TRAFFIC ANALYSIS SOFTWARE:
PERFORMANCE EVALUATION OF WISCONSIN CONDITIONS

FINAL REPORT

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TRAFFIC ANALYSIS SOFTWARE: PERFORMANCE EVALUATION OF WISCONSIN CONDITIONS

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EXECUTIVE SUMMARY

The Wisconsin Department of Transportation (WisDOT) is considering expanding their list of supported software programs for signalized intersection capacity analysis and signal timing optimization. An evaluation was conducted to assess the ability of various traffic analysis software packages to model Wisconsin conditions following WisDOT policies and practices, and to identify which programs best fit WisDOT needs.

The evaluation was completed in two phases. Phase One involved a high level assessment to identify potential software programs that provide Highway Capacity Manual (HCM) compatible analysis and have the ability to optimize signal timings at isolated intersections and along corridors. Phase Two included a detailed assessment of select software packages which included examination/comparison of software capabilities and methodologies, a traffic analysis evaluation of field data and ability to develop signal timing plans, and a qualitative assessment to gauge software usability and support. A supplementary evaluation was also conducted to assess the stop-sign controlled analysis capabilities of the software packages.

WisDOT's Facilities Development Manual (FDM) currently identifies Highway Capacity Software (HCS) and Synchro as supported software programs for traffic signal analysis and optimization, and stop controlled analysis. The results and conclusion of this study will be used to evaluate if additional software programs should be added to WisDOT's traffic analysis toolbox. The following sections provide a summary of the evaluation phases and recommendations.

Phase One Summary

Through a literature review and a national user survey administered through the American Association of State Highway and Transportation Officials' (AASHTO) Traffic Engineers List Serve, a total of 15 analysis/optimization software candidates were identified. Various attributes of the software programs were identified including analysis capabilities, model complexity, and costs. From this information, the following four software programs were identified as meeting the Phase One evaluation criteria and were recommended for inclusion in the Phase Two evaluation (listed alphabetically):

1. Highway Capacity Software (HCS)
2. SIDRA
3. Synchro
4. Vistro

Phase Two Summary

The Phase Two evaluation can be separated into three primary elements, which are discussed in the following sections.

Analysis and Modeling Comparison

A review was conducted comparing analysis methodologies and modeling capabilities between the four subject software programs. Below are key takeaways from this comparison.

- SIDRA and Synchro provide non-HCM proprietary signal analysis methodologies (SIDRA Standard and Synchro's Percentile Delay Method).
- HCS, Synchro, and Vistro provide companion microsimulation tools (the HCS simulation tool is an add-on package and is not currently supported by WisDOT).
- Signal timings within SIDRA must be rounded to whole seconds (most signal controller timings are entered to the nearest tenth of a second).

- HCS is limited to intersections with four legs or fewer and is unable to model many of the phasing options currently used by WisDOT (which limits its flexibility).
- SIDRA uses a non-NEMA, 'movement group' signal timing setup with single-ring/linear sequencing for signal analysis. The user must convert dual-ring phasing (which is used in signal controllers in Wisconsin) to a single ring equivalent.
- Two separate intersections must be modeled within SIDRA to complete a two-stage left-turn analysis at two-way stop controlled locations. The multi-step process is more complicated and takes considerably longer to complete as compared to the other software programs.

Operational Analysis and Field Implementation

A traffic analysis and field implementation evaluation was conducted to assess the effectiveness of each software program to model existing operating conditions and to develop optimized signal timing plans. A total of 28 intersections were selected to provide a mix of geometric conditions, traffic intensity, and geographic locations.

Existing conditions were modeled within each of the subject software programs and operational metrics including queues and right-turn on red (RTOR) volumes were compared to field measured values obtained from video recordings. Each program/method provided relatively accurate estimates at some locations and less accurate at others, however all were considered generally capable of modeling Wisconsin conditions. Below are some key results of the existing conditions operational analysis.

Queue Comparison

- Software generated queues were below field measured queues for the majority of locations.
- SIDRA tended to report the highest queue in situations where a large discrepancy was reported between the programs.
- SIDRA and Vistro showed the strongest R^2 correlation, Synchro showed the lowest.

RTOR Comparison

- Software estimated RTOR volumes were generally less than field measured volumes at the signalized intersections operating in system and generally more than field measured RTOR volumes at isolated signalized intersections
- Synchro tended to report the highest RTOR volume in situations where a large discrepancy was reported between the programs
- Synchro and the WisDOT RTOR factor, an estimate applied as a simple reduction factor, showed strong R^2 correlation values.

Software generated optimized signal timings were developed and implemented in the field. Based on discussions with WisDOT, it was agreed that SIDRA software would not be included in the optimization evaluation due to various modeling limitations, including the single-ring timing setup noted above. The effectiveness of each optimized signal timing plan was evaluated using performance measures obtained from WisBOOM, an automated traffic signal performance measures (ATSPM) program managed by WisDOT. Performance measures included platoon ratio, percent force off/gap out, and split times (85th percentile and average). Below are key takeaways from the WisBOOM evaluation.

- Across all measures, HCS showed the poorest overall performance.
- Vistro provided inconsistent performance between locations and measures.
- Synchro performance was relatively consistent and was often the closest to baseline conditions. This is expected as baseline timings were likely generated using Synchro and manually adjusted based on local knowledge/regional standards.
- Synchro and Vistro showed favorable force off/gap out performance, while HCS showed poor performance.

Qualitative Assessment

A qualitative assessment was conducted to gauge usability and technical/customer support for each program. The assessment included documentation of experiences encountered by raSmith during this project and a peer survey administered to Wisconsin based traffic signal software users. A short, generalized statement for each program is provided elbow.

- HCS is a well-known program that provides HCM compliant analysis and fully user defined optimization options at a relatively low cost, but the rigid nature of the software limits analysis flexibility, users find the interface outdated, and optimization run times are significantly longer than comparative programs.
- Synchro is a well-known, trusted, and intuitive program for analysis and optimization, but users experience poor customer service and struggle with licensing issues.
- SIDRA includes full analysis and optimization capabilities, however modeling conditions including single-ring phasing configuration, multi-step split optimization and lead/lag optimization processes, and multi-step two-stage left-turn analysis at two-way stop controlled intersections add complexity and time for the user.
- Vistro provides HCM compliant analysis, multiple optimization options, and significantly reduced build-time for Vissim models (companion simulation tool), but is currently not widely used and is still being vetted through customer use.

Recommendations

This study reviewed and tested the capabilities and effectiveness of traffic signal analysis software programs to model Wisconsin conditions. It is recommended that Vistro be added to WisDOT's accepted software list for two-way stop control analysis, isolated and signalized corridor analysis, and signal optimization; joining HCS and Synchro. While SIDRA is capable of analyzing Wisconsin conditions and optimizing signal timings, several additional steps are required for common analysis conditions. Therefore, it is not expected to be selected as a favored analysis tool over comparable software programs for signal analysis/optimization and is not recommended to be added for these uses.

INTRODUCTION

The Wisconsin Department of Transportation (WisDOT) retained raSmith to evaluate the ability of various traffic analysis software packages to model Wisconsin conditions. The project goals include the following.

- Identify HCM-based traffic software packages that can:
  - Analyze and optimize traffic signal timings at isolated intersections and along corridors
  - Analyze stop controlled intersections
- Assess the ability of traffic software packages to model Wisconsin conditions following WisDOT policies and practices
- Identify which programs best fit WisDOT needs

The evaluation was completed in two phases. Phase One involved a high level assessment to identify potential software programs, while Phase Two included a detailed assessment of select software packages and identified which packages best met WisDOT's needs.

WisDOT's Facilities Development Manual (FDM) currently identifies Highway Capacity Software (HCS) and Synchro as supported software programs for traffic signal analysis and optimization, and stop controlled analysis. The results and conclusion of this study will be used to evaluate if additional software programs should be added to WisDOT's traffic analysis toolbox.

PHASE ONE: TRAFFIC ANALYSIS SOFTWARE SELECTION

Phase One included a high level assessment to identify traffic analysis software packages for inclusion in the study. The base evaluation criteria were:

- Ability to optimize traffic signal timing plans for intersections and corridors
- HCM compatible capacity analysis for signalized intersections and corridors

Software Candidates

A list of currently available analysis/optimization software candidates was developed through review of online literature and a user survey conducted via the American Association of State Highway and Transportation Officials' (AASHTO) Traffic Engineers List Serve. The online literature review predominately utilized National Cooperative Highway Research Program (NCHRP), Transportation Research Board (TRB), and Institute of Transportation Engineers (ITE) publications.

The 15 traffic software programs identified and evaluated in Phase One are listed below:

1. ATSPM
2. CORSIM
3. Highway Capacity Software (HCS)
4. LISA+
5. LinSig
6. Passer-V
7. SIDRA
8. Synchro
9. TransModeler
10. TransModeler SE
11. TEAPAC
12. TRL Software
13. Tru-Traffic
14. Vissim
15. Vistro

raSmith researched attributes of these software programs such as initial and ongoing maintenance costs, model complexity, and analysis capabilities (stop control, signalized

intersections/corridors, and roundabouts). An evaluation matrix summarizing these attributes is provided in Appendix A.

WisDOT administered the AASHTO user-survey and provided responses to raSmith. US state DOTs were asked to identify:

- What software packages they use for conducting traffic signal capacity analysis, optimization, and timings plans; and
- Qualitative pros/cons of each software program.

Responses were received from 25 states. Table 1 identifies the most common software packages used by the states to analyze and optimize traffic signals.

Table 1
AASHTO Survey Responses
Common Software Packages Used by States

Software	Percent of Respondents Using Software[1,2]
Synchro	96%
HCS	44%
Vissim	44%
Tru-Traffic	28%
CORSIM	12%
Vistro	8%
TransModeler	8%

1) Some states use multiple software packages
2) Software packages not shown in the table had a single or no respondents using the software.

As shown in Table 1, 96% of the responding states currently use Synchro to evaluate and optimize traffic signals, and it was by far the most commonly used software program. Synchro usage is more than double that of the next two software programs, HCS (44%) and Vissim (44%). The overall consensus was Synchro is widely used and liked for its traffic signal optimization capabilities, but there is frustration in dealing with Trafficware (manufacturer and distributor of Synchro). Poor customer service, inquiry response, and issue resolution were cited.

A key piece of feedback received from the survey involved a recent software switch by Louisiana Department of Transportation and Development (LaDOTD) from Synchro to Vistro. A follow-up conference call was held and LaDOTD provided the following reasons for deciding to switch:

- LaDOTD feels Vistro provides closer adherence to HCM methodologies as compared to Synchro
- Vistro has beneficial compatibility with Vissim. Vissim models can be quickly and easily built in Vistro.
- Vistro can be loaded on any computer and allows for network licenses.
- LaDOTD noted poor experiences working with Trafficware on issues with Synchro.

Appendix B lists all questions included in the AASHTO survey and summarizes the comments received from the states.

Software Selection for Phase Two

Based on the results of the literature review and AASHTO survey, five software programs met the project's base criteria of HCM compatibility and ability to optimize traffic signal timing plans: HCS, SIDRA, Synchro, TransModeler, and Vistro.

While Tru-Traffic (28%) and CORSIM (12%) are being used by several of the responding states for optimizing traffic signal timings, these programs do not have analysis capabilities. Therefore, they did not meet the project's base criteria and were not included in the Phase Two evaluation. Vissim is also used by many states (44%) but is not HCM compatible and was not included in the Phase Two evaluation.

TransModeler met the project base criteria, but provides a full suite of products and capabilities including travel demand forecasting/modeling, 3-D animation tools, and traffic data database management. TransModeler is sold as a bundled package with a cost that is much higher than the comparable traffic analysis/optimization programs. At this time, WisDOT is not considering replacement of their current travel demand forecasting model and is not considering adding the other available products to their analysis toolbox. Therefore, TransModeler was not recommended for further evaluation in Phase Two.

Based on the Phase One evaluation, the following four software programs were recommended for inclusion in the Phase Two evaluation (listed alphabetically):

1. HCS
2. SIDRA
3. Synchro
4. Vistro

PHASE TWO: SOFTWARE EVALUATION AND FIELD ANALYSIS

Phase Two included a more detailed evaluation of the four software programs identified in Phase One: HCS, SIDRA, Synchro, Vistro. Analysis/optimization methodologies and capabilities, output metrics, and modeling approach were examined and compared between the programs. A traffic analysis evaluation using field data was conducted to assess the effectiveness of each software program to model existing operating conditions (signalized and two-way stop control) and to develop optimized signal timing plans. Both isolated signalized intersections and signalized corridors were considered for the timing optimization. Additionally, a qualitative assessment was conducted to gauge usability and technical/customer support for each program. The following sections outline the methodologies and results of the Phase Two evaluation.

Software Version and Analysis Methodology

A variety of software versions are commercially available for each software program. Selection of the specific software version to be used was based on the following criteria: 1) Listed as the currently supported version in the WisDOT FDM (FDM 11-5-3.7) at the start of the Phase 2 evaluation (December, 2017), or 2) The most current available version at the start of the Phase 2 evaluation.

WisDOT currently supports Highway Capacity Manual (HCM) methodologies for intersection capacity analysis and it is widely accepted as the national standard for traffic analysis in the United States. All of the subject software programs support HCM methodologies but some contain additional analysis methodologies (i.e., Synchro allows the user to utilize either the HCM methodology or Synchro's proprietary methodology to analyze intersections). If a non-HCM

proprietary analysis methodology was provided, it was selected for use in the evaluation. If not, the most current HCM methodology accepted by WisDOT was selected.

The selected version and analysis method for each subject software program is provided in Table 2 and were maintained throughout the evaluation.

Table 2
Selected Software Program Version and Capacity Analysis Method

Software Program and Version	Analysis Method[3]	
	Signal	Two-Way Stop
HCS 2010[1]	HCM 2010	HCM 2010
SIDRA 7[2]	SIDRA Standard[4]	SIDRA Standard[4]
Synchro 10	Synchro Percentile Delay[4]	HCM 2010
Vistro 6	HCM 2010	HCM 2010

1) HCS 7 (released March, 2017) was available at the start of the Phase 2 evaluation and was being used internally at WisDOT; however it was not listed in the WisDOT FDM as a supported software program until March, 2018. Therefore, HCS 2010 was used in this study.
2) SIDRA INTERSECTION 8 was released in May, 2018 (after the start of the Phase 2 evaluation) and was not used in this study
3) HCM 6 was available at the start of the Phase 2 evaluation but was not listed in the WisDOT FDM as the supported analysis methodology and was not used in this study. At the time of publication of this report WisDOT follows HCM 6 methodology and it is available in Synchro 10, SIDRA 7, Vistro 6, and the current version of the HCS (HCS 7).
4) HCM 2010 methodology is available in the referenced software programs.

Each software version may also include several 'build' iterations. Software builds are released more frequently than versions, generally include functional updates, and are available free of charge. As opposed to software versions which are released less frequently, can include more substantial updates, and typically involve new licensing fees. The most current build available at the start of Phase 2 was used and maintained throughout the project (see Appendix G for software builds used in this study).

Both SIDRA and Synchro provide non-HCM proprietary signal analysis methodologies, as described in the following paragraphs, which were used for this study. HCS and Vistro software utilize HCM methodologies for signal analysis.

SIDRA Standard utilizes a 'Critical Movement Method' for delay calculations at signalized intersections. The Critical Movement Method features a movement-related focus instead of phase-based. Delay and queue calculations are based on formulas presented in the research paper titled *Traffic Signals: Capacity and Timing Analysis* (Rahmi Akcelik, 1998).

Synchro methodology utilizes a 'Percentile Delay Method' for delay calculations at signalized intersections. The Percentile Delay Method considers five traffic flow percentile scenarios (90th, 70th, 50th, 30th, 10th) and a volume weighted delay average of the scenarios. Vehicle delays are calculated using Webster Delay Formula (HCM, 2000) for each scenario with adjusted volumes and green times.

HCM methodology provides estimates of saturation flow, capacity, delay, LOS and back of queue by lane group for each approach and for the overall intersection based on a single volume scenario.

HCS, Synchro, and Vistro utilize HCM methodologies for two-way stop control analysis. SIDRA Standard methodology uses a gap acceptance approach with critical gap and follow-up

headway values recommended in the Austroads (Australia and New Zealand roadway and traffic agency) Road Design Guide.

Analysis Measures of Effectiveness (MOE)

Hundreds of different MOEs are available within each software program. The following list of the most typical MOEs used to evaluate signal timing performance can be found within all four software programs:

- Control Delay/Vehicle
- Queue Delay/Vehicle
- Delay/Vehicle
- Queue
- Level of Service
- Total Delay
- Stops/Vehicle
- Total Stops
- V/C Ratio
- Corridor Average Speed

Additionally, SIDRA and Synchro provide emissions (CO, NOx, VOC) and fuel consumption MOEs.

Analysis Calibration

Calibration is recommended for any traffic analysis to better reflect local conditions. Each software program contains default values based on the core methodologies utilized in the program. These can be influenced by the geographical location in which the program was developed. For example, SIDRA Standard utilizes default headway and critical gap values developed in Australia and New Zealand, while Vistro utilizes start-up/lost times based on operating conditions in Germany. However, each program allows the user to easily adjust many of the analysis parameters, including the following typical locally influenced items:

- Saturation flow rate
- Start-up/lost time
- Headway/critical gap times
- Lane utilization
- Link speed

Default values provided by each software program were generally used for the analysis parameters. Site specific parameters such as link speed were adjusted.

General Capabilities

Table 3 outlines various analysis capabilities and provides a comparison between each of the software programs.

Table 3
Software Analysis Capabilities

Condition	HCS 2010	SIDRA 7	Synchro 10	Vistro 6
Ability to use WisDOT signal timing parameters				
Minimum/Maximum green timings	X	[1]	X	X
Clearance timings	X	[1]	X	X
Pedestrian timings	X	[1]	X	X
Cycle length	X	[1]	X	X
Ability to analyze other intersection types				
Diverging Diamond Interchange (DDI)	X	X	X	X
Single Point Urban Interchange (SPUI)	X	X	X	X
Roundabouts	X	X	X	X
> 4 legs		X	X	X
Ability to analyze multi-modal operations				
Pedestrian	X	X	X	X
Bicycle	X		X	X
Transit	X			
Ability to conduct other analysis tasks				
Traffic route assignment		[2]	X	X
Trip Generation			X[3]	X
Work zone analysis	X	X	X	X
Diversion analysis				X
Analysis Methods available in Software				
HCM2000			X	X
HCM2010	X	X	X	X
HCM6	[4]	X	X	X
Intersection Capacity Utilization (ICU)		X	X	X
Non-HCM Signal Analysis Methodology		X	X	
Non-HCM Stop Control Analysis Methodology		X		
Companion microsimulation tool	X[3]		X	X
Display time-space diagram	X	X	X	X
Signal Warrants	X		X[3]	X
Accommodates half-cycle lengths for corridor analyses		X	X	X
Ability to upload/download timing plans to/from signal controller			X[3]	

1) Must use whole numbers (decimals not allowed)
2) Available as add-on package with current version of SIDRA (SIDRA 8)
3) Separate add-on package required
4) HCM 6 methodology available in current version of the HCS (HCS 7)

As shown in Table 3, HCS, Synchro, and Vistro have the ability to use WisDOT signal timing parameters directly. SIDRA can follow most WisDOT parameters, but signal timings must be

rounded to whole seconds. This is an issue with WisDOT applications because most clearance intervals are calculated and entered into the signal controller to the nearest tenth of a second.

All of the subject software programs are capable of analyzing roundabouts and alternate intersection types including diverging diamond and single point urban interchanges. Each program is also capable of analyzing intersections with more than four legs, except HCS which is limited to intersections with four legs or fewer.

Several additional analysis limitations were encountered within HCS, including:

- Half cycle timing plans cannot be modeled.
- The software is unable to model many phasing options, which limits its flexibility. It cannot model right-turn overlap phasing, right-turn movements as unsignalized, and most other non-standard applications. An option for Dallas Protected-Permitted (DP-P) phasing can be selected, but it is unclear if the phasing is being modeled correctly (especially with different phasing on opposing left-turn movements).
- Several timing parameters cannot be entered (vehicle extension, time before reduce, time to recue) or changed (minimum gap for coordinated phases).
- A thru movement must be coded on an approach to enter speed limit, RTOR volume, and pedestrian timings.
- Isolated intersections are optimized using the natural cycle and the user is not able to specify a desired cycle length.
- For two-way stop control, major left-turn lane storage is limited to 225', more than 2 vehicle storage is allowed in the median for two stage left-turn analysis (non-HCM compliant), and the user is required to enter the 'portion of time blocked' to account for upstream signal.

The above can present issues with WisDOT applications because many of these conditions (i.e. half cycle timing plans, unsignalized right-turns at signals) are present along the state highway system. An alternate analysis program (other than HCS) would be required.

HCS, Synchro, and Vistro provide companion microsimulation tools (HCS simulation tool is an add-on package and is not currently supported by WisDOT), while SIDRA and Synchro provide non-HCM analysis methodologies. These can be useful in situations where HCM methodologies are not applicable.

Geometry, Volume, and Timing Plan Implementation

While the format of each software program is visually different, each takes the same general approach requiring user entry of geometric, volume, and timing information. One difference includes the use of separate windows or tabs within SIDRA and Synchro to organize the various input data. In comparison, HCS and Vistro utilize a single entry window with various sections for data entry that requires the user to scroll up/down on the screen to reach different input areas. Both approaches have benefits/drawbacks, and it is a user preference as to which is favored.

Each program also provides some version of a map or layout mode that can be used to visually aid in the input and review of select data inputs. SIDRA, Synchro, and Vistro display lane geometry while HCS shows links and nodes only. HCS, Synchro, and Vistro allow for an aerial background image to be uploaded, but HCS requires the user to manually scale the image. SIDRA does not support background imagery and intersection spacing/link length is not depicted to-scale in the layout mode (intersection spacing is a geometric input, but is not shown visually).

Synchro and Vistro have the ability to display various additional input items such as volumes (both), cycle length (Synchro), queue lengths (Vistro), and delay/LOS (both). Example map or layout mode screen shots from each software program are shown in Figure 1.

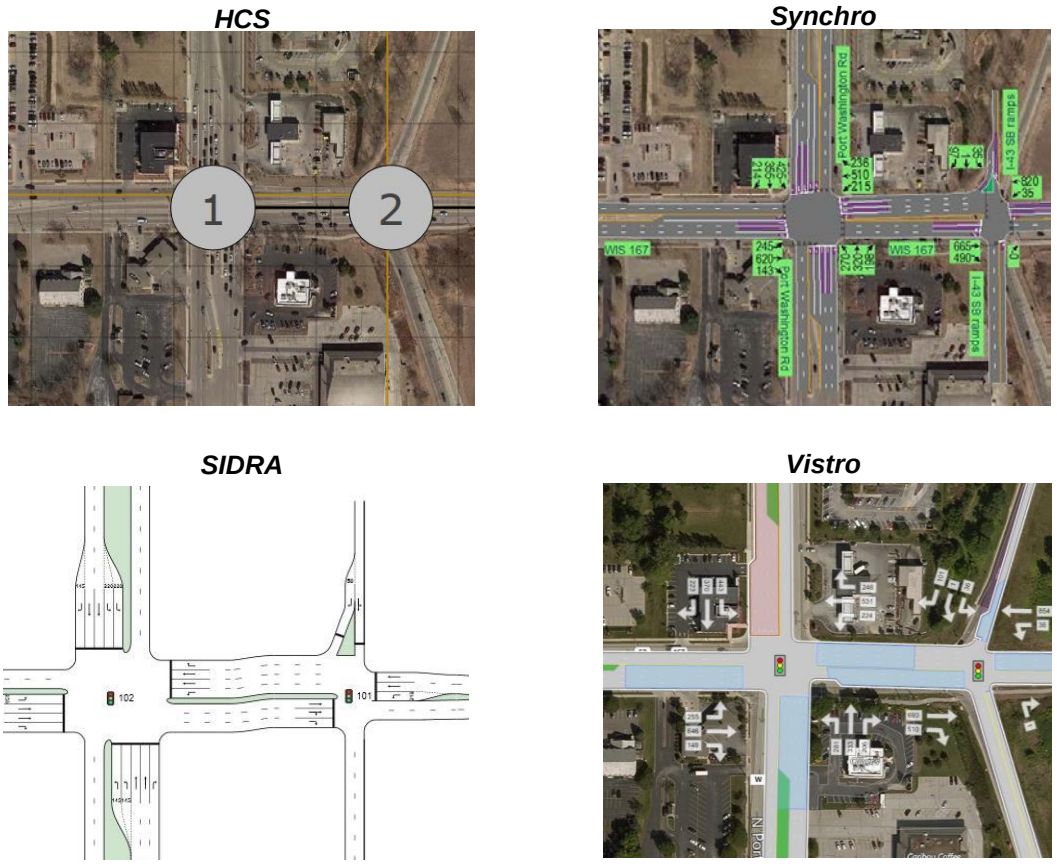


Figure 1: Software Map/Layout Mode Examples

For signal phasing, HCS, Synchro, and Vistro use a dual-ring, eight-phase (standard NEMA) signal timing setup. SIDRA uses a 'movement group' approach with single-ring equivalent/linear sequencing. For example, a four-leg intersection with mainline left-turn phasing (and different split times for the left-turn movements) would need to be dissected into four movement groups (opposing lefts, adjacent left/thru, opposing major street thru, opposing minor street thru). This is shown visually in Figure 2.

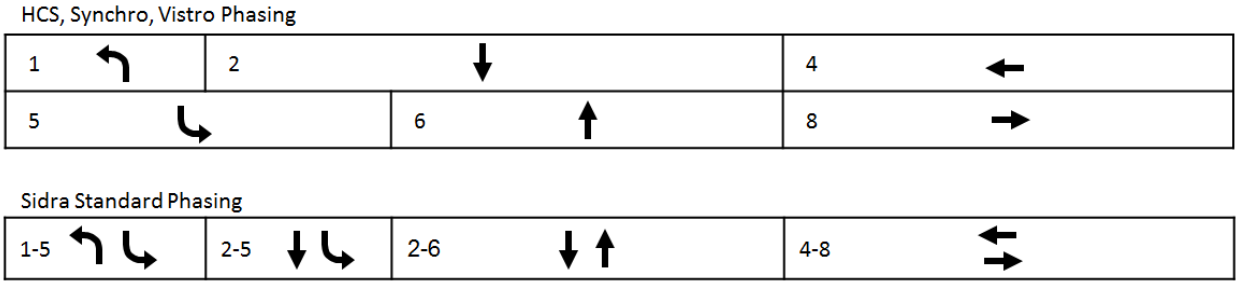


Figure 2: Signal Phasing Modeling HCS/Synchro/Vistro versus SIDRA

The standard Wisconsin phasing can be accommodated within SIDRA, but an additional step is required in the modeling process. The user must convert the dual-ring phasing (which is used

in signal controllers in Wisconsin) to a single-ring equivalent for SIDRA analysis. A new version of SIDRA (SIDRA 8) was released during this study and it continues to use the same single-ring equivalent phasing method discussed above.

SIDRA, Synchro, and Vistro can model non-NEMA phasing, but due to limitations with the HCM methodology, do not provide true HCM results. HCS does not accommodate non-NEMA phasing.

Two-Way Stop Controlled Analysis

Modeling of two-way stop controlled intersections is similar between all of the subject software programs. Geometric, volume, and traffic control information is entered into the appropriate tabs/windows or input section within the software.

The only major difference appears when modeling locations with minor street two-stage left turns. HCS, Synchro, and Vistro follow HCM methodology and allow the user to enter the number of vehicles that can be stored within the median. Once entered, the program automatically accounts for the increased capacity. The two-stage left-turn analysis was completed in in less than two minutes.

In SIDRA the user is required to model two separate intersections, enter modified critical gap and headway values (provided in the user manual), and dissect volumes between the intersections to complete a two-stage left-turn analysis. The multi-step process is more complicated and takes considerably longer to complete as compared to the other software programs. As part of this study, the modeling process took more than an hour for one location. SIDRA provided an example file which expedited the process for future locations but would still require updating volumes and headways at two intersections for each analysis location. A new version of SIDRA (SIDRA 8) was released during this study and it uses the same two-stage crossing method discussed above.

Operational Analysis and Field Implementation Evaluation

A traffic analysis and field implementation evaluation was conducted to assess the effectiveness of each software program to model existing operating conditions (signalized and two-way stop control) and to develop optimized signal timing plans. Existing conditions were modeled within each of the subject software programs and operational metrics including queues and right-turn on red volumes were compared to field measured values obtained from video recordings. Optimized signal timings were then developed using each software program (except SIDRA as discussed further in later sections) and implemented in the field.

The effectiveness of each software program's optimized signal timing plan was evaluated using an automated traffic signal performance measures (ATSPM) program. ATSPM programs provide real-time and historical signal operation information and performance measures at isolated intersections and along signalized corridors. Appropriate communication systems and compatible signal controllers are required for information to be provided. WisDOT manages an ATSPM program, known as WisBOOM, which was created using open source code developed and provided by Utah DOT.

The overall evaluation process is summarized in Figure 3

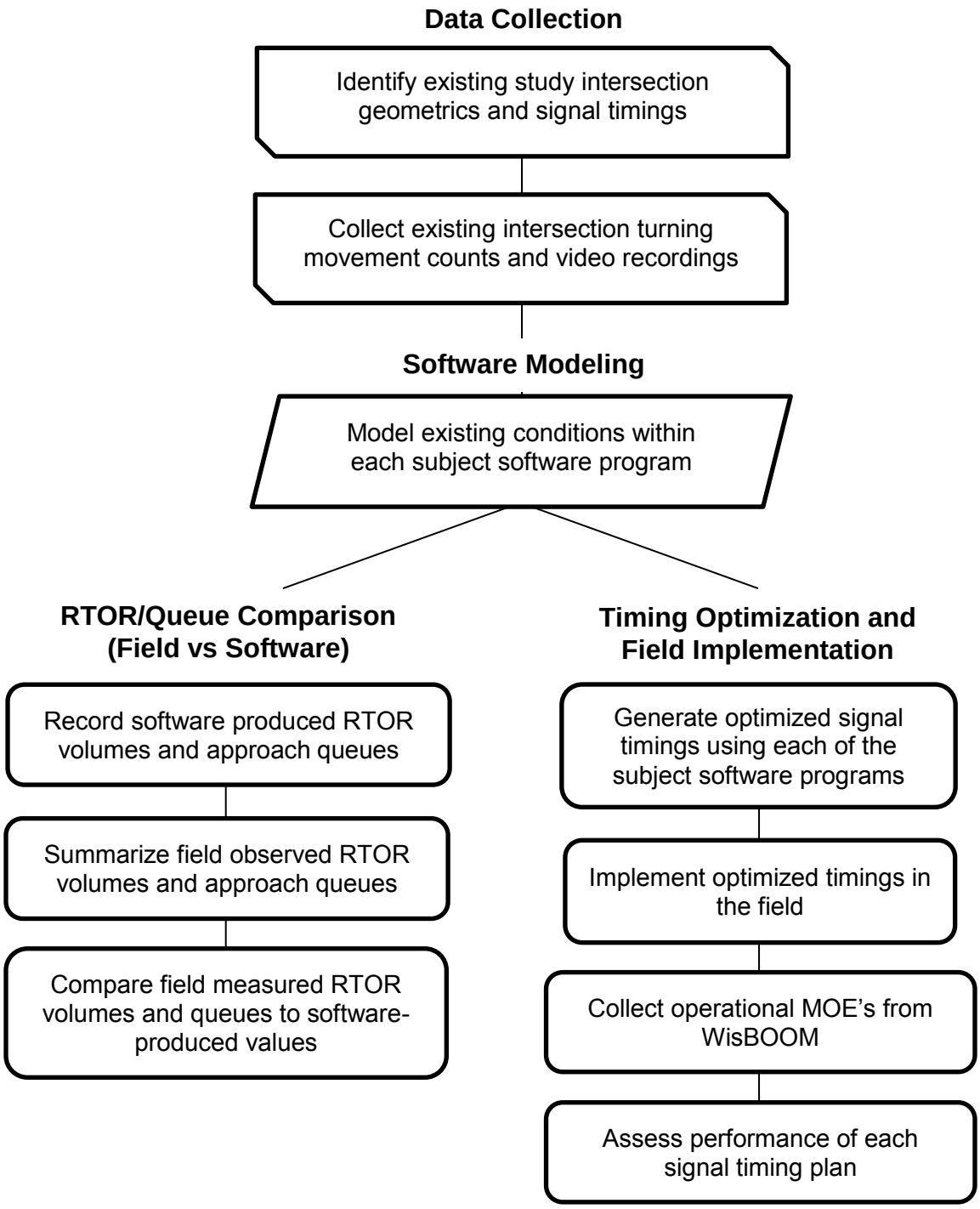


Figure 3: Operational Analysis and Field Evaluation Process

The following sections provide more detail on the operational analysis and field evaluation.

Study Intersections and Data Collection

The study intersections were selected to provide a mix of geometric conditions, traffic intensity, and geographic locations. The list of the 28 study intersections (18 signalized, 10 unsignalized) is provided below and includes isolated signalized intersections, signalized corridors, and two-way stop controlled intersections. The study intersections are located within 10 different Wisconsin counties and four WisDOT regions.

Signalized Corridors

Southeast Region

- WIS 38 (Milwaukee County):
  - Drexel Avenue
  - Town Square Way/Susan Drive
  - Forest Hill Avenue
  - Puetz Road
  - Centennial Drive
- WIS 67 (Waukesha County):
  - I-94 Eastbound Ramps
  - I-94 Westbound Ramps
  - Oconomowoc Drive
  - County B/Valley Road
  - Oconomowoc Parkway
- WIS 167 (Ozaukee County):
  - Port Washington Road
  - I-43 Southbound Ramps
  - I-4 Northbound Ramps

Isolated Intersections

Northeast Region

- WIS 172 with County EB/Packerland Drive (Brown County)

North Central Region

- WIS 52 with South 28th Avenue (Marathon County)

Southeast Region

- WIS 20/WIS 83 with WIS 36 (Racine County)
- WIS 67 with US 14 (Walworth County)

Southwest Region

- WIS 12 with County K (Dane County)

Two-Way Stop Controlled Intersections

Northeast Region

- WIS 54/Mason Street with Lacount Road (Brown County)

Southeast Region

- WIS 32 with Russell Road (Kenosha County)
- WIS 100 with North Mayfair Mall Driveway (Milwaukee County)
- WIS 16 westbound ramp with County C (Waukesha)
- WIS 167 with Country Aire (Waukesha County)
- WIS 67 with County Z (Waukesha County)
- WIS 57 with County K (Ozaukee County)

Southwest Region

- US 51 with County AB/County B (Dane County)
- WIS 19 with Musket Ridge Drive (Dane County)
- I-94 westbound Ramp with County F (Jefferson County)

The study intersections feature a range of geometric conditions, traffic volumes, signal phasing, and speed limit. A general summary of these characteristics is provided in Table 4 and Exhibit 1.

Table 4
Study Intersection Characteristics

Intersection Characteristic	Number of Locations Featuring Subject Characteristic	
	Signalized	Two-way Stop
Mainline Thru Travel Lanes		
2-lane	2	6
4-lane	9	3
5 or 6-lane	7	1
Analysis Hour Intersection Entering Volume		
<1000 vph	1	6
1000 to 2000 vph	2	3
2000 to 3000 vph	11	1
>3000 vph	4	0
Mainline Speed Limit		
≤35 mph	5	5
40 to 50 mph	11	3
≥55 mph	2	2
Left-turn phasing		
Protected only (all left-turns)	3	-
Protected-perm only (all left-turns)	6	-
Mix of protected, protected-permitted, and permitted	8	-
Split phasing	1	-

Existing turning movement counts were primarily collected in January of 2018 (two locations collected in May/June of 2017). Analysis hours were selected to provide a mix of weekday morning peak, weekday evening peak, and non-peak hour conditions. Video recordings were collected on one approach of each intersection to document queue lengths and right-turn on red volumes. One of the minor street approaches was recorded at two-way stop controlled intersections, and a mix of major and minor street approaches was recorded at signalized intersections. It should be noted that some video recordings were not usable due to poor weather conditions, low image quality, or visual obstructions (adjacent traffic or other objects).

Analysis hours and approaches selected for video recording is summarized in Exhibit 1. Existing conditions information including geometric exhibits, recent aerial images of the study intersections, existing signal timings, and traffic count data are provided in Appendix C.

Existing Conditions – Queue Evaluation

Field measured queues were obtained from video recordings collected at select study intersection approaches. Processing of the video data included the following steps.

- For each lane, identify the number of automobiles and heavy vehicles in queue at the end of each subject movement red phase during the analysis hour.
- Queue lengths are reported by either number of vehicles or in feet, depending on the program. Each software program uses the following conversion: Automobile = 25', Heavy Vehicle = 45'. Calculate the queue length at the end of each red phase using the above conversion.
- Calculate 95th percentile, 50th percentile, and average queue length during the analysis hour.

Field collected 95th percentile queues were compared to corresponding 95th percentile queues predicted by each software program. Queues were compared at both signalized and two-way stop controlled study intersections. A full summary of the field collected queues is provided in Appendix D.

Software Queue Estimation Methodologies
The queue estimation methodology used by each software program is generally based on the arrival-departure flow relationship (i.e. queue accumulation graph). However specific variables integral to the queue calculations such as arrival rate, effective green time, etc. are determined through each software program's delay analysis methodology (see the Software Version and Analysis Methodology section).

Comparison Results
Tabular and graphical summaries were developed to compare software outputs to field measured values and are provided in Exhibits 2A through 2J. Each program provided a relatively accurate estimate at some locations and less accurate at others. All of the software programs were considered generally capable of modeling queues for Wisconsin conditions. Below are a few observations from the data.

- Software generated queues were below field measured queues for the majority of locations
- In situations where a large discrepancy in queue was reported amongst the software programs, SIDRA tended to report the highest queue.

A preliminary regression analysis was conducted to identify correlation of observed values to software predicted values. Note that the evaluation was based on a relatively small sample size and includes a mix of stop control and signalized locations. A summary of the analysis is provided in Table 5.

Table 5
Observed versus Software Estimated Queues
Regression Analysis

Software Program	R^2 Value[1]
HCS	0.44
SIDRA	0.78
Synchro	0.36
Vistro	0.64

1) Coefficient of determination (or R^2). A value of 1.0 represents perfect correlation between observed and software estimated queues (software exactly matched field conditions).

SIDRA (0.78) showed the highest R^2 correlation to observed queue data and Synchro (0.36) showed the lowest.

Existing Conditions – Right-Turn on Red Evaluation

Right-turn on red (RTOR) volumes were collected at select study intersection approaches featuring exclusive single or dual right-turn lanes and compared to corresponding RTOR volumes predicted by each software package. A comparison was also made to the current RTOR estimation method outlined in WisDOT's Traffic Engineering, Operations, & Safety Manual (TEOpS 16-15-5.2.1.3). A full summary of the field collected RTOR volumes is provided in Appendix E.

Software RTOR Volume Estimate Methodologies
HCM methodology states RTOR volumes should be measured in the field and an estimation procedure is not provided if field volumes are not available. HCS and Vistro do not provide a method for estimating RTOR volume because they strictly adhere to HCM methodology. Both software programs require the user to identify a RTOR volume and code it manually. Therefore, these two programs were not included in the RTOR evaluation.

SIDRA and Synchro utilize proprietary methods for estimating RTOR which are based on adjusted saturation flow rates (Synchro) and the use of gap acceptance modeling (SIDRA) during the 'red phase' of the right-turn movements. RTOR values are not directly reported within the software programs, but were calculated using formulas provided by the software developers. In the absence of a universally accepted method for estimating right-turn on red volume, the methods used by Synchro and SIDRA to model right-turn operations during the red signal phase appear reasonable.

A more detailed description of the RTOR estimation methodologies is provided in Appendix F.

Comparison Results
Tabular and graphical summaries were developed to compare software and WisDOT methodology outputs to field measured values. These are provided in Exhibits 3A through 3G. Each program/method provided a relatively accurate estimate at some locations and less accurate at others. SIDRA, Synchro, and the WisDOT method were considered generally capable of modeling Wisconsin conditions. Below are a few observations from the data.

- Estimated RTOR volumes were generally less than field measured RTOR volumes at the signalized intersections operating in system and generally more than field measured RTOR volumes at isolated signalized intersections
- In situations where a large discrepancy in RTOR volume was reported amongst the software programs, Synchro tended to report the highest RTOR volume.

A preliminary regression analysis was conducted to identify correlation of observed values to software predicted values. Note that the evaluation was based on a relatively small sample size. A summary of the analysis is provided in Table 6.

Table 6
Observed versus Software Estimated RTOR Volumes
Regression Analysis

Software Program	R^2 Value[1]
SIDRA	0.49
Synchro	0.79
WisDOT Factor	0.75

1) Coefficient of determination (or R^2). A value of 1.0 represents perfect correlation between observed and software estimated queues (software exactly matched field conditions).

Synchro showed the best R^2 correlation value of 0.79. The WisDOT factor, an estimate applied as a simple reduction factor, showed a similar R^2 value of 0.75.

Existing Conditions – Level of Service Evaluation

Existing conditions at the study intersections were analyzed within each of the subject software programs. Identical traffic volumes, signal timings, and geometrics were used with the only difference being the analysis methodologies. The results are summarized in Exhibit 4. The summary shows each program reported relatively consistent results, with most locations being within one letter grade.

Two locations, however, showed a more significant discrepancy: US 12 with County K (LOS F vs LOS C) and WIS 38 with Forest Hill Avenue (LOS D vs LOS B). In both instances, SIDRA reported the higher delay. During peak times, the US 12 intersection with County K operates near capacity with heavy volumes (especially northbound). SIDRA showed overcapacity conditions for the northbound approach, resulting in higher intersection delays as compared to the other software programs. This is not uncommon at locations operating overcapacity where small increases in volume can result in significant changes in delay.

At the WIS 38 intersection with Forest Hill Avenue, SIDRA reported LOS D (36 seconds). This is one second over the LOS C/D threshold. While the difference in the reported LOS was two letter grades, the difference in delay values is similar to other locations.

All traffic analysis output reports are provided in Appendix G.

Signal Timing Optimization

Based on discussions with WisDOT, it was agreed that SIDRA software would not be included in the optimization evaluation due to the following modeling limitations: 1) Extra steps required to model dual-ring signal phasing, and 2) Multi-step approach required for split optimization and left-turn lead/lag optimization. SIDRA is capable of modeling and analyzing signalized intersections and corridors, but would not be the preferred program for modeling Wisconsin signalized intersections due to the additional effort required to complete the tasks.

Optimized signal timings were generated at each intersection and corridor utilizing the optimization methodologies provided within the remaining software programs. Optimized timing plans from HCS, Synchro, and Vistro, along with the existing timing plans for comparison purposes, are provided in Exhibits 5A though 5L. The optimized timing plans were generally implemented in the field for one week each, as shown in Exhibit 6. Performance measures were obtained from WisBOOM for each optimized timing plan and existing conditions (see Exhibit 6). These measures were evaluated to assess performance of the individual timing plans.

It should be noted that the optimization was conducted primarily using default software parameters and included no post-optimization adjustments. In practice, signal timing plans are manually adjusted by WisDOT staff based on local knowledge and regional standards. This is a step not captured within any of the software programs.

Software Optimization Methodologies

Each program includes varying levels of signal optimization capabilities and user defined parameters. Optimization objective options within Synchro and Vistro are relatively limited and focus on reducing overall vehicle delay. The user has the ability to favor or reduce delay on specific movements but few additional optimization options are available. On the other hand, HCS provides multiple potential optimization objectives such as percent base free flow speed, travel time, arterial stops, overall delay, balanced delay, queue, stop rates, etc. The user is able to select which objective function is used for the optimization. A more detailed description of optimization methodologies is provided in Appendix F.

HCS and Vistro software utilize commonly accepted optimization algorithms (i.e. hill climb, genetic) to locate local and global solutions. The specific optimization mathematical techniques utilized in Synchro were not defined within the software user manual. Optimization duration (i.e. the amount of time needed to produce a solution) is relatively short for Synchro and Vistro (less than 20 seconds). HCS optimization run times are longer (up to one minute) for typical conditions and can be extensive (several minutes) with more complex conditions.

The subject software programs provide optimization objectives and methodologies that are in line with typical improvement metrics considered at signalized intersections (i.e. reduced delays and queues), utilize widely accepted optimization mathematic techniques, and were considered to provide a reasonable optimization approach.

It should be noted that during the isolated intersection optimization process, it was identified that maximum green parameters were being violated within Vistro and unrealistic split times were being produced. PTV (manufacturer and distributor of Vistro) was contacted and their investigation revealed an error in the optimization coding at isolated intersections with actuated timing and recommended fixed timing be used for optimization. A software patch was released at a later date to address the issue. See Appendix F for more information.

WisBOOM Performance Evaluation

WisDOT conducted an evaluation to assess the effectiveness of the individual timing plans based on a comparison of the performance measures obtained from WisBOOM. The following sections provide additional detail on this comparison.

WisBOOM Performance Measures

The following WisBOOM performance measures were selected for use in the study's field evaluation:

- Platoon Ratio: Ratio measuring progression quality on a coordinated approach in a given time period; the HCM defines the range of potential values as 0.33 (very poor) to 2.0 (exceptional)
- Percent Force off: Percent of time a phase is terminated because the split time expires in a given time period; generally WisDOT practice is to aim to provide timings plans that yield a force off percentage equal to the gap out percentage and a value less than 50%
- Percent Gap out: Percent of time a phase is terminated because the minimum green time has elapsed and the vehicle extension has expired in a given time period; generally WisDOT practice is to aim to provide timing plans that yield a gap out percentage equal to the force off percentage and a value less than 50%
- 85th Percentile Split: Split time that encompasses 85 percent of the split time data points in a given time period
- Average Split: Average of all split time data points in a given time period

To represent typical weekday conditions, an average of the analysis hour outputs from Tuesday, Wednesday, and Thursday of each analysis week was used. A summary of the WisBOOM performance measures data is provided in Appendix H and the full WisBOOM output reports are provided in Appendix I.

WisBOOM Evaluation Criteria

Various evaluation criteria were used to compare performance measures between the software programs and to compare software output to baseline conditions. Individual criterion were obtained from the HCM or developed by WisDOT, and each is discussed in more detail below.

Platoon Ratio:

The average platoon ratio for the primary travel direction during the analysis hour was identified from each timing plan. A higher platoon ratio was considered a more favorable performance with the HCM defining the range of potential values as 0.33 (very poor) to 2.0 (exceptional). Platoon ratio was evaluated along the mainline corridor thru movements only.

Percent Force Off to Percent Gap Out Ratio:
This criterion was a WisDOT generated measure. General WisDOT practice is to aim to provide a signal timing plan that yields an even balance between percent force off and percent gap out. The ratio of force off to gap out percentage was evaluated based a 'balance measure' developed by WisDOT. The balance measure is defined as:

$$Balance\ Measure = \frac{\text{Force Off \%} - \text{Gap Out \%}}{\text{Force Off \%} + \text{Gap Out \%})}$$

A balance measure value of 0 represents perfect balance between percent force off and percent gap out, a more favorable performance. A value of 1 represents complete imbalance, a less favorable performance. The balance measure was evaluated at non-coordinated corridor movements and in the following movement groups: mainline left-turns, minor street left-turns, and minor street thru movements.

85th Percentile Split Time and Average Split Time to Max Split Ratio:
This criterion was a WisDOT generated measure. Timings plans were considered to have allocated an appropriate split time if the ratios of reported 85th percentile split times to max split and reported average split times to the same max split time fell within the following ranges identified by WisDOT:

- Left-turn movement 85th percentile split is 85% to 100% of max split **and** average split is 70% to 90% of max split
- Thru or right-turn movement 85th percentile split is 95% to 125% of max split **and** average split is 75% to 100% of max split

These ranges were developed based on theoretical considerations and reviewing the split ratio data.

Travel Speed:
Separate from WisBOOM, WisDOT also collected NPMRDS (National Performance Management Research Data) travel speed data along the WIS 38 corridor (Drexel Avenue to Puetz Road – Centennial Drive excluded due to data limitations). The NPMRDS data is provided by FHWA (Federal Highway Administration) and is collected via a number of probe sources including mobile photos, connected vehicles, and portable navigational devices. A higher corridor speed was considered a more favorable performance.

Mainline Delay:
Average mainline thru movement delays were compared at two of the isolated intersections (WIS 172 with County EB and WIS 52 with 28th Street). Data was not available at the other study intersections. A lower delay was considered a more favorable performance.

It should be noted and stressed there are concerns with the delay data obtained from WisBOOM. The WisBOOM reported delay value is not considered an accurate estimate of field conditions, but was included strictly for comparison between the timing plans.

Summary tables were developed for each of the above criteria and are provided in Exhibit 7. Full spreadsheet comparison data is provided in Appendix J.

WisBOOM Evaluation Summary
The following key takeaways of the WisBOOM evaluation were identified.

- Baseline conditions nearly always showed the best performance and Synchro results were often the closest to baseline conditions. This is expected as baseline timings were likely generated using Synchro and manually adjusted by WisDOT staff based on local knowledge and regional standards. This highlights the importance of the human element in signal optimization.
- Overall, HCS showed the poorest performance as compared to the other software programs
- Vistro provided relatively inconsistent performance. Depending on the measure and location, performance was often significantly better or significantly worse than the baseline and Synchro result.
- For the percent force off/gap out (balance measure) evaluation, Synchro showed favorable performance along both evaluation corridors, especially for the major left and minor thru movements. Vistro showed favorable performance for the WIS 38 major lefts and minor thru movements as well. HCS had generally poor balance measures.
- Vistro struggled with the WIS 67 corridor timing optimization showing poor peak direction platoon ratios and poor balance measures for the left-turns and minor street thru movements.

Qualitative Assessment

A qualitative assessment was conducted to gauge usability and technical/customer support for each program. The assessment included documentation of experiences encountered by raSmith during this project and a peer survey administered to Wisconsin based traffic signal software users. The following sections provide additional detail.

User Experience

Several observations, impressions, and preferences were documented through raSmith's experience working with the software programs during the evaluation period. Major takeaways of this experience have been discussed throughout this report and additional key takeaways are listed below. A full list is provided in Appendix K. Keep in mind, some of these comments are based on personal preferences of the individual user and can be subjective.

- HCS
  - Does not support the use of a 'growth factor' to adjust volumes (useful feature for sensitivity tests, background growth change, or development volume).
  - Complex signals are more time consuming to set up as compared to the other software programs.
  - For two-way stop control, lane utilization for shared lanes defaults to 50% of through volume independent of the number of lanes (user must manually adjust).
- SIDRA
  - At signalized locations, phase identification defaults to letters instead of numbers (user can change), numbers are typically used in signal plans.
  - Requires use of 'Network License' to model more than two nodes and to account for upstream signal affects at unsignalized locations.
  - Can't specify travel path/alignment through intersections (i.e. thru lane drops as turn lane downstream).

    - Some technical terms are described using language common in Australia and New Zealand, but not commonly used in the US.
    - Customer service response was helpful and timely, but different time zones (SIDRA is based in Australia) limited immediate response.
    - When comparing SIDRA and Synchro input approaches, SIDRA was found to be a bit more cumbersome due to multiple tables being present within each window (some inputs were felt to be 'buried')
- Synchro
    - Some bugs identified in the software, including difficulty modeling shared thru-left opposing shared thru-left configuration have been brought to Trafficware's attention in the past and have still not been addressed.
    - raSmith upgraded to Synchro 10 prior to starting the study, but had difficulty downloading. Delays in processing payment and long customer service response times (12 business days for link to download program) were experienced, and minimal direction was provided with feedback.
- Vistro
    - Results are not compliant for shared movement lane groups (Vistro reports LOS by movement but HCM methodology reports by lane group)
    - Synchro files can be imported into Vistro, but some data is lost/incorrect. In particular, the heavy vehicle percentage and right-turn on red growth factors don't appear to transfer correctly.
    - Customer service response was helpful and timely, but different time zones (PTV is based in Germany) limited immediate response.

Peer Survey

raSmith designed and administered a survey to assess the traffic signal software experiences amongst Wisconsin based consultants, municipal and county traffic engineers, and WisDOT traffic signal engineers. A total of 42 responses were received. The survey focused strictly on the traffic signal analysis capabilities of the four software programs included in the Phase Two evaluation: HCS, SIDRA, Synchro and Vistro. A few of the key survey takeaways are noted below. Appendix K summarizes the complete survey including the survey questions, responses, and comments.

The following bullets highlight responses to specific survey questions. The values shown in parentheses were the percentage of respondents for each question, by software:

- The majority of respondents have used HCS (83%) and Synchro (97%) for traffic signal analysis or optimization. Very few respondents have used SIDRA (10%) or Vistro (8%).
- There appeared to be a direct correlation between the usage and the self-reported experience level. 90% of HCS users and 100% of Synchro users considered themselves intermediate or expert users. SIDRA and Vistro had no experts.
- 90% of HCS users and 94% of Synchro users considered these software programs to have easy or average learning curves.
- 92% of HCS users had excellent or average customer service on *technical issues*. Synchro had 74% report excellent or average customer service on *technical issues*. SIDRA and Vistro had two responses each, and both were average.

- Synchro was the only software with poor ratings for their customer service on *licensing* issues. 44% of respondents indicated Trafficware's customer service on licensing issues was poor.
- The limited experience and corresponding low number of responses for SIDRA and Vistro make it challenging to draw conclusions about these programs from the survey.

The respondents were also given the opportunity to write their own comments. Several key impressions from the comments were paraphrased and summarized below:

- The HCS interface is outdated and limits user flexibility.
- It is not easy or intuitive to optimize traffic signal systems in HCS.
- Synchro is the preferred intersection analysis software for many respondents.
- Synchro's interface is intuitive, it provides valid and trusted results, and it provides the flexibility to model complex systems.
- Synchro (Trafficware) has poor customer service and an expensive licensing structure.

CONCLUSIONS AND RECOMMENDATIONS

This study reviewed and tested the capabilities and effectiveness of traffic signal analysis software programs to model Wisconsin conditions. A list of 15 candidate software programs was developed based on a comprehensive review of national best practices. Using the initial evaluation criteria of 1) HCM based capacity analysis, and 2) Ability to optimize signal timings, four software programs were selected for inclusion in the study: Highway Capacity Software (HCS) 2010, SIDRA 7, Synchro 10, and Vistro 6. A traffic analysis evaluation using field data was conducted to assess the effectiveness of these software programs to model existing operating conditions in Wisconsin and to develop optimized signal timing plans. Based on discussions with WisDOT, it was agreed that SIDRA software would not be included in the optimization evaluation due modeling limitations (extra steps required to model dual-ring signal phasing, split optimization, left-turn lead/lag optimization).

A comparison of software generated and field measured operational metrics showed varied results by location and metric, with no single program performing significantly better or worse than the other. SIDRA and Vistro showed the strongest correlation when estimating queues and Synchro showed the strongest correlation when estimating RTOR volume. Overall, each of the four subject programs was considered to be capable of modeling Wisconsin conditions.

Software generated optimized signal timing plans implemented in the field were evaluated based on various performance metrics. The evaluation showed HCS provided the poorest overall performance, Vistro provided inconsistent performance (depending on metric and location), and Synchro provided the most consistent overall performance. In nearly all cases, the optimized timings performed worse than the existing timings. This is expected as the optimized signal timings used in the study were implemented with minimal adjustments from the analyst. The optimization was conducted primarily using default software parameters and included no post-optimization adjustments. This highlights the importance of the human element in signal optimization.

A qualitative assessment provided valuable insight into the user side of the software programs and identified several pros and cons to each software program. The assessment included documentation of experiences encountered by raSmith during this project and a peer survey administered to Wisconsin based traffic signal software users. A short, generalized statement for each program is provided elbow.

- HCS is a well-known program that provides HCM compliant analysis and fully user defined optimization options at a relatively low cost, but the rigid nature of the software limits analysis flexibility, users find the interface outdated, and optimization run times are significantly longer than comparative programs.
- Synchro is a well-known, trusted, and intuitive program for analysis and optimization, but users experience poor customer service and struggle with licensing issues.
- SIDRA includes full analysis and optimization capabilities, however modeling conditions including single-ring phasing configuration, multi-step split optimization and lead/lag optimization processes, and multi-step two-stage left-turn analysis at two-way stop controlled intersections add complexity and time for the user.
- Vistro provides HCM compliant analysis, multiple optimization options, and significantly reduced build-time for Vissim models (companion simulation tool), but is currently not widely used and is still being vetted through customer use.

It is recommended that Vistro be added to WisDOT's accepted software list for two-way stop control analysis, isolated and signalized corridor analysis, and signal optimization; joining HCS and Synchro. While SIDRA is capable of analyzing Wisconsin conditions and optimizing signal timings, several additional steps are required for common analysis conditions. Therefore, it is not expected to be selected as a favored analysis tool over comparable software programs for signal analysis/optimization and is not recommended to be added for these uses.

Traffic Control		Intersection	County	WisDOT Region	Analysis Hour	Mainline Speed Limit (mph)	Mainline Through Lanes	Analysis Hour Entering Volume (vph)	Video Approach
Signalized Corridors	WIS 38	Drexel Avenue	Milwaukee	SE	4:30-5:30PM	45	5	3508	north
		Town Square Way/Susan Drive				45	5	2741	north
		Forest Hill Avenue				45	5	2788	north
		Puetz Road				45	4	3302	north
		Centennial Drive				45	4	2344	north
	WIS 67	I-94 Eastbound Ramps	Waukesha	SE	4:00-5:00PM	45	4	2247	south
		I-94 Westbound Ramps				45	7	2637	south
		Oconomowoc Drive				45	6	2532	south
		County B/Valley Road				45	6	2533	south
		Oconomowoc Parkway				45	6	2362	south
	WIS 167	Port Washington Road	Ozaukee	SE	4:30-5:30PM	35	4	4184	south
		I-43 Southbound Ramps				35	4	2560	east
		I-43 Northbound Ramps				35	2	1668	west
Isolated Traffic Signal		WIS 172 with County EB/Packerland Drive	Brown	NE	4:00-5:00PM	45	4	2996	east
		WIS 52 with South 28th Avenue	Marathon	NC	4:15-5:45PM	35	4	2056	north
		WIS 20/WIS 83 with WIS 36	Racine	SE	4:45-5:45PM	55	4	1970	northeast
		WIS 67 with US 14	Walworth	SE	4:00-5:00PM	30	2	809	west
		WIS 12 with County K	Dane	SW	4:30-5:30PM	55	4	3798	south
Two-Way Stop Control		WIS 32 with Russell Road	Kenosha	SE	7:00-8:00AM	35	2	1003	west
		WIS 100 with North Mayfair Mall Driveway	Milwaukee	SE	4:00-5:00PM	40	6	2403	east
		WIS 16 westbound ramp with County C	Waukesha	SE	4:00-5:00PM	35	4	980	east
		WIS 167 with Country Aire	Waukesha	SE	4:30-5:30PM	45	2	1343	south
		WIS 67 with County Z	Waukesha	SE	3:00-4:00PM	40	2	826	west
		US 51 with County AB/County B	Dane	SW	4:15-5:15PM	55	2	1481	west
		WIS 19 with Musket Ridge Drive	Dane	SW	7:00-8:00AM	35	2	820	north
		WIS 54/Mason Street with Lacount Road	Brown	NE	7:00-8:00AM	35	4	915	south
		I-94 westbound Ramp with County F	Jefferson	SW	4:00-5:00PM	45	2	897	east
		WIS 57 with County K	Ozaukee	SE	4:00-5:00PM	55	4	902	west

Study Intersections

Exhibit **1**

			Two-Way Stop Control Queues (feet/lane)					
			WIS 32 & Russell Rd	**WIS 100 & North Mayfair Mall Driveway**		**WIS 16 WB Ramp & County C**	**WIS 167 & Country Aire**	**WIS 67 & County Z**
			Eastbound	**Westbound**		**Westbound**	**Northbound**	**Eastbound**
			L/T/R	**L/T**	**R**	**L/T**	**R**	**L/T/R**	**L/R**
Max Observed (based on video data)			>175	100	>150	175	145	75	>200
95th Percentile Queues	Field Measured (based on video data)		---	51	---	**76**	**75**	**26**	---
	Software Outputs	HCS	45	error[a]	100	**53**	**33**	**25**	78
		SIDRA	47	13	24	**106**	**46**	**31**	77
		Synchro	45	105	100	**63**	**33**	**38**	78
		VISTRO	46	138	100	**73**	**32**	**36**	79

			Two-Way Stop Control Queues (feet/lane)							
			US 51 & County B/County AB		**WIS 19 & Musket Ridge Drive**		**WIS 54/Mason St & Lacount Rd**		**I-94 WB Ramp & County F**		**WIS 57 & County K**
			Eastbound		**Southbound**		**Northbound**		**Westbound**		**Eastbound**
			L/T	**R**	**L/T**	**R**	**L/T**	**R**	**L/T**	**R**	**L/T/R**
Max Observed (based on video data)			50	200	45	125	50	150	175	75	120
95th Percentile Queues	Field Measured (based on video data)		**50**	**150**	**25**	**75**	**45**	**70**	**150**	**50**	**25**
	Software Outputs	HCS	**38**	**98**	**5**	**43**	**8**	**20**	**80**	**18**	**5**
		SIDRA	**32**	**160**	**5**	**71**	**13**	**28**	**152**	**23**	**7**
		Synchro	**40**	**98**	**5**	**43**	**8**	**20**	**90**	**18**	**10**
		VISTRO	**39**	**98**	**5**	**43**	**7**	**20**	**107**	**17**	**9**

Notes:

- [a]The HCS model did not produce results for the shared westbound left-turn/through lane at the WIS 100 intersection with the North Mayfair Driveway. This typically occurs with over capacity conditions.
- ">" indicates the max queue was at least the length shown. Poor video quality, obstructions, and weather contributed to not being able to observe max queue values at all locations.
- "---" indicates the 95th percentile queue could not be calculated because the max queue may not have been observed.
- The WIS 75 intersection with County K and the WIS 100 intersection with the North Mayfair Driveway were assumed to operate with two-stage left-turns from the minor street.
- Bold values used in the R^2 calculation (see Table 5 in report). Select locations excluded due to unusable field/software data.
- See Exhibit 2-J for additional notes.

Two-Way Stop Control Queues

Exhibit **2-A**

			Isolated Signals Queues (feet/lane)													
			WIS 172 & County EB/Packerland			WIS 52 & S. 28th Ave			WIS 20/83 & WIS 36			WIS 67 & US 14			US 12 & County K		
			Westbound			Southbound			Southbound			Eastbound			Northbound		
			L	T	R	L	T	R	L	T	R	L	T	R	L	T	R
Max Observed (based on video data)			225	500	165	>250	250	100	75	325	50	>75	>325	>145	>300	>675	>400
95th Percentile Queues	Field Measured (based on video data)		**172**	**245**	**110**	---	**150**	**75**	**50**	**216**	**25**	---	---	---	---	---	---
	Software Outputs	HCS	**65**	**143**	**41**	109	**76**	**34**	**14**	**128**	**13**	29	95	61	138	792	413
		SIDRA	**150**	**346**	**98**	163	**124**	**56**	**34**	**256**	**25**	17	73	38	145	2843	592
		Synchro	**105**	**217**	**84**	123	**108**	**65**	**42**	**188**	**33**	40	112	44	147	1086	506
		VISTRO	**62**	**153**	**44**	107	**76**	**34**	**38**	**221**	**22**	43	128	60	148	943	318

			WIS 38 Corridor Queues (feet/lane)													
			WIS 38 & Drexel			WIS 38 & Town Square Way/Susan			WIS 38 & Forest Hill			WIS 38 & Puetz			WIS 38 & Centennial		
			Southbound			Southbound			Southbound			Southbound			Southbound		
			L	T	R	L	T	R	L	T	R	L	T	R	L	T	R
Max Observed (based on video data)			>200	>425	>100	>50	>275	>75	>125	>300	50	>175	>300	>100	>275	>325	>100
95th Percentile Queues	Field Measured (based on video data)		---	---	---	---	---	---	---	---	**0**	---	---	---	---	---	---
	Software Outputs	HCS	115	259	73	11	223	19	39	327	**39**	187	212	25	100	184	25
		SIDRA	111	463	49	8	506	75	95	473	**33**	175	360	31	107	344	56
		Synchro	101	300	103	14	150	40	20	185	**10**	141	227	15	45	100	23
		VISTRO	125	267	75	10	272	45	41	249	**17**	165	374	64	86	309	72

Notes:

- ">" indicates that the max queue was at least the length shown. Poor video quality, obstructions, and weather contributed to not being able to observe max queue values at all locations.
- "---" indicates the 95th percentile queue could not be calculated because the max queue may not have been observed.
- Bold values used in the R^2 calculation (see Table 5 in report). Select locations excluded due to unusable field/software data.
- See Exhibit 2-J for additional notes.

Signal Queues

Exhibit **2-B**

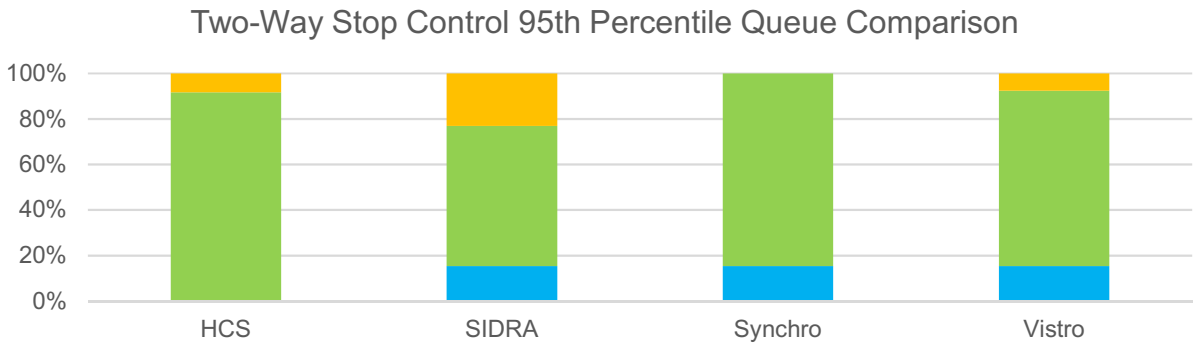
			WIS 67 Corridor Queues (feet/lane)											
			WIS 67 & Oconomowoc Parkway			WIS 67 & County B/Valley Rd			WIS 67 & Oconomowoc Dr			WIS 67 & I-94 WB Ramps		WIS 67 & I-94 EB Ramps	
			Northbound			Northbound			Northbound			Northbound		Eastbound	
			L	T	R	L	T	R	L	T	R	L	T	L	R
Max Observed (based on video data)			100	125	25	100	200	25	75	275	75	125	150	150	25
95th Percentile Queues	Field Measured (based on video data)		**75**	**125**	**25**	**84**	**151**	**9**	**75**	**206**	**25**	**125**	**133**	**116**	**25**
	Software Outputs	HCS	**45**	**33**	**4**	**25**	**46**	**4**	**47**	**180**	**98**	**42**	**45**	**90**	**71**
		SIDRA	**65**	**108**	**6**	**9**	**87**	**1**	**65**	**350**	**26**	**83**	**198**	**89**	**14**
		Synchro	**18**	**26**	**7**	**17**	**176**	**15**	**64**	**176**	**70**	**41**	**58**	**42**	**19**
		VISTRO	**35**	**119**	**19**	**19**	**187**	**17**	**43**	**186**	**47**	**47**	**63**	**34**	**9**

			WIS 167 Corridor Queues (feet/lane)						
			WIS 167 & Port Washington Rd			WIS 167 & I-43 SB Ramps		WIS 167 & I-43 NB Ramps	
			Eastbound			Westbound		Northbound	
			L	T	R	L	T	L/T	R
Max Observed (based on video data)			>350	>425	>125	100	120	>465	>25
95th Percentile Queues	Field Measured (based on video data)		---	---	---	**95**	**95**	---	---
	Software Outputs	HCS	197	280	104	**5**	**172**	493	24
		SIDRA	270	484	122	**1**	**24**	570	12
		Synchro	179	306	108	**27**	**407**	411	32
		VISTRO	150	238	64	**57**	**157**	482	24

Notes:
- ">" indicates that the max queue was at least the length shown. Poor video quality, obstructions, and weather contributed to not being able to observe max queue values at all locations.
- "---" indicates the 95th percentile queue could not be calculated because the max queue may not have been observed.
- Bold values used in the R^2 calculation (see Table 5 in report). Select locations excluded due to unusable field/software data.
- See Exhibit 2-J for additional notes.

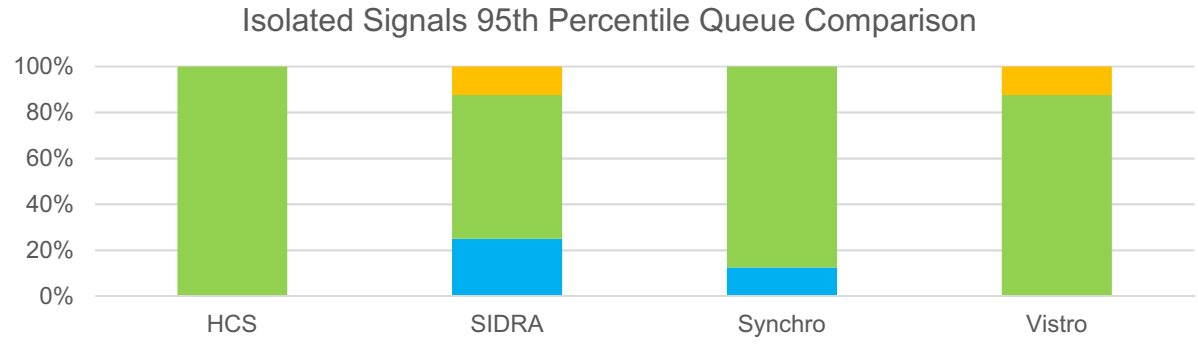
Signal Queues

Exhibit **2-C**

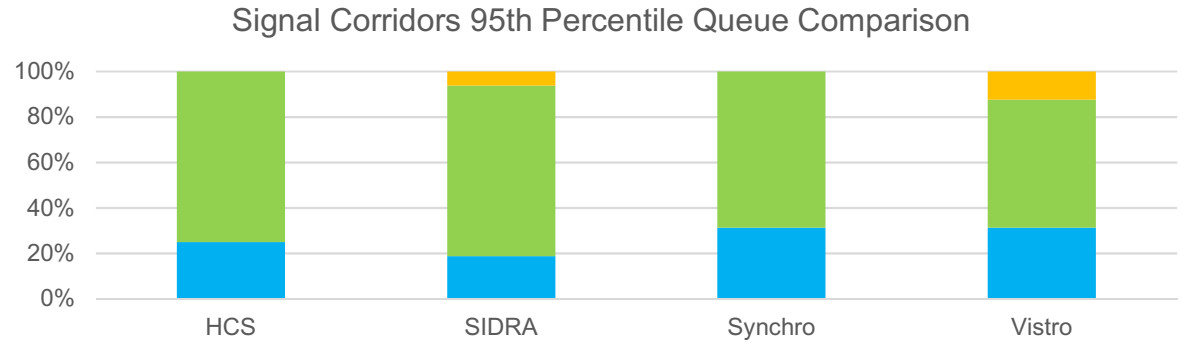


Traffic Control	Queue Estimation Method	All Movements			Total Number of Sites
		Over	Under	Equal	
Two-Way Stop Control	HCS	0	11	1	13[a]
	SIDRA	2	8	3	
	Synchro	2	11	0	
	Vistro	2	10	1	

[a]One two-way stop control HCS queue wasn't included. The HCS model did not report results (indicating over capacity conditions) therefore, the difference from field measured 95th percentile queue cannot be determined.



Traffic Control	Queue Estimation Method	All Movements			Total Number of Sites
		Over	Under	Equal	
Isolated Signals	HCS	0	8	0	8
	SIDRA	2	5	1	
	Synchro	1	7	0	
	Vistro	0	7	1	



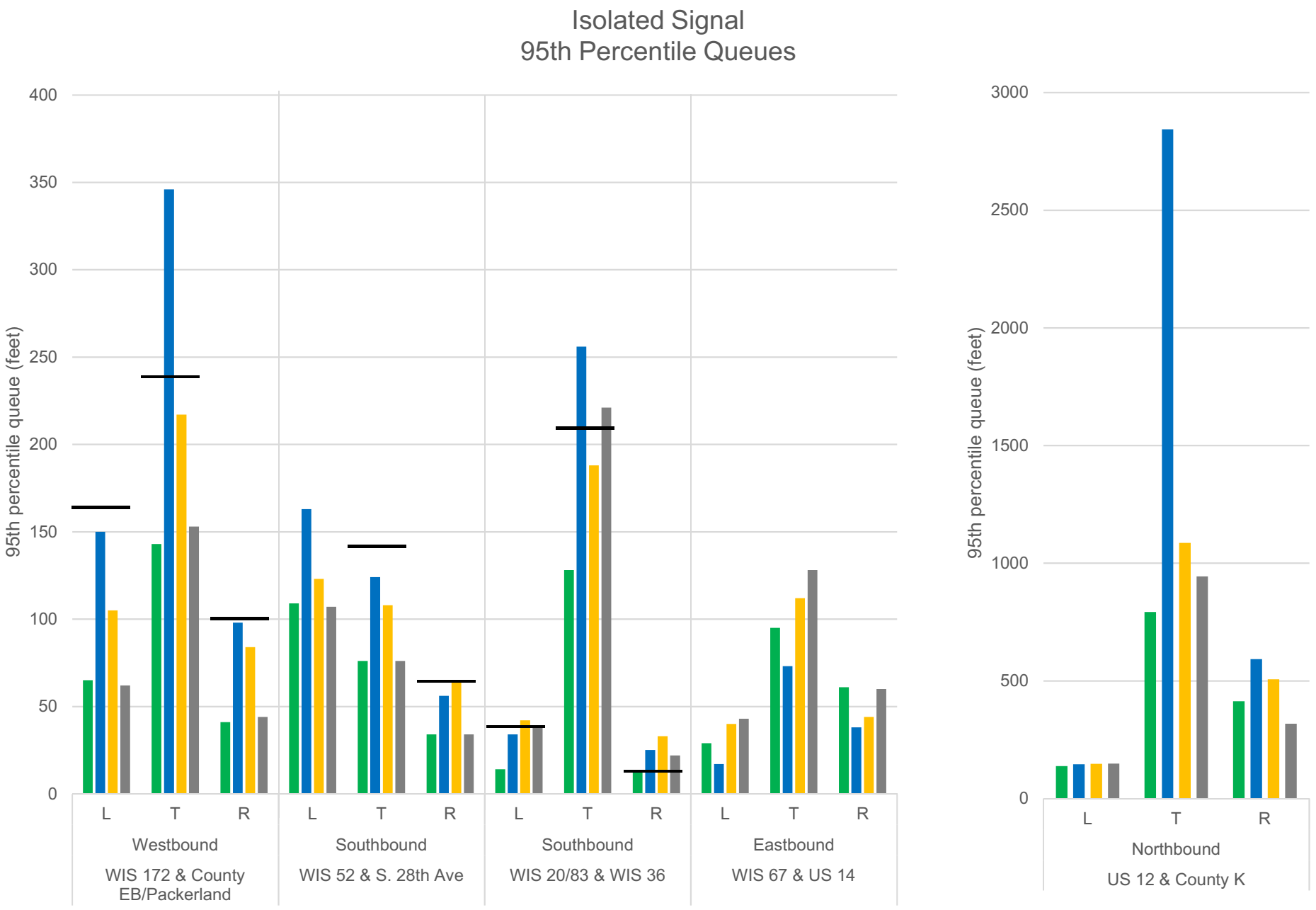
Traffic Control	Queue Estimation Method	All Movements			Total Number of Sites
		Over	Under	Equal	
Signal Corridor	HCS	4	12	0	16
	SIDRA	3	12	1	
	Synchro	5	11	0	
	Vistro	5	9	2	

Software queue equal to field measured 95th percentile queue from video data
Software queue under field measured 95th percentile queue from video data
Software queue over to field measured 95th percentile queue from video data

Queue Evaluation Summary

Exhibit **2-D**

raSmith

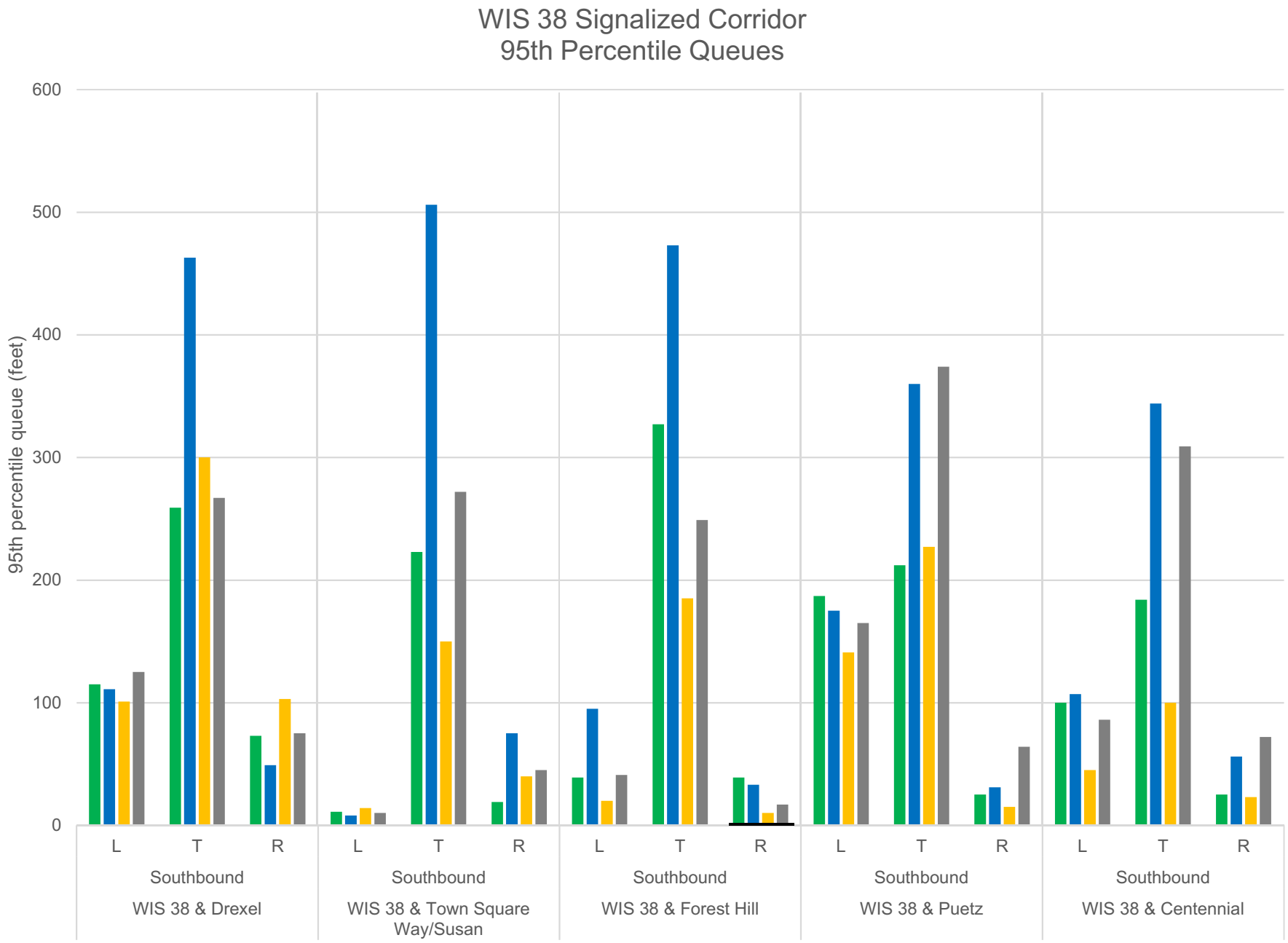


- Some 95th percentile queues could not be measured because the max queue may not have been observed.

Isolated Signal Queues

Exhibit **2-E**

raSmith

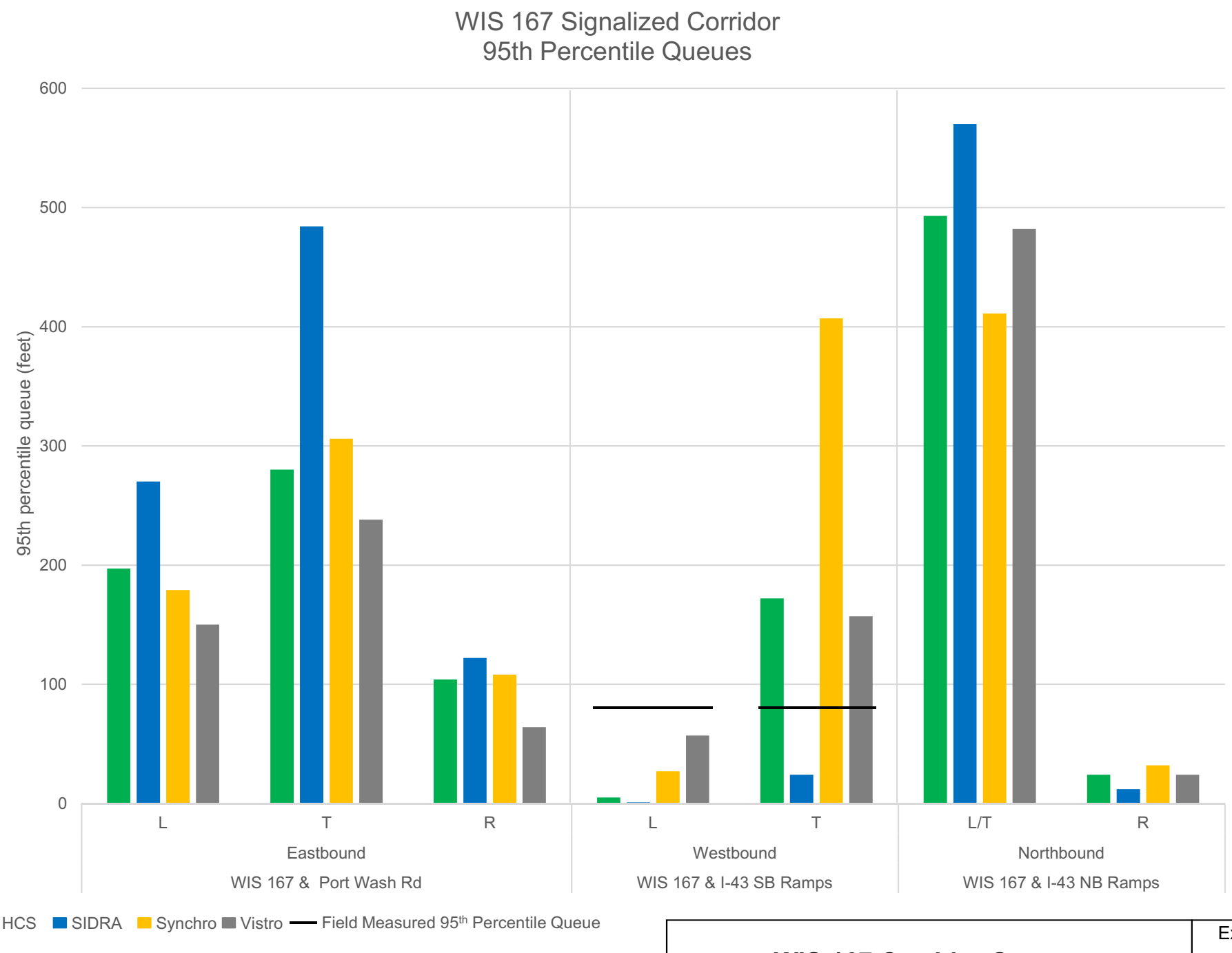


- Some 95th percentile queues could not be measured because the max queue may not have been observed.

WIS 38 Corridor Queues

Exhibit **2-F**

raSmith

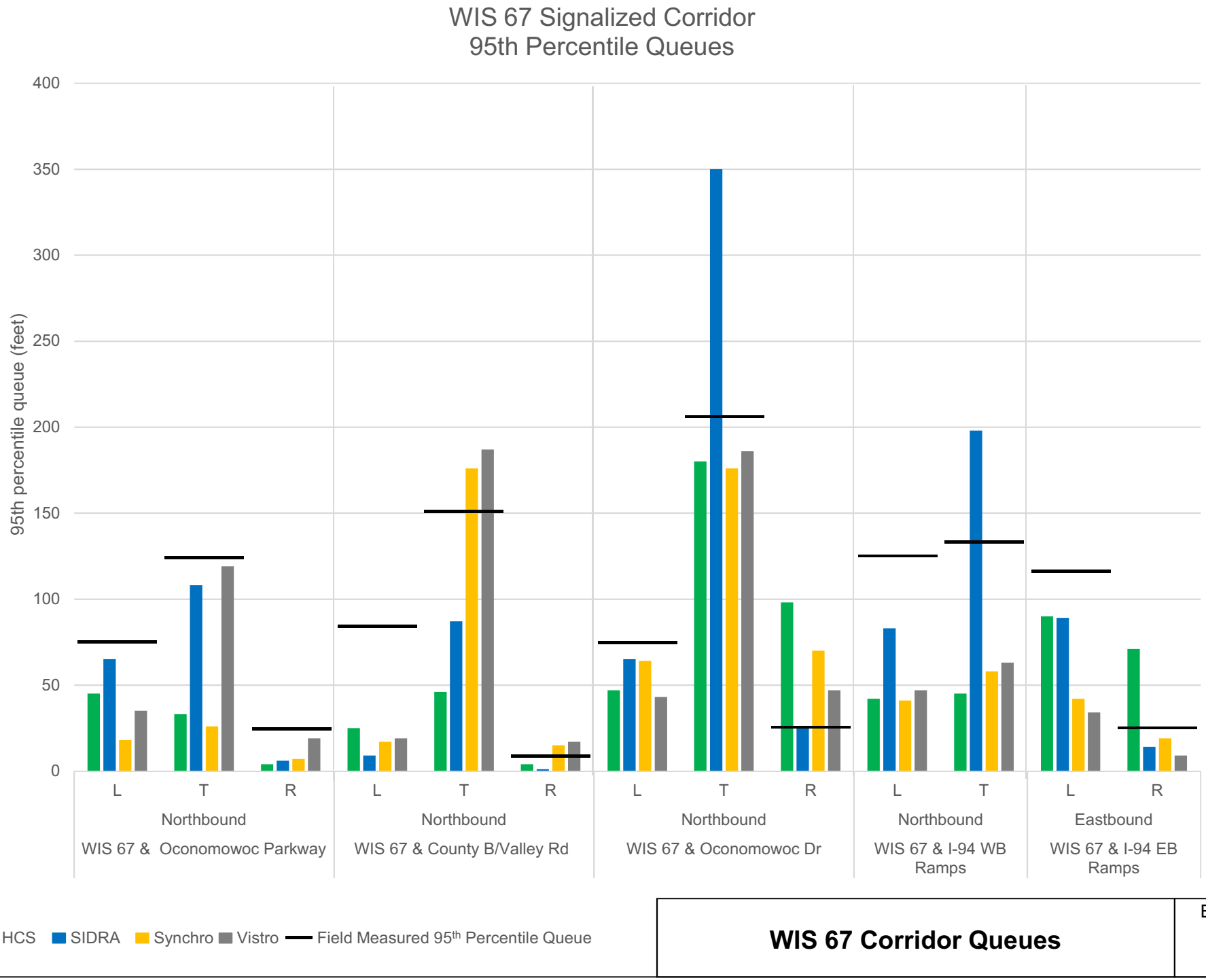


- Some 95th percentile queues could not be measured because the max queue may not have been observed.

WIS 167 Corridor Queues

Exhibit **2-G**

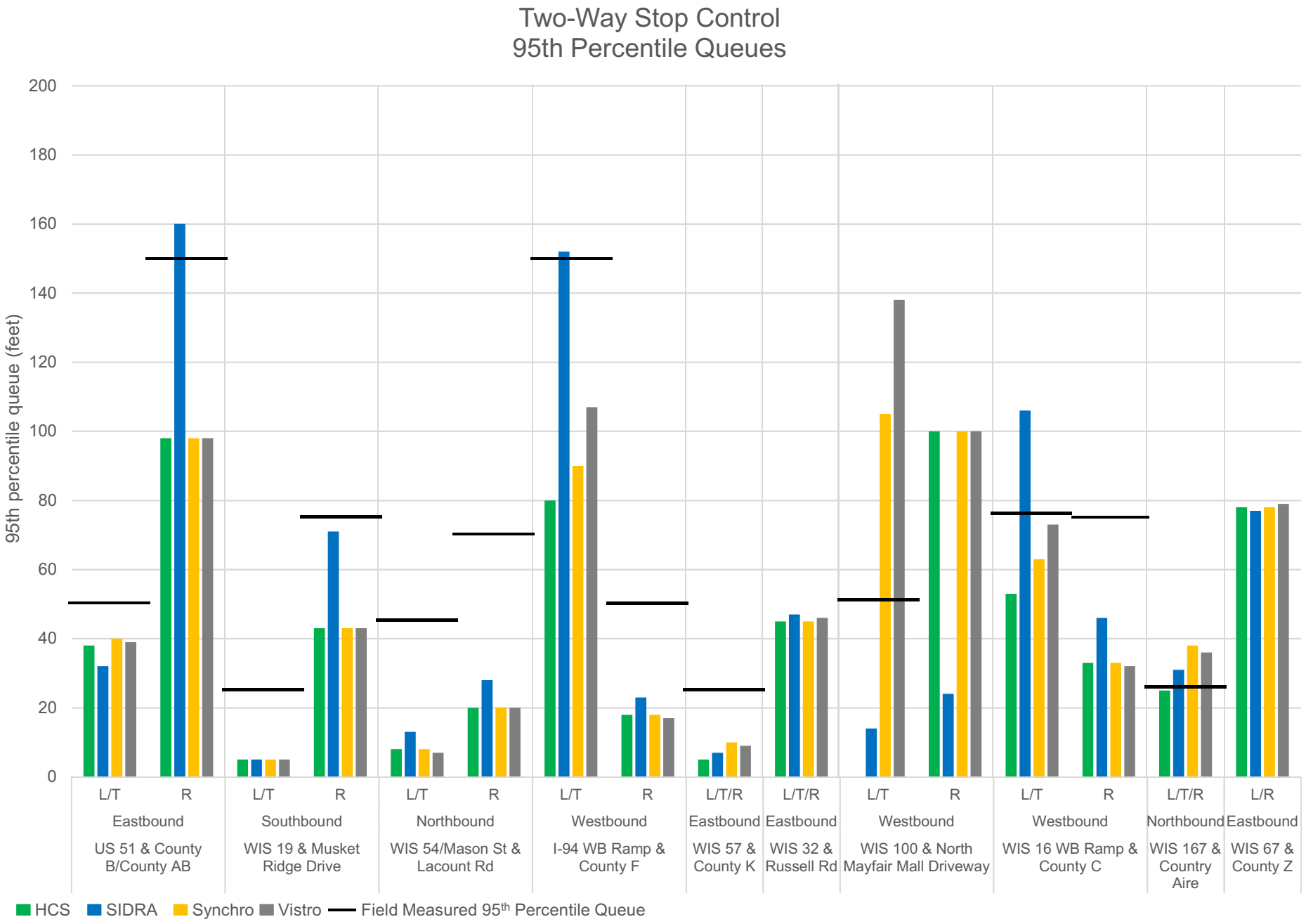
raSmith



WIS 67 Corridor Queues

Exhibit **2-H**

raSmith



- The HCS model did not produce results for the shared westbound left-turn/through lane at the WIS 100 intersection with the North Mayfair Driveway. This typically occurs with over capacity conditions.
- Some 95th percentile queues could not be measured because the max queue may not have been observed.

Two-Way Stop Control Queues

Exhibit **2-I**

raSmith

Queue Notes

- If the 50th percentile queue is higher than the 95th percentile queue, the 50th percentile queue is shown.
- For video observations, the number and classification of vehicles were collected each cycle. Queue lengths were estimated using the following classification information:
    - Car = 25'
    - HV = 45'
- Max queue is that length observed during analysis hour. The 95th percentile queue was calculated based on all peak hour observations collected for that location.
- 95th percentile queues output from software are based on existing timings.

Queue Evaluation
Additional Notes

Exhibit
2-J

		Isolated Signals				
		WIS 172 & County EB/Packerland	**WIS 52 & S. 28th Ave**	**WIS 20/83 & WIS 36**	**WIS 67 & US 14**	**US 12 & County K**
		Westbound	**Northbound**	**Southbound**	**Eastbound**	**Eastbound**
Video Measured Data (vph)	Right-Turn Volume	**145**	**125**	**70**	175	55
	Right-Turn on Red Volume	**54**	**55**	**23**	>56	>51
Right-Turn on Red Estimation Method (vph)	SIDRA	**64**	**55**	**34**	122	45
	Synchro	**66**	**80**	**46**	86	55
	WisDOT Factor	**55**	**48**	**27**	67	21

		WIS 38 Corridor				
		WIS 38 & Drexel	**WIS 38 & Town Square Way/Susan**	**WIS 38 & Forest Hill**	**WIS 38 & Puetz**	**WIS 38 & Centennial**
		Eastbound	**Southbound**	**Eastbound**	**Southbound**	**Southbound**
Video Measured Data (vph)	Right-Turn Volume	**410**	**125**	**155**	145	175
	Right-Turn on Red Volume	**230**	**22**	**100**	>71	>57
Right-Turn on Red Estimation Method (vph)	SIDRA	**237**	**69**	**82**	81	104
	Synchro	**349**	**56**	**140**	72	85
	WisDOT Factor	**156**	**48**	**59**	55	67

Notes:

- Video measured right-turn on red values denoted with “>” indicate that at least that many vehicles turned right on red. Video data was limited at these locations due to long queues, video quality, poor weather conditions, or that the signal head wasn’t visible.
- Bold values used in the R^2 calculation (see Table 6 in report). Select locations excluded due to unusable field data.
- HCS and Vistro only accommodate user entered right-turn on red volumes and are not shown in the exhibits.
- Right-Turn on Red estimations from software are based on existing timings.

Right-Turn on Red Volumes

Exhibit **3-A**

		WIS 67 Corridor				
		WIS 67 & Oconomowoc Parkway	**WIS 67 & County B/Valley Rd**	**WIS 67 & Oconomowoc Dr**	**WIS 67 & I-94 WB Ramps**	**WIS 67 & I-94 EB Ramps**
		Eastbound	**Eastbound[a]**	**Eastbound[a]**	**Westbound[b]**	**Eastbound[a]**
Video Measured Data (vph)	Right-Turn Volume	**150**	**165**	**175**	**555**	**65**
	Right-Turn on Red Volume	**105**	**133**	**155**	**312[c]**	**41**
Right-Turn on Red Estimation Method (vph)	SIDRA	**40**	**86**	**71**	**228**	**42**
	Synchro	**84**	**147**	**157**	**332**	**18**
	WisDOT Factor	**57**	**63**	**67**	**167**	**43**

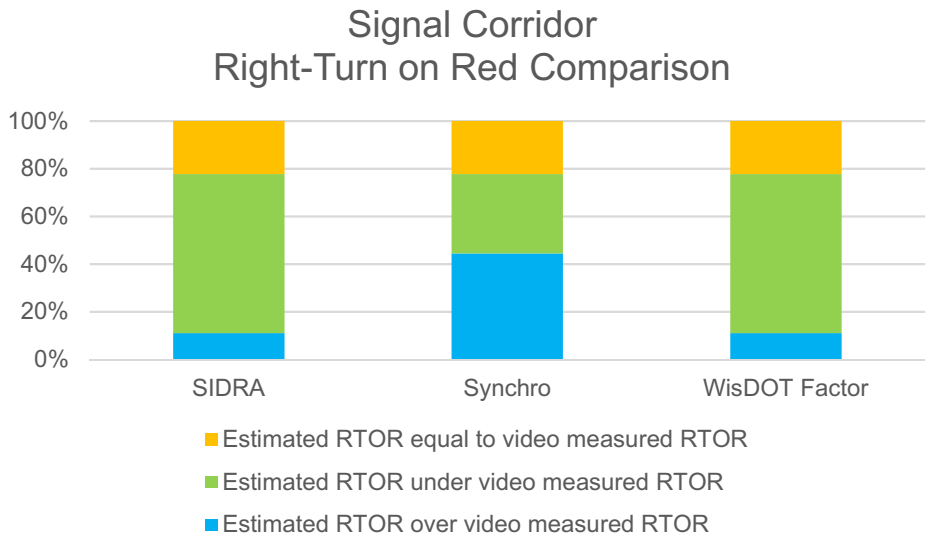
		WIS 167 Corridor		
		WIS 167 & Port Washington Rd	**WIS 167 & I-43 SB Ramps**	**WIS 167 & I-43 NB Ramps**
		Southbound	**Southbound**	**Northbound[a]**
Video Measured Data (vph)	Right-Turn Volume	345	**285**	60
	Right-Turn on Red Volume	>107	**183**	>28
Right-Turn on Red Estimation Method (vph)	SIDRA	109	**121**	36
	Synchro	76	**91**	15
	WisDOT Factor	131	**188**	40

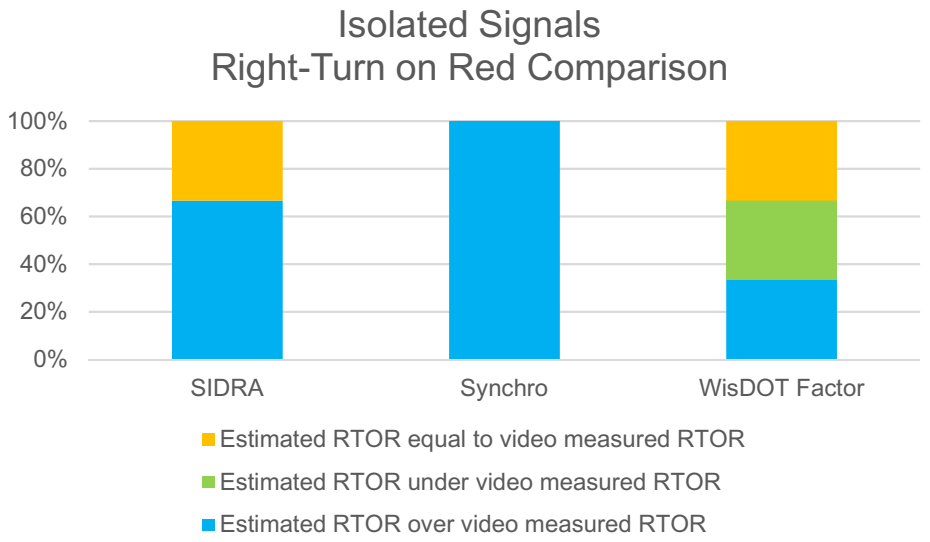
Notes:

- Video measured right-turn on red values denoted with ">" indicate that at least that many vehicles turned right on red. Video data was limited at these locations due to long queues, video quality, poor weather conditions, or that the signal head wasn't visible.
- [A] Yield controlled right-turn lane
- [B] Dual right-turn lane
- [c] The video measured westbound right-turn on red volume at the WIS 67 intersection with the I-94 Westbound Ramps is a summation of the right-turn on red volume measured for the inside lane (99 vehicles) and the right-turn on red volume measured for the outside lane (213 vehicles).
- Bold values used in the R^2 calculation (see Table 6 in report). Select locations excluded due to unusable field data.
- HCS and Vistro only accommodate user entered right-turn on red volumes and are not shown in the exhibits.
- Right-Turn on Red estimations from software are based on existing timings.

Right-Turn on Red Volumes

Exhibit **3-B**





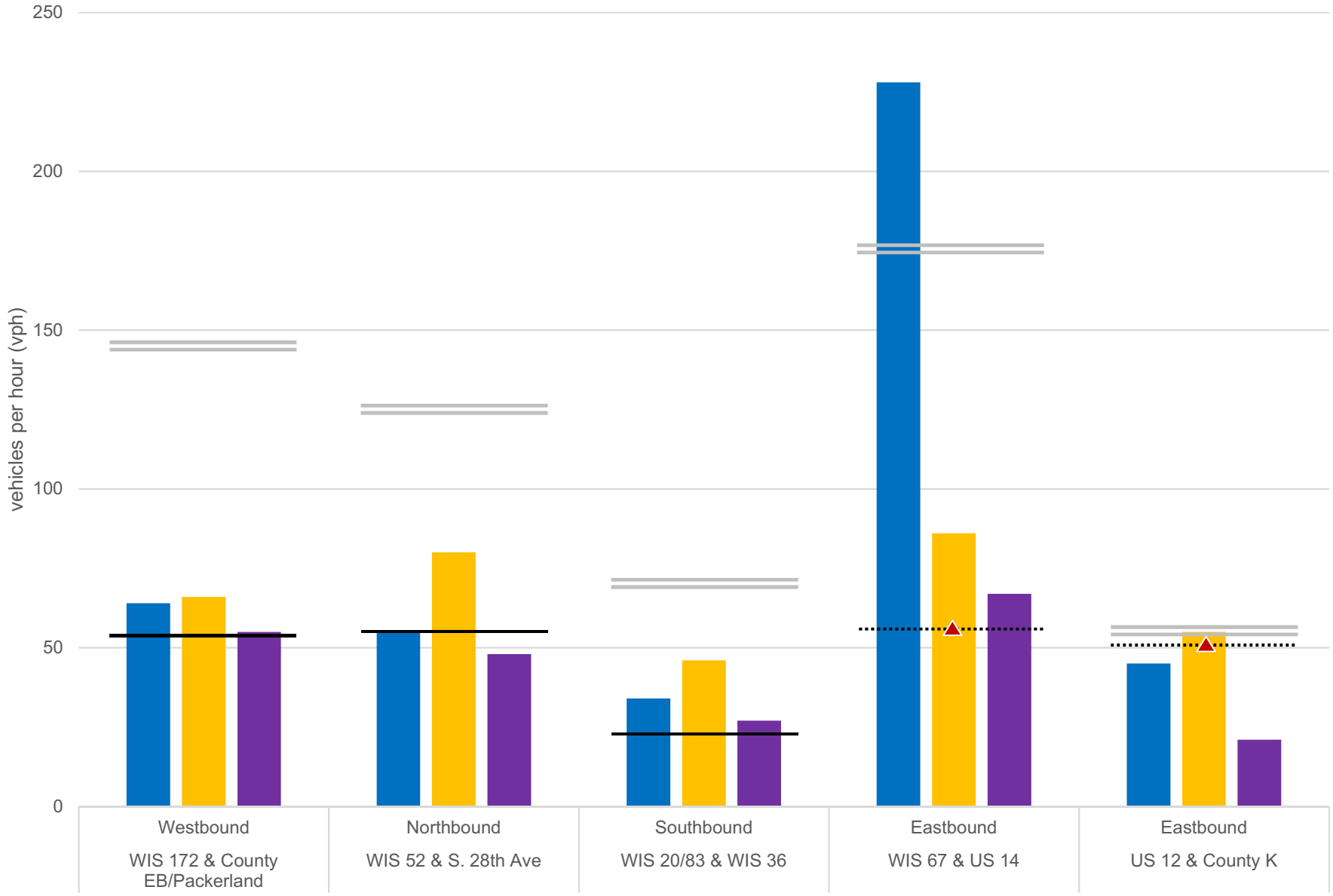
Traffic Control	RTOR Estimation Method	Over	Under	Equal	Total Number of Sites
Signal Corridor	SIDRA	1	6	2	9
	Synchro	4	3	2	
	WisDOT Factor	1	6	2	

Traffic Control	RTOR Estimation Method	Over	Under	Equal	Total Number of Sites
Signal Corridor	SIDRA	2	0	1	3
	Synchro	3	0	0	
	WisDOT Factor	1	1	1	

RTOR Evaluation Summary

Exhibit **3-C**

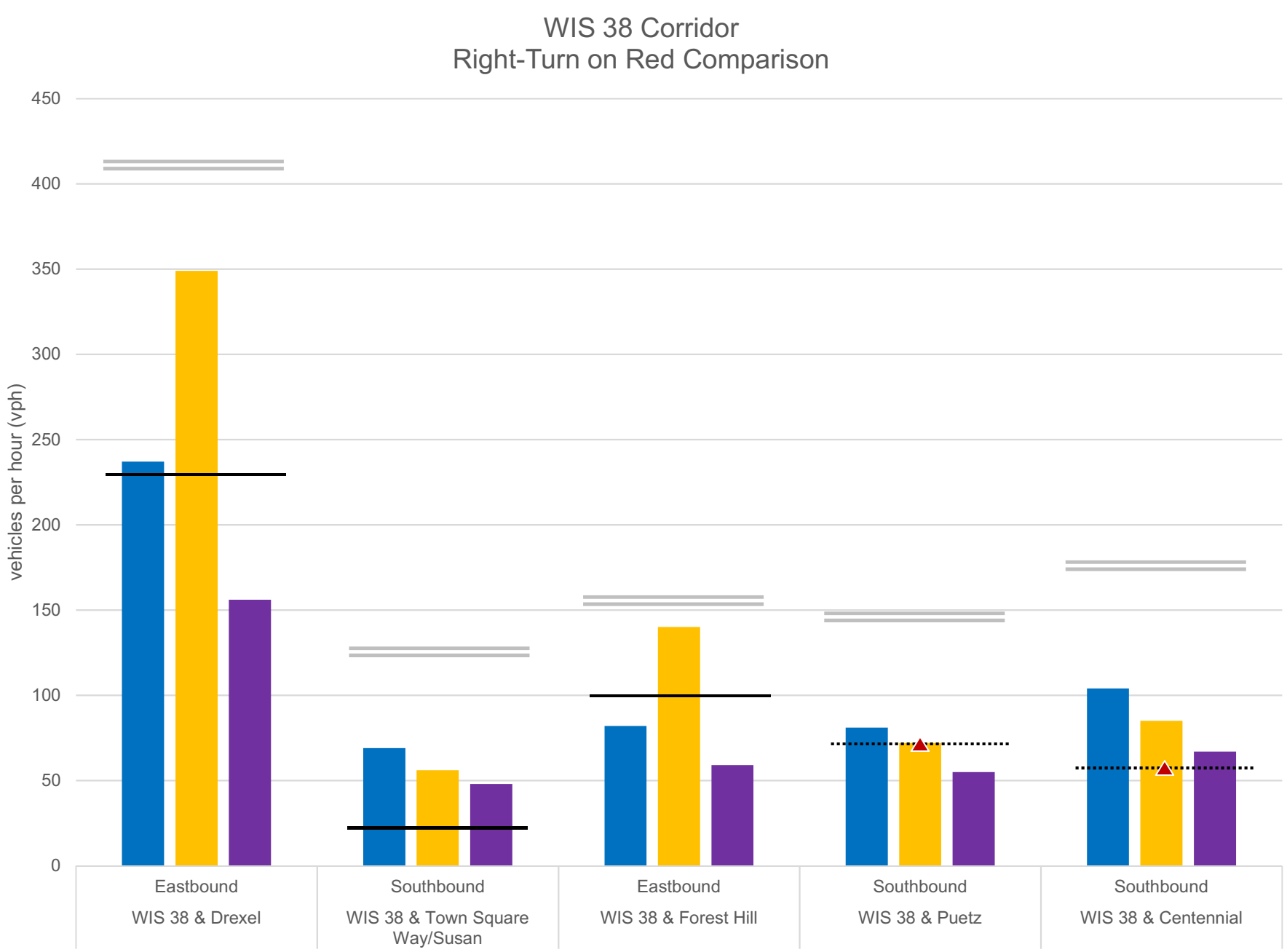
raSmith



Isolated Signal Right-Turn On Red

Exhibit **3-D**

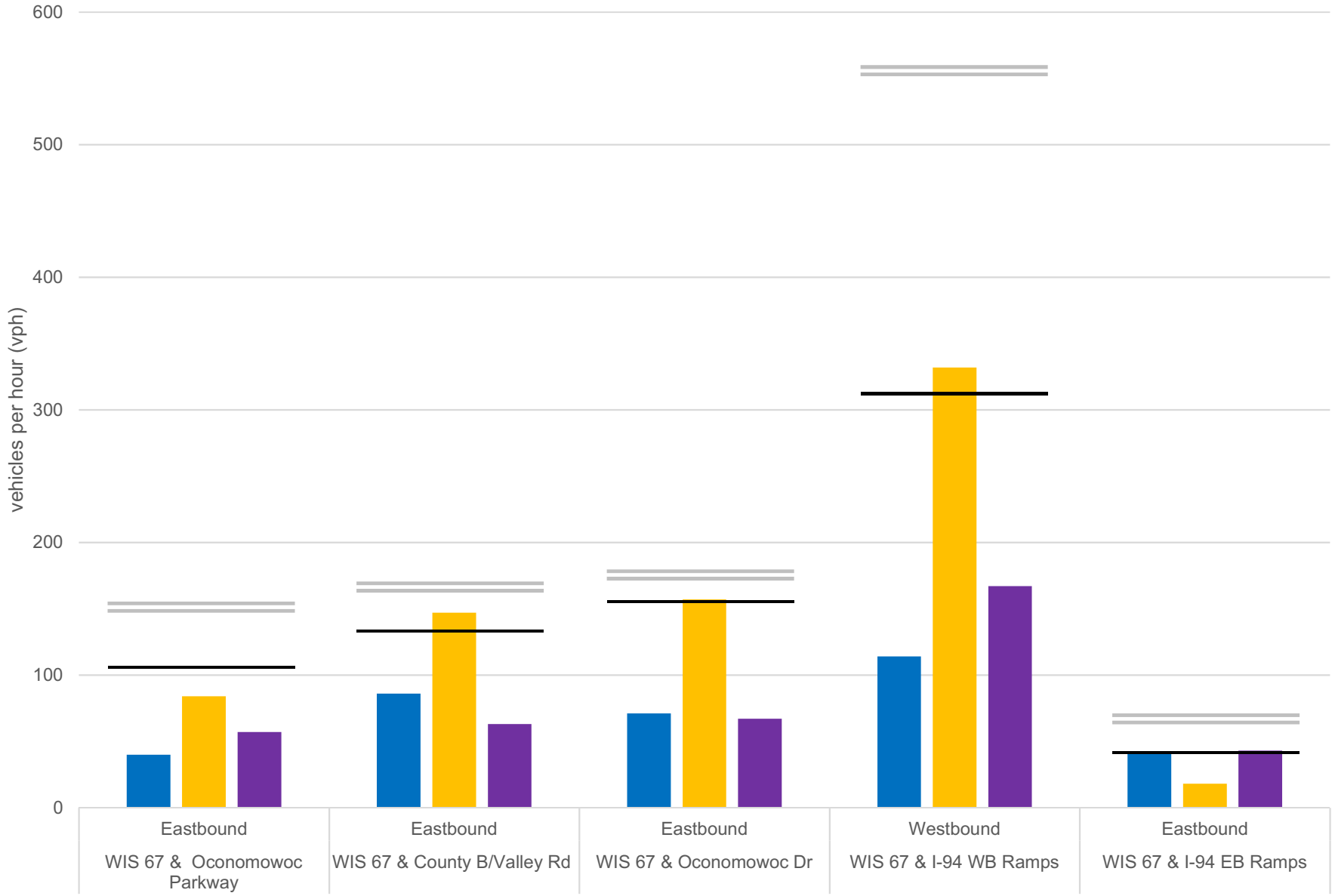
raSmith



WIS 38 Corridor Right-Turn On Red

Exhibit **3-E**

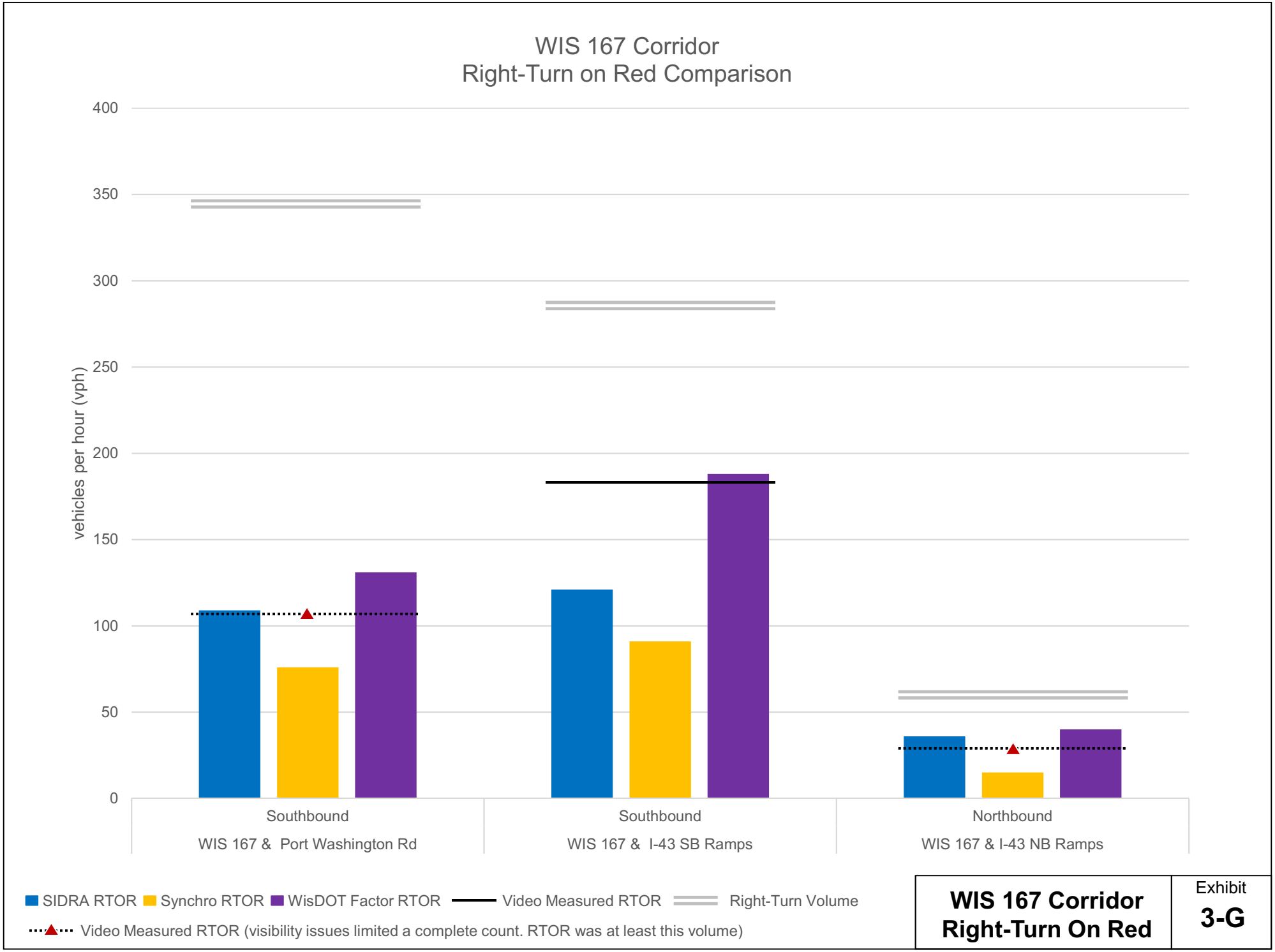
raSmith



WIS 67 Corridor Right-Turn On Red

Exhibit **3-F**

raSmith



WIS 167 Corridor Right-Turn On Red

Exhibit **3-G**

raSmith

WIS 167 Corridor *4:30 pm – 5:30 pm*			
	LOS (Overall Intersection Delay, sec)		
Software	**Port Washington Road**	**I-43 Southbound Ramps**	**I-43 Northbound Ramps**
HCS	D (37)	B (10)	D (36)
SIDRA	D (46)	B (13)	D (38)
Synchro	D (42)	C (23)	D (35)
Vistro	D (55)	B (16)	C (35)

WIS 67 Corridor *4:00 pm – 5:00 pm*					
	LOS (Overall Intersection Delay, sec)				
Software	**Oconomowoc Parkway**	**County B/ Valley Road**	**Oconomowoc Drive/Pabst Farms Boulevard**	**I-94 Westbound Ramps**	**I-94 Eastbound Ramps**
HCS	B (11)	B (19)	B (18)	B (18)	A (7)
SIDRA	B (14)	B (19)	C (24)	C (21)	A (10)
Synchro	B (11)	C (24)	C (21)	C (20)	A (5)
Vistro	B (14)	C (23)	C (21)	B (19)	A (8)

WIS 38 Corridor *4:30 pm – 5:30 pm*					
	LOS (Overall Intersection Delay, sec)				
Software	**Drexel Avenue**	**Town Square Way/Susan Drive**	**Forest Hill Avenue**	**Puetz Road**	**Centennial Drive**
HCS	D (38)	C (21)	C (22)	C (32)	B (19)
SIDRA	D (46)	C (34)	D (36)	C (34)	C (26)
Synchro	D (45)	C (21)	B (19)	D (35)	B (20)
Vistro	D (41)	C (22)	B (18)	D (37)	C (22)

Isolated Signals					
	LOS (Overall Intersection Delay, sec)				
	WIS 172 & County EB/ Packerland Drive	**WIS 52 & 28th Street**	**WIS 20/83 & WIS 36**	**WIS 67 & US 14**	**US 12 & County K**
Software	4:00 pm – 5:00 pm	4:15 pm – 5:15 pm	4:45 pm – 5:45 pm	4:00 pm – 5:00 pm	4:30 pm – 5:30 pm
HCS	C (21)	C (22)	B (14)	C (29)	C (33)
SIDRA	C (32)	C (34)	B (19)	B (16)	**F (83)**
Synchro	C (27)	C (26)	B (17)	B (20)	C (30)
Vistro	C (21)	C (22)	C (23)	C (31)	C (33)

Existing Conditions
Intersection Level of Service

Exhibit **4**

	Intersection	Coordinated Splits 1	2*	3	4	5	6*	7	8	Cycle Length	Offset
WIS 38 Corridor	Drexel Avenue	30	37	20	43	28	39	28	35	130	7
	Susan/Town Square Way	30	60	13	27	13	77	20	20		125
	Forest Hill Avenue	18	59	13	40	15	62	26	27		44
	Puetz Road	25	55	15	35	20	60	15	35		68
	Centennial Drive	17	61	19	33	22	56	22	30		94

	Intersection	Coordinated Splits 1	2*	3	4	5	6*	7	8	Cycle Length	Offset
WIS 67 Corridor	Oconomowoc Parkway	25	45	NOT USED	30	15	55	NOT USED	30	100	96
	County B/Valley Road	17	47	15	21	19	45	15	21		53
	Oconomowoc Drive	20	40	15	25	20	40	15	25		48
	I-94 WB Ramps	20	40	NOT USED	NOT USED	NOT USED	60	NOT USED	40		93
	I-94 EB Ramps	NOT USED	28	NOT USED	22	NOT USED	28	NOT USED	NOT USED	50	18

	Intersection	Coordinated Splits 1	2*	3	4	5	6*	7	8	Cycle Length	Offset
WIS 167 Corridor	Port Washington Road	25	41	30	34	21	45	32	32	130	102
	I-43 SB Ramps	28	56	28	18	22	62	NOT USED	NOT USED		110
	I-43 NB Ramps	49	31	NOT USED	NOT USED	NOT USED	80	NOT USED	50		3

Notes:

- Coordinated phase indicated by "*" symbol.
- Offset reference point is beginning of green of first coordinated phase.
- Phase 3 at the WIS 167 intersection with the I-43 SB Ramps functions as max recall when pedestrian call is made.
- Splits shown represent the afternoon peak period.

Summary of Existing Timing Plans – Coordinated Systems

Exhibit **5-A**

Intersection	Max Splits								Maximum Cycle Length
	1	2	3	4	5	6	7	8	
WIS 172 & County EB/Packerland Drive									136
	19	56.5	19	41.5	19	56.5	19	41.5	
US 12 & County K									190
	28.3	71.6	25.8	27.5	32.9	71.6	56.6	27.5	
WIS 36 & WIS 20			NOT USED		NOT USED		NOT USED		109
	19.5	52.4		37.2		52.4		37.2	
US 14 & WIS 67	NOT USED						NOT USED		133
		45.5	26	35	26	35.5		36	
WIS 52 & 28th Avenue									152
	24	57	16	37	24	67	29	32	

Note:
- Max splits are the sum of Max Green, Yellow and All Red
- Cycle lengths are based on rounded split times.

Summary of Existing Timing Plans – Isolated Signals

Exhibit **5-B**

raSmith

WIS 38				
Drexel	1	2	3	4
	5	6	7	8
Susan/ Town Square Way	1	2	3	4
	5	6	7	8
Forest Hill Avenue	1	2	3	4
	5	6	7	8
Puetz Road	1	2	3	4
	5	6	7	8
Centennial Drive	1	2	3	4
	5	6	7	8

WIS 67				
Oconomowoc Parkway	1	2	-	4
	5	6	-	8
County B/ Valley Road	1	2	3	4
	5	6	7	8
Oconomowoc Drive	1	2	3	4
	5	6	7	8
I-94 WB Ramps	1	2	-	-
	-	6	-	8
I-94 EB Ramps	-	2	-	4
	-	6	-	-

WIS 167				
Port Washington Road	1	2	3	4
	5	6	7	8
I-43 SB Ramps	1	2	3(P[1])	4
	5	6	-	-
I-43 NB Ramps	1	2	-	-
		6	-	8

Isolated Signals					
WIS 172 & County EB/ Packerland Drive	1	2	3	4	
	5	6	7	8	
US 12 & County K	1	2	3	4	
	5	6	7	8	
WIS 36 & WIS 20	1	2	-	4	
	-	6	-	8	
US 14 & WIS 67	-	2	3	-	P[2]
	5	6	-	8	
WIS 52 & 28th Avenue	1	2	3	4	
	5	6	7	8	

Notes:
- "P[1]" designates pedestrian phase (crossing south leg only). This phase is called with pedestrian push button only.
- "P[2]" designates all-pedestrian phase. This phase is called with pedestrian push button only.
- "-" indicates phase not used.

Summary of Existing Phasing

Exhibit **5-C**

raSmith

	Intersection	Coordinated Splits 1	2*	3	4	5	6*	7	8	Cycle Length	Offset
WIS 38 Corridor	Drexel Avenue	16	26	14	29	14	28	19	24	85	7
	Susan/Town Square Way	14	40	12	19	13	41	12	19		85
	Forest Hill Avenue	29	25	13	18	16	38	13	18		23
	Puetz Road	17	32	14	22	12	37	14	22		48
	Centennial Drive	16	39	12	18	28	27	12	18		63

	Intersection	Coordinated Splits 1	2*	3	4	5	6*	7	8	Cycle Length	Offset
WIS 67 Corridor	Oconomowoc Parkway	22	24	NOT USED	34	15	31	NOT USED	34	80	16
	County B/Valley Road	24	23	15	18	15	32	15	18		42
	Oconomowoc Drive	16	30	15	19	18	28	16	18		38
	I-94 WB Ramps	17	30	NOT USED	NOT USED	NOT USED	47	NOT USED	33		72
	I-94 EB Ramps	NOT USED	37	NOT USED	43	NOT USED	37	NOT USED	NOT USED		25

	Intersection	Coordinated Splits 1	2*	3	4	5	6*	7	8	Cycle Length	Offset
WIS 167 Corridor	Port Washington Road	15	23	18	19	15	23	20	17	75	27
	I-43 SB Ramps	24	34	28	17	12	46	NOT USED	NOT USED		3
	I-43 NB Ramps	11	19	NOT USED	NOT USED	NOT USED	30	NOT USED	45		49

Notes:

- Coordinated phase indicated by "*" symbol.
- Offset reference point is beginning of green of first coordinated phase.
- Splits rounded to maintain full second splits and optimized cycle length.
- Phase 3 at the WIS 167 intersection with the I-43 SB Ramps functions as max recall when pedestrian call is made. Due to limitations of the HCS 2010 software, the Phase 3 time was combined with phases 2 and 6.

Summary of HCS 2010 Timing Plans – Coordinated Systems

Exhibit **5-D**

Intersection	Max Splits								Maximum Cycle Length
	1	2	3	4	5	6	7	8	
WIS 172 & County EB/Packerland Drive	11	65	11	49	11	65	11	49	136
US 12 & County K	**13**	123	**19**	35	**26**	110	**38**	**16**	190
WIS 36 & WIS 20	11	59	NOT USED	39	NOT USED	70	NOT USED	39	109
US 14 & WIS 67	NOT USED	64	34	35	43	21	NOT USED	34	133
WIS 52 & 28th Avenue	13	72	12	55	46	39	44	23	152

Notes:

- Red/Bold indicates LOS F for the movement.
- Max splits are the sum of Max Green, Yellow and All Red
- Splits rounded to maintain full second splits and optimized cycle length.
- Due to complex field phasing and software limitations at the US 14 intersection with WIS 67, dummy phases were used to accommodate the protected movements. The all-pedestrian phase is modeled in the software, but HCS does not incorporate the all-pedestrian phase time into the overall cycle length. (HCS 2010 shows a 98 second cycle length).

Summary of HCS 2010 Timing Plans – Isolated Signals

Exhibit **5-E**

WIS 38				
Drexel	**2**	**1**	3	4
	5	6	7	8
Susan/ Town Square Way	**2**	**1**	3	4
	5	6	7	8
Forest Hill Avenue	1	2	3	4
	5	6	7	8
Puetz Road	**2**	**1**	3	4
	5	6	7	8
Centennial Drive	1	2	3	4
	6	**5**	7	8

WIS 67				
Oconomowoc Parkway	1	2	-	4
	5	6	-	8
County B/ Valley Road	**2**	**1**	3	4
	5	6	7	8
Oconomowoc Drive	1	2	3	4
	5	6	7	8
I-94 WB Ramps	1	2	-	-
	-	6	-	8
I-94 EB Ramps	-	2	-	4
	-	6	-	-

WIS 167				
Port Washington Road	1	2	3	4
	6	**5**	7	8
I-43 SB Ramps	1	2	3(P^1)	4
	5	6	-	-
I-43 NB Ramps	1	2	-	-
		6	-	8

Isolated Signals					
WIS 172 & County EB/ Packerland Drive	1	2	3	4	
	5	6	7	8	
US 12 & County K	1	2	3	4	
	5	6	7	8	
WIS 36 & WIS 20	1	2	-	4	
	-	6	-	8	
US 14 & WIS 67	-	2	3	-	P^2
	5	6	-	8	
WIS 52 & 28th Avenue	1	2	3	4	
	5	6	7	8	

Notes:
- "P^1" designates pedestrian phase (crossing south leg only). This phase is called with pedestrian push button only.
- "P^2" designates all-pedestrian phase. This phase is called with pedestrian push button only.
- Yellow shading designates lagging left-turn phasing (no lagging left-turn phases were in operation in the existing conditions at the project intersections).
- Due to complex phasing and software limitations, some locations are modeled with work-arounds. See timing plan pages for details.
- "-" indicates phase not used.

Summary of HCS 2010 Phasing

Exhibit **5-F**

raSmith

	Intersection	Coordinated Splits 1	2*	3	4	5	6*	7	8	Cycle Length	Offset
WIS 38 Corridor	Drexel Avenue	15	27	12	26	12	30	13	25	80	59
	Susan/Town Square Way	12	34	12	22	12	34	13	21		56
	Forest Hill Avenue	13	36	12	19	12	37	12	19		13
	Puetz Road	12	33	12	23	15	30	12	23		39
	Centennial Drive	12	35	12	21	15	32	14	19		68

	Intersection	Coordinated Splits 1	2*	3	4	5	6*	7	8	Cycle Length	Offset
WIS 67 Corridor	Oconomowoc Parkway	18	30	NOT USED	22	16	32	NOT USED	22	70	34
	County B/Valley Road	14	24	14	18	14	24	14	18		64
	Oconomowoc Drive	14	23	14	19	14	23	14	19		64
	I-94 WB Ramps	14	27	NOT USED	NOT USED	NOT USED	41	NOT USED	29		42
	I-94 EB Ramps	NOT USED	44	NOT USED	26	NOT USED	44	NOT USED	NOT USED		62

	Intersection	Coordinated Splits 1	2*	3	4	5	6*	7	8	Cycle Length	Offset
WIS 167 Corridor	Port Washington Road	20	34	19	27	19	35	24	22	100	67
	I-43 SB Ramps	18	36	28	18	15	39	NOT USED	NOT USED		97
	I-43 NB Ramps	36	24	NOT USED	NOT USED	NOT USED	60	NOT USED	40		4

Notes:

- Coordinated phase indicated by "*" symbol.
- Offset reference point is beginning of green of first coordinated phase (TS2 – 1st Green).
- Splits rounded to maintain full second splits and optimized cycle length.
- Phase 3 at the WIS 167 intersection with the I-43 SB Ramps functions as max recall when pedestrian call is made. Due to limitations of the Synchro software, the Phase 3 time was combined with phases 2 and 6.

Summary of Synchro Timing Plans – Coordinated Systems

Exhibit **5-G**

raSmith

Intersection	Max Splits								Maximum Cycle Length
	1	2	3	4	5	6	7	8	
WIS 172 & County EB/Packerland Drive	17	55	20	44	22	50	18	46	136
US 12 & County K	**14**	117	**16**	43	**26**	105	42	**17**	190
WIS 36 & WIS 20	14	51	NOT USED	44	NOT USED	65	NOT USED	44	109
US 14 & WIS 67	NOT USED	60	38	35	32	28	NOT USED	38	133
WIS 52 & 28th Avenue	20	59	14	59	29	50	36	37	152

Notes:

- Red/Bold indicates LOS F for the movement.
- Max splits are the sum of Max Green, Yellow and All Red
- Due to complex field phasing and software limitations at the US 14 intersection with WIS 67, phase 3 was modeled concurrently with phase 8.
- Existing timings for the isolated signals were given in decimal format and not rounded to full seconds. Synchro is able to analyze timings in this format, so the Synchro models show cycle lengths and splits to the tenth of a second. For ease of programming the timings in the controller, the timing plans were rounded to full seconds.

Summary of Synchro Timing Plans – Isolated Signals

Exhibit **5-H**

WIS 38				
Drexel Avenue	**2**	**1**	**4**	**3**
	5	6	7	8
Susan/ Town Square Way	1	2	3	4
	6	**5**	**8**	**7**
Forest Hill Avenue	**2**	**1**	**4**	**3**
	5	6	7	8
Puetz Road	1	2	3	4
	6	**5**	**8**	**7**
Centennial Drive	**2**	**1**	3	4
	5	6	**8**	**7**

WIS 67				
Oconomowoc Parkway	1	2	-	4
	6	**5**	**-**	8
County B/ Valley Road	**2**	**1**	3	4
	5	6	**8**	**7**
Oconomowoc Drive	1	2	**4**	**3**
	6	**5**	**8**	**7**
I-94 WB Ramps	**2**	**1**	-	-
	-	6	-	8
I-94 EB Ramps	-	2	-	4
	-	6	-	-

WIS 167				
Port Washington Road	1	2	**4**	**3**
	6	**5**	7	8
I-43 SB Ramps	1	2	3(P^1)	4
	5	6	-	-
I-43 NB Ramps	1	2	-	-
	-	6	-	8

Isolated Signals					
WIS 172 & County EB/ Packerland Drive	1	2	3	4	
	5	6	7	8	
US 12 & County K	1	2	3	4	
	5	6	7	8	
WIS 36 & WIS 20	1	2	-	4	
	-	6	-	8	
US 14 & WIS 67		2	3	-	P^2
	5	6	-	8	
WIS 52 & 28th Avenue	1	2	3	4	
	5	6	7	8	

Notes:

- "P^1" designates pedestrian phase (crossing south leg only). This phase is called with pedestrian push button only.
- "P^2" designates all-pedestrian phase. This phase is called with pedestrian push button only.
- Yellow shading designates lagging left-turn phasing (no lagging left-turn phases were in operation in the existing conditions at the project intersections).
- Due to complex phasing and software limitations, some locations are modeled with work-arounds. See timing plan pages for details.
- "-" indicates phase not used.

Summary of Synchro Phasing

Exhibit **5-I**

	Intersection	Coordinated Splits 1	2*	3	4	5	6*	7	8	Cycle Length	Offset
WIS 38 Corridor	Drexel Avenue	15	27	12	26	12	30	12	26	80	0
	Susan/Town Square Way	12	36	12	20	12	36	13	19		36
	Forest Hill Avenue	12	38	12	18	12	38	12	18		61
	Puetz Road	12	34	12	22	14	32	12	22		25
	Centennial Drive	12	38	12	18	12	38	12	18		45

	Intersection	Coordinated Splits 1	2*	3	4	5	6*	7	8	Cycle Length	Offset
WIS 67 Corridor	Oconomowoc Parkway	25	34	NOT USED	21	14	45	NOT USED	21	80	0
	County B/Valley Road	14	34	14	18	14	34	14	18		50
	Oconomowoc Drive	14	33	14	19	14	33	14	19		21
	I-94 WB Ramps	14	32	NOT USED	NOT USED	NOT USED	46	NOT USED	34		33
	I-94 EB Ramps	NOT USED	59	NOT USED	21	NOT USED	59	NOT USED	NOT USED		65

	Intersection	Coordinated Splits 1	2*	3	4	5	6*	7	8	Cycle Length	Offset
WIS 167 Corridor	Port Washington Road	19	24	16	21	16	27	19	18	80	0
	I-43 SB Ramps	11	29	28	12	11	29	NOT USED	NOT USED		43
	I-43 NB Ramps	29	18	NOT USED	NOT USED	NOT USED	47	NOT USED	33		62

Notes:
- Coordinated phase indicated by "*" symbol.
- Offset reference point is beginning of green of first coordinated phase (TS2 – 1st Green).

Summary of Vistro Timing Plans – Coordinated Systems

Exhibit **5-J**

raSmith

Intersection	Max Splits								Maximum Cycle Length
	1	2	3	4	5	6	7	8	
WIS 172 & County EB/Packerland Drive	22	56	32	26	27	51	11	47	136
US 12 & County K	**14**	124	**14**	38	**20**	118	**36**	**16**	190
WIS 36 & WIS 20	11	54	NOT USED	44	NOT USED	65	NOT USED	44	109
US 14 & WIS 67	NOT USED	62	36	35	26	36	NOT USED	36	133
WIS 52 & 28th Avenue	17	63	12	60	39	41	45	27	152

Notes:

- Red/Bold indicates LOS F for the movement.
- Max splits are the sum of Max Green, Yellow and All Red
- Due to limitations with the version of Vistro 6 used at the time of analysis, the timings plans for isolated signals were optimized based on fixed time controller configuration instead of isolated-uncoordinated operation.
- Vistro allows the user to choose between two different optimization methods: the “v/c balancing” method and the “minimize critical movement delay” method. Results may differ significantly depending on the method used. The “v/c balancing” method was used for this project based on guidance in the user manual.
- Due to complex field phasing and software limitations at the US 14 intersection with WIS 67, phase 3 was modeled concurrently with phase 8.

Summary of Vistro Timing Plans – Isolated Signals

Exhibit **5-K**

WIS 38				
Drexel Avenue	1	2	**4**	**3**
	5	6	7	8
Susan/ Town Square Way	1	2	3	4
	5	6	7	8
Forest Hill Avenue	1	2	3	4
	5	6	7	8
Puetz Road	**2**	**1**	3	4
	6	**5**	7	8
Centennial Drive	1	2	3	4
	5	6	7	8

WIS 67				
Oconomowoc Parkway	1	2	-	4
	5	6	**-**	8
County B/ Valley Road	1	2	3	4
	5	6	7	8
Oconomowoc Drive	1	2	**4**	**3**
	5	6	7	8
I-94 WB Ramps	1	2	-	-
	-	6	-	8
I-94 EB Ramps	-	2	-	4
	-	6	-	-

WIS 167				
Port Washington Road	1	2	**4**	**3**
	5	6	**8**	**7**
I-43 SB Ramps	1	2	3(P^1)	4
	5	6	-	-
I-43 NB Ramps	1	2	-	-
	-	6	-	8

Isolated Signals					
WIS 172 & County EB/ Packerland Drive	1	2	3	4	
	5	6	7	8	
US 12 & County K	1	2	3	4	
	5	6	7	8	
WIS 36 & WIS 20	1	2	-	4	
	-	6	-	8	
US 14 & WIS 67		2	3	-	P^2
	5	6	-	8	
WIS 52 & 28th Avenue	1	2	3	4	
	5	6	7	8	

Notes:
- "P^1" designates pedestrian phase (crossing south leg only). This phase is called with pedestrian push button only.
- "P^2" designates all-pedestrian phase. This phase is called with pedestrian push button only.
- Yellow shading designates lagging left-turn phasing (no lagging left-turn phases were in operation in the existing conditions at the project intersections).
- Due to complex phasing and software limitations, some locations are modeled with work-arounds. See timing plan pages for details.
- "-" indicates phase not used.

Summary of Vistro Phasing

Exhibit **5-L**

raSmith

Isolated Intersections

Intersection	Region	Software	Implementation Schedule: Date Range		Implementation Schedule: Time Range		Requested WisBOOM Data: Timing Plan	Requested WisBOOM Data: Dates	Requested WisBOOM Data: Time Periods	Requested WisBOOM Data: Reports	WisBOOM Data Request	WisBOOM Data Received
WIS 172 & County EB/Packerland	NE	Synchro	7/16/2018	7/20/2018	continuous		Synchro	7/17, 7/18, 7/19	4-5 PM and 3-6 PM	Split Monitor[2]	1 (8/10/18)	9/11/2018
		Vistro	7/23/2018	7/27/2018	continuous		Vistro	7/24, 7/25, 7/26			1 (8/10/18)	9/11/2018
		HCS 2010	7/30/2018	8/3/2018	continuous		HCS 2010	7/31, 8/1, 8/2			1 (8/10/18)	9/11/2018
		SIDRA	n/a	n/a	n/a	n/a	Baseline	8/7, 8/8, 8/9			1 (8/10/18)	9/11/2018
WIS 52 & 28th Ave	NC	Synchro	7/27/2018	8/17/2018	continuous		Synchro	8/7, 8/8, 8/9	4:15-5:15 PM and 3-6 PM		1 (8/10/18)	9/11/2018
		Vistro	8/17/2018	8/24/2018[1]	continuous		Vistro	8/21, 8/22, 8/23			2 (9/13/18)	9/13/2018
		HCS 2010	7/20/2018	7/27/2018	continuous		HCS 2010	7/24, 7/25, 7/26			2 (9/13/18)	9/13/2018
		SIDRA	n/a	n/a	n/a	n/a	Baseline	7/17, 7/18, 7/19			1 (8/10/18)	9/11/2018
WIS 36 & WIS 20/83	SE	Synchro	10/15/2018	10/19/2018	3:00 PM	6:00 PM	Synchro	10/16, 10/17, 10/18	4:45-5:45 PM and 3-6 PM		4 (10/29/18)	11/1/2018
		Vistro	10/1/2018	10/5/2018	3:00 PM	6:00 PM	Vistro	10/2, 10/3, 10/4			4 (10/29/18)	11/1/2018
		HCS 2010	10/8/2018	10/12/2018	3:00 PM	6:00 PM	HCS 2010	10/9, 10/10, 10/11			4 (10/29/18)	11/1/2018
		SIDRA	n/a	n/a	n/a	n/a	Baseline	10/23, 10/24, 10/25			4 (10/29/18)	11/1/2018
WIS 67 & US 14	SE	Synchro	10/15/2018	10/19/2018	3:00 PM	6:00 PM	Synchro	10/16, 10/17, 10/18	4-5 PM and 3-6 PM		4 (10/29/18)	11/1/2018
		Vistro	10/1/2018	10/5/2018	3:00 PM	6:00 PM	Vistro	10/2, 10/3, 10/4			4 (10/29/18)	11/1/2018
		HCS 2010	10/8/2018	10/12/2018	3:00 PM	6:00 PM	HCS 2010	10/9, 10/10, 10/11			4 (10/29/18)	11/1/2018
		SIDRA	n/a	n/a	n/a	n/a	Baseline	10/23, 10/24, 10/25			4 (10/29/18)	11/1/2018
US 12 & County K[3]	SW	Synchro	n/a	n/a	n/a	n/a	Synchro	n/a	n/a	n/a	n/a	n/a
		Vistro	n/a	n/a	n/a	n/a	Vistro	n/a				
		HCS 2010	n/a	n/a	n/a	n/a	HCS 2010	n/a				
		SIDRA	n/a	n/a	n/a	n/a	Baseline	n/a				

[1] As of 11/30/2018, the Vistro timing plan was still running.
[2] The split monitor reports are requested for all signal phases for each intersection, date and time listed.
[3] The SW Region is concerned with implementing new timings at the US 12 intersection with County K due to a long history of operational issues and multiple timing plan modifications.

Signalized Corridors

Corridor/Intersections	Region	Software	Implementation Schedule: Date Range		Implementation Schedule: Time Range		Requested WisBOOM Data: Timing Plan	Requested WisBOOM Data: Dates	Requested WisBOOM Data: Time Period	Requested WisBOOM Data: Reports	WisBOOM Data Request	WisBOOM Data Received
WIS 38	SE	Synchro	6/25/2018	6/29/2018	3:00 PM	6:00 PM	Synchro	6/26, 6/27, 6/28	3-6 PM	Purdue Coordination Diagram, Split Monitor[4]	1 (8/10/18)	9/11/2018
		Vistro	6/11/2018	6/15/2018	3:00 PM	6:00 PM	Vistro	6/12, 6/13, 6/14			1 (8/10/18)	9/11/2018
		HCS 2010	6/18/2018	6/22/2018	3:00 PM	6:00 PM	HCS 2010	6/19, 6/20, 6/21			1 (8/10/18)	9/11/2018
		SIDRA	n/a	n/a	n/a	n/a	Baseline	6/5, 6/6, 6/7			3 (9/19/18)	9/27/2018
WIS 67	SE	Synchro	6/25/2018	6/29/2018	3:00 PM	6:00 PM	Synchro	6/26, 6/27, 6/28	3-6 PM		1 (8/10/18)	9/11/2018
		Vistro	6/11/2018	6/15/2018	3:00 PM	6:00 PM	Vistro	6/12, 6/13, 6/14			1 (8/10/18)	9/11/2018
		HCS 2010	6/18/2018	6/22/2018	3:00 PM	6:00 PM	HCS 2010	6/19, 6/20, 6/21			1 (8/10/18)	9/11/2018
		SIDRA	n/a	n/a	n/a	n/a	Baseline	6/5, 6/6, 6/7			3 (9/19/18)	9/27/2018
WIS 167[5]	SE	Synchro	n/a	n/a	n/a	n/a	Synchro	n/a	n/a	n/a	n/a	n/a
		Vistro	n/a	n/a	n/a	n/a	Vistro	n/a				
		HCS 2010	n/a	n/a	n/a	n/a	HCS 2010	n/a				
		SIDRA	n/a	n/a	n/a	n/a	Baseline	n/a				

[4] The split monitor reports are requested for all signal phases for each intersection, date and time listed. The Purdue Coordination diagrams are requested for the coordinated signal phases for each intersection, date and time listed.
[5] Communication systems were not in place in the field at the time of timing implementation.

Signal Timing Field Implementation Schedule and WisBOOM Data Request

Exhibit **6**

raSmith

Average Platoon Ratio
Primary Direction (Analysis Hour)

Timing Plan	WIS 38 Phase 2 Platoon Ratio	WIS 67 Phase 6 Platoon Ratio
Baseline	*1.30*	*1.11*
HCS	1.13	1.13
Synchro	1.10	1.12
Vistro	1.22	1.03

Note: Average of platoon ratios for the primary phases (2 and 6).

Force Off%/Gap Out % Assessment
Balance Measure Performance

	WIS 38 Balance Measure (Median Values)		
Timing Plan	Major Lefts	Minor Lefts	Major Thrus
Baseline	*0.58*	*0.32*	*0.79*
HCS	0.77	0.70	0.53
Synchro	0.37	0.59	0.29
Vistro	0.34	0.55	0.35

	WIS 67Balance Measure (Median Values)		
Timing Plan	Major Lefts	Minor Lefts	Major Thrus
Baseline	*0.19*	*0.55*	*0.79*
HCS	0.89	0.56	0.24
Synchro	0.38	0.44	0.24
Vistro	0.56	0.72	0.59

Note: Balance Measure = (Force Off % - Gap Out %)/(Force Off % + Gap Out %). A value of 0 represents perfect balance between force off % and gap out % and a value of 1 represents complete imbalance (all one and none of the other).

Isolated Signals – 85th Percentile Split and Average Split Comparison

	Percent of Phases Meeting WisDOT Evaluation Criteria[1]	
Timing Plan	Left-Turn Phases	Thru Phases
Baseline	*30%*	*53.5%*
HCS	0%	33.3%
Synchro	50%	40%
Vistro	11.1%	45.5%

[1] The following evaluation criteria were determined by WisDOT. If WisBOOM 85th and Average split values fell within the noted ranges, the evaluation criteria was considered met.

- Left-turn Phases: 85th Percentile is 85-100% of Max Split and Average Split is 70-90% of Max Split
- Thru Phases: 85th Percentile Split is 90-125% of the Max Split and Average Split is 75-100% of the Max Split

WIS 38 Mainline Median Speed (Drexel Ave to Puetz Rd)

Timing Plan	SB Median Speed (mph)	NB Median Speed (mph)
Baseline	*23.5*	27
HCS	14	23
Synchro	22	22.5
Vistro	21	30

Note: Based on NPMRDS probe data

Mainline Peak Hour Thru Movement Delays

Timing Plan	WIS 172 & CTH EB Average Peak Hour Phase 2 & 6 Delay (s)	WIS 52 & 28th St Average Peak Hour Phase 2 & 6 Delay (s)
Baseline	*20*	*15*
HCS	-results unreliable-	20
Synchro	19	17
Vistro	15	19

WisDOT WisBOOM Evaluation Summary Tables

Exhibit **7**

APPENDIX A

Phase 1 Software Evaluation Matrix

Table A-1: Phase 1 Software Research and Pricing

Software Package	Current Version	Analysis Capabilities							Price									Maintenance Cost (if specified)	Approximate Frequency of Release Version	Notes
										5 Users		10 Users		25 Users		50 Users				
		Corridors	Stop Control	Roundabouts	Timing Optimization	Adaptive Signal	HCM 2010	HCM 6	1 License	Per License	Total	Per License	Total	Per License	Total	Per License	Total			
Automated Traffic Signal Performance Metrics (ATSPM)	4	X	n/a	n/a	X	X	n/a	n/a	$0	$0	$0	$0	$0	$0	$0	$0	$0			
Corridor Simulation (CORSIM)	6	X	n/a	n/a	X	X	n/a	n/a	$1,500	$300	$1,500	$150	$1,500	$60	$1,500	$30	$1,500	$300 support upgrade		Note: CORSIM is a McTrans product. Assumed site license similar to HCS.
Highway Capacity Software (HCS)	7	X	X	X	X	n/a	X	X	$3,000	$600	$3,000	$300	$3,000	$120	$3,000	$60	$3,000	$500 support subscription	every 5 yrs	
LinSig	3	X	?	?	X	?	?	?	$3,000	986**	$3945**	$479	$4,785	$215	$5385*	$108	$5385*			(UK) single user
LISA+		X	X	?	X	?	n/a	n/a												(German)
Passer-V	9	X	X	n/a	X	n/a	n/a	n/a											every 5 yrs	Note: pricing information not available online
Signalized Intersection Design and Research Aid (SIDRA)	7	X	X	X	?	n/a	X	?	$3,700	$3,000	$15,000	$3,000	$30,000	$3,000	$75,000	$3,000	$150,000	$440 upgrade	every 3 yrs	
Synchro (NEW)	10	X	X	X	X	Synchro Green	X	X	$3,794	$3,127	$15,634	$2,759	$27,589	$2,207	$55,171	$2,016	$100,798	15% charge (included in prices shown) for 2 yr service	every 3 yrs	
Synchro (upgrade)									$2,264	$1,850	$9,252	$1,666	$16,664	$1,335	$33,379	$1,220	$61,008			
TEAPAC	Complete 2016	X	n/a	n/a	X	n/a	X	X	$1,495	$1,047	$5,233	$710	$7,101	$508	$12,708	$441	$22,051	$445/yr	every 4 yrs	
TransModeler	4	X	X	X	X	n/a	X	n/a	$12,000	$9,600	$48,000	$8,800	$88,000	$7,920	$198,000	$7,460	$373,000	$2500 10-hr service pack, $1500 for 1-year service extension	every 3-4 yrs	unlimited intersections
TransModeler SE	4	X	X	X	X	n/a	X	n/a	$995	$995	$4,975	$995	$9,950	$995	$24,875	$995	$49,750		every 3-4 yrs	20 intersections, 100 links
TRL Software		X	X	X			X-RAB													Multiple softwares?
Tru-Traffic	10	X	n/a	n/a	X	n/a	n/a	n/a	$995	$639	$3,195	$495	$4,945	$410	$10,195	$379	$18,945		every 2 yrs	
Vissim	9	X	X	X	X	X	n/a	n/a	$7,500	$4,950	$24,750	$4,350	$43,500	$3,990	$99,750	$3,870	$193,500		every 2 yrs	20% discount if VISSIM and VISTRO bundeled, 25% additional cost for network
Vistro	5	X	X	X	X	n/a	X	X	$3,950	$2,765	$13,825	$2,765	$27,650	$2,765	$69,125	$2,765	$138,250			dongels

9/29/2017

*unlimited copies **4 copies

Eliminated from Phase 2 consideration

ATSPM	Doesn't offer HCM
CORSIM	Doesn't offer HCM
LinSig	Limited information available about software capabilities
LISA+	Doesn't offer HCM
Passer-V	Doesn't offer HCM
TEAPAC	Doesn't offer HCM
TransModeler	Single bundle software suite with multiple capabilites. WisDOT forcasting was not looking to replace their travel demand model, therefore this package included more capaabilites than WisDOT was looking to purchase/replace.
TransModeler SE	Limited to a 20 node network
TRL Software	Doesn't offer HCM
Tru-Traffic	Doesn't offer HCM
Vissim Basic	Doesn't offer HCM

APPENDIX B

Complete Phase 1 AASHTO Survey

Survey Questions

WisDOT is working on a study to evaluate the software tools available for conducting traffic signal capacity analysis, optimization, and timing plans. To help us identify all of the potential software packages currently being used, will you please:

- Indicate what software tool(s) your state currently uses for traffic signal capacity analysis, optimization, and timing plans
- Provide a qualitative assessment (pros/cons) for each software package you currently or have recently used
- Provide contact information for potential follow up

Survey Response Summary Tables

State DOT	Contact				Response Date
	Name	Title/Department	Phone Number	Email	
Alaska	Matt Walker	State Traffic & Safety Engineer	(907) 465-6963	matthew.walker@alaska.gov	8/25/2017
Arkansas	Andrew Warren			andrew.warren@ardot.gov	8/23/2017
Delaware	Mark Luszcz	Chief Traffic Engineer	(302) 659-4062	Mark.Luszcz@state.de.us	8/29/2017
Florida	Humberto Castillero		850-410-5417		9/16/2017
Georgia	Kate D'Ambrosio	State Signal Engineer	404-635-2842	kdambrosio@dot.ga.gov	8/22/2017
	Alan Davis	Assistant State Traffic Engineer - Signals	404-635-2832	aladavis@dot.ga.gov	
Illinois	Kyle Armstrong	Acting Engineer of Traffic Operations	217-782-2076	Kyle.Armstrong@illinois.gov	8/31/2017
Indiana	Greg Richards	Senior Engineer, Signal Systems	317-899-8629		8/22/2017
Kentucky	Joe Carter	Division of Traffic Operations	(502) 782-5527	JoeL.Carter@ky.gov	8/24/2017
Louisiana	Ryan Hoyt			Ryan.Hoyt@LA.GOV	8/25/2017
Michigan	Douglas Adelman	Synchro contact		adelmand@michigan.gov	8/22/2017
	Jason Firman	VISSIM contact		firmanj@michigan.gov	
Mississippi	Edward Raymond	Traffic Signal Systems and Operations Engineer	601-359-1454	eraymond@mdot.ms.gov	8/25/2017
Missouri	Ray Shank	Traffic Safety Engineer	573-751-0982	Julie.Stotlemeyer@modot.mo.gov	8/24/2017
Montana	Sarah Karjala	Signal Timing Engineer	406-444-6255	skarjala@mt.gov	8/22/2017
	Julie Wotring	Signal Timing Engineer	406-444-9031	jwotring@mt.gov	
New Hampshire	Mike O'Donnell		603-271-1581	Michael.O'Donnell@dot.nh.gov	8/23/2017
New Mexico	Afshin Jian	State Traffic Engineer	(505) 827-5490	Afshin.Jian@state.nm.us	8/25/2017
North Carolina	Jim Dunlop	Congestion Management	919-814-4936	jdunlop@ncdot.gov	8/28/2017
	Mohamed Deen	Central Office System Timing Group	919-814-5108	msdeen@ncdot.gov	
	Meredith McDiarmid	State ITS and Signals Engineer	919 814 5030	mmcdiarmid@ncdot.gov	
Ohio	Jason Yeray	Office of Traffic Operations	614.466.2168	Jason.Yeray@dot.ohio.gov	8/24/2017
Oregon	Julie Kentosh	Region 2 Signal Operations Engineer	(503) 986-3576	Julie.L.Kentosh@odot.state.or.us	8/29/2017
Pennsylvania	Daniel Farley	Chief, Traffic Operations Deployment and Maintenance Section	717.783.0333	dfarley@pa.gov	8/25/2017
South Dakota	John Less	Lead SDDOT Traffic Design Engineer	605-394-5324	John.Less@state.sd.us	8/23/2017
Utah	Eric Rasband	Traffic Operations Analysis and Reporting Manager	(801) 608-8870	erasband@utah.gov	8/23/2017
Vermont	Derek Lyman	Traffic Signal Operations Engineer	802-249-5079	Derek.Lyman@vermont.gov	9/5/2017
Virginia	Sanhita Lahiri			Sanhita.Lahiri@VDOT.Virginia.gov	8/30/2017
Washington	Doug McClanahan	State Traffic Analysis, Geometrics & Operations Specialist	360-705-7984	mcclando@wsdot.wa.gov	8/28/2017
Wyoming	Lee Roadifer	Signal Systems Engineer	307-777-3906	lee.roadifer@wyo.gov	8/31/2017

*no phone/email provided for Ray Shank (contact info shown is for Julie Stotlemeyer)

	State DOT	Software used (past or present)										
		Synchro	SimTraffic	HCS	SIDRA	VISSIM	VISTRO	CORSIM	Transmodeler	Tru-Traffic	Passer-V	ATSPM
1	Alaska	X	X									
2	Arkansas	X				X				X	X	
3	Delaware	X	X	X		X						
4	Florida	X										
5	Georgia	X		X								X
6	Illinois	X		X								
7	Indiana	X										
8	Kentucky	X	X	X				X				
9	Louisiana	--			X	X	X					
10	Michigan	X				X						
11	Mississippi	X	X									
12	Missouri	X		X	X	X	--					
13	Montana	X	X							X		
14	New Hampshire	X	X									
15	New Mexico	X		X		X		X				
16	North Carolina	X	X	X	X	X			X	X		
17	Ohio	X		X		--			X	X		
18	Oregon	X	X			X						X
19	Pennsylvania	X		X			X			X		
20	South Dakota	X	X	X						X		
21	Utah	X	X			X						X
22	Vermont	X			X	X						
23	Virginia	X	X	X		X		X		X		
24	Washington	X	X		X							
25	Wisconsin	X	X	X	X	X	X					
26	Wyoming	X										
Total		24 *96%*	12 *48%*	11 *44%*	5 *20%*	11 *44%*	2 *8%*	3 *12%*	2 *8%*	7 *28%*	1 *4%*	3 *12%*

NOTE: all responses were in the form of unsolicited input

Wisconsin responses excluded from totals

X = software currently used

-- = software was used previously or is owned but not used

	Pros & Cons	Synchro/SimTraffic	HCS	Tru-Traffic	VISSIM	Transmodler
	Number of States mentioning:	18	5	2	6	1
Pros						
Features/ Analysis Capabilities	Signal/RAB/Stop Control options	2	1	--	--	--
	half cycles, split phasing, custom phasing	1	--	--	--	--
	models different percentile traffic volumes	1	--	--	--	--
	looks at corridor as a whole	1	--	--	--	--
	Can model 5+ leg intersections	2	--	--	--	--
	has Econolite ASC-3 virtual controller built in	--	--	--	1	--
	lead/lag opt	1	--	--	--	--
	time space diagram/click and drag feature	2	--	--	--	--
	coordinability factor	1	--	--	--	--
	good split/cycle length optimizing	3	1	--	--	--
	can be paired with GPS for floating car studies	--	--	1	--	--
	good offset optimizing/coordinating/flexible offset opt	4	--	2	--	--
	can observe progression and verify that offsets are working in field as designed	--	--	1	--	--
	Synchro methods consider queue interaction/affects of coordinated algorithms (HCM does not)	1	--	--	--	--
	can import networks from synchro	--	--	1	--	--
	used for quick capacity/LOS estimation for an "apples to apples" comparison of scenarios	1	--	--	--	--
	able to evaluate multiple scenarios	1	--	--	--	--
	good for locations prone to queuing or complex intersections	--	--	--	3	--
	dictates what movements vehicles are making (weaving/cut thru)	--	--	--	1	--
Outputs	3D simulations from outputs/great visualizations for presentations	--	--	--	3	--
	fully calibrated model gives more accurate queues/delays (SimTraffic)	1	--	--	--	--
	Environmental MOEs (CMAQ & Signal Op projects)	2	--	--	--	--
	Results close enough to modify in field	4	--	--	--	--
	documenting/reporting results	1	--	--	--	--
	one set of results for same set of inputs	--	1	--	--	--
	Non-HCM Outputs	4	--	--	--	--
	Good results/more precise	2	1	--	2	1
	quick visualizations (SimTraffic)	1	--	--	--	--
	delay and queue length outputs	1	1	--	1	--
	accurately replicates HCM procedures	--	2	--	--	--
Ease of Use	Easy to use toolbars	2	--	--	--	--
	User-friendly	5	--	--	--	--
	convenient	2	--	--	--	--
	flexible	2	--	--	--	--
	can be manipulated to match almost any configuration	1	--	--	--	--
	Same interface for micro/macro models	3	--	--	--	--
	Easy and fast user interface	4	--	--	--	--
	Good graphics/easy to check inputs	4	--	--	--	--
	Efficient (entering inputs)	5	--	--	--	--
	Ease of use/train	6	--	--	--	--
	Allows public to visualize intersections/traffic flow during public meetings	3	--	--	1	--
	Background map option	2	--	--	--	--
	Customize default timing settings for new intersections	2	--	--	--	--
User Support/ Licensing	Good user support	4	1	--	--	1
	always being improved/open to user feedback	1	--	--	--	1
	License discounts for multiple users	2	--	--	--	--
	licensing relatively cost effective	1	--	--	--	--
	network license offered	--	--	--	--	1
Other	Consultants Use/Wide User base/staff familiar	7	--	--	--	--
	existing models	1	--	--	--	--
	deterministic model	1	--	--	--	--
	nationally recognized methods	--	1	--	--	--
	Less expensive RAB	--	1	--	--	--
Cons		--	--	--	--	--
Features/ Analysis Capabilities	lack up uninterrupted flow analysis	2	--	--	--	--
	lane utilization impacts only partially modeled (O-D for 1-2 intersections, not whole corridor)	--	--	--	--	--
	can't model signal preemption	1	--	--	--	--
	not flexible (especially for innovative designs)	4	--	--	--	--
	can't set offset opt. algorithms to ignore side road delay	3	--	--	--	--
	weak on signal timings/offset optimizations/due to delay equation, cycle lengths arbitrarily low	2	2	--	1	--
	limits on how close two intersections can be modeled	1	--	--	--	--
	cumbersome to develop models for multiple peaks					
	cannot manipulate SimTraffic to force certain movement to occur/not occur	1	--	--	--	--
	doesn't model arterial friction	1	--	--	--	--
	optimized splits/offsets require further adjustment	1	1	--	--	--
	Limited to 4 approach legs	2	--	--	--	--
Outputs	time-space diagrams backwards from synchro	--	--	1	--	--
	"black box" outputs/difficult to troubleshoot	2	--	--	--	--
	Imperfect Results/doesn't match HCM/HCS/LOS algorithms do not fully replicate HCM/differ from acutal conditions	5	--	--	--	--
	public gets caught up in "video game" aspect, misses big picture (SimTraffic)	1	--	--	--	--
	not reliable for long queues/oversaturated conditions/doesn't model queue spillback or downstream intersection impacts	4	1	--	--	--
	optimize button (some assume this is end all be all)/timings req adjustment	2	--	--	--	--
Ease of Use	inputs finicky	--	--	1	--	--
	Time-consuming calibration (microsimulation)/calibration often overlooked	6	--	--	4	--
	Time-consuming coding to achieve useful model	3	--	--	3	--
	Not user-friendly	--	1	--	--	--
	File management (large files) /user must delete temp files	3	--	--	--	--
	not elegant in appearance/operation	--	--	1	--	--
	more complicated/many variables	1	1	--	3	--
	room for "cheating" or error/easy to improperly use	1	1	--	--	--
User Support/ Licensing	No network license/difficult to share a license/dongle system	5	--	--	1	--
	not good user support	--	--	--	1	--
	time consuming to troubleshoot	--	--	--	1	--
Other	expensive	2	--	--	3	--

NOTES: all responses were in the form of unsolicited input
Total states responding to survey: 25

Software Use		Syncrho/Sim Traffic	HCS	Tru-Traffic	VISSIM	Transmodler	CORSIM	SIDRA	VISTRO
	Number of States mentioning:	22	7	5	9	1	2	4	1
Capacity Analysis	Signal	15	5	--	2	--	--	--	1
	RAB	--	2	--	--	--	--	3	--
	Stop	--	--	--	--	--	--	--	--
Timings & Optimization	optimization	19	1	2	--	--	--	--	--
	fine tuning timings from Synchro	--	--	--	1	--	--	--	--
	timing plans/coordination	21	2	2	1	--	1	--	--
	offset calcs/optimization	3	--	3	--	--	--	--	--
	coordinability factor	1	--	--	--	--	--	--	--
	time/space diagram	2	--	--	--	--	--	--	--
Special Concern/Specific Output	oversaturated conditions/queuing concern	1	--	--	4	--	2	--	--
	RAB metering (signals)	--	--	--	1	--	--	1	--
	RAB with nearby signals	--	--	--	1	--	--	1	--
	macrosimulation	3	--	--	--	--	--	--	--
	microsimulation	3	--	--	--	--	--	--	--
	MOEs (Delay, Travel Time, Stops, Speed, etc.),	--	--	1	--	--	--	--	--
	data cataloging	1	--	--	--	--	--	--	--
	GPS runs	--	--	1	--	--	--	--	--
Project Type	uninterrupted flow	--	--	--	--	--	--	--	--
	work zone	--	--	--	--	--	--	--	--
	TIP projects	--	--	--	--	1	--	--	--
	simple projects	1	--	--	--	--	--	--	--
	weaving/cut thru analysis	--	--	--	1	--	--	--	--
	superstreets/DDI/uninterrupted flow/CFI	--	--	--	3	1	--	--	--
	Intersection design studies	--	1	--	--	--	--	--	--
	complex systems (ramp meters, transit corridors)	--	--	--	1	--	--	--	--
	TIA	1	--	--	--	--	--	--	--
	complex interaction with freeways	--	--	--	1	--	--	--	--
Output Used (if Specified)	HCM 2000	3	--	--	--	--	--	--	--
	HCM 2010	2	--	--	--	--	--	--	--
	Software specific outputs	2	--	--	--	--	--	--	--

NOTES: all responses were in the form of unsolicited input
Total states responding to survey: 25

Complete Survey Responses

Alaska

Only one of our three regions does much of this work in house. Here's what they told me:

"We use Synchro/SimTraffic. Easy and fast user interface. Results close enough to tweak in the street."

Matt Walker, P.E.
State Traffic & Safety Engineer
Statewide Traffic & Safety
Alaska DOT & PF
(907) 465-6963
matthew.walker@alaska.gov

Arkansas

ArDot Operations use (in order of most to least used):

Synchro -primarily modeling, some optimization, starting point timing plans
Tru-Traffic -optimization, GPS runs, offsets
PC-Travel -GPS runs (clunky/older - but has prepackaged reports, only used a couple of times (not trivial to import raw unmatched GPS data))
Passer V -used infrequently, older style interface

ArDot Planning use:

Vissim -capacity, design, modeling, etc.
Synchro -modeling, optimization
Andrew Warren (CC'ed) is the Department's expert on modeling software in general and specifically the ones used by Planning Division. Andrew.Warren@ardot.gov

Delaware

Software/Analysis Tool	Pros	Cons
Critical Movement Summation (a.k.a. CLV) (MS Excel)	Helps understand fundamentals of signal timing; Quick and easy to manipulate for case-by-case assessments (i.e., anti "Black Box"); Can be used with Greenshields' model to suggest split times and required cycle lengths; Great for quickly comparing lane configuration, phasing alternatives, and impacts associated with required ped splits	Not extremely precise; Does not give delays or queue lengths; Does not help with coordination; Generally lacks PHF consideration (i.e., typ. 60-min. analysis period); Generally lacks sat. flow aspect
In-pavement System Loop Detection (data output to MS Excel)	Continuously recording traffic data; Available for download immediately; Typically used to determine time-of-day schedules (i.e., when different cycle lengths should be running); Also used for traffic responsive signal systems	Relies on established statewide network of system loop; Detectors often fail; Data analysis can be time consuming
Bluetooth Detection (BluStat/BluFax; raw data can be output to MS Excel)	Provides live and historical travel times between detectors; Significantly more comprehensive travel time data than travel time runs by car	Relatively new so limited knowledge about and access to the software/portals; Current network of detection stations is small but growing; Can be hard to differentiate between traffic delay and making a stop at an intermediate destination; Cannot pinpoint specific delay location
Highway Capacity Software (HCS)	Nationally recongnized methods. Analytical methods result in one set of results for the same set of input. Provides estimates of delays and queue lengths; Capacity analysis more precise than CMS. Newest versions have timing optimization functions but we generally use Synchro, not HSC, for this purpose.	Less user friendly than Synchro. More complicated (room for error and/or "cheating") than CMS.
Synchro (Includes *HCS 2000* & *HCS 2010*)	Extremely useful for coordination/offset calculations and adjustments; Provides estimates of delays and queue lengths; Capacity analysis more precise than CMS	Expensive software; Time consuming to build a model; Many variables to understand and input correctly to achieve useful model; Questionable outputs can be difficult to troubleshoot. Some parameters within capacity analysis do not match HCS.
SimTraffic	Microsimulation with video outputs can be helpful and understood by laypeople; May result in more realistic queues and delays (if model is calibrated properly)	Requires *Synchro* software and model; Sometimes overcomplicates everything and is not worth to additional effort; Laypeople may get hung up on "video game" aspect of output/sim runs in lieu of big picture
VISSIM	Extremely useful for dictating exactly what movements vehicles make, particularly if there is a high weaving or cut-through movement; Can create 3D simulation with output; Provides estimates of delays and queue lengths	Very expensive software; Very time consuming to build a model; Many variables to understand and input correctly to achieve useful model; Very time consuming to troubleshoot

Mark Luszcz, P.E., PTOE
Chief Traffic Engineer
Delaware Department of Transportation
(302) 659-4062
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Florida

On behalf of Trey Tillander, please see Florida's response to your questions below:

- Indicate what software tool(s) your state currently uses for traffic signal capacity analysis, optimization, and timing plans

  Florida uses Synchro for capacity, optimization and timing plans.

- Provide a qualitative assessment (pros/cons) for each software package you currently or have recently used

  Synchro/Simtraffic has been the preferred software for signalized intersections because it is easy to use and has enhanced capabilities over HCS.

- Provide contact information for potential follow up

  Humberto Castillero, 850-410-5417

Thanks,

Alan S. El-Urfali, P.E.
State Traffic Services Program Engineer
(850) 410-5416 - Office
(850) 274-7935 - Cell
alan.el-urfali@dot.state.fl.us

Georgia

Indicate what software tool(s) your state currently uses for traffic signal capacity analysis, optimization, and timing plans

The signal group uses Synchro, the Automated Traffic Signal Performance Metrics Website and Maxview data to look at some capacity analysis, signal timing optimization and other timing plan adjustments. I believe the planning group and the general ops group looks at HCS, a roundabout analysis spreadsheet and some other software for capacity analysis when doing TE studies and concept reports for larger construction projects.

-Provide a qualitative assessment (pros/cons) for each software package you currently or have recently used

Synchro and Sim Traffic: Pros – the software allows for a very visual analysis of a corridor. One of the main advantages of using this software for signal timing is that it does look at the corridor as a whole in terms of arrival times and queuing because it models vehicles through the corridor. This allows the engineer to view a clear representation of how traffic could look out in the field, determine offsets and look at the advantages of lead/lag movements based on how vehicles are arriving. Cons: The biggest con of this software is probably the use of the optimize button, while the optimize button can be a useful tool, it is too easy for an engineer to just hit the button and assume that the results are the best it can get. Additional work must be done to really optimize the timing plans for a specific corridor. Our biggest concern with the use of the software is the reliance on what the program produces. Synchro is only a tool to help the engineer get an idea of what could work out in the field, it should not be the end-all-be-all. There are also some constraints in the software that can limit the engineer from modeling desired situations such as innovative intersections (example: DDIs) and dual serve phases.

ATSPM Website – this software is in conjunction with the upgraded software deployment (Maxtime) that we are currently in the process of completing. The upgraded CPU and Intelight software allow us to collect high resolution performance metric data at a signal and then process it using the ATSPM software. Pros: this is an open source platform. This is only the beginning of what we can do with the high resolution data coming in from signals. We can see when vehicles are arriving at the signal in order

to determine if offsets are optimized, we can review data about how splits are used to see if extra time can be moved to other phases and we can determine when equipment is malfunctioning. There are many non-open source platforms available that present this same data in more colorful and useful ways but we have not procured anything because we are looking to develop internally. Cons – currently this website looks only at an individual intersection level, it does not look at the corridor as a whole or a regional approach.

MaxView – this is similar to the ATSPM website, it uses the same information it just has some different charts and looks at it on a more connected level. Intelight is developing a more robust analytical software to help us read and use all of the data that is coming in, but that is not available yet.

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404-635-2842
Alan Davis – Assistant State Traffic Engineer - Signals
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404-635-2832

Illinois

In Illinois, we typically use Highway Capacity Software (HCS) for Intersection Design Studies and Synchro/SimTraffic for signal coordination and timing. HCS would be utilized for capacity analysis since it is based on the Highway Capacity Manual. We utilize Synchro for signal coordination studies because of its flexibility and user-friendly interface. It has the ability to model different percentile traffic volumes and different types of phasing/programming such as half-cycles, split phasing and customized phasing. For coordinated signal systems, Synchro has a time space diagram interface which allows the user to 'click and drag' to change the offsets at individual intersections which adjusts the bandwidths between intersections or through the entire corridor. This allows the user to see how the offset adjustments affect progression through the system.

There are a couple of drawbacks to Synchro. It is a more expensive program although multi-licensing pricing is available. When developing signal timing plans, Synchro tends to focus on balancing out delay amongst all the approaches at the intersection. Typically when developing coordinated timing plans we prefer to try and maximize the primary route's bandwidth while keeping the side approaches to an acceptable LOS. This requires some split and offset adjustments in the software, although as I mentioned earlier there is a click and drag interface that allows these adjustments to be made relatively easy.

Let me know if you have any further questions.
Kyle D. Armstrong, P.E., PTOE
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Springfield, IL 62764
Phone: 217/782-2076
E-Mail: Kyle.Armstrong@illinois.gov

Indiana

We primarily use Synchro for traffic signal optimization and developing timing plans. We are currently running versions 8 and 9. We use GPS2Laptop as well as some smartphone apps for travel time studies.

In addition to modeling with Synchro, we've worked with Purdue University to develop tools and methods for retiming signals using high resolution controller event data. This requires controllers capable of generating the data as well as detection set up and programmed to generate usable data. Reliable Ethernet communication to the signals is not required but makes the data much more accessible and allows us to continuously add to our database. The catch for retiming or optimizing using these methods is that they can only be used in systems where we're generating and collecting the high-res data.

We've also started using INRIX data, which we purchase, to see and document before and after travel times through a system, but we're still relying on Purdue's assistance to work with that data.

Please let me know if you have any questions.
Best Regards,
Greg Richards
Senior Engineer, Signal Systems
Traffic Control Systems
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Kentucky

I work with the System Operations branch where we specialize in Signal Systems for KYTC. Synchro is the most used software tool for capacity analysis, optimization, and timing plan development by us and our consultants. Due to the tedious nature of data collection needed for simulation software, we find ourselves using more fundamental signal timing principles to improve most of our signal systems. This includes controlling intersection split counts, time-space diagrams in MicroStation, and field observations.

However, if we have specific project that may need a more intense analysis we look to Syncrho. We have used corsim and Highway Capacity Software occasionally, but Synchro has the ability to analyze intersections or corridors on both a macroscopic and microscopic level. It's the flexibility and convenience that makes it the most used software. In addition to Syncrho's Percentile method, Highway Capacity Manual 2000 and 2010 are available through the Synchro suite for additional macroscopic calculations. SimTraffic provides that microscopic view along the corridor and intersections that may not show up in Synchro or HCM. Sycnhro also has the optimization function for intersection splits, cycle lengths and offsets. I have also used the time-space diagrams and the coordinability factor has come in handy for those outlying intersections. Synchro/SimTraffic fits a majority of our needs when a software is needed.

As stated earlier labor intensive data collection is a common thread for Synchro and other signal capacity analysis software. Calibration must be done to model existing conditions in SimTraffic prior to optimization. It is my understanding that a program like VISSIM, possibly others, have more flexibility in the level of detail and the calibration process than Synchro/SimTraffic but with that more time is spent coding. The optimization functions in Synchro provide a great starting point for signal and corridor improvements, but field adjustments are likely needed.

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Louisiana

Louisiana has just switched from Synchro to Vistro for HCM analysis for unsaturated locations and use Vissim for saturated conditions. We use Sidra for roundabout analysis. You can contact Ryan Hoyt for more information.
Ryan.Hoyt@LA.GOV

Michigan

Response for MDOT:
- Indicate what software tool(s) your state currently uses for traffic signal capacity analysis, optimization, and timing plans
Primarily Synchro. We use Vissim for complex interactions with freeways, where queuing is a primary consideration (DDI analyses) and where roundabouts and signals interact.
- Provide a qualitative assessment (pros/cons) for each software package you currently or have recently used
Synchro:
+ Easy to use; + Seems to provide a good starting point for optimized timings
- Less reliable results when queuing extends into multiple segments and when movements are near failure
Vissim:
+ More confidence in accuracy for complex intersections, interactions with freeways, and for operational analyses that are sensitive to queuing.
- Much more data intensive and time consuming to construct. Still use Synchro to optimize signals and then input the timing into VISSIM.
- Provide contact information for potential follow up
Synchro=Douglas Adelman (adelmand@michigan.gov)
Vissim=Jason Firman (firmanj@michigan.gov)

Mississippi

Synchro/Simtraffic

Great tool, mainly because of ease of use and time to enter information. It does not produce perfect results (to my knowledge, no software does) but will give good results with very little time spent inputting data. If you're trying to move traffic on a corridor, you have to set minimum cycle lengths because Synchro tries to balance intersection LOS, which typically requires short cycle lengths.

Edward Raymond – Traffic Signal Systems and Operations Engineer, eraymond@mdot.ms.gov, 601-359-1454

Missouri

Synchro is the software of choice used at MoDOT, particularly regarding optimization and timing plans. With our recent purchase of the latest Highway Capacity Software (HCS7), it did include a tool called TRANSYT-7F, which is a signal timing optimization program. However, this tool is not being used in any real way at MoDOT.

We do have a couple other tools available which are capacity analysis focused. These would include, the Highway Capacity Software (HCS7), SIDRA, and VISSIM, in addition to Synchro. We did try a VISTRO software, which is similar to Synchro but developed by the same people that do VISSIM. We decided against pursuing this software mainly due to the training and learning curve it would take to get our staff knowledgeable of the tool.

Out of the other tools listed above, the only other tool that may be used for timing signals is VISSIM. But usually it involves importing timing plans from Synchro first then making some fine tuning adjustments.

Below are some of the pros/cons for Synchro.

Pros
User Friendly Interface
Staff Familiarity

Deterministic Model
Connected tool, SimTraffic, to perform quick visualizations
Relatively fast tool
Signal Timing Optimization capability

Cons
Model calibration is often overlooked (such as adjusting saturation flow rates)
Queue spillback from storage lanes or downstream intersection not factored in intersection impacts
Limitation on how close two intersections can be evaluated
Not very flexible to evaluate intersections with unique/atypical geometry
Lane utilization impacts can only be partially addressed. (Origin-Destination for only one or two intersections at a time instead of the entire network.)

For further follow-up/questions, contact

Ray Shank, PE
Traffic Safety Engineer
MoDOT Central Office – Traffic and Highway Safety Division

Montana

Programs Used
Synchro/SimTraffic (traffic signal capacity analysis, optimization, and plan development)
TruTraffic (offset optimization)
Synchro Pros
Easy to use
Relatively quick to build model
Widely used in the industry
Synchro Cons
Time consuming to simulate congested conditions (or situations with closely spaced intersections/queue spillback) in SimTraffic
Can't model signal preemption
Synchro-optimized splits and offsets typically need to be further adjusted
Need to contact customer support to transfer user-license to another computer (difficult to share a license)
TruTraffic Pros
Can be paired with a GPS for use in floating car studies
Can easily observe progression and verify that offsets are working in the field as designed
Flexibility in offset optimization
Can import networks from Synchro
TruTraffic Cons
Time Space Diagrams are oriented opposite of Synchro (may not necessarily be a con, but just takes a bit of getting used to)
Input can be finicky (e.g., inputting split times)
Contact Info
Sarah Karjala, Signal Timing Engineer, skarjala@mt.gov; 406-444-6255
Julie Wotring, Signal Timing Engineer, jwotring@mt.gov; 406-444-9031

New Hampshire

NHDOT uses Trafficware software for this purpose, primarily Synchro for macrosimulation methods and sometimes SimTraffic (when microsimulation is used). Depending on the situation, we may look at any of a variety of report formats, most commonly HCM2000 and Syncho's proprietary output (Lanes, Volumes, Timings) since there are known bugs with HCM2010 and HCM6.

Advantages:

- Most consultants in NH also use Trafficware's software
- The software uses the same input interface to go between macro- and microsimulation models, and signal, roundabout, and stop sign control
- User-friendly interface
- Good graphics aid in checking that input was entered correctly, and allow laypeople to visualize the intersection(s) and traffic flow conditions during public hearings
- SimTraffic calculates environmental measures of effectiveness such as fuel consumed, fuel efficiency, and emissions which can be useful on certain projects such as our CMAQ signal optimization projects
- Software allows you to import a background image from Bing maps
- Easy to customize default settings such as minimum initial, extend, all red time, lost ime, etc. so that they don't have to be re-set each time a model is developed for a new intersection
- Good responsiveness from user support
- Volume discounts are available for 2 or more users
- The current version has a ribbon at the top of the screen (like Word and Excel) that makes its use more efficient compared to previous versions
- Proprietary macrosimulation methodology considers additional factors in its algorhythm that HCM does not:
    - Queue interactions are considered in Synchro's delay calculations but not in HCM methods
    - Synchro calculates the effects of coordination, where the HCM methods use an estimate
- Synchro can model 5+ legged intersections where HCM methods limit you to 3 or 4.

Disadvantages:

- Trafficware does not sell network licenses (the software is registered to an individual user on a specific computer)
- The microsimulation model can be difficult and time-consuming to calibrate (although this may be true of any microsimulation software)
- .hst files created by SimTraffic are very large and must be manually deleted to save space on the server

Contact: Mike O'Donnell 603-271-1581 Michael.O'Donnell@dot.nh.gov

New Mexico

We use both Synchro and HCS7. Synchro is mostly used for signal timing and optimization where HCS is used for capacity analysis of signals and roundabouts. Vissim and Corsim are acceptable analysis tools for saturated conditions.

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North Carolina

Traffic Analysis for Transportation Improvement Program projects:

Contact:

Jim Dunlop, PE
Congestion Management
jdunlop@ncdot.gov
919-814-4936

The primary software used for TIP projects is TransModeler. NCDOT commissioned an evaluation in 2013, to compare two advanced simulation software packages, TransModeler (Caliper) and VISSIM (PTV Group). Both software packages provide excellent information and results. However, since TransCadd (Caliper) is used by the Department to develop traffic forecast models, TransModeler was favored primarily because of the interaction available between the two software packages. (Please note that both software packages have since had updates that improve both the modeling results and user interface since our evaluation.) While the Department's project work is done in TransModeler, some consultants will use VISSIM for private/municipal work, and we will accept those results. We are finding that using a volume O-D matrix speeds up analyzing innovative designs, as the software will "re-route" traffic along the various paths as needed.

TransModeler provides two versions. Their full version is roughly $10,000, and includes all features. SE is roughly $1000, and has limitations on network size (20 nodes and/or 100 links) and is by individual machine. The SE version makes TransModeler affordable for our small consultant firms, and the limitations have not been a problem so far (those small firms are unlikely to be assigned our larger projects.) We receive excellent service by Caliper, both on the licensing side, and with them providing updates as we find bugs or need additional functionality. (It helps that we were the first state to move almost exclusively to their software package.)

For some simpler projects, Synchro/SimTraffic (Trafficware) is still used. Its easy interface makes it a quick tool for traffic analysis. However, it has limited flexibility, especially when reviewing innovative design such as superstreets and Diverging Diamond Interchanges. In essence, the user must "trick" the software to model the proposed network. It is not intended for use for uninterrupted flow (freeways.) The advanced simulation software package (TransModeler and VISSIM) provide more flexibility in modeling these designs, although they definitely take more time by the modeler to do so. Synchro's "black box" methodology has always concerned us (the HCM output does appear to match.)

Most Traffic Impact Analyses (TIAs) use Synchro, primarily because of the ease and quickness in setting up a network and producing results (time=money.) Typically, volume entry is by node, so a change from a traditional intersection to a superstreet (for instance) takes a lot of manual coding nullifying some of the speed benefits of the software (external spreadsheets can provide help for this task.)

For roundabouts, we have typically only allowed the use of SIDRA (Australia). We did not like the methodology used by RODEL or ARCADY (British) as we have always been on the "gap acceptance" methodology side. Previous versions of Synchro had a roundabout feature, but the methodology was not acceptable to us. Their latest version (10) uses the HCM 6th Edition methodology, and is promising. However, HCS+ from McTrans does the same thing, and is a lot less expensive (and they provide an agency license.) We are currently evaluating which software package(s) to accept for roundabouts.

Regarding licensing, we are disappointed with the limitations of Synchro. It is by user, so even if multiple users use a single computer, each individual must have a license. (This is frustrating when we have temporary employees, or if a computer goes down.) With a lot of users in the Department, the license management gets to be a bit of a chore. Their latest upgrades, versions 9 and 10, are disappointing. Version 9 appeared to only fix bugs from version 8, and version 10

only appears to update the HCM methodology from 2010 to 6th edition (this is significant for roundabout analysis, less so for signalized intersections.) The expense of maintaining the number of licenses keeps growing. We are currently at version 9, and evaluating if we should upgrade to 10.

TransModeler provides either and individual license (hardware key) or a server license. The server license makes it easier for us. The hardware key is not as portable as we had hoped (Caliper frowns on it moving frequently between users) but isn't as much of a problem as Synchro's licensing. We had a server license for SIDRA, however they discontinued it. They do offer an agency license, and we are investigating it as part of an upgrade to their latest version.

While not for signal analysis, we have also commissioned an upgrade to FREVAL (included with the HCM.) This was developed at NC State, and provides a quick evaluation of freeway operation. Our modifications include a Work Zone component, and a planning front end that simplifies data entry (the original spreadsheet was tedious.)

Analysis for Signal System Timing:
Contact:
Mohamed Deen
Central Office System Timing Group
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The NCDOT Signal System Timing teams (central and field) and consulting firms contracted by the department, mainly use Synchro/SimTraffic (version 9) and Tru-Traffic (version10) software in the execution of all system timing projects.

Synchro is mainly used as a guide in the design of system timing plans, to analyze traffic performance of study corridors and for analyzing existing systems to advise on potential traffic impacts associated with land use development within their areas of influence. We also find the Synchro software to be very good for documenting and reporting the results of our system timing and retiming efforts.

Tru-Traffic is mainly used for adjusting (or fine-tuning) new and existing timing plans during the field implementation phases of projects. And in conjunction with a connected GPS receiver, we use it to collect trip logs before and after implementing a set of new timing plans. From these logs travel time reports are generated for predetermined MOEs (Delay, Travel Time, Stops, Speed, etc), which are then used for evaluating the timing plans.

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Ohio

We have pretty much use the same software as SDDOT. HCS7, Synchro 8 and TRU-Traffic 10. Will be upgrading to Synchro 10 soon.
Our Engineering Department recently purchased Transmodeler SE to eventually replace Vissim for analysis. I have heard its much easier to use than Vissim, however I am not familiar with it. It does have some ability for signal analysis.
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Administrator
ODOT Office of Traffic Operations
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Oregon

Trafficware's Synchro/SimTraffic – widely used for capacity analysis (intersection delay, LOS) and queueing. Synchro has traditionally been used to develop signal timing plans, particularly to set coordination parameters such as cycle length, offset, and split. Synchro provides consistency for predictive analysis. However, Synchro uses assumptions that can differ from actual conditions, and it is time consuming to collect data and validate a model. Especially when traffic flow varies widely throughout the day, it becomes cumbersome to developing several models representing various time periods. For signal timing and optimization, Synchro has traditionally provided a good starting point that has necessitated field verification and adjustments.

PTV's VISSIM – used for operational analysis of more complex systems, particularly in urban areas with features that are not easily modeled in Synchro (i.e. ramp meters, transit corridors, etc). VISSIM is not used for signal optimization and timing – just for analysis. Typically VISSIM is used by a consultant as part of a project and reviewed by ODOT. VISSIM is better at modeling complex scenarios than Synchro/SimTraffic, but it's generally too complicated for widespread use.

Data from Traffic signal controller firmware and central software – while not currently used for capacity analysis, controller-based data is commonly used for traffic signal timing optimization and development/refinement of timing plans. Currently, most ODOT controllers are model 2070s with Voyage software networked through TransSuite. Voyage and TransSuite provide data including average green times, phase termination type, pedestrian actuations, split logger, etc. This data measures actual performance, which is inherently more accurate than modeled data. Furthermore, ODOT is beginning to migrate to the ATC controller using MaxTime and MaxView, which collects high-resolution data and allows for additional controller-based performance metrics (compared to Voyage/TransSuite).

Automated Traffic Signal Performance Metrics – ODOT has installed the automated signal performance measures web application developed by Utah DOT. Seven ATC controllers are currently connected to the system. This software is used similarly to the controller-based data described above but provides a greater number of analytical and visual tools without the need for post-processing. ODOT is planning to use ATSPMs as part of a shift toward a more performance-based management of our signal systems.
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Region 2 Signal Operations Engineer
Oregon Department of Transportation
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Ph: (503) 986-3576 (effective 9/1)
Julie.L.Kentosh@odot.state.or.us

Pennsylvania

- Indicate what software tool(s) your state currently uses for traffic signal capacity analysis, optimization, and timing plans – **Attached is Publication 46, Chapter 12 which identifies the tools (Currently HSC, Synchro, TruTraffic, and PTV Vistro are the main tools) and a process to utilize other software tools.**

- Provide a qualitative assessment (pros/cons) for each software package you currently or have recently used – **Attached Publication 46, Chapter 10 provides the necessary data and pros/cons of each analysis. I believe this is what you are looking for. We had a consultant that was on the TRB Committee for HCM help develop this effort.**

Daniel P. Farley | Chief, Traffic Operations Deployment and Maintenance Section
Bureau of Maintenance and Operations |Transportation Operations Division
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dfarley@pa.gov

South Dakota

Indicate what software tool(s) your state currently uses for traffic signal capacity analysis, optimization, and timing plans HCS7 (from McTrans) is the only software I use for capacity analysis. I use Synchro/SimTraffic (from Trafficware), HCS7, and Tru-Traffic 9.0 for signal timing & optimization.

Provide a qualitative assessment (pros/cons) for each software package you currently or have recently used HCS7 is the only software that accurately replicates the methodologies of the HCM, but the software is very weak on signal timing and offset optimization. McTrans has provided excellent support when needed. Synchro/SimTraffic is always being improved, has a very wide user base, and is very easy to use. Trafficware has provided good support when needed and is open to user feedback on improvements. The biggest downsides are that the LOS algorithms Trafficware uses do not fully replicate the HCM, and the offset optimization algorithms can't be manipulated to ignore side road delay. Tru-Traffic is a decent offset optimizing software, but not that elegant in appearance or operation. I usually end up using all three software packages whenever I am working with signal networks. For isolated signals I use Synchro for timing and HCS7 for performance reporting.

Lead SDDOT Traffic Design Engineer.
John Less
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Utah

We currently use Synchro/SimTraffic mostly for data cataloging and for the time/space diagram capabilities. We use VISSIM for complex intersections such as DDIs or CFIs. Our bread and butter signal optimization system is the use of our signal performance metrics available to the public at http://udottraffic.utah.gov/atSPM. There are several metrics that have been setup for signal optimization and troubleshooting our traffic signal system including detection functionality, split failures and offset optimization.

Eric Rasband
Utah Department of Transportation
Traffic Operations Analysis and Reporting Manager
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Vermont

VTrans Primarily uses SYNCHRO for our optimization and timing plans.

Pros: We have years of pre-existing models
Easy to use and train new hires on
Licensing is relatively cost effective

Cons: Does not model arterial friction very well
Due to delay equation, Cycle Lengths tend to be arbitrary low.
I can go on, but I assume you folks are in the same boat…

VISSIM.

We haven't really used it too much yet for signal modeling and we don't use it for timing (plan development or optimization).

Pros: Has Econolite ASC-3 Virtual Controller built in.
Great visualizations, presentations.

Cons: Expensive.
PTV is difficult to work with.
Archaic licensing system, using USB dongles.

We do have SIDRA, which has a signal modeling component, but we use it strictly for roundabouts.

Derek Lyman, PE | Traffic Signal Operations Engineer
Vermont Agency of Transportation
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Virginia

Signal Timings						
Tool	Under saturated Conditions			Oversaturated Conditions		
	Point	Segment & Facility	Corridor, Area & System	Point	Segment & Facility	Corridor, Area & System
Synchro 9	Yes	Yes	Yes	No	No	No
SimTraffic 9	Yes	Yes	Yes	Yes	Yes	Yes
HCS7	Yes	Yes	No	No	No	No
CORSIM 6	Yes	Yes	Yes	Yes	Yes	Yes
VISSIM 9	Yes	Yes	Yes	Yes	Yes	Yes
Signal Optimizations						
Tool	Under saturated Conditions			Oversaturated Conditions		
	Point	Segment & Facility	Corridor, Area, System	Point	Segment & Facility	Corridor, Area & System
Synchro 9	Yes	Yes	Yes	Yes	Yes	Yes
SimTraffic 9	Yes	Yes	Yes	Yes	Yes	Yes
HCS 7	No	No	No	No	No	No
CORSIM 6	No	No	No	No	No	No
VISSIM 9	No	No	No	No	No	No
Tru-Traffic	Mainly Offsets are Optimized using this tool					

Notes: VDOT conducts v/c analysis for planning level studies using HCM formula

Qualitative Commentary:

General: Before Analysis – Field observations are always performed to observe the field operating conditions, and the knowledge is used in analysis.

After Analysis – All signal timings, generated by any of the above analysis tools are always fine-tuned in the field before implementation.

Synchro Software: While Synchro software is not recommended for use during oversaturated conditions, but analysts do depend on it for planning level signal timing. E.g. If in future scenarios, conditions become oversaturated and the primary model being used for analysis is VISSIM, then analysts would estimate a signal timing using the Synchro software, then implement in VISSIM, where they would further fine-tune the timings and the offsets.

Tru-Traffic Software: This is used primarily for offset adjustments, however the best way to implement this is in field while performing offset runs.

- The ability/inability to perform analysis in Under saturated/ Oversaturated condition dictates which software should be used.
- VISSIM/ CORSIM is more versatile in being able to accommodate different types of geometry and operating conditions, provides detailed outputs, which can be used for a variety of purposes including public presentations of 3D rendering. However it requires far more data input than Synchro/HCS, and is much more laborious in terms of running the analysis and data input and therefore more time consuming and expensive. The micro simulation software does not have capability to optimize signal timings or offsets.
- Synchro is able to optimize signal timings and offsets and is more friendly and faster for data input. However it is very limited in terms of geometries it can analyze correctly, and it does not do freeways. Also, for novice analysts or those not expert in the field of traffic operations analysis – Synchro may seem to be able to everything, however the results are far from accurate.
- HCS has arterial and freeway components but it is not able to optimize signal timings, phasing or offsets and does not produce meaningful results for oversaturated conditions

- If you have any follow up questions please contact Sanhita Lahiri, Sanhita.Lahiri@VDOT.Virginia.gov

Washington

WSDOT would echo NHDOT and add that all signal analysis for roundabouts (metering) and analysis of roundabouts with signals nearby are accomplished in Sidra.

Doug McClanahan
State Traffic Analysis, Geometrics, and Operations Specalist
Operations Divistion – HQ Traffic
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Wyoming

Here at WYDOT, we use Trafficware's Synchro plus SimTraffic (v10) for most signal timing & optimization. We also use it to evaluate capacity and level of service, even though it doesn't fully follow HCM methodology.

Pros:

- Synchro is very easy to use, and very easy to evaluate multiple scenarios quickly.
- Great graphics display everything entered and can be manipulated to match almost any configuration you can imagine.
- Synchro can give a quick estimation of capacity and level of service and provide a quick "apples to apples" comparison of various scenarios.
- Capacity analysis considers the additional factors of queue interactions and the effects of coordination in its algorithms that HCM does not:
- Support from Trafficware has been good.

Cons:

- Synchro is very easy to use improperly – it is not a simple "optimize the network and implement it on the street" affair as Synchro tends to recommend cycle lengths and splits that are shorter than what many road users feel are adequate, and the offset optimization algorithms sometimes seem to favor side street traffic over mainline traffic (Synchro 10 is supposed to have the ability to weight certain phases over others; but I haven't seen where it makes any difference - probably operator error on my part).
- SimTraffic cannot be manipulated to force certain vehicle movements to occur or not - for example you can't prevent SimTraffic from modeling significant numbers of U-turn type movements off of interchange ramps (or one way couplets) back onto the next ramp or road.
- Synchro's LOS algorithms don't give the same results as the HCM.
- Switching out computers is a pain. Trafficware licenses the software to an individual user on a specific computer, so you have to deactivate the software on the old machine before you can install and reactivate on the new machine.
- You have to clean your drive periodically to remove all of the old history (.hst) files and work in progress (.~yn) files that are created by the software. Some of the files can be quite large at times.

I look forward to seeing what you learn about the various software tools available and being used out there.

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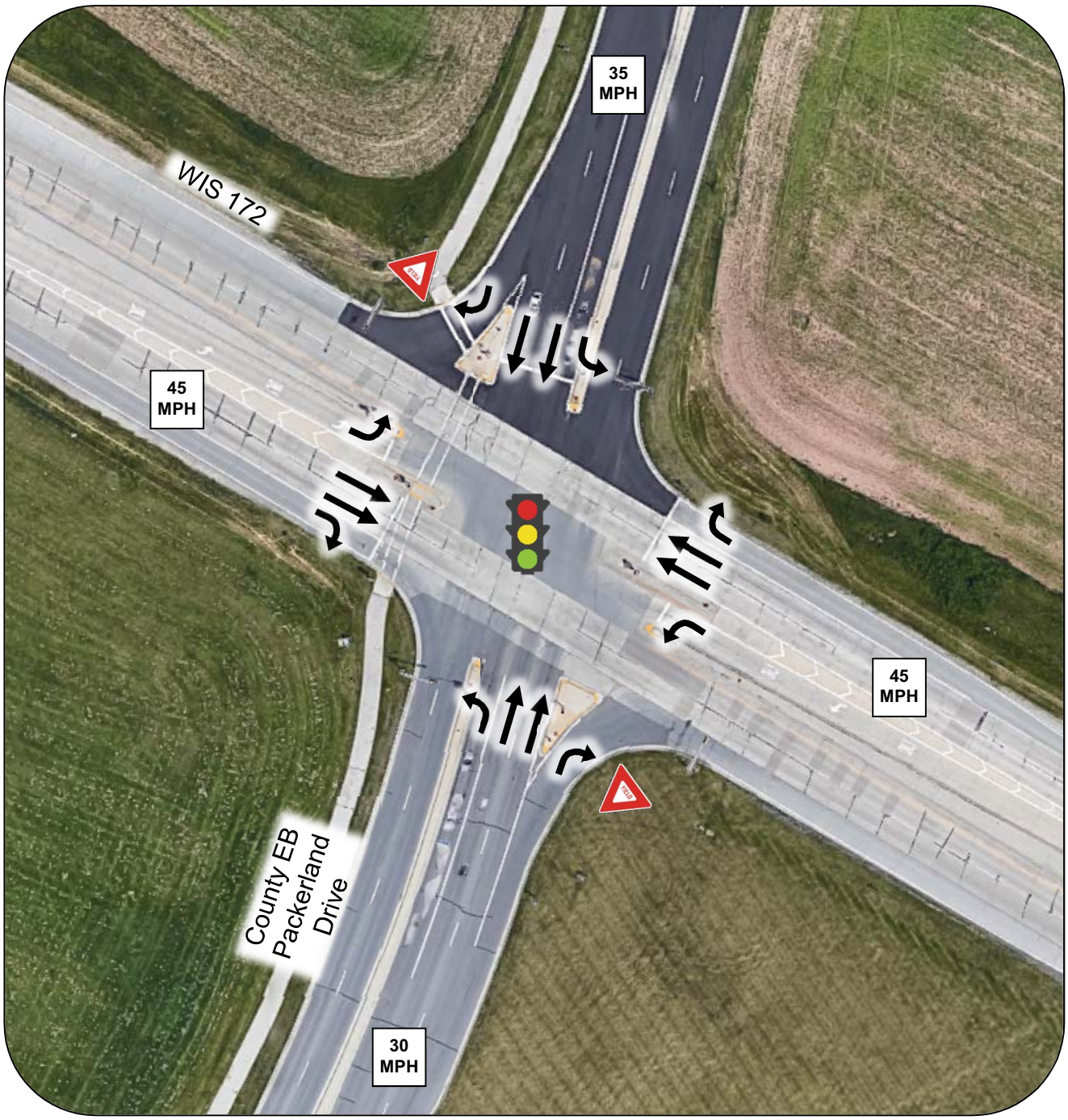
APPENDIX C

Existing Conditions Data

Intersection Geometrics
Isolated Signalized Intersections



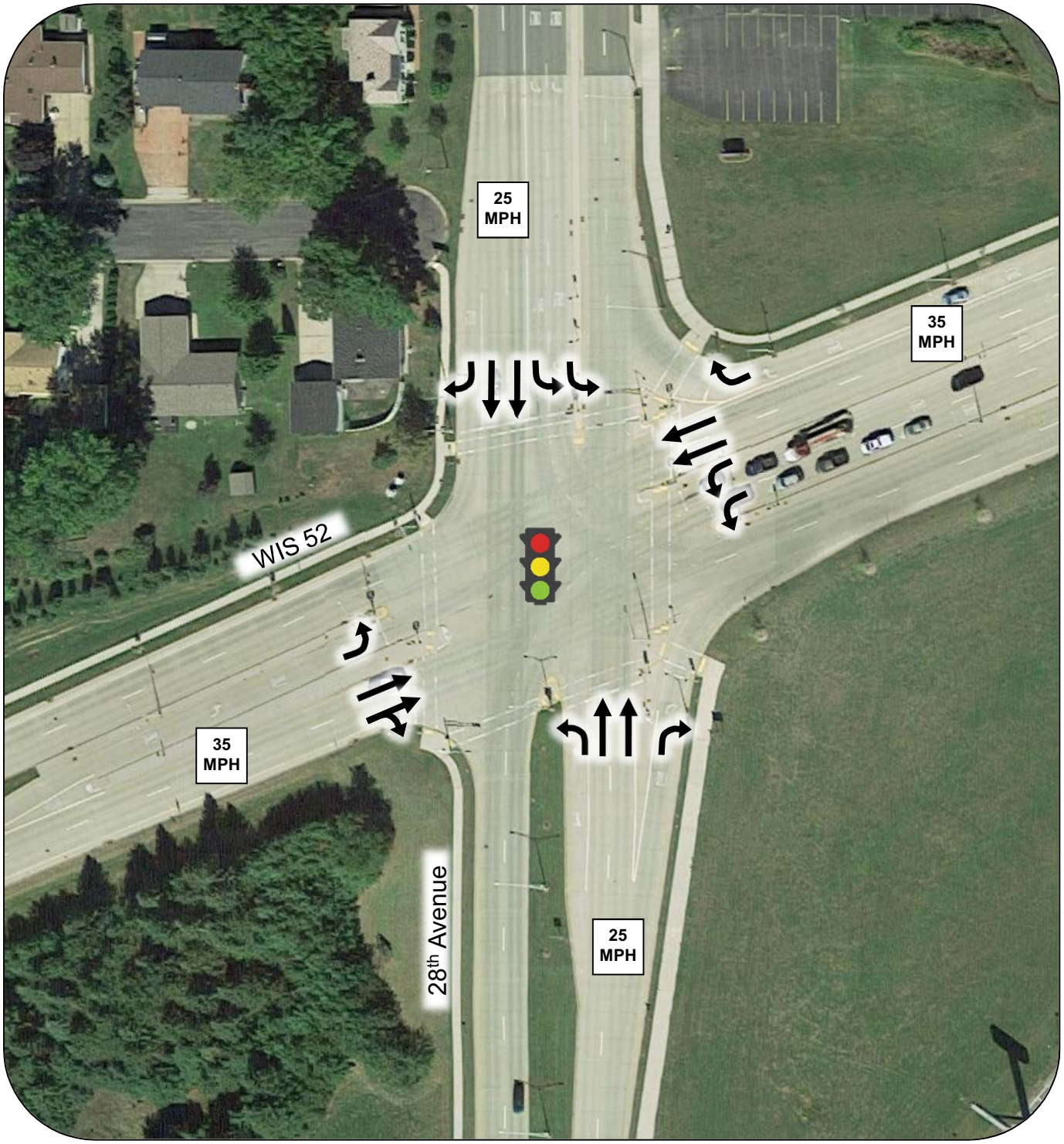
Legend

- STOP = Stop Sign
- = Traffic Signal
- = Yield Sign
- = Existing Geometry
- XX MPH = Posted Speed Limit

WIS 172 & County EB/Packerland Drive
NE Region
Existing Geometry

Exhibit
C-1

raSmith



Legend

- STOP = Stop Sign
- = Traffic Signal
- = Yield Sign
- = Existing Geometry
- XX MPH = Posted Speed Limit

WIS 52 & S 28th Avenue
NC Region
Existing Geometry

Exhibit
C-2

raSmith

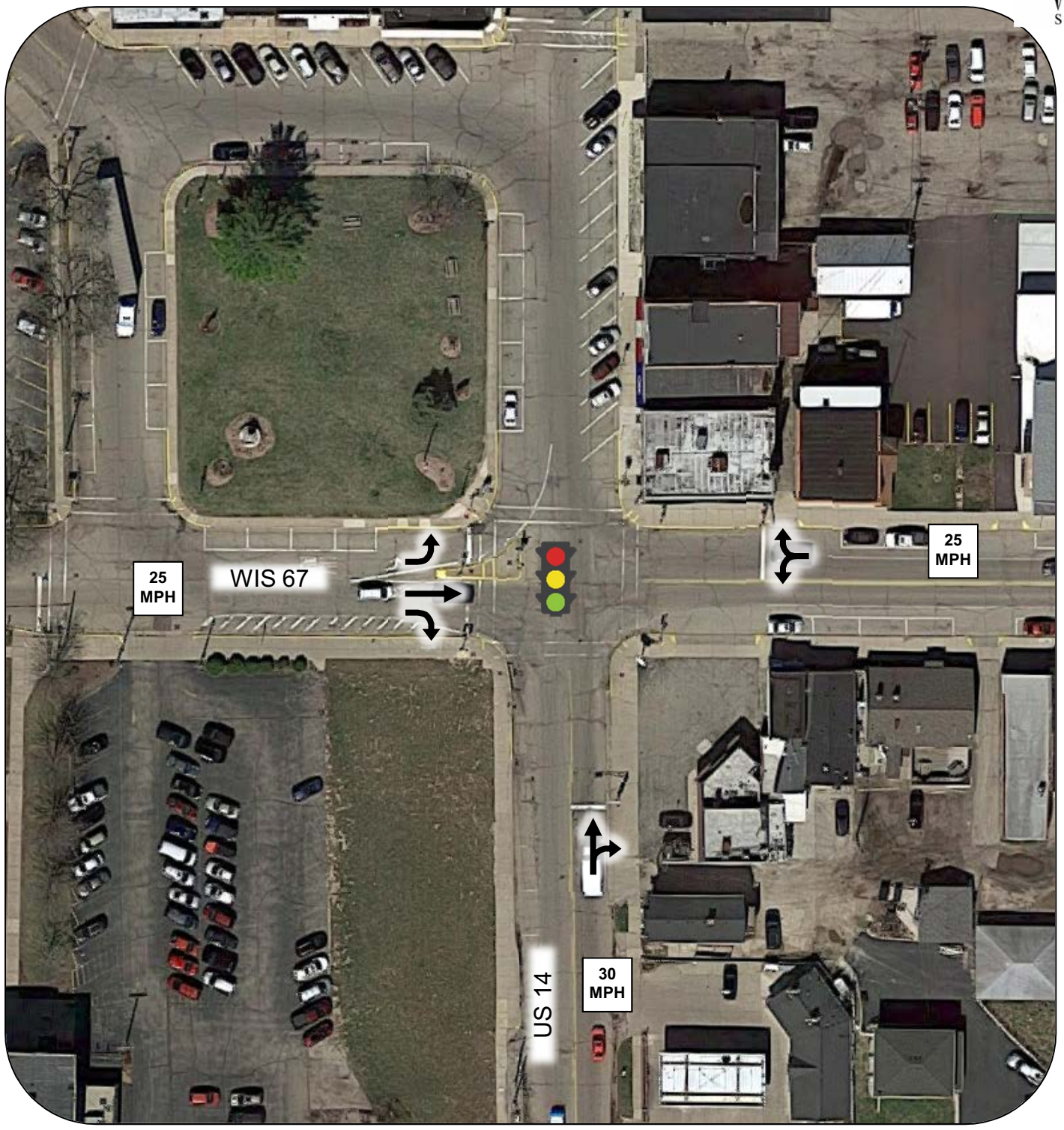
Legend

- STOP = Stop Sign
- = Traffic Signal
- = Yield Sign
- = Existing Geometry
- XX MPH = Posted Speed Limit

WIS 36 & WIS 20/83
SE Region
Existing Geometry

Exhibit
C-3

raSmith



Note: West leg was restriped in November of 2017. Arrows reflect current geometry.

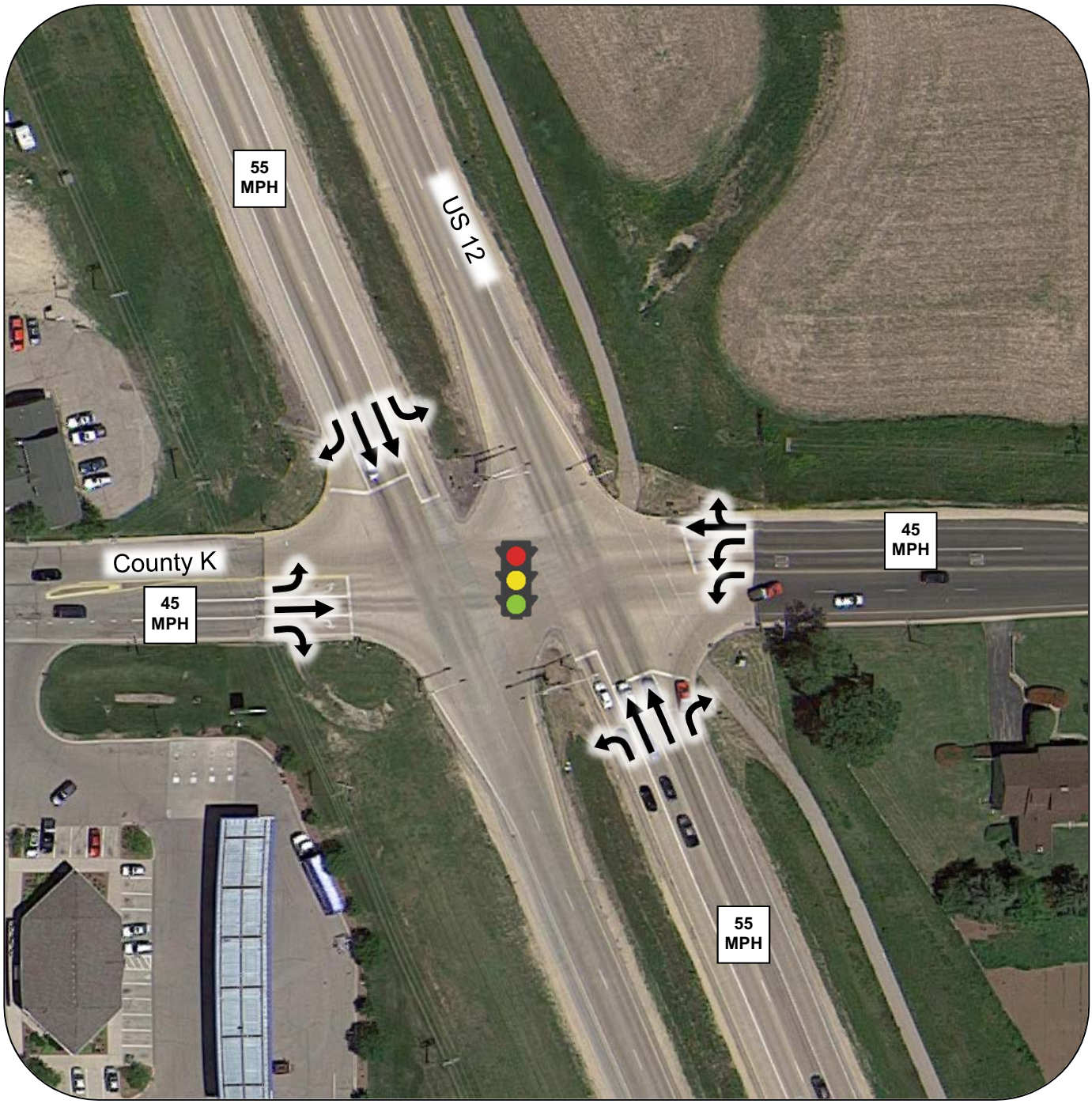
Legend

- STOP = Stop Sign
- = Traffic Signal
- = Yield Sign
- = Existing Geometry
- XX MPH = Posted Speed Limit

WIS 67 & US 14
SE Region
Existing Geometry

Exhibit
C-4

raSmith



Legend

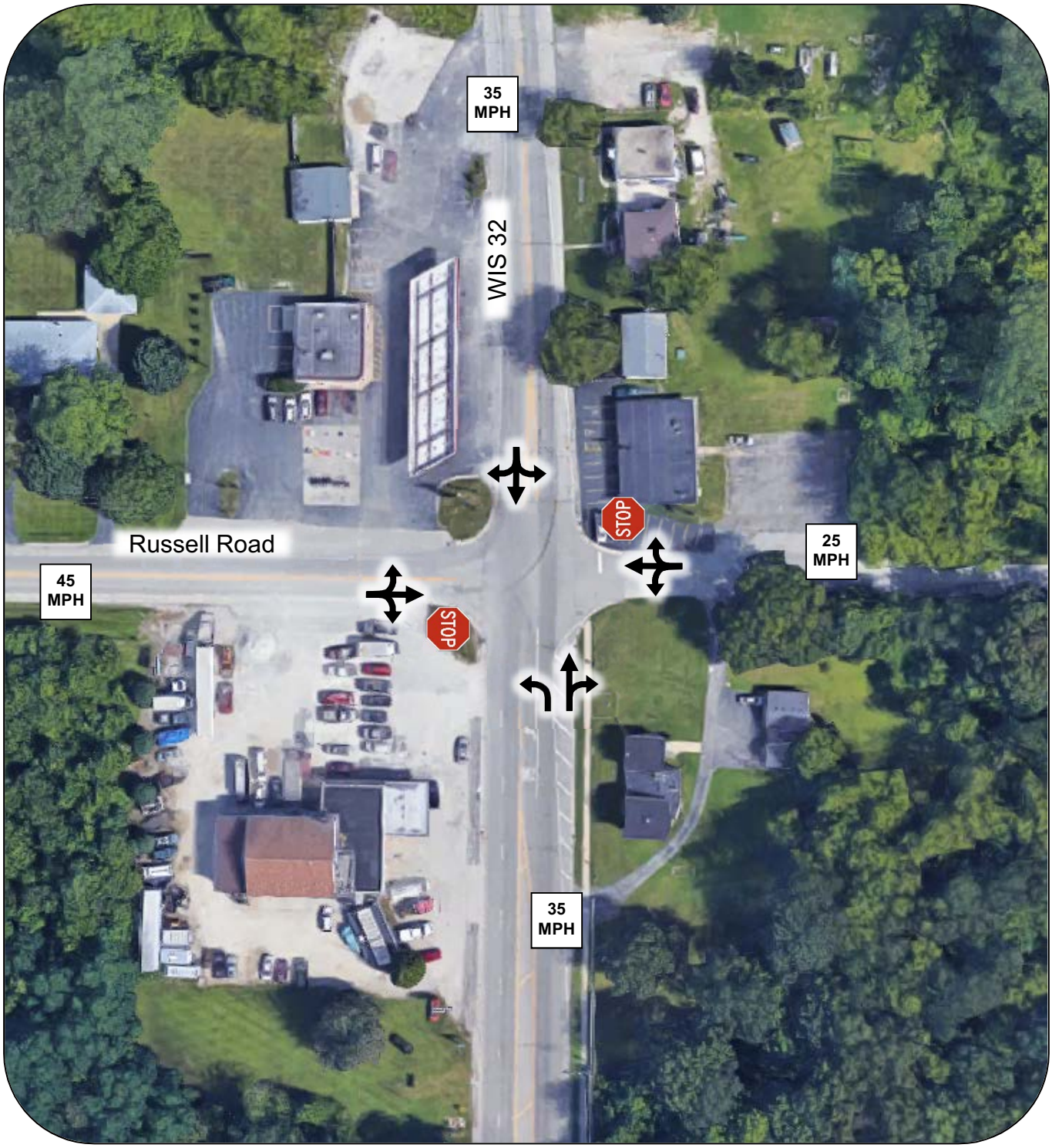
- STOP = Stop Sign
- = Traffic Signal
- = Yield Sign
- = Existing Geometry
- XX MPH = Posted Speed Limit

US 12 & County K
SW Region
Existing Geometry

Exhibit
C-5

raSmith

Intersection Geometrics
Isolated Two-Way Stop Controlled Intersections



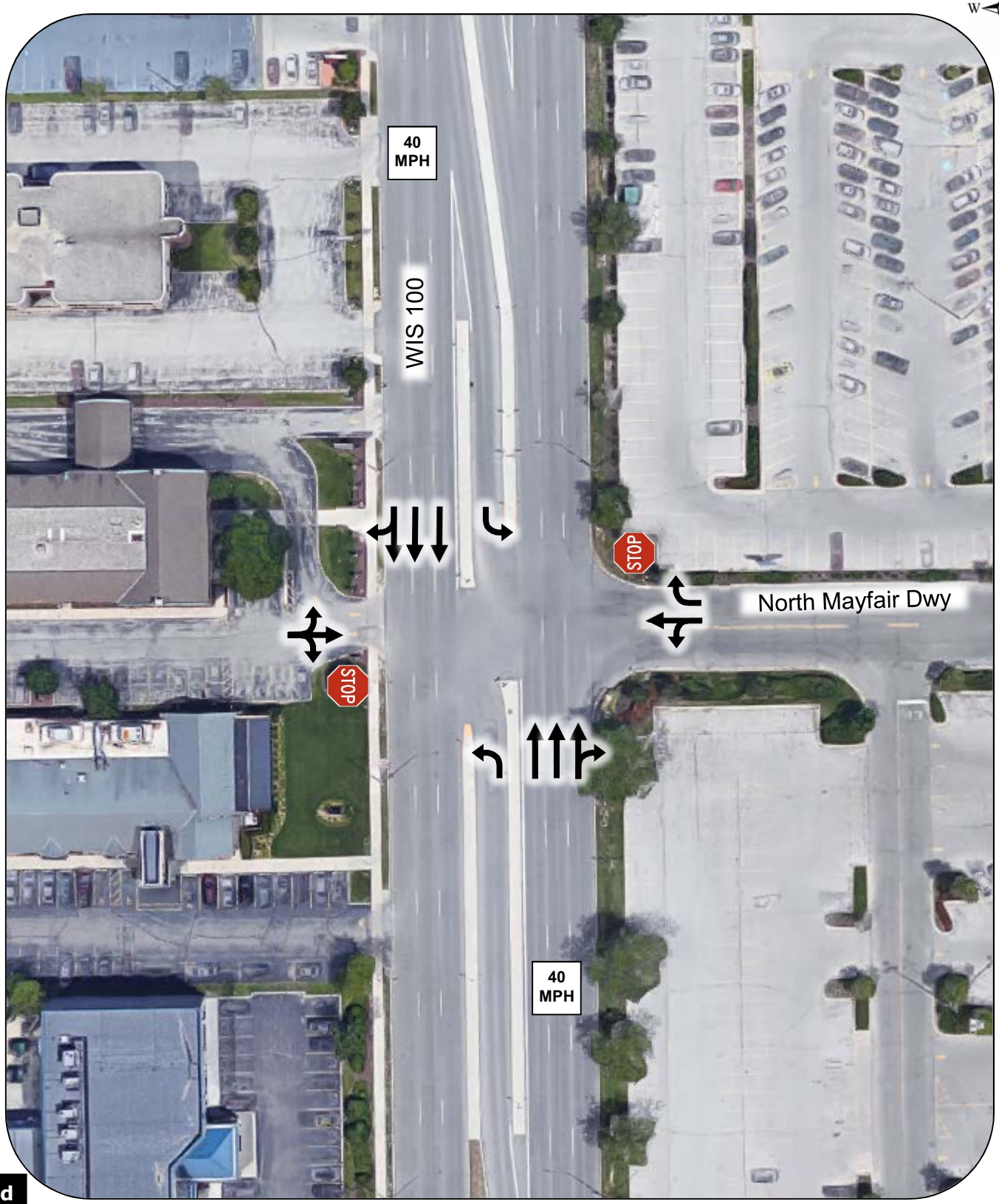
Legend

- STOP = Stop Sign
- = Traffic Signal
- = Yield Sign
- = Existing Geometry
- XX MPH = Posted Speed Limit

WIS 32 & Russell Road
SE Region
Existing Geometry

Exhibit
C-6

raSmith



Legend

STOP = Stop Sign

= Traffic Signal

= Yield Sign

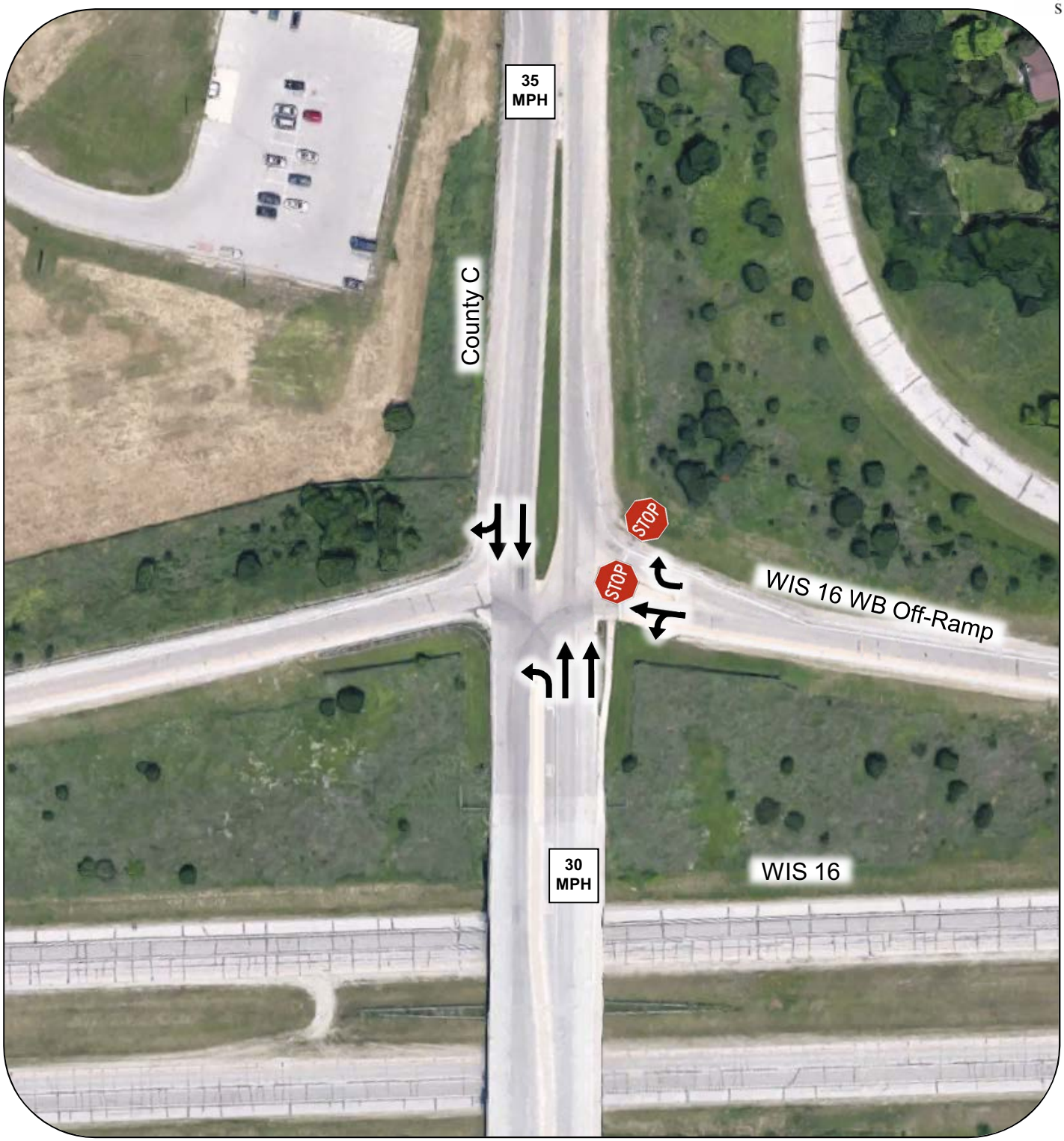
= Existing Geometry

XX MPH = Posted Speed Limit

WIS 100 & North Mayfair Dwy
SE Region
Existing Geometry

Exhibit
C-7

raSmith



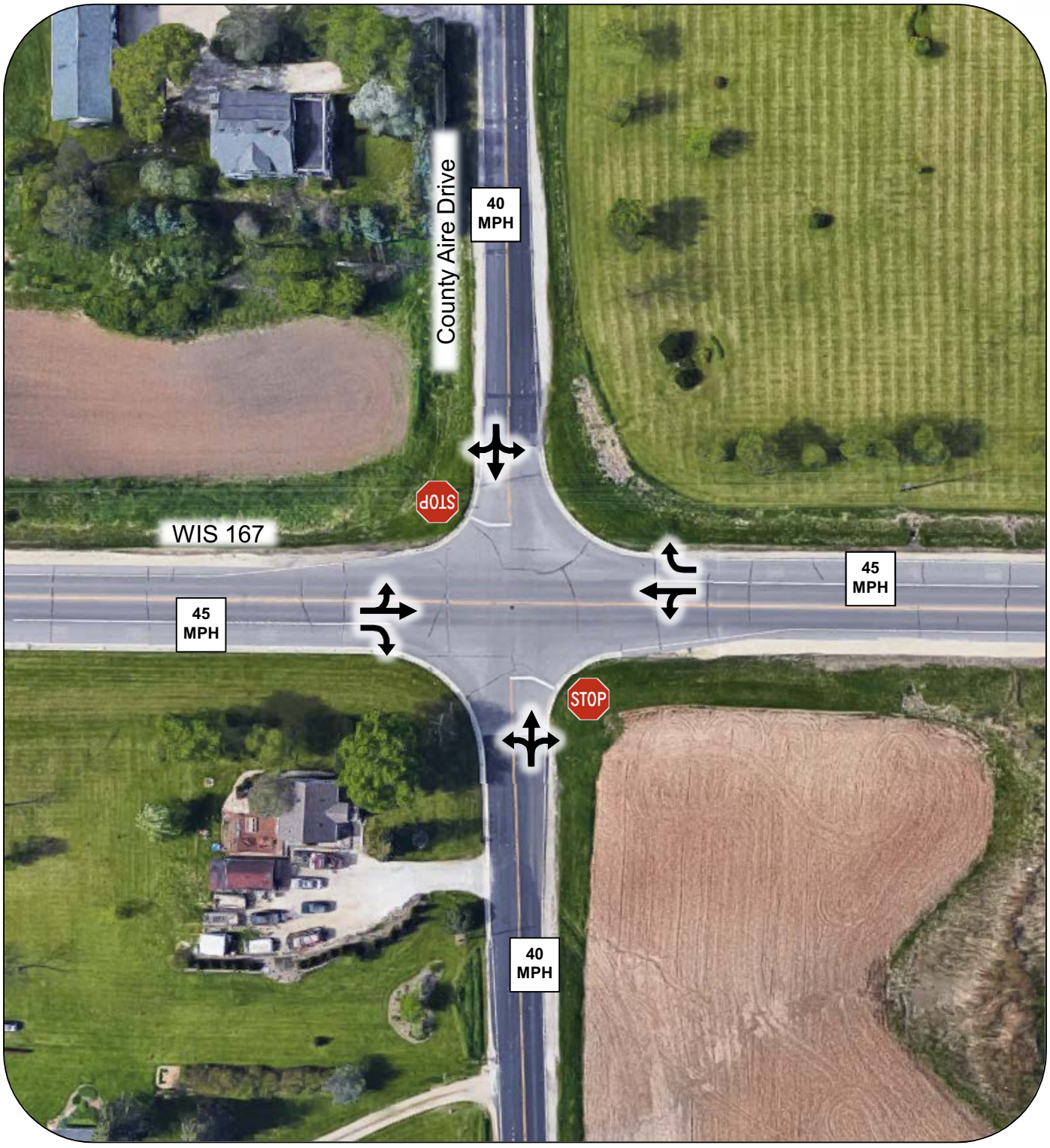
Legend

- STOP = Stop Sign
- = Traffic Signal
- = Yield Sign
- = Existing Geometry
- XX MPH = Posted Speed Limit

WIS 16 WB Ramps & County C
SE Region
Existing Geometry

Exhibit
C-8

raSmith



Legend

- STOP = Stop Sign
- = Traffic Signal
- = Yield Sign
- = Existing Geometry
- XX MPH = Posted Speed Limit

WIS 167 & County Aire Drive
SE Region
Existing Geometry

Exhibit
C-9

raSmith

Legend

STOP = Stop Sign

= Traffic Signal

= Yield Sign

= Existing Geometry

XX MPH = Posted Speed Limit

WIS 67 & County Z
SE Region
Existing Geometry

Exhibit
C-10

raSmith

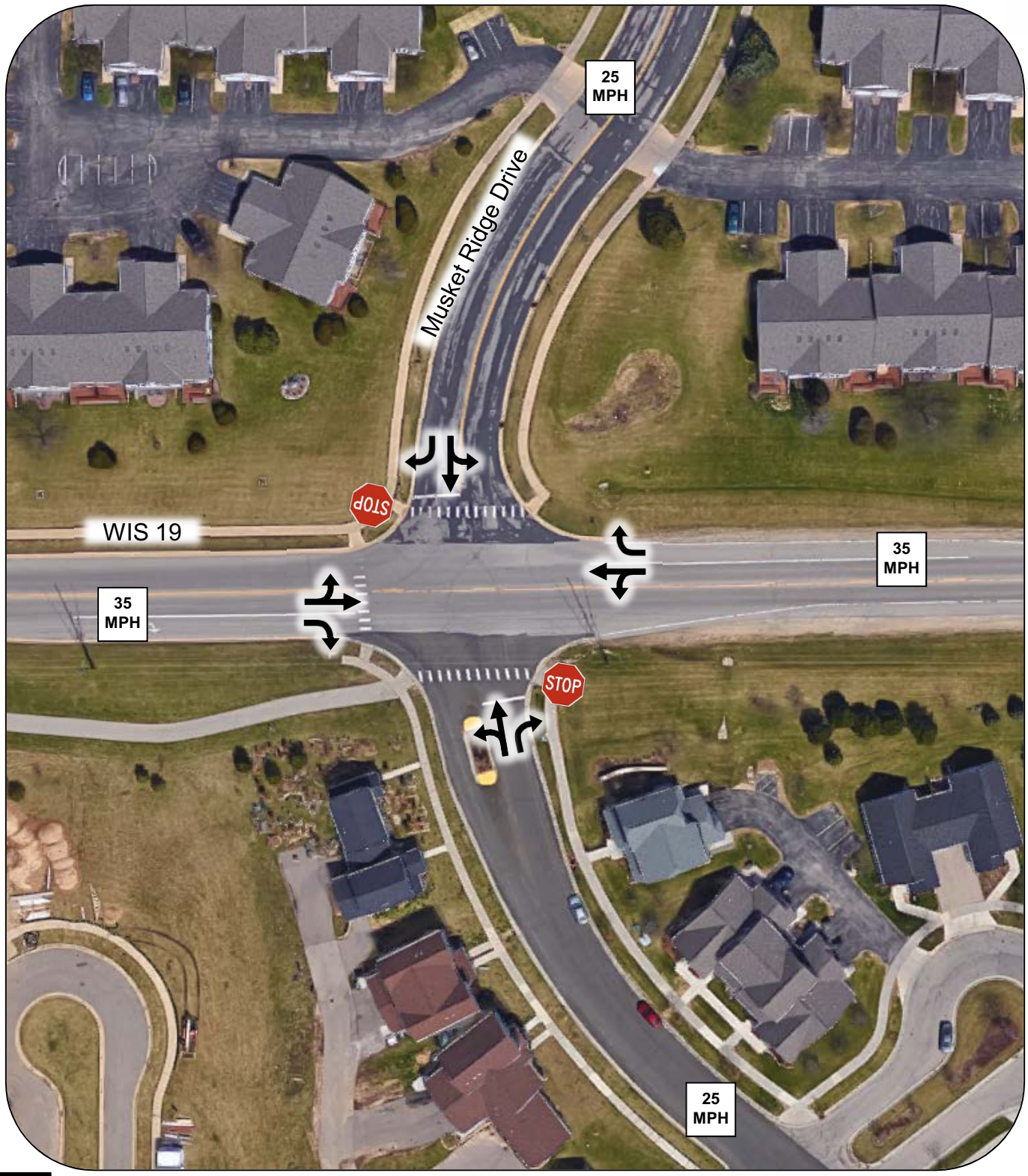
Legend

STOP = Stop Sign	= Existing Geometry
= Traffic Signal	XX MPH = Posted Speed Limit
= Yield Sign	

US 51 & County B/ County AB
SW Region
Existing Geometry

Exhibit
C-11

raSmith



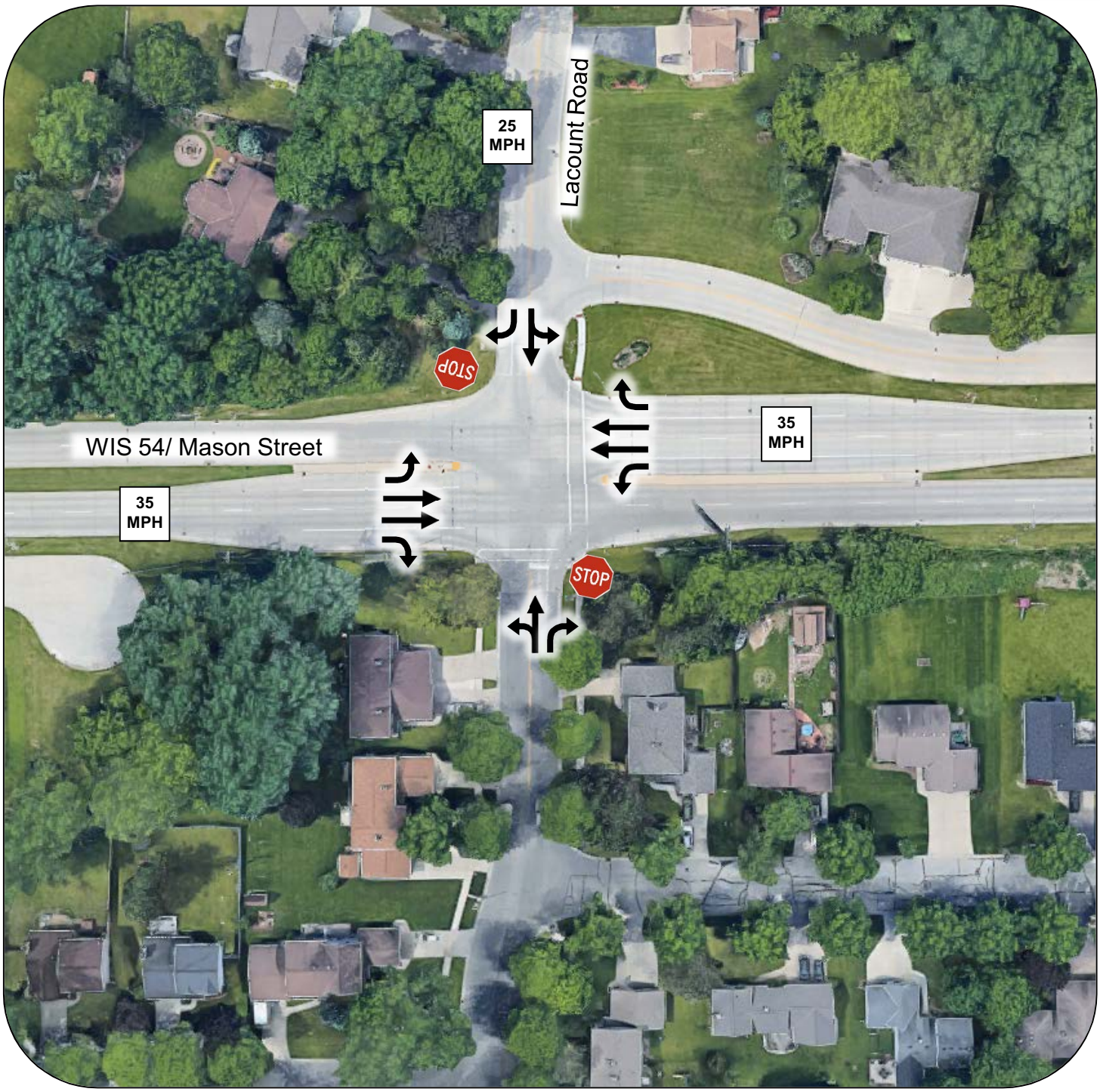
Legend

- STOP = Stop Sign
- = Traffic Signal
- = Yield Sign
- = Existing Geometry
- XX MPH = Posted Speed Limit

WIS 19 & Musket Ridge Drive
SW Region
Existing Geometry

Exhibit
C-12

raSmith



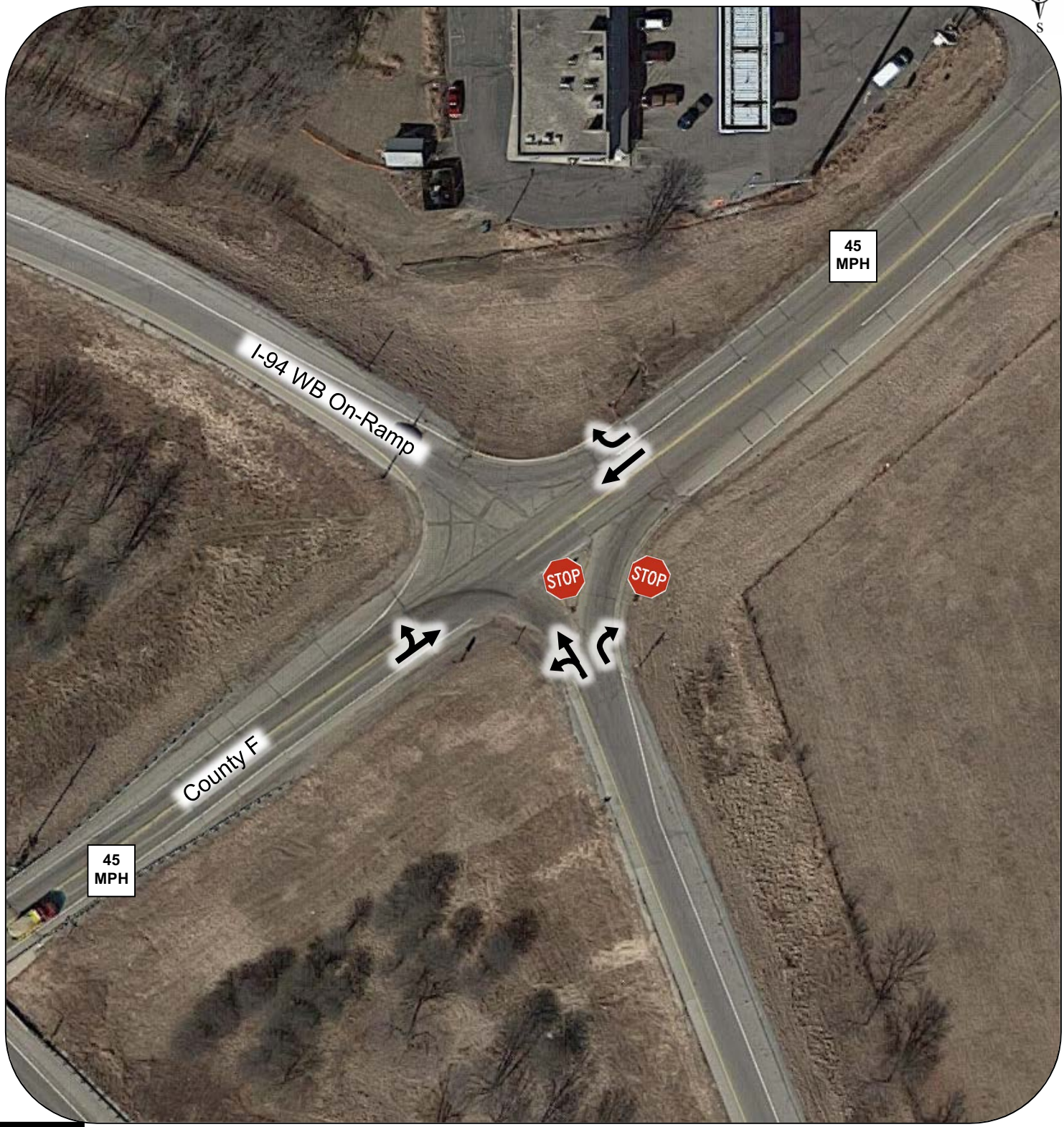
Legend

STOP = Stop Sign	= Existing Geometry
= Traffic Signal	XX MPH = Posted Speed Limit
= Yield Sign	

WIS 54/Mason Street & Lacount Road
NE Region
Existing Geometry

Exhibit
C-13

raSmith



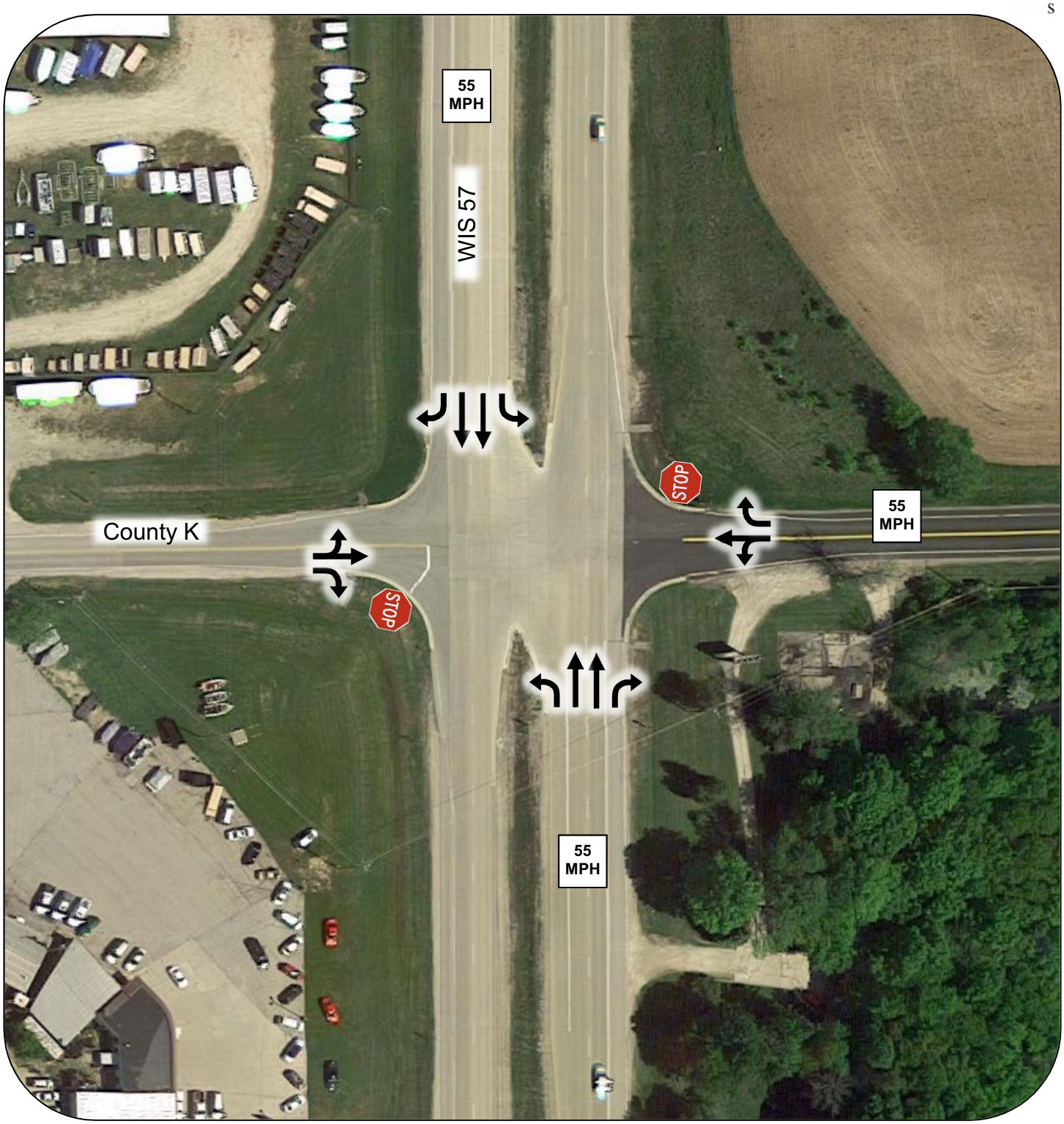
Legend

- STOP = Stop Sign
- = Traffic Signal
- = Yield Sign
- = Existing Geometry
- XX MPH = Posted Speed Limit

I-94 WB Ramps & County F
SW Region
Existing Geometry

Exhibit
C-14

raSmith



Legend

STOP = Stop Sign	= Existing Geometry
= Traffic Signal	XX MPH = Posted Speed Limit
= Yield Sign	

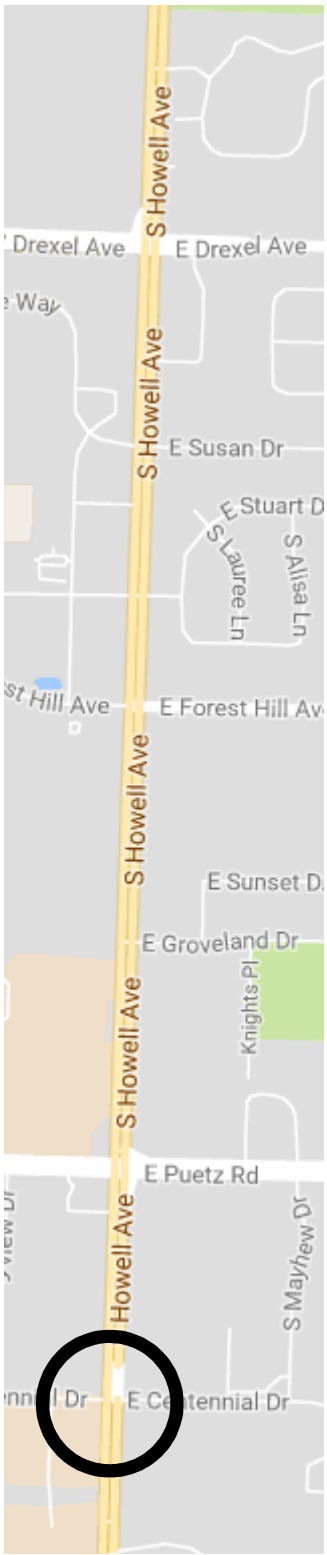
WIS 57 & County K
SE Region
Existing Geometry

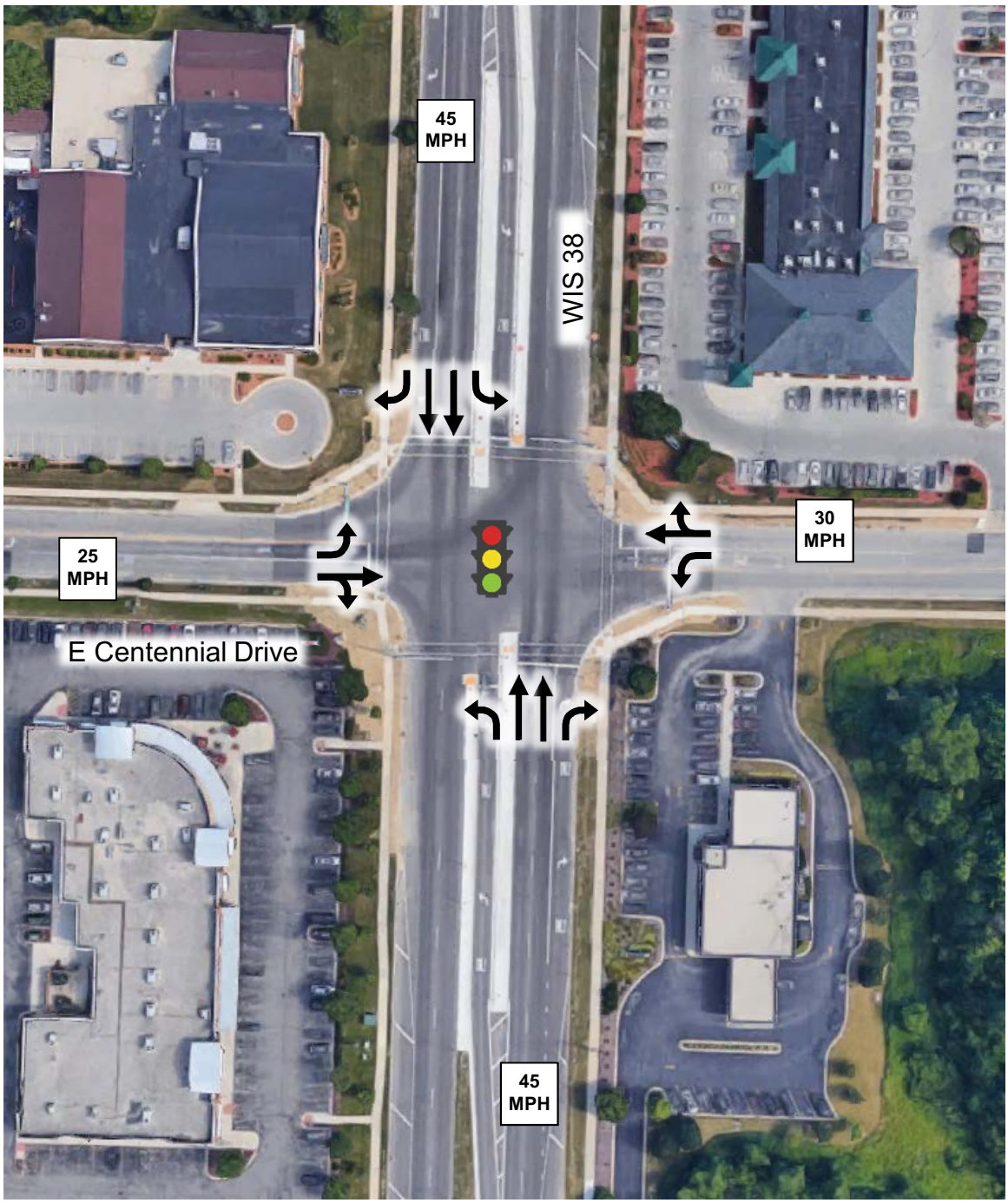
Exhibit
C-15

raSmith

Intersection Geometrics
WIS 38 Signalized Corridor

WIS 38





Legend

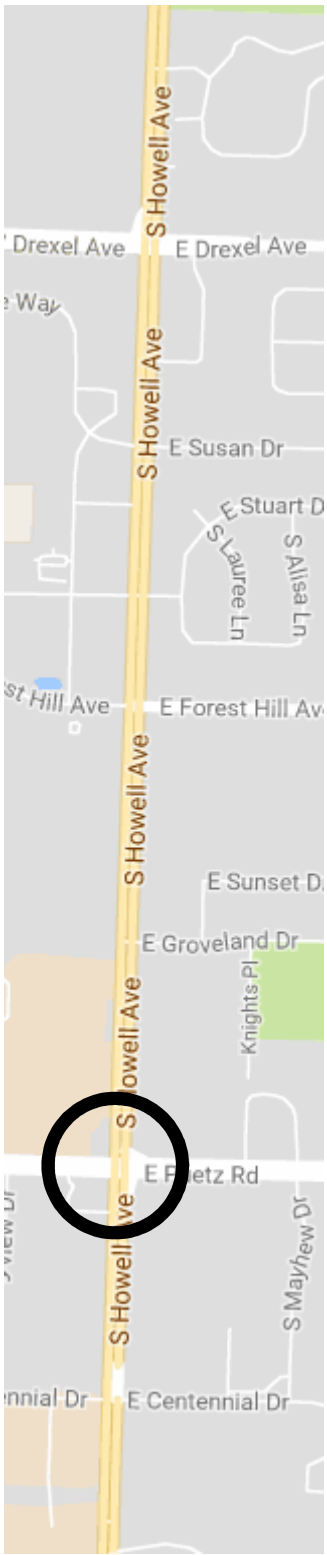
- STOP = Stop Sign
- = Traffic Signal
- = Yield Sign
- = Existing Geometry
- XX MPH = Posted Speed Limit

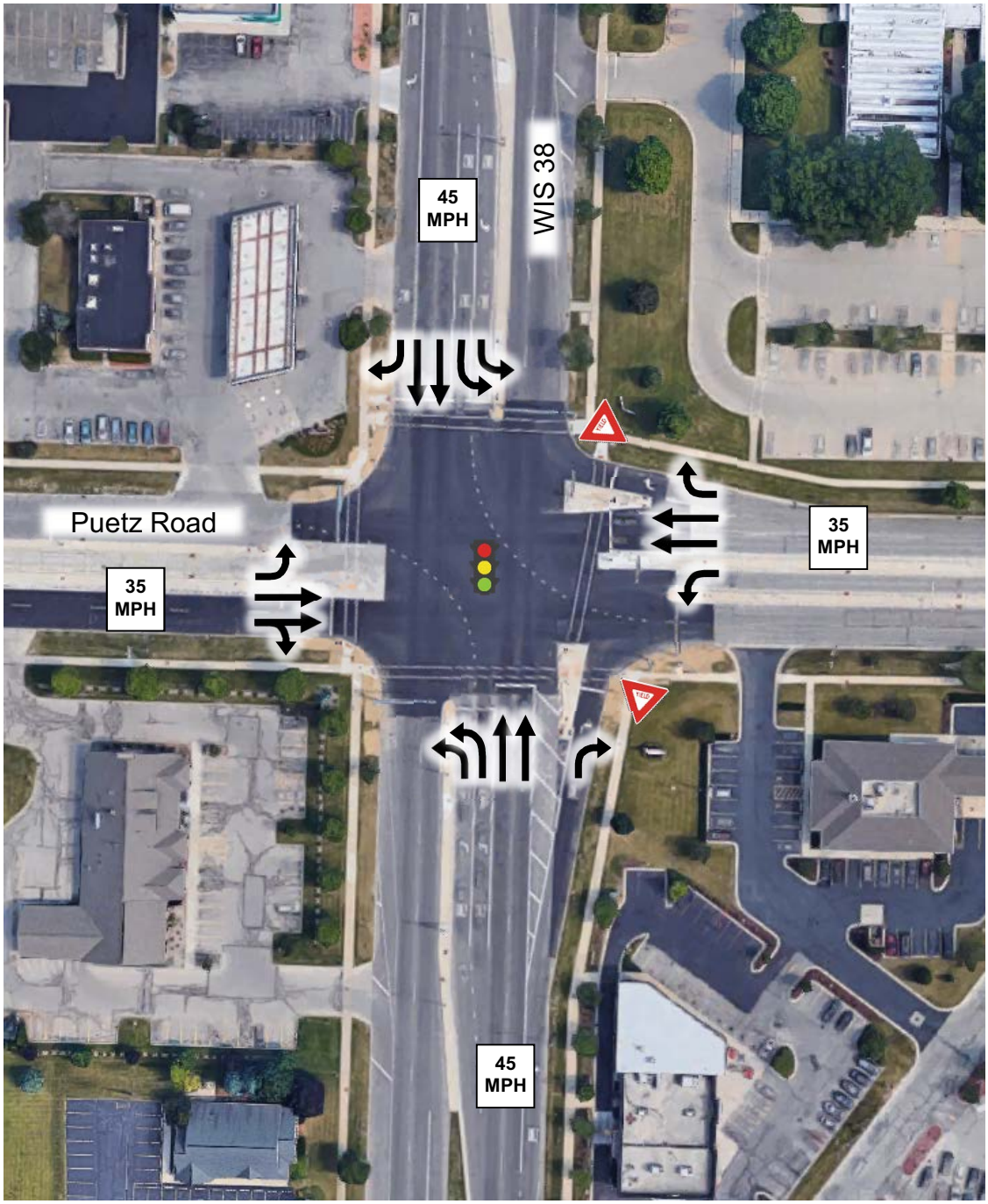
WIS 38 & E Centennial Drive
SE Region
Existing Geometry

Exhibit
C-16

raSmith

WIS 38





Legend

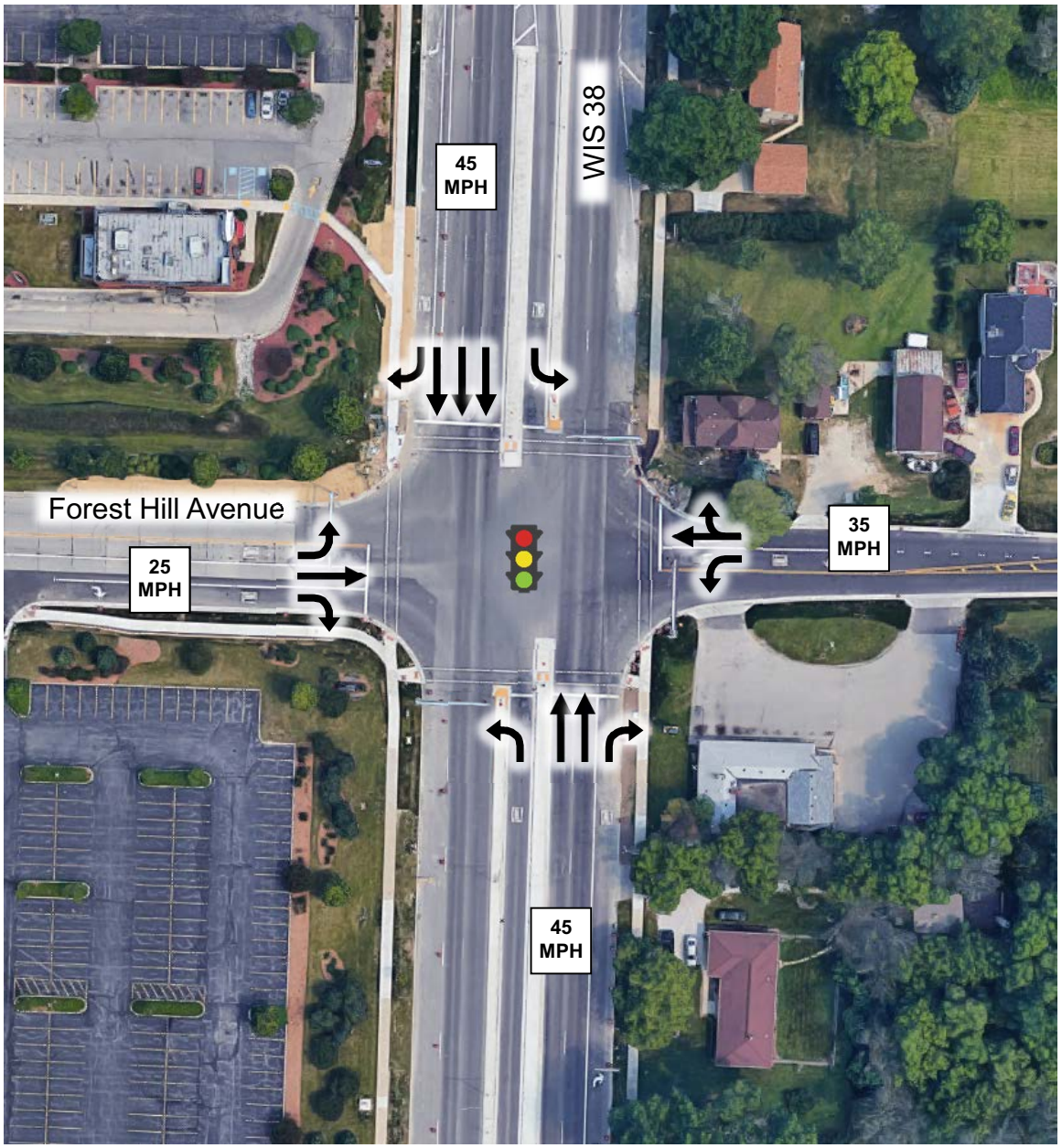
- STOP = Stop Sign
- = Traffic Signal
- = Yield Sign
- = Existing Geometry
- XX MPH = Posted Speed Limit

WIS 38 & Puetz Road
SE Region
Existing Geometry

Exhibit
C-17

raSmith

WIS 38



Legend

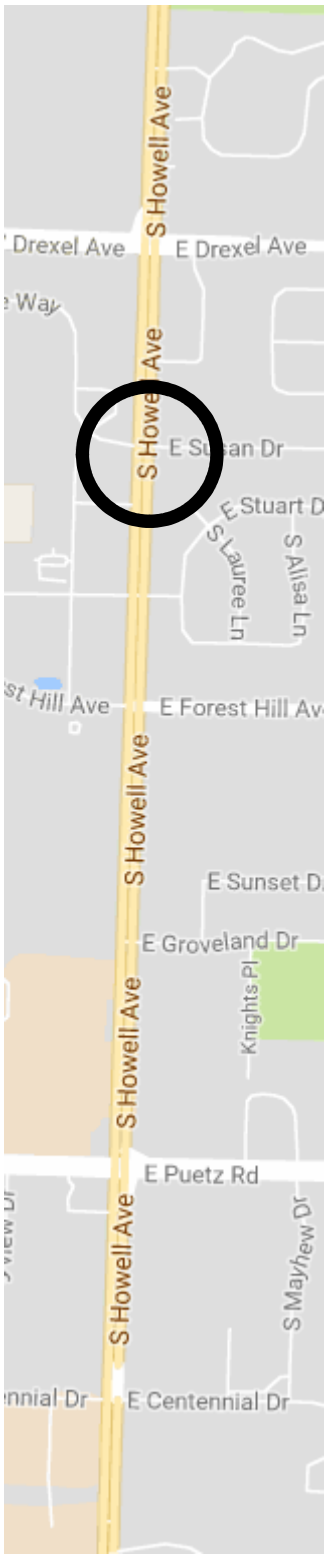
- STOP = Stop Sign
- = Traffic Signal
- = Yield Sign
- = Existing Geometry
- XX MPH = Posted Speed Limit

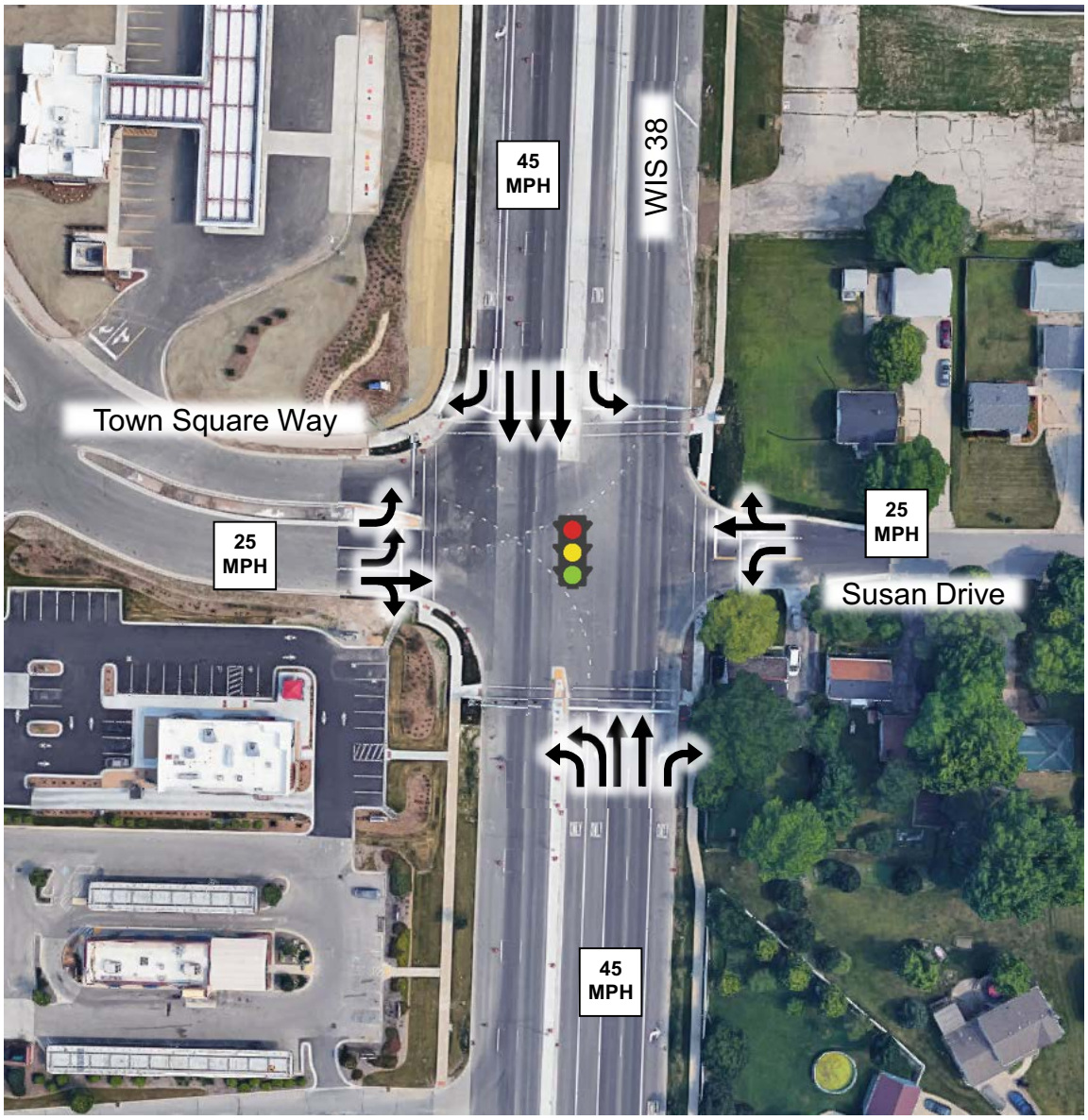
WIS 38 & Forest Hill Avenue
SE Region
Existing Geometry

Exhibit
C-18

raSmith

WIS 38





Legend

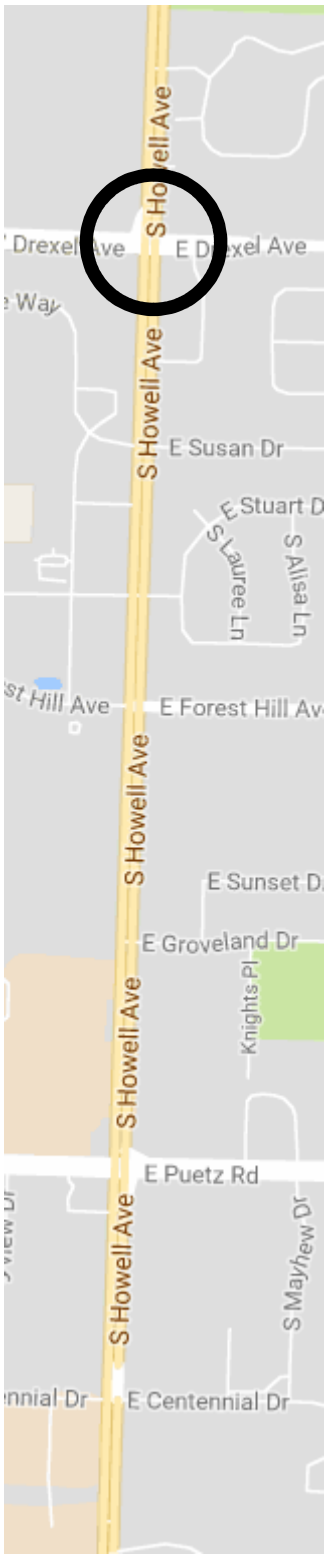
- STOP = Stop Sign
- = Traffic Signal
- = Yield Sign
- = Existing Geometry
- XX MPH = Posted Speed Limit

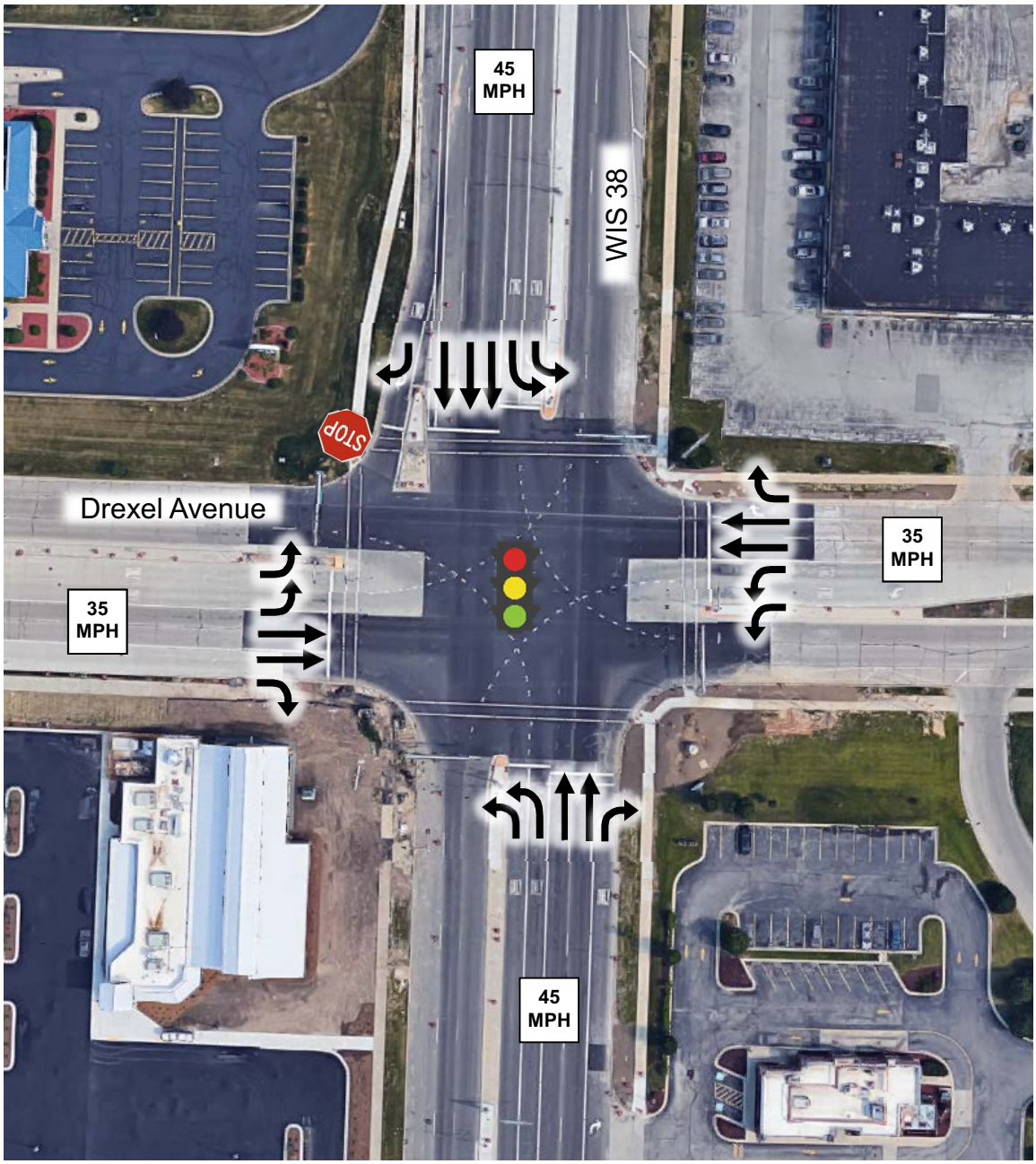
WIS 38 & Town Square Way/Susan Drive
SE Region
Existing Geometry

Exhibit
C-19

raSmith

WIS 38





Legend

- STOP = Stop Sign
- = Traffic Signal
- = Yield Sign
- = Existing Geometry
- XX MPH = Posted Speed Limit

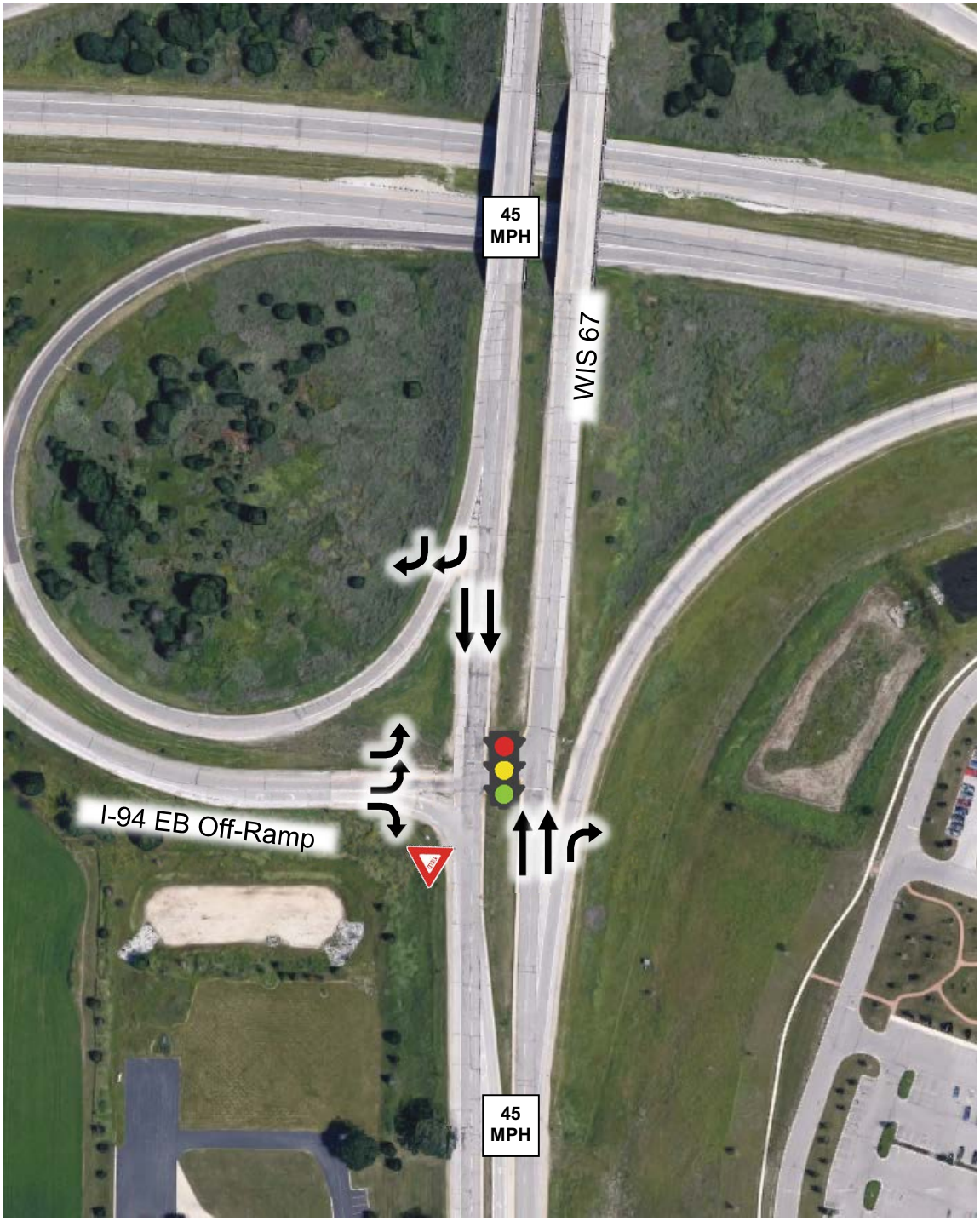
WIS 38 & Drexel Avenue
SE Region
Existing Geometry

Exhibit
C-20

raSmith

Intersection Geometrics
WIS 67 Signalized Corridor

WIS 67



Note: WIS 67 corridor was reconstructed since the most recent aerial photo. Arrows reflect current geometry

Legend

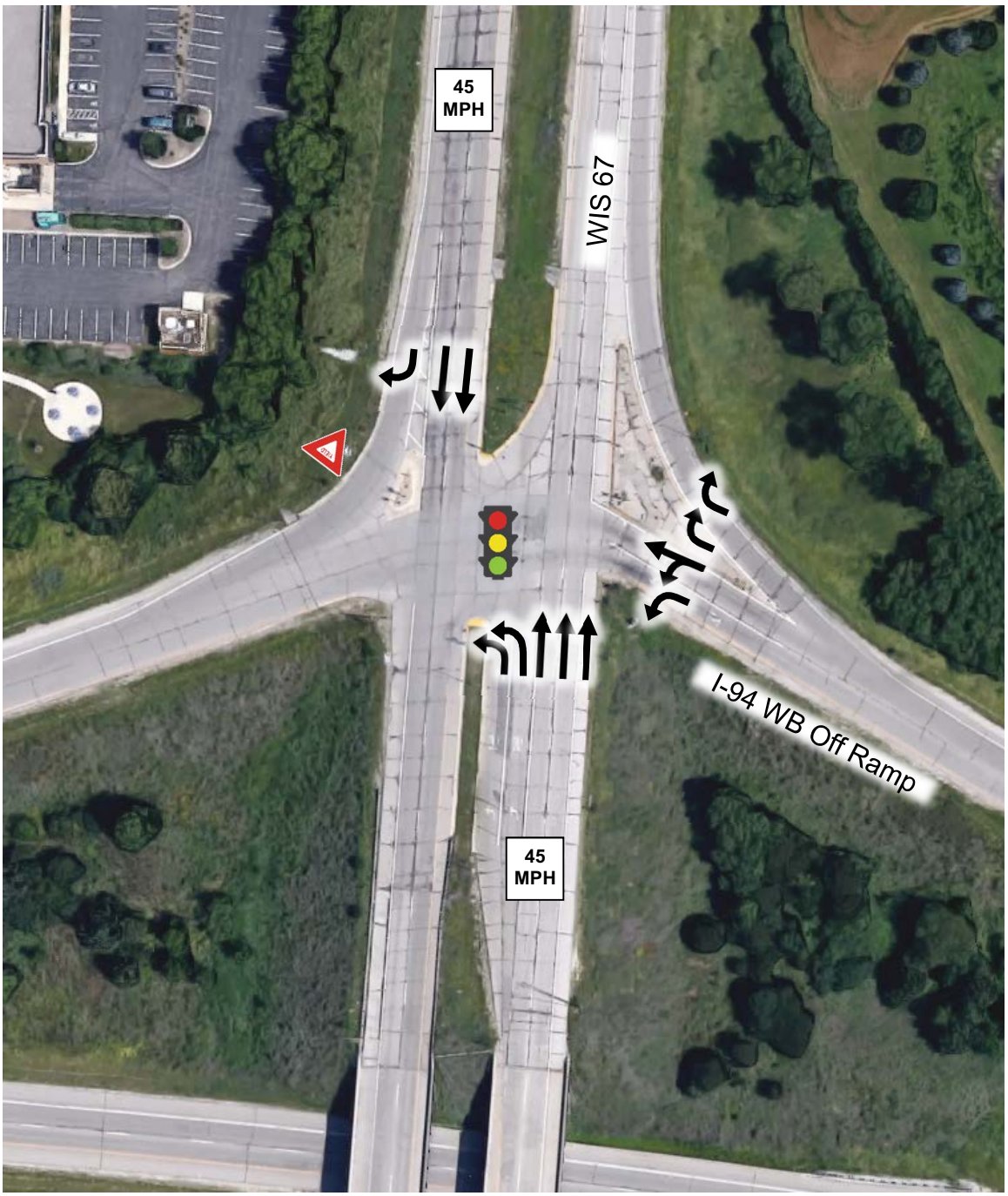
- STOP = Stop Sign
- = Traffic Signal
- = Yield Sign
- = Existing Geometry
- XX MPH = Posted Speed Limit

WIS 67 & I-94 EB Ramps
SE Region
Existing Geometry

Exhibit
C-21

raSmith

WIS 67



Note: WIS 67 corridor was reconstructed since the most recent aerial photo. Arrows reflect current geometry

Legend

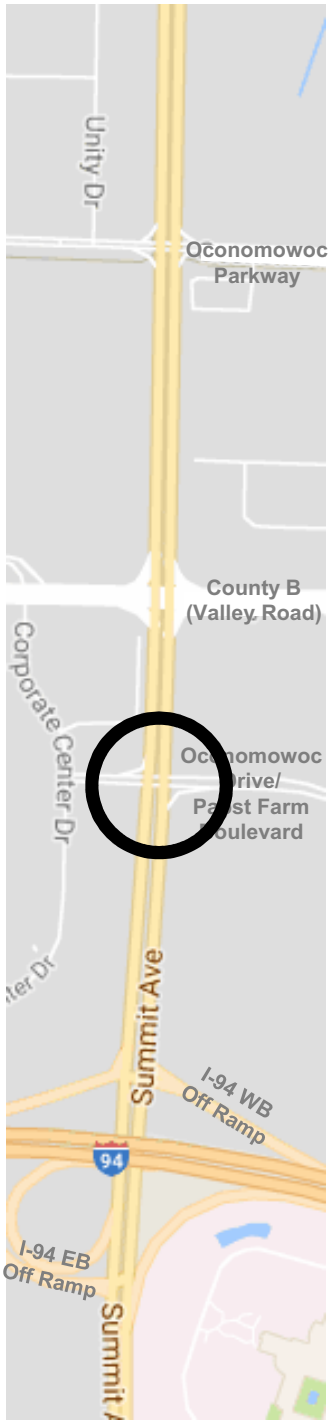
- STOP = Stop Sign
- = Traffic Signal
- = Yield Sign
- = Existing Geometry
- XX MPH = Posted Speed Limit

WIS 67 & I-94 WB Ramps
SE Region
Existing Geometry

Exhibit
C-22

raSmith

WIS 67



Note: WIS 67 corridor was reconstructed since the most recent aerial photo. Arrows reflect current geometry

Legend

- STOP = Stop Sign
- = Traffic Signal
- = Yield Sign
- = Existing Geometry
- XX MPH = Posted Speed Limit

WIS 67 & Oconomowoc Drive/ Pabst Farms Boulevard
SE Region
Existing Geometry

Exhibit
C-23

raSmith

WIS 67

Note: WIS 67 corridor was reconstructed since the most recent aerial photo. Arrows reflect current geometry

Legend

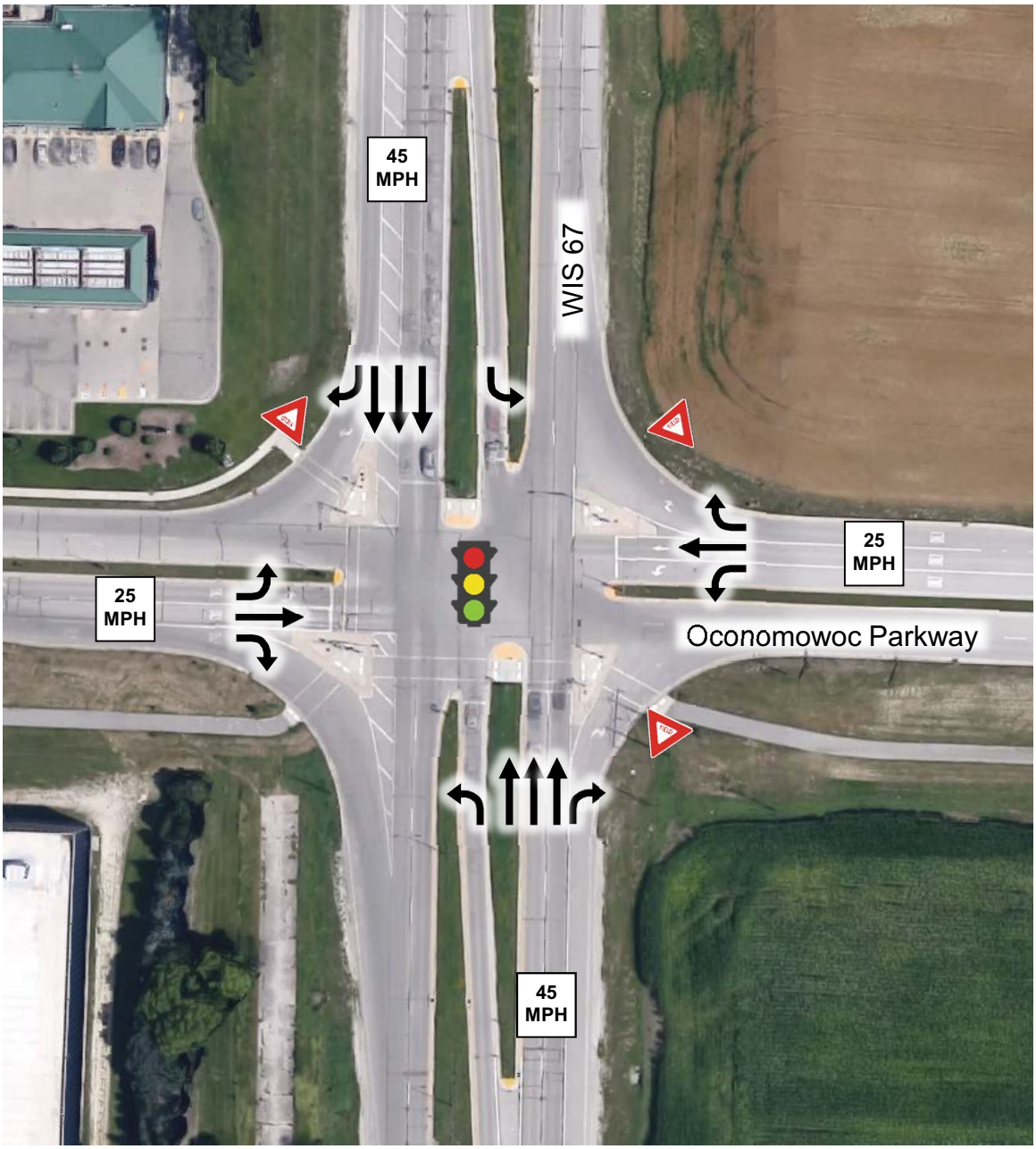
- STOP = Stop Sign
- = Traffic Signal
- = Yield Sign
- = Existing Geometry
- XX MPH = Posted Speed Limit

WIS 67 & County B (Valley Road)
SE Region
Existing Geometry

Exhibit
C-24

raSmith

WIS 67



Note: WIS 67 corridor was reconstructed since the most recent aerial photo. Arrows reflect current geometry

Legend

- STOP = Stop Sign
- = Traffic Signal
- = Yield Sign
- = Existing Geometry
- XX MPH = Posted Speed Limit

WIS 67 & Oconomowoc Parkway
SE Region
Existing Geometry

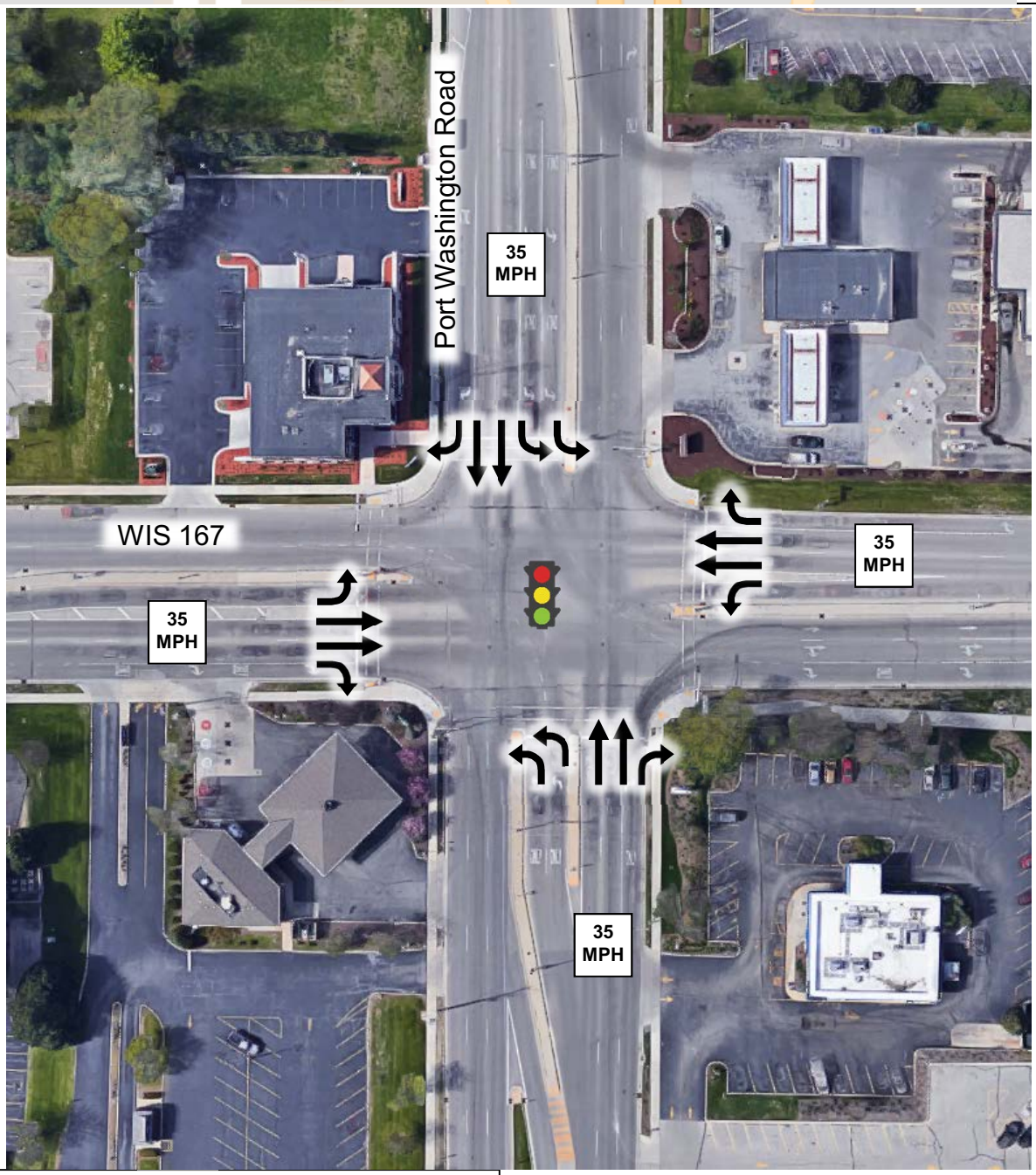
Exhibit
C-25

raSmith

Intersection Geometrics
WIS 167 Signalized Corridor

N
W E
S

WIS 167



Legend

- STOP = Stop Sign
- = Traffic Signal
- = Yield Sign
- = Existing Geometry
- XX MPH = Posted Speed Limit

WIS 167 & Port Washington Road
SE Region
Existing Geometry

Exhibit
C-26

raSmith

WIS 167

Legend

- STOP = Stop Sign
- = Traffic Signal
- = Yield Sign
- = Existing Geometry
- XX MPH = Posted Speed Limit

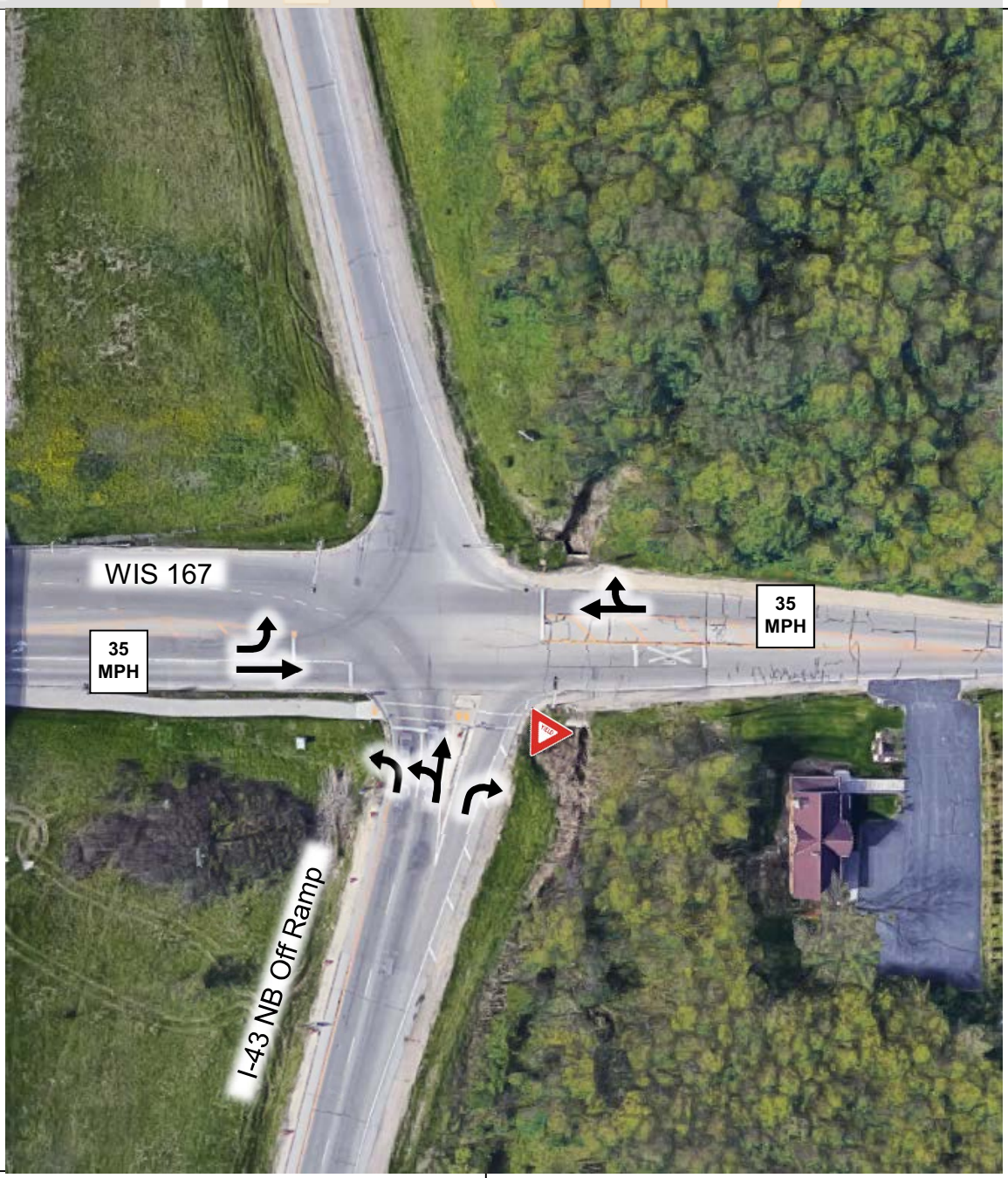
WIS 167 & I-43 & SB Ramps
SE Region
Existing Geometry

Exhibit
C-27

raSmith

N
W E
S

WIS 167



Legend

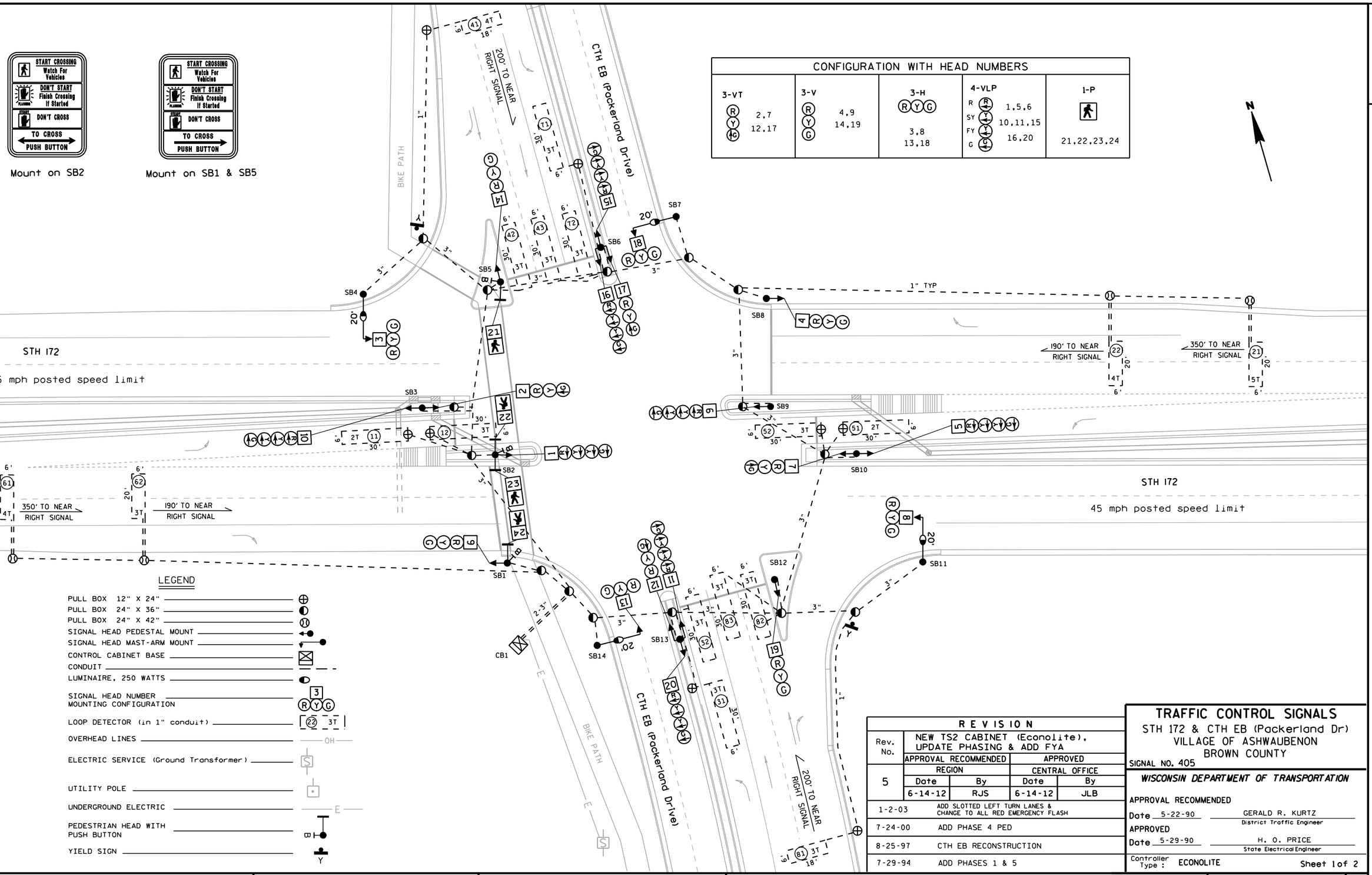
- STOP = Stop Sign
- = Traffic Signal
- = Yield Sign
- = Existing Geometry
- XX MPH = Posted Speed Limit

WIS 167 & I-43 NB Ramps
SE Region
Existing Geometry

Exhibit
C-28

raSmith

Existing Signal Plans & Timings
Isolated Signalized Intersections



PROJECT NO: 0083-03-01	HWY: STH 172	COUNTY: BROWN	TRAFFIC CONTROL SIGNAL S-405	SHEET	E

FILE NAME : F:\d3_traffi\S-405.dgn PLOT DATE : 22-JUN-2012 15:11 PLOT BY : dotc5s PLOT NAME : S-405.rev5 PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

SEQUENCE OF OPERATION

RING 1

	HEAD NUMBERS	Ø1 R/W	Ø1 **	Ø1 CLEAR TO	Ø2 R/W	Ø2 **	Ø2 CLEAR TO	Ø3 R/W	Ø3 **	Ø3 CLEAR TO	Ø4 R/W	Ø4 **	Ø4 CLEAR TO	FLASH
Ø1	6, 10	G ←	Y R ←		-	- -		R ←	R R ←		R ←	R R ←		R ←
Ø2	2, 3, 4	R	R R		G	Y R		R	R R		R	R R		R
Ø3	16, 20	R ←	R R ←		R ←	R R ←		G ←	Y R ←		-	- -		R ←
Ø4	12, 13, 14	R	R R		R	R R		R	R R		G	Y R		R
Ø5	1, 5	R ←	R R ←		R ←	R R ←		R ←	R R ←		R ←	R R ←		R ←
Ø6	7, 8, 9	R	R R		R	R R		R	R R		R	R R		R
Ø7	11, 15	R ←	R R ←		R ←	R R ←		R ←	R R ←		R ←	R R ←		R ←
Ø8	17, 18, 19	R	R R		R	R R		R	R R		R	R R		R
Ø4P	21, 22, 23, 24	D	D D		D	D D		D	D D		*	D D		
OL	"M" 6, 10	-	- -		FY ←	Y R ←		-	- -		-	- -		
OL	"N" 16, 20	-	- -		-	- -		-	- -		FY ←	Y R ←		
OL	"O" 1, 5	-	- -		-	- -		-	- -		-	- -		
OL	"P" 11, 15	-	- -		-	- -		-	- -		-	- -		

RING 2

	HEAD NUMBERS	Ø5 R/W	Ø5 **	Ø5 CLEAR TO	Ø6 R/W	Ø6 **	Ø6 CLEAR TO	Ø7 R/W	Ø7 **	Ø7 CLEAR TO	Ø8 R/W	Ø8 **	Ø8 CLEAR TO
Ø1	6, 10	R ←	R R ←		R ←	R R ←		R ←	R R ←		R ←	R R ←	
Ø2	2, 3, 4	R	R R		R	R R		R	R R		R	R R	
Ø3	16, 20	R ←	R R ←		R ←	R R ←		R ←	R R ←		R ←	R R ←	
Ø4	12, 13, 14	R	R R		R	R R		R	R R		R	R R	
Ø5	1, 5	G ←	Y R ←		-	- -		R ←	R R ←		R ←	R R ←	
Ø6	7, 8, 9	R	R R		G	Y R		R	R R		R	R R	
Ø7	11, 15	R ←	R R ←		R ←	R R ←		G ←	Y R ←		-	- -	
Ø8	17, 18, 19	R	R R		R	R R		R	R R		G	Y R	
Ø4P	21, 22, 23, 24	D	D D		D	D D		D	D D		D	D D	
OL	"M" 6, 10	-	- -		-	- -		-	- -		-	- -	
OL	"N" 16, 20	-	- -		-	- -		-	- -		-	- -	
OL	"O" 1, 5	-	- -		FY ←	Y R ←		-	- -		-	- -	
OL	"P" 11, 15	-	- -		-	- -		-	- -		FY ←	Y R ←	

BARRIER

** CLEARANCE TO A PHASE IN CONFLICT WITH THIS PHASE ON (SEE CHART 1)

* WHEN CALLED, TIMED STEADY WALK, THEN FLASHING DON'T WALK, THEN GOES TO STEADY DON'T WALK

D = DON'T WALK

CHART 1

PHASE ON	NONCONFLICTING PHASE ALLOWED TO TIME CONCURRENTLY	PHASES IN CONFLICT WITH PHASE ON
1	5 or 6	2, 3, 4, 7, 8
2	5 or 6	1, 3, 4, 7, 8
3	7 or 8	1, 2, 4, 5, 6
4	7 or 8	1, 2, 3, 5, 6
5	1 or 2	3, 4, 6, 7, 8
6	1 or 2	3, 4, 5, 7, 8
7	3 or 4	1, 2, 5, 6, 8
8	3 or 4	1, 2, 5, 6, 7

DETECTOR LOGIC

DETECTOR NUMBER	DETECTOR RACK NUMBER	DETECTOR OPERATION: CALLS AND EXTENDS	DETECTOR OPERATION: CALLS ONLY	DETECTOR OPERATION: EXTENDS ONLY	PHASE CALLED	PHASE EXTENDED	DETECTOR DISCONNECT PHASE	CALLING DELAY	EXTENSION STRETCH	SIZE	NUMBER OF TURNS
11	3	X			1	1				6x30	2
12	4	X			1	1				6x30	3
21	1	X			2	2			X	6x20	5
22	2	X			2	2				6x20	4
31	7	X			3	3				6x30	3
32	8	X			3	3				6x30	3
41	5			X		4			X	6x18	4
42	6	X			4	4				6x30	3
43	11	X			4	4				6x30	3
51	9	X			5	5				6x30	2
52	10	X			5	5				6x30	3
61	15	X			6	6			X	6x20	4
62	16	X			6	6				6x20	3
71	13	X			7	7				6x30	3
72	14	X			7	7				6x30	3
81	19			X		8			X	6x18	3
82	20	X			8	8				6x30	3
83	17	X			8	8				6x30	3

CONTROLLER LOGIC

PHASE NUMBER	PHASE LOCKING	DUAL ENTRY W / Ø	PHASE RECALL	PHASE ACTIVE
1				YES
2			MIN	YES
3				YES
4		8		YES
5				YES
6			MIN	YES
7				YES
8		4		YES

TYPE OF INTERCONNECT COMMUNICATION	
NONE	
TBC	x
CLOSED LOOP TWISTED PAIR*	
CLOSED LOOP FIBER OPTIC*	
RADIO	
*LOCATION OF MASTER CONTROLLER NO: S-	
SIGNAL SYSTEM *: SS- -	

TYPE OF COORDINATION	
NONE	
TBC	x
TRAFFIC RESPONSIVE	
ADAPTIVE	

TYPE OF PRE-EMPT	
NONE	x
RAILROAD	
EMERGENCY VEHICLE	
3M	
TOMAR	
HARDWIRE	
OTHER	
LIFT BRIDGE	
QUEUE DETECTOR	

TYPE OF LIGHTING	
BY OTHER AGENCY	
IN TRAFFIC SIGNAL CABINET	x
IN SEPARATE DOT LIGHTING CABINET	

GENERAL NOTES:

1. ANY ACTUATED PHASE FOR WHICH THERE IS NO CALL SHALL BE SKIPPED.
2. WHEN ONE PHASE IS ON ALONE, ANY NONCONFLICTING PHASE MAY START TIMING CONCURRENTLY WITHOUT A CLEARANCE INTERVAL. (SEE CHART 1 AT LEFT.)
3. IF ANY OPPOSING THRU PHASES ARE TIMING CONCURRENTLY, THEY SHALL TERMINATE TOGETHER DUE TO PERMISSIVE LEFT TURN CONFLICT.
4. PROVIDE FOR HAND CONTROL.

Revision 5

STH 172 & CTH EB (Packerland Dr)
VILLAGE OF ASHWAUBENON
BROWN COUNTY

SIGNAL NO. 405

CONTROLLER TYPE: ECONOLITE

DATE: 6-14-2012 PAGE NO. 2 OF 2

PROJECT NO: 0083-03-01	HWY: STH 172	COUNTY: BROWN	SEQUENCE OF OPERATIONS S-405	SHEET E

FILE NAME : F:\d3_traffi\S-405.dgn PLOT DATE : 22-JUN-2012 15:11 PLOT BY : dotc5s PLOT NAME : S-405.seq,rev5 PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

Brown County - S0405 (172 & Packerland)

Controller Timing Plan (MM)2-1
Plan 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction																
Min Green	7	20	7	10	7	20	7	10	0	0	0	0	0	0	0	0
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	0	0	21	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	2.0	4.0	2.0	3.0	2.0	4.0	2.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	15	50	15	35	15	50	15	35	0	0	0	0	0	0	0	0
Max 2	0	0	0	0	25	0	0	0	0	0	0	0	0	0	0	0
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.0	4.5	3.0	4.5	3.0	4.5	3.0	4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	1.0	2.0	1.0	2.0	1.0	2.0	1.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	30	0	20	0	30	0	20	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	15	0	10	0	15	0	10	0	0	0	0	0	0	0	0
Min Gap	0.0	1.0	0.0	1.0	0.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Brown County - S0405 (172 & Packerland)

Controller Overlaps

Vehicle Overlaps (MM)2-2

Overlap	Type	Lag Green	Yellow	Red	Advance Green

Phases

Overlap	Phase	Included	Protect	Ped Protect	Not Overlap	Modifier	Lag X Phase	Lag 2 Phase	Flash Green

PPLT FYA

Overlap	Protected Phase	Permissive Phase	Flash Arrow Output	Flash Arrow Channel	FYA Delay	FYA Clearance	Special Function Disable
M	1	2	Ped Yellow	9	5.0	0.0	0
N	3	4	Ped Yellow	10	5.0	0.0	0
O	5	6	Ped Yellow	11	5.0	0.0	0
P	7	8	Ped Yellow	12	5.0	0.0	0

Guaranteed Minimum Time Data (MM) 2-4

Phase Time Data

Phase	Min Green	Walk	Ped Clear	Yellow	Red Clear	Overlap Green
A01	1	0	7	3.0	0.0	1
B02	1	0	7	3.0	0.0	1
C03	1	0	7	3.0	0.0	1
D04	1	0	7	3.0	0.0	1
E05	1	0	7	3.0	0.0	1
F06	1	0	7	3.0	0.0	1
G07	1	0	7	3.0	0.0	1
H08	1	0	7	3.0	0.0	1
I09	1	0	7	3.0	0.0	1
J10	1	0	7	3.0	0.0	1
K11	1	0	7	3.0	0.0	1
L12	1	0	7	3.0	0.0	1
M13	1	0	7	3.0	0.0	1
N14	1	0	7	3.0	0.0	1
O15	1	0	7	3.0	0.0	1
P16	1	0	7	3.0	0.0	1

Brown County - S0405 (172 & Packerland)

Controller Start/Fash (MM) 2-5

Startup

Phase	Phase Setting
2	G
6	G

Overlap
A
B
C
D

Flash > Mon: No
Flash Time: 10
All Red: 6
Power Start Sequence: 1

Automatic Flash

Entry Phase
2
6

Exit Phase
2
6

Overlap Exit
A
B
C
D

Flash > Mon: No
Exit Flash Interval: G
Minimum Auto Flash: 8
Minimumin Recall: No
Cycle Through Phase: No

Brown County - S0405 (172 & Packerland)

Controller Options

Controller Options (MM)2-6-1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Flashing Green Phase																
Guaranteed Passage																
Non Act 1																
Non Act 2																
Dual Entry				X				X								
Conditional Service																
Conditional Reservice																
Ped Reservice																
Rest In Walk																
Flashing Walk																
Ped Clear Yellow																
Ped Clear Red																
IGRN + Veh Ext																

Ped Clear Protect: Off

Red Revert: 2.0

Act Pre-Time (MM)2-7

Pre-Time Mode Enable: No

Free Input Enables Pre-Timed: Yes

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Pre-Timed Phase																

Phase Recall Options (MM)2-8

Plan 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector																
Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
AI Calc																

Plan 2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector		X				X										
Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
AI Calc																

Plan 3

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector		X				X										
Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
AI Calc																

Plan 4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector		X				X										

Brown County - S0405 (172 & Packerland)

Time Base Action Plan
Action Plan (MM)5-2

Action Plan - 1

Pattern	Auto	Override System	No
Timing Plan	1	Sequence	0
Veh Det Plan	0	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2					X											
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 99

Pattern	255 - FLSH	Override System	No
Timing Plan	0	Sequence	0
Veh Det Plan	0	Detector Log	None
Flash	Yes	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 100

Pattern	254 - FREE	Override System	No
Timing Plan	0	Sequence	0
Veh Det Plan	0	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Brown County - S0405 (172 & Packerland)

Time Base Day Plan/Schedule
Day Plan (MM)5-3

Plan	Event	Action Plan	Start Time
1	1	1	6:30 AM
1	2	2	8:00 AM

Schedule (MM)5-4

Schedule Number - 1

Day Plan Number: 1

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	X	X	X	X	X	X	X	X	X	X	X	X

Day of Week	Sun	Mon	Tue	Wed	Thur	Fri	Sat
		X	X	X	X	X	

Day of Month	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

15	N-NTCIP	Yes	
16	N-NTCIP	Yes	
17	N-NTCIP	Yes	
18	N-NTCIP	Yes	
19	N-NTCIP	Yes	
20	N-NTCIP	Yes	
21	N-NTCIP	Yes	
22	N-NTCIP	Yes	
23	N-NTCIP	Yes	
24	N-NTCIP	Yes	
25	N-NTCIP	Yes	
26	N-NTCIP	Yes	
27	N-NTCIP	Yes	
28	N-NTCIP	Yes	
29	N-NTCIP	Yes	
30	N-NTCIP	Yes	
31	N-NTCIP	Yes	
32	N-NTCIP	Yes	
33	N-NTCIP	Yes	
34	N-NTCIP	Yes	
35	N-NTCIP	Yes	
36	N-NTCIP	Yes	
37	N-NTCIP	Yes	
38	N-NTCIP	Yes	
39	N-NTCIP	Yes	
40	N-NTCIP	Yes	
41	N-NTCIP	Yes	
42	N-NTCIP	Yes	
43	N-NTCIP	Yes	
44	N-NTCIP	Yes	
45	N-NTCIP	Yes	
46	N-NTCIP	Yes	
47	N-NTCIP	Yes	
48	N-NTCIP	Yes	
49	N-NTCIP	Yes	
50	N-NTCIP	Yes	
51	N-NTCIP	Yes	
52	N-NTCIP	Yes	
53	N-NTCIP	Yes	
54	N-NTCIP	Yes	
55	N-NTCIP	Yes	
56	N-NTCIP	Yes	
57	N-NTCIP	Yes	
58	N-NTCIP	Yes	
59	N-NTCIP	Yes	
60	N-NTCIP	Yes	
61	N-NTCIP	Yes	
62	N-NTCIP	Yes	
63	N-NTCIP	Yes	
64	N-NTCIP	Yes	

LOOP DETECTOR #

Vehicle Detector Setup (MM)6-2 continued

Det Num	Veh Det Plan	Phase	ECPI Log	Call Option	Delay Time	Ext Option	Extend Time / Passage Time	Queue Lim / Discon. Time	Use Added Initial	Cross Switch Phase	Lock In	NTCIP Vol.	NTCIP Occ.	Pmt Queue Delay
1	1	2	No	Yes	0.0	Passage	1.5	0	Yes	0	None	No	No	No
1	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
1	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
1	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
2	1	2	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
2	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
2	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
2	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
3	1	1	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
3	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
3	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
3	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

4	1	12	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
4	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
4	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
4	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
5	1	41	No	No	0.0	Passage	0.5	0	Yes	0	None	No	No	No
5	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
5	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
5	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
6	1	42	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
6	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
6	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
6	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
7	1	31	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
7	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
7	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
7	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
8	1	32	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
8	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
8	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
8	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
9	1	51	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
9	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
9	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
9	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
10	1	52	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
10	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
10	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
10	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
11	1	43	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
11	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
11	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
11	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
12	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
12	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
12	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
12	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
13	1	71	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
13	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
13	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
13	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
14	1	72	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
14	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
14	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
14	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
15	1	61	No	Yes	0.0	Passage	1.5	0	Yes	0	None	No	No	No
15	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
15	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
15	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
16	1	62	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
16	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
16	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
16	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
17	1	83 8	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
17	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
17	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
17	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
18	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
18	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
18	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
18	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
19	1	81	No	No	0.0	Passage	0.5	0	Yes	0	None	No	No	No
19	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
19	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
19	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
20	1	82	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
20	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
20	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
20	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

Brown County - S0405 (172 & Packerland)

Configuration Phase Sequence

Controller Sequence (MM)1-1-1

Hardware Alternate Sequence Enable: No

Phase Ring Sequence.....(Note: Sequences identical to the prior one are not printed)

	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
Sequence 1																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 2																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 3																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 4																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 5																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 6																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 7																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 8																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 9																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 10																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 11																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 12																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 13																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 14																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 15																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 16																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.

Phases In Use / Exclusive PED (MM)1-2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phases in Use	X	X	X	X	X	X	X	X								
Exclusive PED																

Phase Compatibility (MM)1-1-2

Phase	Compatible Phase
1	5

1	6
2	5
2	6
3	7
3	8
4	7
4	8
9	11
9	12
10	11
10	12
13	15
13	16
14	15
14	16

Overlap Direction Descriptions

Overlap	Description

Administration (MM)1-7-1

Enable CU/Cabinet Interlock CRC	No
Request Download Controller Data	No
Controller Database CRC	0000
Enable Automatic Backup to Datakey	Yes

Backup Prevent (MM)1-1-3

	Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Timing /	1		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Backup	2	X		.	.	.	.	.	.	.	.	.	.	.	.	.	.
	3	.	.		.	.	.	.	.	.	.	.	.	.	.	.	.
	4	.	.	X		.	.	.	.	.	.	.	.	.	.	.	.
	5	.	.	.	.		.	.	.	.	.	.	.	.	.	.	.
	6	.	.	.	.	X		.	.	.	.	.	.	.	.	.	.
	7	.	.	.	.	.	.		.	.	.	.	.	.	.	.	.
	8	.	.	.	.	.	.	X		.	.	.	.	.	.	.	.
	9	.	.	.	.	.	.	.	.		.	.	.	.	.	.	.
	10	.	.	.	.	.	.	.	.	.		.	.	.	.	.	.
	11	.	.	.	.	.	.	.	.	.	.		.	.	.	.	.
	12	.	.	.	.	.	.	.	.	.	.	.		.	.	.	.
	13	.	.	.	.	.	.	.	.	.	.	.	.		.	.	.
	14	.	.	.	.	.	.	.	.	.	.	.	.	.		.	.
	15	.	.	.	.	.	.	.	.	.	.	.	.	.	.		.
	16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	

Simultaneous Gap (MM)1-1-4

	Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	1		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	2	.		.	.	.	X	.	.	.	.	.	.	.	.	.	.
	3	.	.		.	.	.	.	.	.	.	.	.	.	.	.	.
	4	.	.	.		.	.	.	X	.	.	.	.	.	.	.	.
	5	.	.	.	.		.	.	.	.	.	.	.	.	.	.	.
Phase	6	.	X	.	.	.		.	.	.	.	.	.	.	.	.	.
Must	7	.	.	.	.	.	.		.	.	.	.	.	.	.	.	.
Gap	8	.	.	.	X	.	.	.		.	.	.	.	.	.	.	.
With	9	.	.	.	.	.	.	.	.		.	.	.	.	.	.	.
Phase	10	.	.	.	.	.	.	.	.	.		.	.	.	.	.	.
	11	.	.	.	.	.	.	.	.	.	.		.	.	.	.	.
	12	.	.	.	.	.	.	.	.	.	.	.		.	.	.	.
	13	.	.	.	.	.	.	.	.	.	.	.	.		.	.	.
	14	.	.	.	.	.	.	.	.	.	.	.	.	.		.	.
	15	.	.	.	.	.	.	.	.	.	.	.	.	.	.		.
	16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
	Disable	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Load Switch Assignments (MMU Channel) (MM)1-3

	Phase / Overlap	Type	Dimming				Power Up				Auto		Flash Together
			Red	Yellow	Green	Dark	Auto	Red	Yellow	Dark	Red	Yellow	
1	1	V				+	X				X		X
2	2	V				+	X				X		
3	3	V				+	X				X		X
4	4	V				+	X				X		
5	5	V				-	X				X		
6	6	V				-	X				X		X
7	7	V				-	X				X		
8	8	V				-	X				X		X
9	2	P				+	X						
10	4	P				+	X						
11	6	P				-	X						
12	8	P				-	X						
13	1	O				+	X				X		X
14	2	O				-	X				X		X
15	3	O				+	X				X		
16	4	O				-	X				X		

Brown County - S0405 (172 & Packerland)

Configuration Port 1 (SDLC)

SDLC Options (MM)1-4-1

BIU	1	2	3	4	5	6	7	8
Term and Facility Enable	X	X						
Detector Rack Enable	X	X						

Enable TS2/MMU Type Cabinet: No
Enable MMU Extended Status: Yes
Enable SDLC Stop Time: No
Enable 3 Critical RFE's Lockup: Yes

MMU Program (MM)1-4-2

Channel Can Serve with Channel	
Channel 1	**Channel 2**
1	5
1	6
1	11
2	5
2	6
2	9
2	11
3	7
3	8
3	12
4	7
4	8
4	10
4	12
5	9
6	9
6	11
7	10
8	10
8	12
9	11
10	12

Color Check Enable (MM)1-4-3

Enable Color Check: Yes

MMU Channel	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Green	X	X	X	X	X	X	X	X		X						
Yellow	X	X	X	X	X	X	X	X	X	X	X	X				
Red	X	X	X	X	X	X	X	X								

Secondary To Secondary Addressing (MM)1-4-4

ID	1	2	3	4	5	6	7	8	MMU
Term and Facility Enable									

ID	1	2	3	4	5	6	7	8	Diag
Detector Rack Enable									

Diagonstics (Test Fixture) Enable: No

Brown County - S0405 (172 & Packerland)

Configuration Communications

Ethernet Port Configuration (MM)1-5-1

Controller IP: 192.168.0.11
Subnet Mask: 255.255.255.0
Default Gateway IP: 192.168.0.1
Server IP: 172.22.65.24

NTCIP Parameters (MM)1-5-5

Backup Time: 0
UDP Port: 501
Ethernet Priority: 1
Port 2 Priority: 4
Port 3A Priority: 2
Port 3B Priority: 3

Port Configuration (MM)1-5-2 to 1-5-4

Port	2 (C50S)	3A (C21S)	3B (C22S)
Protocol	NTCIP	NTCIP	Terminal
Enable	Yes	Yes	No
Data Rate	19.2K	19.2K	1200
Data Parity Stop	8 N 1	8 N 1	8 0 1
Modem Setup String	None	None	None
User String			
Comm Port Address	1	1	0
System Detector 9-1	0	0	0
Telemetry Response Delay	0.0	0.0	0.0
Duplex Half/Full	Full	Full	Full
Flow Control	Yes	Yes	Yes
AB3418 NTCIP Group Address	0	0	0
AB3418 NTCIP Single Flag Enable	No	No	No
RTS to CTS Delay	0.0	0.0	3.0
RTS Turn Off Delay	0.0	0.0	2.0
Droupout Time	10	10	10
Early RTS	No	No	No
FSK Hardware	Yes	Yes	Yes
Rail Road	0	0	0
Rail Road Line	0	0	0
ATCS Group	0	0	0
Wayside Device	0	0	0
ATCS Device	0	0	0
Wayside SubNode	0	0	0
ATCS SubNode	0	0	0

ECPIP Parameters (MM)1-5-6

Controller Address: 0
Expanded System Detector Address: 0

Local System Detector

Local System Detector	Number

Brown County - S0405 (172 & Packerland)

Configuration Logging/Display

Event Logging (MM)1-6-1

Critical RFE's	Yes	3 Critical RFE's in 24 Hours	Yes
MMU Flash Faults	Yes	Local Flash Faults	Yes
Non-Critical RFE's (Det/Test)	Yes	Detector Errors	Yes
Coordination Errors	Yes	Controller Download	Yes
Preempt	Yes	TSP	Yes
Power On/Off	Yes	Low Battery	Yes
Access	Yes	Data Change	Yes
Online/Offline	Yes		

Alarm Log	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Enable Logging	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Display Options (MM)1-7-2

Key Click Enable: Yes
Backlight Enable: Yes
LED Mode: Single Color
Display Mode: Basic
Screen Format: Advanced

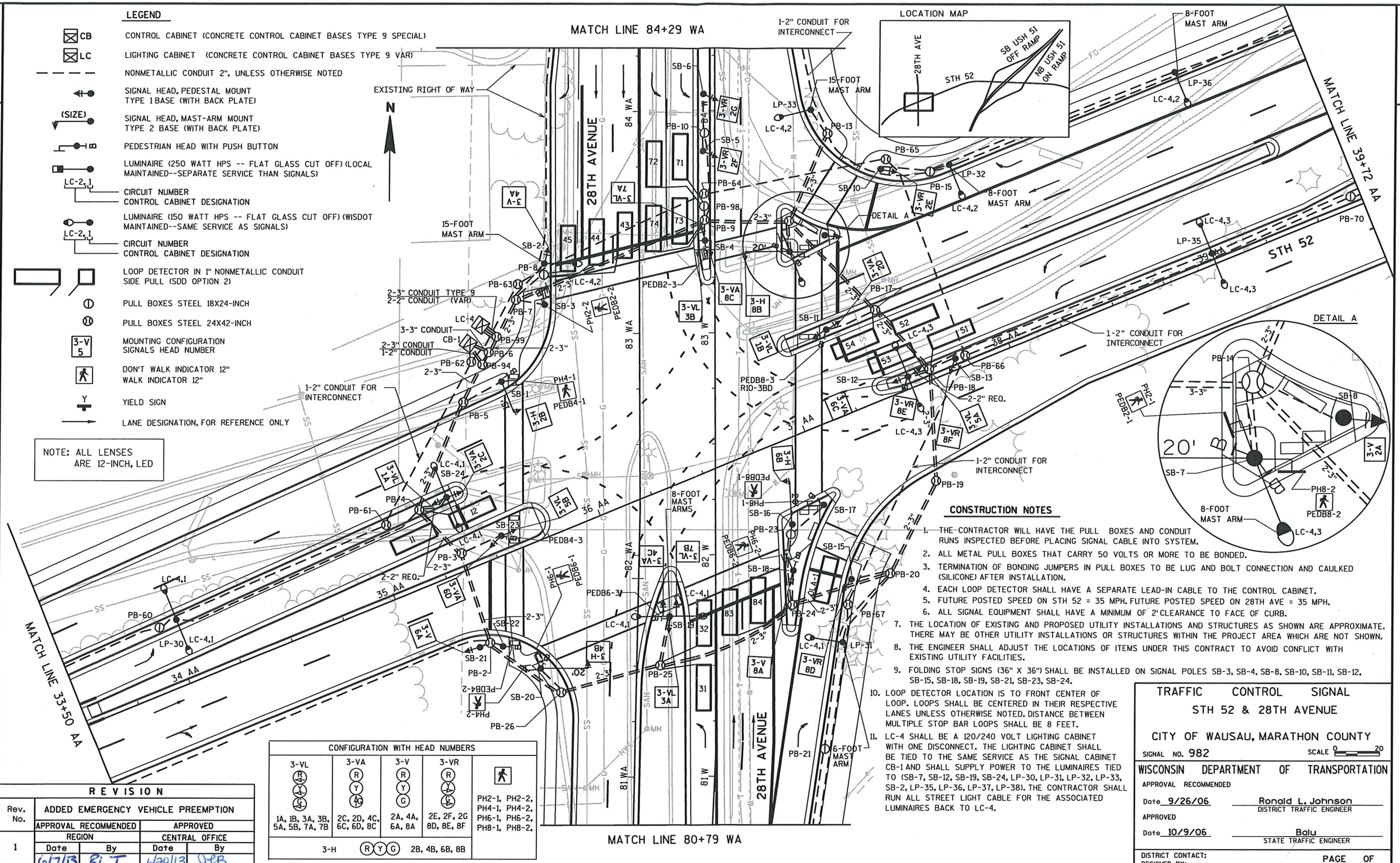
Sign On (MM)8-5

Sign On Message Line 1: INTERSECTION NAME:
Sign On Message Line 2: WisDOT Data Base

LEGEND

- CB — CONTROL CABINET (CONCRETE CONTROL CABINET BASES TYPE 9 SPECIAL)
- LC — LIGHTING CABINET (CONCRETE CONTROL CABINET BASES TYPE 9 VAR)
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- SIGNAL HEAD, PEDESTAL MOUNT TYPE 1 BASE (WITH BACK PLATE)
- (SIZE) SIGNAL HEAD, MAST-ARM MOUNT TYPE 2 BASE (WITH BACK PLATE)
- B PEDESTRIAN HEAD WITH PUSH BUTTON
- LUMINAIRE (250 WATT HPS -- FLAT GLASS CUT OFF) (LOCAL MAINTAINED--SEPARATE SERVICE THAN SIGNALS)
- LC-2,1 — CIRCUIT NUMBER / CONTROL CABINET DESIGNATION
- LUMINAIRE (150 WATT HPS -- FLAT GLASS CUT OFF) (WISDOT MAINTAINED--SAME SERVICE AS SIGNALS)
- LC-2,1 — CIRCUIT NUMBER / CONTROL CABINET DESIGNATION
- LOOP DETECTOR IN 1" NONMETALLIC CONDUIT SIDE PULL (SDD OPTION 2)
- PULL BOXES STEEL 18X24-INCH
- PULL BOXES STEEL 24X42-INCH
- 3-V 5 — MOUNTING CONFIGURATION SIGNALS HEAD NUMBER
- DON'T WALK INDICATOR 12" / WALK INDICATOR 12"
- Y YIELD SIGN
- LANE DESIGNATION, FOR REFERENCE ONLY

NOTE: ALL LENSES ARE 12-INCH, LED



CONSTRUCTION NOTES

1. THE CONTRACTOR WILL HAVE THE PULL BOXES AND CONDUIT RUNS INSPECTED BEFORE PLACING SIGNAL CABLE INTO SYSTEM.
2. ALL METAL PULL BOXES THAT CARRY 50 VOLTS OR MORE TO BE BONDED.
3. TERMINATION OF BONDING JUMPERS IN PULL BOXES TO BE LUG AND BOLT CONNECTION AND CAULKED (SILICONE) AFTER INSTALLATION.
4. EACH LOOP DETECTOR SHALL HAVE A SEPARATE LEAD-IN CABLE TO THE CONTROL CABINET.
5. FUTURE POSTED SPEED ON STH 52 = 35 MPH. FUTURE POSTED SPEED ON 28TH AVE = 35 MPH.
6. ALL SIGNAL EQUIPMENT SHALL HAVE A MINIMUM OF 2' CLEARANCE TO FACE OF CURB.
7. THE LOCATION OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AND STRUCTURES AS SHOWN ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS OR STRUCTURES WITHIN THE PROJECT AREA WHICH ARE NOT SHOWN.
8. THE ENGINEER SHALL ADJUST THE LOCATIONS OF ITEMS UNDER THIS CONTRACT TO AVOID CONFLICT WITH EXISTING UTILITY FACILITIES.
9. FOLDING STOP SIGNS (36" X 36") SHALL BE INSTALLED ON SIGNAL POLES SB-3, SB-4, SB-8, SB-10, SB-11, SB-12, SB-15, SB-18, SB-19, SB-21, SB-23, SB-24.
10. LOOP DETECTOR LOCATION IS TO FRONT CENTER OF LOOP. LOOPS SHALL BE CENTERED IN THEIR RESPECTIVE LANES UNLESS OTHERWISE NOTED. DISTANCE BETWEEN MULTIPLE STOP BAR LOOPS SHALL BE 8 FEET.
11. LC-4 SHALL BE A 120/240 VOLT LIGHTING CABINET WITH ONE DISCONNECT. THE LIGHTING CABINET SHALL BE TIED TO THE SAME SERVICE AS THE SIGNAL CABINET CB-1 AND SHALL SUPPLY POWER TO THE LUMINAIRES TIED TO (SB-7, SB-12, SB-19, SB-24, LP-30, LP-31, LP-32, LP-33, SB-2, LP-35, LP-36, LP-37, LP-38). THE CONTRACTOR SHALL RUN ALL STREET LIGHT CABLE FOR THE ASSOCIATED LUMINAIRES BACK TO LC-4.

CONFIGURATION WITH HEAD NUMBERS

3-VL	3-VA	3-V	3-VR	
1A, 1B, 3A, 3B, 5A, 5B, 7A, 7B	2C, 2D, 4C, 6C, 6D, 8C	2A, 4A, 6A, 8A	2E, 2F, 2G 8D, 8E, 8F	PH2-1, PH2-2, PH4-1, PH4-2, PH6-1, PH6-2, PH8-1, PH8-2,
3-H	(R)(Y)(G) 2B, 4B, 6B, 8B			

REVISION

Rev. No.	ADDED EMERGENCY VEHICLE PREEMPTION			
	APPROVAL RECOMMENDED		APPROVED	
	REGION		CENTRAL OFFICE	
	Date	By	Date	By
1	6/7/13	RLJ	6/20/13	JJFB

TRAFFIC CONTROL SIGNAL
STH 52 & 28TH AVENUE
CITY OF WAUSAU, MARATHON COUNTY
SIGNAL NO. 982 SCALE 0 20

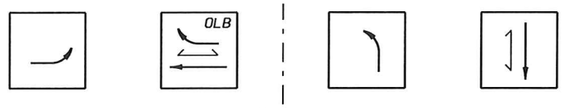
WISCONSIN DEPARTMENT OF TRANSPORTATION
APPROVAL RECOMMENDED
Date 9/26/06 — Ronald L. Johnson, DISTRICT TRAFFIC ENGINEER
APPROVED
Date 10/9/06 — Balu, STATE TRAFFIC ENGINEER
DISTRICT CONTACT:
DESIGNED BY:
PAGE OF

PROJECT NO: 1166-09-72	HWY: STH 52	COUNTY: MARATHON	STH 52/28TH AVENUE TRAFFIC SIGNAL	SHEET	E

FILE NAME : U:\Signals\Working On\SP_0982_REV1.dgn PLOT DATE : 07-JUN-2013 06:39 PLOT BY : dotllm PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

SEQUENCE OF OPERATION



RING 1

	HEAD NUMBERS	01 R/W	01 CLEAR TO **		02 R/W	02 CLEAR TO **		03 R/W	03 CLEAR TO **		04 R/W	04 CLEAR TO **		FLASH
01	1A, 1B	G	Y	R	R	R	R	R	R	R	R	R	R	R
02	2A, 2B, 2C, 2D	R	R	R	G	Y	R	R	R	R	R	R	R	R
03	3A, 3B	R	R	R	R	R	R	G	Y	R	R	R	R	R
04	4A, 4B, 4C	R	R	R	R	R	R	R	R	R	G	Y	R	R
05	5A, 5B	R	R	R	R	R	R	R	R	R	R	R	R	R
06	6A, 6B, 6C, 6D	R	R	R	R	R	R	R	R	R	R	R	R	R
07	7A, 7B	R	R	R	R	R	R	R	R	R	R	R	R	R
08	8A, 8B, 8C	R	R	R	R	R	R	R	R	R	R	R	R	R
OLA	8D, 8E, 8F	R	R	R	R	R	R	R	R	R	R	R	R	R
OLB	2E, 2F, 2G	R	R	R	G	Y	R	R	R	R	R	R	R	R
02P	PH2-1, PH2-2	DW	DW	DW	*	DW	DW	DW	DW	DW	DW	DW	DW	–
04P	PH4-1, PH4-2	DW	DW	DW	DW	DW	DW	DW	DW	DW	*	DW	DW	–
06P	PH6-1, PH6-2	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	–
08P	PH8-1, PH8-2	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	–

RING 2

	HEAD NUMBERS	05 R/W	05 CLEAR TO **		06 R/W	06 CLEAR TO **		07 R/W	07 CLEAR TO **		08 R/W	08 CLEAR TO **	
01	1A, 1B	R	R	R	R	R	R	R	R	R	R	R	R
02	2A, 2B, 2C, 2D	R	R	R	R	R	R	R	R	R	R	R	R
03	3A, 3B	R	R	R	R	R	R	R	R	R	R	R	R
04	4A, 4B, 4C	R	R	R	R	R	R	R	R	R	R	R	R
05	5A, 5B	G	Y	R	R	R	R	R	R	R	R	R	R
06	6A, 6B, 6C, 6D	R	R	R	G	Y	R	R	R	R	R	R	R
07	7A, 7B	R	R	R	R	R	R	G	Y	R	R	R	R
08	8A, 8B, 8C	R	R	R	R	R	R	R	R	R	G	Y	R
OLA	8D, 8E, 8F	G	Y	R	R	R	R	R	R	R	G	Y	R
OLB	2E, 2F, 2G	R	R	R	R	R	R	G	Y	R	R	R	R
02P	PH2-1, PH2-2	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW
04P	PH4-1, PH4-2	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW
06P	PH6-1, PH6-2	DW	DW	DW	*	DW	DW	DW	DW	DW	DW	DW	DW
08P	PH8-1, PH8-2	DW	DW	DW	DW	DW	DW	DW	DW	DW	*	DW	DW

BARRIER

** CLEARANCE TO A PHASE IN CONFLICT WITH THIS PHASE ON (SEE CHART 1 BELOW)

* WHEN CALLED, TIMED STEADY WALK, THEN FLASHING DON'T WALK, THEN GOES TO STEADY DON'T WALK.

CHART 1

PHASE ON	NONCONFLICTING PHASE ALLOWED TO TIME CONCURRENTLY	PHASES IN CONFLICT WITH PHASE ON
01	5, 6, OLA	2, 3, 4, 7, 8, OLB
02	5, 6, OLA, OLB	1, 3, 4, 7, 8
03	7, 8, OLA, OLB	1, 2, 4, 5, 6
04	7, 8, OLA, OLB	1, 2, 3, 5, 6
05	1, 2, OLA, OLB	3, 4, 6, 7, 8
06	1, 2, OLB	3, 4, 5, 7, 8, OLA
07	3, 4, OLB	1, 2, 5, 6, 8, OLA
08	3, 4, OLA	1, 2, 5, 6, 7, OLB

DETECTOR LOGIC

DETECTOR NUMBER	AMPLIFIER CHANNEL NUMBER	DETECTOR OPERATION: CALLS AND EXTENDS	DETECTOR OPERATION: CALLS ONLY	DETECTOR OPERATION: EXTENDS ONLY	PHASE CALLED	PHASE EXTENDED	DETECTOR DISCONNECT PHASE	CALLING DELAY	EXTENSION STRETCH	SIZE	NUMBER OF TURNS
11	1	X			1	1				6X20	3
12	1	X			1	1				6X20	3
21	2	X			2	2				6X6	5
22	2	X			2	2				6X6	6
31	3	X			3	3				6X20	3
32	3	X			3	3				6X20	3
41	4			X		4			X	6X6	3
42	4			X		4			X	6X6	4
43	5	X			4	4				6X20	3
44	5	X			4	4				6X20	3
45	6	X			4	4		X		6X20	3
51	7	X			5	5				6X20	3
52	7	X			5	5				6X20	3
53	8	X			5	5				6X20	3
54	8	X			5	5				6X20	3
61	9	X			6	6				6X6	4
62	9	X			6	6				6X6	5
71	10	X			7	7				6X20	3
72	10	X			7	7				6X20	3
73	11	X			7	7				6X20	3
74	11	X			7	7				6X20	3
81	12			X		8			X	6X6	5
82	12			X		8			X	6X6	6
83	13	X			8	8				6X20	3
84	13	X			8	8				6X20	3
OLA-1	14	X			8	8		X		6X20	3

CONTROLLER LOGIC

PHASE NUMBER	PHASE LOCKING	DUAL ENTRY W / Ø	PHASE RECALL
1		6	
2	X	6	MIN
3		8	
4		8	
5		2	
6	X	2	MIN
7		4	
8		4	

OVERLAPS

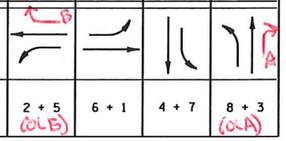
O.L. "A" = 5, 8
O.L. "B" = 2, 7
O.L. "C"
O.L. "D"

TYPE OF INTERCONNECT	
NONE	
TBC	X
CLOSED LOOP	
HARDWIRE	
TONE (FREQ)	

FUTURE PLANS FOR CLOSED LOOP SYSTEM

TYPE OF PRE-EMPT	
NONE	
RAILROAD	
EMERGENCY VEHICLE	X

EMERGENCY VEHICLE PREEMPTION SEQUENCE

EMERGENCY VEHICLE PREMPTOR	A	B	C	D
MOVEMENT				
PHASE	2 + 5 (OLB)	6 + 1	4 + 7	8 + 3 (OLA)

AFTER PREEMPTION SEQUENCE A OR B, CONTROLLER SHALL RETURN TO PHASES 2 & 6.

AFTER PREEMPTION SEQUENCE C OR D, CONTROLLER SHALL RETURN TO PHASES 4 & 8.

GENERAL NOTES:

1. ANY ACTUATED PHASE FOR WHICH THERE IS NO CALL SHALL BE SKIPPED.

2. WHEN ONE PHASE IS ON ALONE, ANY NONCONFLICTING PHASE MAY START TIMING CONCURRENTLY WITHOUT A CLEARANCE INTERVAL (SEE CHART 1 AT LEFT).

TYPE OF LIGHTING	
NONE	
IN TRAFFIC CONTROL CABINET	
IN SEPARATE CONTROL CABINET	X

LC-4 TO UTILIZE SAME ELECTRICAL SERVICE AS CB-1

STH 52 & 28TH AVENUE

CITY OF WAUSAU, MARATHON COUNTY

SIGNAL NO. 982

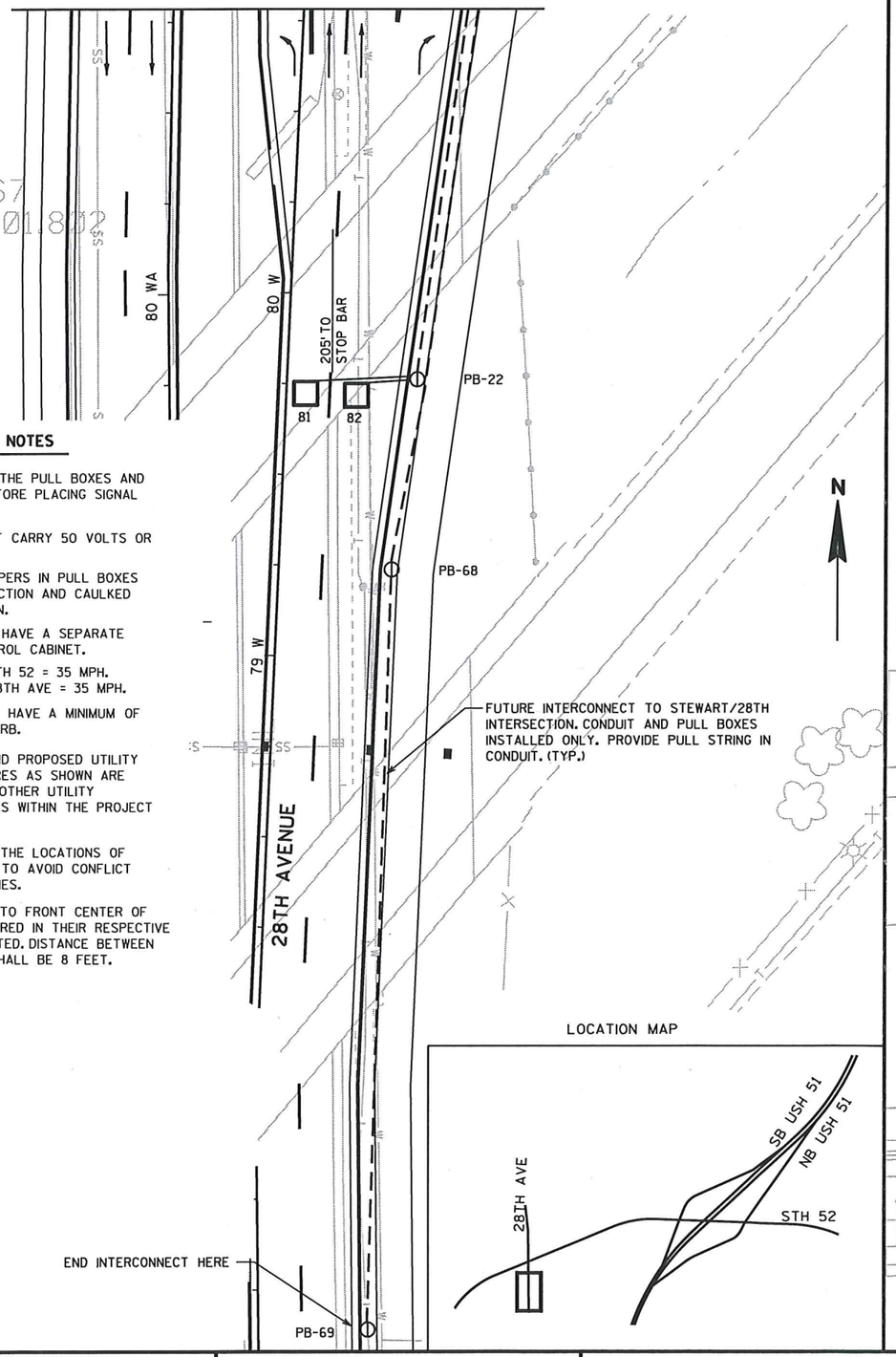
PROJECT NO: 166-09-72	HWY: STH 52	COUNTY: MARATHON	SEQUENCE OF OPERATIONS	SHEET	E

FILE NAME : U:\Signals\Working On\PH_0982_REV1.dgn PLOT DATE : 06-JUN-2013 10:08 PLOT BY : dotlm PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

2

MATCH LINE 80+79 WA



CONSTRUCTION NOTES

1. THE CONTRACTOR WILL HAVE THE PULL BOXES AND CONDUIT RUNS INSPECTED BEFORE PLACING SIGNAL CABLE INTO SYSTEM.
2. ALL METAL PULL BOXES THAT CARRY 50 VOLTS OR MORE TO BE BONDED.
3. TERMINATION OF BONDING JUMPERS IN PULL BOXES TO BE LUG AND BOLT CONNECTION AND CAULKED (SILICONE) AFTER INSTALLATION.
4. EACH LOOP DETECTOR SHALL HAVE A SEPARATE LEAD-IN CABLE TO THE CONTROL CABINET.
5. FUTURE POSTED SPEED ON STH 52 = 35 MPH. FUTURE POSTED SPEED ON 28TH AVE = 35 MPH.
6. ALL SIGNAL EQUIPMENT SHALL HAVE A MINIMUM OF 2' CLEARANCE TO FACE OF CURB.
7. THE LOCATION OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AND STRUCTURES AS SHOWN ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS OR STRUCTURES WITHIN THE PROJECT AREA WHICH ARE NOT SHOWN.
8. THE ENGINEER SHALL ADJUST THE LOCATIONS OF ITEMS UNDER THIS CONTRACT TO AVOID CONFLICT WITH EXISTING UTILITY FACILITIES.
9. LOOP DETECTOR LOCATION IS TO FRONT CENTER OF LOOP. LOOPS SHALL BE CENTERED IN THEIR RESPECTIVE LANES UNLESS OTHERWISE NOTED. DISTANCE BETWEEN MULTIPLE STOP BAR LOOPS SHALL BE 8 FEET.

LOCATION MAP

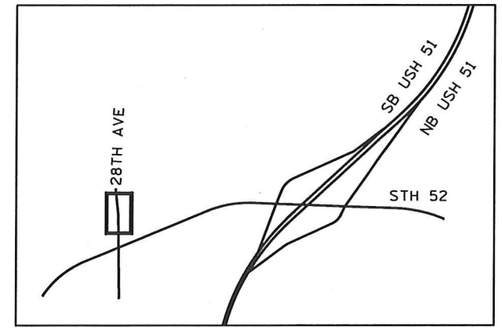
LEGEND

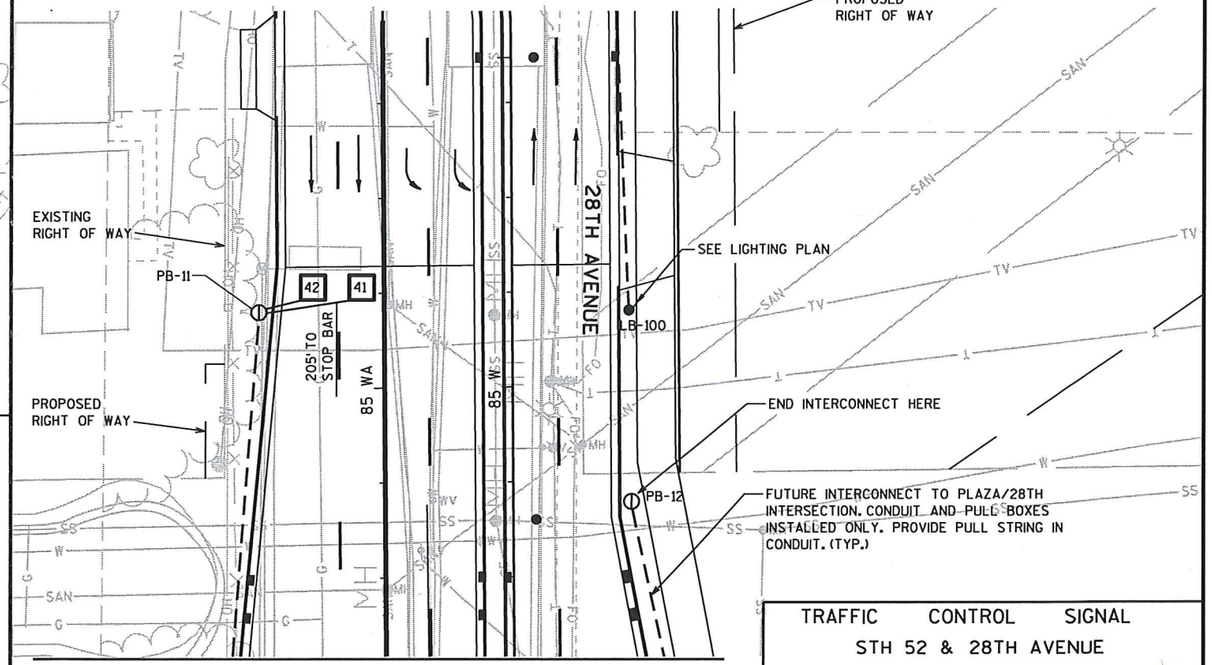
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- LOOP DETECTOR IN 1" NONMETALLIC CONDUIT SIDE PULL (SDD OPTION 2)
- PULL BOXES STEEL 18X24-INCH
- PULL BOXES STEEL 24X42-INCH
- LANE DESIGNATION, FOR REFERENCE ONLY

N

2

LOCATION MAP





MATCH LINE 84+29 WA

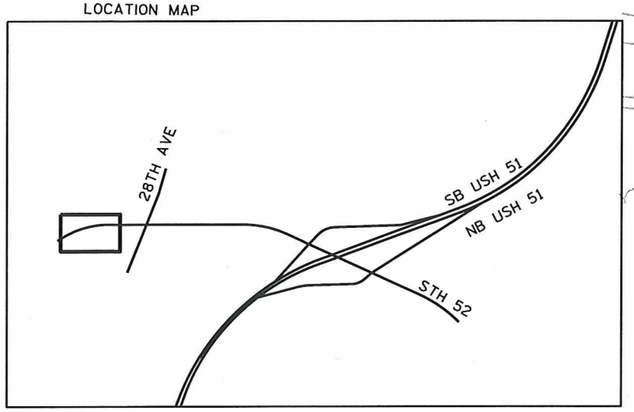
TRAFFIC CONTROL SIGNAL
STH 52 & 28TH AVENUE
CITY OF WAUSAU, MARATHON COUNTY
SIGNAL NO. 982

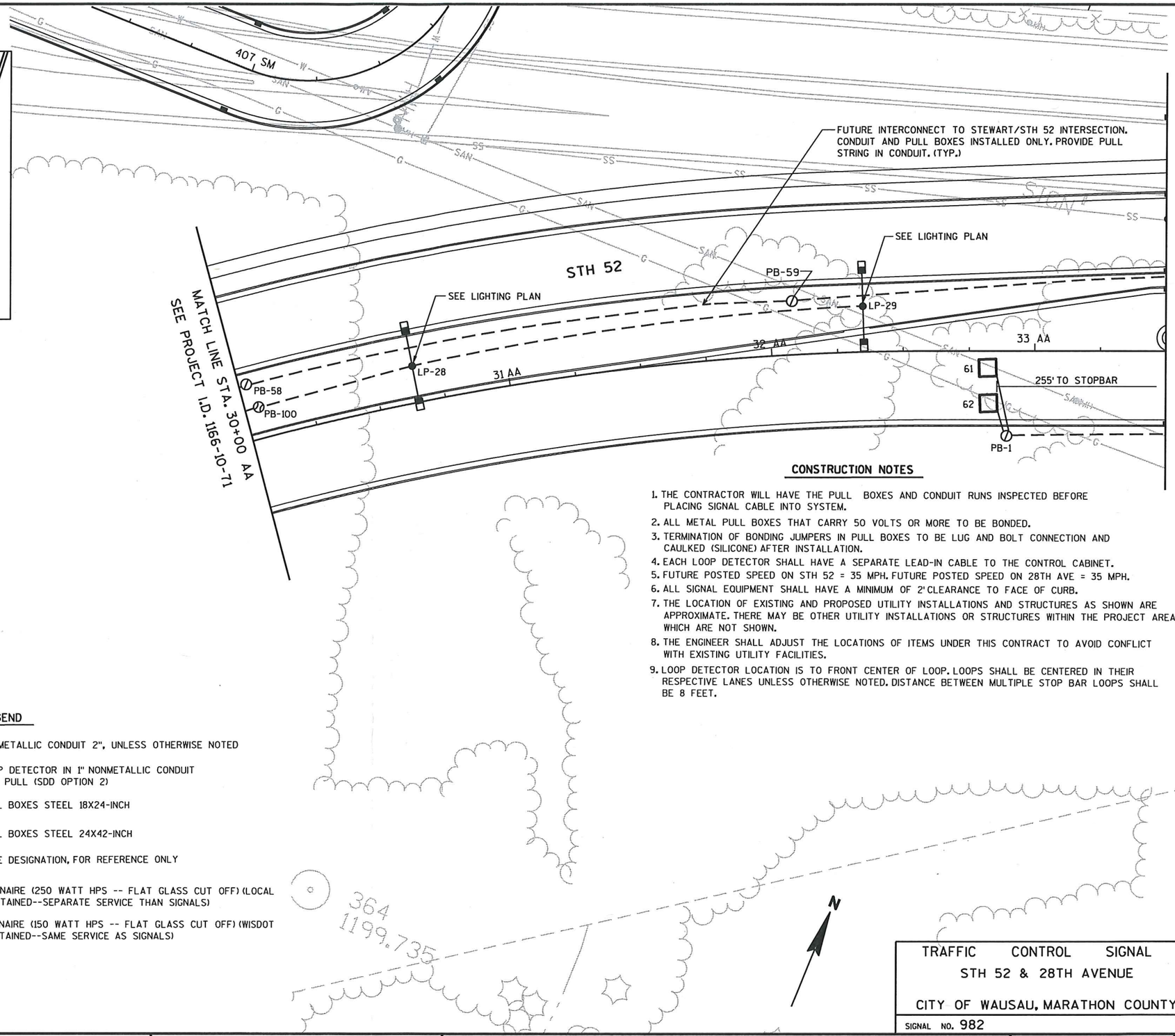
PROJECT NO: 1166-09-72	HWY: STH 52	COUNTY: MARATHON	STH 52/28TH AVENUE TRAFFIC SIGNAL	SHEET	E

FILE NAME : W:\traffic\Signals\NCR Maintained\Marathon\982\Plan\982_024013_sp.dgn PLOT DATE : 06-JUN-2013 10:01 PLOT BY : dotllm PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

LOCATION MAP





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- PULL BOXES STEEL 24X42-INCH
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- LUMINAIRE (250 WATT HPS -- FLAT GLASS CUT OFF) (LOCAL MAINTAINED--SEPARATE SERVICE THAN SIGNALS)
- LUMINAIRE (150 WATT HPS -- FLAT GLASS CUT OFF) (WISDOT MAINTAINED--SAME SERVICE AS SIGNALS)

TRAFFIC CONTROL SIGNAL
STH 52 & 28TH AVENUE
CITY OF WAUSAU, MARATHON COUNTY
SIGNAL NO. 982

PROJECT NO: 1166-09-72	HWY: STH 52	COUNTY: MARATHON	STH 52/28TH AVENUE TRAFFIC SIGNAL	SHEET	E

FILE NAME : W:\traffic\Signals\NCR Maintained\Marathon\982\Plan\982_024014_sp.dgn PLOT DATE : 06-JUN-2013 10:02 PLOT BY : dotllm PLOT NAME : PLOT SCALE : 39.999979:1

WISDOT/CADDS SHEET 42

LEGEND

- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- LOOP DETECTOR IN 1" NONMETALLIC CONDUIT SIDE PULL (SDD OPTION 2)
- PULL BOXES STEEL 18X24-INCH
- PULL BOXES STEEL 24X42-INCH
- LANE DESIGNATION, FOR REFERENCE ONLY
- LUMINAIRE (250 WATT HPS -- FLAT GLASS CUT OFF) (LOCAL MAINTAINED--SEPARATE SERVICE THAN SIGNALS)
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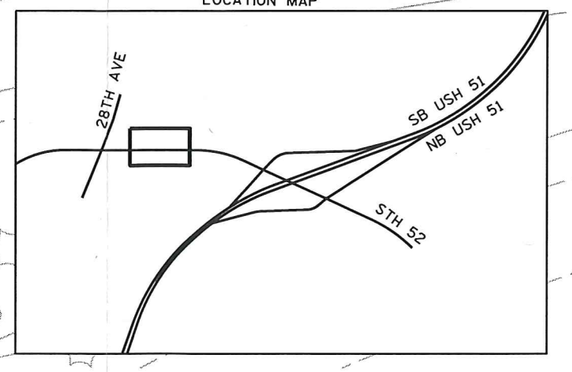
N

STA. 40+25.0 AA, 82.85'LT
LP-38
1-2" PB-16
22
255' TO STOP BAR
21
STA. 40+20.0 AA, 8.70'LT
LP-37
SEE LIGHTING PLAN
LP-39
PB-71
LP-40
SEE LIGHTING PLAN
PB-72
LP-41
SEE LIGHTING PLAN
12 CD
13 CD
14 CD
STH 52
WB S.T.H. 29
EB S.T.H. 29
MATCH LINE 39+72 AA
MATCH LINE 45+61 AA
40 AA
41 AA
42 AA
43 AA
44 AA
45 AA
FUTURE INTERCONNECT TO SIGNAL 540.
CONDUIT AND PULL BOXES INSTALLED ONLY.
PROVIDE PULL STRING IN CONDUIT (TYP.)

LOCATION MAP



TRAFFIC CONTROL SIGNAL
STH 52 & 28TH AVENUE
CITY OF WAUSAU, MARATHON COUNTY
SIGNAL NO. 982

PROJECT NO: 1166-09-72	HWY: STH 52	COUNTY: MARATHON	STH 52/28TH AVENUE TRAFFIC SIGNAL	SHEET	E

FILE NAME : W:\traffic\Signals\NCR Maintained\Marathon\982\Plan\982_024015_sp.dgn PLOT DATE : 06-JUN-2013 10:03 PLOT BY : dotllm PLOT NAME : PLOT SCALE : 39.999906:1

WISDOT/CADDS SHEET 42

Wisconsin DOT

S 37-0982 (Fiber) - STH 52 & 28th Ave - Econolite Type - ASC3

Configuration Phase Sequence

Controller Sequence (MM)1-1-1

Hardware Alternate Sequence Enable: No

Phase Ring Sequence.....(Note: Sequences identical to the prior one are not printed)

	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
Sequence 1																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 2																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 3																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 4																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 5																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 6																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 7																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 8																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 9																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 10																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 11																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 12																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 13																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 14																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 15																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 16																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.

Phases In Use / Exclusive PED (MM)1-2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phases in Use	X	X	X	X	X	X	X	X								
Exclusive PED																

Phase Compatibility (MM)1-1-2

Phase	Compatible Phase

1	5
1	6
2	5
2	6
3	7
3	8
4	7
4	8
9	11
9	12
10	11
10	12
13	15
13	16
14	15
14	16

Phase and Overlap Descriptions

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Description																
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**L**	**K**	**L**	**M**	**N**	**O**
Description																

Administration (MM)1-7-1

Enable CU/Cabinet Interlock CRC	No
Request Download Controller Data	No
Controller Database CRC	5818
Enable Automatic Backup to Datakey	Yes

Backup Prevent (MM)1-1-3

Timing / Backup	Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	1		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	2	.		.	.	.	.	.	.	.	.	.	.	.	.	.	.
	3	.	.		.	.	.	.	.	.	.	.	.	.	.	.	.
	4	.	.	.		.	.	.	.	.	.	.	.	.	.	.	.
	5	.	.	.	.		.	.	.	.	.	.	.	.	.	.	.
	6	.	.	.	.	.		.	.	.	.	.	.	.	.	.	.
	7	.	.	.	.	.	.		.	.	.	.	.	.	.	.	.
	8	.	.	.	.	.	.	.		.	.	.	.	.	.	.	.
	9	.	.	.	.	.	.	.	.		.	.	.	.	.	.	.
	10	.	.	.	.	.	.	.	.	.		.	.	.	.	.	.
	11	.	.	.	.	.	.	.	.	.	.		.	.	.	.	.
	12	.	.	.	.	.	.	.	.	.	.	.		.	.	.	.
	13	.	.	.	.	.	.	.	.	.	.	.	.		.	.	.
	14	.	.	.	.	.	.	.	.	.	.	.	.	.		.	.
	15	.	.	.	.	.	.	.	.	.	.	.	.	.	.		.
	16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	

Simultaneous Gap (MM)1-1-4

Phase Must Gap With Phase	Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	1		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	2	.		.	.	.	X	.	.	.	.	.	.	.	.	.	.
	3	.	.		.	.	.	.	.	.	.	.	.	.	.	.	.
	4	.	.	.		.	.	.	X	.	.	.	.	.	.	.	.
	5	.	.	.	.		.	.	.	.	.	.	.	.	.	.	.
	6	.	X	.	.	.		.	.	.	.	.	.	.	.	.	.
	7	.	.	.	.	.	.		.	.	.	.	.	.	.	.	.
	8	.	.	.	X	.	.	.		.	.	.	.	.	.	.	.
	9	.	.	.	.	.	.	.	.		.	.	.	.	.	.	.
	10	.	.	.	.	.	.	.	.	.		.	.	.	.	.	.
	11	.	.	.	.	.	.	.	.	.	.		.	.	.	.	.
	12	.	.	.	.	.	.	.	.	.	.	.		.	.	.	.
	13	.	.	.	.	.	.	.	.	.	.	.	.		.	.	.
	14	.	.	.	.	.	.	.	.	.	.	.	.	.		.	.
	15	.	.	.	.	.	.	.	.	.	.	.	.	.	.		.
	16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
	Disable	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Load Switch Assignments (MMU Channel) (MM)1-3

	Phase / Overlap	Type	Dimming				Power Up				Auto		Flash Together
			Red	Yellow	Green	Dark	Auto	Red	Yellow	Dark	Red	Yellow	
1	1	V				+	X				X		X
2	2	V				+	X				X		
3	3	V				+	X				X		X
4	4	V				+	X				X		
5	5	V				-	X				X		
6	6	V				-	X				X		X
7	7	V				-	X				X		
8	8	V				-	X				X		X
9	2	P				+	X						
10	4	P				+	X						
11	6	P				-	X						
12	8	P				-	X						
13	1	O				+	X				X		X
14	2	O				-	X				X		X
15	3	O				+	X				X		
16	4	O				-	X				X		

Wisconsin DOT

S 37-0982 (Fiber) - STH 52 & 28th Ave - Econolite Type - ASC3

Configuration Port 1 (SDLC)

SDLC Options (MM)1-4-1

BIU	1	2	3	4	5	6	7	8
Term and Facility Enable								
Detector Rack Enable								

Enable TS2/MMU Type Cabinet: No
Enable MMU Extended Status: No
Enable SDLC Stop Time: No
Enable 3 Critical RFE's Lockup: No

MMU Program (MM)1-4-2

Channel Can Serve with Channel	
Channel 1	**Channel 2**
1	5
1	6
2	5
2	6
3	7
3	8
4	7
4	8

Color Check Enable (MM)1-4-3
Enable Color Check: Yes

MMU Channel	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Green	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Yellow	X	X	X	X	X	X	X	X					X	X	X	X
Red		X		X		X		X								

Secondary To Secondary Addressing (MM)1-4-4

ID	1	2	3	4	5	6	7	8	MMU
Term and Facility Enable									

ID	1	2	3	4	5	6	7	8	Diag
Detector Rack Enable									

Diagonstics (Test Fixture) Enable: No

Wisconsin DOT

S 37-0982 (Fiber) - STH 52 & 28th Ave - Econolite Type - ASC3

Configuration Communications

Ethernet Port Configuration (MM)1-5-1
Controller IP: 172.24.64.60
Subnet Mask: 255.255.254.0
Default Gateway IP: 172.24.64.1
Server IP: 0.0.0.0

NTCIP Parameters (MM)1-5-5
Backup Time: 0
UDP Port: 501
Ethernet Priority: 1
Port 2 Priority: 4
Port 3A Priority: 2
Port 3B Priority: 3

Port Configuration (MM)1-5-2 to 1-5-4

Port	2 (C50S)	3A (C21S)	3B (C22S)
Protocol	NTCIP	NTCIP	Terminal
Enable	Yes	Yes	No
Data Rate	19.2K	19.2K	1200
Data Parity Stop	8 N 1	8 N 1	8 0 1
Modem Setup String	None	None	None
User String			
Comm Port Address	1	1	0
System Detector 9-1	0	0	0
Telemetry Response Delay	0.0	0.0	0.0
Duplex Half/Full	Full	Full	Full
Flow Control	Yes	Yes	Yes
AB3418 NTCIP Group Address	0	0	0
AB3418 NTCIP Single Flag Enable	No	No	No

RTS to CTS Delay	0.0	0.0	3.0
RTS Turn Off Delay	0.0	0.0	2.0
Droupout Time	10	10	10
Early RTS	No	No	No
Telemetry Mode	FSK	FSK	FSK
Rail Road	0	0	0
Rail Road Line	0	0	0
ATCS Group	0	0	0
Wayside Device	0	0	0
ATCS Device	0	0	0
Wayside SubNode	0	0	0
ATCS SubNode	0	0	0

ECPIP Parameters (MM)1-5-6

Controller Address: 0
Expanded System Detector Address: 0

Local System Detector

Local System Detector	Number

Wisconsin DOT

S 37-0982 (Fiber) - STH 52 & 28th Ave - Econolite Type - ASC3

Configuration Logging/Display

Event Logging (MM)1-6-1

Critical RFE's	Yes	3 Critical RFE's in 24 Hours	Yes
MMU Flash Faults	Yes	Local Flash Faults	Yes
Non-Critical RFE's (Det/Test)	Yes	Detector Errors	Yes
Coordination Errors	Yes	Controller Download	Yes
Preempt	Yes	TSP	Yes
Power On/Off	Yes	Low Battery	Yes
Access	Yes	Data Change	Yes
Online/Offline	Yes		

Alarm Log	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Enable Logging	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Display Options (MM)1-7-2

Key Click Enable: Yes
Backlight Enable: Yes
LED Mode: Single Color
Main Status Display Mode: Basic
Screen Format: Advanced
Trans Mode Pop-up Disable: No

Sign On (MM)8-5

Sign On Message Line 1: INTERSECTION NAME:
Sign On Message Line 2: WisDOT Data Base

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S 37-0982 (Fiber) - STH 52 & 28th Ave - Econolite Type - ASC3

Controller Timing Plan (MM)2-1

Plan 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction																
Min Green	8	16	8	10	8	16	8	10	0	0	0	0	0	0	0	0
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	10	0	7	0	13	0	7	0	0	0	0	0	0	0	0

Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	18	0	15	0	17	0	17	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	2.0	5.0	2.0	2.0	2.0	5.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	20	50	12	30	20	60	25	25	0	0	0	0	0	0	0	0
Max 2	12	25	12	15	12	30	17	15	0	0	0	0	0	0	0	0
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.5	4.0	3.5	4.0	3.5	4.0	3.5	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	0.5	3.0	0.5	3.0	0.5	3.0	0.5	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	24	0	0	0	24	0	0	0	0	0	0	0	0	0	0
Time B4	0	20	0	0	0	20	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	20	0	0	0	20	0	0	0	0	0	0	0	0	0	0
Min Gap	2.0	3.0	2.0	2.0	2.0	3.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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Controller Overlaps

Vehicle Overlaps (MM)2-2

Overlap	Type	Lag Green	Yellow	Red	Advance Green

Phases

Overlap	Phase	Included	Protect	Ped Protect	Not Overlap	Modifier	Lag X Phase	Lag 2 Phase	Flash Green
A	5	Yes	No	No	No		No	No	0
A	8	Yes	No	No	No		No	No	0
B	2	Yes	No	No	No		No	No	0
B	7	Yes	No	No	No		No	No	0

PPLT FYA

Overlap	Protected Left Turn	Opposing Through	Flash Arrow Output	Flash Arrow Channel	FYA Delay	FYA Clearance	Special Function Disable	Ped Protected

Guaranteed Minimum Time Data (MM) 2-4

Phase Time Data

Phase	Min Green	Walk	Ped Clear	Yellow	Red Clear	Overlap Green
A01	1	0	7	3.0	0.0	1
B02	1	0	7	3.0	0.0	1
C03	1	0	7	3.0	0.0	1
D04	1	0	7	3.0	0.0	1
E05	1	0	7	3.0	0.0	1
F06	1	0	7	3.0	0.0	1
G07	1	0	7	3.0	0.0	1
H08	1	0	7	3.0	0.0	1
I09	1	0	7	3.0	0.0	1
J10	1	0	7	3.0	0.0	1
K11	1	0	7	3.0	0.0	1
L12	1	0	7	3.0	0.0	1
M13	1	0	7	3.0	0.0	1
N14	1	0	7	3.0	0.0	1
O15	1	0	7	3.0	0.0	1
P16	1	0	7	3.0	0.0	1

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Controller Pedestrian Overlaps

Pedestrian Overlaps (MM) 2-3

Included Phase	Ped Overlap

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S 37-0982 (Fiber) - STH 52 & 28th Ave - Econolite Type - ASC3

Controller Start/Fash (MM) 2-5

Startup

Phase	Phase Setting
2	G
6	G

Overlap
A
B
C
D

Flash > Mon: No
Flash Time: 10
All Red: 6
Power Start Sequence: 1
MUTCD Enabled: No
MUTCD Yellow to Green: n/a

Automatic Flash

Entry Phase
2
6

Exit Phase
2
6

Overlap Exit
A
B
C
D

Flash > Mon: No
Exit Flash Interval: G
Minimum Auto Flash: 8
Minimumin Recall: No
Cycle Through Phase: No

Wisconsin DOT

S 37-0982 (Fiber) - STH 52 & 28th Ave - Econolite Type - ASC3

Controller Options

Controller Options (MM)2-6-1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Flashing Green Phase																

Guaranteed Passage																
Non Act 1																
Non Act 2																
Dual Entry		X		X		X		X								
Conditional Service																
Conditional Reservice																
Ped Reservice																
Rest In Walk																
Flashing Walk																
Ped Clear Yellow																
Ped Clear Red																
IGRN + Veh Ext																

Ped Clear Protect: On Red Revert: 2.0 MUTCD 3 Seconds Don't Walk: No

Act Pre-Time (MM)2-7

Pre-Time Mode Enable: No Free Input Enables Pre-Timed: No

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Pre-Timed Phase																

Phase Recall Options (MM)2-8

Plan 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector		X				X										
Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
AI Calc																

Plan 2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector		X				X										
Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
AI Calc																

Plan 3

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector		X				X										
Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
AI Calc																

Plan 4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector		X				X										
Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
AI Calc																

S 37-0982 (Fiber) - STH 52 & 28th Ave - Econolite Type - ASC3

Coordination Options

Coordination Options (MM)3-1

Manual Pattern	Auto	ECPI Coord	Yes
System Source	SYS	System Format	PTN
Splits In	Seconds	Offsets In	Seconds
Transition	Smooth	Max Select	MAXINH
Dwell/Add Time	0		
Delay Coord Walk to LZ	No	Force Off	Fixed
Offset Reference	Lead	Use Ped Time	No
Ped Recall	No	Ped Reservice	No
Local Zero Override	No	FO Added Initial Green	Yes
Re-Sync Count	3	Multisync	No

Auto Perm Minimum Green (Seconds) (MM)3-4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Minimum Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Split Demand (MM)3-5

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Demand 1																
Demand 2																

Demand	1	2
Detector	0	0
Call Time (Sec)	0	0
Cycle Count	0	0

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Coordination Pattern Data

Pattern Data (MM)3-2

Wisconsin DOT

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Preemptor

Preempt Plan (MM)4-1

Plan 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Track Clear Vehicle																
Track Clear Overlap																
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Vehicle		X			X											
Dwell Ped																
Dwell Overlap		X														
Cycling Vehicle																
Cycling Ped																
Cycling Overlap																
Exit Phase		X				X										
Exit Calls	X		X	X			X	X								
Special Funciton																

Enable	Yes	Preempt Override	No	Interlock Enable	No
Detector Lock	Yes	Delay	0	Inhibit	0
Override Flash	No	Duration	0	CLR > GRN	No

Term Overlap Asap	No	PC Through Yellow	No	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	Flash Exit Color	Green	Exit Option	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Preempt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	0	255	5	25.5	25.5
	Min Grn	Ext Grn	Max Grn	Yellow	Red
Track Clear	0	0	0	25.5	25.5
	Min Dwell	Pmt Ext	Max Time	Yellow	Red
Dwell / Cycle-Exit	10	0.5	180	25.5	25.5

Preempt Active Out	On	Preempt Active Dwell	No
Other Priority Preempt	On	Non-Priority Preempt	F1
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Pri Return % Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Track Clear Vehicle																
Track Clear Overlap																
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Vehicle	X					X										
Dwell Ped																
Dwell Overlap																
Cycling Vehicle																
Cycling Ped																
Cycling Overlap																
Exit Phase		X				X										
Exit Calls			X	X	X		X	X								
Special Funciton																

Enable	Yes	Preempt Override	No	Interlock Enable	No
Detector Lock	Yes	Delay	0	Inhibit	0
Override Flash	No	Duration	0	CLR > GRN	No
Term Overlap Asap	No	PC Through Yellow	No	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	Flash Exit Color	Green	Exit Option	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Preempt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	0	255	5	25.5	25.5
	Min Grn	Ext Grn	Max Grn	Yellow	Red
Track Clear	0	0	0	25.5	25.5
	Min Dwell	Pmt Ext	Max Time	Yellow	Red
Dwell / Cycle-Exit	10	0.5	180	25.5	25.5

Preempt Active Out	On	Preempt Active Dwell	No
Other Priority Preempt	On	Non-Priority Preempt	F1
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Pri Return % Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 3

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Overlap	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Track Clear Vehicle																
Track Clear Overlap																
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Vehicle				X			X									
Dwell Ped																
Dwell Overlap																
Cycling Vehicle																
Cycling Ped																
Cycling Overlap																
Exit Phase				X				X								
Exit Calls	X	X	X		X	X										
Special Funciton																

Enable	Yes	Preempt Override	No	Interlock Enable	No
Detector Lock	Yes	Delay	0	Inhibit	0
Override Flash	No	Duration	0	CLR > GRN	No
Term Overlap Asap	No	PC Through Yellow	No	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	Flash Exit Color	Green	Exit Option	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Preempt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	0	255	5	25.5	25.5
	Min Grn	**Ext Grn**	**Max Grn**	**Yellow**	**Red**
Track Clear	0	0	0	25.5	25.5
	Min Dwell	**Pmt Ext**	**Max Time**	**Yellow**	**Red**
Dwell / Cycle-Exit	10	0.5	180	25.5	25.5

Preempt Active Out	On	Preempt Active Dwell	No
Other Priority Preempt	On	Non-Priority Preempt	F1
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Pri Return % Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Track Clear Vehicle																
Track Clear Overlap																
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Vehicle			X					X								
Dwell Ped																
Dwell Overlap	X															
Cycling Vehicle																
Cycling Ped																
Cycling Overlap																
Exit Phase				X				X								
Exit Calls	X	X			X	X	X									
Special Funciton																

Enable	Yes	Preempt Override	No	Interlock Enable	No
Detector Lock	Yes	Delay	0	Inhibit	0
Override Flash	No	Duration	0	CLR > GRN	No
Term Overlap Asap	No	PC Through Yellow	No	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	Flash Exit Color	Green	Exit Option	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Preempt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red

Entrance	0	255	5	25.5	25.5
	Min Grn	**Ext Grn**	**Max Grn**	**Yellow**	**Red**
Track Clear	0	0	0	25.5	25.5
	Min Dwell	**Pmt Ext**	**Max Time**	**Yellow**	**Red**
Dwell / Cycle-Exit	10	0.5	180	25.5	25.5

Preempt Active Out	On	Preempt Active Dwell	No
Other Priority Preempt	On	Non-Priority Preempt	F1
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Veh Pri Return % Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Wisconsin DOT

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Preemptor Preempt Filtering
Enable Preempt Filtering and TSP/SCP
(MM)4-2

Input	Solid	Pulsing
1	...Bypassed...	...Bypassed...
2	...Bypassed...	...Bypassed...
3	Preemption -3	TSP/SCP -1
4	Preemption -4	TSP/SCP -2
5	Preemption -5	TSP/SCP -3
6	Preemption -6	TSP/SCP -4
7	Preemption -7	...Bypassed...
8	Preemption -8	...Bypassed...
9	Preemption -9	...Bypassed...
10	Preemption -10	...Bypassed...

Wisconsin DOT

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Time Base Clock/Calendar
Clock/Calendar Options (MM)5-1

Enable Action Plan:	0
Sync Reference Time:	12:00 AM
Sync Reference:	Reference Time
Day Light Savings:	No
Time Reset Input Set Time:	3:30:00
Standard Time From GMT:	0

Wisconsin DOT

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Time Base Action Plan
Action Plan (MM)5-2

Action Plan - 1

Pattern	99	Override System	No
Timing Plan	0	Sequence	0
Veh Det Plan	0	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**

Ped Recall															
Walk 2															
Veh Ext 2															
Veh Recall															
Max Recall															
Max 2															
Max 3															
CS Inhibit															
Omit															

Special Function															
Auxilliary Function															

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 2

Pattern	2	Override System	No
Timing Plan	0	Sequence	0
Veh Det Plan	0	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 3

Pattern	3	Override System	No
Timing Plan	0	Sequence	0
Veh Det Plan	0	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 99

Pattern	254 - FREE	Override System	No
Timing Plan	0	Sequence	0
Veh Det Plan	0	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2		X		X	X	X	X	X								
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 100

Pattern	254 - FREE	Override System	No
Timing Plan	0	Sequence	0
Veh Det Plan	0	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Wisconsin DOT

S 37-0982 (Fiber) - STH 52 & 28th Ave - Econolite Type - ASC3

Time Base Day Plan/Schedule
Day Plan (MM)5-3

Day Plan - 1

Event	Action Plan	Start Time
1	99	12:00 AM
2	100	6:00 AM
3	99	9:00 PM

Schedule (MM)5-4

Schedule Number - 1

Day Plan Number: 1

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	X	X	X	X	X	X	X	X	X	X	X	X

Day of Week	Sun	Mon	Tue	Wed	Thur	Fri	Sat
	X	X	X	X	X	X	X

Day of Month	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**
	X	X	X	X	X	X	X	X	X	X	X
	23	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**		
	X	X	X	X	X	X	X	X	X		

Wisconsin DOT

S 37-0982 (Fiber) - STH 52 & 28th Ave - Econolite Type - ASC3

Time Base Exceptions
Exception Day Program (MM)5-5

Day	Fixed/Float	Month	Day of Week/Month	Week of Month/Year	Day Plan
37	FIXED	255	255	65535	255
38	FIXED	255	255	65535	255
39	FIXED	255	255	65535	255
40	FIXED	255	255	65535	255
41	FIXED	255	255	65535	255
42	FIXED	255	255	65535	255
43	FIXED	255	255	65535	255
44	FIXED	255	255	65535	255
45	FIXED	255	255	65535	255
46	FIXED	255	255	65535	255
47	FIXED	255	255	65535	255
48	FIXED	255	255	65535	255
49	FIXED	255	255	65535	255
50	FIXED	255	255	65535	255
51	FIXED	255	255	65535	255
52	FIXED	255	255	65535	255
53	FIXED	255	255	65535	255
54	FIXED	255	255	65535	255
55	FIXED	255	255	65535	255
56	FIXED	255	255	65535	255
57	FIXED	255	255	65535	255
58	FIXED	255	255	65535	255
59	FIXED	255	255	65535	255
60	FIXED	255	255	65535	255
61	FIXED	255	255	65535	255
62	FIXED	255	255	65535	255
63	FIXED	255	255	65535	255
64	FIXED	255	255	65535	255
65	FIXED	255	255	65535	255
66	FIXED	255	255	65535	255
67	FIXED	255	255	65535	255
68	FIXED	255	255	65535	255
69	FIXED	255	255	65535	255
70	FIXED	255	255	65535	255
71	FIXED	255	255	65535	255
72	FIXED	255	255	65535	255
73	FIXED	255	255	65535	255

74	FIXED	255	255	65535	255
75	FIXED	255	255	65535	255
76	FIXED	255	255	65535	255
77	FIXED	255	255	65535	255
78	FIXED	255	255	65535	255
79	FIXED	255	255	65535	255
80	FIXED	255	255	65535	255
81	FIXED	255	255	65535	255
82	FIXED	255	255	65535	255
83	FIXED	255	255	65535	255
84	FIXED	255	255	65535	255
85	FIXED	255	255	65535	255
86	FIXED	255	255	65535	255
87	FIXED	255	255	65535	255
88	FIXED	255	255	65535	255
89	FIXED	255	255	65535	255
90	FIXED	255	255	65535	255

Wisconsin DOT

S 37-0982 (Fiber) - STH 52 & 28th Ave - Econolite Type - ASC3

Detectors

Detectors Page 1

Vehicle Detectors Setup (MM)6-1

Vehicle Plan	Detector Number	Called	Type
1	1	1	N
1	2	2	N
1	3	3	N
1	4	4	N
1	5	5	N
1	6	6	N
1	7	7	N
1	8	8	N
1	60	2	N
1	60	4	N
1	60	6	N
1	60	8	N
2	1	1	N
2	2	2	N
2	3	3	N
2	4	4	N
2	5	5	N
2	6	6	N
2	7	7	N
2	8	8	N
2	60	2	N
2	60	4	N
2	60	6	N
2	60	8	N
3	1	1	N
3	2	2	N
3	3	3	N
3	4	4	N
3	5	5	N
3	6	6	N
3	7	7	N
3	8	8	N
3	60	2	N
3	60	4	N
3	60	6	N
3	60	8	N
4	1	1	N
4	2	2	N
4	3	3	N

4	4	4	N
4	5	5	N
4	6	6	N
4	7	7	N
4	8	8	N
4	60	2	N
4	60	4	N
4	60	6	N
4	60	8	N

Vehicle Detector Setup (MM)6-2 continued

Detector Number	Type	TS2 Detector	Detector Description
1	N-NTCIP	Yes	
2	N-NTCIP	Yes	
3	N-NTCIP	Yes	
4	N-NTCIP	Yes	
5	N-NTCIP	Yes	
6	N-NTCIP	Yes	
7	N-NTCIP	Yes	
8	N-NTCIP	Yes	
9	N-NTCIP	Yes	
10	N-NTCIP	Yes	
11	N-NTCIP	Yes	
12	N-NTCIP	Yes	
13	N-NTCIP	Yes	
14	N-NTCIP	Yes	
15	N-NTCIP	Yes	
16	N-NTCIP	Yes	
17	N-NTCIP	Yes	
18	N-NTCIP	Yes	
19	N-NTCIP	Yes	
20	N-NTCIP	Yes	
21	N-NTCIP	Yes	
22	N-NTCIP	Yes	
23	N-NTCIP	Yes	
24	N-NTCIP	Yes	
25	N-NTCIP	Yes	
26	N-NTCIP	Yes	
27	N-NTCIP	Yes	
28	N-NTCIP	Yes	
29	N-NTCIP	Yes	
30	N-NTCIP	Yes	
31	N-NTCIP	Yes	
32	N-NTCIP	Yes	
33	N-NTCIP	Yes	
34	N-NTCIP	Yes	
35	N-NTCIP	Yes	
36	N-NTCIP	Yes	
37	N-NTCIP	Yes	
38	N-NTCIP	Yes	
39	N-NTCIP	Yes	
40	N-NTCIP	Yes	
41	N-NTCIP	Yes	
42	N-NTCIP	Yes	
43	N-NTCIP	Yes	
44	N-NTCIP	Yes	
45	N-NTCIP	Yes	
46	N-NTCIP	Yes	
47	N-NTCIP	Yes	
48	N-NTCIP	Yes	
49	N-NTCIP	Yes	
50	N-NTCIP	Yes	
51	N-NTCIP	Yes	
52	N-NTCIP	Yes	
53	N-NTCIP	Yes	
54	N-NTCIP	Yes	
55	N-NTCIP	Yes	
56	N-NTCIP	Yes	

57	N-NTCIP	Yes	
58	N-NTCIP	Yes	
59	N-NTCIP	Yes	
60	N-NTCIP	Yes	
61	N-NTCIP	Yes	
62	N-NTCIP	Yes	
63	N-NTCIP	Yes	
64	N-NTCIP	Yes	

Vehicle Detector Setup (MM)6-2 continued

Det Num	Veh Det Plan	Phase	ECPI Log	Call Option	Delay Time	Ext Option	Extend Time / Passage Time	Queue Lim / Discon. Time	Use Added Initial	Cross Switch Phase	Lock In	NTCIP Vol.	NTCIP Occ.	Pmt Queue Delay
1	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
1	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
1	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
1	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
2	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
2	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
2	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
2	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
3	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
3	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
3	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
3	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
4	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
4	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
4	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
4	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
5	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
5	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
5	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
5	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
6	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
6	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
6	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
6	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
7	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
7	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
7	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
7	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
8	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
8	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
8	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
8	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
9	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
9	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
9	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
9	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
10	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
10	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
10	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
10	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
11	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
11	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
11	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
11	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
12	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
12	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
12	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
12	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
13	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
13	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
13	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
13	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
14	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
14	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
14	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

14	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
15	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
15	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
15	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
15	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
16	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
16	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
16	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
16	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
17	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
17	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
17	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
17	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
18	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
18	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
18	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
18	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
19	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
19	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
19	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
19	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
20	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
20	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
20	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
20	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
21	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
21	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
21	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
21	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
22	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
22	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
22	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
22	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
23	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
23	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
23	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
23	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
24	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
24	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
24	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
24	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
25	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
25	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
25	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
25	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
26	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
26	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
26	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
26	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
27	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
27	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
27	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
27	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
28	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
28	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
28	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
28	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
29	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
29	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
29	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
29	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
30	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
30	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
30	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
30	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
31	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
31	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
31	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

31	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
32	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
32	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
32	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
32	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
33	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
33	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
33	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
33	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
34	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
34	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
34	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
34	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
35	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
35	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
35	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
35	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
36	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
36	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
36	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
36	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
37	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
37	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
37	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
37	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
38	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
38	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
38	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
38	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
39	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
39	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
39	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
39	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
40	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
40	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
40	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
40	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
41	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
41	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
41	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
41	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
42	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
42	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
42	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
42	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
43	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
43	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
43	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
43	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
44	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
44	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
44	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
44	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
45	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
45	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
45	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
45	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
46	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
46	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
46	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
46	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
47	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
47	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
47	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
47	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
48	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
48	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
48	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

48	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
49	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
49	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
49	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
49	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
50	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
50	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
50	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
50	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
51	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
51	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
51	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
51	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
52	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
52	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
52	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
52	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
53	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
53	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
53	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
53	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
54	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
54	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
54	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
54	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
55	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
55	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
55	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
55	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
56	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
56	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
56	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
56	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
57	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
57	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
57	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
57	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
58	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
58	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
58	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
58	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
59	1	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
59	2	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
59	3	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
59	4	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
60	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	Yellow	No	No	No
60	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	Yellow	No	No	No
60	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	Yellow	No	No	No
60	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	Yellow	No	No	No
61	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
61	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
61	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
61	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
62	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
62	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
62	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
62	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
63	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
63	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
63	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
63	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
64	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
64	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
64	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
64	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

Ped Detector Options (MM)6-3

Phase Ped Detector (Econolite)

Detector	Call Phase															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.
4	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.
5	.	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.
6	.	.	.	.	.	X	.	.	.	.	.	.	.	.	.	.
7	.	.	.	.	.	.	X	.	.	.	.	.	.	.	.	.
8	.	.	.	.	.	.	.	X	.	.	.	.	.	.	.	.
9	.	.	.	.	.	.	.	.	X	.	.	.	.	.	.	.
10	.	.	.	.	.	.	.	.	.	X	.	.	.	.	.	.
11	.	.	.	.	.	.	.	.	.	.	X	.	.	.	.	.
12	.	.	.	.	.	.	.	.	.	.	.	X	.	.	.	.
13	.	.	.	.	.	.	.	.	.	.	.	.	X	.	.	.
14	.	.	.	.	.	.	.	.	.	.	.	.	.	X	.	.
15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	X	.
16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	X

Wisconsin DOT

S 37-0982 (Fiber) - STH 52 & 28th Ave - Econolite Type - ASC3

Detectors

Detectors Page 2

Log - Speed Detector Setup (MM)6-4

NTCIP Log Period: 60 ECPI Log Period: 15 Length Unit: Inch

Speed Detector	Local Detector	One/Two Detector	Vehicle Length	Trap Length	Enable Log
1	0	1	0	0	No
2	0	1	0	0	No
3	0	1	0	0	No
4	0	1	0	0	No
5	0	1	0	0	No
6	0	1	0	0	No
7	0	1	0	0	No
8	0	1	0	0	No
9	0	1	0	0	No
10	0	1	0	0	No
11	0	1	0	0	No
12	0	1	0	0	No
13	0	1	0	0	No
14	0	1	0	0	No
15	0	1	0	0	No
16	0	1	0	0	No

Vehicle Detector Diagnostics (MM)6-5

Plan	Detector	Counts	Act	Pres	Multiplier	Failed Time	Failed Call Delay
1	1	0	0	0	1	255	0
1	2	0	0	0	1	255	0
1	3	0	0	0	1	255	0
1	4	0	0	0	1	255	0
1	5	0	0	0	1	255	0
1	6	0	0	0	1	255	0
1	7	0	0	0	1	255	0
1	8	0	0	0	1	255	0

1	9	0	0	0	1	255	0
1	10	0	0	0	1	255	0
1	11	0	0	0	1	255	0
1	12	0	0	0	1	255	0
1	13	0	0	0	1	255	0
1	14	0	0	0	1	255	0
1	15	0	0	0	1	255	0
1	16	0	0	0	1	255	0
1	17	0	0	0	1	255	0
1	18	0	0	0	1	255	0
1	19	0	0	0	1	255	0
1	20	0	0	0	1	255	0
1	21	0	0	0	1	255	0
1	22	0	0	0	1	255	0
1	23	0	0	0	1	255	0
1	24	0	0	0	1	255	0
1	25	0	0	0	1	255	0
1	26	0	0	0	1	255	0
1	27	0	0	0	1	255	0
1	28	0	0	0	1	255	0
1	29	0	0	0	1	255	0
1	30	0	0	0	1	255	0
1	31	0	0	0	1	255	0
1	32	0	0	0	1	255	0
1	33	0	0	0	1	255	0
1	34	0	0	0	1	255	0
1	35	0	0	0	1	255	0
1	36	0	0	0	1	255	0
1	37	0	0	0	1	255	0
1	38	0	0	0	1	255	0
1	39	0	0	0	1	255	0
1	40	0	0	0	1	255	0
1	41	0	0	0	1	255	0
1	42	0	0	0	1	255	0
1	43	0	0	0	1	255	0
1	44	0	0	0	1	255	0
1	45	0	0	0	1	255	0
1	46	0	0	0	1	255	0
1	47	0	0	0	1	255	0
1	48	0	0	0	1	255	0
1	49	0	0	0	1	255	0
1	50	0	0	0	1	255	0
1	51	0	0	0	1	255	0
1	52	0	0	0	1	255	0
1	53	0	0	0	1	255	0
1	54	0	0	0	1	255	0
1	55	0	0	0	1	255	0
1	56	0	0	0	1	255	0
1	57	0	0	0	1	255	0
1	58	0	0	0	1	255	0
1	59	0	0	0	1	255	0
1	60	0	0	0	1	255	0
1	61	0	0	0	1	255	0
1	62	0	0	0	1	255	0
1	63	0	0	0	1	255	0
1	64	0	0	0	1	255	0
2	1	0	0	0	1	255	0
2	2	0	0	0	1	255	0
2	3	0	0	0	1	255	0
2	4	0	0	0	1	255	0
2	5	0	0	0	1	255	0
2	6	0	0	0	1	255	0
2	7	0	0	0	1	255	0
2	8	0	0	0	1	255	0
2	9	0	0	0	1	255	0
2	10	0	0	0	1	255	0
2	11	0	0	0	1	255	0
2	12	0	0	0	1	255	0

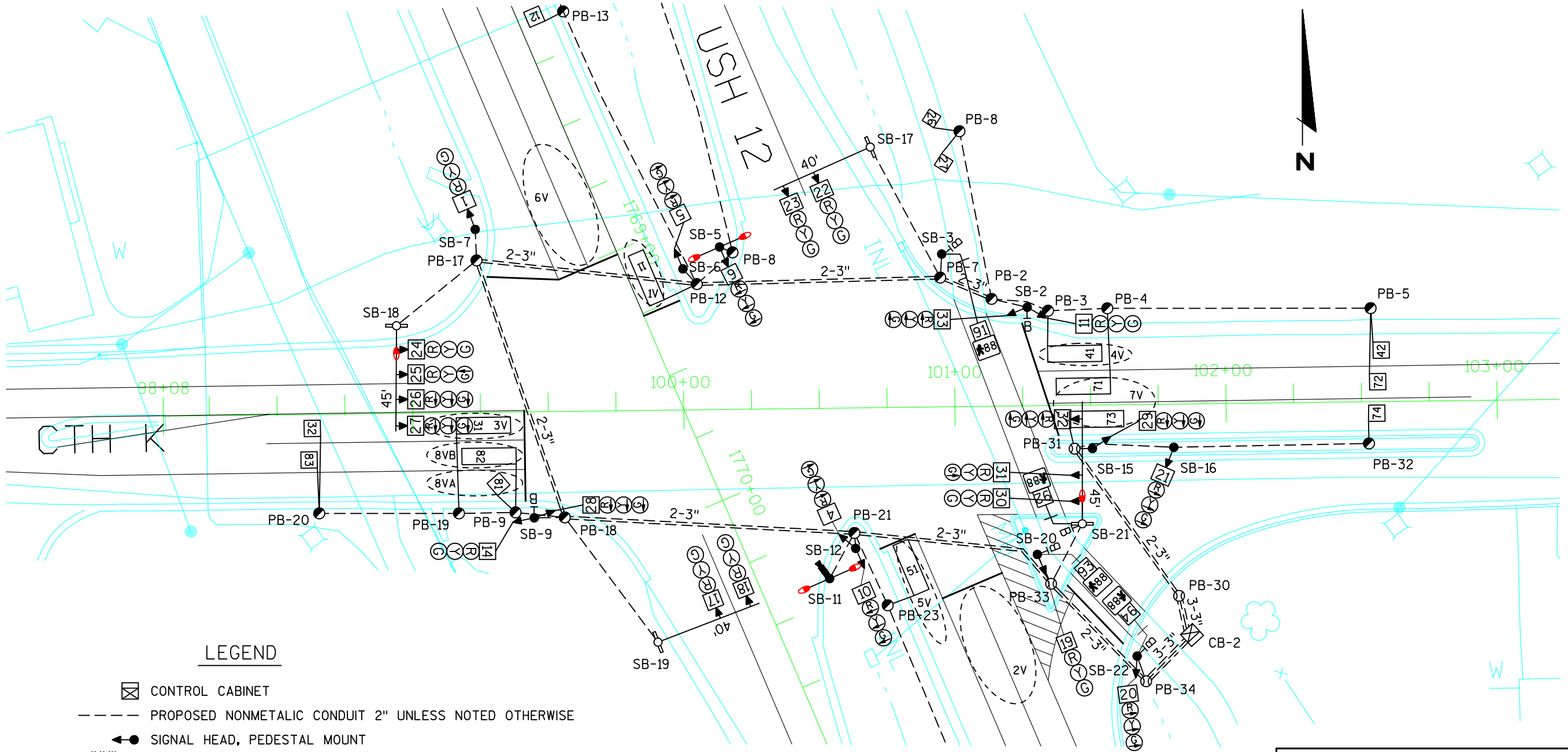
2	13	0	0	0	1	255	0
2	14	0	0	0	1	255	0
2	15	0	0	0	1	255	0
2	16	0	0	0	1	255	0
2	17	0	0	0	1	255	0
2	18	0	0	0	1	255	0
2	19	0	0	0	1	255	0
2	20	0	0	0	1	255	0
2	21	0	0	0	1	255	0
2	22	0	0	0	1	255	0
2	23	0	0	0	1	255	0
2	24	0	0	0	1	255	0
2	25	0	0	0	1	255	0
2	26	0	0	0	1	255	0
2	27	0	0	0	1	255	0
2	28	0	0	0	1	255	0
2	29	0	0	0	1	255	0
2	30	0	0	0	1	255	0
2	31	0	0	0	1	255	0
2	32	0	0	0	1	255	0
2	33	0	0	0	1	255	0
2	34	0	0	0	1	255	0
2	35	0	0	0	1	255	0
2	36	0	0	0	1	255	0
2	37	0	0	0	1	255	0
2	38	0	0	0	1	255	0
2	39	0	0	0	1	255	0
2	40	0	0	0	1	255	0
2	41	0	0	0	1	255	0
2	42	0	0	0	1	255	0
2	43	0	0	0	1	255	0
2	44	0	0	0	1	255	0
2	45	0	0	0	1	255	0
2	46	0	0	0	1	255	0
2	47	0	0	0	1	255	0
2	48	0	0	0	1	255	0
2	49	0	0	0	1	255	0
2	50	0	0	0	1	255	0
2	51	0	0	0	1	255	0
2	52	0	0	0	1	255	0
2	53	0	0	0	1	255	0
2	54	0	0	0	1	255	0
2	55	0	0	0	1	255	0
2	56	0	0	0	1	255	0
2	57	0	0	0	1	255	0
2	58	0	0	0	1	255	0
2	59	0	0	0	1	255	0
2	60	0	0	0	1	255	0
2	61	0	0	0	1	255	0
2	62	0	0	0	1	255	0
2	63	0	0	0	1	255	0
2	64	0	0	0	1	255	0
3	1	0	0	0	1	255	0
3	2	0	0	0	1	255	0
3	3	0	0	0	1	255	0
3	4	0	0	0	1	255	0
3	5	0	0	0	1	255	0
3	6	0	0	0	1	255	0
3	7	0	0	0	1	255	0
3	8	0	0	0	1	255	0
3	9	0	0	0	1	255	0
3	10	0	0	0	1	255	0
3	11	0	0	0	1	255	0
3	12	0	0	0	1	255	0
3	13	0	0	0	1	255	0
3	14	0	0	0	1	255	0
3	15	0	0	0	1	255	0
3	16	0	0	0	1	255	0

3	17	0	0	0	1	255	0
3	18	0	0	0	1	255	0
3	19	0	0	0	1	255	0
3	20	0	0	0	1	255	0
3	21	0	0	0	1	255	0
3	22	0	0	0	1	255	0
3	23	0	0	0	1	255	0
3	24	0	0	0	1	255	0
3	25	0	0	0	1	255	0
3	26	0	0	0	1	255	0
3	27	0	0	0	1	255	0
3	28	0	0	0	1	255	0
3	29	0	0	0	1	255	0
3	30	0	0	0	1	255	0
3	31	0	0	0	1	255	0
3	32	0	0	0	1	255	0
3	33	0	0	0	1	255	0
3	34	0	0	0	1	255	0
3	35	0	0	0	1	255	0
3	36	0	0	0	1	255	0
3	37	0	0	0	1	255	0
3	38	0	0	0	1	255	0
3	39	0	0	0	1	255	0
3	40	0	0	0	1	255	0
3	41	0	0	0	1	255	0
3	42	0	0	0	1	255	0
3	43	0	0	0	1	255	0
3	44	0	0	0	1	255	0
3	45	0	0	0	1	255	0
3	46	0	0	0	1	255	0
3	47	0	0	0	1	255	0
3	48	0	0	0	1	255	0
3	49	0	0	0	1	255	0
3	50	0	0	0	1	255	0
3	51	0	0	0	1	255	0
3	52	0	0	0	1	255	0
3	53	0	0	0	1	255	0
3	54	0	0	0	1	255	0
3	55	0	0	0	1	255	0
3	56	0	0	0	1	255	0
3	57	0	0	0	1	255	0
3	58	0	0	0	1	255	0
3	59	0	0	0	1	255	0
3	60	0	0	0	1	255	0
3	61	0	0	0	1	255	0
3	62	0	0	0	1	255	0
3	63	0	0	0	1	255	0
3	64	0	0	0	1	255	0
4	1	0	0	0	1	255	0
4	2	0	0	0	1	255	0
4	3	0	0	0	1	255	0
4	4	0	0	0	1	255	0
4	5	0	0	0	1	255	0
4	6	0	0	0	1	255	0
4	7	0	0	0	1	255	0
4	8	0	0	0	1	255	0
4	9	0	0	0	1	255	0
4	10	0	0	0	1	255	0
4	11	0	0	0	1	255	0
4	12	0	0	0	1	255	0
4	13	0	0	0	1	255	0
4	14	0	0	0	1	255	0
4	15	0	0	0	1	255	0
4	16	0	0	0	1	255	0
4	17	0	0	0	1	255	0
4	18	0	0	0	1	255	0
4	19	0	0	0	1	255	0
4	20	0	0	0	1	255	0

4	21	0	0	0	1	255	0
4	22	0	0	0	1	255	0
4	23	0	0	0	1	255	0
4	24	0	0	0	1	255	0
4	25	0	0	0	1	255	0
4	26	0	0	0	1	255	0
4	27	0	0	0	1	255	0
4	28	0	0	0	1	255	0
4	29	0	0	0	1	255	0
4	30	0	0	0	1	255	0
4	31	0	0	0	1	255	0
4	32	0	0	0	1	255	0
4	33	0	0	0	1	255	0
4	34	0	0	0	1	255	0
4	35	0	0	0	1	255	0
4	36	0	0	0	1	255	0
4	37	0	0	0	1	255	0
4	38	0	0	0	1	255	0
4	39	0	0	0	1	255	0
4	40	0	0	0	1	255	0
4	41	0	0	0	1	255	0
4	42	0	0	0	1	255	0
4	43	0	0	0	1	255	0
4	44	0	0	0	1	255	0
4	45	0	0	0	1	255	0
4	46	0	0	0	1	255	0
4	47	0	0	0	1	255	0
4	48	0	0	0	1	255	0
4	49	0	0	0	1	255	0
4	50	0	0	0	1	255	0
4	51	0	0	0	1	255	0
4	52	0	0	0	1	255	0
4	53	0	0	0	1	255	0
4	54	0	0	0	1	255	0
4	55	0	0	0	1	255	0
4	56	0	0	0	1	255	0
4	57	0	0	0	1	255	0
4	58	0	0	0	1	255	0
4	59	0	0	0	1	255	0
4	60	0	0	0	1	255	0
4	61	0	0	0	1	255	0
4	62	0	0	0	1	255	0
4	63	0	0	0	1	255	0
4	64	0	0	0	1	255	0

Pedestrian Detector Diagnotics (MM)6-6

Plan	Detector	Counts	Act	Pres	Multiplier



LEGEND

- CONTROL CABINET
- PROPOSED NONMETALIC CONDUIT 2" UNLESS NOTED OTHERWISE
- SIGNAL HEAD, PEDESTAL MOUNT
- (XX') MONOTUBE BASE, POLE, 35'-55' ARM
- PEDESTRIAN HEAD WITH PUSH BUTTON
- LUMINAIRE, POLE, TRANSFORMER BASE
- TRAFFIC SIGNAL HEAD
- PULL BOX, 24"X36"
- PULL BOX, 24"X42"
- VIDEO DETECTION
- RADAR DETECTION
- VIDEO DETECTION ZONE
- LOOP DETECTOR IN 1" NONMETALLIC CONDUIT

STRUCTURE NUMBER
SB-17 = S13-0573-01
SB-18 = S13-0573-03
SB-19 = S13-0573-02
SB-21 = S13-0573-04

REVISIONS

REV. NO.	APPROVALS				CONT. TYPE
	DISTRICT		CENTRAL OFFICE		
	DATE	BY	DATE	BY	
1	1/6/06	DGD	1/10/06	WCG	EPAC
	REVISED FACE CONFIGURATION				
2	4/26/06	DGD	5/2/06	WCG	EPAC
	ADD ϕ3 & ϕ7				
3	10/16/12	DGD	11/1/12	JLB	EPAC
	CHANGE TO COUNTDOWN PEDS				
4					ASC/3
	ADD WB DOUBLE LEFT, MONOTUBES, VIDEO, EXTEND DILEMMA ZONE DETECTION & UPGRADE CABINET				

TRAFFIC CONTROL SIGNAL

USH 12 & CTH K

TOWN OF SPRINGFIELD DANE COUNTY

SIGNAL NO. S13-0573

SCALE 0 5 10 20

WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVAL RECOMMENDED

Date _____ REGION TRAFFIC ENGINEER

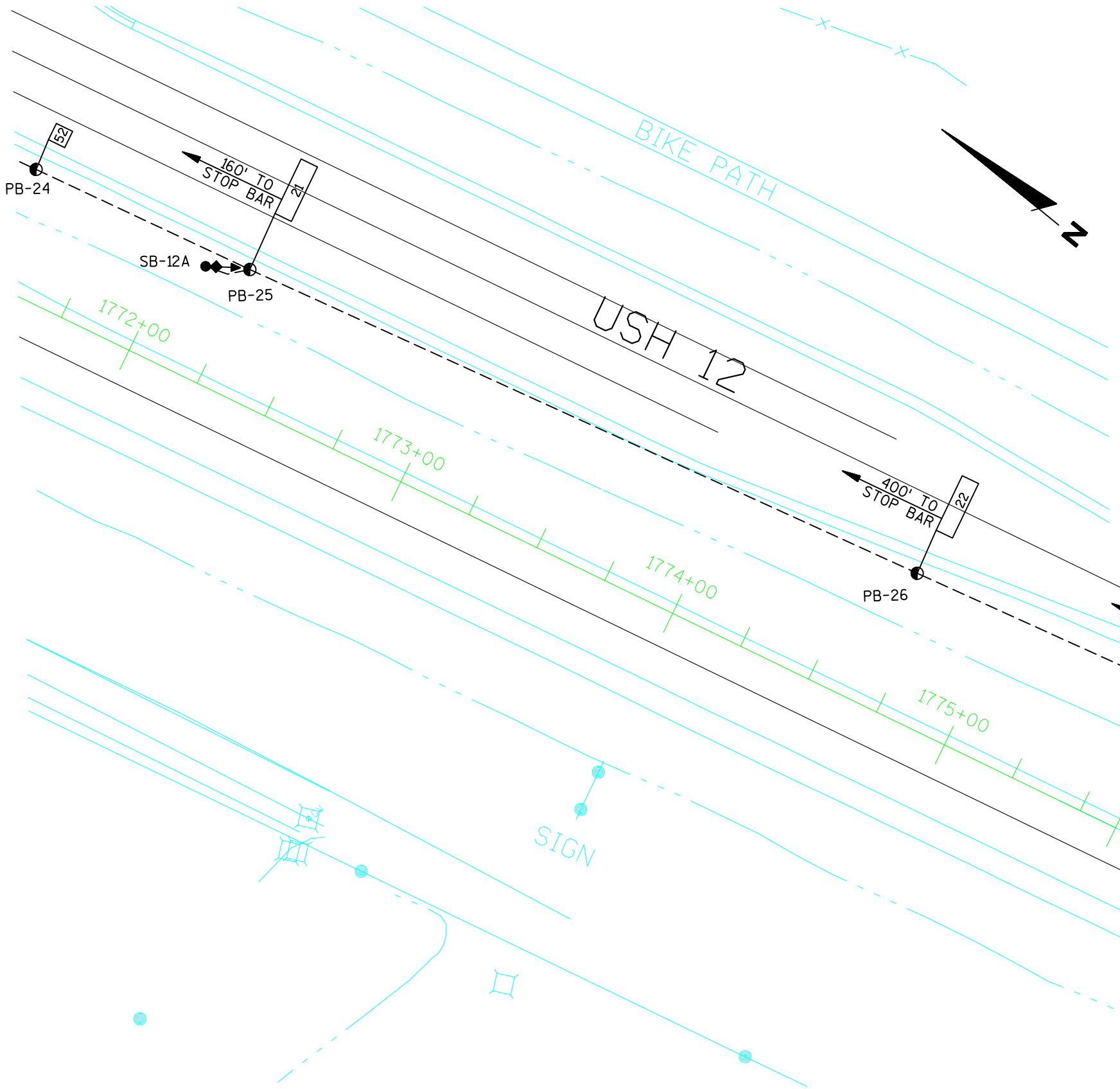
APPROVED

Date _____ STATE TRAFFIC ENGINEER

REGION CONTACT:
DESIGNED BY:
REVISED BY:

PROJECT NO: 5301-04-74	HWY: USH 12	COUNTY: DANE	TRAFFIC SIGNAL PLAN	SHEET	E

2



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TRAFFIC CONTROL SIGNAL

USH 12 & CTH K

TOWN OF SPRINGFIELD DANE COUNTY

SIGNAL NO. S13-0573

REGION CONTACT:
DESIGNED BY:
REVISED BY:

PROJECT NO: 5301-04-74	HWY: USH 12	COUNTY: DANE	TRAFFIC SIGNAL PLAN	SHEET	E

2

LEGEND

- CONTROL CABINET
- PROPOSED NONMETALLIC CONDUIT 2" UNLESS NOTED OTHERWISE
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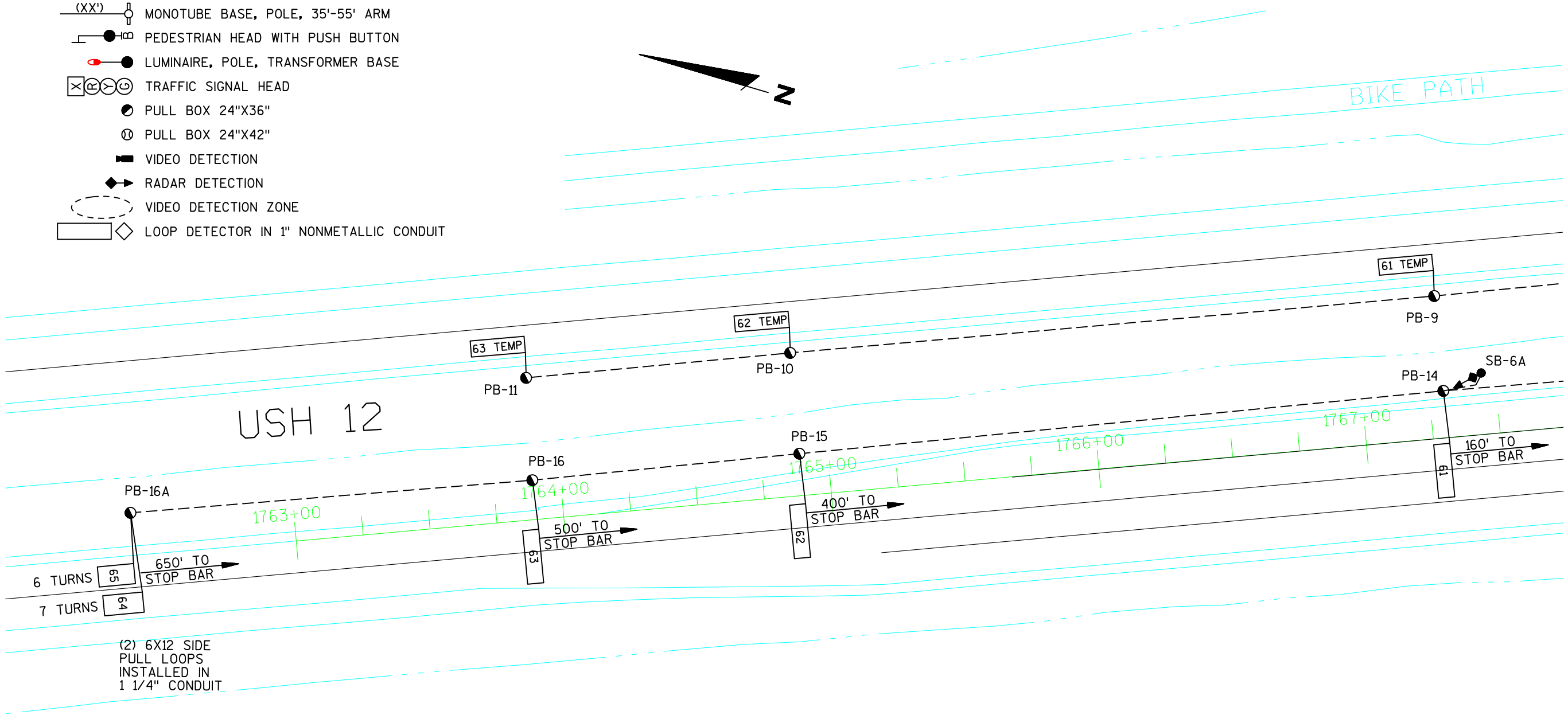


TRAFFIC CONTROL SIGNAL

USH 12 & CTH K

TOWN OF SPRINGFIELD DANE COUNTY

SIGNAL NO. S13-0573

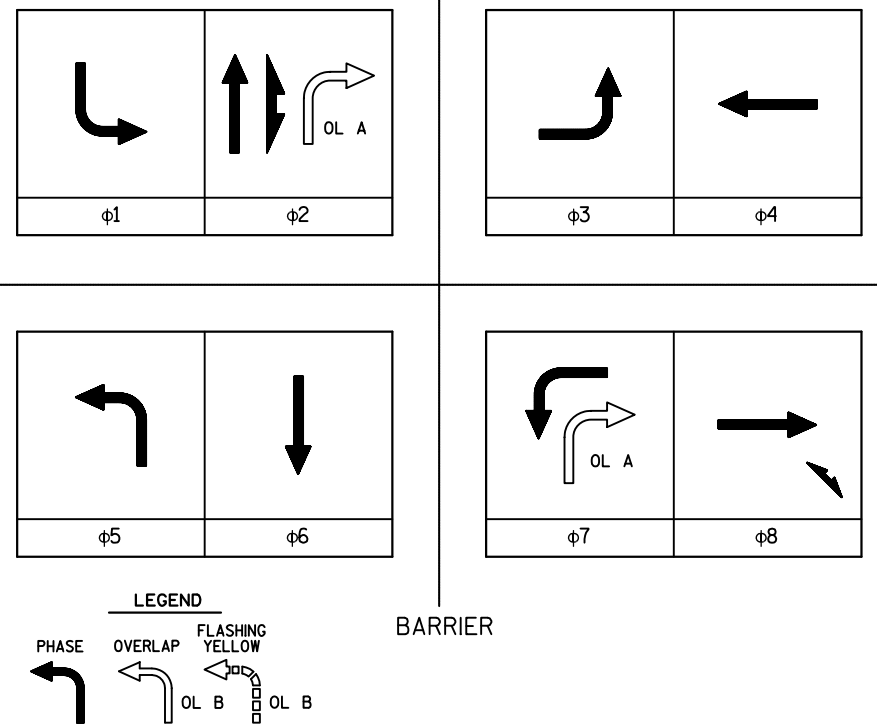
REGION CONTACT:
DESIGNED BY:
REVISED BY:

PROJECT NO: 5301-04-74	HWY: USH 12	COUNTY: DANE	TRAFFIC SIGNAL PLAN	SHEET	E

HEAD ASSIGNMENTS		
PHASE	HEAD NUMBERS	FLASH
φ1	4,5	R
φ2	19,22,23	R
φ3	32,33	R
φ4	11,24,25	R
φ5	9,10	R
φ6	1,17,18	R
φ7	26,27,28,29	R
φ8	14,30,31	R
φ2 PED	91,92	
φ4 PED		
φ6 PED		
φ8 PED	93,94	
OL A	20,21	R
OL B		
OL C		
OL D		
OL E		
OL F		
OL G		
OL H		

O.L. ASSIGNMENTS
φ2,φ7

N



PREEMPTION ASSIGNMENTS			
PREEMPTION DESIGNATION	PREEMPTION TYPE	EVP CHANNEL	PHASE(S) CALLED
1	RESERVED		
2	RESERVED		
3	NOT USED		
4	NOT USED		
5	NOT USED		
6	NOT USED		
7	NOT USED		
8	NOT USED		
9	NOT USED		
10	NOT USED		

CONTROLLER LOGIC				
PHASE NUMBER	PHASE LOCKING	DUAL ENTRY W/φ	PHASE RECALL	PHASE ACTIVE
φ1				X
φ2	X	6	MIN	X
φ3				X
φ4		8		X
φ5				X
φ6	X	2	MIN	X
φ7				X
φ8		4		X

TYPE OF LIGHTING	
BY OTHER AGENCY	
IN TRAFFIC SIGNAL CABINET	X
IN SEPERATE DOT LIGHTING CABINET	

TYPE OF COORDINATION	
NONE	X
TBC	
CLOSED LOOP TWISTED PAIR	
CLOSED LOOP FIBER OPTIC	
RADIO	

CENTRAL SYSTEM
LOCATION OF MASTER:
CONTROLLER NO. SXX-XXXX
SIGNAL SYSTEM NO.

TYPE OF PREEMPTION	
NONE	X
RAILROAD	
EMERGENCY VEHICLE	
GTT	
TOMAR	
HARDWIRE	
OTHER	
LIFT BRIDGE	
QUEUE DETECTOR	

TYPE OF REMOTE COMMUNICATION	
NONE	
FIBER OPTIC	
CELL MODEM	X
PHONE	

DETECTOR LOGIC

DETECTOR INPUT	3	1	7	5	11	9	15	13	19	17	23	21	27	25	31	29	35	33	39	37	43	41	DETECTOR INPUT
DETECTOR #(S)	12	24	25	32	42	52	64	65	72	74		83	2R	6R			3V	1V	7V	5V		8VB	DETECTOR #(S)
PHASE CALLED													2	6									PHASE CALLED
PHASE EXTENDED	1			3	4	5			7	7		8	2	6									PHASE EXTENDED
DISCONNECT TIME																							DISCONNECT TIME
CALLING DELAY																							CALLING DELAY
EXTENSION STRETCH	1.0			1.0	2.5	1.0			3.0	3.0		1.0											EXTENSION STRETCH
LOOP FUNCTION		SYS	SYS				SYS	SYS															LOOP FUNCTION

DETECTOR INPUT	4	2	8	6	12	10	16	14	20	18	24	22	28	26	32	30	36	34	40	38	44	42	DETECTOR INPUT
DETECTOR #(S)	11	21		31	41	51	61		71	73	81	82					4V	2V	8VA	6V			DETECTOR #(S)
PHASE CALLED	1	2		3	4	5	6		7	7	8	8						2		6			PHASE CALLED
PHASE EXTENDED	1	2		3	4	5	6		7	7	8	8						2		6			PHASE EXTENDED
DISCONNECT TIME																							DISCONNECT TIME
CALLING DELAY				3	10						18												CALLING DELAY
EXTENSION STRETCH																							EXTENSION STRETCH
LOOP FUNCTION																							LOOP FUNCTION

SYS = SYSTEM

TRAFFIC CONTROL SIGNAL
USH 12 & CTH K
TOWN OF SPRINGFIELD DANE COUNTY
SIGNAL NO. S13-0573
REGION CONTACT:
DESIGNED BY:
REVISED BY:
PAGE 4 OF 5

PROJECT NO: 5301-04-74	HWY: USH 12	COUNTY: DANE	TRAFFIC SIGNAL SEQUENCE OF OPERATIONS	SHEET	E

Dane Co (USH 12 - CTH P/STH 19/CTH K) - S13-0573 USH 12 & CTH K

Configuration Phase Sequence

Controller Sequence (MM)1-1-1

Hardware Alternate Sequence Enable: No

Phase Ring Sequence.....(Note: Sequences identical to the prior one are not printed)

	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
Sequence 1																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 2																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 3																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 4																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 5																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 6																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 7																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 8																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 9																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 10																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 11																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 12																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 13																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 14																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 15																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 16																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.

Phases In Use / Exclusive PED (MM)1-2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phases in Use	X	X	X	X	X	X	X	X								
Exclusive PED																

Phase Compatibility (MM)1-1-2

Phase	Compatible Phase
1	5

1	6
2	5
2	6
3	7
3	8
4	7
4	8
9	11
9	12
10	11
10	12
13	15
13	16
14	15
14	16

Phase and Overlap Descriptions

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Description	SBLT	NB	EBLT	WB	NBLT	SB	WBLT	EB								
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**L**	**K**	**L**	**M**	**N**	**O**
Description	NBRT															

Administration (MM)1-7-1

Enable CU/Cabinet Interlock CRC	No
Request Download Controller Data	No
Controller Database CRC	0000
Enable Automatic Backup to Datakey	Yes

Backup Prevent (MM)1-1-3

	Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Timing /	1		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Backup	2	.		.	.	.	.	.	.	.	.	.	.	.	.	.	.
	3	.	.		.	.	.	.	.	.	.	.	.	.	.	.	.
	4	.	.	.		.	.	.	.	.	.	.	.	.	.	.	.
	5	.	.	.	.		.	.	.	.	.	.	.	.	.	.	.
	6	.	.	.	.	.		.	.	.	.	.	.	.	.	.	.
	7	.	.	.	.	.	.		.	.	.	.	.	.	.	.	.
	8	.	.	.	.	.	.	.		.	.	.	.	.	.	.	.
	9	.	.	.	.	.	.	.	.		.	.	.	.	.	.	.
	10	.	.	.	.	.	.	.	.	.		.	.	.	.	.	.
	11	.	.	.	.	.	.	.	.	.	.		.	.	.	.	.
	12	.	.	.	.	.	.	.	.	.	.	.		.	.	.	.
	13	.	.	.	.	.	.	.	.	.	.	.	.		.	.	.
	14	.	.	.	.	.	.	.	.	.	.	.	.	.		.	.
	15	.	.	.	.	.	.	.	.	.	.	.	.	.	.		.
	16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	

Simultaneous Gap (MM)1-1-4

	Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	1		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	2	.		.	.	.	X	.	.	.	.	.	.	.	.	.	.
	3	.	.		.	.	.	.	.	.	.	.	.	.	.	.	.
	4	.	.	.		.	.	.	X	.	.	.	.	.	.	.	.
	5	.	.	.	.		.	.	.	.	.	.	.	.	.	.	.
Phase	6	.	X	.	.	.		.	.	.	.	.	.	.	.	.	.
Must	7	.	.	.	.	.	.		.	.	.	.	.	.	.	.	.
Gap	8	.	.	.	X	.	.	.		.	.	.	.	.	.	.	.
With	9	.	.	.	.	.	.	.	.		.	.	.	.	.	.	.
Phase	10	.	.	.	.	.	.	.	.	.		.	.	.	.	.	.
	11	.	.	.	.	.	.	.	.	.	.		.	.	.	.	.
	12	.	.	.	.	.	.	.	.	.	.	.		.	.	.	.
	13	.	.	.	.	.	.	.	.	.	.	.	.		.	.	.
	14	.	.	.	.	.	.	.	.	.	.	.	.	.		.	.
	15	.	.	.	.	.	.	.	.	.	.	.	.	.	.		.
	16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
	Disable	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Load Switch Assignments (MMU Channel) (MM)1-3

	Phase / Overlap	Type	Dimming				Power Up				Auto		Flash Together
			Red	Yellow	Green	Dark	Auto	Red	Yellow	Dark	Red	Yellow	
1	1	V				+	X				X		X
2	2	V				+	X				X		
3	3	V				+	X				X		X
4	4	V				+	X				X		
5	5	V				-	X				X		
6	6	V				-	X				X		X
7	7	V				-	X				X		
8	8	V				-	X				X		X
9	2	P				+	X						
10	4	P				+	X						
11	6	P				-	X						
12	8	P				-	X						
13	1	O				+	X				X		X
14	2	O				-	X				X		X
15	3	O				+	X				X		
16	4	O				-	X				X		

Dane Co (USH 12 - CTH P/STH 19/CTH K) - S13-0573 USH 12 & CTH K

Configuration Port 1 (SDLC)

SDLC Options (MM)1-4-1

BIU	1	2	3	4	5	6	7	8
Term and Facility Enable	X	X						
Detector Rack Enable	X	X	X					

Enable TS2/MMU Type Cabinet: Yes
Enable MMU Extended Status: Yes
Enable SDLC Stop Time: No
Enable 3 Critical RFE's Lockup: Yes

MMU Program (MM)1-4-2

Channel Can Serve with Channel	
Channel 1	**Channel 2**
1	5
1	6
2	5
2	6
2	9
2	13
3	7
3	8
3	12
3	13
4	7
4	8
4	12
4	13
5	9
5	13
6	9
6	13
7	13
8	12
9	13

Color Check Enable (MM)1-4-3

Enable Color Check: Yes

MMU Channel	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Green	X	X	X	X	X	X	X	X	X			X	X			
Yellow	X	X	X	X	X	X	X	X					X			
Red	X	X	X	X	X	X	X	X					X			

Secondary To Secondary Addressing (MM)1-4-4

ID	1	2	3	4	5	6	7	8	MMU
Term and Facility Enable									

ID	1	2	3	4	5	6	7	8	Diag
Detector Rack Enable									

Diagonstics (Test Fixture) Enable: No

Dane Co (USH 12 - CTH P/STH 19/CTH K) - S13-0573 USH 12 & CTH K

Configuration Communications

Ethernet Port Configuration (MM)1-5-1

Controller IP: 192.168.0.11
Subnet Mask: 255.255.255.0
Default Gateway IP: 192.168.0.1
Server IP: 172.20.3.21

NTCIP Parameters (MM)1-5-5

Backup Time: 0
UDP Port: 501
Ethernet Priority: 1
Port 2 Priority: 4
Port 3A Priority: 2
Port 3B Priority: 3

Port Configuration (MM)1-5-2 to 1-5-4

Port	2 (C50S)	3A (C21S)	3B (C22S)
Protocol	NTCIP	NTCIP	Terminal
Enable	Yes	Yes	No
Data Rate	19.2K	19.2K	1200
Data Parity Stop	8 N 1	8 N 1	8 0 1
Modem Setup String	None	None	None
User String			
Comm Port Address	1	1	0
System Detector 9-1	0	0	0
Telemetry Response Delay	0.0	0.0	0.0
Duplex Half/Full	Full	Full	Full
Flow Control	Yes	Yes	Yes
AB3418 NTCIP Group Address	0	0	0
AB3418 NTCIP Single Flag Enable	No	No	No
RTS to CTS Delay	0.0	0.0	3.0
RTS Turn Off Delay	0.0	0.0	2.0
Droupout Time	10	10	10
Early RTS	No	No	No
Telemetry Mode	FSK	FSK	FSK
Rail Road	0	0	0
Rail Road Line	0	0	0
ATCS Group	0	0	0
Wayside Device	0	0	0
ATCS Device	0	0	0
Wayside SubNode	0	0	0
ATCS SubNode	0	0	0

ECPIP Parameters (MM)1-5-6

Controller Address: 0
Expanded System Detector Address: 0

Local System Detector

Local System Detector	Number

Dane Co (USH 12 - CTH P/STH 19/CTH K) - S13-0573 USH 12 & CTH K

Configuration Logging/Display

Event Logging (MM)1-6-1

Critical RFE's	Yes	3 Critical RFE's in 24 Hours	Yes
MMU Flash Faults	Yes	Local Flash Faults	Yes
Non-Critical RFE's (Det/Test)	Yes	Detector Errors	Yes
Coordination Errors	Yes	Controller Download	Yes
Preempt	Yes	TSP	Yes
Power On/Off	Yes	Low Battery	Yes
Access	Yes	Data Change	Yes
Online/Offline	Yes		

Alarm Log	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Enable Logging	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Display Options (MM)1-7-2

Key Click Enable:	Yes
Backlight Enable:	Yes
LED Mode:	Single Color
Main Status Display Mode:	Basic
Screen Format:	Advanced
Trans Mode Pop-up Disable:	No

Sign On (MM)8-5

Sign On Message Line 1: WisDOT Database
Sign On Message Line 2: USH 12 & CTH K

Dane Co (USH 12 - CTH P/STH 19/CTH K) - S13-0573 USH 12 & CTH K

Logic Processor Page 1
Statement Control (MM)1-8-1

LP	Statement Control
1	E
2	E
3	E

Dane Co (USH 12 - CTH P/STH 19/CTH K) - S13-0573 USH 12 & CTH K

Logic Processor Page 2

Logic Statements (MM)1-8-2

Statement Number: 1

IF:

	Assignment	#		State
IF	CALL ON PHASE	1	IS	ON
AND	CALL ON PHASE	5	IS	ON
AND	PHASE TIMING	2	IS	OFF
AND	PHASE TIMING	6	IS	OFF

THEN:

Assignment	#	State
SET PED DET	5	ON

ELSE:

Assignment	#	State

Statement Number: 2

IF:

	Assignment	#		State
IF	PHASE TIMING	2	IS	ON
AND	PHASE TIMING	6	IS	ON
AND	CALL ON PHASE	1	IS	ON
AND	CALL ON PHASE	5	IS	ON
AND	PHASE NEXT ON PHS	1	IS	ON
AND	PHASE NEXT ON PHS	5	IS	ON

THEN:

Assignment	#	State
SET PED DET	5	ON

ELSE:

Assignment	#	State

Statement Number: 3

IF:

	Assignment	#		State
IF	DETECTOR	48	IS	ON

THEN:

Assignment	#	State
SET MAX3 RING	1	OFF
SET MAX3 RING	2	OFF
SET ALARM	16	ON

ELSE:

Assignment	#	State
SET MAX3 RING	1	OFF
SET MAX3 RING	2	OFF

Dane Co (USH 12 - CTH P/STH 19/CTH K) - S13-0573 USH 12 & CTH K

Controller Timing Plan (MM)2-1

Plan 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	SBLT	NB	EBLT	WB	NBLT	SB	WBLT	EB								
Min Green	5	12	5	8	5	12	5	8	0	0	0	0	0	0	0	0
BK Min Green	0	0	0	18	0	0	0	18	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0
Walk	0	7	0	0	3	0	0	7	0	0	0	0	0	0	0	0
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	23	0	0	3	0	0	10	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	1.5	3.0	1.5	1.5	1.5	3.0	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	20	65	20	20	25	65	50	20	0	0	0	0	0	0	0	0
Max 2	15	160	0	0	15	150	55	25	0	0	0	0	0	0	0	0
Max 3	8	58	14	19	12	54	18	15	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	4.7	5.0	3.9	4.5	4.7	5.0	3.9	4.5	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	3.6	1.6	1.9	3.0	3.2	1.6	2.7	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	2.6	0.0	0.0	0.0	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	18	0	0	0	18	0	0	0	0	0	0	0	0	0	0
Time B4	0	30	0	0	0	30	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	25	0	0	0	25	0	0	0	0	0	0	0	0	0	0
Min Gap	1.0	1.5	1.5	1.0	1.0	1.5	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	SBLT	NB	EBLT	WB	NBLT	SB	WBLT	EB								
Min Green	5	12	5	8	5	12	5	8	0	0	0	0	0	0	0	0
BK Min Green	0	0	0	18	0	0	0	18	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0
Walk	0	7	0	0	3	0	0	7	0	0	0	0	0	0	0	0
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	23	0	0	3	0	0	10	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	1.5	5.0	1.5	1.5	1.5	5.0	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	20	65	20	20	25	65	50	20	0	0	0	0	0	0	0	0
Max 2	15	160	0	0	15	150	55	25	0	0	0	0	0	0	0	0
Max 3	8	58	14	19	12	54	18	15	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	4.7	5.0	3.9	4.5	4.7	5.0	3.9	4.5	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	3.6	1.6	1.9	3.0	3.2	1.6	2.7	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	2.6	0.0	0.0	0.0	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Max Int	0	18	0	0	0	18	0	0	0	0	0	0	0	0	0	0
Time B4	0	50	0	0	0	50	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	25	0	0	0	25	0	0	0	0	0	0	0	0	0	0
Min Gap	1.0	2.5	1.5	1.0	1.0	2.5	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Dane Co (USH 12 - CTH P/STH 19/CTH K) - S13-0573 USH 12 & CTH K

Controller Overlaps

Vehicle Overlaps (MM)2-2

Overlap	Type	Lag Green	Yellow	Red	Advance Green

Phases

Overlap	Phase	Included	Protect	Ped Protect	Not Overlap	Modifier	Lag X Phase	Lag 2 Phase	Flash Green
A	2	Yes	No	No	No		No	No	0
A	7	Yes	No	No	No		No	No	0

PPLT FYA

Overlap	Protected Phase	Permissive Phase	Flash Arrow Output	Flash Arrow Channel	FYA Delay	FYA Clearance	Special Function Disable

Guaranteed Minimum Time Data (MM) 2-4

Phase Time Data

Phase	Min Green	Walk	Ped Clear	Yellow	Red Clear	Overlap Green
A01	1	0	3	3.0	0.0	1
B02	1	0	7	3.0	0.0	1
C03	1	0	7	3.0	0.0	1
D04	1	0	7	3.0	0.0	1
E05	1	0	3	3.0	0.0	1
F06	1	0	7	3.0	0.0	1
G07	1	0	7	3.0	0.0	1
H08	1	0	7	3.0	0.0	1
I09	1	0	7	3.0	0.0	1
J10	1	0	7	3.0	0.0	1
K11	1	0	7	3.0	0.0	1
L12	1	0	7	3.0	0.0	1
M13	1	0	7	3.0	0.0	1
N14	1	0	7	3.0	0.0	1
O15	1	0	7	3.0	0.0	1
P16	1	0	7	3.0	0.0	1

Dane Co (USH 12 - CTH P/STH 19/CTH K) - S13-0573 USH 12 & CTH K

Controller Pedestrian Overlaps
Pedestrian Overlaps (MM) 2-3

Included Phase	Ped Overlap

Dane Co (USH 12 - CTH P/STH 19/CTH K) - S13-0573 USH 12 & CTH K

Controller Start/Fash (MM) 2-5

Startup

Phase	Phase Setting
2	G
6	G

Overlap
A

Flash > Mon: No
Flash Time: 0
All Red: 6
Power Start Sequence: 1
MUTCD Enabled: Yes
MUTCD Yellow to Green: No

Automatic Flash

Entry Phase
2
6

Exit Phase
2
6

Overlap Exit
A

Flash > Mon: No
Exit Flash Interval: G
Minimum Auto Flash: 8
Minimumin Recall: No
Cycle Through Phase: No

Dane Co (USH 12 - CTH P/STH 19/CTH K) - S13-0573 USH 12 & CTH K

Controller Options

Controller Options (MM)2-6-1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Flashing Green Phase																
Guaranteed Passage																
Non Act 1																
Non Act 2																
Dual Entry		X		X		X		X								
Conditional Service																
Conditional Reservice																
Ped Reservice		X						X								
Rest In Walk																
Flashing Walk																
Ped Clear Yellow																
Ped Clear Red																
IGRN + Veh Ext																

Ped Clear Protect: On Red Revert: 2.0 MUTCD 3 Seconds Don't Walk: No

Act Pre-Time (MM)2-7

Pre-Time Mode Enable: No Free Input Enables Pre-Timed: Yes

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Pre-Timed Phase																

Phase Recall Options (MM)2-8

Plan 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector		X				X										
Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
AI Calc																

Plan 2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector		X				X										
Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
AI Calc																

Plan 3

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector		X				X										
Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
AI Calc																

Plan 4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector		X				X										

Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
AI Calc																

Dane Co (USH 12 - CTH P/STH 19/CTH K) - S13-0573 USH 12 & CTH K

Coordination Options

Coordination Options (MM)3-1

Manual Pattern	Auto	ECPI Coord	Yes
System Source	SYS	System Format	STD
Splits In	Seconds	Offsets In	Seconds
Transition	Smooth	Max Select	MAXINH
Dwell/Add Time	0		
Delay Coord Walk to LZ	No	Force Off	Fixed
Offset Reference	Lead	Use Ped Time	No
Ped Recall	No	Ped Reservice	No
Local Zero Override	No	FO Added Initial Green	Yes
Re-Sync Count	3	Multisync	No

Auto Perm Minimum Green (Seconds) (MM)3-4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Minimum Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Split Demand (MM)3-5

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Demand 1																
Demand 2																

Demand	1	2
Detector	0	0
Call Time (Sec)	0	0
Cycle Count	0	0

Dane Co (USH 12 - CTH P/STH 19/CTH K) - S13-0573 USH 12 & CTH K

Coordination Pattern Data
Pattern Data (MM)3-2

Dane Co (USH 12 - CTH P/STH 19/CTH K) - S13-0573 USH 12 & CTH K

Time Base Clock/Calendar
Clock/Calendar Options (MM)5-1

Enable Action Plan:	0
Sync Reference Time:	12:00 AM
Sync Reference:	Reference Time
Day Light Savings:	No
Time Reset Input Set Time:	3:30:00
Standard Time From GMT:	0

Dane Co (USH 12 - CTH P/STH 19/CTH K) - S13-0573 USH 12 & CTH K

Time Base Action Plan
Action Plan (MM)5-2

Action Plan - 1

Pattern	254 - FREE	Override System	No
Timing Plan	2	Sequence	0
Veh Det Plan	0	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2	X				X	X	X	X								
Max 3																
CS Inhibit																
Omit																

Special Function								
Auxilliary Function								

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 3

Pattern	254 - FREE	Override System	No
Timing Plan	2	Sequence	0
Veh Det Plan	0	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2	X	X						X								
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 99

Pattern	255 - FLSH	Override System	No
Timing Plan	0	Sequence	0
Veh Det Plan	0	Detector Log	None
Flash	Yes	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 100

Pattern	254 - FREE	Override System	No
Timing Plan	1	Sequence	0
Veh Det Plan	0	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Dane Co (USH 12 - CTH P/STH 19/CTH K) - S13-0573 USH 12 & CTH K

Time Base Day Plan/Schedule
Day Plan (MM)5-3

Day Plan - 1

Event	Action Plan	Start Time
1	100	12:01 AM
2	1	6:00 AM
3	100	9:00 AM
4	3	2:30 PM
5	100	6:30 PM

Schedule (MM)5-4

Schedule Number - 1

Day Plan Number: 1

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	X	X	X	X	X	X	X	X	X	X	X	X

Day of Week	Sun	Mon	Tue	Wed	Thur	Fri	Sat
		X	X	X	X	X	

Day of Month	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

Dane Co (USH 12 - CTH P/STH 19/CTH K) - S13-0573 USH 12 & CTH K

Detectors

Detectors Page 1

Vehicle Detectors Setup (MM)6-1

Vehicle Plan	Detector Number	Called	Type

Vehicle Detector Setup (MM)6-2 continued

Detector Number	Type	TS2 Detector	Detector Description
1	N-NTCIP	Yes	
2	N-NTCIP	Yes	
3	N-NTCIP	Yes	
4	N-NTCIP	Yes	
5	N-NTCIP	Yes	
6	N-NTCIP	Yes	
7	N-NTCIP	Yes	
8	N-NTCIP	Yes	
9	N-NTCIP	Yes	
10	N-NTCIP	Yes	
11	N-NTCIP	Yes	
12	N-NTCIP	Yes	
13	N-NTCIP	Yes	
14	N-NTCIP	Yes	
15	N-NTCIP	Yes	
16	N-NTCIP	Yes	
17	N-NTCIP	Yes	
18	N-NTCIP	Yes	
19	N-NTCIP	Yes	
20	N-NTCIP	Yes	
21	N-NTCIP	Yes	
22	N-NTCIP	Yes	
23	N-NTCIP	Yes	
24	N-NTCIP	Yes	
25	N-NTCIP	Yes	
26	N-NTCIP	Yes	
27	N-NTCIP	Yes	
28	N-NTCIP	Yes	
29	N-NTCIP	Yes	
30	N-NTCIP	Yes	
31	N-NTCIP	Yes	
32	N-NTCIP	Yes	
33	N-NTCIP	Yes	
34	N-NTCIP	Yes	
35	N-NTCIP	Yes	
36	N-NTCIP	Yes	
37	N-NTCIP	Yes	
38	N-NTCIP	Yes	
39	N-NTCIP	Yes	
40	N-NTCIP	Yes	
41	N-NTCIP	Yes	
42	N-NTCIP	Yes	
43	N-NTCIP	Yes	
44	N-NTCIP	Yes	
45	N-NTCIP	Yes	
46	N-NTCIP	Yes	
47	N-NTCIP	Yes	
48	N-NTCIP	Yes	
49	N-NTCIP	Yes	
50	N-NTCIP	Yes	
51	N-NTCIP	Yes	
52	N-NTCIP	Yes	
53	N-NTCIP	Yes	
54	N-NTCIP	Yes	

55	N-NTCIP	Yes	
56	N-NTCIP	Yes	
57	N-NTCIP	Yes	
58	N-NTCIP	Yes	
59	N-NTCIP	Yes	
60	N-NTCIP	Yes	
61	N-NTCIP	Yes	
62	N-NTCIP	Yes	
63	N-NTCIP	Yes	
64	N-NTCIP	Yes	

Vehicle Detector Setup (MM)6-2 continued

Det Num	Veh Det Plan	Phase	ECPI Log	Call Option	Delay Time	Ext Option	Extend Time / Passage Time	Queue Lim / Discon. Time	Use Added Initial	Cross Switch Phase	Lock In	NTCIP Vol.	NTCIP Occ.	Pmt Queue Delay
1	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	Yes	Yes	No
1	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
1	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
1	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
2	1	2	No	Yes	0.0	Passage	0.0	0	Yes	0	None	Yes	Yes	No
2	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
2	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
2	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
3	1	1	No	No	0.0	Passage	1.0	0	Yes	0	None	Yes	Yes	No
3	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
3	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
3	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
4	1	1	No	Yes	2.0	Passage	0.0	0	Yes	0	Red	Yes	Yes	No
4	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
4	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
4	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
5	1	3	No	No	0.0	Passage	1.0	0	Yes	0	None	Yes	Yes	No
5	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
5	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
5	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
6	1	3	No	Yes	3.0	Passage	0.0	0	Yes	0	Red	Yes	Yes	No
6	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
6	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
6	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
7	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	Yes	Yes	No
7	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
7	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
7	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
8	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
8	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
8	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
8	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
9	1	5	No	No	0.0	Passage	1.0	0	Yes	0	None	Yes	Yes	No
9	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
9	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
9	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
10	1	5	No	Yes	0.0	Passage	0.0	0	Yes	0	Red	Yes	Yes	No
10	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
10	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
10	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
11	1	4	No	No	0.0	Passage	2.5	0	Yes	0	None	Yes	Yes	No
11	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
11	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
11	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
12	1	4	No	Yes	10.0	Passage	0.0	0	Yes	0	Red	Yes	Yes	No
12	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
12	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
12	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
13	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	Yes	Yes	No
13	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
13	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
13	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
14	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

14	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
14	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
14	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
15	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	Yes	Yes	No
15	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
15	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
15	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
16	1	6	No	Yes	0.0	Passage	0.0	0	Yes	0	None	Yes	Yes	No
16	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
16	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
16	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
17	1	7	No	No	0.0	Passage	3.0	0	Yes	0	None	Yes	Yes	No
17	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
17	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
17	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
18	1	7	No	Yes	0.0	Passage	0.0	0	Yes	0	Red	Yes	Yes	No
18	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
18	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
18	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
19	1	7	No	No	0.0	Passage	3.0	0	Yes	0	None	Yes	Yes	No
19	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
19	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
19	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
20	1	7	No	Yes	0.0	Passage	0.0	0	Yes	0	Red	Yes	Yes	No
20	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
20	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
20	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
21	1	8	No	No	0.0	Passage	1.0	0	Yes	0	None	Yes	Yes	No
21	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
21	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
21	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
22	1	8	No	Yes	0.0	Passage	0.0	0	Yes	0	None	Yes	Yes	No
22	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
22	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
22	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
23	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
23	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
23	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
23	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
24	1	8	No	Yes	18.0	Passage	0.0	0	Yes	0	Red	Yes	Yes	No
24	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
24	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
24	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
25	1	6	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
25	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
25	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
25	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
26	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
26	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
26	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
26	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
27	1	2	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
27	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
27	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
27	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
28	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
28	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
28	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
28	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
29	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
29	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
29	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
29	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
30	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
30	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
30	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
30	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
31	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

31	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
31	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
31	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
32	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
32	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
32	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
32	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
33	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
33	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
33	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
33	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
34	1	2	No	Yes	0.0	Passage	0.0	50	Yes	0	None	No	No	No
34	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
34	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
34	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
35	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
35	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
35	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
35	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
36	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
36	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
36	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
36	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
37	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
37	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
37	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
37	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
38	1	6	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
38	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
38	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
38	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
39	1	0	No	Yes	0.0	Passage	0.0	40	Yes	0	None	No	No	No
39	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
39	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
39	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
40	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
40	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
40	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
40	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
41	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
41	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
41	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
41	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
42	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
42	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
42	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
42	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
43	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
43	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
43	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
43	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
44	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
44	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
44	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
44	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
45	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
45	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
45	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
45	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
46	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
46	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
46	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
46	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
47	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
47	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
47	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
47	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
48	1	9	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

48	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
48	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
48	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
49	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
49	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
49	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
49	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
50	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
50	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
50	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
50	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
51	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
51	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
51	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
51	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
52	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
52	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
52	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
52	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
53	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
53	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
53	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
53	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
54	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
54	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
54	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
54	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
55	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
55	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
55	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
55	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
56	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
56	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
56	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
56	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
57	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
57	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
57	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
57	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
58	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
58	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
58	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
58	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
59	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
59	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
59	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
59	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
60	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
60	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
60	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
60	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
61	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
61	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
61	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
61	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
62	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
62	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
62	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
62	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
63	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
63	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
63	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
63	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
64	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
64	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
64	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
64	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

Ped Detector Options (MM)6-3

Phase Ped Detector (Econolite)

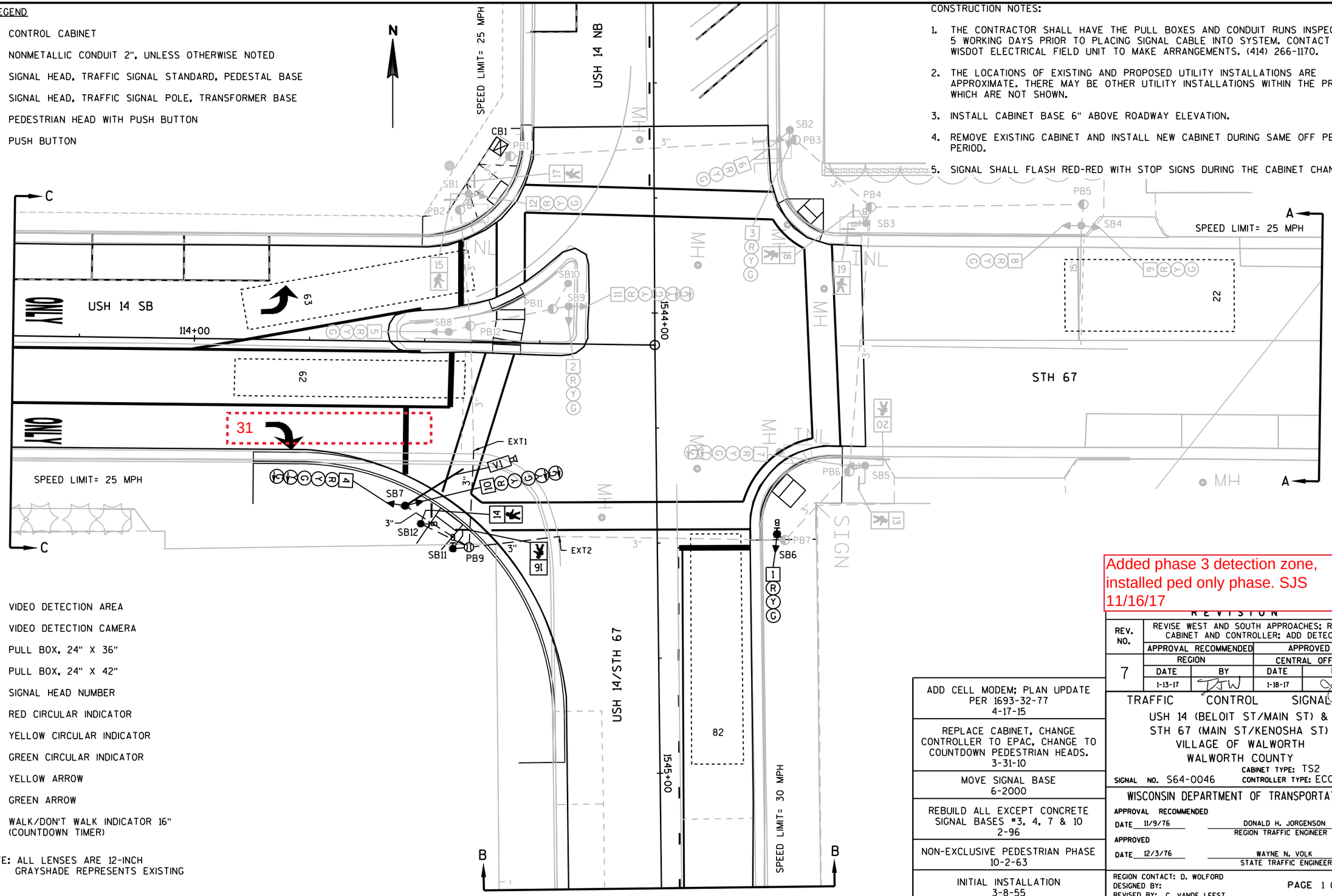
Detector	Call Phase															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.
4	.	.	.	B	.	.	.	.	.	.	.	.	.	.	.	.
5	.	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.
6	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
7	.	.	.	.	.	.	X	.	.	.	.	.	.	.	.	.
8	.	.	.	.	.	.	.	X	.	.	.	.	.	.	.	.
9	.	.	.	.	.	.	.	.	X	.	.	.	.	.	.	.
10	.	.	.	.	.	.	.	.	.	X	.	.	.	.	.	.
11	.	.	.	.	.	.	.	.	.	.	X	.	.	.	.	.
12	.	.	.	.	.	.	.	.	.	.	.	X	.	.	.	.
13	.	.	.	.	.	.	.	.	.	.	.	.	X	.	.	.
14	.	.	.	.	.	.	.	.	.	.	.	.	.	X	.	.
15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	X	.
16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	X

LEGEND

- CONTROL CABINET
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- (XX) SIGNAL HEAD, TRAFFIC SIGNAL POLE, TRANSFORMER BASE
- PEDESTRIAN HEAD WITH PUSH BUTTON
- PUSH BUTTON

CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL HAVE THE PULL BOXES AND CONDUIT RUNS INSPECTED 5 WORKING DAYS PRIOR TO PLACING SIGNAL CABLE INTO SYSTEM. CONTACT THE WISDOT ELECTRICAL FIELD UNIT TO MAKE ARRANGEMENTS. (414) 266-1170.
2. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
3. INSTALL CABINET BASE 6" ABOVE ROADWAY ELEVATION.
4. REMOVE EXISTING CABINET AND INSTALL NEW CABINET DURING SAME OFF PEAK PERIOD.
5. SIGNAL SHALL FLASH RED-RED WITH STOP SIGNS DURING THE CABINET CHANGE.



- VIDEO DETECTION AREA
- VX VIDEO DETECTION CAMERA
- PULL BOX, 24" X 36"
- PULL BOX, 24" X 42"
- XX SIGNAL HEAD NUMBER
- R RED CIRCULAR INDICATOR
- Y YELLOW CIRCULAR INDICATOR
- G GREEN CIRCULAR INDICATOR
- YELLOW ARROW
- GREEN ARROW
- WALK/DON'T WALK INDICATOR 16" (COUNTDOWN TIMER)

NOTE: ALL LENSES ARE 12-INCH
GRAYSHADE REPRESENTS EXISTING

Added phase 3 detection zone, installed ped only phase. SJS 11/16/17

REVISION				
REV. NO.	REVISE WEST AND SOUTH APPROACHES; REPLACE CABINET AND CONTROLLER; ADD DETECTION			
	APPROVAL RECOMMENDED		APPROVED	
	REGION		CENTRAL OFFICE	
7	DATE	BY	DATE	BY
	1-13-17	DJW	1-18-17	

ADD CELL MODEM; PLAN UPDATE PER 1693-32-77 4-17-15
REPLACE CABINET, CHANGE CONTROLLER TO EPAC, CHANGE TO COUNTDOWN PEDESTRIAN HEADS. 3-31-10
MOVE SIGNAL BASE 6-2000
REBUILD ALL EXCEPT CONCRETE SIGNAL BASES #3, 4, 7 & 10 2-96
NON-EXCLUSIVE PEDESTRIAN PHASE 10-2-63
INITIAL INSTALLATION 3-8-55

TRAFFIC CONTROL SIGNAL

USH 14 (BELOIT ST/MAIN ST) &
STH 67 (MAIN ST/KENOSHA ST)
VILLAGE OF WALWORTH
WALWORTH COUNTY

CABINET TYPE: TS2
SIGNAL NO. S64-0046 CONTROLLER TYPE: ECONOLITE

WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVAL RECOMMENDED
DATE 11/9/76 DONALD H. JORGENSON, REGION TRAFFIC ENGINEER

APPROVED
DATE 12/3/76 WAYNE N. VOLK, STATE TRAFFIC ENGINEER

REGION CONTACT: D. WOLFORD
DESIGNED BY:
REVISED BY: C. VANDE LEEST

PAGE 1 OF 4

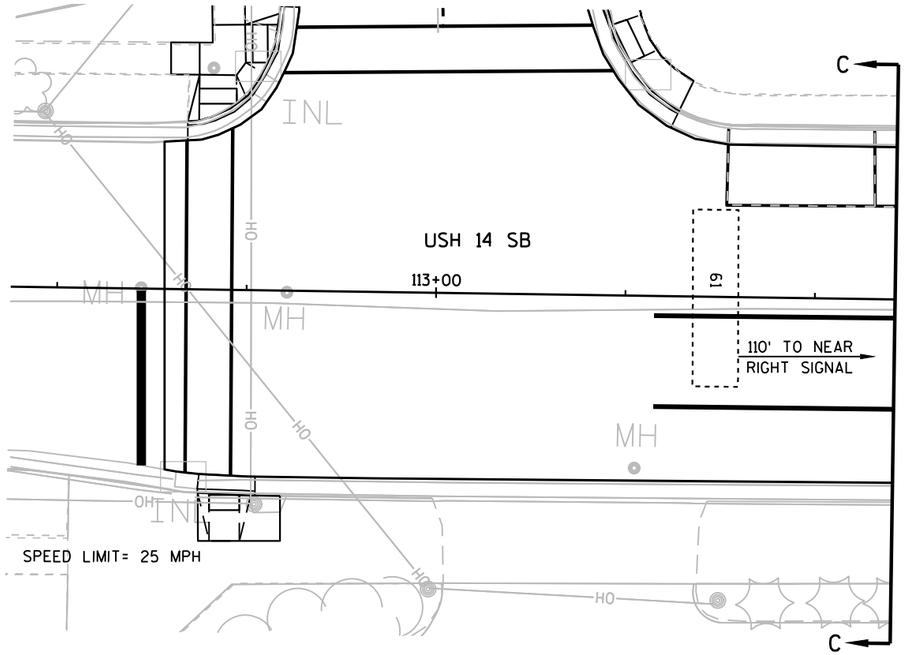
PROJECT NO: 3150-11-61	HWY: USH 14/STH 67	COUNTY: WALWORTH	TRAFFIC SIGNAL PLAN	SHEET	E

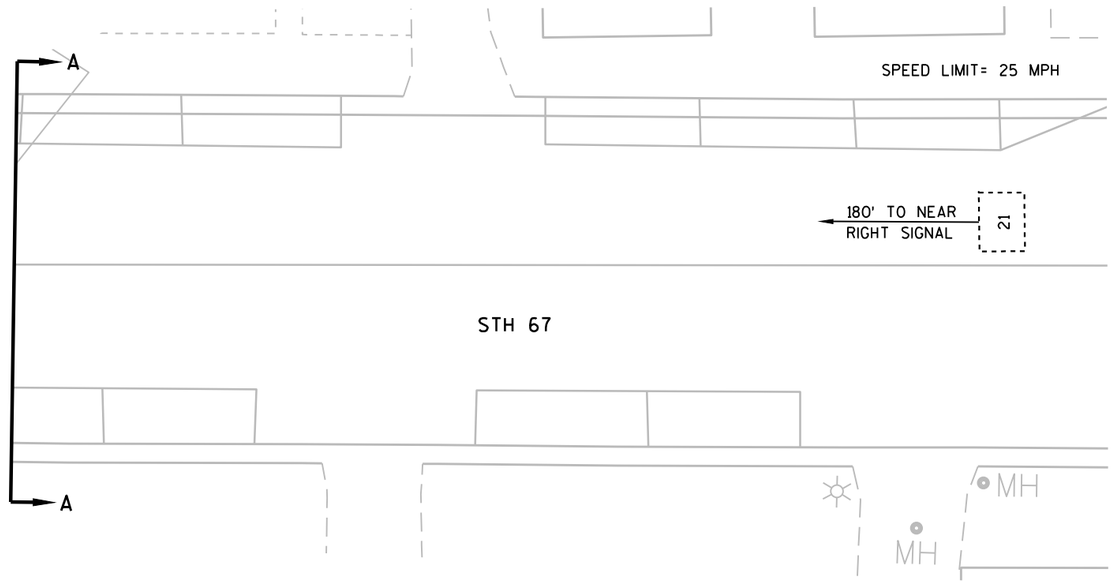
FILE NAME : N:\PDS\C3D\CAD\31501131\SIG\S64-0046\S64-0046_C.DWG
LAYOUT NAME - S64-0046_C_PG1

PLOT DATE : 1/24/2017 3:43 PM PLOT BY : VANDE LEEST, CYNTHIAPLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 42

2





TRAFFIC CONTROL SIGNAL
USH 14 (BELOIT ST/MAIN ST) &
STH 67 (MAIN ST/KENOSHA ST)
VILLAGE OF WALWORTH
WALWORTH COUNTY

SIGNAL NO. S64-0046

REGION CONTACT: D. WOLFORD
DESIGNED BY:
REVISED BY: C. VANDE LEEST

PAGE 2 OF 4

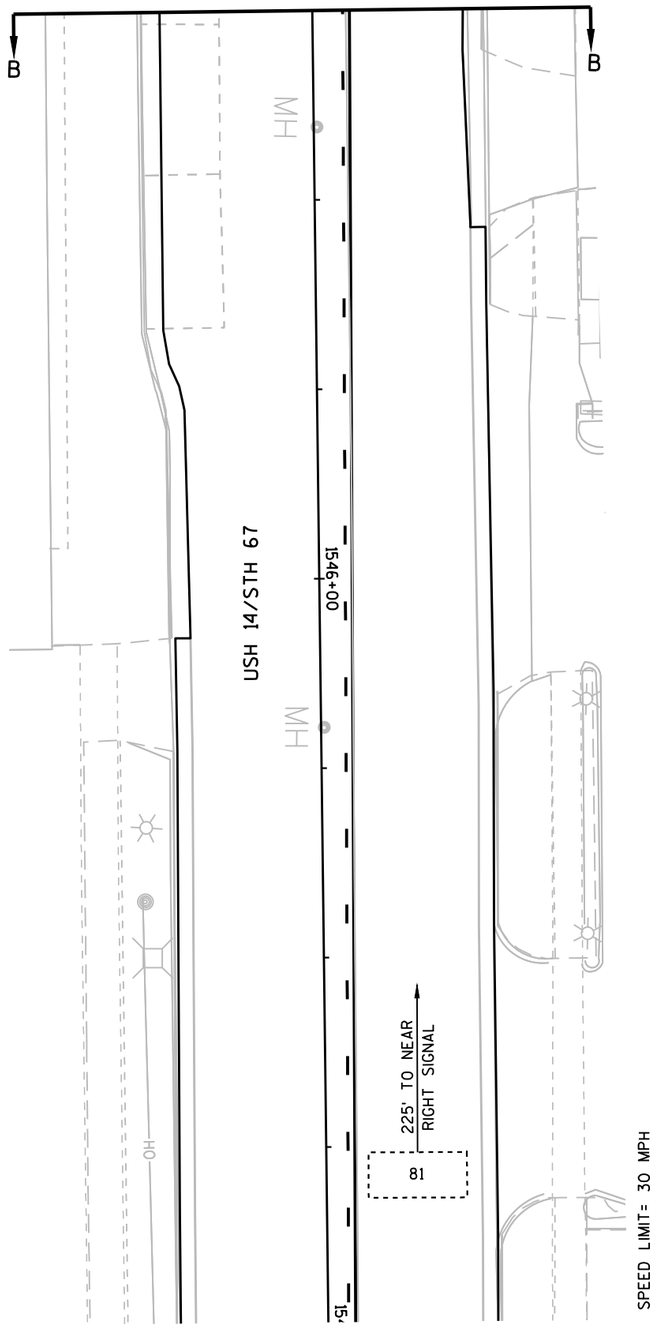
PROJECT NO: 3150-11-61	HWY: USH 14/STH 67	COUNTY: WALWORTH	TRAFFIC SIGNAL PLAN	SHEET	E

FILE NAME : N:\PDS\C3D\CAD\31501131\SIG\S64-0046\S64-0046_C.DWG
LAYOUT NAME - S64-0046_C_PG2

PLOT DATE : 1/24/2017 3:43 PM PLOT BY : VANDE LEEST, CYNTHIAPLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 42

2



N

TRAFFIC CONTROL SIGNAL
USH 14 (BELOIT ST/MAIN ST) &
STH 67 (MAIN ST/KENOSHA ST)
VILLAGE OF WALWORTH
WALWORTH COUNTY

SIGNAL NO. S64-0046

REGION CONTACT: D. WOLFORD
DESIGNED BY:
REVISED BY: C. VANDE LEEST

PAGE 3 OF 4

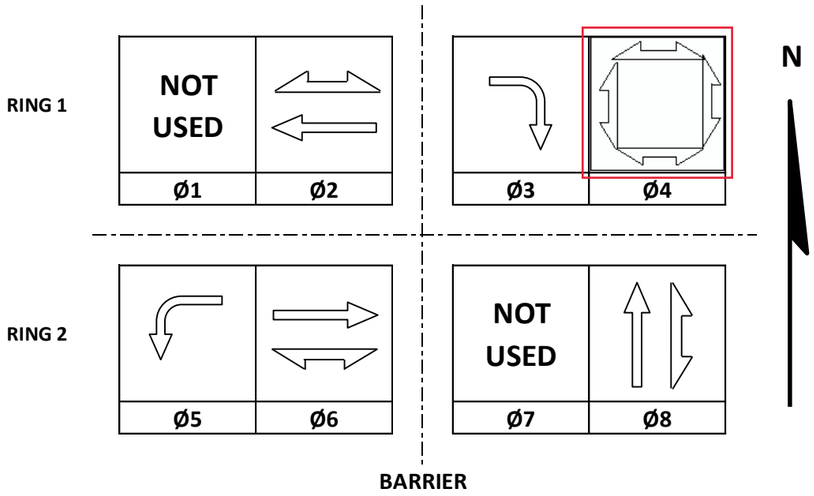
PROJECT NO: 3150-11-61	HWY: USH 14/STH 67	COUNTY: WALWORTH	TRAFFIC SIGNAL PLAN	SHEET	E

FILE NAME : N:\PDS\C3D\CAD\31501131\SIG\S64-0046\S64-0046_C.DWG
LAYOUT NAME - S64-0046_C_PG3

PLOT DATE : 1/24/2017 3:43 PM PLOT BY : VANDE LEEST, CYNTHIAPLOT NAME : PLOT SCALE : **********

WISDOT/CADDS SHEET 42

	HEAD NUMBERS	FLASH
Ø1		
Ø2	9,10,11,12	R
Ø3	4,7	-
Ø4		
Ø5	10,11	-
Ø6	4,5,6,7,8	R
Ø7		
Ø8	1,2,3	R
Ø2P	17,18	
Ø4P	15,16	
Ø6P	13,14	
Ø8P	19,20	
OLE		
OLF		
OLG		
OLH		



CONTROLLER LOGIC

PHASE NUMBER	PHASE LOCKING	DUAL ENTRY W / Ø	PHASE RECALL DAY	PHASE RECALL NIGHT	PHASE ACTIVE
1					
2		6	MIN	MIN	X
3		8			X
4		8			X
5		2	MAX		X
6		2	MIN	MIN	X
7					
8		3			X

TYPE OF INTERCONNECT/COMMUNICATION	
NONE	
CLOSED LOOP	
TWISTED PAIR	
FIBER OPTIC*	
FIBER OPTIC (ETHERNET)	
RADIO	
CELL MODEM	X

TYPE OF COORDINATION	
NONE	X
TBC	
TRAFFIC RESPONSIVE	
ADAPTIVE	
*LOCATION OF MASTER CONTROLLER NO: S-	
SIGNAL SYSTEM NO: SS-	

TYPE OF LIGHTING	
BY OTHER AGENCY	X
IN TRAFFIC CABINET	
IN SEPARATE DOT LIGHTING CABINET	

TYPE OF PRE-EMPT	
NONE	X
RAILROAD	
EMERGENCY VEHICLE	
GTT	
TOMAR	
HARDWIRE	
OTHER	
LIFT BRIDGE	
QUEUE DETECTION	

DETECTOR LOGIC

DETECTOR INPUT	1	3	5	7	9	11	13	15	17	19	21	23	25	27	29	31	DETECTOR INPUT
PLAN LOOP DETECTOR*(S)	21	61	63	82													PLAN LOOP DETECTOR*(S)
CALLED PHASE	2	6	6	8													CALLED PHASE
CALL OPTION			X	X													CALL OPTION
DELAY TIME																	DELAY TIME
EXTENTION OPTION	X	X	X	X													EXTENTION OPTION
EXTEND TIME	X	X															EXTEND TIME
USE ADDED INITIAL																	USE ADDED INITIAL
CROSS SWITCH PHASE																	CROSS SWITCH PHASE

DETECTOR INPUT	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	DETECTOR INPUT
PLAN LOOP DETECTOR*(S)	22	62	81	31													PLAN LOOP DETECTOR*(S)
CALLED PHASE	2	6	8	3													CALLED PHASE
CALL OPTION	X	X		x													CALL OPTION
DELAY TIME				x													DELAY TIME
EXTENTION OPTION	X	X	X														EXTENTION OPTION
EXTEND TIME			X														EXTEND TIME
USE ADDED INITIAL																	USE ADDED INITIAL
CROSS SWITCH PHASE																	CROSS SWITCH PHASE

GENERAL NOTES:

1. PHASE 5 OPERATES BY TIME OF DAY. SEE TIMING FOR DETAILS.

USH 14 (BELOIT ST/MAIN ST) & STH 67 (MAIN ST/KENOSHA ST)
VILLAGE OF WALWORTH
WALWORTH COUNTY

SIGNAL NO: S64-0046 CABINET TYPE: TS2
CONTROLLER TYPE: ECONOLITE
DATE: 1/17 PAGE NO. 4 OF 4

PROJECT NO: 3150-11-61	HWY: USH 14/STH 67	COUNTY: WALWORTH	SEQUENCE OF OPERATIONS	SHEET NO:	E

FILE NAME : \\WKERTOVFILPI01\n3public\SPO\Operations\Signals\Databases\Signal Intersection Files\S64-0046\PLANS\Econolite SEQ.pptm PLOT DATE : 1/13/2017 2:00PM PLOT BY : WOLFORD, DERRIN PLOT NAME : _____ PLOT SCALE : 1:1

Timing Cover Sheet for Signal: S0046 HWY: 14 and STH 67 (Kenosha St.)

Date:	11/16/2017	Changes Made By:	S. Sward
Signal No	S0046	Highway:	14
County:	WAL	Local Hwy:	Beloit St./Main St.
Controller:	ECONOLITE	Location:	STH 67 (Kenosha St.)
School:	None	Ped:	

Pre-emption

Preemption: Type: Phases:

None Recorded

Coordination

System No:

Coordination Type

Comm Type

Controller IP Address: 192.168.0.11

Comments:

	Length	Split 1	Split 2	Split 3	Split 4
Cycle 1=		Action Plan 1: 10pm - 6am M-F; 10pm - 7am Sat; 9pm - 7am Sun	Action Plan 2: 6am-11am & 7pm-10pm M-F; 7am - 11am S-S; 8pm-10pm Sat; 7pm - 9pm Sun		
Cycle 2=					
Cycle 3=					
Cycle 4=					

Cabinet Type:

☐ Battery Backup

Part of a Local System: No

Local Contact:

Phone Number:

Overlaps

Overlap A= Phases:

Overlap B= Phases:

Overlap C= Phases:

Overlap D= Phases:

Turn Operations

Phases with

FYA TOD	☐		Phase Omit	☐	
5 Section Head	☐		Dynamic FYA	☐	
Lead/Lag	☐		Split Phase	☐	

Detector Timing

Dilemma Zone: No Bike Detection ☐ Detection Type(s): Aldis,

Detector Number	31													
Stretch														
Right Turn Delay	*													
Left Turn Delay														

Unique Features

Phase 5 operates by time of day programming. Phase 4 ped buttons call all-pedestrian phase.
Cell Modem IP: 172.22.248.2

Timing Changes Log for Signal S0046 on Hwy 14 in WALWORTH County

STH 67 (Kenosha St.)

Date Computer Changed	Date Change Made in Field	Timing Change	Reason for Change	Change By	Temp Timing
11/16/17	11/16/2017	Add all pedestrian phase	Request by locals	S. Sward	No
10/05/17	10/25/2017	adjusted coordination settings, vehicle clearances, detector settings	new cabinet/controller, added gridsmart detection, construction ID 3150-11-61 complete	S. Sward	No
02/08/16	2/8/2016	Update controller IP address; Update startup data	Bring up to current standards	D. Wolford	No
04/16/15	4/17/2015	Input IP address and Centracs information	Install Cell Modem	D. Wolford	No
08/08/14	8/11/2014	Created 9 timing plans and 2 time of year plans (Sept-May & June-August); updated ped timing, yellows, all-reds	Various complaints about certain timings; Signal Timing & Operation Review	D. Wolford	No
02/07/12		Converted timing to Marc NX.		D. Brantner	No
08/30/10	8/31/2010	Change Sunday day program.	Police dept concerned about hours of left turn arrow operations.	D. Murphy	No
05/17/10	8/4/2010	Changed controller to EPAC	More efficient operations, more flexibility.	D. Murphy	No
07/08/05	7/8/2005	Increase interval 9 (USH 14 NB green).	Village of Walworth Police complaint.	E. Lloyd-Weis	No
	5/9/2003	Reduced clearance times.	Village of Walworth Police complaint.	E. Lloyd-Weis	No

Walworth - S64-0046 - USH 14 & STH 67

Configuration Phase Sequence

Controller Sequence (MM)1-1-1

Hardware Alternate Sequence Enable: No

Phase Ring Sequence.....(Note: Sequences identical to the prior one are not printed)

	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
Sequence 1																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 2																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 3																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 4																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 5																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 6																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 7																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 8																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 9																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 10																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 11																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 12																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 13																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 14																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 15																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 16																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.

Phases In Use / Exclusive PED (MM)1-2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phases in Use		X	X		X	X		X								
Exclusive PED				X												

Phase Compatibility (MM)1-1-2

Phase	Compatible Phase
1	5

1	6
2	5
2	6
3	7
3	8
9	11
9	12
10	11
10	12
13	15
13	16
14	15
14	16

Phase and Overlap Descriptions

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Description		WB	EBRT		WBLT	EB		NB								
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**L**	**K**	**L**	**M**	**N**	**O**
Description																

Administration (MM)1-7-1

Enable CU/Cabinet Interlock CRC	No
Request Download Controller Data	No
Controller Database CRC	0000
Enable Automatic Backup to Datakey	Yes

Backup Prevent (MM)1-1-3

	Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Timing /	1		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Backup	2	.		.	.	.	.	.	.	.	.	.	.	.	.	.	.
	3	.	.		.	.	.	.	.	.	.	.	.	.	.	.	.
	4	.	.	.		.	.	.	.	.	.	.	.	.	.	.	.
	5	.	.	.	.		.	.	.	.	.	.	.	.	.	.	.
	6	.	.	.	.	.		.	.	.	.	.	.	.	.	.	.
	7	.	.	.	.	.	.		.	.	.	.	.	.	.	.	.
	8	.	.	.	.	.	.	.		.	.	.	.	.	.	.	.
	9	.	.	.	.	.	.	.	.		.	.	.	.	.	.	.
	10	.	.	.	.	.	.	.	.	.		.	.	.	.	.	.
	11	.	.	.	.	.	.	.	.	.	.		.	.	.	.	.
	12	.	.	.	.	.	.	.	.	.	.	.		.	.	.	.
	13	.	.	.	.	.	.	.	.	.	.	.	.		.	.	.
	14	.	.	.	.	.	.	.	.	.	.	.	.	.		.	.
	15	.	.	.	.	.	.	.	.	.	.	.	.	.	.		.
	16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	

Simultaneous Gap (MM)1-1-4

	Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	1		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	2	.		.	.	.	X	.	.	.	.	.	.	.	.	.	.
	3	.	.		.	.	.	.	.	.	.	.	.	.	.	.	.
	4	.	.	.		.	.	.	X	.	.	.	.	.	.	.	.
	5	.	.	.	.		.	.	.	.	.	.	.	.	.	.	.
Phase	6	.	X	.	.	.		.	.	.	.	.	.	.	.	.	.
Must	7	.	.	.	.	.	.		.	.	.	.	.	.	.	.	.
Gap	8	.	.	.	X	.	.	.		.	.	.	.	.	.	.	.
With	9	.	.	.	.	.	.	.	.		.	.	.	.	.	.	.
Phase	10	.	.	.	.	.	.	.	.	.		.	.	.	.	.	.
	11	.	.	.	.	.	.	.	.	.	.		.	.	.	.	.
	12	.	.	.	.	.	.	.	.	.	.	.		.	.	.	.
	13	.	.	.	.	.	.	.	.	.	.	.	.		.	.	.
	14	.	.	.	.	.	.	.	.	.	.	.	.	.		.	.
	15	.	.	.	.	.	.	.	.	.	.	.	.	.	.		.
	16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
	Disable	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Load Switch Assignments (MMU Channel) (MM)1-3

	Phase / Overlap	Type	Dimming				Power Up				Auto		Flash Together
			Red	Yellow	Green	Dark	Auto	Red	Yellow	Dark	Red	Yellow	
1	1	V				+	X				X		
2	2	V				+	X				X		X
3	3	V				+	X				X		
4	4	V				+	X				X		
5	5	V				-	X				X		
6	6	V				-	X				X		X
7	7	V				-	X				X		
8	8	V				-	X				X		X
9	2	P				+	X						
10	4	P				+	X						
11	6	P				-	X						
12	8	P				-	X						
13	1	O				+	X				X		X
14	2	O				-	X				X		X
15	3	O				+	X				X		
16	4	O				-	X				X		

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Configuration Port 1 (SDLC)

SDLC Options (MM)1-4-1

BIU	1	2	3	4	5	6	7	8
Term and Facility Enable	X	X						
Detector Rack Enable	X							

Enable TS2/MMU Type Cabinet: Yes
Enable MMU Extended Status: Yes
Enable SDLC Stop Time: Yes
Enable 3 Critical RFE's Lockup: Yes

MMU Program (MM)1-4-2

Channel Can Serve with Channel	
Channel 1	**Channel 2**
2	5
2	6
2	9
2	11
3	8
3	12
5	9
6	9
6	11
8	10
8	12
9	10
9	11
9	12
10	11
10	12
11	12

Color Check Enable (MM)1-4-3

Enable Color Check: Yes

MMU Channel	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Green		X	X	X	X	X		X	X	X	X	X	X	X	X	X
Yellow		X	X	X	X	X		X					X	X	X	X
Red		X		X		X		X								

Secondary To Secondary Addressing (MM)1-4-4

ID	1	2	3	4	5	6	7	8	MMU
Term and Facility Enable									

ID	1	2	3	4	5	6	7	8	Diag
Detector Rack Enable									

Diagonstics (Test Fixture) Enable: No

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Configuration Communications

Ethernet Port Configuration (MM)1-5-1

Controller IP: 192.168.0.11
Subnet Mask: 255.255.255.0
Default Gateway IP: 192.168.0.1
Server IP: 172.22.65.22

NTCIP Parameters (MM)1-5-5

Backup Time: 0
UDP Port: 501
Ethernet Priority: 1
Port 2 Priority: 4
Port 3A Priority: 2
Port 3B Priority: 3

Port Configuration (MM)1-5-2 to 1-5-4

Port	2 (C50S)	3A (C21S)	3B (C22S)
Protocol	NTCIP	NTCIP	Terminal
Enable	Yes	Yes	No
Data Rate	19.2K	19.2K	1200
Data Parity Stop	8 N 1	8 N 1	8 0 1
Modem Setup String	None	None	None
User String			
Comm Port Address	1	1	0
System Detector 9-1	0	0	0
Telemetry Response Delay	0.0	0.0	0.0
Duplex Half/Full	Full	Full	Full
Flow Control	Yes	Yes	Yes
AB3418 NTCIP Group Address	0	0	0
AB3418 NTCIP Single Flag Enable	No	No	No
RTS to CTS Delay	0.0	0.0	3.0
RTS Turn Off Delay	0.0	0.0	2.0
Droupout Time	10	10	10
Early RTS	No	No	No
Telemetry Mode	FSK	FSK	FSK
Rail Road	0	0	0
Rail Road Line	0	0	0
ATCS Group	0	0	0
Wayside Device	0	0	0
ATCS Device	0	0	0
Wayside SubNode	0	0	0
ATCS SubNode	0	0	0

ECPIP Parameters (MM)1-5-6

Controller Address: 0
Expanded System Detector Address: 0

Local System Detector

Local System Detector	Number

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Configuration Logging/Display

Event Logging (MM)1-6-1

Critical RFE's	Yes	3 Critical RFE's in 24 Hours	Yes
MMU Flash Faults	Yes	Local Flash Faults	Yes
Non-Critical RFE's (Det/Test)	Yes	Detector Errors	Yes
Coordination Errors	Yes	Controller Download	Yes
Preempt	Yes	TSP	Yes
Power On/Off	Yes	Low Battery	Yes
Access	Yes	Data Change	Yes
Online/Offline	Yes		

Alarm Log	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Enable Logging	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Display Options (MM)1-7-2

Key Click Enable:	Yes
Backlight Enable:	Yes
LED Mode:	Single Color
Main Status Display Mode:	Basic
Screen Format:	Advanced
Trans Mode Pop-up Disable:	No

Sign On (MM)8-5

Sign On Message Line 1: INTERSECTION NAME:
Sign On Message Line 2: WisDOT Data Base

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Controller Timing Plan (MM)2-1
Plan 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction		WB	EBRT		WBLT	EB		NB								
Min Green	0	15	6	5	8	15	0	15	0	0	0	0	0	0	0	0
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	7	0	7	0	7	0	7	0	0	0	0	0	0	0	0
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	23	0	25	0	25	0	18	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	0	40	20	0	20	30	0	30	0	0	0	0	0	0	0	0
Max 2	0	40	20	0	20	30	0	30	0	0	0	0	0	0	0	0
Max 3	0	40	20	0	20	30	0	30	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	0.0	3.5	4.0	0.0	4.0	3.5	3.5	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	3.0	2.0	2.0	3.0	2.0	2.0	1.5	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	2.7	0.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	16	6	0	8	12	0	15	0	0	0	0	0	0	0	0
Time B4	0	16	20	0	20	12	0	30	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	24	0	0	0	18	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	2.0	1.5	0.0	1.5	2.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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Controller Overlaps

Vehicle Overlaps (MM)2-2

Overlap	Type	Lag Green	Yellow	Red	Advance Green

Phases

Overlap	Phase	Included	Protect	Ped Protect	Not Overlap	Modifier	Lag X Phase	Lag 2 Phase	Flash Green

PPLT FYA

Overlap	Protected Phase	Permissive Phase	Flash Arrow Output	Flash Arrow Channel	FYA Delay	FYA Clearance	Special Function Disable

Guaranteed Minimum Time Data (MM) 2-4

Phase Time Data

Phase	Min Green	Walk	Ped Clear	Yellow	Red Clear	Overlap Green
A01	1	0	7	3.0	0.0	1
B02	1	0	7	3.0	0.0	1
C03	1	0	7	3.0	0.0	1
D04	1	0	7	3.0	0.0	1
E05	1	0	7	3.0	0.0	1
F06	1	0	7	3.0	0.0	1
G07	1	0	7	3.0	0.0	1
H08	1	0	7	3.0	0.0	1
I09	1	0	7	3.0	0.0	1
J10	1	0	7	3.0	0.0	1
K11	1	0	7	3.0	0.0	1
L12	1	0	7	3.0	0.0	1
M13	1	0	7	3.0	0.0	1
N14	1	0	7	3.0	0.0	1
O15	1	0	7	3.0	0.0	1
P16	1	0	7	3.0	0.0	1

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Controller **Pedestrian Overlaps**
Pedestrian Overlaps (MM) 2-3

Included Phase	Ped Overlap
2	2
4	2
4	6
4	8
6	6
8	8

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Controller Start/Fash (MM) 2-5

Startup

Phase	Phase Setting
2	G

Overlap

Flash > Mon:	No
Flash Time:	0
All Red:	6
Power Start Sequence:	1
MUTCD Enabled:	Yes
MUTCD Yellow to Green:	No

Automatic Flash

Entry Phase
2

Exit Phase
2

Overlap Exit

Flash > Mon:	No
Exit Flash Interval:	G
Minimum Auto Flash:	8
Minimumin Recall:	No
Cycle Through Phase:	No

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Controller Options

Controller Options (MM)2-6-1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Flashing Green Phase																
Guaranteed Passage																
Non Act 1																
Non Act 2																
Dual Entry		X				X										
Conditional Service																
Conditional Reservice																
Ped Reservice																
Rest In Walk																
Flashing Walk																
Ped Clear Yellow																
Ped Clear Red																
IGRN + Veh Ext																

Ped Clear Protect: On Red Revert: 2.0 MUTCD 3 Seconds Don't Walk: No

Act Pre-Time (MM)2-7

Pre-Time Mode Enable: No Free Input Enables Pre-Timed: Yes

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Pre-Timed Phase																

Phase Recall Options (MM)2-8

Plan 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector																
Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
Al Calc																

Plan 2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector																
Vehicle Recall		X		X				X								
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
Al Calc																

Plan 3

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector																
Vehicle Recall		X		X				X								
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
Al Calc																

Plan 4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector		X				X										

Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
AI Calc																

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Coordination Options

Coordination Options (MM)3-1

Manual Pattern	Auto	ECPI Coord	Yes
System Source	TBC	System Format	STD
Splits In	Seconds	Offsets In	Seconds
Transition	Add	Max Select	MAXINH
Dwell/Add Time	0		
Delay Coord Walk to LZ	No	Force Off	Fixed
Offset Reference	Lead	Use Ped Time	No
Ped Recall	No	Ped Reservice	No
Local Zero Override	No	FO Added Initial Green	Yes
Re-Sync Count	3	Multisync	No

Auto Perm Minimum Green (Seconds) (MM)3-4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Minimum Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Split Demand (MM)3-5

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Demand 1																
Demand 2																

Demand	1	2
Detector	0	0
Call Time (Sec)	0	0
Cycle Count	0	0

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Coordination Pattern Data
Pattern Data (MM)3-2

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Preemptor

Preempt Plan (MM)4-1

No Enabled Preempts

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Time Base Clock/Calendar
Clock/Calendar Options (MM)5-1

Enable Action Plan:	0
Sync Reference Time:	12:00 AM
Sync Reference:	Reference Time
Day Light Savings:	No
Time Reset Input Set Time:	3:30:00
Standard Time From GMT:	0

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Time Base Action Plan
Action Plan (MM)5-2

Action Plan - 1

Pattern	Auto	Override System	No
Timing Plan	1	Sequence	0
Veh Det Plan	0	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall		X				X										
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																

Special Function								
Auxilliary Function								

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 2

Pattern	Auto	Override System	No
Timing Plan	1	Sequence	0
Veh Det Plan	0	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall		X				X										
Max Recall					X											
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 3

Pattern	Auto	Override System	No
Timing Plan	1	Sequence	0
Veh Det Plan	0	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Walworth - S64-0046 - USH 14 & STH 67

Time Base Day Plan/Schedule
Day Plan (MM)5-3

Day Plan - 1

Event	Action Plan	Start Time
1	1	12:01 AM
2	2	11:00 AM
3	1	4:30 PM

Day Plan - 2

Event	Action Plan	Start Time
1	1	12:01 AM
2	2	11:00 AM
3	1	8:00 PM

Day Plan - 3

Event	Action Plan	Start Time
1	1	12:01 AM
2	2	11:00 AM
3	1	7:00 PM

Schedule (MM)5-4

Schedule Number - 1

Day Plan Number: 1

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	X	X	X	X	X	X	X	X	X	X	X	X

Day of Week	Sun	Mon	Tue	Wed	Thur	Fri	Sat
		X	X	X	X	X	

Day of Month	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

Schedule Number - 2

Day Plan Number: 2

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	X	X	X	X	X	X	X	X	X	X	X	X

Day of Week	Sun	Mon	Tue	Wed	Thur	Fri	Sat
							X

Day of Month	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

Schedule Number - 3

Day Plan Number: 3

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	X	X	X	X	X	X	X	X	X	X	X	X

Day of Week	Sun	Mon	Tue	Wed	Thur	Fri	Sat
	X						

Day of Month	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

Schedule Number - 4

Day Plan Number: 3

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
						X	X	X				

Day of Week	Sun	Mon	Tue	Wed	Thur	Fri	Sat
		X	X	X	X		

Day of Month	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**
	X	X	X	X	X	X	X	X	X	X	X
	23	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**		
	X	X	X	X	X	X	X	X	X		

Schedule Number - 5

Day Plan Number: 5

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
						X	X	X				

Day of Week	Sun	Mon	Tue	Wed	Thur	Fri	Sat
						X	

Day of Month	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**
	X	X	X	X	X	X	X	X	X	X	X
	23	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**		
	X	X	X	X	X	X	X	X	X		

Schedule Number - 6

Day Plan Number: 6

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
						X	X	X				

Day of Week	Sun	Mon	Tue	Wed	Thur	Fri	Sat
	X						X

Day of Month	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**
	X	X	X	X	X	X	X	X	X	X	X
	23	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**		
	X	X	X	X	X	X	X	X	X		

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Time Base Exceptions
Exception Day Program (MM)5-5

Day	Fixed/Float	Month	Day of Week/Month	Week of Month/Year	Day Plan
37	FIXED	255	255	65535	255
38	FIXED	255	255	65535	255
39	FIXED	255	255	65535	255
40	FIXED	255	255	65535	255
41	FIXED	255	255	65535	255
42	FIXED	255	255	65535	255
43	FIXED	255	255	65535	255
44	FIXED	255	255	65535	255
45	FIXED	255	255	65535	255
46	FIXED	255	255	65535	255
47	FIXED	255	255	65535	255
48	FIXED	255	255	65535	255
49	FIXED	255	255	65535	255
50	FIXED	255	255	65535	255
51	FIXED	255	255	65535	255
52	FIXED	255	255	65535	255
53	FIXED	255	255	65535	255
54	FIXED	255	255	65535	255
55	FIXED	255	255	65535	255
56	FIXED	255	255	65535	255
57	FIXED	255	255	65535	255
58	FIXED	255	255	65535	255
59	FIXED	255	255	65535	255
60	FIXED	255	255	65535	255
61	FIXED	255	255	65535	255
62	FIXED	255	255	65535	255
63	FIXED	255	255	65535	255
64	FIXED	255	255	65535	255
65	FIXED	255	255	65535	255
66	FIXED	255	255	65535	255
67	FIXED	255	255	65535	255
68	FIXED	255	255	65535	255
69	FIXED	255	255	65535	255
70	FIXED	255	255	65535	255
71	FIXED	255	255	65535	255
72	FIXED	255	255	65535	255
73	FIXED	255	255	65535	255
74	FIXED	255	255	65535	255
75	FIXED	255	255	65535	255
76	FIXED	255	255	65535	255
77	FIXED	255	255	65535	255
78	FIXED	255	255	65535	255
79	FIXED	255	255	65535	255
80	FIXED	255	255	65535	255
81	FIXED	255	255	65535	255
82	FIXED	255	255	65535	255
83	FIXED	255	255	65535	255
84	FIXED	255	255	65535	255
85	FIXED	255	255	65535	255
86	FIXED	255	255	65535	255
87	FIXED	255	255	65535	255
88	FIXED	255	255	65535	255
89	FIXED	255	255	65535	255
90	FIXED	255	255	65535	255

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Detectors

Detectors Page 1

Vehicle Detectors Setup (MM)6-1

Vehicle Plan	Detector Number	Called	Type
1	1	2	N
1	2	2	N
1	3	6	N
1	4	6	N
1	5	6	N
1	6	8	N
1	7	8	N
1	8	3	N
1	60	2	N
1	60	4	N
1	60	6	N
1	60	8	N
2	1	1	N
2	2	2	N
2	3	3	N
2	4	4	N
2	5	5	N
2	6	6	N
2	7	7	N
2	8	8	N
2	60	2	N
2	60	4	N
2	60	6	N
2	60	8	N
3	1	1	N
3	2	2	N
3	3	3	N
3	4	4	N
3	5	5	N
3	6	6	N
3	7	7	N
3	8	8	N
3	60	2	N
3	60	4	N
3	60	6	N
3	60	8	N
4	1	1	N
4	2	2	N
4	3	3	N
4	4	4	N
4	5	5	N
4	6	6	N
4	7	7	N
4	8	8	N
4	60	2	N
4	60	4	N
4	60	6	N
4	60	8	N

Vehicle Detector Setup (MM)6-2 continued

Detector Number	Type	TS2 Detector	Detector Description
1	N-NTCIP	Yes	Zone 21
2	N-NTCIP	Yes	Zone 22
3	N-NTCIP	Yes	Zone 61
4	N-NTCIP	Yes	Zone 62
5	N-NTCIP	Yes	Zone 63
6	N-NTCIP	Yes	Zone 81

7	N-NTCIP	Yes	Zone 82
8	N-NTCIP	Yes	Zone 31
9	N-NTCIP	Yes	
10	N-NTCIP	Yes	
11	N-NTCIP	Yes	
12	N-NTCIP	Yes	
13	N-NTCIP	Yes	
14	N-NTCIP	Yes	
15	N-NTCIP	Yes	
16	N-NTCIP	Yes	
17	N-NTCIP	Yes	
18	N-NTCIP	Yes	
19	N-NTCIP	Yes	
20	N-NTCIP	Yes	
21	N-NTCIP	Yes	
22	N-NTCIP	Yes	
23	N-NTCIP	Yes	
24	N-NTCIP	Yes	
25	N-NTCIP	Yes	
26	N-NTCIP	Yes	
27	N-NTCIP	Yes	
28	N-NTCIP	Yes	
29	N-NTCIP	Yes	
30	N-NTCIP	Yes	
31	N-NTCIP	Yes	
32	N-NTCIP	Yes	
33	N-NTCIP	Yes	
34	N-NTCIP	Yes	
35	N-NTCIP	Yes	
36	N-NTCIP	Yes	
37	N-NTCIP	Yes	
38	N-NTCIP	Yes	
39	N-NTCIP	Yes	
40	N-NTCIP	Yes	
41	N-NTCIP	Yes	
42	N-NTCIP	Yes	
43	N-NTCIP	Yes	
44	N-NTCIP	Yes	
45	N-NTCIP	Yes	
46	N-NTCIP	Yes	
47	N-NTCIP	Yes	
48	N-NTCIP	Yes	
49	N-NTCIP	Yes	
50	N-NTCIP	Yes	
51	N-NTCIP	Yes	
52	N-NTCIP	Yes	
53	N-NTCIP	Yes	
54	N-NTCIP	Yes	
55	N-NTCIP	Yes	
56	N-NTCIP	Yes	
57	N-NTCIP	Yes	
58	N-NTCIP	Yes	
59	N-NTCIP	Yes	
60	N-NTCIP	Yes	
61	N-NTCIP	Yes	
62	N-NTCIP	Yes	
63	N-NTCIP	Yes	
64	N-NTCIP	Yes	

Vehicle Detector Setup (MM)6-2 continued

Det Num	Veh Det Plan	Phase	ECPI Log	Call Option	Delay Time	Ext Option	Extend Time / Passage Time	Queue Lim / Discon. Time	Use Added Initial	Cross Switch Phase	Lock In	NTCIP Vol.	NTCIP Occ.	Pmt Queue Delay
1	1	2	No	No	0.0	Passage	4.9	0	Yes	0	None	No	No	No
1	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
1	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
1	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

2	1	2	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
2	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
2	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
2	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
3	1	6	No	No	0.0	Passage	3.0	0	Yes	0	None	No	No	No
3	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
3	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
3	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
4	1	6	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
4	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
4	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
4	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
5	1	6	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
5	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
5	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
5	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
6	1	8	No	No	0.0	Passage	5.1	0	Yes	0	None	No	No	No
6	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
6	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
6	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
7	1	8	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
7	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
7	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
7	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
8	1	3	No	Yes	8.0	Passage	0.0	0	Yes	0	None	No	No	No
8	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
8	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
8	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
9	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
9	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
9	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
9	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
10	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
10	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
10	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
10	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
11	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
11	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
11	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
11	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
12	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
12	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
12	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
12	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
13	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
13	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
13	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
13	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
14	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
14	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
14	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
14	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
15	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
15	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
15	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
15	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
16	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
16	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
16	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
16	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
17	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
17	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
17	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
17	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
18	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
18	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
18	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
18	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

19	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
19	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
19	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
19	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
20	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
20	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
20	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
20	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
21	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
21	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
21	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
21	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
22	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
22	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
22	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
22	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
23	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
23	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
23	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
23	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
24	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
24	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
24	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
24	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
25	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
25	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
25	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
25	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
26	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
26	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
26	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
26	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
27	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
27	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
27	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
27	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
28	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
28	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
28	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
28	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
29	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
29	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
29	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
29	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
30	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
30	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
30	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
30	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
31	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
31	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
31	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
31	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
32	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
32	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
32	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
32	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
33	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
33	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
33	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
33	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
34	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
34	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
34	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
34	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
35	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
35	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
35	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
35	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

36	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
36	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
36	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
36	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
37	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
37	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
37	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
37	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
38	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
38	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
38	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
38	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
39	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
39	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
39	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
39	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
40	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
40	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
40	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
40	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
41	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
41	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
41	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
41	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
42	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
42	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
42	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
42	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
43	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
43	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
43	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
43	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
44	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
44	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
44	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
44	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
45	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
45	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
45	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
45	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
46	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
46	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
46	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
46	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
47	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
47	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
47	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
47	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
48	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
48	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
48	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
48	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
49	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
49	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
49	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
49	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
50	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
50	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
50	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
50	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
51	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
51	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
51	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
51	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
52	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
52	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
52	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
52	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

53	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
53	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
53	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
53	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
54	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
54	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
54	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
54	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
55	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
55	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
55	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
55	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
56	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
56	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
56	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
56	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
57	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
57	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
57	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
57	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
58	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
58	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
58	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
58	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
59	1	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
59	2	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
59	3	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
59	4	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
60	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	Yellow	No	No	No
60	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	Yellow	No	No	No
60	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	Yellow	No	No	No
60	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	Yellow	No	No	No
61	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
61	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
61	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
61	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
62	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
62	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
62	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
62	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
63	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
63	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
63	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
63	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
64	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
64	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
64	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
64	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

Ped Detector Options (MM)6-3

Phase Ped Detector (Econolite)

Detector	Call Phase															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.
4	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.
5	.	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.
6	.	.	.	.	.	X	.	.	.	.	.	.	.	.	.	.
7	.	.	.	.	.	.	X	.	.	.	.	.	.	.	.	.
8	.	.	.	.	.	.	.	X	.	.	.	.	.	.	.	.
9	.	.	.	.	.	.	.	.	X	.	.	.	.	.	.	.
10	.	.	.	.	.	.	.	.	.	X	.	.	.	.	.	.
11	.	.	.	.	.	.	.	.	.	.	X	.	.	.	.	.
12	.	.	.	.	.	.	.	.	.	.	.	X	.	.	.	.

13	.	.	.	.	.	.	.	.	.	.	.	.	X	.	.	.
14	.	.	.	.	.	.	.	.	.	.	.	.	.	X	.	.
15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	X	.
16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	X

Walworth - S64-0046 - USH 14 & STH 67

Detectors

Detectors Page 2

Log - Speed Detector Setup (MM)6-4

NTCIP Log Period: 60 ECPI Log Period: 15 Length Unit: Inch

Speed Detector	Local Detector	One/Two Detector	Vehicle Length	Trap Length	Enable Log
1	0	1	0	0	No
2	0	1	0	0	No
3	0	1	0	0	No
4	0	1	0	0	No
5	0	1	0	0	No
6	0	1	0	0	No
7	0	1	0	0	No
8	0	1	0	0	No
9	0	1	0	0	No
10	0	1	0	0	No
11	0	1	0	0	No
12	0	1	0	0	No
13	0	1	0	0	No
14	0	1	0	0	No
15	0	1	0	0	No
16	0	1	0	0	No

Vehicle Detector Diagnostics (MM)6-5

Plan	Detector	Counts	Act	Pres	Multiplier	Failed Time	Failed Call Delay
1	1	0	0	0	1	255	0
1	2	0	0	0	1	255	0
1	3	0	0	0	1	255	0
1	4	0	0	0	1	255	0
1	5	0	0	0	1	255	0
1	6	0	0	0	1	255	0
1	7	0	0	0	1	255	0
1	8	0	0	0	1	255	0
1	9	0	0	0	1	255	0
1	10	0	0	0	1	255	0
1	11	0	0	0	1	255	0
1	12	0	0	0	1	255	0
1	13	0	0	0	1	255	0
1	14	0	0	0	1	255	0
1	15	0	0	0	1	255	0
1	16	0	0	0	1	255	0
1	17	0	0	0	1	255	0
1	18	0	0	0	1	255	0
1	19	0	0	0	1	255	0
1	20	0	0	0	1	255	0
1	21	0	0	0	1	255	0
1	22	0	0	0	1	255	0
1	23	0	0	0	1	255	0
1	24	0	0	0	1	255	0
1	25	0	0	0	1	255	0
1	26	0	0	0	1	255	0
1	27	0	0	0	1	255	0
1	28	0	0	0	1	255	0
1	29	0	0	0	1	255	0
1	30	0	0	0	1	255	0
1	31	0	0	0	1	255	0
1	32	0	0	0	1	255	0
1	33	0	0	0	1	255	0

1	34	0	0	0	1	255	0
1	35	0	0	0	1	255	0
1	36	0	0	0	1	255	0
1	37	0	0	0	1	255	0
1	38	0	0	0	1	255	0
1	39	0	0	0	1	255	0
1	40	0	0	0	1	255	0
1	41	0	0	0	1	255	0
1	42	0	0	0	1	255	0
1	43	0	0	0	1	255	0
1	44	0	0	0	1	255	0
1	45	0	0	0	1	255	0
1	46	0	0	0	1	255	0
1	47	0	0	0	1	255	0
1	48	0	0	0	1	255	0
1	49	0	0	0	1	255	0
1	50	0	0	0	1	255	0
1	51	0	0	0	1	255	0
1	52	0	0	0	1	255	0
1	53	0	0	0	1	255	0
1	54	0	0	0	1	255	0
1	55	0	0	0	1	255	0
1	56	0	0	0	1	255	0
1	57	0	0	0	1	255	0
1	58	0	0	0	1	255	0
1	59	0	0	0	1	255	0
1	60	0	0	0	1	255	0
1	61	0	0	0	1	255	0
1	62	0	0	0	1	255	0
1	63	0	0	0	1	255	0
1	64	0	0	0	1	255	0
2	1	0	0	0	1	255	0
2	2	0	0	0	1	255	0
2	3	0	0	0	1	255	0
2	4	0	0	0	1	255	0
2	5	0	0	0	1	255	0
2	6	0	0	0	1	255	0
2	7	0	0	0	1	255	0
2	8	0	0	0	1	255	0
2	9	0	0	0	1	255	0
2	10	0	0	0	1	255	0
2	11	0	0	0	1	255	0
2	12	0	0	0	1	255	0
2	13	0	0	0	1	255	0
2	14	0	0	0	1	255	0
2	15	0	0	0	1	255	0
2	16	0	0	0	1	255	0
2	17	0	0	0	1	255	0
2	18	0	0	0	1	255	0
2	19	0	0	0	1	255	0
2	20	0	0	0	1	255	0
2	21	0	0	0	1	255	0
2	22	0	0	0	1	255	0
2	23	0	0	0	1	255	0
2	24	0	0	0	1	255	0
2	25	0	0	0	1	255	0
2	26	0	0	0	1	255	0
2	27	0	0	0	1	255	0
2	28	0	0	0	1	255	0
2	29	0	0	0	1	255	0
2	30	0	0	0	1	255	0
2	31	0	0	0	1	255	0
2	32	0	0	0	1	255	0
2	33	0	0	0	1	255	0
2	34	0	0	0	1	255	0
2	35	0	0	0	1	255	0
2	36	0	0	0	1	255	0
2	37	0	0	0	1	255	0

2	38	0	0	0	1	255	0
2	39	0	0	0	1	255	0
2	40	0	0	0	1	255	0
2	41	0	0	0	1	255	0
2	42	0	0	0	1	255	0
2	43	0	0	0	1	255	0
2	44	0	0	0	1	255	0
2	45	0	0	0	1	255	0
2	46	0	0	0	1	255	0
2	47	0	0	0	1	255	0
2	48	0	0	0	1	255	0
2	49	0	0	0	1	255	0
2	50	0	0	0	1	255	0
2	51	0	0	0	1	255	0
2	52	0	0	0	1	255	0
2	53	0	0	0	1	255	0
2	54	0	0	0	1	255	0
2	55	0	0	0	1	255	0
2	56	0	0	0	1	255	0
2	57	0	0	0	1	255	0
2	58	0	0	0	1	255	0
2	59	0	0	0	1	255	0
2	60	0	0	0	1	255	0
2	61	0	0	0	1	255	0
2	62	0	0	0	1	255	0
2	63	0	0	0	1	255	0
2	64	0	0	0	1	255	0
3	1	0	0	0	1	255	0
3	2	0	0	0	1	255	0
3	3	0	0	0	1	255	0
3	4	0	0	0	1	255	0
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3	38	0	0	0	1	255	0
3	39	0	0	0	1	255	0
3	40	0	0	0	1	255	0
3	41	0	0	0	1	255	0

3	42	0	0	0	1	255	0
3	43	0	0	0	1	255	0
3	44	0	0	0	1	255	0
3	45	0	0	0	1	255	0
3	46	0	0	0	1	255	0
3	47	0	0	0	1	255	0
3	48	0	0	0	1	255	0
3	49	0	0	0	1	255	0
3	50	0	0	0	1	255	0
3	51	0	0	0	1	255	0
3	52	0	0	0	1	255	0
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4	29	0	0	0	1	255	0
4	30	0	0	0	1	255	0
4	31	0	0	0	1	255	0
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4	44	0	0	0	1	255	0
4	45	0	0	0	1	255	0

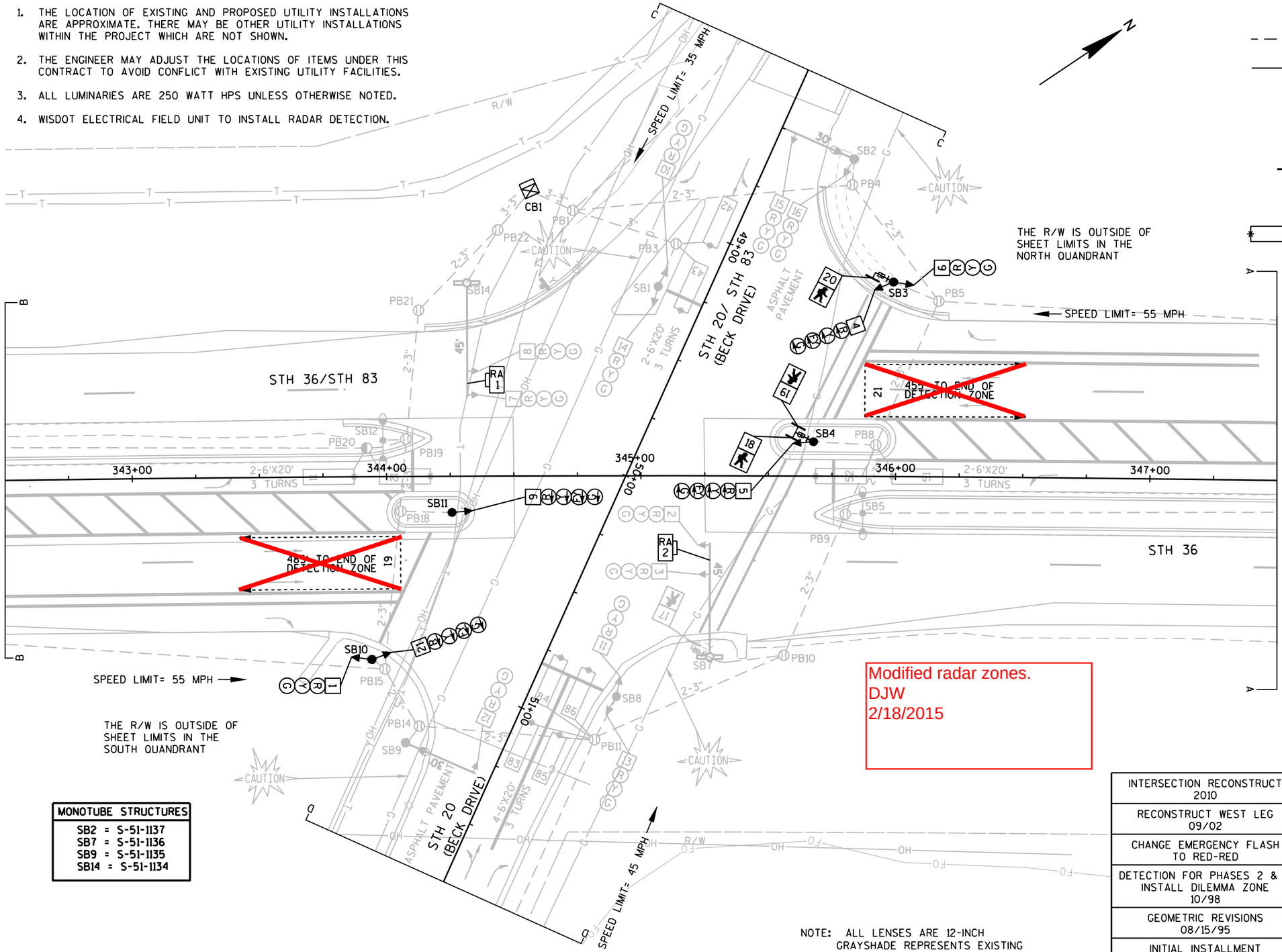
4	46	0	0	0	1	255	0
4	47	0	0	0	1	255	0
4	48	0	0	0	1	255	0
4	49	0	0	0	1	255	0
4	50	0	0	0	1	255	0
4	51	0	0	0	1	255	0
4	52	0	0	0	1	255	0
4	53	0	0	0	1	255	0
4	54	0	0	0	1	255	0
4	55	0	0	0	1	255	0
4	56	0	0	0	1	255	0
4	57	0	0	0	1	255	0
4	58	0	0	0	1	255	0
4	59	0	0	0	1	255	0
4	60	0	0	0	1	255	0
4	61	0	0	0	1	255	0
4	62	0	0	0	1	255	0
4	63	0	0	0	1	255	0
4	64	0	0	0	1	255	0

Pedestrian Detector Diagnotics (MM)6-6

Plan	Detector	Counts	Act	Pres	Multiplier

CONSTRUCTION NOTES:

1. THE LOCATION OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
2. THE ENGINEER MAY ADJUST THE LOCATIONS OF ITEMS UNDER THIS CONTRACT TO AVOID CONFLICT WITH EXISTING UTILITY FACILITIES.
3. ALL LUMINARIES ARE 250 WATT HPS UNLESS OTHERWISE NOTED.
4. WISDOT ELECTRICAL FIELD UNIT TO INSTALL RADAR DETECTION.



LEGEND

- CONTROL CABINET
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- LOOP DETECTOR CONDUIT 1" NONMETALLIC
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- (XX) MONOTUBE BASE, POLE, 15'-30' ARM
- (XX) MONOTUBE BASE, POLE, 35'-55' ARM
- PEDESTRIAN HEAD WITH PUSH BUTTON
- PUSH BUTTON
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
- LOOP DETECTOR IN 1" NONMETALLIC CONDUIT
- PULL BOX, 24" X 36"
- PULL BOX, 24" X 42"
- XX SIGNAL HEAD NUMBER
- R RED CIRCULAR INDICATOR
- Y YELLOW CIRCULAR INDICATOR
- G GREEN CIRCULAR INDICATOR
- R RED ARROW
- FY YELLOW ARROW
- G GREEN ARROW
- DON'T WALK INDICATOR 16" WALK INDICATOR 16"
- X EVP DESIGNATOR
- EVP DETECTOR HEAD
- Y YIELD SIGN
- LANE DESIGNATION FOR INFO ONLY
- RA X RADAR DETECTOR
- RADAR DETECTION ZONE

MONOTUBE STRUCTURES
SB2 = S-51-1137
SB7 = S-51-1136
SB9 = S-51-1135
SB14 = S-51-1134

Modified radar zones.
DJW
2/18/2015

NOTE: ALL LENSES ARE 12-INCH
GRAYSHADE REPRESENTS EXISTING

REVISION				
REV. NO.	REPLACE CABINET & CONTROLLER; INSTALL EB/WB FYA; ACTIVATE PHASE 5; INSTALL CELL MODEM; INSTALL EB & WB ADVANCE RADAR DETECTION			
	APPROVAL RECOMMENDED		APPROVED	
	REGION		CENTRAL OFFICE	
	DATE	BY	DATE	BY
6	6/18/2014		6/20/2014	

INTERSECTION RECONSTRUCT 2010
RECONSTRUCT WEST LEG 09/02
CHANGE EMERGENCY FLASH TO RED-RED
DETECTION FOR PHASES 2 & 5 INSTALL DILEMMA ZONE 10/98
GEOMETRIC REVISIONS 08/15/95
INITIAL INSTALLMENT 09/1989

TRAFFIC CONTROL SIGNAL
STH 36 & STH 20/83
TOWN OF ROCHESTER
RACINE COUNTY
CABINET TYPE: TS2
SIGNAL NO. S51-0406 CONTROLLER TYPE: ECONOLITE

WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVAL RECOMMENDED
DATE 09/05/89 EDWARD J. FRIEDE, REGION TRAFFIC ENGINEER

APPROVED
DATE 09/19/89 H. O. PRICE, STATE TRAFFIC ENGINEER

REGION CONTACT: D. WOLFORD
DESIGNED BY:
REVISED BY: MAS

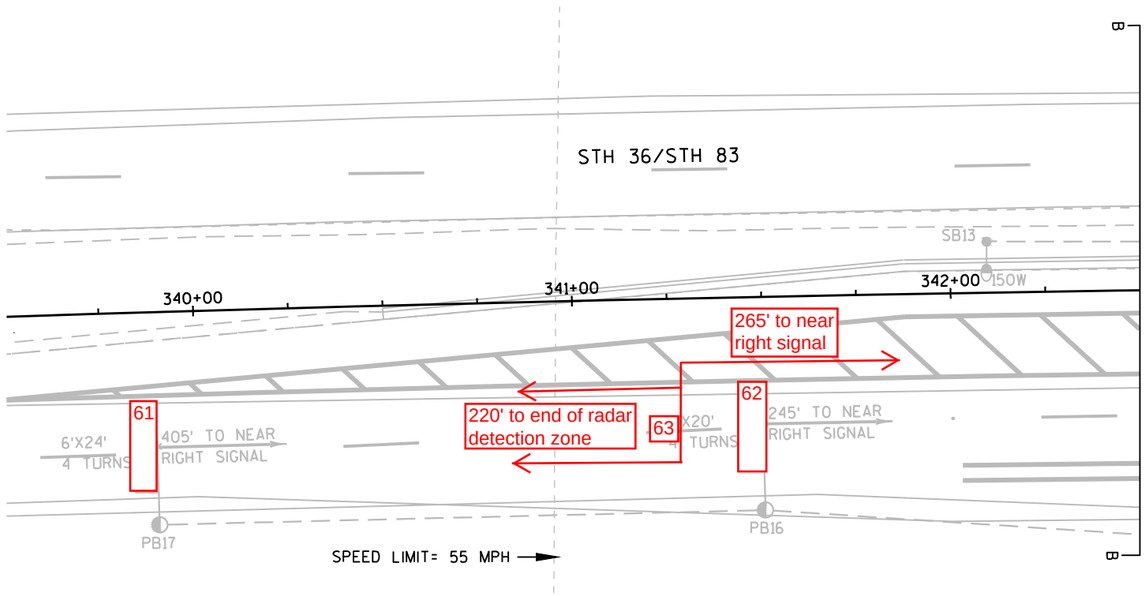
PAGE 1 OF 4

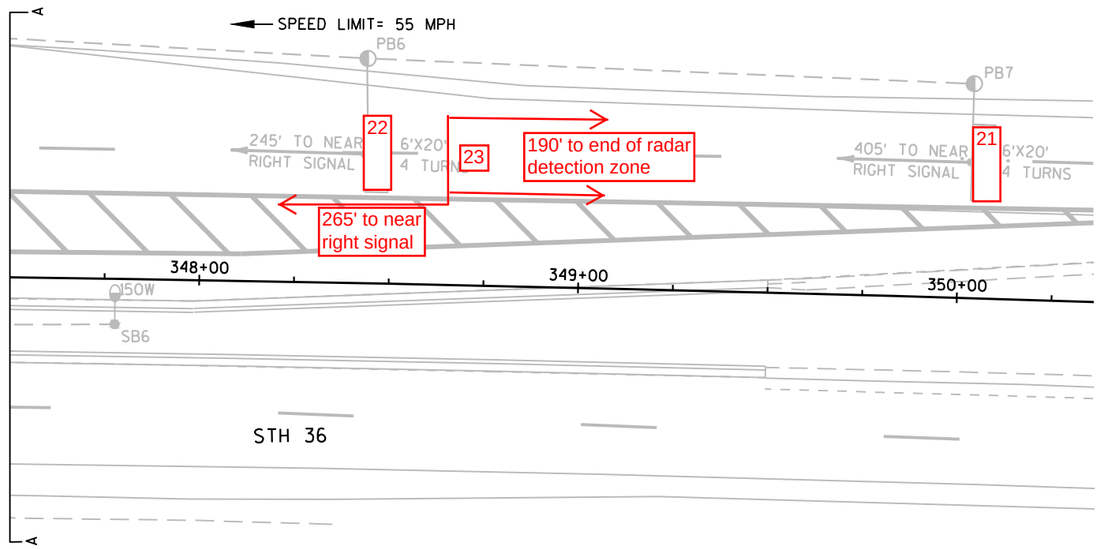
PROJECT NO: 3700-20-08	HWY: STH 36/83	COUNTY: RACINE	TRAFFIC SIGNAL PLAN	SHEET	E

FILE NAME : N:\PDS\C3D\CAD\00820300\SIG\S51-0406\S51-0406_F.DWG PLOT DATE : 6/25/2014 11:21 AM PLOT BY : JOHNSON, JUDITH A PLOT NAME : PLOT SCALE : 1:40_XREF

WISDOT/CADDS SHEET 42

2





TRAFFIC CONTROL SIGNAL
STH 36 & STH 20/83
TOWN OF ROCHESTER
RACINE COUNTY

SIGNAL NO. S51-0406

REGION CONTACT: D. WOLFORD
DESIGNED BY:
REVISED BY: MAS

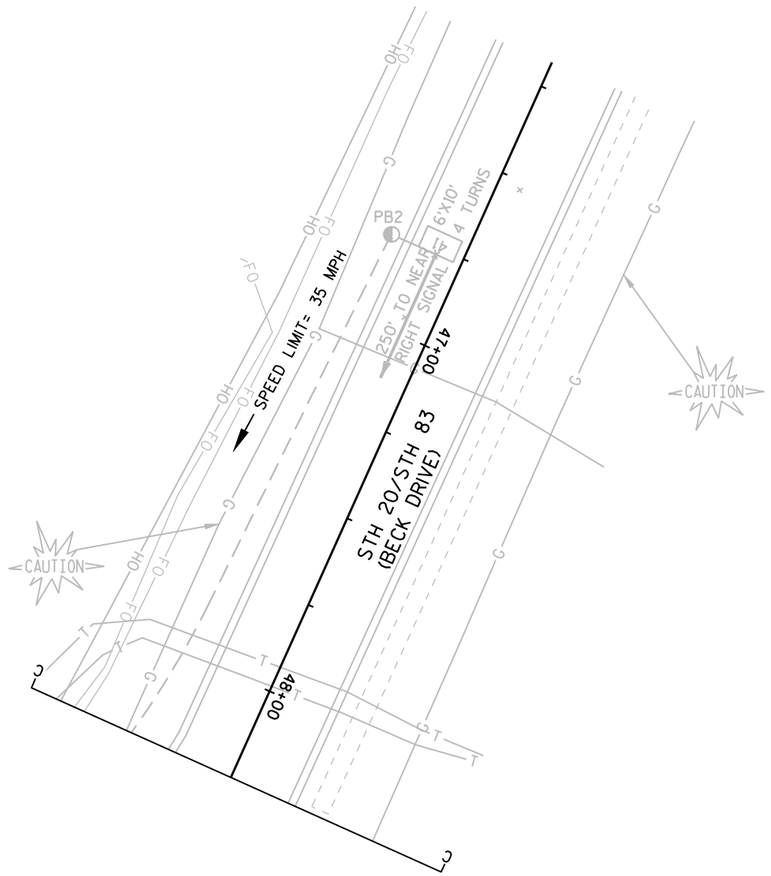
PAGE 2 OF 4

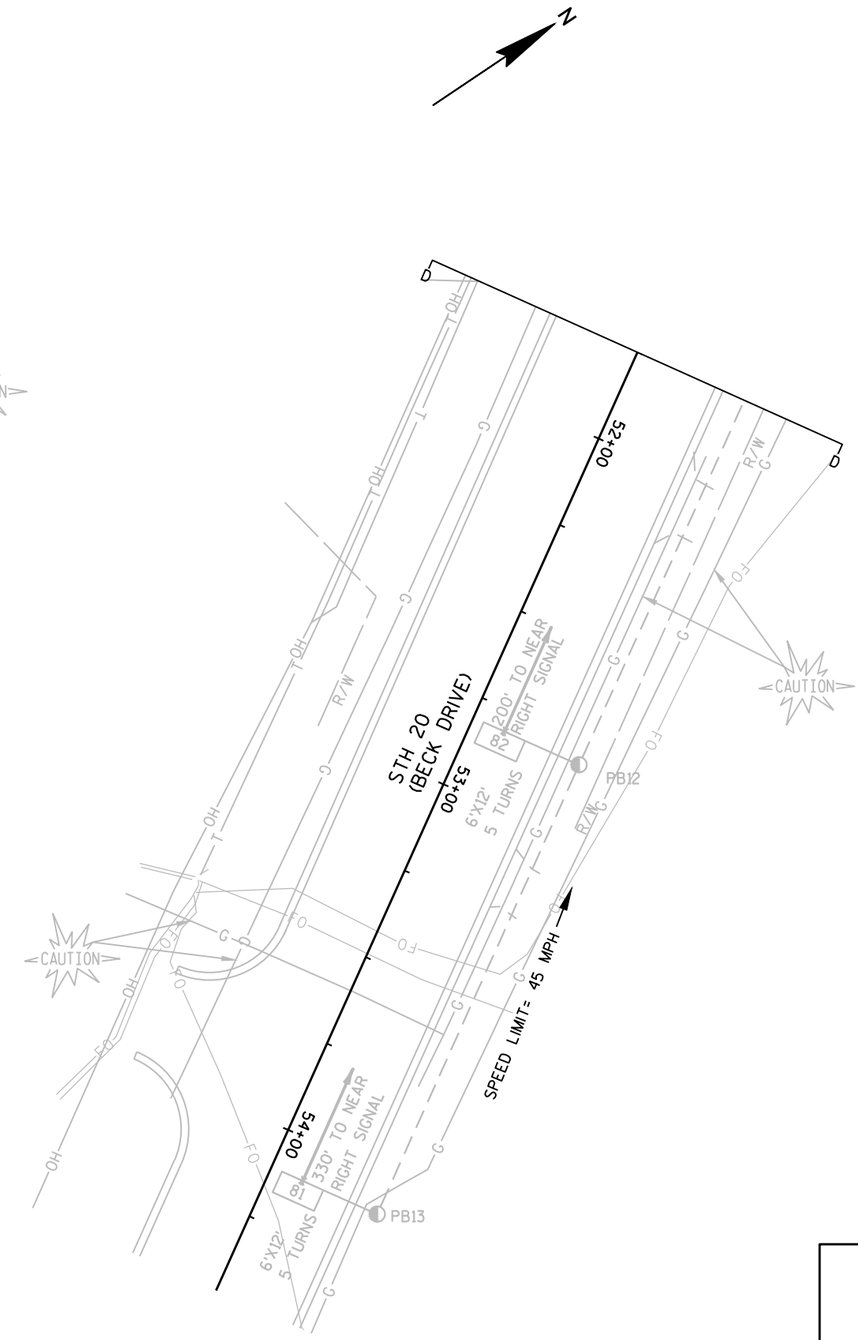
PROJECT NO: 3700-20-08	HWY: STH 36/83	COUNTY: RACINE	TRAFFIC SIGNAL PLAN	SHEET	E

FILE NAME : N:\PDS\C3D\CAD\00820300\SIG\S51-0406\S51-0406_F.DWG PLOT DATE : 6/25/2014 11:33 AM PLOT BY : JOHNSON, JUDITH A PLOT NAME : PLOT SCALE : 1:40_XREF

WISDOT/CADDS SHEET 42

2





TRAFFIC CONTROL SIGNAL
STH 36 & STH 20/83
TOWN OF ROCHESTER
RACINE COUNTY

SIGNAL NO. S51-0406

REGION CONTACT: D. WOLFORD
DESIGNED BY:
REVISED BY: MAS

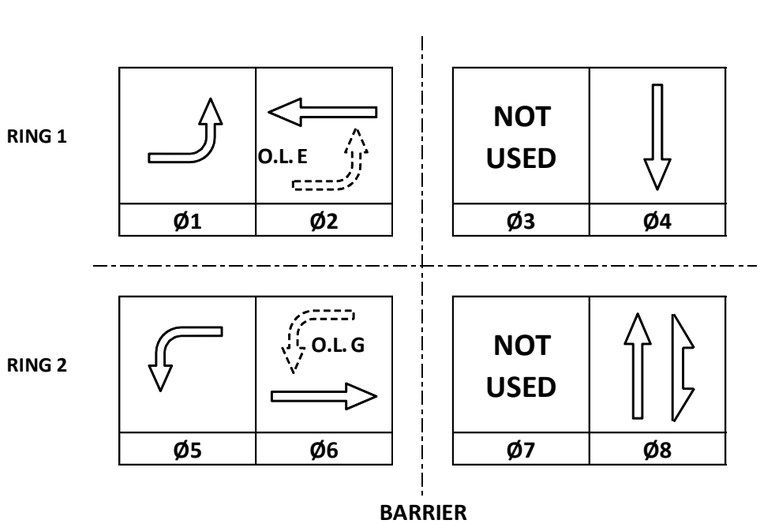
PAGE 3 OF 4

PROJECT NO: 3700-20-08	HWY: STH 36/83	COUNTY: RACINE	TRAFFIC SIGNAL PLAN	SHEET	E

FILE NAME : N:\PDS\C3D\CAD\00820300\SIG\S51-0406\S51-0406_F.DWG PLOT DATE : 6/25/2014 11:33 AM PLOT BY : JOHNSON, JUDITH A PLOT NAME : PLOT SCALE : 1:40_XREF

WISDOT/CADDS SHEET 42

	HEAD NUMBERS	FLASH
Ø1	4,5	R ←
Ø2	6,7,8	R
Ø3		
Ø4	10,11,12	R
Ø5	9,21	R ←
Ø6	1,2,3	R
Ø7		
Ø8	13,14,15,16	R
Ø2P		
Ø4P		
Ø6P		
Ø8P	17,18,19,20	
OLE	4,5	-
OLF		
OLG	9,21	-
OLH		



CONTROLLER LOGIC

PHASE NUMBER	PHASE LOCKING	DUAL ENTRY W / Ø	PHASE RECALL	PHASE ACTIVE
1		6		X
2	X	6	MIN	X
3				
4		8		X
5		2		X
6	X	2	MIN	X
7				
8		4		X

TYPE OF INTERCONNECT/COMMUNICATION	
NONE	
CLOSED LOOP	
TWISTED PAIR	
FIBER OPTIC*	
FIBER OPTIC (ETHERNET)	
RADIO	
CELL MODEM	X

TYPE OF COORDINATION	
NONE	X
TBC	
TRAFFIC RESPONSIVE	
ADAPTIVE	
*LOCATION OF MASTER CONTROLLER NO: S-	
SIGNAL SYSTEM NO: SS-	

TYPE OF LIGHTING	
BY OTHER AGENCY	
IN TRAFFIC CABINET	X
IN SEPARATE DOT LIGHTING CABINET	

TYPE OF PRE-EMPT	
NONE	X
RAILROAD	
EMERGENCY VEHICLE	
GTT	
TOMAR	
HARDWIRE	
OTHER	
LIFT BRIDGE	
QUEUE DETECTION	

DETECTOR LOGIC

DETECTOR INPUT	3	1	7	5	11	9	15	13
PLAN LOOP DETECTOR*(S)	41	11,12	83,84	61,62	22	51,52		
CALLED PHASE	4	1	8	6	2	5		
CALL OPTION		X	X	X		X		
DELAY TIME			X					
EXTENTION OPTION	X	X	X	X	X	X		
EXTEND TIME	X							
USE ADDED INITIAL				X				
CROSS SWITCH PHASE		2				6		

DETECTOR INPUT	4	2	8	6	12	10	16	14
PLAN LOOP DETECTOR*(S)	42,43	21,22	85,86	81,82	62			
CALLED PHASE	4	2	8	8	6			
CALL OPTION	X	X	X					
DELAY TIME	X		X					
EXTENTION OPTION	X	X	X	X	X			
EXTEND TIME				X				
USE ADDED INITIAL		X						
CROSS SWITCH PHASE								

19	17	23	21	27	25	49	51	DETECTOR INPUT
						23		PLAN LOOP DETECTOR*(S)
						2		CALLED PHASE
						X		CALL OPTION
								DELAY TIME
						X		EXTENTION OPTION
								EXTEND TIME
								USE ADDED INITIAL
								CROSS SWITCH PHASE

20	18	24	22	28	26	50	52	DETECTOR INPUT
						63		PLAN LOOP DETECTOR*(S)
						6		CALLED PHASE
						X		CALL OPTION
								DELAY TIME
						X		EXTENTION OPTION
								EXTEND TIME
								USE ADDED INITIAL
								CROSS SWITCH PHASE

STH 36 & STH 20/83
TOWN OF ROCHESTER
RACINE COUNTY

SIGNAL NO: S51-0406	CABINET TYPE: TS2
	CONTROLLER TYPE: ECONOLITE
DATE: 2/15	PAGE NO. 4 OF 4

PROJECT NO: 3700-20-08	HWY: STH 36	COUNTY: RACINE	SEQUENCE OF OPERATIONS	SHEET NO:	E

ning Cover Sheet for Signal: S0406 HWY: 20 and STH 36/STH 83 (Milwaukee A

Date: 2/19/2016
Changes Made By: D. Wolford
Signal No S0406 **S0406**
Highway: 20
County: RAC
Local Hwy: Milwaukee Ave/Beck Rd
Controller: ECONOLITE
Location: STH 36/STH 83 (Milwaukee Ave)
School: None
Audible Ped: No

Pre-emption

Emergency: No Type: Phases:
Railroad: No Type: Phases:

EVP Maintenance Id:
EVP Contact:
Community:
Contact Phone:
Alternate Phone:

Coordination

System No:
Controller IP Address: 192.168.0.11
CoordType: None
Comments:
Dip Switch Setting
DS ☑

TBC: No
Tone: No
Closed Loop: No
Hardwire: No

	Length	Split 1	Split 2	Split 3	Split 4
Cycle 1=					
Cycle 2=					
Cycle 3=					
Cycle 4=					

Prom Replacement

Signal Plan No
Pre-empt: No

Part of a Local System: No

Local Contact:
Phone Number:

Overlaps

Overlap A= Phases:
Overlap B= Phases:
Overlap C= Phases:
Overlap D= Phases:

Flash

Emergency: R-R
Off Peak: No

Off Peak Times

Detector Timing

Dilemna Zone Yes
Video Detection: Wavetronix

Detector Number	41	42	43	81	82	83	84	85	86					
Stretch	*			*	*									
Right Turn Delay								*	*					
Left Turn Delay		*	*			*	*							

Unique Features

* See program for detector settings
Phase 5 is omitted all-day
Cell Modem IP: 172.22.248.3

Timing Changes Log for Signal S0406 on Hwy 20 in RACINE County

STH 36/STH 83 (Milwaukee Ave)

Date Computer Changed	Date Change Made in Field	Timing Change	Reason for Change	Change By	Temp Timing
02/19/16	2/19/2016	Update detector logic for Phases 2 & 6	Inductive loops still being used with advance radar detection	D. Wolford	No
02/08/16	2/8/2016	Update controller IP address; Update startup data	Bring up to current standards	D. Wolford	No
03/27/15	3/26/2015	Input communication data; Enabled BIU 4 and detector data for advance radar detection	Installed Cell Modem; Setup advance radar detection	D. Wolford	No
12/01/14	12/4/2014	New Aries timing; Phase 5 active but omitted all-day	New Econolite cabinet and controller; Install EB and WB FYA	D. Wolford	No
09/12/13	9/20/2013	Update Vehicle Timings, Vehicle Density, Pedestrian Timings and loop 41 delay.	Signal Timing Review.	J. Gates	No
09/07/12	9/13/2012	Increase delay on loops 42, 43, 83, and 84.	Improve operations to make side street not as responsive.	D. Wolford	No
02/17/12		Converted timing to Marc NX.		J. Gates	No
11/10/10	12/29/2010	Updated signal timing for signal reconstruction.	Construction completed.	D. Brantner	No
07/02/10	7/2/2010	Implemented Lead- Lag left turn phasing EB/WB. Switched phases 5&6.	Left turn conflicts.	D. Brantner	Yes
06/30/10	6/30/2010	Implemented temp signal timing for temp signal.	Switched to temp signal.	D. Brantner	Yes

Timing Changes Log for Signal S0406 on Hwy 20 in RACINE County

STH 36/STH 83 (Milwaukee Ave)

Date Computer Changed	Date Change Made in Field	Timing Change	Reason for Change	Change By	Temp Timing
11/26/03		Increased min. grn. to 18s and set min. gap. equal to passage on phases 2 & 6.	To make the mainline less responsive to the side street.	J. Haug	No
03/26/03	3/26/2003	Removed stretch from loops 41 and 81 and changed function to call and extend. Increased passage for both phase 4 and 8.	Cabinet hit.	A. Reshadi	Yes
04/01/02	4/1/2002	Changed emergency flash to Red/Red		A. Reshadi	No
01/09/02		Changed passage & min gap for phases 2 & 6	Too snappy	A. Reshadi	No
12/03/99		Changed S/A, MVI, PASSAGE, TBR,TTR,MAX1 & MAX2 for phases 2 & 6	Added dilemna zone loops on STH 36	A. Reshadi	No

Racine (S51-0059 - S51-0447) - S51-0406 - STH 36 & STH 20/83

Configuration Phase Sequence

Controller Sequence (MM)1-1-1

Hardware Alternate Sequence Enable: No

Phase Ring Sequence.....(Note: Sequences identical to the prior one are not printed)

	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
Sequence 1																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 2																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 3																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 4																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 5																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 6																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 7																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 8																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 9																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 10																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 11																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 12																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 13																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 14																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 15																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 16																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.

Phases In Use / Exclusive PED (MM)1-2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phases in Use	X	X		X	X	X		X								
Exclusive PED																

Phase Compatibility (MM)1-1-2

Phase	Compatible Phase
1	5

1	6
2	5
2	6
3	7
3	8
4	7
4	8
9	11
9	12
10	11
10	12
13	15
13	16
14	15
14	16

Phase and Overlap Descriptions

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Description																
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**L**	**K**	**L**	**M**	**N**	**O**
Description																

Administration (MM)1-7-1

Enable CU/Cabinet Interlock CRC	No
Request Download Controller Data	No
Controller Database CRC	0000
Enable Automatic Backup to Datakey	Yes

Backup Prevent (MM)1-1-3

	Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Timing /	1		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Backup	2	.		.	.	.	.	.	.	.	.	.	.	.	.	.	.
	3	.	.		.	.	.	.	.	.	.	.	.	.	.	.	.
	4	.	.	.		.	.	.	.	.	.	.	.	.	.	.	.
	5	.	.	.	.		.	.	.	.	.	.	.	.	.	.	.
	6	.	.	.	.	.		.	.	.	.	.	.	.	.	.	.
	7	.	.	.	.	.	.		.	.	.	.	.	.	.	.	.
	8	.	.	.	.	.	.	.		.	.	.	.	.	.	.	.
	9	.	.	.	.	.	.	.	.		.	.	.	.	.	.	.
	10	.	.	.	.	.	.	.	.	.		.	.	.	.	.	.
	11	.	.	.	.	.	.	.	.	.	.		.	.	.	.	.
	12	.	.	.	.	.	.	.	.	.	.	.		.	.	.	.
	13	.	.	.	.	.	.	.	.	.	.	.	.		.	.	.
	14	.	.	.	.	.	.	.	.	.	.	.	.	.		.	.
	15	.	.	.	.	.	.	.	.	.	.	.	.	.	.		.
	16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	

Simultaneous Gap (MM)1-1-4

	Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	1		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	2	.		.	.	.	X	.	.	.	.	.	.	.	.	.	.
	3	.	.		.	.	.	.	.	.	.	.	.	.	.	.	.
	4	.	.	.		.	.	.	X	.	.	.	.	.	.	.	.
	5	.	.	.	.		.	.	.	.	.	.	.	.	.	.	.
Phase	6	.	X	.	.	.		.	.	.	.	.	.	.	.	.	.
Must	7	.	.	.	.	.	.		.	.	.	.	.	.	.	.	.
Gap	8	.	.	.	X	.	.	.		.	.	.	.	.	.	.	.
With	9	.	.	.	.	.	.	.	.		.	.	.	.	.	.	.
Phase	10	.	.	.	.	.	.	.	.	.		.	.	.	.	.	.
	11	.	.	.	.	.	.	.	.	.	.		.	.	.	.	.
	12	.	.	.	.	.	.	.	.	.	.	.		.	.	.	.
	13	.	.	.	.	.	.	.	.	.	.	.	.		.	.	.
	14	.	.	.	.	.	.	.	.	.	.	.	.	.		.	.
	15	.	.	.	.	.	.	.	.	.	.	.	.	.	.		.
	16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
	Disable	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Load Switch Assignments (MMU Channel) (MM)1-3

	Phase / Overlap	Type	Dimming				Power Up				Auto		Flash Together
			Red	Yellow	Green	Dark	Auto	Red	Yellow	Dark	Red	Yellow	
1	1	V				+	X				X		X
2	2	V				+	X				X		
3	3	V				+	X				X		X
4	4	V				+	X				X		
5	5	V				-	X				X		
6	6	V				-	X				X		X
7	7	V				-	X				X		
8	8	V				-	X				X		X
9	2	P				+	X						
10	4	P				+	X						
11	6	P				-	X						
12	8	P				-	X						
13	1	O				+	X				X		X
14	2	O				-	X				X		X
15	3	O				+	X				X		
16	4	O				-	X				X		

Racine (S51-0059 - S51-0447) - S51-0406 - STH 36 & STH 20/83

Configuration Port 1 (SDLC)

SDLC Options (MM)1-4-1

BIU	1	2	3	4	5	6	7	8
Term and Facility Enable	X	X						
Detector Rack Enable	X			X				

Enable TS2/MMU Type Cabinet: Yes
Enable MMU Extended Status: Yes
Enable SDLC Stop Time: No
Enable 3 Critical RFE's Lockup: Yes

MMU Program (MM)1-4-2

Channel Can Serve with Channel	
Channel 1	**Channel 2**
1	5
1	6
1	11
2	5
2	6
2	9
2	11
4	8
4	12
5	9
6	9
6	11
8	12
9	11

Color Check Enable (MM)1-4-3

Enable Color Check: Yes

MMU Channel	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Green	X	X		X	X	X		X	X		X	X				
Yellow	X	X		X	X	X		X								
Red	X	X		X	X	X		X								

Secondary To Secondary Addressing (MM)1-4-4

ID	1	2	3	4	5	6	7	8	MMU
Term and Facility Enable									

ID	1	2	3	4	5	6	7	8	Diag
Detector Rack Enable									

Diagonstics (Test Fixture) Enable: No

Racine (S51-0059 - S51-0447) - S51-0406 - STH 36 & STH 20/83

Configuration Communications

Ethernet Port Configuration (MM)1-5-1

Controller IP: 192.168.0.11
Subnet Mask: 255.255.255.0
Default Gateway IP: 192.168.0.1
Server IP: 172.22.65.22

NTCIP Parameters (MM)1-5-5

Backup Time: 0
UDP Port: 501
Ethernet Priority: 1
Port 2 Priority: 4
Port 3A Priority: 2
Port 3B Priority: 3

Port Configuration (MM)1-5-2 to 1-5-4

Port	2 (C50S)	3A (C21S)	3B (C22S)
Protocol	NTCIP	NTCIP	Terminal
Enable	No	Yes	No
Data Rate	9600	19.2K	1200
Data Parity Stop	8 N 1	8 N 1	8 0 1
Modem Setup String	None	None	None
User String			
Comm Port Address	1	1	0
System Detector 9-1	0	0	0
Telemetry Response Delay	0.0	0.0	0.0
Duplex Half/Full	Full	Full	Full
Flow Control	Yes	Yes	Yes
AB3418 NTCIP Group Address	0	0	0
AB3418 NTCIP Single Flag Enable	No	No	No
RTS to CTS Delay	0.0	0.0	3.0
RTS Turn Off Delay	0.0	0.0	2.0
Droupout Time	10	10	10
Early RTS	No	No	No
Telemetry Mode	FSK	FSK	FSK
Rail Road	0	0	0
Rail Road Line	0	0	0
ATCS Group	0	0	0
Wayside Device	0	0	0
ATCS Device	0	0	0
Wayside SubNode	0	0	0
ATCS SubNode	0	0	0

ECPIP Parameters (MM)1-5-6

Controller Address: 0
Expanded System Detector Address: 0

Local System Detector

Local System Detector	Number

Racine (S51-0059 - S51-0447) - S51-0406 - STH 36 & STH 20/83

Configuration Logging/Display

Event Logging (MM)1-6-1

Critical RFE's	Yes	3 Critical RFE's in 24 Hours	Yes
MMU Flash Faults	Yes	Local Flash Faults	Yes
Non-Critical RFE's (Det/Test)	Yes	Detector Errors	Yes
Coordination Errors	Yes	Controller Download	Yes
Preempt	Yes	TSP	Yes
Power On/Off	Yes	Low Battery	Yes
Access	Yes	Data Change	Yes
Online/Offline	Yes		

Alarm Log	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Enable Logging	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Display Options (MM)1-7-2

Key Click Enable:	Yes
Backlight Enable:	Yes
LED Mode:	Single Color
Main Status Display Mode:	Basic
Screen Format:	Advanced
Trans Mode Pop-up Disable:	No

Sign On (MM)8-5

Sign On Message Line 1: INTERSECTION NAME:
Sign On Message Line 2: WisDOT Data Base

Racine (S51-0059 - S51-0447) - S51-0406 - STH 36 & STH 20/83

Logic Processor Page 1
Statement Control (MM)1-8-1

LP	Statement Control
1	E

Racine (S51-0059 - S51-0447) - S51-0406 - STH 36 & STH 20/83

Logic Processor Page 2

Logic Statements (MM)1-8-2

Statement Number: 1

IF:

	Assignment	#		State
IF	DETECTOR	9	IS	ON

THEN:

Assignment	#	State
CALL PHASE	6	ON

ELSE:

Assignment	#	State

Racine (S51-0059 - S51-0447) - S51-0406 - STH 36 & STH 20/83

Controller Timing Plan (MM)2-1
Plan 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction																
Min Green	6	15	0	8	6	15	0	8	0	0	0	0	0	0	0	0
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	1.5	3.1	0.0	1.5	1.5	3.1	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	15	45	0	30	15	45	0	30	0	0	0	0	0	0	0	0
Max 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.5	5.1	0.0	4.2	3.5	5.1	0.0	4.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	1.0	2.3	0.0	3.0	1.0	2.3	0.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	1.2	0.0	0.0	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	6	24	0	8	6	24	0	8	0	0	0	0	0	0	0	0
Time B4	15	24	0	30	15	24	0	30	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	21	0	0	0	21	0	0	0	0	0	0	0	0	0	0
Min Gap	1.5	3.5	0.0	1.5	1.5	3.5	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Racine (S51-0059 - S51-0447) - S51-0406 - STH 36 & STH 20/83

Controller Overlaps

Vehicle Overlaps (MM)2-2

Overlap	Type	Lag Green	Yellow	Red	Advance Green

Phases

Overlap	Phase	Included	Protect	Ped Protect	Not Overlap	Modifier	Lag X Phase	Lag 2 Phase	Flash Green

PPLT FYA

Overlap	Protected Phase	Permissive Phase	Flash Arrow Output	Flash Arrow Channel	FYA Delay	FYA Clearance	Special Function Disable
E	1	2	Ped Yellow	9	0.0	0.0	0
G	5	6	Ped Yellow	11	0.0	0.0	0

Guaranteed Minimum Time Data (MM) 2-4

Phase Time Data

Phase	Min Green	Walk	Ped Clear	Yellow	Red Clear	Overlap Green
A01	1	0	7	3.0	0.0	1
B02	1	0	7	3.0	0.0	1
C03	1	0	7	3.0	0.0	1
D04	1	0	7	3.0	0.0	1
E05	1	0	7	3.0	0.0	1
F06	1	0	7	3.0	0.0	1
G07	1	0	7	3.0	0.0	1
H08	1	0	7	3.0	0.0	1
I09	1	0	7	3.0	0.0	1
J10	1	0	7	3.0	0.0	1
K11	1	0	7	3.0	0.0	1
L12	1	0	7	3.0	0.0	1
M13	1	0	7	3.0	0.0	1
N14	1	0	7	3.0	0.0	1
O15	1	0	7	3.0	0.0	1
P16	1	0	7	3.0	0.0	1

Racine (S51-0059 - S51-0447) - S51-0406 - STH 36 & STH 20/83

Controller Pedestrian Overlaps
Pedestrian Overlaps (MM) 2-3

Included Phase	Ped Overlap

Racine (S51-0059 - S51-0447) - S51-0406 - STH 36 & STH 20/83

Controller Start/Fash (MM) 2-5

Startup

Phase	Phase Setting
2	G
6	G

Overlap
E
G

Flash > Mon: No
Flash Time: 0
All Red: 6
Power Start Sequence: 1
MUTCD Enabled: Yes
MUTCD Yellow to Green: No

Automatic Flash

Entry Phase
2
6

Exit Phase
2
6

Overlap Exit
E
G

Flash > Mon: No
Exit Flash Interval: G
Minimum Auto Flash: 8
Minimumin Recall: No
Cycle Through Phase: No

Racine (S51-0059 - S51-0447) - S51-0406 - STH 36 & STH 20/83

Controller Options

Controller Options (MM)2-6-1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Flashing Green Phase																
Guaranteed Passage																
Non Act 1																
Non Act 2																
Dual Entry	X	X		X	X	X		X								
Conditional Service																
Conditional Reservice																
Ped Reservice																
Rest In Walk																
Flashing Walk																
Ped Clear Yellow																
Ped Clear Red																
IGRN + Veh Ext																

Ped Clear Protect: On Red Revert: 2.0 MUTCD 3 Seconds Don't Walk: No

Act Pre-Time (MM)2-7

Pre-Time Mode Enable: No Free Input Enables Pre-Timed: Yes

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Pre-Timed Phase																

Phase Recall Options (MM)2-8

Plan 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector		X				X										
Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
AI Calc																

Plan 2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector		X				X										
Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
AI Calc																

Plan 3

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector		X				X										
Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
AI Calc																

Plan 4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector		X				X										

Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
AI Calc																

Racine (S51-0059 - S51-0447) - S51-0406 - STH 36 & STH 20/83

Coordination Options

Coordination Options (MM)3-1

Manual Pattern	Auto	ECPI Coord	Yes
System Source	TBC	System Format	STD
Splits In	Seconds	Offsets In	Seconds
Transition	Smooth	Max Select	MAXINH
Dwell/Add Time	0		
Delay Coord Walk to LZ	No	Force Off	Fixed
Offset Reference	Lead	Use Ped Time	No
Ped Recall	No	Ped Reservice	No
Local Zero Override	No	FO Added Initial Green	Yes
Re-Sync Count	3	Multisync	No

Auto Perm Minimum Green (Seconds) (MM)3-4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Minimum Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Split Demand (MM)3-5

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Demand 1																
Demand 2																

Demand	1	2
Detector	0	0
Call Time (Sec)	0	0
Cycle Count	0	0

Racine (S51-0059 - S51-0447) - S51-0406 - STH 36 & STH 20/83

Coordination Pattern Data
Pattern Data (MM)3-2

Racine (S51-0059 - S51-0447) - S51-0406 - STH 36 & STH 20/83

Time Base Clock/Calendar
Clock/Calendar Options (MM)5-1

Enable Action Plan:	0
Sync Reference Time:	12:00 AM
Sync Reference:	Reference Time
Day Light Savings:	No
Time Reset Input Set Time:	3:30:00
Standard Time From GMT:	0

Racine (S51-0059 - S51-0447) - S51-0406 - STH 36 & STH 20/83

Time Base Action Plan
Action Plan (MM)5-2

Action Plan - 99

Pattern	255 - FLSH	Override System	No
Timing Plan	0	Sequence	0
Veh Det Plan	0	Detector Log	None
Flash	Yes	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 100

Pattern	254 - FREE	Override System	No
Timing Plan	0	Sequence	0
Veh Det Plan	0	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit					X											

Special Function								
Auxilliary Function								

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Racine (S51-0059 - S51-0447) - S51-0406 - STH 36 & STH 20/83

Time Base Day Plan/Schedule
Day Plan (MM)5-3

Day Plan - 1

Event	Action Plan	Start Time
1	100	12:01 AM

Schedule (MM)5-4

Schedule Number - 1

Day Plan Number: 1

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	X	X	X	X	X	X	X	X	X	X	X	X

Day of Week	Sun	Mon	Tue	Wed	Thur	Fri	Sat
	X	X	X	X	X	X	X

Day of Month	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

Racine (S51-0059 - S51-0447) - S51-0406 - STH 36 & STH 20/83

Detectors

Detectors Page 1

Vehicle Detectors Setup (MM)6-1

Vehicle Plan	Detector Number	Called	Type
2	1	1	N
2	2	2	N
2	3	3	N
2	4	4	N
2	5	5	N
2	6	6	N
2	7	7	N
2	8	8	N
3	1	1	N
3	2	2	N
3	3	3	N
3	4	4	N
3	5	5	N
3	6	6	N
3	7	7	N
3	8	8	N
4	1	1	N
4	2	2	N
4	3	3	N
4	4	4	N
4	5	5	N
4	6	6	N
4	7	7	N
4	8	8	N

Vehicle Detector Setup (MM)6-2 continued

Detector Number	Type	TS2 Detector	Detector Description
1	N-NTCIP	Yes	
2	N-NTCIP	Yes	
3	N-NTCIP	Yes	
4	N-NTCIP	Yes	
5	N-NTCIP	Yes	
6	N-NTCIP	Yes	
7	N-NTCIP	Yes	
8	N-NTCIP	Yes	
9	N-NTCIP	Yes	
10	N-NTCIP	Yes	
11	N-NTCIP	Yes	
12	N-NTCIP	Yes	
13	N-NTCIP	Yes	
14	N-NTCIP	Yes	
15	N-NTCIP	Yes	
16	N-NTCIP	Yes	
17	N-NTCIP	Yes	
18	N-NTCIP	Yes	
19	N-NTCIP	Yes	
20	N-NTCIP	Yes	
21	N-NTCIP	Yes	
22	N-NTCIP	Yes	
23	N-NTCIP	Yes	
24	N-NTCIP	Yes	
25	N-NTCIP	Yes	
26	N-NTCIP	Yes	
27	N-NTCIP	Yes	
28	N-NTCIP	Yes	
29	N-NTCIP	Yes	
30	N-NTCIP	Yes	

31	N-NTCIP	Yes	
32	N-NTCIP	Yes	
33	N-NTCIP	Yes	
34	N-NTCIP	Yes	
35	N-NTCIP	Yes	
36	N-NTCIP	Yes	
37	N-NTCIP	Yes	
38	N-NTCIP	Yes	
39	N-NTCIP	Yes	
40	N-NTCIP	Yes	
41	N-NTCIP	Yes	
42	N-NTCIP	Yes	
43	N-NTCIP	Yes	
44	N-NTCIP	Yes	
45	N-NTCIP	Yes	
46	N-NTCIP	Yes	
47	N-NTCIP	Yes	
48	N-NTCIP	Yes	
49	N-NTCIP	Yes	
50	N-NTCIP	Yes	
51	N-NTCIP	Yes	
52	N-NTCIP	Yes	
53	N-NTCIP	Yes	
54	N-NTCIP	Yes	
55	N-NTCIP	Yes	
56	N-NTCIP	Yes	
57	N-NTCIP	Yes	
58	N-NTCIP	Yes	
59	N-NTCIP	Yes	
60	N-NTCIP	Yes	
61	N-NTCIP	Yes	
62	N-NTCIP	Yes	
63	N-NTCIP	Yes	
64	N-NTCIP	Yes	

Vehicle Detector Setup (MM)6-2 continued

Det Num	Veh Det Plan	Phase	ECPI Log	Call Option	Delay Time	Ext Option	Extend Time / Passage Time	Queue Lim / Discon. Time	Use Added Initial	Cross Switch Phase	Lock In	NTCIP Vol.	NTCIP Occ.	Pmt Queue Delay
1	1	1	No	Yes	0.0	Passage	0.0	0	Yes	2	None	No	No	No
1	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
1	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
1	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
2	1	2	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
2	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
2	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
2	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
3	1	4	No	No	0.0	Passage	4.3	0	Yes	0	None	No	No	No
3	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
3	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
3	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
4	1	4	No	Yes	2.0	Passage	0.0	0	Yes	0	None	No	No	No
4	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
4	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
4	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
5	1	6	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
5	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
5	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
5	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
6	1	8	No	No	0.0	Passage	2.5	0	Yes	0	None	No	No	No
6	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
6	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
6	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
7	1	8	No	Yes	2.0	Passage	0.0	0	Yes	0	None	No	No	No
7	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
7	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
7	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

8	1	8	No	Yes	8.0	Passage	0.0	0	Yes	0	None	No	No	No
8	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
8	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
8	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
9	1	5	No	Yes	0.0	Passage	0.0	0	Yes	6	None	No	No	No
9	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
9	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
9	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
10	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
10	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
10	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
10	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
11	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
11	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
11	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
11	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
12	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
12	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
12	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
12	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
13	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
13	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
13	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
13	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
14	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
14	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
14	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
14	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
15	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
15	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
15	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
15	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
16	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
16	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
16	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
16	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
17	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
17	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
17	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
17	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
18	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
18	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
18	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
18	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
19	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
19	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
19	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
19	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
20	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
20	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
20	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
20	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
21	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
21	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
21	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
21	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
22	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
22	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
22	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
22	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
23	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
23	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
23	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
23	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
24	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
24	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
24	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
24	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

25	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
25	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
25	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
25	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
26	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
26	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
26	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
26	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
27	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
27	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
27	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
27	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
28	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
28	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
28	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
28	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
29	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
29	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
29	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
29	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
30	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
30	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
30	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
30	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
31	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
31	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
31	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
31	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
32	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
32	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
32	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
32	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
33	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
33	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
33	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
33	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
34	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
34	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
34	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
34	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
35	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
35	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
35	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
35	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
36	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
36	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
36	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
36	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
37	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
37	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
37	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
37	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
38	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
38	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
38	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
38	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
39	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
39	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
39	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
39	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
40	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
40	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
40	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
40	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
41	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
41	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
41	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
41	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

42	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
42	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
42	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
42	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
43	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
43	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
43	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
43	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
44	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
44	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
44	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
44	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
45	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
45	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
45	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
45	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
46	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
46	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
46	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
46	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
47	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
47	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
47	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
47	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
48	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
48	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
48	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
48	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
49	1	2	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
49	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
49	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
49	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
50	1	6	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
50	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
50	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
50	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
51	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
51	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
51	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
51	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
52	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
52	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
52	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
52	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
53	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
53	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
53	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
53	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
54	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
54	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
54	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
54	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
55	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
55	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
55	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
55	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
56	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
56	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
56	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
56	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
57	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
57	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
57	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
57	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
58	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
58	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
58	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
58	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

59	1	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
59	2	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
59	3	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
59	4	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
60	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
60	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
60	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
60	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
61	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
61	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
61	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
61	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
62	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
62	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
62	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
62	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
63	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
63	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
63	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
63	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
64	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
64	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
64	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
64	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

Ped Detector Options (MM)6-3

Phase Ped Detector (Econolite)

Detector	Call Phase															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.
4	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.
5	.	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.
6	.	.	.	.	.	X	.	.	.	.	.	.	.	.	.	.
7	.	.	.	.	.	.	X	.	.	.	.	.	.	.	.	.
8	.	.	.	.	.	.	.	X	.	.	.	.	.	.	.	.
9	.	.	.	.	.	.	.	.	X	.	.	.	.	.	.	.
10	.	.	.	.	.	.	.	.	.	X	.	.	.	.	.	.
11	.	.	.	.	.	.	.	.	.	.	X	.	.	.	.	.
12	.	.	.	.	.	.	.	.	.	.	.	X	.	.	.	.
13	.	.	.	.	.	.	.	.	.	.	.	.	X	.	.	.
14	.	.	.	.	.	.	.	.	.	.	.	.	.	X	.	.
15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	X	.
16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	X

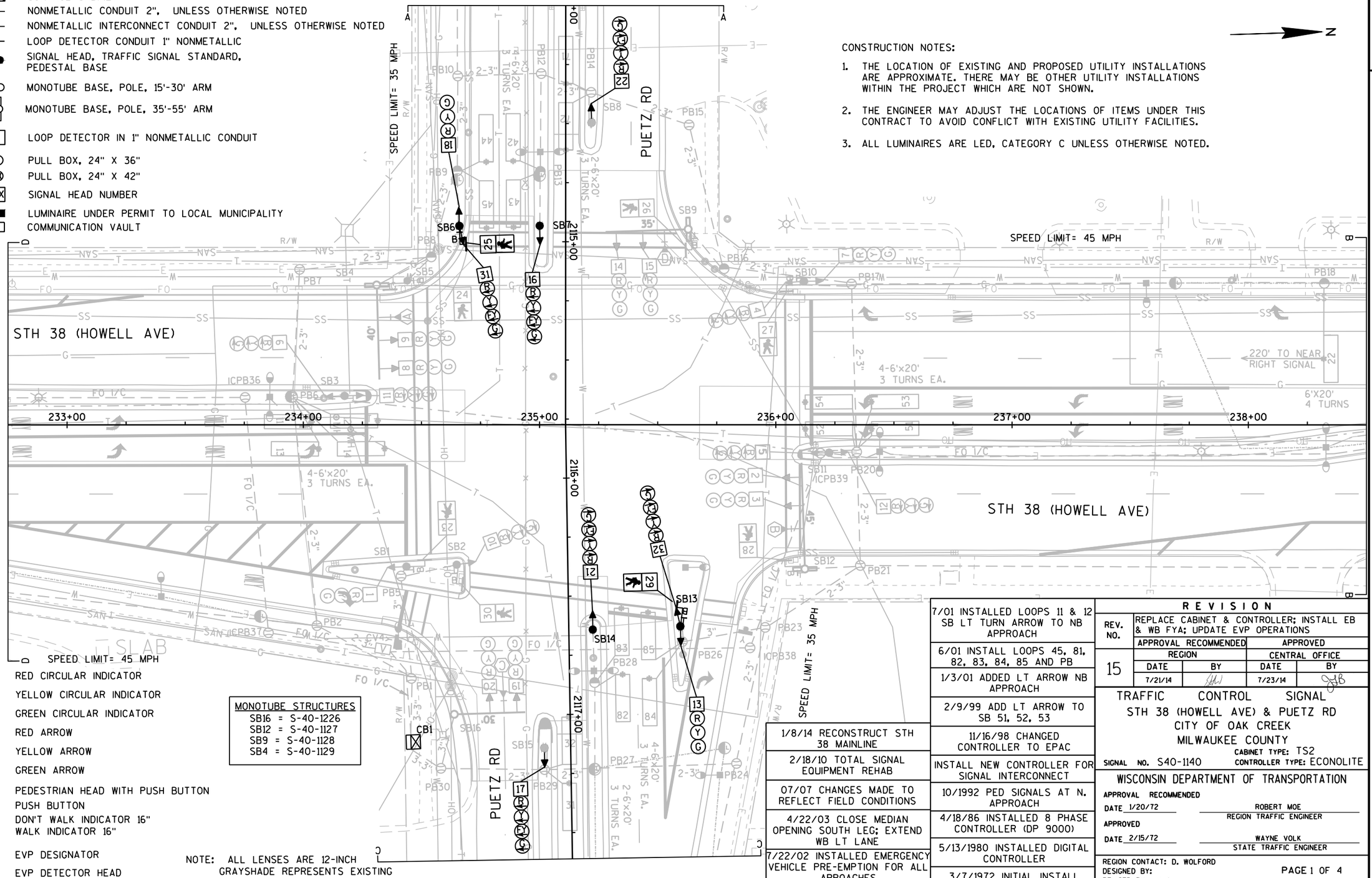
Existing Signal Plans & Timings
WIS 38 Signalized Corridor

LEGEND

- CONTROL CABINET
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- NONMETALLIC INTERCONNECT CONDUIT 2", UNLESS OTHERWISE NOTED
- LOOP DETECTOR CONDUIT 1" NONMETALLIC
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- (XX) MONOTUBE BASE, POLE, 15'-30' ARM
- (XX) MONOTUBE BASE, POLE, 35'-55' ARM
- LOOP DETECTOR IN 1" NONMETALLIC CONDUIT
- PULL BOX, 24" X 36"
- PULL BOX, 24" X 42"
- XX SIGNAL HEAD NUMBER
- LUMINAIRE UNDER PERMIT TO LOCAL MUNICIPALITY
- V COMMUNICATION VAULT

CONSTRUCTION NOTES:

1. THE LOCATION OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
2. THE ENGINEER MAY ADJUST THE LOCATIONS OF ITEMS UNDER THIS CONTRACT TO AVOID CONFLICT WITH EXISTING UTILITY FACILITIES.
3. ALL LUMINAIRES ARE LED, CATEGORY C UNLESS OTHERWISE NOTED.



- R RED CIRCULAR INDICATOR
- Y YELLOW CIRCULAR INDICATOR
- G GREEN CIRCULAR INDICATOR
- RA RED ARROW
- FY YELLOW ARROW
- GA GREEN ARROW
- PEDESTRIAN HEAD WITH PUSH BUTTON
- PB PUSH BUTTON
- DON'T WALK INDICATOR 16" / WALK INDICATOR 16"
- X EVP DESIGNATOR
- EVP DETECTOR HEAD

MONOTUBE STRUCTURES
SB16 = S-40-1226
SB12 = S-40-1127
SB9 = S-40-1128
SB4 = S-40-1129

NOTE: ALL LENSES ARE 12-INCH
GRAYSHADE REPRESENTS EXISTING

REVISION	
REV. NO.	REPLACE CABINET & CONTROLLER; INSTALL EB & WB FYA; UPDATE EVP OPERATIONS
	APPROVAL RECOMMENDED / APPROVED
15	REGION: DATE 7/21/14, BY / CENTRAL OFFICE: DATE 7/23/14, BY

7/01	INSTALLED LOOPS 11 & 12 SB LT TURN ARROW TO NB APPROACH
6/01	INSTALL LOOPS 45, 81, 82, 83, 84, 85 AND PB
1/3/01	ADDED LT ARROW NB APPROACH
2/9/99	ADD LT ARROW TO SB 51, 52, 53
11/16/98	CHANGED CONTROLLER TO EPAC
	INSTALL NEW CONTROLLER FOR SIGNAL INTERCONNECT
10/1992	PED SIGNALS AT N. APPROACH
4/18/86	INSTALLED 8 PHASE CONTROLLER (DP 9000)
5/13/1980	INSTALLED DIGITAL CONTROLLER
3/7/1972	INITIAL INSTALL
1/8/14	RECONSTRUCT STH 38 MAINLINE
2/18/10	TOTAL SIGNAL EQUIPMENT REHAB
07/07	CHANGES MADE TO REFLECT FIELD CONDITIONS
4/22/03	CLOSE MEDIAN OPENING SOUTH LEG; EXTEND WB LT LANE
7/22/02	INSTALLED EMERGENCY VEHICLE PRE-EMPTION FOR ALL APROACHES

TRAFFIC CONTROL SIGNAL
STH 38 (HOWELL AVE) & PUETZ RD
CITY OF OAK CREEK
MILWAUKEE COUNTY
CABINET TYPE: TS2
SIGNAL NO. S40-1140 CONTROLLER TYPE: ECONOLITE

WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVAL RECOMMENDED
DATE 1/20/72 — ROBERT MOE, REGION TRAFFIC ENGINEER

APPROVED
DATE 2/15/72 — WAYNE VOLK, STATE TRAFFIC ENGINEER

REGION CONTACT: D. WOLFORD
DESIGNED BY:
REVISED BY: MAS

PAGE 1 OF 4

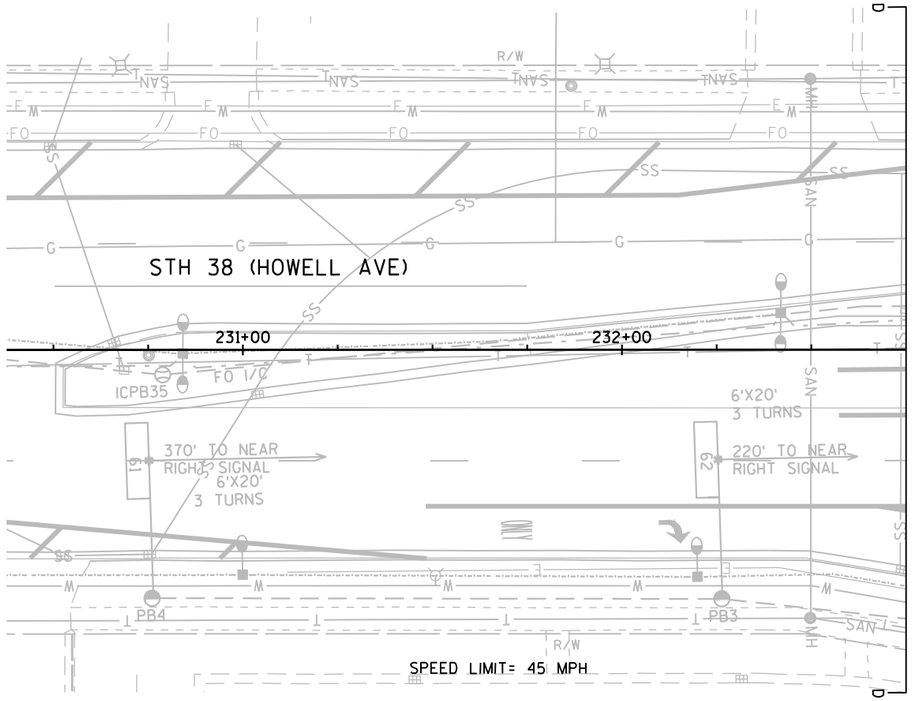
PROJECT NO: 3700-20-08	HWY: STH 38	COUNTY: MILWAUKEE	TRAFFIC SIGNAL PLAN	SHEET	E

FILE NAME : N:\PDS\C3D\CAD\00820300\SIG\S40-1140\S40-1140_J.DWG
LAYOUT NAME - 024001_SP
PLOT DATE : 8/4/2014 10:25 AM PLOT BY : VANDE LEEST, CYNTHIA PLOT NAME : PLOT SCALE : 1:40_XREF

WISDOT/CADDS SHEET 42

2

N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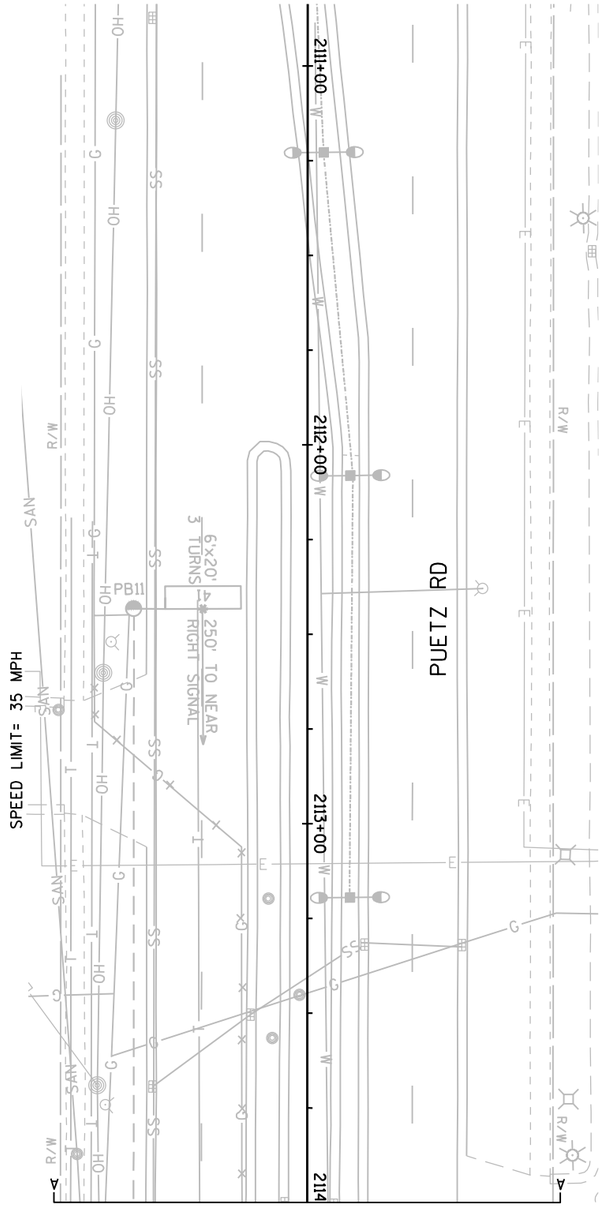
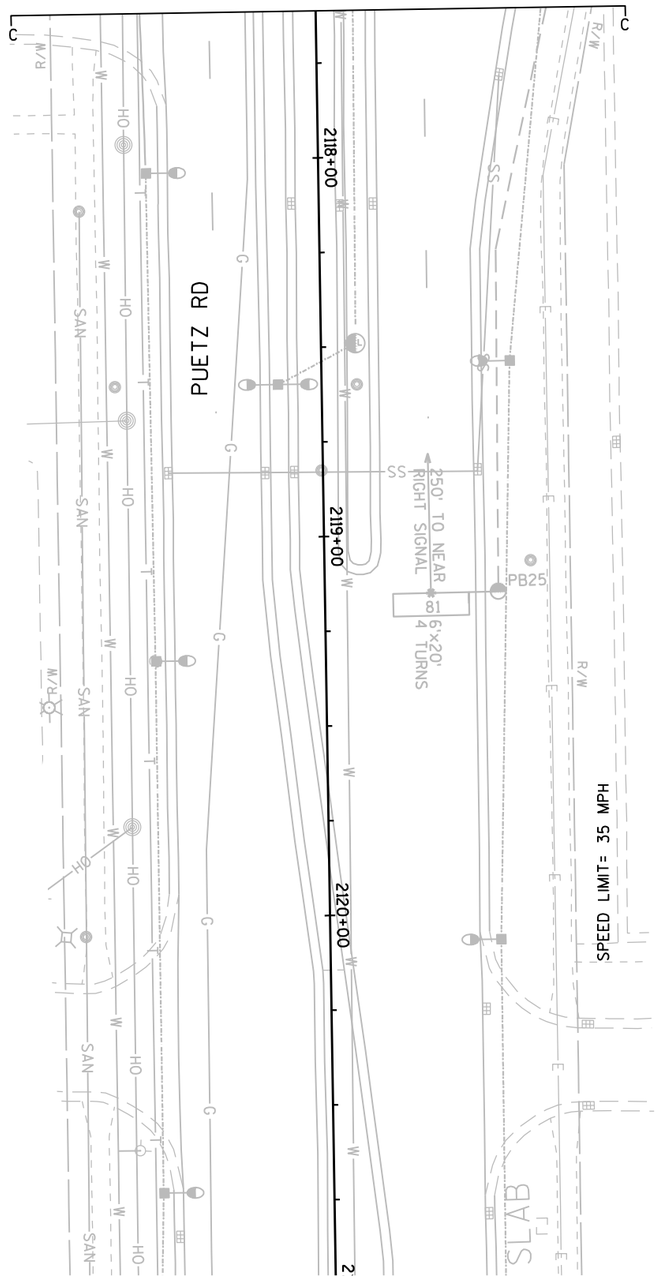
R/W
SAN
SAN
SAN





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TRAFFIC CONTROL SIGNAL
STH 38 (HOWELL AVE) & PUETZ RD
CITY OF OAK CREEK
MILWAUKEE COUNTY

SIGNAL NO. S40-1140

REGION CONTACT: D. WOLFORD
DESIGNED BY:
REVISED BY: MAS

PAGE 3 OF 4

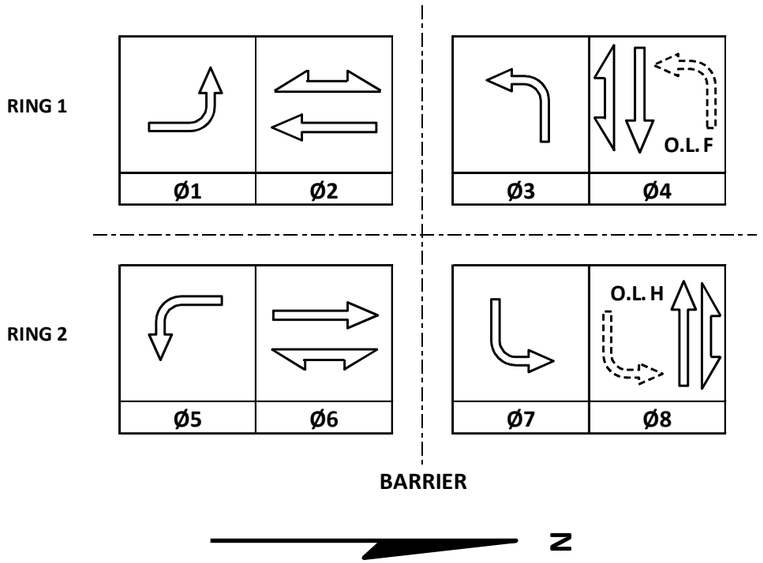
PROJECT NO: 3700-20-08	HWY: STH 38	COUNTY: MILWAUKEE	TRAFFIC SIGNAL PLAN	SHEET	E

FILE NAME : N:\PDS\C3D\CAD\00820300\SIG\S40-1140\S40-1140_J.DWG
LAYOUT NAME - 024003_SP

PLOT DATE : 8/4/2014 10:25 AM PLOT BY : VANDE LEEST, CYNTHIAPLOT NAME : PLOT SCALE : 1:40_XREF

WISDOT/CADDS SHEET 42

	HEAD NUMBERS	FLASH
Ø1	4,5,6	R ←
Ø2	7,8,9	R
Ø3	16,17,31	-
Ø4	18,19,20	R
Ø5	10,11,12	R ←
Ø6	1,2,3	R
Ø7	21,22,32	-
Ø8	13,14,15	R
Ø2P	25,26	
Ø4P	23,24	
Ø6P	29,30	
Ø8P	27,28	
OLE		
OLF	16,17,31	R ←
OLG		
OLH	21,22,32	R ←



CONTROLLER LOGIC

PHASE NUMBER	PHASE LOCKING	DUAL ENTRY W / Ø	PHASE RECALL	PHASE ACTIVE
1		6		X
2	X	6	MIN	X
3		8		X
4		8		X
5		2		X
6	X	2	MIN	X
7		4		X
8		4		X

EMERGENCY VEHICLE PREEMPTION SEQUENCE

EMERGENCY VEHICLE PREEMPTOR	A	B	C	D
MOVEMENT	←	→	↓	↑
PHASE	2+5	6+1	4+7	8+3

AFTER PREEMPTION SEQUENCE 2+5 OR 6+1, CONTROLLER SHALL RETURN TO PHASES 2+6.
AFTER PREEMPTION SEQUENCE 4+7 OR 8+3, CONTROLLER SHALL RETURN TO PHASES 4+8.

TYPE OF INTERCONNECT/COMMUNICATION	
NONE	
CLOSED LOOP	
TWISTED PAIR	
FIBER OPTIC*	X
FIBER OPTIC (ETHERNET)	
RADIO	
CELL MODEM	

TYPE OF COORDINATION	
NONE	
TBC	X
TRAFFIC RESPONSIVE	X
ADAPTIVE	
*LOCATION OF MASTER CONTROLLER NO:	S-
SIGNAL SYSTEM NO:	SS- 00-06

TYPE OF LIGHTING	
BY OTHER AGENCY	X
IN TRAFFIC CABINET	
IN SEPARATE DOT LIGHTING CABINET	

TYPE OF PRE-EMPT	
NONE	
RAILROAD	
EMERGENCY VEHICLE	X
GTT	X
TOMAR	
HARDWIRE	
OTHER	
LIFT BRIDGE	
QUEUE DETECTION	

DETECTOR LOGIC

DETECTOR INPUT	3	1	7	5	11	9	15	13
PLAN LOOP DETECTOR*(S)	11	13	21	31	41	43	45	51
CALLED PHASE	1	1	2	3	4	4	4	5
CALL OPTION	X	X	X	X		X	X	X
DELAY TIME							X	
EXTENTION OPTION	X	X	X	X	X	X	X	X
EXTEND TIME					X			
USE ADDED INITIAL			X					
CROSS SWITCH PHASE				4				

DETECTOR INPUT	19	17	23	21	27	25	31	29
PLAN LOOP DETECTOR*(S)	53	61	71	81	83	85	S5	S7
CALLED PHASE	5	6	7	8	8	8		
CALL OPTION	X	X	X		X	X		
DELAY TIME								
EXTENTION OPTION	X	X	X	X	X	X		
EXTEND TIME				X				
USE ADDED INITIAL		X						
CROSS SWITCH PHASE			8					

DETECTOR INPUT	4	2	8	6	12	10	16	14
PLAN LOOP DETECTOR*(S)	12	14	22	32	42	44		52
CALLED PHASE	1	1	2	3	4	4		5
CALL OPTION	X	X	X	X	X	X		X
DELAY TIME						X		
EXTENTION OPTION	X	X	X	X	X	X		X
EXTEND TIME								
USE ADDED INITIAL			X					
CROSS SWITCH PHASE				4				

DETECTOR INPUT	20	18	24	22	28	26	32	30
PLAN LOOP DETECTOR*(S)	54	62	72	82	84		S6	S8
CALLED PHASE	5	6	7	8	8			
CALL OPTION	X	X	X	X	X			
DELAY TIME								
EXTENTION OPTION	X	X	X	X	X			
EXTEND TIME								
USE ADDED INITIAL		X						
CROSS SWITCH PHASE			8					

STH 38 (HOWELL AVE) & PUETZ RD
CITY OF OAK CREEK
MILWAUKEE COUNTY
SIGNAL NO: S40-1140 CABINET TYPE: TS2
CONTROLLER TYPE: ECONOLITE
DATE: 7/14 PAGE NO. 4 OF 4

PROJECT NO: 3700-20-08	HWY: STH 38	COUNTY: MILWAUKEE	SEQUENCE OF OPERATIONS	SHEET NO: E

Timing Cover Sheet for Signal: S1140 HWY: 38 and Puetz Rd

Date:	7/13/2016	Changes Made By:	D. Dedrick
Signal No	S1140 **S1140**	Highway:	38
County:	MIL	Local Hwy:	Howell Ave
Controller:	ECONOLITE	Location:	Puetz Rd
School:	High	Audible Ped:	No

Pre-emption

Emergency:	Yes	Type:	3M Opticom	Phases:	2+5;6+1;4+7;8+3	EVP Maintenance Id:	0663-42-19
Railroad:	No	Type:		Phases:		EVP Contact:	Brian L. Johnston, P.E.
						Community:	Oak Creek, City of
						Contact Phone:	(414) 768-6531
						Alternate Phone:	

Coordination

System No: SS0006 Controller IP Address: 10.98.203.53

CoordType: TBC Comments:

Dip Switch Setting

DS ☑

TBC:	Yes
Tone:	No
Closed Loop:	No
Hardwire:	No

	Length	Split 1	Split 2	Split 3	Split 4
Cycle 1=	120	6:00am-12:30pm M-F	10am-6pm Sat-Sun		
Cycle 2=					
Cycle 3=	130	12:30pm-8:00pm M-F			
Cycle 4=					

Prom Replacement

Signal Plan No

Pre-empt: No

Part of a Local System: No

Local Contact:

Phone Number:

Overlaps

Overlap A= Phases:

Overlap B= Phases:

Overlap C= Phases:

Overlap D= Phases:

Flash

Emergency: R-R

Off Peak: No

Off Peak Times

Detector Timing

Dilemna Zone Yes Video Detection: No

Detector Number	41	44	45	81										
Stretch	*			*										
Right Turn Delay		*	*											
Left Turn Delay														

Unique Features

* See program for detector settings; Logic statements 1-4 used for detector assignments for permitted only operation during Time Base Plan 5.

Timing Changes Log for Signal S1140 on Hwy 38 in MILWAUKEE County

Puetz Rd

Date Computer Changed	Date Change Made in Field	Timing Change	Reason for Change	Change By	Temp Timing
07/13/16	7/13/2016	New coord timing, update timing to current standards	Increase in volume	D. Dedrick	No
04/20/16	4/20/2016	Removed timing pattern 2 from the schedule and extended running times for patterns 1 & 3.	Short green times for side street at STH 38 & Drexel Ave.	D. Dedrick	No
03/29/16	3/29/2016	Changed DLS input to NO on MM 5-1.	Allow time sync via CENTRACS.	E. Lloyd-Weis	No
07/23/15	7/24/2015	Implement coordination timing plan for SS0006.	Put signal into system.	J. Gates	No
07/10/15	7/10/2015	Signal timing review + loops repaired.	Resurfacing project 2060-15-71 completed.	J. Gates	No
05/21/15	5/21/2015	Same as previous change but for phase 4. All phase 4 loops disabled.	Sawcutting for project 2060-15-71 impacting loops.	J. Gates	Yes
05/20/15	5/20/2015	Increased phase 8 min. green to 15 sec.; Phase 8 set to max. recall on Action Plans 1, 2, 3; Phase 8 set to min. recall on Action Plan 100; Loop 81 passage increased to 8 sec.; Loops 21, 22, 61, 62 enabled; Loops 82, 83, 84, 85 disabled.	Phase 8 stopline loops impacted by sawcutting for 2060-15-71; mainline loops need activation to max out when signal running free.	J. Gates	Yes
02/24/15	2/24/2015	New Aries Timing; Update EVP Operation	New TS2 Econolite cabinet & controller; Install EB & WB FYA; Outdated EVP Operation	D. Wolford	No
01/14/15	1/14/2015	Reduce max. green for phases 2 and 6 to 25 seconds.	Mainline loops (21, 22, 61, 62) hit during construction. They were maxing out and generating complaints when signal not in coordination.	J. Gates	Yes
06/16/14	6/17/2014	Adjust coordination and TBC data.	Put in system with temporary signals for 2060-15-71.	J. Gates	Yes

Timing Changes Log for Signal S1140 on Hwy 38 in MILWAUKEE County

Puetz Rd

Date Computer Changed	Date Change Made in Field	Timing Change	Reason for Change	Change By	Temp Timing
08/26/13	9/4/2013	Increase phases 3 & 7 and decrease phases 4 & 8 for 1/1 (3 sec.), 1/2 (2 sec.), and 2/1 (3 sec).	Citizen complaint: not enough green time to turn onto STH 38.	J. Gates	No
06/10/13		Returned to normal opeartion	Construction complete on Puetz Rd	S. Sward	No
03/18/13		Adjusted splits for reduced lanes	Construction on Puetz Rd	S. Sward	Yes
12/10/12		Added exit calls for phases 3 and 7 for Pre-empt 1-4. Zeroed Yel and Red for select, tract and return. (All in Pre 1-4 Time)	Pre-empt still wasn't working after adding vehicle phases 3 and 7 in Pre 3-4 Load SW.	J. Effinger	No
12/07/12		Fixed pre-empt 3 and pre-empt 4 to match the plans.	Oak Creek complaint (green arrows weren't coming up)	J. Effinger	No
03/20/12		Converted timing to Marc NX.		J. Gates	No
01/12/11	1/13/2011	Permanent signal timing	Signal reconstruct complete	M. Dobersek	
07/22/10		Revised temporary timing given to contractor	To properly reflect block times	M. Dobersek	Yes
07/01/10		Temporary timing given to contractor	Signal reconstruct	M. Dobersek	Yes
04/25/08		System cycles, time of day, ped times	Operation review	E. Schneider	No

Timing Changes Log for Signal S1140 on Hwy 38 in MILWAUKEE County

Puetz Rd

Date Computer Changed	Date Change Made in Field	Timing Change	Reason for Change	Change By	Temp Timing
02/09/07		DST	DST	S. Pierce	No
06/02/06	6/2/2006	Phase 4 taken off recall	All phase 4 loops repaired	S. Pierce	No
07/12/04	7/12/2004	Put phase 4 on min recall.	Loop 42 damaged.	A. Reshadi	No
10/10/03	10/14/2003	Increased stretch on Loop 81	New installation of Loop 81 due to local project	E. Lloyd-Weis	No
10/08/02		Updated Timing to current standards. Added EVP Timing	EVP heads added to east, west, south, and north approach	D. Brantner	No
07/29/02		added phases 2 & 6 ped times using 3.5 ft/s	new ped indications for handicapped accessible signal	M. Milam	No
07/29/02		increased ped times for phases 4 & 8 using 3.5 ft/s	handicapped accessible signal	M. Milam	No
05/09/02		Changed Min Green, Passage, MVI, and Min Gap for phases 4 & 8	Completed installation of stopline loops on phase 4 and stopline loops and passage loops on phase 8	D. Brantner	No
05/07/02	5/7/2002	Put phase 8 on Max recall of 30 sec	Far loops out due to cntsruction	D. Brantner	No
08/16/01		Initialized Ph.1 and entered Ph.1 Phase Data, Coord. Data	Added NBLT-Ph.1	J. Haug	No

Timing Changes Log for Signal S1140 on Hwy 38 in MILWAUKEE County

Puetz Rd

Date Computer Changed	Date Change Made in Field	Timing Change	Reason for Change	Change By	Temp Timing
05/11/99		Ph. 5 Phase Data, Coord Data	Added SB LT - Phase 5	S. Pierce	No
04/07/99		Epac	Controller Change	S. Pierce	No

Milwaukee (S40-1115 - S40-1144) - S40-1140 - STH 38 & Puetz Rd

Configuration Phase Sequence

Controller Sequence (MM)1-1-1

Hardware Alternate Sequence Enable: No

Phase Ring Sequence.....(Note: Sequences identical to the prior one are not printed)

	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
Sequence 1																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 2																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 3																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 4																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 5																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 6																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 7																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 8																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 9																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 10																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 11																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 12																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 13																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 14																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 15																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 16																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.

Phases In Use / Exclusive PED (MM)1-2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phases in Use	X	X	X	X	X	X	X	X								
Exclusive PED																

Phase Compatibility (MM)1-1-2

Phase	Compatible Phase
1	5

1	6
2	5
2	6
3	7
3	8
4	7
4	8
9	11
9	12
10	11
10	12
13	15
13	16
14	15
14	16

Phase and Overlap Descriptions

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Description	NBLT	SB	WBLT	EB	SBLT	NB	EBLT	WB								
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**L**	**K**	**L**	**M**	**N**	**O**
Description						WBLT		EBLT								

Administration (MM)1-7-1

Enable CU/Cabinet Interlock CRC	No
Request Download Controller Data	No
Controller Database CRC	0000
Enable Automatic Backup to Datakey	Yes

Backup Prevent (MM)1-1-3

	Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Timing /	1		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Backup	2	.		.	.	.	.	.	.	.	.	.	.	.	.	.	.
	3	.	.		.	.	.	.	.	.	.	.	.	.	.	.	.
	4	.	.	.		.	.	.	.	.	.	.	.	.	.	.	.
	5	.	.	.	.		.	.	.	.	.	.	.	.	.	.	.
	6	.	.	.	.	.		.	.	.	.	.	.	.	.	.	.
	7	.	.	.	.	.	.		.	.	.	.	.	.	.	.	.
	8	.	.	.	.	.	.	.		.	.	.	.	.	.	.	.
	9	.	.	.	.	.	.	.	.		.	.	.	.	.	.	.
	10	.	.	.	.	.	.	.	.	.		.	.	.	.	.	.
	11	.	.	.	.	.	.	.	.	.	.		.	.	.	.	.
	12	.	.	.	.	.	.	.	.	.	.	.		.	.	.	.
	13	.	.	.	.	.	.	.	.	.	.	.	.		.	.	.
	14	.	.	.	.	.	.	.	.	.	.	.	.	.		.	.
	15	.	.	.	.	.	.	.	.	.	.	.	.	.	.		.
	16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	

Simultaneous Gap (MM)1-1-4

	Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	1		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	2	.		.	.	.	X	.	.	.	.	.	.	.	.	.	.
	3	.	.		.	.	.	.	.	.	.	.	.	.	.	.	.
	4	.	.	.		.	.	.	X	.	.	.	.	.	.	.	.
	5	.	.	.	.		.	.	.	.	.	.	.	.	.	.	.
Phase	6	.	X	.	.	.		.	.	.	.	.	.	.	.	.	.
Must	7	.	.	.	.	.	.		.	.	.	.	.	.	.	.	.
Gap	8	.	.	.	X	.	.	.		.	.	.	.	.	.	.	.
With	9	.	.	.	.	.	.	.	.		.	.	.	.	.	.	.
Phase	10	.	.	.	.	.	.	.	.	.		.	.	.	.	.	.
	11	.	.	.	.	.	.	.	.	.	.		.	.	.	.	.
	12	.	.	.	.	.	.	.	.	.	.	.		.	.	.	.
	13	.	.	.	.	.	.	.	.	.	.	.	.		.	.	.
	14	.	.	.	.	.	.	.	.	.	.	.	.	.		.	.
	15	.	.	.	.	.	.	.	.	.	.	.	.	.	.		.
	16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
	Disable	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Load Switch Assignments (MMU Channel) (MM)1-3

	Phase / Overlap	Type	Dimming				Power Up				Auto		Flash Together
			Red	Yellow	Green	Dark	Auto	Red	Yellow	Dark	Red	Yellow	
1	1	V				+	X				X		X
2	2	V				+	X				X		
3	3	V				+	X				X		X
4	4	V				+	X				X		
5	5	V				-	X				X		
6	6	V				-	X				X		X
7	7	V				-	X				X		
8	8	V				-	X				X		X
9	2	P				+	X						
10	4	P				+	X						
11	6	P				-	X						
12	8	P				-	X						
13	1	O				+	X				X		X
14	2	O				-	X				X		X
15	3	O				+	X				X		
16	4	O				-	X				X		

Milwaukee (S40-1115 - S40-1144) - S40-1140 - STH 38 & Puetz Rd

Configuration Port 1 (SDLC)

SDLC Options (MM)1-4-1

BIU	1	2	3	4	5	6	7	8
Term and Facility Enable	X	X						
Detector Rack Enable	X	X						

Enable TS2/MMU Type Cabinet: Yes
Enable MMU Extended Status: Yes
Enable SDLC Stop Time: No
Enable 3 Critical RFE's Lockup: Yes

MMU Program (MM)1-4-2

Channel Can Serve with Channel	
Channel 1	**Channel 2**
1	5
1	6
1	11
2	5
2	6
2	9
2	11
3	7
3	8
3	12
4	7
4	8
4	10
4	12
5	9
6	9
6	11
7	10
8	10
8	12
9	11
10	12

Color Check Enable (MM)1-4-3

Enable Color Check: Yes

MMU Channel	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Green	X	X	X	X	X	X	X	X	X	X	X	X				
Yellow	X	X	X	X	X	X	X	X								
Red	X	X	X	X	X	X	X	X								

Secondary To Secondary Addressing (MM)1-4-4

ID	1	2	3	4	5	6	7	8	MMU
Term and Facility Enable									

ID	1	2	3	4	5	6	7	8	Diag
Detector Rack Enable									

Diagonstics (Test Fixture) Enable: No

Milwaukee (S40-1115 - S40-1144) - S40-1140 - STH 38 & Puetz Rd

Configuration Communications

Ethernet Port Configuration (MM)1-5-1

Controller IP: 10.98.203.53
Subnet Mask: 255.255.254.0
Default Gateway IP: 10.98.202.1
Server IP: 10.70.10.1

NTCIP Parameters (MM)1-5-5

Backup Time: 0
UDP Port: 501
Ethernet Priority: 1
Port 2 Priority: 4
Port 3A Priority: 2
Port 3B Priority: 3

Port Configuration (MM)1-5-2 to 1-5-4

Port	2 (C50S)	3A (C21S)	3B (C22S)
Protocol	NTCIP	NTCIP	Terminal
Enable	No	Yes	No
Data Rate	9600	19.2K	1200
Data Parity Stop	8 N 1	8 N 1	8 0 1
Modem Setup String	None	None	None
User String			
Comm Port Address	1	1	0
System Detector 9-1	0	0	0
Telemetry Response Delay	0.0	0.0	0.0
Duplex Half/Full	Full	Full	Full
Flow Control	Yes	Yes	Yes
AB3418 NTCIP Group Address	0	0	0
AB3418 NTCIP Single Flag Enable	No	No	No
RTS to CTS Delay	0.0	0.0	3.0
RTS Turn Off Delay	0.0	0.0	2.0
Droupout Time	10	10	10
Early RTS	No	No	No
Telemetry Mode	FSK	FSK	FSK
Rail Road	0	0	0
Rail Road Line	0	0	0
ATCS Group	0	0	0
Wayside Device	0	0	0
ATCS Device	0	0	0
Wayside SubNode	0	0	0
ATCS SubNode	0	0	0

ECPIP Parameters (MM)1-5-6

Controller Address: 0
Expanded System Detector Address: 0

Local System Detector

Local System Detector	Number
5	31
6	32
7	29
8	30

Milwaukee (S40-1115 - S40-1144) - S40-1140 - STH 38 & Puetz Rd

Configuration Logging/Display

Event Logging (MM)1-6-1

Critical RFE's	Yes	3 Critical RFE's in 24 Hours	Yes
MMU Flash Faults	Yes	Local Flash Faults	Yes
Non-Critical RFE's (Det/Test)	Yes	Detector Errors	Yes
Coordination Errors	Yes	Controller Download	Yes
Preempt	Yes	TSP	Yes
Power On/Off	Yes	Low Battery	Yes
Access	Yes	Data Change	Yes
Online/Offline	Yes		

Alarm Log	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Enable Logging	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Display Options (MM)1-7-2

Key Click Enable:	Yes
Backlight Enable:	Yes
LED Mode:	Single Color
Main Status Display Mode:	Basic
Screen Format:	Advanced
Trans Mode Pop-up Disable:	No

Sign On (MM)8-5

Sign On Message Line 1: INTERSECTION NAME:
Sign On Message Line 2: WisDOT Data Base

Milwaukee (S40-1115 - S40-1144) - S40-1140 - STH 38 & Puetz Rd

Logic Processor Page 1
Statement Control (MM)1-8-1

LP	Statement Control
1	E
2	E
3	E
4	E

Milwaukee (S40-1115 - S40-1144) - S40-1140 - STH 38 & Puetz Rd

Logic Processor Page 2

Logic Statements (MM)1-8-2

Statement Number: 1

IF:

	Assignment	#		State
IF	DETECTOR	5	IS	ON
AND	ACTION PLAN NUM		IS	5

THEN:

Assignment	#	State
CALL PHASE	4	ON

ELSE:

Assignment	#	State

Statement Number: 2

IF:

	Assignment	#		State
IF	DETECTOR	6	IS	ON
AND	ACTION PLAN NUM		IS	5

THEN:

Assignment	#	State
CALL PHASE	4	ON

ELSE:

Assignment	#	State

Statement Number: 3

IF:

	Assignment	#		State
IF	DETECTOR	23	IS	ON
AND	ACTION PLAN NUM		IS	5

THEN:

Assignment	#	State
CALL PHASE	8	ON

ELSE:

Assignment	#	State

Statement Number: 4

IF:

	Assignment	#		State
IF	DETECTOR	24	IS	ON
AND	ACTION PLAN NUM		IS	5

THEN:

Assignment	#	State
CALL PHASE	8	ON

ELSE:

Assignment	#	State

Milwaukee (S40-1115 - S40-1144) - S40-1140 - STH 38 & Puetz Rd

Controller Timing Plan (MM)2-1

Plan 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	NBLT	SB	WBLT	EB	SBLT	NB	EBLT	WB								
Min Green	6	15	6	10	6	15	6	10	0	0	0	0	0	0	0	0
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	7	0	7	0	7	0	7	0	0	0	0	0	0	0	0
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	29	0	34	0	26	0	33	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	1.5	3.4	1.5	1.5	1.5	3.4	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	30	45	30	35	30	45	30	35	0	0	0	0	0	0	0	0
Max 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.5	4.3	3.5	4.2	3.5	4.3	3.5	4.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	2.0	2.9	2.0	3.0	2.0	2.9	2.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	1.3	0.0	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	6	22	6	10	6	22	6	10	0	0	0	0	0	0	0	0
Time B4	30	22	30	35	30	22	30	35	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	23	0	0	0	23	0	0	0	0	0	0	0	0	0	0
Min Gap	1.5	3.5	1.5	1.5	1.5	3.5	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	NBLT	SB	WBLT	EB	SBLT	NB	EBLT	WB								
Min Green	5	15	5	10	5	15	5	10	0	0	0	0	0	0	0	0
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	3.0	7.0	3.0	5.0	3.0	7.0	3.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	15	45	15	35	15	45	15	35	0	0	0	0	0	0	0	0
Max 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 3

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Direction	**NBLT**	**SB**	**WBLT**	**EB**	**SBLT**	**NB**	**EBLT**	**WB**								
Min Green	5	15	5	10	5	15	5	10	0	0	0	0	0	0	0	0
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	3.0	7.0	3.0	5.0	3.0	7.0	3.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	15	45	15	35	15	45	15	35	0	0	0	0	0	0	0	0
Max 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 4

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Direction	**NBLT**	**SB**	**WBLT**	**EB**	**SBLT**	**NB**	**EBLT**	**WB**								
Min Green	5	15	5	10	5	15	5	10	0	0	0	0	0	0	0	0
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	3.0	7.0	3.0	5.0	3.0	7.0	3.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	15	45	15	35	15	45	15	35	0	0	0	0	0	0	0	0
Max 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Milwaukee (S40-1115 - S40-1144) - S40-1140 - STH 38 & Puetz Rd

Controller Overlaps

Vehicle Overlaps (MM)2-2

Overlap	Type	Lag Green	Yellow	Red	Advance Green

Phases

Overlap	Phase	Included	Protect	Ped Protect	Not Overlap	Modifier	Lag X Phase	Lag 2 Phase	Flash Green

PPLT FYA

Overlap	Protected Phase	Permissive Phase	Flash Arrow Output	Flash Arrow Channel	FYA Delay	FYA Clearance	Special Function Disable
F	3	4	Ped Yellow	10	0	0.0	0
H	7	8	Ped Yellow	12	0	0.0	0

Guaranteed Minimum Time Data (MM) 2-4

Phase Time Data

Phase	Min Green	Walk	Ped Clear	Yellow	Red Clear	Overlap Green
A01	1	0	7	3.0	0.0	1
B02	1	0	7	3.0	0.0	1
C03	1	0	7	3.0	0.0	1
D04	1	0	7	3.0	0.0	1
E05	1	0	7	3.0	0.0	1
F06	1	0	7	3.0	0.0	1
G07	1	0	7	3.0	0.0	1
H08	1	0	7	3.0	0.0	1
I09	1	0	7	3.0	0.0	1
J10	1	0	7	3.0	0.0	1
K11	1	0	7	3.0	0.0	1
L12	1	0	7	3.0	0.0	1
M13	1	0	7	3.0	0.0	1
N14	1	0	7	3.0	0.0	1
O15	1	0	7	3.0	0.0	1
P16	1	0	7	3.0	0.0	1

Milwaukee (S40-1115 - S40-1144) - S40-1140 - STH 38 & Puetz Rd

Controller **Pedestrian Overlaps**
Pedestrian Overlaps (MM) 2-3

Included Phase	Ped Overlap

Milwaukee (S40-1115 - S40-1144) - S40-1140 - STH 38 & Puetz Rd

Controller Start/Fash (MM) 2-5

Startup

Phase	Phase Setting
2	G
6	G

Overlap
F
H

Flash > Mon: No
Flash Time: 10
All Red: 6
Power Start Sequence: 1
MUTCD Enabled: Yes
MUTCD Yellow to Green: No

Automatic Flash

Entry Phase
2
6

Exit Phase
2
6

Overlap Exit
F
H

Flash > Mon: No
Exit Flash Interval: G
Minimum Auto Flash: 8
Minimumin Recall: No
Cycle Through Phase: No

Milwaukee (S40-1115 - S40-1144) - S40-1140 - STH 38 & Puetz Rd

Controller Options

Controller Options (MM)2-6-1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Flashing Green Phase																
Guaranteed Passage																
Non Act 1																
Non Act 2																
Dual Entry		X		X		X		X								
Conditional Service																
Conditional Reservice																
Ped Reservice		X		X		X		X								
Rest In Walk																
Flashing Walk																
Ped Clear Yellow																
Ped Clear Red																
IGRN + Veh Ext																

Ped Clear Protect: On Red Revert: 2.0 MUTCD 3 Seconds Don't Walk: No

Act Pre-Time (MM)2-7

Pre-Time Mode Enable: No Free Input Enables Pre-Timed: Yes

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Pre-Timed Phase																

Phase Recall Options (MM)2-8

Plan 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector		X				X										
Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
Al Calc																

Plan 2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector		X				X										
Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
Al Calc																

Plan 3

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector		X				X										
Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
Al Calc																

Plan 4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector		X				X										

Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
AI Calc																

Milwaukee (S40-1115 - S40-1144) - S40-1140 - STH 38 & Puetz Rd

Coordination Options

Coordination Options (MM)3-1

Manual Pattern	Auto	ECPI Coord	Yes
System Source	TBC	System Format	STD
Splits In	Seconds	Offsets In	Seconds
Transition	Add	Max Select	MAXINH
Dwell/Add Time	0		
Delay Coord Walk to LZ	No	Force Off	Fixed
Offset Reference	Lead	Use Ped Time	No
Ped Recall	No	Ped Reservice	No
Local Zero Override	No	FO Added Initial Green	Yes
Re-Sync Count	3	Multisync	No

Auto Perm Minimum Green (Seconds) (MM)3-4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Minimum Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Split Demand (MM)3-5

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Demand 1																
Demand 2																

Demand	1	2
Detector	0	0
Call Time (Sec)	0	0
Cycle Count	0	0

Milwaukee (S40-1115 - S40-1144) - S40-1140 - STH 38 & Puetz Rd

Coordination Pattern Data
Pattern Data (MM)3-2

Pattern - 1

Split Pattern	1	TS2 (Pat-Off)	0-1	Splits in	Seconds
Cycle	120	Std (COS)	0	Offsets in	Seconds
Offset Value	104s	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	6		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	NBLT	SB	WBLT	EB	SBLT	NB	EBLT	WB								
Splits (Split Pat 1)	20	49	20	31	14	55	21	30	0	0	0	0	0	0	0	0
Preference 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Preference 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Disp.	-	0	0	0
Split Sum	120s	120s	0s	0s

Misc. Data

Veh. Permissive 1	0	Veh. Permissive 2	0	Veh. Permissive 2 Disp.	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern Data

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coordinated Phases		X				X										
Vehicle Recalls																
Ped Recalls																
Max Recalls																
Phase Omit																
Special Function Output																

Pattern - 3

Split Pattern	3	TS2 (Pat-Off)	0-3	Splits in	Seconds
Cycle	130	Std (COS)	0	Offsets in	Seconds
Offset Value	68s	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	6		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	NBLT	SB	WBLT	EB	SBLT	NB	EBLT	WB								
Splits (Split Pat 3)	25	55	15	35	20	60	15	35	0	0	0	0	0	0	0	0
Preference 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Preference 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Disp.	-	0	0	0
Split Sum	130s	130s	0s	0s

Misc. Data

Veh. Permissive 1	0	Veh. Permissive 2	0	Veh. Permissive 2 Disp.	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern Data

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coordinated Phases		X				X										
Vehicle Recalls																
Ped Recalls																
Max Recalls																
Phase Omit																
Special Function Output																

Milwaukee (S40-1115 - S40-1144) - S40-1140 - STH 38 & Puetz Rd

Coordination Split Pattern Data
Split Pattern Data (MM)3-3

Split Pattern - 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	NBLT	SB	WBLT	EB	SBLT	NB	EBLT	WB								
Splits (seconds)	20	49	20	31	14	55	21	30	0	0	0	0	0	0	0	0
Coordinated Phases		X				X										
Vehicle Recalls																
Ped Recalls																
Max Recalls																
Phase Omit																

Ring	1	2	3	4
Split Sum	120s	120s	0s	0s

Split Pattern - 3

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	NBLT	SB	WBLT	EB	SBLT	NB	EBLT	WB								
Splits (seconds)	25	55	15	35	20	60	15	35	0	0	0	0	0	0	0	0
Coordinated Phases		X				X										
Vehicle Recalls																
Ped Recalls																
Max Recalls																
Phase Omit																

Ring	1	2	3	4
Split Sum	130s	130s	0s	0s

Milwaukee (S40-1115 - S40-1144) - S40-1140 - STH 38 & Puetz Rd

Preemptor

Preempt Plan (MM)4-1

Plan 3

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**
Track Clear Vehicle																
Track Clear Overlap																
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Vehicle		X			X											
Dwell Ped																
Dwell Overlap																
Cycling Vehicle																
Cycling Ped																
Cycling Overlap																
Exit Phase		X				X										
Exit Calls																
Special Funciton																

Enable	Yes	Preempt Override	No	Interlock Enable	No
Detector Lock	Yes	Delay	1	Inhibit	0
Override Flash	No	Duration	0	CLR > GRN	No
Term Overlap Asap	No	PC Through Yellow	No	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	Flash Exit Color	Green	Exit Option	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Preempt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	5	0	5	25.5	25.5
	Min Grn	**Ext Grn**	**Max Grn**	**Yellow**	**Red**
Track Clear	0	0	0	25.5	25.5
	Min Dwell	**Pmt Ext**	**Max Time**	**Yellow**	**Red**
Dwell / Cycle-Exit	10	5.0	0	25.5	25.5

Preempt Active Out	On	Preempt Active Dwell	No
Other Priority Preempt	On	Non-Priority Preempt	F1
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Pri Return % Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**
Track Clear Vehicle																
Track Clear Overlap																
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Vehicle	X					X										
Dwell Ped																
Dwell Overlap																
Cycling Vehicle																
Cycling Ped																
Cycling Overlap																
Exit Phase		X				X										
Exit Calls																
Special Funciton																

Enable	Yes	Preempt Override	No	Interlock Enable	No
Detector Lock	Yes	Delay	1	Inhibit	0
Override Flash	No	Duration	0	CLR > GRN	No
Term Overlap Asap	No	PC Through Yellow	No	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	Flash Exit Color	Green	Exit Option	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Preempt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	5	0	5	25.5	25.5
	Min Grn	**Ext Grn**	**Max Grn**	**Yellow**	**Red**
Track Clear	0	0	0	25.5	25.5
	Min Dwell	**Pmt Ext**	**Max Time**	**Yellow**	**Red**
Dwell / Cycle-Exit	10	5.0	0	25.5	25.5

Preempt Active Out	On	Preempt Active Dwell	No
Other Priority Preempt	On	Non-Priority Preempt	F1
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Pri Return % Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 5

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**
Track Clear Vehicle																
Track Clear Overlap																
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Vehicle				X			X									
Dwell Ped																
Dwell Overlap						F1		F1								
Cycling Vehicle																
Cycling Ped																
Cycling Overlap																
Exit Phase				X				X								
Exit Calls																
Special Funciton																

Enable	Yes	Preempt Override	No	Interlock Enable	No
Detector Lock	Yes	Delay	1	Inhibit	0
Override Flash	No	Duration	0	CLR > GRN	No
Term Overlap Asap	No	PC Through Yellow	No	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	Flash Exit Color	Green	Exit Option	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Preempt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	5	0	5	25.5	25.5
	Min Grn	**Ext Grn**	**Max Grn**	**Yellow**	**Red**
Track Clear	0	0	0	25.5	25.5
	Min Dwell	**Pmt Ext**	**Max Time**	**Yellow**	**Red**
Dwell / Cycle-Exit	10	5.0	0	25.5	25.5

Preempt Active Out	On	Preempt Active Dwell	No
Other Priority Preempt	On	Non-Priority Preempt	F1
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Pri Return % Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 6

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**
Track Clear Vehicle																
Track Clear Overlap																
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Vehicle			X					X								
Dwell Ped																
Dwell Overlap						F1		F1								
Cycling Vehicle																
Cycling Ped																
Cycling Overlap																
Exit Phase				X				X								
Exit Calls																
Special Funciton																

Enable	Yes	Preempt Override	No	Interlock Enable	No
Detector Lock	Yes	Delay	1	Inhibit	0
Override Flash	No	Duration	0	CLR > GRN	No
Term Overlap Asap	No	PC Through Yellow	No	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	Flash Exit Color	Green	Exit Option	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Preempt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	5	0	5	25.5	25.5
	Min Grn	**Ext Grn**	**Max Grn**	**Yellow**	**Red**
Track Clear	0	0	0	25.5	25.5
	Min Dwell	**Pmt Ext**	**Max Time**	**Yellow**	**Red**
Dwell / Cycle-Exit	10	5.0	0	25.5	25.5

Preempt Active Out	On	Preempt Active Dwell	No
Other Priority Preempt	On	Non-Priority Preempt	F1
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Pri Return % Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Milwaukee (S40-1115 - S40-1144) - S40-1140 - STH 38 & Puetz Rd

Time Base **Clock/Calendar**
Clock/Calendar Options (MM)5-1

Enable Action Plan:	0
Sync Reference Time:	12:00 AM
Sync Reference:	Reference Time
Day Light Savings:	No
Time Reset Input Set Time:	3:30:00
Standard Time From GMT:	0

Milwaukee (S40-1115 - S40-1144) - S40-1140 - STH 38 & Puetz Rd

Time Base Action Plan
Action Plan (MM)5-2

Action Plan - 1

Pattern	1	Override System	No
Timing Plan	0	Sequence	6
Veh Det Plan	2	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 2

Pattern	2	Override System	No
Timing Plan	0	Sequence	1
Veh Det Plan	2	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 3

Pattern	3	Override System	No
Timing Plan	0	Sequence	6
Veh Det Plan	2	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 4

Pattern	4	Override System	No
Timing Plan	0	Sequence	1
Veh Det Plan	2	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 5

Pattern	254 - FREE	Override System	No
Timing Plan	0	Sequence	0
Veh Det Plan	2	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit			X				X									
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 99

Pattern	255 - FLSH	Override System	No
Timing Plan	0	Sequence	0
Veh Det Plan	0	Detector Log	None
Flash	Yes	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 100

Pattern	254 - FREE	Override System	No
Timing Plan	0	Sequence	0
Veh Det Plan	1	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Milwaukee (S40-1115 - S40-1144) - S40-1140 - STH 38 & Puetz Rd

Time Base Day Plan/Schedule
Day Plan (MM)5-3

Day Plan - 1

Event	Action Plan	Start Time
1	5	12:01 AM
2	100	4:30 AM
3	1	6:00 AM
4	3	12:30 PM
5	100	8:00 PM
6	5	10:30 PM

Day Plan - 2

Event	Action Plan	Start Time
1	5	12:01 AM
2	100	4:30 AM
3	1	10:00 AM
4	100	6:00 PM
5	5	10:30 PM

Schedule (MM)5-4

Schedule Number - 1

Day Plan Number: 1

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	X	X	X	X	X	X	X	X	X	X	X	X

Day of Week	Sun	Mon	Tue	Wed	Thur	Fri	Sat
		X	X	X	X	X	

Day of Month	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

Schedule Number - 2

Day Plan Number: 2

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	X	X	X	X	X	X	X	X	X	X	X	X

Day of Week	Sun	Mon	Tue	Wed	Thur	Fri	Sat
	X						X

Day of Month	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

Milwaukee (S40-1115 - S40-1144) - S40-1140 - STH 38 & Puetz Rd

Time Base Exceptions
Exception Day Program (MM)5-5

Day	Fixed/Float	Month	Day of Week/Month	Week of Month/Year	Day Plan

Milwaukee (S40-1115 - S40-1144) - S40-1140 - STH 38 & Puetz Rd

Detectors

Detectors Page 1

Vehicle Detectors Setup (MM)6-1

Vehicle Plan	Detector Number	Called	Type
1	60	2	N
1	60	4	N
1	60	6	N
1	60	8	N
2	60	2	N
2	60	4	N
2	60	6	N
2	60	8	N
3	1	1	N
3	2	2	N
3	3	3	N
3	4	4	N
3	5	5	N
3	6	6	N
3	7	7	N
3	8	8	N
3	60	2	N
3	60	4	N
3	60	6	N
3	60	8	N
4	1	1	N
4	2	2	N
4	3	3	N
4	4	4	N
4	5	5	N
4	6	6	N
4	7	7	N
4	8	8	N
4	60	2	N
4	60	4	N
4	60	6	N
4	60	8	N

Vehicle Detector Setup (MM)6-2 continued

Detector Number	Type	TS2 Detector	Detector Description
1	N-NTCIP	Yes	Loop 13
2	N-NTCIP	Yes	Loop 14
3	N-NTCIP	Yes	Loop 11
4	N-NTCIP	Yes	Loop 12
5	N-NTCIP	Yes	Loop 31
6	N-NTCIP	Yes	Loop 32
7	N-NTCIP	Yes	Loop 21
8	N-NTCIP	Yes	Loop 22
9	N-NTCIP	Yes	Loop 43
10	N-NTCIP	Yes	Loop 44
11	N-NTCIP	Yes	Loop 41
12	N-NTCIP	Yes	Loop 42
13	N-NTCIP	Yes	Loop 51
14	N-NTCIP	Yes	Loop 52
15	N-NTCIP	Yes	Loop 45
16	N-NTCIP	No	
17	N-NTCIP	Yes	Loop 61
18	N-NTCIP	Yes	Loop 62
19	N-NTCIP	Yes	Loop 53
20	N-NTCIP	Yes	Loop 54
21	N-NTCIP	Yes	Loop 81
22	N-NTCIP	Yes	Loop 82

23	N-NTCIP	Yes	Loop 71
24	N-NTCIP	Yes	Loop 72
25	N-NTCIP	Yes	Loop 85
26	N-NTCIP	No	
27	N-NTCIP	Yes	Loop 83
28	N-NTCIP	Yes	Loop 84
29	N-NTCIP	Yes	System Loop 7
30	N-NTCIP	Yes	System Loop 8
31	N-NTCIP	Yes	System Loop 5
32	N-NTCIP	Yes	System Loop 6
33	N-NTCIP	Yes	
34	N-NTCIP	Yes	
35	N-NTCIP	Yes	
36	N-NTCIP	Yes	
37	N-NTCIP	Yes	
38	N-NTCIP	Yes	
39	N-NTCIP	Yes	
40	N-NTCIP	Yes	
41	N-NTCIP	Yes	
42	N-NTCIP	Yes	
43	N-NTCIP	Yes	
44	N-NTCIP	Yes	
45	N-NTCIP	Yes	
46	N-NTCIP	Yes	
47	N-NTCIP	Yes	
48	N-NTCIP	Yes	
49	N-NTCIP	Yes	
50	N-NTCIP	Yes	
51	N-NTCIP	Yes	
52	N-NTCIP	Yes	
53	N-NTCIP	Yes	
54	N-NTCIP	Yes	
55	N-NTCIP	Yes	
56	N-NTCIP	Yes	
57	N-NTCIP	Yes	
58	N-NTCIP	Yes	
59	N-NTCIP	Yes	
60	N-NTCIP	Yes	
61	N-NTCIP	Yes	
62	N-NTCIP	Yes	
63	N-NTCIP	Yes	
64	N-NTCIP	Yes	

Vehicle Detector Setup (MM)6-2 continued

Det Num	Veh Det Plan	Phase	ECPI Log	Call Option	Delay Time	Ext Option	Extend Time / Passage Time	Queue Lim / Discon. Time	Use Added Initial	Cross Switch Phase	Lock In	NTCIP Vol.	NTCIP Occ.	Pmt Queue Delay
1	1	1	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
1	2	1	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
1	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
1	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
2	1	1	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
2	2	1	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
2	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
2	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
3	1	1	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
3	2	1	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
3	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
3	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
4	1	1	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
4	2	1	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
4	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
4	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
5	1	3	No	Yes	0.0	Passage	0.0	0	Yes	4	None	No	No	No
5	2	3	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
5	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
5	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

6	1	3	No	Yes	0.0	Passage	0.0	0	Yes	4	None	No	No	No
6	2	3	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
6	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
6	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
7	1	2	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
7	2	2	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
7	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
7	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
8	1	2	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
8	2	2	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
8	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
8	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
9	1	4	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
9	2	4	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
9	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
9	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
10	1	4	No	Yes	8.0	Passage	0.0	0	Yes	0	None	No	No	No
10	2	4	No	Yes	8.0	Passage	0.0	0	Yes	0	None	No	No	No
10	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
10	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
11	1	4	No	No	0.0	Passage	4.0	0	Yes	0	None	No	No	No
11	2	4	No	No	0.0	Passage	4.0	0	Yes	0	None	No	No	No
11	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
11	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
12	1	4	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
12	2	4	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
12	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
12	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
13	1	5	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
13	2	5	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
13	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
13	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
14	1	5	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
14	2	5	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
14	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
14	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
15	1	4	No	Yes	8.0	Passage	0.0	0	Yes	0	None	No	No	No
15	2	4	No	Yes	8.0	Passage	0.0	0	Yes	0	None	No	No	No
15	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
15	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
16	1	0	Yes	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
16	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
16	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
16	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
17	1	6	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
17	2	6	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
17	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
17	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
18	1	6	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
18	2	6	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
18	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
18	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
19	1	5	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
19	2	5	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
19	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
19	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
20	1	5	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
20	2	5	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
20	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
20	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
21	1	8	No	No	0.0	Passage	4.1	0	Yes	0	None	No	No	No
21	2	8	No	No	0.0	Passage	4.1	0	Yes	0	None	No	No	No
21	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
21	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
22	1	8	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
22	2	8	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
22	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
22	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

23	1	7	No	Yes	0.0	Passage	0.0	0	Yes	8	None	No	No	No
23	2	7	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
23	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
23	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
24	1	7	No	Yes	0.0	Passage	0.0	0	Yes	8	None	No	No	No
24	2	7	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
24	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
24	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
25	1	8	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
25	2	8	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
25	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
25	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
26	1	0	Yes	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
26	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
26	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
26	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
27	1	8	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
27	2	8	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
27	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
27	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
28	1	8	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
28	2	8	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
28	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
28	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
29	1	0	Yes	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
29	2	0	Yes	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
29	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
29	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
30	1	0	Yes	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
30	2	0	Yes	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
30	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
30	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
31	1	0	Yes	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
31	2	0	Yes	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
31	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
31	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
32	1	0	Yes	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
32	2	0	Yes	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
32	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
32	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
33	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
33	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
33	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
33	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
34	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
34	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
34	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
34	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
35	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
35	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
35	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
35	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
36	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
36	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
36	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
36	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
37	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
37	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
37	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
37	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
38	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
38	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
38	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
38	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
39	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
39	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
39	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
39	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

40	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
40	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
40	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
40	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
41	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
41	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
41	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
41	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
42	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
42	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
42	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
42	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
43	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
43	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
43	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
43	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
44	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
44	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
44	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
44	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
45	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
45	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
45	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
45	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
46	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
46	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
46	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
46	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
47	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
47	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
47	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
47	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
48	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
48	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
48	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
48	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
49	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
49	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
49	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
49	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
50	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
50	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
50	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
50	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
51	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
51	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
51	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
51	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
52	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
52	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
52	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
52	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
53	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
53	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
53	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
53	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
54	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
54	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
54	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
54	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
55	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
55	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
55	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
55	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
56	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
56	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
56	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
56	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

57	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
57	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
57	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
57	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
58	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
58	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
58	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
58	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
59	1	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
59	2	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
59	3	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
59	4	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
60	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	Yellow	No	No	No
60	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	Yellow	No	No	No
60	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	Yellow	No	No	No
60	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	Yellow	No	No	No
61	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
61	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
61	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
61	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
62	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
62	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
62	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
62	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
63	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
63	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
63	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
63	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
64	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
64	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
64	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
64	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

Ped Detector Options (MM)6-3

Phase Ped Detector (Econolite)

Detector	Call Phase															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.
4	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.
5	.	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.
6	.	.	.	.	.	X	.	.	.	.	.	.	.	.	.	.
7	.	.	.	.	.	.	X	.	.	.	.	.	.	.	.	.
8	.	.	.	.	.	.	.	X	.	.	.	.	.	.	.	.
9	.	.	.	.	.	.	.	.	X	.	.	.	.	.	.	.
10	.	.	.	.	.	.	.	.	.	X	.	.	.	.	.	.
11	.	.	.	.	.	.	.	.	.	.	X	.	.	.	.	.
12	.	.	.	.	.	.	.	.	.	.	.	X	.	.	.	.
13	.	.	.	.	.	.	.	.	.	.	.	.	X	.	.	.
14	.	.	.	.	.	.	.	.	.	.	.	.	.	X	.	.
15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	X	.
16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	X

Milwaukee (S40-1115 - S40-1144) - S40-1140 - STH 38 & Puetz Rd

Detectors

Detectors Page 2

Log - Speed Detector Setup (MM)6-4

NTCIP Log Period: 60 ECPI Log Period: 15 Length Unit: Inch

Speed Detector	Local Detector	One/Two Detector	Vehicle Length	Trap Length	Enable Log
1	0	1	0	0	No
2	0	1	0	0	No
3	0	1	0	0	No
4	0	1	0	0	No
5	0	1	0	0	No
6	0	1	0	0	No
7	0	1	0	0	No
8	0	1	0	0	No
9	0	1	0	0	No
10	0	1	0	0	No
11	0	1	0	0	No
12	0	1	0	0	No
13	0	1	0	0	No
14	0	1	0	0	No
15	0	1	0	0	No
16	0	1	0	0	No

Vehicle Detector Diagnostics (MM)6-5

Plan	Detector	Counts	Act	Pres	Multiplier	Failed Time	Failed Call Delay
1	1	0	0	0	1	255	0
1	2	0	0	0	1	255	0
1	3	0	0	0	1	255	0
1	4	0	0	0	1	255	0
1	5	0	0	0	1	255	0
1	6	0	0	0	1	255	0
1	7	0	0	0	1	255	0
1	8	0	0	0	1	255	0
1	9	0	0	0	1	255	0
1	10	0	0	0	1	255	0
1	11	0	0	0	1	255	0
1	12	0	0	0	1	255	0
1	13	0	0	0	1	255	0
1	14	0	0	0	1	255	0
1	15	0	0	0	1	255	0
1	16	0	0	0	1	255	0
1	17	0	0	0	1	255	0
1	18	0	0	0	1	255	0
1	19	0	0	0	1	255	0
1	20	0	0	0	1	255	0
1	21	0	0	0	1	255	0
1	22	0	0	0	1	255	0
1	23	0	0	0	1	255	0
1	24	0	0	0	1	255	0
1	25	0	0	0	1	255	0
1	26	0	0	0	1	255	0
1	27	0	0	0	1	255	0
1	28	0	0	0	1	255	0
1	29	0	0	0	1	255	0
1	30	0	0	0	1	255	0
1	31	0	0	0	1	255	0
1	32	0	0	0	1	255	0
1	33	0	0	0	1	255	0

1	34	0	0	0	1	255	0
1	35	0	0	0	1	255	0
1	36	0	0	0	1	255	0
1	37	0	0	0	1	255	0
1	38	0	0	0	1	255	0
1	39	0	0	0	1	255	0
1	40	0	0	0	1	255	0
1	41	0	0	0	1	255	0
1	42	0	0	0	1	255	0
1	43	0	0	0	1	255	0
1	44	0	0	0	1	255	0
1	45	0	0	0	1	255	0
1	46	0	0	0	1	255	0
1	47	0	0	0	1	255	0
1	48	0	0	0	1	255	0
1	49	0	0	0	1	255	0
1	50	0	0	0	1	255	0
1	51	0	0	0	1	255	0
1	52	0	0	0	1	255	0
1	53	0	0	0	1	255	0
1	54	0	0	0	1	255	0
1	55	0	0	0	1	255	0
1	56	0	0	0	1	255	0
1	57	0	0	0	1	255	0
1	58	0	0	0	1	255	0
1	59	0	0	0	1	255	0
1	60	0	0	0	1	255	0
1	61	0	0	0	1	255	0
1	62	0	0	0	1	255	0
1	63	0	0	0	1	255	0
1	64	0	0	0	1	255	0
2	1	0	0	0	1	255	0
2	2	0	0	0	1	255	0
2	3	0	0	0	1	255	0
2	4	0	0	0	1	255	0
2	5	0	0	0	1	255	0
2	6	0	0	0	1	255	0
2	7	0	0	0	1	255	0
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2	17	0	0	0	1	255	0
2	18	0	0	0	1	255	0
2	19	0	0	0	1	255	0
2	20	0	0	0	1	255	0
2	21	0	0	0	1	255	0
2	22	0	0	0	1	255	0
2	23	0	0	0	1	255	0
2	24	0	0	0	1	255	0
2	25	0	0	0	1	255	0
2	26	0	0	0	1	255	0
2	27	0	0	0	1	255	0
2	28	0	0	0	1	255	0
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2	33	0	0	0	1	255	0
2	34	0	0	0	1	255	0
2	35	0	0	0	1	255	0
2	36	0	0	0	1	255	0
2	37	0	0	0	1	255	0

2	38	0	0	0	1	255	0
2	39	0	0	0	1	255	0
2	40	0	0	0	1	255	0
2	41	0	0	0	1	255	0
2	42	0	0	0	1	255	0
2	43	0	0	0	1	255	0
2	44	0	0	0	1	255	0
2	45	0	0	0	1	255	0
2	46	0	0	0	1	255	0
2	47	0	0	0	1	255	0
2	48	0	0	0	1	255	0
2	49	0	0	0	1	255	0
2	50	0	0	0	1	255	0
2	51	0	0	0	1	255	0
2	52	0	0	0	1	255	0
2	53	0	0	0	1	255	0
2	54	0	0	0	1	255	0
2	55	0	0	0	1	255	0
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2	57	0	0	0	1	255	0
2	58	0	0	0	1	255	0
2	59	0	0	0	1	255	0
2	60	0	0	0	1	255	0
2	61	0	0	0	1	255	0
2	62	0	0	0	1	255	0
2	63	0	0	0	1	255	0
2	64	0	0	0	1	255	0
3	1	0	0	0	1	255	0
3	2	0	0	0	1	255	0
3	3	0	0	0	1	255	0
3	4	0	0	0	1	255	0
3	5	0	0	0	1	255	0
3	6	0	0	0	1	255	0
3	7	0	0	0	1	255	0
3	8	0	0	0	1	255	0
3	9	0	0	0	1	255	0
3	10	0	0	0	1	255	0
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3	39	0	0	0	1	255	0
3	40	0	0	0	1	255	0
3	41	0	0	0	1	255	0

3	42	0	0	0	1	255	0
3	43	0	0	0	1	255	0
3	44	0	0	0	1	255	0
3	45	0	0	0	1	255	0
3	46	0	0	0	1	255	0
3	47	0	0	0	1	255	0
3	48	0	0	0	1	255	0
3	49	0	0	0	1	255	0
3	50	0	0	0	1	255	0
3	51	0	0	0	1	255	0
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3	57	0	0	0	1	255	0
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3	60	0	0	0	1	255	0
3	61	0	0	0	1	255	0
3	62	0	0	0	1	255	0
3	63	0	0	0	1	255	0
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4	4	0	0	0	1	255	0
4	5	0	0	0	1	255	0
4	6	0	0	0	1	255	0
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4	25	0	0	0	1	255	0
4	26	0	0	0	1	255	0
4	27	0	0	0	1	255	0
4	28	0	0	0	1	255	0
4	29	0	0	0	1	255	0
4	30	0	0	0	1	255	0
4	31	0	0	0	1	255	0
4	32	0	0	0	1	255	0
4	33	0	0	0	1	255	0
4	34	0	0	0	1	255	0
4	35	0	0	0	1	255	0
4	36	0	0	0	1	255	0
4	37	0	0	0	1	255	0
4	38	0	0	0	1	255	0
4	39	0	0	0	1	255	0
4	40	0	0	0	1	255	0
4	41	0	0	0	1	255	0
4	42	0	0	0	1	255	0
4	43	0	0	0	1	255	0
4	44	0	0	0	1	255	0
4	45	0	0	0	1	255	0

4	46	0	0	0	1	255	0
4	47	0	0	0	1	255	0
4	48	0	0	0	1	255	0
4	49	0	0	0	1	255	0
4	50	0	0	0	1	255	0
4	51	0	0	0	1	255	0
4	52	0	0	0	1	255	0
4	53	0	0	0	1	255	0
4	54	0	0	0	1	255	0
4	55	0	0	0	1	255	0
4	56	0	0	0	1	255	0
4	57	0	0	0	1	255	0
4	58	0	0	0	1	255	0
4	59	0	0	0	1	255	0
4	60	0	0	0	1	255	0
4	61	0	0	0	1	255	0
4	62	0	0	0	1	255	0
4	63	0	0	0	1	255	0
4	64	0	0	0	1	255	0

Pedestrian Detector Diagnotics (MM)6-6

Plan	Detector	Counts	Act	Pres	Multiplier

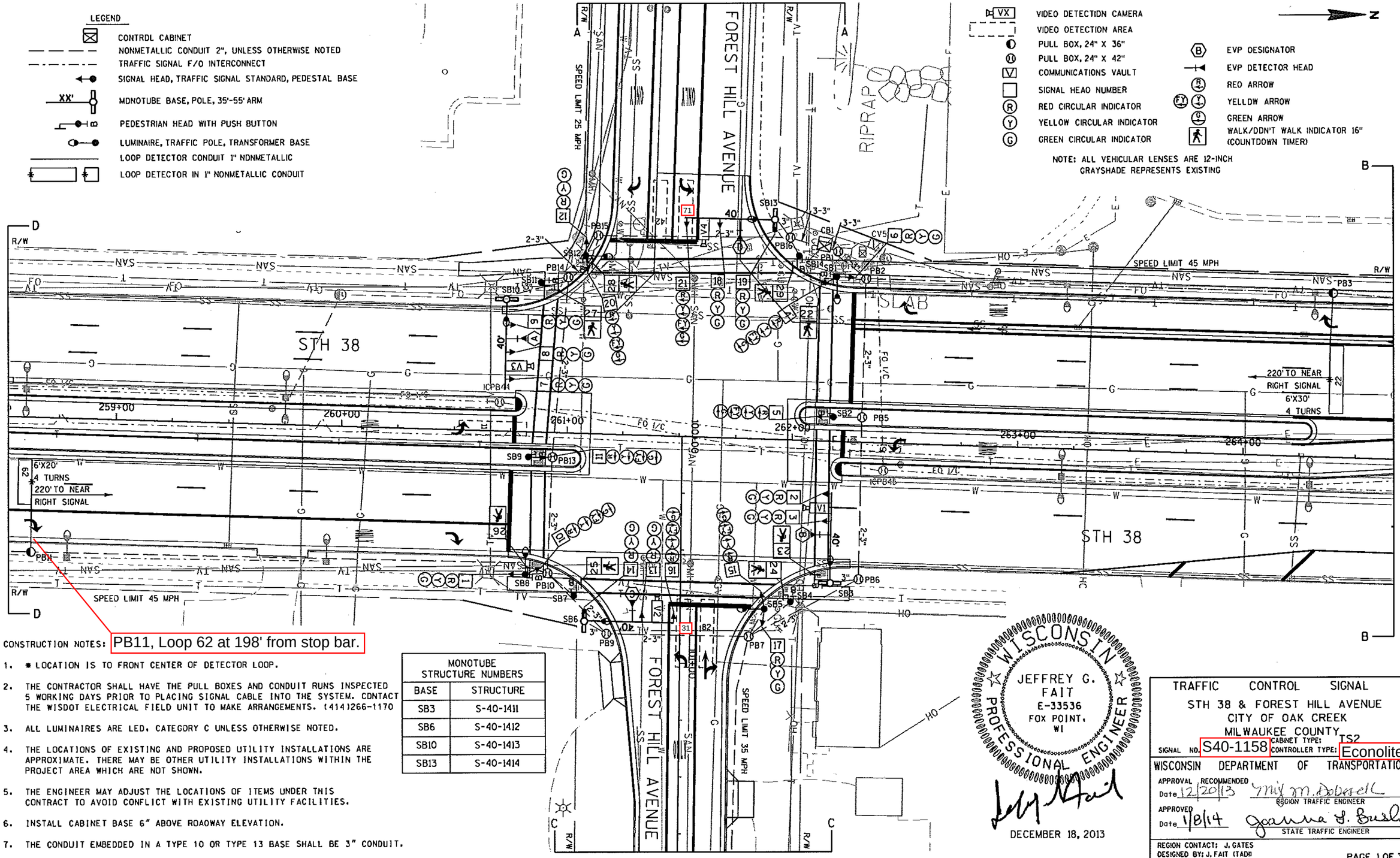
LEGEND

- CONTRDL CABINET
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- TRAFFIC SIGNAL F/O INTERCONNECT
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- XX' MDNOTUBE BASE, POLE, 35'-55' ARM
- PEDESTRIAN HEAD WITH PUSH BUTTON
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
- LOOP DETECTOR CONDUIT 1" NDNMETALLIC
- LOOP DETECTOR IN 1" NONMETALLIC CONDUIT

- VX VIDEO DETECTIDN CAMERA
- VIDEO OETECTION AREA
- PULL BOX, 24" X 36"
- PULL BOX, 24" X 42"
- COMMUNICATIONS VAULT
- SIGNAL HEAD NUMBER
- R RED CIRCULAR INDICATOR
- Y YELLOW CIRCULAR INDICATOR
- G GREEN CIRCULAR INDICATOR
- B EVP OESIGNATOR
- EVP DETECTOR HEAD
- RED ARROW
- YELLDW ARROW
- GREEN ARROW
- WALK/DDN'T WALK INDICATOR 16" (COUNTDOWN TIMER)

NOTE: ALL VEHICULAR LENSES ARE 12-INCH
GRAYSHADE REPRESENTS EXISTING

N



CONSTRUCTION NOTES: PB11, Loop 62 at 198' from stop bar.

1. * LOCATION IS TO FRONT CENTER OF DETECTOR LOOP.
2. THE CONTRACTOR SHALL HAVE THE PULL BOXES AND CONDUIT RUNS INSPECTED 5 WORKING DAYS PRIOR TO PLACING SIGNAL CABLE INTO THE SYSTEM. CONTACT THE WISDOT ELECTRICAL FIELD UNIT TO MAKE ARRANGEMENTS. (414)266-1170
3. ALL LUMINAIRES ARE LED, CATEGORY C UNLESS OTHERWISE NOTED.
4. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA WHICH ARE NOT SHOWN.
5. THE ENGINEER MAY ADJUST THE LOCATIONS OF ITEMS UNDER THIS CONTRACT TO AVOID CONFLICT WITH EXISTING UTILITY FACILITIES.
6. INSTALL CABINET BASE 6" ABOVE ROADWAY ELEVATION.
7. THE CONDUIT EMBEDDED IN A TYPE 10 OR TYPE 13 BASE SHALL BE 3" CONDUIT.

MONOTUBE STRUCTURE NUMBERS	
BASE	STRUCTURE
SB3	S-40-1411
SB6	S-40-1412
SB10	S-40-1413
SB13	S-40-1414

WISCONSIN
JEFFREY G. FAIT
E-33536
FOX POINT, WI
PROFESSIONAL ENGINEER
DECEMBER 18, 2013

TRAFFIC CONTROL SIGNAL
STH 38 & FOREST HILL AVENUE
CITY OF OAK CREEK
MILWAUKEE COUNTY
SIGNAL NO. S40-1158 CABINET TYPE: TS2
CONTROLLER TYPE: Econolite

WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVAL RECOMMENDED Date 12/20/13 — REGION TRAFFIC ENGINEER
APPROVED Date 1/8/14 — STATE TRAFFIC ENGINEER

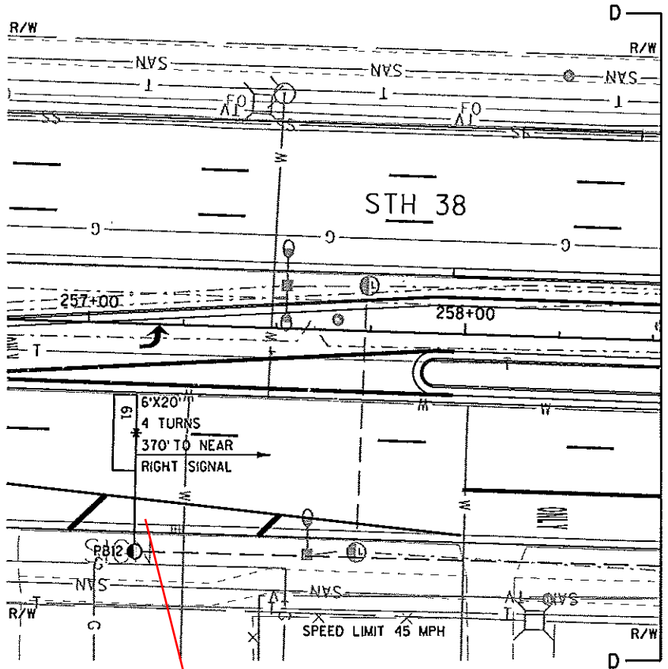
REGION CONTACT: J. GATES
DESIGNED BY: J. FAIT (TADI
REVISED BY:

PAGE 1 OF 3

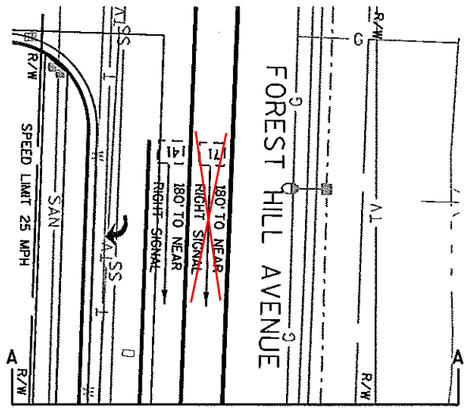
JMG 12/20/2013

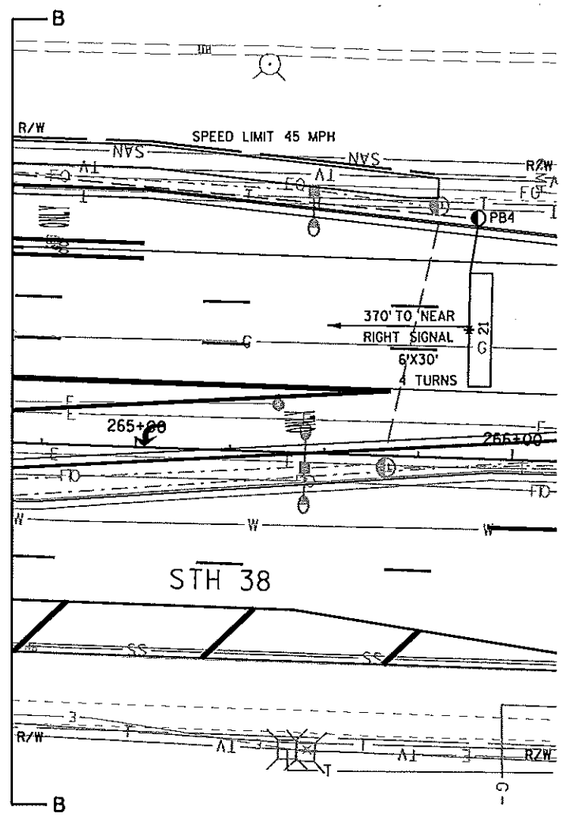
PROJECT NO: 2060-15-71	HWY: STH 38	COUNTY: MILWAUKEE	TRAFFIC SIGNAL PLAN	SHEET	E

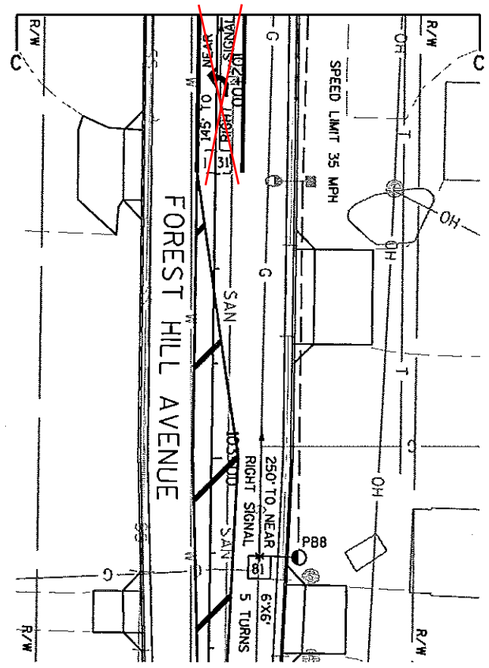
FILE NAME : Proposed Signals.dgn PLOT DATE : 12/19/2013 PLOT BY : DSCHNABEL-TADI PLOT NAME : PLOT SCALE : 40.0000 sf / in. WISDOT/CADDS SHEET 42



PB12, Loop 61 at 353' from near stop bar.



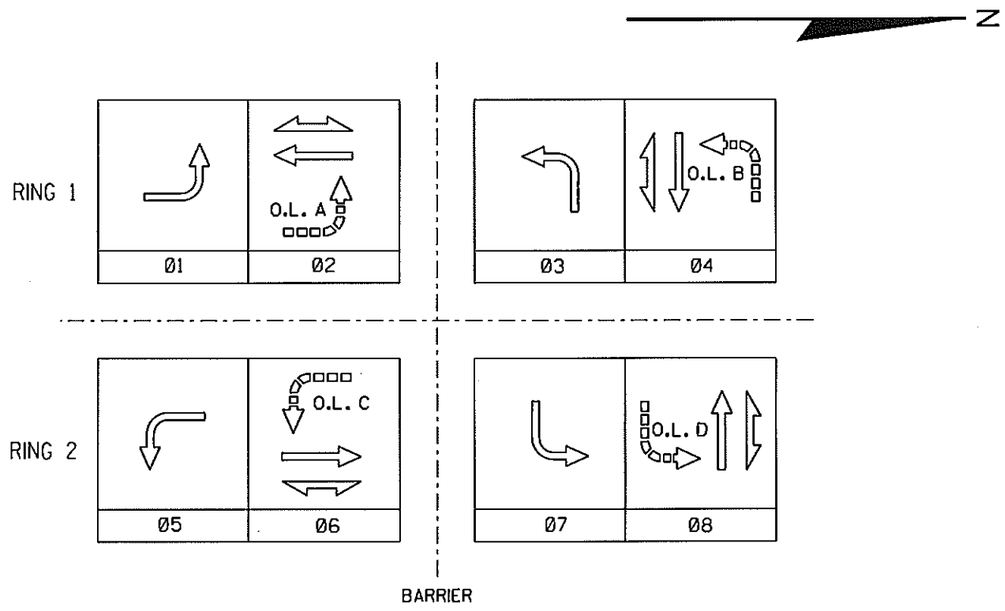




TRAFFIC CONTROL SIGNAL STH 38 & FOREST HILL AVENUE CITY OF OAK CREEK MILWAUKEE COUNTY SIGNAL NO. S40-1158				
REGION CONTACT: J. GATES DESIGNED BY: J. FAIT (TADI) REVISED BY:			PAGE 2 OF 3	
PROJECT NO: 2060-15-71	HWY: STH 38	COUNTY: MILWAUKEE	TRAFFIC SIGNAL PLAN	SHEET E

FILE NAME : Proposed Signals.dgn | PLOT DATE : 12/18/2013 | PLOT BY : DSCHNABEL-TADI | PLOT NAME : | PLOT SCALE : 40.0000 sf / in. | WISDOT/CADOS SHEET 42

	HEAD NUMBERS	FLASH
Ø1	4,5	-
Ø2	6,7,8,9	R
Ø3	20,21	-
Ø4	12,13,14	R
Ø5	10,11	-
Ø6	1,2,3	R
Ø7	15,16	-
Ø8	17,18,19	R
Ø2P	28,29	
Ø4P	26,27	
Ø6P	24,25	
Ø8P	22,23	
OLA	4,5	R
OLB	20,21	R
OLC	10,11	R
OLD	15,16	R



CONTROLLER LOGIC

PHASE NUMBER	PHASE LOCKING	DUAL ENTRY W / Ø	PHASE RECALL	PHASE ACTIVE
1		6		X
2	X	6	MIN	X
3		8		X
4		8		X
5		2		X
6	X	2	MIN	X
7		4		X
8		4		X

TYPE OF INTERCONNECT/COMMUNICATION	
NONE	
CLOSED LOOP	
TWISTED PAIR*	
FIBER OPTIC*	X
FIBER OPTIC (ETHERNET)	
RADIO	

TYPE OF COORDINATION	
NONE	
TBC	X
TRAFFIC RESPONSIVE	X
ADAPTIVE	
*LOCATION OF MASTER CONTROLLER NO:	S-
SIGNAL SYSTEM #:	SS-00-06

TYPE OF LIGHTING	
BY OTHER AGENCY	
IN TRAFFIC SIGNAL CABINET	X
IN SEPARATE DOT LIGHTING CABINET	

TYPE OF PRE-EMPT	
NONE	
RAILROAD	
EMERGENCY VEHICLE	X
GTT	X
TOMAR	
HARDWIRE	
OTHER	
LIFT BRIDGE	
QUEUE DETECTOR	

DETECTOR LOGIC

DETECTOR INPUT	3	1	7	5	11	9	15	13
PLAN LOOP DETECTOR #(S)	21	61	81					
ASSIGNED PHASE	2	6	8					
OPERATION MODE	VEH	VEH	VEH					
SWITCH								
EXTEND			X					
DELAY								

DETECTOR INPUT	19	17	23	21	27	25	31	29
PLAN LOOP DETECTOR #(S)	11	31	41	43	51	71	82	
ASSIGNED PHASE	1	3	4	4	5	7	8	
OPERATION MODE	VEH	VEH	VEH	VEH	VEH	VEH	VEH	
SWITCH	2	4			6	8		
EXTEND			X					
DELAY		*				*	X	

DETECTOR INPUT	4	2	8	6	12	10	16	14
PLAN LOOP DETECTOR #(S)	22	62						
ASSIGNED PHASE	2	6						
OPERATION MODE	VEH	VEH						
SWITCH								
EXTEND								
DELAY								

DETECTOR INPUT	20	18	24	22	28	26	32	30
PLAN LOOP DETECTOR #(S)			42				83	
ASSIGNED PHASE			4				8	
OPERATION MODE			VEH				VEH	
SWITCH								
EXTEND								
DELAY								

EMERGENCY VEHICLE PREEMPTION SEQUENCE

EMERGENCY VEHICLE DETECTOR	A	B	C	D
MOVEMENT				
PHASE	2+5	6+1	4+7	8+3

AFTER PREEMPTION SEQUENCE 2+5 OR 1+6, CONTROLLER SHALL RETURN TO PHASES 2+6.

AFTER PREEMPTION SEQUENCE 4+7 OR 8+3, CONTROLLER SHALL RETURN TO PHASES 4+8.

STH 38 & FOREST HILL AVENUE
CITY OF OAK CREEK
MILWAUKEE COUNTY

SIGNAL NO S40-1158 CABINET TYPE: TS2

CONTROLLER TYPE: Econolite

DATE 12/13 PAGE NO. 3 OF 3

JMG 12/20/2013

12/20/13 mmd

PROJECT NO: 2060-15-71	HWY: STH 38	COUNTY: MILWAUKEE	SEQUENCE OF OPERATIONS	SHEET	E

FILE NAME : Proposed Signals.dgn PLOT DATE : 12/18/2013 PLOT BY : DSCHNABEL-TADI PLOT NAME : S-400,seq,rev2 PLOT SCALE : 40.0000 sf / in. WISDOT/CADDS SHEET 42

Timing Cover Sheet for Signal: S1158 HWY: 38 and Forest Hill Ave

Date:	8/1/2017	Changes Made By:	M. Cowap
Signal No	S1158 **M134**	Highway:	38
County:	MIL	Local Hwy:	Howell Ave
Controller:	ECONOLITE	Location:	Forest Hill Ave
School:	None	Audible Ped:	No

Pre-emption

Emergency:	Yes	Type:	GTT	Phases:	2+5,6+1,4+7,3+8	EVP Maintenance Id:	0663-42-19
Railroad:	No	Type:		Phases:		EVP Contact:	Brian L. Johnston, P.E.
						Community:	Oak Creek, City of
						Contact Phone:	(414) 768-6531
						Alternate Phone:	

Coordination

System No: SS0006 Controller IP Address: 10.98.203.55

CoordType: TBC Comments:

Dip Switch Setting

DS ☑

TBC:	Yes
Tone:	No
Closed Loop:	No
Hardwire:	No

	Length	Split 1	Split 2	Split 3	Split 4
Cycle 1=	120	6:00am-12:30pm M-F	10am-6pm Sat-Sun		
Cycle 2=					
Cycle 3=	130	12:30pm-8:00pm M-F			
Cycle 4=					

Prom Replacement

Signal Plan No

Pre-empt: No

Part of a Local System: No

Local Contact:

Phone Number:

Overlaps

Overlap A= Phases:

Overlap B= Phases:

Overlap C= Phases:

Overlap D= Phases

Flash

Emergency R-R

Off Peak: No

Off Peak Times

Detector Timing

Dilemna Zone Yes Video Detection: Autoscope

Detector Number	41	81	82											
Stretch	*	*												
Right Turn Delay			*											
Left Turn Delay														

Unique Features

* = see program for detector settings; Logic statements 1-4 used for detector assignments for permitted only operation during Time Base Plan 5.

Timing Changes Log for Signal S1158 on Hwy 38 in MILWAUKEE County

Forest Hill Ave

Date Computer Changed	Date Change Made in Field	Timing Change	Reason for Change	Change By	Temp Timing
08/01/17	8/1/2017	Updated EVP pedestrian clearance times	EVP sending signal to flash	M. Cowap	No
07/13/16	7/13/2016	New coord timing, update timing to current standards	Increase in volume	D. Dedrick	No
04/20/16	4/20/2016	Removed timing pattern 2 from the schedule and extended running times for patterns 1 & 3.	Short green times for side street at STH 38 & Drexel Ave.	D. Dedrick	No
03/29/16	3/29/2016	Changed DLS input to NO on MM 5-1.	Allow time sync via CENTRACS.	E. Lloyd-Weis	No
07/23/15	7/24/2015	Implement coordination timing plan for SS0006.	Put signal into system.	J. Gates	No
07/10/15	7/8/2015	Signal timing review + signal reconstruction.	Signal turned on to permanent operation via 2060-15-71.	J. Gates	No
06/25/14	6/25/2014	Signal switched from permanent to temporary and is now maintained by the electrical contractor (JWE).	Signal reconstruction under project 2060-15-71.	J. Gates	Yes
06/05/14	6/6/2014	Increase min. green for phases 2 and 6 to 25 sec.; Decrease max. green for phase 8 to 15 sec.; Phase 8 on max recall.	Stopline loops damaged by construction.	J. Gates	Yes
06/05/14	6/5/2014	Loops 82, 84 placed on locking. Very temporary solution, timing change to follow.	Loops 83, 85 damaged by construction.	J. Gates	Yes
03/20/12		Converted timing to Marc NX.		J. Gates	No

Timing Changes Log for Signal S1158 on Hwy 38 in MILWAUKEE County

Forest Hill Ave

Date Computer Changed	Date Change Made in Field	Timing Change	Reason for Change	Change By	Temp Timing
11/05/08		Add Ph. 2 & 6 ped times and put on ped recall	Locals requested and painted crosswalks	S. Pierce	No
05/02/08	5/1/2008	Phase 5 block time D1S1	Block time too long	E. Schneider	No
04/25/08		System cycles, time of day	Operation review	E. Schneider	No
02/09/07		DST	DST	S. Pierce	No
05/19/06		Updated veh clearances for phases 4 and 8. Increased stretch for loop 41 to 2.75s.	Approach speeds incorrect.	J. Haug	No
05/19/06		Increased stretch for loop 81 to 4.5s.	Loop moved back to 250ft to accommodate 35mph speed limit.	J. Haug	No
11/11/05	11/11/2005	Took phases 4 & 8 off max recall and restored max times to 30s. Start-up time changed to 10s.	Loops 82 and 84 cut in. The adv loop 81 remains inop.	J. Haug	No
07/23/04	7/23/2004	Put Phases 4 and 8 on "Max. Recall" and decreased Max. Times to 20s.	Construction damaged Adv. and Stopline Detection.	J. Haug	Yes
01/15/03	1/16/2003	Updated timing for normal operation; added time for SB left turn phase; added time for EVP	Split phasing no longer required	D. Brantner	No
02/28/02	3/5/2002	Changed yellow and all red times for STH 38 & Forest Hill Avenue; changed detector numbers on cover sheet; changed stretch times for Forest Hill Ave	Corrected calculation errors	M. Milam	No

Timing Changes Log for Signal S1158 on Hwy 38 in MILWAUKEE County

Forest Hill Ave

Date Computer Changed	Date Change Made in Field	Timing Change	Reason for Change	Change By	Temp Timing
04/07/99		Epac	Controller Change	S. Pierce	No

Wisconsin DOT

S 40-1158 - STH 38 & Forest Hill Ave - Econolite Type - ASC3

Configuration Phase Sequence

Controller Sequence (MM)1-1-1

Hardware Alternate Sequence Enable: No

Phase Ring Sequence.....(Note: Sequences identical to the prior one are not printed)

	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
Sequence 1																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 2																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 3																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 4																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 5																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 6																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 7																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 8																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 9																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 10																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 11																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 12																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 13																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 14																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 15																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 16																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.

Phases In Use / Exclusive PED (MM)1-2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phases in Use	X	X	X	X	X	X	X	X								

Exclusive PED																

Phase Compatibility (MM)1-1-2

Phase	Compatible Phase
1	5
1	6
2	5
2	6
3	7
3	8
4	7
4	8
9	11
9	12
10	11
10	12
13	15
13	16
14	15
14	16

Phase and Overlap Descriptions

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Description																
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**L**	**K**	**L**	**M**	**N**	**O**
Description																

Administration (MM)1-7-1

Enable CU/Cabinet Interlock CRC	No
Request Download Controller Data	No
Controller Database CRC	F9D0
Enable Automatic Backup to Datakey	Yes

Backup Prevent (MM)1-1-3

	Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Timing /	1		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Backup	2	.		.	.	.	.	.	.	.	.	.	.	.	.	.	.
	3	.	.		.	.	.	.	.	.	.	.	.	.	.	.	.
	4	.	.	.		.	.	.	.	.	.	.	.	.	.	.	.
	5	.	.	.	.		.	.	.	.	.	.	.	.	.	.	.
	6	.	.	.	.	.		.	.	.	.	.	.	.	.	.	.
	7	.	.	.	.	.	.		.	.	.	.	.	.	.	.	.
	8	.	.	.	.	.	.	.		.	.	.	.	.	.	.	.
	9	.	.	.	.	.	.	.	.		.	.	.	.	.	.	.
	10	.	.	.	.	.	.	.	.	.		.	.	.	.	.	.
	11	.	.	.	.	.	.	.	.	.	.		.	.	.	.	.
	12	.	.	.	.	.	.	.	.	.	.	.		.	.	.	.
	13	.	.	.	.	.	.	.	.	.	.	.	.		.	.	.
	14	.	.	.	.	.	.	.	.	.	.	.	.	.		.	.
	15	.	.	.	.	.	.	.	.	.	.	.	.	.	.		.
	16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	

Simultaneous Gap (MM)1-1-4

	Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	1		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	2	.		.	.	.	X	.	.	.	.	.	.	.	.	.	.
	3	.	.		.	.	.	.	.	.	.	.	.	.	.	.	.
	4	.	.	.		.	.	.	X	.	.	.	.	.	.	.	.
	5	.	.	.	.		.	.	.	.	.	.	.	.	.	.	.
Phase	6	.	X	.	.	.		.	.	.	.	.	.	.	.	.	.
Must	7	.	.	.	.	.	.		.	.	.	.	.	.	.	.	.
Gap	8	.	.	.	X	.	.	.		.	.	.	.	.	.	.	.
With	9	.	.	.	.	.	.	.	.		.	.	.	.	.	.	.
Phase	10	.	.	.	.	.	.	.	.	.		.	.	.	.	.	.
	11	.	.	.	.	.	.	.	.	.	.		.	.	.	.	.
	12	.	.	.	.	.	.	.	.	.	.	.		.	.	.	.
	13	.	.	.	.	.	.	.	.	.	.	.	.		.	.	.
	14	.	.	.	.	.	.	.	.	.	.	.	.	.		.	.
	15	.	.	.	.	.	.	.	.	.	.	.	.	.	.		.
	16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
	Disable	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Load Switch Assignments (MMU Channel) (MM)1-3

	Phase / Overlap	Type	Dimming				Power Up				Auto		Flash Together
			Red	Yellow	Green	Dark	Auto	Red	Yellow	Dark	Red	Yellow	
1	1	V				+	X				X		X
2	2	V				+	X				X		
3	3	V				+	X				X		X
4	4	V				+	X				X		
5	5	V				-	X				X		
6	6	V				-	X				X		X
7	7	V				-	X				X		
8	8	V				-	X				X		X
9	2	P				+	X						
10	4	P				+	X						
11	6	P				-	X						
12	8	P				-	X						
13	1	O				+	X				X		X
14	2	O				-	X				X		X
15	3	O				+	X				X		
16	4	O				-	X				X		

Configuration Port 1 (SDLC)

SDLC Options (MM)1-4-1

BIU	1	2	3	4	5	6	7	8
Term and Facility Enable	X	X						
Detector Rack Enable	X	X						

Enable TS2/MMU Type Cabinet: Yes
Enable MMU Extended Status: Yes
Enable SDLC Stop Time: No
Enable 3 Critical RFE's Lockup: Yes

MMU Program (MM)1-4-2

Channel Can Serve with Channel	
Channel 1	**Channel 2**
1	5
1	6
1	11
2	5
2	6
2	9
2	11
3	7
3	8
3	12
4	7
4	8
4	10
4	12
5	9
6	9
6	11
7	10
8	10
8	12
9	11
10	12

Color Check Enable (MM)1-4-3

Enable Color Check: Yes

MMU Channel	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Green	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Yellow	X	X	X	X	X	X	X	X					X	X	X	X
Red		X		X		X		X								

Secondary To Secondary Addressing (MM)1-4-4

ID	1	2	3	4	5	6	7	8	MMU
Term and Facility Enable									

ID	1	2	3	4	5	6	7	8	Diag
Detector Rack Enable									

Diagonstics (Test Fixture) Enable: No

Wisconsin DOT

S 40-1158 - STH 38 & Forest Hill Ave - Econolite Type - ASC3

Configuration Communications

Ethernet Port Configuration (MM)1-5-1

Controller IP: 10.98.203.55
Subnet Mask: 255.255.254.0
Default Gateway IP: 10.98.202.1
Server IP: 10.70.10.1

NTCIP Parameters (MM)1-5-5

Backup Time: 0
UDP Port: 501
Ethernet Priority: 1
Port 2 Priority: 4
Port 3A Priority: 2
Port 3B Priority: 3

Port Configuration (MM)1-5-2 to 1-5-4

Port	2 (C50S)	3A (C21S)	3B (C22S)
Protocol	NTCIP	NTCIP	Terminal
Enable	No	Yes	No
Data Rate	9600	19.2K	1200
Data Parity Stop	8 N 1	8 N 1	8 0 1
Modem Setup String	None	None	None
User String			
Comm Port Address	1	1	0
System Detector 9-1	0	0	0
Telemetry Response Delay	0.0	0.0	0.0
Duplex Half/Full	Full	Full	Full
Flow Control	Yes	Yes	Yes
AB3418 NTCIP Group Address	0	0	0
AB3418 NTCIP Single Flag Enable	No	No	No
RTS to CTS Delay	0.0	0.0	3.0
RTS Turn Off Delay	0.0	0.0	2.0
Droupout Time	10	10	10
Early RTS	No	No	No
Telemetry Mode	FSK	FSK	FSK
Rail Road	0	0	0
Rail Road Line	0	0	0
ATCS Group	0	0	0
Wayside Device	0	0	0
ATCS Device	0	0	0
Wayside SubNode	0	0	0
ATCS SubNode	0	0	0

ECPIP Parameters (MM)1-5-6

Controller Address: 0
Expanded System Detector Address: 0

Local System Detector

Local System Detector	Number

Wisconsin DOT

S 40-1158 - STH 38 & Forest Hill Ave - Econolite Type - ASC3

Configuration Logging/Display

Event Logging (MM)1-6-1

Critical RFE's	Yes	3 Critical RFE's in 24 Hours	Yes
MMU Flash Faults	Yes	Local Flash Faults	Yes
Non-Critical RFE's (Det/Test)	Yes	Detector Errors	Yes
Coordination Errors	Yes	Controller Download	Yes
Preempt	Yes	TSP	Yes
Power On/Off	Yes	Low Battery	Yes
Access	Yes	Data Change	Yes
Online/Offline	Yes		

Alarm Log	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Enable Logging	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Display Options (MM)1-7-2

Key Click Enable:	Yes
Backlight Enable:	Yes
LED Mode:	Single Color
Main Status Display Mode:	Basic
Screen Format:	Advanced
Trans Mode Pop-up Disable:	No

Sign On (MM)8-5

Sign On Message Line 1: INTERSECTION NAME:
Sign On Message Line 2: WisDOT Data Base

Wisconsin DOT

S 40-1158 - STH 38 & Forest Hill Ave - Econolite Type - ASC3

Logic Processor Page 1

Statement Control (MM)1-8-1

LP	Statement Control
1	E
2	E
3	E
4	E

Wisconsin DOT

S 40-1158 - STH 38 & Forest Hill Ave - Econolite Type - ASC3

Logic Processor Page 2

Logic Statements (MM)1-8-2

Statement Number: 1

IF:

	Assignment	#		State
IF	DETECTOR	17	IS	ON
AND	ACTION PLAN NUM		IS	5

THEN:

Assignment	#	State
CALL PHASE	4	ON

ELSE:

Assignment	#	State

Statement Number: 2

IF:

	Assignment	#		State
IF	DETECTOR	19	IS	ON
AND	ACTION PLAN NUM		IS	5

THEN:

Assignment	#	State
CALL PHASE	2	ON

ELSE:

Assignment	#	State

Statement Number: 3

IF:

	Assignment	#		State
IF	DETECTOR	25	IS	ON
AND	ACTION PLAN NUM		IS	5

THEN:

Assignment	#	State
CALL PHASE	8	ON

ELSE:

Assignment	#	State

Statement Number: 4

IF:

	Assignment	#		State
IF	DETECTOR	27	IS	ON
AND	ACTION PLAN NUM		IS	5

THEN:

Assignment	#	State
CALL PHASE	6	ON

ELSE:

Assignment	#	State

Wisconsin DOT

S 40-1158 - STH 38 & Forest Hill Ave - Econolite Type - ASC3

Controller Timing Plan (MM)2-1

Plan 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction																
Min Green	6	15	6	10	6	15	6	10	0	0	0	0	0	0	0	0
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	7	0	7	0	7	0	7	0	0	0	0	0	0	0	0
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	29	0	35	0	28	0	37	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	1.5	3.4	1.5	1.5	1.5	3.0	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	25	45	25	30	25	45	25	30	0	0	0	0	0	0	0	0
Max 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.5	4.3	3.5	4.6	3.5	4.3	3.5	4.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	2.0	2.5	2.0	3.0	2.0	2.5	2.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	1.3	0.0	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	6	22	6	10	6	20	6	10	0	0	0	0	0	0	0	0
Time B4	25	22	25	30	25	25	25	30	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	23	0	0	0	25	0	0	0	0	0	0	0	0	0	0
Min Gap	1.5	3.5	1.5	1.5	1.5	3.5	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Controller Overlaps

Vehicle Overlaps (MM)2-2

Overlap	Type	Lag Green	Yellow	Red	Advance Green

Phases

Overlap	Phase	Included	Protect	Ped Protect	Not Overlap	Modifier	Lag X Phase	Lag 2 Phase	Flash Green

PPLT FYA

Overlap	Protected Left Turn	Opposing Through	Flash Arrow Output	Flash Arrow Channel	FYA Delay	FYA Clearance	Special Function Disable	Ped Protected
E	1	2	Ped Yellow	9	0.0	0.0	0	No
F	3	4	Ped Yellow	10	0.0	0.0	0	No
G	5	6	Ped Yellow	11	0.0	0.0	0	No
H	7	8	Ped Yellow	12	0.0	0.0	0	No

Guaranteed Minimum Time Data (MM) 2-4

Phase Time Data

Phase	Min Green	Walk	Ped Clear	Yellow	Red Clear	Overlap Green
A01	1	0	7	3.0	0.0	1
B02	1	0	7	3.0	0.0	1
C03	1	0	7	3.0	0.0	1
D04	1	0	7	3.0	0.0	1
E05	1	0	7	3.0	0.0	1
F06	1	0	7	3.0	0.0	1
G07	1	0	7	3.0	0.0	1
H08	1	0	7	3.0	0.0	1
I09	1	0	7	3.0	0.0	1
J10	1	0	7	3.0	0.0	1
K11	1	0	7	3.0	0.0	1
L12	1	0	7	3.0	0.0	1
M13	1	0	7	3.0	0.0	1
N14	1	0	7	3.0	0.0	1
O15	1	0	7	3.0	0.0	1
P16	1	0	7	3.0	0.0	1

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Controller Pedestrian Overlaps

Pedestrian Overlaps (MM) 2-3

Included Phase	Ped Overlap

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Controller Start/Fash (MM) 2-5

Startup

Phase	Phase Setting
2	G
6	G

Overlap
E
F
G
H

Flash > Mon: No
Flash Time: 10
All Red: 6
Power Start Sequence: 1
MUTCD Enabled: Yes
MUTCD Yellow to Green: No

Automatic Flash

Entry Phase
2
6

Exit Phase
2
6

Overlap Exit
E
F
G
H

Flash > Mon: No
Exit Flash Interval: G
Minimum Auto Flash: 8
Minimumin Recall: No
Cycle Through Phase: No

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Controller Options

Controller Options (MM)2-6-1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Flashing Green Phase																
Guaranteed Passage																
Non Act 1																
Non Act 2																
Dual Entry		X		X		X		X								
Conditional Service																
Conditional Reservice																
Ped Reservice		X		X		X		X								
Rest In Walk																
Flashing Walk																
Ped Clear Yellow																
Ped Clear Red																

IGRN + Veh Ext																

Ped Clear Protect: On Red Revert: 2.0 MUTCD 3 Seconds Don't Walk: No

Act Pre-Time (MM)2-7

Pre-Time Mode Enable: No Free Input Enables Pre-Timed: Yes

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Pre-Timed Phase																

Phase Recall Options (MM)2-8

Plan 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector		X				X										
Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
AI Calc																

Plan 2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector		X				X										
Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
AI Calc																

Plan 3

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector		X				X										
Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
AI Calc																

Plan 4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector		X				X										
Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
AI Calc																

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Coordination Options

Coordination Options (MM)3-1

Manual Pattern	Auto	ECPI Coord	Yes
System Source	TBC	System Format	STD

Splits In	Seconds	Offsets In	Seconds
Transition	Add	Max Select	MAXINH
Dwell/Add Time	0		
Delay Coord Walk to LZ	No	Force Off	Fixed
Offset Reference	Lead	Use Ped Time	No
Ped Recall	No	Ped Reservice	No
Local Zero Override	No	FO Added Initial Green	Yes
Re-Sync Count	3	Multisync	No

Auto Perm Minimum Green (Seconds) (MM)3-4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Minimum Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Split Demand (MM)3-5

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Demand 1																
Demand 2																

Demand	1	2
Detector	0	0
Call Time (Sec)	0	0
Cycle Count	0	0

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Coordination Pattern Data
Pattern Data (MM)3-2

Pattern - 1

Split Pattern	1	TS2 (Pat-Off)	0-1	Splits in	Seconds
Cycle	120	Std (COS)	0	Offsets in	Seconds
Offset Value	20s	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	5		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description																
Splits (Split Pat 1)	13	65	13	29	13	65	16	26	0	0	0	0	0	0	0	0
Preference 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Preference 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Disp.	-	0	0	0
Split Sum	120s	120s	0s	0s

Misc. Data

Veh. Permissive 1	0	Veh. Permissive 2	0	Veh. Permissive 2 Disp.	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern Data

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coordinated Phases		X				X										
Vehicle Recalls																
Ped Recalls																
Max Recalls																
Phase Omit																

Special Function Output								

Pattern - 3

Split Pattern	3	TS2 (Pat-Off)	0-3	Splits in	Seconds
Cycle	130	Std (COS)	0	Offsets in	Seconds
Offset Value	44s	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	2		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description																
Splits (Split Pat 3)	18	59	13	40	15	62	26	27	0	0	0	0	0	0	0	0
Preference 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Preference 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Disp.	-	0	0	0
Split Sum	130s	130s	0s	0s

Misc. Data

Veh. Permissive 1	0	Veh. Permissive 2	0	Veh. Permissive 2 Disp.	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern Data

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coordinated Phases		X				X										
Vehicle Recalls																
Ped Recalls																
Max Recalls																
Phase Omit																
Special Function Output																

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Preemptor

Preempt Plan (MM)4-1

Plan 3

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Track Clear Vehicle																
Track Clear Overlap																
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Vehicle		X			X											
Dwell Ped																
Dwell Overlap					F1		F1									
Cycling Vehicle																
Cycling Ped																
Cycling Overlap																
Exit Phase		X				X										
Exit Calls																
Special Funciton																

Enable	Yes	Preempt Override	No	Interlock Enable	No
Detector Lock	Yes	Delay	1	Inhibit	0
Override Flash	No	Duration	0	CLR > GRN	No
Term Overlap Asap	No	PC Through Yellow	No	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off

Linked Pmt	0	Flash Exit Color	Green	Exit Option	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Preempt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	5	3	5	25.5	25.5
	Min Grn	Ext Grn	Max Grn	Yellow	Red
Track Clear	0	0	0	25.5	25.5
	Min Dwell	Pmt Ext	Max Time	Yellow	Red
Dwell / Cycle-Exit	10	5.0	0	25.5	25.5

Preempt Active Out	On	Preempt Active Dwell	No
Other Priority Preempt	On	Non-Priority Preempt	F1
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Pri Return % Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Track Clear Vehicle																
Track Clear Overlap																
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Vehicle	X					X										
Dwell Ped																
Dwell Overlap					F1		F1									
Cycling Vehicle																
Cycling Ped																
Cycling Overlap																
Exit Phase		X				X										
Exit Calls																
Special Funciton																

Enable	Yes	Preempt Override	No	Interlock Enable	No
Detector Lock	Yes	Delay	1	Inhibit	0
Override Flash	No	Duration	0	CLR > GRN	No
Term Overlap Asap	No	PC Through Yellow	No	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	Flash Exit Color	Green	Exit Option	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Preempt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	5	3	5	25.5	25.5
	Min Grn	Ext Grn	Max Grn	Yellow	Red
Track Clear	0	0	0	25.5	25.5
	Min Dwell	Pmt Ext	Max Time	Yellow	Red
Dwell / Cycle-Exit	10	5.0	0	25.5	25.5

Preempt Active Out	On	Preempt Active Dwell	No
Other Priority Preempt	On	Non-Priority Preempt	F1
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Veh Pri Return % Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 5

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Track Clear Vehicle																
Track Clear Overlap																
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Vehicle				X			X									
Dwell Ped																
Dwell Overlap						F1		F1								
Cycling Vehicle																
Cycling Ped																
Cycling Overlap																
Exit Phase				X				X								
Exit Calls																
Special Funciton																

Enable	Yes	Preempt Override	No	Interlock Enable	No
Detector Lock	Yes	Delay	1	Inhibit	0
Override Flash	No	Duration	0	CLR > GRN	No
Term Overlap Asap	No	PC Through Yellow	No	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	Flash Exit Color	Green	Exit Option	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Preempt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	5	3	5	25.5	25.5
	Min Grn	**Ext Grn**	**Max Grn**	**Yellow**	**Red**
Track Clear	0	0	0	25.5	25.5
	Min Dwell	**Pmt Ext**	**Max Time**	**Yellow**	**Red**
Dwell / Cycle-Exit	10	5.0	0	25.5	25.5

Preempt Active Out	On	Preempt Active Dwell	No
Other Priority Preempt	On	Non-Priority Preempt	F1
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Pri Return % Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 6

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Track Clear Vehicle																
Track Clear Overlap																
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Vehicle			X					X								
Dwell Ped																
Dwell Overlap						F1		F1								
Cycling Vehicle																
Cycling Ped																
Cycling Overlap																
Exit Phase				X				X								
Exit Calls																
Special Funciton																

Enable	Yes	Preempt Override	No	Interlock Enable	No
Detector Lock	Yes	Delay	1	Inhibit	0

Override Flash	No	Duration	0	CLR > GRN	No
Term Overlap Asap	No	PC Through Yellow	No	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	Flash Exit Color	Green	Exit Option	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Preempt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	5	3	5	25.5	25.5
	Min Grn	**Ext Grn**	**Max Grn**	**Yellow**	**Red**
Track Clear	0	0	0	25.5	25.5
	Min Dwell	**Pmt Ext**	**Max Time**	**Yellow**	**Red**
Dwell / Cycle-Exit	10	5.0	0	25.5	25.5

Preempt Active Out	On	Preempt Active Dwell	No
Other Priority Preempt	On	Non-Priority Preempt	F1
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Pri Return % Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Wisconsin DOT

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Preemptor Preempt Filtering
Enable Preempt Filtering and TSP/SCP (MM)4-2

Input	Solid	Pulsing
1	...Bypassed...	...Bypassed...
2	...Bypassed...	...Bypassed...
3	Preemption -3	TSP/SCP -1
4	Preemption -4	TSP/SCP -2
5	Preemption -5	TSP/SCP -3
6	Preemption -6	TSP/SCP -4
7	Preemption -7	...Bypassed...
8	Preemption -8	...Bypassed...
9	Preemption -9	...Bypassed...
10	Preemption -10	...Bypassed...

Wisconsin DOT

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Time Base Clock/Calendar
Clock/Calendar Options (MM)5-1

Enable Action Plan:	0
Sync Reference Time:	12:00 AM
Sync Reference:	Reference Time
Day Light Savings:	No
Time Reset Input Set Time:	3:30:00
Standard Time From GMT:	0

Wisconsin DOT

Time Base Action Plan
Action Plan (MM)5-2

Action Plan - 1

Pattern	1	Override System	No
Timing Plan	0	Sequence	5
Veh Det Plan	2	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																

Special Function								

Auxilliary Function			

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 2

Pattern	2	Override System	No
Timing Plan	0	Sequence	1
Veh Det Plan	2	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 3

Pattern	3	Override System	No
Timing Plan	0	Sequence	2
Veh Det Plan	2	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 4

Pattern	4	Override System	No
Timing Plan	0	Sequence	1
Veh Det Plan	2	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 5

Pattern	254 - FREE	Override System	No
Timing Plan	0	Sequence	0
Veh Det Plan	2	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit	X		X		X		X									
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 99

Pattern	255 - FLSH	Override System	No
Timing Plan	0	Sequence	0
Veh Det Plan	0	Detector Log	None
Flash	Yes	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 100

Pattern	254 - FREE	Override System	No
Timing Plan	0	Sequence	0
Veh Det Plan	1	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Wisconsin DOT

S 40-1158 - STH 38 & Forest Hill Ave - Econolite Type - ASC3

Time Base Day Plan/Schedule
Day Plan (MM)5-3

Day Plan - 1

Event	Action Plan	Start Time
1	5	12:01 AM
2	100	4:30 AM
3	1	6:00 AM
4	3	12:30 PM
5	100	8:00 PM
6	5	10:30 PM

Day Plan - 2

Event	Action Plan	Start Time
1	5	12:01 AM
2	100	4:30 AM
3	1	10:00 AM
4	100	6:00 PM
5	5	10:30 PM

Schedule (MM)5-4

Schedule Number - 1

Day Plan Number: 1

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	X	X	X	X	X	X	X	X	X	X	X	X

Day of Week	Sun	Mon	Tue	Wed	Thur	Fri	Sat
		X	X	X	X	X	

Day of Month	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

Schedule Number - 2

Day Plan Number: 2

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	X	X	X	X	X	X	X	X	X	X	X	X

Day of Week	Sun	Mon	Tue	Wed	Thur	Fri	Sat
	X						X

Day of Month	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

Wisconsin DOT

S 40-1158 - STH 38 & Forest Hill Ave - Econolite Type - ASC3

Time Base Exceptions

Exception Day Program (MM)5-5

Day	Fixed/Float	Month	Day of Week/Month	Week of Month/Year	Day Plan

Wisconsin DOT

S 40-1158 - STH 38 & Forest Hill Ave - Econolite Type - ASC3

Detectors

Detectors Page 1

Vehicle Detectors Setup (MM)6-1

Vehicle Plan	Detector Number	Called	Type

Vehicle Detector Setup (MM)6-2 continued

Detector Number	Type	TS2 Detector	Detector Description
1	N-NTCIP	Yes	
2	N-NTCIP	Yes	
3	N-NTCIP	Yes	
4	N-NTCIP	Yes	
5	N-NTCIP	Yes	
6	N-NTCIP	Yes	
7	N-NTCIP	Yes	
8	N-NTCIP	Yes	
9	N-NTCIP	Yes	
10	N-NTCIP	Yes	
11	N-NTCIP	Yes	
12	N-NTCIP	Yes	
13	N-NTCIP	Yes	
14	N-NTCIP	Yes	
15	N-NTCIP	Yes	
16	N-NTCIP	Yes	
17	N-NTCIP	Yes	
18	N-NTCIP	Yes	
19	N-NTCIP	Yes	
20	N-NTCIP	Yes	
21	N-NTCIP	Yes	
22	N-NTCIP	Yes	
23	N-NTCIP	Yes	
24	N-NTCIP	Yes	
25	N-NTCIP	Yes	
26	N-NTCIP	Yes	
27	N-NTCIP	Yes	
28	N-NTCIP	Yes	
29	N-NTCIP	Yes	
30	N-NTCIP	Yes	
31	N-NTCIP	Yes	
32	N-NTCIP	Yes	
33	N-NTCIP	Yes	
34	N-NTCIP	Yes	
35	N-NTCIP	Yes	
36	N-NTCIP	Yes	
37	N-NTCIP	Yes	
38	N-NTCIP	Yes	
39	N-NTCIP	Yes	
40	N-NTCIP	Yes	
41	N-NTCIP	Yes	
42	N-NTCIP	Yes	
43	N-NTCIP	Yes	
44	N-NTCIP	Yes	
45	N-NTCIP	Yes	
46	N-NTCIP	Yes	
47	N-NTCIP	Yes	
48	N-NTCIP	Yes	
49	N-NTCIP	Yes	
50	N-NTCIP	Yes	
51	N-NTCIP	Yes	
52	N-NTCIP	Yes	
53	N-NTCIP	Yes	
54	N-NTCIP	Yes	
55	N-NTCIP	Yes	
56	N-NTCIP	Yes	
57	N-NTCIP	Yes	
58	N-NTCIP	Yes	
59	N-NTCIP	Yes	
60	N-NTCIP	Yes	

61	N-NTCIP	Yes	
62	N-NTCIP	Yes	
63	N-NTCIP	Yes	
64	N-NTCIP	Yes	

Vehicle Detector Setup (MM)6-2 continued

Det Num	Veh Det Plan	Phase	ECPI Log	Call Option	Delay Time	Ext Option	Extend Time / Passage Time	Queue Lim / Discon. Time	Use Added Initial	Cross Switch Phase	Lock In	NTCIP Vol.	NTCIP Occ.
1	1	6	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
1	2	6	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
1	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
1	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
2	1	6	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
2	2	6	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
2	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
2	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
3	1	2	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
3	2	2	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
3	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
3	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
4	1	2	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
4	2	2	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
4	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
4	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
5	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
5	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
5	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
5	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
6	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
6	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
6	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
6	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
7	1	8	No	No	0.0	Passage	4.4	0	Yes	0	None	No	No
7	2	8	No	No	0.0	Passage	4.4	0	Yes	0	None	No	No
7	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
7	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
8	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
8	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
8	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
8	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
9	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
9	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
9	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
9	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
10	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
10	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
10	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
10	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
11	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
11	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
11	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
11	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
12	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
12	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
12	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
12	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
13	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
13	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
13	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
13	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
14	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No

14	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
14	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
14	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
15	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
15	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
15	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
15	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
16	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
16	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
16	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
16	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
17	1	3	No	Yes	0.0	Passage	0.0	0	Yes	4	None	No	No
17	2	3	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
17	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
17	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
18	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
18	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
18	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
18	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
19	1	1	No	Yes	0.0	Passage	0.0	0	Yes	2	None	No	No
19	2	1	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
19	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
19	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
20	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
20	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
20	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
20	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
21	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
21	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
21	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
21	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
22	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
22	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
22	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
22	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
23	1	4	No	No	0.0	Passage	4.0	0	Yes	0	None	No	No
23	2	4	No	No	0.0	Passage	4.0	0	Yes	0	None	No	No
23	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
23	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
24	1	4	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
24	2	4	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
24	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
24	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
25	1	7	No	Yes	0.0	Passage	0.0	0	Yes	8	None	No	No
25	2	7	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
25	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
25	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
26	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
26	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
26	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
26	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
27	1	5	No	Yes	0.0	Passage	0.0	0	Yes	6	None	No	No
27	2	5	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
27	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
27	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
28	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
28	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
28	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
28	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
29	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
29	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
29	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
29	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No

30	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
30	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
30	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
30	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
31	1	8	No	Yes	8.0	Passage	0.0	0	Yes	0	None	No	No
31	2	8	No	Yes	8.0	Passage	0.0	0	Yes	0	None	No	No
31	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
31	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
32	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
32	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
32	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
32	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
33	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
33	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
33	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
33	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
34	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
34	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
34	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
34	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
35	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
35	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
35	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
35	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
36	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
36	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
36	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
36	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
37	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
37	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
37	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
37	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
38	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
38	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
38	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
38	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
39	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
39	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
39	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
39	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
40	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
40	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
40	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
40	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
41	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
41	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
41	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
41	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
42	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
42	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
42	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
42	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
43	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
43	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
43	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
43	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
44	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
44	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
44	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
44	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
45	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
45	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
45	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No

45	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
46	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
46	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
46	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
46	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
47	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
47	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
47	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
47	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
48	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
48	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
48	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
48	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
49	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
49	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
49	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
49	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
50	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
50	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
50	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
50	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
51	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
51	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
51	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
51	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
52	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
52	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
52	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
52	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
53	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
53	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
53	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
53	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
54	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
54	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
54	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
54	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
55	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
55	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
55	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
55	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
56	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
56	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
56	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
56	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
57	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
57	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
57	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
57	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
58	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
58	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
58	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
58	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
59	1	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No
59	2	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No
59	3	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No
59	4	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No
60	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	Yellow	No	No
60	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	Yellow	No	No
60	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	Yellow	No	No
60	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	Yellow	No	No
61	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
61	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No

61	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
61	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
62	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
62	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
62	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
62	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
63	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
63	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
63	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
63	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
64	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
64	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
64	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No
64	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No

Ped Detector Options (MM)6-3

Phase Ped Detector (Econolite)

Detector	Call Phase															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.
4	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.
5	.	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.
6	.	.	.	.	.	X	.	.	.	.	.	.	.	.	.	.
7	.	.	.	.	.	.	X	.	.	.	.	.	.	.	.	.
8	.	.	.	.	.	.	.	X	.	.	.	.	.	.	.	.
9	.	.	.	.	.	.	.	.	X	.	.	.	.	.	.	.
10	.	.	.	.	.	.	.	.	.	X	.	.	.	.	.	.
11	.	.	.	.	.	.	.	.	.	.	X	.	.	.	.	.
12	.	.	.	.	.	.	.	.	.	.	.	X	.	.	.	.
13	.	.	.	.	.	.	.	.	.	.	.	.	X	.	.	.
14	.	.	.	.	.	.	.	.	.	.	.	.	.	X	.	.
15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	X	.
16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	X

Wisconsin DOT

S 40-1158 - STH 38 & Forest Hill Ave - Econolite Type - ASC3

Detectors

Detectors Page 2

Log - Speed Detector Setup (MM)6-4

NTCIP Log Period: 60 ECPI Log Period: 15 Length Unit: Inch

Speed Detector	Local Detector	One/Two Detector	Vehicle Length	Trap Length	Enable Log
1	0	1	0	0	No
2	0	1	0	0	No
3	0	1	0	0	No
4	0	1	0	0	No
5	0	1	0	0	No
6	0	1	0	0	No
7	0	1	0	0	No

8	0	1	0	0	No
9	0	1	0	0	No
10	0	1	0	0	No
11	0	1	0	0	No
12	0	1	0	0	No
13	0	1	0	0	No
14	0	1	0	0	No
15	0	1	0	0	No
16	0	1	0	0	No

Vehicle Detector Diagnostics (MM)6-5

Plan	Detector	Counts	Act	Pres	Multiplier	Failed Time	Failed Call Delay
1	1	0	0	0	1	255	0
1	2	0	0	0	1	255	0
1	3	0	0	0	1	255	0
1	4	0	0	0	1	255	0
1	5	0	0	0	1	255	0
1	6	0	0	0	1	255	0
1	7	0	0	0	1	255	0
1	8	0	0	0	1	255	0
1	9	0	0	0	1	255	0
1	10	0	0	0	1	255	0
1	11	0	0	0	1	255	0
1	12	0	0	0	1	255	0
1	13	0	0	0	1	255	0
1	14	0	0	0	1	255	0
1	15	0	0	0	1	255	0
1	16	0	0	0	1	255	0
1	17	0	0	0	1	255	0
1	18	0	0	0	1	255	0
1	19	0	0	0	1	255	0
1	20	0	0	0	1	255	0
1	21	0	0	0	1	255	0
1	22	0	0	0	1	255	0
1	23	0	0	0	1	255	0
1	24	0	0	0	1	255	0
1	25	0	0	0	1	255	0
1	26	0	0	0	1	255	0
1	27	0	0	0	1	255	0
1	28	0	0	0	1	255	0
1	29	0	0	0	1	255	0
1	30	0	0	0	1	255	0
1	31	0	0	0	1	255	0
1	32	0	0	0	1	255	0
1	33	0	0	0	1	255	0
1	34	0	0	0	1	255	0
1	35	0	0	0	1	255	0
1	36	0	0	0	1	255	0
1	37	0	0	0	1	255	0
1	38	0	0	0	1	255	0
1	39	0	0	0	1	255	0
1	40	0	0	0	1	255	0
1	41	0	0	0	1	255	0
1	42	0	0	0	1	255	0
1	43	0	0	0	1	255	0
1	44	0	0	0	1	255	0
1	45	0	0	0	1	255	0
1	46	0	0	0	1	255	0
1	47	0	0	0	1	255	0
1	48	0	0	0	1	255	0
1	49	0	0	0	1	255	0

1	50	0	0	0	1	255	0
1	51	0	0	0	1	255	0
1	52	0	0	0	1	255	0
1	53	0	0	0	1	255	0
1	54	0	0	0	1	255	0
1	55	0	0	0	1	255	0
1	56	0	0	0	1	255	0
1	57	0	0	0	1	255	0
1	58	0	0	0	1	255	0
1	59	0	0	0	1	255	0
1	60	0	0	0	1	255	0
1	61	0	0	0	1	255	0
1	62	0	0	0	1	255	0
1	63	0	0	0	1	255	0
1	64	0	0	0	1	255	0
2	1	0	0	0	1	255	0
2	2	0	0	0	1	255	0
2	3	0	0	0	1	255	0
2	4	0	0	0	1	255	0
2	5	0	0	0	1	255	0
2	6	0	0	0	1	255	0
2	7	0	0	0	1	255	0
2	8	0	0	0	1	255	0
2	9	0	0	0	1	255	0
2	10	0	0	0	1	255	0
2	11	0	0	0	1	255	0
2	12	0	0	0	1	255	0
2	13	0	0	0	1	255	0
2	14	0	0	0	1	255	0
2	15	0	0	0	1	255	0
2	16	0	0	0	1	255	0
2	17	0	0	0	1	255	0
2	18	0	0	0	1	255	0
2	19	0	0	0	1	255	0
2	20	0	0	0	1	255	0
2	21	0	0	0	1	255	0
2	22	0	0	0	1	255	0
2	23	0	0	0	1	255	0
2	24	0	0	0	1	255	0
2	25	0	0	0	1	255	0
2	26	0	0	0	1	255	0
2	27	0	0	0	1	255	0
2	28	0	0	0	1	255	0
2	29	0	0	0	1	255	0
2	30	0	0	0	1	255	0
2	31	0	0	0	1	255	0
2	32	0	0	0	1	255	0
2	33	0	0	0	1	255	0
2	34	0	0	0	1	255	0
2	35	0	0	0	1	255	0
2	36	0	0	0	1	255	0
2	37	0	0	0	1	255	0
2	38	0	0	0	1	255	0
2	39	0	0	0	1	255	0
2	40	0	0	0	1	255	0
2	41	0	0	0	1	255	0
2	42	0	0	0	1	255	0
2	43	0	0	0	1	255	0
2	44	0	0	0	1	255	0
2	45	0	0	0	1	255	0
2	46	0	0	0	1	255	0
2	47	0	0	0	1	255	0
2	48	0	0	0	1	255	0

2	49	0	0	0	1	255	0
2	50	0	0	0	1	255	0
2	51	0	0	0	1	255	0
2	52	0	0	0	1	255	0
2	53	0	0	0	1	255	0
2	54	0	0	0	1	255	0
2	55	0	0	0	1	255	0
2	56	0	0	0	1	255	0
2	57	0	0	0	1	255	0
2	58	0	0	0	1	255	0
2	59	0	0	0	1	255	0
2	60	0	0	0	1	255	0
2	61	0	0	0	1	255	0
2	62	0	0	0	1	255	0
2	63	0	0	0	1	255	0
2	64	0	0	0	1	255	0
3	1	0	0	0	1	255	0
3	2	0	0	0	1	255	0
3	3	0	0	0	1	255	0
3	4	0	0	0	1	255	0
3	5	0	0	0	1	255	0
3	6	0	0	0	1	255	0
3	7	0	0	0	1	255	0
3	8	0	0	0	1	255	0
3	9	0	0	0	1	255	0
3	10	0	0	0	1	255	0
3	11	0	0	0	1	255	0
3	12	0	0	0	1	255	0
3	13	0	0	0	1	255	0
3	14	0	0	0	1	255	0
3	15	0	0	0	1	255	0
3	16	0	0	0	1	255	0
3	17	0	0	0	1	255	0
3	18	0	0	0	1	255	0
3	19	0	0	0	1	255	0
3	20	0	0	0	1	255	0
3	21	0	0	0	1	255	0
3	22	0	0	0	1	255	0
3	23	0	0	0	1	255	0
3	24	0	0	0	1	255	0
3	25	0	0	0	1	255	0
3	26	0	0	0	1	255	0
3	27	0	0	0	1	255	0
3	28	0	0	0	1	255	0
3	29	0	0	0	1	255	0
3	30	0	0	0	1	255	0
3	31	0	0	0	1	255	0
3	32	0	0	0	1	255	0
3	33	0	0	0	1	255	0
3	34	0	0	0	1	255	0
3	35	0	0	0	1	255	0
3	36	0	0	0	1	255	0
3	37	0	0	0	1	255	0
3	38	0	0	0	1	255	0
3	39	0	0	0	1	255	0
3	40	0	0	0	1	255	0
3	41	0	0	0	1	255	0
3	42	0	0	0	1	255	0
3	43	0	0	0	1	255	0
3	44	0	0	0	1	255	0
3	45	0	0	0	1	255	0
3	46	0	0	0	1	255	0
3	47	0	0	0	1	255	0

3	48	0	0	0	1	255	0
3	49	0	0	0	1	255	0
3	50	0	0	0	1	255	0
3	51	0	0	0	1	255	0
3	52	0	0	0	1	255	0
3	53	0	0	0	1	255	0
3	54	0	0	0	1	255	0
3	55	0	0	0	1	255	0
3	56	0	0	0	1	255	0
3	57	0	0	0	1	255	0
3	58	0	0	0	1	255	0
3	59	0	0	0	1	255	0
3	60	0	0	0	1	255	0
3	61	0	0	0	1	255	0
3	62	0	0	0	1	255	0
3	63	0	0	0	1	255	0
3	64	0	0	0	1	255	0
4	1	0	0	0	1	255	0
4	2	0	0	0	1	255	0
4	3	0	0	0	1	255	0
4	4	0	0	0	1	255	0
4	5	0	0	0	1	255	0
4	6	0	0	0	1	255	0
4	7	0	0	0	1	255	0
4	8	0	0	0	1	255	0
4	9	0	0	0	1	255	0
4	10	0	0	0	1	255	0
4	11	0	0	0	1	255	0
4	12	0	0	0	1	255	0
4	13	0	0	0	1	255	0
4	14	0	0	0	1	255	0
4	15	0	0	0	1	255	0
4	16	0	0	0	1	255	0
4	17	0	0	0	1	255	0
4	18	0	0	0	1	255	0
4	19	0	0	0	1	255	0
4	20	0	0	0	1	255	0
4	21	0	0	0	1	255	0
4	22	0	0	0	1	255	0
4	23	0	0	0	1	255	0
4	24	0	0	0	1	255	0
4	25	0	0	0	1	255	0
4	26	0	0	0	1	255	0
4	27	0	0	0	1	255	0
4	28	0	0	0	1	255	0
4	29	0	0	0	1	255	0
4	30	0	0	0	1	255	0
4	31	0	0	0	1	255	0
4	32	0	0	0	1	255	0
4	33	0	0	0	1	255	0
4	34	0	0	0	1	255	0
4	35	0	0	0	1	255	0
4	36	0	0	0	1	255	0
4	37	0	0	0	1	255	0
4	38	0	0	0	1	255	0
4	39	0	0	0	1	255	0
4	40	0	0	0	1	255	0
4	41	0	0	0	1	255	0
4	42	0	0	0	1	255	0
4	43	0	0	0	1	255	0
4	44	0	0	0	1	255	0
4	45	0	0	0	1	255	0
4	46	0	0	0	1	255	0

4	47	0	0	0	1	255	0
4	48	0	0	0	1	255	0
4	49	0	0	0	1	255	0
4	50	0	0	0	1	255	0
4	51	0	0	0	1	255	0
4	52	0	0	0	1	255	0
4	53	0	0	0	1	255	0
4	54	0	0	0	1	255	0
4	55	0	0	0	1	255	0
4	56	0	0	0	1	255	0
4	57	0	0	0	1	255	0
4	58	0	0	0	1	255	0
4	59	0	0	0	1	255	0
4	60	0	0	0	1	255	0
4	61	0	0	0	1	255	0
4	62	0	0	0	1	255	0
4	63	0	0	0	1	255	0
4	64	0	0	0	1	255	0

Pedestrian Detector Diagnotics (MM)6-6

Plan	Detector	Counts	Act	Pres	Multiplier

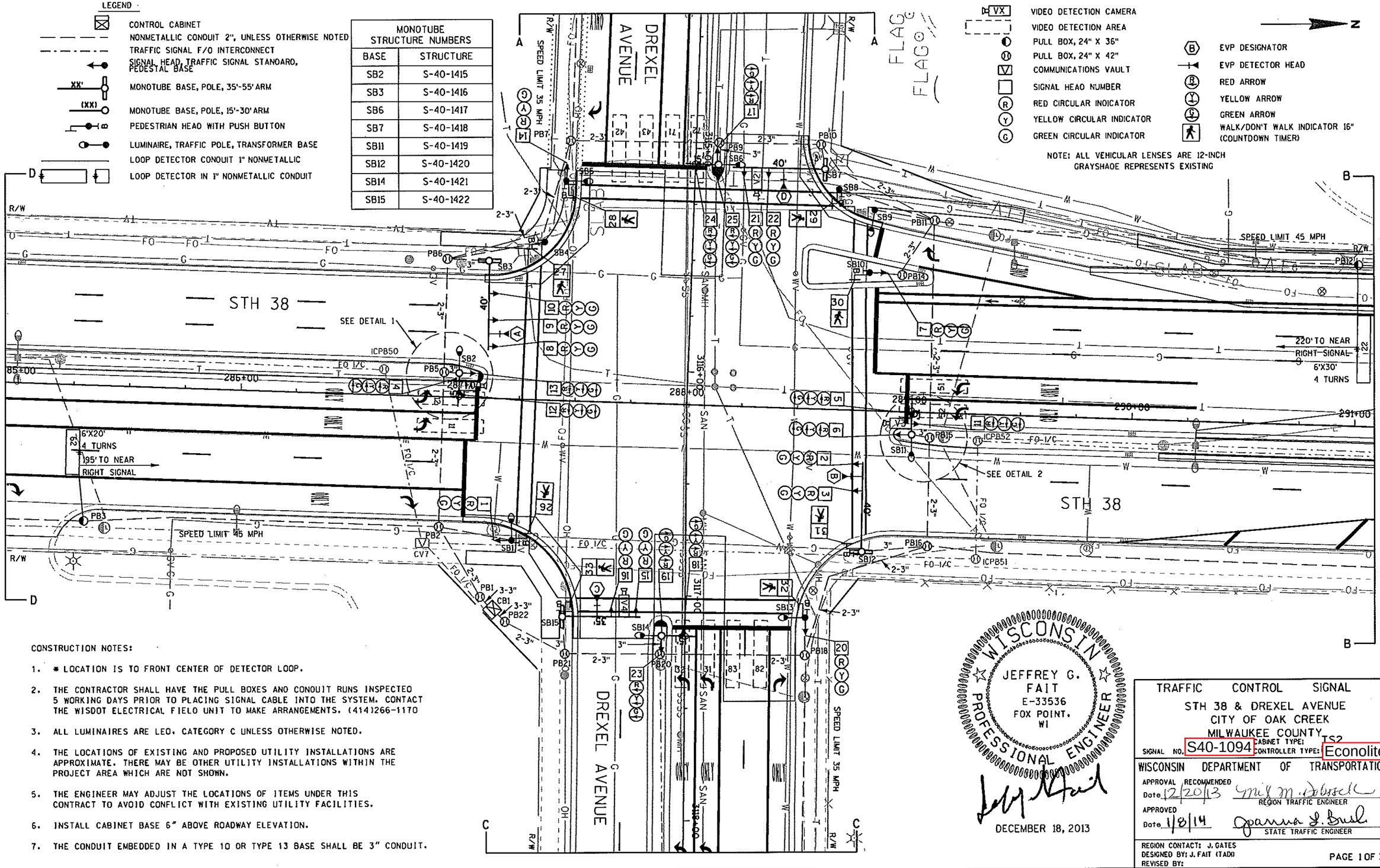
LEGEND

- CONTROL CABINET
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- TRAFFIC SIGNAL F/O INTERCONNECT
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- XX' — MONOTUBE BASE, POLE, 35'-55' ARM
- (XX) — MONOTUBE BASE, POLE, 15'-30' ARM
- B — PEDESTRIAN HEAD WITH PUSH BUTTON
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
- LOOP DETECTOR CONDUIT 1" NONMETALLIC
- LOOP DETECTOR IN 1" NONMETALLIC CONDUIT

MONOTUBE STRUCTURE NUMBERS	
BASE	STRUCTURE
SB2	S-40-1415
SB3	S-40-1416
SB6	S-40-1417
SB7	S-40-1418
SB11	S-40-1419
SB12	S-40-1420
SB14	S-40-1421
SB15	S-40-1422

- VX — VIDEO DETECTION CAMERA
- VIDEO DETECTION AREA
- PULL BOX, 24" X 36"
- PULL BOX, 24" X 42"
- V — COMMUNICATIONS VAULT
- SIGNAL HEAD NUMBER
- R — RED CIRCULAR INDICATOR
- Y — YELLOW CIRCULAR INDICATOR
- G — GREEN CIRCULAR INDICATOR
- B — EVP DESIGNATOR
- EVP DETECTOR HEAD
- R — RED ARROW
- Y — YELLOW ARROW
- G — GREEN ARROW
- WALK/DON'T WALK INDICATOR 16" (COUNTDOWN TIMER)

NOTE: ALL VEHICULAR LENSES ARE 12-INCH
GRAYSHAOE REPRESENTS EXISTING



CONSTRUCTION NOTES:

1. * LOCATION IS TO FRONT CENTER OF DETECTOR LOOP.
2. THE CONTRACTOR SHALL HAVE THE PULL BOXES AND CONDUIT RUNS INSPECTED 5 WORKING DAYS PRIOR TO PLACING SIGNAL CABLE INTO THE SYSTEM. CONTACT THE WISDOT ELECTRICAL FIELD UNIT TO MAKE ARRANGEMENTS. (414)266-1170
3. ALL LUMINAIRES ARE LED, CATEGORY C UNLESS OTHERWISE NOTED.
4. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA WHICH ARE NOT SHOWN.
5. THE ENGINEER MAY ADJUST THE LOCATIONS OF ITEMS UNDER THIS CONTRACT TO AVOID CONFLICT WITH EXISTING UTILITY FACILITIES.
6. INSTALL CABINET BASE 6" ABOVE ROADWAY ELEVATION.
7. THE CONDUIT EMBEDDED IN A TYPE 10 OR TYPE 13 BASE SHALL BE 3" CONDUIT.

WISCONSIN
JEFFREY G. FAIT
E-33536
FOX POINT, WI
PROFESSIONAL ENGINEER
DECEMBER 18, 2013

TRAFFIC CONTROL SIGNAL
STH 38 & DREXEL AVENUE
CITY OF OAK CREEK
MILWAUKEE COUNTY
SIGNAL NO. S40-1094 CABINET TYPE: TS2
CONTROLLER TYPE: Econolite

WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVAL RECOMMENDED Date 12/20/13 — REGION TRAFFIC ENGINEER
APPROVED Date 1/8/14 — STATE TRAFFIC ENGINEER

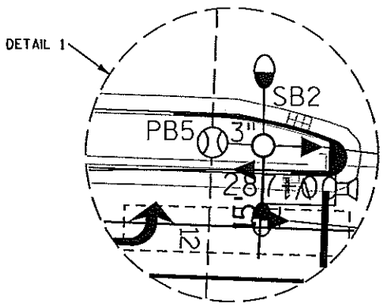
REGION CONTACT: J. GATES
DESIGNED BY: J. FAIT (TADI)
REVISED BY:

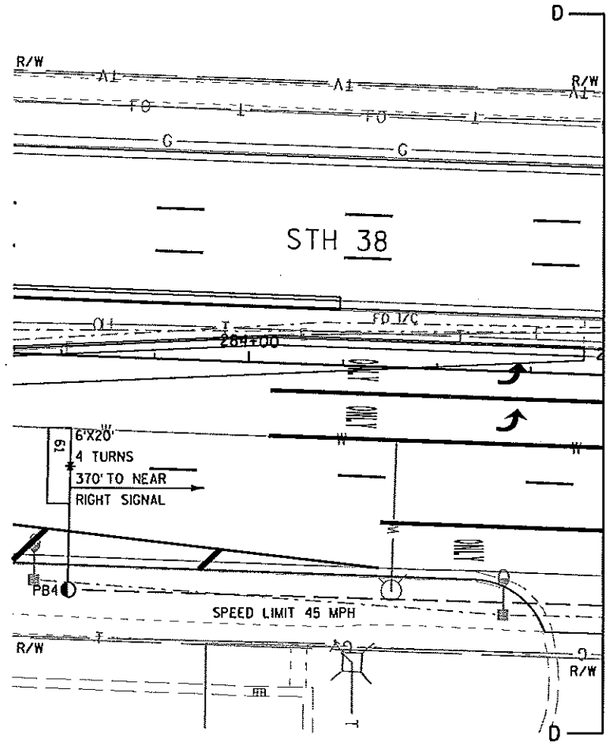
PAGE 1 OF 3

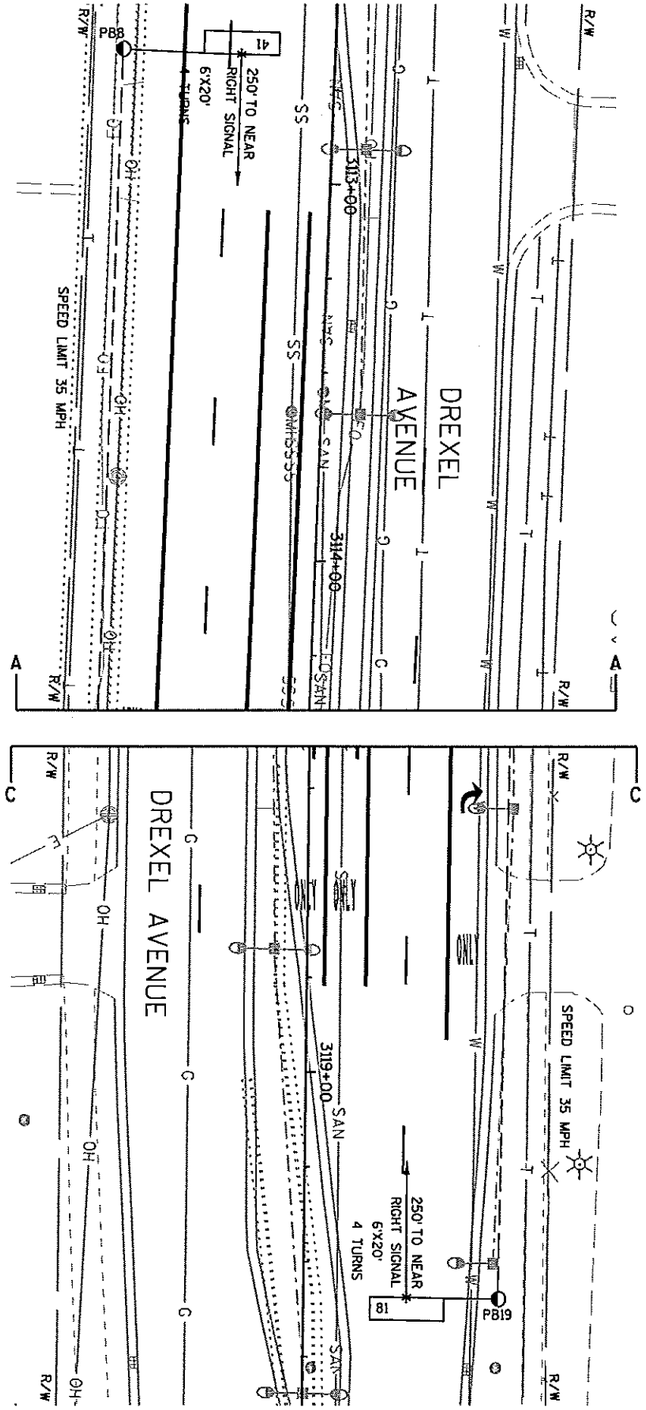
PROJECT NO: 2060-15-71	HWY: STH 38	COUNTY: MILWAUKEE	TRAFFIC SIGNAL PLAN	SHEET	E

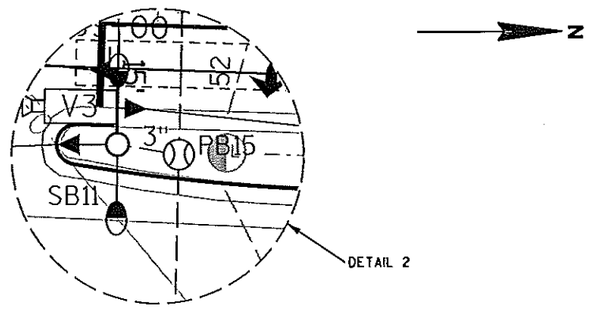
FILE NAME : Proposed Signals.dgn | PLOT DATE : 12/19/2013 | PLOT BY : DSCHNABEL-TADI | PLOT NAME : | PLOT SCALE : 40.0000 sf / in. | WISDOT/CADDS SHEET 42

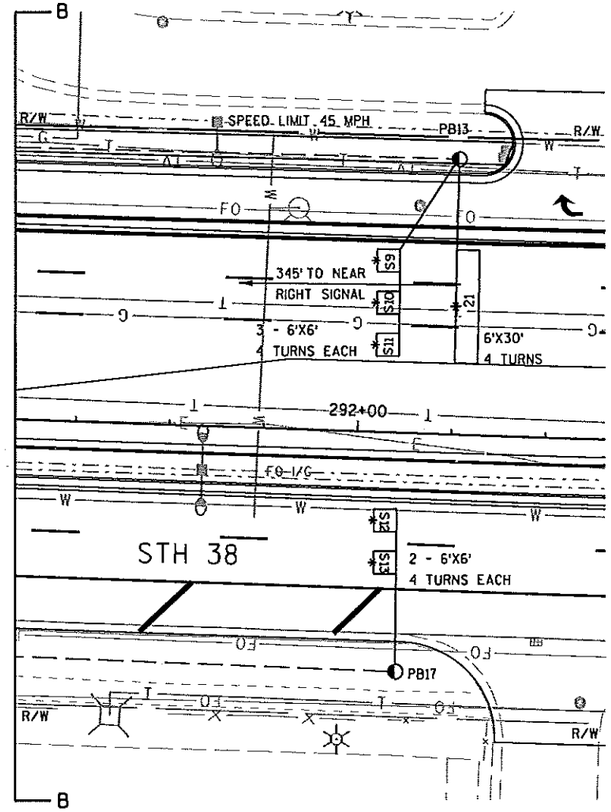
12/20/2013 JMG











TRAFFIC CONTROL SIGNAL
STH 38 & DREXEL AVENUE
CITY OF OAK CREEK
MILWAUKEE COUNTY

SIGNAL NO. S40-1094

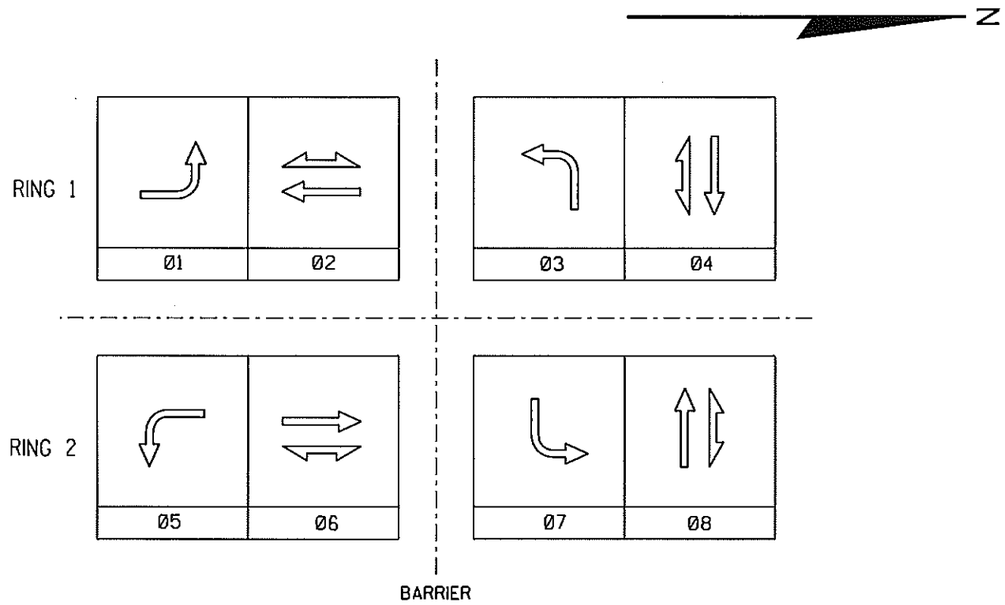
REGION CONTACT: J. GATES
DESIGNED BY: J. FAIT (TADI)
REVISED BY:

PAGE 2 OF 3

PROJECT NO: 2060-15-71	HWY: STH 38	COUNTY: MILWAUKEE	TRAFFIC SIGNAL PLAN	SHEET	E

FILE NAME : Proposed Signals.dgn PLOT DATE : 12/19/2013 PLOT BY : DSCHNABEL-TADI PLOT NAME : PLOT SCALE : 40.0000 sf / in. WISDOT/CADDS SHEET 42

	HEAD NUMBERS	FLASH
Ø1	4,5,6	R
Ø2	7,8,9,10	R
Ø3	23,24,25	R
Ø4	14,15,16	R
Ø5	11,12,13	R
Ø6	1,2,3	R
Ø7	17,18,19	R
Ø8	20,21,22	R
Ø2P	28,29	
Ø4P	26,27	
Ø6P	32,33	
Ø8P	30,31	
OLA		
OLB		
OLC		
OLD		



CONTROLLER LOGIC

PHASE NUMBER	PHASE LOCKING	DUAL ENTRY W / Ø	PHASE RECALL	PHASE ACTIVE
1		6		X
2	X	6	MIN	X
3		8		X
4		8		X
5		2		X
6	X	2	MIN	X
7		4		X
8		4		X

TYPE OF INTERCONNECT/COMMUNICATION	
NONE	
CLOSED LOOP	
TWISTED PAIR*	
FIBER OPTIC*	X
FIBER OPTIC (ETHERNET)	
RADIO	

TYPE OF COORDINATION	
NONE	
TBC	X
TRAFFIC RESPONSIVE	X
ADAPTIVE	
*LOCATION OF MASTER CONTROLLER NO:	S-
SIGNAL SYSTEM #:	SS-00-06

TYPE OF LIGHTING	
BY OTHER AGENCY	
IN TRAFFIC SIGNAL CABINET	X
IN SEPARATE DOT LIGHTING CABINET	

TYPE OF PRE-EMPT	
NONE	
RAILROAD	
EMERGENCY VEHICLE	X
GTT	X
TOMAR	
HARDWIRE	
OTHER	
LIFT BRIDGE	
QUEUE DETECTOR	

DETECTOR LOGIC

DETECTOR INPUT	3	1	7	5	11	9	15	13
PLAN LOOP DETECTOR #(S)	21	41	61	81		S9	S11	S13
ASSIGNED PHASE	2	4	6	8				
OPERATION MODE	VEH	VEH	VEH	VEH				
SWITCH								
EXTEND		X		X				
DELAY								

19	17	23	21	27	25	31	29	DETECTOR INPUT
11	31	42	51	71	82			PLAN LOOP DETECTOR #(S)
1	3	4	5	7	8			ASSIGNED PHASE
VEH	VEH	VEH	VEH	VEH	VEH			OPERATION MODE
								SWITCH
								EXTEND
								DELAY

DETECTOR INPUT	4	2	8	6	12	10	16	14
PLAN LOOP DETECTOR #(S)	22		62			S10	S12	
ASSIGNED PHASE	2		6					
OPERATION MODE	VEH		VEH					
SWITCH								
EXTEND								
DELAY								

20	18	24	22	28	26	32	30	DETECTOR INPUT
12	32	43	52	72	83			PLAN LOOP DETECTOR #(S)
1	3	4	5	7	8			ASSIGNED PHASE
VEH	VEH	VEH	VEH	VEH	VEH			OPERATION MODE
								SWITCH
								EXTEND
								DELAY

EMERGENCY VEHICLE PREEMPTION SEQUENCE

EMERGENCY VEHICLE DETECTOR	A	B	C	D
MOVEMENT				
PHASE	2+5	6+1	4+7	8+3

AFTER PREEMPTION SEQUENCE 2+5 OR 1+6, CONTROLLER SHALL RETURN TO PHASES 2+6.

AFTER PREEMPTION SEQUENCE 4+7 OR 8+3, CONTROLLER SHALL RETURN TO PHASES 4+8.

STH 38 & DREXEL AVENUE
CITY OF OAK CREEK
MILWAUKEE COUNTY

SIGNAL NO S40-1094 CABINET TYPE: TS2

CONTROLLER TYPE: Econolite

DATE 12/13 PAGE NO. 3 OF 3

JMG 12/20/2013

12/20/13 MMD

PROJECT NO: 2060-15-71	HWY: STH 38	COUNTY: MILWAUKEE	SEQUENCE OF OPERATIONS	SHEET	E

FILE NAME : Proposed Signals.dgn PLOT DATE : 12/18/2013 PLOT BY : DSCHNABEL-TADI PLOT NAME : S-400,seq,rev2 PLOT SCALE : 40.0000 sf / in. WISDOT/CADDS SHEET 42

Timing Cover Sheet for Signal: S1094 HWY: 38 and Drexel Ave

Date:	7/13/2016	Changes Made By:	D. Dedrick
Signal No	S1094 M059	Highway:	38
County:	MIL	Local Hwy:	Howell Ave
Controller:	ECONOLITE	Location:	Drexel Ave
School:	None	Audible Ped:	No

Pre-emption

Emergency:	Yes	Type:	GTT	Phases:	2+5,1+6,4+7,3+8	EVP Maintenance Id:	0663-42-19
Railroad:	No	Type:		Phases:		EVP Contact:	Brian L. Johnston, P.E.
						Community:	Oak Creek, City of
						Contact Phone:	(414) 768-6531
						Alternate Phone:	

Coordination

System No: SS0006
CoordType: TBC
Dip Switch Setting
DS ☑

Controller IP Address: 10.98.203.69

Comments:

TBC: Yes
Tone: No
Closed Loop: No
Hardwire: No

	Length	Split 1	Split 2	Split 3	Split 4
Cycle 1=	120	6:00am-12:30pm M-F	10am-6pm Sat-Sun		
Cycle 2=					
Cycle 3=	130	12:30pm-8:00pm M-F			
Cycle 4=					

Prom Replacement

Signal Plan No
Pre-empt: No

Part of a Local System: Yes

Local Contact: Brian Johnston
Phone Number: (414) 397-6551

Overlaps

Overlap A= Phases:
Overlap B= Phases:
Overlap C= Phases:
Overlap D= Phases:

Flash

Emergency: R-R
Off Peak: No

Off Peak Times

Detector Timing

Dilemna Zone Yes

Video Detection: Autoscope

Detector Number	41	81												
Stretch	*	*												
Right Turn Delay														
Left Turn Delay														

Unique Features

* = see program for detector settings; Running in system w/ 6th St. & Delco St. on Drexel west of STH 38.

Timing Changes Log for Signal S1094 on Hwy 38 in MILWAUKEE County

Drexel Ave

Date Computer Changed	Date Change Made in Field	Timing Change	Reason for Change	Change By	Temp Timing
07/13/16	7/13/2016	New coord timing, update to current standards	Change in volume	D. Dedrick	No
04/20/16	4/20/2016	Removed timing pattern 2 from the schedule and extended running times for patterns 1 & 3.	Short green times for side street at STH 38 & Drexel Ave.	D. Dedrick	No
03/29/16	3/29/2016	Changed DLS input to NO on MM 5-1.	Allow time sync via CENTRACS.	E. Lloyd-Weis	No
08/11/15	8/12/2015	Adjust phase sequences and offsets for coord plans.	Coordinate w/ signals at 6th St. and Delco on Drexel west of STH 38.	J. Gates	No
07/23/15	7/24/2015	Implement coordination timing plan for SS0006.	Put signal into system.	J. Gates	No
07/10/15	7/10/2015	Signal timing review + signal reconstruction.	Signal turned on to permanent operation via 2060-15-71.	J. Gates	No
06/19/14	6/19/2014	Signal switched from permanent to temporary and is now maintained by the electrical contractor (JWE).	Signal reconstruction under project 2060-15-71.	J. Gates	Yes
06/04/14	6/5/2014	Increase min green for phases 2 & 6 to 25 sec. Set max 2 to 15 sec. for phase 4 and 12 sec. for phase 7. Put phases 4 and 7 on max. recall. Turn on phase functions for phases 4 and 7 (and zero out D/S/O) for all times controller runs free.	Boring operation under west leg requires stopline amplifiers to be turned off. Related to Drexel Town Center project work.	J. Gates	Yes
08/26/13	8/28/2013	Increase phases 3 & 7 and decrease phases 4 & 8 for 1/1 (4 sec.); increase phase 3 & decrease phase 4 for 1/2 (2 sec.) and 2/1 (4 sec.); Clean up/correct EVP programming; Install M52 controller.	Citizen complaint: not enough green time to turn onto STH 38; Windows 7 project - replace M10.	J. Gates	No
11/04/10	1/25/2011	Permanent timing	Signal reconstruct	M. Dobersek	

Timing Changes Log for Signal S1094 on Hwy 38 in MILWAUKEE County

Drexel Ave

Date Computer Changed	Date Change Made in Field	Timing Change	Reason for Change	Change By	Temp Timing
07/22/10		Revised temporary timing	Construction project	M. Dobersek	Yes
07/01/10		Temporary signal timing provided to contractor	Construction project	M. Dobersek	Yes
08/26/09		Changed through mins and other phase data, changed coord splits for all dial and splits in use.	Complaints about early morning operations and daytime left turn lengths promted update to current standards and increases in left turn times.	D. Murphy	No
05/07/08	5/12/2008	Change PM offset	Timing revision	E. Schneider	No
04/25/08		System cycles, time of day, ped times	Operation review	E. Schneider	No
02/09/07		DST	DST	S. Pierce	No
08/22/06	8/22/2006	Put phases 1 and 5 on locking.	To facilitate a safer NB/SB left turn.	J. Haug	No
05/10/06	5/9/2006	Phases 2 & 6 put on Max. Recall; Phases 4 & 8 put on Locking, stop line detection not operating; far detectors set to call and extend, Passage inc. to 3.9 sec.; Left turn arrows are actuated.	Temp. cabinet in place due to cabinet hit.	E. Lloyd-Weis	Yes
04/20/05	4/18/2005	Placed phases 2 & 6 on Min. Recall.	Detection repaired.	E. Lloyd-Weis	No
11/03/04	11/3/2004	Placed phases 2 & 6 on max. recall.	Phase 2 far detection hit by contractor.	E. Lloyd-Weis	Yes

Timing Changes Log for Signal S1094 on Hwy 38 in MILWAUKEE County

Drexel Ave

Date Computer Changed	Date Change Made in Field	Timing Change	Reason for Change	Change By	Temp Timing
07/08/03	7/8/2003	Increased phase 7 yellow time to 3.5 s.	Phase 7 yellow time found to be only 3.0 s.	J. Haug	No
09/26/02	9/27/2002	Added times for EVP	EVP Installation complete	D. Brantner	No
04/07/99		Epac	Controller Change	S. Pierce	No

Milwaukee (S40-1089 - S40-1114) - S40-1094 - STH 38 & Drexel Ave

Configuration Phase Sequence

Controller Sequence (MM)1-1-1

Hardware Alternate Sequence Enable: No

Phase Ring Sequence.....(Note: Sequences identical to the prior one are not printed)

	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
Sequence 1																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 2																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 3																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 4																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 5																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 6																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 7																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 8																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 9																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 10																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 11																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 12																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 13																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 14																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 15																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 16																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.

Phases In Use / Exclusive PED (MM)1-2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phases in Use	X	X	X	X	X	X	X	X								
Exclusive PED																

Phase Compatibility (MM)1-1-2

Phase	Compatible Phase
1	5

1	6
2	5
2	6
3	7
3	8
4	7
4	8
9	11
9	12
10	11
10	12
13	15
13	16
14	15
14	16

Phase and Overlap Descriptions

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Description	NBLT	SB	WBLT	EB	SBLT	NB	EBLT	WB								
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**L**	**K**	**L**	**M**	**N**	**O**
Description																

Administration (MM)1-7-1

Enable CU/Cabinet Interlock CRC	No
Request Download Controller Data	No
Controller Database CRC	0000
Enable Automatic Backup to Datakey	Yes

Backup Prevent (MM)1-1-3

	Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Timing /	1		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Backup	2	.		.	.	.	.	.	.	.	.	.	.	.	.	.	.
	3	.	.		.	.	.	.	.	.	.	.	.	.	.	.	.
	4	.	.	.		.	.	.	.	.	.	.	.	.	.	.	.
	5	.	.	.	.		.	.	.	.	.	.	.	.	.	.	.
	6	.	.	.	.	.		.	.	.	.	.	.	.	.	.	.
	7	.	.	.	.	.	.		.	.	.	.	.	.	.	.	.
	8	.	.	.	.	.	.	.		.	.	.	.	.	.	.	.
	9	.	.	.	.	.	.	.	.		.	.	.	.	.	.	.
	10	.	.	.	.	.	.	.	.	.		.	.	.	.	.	.
	11	.	.	.	.	.	.	.	.	.	.		.	.	.	.	.
	12	.	.	.	.	.	.	.	.	.	.	.		.	.	.	.
	13	.	.	.	.	.	.	.	.	.	.	.	.		.	.	.
	14	.	.	.	.	.	.	.	.	.	.	.	.	.		.	.
	15	.	.	.	.	.	.	.	.	.	.	.	.	.	.		.
	16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	

Simultaneous Gap (MM)1-1-4

	Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	1		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	2	.		.	.	.	X	.	.	.	.	.	.	.	.	.	.
	3	.	.		.	.	.	.	.	.	.	.	.	.	.	.	.
	4	.	.	.		.	.	.	X	.	.	.	.	.	.	.	.
	5	.	.	.	.		.	.	.	.	.	.	.	.	.	.	.
Phase	6	.	X	.	.	.		.	.	.	.	.	.	.	.	.	.
Must	7	.	.	.	.	.	.		.	.	.	.	.	.	.	.	.
Gap	8	.	.	.	X	.	.	.		.	.	.	.	.	.	.	.
With	9	.	.	.	.	.	.	.	.		.	.	.	.	.	.	.
Phase	10	.	.	.	.	.	.	.	.	.		.	.	.	.	.	.
	11	.	.	.	.	.	.	.	.	.	.		.	.	.	.	.
	12	.	.	.	.	.	.	.	.	.	.	.		.	.	.	.
	13	.	.	.	.	.	.	.	.	.	.	.	.		.	.	.
	14	.	.	.	.	.	.	.	.	.	.	.	.	.		.	.
	15	.	.	.	.	.	.	.	.	.	.	.	.	.	.		.
	16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
	Disable	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Load Switch Assignments (MMU Channel) (MM)1-3

	Phase / Overlap	Type	Dimming				Power Up				Auto		Flash Together
			Red	Yellow	Green	Dark	Auto	Red	Yellow	Dark	Red	Yellow	
1	1	V				+	X				X		X
2	2	V				+	X				X		
3	3	V				+	X				X		X
4	4	V				+	X				X		
5	5	V				-	X				X		
6	6	V				-	X				X		X
7	7	V				-	X				X		
8	8	V				-	X				X		X
9	2	P				+	X						
10	4	P				+	X						
11	6	P				-	X						
12	8	P				-	X						
13	1	O				+	X				X		X
14	2	O				-	X				X		X
15	3	O				+	X				X		
16	4	O				-	X				X		

Milwaukee (S40-1089 - S40-1114) - S40-1094 - STH 38 & Drexel Ave

Configuration Port 1 (SDLC)

SDLC Options (MM)1-4-1

BIU	1	2	3	4	5	6	7	8
Term and Facility Enable	X	X						
Detector Rack Enable	X	X						

Enable TS2/MMU Type Cabinet: Yes
Enable MMU Extended Status: Yes
Enable SDLC Stop Time: No
Enable 3 Critical RFE's Lockup: Yes

MMU Program (MM)1-4-2

Channel Can Serve with Channel	
Channel 1	**Channel 2**
1	5
1	6
1	11
2	5
2	6
2	9
2	11
3	7
3	8
3	12
4	7
4	8
4	10
4	12
5	9
6	9
6	11
7	10
8	10
8	12
9	11
10	12

Color Check Enable (MM)1-4-3

Enable Color Check: Yes

MMU Channel	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Green	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Yellow	X	X	X	X	X	X	X	X					X	X	X	X
Red		X		X		X		X								

Secondary To Secondary Addressing (MM)1-4-4

ID	1	2	3	4	5	6	7	8	MMU
Term and Facility Enable									

ID	1	2	3	4	5	6	7	8	Diag
Detector Rack Enable									

Diagonstics (Test Fixture) Enable: No

Milwaukee (S40-1089 - S40-1114) - S40-1094 - STH 38 & Drexel Ave

Configuration Communications

Ethernet Port Configuration (MM)1-5-1

Controller IP: 10.98.203.69
Subnet Mask: 255.255.254.0
Default Gateway IP: 10.98.202.1
Server IP: 10.70.10.1

NTCIP Parameters (MM)1-5-5

Backup Time: 0
UDP Port: 501
Ethernet Priority: 1
Port 2 Priority: 4
Port 3A Priority: 2
Port 3B Priority: 3

Port Configuration (MM)1-5-2 to 1-5-4

Port	2 (C50S)	3A (C21S)	3B (C22S)
Protocol	NTCIP	NTCIP	Terminal
Enable	No	Yes	No
Data Rate	9600	19.2K	1200
Data Parity Stop	8 N 1	8 N 1	8 0 1
Modem Setup String	None	None	None
User String			
Comm Port Address	1	1	0
System Detector 9-1	0	0	0
Telemetry Response Delay	0.0	0.0	0.0
Duplex Half/Full	Full	Full	Full
Flow Control	Yes	Yes	Yes
AB3418 NTCIP Group Address	0	0	0
AB3418 NTCIP Single Flag Enable	No	No	No
RTS to CTS Delay	0.0	0.0	3.0
RTS Turn Off Delay	0.0	0.0	2.0
Droupout Time	10	10	10
Early RTS	No	No	No
Telemetry Mode	FSK	FSK	FSK
Rail Road	0	0	0
Rail Road Line	0	0	0
ATCS Group	0	0	0
Wayside Device	0	0	0
ATCS Device	0	0	0
Wayside SubNode	0	0	0
ATCS SubNode	0	0	0

ECPIP Parameters (MM)1-5-6

Controller Address: 0
Expanded System Detector Address: 0

Local System Detector

Local System Detector	Number

Milwaukee (S40-1089 - S40-1114) - S40-1094 - STH 38 & Drexel Ave

Configuration Logging/Display

Event Logging (MM)1-6-1

Critical RFE's	Yes	3 Critical RFE's in 24 Hours	Yes
MMU Flash Faults	Yes	Local Flash Faults	Yes
Non-Critical RFE's (Det/Test)	Yes	Detector Errors	Yes
Coordination Errors	Yes	Controller Download	Yes
Preempt	Yes	TSP	Yes
Power On/Off	Yes	Low Battery	Yes
Access	Yes	Data Change	Yes
Online/Offline	Yes		

Alarm Log	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Enable Logging	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Display Options (MM)1-7-2

Key Click Enable:	Yes
Backlight Enable:	Yes
LED Mode:	Single Color
Main Status Display Mode:	Basic
Screen Format:	Advanced
Trans Mode Pop-up Disable:	No

Sign On (MM)8-5

Sign On Message Line 1: INTERSECTION NAME:
Sign On Message Line 2: WisDOT Data Base

Milwaukee (S40-1089 - S40-1114) - S40-1094 - STH 38 & Drexel Ave

Logic Processor Page 1
Statement Control (MM)1-8-1

LP	Statement Control

Milwaukee (S40-1089 - S40-1114) - S40-1094 - STH 38 & Drexel Ave

Logic Processor Page 2

Logic Statements (MM)1-8-2

Milwaukee (S40-1089 - S40-1114) - S40-1094 - STH 38 & Drexel Ave

Controller Timing Plan (MM)2-1

Plan 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	NBLT	SB	WBLT	EB	SBLT	NB	EBLT	WB								
Min Green	6	15	6	10	6	15	6	10	0	0	0	0	0	0	0	0
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	7	0	7	0	7	0	7	0	0	0	0	0	0	0	0
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	35	0	36	0	30	0	34	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	1.5	3.4	1.5	1.5	1.5	3.0	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	30	45	30	35	30	45	30	35	0	0	0	0	0	0	0	0
Max 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.5	4.4	3.5	5.0	3.5	4.4	3.5	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	1.3	0.0	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	6	22	6	10	6	20	6	10	0	0	0	0	0	0	0	0
Time B4	30	22	30	35	30	20	30	35	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	23	0	0	0	25	0	0	0	0	0	0	0	0	0	0
Min Gap	1.5	3.5	1.5	1.5	1.5	3.5	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	NBLT	SB	WBLT	EB	SBLT	NB	EBLT	WB								
Min Green	5	15	5	10	5	15	5	10	0	0	0	0	0	0	0	0
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	3.0	7.0	3.0	5.0	3.0	7.0	3.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	15	45	15	35	15	45	15	35	0	0	0	0	0	0	0	0
Max 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 3

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Direction	**NBLT**	**SB**	**WBLT**	**EB**	**SBLT**	**NB**	**EBLT**	**WB**								
Min Green	5	15	5	10	5	15	5	10	0	0	0	0	0	0	0	0
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	3.0	7.0	3.0	5.0	3.0	7.0	3.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	15	45	15	35	15	45	15	35	0	0	0	0	0	0	0	0
Max 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 4

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Direction	**NBLT**	**SB**	**WBLT**	**EB**	**SBLT**	**NB**	**EBLT**	**WB**								
Min Green	5	15	5	10	5	15	5	10	0	0	0	0	0	0	0	0
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	3.0	7.0	3.0	5.0	3.0	7.0	3.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	15	45	15	35	15	45	15	35	0	0	0	0	0	0	0	0
Max 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Milwaukee (S40-1089 - S40-1114) - S40-1094 - STH 38 & Drexel Ave

Controller Overlaps

Vehicle Overlaps (MM)2-2

Overlap	Type	Lag Green	Yellow	Red	Advance Green

Phases

Overlap	Phase	Included	Protect	Ped Protect	Not Overlap	Modifier	Lag X Phase	Lag 2 Phase	Flash Green

PPLT FYA

Overlap	Protected Phase	Permissive Phase	Flash Arrow Output	Flash Arrow Channel	FYA Delay	FYA Clearance	Special Function Disable

Guaranteed Minimum Time Data (MM) 2-4

Phase Time Data

Phase	Min Green	Walk	Ped Clear	Yellow	Red Clear	Overlap Green
A01	1	0	7	3.0	0.0	1
B02	1	0	7	3.0	0.0	1
C03	1	0	7	3.0	0.0	1
D04	1	0	7	3.0	0.0	1
E05	1	0	7	3.0	0.0	1
F06	1	0	7	3.0	0.0	1
G07	1	0	7	3.0	0.0	1
H08	1	0	7	3.0	0.0	1
I09	1	0	7	3.0	0.0	1
J10	1	0	7	3.0	0.0	1
K11	1	0	7	3.0	0.0	1
L12	1	0	7	3.0	0.0	1
M13	1	0	7	3.0	0.0	1
N14	1	0	7	3.0	0.0	1
O15	1	0	7	3.0	0.0	1
P16	1	0	7	3.0	0.0	1

Milwaukee (S40-1089 - S40-1114) - S40-1094 - STH 38 & Drexel Ave

Controller **Pedestrian Overlaps**
Pedestrian Overlaps (MM) 2-3

Included Phase	Ped Overlap

Milwaukee (S40-1089 - S40-1114) - S40-1094 - STH 38 & Drexel Ave

Controller Start/Fash (MM) 2-5

Startup

Phase	Phase Setting
2	G
6	G

Overlap
A
B
C
D

Flash > Mon: No
Flash Time: 10
All Red: 6
Power Start Sequence: 1
MUTCD Enabled: Yes
MUTCD Yellow to Green: No

Automatic Flash

Entry Phase
2
6

Exit Phase
2
6

Overlap Exit
A
B
C
D

Flash > Mon: No
Exit Flash Interval: G
Minimum Auto Flash: 8
Minimumin Recall: No
Cycle Through Phase: No

Milwaukee (S40-1089 - S40-1114) - S40-1094 - STH 38 & Drexel Ave

Controller Options

Controller Options (MM)2-6-1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Flashing Green Phase																
Guaranteed Passage																
Non Act 1																
Non Act 2																
Dual Entry		X		X		X		X								
Conditional Service																
Conditional Reservice																
Ped Reservice		X		X		X		X								
Rest In Walk																
Flashing Walk																
Ped Clear Yellow																
Ped Clear Red																
IGRN + Veh Ext																

Ped Clear Protect: On Red Revert: 2.0 MUTCD 3 Seconds Don't Walk: No

Act Pre-Time (MM)2-7

Pre-Time Mode Enable: No Free Input Enables Pre-Timed: Yes

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Pre-Timed Phase																

Phase Recall Options (MM)2-8

Plan 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector		X				X										
Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
Al Calc																

Plan 2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector		X				X										
Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
Al Calc																

Plan 3

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector		X				X										
Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
Al Calc																

Plan 4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector		X				X										

Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
AI Calc																

Milwaukee (S40-1089 - S40-1114) - S40-1094 - STH 38 & Drexel Ave

Coordination Options

Coordination Options (MM)3-1

Manual Pattern	Auto	ECPI Coord	Yes
System Source	TBC	System Format	STD
Splits In	Seconds	Offsets In	Seconds
Transition	Add	Max Select	MAXINH
Dwell/Add Time	0		
Delay Coord Walk to LZ	No	Force Off	Fixed
Offset Reference	Lead	Use Ped Time	No
Ped Recall	No	Ped Reservice	No
Local Zero Override	No	FO Added Initial Green	Yes
Re-Sync Count	3	Multisync	No

Auto Perm Minimum Green (Seconds) (MM)3-4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Minimum Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Split Demand (MM)3-5

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Demand 1																
Demand 2																

Demand	1	2
Detector	0	0
Call Time (Sec)	0	0
Cycle Count	0	0

Milwaukee (S40-1089 - S40-1114) - S40-1094 - STH 38 & Drexel Ave

Coordination Pattern Data
Pattern Data (MM)3-2

Pattern - 1

Split Pattern	1	TS2 (Pat-Off)	0-1	Splits in	Seconds
Cycle	120	Std (COS)	0	Offsets in	Seconds
Offset Value	41s	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	6		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	NBLT	SB	WBLT	EB	SBLT	NB	EBLT	WB								
Splits (Split Pat 1)	30	36	18	36	15	51	20	34	0	0	0	0	0	0	0	0
Preference 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Preference 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Disp.	-	0	0	0
Split Sum	120s	120s	0s	0s

Misc. Data

Veh. Permissive 1	0	Veh. Permissive 2	0	Veh. Permissive 2 Disp.	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern Data

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coordinated Phases		X				X										
Vehicle Recalls																
Ped Recalls																
Max Recalls																
Phase Omit																
Special Function Output																

Pattern - 3

Split Pattern	3	TS2 (Pat-Off)	0-3	Splits in	Seconds
Cycle	130	Std (COS)	0	Offsets in	Seconds
Offset Value	7s	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	6		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	NBLT	SB	WBLT	EB	SBLT	NB	EBLT	WB								
Splits (Split Pat 3)	30	37	20	43	28	39	28	35	0	0	0	0	0	0	0	0
Preference 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Preference 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Disp.	-	0	0	0
Split Sum	130s	130s	0s	0s

Misc. Data

Veh. Permissive 1	0	Veh. Permissive 2	0	Veh. Permissive 2 Disp.	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern Data

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coordinated Phases		X				X										
Vehicle Recalls																
Ped Recalls																
Max Recalls																
Phase Omit																
Special Function Output																

Milwaukee (S40-1089 - S40-1114) - S40-1094 - STH 38 & Drexel Ave

Coordination Split Pattern Data
Split Pattern Data (MM)3-3

Split Pattern - 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	NBLT	SB	WBLT	EB	SBLT	NB	EBLT	WB								
Splits (seconds)	30	36	18	36	15	51	20	34	0	0	0	0	0	0	0	0
Coordinated Phases		X				X										
Vehicle Recalls																
Ped Recalls																
Max Recalls																
Phase Omit																

Ring	1	2	3	4
Split Sum	120s	120s	0s	0s

Split Pattern - 3

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	NBLT	SB	WBLT	EB	SBLT	NB	EBLT	WB								
Splits (seconds)	30	37	20	43	28	39	28	35	0	0	0	0	0	0	0	0
Coordinated Phases		X				X										
Vehicle Recalls																
Ped Recalls																
Max Recalls																
Phase Omit																

Ring	1	2	3	4
Split Sum	130s	130s	0s	0s

Milwaukee (S40-1089 - S40-1114) - S40-1094 - STH 38 & Drexel Ave

Preemptor

Preempt Plan (MM)4-1

Plan 3

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**
Track Clear Vehicle																
Track Clear Overlap																
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Vehicle		X			X											
Dwell Ped																
Dwell Overlap																
Cycling Vehicle																
Cycling Ped																
Cycling Overlap																
Exit Phase		X				X										
Exit Calls																
Special Funciton																

Enable	Yes	Preempt Override	No	Interlock Enable	No
Detector Lock	Yes	Delay	1	Inhibit	0
Override Flash	No	Duration	0	CLR > GRN	No
Term Overlap Asap	No	PC Through Yellow	No	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	Flash Exit Color	Green	Exit Option	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Preempt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	5	0	5	25.5	25.5
	Min Grn	**Ext Grn**	**Max Grn**	**Yellow**	**Red**
Track Clear	0	0	0	25.5	25.5
	Min Dwell	**Pmt Ext**	**Max Time**	**Yellow**	**Red**
Dwell / Cycle-Exit	10	5.0	0	25.5	25.5

Preempt Active Out	On	Preempt Active Dwell	No
Other Priority Preempt	On	Non-Priority Preempt	F1
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Pri Return % Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**
Track Clear Vehicle																
Track Clear Overlap																
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Vehicle	X					X										
Dwell Ped																
Dwell Overlap																
Cycling Vehicle																
Cycling Ped																
Cycling Overlap																
Exit Phase		X				X										
Exit Calls																
Special Funciton																

Enable	Yes	Preempt Override	No	Interlock Enable	No
Detector Lock	Yes	Delay	1	Inhibit	0
Override Flash	No	Duration	0	CLR > GRN	No
Term Overlap Asap	No	PC Through Yellow	No	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	Flash Exit Color	Green	Exit Option	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Preempt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	5	0	5	25.5	25.5
	Min Grn	**Ext Grn**	**Max Grn**	**Yellow**	**Red**
Track Clear	0	0	0	25.5	25.5
	Min Dwell	**Pmt Ext**	**Max Time**	**Yellow**	**Red**
Dwell / Cycle-Exit	10	5.0	0	25.5	25.5

Preempt Active Out	On	Preempt Active Dwell	No
Other Priority Preempt	On	Non-Priority Preempt	F1
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Pri Return % Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 5

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**
Track Clear Vehicle																
Track Clear Overlap																
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Vehicle				X			X									
Dwell Ped																
Dwell Overlap																
Cycling Vehicle																
Cycling Ped																
Cycling Overlap																
Exit Phase				X				X								
Exit Calls																
Special Funciton																

Enable	Yes	Preempt Override	No	Interlock Enable	No
Detector Lock	Yes	Delay	1	Inhibit	0
Override Flash	No	Duration	0	CLR > GRN	No
Term Overlap Asap	No	PC Through Yellow	No	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	Flash Exit Color	Green	Exit Option	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Preempt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	5	0	5	25.5	25.5
	Min Grn	**Ext Grn**	**Max Grn**	**Yellow**	**Red**
Track Clear	0	0	0	25.5	25.5
	Min Dwell	**Pmt Ext**	**Max Time**	**Yellow**	**Red**
Dwell / Cycle-Exit	10	5.0	0	25.5	25.5

Preempt Active Out	On	Preempt Active Dwell	No
Other Priority Preempt	On	Non-Priority Preempt	F1
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Pri Return % Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 6

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**
Track Clear Vehicle																
Track Clear Overlap																
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Vehicle			X					X								
Dwell Ped																
Dwell Overlap																
Cycling Vehicle																
Cycling Ped																
Cycling Overlap																
Exit Phase				X				X								
Exit Calls																
Special Funciton																

Enable	Yes	Preempt Override	No	Interlock Enable	No
Detector Lock	Yes	Delay	1	Inhibit	0
Override Flash	No	Duration	0	CLR > GRN	No
Term Overlap Asap	No	PC Through Yellow	No	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	Flash Exit Color	Green	Exit Option	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Preempt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	5	0	5	25.5	25.5
	Min Grn	**Ext Grn**	**Max Grn**	**Yellow**	**Red**
Track Clear	0	0	0	25.5	25.5
	Min Dwell	**Pmt Ext**	**Max Time**	**Yellow**	**Red**
Dwell / Cycle-Exit	10	5.0	0	25.5	25.5

Preempt Active Out	On	Preempt Active Dwell	No
Other Priority Preempt	On	Non-Priority Preempt	F1
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Pri Return % Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Milwaukee (S40-1089 - S40-1114) - S40-1094 - STH 38 & Drexel Ave

Time Base **Clock/Calendar**
Clock/Calendar Options (MM)5-1

Enable Action Plan:	0
Sync Reference Time:	12:00 AM
Sync Reference:	Reference Time
Day Light Savings:	No
Time Reset Input Set Time:	3:30:00
Standard Time From GMT:	0

Milwaukee (S40-1089 - S40-1114) - S40-1094 - STH 38 & Drexel Ave

Time Base Action Plan
Action Plan (MM)5-2

Action Plan - 1

Pattern	1	Override System	No
Timing Plan	0	Sequence	2
Veh Det Plan	0	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 2

Pattern	2	Override System	No
Timing Plan	0	Sequence	1
Veh Det Plan	0	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 3

Pattern	3	Override System	No
Timing Plan	0	Sequence	6
Veh Det Plan	0	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 4

Pattern	4	Override System	No
Timing Plan	0	Sequence	1
Veh Det Plan	0	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 99

Pattern	255 - FLSH	Override System	No
Timing Plan	0	Sequence	0
Veh Det Plan	0	Detector Log	None
Flash	Yes	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 100

Pattern	254 - FREE	Override System	No
Timing Plan	0	Sequence	0
Veh Det Plan	0	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Milwaukee (S40-1089 - S40-1114) - S40-1094 - STH 38 & Drexel Ave

Time Base Day Plan/Schedule
Day Plan (MM)5-3

Day Plan - 1

Event	Action Plan	Start Time
1	100	12:01 AM
2	1	6:00 AM
3	3	12:30 PM
4	100	8:00 PM

Day Plan - 2

Event	Action Plan	Start Time
1	100	12:01 AM
2	1	10:00 AM
3	100	6:00 PM

Schedule (MM)5-4

Schedule Number - 1

Day Plan Number: 1

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	X	X	X	X	X	X	X	X	X	X	X	X

Day of Week	Sun	Mon	Tue	Wed	Thur	Fri	Sat
		X	X	X	X	X	

Day of Month	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

Schedule Number - 2

Day Plan Number: 2

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	X	X	X	X	X	X	X	X	X	X	X	X

Day of Week	Sun	Mon	Tue	Wed	Thur	Fri	Sat
	X						X

Day of Month	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

Milwaukee (S40-1089 - S40-1114) - S40-1094 - STH 38 & Drexel Ave

Time Base Exceptions
Exception Day Program (MM)5-5

Day	Fixed/Float	Month	Day of Week/Month	Week of Month/Year	Day Plan

Milwaukee (S40-1089 - S40-1114) - S40-1094 - STH 38 & Drexel Ave

Detectors

Detectors Page 1

Vehicle Detectors Setup (MM)6-1

Vehicle Plan	Detector Number	Called	Type
1	60	2	N
1	60	4	N
1	60	6	N
1	60	8	N
2	1	1	N
2	2	2	N
2	3	3	N
2	4	4	N
2	5	5	N
2	6	6	N
2	7	7	N
2	8	8	N
2	60	2	N
2	60	4	N
2	60	6	N
2	60	8	N
3	1	1	N
3	2	2	N
3	3	3	N
3	4	4	N
3	5	5	N
3	6	6	N
3	7	7	N
3	8	8	N
3	60	2	N
3	60	4	N
3	60	6	N
3	60	8	N
4	1	1	N
4	2	2	N
4	3	3	N
4	4	4	N
4	5	5	N
4	6	6	N
4	7	7	N
4	8	8	N
4	60	2	N
4	60	4	N
4	60	6	N
4	60	8	N

Vehicle Detector Setup (MM)6-2 continued

Detector Number	Type	TS2 Detector	Detector Description
1	N-NTCIP	Yes	Loop 41
2	N-NTCIP	Yes	
3	N-NTCIP	Yes	Loop 21
4	N-NTCIP	Yes	Loop 22
5	N-NTCIP	Yes	Loop 81
6	N-NTCIP	Yes	
7	N-NTCIP	Yes	Loop 61
8	N-NTCIP	Yes	Loop 62
9	N-NTCIP	Yes	System Loop 9
10	N-NTCIP	Yes	System Loop 10
11	N-NTCIP	Yes	
12	N-NTCIP	Yes	
13	N-NTCIP	Yes	System Loop 13
14	N-NTCIP	Yes	

15	N-NTCIP	Yes	System Loop 11
16	N-NTCIP	Yes	System Loop 12
17	N-NTCIP	Yes	Video Detection Zone 31
18	N-NTCIP	Yes	Video Detection Zone 32
19	N-NTCIP	Yes	Video Detection Zone 11
20	N-NTCIP	Yes	Video Detection Zone 12
21	N-NTCIP	Yes	Video Detection Zone 51
22	N-NTCIP	Yes	Video Detection Zone 52
23	N-NTCIP	Yes	Video Detection Zone 42
24	N-NTCIP	Yes	Video Detection Zone 43
25	N-NTCIP	Yes	Video Detection Zone 82
26	N-NTCIP	Yes	Video Detection Zone 83
27	N-NTCIP	Yes	Video Detection Zone 71
28	N-NTCIP	Yes	Video Detection Zone 72
29	N-NTCIP	Yes	
30	N-NTCIP	Yes	
31	N-NTCIP	Yes	
32	N-NTCIP	Yes	
33	N-NTCIP	Yes	
34	N-NTCIP	Yes	
35	N-NTCIP	Yes	
36	N-NTCIP	Yes	
37	N-NTCIP	Yes	
38	N-NTCIP	Yes	
39	N-NTCIP	Yes	
40	N-NTCIP	Yes	
41	N-NTCIP	Yes	
42	N-NTCIP	Yes	
43	N-NTCIP	Yes	
44	N-NTCIP	Yes	
45	N-NTCIP	Yes	
46	N-NTCIP	Yes	
47	N-NTCIP	Yes	
48	N-NTCIP	Yes	
49	N-NTCIP	Yes	
50	N-NTCIP	Yes	
51	N-NTCIP	Yes	
52	N-NTCIP	Yes	
53	N-NTCIP	Yes	
54	N-NTCIP	Yes	
55	N-NTCIP	Yes	
56	N-NTCIP	Yes	
57	N-NTCIP	Yes	
58	N-NTCIP	Yes	
59	N-NTCIP	Yes	
60	N-NTCIP	Yes	
61	N-NTCIP	Yes	
62	N-NTCIP	Yes	
63	N-NTCIP	Yes	
64	N-NTCIP	Yes	

Vehicle Detector Setup (MM)6-2 continued

Det Num	Veh Det Plan	Phase	ECPI Log	Call Option	Delay Time	Ext Option	Extend Time / Passage Time	Queue Lim / Discon. Time	Use Added Initial	Cross Switch Phase	Lock In	NTCIP Vol.	NTCIP Occ.	Pmt Queue Delay
1	1	4	No	No	0.0	Passage	4.0	0	Yes	0	None	No	No	No
1	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
1	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
1	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
2	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
2	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
2	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
2	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
3	1	2	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
3	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
3	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
3	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

4	1	2	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
4	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
4	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
4	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
5	1	8	No	No	0.0	Passage	4.0	0	Yes	0	None	No	No	No
5	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
5	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
5	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
6	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
6	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
6	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
6	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
7	1	6	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
7	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
7	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
7	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
8	1	6	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
8	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
8	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
8	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
9	1	0	Yes	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
9	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
9	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
9	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
10	1	0	Yes	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
10	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
10	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
10	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
11	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
11	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
11	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
11	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
12	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
12	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
12	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
12	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
13	1	0	Yes	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
13	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
13	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
13	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
14	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
14	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
14	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
14	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
15	1	0	Yes	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
15	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
15	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
15	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
16	1	0	Yes	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
16	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
16	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
16	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
17	1	3	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
17	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
17	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
17	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
18	1	3	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
18	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
18	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
18	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
19	1	1	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
19	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
19	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
19	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
20	1	1	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
20	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
20	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
20	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

21	1	5	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
21	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
21	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
21	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
22	1	5	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
22	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
22	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
22	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
23	1	4	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
23	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
23	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
23	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
24	1	4	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
24	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
24	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
24	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
25	1	8	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
25	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
25	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
25	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
26	1	8	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
26	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
26	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
26	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
27	1	7	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
27	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
27	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
27	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
28	1	7	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
28	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
28	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
28	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
29	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
29	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
29	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
29	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
30	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
30	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
30	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
30	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
31	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
31	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
31	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
31	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
32	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
32	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
32	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
32	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
33	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
33	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
33	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
33	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
34	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
34	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
34	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
34	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
35	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
35	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
35	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
35	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
36	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
36	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
36	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
36	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
37	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
37	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
37	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
37	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

38	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
38	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
38	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
38	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
39	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
39	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
39	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
39	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
40	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
40	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
40	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
40	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
41	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
41	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
41	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
41	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
42	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
42	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
42	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
42	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
43	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
43	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
43	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
43	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
44	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
44	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
44	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
44	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
45	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
45	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
45	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
45	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
46	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
46	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
46	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
46	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
47	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
47	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
47	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
47	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
48	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
48	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
48	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
48	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
49	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
49	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
49	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
49	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
50	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
50	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
50	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
50	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
51	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
51	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
51	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
51	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
52	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
52	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
52	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
52	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
53	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
53	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
53	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
53	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
54	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
54	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
54	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
54	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

55	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
55	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
55	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
55	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
56	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
56	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
56	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
56	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
57	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
57	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
57	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
57	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
58	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
58	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
58	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
58	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
59	1	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
59	2	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
59	3	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
59	4	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
60	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	Yellow	No	No	No
60	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	Yellow	No	No	No
60	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	Yellow	No	No	No
60	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	Yellow	No	No	No
61	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
61	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
61	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
61	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
62	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
62	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
62	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
62	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
63	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
63	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
63	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
63	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
64	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
64	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
64	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
64	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

Ped Detector Options (MM)6-3

Phase Ped Detector (Econolite)

Detector	Call Phase															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.
4	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.
5	.	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.
6	.	.	.	.	.	X	.	.	.	.	.	.	.	.	.	.
7	.	.	.	.	.	.	X	.	.	.	.	.	.	.	.	.
8	.	.	.	.	.	.	.	X	.	.	.	.	.	.	.	.
9	.	.	.	.	.	.	.	.	X	.	.	.	.	.	.	.
10	.	.	.	.	.	.	.	.	.	X	.	.	.	.	.	.
11	.	.	.	.	.	.	.	.	.	.	X	.	.	.	.	.
12	.	.	.	.	.	.	.	.	.	.	.	X	.	.	.	.
13	.	.	.	.	.	.	.	.	.	.	.	.	X	.	.	.
14	.	.	.	.	.	.	.	.	.	.	.	.	.	X	.	.
15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	X	.
16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	X

Milwaukee (S40-1089 - S40-1114) - S40-1094 - STH 38 & Drexel Ave

Detectors

Detectors Page 2

Log - Speed Detector Setup (MM)6-4

NTCIP Log Period: 60 ECPI Log Period: 15 Length Unit: Inch

Speed Detector	Local Detector	One/Two Detector	Vehicle Length	Trap Length	Enable Log
1	0	1	0	0	No
2	0	1	0	0	No
3	0	1	0	0	No
4	0	1	0	0	No
5	0	1	0	0	No
6	0	1	0	0	No
7	0	1	0	0	No
8	0	1	0	0	No
9	0	1	0	0	No
10	0	1	0	0	No
11	0	1	0	0	No
12	0	1	0	0	No
13	0	1	0	0	No
14	0	1	0	0	No
15	0	1	0	0	No
16	0	1	0	0	No

Vehicle Detector Diagnostics (MM)6-5

Plan	Detector	Counts	Act	Pres	Multiplier	Failed Time	Failed Call Delay
1	1	0	0	0	1	255	0
1	2	0	0	0	1	255	0
1	3	0	0	0	1	255	0
1	4	0	0	0	1	255	0
1	5	0	0	0	1	255	0
1	6	0	0	0	1	255	0
1	7	0	0	0	1	255	0
1	8	0	0	0	1	255	0
1	9	0	0	0	1	255	0
1	10	0	0	0	1	255	0
1	11	0	0	0	1	255	0
1	12	0	0	0	1	255	0
1	13	0	0	0	1	255	0
1	14	0	0	0	1	255	0
1	15	0	0	0	1	255	0
1	16	0	0	0	1	255	0
1	17	0	0	0	1	255	0
1	18	0	0	0	1	255	0
1	19	0	0	0	1	255	0
1	20	0	0	0	1	255	0
1	21	0	0	0	1	255	0
1	22	0	0	0	1	255	0
1	23	0	0	0	1	255	0
1	24	0	0	0	1	255	0
1	25	0	0	0	1	255	0
1	26	0	0	0	1	255	0
1	27	0	0	0	1	255	0
1	28	0	0	0	1	255	0
1	29	0	0	0	1	255	0
1	30	0	0	0	1	255	0
1	31	0	0	0	1	255	0
1	32	0	0	0	1	255	0
1	33	0	0	0	1	255	0

1	34	0	0	0	1	255	0
1	35	0	0	0	1	255	0
1	36	0	0	0	1	255	0
1	37	0	0	0	1	255	0
1	38	0	0	0	1	255	0
1	39	0	0	0	1	255	0
1	40	0	0	0	1	255	0
1	41	0	0	0	1	255	0
1	42	0	0	0	1	255	0
1	43	0	0	0	1	255	0
1	44	0	0	0	1	255	0
1	45	0	0	0	1	255	0
1	46	0	0	0	1	255	0
1	47	0	0	0	1	255	0
1	48	0	0	0	1	255	0
1	49	0	0	0	1	255	0
1	50	0	0	0	1	255	0
1	51	0	0	0	1	255	0
1	52	0	0	0	1	255	0
1	53	0	0	0	1	255	0
1	54	0	0	0	1	255	0
1	55	0	0	0	1	255	0
1	56	0	0	0	1	255	0
1	57	0	0	0	1	255	0
1	58	0	0	0	1	255	0
1	59	0	0	0	1	255	0
1	60	0	0	0	1	255	0
1	61	0	0	0	1	255	0
1	62	0	0	0	1	255	0
1	63	0	0	0	1	255	0
1	64	0	0	0	1	255	0
2	1	0	0	0	1	255	0
2	2	0	0	0	1	255	0
2	3	0	0	0	1	255	0
2	4	0	0	0	1	255	0
2	5	0	0	0	1	255	0
2	6	0	0	0	1	255	0
2	7	0	0	0	1	255	0
2	8	0	0	0	1	255	0
2	9	0	0	0	1	255	0
2	10	0	0	0	1	255	0
2	11	0	0	0	1	255	0
2	12	0	0	0	1	255	0
2	13	0	0	0	1	255	0
2	14	0	0	0	1	255	0
2	15	0	0	0	1	255	0
2	16	0	0	0	1	255	0
2	17	0	0	0	1	255	0
2	18	0	0	0	1	255	0
2	19	0	0	0	1	255	0
2	20	0	0	0	1	255	0
2	21	0	0	0	1	255	0
2	22	0	0	0	1	255	0
2	23	0	0	0	1	255	0
2	24	0	0	0	1	255	0
2	25	0	0	0	1	255	0
2	26	0	0	0	1	255	0
2	27	0	0	0	1	255	0
2	28	0	0	0	1	255	0
2	29	0	0	0	1	255	0
2	30	0	0	0	1	255	0
2	31	0	0	0	1	255	0
2	32	0	0	0	1	255	0
2	33	0	0	0	1	255	0
2	34	0	0	0	1	255	0
2	35	0	0	0	1	255	0
2	36	0	0	0	1	255	0
2	37	0	0	0	1	255	0

2	38	0	0	0	1	255	0
2	39	0	0	0	1	255	0
2	40	0	0	0	1	255	0
2	41	0	0	0	1	255	0
2	42	0	0	0	1	255	0
2	43	0	0	0	1	255	0
2	44	0	0	0	1	255	0
2	45	0	0	0	1	255	0
2	46	0	0	0	1	255	0
2	47	0	0	0	1	255	0
2	48	0	0	0	1	255	0
2	49	0	0	0	1	255	0
2	50	0	0	0	1	255	0
2	51	0	0	0	1	255	0
2	52	0	0	0	1	255	0
2	53	0	0	0	1	255	0
2	54	0	0	0	1	255	0
2	55	0	0	0	1	255	0
2	56	0	0	0	1	255	0
2	57	0	0	0	1	255	0
2	58	0	0	0	1	255	0
2	59	0	0	0	1	255	0
2	60	0	0	0	1	255	0
2	61	0	0	0	1	255	0
2	62	0	0	0	1	255	0
2	63	0	0	0	1	255	0
2	64	0	0	0	1	255	0
3	1	0	0	0	1	255	0
3	2	0	0	0	1	255	0
3	3	0	0	0	1	255	0
3	4	0	0	0	1	255	0
3	5	0	0	0	1	255	0
3	6	0	0	0	1	255	0
3	7	0	0	0	1	255	0
3	8	0	0	0	1	255	0
3	9	0	0	0	1	255	0
3	10	0	0	0	1	255	0
3	11	0	0	0	1	255	0
3	12	0	0	0	1	255	0
3	13	0	0	0	1	255	0
3	14	0	0	0	1	255	0
3	15	0	0	0	1	255	0
3	16	0	0	0	1	255	0
3	17	0	0	0	1	255	0
3	18	0	0	0	1	255	0
3	19	0	0	0	1	255	0
3	20	0	0	0	1	255	0
3	21	0	0	0	1	255	0
3	22	0	0	0	1	255	0
3	23	0	0	0	1	255	0
3	24	0	0	0	1	255	0
3	25	0	0	0	1	255	0
3	26	0	0	0	1	255	0
3	27	0	0	0	1	255	0
3	28	0	0	0	1	255	0
3	29	0	0	0	1	255	0
3	30	0	0	0	1	255	0
3	31	0	0	0	1	255	0
3	32	0	0	0	1	255	0
3	33	0	0	0	1	255	0
3	34	0	0	0	1	255	0
3	35	0	0	0	1	255	0
3	36	0	0	0	1	255	0
3	37	0	0	0	1	255	0
3	38	0	0	0	1	255	0
3	39	0	0	0	1	255	0
3	40	0	0	0	1	255	0
3	41	0	0	0	1	255	0

3	42	0	0	0	1	255	0
3	43	0	0	0	1	255	0
3	44	0	0	0	1	255	0
3	45	0	0	0	1	255	0
3	46	0	0	0	1	255	0
3	47	0	0	0	1	255	0
3	48	0	0	0	1	255	0
3	49	0	0	0	1	255	0
3	50	0	0	0	1	255	0
3	51	0	0	0	1	255	0
3	52	0	0	0	1	255	0
3	53	0	0	0	1	255	0
3	54	0	0	0	1	255	0
3	55	0	0	0	1	255	0
3	56	0	0	0	1	255	0
3	57	0	0	0	1	255	0
3	58	0	0	0	1	255	0
3	59	0	0	0	1	255	0
3	60	0	0	0	1	255	0
3	61	0	0	0	1	255	0
3	62	0	0	0	1	255	0
3	63	0	0	0	1	255	0
3	64	0	0	0	1	255	0
4	1	0	0	0	1	255	0
4	2	0	0	0	1	255	0
4	3	0	0	0	1	255	0
4	4	0	0	0	1	255	0
4	5	0	0	0	1	255	0
4	6	0	0	0	1	255	0
4	7	0	0	0	1	255	0
4	8	0	0	0	1	255	0
4	9	0	0	0	1	255	0
4	10	0	0	0	1	255	0
4	11	0	0	0	1	255	0
4	12	0	0	0	1	255	0
4	13	0	0	0	1	255	0
4	14	0	0	0	1	255	0
4	15	0	0	0	1	255	0
4	16	0	0	0	1	255	0
4	17	0	0	0	1	255	0
4	18	0	0	0	1	255	0
4	19	0	0	0	1	255	0
4	20	0	0	0	1	255	0
4	21	0	0	0	1	255	0
4	22	0	0	0	1	255	0
4	23	0	0	0	1	255	0
4	24	0	0	0	1	255	0
4	25	0	0	0	1	255	0
4	26	0	0	0	1	255	0
4	27	0	0	0	1	255	0
4	28	0	0	0	1	255	0
4	29	0	0	0	1	255	0
4	30	0	0	0	1	255	0
4	31	0	0	0	1	255	0
4	32	0	0	0	1	255	0
4	33	0	0	0	1	255	0
4	34	0	0	0	1	255	0
4	35	0	0	0	1	255	0
4	36	0	0	0	1	255	0
4	37	0	0	0	1	255	0
4	38	0	0	0	1	255	0
4	39	0	0	0	1	255	0
4	40	0	0	0	1	255	0
4	41	0	0	0	1	255	0
4	42	0	0	0	1	255	0
4	43	0	0	0	1	255	0
4	44	0	0	0	1	255	0
4	45	0	0	0	1	255	0

4	46	0	0	0	1	255	0
4	47	0	0	0	1	255	0
4	48	0	0	0	1	255	0
4	49	0	0	0	1	255	0
4	50	0	0	0	1	255	0
4	51	0	0	0	1	255	0
4	52	0	0	0	1	255	0
4	53	0	0	0	1	255	0
4	54	0	0	0	1	255	0
4	55	0	0	0	1	255	0
4	56	0	0	0	1	255	0
4	57	0	0	0	1	255	0
4	58	0	0	0	1	255	0
4	59	0	0	0	1	255	0
4	60	0	0	0	1	255	0
4	61	0	0	0	1	255	0
4	62	0	0	0	1	255	0
4	63	0	0	0	1	255	0
4	64	0	0	0	1	255	0

Pedestrian Detector Diagnotics (MM)6-6

Plan	Detector	Counts	Act	Pres	Multiplier

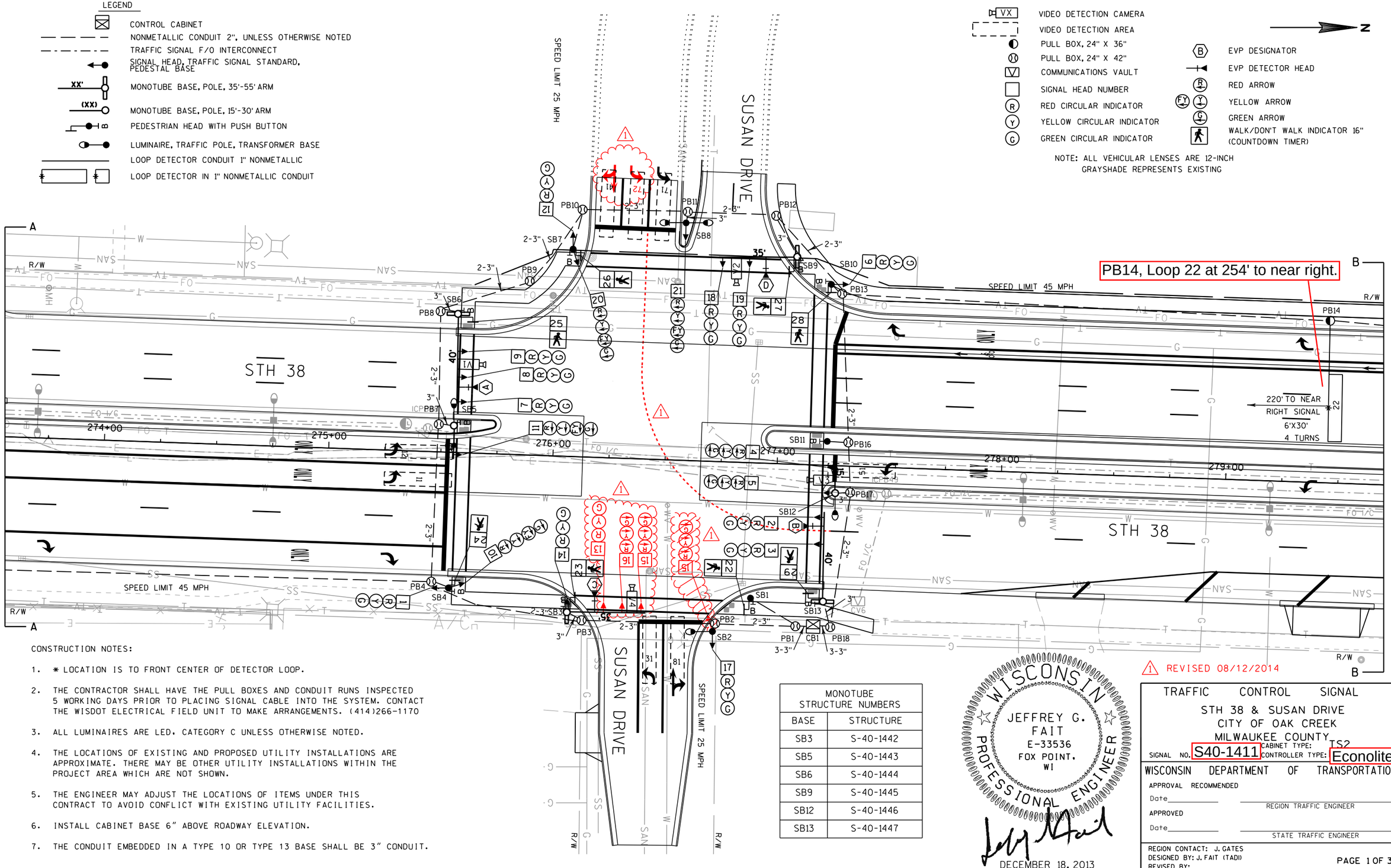
LEGEND

- CONTROL CABINET
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- TRAFFIC SIGNAL F/O INTERCONNECT
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- XX' — MONOTUBE BASE, POLE, 35'-55' ARM
- (XX) — MONOTUBE BASE, POLE, 15'-30' ARM
- B — PEDESTRIAN HEAD WITH PUSH BUTTON
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
- LOOP DETECTOR CONDUIT 1" NONMETALLIC
- LOOP DETECTOR IN 1" NONMETALLIC CONDUIT

- VX — VIDEO DETECTION CAMERA
- VIDEO DETECTION AREA
- PULL BOX, 24" X 36"
- PULL BOX, 24" X 42"
- COMMUNICATIONS VAULT
- SIGNAL HEAD NUMBER
- R — RED CIRCULAR INDICATOR
- Y — YELLOW CIRCULAR INDICATOR
- G — GREEN CIRCULAR INDICATOR
- B — EVP DESIGNATOR
- EVP DETECTOR HEAD
- R — RED ARROW
- FY Y — YELLOW ARROW
- G — GREEN ARROW
- WALK/DON'T WALK INDICATOR 16" (COUNTDOWN TIMER)

N

NOTE: ALL VEHICULAR LENSES ARE 12-INCH
GRAYSHADE REPRESENTS EXISTING



CONSTRUCTION NOTES:

1. * LOCATION IS TO FRONT CENTER OF DETECTOR LOOP.
2. THE CONTRACTOR SHALL HAVE THE PULL BOXES AND CONDUIT RUNS INSPECTED 5 WORKING DAYS PRIOR TO PLACING SIGNAL CABLE INTO THE SYSTEM. CONTACT THE WISDOT ELECTRICAL FIELD UNIT TO MAKE ARRANGEMENTS. (414)266-1170
3. ALL LUMINAIRES ARE LED, CATEGORY C UNLESS OTHERWISE NOTED.
4. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA WHICH ARE NOT SHOWN.
5. THE ENGINEER MAY ADJUST THE LOCATIONS OF ITEMS UNDER THIS CONTRACT TO AVOID CONFLICT WITH EXISTING UTILITY FACILITIES.
6. INSTALL CABINET BASE 6" ABOVE ROADWAY ELEVATION.
7. THE CONDUIT EMBEDDED IN A TYPE 10 OR TYPE 13 BASE SHALL BE 3" CONDUIT.

MONOTUBE STRUCTURE NUMBERS	
BASE	STRUCTURE
SB3	S-40-1442
SB5	S-40-1443
SB6	S-40-1444
SB9	S-40-1445
SB12	S-40-1446
SB13	S-40-1447

WISCONSIN
JEFFREY G. FAIT
E-33536
FOX POINT, WI
PROFESSIONAL ENGINEER
DECEMBER 18, 2013

1 REVISED 08/12/2014

TRAFFIC CONTROL SIGNAL
STH 38 & SUSAN DRIVE
CITY OF OAK CREEK
MILWAUKEE COUNTY
SIGNAL NO. S40-1411 CABINET TYPE: TS2
CONTROLLER TYPE: Econolite

WISCONSIN DEPARTMENT OF TRANSPORTATION
APPROVAL RECOMMENDED
Date _____ REGION TRAFFIC ENGINEER
APPROVED
Date _____ STATE TRAFFIC ENGINEER

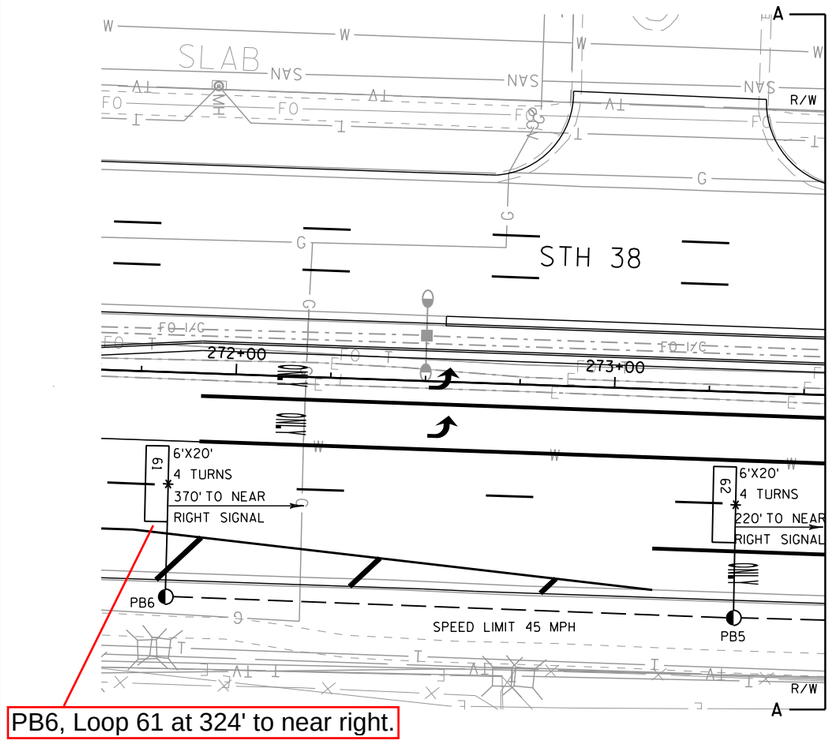
REGION CONTACT: J. GATES
DESIGNED BY: J. FAIT (TADI)
REVISED BY:

PAGE 1 OF 3

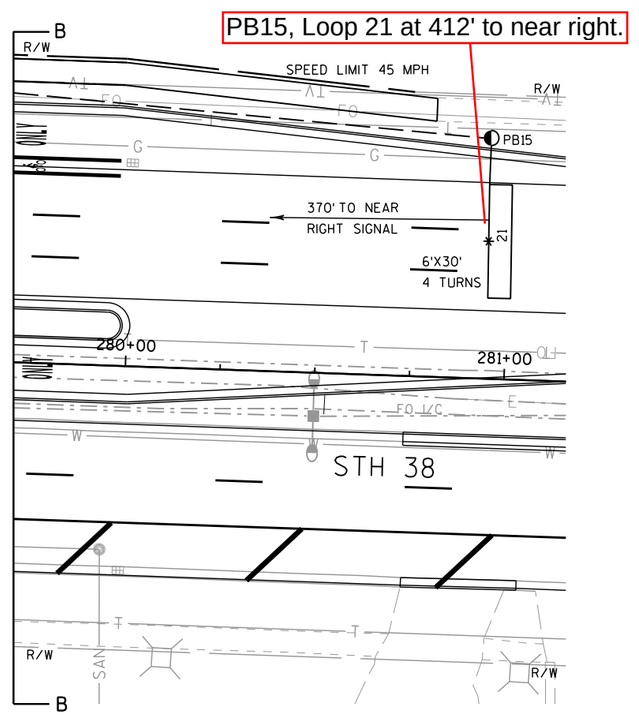
PROJECT NO: 2060-15-71	HWY: STH 38	COUNTY: MILWAUKEE	TRAFFIC SIGNAL PLAN	SHEET	E

FILE NAME : Proposed Signals.dgn PLOT DATE : 8/12/2014 PLOT BY : JFAIT-TADI PLOT NAME : PLOT SCALE : 40.0000 sf / in.

WISDOT/CADDS SHEET 42



PB6, Loop 61 at 324' to near right.



PB15, Loop 21 at 412' to near right.

TRAFFIC CONTROL SIGNAL
STH 38 & SUSAN DRIVE
CITY OF OAK CREEK
MILWAUKEE COUNTY

SIGNAL NO. S40-1411

REGION CONTACT: J. GATES
DESIGNED BY: J. FAIT (TADI)
REVISED BY:

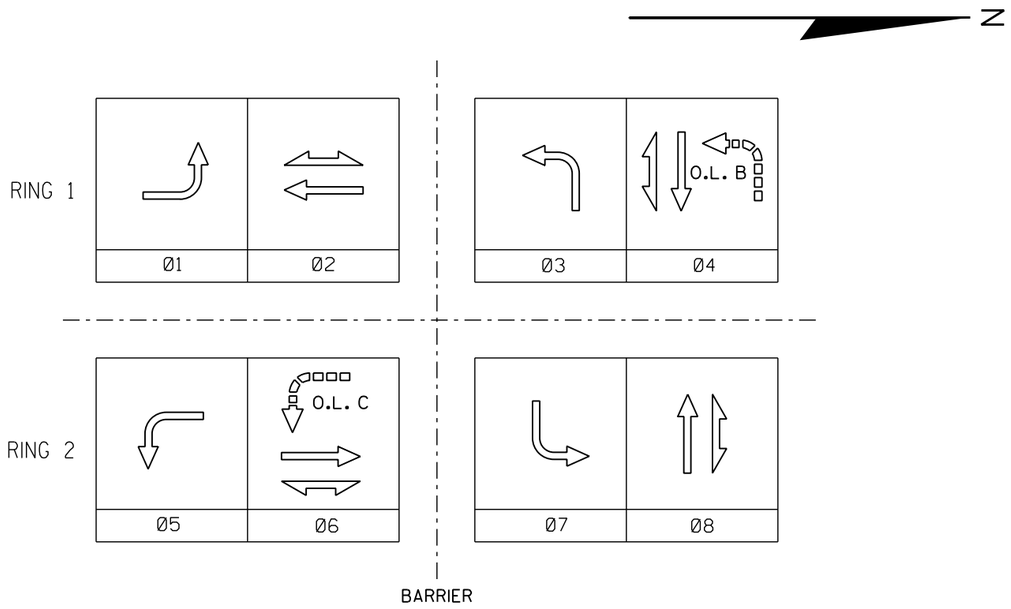
PAGE 2 OF 3

PROJECT NO: 2060-15-71	HWY: STH 38	COUNTY: MILWAUKEE	TRAFFIC SIGNAL PLAN	SHEET	E

FILE NAME : Proposed Signals.dgn PLOT DATE : 8/12/2014 PLOT BY : JFAIT-TADI PLOT NAME : PLOT SCALE : 40.0000 sf / in.

WISDOT/CADDS SHEET 42

	HEAD NUMBERS	FLASH
Ø1	4,5	R
Ø2	6,7,8,9	R
Ø3	20,21	-
Ø4	12,13,14	R
Ø5	10,11	-
Ø6	1,2,3	R
Ø7	15,16	R
Ø8	17,18,19	R
Ø2P	26,27	
Ø4P	24,25	
Ø6P	22,23	
Ø8P	28,29	
OLA		
OLB	20,21	R
OLC	10,11	R
OLD		



CONTROLLER LOGIC

PHASE NUMBER	PHASE LOCKING	DUAL ENTRY W / Ø	PHASE RECALL	PHASE ACTIVE
1		6		X
2	X	6	MIN	X
3		8		X
4		8		X
5		2		X
6	X	2	MIN	X
7		4		X
8		4		X

TYPE OF INTERCONNECT/COMMUNICATION	
NONE	
CLOSED LOOP	
TWISTED PAIR*	
FIBER OPTIC*	X
FIBER OPTIC (ETHERNET)	
RADIO	

TYPE OF COORDINATION	
NONE	
TBC	X
TRAFFIC RESPONSIVE	X
ADAPTIVE	
*LOCATION OF MASTER CONTROLLER NO:	S-
SIGNAL SYSTEM #:	SS-00-06

TYPE OF LIGHTING	
BY OTHER AGENCY	
IN TRAFFIC SIGNAL CABINET	X
IN SEPARATE DOT LIGHTING CABINET	

TYPE OF PRE-EMPT	
NONE	
RAILROAD	
EMERGENCY VEHICLE	X
GTT	X
TOMAR	
HARDWIRE	
OTHER	
LIFT BRIDGE	
QUEUE DETECTOR	

DETECTOR LOGIC

DETECTOR INPUT	3	1	7	5	11	9	15	13
PLAN LOOP DETECTOR #(S)	21	61						
ASSIGNED PHASE	2	6						
OPERATION MODE	VEH	VEH						
SWITCH								
EXTEND								
DELAY								

DETECTOR INPUT	19	17	23	21	27	25	31	29
PLAN LOOP DETECTOR #(S)	11	31	41	51	71	81		
ASSIGNED PHASE	1	3	4	5	7	8		
OPERATION MODE	VEH	VEH	VEH	VEH	VEH	VEH		
SWITCH		4		6				
EXTEND								
DELAY			X			X		

DETECTOR INPUT	4	2	8	6	12	10	16	14
PLAN LOOP DETECTOR #(S)	22	62						
ASSIGNED PHASE	2	6						
OPERATION MODE	VEH	VEH						
SWITCH								
EXTEND								
DELAY								

DETECTOR INPUT	20	18	24	22	28	26	32	30
PLAN LOOP DETECTOR #(S)	12		72					
ASSIGNED PHASE	1		7					
OPERATION MODE	VEH		VEH					
SWITCH								
EXTEND								
DELAY								

1

EMERGENCY VEHICLE PREEMPTION SEQUENCE

EMERGENCY VEHICLE DETECTOR	A	B	C	D
MOVEMENT				
PHASE	2+5	6+1	4+7	8+3

AFTER PREEMPTION SEQUENCE 2+5 OR 1+6, CONTROLLER SHALL RETURN TO PHASES 2+6.

AFTER PREEMPTION SEQUENCE 4+7 OR 8+3, CONTROLLER SHALL RETURN TO PHASES 4+8.

1 REVISED 08/12/2014

STH 38 & SUSAN DRIVE
CITY OF OAK CREEK
MILWAUKEE COUNTY

SIGNAL NO S40-1411 CABINET TYPE: TS2

CONTROLLER TYPE Econolite

DATE 12/13 PAGE NO. 3 OF 3

PROJECT NO: 2060-15-71	HWY: STH 38	COUNTY: MILWAUKEE	SEQUENCE OF OPERATIONS	SHEET	E

FILE NAME : Proposed Signals.dgn PLOT DATE : 8/12/2014 PLOT BY : JFAIT-TADI PLOT NAME : S-400,seq,rev2 PLOT SCALE : 40.0000 sf / in.

WISDOT/CADDS SHEET 42

Timing Cover Sheet for Signal: S1411 HWY: 38 and Susan Dr

Date: 7/13/2016
Signal No S1411 **S1411**
County: MIL
Controller: Econolite
School: None

Changes Made By: D. Dedrick
Highway: 38
Local Hwy: Howell Ave
Location: Susan Dr
Audible Ped: No

Pre-emption

Emergency: Yes Type: GTT Phases: 2+5,6+1,4+7,8+3
Railroad: No Type: Phases:

EVP Maintenance Id:
EVP Contact:
Community:
Contact Phone:
Alternate Phone:

Coordination

System No: SS0006
CoordType: TBC
Dip Switch Setting
DS ☑

Controller IP Address: 10.98.203.62
Comments:

TBC: Yes
Tone: No
Closed Loop: No
Hardwire: No

	Length	Split 1	Split 2	Split 3	Split 4
Cycle 1=	120	6:00am-12:30pm M-F	10am-6pm Sat-Sun		
Cycle 2=					
Cycle 3=	130	12:30pm-8:00pm M-F			
Cycle 4=					

Prom Replacement

Signal Plan No
Pre-empt: No

Part of a Local System: No

Local Contact:
Phone Number:

Overlaps

Overlap A= Phases:
Overlap B= Phases:
Overlap C= Phases:
Overlap D= Phases:

Flash

Emergency: R-R
Off Peak: No

Off Peak Times

Detector Timing

Dilemna Zone Yes Video Detection: Autoscope

Detector Number	41	81												
Stretch														
Right Turn Delay	*	*												
Left Turn Delay														

Unique Features

* = see program for detector settings; Logic statements 1-2 used for detector adjustments for permitted only operation during Time Base Plan 5.

Timing Changes Log for Signal S1411 on Hwy 38 in MILWAUKEE County

Susan Dr

Date Computer Changed	Date Change Made in Field	Timing Change	Reason for Change	Change By	Temp Timing
07/13/16	7/13/2016	New coord timing, update timing to current standards	Increase in volume	D. Dedrick	No
04/20/16	4/20/2016	Removed timing pattern 2 from the schedule and extended running times for patterns 1 & 3.	Short green times for side street at STH 38 & Drexel Ave.	D. Dedrick	No
04/12/16	4/12/2016	Updated preempt plans to current standards	Signal would go into flash because F1 was not programmed for Preempt Plans 3 & 5	D. Wolford	No
03/29/16	3/29/2016	Changed DLS input to NO on MM 5-1.	Allow time sync via CENTRACS.	E. Lloyd-Weis	No
07/23/15	7/24/2015	Implement coordination timing plan for SS0006.	Put signal into system.	J. Gates	No
07/02/15	7/2/2015	New signal turn on.	Signal constructed under 2060-15-71.	J. Gates	No

Milwaukee (S40-1408+) - S40-1411 - STH 38 & Susan

Configuration Phase Sequence

Controller Sequence (MM)1-1-1

Hardware Alternate Sequence Enable: No

Phase Ring Sequence.....(Note: Sequences identical to the prior one are not printed)

	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
Sequence 1																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 2																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 3																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 4																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 5																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 6																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 7																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 8																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 9																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 10																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 11																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 12																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 13																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 14																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 15																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 16																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.

Phases In Use / Exclusive PED (MM)1-2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phases in Use	X	X	X	X	X	X	X	X								
Exclusive PED																

Phase Compatibility (MM)1-1-2

Phase	Compatible Phase
1	5

1	6
2	5
2	6
3	7
3	8
4	7
4	8
9	11
9	12
10	11
10	12
13	15
13	16
14	15
14	16

Phase and Overlap Descriptions

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Description	NBLT	SB	WBLT	EB	SBLT	NB	EBLT	WB								
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**L**	**K**	**L**	**M**	**N**	**O**
Description						WBLT	SBLT									

Administration (MM)1-7-1

Enable CU/Cabinet Interlock CRC	No
Request Download Controller Data	No
Controller Database CRC	0000
Enable Automatic Backup to Datakey	Yes

Backup Prevent (MM)1-1-3

	Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Timing /	1		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Backup	2	.		.	.	.	.	.	.	.	.	.	.	.	.	.	.
	3	.	.		.	.	.	.	.	.	.	.	.	.	.	.	.
	4	.	.	.		.	.	.	.	.	.	.	.	.	.	.	.
	5	.	.	.	.		.	.	.	.	.	.	.	.	.	.	.
	6	.	.	.	.	.		.	.	.	.	.	.	.	.	.	.
	7	.	.	.	.	.	.		.	.	.	.	.	.	.	.	.
	8	.	.	.	.	.	.	.		.	.	.	.	.	.	.	.
	9	.	.	.	.	.	.	.	.		.	.	.	.	.	.	.
	10	.	.	.	.	.	.	.	.	.		.	.	.	.	.	.
	11	.	.	.	.	.	.	.	.	.	.		.	.	.	.	.
	12	.	.	.	.	.	.	.	.	.	.	.		.	.	.	.
	13	.	.	.	.	.	.	.	.	.	.	.	.		.	.	.
	14	.	.	.	.	.	.	.	.	.	.	.	.	.		.	.
	15	.	.	.	.	.	.	.	.	.	.	.	.	.	.		.
	16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	

Simultaneous Gap (MM)1-1-4

	Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	1		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	2	.		.	.	.	X	.	.	.	.	.	.	.	.	.	.
	3	.	.		.	.	.	.	.	.	.	.	.	.	.	.	.
	4	.	.	.		.	.	.	X	.	.	.	.	.	.	.	.
	5	.	.	.	.		.	.	.	.	.	.	.	.	.	.	.
Phase	6	.	X	.	.	.		.	.	.	.	.	.	.	.	.	.
Must	7	.	.	.	.	.	.		.	.	.	.	.	.	.	.	.
Gap	8	.	.	.	X	.	.	.		.	.	.	.	.	.	.	.
With	9	.	.	.	.	.	.	.	.		.	.	.	.	.	.	.
Phase	10	.	.	.	.	.	.	.	.	.		.	.	.	.	.	.
	11	.	.	.	.	.	.	.	.	.	.		.	.	.	.	.
	12	.	.	.	.	.	.	.	.	.	.	.		.	.	.	.
	13	.	.	.	.	.	.	.	.	.	.	.	.		.	.	.
	14	.	.	.	.	.	.	.	.	.	.	.	.	.		.	.
	15	.	.	.	.	.	.	.	.	.	.	.	.	.	.		.
	16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
	Disable	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Load Switch Assignments (MMU Channel) (MM)1-3

	Phase / Overlap	Type	Dimming				Power Up				Auto		Flash Together
			Red	Yellow	Green	Dark	Auto	Red	Yellow	Dark	Red	Yellow	
1	1	V				+	X				X		X
2	2	V				+	X				X		
3	3	V				+	X				X		X
4	4	V				+	X				X		
5	5	V				-	X				X		
6	6	V				-	X				X		X
7	7	V				-	X				X		
8	8	V				-	X				X		X
9	2	P				+	X						
10	4	P				+	X						
11	6	P				-	X						
12	8	P				-	X						
13	1	O				+	X				X		X
14	2	O				-	X				X		X
15	3	O				+	X				X		
16	4	O				-	X				X		

Milwaukee (S40-1408+) - S40-1411 - STH 38 & Susan

Configuration Port 1 (SDLC)

SDLC Options (MM)1-4-1

BIU	1	2	3	4	5	6	7	8
Term and Facility Enable	X	X						
Detector Rack Enable	X	X						

Enable TS2/MMU Type Cabinet: Yes
Enable MMU Extended Status: Yes
Enable SDLC Stop Time: No
Enable 3 Critical RFE's Lockup: Yes

MMU Program (MM)1-4-2

Channel Can Serve with Channel	
Channel 1	**Channel 2**
1	5
1	6
1	11
2	5
2	6
2	9
2	11
3	7
3	8
3	12
4	7
4	8
4	10
4	12
5	9
6	9
6	11
7	10
8	10
8	12
9	11
10	12

Color Check Enable (MM)1-4-3

Enable Color Check: Yes

MMU Channel	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Green	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Yellow	X	X	X	X	X	X	X	X					X	X	X	X
Red		X		X		X		X								

Secondary To Secondary Addressing (MM)1-4-4

ID	1	2	3	4	5	6	7	8	MMU
Term and Facility Enable									

ID	1	2	3	4	5	6	7	8	Diag
Detector Rack Enable									

Diagonstics (Test Fixture) Enable: No

Milwaukee (S40-1408+) - S40-1411 - STH 38 & Susan

Configuration Communications

Ethernet Port Configuration (MM)1-5-1

Controller IP: 10.98.203.62
Subnet Mask: 255.255.254.0
Default Gateway IP: 10.98.202.1
Server IP: 10.70.10.1

NTCIP Parameters (MM)1-5-5

Backup Time: 0
UDP Port: 501
Ethernet Priority: 1
Port 2 Priority: 4
Port 3A Priority: 2
Port 3B Priority: 3

Port Configuration (MM)1-5-2 to 1-5-4

Port	2 (C50S)	3A (C21S)	3B (C22S)
Protocol	NTCIP	NTCIP	Terminal
Enable	No	Yes	No
Data Rate	9600	19.2K	1200
Data Parity Stop	8 N 1	8 N 1	8 0 1
Modem Setup String	None	None	None
User String			
Comm Port Address	1	1	0
System Detector 9-1	0	0	0
Telemetry Response Delay	0.0	0.0	0.0
Duplex Half/Full	Full	Full	Full
Flow Control	Yes	Yes	Yes
AB3418 NTCIP Group Address	0	0	0
AB3418 NTCIP Single Flag Enable	No	No	No
RTS to CTS Delay	0.0	0.0	3.0
RTS Turn Off Delay	0.0	0.0	2.0
Droupout Time	10	10	10
Early RTS	No	No	No
Telemetry Mode	FSK	FSK	FSK
Rail Road	0	0	0
Rail Road Line	0	0	0
ATCS Group	0	0	0
Wayside Device	0	0	0
ATCS Device	0	0	0
Wayside SubNode	0	0	0
ATCS SubNode	0	0	0

ECPIP Parameters (MM)1-5-6

Controller Address: 0
Expanded System Detector Address: 0

Local System Detector

Local System Detector	Number

Milwaukee (S40-1408+) - S40-1411 - STH 38 & Susan

Configuration Logging/Display

Event Logging (MM)1-6-1

Critical RFE's	Yes	3 Critical RFE's in 24 Hours	Yes
MMU Flash Faults	Yes	Local Flash Faults	Yes
Non-Critical RFE's (Det/Test)	Yes	Detector Errors	Yes
Coordination Errors	Yes	Controller Download	Yes
Preempt	Yes	TSP	Yes
Power On/Off	Yes	Low Battery	Yes
Access	Yes	Data Change	Yes
Online/Offline	Yes		

Alarm Log	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Enable Logging	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Display Options (MM)1-7-2

Key Click Enable:	Yes
Backlight Enable:	Yes
LED Mode:	Single Color
Main Status Display Mode:	Basic
Screen Format:	Advanced
Trans Mode Pop-up Disable:	No

Sign On (MM)8-5

Sign On Message Line 1: INTERSECTION NAME:
Sign On Message Line 2: WisDOT Data Base

Milwaukee (S40-1408+) - S40-1411 - STH 38 & Susan

Logic Processor Page 1
Statement Control (MM)1-8-1

LP	Statement Control
1	E
2	E

Milwaukee (S40-1408+) - S40-1411 - STH 38 & Susan

Logic Processor Page 2

Logic Statements (MM)1-8-2

Statement Number: 1

IF:

	Assignment	#		State
IF	DETECTOR	17	IS	ON
AND	ACTION PLAN NUM		IS	5

THEN:

Assignment	#	State
CALL PHASE	4	ON

ELSE:

Assignment	#	State

Statement Number: 2

IF:

	Assignment	#		State
IF	DETECTOR	21	IS	ON
AND	ACTION PLAN NUM		IS	5

THEN:

Assignment	#	State
CALL PHASE	6	ON

ELSE:

Assignment	#	State

Milwaukee (S40-1408+) - S40-1411 - STH 38 & Susan

Controller Timing Plan (MM)2-1

Plan 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	NBLT	SB	WBLT	EB	SBLT	NB	EBLT	WB								
Min Green	6	15	6	10	6	15	6	10	0	0	0	0	0	0	0	0
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	7	0	7	0	7	0	7	0	0	0	0	0	0	0	0
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	29	0	32	0	22	0	39	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	1.5	3.9	1.5	1.5	1.5	3.4	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	30	45	30	35	30	45	30	35	0	0	0	0	0	0	0	0
Max 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.5	4.3	3.5	5.2	3.5	4.3	3.5	5.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	2.0	2.9	2.0	3.0	2.0	2.9	2.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	1.2	0.0	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	6	26	6	10	6	22	6	10	0	0	0	0	0	0	0	0
Time B4	30	26	30	35	30	22	30	35	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	19	0	0	0	23	0	0	0	0	0	0	0	0	0	0
Min Gap	1.5	3.5	1.5	1.5	1.5	3.5	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	NBLT	SB	WBLT	EB	SBLT	NB	EBLT	WB								
Min Green	5	15	5	10	5	15	5	10	0	0	0	0	0	0	0	0
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	3.0	7.0	3.0	5.0	3.0	7.0	3.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	15	45	15	35	15	45	15	35	0	0	0	0	0	0	0	0
Max 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 3

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Direction	**NBLT**	**SB**	**WBLT**	**EB**	**SBLT**	**NB**	**EBLT**	**WB**								
Min Green	5	15	5	10	5	15	5	10	0	0	0	0	0	0	0	0
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	3.0	7.0	3.0	5.0	3.0	7.0	3.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	15	45	15	35	15	45	15	35	0	0	0	0	0	0	0	0
Max 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 4

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Direction	**NBLT**	**SB**	**WBLT**	**EB**	**SBLT**	**NB**	**EBLT**	**WB**								
Min Green	5	15	5	10	5	15	5	10	0	0	0	0	0	0	0	0
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	3.0	7.0	3.0	5.0	3.0	7.0	3.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	15	45	15	35	15	45	15	35	0	0	0	0	0	0	0	0
Max 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Milwaukee (S40-1408+) - S40-1411 - STH 38 & Susan

Controller Overlaps

Vehicle Overlaps (MM)2-2

Overlap	Type	Lag Green	Yellow	Red	Advance Green

Phases

Overlap	Phase	Included	Protect	Ped Protect	Not Overlap	Modifier	Lag X Phase	Lag 2 Phase	Flash Green

PPLT FYA

Overlap	Protected Phase	Permissive Phase	Flash Arrow Output	Flash Arrow Channel	FYA Delay	FYA Clearance	Special Function Disable
F	3	4	Ped Yellow	10	0	0.0	0
G	5	6	Ped Yellow	11	0	0.0	0

Guaranteed Minimum Time Data (MM) 2-4

Phase Time Data

Phase	Min Green	Walk	Ped Clear	Yellow	Red Clear	Overlap Green
A01	1	0	7	3.0	0.0	1
B02	1	0	7	3.0	0.0	1
C03	1	0	7	3.0	0.0	1
D04	1	0	7	3.0	0.0	1
E05	1	0	7	3.0	0.0	1
F06	1	0	7	3.0	0.0	1
G07	1	0	7	3.0	0.0	1
H08	1	0	7	3.0	0.0	1
I09	1	0	7	3.0	0.0	1
J10	1	0	7	3.0	0.0	1
K11	1	0	7	3.0	0.0	1
L12	1	0	7	3.0	0.0	1
M13	1	0	7	3.0	0.0	1
N14	1	0	7	3.0	0.0	1
O15	1	0	7	3.0	0.0	1
P16	1	0	7	3.0	0.0	1

Milwaukee (S40-1408+) - S40-1411 - STH 38 & Susan

Controller Pedestrian Overlaps
Pedestrian Overlaps (MM) 2-3

Included Phase	Ped Overlap

Milwaukee (S40-1408+) - S40-1411 - STH 38 & Susan

Controller Start/Fash (MM) 2-5

Startup

Phase	Phase Setting
2	G
6	G

Overlap
F
G

Flash > Mon: No
Flash Time: 10
All Red: 6
Power Start Sequence: 1
MUTCD Enabled: Yes
MUTCD Yellow to Green: No

Automatic Flash

Entry Phase
2
6

Exit Phase
2
6

Overlap Exit
F
G

Flash > Mon: No
Exit Flash Interval: G
Minimum Auto Flash: 8
Minimumin Recall: No
Cycle Through Phase: No

Milwaukee (S40-1408+) - S40-1411 - STH 38 & Susan

Controller Options

Controller Options (MM)2-6-1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Flashing Green Phase																
Guaranteed Passage																
Non Act 1																
Non Act 2																
Dual Entry		X		X		X		X								
Conditional Service																
Conditional Reservice																
Ped Reservice		X		X		X		X								
Rest In Walk																
Flashing Walk																
Ped Clear Yellow																
Ped Clear Red																
IGRN + Veh Ext																

Ped Clear Protect: On Red Revert: 2.0 MUTCD 3 Seconds Don't Walk: No

Act Pre-Time (MM)2-7

Pre-Time Mode Enable: No Free Input Enables Pre-Timed: Yes

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Pre-Timed Phase																

Phase Recall Options (MM)2-8

Plan 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector		X				X										
Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
Al Calc																

Plan 2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector		X				X										
Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
Al Calc																

Plan 3

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector		X				X										
Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
Al Calc																

Plan 4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector		X				X										

Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
AI Calc																

Milwaukee (S40-1408+) - S40-1411 - STH 38 & Susan

Coordination Options

Coordination Options (MM)3-1

Manual Pattern	Auto	ECPI Coord	Yes
System Source	TBC	System Format	STD
Splits In	Seconds	Offsets In	Seconds
Transition	Add	Max Select	MAXINH
Dwell/Add Time	0		
Delay Coord Walk to LZ	No	Force Off	Fixed
Offset Reference	Lead	Use Ped Time	No
Ped Recall	No	Ped Reservice	No
Local Zero Override	No	FO Added Initial Green	Yes
Re-Sync Count	3	Multisync	No

Auto Perm Minimum Green (Seconds) (MM)3-4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Minimum Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Split Demand (MM)3-5

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Demand 1																
Demand 2																

Demand	1	2
Detector	0	0
Call Time (Sec)	0	0
Cycle Count	0	0

Milwaukee (S40-1408+) - S40-1411 - STH 38 & Susan

Coordination Pattern Data
Pattern Data (MM)3-2

Pattern - 1

Split Pattern	1	TS2 (Pat-Off)	0-1	Splits in	Seconds
Cycle	120	Std (COS)	0	Offsets in	Seconds
Offset Value	37s	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	6		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	NBLT	SB	WBLT	EB	SBLT	NB	EBLT	WB								
Splits (Split Pat 1)	25	57	13	25	13	69	18	20	0	0	0	0	0	0	0	0
Preference 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Preference 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Disp.	-	0	0	0
Split Sum	120s	120s	0s	0s

Misc. Data

Veh. Permissive 1	0	Veh. Permissive 2	0	Veh. Permissive 2 Disp.	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern Data

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coordinated Phases		X				X										
Vehicle Recalls																
Ped Recalls																
Max Recalls																
Phase Omit																
Special Function Output																

Pattern - 3

Split Pattern	3	TS2 (Pat-Off)	0-3	Splits in	Seconds
Cycle	130	Std (COS)	0	Offsets in	Seconds
Offset Value	125s	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	5		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	NBLT	SB	WBLT	EB	SBLT	NB	EBLT	WB								
Splits (Split Pat 3)	30	60	13	27	13	77	20	20	0	0	0	0	0	0	0	0
Preference 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Preference 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Disp.	-	0	0	0
Split Sum	130s	130s	0s	0s

Misc. Data

Veh. Permissive 1	0	Veh. Permissive 2	0	Veh. Permissive 2 Disp.	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern Data

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coordinated Phases		X				X										
Vehicle Recalls																
Ped Recalls																
Max Recalls																
Phase Omit																
Special Function Output																

Milwaukee (S40-1408+) - S40-1411 - STH 38 & Susan

Coordination Split Pattern Data

Split Pattern Data (MM)3-3

Split Pattern - 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	NBLT	SB	WBLT	EB	SBLT	NB	EBLT	WB								
Splits (seconds)	25	57	13	25	13	69	18	20	0	0	0	0	0	0	0	0
Coordinated Phases		X				X										
Vehicle Recalls																
Ped Recalls																
Max Recalls																
Phase Omit																

Ring	1	2	3	4
Split Sum	120s	120s	0s	0s

Split Pattern - 3

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	NBLT	SB	WBLT	EB	SBLT	NB	EBLT	WB								
Splits (seconds)	30	60	13	27	13	77	20	20	0	0	0	0	0	0	0	0
Coordinated Phases		X				X										
Vehicle Recalls																
Ped Recalls																
Max Recalls																
Phase Omit																

Ring	1	2	3	4
Split Sum	130s	130s	0s	0s

Milwaukee (S40-1408+) - S40-1411 - STH 38 & Susan

Preemptor

Preempt Plan (MM)4-1

Plan 3

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Track Clear Vehicle																
Track Clear Overlap																
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Vehicle		X			X											
Dwell Ped																
Dwell Overlap							F1									
Cycling Vehicle																
Cycling Ped																
Cycling Overlap																
Exit Phase		X				X										
Exit Calls																
Special Funciton																

Enable	Yes	Preempt Override	No	Interlock Enable	No
Detector Lock	Yes	Delay	1	Inhibit	0
Override Flash	No	Duration	0	CLR > GRN	No
Term Overlap Asap	No	PC Through Yellow	No	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	Flash Exit Color	Green	Exit Option	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Preempt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	5	0	5	25.5	25.5
	Min Grn	**Ext Grn**	**Max Grn**	**Yellow**	**Red**
Track Clear	0	0	0	25.5	25.5
	Min Dwell	**Pmt Ext**	**Max Time**	**Yellow**	**Red**
Dwell / Cycle-Exit	10	5.0	0	25.5	25.5

Preempt Active Out	On	Preempt Active Dwell	No
Other Priority Preempt	On	Non-Priority Preempt	F1
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Pri Return % Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Track Clear Vehicle																
Track Clear Overlap																
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Vehicle	X					X										
Dwell Ped																
Dwell Overlap							F1									
Cycling Vehicle																
Cycling Ped																
Cycling Overlap																
Exit Phase		X				X										
Exit Calls																
Special Funciton																

Enable	Yes	Preempt Override	No	Interlock Enable	No
Detector Lock	Yes	Delay	1	Inhibit	0
Override Flash	No	Duration	0	CLR > GRN	No
Term Overlap Asap	No	PC Through Yellow	No	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	Flash Exit Color	Green	Exit Option	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Preempt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	5	0	5	25.5	25.5
	Min Grn	**Ext Grn**	**Max Grn**	**Yellow**	**Red**
Track Clear	0	0	0	25.5	25.5
	Min Dwell	**Pmt Ext**	**Max Time**	**Yellow**	**Red**
Dwell / Cycle-Exit	10	5.0	0	25.5	25.5

Preempt Active Out	On	Preempt Active Dwell	No
Other Priority Preempt	On	Non-Priority Preempt	F1
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Pri Return % Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 5

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**
Track Clear Vehicle																
Track Clear Overlap																
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Vehicle				X			X									
Dwell Ped																
Dwell Overlap						F1										
Cycling Vehicle																
Cycling Ped																
Cycling Overlap																
Exit Phase				X				X								
Exit Calls																
Special Funciton																

Enable	Yes	Preempt Override	No	Interlock Enable	No
Detector Lock	Yes	Delay	1	Inhibit	0
Override Flash	No	Duration	0	CLR > GRN	No
Term Overlap Asap	No	PC Through Yellow	No	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	Flash Exit Color	Green	Exit Option	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Preempt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	5	0	5	25.5	25.5
	Min Grn	**Ext Grn**	**Max Grn**	**Yellow**	**Red**
Track Clear	0	0	0	25.5	25.5
	Min Dwell	**Pmt Ext**	**Max Time**	**Yellow**	**Red**
Dwell / Cycle-Exit	10	5.0	0	25.5	25.5

Preempt Active Out	On	Preempt Active Dwell	No
Other Priority Preempt	On	Non-Priority Preempt	F1
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Pri Return % Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 6

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**
Track Clear Vehicle																
Track Clear Overlap																
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Vehicle			X					X								
Dwell Ped																
Dwell Overlap						F1										
Cycling Vehicle																
Cycling Ped																
Cycling Overlap																
Exit Phase				X				X								
Exit Calls																
Special Funciton																

Enable	Yes	Preempt Override	No	Interlock Enable	No
Detector Lock	Yes	Delay	1	Inhibit	0
Override Flash	No	Duration	0	CLR > GRN	No
Term Overlap Asap	No	PC Through Yellow	No	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	Flash Exit Color	Green	Exit Option	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Preempt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	5	0	5	25.5	25.5
	Min Grn	**Ext Grn**	**Max Grn**	**Yellow**	**Red**
Track Clear	0	0	0	25.5	25.5
	Min Dwell	**Pmt Ext**	**Max Time**	**Yellow**	**Red**
Dwell / Cycle-Exit	10	5.0	0	25.5	25.5

Preempt Active Out	On	Preempt Active Dwell	No
Other Priority Preempt	On	Non-Priority Preempt	F1
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Pri Return % Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Milwaukee (S40-1408+) - S40-1411 - STH 38 & Susan

Time Base Clock/Calendar
Clock/Calendar Options (MM)5-1

Enable Action Plan:	0
Sync Reference Time:	12:00 AM
Sync Reference:	Reference Time
Day Light Savings:	No
Time Reset Input Set Time:	3:30:00
Standard Time From GMT:	0

Milwaukee (S40-1408+) - S40-1411 - STH 38 & Susan

Time Base Action Plan
Action Plan (MM)5-2

Action Plan - 1

Pattern	1	Override System	No
Timing Plan	0	Sequence	6
Veh Det Plan	2	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 2

Pattern	2	Override System	No
Timing Plan	0	Sequence	1
Veh Det Plan	2	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 3

Pattern	3	Override System	No
Timing Plan	0	Sequence	5
Veh Det Plan	2	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 4

Pattern	4	Override System	No
Timing Plan	0	Sequence	1
Veh Det Plan	2	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 5

Pattern	254 - FREE	Override System	No
Timing Plan	0	Sequence	0
Veh Det Plan	2	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit			X		X											
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 99

Pattern	255 - FLSH	Override System	No
Timing Plan	0	Sequence	0
Veh Det Plan	0	Detector Log	None
Flash	Yes	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 100

Pattern	254 - FREE	Override System	No
Timing Plan	0	Sequence	0
Veh Det Plan	1	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Milwaukee (S40-1408+) - S40-1411 - STH 38 & Susan

Time Base Day Plan/Schedule
Day Plan (MM)5-3

Day Plan - 1

Event	Action Plan	Start Time
1	5	12:01 AM
2	100	4:30 AM
3	1	6:00 AM
4	3	12:30 PM
5	100	8:00 PM
6	5	10:30 PM

Day Plan - 2

Event	Action Plan	Start Time
1	5	12:01 AM
2	100	4:30 AM
3	1	10:00 AM
4	100	6:00 PM
5	5	10:30 PM

Schedule (MM)5-4

Schedule Number - 1

Day Plan Number: 1

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	X	X	X	X	X	X	X	X	X	X	X	X

Day of Week	Sun	Mon	Tue	Wed	Thur	Fri	Sat
		X	X	X	X	X	

Day of Month	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

Schedule Number - 2

Day Plan Number: 2

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	X	X	X	X	X	X	X	X	X	X	X	X

Day of Week	Sun	Mon	Tue	Wed	Thur	Fri	Sat
	X						X

Day of Month	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

Milwaukee (S40-1408+) - S40-1411 - STH 38 & Susan

Time Base Exceptions
Exception Day Program (MM)5-5

Day	Fixed/Float	Month	Day of Week/Month	Week of Month/Year	Day Plan

Milwaukee (S40-1408+) - S40-1411 - STH 38 & Susan

Detectors

Detectors Page 1

Vehicle Detectors Setup (MM)6-1

Vehicle Plan	Detector Number	Called	Type

Vehicle Detector Setup (MM)6-2 continued

Detector Number	Type	TS2 Detector	Detector Description
1	N-NTCIP	Yes	Loop 61
2	N-NTCIP	Yes	Loop 62
3	N-NTCIP	Yes	Loop 21
4	N-NTCIP	Yes	Loop 22
5	N-NTCIP	Yes	
6	N-NTCIP	Yes	
7	N-NTCIP	Yes	
8	N-NTCIP	Yes	
9	N-NTCIP	Yes	
10	N-NTCIP	Yes	
11	N-NTCIP	Yes	
12	N-NTCIP	Yes	
13	N-NTCIP	Yes	
14	N-NTCIP	Yes	
15	N-NTCIP	Yes	
16	N-NTCIP	Yes	
17	N-NTCIP	Yes	Video Detection Zone 31
18	N-NTCIP	Yes	
19	N-NTCIP	Yes	Video Detection Zone 11
20	N-NTCIP	Yes	Video Detection Zone 12
21	N-NTCIP	Yes	Video Detection Zone 51
22	N-NTCIP	Yes	
23	N-NTCIP	Yes	Video Detection Zone 41
24	N-NTCIP	Yes	Video Detection Zone 72
25	N-NTCIP	Yes	Video Detection Zone 81
26	N-NTCIP	Yes	
27	N-NTCIP	Yes	Video Detection Zone 71
28	N-NTCIP	Yes	
29	N-NTCIP	Yes	
30	N-NTCIP	Yes	
31	N-NTCIP	Yes	
32	N-NTCIP	Yes	
33	N-NTCIP	Yes	
34	N-NTCIP	Yes	
35	N-NTCIP	Yes	
36	N-NTCIP	Yes	
37	N-NTCIP	Yes	
38	N-NTCIP	Yes	
39	N-NTCIP	Yes	
40	N-NTCIP	Yes	
41	N-NTCIP	Yes	
42	N-NTCIP	Yes	
43	N-NTCIP	Yes	
44	N-NTCIP	Yes	
45	N-NTCIP	Yes	
46	N-NTCIP	Yes	
47	N-NTCIP	Yes	
48	N-NTCIP	Yes	
49	N-NTCIP	Yes	
50	N-NTCIP	Yes	
51	N-NTCIP	Yes	
52	N-NTCIP	Yes	
53	N-NTCIP	Yes	
54	N-NTCIP	Yes	

55	N-NTCIP	Yes	
56	N-NTCIP	Yes	
57	N-NTCIP	Yes	
58	N-NTCIP	Yes	
59	N-NTCIP	Yes	
60	N-NTCIP	Yes	
61	N-NTCIP	Yes	
62	N-NTCIP	Yes	
63	N-NTCIP	Yes	
64	N-NTCIP	Yes	

Vehicle Detector Setup (MM)6-2 continued

Det Num	Veh Det Plan	Phase	ECPI Log	Call Option	Delay Time	Ext Option	Extend Time / Passage Time	Queue Lim / Discon. Time	Use Added Initial	Cross Switch Phase	Lock In	NTCIP Vol.	NTCIP Occ.	Pmt Queue Delay
1	1	6	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
1	2	6	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
1	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
1	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
2	1	6	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
2	2	6	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
2	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
2	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
3	1	2	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
3	2	2	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
3	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
3	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
4	1	2	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
4	2	2	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
4	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
4	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
5	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
5	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
5	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
5	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
6	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
6	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
6	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
6	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
7	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
7	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
7	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
7	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
8	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
8	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
8	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
8	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
9	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
9	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
9	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
9	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
10	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
10	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
10	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
10	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
11	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
11	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
11	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
11	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
12	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
12	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
12	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
12	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
13	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
13	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
13	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
13	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
14	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

14	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
14	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
14	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
15	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
15	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
15	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
15	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
16	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
16	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
16	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
16	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
17	1	3	No	Yes	0.0	Passage	0.0	0	Yes	4	None	No	No	No
17	2	3	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
17	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
17	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
18	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
18	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
18	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
18	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
19	1	1	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
19	2	1	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
19	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
19	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
20	1	1	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
20	2	1	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
20	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
20	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
21	1	5	No	Yes	0.0	Passage	0.0	0	Yes	6	None	No	No	No
21	2	5	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
21	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
21	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
22	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
22	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
22	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
22	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
23	1	4	No	Yes	8.0	Passage	0.0	0	Yes	0	None	No	No	No
23	2	4	No	Yes	8.0	Passage	0.0	0	Yes	0	None	No	No	No
23	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
23	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
24	1	7	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
24	2	7	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
24	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
24	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
25	1	8	No	Yes	8.0	Passage	0.0	0	Yes	0	None	No	No	No
25	2	8	No	Yes	8.0	Passage	0.0	0	Yes	0	None	No	No	No
25	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
25	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
26	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
26	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
26	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
26	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
27	1	7	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
27	2	7	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
27	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
27	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
28	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
28	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
28	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
28	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
29	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
29	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
29	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
29	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
30	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
30	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
30	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
30	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
31	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

31	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
31	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
31	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
32	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
32	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
32	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
32	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
33	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
33	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
33	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
33	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
34	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
34	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
34	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
34	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
35	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
35	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
35	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
35	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
36	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
36	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
36	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
36	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
37	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
37	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
37	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
37	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
38	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
38	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
38	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
38	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
39	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
39	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
39	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
39	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
40	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
40	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
40	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
40	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
41	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
41	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
41	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
41	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
42	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
42	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
42	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
42	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
43	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
43	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
43	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
43	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
44	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
44	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
44	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
44	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
45	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
45	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
45	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
45	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
46	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
46	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
46	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
46	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
47	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
47	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
47	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
47	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
48	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

48	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
48	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
48	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
49	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
49	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
49	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
49	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
50	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
50	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
50	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
50	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
51	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
51	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
51	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
51	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
52	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
52	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
52	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
52	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
53	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
53	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
53	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
53	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
54	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
54	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
54	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
54	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
55	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
55	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
55	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
55	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
56	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
56	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
56	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
56	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
57	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
57	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
57	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
57	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
58	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
58	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
58	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
58	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
59	1	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
59	2	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
59	3	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
59	4	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
60	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	Yellow	No	No	No
60	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	Yellow	No	No	No
60	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	Yellow	No	No	No
60	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	Yellow	No	No	No
61	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
61	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
61	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
61	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
62	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
62	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
62	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
62	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
63	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
63	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
63	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
63	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
64	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
64	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
64	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
64	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

Ped Detector Options (MM)6-3

Phase Ped Detector (Econolite)

Detector	Call Phase															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.
4	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.
5	.	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.
6	.	.	.	.	.	X	.	.	.	.	.	.	.	.	.	.
7	.	.	.	.	.	.	X	.	.	.	.	.	.	.	.	.
8	.	.	.	.	.	.	.	X	.	.	.	.	.	.	.	.
9	.	.	.	.	.	.	.	.	X	.	.	.	.	.	.	.
10	.	.	.	.	.	.	.	.	.	X	.	.	.	.	.	.
11	.	.	.	.	.	.	.	.	.	.	X	.	.	.	.	.
12	.	.	.	.	.	.	.	.	.	.	.	X	.	.	.	.
13	.	.	.	.	.	.	.	.	.	.	.	.	X	.	.	.
14	.	.	.	.	.	.	.	.	.	.	.	.	.	X	.	.
15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	X	.
16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	X

Milwaukee (S40-1408+) - S40-1411 - STH 38 & Susan

Detectors

Detectors Page 2

Log - Speed Detector Setup (MM)6-4

NTCIP Log Period: 60 ECPI Log Period: 15 Length Unit: Inch

Speed Detector	Local Detector	One/Two Detector	Vehicle Length	Trap Length	Enable Log
1	0	1	0	0	No
2	0	1	0	0	No
3	0	1	0	0	No
4	0	1	0	0	No
5	0	1	0	0	No
6	0	1	0	0	No
7	0	1	0	0	No
8	0	1	0	0	No
9	0	1	0	0	No
10	0	1	0	0	No
11	0	1	0	0	No
12	0	1	0	0	No
13	0	1	0	0	No
14	0	1	0	0	No
15	0	1	0	0	No
16	0	1	0	0	No

Vehicle Detector Diagnostics (MM)6-5

Plan	Detector	Counts	Act	Pres	Multiplier	Failed Time	Failed Call Delay
1	1	0	0	0	1	255	0
1	2	0	0	0	1	255	0
1	3	0	0	0	1	255	0
1	4	0	0	0	1	255	0
1	5	0	0	0	1	255	0
1	6	0	0	0	1	255	0
1	7	0	0	0	1	255	0
1	8	0	0	0	1	255	0
1	9	0	0	0	1	255	0
1	10	0	0	0	1	255	0
1	11	0	0	0	1	255	0
1	12	0	0	0	1	255	0
1	13	0	0	0	1	255	0
1	14	0	0	0	1	255	0
1	15	0	0	0	1	255	0
1	16	0	0	0	1	255	0
1	17	0	0	0	1	255	0
1	18	0	0	0	1	255	0
1	19	0	0	0	1	255	0
1	20	0	0	0	1	255	0
1	21	0	0	0	1	255	0
1	22	0	0	0	1	255	0
1	23	0	0	0	1	255	0
1	24	0	0	0	1	255	0
1	25	0	0	0	1	255	0
1	26	0	0	0	1	255	0
1	27	0	0	0	1	255	0
1	28	0	0	0	1	255	0
1	29	0	0	0	1	255	0
1	30	0	0	0	1	255	0
1	31	0	0	0	1	255	0
1	32	0	0	0	1	255	0
1	33	0	0	0	1	255	0

1	34	0	0	0	1	255	0
1	35	0	0	0	1	255	0
1	36	0	0	0	1	255	0
1	37	0	0	0	1	255	0
1	38	0	0	0	1	255	0
1	39	0	0	0	1	255	0
1	40	0	0	0	1	255	0
1	41	0	0	0	1	255	0
1	42	0	0	0	1	255	0
1	43	0	0	0	1	255	0
1	44	0	0	0	1	255	0
1	45	0	0	0	1	255	0
1	46	0	0	0	1	255	0
1	47	0	0	0	1	255	0
1	48	0	0	0	1	255	0
1	49	0	0	0	1	255	0
1	50	0	0	0	1	255	0
1	51	0	0	0	1	255	0
1	52	0	0	0	1	255	0
1	53	0	0	0	1	255	0
1	54	0	0	0	1	255	0
1	55	0	0	0	1	255	0
1	56	0	0	0	1	255	0
1	57	0	0	0	1	255	0
1	58	0	0	0	1	255	0
1	59	0	0	0	1	255	0
1	60	0	0	0	1	255	0
1	61	0	0	0	1	255	0
1	62	0	0	0	1	255	0
1	63	0	0	0	1	255	0
1	64	0	0	0	1	255	0
2	1	0	0	0	1	255	0
2	2	0	0	0	1	255	0
2	3	0	0	0	1	255	0
2	4	0	0	0	1	255	0
2	5	0	0	0	1	255	0
2	6	0	0	0	1	255	0
2	7	0	0	0	1	255	0
2	8	0	0	0	1	255	0
2	9	0	0	0	1	255	0
2	10	0	0	0	1	255	0
2	11	0	0	0	1	255	0
2	12	0	0	0	1	255	0
2	13	0	0	0	1	255	0
2	14	0	0	0	1	255	0
2	15	0	0	0	1	255	0
2	16	0	0	0	1	255	0
2	17	0	0	0	1	255	0
2	18	0	0	0	1	255	0
2	19	0	0	0	1	255	0
2	20	0	0	0	1	255	0
2	21	0	0	0	1	255	0
2	22	0	0	0	1	255	0
2	23	0	0	0	1	255	0
2	24	0	0	0	1	255	0
2	25	0	0	0	1	255	0
2	26	0	0	0	1	255	0
2	27	0	0	0	1	255	0
2	28	0	0	0	1	255	0
2	29	0	0	0	1	255	0
2	30	0	0	0	1	255	0
2	31	0	0	0	1	255	0
2	32	0	0	0	1	255	0
2	33	0	0	0	1	255	0
2	34	0	0	0	1	255	0
2	35	0	0	0	1	255	0
2	36	0	0	0	1	255	0
2	37	0	0	0	1	255	0

2	38	0	0	0	1	255	0
2	39	0	0	0	1	255	0
2	40	0	0	0	1	255	0
2	41	0	0	0	1	255	0
2	42	0	0	0	1	255	0
2	43	0	0	0	1	255	0
2	44	0	0	0	1	255	0
2	45	0	0	0	1	255	0
2	46	0	0	0	1	255	0
2	47	0	0	0	1	255	0
2	48	0	0	0	1	255	0
2	49	0	0	0	1	255	0
2	50	0	0	0	1	255	0
2	51	0	0	0	1	255	0
2	52	0	0	0	1	255	0
2	53	0	0	0	1	255	0
2	54	0	0	0	1	255	0
2	55	0	0	0	1	255	0
2	56	0	0	0	1	255	0
2	57	0	0	0	1	255	0
2	58	0	0	0	1	255	0
2	59	0	0	0	1	255	0
2	60	0	0	0	1	255	0
2	61	0	0	0	1	255	0
2	62	0	0	0	1	255	0
2	63	0	0	0	1	255	0
2	64	0	0	0	1	255	0
3	1	0	0	0	1	255	0
3	2	0	0	0	1	255	0
3	3	0	0	0	1	255	0
3	4	0	0	0	1	255	0
3	5	0	0	0	1	255	0
3	6	0	0	0	1	255	0
3	7	0	0	0	1	255	0
3	8	0	0	0	1	255	0
3	9	0	0	0	1	255	0
3	10	0	0	0	1	255	0
3	11	0	0	0	1	255	0
3	12	0	0	0	1	255	0
3	13	0	0	0	1	255	0
3	14	0	0	0	1	255	0
3	15	0	0	0	1	255	0
3	16	0	0	0	1	255	0
3	17	0	0	0	1	255	0
3	18	0	0	0	1	255	0
3	19	0	0	0	1	255	0
3	20	0	0	0	1	255	0
3	21	0	0	0	1	255	0
3	22	0	0	0	1	255	0
3	23	0	0	0	1	255	0
3	24	0	0	0	1	255	0
3	25	0	0	0	1	255	0
3	26	0	0	0	1	255	0
3	27	0	0	0	1	255	0
3	28	0	0	0	1	255	0
3	29	0	0	0	1	255	0
3	30	0	0	0	1	255	0
3	31	0	0	0	1	255	0
3	32	0	0	0	1	255	0
3	33	0	0	0	1	255	0
3	34	0	0	0	1	255	0
3	35	0	0	0	1	255	0
3	36	0	0	0	1	255	0
3	37	0	0	0	1	255	0
3	38	0	0	0	1	255	0
3	39	0	0	0	1	255	0
3	40	0	0	0	1	255	0
3	41	0	0	0	1	255	0

3	42	0	0	0	1	255	0
3	43	0	0	0	1	255	0
3	44	0	0	0	1	255	0
3	45	0	0	0	1	255	0
3	46	0	0	0	1	255	0
3	47	0	0	0	1	255	0
3	48	0	0	0	1	255	0
3	49	0	0	0	1	255	0
3	50	0	0	0	1	255	0
3	51	0	0	0	1	255	0
3	52	0	0	0	1	255	0
3	53	0	0	0	1	255	0
3	54	0	0	0	1	255	0
3	55	0	0	0	1	255	0
3	56	0	0	0	1	255	0
3	57	0	0	0	1	255	0
3	58	0	0	0	1	255	0
3	59	0	0	0	1	255	0
3	60	0	0	0	1	255	0
3	61	0	0	0	1	255	0
3	62	0	0	0	1	255	0
3	63	0	0	0	1	255	0
3	64	0	0	0	1	255	0
4	1	0	0	0	1	255	0
4	2	0	0	0	1	255	0
4	3	0	0	0	1	255	0
4	4	0	0	0	1	255	0
4	5	0	0	0	1	255	0
4	6	0	0	0	1	255	0
4	7	0	0	0	1	255	0
4	8	0	0	0	1	255	0
4	9	0	0	0	1	255	0
4	10	0	0	0	1	255	0
4	11	0	0	0	1	255	0
4	12	0	0	0	1	255	0
4	13	0	0	0	1	255	0
4	14	0	0	0	1	255	0
4	15	0	0	0	1	255	0
4	16	0	0	0	1	255	0
4	17	0	0	0	1	255	0
4	18	0	0	0	1	255	0
4	19	0	0	0	1	255	0
4	20	0	0	0	1	255	0
4	21	0	0	0	1	255	0
4	22	0	0	0	1	255	0
4	23	0	0	0	1	255	0
4	24	0	0	0	1	255	0
4	25	0	0	0	1	255	0
4	26	0	0	0	1	255	0
4	27	0	0	0	1	255	0
4	28	0	0	0	1	255	0
4	29	0	0	0	1	255	0
4	30	0	0	0	1	255	0
4	31	0	0	0	1	255	0
4	32	0	0	0	1	255	0
4	33	0	0	0	1	255	0
4	34	0	0	0	1	255	0
4	35	0	0	0	1	255	0
4	36	0	0	0	1	255	0
4	37	0	0	0	1	255	0
4	38	0	0	0	1	255	0
4	39	0	0	0	1	255	0
4	40	0	0	0	1	255	0
4	41	0	0	0	1	255	0
4	42	0	0	0	1	255	0
4	43	0	0	0	1	255	0
4	44	0	0	0	1	255	0
4	45	0	0	0	1	255	0

4	46	0	0	0	1	255	0
4	47	0	0	0	1	255	0
4	48	0	0	0	1	255	0
4	49	0	0	0	1	255	0
4	50	0	0	0	1	255	0
4	51	0	0	0	1	255	0
4	52	0	0	0	1	255	0
4	53	0	0	0	1	255	0
4	54	0	0	0	1	255	0
4	55	0	0	0	1	255	0
4	56	0	0	0	1	255	0
4	57	0	0	0	1	255	0
4	58	0	0	0	1	255	0
4	59	0	0	0	1	255	0
4	60	0	0	0	1	255	0
4	61	0	0	0	1	255	0
4	62	0	0	0	1	255	0
4	63	0	0	0	1	255	0
4	64	0	0	0	1	255	0

Pedestrian Detector Diagnotics (MM)6-6

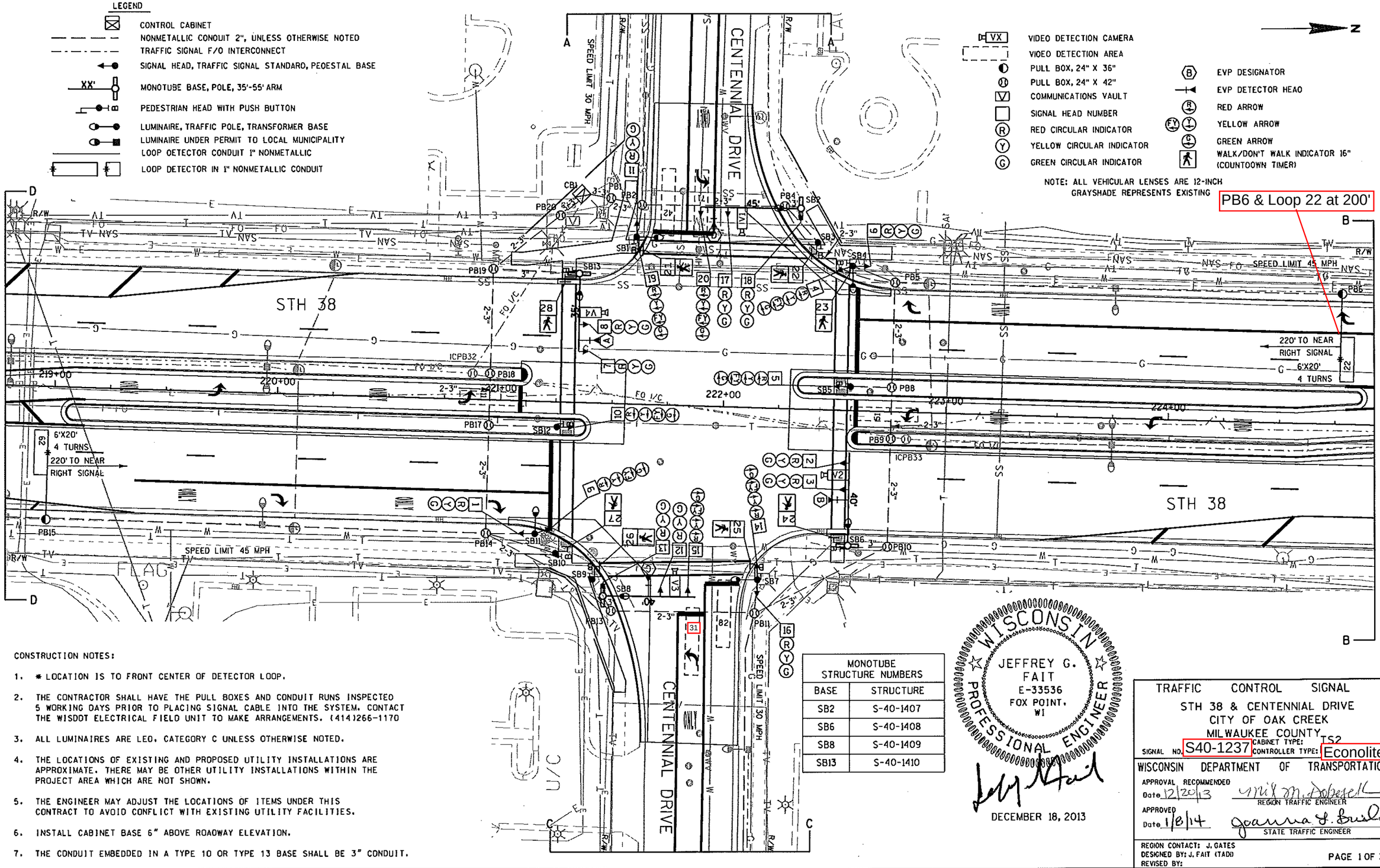
Plan	Detector	Counts	Act	Pres	Multiplier

LEGEND

- CONTROL CABINET
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- TRAFFIC SIGNAL F/O INTERCONNECT
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- XX' MONOTUBE BASE, POLE, 35'-55' ARM
- PEDESTRIAN HEAD WITH PUSH BUTTON
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
- LUMINAIRE UNDER PERMIT TO LOCAL MUNICIPALITY
- LOOP DETECTOR CONDUIT 1" NONMETALLIC
- LOOP DETECTOR IN 1" NONMETALLIC CONDUIT
- VX VIDEO DETECTION CAMERA
- VIDEO DETECTION AREA
- PULL BOX, 24" X 36"
- PULL BOX, 24" X 42"
- COMMUNICATIONS VAULT
- SIGNAL HEAD NUMBER
- R RED CIRCULAR INDICATOR
- Y YELLOW CIRCULAR INDICATOR
- G GREEN CIRCULAR INDICATOR
- B EVP DESIGNATOR
- EVP DETECTOR HEAD
- R RED ARROW
- FY Y YELLOW ARROW
- G GREEN ARROW
- WALK/DON'T WALK INDICATOR 16" (COUNTDOWN TIMER)

NOTE: ALL VEHICULAR LENSES ARE 12-INCH
GRAYSHADE REPRESENTS EXISTING

N



CONSTRUCTION NOTES:

1. * LOCATION IS TO FRONT CENTER OF DETECTOR LOOP.
2. THE CONTRACTOR SHALL HAVE THE PULL BOXES AND CONDUIT RUNS INSPECTED 5 WORKING DAYS PRIOR TO PLACING SIGNAL CABLE INTO THE SYSTEM. CONTACT THE WISDOT ELECTRICAL FIELD UNIT TO MAKE ARRANGEMENTS. (414)266-1170
3. ALL LUMINAIRES ARE LED. CATEGORY C UNLESS OTHERWISE NOTED.
4. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA WHICH ARE NOT SHOWN.
5. THE ENGINEER MAY ADJUST THE LOCATIONS OF ITEMS UNDER THIS CONTRACT TO AVOID CONFLICT WITH EXISTING UTILITY FACILITIES.
6. INSTALL CABINET BASE 6" ABOVE ROADWAY ELEVATION.
7. THE CONDUIT EMBEDDED IN A TYPE 10 OR TYPE 13 BASE SHALL BE 3" CONDUIT.

MONOTUBE STRUCTURE NUMBERS	
BASE	STRUCTURE
SB2	S-40-1407
SB6	S-40-1408
SB8	S-40-1409
SB13	S-40-1410

WISCONSIN
JEFFREY G. FAIT
E-33536
FOX POINT, WI
PROFESSIONAL ENGINEER

DECEMBER 18, 2013

TRAFFIC CONTROL SIGNAL
STH 38 & CENTENNIAL DRIVE
CITY OF OAK CREEK
MILWAUKEE COUNTY
SIGNAL NO. S40-1237 CABINET TYPE: TS2
CONTROLLER TYPE: Econolite

WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVAL RECOMMENDED Date 12/20/13 — REGION TRAFFIC ENGINEER
APPROVED Date 1/8/14 — STATE TRAFFIC ENGINEER

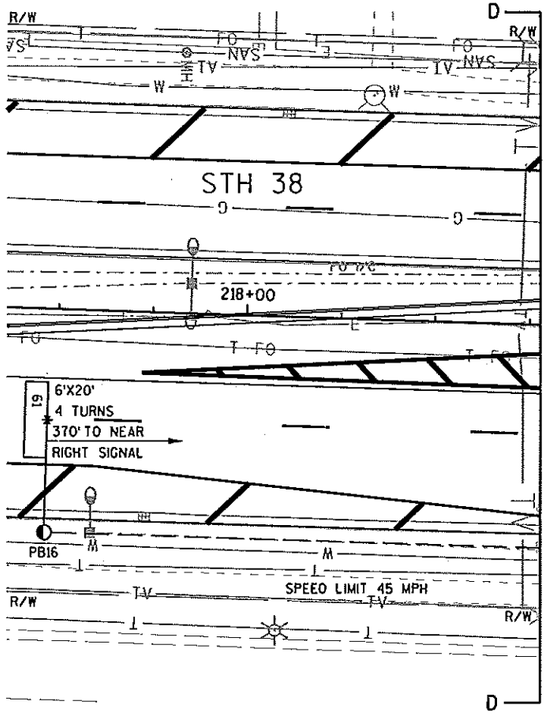
REGION CONTACT: J. GATES
DESIGNED BY: J. FAIT (TADI)
REVISED BY:

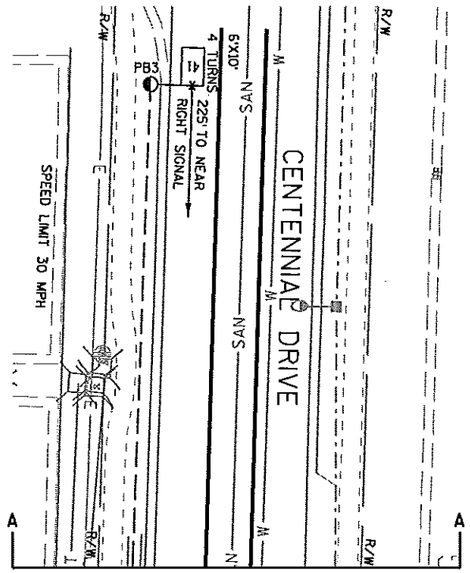
PAGE 1 OF 3

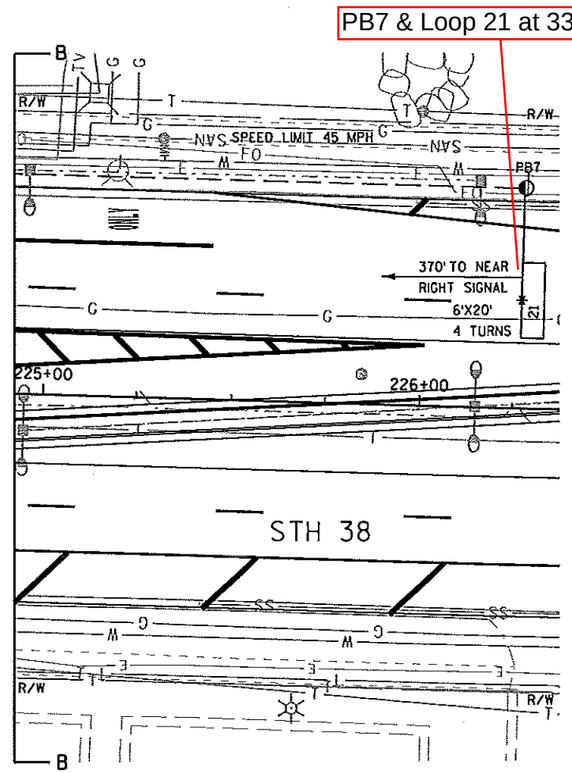
PROJECT NO: 2060-15-71	HWY: STH 38	COUNTY: MILWAUKEE	TRAFFIC SIGNAL PLAN	SHEET	E

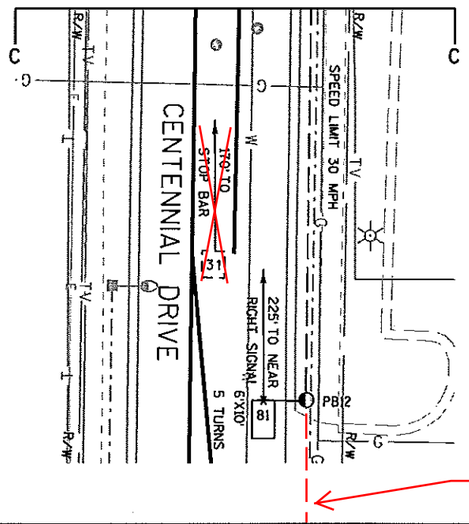
FILE NAME : Proposed Signals.dgn | PLOT DATE : 12/19/2013 | PLOT BY : DSCHNABEL-TADI | PLOT NAME : | PLOT SCALE : 40.0000 sf / in. | WISDOT/CADDS SHEET 42

JMG 12/20/2013









Directional Bore 500 LF of 2-Inch PVC Conduit to New Concrete Base w/ Type 4 Pole & EVP Head 5 (for EVP D)

TRAFFIC CONTROL SIGNAL
STH 38 & CENTENNIAL DRIVE
CITY OF OAK CREEK
MILWAUKEE COUNTY

SIGNAL NO. S40-1237

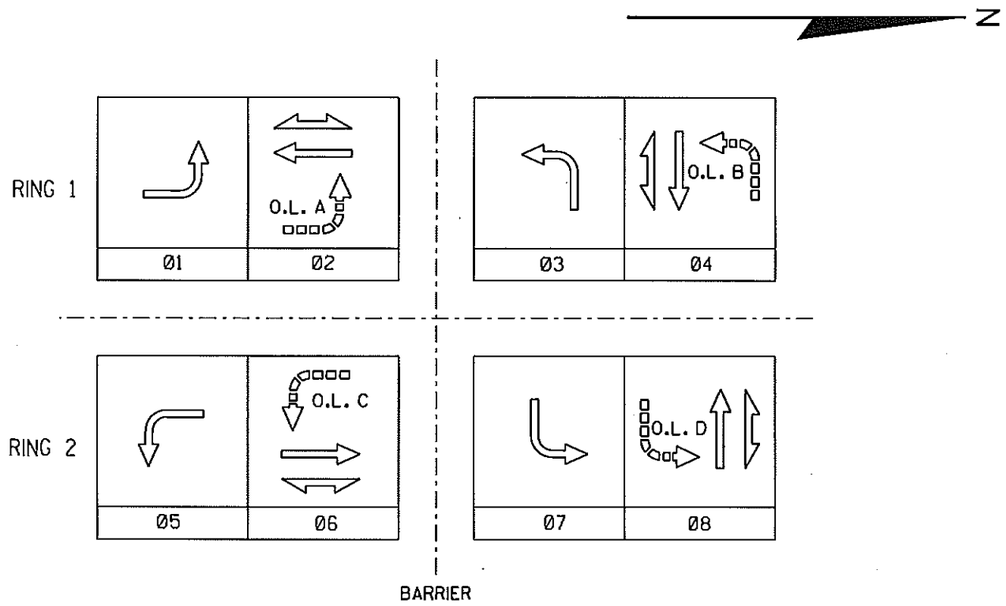
REGION CONTACT: J. GATES
DESIGNED BY: J. FAIT (TADI)
REVISED BY:

PAGE 2 OF 3

PROJECT NO: 2060-15-71	HWY: STH 38	COUNTY: MILWAUKEE	TRAFFIC SIGNAL PLAN	SHEET	E

FILE NAME : Proposed Signals.dgn PLOT DATE : 12/18/2013 PLOT BY : DSCHNABEL-TADI PLOT NAME : PLOT SCALE : 40.0000 sf / in. WISDOT/CADDS SHEET 42

	HEAD NUMBERS	FLASH
Ø1	4,5	-
Ø2	6,7,8	R
Ø3	19,20	-
Ø4	11,12,13	R
Ø5	9,10	-
Ø6	1,2,3	R
Ø7	14,15	-
Ø8	16,17,18	R
Ø2P	21,22	
Ø4P	27,28	
Ø6P	25,26	
Ø8P	23,24	
OLA	4,5	R
OLB	19,20	R
OLC	9,10	R
OLD	14,15	R



CONTROLLER LOGIC

PHASE NUMBER	PHASE LOCKING	DUAL ENTRY W / Ø	PHASE RECALL	PHASE ACTIVE
1		6		X
2	X	6	MIN	X
3		8		X
4		8		X
5		2		X
6	X	2	MIN	X
7		4		X
8		4		X

TYPE OF INTERCONNECT/COMMUNICATION	
NONE	
CLOSED LOOP	
TWISTED PAIR*	
FIBER OPTIC*	X
FIBER OPTIC (ETHERNET)	
RADIO	

TYPE OF COORDINATION	
NONE	
TBC	X
TRAFFIC RESPONSIVE	X
ADAPTIVE	
*LOCATION OF MASTER CONTROLLER NO:	S-
SIGNAL SYSTEM *:	SS-00-06

TYPE OF LIGHTING	
BY OTHER AGENCY	
IN TRAFFIC SIGNAL CABINET	X
IN SEPARATE DOT LIGHTING CABINET	

TYPE OF PRE-EMPT	
NONE	
RAILROAD	
EMERGENCY VEHICLE	X
GTT	X
TOMAR	
HARDWIRE	
OTHER	
LIFT BRIDGE	
QUEUE DETECTOR	

DETECTOR LOGIC

DETECTOR INPUT	3	1	7	5	11	9	15	13
PLAN LOOP DETECTOR #(S)	21	41	61	81				
ASSIGNED PHASE	2	4	6	8				
OPERATION MODE	VEH	VEH	VEH	VEH				
SWITCH								
EXTEND		X		X				
DELAY								

DETECTOR INPUT	19	17	23	21	27	25	31	29
PLAN LOOP DETECTOR #(S)	11	31	42	51	71	82		
ASSIGNED PHASE	1	3	4	5	7	8		
OPERATION MODE	VEH	VEH	VEH	VEH	VEH	VEH		
SWITCH	2	4		6	8			
EXTEND								
DELAY		~~X~~	X			X		

DETECTOR INPUT	4	2	8	6	12	10	16	14
PLAN LOOP DETECTOR #(S)	22		62					
ASSIGNED PHASE	2		6					
OPERATION MODE	VEH		VEH					
SWITCH								
EXTEND								
DELAY								

DETECTOR INPUT	20	18	24	22	28	26	32	30
PLAN LOOP DETECTOR #(S)			~~43~~					
ASSIGNED PHASE			~~4~~					
OPERATION MODE			~~VEH~~					
SWITCH								
EXTEND								
DELAY								

EMERGENCY VEHICLE PREEMPTION SEQUENCE

EMERGENCY VEHICLE DETECTOR	A	B	C	D
MOVEMENT				
PHASE	2+5	6+1	4+7	8+3

AFTER PREEMPTION SEQUENCE 2+5 OR 1+6, CONTROLLER SHALL RETURN TO PHASES 2+6.

AFTER PREEMPTION SEQUENCE 4+7 OR 8+3, CONTROLLER SHALL RETURN TO PHASES 4+8.

Add EVP note about extra detector head in front of Fire Department on East Leg

STH 38 & CENTENNIAL DRIVE
CITY OF OAK CREEK
MILWAUKEE COUNTY

SIGNAL NO: S40-1237 CABINET TYPE: TS2

CONTROLLER TYPE: Econolite

DATE 12/13 PAGE NO. 3 OF 3

JMG 12/20/2013

12/20/13 mmd

PROJECT NO: 2060-15-71	HWY: STH 38	COUNTY: MILWAUKEE	SEQUENCE OF OPERATIONS	SHEET	E

FILE NAME : Proposed Signals.dgn PLOT DATE : 12/18/2013 PLOT BY : DSCHNABEL-TADI PLOT NAME : S-400,seq,rev2 PLOT SCALE : 40.0000 sf / in. WISDOT/CADDS SHEET 42

Timing Cover Sheet for Signal: S1237 HWY: 38 and Centennial Dr.

Date:	5/15/2017	Changes Made By:	M. Cowap
Signal No	S1237 **M213**	Highway:	38
County:	MIL	Local Hwy:	Howell Ave
Controller:	ECONOLITE	Location:	Centennial Dr.
School:	None	Audible Ped:	No

Pre-emption

Emergency:	Yes	Type:	GTT	Phases:	2+5,6+1,4+7,8+3	EVP Maintenance Id:	0663-42-19
Railroad:	No	Type:		Phases:		EVP Contact:	Brian L. Johnston, P.E.
						Community:	Oak Creek, City of
						Contact Phone:	(414) 768-6531
						Alternate Phone:	

Coordination

System No: SS0006 Controller IP Address: 10.98.203.46

CoordType: TBC Comments:

Dip Switch Setting

DS ☑

TBC:	Yes
Tone:	No
Closed Loop:	No
Hardwire:	No

	Length	Split 1	Split 2	Split 3	Split 4
Cycle 1=	120	6:00am-12:30pm M-F	10am-6pm Sat-Sun		
Cycle 2=					
Cycle 3=	130	12:30pm-8:00pm M-F			
Cycle 4=					

Prom Replacement

Signal Plan No

Pre-empt: No

Part of a Local System: No

Local Contact:

Phone Number:

Overlaps

Overlap A= Phases:

Overlap B= Phases:

Overlap C= Phases:

Overlap D= Phases:

Flash

Emergency: R-R

Off Peak: No

Off Peak Times

Detector Timing

Dilemna Zone Yes Video Detection: Autoscope

Detector Number	41	42	81	82										
Stretch	*		*											
Right Turn Delay		*		*										
Left Turn Delay														

Unique Features

* = see program for detector settings; Logic statements 1-4 used for detector assignments for permitted only operation during Time Base Plan 5.

Timing Changes Log for Signal S1237 on Hwy 38 in MILWAUKEE County

Centennial Dr.

Date Computer Changed	Date Change Made in Field	Timing Change	Reason for Change	Change By	Temp Timing
05/15/17	5/15/2017	Updated EVP pedestrian clearance times	EVP sending signal to flash	M. Cowap	No
07/13/16	7/13/2016	New coord timing, update timing to current standards	Increase in volume	D. Dedrick	No
04/20/16	4/20/2016	Removed timing pattern 2 from the schedule and extended running times for patterns 1 & 3.	Short green times for side street at STH 38 & Drexel Ave.	D. Dedrick	No
03/29/16	3/29/2016	Changed DLS input to NO on MM 5-1.	Allow time sync via CENTRACS.	E. Lloyd-Weis	No
07/23/15	7/24/2015	Implement coordination timing plan for SS0006.	Put signal into system.	J. Gates	No
07/10/15	7/8/2015	Signal timing review + signal reconstruction.	Signal turned on to permanent operation via 2060-15-71.	J. Gates	No
06/17/14	6/17/2014	Signal switched from permanent to temporary and is now maintained by the electrical contractor (JWE).	Signal reconstruction under project 2060-15-71.	J. Gates	Yes
06/10/13		Returned to normal operation	construction on Puetz Rd complete	S. Sward	No
03/18/13		Adjusted splits to match Puetz	Construction on Puetz Rd	S. Sward	Yes
06/05/12		Converted timing to Marc NX.		J. Gates	No

Timing Changes Log for Signal S1237 on Hwy 38 in MILWAUKEE County

Centennial Dr.

Date Computer Changed	Date Change Made in Field	Timing Change	Reason for Change	Change By	Temp Timing
04/25/08		System cycles, time of day, ped times	Operation review	E. Schneider	No
07/14/05	7/14/2005	Added ph 6 ped times.	Ped signals added on east approach.	J. Haug	No
02/24/05		New EPAC Timing	New Installation	J. Haug	No

Wisconsin DOT

S 40-1237 - ST 38 & Centennial Dr. - Econolite Type - ASC3

Configuration Phase Sequence

Controller Sequence (MM)1-1-1

Hardware Alternate Sequence Enable: No

Phase Ring Sequence.....(Note: Sequences identical to the prior one are not printed)

	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
Sequence 1																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 2																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 3																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 4																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 5																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 6																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 7																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 8																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 9																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 10																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 11																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 12																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 13																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 14																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 15																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 16																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.

Phases In Use / Exclusive PED (MM)1-2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phases in Use	X	X	X	X	X	X	X	X								
Exclusive PED																

Phase Compatibility (MM)1-1-2

Phase	Compatible Phase
1	5

1	6
2	5
2	6
3	7
3	8
4	7
4	8
9	11
9	12
10	11
10	12
13	15
13	16
14	15
14	16

Phase and Overlap Descriptions

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Description																
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**L**	**K**	**L**	**M**	**N**	**O**
Description																

Administration (MM)1-7-1

Enable CU/Cabinet Interlock CRC	No
Request Download Controller Data	No
Controller Database CRC	4F61
Enable Automatic Backup to Datakey	Yes

Backup Prevent (MM)1-1-3

	Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Timing /	1		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Backup	2	.		.	.	.	.	.	.	.	.	.	.	.	.	.	.
	3	.	.		.	.	.	.	.	.	.	.	.	.	.	.	.
	4	.	.	.		.	.	.	.	.	.	.	.	.	.	.	.
	5	.	.	.	.		.	.	.	.	.	.	.	.	.	.	.
	6	.	.	.	.	.		.	.	.	.	.	.	.	.	.	.
	7	.	.	.	.	.	.		.	.	.	.	.	.	.	.	.
	8	.	.	.	.	.	.	.		.	.	.	.	.	.	.	.
	9	.	.	.	.	.	.	.	.		.	.	.	.	.	.	.
	10	.	.	.	.	.	.	.	.	.		.	.	.	.	.	.
	11	.	.	.	.	.	.	.	.	.	.		.	.	.	.	.
	12	.	.	.	.	.	.	.	.	.	.	.		.	.	.	.
	13	.	.	.	.	.	.	.	.	.	.	.	.		.	.	.
	14	.	.	.	.	.	.	.	.	.	.	.	.	.		.	.
	15	.	.	.	.	.	.	.	.	.	.	.	.	.	.		.
	16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	

Simultaneous Gap (MM)1-1-4

	Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	1		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	2	.		.	.	.	X	.	.	.	.	.	.	.	.	.	.
	3	.	.		.	.	.	.	.	.	.	.	.	.	.	.	.
	4	.	.	.		.	.	.	X	.	.	.	.	.	.	.	.
	5	.	.	.	.		.	.	.	.	.	.	.	.	.	.	.
Phase	6	.	X	.	.	.		.	.	.	.	.	.	.	.	.	.
Must	7	.	.	.	.	.	.		.	.	.	.	.	.	.	.	.
Gap	8	.	.	.	X	.	.	.		.	.	.	.	.	.	.	.
With	9	.	.	.	.	.	.	.	.		.	.	.	.	.	.	.
Phase	10	.	.	.	.	.	.	.	.	.		.	.	.	.	.	.
	11	.	.	.	.	.	.	.	.	.	.		.	.	.	.	.
	12	.	.	.	.	.	.	.	.	.	.	.		.	.	.	.
	13	.	.	.	.	.	.	.	.	.	.	.	.		.	.	.
	14	.	.	.	.	.	.	.	.	.	.	.	.	.		.	.
	15	.	.	.	.	.	.	.	.	.	.	.	.	.	.		.
	16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
	Disable	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Load Switch Assignments (MMU Channel) (MM)1-3

	Phase / Overlap	Type	Dimming				Power Up				Auto		Flash Together
			Red	Yellow	Green	Dark	Auto	Red	Yellow	Dark	Red	Yellow	
1	1	V				+	X				X		X
2	2	V				+	X				X		
3	3	V				+	X				X		X
4	4	V				+	X				X		
5	5	V				-	X				X		
6	6	V				-	X				X		X
7	7	V				-	X				X		
8	8	V				-	X				X		X
9	2	P				+	X						
10	4	P				+	X						
11	6	P				-	X						
12	8	P				-	X						
13	1	O				+	X				X		X
14	2	O				-	X				X		X
15	3	O				+	X				X		
16	4	O				-	X				X		

Wisconsin DOT

S 40-1237 - ST 38 & Centennial Dr. - Econolite Type - ASC3

Configuration Port 1 (SDLC)

SDLC Options (MM)1-4-1

BIU	1	2	3	4	5	6	7	8

Term and Facility Enable	X	X						
Detector Rack Enable	X	X						

Enable TS2/MMU Type Cabinet: Yes
Enable MMU Extended Status: Yes
Enable SDLC Stop Time: No
Enable 3 Critical RFE's Lockup: Yes

MMU Program (MM)1-4-2

Channel Can Serve with Channel	
Channel 1	**Channel 2**
1	5
1	6
1	11
2	5
2	6
2	9
2	11
3	7
3	8
3	12
4	7
4	8
4	10
4	12
5	9
6	9
6	11
7	10
8	10
8	12
9	11
10	12

Color Check Enable (MM)1-4-3
Enable Color Check: Yes

MMU Channel	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Green	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Yellow	X	X	X	X	X	X	X	X					X	X	X	X
Red		X		X		X		X								

Secondary To Secondary Addressing (MM)1-4-4

ID	1	2	3	4	5	6	7	8	MMU
Term and Facility Enable									

ID	1	2	3	4	5	6	7	8	Diag
Detector Rack Enable									

Diagonstics (Test Fixture) Enable: No

Wisconsin DOT

S 40-1237 - ST 38 & Centennial Dr. - Econolite Type - ASC3

Configuration Communications

Ethernet Port Configuration (MM)1-5-1
Controller IP: 10.98.203.46
Subnet Mask: 255.255.254.0
Default Gateway IP: 10.98.202.1
Server IP: 10.70.10.1

NTCIP Parameters (MM)1-5-5
Backup Time: 0
UDP Port: 501
Ethernet Priority: 1
Port 2 Priority: 4
Port 3A Priority: 2
Port 3B Priority: 3

Port Configuration (MM)1-5-2 to 1-5-4

Port	2 (C50S)	3A (C21S)	3B (C22S)
Protocol	NTCIP	NTCIP	Terminal

Enable	No	Yes	No
Data Rate	9600	19.2K	1200
Data Parity Stop	8 N 1	8 N 1	8 0 1
Modem Setup String	None	None	None
User String			
Comm Port Address	1	1	0
System Detector 9-1	0	0	0
Telemetry Response Delay	0.0	0.0	0.0
Duplex Half/Full	Full	Full	Full
Flow Control	Yes	Yes	Yes
AB3418 NTCIP Group Address	0	0	0
AB3418 NTCIP Single Flag Enable	No	No	No
RTS to CTS Delay	0.0	0.0	3.0
RTS Turn Off Delay	0.0	0.0	2.0
Droupout Time	10	10	10
Early RTS	No	No	No
Telemetry Mode	FSK	FSK	FSK
Rail Road	0	0	0
Rail Road Line	0	0	0
ATCS Group	0	0	0
Wayside Device	0	0	0
ATCS Device	0	0	0
Wayside SubNode	0	0	0
ATCS SubNode	0	0	0

ECPIP Parameters (MM)1-5-6

Controller Address: 0
Expanded System Detector Address: 0

Local System Detector

Local System Detector	Number

Wisconsin DOT

S 40-1237 - ST 38 & Centennial Dr. - Econolite Type - ASC3

Configuration Logging/Display

Event Logging (MM)1-6-1

Critical RFE's	Yes	3 Critical RFE's in 24 Hours	Yes
MMU Flash Faults	Yes	Local Flash Faults	Yes
Non-Critical RFE's (Det/Test)	Yes	Detector Errors	Yes
Coordination Errors	Yes	Controller Download	Yes
Preempt	Yes	TSP	Yes
Power On/Off	Yes	Low Battery	Yes
Access	Yes	Data Change	Yes
Online/Offline	Yes		

Alarm Log	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Enable Logging	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Display Options (MM)1-7-2

Key Click Enable: Yes
Backlight Enable: Yes
LED Mode: Single Color
Main Status Display Mode: Basic
Screen Format: Advanced
Trans Mode Pop-up Disable: No

Sign On (MM)8-5

Sign On Message Line 1: INTERSECTION NAME:
Sign On Message Line 2: WisDOT Data Base

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Logic Processor Page 1

Statement Control (MM)1-8-1

LP	Statement Control
1	E
2	E
3	E
4	E

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Logic Processor Page 2

Logic Statements (MM)1-8-2

Statement Number: 1

IF:

	Assignment	#		State
IF	DETECTOR	17	IS	ON
AND	ACTION PLAN NUM		IS	5

THEN:

Assignment	#	State
CALL PHASE	4	ON

ELSE:

Assignment	#	State

Statement Number: 2

IF:

	Assignment	#		State
IF	DETECTOR	19	IS	ON
AND	ACTION PLAN NUM		IS	5

THEN:

Assignment	#	State
CALL PHASE	2	ON

ELSE:

Assignment	#	State

Statement Number: 3

IF:

	Assignment	#		State
IF	DETECTOR	21	IS	ON
AND	ACTION PLAN NUM		IS	5

THEN:

Assignment	#	State
CALL PHASE	6	ON

ELSE:

Assignment	#	State

Statement Number: 4

IF:

	Assignment	#		State
IF	DETECTOR	27	IS	ON
AND	ACTION PLAN NUM		IS	5

THEN:

Assignment	#	State
CALL PHASE	8	ON

ELSE:

Assignment	#	State

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Controller Timing Plan (MM)2-1

Plan 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction																
Min Green	6	15	6	10	6	15	6	10	0	0	0	0	0	0	0	0
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	7	0	7	0	7	0	7	0	0	0	0	0	0	0	0
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	24	0	35	0	22	0	34	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	1.5	3.1	1.5	1.5	1.5	3.4	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	30	45	30	35	30	45	30	35	0	0	0	0	0	0	0	0
Max 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.5	4.3	3.5	4.2	3.5	4.3	3.5	4.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	2.0	2.4	2.0	3.0	2.0	2.4	2.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	2.5	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	6	20	6	10	6	22	6	10	0	0	0	0	0	0	0	0
Time B4	30	20	30	35	30	22	30	35	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	25	0	0	0	23	0	0	0	0	0	0	0	0	0	0
Min Gap	1.5	3.5	1.5	1.5	1.5	3.5	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction																
Min Green	5	15	5	10	5	15	5	10	0	0	0	0	0	0	0	0
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	3.0	7.0	3.0	5.0	3.0	7.0	3.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	15	45	15	35	15	45	15	35	0	0	0	0	0	0	0	0
Max 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 3

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Direction																
Min Green	5	15	5	10	5	15	5	10	0	0	0	0	0	0	0	0
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	3.0	7.0	3.0	5.0	3.0	7.0	3.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	15	45	15	35	15	45	15	35	0	0	0	0	0	0	0	0
Max 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 4

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Direction																
Min Green	5	15	5	10	5	15	5	10	0	0	0	0	0	0	0	0
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	3.0	7.0	3.0	5.0	3.0	7.0	3.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	15	45	15	35	15	45	15	35	0	0	0	0	0	0	0	0
Max 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Controller Overlaps

Vehicle Overlaps (MM)2-2

Overlap	Type	Lag Green	Yellow	Red	Advance Green

Phases

Overlap	Phase	Included	Protect	Ped Protect	Not Overlap	Modifier	Lag X Phase	Lag 2 Phase	Flash Green

PPLT FYA

Overlap	Protected Left Turn	Opposing Through	Flash Arrow Output	Flash Arrow Channel	FYA Delay	FYA Clearance	Special Function Disable	Ped Protected
E	1	2	Ped Yellow	9	0.0	0.0	0	No
F	3	4	Ped Yellow	10	0.0	0.0	0	No
G	5	6	Ped Yellow	11	0.0	0.0	0	No
H	7	8	Ped Yellow	12	0.0	0.0	0	No

Guaranteed Minimum Time Data (MM) 2-4

Phase Time Data

Phase	Min Green	Walk	Ped Clear	Yellow	Red Clear	Overlap Green
A01	1	0	7	3.0	0.0	1
B02	1	0	7	3.0	0.0	1
C03	1	0	7	3.0	0.0	1
D04	1	0	7	3.0	0.0	1
E05	1	0	7	3.0	0.0	1
F06	1	0	7	3.0	0.0	1
G07	1	0	7	3.0	0.0	1
H08	1	0	7	3.0	0.0	1
I09	1	0	7	3.0	0.0	1
J10	1	0	7	3.0	0.0	1
K11	1	0	7	3.0	0.0	1
L12	1	0	7	3.0	0.0	1
M13	1	0	7	3.0	0.0	1
N14	1	0	7	3.0	0.0	1
O15	1	0	7	3.0	0.0	1
P16	1	0	7	3.0	0.0	1

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Controller Pedestrian Overlaps

Pedestrian Overlaps (MM) 2-3

Included Phase	Ped Overlap

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Controller Start/Fash (MM) 2-5

Startup

Phase	Phase Setting
2	G
6	G

Overlap
E
F
G
H

Flash > Mon: No
Flash Time: 10
All Red: 6
Power Start Sequence: 1
MUTCD Enabled: Yes
MUTCD Yellow to Green: No

Automatic Flash

Entry Phase
2
6

Exit Phase
2
6

Overlap Exit
E
F
G
H

Flash > Mon: No
Exit Flash Interval: G
Minimum Auto Flash: 8
Minimumin Recall: No
Cycle Through Phase: No

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Controller Options

Controller Options (MM)2-6-1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Flashing Green Phase																
Guaranteed Passage																
Non Act 1																
Non Act 2																
Dual Entry		X		X		X		X								
Conditional Service																
Conditional Reservice																
Ped Reservice		X		X		X		X								
Rest In Walk																
Flashing Walk																
Ped Clear Yellow																
Ped Clear Red																
IGRN + Veh Ext																

Ped Clear Protect: On Red Revert: 2.0 MUTCD 3 Seconds Don't Walk: No

Act Pre-Time (MM)2-7

Pre-Time Mode Enable: No Free Input Enables Pre-Timed: Yes

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Pre-Timed Phase																

Phase Recall Options (MM)2-8

Plan 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector		X				X										
Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
AI Calc																

Plan 2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector		X				X										
Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
AI Calc																

Plan 3

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector		X				X										
Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
AI Calc																

Plan 4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector		X				X										
Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
AI Calc																

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Coordination Options

Coordination Options (MM)3-1

Manual Pattern	Auto	ECPI Coord	Yes
System Source	TBC	System Format	STD
Splits In	Seconds	Offsets In	Seconds
Transition	Add	Max Select	MAXINH
Dwell/Add Time	0		
Delay Coord Walk to LZ	No	Force Off	Fixed
Offset Reference	Lead	Use Ped Time	No
Ped Recall	No	Ped Reservice	No
Local Zero Override	No	FO Added Initial Green	Yes
Re-Sync Count	3	Multisync	No

Auto Perm Minimum Green (Seconds) (MM)3-4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Minimum Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Split Demand (MM)3-5

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Demand 1																
Demand 2																

Demand	1	2
Detector	0	0
Call Time (Sec)	0	0
Cycle Count	0	0

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Coordination Pattern Data
Pattern Data (MM)3-2

Pattern - 1

Split Pattern	1	TS2 (Pat-Off)	0-1	Splits in	Seconds
Cycle	120	Std (COS)	0	Offsets in	Seconds
Offset Value	104s	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	6		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description																
Splits (Split Pat 1)	13	64	15	28	19	58	15	28	0	0	0	0	0	0	0	0
Preference 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Preference 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Disp.	-	0	0	0
Split Sum	120s	120s	0s	0s

Misc. Data

Veh. Permissive 1	0	Veh. Permissive 2	0	Veh. Permissive 2 Disp.	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern Data

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coordinated Phases		X				X										
Vehicle Recalls																
Ped Recalls																
Max Recalls																
Phase Omit																
Special Function Output																

Pattern - 3

Split Pattern	3	TS2 (Pat-Off)	0-3	Splits in	Seconds
Cycle	130	Std (COS)	0	Offsets in	Seconds
Offset Value	94s	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	2		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description																
Splits (Split Pat 3)	17	61	19	33	22	56	22	30	0	0	0	0	0	0	0	0
Preference 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Preference 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Disp.	-	0	0	0
Split Sum	130s	130s	0s	0s

Misc. Data

Veh. Permissive 1	0	Veh. Permissive 2	0	Veh. Permissive 2 Disp.	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern Data

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coordinated Phases		X				X										
Vehicle Recalls																
Ped Recalls																
Max Recalls																
Phase Omit																
Special Function Output																

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Preemptor

Preempt Plan (MM)4-1

Plan 3

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Track Clear Vehicle																
Track Clear Overlap																
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Vehicle		X			X											
Dwell Ped																
Dwell Overlap					F1		F1									
Cycling Vehicle																
Cycling Ped																
Cycling Overlap																
Exit Phase		X				X										
Exit Calls																
Special Funciton																

Enable	Yes	Preempt Override	No	Interlock Enable	No
Detector Lock	Yes	Delay	1	Inhibit	0
Override Flash	No	Duration	0	CLR > GRN	No
Term Overlap Asap	No	PC Through Yellow	No	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	Flash Exit Color	Green	Exit Option	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Preempt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	5	3	5	25.5	25.5
	Min Grn	**Ext Grn**	**Max Grn**	**Yellow**	**Red**
Track Clear	0	0	0	25.5	25.5
	Min Dwell	**Pmt Ext**	**Max Time**	**Yellow**	**Red**
Dwell / Cycle-Exit	10	5.0	0	25.5	25.5

Preempt Active Out	On	Preempt Active Dwell	No
Other Priority Preempt	On	Non-Priority Preempt	F1
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Pri Return % Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**
Track Clear Vehicle																
Track Clear Overlap																
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Vehicle	X					X										
Dwell Ped																
Dwell Overlap					F1		F1									
Cycling Vehicle																
Cycling Ped																
Cycling Overlap																
Exit Phase		X				X										
Exit Calls																
Special Funciton																

Enable	Yes	Preempt Override	No	Interlock Enable	No
Detector Lock	Yes	Delay	1	Inhibit	0
Override Flash	No	Duration	0	CLR > GRN	No
Term Overlap Asap	No	PC Through Yellow	No	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	Flash Exit Color	Green	Exit Option	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Preempt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	5	3	5	25.5	25.5
	Min Grn	**Ext Grn**	**Max Grn**	**Yellow**	**Red**
Track Clear	0	0	0	25.5	25.5
	Min Dwell	**Pmt Ext**	**Max Time**	**Yellow**	**Red**
Dwell / Cycle-Exit	10	5.0	0	25.5	25.5

Preempt Active Out	On	Preempt Active Dwell	No
Other Priority Preempt	On	Non-Priority Preempt	F1
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Pri Return % Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 5

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**
Track Clear Vehicle																
Track Clear Overlap																
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Vehicle				X			X									
Dwell Ped																
Dwell Overlap						F1		F1								
Cycling Vehicle																

Cycling Ped																
Cycling Overlap																
Exit Phase				X				X								
Exit Calls																
Special Funciton																

Enable	Yes	Preempt Override	No	Interlock Enable	No
Detector Lock	Yes	Delay	1	Inhibit	0
Override Flash	No	Duration	0	CLR > GRN	No
Term Overlap Asap	No	PC Through Yellow	No	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	Flash Exit Color	Green	Exit Option	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	**1**	**2**	**3**	**4**
Free During Preempt	No	No	No	No

Timing	**Walk**	**Ped Clr**	**Min Grn**	**Yellow**	**Red**
Entrance	5	3	5	25.5	25.5
	Min Grn	**Ext Grn**	**Max Grn**	**Yellow**	**Red**
Track Clear	0	0	0	25.5	25.5
	Min Dwell	**Pmt Ext**	**Max Time**	**Yellow**	**Red**
Dwell / Cycle-Exit	10	5.0	0	25.5	25.5

Preempt Active Out	On	Preempt Active Dwell	No
Other Priority Preempt	On	Non-Priority Preempt	F1
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Veh Pri Return % Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 6

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**
Track Clear Vehicle																
Track Clear Overlap																
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Vehicle			X					X								
Dwell Ped																
Dwell Overlap						F1		F1								
Cycling Vehicle																
Cycling Ped																
Cycling Overlap																
Exit Phase				X				X								
Exit Calls																
Special Funciton																

Enable	Yes	Preempt Override	No	Interlock Enable	No
Detector Lock	Yes	Delay	1	Inhibit	0
Override Flash	No	Duration	0	CLR > GRN	No
Term Overlap Asap	No	PC Through Yellow	No	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	Flash Exit Color	Green	Exit Option	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	**1**	**2**	**3**	**4**
Free During Preempt	No	No	No	No

Timing	**Walk**	**Ped Clr**	**Min Grn**	**Yellow**	**Red**
Entrance	5	3	5	25.5	25.5
	Min Grn	**Ext Grn**	**Max Grn**	**Yellow**	**Red**
Track Clear	0	0	0	25.5	25.5
	Min Dwell	**Pmt Ext**	**Max Time**	**Yellow**	**Red**
Dwell / Cycle-Exit	10	5.0	0	25.5	25.5

Preempt Active Out	On	Preempt Active Dwell	No
Other Priority Preempt	On	Non-Priority Preempt	F1
Inhibit Extension Time	0.0	Ped Priority Return	Off

Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Pri Return % Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Preemptor Preempt Filtering
Enable Preempt Filtering and TSP/SCP (MM)4-2

Input	Solid	Pulsing
1	...Bypassed...	...Bypassed...
2	...Bypassed...	...Bypassed...
3	Preemption -3	TSP/SCP -1
4	Preemption -4	TSP/SCP -2
5	Preemption -5	TSP/SCP -3
6	Preemption -6	TSP/SCP -4
7	Preemption -7	...Bypassed...
8	Preemption -8	...Bypassed...
9	Preemption -9	...Bypassed...
10	Preemption -10	...Bypassed...

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Time Base Clock/Calendar
Clock/Calendar Options (MM)5-1

Enable Action Plan:	0
Sync Reference Time:	12:00 AM
Sync Reference:	Reference Time
Day Light Savings:	No
Time Reset Input Set Time:	3:30:00
Standard Time From GMT:	0

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Time Base Action Plan
Action Plan (MM)5-2

Action Plan - 1

Pattern	1	Override System	No
Timing Plan	0	Sequence	6
Veh Det Plan	2	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																

Auxilliary Function			

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 2

Pattern	2	Override System	No
Timing Plan	0	Sequence	1
Veh Det Plan	2	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 3

Pattern	3	Override System	No
Timing Plan	0	Sequence	2
Veh Det Plan	2	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 4

Pattern	4	Override System	No
Timing Plan	0	Sequence	1
Veh Det Plan	2	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 5

Pattern	254 - FREE	Override System	No
Timing Plan	0	Sequence	0
Veh Det Plan	2	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit	X		X		X		X									
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 99

Pattern	255 - FLSH	Override System	No
Timing Plan	0	Sequence	0
Veh Det Plan	0	Detector Log	None
Flash	Yes	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 100

Pattern	254 - FREE	Override System	No
Timing Plan	0	Sequence	0
Veh Det Plan	1	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

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Time Base Day Plan/Schedule

Day Plan (MM)5-3

Day Plan - 1

Event	Action Plan	Start Time
1	5	12:01 AM
2	100	4:30 AM
3	1	6:00 AM
4	3	12:30 PM
5	100	8:00 PM
6	5	10:30 PM

Day Plan - 2

Event	Action Plan	Start Time
1	5	12:01 AM
2	100	4:30 AM
3	1	10:00 AM
4	100	6:00 PM
5	5	10:30 PM

Schedule (MM)5-4

Schedule Number - 1

Day Plan Number: 1

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	X	X	X	X	X	X	X	X	X	X	X	X

Day of Week	Sun	Mon	Tue	Wed	Thur	Fri	Sat
		X	X	X	X	X	

Day of Month	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

Schedule Number - 2

Day Plan Number: 2

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	X	X	X	X	X	X	X	X	X	X	X	X

Day of Week	Sun	Mon	Tue	Wed	Thur	Fri	Sat
	X						X

Day of Month	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

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Time Base Exceptions

Exception Day Program (MM)5-5

Day	Fixed/Float	Month	Day of Week/Month	Week of Month/Year	Day Plan

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Detectors

Detectors Page 1

Vehicle Detectors Setup (MM)6-1

Vehicle Plan	Detector Number	Called	Type
1	60	2	N
1	60	4	N
1	60	6	N
1	60	8	N
2	60	2	N
2	60	4	N
2	60	6	N

2	60	8	N
3	1	1	N
3	2	2	N
3	3	3	N
3	4	4	N
3	5	5	N
3	6	6	N
3	7	7	N
3	8	8	N
3	60	2	N
3	60	4	N
3	60	6	N
3	60	8	N
4	1	1	N
4	2	2	N
4	3	3	N
4	4	4	N
4	5	5	N
4	6	6	N
4	7	7	N
4	8	8	N
4	60	2	N
4	60	4	N
4	60	6	N
4	60	8	N

Vehicle Detector Setup (MM)6-2 continued

Detector Number	Type	TS2 Detector	Detector Description
1	N-NTCIP	Yes	
2	N-NTCIP	Yes	
3	N-NTCIP	Yes	
4	N-NTCIP	Yes	
5	N-NTCIP	Yes	
6	N-NTCIP	Yes	
7	N-NTCIP	Yes	
8	N-NTCIP	Yes	
9	N-NTCIP	Yes	
10	N-NTCIP	Yes	
11	N-NTCIP	Yes	
12	N-NTCIP	Yes	
13	N-NTCIP	Yes	
14	N-NTCIP	Yes	
15	N-NTCIP	Yes	
16	N-NTCIP	Yes	
17	N-NTCIP	Yes	
18	N-NTCIP	Yes	
19	N-NTCIP	Yes	
20	N-NTCIP	Yes	
21	N-NTCIP	Yes	
22	N-NTCIP	Yes	
23	N-NTCIP	Yes	
24	N-NTCIP	Yes	
25	N-NTCIP	Yes	
26	N-NTCIP	Yes	
27	N-NTCIP	Yes	
28	N-NTCIP	Yes	
29	N-NTCIP	Yes	
30	N-NTCIP	Yes	
31	N-NTCIP	Yes	
32	N-NTCIP	Yes	
33	N-NTCIP	Yes	
34	N-NTCIP	Yes	
35	N-NTCIP	Yes	
36	N-NTCIP	Yes	
37	N-NTCIP	Yes	
38	N-NTCIP	Yes	
39	N-NTCIP	Yes	
40	N-NTCIP	Yes	
41	N-NTCIP	Yes	

42	N-NTCIP	Yes	
43	N-NTCIP	Yes	
44	N-NTCIP	Yes	
45	N-NTCIP	Yes	
46	N-NTCIP	Yes	
47	N-NTCIP	Yes	
48	N-NTCIP	Yes	
49	N-NTCIP	Yes	
50	N-NTCIP	Yes	
51	N-NTCIP	Yes	
52	N-NTCIP	Yes	
53	N-NTCIP	Yes	
54	N-NTCIP	Yes	
55	N-NTCIP	Yes	
56	N-NTCIP	Yes	
57	N-NTCIP	Yes	
58	N-NTCIP	Yes	
59	N-NTCIP	Yes	
60	N-NTCIP	Yes	
61	N-NTCIP	Yes	
62	N-NTCIP	Yes	
63	N-NTCIP	Yes	
64	N-NTCIP	Yes	

Vehicle Detector Setup (MM)6-2 continued

Det Num	Veh Det Plan	Phase	ECPI Log	Call Option	Delay Time	Ext Option	Extend Time / Passage Time	Queue Lim / Discon. Time	Use Added Initial	Cross Switch Phase	Lock In	NTCIP Vol.	NTCIP Occ.	Pmt Queue Delay
1	1	4	No	No	0.0	Passage	4.5	0	Yes	0	None	No	No	No
1	2	4	No	No	0.0	Passage	4.5	0	Yes	0	None	No	No	No
1	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
1	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
2	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
2	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
2	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
2	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
3	1	2	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
3	2	2	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
3	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
3	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
4	1	2	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
4	2	2	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
4	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
4	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
5	1	8	No	No	0.0	Passage	4.5	0	Yes	0	None	No	No	No
5	2	8	No	No	0.0	Passage	4.5	0	Yes	0	None	No	No	No
5	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
5	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
6	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
6	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
6	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
6	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
7	1	6	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
7	2	6	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
7	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
7	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
8	1	6	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
8	2	6	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
8	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
8	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
9	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
9	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
9	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
9	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
10	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
10	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
10	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
10	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
11	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

11	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
11	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
11	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
12	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
12	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
12	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
12	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
13	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
13	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
13	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
13	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
14	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
14	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
14	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
14	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
15	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
15	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
15	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
15	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
16	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
16	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
16	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
16	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
17	1	3	No	Yes	0.0	Passage	0.0	0	Yes	4	None	No	No	No
17	2	3	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
17	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
17	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
18	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
18	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
18	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
18	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
19	1	1	No	Yes	0.0	Passage	0.0	0	Yes	2	None	No	No	No
19	2	1	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
19	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
19	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
20	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
20	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
20	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
20	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
21	1	5	No	Yes	0.0	Passage	0.0	0	Yes	6	None	No	No	No
21	2	5	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
21	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
21	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
22	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
22	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
22	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
22	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
23	1	4	No	Yes	8.0	Passage	0.0	0	Yes	0	None	No	No	No
23	2	4	No	Yes	8.0	Passage	0.0	0	Yes	0	None	No	No	No
23	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
23	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
24	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
24	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
24	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
24	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
25	1	8	No	Yes	8.0	Passage	0.0	0	Yes	0	None	No	No	No
25	2	8	No	Yes	8.0	Passage	0.0	0	Yes	0	None	No	No	No
25	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
25	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
26	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
26	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
26	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
26	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
27	1	7	No	Yes	0.0	Passage	0.0	0	Yes	8	None	No	No	No
27	2	7	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
27	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
27	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
28	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
28	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

28	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
28	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
29	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
29	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
29	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
29	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
30	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
30	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
30	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
30	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
31	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
31	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
31	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
31	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
32	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
32	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
32	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
32	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
33	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
33	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
33	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
33	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
34	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
34	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
34	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
34	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
35	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
35	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
35	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
35	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
36	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
36	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
36	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
36	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
37	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
37	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
37	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
37	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
38	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
38	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
38	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
38	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
39	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
39	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
39	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
39	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
40	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
40	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
40	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
40	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
41	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
41	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
41	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
41	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
42	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
42	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
42	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
42	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
43	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
43	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
43	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
43	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
44	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
44	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
44	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
44	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
45	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
45	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
45	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

45	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
46	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
46	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
46	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
46	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
47	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
47	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
47	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
47	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
48	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
48	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
48	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
48	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
49	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
49	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
49	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
49	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
50	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
50	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
50	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
50	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
51	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
51	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
51	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
51	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
52	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
52	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
52	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
52	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
53	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
53	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
53	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
53	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
54	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
54	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
54	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
54	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
55	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
55	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
55	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
55	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
56	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
56	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
56	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
56	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
57	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
57	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
57	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
57	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
58	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
58	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
58	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
58	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
59	1	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
59	2	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
59	3	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
59	4	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
60	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	Yellow	No	No	No
60	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	Yellow	No	No	No
60	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	Yellow	No	No	No
60	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	Yellow	No	No	No
61	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
61	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
61	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
61	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
62	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
62	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
62	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
62	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

63	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
63	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
63	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
63	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
64	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
64	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
64	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
64	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

Ped Detector Options (MM)6-3

Phase Ped Detector (Econolite)

Detector	Call Phase															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.
4	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.
5	.	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.
6	.	.	.	.	.	X	.	.	.	.	.	.	.	.	.	.
7	.	.	.	.	.	.	X	.	.	.	.	.	.	.	.	.
8	.	.	.	.	.	.	.	X	.	.	.	.	.	.	.	.
9	.	.	.	.	.	.	.	.	X	.	.	.	.	.	.	.
10	.	.	.	.	.	.	.	.	.	X	.	.	.	.	.	.
11	.	.	.	.	.	.	.	.	.	.	X	.	.	.	.	.
12	.	.	.	.	.	.	.	.	.	.	.	X	.	.	.	.
13	.	.	.	.	.	.	.	.	.	.	.	.	X	.	.	.
14	.	.	.	.	.	.	.	.	.	.	.	.	.	X	.	.
15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	X	.
16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	X

Wisconsin DOT

S 40-1237 - ST 38 & Centennial Dr. - Econolite Type - ASC3

Detectors

Detectors Page 2

Log - Speed Detector Setup (MM)6-4

NTCIP Log Period: 60 ECPI Log Period: 15 Length Unit: Inch

Speed Detector	Local Detector	One/Two Detector	Vehicle Length	Trap Length	Enable Log
1	0	1	0	0	No
2	0	1	0	0	No
3	0	1	0	0	No
4	0	1	0	0	No
5	0	1	0	0	No
6	0	1	0	0	No
7	0	1	0	0	No
8	0	1	0	0	No
9	0	1	0	0	No
10	0	1	0	0	No
11	0	1	0	0	No
12	0	1	0	0	No
13	0	1	0	0	No
14	0	1	0	0	No
15	0	1	0	0	No
16	0	1	0	0	No

Vehicle Detector Diagnostics (MM)6-5

Plan	Detector	Counts	Act	Pres	Multiplier	Failed Time	

							Failed Call Delay
1	1	0	0	0	1	255	0
1	2	0	0	0	1	255	0
1	3	0	0	0	1	255	0
1	4	0	0	0	1	255	0
1	5	0	0	0	1	255	0
1	6	0	0	0	1	255	0
1	7	0	0	0	1	255	0
1	8	0	0	0	1	255	0
1	9	0	0	0	1	255	0
1	10	0	0	0	1	255	0
1	11	0	0	0	1	255	0
1	12	0	0	0	1	255	0
1	13	0	0	0	1	255	0
1	14	0	0	0	1	255	0
1	15	0	0	0	1	255	0
1	16	0	0	0	1	255	0
1	17	0	0	0	1	255	0
1	18	0	0	0	1	255	0
1	19	0	0	0	1	255	0
1	20	0	0	0	1	255	0
1	21	0	0	0	1	255	0
1	22	0	0	0	1	255	0
1	23	0	0	0	1	255	0
1	24	0	0	0	1	255	0
1	25	0	0	0	1	255	0
1	26	0	0	0	1	255	0
1	27	0	0	0	1	255	0
1	28	0	0	0	1	255	0
1	29	0	0	0	1	255	0
1	30	0	0	0	1	255	0
1	31	0	0	0	1	255	0
1	32	0	0	0	1	255	0
1	33	0	0	0	1	255	0
1	34	0	0	0	1	255	0
1	35	0	0	0	1	255	0
1	36	0	0	0	1	255	0
1	37	0	0	0	1	255	0
1	38	0	0	0	1	255	0
1	39	0	0	0	1	255	0
1	40	0	0	0	1	255	0
1	41	0	0	0	1	255	0
1	42	0	0	0	1	255	0
1	43	0	0	0	1	255	0
1	44	0	0	0	1	255	0
1	45	0	0	0	1	255	0
1	46	0	0	0	1	255	0
1	47	0	0	0	1	255	0
1	48	0	0	0	1	255	0
1	49	0	0	0	1	255	0
1	50	0	0	0	1	255	0
1	51	0	0	0	1	255	0
1	52	0	0	0	1	255	0
1	53	0	0	0	1	255	0
1	54	0	0	0	1	255	0
1	55	0	0	0	1	255	0
1	56	0	0	0	1	255	0
1	57	0	0	0	1	255	0
1	58	0	0	0	1	255	0
1	59	0	0	0	1	255	0
1	60	0	0	0	1	255	0
1	61	0	0	0	1	255	0
1	62	0	0	0	1	255	0
1	63	0	0	0	1	255	0
1	64	0	0	0	1	255	0
2	1	0	0	0	1	255	0
2	2	0	0	0	1	255	0
2	3	0	0	0	1	255	0

2	4	0	0	0	1	255	0
2	5	0	0	0	1	255	0
2	6	0	0	0	1	255	0
2	7	0	0	0	1	255	0
2	8	0	0	0	1	255	0
2	9	0	0	0	1	255	0
2	10	0	0	0	1	255	0
2	11	0	0	0	1	255	0
2	12	0	0	0	1	255	0
2	13	0	0	0	1	255	0
2	14	0	0	0	1	255	0
2	15	0	0	0	1	255	0
2	16	0	0	0	1	255	0
2	17	0	0	0	1	255	0
2	18	0	0	0	1	255	0
2	19	0	0	0	1	255	0
2	20	0	0	0	1	255	0
2	21	0	0	0	1	255	0
2	22	0	0	0	1	255	0
2	23	0	0	0	1	255	0
2	24	0	0	0	1	255	0
2	25	0	0	0	1	255	0
2	26	0	0	0	1	255	0
2	27	0	0	0	1	255	0
2	28	0	0	0	1	255	0
2	29	0	0	0	1	255	0
2	30	0	0	0	1	255	0
2	31	0	0	0	1	255	0
2	32	0	0	0	1	255	0
2	33	0	0	0	1	255	0
2	34	0	0	0	1	255	0
2	35	0	0	0	1	255	0
2	36	0	0	0	1	255	0
2	37	0	0	0	1	255	0
2	38	0	0	0	1	255	0
2	39	0	0	0	1	255	0
2	40	0	0	0	1	255	0
2	41	0	0	0	1	255	0
2	42	0	0	0	1	255	0
2	43	0	0	0	1	255	0
2	44	0	0	0	1	255	0
2	45	0	0	0	1	255	0
2	46	0	0	0	1	255	0
2	47	0	0	0	1	255	0
2	48	0	0	0	1	255	0
2	49	0	0	0	1	255	0
2	50	0	0	0	1	255	0
2	51	0	0	0	1	255	0
2	52	0	0	0	1	255	0
2	53	0	0	0	1	255	0
2	54	0	0	0	1	255	0
2	55	0	0	0	1	255	0
2	56	0	0	0	1	255	0
2	57	0	0	0	1	255	0
2	58	0	0	0	1	255	0
2	59	0	0	0	1	255	0
2	60	0	0	0	1	255	0
2	61	0	0	0	1	255	0
2	62	0	0	0	1	255	0
2	63	0	0	0	1	255	0
2	64	0	0	0	1	255	0
3	1	0	0	0	1	255	0
3	2	0	0	0	1	255	0
3	3	0	0	0	1	255	0
3	4	0	0	0	1	255	0
3	5	0	0	0	1	255	0
3	6	0	0	0	1	255	0
3	7	0	0	0	1	255	0
3	8	0	0	0	1	255	0

3	9	0	0	0	1	255	0
3	10	0	0	0	1	255	0
3	11	0	0	0	1	255	0
3	12	0	0	0	1	255	0
3	13	0	0	0	1	255	0
3	14	0	0	0	1	255	0
3	15	0	0	0	1	255	0
3	16	0	0	0	1	255	0
3	17	0	0	0	1	255	0
3	18	0	0	0	1	255	0
3	19	0	0	0	1	255	0
3	20	0	0	0	1	255	0
3	21	0	0	0	1	255	0
3	22	0	0	0	1	255	0
3	23	0	0	0	1	255	0
3	24	0	0	0	1	255	0
3	25	0	0	0	1	255	0
3	26	0	0	0	1	255	0
3	27	0	0	0	1	255	0
3	28	0	0	0	1	255	0
3	29	0	0	0	1	255	0
3	30	0	0	0	1	255	0
3	31	0	0	0	1	255	0
3	32	0	0	0	1	255	0
3	33	0	0	0	1	255	0
3	34	0	0	0	1	255	0
3	35	0	0	0	1	255	0
3	36	0	0	0	1	255	0
3	37	0	0	0	1	255	0
3	38	0	0	0	1	255	0
3	39	0	0	0	1	255	0
3	40	0	0	0	1	255	0
3	41	0	0	0	1	255	0
3	42	0	0	0	1	255	0
3	43	0	0	0	1	255	0
3	44	0	0	0	1	255	0
3	45	0	0	0	1	255	0
3	46	0	0	0	1	255	0
3	47	0	0	0	1	255	0
3	48	0	0	0	1	255	0
3	49	0	0	0	1	255	0
3	50	0	0	0	1	255	0
3	51	0	0	0	1	255	0
3	52	0	0	0	1	255	0
3	53	0	0	0	1	255	0
3	54	0	0	0	1	255	0
3	55	0	0	0	1	255	0
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3	57	0	0	0	1	255	0
3	58	0	0	0	1	255	0
3	59	0	0	0	1	255	0
3	60	0	0	0	1	255	0
3	61	0	0	0	1	255	0
3	62	0	0	0	1	255	0
3	63	0	0	0	1	255	0
3	64	0	0	0	1	255	0
4	1	0	0	0	1	255	0
4	2	0	0	0	1	255	0
4	3	0	0	0	1	255	0
4	4	0	0	0	1	255	0
4	5	0	0	0	1	255	0
4	6	0	0	0	1	255	0
4	7	0	0	0	1	255	0
4	8	0	0	0	1	255	0
4	9	0	0	0	1	255	0
4	10	0	0	0	1	255	0
4	11	0	0	0	1	255	0
4	12	0	0	0	1	255	0
4	13	0	0	0	1	255	0

4	14	0	0	0	1	255	0
4	15	0	0	0	1	255	0
4	16	0	0	0	1	255	0
4	17	0	0	0	1	255	0
4	18	0	0	0	1	255	0
4	19	0	0	0	1	255	0
4	20	0	0	0	1	255	0
4	21	0	0	0	1	255	0
4	22	0	0	0	1	255	0
4	23	0	0	0	1	255	0
4	24	0	0	0	1	255	0
4	25	0	0	0	1	255	0
4	26	0	0	0	1	255	0
4	27	0	0	0	1	255	0
4	28	0	0	0	1	255	0
4	29	0	0	0	1	255	0
4	30	0	0	0	1	255	0
4	31	0	0	0	1	255	0
4	32	0	0	0	1	255	0
4	33	0	0	0	1	255	0
4	34	0	0	0	1	255	0
4	35	0	0	0	1	255	0
4	36	0	0	0	1	255	0
4	37	0	0	0	1	255	0
4	38	0	0	0	1	255	0
4	39	0	0	0	1	255	0
4	40	0	0	0	1	255	0
4	41	0	0	0	1	255	0
4	42	0	0	0	1	255	0
4	43	0	0	0	1	255	0
4	44	0	0	0	1	255	0
4	45	0	0	0	1	255	0
4	46	0	0	0	1	255	0
4	47	0	0	0	1	255	0
4	48	0	0	0	1	255	0
4	49	0	0	0	1	255	0
4	50	0	0	0	1	255	0
4	51	0	0	0	1	255	0
4	52	0	0	0	1	255	0
4	53	0	0	0	1	255	0
4	54	0	0	0	1	255	0
4	55	0	0	0	1	255	0
4	56	0	0	0	1	255	0
4	57	0	0	0	1	255	0
4	58	0	0	0	1	255	0
4	59	0	0	0	1	255	0
4	60	0	0	0	1	255	0
4	61	0	0	0	1	255	0
4	62	0	0	0	1	255	0
4	63	0	0	0	1	255	0
4	64	0	0	0	1	255	0

Pedestrian Detector Diagnotics (MM)6-6

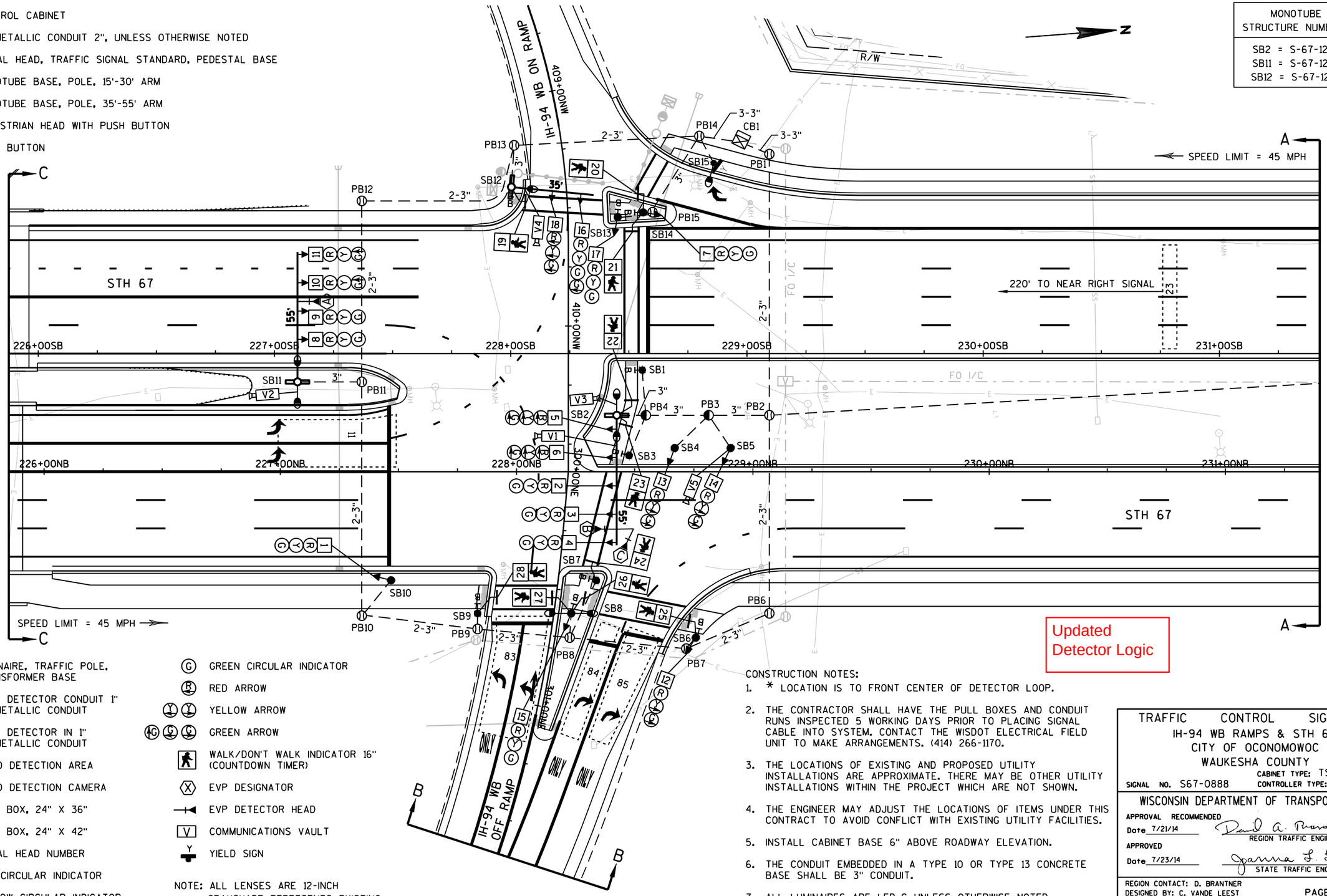
Plan	Detector	Counts	Act	Pres	Multiplier

Existing Signal Plans & Timings
WIS 67 Signalized Corridor

LEGEND

- CONTROL CABINET
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- (XX) MONOTUBE BASE, POLE, 15'-30' ARM
- (XX) MONOTUBE BASE, POLE, 35'-55' ARM
- PEDESTRIAN HEAD WITH PUSH BUTTON
- PUSH BUTTON

MONOTUBE STRUCTURE NUMBERS
SB2 = S-67-1275
SB11 = S-67-1276
SB12 = S-67-1277



Updated Detector Logic

- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
- LOOP DETECTOR CONDUIT 1" NONMETALLIC CONDUIT
- LOOP DETECTOR IN 1" NONMETALLIC CONDUIT
- VIDEO DETECTION AREA
- VX VIDEO DETECTION CAMERA
- PULL BOX, 24" X 36"
- PULL BOX, 24" X 42"
- XX SIGNAL HEAD NUMBER
- (R) RED CIRCULAR INDICATOR
- (Y) YELLOW CIRCULAR INDICATOR
- (G) GREEN CIRCULAR INDICATOR
- RED ARROW
- YELLOW ARROW
- GREEN ARROW
- WALK/DON'T WALK INDICATOR 16" (COUNTDOWN TIMER)
- (X) EVP DESIGNATOR
- EVP DETECTOR HEAD
- V COMMUNICATIONS VAULT
- YIELD SIGN

NOTE: ALL LENSES ARE 12-INCH
GRAYSHADE REPRESENTS EXISTING

CONSTRUCTION NOTES:

1. * LOCATION IS TO FRONT CENTER OF DETECTOR LOOP.
2. THE CONTRACTOR SHALL HAVE THE PULL BOXES AND CONDUIT RUNS INSPECTED 5 WORKING DAYS PRIOR TO PLACING SIGNAL CABLE INTO SYSTEM. CONTACT THE WISDOT ELECTRICAL FIELD UNIT TO MAKE ARRANGEMENTS. (414) 266-1170.
3. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
4. THE ENGINEER MAY ADJUST THE LOCATIONS OF ITEMS UNDER THIS CONTRACT TO AVOID CONFLICT WITH EXISTING UTILITY FACILITIES.
5. INSTALL CABINET BASE 6" ABOVE ROADWAY ELEVATION.
6. THE CONDUIT EMBEDDED IN A TYPE 10 OR TYPE 13 CONCRETE BASE SHALL BE 3" CONDUIT.
7. ALL LUMINAIRES ARE LED-C UNLESS OTHERWISE NOTED.

TRAFFIC CONTROL SIGNAL
IH-94 WB RAMPS & STH 67
CITY OF OCONOMOWOC
WAUKESHA COUNTY
CABINET TYPE: TS2
SIGNAL NO. S67-0888 CONTROLLER TYPE: ECONOLITE

WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVAL RECOMMENDED
Date 7/21/14 David A. Brantner, P.E.
REGION TRAFFIC ENGINEER

APPROVED
Date 7/23/14 Joanna L. Bush
STATE TRAFFIC ENGINEER

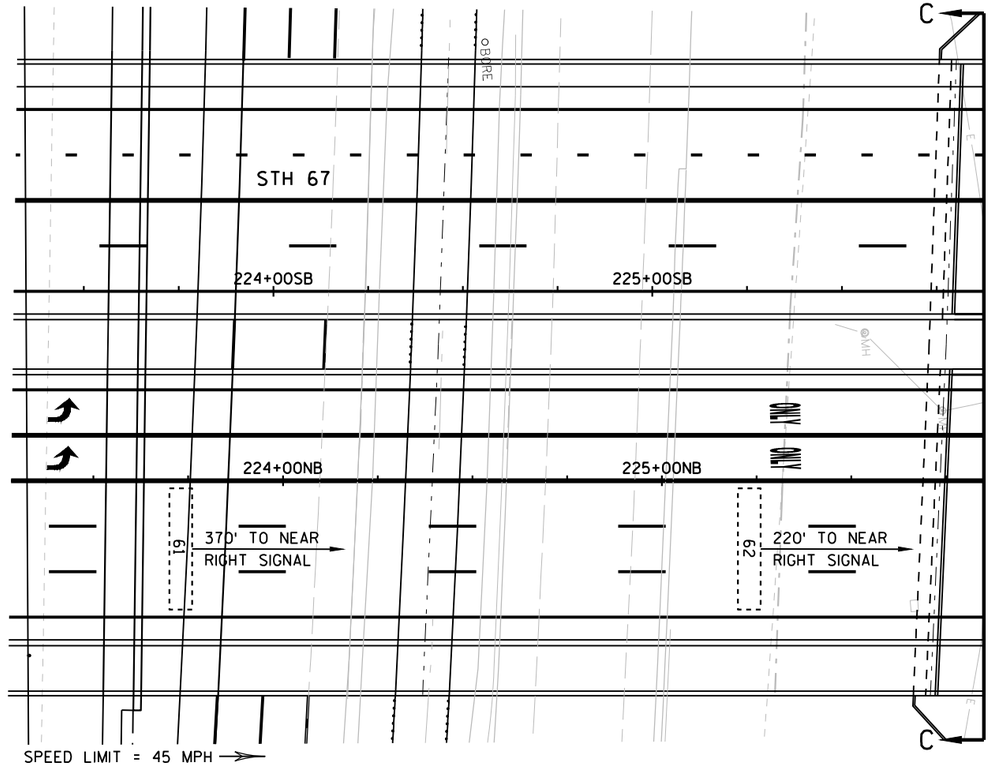
REGION CONTACT: D. BRANTNER
DESIGNED BY: C. VANDE LEEST
REVISED BY:

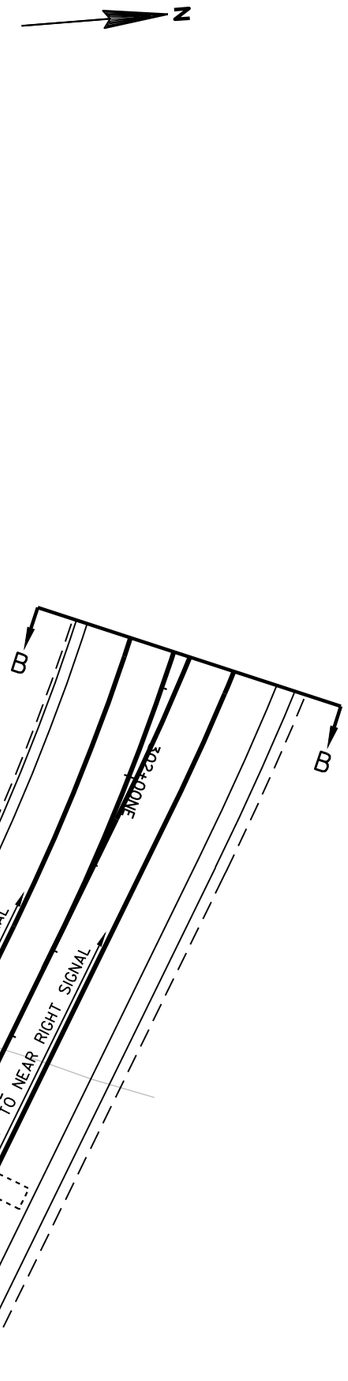
PAGE 1 OF 3

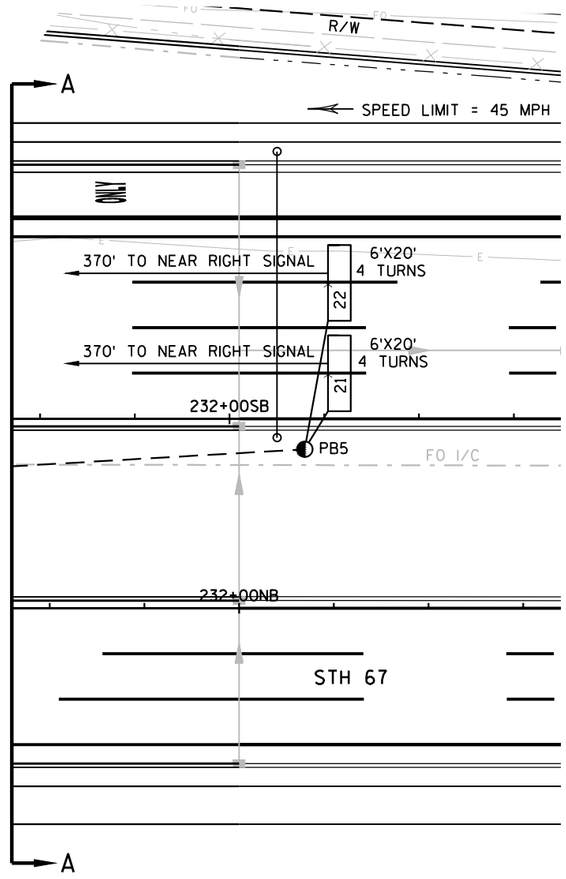
PROJECT NO: 1060-30-70	HWY: STH 67	COUNTY: WAUKESHA	TRAFFIC SIGNAL PLAN	SHEET -----	E

FILE NAME : N:\PDS\C3D\CAD\30300800\024002_SP.DWG PLOT DATE : 7/24/2014 8:11 AM PLOT BY : VANDE LEEST, CYNTHIA PLOT NAME : ---------- PLOT SCALE : 1:40_XREF

WISDOT/CADDS SHEET 42







TRAFFIC CONTROL SIGNAL
IH-94 WB RAMPS & STH 67
CITY OF OCONOMOWOC
WAUKESHA COUNTY

SIGNAL NO. S67-0888

REGION CONTACT: D. BRANTNER
DESIGNED BY: C. VANDE LEEST
REVISED BY:

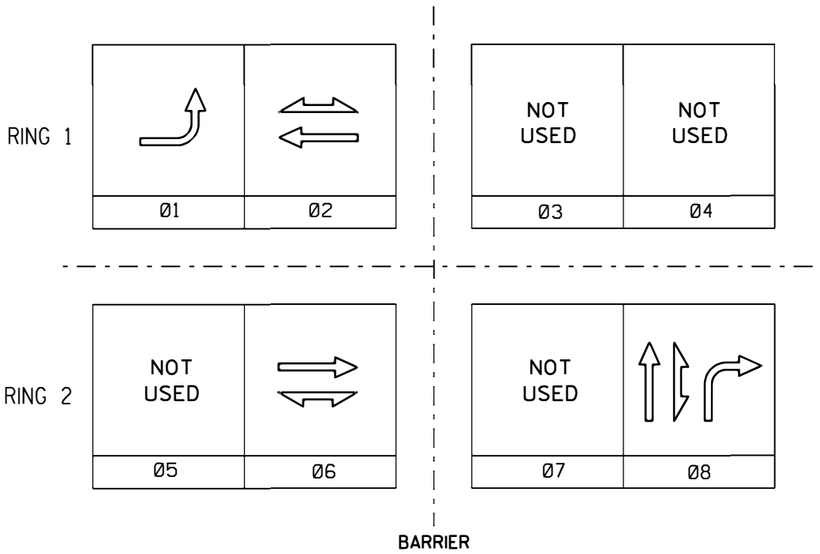
PAGE 2 OF 3

PROJECT NO: 1060-30-70	HWY: STH 67	COUNTY: WAUKESHA	TRAFFIC SIGNAL PLAN	SHEET _____	E

FILE NAME : N:\PDS\C3D\CAD\30300800\024002_SP.DWG PLOT DATE : 7/24/2014 8:12 AM PLOT BY : VANDE LEEST, CYNTHIA PLOT NAME : ---------- PLOT SCALE : 1:40_XREF

WISDOT/CADDS SHEET 42

	HEAD NUMBERS	FLASH
Ø1	5, 6	R ←
Ø2	7, 8, 9, 10, 11	R
Ø3		
Ø4		
Ø5		
Ø6	1, 2, 3, 4	R
Ø7		
Ø8	12, 13, 14, 15, 16, 17, 18	R, R ←
Ø2P	19, 20	
Ø4P		
Ø6P	25, 26, 27, 28	
Ø8P	21, 22, 23, 24	
OLE		
OLF		
OLG		
OLH		



CONTROLLER LOGIC

PHASE NUMBER	PHASE LOCKING	DUAL ENTRY W / Ø	PHASE RECALL	PHASE ACTIVE
1		6		x
2	X	6	MIN	x
3				
4				
5				
6	X	2	MIN	x
7				
8				

TYPE OF INTERCONNECT/COMMUNICATION	
NONE	
CLOSED LOOP	
TWISTED PAIR*	
FIBER OPTIC*	
FIBER OPTIC (ETHERNET)	x
RADIO	

TYPE OF COORDINATION	
NONE	
TBC	x
TRAFFIC RESPONSIVE	
ADAPTIVE	
*LOCATION OF MASTER CONTROLLER NO:	
SIGNAL SYSTEM #:	SS-00-50

TYPE OF LIGHTING	
BY OTHER AGENCY	
IN TRAFFIC SIGNAL CABINET	x
IN SEPARATE DOT LIGHTING CABINET	

TYPE OF PRE-EMPT	
NONE	
RAILROAD	
EMERGENCY VEHICLE	x
GTT	x
TOMAR	
HARDWIRE	
OTHER	
LIFT BRIDGE	
QUEUE DETECTOR	

DETECTOR LOGIC

DETECTOR INPUT	3	1	7	5	11	9	15	13
PLAN LOOP DETECTOR #(S)	21							
CALLED PHASE	2							
CALL OPTION	X							
DELAY TIME								
EXTEND OPTION	X							
EXTEND TIME								
USE ADDED INITIAL	X							
CROSS SWITCH PHASE								

19	17	23	21	27	25	31	29	DETECTOR INPUT
11	62	82	84		23			PLAN LOOP DETECTOR #(S)
1	6		8		2			CALLED PHASE
X	X		X		X			CALL OPTION
								DELAY TIME
X	X	X	X		X			EXTEND OPTION
		X						EXTEND TIME
	X							USE ADDED INITIAL
								CROSS SWITCH PHASE

DETECTOR INPUT	4	2	8	6	12	10	16	14
PLAN LOOP DETECTOR #(S)	22							
CALLED PHASE	2							
CALL OPTION	X							
DELAY TIME								
EXTEND OPTION	X							
EXTEND TIME								
USE ADDED INITIAL	X							
CROSS SWITCH PHASE								

20	18	24	22	28	26	32	30	DETECTOR INPUT
61	81	83	85					PLAN LOOP DETECTOR #(S)
6		8	8					CALLED PHASE
X		X	X					CALL OPTION
			X					DELAY TIME
X	X	X	X					EXTEND OPTION
	X							EXTEND TIME
X								USE ADDED INITIAL
								CROSS SWITCH PHASE

EMERGENCY VEHICLE PREEMPTION SEQUENCE

EMERGENCY VEHICLE DETECTOR	A	B	D
MOVEMENT	← →	↑ →	↑ ↑
PHASE	2+6	6+1	8

AFTER PREEMPTION SEQUENCE 2+6 OR 6+1, CONTROLLER SHALL RETURN TO PHASES 2+6.
AFTER PREEMPTION SEQUENCE 8, CONTROLLER SHALL RETURN TO PHASE 8.

IH-94 WB RAMPS & STH 67
CITY OF OCONOMOWOC
WAUKESHA COUNTY

SIGNAL NO. S67-0888 CABINET TYPE: TS2
CONTROLLER TYPE: ECONOLITE
DATE 07/14 PAGE NO. 3 OF 3

PROJECT NO: 1060-30-70	HWY: STH 67	COUNTY: WAUKESHA	SEQUENCE OF OPERATIONS	SHEET	E

FILE NAME : N:\PDS\C3D\CAD\30300800\024002_S0888\024002_sp_seq.dgn PLOT DATE : 09-JUL-2014 17:52 PLOT BY : dotcmv PLOT NAME : S-400,seq,rev2 PLOT SCALE : 40.000373:1
WISDOT/CADDS SHEET 42

Timing Cover Sheet for Signal: S0888 HWY: 94 and STH 67

Date:	12/8/2016	Changes Made By:	P. Virk
Signal No	S0888 **S888**	Highway:	94
County:	WAU	Local Hwy:	WB Ramp
Controller:	ECONOLITE	Location:	STH 67
School:	None	Audible Ped:	No

Pre-emption

Emergency:	Yes	Type:	3M Opticom	Phases:	2+6, 1+6, 8	EVP Maintenance Id:	0663-42-08
Railroad:	No	Type:		Phases:		EVP Contact:	Public Safety Director, David Beguh
						Community:	Oconomowoc, City of
						Contact Phone:	(262) 567-4401
						Alternate Phone:	

Coordination

System No: SS0050 Controller IP Address:

CoordType: TBC Comments:

Dip Switch Setting

DS ☑

TBC:	Yes
Tone:	No
Closed Loop:	No
Hardwire:	No

	Length	Split 1	Split 2	Split 3	Split 4
Cycle 1=	90	M-F 6AM to 9AM			
Cycle 2=	80	M-F 9AM to 3PM, 7PM to 9PM Sa-Su 9AM to 9PM			
Cycle 3=	100	M-F 3PM to 7PM			
Cycle 4=					

Prom Replacement

Signal Plan No

Pre-empt: No

Part of a Local System: No

Local Contact:

Phone Number:

Overlaps

Overlap A= Phases:

Overlap B= Phases:

Overlap C= Phases:

Overlap D= Phases:

Flash

Emergency: R-R

Off Peak: No

Off Peak Times

Detector Timing

Dilemna Zone Yes Video Detection: No

Detector Number	81	82												
Stretch	*	*												
Right Turn Delay														
Left Turn Delay														

Unique Features

* See programming for details

Timing Changes Log for Signal S0888 on Hwy 94 in WAUKESHA County

STH 67

Date Computer Changed	Date Change Made in Field	Timing Change	Reason for Change	Change By	Temp Timing
12/02/16	12/8/2016	Permanent Timings Added - Coordination Timings	Improve Operation	P. Virk	No
08/30/16	9/1/2016	Construction Timings	Permanent Signal Turned on	P. Virk	Yes
04/24/15	4/24/2015	Permanent Signal turned off	Temporary Signal turned on under project 1060-30-70/3030-08-70	P. Virk	Yes
04/29/14	5/2/2014	Updated System Timing and EVP Operations	Signal Timing Review	P. Virk	No
02/03/14	2/4/2014	Updated start up timing. Updated EVP timing to current standards.	Windows 7 conttoller upgrade.	D. Brantner	No
03/07/12		Converted timing to Marc NX.		J. Gates	No
12/10/09	12/18/2009	Updated system timing.	Citizen complaint.	D. Brantner	No
11/18/09	11/12/2009	Changed startup time to 10 sec.	Updated to current practice.	D. Brantner	No
11/03/09		Changed min gap to 3.5 sec for phase 2 & 6. Changed force off to cycle. Changed correction to shortway plus.	Wanted match the force off and correction to rest of the system.	D. Brantner	No
05/28/09	5/28/2009	Decreased the MVI and Time to Reduce to 15 sec	Better System Operation	J. Dimmer	No

Timing Changes Log for Signal S0888 on Hwy 94 in WAUKESHA County

STH 67

Date Computer Changed	Date Change Made in Field	Timing Change	Reason for Change	Change By	Temp Timing
03/20/09		Updated system timing	Added NBLT to S0890	J. Dimmer	No
02/09/07		DST	DST	S. Pierce	No
02/19/04	2/20/2004	Turned system off at 7 pm.	Traffic lighter than expected.	J. Haug	No
11/21/03		Increase phase 2 passage.	Adv. detectors farther out than shown on plan.	J. Haug	No
11/06/03		New System Timing.	New signal being put into system along STH 67.	J. Haug	No

Waukesha (S67-0649 - S67-0889) - S67-0888 - IH-94 WB Ramps & STH 67

Configuration Phase Sequence

Controller Sequence (MM)1-1-1

Hardware Alternate Sequence Enable: No

Phase Ring Sequence.....(Note: Sequences identical to the prior one are not printed)

	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
Sequence 1																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 2																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 3																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 4																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 5																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 6																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 7																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 8																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 9																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 10																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 11																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 12																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 13																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 14																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 15																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 16																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.

Phases In Use / Exclusive PED (MM)1-2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phases in Use	X	X				X		X								
Exclusive PED																

Phase Compatibility (MM)1-1-2

Phase	Compatible Phase
1	5

1	6
2	5
2	6
3	7
3	8
4	7
4	8
9	11
9	12
10	11
10	12
13	15
13	16
14	15
14	16

Phase and Overlap Descriptions

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Description	NBLT	SB				NB		WB								
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**L**	**K**	**L**	**M**	**N**	**O**
Description																

Administration (MM)1-7-1

Enable CU/Cabinet Interlock CRC	No
Request Download Controller Data	No
Controller Database CRC	0000
Enable Automatic Backup to Datakey	Yes

Backup Prevent (MM)1-1-3

	Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Timing /	1		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Backup	2	.		.	.	.	.	.	.	.	.	.	.	.	.	.	.
	3	.	.		.	.	.	.	.	.	.	.	.	.	.	.	.
	4	.	.	.		.	.	.	.	.	.	.	.	.	.	.	.
	5	.	.	.	.		.	.	.	.	.	.	.	.	.	.	.
	6	.	.	.	.	.		.	.	.	.	.	.	.	.	.	.
	7	.	.	.	.	.	.		.	.	.	.	.	.	.	.	.
	8	.	.	.	.	.	.	.		.	.	.	.	.	.	.	.
	9	.	.	.	.	.	.	.	.		.	.	.	.	.	.	.
	10	.	.	.	.	.	.	.	.	.		.	.	.	.	.	.
	11	.	.	.	.	.	.	.	.	.	.		.	.	.	.	.
	12	.	.	.	.	.	.	.	.	.	.	.		.	.	.	.
	13	.	.	.	.	.	.	.	.	.	.	.	.		.	.	.
	14	.	.	.	.	.	.	.	.	.	.	.	.	.		.	.
	15	.	.	.	.	.	.	.	.	.	.	.	.	.	.		.
	16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	

Simultaneous Gap (MM)1-1-4

	Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	1		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	2	.		.	.	.	X	.	.	.	.	.	.	.	.	.	.
	3	.	.		.	.	.	.	.	.	.	.	.	.	.	.	.
	4	.	.	.		.	.	.	X	.	.	.	.	.	.	.	.
	5	.	.	.	.		.	.	.	.	.	.	.	.	.	.	.
Phase	6	.	X	.	.	.		.	.	.	.	.	.	.	.	.	.
Must	7	.	.	.	.	.	.		.	.	.	.	.	.	.	.	.
Gap	8	.	.	.	X	.	.	.		.	.	.	.	.	.	.	.
With	9	.	.	.	.	.	.	.	.		.	.	.	.	.	.	.
Phase	10	.	.	.	.	.	.	.	.	.		.	.	.	.	.	.
	11	.	.	.	.	.	.	.	.	.	.		.	.	.	.	.
	12	.	.	.	.	.	.	.	.	.	.	.		.	.	.	.
	13	.	.	.	.	.	.	.	.	.	.	.	.		.	.	.
	14	.	.	.	.	.	.	.	.	.	.	.	.	.		.	.
	15	.	.	.	.	.	.	.	.	.	.	.	.	.	.		.
	16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
	Disable	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Load Switch Assignments (MMU Channel) (MM)1-3

	Phase / Overlap	Type	Dimming				Power Up				Auto		Flash Together
			Red	Yellow	Green	Dark	Auto	Red	Yellow	Dark	Red	Yellow	
1	1	V				+	X				X		X
2	2	V				+	X				X		
3	3	V				+	X				X		X
4	4	V				+	X				X		
5	5	V				-	X				X		
6	6	V				-	X				X		X
7	7	V				-	X				X		
8	8	V				-	X				X		X
9	2	P				+	X						
10	4	P				+	X						
11	6	P				-	X						
12	8	P				-	X						
13	1	O				+	X				X		X
14	2	O				-	X				X		X
15	3	O				+	X				X		
16	4	O				-	X				X		

Waukesha (S67-0649 - S67-0889) - S67-0888 - IH-94 WB Ramps & STH 67

Configuration Port 1 (SDLC)

SDLC Options (MM)1-4-1

BIU	1	2	3	4	5	6	7	8
Term and Facility Enable	X	X						
Detector Rack Enable	X	X						

Enable TS2/MMU Type Cabinet: Yes
Enable MMU Extended Status: Yes
Enable SDLC Stop Time: No
Enable 3 Critical RFE's Lockup: Yes

MMU Program (MM)1-4-2

Channel Can Serve with Channel	
Channel 1	**Channel 2**
1	6
1	11
2	6
2	9
2	11
6	9
6	11
8	12
9	11

Color Check Enable (MM)1-4-3

Enable Color Check: Yes

MMU Channel	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Green	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Yellow	X	X	X	X	X	X	X	X					X	X	X	X
Red		X		X		X		X								

Secondary To Secondary Addressing (MM)1-4-4

ID	1	2	3	4	5	6	7	8	MMU
Term and Facility Enable									

ID	1	2	3	4	5	6	7	8	Diag
Detector Rack Enable									

Diagonstics (Test Fixture) Enable: No

Waukesha (S67-0649 - S67-0889) - S67-0888 - IH-94 WB Ramps & STH 67

Configuration Communications

Ethernet Port Configuration (MM)1-5-1

Controller IP: 172.22.82.60
Subnet Mask: 255.255.255.0
Default Gateway IP: 172.22.82.1
Server IP: 0.0.0.0

NTCIP Parameters (MM)1-5-5

Backup Time: 0
UDP Port: 501
Ethernet Priority: 1
Port 2 Priority: 4
Port 3A Priority: 2
Port 3B Priority: 3

Port Configuration (MM)1-5-2 to 1-5-4

Port	2 (C50S)	3A (C21S)	3B (C22S)
Protocol	NTCIP	NTCIP	Terminal
Enable	No	Yes	No
Data Rate	9600	19.2K	1200
Data Parity Stop	8 N 1	8 N 1	8 0 1
Modem Setup String	None	None	None
User String			
Comm Port Address	1	1	0
System Detector 9-1	0	0	0
Telemetry Response Delay	0.0	0.0	0.0
Duplex Half/Full	Full	Full	Full
Flow Control	Yes	Yes	Yes
AB3418 NTCIP Group Address	0	0	0
AB3418 NTCIP Single Flag Enable	No	No	No
RTS to CTS Delay	0.0	0.0	3.0
RTS Turn Off Delay	0.0	0.0	2.0
Droupout Time	10	10	10
Early RTS	No	No	No
Telemetry Mode	FSK	FSK	FSK
Rail Road	0	0	0
Rail Road Line	0	0	0
ATCS Group	0	0	0
Wayside Device	0	0	0
ATCS Device	0	0	0
Wayside SubNode	0	0	0
ATCS SubNode	0	0	0

ECPIP Parameters (MM)1-5-6

Controller Address: 0
Expanded System Detector Address: 0

Local System Detector

Local System Detector	Number

Waukesha (S67-0649 - S67-0889) - S67-0888 - IH-94 WB Ramps & STH 67

Configuration Logging/Display

Event Logging (MM)1-6-1

Critical RFE's	Yes	3 Critical RFE's in 24 Hours	Yes
MMU Flash Faults	Yes	Local Flash Faults	Yes
Non-Critical RFE's (Det/Test)	Yes	Detector Errors	Yes
Coordination Errors	Yes	Controller Download	Yes
Preempt	Yes	TSP	Yes
Power On/Off	Yes	Low Battery	Yes
Access	Yes	Data Change	Yes
Online/Offline	Yes		

Alarm Log	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Enable Logging	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Display Options (MM)1-7-2

Key Click Enable:	Yes
Backlight Enable:	Yes
LED Mode:	Single Color
Main Status Display Mode:	Basic
Screen Format:	Advanced
Trans Mode Pop-up Disable:	No

Sign On (MM)8-5

Sign On Message Line 1: INTERSECTION NAME:
Sign On Message Line 2: WisDOT Data Base

Waukesha (S67-0649 - S67-0889) - S67-0888 - IH-94 WB Ramps & STH 67

Logic Processor Page 1
Statement Control (MM)1-8-1

LP	Statement Control

Waukesha (S67-0649 - S67-0889) - S67-0888 - IH-94 WB Ramps & STH 67

Logic Processor Page 2

Logic Statements (MM)1-8-2

Waukesha (S67-0649 - S67-0889) - S67-0888 - IH-94 WB Ramps & STH 67

Controller Timing Plan (MM)2-1

Plan 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	NBLT	SB				NB		WB								
Min Green	8	15	0	0	0	15	0	10	0	0	0	0	0	0	0	0
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	7	0	0	0	7	0	7	0	0	0	0	0	0	0	0
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	11	0	0	0	23	0	41	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	1.5	3.3	0.0	0.0	0.0	3.3	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	25	40	0	0	0	40	0	30	0	0	0	0	0	0	0	0
Max 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.5	4.3	0.0	0.0	0.0	4.3	0.0	5.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	2.5	1.8	0.0	0.0	0.0	1.8	0.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	1.2	0.0	0.0	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	8	21	0	0	0	21	0	10	0	0	0	0	0	0	0	0
Time B4	25	21	0	0	0	21	0	30	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	18	0	0	0	18	0	0	0	0	0	0	0	0	0	0
Min Gap	1.5	3.5	0.0	0.0	0.0	3.5	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	NBLT	SB				NB		WB								
Min Green	5	15	5	10	5	15	5	10	0	0	0	0	0	0	0	0
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	3.0	7.0	3.0	5.0	3.0	7.0	3.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	15	45	15	35	15	45	15	35	0	0	0	0	0	0	0	0
Max 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 3

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Direction	**NBLT**	**SB**				**NB**		**WB**								
Min Green	5	15	5	10	5	15	5	10	0	0	0	0	0	0	0	0
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	3.0	7.0	3.0	5.0	3.0	7.0	3.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	15	45	15	35	15	45	15	35	0	0	0	0	0	0	0	0
Max 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 4

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Direction	**NBLT**	**SB**				**NB**		**WB**								
Min Green	5	15	5	10	5	15	5	10	0	0	0	0	0	0	0	0
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	3.0	7.0	3.0	5.0	3.0	7.0	3.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	15	45	15	35	15	45	15	35	0	0	0	0	0	0	0	0
Max 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Waukesha (S67-0649 - S67-0889) - S67-0888 - IH-94 WB Ramps & STH 67

Controller Overlaps

Vehicle Overlaps (MM)2-2

Overlap	Type	Lag Green	Yellow	Red	Advance Green

Phases

Overlap	Phase	Included	Protect	Ped Protect	Not Overlap	Modifier	Lag X Phase	Lag 2 Phase	Flash Green

PPLT FYA

Overlap	Protected Phase	Permissive Phase	Flash Arrow Output	Flash Arrow Channel	FYA Delay	FYA Clearance	Special Function Disable

Guaranteed Minimum Time Data (MM) 2-4

Phase Time Data

Phase	Min Green	Walk	Ped Clear	Yellow	Red Clear	Overlap Green
A01	1	0	7	3.0	0.0	1
B02	1	0	7	3.0	0.0	1
C03	1	0	7	3.0	0.0	1
D04	1	0	7	3.0	0.0	1
E05	1	0	7	3.0	0.0	1
F06	1	0	7	3.0	0.0	1
G07	1	0	7	3.0	0.0	1
H08	1	0	7	3.0	0.0	1
I09	1	0	7	3.0	0.0	1
J10	1	0	7	3.0	0.0	1
K11	1	0	7	3.0	0.0	1
L12	1	0	7	3.0	0.0	1
M13	1	0	7	3.0	0.0	1
N14	1	0	7	3.0	0.0	1
O15	1	0	7	3.0	0.0	1
P16	1	0	7	3.0	0.0	1

Waukesha (S67-0649 - S67-0889) - S67-0888 - IH-94 WB Ramps & STH 67

Controller **Pedestrian Overlaps**
Pedestrian Overlaps (MM) 2-3

Included Phase	Ped Overlap

Waukesha (S67-0649 - S67-0889) - S67-0888 - IH-94 WB Ramps & STH 67

Controller Start/Fash (MM) 2-5

Startup

Phase	Phase Setting
2	G
6	G

Overlap
A
B
C
D

Flash > Mon: No
Flash Time: 0
All Red: 6
Power Start Sequence: 1
MUTCD Enabled: Yes
MUTCD Yellow to Green: No

Automatic Flash

Entry Phase
2
6

Exit Phase
2
6

Overlap Exit
A
B
C
D

Flash > Mon: No
Exit Flash Interval: G
Minimum Auto Flash: 8
Minimumin Recall: No
Cycle Through Phase: No

Waukesha (S67-0649 - S67-0889) - S67-0888 - IH-94 WB Ramps & STH 67

Controller Options

Controller Options (MM)2-6-1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Flashing Green Phase																
Guaranteed Passage																
Non Act 1																
Non Act 2																
Dual Entry		X				X										
Conditional Service																
Conditional Reservice																
Ped Reservice																
Rest In Walk																
Flashing Walk																
Ped Clear Yellow																
Ped Clear Red																
IGRN + Veh Ext																

Ped Clear Protect: On Red Revert: 2.0 MUTCD 3 Seconds Don't Walk: No

Act Pre-Time (MM)2-7

Pre-Time Mode Enable: No Free Input Enables Pre-Timed: Yes

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Pre-Timed Phase																

Phase Recall Options (MM)2-8

Plan 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector		X				X										
Vehicle Recall		X				X										
Ped Recall						X										
Max Recall																
Soft Recall																
No Rest																
Al Calc																

Plan 2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector		X				X										
Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
Al Calc																

Plan 3

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector		X				X										
Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
Al Calc																

Plan 4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector		X				X										

Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
AI Calc																

Waukesha (S67-0649 - S67-0889) - S67-0888 - IH-94 WB Ramps & STH 67

Coordination Options

Coordination Options (MM)3-1

Manual Pattern	Auto	ECPI Coord	Yes
System Source	TBC	System Format	STD
Splits In	Seconds	Offsets In	Seconds
Transition	Smooth	Max Select	MAXINH
Dwell/Add Time	0		
Delay Coord Walk to LZ	No	Force Off	Fixed
Offset Reference	Lead	Use Ped Time	No
Ped Recall	No	Ped Reservice	No
Local Zero Override	No	FO Added Initial Green	Yes
Re-Sync Count	3	Multisync	No

Auto Perm Minimum Green (Seconds) (MM)3-4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Minimum Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Split Demand (MM)3-5

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Demand 1																
Demand 2																

Demand	1	2
Detector	0	0
Call Time (Sec)	0	0
Cycle Count	0	0

Waukesha (S67-0649 - S67-0889) - S67-0888 - IH-94 WB Ramps & STH 67

Coordination Pattern Data
Pattern Data (MM)3-2

Pattern - 1

Split Pattern	1	TS2 (Pat-Off)	0-1	Splits in	Seconds
Cycle	90	Std (COS)	0	Offsets in	Seconds
Offset Value	68s	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	NBLT	SB				NB		WB								
Splits (Split Pat 1)	20	40	0	30	0	60	0	30	0	0	0	0	0	0	0	0
Preference 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Preference 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Disp.	-	0	0	0
Split Sum	90s	90s	0s	0s

Misc. Data

Veh. Permissive 1	0	Veh. Permissive 2	0	Veh. Permissive 2 Disp.	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern Data

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coordinated Phases		X				X										
Vehicle Recalls																
Ped Recalls																
Max Recalls																
Phase Omit																
Special Function Output																

Pattern - 2

Split Pattern	2	TS2 (Pat-Off)	0-2	Splits in	Seconds
Cycle	80	Std (COS)	0	Offsets in	Seconds
Offset Value	2s	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	NBLT	SB				NB		WB								
Splits (Split Pat 2)	18	32	0	30	0	50	0	30	0	0	0	0	0	0	0	0
Preference 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Preference 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Disp.	-	0	0	0
Split Sum	80s	80s	0s	0s

Misc. Data

Veh. Permissive 1	0	Veh. Permissive 2	0	Veh. Permissive 2 Disp.	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern Data

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coordinated Phases		X				X										
Vehicle Recalls																
Ped Recalls																
Max Recalls																
Phase Omit																
Special Function Output																

Pattern - 3

Split Pattern	3	TS2 (Pat-Off)	0-3	Splits in	Seconds
Cycle	100	Std (COS)	0	Offsets in	Seconds
Offset Value	93s	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	NBLT	SB				NB		WB								
Splits (Split Pat 3)	20	40	0	40	0	60	0	40	0	0	0	0	0	0	0	0
Preference 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Preference 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Disp.	-	0	0	0
Split Sum	100s	100s	0s	0s

Misc. Data

Veh. Permissive 1	0	Veh. Permissive 2	0	Veh. Permissive 2 Disp.	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern Data

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coordinated Phases		X				X										
Vehicle Recalls																
Ped Recalls																
Max Recalls																
Phase Omit																
Special Function Output																

Waukesha (S67-0649 - S67-0889) - S67-0888 - IH-94 WB Ramps & STH 67

Preemptor

Preempt Plan (MM)4-1

Plan 3

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Track Clear Vehicle																
Track Clear Overlap																
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Vehicle		X				X										
Dwell Ped																
Dwell Overlap																
Cycling Vehicle																
Cycling Ped																
Cycling Overlap																
Exit Phase		X				X										
Exit Calls																
Special Funciton																

Enable	Yes	Preempt Override	No	Interlock Enable	No
Detector Lock	Yes	Delay	1	Inhibit	0
Override Flash	No	Duration	0	CLR > GRN	No
Term Overlap Asap	No	PC Through Yellow	No	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	Flash Exit Color	Green	Exit Option	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Preempt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	5	0	5	25.5	25.5
	Min Grn	**Ext Grn**	**Max Grn**	**Yellow**	**Red**
Track Clear	0	0	0	25.5	25.5
	Min Dwell	**Pmt Ext**	**Max Time**	**Yellow**	**Red**
Dwell / Cycle-Exit	10	5.0	0	25.5	25.5

Preempt Active Out	On	Preempt Active Dwell	No
Other Priority Preempt	On	Non-Priority Preempt	F1
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Pri Return % Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Track Clear Vehicle																
Track Clear Overlap																
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Vehicle	X					X										
Dwell Ped																
Dwell Overlap																
Cycling Vehicle																
Cycling Ped																
Cycling Overlap																
Exit Phase		X				X										
Exit Calls																
Special Funciton																

Enable	Yes	Preempt Override	No	Interlock Enable	No
Detector Lock	Yes	Delay	1	Inhibit	0
Override Flash	No	Duration	0	CLR > GRN	No
Term Overlap Asap	No	PC Through Yellow	No	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	Flash Exit Color	Green	Exit Option	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Preempt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	5	0	5	25.5	25.5
	Min Grn	**Ext Grn**	**Max Grn**	**Yellow**	**Red**
Track Clear	0	0	0	25.5	25.5
	Min Dwell	**Pmt Ext**	**Max Time**	**Yellow**	**Red**
Dwell / Cycle-Exit	10	5.0	0	25.5	25.5

Preempt Active Out	On	Preempt Active Dwell	No
Other Priority Preempt	On	Non-Priority Preempt	F1
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Pri Return % Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 5

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**
Track Clear Vehicle																
Track Clear Overlap																
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Vehicle								X								
Dwell Ped																
Dwell Overlap																
Cycling Vehicle																
Cycling Ped																
Cycling Overlap																
Exit Phase								X								
Exit Calls																
Special Funciton																

Enable	Yes	Preempt Override	No	Interlock Enable	No
Detector Lock	Yes	Delay	1	Inhibit	0
Override Flash	No	Duration	0	CLR > GRN	No
Term Overlap Asap	No	PC Through Yellow	No	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	Flash Exit Color	Green	Exit Option	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Preempt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	5	0	5	25.5	25.5
	Min Grn	**Ext Grn**	**Max Grn**	**Yellow**	**Red**
Track Clear	0	0	0	25.5	25.5
	Min Dwell	**Pmt Ext**	**Max Time**	**Yellow**	**Red**
Dwell / Cycle-Exit	10	5.0	0	25.5	25.5

Preempt Active Out	On	Preempt Active Dwell	No
Other Priority Preempt	On	Non-Priority Preempt	F1
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Pri Return % Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Waukesha (S67-0649 - S67-0889) - S67-0888 - IH-94 WB Ramps & STH 67

Time Base Clock/Calendar
Clock/Calendar Options (MM)5-1

Enable Action Plan:	0
Sync Reference Time:	12:00 AM
Sync Reference:	Reference Time
Day Light Savings:	USDLS
Time Reset Input Set Time:	3:30:00
Standard Time From GMT:	0

Waukesha (S67-0649 - S67-0889) - S67-0888 - IH-94 WB Ramps & STH 67

Time Base Action Plan
Action Plan (MM)5-2

Action Plan - 1

Pattern	1	Override System	No
Timing Plan	1	Sequence	0
Veh Det Plan	1	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 2

Pattern	2	Override System	No
Timing Plan	1	Sequence	0
Veh Det Plan	1	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 3

Pattern	3	Override System	No
Timing Plan	1	Sequence	0
Veh Det Plan	1	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 99

Pattern	255 - FLSH	Override System	No
Timing Plan	0	Sequence	0
Veh Det Plan	0	Detector Log	None
Flash	Yes	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 100

Pattern	254 - FREE	Override System	No
Timing Plan	1	Sequence	0
Veh Det Plan	1	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Waukesha (S67-0649 - S67-0889) - S67-0888 - IH-94 WB Ramps & STH 67

Time Base Day Plan/Schedule
Day Plan (MM)5-3

Day Plan - 1

Event	Action Plan	Start Time
1	100	12:01 AM
2	2	9:00 AM
3	100	9:00 PM

Day Plan - 2

Event	Action Plan	Start Time
1	100	12:01 AM
2	1	6:00 AM
3	2	9:00 AM
4	3	3:00 PM
5	2	7:00 PM
6	100	9:00 PM

Schedule (MM)5-4

Schedule Number - 1

Day Plan Number: 1

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	X	X	X	X	X	X	X	X	X	X	X	X

Day of Week	Sun	Mon	Tue	Wed	Thur	Fri	Sat
	X						X

Day of Month	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

Schedule Number - 2

Day Plan Number: 2

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	X	X	X	X	X	X	X	X	X	X	X	X

Day of Week	Sun	Mon	Tue	Wed	Thur	Fri	Sat
		X	X	X	X	X	

Day of Month	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

Waukesha (S67-0649 - S67-0889) - S67-0888 - IH-94 WB Ramps & STH 67

Time Base Exceptions

Exception Day Program (MM)5-5

Day	Fixed/Float	Month	Day of Week/Month	Week of Month/Year	Day Plan
37	FIXED	255	255	65535	255
38	FIXED	255	255	65535	255
39	FIXED	255	255	65535	255
40	FIXED	255	255	65535	255
41	FIXED	255	255	65535	255
42	FIXED	255	255	65535	255
43	FIXED	255	255	65535	255
44	FIXED	255	255	65535	255
45	FIXED	255	255	65535	255
46	FIXED	255	255	65535	255
47	FIXED	255	255	65535	255
48	FIXED	255	255	65535	255
49	FIXED	255	255	65535	255
50	FIXED	255	255	65535	255
51	FIXED	255	255	65535	255
52	FIXED	255	255	65535	255
53	FIXED	255	255	65535	255
54	FIXED	255	255	65535	255
55	FIXED	255	255	65535	255
56	FIXED	255	255	65535	255
57	FIXED	255	255	65535	255
58	FIXED	255	255	65535	255
59	FIXED	255	255	65535	255
60	FIXED	255	255	65535	255
61	FIXED	255	255	65535	255
62	FIXED	255	255	65535	255
63	FIXED	255	255	65535	255
64	FIXED	255	255	65535	255
65	FIXED	255	255	65535	255
66	FIXED	255	255	65535	255
67	FIXED	255	255	65535	255
68	FIXED	255	255	65535	255
69	FIXED	255	255	65535	255
70	FIXED	255	255	65535	255
71	FIXED	255	255	65535	255
72	FIXED	255	255	65535	255
73	FIXED	255	255	65535	255
74	FIXED	255	255	65535	255
75	FIXED	255	255	65535	255
76	FIXED	255	255	65535	255
77	FIXED	255	255	65535	255
78	FIXED	255	255	65535	255
79	FIXED	255	255	65535	255
80	FIXED	255	255	65535	255
81	FIXED	255	255	65535	255
82	FIXED	255	255	65535	255
83	FIXED	255	255	65535	255
84	FIXED	255	255	65535	255
85	FIXED	255	255	65535	255
86	FIXED	255	255	65535	255
87	FIXED	255	255	65535	255
88	FIXED	255	255	65535	255
89	FIXED	255	255	65535	255
90	FIXED	255	255	65535	255

Waukesha (S67-0649 - S67-0889) - S67-0888 - IH-94 WB Ramps & STH 67

Detectors

Detectors Page 1

Vehicle Detectors Setup (MM)6-1

Vehicle Plan	Detector Number	Called	Type
2	1	1	N
2	2	2	N
2	3	3	N
2	4	4	N
2	5	5	N
2	6	6	N
2	7	7	N
2	8	8	N
2	60	2	N
2	60	4	N
2	60	6	N
2	60	8	N
3	1	1	N
3	2	2	N
3	3	3	N
3	4	4	N
3	5	5	N
3	6	6	N
3	7	7	N
3	8	8	N
3	60	2	N
3	60	4	N
3	60	6	N
3	60	8	N
4	1	1	N
4	2	2	N
4	3	3	N
4	4	4	N
4	5	5	N
4	6	6	N
4	7	7	N
4	8	8	N
4	60	2	N
4	60	4	N
4	60	6	N
4	60	8	N

Vehicle Detector Setup (MM)6-2 continued

Detector Number	Type	TS2 Detector	Detector Description
1	N-NTCIP	Yes	
2	N-NTCIP	Yes	
3	N-NTCIP	Yes	
4	N-NTCIP	Yes	
5	N-NTCIP	Yes	
6	N-NTCIP	Yes	
7	N-NTCIP	Yes	
8	N-NTCIP	Yes	
9	N-NTCIP	Yes	
10	N-NTCIP	Yes	
11	N-NTCIP	Yes	
12	N-NTCIP	Yes	
13	N-NTCIP	Yes	
14	N-NTCIP	Yes	
15	N-NTCIP	Yes	
16	N-NTCIP	Yes	
17	N-NTCIP	Yes	
18	N-NTCIP	Yes	

19	N-NTCIP	Yes	
20	N-NTCIP	Yes	
21	N-NTCIP	Yes	
22	N-NTCIP	Yes	
23	N-NTCIP	Yes	
24	N-NTCIP	Yes	
25	N-NTCIP	Yes	
26	N-NTCIP	Yes	
27	N-NTCIP	Yes	
28	N-NTCIP	Yes	
29	N-NTCIP	Yes	
30	N-NTCIP	Yes	
31	N-NTCIP	Yes	
32	N-NTCIP	Yes	
33	N-NTCIP	Yes	
34	N-NTCIP	Yes	
35	N-NTCIP	Yes	
36	N-NTCIP	Yes	
37	N-NTCIP	Yes	
38	N-NTCIP	Yes	
39	N-NTCIP	Yes	
40	N-NTCIP	Yes	
41	N-NTCIP	Yes	
42	N-NTCIP	Yes	
43	N-NTCIP	Yes	
44	N-NTCIP	Yes	
45	N-NTCIP	Yes	
46	N-NTCIP	Yes	
47	N-NTCIP	Yes	
48	N-NTCIP	Yes	
49	N-NTCIP	Yes	
50	N-NTCIP	Yes	
51	N-NTCIP	Yes	
52	N-NTCIP	Yes	
53	N-NTCIP	Yes	
54	N-NTCIP	Yes	
55	N-NTCIP	Yes	
56	N-NTCIP	Yes	
57	N-NTCIP	Yes	
58	N-NTCIP	Yes	
59	N-NTCIP	Yes	
60	N-NTCIP	Yes	
61	N-NTCIP	Yes	
62	N-NTCIP	Yes	
63	N-NTCIP	Yes	
64	N-NTCIP	Yes	

Vehicle Detector Setup (MM)6-2 continued

Det Num	Veh Det Plan	Phase	ECPI Log	Call Option	Delay Time	Ext Option	Extend Time / Passage Time	Queue Lim / Discon. Time	Use Added Initial	Cross Switch Phase	Lock In	NTCIP Vol.	NTCIP Occ.	Pmt Queue Delay
1	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
1	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
1	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
1	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
2	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
2	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
2	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
2	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
3	1	2	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
3	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
3	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
3	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
4	1	2	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
4	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
4	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
4	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

5	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
5	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
5	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
5	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
6	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
6	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
6	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
6	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
7	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
7	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
7	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
7	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
8	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
8	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
8	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
8	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
9	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
9	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
9	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
9	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
10	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
10	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
10	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
10	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
11	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
11	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
11	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
11	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
12	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
12	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
12	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
12	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
13	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
13	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
13	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
13	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
14	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
14	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
14	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
14	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
15	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
15	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
15	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
15	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
16	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
16	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
16	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
16	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
17	1	6	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
17	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
17	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
17	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
18	1	8	No	No	0.0	Passage	4.2	0	Yes	0	None	No	No	No
18	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
18	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
18	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
19	1	1	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
19	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
19	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
19	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
20	1	6	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
20	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
20	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
20	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
21	1	8	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
21	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
21	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
21	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

22	1	8	No	Yes	8.0	Passage	0.0	0	Yes	0	None	No	No	No
22	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
22	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
22	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
23	1	8	No	No	0.0	Passage	4.2	0	Yes	0	None	No	No	No
23	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
23	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
23	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
24	1	8	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
24	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
24	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
24	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
25	1	2	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
25	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
25	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
25	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
26	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
26	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
26	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
26	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
27	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
27	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
27	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
27	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
28	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
28	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
28	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
28	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
29	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
29	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
29	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
29	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
30	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
30	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
30	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
30	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
31	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
31	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
31	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
31	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
32	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
32	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
32	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
32	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
33	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
33	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
33	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
33	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
34	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
34	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
34	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
34	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
35	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
35	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
35	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
35	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
36	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
36	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
36	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
36	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
37	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
37	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
37	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
37	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
38	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
38	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
38	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
38	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

39	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
39	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
39	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
39	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
40	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
40	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
40	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
40	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
41	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
41	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
41	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
41	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
42	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
42	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
42	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
42	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
43	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
43	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
43	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
43	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
44	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
44	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
44	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
44	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
45	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
45	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
45	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
45	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
46	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
46	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
46	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
46	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
47	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
47	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
47	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
47	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
48	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
48	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
48	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
48	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
49	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
49	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
49	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
49	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
50	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
50	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
50	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
50	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
51	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
51	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
51	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
51	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
52	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
52	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
52	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
52	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
53	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
53	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
53	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
53	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
54	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
54	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
54	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
54	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
55	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
55	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
55	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
55	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

56	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
56	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
56	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
56	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
57	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
57	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
57	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
57	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
58	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
58	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
58	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
58	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
59	1	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
59	2	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
59	3	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
59	4	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
60	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	Yellow	No	No	No
60	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	Yellow	No	No	No
60	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	Yellow	No	No	No
60	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	Yellow	No	No	No
61	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
61	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
61	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
61	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
62	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
62	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
62	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
62	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
63	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
63	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
63	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
63	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
64	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
64	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
64	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
64	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

Ped Detector Options (MM)6-3

Phase Ped Detector (Econolite)

Detector	Call Phase															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.
4	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.
5	.	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.
6	.	.	.	.	.	X	.	.	.	.	.	.	.	.	.	.
7	.	.	.	.	.	.	X	.	.	.	.	.	.	.	.	.
8	.	.	.	.	.	.	.	X	.	.	.	.	.	.	.	.
9	.	.	.	.	.	.	.	.	X	.	.	.	.	.	.	.
10	.	.	.	.	.	.	.	.	.	X	.	.	.	.	.	.
11	.	.	.	.	.	.	.	.	.	.	X	.	.	.	.	.
12	.	.	.	.	.	.	.	.	.	.	.	X	.	.	.	.
13	.	.	.	.	.	.	.	.	.	.	.	.	X	.	.	.
14	.	.	.	.	.	.	.	.	.	.	.	.	.	X	.	.
15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	X	.
16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	X

Waukesha (S67-0649 - S67-0889) - S67-0888 - IH-94 WB Ramps & STH 67

Detectors

Detectors Page 2

Log - Speed Detector Setup (MM)6-4

NTCIP Log Period: 15 ECPI Log Period: 15 Length Unit: Inch

Speed Detector	Local Detector	One/Two Detector	Vehicle Length	Trap Length	Enable Log
1	0	1	0	0	No
2	0	1	0	0	No
3	0	1	0	0	No
4	0	1	0	0	No
5	0	1	0	0	No
6	0	1	0	0	No
7	0	1	0	0	No
8	0	1	0	0	No
9	0	1	0	0	No
10	0	1	0	0	No
11	0	1	0	0	No
12	0	1	0	0	No
13	0	1	0	0	No
14	0	1	0	0	No
15	0	1	0	0	No
16	0	1	0	0	No

Vehicle Detector Diagnostics (MM)6-5

Plan	Detector	Counts	Act	Pres	Multiplier	Failed Time	Failed Call Delay
1	1	0	0	0	1	255	0
1	2	0	0	0	1	255	0
1	3	0	0	0	1	255	0
1	4	0	0	0	1	255	0
1	5	0	0	0	1	255	0
1	6	0	0	0	1	255	0
1	7	0	0	0	1	255	0
1	8	0	0	0	1	255	0
1	9	0	0	0	1	255	0
1	10	0	0	0	1	255	0
1	11	0	0	0	1	255	0
1	12	0	0	0	1	255	0
1	13	0	0	0	1	255	0
1	14	0	0	0	1	255	0
1	15	0	0	0	1	255	0
1	16	0	0	0	1	255	0
1	17	0	0	0	1	255	0
1	18	0	0	0	1	255	0
1	19	0	0	0	1	255	0
1	20	0	0	0	1	255	0
1	21	0	0	0	1	255	0
1	22	0	0	0	1	255	0
1	23	0	0	0	1	255	0
1	24	0	0	0	1	255	0
1	25	0	0	0	1	255	0
1	26	0	0	0	1	255	0
1	27	0	0	0	1	255	0
1	28	0	0	0	1	255	0
1	29	0	0	0	1	255	0
1	30	0	0	0	1	255	0
1	31	0	0	0	1	255	0
1	32	0	0	0	1	255	0
1	33	0	0	0	1	255	0

1	34	0	0	0	1	255	0
1	35	0	0	0	1	255	0
1	36	0	0	0	1	255	0
1	37	0	0	0	1	255	0
1	38	0	0	0	1	255	0
1	39	0	0	0	1	255	0
1	40	0	0	0	1	255	0
1	41	0	0	0	1	255	0
1	42	0	0	0	1	255	0
1	43	0	0	0	1	255	0
1	44	0	0	0	1	255	0
1	45	0	0	0	1	255	0
1	46	0	0	0	1	255	0
1	47	0	0	0	1	255	0
1	48	0	0	0	1	255	0
1	49	0	0	0	1	255	0
1	50	0	0	0	1	255	0
1	51	0	0	0	1	255	0
1	52	0	0	0	1	255	0
1	53	0	0	0	1	255	0
1	54	0	0	0	1	255	0
1	55	0	0	0	1	255	0
1	56	0	0	0	1	255	0
1	57	0	0	0	1	255	0
1	58	0	0	0	1	255	0
1	59	0	0	0	1	255	0
1	60	0	0	0	1	255	0
1	61	0	0	0	1	255	0
1	62	0	0	0	1	255	0
1	63	0	0	0	1	255	0
1	64	0	0	0	1	255	0
2	1	0	0	0	1	255	0
2	2	0	0	0	1	255	0
2	3	0	0	0	1	255	0
2	4	0	0	0	1	255	0
2	5	0	0	0	1	255	0
2	6	0	0	0	1	255	0
2	7	0	0	0	1	255	0
2	8	0	0	0	1	255	0
2	9	0	0	0	1	255	0
2	10	0	0	0	1	255	0
2	11	0	0	0	1	255	0
2	12	0	0	0	1	255	0
2	13	0	0	0	1	255	0
2	14	0	0	0	1	255	0
2	15	0	0	0	1	255	0
2	16	0	0	0	1	255	0
2	17	0	0	0	1	255	0
2	18	0	0	0	1	255	0
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2	35	0	0	0	1	255	0
2	36	0	0	0	1	255	0
2	37	0	0	0	1	255	0

2	38	0	0	0	1	255	0
2	39	0	0	0	1	255	0
2	40	0	0	0	1	255	0
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2	43	0	0	0	1	255	0
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2	45	0	0	0	1	255	0
2	46	0	0	0	1	255	0
2	47	0	0	0	1	255	0
2	48	0	0	0	1	255	0
2	49	0	0	0	1	255	0
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4	47	0	0	0	1	255	0
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4	49	0	0	0	1	255	0
4	50	0	0	0	1	255	0
4	51	0	0	0	1	255	0
4	52	0	0	0	1	255	0
4	53	0	0	0	1	255	0
4	54	0	0	0	1	255	0
4	55	0	0	0	1	255	0
4	56	0	0	0	1	255	0
4	57	0	0	0	1	255	0
4	58	0	0	0	1	255	0
4	59	0	0	0	1	255	0
4	60	0	0	0	1	255	0
4	61	0	0	0	1	255	0
4	62	0	0	0	1	255	0
4	63	0	0	0	1	255	0
4	64	0	0	0	1	255	0

Pedestrian Detector Diagnotics (MM)6-6

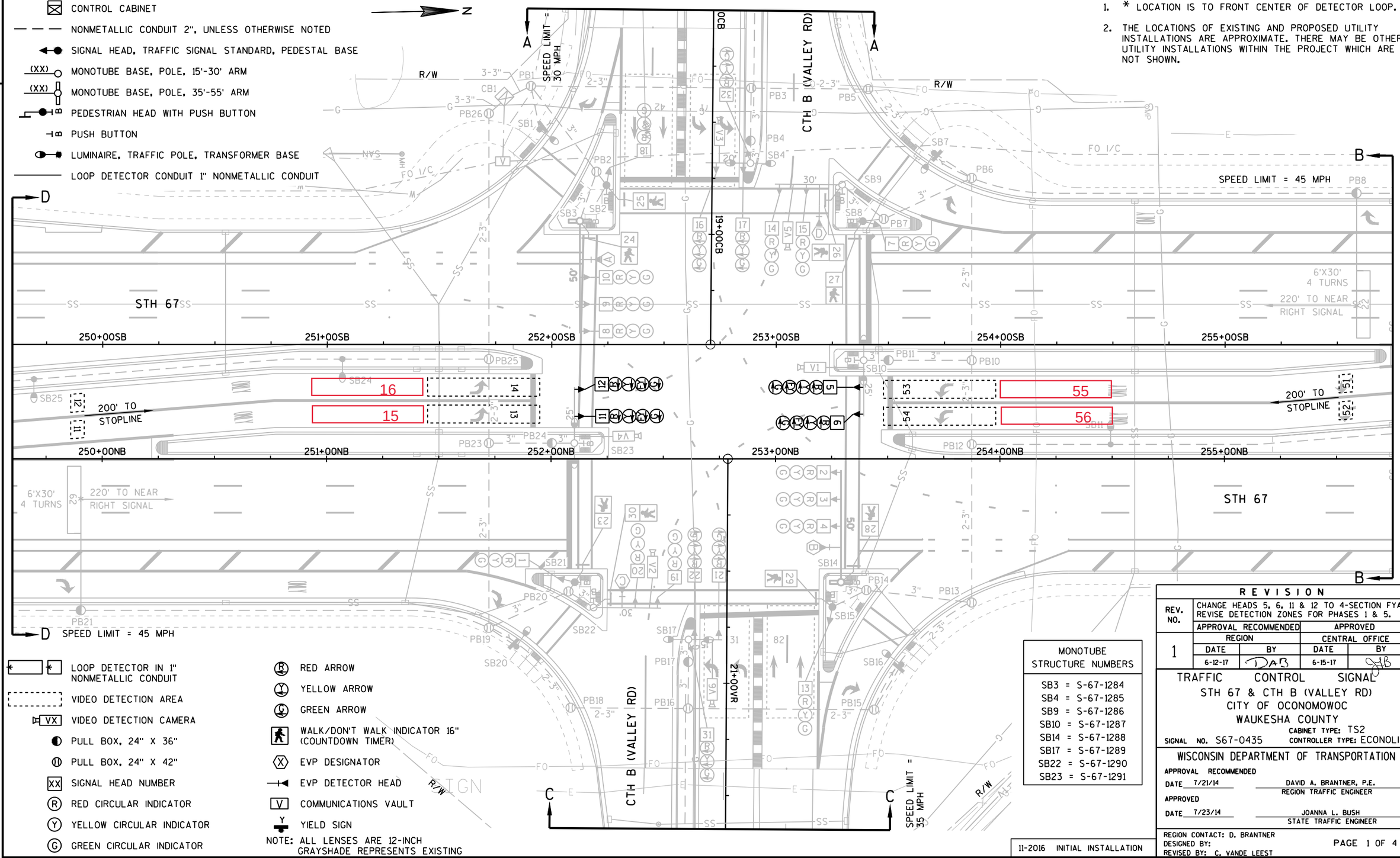
Plan	Detector	Counts	Act	Pres	Multiplier

LEGEND

- CONTROL CABINET
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- (XX) MONOTUBE BASE, POLE, 15'-30' ARM
- (XX) MONOTUBE BASE, POLE, 35'-55' ARM
- PEDESTRIAN HEAD WITH PUSH BUTTON
- PUSH BUTTON
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
- LOOP DETECTOR CONDUIT 1" NONMETALLIC CONDUIT

CONSTRUCTION NOTES:

1. * LOCATION IS TO FRONT CENTER OF DETECTOR LOOP.
2. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.



- LOOP DETECTOR IN 1" NONMETALLIC CONDUIT
- VIDEO DETECTION AREA
- VX VIDEO DETECTION CAMERA
- PULL BOX, 24" X 36"
- PULL BOX, 24" X 42"
- XX SIGNAL HEAD NUMBER
- (R) RED CIRCULAR INDICATOR
- (Y) YELLOW CIRCULAR INDICATOR
- (G) GREEN CIRCULAR INDICATOR
- (R) RED ARROW
- (Y) YELLOW ARROW
- (G) GREEN ARROW
- WALK/DON'T WALK INDICATOR 16" (COUNTDOWN TIMER)
- (X) EVP DESIGNATOR
- EVP DETECTOR HEAD
- (V) COMMUNICATIONS VAULT
- Y YIELD SIGN

NOTE: ALL LENSES ARE 12-INCH GRAYSHADE REPRESENTS EXISTING

MONOTUBE STRUCTURE NUMBERS

SB3	S-67-1284
SB4	S-67-1285
SB9	S-67-1286
SB10	S-67-1287
SB14	S-67-1288
SB17	S-67-1289
SB22	S-67-1290
SB23	S-67-1291

11-2016 INITIAL INSTALLATION

REVISION

REV. NO.				
	CHANGE HEADS 5, 6, 11 & 12 TO 4-SECTION FYA; REVISE DETECTION ZONES FOR PHASES 1 & 5.			
	APPROVAL RECOMMENDED		APPROVED	
1	REGION		CENTRAL OFFICE	
	DATE	BY	DATE	BY
	6-12-17	DAB	6-15-17	JJB

TRAFFIC CONTROL SIGNAL
STH 67 & CTH B (VALLEY RD)
CITY OF OCONOMOWOC
WAUKESHA COUNTY
CABINET TYPE: TS2
SIGNAL NO. S67-0435 CONTROLLER TYPE: ECONOLITE

WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVAL RECOMMENDED
DATE 7/21/14 DAVID A. BRANTNER, P.E. REGION TRAFFIC ENGINEER

APPROVED
DATE 7/23/14 JOANNA L. BUSH STATE TRAFFIC ENGINEER

REGION CONTACT: D. BRANTNER
DESIGNED BY:
REVISED BY: C. VANDE LEEST

PAGE 1 OF 4

PROJECT NO: 0082-03-00	HWY: STH 67	COUNTY: WAUKESHA	TRAFFIC SIGNAL PLAN	SHEET	E

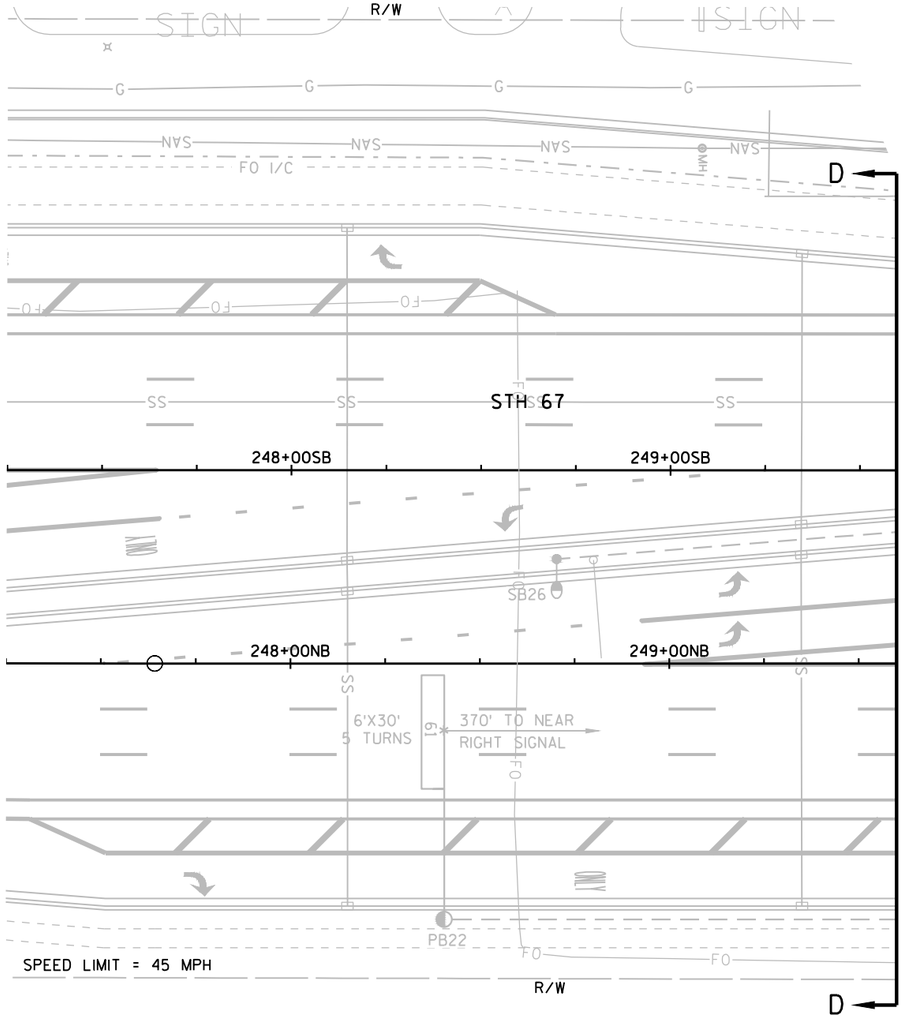
FILE NAME : N:\PDS\C3D\CAD\00820300\SIG\S67-0435\S67-0435_A.DWG
LAYOUT NAME - S67-0435_A_PG1

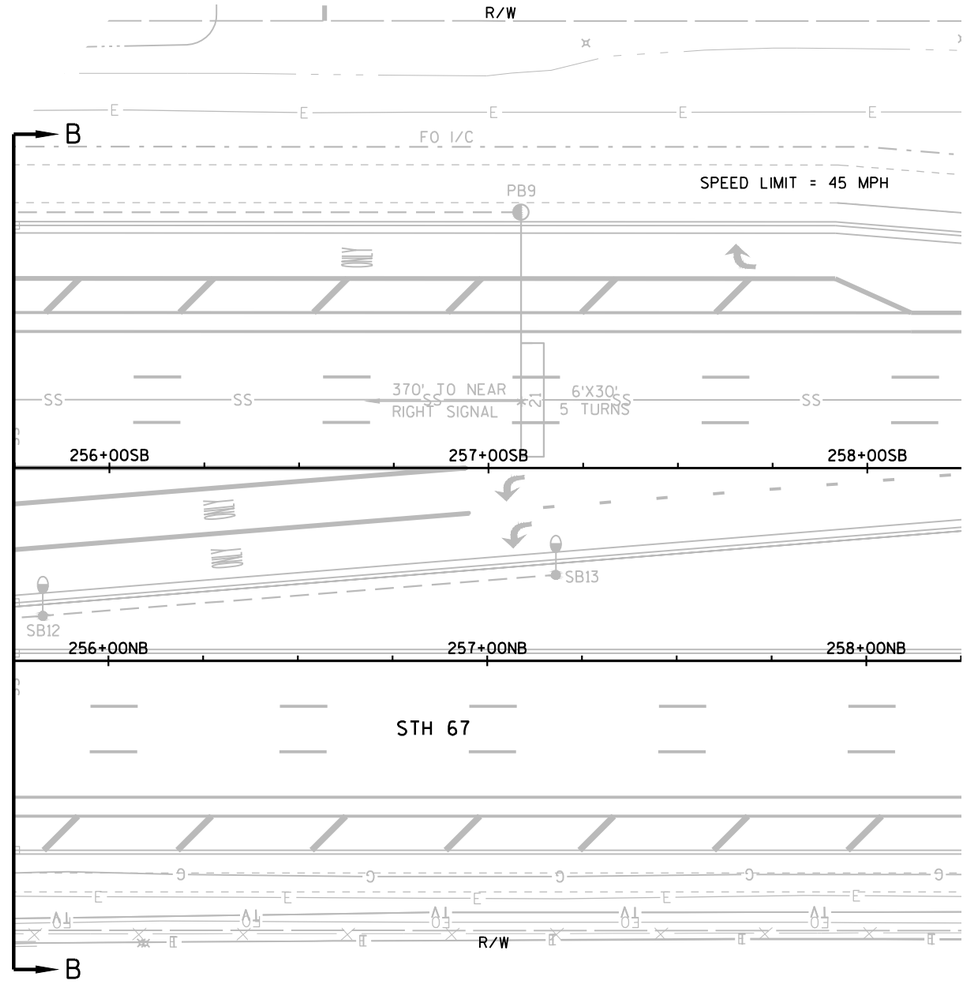
PLOT DATE : 6/20/2017 7:18 AM PLOT BY : VANDE LEEST, CYNTHIA PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

2

N





TRAFFIC CONTROL SIGNAL
STH 67 & CTH B (VALLEY RD)
CITY OF OCONOMOWOC
WAUKESHA COUNTY

SIGNAL NO. S67-0435

REGION CONTACT: D. BRANTNER
DESIGNED BY:
REVISED BY: C. VANDE LEEST

PAGE 2 OF 4

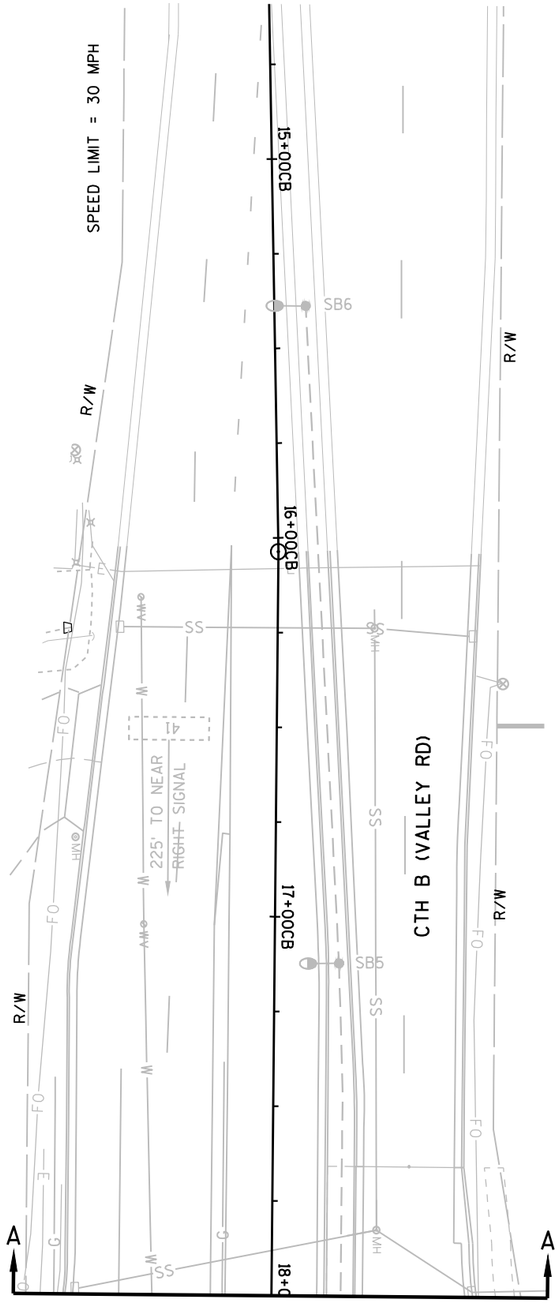
PROJECT NO: 0082-03-00	HWY: STH 67	COUNTY: WAUKESHA	TRAFFIC SIGNAL PLAN	SHEET	E

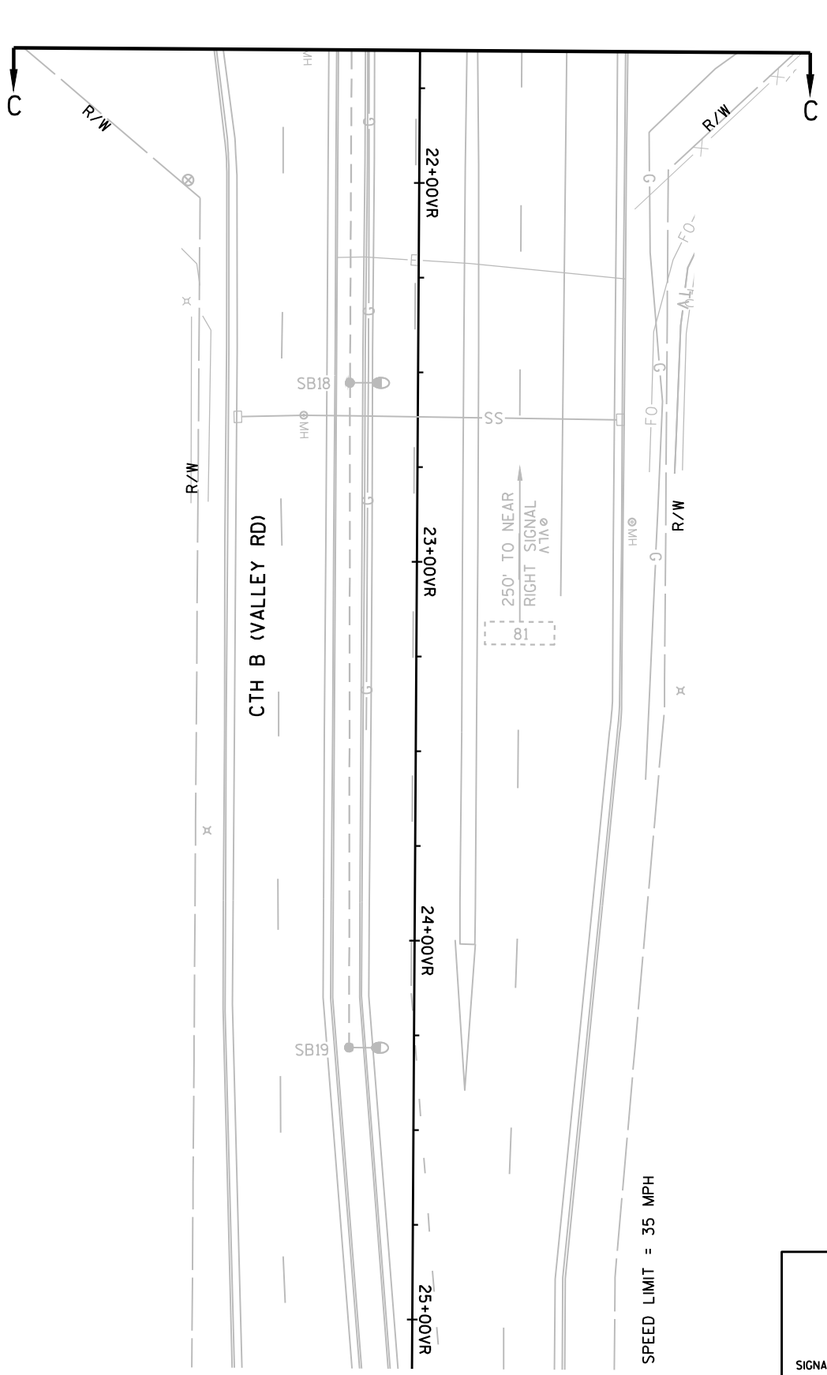
FILE NAME : N:\PDS\C3D\CAD\00820300\SIG\S67-0435\S67-0435_A.DWG
LAYOUT NAME - S67-0435_A_PG2

PLOT DATE : 6/20/2017 7:18 AM PLOT BY : VANDE LEEST, CYNTHIAPLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

2





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TRAFFIC CONTROL SIGNAL
STH 67 & CTH B (VALLEY RD)
CITY OF OCONOMOWOC
WAUKESHA COUNTY

SIGNAL NO. S67-0435

REGION CONTACT: D. BRANTNER
DESIGNED BY:
REVISED BY: C. VANDE LEEST

PAGE 3 OF 4

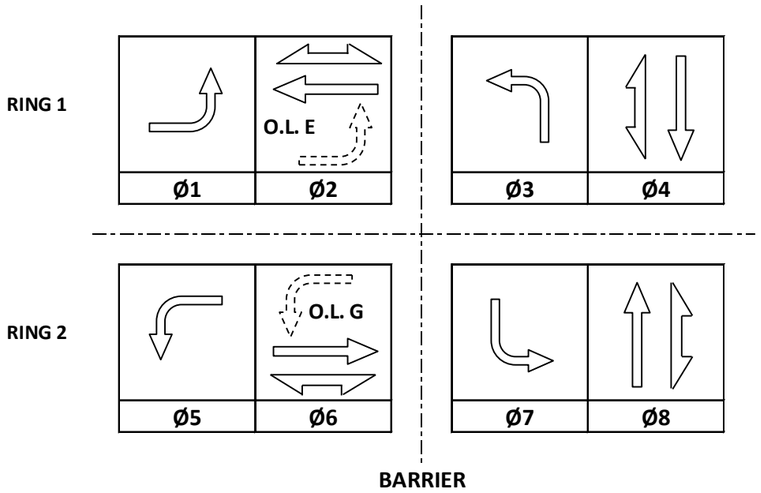
PROJECT NO: 0082-03-00	HWY: STH 67	COUNTY: WAUKESHA	TRAFFIC SIGNAL PLAN	SHEET	E

FILE NAME : N:\PDS\C3D\CAD\00820300\SIG\S67-0435\S67-0435_A.DWG
LAYOUT NAME - S67-0435_A_PG3

PLOT DATE : 6/20/2017 7:18 AM PLOT BY : VANDE LEEST, CYNTHIAPLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

	HEAD NUMBERS	FLASH
Ø1	5,6	R ←
Ø2	7,8,9,10	R
Ø3	16,17,31	R ←
Ø4	18,19,20	R
Ø5	11,12	R ←
Ø6	1,2,3,4	R
Ø7	21,22,32	R ←
Ø8	13,14,15	R
Ø2P	25,26	
Ø4P	23,24	
Ø6P	29,30	
Ø8P	27,28	
OLE	5,6	-
OLF		
OLG	11,12	-
OLH		



CONTROLLER LOGIC

PHASE NUMBER	PHASE LOCKING	DUAL ENTRY W / Ø	PHASE RECALL	PHASE ACTIVE
1		6		X
2	X	6	MIN	X
3		8		X
4		8		X
5		2		X
6	X	2	MIN	X
7		4		X
8		4		X

EMERGENCY VEHICLE PREEMPTION SEQUENCE

EMERGENCY VEHICLE PREEMPTOR	A	B	C	D
MOVEMENT	←	⌒	↓	↑
PHASE	2+5	6+1	4+7	8+3

AFTER PREEMPTION SEQUENCE 2+5 OR 6+1, CONTROLLER SHALL RETURN TO PHASES 2+6.
AFTER PREEMPTION SEQUENCE 4+7 OR 8+3, CONTROLLER SHALL RETURN TO PHASES 4+8.

TYPE OF INTERCONNECT/COMMUNICATION	
NONE	
CLOSED LOOP	
TWISTED PAIR	
FIBER OPTIC*	
FIBER OPTIC (ETHERNET)	X
RADIO	
CELL MODEM	

TYPE OF COORDINATION	
NONE	
TBC	X
TRAFFIC RESPONSIVE	
ADAPTIVE	
*LOCATION OF MASTER CONTROLLER NO:	S-
SIGNAL SYSTEM NO:	SS- 00-50

TYPE OF LIGHTING	
BY OTHER AGENCY	
IN TRAFFIC CABINET	X
IN SEPARATE DOT LIGHTING CABINET	

TYPE OF PRE-EMPT	
NONE	
RAILROAD	
EMERGENCY VEHICLE	X
GTT	X
TOMAR	
HARDWIRE	
OTHER	
LIFT BRIDGE	
QUEUE DETECTION	

DETECTOR LOGIC

DETECTOR INPUT	3	1	7	5	11	9	15	33
PLAN LOOP DETECTOR*(S)	21	61						55
CALLED PHASE	2	6						5
CALL OPTION	X	X						X
DELAY TIME								
EXTENTION OPTION	X	X						X
EXTEND TIME								
USE ADDED INITIAL	X	X						
CROSS SWITCH PHASE								6

DETECTOR INPUT	19	17	23	21	27	25	31	29
PLAN LOOP DETECTOR*(S)	11	13	31	42	52	54	81	15
CALLED PHASE		1	3	4		5		1
CALL OPTION	X	X	X	X	X	X		X
DELAY TIME	X				X			
EXTENTION OPTION		X	X	X		X	X	X
EXTEND TIME							X	
USE ADDED INITIAL								
CROSS SWITCH PHASE		2				6		2

DETECTOR INPUT	4	2	8	6	12	10	16	34
PLAN LOOP DETECTOR*(S)	22	62						56
CALLED PHASE	2	6						5
CALL OPTION	X	X						X
DELAY TIME								
EXTENTION OPTION	X	X						X
EXTEND TIME								
USE ADDED INITIAL	X	X						
CROSS SWITCH PHASE								6

DETECTOR INPUT	20	18	24	22	28	26	32	30
PLAN LOOP DETECTOR*(S)	12	14	41	51	53	71	82	16
CALLED PHASE		1			5	7	8	1
CALL OPTION	X	X		X	X	X	X	X
DELAY TIME	X			X				
EXTENTION OPTION		X	X		X	X	X	X
EXTEND TIME			X					
USE ADDED INITIAL								
CROSS SWITCH PHASE		2			6			2

GENERAL NOTES:

1. PHASE 1 RUNS PROTECTED ONLY OR PROTECTED/PERMITTED BASED ON CONDITIONS PROGRAMMED IN THE CONTROLLER LOGIC STATEMENTS
2. PHASE 5 RUNS PROTECTED ONLY OR PROTECTED/PERMITTED BASED ON CONDITIONS PROGRAMMED IN THE CONTROLLER LOGIC STATEMENTS
3. IN NB OR SB EMERGENCY VEHICLE PREEMPTION, PHASES 1 & 5 CAN RUN PROTECTED ONLY OR PROTECTED/PERMITTED DEPENDING ON THE PHASE OPERATIONS WHEN THE EMERGENCY VEHICLE PREEMPTION IS ACTIVATED

STH 67 & CTH B (VALLEY RD)
CITY OF OCONOMOWOC
WAUKESHA COUNTY

SIGNAL NO: S67-0435	CABINET TYPE: TS2
	CONTROLLER TYPE: ECONOLITE
DATE: 6/2017	PAGE NO. 4 OF 4

PROJECT NO: 0082-03-01	HWY: STH 67	COUNTY: WAUKESHA	SEQUENCE OF OPERATIONS	SHEET NO:	E

FILE NAME : _____ PLOT DATE : _____ PLOT BY : _____ PLOT NAME : _____ PLOT SCALE : 1:1

Timing Cover Sheet for Signal: S0435 HWY: 67 and CTH B (Valley Rd)

Date:	7/10/2017	Changes Made By:	J. Effinger
Signal No	S0435 **S435**	Highway:	67
County:	WAU	Local Hwy:	Summit Ave
Controller:	ECONOLITE	Location:	CTH B (Valley Rd)
School:	Elementary	Audible Ped:	No

Pre-emption

Emergency:	Yes	Type:	3M Opticom	Phases:	2+5,1+6,4+7,3+8	EVP Maintenance Id:	0663-42-08
Railroad:	No	Type:		Phases:		EVP Contact:	Public Safety Director, David Beguh
						Community:	Oconomowoc, City of
						Contact Phone:	(262) 567-4401
						Alternate Phone:	

Coordination

System No: SS0050 Controller IP Address: 172.22.82.80

CoordType: TBC Comments:

Dip Switch Setting

DS ☑

TBC:	Yes
Tone:	No
Closed Loop:	No
Hardwire:	No

	Length	Split 1	Split 2	Split 3	Split 4
Cycle 1=	90sec	M-F 6AM to 9AM			
Cycle 2=	80sec	M-F 9AM to 3PM, 7PM to 9PM Sa-Su 9AM to 9PM			
Cycle 3=	100sec	M-F 3PM to 7PM			
Cycle 4=					

Prom Replacement

Signal Plan No

Pre-empt: No

Part of a Local System: No

Local Contact:

Phone Number:

Overlaps

Overlap A= Phases:

Overlap B= Phases:

Overlap C= Phases:

Overlap D= Phases:

Flash

Emergency: R-R

Off Peak: No

Off Peak Times

Detector Timing

Dilemna Zone Yes Video Detection: No

Detector Number	41	81												
Stretch	*	*												
Right Turn Delay														
Left Turn Delay														

Unique Features

* - See Programming

Logic Statements 1-49: Left turn operation (protected only or protected/permitted)

Timing Changes Log for Signal S0435 on Hwy 67 in WAUKESHA County

CTH B (Valley Rd)

Date Computer Changed	Date Change Made in Field	Timing Change	Reason for Change	Change By	Temp Timing
07/10/17	7/10/2017	Modified Logic Statements	Separated NB & SB FYA Operation	J. Effinger	No
06/29/17	6/29/2017	Modified logic thresholds	Calibration	J. Effinger	No
06/29/17	6/29/2017	Modified logic threshold	Calibration	J. Effinger	No
06/29/17	6/29/2017	Modified logic threshold. Corrected NTCIP log period	Calibration. NTCIP log period didn't download correctly.	J. Effinger	No
06/28/17	6/28/2017	Modified Logic Threshold	Calibration	J. Effinger	No
06/19/17	6/28/2017	Added 4-section FYA for NB/SB left turns. Modified detection settings. Added logic statements for left turn operation	Improved operation	J. Effinger	No
12/02/16	12/8/2016	Added Coordination Timings	Improve operations	P. Virk	No
09/27/16	9/29/2016	Intersection Set to Free	Permanent Signal Turned On	P. Virk	Yes
04/21/15	4/21/2015	Permanent Signal turned off	Temporary Signal turned on under project 1060-30-70/3030-08-70	P. Virk	Yes
04/29/14	5/2/2014	Updated System Timing and Stretch	Signal Timing Review	P. Virk	No

Timing Changes Log for Signal S0435 on Hwy 67 in WAUKESHA County

CTH B (Valley Rd)

Date Computer Changed	Date Change Made in Field	Timing Change	Reason for Change	Change By	Temp Timing
08/13/12	12/18/2009	Changed min green and MVI for phase 1 to 6 sec. Changed all-red for phase 1 to 1 sec. Put in data for the NB LT flashing yellow arrow in unit data and EVP data.	Intstalled the NB LT flashing yellow arrow.	D. Brantner	No
03/07/12		Converted timing to Marc NX.		J. Gates	No
12/10/09		Updated system timing.	Citizen complaint.	D. Brantner	No
11/18/09	11/12/2009	Changed startup time to 10 sec.	Updated to current practice.	D. Brantner	No
10/22/09		Updated system timing for revised geometrics.	Construction completed.	D. Brantner	No
07/29/09	7/29/2009	Turned temp signal off and bagged all remaining heads.	East and west approaches completely closed to traffic	D. Brantner	Yes
07/24/09	7/24/2009	Temp signal timing modified. Phases 3,4,5 were eliminated. Ph 3 and Ph 4 times were moved to Ph 2. And Ph 5 time was moved to Ph 6.	The EB/WB and SBLT movements have been closed to traffic. Excessive NB/SB queueing was being created by running the unused phases.	J. Haug	Yes
07/15/09	7/15/2009	Implemented temporary signal timing for temporary signal.	Intersection is being reconstructed.	D. Brantner	Yes
03/20/09		Updated system timing.	Added NBLT to S0890	J. Dimmer	No
02/09/07		DST	DST	J. Dimmer	No

Timing Changes Log for Signal S0435 on Hwy 67 in WAUKESHA County

CTH B (Valley Rd)

Date Computer Changed	Date Change Made in Field	Timing Change	Reason for Change	Change By	Temp Timing
06/03/05	6/3/2005	Put loop 82 on 2 sec LT delay.	E Appr green coming up needlessly.	J. Haug	No
10/20/04	10/20/2004	Updated phase 2 & 6 Phase Data - Vehicle Timings.	Dilemma zone detection installation complete.	E. Lloyd-Weis	No
02/19/04	2/20/2004	Turned system off at 7 pm.	Traffic lighter than expected.	J. Haug	No
11/05/03		New System Timing.	Controller updated to EPAC and signal put in system along STH 67.	J. Haug	No

Waukesha (S67-0300 - S67-0444) - S67-0435 - STH 67 & Valley Rd

Configuration Phase Sequence

Controller Sequence (MM)1-1-1

Hardware Alternate Sequence Enable: No

Phase Ring Sequence.....(Note: Sequences identical to the prior one are not printed)

	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
Sequence 1																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 2																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 3																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 4																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 5																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 6																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 7																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 8																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 9																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 10																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 11																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 12																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 13																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 14																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 15																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 16																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.

Phases In Use / Exclusive PED (MM)1-2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phases in Use	X	X	X	X	X	X	X	X								
Exclusive PED																

Phase Compatibility (MM)1-1-2

Phase	Compatible Phase
1	5

1	6
2	5
2	6
3	7
3	8
4	7
4	8
9	11
9	12
10	11
10	12
13	15
13	16
14	15
14	16

Phase and Overlap Descriptions

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Description	NBLT	SB	WBLT	EB	SBLT	NB	EBLT	WB								
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**L**	**K**	**L**	**M**	**N**	**O**
Description																

Administration (MM)1-7-1

Enable CU/Cabinet Interlock CRC	No
Request Download Controller Data	No
Controller Database CRC	0000
Enable Automatic Backup to Datakey	Yes

Backup Prevent (MM)1-1-3

	Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Timing /	1		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Backup	2	.		.	.	.	.	.	.	.	.	.	.	.	.	.	.
	3	.	.		.	.	.	.	.	.	.	.	.	.	.	.	.
	4	.	.	.		.	.	.	.	.	.	.	.	.	.	.	.
	5	.	.	.	.		.	.	.	.	.	.	.	.	.	.	.
	6	.	.	.	.	.		.	.	.	.	.	.	.	.	.	.
	7	.	.	.	.	.	.		.	.	.	.	.	.	.	.	.
	8	.	.	.	.	.	.	.		.	.	.	.	.	.	.	.
	9	.	.	.	.	.	.	.	.		.	.	.	.	.	.	.
	10	.	.	.	.	.	.	.	.	.		.	.	.	.	.	.
	11	.	.	.	.	.	.	.	.	.	.		.	.	.	.	.
	12	.	.	.	.	.	.	.	.	.	.	.		.	.	.	.
	13	.	.	.	.	.	.	.	.	.	.	.	.		.	.	.
	14	.	.	.	.	.	.	.	.	.	.	.	.	.		.	.
	15	.	.	.	.	.	.	.	.	.	.	.	.	.	.		.
	16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	

Simultaneous Gap (MM)1-1-4

	Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	1		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	2	.		.	.	.	X	.	.	.	.	.	.	.	.	.	.
	3	.	.		.	.	.	.	.	.	.	.	.	.	.	.	.
	4	.	.	.		.	.	.	X	.	.	.	.	.	.	.	.
	5	.	.	.	.		.	.	.	.	.	.	.	.	.	.	.
Phase	6	.	X	.	.	.		.	.	.	.	.	.	.	.	.	.
Must	7	.	.	.	.	.	.		.	.	.	.	.	.	.	.	.
Gap	8	.	.	.	X	.	.	.		.	.	.	.	.	.	.	.
With	9	.	.	.	.	.	.	.	.		.	.	.	.	.	.	.
Phase	10	.	.	.	.	.	.	.	.	.		.	.	.	.	.	.
	11	.	.	.	.	.	.	.	.	.	.		.	.	.	.	.
	12	.	.	.	.	.	.	.	.	.	.	.		.	.	.	.
	13	.	.	.	.	.	.	.	.	.	.	.	.		.	.	.
	14	.	.	.	.	.	.	.	.	.	.	.	.	.		.	.
	15	.	.	.	.	.	.	.	.	.	.	.	.	.	.		.
	16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
	Disable	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Load Switch Assignments (MMU Channel) (MM)1-3

	Phase / Overlap	Type	Dimming				Power Up				Auto		Flash Together
			Red	Yellow	Green	Dark	Auto	Red	Yellow	Dark	Red	Yellow	
1	1	V				+	X				X		X
2	2	V				+	X				X		
3	3	V				+	X				X		X
4	4	V				+	X				X		
5	5	V				-	X				X		
6	6	V				-	X				X		X
7	7	V				-	X				X		
8	8	V				-	X				X		X
9	2	P				+	X						
10	4	P				+	X						
11	6	P				-	X						
12	8	P				-	X						
13	1	O				+	X				X		X
14	2	O				-	X				X		X
15	3	O				+	X				X		
16	4	O				-	X				X		

Waukesha (S67-0300 - S67-0444) - S67-0435 - STH 67 & Valley Rd

Configuration Port 1 (SDLC)

SDLC Options (MM)1-4-1

BIU	1	2	3	4	5	6	7	8
Term and Facility Enable	X	X						
Detector Rack Enable	X	X						

Enable TS2/MMU Type Cabinet: Yes
Enable MMU Extended Status: Yes
Enable SDLC Stop Time: No
Enable 3 Critical RFE's Lockup: Yes

MMU Program (MM)1-4-2

Channel Can Serve with Channel	
Channel 1	**Channel 2**
1	5
1	6
1	11
2	5
2	6
2	9
2	11
3	7
3	8
3	12
4	7
4	8
4	10
4	12
5	9
6	9
6	11
7	10
8	10
8	12
9	11
10	12

Color Check Enable (MM)1-4-3

Enable Color Check: Yes

MMU Channel	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Green	X	X	X	X	X	X	X	X	X	X	X	X				
Yellow	X	X	X	X	X	X	X	X								
Red	X	X	X	X	X	X	X	X								

Secondary To Secondary Addressing (MM)1-4-4

ID	1	2	3	4	5	6	7	8	MMU
Term and Facility Enable									

ID	1	2	3	4	5	6	7	8	Diag
Detector Rack Enable									

Diagonstics (Test Fixture) Enable: No

Waukesha (S67-0300 - S67-0444) - S67-0435 - STH 67 & Valley Rd

Configuration Communications

Ethernet Port Configuration (MM)1-5-1

Controller IP: 172.22.82.80
Subnet Mask: 255.255.255.0
Default Gateway IP: 172.22.82.1
Server IP: 0.0.0.0

NTCIP Parameters (MM)1-5-5

Backup Time: 0
UDP Port: 501
Ethernet Priority: 1
Port 2 Priority: 4
Port 3A Priority: 2
Port 3B Priority: 3

Port Configuration (MM)1-5-2 to 1-5-4

Port	2 (C50S)	3A (C21S)	3B (C22S)
Protocol	NTCIP	NTCIP	Terminal
Enable	No	Yes	No
Data Rate	9600	19.2K	1200
Data Parity Stop	8 N 1	8 N 1	8 0 1
Modem Setup String	None	None	None
User String			
Comm Port Address	1	1	0
System Detector 9-1	0	0	0
Telemetry Response Delay	0.0	0.0	0.0
Duplex Half/Full	Full	Full	Full
Flow Control	Yes	Yes	Yes
AB3418 NTCIP Group Address	0	0	0
AB3418 NTCIP Single Flag Enable	No	No	No
RTS to CTS Delay	0.0	0.0	3.0
RTS Turn Off Delay	0.0	0.0	2.0
Droupout Time	10	10	10
Early RTS	No	No	No
Telemetry Mode	FSK	FSK	FSK
Rail Road	0	0	0
Rail Road Line	0	0	0
ATCS Group	0	0	0
Wayside Device	0	0	0
ATCS Device	0	0	0
Wayside SubNode	0	0	0
ATCS SubNode	0	0	0

ECPIP Parameters (MM)1-5-6

Controller Address: 0
Expanded System Detector Address: 0

Local System Detector

Local System Detector	Number

Waukesha (S67-0300 - S67-0444) - S67-0435 - STH 67 & Valley Rd

Configuration Logging/Display

Event Logging (MM)1-6-1

Critical RFE's	Yes	3 Critical RFE's in 24 Hours	Yes
MMU Flash Faults	Yes	Local Flash Faults	Yes
Non-Critical RFE's (Det/Test)	Yes	Detector Errors	Yes
Coordination Errors	Yes	Controller Download	Yes
Preempt	Yes	TSP	Yes
Power On/Off	Yes	Low Battery	Yes
Access	Yes	Data Change	Yes
Online/Offline	Yes		

Alarm Log	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Enable Logging	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Display Options (MM)1-7-2

Key Click Enable:	Yes
Backlight Enable:	Yes
LED Mode:	Single Color
Main Status Display Mode:	Basic
Screen Format:	Advanced
Trans Mode Pop-up Disable:	No

Sign On (MM)8-5

Sign On Message Line 1: INTERSECTION NAME:
Sign On Message Line 2: WisDOT Data Base

Waukesha (S67-0300 - S67-0444) - S67-0435 - STH 67 & Valley Rd

Logic Processor Page 1
Statement Control (MM)1-8-1

LP	Statement Control
1	E
2	E
3	E
4	E
5	E
6	E
7	E
8	E
9	E
10	E
11	E
12	E
13	E
14	E
15	E
16	E
17	E
18	E
19	E
20	E
21	E
22	E
23	E
24	E
25	E
26	E
27	E
28	E
29	E
30	E
31	E
32	E
33	E
34	E
35	E
36	E
37	E
38	E
39	E
40	E
41	E
42	E
43	E
44	E
45	E
46	E
47	E
48	E
49	E

Waukesha (S67-0300 - S67-0444) - S67-0435 - STH 67 & Valley Rd

Logic Processor Page 2

Logic Statements (MM)1-8-2

Statement Number: 1

IF:

	Assignment	#		State
IF	DETECTOR VOLUME	3	>	22
OR	DET OCCUPANCY %	3	>	100
OR	DETECTOR VOLUME	4	>	22
OR	DET OCCUPANCY %	4	>	100

THEN:

Assignment	#	State
SET LOGIC FLAG	11	ON

ELSE:

Assignment	#	State

Statement Number: 2

IF:

	Assignment	#		State
IF	DETECTOR	19	IS	ON
OR	DETECTOR	20	IS	ON

THEN:

Assignment	#	State
DELAY FOR	25.0 Sec	
SET LOGIC FLAG	16	ON

ELSE:

Assignment	#	State
SET LOGIC FLAG	16	OFF

Statement Number: 3

IF:

	Assignment	#		State
IF	LOGIC FLAG	16	IS	ON

THEN:

Assignment	#	State
DELAY FOR	20.0 Sec	
SET LOGIC FLAG	12	ON

ELSE:

Assignment	#	State

Statement Number: 4

IF:

	Assignment	#		State
IF	LOGIC FLAG	1	IS	ON
OR	LOGIC FLAG	2	IS	ON
OR	LOGIC FLAG	4	IS	ON

THEN:

Assignment	#	State
OMIT OVLP A-P	5	ON
SET LOGIC FLAG	18	ON
SET ALARM	10	ON

ELSE:

Assignment	#	State

Statement Number: 5

IF:

	Assignment	#		State
IF	DETECTOR VOLUME	3	IS	22
AND	DET OCCUPANCY %	3	IS	100
AND	DETECTOR VOLUME	4	IS	22
AND	DET OCCUPANCY %	4	IS	100

THEN:

Assignment	#	State
DELAY FOR	120.0 Sec	
SET LOGIC FLAG	5	ON

ELSE:

Assignment	#	State
SET LOGIC FLAG	5	OFF

Statement Number: 6

IF:

	Assignment	#		State
IF	DETECTOR VOLUME	3	<	22
AND	DET OCCUPANCY %	3	<	100
AND	DETECTOR VOLUME	4	<	22
AND	DET OCCUPANCY %	4	<	100

THEN:

Assignment	#	State
DELAY FOR	120.0 Sec	
SET LOGIC FLAG	6	ON

ELSE:

Assignment	#	State
SET LOGIC FLAG	6	OFF

Statement Number: 7

IF:

	Assignment	#		State
IF	LOGIC FLAG	16	IS	OFF

THEN:

Assignment	#	State
DELAY FOR	120.0 Sec	
SET LOGIC FLAG	7	ON

ELSE:

Assignment	#	State
SET LOGIC FLAG	7	OFF

Statement Number: 8

IF:

	Assignment	#		State
IF	DETECTOR VOLUME	1	>	22
OR	DET OCCUPANCY %	1	>	100
OR	DETECTOR VOLUME	2	>	22
OR	DET OCCUPANCY %	2	>	100

THEN:

Assignment	#	State
SET LOGIC FLAG	13	ON

ELSE:

Assignment	#	State

Statement Number: 9

IF:

	Assignment	#		State
IF	DETECTOR	22	IS	ON
OR	DETECTOR	27	IS	ON

THEN:

Assignment	#	State
DELAY FOR	25.0 Sec	
SET LOGIC FLAG	17	ON

ELSE:

Assignment	#	State
SET LOGIC FLAG	17	OFF

Statement Number: 10

IF:

	Assignment	#		State
IF	LOGIC FLAG	17	IS	ON

THEN:

Assignment	#	State
DELAY FOR	20.0 Sec	
SET LOGIC FLAG	14	ON

ELSE:

Assignment	#	State

Statement Number: 11

IF:

	Assignment	#		State
IF	LOGIC FLAG	2	IS	ON
OR	LOGIC FLAG	3	IS	ON
OR	LOGIC FLAG	4	IS	ON

THEN:

Assignment	#	State
OMIT OVLP A-P	7	ON
SET LOGIC FLAG	19	ON
SET ALARM	11	ON

ELSE:

Assignment	#	State

Statement Number: 12

IF:

	Assignment	#		State
IF	DETECTOR VOLUME	1	IS	22
AND	DET OCCUPANCY %	1	IS	100
AND	DETECTOR VOLUME	2	IS	22
AND	DET OCCUPANCY %	2	IS	100

THEN:

Assignment	#	State
DELAY FOR	120.0 Sec	
SET LOGIC FLAG	8	ON

ELSE:

Assignment	#	State
SET LOGIC FLAG	8	OFF

Statement Number: 13

IF:

	Assignment	#		State
IF	DETECTOR VOLUME	1	<	22
AND	DET OCCUPANCY %	1	<	100
AND	DETECTOR VOLUME	2	<	22
AND	DET OCCUPANCY %	2	<	100

THEN:

Assignment	#	State
DELAY FOR	120.0 Sec	
SET LOGIC FLAG	9	ON

ELSE:

Assignment	#	State
SET LOGIC FLAG	9	OFF

Statement Number: 14

IF:

	Assignment	#		State
IF	LOGIC FLAG	17	IS	OFF

THEN:

Assignment	#	State
DELAY FOR	120.0 Sec	
SET LOGIC FLAG	10	ON

ELSE:

Assignment	#	State
SET LOGIC FLAG	10	OFF

Statement Number: 15

IF:

	Assignment	#		State
IF	LOGIC FLAG	18	IS	ON
AND	LOGIC FLAG	19	IS	ON

THEN:

Assignment	#	State
SET CIB CODE ON	496	

ELSE:

Assignment	#	State

Statement Number: 16

IF:

	Assignment	#		State
IF	LOGIC FLAG	18	IS	ON
AND	LOGIC FLAG	19	IS	OFF

THEN:

Assignment	#	State
SET CIB CODE ON	497	

ELSE:

Assignment	#	State

Statement Number: 17

IF:

	Assignment	#		State
IF	LOGIC FLAG	18	IS	OFF
AND	LOGIC FLAG	19	IS	ON

THEN:

Assignment	#	State
SET CIB CODE ON	496	
SET CIB CODE ON	497	

ELSE:

Assignment	#	State

Statement Number: 18

IF:

	Assignment	#		State
IF	LOGIC FLAG	18	IS	ON
AND	LOGIC FLAG	19	IS	ON
AND	CIB CODE ON			290

THEN:

Assignment	#	State
SET CIB CODE OFF	290	
SET CIB CODE ON	288	

ELSE:

Assignment	#	State

Statement Number: 19

IF:

	Assignment	#		State
IF	LOGIC FLAG	18	IS	ON
AND	LOGIC FLAG	19	IS	ON
AND	CIB CODE ON			291

THEN:

Assignment	#	State
SET CIB CODE OFF	291	
SET CIB CODE ON	289	

ELSE:

Assignment	#	State

Statement Number: 20

IF:

	Assignment	#		State
IF	LOGIC FLAG	18	IS	ON
AND	LOGIC FLAG	19	IS	OFF
AND	CIB CODE ON			290

THEN:

Assignment	#	State
SET CIB CODE OFF	290	
SET CIB CODE ON	294	

ELSE:

Assignment	#	State

Statement Number: 21

IF:

	Assignment	#		State
IF	LOGIC FLAG	18	IS	ON
AND	LOGIC FLAG	19	IS	OFF
AND	CIB CODE ON			291

THEN:

Assignment	#	State
SET CIB CODE OFF	291	
SET CIB CODE ON	295	

ELSE:

Assignment	#	State

Statement Number: 22

IF:

	Assignment	#		State
IF	LOGIC FLAG	18	IS	OFF
AND	LOGIC FLAG	19	IS	ON
AND	CIB CODE ON			290

THEN:

Assignment	#	State
SET CIB CODE OFF	290	
SET CIB CODE ON	296	

ELSE:

Assignment	#	State

Statement Number: 23

IF:

	Assignment	#		State
IF	LOGIC FLAG	18	IS	OFF
AND	LOGIC FLAG	19	IS	ON
AND	CIB CODE ON			291

THEN:

Assignment	#	State
SET CIB CODE OFF	291	
SET CIB CODE ON	297	

ELSE:

Assignment	#	State

Statement Number: 24

IF:

	Assignment	#		State
IF	DETECTOR FAIL	3	IS	ON
AND	DETECTOR FAIL	4	IS	ON

THEN:

Assignment	#	State
SET LOGIC FLAG	1	ON

ELSE:

Assignment	#	State

Statement Number: 25

IF:

	Assignment	#		State
IF	DETECTOR FAIL	1	IS	ON
AND	DETECTOR FAIL	2	IS	ON

THEN:

Assignment	#	State
SET LOGIC FLAG	3	ON

ELSE:

Assignment	#	State

Statement Number: 26

IF:

	Assignment	#		State
IF	RED ON PHASE	2	IS	ON
AND	LOGIC FLAG	6	IS	ON
AND	LOGIC FLAG	7	IS	ON
AND	LOGIC FLAG	10	IS	ON
AND	COORD FREE		IS	OFF

THEN:

Assignment	#	State
OMIT OVLP A-P	5	OFF
SET ALARM	10	OFF
SET LOGIC FLAG	18	OFF

ELSE:

Assignment	#	State

Statement Number: 27

IF:

	Assignment	#		State
IF	RED ON PHASE	2	IS	ON
AND	LOGIC FLAG	6	IS	ON
AND	LOGIC FLAG	7	IS	ON
AND	LOGIC FLAG	10	IS	ON

THEN:

Assignment	#	State
SET LOGIC FLAG	1	OFF
SET LOGIC FLAG	2	OFF
SET LOGIC FLAG	4	OFF

ELSE:

Assignment	#	State

Statement Number: 28

IF:

	Assignment	#		State
IF	RED ON PHASE	2	IS	ON
AND	LOGIC FLAG	6	IS	ON
AND	LOGIC FLAG	7	IS	ON
AND	LOGIC FLAG	10	IS	ON
AND	COORD FREE		IS	ON

THEN:

Assignment	#	State
OMIT OVLP A-P	5	OFF
SET ALARM	10	OFF
SET LOGIC FLAG	18	OFF

ELSE:

Assignment	#	State

Statement Number: 29

IF:

	Assignment	#		State
IF	RED ON PHASE	6	IS	ON
AND	LOGIC FLAG	7	IS	ON
AND	LOGIC FLAG	9	IS	ON
AND	LOGIC FLAG	10	IS	ON
AND	COORD FREE		IS	OFF

THEN:

Assignment	#	State
OMIT OVLP A-P	7	OFF
SET ALARM	11	OFF
SET LOGIC FLAG	19	OFF

ELSE:

Assignment	#	State

Statement Number: 30

IF:

	Assignment	#		State
IF	RED ON PHASE	6	IS	ON
AND	LOGIC FLAG	7	IS	ON
AND	LOGIC FLAG	9	IS	ON
AND	LOGIC FLAG	10	IS	ON

THEN:

Assignment	#	State
SET LOGIC FLAG	2	OFF
SET LOGIC FLAG	3	OFF
SET LOGIC FLAG	4	OFF

ELSE:

Assignment	#	State

Statement Number: 31

IF:

	Assignment	#		State
IF	RED ON PHASE	6	IS	ON
AND	LOGIC FLAG	7	IS	ON
AND	LOGIC FLAG	9	IS	ON
AND	LOGIC FLAG	10	IS	ON
AND	COORD FREE		IS	ON

THEN:

Assignment	#	State
OMIT OVLP A-P	7	OFF
SET ALARM	11	OFF
SET LOGIC FLAG	19	OFF

ELSE:

Assignment	#	State

Statement Number: 32

IF:

	Assignment	#		State
IF	RED ON PHASE	2	IS	ON
AND	LOGIC FLAG	5	IS	ON
AND	LOGIC FLAG	7	IS	ON
AND	LOGIC FLAG	10	IS	ON
AND	COORD FREE		IS	OFF

THEN:

Assignment	#	State
OMIT OVLP A-P	5	OFF
SET ALARM	10	OFF
SET LOGIC FLAG	18	OFF

ELSE:

Assignment	#	State

Statement Number: 33

IF:

	Assignment	#		State
IF	RED ON PHASE	2	IS	ON
AND	LOGIC FLAG	5	IS	ON
AND	LOGIC FLAG	7	IS	ON
AND	LOGIC FLAG	10	IS	ON

THEN:

Assignment	#	State
SET LOGIC FLAG	1	OFF
SET LOGIC FLAG	2	OFF
SET LOGIC FLAG	4	OFF

ELSE:

Assignment	#	State

Statement Number: 34

IF:

	Assignment	#		State
IF	RED ON PHASE	2	IS	ON
AND	LOGIC FLAG	5	IS	ON
AND	LOGIC FLAG	7	IS	ON
AND	LOGIC FLAG	10	IS	ON
AND	COORD FREE		IS	ON

THEN:

Assignment	#	State
OMIT OVLP A-P	5	OFF
SET ALARM	10	OFF
SET LOGIC FLAG	18	OFF

ELSE:

Assignment	#	State

Statement Number: 35

IF:

	Assignment	#		State
IF	RED ON PHASE	6	IS	ON
AND	LOGIC FLAG	7	IS	ON
AND	LOGIC FLAG	8	IS	ON
AND	LOGIC FLAG	10	IS	ON
AND	COORD FREE		IS	OFF

THEN:

Assignment	#	State
OMIT OVLP A-P	7	OFF
SET ALARM	11	OFF
SET LOGIC FLAG	19	OFF

ELSE:

Assignment	#	State

Statement Number: 36

IF:

	Assignment	#		State
IF	RED ON PHASE	6	IS	ON
AND	LOGIC FLAG	7	IS	ON
AND	LOGIC FLAG	8	IS	ON
AND	LOGIC FLAG	10	IS	ON

THEN:

Assignment	#	State
SET LOGIC FLAG	2	OFF
SET LOGIC FLAG	3	OFF
SET LOGIC FLAG	4	OFF

ELSE:

Assignment	#	State

Statement Number: 37

IF:

	Assignment	#		State
IF	RED ON PHASE	6	IS	ON
AND	LOGIC FLAG	7	IS	ON
AND	LOGIC FLAG	8	IS	ON
AND	LOGIC FLAG	10	IS	ON
AND	COORD FREE		IS	ON

THEN:

Assignment	#	State
OMIT OVLP A-P	7	OFF
SET ALARM	11	OFF
SET LOGIC FLAG	19	OFF

ELSE:

Assignment	#	State

Statement Number: 38

IF:

	Assignment	#		State
IF	LOGIC FLAG	1	IS	OFF
AND	LOGIC FLAG	2	IS	OFF
AND	LOGIC FLAG	3	IS	OFF
AND	LOGIC FLAG	4	IS	OFF
AND	COORD FREE		IS	OFF

THEN:

Assignment	#	State
SET LOGIC FLAG	18	OFF
SET LOGIC FLAG	19	OFF
SET CIB CODE ON	498	

ELSE:

Assignment	#	State

Statement Number: 39

IF:

	Assignment	#		State
IF	LOGIC FLAG	1	IS	OFF
AND	LOGIC FLAG	2	IS	OFF
AND	LOGIC FLAG	3	IS	OFF
AND	LOGIC FLAG	4	IS	OFF
AND	COORD FREE		IS	ON

THEN:

Assignment	#	State
SET LOGIC FLAG	18	OFF
SET LOGIC FLAG	19	OFF
SET CIB CODE ON	498	

ELSE:

Assignment	#	State

Statement Number: 40

IF:

	Assignment	#		State
IF	LOGIC FLAG	11	IS	ON
AND	RED ON PHASE	2	IS	ON

THEN:

Assignment	#	State
SET LOGIC FLAG	1	ON
SET LOGIC FLAG	15	ON

ELSE:

Assignment	#	State

Statement Number: 41

IF:

	Assignment	#		State
IF	LOGIC FLAG	12	IS	ON
AND	RED ON PHASE	2	IS	ON
AND	RED ON PHASE	6	IS	ON

THEN:

Assignment	#	State
SET LOGIC FLAG	2	ON
SET LOGIC FLAG	15	ON

ELSE:

Assignment	#	State

Statement Number: 42

IF:

	Assignment	#		State
IF	LOGIC FLAG	13	IS	ON
AND	RED ON PHASE	6	IS	ON

THEN:

Assignment	#	State
SET LOGIC FLAG	3	ON
SET LOGIC FLAG	15	ON

ELSE:

Assignment	#	State

Statement Number: 43

IF:

	Assignment	#		State
IF	LOGIC FLAG	14	IS	ON
AND	RED ON PHASE	2	IS	ON
AND	RED ON PHASE	6	IS	ON

THEN:

Assignment	#	State
SET LOGIC FLAG	4	ON
SET LOGIC FLAG	15	ON

ELSE:

Assignment	#	State

Statement Number: 44

IF:

	Assignment	#		State
IF	LOGIC FLAG	15	IS	ON

THEN:

Assignment	#	State
SET LOGIC FLAG	11	OFF
SET LOGIC FLAG	12	OFF

SET LOGIC FLAG	13	OFF
SET LOGIC FLAG	14	OFF

ELSE:

Assignment	#	State

Statement Number: 45

IF:

	Assignment	#		State
IF	GREEN ON PHASE	2	IS	ON
OR	GREEN ON PHASE	6	IS	ON

THEN:

Assignment	#	State
SET LOGIC FLAG	15	OFF

ELSE:

Assignment	#	State

Statement Number: 46

IF:

	Assignment	#		State
IF	RED ON PHASE	2	IS	ON
AND	LOGIC FLAG	6	IS	ON
AND	LOGIC FLAG	7	IS	ON
AND	LOGIC FLAG	10	IS	ON

THEN:

Assignment	#	State
SET LOGIC FLAG	11	OFF
SET LOGIC FLAG	12	OFF
SET LOGIC FLAG	14	OFF

ELSE:

Assignment	#	State

Statement Number: 47

IF:

	Assignment	#		State
IF	RED ON PHASE	2	IS	ON
AND	LOGIC FLAG	5	IS	ON
AND	LOGIC FLAG	7	IS	ON
AND	LOGIC FLAG	10	IS	ON

THEN:

Assignment	#	State
SET LOGIC FLAG	11	OFF
SET LOGIC FLAG	12	OFF
SET LOGIC FLAG	14	OFF

ELSE:

Assignment	#	State

Statement Number: 48

IF:

	Assignment	#		State
IF	RED ON PHASE	6	IS	ON
AND	LOGIC FLAG	7	IS	ON
AND	LOGIC FLAG	9	IS	ON
AND	LOGIC FLAG	10	IS	ON

THEN:

Assignment	#	State
SET LOGIC FLAG	12	OFF
SET LOGIC FLAG	13	OFF
SET LOGIC FLAG	14	OFF

ELSE:

Assignment	#	State

Statement Number: 49

IF:

	Assignment	#		State
IF	RED ON PHASE	6	IS	ON
AND	LOGIC FLAG	7	IS	ON
AND	LOGIC FLAG	8	IS	ON
AND	LOGIC FLAG	10	IS	ON

THEN:

Assignment	#	State
SET LOGIC FLAG	12	OFF
SET LOGIC FLAG	13	OFF
SET LOGIC FLAG	14	OFF

ELSE:

Assignment	#	State

Waukesha (S67-0300 - S67-0444) - S67-0435 - STH 67 & Valley Rd

Controller Timing Plan (MM)2-1

Plan 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	NBLT	SB	WBLT	EB	SBLT	NB	EBLT	WB								
Min Green	8	15	8	10	8	15	8	10	0	0	0	0	0	0	0	0
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	7	0	7	0	7	0	7	0	0	0	0	0	0	0	0
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	27	0	42	0	27	0	42	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	1.5	3.3	1.5	1.5	1.5	3.3	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	25	40	25	35	25	40	25	35	0	0	0	0	0	0	0	0
Max 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.5	4.3	3.5	4.8	3.5	4.3	3.5	4.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	2.5	2.3	2.5	3.0	2.5	2.3	2.5	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	1.2	0.0	0.0	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	8	21	8	10	8	21	8	10	0	0	0	0	0	0	0	0
Time B4	25	21	25	35	25	21	25	35	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	18	0	0	0	18	0	0	0	0	0	0	0	0	0	0
Min Gap	1.5	3.5	1.5	1.5	1.5	3.5	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	NBLT	SB	WBLT	EB	SBLT	NB	EBLT	WB								
Min Green	5	15	5	10	5	15	5	10	0	0	0	0	0	0	0	0
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	3.0	7.0	3.0	5.0	3.0	7.0	3.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	15	45	15	35	15	45	15	35	0	0	0	0	0	0	0	0
Max 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 3

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Direction	**NBLT**	**SB**	**WBLT**	**EB**	**SBLT**	**NB**	**EBLT**	**WB**								
Min Green	5	15	5	10	5	15	5	10	0	0	0	0	0	0	0	0
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	3.0	7.0	3.0	5.0	3.0	7.0	3.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	15	45	15	35	15	45	15	35	0	0	0	0	0	0	0	0
Max 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 4

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Direction	**NBLT**	**SB**	**WBLT**	**EB**	**SBLT**	**NB**	**EBLT**	**WB**								
Min Green	5	15	5	10	5	15	5	10	0	0	0	0	0	0	0	0
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	3.0	7.0	3.0	5.0	3.0	7.0	3.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	15	45	15	35	15	45	15	35	0	0	0	0	0	0	0	0
Max 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Waukesha (S67-0300 - S67-0444) - S67-0435 - STH 67 & Valley Rd

Controller Overlaps

Vehicle Overlaps (MM)2-2

Overlap	Type	Lag Green	Yellow	Red	Advance Green

Phases

Overlap	Phase	Included	Protect	Ped Protect	Not Overlap	Modifier	Lag X Phase	Lag 2 Phase	Flash Green

PPLT FYA

Overlap	Protected Phase	Permissive Phase	Flash Arrow Output	Flash Arrow Channel	FYA Delay	FYA Clearance	Special Function Disable
E	1	2	Ped Yellow	9	0.0	0.0	1
G	5	6	Ped Yellow	11	0.0	0.0	5

Guaranteed Minimum Time Data (MM) 2-4

Phase Time Data

Phase	Min Green	Walk	Ped Clear	Yellow	Red Clear	Overlap Green
A01	1	0	7	3.0	0.0	1
B02	1	0	7	3.0	0.0	1
C03	1	0	7	3.0	0.0	1
D04	1	0	7	3.0	0.0	1
E05	1	0	7	3.0	0.0	1
F06	1	0	7	3.0	0.0	1
G07	1	0	7	3.0	0.0	1
H08	1	0	7	3.0	0.0	1
I09	1	0	7	3.0	0.0	1
J10	1	0	7	3.0	0.0	1
K11	1	0	7	3.0	0.0	1
L12	1	0	7	3.0	0.0	1
M13	1	0	7	3.0	0.0	1
N14	1	0	7	3.0	0.0	1
O15	1	0	7	3.0	0.0	1
P16	1	0	7	3.0	0.0	1

Waukesha (S67-0300 - S67-0444) - S67-0435 - STH 67 & Valley Rd

Controller Pedestrian Overlaps
Pedestrian Overlaps (MM) 2-3

Included Phase	Ped Overlap

Waukesha (S67-0300 - S67-0444) - S67-0435 - STH 67 & Valley Rd

Controller Start/Fash (MM) 2-5

Startup

Phase	Phase Setting
2	G
6	G

Overlap
A
B
C
D

Flash > Mon: No
Flash Time: 0
All Red: 6
Power Start Sequence: 1
MUTCD Enabled: Yes
MUTCD Yellow to Green: No

Automatic Flash

Entry Phase
2
6

Exit Phase
2
6

Overlap Exit
A
B
C
D

Flash > Mon: No
Exit Flash Interval: G
Minimum Auto Flash: 8
Minimumin Recall: No
Cycle Through Phase: No

Waukesha (S67-0300 - S67-0444) - S67-0435 - STH 67 & Valley Rd

Controller Options

Controller Options (MM)2-6-1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Flashing Green Phase																
Guaranteed Passage																
Non Act 1																
Non Act 2																
Dual Entry		X		X		X		X								
Conditional Service																
Conditional Reservice																
Ped Reservice																
Rest In Walk																
Flashing Walk																
Ped Clear Yellow																
Ped Clear Red																
IGRN + Veh Ext																

Ped Clear Protect: On Red Revert: 2.0 MUTCD 3 Seconds Don't Walk: No

Act Pre-Time (MM)2-7

Pre-Time Mode Enable: No Free Input Enables Pre-Timed: Yes

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Pre-Timed Phase																

Phase Recall Options (MM)2-8

Plan 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector		X				X										
Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
Al Calc																

Plan 2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector		X				X										
Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
Al Calc																

Plan 3

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector		X				X										
Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
Al Calc																

Plan 4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector		X				X										

Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
AI Calc																

Waukesha (S67-0300 - S67-0444) - S67-0435 - STH 67 & Valley Rd

Coordination Options

Coordination Options (MM)3-1

Manual Pattern	Auto	ECPI Coord	Yes
System Source	TBC	System Format	STD
Splits In	Seconds	Offsets In	Seconds
Transition	Add	Max Select	MAXINH
Dwell/Add Time	0		
Delay Coord Walk to LZ	No	Force Off	Fixed
Offset Reference	Lead	Use Ped Time	No
Ped Recall	No	Ped Reservice	No
Local Zero Override	No	FO Added Initial Green	Yes
Re-Sync Count	3	Multisync	No

Auto Perm Minimum Green (Seconds) (MM)3-4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Minimum Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Split Demand (MM)3-5

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Demand 1																
Demand 2																

Demand	1	2
Detector	0	0
Call Time (Sec)	0	0
Cycle Count	0	0

Waukesha (S67-0300 - S67-0444) - S67-0435 - STH 67 & Valley Rd

Coordination Pattern Data
Pattern Data (MM)3-2

Pattern - 1

Split Pattern	1	TS2 (Pat-Off)	0-1	Splits in	Seconds
Cycle	90	Std (COS)	0	Offsets in	Seconds
Offset Value	37s	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	2		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	NBLT	SB	WBLT	EB	SBLT	NB	EBLT	WB								
Splits (Split Pat 1)	18	37	15	20	20	35	15	20	0	0	0	0	0	0	0	0
Preference 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Preference 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Disp.	-	0	0	0
Split Sum	90s	90s	0s	0s

Misc. Data

Veh. Permissive 1	0	Veh. Permissive 2	0	Veh. Permissive 2 Disp.	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern Data

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coordinated Phases		X				X										
Vehicle Recalls																
Ped Recalls																
Max Recalls																
Phase Omit																
Special Function Output																

Pattern - 2

Split Pattern	2	TS2 (Pat-Off)	0-2	Splits in	Seconds
Cycle	80	Std (COS)	0	Offsets in	Seconds
Offset Value	56s	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	NBLT	SB	WBLT	EB	SBLT	NB	EBLT	WB								
Splits (Split Pat 2)	15	29	17	19	15	29	17	19	0	0	0	0	0	0	0	0
Preference 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Preference 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Disp.	-	0	0	0
Split Sum	80s	80s	0s	0s

Misc. Data

Veh. Permissive 1	0	Veh. Permissive 2	0	Veh. Permissive 2 Disp.	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern Data

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coordinated Phases		X				X										
Vehicle Recalls																
Ped Recalls																
Max Recalls																
Phase Omit																
Special Function Output																

Pattern - 3

Split Pattern	3	TS2 (Pat-Off)	0-3	Splits in	Seconds
Cycle	100	Std (COS)	0	Offsets in	Seconds
Offset Value	53s	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	5		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	NBLT	SB	WBLT	EB	SBLT	NB	EBLT	WB								
Splits (Split Pat 3)	17	47	15	21	19	45	15	21	0	0	0	0	0	0	0	0
Preference 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Preference 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Disp.	-	0	0	0
Split Sum	100s	100s	0s	0s

Misc. Data

Veh. Permissive 1	0	Veh. Permissive 2	0	Veh. Permissive 2 Disp.	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern Data

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coordinated Phases		X				X										
Vehicle Recalls																
Ped Recalls																
Max Recalls																
Phase Omit																
Special Function Output																

Waukesha (S67-0300 - S67-0444) - S67-0435 - STH 67 & Valley Rd

Preemptor

Preempt Plan (MM)4-1

Plan 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**
Track Clear Vehicle																
Track Clear Overlap																
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Vehicle		X			X											
Dwell Ped																
Dwell Overlap																
Cycling Vehicle																
Cycling Ped																
Cycling Overlap																
Exit Phase		X				X										
Exit Calls																
Special Funciton																

Enable	Yes	Preempt Override	No	Interlock Enable	No
Detector Lock	Yes	Delay	1	Inhibit	0
Override Flash	No	Duration	0	CLR > GRN	No
Term Overlap Asap	No	PC Through Yellow	No	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	Flash Exit Color	Green	Exit Option	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Preempt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	5	0	5	25.5	25.5
	Min Grn	**Ext Grn**	**Max Grn**	**Yellow**	**Red**
Track Clear	0	0	0	25.5	25.5
	Min Dwell	**Pmt Ext**	**Max Time**	**Yellow**	**Red**
Dwell / Cycle-Exit	10	5.0	0	25.5	25.5

Preempt Active Out	On	Preempt Active Dwell	No
Other Priority Preempt	On	Non-Priority Preempt	F1
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Pri Return % Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**
Track Clear Vehicle																
Track Clear Overlap																
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Vehicle	X					X										
Dwell Ped																
Dwell Overlap																
Cycling Vehicle																
Cycling Ped																
Cycling Overlap																
Exit Phase		X				X										
Exit Calls																
Special Funciton																

Enable	Yes	Preempt Override	No	Interlock Enable	No
Detector Lock	Yes	Delay	1	Inhibit	0
Override Flash	No	Duration	0	CLR > GRN	No
Term Overlap Asap	No	PC Through Yellow	No	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	Flash Exit Color	Green	Exit Option	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Preempt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	5	0	5	25.5	25.5
	Min Grn	**Ext Grn**	**Max Grn**	**Yellow**	**Red**
Track Clear	0	0	0	25.5	25.5
	Min Dwell	**Pmt Ext**	**Max Time**	**Yellow**	**Red**
Dwell / Cycle-Exit	10	5.0	0	25.5	25.5

Preempt Active Out	On	Preempt Active Dwell	No
Other Priority Preempt	On	Non-Priority Preempt	F1
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Pri Return % Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 3

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**
Track Clear Vehicle																
Track Clear Overlap																
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Vehicle		X			X											
Dwell Ped																
Dwell Overlap					F1		F1									
Cycling Vehicle																
Cycling Ped																
Cycling Overlap																
Exit Phase		X				X										
Exit Calls																
Special Funciton																

Enable	Yes	Preempt Override	No	Interlock Enable	No
Detector Lock	Yes	Delay	1	Inhibit	0
Override Flash	No	Duration	0	CLR > GRN	No
Term Overlap Asap	No	PC Through Yellow	No	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	Flash Exit Color	Green	Exit Option	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Preempt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	5	0	5	25.5	25.5
	Min Grn	**Ext Grn**	**Max Grn**	**Yellow**	**Red**
Track Clear	0	0	0	25.5	25.5
	Min Dwell	**Pmt Ext**	**Max Time**	**Yellow**	**Red**
Dwell / Cycle-Exit	10	5.0	0	25.5	25.5

Preempt Active Out	On	Preempt Active Dwell	No
Other Priority Preempt	On	Non-Priority Preempt	F1
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Pri Return % Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**
Track Clear Vehicle																
Track Clear Overlap																
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Vehicle	X					X										
Dwell Ped																
Dwell Overlap					F1		F1									
Cycling Vehicle																
Cycling Ped																
Cycling Overlap																
Exit Phase		X				X										
Exit Calls																
Special Funciton																

Enable	Yes	Preempt Override	No	Interlock Enable	No
Detector Lock	Yes	Delay	1	Inhibit	0
Override Flash	No	Duration	0	CLR > GRN	No
Term Overlap Asap	No	PC Through Yellow	No	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	Flash Exit Color	Green	Exit Option	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Preempt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	5	0	5	25.5	25.5
	Min Grn	**Ext Grn**	**Max Grn**	**Yellow**	**Red**
Track Clear	0	0	0	25.5	25.5
	Min Dwell	**Pmt Ext**	**Max Time**	**Yellow**	**Red**
Dwell / Cycle-Exit	10	5.0	0	25.5	25.5

Preempt Active Out	On	Preempt Active Dwell	No
Other Priority Preempt	On	Non-Priority Preempt	F1
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Pri Return % Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 5

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**
Track Clear Vehicle																
Track Clear Overlap																
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Vehicle				X			X									
Dwell Ped																
Dwell Overlap																
Cycling Vehicle																
Cycling Ped																
Cycling Overlap																
Exit Phase				X				X								
Exit Calls																
Special Funciton																

Enable	Yes	Preempt Override	No	Interlock Enable	No
Detector Lock	Yes	Delay	1	Inhibit	0
Override Flash	No	Duration	0	CLR > GRN	No
Term Overlap Asap	No	PC Through Yellow	No	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	Flash Exit Color	Green	Exit Option	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4

Free During Preempt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	5	0	5	25.5	25.5
	Min Grn	**Ext Grn**	**Max Grn**	**Yellow**	**Red**
Track Clear	0	0	0	25.5	25.5
	Min Dwell	**Pmt Ext**	**Max Time**	**Yellow**	**Red**
Dwell / Cycle-Exit	10	5.0	0	25.5	25.5

Preempt Active Out	On	Preempt Active Dwell	No
Other Priority Preempt	On	Non-Priority Preempt	F1
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Pri Return % Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 6

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**
Track Clear Vehicle																
Track Clear Overlap																
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Vehicle			X					X								
Dwell Ped																
Dwell Overlap																
Cycling Vehicle																
Cycling Ped																
Cycling Overlap																
Exit Phase				X				X								
Exit Calls																
Special Funciton																

Enable	Yes	Preempt Override	No	Interlock Enable	No
Detector Lock	Yes	Delay	1	Inhibit	0
Override Flash	No	Duration	0	CLR > GRN	No
Term Overlap Asap	No	PC Through Yellow	No	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	Flash Exit Color	Green	Exit Option	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Preempt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	5	0	5	25.5	25.5
	Min Grn	**Ext Grn**	**Max Grn**	**Yellow**	**Red**
Track Clear	0	0	0	25.5	25.5
	Min Dwell	**Pmt Ext**	**Max Time**	**Yellow**	**Red**
Dwell / Cycle-Exit	10	5.0	0	25.5	25.5

Preempt Active Out	On	Preempt Active Dwell	No
Other Priority Preempt	On	Non-Priority Preempt	F1
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Pri Return % Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 7

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**
Track Clear Vehicle																
Track Clear Overlap																
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Vehicle		X			X											

Dwell Ped																
Dwell Overlap							F1									
Cycling Vehicle																
Cycling Ped																
Cycling Overlap																
Exit Phase		X				X										
Exit Calls																
Special Funciton																

Enable	Yes	Preempt Override	No	Interlock Enable	No
Detector Lock	Yes	Delay	1	Inhibit	0
Override Flash	No	Duration	0	CLR > GRN	No
Term Overlap Asap	No	PC Through Yellow	No	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	Flash Exit Color	Green	Exit Option	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Preempt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	5	0	5	25.5	25.5
	Min Grn	**Ext Grn**	**Max Grn**	**Yellow**	**Red**
Track Clear	0	0	0	25.5	25.5
	Min Dwell	**Pmt Ext**	**Max Time**	**Yellow**	**Red**
Dwell / Cycle-Exit	10	5.0	0	25.5	25.5

Preempt Active Out	On	Preempt Active Dwell	No
Other Priority Preempt	On	Non-Priority Preempt	F1
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Pri Return % Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 8

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**
Track Clear Vehicle																
Track Clear Overlap																
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Vehicle	X					X										
Dwell Ped																
Dwell Overlap							F1									
Cycling Vehicle																
Cycling Ped																
Cycling Overlap																
Exit Phase		X				X										
Exit Calls																
Special Funciton																

Enable	Yes	Preempt Override	No	Interlock Enable	No
Detector Lock	Yes	Delay	1	Inhibit	0
Override Flash	No	Duration	0	CLR > GRN	No
Term Overlap Asap	No	PC Through Yellow	No	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	Flash Exit Color	Green	Exit Option	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Preempt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	5	0	5	25.5	25.5
	Min Grn	**Ext Grn**	**Max Grn**	**Yellow**	**Red**
Track Clear	0	0	0	25.5	25.5
	Min Dwell	**Pmt Ext**	**Max Time**	**Yellow**	**Red**

Dwell / Cycle-Exit	10	5.0	0	25.5	25.5

Preempt Active Out	On	Preempt Active Dwell	No
Other Priority Preempt	On	Non-Priority Preempt	F1
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Pri Return % Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 9

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Track Clear Vehicle																
Track Clear Overlap																
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Vehicle		X			X											
Dwell Ped																
Dwell Overlap					F1											
Cycling Vehicle																
Cycling Ped																
Cycling Overlap																
Exit Phase		X				X										
Exit Calls																
Special Funciton																

Enable	Yes	Preempt Override	No	Interlock Enable	No
Detector Lock	Yes	Delay	1	Inhibit	0
Override Flash	No	Duration	0	CLR > GRN	No
Term Overlap Asap	No	PC Through Yellow	No	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	Flash Exit Color	Green	Exit Option	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Preempt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	5	0	5	25.5	25.5
	Min Grn	Ext Grn	Max Grn	Yellow	Red
Track Clear	0	0	0	25.5	25.5
	Min Dwell	Pmt Ext	Max Time	Yellow	Red
Dwell / Cycle-Exit	10	5.0	0	25.5	25.5

Preempt Active Out	On	Preempt Active Dwell	No
Other Priority Preempt	On	Non-Priority Preempt	F1
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Pri Return % Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 10

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Track Clear Vehicle																
Track Clear Overlap																
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Vehicle	X					X										
Dwell Ped																
Dwell Overlap					F1											
Cycling Vehicle																
Cycling Ped																
Cycling Overlap																
Exit Phase		X				X										
Exit Calls																
Special Funciton																

Enable	Yes	Preempt Override	No	Interlock Enable	No
Detector Lock	Yes	Delay	1	Inhibit	0
Override Flash	No	Duration	0	CLR > GRN	No
Term Overlap Asap	No	PC Through Yellow	No	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	Flash Exit Color	Green	Exit Option	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Preempt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	5	0	5	25.5	25.5
	Min Grn	**Ext Grn**	**Max Grn**	**Yellow**	**Red**
Track Clear	0	0	0	25.5	25.5
	Min Dwell	**Pmt Ext**	**Max Time**	**Yellow**	**Red**
Dwell / Cycle-Exit	10	5.0	0	25.5	25.5

Preempt Active Out	On	Preempt Active Dwell	No
Other Priority Preempt	On	Non-Priority Preempt	F1
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Pri Return % Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Waukesha (S67-0300 - S67-0444) - S67-0435 - STH 67 & Valley Rd

Time Base Clock/Calendar
Clock/Calendar Options (MM)5-1

Enable Action Plan:	0
Sync Reference Time:	12:00 AM
Sync Reference:	Reference Time
Day Light Savings:	No
Time Reset Input Set Time:	3:30:00
Standard Time From GMT:	0

Waukesha (S67-0300 - S67-0444) - S67-0435 - STH 67 & Valley Rd

Time Base Action Plan
Action Plan (MM)5-2

Action Plan - 1

Pattern	1	Override System	No
Timing Plan	1	Sequence	2
Veh Det Plan	0	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 2

Pattern	2	Override System	No
Timing Plan	1	Sequence	0
Veh Det Plan	0	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 3

Pattern	3	Override System	No
Timing Plan	1	Sequence	5
Veh Det Plan	0	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 99

Pattern	255 - FLSH	Override System	No
Timing Plan	0	Sequence	0
Veh Det Plan	0	Detector Log	None
Flash	Yes	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 100

Pattern	254 - FREE	Override System	No
Timing Plan	1	Sequence	0
Veh Det Plan	0	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Waukesha (S67-0300 - S67-0444) - S67-0435 - STH 67 & Valley Rd

Time Base Day Plan/Schedule
Day Plan (MM)5-3

Day Plan - 1

Event	Action Plan	Start Time
1	100	12:01 AM
2	2	9:00 AM
3	100	9:00 PM

Day Plan - 2

Event	Action Plan	Start Time
1	100	12:01 AM
2	1	6:00 AM
3	2	9:00 AM
4	3	3:00 PM
5	2	7:00 PM
6	100	9:00 PM

Schedule (MM)5-4

Schedule Number - 1

Day Plan Number: 1

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	X	X	X	X	X	X	X	X	X	X	X	X

Day of Week	Sun	Mon	Tue	Wed	Thur	Fri	Sat
	X						X

Day of Month	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

Schedule Number - 2

Day Plan Number: 2

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	X	X	X	X	X	X	X	X	X	X	X	X

Day of Week	Sun	Mon	Tue	Wed	Thur	Fri	Sat
		X	X	X	X	X	

Day of Month	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

Waukesha (S67-0300 - S67-0444) - S67-0435 - STH 67 & Valley Rd

Time Base Exceptions
Exception Day Program (MM)5-5

Day	Fixed/Float	Month	Day of Week/Month	Week of Month/Year	Day Plan
37	FIXED	255	255	65535	255
38	FIXED	255	255	65535	255
39	FIXED	255	255	65535	255
40	FIXED	255	255	65535	255
41	FIXED	255	255	65535	255
42	FIXED	255	255	65535	255
43	FIXED	255	255	65535	255
44	FIXED	255	255	65535	255
45	FIXED	255	255	65535	255
46	FIXED	255	255	65535	255
47	FIXED	255	255	65535	255
48	FIXED	255	255	65535	255
49	FIXED	255	255	65535	255
50	FIXED	255	255	65535	255
51	FIXED	255	255	65535	255
52	FIXED	255	255	65535	255
53	FIXED	255	255	65535	255
54	FIXED	255	255	65535	255
55	FIXED	255	255	65535	255
56	FIXED	255	255	65535	255
57	FIXED	255	255	65535	255
58	FIXED	255	255	65535	255
59	FIXED	255	255	65535	255
60	FIXED	255	255	65535	255
61	FIXED	255	255	65535	255
62	FIXED	255	255	65535	255
63	FIXED	255	255	65535	255
64	FIXED	255	255	65535	255
65	FIXED	255	255	65535	255
66	FIXED	255	255	65535	255
67	FIXED	255	255	65535	255
68	FIXED	255	255	65535	255
69	FIXED	255	255	65535	255
70	FIXED	255	255	65535	255
71	FIXED	255	255	65535	255
72	FIXED	255	255	65535	255
73	FIXED	255	255	65535	255
74	FIXED	255	255	65535	255
75	FIXED	255	255	65535	255
76	FIXED	255	255	65535	255
77	FIXED	255	255	65535	255
78	FIXED	255	255	65535	255
79	FIXED	255	255	65535	255
80	FIXED	255	255	65535	255
81	FIXED	255	255	65535	255
82	FIXED	255	255	65535	255
83	FIXED	255	255	65535	255
84	FIXED	255	255	65535	255
85	FIXED	255	255	65535	255
86	FIXED	255	255	65535	255
87	FIXED	255	255	65535	255
88	FIXED	255	255	65535	255
89	FIXED	255	255	65535	255
90	FIXED	255	255	65535	255

Waukesha (S67-0300 - S67-0444) - S67-0435 - STH 67 & Valley Rd

Detectors

Detectors Page 1

Vehicle Detectors Setup (MM)6-1

Vehicle Plan	Detector Number	Called	Type
2	60	2	N
2	60	4	N
2	60	6	N
2	60	8	N
3	60	2	N
3	60	4	N
3	60	6	N
3	60	8	N
4	60	2	N
4	60	4	N
4	60	6	N
4	60	8	N

Vehicle Detector Setup (MM)6-2 continued

Detector Number	Type	TS2 Detector	Detector Description
1	N-NTCIP	Yes	
2	N-NTCIP	Yes	
3	N-NTCIP	Yes	
4	N-NTCIP	Yes	
5	N-NTCIP	Yes	
6	N-NTCIP	Yes	
7	N-NTCIP	Yes	
8	N-NTCIP	Yes	
9	N-NTCIP	Yes	
10	N-NTCIP	Yes	
11	N-NTCIP	Yes	
12	N-NTCIP	Yes	
13	N-NTCIP	Yes	
14	N-NTCIP	Yes	
15	N-NTCIP	Yes	
16	N-NTCIP	Yes	
17	N-NTCIP	Yes	
18	N-NTCIP	Yes	
19	N-NTCIP	Yes	
20	N-NTCIP	Yes	
21	N-NTCIP	Yes	
22	N-NTCIP	Yes	
23	N-NTCIP	Yes	
24	N-NTCIP	Yes	
25	N-NTCIP	Yes	
26	N-NTCIP	Yes	
27	N-NTCIP	Yes	
28	N-NTCIP	Yes	
29	N-NTCIP	Yes	
30	N-NTCIP	Yes	
31	N-NTCIP	Yes	
32	N-NTCIP	Yes	
33	N-NTCIP	Yes	
34	N-NTCIP	Yes	
35	N-NTCIP	Yes	
36	N-NTCIP	Yes	
37	N-NTCIP	Yes	
38	N-NTCIP	Yes	
39	N-NTCIP	Yes	
40	N-NTCIP	Yes	
41	N-NTCIP	Yes	
42	N-NTCIP	Yes	

43	N-NTCIP	Yes	
44	N-NTCIP	Yes	
45	N-NTCIP	Yes	
46	N-NTCIP	Yes	
47	N-NTCIP	Yes	
48	N-NTCIP	Yes	
49	N-NTCIP	Yes	
50	N-NTCIP	Yes	
51	N-NTCIP	Yes	
52	N-NTCIP	Yes	
53	N-NTCIP	Yes	
54	N-NTCIP	Yes	
55	N-NTCIP	Yes	
56	N-NTCIP	Yes	
57	N-NTCIP	Yes	
58	N-NTCIP	Yes	
59	N-NTCIP	Yes	
60	N-NTCIP	Yes	
61	N-NTCIP	Yes	
62	N-NTCIP	Yes	
63	N-NTCIP	Yes	
64	N-NTCIP	Yes	

Vehicle Detector Setup (MM)6-2 continued

Det Num	Veh Det Plan	Phase	ECPI Log	Call Option	Delay Time	Ext Option	Extend Time / Passage Time	Queue Lim / Discon. Time	Use Added Initial	Cross Switch Phase	Lock In	NTCIP Vol.	NTCIP Occ.	Pmt Queue Delay
1	1	6	Yes	Yes	0.0	Passage	0.0	0	Yes	0	None	Yes	Yes	No
1	2	6	Yes	Yes	0.0	Passage	0.0	0	Yes	0	None	Yes	Yes	No
1	3	6	Yes	Yes	0.0	Passage	0.0	0	Yes	0	None	Yes	Yes	No
1	4	6	Yes	Yes	0.0	Passage	0.0	0	Yes	0	None	Yes	Yes	No
2	1	6	Yes	Yes	0.0	Passage	0.0	0	Yes	0	None	Yes	Yes	No
2	2	6	Yes	Yes	0.0	Passage	0.0	0	Yes	0	None	Yes	Yes	No
2	3	6	Yes	Yes	0.0	Passage	0.0	0	Yes	0	None	Yes	Yes	No
2	4	6	Yes	Yes	0.0	Passage	0.0	0	Yes	0	None	Yes	Yes	No
3	1	2	Yes	Yes	0.0	Passage	0.0	0	Yes	0	None	Yes	Yes	No
3	2	2	Yes	Yes	0.0	Passage	0.0	0	Yes	0	None	Yes	Yes	No
3	3	2	Yes	Yes	0.0	Passage	0.0	0	Yes	0	None	Yes	Yes	No
3	4	2	Yes	Yes	0.0	Passage	0.0	0	Yes	0	None	Yes	Yes	No
4	1	2	Yes	Yes	0.0	Passage	0.0	0	Yes	0	None	Yes	Yes	No
4	2	2	Yes	Yes	0.0	Passage	0.0	0	Yes	0	None	Yes	Yes	No
4	3	2	Yes	Yes	0.0	Passage	0.0	0	Yes	0	None	Yes	Yes	No
4	4	2	Yes	Yes	0.0	Passage	0.0	0	Yes	0	None	Yes	Yes	No
5	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
5	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
5	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
5	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
6	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
6	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
6	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
6	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
7	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
7	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
7	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
7	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
8	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
8	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
8	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
8	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
9	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
9	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
9	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
9	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
10	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
10	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
10	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
10	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

11	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
11	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
11	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
11	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
12	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
12	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
12	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
12	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
13	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
13	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
13	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
13	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
14	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
14	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
14	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
14	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
15	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
15	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
15	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
15	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
16	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
16	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
16	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
16	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
17	1	1	Yes	Yes	0.0	Passage	0.0	0	No	0	None	Yes	Yes	No
17	2	1	Yes	Yes	0.0	Passage	0.0	0	No	0	None	Yes	Yes	No
17	3	0	Yes	Yes	0.0	Passage	0.0	0	No	0	None	Yes	Yes	No
17	4	0	Yes	Yes	0.0	Passage	0.0	0	No	0	None	Yes	Yes	No
18	1	1	Yes	Yes	0.0	Passage	0.0	0	No	0	None	Yes	Yes	No
18	2	1	Yes	Yes	0.0	Passage	0.0	0	No	0	None	Yes	Yes	No
18	3	0	Yes	Yes	0.0	Passage	0.0	0	No	0	None	Yes	Yes	No
18	4	0	Yes	Yes	0.0	Passage	0.0	0	No	0	None	Yes	Yes	No
19	1	0	Yes	Yes	0.0	None	0.0	0	No	0	None	Yes	Yes	No
19	2	0	Yes	Yes	0.0	None	0.0	0	No	0	None	Yes	Yes	No
19	3	0	Yes	Yes	0.0	None	0.0	0	No	0	None	Yes	Yes	No
19	4	0	Yes	Yes	0.0	None	0.0	0	No	0	None	Yes	Yes	No
20	1	0	Yes	Yes	0.0	None	0.0	0	No	0	None	Yes	Yes	No
20	2	0	Yes	Yes	0.0	None	0.0	0	No	0	None	Yes	Yes	No
20	3	0	Yes	Yes	0.0	None	0.0	0	No	0	None	Yes	Yes	No
20	4	0	Yes	Yes	0.0	None	0.0	0	No	0	None	Yes	Yes	No
21	1	4	Yes	Yes	0.0	Passage	0.0	0	No	0	None	Yes	Yes	No
21	2	4	Yes	Yes	0.0	Passage	0.0	0	No	0	None	Yes	Yes	No
21	3	4	Yes	Yes	0.0	Passage	0.0	0	No	0	None	Yes	Yes	No
21	4	4	Yes	Yes	0.0	Passage	0.0	0	No	0	None	Yes	Yes	No
22	1	0	Yes	Yes	0.0	None	0.0	0	No	0	None	Yes	Yes	No
22	2	0	Yes	Yes	0.0	None	0.0	0	No	0	None	Yes	Yes	No
22	3	0	Yes	Yes	0.0	None	0.0	0	No	0	None	Yes	Yes	No
22	4	0	Yes	Yes	0.0	None	0.0	0	No	0	None	Yes	Yes	No
23	1	3	Yes	Yes	0.0	Passage	0.0	0	No	0	None	Yes	Yes	No
23	2	3	Yes	Yes	0.0	Passage	0.0	0	No	0	None	Yes	Yes	No
23	3	3	Yes	Yes	0.0	Passage	0.0	0	No	0	None	Yes	Yes	No
23	4	3	Yes	Yes	0.0	Passage	0.0	0	No	0	None	Yes	Yes	No
24	1	4	Yes	No	0.0	Passage	5.1	0	No	0	None	Yes	Yes	No
24	2	4	Yes	No	0.0	Passage	5.1	0	No	0	None	Yes	Yes	No
24	3	4	Yes	No	0.0	Passage	5.1	0	No	0	None	Yes	Yes	No
24	4	4	Yes	No	0.0	Passage	5.1	0	No	0	None	Yes	Yes	No
25	1	5	Yes	Yes	0.0	Passage	0.0	0	No	0	None	Yes	Yes	No
25	2	0	Yes	Yes	0.0	Passage	0.0	0	No	0	None	Yes	Yes	No
25	3	5	Yes	Yes	0.0	Passage	0.0	0	No	0	None	Yes	Yes	No
25	4	0	Yes	Yes	0.0	Passage	0.0	0	No	0	None	Yes	Yes	No
26	1	7	Yes	Yes	0.0	Passage	0.0	0	No	0	None	Yes	Yes	No
26	2	7	Yes	Yes	0.0	Passage	0.0	0	No	0	None	Yes	Yes	No
26	3	7	Yes	Yes	0.0	Passage	0.0	0	No	0	None	Yes	Yes	No
26	4	7	Yes	Yes	0.0	Passage	0.0	0	No	0	None	Yes	Yes	No
27	1	0	Yes	Yes	0.0	None	0.0	0	No	0	None	Yes	Yes	No
27	2	0	Yes	Yes	0.0	None	0.0	0	No	0	None	Yes	Yes	No
27	3	0	Yes	Yes	0.0	None	0.0	0	No	0	None	Yes	Yes	No
27	4	0	Yes	Yes	0.0	None	0.0	0	No	0	None	Yes	Yes	No

28	1	5	Yes	Yes	0.0	Passage	0.0	0	No	0	None	Yes	Yes	No
28	2	0	Yes	Yes	0.0	Passage	0.0	0	No	0	None	Yes	Yes	No
28	3	5	Yes	Yes	0.0	Passage	0.0	0	No	0	None	Yes	Yes	No
28	4	0	Yes	Yes	0.0	Passage	0.0	0	No	0	None	Yes	Yes	No
29	1	0	Yes	Yes	0.0	Passage	0.0	0	No	0	None	Yes	Yes	No
29	2	0	Yes	Yes	0.0	Passage	0.0	0	No	0	None	Yes	Yes	No
29	3	1	Yes	Yes	0.0	Passage	0.0	0	No	0	None	Yes	Yes	No
29	4	1	Yes	Yes	0.0	Passage	0.0	0	No	0	None	Yes	Yes	No
30	1	0	Yes	Yes	0.0	Passage	0.0	0	No	0	None	Yes	Yes	No
30	2	0	Yes	Yes	0.0	Passage	0.0	0	No	0	None	Yes	Yes	No
30	3	1	Yes	Yes	0.0	Passage	0.0	0	No	0	None	Yes	Yes	No
30	4	1	Yes	Yes	0.0	Passage	0.0	0	No	0	None	Yes	Yes	No
31	1	8	Yes	No	0.0	Passage	4.9	0	No	0	None	Yes	Yes	No
31	2	8	Yes	No	0.0	Passage	4.9	0	No	0	None	Yes	Yes	No
31	3	8	Yes	No	0.0	Passage	4.9	0	No	0	None	Yes	Yes	No
31	4	8	Yes	No	0.0	Passage	4.9	0	No	0	None	Yes	Yes	No
32	1	8	Yes	Yes	0.0	Passage	0.0	0	No	0	None	Yes	Yes	No
32	2	8	Yes	Yes	0.0	Passage	0.0	0	No	0	None	Yes	Yes	No
32	3	8	Yes	Yes	0.0	Passage	0.0	0	No	0	None	Yes	Yes	No
32	4	8	Yes	Yes	0.0	Passage	0.0	0	No	0	None	Yes	Yes	No
33	1	0	Yes	Yes	0.0	Passage	0.0	0	No	0	None	Yes	Yes	No
33	2	5	Yes	Yes	0.0	Passage	0.0	0	No	0	None	Yes	Yes	No
33	3	0	Yes	Yes	0.0	Passage	0.0	0	No	0	None	Yes	Yes	No
33	4	5	Yes	Yes	0.0	Passage	0.0	0	No	0	None	Yes	Yes	No
34	1	0	Yes	Yes	0.0	Passage	0.0	0	No	0	None	Yes	Yes	No
34	2	5	Yes	Yes	0.0	Passage	0.0	0	No	0	None	Yes	Yes	No
34	3	0	Yes	Yes	0.0	Passage	0.0	0	No	0	None	Yes	Yes	No
34	4	5	Yes	Yes	0.0	Passage	0.0	0	No	0	None	Yes	Yes	No
35	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
35	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
35	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
35	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
36	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
36	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
36	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
36	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
37	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
37	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
37	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
37	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
38	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
38	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
38	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
38	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
39	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
39	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
39	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
39	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
40	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
40	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
40	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
40	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
41	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
41	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
41	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
41	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
42	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
42	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
42	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
42	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
43	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
43	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
43	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
43	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
44	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
44	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
44	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
44	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

45	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
45	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
45	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
45	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
46	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
46	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
46	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
46	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
47	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
47	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
47	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
47	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
48	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
48	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
48	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
48	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
49	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
49	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
49	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
49	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
50	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
50	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
50	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
50	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
51	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
51	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
51	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
51	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
52	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
52	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
52	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
52	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
53	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
53	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
53	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
53	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
54	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
54	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
54	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
54	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
55	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
55	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
55	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
55	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
56	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
56	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
56	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
56	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
57	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
57	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
57	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
57	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
58	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
58	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
58	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
58	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
59	1	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
59	2	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
59	3	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
59	4	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
60	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	Yellow	No	No	No
60	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	Yellow	No	No	No
60	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	Yellow	No	No	No
60	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	Yellow	No	No	No
61	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
61	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
61	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
61	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

62	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
62	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
62	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
62	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
63	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
63	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
63	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
63	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
64	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
64	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
64	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
64	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

Ped Detector Options (MM)6-3

Phase Ped Detector (Econolite)

Detector	Call Phase															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.
4	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.
5	.	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.
6	.	.	.	.	.	X	.	.	.	.	.	.	.	.	.	.
7	.	.	.	.	.	.	X	.	.	.	.	.	.	.	.	.
8	.	.	.	.	.	.	.	X	.	.	.	.	.	.	.	.
9	.	.	.	.	.	.	.	.	X	.	.	.	.	.	.	.
10	.	.	.	.	.	.	.	.	.	X	.	.	.	.	.	.
11	.	.	.	.	.	.	.	.	.	.	X	.	.	.	.	.
12	.	.	.	.	.	.	.	.	.	.	.	X	.	.	.	.
13	.	.	.	.	.	.	.	.	.	.	.	.	X	.	.	.
14	.	.	.	.	.	.	.	.	.	.	.	.	.	X	.	.
15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	X	.
16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	X

Waukesha (S67-0300 - S67-0444) - S67-0435 - STH 67 & Valley Rd

Detectors

Detectors Page 2

Log - Speed Detector Setup (MM)6-4

NTCIP Log Period: 90 ECPI Log Period: 15 Length Unit: Inch

Speed Detector	Local Detector	One/Two Detector	Vehicle Length	Trap Length	Enable Log
1	0	1	0	0	No
2	0	1	0	0	No
3	0	1	0	0	No
4	0	1	0	0	No
5	0	1	0	0	No
6	0	1	0	0	No
7	0	1	0	0	No
8	0	1	0	0	No
9	0	1	0	0	No
10	0	1	0	0	No
11	0	1	0	0	No
12	0	1	0	0	No
13	0	1	0	0	No
14	0	1	0	0	No
15	0	1	0	0	No
16	0	1	0	0	No

Vehicle Detector Diagnostics (MM)6-5

Plan	Detector	Counts	Act	Pres	Multiplier	Failed Time	Failed Call Delay
1	1	0	0	5	1	255	0
1	2	0	0	5	1	255	0
1	3	0	0	5	1	255	0
1	4	0	0	5	1	255	0
1	5	0	0	0	1	255	0
1	6	0	0	0	1	255	0
1	7	0	0	0	1	255	0
1	8	0	0	0	1	255	0
1	9	0	0	0	1	255	0
1	10	0	0	0	1	255	0
1	11	0	0	0	1	255	0
1	12	0	0	0	1	255	0
1	13	0	0	0	1	255	0
1	14	0	0	0	1	255	0
1	15	0	0	0	1	255	0
1	16	0	0	0	1	255	0
1	17	0	0	0	1	255	0
1	18	0	0	0	1	255	0
1	19	0	0	0	1	255	0
1	20	0	0	0	1	255	0
1	21	0	0	0	1	255	0
1	22	0	0	0	1	255	0
1	23	0	0	0	1	255	0
1	24	0	0	0	1	255	0
1	25	0	0	0	1	255	0
1	26	0	0	0	1	255	0
1	27	0	0	0	1	255	0
1	28	0	0	0	1	255	0
1	29	0	0	0	1	255	0
1	30	0	0	0	1	255	0
1	31	0	0	0	1	255	0
1	32	0	0	0	1	255	0
1	33	0	0	0	1	255	0

1	34	0	0	0	1	255	0
1	35	0	0	0	1	255	0
1	36	0	0	0	1	255	0
1	37	0	0	0	1	255	0
1	38	0	0	0	1	255	0
1	39	0	0	0	1	255	0
1	40	0	0	0	1	255	0
1	41	0	0	0	1	255	0
1	42	0	0	0	1	255	0
1	43	0	0	0	1	255	0
1	44	0	0	0	1	255	0
1	45	0	0	0	1	255	0
1	46	0	0	0	1	255	0
1	47	0	0	0	1	255	0
1	48	0	0	0	1	255	0
1	49	0	0	0	1	255	0
1	50	0	0	0	1	255	0
1	51	0	0	0	1	255	0
1	52	0	0	0	1	255	0
1	53	0	0	0	1	255	0
1	54	0	0	0	1	255	0
1	55	0	0	0	1	255	0
1	56	0	0	0	1	255	0
1	57	0	0	0	1	255	0
1	58	0	0	0	1	255	0
1	59	0	0	0	1	255	0
1	60	0	0	0	1	255	0
1	61	0	0	0	1	255	0
1	62	0	0	0	1	255	0
1	63	0	0	0	1	255	0
1	64	0	0	0	1	255	0
2	1	0	0	5	1	255	0
2	2	0	0	5	1	255	0
2	3	0	0	5	1	255	0
2	4	0	0	5	1	255	0
2	5	0	0	0	1	255	0
2	6	0	0	0	1	255	0
2	7	0	0	0	1	255	0
2	8	0	0	0	1	255	0
2	9	0	0	0	1	255	0
2	10	0	0	0	1	255	0
2	11	0	0	0	1	255	0
2	12	0	0	0	1	255	0
2	13	0	0	0	1	255	0
2	14	0	0	0	1	255	0
2	15	0	0	0	1	255	0
2	16	0	0	0	1	255	0
2	17	0	0	0	1	255	0
2	18	0	0	0	1	255	0
2	19	0	0	0	1	255	0
2	20	0	0	0	1	255	0
2	21	0	0	0	1	255	0
2	22	0	0	0	1	255	0
2	23	0	0	0	1	255	0
2	24	0	0	0	1	255	0
2	25	0	0	0	1	255	0
2	26	0	0	0	1	255	0
2	27	0	0	0	1	255	0
2	28	0	0	0	1	255	0
2	29	0	0	0	1	255	0
2	30	0	0	0	1	255	0
2	31	0	0	0	1	255	0
2	32	0	0	0	1	255	0
2	33	0	0	0	1	255	0
2	34	0	0	0	1	255	0
2	35	0	0	0	1	255	0
2	36	0	0	0	1	255	0
2	37	0	0	0	1	255	0

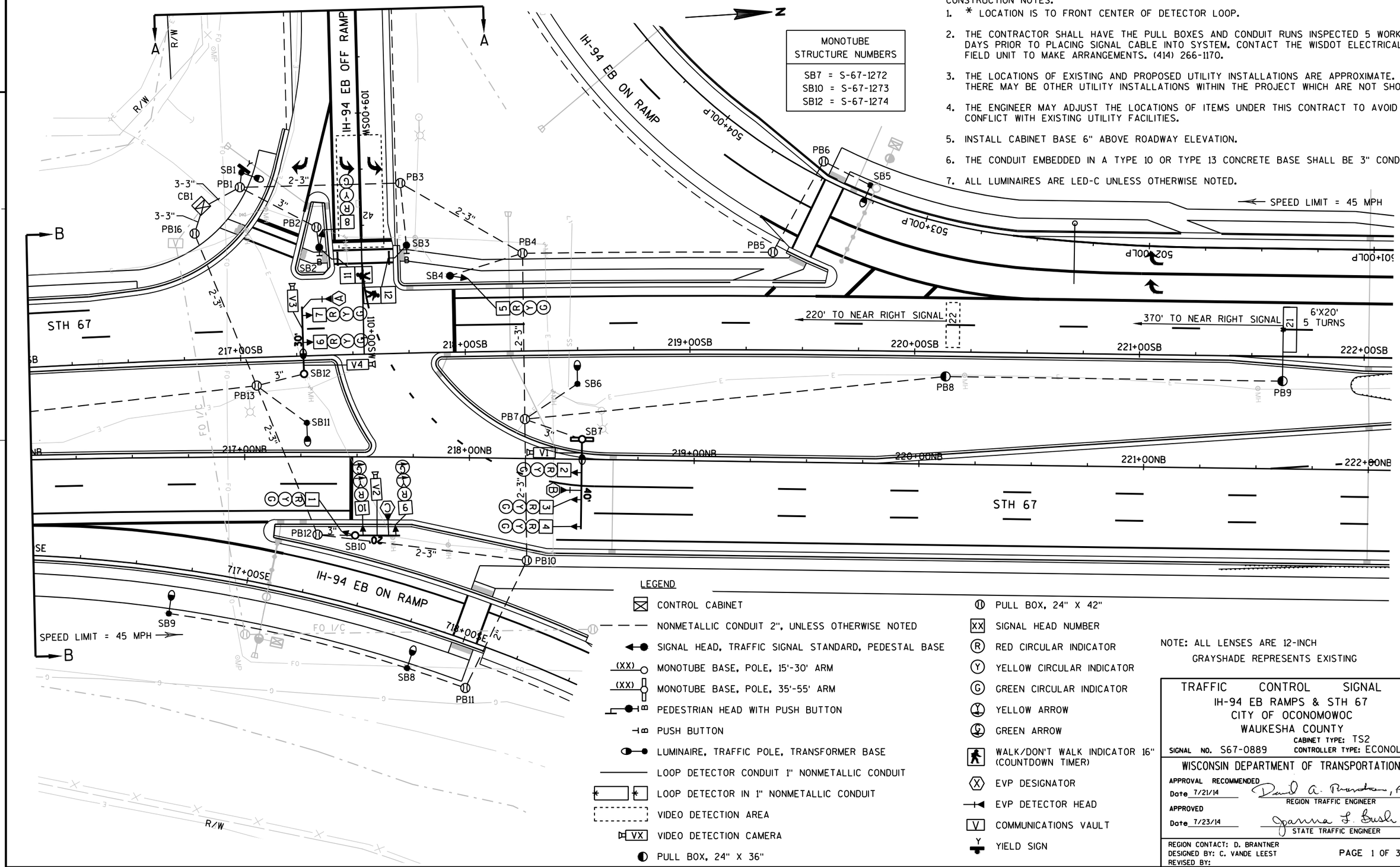
2	38	0	0	0	1	255	0
2	39	0	0	0	1	255	0
2	40	0	0	0	1	255	0
2	41	0	0	0	1	255	0
2	42	0	0	0	1	255	0
2	43	0	0	0	1	255	0
2	44	0	0	0	1	255	0
2	45	0	0	0	1	255	0
2	46	0	0	0	1	255	0
2	47	0	0	0	1	255	0
2	48	0	0	0	1	255	0
2	49	0	0	0	1	255	0
2	50	0	0	0	1	255	0
2	51	0	0	0	1	255	0
2	52	0	0	0	1	255	0
2	53	0	0	0	1	255	0
2	54	0	0	0	1	255	0
2	55	0	0	0	1	255	0
2	56	0	0	0	1	255	0
2	57	0	0	0	1	255	0
2	58	0	0	0	1	255	0
2	59	0	0	0	1	255	0
2	60	0	0	0	1	255	0
2	61	0	0	0	1	255	0
2	62	0	0	0	1	255	0
2	63	0	0	0	1	255	0
2	64	0	0	0	1	255	0
3	1	0	0	0	1	255	0
3	2	0	0	0	1	255	0
3	3	0	0	0	1	255	0
3	4	0	0	0	1	255	0
3	5	0	0	0	1	255	0
3	6	0	0	0	1	255	0
3	7	0	0	0	1	255	0
3	8	0	0	0	1	255	0
3	9	0	0	0	1	255	0
3	10	0	0	0	1	255	0
3	11	0	0	0	1	255	0
3	12	0	0	0	1	255	0
3	13	0	0	0	1	255	0
3	14	0	0	0	1	255	0
3	15	0	0	0	1	255	0
3	16	0	0	0	1	255	0
3	17	0	0	0	1	255	0
3	18	0	0	0	1	255	0
3	19	0	0	0	1	255	0
3	20	0	0	0	1	255	0
3	21	0	0	0	1	255	0
3	22	0	0	0	1	255	0
3	23	0	0	0	1	255	0
3	24	0	0	0	1	255	0
3	25	0	0	0	1	255	0
3	26	0	0	0	1	255	0
3	27	0	0	0	1	255	0
3	28	0	0	0	1	255	0
3	29	0	0	0	1	255	0
3	30	0	0	0	1	255	0
3	31	0	0	0	1	255	0
3	32	0	0	0	1	255	0
3	33	0	0	0	1	255	0
3	34	0	0	0	1	255	0
3	35	0	0	0	1	255	0
3	36	0	0	0	1	255	0
3	37	0	0	0	1	255	0
3	38	0	0	0	1	255	0
3	39	0	0	0	1	255	0
3	40	0	0	0	1	255	0
3	41	0	0	0	1	255	0

3	42	0	0	0	1	255	0
3	43	0	0	0	1	255	0
3	44	0	0	0	1	255	0
3	45	0	0	0	1	255	0
3	46	0	0	0	1	255	0
3	47	0	0	0	1	255	0
3	48	0	0	0	1	255	0
3	49	0	0	0	1	255	0
3	50	0	0	0	1	255	0
3	51	0	0	0	1	255	0
3	52	0	0	0	1	255	0
3	53	0	0	0	1	255	0
3	54	0	0	0	1	255	0
3	55	0	0	0	1	255	0
3	56	0	0	0	1	255	0
3	57	0	0	0	1	255	0
3	58	0	0	0	1	255	0
3	59	0	0	0	1	255	0
3	60	0	0	0	1	255	0
3	61	0	0	0	1	255	0
3	62	0	0	0	1	255	0
3	63	0	0	0	1	255	0
3	64	0	0	0	1	255	0
4	1	0	0	0	1	255	0
4	2	0	0	0	1	255	0
4	3	0	0	0	1	255	0
4	4	0	0	0	1	255	0
4	5	0	0	0	1	255	0
4	6	0	0	0	1	255	0
4	7	0	0	0	1	255	0
4	8	0	0	0	1	255	0
4	9	0	0	0	1	255	0
4	10	0	0	0	1	255	0
4	11	0	0	0	1	255	0
4	12	0	0	0	1	255	0
4	13	0	0	0	1	255	0
4	14	0	0	0	1	255	0
4	15	0	0	0	1	255	0
4	16	0	0	0	1	255	0
4	17	0	0	0	1	255	0
4	18	0	0	0	1	255	0
4	19	0	0	0	1	255	0
4	20	0	0	0	1	255	0
4	21	0	0	0	1	255	0
4	22	0	0	0	1	255	0
4	23	0	0	0	1	255	0
4	24	0	0	0	1	255	0
4	25	0	0	0	1	255	0
4	26	0	0	0	1	255	0
4	27	0	0	0	1	255	0
4	28	0	0	0	1	255	0
4	29	0	0	0	1	255	0
4	30	0	0	0	1	255	0
4	31	0	0	0	1	255	0
4	32	0	0	0	1	255	0
4	33	0	0	0	1	255	0
4	34	0	0	0	1	255	0
4	35	0	0	0	1	255	0
4	36	0	0	0	1	255	0
4	37	0	0	0	1	255	0
4	38	0	0	0	1	255	0
4	39	0	0	0	1	255	0
4	40	0	0	0	1	255	0
4	41	0	0	0	1	255	0
4	42	0	0	0	1	255	0
4	43	0	0	0	1	255	0
4	44	0	0	0	1	255	0
4	45	0	0	0	1	255	0

4	46	0	0	0	1	255	0
4	47	0	0	0	1	255	0
4	48	0	0	0	1	255	0
4	49	0	0	0	1	255	0
4	50	0	0	0	1	255	0
4	51	0	0	0	1	255	0
4	52	0	0	0	1	255	0
4	53	0	0	0	1	255	0
4	54	0	0	0	1	255	0
4	55	0	0	0	1	255	0
4	56	0	0	0	1	255	0
4	57	0	0	0	1	255	0
4	58	0	0	0	1	255	0
4	59	0	0	0	1	255	0
4	60	0	0	0	1	255	0
4	61	0	0	0	1	255	0
4	62	0	0	0	1	255	0
4	63	0	0	0	1	255	0
4	64	0	0	0	1	255	0

Pedestrian Detector Diagnotics (MM)6-6

Plan	Detector	Counts	Act	Pres	Multiplier



MONOTUBE STRUCTURE NUMBERS
SB7 = S-67-1272
SB10 = S-67-1273
SB12 = S-67-1274

CONSTRUCTION NOTES:

1. * LOCATION IS TO FRONT CENTER OF DETECTOR LOOP.
2. THE CONTRACTOR SHALL HAVE THE PULL BOXES AND CONDUIT RUNS INSPECTED 5 WORKING DAYS PRIOR TO PLACING SIGNAL CABLE INTO SYSTEM. CONTACT THE WISDOT ELECTRICAL FIELD UNIT TO MAKE ARRANGEMENTS. (414) 266-1170.
3. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
4. THE ENGINEER MAY ADJUST THE LOCATIONS OF ITEMS UNDER THIS CONTRACT TO AVOID CONFLICT WITH EXISTING UTILITY FACILITIES.
5. INSTALL CABINET BASE 6" ABOVE ROADWAY ELEVATION.
6. THE CONDUIT EMBEDDED IN A TYPE 10 OR TYPE 13 CONCRETE BASE SHALL BE 3" CONDUIT.
7. ALL LUMINAIRES ARE LED-C UNLESS OTHERWISE NOTED.

LEGEND

- CONTROL CABINET
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- (XX) MONOTUBE BASE, POLE, 15'-30' ARM
- (XX) MONOTUBE BASE, POLE, 35'-55' ARM
- PEDESTRIAN HEAD WITH PUSH BUTTON
- PUSH BUTTON
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
- LOOP DETECTOR CONDUIT 1" NONMETALLIC CONDUIT
- LOOP DETECTOR IN 1" NONMETALLIC CONDUIT
- VIDEO DETECTION AREA
- VX VIDEO DETECTION CAMERA
- PULL BOX, 24" X 36"
- PULL BOX, 24" X 42"
- XX SIGNAL HEAD NUMBER
- (R) RED CIRCULAR INDICATOR
- (Y) YELLOW CIRCULAR INDICATOR
- (G) GREEN CIRCULAR INDICATOR
- YELLOW ARROW
- GREEN ARROW
- WALK/DON'T WALK INDICATOR 16" (COUNTDOWN TIMER)
- (X) EVP DESIGNATOR
- EVP DETECTOR HEAD
- V COMMUNICATIONS VAULT
- Y YIELD SIGN

NOTE: ALL LENSES ARE 12-INCH
GRAYSHADE REPRESENTS EXISTING

TRAFFIC CONTROL SIGNAL
IH-94 EB RAMPS & STH 67
CITY OF OCONOMOWOC
WAUKESHA COUNTY
CABINET TYPE: TS2
SIGNAL NO. S67-0889 CONTROLLER TYPE: ECONOLITE

WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVAL RECOMMENDED
Date 7/21/14 David A. Brantner, P.E.
REGION TRAFFIC ENGINEER

APPROVED
Date 7/23/14 Joanna L. Bush
STATE TRAFFIC ENGINEER

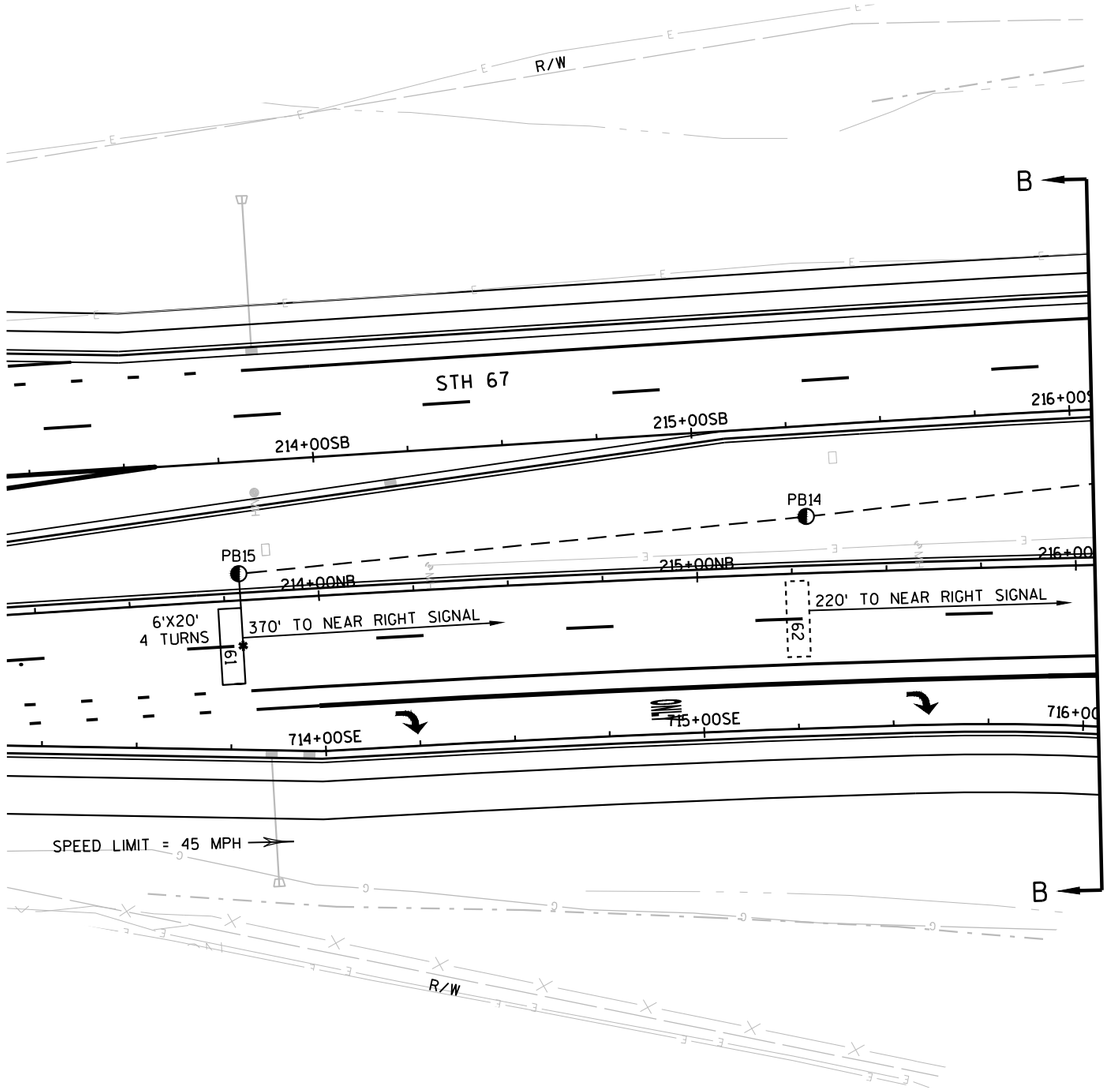
REGION CONTACT: D. BRANTNER
DESIGNED BY: C. VANDE LEEST
REVISED BY:

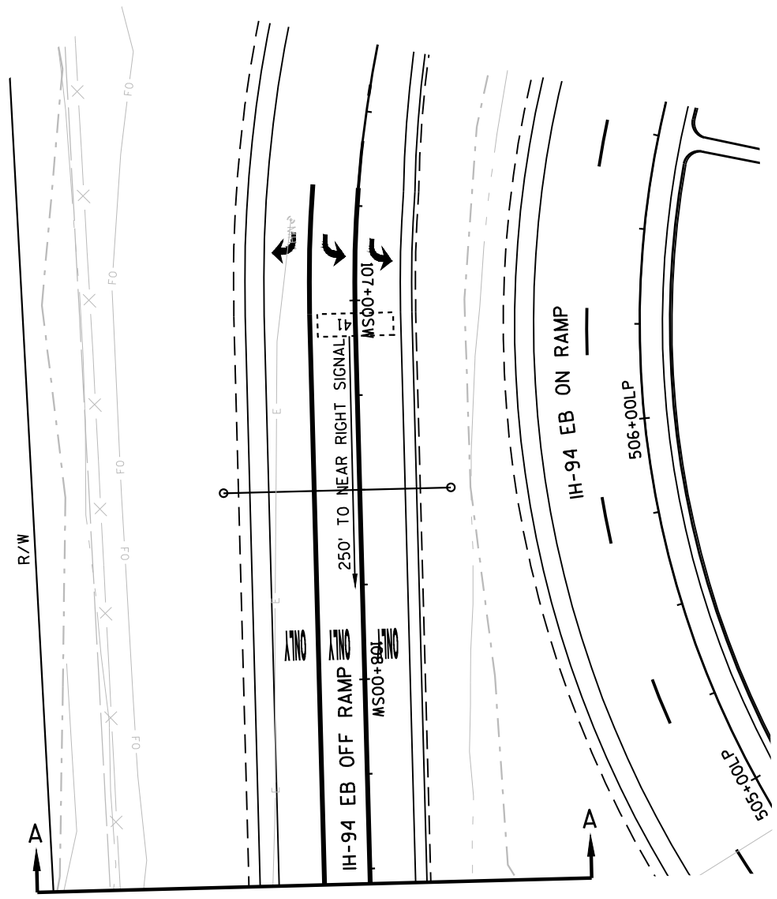
PAGE 1 OF 3

PROJECT NO: 1060-30-70	HWY: STH 67	COUNTY: WAUKESHA	TRAFFIC SIGNAL PLAN	SHEET -----	E

FILE NAME : N:\PDS\C3D\CAD\30300800\024001_SP.DWG PLOT DATE : 7/24/2014 8:08 AM PLOT BY : VANDE LEEST, CYNTHIA PLOT NAME : ---------- PLOT SCALE : 1" = 40'_XREF

WISDOT/CADDS SHEET 42





TRAFFIC CONTROL SIGNAL
IH-94 EB RAMPS & STH 67
CITY OF OCONOMOWOC
WAUKESHA COUNTY

SIGNAL NO. S67-0889

REGION CONTACT: D. BRANTNER
DESIGNED BY: C. VANDE LEEST
REVISED BY:

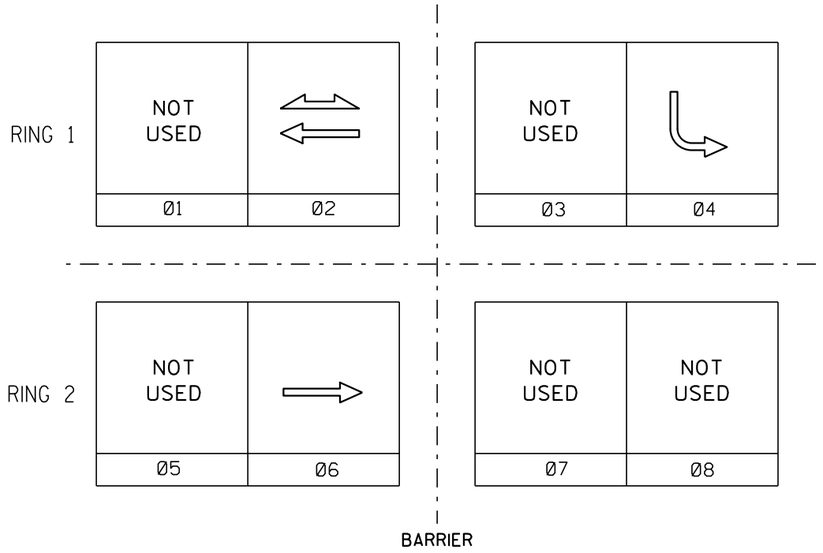
PAGE 2 OF 3

PROJECT NO: 1060-30-70	HWY: STH 67	COUNTY: WAUKESHA	TRAFFIC SIGNAL PLAN	SHEET -----	E

FILE NAME : N:\PDS\C3D\CAD\30300800\024001_SP.DWG PLOT DATE : 7/24/2014 8:09 AM PLOT BY : VANDE LEEST, CYNTHIA PLOT NAME : ---------- PLOT SCALE : 1" = 40'_XREF

WISDOT/CADDS SHEET 42

	HEAD NUMBERS	FLASH
Ø1		
Ø2	5, 6, 7	R
Ø3		
Ø4	8, 9, 10	R
Ø5		
Ø6	1, 2, 3, 4	R
Ø7		
Ø8		
Ø2P	11, 12	
Ø4P		
Ø6P		
Ø8P		
OLE		
OLF		
OLG		
OLH		



CONTROLLER LOGIC

PHASE NUMBER	PHASE LOCKING	DUAL ENTRY W / Ø	PHASE RECALL	PHASE ACTIVE
1				
2	X	6	MIN	x
3				
4				x
5				
6	X	2	MIN	x
7				
8				

TYPE OF INTERCONNECT/COMMUNICATION	
NONE	
CLOSED LOOP	
TWISTED PAIR*	
FIBER OPTIC*	
FIBER OPTIC (ETHERNET)	x
RADIO	

TYPE OF COORDINATION	
NONE	
TBC	x
TRAFFIC RESPONSIVE	
ADAPTIVE	
*LOCATION OF MASTER CONTROLLER NO:	
SIGNAL SYSTEM #:	SS-00-50

TYPE OF LIGHTING	
BY OTHER AGENCY	
IN TRAFFIC SIGNAL CABINET	x
IN SEPARATE DOT LIGHTING CABINET	

TYPE OF PRE-EMPT	
NONE	
RAILROAD	
EMERGENCY VEHICLE	x
GTT	x
TOMAR	
HARDWIRE	
OTHER	
LIFT BRIDGE	
QUEUE DETECTOR	

DETECTOR LOGIC

DETECTOR INPUT	3	1	7	5	11	9	15	13
PLAN LOOP DETECTOR #(S)	21							
CALLED PHASE	2							
CALL OPTION	X							
DELAY TIME								
EXTEND OPTION	X							
EXTEND TIME								
USE ADDED INITIAL	X							
CROSS SWITCH PHASE								

19	17	23	21	27	25	31	29	DETECTOR INPUT
22	42							PLAN LOOP DETECTOR #(S)
2	4							CALLED PHASE
X	X							CALL OPTION
								DELAY TIME
X	X							EXTEND OPTION
								EXTEND TIME
X								USE ADDED INITIAL
								CROSS SWITCH PHASE

DETECTOR INPUT	4	2	8	6	12	10	16	14
PLAN LOOP DETECTOR #(S)	61							
CALLED PHASE	6							
CALL OPTION	X							
DELAY TIME								
EXTEND OPTION	X							
EXTEND TIME								
USE ADDED INITIAL	X							
CROSS SWITCH PHASE								

20	18	24	22	28	26	32	30	DETECTOR INPUT
41	61							PLAN LOOP DETECTOR #(S)
	6							CALLED PHASE
	X							CALL OPTION
								DELAY TIME
X	X							EXTEND OPTION
X								EXTEND TIME
	X							USE ADDED INITIAL
								CROSS SWITCH PHASE

EMERGENCY VEHICLE PREEMPTION SEQUENCE

EMERGENCY VEHICLE DETECTOR	A	B	C
MOVEMENT	← →	← →	↓
PHASE	2+6	6+2	4

AFTER PREEMPTION SEQUENCE 2+6 OR 6+2,
CONTROLLER SHALL RETURN TO PHASES 2+6.
AFTER PREEMPTION SEQUENCE 4,
CONTROLLER SHALL RETURN TO PHASE 4.

IH-94 EB RAMPS & STH 67
CITY OF OCONOMOWOC
WAUKESHA COUNTY

SIGNAL NO. S67-0889 CABINET TYPE: TS2

CONTROLLER TYPE: ECONOLITE

DATE 07/14 PAGE NO. 3 OF 3

PROJECT NO: 1060-30-70	HWY: STH 67	COUNTY: WAUKESHA	SEQUENCE OF OPERATIONS	SHEET	E

FILE NAME : N:\PDS\C3D\CAD\30300800\024001_S0889\024001_sp_seq.dgn PLOT DATE : 11-JUL-2014 09:22 PLOT BY : dotcmv PLOT NAME : S-400,seq,rev2 PLOT SCALE : 40.000373:1

WISDOT/CADDS SHEET 42

Timing Cover Sheet for Signal: s0889 HWY: 94 and STH 67

Date:	12/8/2016	Changes Made By:	P. Virk
Signal No	S0889 **S889**	Highway:	94
County:	WAU	Local Hwy:	EB Ramp
Controller:	ECONOLITE	Location:	STH 67
School:	None	Audible Ped:	No

Pre-emption

Emergency:	Yes	Type:	3M Option	Phases:	2+6,4	EVP Maintenance Id:	0663-42-08
Railroad:	No	Type:		Phases:		EVP Contact:	Public Safety Director, David Beguh
						Community:	Oconomowoc, City of
						Contact Phone:	(262) 567-4401
						Alternate Phone:	

Coordination

System No: SS0050 Controller IP Address:

CoordType: TBC Comments:

Dip Switch Setting

DS ☑

TBC: Yes

Tone:

Closed Loop:

Hardwire:

	Length	Split 1	Split 2	Split 3	Split 4
Cycle 1=	45	M-F 6AM to 9AM			
Cycle 2=	80	M-F 9AM to 3PM, 7PM to 9PM Sa-Su 9AM to 9PM			
Cycle 3=	50	M-F 3PM to 7PM			
Cycle 4=					

Prom Replacement

Signal Plan No

Pre-empt: No

Part of a Local System: No

Local Contact:

Phone Number:

Overlaps

Overlap A= Phases:

Overlap B= Phases:

Overlap C= Phases:

Overlap D= Phases:

Flash

Emergency: R-R

Off Peak: No

Off Peak Times

Detector Timing

Dilemna Zone Yes Video Detection: No

Detector Number	41													
Stretch	*													
Right Turn Delay														
Left Turn Delay														

Unique Features

* See Programming

Timing Changes Log for Signal s0889 on Hwy 94 in WAUKESHA County

STH 67

Date Computer Changed	Date Change Made in Field	Timing Change	Reason for Change	Change By	Temp Timing
12/02/16	12/8/2016	Permanent timings Added - Coordination Timings	Improve Operation	P. Virk	No
09/27/16	9/29/2016	Construction Timings	Permanent Signal Turned On	P. Virk	Yes
03/26/15	3/26/2015	Permanent Signal turned off	Temporary Signal turned on under project 1060-30-70/3030-08-70	D. Brantner	Yes
04/29/14	5/2/2014	Updated System Timing	Signal Timing Review	P. Virk	
03/07/12		Converted timing to Marc NX.		J. Gates	No
12/10/09	12/18/2009	Updated system timing.	Citizen complaint.	D. Brantner	No
11/18/09	11/12/2009	Changed startup time to 10 sec.	Updated to current practice.	D. Brantner	No
11/03/09		Changed min gap to 3.5 sec. Changed force off to cycle. Changed correction to shortway plus.	Wanted to match the force off and correction to the rest of the system.	D. Brantner	No
03/20/09		Updated system timing.	Added NBLT to S0890.	J. Dimmer	No
02/09/07		DST	DST	S. Pierce	No

Timing Changes Log for Signal s0889 on Hwy 94 in WAUKESHA County

STH 67

Date Computer Changed	Date Change Made in Field	Timing Change	Reason for Change	Change By	Temp Timing
10/04/04	10/4/2004	Blk times for ph 1 set to "0" in C1S1 and C1S2. That time was then given to ph 2 in both timing plans. Ph 1 was taken off initialization and EVP dwell status made "0" or NO. Ph 6 min green lowered to 10s. Changes made per Don S.	Construction complete and NBLT has been eliminated.	J. Haug	No
08/04/04	8/4/2004	Don Schultz removed NB LT 5 section heads and placed 3 section head with ahead arrow on SB 9	existing I-94 EB on ramp is closed off	M. Treazise	Yes
06/17/04		Increased min green for phase 6 from 10 sec to 25 sec	Loops 61 & 62 will be removed because of signal reconstruction project	M. Treazise	Yes
02/19/04	2/20/2004	Turned system off at 7 pm.	Traffic lighter than expected.	J. Haug	No
11/21/03		Added stretch to loop 11.	To make the NBLT more sluggish.	J. Haug	No
11/06/03		New System Timing.	New signal put into system along STH 67.	J. Haug	No
				P. Virk	Yes

Waukesha (S67-0649 - S67-0889) - S67-0889 - IH-94 EB Ramps & STH 67

Configuration Phase Sequence

Controller Sequence (MM)1-1-1

Hardware Alternate Sequence Enable: No

Phase Ring Sequence.....(Note: Sequences identical to the prior one are not printed)

	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
Sequence 1																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 2																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 3																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 4																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 5																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 6																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 7																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 8																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 9																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 10																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 11																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 12																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 13																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 14																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 15																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 16																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.

Phases In Use / Exclusive PED (MM)1-2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phases in Use		X		X		X										
Exclusive PED																

Phase Compatibility (MM)1-1-2

Phase	Compatible Phase
1	5

1	6
2	5
2	6
3	7
3	8
4	7
4	8
9	11
9	12
10	11
10	12
13	15
13	16
14	15
14	16

Phase and Overlap Descriptions

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Description		SB		EB		NB										
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**L**	**K**	**L**	**M**	**N**	**O**
Description																

Administration (MM)1-7-1

Enable CU/Cabinet Interlock CRC	No
Request Download Controller Data	No
Controller Database CRC	0000
Enable Automatic Backup to Datakey	Yes

Backup Prevent (MM)1-1-3

	Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Timing /	1		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Backup	2	.		.	.	.	.	.	.	.	.	.	.	.	.	.	.
	3	.	.		.	.	.	.	.	.	.	.	.	.	.	.	.
	4	.	.	.		.	.	.	.	.	.	.	.	.	.	.	.
	5	.	.	.	.		.	.	.	.	.	.	.	.	.	.	.
	6	.	.	.	.	.		.	.	.	.	.	.	.	.	.	.
	7	.	.	.	.	.	.		.	.	.	.	.	.	.	.	.
	8	.	.	.	.	.	.	.		.	.	.	.	.	.	.	.
	9	.	.	.	.	.	.	.	.		.	.	.	.	.	.	.
	10	.	.	.	.	.	.	.	.	.		.	.	.	.	.	.
	11	.	.	.	.	.	.	.	.	.	.		.	.	.	.	.
	12	.	.	.	.	.	.	.	.	.	.	.		.	.	.	.
	13	.	.	.	.	.	.	.	.	.	.	.	.		.	.	.
	14	.	.	.	.	.	.	.	.	.	.	.	.	.		.	.
	15	.	.	.	.	.	.	.	.	.	.	.	.	.	.		.
	16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	

Simultaneous Gap (MM)1-1-4

	Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	1		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	2	.		.	.	.	X	.	.	.	.	.	.	.	.	.	.
	3	.	.		.	.	.	.	.	.	.	.	.	.	.	.	.
	4	.	.	.		.	.	.	X	.	.	.	.	.	.	.	.
	5	.	.	.	.		.	.	.	.	.	.	.	.	.	.	.
Phase	6	.	X	.	.	.		.	.	.	.	.	.	.	.	.	.
Must	7	.	.	.	.	.	.		.	.	.	.	.	.	.	.	.
Gap	8	.	.	.	X	.	.	.		.	.	.	.	.	.	.	.
With	9	.	.	.	.	.	.	.	.		.	.	.	.	.	.	.
Phase	10	.	.	.	.	.	.	.	.	.		.	.	.	.	.	.
	11	.	.	.	.	.	.	.	.	.	.		.	.	.	.	.
	12	.	.	.	.	.	.	.	.	.	.	.		.	.	.	.
	13	.	.	.	.	.	.	.	.	.	.	.	.		.	.	.
	14	.	.	.	.	.	.	.	.	.	.	.	.	.		.	.
	15	.	.	.	.	.	.	.	.	.	.	.	.	.	.		.
	16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
	Disable	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Load Switch Assignments (MMU Channel) (MM)1-3

	Phase / Overlap	Type	Dimming				Power Up				Auto		Flash Together
			Red	Yellow	Green	Dark	Auto	Red	Yellow	Dark	Red	Yellow	
1	1	V				+	X				X		X
2	2	V				+	X				X		
3	3	V				+	X				X		X
4	4	V				+	X				X		
5	5	V				-	X				X		
6	6	V				-	X				X		X
7	7	V				-	X				X		
8	8	V				-	X				X		X
9	2	P				+	X						
10	4	P				+	X						
11	6	P				-	X						
12	8	P				-	X						
13	1	O				+	X				X		X
14	2	O				-	X				X		X
15	3	O				+	X				X		
16	4	O				-	X				X		

Waukesha (S67-0649 - S67-0889) - S67-0889 - IH-94 EB Ramps & STH 67

Configuration Port 1 (SDLC)

SDLC Options (MM)1-4-1

BIU	1	2	3	4	5	6	7	8
Term and Facility Enable	X	X						
Detector Rack Enable	X	X						

Enable TS2/MMU Type Cabinet: Yes
Enable MMU Extended Status: Yes
Enable SDLC Stop Time: No
Enable 3 Critical RFE's Lockup: Yes

MMU Program (MM)1-4-2

Channel Can Serve with Channel	
Channel 1	**Channel 2**
2	6
2	9
6	9

Color Check Enable (MM)1-4-3

Enable Color Check: Yes

MMU Channel	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Green	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Yellow	X	X	X	X	X	X	X	X					X	X	X	X
Red		X		X		X		X								

Secondary To Secondary Addressing (MM)1-4-4

ID	1	2	3	4	5	6	7	8	MMU
Term and Facility Enable									

ID	1	2	3	4	5	6	7	8	Diag
Detector Rack Enable									

Diagonstics (Test Fixture) Enable: No

Waukesha (S67-0649 - S67-0889) - S67-0889 - IH-94 EB Ramps & STH 67

Configuration Communications

Ethernet Port Configuration (MM)1-5-1

Controller IP: 172.22.82.50
Subnet Mask: 255.255.255.0
Default Gateway IP: 172.22.82.1
Server IP: 0.0.0.0

NTCIP Parameters (MM)1-5-5

Backup Time: 0
UDP Port: 501
Ethernet Priority: 1
Port 2 Priority: 4
Port 3A Priority: 2
Port 3B Priority: 3

Port Configuration (MM)1-5-2 to 1-5-4

Port	2 (C50S)	3A (C21S)	3B (C22S)
Protocol	NTCIP	NTCIP	Terminal
Enable	No	Yes	No
Data Rate	9600	19.2K	1200
Data Parity Stop	8 N 1	8 N 1	8 0 1
Modem Setup String	None	None	None
User String			
Comm Port Address	1	1	0
System Detector 9-1	0	0	0
Telemetry Response Delay	0.0	0.0	0.0
Duplex Half/Full	Full	Full	Full
Flow Control	Yes	Yes	Yes
AB3418 NTCIP Group Address	0	0	0
AB3418 NTCIP Single Flag Enable	No	No	No
RTS to CTS Delay	0.0	0.0	3.0
RTS Turn Off Delay	0.0	0.0	2.0
Droupout Time	10	10	10
Early RTS	No	No	No
Telemetry Mode	FSK	FSK	FSK
Rail Road	0	0	0
Rail Road Line	0	0	0
ATCS Group	0	0	0
Wayside Device	0	0	0
ATCS Device	0	0	0
Wayside SubNode	0	0	0
ATCS SubNode	0	0	0

ECPIP Parameters (MM)1-5-6

Controller Address: 0
Expanded System Detector Address: 0

Local System Detector

Local System Detector	Number

Waukesha (S67-0649 - S67-0889) - S67-0889 - IH-94 EB Ramps & STH 67

Configuration Logging/Display

Event Logging (MM)1-6-1

Critical RFE's	Yes	3 Critical RFE's in 24 Hours	Yes
MMU Flash Faults	Yes	Local Flash Faults	Yes
Non-Critical RFE's (Det/Test)	Yes	Detector Errors	Yes
Coordination Errors	Yes	Controller Download	Yes
Preempt	Yes	TSP	Yes
Power On/Off	Yes	Low Battery	Yes
Access	Yes	Data Change	Yes
Online/Offline	Yes		

Alarm Log	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Enable Logging	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Display Options (MM)1-7-2

Key Click Enable:	Yes
Backlight Enable:	Yes
LED Mode:	Single Color
Main Status Display Mode:	Basic
Screen Format:	Advanced
Trans Mode Pop-up Disable:	No

Sign On (MM)8-5

Sign On Message Line 1: INTERSECTION NAME:
Sign On Message Line 2: WisDOT Data Base

Waukesha (S67-0649 - S67-0889) - S67-0889 - IH-94 EB Ramps & STH 67

Logic Processor Page 1
Statement Control (MM)1-8-1

LP	Statement Control

Waukesha (S67-0649 - S67-0889) - S67-0889 - IH-94 EB Ramps & STH 67

Logic Processor Page 2

Logic Statements (MM)1-8-2

Waukesha (S67-0649 - S67-0889) - S67-0889 - IH-94 EB Ramps & STH 67

Controller Timing Plan (MM)2-1

Plan 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction		SB		EB		NB										
Min Green	0	15	0	10	0	15	0	0	0	0	0	0	0	0	0	0
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	0.0	3.3	0.0	1.5	0.0	3.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	0	40	0	30	0	40	0	0	0	0	0	0	0	0	0	0
Max 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	0.0	4.3	0.0	4.9	0.0	4.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	0.0	1.5	0.0	3.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	1.2	0.0	0.0	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	21	0	10	0	21	0	0	0	0	0	0	0	0	0	0
Time B4	0	21	0	30	0	21	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	18	0	0	0	18	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	3.5	0.0	1.5	0.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction		SB		EB		NB										
Min Green	5	15	5	10	5	15	5	10	0	0	0	0	0	0	0	0
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	3.0	7.0	3.0	5.0	3.0	7.0	3.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	15	45	15	35	15	45	15	35	0	0	0	0	0	0	0	0
Max 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 3

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Direction		**SB**		**EB**		**NB**										
Min Green	5	15	5	10	5	15	5	10	0	0	0	0	0	0	0	0
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	3.0	7.0	3.0	5.0	3.0	7.0	3.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	15	45	15	35	15	45	15	35	0	0	0	0	0	0	0	0
Max 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 4

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Direction		**SB**		**EB**		**NB**										
Min Green	5	15	5	10	5	15	5	10	0	0	0	0	0	0	0	0
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	3.0	7.0	3.0	5.0	3.0	7.0	3.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	15	45	15	35	15	45	15	35	0	0	0	0	0	0	0	0
Max 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Waukesha (S67-0649 - S67-0889) - S67-0889 - IH-94 EB Ramps & STH 67

Controller Overlaps

Vehicle Overlaps (MM)2-2

Overlap	Type	Lag Green	Yellow	Red	Advance Green

Phases

Overlap	Phase	Included	Protect	Ped Protect	Not Overlap	Modifier	Lag X Phase	Lag 2 Phase	Flash Green

PPLT FYA

Overlap	Protected Phase	Permissive Phase	Flash Arrow Output	Flash Arrow Channel	FYA Delay	FYA Clearance	Special Function Disable

Guaranteed Minimum Time Data (MM) 2-4

Phase Time Data

Phase	Min Green	Walk	Ped Clear	Yellow	Red Clear	Overlap Green
A01	1	0	7	3.0	0.0	1
B02	1	0	7	3.0	0.0	1
C03	1	0	7	3.0	0.0	1
D04	1	0	7	3.0	0.0	1
E05	1	0	7	3.0	0.0	1
F06	1	0	7	3.0	0.0	1
G07	1	0	7	3.0	0.0	1
H08	1	0	7	3.0	0.0	1
I09	1	0	7	3.0	0.0	1
J10	1	0	7	3.0	0.0	1
K11	1	0	7	3.0	0.0	1
L12	1	0	7	3.0	0.0	1
M13	1	0	7	3.0	0.0	1
N14	1	0	7	3.0	0.0	1
O15	1	0	7	3.0	0.0	1
P16	1	0	7	3.0	0.0	1

Waukesha (S67-0649 - S67-0889) - S67-0889 - IH-94 EB Ramps & STH 67

Controller **Pedestrian Overlaps**
Pedestrian Overlaps (MM) 2-3

Included Phase	Ped Overlap

Waukesha (S67-0649 - S67-0889) - S67-0889 - IH-94 EB Ramps & STH 67

Controller Start/Fash (MM) 2-5

Startup

Phase	Phase Setting
2	G
6	G

Overlap
A
B
C
D

Flash > Mon: No
Flash Time: 0
All Red: 6
Power Start Sequence: 1
MUTCD Enabled: Yes
MUTCD Yellow to Green: No

Automatic Flash

Entry Phase
2
6

Exit Phase
2
6

Overlap Exit
A
B
C
D

Flash > Mon: No
Exit Flash Interval: G
Minimum Auto Flash: 8
Minimumin Recall: No
Cycle Through Phase: No

Waukesha (S67-0649 - S67-0889) - S67-0889 - IH-94 EB Ramps & STH 67

Controller Options

Controller Options (MM)2-6-1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Flashing Green Phase																
Guaranteed Passage																
Non Act 1																
Non Act 2																
Dual Entry		X				X										
Conditional Service																
Conditional Reservice																
Ped Reservice																
Rest In Walk																
Flashing Walk																
Ped Clear Yellow																
Ped Clear Red																
IGRN + Veh Ext																

Ped Clear Protect: On Red Revert: 2.0 MUTCD 3 Seconds Don't Walk: No

Act Pre-Time (MM)2-7

Pre-Time Mode Enable: No Free Input Enables Pre-Timed: Yes

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Pre-Timed Phase																

Phase Recall Options (MM)2-8

Plan 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector		X				X										
Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
AI Calc																

Plan 2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector		X				X										
Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
AI Calc																

Plan 3

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector		X				X										
Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
AI Calc																

Plan 4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector		X				X										

Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
AI Calc																

Waukesha (S67-0649 - S67-0889) - S67-0889 - IH-94 EB Ramps & STH 67

Coordination Options

Coordination Options (MM)3-1

Manual Pattern	Auto	ECPI Coord	Yes
System Source	TBC	System Format	STD
Splits In	Seconds	Offsets In	Seconds
Transition	Add	Max Select	MAXINH
Dwell/Add Time	0		
Delay Coord Walk to LZ	No	Force Off	Fixed
Offset Reference	Lead	Use Ped Time	No
Ped Recall	No	Ped Reservice	No
Local Zero Override	No	FO Added Initial Green	Yes
Re-Sync Count	3	Multisync	No

Auto Perm Minimum Green (Seconds) (MM)3-4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Minimum Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Split Demand (MM)3-5

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Demand 1																
Demand 2																

Demand	1	2
Detector	0	0
Call Time (Sec)	0	0
Cycle Count	0	0

Waukesha (S67-0649 - S67-0889) - S67-0889 - IH-94 EB Ramps & STH 67

Coordination Pattern Data
Pattern Data (MM)3-2

Pattern - 1

Split Pattern	1	TS2 (Pat-Off)	0-1	Splits in	Seconds
Cycle	45	Std (COS)	0	Offsets in	Seconds
Offset Value	3s	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description		SB		EB		NB										
Splits (Split Pat 1)	0	25	0	20	0	25	0	0	0	0	0	0	0	0	0	0
Preference 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Preference 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Disp.	-	0	0	0
Split Sum	45s	25s	0s	0s

Misc. Data

Veh. Permissive 1	0	Veh. Permissive 2	0	Veh. Permissive 2 Disp.	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern Data

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coordinated Phases		X				X										
Vehicle Recalls																
Ped Recalls																
Max Recalls																
Phase Omit																
Special Function Output																

Pattern - 2

Split Pattern	2	TS2 (Pat-Off)	0-2	Splits in	Seconds
Cycle	80	Std (COS)	0	Offsets in	Seconds
Offset Value	24s	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description		SB		EB		NB										
Splits (Split Pat 2)	0	50	0	30	0	50	0	0	0	0	0	0	0	0	0	0
Preference 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Preference 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Disp.	-	0	0	0
Split Sum	80s	50s	0s	0s

Misc. Data

Veh. Permissive 1	0	Veh. Permissive 2	0	Veh. Permissive 2 Disp.	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern Data

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coordinated Phases		X				X										
Vehicle Recalls																
Ped Recalls																
Max Recalls																
Phase Omit																
Special Function Output																

Pattern - 3

Split Pattern	3	TS2 (Pat-Off)	0-3	Splits in	Seconds
Cycle	50	Std (COS)	0	Offsets in	Seconds
Offset Value	18s	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description		SB		EB		NB										
Splits (Split Pat 3)	0	28	0	22	0	28	0	0	0	0	0	0	0	0	0	0
Preference 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Preference 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Disp.	-	0	0	0
Split Sum	50s	28s	0s	0s

Misc. Data

Veh. Permissive 1	0	Veh. Permissive 2	0	Veh. Permissive 2 Disp.	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern Data

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coordinated Phases		X				X										
Vehicle Recalls																
Ped Recalls																
Max Recalls																
Phase Omit																
Special Function Output																

Waukesha (S67-0649 - S67-0889) - S67-0889 - IH-94 EB Ramps & STH 67

Preemptor

Preempt Plan (MM)4-1

Plan 3

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Track Clear Vehicle																
Track Clear Overlap																
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Vehicle		X				X										
Dwell Ped																
Dwell Overlap																
Cycling Vehicle																
Cycling Ped																
Cycling Overlap																
Exit Phase		X				X										
Exit Calls																
Special Funciton																

Enable	Yes	Preempt Override	No	Interlock Enable	No
Detector Lock	Yes	Delay	1	Inhibit	0
Override Flash	No	Duration	0	CLR > GRN	No
Term Overlap Asap	No	PC Through Yellow	No	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	Flash Exit Color	Green	Exit Option	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Preempt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	5	0	5	25.5	25.5
	Min Grn	**Ext Grn**	**Max Grn**	**Yellow**	**Red**
Track Clear	0	0	0	25.5	25.5
	Min Dwell	**Pmt Ext**	**Max Time**	**Yellow**	**Red**
Dwell / Cycle-Exit	10	5.0	0	25.5	25.5

Preempt Active Out	On	Preempt Active Dwell	No
Other Priority Preempt	On	Non-Priority Preempt	F1
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Pri Return % Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Track Clear Vehicle																
Track Clear Overlap																
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Vehicle		X				X										
Dwell Ped																
Dwell Overlap																
Cycling Vehicle																
Cycling Ped																
Cycling Overlap																
Exit Phase		X				X										
Exit Calls																
Special Funciton																

Enable	Yes	Preempt Override	No	Interlock Enable	No
Detector Lock	Yes	Delay	1	Inhibit	0
Override Flash	No	Duration	0	CLR > GRN	No
Term Overlap Asap	No	PC Through Yellow	No	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	Flash Exit Color	Green	Exit Option	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Preempt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	5	0	5	25.5	25.5
	Min Grn	**Ext Grn**	**Max Grn**	**Yellow**	**Red**
Track Clear	0	0	0	25.5	25.5
	Min Dwell	**Pmt Ext**	**Max Time**	**Yellow**	**Red**
Dwell / Cycle-Exit	10	5.0	0	25.5	25.5

Preempt Active Out	On	Preempt Active Dwell	No
Other Priority Preempt	On	Non-Priority Preempt	F1
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Pri Return % Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 5

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**
Track Clear Vehicle																
Track Clear Overlap																
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Vehicle				X												
Dwell Ped																
Dwell Overlap																
Cycling Vehicle																
Cycling Ped																
Cycling Overlap																
Exit Phase				X												
Exit Calls																
Special Funciton																

Enable	Yes	Preempt Override	No	Interlock Enable	No
Detector Lock	Yes	Delay	1	Inhibit	0
Override Flash	No	Duration	0	CLR > GRN	No
Term Overlap Asap	No	PC Through Yellow	No	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	Flash Exit Color	Green	Exit Option	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Preempt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	5	0	5	25.5	25.5
	Min Grn	**Ext Grn**	**Max Grn**	**Yellow**	**Red**
Track Clear	0	0	0	25.5	25.5
	Min Dwell	**Pmt Ext**	**Max Time**	**Yellow**	**Red**
Dwell / Cycle-Exit	10	5.0	0	25.5	25.5

Preempt Active Out	On	Preempt Active Dwell	No
Other Priority Preempt	On	Non-Priority Preempt	F1
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Pri Return % Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Waukesha (S67-0649 - S67-0889) - S67-0889 - IH-94 EB Ramps & STH 67

Time Base **Clock/Calendar**
Clock/Calendar Options (MM)5-1

Enable Action Plan:	0
Sync Reference Time:	12:00 AM
Sync Reference:	Reference Time
Day Light Savings:	USDLS
Time Reset Input Set Time:	3:30:00
Standard Time From GMT:	0

Waukesha (S67-0649 - S67-0889) - S67-0889 - IH-94 EB Ramps & STH 67

Time Base Action Plan
Action Plan (MM)5-2

Action Plan - 1

Pattern	1	Override System	No
Timing Plan	1	Sequence	0
Veh Det Plan	1	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 2

Pattern	2	Override System	No
Timing Plan	1	Sequence	0
Veh Det Plan	1	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 3

Pattern	3	Override System	No
Timing Plan	1	Sequence	0
Veh Det Plan	1	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 99

Pattern	255 - FLSH	Override System	No
Timing Plan	0	Sequence	0
Veh Det Plan	0	Detector Log	None
Flash	Yes	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 100

Pattern	254 - FREE	Override System	No
Timing Plan	1	Sequence	0
Veh Det Plan	1	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Waukesha (S67-0649 - S67-0889) - S67-0889 - IH-94 EB Ramps & STH 67

Time Base Day Plan/Schedule
Day Plan (MM)5-3

Day Plan - 1

Event	Action Plan	Start Time
1	100	12:01 AM
2	2	9:00 AM
3	100	9:00 PM

Day Plan - 2

Event	Action Plan	Start Time
1	100	12:01 AM
2	1	6:00 AM
3	2	9:00 AM
4	3	3:00 PM
5	2	7:00 PM
6	100	9:00 PM

Schedule (MM)5-4

Schedule Number - 1

Day Plan Number: 1

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	X	X	X	X	X	X	X	X	X	X	X	X

Day of Week	Sun	Mon	Tue	Wed	Thur	Fri	Sat
	X						X

Day of Month	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

Schedule Number - 2

Day Plan Number: 2

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	X	X	X	X	X	X	X	X	X	X	X	X

Day of Week	Sun	Mon	Tue	Wed	Thur	Fri	Sat
		X	X	X	X	X	

Day of Month	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

Waukesha (S67-0649 - S67-0889) - S67-0889 - IH-94 EB Ramps & STH 67

Time Base Exceptions
Exception Day Program (MM)5-5

Day	Fixed/Float	Month	Day of Week/Month	Week of Month/Year	Day Plan
37	FIXED	255	255	65535	255
38	FIXED	255	255	65535	255
39	FIXED	255	255	65535	255
40	FIXED	255	255	65535	255
41	FIXED	255	255	65535	255
42	FIXED	255	255	65535	255
43	FIXED	255	255	65535	255
44	FIXED	255	255	65535	255
45	FIXED	255	255	65535	255
46	FIXED	255	255	65535	255
47	FIXED	255	255	65535	255
48	FIXED	255	255	65535	255
49	FIXED	255	255	65535	255
50	FIXED	255	255	65535	255
51	FIXED	255	255	65535	255
52	FIXED	255	255	65535	255
53	FIXED	255	255	65535	255
54	FIXED	255	255	65535	255
55	FIXED	255	255	65535	255
56	FIXED	255	255	65535	255
57	FIXED	255	255	65535	255
58	FIXED	255	255	65535	255
59	FIXED	255	255	65535	255
60	FIXED	255	255	65535	255
61	FIXED	255	255	65535	255
62	FIXED	255	255	65535	255
63	FIXED	255	255	65535	255
64	FIXED	255	255	65535	255
65	FIXED	255	255	65535	255
66	FIXED	255	255	65535	255
67	FIXED	255	255	65535	255
68	FIXED	255	255	65535	255
69	FIXED	255	255	65535	255
70	FIXED	255	255	65535	255
71	FIXED	255	255	65535	255
72	FIXED	255	255	65535	255
73	FIXED	255	255	65535	255
74	FIXED	255	255	65535	255
75	FIXED	255	255	65535	255
76	FIXED	255	255	65535	255
77	FIXED	255	255	65535	255
78	FIXED	255	255	65535	255
79	FIXED	255	255	65535	255
80	FIXED	255	255	65535	255
81	FIXED	255	255	65535	255
82	FIXED	255	255	65535	255
83	FIXED	255	255	65535	255
84	FIXED	255	255	65535	255
85	FIXED	255	255	65535	255
86	FIXED	255	255	65535	255
87	FIXED	255	255	65535	255
88	FIXED	255	255	65535	255
89	FIXED	255	255	65535	255
90	FIXED	255	255	65535	255

Waukesha (S67-0649 - S67-0889) - S67-0889 - IH-94 EB Ramps & STH 67

Detectors

Detectors Page 1

Vehicle Detectors Setup (MM)6-1

Vehicle Plan	Detector Number	Called	Type
2	1	1	N
2	2	2	N
2	3	3	N
2	4	4	N
2	5	5	N
2	6	6	N
2	7	7	N
2	8	8	N
2	60	2	N
2	60	4	N
2	60	6	N
2	60	8	N
3	1	1	N
3	2	2	N
3	3	3	N
3	4	4	N
3	5	5	N
3	6	6	N
3	7	7	N
3	8	8	N
3	60	2	N
3	60	4	N
3	60	6	N
3	60	8	N
4	1	1	N
4	2	2	N
4	3	3	N
4	4	4	N
4	5	5	N
4	6	6	N
4	7	7	N
4	8	8	N
4	60	2	N
4	60	4	N
4	60	6	N
4	60	8	N

Vehicle Detector Setup (MM)6-2 continued

Detector Number	Type	TS2 Detector	Detector Description
1	N-NTCIP	Yes	
2	N-NTCIP	Yes	
3	N-NTCIP	Yes	
4	N-NTCIP	Yes	
5	N-NTCIP	Yes	
6	N-NTCIP	Yes	
7	N-NTCIP	Yes	
8	N-NTCIP	Yes	
9	N-NTCIP	Yes	
10	N-NTCIP	Yes	
11	N-NTCIP	Yes	
12	N-NTCIP	Yes	
13	N-NTCIP	Yes	
14	N-NTCIP	Yes	
15	N-NTCIP	Yes	
16	N-NTCIP	Yes	
17	N-NTCIP	Yes	
18	N-NTCIP	Yes	

19	N-NTCIP	Yes	
20	N-NTCIP	Yes	
21	N-NTCIP	Yes	
22	N-NTCIP	Yes	
23	N-NTCIP	Yes	
24	N-NTCIP	Yes	
25	N-NTCIP	Yes	
26	N-NTCIP	Yes	
27	N-NTCIP	Yes	
28	N-NTCIP	Yes	
29	N-NTCIP	Yes	
30	N-NTCIP	Yes	
31	N-NTCIP	Yes	
32	N-NTCIP	Yes	
33	N-NTCIP	Yes	
34	N-NTCIP	Yes	
35	N-NTCIP	Yes	
36	N-NTCIP	Yes	
37	N-NTCIP	Yes	
38	N-NTCIP	Yes	
39	N-NTCIP	Yes	
40	N-NTCIP	Yes	
41	N-NTCIP	Yes	
42	N-NTCIP	Yes	
43	N-NTCIP	Yes	
44	N-NTCIP	Yes	
45	N-NTCIP	Yes	
46	N-NTCIP	Yes	
47	N-NTCIP	Yes	
48	N-NTCIP	Yes	
49	N-NTCIP	Yes	
50	N-NTCIP	Yes	
51	N-NTCIP	Yes	
52	N-NTCIP	Yes	
53	N-NTCIP	Yes	
54	N-NTCIP	Yes	
55	N-NTCIP	Yes	
56	N-NTCIP	Yes	
57	N-NTCIP	Yes	
58	N-NTCIP	Yes	
59	N-NTCIP	Yes	
60	N-NTCIP	Yes	
61	N-NTCIP	Yes	
62	N-NTCIP	Yes	
63	N-NTCIP	Yes	
64	N-NTCIP	Yes	

Vehicle Detector Setup (MM)6-2 continued

Det Num	Veh Det Plan	Phase	ECPI Log	Call Option	Delay Time	Ext Option	Extend Time / Passage Time	Queue Lim / Discon. Time	Use Added Initial	Cross Switch Phase	Lock In	NTCIP Vol.	NTCIP Occ.	Pmt Queue Delay
1	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
1	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
1	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
1	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
2	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
2	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
2	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
2	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
3	1	2	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
3	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
3	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
3	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
4	1	6	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
4	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
4	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
4	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

5	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
5	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
5	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
5	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
6	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
6	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
6	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
6	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
7	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
7	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
7	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
7	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
8	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
8	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
8	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
8	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
9	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
9	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
9	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
9	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
10	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
10	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
10	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
10	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
11	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
11	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
11	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
11	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
12	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
12	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
12	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
12	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
13	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
13	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
13	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
13	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
14	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
14	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
14	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
14	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
15	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
15	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
15	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
15	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
16	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
16	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
16	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
16	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
17	1	4	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
17	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
17	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
17	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
18	1	6	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
18	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
18	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
18	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
19	1	2	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
19	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
19	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
19	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
20	1	4	No	No	0.0	Passage	4.2	0	Yes	0	None	No	No	No
20	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
20	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
20	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
21	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
21	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
21	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
21	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

22	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
22	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
22	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
22	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
23	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
23	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
23	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
23	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
24	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
24	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
24	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
24	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
25	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
25	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
25	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
25	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
26	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
26	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
26	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
26	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
27	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
27	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
27	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
27	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
28	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
28	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
28	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
28	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
29	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
29	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
29	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
29	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
30	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
30	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
30	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
30	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
31	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
31	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
31	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
31	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
32	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
32	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
32	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
32	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
33	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
33	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
33	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
33	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
34	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
34	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
34	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
34	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
35	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
35	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
35	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
35	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
36	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
36	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
36	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
36	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
37	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
37	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
37	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
37	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
38	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
38	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
38	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
38	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

39	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
39	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
39	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
39	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
40	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
40	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
40	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
40	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
41	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
41	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
41	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
41	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
42	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
42	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
42	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
42	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
43	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
43	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
43	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
43	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
44	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
44	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
44	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
44	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
45	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
45	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
45	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
45	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
46	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
46	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
46	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
46	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
47	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
47	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
47	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
47	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
48	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
48	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
48	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
48	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
49	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
49	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
49	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
49	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
50	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
50	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
50	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
50	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
51	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
51	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
51	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
51	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
52	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
52	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
52	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
52	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
53	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
53	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
53	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
53	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
54	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
54	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
54	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
54	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
55	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
55	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
55	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
55	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

56	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
56	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
56	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
56	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
57	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
57	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
57	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
57	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
58	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
58	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
58	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
58	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
59	1	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
59	2	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
59	3	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
59	4	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
60	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	Yellow	No	No	No
60	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	Yellow	No	No	No
60	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	Yellow	No	No	No
60	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	Yellow	No	No	No
61	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
61	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
61	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
61	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
62	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
62	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
62	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
62	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
63	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
63	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
63	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
63	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
64	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
64	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
64	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
64	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

Ped Detector Options (MM)6-3

Phase Ped Detector (Econolite)

Detector	Call Phase															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.
4	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.
5	.	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.
6	.	.	.	.	.	X	.	.	.	.	.	.	.	.	.	.
7	.	.	.	.	.	.	X	.	.	.	.	.	.	.	.	.
8	.	.	.	.	.	.	.	X	.	.	.	.	.	.	.	.
9	.	.	.	.	.	.	.	.	X	.	.	.	.	.	.	.
10	.	.	.	.	.	.	.	.	.	X	.	.	.	.	.	.
11	.	.	.	.	.	.	.	.	.	.	X	.	.	.	.	.
12	.	.	.	.	.	.	.	.	.	.	.	X	.	.	.	.
13	.	.	.	.	.	.	.	.	.	.	.	.	X	.	.	.
14	.	.	.	.	.	.	.	.	.	.	.	.	.	X	.	.
15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	X	.
16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	X

Waukesha (S67-0649 - S67-0889) - S67-0889 - IH-94 EB Ramps & STH 67

Detectors

Detectors Page 2

Log - Speed Detector Setup (MM)6-4

NTCIP Log Period: 15 ECPI Log Period: 15 Length Unit: Inch

Speed Detector	Local Detector	One/Two Detector	Vehicle Length	Trap Length	Enable Log
1	0	1	0	0	No
2	0	1	0	0	No
3	0	1	0	0	No
4	0	1	0	0	No
5	0	1	0	0	No
6	0	1	0	0	No
7	0	1	0	0	No
8	0	1	0	0	No
9	0	1	0	0	No
10	0	1	0	0	No
11	0	1	0	0	No
12	0	1	0	0	No
13	0	1	0	0	No
14	0	1	0	0	No
15	0	1	0	0	No
16	0	1	0	0	No

Vehicle Detector Diagnostics (MM)6-5

Plan	Detector	Counts	Act	Pres	Multiplier	Failed Time	Failed Call Delay
1	1	0	0	0	1	255	0
1	2	0	0	0	1	255	0
1	3	0	0	0	1	255	0
1	4	0	0	0	1	255	0
1	5	0	0	0	1	255	0
1	6	0	0	0	1	255	0
1	7	0	0	0	1	255	0
1	8	0	0	0	1	255	0
1	9	0	0	0	1	255	0
1	10	0	0	0	1	255	0
1	11	0	0	0	1	255	0
1	12	0	0	0	1	255	0
1	13	0	0	0	1	255	0
1	14	0	0	0	1	255	0
1	15	0	0	0	1	255	0
1	16	0	0	0	1	255	0
1	17	0	0	0	1	255	0
1	18	0	0	0	1	255	0
1	19	0	0	0	1	255	0
1	20	0	0	0	1	255	0
1	21	0	0	0	1	255	0
1	22	0	0	0	1	255	0
1	23	0	0	0	1	255	0
1	24	0	0	0	1	255	0
1	25	0	0	0	1	255	0
1	26	0	0	0	1	255	0
1	27	0	0	0	1	255	0
1	28	0	0	0	1	255	0
1	29	0	0	0	1	255	0
1	30	0	0	0	1	255	0
1	31	0	0	0	1	255	0
1	32	0	0	0	1	255	0
1	33	0	0	0	1	255	0

1	34	0	0	0	1	255	0
1	35	0	0	0	1	255	0
1	36	0	0	0	1	255	0
1	37	0	0	0	1	255	0
1	38	0	0	0	1	255	0
1	39	0	0	0	1	255	0
1	40	0	0	0	1	255	0
1	41	0	0	0	1	255	0
1	42	0	0	0	1	255	0
1	43	0	0	0	1	255	0
1	44	0	0	0	1	255	0
1	45	0	0	0	1	255	0
1	46	0	0	0	1	255	0
1	47	0	0	0	1	255	0
1	48	0	0	0	1	255	0
1	49	0	0	0	1	255	0
1	50	0	0	0	1	255	0
1	51	0	0	0	1	255	0
1	52	0	0	0	1	255	0
1	53	0	0	0	1	255	0
1	54	0	0	0	1	255	0
1	55	0	0	0	1	255	0
1	56	0	0	0	1	255	0
1	57	0	0	0	1	255	0
1	58	0	0	0	1	255	0
1	59	0	0	0	1	255	0
1	60	0	0	0	1	255	0
1	61	0	0	0	1	255	0
1	62	0	0	0	1	255	0
1	63	0	0	0	1	255	0
1	64	0	0	0	1	255	0
2	1	0	0	0	1	255	0
2	2	0	0	0	1	255	0
2	3	0	0	0	1	255	0
2	4	0	0	0	1	255	0
2	5	0	0	0	1	255	0
2	6	0	0	0	1	255	0
2	7	0	0	0	1	255	0
2	8	0	0	0	1	255	0
2	9	0	0	0	1	255	0
2	10	0	0	0	1	255	0
2	11	0	0	0	1	255	0
2	12	0	0	0	1	255	0
2	13	0	0	0	1	255	0
2	14	0	0	0	1	255	0
2	15	0	0	0	1	255	0
2	16	0	0	0	1	255	0
2	17	0	0	0	1	255	0
2	18	0	0	0	1	255	0
2	19	0	0	0	1	255	0
2	20	0	0	0	1	255	0
2	21	0	0	0	1	255	0
2	22	0	0	0	1	255	0
2	23	0	0	0	1	255	0
2	24	0	0	0	1	255	0
2	25	0	0	0	1	255	0
2	26	0	0	0	1	255	0
2	27	0	0	0	1	255	0
2	28	0	0	0	1	255	0
2	29	0	0	0	1	255	0
2	30	0	0	0	1	255	0
2	31	0	0	0	1	255	0
2	32	0	0	0	1	255	0
2	33	0	0	0	1	255	0
2	34	0	0	0	1	255	0
2	35	0	0	0	1	255	0
2	36	0	0	0	1	255	0
2	37	0	0	0	1	255	0

2	38	0	0	0	1	255	0
2	39	0	0	0	1	255	0
2	40	0	0	0	1	255	0
2	41	0	0	0	1	255	0
2	42	0	0	0	1	255	0
2	43	0	0	0	1	255	0
2	44	0	0	0	1	255	0
2	45	0	0	0	1	255	0
2	46	0	0	0	1	255	0
2	47	0	0	0	1	255	0
2	48	0	0	0	1	255	0
2	49	0	0	0	1	255	0
2	50	0	0	0	1	255	0
2	51	0	0	0	1	255	0
2	52	0	0	0	1	255	0
2	53	0	0	0	1	255	0
2	54	0	0	0	1	255	0
2	55	0	0	0	1	255	0
2	56	0	0	0	1	255	0
2	57	0	0	0	1	255	0
2	58	0	0	0	1	255	0
2	59	0	0	0	1	255	0
2	60	0	0	0	1	255	0
2	61	0	0	0	1	255	0
2	62	0	0	0	1	255	0
2	63	0	0	0	1	255	0
2	64	0	0	0	1	255	0
3	1	0	0	0	1	255	0
3	2	0	0	0	1	255	0
3	3	0	0	0	1	255	0
3	4	0	0	0	1	255	0
3	5	0	0	0	1	255	0
3	6	0	0	0	1	255	0
3	7	0	0	0	1	255	0
3	8	0	0	0	1	255	0
3	9	0	0	0	1	255	0
3	10	0	0	0	1	255	0
3	11	0	0	0	1	255	0
3	12	0	0	0	1	255	0
3	13	0	0	0	1	255	0
3	14	0	0	0	1	255	0
3	15	0	0	0	1	255	0
3	16	0	0	0	1	255	0
3	17	0	0	0	1	255	0
3	18	0	0	0	1	255	0
3	19	0	0	0	1	255	0
3	20	0	0	0	1	255	0
3	21	0	0	0	1	255	0
3	22	0	0	0	1	255	0
3	23	0	0	0	1	255	0
3	24	0	0	0	1	255	0
3	25	0	0	0	1	255	0
3	26	0	0	0	1	255	0
3	27	0	0	0	1	255	0
3	28	0	0	0	1	255	0
3	29	0	0	0	1	255	0
3	30	0	0	0	1	255	0
3	31	0	0	0	1	255	0
3	32	0	0	0	1	255	0
3	33	0	0	0	1	255	0
3	34	0	0	0	1	255	0
3	35	0	0	0	1	255	0
3	36	0	0	0	1	255	0
3	37	0	0	0	1	255	0
3	38	0	0	0	1	255	0
3	39	0	0	0	1	255	0
3	40	0	0	0	1	255	0
3	41	0	0	0	1	255	0

3	42	0	0	0	1	255	0
3	43	0	0	0	1	255	0
3	44	0	0	0	1	255	0
3	45	0	0	0	1	255	0
3	46	0	0	0	1	255	0
3	47	0	0	0	1	255	0
3	48	0	0	0	1	255	0
3	49	0	0	0	1	255	0
3	50	0	0	0	1	255	0
3	51	0	0	0	1	255	0
3	52	0	0	0	1	255	0
3	53	0	0	0	1	255	0
3	54	0	0	0	1	255	0
3	55	0	0	0	1	255	0
3	56	0	0	0	1	255	0
3	57	0	0	0	1	255	0
3	58	0	0	0	1	255	0
3	59	0	0	0	1	255	0
3	60	0	0	0	1	255	0
3	61	0	0	0	1	255	0
3	62	0	0	0	1	255	0
3	63	0	0	0	1	255	0
3	64	0	0	0	1	255	0
4	1	0	0	0	1	255	0
4	2	0	0	0	1	255	0
4	3	0	0	0	1	255	0
4	4	0	0	0	1	255	0
4	5	0	0	0	1	255	0
4	6	0	0	0	1	255	0
4	7	0	0	0	1	255	0
4	8	0	0	0	1	255	0
4	9	0	0	0	1	255	0
4	10	0	0	0	1	255	0
4	11	0	0	0	1	255	0
4	12	0	0	0	1	255	0
4	13	0	0	0	1	255	0
4	14	0	0	0	1	255	0
4	15	0	0	0	1	255	0
4	16	0	0	0	1	255	0
4	17	0	0	0	1	255	0
4	18	0	0	0	1	255	0
4	19	0	0	0	1	255	0
4	20	0	0	0	1	255	0
4	21	0	0	0	1	255	0
4	22	0	0	0	1	255	0
4	23	0	0	0	1	255	0
4	24	0	0	0	1	255	0
4	25	0	0	0	1	255	0
4	26	0	0	0	1	255	0
4	27	0	0	0	1	255	0
4	28	0	0	0	1	255	0
4	29	0	0	0	1	255	0
4	30	0	0	0	1	255	0
4	31	0	0	0	1	255	0
4	32	0	0	0	1	255	0
4	33	0	0	0	1	255	0
4	34	0	0	0	1	255	0
4	35	0	0	0	1	255	0
4	36	0	0	0	1	255	0
4	37	0	0	0	1	255	0
4	38	0	0	0	1	255	0
4	39	0	0	0	1	255	0
4	40	0	0	0	1	255	0
4	41	0	0	0	1	255	0
4	42	0	0	0	1	255	0
4	43	0	0	0	1	255	0
4	44	0	0	0	1	255	0
4	45	0	0	0	1	255	0

4	46	0	0	0	1	255	0
4	47	0	0	0	1	255	0
4	48	0	0	0	1	255	0
4	49	0	0	0	1	255	0
4	50	0	0	0	1	255	0
4	51	0	0	0	1	255	0
4	52	0	0	0	1	255	0
4	53	0	0	0	1	255	0
4	54	0	0	0	1	255	0
4	55	0	0	0	1	255	0
4	56	0	0	0	1	255	0
4	57	0	0	0	1	255	0
4	58	0	0	0	1	255	0
4	59	0	0	0	1	255	0
4	60	0	0	0	1	255	0
4	61	0	0	0	1	255	0
4	62	0	0	0	1	255	0
4	63	0	0	0	1	255	0
4	64	0	0	0	1	255	0

Pedestrian Detector Diagnotics (MM)6-6

Plan	Detector	Counts	Act	Pres	Multiplier

SB22
Type 5 Pole with 6' Luminaire

SB 17
Future Near Right Signal

SB18
V4 installed on the pole shaft

3 - HDPE 2-INCH (RUN THROUGH CONDUITS OVER BOX CULVERT). INSTALL ONE ADD'L 3" SCH. 80 CONDUIT OVER BOX CULVERT (SEE WAF062R1)

2 - HDPE 2-INCH (RUN THROUGH CONDUITS OVER BOX CULVERT)

WAF067R1

PB27A (24X42-INCH)
269+30NB, 15' LT

SB12, SB4
Twin Luminaire

SB23
Type 5 Pole with 6' Luminaire

PB27
24X42-INCH

NO CONDUIT FROM PB15 TO PB27

SB10
Eliminate the south luminaire and put it on SB12

LEGEND

- CONTROL CABINET
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDE
- (XX) MONOTUBE BASE, POLE, 15'-30' ARM
- (XX) MONOTUBE BASE, POLE, 35'-55' ARM
- PEDESTRIAN HEAD WITH PUSH BUTTON
- PUSH BUTTON
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
- LOOP DETECTOR CONDUIT 1" NONMETALLIC CONDUIT
- LOOP DETECTOR IN 1" NONMETALLIC CONDUIT

- VIDEO DETECTION AREA
- VX VIDEO DETECTION CAMERA
- PULL BOX, 24" X 36"
- PULL BOX, 24" X 42"
- XX SIGNAL HEAD NUMBER
- (R) RED CIRCULAR INDICATOR
- (Y) YELLOW CIRCULAR INDICATOR
- (G) GREEN CIRCULAR INDICATOR
- RED ARROW
- YELLOW ARROW
- GREEN ARROW
- WALK/DON'T WALK (COUNTDOWN TIMER)
- (X) EVP DESIGNATOR
- EVP DETECTOR HEAD
- V COMMUNICATIONS VAULT
- YIELD SIGN

NOTE: ALL LENSES ARE 12-INCH
GRAYSHADE REPRESENTS EXISTING

CONSTRUCTION NOTES:

1. * LOCATION IS TO FRONT CENTER OF DETECTOR LOOP.
2. THE CONTRACTOR SHALL HAVE THE PULL BOXES AND CONDUIT RUNS INSPECTED 5 WORKING DAYS PRIOR TO PLACING SIGNAL CABLE INTO SYSTEM. CONTACT THE WISDOT ELECTRICAL FIELD UNIT TO MAKE ARRANGEMENTS. (414) 266-1170.
3. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
4. THE ENGINEER MAY ADJUST THE LOCATIONS OF ITEMS UNDER THIS CONTRACT TO AVOID CONFLICT WITH EXISTING UTILITY FACILITIES.
5. INSTALL CABINET BASE 6" ABOVE ROADWAY ELEVATION.
6. THE CONDUIT EMBEDDED IN A TYPE 10 OR TYPE 13 CONCRETE BASE SHALL BE 3" CONDUIT.
7. ALL LUMINAIRES ARE LED-C UNLESS OTHERWISE NOTED.

MONOTUBE STRUCTURE NUMBERS

SB1	= S-67-1292
SB4	= S-67-1293
SB8	= S-67-1294
SB10	= S-67-1295
SB12	= S-67-1296
SB18	= S-67-1297

WAF067R1 REVISED 8/8/2016
WAF067 REVISED 5/12/2016

TRAFFIC CONTROL SIGNAL
STH 67 & OCONOMOWOC PKWY
CITY OF OCONOMOWOC
WAUKESHA COUNTY
CABINET TYPE: TS2
SIGNAL NO. S67-1298 CONTROLLER TYPE: ECONOLITE

WISCONSIN DEPARTMENT OF TRANSPORTATION
APPROVAL RECOMMENDED
Date 9/18/14 David A. Brantner, P.E. REGION TRAFFIC ENGINEER
APPROVED
Date 9/18/14 Joanna L. Bush STATE TRAFFIC ENGINEER

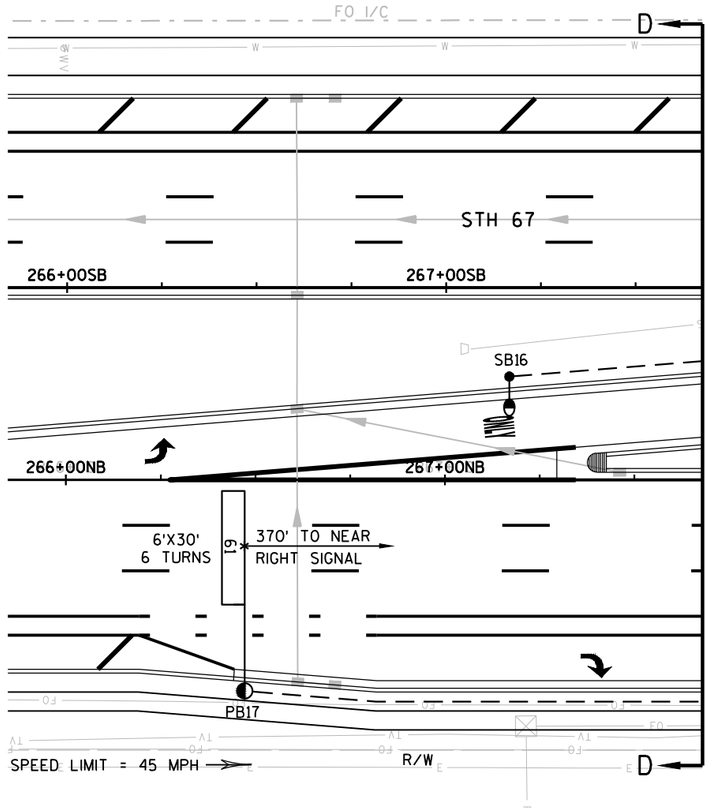
REGION CONTACT: D. BRANTNER
DESIGNED BY: C. VANDE LEEST
REVISED BY:

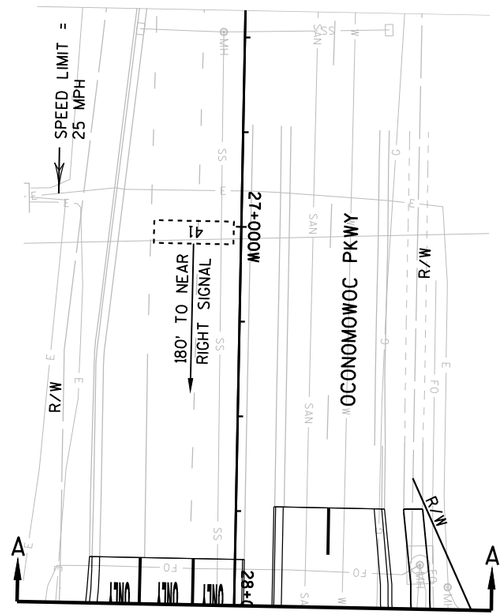
PAGE 1 OF 3

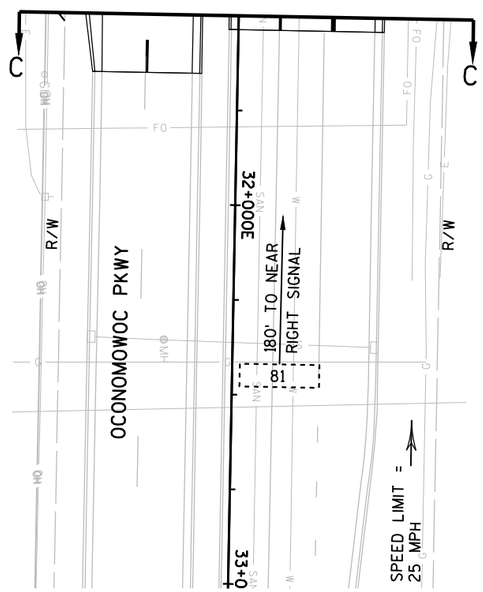
PROJECT NO: 3030-08-70	HWY: STH 67	COUNTY: WAUKESHA	TRAFFIC SIGNAL PLAN	SHEET 503A	E

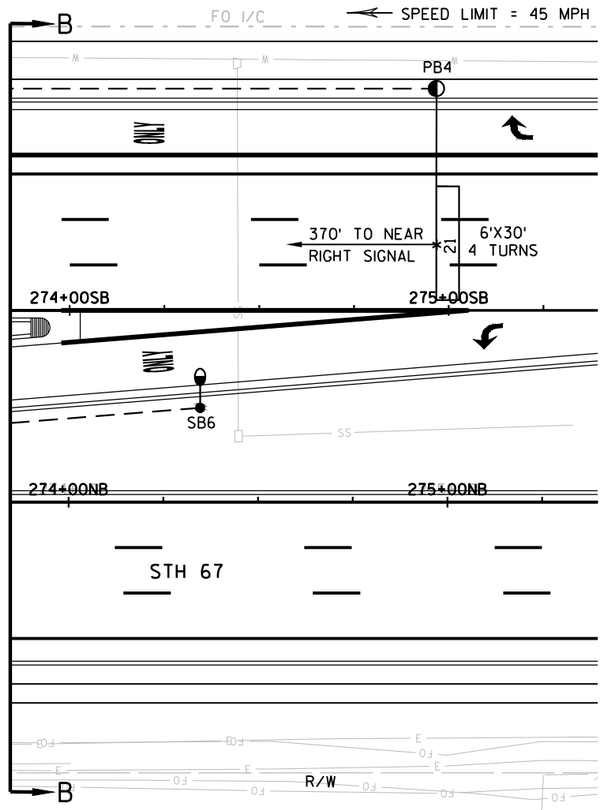
FILE NAME : N:\PDS\C3D\CAD\30300800\024005_SP.DWG PLOT DATE : 9/19/2014 11:46 AM PLOT BY : VANDE LEEST, CYNTHIA PLOT NAME : PLOT SCALE : 1" = 40'_XREF

WISDOT/CADDS SHEET 42









TRAFFIC CONTROL SIGNAL
STH 67 & OCONOMOWOC PKWY
CITY OF OCONOMOWOC
WAUKESHA COUNTY

SIGNAL NO. S67-1298

REGION CONTACT: D. BRANTNER
DESIGNED BY: C. VANDE LEEST
REVISED BY:

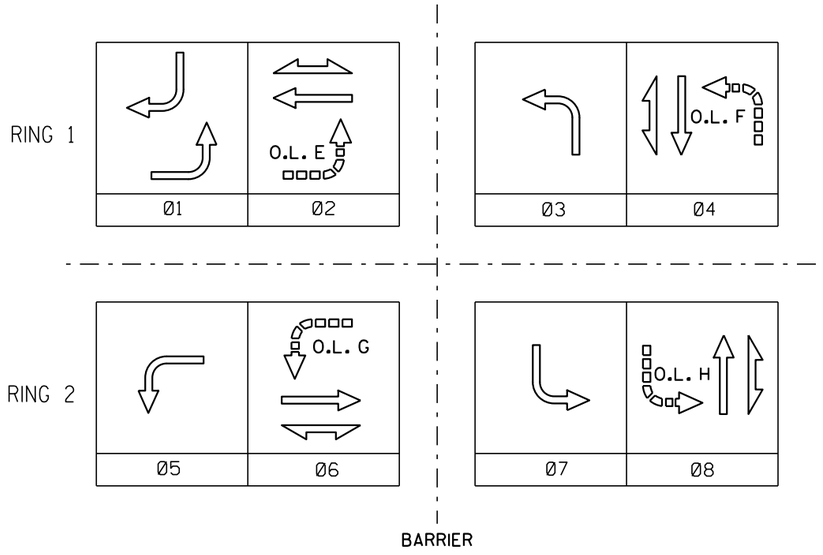
PAGE 2 OF 3

PROJECT NO: 3030-08-70	HWY: STH 67	COUNTY: WAUKESHA	TRAFFIC SIGNAL PLAN	SHEET _____	E

FILE NAME : N:\PDS\C3D\CAD\30300800\024005_SP.DWG PLOT DATE : 9/19/2014 11:47 AM PLOT BY : VANDE LEEST, CYNTHIA PLOT NAME : _____ PLOT SCALE : 1" = 40'_XREF

WISDOT/CADDS SHEET 42

	HEAD NUMBERS	FLASH
Ø1	5, 6, 23, 24	-
Ø2	7, 8, 9, 10	R
Ø3	16, 17	-
Ø4	18, 19, 20	R
Ø5	11, 12	-
Ø6	1, 2, 3, 4	R
Ø7	21, 22	-
Ø8	13, 14, 15	R
Ø2P	29, 30, 35, 36	
Ø4P	25, 26, 27, 28	
Ø6P	33, 34	
Ø8P	31, 32	
OLE	5, 6	R
OLF	16, 17	R
OLG	11, 12	R
OLH	21, 22	R



CONTROLLER LOGIC

PHASE NUMBER	PHASE LOCKING	DUAL ENTRY W / Ø	PHASE RECALL	PHASE ACTIVE
1		6		x
2	X	6	MIN	x
3		8		x
4		8		x
5		2		x
6	X	2	MIN	x
7		4		x
8		4		x

TYPE OF INTERCONNECT/COMMUNICATION	
NONE	
CLOSED LOOP	
TWISTED PAIR*	
FIBER OPTIC*	
FIBER OPTIC (ETHERNET)	x
RADIO	

TYPE OF COORDINATION	
NONE	
TBC	x
TRAFFIC RESPONSIVE	
ADAPTIVE	
*LOCATION OF MASTER CONTROLLER NO:	
SIGNAL SYSTEM #:	SS-00-50

TYPE OF LIGHTING	
BY OTHER AGENCY	
IN TRAFFIC SIGNAL CABINET	x
IN SEPARATE DOT LIGHTING CABINET	

TYPE OF PRE-EMPT	
NONE	
RAILROAD	
EMERGENCY VEHICLE	x
GTT	x
TOMAR	
HARDWIRE	
OTHER	
LIFT BRIDGE	
QUEUE DETECTOR	

DETECTOR LOGIC

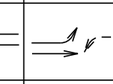
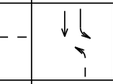
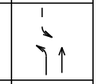
DETECTOR INPUT	3	1	7	5	11	9	15	13
PLAN LOOP DETECTOR #(S)	21	61						
CALLED PHASE	2	6						
CALL OPTION	X	X						
DELAY TIME								
EXTEND OPTION	X	X						
EXTEND TIME								
USE ADDED INITIAL	X	X						
CROSS SWITCH PHASE								

19	17	23	21	27	25	31	29	DETECTOR INPUT
11	31	42	71	82				PLAN LOOP DETECTOR #(S)
1	3	4	7	8				CALLED PHASE
X	X	X	X	X				CALL OPTION
								DELAY TIME
X	X	X	X	X				EXTEND OPTION
								EXTEND TIME
								USE ADDED INITIAL
2	4		8					CROSS SWITCH PHASE

DETECTOR INPUT	4	2	8	6	12	10	16	14
PLAN LOOP DETECTOR #(S)	22	62						
CALLED PHASE	2	6						
CALL OPTION	X	X						
DELAY TIME								
EXTEND OPTION	X	X						
EXTEND TIME								
USE ADDED INITIAL	X	X						
CROSS SWITCH PHASE								

20	18	24	22	28	26	32	30	DETECTOR INPUT
12	41	51	81					PLAN LOOP DETECTOR #(S)
1		5						CALLED PHASE
X		X						CALL OPTION
X								DELAY TIME
X	X	X	X					EXTEND OPTION
	X		X					EXTEND TIME
								USE ADDED INITIAL
		6						CROSS SWITCH PHASE

EMERGENCY VEHICLE PREEMPTION SEQUENCE

EMERGENCY VEHICLE DETECTOR	A	B	C	D
MOVEMENT				
PHASE	2+5	6+1	4+7	8+3

AFTER PREEMPTION SEQUENCE 2+5 OR 6+1, CONTROLLER SHALL RETURN TO PHASES 2+6.

AFTER PREEMPTION SEQUENCE 4+7 OR 8+3, CONTROLLER SHALL RETURN TO PHASES 4+8.

STH 67 & OCONOMOWOC PKWY
CITY OF OCONOMOWOC
WAUKESHA COUNTY

SIGNAL NO. S67-1298 CABINET TYPE: TS2

CONTROLLER TYPE: ECONOLITE

DATE 07/14 PAGE NO. 3 OF 3

PROJECT NO: 3030-08-70	HWY: STH 67	COUNTY: WAUKESHA	SEQUENCE OF OPERATIONS	SHEET	E

FILE NAME : N:\PDS\C3D\CAD\30300800\024005_S1298\024005_sp_seq.dgn PLOT DATE : 16-JUL-2014 13:03 PLOT BY : dotcmv PLOT NAME : S-400,seq,rev2 PLOT SCALE : 40.000373:1

WISDOT/CADDS SHEET 42

PROJECT ID:	3030-08-70
INTERSECTION:	STH 67 & Oconomowoc Pkwy

Signal Wire Color Coding	BLK - black	RED - red	GRN - green
	WHT - white	BLU - blue	ORG - orange

CB1 TO	AWG14 # OF CONDUCTORS	HEAD NO.	SIGNAL INDICATION WIRE COLOR									PED BUTTON
			RED	YELLOW	GREEN	<RED>	<YELLOW>	<GREEN>	<FLASHING YELLOW>	D/WALK	WALK	
SB1	12	14	RED	ORG	GRN							
		15	RED	ORG	GRN							
		17				RED/BLK	ORG/BLK	GRN/BLK	BLK/WHT			
		30								BLK	BLU	
		BUTTON										WHT/BLK
SB2	12	5				RED	ORG	GRN	BLK/WHT			
		7	RED/BLK	ORG/BLK	GRN/BLK							
		31								BLK	BLU	
		BUTTON										WHT/BLK
SB4	12	6				RED	ORG	GRN	BLK/WHT			
		BUTTON										WHT/BLK
SB8	12	2	RED	ORG	GRN							
		3	RED	ORG	GRN							
		4	RED	ORG	GRN							
		32								BLK	BLU	
		BUTTON										WHT/BLK
SB9	12	13	RED/BLK	ORG/BLK	GRN/BLK							
		21				RED	ORG	GRN	BLK/WHT			
		33								BLK	BLU	
		BUTTON										WHT/BLK
SB10	12	19	RED	ORG	GRN							
		20	RED	ORG	GRN							
		22				RED/BLK	ORG/BLK	GRN/BLK	BLK/WHT			
		34								BLK	BLU	
		BUTTON										WHT/BLK
SB11	12	1	RED	ORG	GRN							
		11				RED/BLK	ORG/BLK	GRN/BLK	BLK/WHT			
		25								BLK	BLU	
		BUTTON										WHT/BLK
SB12	12	12				RED	ORG	GRN	BLK/WHT			
		26								BLK	BLU	
		27								BLK	BLU	
		BUTTON										WHT/BLK
SB13	7	23	RED				ORG	GRN				
SB14	7	24	RED				ORG	GRN				
SB18	12	8	RED	ORG	GRN							
		9	RED	ORG	GRN							
		10	RED	ORG	GRN							
		16				RED/BLK	ORG/BLK	GRN/BLK	BLK/WHT			
		28								BLK	BLU	
		BUTTON										WHT/BLK
SB19	12	18	RED	ORG	GRN							
		29								BLK	BLU	
		BUTTON										WHT/BLK
SB20	7	35								BLK	BLU	
		BUTTON										WHT/BLK
SB21	7	36								BLK	BLU	
		BUTTON										WHT/BLK
SB17	7	FUTURE										

*Use the white conductor in the cable assembly as the grounded conductor for all traffic signal indications
*Ensure the grounded conductor in the feeder cable and the pole cables are both 18" longer than the ungrounded conductors.
*At the signal bases, connect one terminal from the pedestrian push buttons to the color indicated in the chart. Connect the other terminal to the grounded conductor.
*Reconnect the grounding conductors wherever the circuit has been interrupted to ensure the grounding circuit is complete.

Equipment grounding conductor 10 AWG Green XLP

From	To
CB1	SB1
SB1	SB2
SB2	SB4
SB4	SB8
SB8	SB9
SB9	SB10
SB10	SB11
SB11	SB12
SB12	SB13
SB13	SB14
SB14	SB21
SB21	SB18
SB18	SB19
SB19	SB20
SB20	~~CB1~~ SB17
SB17	CB1

Pull Box Bonding Jumper 10 AWG Green XLP

From	To
PB1	CB1
PB2	SB1
PB5	SB4
PB6	SB4
PB7	SB5
PB8	SB7
PB9	SB7
PB10	SB8
PB11	SB7
PB12	SB10
PB13	SB10
PB14	SB10
PB15	SB10
PB18	SB12
PB19	SB12
PB20	SB13
PB21	SB14
PB22	SB21
PB23	SB17
PB24	SB18
PB25	CB1
PB26	CB1
PB27	SB10

Lighting UF #12 w/ground

From	To
CB1	SB1
SB1	SB3
SB3	SB4
SB4	SB5
SB5	SB6
SB5	SB7
SB7	SB8
CB1	~~SB17~~ SB22
SB22	~~SB17~~ SB18
SB18	SB15
SB15	SB16
SB15	SB12
SB12	SB10
SB12	SB23

EVP Cable

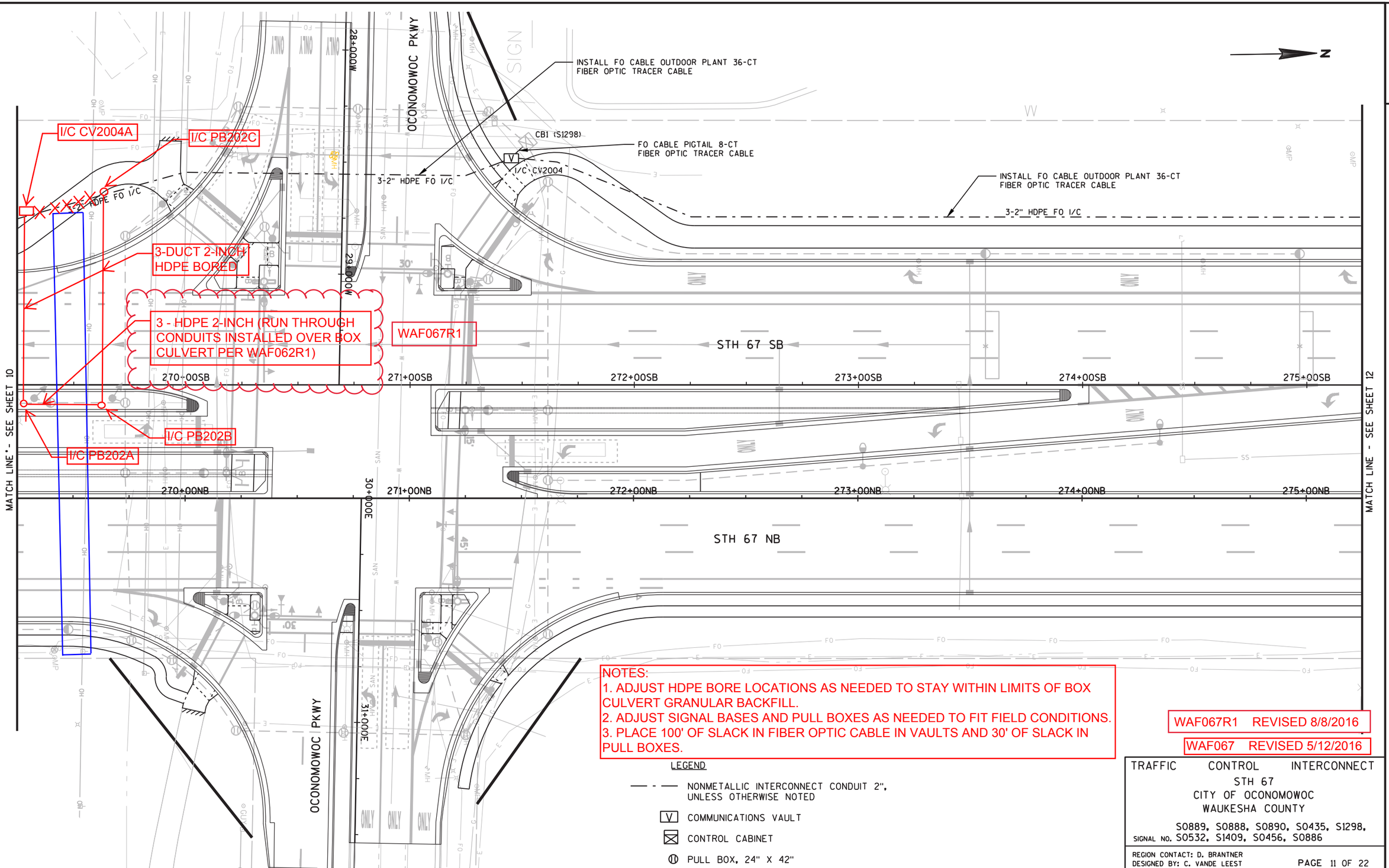
From	To
CB1	SB18 (HEAD A)
CB1	SB8 (HEAD B)
CB1	SB10 (HEAD C)
CB1	SB1 (HEAD D)

Video Detection Cable

From	To
CB1	SB4 (V1)
CB1	SB10 (V2)
CB1	SB1 (V3)
CB1	SB12 (V4)
CB1	SB12 (V5)
CB1	SB1 (V6)
CB1	SB10 (V7)

PROJECT NO: 3030-08-70	HWY: STH 67	COUNTY: WAUKESHA	CABLE ROUTING	SHEET:	E

2



NOTES:
1. ADJUST HDPE BORE LOCATIONS AS NEEDED TO STAY WITHIN LIMITS OF BOX CULVERT GRANULAR BACKFILL.
2. ADJUST SIGNAL BASES AND PULL BOXES AS NEEDED TO FIT FIELD CONDITIONS.
3. PLACE 100' OF SLACK IN FIBER OPTIC CABLE IN VAULTS AND 30' OF SLACK IN PULL BOXES.

LEGEND

- NONMETALLIC INTERCONNECT CONDUIT 2", UNLESS OTHERWISE NOTED
- V — COMMUNICATIONS VAULT
- ⊠ — CONTROL CABINET
- PULL BOX, 24" X 42"

WAF067R1 REVISED 8/8/2016

WAF067 REVISED 5/12/2016

TRAFFIC CONTROL INTERCONNECT
STH 67
CITY OF OCONOMOWOC
WAUKESHA COUNTY

SIGNAL NO. S0889, S0888, S0890, S0435, S1298, S0532, S1409, S0456, S0886

REGION CONTACT: D. BRANTNER
DESIGNED BY: C. VANDE LEEST
REVISED BY:

PAGE 11 OF 22

PROJECT NO: 3030-08-70	HWY: STH 67	COUNTY: WAUKESHA	TRAFFIC SIGNAL INTERCONNECT PLAN	SHEET 611A	E

FILE NAME : N:\PDS\C3D\CAD\30300800\024060_IC.DWG PLOT DATE : 7/21/2014 3:35 PM PLOT BY : VANDE LEEST, CYNTHIAPLOT NAME : PLOT SCALE : 1" = 40'_XREF

WISDOT/CADDS SHEET 42

Timing Cover Sheet for Signal: S1298 HWY: 67 and Oconomowoc Pkwy

Date:	12/8/2016	Changes Made By:	P. Virk
Signal No	S1298 **S1298**	Highway:	67
County:	WAU	Local Hwy:	Summit Ave
Controller:	ECONOLITE	Location:	Oconomowoc Pkwy
School:	None	Audible Ped:	No

Pre-emption

Emergency:	Yes	Type:	3M Opticom	Phases:	2+5, 1+6, 3+8, 4+	EVP Maintenance Id:	0663-42-08
Railroad:	No	Type:		Phases:		EVP Contact:	Public Safety Director, David Beguh
						Community:	Oconomowoc, City of
						Contact Phone:	(262) 567-4401
						Alternate Phone:	

Coordination

System No: SS0050 Controller IP Address:

CoordType: TBC Comments:

Dip Switch Setting

DS ☑

TBC: No
Tone: No
Closed Loop: No
Hardwire: No

	Length	Split 1	Split 2	Split 3	Split 4
Cycle 1=	90	M-F 6AM to 9AM			
Cycle 2=	80	M-F 9AM to 3PM, 7PM to 9PM Sa-Su 9AM to 9PM			
Cycle 3=	100	M-F 3PM to 7PM			
Cycle 4=					

Prom Replacement

Signal Plan No
Pre-empt: No

Part of a Local System: No

Local Contact:
Phone Number:

Overlaps

Overlap A= Phases:
Overlap B= Phases:
Overlap C= Phases:
Overlap D= Phases:

Flash

Emergency: R-R
Off Peak: No

Off Peak Times

Detector Timing

Dilemna Zone Yes Video Detection:

Detector Number	41	81	12											
Stretch	*	*	*											
Right Turn Delay														
Left Turn Delay														

Unique Features

* See programming. Phases 3 and 7 are omitted all day.

Timing Changes Log for Signal S1298 on Hwy 67 in WAUKESHA County

Oconomowoc Pkwy

Date Computer Changed	Date Change Made in Field	Timing Change	Reason for Change	Change By	Temp Timing
12/02/16	12/8/2016	Added Coordination Timings	Improve Operation	P. Virk	No
10/11/16	10/12/2016	Intersection Set to Free	Permanent Signal Turned On	P. Virk	Yes
04/06/15	4/6/2015	Permanent Signal Turned off	Temporary Signal turned on under project 3030-08-70	P. Virk	Yes
04/29/14	5/2/2014	Added this intersection into SS0050. Updated Stretch & EVP operation	Signal Timing Review	P. Virk	No
08/01/12	8/1/2012	Changed Max time for Phase 6 to 30s	Far loops impacted by utility, reduced max until loops can be fixed	S. Sward	Yes
03/15/12		Converted timing to Marc NX.		J. Gates	No
11/17/08	11/23/2008	Initial timing for new signal.	Construction completed.	D. Brantner	No

Waukesha (S67-1298+) - S67-1298 - STH 67 & Oconomowoc Pkwy

Configuration Phase Sequence

Controller Sequence (MM)1-1-1

Hardware Alternate Sequence Enable: No

Phase Ring Sequence.....(Note: Sequences identical to the prior one are not printed)

	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
Sequence 1																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 2																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 3																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 4																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 5																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 6																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 7																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 8																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 9																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 10																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 11																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 12																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 13																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 14																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 15																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 16																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.

Phases In Use / Exclusive PED (MM)1-2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phases in Use	X	X	X	X	X	X	X	X								
Exclusive PED																

Phase Compatibility (MM)1-1-2

Phase	Compatible Phase
1	5

1	6
2	5
2	6
3	7
3	8
4	7
4	8
9	11
9	12
10	11
10	12
13	15
13	16
14	15
14	16

Phase and Overlap Descriptions

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Description	NBLT	SB	WBLT	EB	SBLT	NB	EBLT	WB								
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**L**	**K**	**L**	**M**	**N**	**O**
Description					NBLT	WBLT	SBLT	EBLT								

Administration (MM)1-7-1

Enable CU/Cabinet Interlock CRC	No
Request Download Controller Data	No
Controller Database CRC	0000
Enable Automatic Backup to Datakey	Yes

Backup Prevent (MM)1-1-3

	Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Timing /	1		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Backup	2	.		.	.	.	.	.	.	.	.	.	.	.	.	.	.
	3	.	.		.	.	.	.	.	.	.	.	.	.	.	.	.
	4	.	.	.		.	.	.	.	.	.	.	.	.	.	.	.
	5	.	.	.	.		.	.	.	.	.	.	.	.	.	.	.
	6	.	.	.	.	.		.	.	.	.	.	.	.	.	.	.
	7	.	.	.	.	.	.		.	.	.	.	.	.	.	.	.
	8	.	.	.	.	.	.	.		.	.	.	.	.	.	.	.
	9	.	.	.	.	.	.	.	.		.	.	.	.	.	.	.
	10	.	.	.	.	.	.	.	.	.		.	.	.	.	.	.
	11	.	.	.	.	.	.	.	.	.	.		.	.	.	.	.
	12	.	.	.	.	.	.	.	.	.	.	.		.	.	.	.
	13	.	.	.	.	.	.	.	.	.	.	.	.		.	.	.
	14	.	.	.	.	.	.	.	.	.	.	.	.	.		.	.
	15	.	.	.	.	.	.	.	.	.	.	.	.	.	.		.
	16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	

Simultaneous Gap (MM)1-1-4

	Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	1		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	2	.		.	.	.	X	.	.	.	.	.	.	.	.	.	.
	3	.	.		.	.	.	.	.	.	.	.	.	.	.	.	.
	4	.	.	.		.	.	.	X	.	.	.	.	.	.	.	.
	5	.	.	.	.		.	.	.	.	.	.	.	.	.	.	.
Phase	6	.	X	.	.	.		.	.	.	.	.	.	.	.	.	.
Must	7	.	.	.	.	.	.		.	.	.	.	.	.	.	.	.
Gap	8	.	.	.	X	.	.	.		.	.	.	.	.	.	.	.
With	9	.	.	.	.	.	.	.	.		.	.	.	.	.	.	.
Phase	10	.	.	.	.	.	.	.	.	.		.	.	.	.	.	.
	11	.	.	.	.	.	.	.	.	.	.		.	.	.	.	.
	12	.	.	.	.	.	.	.	.	.	.	.		.	.	.	.
	13	.	.	.	.	.	.	.	.	.	.	.	.		.	.	.
	14	.	.	.	.	.	.	.	.	.	.	.	.	.		.	.
	15	.	.	.	.	.	.	.	.	.	.	.	.	.	.		.
	16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
	Disable	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Load Switch Assignments (MMU Channel) (MM)1-3

	Phase / Overlap	Type	Dimming				Power Up				Auto		Flash Together
			Red	Yellow	Green	Dark	Auto	Red	Yellow	Dark	Red	Yellow	
1	1	V				+	X				X		X
2	2	V				+	X				X		
3	3	V				+	X				X		X
4	4	V				+	X				X		
5	5	V				-	X				X		
6	6	V				-	X				X		X
7	7	V				-	X				X		
8	8	V				-	X				X		X
9	2	P				+	X						
10	4	P				+	X						
11	6	P				-	X						
12	8	P				-	X						
13	1	O				+	X				X		X
14	2	O				-	X				X		X
15	3	O				+	X				X		
16	4	O				-	X				X		

Waukesha (S67-1298+) - S67-1298 - STH 67 & Oconomowoc Pkwy

Configuration Port 1 (SDLC)

SDLC Options (MM)1-4-1

BIU	1	2	3	4	5	6	7	8
Term and Facility Enable	X	X						
Detector Rack Enable	X	X						

Enable TS2/MMU Type Cabinet: Yes
Enable MMU Extended Status: Yes
Enable SDLC Stop Time: No
Enable 3 Critical RFE's Lockup: Yes

MMU Program (MM)1-4-2

Channel Can Serve with Channel	
Channel 1	**Channel 2**
1	5
1	6
1	11
1	15
2	5
2	6
2	9
2	11
3	7
3	8
3	12
4	7
4	8
4	10
4	12
5	9
5	15
6	9
6	11
6	15
7	10
8	10
8	12
9	11
10	12
11	15

Color Check Enable (MM)1-4-3

Enable Color Check: Yes

MMU Channel	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Green	X	X	X	X	X	X	X	X	X	X	X	X			X	
Yellow	X	X	X	X	X	X	X	X							X	
Red	X	X	X	X	X	X	X	X							X	

Secondary To Secondary Addressing (MM)1-4-4

ID	1	2	3	4	5	6	7	8	MMU
Term and Facility Enable									

ID	1	2	3	4	5	6	7	8	Diag
Detector Rack Enable									

Diagonstics (Test Fixture) Enable: No

Waukesha (S67-1298+) - S67-1298 - STH 67 & Oconomowoc Pkwy

Configuration Communications

Ethernet Port Configuration (MM)1-5-1

Controller IP: 172.16.1.252
Subnet Mask: 255.0.0.0
Default Gateway IP: 10.70.10.1
Server IP: 10.70.10.1

NTCIP Parameters (MM)1-5-5

Backup Time: 0
UDP Port: 501
Ethernet Priority: 1
Port 2 Priority: 4
Port 3A Priority: 2
Port 3B Priority: 3

Port Configuration (MM)1-5-2 to 1-5-4

Port	2 (C50S)	3A (C21S)	3B (C22S)
Protocol	NTCIP	NTCIP	Terminal
Enable	No	Yes	No
Data Rate	9600	19.2K	1200
Data Parity Stop	8 N 1	8 N 1	8 0 1
Modem Setup String	None	None	None
User String			
Comm Port Address	1	1	0
System Detector 9-1	0	0	0
Telemetry Response Delay	0.0	0.0	0.0
Duplex Half/Full	Full	Full	Full
Flow Control	Yes	Yes	Yes
AB3418 NTCIP Group Address	0	0	0
AB3418 NTCIP Single Flag Enable	No	No	No
RTS to CTS Delay	0.0	0.0	3.0
RTS Turn Off Delay	0.0	0.0	2.0
Droupout Time	10	10	10
Early RTS	No	No	No
Telemetry Mode	FSK	FSK	FSK
Rail Road	0	0	0
Rail Road Line	0	0	0
ATCS Group	0	0	0
Wayside Device	0	0	0
ATCS Device	0	0	0
Wayside SubNode	0	0	0
ATCS SubNode	0	0	0

ECPIP Parameters (MM)1-5-6

Controller Address: 0
Expanded System Detector Address: 0

Local System Detector

Local System Detector	Number

Waukesha (S67-1298+) - S67-1298 - STH 67 & Oconomowoc Pkwy

Configuration Logging/Display

Event Logging (MM)1-6-1

Critical RFE's	Yes	3 Critical RFE's in 24 Hours	Yes
MMU Flash Faults	Yes	Local Flash Faults	Yes
Non-Critical RFE's (Det/Test)	Yes	Detector Errors	Yes
Coordination Errors	Yes	Controller Download	Yes
Preempt	Yes	TSP	Yes
Power On/Off	Yes	Low Battery	Yes
Access	Yes	Data Change	Yes
Online/Offline	Yes		

Alarm Log	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Enable Logging	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Display Options (MM)1-7-2

Key Click Enable:	Yes
Backlight Enable:	Yes
LED Mode:	Single Color
Main Status Display Mode:	Basic
Screen Format:	Advanced
Trans Mode Pop-up Disable:	No

Sign On (MM)8-5

Sign On Message Line 1:
Sign On Message Line 2:

Waukesha (S67-1298+) - S67-1298 - STH 67 & Oconomowoc Pkwy

Logic Processor Page 1
Statement Control (MM)1-8-1

LP	Statement Control
1	E
2	E

Waukesha (S67-1298+) - S67-1298 - STH 67 & Oconomowoc Pkwy

Logic Processor Page 2

Logic Statements (MM)1-8-2

Statement Number: 1

IF:

	Assignment	#		State
IF	DETECTOR	17	IS	ON

THEN:

Assignment	#	State
CALL PHASE	4	ON

ELSE:

Assignment	#	State

Statement Number: 2

IF:

	Assignment	#		State
IF	DETECTOR	21	IS	ON

THEN:

Assignment	#	State
CALL PHASE	8	ON

ELSE:

Assignment	#	State

Waukesha (S67-1298+) - S67-1298 - STH 67 & Oconomowoc Pkwy

Controller Timing Plan (MM)2-1

Plan 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	NBLT	SB	WBLT	EB	SBLT	NB	EBLT	WB								
Min Green	8	15	8	10	8	15	8	10	0	0	0	0	0	0	0	0
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	7	0	7	0	7	0	7	0	0	0	0	0	0	0	0
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	19	0	37	0	18	0	37	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	1.5	3.3	1.5	1.5	1.5	3.3	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	20	40	20	35	20	40	15	35	0	0	0	0	0	0	0	0
Max 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.5	4.3	3.5	5.0	3.5	4.3	3.5	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	2.0	2.0	2.0	3.0	2.0	2.0	2.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	1.2	0.0	0.0	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	8	21	8	10	8	21	8	10	0	0	0	0	0	0	0	0
Time B4	20	21	20	35	20	21	20	35	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	18	0	0	0	18	0	0	0	0	0	0	0	0	0	0
Min Gap	1.5	3.5	1.5	1.5	1.5	3.5	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	NBLT	SB	WBLT	EB	SBLT	NB	EBLT	WB								
Min Green	5	15	5	10	5	15	5	10	0	0	0	0	0	0	0	0
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	3.0	7.0	3.0	5.0	3.0	7.0	3.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	15	45	15	35	15	45	15	35	0	0	0	0	0	0	0	0
Max 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 3

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Direction	**NBLT**	**SB**	**WBLT**	**EB**	**SBLT**	**NB**	**EBLT**	**WB**								
Min Green	5	15	5	10	5	15	5	10	0	0	0	0	0	0	0	0
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	3.0	7.0	3.0	5.0	3.0	7.0	3.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	15	45	15	35	15	45	15	35	0	0	0	0	0	0	0	0
Max 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 4

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Direction	**NBLT**	**SB**	**WBLT**	**EB**	**SBLT**	**NB**	**EBLT**	**WB**								
Min Green	5	15	5	10	5	15	5	10	0	0	0	0	0	0	0	0
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	3.0	7.0	3.0	5.0	3.0	7.0	3.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	15	45	15	35	15	45	15	35	0	0	0	0	0	0	0	0
Max 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Waukesha (S67-1298+) - S67-1298 - STH 67 & Oconomowoc Pkwy

Controller Overlaps

Vehicle Overlaps (MM)2-2

Overlap	Type	Lag Green	Yellow	Red	Advance Green

Phases

Overlap	Phase	Included	Protect	Ped Protect	Not Overlap	Modifier	Lag X Phase	Lag 2 Phase	Flash Green
C	1	Yes	No	No	No		No	No	0

PPLT FYA

Overlap	Protected Phase	Permissive Phase	Flash Arrow Output	Flash Arrow Channel	FYA Delay	FYA Clearance	Special Function Disable
E	1	2	Ped Yellow	9	0.0	0.0	0
F	3	4	Ped Yellow	10	0.0	0.0	0
G	5	6	Ped Yellow	11	0.0	0.0	0
H	7	8	Ped Yellow	12	0.0	0.0	0

Guaranteed Minimum Time Data (MM) 2-4

Phase Time Data

Phase	Min Green	Walk	Ped Clear	Yellow	Red Clear	Overlap Green
A01	1	0	7	3.0	0.0	1
B02	1	0	7	3.0	0.0	1
C03	1	0	7	3.0	0.0	1
D04	1	0	7	3.0	0.0	1
E05	1	0	7	3.0	0.0	1
F06	1	0	7	3.0	0.0	1
G07	1	0	7	3.0	0.0	1
H08	1	0	7	3.0	0.0	1
I09	1	0	7	3.0	0.0	1
J10	1	0	7	3.0	0.0	1
K11	1	0	7	3.0	0.0	1
L12	1	0	7	3.0	0.0	1
M13	1	0	7	3.0	0.0	1
N14	1	0	7	3.0	0.0	1
O15	1	0	7	3.0	0.0	1
P16	1	0	7	3.0	0.0	1

Waukesha (S67-1298+) - S67-1298 - STH 67 & Oconomowoc Pkwy

Controller **Pedestrian Overlaps**
Pedestrian Overlaps (MM) 2-3

Included Phase	Ped Overlap

Waukesha (S67-1298+) - S67-1298 - STH 67 & Oconomowoc Pkwy

Controller Start/Fash (MM) 2-5

Startup

Phase	Phase Setting
2	G
6	G

Overlap
A
B
C
D

Flash > Mon: No
Flash Time: 0
All Red: 6
Power Start Sequence: 1
MUTCD Enabled: Yes
MUTCD Yellow to Green: No

Automatic Flash

Entry Phase
2
6

Exit Phase
2
6

Overlap Exit
A
B
C
D

Flash > Mon: No
Exit Flash Interval: G
Minimum Auto Flash: 8
Minimumin Recall: No
Cycle Through Phase: No

Waukesha (S67-1298+) - S67-1298 - STH 67 & Oconomowoc Pkwy

Controller Options

Controller Options (MM)2-6-1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Flashing Green Phase																
Guaranteed Passage																
Non Act 1																
Non Act 2																
Dual Entry		X		X		X		X								
Conditional Service																
Conditional Reservice																
Ped Reservice																
Rest In Walk																
Flashing Walk																
Ped Clear Yellow																
Ped Clear Red																
IGRN + Veh Ext																

Ped Clear Protect: On Red Revert: 2.0 MUTCD 3 Seconds Don't Walk: No

Act Pre-Time (MM)2-7

Pre-Time Mode Enable: No Free Input Enables Pre-Timed: Yes

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Pre-Timed Phase																

Phase Recall Options (MM)2-8

Plan 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector		X				X										
Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
Al Calc																

Plan 2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector		X				X										
Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
Al Calc																

Plan 3

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector		X				X										
Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
Al Calc																

Plan 4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector		X				X										

Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
AI Calc																

Waukesha (S67-1298+) - S67-1298 - STH 67 & Oconomowoc Pkwy

Coordination Options

Coordination Options (MM)3-1

Manual Pattern	Auto	ECPI Coord	Yes
System Source	TBC	System Format	STD
Splits In	Seconds	Offsets In	Seconds
Transition	Smooth	Max Select	MAXINH
Dwell/Add Time	0		
Delay Coord Walk to LZ	No	Force Off	Fixed
Offset Reference	Lead	Use Ped Time	No
Ped Recall	No	Ped Reservice	No
Local Zero Override	No	FO Added Initial Green	Yes
Re-Sync Count	3	Multisync	No

Auto Perm Minimum Green (Seconds) (MM)3-4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Minimum Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Split Demand (MM)3-5

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Demand 1																
Demand 2																

Demand	1	2
Detector	0	0
Call Time (Sec)	0	0
Cycle Count	0	0

Waukesha (S67-1298+) - S67-1298 - STH 67 & Oconomowoc Pkwy

Coordination Pattern Data
Pattern Data (MM)3-2

Pattern - 1

Split Pattern	1	TS2 (Pat-Off)	0-1	Splits in	Seconds
Cycle	90	Std (COS)	0	Offsets in	Seconds
Offset Value	88s	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	5		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	NBLT	SB	WBLT	EB	SBLT	NB	EBLT	WB								
Splits (Split Pat 1)	21	40	0	29	17	44	0	29	0	0	0	0	0	0	0	0
Preference 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Preference 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Disp.	-	0	0	0
Split Sum	90s	90s	0s	0s

Misc. Data

Veh. Permissive 1	0	Veh. Permissive 2	0	Veh. Permissive 2 Disp.	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern Data

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coordinated Phases		X				X										
Vehicle Recalls																
Ped Recalls																
Max Recalls																
Phase Omit			X				X									
Special Function Output																

Pattern - 2

Split Pattern	2	TS2 (Pat-Off)	0-2	Splits in	Seconds
Cycle	80	Std (COS)	0	Offsets in	Seconds
Offset Value	13s	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	NBLT	SB	WBLT	EB	SBLT	NB	EBLT	WB								
Splits (Split Pat 2)	22	33	0	25	15	40	0	25	0	0	0	0	0	0	0	0
Preference 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Preference 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Disp.	-	0	0	0
Split Sum	80s	80s	0s	0s

Misc. Data

Veh. Permissive 1	0	Veh. Permissive 2	0	Veh. Permissive 2 Disp.	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern Data

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coordinated Phases		X				X										
Vehicle Recalls																
Ped Recalls																
Max Recalls																
Phase Omit			X				X									
Special Function Output																

Pattern - 3

Split Pattern	3	TS2 (Pat-Off)	0-3	Splits in	Seconds
Cycle	100	Std (COS)	0	Offsets in	Seconds
Offset Value	96s	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	5		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	NBLT	SB	WBLT	EB	SBLT	NB	EBLT	WB								
Splits (Split Pat 3)	25	45	0	30	15	55	0	30	0	0	0	0	0	0	0	0
Preference 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Preference 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Disp.	-	0	0	0
Split Sum	100s	100s	0s	0s

Misc. Data

Veh. Permissive 1	0	Veh. Permissive 2	0	Veh. Permissive 2 Disp.	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern Data

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coordinated Phases		X				X										
Vehicle Recalls																
Ped Recalls																
Max Recalls																
Phase Omit			X				X									
Special Function Output																

Waukesha (S67-1298+) - S67-1298 - STH 67 & Oconomowoc Pkwy

Preemptor

Preempt Plan (MM)4-1

Plan 3

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**
Track Clear Vehicle																
Track Clear Overlap																
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Vehicle		X			X											
Dwell Ped																
Dwell Overlap																
Cycling Vehicle																
Cycling Ped																
Cycling Overlap																
Exit Phase		X				X										
Exit Calls																
Special Funciton																

Enable	Yes	Preempt Override	No	Interlock Enable	No
Detector Lock	Yes	Delay	1	Inhibit	0
Override Flash	No	Duration	0	CLR > GRN	No
Term Overlap Asap	No	PC Through Yellow	No	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	Flash Exit Color	Green	Exit Option	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Preempt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	5	0	5	25.5	25.5
	Min Grn	**Ext Grn**	**Max Grn**	**Yellow**	**Red**
Track Clear	0	0	0	25.5	25.5
	Min Dwell	**Pmt Ext**	**Max Time**	**Yellow**	**Red**
Dwell / Cycle-Exit	10	5.0	0	25.5	25.5

Preempt Active Out	On	Preempt Active Dwell	No
Other Priority Preempt	On	Non-Priority Preempt	F1
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Pri Return % Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**
Track Clear Vehicle																
Track Clear Overlap																
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Vehicle	X					X										
Dwell Ped																
Dwell Overlap																
Cycling Vehicle																
Cycling Ped																
Cycling Overlap																
Exit Phase		X				X										
Exit Calls																
Special Funciton																

Enable	Yes	Preempt Override	No	Interlock Enable	No
Detector Lock	Yes	Delay	1	Inhibit	0
Override Flash	No	Duration	0	CLR > GRN	No
Term Overlap Asap	No	PC Through Yellow	No	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	Flash Exit Color	Green	Exit Option	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Preempt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	5	0	5	25.5	25.5
	Min Grn	**Ext Grn**	**Max Grn**	**Yellow**	**Red**
Track Clear	0	0	0	25.5	25.5
	Min Dwell	**Pmt Ext**	**Max Time**	**Yellow**	**Red**
Dwell / Cycle-Exit	10	5.0	0	25.5	25.5

Preempt Active Out	On	Preempt Active Dwell	No
Other Priority Preempt	On	Non-Priority Preempt	F1
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Pri Return % Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 5

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**
Track Clear Vehicle																
Track Clear Overlap																
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Vehicle				X			X									
Dwell Ped																
Dwell Overlap																
Cycling Vehicle																
Cycling Ped																
Cycling Overlap																
Exit Phase				X				X								
Exit Calls																
Special Funciton																

Enable	Yes	Preempt Override	No	Interlock Enable	No
Detector Lock	Yes	Delay	1	Inhibit	0
Override Flash	No	Duration	0	CLR > GRN	No
Term Overlap Asap	No	PC Through Yellow	No	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	Flash Exit Color	Green	Exit Option	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Preempt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	5	0	5	25.5	25.5
	Min Grn	**Ext Grn**	**Max Grn**	**Yellow**	**Red**
Track Clear	0	0	0	25.5	25.5
	Min Dwell	**Pmt Ext**	**Max Time**	**Yellow**	**Red**
Dwell / Cycle-Exit	10	5.0	0	25.5	25.5

Preempt Active Out	On	Preempt Active Dwell	No
Other Priority Preempt	On	Non-Priority Preempt	F1
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Pri Return % Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 6

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**
Track Clear Vehicle																
Track Clear Overlap																
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Vehicle			X					X								
Dwell Ped																
Dwell Overlap																
Cycling Vehicle																
Cycling Ped																
Cycling Overlap																
Exit Phase				X				X								
Exit Calls																
Special Funciton																

Enable	Yes	Preempt Override	No	Interlock Enable	No
Detector Lock	Yes	Delay	1	Inhibit	0
Override Flash	No	Duration	0	CLR > GRN	No
Term Overlap Asap	No	PC Through Yellow	No	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	Flash Exit Color	Green	Exit Option	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Preempt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	5	0	5	25.5	25.5
	Min Grn	**Ext Grn**	**Max Grn**	**Yellow**	**Red**
Track Clear	0	0	0	25.5	25.5
	Min Dwell	**Pmt Ext**	**Max Time**	**Yellow**	**Red**
Dwell / Cycle-Exit	10	5.0	0	25.5	25.5

Preempt Active Out	On	Preempt Active Dwell	No
Other Priority Preempt	On	Non-Priority Preempt	F1
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Pri Return % Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Waukesha (S67-1298+) - S67-1298 - STH 67 & Oconomowoc Pkwy

Time Base **Clock/Calendar**
Clock/Calendar Options (MM)5-1

Enable Action Plan:	0
Sync Reference Time:	12:00 AM
Sync Reference:	Reference Time
Day Light Savings:	USDLS
Time Reset Input Set Time:	3:30:00
Standard Time From GMT:	0

Waukesha (S67-1298+) - S67-1298 - STH 67 & Oconomowoc Pkwy

Time Base Action Plan
Action Plan (MM)5-2

Action Plan - 1

Pattern	1	Override System	No
Timing Plan	1	Sequence	5
Veh Det Plan	1	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit			X				X									
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 2

Pattern	2	Override System	No
Timing Plan	1	Sequence	0
Veh Det Plan	1	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit			X				X									
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 3

Pattern	3	Override System	No
Timing Plan	1	Sequence	5
Veh Det Plan	1	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit			X				X									
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 99

Pattern	255 - FLSH	Override System	No
Timing Plan	0	Sequence	0
Veh Det Plan	0	Detector Log	None
Flash	Yes	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 100

Pattern	254 - FREE	Override System	No
Timing Plan	0	Sequence	0
Veh Det Plan	0	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit			X				X									
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Waukesha (S67-1298+) - S67-1298 - STH 67 & Oconomowoc Pkwy

Time Base Day Plan/Schedule
Day Plan (MM)5-3

Day Plan - 1

Event	Action Plan	Start Time
1	100	12:01 AM
2	2	9:00 AM
3	100	9:00 PM

Day Plan - 2

Event	Action Plan	Start Time
1	100	12:01 AM
2	1	6:00 AM
3	2	9:00 AM
4	3	3:00 PM
5	2	5:00 PM
6	100	9:00 PM

Schedule (MM)5-4

Schedule Number - 1

Day Plan Number: 1

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	X	X	X	X	X	X	X	X	X	X	X	X

Day of Week	Sun	Mon	Tue	Wed	Thur	Fri	Sat
	X						X

Day of Month	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

Schedule Number - 2

Day Plan Number: 2

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	X	X	X	X	X	X	X	X	X	X	X	X

Day of Week	Sun	Mon	Tue	Wed	Thur	Fri	Sat
		X	X	X	X	X	

Day of Month	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

Waukesha (S67-1298+) - S67-1298 - STH 67 & Oconomowoc Pkwy

Time Base Exceptions

Exception Day Program (MM)5-5

Day	Fixed/Float	Month	Day of Week/Month	Week of Month/Year	Day Plan
37	FIXED	255	255	65535	255
38	FIXED	255	255	65535	255
39	FIXED	255	255	65535	255
40	FIXED	255	255	65535	255
41	FIXED	255	255	65535	255
42	FIXED	255	255	65535	255
43	FIXED	255	255	65535	255
44	FIXED	255	255	65535	255
45	FIXED	255	255	65535	255
46	FIXED	255	255	65535	255
47	FIXED	255	255	65535	255
48	FIXED	255	255	65535	255
49	FIXED	255	255	65535	255
50	FIXED	255	255	65535	255
51	FIXED	255	255	65535	255
52	FIXED	255	255	65535	255
53	FIXED	255	255	65535	255
54	FIXED	255	255	65535	255
55	FIXED	255	255	65535	255
56	FIXED	255	255	65535	255
57	FIXED	255	255	65535	255
58	FIXED	255	255	65535	255
59	FIXED	255	255	65535	255
60	FIXED	255	255	65535	255
61	FIXED	255	255	65535	255
62	FIXED	255	255	65535	255
63	FIXED	255	255	65535	255
64	FIXED	255	255	65535	255
65	FIXED	255	255	65535	255
66	FIXED	255	255	65535	255
67	FIXED	255	255	65535	255
68	FIXED	255	255	65535	255
69	FIXED	255	255	65535	255
70	FIXED	255	255	65535	255
71	FIXED	255	255	65535	255
72	FIXED	255	255	65535	255
73	FIXED	255	255	65535	255
74	FIXED	255	255	65535	255
75	FIXED	255	255	65535	255
76	FIXED	255	255	65535	255
77	FIXED	255	255	65535	255
78	FIXED	255	255	65535	255
79	FIXED	255	255	65535	255
80	FIXED	255	255	65535	255
81	FIXED	255	255	65535	255
82	FIXED	255	255	65535	255
83	FIXED	255	255	65535	255
84	FIXED	255	255	65535	255
85	FIXED	255	255	65535	255
86	FIXED	255	255	65535	255
87	FIXED	255	255	65535	255
88	FIXED	255	255	65535	255
89	FIXED	255	255	65535	255
90	FIXED	255	255	65535	255

Waukesha (S67-1298+) - S67-1298 - STH 67 & Oconomowoc Pkwy

Detectors

Detectors Page 1

Vehicle Detectors Setup (MM)6-1

Vehicle Plan	Detector Number	Called	Type
2	1	1	N
2	2	2	N
2	3	3	N
2	4	4	N
2	5	5	N
2	6	6	N
2	7	7	N
2	8	8	N
2	60	2	N
2	60	4	N
2	60	6	N
2	60	8	N
3	1	1	N
3	2	2	N
3	3	3	N
3	4	4	N
3	5	5	N
3	6	6	N
3	7	7	N
3	8	8	N
3	60	2	N
3	60	4	N
3	60	6	N
3	60	8	N
4	1	1	N
4	2	2	N
4	3	3	N
4	4	4	N
4	5	5	N
4	6	6	N
4	7	7	N
4	8	8	N
4	60	2	N
4	60	4	N
4	60	6	N
4	60	8	N

Vehicle Detector Setup (MM)6-2 continued

Detector Number	Type	TS2 Detector	Detector Description
1	N-NTCIP	Yes	
2	N-NTCIP	Yes	
3	N-NTCIP	Yes	
4	N-NTCIP	Yes	
5	N-NTCIP	Yes	
6	N-NTCIP	Yes	
7	N-NTCIP	Yes	
8	N-NTCIP	Yes	
9	N-NTCIP	Yes	
10	N-NTCIP	Yes	
11	N-NTCIP	Yes	
12	N-NTCIP	Yes	
13	N-NTCIP	Yes	
14	N-NTCIP	Yes	
15	N-NTCIP	Yes	
16	N-NTCIP	Yes	
17	N-NTCIP	Yes	
18	N-NTCIP	Yes	

19	N-NTCIP	Yes	
20	N-NTCIP	Yes	
21	N-NTCIP	Yes	
22	N-NTCIP	Yes	
23	N-NTCIP	Yes	
24	N-NTCIP	Yes	
25	N-NTCIP	Yes	
26	N-NTCIP	Yes	
27	N-NTCIP	Yes	
28	N-NTCIP	Yes	
29	N-NTCIP	Yes	
30	N-NTCIP	Yes	
31	N-NTCIP	Yes	
32	N-NTCIP	Yes	
33	N-NTCIP	Yes	
34	N-NTCIP	Yes	
35	N-NTCIP	Yes	
36	N-NTCIP	Yes	
37	N-NTCIP	Yes	
38	N-NTCIP	Yes	
39	N-NTCIP	Yes	
40	N-NTCIP	Yes	
41	N-NTCIP	Yes	
42	N-NTCIP	Yes	
43	N-NTCIP	Yes	
44	N-NTCIP	Yes	
45	N-NTCIP	Yes	
46	N-NTCIP	Yes	
47	N-NTCIP	Yes	
48	N-NTCIP	Yes	
49	N-NTCIP	Yes	
50	N-NTCIP	Yes	
51	N-NTCIP	Yes	
52	N-NTCIP	Yes	
53	N-NTCIP	Yes	
54	N-NTCIP	Yes	
55	N-NTCIP	Yes	
56	N-NTCIP	Yes	
57	N-NTCIP	Yes	
58	N-NTCIP	Yes	
59	N-NTCIP	Yes	
60	N-NTCIP	Yes	
61	N-NTCIP	Yes	
62	N-NTCIP	Yes	
63	N-NTCIP	Yes	
64	N-NTCIP	Yes	

Vehicle Detector Setup (MM)6-2 continued

Det Num	Veh Det Plan	Phase	ECPI Log	Call Option	Delay Time	Ext Option	Extend Time / Passage Time	Queue Lim / Discon. Time	Use Added Initial	Cross Switch Phase	Lock In	NTCIP Vol.	NTCIP Occ.	Pmt Queue Delay
1	1	6	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
1	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
1	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
1	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
2	1	6	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
2	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
2	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
2	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
3	1	2	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
3	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
3	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
3	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
4	1	2	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
4	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
4	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
4	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

5	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
5	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
5	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
5	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
6	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
6	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
6	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
6	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
7	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
7	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
7	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
7	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
8	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
8	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
8	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
8	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
9	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
9	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
9	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
9	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
10	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
10	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
10	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
10	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
11	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
11	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
11	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
11	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
12	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
12	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
12	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
12	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
13	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
13	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
13	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
13	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
14	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
14	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
14	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
14	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
15	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
15	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
15	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
15	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
16	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
16	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
16	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
16	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
17	1	3	No	Yes	0.0	Passage	0.0	0	Yes	4	None	No	No	No
17	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
17	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
17	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
18	1	4	No	No	0.0	Passage	4.9	0	Yes	0	None	No	No	No
18	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
18	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
18	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
19	1	1	No	Yes	0.0	Passage	0.0	0	Yes	2	None	No	No	No
19	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
19	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
19	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
20	1	1	No	Yes	8.0	Passage	0.0	0	Yes	0	None	No	No	No
20	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
20	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
20	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
21	1	7	No	Yes	0.0	Passage	0.0	0	Yes	8	None	No	No	No
21	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
21	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
21	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

22	1	8	No	No	0.0	Passage	4.9	0	Yes	0	None	No	No	No
22	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
22	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
22	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
23	1	4	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
23	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
23	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
23	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
24	1	5	No	Yes	0.0	Passage	0.0	0	Yes	6	None	No	No	No
24	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
24	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
24	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
25	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
25	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
25	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
25	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
26	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
26	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
26	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
26	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
27	1	8	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
27	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
27	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
27	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
28	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
28	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
28	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
28	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
29	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
29	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
29	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
29	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
30	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
30	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
30	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
30	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
31	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
31	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
31	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
31	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
32	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
32	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
32	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
32	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
33	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
33	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
33	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
33	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
34	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
34	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
34	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
34	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
35	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
35	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
35	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
35	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
36	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
36	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
36	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
36	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
37	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
37	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
37	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
37	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
38	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
38	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
38	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
38	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

39	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
39	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
39	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
39	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
40	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
40	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
40	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
40	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
41	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
41	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
41	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
41	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
42	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
42	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
42	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
42	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
43	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
43	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
43	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
43	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
44	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
44	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
44	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
44	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
45	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
45	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
45	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
45	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
46	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
46	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
46	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
46	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
47	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
47	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
47	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
47	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
48	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
48	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
48	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
48	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
49	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
49	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
49	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
49	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
50	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
50	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
50	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
50	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
51	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
51	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
51	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
51	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
52	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
52	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
52	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
52	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
53	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
53	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
53	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
53	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
54	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
54	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
54	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
54	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
55	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
55	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
55	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
55	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

56	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
56	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
56	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
56	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
57	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
57	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
57	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
57	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
58	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
58	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
58	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
58	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
59	1	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
59	2	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
59	3	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
59	4	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
60	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	Yellow	No	No	No
60	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	Yellow	No	No	No
60	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	Yellow	No	No	No
60	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	Yellow	No	No	No
61	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
61	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
61	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
61	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
62	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
62	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
62	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
62	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
63	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
63	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
63	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
63	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
64	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
64	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
64	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
64	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

Ped Detector Options (MM)6-3

Phase Ped Detector (Econolite)

Detector	Call Phase															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.
4	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.
5	.	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.
6	.	.	.	.	.	X	.	.	.	.	.	.	.	.	.	.
7	.	.	.	.	.	.	X	.	.	.	.	.	.	.	.	.
8	.	.	.	.	.	.	.	X	.	.	.	.	.	.	.	.
9	.	.	.	.	.	.	.	.	X	.	.	.	.	.	.	.
10	.	.	.	.	.	.	.	.	.	X	.	.	.	.	.	.
11	.	.	.	.	.	.	.	.	.	.	X	.	.	.	.	.
12	.	.	.	.	.	.	.	.	.	.	.	X	.	.	.	.
13	.	.	.	.	.	.	.	.	.	.	.	.	X	.	.	.
14	.	.	.	.	.	.	.	.	.	.	.	.	.	X	.	.
15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	X	.
16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	X

Waukesha (S67-1298+) - S67-1298 - STH 67 & Oconomowoc Pkwy

Detectors

Detectors Page 2

Log - Speed Detector Setup (MM)6-4

NTCIP Log Period: 15 ECPI Log Period: 15 Length Unit: Inch

Speed Detector	Local Detector	One/Two Detector	Vehicle Length	Trap Length	Enable Log
1	0	1	0	0	No
2	0	1	0	0	No
3	0	1	0	0	No
4	0	1	0	0	No
5	0	1	0	0	No
6	0	1	0	0	No
7	0	1	0	0	No
8	0	1	0	0	No
9	0	1	0	0	No
10	0	1	0	0	No
11	0	1	0	0	No
12	0	1	0	0	No
13	0	1	0	0	No
14	0	1	0	0	No
15	0	1	0	0	No
16	0	1	0	0	No

Vehicle Detector Diagnostics (MM)6-5

Plan	Detector	Counts	Act	Pres	Multiplier	Failed Time	Failed Call Delay
1	1	0	0	0	1	255	0
1	2	0	0	0	1	255	0
1	3	0	0	0	1	255	0
1	4	0	0	0	1	255	0
1	5	0	0	0	1	255	0
1	6	0	0	0	1	255	0
1	7	0	0	0	1	255	0
1	8	0	0	0	1	255	0
1	9	0	0	0	1	255	0
1	10	0	0	0	1	255	0
1	11	0	0	0	1	255	0
1	12	0	0	0	1	255	0
1	13	0	0	0	1	255	0
1	14	0	0	0	1	255	0
1	15	0	0	0	1	255	0
1	16	0	0	0	1	255	0
1	17	0	0	0	1	255	0
1	18	0	0	0	1	255	0
1	19	0	0	0	1	255	0
1	20	0	0	0	1	255	0
1	21	0	0	0	1	255	0
1	22	0	0	0	1	255	0
1	23	0	0	0	1	255	0
1	24	0	0	0	1	255	0
1	25	0	0	0	1	255	0
1	26	0	0	0	1	255	0
1	27	0	0	0	1	255	0
1	28	0	0	0	1	255	0
1	29	0	0	0	1	255	0
1	30	0	0	0	1	255	0
1	31	0	0	0	1	255	0
1	32	0	0	0	1	255	0
1	33	0	0	0	1	255	0

1	34	0	0	0	1	255	0
1	35	0	0	0	1	255	0
1	36	0	0	0	1	255	0
1	37	0	0	0	1	255	0
1	38	0	0	0	1	255	0
1	39	0	0	0	1	255	0
1	40	0	0	0	1	255	0
1	41	0	0	0	1	255	0
1	42	0	0	0	1	255	0
1	43	0	0	0	1	255	0
1	44	0	0	0	1	255	0
1	45	0	0	0	1	255	0
1	46	0	0	0	1	255	0
1	47	0	0	0	1	255	0
1	48	0	0	0	1	255	0
1	49	0	0	0	1	255	0
1	50	0	0	0	1	255	0
1	51	0	0	0	1	255	0
1	52	0	0	0	1	255	0
1	53	0	0	0	1	255	0
1	54	0	0	0	1	255	0
1	55	0	0	0	1	255	0
1	56	0	0	0	1	255	0
1	57	0	0	0	1	255	0
1	58	0	0	0	1	255	0
1	59	0	0	0	1	255	0
1	60	0	0	0	1	255	0
1	61	0	0	0	1	255	0
1	62	0	0	0	1	255	0
1	63	0	0	0	1	255	0
1	64	0	0	0	1	255	0
2	1	0	0	0	1	255	0
2	2	0	0	0	1	255	0
2	3	0	0	0	1	255	0
2	4	0	0	0	1	255	0
2	5	0	0	0	1	255	0
2	6	0	0	0	1	255	0
2	7	0	0	0	1	255	0
2	8	0	0	0	1	255	0
2	9	0	0	0	1	255	0
2	10	0	0	0	1	255	0
2	11	0	0	0	1	255	0
2	12	0	0	0	1	255	0
2	13	0	0	0	1	255	0
2	14	0	0	0	1	255	0
2	15	0	0	0	1	255	0
2	16	0	0	0	1	255	0
2	17	0	0	0	1	255	0
2	18	0	0	0	1	255	0
2	19	0	0	0	1	255	0
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2	21	0	0	0	1	255	0
2	22	0	0	0	1	255	0
2	23	0	0	0	1	255	0
2	24	0	0	0	1	255	0
2	25	0	0	0	1	255	0
2	26	0	0	0	1	255	0
2	27	0	0	0	1	255	0
2	28	0	0	0	1	255	0
2	29	0	0	0	1	255	0
2	30	0	0	0	1	255	0
2	31	0	0	0	1	255	0
2	32	0	0	0	1	255	0
2	33	0	0	0	1	255	0
2	34	0	0	0	1	255	0
2	35	0	0	0	1	255	0
2	36	0	0	0	1	255	0
2	37	0	0	0	1	255	0

2	38	0	0	0	1	255	0
2	39	0	0	0	1	255	0
2	40	0	0	0	1	255	0
2	41	0	0	0	1	255	0
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2	44	0	0	0	1	255	0
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2	47	0	0	0	1	255	0
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2	50	0	0	0	1	255	0
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2	52	0	0	0	1	255	0
2	53	0	0	0	1	255	0
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2	57	0	0	0	1	255	0
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2	59	0	0	0	1	255	0
2	60	0	0	0	1	255	0
2	61	0	0	0	1	255	0
2	62	0	0	0	1	255	0
2	63	0	0	0	1	255	0
2	64	0	0	0	1	255	0
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3	3	0	0	0	1	255	0
3	4	0	0	0	1	255	0
3	5	0	0	0	1	255	0
3	6	0	0	0	1	255	0
3	7	0	0	0	1	255	0
3	8	0	0	0	1	255	0
3	9	0	0	0	1	255	0
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3	27	0	0	0	1	255	0
3	28	0	0	0	1	255	0
3	29	0	0	0	1	255	0
3	30	0	0	0	1	255	0
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3	39	0	0	0	1	255	0
3	40	0	0	0	1	255	0
3	41	0	0	0	1	255	0

3	42	0	0	0	1	255	0
3	43	0	0	0	1	255	0
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4	37	0	0	0	1	255	0
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4	44	0	0	0	1	255	0
4	45	0	0	0	1	255	0

4	46	0	0	0	1	255	0
4	47	0	0	0	1	255	0
4	48	0	0	0	1	255	0
4	49	0	0	0	1	255	0
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4	51	0	0	0	1	255	0
4	52	0	0	0	1	255	0
4	53	0	0	0	1	255	0
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4	55	0	0	0	1	255	0
4	56	0	0	0	1	255	0
4	57	0	0	0	1	255	0
4	58	0	0	0	1	255	0
4	59	0	0	0	1	255	0
4	60	0	0	0	1	255	0
4	61	0	0	0	1	255	0
4	62	0	0	0	1	255	0
4	63	0	0	0	1	255	0
4	64	0	0	0	1	255	0

Pedestrian Detector Diagnotics (MM)6-6

Plan	Detector	Counts	Act	Pres	Multiplier

LEGEND

- CONTROL CABINET
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- (XX) MONOTUBE BASE, POLE, 15'-30' ARM
- (XX) MONOTUBE BASE, POLE, 35'-55' ARM
- PEDESTRIAN HEAD WITH PUSH BUTTON
- PUSH BUTTON
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
- LOOP DETECTOR CONDUIT 1" NONMETALLIC CONDUIT
- LOOP DETECTOR IN 1" NONMETALLIC CONDUIT

MONOTUBE STRUCTURE NUMBERS
SB7 = S-67-1278
SB9 = S-67-1279
SB15 = S-67-1280
SB19 = S-67-1281
SB20 = S-67-1282
SB24 = S-67-1283

CONSTRUCTION NOTES:

1. * LOCATION IS TO FRONT CENTER OF DETECTOR LOOP.
2. THE CONTRACTOR SHALL HAVE THE PULL BOXES AND CONDUIT RUNS INSPECTED 5 WORKING DAYS PRIOR TO PLACING SIGNAL CABLE INTO SYSTEM. CONTACT THE WISDOT ELECTRICAL FIELD UNIT TO MAKE ARRANGEMENTS. (414) 266-1170.
3. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.

MOVE SB20

ADD SB 27
- TYPE 1 BASE, 10' STANDARD
- PLACE PB, PH27 AND PH28

ADD SB 28
- TYPE 1 BASE, 13' STANDARD
- 3 SECTION LEFT TURN ARROW (HEAD 40)

- VIDEO DETECTION AREA
- VX VIDEO DETECTION CAMERA
- PULL BOX, 24" X 36"
- PULL BOX, 24" X 42"
- XX SIGNAL HEAD NUMBER
- R RED CIRCULAR INDICATOR
- Y YELLOW CIRCULAR INDICATOR
- G GREEN CIRCULAR INDICATOR
- R RED ARROW
- Y YELLOW ARROW
- G GREEN ARROW
- WALK/DON'T WALK INDICATOR 16" (COUNTDOWN TIMER)
- X EVP DESIGNATOR
- EVP DETECTOR HEAD
- V COMMUNICATIONS VAULT
- Y YIELD SIGN

NOTE: ALL LENSES ARE 12-INCH
GRAYSHADE REPRESENTS EXISTING

4. THE ENGINEER MAY ADJUST THE LOCATIONS OF ITEMS UNDER THIS CONTRACT TO AVOID CONFLICT WITH EXISTING UTILITY FACILITIES.
5. INSTALL CABINET BASE 6" ABOVE ROADWAY ELEVATION.
6. THE CONDUIT EMBEDDED IN A TYPE 10 OR TYPE 13 CONCRETE BASE SHALL BE 3" CONDUIT.
7. ALL LUMINAIRES ARE LED-C UNLESS OTHERWISE NOTED.

TRAFFIC CONTROL SIGNAL
STH 67 & OCONOMOWOC DR./
PABST FARMS BOULEVARD
CITY OF OCONOMOWOC
WAUKESHA COUNTY
CABINET TYPE: TS2
SIGNAL NO. S67-0890 CONTROLLER TYPE: ECONOLITE

WISCONSIN DEPARTMENT OF TRANSPORTATION
APPROVAL RECOMMENDED
DATE 7/21/14 David A. Brantner, P.E.
REGION TRAFFIC ENGINEER
APPROVED
DATE 7/23/14 Joanna L. Bush
STATE TRAFFIC ENGINEER

REGION CONTACT: D. BRANTNER
DESIGNED BY: C. VANDE LEEST
REVISED BY:
PAGE 1 OF 4

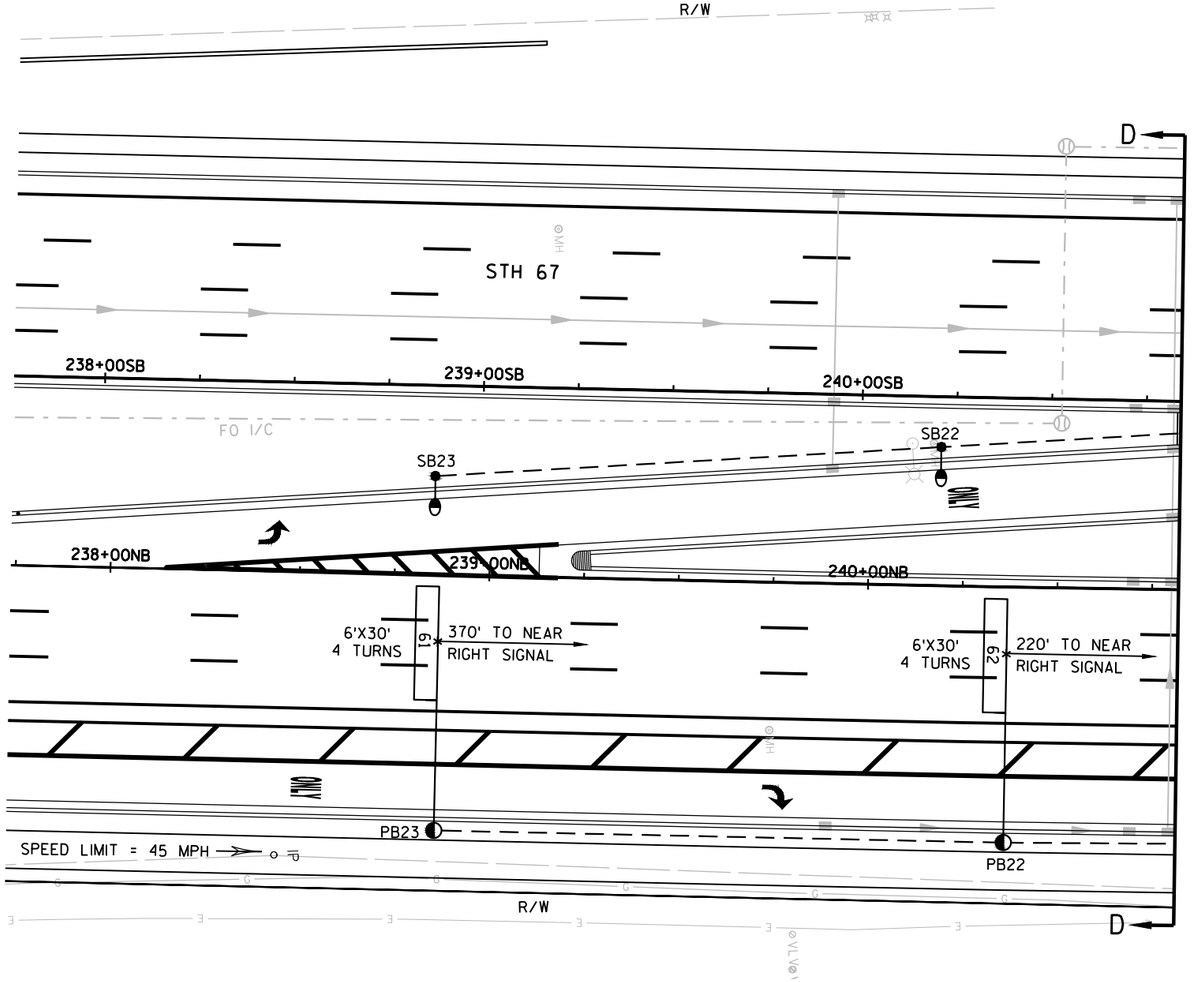
PROJECT NO: 3030-08-70	HWY: STH 67	COUNTY: WAUKESHA	TRAFFIC SIGNAL PLAN	SHEET -----	E

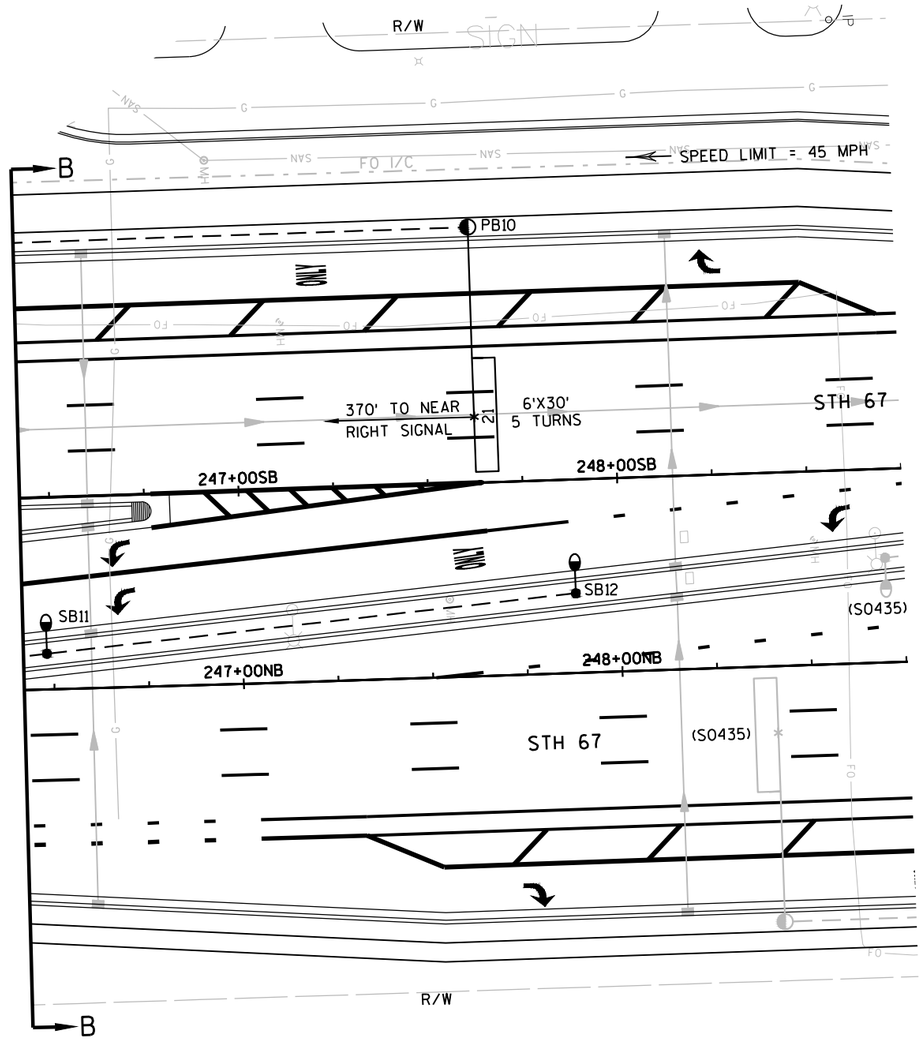
FILE NAME : N:\PDS\C3D\CAD\30300800\024003_SP.DWG PLOT DATE : 7/24/2014 8:14 AM PLOT BY : VANDE LEEST, CYNTHIA PLOT NAME : ---------- PLOT SCALE : 1" = 40'_XREF

WISDOT/CADDS SHEET 42

2

N





TRAFFIC CONTROL SIGNAL
STH 67 & OCONOMOWOC DR./
PABST FARMS BOULEVARD
CITY OF OCONOMOWOC
WAUKESHA COUNTY

SIGNAL NO. S67-0890

REGION CONTACT: D. BRANTNER
DESIGNED BY: C. VANDE LEEST
REVISED BY:

PAGE 2 OF 4

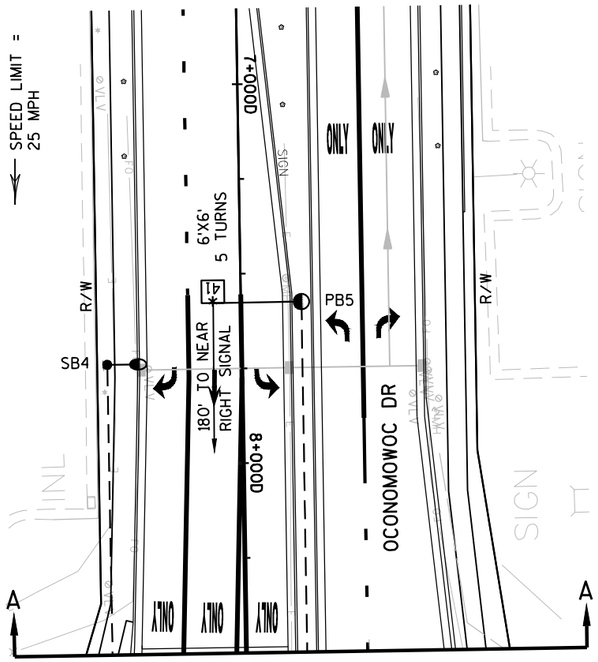
PROJECT NO: 3030-08-70	HWY: STH 67	COUNTY: WAUKESHA	TRAFFIC SIGNAL PLAN	SHEET -----	E

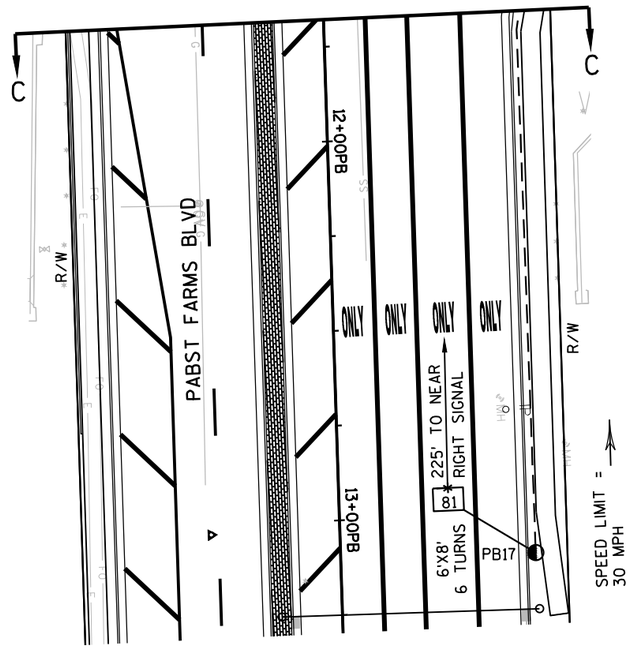
FILE NAME : N:\PDS\C3D\CAD\30300800\024003_SP.DWG PLOT DATE : 7/24/2014 8:14 AM PLOT BY : VANDE LEEST, CYNTHIA PLOT NAME : ---------- PLOT SCALE : 1" = 40'_XREF

WISDOT/CADDS SHEET 42

2

N





TRAFFIC CONTROL SIGNAL
STH 67 & OCONOMOWOC DR./
PABST FARMS BOULEVARD
CITY OF OCONOMOWOC
WAUKESHA COUNTY

SIGNAL NO. S67-0890

REGION CONTACT: D. BRANTNER
DESIGNED BY: C. VANDE LEEST
REVISED BY:

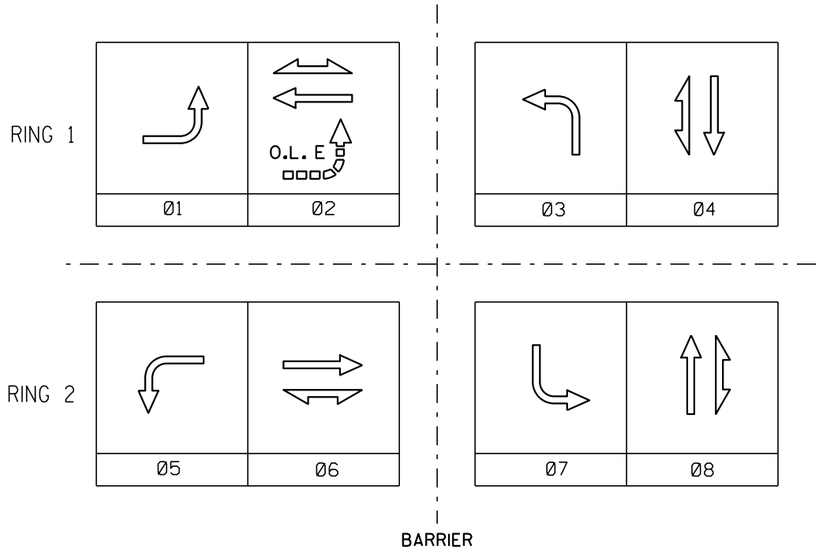
PAGE 3 OF 4

PROJECT NO: 3030-08-70	HWY: STH 67	COUNTY: WAUKESHA	TRAFFIC SIGNAL PLAN	SHEET _____	E

FILE NAME : N:\PDS\C3D\CAD\30300800\024003_SP.DWG PLOT DATE : 7/24/2014 8:15 AM PLOT BY : VANDE LEEST, CYNTHIA PLOT NAME : _____ PLOT SCALE : 1" = 40'_XREF

WISDOT/CADDS SHEET 42

	HEAD NUMBERS	FLASH
Ø1	5, 6	-
Ø2	7, 8, 9, 10, 11	R
Ø3	18, 19, 38	R
Ø4	20, 21, 22, 23	R
Ø5	12, 13	R
Ø6	1, 2, 3, 4	R
Ø7	24, 25, 39	R
Ø8	14, 15, 16	R
Ø2P	30, 31	
Ø4P	26, 27, 28, 29	
Ø6P	36, 37	
Ø8P	32, 33, 34, 35	
OLE	5, 6	R
OLF		
OLG		
OLH		



CONTROLLER LOGIC

PHASE NUMBER	PHASE LOCKING	DUAL ENTRY W / Ø	PHASE RECALL	PHASE ACTIVE
1		6		x
2	X	6	MIN	x
3		8		x
4		8		x
5		2		x
6	X	2	MIN	x
7		4		x
8		4		x

N

GENERAL NOTES:

1. CABINET IS EQUIPPED WITH A BATTERY BACKUP.

TYPE OF INTERCONNECT/COMMUNICATION	
NONE	
CLOSED LOOP	
TWISTED PAIR*	
FIBER OPTIC*	
FIBER OPTIC (ETHERNET)	x
RADIO	

TYPE OF COORDINATION	
NONE	
TBC	x
TRAFFIC RESPONSIVE	
ADAPTIVE	
*LOCATION OF MASTER CONTROLLER NO:	
SIGNAL SYSTEM #:	SS-00-50

TYPE OF LIGHTING	
BY OTHER AGENCY	
IN TRAFFIC SIGNAL CABINET	x
IN SEPARATE DOT LIGHTING CABINET	

TYPE OF PRE-EMPT	
NONE	
RAILROAD	
EMERGENCY VEHICLE	x
GTT	x
TOMAR	
HARDWIRE	
OTHER	
LIFT BRIDGE	
QUEUE DETECTOR	

DETECTOR LOGIC

DETECTOR INPUT	3	1	7	5	11	9	15	13
PLAN LOOP DETECTOR #(S)	21	41	62					
CALLED PHASE	2		6					
CALL OPTION	X		X					
DELAY TIME								
EXTEND OPTION	X	X	X					
EXTEND TIME		X						
USE ADDED INITIAL	X		X					
CROSS SWITCH PHASE								

19	17	23	21	27	25	31	29	DETECTOR INPUT
11	42	71	82					PLAN LOOP DETECTOR #(S)
1	4	7	8					CALLED PHASE
X	X	X	X					CALL OPTION
								DELAY TIME
X	X	X	X					EXTEND OPTION
								EXTEND TIME
								USE ADDED INITIAL
2								CROSS SWITCH PHASE

DETECTOR INPUT	4	2	8	6	12	10	16	14
PLAN LOOP DETECTOR #(S)	22	61	81					
CALLED PHASE	2	6						
CALL OPTION	X	X						
DELAY TIME								
EXTEND OPTION	X	X	X					
EXTEND TIME			X					
USE ADDED INITIAL	X	X						
CROSS SWITCH PHASE								

20	18	24	22	28	26	32	30	DETECTOR INPUT
31	51	82						PLAN LOOP DETECTOR #(S)
3	5	8						CALLED PHASE
X	X	X						CALL OPTION
								DELAY TIME
X	X	X						EXTEND OPTION
								EXTEND TIME
								USE ADDED INITIAL
								CROSS SWITCH PHASE

EMERGENCY VEHICLE PREEMPTION SEQUENCE

EMERGENCY VEHICLE DETECTOR	A	B	C	D
MOVEMENT				
PHASE	2+5	6+1	4+7	8+3

AFTER PREEMPTION SEQUENCE 2+5 OR 6+1, CONTROLLER SHALL RETURN TO PHASES 2+6.

AFTER PREEMPTION SEQUENCE 4+7 OR 8+3, CONTROLLER SHALL RETURN TO PHASES 4+8.

STH 67 & OCONOMOWOC DR./
PABST FARMS BOULEVARD
CITY OF OCONOMOWOC
WAUKESHA COUNTY

SIGNAL NO. S67-0890 CABINET TYPE: TS2

CONTROLLER TYPE: ECONOLITE

DATE 07/14 PAGE NO. 4 OF 4

PROJECT NO: 3030-08-70	HWY: STH 67	COUNTY: WAUKESHA	SEQUENCE OF OPERATIONS	SHEET	E

FILE NAME : N:\PDS\C3D\CAD\30300800\024003_S0890\024003_ps_seq.dgn PLOT DATE : 17-JUL-2014 15:02 PLOT BY : dotcmv PLOT NAME : S-400,seq,rev2 PLOT SCALE : 40.000373:1

WISDOT/CADDS SHEET 42

ng Cover Sheet for Signal: S0890 HWY: 67 and Oconomowoc Dr/Pabst Farms

Date: 12/8/2016
Signal No S0890 **S890**
County: WAU
Controller: ECONOLITE
School: None

Changes Made By: P. Virk
Highway: 67
Local Hwy: Summit Ave
Location: Oconomowoc Dr/Pabst Farms Blvd
Audible Ped: No

Pre-emption

Emergency: Yes Type: 3M Opticom Phases: 2+5,1+6,4+7,8+3
Railroad: No Type: Phases:

EVP Maintenance Id: 0663-42-08
EVP Contact: Public Safety Director, David Beguh
Community: Oconomowoc, City of
Contact Phone: (262) 567-4401
Alternate Phone:

Coordination

System No: SS0050
CoordType: TBC
Dip Switch Setting
DS ☑

Controller IP Address:
Comments:

TBC: Yes
Tone: No
Closed Loop: No
Hardwire: No

	Length	Split 1	Split 2	Split 3	Split 4
Cycle 1=	90	M-F 6AM to 9AM			
Cycle 2=	80	M-F 9AM to 3PM, 7PM to 9PM Sa-Su 9AM to 9PM			
Cycle 3=	100	M-F 3PM to 7PM			
Cycle 4=					

Prom Replacement

Signal Plan No
Pre-empt: No

Part of a Local System: No

Local Contact:
Phone Number:

Overlaps

Overlap A= Phases:
Overlap B= Phases:
Overlap C= Phases:
Overlap D= Phases:

Flash

Emergency: R-R
Off Peak: No

Off Peak Times

Detector Timing

Dilemna Zone Yes Video Detection: No

Detector Number	41	81												
Stretch	*	*												
Right Turn Delay														
Left Turn Delay														

Unique Features

* See programming for details

Timing Changes Log for Signal S0890 on Hwy 67 in WAUKESHA County

Oconomowoc Dr/Pabst Farms Blvd

Date Computer Changed	Date Change Made in Field	Timing Change	Reason for Change	Change By	Temp Timing
12/02/16	12/8/2016	Added Coordination Timings	Improve Operation	P. Virk	No
08/30/16	9/2/2016	Signal Running Free	Permanent Signal Turned on	P. Virk	Yes
03/26/15	3/26/2015	Permanent signal turned off	Temporary Signal turned on under project 1060-30-70/3030-08-70	P. Virk	Yes
04/29/14	5/2/2014	Updated System Timing and EVP Operation	Signal Timing Review	P. Virk	No
03/07/12		Converted timing to Marc NX.		J. Gates	No
12/10/09	12/18/2009	Updated system timing.	Citizen complaint.	D. Brantner	No
11/03/09		Updated system timing - modified system splits and offsets. Put signal back in system.	Construction completed at STH 67 & CTH B.	D. Brantner	No
08/05/09	8/5/2009	Added timing for the SB left turn phase. Changed all-red time for phases 3 & 7 to 2 sec. Updated EVP timing to current standards.	Added SB prot/perm left turn phase.	D. Brantner	No
07/29/09	7/29/2009	Temporarily set signal to free mode.	Complaints of long backups EB and WB during am & midday peak due to posted detour of CTH B through intersection.	D. Brantner	Yes
07/16/09		Increased max times on all phases. Modified system splits and offsets.	Construction detouring through signal.	J. Dimmer	Yes

Timing Changes Log for Signal S0890 on Hwy 67 in WAUKESHA County

Oconomowoc Dr/Pabst Farms Blvd

Date Computer Changed	Date Change Made in Field	Timing Change	Reason for Change	Change By	Temp Timing
03/20/09		Added NBLT. Modified system timing	Citizen complaint	J. Dimmer	No
02/09/07		DST	DST	S. Pierce	No
09/12/05	9/13/2005	Updated system timing to reflect the addition of EB and WB protected only left turn phases. Updated EVP to reflect the addition of phases 3 & 7.	Added EB and WB left turn phase	D. Brantner	No
08/09/05	8/9/2005	Took phase 8 off Min Recall and decreased Min Green to 8 sec.	WB outside left turn detection hooked up to pick up vehicles in lane.	D. Brantner	No
08/08/05	8/8/2005	Put ph8 on min recall and bumped min up to 20s.	WB outside left turn lane which is missing detection has not been striped out and currently being used by vehicles.	J. Haug	Yes
07/01/04	7/6/2004	Set Ph. 2 to Max. Recall.	Construction.	J. Haug	No
02/19/04	2/20/2004	Turned system off at 7 pm.	Traffic lighter than expected.	J. Haug	No
11/05/03		New System Timing.	New signal to be put in system along STH 67.	J. Haug	No
				P. Virk	Yes
				P. Virk	

Waukesha (S67-0890 - S67-1270) - S67-0890 - STH 67 & Oconomowoc Dr

Configuration Phase Sequence

Controller Sequence (MM)1-1-1

Hardware Alternate Sequence Enable: No

Phase Ring Sequence.....(Note: Sequences identical to the prior one are not printed)

	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
Sequence 1																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 2																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 3																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 4																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 5																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 6																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 7																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 8																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 9																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 10																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 11																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 12																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 13																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 14																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 15																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 16																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.

Phases In Use / Exclusive PED (MM)1-2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phases in Use	X	X	X	X	X	X	X	X								
Exclusive PED																

Phase Compatibility (MM)1-1-2

Phase	Compatible Phase
1	5

1	6
2	5
2	6
3	7
3	8
4	7
4	8
9	11
9	12
10	11
10	12
13	15
13	16
14	15
14	16

Phase and Overlap Descriptions

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Description	NBLT	SB	WBLT	EB	SBLT	NB	EBLT	WB								
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**L**	**K**	**L**	**M**	**N**	**O**
Description																

Administration (MM)1-7-1

Enable CU/Cabinet Interlock CRC	No
Request Download Controller Data	No
Controller Database CRC	0000
Enable Automatic Backup to Datakey	Yes

Backup Prevent (MM)1-1-3

	Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Timing /	1		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Backup	2	.		.	.	.	.	.	.	.	.	.	.	.	.	.	.
	3	.	.		.	.	.	.	.	.	.	.	.	.	.	.	.
	4	.	.	.		.	.	.	.	.	.	.	.	.	.	.	.
	5	.	.	.	.		.	.	.	.	.	.	.	.	.	.	.
	6	.	.	.	.	.		.	.	.	.	.	.	.	.	.	.
	7	.	.	.	.	.	.		.	.	.	.	.	.	.	.	.
	8	.	.	.	.	.	.	.		.	.	.	.	.	.	.	.
	9	.	.	.	.	.	.	.	.		.	.	.	.	.	.	.
	10	.	.	.	.	.	.	.	.	.		.	.	.	.	.	.
	11	.	.	.	.	.	.	.	.	.	.		.	.	.	.	.
	12	.	.	.	.	.	.	.	.	.	.	.		.	.	.	.
	13	.	.	.	.	.	.	.	.	.	.	.	.		.	.	.
	14	.	.	.	.	.	.	.	.	.	.	.	.	.		.	.
	15	.	.	.	.	.	.	.	.	.	.	.	.	.	.		.
	16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	

Simultaneous Gap (MM)1-1-4

	Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	1		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	2	.		.	.	.	X	.	.	.	.	.	.	.	.	.	.
	3	.	.		.	.	.	.	.	.	.	.	.	.	.	.	.
	4	.	.	.		.	.	.	X	.	.	.	.	.	.	.	.
	5	.	.	.	.		.	.	.	.	.	.	.	.	.	.	.
Phase	6	.	X	.	.	.		.	.	.	.	.	.	.	.	.	.
Must	7	.	.	.	.	.	.		.	.	.	.	.	.	.	.	.
Gap	8	.	.	.	X	.	.	.		.	.	.	.	.	.	.	.
With	9	.	.	.	.	.	.	.	.		.	.	.	.	.	.	.
Phase	10	.	.	.	.	.	.	.	.	.		.	.	.	.	.	.
	11	.	.	.	.	.	.	.	.	.	.		.	.	.	.	.
	12	.	.	.	.	.	.	.	.	.	.	.		.	.	.	.
	13	.	.	.	.	.	.	.	.	.	.	.	.		.	.	.
	14	.	.	.	.	.	.	.	.	.	.	.	.	.		.	.
	15	.	.	.	.	.	.	.	.	.	.	.	.	.	.		.
	16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
	Disable	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Load Switch Assignments (MMU Channel) (MM)1-3

	Phase / Overlap	Type	Dimming				Power Up				Auto		Flash Together
			Red	Yellow	Green	Dark	Auto	Red	Yellow	Dark	Red	Yellow	
1	1	V				+	X				X		X
2	2	V				+	X				X		
3	3	V				+	X				X		X
4	4	V				+	X				X		
5	5	V				-	X				X		
6	6	V				-	X				X		X
7	7	V				-	X				X		
8	8	V				-	X				X		X
9	2	P				+	X						
10	4	P				+	X						
11	6	P				-	X						
12	8	P				-	X						
13	1	O				+	X				X		X
14	2	O				-	X				X		X
15	3	O				+	X				X		
16	4	O				-	X				X		

Waukesha (S67-0890 - S67-1270) - S67-0890 - STH 67 & Oconomowoc Dr

Configuration Port 1 (SDLC)

SDLC Options (MM)1-4-1

BIU	1	2	3	4	5	6	7	8
Term and Facility Enable	X	X						
Detector Rack Enable	X	X						

Enable TS2/MMU Type Cabinet: Yes
Enable MMU Extended Status: Yes
Enable SDLC Stop Time: No
Enable 3 Critical RFE's Lockup: Yes

MMU Program (MM)1-4-2

Channel Can Serve with Channel	
Channel 1	**Channel 2**
1	5
1	6
1	11
2	5
2	6
2	9
2	11
3	7
3	8
3	12
4	7
4	8
4	10
4	12
5	9
6	9
6	11
7	10
8	10
8	12
9	11
10	12

Color Check Enable (MM)1-4-3

Enable Color Check: Yes

MMU Channel	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Green	X	X	X	X	X	X	X	X	X	X	X	X				
Yellow	X	X	X	X	X	X	X	X								
Red	X	X	X	X	X	X	X	X								

Secondary To Secondary Addressing (MM)1-4-4

ID	1	2	3	4	5	6	7	8	MMU
Term and Facility Enable									

ID	1	2	3	4	5	6	7	8	Diag
Detector Rack Enable									

Diagonstics (Test Fixture) Enable: No

Waukesha (S67-0890 - S67-1270) - S67-0890 - STH 67 & Oconomowoc Dr

Configuration Communications

Ethernet Port Configuration (MM)1-5-1

Controller IP: 172.22.82.70
Subnet Mask: 255.255.255.0
Default Gateway IP: 172.22.82.1
Server IP: 0.0.0.0

NTCIP Parameters (MM)1-5-5

Backup Time: 0
UDP Port: 501
Ethernet Priority: 1
Port 2 Priority: 4
Port 3A Priority: 2
Port 3B Priority: 3

Port Configuration (MM)1-5-2 to 1-5-4

Port	2 (C50S)	3A (C21S)	3B (C22S)
Protocol	NTCIP	NTCIP	Terminal
Enable	No	Yes	No
Data Rate	9600	19.2K	1200
Data Parity Stop	8 N 1	8 N 1	8 0 1
Modem Setup String	None	None	None
User String			
Comm Port Address	1	1	0
System Detector 9-1	0	0	0
Telemetry Response Delay	0.0	0.0	0.0
Duplex Half/Full	Full	Full	Full
Flow Control	Yes	Yes	Yes
AB3418 NTCIP Group Address	0	0	0
AB3418 NTCIP Single Flag Enable	No	No	No
RTS to CTS Delay	0.0	0.0	3.0
RTS Turn Off Delay	0.0	0.0	2.0
Droupout Time	10	10	10
Early RTS	No	No	No
Telemetry Mode	FSK	FSK	FSK
Rail Road	0	0	0
Rail Road Line	0	0	0
ATCS Group	0	0	0
Wayside Device	0	0	0
ATCS Device	0	0	0
Wayside SubNode	0	0	0
ATCS SubNode	0	0	0

ECPIP Parameters (MM)1-5-6

Controller Address: 0
Expanded System Detector Address: 0

Local System Detector

Local System Detector	Number

Waukesha (S67-0890 - S67-1270) - S67-0890 - STH 67 & Oconomowoc Dr

Configuration Logging/Display

Event Logging (MM)1-6-1

Critical RFE's	Yes	3 Critical RFE's in 24 Hours	Yes
MMU Flash Faults	Yes	Local Flash Faults	Yes
Non-Critical RFE's (Det/Test)	Yes	Detector Errors	Yes
Coordination Errors	Yes	Controller Download	Yes
Preempt	Yes	TSP	Yes
Power On/Off	Yes	Low Battery	Yes
Access	Yes	Data Change	Yes
Online/Offline	Yes		

Alarm Log	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Enable Logging	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Display Options (MM)1-7-2

Key Click Enable:	Yes
Backlight Enable:	Yes
LED Mode:	Single Color
Main Status Display Mode:	Basic
Screen Format:	Advanced
Trans Mode Pop-up Disable:	No

Sign On (MM)8-5

Sign On Message Line 1: INTERSECTION NAME:
Sign On Message Line 2: SE WisDOT Database 150828

Waukesha (S67-0890 - S67-1270) - S67-0890 - STH 67 & Oconomowoc Dr

Logic Processor Page 1
Statement Control (MM)1-8-1

LP	Statement Control

Waukesha (S67-0890 - S67-1270) - S67-0890 - STH 67 & Oconomowoc Dr

Logic Processor Page 2

Logic Statements (MM)1-8-2

Waukesha (S67-0890 - S67-1270) - S67-0890 - STH 67 & Oconomowoc Dr

Controller Timing Plan (MM)2-1

Plan 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	NBLT	SB	WBLT	EB	SBLT	NB	EBLT	WB								
Min Green	8	15	8	10	8	15	8	10	0	0	0	0	0	0	0	0
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	7	0	7	0	7	0	7	0	0	0	0	0	0	0	0
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	21	0	43	0	27	0	42	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	1.5	3.4	1.5	1.5	1.5	3.3	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	20	40	20	30	20	40	20	30	0	0	0	0	0	0	0	0
Max 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.5	4.3	3.5	5.3	3.5	4.3	3.5	5.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	2.0	3.0	2.5	3.0	2.5	3.0	2.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	1.2	0.0	0.0	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	8	22	8	10	8	21	8	10	0	0	0	0	0	0	0	0
Time B4	20	22	20	30	20	21	20	30	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	18	0	0	0	18	0	0	0	0	0	0	0	0	0	0
Min Gap	1.5	3.5	1.5	1.5	1.5	3.5	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	NBLT	SB	WBLT	EB	SBLT	NB	EBLT	WB								
Min Green	5	15	5	10	5	15	5	10	0	0	0	0	0	0	0	0
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	3.0	7.0	3.0	5.0	3.0	7.0	3.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	15	45	15	35	15	45	15	35	0	0	0	0	0	0	0	0
Max 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 3

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Direction	**NBLT**	**SB**	**WBLT**	**EB**	**SBLT**	**NB**	**EBLT**	**WB**								
Min Green	5	15	5	10	5	15	5	10	0	0	0	0	0	0	0	0
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	3.0	7.0	3.0	5.0	3.0	7.0	3.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	15	45	15	35	15	45	15	35	0	0	0	0	0	0	0	0
Max 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 4

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Direction	**NBLT**	**SB**	**WBLT**	**EB**	**SBLT**	**NB**	**EBLT**	**WB**								
Min Green	5	15	5	10	5	15	5	10	0	0	0	0	0	0	0	0
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	3.0	7.0	3.0	5.0	3.0	7.0	3.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	15	45	15	35	15	45	15	35	0	0	0	0	0	0	0	0
Max 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Waukesha (S67-0890 - S67-1270) - S67-0890 - STH 67 & Oconomowoc Dr

Controller Overlaps

Vehicle Overlaps (MM)2-2

Overlap	Type	Lag Green	Yellow	Red	Advance Green
G	Other	0.0	3.5	2.0	0.0

Phases

Overlap	Phase	Included	Protect	Ped Protect	Not Overlap	Modifier	Lag X Phase	Lag 2 Phase	Flash Green

PPLT FYA

Overlap	Protected Phase	Permissive Phase	Flash Arrow Output	Flash Arrow Channel	FYA Delay	FYA Clearance	Special Function Disable
E	1	2	Ped Yellow	9	0.0	0.0	0

Guaranteed Minimum Time Data (MM) 2-4

Phase Time Data

Phase	Min Green	Walk	Ped Clear	Yellow	Red Clear	Overlap Green
A01	1	0	7	3.0	0.0	1
B02	1	0	7	3.0	0.0	1
C03	1	0	7	3.0	0.0	1
D04	1	0	7	3.0	0.0	1
E05	1	0	7	3.0	0.0	1
F06	1	0	7	3.0	0.0	1
G07	1	0	7	3.0	0.0	1
H08	1	0	7	3.0	0.0	1
I09	1	0	7	3.0	0.0	1
J10	1	0	7	3.0	0.0	1
K11	1	0	7	3.0	0.0	1
L12	1	0	7	3.0	0.0	1
M13	1	0	7	3.0	0.0	1
N14	1	0	7	3.0	0.0	1
O15	1	0	7	3.0	0.0	1
P16	1	0	7	3.0	0.0	1

Waukesha (S67-0890 - S67-1270) - S67-0890 - STH 67 & Oconomowoc Dr

Controller **Pedestrian Overlaps**
Pedestrian Overlaps (MM) 2-3

Included Phase	Ped Overlap

Waukesha (S67-0890 - S67-1270) - S67-0890 - STH 67 & Oconomowoc Dr

Controller Start/Fash (MM) 2-5

Startup

Phase	Phase Setting
2	G
6	G

Overlap
A
B
C
D

Flash > Mon: No
Flash Time: 0
All Red: 6
Power Start Sequence: 1
MUTCD Enabled: Yes
MUTCD Yellow to Green: No

Automatic Flash

Entry Phase
2
6

Exit Phase
2
6

Overlap Exit
A
B
C
D

Flash > Mon: No
Exit Flash Interval: G
Minimum Auto Flash: 8
Minimumin Recall: No
Cycle Through Phase: No

Waukesha (S67-0890 - S67-1270) - S67-0890 - STH 67 & Oconomowoc Dr

Controller Options

Controller Options (MM)2-6-1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Flashing Green Phase																
Guaranteed Passage																
Non Act 1																
Non Act 2																
Dual Entry		X		X		X		X								
Conditional Service																
Conditional Reservice																
Ped Reservice																
Rest In Walk																
Flashing Walk																
Ped Clear Yellow																
Ped Clear Red																
IGRN + Veh Ext																

Ped Clear Protect: On Red Revert: 2.0 MUTCD 3 Seconds Don't Walk: No

Act Pre-Time (MM)2-7

Pre-Time Mode Enable: No Free Input Enables Pre-Timed: Yes

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Pre-Timed Phase																

Phase Recall Options (MM)2-8

Plan 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector		X				X										
Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
Al Calc																

Plan 2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector		X				X										
Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
Al Calc																

Plan 3

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector		X				X										
Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
Al Calc																

Plan 4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector		X				X										

Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
AI Calc																

Waukesha (S67-0890 - S67-1270) - S67-0890 - STH 67 & Oconomowoc Dr

Coordination Options

Coordination Options (MM)3-1

Manual Pattern	Auto	ECPI Coord	Yes
System Source	TBC	System Format	STD
Splits In	Seconds	Offsets In	Seconds
Transition	Add	Max Select	MAXINH
Dwell/Add Time	0		
Delay Coord Walk to LZ	No	Force Off	Fixed
Offset Reference	Lead	Use Ped Time	No
Ped Recall	No	Ped Reservice	No
Local Zero Override	No	FO Added Initial Green	Yes
Re-Sync Count	3	Multisync	No

Auto Perm Minimum Green (Seconds) (MM)3-4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Minimum Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Split Demand (MM)3-5

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Demand 1																
Demand 2																

Demand	1	2
Detector	0	0
Call Time (Sec)	0	0
Cycle Count	0	0

Waukesha (S67-0890 - S67-1270) - S67-0890 - STH 67 & Oconomowoc Dr

Coordination Pattern Data
Pattern Data (MM)3-2

Pattern - 1

Split Pattern	1	TS2 (Pat-Off)	0-1	Splits in	Seconds
Cycle	90	Std (COS)	0	Offsets in	Seconds
Offset Value	35s	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	5		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	NBLT	SB	WBLT	EB	SBLT	NB	EBLT	WB								
Splits (Split Pat 1)	20	33	18	19	15	38	18	19	0	0	0	0	0	0	0	0
Preference 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Preference 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Disp.	-	0	0	0
Split Sum	90s	90s	0s	0s

Misc. Data

Veh. Permissive 1	0	Veh. Permissive 2	0	Veh. Permissive 2 Disp.	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern Data

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coordinated Phases		X				X										
Vehicle Recalls																
Ped Recalls																
Max Recalls																
Phase Omit																
Special Function Output																

Pattern - 2

Split Pattern	2	TS2 (Pat-Off)	0-2	Splits in	Seconds
Cycle	80	Std (COS)	0	Offsets in	Seconds
Offset Value	56s	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	NBLT	SB	WBLT	EB	SBLT	NB	EBLT	WB								
Splits (Split Pat 2)	15	29	16	20	15	29	16	20	0	0	0	0	0	0	0	0
Preference 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Preference 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Disp.	-	0	0	0
Split Sum	80s	80s	0s	0s

Misc. Data

Veh. Permissive 1	0	Veh. Permissive 2	0	Veh. Permissive 2 Disp.	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern Data

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coordinated Phases		X				X										
Vehicle Recalls																
Ped Recalls																
Max Recalls																
Phase Omit																
Special Function Output																

Pattern - 3

Split Pattern	3	TS2 (Pat-Off)	0-3	Splits in	Seconds
Cycle	100	Std (COS)	0	Offsets in	Seconds
Offset Value	48s	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	5		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	NBLT	SB	WBLT	EB	SBLT	NB	EBLT	WB								
Splits (Split Pat 3)	20	40	15	25	20	40	15	25	0	0	0	0	0	0	0	0
Preference 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Preference 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Disp.	-	0	0	0
Split Sum	100s	100s	0s	0s

Misc. Data

Veh. Permissive 1	0	Veh. Permissive 2	0	Veh. Permissive 2 Disp.	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern Data

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coordinated Phases		X				X										
Vehicle Recalls																
Ped Recalls																
Max Recalls																
Phase Omit																
Special Function Output																

Waukesha (S67-0890 - S67-1270) - S67-0890 - STH 67 & Oconomowoc Dr

Preemptor

Preempt Plan (MM)4-1

Plan 3

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**
Track Clear Vehicle																
Track Clear Overlap																
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Vehicle		X			X											
Dwell Ped																
Dwell Overlap					F1											
Cycling Vehicle																
Cycling Ped																
Cycling Overlap																
Exit Phase		X				X										
Exit Calls																
Special Funciton																

Enable	Yes	Preempt Override	No	Interlock Enable	No
Detector Lock	Yes	Delay	1	Inhibit	0
Override Flash	No	Duration	0	CLR > GRN	No
Term Overlap Asap	No	PC Through Yellow	No	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	Flash Exit Color	Green	Exit Option	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Preempt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	5	0	5	25.5	25.5
	Min Grn	**Ext Grn**	**Max Grn**	**Yellow**	**Red**
Track Clear	0	0	0	25.5	25.5
	Min Dwell	**Pmt Ext**	**Max Time**	**Yellow**	**Red**
Dwell / Cycle-Exit	10	5.0	0	25.5	25.5

Preempt Active Out	On	Preempt Active Dwell	No
Other Priority Preempt	On	Non-Priority Preempt	F1
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Pri Return % Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**
Track Clear Vehicle																
Track Clear Overlap																
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Vehicle	X					X										
Dwell Ped																
Dwell Overlap																
Cycling Vehicle																
Cycling Ped																
Cycling Overlap																
Exit Phase		X				X										
Exit Calls																
Special Funciton																

Enable	Yes	Preempt Override	No	Interlock Enable	No
Detector Lock	Yes	Delay	1	Inhibit	0
Override Flash	No	Duration	0	CLR > GRN	No
Term Overlap Asap	No	PC Through Yellow	No	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	Flash Exit Color	Green	Exit Option	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Preempt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	5	0	5	25.5	25.5
	Min Grn	**Ext Grn**	**Max Grn**	**Yellow**	**Red**
Track Clear	0	0	0	25.5	25.5
	Min Dwell	**Pmt Ext**	**Max Time**	**Yellow**	**Red**
Dwell / Cycle-Exit	10	5.0	0	25.5	25.5

Preempt Active Out	On	Preempt Active Dwell	No
Other Priority Preempt	On	Non-Priority Preempt	F1
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Pri Return % Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 5

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**
Track Clear Vehicle																
Track Clear Overlap																
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Vehicle				X			X									
Dwell Ped																
Dwell Overlap																
Cycling Vehicle																
Cycling Ped																
Cycling Overlap																
Exit Phase				X				X								
Exit Calls																
Special Funciton																

Enable	Yes	Preempt Override	No	Interlock Enable	No
Detector Lock	Yes	Delay	1	Inhibit	0
Override Flash	No	Duration	0	CLR > GRN	No
Term Overlap Asap	No	PC Through Yellow	No	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	Flash Exit Color	Green	Exit Option	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Preempt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	5	0	5	25.5	25.5
	Min Grn	**Ext Grn**	**Max Grn**	**Yellow**	**Red**
Track Clear	0	0	0	25.5	25.5
	Min Dwell	**Pmt Ext**	**Max Time**	**Yellow**	**Red**
Dwell / Cycle-Exit	10	5.0	0	25.5	25.5

Preempt Active Out	On	Preempt Active Dwell	No
Other Priority Preempt	On	Non-Priority Preempt	F1
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Pri Return % Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 6

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**
Track Clear Vehicle																
Track Clear Overlap																
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Vehicle			X					X								
Dwell Ped																
Dwell Overlap																
Cycling Vehicle																
Cycling Ped																
Cycling Overlap																
Exit Phase				X				X								
Exit Calls																
Special Funciton																

Enable	Yes	Preempt Override	No	Interlock Enable	No
Detector Lock	Yes	Delay	1	Inhibit	0
Override Flash	No	Duration	0	CLR > GRN	No
Term Overlap Asap	No	PC Through Yellow	No	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	Flash Exit Color	Green	Exit Option	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Preempt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	5	0	5	25.5	25.5
	Min Grn	**Ext Grn**	**Max Grn**	**Yellow**	**Red**
Track Clear	0	0	0	25.5	25.5
	Min Dwell	**Pmt Ext**	**Max Time**	**Yellow**	**Red**
Dwell / Cycle-Exit	10	5.0	0	25.5	25.5

Preempt Active Out	On	Preempt Active Dwell	No
Other Priority Preempt	On	Non-Priority Preempt	F1
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Pri Return % Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Waukesha (S67-0890 - S67-1270) - S67-0890 - STH 67 & Oconomowoc Dr

Time Base **Clock/Calendar**
Clock/Calendar Options (MM)5-1

Enable Action Plan:	0
Sync Reference Time:	12:00 AM
Sync Reference:	Reference Time
Day Light Savings:	USDLS
Time Reset Input Set Time:	3:30:00
Standard Time From GMT:	0

Waukesha (S67-0890 - S67-1270) - S67-0890 - STH 67 & Oconomowoc Dr

Time Base Action Plan
Action Plan (MM)5-2

Action Plan - 1

Pattern	1	Override System	No
Timing Plan	1	Sequence	5
Veh Det Plan	1	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 2

Pattern	2	Override System	No
Timing Plan	1	Sequence	0
Veh Det Plan	1	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 3

Pattern	3	Override System	No
Timing Plan	1	Sequence	5
Veh Det Plan	1	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 99

Pattern	255 - FLSH	Override System	No
Timing Plan	0	Sequence	0
Veh Det Plan	0	Detector Log	None
Flash	Yes	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Action Plan - 100

Pattern	254 - FREE	Override System	No
Timing Plan	1	Sequence	0
Veh Det Plan	1	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No	Veh Priority Return	No
Ped Priority Return	No	Queue Delay	No
Prempt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Special Function																
Auxilliary Function																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

Waukesha (S67-0890 - S67-1270) - S67-0890 - STH 67 & Oconomowoc Dr

Time Base Day Plan/Schedule
Day Plan (MM)5-3

Day Plan - 1

Event	Action Plan	Start Time
1	100	12:01 AM
2	2	9:00 AM
3	100	9:00 PM

Day Plan - 2

Event	Action Plan	Start Time
1	100	12:01 AM
2	1	6:00 AM
3	2	9:00 AM
4	3	3:00 PM
5	2	7:00 PM
6	100	9:00 PM

Schedule (MM)5-4

Schedule Number - 1

Day Plan Number: 1

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	X	X	X	X	X	X	X	X	X	X	X	X

Day of Week	Sun	Mon	Tue	Wed	Thur	Fri	Sat
	X						X

Day of Month	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

Schedule Number - 2

Day Plan Number: 2

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	X	X	X	X	X	X	X	X	X	X	X	X

Day of Week	Sun	Mon	Tue	Wed	Thur	Fri	Sat
		X	X	X	X	X	

Day of Month	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

Waukesha (S67-0890 - S67-1270) - S67-0890 - STH 67 & Oconomowoc Dr

Time Base Exceptions

Exception Day Program (MM)5-5

Day	Fixed/Float	Month	Day of Week/Month	Week of Month/Year	Day Plan
37	FIXED	255	255	65535	255
38	FIXED	255	255	65535	255
39	FIXED	255	255	65535	255
40	FIXED	255	255	65535	255
41	FIXED	255	255	65535	255
42	FIXED	255	255	65535	255
43	FIXED	255	255	65535	255
44	FIXED	255	255	65535	255
45	FIXED	255	255	65535	255
46	FIXED	255	255	65535	255
47	FIXED	255	255	65535	255
48	FIXED	255	255	65535	255
49	FIXED	255	255	65535	255
50	FIXED	255	255	65535	255
51	FIXED	255	255	65535	255
52	FIXED	255	255	65535	255
53	FIXED	255	255	65535	255
54	FIXED	255	255	65535	255
55	FIXED	255	255	65535	255
56	FIXED	255	255	65535	255
57	FIXED	255	255	65535	255
58	FIXED	255	255	65535	255
59	FIXED	255	255	65535	255
60	FIXED	255	255	65535	255
61	FIXED	255	255	65535	255
62	FIXED	255	255	65535	255
63	FIXED	255	255	65535	255
64	FIXED	255	255	65535	255
65	FIXED	255	255	65535	255
66	FIXED	255	255	65535	255
67	FIXED	255	255	65535	255
68	FIXED	255	255	65535	255
69	FIXED	255	255	65535	255
70	FIXED	255	255	65535	255
71	FIXED	255	255	65535	255
72	FIXED	255	255	65535	255
73	FIXED	255	255	65535	255
74	FIXED	255	255	65535	255
75	FIXED	255	255	65535	255
76	FIXED	255	255	65535	255
77	FIXED	255	255	65535	255
78	FIXED	255	255	65535	255
79	FIXED	255	255	65535	255
80	FIXED	255	255	65535	255
81	FIXED	255	255	65535	255
82	FIXED	255	255	65535	255
83	FIXED	255	255	65535	255
84	FIXED	255	255	65535	255
85	FIXED	255	255	65535	255
86	FIXED	255	255	65535	255
87	FIXED	255	255	65535	255
88	FIXED	255	255	65535	255
89	FIXED	255	255	65535	255
90	FIXED	255	255	65535	255

Waukesha (S67-0890 - S67-1270) - S67-0890 - STH 67 & Oconomowoc Dr

Detectors

Detectors Page 1

Vehicle Detectors Setup (MM)6-1

Vehicle Plan	Detector Number	Called	Type
1	60	2	N
1	60	4	N
1	60	6	N
1	60	8	N
2	1	1	N
2	2	2	N
2	3	3	N
2	4	4	N
2	5	5	N
2	6	6	N
2	7	7	N
2	8	8	N
2	60	2	N
2	60	4	N
2	60	6	N
2	60	8	N
3	1	1	N
3	2	2	N
3	3	3	N
3	4	4	N
3	5	5	N
3	6	6	N
3	7	7	N
3	8	8	N
3	60	2	N
3	60	4	N
3	60	6	N
3	60	8	N
4	1	1	N
4	2	2	N
4	3	3	N
4	4	4	N
4	5	5	N
4	6	6	N
4	7	7	N
4	8	8	N
4	60	2	N
4	60	4	N
4	60	6	N
4	60	8	N

Vehicle Detector Setup (MM)6-2 continued

Detector Number	Type	TS2 Detector	Detector Description
1	N-NTCIP	Yes	
2	N-NTCIP	Yes	
3	N-NTCIP	Yes	
4	N-NTCIP	Yes	
5	N-NTCIP	Yes	
6	N-NTCIP	Yes	
7	N-NTCIP	Yes	
8	N-NTCIP	Yes	
9	N-NTCIP	Yes	
10	N-NTCIP	Yes	
11	N-NTCIP	Yes	
12	N-NTCIP	Yes	
13	N-NTCIP	Yes	
14	N-NTCIP	Yes	

15	N-NTCIP	Yes	
16	N-NTCIP	Yes	
17	N-NTCIP	Yes	
18	N-NTCIP	Yes	
19	N-NTCIP	Yes	
20	N-NTCIP	Yes	
21	N-NTCIP	Yes	
22	N-NTCIP	Yes	
23	N-NTCIP	Yes	
24	N-NTCIP	Yes	
25	N-NTCIP	Yes	
26	N-NTCIP	Yes	
27	N-NTCIP	Yes	
28	N-NTCIP	Yes	
29	N-NTCIP	Yes	
30	N-NTCIP	Yes	
31	N-NTCIP	Yes	
32	N-NTCIP	Yes	
33	N-NTCIP	Yes	
34	N-NTCIP	Yes	
35	N-NTCIP	Yes	
36	N-NTCIP	Yes	
37	N-NTCIP	Yes	
38	N-NTCIP	Yes	
39	N-NTCIP	Yes	
40	N-NTCIP	Yes	
41	N-NTCIP	Yes	
42	N-NTCIP	Yes	
43	N-NTCIP	Yes	
44	N-NTCIP	Yes	
45	N-NTCIP	Yes	
46	N-NTCIP	Yes	
47	N-NTCIP	Yes	
48	N-NTCIP	Yes	
49	N-NTCIP	Yes	
50	N-NTCIP	Yes	
51	N-NTCIP	Yes	
52	N-NTCIP	Yes	
53	N-NTCIP	Yes	
54	N-NTCIP	Yes	
55	N-NTCIP	Yes	
56	N-NTCIP	Yes	
57	N-NTCIP	Yes	
58	N-NTCIP	Yes	
59	N-NTCIP	Yes	
60	N-NTCIP	Yes	
61	N-NTCIP	Yes	
62	N-NTCIP	Yes	
63	N-NTCIP	Yes	
64	N-NTCIP	Yes	

Vehicle Detector Setup (MM)6-2 continued

Det Num	Veh Det Plan	Phase	ECPI Log	Call Option	Delay Time	Ext Option	Extend Time / Passage Time	Queue Lim / Discon. Time	Use Added Initial	Cross Switch Phase	Lock In	NTCIP Vol.	NTCIP Occ.	Pmt Queue Delay
1	1	4	No	No	0.0	Passage	4.9	0	Yes	0	None	No	No	No
1	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
1	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
1	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
2	1	6	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
2	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
2	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
2	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
3	1	2	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
3	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
3	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
3	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

4	1	2	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
4	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
4	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
4	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
5	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
5	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
5	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
5	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
6	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
6	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
6	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
6	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
7	1	6	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
7	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
7	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
7	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
8	1	8	No	No	0.0	Passage	5.1	0	Yes	0	None	No	No	No
8	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
8	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
8	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
9	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
9	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
9	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
9	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
10	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
10	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
10	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
10	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
11	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
11	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
11	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
11	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
12	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
12	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
12	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
12	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
13	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
13	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
13	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
13	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
14	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
14	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
14	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
14	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
15	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
15	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
15	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
15	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
16	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
16	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
16	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
16	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
17	1	4	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
17	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
17	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
17	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
18	1	5	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
18	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
18	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
18	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
19	1	1	No	Yes	0.0	Passage	0.0	0	Yes	2	None	No	No	No
19	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
19	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
19	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
20	1	3	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
20	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
20	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
20	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

21	1	8	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
21	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
21	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
21	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
22	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
22	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
22	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
22	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
23	1	7	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
23	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
23	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
23	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
24	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
24	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
24	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
24	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
25	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
25	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
25	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
25	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
26	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
26	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
26	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
26	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
27	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
27	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
27	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
27	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
28	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
28	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
28	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
28	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
29	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
29	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
29	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
29	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
30	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
30	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
30	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
30	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
31	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
31	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
31	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
31	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
32	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
32	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
32	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
32	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
33	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
33	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
33	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
33	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
34	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
34	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
34	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
34	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
35	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
35	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
35	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
35	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
36	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
36	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
36	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
36	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
37	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
37	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
37	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
37	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

38	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
38	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
38	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
38	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
39	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
39	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
39	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
39	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
40	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
40	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
40	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
40	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
41	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
41	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
41	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
41	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
42	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
42	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
42	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
42	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
43	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
43	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
43	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
43	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
44	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
44	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
44	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
44	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
45	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
45	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
45	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
45	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
46	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
46	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
46	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
46	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
47	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
47	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
47	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
47	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
48	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
48	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
48	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
48	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
49	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
49	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
49	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
49	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
50	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
50	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
50	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
50	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
51	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
51	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
51	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
51	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
52	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
52	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
52	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
52	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
53	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
53	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
53	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
53	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
54	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
54	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
54	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
54	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

55	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
55	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
55	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
55	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
56	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
56	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
56	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
56	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
57	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
57	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
57	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
57	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
58	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
58	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
58	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
58	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
59	1	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
59	2	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
59	3	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
59	4	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
60	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	Yellow	No	No	No
60	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	Yellow	No	No	No
60	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	Yellow	No	No	No
60	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	Yellow	No	No	No
61	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
61	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
61	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
61	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
62	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
62	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
62	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
62	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
63	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
63	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
63	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
63	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
64	1	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
64	2	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
64	3	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No
64	4	0	No	Yes	0.0	Passage	0.0	0	Yes	0	None	No	No	No

Ped Detector Options (MM)6-3

Phase Ped Detector (Econolite)

Detector	Call Phase															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.
4	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.
5	.	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.
6	.	.	.	.	.	X	.	.	.	.	.	.	.	.	.	.
7	.	.	.	.	.	.	X	.	.	.	.	.	.	.	.	.
8	.	.	.	.	.	.	.	X	.	.	.	.	.	.	.	.
9	.	.	.	.	.	.	.	.	X	.	.	.	.	.	.	.
10	.	.	.	.	.	.	.	.	.	X	.	.	.	.	.	.
11	.	.	.	.	.	.	.	.	.	.	X	.	.	.	.	.
12	.	.	.	.	.	.	.	.	.	.	.	X	.	.	.	.
13	.	.	.	.	.	.	.	.	.	.	.	.	X	.	.	.
14	.	.	.	.	.	.	.	.	.	.	.	.	.	X	.	.
15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	X	.
16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	X

Waukesha (S67-0890 - S67-1270) - S67-0890 - STH 67 & Oconomowoc Dr

Detectors

Detectors Page 2

Log - Speed Detector Setup (MM)6-4

NTCIP Log Period: 15 ECPI Log Period: 15 Length Unit: Inch

Speed Detector	Local Detector	One/Two Detector	Vehicle Length	Trap Length	Enable Log
1	0	1	0	0	No
2	0	1	0	0	No
3	0	1	0	0	No
4	0	1	0	0	No
5	0	1	0	0	No
6	0	1	0	0	No
7	0	1	0	0	No
8	0	1	0	0	No
9	0	1	0	0	No
10	0	1	0	0	No
11	0	1	0	0	No
12	0	1	0	0	No
13	0	1	0	0	No
14	0	1	0	0	No
15	0	1	0	0	No
16	0	1	0	0	No

Vehicle Detector Diagnostics (MM)6-5

Plan	Detector	Counts	Act	Pres	Multiplier	Failed Time	Failed Call Delay
1	1	0	0	0	1	255	0
1	2	0	0	0	1	255	0
1	3	0	0	0	1	255	0
1	4	0	0	0	1	255	0
1	5	0	0	0	1	255	0
1	6	0	0	0	1	255	0
1	7	0	0	0	1	255	0
1	8	0	0	0	1	255	0
1	9	0	0	0	1	255	0
1	10	0	0	0	1	255	0
1	11	0	0	0	1	255	0
1	12	0	0	0	1	255	0
1	13	0	0	0	1	255	0
1	14	0	0	0	1	255	0
1	15	0	0	0	1	255	0
1	16	0	0	0	1	255	0
1	17	0	0	0	1	255	0
1	18	0	0	0	1	255	0
1	19	0	0	0	1	255	0
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1	21	0	0	0	1	255	0
1	22	0	0	0	1	255	0
1	23	0	0	0	1	255	0
1	24	0	0	0	1	255	0
1	25	0	0	0	1	255	0
1	26	0	0	0	1	255	0
1	27	0	0	0	1	255	0
1	28	0	0	0	1	255	0
1	29	0	0	0	1	255	0
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1	31	0	0	0	1	255	0
1	32	0	0	0	1	255	0
1	33	0	0	0	1	255	0

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1	35	0	0	0	1	255	0
1	36	0	0	0	1	255	0
1	37	0	0	0	1	255	0
1	38	0	0	0	1	255	0
1	39	0	0	0	1	255	0
1	40	0	0	0	1	255	0
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1	59	0	0	0	1	255	0
1	60	0	0	0	1	255	0
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2	39	0	0	0	1	255	0
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3	42	0	0	0	1	255	0
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3	61	0	0	0	1	255	0
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3	64	0	0	0	1	255	0
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4	3	0	0	0	1	255	0
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4	44	0	0	0	1	255	0
4	45	0	0	0	1	255	0

4	46	0	0	0	1	255	0
4	47	0	0	0	1	255	0
4	48	0	0	0	1	255	0
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4	59	0	0	0	1	255	0
4	60	0	0	0	1	255	0
4	61	0	0	0	1	255	0
4	62	0	0	0	1	255	0
4	63	0	0	0	1	255	0
4	64	0	0	0	1	255	0

Pedestrian Detector Diagnotics (MM)6-6

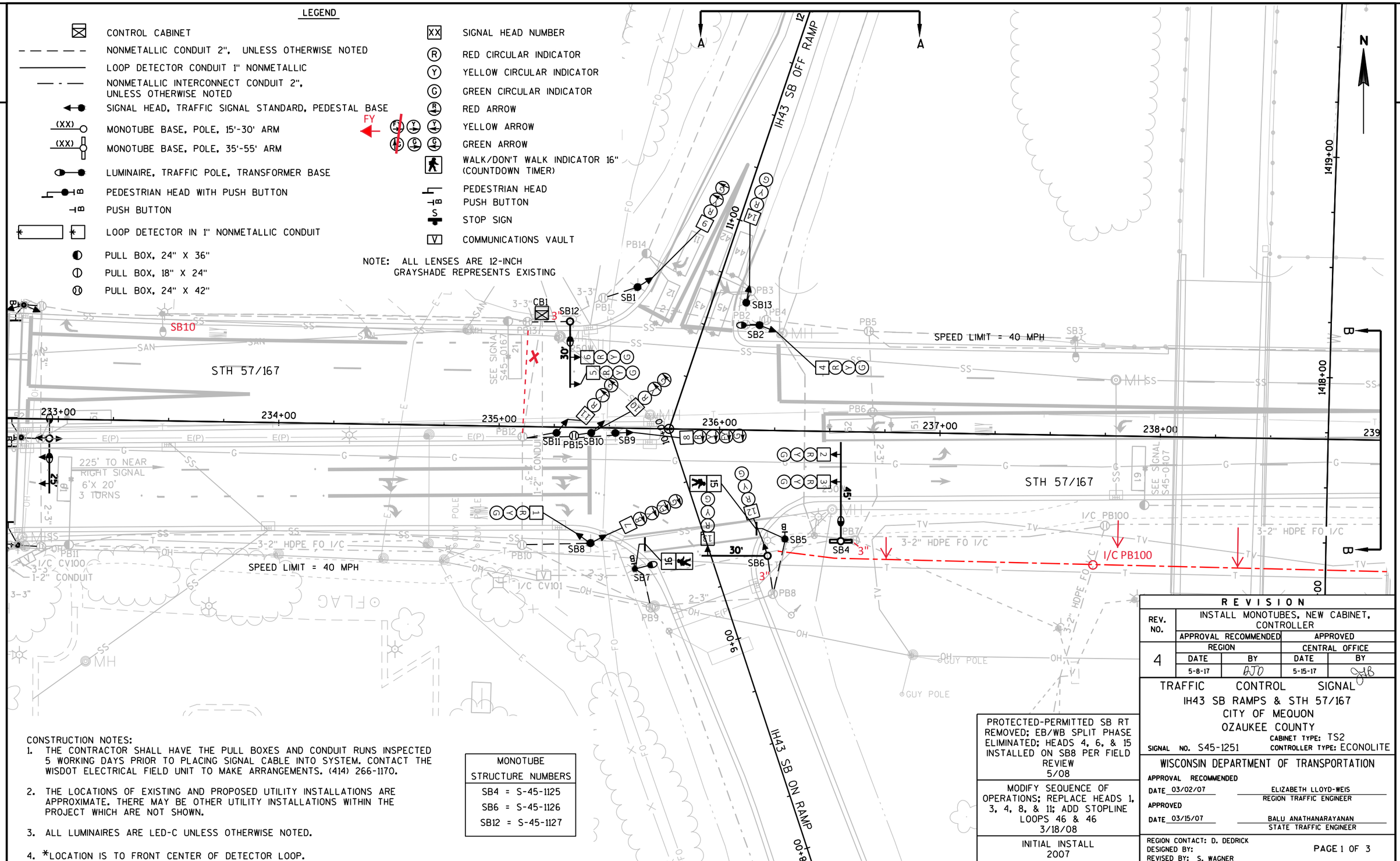
Plan	Detector	Counts	Act	Pres	Multiplier

Existing Signal Plans & Timings
WIS 167 Signalized Corridor

LEGEND

- CONTROL CABINET
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- LOOP DETECTOR CONDUIT 1" NONMETALLIC
- NONMETALLIC INTERCONNECT CONDUIT 2", UNLESS OTHERWISE NOTED
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- (XX) MONOTUBE BASE, POLE, 15'-30' ARM
- (XX) MONOTUBE BASE, POLE, 35'-55' ARM
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
- PEDESTRIAN HEAD WITH PUSH BUTTON
- PUSH BUTTON
- LOOP DETECTOR IN 1" NONMETALLIC CONDUIT
- PULL BOX, 24" X 36"
- PULL BOX, 18" X 24"
- PULL BOX, 24" X 42"
- XX SIGNAL HEAD NUMBER
- (R) RED CIRCULAR INDICATOR
- (Y) YELLOW CIRCULAR INDICATOR
- (G) GREEN CIRCULAR INDICATOR
- RED ARROW
- YELLOW ARROW
- GREEN ARROW
- WALK/DON'T WALK INDICATOR 16" (COUNTDOWN TIMER)
- PEDESTRIAN HEAD
- PB PUSH BUTTON
- S STOP SIGN
- V COMMUNICATIONS VAULT

NOTE: ALL LENSES ARE 12-INCH
GRAYSHADE REPRESENTS EXISTING



CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL HAVE THE PULL BOXES AND CONDUIT RUNS INSPECTED 5 WORKING DAYS PRIOR TO PLACING SIGNAL CABLE INTO SYSTEM. CONTACT THE WISDOT ELECTRICAL FIELD UNIT TO MAKE ARRANGEMENTS. (414) 266-1170.
2. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
3. ALL LUMINAIRES ARE LED-C UNLESS OTHERWISE NOTED.
4. *LOCATION IS TO FRONT CENTER OF DETECTOR LOOP.

MONOTUBE STRUCTURE NUMBERS
SB4 = S-45-1125
SB6 = S-45-1126
SB12 = S-45-1127

PROTECTED-PERMITTED SB RT REMOVED; EB/WB SPLIT PHASE ELIMINATED; HEADS 4, 6, & 15 INSTALLED ON SB8 PER FIELD REVIEW
5/08

MODIFY SEQUENCE OF OPERATIONS; REPLACE HEADS 1, 3, 4, 8, & 11; ADD STOPLINE LOOPS 46 & 46
3/18/08

INITIAL INSTALL
2007

REVISION

REV. NO.	INSTALL MONOTUBES, NEW CABINET, CONTROLLER			
	APPROVAL RECOMMENDED		APPROVED	
	REGION		CENTRAL OFFICE	
4	DATE	BY	DATE	BY
	5-8-17	AJO	5-15-17	

TRAFFIC CONTROL SIGNAL
IH43 SB RAMPS & STH 57/167
CITY OF MEQUON
OZAUKEE COUNTY
CABINET TYPE: TS2
SIGNAL NO. S45-1251 CONTROLLER TYPE: ECONOLITE

WISCONSIN DEPARTMENT OF TRANSPORTATION
APPROVAL RECOMMENDED
DATE 03/02/07 ELIZABETH LLOYD-WEIS, REGION TRAFFIC ENGINEER
APPROVED
DATE 03/15/07 BALU ANATHANARAYANAN, STATE TRAFFIC ENGINEER

REGION CONTACT: D. DEDRICK
DESIGNED BY:
REVISED BY: S. WAGNER

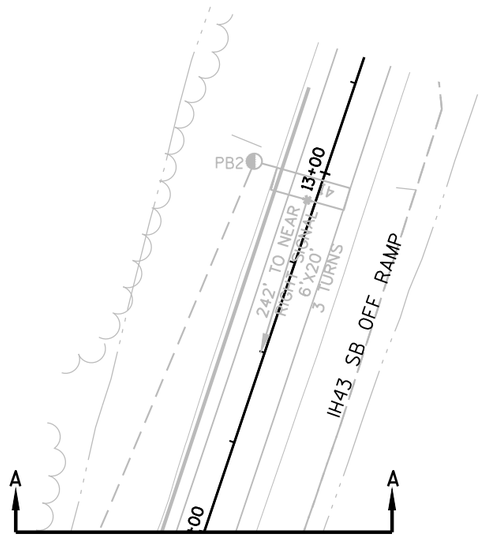
PAGE 1 OF 3

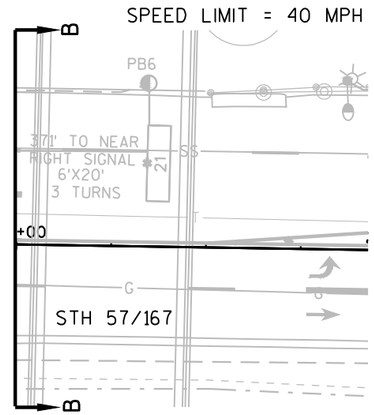
PROJECT NO: 3700-20-28	HWY: IH 43	COUNTY: OZAUKEE	TRAFFIC SIGNAL PLAN	SHEET	E

FILE NAME : N:\PDS\C3D\CAD\00900302\S45-1251\S45-1251_F.DWG
LAYOUT NAME - S45-1251_F_PG1
PLOT DATE : 5/15/2017 3:44 PM PLOT BY : VANDE LEEST, CYNTHIA PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

2





TRAFFIC CONTROL SIGNAL
IH 43 SB RAMPS & STH 57/167
CITY OF MEQUON
OZAUKEE COUNTY

SIGNAL NO. S45-1251

REGION CONTACT: D. DEDRICK
DESIGNED BY:
REVISED BY: S. WAGNER

PAGE 2 OF 3

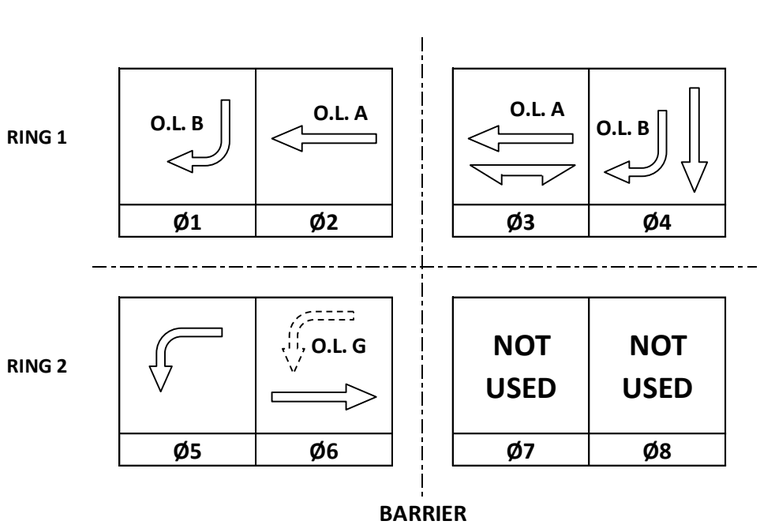
PROJECT NO: 3700-20-28	HWY: IH 43	COUNTY: OZAUKEE	TRAFFIC SIGNAL PLAN	SHEET	E

FILE NAME : N:\PDS\C3D\CAD\00900302\S45-1251\S45-1251_F.DWG
LAYOUT NAME - S45-1251_F_PG2

PLOT DATE : 5/15/2017 3:44 PM PLOT BY : VANDE LEEST, CYNTHIAPLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

	HEAD NUMBERS	FLASH
Ø1		
Ø2		
Ø3		
Ø4	12,13,14	R
Ø5	7,8	R ←
Ø6	1,2,3	R
Ø7		
Ø8		
Ø2P		
Ø3P	15,16	
Ø6P		
Ø8P		
OLA	4,5,6	R
OLB	9,10,11	R
OLG	7,8	-



CONTROLLER LOGIC

PHASE NUMBER	PHASE LOCKING	DUAL ENTRY W / Ø	PHASE RECALL	PHASE ACTIVE
1			---	X
2	X	6	MIN	X
3			---	X
4			---	X
5		2	---	X
6	X	2	MIN	X
7				
8				

TYPE OF INTERCONNECT/COMMUNICATION	
NONE	
CLOSED LOOP	
TWISTED PAIR	
FIBER OPTIC*	
FIBER OPTIC (ETHERNET)	X
RADIO	
CELL MODEM	

TYPE OF COORDINATION	
NONE	
TBC	X
TRAFFIC RESPONSIVE	
ADAPTIVE	
*LOCATION OF MASTER CONTROLLER NO:	S-
SIGNAL SYSTEM NO:	SS- 0030

TYPE OF LIGHTING	
BY OTHER AGENCY	
IN TRAFFIC CABINET	X
IN SEPARATE DOT LIGHTING CABINET	

TYPE OF PRE-EMPT	
NONE	X
RAILROAD	
EMERGENCY VEHICLE	
GTT	
TOMAR	
HARDWIRE	
OTHER	
LIFT BRIDGE	
QUEUE DETECTION	

DETECTOR LOGIC

DETECTOR INPUT	3	1	7	5	11	9	15	13
PLAN LOOP DETECTOR*(S)	21	11	44	42	61	51		
CALLED PHASE	2	1	4	4	6	5		
CALL OPTION	X	X	X	X	X	X		
DELAY TIME		X						
EXTENTION OPTION	X	X	X	X	X	X		
EXTEND TIME								
USE ADDED INITIAL	X				X			
CROSS SWITCH PHASE						6		

19	17	23	21	27	25	31	29	DETECTOR INPUT
								PLAN LOOP DETECTOR*(S)
								CALLED PHASE
								CALL OPTION
								DELAY TIME
								EXTENTION OPTION
								EXTEND TIME
								USE ADDED INITIAL
								CROSS SWITCH PHASE

DETECTOR INPUT	4	2	8	6	12	10	16	14
PLAN LOOP DETECTOR*(S)	41	12	45	43		52		
CALLED PHASE	4	1	4	4		5		
CALL OPTION		X	X	X		X		
DELAY TIME		X						
EXTENTION OPTION	X	X	X	X		X		
EXTEND TIME	X							
USE ADDED INITIAL								
CROSS SWITCH PHASE						6		

20	18	24	22	28	26	32	30	DETECTOR INPUT
								PLAN LOOP DETECTOR*(S)
								CALLED PHASE
								CALL OPTION
								DELAY TIME
								EXTENTION OPTION
								EXTEND TIME
								USE ADDED INITIAL
								CROSS SWITCH PHASE

GENERAL NOTES:

1. PHASE 3 CALLED BY PEDESTRIAN PUSH BUTTONS.

IH-43 SB RAMPS & STH 57/167
CITY OF MEQUON
OZAUKEE COUNTY

SIGNAL NO: S45-1251 CABINET TYPE: TS2
CONTROLLER TYPE: ECONOLITE
DATE: 05/2017 PAGE NO. 3 OF 3

PROJECT NO: 3700-20-28	HWY: IH-43	COUNTY: OZAUKEE	SEQUENCE OF OPERATIONS	SHEET NO:	E

FILE NAME : _____ PLOT DATE : _____ PLOT BY : PLOT NAME : _____ PLOT SCALE : 1:1

Timing Cover Sheet for Signal: S1251 HWY: 43 and STH 167

Date:	12/12/2016	Changes Made By:	D. Dedrick
Signal No	S1251 **S1251**	Highway:	43
County:	OZA	Local Hwy:	SB Ramps
Controller:	EPAC	Location:	STH 167
School:	None	Audible Ped:	No

Pre-emption

Emergency:	No	Type:	Phases:	EVP Maintenance Id:	
Railroad:	No	Type:	Phases:	EVP Contact:	
				Community:	
				Contact Phone:	
				Alternate Phone:	

Coordination

System No:	SS0030	Controller IP Address:		TBC:	Yes
CoordType:	TBC	Comments:		Tone:	No
Dip Switch Setting	4			Closed Loop:	No
DS	☑			Hardwire:	No

	Length	Split 1	Split 2	Split 3	Split 4
Cycle 1=	130 sec	7:00am - 8:30am M-F			
Cycle 2=	110 sec	6:00pm - 7:00pm M-F			
Cycle 3=	130 sec	3:45pm - 6:00pm M-F			
Cycle 4=					

Prom Replacement

Signal Plan No
Pre-empt: No

Part of a Local System: No

Local Contact:
Phone Number:

Overlaps

Overlap A= Phases:
Overlap B= Phases:
Overlap C= Phases:
Overlap D= Phases:

Flash

Emergency: R-R
Off Peak: No

Off Peak Times

Detector Timing

Dilemna Zone No

Video Detection: No

Detector Number	11	12	41											
Stretch			5.0											
Right Turn Delay	8	8												
Left Turn Delay														

Unique Features

Timing Changes Log for Signal S1251 on Hwy 43 in OZAUKEE County

STH 167

Date Computer Changed	Date Change Made in Field	Timing Change	Reason for Change	Change By	Temp Timing
12/12/16	12/12/2016	Modified TOD plan	Coordination not needed during off peak times	D. Dedrick	No
11/01/16	11/1/2016	Updated timings	Timing and operation review	D. Dedrick	No
06/20/14	6/20/2014	Changed TOD Settings	Complaints of not enough traffic during the early hours	D. Wolford	No
05/14/14	5/15/2014	Set Phases 1 & 3 to Lag during coordination; Set Force to Plan; Changed Offsets; Phase 1 on Min Recall during 1/1/1 and Max Recall during 1/2/1 and 2/1/1	Fix Coordination Issues	D. Wolford	No
05/12/14	5/13/2014	Updated system timing	Improve Progression for STH 167	D. Wolford	No
09/16/13	9/17/2013	Updated Signal and System Timings	Signal Timing and Operation Review	D. Wolford	No
02/08/12		Converted timing to Marc NX.		D. Brantner	No
11/04/10	11/19/2010	Changed 1/1/1 to start a 7:15 am. Changed 2/1/1 to start a 10:00 am Sat & Sun. Changed 3/1/1 to end at 6:30 pm.	Citizen Complaint.	D. Brantner	No
06/28/10		Changed Midday cycle length to 60 sec. Changed min green and MVI for phases 2 & 6 to 8 sec. Changed mode to Perm Yield. Changed correction to SW2. Took phase 2 & 6 off max recall. 2/1/1 now runs 9:30 am - 6 pm Sa& S.	Citizen complaint - too long of wait for WB green LT arrow.	D. Brantner	No
05/07/10		Put Ph2 and Ph6 on Max Recall.	5/10 - 5/13 detour route.	J. Haug	Yes

Timing Changes Log for Signal S1251 on Hwy 43 in OZAUKEE County

STH 167

Date Computer Changed	Date Change Made in Field	Timing Change	Reason for Change	Change By	Temp Timing
09/01/09	9/2/2009	Adjusted AM splits and PM splits and offsets per field visit.	Better operations.	D. Murphy	No
08/18/09	8/19/2009	Added phase 1 and overlap B changed coord data and phase data accordingly.	To stop SB traffic from backing up onto the freeway during the AM Peak	D. Murphy	No
07/09/09	7/10/2009	Changed Dial1Split1 so that 4 is on min recall and so the coordination runs yield mode when this dial/split is active	The sb ramp is still backing up onto the freeway in the am, this is the solution until a revision can be completed	D. Murphy	Yes
02/17/09	2/18/2009	Changed TOD Program and Coord Data	Continued complaints about SB ramp backing up.	D. Murphy	No
11/13/08	11/19/2008	Revised 1/1/1 splits for more time for ramp in AM	Complaint	S. Pierce	No
05/19/08		New system times	Better operation	S. Pierce	No
05/08/08	5/9/2008	Modify system timing.	Improve progression and reduce delay.	J. Haug	No
05/02/08	5/6/2008	Revised system timing.	New sequence of operation.	J. Haug	No
11/16/07		Initial Timing	Improvement Project - New Signal	S. Pierce	No

Programmed EPAC Data

12/9/2016
8:05:16AM

Intersection Name: SE45S1251 IH43SB & STH57/167 **Intersection Alias: S1251**

Access Code: 9999 Channel: 1 Address: 0 Revision: 3.34e
IP:

Access Data

:1200 Baud
:19200 Baud

Phase Data

Vehical Basic Timings

Phase	Min_Grn	Passage	Max1	Max2	Yellow	All Red
1	6	2.0	25	25	3.5	1.0
2	12	6.3	40	40	3.9	2.0
3	5	1.5	21	21	3.9	3.0
4	6	1.5	25	25	3.6	2.3
5	5	1.5	20	20	3.5	2.0
6	12	4.0	40	40	3.9	2.0
8	6	1.5	25	25	3.6	2.3

Vehical Density Timings

Added Initial	Max_Initial	Time B4 Reduction	Cars Before	Time To Reduce	Min_Gap
0.0	6	25	0	0	1.5
1.2	24	24	0	16	2.0
0.0	0	0	0	0	1.5
0.0	6	25	0	0	1.5
0.0	5	20	0	0	1.5
1.2	24	24	0	16	2.0
0.0	6	25	0	0	1.5

Pedestrian Timing

Phase	Walk	Ped Clear	Flashing Walk	Extended Ped Clear	Actuated Rest in Walk
1	0	0	No	0	No
2	0	0	No	0	No
3	7	17	No	2	No
4	0	0	No	0	No
5	0	0	No	0	No
6	0	0	No	0	No
8	0	0	No	0	No

General Control

Initialize	Non-Act Response	Veh Recall	Ped Recall	Recall Delay
Inactive	None	None	None	0
Green	None	Min	None	0
Inactive	None	None	None	0
Inactive	None	None	None	0
Inactive	None	None	None	0
Green	None	Min	None	0
Inactive	None	None	None	0

Miscellaneous

Non Lock	Dual Entry	Last Car Passage	Conditional Service	No Simultaneous Gap Out
Yes	No	No	No	No
No	Yes	No	No	No
Yes	No	No	No	No
Yes	Yes	No	No	No
Yes	No	No	Yes	No
No	Yes	No	No	No
Yes	Yes	No	No	No

Special Sequence

Default Data

Vehical Detector Phase Assignment

Assigned Phase	Mode	Switched Phase	Extend	Delay

Default Data

Pedestrian Detector

Default Data

Special Detector Phase Assignment

Assign Phase	Mode	Switched Phase	Extend	Delay

:

Default Data

Unit Data

General Control

Startup Time: 6sec Startup State: All Red Red Revert: 2.0sec
Auto Ped Clear: No Stop Time Reset: No Alternate Sequence: 0

ABC connector Input Modes: 0
ABC connector Output Modes: 0
D connector Input Modes: 0
D connector Output Modes: 0

Ring	Input Response	Output Selection
1	Ring 1	Ring 1
2	Ring 2	Ring 2
3	None	None
4	None	None

Remote Flash

Test A = Flash No

Phase	Flash Entry Phase	Flash Exit Phase
2	No	Yes
6	No	Yes

Channel	Flash Color	Flash Alternat

Default Data - No Flash

Overlaps

Overlaps

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Phase(s)	2	1														
	3	4														

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Yellow	4.0	2.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Red	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Stop Grn/Yel Phase	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Strat Green Phase	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring

Phase	Ring	Next Phase
1	1	2
2	1	3
3	1	4
4	1	1
5	2	6
6	2	7
8	2	5

Phase(s)

Concurrent Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	1	2	3	4	1	1	3	3	9	10	11	12	13	14	15	16
	5	5	7	7	2	2	4	4								
	6	6	8	8	5	6	7	8								

Alternate Sequences

Alternate Sequences

Phase Pair(s)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	**1 2**	**3 4**	**1 2**	**5 6**	**1 2**	**3 4**	**1 2**	**7 8**	**1 2**	**3 4**	**1 2**	**5 6**	**1 2**	**3 4**	**1 2**
2	**0 0**	**0 0**	**3 4**	**0 0**	**5 6**	**5 6**	**3 4**	**0 0**	**7 8**	**7 8**	**3 4**	**7 8**	**5 6**	**5 6**	**3 4**
3	**0 0**	**0 0**	**0 0**	**0 0**	**0 0**	**0 0**	**5 6**	**0 0**	**0 0**	**0 0**	**7 8**	**0 0**	**7 8**	**7 8**	**5 6**
4	**0 0**	**0 0**	**0 0**	**0 0**	**0 0**	**0 0**	**0 0**	**0 0**	**0 0**	**0 0**	**0 0**	**0 0**	**0 0**	**0 0**	**7 8**

Port 1 Data

BIU Addr	Port Status	Message
		40

Default Data

Control	Channel	Hardware Pins	Control	Channel	Hardware Pins
1 - Veh Phase 1	**1**	1 - Phase 1 RYG	2 - Veh Phase 2	**2**	2 - Phase 2 RYG
3 - Veh Phase 3	**3**	3 - Phase 3 RYG	4 - Veh Phase 4	**4**	4 - Phase 4 RYG
5 - Veh Phase 5	**5**	5 - Phase 5 RYG	6 - Veh Phase 6	**6**	6 - Phase 6 RYG
7 - Veh Phase 7	**7**	7 - Phase 7 RYG	8 - Veh Phase 8	**8**	8 - Phase 8 RYG
18 - Ped Phase 2	**9**	10 - Phase 2 DPW	20 - Ped Phase 4	**10**	12 - Phase 4 DPW
22 - Ped Phase 6	**11**	14 - Phase 6 DPW	24 - Ped Phase 8	**12**	16 - Phase 8 DPW
33 - Overlap A	**13**	17 - Overlap A RYG	34 - Overlap B	**14**	18 - Overlap B RYG
35 - Overlap C	**15**	19 - Overlap C RYG	36 - Overlap D	**16**	20 - Overlap D RYG
17 - Ped Phase 1	**17**	9 - Phase 1 DPW	19 - Ped Phase 3	**18**	11 - Phase 3 DPW
21 - Ped Phase 5	**19**	13 - Phase 5 DPW	23 - Ped Phase 7	**20**	15 - Phase 7 DPW

Coordination Data

General Coordination Data

Operation Mode: 1=Auto

Coordination Mode: 2=Permissive

Maximun Mode: 0=Inhibit

Correction Mode: 3=Short Way Plus

Offset Mode: 0=Beg Grn

Force Mode: 0=Plan

Max Dwell Time: 15

Yield Period: 0

Manual Dial: 1

Manual Split: 1

Manual Offset: 1

Dial/Split	Cycle
1/1	130
2/1	110
3/1	130

Split Times and Phase Modes

Dial 1 / Split 1

Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode
1	52	3=Max Recall	2	33	1=Coordinate	3	28	0=Actuated	4	17	0=Actuated
5	40	0=Actuated	6	45	1=Coordinate	8	45	0=Actuated			

Dial 2 / Split 1

Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode
1	22	0=Actuated	2	43	1=Coordinate	3	28	0=Actuated	4	17	0=Actuated
5	22	0=Actuated	6	43	1=Coordinate	8	45	0=Actuated			

Dial 3 / Split 1

Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode
1	28	0=Actuated	2	56	1=Coordinate	3	28	0=Actuated	4	18	0=Actuated
5	22	0=Actuated	6	62	1=Coordinate	8	46	0=Actuated			

Traffic Plan Data

Plan: **1/1/1**	Offset Time: 52	Alt. Sequence: 2	Mode: 0=Normal	Rg 2 Lag Time: 0	Rg 3 Lag Time: 0	Rg 4 Lag Time: 0
Plan: **2/1/1**	Offset Time: 84	Alt. Sequence: 2	Mode: 0=Normal	Rg 2 Lag Time: 0	Rg 3 Lag Time: 0	Rg 4 Lag Time: 0
Plan: **3/1/1**	Offset Time: 110	Alt. Sequence: 3	Mode: 0=Normal	Rg 2 Lag Time: 0	Rg 3 Lag Time: 0	Rg 4 Lag Time: 0

Local TBC Data

Start of Daylight Saving	Month: 3	Week: 2	Cycle Zero Reference	Hours: 24	Min: 0
End of Daylight Saving	Month: 11	Week: 1			

Source Day	Equate Days 1	2	3	4	5	6	7
1	7	0	0	0	0	0	0
2	3	4	5	6	0	0	0

Traffic Data

Event	Day	Time	D/S/O	flash	PHASE FUNCTION 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	1	0:1	0/0/4																	
2	2	0:1	0/0/4																	
3	2	7:0	1/1/1																	
4	2	8:30	0/0/4																	
5	2	15:45	3/1/1																	
6	2	18:0	2/1/1																	
7	2	19:0	0/0/4																	

AUX. Events

Event	Program Day	Hour	Min.	Aux Ouputs 1	2	3	Det. Diag. D1	Det. Rpt. D2	Det. Mult100 D3	Dimming	Special Function Outputs 1	2	3	4	5	6	7	8

Default Data - No Special Day(s) or Week(s) Programmed

Special Functions

Function	SF1	SF2	SF3	SF4	SF5	SF6	SF7	SF8

Phase Function

Phase Function Map	PF1	PF2	PF3	PF4	PF5	PF6	PF7	PF8	PF9	PF10	PF11	PF12	PF13	PF14	PF15	PF16

Dimming Data

Channel	Red	Yellow	Green	Alternate
	☐	☐	☐	☐

Default Data - No Dimming Programmed

Preemption Data

General Preemption Data

Flash = Preempt 1, Preepmt 1 = Preempt 2, Preepmt 2 = Preempt 3, Preepmt 3 = Preempt 4, Preepmt 4 = Preempt 5, Preepmt 5 = Preempt 6

Ring 1 Min GRN/WLK = 5 Ring 2 Min GRN/WLK = 5 Ring 3 Min GRN/WLK = 5 Ring 4 Min GRN/WLK = 5

Preempt Timers

Preempt	Non-Locking	Link to Preempt	Delay	Extend	Duration	MaxCall	Lock-Out	Select			Track				Dwell	Return		
								Ped Clear	Yel	Red	Grn	Ped	Yel	Red	Green	Ped Clear	Yel	Red
1	No	0	0	0	0	0	0	5	0	0	0	0	0	0	5	0	0	0
2	No	0	0	0	0	0	0	5	0	0	0	0	0	0	5	0	0	0
3	No	0	0	0	0	0	0	5	0	0	0	0	0	0	5	0	0	0
4	No	0	0	0	0	0	0	5	0	0	0	0	0	0	5	0	0	0
5	No	0	0	0	0	0	0	8	0	0	10	8	0	0	10	8	0	0
6	No	0	0	0	0	0	0	8	0	0	10	8	0	0	10	8	0	0

Preempt 1

Phase	Exit Phase	Exit Calls

Preempt 2

Phase	Exit Phase	Exit Calls

Preempt 3

Phase	Exit Phase	Exit Calls

Preempt 4

Phase	Exit Phase	Exit Calls

Preempt 5

Phase	Exit Phase	Exit Calls

Preempt 6

Phase	Exit Phase	Exit Calls

Priority Timers

Priority	Non-Locking	Delay	Extend	Duration	Dwell	Max_Call	Lock-Out	Skip Phases
1	No	0	0	0	0	0	0	0=Do not Skip Phases
2	No	0	0	0	0	0	0	0=Do not Skip Phases
3	No	0	0	0	0	0	0	0=Do not Skip Phases
4	No	0	0	0	0	0	0	0=Do not Skip Phases
5	No	0	0	0	0	0	0	0=Do not Skip Phases
6	No	0	0	0	0	0	0	0=Do not Skip Phases

Priority 1

Phase	Exit Phase	Exit Calls

Priority 2

Phase	Exit Phase	Exit Calls

Priority 3

Phase	Exit Phase	Exit Calls

Priority 4

Phase	Exit Phase	Exit Calls

Priority 5

Phase	Exit Phase	Exit Calls

Priority 6

Phase	Exit Phase	Exit Calls

Preempt 1

Vehical Phases

Ph.	Track	Dwell	Cycle
1	Red	Red	No
2	Red	Red	No
3	Red	Red	No
4	Red	Red	No
5	Red	Red	No
6	Red	Red	No
7	Red	Red	No
8	Red	Red	No
9	Red	Red	No
10	Red	Red	No
11	Red	Red	No
12	Red	Red	No
13	Red	Red	No
14	Red	Red	No
15	Red	Red	No
16	Red	Red	No

Pedestrian Phases

Ph	Track	Dwell	Cycle
1	Don't Walk	Don't Walk	No
2	Don't Walk	Don't Walk	No
3	Don't Walk	Don't Walk	No
4	Don't Walk	Don't Walk	No
5	Don't Walk	Don't Walk	No
6	Don't Walk	Don't Walk	No
7	Don't Walk	Don't Walk	No
8	Don't Walk	Don't Walk	No
9	Don't Walk	Don't Walk	No
10	Don't Walk	Don't Walk	No
11	Don't Walk	Don't Walk	No
12	Don't Walk	Don't Walk	No
13	Don't Walk	Don't Walk	No
14	Don't Walk	Don't Walk	No
15	Don't Walk	Don't Walk	No
16	Don't Walk	Don't Walk	No

Overlaps

Ovlp	Track	Dwell	Cycle
A	Red	Red	No
B	Red	Red	No
C	Red	Red	No
D	Red	Red	No
E	Red	Red	No
F	Red	Red	No
G	Red	Red	No
H	Red	Red	No
I	Red	Red	No
J	Red	Red	No
K	Red	Red	No
L	Red	Red	No
M	Red	Red	No
N	Red	Red	No
O	Red	Red	No
P	Red	Red	No

Preempt 2

Vehical Phases

Ph.	Track	Dwell	Cycle
1	Red	Red	No
2	Red	Red	No
3	Red	Red	No
4	Red	Red	No
5	Red	Red	No
6	Red	Red	No
7	Red	Red	No
8	Red	Red	No
9	Red	Red	No
10	Red	Red	No
11	Red	Red	No
12	Red	Red	No
13	Red	Red	No
14	Red	Red	No
15	Red	Red	No
16	Red	Red	No

Pedestrian Phases

Ph.	Track	Dwell	Cycle
1	Don't Walk	Don't Walk	No
2	Don't Walk	Don't Walk	No
3	Don't Walk	Don't Walk	No
4	Don't Walk	Don't Walk	No
5	Don't Walk	Don't Walk	No
6	Don't Walk	Don't Walk	No
7	Don't Walk	Don't Walk	No
8	Don't Walk	Don't Walk	No
9	Don't Walk	Don't Walk	No
10	Don't Walk	Don't Walk	No
11	Don't Walk	Don't Walk	No
12	Don't Walk	Don't Walk	No
13	Don't Walk	Don't Walk	No
14	Don't Walk	Don't Walk	No
15	Don't Walk	Don't Walk	No
16	Don't Walk	Don't Walk	No

Overlaps

Ovlp.	Track	Dwell	Cycle
A	Red	Red	No
B	Red	Red	No
C	Red	Red	No
D	Red	Red	No
E	Red	Red	No
F	Red	Red	No
G	Red	Red	No
H	Red	Red	No
I	Red	Red	No
J	Red	Red	No
K	Red	Red	No
L	Red	Red	No
M	Red	Red	No
N	Red	Red	No
O	Red	Red	No
P	Red	Red	No

Preempt 3

Vehical Phases

Ph.	Track	Dwell	Cycle
1	Red	Red	No
2	Red	Red	No
3	Red	Red	No
4	Red	Red	No
5	Red	Red	No
6	Red	Red	No
7	Red	Red	No
8	Red	Red	No
9	Red	Red	No
10	Red	Red	No
11	Red	Red	No
12	Red	Red	No
13	Red	Red	No
14	Red	Red	No
15	Red	Red	No
16	Red	Red	No

Pedestrian Phases

Ph.	Track	Dwell	Cycle
1	Don't Walk	Don't Walk	No
2	Don't Walk	Don't Walk	No
3	Don't Walk	Don't Walk	No
4	Don't Walk	Don't Walk	No
5	Don't Walk	Don't Walk	No
6	Don't Walk	Don't Walk	No
7	Don't Walk	Don't Walk	No
8	Don't Walk	Don't Walk	No
9	Don't Walk	Don't Walk	No
10	Don't Walk	Don't Walk	No
11	Don't Walk	Don't Walk	No
12	Don't Walk	Don't Walk	No
13	Don't Walk	Don't Walk	No
14	Don't Walk	Don't Walk	No
15	Don't Walk	Don't Walk	No
16	Don't Walk	Don't Walk	No

Overlaps

Ovlp.	Track	Dwell	Cycle
A	Red	Red	No
B	Red	Red	No
C	Red	Red	No
D	Red	Red	No
E	Red	Red	No
F	Red	Red	No
G	Red	Red	No
H	Red	Red	No
I	Red	Red	No
J	Red	Red	No
K	Red	Red	No
L	Red	Red	No
M	Red	Red	No
N	Red	Red	No
O	Red	Red	No
P	Red	Red	No

Preempt 4

Vehical Phases				Pedestrian Phases				Overlaps			
Ph.	Track	Dwell	Cycle	Ph.	Track	Dwell	Cycle	Ovlp.	Track	Dwell	Cycle
1	Red	Red	No	1	Don't Walk	Don't Walk	No	A	Red	Red	No
2	Red	Red	No	2	Don't Walk	Don't Walk	No	B	Red	Red	No
3	Red	Red	No	3	Don't Walk	Don't Walk	No	C	Red	Red	No
4	Red	Red	No	4	Don't Walk	Don't Walk	No	D	Red	Red	No
5	Red	Red	No	5	Don't Walk	Don't Walk	No	E	Red	Red	No
6	Red	Red	No	6	Don't Walk	Don't Walk	No	F	Red	Red	No
7	Red	Red	No	7	Don't Walk	Don't Walk	No	G	Red	Red	No
8	Red	Red	No	8	Don't Walk	Don't Walk	No	H	Red	Red	No
9	Red	Red	No	9	Don't Walk	Don't Walk	No	I	Red	Red	No
10	Red	Red	No	10	Don't Walk	Don't Walk	No	J	Red	Red	No
11	Red	Red	No	11	Don't Walk	Don't Walk	No	K	Red	Red	No
12	Red	Red	No	12	Don't Walk	Don't Walk	No	L	Red	Red	No
13	Red	Red	No	13	Don't Walk	Don't Walk	No	M	Red	Red	No
14	Red	Red	No	14	Don't Walk	Don't Walk	No	N	Red	Red	No
15	Red	Red	No	15	Don't Walk	Don't Walk	No	O	Red	Red	No
16	Red	Red	No	16	Don't Walk	Don't Walk	No	P	Red	Red	No

Preempt 5

Vehical Phases				Pedestrian Phases				Overlaps			
Ph.	Track	Dwell	Cycle	Ph.	Track	Dwell	Cycle	Ovlp.	Track	Dwell	Cycle
1	Red	Red	No	1	Don't Walk	Don't Walk	No	A	Red	Red	No
2	Red	Red	No	2	Don't Walk	Don't Walk	No	B	Red	Red	No
3	Red	Red	No	3	Don't Walk	Don't Walk	No	C	Red	Red	No
4	Red	Red	No	4	Don't Walk	Don't Walk	No	D	Red	Red	No
5	Red	Red	No	5	Don't Walk	Don't Walk	No	E	Red	Red	No
6	Red	Red	No	6	Don't Walk	Don't Walk	No	F	Red	Red	No
7	Red	Red	No	7	Don't Walk	Don't Walk	No	G	Red	Red	No
8	Red	Red	No	8	Don't Walk	Don't Walk	No	H	Red	Red	No
9	Red	Red	No	9	Don't Walk	Don't Walk	No	I	Red	Red	No
10	Red	Red	No	10	Don't Walk	Don't Walk	No	J	Red	Red	No
11	Red	Red	No	11	Don't Walk	Don't Walk	No	K	Red	Red	No
12	Red	Red	No	12	Don't Walk	Don't Walk	No	L	Red	Red	No
13	Red	Red	No	13	Don't Walk	Don't Walk	No	M	Red	Red	No
14	Red	Red	No	14	Don't Walk	Don't Walk	No	N	Red	Red	No
15	Red	Red	No	15	Don't Walk	Don't Walk	No	O	Red	Red	No
16	Red	Red	No	16	Don't Walk	Don't Walk	No	P	Red	Red	No

Preempt 6

Vehical Phases				Pedestrian Phases				Overlaps			
Ph.	Track	Dwell	Cycle	Ph.	Track	Dwell	Cycle	Ovlp.	Track	Dwell	Cycle
1	Red	Red	No	1	Don't Walk	Don't Walk	No	A	Red	Red	No
2	Red	Red	No	2	Don't Walk	Don't Walk	No	B	Red	Red	No
3	Red	Red	No	3	Don't Walk	Don't Walk	No	C	Red	Red	No
4	Red	Red	No	4	Don't Walk	Don't Walk	No	D	Red	Red	No
5	Red	Red	No	5	Don't Walk	Don't Walk	No	E	Red	Red	No
6	Red	Red	No	6	Don't Walk	Don't Walk	No	F	Red	Red	No
7	Red	Red	No	7	Don't Walk	Don't Walk	No	G	Red	Red	No
8	Red	Red	No	8	Don't Walk	Don't Walk	No	H	Red	Red	No
9	Red	Red	No	9	Don't Walk	Don't Walk	No	I	Red	Red	No
10	Red	Red	No	10	Don't Walk	Don't Walk	No	J	Red	Red	No
11	Red	Red	No	11	Don't Walk	Don't Walk	No	K	Red	Red	No
12	Red	Red	No	12	Don't Walk	Don't Walk	No	L	Red	Red	No
13	Red	Red	No	13	Don't Walk	Don't Walk	No	M	Red	Red	No
14	Red	Red	No	14	Don't Walk	Don't Walk	No	N	Red	Red	No
15	Red	Red	No	15	Don't Walk	Don't Walk	No	O	Red	Red	No
16	Red	Red	No	16	Don't Walk	Don't Walk	No	P	Red	Red	No

System/Detectors Data

Local Critical Alarms

Revert to Backup: 15

1st Phone:

2nd Phone:

Cycle Failure: No
Local Free: No
Coord Failure: No
Conflict Flash: No
Remote Flash: No

Local Fash: No
Cycle Fault: No
Coord Fault: No
Premption: No
Voltage Monitor: No

Special Status 1: No
Special Status 2: No
Special Status 3: No
Special Status 4: No
Special Status 5: No
Special Status 6: No

Traffic Responsive

System Detector	Detector Channel	Veh/Hr	Average Time(mins)	Occupancy Correction/10	Min Volume %	Queue 1 Detectors	System Detectors	Weight Factor	Queue 2 Detectors	System Detectors	Weight Factor

Default Data

Sample Interval:

Default Data

Queue: 1 Input Selection: 0=Average

Detector Failed Level : 0

Queue: 2 Input Selection: 0=Average

Detector Failed Level : 0

Default Data

Queue:

Level	Enter	Leave	Dial / Split / Offset
			/ /

Default Data

Vehical Detector

Diagnostic Value 0

Detector	Max Presence	No Activity	Erratic Count

Vehical Detector

Diagnostic Value 1

Detector	Max Presence	No Activity	Erratic Count

Special Detector

Diagnostic Value 0

Detector	Max Presence	No Activity	Erratic Count

Default Data - Diag 0 Values

Default Data - No Diag 1 Values

Default Data - No Diag 0 Valu

Pedestrian Detector

Diagnostic Value 0

Detector	Max Presence	No Activity	Erratic Count

Pedestrian Detector

Diagnostic Value 1

Detector	Max Presence	No Activity	Erratic Count

Special Detector

Diagnostic Value 1

Detector	Max Presence	No Activity	Erratic Count

Default Data - No Diag 0 Values

Default Data - No Diag 1 Values

Default Data - No Diag 1 Values

Speed Trap Data

Speed Trap:

Measurement:

Detector 1	Detector_2	Distance :

Speed Trap Low Treshold	Speed Trap High Treshold

Dial/Split/Offset

//

Default Data

Default Data

Volume Detector Data

Volume Detector Number	Report Interval Controller Detector Channel

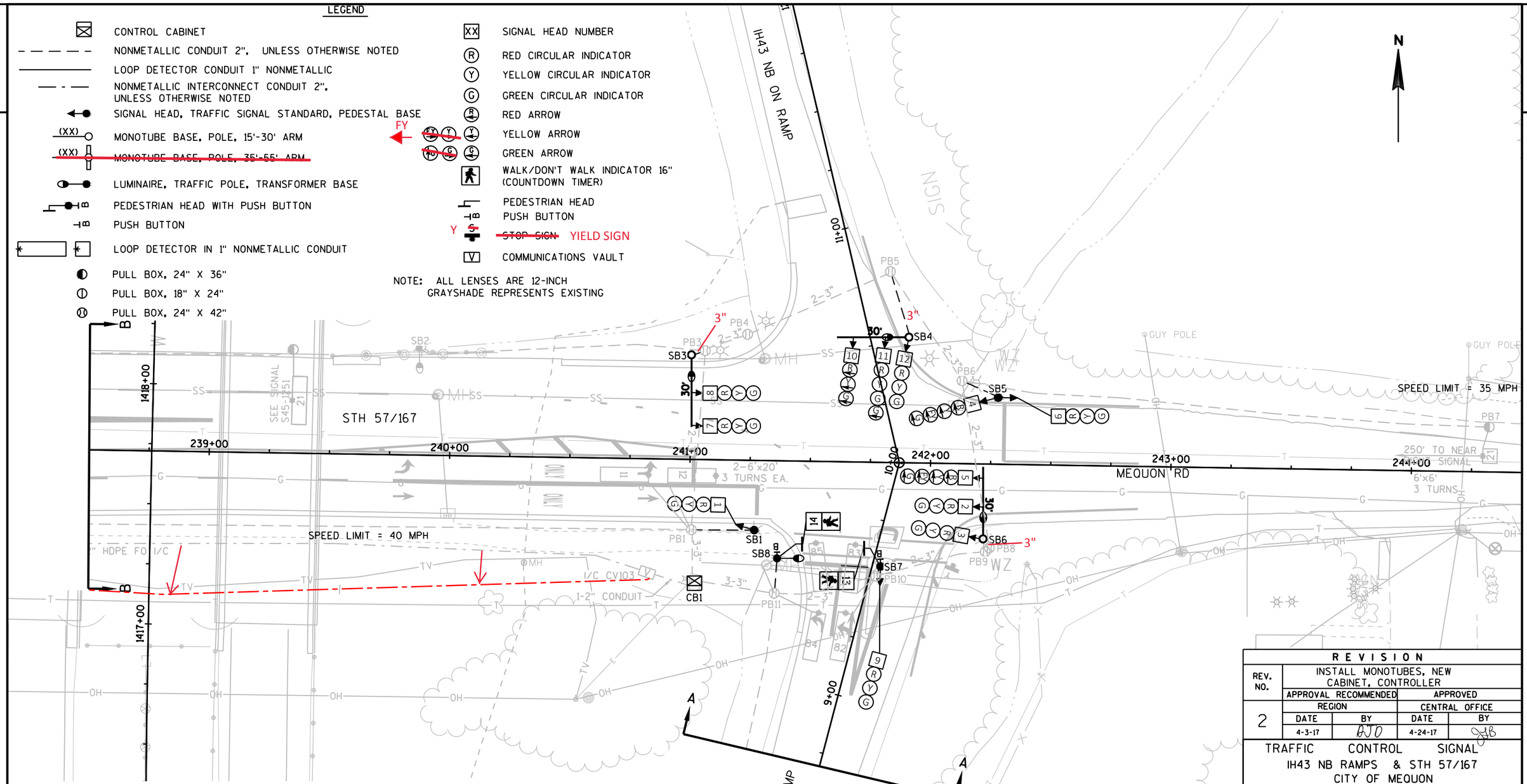
Default Data

2

LEGEND

- CONTROL CABINET
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- LOOP DETECTOR CONDUIT 1" NONMETALLIC
- NONMETALLIC INTERCONNECT CONDUIT 2", UNLESS OTHERWISE NOTED
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- (XX) MONOTUBE BASE, POLE, 15'-30' ARM
- ~~(XX) MONOTUBE BASE, POLE, 35'-55' ARM~~
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
- PEDESTRIAN HEAD WITH PUSH BUTTON
- PUSH BUTTON
- LOOP DETECTOR IN 1" NONMETALLIC CONDUIT
- PULL BOX, 24" X 36"
- PULL BOX, 18" X 24"
- PULL BOX, 24" X 42"
- XX SIGNAL HEAD NUMBER
- R RED CIRCULAR INDICATOR
- Y YELLOW CIRCULAR INDICATOR
- G GREEN CIRCULAR INDICATOR
- R RED ARROW
- Y YELLOW ARROW
- G GREEN ARROW
- WALK/DON'T WALK INDICATOR 16" (COUNTDOWN TIMER)
- PEDESTRIAN HEAD
- PUSH BUTTON
- ~~STOP SIGN~~ YIELD SIGN
- V COMMUNICATIONS VAULT

NOTE: ALL LENSES ARE 12-INCH
GRAYSHADE REPRESENTS EXISTING



CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL HAVE THE PULL BOXES AND CONDUIT RUNS INSPECTED 5 WORKING DAYS PRIOR TO PLACING SIGNAL CABLE INTO SYSTEM. CONTACT THE WISDOT ELECTRICAL FIELD UNIT TO MAKE ARRANGEMENTS. (414) 266-1170.
2. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
3. ALL LUMINAIRES ARE LED-C UNLESS OTHERWISE NOTED.
4. *LOCATION IS TO FRONT CENTER OF DETECTOR LOOPS.

MONOTUBE STRUCTURE NUMBERS
SB3 = S-45-1122
SB4 = S-45-1123
SB6 = S-45-1124

REVISION				
REV. NO.	INSTALL MONOTUBES, NEW CABINET, CONTROLLER			
	APPROVAL RECOMMENDED		APPROVED	
2	REGION		CENTRAL OFFICE	
	DATE	BY	DATE	BY
	4-3-17	RJO	4-24-17	JHB

TRAFFIC CONTROL SIGNAL
IH43 NB RAMPS & STH 57/167
CITY OF MEQUON
OZAUKEE COUNTY
SIGNAL NO. S45-0407 CABINET TYPE: TS2 CONTROLLER TYPE: ECONOLITE

WISCONSIN DEPARTMENT OF TRANSPORTATION
APPROVAL RECOMMENDED
DATE 09/05/89 EDWARD J. FRIEDE, REGION TRAFFIC ENGINEER
APPROVED
DATE 10/20/89 H. O. PRICE, STATE TRAFFIC ENGINEER

RECONSTRUCT INTERSECTION 3/2/07
RELOCATE SIG. BASES IN NW QUAD. ADD LOOP ON SB OFF RAMP
INITIAL INSTALL 1989

REGION CONTACT: D. DEDRICK
DESIGNED BY:
REVISED BY: S. WAGNER

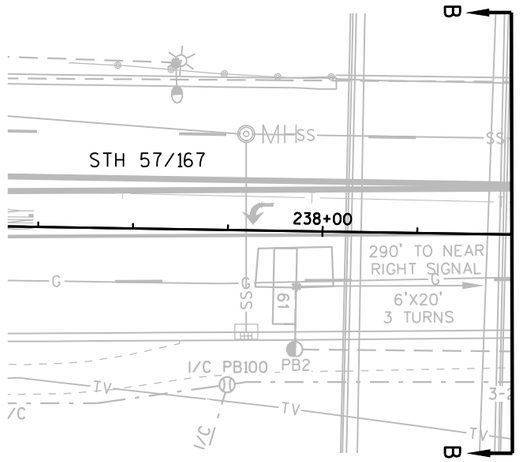
PAGE 1 OF 3

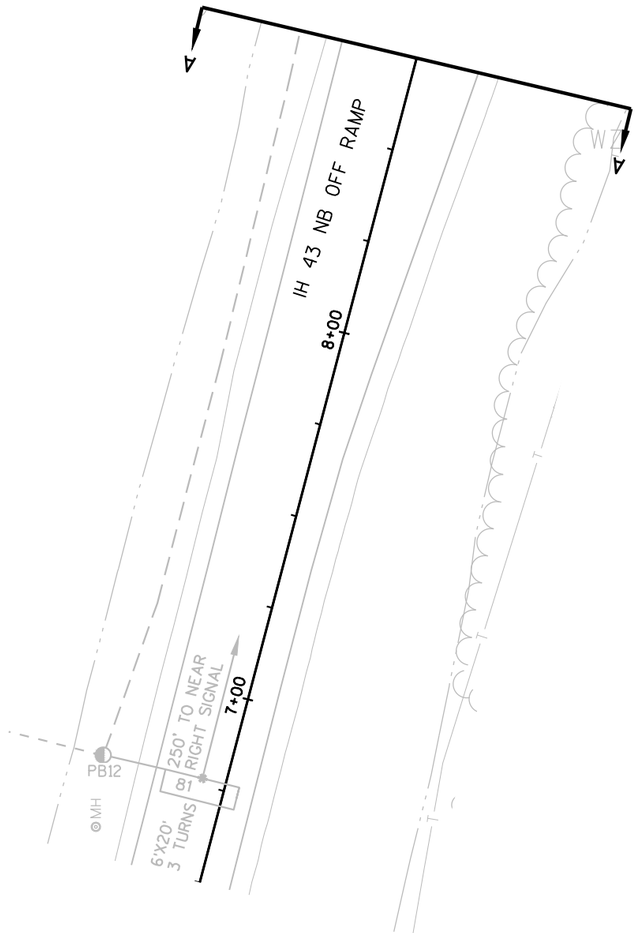
PROJECT NO: 3700-20-28	HWY: IH 43	COUNTY: OZAUKEE	TRAFFIC SIGNAL PLAN	SHEET	E

FILE NAME : N:\PDS\C3D\CAD\00900302\S45-0407\S45-0407_C.DWG
LAYOUT NAME - S45-0407_C_PG1
PLOT DATE : 5/9/2017 12:44 PM PLOT BY : VANDE LEEST, CYNTHIA PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

2





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TRAFFIC CONTROL SIGNAL
IH43 NB RAMPS & STH 57/167
CITY OF MEQUON
OZAUKEE COUNTY

SIGNAL NO. S45-0407

REGION CONTACT: D. DEDRICK
DESIGNED BY:
REVISED BY: S. WAGNER

PAGE 2 OF 3

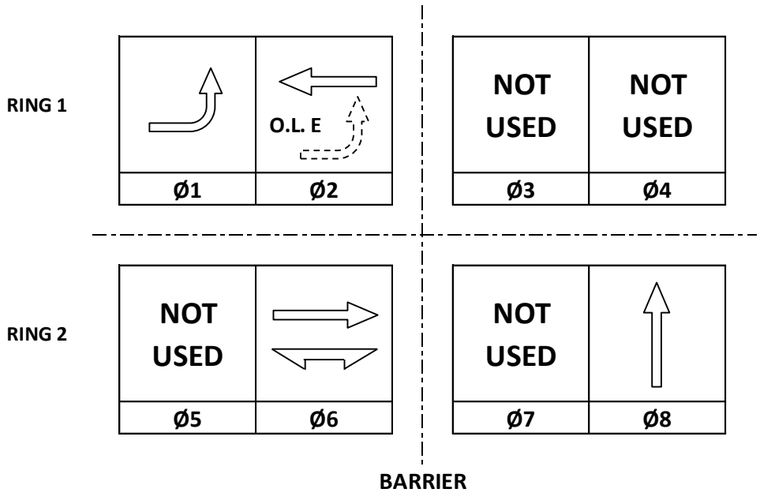
PROJECT NO: XXXX-XX-XX	HWY: IH 43	COUNTY: OZAUKEE	TRAFFIC SIGNAL PLAN	SHEET	E

FILE NAME : N:\PDS\C3D\CAD\00900302\S45-0407\S45-0407_C.DWG
LAYOUT NAME - S45-0407_C_PG2

PLOT DATE : 5/9/2017 12:44 PM PLOT BY : VANDE LEEST, CYNTHIAPLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

	HEAD NUMBERS	FLASH
Ø1	4,5	R ←
Ø2	6,7,8	R
Ø3		
Ø4		
Ø5		
Ø6	1,2,3	R
Ø7		
Ø8	9,10,11,12	R,R ←
Ø2P		
Ø4P		
Ø6P	13,14	
Ø8P		
OLE	4,5	-
OLF		
OLG		
OLH		



CONTROLLER LOGIC

PHASE NUMBER	PHASE LOCKING	DUAL ENTRY W / Ø	PHASE RECALL	PHASE ACTIVE
1		6	---	X
2	X	6	MIN	X
3				
4				
5				
6	X	2	MIN	X
7				
8			---	X

TYPE OF INTERCONNECT/COMMUNICATION	
NONE	
CLOSED LOOP	
TWISTED PAIR	
FIBER OPTIC*	
FIBER OPTIC (ETHERNET)	X
RADIO	
CELL MODEM	

TYPE OF COORDINATION	
NONE	
TBC	X
TRAFFIC RESPONSIVE	
ADAPTIVE	
*LOCATION OF MASTER CONTROLLER NO:	S-
SIGNAL SYSTEM NO:	SS- 0030

TYPE OF LIGHTING	
BY OTHER AGENCY	
IN TRAFFIC CABINET	X
IN SEPARATE DOT LIGHTING CABINET	

TYPE OF PRE-EMPT	
NONE	X
RAILROAD	
EMERGENCY VEHICLE	
GTT	
TOMAR	
HARDWIRE	
OTHER	
LIFT BRIDGE	
QUEUE DETECTION	

DETECTOR LOGIC

DETECTOR INPUT	3	1	7	5	11	9	15	13
PLAN LOOP DETECTOR*(S)	21	11	83	81		85		
CALLED PHASE	2	1	8	8		8		
CALL OPTION	X	X	X			X		
DELAY TIME								
EXTENTION OPTION	X	X	X	X		X		
EXTEND TIME				X				
USE ADDED INITIAL	X							
CROSS SWITCH PHASE		2						

19	17	23	21	27	25	31	29	DETECTOR INPUT
								PLAN LOOP DETECTOR*(S)
								CALLED PHASE
								CALL OPTION
								DELAY TIME
								EXTENTION OPTION
								EXTEND TIME
								USE ADDED INITIAL
								CROSS SWITCH PHASE

DETECTOR INPUT	4	2	8	6	12	10	16	14
PLAN LOOP DETECTOR*(S)	61	12	84	82				
CALLED PHASE	6	1	8	8				
CALL OPTION	X	X	X	X				
DELAY TIME		X						
EXTENTION OPTION	X	X	X	X				
EXTEND TIME								
USE ADDED INITIAL	X							
CROSS SWITCH PHASE		2						

20	18	24	22	28	26	32	30	DETECTOR INPUT
								PLAN LOOP DETECTOR*(S)
								CALLED PHASE
								CALL OPTION
								DELAY TIME
								EXTENTION OPTION
								EXTEND TIME
								USE ADDED INITIAL
								CROSS SWITCH PHASE

IH 43 NB RAMPS & STH 57/167
CITY OF MEQUON
OZAUKEE COUNTY

SIGNAL NO: S45-0407 CABINET TYPE: TS2
CONTROLLER TYPE: ECONOLITE
DATE: 04/2017 PAGE NO. 3 OF 3

PROJECT NO: 3700-20-28	HWY: IH 43	COUNTY: OZAUKEE	SEQUENCE OF OPERATIONS	SHEET NO:	E

FILE NAME : _____ PLOT DATE : _____ PLOT BY : _____ PLOT NAME : _____ PLOT SCALE : 1:1

Timing Cover Sheet for Signal: S0407 HWY: 43 and STH 167 (Mequon Rd)

Date: 12/12/2016
Signal No S0407 **S0407**
County: OZA
Controller: EPAC
School: None

Changes Made By: D. Dedrick
Highway: 43
Local Hwy: NB
Location: STH 167 (Mequon Rd)
Audible Ped: No

Pre-emption

Emergency: No Type: Phases:
Railroad: No Type: Phases:

EVP Maintenance Id:
EVP Contact:
Community:
Contact Phone:
Alternate Phone:

Coordination

System No: SS0030
CoordType: TBC
Dip Switch Setting
DS ☑

Controller IP Address:
Comments:

TBC: Yes
Tone: No
Closed Loop: No
Hardwire: No

	Length	Split 1	Split 2	Split 3	Split 4
Cycle 1=	130 sec	7:00am - 8:30am M-F			
Cycle 2=	110 sec	6:00pm - 7:00pm M-F			
Cycle 3=	130 sec	3:45pm - 6:00pm M-F			
Cycle 4=					

Prom Replacement

Signal Plan No
Pre-empt: No

Part of a Local System: No

Local Contact:
Phone Number:

Overlaps

Overlap A= Phases:
Overlap B= Phases:
Overlap C= Phases:
Overlap D= Phases:

Flash

Emergency: R-R
Off Peak: No

Off Peak Times

Detector Timing

Dilemna Zone No

Video Detection: No

Detector Number	81													
Stretch	5.0													
Right Turn Delay														
Left Turn Delay														

Unique Features

Timing Changes Log for Signal S0407 on Hwy 43 in OZAUKEE County

STH 167 (Mequon Rd)

Date Computer Changed	Date Change Made in Field	Timing Change	Reason for Change	Change By	Temp Timing
12/12/16	12/12/2016	Modified TOD plan	Coordination not needed during off peak times	D. Dedrick	No
11/01/16	11/1/2016	Updated timings	Timing and operation review	D. Dedrick	No
06/20/14	6/20/2014	Changed TOD Settings	Complaints of not enough traffic during the early hours	D. Wolford	No
05/12/14	5/13/2014	Updated system timings	Improve Progression for STH 167	D. Wolford	No
09/16/13	9/17/2013	Updated Signal and System Timings	Signal Timing and Operation Review	D. Wolford	No
05/30/12		Converted timing to Marc NX.		D. Brantner	No
11/04/10	11/19/2010	Changed 1/1/1 to start at 7:15 am. Changed 1/2/1 to start at 10:00 am Sat & Sun. Changed 2/1/1 to end at 6:30 pm.	Citizen Complaint.	D. Brantner	No
06/28/10		Changed Midday cycle length to 60 sec. Changed Mode to Perm Yield. Changed correction to SW2. Changed max green times for phase 1 back to 20 sec. Changed phase 1 min green back to 6 sec.	Changed system times a IH 43 SB Ramps & STH57/167.	D. Brantner	No
05/07/10		Increased Ph1 minimum and maximum green times.	5/10 - 5/13 detour route.	J. Haug	Yes
09/02/09	9/2/2009	Changed passage for phase 1 to 2.5s	Phase was gapping out too quickly and causing backups during PM rush hour.	D. Murphy	No

Timing Changes Log for Signal S0407 on Hwy 43 in OZAUKEE County

STH 167 (Mequon Rd)

Date Computer Changed	Date Change Made in Field	Timing Change	Reason for Change	Change By	Temp Timing
08/18/09	8/19/2009	Changed offsets.	Revision to S1251 produced different offsets.	D. Murphy	No
02/17/09	2/18/2009	Changed coord data and TOD program	Continued complaints about SB ramp backing up	D. Murphy	No
05/19/08		New system times	Better operation	S. Pierce	No
05/08/08	5/9/2008	Modify system timing.	Improve progression and reduce delay.	J. Haug	No
05/02/08	5/6/2008	Revised system timing.	New sequence of operation at the SB ramp signal S1251.	J. Haug	No
11/16/07		New timing	Improvement Project - Signal Redo	S. Pierce	No
02/09/07		DST	DST	J. Dimmer	No
12/02/99		EPAC Timing	Changed DP9800 to EPAC for Y2K	J. Haug	No
03/11/99		DST		S. Pierce	No
02/11/98	2/11/1998	DST		S. Langdon	No

Programmed EPAC Data

12/9/2016
8:09:49AM

Intersection Name: SE45S0407 IH43NB & STH57/167 **Intersection Alias: S0407**

Access Code: 9999 Channel: 1 Address: 0 Revision: 3.33e
IP:

Access Data

:1200 Baud
:19200 Baud

Phase Data

Vehical Basic Timings

Phase	Min_Grn	Passage	Max1	Max2	Yellow	All Red
1	6	2.5	20	20	3.5	1.0
2	12	4.9	35	35	3.6	2.1
4	8	1.5	25	25	3.6	3.0
6	12	4.9	35	35	3.6	2.1
8	8	1.5	25	25	3.6	3.0

Vehical Density Timings

Added Initial	Max_Initial	Time B4 Reduction	Cars Before	Time To Reduce	Min_Gap
0.0	6	20	0	0	1.5
2.4	24	24	0	11	2.0
0.0	8	25	0	0	1.5
2.3	28	28	0	7	2.0
0.0	8	25	0	0	1.5

Pedestrian Timing

Phase	Walk	Ped Clear	Flashing Walk	Extended Ped Clear	Actuated Rest in Walk
1	0	0	No	0	No
2	0	0	No	0	No
4	0	0	No	0	No
6	7	19	No	0	No
8	0	0	No	0	No

General Control

Initialize	Non-Act Response	Veh Recall	Ped Recall	Recall Delay
Inactive	None	None	None	0
Green	None	Min	None	0
Inactive	None	None	None	0
Green	None	Min	None	0
Inactive	None	None	None	0

Miscellaneous

Non Lock	Dual Entry	Last Car Passage	Conditional Service	No Simultaneous Gap Out
Yes	No	No	No	No
No	Yes	No	No	No
Yes	Yes	No	No	No
No	Yes	No	No	No
Yes	Yes	No	No	No

Special Sequence
Default Data

Vehical Detector Phase Assignment

Assigned Phase	Mode	Switched Phase	Extend	Delay

Default Data

Pedestrian Detector
Default Data

Special Detector Phase Assignment

Assign Phase	Mode	Switched Phase	Extend	Delay

:
Default Data

Unit Data

General Control

Startup Time: 6sec Startup State: All Red Red Revert: 2.0sec
Auto Ped Clear: No Stop Time Reset: No Alternate Sequence: 0

ABC connector Input Modes: 0
ABC connector Output Modes: 0
D connector Input Modes: 0
D connector Output Modes: 0

Ring	Input Response	Output Selection
1	Ring 1	Ring 1
2	Ring 2	Ring 2
3	None	None
4	None	None

Remote Flash

Test A = Flash No

Phase	Flash Entry Phase	Flash Exit Phase
2	No	Yes
6	No	Yes

Channel	Flash Color	Flash Alternat

Default Data - No Flash

Overlaps

Overlaps

Phase(s)	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Yellow	4.0	2.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Red	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Stop Grn/Yel Phase	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Strat Green Phase	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring

Phase	Ring	Next Phase
1	1	2
2	1	3
4	1	1
6	2	7
8	2	5

Phase(s)

Concurrent Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	1	2	3	4	1	1	3	3	9	10	11	12	13	14	15	16
	5	5	7	7	2	2	4	4								
	6	6	8	8	5	6	7	8								

Alternate Sequences

Alternate Sequences

Phase Pair(s)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	**1 2**	**3 4**	**1 2**	**5 6**	**1 2**	**3 4**	**1 2**	**7 8**	**1 2**	**3 4**	**1 2**	**5 6**	**1 2**	**3 4**	**1 2**
2	**0 0**	**0 0**	**3 4**	**0 0**	**5 6**	**5 6**	**3 4**	**0 0**	**7 8**	**7 8**	**3 4**	**7 8**	**5 6**	**5 6**	**3 4**
3	**0 0**	**0 0**	**0 0**	**0 0**	**0 0**	**0 0**	**5 6**	**0 0**	**0 0**	**0 0**	**7 8**	**0 0**	**7 8**	**7 8**	**5 6**
4	**0 0**	**0 0**	**0 0**	**0 0**	**0 0**	**0 0**	**0 0**	**0 0**	**0 0**	**0 0**	**0 0**	**0 0**	**0 0**	**0 0**	**7 8**

Port 1 Data

BIU Addr	Port Status	Message
		40

Default Data

Control	Channel	Hardware Pins	Control	Channel	Hardware Pins
1 - Veh Phase 1	**1**	1 - Phase 1 RYG	2 - Veh Phase 2	**2**	2 - Phase 2 RYG
3 - Veh Phase 3	**3**	3 - Phase 3 RYG	4 - Veh Phase 4	**4**	4 - Phase 4 RYG
5 - Veh Phase 5	**5**	5 - Phase 5 RYG	6 - Veh Phase 6	**6**	6 - Phase 6 RYG
7 - Veh Phase 7	**7**	7 - Phase 7 RYG	8 - Veh Phase 8	**8**	8 - Phase 8 RYG
18 - Ped Phase 2	**9**	10 - Phase 2 DPW	20 - Ped Phase 4	**10**	12 - Phase 4 DPW
22 - Ped Phase 6	**11**	14 - Phase 6 DPW	24 - Ped Phase 8	**12**	16 - Phase 8 DPW
33 - Overlap A	**13**	17 - Overlap A RYG	34 - Overlap B	**14**	18 - Overlap B RYG
35 - Overlap C	**15**	19 - Overlap C RYG	36 - Overlap D	**16**	20 - Overlap D RYG
17 - Ped Phase 1	**17**	9 - Phase 1 DPW	19 - Ped Phase 3	**18**	11 - Phase 3 DPW
21 - Ped Phase 5	**19**	13 - Phase 5 DPW	23 - Ped Phase 7	**20**	15 - Phase 7 DPW

Coordination Data

General Coordination Data

Operation Mode: 1=Auto

Coordination Mode: 2=Permissive

Maximun Mode: 0=Inhibit

Correction Mode: 3=Short Way Plus

Offset Mode: 0=Beg Grn

Force Mode: 1=Cycle

Max Dwell Time: 15

Yield Period: 0

Manual Dial: 1

Manual Split: 1

Manual Offset: 1

Dial/Split	Cycle
1/1	130
2/1	110
3/1	130

Split Times and Phase Modes

Dial 1 / Split 1

Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode
1	25	0=Actuated	2	42	1=Coordinate	4	63	0=Actuated	6	67	1=Coordinate
8	63	0=Actuated									

Dial 2 / Split 1

Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode
1	27	0=Actuated	2	31	1=Coordinate	4	52	0=Actuated	6	58	1=Coordinate
8	52	0=Actuated									

Dial 3 / Split 1

Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode
1	49	0=Actuated	2	31	1=Coordinate	4	50	0=Actuated	6	80	1=Coordinate
8	50	0=Actuated									

Traffic Plan Data

Plan: **1/1/1**	Offset Time: 108	Alt. Sequence: 0	Mode: 0=Normal	Rg 2 Lag Time: 0	Rg 3 Lag Time: 0	Rg 4 Lag Time: 0
Plan: **2/1/1**	Offset Time: 94	Alt. Sequence: 0	Mode: 0=Normal	Rg 2 Lag Time: 0	Rg 3 Lag Time: 0	Rg 4 Lag Time: 0
Plan: **3/1/1**	Offset Time: 3	Alt. Sequence: 0	Mode: 0=Normal	Rg 2 Lag Time: 0	Rg 3 Lag Time: 0	Rg 4 Lag Time: 0

Local TBC Data

Start of Daylight Saving Month: 3 Week: 2 Cycle Zero Reference Hours: 24 Min: 0

End of Daylight Saving Month: 11 Week: 1

Source Day	Equate Days 1	2	3	4	5	6	7
1	7	0	0	0	0	0	0
2	3	4	5	6	0	0	0

Traffic Data

Event	Day	Time	D/S/O	flash	PHASE FUNCTION 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	1	0:1	0/0/4																	
2	2	0:1	0/0/4																	
3	2	7:0	1/1/1																	
4	2	8:30	0/0/4																	
5	2	15:45	3/1/1																	
6	2	18:0	2/1/1																	
7	2	19:0	0/0/4																	

AUX. Events

Event	Program Day	Hour	Min.	Aux Ouputs 1	2	3	Det. Diag. D1	Det. Rpt. D2	Det. Mult100 D3	Dimming	Special Function Outputs 1	2	3	4	5	6	7	8

Default Data - No Special Day(s) or Week(s) Programmed

Special Functions

Function	SF1	SF2	SF3	SF4	SF5	SF6	SF7	SF8

Phase Function

Phase Function Map	PF1	PF2	PF3	PF4	PF5	PF6	PF7	PF8	PF9	PF10	PF11	PF12	PF13	PF14	PF15	PF16

Dimming Data

Channel	Red	Yellow	Green	Alternate

Default Data - No Dimming Programmed

Preemption Data

General Preemption Data

Flash > Preepmt 1, Preepmt 1 > Preempt 2, Preepmt 2 > Preempt 3, Preepmt 3 > Preempt 4, Preepmt 4 > Preempt 5, Preepmt 5 > Preempt 6

Ring 1 Min GRN/WLK = 10 Ring 2 Min GRN/WLK = 10 Ring 3 Min GRN/WLK = 10 Ring 4 Min GRN/WLK = 10

Preempt Timers

Preempt	Non-Locking	Link to Preempt	Delay	Extend	Duration	MaxCall	Lock-Out	Select			Track				Dwell	Return		
								Ped Clear	Yel	Red	Grn	Ped	Yel	Red	Green	Ped Clear	Yel	Red
1	No	0	0	0	0	0	0	8	40	20	10	8	40	20	10	8	40	20
2	No	0	0	0	0	0	0	8	40	20	10	8	40	20	10	8	40	20
3	No	0	0	0	0	0	0	8	40	20	10	8	40	20	10	8	40	20
4	No	0	0	0	0	0	0	8	40	20	10	8	40	20	10	8	40	20
5	No	0	0	0	0	0	0	8	40	20	10	8	40	20	10	8	40	20
6	No	0	0	0	0	0	0	8	40	20	10	8	40	20	10	8	40	20

Preempt 1

Phase	Exit Phase	Exit Calls
1	No	Yes
2	Yes	Yes
3	No	Yes
4	No	Yes
5	No	Yes
6	Yes	Yes
7	No	Yes
8	No	Yes

Preempt 2

Phase	Exit Phase	Exit Calls
1	No	Yes
2	Yes	Yes
3	No	Yes
4	No	Yes
5	No	Yes
6	Yes	Yes
7	No	Yes
8	No	Yes

Preempt 3

Phase	Exit Phase	Exit Calls
1	No	Yes
2	Yes	Yes
3	No	Yes
4	No	Yes
5	No	Yes
6	Yes	Yes
7	No	Yes
8	No	Yes

Preempt 4

Phase	Exit Phase	Exit Calls
1	No	Yes
2	Yes	Yes
3	No	Yes
4	No	Yes
5	No	Yes
6	Yes	Yes
7	No	Yes
8	No	Yes

Preempt 5

Phase	Exit Phase	Exit Calls
1	No	Yes
2	Yes	Yes
3	No	Yes
4	No	Yes
5	No	Yes
6	Yes	Yes
7	No	Yes
8	No	Yes

Preempt 6

Phase	Exit Phase	Exit Calls
1	No	Yes
2	Yes	Yes
3	No	Yes
4	No	Yes
5	No	Yes
6	Yes	Yes
7	No	Yes
8	No	Yes

Priority Timers

Priority	Non-Locking	Delay	Extend	Duration	Dwell	Max_Call	Lock-Out	Skip Phases
1	No	0	0	0	0	0	0	0=Do not Skip Phases
2	No	0	0	0	0	0	0	0=Do not Skip Phases
3	No	0	0	0	0	0	0	0=Do not Skip Phases
4	No	0	0	0	0	0	0	0=Do not Skip Phases
5	No	0	0	0	0	0	0	0=Do not Skip Phases
6	No	0	0	0	0	0	0	0=Do not Skip Phases

Priority 1

Phase	Exit Phase	Exit Calls

Priority 2

Phase	Exit Phase	Exit Calls

Priority 3

Phase	Exit Phase	Exit Calls

Priority 4

Phase	Exit Phase	Exit Calls

Priority 5

Phase	Exit Phase	Exit Calls

Priority 6

Phase	Exit Phase	Exit Calls

Preempt 1

Vehical Phases

Ph.	Track	Dwell	Cycle
1	Red	Red	No
2	Red	Red	No
3	Red	Red	No
4	Red	Red	No
5	Red	Red	No
6	Red	Red	No
7	Red	Red	No
8	Red	Red	No
9	Red	Red	No
10	Red	Red	No
11	Red	Red	No
12	Red	Red	No
13	Red	Red	No
14	Red	Red	No
15	Red	Red	No
16	Red	Red	No

Pedestrian Phases

Ph	Track	Dwell	Cycle
1	Don't Walk	Don't Walk	No
2	Don't Walk	Don't Walk	No
3	Don't Walk	Don't Walk	No
4	Don't Walk	Don't Walk	No
5	Don't Walk	Don't Walk	No
6	Don't Walk	Don't Walk	No
7	Don't Walk	Don't Walk	No
8	Don't Walk	Don't Walk	No
9	Don't Walk	Don't Walk	No
10	Don't Walk	Don't Walk	No
11	Don't Walk	Don't Walk	No
12	Don't Walk	Don't Walk	No
13	Don't Walk	Don't Walk	No
14	Don't Walk	Don't Walk	No
15	Don't Walk	Don't Walk	No
16	Don't Walk	Don't Walk	No

Overlaps

Ovlp	Track	Dwell	Cycle
A	Red	Red	No
B	Red	Red	No
C	Red	Red	No
D	Red	Red	No
E	Red	Red	No
F	Red	Red	No
G	Red	Red	No
H	Red	Red	No
I	Red	Red	No
J	Red	Red	No
K	Red	Red	No
L	Red	Red	No
M	Red	Red	No
N	Red	Red	No
O	Red	Red	No
P	Red	Red	No

Preempt 2

Vehical Phases

Ph.	Track	Dwell	Cycle
1	Red	Red	No
2	Red	Red	No
3	Red	Red	No
4	Red	Red	No
5	Red	Red	No
6	Red	Red	No
7	Red	Red	No
8	Red	Red	No
9	Red	Red	No
10	Red	Red	No
11	Red	Red	No
12	Red	Red	No
13	Red	Red	No
14	Red	Red	No
15	Red	Red	No
16	Red	Red	No

Pedestrian Phases

Ph.	Track	Dwell	Cycle
1	Don't Walk	Don't Walk	No
2	Don't Walk	Don't Walk	No
3	Don't Walk	Don't Walk	No
4	Don't Walk	Don't Walk	No
5	Don't Walk	Don't Walk	No
6	Don't Walk	Don't Walk	No
7	Don't Walk	Don't Walk	No
8	Don't Walk	Don't Walk	No
9	Don't Walk	Don't Walk	No
10	Don't Walk	Don't Walk	No
11	Don't Walk	Don't Walk	No
12	Don't Walk	Don't Walk	No
13	Don't Walk	Don't Walk	No
14	Don't Walk	Don't Walk	No
15	Don't Walk	Don't Walk	No
16	Don't Walk	Don't Walk	No

Overlaps

Ovlp.	Track	Dwell	Cycle
A	Red	Red	No
B	Red	Red	No
C	Red	Red	No
D	Red	Red	No
E	Red	Red	No
F	Red	Red	No
G	Red	Red	No
H	Red	Red	No
I	Red	Red	No
J	Red	Red	No
K	Red	Red	No
L	Red	Red	No
M	Red	Red	No
N	Red	Red	No
O	Red	Red	No
P	Red	Red	No

Preempt 3

Vehical Phases

Ph.	Track	Dwell	Cycle
1	Red	Red	No
2	Red	Red	No
3	Red	Red	No
4	Red	Red	No
5	Red	Red	No
6	Red	Red	No
7	Red	Red	No
8	Red	Red	No
9	Red	Red	No
10	Red	Red	No
11	Red	Red	No
12	Red	Red	No
13	Red	Red	No
14	Red	Red	No
15	Red	Red	No
16	Red	Red	No

Pedestrian Phases

Ph.	Track	Dwell	Cycle
1	Don't Walk	Don't Walk	No
2	Don't Walk	Don't Walk	No
3	Don't Walk	Don't Walk	No
4	Don't Walk	Don't Walk	No
5	Don't Walk	Don't Walk	No
6	Don't Walk	Don't Walk	No
7	Don't Walk	Don't Walk	No
8	Don't Walk	Don't Walk	No
9	Don't Walk	Don't Walk	No
10	Don't Walk	Don't Walk	No
11	Don't Walk	Don't Walk	No
12	Don't Walk	Don't Walk	No
13	Don't Walk	Don't Walk	No
14	Don't Walk	Don't Walk	No
15	Don't Walk	Don't Walk	No
16	Don't Walk	Don't Walk	No

Overlaps

Ovlp.	Track	Dwell	Cycle
A	Red	Red	No
B	Red	Red	No
C	Red	Red	No
D	Red	Red	No
E	Red	Red	No
F	Red	Red	No
G	Red	Red	No
H	Red	Red	No
I	Red	Red	No
J	Red	Red	No
K	Red	Red	No
L	Red	Red	No
M	Red	Red	No
N	Red	Red	No
O	Red	Red	No
P	Red	Red	No

Preempt 4

Vehical Phases				Pedestrian Phases				Overlaps			
Ph.	Track	Dwell	Cycle	Ph.	Track	Dwell	Cycle	Ovlp.	Track	Dwell	Cycle
1	Red	Red	No	1	Don't Walk	Don't Walk	No	A	Red	Red	No
2	Red	Red	No	2	Don't Walk	Don't Walk	No	B	Red	Red	No
3	Red	Red	No	3	Don't Walk	Don't Walk	No	C	Red	Red	No
4	Red	Red	No	4	Don't Walk	Don't Walk	No	D	Red	Red	No
5	Red	Red	No	5	Don't Walk	Don't Walk	No	E	Red	Red	No
6	Red	Red	No	6	Don't Walk	Don't Walk	No	F	Red	Red	No
7	Red	Red	No	7	Don't Walk	Don't Walk	No	G	Red	Red	No
8	Red	Red	No	8	Don't Walk	Don't Walk	No	H	Red	Red	No
9	Red	Red	No	9	Don't Walk	Don't Walk	No	I	Red	Red	No
10	Red	Red	No	10	Don't Walk	Don't Walk	No	J	Red	Red	No
11	Red	Red	No	11	Don't Walk	Don't Walk	No	K	Red	Red	No
12	Red	Red	No	12	Don't Walk	Don't Walk	No	L	Red	Red	No
13	Red	Red	No	13	Don't Walk	Don't Walk	No	M	Red	Red	No
14	Red	Red	No	14	Don't Walk	Don't Walk	No	N	Red	Red	No
15	Red	Red	No	15	Don't Walk	Don't Walk	No	O	Red	Red	No
16	Red	Red	No	16	Don't Walk	Don't Walk	No	P	Red	Red	No

Preempt 5

Vehical Phases				Pedestrian Phases				Overlaps			
Ph.	Track	Dwell	Cycle	Ph.	Track	Dwell	Cycle	Ovlp.	Track	Dwell	Cycle
1	Red	Red	No	1	Don't Walk	Don't Walk	No	A	Red	Red	No
2	Red	Red	No	2	Don't Walk	Don't Walk	No	B	Red	Red	No
3	Red	Red	No	3	Don't Walk	Don't Walk	No	C	Red	Red	No
4	Red	Red	No	4	Don't Walk	Don't Walk	No	D	Red	Red	No
5	Red	Red	No	5	Don't Walk	Don't Walk	No	E	Red	Red	No
6	Red	Red	No	6	Don't Walk	Don't Walk	No	F	Red	Red	No
7	Red	Red	No	7	Don't Walk	Don't Walk	No	G	Red	Red	No
8	Red	Red	No	8	Don't Walk	Don't Walk	No	H	Red	Red	No
9	Red	Red	No	9	Don't Walk	Don't Walk	No	I	Red	Red	No
10	Red	Red	No	10	Don't Walk	Don't Walk	No	J	Red	Red	No
11	Red	Red	No	11	Don't Walk	Don't Walk	No	K	Red	Red	No
12	Red	Red	No	12	Don't Walk	Don't Walk	No	L	Red	Red	No
13	Red	Red	No	13	Don't Walk	Don't Walk	No	M	Red	Red	No
14	Red	Red	No	14	Don't Walk	Don't Walk	No	N	Red	Red	No
15	Red	Red	No	15	Don't Walk	Don't Walk	No	O	Red	Red	No
16	Red	Red	No	16	Don't Walk	Don't Walk	No	P	Red	Red	No

Preempt 6

Vehical Phases				Pedestrian Phases				Overlaps			
Ph.	Track	Dwell	Cycle	Ph.	Track	Dwell	Cycle	Ovlp.	Track	Dwell	Cycle
1	Red	Red	No	1	Don't Walk	Don't Walk	No	A	Red	Red	No
2	Red	Red	No	2	Don't Walk	Don't Walk	No	B	Red	Red	No
3	Red	Red	No	3	Don't Walk	Don't Walk	No	C	Red	Red	No
4	Red	Red	No	4	Don't Walk	Don't Walk	No	D	Red	Red	No
5	Red	Red	No	5	Don't Walk	Don't Walk	No	E	Red	Red	No
6	Red	Red	No	6	Don't Walk	Don't Walk	No	F	Red	Red	No
7	Red	Red	No	7	Don't Walk	Don't Walk	No	G	Red	Red	No
8	Red	Red	No	8	Don't Walk	Don't Walk	No	H	Red	Red	No
9	Red	Red	No	9	Don't Walk	Don't Walk	No	I	Red	Red	No
10	Red	Red	No	10	Don't Walk	Don't Walk	No	J	Red	Red	No
11	Red	Red	No	11	Don't Walk	Don't Walk	No	K	Red	Red	No
12	Red	Red	No	12	Don't Walk	Don't Walk	No	L	Red	Red	No
13	Red	Red	No	13	Don't Walk	Don't Walk	No	M	Red	Red	No
14	Red	Red	No	14	Don't Walk	Don't Walk	No	N	Red	Red	No
15	Red	Red	No	15	Don't Walk	Don't Walk	No	O	Red	Red	No
16	Red	Red	No	16	Don't Walk	Don't Walk	No	P	Red	Red	No

System/Detectors Data

Local Critical Alarms

Revert to Backup: 15

1st Phone:

2nd Phone:

Cycle Failure: No
Local Free: No
Coord Failure: No
Conflict Flash: No
Remote Flash: No

Local Fash: No
Cycle Fault: No
Coord Fault: No
Premption: No
Voltage Monitor: No

Special Status 1: No
Special Status 2: No
Special Status 3: No
Special Status 4: No
Special Status 5: No
Special Status 6: No

Traffic Responsive

System Detector	Detector Channel	Veh/Hr	Average Time(mins)	Occupancy Correction/10	Min Volume %	Queue 1 Detectors	System Detectors	Weight Factor	Queue 2 Detectors	System Detectors	Weight Factor

Default Data

Sample Interval:

Default Data

Queue: 1 Input Selection: 0=Average

Detector Failed Level : 0

Queue: 2 Input Selection: 0=Average

Detector Failed Level : 0

Default Data

Queue:

Level	Enter	Leave	Dial / Split / Offset
			/ /

Default Data

Vehical Detector

Diagnostic Value 0

Detector	Max Presence	No Activity	Erratic Count

Vehical Detector

Diagnostic Value 1

Detector	Max Presence	No Activity	Erratic Count

Special Detector

Diagnostic Value 0

Detector	Max Presence	No Activity	Erratic Count

Default Data - Diag 0 Values

Default Data - No Diag 1 Values

Default Data - No Diag 0 Valu

Pedestrian Detector

Diagnostic Value 0

Detector	Max Presence	No Activity	Erratic Count

Pedestrian Detector

Diagnostic Value 1

Detector	Max Presence	No Activity	Erratic Count

Special Detector

Diagnostic Value 1

Detector	Max Presence	No Activity	Erratic Count

Default Data - No Diag 0 Values

Default Data - No Diag 1 Values

Default Data - No Diag 1 Values

Speed Trap Data

Speed Trap:

Measurement:

Detector 1	Detector_2	Distance :

Speed Trap Low Treshold	Speed Trap High Treshold

Dial/Split/Offset

//

Default Data

Default Data

Volume Detector Data

Volume Detector Number	Report Interval Controller Detector Channel

Default Data

LEGEND

- CONTROL CABINET
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- LOOP DETECTOR CONDUIT 1" NONMETALLIC
- NONMETALLIC INTERCONNECT CONDUIT 2", UNLESS OTHERWISE NOTED
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- (XX) MONOTUBE BASE, POLE, 15'-30' ARM
- (XX) MONOTUBE BASE, POLE, 35'-55' ARM
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
- PEDESTRIAN HEAD WITH PUSH BUTTON
- PUSH BUTTON
- LOOP DETECTOR IN 1" NONMETALLIC CONDUIT
- PULL BOX, 24" X 36"
- PULL BOX, 18" X 24"
- PULL BOX, 24" X 42"
- XX SIGNAL HEAD NUMBER
- R RED CIRCULAR INDICATOR
- Y YELLOW CIRCULAR INDICATOR
- G GREEN CIRCULAR INDICATOR
- RA RED ARROW
- YA YELLOW ARROW
- GA GREEN ARROW
- WALK/DON'T WALK INDICATOR 16" (COUNTDOWN TIMER)
- PEDESTRIAN HEAD
- PB PUSH BUTTON
- S STOP SIGN
- V COMMUNICATIONS VAULT

NOTE: ALL LENSES ARE 12-INCH
GRAYSHADE REPRESENTS EXISTING

CONSTRUCTION NOTES:
1. THE CONTRACTOR SHALL HAVE THE PULL BOXES AND CONDUIT RUNS INSPECTED 5 WORKING DAYS PRIOR TO PLACING SIGNAL CABLE INTO SYSTEM. CONTACT THE WISDOT ELECTRICAL FIELD UNIT TO MAKE ARRANGEMENTS. (414) 266-1170.
2. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
3. ALL LUMINARIES ARE LED-C UNLESS OTHERWISE NOTED.
4. *LOCATION IS TO FRONT CENTER OF DETECTOR LOOP.

MONOTUBE STRUCTURE NUMBERS
SB2 = S-45-1118
SB5 = S-45-1119
SB9 = S-45-1120
SB12 = S-45-1121

REVISION				
REV. NO.	INSTALL MONOTUBES, NEW CABINET, CONTROLLER			
	APPROVAL RECOMMENDED		APPROVED	
6	REGION		CENTRAL OFFICE	
	DATE	BY	DATE	BY
	4-3-17	AJO	4-24-17	JJB

CHANGE MAST ARM ON SB13 TO 25' 01/22/09
RECONSTRUCT INTERSECTION 03/02/07
CHANGE DETECTOR OPERATION ON LOOP 72 10/4/99
MODIFIED GEOMETRY (NB/SB); ADDED DET. LOOPS; MODIFIED SIGNAL HEADS 1/3/96
ADDED LEFT TURN ARROWS NORTH & SOUTHBOUND DETECTION 6/14/90
INITIAL INSTALL 5/16/66

TRAFFIC CONTROL SIGNAL
STH 57/167 & CTH W
(PORT WASHINGTON ROAD)
CITY OF MEQUON, OZAUKEE COUNTY
CABINET TYPE: TS2
SIGNAL NO. S45-0167 CONTROLLER TYPE: ECONOLITE

WISCONSIN DEPARTMENT OF TRANSPORTATION
APPROVAL RECOMMENDED
DATE 5/5/81 JOHN A. WHITE, REGION TRAFFIC ENGINEER
APPROVED
DATE 11/26/82 H. O. PRICE, STATE TRAFFIC ENGINEER

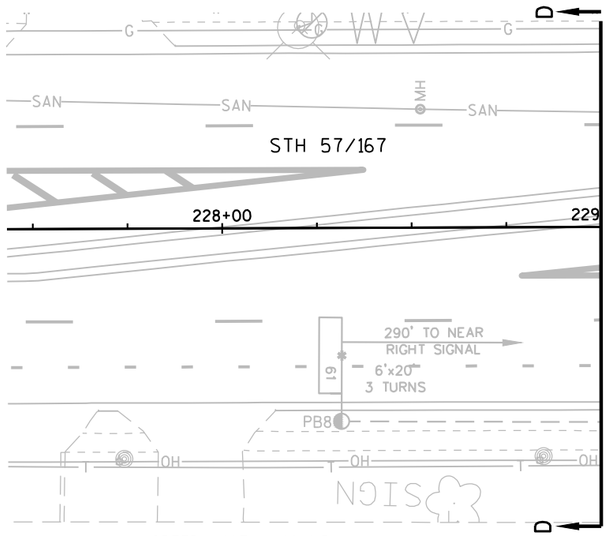
REGION CONTACT: D. DEDRICK
DESIGNED BY:
REVISED BY: S. WAGNER
PAGE 1 OF 3

PROJECT NO: 3700-20-28	HWY: STH 57/167	COUNTY: OZAUKEE	TRAFFIC SIGNAL PLAN	SHEET	E

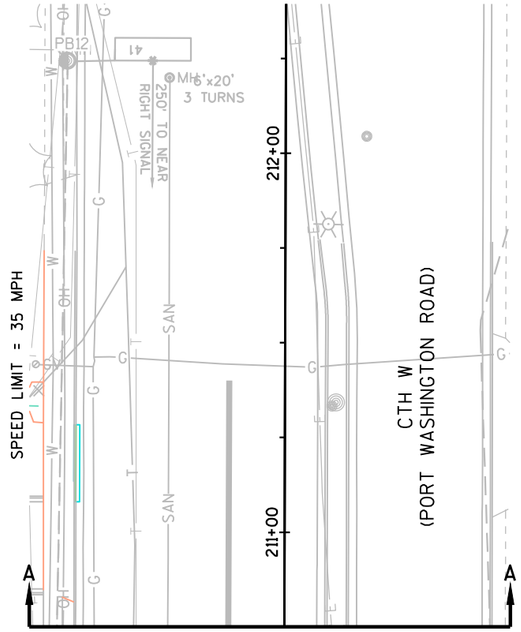
FILE NAME : N:\PDS\C3D\CAD\00900302\S45-0167\S45-0167_E.DWG
LAYOUT NAME - S45-0167_E_PG1
PLOT DATE : 5/4/2017 11:47 AM PLOT BY : VANDE LEEST, CYNTHIA PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

2



SPEED LIMIT = 40 MPH



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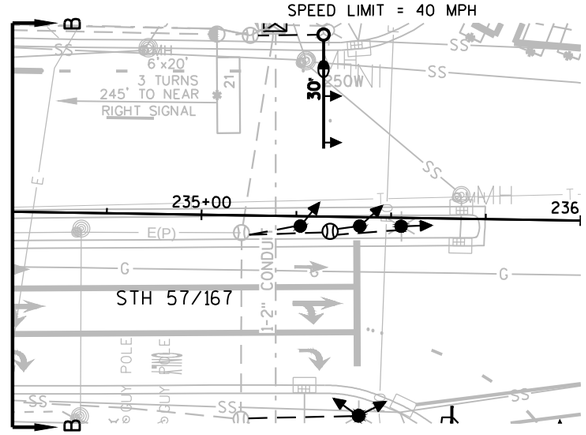
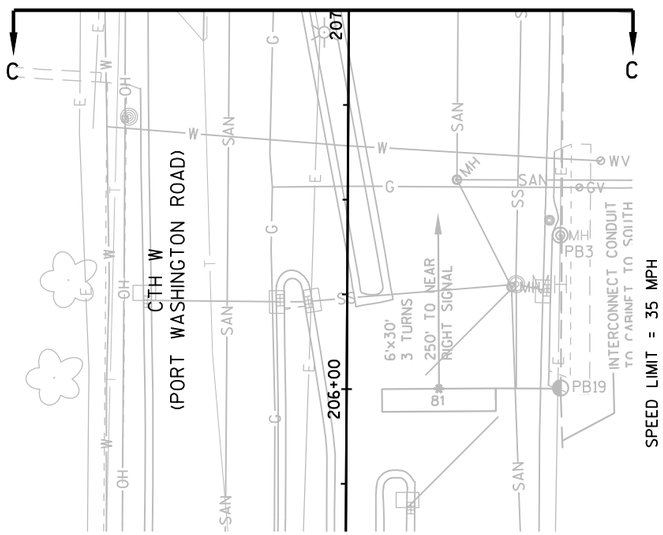




SPEED LIMIT = 35 MPH

TRAFFIC CONTROL SIGNAL
STH 57/167 & CTH W
(PORT WASHINGTON ROAD)
CITY OF MEQUON, OZAUKEE COUNTY

SIGNAL NO. S45-0167

REGION CONTACT: D. DEDRICK
DESIGNED BY:
REVISED BY: S. WAGNER

PAGE 2 OF 3

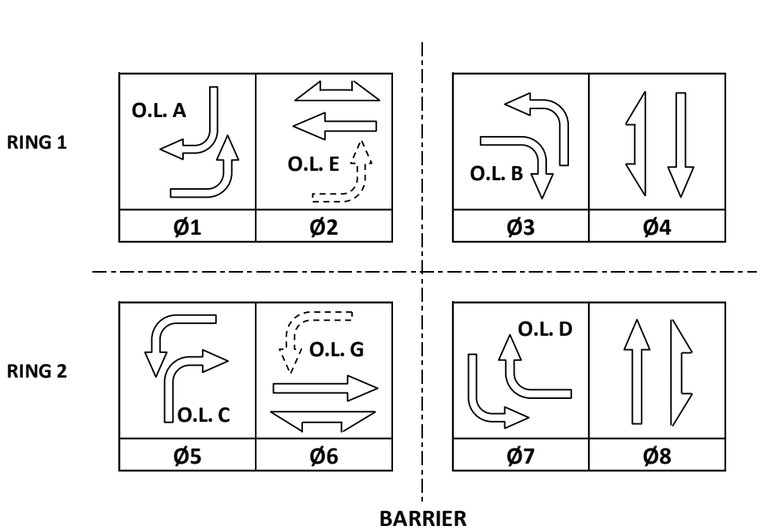
PROJECT NO: 3700-20-28	HWY: STH 57/167	COUNTY: OZAUKEE	TRAFFIC SIGNAL PLAN	SHEET	E

FILE NAME : N:\PDS\C3D\CAD\00900302\S45-0167\S45-0167_E.DWG
LAYOUT NAME - S45-0167_E_PG2

PLOT DATE : 5/4/2017 11:48 AM PLOT BY : VANDE LEEST, CYNTHIAPLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

	HEAD NUMBERS	FLASH
Ø1	5,6,7	R
Ø2	8,9,10,11	R
Ø3	19,20	R
Ø4	21,22,23,24	R
Ø5	12,13,14	R
Ø6	1,2,3,4	R
Ø7	25,26	R
Ø8	15,16,17,18	R
Ø2P	33,34,35,36	
Ø4P	29,30,31,32	
Ø6P	27,28	
Ø8P	37,38,39,40	
OLA	21,24	R
OLB	1,4	R
OLC	15,18	R
OLD	8,11	R
OLE	5,6,7	-
OLG	12,13,14	-



CONTROLLER LOGIC

PHASE NUMBER	PHASE LOCKING	DUAL ENTRY W / Ø	PHASE RECALL	PHASE ACTIVE
1		6	---	X
2	X	6	MIN	X
3		8	---	X
4		8	---	X
5		2	---	X
6	X	2	MIN	X
7		4	---	X
8		4	---	X

TYPE OF INTERCONNECT/COMMUNICATION	
NONE	
CLOSED LOOP	
TWISTED PAIR	
FIBER OPTIC*	
FIBER OPTIC (ETHERNET)	X
RADIO	
CELL MODEM	

TYPE OF COORDINATION	
NONE	
TBC	X
TRAFFIC RESPONSIVE	
ADAPTIVE	
*LOCATION OF MASTER CONTROLLER NO:	S-
SIGNAL SYSTEM NO:	SS- 0030

TYPE OF LIGHTING	
BY OTHER AGENCY	
IN TRAFFIC CABINET	X
IN SEPARATE DOT LIGHTING CABINET	

TYPE OF PRE-EMPT	
NONE	X
RAILROAD	
EMERGENCY VEHICLE	
GTT	
TOMAR	
HARDWIRE	
OTHER	
LIFT BRIDGE	
QUEUE DETECTION	

DETECTOR LOGIC

DETECTOR INPUT	3	1	7	5	11	9	15	13	19	17	23	21	27	25	31	29	DETECTOR INPUT
PLAN LOOP DETECTOR*(S)	21	11	34	32	44	42	51	46	72	61	82	74	86	84			PLAN LOOP DETECTOR*(S)
CALLED PHASE	2	1	3	3	4	4	5	4	7	6	8	7	8	8			CALLED PHASE
CALL OPTION	X	X	X	X	X	X	X	X	X	X	X	X	X	X			CALL OPTION
DELAY TIME						X					X						DELAY TIME
EXTENTION OPTION	X	X	X	X	X	X	X	X	X	X	X	X	X	X			EXTENTION OPTION
EXTEND TIME																	EXTEND TIME
USE ADDED INITIAL	X									X							USE ADDED INITIAL
CROSS SWITCH PHASE		2					6										CROSS SWITCH PHASE

DETECTOR INPUT	4	2	8	6	12	10	16	14	20	18	24	22	28	26	32	30	DETECTOR INPUT
PLAN LOOP DETECTOR*(S)	31	12	41	33	45	43	52	47	73	71	83	81	87	85			PLAN LOOP DETECTOR*(S)
CALLED PHASE	3	1	4	3	4	4	5	4	7	7	8	8	8	8			CALLED PHASE
CALL OPTION	X	X		X	X	X	X	X	X	X	X		X	X			CALL OPTION
DELAY TIME						X					X						DELAY TIME
EXTENTION OPTION	X	X	X	X	X	X	X	X	X	X	X	X	X	X			EXTENTION OPTION
EXTEND TIME			X									X					EXTEND TIME
USE ADDED INITIAL																	USE ADDED INITIAL
CROSS SWITCH PHASE		2					6										CROSS SWITCH PHASE

STH 57/167 & CTH W
CITY OF MEQUON
OZAUKEE COUNTY

SIGNAL NO: S45-0167 CABINET TYPE: TS2
CONTROLLER TYPE: ECONOLITE
DATE: 04/2017 PAGE NO. 3 OF 3

PROJECT NO: 3700-20-28	HWY: STH 57/167	COUNTY: OZAUKEE	SEQUENCE OF OPERATIONS	SHEET NO:	E

FILE NAME : _____ PLOT DATE : _____ PLOT BY : _____ PLOT NAME : _____ PLOT SCALE : 1:1

iming Cover Sheet for Signal: S0167 HWY: 57 and CTH W (Port Washington Rd

Date: 12/12/2016
Signal No S0167 **S0167**
County: OZA
Controller: EPAC
School: None

Changes Made By: D. Dedrick
Highway: 57
Local Hwy: STH 167 (Mequon Rd)
Location: CTH W (Port Washington Rd)
Audible Ped: No

Pre-emption

Emergency: No Type: Phases:
Railroad: No Type: Phases:

EVP Maintenance Id:
EVP Contact:
Community:
Contact Phone:
Alternate Phone:

Coordination

System No: SS0030
CoordType: TBC
Dip Switch Setting
DS ☑

Controller IP Address:
Comments:

TBC: Yes
Tone: No
Closed Loop: No
Hardwire: No

	Length	Split 1	Split 2	Split 3	Split 4
Cycle 1=	130 sec	7:00am - 8:30am M-F			
Cycle 2=	110 sec	6:00pm - 7:00pm M-F			
Cycle 3=	130 sec	3:45pm - 6:00pm M-F			
Cycle 4=					

Prom Replacement

Signal Plan No
Pre-empt: No

Part of a Local System: No

Local Contact:
Phone Number:

Overlaps

Overlap A= Phases:
Overlap B= Phases:
Overlap C= Phases:
Overlap D= Phases:

Flash

Emergency: R-R
Off Peak: No

Off Peak Times

Detector Timing

Dilemna Zone No

Video Detection: No

Detector Number	41	42	43	81	82	83								
Stretch	5.0			5.0										
Right Turn Delay		8	8		8	8								
Left Turn Delay														

Unique Features

Timing Changes Log for Signal S0167 on Hwy 57 in OZAUKEE County

CTH W (Port Washington Rd)

Date Computer Changed	Date Change Made in Field	Timing Change	Reason for Change	Change By	Temp Timing
12/12/16	12/12/2016	Modified TOD plan	Coordination not needed during off peak times	D. Dedrick	No
11/01/16	11/1/2016	Updated timings	Timing and operation review	D. Dedrick	No
06/20/14	6/20/2014	Changed TOD Settings	Complaints of not enough traffic during the early hours	D. Wolford	No
05/12/14	5/13/2014	Updated system timings; Change Phase 6 MVI, TBR, TTR, and Added Initial	Improve STH 167 Progression	D. Wolford	No
09/16/13	9/17/2013	Updated Signal and System Timings	Signal Timing and Operation Review	D. Wolford	No
05/30/12		Converted timing to Marc NX.		D. Brantner	No
11/04/10	11/19/2010	Changed 1/1/1 to start at 7:15 am. Changed 1/2/1 to start at 10:00 am Sat & Sun. Changed 2/1/1 to end at 6:30 pm.	Citizen Complaint.	D. Brantner	No
06/28/10		Changed Midday cycle length to 120 sec. Changed correction to SW2.	Changed system times at the IH 43 SB Ramps & STH 57/167.	D. Brantner	No
08/18/09	8/19/2009	Changed coord data.	Revision to S1251.	D. Murphy	No
02/17/09	2/18/2009	Changed cycle length for am peak, moved 1/2/1 to 3/1/1, changed to cycle time.	Continued complaints about SB ramp backing up forced a change in cycle length.	D. Murphy	No

Timing Changes Log for Signal S0167 on Hwy 57 in OZAUKEE County

CTH W (Port Washington Rd)

Date Computer Changed	Date Change Made in Field	Timing Change	Reason for Change	Change By	Temp Timing
05/19/08		New system times	Better Operation	S. Pierce	No
05/08/08	5/9/2008	Modify system timing.	Improve progression and reduce delay.	J. Haug	No
05/02/08	5/6/2008	Revised system timing.	New sequence of operation at the SB ramp S1251.	J. Haug	No
11/27/07	11/27/2007	Take Phases 1,3,5,7 off min. recall	Construction Completed	Unknown	No
11/15/07	11/19/2007	New System Timing, Update Clearance Times, Ph. 1, 3,5,7 on Min Recall Temporarily	Construction Nearly Complete	C. Hager	Yes
02/09/07		DST	DST	J. Dimmer	No
12/18/06	12/18/2006	Added 1.0 sec of all-red time to phases 1,3,5, and 7.	Citizen complaint - requested by City of Mequon Police Chief.	D. Brantner	No
06/01/06	5/31/2006	Took out of system.	Ped calls for phase 8 are being skipped, when set free (out of system) the ped calls work fine.	B. Barnard	Yes
05/13/03	5/13/2003	Until system timings can be fixed, intersection appears to be running free until 3pm so phases 2 & 6 min. grn. set to 15s., TBR reduced to 22s & TTR increased to 18s. Phase 5 MGAP reduced to 1.5s. Offset 1 for 1/1/1, 1/2/1 and 1/3/1 changed to 1s.	After a citizen complaint about east-west progression, old timing was found in the LAN and the controller.	J. Haug	No
07/02/02	7/3/2002	Changed ph. 2,6 MGR to 10s., TBR to 22s., TTR to 18s. and changed ph. 2 MGAP to 2.0s. Changed ph. 5 PASS to 1.5s. and MGAP to 1.5s.	Increase efficiency.	J. Haug	No

Timing Changes Log for Signal S0167 on Hwy 57 in OZAUKEE County

CTH W (Port Washington Rd)

Date Computer Changed	Date Change Made in Field	Timing Change	Reason for Change	Change By	Temp Timing
07/01/02		Change to permissive yield	Signal may skip phases without this change	M. Milam	No
06/19/02	6/19/2002	Increased phases 4 & 8 ped clearances to 25 sec and phases 2 & 6 ped clearances to 27 sec	Citizen complaint	M. Milam	No
10/04/00	10/4/2000	Set ph. 2 min. gap to 4.5sec. and increase ph. 2 min. green to 20 sec.	Reduce westbound backups.	J. Haug	No
08/30/00		Change block times for 1/1/1 to 13 sec. for ph. 3 , 39 sec. for ph. 2, 20sec. for ph. 5 and 18sec. for ph. 7. Change block times for 1/3/1 to 18sec. for ph.7 and 27sec. for ph. 8. Also set ph. 6 min. green to 25sec.	STH 167 construction	J. Haug	No
03/13/00		changed local address to "000"	Y2K compliance per Don S.	J. Haug	No
12/02/99		EPAC Timing	Changed DP9800 to EPAC for Y2K	J. Haug	No
03/11/99		DST		S. Pierce	No

Programmed EPAC Data

12/9/2016
8:15:43AM

Intersection Name: SE45S0167 STH 57/167 & CTH W **Intersection Alias: S0167**

Access Code: 9999 Channel: 1 Address: 0 Revision: 3.33e
IP:

Access Data

:1200 Baud
:19200 Baud

Phase Data

Vehical Basic Timings

Phase	Min_Grn	Passage	Max1	Max2	Yellow	All Red
1	8	1.5	20	20	3.5	2.0
2	15	4.2	45	45	4.4	3.0
3	8	1.5	20	20	3.5	2.0
4	10	1.5	40	40	4.1	3.0
5	8	1.5	20	20	3.5	2.0
6	15	4.9	45	45	4.4	3.0
7	8	1.5	20	20	3.5	2.0
8	10	1.5	40	40	4.1	3.0

Vehical Density Timings

Added Initial	Max_Initial	Time B4 Reduction	Cars Before	Time To Reduce	Min_Gap
0.0	8	20	0	0	1.5
2.4	24	24	0	21	2.0
0.0	8	20	0	0	1.5
0.0	10	40	0	0	1.5
0.0	8	20	0	0	1.5
1.2	28	28	0	17	2.0
0.0	8	20	0	0	1.5
0.0	10	40	0	0	1.5

Pedestrian Timing

Phase	Walk	Ped Clear	Flashing Walk	Extended Ped Clear	Actuated Rest in Walk
1	0	0	No	0	No
2	7	31	No	2	No
3	0	0	No	0	No
4	7	27	No	2	No
5	0	0	No	0	No
6	7	32	No	2	No
7	0	0	No	0	No
8	7	28	No	2	No

General Control

Initialize	Non-Act Response	Veh Recall	Ped Recall	Recall Delay
Inactive	None	None	None	0
Green	None	Min	None	0
Inactive	None	None	None	0
Inactive	None	None	None	0
Inactive	None	None	None	0
Green	None	Min	None	0
Inactive	None	None	None	0
Inactive	None	None	None	0

Miscellaneous

Non Lock	Dual Entry	Last Car Passage	Conditional Service	No Simultaneous Gap Out
Yes	No	No	No	No
No	Yes	No	No	No
Yes	No	No	No	No
Yes	Yes	No	No	No
Yes	No	No	No	No
No	Yes	No	No	No
Yes	No	No	No	No
Yes	Yes	No	No	No

Special Sequence

Default Data

Vehical Detector Phase Assignment

Assigned Phase	Mode	Switched Phase	Extend	Delay

Default Data

Pedestrian Detector

Default Data

Special Detector Phase Assignment

Assign Phase	Mode	Switched Phase	Extend	Delay

:

Default Data

Unit Data

General Control

Startup Time: 6sec Startup State: All Red Red Revert: 2.0sec
Auto Ped Clear: No Stop Time Reset: No Alternate Sequence: 0

ABC connector Input Modes: 0
ABC connector Output Modes: 0
D connector Input Modes: 0
D connector Output Modes: 0

Ring	Input Response	Output Selection
1	Ring 1	Ring 1
2	Ring 2	Ring 2
3	None	None
4	None	None

Remote Flash

Test A = Flash No

Phase	Flash Entry Phase	Flash Exit Phase
2	No	Yes
6	No	Yes

Channel	Flash Color	Flash Alternat

Default Data - No Flash

Overlaps

Overlaps

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Phase(s)																

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Yellow	4.0	2.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Red	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Stop Grn/Yel Phase	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Strat Green Phase	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring

Phase	Ring	Next Phase
1	1	2
2	1	3
3	1	4
4	1	1
5	2	6
6	2	7
7	2	8
8	2	5

Phase(s)

Concurrent Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	1	2	3	4	1	1	3	3	9	10	11	12	13	14	15	16
	5	5	7	7	2	2	4	4								
	6	6	8	8	5	6	7	8								

Alternate Sequences

Alternate Sequences

Phase Pair(s)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	**1 2**	**3 4**	**1 2**	**5 6**	**1 2**	**3 4**	**1 2**	**7 8**	**1 2**	**3 4**	**1 2**	**5 6**	**1 2**	**3 4**	**1 2**
2	**0 0**	**0 0**	**3 4**	**0 0**	**5 6**	**5 6**	**3 4**	**0 0**	**7 8**	**7 8**	**3 4**	**7 8**	**5 6**	**5 6**	**3 4**
3	**0 0**	**0 0**	**0 0**	**0 0**	**0 0**	**0 0**	**5 6**	**0 0**	**0 0**	**0 0**	**7 8**	**0 0**	**7 8**	**7 8**	**5 6**
4	**0 0**	**0 0**	**0 0**	**0 0**	**0 0**	**0 0**	**0 0**	**0 0**	**0 0**	**0 0**	**0 0**	**0 0**	**0 0**	**0 0**	**7 8**

Port 1 Data

BIU Addr	Port Status	Message 40

Default Data

Control	Channel	Hardware Pins	Control	Channel	Hardware Pins
1 - Veh Phase 1	**1**	1 - Phase 1 RYG	2 - Veh Phase 2	**2**	2 - Phase 2 RYG
3 - Veh Phase 3	**3**	3 - Phase 3 RYG	4 - Veh Phase 4	**4**	4 - Phase 4 RYG
5 - Veh Phase 5	**5**	5 - Phase 5 RYG	6 - Veh Phase 6	**6**	6 - Phase 6 RYG
7 - Veh Phase 7	**7**	7 - Phase 7 RYG	8 - Veh Phase 8	**8**	8 - Phase 8 RYG
18 - Ped Phase 2	**9**	10 - Phase 2 DPW	20 - Ped Phase 4	**10**	12 - Phase 4 DPW
22 - Ped Phase 6	**11**	14 - Phase 6 DPW	24 - Ped Phase 8	**12**	16 - Phase 8 DPW
33 - Overlap A	**13**	17 - Overlap A RYG	34 - Overlap B	**14**	18 - Overlap B RYG
35 - Overlap C	**15**	19 - Overlap C RYG	36 - Overlap D	**16**	20 - Overlap D RYG
17 - Ped Phase 1	**17**	9 - Phase 1 DPW	19 - Ped Phase 3	**18**	11 - Phase 3 DPW
21 - Ped Phase 5	**19**	13 - Phase 5 DPW	23 - Ped Phase 7	**20**	15 - Phase 7 DPW

Coordination Data

General Coordination Data

Operation Mode: 1=Auto

Coordination Mode: 2=Permissive

Maximun Mode: 0=Inhibit

Correction Mode: 3=Short Way Plus

Offset Mode: 0=Beg Grn

Force Mode: 1=Cycle

Max Dwell Time: 15

Yield Period: 0

Manual Dial: 1

Manual Split: 1

Manual Offset: 1

Dial/Split	Cycle
1/1	130
2/1	110
3/1	130

Split Times and Phase Modes

Dial 1 / Split 1

Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode
1	29	0=Actuated	2	51	1=Coordinate	3	20	0=Actuated	4	30	0=Actuated
5	34	0=Actuated	6	46	1=Coordinate	7	25	0=Actuated	8	25	0=Actuated

Dial 2 / Split 1

Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode
1	25	0=Actuated	2	36	1=Coordinate	3	20	0=Actuated	4	29	0=Actuated
5	21	0=Actuated	6	40	1=Coordinate	7	23	0=Actuated	8	26	0=Actuated

Dial 3 / Split 1

Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode
1	25	0=Actuated	2	41	1=Coordinate	3	30	0=Actuated	4	34	0=Actuated
5	21	0=Actuated	6	45	1=Coordinate	7	32	0=Actuated	8	32	0=Actuated

Traffic Plan Data

Plan: **1/1/1**	Offset Time: 64	Alt. Sequence: 10	Mode: 0=Normal	Rg 2 Lag Time: 0	Rg 3 Lag Time: 0	Rg 4 Lag Time: 0
Plan: **2/1/1**	Offset Time: 58	Alt. Sequence: 0	Mode: 0=Normal	Rg 2 Lag Time: 0	Rg 3 Lag Time: 0	Rg 4 Lag Time: 0
Plan: **3/1/1**	Offset Time: 102	Alt. Sequence: 0	Mode: 0=Normal	Rg 2 Lag Time: 0	Rg 3 Lag Time: 0	Rg 4 Lag Time: 0

Local TBC Data

Start of Daylight Saving Month: 3 Week: 2 Cycle Zero Reference Hours: 24 Min: 0

End of Daylight Saving Month: 11 Week: 1

Source Day	Equate Days 1	2	3	4	5	6	7
1	7	0	0	0	0	0	0
2	3	4	5	6	0	0	0

Traffic Data

Event	Day	Time	D/S/O	flash	PHASE FUNCTION 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	1	0:1	0/0/4		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	2	0:1	0/0/4		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	2	7:0	1/1/1		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	2	8:30	0/0/4		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	2	15:45	3/1/1		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6	2	18:0	2/1/1		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
7	2	19:0	0/0/4		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

AUX. Events

Event	Program Day	Hour	Min.	Aux Ouputs 1	2	3	Det. Diag. D1	Det. Rpt. D2	Det. Mult100 D3	Dimming	Special Function Outputs 1	2	3	4	5	6	7	8
				☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Default Data - No Special Day(s) or Week(s) Programmed

Special Functions

Function

SF1	SF2	SF3	SF4	SF5	SF6	SF7	SF8
☐	☐	☐	☐	☐	☐	☐	☐

Phase Function

Phase Function Map

PF1	PF2	PF3	PF4	PF5	PF6	PF7	PF8	PF9	PF10	PF11	PF12	PF13	PF14	PF15	PF16
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Dimming Data

Channel	Red	Yellow	Green	Alternate
	☐	☐	☐	☐

Default Data - No Dimming Programmed

Preemption Data

General Preemption Data

Flash > Preepmt 1, Preepmt 1 > Preempt 2, Preepmt 2 > Preempt 3, Preepmt 3 > Preempt 4, Preepmt 4 > Preempt 5, Preepmt 5 > Preempt 6
Ring 1 Min GRN/WLK = 10 Ring 2 Min GRN/WLK = 10 Ring 3 Min GRN/WLK = 10 Ring 4 Min GRN/WLK = 10

Preempt Timers

Preempt	Non-Locking	Link to Preempt	Delay	Extend	Duration	MaxCall	Lock-Out	Select			Track				Dwell	Return		
								Ped Clear	Yel	Red	Grn	Ped	Yel	Red	Green	Ped Clear	Yel	Red
1	No	0	0	0	0	0	0	8	40	20	10	8	40	20	10	8	40	20
2	No	0	0	0	0	0	0	8	40	20	10	8	40	20	10	8	40	20
3	No	0	0	0	0	0	0	8	40	20	10	8	40	20	10	8	40	20
4	No	0	0	0	0	0	0	8	40	20	10	8	40	20	10	8	40	20
5	No	0	0	0	0	0	0	8	40	20	10	8	40	20	10	8	40	20
6	No	0	0	0	0	0	0	8	40	20	10	8	40	20	10	8	40	20

Preempt 1

Phase	Exit Phase	Exit Calls
1	No	Yes
2	Yes	Yes
3	No	Yes
4	No	Yes
5	No	Yes
6	Yes	Yes
7	No	Yes
8	No	Yes

Preempt 2

Phase	Exit Phase	Exit Calls
1	No	Yes
2	Yes	Yes
3	No	Yes
4	No	Yes
5	No	Yes
6	Yes	Yes
7	No	Yes
8	No	Yes

Preempt 3

Phase	Exit Phase	Exit Calls
1	No	Yes
2	Yes	Yes
3	No	Yes
4	No	Yes
5	No	Yes
6	Yes	Yes
7	No	Yes
8	No	Yes

Preempt 4

Phase	Exit Phase	Exit Calls
1	No	Yes
2	Yes	Yes
3	No	Yes
4	No	Yes
5	No	Yes
6	Yes	Yes
7	No	Yes
8	No	Yes

Preempt 5

Phase	Exit Phase	Exit Calls
1	No	Yes
2	Yes	Yes
3	No	Yes
4	No	Yes
5	No	Yes
6	Yes	Yes
7	No	Yes
8	No	Yes

Preempt 6

Phase	Exit Phase	Exit Calls
1	No	Yes
2	Yes	Yes
3	No	Yes
4	No	Yes
5	No	Yes
6	Yes	Yes
7	No	Yes
8	No	Yes

Priority Timers

Priority	Non-Locking	Delay	Extend	Duration	Dwell	Max_Call	Lock-Out	Skip Phases
1	No	0	0	0	0	0	0	0=Do not Skip Phases
2	No	0	0	0	0	0	0	0=Do not Skip Phases
3	No	0	0	0	0	0	0	0=Do not Skip Phases
4	No	0	0	0	0	0	0	0=Do not Skip Phases
5	No	0	0	0	0	0	0	0=Do not Skip Phases
6	No	0	0	0	0	0	0	0=Do not Skip Phases

Priority 1

Phase	Exit Phase	Exit Calls

Priority 2

Phase	Exit Phase	Exit Calls

Priority 3

Phase	Exit Phase	Exit Calls

Priority 4

Phase	Exit Phase	Exit Calls

Priority 5

Phase	Exit Phase	Exit Calls

Priority 6

Phase	Exit Phase	Exit Calls

Preempt 1

Vehical Phases				Pedestrian Phases				Overlaps			
Ph.	Track	Dwell	Cycle	Ph	Track	Dwell	Cycle	Ovlp	Track	Dwell	Cycle
1	Red	Red	No	1	Don't Walk	Don't Walk	No	A	Red	Red	No
2	Red	Red	No	2	Don't Walk	Don't Walk	No	B	Red	Red	No
3	Red	Red	No	3	Don't Walk	Don't Walk	No	C	Red	Red	No
4	Red	Red	No	4	Don't Walk	Don't Walk	No	D	Red	Red	No
5	Red	Red	No	5	Don't Walk	Don't Walk	No	E	Red	Red	No
6	Red	Red	No	6	Don't Walk	Don't Walk	No	F	Red	Red	No
7	Red	Red	No	7	Don't Walk	Don't Walk	No	G	Red	Red	No
8	Red	Red	No	8	Don't Walk	Don't Walk	No	H	Red	Red	No
9	Red	Red	No	9	Don't Walk	Don't Walk	No	I	Red	Red	No
10	Red	Red	No	10	Don't Walk	Don't Walk	No	J	Red	Red	No
11	Red	Red	No	11	Don't Walk	Don't Walk	No	K	Red	Red	No
12	Red	Red	No	12	Don't Walk	Don't Walk	No	L	Red	Red	No
13	Red	Red	No	13	Don't Walk	Don't Walk	No	M	Red	Red	No
14	Red	Red	No	14	Don't Walk	Don't Walk	No	N	Red	Red	No
15	Red	Red	No	15	Don't Walk	Don't Walk	No	O	Red	Red	No
16	Red	Red	No	16	Don't Walk	Don't Walk	No	P	Red	Red	No

Preempt 2

Vehical Phases				Pedestrian Phases				Overlaps			
Ph.	Track	Dwell	Cycle	Ph.	Track	Dwell	Cycle	Ovlp.	Track	Dwell	Cycle
1	Red	Red	No	1	Don't Walk	Don't Walk	No	A	Red	Red	No
2	Red	Red	No	2	Don't Walk	Don't Walk	No	B	Red	Red	No
3	Red	Red	No	3	Don't Walk	Don't Walk	No	C	Red	Red	No
4	Red	Red	No	4	Don't Walk	Don't Walk	No	D	Red	Red	No
5	Red	Red	No	5	Don't Walk	Don't Walk	No	E	Red	Red	No
6	Red	Red	No	6	Don't Walk	Don't Walk	No	F	Red	Red	No
7	Red	Red	No	7	Don't Walk	Don't Walk	No	G	Red	Red	No
8	Red	Red	No	8	Don't Walk	Don't Walk	No	H	Red	Red	No
9	Red	Red	No	9	Don't Walk	Don't Walk	No	I	Red	Red	No
10	Red	Red	No	10	Don't Walk	Don't Walk	No	J	Red	Red	No
11	Red	Red	No	11	Don't Walk	Don't Walk	No	K	Red	Red	No
12	Red	Red	No	12	Don't Walk	Don't Walk	No	L	Red	Red	No
13	Red	Red	No	13	Don't Walk	Don't Walk	No	M	Red	Red	No
14	Red	Red	No	14	Don't Walk	Don't Walk	No	N	Red	Red	No
15	Red	Red	No	15	Don't Walk	Don't Walk	No	O	Red	Red	No
16	Red	Red	No	16	Don't Walk	Don't Walk	No	P	Red	Red	No

Preempt 3

Vehical Phases				Pedestrian Phases				Overlaps			
Ph.	Track	Dwell	Cycle	Ph.	Track	Dwell	Cycle	Ovlp.	Track	Dwell	Cycle
1	Red	Red	No	1	Don't Walk	Don't Walk	No	A	Red	Red	No
2	Red	Red	No	2	Don't Walk	Don't Walk	No	B	Red	Red	No
3	Red	Red	No	3	Don't Walk	Don't Walk	No	C	Red	Red	No
4	Red	Red	No	4	Don't Walk	Don't Walk	No	D	Red	Red	No
5	Red	Red	No	5	Don't Walk	Don't Walk	No	E	Red	Red	No
6	Red	Red	No	6	Don't Walk	Don't Walk	No	F	Red	Red	No
7	Red	Red	No	7	Don't Walk	Don't Walk	No	G	Red	Red	No
8	Red	Red	No	8	Don't Walk	Don't Walk	No	H	Red	Red	No
9	Red	Red	No	9	Don't Walk	Don't Walk	No	I	Red	Red	No
10	Red	Red	No	10	Don't Walk	Don't Walk	No	J	Red	Red	No
11	Red	Red	No	11	Don't Walk	Don't Walk	No	K	Red	Red	No
12	Red	Red	No	12	Don't Walk	Don't Walk	No	L	Red	Red	No
13	Red	Red	No	13	Don't Walk	Don't Walk	No	M	Red	Red	No
14	Red	Red	No	14	Don't Walk	Don't Walk	No	N	Red	Red	No
15	Red	Red	No	15	Don't Walk	Don't Walk	No	O	Red	Red	No
16	Red	Red	No	16	Don't Walk	Don't Walk	No	P	Red	Red	No

Preempt 4

Vehical Phases				Pedestrian Phases				Overlaps			
Ph.	Track	Dwell	Cycle	Ph.	Track	Dwell	Cycle	Ovlp.	Track	Dwell	Cycle
1	Red	Red	No	1	Don't Walk	Don't Walk	No	A	Red	Red	No
2	Red	Red	No	2	Don't Walk	Don't Walk	No	B	Red	Red	No
3	Red	Red	No	3	Don't Walk	Don't Walk	No	C	Red	Red	No
4	Red	Red	No	4	Don't Walk	Don't Walk	No	D	Red	Red	No
5	Red	Red	No	5	Don't Walk	Don't Walk	No	E	Red	Red	No
6	Red	Red	No	6	Don't Walk	Don't Walk	No	F	Red	Red	No
7	Red	Red	No	7	Don't Walk	Don't Walk	No	G	Red	Red	No
8	Red	Red	No	8	Don't Walk	Don't Walk	No	H	Red	Red	No
9	Red	Red	No	9	Don't Walk	Don't Walk	No	I	Red	Red	No
10	Red	Red	No	10	Don't Walk	Don't Walk	No	J	Red	Red	No
11	Red	Red	No	11	Don't Walk	Don't Walk	No	K	Red	Red	No
12	Red	Red	No	12	Don't Walk	Don't Walk	No	L	Red	Red	No
13	Red	Red	No	13	Don't Walk	Don't Walk	No	M	Red	Red	No
14	Red	Red	No	14	Don't Walk	Don't Walk	No	N	Red	Red	No
15	Red	Red	No	15	Don't Walk	Don't Walk	No	O	Red	Red	No
16	Red	Red	No	16	Don't Walk	Don't Walk	No	P	Red	Red	No

Preempt 5

Vehical Phases				Pedestrian Phases				Overlaps			
Ph.	Track	Dwell	Cycle	Ph.	Track	Dwell	Cycle	Ovlp.	Track	Dwell	Cycle
1	Red	Red	No	1	Don't Walk	Don't Walk	No	A	Red	Red	No
2	Red	Red	No	2	Don't Walk	Don't Walk	No	B	Red	Red	No
3	Red	Red	No	3	Don't Walk	Don't Walk	No	C	Red	Red	No
4	Red	Red	No	4	Don't Walk	Don't Walk	No	D	Red	Red	No
5	Red	Red	No	5	Don't Walk	Don't Walk	No	E	Red	Red	No
6	Red	Red	No	6	Don't Walk	Don't Walk	No	F	Red	Red	No
7	Red	Red	No	7	Don't Walk	Don't Walk	No	G	Red	Red	No
8	Red	Red	No	8	Don't Walk	Don't Walk	No	H	Red	Red	No
9	Red	Red	No	9	Don't Walk	Don't Walk	No	I	Red	Red	No
10	Red	Red	No	10	Don't Walk	Don't Walk	No	J	Red	Red	No
11	Red	Red	No	11	Don't Walk	Don't Walk	No	K	Red	Red	No
12	Red	Red	No	12	Don't Walk	Don't Walk	No	L	Red	Red	No
13	Red	Red	No	13	Don't Walk	Don't Walk	No	M	Red	Red	No
14	Red	Red	No	14	Don't Walk	Don't Walk	No	N	Red	Red	No
15	Red	Red	No	15	Don't Walk	Don't Walk	No	O	Red	Red	No
16	Red	Red	No	16	Don't Walk	Don't Walk	No	P	Red	Red	No

Preempt 6

Vehical Phases				Pedestrian Phases				Overlaps			
Ph.	Track	Dwell	Cycle	Ph.	Track	Dwell	Cycle	Ovlp.	Track	Dwell	Cycle
1	Red	Red	No	1	Don't Walk	Don't Walk	No	A	Red	Red	No
2	Red	Red	No	2	Don't Walk	Don't Walk	No	B	Red	Red	No
3	Red	Red	No	3	Don't Walk	Don't Walk	No	C	Red	Red	No
4	Red	Red	No	4	Don't Walk	Don't Walk	No	D	Red	Red	No
5	Red	Red	No	5	Don't Walk	Don't Walk	No	E	Red	Red	No
6	Red	Red	No	6	Don't Walk	Don't Walk	No	F	Red	Red	No
7	Red	Red	No	7	Don't Walk	Don't Walk	No	G	Red	Red	No
8	Red	Red	No	8	Don't Walk	Don't Walk	No	H	Red	Red	No
9	Red	Red	No	9	Don't Walk	Don't Walk	No	I	Red	Red	No
10	Red	Red	No	10	Don't Walk	Don't Walk	No	J	Red	Red	No
11	Red	Red	No	11	Don't Walk	Don't Walk	No	K	Red	Red	No
12	Red	Red	No	12	Don't Walk	Don't Walk	No	L	Red	Red	No
13	Red	Red	No	13	Don't Walk	Don't Walk	No	M	Red	Red	No
14	Red	Red	No	14	Don't Walk	Don't Walk	No	N	Red	Red	No
15	Red	Red	No	15	Don't Walk	Don't Walk	No	O	Red	Red	No
16	Red	Red	No	16	Don't Walk	Don't Walk	No	P	Red	Red	No

System/Detectors Data

Local Critical Alarms

Revert to Backup: 15

1st Phone:

2nd Phone:

Cycle Failure: No
Local Free: No
Coord Failure: No
Conflict Flash: No
Remote Flash: No

Local Fash: No
Cycle Fault: No
Coord Fault: No
Premption: No
Voltage Monitor: No

Special Status 1: No
Special Status 2: No
Special Status 3: No
Special Status 4: No
Special Status 5: No
Special Status 6: No

Traffic Responsive

System Detector	Detector Channel	Veh/Hr	Average Time(mins)	Occupancy Correction/10	Min Volume %	Queue 1 Detectors	System Detectors	Weight Factor	Queue 2 Detectors	System Detectors	Weight Factor

Default Data

Sample Interval:

Default Data

Queue: 1 Input Selection: 0=Average

Detector Failed Level : 0

Queue: 2 Input Selection: 0=Average

Detector Failed Level : 0

Default Data

Queue:

Level	Enter	Leave	Dial / Split / Offset
			/ /

Default Data

Vehical Detector

Diagnostic Value 0

Detector	Max Presence	No Activity	Erratic Count

Vehical Detector

Diagnostic Value 1

Detector	Max Presence	No Activity	Erratic Count

Special Detector

Diagnostic Value 0

Detector	Max Presence	No Activity	Erratic Count

Default Data - Diag 0 Values

Default Data - No Diag 1 Values

Default Data - No Diag 0 Valu

Pedestrian Detector

Diagnostic Value 0

Detector	Max Presence	No Activity	Erratic Count

Pedestrian Detector

Diagnostic Value 1

Detector	Max Presence	No Activity	Erratic Count

Special Detector

Diagnostic Value 1

Detector	Max Presence	No Activity	Erratic Count

Default Data - No Diag 0 Values

Default Data - No Diag 1 Values

Default Data - No Diag 1 Values

Speed Trap Data

Speed Trap:

Measurement:

Detector 1	Detector_2	Distance :

Speed Trap Low Treshold	Speed Trap High Treshold

Dial/Split/Offset

//

Default Data

Default Data

Volume Detector Data

Volume Detector Number	Report Interval Controller Detector Channel

Default Data

Traffic Counts
Dates and Times

Two-Way Stop Control Intersection	Count		
	Date	Time	
I-94 WB Ramp & County F	1/10/2018	4:00 PM	6:00 PM
WIS 32 & Russell Rd	5/17/2017	6:00 AM	7:00 PM
WIS 100 & N Mayfair Dwy	6/6/2017	6:00 AM	7:00 PM
US 51 & County B/County AB	1/24/2018	4:00 PM	6:00 PM
WIS 16 WB Ramp & County C	1/10/2018	4:00 PM	6:00 PM
WIS 19 & Musket Ridge Dr	1/25/2018	6:30 AM	8:30 AM
WIS 54/Mason St & Lacount Rd	1/25/2018	6:30 AM	8:30 AM
WIS 57 & County K	1/17/2018	4:00 PM	6:00 PM
WIS 67 & County Z	1/17/2018	2:00 PM	4:00 PM
WIS 167 & Country Aire	1/17/2018	4:00 PM	6:00 PM

Isolated Signalized Intersections	Traffic Count		
	Date	Time	
WIS 172 & County EB/Packerland	1/17/2018	4:00 PM	6:00 PM
WIS 52 & 28th Ave	1/17/2018	4:00 PM	6:00 PM
WIS 36 & WIS 20/83	1/10/2018	4:00 PM	6:00 PM
WIS 67 & US 14	1/10/2018	4:00 PM	6:00 PM
US 12 & County K	1/17/2018	4:00 PM	6:00 PM

Signalized Corridors		Traffic Count		
Corridor/Intersections		Date	Time	
WIS 38	Drexel Ave	1/10/2018	4:00 PM	6:00 PM
	Susan/Town Square Way	1/10/2018	4:00 PM	6:00 PM
	Forest Hill Ave	1/10/2018	4:00 PM	6:00 PM
	Puetz Rd	1/10/2018	4:00 PM	6:00 PM
	Centennial Dr	1/10/2018	4:00 PM	6:00 PM
WIS 67	Oconomowoc Pkwy	1/10/2018	4:00 PM	6:00 PM
	County B/ Valley Rd	1/10/2018	4:00 PM	6:00 PM
	Oconomowoc Dr	1/10/2018	4:00 PM	6:00 PM
	I-94 WB Ramps	1/10/2018	4:00 PM	6:00 PM
	I-94 EB Ramps	1/10/2018	4:00 PM	6:00 PM
WIS 167	Port Washington Rd	1/17/2018	4:00 PM	6:00 PM
	I-43 SB Ramps	1/17/2018	4:00 PM	6:00 PM
	I-43 NB Ramps	1/17/2018	4:00 PM	6:00 PM

Traffic Count Dates & Times

Traffic Counts
Isolated Signalized Intersections

Intersection	USH 12 & CTH K
Count Date	1/17/2018
Count Times	4:00 PM - 6:00 PM
Day of Week	Wednesday
Classification	All Vehicles
Counting Agency	Gewalt Hamilton Associates, Inc.

raSmith

Weekday Morning Peak

12:45 PM

Weekday Midday Peak

12:45 PM

Weekday Afternoon Peak

		Southbound				Westbound				Northbound				Eastbound						
		L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	U	Sum	PHF	Hourly Total
All Vehicles	4:30 PM PM	2	118	6	0	99	21	2	0	30	399	203	0	15	9	13	0	917		
	4:45 PM	1	137	12	0	115	25	2	0	19	439	203	1	11	15	15	0	995	**0.95**	3798
	5:00 PM	0	109	9	0	139	32	3	0	28	419	155	1	9	5	12	0	921		
	5:15 PM	3	146	12	0	112	13	3	0	19	431	193	0	11	5	17	0	965		
	Movement Total	6	510	39	0	465	91	10	0	96	1688	754	2	46	34	57	0			
	Rounded Total	**5**	**510**	**40**	**0**	**465**	**90**	**10**	**0**	**95**	**1690**	**755**	**0**	**45**	**35**	**55**	**0**			
	Approach Total	555				566				2540				137						
Heavy Vehicles	4:30:00 PM	0	3	0	0	2	0	0	0	0	5	4	0	0	0	0	0			
	4:45 PM	0	2	0	0	2	0	0	0	0	6	5	0	0	1	0	0			
	5:00 PM	0	2	0	0	1	0	0	0	0	5	2	0	0	1	0	0			
	5:15 PM	0	1	1	0	5	0	0	0	0	1	1	0	0	0	0	0			
	Movement Total	0	8	1	0	10	0	0	0	0	17	12	0	0	2	0	0			
	Approach Total	9				10				29				2						
	HV%	**1.6%**				**1.8%**				**1.1%**				**1.5%**						

Intersection	WIS 20/83 & WIS 36
Count Date	1/10/2018
Count Times	4:00 PM - 6:00 PM
Day of Week	Wednesday
Classification	All Vehicles
Counting Agency	Gewalt Hamilton Associates, Inc.

raSmith

Weekday Morning Peak

12:45 PM

Weekday Midday Peak

12:45 PM

Weekday Afternoon Peak

		Southbound				Westbound				Northbound				Eastbound						
		L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	U	Sum	PHF	Hourly Total
All Vehicles	4:45 PM PM	16	163	29	0	3	59	12	0	26	116	1	0	13	25	25	0	488		
	5:00 PM	17	188	13	0	7	63	11	0	18	120	0	0	11	23	24	0	495	**0.99**	1970
	5:15 PM	9	178	12	0	1	61	14	0	11	148	0	1	8	29	21	0	493		
	5:30 PM	14	191	17	0	6	71	7	0	21	110	4	0	11	18	24	0	494		
	Movement Total	56	720	71	0	17	254	44	0	76	494	5	1	43	95	94	0			
	Rounded Total	**55**	**720**	**70**	**0**	**15**	**255**	**45**	**0**	**75**	**495**	**5**	**0**	**45**	**95**	**95**	**0**			
	Approach Total	847				315				576				232						
Heavy Vehicles	4:45:00 PM	3	1	1	0	0	0	0	0	0	1	0	0	0	1	0	0			
	5:00 PM	0	1	0	0	0	2	0	0	0	1	0	0	0	1	0	0			
	5:15 PM	0	1	0	0	0	0	1	0	0	2	0	0	0	1	0	0			
	5:30 PM	1	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0			
	Movement Total	4	4	1	0	0	3	1	0	1	4	0	0	0	3	0	0			
	Approach Total	9				4				5				3						
	HV%	**1.1%**				**1.3%**				**0.9%**				**1.3%**						

Intersection	WIS 52 & 28th Ave
Count Date	1/17/2018
Count Times	4:00 PM - 6:00 PM
Day of Week	Wednesday
Classification	All Vehicles
Counting Agency	Gewalt Hamilton Associates, Inc.

raSmith

Weekday Morning Peak

12:45 PM

Weekday Midday Peak

12:45 PM

Weekday Afternoon Peak

		Southbound				Westbound				Northbound				Eastbound						
		L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	U	Sum	PHF	Hourly Total
All Vehicles	4:15 PM PM	66	57	31	0	59	98	19	0	1	39	29	0	16	55	1	0	471		
	4:30 PM	80	87	24	0	79	96	29	1	1	43	28	0	13	65	0	0	546	**0.94**	2056
	4:45 PM	76	53	21	1	45	134	20	1	0	35	33	0	13	60	1	0	493		
	5:00 PM	89	85	28	0	49	107	34	1	2	34	33	0	9	75	0	0	546		
	Movement Total	311	282	104	1	232	435	102	3	4	151	123	0	51	255	2	0			
	Rounded Total	**310**	**280**	**105**	**0**	**230**	**435**	**100**	**5**	**5**	**150**	**125**	**0**	**50**	**255**	**0**	**0**			
	Approach Total	698				772				278				308						
Heavy Vehicles	4:15:00 PM	2	0	0	0	1	0	0	0	0	0	0	0	0	3	0	0			
	4:30 PM	1	0	0	0	2	5	0	0	0	1	0	0	0	0	0	0			
	4:45 PM	1	0	0	0	0	3	0	0	0	0	0	0	0	1	0	0			
	5:00 PM	1	0	0	0	2	3	0	0	0	1	2	0	0	1	0	0			
	Movement Total	5	0	0	0	5	11	0	0	0	2	2	0	0	5	0	0			
	Approach Total	5				16				4				5						
	HV%	**0.7%**				**2.1%**				**1.4%**				**1.6%**						

Intersection	WIS 67 & USH 14
Count Date	1/10/2018
Count Times	4:00 PM - 6:00 PM
Day of Week	Wednesday
Classification	All Vehicles
Counting Agency	Gewalt Hamilton Associates, Inc.

raSmith

Weekday Morning Peak

12:45 PM

Weekday Midday Peak

12:45 PM

Weekday Afternoon Peak

		Southbound				Westbound				Northbound				Eastbound						
		L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	U	Sum	PHF	Hourly Total
All Vehicles	4:00 PM PM	0	0	0	0	31	0	38	0	0	28	17	0	7	37	40	0	198		
	4:15 PM	0	0	0	0	30	0	40	0	0	31	20	0	9	19	34	0	183	**0.92**	809
	4:30 PM	0	0	0	0	37	0	31	0	0	30	24	0	7	37	53	0	219		
	4:45 PM	0	0	0	0	43	0	26	0	0	41	18	0	6	27	48	0	209		
	Movement Total	0	0	0	0	141	0	135	0	0	130	79	0	29	120	175	0			
	Rounded Total	**0**	**0**	**0**	**0**	**140**	**0**	**135**	**0**	**0**	**130**	**80**	**0**	**30**	**120**	**175**	**0**			
	Approach Total	0				276				209				324						
Heavy Vehicles	4:00:00 PM	0	0	0	0	2	0	3	0	0	2	0	0	0	2	2	0			
	4:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0			
	4:30 PM	0	0	0	0	0	0	3	0	0	2	0	0	1	0	5	0			
	4:45 PM	0	0	0	0	1	0	0	0	0	6	0	0	1	0	0	0			
	Movement Total	0	0	0	0	3	0	6	0	0	11	0	0	2	2	8	0			
	Approach Total	0				9				11				12						
	HV%	**#DIV/0!**				**3.3%**				**5.3%**				**3.7%**						

Intersection	WIS 172/CTH EB & Packerland Dr
Count Date	1/17/2018
Count Times	4:00 PM - 6:00 PM
Day of Week	Wednesday
Classification	All Vehicles
Counting Agency	Gewalt Hamilton Associates, Inc.

raSmith

Weekday Morning Peak

12:45 PM

Weekday Afternoon Peak

		Southbound				Westbound				Northbound				Eastbound						
		L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	U	Sum	PHF	Hourly Total
All Vehicles	4:00 PM PM	29	54	20	0	42	143	36	0	38	122	99	0	30	118	33	0	764		
	4:15 PM	35	56	24	0	39	137	32	0	41	101	69	0	15	116	19	0	684	**0.95**	2996
	4:30 PM	29	54	19	0	37	129	42	0	44	128	79	0	31	135	31	0	758		
	4:45 PM	28	54	23	0	50	152	35	0	50	127	69	0	31	137	34	0	790		
	Movement Total	121	218	86	0	168	561	145	0	173	478	316	0	107	506	117	0			
	Rounded Total	**120**	**220**	**85**	**0**	**170**	**560**	**145**	**0**	**175**	**480**	**315**	**0**	**105**	**505**	**115**	**0**			
	Approach Total	425				874				967				730						
Heavy Vehicles	4:00:00 PM	0	0	0	0	0	1	2	0	2	0	1	0	1	4	4	0			
	4:15 PM	1	1	1	0	0	1	2	0	1	1	0	0	0	2	2	0			
	4:30 PM	0	1	0	0	1	0	7	0	2	0	0	0	1	2	1	0			
	4:45 PM	1	4	1	0	0	1	2	0	4	1	2	0	1	3	1	0			
	Movement Total	2	6	2	0	1	3	13	0	9	2	3	0	3	11	8	0			
	Approach Total	10				17				14				22						
	HV%	**2.4%**				**1.9%**				**1.4%**				**3.0%**						

Traffic Counts
Isolated Two-Way Stop Controlled Intersections

Intersection Traffic Volume Report

Count Basics			Page 3 of 11
Start Date:	Tuesday, June 06, 2017	Weekday	Schools in Session
Total Number of Hours Counted: 13		Non-Holiday	No Special Events

Peak Hour Volume Summary

STH 100 & Mayfair Mall North Drwy

All Motor Vehicles

Peak Hour Volumes, Truck Percentages, and PHFs

Tuesday, June 06, 2017		From North					From East					From South					From West					
	AM Peak Hour	STH 100					Mayfair Mall North Drwy					STH 100					Mayfair Mall North Drwy					
	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals
AM Peak Hour	7:15 AM	0	264	3	11	278	3	0	2	0	5	15	234	2	1	252	0	0	0	0	0	535
	7:30 AM	2	300	3	10	315	3	0	1	0	4	17	239	5	4	265	2	0	0	0	2	586
	7:45 AM	6	366	11	14	397	2	0	0	0	2	19	256	6	3	284	1	0	3	0	4	687
	8:00 AM	1	283	8	5	297	8	0	2	0	10	17	257	4	5	283	2	0	3	0	5	595
	Peak Hour Volume	9	1213	25	40	1287	16	0	5	0	21	68	986	17	13	1084	5	0	6	0	11	2403
	Rounded Hourly Volume	10	1215	25	40	1290	15	0	5	0	20	70	985	15	15	1085	5	0	5	0	10	2405
	% Single Unit Trucks	0.0	2.2	0.0	0.0	2.1	31.2	0.0	0.0	0.0	23.8	11.8	2.4	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	2.7
	% Heavy Trucks	0.0	0.2	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.7
	% Trucks (Total)	0.0	2.5	0.0	0.0	2.3	31.2	0.0	0.0	0.0	23.8	11.8	3.9	0.0	0.0	4.2	0.0	0.0	0.0	0.0	0.0	3.4
	Peak Hour Factor (PHF)	0.37	0.83	0.57	0.71	0.81	0.50	0.00	0.62	0.00	0.52	0.89	0.96	0.71	0.65	0.95	0.62	0.00	0.50	0.00	0.55	0.87

Tuesday, June 06, 2017		From North					From East					From South					From West					
	MD Peak Hour	STH 100					Mayfair Mall North Drwy					STH 100					Mayfair Mall North Drwy					
	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals
Midday (MD) Peak Hour	12:15 PM	3	370	30	4	407	38	0	9	1	48	23	254	3	6	286	7	0	0	0	7	748
	12:30 PM	7	337	19	3	366	24	0	6	0	30	18	272	9	14	313	10	1	4	0	15	724
	12:45 PM	2	413	32	7	454	29	0	7	0	36	22	260	5	1	288	8	0	2	0	10	788
	1:00 PM	6	366	22	1	395	44	1	10	0	55	15	272	6	7	300	6	1	2	0	9	759
	Peak Hour Volume	18	1486	103	15	1622	135	1	32	1	169	78	1058	23	28	1187	31	2	8	0	41	3019
	Rounded Hourly Volume	20	1485	105	15	1625	135	0	30	0	165	80	1060	25	30	1195	30	0	10	0	40	3025
	% Single Unit Trucks	5.6	2.9	1.0	0.0	2.8	4.4	0.0	0.0	0.0	3.6	7.7	2.5	4.3	0.0	2.8	3.2	0.0	12.5	0.0	4.9	2.8
	% Heavy Trucks	0.0	0.5	0.0	0.0	0.5	0.7	0.0	0.0	0.0	0.6	0.0	0.6	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.5
	% Trucks (Total)	5.6	3.4	1.0	0.0	3.3	5.2	0.0	0.0	0.0	4.1	7.7	3.0	4.3	0.0	3.3	3.2	0.0	12.5	0.0	4.9	3.3
	Peak Hour Factor (PHF)	0.64	0.90	0.80	0.54	0.89	0.77	0.25	0.80	0.25	0.77	0.85	0.97	0.64	0.50	0.95	0.77	0.50	0.50	0.00	0.68	0.96

Tuesday, June 06, 2017		From North					From East					From South					From West					
	PM Peak Hour	STH 100					Mayfair Mall North Drwy					STH 100					Mayfair Mall North Drwy					
	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals
PM Peak Hour	4:00 PM	3	325	19	6	353	38	0	11	0	49	9	303	5	10	327	13	0	8	0	21	750
	4:15 PM	2	370	17	2	391	36	0	4	0	40	11	380	3	10	404	9	0	7	0	16	851
	4:30 PM	1	418	24	8	451	37	0	9	0	46	15	382	3	5	405	5	0	1	0	6	908
	4:45 PM	6	435	22	5	468	43	0	6	0	49	14	401	3	4	422	10	0	3	0	13	952
	Peak Hour Volume	12	1548	82	21	1663	154	0	30	0	184	49	1466	14	29	1558	37	0	19	0	56	3461
	Rounded Hourly Volume	10	1550	80	20	1660	155	0	30	0	185	50	1465	15	30	1560	35	0	20	0	55	3460
	% Single Unit Trucks	0.0	1.8	0.0	0.0	1.7	3.2	0.0	0.0	0.0	2.7	16.3	1.2	0.0	0.0	1.6	0.0	0.0	0.0	0.0	0.0	1.7
	% Heavy Trucks	0.0	0.5	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.4
	% Trucks (Total)	0.0	2.3	0.0	0.0	2.2	3.2	0.0	0.0	0.0	2.7	16.3	1.5	0.0	0.0	1.9	0.0	0.0	0.0	0.0	0.0	2.1
	Peak Hour Factor (PHF)	0.50	0.89	0.85	0.66	0.89	0.90	0.00	0.68	0.00	0.94	0.82	0.91	0.70	0.72	0.92	0.71	0.00	0.59	0.00	0.67	0.91

Peak Hour Pedestrian and Bicyclist Volumes

Pedestrians and Bicyclists		Crossing North Approach			Crossing East Approach			Crossing South Approach			Crossing West Approach			Total Ped & Bike
		STH 100			Mayfair Mall North Drwy			STH 100			Mayfair Mall North Drwy			
	15-Minute Start Time	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Volume
AM	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	1	0	1	1
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	1	0	1	1
	Total	0	0	0	0	0	0	0	0	0	2	0	2	2
MD	12:15 PM	0	0	0	0	0	0	0	0	0	9	0	9	9
	12:30 PM	0	0	0	0	0	0	0	0	0	2	0	2	2
	12:45 PM	0	0	0	0	0	0	0	0	0	6	0	6	6
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	17	0	17	17
PM	4:00 PM	0	0	0	0	0	0	0	0	0	3	0	3	3
	4:15 PM	0	0	0	0	0	0	0	0	0	1	0	1	1
	4:30 PM	0	0	0	0	0	0	0	0	0	3	0	3	3
	4:45 PM	0	0	0	1	0	1	0	0	0	1	0	1	2
	Total	0	0	0	1	0	1	0	0	0	8	0	8	9

Intersection	I-94 WB Ramp & CTH F
Count Date	1/10/2018
Count Times	4:00 PM - 6:00 PM
Day of Week	Wednesday
Classification	All Vehicles
Counting Agency	Gewalt Hamilton Associates, Inc.

raSmith

Weekday Morning Peak

12:45 PM

Weekday Midday Peak

12:45 PM

Weekday Afternoon Peak

		Southbound				Westbound				Northbound				Eastbound						
		L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	U	Sum	PHF	Hourly Total
All Vehicles	4:00 PM PM	0	65	30	0	72	0	35	0	3	23	0	0	0	0	0	0	228		
	4:15 PM	0	56	9	0	78	0	37	0	3	27	0	0	0	0	0	0	210	**0.95**	897
	4:30 PM	0	49	15	0	75	0	41	0	5	39	0	0	0	0	0	0	224		
	4:45 PM	0	42	17	0	89	0	49	0	2	36	0	0	0	0	0	0	235		
	Movement Total	0	212	71	0	314	0	162	0	13	125	0	0	0	0	0	0			
	Rounded Total	**0**	**210**	**70**	**0**	**315**	**0**	**160**	**0**	**15**	**125**	**0**	**0**	**0**	**0**	**0**	**0**			
	Approach Total	283				476				138				0						
Heavy Vehicles	4:00:00 PM	0	2	2	0	2	0	0	0	0	1	0	0	0	0	0	0			
	4:15 PM	0	4	0	0	2	0	1	0	1	2	0	0	0	0	0	0			
	4:30 PM	0	1	0	0	3	0	0	0	0	3	0	0	0	0	0	0			
	4:45 PM	0	1	1	0	2	0	3	0	0	0	0	0	0	0	0	0			
	Movement Total	0	8	3	0	9	0	4	0	1	6	0	0	0	0	0	0			
	Approach Total	11				13				7				0						
	HV%	**3.9%**				**2.7%**				**5.1%**				**#DIV/0!**						

Intersection Traffic Volume Report

Count Basics		Page 3 of 11
Start Date: Wednesday, May 17, 2017	Weekday	Schools in Session
Total Number of Hours Counted: 13	Non-Holiday	No Special Events

Peak Hour Volume Summary

STH 32 & Russell Rd

All Motor Vehicles

Peak Hour Volumes, Truck Percentages, and PHFs

Wednesday, May 17, 2017		From North (↓)					From East (←)					From South (↑)					From West (→)					
	AM Peak Hour	STH 32					Russell Rd					STH 32					Russell Rd					
	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals
AM Peak Hour	7:00 AM	32	109	0	0	141	0	1	1	0	2	0	42	22	0	64	24	0	10	0	34	241
	7:15 AM	21	119	0	0	140	0	0	0	0	0	0	50	20	0	70	17	1	8	0	26	236
	7:30 AM	35	141	0	0	176	0	0	0	0	0	0	60	21	0	81	19	0	7	0	26	283
	7:45 AM	23	110	2	0	135	3	1	0	0	4	1	52	20	0	73	22	0	9	0	31	243
	Peak Hour Volume	111	479	2	0	592	3	2	1	0	6	1	204	83	0	288	82	1	34	0	117	1003
	Rounded Hourly Volume	110	480	0	0	590	5	0	0	0	5	0	205	85	0	290	80	0	35	0	115	1000
	% Single Unit Trucks	0.9	0.2	50.0	0.0	0.5	33.3	0.0	100.0	0.0	33.3	0.0	1.5	1.2	0.0	1.4	2.4	100.0	5.9	0.0	4.3	1.4
	% Heavy Trucks	1.8	0.8	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	2.4	0.0	1.4	0.0	0.0	8.8	0.0	2.6	1.3
	% Trucks (Total)	2.7	1.0	50.0	0.0	1.5	33.3	0.0	100.0	0.0	33.3	0.0	2.5	3.6	0.0	2.8	2.4	100.0	14.7	0.0	6.8	2.7
	Peak Hour Factor (PHF)	0.79	0.85	0.25	0.00	0.84	0.25	0.50	0.25	0.00	0.37	0.25	0.85	0.94	0.00	0.89	0.85	0.25	0.85	0.00	0.86	0.89

Wednesday, May 17, 2017		From North (↓)					From East (←)					From South (↑)					From West (→)					
	MD Peak Hour	STH 32					Russell Rd					STH 32					Russell Rd					
	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals
Midday (MD) Peak Hour	11:45 AM	14	52	0	0	66	0	2	0	0	2	0	53	19	0	72	15	1	5	0	21	161
	12:00 PM	13	41	0	0	54	1	1	1	0	3	1	58	14	0	73	20	1	9	0	30	160
	12:15 PM	16	44	1	0	61	0	2	2	0	4	0	63	21	0	84	23	1	15	0	39	188
	12:30 PM	13	53	0	0	66	1	1	0	0	2	2	66	24	0	92	26	0	12	0	38	198
	Peak Hour Volume	56	190	1	0	247	2	6	3	0	11	3	240	78	0	321	84	3	41	0	128	707
	Rounded Hourly Volume	55	190	0	0	245	0	5	5	0	10	5	240	80	0	325	85	5	40	0	130	710
	% Single Unit Trucks	3.6	1.6	0.0	0.0	2.0	0.0	16.7	33.3	0.0	18.2	0.0	1.2	3.8	0.0	1.9	2.4	0.0	2.4	0.0	2.3	2.3
	% Heavy Trucks	3.6	0.5	0.0	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.3	0.0	0.0	7.3	0.0	2.3	1.0
	% Trucks (Total)	7.1	2.1	0.0	0.0	3.2	0.0	16.7	33.3	0.0	18.2	0.0	1.7	3.8	0.0	2.2	2.4	0.0	9.8	0.0	4.7	3.3
	Peak Hour Factor (PHF)	0.87	0.90	0.25	0.00	0.94	0.50	0.75	0.37	0.00	0.69	0.37	0.91	0.81	0.00	0.87	0.81	0.75	0.68	0.00	0.82	0.89

Wednesday, May 17, 2017		From North (↓)					From East (←)					From South (↑)					From West (→)					
	PM Peak Hour	STH 32					Russell Rd					STH 32					Russell Rd					
	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals
PM Peak Hour	4:15 PM	19	69	0	0	88	0	2	0	0	2	1	159	28	0	188	24	1	35	0	60	338
	4:30 PM	18	79	2	0	99	1	1	0	0	2	0	174	34	0	208	31	1	20	0	52	361
	4:45 PM	9	68	2	0	79	0	0	1	0	1	1	166	34	0	201	27	1	28	0	56	337
	5:00 PM	12	70	0	0	82	1	1	0	0	2	0	132	38	0	170	28	1	23	0	52	306
	Peak Hour Volume	58	286	4	0	348	2	4	1	0	7	2	631	134	0	767	110	4	106	0	220	1342
	Rounded Hourly Volume	60	285	5	0	350	0	5	0	0	5	0	630	135	0	765	110	5	105	0	220	1340
	% Single Unit Trucks	1.7	0.0	25.0	0.0	0.6	50.0	0.0	0.0	0.0	14.3	0.0	0.2	0.0	0.0	0.1	0.9	0.0	0.0	0.0	0.5	0.4
	% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.7	0.0	0.3	0.9	0.0	0.0	0.0	0.5	0.2
	% Trucks (Total)	1.7	0.0	25.0	0.0	0.6	50.0	0.0	0.0	0.0	14.3	0.0	0.3	0.7	0.0	0.4	1.8	0.0	0.0	0.0	0.9	0.6
	Peak Hour Factor (PHF)	0.76	0.91	0.50	0.00	0.88	0.50	0.50	0.25	0.00	0.87	0.50	0.91	0.88	0.00	0.92	0.89	1.00	0.76	0.00	0.92	0.93

Peak Hour Pedestrian and Bicyclist Volumes

Pedestrians and Bicyclists		Crossing North Approach			Crossing East Approach			Crossing South Approach			Crossing West Approach			Total Ped & Bike Volume
		STH 32			Russell Rd			STH 32			Russell Rd			
	15-Minute Start Time	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	1	1	0	0	0	0	0	0	0	0	0	1
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	1	1	0	0	0	0	0	0	0	0	0	1
MD	11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	1	0	1	0	0	0	0	0	0	0	0	0	1
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	1	0	1	1	0	1	0	0	0	0	0	0	2
	Total	2	0	2	1	0	1	0	0	0	0	0	0	3

Intersection	USH 51 & CTH B
Count Date	1/24/2018
Count Times	4:00 PM - 6:00 PM
Day of Week	Wednesday
Classification	All Vehicles
Counting Agency	Gewalt Hamilton Associates, Inc.

raSmith

Weekday Morning Peak

12:45 PM

Weekday Midday Peak

12:45 PM

Weekday Afternoon Peak

		Southbound				Westbound				Northbound				Eastbound						
		L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	U	Sum	PHF	Hourly Total
All Vehicles	4:15 PM PM	10	173	2	0	6	0	3	0	8	79	4	0	6	5	61	0	357		
	4:30 PM	7	167	3	0	1	3	5	0	19	84	2	0	7	7	56	0	361	**0.95**	1481
	4:45 PM	3	177	6	0	1	0	2	0	11	98	2	0	9	7	75	0	391		
	5:00 PM	2	172	0	0	5	1	4	0	13	102	9	0	5	7	52	0	372		
	Movement Total	22	689	11	0	13	4	14	0	51	363	17	0	27	26	244	0			
	Rounded Total	**20**	**690**	**10**	**0**	**15**	**5**	**15**	**0**	**50**	**365**	**15**	**0**	**25**	**25**	**245**	**0**			
	Approach Total	722				31				431				297						
Heavy Vehicles	4:15:00 PM	0	3	0	0	0	0	0	0	0	2	0	0	0	0	0	0			
	4:30 PM	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0			
	4:45 PM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	5:00 PM	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0			
	Movement Total	0	6	0	0	0	0	0	0	1	8	0	0	0	0	0	0			
	Approach Total	6				0				9				0						
	HV%	**0.8%**				**0.0%**				**2.1%**				**0.0%**						

Intersection	WIS 16 WB Ramp & CTH C
Count Date	1/10/2018
Count Times	4:00 PM - 6:00 PM
Day of Week	Wednesday
Classification	All Vehicles
Counting Agency	Gewalt Hamilton Associates, Inc.

raSmith

Weekday Morning Peak

12:45 PM

Weekday Midday Peak

12:45 PM

Weekday Afternoon Peak

		Southbound				Westbound				Northbound				Eastbound						
		L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	U	Sum	PHF	Hourly Total
All Vehicles	4:00 PM PM	0	65	8	0	49	0	63	0	29	27	0	0	0	0	0	0	241		
	4:15 PM	0	50	5	0	37	0	67	0	25	33	0	0	0	0	0	0	217	**0.93**	980
	4:30 PM	0	59	7	0	54	0	81	0	21	41	0	1	0	0	0	0	264		
	4:45 PM	0	65	5	0	57	0	66	0	39	25	0	1	0	0	0	0	258		
	Movement Total	0	239	25	0	197	0	277	0	114	126	0	2	0	0	0	0			
	Rounded Total	**0**	**240**	**25**	**0**	**195**	**0**	**275**	**0**	**115**	**125**	**0**	**0**	**0**	**0**	**0**	**0**			
	Approach Total	264				474				242				0						
Heavy Vehicles	4:00:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	4:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0			
	4:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0			
	4:45 PM	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0			
	Movement Total	0	2	0	0	0	0	1	0	0	3	0	0	0	0	0	0			
	Approach Total	2				1				3				0						
	HV%	**0.8%**				**0.2%**				**1.2%**				**#DIV/0!**						

Intersection	WIS 19 & Musket Ridge Dr
Count Date	1/25/2018
Count Times	6:30 AM - 8:30 AM
Day of Week	Wednesday
Classification	All Vehicles
Counting Agency	Gewalt Hamilton Associates, Inc.

raSmith

Weekday Morning Peak

		Southbound				Westbound				Northbound				Eastbound						
		L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	U	Sum	PHF	Hourly Total
All Vehicles	7:00 AM	0	0	44	0	1	69	1	0	3	1	0	0	7	39	1	0	166	0.80	820
	7:15 AM	3	2	43	0	1	63	1	0	5	2	0	0	5	38	4	0	167		
	7:30 AM	3	2	57	0	3	103	4	0	9	0	3	0	13	52	7	0	256		
	7:45 AM	3	0	48	0	0	96	4	0	17	2	1	0	11	43	6	0	231		
	Movement Total	9	4	192	0	5	331	10	0	34	5	4	0	36	172	18	0			
	Rounded Total	**10**	**5**	**190**	**0**	**5**	**330**	**10**	**0**	**35**	**5**	**5**	**0**	**35**	**170**	**20**	**0**			
	Approach Total	205				346				43				226						
Heavy Vehicles	7:00:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0			
	7:15 AM	0	0	2	0	1	3	0	0	0	1	0	0	0	2	0	0			
	7:30 AM	0	1	0	0	2	1	1	0	0	0	0	0	1	3	1	0			
	7:45 AM	0	0	0	0	0	1	0	0	2	2	0	0	0	1	0	0			
	Movement Total	0	1	2	0	3	6	1	0	2	3	0	0	1	8	1	0			
	Approach Total	3				10				5				10						
	HV%	**1.5%**				**2.9%**				**11.6%**				**4.4%**						

Weekday Midday Peak

12:45 PM

Weekday Afternoon Peak

Intersection	Lacount Rd & WIS 54/Mason St
Count Date	1/25/2018
Count Times	6:30 AM - 8:30 AM
Day of Week	Thursday
Classification	All Vehicles
Counting Agency	Gewalt Hamilton Associates, Inc.

raSmith

Weekday Morning Peak

		Southbound				Westbound				Northbound				Eastbound						
		L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	U	Sum	PHF	Hourly Total
All Vehicles	7:00 AM	7	2	0	0	10	59	0	0	6	1	57	0	0	97	7	0	246		
	7:15 AM	3	0	2	0	7	49	1	0	5	0	37	0	0	100	4	0	208	**0.93**	915
	7:30 AM	2	0	0	0	10	61	1	0	4	0	30	0	0	109	1	0	218		
	7:45 AM	11	1	0	0	6	56	1	0	9	0	27	0	0	129	2	1	243		
	Movement Total	23	3	2	0	33	225	3	0	24	1	151	0	0	435	14	1			
	Rounded Total	**25**	**5**	**0**	**0**	**35**	**225**	**5**	**0**	**25**	**0**	**150**	**0**	**0**	**435**	**15**	**0**			
	Approach Total	28				261				176				450						
Heavy Vehicles	7:00:00 AM	0	0	0	0	0	9	0	0	0	0	0	0	0	1	0	0			
	7:15 AM	0	0	0	0	0	2	0	0	1	0	2	0	0	1	0	0			
	7:30 AM	0	0	0	0	0	4	0	0	1	0	0	0	0	2	0	0			
	7:45 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	4	0	0			
	Movement Total	0	1	0	0	0	16	0	0	2	0	2	0	0	8	0	0			
	Approach Total	1				16				4				8						
	HV%	**3.6%**				**6.1%**				**2.3%**				**1.8%**						

Weekday Midday Peak

12:45 PM

Weekday Afternoon Peak

Intersection	WIS 57 & CTH K
Count Date	1/17/2018
Count Times	4:00 PM - 6:00 PM
Day of Week	Wednesday
Classification	All Vehicles
Counting Agency	Gewalt Hamilton Associates, Inc.

raSmith

Weekday Morning Peak

12:45 PM

Weekday Midday Peak

12:45 PM

Weekday Afternoon Peak

		Southbound				Westbound				Northbound				Eastbound						
		L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	U	Sum	PHF	Hourly Total
All Vehicles	4:00 PM PM	5	63	2	0	2	3	5	0	12	114	3	0	1	1	6	0	217		
	4:15 PM	5	76	0	0	0	1	6	0	22	108	2	0	3	2	14	0	239	**0.94**	902
	4:30 PM	1	68	3	0	1	3	1	0	9	118	2	0	9	4	8	0	227		
	4:45 PM	3	68	0	0	0	2	5	0	7	119	2	0	0	2	11	0	219		
	Movement Total	14	275	5	0	3	9	17	0	50	459	9	0	13	9	39	0			
	Rounded Total	**15**	**275**	**5**	**0**	**5**	**10**	**15**	**0**	**50**	**460**	**10**	**0**	**15**	**10**	**40**	**0**			
	Approach Total	294				29				518				61						
Heavy Vehicles	4:00:00 PM	0	6	1	0	0	0	0	0	0	6	0	0	0	0	0	0			
	4:15 PM	0	3	0	0	0	0	0	0	1	6	0	0	0	0	0	0			
	4:30 PM	0	7	1	0	0	0	0	0	0	4	0	0	0	0	0	0			
	4:45 PM	0	8	0	0	0	0	0	0	1	2	0	0	0	0	1	0			
	Movement Total	0	24	2	0	0	0	0	0	2	18	0	0	0	0	1	0			
	Approach Total	26				0				20				1						
	HV%	**8.8%**				**0.0%**				**3.9%**				**1.6%**						

Intersection	WIS 67 & CTH Z
Count Date	1/17/2018
Count Times	2:00 PM - 4:00 PM
Day of Week	Wednesday
Classification	All Vehicles
Counting Agency	Gewalt Hamilton Associates, Inc.

raSmith

Weekday Morning Peak

12:45 PM

Weekday Midday Peak

12:45 PM

Weekday Afternoon Peak

		Southbound				Westbound				Northbound				Eastbound						
		L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	U	Sum	PHF	Hourly Total
All Vehicles	3:00 PM PM	0	65	22	0	0	0	0	0	12	45	0	0	22	0	12	0	178		
	3:15 PM	0	58	42	0	0	0	0	0	19	29	0	0	22	0	12	0	182	**0.83**	826
	3:30 PM	0	69	25	0	0	0	0	0	9	47	0	0	43	0	25	0	218		
	3:45 PM	0	71	49	0	0	0	0	0	17	62	0	0	31	0	18	0	248		
	Movement Total	0	263	138	0	0	0	0	0	57	183	0	0	118	0	67	0			
	Rounded Total	**0**	**265**	**140**	**0**	**0**	**0**	**0**	**0**	**55**	**185**	**0**	**0**	**120**	**0**	**65**	**0**			
	Approach Total	401				0				240				185						
Heavy Vehicles	3:00:00 PM	0	2	2	0	0	0	0	0	0	2	0	0	1	0	0	0			
	3:15 PM	0	3	2	0	0	0	0	0	3	1	0	0	3	0	0	0			
	3:30 PM	0	4	0	0	0	0	0	0	0	1	0	0	2	0	3	0			
	3:45 PM	0	3	0	0	0	0	0	0	0	2	0	0	0	0	0	0			
	Movement Total	0	12	4	0	0	0	0	0	3	6	0	0	6	0	3	0			
	Approach Total	16				0				9				9						
	HV%	**4.0%**				**#DIV/0!**				**3.8%**				**4.9%**						

Intersection	WIS 167 & Country Aire
Count Date	1/17/2018
Count Times	4:00 PM - 6:00 PM
Day of Week	Wednesday
Classification	All Vehicles
Counting Agency	Gewalt Hamilton Associates, Inc.

raSmith

Weekday Morning Peak

12:45 PM

Weekday Midday Peak

12:45 PM

Weekday Afternoon Peak

		Southbound				Westbound				Northbound				Eastbound						
		L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	U	Sum	PHF	Hourly Total
All Vehicles	4:30 PM PM	0	2	5	0	9	184	4	0	1	5	12	0	6	105	4	0	337		
	4:45 PM	0	5	6	0	8	186	3	0	0	10	14	0	8	108	2	0	350	**0.96**	1343
	5:00 PM	0	5	2	0	10	180	10	0	0	9	11	0	4	93	1	0	325		
	5:15 PM	0	3	3	0	5	182	6	0	1	13	12	0	5	100	1	0	331		
	Movement Total	0	15	16	0	32	732	23	0	2	37	49	0	23	406	8	0			
	Rounded Total	**0**	**15**	**15**	**0**	**30**	**730**	**25**	**0**	**0**	**35**	**50**	**0**	**25**	**405**	**10**	**0**			
	Approach Total	31				787				88				437						
Heavy Vehicles	4:30:00 PM	0	0	0	0	0	5	0	0	0	0	0	0	0	1	0	0			
	4:45 PM	0	0	1	0	0	2	0	0	0	0	0	0	0	6	0	0			
	5:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0			
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0			
	Movement Total	0	0	1	0	0	8	0	0	0	0	0	0	0	10	0	0			
	Approach Total	1				8				0				10						
	HV%	**3.2%**				**1.0%**				**0.0%**				**2.3%**						

Traffic Counts
WIS 38 Signalized Corridor

Intersection	WIS 38 & Drexel Ave
Count Date	1/10/2018
Count Times	4:00 PM - 6:00 PM
Day of Week	Wednesday
Classification	All Vehicles
Counting Agency	Gewalt Hamilton Associates, Inc.

raSmith

Weekday Morning Peak

12:45 PM

Weekday Midday Peak

12:45 PM

Weekday Afternoon Peak

		Southbound				Westbound				Northbound				Eastbound						
		L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	U	Sum	PHF	Hourly Total
All Vehicles	4:30 PM PM	40	216	33	2	33	79	29	0	67	162	19	0	40	99	123	0	942		
	4:45 PM	33	194	45	3	29	82	14	0	59	150	38	0	27	94	90	0	858	**0.93**	3508
	5:00 PM	39	214	24	1	27	74	16	0	74	153	30	4	26	104	92	0	878		
	5:15 PM	30	209	33	0	23	72	9	0	61	147	32	0	30	95	89	0	830		
	Movement Total	142	833	135	6	112	307	68	0	261	612	119	4	123	392	394	0			
	Rounded Total	**140**	**835**	**135**	**5**	**110**	**305**	**70**	**0**	**260**	**610**	**120**	**5**	**125**	**390**	**395**	**0**			
	Approach Total	1116				487				996				909						
Heavy Vehicles	4:30:00 PM	0	1	2	0	0	0	1	0	1	6	0	0	2	0	1	0			
	4:45 PM	1	3	1	0	0	0	0	0	2	3	0	0	0	0	2	0			
	5:00 PM	0	1	0	0	0	1	0	0	3	7	0	0	0	1	3	0			
	5:15 PM	0	2	0	0	0	1	0	0	1	1	0	0	0	0	0	0			
	Movement Total	1	7	3	0	0	2	1	0	7	17	0	0	2	1	6	0			
	Approach Total	11				3				24				9						
	HV%	**1.0%**				**0.6%**				**2.4%**				**1.0%**						

Intersection	WIS 38 & Town Square Way/Susan Dr
Count Date	1/10/2018
Count Times	4:00 PM - 6:00 PM
Day of Week	Wednesday
Classification	All Vehicles
Counting Agency	Gewalt Hamilton Associates, Inc.

raSmith

Weekday Morning Peak

12:45 PM

Weekday Midday Peak

12:45 PM

Weekday Afternoon Peak

		Southbound				Westbound				Northbound				Eastbound						
		L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	U	Sum	PHF	Hourly Total
All Vehicles	4:30 PM PM	4	338	30	2	1	0	3	0	29	206	4	0	27	2	40	0	686		
	4:45 PM	2	291	45	6	0	1	5	0	26	213	1	0	34	2	40	0	666	**0.96**	2741
	5:00 PM	3	341	24	3	0	1	2	0	45	223	1	0	32	0	38	0	713		
	5:15 PM	3	323	29	6	2	1	4	0	21	208	2	2	40	0	35	0	676		
	Movement Total	12	1293	128	17	3	3	14	0	121	850	8	2	133	4	153	0			
	Rounded Total	**10**	**1295**	**130**	**15**	**5**	**5**	**15**	**0**	**120**	**850**	**10**	**0**	**135**	**5**	**155**	**0**			
	Approach Total	1450				20				981				290						
Heavy Vehicles	4:30:00 PM	0	2	0	0	0	0	0	0	1	5	0	0	0	0	0	0			
	4:45 PM	0	6	0	0	0	0	0	0	0	4	0	0	1	0	1	0			
	5:00 PM	0	4	0	0	0	0	0	0	0	10	0	0	0	0	0	0			
	5:15 PM	0	2	0	0	0	0	0	0	1	6	0	0	0	0	0	0			
	Movement Total	0	14	0	0	0	0	0	0	2	25	0	0	1	0	1	0			
	Approach Total	14				0				27				2						
	HV%	**1.0%**				**0.0%**				**2.8%**				**0.7%**						

Intersection	WIS 38 & Forest Hill
Count Date	1/10/2018
Count Times	4:00 PM - 6:00 PM
Day of Week	Wednesday
Classification	All Vehicles
Counting Agency	Gewalt Hamilton Associates, Inc.

raSmith

Weekday Morning Peak

12:45 PM

Weekday Midday Peak

12:45 PM

Weekday Afternoon Peak

		Southbound				Westbound				Northbound				Eastbound						
		L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	U	Sum	PHF	Hourly Total
All Vehicles	4:30 PM PM	21	337	14	0	6	4	21	0	25	212	9	2	16	12	43	0	722		
	4:45 PM	23	297	11	2	11	5	20	0	25	218	4	2	13	4	48	0	683	**0.96**	2788
	5:00 PM	31	313	15	2	9	7	19	0	18	234	7	5	24	12	27	0	723		
	5:15 PM	21	281	16	0	8	9	19	0	22	199	11	8	17	10	39	0	660		
	Movement Total	96	1228	56	4	34	25	79	0	90	863	31	17	70	38	157	0			
	Rounded Total	**95**	**1230**	**55**	**5**	**35**	**25**	**80**	**0**	**90**	**865**	**30**	**15**	**70**	**40**	**155**	**0**			
	Approach Total	1384				138				1001				265						
Heavy Vehicles	4:30:00 PM	0	2	0	0	0	0	0	0	0	4	0	0	1	0	0	0			
	4:45 PM	0	3	0	0	0	0	0	0	0	3	0	0	1	0	1	0			
	5:00 PM	0	5	0	0	0	0	0	0	0	8	0	0	2	0	0	0			
	5:15 PM	0	1	0	0	0	0	0	0	0	6	0	0	1	0	0	0			
	Movement Total	0	11	0	0	0	0	0	0	0	21	0	0	5	0	1	0			
	Approach Total	11				0				21				6						
	HV%	**0.8%**				**0.0%**				**2.1%**				**2.3%**						

Intersection	WIS 38 & Puetz
Count Date	1/10/2018
Count Times	4:00 PM - 6:00 PM
Day of Week	Wednesday
Classification	All Vehicles
Counting Agency	Gewalt Hamilton Associates, Inc.

raSmith

Weekday Morning Peak

12:45 PM

Weekday Midday Peak

12:45 PM

Weekday Afternoon Peak

		Southbound				Westbound				Northbound				Eastbound						
		L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	U	Sum	PHF	Hourly Total
All Vehicles	4:30 PM PM	61	232	34	0	18	69	58	1	36	146	34	0	21	98	28	0	836		
	4:45 PM	49	254	36	0	31	56	57	0	33	155	32	1	31	87	37	0	859	**0.96**	3302
	5:00 PM	37	242	44	0	17	49	41	0	20	160	30	0	29	64	42	0	775		
	5:15 PM	58	242	31	0	17	62	39	0	32	129	34	0	34	109	45	0	832		
	Movement Total	205	970	145	0	83	236	195	1	121	590	130	1	115	358	152	0			
	Rounded Total	**205**	**970**	**145**	**0**	**85**	**235**	**195**	**0**	**120**	**590**	**130**	**0**	**115**	**360**	**150**	**0**			
	Approach Total	1320				515				842				625						
Heavy Vehicles	4:30:00 PM	0	1	1	0	0	0	0	0	0	5	1	0	0	1	0	0			
	4:45 PM	0	2	0	0	0	0	1	0	0	1	0	0	2	0	0	0			
	5:00 PM	0	6	0	0	0	0	1	0	0	6	1	0	0	0	0	0			
	5:15 PM	0	1	0	0	0	0	1	0	0	5	0	0	0	0	0	0			
	Movement Total	0	10	1	0	0	0	3	0	0	17	2	0	2	1	0	0			
	Approach Total	11				3				19				3						
	HV%	**0.8%**				**0.6%**				**2.3%**				**0.5%**						

Intersection	WIS 38 & Centennial
Count Date	1/10/2018
Count Times	4:00 PM - 6:00 PM
Day of Week	Wednesday
Classification	All Vehicles
Counting Agency	Gewalt Hamilton Associates, Inc.

raSmith

Weekday Morning Peak

12:45 PM

Weekday Midday Peak

12:45 PM

Weekday Afternoon Peak

		Southbound				Westbound				Northbound				Eastbound						
		L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	U	Sum	PHF	Hourly Total
All Vehicles	4:30 PM PM	38	177	43	0	13	18	21	0	19	144	25	0	40	10	13	0	561		
	4:45 PM	48	250	44	0	16	12	21	0	17	139	17	0	44	6	15	0	629	**0.93**	2344
	5:00 PM	37	207	40	0	14	11	16	0	20	156	16	0	34	10	13	0	574		
	5:15 PM	39	233	49	1	16	2	12	0	13	135	14	0	40	13	13	0	580		
	Movement Total	162	867	176	1	59	43	70	0	69	574	72	0	158	39	54	0			
	Rounded Total	**160**	**865**	**175**	**0**	**60**	**45**	**70**	**0**	**70**	**575**	**70**	**0**	**160**	**40**	**55**	**0**			
	Approach Total	1206				172				715				251						
Heavy Vehicles	4:30:00 PM	0	1	0	0	0	1	0	0	0	4	0	0	1	0	0	0			
	4:45 PM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	5:00 PM	2	4	0	0	0	1	0	0	0	7	0	0	1	0	0	0			
	5:15 PM	0	1	0	0	1	0	1	0	0	4	0	0	0	0	0	0			
	Movement Total	2	9	0	0	1	2	1	0	0	15	0	0	2	0	0	0			
	Approach Total	11				4				15				2						
	HV%	**0.9%**				**2.3%**				**2.1%**				**0.8%**						

Traffic Counts
WIS 67 Signalized Corridor

Intersection	WIS 67 & Oconomowoc Pkwy
Count Date	1/10/2018
Count Times	4:00 PM - 6:00 PM
Day of Week	Wednesday
Classification	All Vehicles
Counting Agency	Gewalt Hamilton Associates, Inc.

raSmith

Weekday Morning Peak

12:45 PM

Weekday Midday Peak

12:45 PM

Weekday Afternoon Peak

		Southbound				Westbound				Northbound				Eastbound						
		L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	U	Sum	PHF	Hourly Total
All Vehicles	4:00 PM PM	17	160	15	0	15	9	40	0	31	218	22	0	12	18	42	0	599		
	4:15 PM	17	161	22	0	10	7	31	0	45	203	19	0	12	5	32	0	564	**0.95**	2362
	4:30 PM	23	174	18	0	9	10	36	0	45	232	22	0	11	6	34	0	620		
	4:45 PM	28	134	19	0	14	9	37	0	42	215	20	0	10	6	45	0	579		
	Movement Total	85	629	74	0	48	35	144	0	163	868	83	0	45	35	153	0			
	Rounded Total	**85**	**630**	**75**	**0**	**50**	**35**	**145**	**0**	**165**	**870**	**85**	**0**	**45**	**35**	**155**	**0**			
	Approach Total	788				227				1114				233						
Heavy Vehicles	4:00:00 PM	0	1	0	0	1	0	1	0	1	2	0	0	1	1	0	0			
	4:15 PM	0	5	0	0	0	1	0	0	0	3	1	0	0	0	0	0			
	4:30 PM	0	5	0	0	1	0	1	0	0	2	0	0	0	0	1	0			
	4:45 PM	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	Movement Total	0	17	0	0	2	1	2	0	1	7	1	0	1	1	1	0			
	Approach Total	17				5				9				3						
	HV%	**2.2%**				**2.2%**				**0.8%**				**1.3%**						

Intersection	WIS 67 & Valley Rd
Count Date	1/10/2018
Count Times	4:00 PM - 6:00 PM
Day of Week	Wednesday
Classification	All Vehicles
Counting Agency	Gewalt Hamilton Associates, Inc.

raSmith

Weekday Morning Peak

12:45 PM

Weekday Midday Peak

12:45 PM

Weekday Afternoon Peak

		Southbound				Westbound				Northbound				Eastbound						
		L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	U	Sum	PHF	Hourly Total
All Vehicles	4:00 PM PM	28	169	16	0	10	23	25	0	25	200	10	0	54	24	71	0	655		
	4:15 PM	30	164	5	0	10	31	23	0	24	228	10	0	25	27	41	0	618	**0.97**	2533
	4:30 PM	39	149	9	0	20	27	26	0	34	213	18	0	43	22	30	0	630		
	4:45 PM	23	167	18	0	11	19	25	0	25	249	12	0	28	26	27	0	630		
	Movement Total	120	649	48	0	51	100	99	0	108	890	50	0	150	99	169	0			
	Rounded Total	**120**	**650**	**50**	**0**	**50**	**100**	**100**	**0**	**110**	**890**	**50**	**0**	**150**	**100**	**170**	**0**			
	Approach Total	817				250				1048				418						
Heavy Vehicles	4:00:00 PM	0	2	0	0	0	1	0	0	1	2	0	0	0	1	2	0			
	4:15 PM	0	4	0	0	0	0	0	0	2	2	0	0	2	0	3	0			
	4:30 PM	0	4	0	0	0	0	0	0	1	2	0	0	0	0	2	0			
	4:45 PM	0	8	1	0	0	0	0	0	1	1	0	0	0	0	1	0			
	Movement Total	0	18	1	0	0	1	0	0	5	7	0	0	2	1	8	0			
	Approach Total	19				1				12				11						
	HV%	**2.3%**				**0.4%**				**1.1%**				**2.6%**						

Intersection	WIS 67 & Oconomowoc Dr
Count Date	1/10/2018
Count Times	4:00 PM - 6:00 PM
Day of Week	Wednesday
Classification	All Vehicles
Counting Agency	Gewalt Hamilton Associates, Inc.

raSmith

Weekday Morning Peak

12:45 PM

Weekday Midday Peak

12:45 PM

Weekday Afternoon Peak

		Southbound				Westbound				Northbound				Eastbound						
		L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	U	Sum	PHF	Hourly Total
All Vehicles	4:00 PM PM	2	237	3	0	40	2	9	0	24	209	31	0	15	8	55	0	635		
	4:15 PM	5	210	1	0	36	3	14	0	23	236	41	0	12	8	30	0	619	**0.99**	2532
	4:30 PM	5	195	4	0	33	5	16	0	29	251	36	0	16	4	47	0	641		
	4:45 PM	7	187	5	0	45	10	14	0	27	248	35	0	6	4	48	1	637		
	Movement Total	19	829	13	0	154	20	53	0	103	944	143	0	49	24	180	1			
	Rounded Total	**20**	**830**	**15**	**0**	**155**	**20**	**55**	**0**	**105**	**945**	**145**	**0**	**50**	**25**	**180**	**0**			
	Approach Total	861				227				1190				254						
Heavy Vehicles	4:00:00 PM	0	3	0	0	0	0	0	0	0	3	0	0	0	0	3	0			
	4:15 PM	0	8	0	0	0	0	0	0	0	4	1	0	0	0	1	0			
	4:30 PM	0	6	0	0	1	0	0	0	0	3	0	0	0	0	0	0			
	4:45 PM	0	8	0	0	1	0	0	0	1	2	0	0	0	0	1	0			
	Movement Total	0	25	0	0	2	0	0	0	1	12	1	0	0	0	5	0			
	Approach Total	25				2				14				5						
	HV%	**2.9%**				**0.9%**				**1.2%**				**2.0%**						

Intersection	WIS 67 & I-94 WB Ramps
Count Date	1/10/2018
Count Times	4:00 PM - 6:00 PM
Day of Week	Wednesday
Classification	All Vehicles
Counting Agency	Gewalt Hamilton Associates, Inc.

raSmith

Weekday Morning Peak

12:45 PM

Weekday Midday Peak

12:45 PM

Weekday Afternoon Peak

		Southbound				Westbound				Northbound				Eastbound						
		L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	U	Sum	PHF	Hourly Total
All Vehicles	4:00 PM PM	0	259	65	0	47	0	128	0	24	138	0	0	0	0	0	0	661		
	4:15 PM	0	236	42	0	50	0	150	0	16	152	0	0	0	0	0	0	646	**0.97**	2637
	4:30 PM	0	217	43	0	54	0	136	0	20	177	0	0	0	0	0	0	647		
	4:45 PM	0	218	62	0	65	0	143	0	20	175	0	0	0	0	0	0	683		
	Movement Total	0	930	212	0	216	0	557	0	80	642	0	0	0	0	0	0			
	Rounded Total	**0**	**930**	**210**	**0**	**215**	**0**	**555**	**0**	**80**	**640**	**0**	**0**	**0**	**0**	**0**	**0**			
	Approach Total	1142				773				722				0						
Heavy Vehicles	4:00:00 PM	0	4	2	0	3	0	1	0	1	1	0	0	0	0	0	0			
	4:15 PM	0	7	1	0	6	0	6	0	1	0	0	0	0	0	0	0			
	4:30 PM	0	6	1	0	3	0	1	0	0	2	0	0	0	0	0	0			
	4:45 PM	0	7	4	0	8	0	2	0	0	1	0	0	0	0	0	0			
	Movement Total	0	24	8	0	20	0	10	0	2	4	0	0	0	0	0	0			
	Approach Total	32				30				6				0						
	HV%	**2.8%**				**3.9%**				**0.8%**				**#DIV/0!**						

Intersection	WIS 67 & I-94 EB Ramps
Count Date	1/10/2018
Count Times	4:00 PM - 6:00 PM
Day of Week	Wednesday
Classification	All Vehicles
Counting Agency	Gewalt Hamilton Associates, Inc.

raSmith

Weekday Morning Peak

12:45 PM

Weekday Midday Peak

12:45 PM

Weekday Afternoon Peak

		Southbound				Westbound				Northbound				Eastbound						
		L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	U	Sum	PHF	Hourly Total
All Vehicles	4:00 PM PM	0	174	145	0	0	0	0	0	0	123	72	0	36	0	13	0	563		
	4:15 PM	0	168	119	0	0	0	0	0	0	137	67	0	37	0	17	0	545	**0.98**	2241
	4:30 PM	0	165	111	0	0	0	0	0	0	151	84	0	41	0	19	0	571		
	4:45 PM	0	181	122	0	0	0	0	0	0	134	60	0	51	0	14	0	562		
	Movement Total	0	688	497	0	0	0	0	0	0	545	283	0	165	0	63	0			
	Rounded Total	**0**	**690**	**495**	**0**	**0**	**0**	**0**	**0**	**0**	**545**	**285**	**0**	**165**	**0**	**65**	**0**			
	Approach Total	1185				0				828				228						
Heavy Vehicles	4:00:00 PM	0	3	4	0	0	0	0	0	0	2	1	0	0	0	1	0			
	4:15 PM	0	12	3	0	0	0	0	0	0	1	2	0	0	0	1	0			
	4:30 PM	0	6	2	0	0	0	0	0	0	2	6	0	0	0	1	0			
	4:45 PM	0	11	4	0	0	0	0	0	0	0	8	0	2	0	0	0			
	Movement Total	0	32	13	0	0	0	0	0	0	5	17	0	2	0	3	0			
	Approach Total	45				0				22				5						
	HV%	**3.8%**				**#DIV/0!**				**2.7%**				**2.2%**						

Traffic Counts
WIS 167 Signalized Corridor

Intersection	WIS 167 & Port Washington Rd
Count Date	1/17/2018
Count Times	4:00 PM - 6:00 PM
Day of Week	Wednesday
Classification	All Vehicles
Counting Agency	Gewalt Hamilton Associates, Inc.

raSmith

Weekday Morning Peak

12:45 PM

Weekday Midday Peak

12:45 PM

Weekday Afternoon Peak

		Southbound				Westbound				Northbound				Eastbound						
		L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	U	Sum	PHF	Hourly Total
All Vehicles	4:30 PM PM	106	98	82	0	54	116	97	0	61	74	73	0	60	145	52	0	1018		
	4:45 PM	111	108	76	1	41	130	86	0	80	70	75	0	63	160	52	1	1054	**0.96**	4184
	5:00 PM	106	80	111	1	54	106	90	0	79	84	103	0	59	144	68	0	1085		
	5:15 PM	95	70	74	0	59	142	95	0	48	93	67	0	63	165	56	0	1027		
	Movement Total	418	356	343	2	208	494	368	0	268	321	318	0	245	614	228	1			
	Rounded Total	**420**	**355**	**345**	**0**	**210**	**495**	**370**	**0**	**270**	**320**	**320**	**0**	**245**	**615**	**230**	**0**			
	Approach Total	1119				1070				907				1088						
Heavy Vehicles	4:30:00 PM	1	0	0	0	1	4	2	0	2	0	0	0	2	4	0	0			
	4:45 PM	0	1	1	0	0	5	3	0	1	0	2	0	0	4	0	0			
	5:00 PM	0	2	0	0	0	4	2	0	0	2	0	0	1	2	0	0			
	5:15 PM	0	0	3	0	1	3	0	0	0	1	0	0	0	3	0	0			
	Movement Total	1	3	4	0	2	16	7	0	3	3	2	0	3	13	0	0			
	Approach Total	8				25				8				16						
	HV%	**0.7%**				**2.3%**				**0.9%**				**1.5%**						

Intersection	WI-167 & I-43 SB Ramps
Count Date	1/17/2018
Count Times	4:00 PM - 6:00 PM
Day of Week	Wednesday
Classification	All Vehicles
Counting Agency	Gewalt Hamilton Associates, Inc.

raSmith

Weekday Morning Peak

12:45 PM

Weekday Midday Peak

12:45 PM

Weekday Afternoon Peak

		Southbound				Westbound				Northbound				Eastbound						
		L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	U	Sum	PHF	Hourly Total
All Vehicles	4:30 PM PM	8	0	76	0	8	197	0	0	0	0	0	0	0	157	172	0	618		
	4:45 PM	12	0	57	0	9	214	0	0	0	0	0	0	0	163	169	0	624	**0.96**	2560
	5:00 PM	8	0	65	0	8	201	0	0	0	0	0	0	0	179	189	0	650		
	5:15 PM	5	0	90	0	9	217	0	0	0	0	0	0	0	173	174	0	668		
	Movement Total	33	0	288	0	34	829	0	0	0	0	0	0	0	672	704	0			
	Rounded Total	**35**	**0**	**290**	**0**	**35**	**830**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**670**	**705**	**0**			
	Approach Total	321				863				0				1376						
Heavy Vehicles	4:30:00 PM	0	0	4	0	0	3	0	0	0	0	0	0	0	3	2	0			
	4:45 PM	0	0	3	0	0	5	0	0	0	0	0	0	0	4	2	0			
	5:00 PM	0	0	4	0	0	3	0	0	0	0	0	0	0	1	2	0			
	5:15 PM	0	0	1	0	0	2	0	0	0	0	0	0	0	2	1	0			
	Movement Total	0	0	12	0	0	13	0	0	0	0	0	0	0	10	7	0			
	Approach Total	12				13				0				17						
	HV%	**3.7%**				**1.5%**				**#DIV/0!**				**1.2%**						

Intersection	WIS 167 & I-43 NB Ramps
Count Date	1/17/2018
Count Times	4:00 PM - 6:00 PM
Day of Week	Wednesday
Classification	All Vehicles
Counting Agency	Gewalt Hamilton Associates, Inc.

raSmith

Weekday Morning Peak

12:45 PM

Weekday Midday Peak

12:45 PM

Weekday Afternoon Peak

		Southbound				Westbound				Northbound				Eastbound						
		L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	U	Sum	PHF	Hourly Total
All Vehicles	4:30 PM PM	0	0	0	0	0	38	5	0	173	0	16	0	130	35	0	0	397		
	4:45 PM	0	0	0	0	0	30	10	0	180	0	14	0	137	46	0	0	417	**0.96**	1668
	5:00 PM	0	0	0	0	0	22	9	0	198	0	10	0	140	39	0	0	418		
	5:15 PM	0	0	0	0	0	31	5	0	198	0	18	0	144	40	0	0	436		
	Movement Total	0	0	0	0	0	121	29	0	749	0	58	0	551	160	0	0			
	Rounded Total	**0**	**0**	**0**	**0**	**0**	**120**	**30**	**0**	**750**	**0**	**60**	**0**	**550**	**160**	**0**	**0**			
	Approach Total	0				150				807				711						
Heavy Vehicles	4:30:00 PM	0	0	0	0	0	3	0	0	1	0	0	0	3	0	0	0			
	4:45 PM	0	0	0	0	0	1	0	0	4	0	0	0	3	1	0	0			
	5:00 PM	0	0	0	0	0	0	0	0	4	0	0	0	1	0	0	0			
	5:15 PM	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	0			
	Movement Total	0	0	0	0	0	4	0	0	10	0	0	0	9	1	0	0			
	Approach Total	0				4				10				10						
	HV%	**#DIV/0!**				**2.7%**				**1.2%**				**1.4%**						

APPENDIX D

Field Collected Queue Data

Queue Video Data
Isolated Signalized Intersections

WIS 172 & CTH EB/Packerland
4:00 - 5:00 PM
Eastern Queue

Movement		Number of Vehicles in Queue												Queue Length (ft)										Total Queue Length (ft)			
		LT			TH			TH			RT (unmarked)			LT			TH			TH			RT (unmarked)			LT	TH 1	TH 2	RT
Time	Cycle #	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis				
4:02:19 PM	1	2	0	0	8	0	0	2	0	0	1	0	0	50	0	0	200	0	0	50	0	0	25	0	0	50	200	50	25
4:03:49 PM	2	4	0	0	2	0	0	4	0	0	1	0	0	100	0	0	50	0	0	100	0	0	25	0	0	100	50	100	25
4:05:12 PM	3	1	0	0	3	0	0	2	0	0	1	0	0	25	0	0	75	0	0	50	0	0	25	0	0	25	75	50	25
4:06:39 PM	4	1	0	0	3	0	0	2	0	0	1	0	0	25	0	0	75	0	0	50	0	0	25	0	0	25	75	50	25
4:08:22 PM	5	4	0	0	6	0	0	9	0	0	1	0	0	100	0	0	150	0	0	225	0	0	25	0	0	100	150	225	25
4:10:31 PM	6	5	0	0	4	0	0	5	0	0	2	0	0	125	0	0	100	0	0	125	0	0	50	0	0	125	100	125	50
4:12:39 PM	7	0	0	0	2	0	0	2	0	0	1	0	0	0	0	0	50	0	0	50	0	0	25	0	0	0	50	50	25
4:14:31 PM	8	0	0	0	4	0	0	2	0	0	0	1	0	0	0	0	100	0	0	50	0	0	0	45	0	0	100	50	45
4:16:15 PM	9	4	0	0	6	0	0	5	0	0	0	1	0	100	0	0	150	0	0	125	0	0	0	45	0	100	150	125	45
4:17:36 PM	10	1	1	0	1	0	0	2	0	0	1	0	0	25	45	0	25	0	0	50	0	0	25	0	0	70	25	50	25
4:19:24 PM	11	3	0	0	1	0	0	3	0	0	1	0	0	75	0	0	25	0	0	75	0	0	25	0	0	75	25	75	25
4:20:54 PM	12	4	0	0	4	0	0	6	0	0	1	0	0	100	0	0	100	0	0	150	0	0	25	0	0	100	100	150	25
4:22:55 PM	13	4	0	0	5	0	0	5	0	0	0	1	0	100	0	0	125	0	0	125	0	0	0	45	0	100	125	125	45
4:24:52 PM	14	1	0	0	1	0	0	4	0	0	1	0	0	25	0	0	25	0	0	100	0	0	25	0	0	25	25	100	25
4:26:14 PM	15	4	0	0	2	0	0	2	0	0	1	0	0	100	0	0	50	0	0	50	0	0	25	0	0	100	50	50	25
4:28:18 PM	16	1	0	0	4	0	0	2	0	0	3	0	0	25	0	0	100	0	0	50	0	0	75	0	0	25	100	50	75
4:30:10 PM	17	5	0	0	3	0	0	4	0	0	1	0	0	125	0	0	75	0	0	100	0	0	25	0	0	125	75	100	25
4:31:39 PM	18	0	0	0	2	0	0	2	0	0	1	0	0	0	0	0	50	0	0	50	0	0	25	0	0	0	50	50	25
4:33:23 PM	19	1	0	0	2	0	0	3	0	0	1	0	0	25	0	0	50	0	0	75	0	0	25	0	0	25	50	75	25
4:34:52 PM	20	2	0	0	2	0	0	6	0	0	1	0	0	50	0	0	50	0	0	150	0	0	25	0	0	50	50	150	25
4:36:49 PM	21	0	0	0	2	0	0	2	0	0	5	0	0	0	0	0	50	0	0	50	0	0	125	0	0	0	50	50	125
4:38:32 PM	22	5	1	0	9	0	0	11	0	0	3	2	0	125	45	0	225	0	0	275	0	0	75	90	0	170	225	275	165
4:40:44 PM	23	2	0	1	2	0	0	3	0	0	3	0	0	50	0	45	50	0	0	75	0	0	75	0	0	95	50	75	75
4:42:20 PM	24	6	0	0	7	0	0	5	1	0	0	0	0	150	0	0	175	0	0	125	45	0	0	0	0	150	175	170	0
4:44:14 PM	25	4	0	0	1	0	0	7	0	0	2	1	0	100	0	0	25	0	0	175	0	0	50	45	0	100	25	175	95
4:45:37 PM	26	9	0	0	9	0	0	20	0	0	4	0	0	225	0	0	225	0	0	500	0	0	100	0	0	225	225	500	100
4:47:50 PM	27	7	0	0	3	0	0	7	0	0	2	0	0	175	0	0	75	0	0	175	0	0	50	0	0	175	75	175	50
4:49:55 PM	28	2	0	0	2	0	0	6	0	0	1	0	0	50	0	0	50	0	0	150	0	0	25	0	0	50	50	150	25
4:51:50 PM	29	3	0	0	3	0	0	4	1	0	1	0	0	75	0	0	75	0	0	100	45	0	25	0	0	75	75	145	25
4:53:58 PM	30	1	0	0	4	0	0	5	0	0	1	0	0	25	0	0	100	0	0	125	0	0	25	0	0	25	100	125	25
4:55:45 PM	31	3	0	0	2	0	0	4	0	0	1	0	0	75	0	0	50	0	0	100	0	0	25	0	0	75	50	100	25
4:57:25 PM	32	0	0	0	2	0	0	2	0	0	2	0	0	0	0	0	50	0	0	50	0	0	50	0	0	0	50	50	50
4:59:04 PM	33	2	0	0	1	0	0	0	0	0	1	0	0	50	0	0	25	0	0	0	0	0	25	0	0	50	25	0	25

Average	73	85	115	43
Standard Deviation	57	57	91	35
95th Percentile	172	210	245	110
50th Percentile	75	75	100	25
Max Queue	225	225	500	165

95th Percentile (ft)	**172**	**245**	**110**
50th Percentile (ft)	**75**	**100**	**25**
Max Queue	**225**	**500**	**165**

WIS 52 & S. 28th Ave
4:15 - 5:15 PM
North leg

Movement		Number of Vehicles in Queue																Queue Length (ft)												Total Queue Length (ft)				
		RT			TH			TH			LT			LT			RT			TH			TH			LT			LT						
Time	Cycle #	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	RT	TH 1	TH 2	LT 1	LT 2
4:15:18 PM	1	1	0	0	0	0	0	1	0	0	2	0	0	3	0	0	25	0	0	0	0	0	25	0	0	50	0	0	75	0	0	25	0	25	50	75
4:16:37 PM	2	1	0	0	1	0	0	5	0	0	3	1	0	0	0	0	25	0	0	25	0	0	125	0	0	75	45	0	0	0	0	25	25	125	120	0
4:17:49 PM	3	1	0	0	1	0	0	5	0	0	2	0	0	0	0	0	25	0	0	25	0	0	125	0	0	50	0	0	0	0	0	25	25	125	50	0
4:19:07 PM	4	1	0	0	0	0	0	3	0	0	3	0	0	1	0	0	25	0	0	0	0	0	75	0	0	75	0	0	25	0	0	25	0	75	75	25
4:20:17 PM	5	4	0	0	2	0	0	1	0	0	3	0	0	0	0	0	100	0	0	50	0	0	25	0	0	75	0	0	0	0	0	100	50	25	75	0
4:21:55 PM	6	2	0	0	2	0	0	0	0	0	5	1	0	3	0	0	50	0	0	50	0	0	0	0	0	125	45	0	75	0	0	50	50	0	170	75
4:23:43 PM	7	1	0	0	2	0	0	3	0	0	5	0	0	3	0	0	25	0	0	50	0	0	75	0	0	125	0	0	75	0	0	25	50	75	125	75
4:24:57 PM	8	2	0	0	1	0	0	4	0	0	3	0	0	2	0	0	50	0	0	25	0	0	100	0	0	75	0	0	50	0	0	50	25	100	75	50
4:26:22 PM	9	1	0	0	0	0	0	6	0	0	5	0	0	0	0	0	25	0	0	0	0	0	150	0	0	125	0	0	0	0	0	25	0	150	125	0
4:27:47 PM	10	1	0	0	1	0	0	4	0	0	5	0	0	2	0	0	25	0	0	25	0	0	100	0	0	125	0	0	50	0	0	25	25	100	125	50
4:29:12 PM	11	1	0	0	1	0	0	4	0	0	5	0	0	1	0	0	25	0	0	25	0	0	100	0	0	125	0	0	25	0	0	25	25	100	125	25
4:30:48 PM	12	1	0	0	2	0	0	3	0	0	4	0	0	0	0	0	25	0	0	50	0	0	75	0	0	100	0	0	0	0	0	25	50	75	100	0
4:32:13 PM	13	1	0	0	1	0	0	2	0	0	1	0	1	2	0	0	25	0	0	25	0	0	50	0	0	25	0	45	50	0	0	25	25	50	70	50
4:33:25 PM	14	0	0	0	1	0	0	7	0	0	3	0	0	0	0	0	0	0	0	25	0	0	175	0	0	75	0	0	0	0	0	0	25	175	75	0
4:34:46 PM	15	0	0	0	0	0	0	3	0	0	8	0	0	0	0	0	0	0	0	0	0	0	75	0	0	200	0	0	0	0	0	0	0	75	200	0
4:36:34 PM	16	1	0	0	2	0	0	5	0	0	6	0	0	5	0	0	25	0	0	50	0	0	125	0	0	150	0	0	125	0	0	25	50	125	150	125
4:38:20 PM	17	1	0	0	1	0	0	1	0	0	7	0	0	6	0	0	25	0	0	25	0	0	25	0	0	175	0	0	150	0	0	25	25	25	175	150
4:40:15 PM	18	1	0	0	1	0	0	5	0	0	5	0	0	1	0	0	25	0	0	25	0	0	125	0	0	125	0	0	25	0	0	25	25	125	125	25
4:41:37 PM	19	1	0	0	0	0	0	10	0	0	5	0	0	2	0	0	25	0	0	0	0	0	250	0	0	125	0	0	50	0	0	25	0	250	125	50
4:43:03 PM	20	1	0	0	3	0	0	1	0	0	9	0	0	0	0	0	25	0	0	75	0	0	25	0	0	225	0	0	0	0	0	25	75	25	225	0
4:44:29 PM	21	1	0	0	1	0	0	5	0	0	2	0	0	3	0	0	25	0	0	25	0	0	125	0	0	50	0	0	75	0	0	25	25	125	50	75
4:45:58 PM	22	0	0	0	5	0	0	5	0	0	4	0	0	3	0	0	0	0	0	125	0	0	125	0	0	100	0	0	75	0	0	0	125	125	100	75
4:47:48 PM	23	3	0	0	0	0	0	3	0	0	3	0	0	4	0	0	75	0	0	0	0	0	75	0	0	75	0	0	100	0	0	75	0	75	75	100
4:49:13 PM	24	1	0	0	2	0	0	0	0	0	6	0	0	3	1	0	25	0	0	50	0	0	0	0	0	150	0	0	75	45	0	25	50	0	150	120
4:50:52 PM	25	1	0	0	1	0	0	3	0	0	6	0	0	2	0	0	25	0	0	25	0	0	75	0	0	150	0	0	50	0	0	25	25	75	150	50
4:52:27 PM	26	1	0	0	0	0	0	2	0	0	7	0	0	2	0	0	25	0	0	0	0	0	50	0	0	175	0	0	50	0	0	25	0	50	175	50
4:53:46 PM	27	1	0	0	0	0	0	1	0	0	3	0	0	1	0	0	25	0	0	0	0	0	25	0	0	75	0	0	25	0	0	25	0	25	75	25
4:55:05 PM	28	3	0	0	0	0	0	1	0	0	7	0	0	0	0	0	75	0	0	0	0	0	25	0	0	175	0	0	0	0	0	75	0	25	175	0
4:56:47 PM	29	2	0	0	1	0	0	2	0	0	2	0	0	1	0	0	50	0	0	25	0	0	50	0	0	50	0	0	25	0	0	50	25	50	50	25
4:57:54 PM	30	1	0	0	1	0	0	1	0	0	1	0	0	3	0	0	25	0	0	25	0	0	25	0	0	25	0	0	75	0	0	25	25	25	25	75
4:59:09 PM	31	1	0	0	0	0	0	0	0	0	2	0	0	1	0	0	25	0	0	0	0	0	0	0	0	50	0	0	25	0	0	25	0	0	50	25
5:00:36 PM	32	0	0	0	0	0	0	3	0	0	2	0	0	2	0	0	0	0	0	0	0	0	75	0	0	50	0	0	50	0	0	0	0	75	50	50
5:02:10 PM	33	2	0	0	2	0	0	2	0	0	3	0	0	0	0	0	50	0	0	50	0	0	50	0	0	75	0	0	0	0	0	50	50	50	75	0
5:03:50 PM	34	1	0	0	0	0	0	4	0	0	6	0	0	2	0	0	25	0	0	0	0	0	100	0	0	150	0	0	50	0	0	25	0	100	150	50
5:05:21 PM	35	1	0	0	0	0	0	5	0	0	5	0	0	4	0	0	25	0	0	0	0	0	125	0	0	125	0	0	100	0	0	25	0	125	125	100
5:07:06 PM	36	0	0	0	5	0	0	5	0	0	9	0	0	3	0	0	0	0	0	125	0	0	125	0	0	225	0	0	75	0	0	0	125	125	225	75
5:08:32 PM	37	2	0	0	1	0	0	2	0	0	10	0	0	2	0	0	50	0	0	25	0	0	50	0	0	250	0	0	50	0	0	50	25	50	250	50
5:10:05 PM	38	0	0	0	1	0	0	5	0	0	3	1	0	4	0	0	0	0	0	25	0	0	125	0	0	75	45	0	100	0	0	0	25	125	120	100
5:11:29 PM	39	1	0	0	1	0	0	6	0	0	4	0	0	2	0	0	25	0	0	25	0	0	150	0	0	100	0	0	50	0	0	25	25	150	100	50
5:12:58 PM	40	2	0	0	1	0	0	3	1	0	5	0	0	1	0	0	50	0	0	25	0	0	75	45	0	125	0	0	25	0	0	50	25	120	125	25
5:14:17 PM	41	1	0	0	1	0	0	4	0	0	5	0	0	2	0	0	25	0	0	25	0	0	100	0	0	125	0	0	50	0	0	25	25	100	125	50

Data points are best estimates based on the camera angle and video quality. Queues were **at least** the stated length.
Note: no North Leg video given, best guess from camera SCU2QN, camera quality limited viewing capacity.

Average	29	27	83	117	47
Standard Deviation	21	29	53	54	39
95th Percentile	75	75	150	225	120
50th Percentile	25	25	75	125	50
Max Queue	100	125	250	250	150

95th Percentile (ft)	**75**	**150**	**225**
50th Percentile (ft)	**25**	**75**	**125**
Max Queue	**100**	**250**	**250**

WIS 20/83 & WIS 36
4:45 - 5:45 PM
Northeast Queue

Movement		Number of Vehicles in Queue												Queue Length (ft)										Total Queue Length (ft)			
		LT			TH			TH			RT			LT			TH			TH			RT						
Time	Cycle #	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	LT	TH 1	TH 2	RT
4:45:30 PM	1	1	0	0	1	0	0	3	0	0	1	0	0	25	0	0	25	0	0	75	0	0	25	0	0	25	25	75	25
4:47:08 PM	2	1	0	0	0	0	0	1	0	0	0	0	0	25	0	0	0	0	0	25	0	0	0	0	0	25	0	25	0
4:48:33 PM	3	0	0	0	3	0	0	1	0	0	0	0	0	0	0	0	75	0	0	25	0	0	0	0	0	0	75	25	0
4:46:30 PM	4	1	0	0	0	0	0	0	0	0	0	0	0	25	0	0	0	0	0	0	0	0	0	0	0	25	0	0	0
4:49:53 PM	5	0	1	0	0	0	0	0	0	0	0	0	0	0	25	0	0	0	0	0	0	0	0	0	0	25	0	0	0
4:51:17 PM	6	0	0	0	5	0	0	1	0	0	0	0	0	0	0	0	125	0	0	25	0	0	0	0	0	0	125	25	0
4:52:24 PM	7	1	0	0	4	0	0	6	0	0	1	0	0	25	0	0	100	0	0	150	0	0	25	0	0	25	100	150	25
4:53:49 PM	8	1	0	0	6	0	0	7	0	0	1	0	0	25	0	0	150	0	0	175	0	0	25	0	0	25	150	175	25
4:55:07 PM	9	2	0	0	13	0	0	5	0	0	1	0	0	50	0	0	325	0	0	125	0	0	25	0	0	50	325	125	25
4:56:16 PM	10	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	25	0	0	0	0	0	0	0	0	0	25	0	0
4:58:12 PM	11	3	0	0	1	0	0	9	0	0	2	0	0	75	0	0	25	0	0	225	0	0	50	0	0	75	25	225	50
4:59:17 PM	12	0	0	0	1	0	0	4	0	0	1	0	0	0	0	0	25	0	0	100	0	0	25	0	0	0	25	100	25
5:00:12 PM	13	1	0	0	8	0	0	2	0	0	0	0	0	25	0	0	200	0	0	50	0	0	0	0	0	25	200	50	0
5:01:38 PM	14	0	0	0	8	0	0	5	0	0	0	0	0	0	0	0	200	0	0	125	0	0	0	0	0	0	200	125	0
5:03:10 PM	15	0	0	0	1	0	0	3	0	0	0	0	0	0	0	0	25	0	0	75	0	0	0	0	0	0	25	75	0
5:05:57 PM	16	1	0	0	0	0	0	1	0	0	0	0	0	25	0	0	0	0	0	25	0	0	0	0	0	25	0	25	0
5:07:22 PM	17	0	0	0	6	0	0	8	0	0	0	0	0	0	0	0	150	0	0	200	0	0	0	0	0	0	150	200	0
5:08:50 PM	18	1	0	0	0	0	0	1	0	0	1	0	0	25	0	0	0	0	0	25	0	0	25	0	0	25	0	25	25
5:09:53 PM	19	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	50	0	0	50	0	0	0	0	0	0	50	50	0
5:10:34 PM	20	0	0	0	5	0	0	5	0	0	0	0	0	0	0	0	125	0	0	125	0	0	0	0	0	0	125	125	0
5:11:46 PM	21	1	0	0	5	0	0	6	0	0	0	0	0	25	0	0	125	0	0	150	0	0	0	0	0	25	125	150	0
5:12:43 PM	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:14:10 PM	23	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	25	0	0	25	0	0	0	0	25	25
5:15:46 PM	24	2	0	0	4	0	0	3	0	0	0	0	0	50	0	0	100	0	0	75	0	0	0	0	0	50	100	75	0
5:17:07 PM	25	0	0	0	3	0	0	4	0	0	0	0	0	0	0	0	75	0	0	100	0	0	0	0	0	0	75	100	0
5:17:49 PM	26	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	25	0	0	0	0	0	0	0	25	0
5:19:17 PM	27	0	0	0	4	0	0	2	0	0	0	0	0	0	0	0	100	0	0	50	0	0	0	0	0	0	100	50	0
5:20:00 PM	28	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	75	0	0	0	0	0	0	0	75	0
5:21:04 PM	29	0	0	0	5	0	0	7	0	0	1	0	0	0	0	0	125	0	0	175	0	0	25	0	0	0	125	175	25
5:22:13 PM	30	1	0	0	2	0	0	2	0	0	1	0	0	25	0	0	50	0	0	50	0	0	25	0	0	25	50	50	25
5:23:15 PM	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:24:33 PM	32	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	25	0	0	0	0	0	25
5:25:21 PM	33	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	25	0	0	0	0	0	25
5:26:25 PM	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:27:53 PM	35	1	0	0	9	0	0	1	0	0	1	0	0	25	0	0	225	0	0	25	0	0	25	0	0	25	225	25	25
5:28:51 PM	36	0	0	0	4	0	0	3	0	0	1	0	0	0	0	0	100	0	0	75	0	0	25	0	0	0	100	75	25
5:30:00 PM	37	0	0	0	2	0	0	1	0	0	0	0	0	0	0	0	50	0	0	25	0	0	0	0	0	0	50	25	0
5:30:59 PM	38	0	0	0	4	0	0	5	0	0	1	0	0	0	0	0	100	0	0	125	0	0	25	0	0	0	100	125	25
5:32:00 PM	38	2	0	0	0	0	0	1	0	0	0	0	0	50	0	0	0	0	0	25	0	0	0	0	0	50	0	25	0
5:33:40 PM	39	1	0	0	0	0	0	1	0	0	0	0	0	25	0	0	0	0	0	25	0	0	0	0	0	25	0	25	0
5:35:26 PM	40	1	0	0	4	0	0	7	0	0	1	0	0	25	0	0	100	0	0	175	0	0	25	0	0	25	100	175	25
5:37:09 PM	41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:38:15 PM	42	1	0	0	1	0	0	0	0	0	1	0	0	25	0	0	25	0	0	0	0	0	25	0	0	25	25	0	25
5:39:21 PM	43	0	0	0	6	0	0	6	0	0	1	0	0	0	0	0	150	0	0	150	0	0	25	0	0	0	150	150	25
5:40:15 PM	44	1	0	0	9	0	0	7	0	0	1	0	0	25	0	0	225	0	0	175	0	0	25	0	0	25	225	175	25
5:41:27 PM	45	1	0	0	1	0	0	6	0	0	0	0	0	25	0	0	25	0	0	150	0	0	0	0	0	25	25	150	0
5:42:22 PM	46	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	25	0	0	0	0	0	25	0	0	0	25	0	25
5:43:55 PM	47	1	0	0	7	0	0	11	0	0	0	0	0	25	0	0	175	0	0	275	0	0	0	0	0	25	175	275	0

Data points are best estimates based on the camera angle and video quality. Queues were at least the stated length.
Note: Headlights combined with camera quality made it difficult to distinguish queues.

Average	14	71	74	11
Standard Deviation	18	79	72	14
95th Percentile	50	216	191	25
50th Percentile	0	38	50	0
Max Queue	75	325	275	50

95th Percentile (ft)	**50**	**216.25**	**25**
50th Percentile (ft)	**0**	**50**	**0**
Max Queue	**75**	**325**	**50**

WIS 67 & US 14
4:00 - 5:00 PM
West Leg

Movement		Number of Vehicles in Queue									Queue Length (ft)									Total Queue Length (ft)			
		LT			TH			RT			LT			TH			RT						
Time	Cycle #	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	LT	TH	RT	
4:00:39 PM	1	2	0	0	1	1	0	2	0	0	50	0	0	25	45	0	50	0	0	50	70	50	
4:02:??PM	2	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	25	0	0	0	0	25	
4:03:13 PM	3	0	0	0	1	0	0	2	0	0	0	0	0	25	0	0	50	0	0	0	25	50	
4:04:26 PM	4	0	0	0	1	0	0	2	0	0	0	0	0	25	0	0	50	0	0	0	25	50	
4:05:43 PM	5	0	0	0	1	0	0	3	0	0	0	0	0	25	0	0	75	0	0	0	25	75	
4:06:52 PM	6	2	0	0	4	0	0	2	0	1	50	0	0	100	0	0	50	0	45	50	100	95	*1 RT, LT, TH in lanes, likely 7 backed up on other streets
4:08:25 PM	7	1	0	0	13	0	0	1	0	0	25	0	0	325	0	0	25	0	0	25	325	25	*6 TH veh in lane, likely 7 TH and 1 LT backed up on other streets
4:09:49 PM	8	0	0	0	3	0	0	1	0	0	0	0	0	75	0	0	25	0	0	0	75	25	
4:12:11 PM	9	0	0	0	4	0	0	2	0	1	0	0	0	100	0	0	50	0	45	0	100	95	*1 TH veh in lane, the 3 others were assumed backed up on other streets
4:13:39 PM	10	0	0	0	1	0	0	2	0	0	0	0	0	25	0	0	50	0	0	0	25	50	
4:14:26 PM	11	1	0	0	1	0	0	2	0	0	25	0	0	25	0	0	50	0	0	25	25	50	
4:17:22 PM	12	0	0	0	2	0	0	2	0	0	0	0	0	50	0	0	50	0	0	0	50	50	
4:18:40 PM	13	3	0	0	0	0	0	1	0	0	75	0	0	0	0	0	25	0	0	75	0	25	
4:19:46 PM	14	1	0	0	1	0	0	3	0	0	25	0	0	25	0	0	75	0	0	25	25	75	
4:20:56 PM	15	0	0	0	1	0	0	1	0	0	0	0	0	25	0	0	25	0	0	0	25	25	
4:22:06 PM	16	1	0	0	2	0	0	2	0	1	25	0	0	50	0	0	50	0	45	25	50	95	*1 TH and 2 RT in lanes, likely 2 backed up on other streets
4:23:43 PM	17	0	0	0	1	0	0	2	0	0	0	0	0	25	0	0	50	0	0	0	25	50	
4:24:52 PM	18	0	0	0	3	0	0	1	0	0	0	0	0	75	0	0	25	0	0	0	75	25	
4:25:?? PM	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:27:15 PM	20	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	100	0	0	0	0	100	
4:28:30 PM	21	1	0	0	1	0	0	1	0	0	25	0	0	25	0	0	25	0	0	25	25	25	
4:29:56 PM	22	0	0	0	1	0	0	1	0	0	0	0	0	25	0	0	25	0	0	0	25	25	
4:30:46 PM	23	0	0	0	1	0	0	1	0	0	0	0	0	25	0	0	25	0	0	0	25	25	
4:31:41 PM	24	0	0	0	1	0	0	2	0	0	0	0	0	25	0	0	50	0	0	0	25	50	
4:32:?? PM	25	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	25	0	0	0	0	25	
4:34:03 PM	26	1	0	0	1	0	0	2	0	0	25	0	0	25	0	0	50	0	0	25	25	50	
4:35:?? PM	27	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	25	0	0	0	0	25	
4:36:31 PM	28	0	0	0	1	0	0	4	0	1	0	0	0	25	0	0	100	0	45	0	25	145	*3 RT in lane (including HV), likely 4 backed up on other streets
4:37:47 PM	29	0	0	0	1	0	0	1	1	0	0	0	0	25	0	0	25	45	0	0	25	70	
4:39:08 PM	30	0	0	0	7	0	1	3	0	0	0	0	0	175	0	45	75	0	0	0	220	75	*4 (incl. HV) in TH, 1 in RT lane, likely 6 backed up on other streets
4:40:08 PM	31	1	0	0	0	0	0	1	0	0	25	0	0	0	0	0	25	0	0	25	0	25	
4:41:34 PM	32	0	0	0	1	0	0	1	0	0	0	0	0	25	0	0	25	0	0	0	25	25	
4:42:48 PM	33	0	0	0	1	0	0	1	0	0	0	0	0	25	0	0	25	0	0	0	25	25	
4:44:15 PM	34	0	0	0	1	0	0	0	0	1	0	0	0	25	0	0	0	0	45	0	25	45	
4:45:30 PM	35	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	25	0	0	0	0	25	
4:46:26 PM	36	0	0	0	1	0	0	1	0	0	0	0	0	25	0	0	25	0	0	0	25	25	
4:48:13 PM	37	1	0	0	1	0	0	1	0	0	25	0	0	25	0	0	25	0	0	25	25	25	
4:49:20 PM	38	0	0	0	3	0	0	0	0	0	0	0	0	75	0	0	0	0	0	0	75	0	
4:50:06 PM	39	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	25	0	0	0	0	25	
4:51:23 PM	40	0	0	0	3	0	0	0	0	0	0	0	0	75	0	0	0	0	0	0	75	0	
4:52:10 PM	41	1	0	0	0	0	0	2	0	0	25	0	0	0	0	0	50	0	0	25	0	50	
4:52:?? PM	42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:53:48 PM	43	0	0	0	2	0	0	2	0	0	0	0	0	50	0	0	50	0	0	0	50	50	
4:54:55 PM	44	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	25	0	0	0	0	25	
4:55:48 PM	45	1	0	0	0	0	0	0	0	0	25	0	0	0	0	0	0	0	0	25	0	0	
4:56:?? PM	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:58:26 PM	47	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	25	0	0	0	0	25	
4:59:35 PM	48	0	0	0	1	0	0	0	0	0	0	0	0	25	0	0	0	0	0	0	25	0	

Data points are best estimates based on the camera angle and video quality. Queues were at least the stated length.

Notes
-Queues back up through adjacent intersection. Unclear whether they're Left or Thru/Right queue.
-Video qualitiy limited from rain. Views obstructed by other vehicles.
-Some cycles did not receive any vehicles. The exact times are unknown.

Average	9	37	40
Standard Deviation	17	57	31
95th Percentile	41	100	95
50th Percentile	0	25	25
Max Queue	75	325	145

95th Percentile (ft)	41.25	100	95
50th Percentile (ft)	0	25	25
Max Queue	75	325	145

US 12 & CTH K
4:30 - 5:30 PM
South Leg

Movement		Number of Vehicles in Queue												Queue Length (ft)										Total Queue Length (ft)			
		LT			TH			TH			RT			LT			TH			TH			RT						
Time	Cycle #	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	LT	TH 1	TH 2	RT
4:31:34 PM	1	6	0	0	15	0	0	12	0	0	7	0	0	150	0	0	375	0	0	300	0	0	175	0	0	150	375	300	175
4:34:33 PM	2	6	0	0	18	0	0	15	3	0	6	0	0	150	0	0	450	0	0	375	75	0	150	0	0	150	450	450	150
4:38:15 PM	3	5	0	0	25	0	0	25	0	0	12	0	0	125	0	0	625	0	0	625	0	0	300	0	0	125	625	625	300
4:42:24 PM	4	12	0	0	25	0	0	25	1	0	12	0	0	300	0	0	625	0	0	625	25	0	300	0	0	300	625	650	300
4:45:54 PM	5	2	0	0	25	0	0	25	0	0	9	0	0	50	0	0	625	0	0	625	0	0	225	0	0	50	625	625	225
4:49:54 PM	6	6	0	0	25	0	0	25	1	0	0	0	0	150	0	0	625	0	0	625	25	0	0	0	0	150	625	650	0
4:53:47 PM	7	3	0	0	25	0	0	25	1	0	8	0	0	75	0	0	625	0	0	625	25	0	200	0	0	75	625	650	200
4:57:48 PM	8	5	0	0	25	1	0	25	1	0	16	0	0	125	0	0	625	25	0	625	25	0	400	0	0	125	650	650	400
5:01:43 PM	9	8	0	0	25	0	0	25	1	0	4	1	0	200	0	0	625	0	0	625	25	0	100	25	0	200	625	650	125
5:05:24 PM	10	5	0	0	25	2	0	20	2	0	3	0	0	125	0	0	625	50	0	500	50	0	75	0	0	125	675	550	75
5:07:58 PM	11	4	0	0	25	0	0	14	0	0	0	0	0	100	0	0	625	0	0	350	0	0	0	0	0	100	625	350	0
5:11:38 PM	12	9	0	0	25	0	0	11	0	0	0	0	0	225	0	0	625	0	0	275	0	0	0	0	0	225	625	275	0
5:15:11 PM	13	3	0	0	23	0	0	13	0	0	0	0	0	75	0	0	575	0	0	325	0	0	0	0	0	75	575	325	0
5:18:48 PM	14	4	0	0	25	0	0	8	0	0	0	0	0	100	0	0	625	0	0	200	0	0	0	0	0	100	625	200	0
5:22:54 PM	15	5	0	0	25	0	0	25	1	0	5	0	0	125	0	0	625	0	0	625	25	0	125	0	0	125	625	650	125
5:25:21 PM	16	0	0	0	21	0	0	12	0	0	0	0	0	0	0	0	525	0	0	300	0	0	0	0	0	0	525	300	0
5:29:09 PM	17	4	0	0	24	0	0	25	0	0	7	0	0	100	0	0	600	0	0	625	0	0	175	0	0	100	600	625	175

Data points are best estimates based on the camera angle and video quality. Queues were at least the stated length.

Notes

*lanes became so long that they were indistinguishable with camera quality. Lights blurred

**RT obstructed

*back of queue indistinguishable

Average	128	594	501	132
Standard Deviation	69	76	170	126
95th Percentile	240	655	650	320
50th Percentile	125	625	625	125
Max Queue	300	675	650	400

95th Percentile (ft)	240	655	320
50th Percentile (ft)	125	625	125
Max Queue	300	675	400

Queue Video Data
Isolated Two-Way Stop Controlled Intersections

WIS 32 & Russell Rd
7:00 - 8:00 AM
West leg

Time	Number of Vehicles in Queue			Queue Length (ft)			Total Queue Length (ft)
	Cars	Trucks/ Buses	Semis	Cars	Trucks/Buses	Semis	
7:00:00 AM	2	0	0	50	0	0	50
7:00:30 AM	1	0	0	25	0	0	25
7:01:00 AM	1	0	0	25	0	0	25
7:01:30 AM	0	0	0	0	0	0	0
7:02:00 AM	2	0	0	50	0	0	50
7:02:30 AM	1	0	0	25	0	0	25
7:03:00 AM	2	0	0	50	0	0	50
7:03:30 AM	0	0	0	0	0	0	0
7:04:00 AM	0	0	0	0	0	0	0
7:04:30 AM	0	0	0	0	0	0	0
7:05:00 AM	1	0	0	25	0	0	25
7:05:30 AM	1	0	0	25	0	0	25
7:06:00 AM	2	0	0	50	0	0	50
7:06:30 AM	3	0	0	75	0	0	75
7:07:00 AM	2	0	0	50	0	0	50
7:07:30 AM	3	0	0	75	0	0	75
7:08:00 AM	2	0	0	50	0	0	50
7:08:30 AM	1	0	0	25	0	0	25
7:09:00 AM	1	0	0	25	0	0	25
7:09:30 AM	1	0	0	25	0	0	25
7:10:00 AM	2	0	0	50	0	0	50
7:10:30 AM	2	0	0	50	0	0	50
7:11:00 AM	1	0	0	25	0	0	25
7:11:30 AM	1	0	0	25	0	0	25
7:12:00 AM	1	1	0	25	45	0	70
7:12:30 AM	2	1	0	50	45	0	95
7:13:00 AM	2	0	0	50	0	0	50
7:13:30 AM	1	0	0	25	0	0	25
7:14:00 AM	2	0	0	50	0	0	50
7:14:30 AM	3	0	0	75	0	0	75
7:15:00 AM	0	0	0	0	0	0	0
7:15:30 AM	1	0	0	25	0	0	25
7:16:00 AM	2	0	0	50	0	0	50
7:16:30 AM	1	0	0	25	0	0	25
7:17:00 AM	0	0	0	0	0	0	0
7:17:30 AM	0	0	0	0	0	0	0
7:18:00 AM	1	0	0	25	0	0	25
7:18:30 AM	2	0	0	50	0	0	50
7:19:00 AM	3	0	0	75	0	0	75
7:19:30 AM	2	0	0	50	0	0	50
7:20:00 AM	1	0	0	25	0	0	25
7:20:30 AM	0	0	0	0	0	0	0
7:21:00 AM	1	0	0	25	0	0	25
7:21:30 AM	2	0	0	50	0	0	50
7:22:00 AM	0	0	0	0	0	0	0
7:22:30 AM	0	0	0	0	0	0	0
7:23:00 AM	1	0	0	25	0	0	25
7:23:30 AM	0	0	0	0	0	0	0
7:24:00 AM	1	0	0	25	0	0	25
7:24:30 AM	0	0	0	0	0	0	0
7:25:00 AM	1	0	0	25	0	0	25
7:25:30 AM	0	0	0	0	0	0	0
7:26:00 AM	1	0	0	25	0	0	25
7:26:30 AM	0	0	0	0	0	0	0
7:27:00 AM	1	0	1	25	0	53	78
7:27:30 AM	1	0	0	25	0	0	25
7:28:00 AM	1	0	0	25	0	0	25
7:28:30 AM	0	0	0	0	0	0	0
7:29:00 AM	1	0	0	25	0	0	25
7:29:30 AM	1	0	0	25	0	0	25
7:30:00 AM	1	0	0	25	0	0	25
7:30:30 AM	0	0	0	0	0	0	0
7:31:00 AM	0	0	0	0	0	0	0
7:31:30 AM	0	0	0	0	0	0	0
7:32:00 AM	1	0	0	25	0	0	25
7:32:30 AM	1	0	0	25	0	0	25
7:33:00 AM	0	1	0	0	45	0	45
7:33:30 AM	1	1	0	25	45	0	70
7:34:00 AM	4	1	0	100	45	0	145
7:34:30 AM	4	1	0	100	45	0	145
7:35:00 AM	7	0	0	175	0	0	175
7:35:30 AM	4	0	0	100	0	0	100
7:36:00 AM	0	0	0	0	0	0	0
7:36:30 AM	0	0	0	0	0	0	0
7:37:00 AM	1	0	0	25	0	0	25
7:37:30 AM	1	0	0	25	0	0	25
7:38:00 AM	0	0	0	0	0	0	0
7:38:30 AM	1	0	0	25	0	0	25
7:39:00 AM	1	0	0	25	0	0	25
7:39:30 AM	1	0	0	25	0	0	25
7:40:00 AM	0	0	0	0	0	0	0
7:40:30 AM	0	0	0	0	0	0	0
7:41:00 AM	2	0	0	50	0	0	50
7:41:30 AM	0	0	0	0	0	0	0
7:42:00 AM	0	0	0	0	0	0	0
7:42:30 AM	0	0	0	0	0	0	0
7:43:00 AM	2	0	0	50	0	0	50
7:43:30 AM	1	0	0	25	0	0	25
7:44:00 AM	0	0	1	0	0	53	53
7:44:30 AM	2	0	0	50	0	0	50
7:45:00 AM	0	0	0	0	0	0	0
7:45:30 AM	0	0	0	0	0	0	0
7:46:00 AM	0	0	0	0	0	0	0
7:46:30 AM	3	0	0	75	0	0	75
7:47:00 AM	4	0	0	100	0	0	100
7:47:30 AM	3	0	0	75	0	0	75
7:48:00 AM	4	0	0	100	0	0	100
7:48:30 AM	5	0	0	125	0	0	125
7:49:00 AM	4	0	0	100	0	0	100
7:49:30 AM	0	0	0	0	0	0	0
7:50:00 AM	0	0	0	0	0	0	0
7:50:30 AM	1	0	0	25	0	0	25
7:51:00 AM	0	0	0	0	0	0	0
7:51:30 AM	3	0	0	75	0	0	75
7:52:00 AM	5	0	0	125	0	0	125
7:52:30 AM	1	0	0	25	0	0	25
7:53:00 AM	0	0	0	0	0	0	0
7:53:30 AM	0	0	0	0	0	0	0
7:54:00 AM	0	0	0	0	0	0	0
7:54:30 AM	1	0	0	25	0	0	25
7:55:00 AM	1	0	0	25	0	0	25
7:55:30 AM	0	0	0	0	0	0	0
7:56:00 AM	0	0	0	0	0	0	0
7:56:30 AM	1	0	0	25	0	0	25
7:57:00 AM	2	1	0	50	45	0	95
7:57:30 AM	0	0	0	0	0	0	0
7:58:00 AM	2	0	0	50	0	0	50
7:58:30 AM	0	0	0	0	0	0	0
7:59:00 AM	1	0	0	25	0	0	25
7:59:30 AM	1	0	0	25	0	0	25

Data points are best estimates based on the camera view obstruction.
Queues were at least the stated length.

Average	34
Standard Deviation	36
95th Percentile	**100**
50th Percentile	**25**
Max Queue	**175**

WIS 100 & North Mayfair Driveway
4:00 - 5:00 PM
East Leg

Movement	Number of Vehicles in Queue						Queue Length (ft)						Total Queue Length (ft)	
	RT			LT			RT			LT				
Time	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	RT	LT
4:00:00	6	0	0	1	0	0	150	0	0	25	0	0	150	25
4:00:30	5	0	0	2	0	0	125	0	0	50	0	0	125	50
4:01:00	3	0	0	0	0	0	75	0	0	0	0	0	75	0
4:01:30	0	0	0	1	0	0	0	0	0	25	0	0	0	25
4:02:00	0	0	0	1	0	0	0	0	0	25	0	0	0	25
4:02:30	1	0	0	3	0	0	25	0	0	75	0	0	25	75
4:03:00	3	0	0	4	0	0	75	0	0	100	0	0	75	100
4:03:30	1	0	0	1	0	0	25	0	0	25	0	0	25	25
4:04:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
4:04:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
4:05:00	2	0	0	1	0	0	50	0	0	25	0	0	50	25
4:05:30	3	0	0	1	0	0	75	0	0	25	0	0	75	25
4:06:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:06:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:07:00	0	0	0	1	0	0	0	0	0	25	0	0	0	25
4:07:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
4:08:00	2	0	0	0	0	0	50	0	0	0	0	0	50	0
4:08:30	1	0	0	1	0	0	25	0	0	25	0	0	25	25
4:09:00	2	0	0	2	0	0	50	0	0	50	0	0	50	50
4:09:30	1	0	0	3	0	0	25	0	0	75	0	0	25	75
4:10:00	1	0	0	3	0	0	25	0	0	75	0	0	25	75
4:10:30	1	0	0	3	0	0	25	0	0	75	0	0	25	75
4:11:00	3	0	0	0	0	0	75	0	0	0	0	0	75	0
4:11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:13:30	2	0	0	0	0	0	50	0	0	0	0	0	50	0
4:14:00	4	0	0	0	0	0	100	0	0	0	0	0	100	0
4:14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15:00	0	1	0	0	0	0	0	45	0	0	0	0	45	0
4:15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:16:00	0	0	0	1	0	0	0	0	0	25	0	0	0	25
4:16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:17:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
4:17:30	2	0	0	0	0	0	50	0	0	0	0	0	50	0
4:18:00	2	0	0	1	0	0	50	0	0	25	0	0	50	25
4:18:30	0	0	0	1	0	0	0	0	0	25	0	0	0	25
4:19:00	1	0	0	1	0	0	25	0	0	25	0	0	25	25
4:19:30	3	0	0	0	0	0	75	0	0	0	0	0	75	0
4:20:00	4	0	0	0	0	0	100	0	0	0	0	0	100	0
4:20:30	4	0	0	0	0	0	100	0	0	0	0	0	100	0
4:21:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
4:21:30	0	0	0	1	0	0	0	0	0	25	0	0	0	25
4:22:00	0	0	0	3	0	0	0	0	0	75	0	0	0	75
4:22:30	0	0	0	2	0	0	0	0	0	50	0	0	0	50
4:23:00	2	0	0	0	0	0	50	0	0	0	0	0	50	0
4:23:30	3	0	0	0	0	0	75	0	0	0	0	0	75	0
4:24:00	2	0	0	0	0	0	50	0	0	0	0	0	50	0
4:24:30	4	0	0	0	0	0	100	0	0	0	0	0	100	0
4:25:00	4	0	0	0	0	0	100	0	0	0	0	0	100	0
4:25:30	4	0	0	1	0	0	100	0	0	25	0	0	100	25
4:26:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
4:26:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
4:27:00	3	0	0	0	0	0	75	0	0	0	0	0	75	0
4:27:30	2	0	0	0	0	0	50	0	0	0	0	0	50	0
4:28:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
4:28:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
4:29:00	0	1	0	0	0	0	0	45	0	0	0	0	45	0
4:29:30	0	1	0	0	0	0	0	45	0	0	0	0	45	0
4:30:00	1	1	0	0	0	0	25	45	0	0	0	0	70	0
4:30:30	2	0	0	2	0	0	50	0	0	50	0	0	50	50
4:31:00	2	0	0	2	0	0	50	0	0	50	0	0	50	50
4:31:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
4:32:00	1	0	0	1	0	0	25	0	0	25	0	0	25	25
4:32:30	2	0	0	1	0	0	50	0	0	25	0	0	50	25
4:33:00	1	0	0	1	0	0	25	0	0	25	0	0	25	25
4:33:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
4:34:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
4:34:30	2	0	0	1	0	0	50	0	0	25	0	0	50	25
4:35:00	4	0	0	1	0	0	100	0	0	25	0	0	100	25
4:35:30	3	0	0	0	0	0	75	0	0	0	0	0	75	0
4:36:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
4:36:30	1	0	0	1	0	0	25	0	0	25	0	0	25	25
4:37:00	1	0	0	1	0	0	25	0	0	25	0	0	25	25
4:37:30	1	0	0	1	0	0	25	0	0	25	0	0	25	25
4:38:00	0	1	0	1	0	0	0	45	0	25	0	0	45	25
4:38:30	1	0	0	1	0	0	25	0	0	25	0	0	25	25
4:39:00	2	0	0	0	0	0	50	0	0	0	0	0	50	0
4:39:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
4:40:00	3	0	0	0	0	0	75	0	0	0	0	0	75	0
4:40:30	3	0	0	1	0	0	75	0	0	25	0	0	75	25
4:41:00	0	0	0	1	0	0	0	0	0	25	0	0	0	25
4:41:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
4:42:00	2	0	0	0	0	0	50	0	0	0	0	0	50	0
4:42:30	2	0	0	0	0	0	50	0	0	0	0	0	50	0
4:43:00	1	0	0	1	0	0	25	0	0	25	0	0	25	25
4:43:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:44:00	1	0	0	1	0	0	25	0	0	25	0	0	25	25
4:44:30	5	0	0	1	0	0	125	0	0	25	0	0	125	25
4:45:00	5	0	0	1	0	0	125	0	0	25	0	0	125	25
4:45:30	6	0	0	1	0	0	150	0	0	25	0	0	150	25
4:46:00	3	0	0	0	0	0	75	0	0	0	0	0	75	0
4:46:30	3	0	0	0	0	0	75	0	0	0	0	0	75	0
4:47:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:47:30	1	0	0	1	0	0	25	0	0	25	0	0	25	25
4:48:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
4:48:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
4:49:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
4:49:30	3	0	0	0	0	0	75	0	0	0	0	0	75	0
4:50:00	4	0	0	1	0	0	100	0	0	25	0	0	100	25
4:50:30	6	0	0	1	0	0	150	0	0	25	0	0	150	25
4:51:00	3	0	0	0	0	0	75	0	0	0	0	0	75	0
4:51:30	2	0	0	0	0	0	50	0	0	0	0	0	50	0
4:52:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:52:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:53:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
4:53:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
4:54:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
4:54:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:55:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
4:55:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
4:56:00	0	0	0	1	0	0	0	0	0	25	0	0	0	25
4:56:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:57:00	3	0	0	0	0	0	75	0	0	0	0	0	75	0
4:57:30	3	0	0	0	0	0	75	0	0	0	0	0	75	0
4:58:00	3	0	0	0	0	0	75	0	0	0	0	0	75	0
4:58:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
4:59:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:59:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0

*1 LT veh in the middle of WIS 100
*1 LT veh in the middle of WIS 100

Data points are best estimates based on the camera view obstruction. Queues were at least the stated length.

Average	42	13
Standard Deviation	37	21
95th Percentile	**101**	**51**
50th Percentile	**25**	**0**
Max Queue	**150**	**100**

WIS 16 WB Ramp & CTH C
4:00 - 5:00 PM
East Leg

Movement	Number of Vehicles in Queue						Queue Length (ft)						Total Queue Length (ft)	
	RT			TH			RT			LT			RT	LT
Time	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis		
4:00:00	1	0	0	1	0	0	25	0	0	25	0	0	25	25
4:00:30	2	0	0	1	0	0	50	0	0	25	0	0	50	25
4:01:00	1	0	0	1	0	0	25	0	0	25	0	0	25	25
4:01:30	0	0	0	1	0	0	0	0	0	25	0	0	0	25
4:02:00	1	0	0	1	0	0	25	0	0	25	0	0	25	25
4:02:30	1	0	0	2	0	0	25	0	0	50	0	0	25	50
4:03:00	1	0	0	2	0	0	25	0	0	50	0	0	25	50
4:03:30	1	0	0	4	0	0	25	0	0	100	0	0	25	100
4:04:00	2	0	0	3	0	0	50	0	0	75	0	0	50	75
4:04:30	1	0	0	1	0	0	25	0	0	25	0	0	25	25
4:05:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
4:05:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
4:06:00	3	0	0	2	0	0	75	0	0	50	0	0	75	50
4:06:30	1	0	0	1	0	0	25	0	0	25	0	0	25	25
4:07:00	2	0	0	2	0	0	50	0	0	50	0	0	50	50
4:07:30	2	0	0	1	0	0	50	0	0	25	0	0	50	25
4:08:00	1	0	0	1	0	0	25	0	0	25	0	0	25	25
4:08:30	1	0	0	1	0	0	25	0	0	25	0	0	25	25
4:09:00	1	0	0	3	0	0	25	0	0	75	0	0	25	75
4:09:30	0	0	0	3	0	0	0	0	0	75	0	0	0	75
4:10:00	2	0	0	2	0	0	50	0	0	50	0	0	50	50
4:10:30	0	0	0	0	1	0	0	0	0	0	45	0	0	45
4:11:00	2	0	0	1	0	0	50	0	0	25	0	0	50	25
4:11:30	1	0	0	1	0	0	25	0	0	25	0	0	25	25
4:12:00	1	0	0	1	0	0	25	0	0	25	0	0	25	25
4:12:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
4:13:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
4:13:30	2	0	0	2	0	0	50	0	0	50	0	0	50	50
4:14:00	3	0	0	3	0	0	75	0	0	75	0	0	75	75
4:14:30	2	0	0	4	0	0	50	0	0	100	0	0	50	100
4:15:00	1	0	0	1	0	0	25	0	0	25	0	0	25	25
4:15:30	3	0	0	0	0	0	75	0	0	0	0	0	75	0
4:16:00	3	0	0	1	0	0	75	0	0	25	0	0	75	25
4:16:30	2	0	0	1	0	0	50	0	0	25	0	0	50	25
4:17:00	1	0	0	1	0	0	25	0	0	25	0	0	25	25
4:17:30	0	0	0	2	0	0	0	0	0	50	0	0	0	50
4:18:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
4:18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:19:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:19:30	1	0	0	1	0	0	25	0	0	25	0	0	25	25
4:20:00	1	0	0	1	0	0	25	0	0	25	0	0	25	25
4:20:30	2	0	0	1	0	0	50	0	0	25	0	0	50	25
4:21:00	1	0	0	2	0	0	25	0	0	50	0	0	25	50
4:21:30	3	0	0	1	0	0	75	0	0	25	0	0	75	25
4:22:00	2	0	0	2	0	0	50	0	0	50	0	0	50	50
4:22:30	1	0	0	1	0	0	25	0	0	25	0	0	25	25
4:23:00	1	0	0	2	0	0	25	0	0	50	0	0	25	50
4:23:30	4	0	0	2	0	0	100	0	0	50	0	0	100	50
4:24:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
4:24:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
4:25:00	2	0	0	2	0	0	50	0	0	50	0	0	50	50
4:25:30	1	0	0	1	0	0	25	0	0	25	0	0	25	25
4:26:00	2	0	0	1	0	0	50	0	0	25	0	0	50	25
4:26:30	1	0	0	2	0	0	25	0	0	50	0	0	25	50
4:27:00	2	0	0	1	0	0	50	0	0	25	0	0	50	25
4:27:30	4	0	0	1	0	0	100	0	0	25	0	0	100	25
4:28:00	1	0	0	1	0	0	25	0	0	25	0	0	25	25
4:28:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
4:29:00	0	0	1	1	0	0	0	0	53	25	0	0	53	25
4:29:30	0	0	0	2	0	0	0	0	0	50	0	0	0	50
4:30:00	3	0	0	1	0	0	75	0	0	25	0	0	75	25
4:30:30	3	0	0	4	0	0	75	0	0	100	0	0	75	100
4:31:00	3	0	0	3	0	0	75	0	0	75	0	0	75	75
4:31:30	3	0	0	1	0	0	75	0	0	25	0	0	75	25
4:32:00	1	0	0	1	0	0	25	0	0	25	0	0	25	25
4:32:30	1	0	0	1	0	0	25	0	0	25	0	0	25	25
4:33:00	1	0	0	3	0	0	25	0	0	75	0	0	25	75
4:33:30	2	0	0	1	0	0	50	0	0	25	0	0	50	25
4:34:00	2	0	0	1	0	0	50	0	0	25	0	0	50	25
4:34:30	1	0	0	1	0	0	25	0	0	25	0	0	25	25
4:35:00	1	0	0	1	0	0	25	0	0	25	0	0	25	25
4:35:30	2	0	0	2	0	0	50	0	0	50	0	0	50	50
4:36:00	1	0	0	1	0	0	25	0	0	25	0	0	25	25
4:36:30	3	0	0	0	0	0	75	0	0	0	0	0	75	0
4:37:00	2	0	0	1	0	0	50	0	0	25	0	0	50	25
4:37:30	1	0	0	1	0	0	25	0	0	25	0	0	25	25
4:38:00	1	0	0	2	0	0	25	0	0	50	0	0	25	50
4:38:30	3	0	0	3	0	0	75	0	0	75	0	0	75	75
4:39:00	2	0	0	2	0	0	50	0	0	50	0	0	50	50
4:39:30	1	0	0	1	0	0	25	0	0	25	0	0	25	25
4:40:00	1	0	0	1	0	0	25	0	0	25	0	0	25	25
4:40:30	2	0	0	1	0	0	50	0	0	25	0	0	50	25
4:41:00	4	0	0	3	0	0	100	0	0	75	0	0	100	75
4:41:30	2	0	0	2	0	0	50	0	0	50	0	0	50	50
4:42:00	2	0	0	1	0	0	50	0	0	25	0	0	50	25
4:42:30	1	0	0	2	0	0	25	0	0	50	0	0	25	50
4:43:00	2	0	0	1	0	0	50	0	0	25	0	0	50	25
4:43:30	1	0	0	1	0	0	25	0	0	25	0	0	25	25
4:44:00	2	0	0	1	0	0	50	0	0	25	0	0	50	25
4:44:30	1	0	0	1	0	0	25	0	0	25	0	0	25	25
4:45:00	1	0	0	3	0	0	25	0	0	75	0	0	25	75
4:45:30	2	0	0	7	0	0	50	0	0	175	0	0	50	175
4:46:00	2	0	0	6	0	0	50	0	0	150	0	0	50	150
4:46:30	1	0	0	3	0	0	25	0	0	75	0	0	25	75
4:47:00	1	0	0	1	0	0	25	0	0	25	0	0	25	25
4:47:30	2	0	0	1	0	0	50	0	0	25	0	0	50	25
4:48:00	0	0	0	2	0	0	0	0	0	50	0	0	0	50
4:48:30	0	0	0	1	0	0	0	0	0	25	0	0	0	25
4:49:00	1	0	0	2	0	0	25	0	0	50	0	0	25	50
4:49:30	1	0	0	3	0	0	25	0	0	75	0	0	25	75
4:50:00	0	1	0	0	0	0	0	45	0	0	0	0	45	0
4:50:30	4	1	0	3	0	0	100	45	0	75	0	0	145	75
4:51:00	3	0	0	2	0	0	75	0	0	50	0	0	75	50
4:51:30	1	0	0	3	0	0	25	0	0	75	0	0	25	75
4:52:00	1	0	0	2	0	0	25	0	0	50	0	0	25	50
4:52:30	2	0	0	2	0	0	50	0	0	50	0	0	50	50
4:53:00	2	0	0	3	0	0	50	0	0	75	0	0	50	75
4:53:30	3	0	0	2	0	0	75	0	0	50	0	0	75	50
4:54:00	1	0	0	2	0	0	25	0	0	50	0	0	25	50
4:54:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
4:55:00	0	0	0	1	0	0	0	0	0	25	0	0	0	25
4:55:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
4:56:00	1	0	0	2	0	0	25	0	0	50	0	0	25	50
4:56:30	1	0	0	1	0	0	25	0	0	25	0	0	25	25
4:57:00	1	0	0	1	0	0	25	0	0	25	0	0	25	25
4:57:30	2	0	0	1	0	0	50	0	0	25	0	0	50	25
4:58:00	2	0	0	4	0	0	50	0	0	100	0	0	50	100
4:58:30	3	0	0	3	0	0	75	0	0	75	0	0	75	75
4:59:00	3	0	0	2	0	0	75	0	0	50	0	0	75	50
4:59:30	1	0	0	1	0	0	25	0	0	25	0	0	25	25

Average	39	39
Standard Deviation	25	29
95th Percentile	**75**	**76**
50th Percentile	**25**	**25**
Max Queue	**145**	**175**

WIS 167 & Country Aire
4:30 - 5:30 PM
South Leg

Time	Number of Vehicles in Queue			Queue Length (ft)			Total Queue Length (ft)	
	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis		
16:30:00	1	0	0	25	0	0	25	
16:30:30	1	0	0	25	0	0	25	
16:31:00	1	0	0	25	0	0	25	
16:31:30	0	0	0	0	0	0	0	
16:32:00	0	0	0	0	0	0	0	
16:32:30	0	0	0	0	0	0	0	
16:33:00	1	0	0	25	0	0	25	
16:33:30	0	0	0	0	0	0	0	
16:34:00	0	0	0	0	0	0	0	
16:34:30	3	0	0	75	0	0	75	*3 total cars on approach, 1 in RT flare
16:35:00	2	0	0	50	0	0	50	
16:35:30	1	0	0	25	0	0	25	
16:36:00	0	0	0	0	0	0	0	
16:36:30	1	0	0	25	0	0	25	
16:37:00	0	0	0	0	0	0	0	
16:37:30	1	0	0	25	0	0	25	
16:38:00	0	0	0	0	0	0	0	
16:38:30	0	0	0	0	0	0	0	
16:39:00	0	0	0	0	0	0	0	
16:39:30	0	0	0	0	0	0	0	
16:40:00	1	0	0	25	0	0	25	
16:40:30	0	0	0	0	0	0	0	
16:41:00	0	0	0	0	0	0	0	
16:41:30	0	0	0	0	0	0	0	
16:42:00	1	0	0	25	0	0	25	
16:42:30	0	0	0	0	0	0	0	
16:43:00	1	0	0	25	0	0	25	
16:43:30	1	0	0	25	0	0	25	
16:44:00	0	0	0	0	0	0	0	
16:44:30	0	0	0	0	0	0	0	
16:45:00	1	0	0	25	0	0	25	
16:45:30	1	0	0	25	0	0	25	
16:46:00	0	0	0	0	0	0	0	
16:46:30	0	0	0	0	0	0	0	
16:47:00	0	0	0	0	0	0	0	
16:47:30	0	0	0	0	0	0	0	
16:48:00	0	0	0	0	0	0	0	
16:48:30	0	0	0	0	0	0	0	
16:49:00	0	0	0	0	0	0	0	
16:49:30	0	0	0	0	0	0	0	
16:50:00	0	0	0	0	0	0	0	
16:50:30	0	0	0	0	0	0	0	
16:51:00	1	0	0	25	0	0	25	
16:51:30	0	0	0	0	0	0	0	
16:52:00	1	0	0	25	0	0	25	
16:52:30	1	0	0	25	0	0	25	
16:53:00	1	0	0	25	0	0	25	
16:53:30	0	0	0	0	0	0	0	
16:54:00	0	0	0	0	0	0	0	
16:54:30	1	0	0	25	0	0	25	
16:55:00	1	0	0	25	0	0	25	
16:55:30	1	0	0	25	0	0	25	
16:56:00	1	0	0	25	0	0	25	
16:56:30	1	0	0	25	0	0	25	
16:57:00	0	0	0	0	0	0	0	
16:57:30	3	0	0	75	0	0	75	
16:58:00	1	0	0	25	0	0	25	
16:58:30	1	0	0	25	0	0	25	
16:59:00	1	0	0	25	0	0	25	
16:59:30	0	0	0	0	0	0	0	
17:00:00	0	0	0	0	0	0	0	
17:00:30	2	0	0	50	0	0	50	
17:01:00	1	0	0	25	0	0	25	
17:01:30	0	0	0	0	0	0	0	
17:02:00	1	0	0	25	0	0	25	
17:02:30	0	0	0	0	0	0	0	
17:03:00	0	0	0	0	0	0	0	
17:03:30	0	0	0	0	0	0	0	
17:04:00	1	0	0	25	0	0	25	
17:04:30	0	0	0	0	0	0	0	
17:05:00	1	0	0	25	0	0	25	
17:05:30	1	0	0	25	0	0	25	
17:06:00	0	0	0	0	0	0	0	
17:06:30	1	0	0	25	0	0	25	
17:07:00	1	0	0	25	0	0	25	
17:07:30	1	0	0	25	0	0	25	
17:08:00	0	0	0	0	0	0	0	
17:08:30	1	0	0	25	0	0	25	
17:09:00	0	0	0	0	0	0	0	
17:09:30	1	0	0	25	0	0	25	
17:10:00	0	0	0	0	0	0	0	
17:10:30	0	0	0	0	0	0	0	
17:11:00	1	0	0	25	0	0	25	
17:11:30	0	0	0	0	0	0	0	
17:12:00	1	0	0	25	0	0	25	
17:12:30	1	0	0	25	0	0	25	
17:13:00	0	0	0	0	0	0	0	
17:13:30	0	0	0	0	0	0	0	
17:14:00	0	0	0	0	0	0	0	
17:14:30	1	0	0	25	0	0	25	
17:15:00	0	0	0	0	0	0	0	
17:15:30	0	0	0	0	0	0	0	
17:16:00	1	0	0	25	0	0	25	
17:16:30	1	0	0	25	0	0	25	
17:17:00	1	0	0	25	0	0	25	
17:17:30	0	0	0	0	0	0	0	
17:18:00	0	0	0	0	0	0	0	
17:18:30	1	0	0	25	0	0	25	
17:19:00	1	0	0	25	0	0	25	
17:19:30	2	0	0	50	0	0	50	
17:20:00	1	0	0	25	0	0	25	
17:20:30	0	0	0	0	0	0	0	
17:21:00	0	0	0	0	0	0	0	
17:21:30	0	0	0	0	0	0	0	
17:22:00	1	0	0	25	0	0	25	
17:22:30	1	0	0	25	0	0	25	
17:23:00	1	0	0	25	0	0	25	
17:23:30	3	0	0	75	0	0	75	
17:24:00	1	0	0	25	0	0	25	
17:24:30	0	0	0	0	0	0	0	
17:25:00	1	0	0	25	0	0	25	
17:25:30	1	0	0	25	0	0	25	
17:26:00	0	0	0	0	0	0	0	
17:26:30	1	0	0	25	0	0	25	
17:27:00	1	0	0	25	0	0	25	
17:27:30	1	0	0	25	0	0	25	
17:28:00	0	0	0	0	0	0	0	
17:28:30	1	0	0	25	0	0	25	
17:29:00	1	0	0	25	0	0	25	
17:29:30	0	0	0	0	0	0	0	

Average	15
Standard Deviation	17
95th Percentile	**26**
50th Percentile	**25**
Max Queue	**75**

WIS 67 & CTH Z
3:00 - 4:00 PM
West Leg

Time	Number of Vehicles in Queue			Queue Length (ft)			Total Queue Length (ft)	
	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis		
15:00:00	1	0	0	25	0	0	25	
15:00:30	0	0	0	0	0	0	0	
15:01:00	1	0	0	25	0	0	25	
15:01:30	1	0	0	25	0	0	25	
15:02:00	0	0	0	0	0	0	0	
15:02:30	0	0	0	0	0	0	0	
15:03:00	1	0	0	25	0	0	25	
15:03:30	2	0	0	50	0	0	50	
15:04:00	4	0	0	100	0	0	100	
15:04:30	2	0	0	50	0	0	50	
15:05:00	1	0	0	25	0	0	25	
15:05:30	0	0	0	0	0	0	0	
15:06:00	0	0	0	0	0	0	0	
15:06:30	1	0	0	25	0	0	25	
15:07:00	1	0	0	25	0	0	25	
15:07:30	1	0	0	25	0	0	25	
15:08:00	0	0	0	0	0	0	0	
15:08:30	1	0	0	25	0	0	25	
15:09:00	1	0	0	25	0	0	25	
15:09:30	1	0	0	25	0	0	25	
15:10:00	1	0	0	25	0	0	25	
15:10:30	1	0	0	25	0	0	25	
15:11:00	0	0	0	0	0	0	0	
15:11:30	0	0	0	0	0	0	0	
15:12:00	1	0	0	25	0	0	25	
15:12:30	0	0	0	0	0	0	0	
15:13:00	0	0	0	0	0	0	0	
15:13:30	0	0	0	0	0	0	0	
15:14:00	0	1	0	0	45	0	45	
15:14:30	1	0	0	25	0	0	25	
15:15:00	1	1	0	25	45	0	70	
15:15:30	1	2	0	25	90	0	115	
15:16:00	0	1	0	0	45	0	45	
15:16:30	0	0	0	0	0	0	0	
15:17:00	0	0	0	0	0	0	0	
15:17:30	0	0	0	0	0	0	0	
15:18:00	1	0	0	25	0	0	25	
15:18:30	1	0	0	25	0	0	25	
15:19:00	1	0	0	25	0	0	25	
15:19:30	1	0	0	25	0	0	25	
15:20:00	1	0	0	25	0	0	25	
15:20:30	1	0	0	25	0	0	25	
15:21:00	1	0	0	25	0	0	25	
15:21:30	1	0	0	25	0	0	25	
15:22:00	1	0	0	25	0	0	25	
15:22:30	1	0	0	25	0	0	25	
15:23:00	1	0	0	25	0	0	25	
15:23:30	2	0	0	50	0	0	50	
15:24:00	1	0	0	25	0	0	25	
15:24:30	0	0	0	0	0	0	0	
15:25:00	0	0	0	0	0	0	0	
15:25:30	0	0	0	0	0	0	0	
15:26:00	1	0	0	25	0	0	25	
15:26:30	0	0	0	0	0	0	0	
15:27:00	1	0	0	25	0	0	25	
15:27:30	1	0	0	25	0	0	25	
15:28:00	0	0	0	0	0	0	0	
15:28:30	0	0	0	0	0	0	0	
15:29:00	1	0	0	25	0	0	25	
15:29:30	1	0	0	25	0	0	25	
15:30:00	0	0	0	0	0	0	0	
15:30:30	1	0	0	25	0	0	25	
15:31:00	2	0	0	50	0	0	50	
15:31:30	2	0	0	50	0	0	50	
15:32:00	1	0	0	25	0	0	25	
15:32:30	0	0	0	0	0	0	0	
15:33:00	0	0	0	0	0	0	0	
15:33:30	0	0	0	0	0	0	0	
15:34:00	1	0	0	25	0	0	25	
15:34:30	0	0	0	0	0	0	0	
15:35:00	1	0	0	25	0	0	25	
15:35:30	3	0	0	75	0	0	75	
15:36:00	3	0	0	75	0	0	75	
15:36:30	1	0	0	25	0	0	25	
15:37:00	1	0	0	25	0	0	25	
15:37:30	1	0	0	25	0	0	25	
15:38:00	3	0	0	75	0	0	75	
15:38:30	5	0	0	125	0	0	125	
15:39:00	5	0	0	125	0	0	125	
15:39:30	8	0	0	200	0	0	200	
15:40:00	5	0	0	125	0	0	125	
15:40:30	7	0	0	175	0	0	175	
15:41:00	4	1	0	100	45	0	145	
15:41:30	1	1	0	25	45	0	70	
15:42:00	0	1	0	0	45	0	45	
15:42:30	4	1	0	100	45	0	145	
15:43:00	2	0	0	50	0	0	50	
15:43:30	1	0	0	25	0	0	25	
15:44:00	3	0	0	75	0	0	75	
15:44:30	1	0	0	25	0	0	25	
15:45:00	1	0	0	25	0	0	25	
15:45:30	2	0	0	50	0	0	50	
15:46:00	3	0	0	75	0	0	75	
15:46:30	6	0	0	150	0	0	150	
15:47:00	8	0	0	200	0	0	200	
15:47:30	8	0	0	200	0	0	200	
15:48:00	8	0	0	200	0	0	200	
15:48:30	8	0	0	200	0	0	200	
15:49:00	7	0	0	175	0	0	175	
15:49:30	6	0	0	150	0	0	150	
15:50:00	6	0	0	150	0	0	150	
15:50:30	7	0	0	175	0	0	175	
15:51:00	5	0	0	125	0	0	125	*6 veh total, 1 in flare
15:51:30	0	1	0	0	45	0	45	
15:52:00	1	0	0	25	0	0	25	
15:52:30	0	0	0	0	0	0	0	
15:53:00	1	0	0	25	0	0	25	
15:53:30	1	0	0	25	0	0	25	
15:54:00	0	0	0	0	0	0	0	
15:54:30	1	0	0	25	0	0	25	
15:55:00	1	0	0	25	0	0	25	
15:55:30	0	0	0	0	0	0	0	
15:56:00	1	0	0	25	0	0	25	
15:56:30	0	0	0	0	0	0	0	
15:57:00	3	0	0	75	0	0	75	
15:57:30	1	0	0	25	0	0	25	
15:58:00	0	0	0	0	0	0	0	
15:58:30	1	0	0	25	0	0	25	
15:59:00	1	0	0	25	0	0	25	
15:59:30	1	0	0	25	0	0	25	

Data points are best estimates based on the camera view obstruction.
Queues were at least the stated length.

Average	41
Standard Deviation	53
95th Percentile	**175**
50th Percentile	**25**
Max Queue	**200**

USH 51 & CTH B/AB
4:15 - 5:15 PM
West Leg

Movement	Number of Vehicles in Queue						Queue Length (ft)						Total Queue Length (ft)	
	RT			TH/LT			RT			TH/LT			RT	TH/LT
Time	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis		
16:15:00	2	0	0	1	0	0	50	0	0	25	0	0	50	25
16:15:30	3	0	0	1	0	0	75	0	0	25	0	0	75	25
16:16:00	8	0	0	1	0	0	200	0	0	25	0	0	200	25
16:16:30	7	0	0	0	0	0	175	0	0	0	0	0	175	0
16:17:00	4	0	0	0	0	0	100	0	0	0	0	0	100	0
16:17:30	4	0	0	0	0	0	100	0	0	0	0	0	100	0
16:18:00	2	0	0	0	0	0	50	0	0	0	0	0	50	0
16:18:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
16:19:00	4	0	0	2	0	0	100	0	0	50	0	0	100	50
16:19:30	3	0	0	2	0	0	75	0	0	50	0	0	75	50
16:20:00	1	0	0	2	0	0	25	0	0	50	0	0	25	50
16:20:30	1	0	0	1	0	0	25	0	0	25	0	0	25	25
16:21:00	1	0	0	1	0	0	25	0	0	25	0	0	25	25
16:21:30	2	0	0	1	0	0	50	0	0	25	0	0	50	25
16:22:00	2	0	0	1	0	0	50	0	0	25	0	0	50	25
16:22:30	2	0	0	1	0	0	50	0	0	25	0	0	50	25
16:23:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
16:23:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
16:24:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:24:30	2	0	0	0	0	0	50	0	0	0	0	0	50	0
16:25:00	2	0	0	1	0	0	50	0	0	25	0	0	50	25
16:25:30	2	0	0	0	0	0	50	0	0	0	0	0	50	0
16:26:00	1	0	0	1	0	0	25	0	0	25	0	0	25	25
16:26:30	2	0	0	2	0	0	50	0	0	50	0	0	50	50
16:27:00	1	0	0	1	0	0	25	0	0	25	0	0	25	25
16:27:30	1	0	0	1	0	0	25	0	0	25	0	0	25	25
16:28:00	2	0	0	1	0	0	50	0	0	25	0	0	50	25
16:28:30	2	0	0	0	0	0	50	0	0	0	0	0	50	0
16:29:00	0	0	0	1	0	0	0	0	0	25	0	0	0	25
16:29:30	1	0	0	1	0	0	25	0	0	25	0	0	25	25
16:30:00	2	0	0	1	0	0	50	0	0	25	0	0	50	25
16:30:30	1	0	0	1	0	0	25	0	0	25	0	0	25	25
16:31:00	2	0	0	0	0	0	50	0	0	0	0	0	50	0
16:31:30	2	0	0	1	0	0	50	0	0	25	0	0	50	25
16:32:00	1	0	0	1	0	0	25	0	0	25	0	0	25	25
16:32:30	3	0	0	0	0	0	75	0	0	0	0	0	75	0
16:33:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
16:33:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
16:34:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:34:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:35:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
16:35:30	2	0	0	1	0	0	50	0	0	25	0	0	50	25
16:36:00	6	0	0	1	0	0	150	0	0	25	0	0	150	25
16:36:30	5	0	0	0	0	0	125	0	0	0	0	0	125	0
16:37:00	2	0	0	0	0	0	50	0	0	0	0	0	50	0
16:37:30	4	0	0	1	0	0	100	0	0	25	0	0	100	25
16:38:00	3	0	0	1	0	0	75	0	0	25	0	0	75	25
16:38:30	3	0	0	1	0	0	75	0	0	25	0	0	75	25
16:39:00	3	0	0	1	0	0	75	0	0	25	0	0	75	25
16:39:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
16:40:00	2	0	0	1	0	0	50	0	0	25	0	0	50	25
16:40:30	2	0	0	1	0	0	50	0	0	25	0	0	50	25
16:41:00	2	0	0	1	0	0	50	0	0	25	0	0	50	25
16:41:30	1	0	0	1	0	0	25	0	0	25	0	0	25	25
16:42:00	3	0	0	1	0	0	75	0	0	25	0	0	75	25
16:42:30	2	0	0	0	0	0	50	0	0	0	0	0	50	0
16:43:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:43:30	3	0	0	1	0	0	75	0	0	25	0	0	75	25
16:44:00	1	0	0	2	0	0	25	0	0	50	0	0	25	50
16:44:30	2	0	0	1	0	0	50	0	0	25	0	0	50	25
16:45:00	1	0	0	1	0	0	25	0	0	25	0	0	25	25
16:45:30	2	0	0	1	0	0	50	0	0	25	0	0	50	25
16:46:00	2	0	0	1	0	0	50	0	0	25	0	0	50	25
16:46:30	1	0	0	1	0	0	25	0	0	25	0	0	25	25
16:47:00	4	0	0	1	0	0	100	0	0	25	0	0	100	25
16:47:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
16:48:00	1	0	0	1	0	0	25	0	0	25	0	0	25	25
16:48:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
16:49:00	6	0	0	1	0	0	150	0	0	25	0	0	150	25
16:49:30	8	0	0	1	0	0	200	0	0	25	0	0	200	25
16:50:00	6	0	0	0	0	0	150	0	0	0	0	0	150	0
16:50:30	5	0	0	1	0	0	125	0	0	25	0	0	125	25
16:51:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:51:30	6	0	0	2	0	0	150	0	0	50	0	0	150	50
16:52:00	1	0	0	2	0	0	25	0	0	50	0	0	25	50
16:52:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:53:00	2	0	0	0	0	0	50	0	0	0	0	0	50	0
16:53:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
16:54:00	2	0	0	1	0	0	50	0	0	25	0	0	50	25
16:54:30	2	0	0	0	0	0	50	0	0	0	0	0	50	0
16:55:00	0	0	0	1	0	0	0	0	0	25	0	0	0	25
16:55:30	1	0	0	1	0	0	25	0	0	25	0	0	25	25
16:56:00	3	0	0	1	0	0	75	0	0	25	0	0	75	25
16:56:30	5	0	0	0	0	0	125	0	0	0	0	0	125	0
16:57:00	3	0	0	0	0	0	75	0	0	0	0	0	75	0
16:57:30	3	0	0	0	0	0	75	0	0	0	0	0	75	0
16:58:00	5	0	0	1	0	0	125	0	0	25	0	0	125	25
16:58:30	7	0	0	0	0	0	175	0	0	0	0	0	175	0
16:59:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
16:59:30	3	0	0	1	0	0	75	0	0	25	0	0	75	25
17:00:00	3	0	0	1	0	0	75	0	0	25	0	0	75	25
17:00:30	2	0	0	0	0	0	50	0	0	0	0	0	50	0
17:01:00	3	0	0	0	0	0	75	0	0	0	0	0	75	0
17:01:30	4	0	0	1	0	0	100	0	0	25	0	0	100	25
17:02:00	4	0	0	1	0	0	100	0	0	25	0	0	100	25
17:02:30	4	0	0	0	0	0	100	0	0	0	0	0	100	0
17:03:00	1	0	0	1	0	0	25	0	0	25	0	0	25	25
17:03:30	1	0	0	1	0	0	25	0	0	25	0	0	25	25
17:04:00	0	0	0	1	0	0	0	0	0	25	0	0	0	25
17:04:30	0	0	0	1	0	0	0	0	0	25	0	0	0	25
17:05:00	2	0	0	0	0	0	50	0	0	0	0	0	50	0
17:05:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
17:06:00	2	0	0	1	0	0	50	0	0	25	0	0	50	25
17:06:30	1	0	0	1	0	0	25	0	0	25	0	0	25	25
17:07:00	5	0	0	0	0	0	125	0	0	0	0	0	125	0
17:07:30	4	0	0	0	0	0	100	0	0	0	0	0	100	0
17:08:00	2	0	0	1	0	0	50	0	0	25	0	0	50	25
17:08:30	2	0	0	1	0	0	50	0	0	25	0	0	50	25
17:09:00	1	0	0	1	0	0	25	0	0	25	0	0	25	25
17:09:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:10:00	2	0	0	0	0	0	50	0	0	0	0	0	50	0
17:10:30	2	0	0	1	0	0	50	0	0	25	0	0	50	25
17:11:00	2	0	0	0	0	0	50	0	0	0	0	0	50	0
17:11:30	3	0	0	1	0	0	75	0	0	25	0	0	75	25
17:12:00	4	0	0	1	0	0	100	0	0	25	0	0	100	25
17:12:30	5	0	0	0	0	0	125	0	0	0	0	0	125	0
17:13:00	4	0	0	1	0	0	100	0	0	25	0	0	100	25
17:13:30	1	0	0	1	0	0	25	0	0	25	0	0	25	25
17:14:00	6	0	0	0	0	0	150	0	0	0	0	0	150	0
17:14:30	2	0	0	0	0	0	50	0	0	0	0	0	50	0

Average	59	16
Standard Deviation	45	15
95th Percentile	**150**	**50**
50th Percentile	**50**	**25**
Max Queue	**200**	**50**

WIS 19 & Musket Ridge Dr
7:00 - 8:00 AM
North Leg

	Number of Vehicles in Queue						Queue Length (ft)						Total RT Queue (ft)	Total LT Queue (ft)
	RT			LT			RT			LT				
	Cars	Trucks/Buses	Semis	Cars	Trucks/Buses	Semis	Cars	rucks/Buse	Semis	Cars	rucks/Buse	Semis		
7:00:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:00:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:01:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:01:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:02:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:03:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:03:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:04:30	2	0	0	0	0	0	50	0	0	0	0	0	50	0
7:05:00	2	0	0	0	0	0	50	0	0	0	0	0	50	0
7:05:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:06:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:06:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:07:30	2	0	0	0	0	0	50	0	0	0	0	0	50	0
7:08:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:09:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:09:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:10:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:10:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:11:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:11:30	2	0	0	0	0	0	50	0	0	0	0	0	50	0
7:12:00	2	0	0	0	0	0	50	0	0	0	0	0	50	0
7:12:30	2	0	0	0	0	0	50	0	0	0	0	0	50	0
7:13:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:13:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:14:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:14:30	2	0	0	0	0	0	50	0	0	0	0	0	50	0
7:15:00	1	0	0	1	0	0	25	0	0	25	0	0	25	25
7:15:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:16:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:17:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:17:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:18:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:19:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:19:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:20:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:20:30	1	0	0	1	0	0	25	0	0	25	0	0	25	25
7:21:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:21:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:22:00	2	0	0	0	0	0	50	0	0	0	0	0	50	0
7:22:30	2	0	0	0	0	0	50	0	0	0	0	0	50	0
7:23:00	0	1	0	0	0	0	0	45	0	0	0	0	45	0
7:23:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:24:00	1	0	0	1	0	0	25	0	0	25	0	0	25	25
7:24:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:25:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:25:30	2	0	0	0	0	0	50	0	0	0	0	0	50	0
7:26:00	0	1	0	0	0	0	0	45	0	0	0	0	45	0
7:26:30	1	0	0	1	0	0	25	0	0	25	0	0	25	25
7:27:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:27:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:28:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:28:30	2	0	0	0	0	0	50	0	0	0	0	0	50	0
7:29:00	3	0	0	0	0	0	75	0	0	0	0	0	75	0
7:29:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:31:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:31:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:32:00	3	0	0	0	0	0	75	0	0	0	0	0	75	0
7:32:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:33:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:33:30	2	0	0	0	0	0	50	0	0	0	0	0	50	0
7:34:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:34:30	2	0	0	1	0	0	50	0	0	25	0	0	50	25
7:35:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:35:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:36:00	5	0	0	0	0	0	125	0	0	0	0	0	125	0
7:36:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:37:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:37:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:38:00	3	0	0	0	0	0	75	0	0	0	0	0	75	0
7:38:30	4	0	0	1	0	0	100	0	0	25	0	0	100	25
7:39:00	2	0	0	1	0	0	50	0	0	25	0	0	50	25
7:39:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:40:00	2	0	0	1	0	0	50	0	0	25	0	0	50	25
7:40:30	2	0	0	0	1	0	50	0	0	0	45	0	50	45
7:41:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:41:30	1	0	0	1	0	0	25	0	0	25	0	0	25	25
7:42:00	2	0	0	1	0	0	50	0	0	25	0	0	50	25
7:42:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:43:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:43:30	2	0	0	0	0	0	50	0	0	0	0	0	50	0
7:44:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:44:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:45:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:45:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:46:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:46:30	2	0	0	0	0	0	50	0	0	0	0	0	50	0
7:47:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:47:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:48:00	5	0	0	0	0	0	125	0	0	0	0	0	125	0
7:48:30	4	0	0	0	0	0	100	0	0	0	0	0	100	0
7:49:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:49:30	1	0	0	1	0	0	25	0	0	25	0	0	25	25
7:50:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:50:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:51:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:51:30	2	0	0	0	0	0	50	0	0	0	0	0	50	0
7:52:00	1	0	0	1	0	0	25	0	0	25	0	0	25	25
7:52:30	2	0	0	1	0	0	50	0	0	25	0	0	50	25
7:53:00	2	0	0	1	0	0	50	0	0	25	0	0	50	25
7:53:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:54:00	2	0	0	0	0	0	50	0	0	0	0	0	50	0
7:54:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:55:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:55:30	2	0	0	0	0	0	50	0	0	0	0	0	50	0
7:56:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:56:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:57:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:57:30	0	0	0	1	0	0	0	0	0	25	0	0	0	25
7:58:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:58:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:59:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:59:30	0	0	0	1	0	0	0	0	0	25	0	0	0	25

Average	30.75	3.708333
Standard Deviation	22.79475	9.33719
95th Percentile	**75**	**25**
50th Percentile	**25**	**0**
Max Queue	**125**	**45**

WIS 54 & Mason St/Lacount Rd
7:00 - 8:00 AM
South Leg

	Number of Vehicles in Queue						Queue Length (ft)						Total RT Queue (ft)	Total LT Queue (ft)
	RT			TH/LT			RT			LT				
	Cars	Trucks/Buses	Semis	Cars	Trucks/Buses	Semis	Cars	rucks/Buse	Semis	Cars	rucks/Buse	Semis		
7:00:00	1	0	0	1	0	0	25	0	0	25	0	0	25	25
7:00:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:01:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:01:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:02:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:02:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:03:00	0	0	0	1	0	0	0	0	0	25	0	0	0	25
7:03:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:04:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:04:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:05:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:05:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:06:00	2	0	0	0	0	0	50	0	0	0	0	0	50	0
7:06:30	2	0	0	0	0	0	50	0	0	0	0	0	50	0
7:07:00	3	0	0	2	0	0	75	0	0	50	0	0	75	50
7:07:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:08:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:08:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:09:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:09:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:10:00	1	0	0	1	0	0	25	0	0	25	0	0	25	25
7:10:30	2	0	0	0	0	0	50	0	0	0	0	0	50	0
7:11:00	4	0	0	0	0	0	100	0	0	0	0	0	100	0
7:11:30	4	0	0	0	0	0	100	0	0	0	0	0	100	0
7:12:00	2	0	0	0	0	0	50	0	0	0	0	0	50	0
7:12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:13:00	1	0	0	1	0	0	25	0	0	25	0	0	25	25
7:13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:14:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:14:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:15:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:15:30	0	0	0	0	1	0	0	0	0	0	45	0	0	45
7:16:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:16:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:17:00	1	1	0	0	0	0	25	45	0	0	0	0	70	0
7:17:30	2	0	0	0	0	0	50	0	0	0	0	0	50	0
7:18:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:18:30	2	0	0	0	0	0	50	0	0	0	0	0	50	0
7:19:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:19:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:20:00	1	0	0	1	0	0	25	0	0	25	0	0	25	25
7:20:30	2	0	0	0	0	0	50	0	0	0	0	0	50	0
7:21:00	1	0	0	1	0	0	25	0	0	25	0	0	25	25
7:21:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:22:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:22:30	0	0	0	1	0	0	0	0	0	25	0	0	0	25
7:23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:23:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:24:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:24:30	2	0	0	0	0	0	50	0	0	0	0	0	50	0
7:25:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:25:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:26:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:26:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:27:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:27:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:28:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:28:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:29:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:29:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:31:00	0	0	0	1	0	0	0	0	0	25	0	0	0	25
7:31:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:32:00	1	0	0	1	0	0	25	0	0	25	0	0	25	25
7:32:30	1	0	0	2	0	0	25	0	0	50	0	0	25	50
7:33:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:33:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:34:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:34:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:35:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:35:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:36:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:36:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:37:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:37:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:38:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:38:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:39:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:39:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:40:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:40:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:41:00	1	0	0	0	1	0	25	0	0	0	45	0	25	45
7:41:30	3	0	0	0	1	0	75	0	0	0	45	0	75	45
7:42:00	3	0	0	0	1	0	75	0	0	0	45	0	75	45
7:42:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:43:00	6	0	0	0	0	0	150	0	0	0	0	0	150	0
7:43:30	2	0	0	1	0	0	50	0	0	25	0	0	50	25
7:44:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:44:30	1	0	0	1	0	0	25	0	0	25	0	0	25	25
7:45:00	2	0	0	0	0	0	50	0	0	0	0	0	50	0
7:45:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:46:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:46:30	1	0	0	1	0	0	25	0	0	25	0	0	25	25
7:47:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:47:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:48:00	0	0	0	1	0	0	0	0	0	25	0	0	0	25
7:48:30	0	0	0	2	0	0	0	0	0	50	0	0	0	50
7:49:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:49:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:50:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:50:30	1	0	0	1	0	0	25	0	0	25	0	0	25	25
7:51:00	1	0	0	1	0	0	25	0	0	25	0	0	25	25
7:51:30	1	0	0	1	0	0	25	0	0	25	0	0	25	25
7:52:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:52:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:53:00	2	0	0	0	0	0	50	0	0	0	0	0	50	0
7:53:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:54:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:54:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:55:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:55:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:56:00	1	0	0	1	0	0	25	0	0	25	0	0	25	25
7:56:30	0	0	0	1	0	0	0	0	0	25	0	0	0	25
7:57:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:57:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:58:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:58:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
7:59:00	0	0	0	1	0	0	0	0	0	25	0	0	0	25
7:59:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0

Average	23.29167	6.708333
Standard Deviation	23.6705	13.61993
95th Percentile	**70.25**	**45**
50th Percentile	**25**	**0**
Max Queue	**150**	**50**

I-94 WB Ramp & CTH F
4:00 - 5:00 PM
East Leg

	Queue Length (ft)												Total RT Queue (ft)	Total LT Queue (ft)
	RT			LT			RT			LT				
	Cars	Trucks/Buses	Semis	Cars	Trucks/Buses	Semis	Cars	Trucks/Buses	Semis	Cars	Trucks/Buses	Semis		
16:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
16:01:00	1	0	0	1	0	0	25	0	0	25	0	0	25	25
16:01:30	1	0	0	1	0	0	25	0	0	25	0	0	25	25
16:02:00	1	0	0	1	0	0	25	0	0	25	0	0	25	25
16:02:30	1	0	0	2	0	0	25	0	0	50	0	0	25	50
16:03:00	1	0	0	3	0	0	25	0	0	75	0	0	25	75
16:03:30	0	0	0	3	0	0	0	0	0	75	0	0	0	75
16:04:00	0	0	0	1	0	0	0	0	0	25	0	0	0	25
16:04:30	1	0	0	3	0	0	25	0	0	75	0	0	25	75
16:05:00	1	0	0	1	0	0	25	0	0	25	0	0	25	25
16:05:30	1	0	0	1	0	0	25	0	0	25	0	0	25	25
16:06:00	1	0	0	2	0	0	25	0	0	50	0	0	25	50
16:06:30	1	0	0	2	0	0	25	0	0	50	0	0	25	50
16:07:00	1	0	0	1	0	0	25	0	0	25	0	0	25	25
16:07:30	1	0	0	1	1	0	25	0	0	25	45	0	25	70
16:08:00	1	0	0	3	0	0	25	0	0	75	0	0	25	75
16:08:30	1	0	0	2	0	0	25	0	0	50	0	0	25	50
16:09:00	1	0	0	3	1	0	25	0	0	75	45	0	25	120
16:09:30	1	0	0	3	1	0	25	0	0	75	45	0	25	120
16:10:00	0	0	0	3	1	0	0	0	0	75	45	0	0	120
16:10:30	0	0	0	3	0	0	0	0	0	75	0	0	0	75
16:11:00	1	0	0	2	0	0	25	0	0	50	0	0	25	50
16:11:30	0	0	0	4	0	0	0	0	0	100	0	0	0	100
16:12:00	1	0	0	4	0	0	25	0	0	100	0	0	25	100
16:12:30	1	0	0	3	0	0	25	0	0	75	0	0	25	75
16:13:00	0	0	0	1	0	0	0	0	0	25	0	0	0	25
16:13:30	1	0	0	6	0	0	25	0	0	150	0	0	25	150
16:14:00	1	0	0	7	0	0	25	0	0	175	0	0	25	175
16:14:30	0	0	0	5	1	0	0	0	0	125	45	0	0	170
16:15:00	0	1	0	4	0	0	0	45	0	100	0	0	45	100
16:15:30	2	0	0	3	0	0	50	0	0	75	0	0	50	75
16:16:00	1	0	0	5	0	0	25	0	0	125	0	0	25	125
16:16:30	1	0	0	6	0	0	25	0	0	150	0	0	25	150
16:17:00	0	0	0	5	0	0	0	0	0	125	0	0	0	125
16:17:30	0	0	0	3	0	0	0	0	0	75	0	0	0	75
16:18:00	1	0	0	1	0	0	25	0	0	25	0	0	25	25
16:18:30	0	0	0	1	0	0	0	0	0	25	0	0	0	25
16:19:00	0	0	0	4	0	0	0	0	0	100	0	0	0	100
16:19:30	1	0	0	3	0	0	25	0	0	75	0	0	25	75
16:20:00	0	0	0	1	0	0	0	0	0	25	0	0	0	25
16:20:30	0	0	0	1	0	0	0	0	0	25	0	0	0	25
16:21:00	2	0	0	1	0	0	50	0	0	25	0	0	50	25
16:21:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:22:00	1	0	0	1	0	0	25	0	0	25	0	0	25	25
16:22:30	1	0	0	1	0	0	25	0	0	25	0	0	25	25
16:23:00	0	0	0	1	0	0	0	0	0	25	0	0	0	25
16:23:30	1	0	0	2	0	0	25	0	0	50	0	0	25	50
16:24:00	0	0	0	2	0	0	0	0	0	50	0	0	0	50
16:24:30	1	0	0	2	0	0	25	0	0	50	0	0	25	50
16:25:00	1	0	0	1	0	0	25	0	0	25	0	0	25	25
16:25:30	3	0	0	0	1	0	75	0	0	0	45	0	75	45
16:26:00	0	0	0	3	1	0	0	0	0	75	45	0	0	120
16:26:30	1	0	0	1	0	0	25	0	0	25	0	0	25	25
16:27:00	1	0	0	1	0	0	25	0	0	25	0	0	25	25
16:27:30	0	0	0	1	0	0	0	0	0	25	0	0	0	25
16:28:00	0	0	0	3	0	0	0	0	0	75	0	0	0	75
16:28:30	1	0	0	2	0	0	25	0	0	50	0	0	25	50
16:29:00	1	0	0	1	0	0	25	0	0	25	0	0	25	25
16:29:30	0	0	0	1	0	0	0	0	0	25	0	0	0	25
16:30:00	1	0	0	1	0	0	25	0	0	25	0	0	25	25
16:30:30	1	0	0	4	0	0	25	0	0	100	0	0	25	100
16:31:00	2	0	0	3	0	0	50	0	0	75	0	0	50	75
16:31:30	1	0	0	3	0	0	25	0	0	75	0	0	25	75
16:32:00	1	0	0	5	0	0	25	0	0	125	0	0	25	125
16:32:30	1	0	0	3	1	0	25	0	0	75	45	0	25	120
16:33:00	1	0	0	5	1	0	25	0	0	125	45	0	25	170
16:33:30	2	0	0	3	0	0	50	0	0	75	0	0	50	75
16:34:00	0	0	0	2	0	0	0	0	0	50	0	0	0	50
16:34:30	0	0	0	1	0	0	0	0	0	25	0	0	0	25
16:35:00	1	0	0	1	0	0	25	0	0	25	0	0	25	25
16:35:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
16:36:00	0	0	0	0	1	0	0	0	0	0	45	0	0	45
16:36:30	1	0	0	1	0	0	25	0	0	25	0	0	25	25
16:37:00	0	0	0	1	0	0	0	0	0	25	0	0	0	25
16:37:30	1	0	0	2	0	0	25	0	0	50	0	0	25	50
16:38:00	0	0	0	4	0	0	0	0	0	100	0	0	0	100
16:38:30	2	0	0	3	0	0	50	0	0	75	0	0	50	75
16:39:00	1	0	0	1	0	0	25	0	0	25	0	0	25	25
16:39:30	1	0	0	6	0	0	25	0	0	150	0	0	25	150
16:40:00	1	0	0	7	0	0	25	0	0	175	0	0	25	175
16:40:30	1	0	0	3	0	0	25	0	0	75	0	0	25	75
16:41:00	1	0	0	3	0	0	25	0	0	75	0	0	25	75
16:41:30	2	0	0	1	0	0	50	0	0	25	0	0	50	25
16:42:00	0	0	0	1	0	0	0	0	0	25	0	0	0	25
16:42:30	1	0	0	5	0	0	25	0	0	125	0	0	25	125
16:43:00	1	0	0	2	0	0	25	0	0	50	0	0	25	50
16:43:30	0	0	0	1	0	0	0	0	0	25	0	0	0	25
16:44:00	1	0	0	2	0	0	25	0	0	50	0	0	25	50
16:44:30	1	0	0	1	0	0	25	0	0	25	0	0	25	25
16:45:00	1	0	0	4	0	0	25	0	0	100	0	0	25	100
16:45:30	2	0	0	4	0	0	50	0	0	100	0	0	50	100
16:46:00	1	0	0	6	0	0	25	0	0	150	0	0	25	150
16:46:30	0	0	0	3	0	0	0	0	0	75	0	0	0	75
16:47:00	1	0	0	3	0	0	25	0	0	75	0	0	25	75
16:47:30	0	0	0	3	0	0	0	0	0	75	0	0	0	75
16:48:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:48:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
16:49:00	0	0	0	2	1	0	0	0	0	50	45	0	0	95
16:49:30	2	0	0	4	0	0	50	0	0	100	0	0	50	100
16:50:00	0	0	0	2	0	0	0	0	0	50	0	0	0	50
16:50:30	1	0	0	1	0	0	25	0	0	25	0	0	25	25
16:51:00	1	0	0	1	0	0	25	0	0	25	0	0	25	25
16:51:30	1	0	0	1	0	0	25	0	0	25	0	0	25	25
16:52:00	1	0	0	2	1	0	25	0	0	50	45	0	25	95
16:52:30	1	0	0	3	1	0	25	0	0	75	45	0	25	120
16:53:00	0	0	1	3	1	0	0	0	53	75	45	0	53	120
16:53:30	1	0	0	1	0	0	25	0	0	25	0	0	25	25
16:54:00	3	0	0	1	0	0	75	0	0	25	0	0	75	25
16:54:30	1	0	0	2	0	0	25	0	0	50	0	0	25	50
16:55:00	1	0	0	3	0	0	25	0	0	75	0	0	25	75
16:55:30	1	0	0	7	0	0	25	0	0	175	0	0	25	175
16:56:00	1	0	0	6	0	0	25	0	0	150	0	0	25	150
16:56:30	0	0	0	3	0	0	0	0	0	75	0	0	0	75
16:57:00	3	0	0	6	0	0	75	0	0	150	0	0	75	150
16:57:30	1	0	0	4	0	0	25	0	0	100	0	0	25	100
16:58:00	0	1	0	1	0	0	0	45	0	25	0	0	45	25
16:58:30	1	0	0	1	0	0	25	0	0	25	0	0	25	25
16:59:00	1	0	0	1	0	0	25	0	0	25	0	0	25	25
16:59:30	0	0	0	2	0	0	0	0	0	50	0	0	0	50

Average	21.19167	65.25
Standard Deviation	16.95733	45.57684
95th Percentile	**50**	**150**
50th Percentile	**25**	**50**
Max Queue	**75**	**175**

WIS 57 & CTH K
4:00 - 5:00 PM
West Leg

	Number of Vehicles in Queue						Queue Length (ft)						Total RT Queue (ft)	Total LT Queue (ft)
	RT			LT			RT			LT				
	Cars	Trucks/Buses	Semis	Cars	Trucks/Buses	Semis	Cars	rucks/Buse	Semis	Cars	rucks/Buse	Semis		
16:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:01:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
16:02:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
16:02:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:03:30	0	0	0	1	0	0	0	0	0	25	0	0	0	25
16:04:00	1	0	0	1	0	0	25	0	0	25	0	0	25	25
16:04:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:05:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
16:05:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:06:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
16:06:30	1	0	0	1	0	0	25	0	0	25	0	0	25	25
16:07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:08:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
16:09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:09:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:11:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
16:11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:16:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
16:17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:17:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
16:18:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
16:18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:19:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
16:19:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:20:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:20:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:21:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
16:21:30	0	0	0	1	0	0	0	0	0	25	0	0	0	25
16:22:00	1	0	0	1	0	0	25	0	0	25	0	0	25	25
16:22:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
16:23:00	0	0	0	1	0	0	0	0	0	25	0	0	0	25
16:23:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:24:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:24:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:25:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
16:25:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:26:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
16:26:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:27:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:27:30	1	0	0	1	0	0	25	0	0	25	0	0	25	25
16:28:00	0	0	0	1	0	0	0	0	0	25	0	0	0	25
16:28:30	1	0	0	1	0	0	25	0	0	25	0	0	25	25
16:29:00	2	0	0	0	0	0	50	0	0	0	0	0	50	0
16:29:30	0	0	0	2	0	0	0	0	0	50	0	0	0	50
16:30:00	0	0	0	2	0	0	0	0	0	50	0	0	0	50
16:30:30	0	0	0	1	0	0	0	0	0	25	0	0	0	25
16:31:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:31:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:32:00	0	0	0	1	0	0	0	0	0	25	0	0	0	25
16:32:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:33:00	0	0	0	1	0	0	0	0	0	25	0	0	0	25
16:33:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:34:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:34:30	1	0	0	1	0	0	25	0	0	25	0	0	25	25
16:35:00	0	0	0	1	0	0	0	0	0	25	0	0	0	25
16:35:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:36:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
16:36:30	0	0	0	2	0	0	0	0	0	50	0	0	0	50
16:37:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:37:30	0	0	0	1	0	0	0	0	0	25	0	0	0	25
16:38:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:38:30	0	0	0	1	0	0	0	0	0	25	0	0	0	25
16:39:00	0	0	0	1	0	0	0	0	0	25	0	0	0	25
16:39:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
16:40:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:40:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
16:41:00	1	0	0	1	0	0	25	0	0	25	0	0	25	25
16:41:30	0	0	0	1	0	0	0	0	0	25	0	0	0	25
16:42:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:42:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:43:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:43:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
16:44:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
16:44:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
16:45:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
16:45:30	0	0	0	1	0	0	0	0	0	25	0	0	0	25
16:46:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:46:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
16:47:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:47:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
16:48:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:48:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:49:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:49:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
16:50:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:50:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:51:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:51:30	1	0	0	0	0	0	25	0	0	0	0	0	25	0
16:52:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:52:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:53:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:53:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:54:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:54:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:55:00	0	0	0	1	0	0	0	0	0	25	0	0	0	25
16:55:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:56:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:56:30	3	1	0	0	0	0	75	45	0	0	0	0	120	0
16:57:00	2	0	0	0	0	0	50	0	0	0	0	0	50	0
16:57:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:58:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:58:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:59:00	1	0	0	0	0	0	25	0	0	0	0	0	25	0
16:59:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Notes

Four vehciles were observed making two-stage left-turns in the median during the analysis hour.

Average	8.708333	5.625
Standard Deviation	16.12055	11.89171
95th Percentile	**25**	**25**
50th Percentile	**0**	**0**
Max Queue	**120**	**50**

Queue Video Data
WIS 38 Signalized Corridor

WIS 38 & Drexel
4:30 - 5:30 PM
Northern Queue

Movement		Number of Vehicles in Queue																Queue Length (ft)																Total Queue Length (ft)					
		LT			LT			TH			TH			TH			RT			LT			LT			TH			TH			TH			RT							
Time	Cycle #	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	LT 1	LT 2	TH 1	TH 2	TH 3	RT
4:30:00 PM	1	6	0	0	1	0	0	12	0	0	10	0	0	3	0	0	3	0	0	150	0	0	25	0	0	300	0	0	250	0	0	75	0	0	75	0	0	150	25	300	250	75	75
4:31:50 PM	2	3	0	0	3	0	0	13	0	0	10	0	0	6	0	0	0	1	0	75	0	0	75	0	0	325	0	0	250	0	0	150	0	0	0	25	0	75	75	325	250	150	25
4:33:30 PM	3	5	0	0	3	0	0	12	0	0	9	0	0	3	0	0	0	0	0	125	0	0	75	0	0	300	0	0	225	0	0	75	0	0	0	0	0	125	75	300	225	75	0
4:36:00 PM	4	1	0	0	0	0	0	17	0	0	8	0	0	3	1	0	0	0	0	25	0	0	0	0	0	425	0	0	200	0	0	75	25	0	0	0	0	25	0	425	200	100	0
4:38:00 PM	5	3	0	0	0	0	0	12	0	0	6	0	0	6	0	0	1	0	0	75	0	0	0	0	0	300	0	0	150	0	0	150	0	0	25	0	0	75	0	300	150	150	25
4:40:30 PM	6	8	0	0	2	0	0	9	0	0	13	0	0	4	0	0	0	0	0	200	0	0	50	0	0	225	0	0	325	0	0	100	0	0	0	0	0	200	50	225	325	100	0
4:42:30 PM	7	4	0	0	2	0	0	14	0	0	10	0	0	6	0	0	0	0	0	100	0	0	50	0	0	350	0	0	250	0	0	150	0	0	0	0	0	100	50	350	250	150	0
4:44:30 PM	8	3	0	0	0	1	0	12	0	0	13	0	0	2	0	0	0	0	0	75	0	0	0	25	0	300	0	0	325	0	0	50	0	0	0	0	0	75	25	300	325	50	0
4:46:30 PM	9	3	0	0	0	0	0	13	0	0	6	1	0	4	0	0	2	0	0	75	0	0	0	0	0	325	0	0	150	25	0	100	0	0	50	0	0	75	0	325	175	100	50
4:48:30 PM	10	5	0	0	1	0	0	11	0	0	10	0	0	5	0	0	1	0	0	125	0	0	25	0	0	275	0	0	250	0	0	125	0	0	25	0	0	125	25	275	250	125	25
4:51:00 PM	11	8	0	0	2	0	0	12	0	0	10	0	0	1	0	0	2	0	0	200	0	0	50	0	0	300	0	0	250	0	0	25	0	0	50	0	0	200	50	300	250	25	50
4:53:00 PM	12	0	0	0	1	0	0	2	0	0	3	0	0	3	0	0	0	0	0	0	0	0	25	0	0	50	0	0	75	0	0	75	0	0	0	0	0	0	25	50	75	75	0
4:55:00 PM	13	2	0	0	2	0	0	6	0	0	7	0	0	6	0	0	4	0	0	50	0	0	50	0	0	150	0	0	175	0	0	150	0	0	100	0	0	50	50	150	175	150	100
4:57:30 PM	14	4	0	0	3	0	0	8	0	0	7	0	1	3	0	0	0	0	0	100	0	0	75	0	0	200	0	0	175	0	25	75	0	0	0	0	0	100	75	200	200	75	0
4:59:30 PM	15	4	0	0	0	0	0	6	0	0	9	0	0	4	0	0	1	0	0	100	0	0	0	0	0	150	0	0	225	0	0	100	0	0	25	0	0	100	0	150	225	100	25
5:01:30 PM	16	3	0	0	0	0	0	7	0	0	4	0	1	3	0	0	0	0	0	75	0	0	0	0	0	175	0	0	100	0	25	75	0	0	0	0	0	75	0	175	125	75	0
5:03:30 PM	17	2	0	0	0	0	0	7	0	0	6	0	0	7	0	0	0	0	0	50	0	0	0	0	0	175	0	0	150	0	0	175	0	0	0	0	0	50	0	175	150	175	0
5:06:00 PM	18	7	0	0	1	0	0	10	0	0	10	0	0	7	0	0	2	0	0	175	0	0	25	0	0	250	0	0	250	0	0	175	0	0	50	0	0	175	25	250	250	175	50
5:08:00 PM	19	1	0	0	0	0	0	10	0	0	10	0	0	6	0	0	0	0	0	25	0	0	0	0	0	250	0	0	250	0	0	150	0	0	0	0	0	25	0	250	250	150	0
5:10:00 PM	20	3	0	0	2	0	0	13	0	0	13	0	0	4	0	0	0	0	0	75	0	0	50	0	0	325	0	0	325	0	0	100	0	0	0	0	0	75	50	325	325	100	0
5:13:00 PM	21	5	0	0	3	0	0	10	0	0	10	0	0	3	0	0	3	0	0	125	0	0	75	0	0	250	0	0	250	0	0	75	0	0	75	0	0	125	75	250	250	75	75
5:15:00 PM	22	1	0	0	1	0	0	10	0	0	10	0	0	5	0	0	1	0	0	25	0	0	25	0	0	250	0	0	250	0	0	125	0	0	25	0	0	25	25	250	250	125	25
5:16:30 PM	23	4	0	0	0	0	0	10	0	0	6	0	0	4	0	0	0	0	0	100	0	0	0	0	0	250	0	0	150	0	0	100	0	0	0	0	0	100	0	250	150	100	0
5:19:00 PM	24	4	0	0	0	0	0	10	0	0	10	0	0	5	0	0	0	0	0	100	0	0	0	0	0	250	0	0	250	0	0	125	0	0	0	0	0	100	0	250	250	125	0
5:21:00 PM	25	4	0	0	1	0	0	10	0	0	10	0	0	3	0	0	0	0	0	100	0	0	25	0	0	250	0	0	250	0	0	75	0	0	0	0	0	100	25	250	250	75	0
5:23:30 PM	26	4	0	0	2	0	0	10	0	0	10	0	0	9	0	0	3	0	0	100	0	0	50	0	0	250	0	0	250	0	0	225	0	0	75	0	0	100	50	250	250	225	75
5:25:30 PM	27	3	0	0	1	0	0	12	0	0	8	0	0	3	0	0	2	0	0	75	0	0	25	0	0	300	0	0	200	0	0	75	0	0	50	0	0	75	25	300	200	75	50
5:28:00 PM	28	2	0	0	1	0	0	10	0	0	6	1	0	5	0	0	0	0	0	50	0	0	25	0	0	250	0	0	150	25	0	125	0	0	0	0	0	50	25	250	175	125	0

Data points are best estimates based on the camera angle and video quality. Queues were at least the stated length.

Average	91	29	257	221	111	23
Standard Deviation	50	26	74	60	44	30
95th Percentile	191	75	341	325	175	75
50th Percentile	88	25	250	250	100	0
Max Queue	200	75	425	325	225	100

95th Percentile (ft)	191	341	75
50th Percentile (ft)	88	250	0
Max Queue	200	425	100

WIS 38 & Town Square Way/Susan
4:30 - 5:30 PM
Northern Queue

Movement		Number of Vehicles in Queue																Queue Length (ft)																Total Queue Length (ft)				
		LT			TH			TH			TH			RT			LT			TH			TH			TH			RT								
Time	Cycle #	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	LT	TH 1	TH 2	TH 3	RT
4:30:00 PM	1	0	0	0	3	0	0	4	0	0	1	0	0	0	0	0	0	0	0	75	0	0	100	0	0	25	0	0	0	0	0	0	75	100	25	0
4:32:50 PM	2	2	0	0	11	0	0	4	0	0	1	0	0	0	0	0	50	0	0	275	0	0	100	0	0	25	0	0	0	0	0	50	275	100	25	0
4:35:00 PM	3	0	0	0	4	0	0	3	0	0	0	0	0	0	0	0	0	0	0	100	0	0	75	0	0	0	0	0	0	0	0	0	100	75	0	0
4:36:30 PM	4	0	0	0	1	0	0	4	0	0	2	0	0	0	0	0	0	0	0	25	0	0	100	0	0	50	0	0	0	0	0	0	25	100	50	0
4:38:30 PM	5	0	0	0	6	0	0	6	0	0	2	1	0	0	0	0	0	0	0	150	0	0	150	0	0	50	25	0	0	0	0	0	150	150	75	0
4:41:00 PM	6	0	0	0	8	0	0	5	0	0	2	0	0	1	0	0	0	0	0	200	0	0	125	0	0	50	0	0	25	0	0	0	200	125	50	25
4:43:00 PM	7	1	0	0	5	0	0	4	0	0	3	0	0	3	0	0	25	0	0	125	0	0	100	0	0	75	0	0	75	0	0	25	125	100	75	75
4:45:00 PM	8	0	0	0	4	0	0	5	0	0	3	0	0	0	0	0	0	0	0	100	0	0	125	0	0	75	0	0	0	0	0	0	100	125	75	0
4:47:30 PM	9	0	0	0	2	0	0	1	0	0	0	0	0	2	0	0	0	0	0	50	0	0	25	0	0	0	0	0	50	0	0	0	50	25	0	50
4:49:30 PM	10	0	0	0	3	0	0	1	1	0	3	0	0	0	0	0	0	0	0	75	0	0	25	25	0	75	0	0	0	0	0	0	75	50	75	0
4:51:30 PM	11	0	0	0	2	0	0	7	0	0	2	0	0	2	0	0	0	0	0	50	0	0	175	0	0	50	0	0	50	0	0	0	50	175	50	50
4:54:00 PM	12	0	0	0	4	0	0	3	0	0	0	0	0	0	0	0	0	0	0	100	0	0	75	0	0	0	0	0	0	0	0	0	100	75	0	0
4:55:30 PM	13	0	0	0	5	0	0	3	0	0	1	0	0	0	0	0	0	0	0	125	0	0	75	0	0	25	0	0	0	0	0	0	125	75	25	0
4:58:00 PM	14	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	25	0	0	25	0	0	0	0	0	0	0	25	25	0
4:59:30 PM	15	1	0	0	10	0	0	10	0	0	5	0	0	0	0	0	25	0	0	250	0	0	250	0	0	125	0	0	0	0	0	25	250	250	125	0
5:03:30 PM	16	0	0	0	6	0	0	3	0	1	1	0	0	0	0	0	0	0	0	150	0	0	75	0	25	25	0	0	0	0	0	0	150	100	25	0
5:06:00 PM	17	0	0	0	10	0	0	8	0	0	5	0	0	3	0	0	0	0	0	250	0	0	200	0	0	125	0	0	75	0	0	0	250	200	125	75
5:08:00 PM	18	0	0	0	10	0	0	10	0	0	6	0	0	0	0	0	0	0	0	250	0	0	250	0	0	150	0	0	0	0	0	0	250	250	150	0
5:11:00 PM	19	1	0	0	3	0	1	4	0	0	1	0	0	1	0	0	25	0	0	75	0	25	100	0	0	25	0	0	25	0	0	25	100	100	25	25
5:13:00 PM	20	0	0	0	6	0	0	3	0	0	2	0	0	0	0	0	0	0	0	150	0	0	75	0	0	50	0	0	0	0	0	0	150	75	50	0
5:17:30 PM	21	1	0	0	7	0	0	4	0	0	2	0	0	0	0	0	25	0	0	175	0	0	100	0	0	50	0	0	0	0	0	25	175	100	50	0
5:20:00 PM	22	1	0	0	5	0	0	5	0	0	0	0	0	0	0	0	25	0	0	125	0	0	125	0	0	0	0	0	0	0	0	25	125	125	0	0
5:22:00 PM	23	0	0	0	5	0	0	8	0	0	3	0	0	0	0	0	0	0	0	125	0	0	200	0	0	75	0	0	0	0	0	0	125	200	75	0
5:24:00 PM	24	1	0	0	7	0	0	1	0	0	1	0	0	0	0	0	25	0	0	175	0	0	25	0	0	25	0	0	0	0	0	25	175	25	25	0
5:26:30 PM	25	0	0	0	10	0	0	4	0	0	3	0	0	0	0	0	0	0	0	250	0	0	100	0	0	75	0	0	0	0	0	0	250	100	75	0
5:28:30 PM	26	0	0	0	3	0	0	2	0	0	2	0	0	0	0	0	0	0	0	75	0	0	50	0	0	50	0	0	0	0	0	0	75	50	50	0

Data points are best estimates based on the camera angle and video quality. Queues were at least the stated length.

Notes

*lanes became so long that they were indistinguishable with camera quality. Lights blurred

	LT	TH 1	TH 2	TH 3	RT
Average	8	136	111	51	12
Standard Deviation	14	75	62	40	24
95th Percentile	25	250	238	125	69
50th Percentile	0	125	100	50	0
Max Queue	50	275	250	150	75

95th Percentile (ft)	25	250	69
50th Percentile (ft)	0	125	0
Max Queue	50	275	75

WIS 38 & Forest Hill
4:30 - 5:30 PM
Northern Queue

Movement		Number of Vehicle in Queue																Queue Length (ft)																Total Queue Length (ft)				
		LT			TH			TH			TH			RT			LT			TH			TH			TH			RT									
Time	Cycle #	Cars	Trucks/Buses	Semis	Cars	Trucks/Buses	Semis	Cars	Trucks/Buses	Semis	Cars	Trucks/Buses	Semis	Cars	Trucks/Buses	Semis	Cars	rucks/Buse	Semis	Cars	rucks/Buse	Semis	Cars	rucks/Buse	Semis	Cars	rucks/Buse	Semis	Cars	rucks/Buse	Semis	LT	TH 1	TH 2	TH 3	RT
4:32:00 PM	1	1	0	0	7	0	0	3	0	0	0	0	0	2	0	0	25	0	0	175	0	0	75	0	0	0	0	0	50	0	0	25	175	75	0	50
4:34:00 PM	2	0	0	0	5	0	0	3	0	0	2	0	0	0	0	0	0	0	0	125	0	0	75	0	0	50	0	0	0	0	0	0	125	75	50	0
4:37:00 PM	3	2	0	0	3	0	0	5	0	0	1	0	0	0	0	0	50	0	0	75	0	0	125	0	0	25	0	0	0	0	0	50	75	125	25	0
4:39:00 PM	4	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	0	0	0	0	0	0	0	0	0	0	0	0	25	0	0	0
4:41:00 PM	5	0	0	0	3	0	0	2	0	0	0	0	0	0	0	0	0	0	0	75	0	0	50	0	0	0	0	0	0	0	0	0	75	50	0	0
4:43:30 PM	6	1	0	0	5	0	0	4	0	0	0	0	0	0	0	0	25	0	0	125	0	0	100	0	0	0	0	0	0	0	0	25	125	100	0	0
4:45:00 PM	7	2	0	0	12	0	0	3	0	0	0	0	0	0	0	0	50	0	0	300	0	0	75	0	0	0	0	0	0	0	0	50	300	75	0	0
4:47:30 PM	8	1	0	0	4	0	0	3	0	0	0	0	0	0	0	0	25	0	0	100	0	0	75	0	0	0	0	0	0	0	0	25	100	75	0	0
4:49:30 PM	9	0	0	0	9	0	0	6	1	0	2	0	0	0	0	0	0	0	0	225	0	0	150	25	0	50	0	0	0	0	0	0	225	175	50	0
4:51:30 PM	10	0	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	50	0	0	25	0	0	0	0	0	0	0	0	0	50	25	0	0
4:54:00 PM	11	0	0	0	2	0	0	1	0	0	1	0	0	0	0	0	0	0	0	50	0	0	25	0	0	25	0	0	0	0	0	0	50	25	25	0
4:56:30 PM	12	3	0	0	4	0	0	4	0	0	0	0	0	0	0	0	75	0	0	100	0	0	100	0	0	0	0	0	0	0	0	75	100	100	0	0
4:58:30 PM	13	0	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	50	0	0	25	0	0	0	0	0	0	0	0	0	50	25	0	0
5:00:30 PM	14	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	75	0	0	75	0	0	0	0	0	0	0	0	0	75	75	0	0
5:03:00 PM	15	0	0	0	4	0	0	1	0	0	1	0	0	0	0	0	0	0	0	100	0	0	25	0	0	25	0	0	0	0	0	0	100	25	25	0
5:07:30 PM	16	5	0	0	1	1	0	3	0	0	0	0	0	0	0	0	125	0	0	25	25	0	75	0	0	0	0	0	0	0	0	125	50	75	0	0
5:09:30 PM	17	1	0	0	10	0	0	10	0	0	4	0	0	0	0	0	25	0	0	250	0	0	250	0	0	100	0	0	0	0	0	25	250	250	100	0
5:11:00 PM	18	2	0	0	10	0	0	10	1	0	1	0	0	0	0	0	50	0	0	250	0	0	250	25	0	25	0	0	0	0	0	50	250	275	25	0
5:14:00 PM	19	5	0	0	6	0	0	10	0	0	3	0	0	0	0	0	125	0	0	150	0	0	250	0	0	75	0	0	0	0	0	125	150	250	75	0
5:15:30 PM	20	0	0	0	4	0	0	3	0	0	0	0	0	0	0	0	0	0	0	100	0	0	75	0	0	0	0	0	0	0	0	0	100	75	0	0
5:18:00 PM	21	0	0	0	10	0	0	8	0	0	0	0	0	0	0	0	0	0	0	250	0	0	200	0	0	0	0	0	0	0	0	0	250	200	0	0
5:20:00 PM	22	1	0	0	4	0	0	3	0	0	0	0	0	0	0	0	25	0	0	100	0	0	75	0	0	0	0	0	0	0	0	25	100	75	0	0
5:22:30 PM	23	0	0	0	1	0	0	2	0	0	1	0	0	0	0	0	0	0	0	25	0	0	50	0	0	25	0	0	0	0	0	0	25	50	25	0
5:24:30 PM	24	0	0	0	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	250	0	0	250	0	0	0	0	0	0	0	0	0	250	250	0	0
5:27:30 PM	25	0	0	0	4	0	0	10	0	0	3	0	0	0	0	0	0	0	0	100	0	0	250	0	0	75	0	0	0	0	0	0	100	250	75	0
5:29:30 AM	26	0	0	0	10	0	0	4	0	0	0	0	0	0	0	0	0	0	0	250	0	0	100	0	0	0	0	0	0	0	0	0	250	100	0	0

Data points are best estimates based on the camera angle and video quality. Queues were at least the stated length.

Notes

*lanes became so long that they were indistinguishable with camera quality. Lights blurred

	LT	TH 1	TH 2	TH 3	RT
Average	23	132	111	18	2
Standard Deviation	37	84	84	29	10
95th Percentile	**113**	**250**	**250**	**75**	**0**
50th Percentile	**0**	**100**	**75**	**0**	**0**
Max Queue	**125**	**300**	**275**	**100**	**50**

95th Percentile (ft)	113	250	0
50th Percentile (ft)	0	100	0
Max Queue	125	300	0

WIS 38 & Puetz
4:30 - 5:30 PM
Northern Queue

Movement		Number of Vehicles in Queue																Queue Length (ft)															Queue Length (ft)				
		LT			LT			TH			TH			RT				LT			LT			TH			TH			RT							
Time	Cycle #	Cars	Trucks/Buses	Semis	Cars	Trucks/Buses	Semis	Cars	Trucks/Buses	Semis	Cars	Trucks/Buses	Semis	Cars	Trucks/Buses	Semis	Cars	rucks/Buse	Semis	Cars	rucks/Buse	Semis	Cars	rucks/Buse	Semis	Cars	rucks/Buse	Semis	Cars	rucks/Buse	Semis	LT 1	LT 2	TH 1	TH 2	RT
4:30:00 PM	1	3	0	0	3	0	0	8	0	0	12	0	0	0	0	0	75	0	0	75	0	0	200	0	0	300	0	0	0	0	0	75	75	200	300	0
4:32:30 PM	2	7	0	0	7	0	0	5	0	0	8	0	0	0	0	0	175	0	0	175	0	0	125	0	0	200	0	0	0	0	0	175	175	125	200	0
4:35:00 PM	3	0	0	0	2	0	0	10	0	0	10	0	0	0	0	0	0	0	0	50	0	0	250	0	0	250	0	0	0	0	0	0	50	250	250	0
4:37:00 PM	4	5	0	0	6	0	0	11	0	0	3	0	0	0	0	0	125	0	0	150	0	0	275	0	0	75	0	0	0	0	0	125	150	275	75	0
4:39:30 PM	5	4	0	0	5	0	0	11	0	0	10	1	0	0	0	0	100	0	0	125	0	0	275	0	0	250	25	0	0	0	0	100	125	275	275	0
4:41:30 PM	6	6	0	0	4	0	0	8	0	0	10	0	0	0	0	0	150	0	0	100	0	0	200	0	0	250	0	0	0	0	0	150	100	200	250	0
4:43:30 PM	7	5	0	0	6	0	0	9	0	0	11	0	0	0	0	0	125	0	0	150	0	0	225	0	0	275	0	0	0	0	0	125	150	225	275	0
4:45:30 PM	8	4	0	0	1	0	0	10	0	0	10	0	0	1	0	0	100	0	0	25	0	0	250	0	0	250	0	0	25	0	0	100	25	250	250	25
4:48:30 PM	9	5	0	0	1	0	0	10	0	0	10	0	0	0	0	0	125	0	0	25	0	0	250	0	0	250	0	0	0	0	0	125	25	250	250	0
4:51:00 PM	10	7	0	0	4	0	0	10	0	0	10	0	0	0	0	0	175	0	0	100	0	0	250	0	0	250	0	0	0	0	0	175	100	250	250	0
4:54:00 PM	11	4	0	0	4	0	0	10	0	0	10	0	0	0	0	0	100	0	0	100	0	0	250	0	0	250	0	0	0	0	0	100	100	250	250	0
4:56:00 PM	12	0	0	0	2	0	0	10	0	0	10	0	0	0	0	0	0	0	0	50	0	0	250	0	0	250	0	0	0	0	0	0	50	250	250	0
4:58:30 PM	13	6	0	0	4	0	0	2	0	0	9	0	0	0	0	0	150	0	0	100	0	0	50	0	0	225	0	0	0	0	0	150	100	50	225	0
5:01:00 PM	14	3	0	0	0	0	0	7	0	0	3	0	2	0	0	0	75	0	0	0	0	0	175	0	0	75	0	50	0	0	0	75	0	175	125	0
5:03:00 PM	15	2	0	0	0	0	0	10	0	0	10	0	0	0	0	0	50	0	0	0	0	0	250	0	0	250	0	0	0	0	0	50	0	250	250	0
5:05:00 PM	16	3	0	0	6	0	0	10	0	0	10	0	1	0	0	0	75	0	0	150	0	0	250	0	0	250	0	25	0	0	0	75	150	250	275	0
5:07:30 PM	17	3	0	0	4	0	0	10	0	0	10	0	0	0	0	0	75	0	0	100	0	0	250	0	0	250	0	0	0	0	0	75	100	250	250	0
5:11:00 PM	18	0	0	0	2	0	0	10	0	0	10	0	0	0	0	0	0	0	0	50	0	0	250	0	0	250	0	0	0	0	0	0	50	250	250	0
5:13:00 PM	19	5	0	0	1	0	0	10	0	0	10	0	0	0	0	0	125	0	0	25	0	0	250	0	0	250	0	0	0	0	0	125	25	250	250	0
5:15:00 PM	20	4	0	0	3	0	0	10	0	0	10	0	0	4	0	0	100	0	0	75	0	0	250	0	0	250	0	0	100	0	0	100	75	250	250	100
5:18:00 PM	21	2	0	0	2	0	0	10	0	0	10	0	0	0	0	0	50	0	0	50	0	0	250	0	0	250	0	0	0	0	0	50	50	250	250	0
5:20:00 PM	22	5	0	0	2	0	0	10	0	0	10	0	0	0	0	0	125	0	0	50	0	0	250	0	0	250	0	0	0	0	0	125	50	250	250	0
5:22:30 PM	23	1	0	0	6	0	0	9	0	0	6	0	0	2	0	0	25	0	0	150	0	0	225	0	0	150	0	0	50	0	0	25	150	225	150	50
5:24:30 PM	24	4	0	0	2	0	0	7	0	0	7	0	0	0	0	0	100	0	0	50	0	0	175	0	0	175	0	0	0	0	0	100	50	175	175	0
5:27:00 PM	25	3	0	0	2	0	0	10	0	0	10	0	0	0	0	0	75	0	0	50	0	0	250	0	0	250	0	0	0	0	0	75	50	250	250	0
5:29:30 PM	26	4	0	0	3	0	0	7	0	0	5	0	0	2	0	0	100	0	0	75	0	0	175	0	0	125	0	0	50	0	0	100	75	175	125	50

Data points are best estimates based on the camera angle and video quality. Queues were at least the stated length.

Notes
*lanes became so long that they were indistinguishable with camera quality
**RT obstructed at max queues
**queues blending from signal prior

Average	91	79	225	229	9
Standard Deviation	49	49	50	54	23
95th Percentile	**169**	**150**	**269**	**275**	**50**
50th Percentile	**100**	**75**	**250**	**250**	**0**
Max Queue	**175**	**175**	**275**	**300**	**100**

95th Percentile (ft)	169	275	50
50th Percentile (ft)	100	250	0
Max Queue	175	300	100

WIS 38 & Centennial
4:30 - 5:30 PM
Northern Queue

Movement		Number of Vehicles In Queue												Queue Length (ft)										Total Queue Length (ft)			
		LT			TH			TH			RT			LT			TH			TH			RT			LT	TH 1	TH 2	RT
Time	Cycle #	Cars	Trucks/Buses	Semis	Cars	Trucks/Buses	Semis	Cars	Trucks/Buses	Semis	Cars	Trucks/Buses	Semis	Cars	rucks/Buse	Semis	Cars	rucks/Buse	Semis	Cars	rucks/Buse	Semis	Cars	rucks/Buse	Semis				
4:31:00 PM	1	6	0	0	8	0	0	10	0	0	0	0	0	150	0	0	200	0	0	250	0	0	0	0	0	150	200	250	0
4:33:30 PM	2	6	0	0	6	0	0	9	0	0	2	0	0	150	0	0	150	0	0	225	0	0	50	0	0	150	150	225	50
4:36:30 PM	3	3	0	0	10	0	0	10	0	0	2	0	0	75	0	0	250	0	0	250	0	0	50	0	0	75	250	250	50
4:38:30 PM	4	6	0	0	12	0	0	8	0	0	0	0	0	150	0	0	300	0	0	200	0	0	0	0	0	150	300	200	0
4:41:00 PM	5	1	0	0	7	0	0	5	0	0	0	0	0	25	0	0	175	0	0	125	0	0	0	0	0	25	175	125	0
4:43:00 PM	6	2	0	0	6	0	0	11	0	0	4	0	0	50	0	0	150	0	0	275	0	0	100	0	0	50	150	275	100
4:46:00 PM	7	3	0	0	6	0	0	4	0	0	0	0	0	75	0	0	150	0	0	100	0	0	0	0	0	75	150	100	0
4:49:00 PM	8	1	0	0	3	0	0	6	0	0	0	0	0	25	0	0	75	0	0	150	0	0	0	0	0	25	75	150	0
4:51:30 PM	9	3	0	0	3	0	0	3	0	0	0	0	0	75	0	0	75	0	0	75	0	0	0	0	0	75	75	75	0
4:54:00 PM	10	2	0	0	6	0	0	5	0	0	1	0	0	50	0	0	150	0	0	125	0	0	25	0	0	50	150	125	25
4:56:30 PM	11	10	0	0	6	0	0	2	0	0	0	0	0	250	0	0	150	0	0	50	0	0	0	0	0	250	150	50	0
4:59:00 PM	12	1	0	0	2	0	0	1	0	0	2	0	0	25	0	0	50	0	0	25	0	0	50	0	0	25	50	25	50
5:01:30 PM	13	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	75	0	0	75	0	0	0	0	0	0	75	75	0
5:03:30 PM	14	7	0	0	10	0	0	10	0	1	0	0	0	175	0	0	250	0	0	250	0	25	0	0	0	175	250	275	0
5:06:00 PM	15	2	0	0	7	0	0	6	0	1	0	0	0	50	0	0	175	0	0	150	0	25	0	0	0	50	175	175	0
5:09:00 PM	16	4	1	0	12	0	0	11	0	0	0	0	0	100	25	0	300	0	0	275	0	0	0	0	0	125	300	275	0
5:11:30 PM	17	2	0	0	10	0	0	10	0	0	1	0	0	50	0	0	250	0	0	250	0	0	25	0	0	50	250	250	25
5:14:00 PM	18	3	0	1	10	0	0	10	0	0	2	0	0	75	0	25	250	0	0	250	0	0	50	0	0	100	250	250	50
5:16:30 PM	19	0	0	0	2	0	0	1	0	0	0	0	0	0	0	0	50	0	0	25	0	0	0	0	0	0	50	25	0
5:19:06 PM	20	0	0	0	2	0	0	1	0	0	0	0	0	0	0	0	50	0	0	25	0	0	0	0	0	0	50	25	0
5:21:44 PM	21	0	0	0	3	0	0	3	0	0	1	0	0	0	0	0	75	0	0	75	0	0	25	0	0	0	75	75	25
5:22:34 PM	22	1	0	0	1	0	0	2	0	0	1	0	0	25	0	0	25	0	0	50	0	0	25	0	0	25	25	50	25
5:26:58 PM	23	4	0	0	13	0	0	11	0	0	0	0	0	100	0	0	325	0	0	275	0	0	0	0	0	100	325	275	0
5:29:24 PM	24	11	0	0	4	0	0	8	0	0	0	0	0	275	0	0	100	0	0	200	0	0	0	0	0	275	100	200	0

Data points are best estimates based on the camera angle and video quality. Queues were at least the stated length.

Notes
*lanes became so long that they were indistinguishable with camera quality
**RT obstructed at max queues

Average	83	158	158	17
Standard Deviation	76	90	93	26
95th Percentile	**239**	**300**	**275**	**50**
50th Percentile	**63**	**150**	**163**	**0**
Max Queue	**275**	**325**	**275**	**100**

95th Percentile (ft)	239	300	50
50th Percentile (ft)	63	163	0
Max Queue	275	325	100

Queue Video Data
WIS 67 Signalized Corridor

WIS 67 & Oconomowoc Pkwy
4:00 - 5:00 PM
South leg

Movement		Number of Vehicles in Queue																Queue Length (ft)																Total Queue Length (ft)				
		LT			TH			TH			TH			RT			LT			TH			TH			TH			RT									
Time	Cycle #	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	LT	TH 1	TH 2	TH 3	RT
4:00:44 PM	1	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	50	0	0	0	0	0	0	0	25	0	0	0	0	50	0	25	0
4:03:31 PM	2	2	0	0	2	0	0	1	0	0	1	0	0	1	0	0	50	0	0	50	0	0	25	0	0	25	0	0	25	0	0	50	50	25	25	25
4:05:06 PM	3	1	0	0	0	0	0	0	0	0	3	0	0	0	0	0	25	0	0	0	0	0	0	0	0	75	0	0	0	0	0	25	0	0	75	0
4:06:53 PM	4	3	0	0	2	0	0	0	0	0	0	0	0	0	0	0	75	0	0	50	0	0	0	0	0	0	0	0	0	0	0	75	50	0	0	0
4:08:34 PM	5	2	0	0	1	0	0	3	0	0	2	0	0	1	0	0	50	0	0	25	0	0	75	0	0	50	0	0	25	0	0	50	25	75	50	25
4:10:05 PM	6	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	25	0	0	25	0	0	0	0	0	0	0	25	25	0
4:11:54 PM	7	1	0	0	2	0	0	2	0	0	2	0	0	0	0	0	25	0	0	50	0	0	50	0	0	50	0	0	0	0	0	25	50	50	50	0
4:13:33 PM	8	0	0	0	1	0	0	4	0	0	4	0	0	0	0	0	0	0	0	25	0	0	100	0	0	100	0	0	0	0	0	0	25	100	100	0
4:15:08 PM	9	0	0	0	0	0	0	1	0	0	3	0	0	0	0	0	0	0	0	0	0	0	25	0	0	75	0	0	0	0	0	0	0	25	75	0
4:16:44 PM	10	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	0	0
4:18:27 PM	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:20:14 PM	12	1	0	0	2	0	0	5	0	0	1	0	0	1	0	0	25	0	0	50	0	0	125	0	0	25	0	0	25	0	0	25	50	125	25	25
4:21:53 PM	13	0	0	0	1	0	0	1	1	0	5	0	0	0	0	0	0	0	0	25	0	0	25	25	0	125	0	0	0	0	0	0	25	50	125	0
4:2?:?? PM	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:25:11 PM	15	0	0	0	3	0	0	4	0	0	3	0	0	0	0	0	0	0	0	75	0	0	100	0	0	75	0	0	0	0	0	0	75	100	75	0
4:26:46 PM	16	0	0	0	1	0	0	2	0	0	0	0	1	0	0	0	0	0	0	25	0	0	50	0	0	0	0	25	0	0	0	0	25	50	25	0
4:28:35 PM	17	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	25	0	0	0	0	0	25	0	0	0	0	0	0	25	0	25	0
4:30:08 PM	18	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50	0	0	0	0	0	0	0	0	50	0
4:31:45 PM	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:33:34 PM	20	1	0	0	4	0	0	3	0	0	5	0	0	0	0	0	25	0	0	100	0	0	75	0	0	125	0	0	0	0	0	25	100	75	125	0
4:35:06 PM	21	1	0	0	0	0	0	4	0	0	3	0	0	1	0	0	25	0	0	0	0	0	100	0	0	75	0	0	25	0	0	25	0	100	75	25
4:36:45 PM	22	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	25	0	0	0	0	0	0	0	0	25	0	0	0	0	0	25	0	0	25	0
4:38:32 PM	23	0	0	0	3	0	0	2	0	0	2	0	0	0	0	0	0	0	0	75	0	0	50	0	0	50	0	0	0	0	0	0	75	50	50	0
4:40:03 PM	24	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	25	0	0	25	0	0	0	0	0	0	0	25	25	0
4:4?:?? PM	25	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50	0	0	0	0
4:45:07 PM	26	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	25	0	0	25	0	0	0	0	0	0	0	25	25	0
4:46:55 PM	27	0	0	0	4	0	0	3	0	0	2	0	0	0	0	0	0	0	0	100	0	0	75	0	0	50	0	0	0	0	0	0	100	75	50	0
4:48:36 PM	28	3	0	0	1	0	0	2	0	0	1	0	0	0	0	0	75	0	0	25	0	0	50	0	0	25	0	0	0	0	0	75	25	50	25	0
4:50:14 PM	29	0	0	0	5	0	0	4	1	0	4	0	0	0	0	0	0	0	0	125	0	0	100	25	0	100	0	0	0	0	0	0	125	125	100	0
4:51:52 PM	30	3	0	0	2	0	0	3	2	0	4	0	0	0	0	0	75	0	0	50	0	0	75	50	0	100	0	0	0	0	0	75	50	125	100	0
4:53:34 PM	31	1	0	0	2	0	0	2	0	0	2	0	0	0	0	0	25	0	0	50	0	0	50	0	0	50	0	0	0	0	0	25	50	50	50	0
4:55:08 PM	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:56:54 PM	33	0	0	0	0	0	0	0	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	50	0	0	25	0	0	0	0	0	50	25
4:5?:?? PM	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Average	19	29	39	43	4
Standard Deviation	28	35	43	37	9
95th Percentile	**75**	**100**	**125**	**109**	**25**
50th Percentile	**0**	**25**	**25**	**25**	**0**
Max Queue	**100**	**125**	**125**	**125**	**25**

95th Percentile (ft)	**75**	**125**	**25**
50th Percentile (ft)	**0**	**25**	**0**
Max Queue	**100**	**125**	**25**

WIS 67 & CTH B/Valley Rd
4:00 - 5:00 PM
South leg

Movement		Number of Vehicles in Queue																			Queue Length (ft)															Total Queue Length (ft)					
		LT			LT			TH			TH			TH			RT				LT			LT			TH			TH			TH			RT									
Time	Cycle #	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	Cars	Trucks/ Buses	Semis	LT 1	LT 2	TH 1	TH 2	TH 3	RT
4:01:10 PM	1	0	0	0	0	0	0	4	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:02:50 PM	2	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	25	0	0	0	0	0	25	0	0	0	0	0	0	0	0	0	0	0	0	25	0	25	0	0	0
4:04:35 PM	3	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	0	0	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	50	0	0	0	0
4:06:11 PM	4	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	25	0	0	0	0	0	0	0	0	25	0	0	0	0	0	25	0	25	0
4:07:50 PM	5	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	0	0	25	0	0	25	0	0	0	0	0	0	25	25	0
4:09:30 PM	6	0	0	0	0	0	0	2	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	50	0	0	0	0	0	75	0	0	0	0	0	0	0	0	50	0	75	0
4:11:10 PM	7	0	0	0	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	25	0	0	25	0	0	25	0	0	25	0	0	0	0	0	25	25	25	0
4:12:51 PM	8	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	0	0	0	0	0	0	0	0	0	0	25	0
4:14:27 PM	9	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	0	0	0	0	0	0	0	0	0	0	0	0	25	0	0
4:16:09 PM	10	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	125	0	0	0	0	0	0	0	0	0	0	0	0	0	0	125	0	0	0
4:17:50 PM	11	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	0	0	25	0	0	0	0	0	0	0	0	0	0	0	25	25	0	0
4:19:31 PM	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:21:12 PM	13	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	25	0	0	0	0	0	25	0	0	0	0	0	25	0	0	0	0	0	0	25	0	25	0	25	0
4:22:50 PM	14	0	0	0	0	0	0	5	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	125	0	0	50	0	0	50	0	0	0	0	0	0	0	0	125	50	50	0
4:24:31 PM	15	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50	0	0	50	0	0	0	0	0	0	0	0	0	50	50	0
4:25:58 PM	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:27:51 PM	17	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	0	0	0	0	0	0	0	0	0	0	25	0
4:29:30 PM	18	0	0	0	0	0	0	0	0	0	1	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	0	0	75	0	0	0	0	0	0	0	0	0	25	75	0
4:31:08 PM	19	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	25	0	0	0	0	0	25	0	0	0	0	0	0	0	0	25	0	25	0
4:32:48 PM	20	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	25	0	0	0	0	0	25	0	0	0	0	0	0	0	0	0	0	0	0	25	0	25	0	0	0
4:34:?? PM	21	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	0	0	0	0	0
4:37:51 PM	22	1	0	0	1	0	0	5	0	0	2	0	0	4	0	0	0	0	0	25	0	0	25	0	0	125	0	0	50	0	0	100	0	0	0	0	0	0	25	25	125	50	100	0
4:37:?? PM	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:41:15 PM	24	4	0	0	0	0	0	4	0	0	3	0	0	6	0	0	0	0	0	100	0	0	0	0	0	100	0	0	75	0	0	150	0	0	0	0	0	0	100	0	100	75	150	0
4:43:11 PM	25	1	0	0	0	0	0	8	0	0	6	0	0	6	0	0	1	0	0	25	0	0	0	0	0	200	0	0	150	0	0	150	0	0	25	0	0	0	25	0	200	150	150	25
4:45:00 PM	26	1	0	0	0	0	0	8	0	0	7	0	0	5	0	0	0	0	0	25	0	0	0	0	0	200	0	0	175	0	0	125	0	0	0	0	0	0	25	0	200	175	125	0
4:46:58 PM	27	1	0	0	0	0	0	5	0	0	3	0	0	8	0	0	0	0	0	25	0	0	0	0	0	125	0	0	75	0	0	200	0	0	0	0	0	0	25	0	125	75	200	0
4:48:58 PM	28	0	0	0	0	0	0	4	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	100	0	0	75	0	0	75	0	0	0	0	0	0	0	0	100	75	75	0
4:50:58 PM	29	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	25	0	0	0	0	0	25	0	0	0	0	0	0	0	0	25	0	25	0
4:52:51 PM	30	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	75	0	0	0	0	0
4:54:32 PM	31	3	0	0	0	0	0	1	0	0	1	0	0	1	0	0	1	0	0	75	0	0	0	0	0	25	0	0	25	0	0	25	0	0	25	0	0	0	75	0	25	25	25	25
4:56:10 PM	32	4	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	100	0	0	0	0	0	25	0	0	0	0	0	25	0	0	0	0	0	0	100	25	0	0	25	0
4:57:52 PM	33	0	0	0	0	0	0	4	0	0	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0	100	0	0	75	0	0	25	0	0	0	0	0	0	0	0	100	75	25	0
4:59:32 PM	34	0	0	0	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	25	0	0	25	0	0	25	0	0	0	0	0	0	0	0	25	25	25	0

Average	17	3	47	29	40	1
Standard Deviation	29	10	59	43	51	6
95th Percentile	**84**	**25**	**151**	**101**	**150**	**9**
50th Percentile	**0**	**0**	**25**	**13**	**25**	**0**
Max Queue	**100**	**50**	**200**	**175**	**200**	**25**
95th Percentile (ft)	84	151	9
50th Percentile (ft)	0	25	0
Max Queue	100	200	25

WIS 67 & Oconomowoc Dr
4:00 - 5:00 PM
South leg

Movement		Number of Vehicles in Queue															Queue Length (ft)														Total Queue Length (ft)				
		LT			TH			TH			TH			RT			LT			TH			TH			TH			RT			LT	TH 1	TH 2	TH 3	RT
Time	Cycle #	Cars	Trucks/Buses	Semis	Cars	Trucks/Buses	Semis	Cars	Trucks/Buses	Semis	Cars	Trucks/Buses	Semis	Cars	Trucks/Buses	Semis	Cars	rucks/Buse	Semis	Cars	rucks/Buse	Semis	Cars	rucks/Buse	Semis	Cars	rucks/Buse	Semis	Cars	rucks/Buse	Semis					
4:00:44 PM	1	2	0	0	0	0	1	3	0	0	4	0	0	0	0	0	50	0	0	0	0	25	75	0	0	100	0	0	0	0	0	50	25	75	100	0
4:02:38 PM	2	0	0	0	5	0	0	3	0	0	4	0	0	0	0	0	0	0	0	125	0	0	75	0	0	100	0	0	0	0	0	0	125	75	100	0
4:04:22 PM	3	3	0	0	5	0	0	8	0	0	6	0	0	3	0	0	75	0	0	125	0	0	200	0	0	150	0	0	75	0	0	75	125	200	150	75
4:05:57 PM	4	2	0	0	2	0	0	2	0	0	0	0	0	0	0	0	50	0	0	50	0	0	50	0	0	0	0	0	0	0	0	50	50	50	0	0
4:07:26 PM	5	0	0	0	3	0	0	0	0	0	2	0	1	0	0	0	0	0	0	75	0	0	0	0	0	50	0	25	0	0	0	0	75	0	75	0
4:09:20 PM	6	0	0	0	3	0	0	1	0	0	5	0	0	1	0	0	0	0	0	75	0	0	25	0	0	125	0	0	25	0	0	0	75	25	125	25
4:10:58 PM	7	2	0	0	9	0	0	4	0	0	2	0	0	0	0	0	50	0	0	225	0	0	100	0	0	50	0	0	0	0	0	50	225	100	50	0
4:12:38 PM	8	2	0	0	3	0	0	2	0	0	0	0	0	0	0	0	50	0	0	75	0	0	50	0	0	0	0	0	0	0	0	50	75	50	0	0
4:14:18 PM	9	1	0	0	5	0	0	3	0	0	7	0	0	0	0	0	25	0	0	125	0	0	75	0	0	175	0	0	0	0	0	25	125	75	175	0
4:15:58 PM	10	1	0	0	5	0	0	3	0	0	4	0	0	0	0	0	25	0	0	125	0	0	75	0	0	100	0	0	0	0	0	25	125	75	100	0
4:17:40 PM	11	1	0	0	10	0	1	6	0	0	4	0	0	1	0	0	25	0	0	250	0	25	150	0	0	100	0	0	25	0	0	25	275	150	100	25
4:19:03 PM	12	0	0	0	4	0	0	2	0	0	4	0	1	0	0	0	0	0	0	100	0	0	50	0	0	100	0	25	0	0	0	0	100	50	125	0
4:20:58 PM	13	0	0	0	4	0	0	2	1	0	2	0	0	1	0	0	0	0	0	100	0	0	50	25	0	50	0	0	25	0	0	0	100	75	50	25
4:22:23 PM	14	1	0	0	1	0	0	2	0	0	0	0	0	0	0	0	25	0	0	25	0	0	50	0	0	0	0	0	0	0	0	25	25	50	0	0
4:24:04 PM	15	0	0	0	4	0	0	2	0	0	3	0	0	0	0	0	0	0	0	100	0	0	50	0	0	75	0	0	0	0	0	0	100	50	75	0
4:25:58 PM	16	0	0	0	3	0	0	7	0	0	1	0	0	1	0	0	0	0	0	75	0	0	175	0	0	25	0	0	25	0	0	0	75	175	25	25
4:27:38 PM	17	1	0	0	6	1	0	2	0	0	5	0	0	0	0	0	25	0	0	150	25	0	50	0	0	125	0	0	0	0	0	25	175	50	125	0
4:29:20 PM	18	1	0	0	5	0	0	4	0	0	4	1	0	0	0	0	25	0	0	125	0	0	100	0	0	100	25	0	0	0	0	25	125	100	125	0
4:30:58 PM	19	0	0	0	4	0	0	6	0	0	5	0	0	0	0	0	0	0	0	100	0	0	150	0	0	125	0	0	0	0	0	0	100	150	125	0
4:32:22 PM	20	1	0	0	3	0	1	2	0	0	0	0	0	1	0	0	25	0	0	75	0	25	50	0	0	0	0	0	25	0	0	25	100	50	0	25
4:34:23 PM	21	1	0	0	2	0	0	1	0	0	3	0	0	0	0	0	25	0	0	50	0	0	25	0	0	75	0	0	0	0	0	25	50	25	75	0
4:35:57 PM	22	1	0	0	6	0	0	7	0	0	5	0	0	1	0	0	25	0	0	150	0	0	175	0	0	125	0	0	25	0	0	25	150	175	125	25
4:37:23 PM	23	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	125	0	0	0	0	0	0	0	0	0	0	0	0	125	0	0	0
4:39:18 PM	24	0	0	0	8	0	0	5	0	0	4	0	0	0	0	0	0	0	0	200	0	0	125	0	0	100	0	0	0	0	0	0	200	125	100	0
4:40:42 PM	25	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	75	0	0	0	0
4:42:39 PM	26	2	0	0	6	0	0	2	0	0	5	0	0	1	0	0	50	0	0	150	0	0	50	0	0	125	0	0	25	0	0	50	150	50	125	25
4:44:18 PM	27	2	0	0	7	0	0	4	0	0	2	0	0	1	0	0	50	0	0	175	0	0	100	0	0	50	0	0	25	0	0	50	175	100	50	25
4:45:42 PM	28	0	0	0	0	0	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	25	0	0	50	0	0	0	0	0	0	0	25	50	0
4:47:38 PM	29	2	0	0	4	0	0	2	0	0	2	0	0	0	0	0	50	0	0	100	0	0	50	0	0	50	0	0	0	0	0	50	100	50	50	0
4:48:59 PM	30	3	0	0	4	0	0	2	0	0	3	0	0	0	0	0	75	0	0	100	0	0	50	0	0	75	0	0	0	0	0	75	100	50	75	0
4:50:44 PM	31	0	0	0	5	0	0	1	0	0	0	0	0	1	0	0	0	0	0	125	0	0	25	0	0	0	0	0	25	0	0	0	125	25	0	25
4:52:38 PM	32	2	0	0	3	0	0	2	0	0	5	0	0	1	0	0	50	0	0	75	0	0	50	0	0	125	0	0	25	0	0	50	75	50	125	25
4:54:19 PM	33	1	0	0	4	0	0	3	0	0	2	0	0	0	0	0	25	0	0	100	0	0	75	0	0	50	0	0	0	0	0	25	100	75	50	0
4:55:59 PM	34	1	0	0	7	0	0	5	0	0	6	0	0	0	0	0	25	0	0	175	0	0	125	0	0	150	0	0	0	0	0	25	175	125	150	0
4:57:21 PM	35	0	0	0	3	0	0	1	0	0	1	0	0	0	0	0	0	0	0	75	0	0	25	0	0	25	0	0	0	0	0	0	75	25	25	0
4:59:03 PM	36	0	0	0	4	1	0	2	0	0	2	0	0	0	0	0	0	0	0	100	25	0	50	0	0	50	0	0	0	0	0	0	125	50	50	0

Average	25	109	72	74	9
Standard Deviation	25	59	51	52	16
95th Percentile	**75**	**206**	**175**	**150**	**25**
50th Percentile	**25**	**100**	**50**	**75**	**0**
Max Queue	**75**	**275**	**200**	**175**	**75**

95th Percentile (ft)	75	206	25
50th Percentile (ft)	25	100	0
Max Queue	75	275	75

WIS 67 & I-94 WB Ramps
4:00 - 5:00 PM
South leg

Movement		Number of Vehicles in Queue																Queue Length (ft)												Total Queue Length (ft)				
		LT			LT			TH			TH			TH			LT			LT			TH			TH			TH					
Time	Cycle #	Cars	Trucks/Buses	Semis	Cars	Trucks/Buses	Semis	Cars	Trucks/Buses	Semis	Cars	Trucks/Buses	Semis	Cars	Trucks/Buses	Semis	Cars	rucks/Buse	Semis	Cars	rucks/Buse	Semis	Cars	rucks/Buse	Semis	Cars	rucks/Buse	Semis	Cars	rucks/Buse	Semis	LT 1	LT 2	TH 1	TH 2	TH 3
4:01:50 PM	1	0	0	0	0	0	0	1	0	0	1	0	0	2	0	0	0	0	0	0	0	0	25	0	0	25	0	0	50	0	0	0	0	25	25	50
4:03:30 PM	2	2	0	0	1	0	0	2	0	0	5	0	0	4	0	0	50	0	0	25	0	0	50	0	0	125	0	0	100	0	0	50	25	50	125	100
4:04:52 PM	3	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	25	0	0	0	0	0	0	0	0	0	0	0	25	0	0	25	0	0	0	25
4:06:38 PM	4	5	0	0	0	0	0	1	0	0	2	0	0	0	0	1	125	0	0	0	0	0	25	0	0	50	0	0	0	0	25	125	0	25	50	25
4:08:24 PM	5	4	1	0	0	0	0	3	0	0	0	0	0	5	0	0	100	25	0	0	0	0	75	0	0	0	0	0	125	0	0	125	0	75	0	125
4:09:50 PM	6	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50	0	0	0	0	0	0	0	0	0	0	50	0	0
4:11:28 PM	7	1	0	0	1	0	0	1	0	0	0	0	0	1	0	0	25	0	0	25	0	0	25	0	0	0	0	0	25	0	0	25	25	25	0	25
4:13:30 PM	8	2	0	0	0	0	0	4	0	0	2	0	0	2	0	0	50	0	0	0	0	0	100	0	0	50	0	0	50	0	0	50	0	100	50	50
4:14:53 PM	9	2	0	0	0	0	0	4	0	0	1	0	0	0	0	0	50	0	0	0	0	0	100	0	0	25	0	0	0	0	0	50	0	100	25	0
4:16:40 PM	10	2	0	0	0	0	0	2	0	0	5	0	0	0	0	0	50	0	0	0	0	0	50	0	0	125	0	0	0	0	0	50	0	50	125	0
4:18:30 PM	11	2	0	0	0	0	0	3	0	0	2	0	0	2	0	0	50	0	0	0	0	0	75	0	0	50	0	0	50	0	0	50	0	75	50	50
4:20:11 PM	12	1	0	0	0	0	0	2	1	0	2	0	0	1	0	0	25	0	0	0	0	0	50	25	0	50	0	0	25	0	0	25	0	75	50	25
4:21:51 PM	13	0	0	0	0	0	0	2	0	0	2	0	0	1	0	0	0	0	0	0	0	0	50	0	0	50	0	0	25	0	0	0	0	50	50	25
4:23:22 PM	14	3	0	0	0	0	0	1	0	0	0	0	0	1	0	0	75	0	0	0	0	0	25	0	0	0	0	0	25	0	0	75	0	25	0	25
4:25:10 PM	15	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	50	0	0	0	0	0	50	0	0	0	0	0	0	0	0	50	0	50	0	0
4:26:42 PM	16	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	50	0	0	0	0	0	0	0	0	0	0	0	25	0	0	50	0	0	0	25
4:28:16 PM	17	1	0	0	0	0	0	1	0	0	1	0	0	0	0	0	25	0	0	0	0	0	25	0	0	25	0	0	0	0	0	25	0	25	25	0
4:30:12 PM	18	3	0	0	0	0	0	4	0	0	3	0	0	4	0	0	75	0	0	0	0	0	100	0	0	75	0	0	100	0	0	75	0	100	75	100
4:31:51 PM	19	2	0	0	0	0	0	6	0	0	2	0	0	2	0	0	50	0	0	0	0	0	150	0	0	50	0	0	50	0	0	50	0	150	50	50
4:33:15 PM	20	2	0	0	0	0	0	0	0	0	1	0	0	1	0	0	50	0	0	0	0	0	0	0	0	25	0	0	25	0	0	50	0	0	25	25
4:34:54 PM	21	0	0	0	0	0	0	2	0	0	2	0	0	2	0	0	0	0	0	0	0	0	50	0	0	50	0	0	50	0	0	0	0	50	50	50
4:36:52 PM	22	2	0	0	0	0	0	2	0	0	2	0	0	0	0	0	50	0	0	0	0	0	50	0	0	50	0	0	0	0	0	50	0	50	50	0
4:38:18 PM	23	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	50	0	0	0	0	0	0	0	0	0	0	0	25	0	0	50	0	0	0	25
4:40:12 PM	24	3	0	0	0	0	0	5	0	0	3	0	0	3	0	0	75	0	0	0	0	0	125	0	0	75	0	0	75	0	0	75	0	125	75	75
4:41:53 PM	25	1	0	0	0	0	0	1	0	0	2	0	0	0	0	0	25	0	0	0	0	0	25	0	0	50	0	0	0	0	0	25	0	25	50	0
4:43:21 PM	26	1	0	0	0	0	0	1	0	0	0	0	0	4	0	0	25	0	0	0	0	0	25	0	0	0	0	0	100	0	0	25	0	25	0	100
4:45:03 PM	27	3	0	0	0	0	0	1	0	0	2	0	0	2	0	0	75	0	0	0	0	0	25	0	0	50	0	0	50	0	0	75	0	25	50	50
4:46:52 PM	28	2	1	0	1	0	0	3	0	0	0	0	0	1	0	0	50	25	0	25	0	0	75	0	0	0	0	0	25	0	0	75	25	75	0	25
4:48:20 PM	29	0	0	0	0	0	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	25	0	0	50	0	0	0	0	0	0	0	25	50	0
4:50:10 PM	30	3	0	0	1	0	0	4	0	0	1	1	0	0	0	0	75	0	0	25	0	0	100	0	0	25	25	0	0	0	0	75	25	100	50	0
4:51:52 PM	31	2	0	0	0	0	0	0	0	0	0	0	0	3	0	0	50	0	0	0	0	0	0	0	0	0	0	0	75	0	0	50	0	0	0	75
4:53:32 PM	32	1	0	0	0	0	0	2	0	0	3	0	0	2	0	0	25	0	0	0	0	0	50	0	0	75	0	0	50	0	0	25	0	50	75	50
4:55:05 PM	33	1	0	0	0	0	0	6	0	0	4	0	0	2	0	0	25	0	0	0	0	0	150	0	0	100	0	0	50	0	0	25	0	150	100	50
4:56:39 PM	34	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	0	0	0	0	0	0	0	0	0	0	25	0	0
4:58:32 PM	35	5	0	0	0	0	0	0	0	0	3	1	0	2	0	0	125	0	0	0	0	0	0	0	0	75	25	0	50	0	0	125	0	0	100	50

Average	46	3	51	39	36
Standard Deviation	34	8	42	37	34
95th Percentile	**125**	**25**	**133**	**108**	**100**
50th Percentile	**50**	**0**	**50**	**50**	**25**
Max Queue	**125**	**25**	**150**	**125**	**125**

95th Percentile (ft)	125	133
50th Percentile (ft)	50	50
Max Queue	125	150

WIS 67 & I-94 EB Ramps
4:00 - 5:00 PM
South leg

Movement		Number of Vehicles in Queue									Queue Length (ft)									Total Queue Length (ft)		
		LT			LT			RT			LT			LT			RT			LT 1	LT 2	RT
Time	Cycle #	Cars	Trucks/Buses	Semis	Cars	Trucks/Buses	Semis	Cars	Trucks/Buses	Semis	Cars	Trucks/Buse	Semis	Cars	Trucks/Buse	Semis	Cars	Trucks/Buse	Semis			
4:00:31 PM	1	1	0	0	2	0	0	1	0	0	25	0	0	50	0	0	25	0	0	25	50	25
4:02:11 PM	2	1	0	0	0	0	0	1	0	0	25	0	0	0	0	0	25	0	0	25	0	25
4:05:36 PM	3	4	0	0	1	0	0	0	0	0	100	0	0	25	0	0	0	0	0	100	25	0
4:07:11 PM	4	3	0	0	2	0	0	1	0	0	75	0	0	50	0	0	25	0	0	75	50	25
4:08:51 PM	5	3	0	0	3	0	0	1	0	0	75	0	0	75	0	0	25	0	0	75	75	25
4:09:46 PM	6	2	0	0	0	0	0	0	0	0	50	0	0	0	0	0	0	0	0	50	0	0
4:11:21 PM	7	2	0	0	0	0	0	1	0	0	50	0	0	0	0	0	25	0	0	50	0	25
4:12:13 PM	8	1	0	0	2	0	0	0	0	0	25	0	0	50	0	0	0	0	0	25	50	0
4:13:02 PM	9	2	0	0	1	0	0	1	0	0	50	0	0	25	0	0	25	0	0	50	25	25
4:14:43 PM	10	3	0	0	2	0	0	0	0	0	75	0	0	50	0	0	0	0	0	75	50	0
4:16:26 PM	11	3	0	0	3	0	0	1	0	0	75	0	0	75	0	0	25	0	0	75	75	25
4:18:02 PM	12	0	0	0	1	0	0	1	0	0	0	0	0	25	0	0	25	0	0	0	25	25
4:18:51 PM	13	0	0	0	2	0	0	0	0	0	0	0	0	50	0	0	0	0	0	0	50	0
4:21:23 PM	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:23:03 PM	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:24:42 PM	16	1	0	1	1	0	0	1	0	0	25	0	25	25	0	0	25	0	0	50	25	25
4:25:33 PM	17	1	0	0	1	0	0	1	0	0	25	0	0	25	0	0	25	0	0	25	25	25
4:27:13 PM	18	1	0	0	0	0	0	0	0	0	25	0	0	0	0	0	0	0	0	25	0	0
4:28:02 PM	19	1	0	0	1	0	0	0	0	0	25	0	0	25	0	0	0	0	0	25	25	0
4:28:52 PM	20	2	0	0	0	0	0	0	0	0	50	0	0	0	0	0	0	0	0	50	0	0
4:29:43 PM	21	4	0	0	2	0	0	0	0	0	100	0	0	50	0	0	0	0	0	100	50	0
4:30:32 PM	22	0	0	0	0	1	0	0	0	0	0	0	0	0	25	0	0	0	0	0	25	0
4:31:26 PM	23	2	0	0	1	0	0	1	0	0	50	0	0	25	0	0	25	0	0	50	25	25
4:32:12 PM	24	1	0	0	2	0	0	0	0	0	25	0	0	50	0	0	0	0	0	25	50	0
4:34:43 PM	25	2	0	0	2	0	0	1	0	0	50	0	0	50	0	0	25	0	0	50	50	25
4:35:32 PM	26	0	0	0	2	0	0	1	0	0	0	0	0	50	0	0	25	0	0	0	50	25
4:37:12 PM	27	1	0	0	1	0	0	0	0	0	25	0	0	25	0	0	0	0	0	25	25	0
4:38:06 PM	28	5	0	0	3	0	0	0	0	0	125	0	0	75	0	0	0	0	0	125	75	0
4:39:42 PM	29	4	0	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	0	100	0	0
4:40:37 PM	30	2	0	0	1	0	0	0	0	1	50	0	0	25	0	0	0	0	25	50	25	25
4:41:22 PM	31	1	0	0	3	0	0	0	0	0	25	0	0	75	0	0	0	0	0	25	75	0
4:43:08 PM	32	5	0	0	3	0	0	0	0	0	125	0	0	75	0	0	0	0	0	125	75	0
4:43:52 PM	33	3	0	0	1	0	0	0	1	0	75	0	0	25	0	0	0	25	0	75	25	25
4:44:46 PM	34	2	0	0	0	0	0	0	1	0	50	0	0	0	0	0	0	25	0	50	0	25
4:45:32 PM	35	2	0	0	0	0	0	0	0	1	50	0	0	0	0	0	0	0	25	50	0	25
4:47:18 PM	36	2	0	0	1	0	0	0	0	1	50	0	0	25	0	0	0	0	25	50	25	25
4:48:56 PM	37	4	0	0	2	0	0	0	0	0	100	0	0	50	0	0	0	0	0	100	50	0
4:50:36 PM	38	3	0	0	3	0	0	1	0	0	75	0	0	75	0	0	25	0	0	75	75	25
4:51:22 PM	39	0	0	0	2	0	0	0	0	0	0	0	0	50	0	0	0	0	0	0	50	0
4:52:17 PM	40	3	0	0	3	0	0	0	0	0	75	0	0	75	0	0	0	0	0	75	75	0
4:53:04 PM	41	1	0	0	1	0	0	0	0	0	25	0	0	25	0	0	0	0	0	25	25	0
4:53:54 PM	42	6	0	0	1	0	0	0	0	0	150	0	0	25	0	0	0	0	0	150	25	0
4:54:47 PM	43	0	0	0	1	0	0	0	0	0	0	0	0	25	0	0	0	0	0	0	25	0
4:55:36 PM	44	2	0	0	3	0	0	1	0	0	50	0	0	75	0	0	25	0	0	50	75	25
4:56:22 PM	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:57:15 PM	46	3	0	0	2	0	0	1	0	0	75	0	0	50	0	0	25	0	0	75	50	25
4:58:03 PM	47	4	0	0	1	0	0	0	0	0	100	0	0	25	0	0	0	0	0	100	25	0
4:58:54 PM	48	1	0	0	0	0	0	1	0	0	25	0	0	0	0	0	25	0	0	25	0	25

Average	49	33	11
Standard Deviation	38	26	13
95th Percentile	**116**	**75**	**25**
50th Percentile	**50**	**25**	**0**
Max Queue	**150**	**75**	**25**

95th Percentile (ft)	116	25
50th Percentile (ft)	50	0
Max Queue	150	25

Queue Video Data
WIS 167 Signalized Corridor

WIS 167 & Port Washington Rd
4:30 - 5:30 PM
West Leg

Movement		Number of Vehicles in Queue												Queue Length (ft)										Total Queue Length (ft)			
		LT			TH			TH			RT			LT			TH			TH			RT						
Time	Cycle #	Cars	Trucks/Buses	Semis	Cars	Trucks/Buses	Semis	Cars	Trucks/Buses	Semis	Cars	Trucks/Buses	Semis	Cars	Trucks/Buses	Semis	Cars	Trucks/Buses	Semis	Cars	Trucks/Buses	Semis	Cars	Trucks/Buses	Semis	LT	TH 1	TH 2	RT
4:31:37 PM	1	3	0	0	2	0	0	5	0	0	2	0	0	75	0	0	50	0	0	125	0	0	50	0	0	75	50	125	50
4:33:48 PM	2	10	0	0	8	0	1	8	0	1	2	0	0	250	0	0	200	0	25	200	0	25	50	0	0	250	225	225	50
4:35:48 PM	3	5	0	0	6	0	1	6	0	0	1	0	0	125	0	0	150	0	25	150	0	0	25	0	0	125	175	150	25
4:38:03 PM	4	4	0	0	11	0	0	5	0	0	5	0	0	100	0	0	275	0	0	125	0	0	125	0	0	100	275	125	125
4:40:14 PM	5	2	0	0	8	0	1	8	0	0	1	0	0	50	0	0	200	0	25	200	0	0	25	0	0	50	225	200	25
4:42:03 PM	6	8	2	0	9	0	0	6	0	0	1	0	0	200	50	0	225	0	0	150	0	0	25	0	0	250	225	150	25
4:44:29 PM	7	5	0	0	7	0	0	9	0	0	3	0	0	125	0	0	175	0	0	225	0	0	75	0	0	125	175	225	75
4:46:45 PM	8	4	0	0	7	0	1	15	1	0	4	0	0	100	0	0	175	0	25	375	25	0	100	0	0	100	200	400	100
4:48:47 PM	9	6	0	0	4	0	0	2	0	0	1	0	0	150	0	0	100	0	0	50	0	0	25	0	0	150	100	50	25
4:51:09 PM	10	8	0	0	13	0	1	9	0	0	0	0	0	200	0	0	325	0	25	225	0	0	0	0	0	200	350	225	0
4:53:15 PM	11	6	0	0	3	0	0	6	0	0	4	0	0	150	0	0	75	0	0	150	0	0	100	0	0	150	75	150	100
4:55:19 PM	12	8	0	0	6	0	0	8	0	0	1	0	0	200	0	0	150	0	0	200	0	0	25	0	0	200	150	200	25
4:57:29 PM	13	5	0	0	17	0	0	6	0	0	1	0	0	125	0	0	425	0	0	150	0	0	25	0	0	125	425	150	25
4:59:43 PM	14	6	0	0	5	0	0	9	0	0	1	0	0	150	0	0	125	0	0	225	0	0	25	0	0	150	125	225	25
5:01:55 PM	15	10	0	0	10	0	0	4	0	0	1	0	0	250	0	0	250	0	0	100	0	0	25	0	0	250	250	100	25
5:03:58 PM	16	3	0	0	17	0	0	8	0	0	5	0	0	75	0	0	425	0	0	200	0	0	125	0	0	75	425	200	125
5:06:09 PM	17	5	1	0	3	0	0	9	0	0	3	0	0	125	25	0	75	0	0	225	0	0	75	0	0	150	75	225	75
5:08:05 PM	18	0	0	0	0	0	0	3	0	1	1	0	0	0	0	0	0	0	0	75	0	25	25	0	0	0	0	100	25
5:10:34 PM	19	8	0	0	10	0	0	7	0	0	3	0	0	200	0	0	250	0	0	175	0	0	75	0	0	200	250	175	75
5:12:42 PM	20	1	0	0	9	0	0	12	0	0	4	0	0	25	0	0	225	0	0	300	0	0	100	0	0	25	225	300	100
5:14:55 PM	21	13	0	0	6	0	0	8	0	0	3	0	0	325	0	0	150	0	0	200	0	0	75	0	0	325	150	200	75
5:17:05 PM	22	14	0	0	9	0	0	4	0	0	2	0	0	350	0	0	225	0	0	100	0	0	50	0	0	350	225	100	50
5:19:14 PM	23	11	0	0	5	0	0	7	0	0	1	0	0	275	0	0	125	0	0	175	0	0	25	0	0	275	125	175	25
5:21:20 PM	24	4	0	0	12	0	0	11	0	0	3	0	0	100	0	0	300	0	0	275	0	0	75	0	0	100	300	275	75
5:23:35 PM	25	2	0	0	7	0	0	12	0	0	3	0	0	50	0	0	175	0	0	300	0	0	75	0	0	50	175	300	75
5:25:43 PM	26	5	0	0	8	0	1	7	0	1	1	0	0	125	0	0	200	0	25	175	0	25	25	0	0	125	225	200	25
5:27:55 PM	27	4	0	0	12	0	0	10	0	0	2	0	0	100	0	0	300	0	0	250	0	0	50	0	0	100	300	250	50

Data points are best estimates based on the camera angle and video quality. Queues were at least the stated length.

Notes
*semi blocked view of adjacent lane, best guess reported
*lanes became so long that they were indistinguishable with camera quality
*RT obstructed at max queues

Average	151	204	193	55
Standard Deviation	89	104	75	35
95th Percentile	310	403	300	118
50th Percentile	125	225	200	50
Max Queue	350	425	400	125

95th Percentile (ft)	310	403	118
50th Percentile (ft)	125	225	50
Max Queue	350	425	125

WIS 167 & I-43 SB Ramps
4:30 - 5:30 PM
East Leg

Movement		Number of Vehicles in Queue									Queue Length (ft)									Total Queue Length (ft)		
		LT			TH			TH			LT			TH			TH			LT	TH 1	TH 2
Time	Cycle #	Cars	Trucks/Buses	Semis	Cars	Trucks/Buses	Semis	Cars	Trucks/Buses	Semis	Cars	rucks/Buse	Semis	Cars	rucks/Buse	Semis	Cars	rucks/Buse	Semis			
4:30:56 PM	1	0	0	0	1	1	0	2	0	0	0	0	0	25	45	0	50	0	0	0	70	50
4:33:10 PM	2	0	0	0	1	0	0	3	0	0	0	0	0	25	0	0	75	0	0	0	25	75
4:35:24 PM	3	1	0	0	0	0	0	0	0	0	25	0	0	0	0	0	0	0	0	25	0	0
4:37:27 PM	4	1	0	0	0	0	0	0	0	0	25	0	0	0	0	0	0	0	0	25	0	0
4:39:40 PM	5	4	0	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	0	100	0	0
4:41:47 PM	6	1	0	0	0	0	0	0	0	0	25	0	0	0	0	0	0	0	0	25	0	0
4:43:40 PM	7	0	0	0	3	0	0	4	0	0	0	0	0	75	0	0	100	0	0	0	75	100
4:46:10 PM	8	2	0	0	1	0	0	1	0	0	50	0	0	25	0	0	25	0	0	50	25	25
4:48:14 PM	9	1	0	0	0	0	0	3	1	0	25	0	0	0	0	0	75	45	0	25	0	120
4:50:25 PM	10	1	0	0	3	0	0	1	0	0	25	0	0	75	0	0	25	0	0	25	75	25
4:52:40 PM	11	3	0	0	0	0	0	0	0	0	75	0	0	0	0	0	0	0	0	75	0	0
4:5?:?? PM	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:56:55 PM	13	1	0	0	0	0	0	0	0	0	25	0	0	0	0	0	0	0	0	25	0	0
4:59:06 PM	14	1	0	0	0	0	0	1	0	0	25	0	0	0	0	0	25	0	0	25	0	25
5:0?:?? PM	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:0?:?? PM	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:07:46 PM	17	2	0	0	0	0	0	0	0	0	50	0	0	0	0	0	0	0	0	50	0	0
5:0?:?? PM	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:12:03 PM	19	1	0	0	0	0	0	0	0	0	25	0	0	0	0	0	0	0	0	25	0	0
5:14:15 PM	20	4	0	0	0	0	0	1	0	0	100	0	0	0	0	0	25	0	0	100	0	25
5:19:09 PM	21	2	0	0	0	0	0	0	0	0	50	0	0	0	0	0	0	0	0	50	0	0
5:20:48 PM	22	2	0	0	3	0	0	1	1	0	50	0	0	75	0	0	25	45	0	50	75	70
5:25:04 PM	23	2	0	0	1	0	0	0	0	0	50	0	0	25	0	0	0	0	0	50	25	0
5:27:00 PM	24	1	0	0	1	0	0	1	0	0	25	0	0	25	0	0	25	0	0	25	25	25
5:29:11 PM	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Average	30	16	22
Standard Deviation	30	27	35
95th Percentile	95	75	95
50th Percentile	25	0	0
Max Queue	100	75	120

95th Percentile (ft)	**95**	**95**
50th Percentile (ft)	**25**	**0**
Max Queue	**100**	**120**

WIS 167 & I-43 NB Ramps
4:30 - 5:30 PM
South Leg

Movement		Number of Vehicles in Queue									Queue Length (ft)									Total Queue Length (ft)		
		LT			LT			RT			LT			LT			RT			LT 1	LT 2	RT
Time	Cycle #	Cars	Trucks/Buses	Semis	Cars	Trucks/Buses	Semis	Cars	Trucks/Buses	Semis	Cars	Trucks/Buse	Semis	Cars	Trucks/Buse	Semis	Cars	Trucks/Buse	Semis			
4:31:00 PM	1	10	0	0	12	0	0	0	0	0	250	0	0	300	0	0	0	0	0	250	300	0
4:33:13 PM	2	7	0	0	10	0	0	1	0	0	175	0	0	250	0	0	25	0	0	175	250	25
4:35:23 PM	3	7	0	0	4	0	0	1	0	0	175	0	0	100	0	0	25	0	0	175	100	25
4:37:32 PM	4	9	0	0	8	0	1	0	0	0	225	0	0	200	0	45	0	0	0	225	245	0
4:39:42 PM	5	11	0	0	8	0	0	1	0	0	275	0	0	200	0	0	25	0	0	275	200	25
4:41:53 PM	6	8	0	0	6	0	0	1	0	0	200	0	0	150	0	0	25	0	0	200	150	25
4:44:03 PM	7	8	0	0	4	0	0	0	0	0	200	0	0	100	0	0	0	0	0	200	100	0
4:46:13 PM	8	10	0	0	12	1	0	0	0	0	250	0	0	300	45	0	0	0	0	250	345	0
4:48:24 PM	9	10	1	0	11	0	1	1	0	0	250	45	0	275	0	45	25	0	0	295	320	25
4:50:33 PM	10	8	0	0	9	0	0	0	0	0	200	0	0	225	0	0	0	0	0	200	225	0
4:52:43 PM	11	11	0	0	10	0	0	1	0	0	275	0	0	250	0	0	25	0	0	275	250	25
4:54:52 PM	12	11	0	0	9	0	1	1	0	0	275	0	0	225	0	45	25	0	0	275	270	25
4:57:02 PM	13	13	0	0	11	0	0	1	0	0	325	0	0	275	0	0	25	0	0	325	275	25
4:59:13 PM	14	9	0	0	11	0	0	1	0	0	225	0	0	275	0	0	25	0	0	225	275	25
5:01:25 PM	15	7	0	0	7	0	0	1	0	0	175	0	0	175	0	0	25	0	0	175	175	25
5:03:33 PM	16	14	0	0	12	0	0	0	0	0	350	0	0	300	0	0	0	0	0	350	300	0
5:05:42 PM	17	15	0	0	15	2	0	0	0	0	375	0	0	375	90	0	0	0	0	375	465	0
5:07:53 PM	18	10	0	0	8	0	0	1	0	0	250	0	0	200	0	0	25	0	0	250	200	25
5:10:02 PM	19	8	0	0	11	1	0	0	0	0	200	0	0	275	45	0	0	0	0	200	320	0
5:12:13 PM	20	11	0	0	8	0	0	0	0	0	275	0	0	200	0	0	0	0	0	275	200	0
5:14:23 PM	21	7	0	0	11	0	1	1	0	0	175	0	0	275	0	45	25	0	0	175	320	25
5:16:33 PM	22	12	0	0	8	0	0	1	0	0	300	0	0	200	0	0	25	0	0	300	200	25
5:18:42 PM	23	9	0	0	16	0	0	0	0	0	225	0	0	400	0	0	0	0	0	225	400	0
5:20:52 PM	24	6	0	0	10	0	0	0	0	0	150	0	0	250	0	0	0	0	0	150	250	0
5:23:01 PM	25	8	1	0	15	0	0	1	0	0	200	45	0	375	0	0	25	0	0	245	375	25
5:25:13 PM	26	11	0	0	10	0	0	1	0	0	275	0	0	250	0	0	25	0	0	275	250	25
5:27:23 PM	27	11	0	0	15	0	0	1	0	0	275	0	0	375	0	0	25	0	0	275	375	25
5:29:32 PM	28	6	0	0	7	0	0	0	0	0	150	0	0	175	0	0	0	0	0	150	175	0

Data points are best estimates based on the camera angle and video quality. Queues were at least the stated length.

Notes
*view of adjacent lane blocked by semi
*lanes became so long that they were indistinguishable with camera quality
*RT obstructed at max queues

Average	242	261	14
Standard Deviation	58	87	13
95th Percentile	341	391	25
50th Percentile	248	250	25
Max Queue	375	465	25

95th Percentile (ft)	**391**	**25**
50th Percentile (ft)	**250**	**25**
Max Queue	**465**	**25**

APPENDIX E

Field Collected Right-Turn on Red Data

Right-Turn on Red Video Data
Isolated Signalized Intersections

Isolated Signals RTOR Counts

WIS 172 & CTH EB/Packerland				WIS 52 & S. 28th Ave					WIS 20/83 & WIS 36				WIS 67 & US 14				US 12 & CTH K			
4:00 - 5:00 PM				4:15 - 5:15 PM					4:45 - 5:45 PM				4:00 - 5:00 PM				4:30 - 5:30 PM			
East leg				South leg					North Leg				West Leg				West leg			
Total RTOR	54			Total RTOR	55				Total RTOR	23			Total RTOR	56			Total RTOR	51		
Time	Cars	Trucks/Buses	Semis	Time	Cars	Trucks/ Buses	Semis	RT during Prot LT phase	Time	Cars	Trucks/Buses	Semis	Time	Cars	Trucks/Buses	Semis	Time	Cars	Trucks/Buses	Semis
4:00:00 PM	0	0	0	4:15:00 PM	2	0	0	0	4:45:00 PM	1	0	0	4:00:00 PM	0	0	0	4:30:00 PM	1	0	0
4:00:30 PM	0	0	0	4:15:30 PM	0	0	0	0	4:45:30 PM	0	0	0	4:00:30 PM	0	0	0	4:30:30 PM	0	0	0
4:01:00 PM	1	0	0	4:16:00 PM	1	0	0	0	4:46:00 PM	0	0	0	4:01:00 PM	1	0	0	4:31:00 PM	0	0	0
4:01:30 PM	0	0	0	4:16:30 PM	0	0	0	0	4:46:30 PM	0	0	0	4:01:30 PM	2	0	0	4:31:30 PM	0	0	0
4:02:00 PM	1	0	0	4:17:00 PM	0	0	0	0	4:47:00 PM	0	0	0	4:02:00 PM	0	0	0	4:32:00 PM	0	0	0
4:02:30 PM	0	0	0	4:17:30 PM	0	0	0	0	4:47:30 PM	0	0	0	4:02:30 PM	4	0	0	4:32:30 PM	1	0	0
4:03:00 PM	0	0	0	4:18:00 PM	1	0	0	1	4:48:00 PM	0	0	0	4:03:00 PM	0	0	0	4:33:00 PM	2	0	0
4:03:30 PM	2	0	0	4:18:30 PM	0	0	0	0	4:48:30 PM	0	0	0	4:03:30 PM	2	0	0	4:33:30 PM	0	0	0
4:04:00 PM	0	0	0	4:19:00 PM	0	1	0	0	4:49:00 PM	0	0	0	4:04:00 PM	0	0	0	4:34:00 PM	0	0	0
4:04:30 PM	0	0	0	4:19:30 PM	1	0	0	1	4:49:30 PM	0	0	0	4:04:30 PM	0	0	0	4:34:30 PM	0	0	0
4:05:00 PM	0	0	0	4:20:00 PM	2	0	0	0	4:50:00 PM	0	0	0	4:05:00 PM	0	0	0	4:35:00 PM	2	0	0
4:05:30 PM	0	0	0	4:20:30 PM	1	0	0	0	4:50:30 PM	0	0	0	4:05:30 PM	0	0	0	4:35:30 PM	0	0	0
4:06:00 PM	0	0	0	4:21:00 PM	0	0	0	0	4:51:00 PM	0	0	0	4:06:00 PM	0	0	0	4:36:00 PM	0	0	0
4:06:30 PM	1	0	0	4:21:30 PM	0	0	0	0	4:51:30 PM	0	0	0	4:06:30 PM	0	0	0	4:36:30 PM	0	0	0
4:07:00 PM	0	0	0	4:22:00 PM	1	0	0	0	4:52:00 PM	2	0	0	4:07:00 PM	0	0	0	4:37:00 PM	0	0	0
4:07:30 PM	2	0	0	4:22:30 PM	0	0	0	0	4:52:30 PM	0	0	0	4:07:30 PM	2	0	0	4:37:30 PM	0	0	0
4:08:00 PM	0	0	0	4:23:00 PM	2	0	0	0	4:53:00 PM	1	0	0	4:08:00 PM	0	0	0	4:38:00 PM	0	0	0
4:08:30 PM	0	0	0	4:23:30 PM	0	0	0	0	4:53:30 PM	1	0	0	4:08:30 PM	0	0	0	4:38:30 PM	0	0	0
4:09:00 PM	0	0	0	4:24:00 PM	0	0	0	2	4:54:00 PM	0	0	0	4:09:00 PM	3	0	0	4:39:00 PM	0	0	0
4:09:30 PM	1	1	0	4:24:30 PM	0	0	0	0	4:54:30 PM	1	0	0	4:09:30 PM	0	0	0	4:39:30 PM	0	0	0
4:10:00 PM	2	0	0	4:25:00 PM	0	0	0	0	4:55:00 PM	0	0	0	4:10:00 PM	0	0	0	4:40:00 PM	0	0	0
4:10:30 PM	0	0	0	4:25:30 PM	0	0	0	0	4:55:30 PM	0	0	0	4:10:30 PM	1	0	0	4:40:30 PM	0	0	0
4:11:00 PM	0	0	0	4:26:00 PM	1	0	0	0	4:56:00 PM	0	0	0	4:11:00 PM	0	0	0	4:41:00 PM	0	0	0
4:11:30 PM	1	0	0	4:26:30 PM	0	0	0	0	4:56:30 PM	0	0	0	4:11:30 PM	1	0	0	4:41:30 PM	0	0	0
4:12:00 PM	1	0	0	4:27:00 PM	0	0	0	2	4:57:00 PM	0	0	0	4:12:00 PM	0	0	0	4:42:00 PM	0	0	0
4:12:30 PM	1	0	0	4:27:30 PM	3	0	0	0	4:57:30 PM	0	0	0	4:12:30 PM	3	0	0	4:42:30 PM	0	0	0
4:13:00 PM	0	0	0	4:28:00 PM	0	0	0	1	4:58:00 PM	2	0	0	4:13:00 PM	0	0	0	4:43:00 PM	0	0	0
4:13:30 PM	0	0	0	4:28:30 PM	0	0	0	0	4:58:30 PM	0	0	0	4:13:30 PM	0	0	0	4:43:30 PM	0	0	0
4:14:00 PM	0	0	0	4:29:00 PM	0	0	0	0	4:59:00 PM	1	0	0	4:14:00 PM	0	0	0	4:44:00 PM	1	0	0
4:14:30 PM	1	0	0	4:29:30 PM	0	0	0	0	4:59:30 PM	0	0	0	4:14:30 PM	0	0	0	4:44:30 PM	2	0	0
4:15:00 PM	0	0	0	4:30:00 PM	0	0	0	0	5:00:00 PM	0	0	0	4:15:00 PM	0	0	0	4:45:00 PM	1	0	0
4:15:30 PM	0	1	0	4:30:30 PM	0	0	0	0	5:00:30 PM	0	0	0	4:15:30 PM	0	0	0	4:45:30 PM	0	0	0
4:16:00 PM	0	0	0	4:31:00 PM	0	0	0	0	5:01:00 PM	0	0	0	4:16:00 PM	0	0	0	4:46:00 PM	1	0	0
4:16:30 PM	0	0	0	4:31:30 PM	0	0	0	0	5:01:30 PM	0	0	0	4:16:30 PM	0	0	0	4:46:30 PM	1	0	0
4:17:00 PM	1	0	0	4:32:00 PM	1	0	0	0	5:02:00 PM	0	0	0	4:17:00 PM	0	0	0	4:47:00 PM	1	0	0
4:17:30 PM	0	0	0	4:32:30 PM	0	0	0	1	5:02:30 PM	0	0	0	4:17:30 PM	0	0	0	4:47:30 PM	0	0	0
4:18:00 PM	0	0	0	4:33:00 PM	0	0	0	0	5:03:00 PM	0	0	0	4:18:00 PM	0	0	0	4:48:00 PM	3	0	0
4:18:30 PM	1	0	0	4:33:30 PM	0	0	0	0	5:03:30 PM	0	0	0	4:18:30 PM	1	0	0	4:48:30 PM	0	0	0
4:19:00 PM	1	0	0	4:34:00 PM	0	0	0	0	5:04:00 PM	0	0	0	4:19:00 PM	2	0	0	4:49:00 PM	2	0	0
4:19:30 PM	0	0	0	4:34:30 PM	0	0	0	0	5:04:30 PM	0	0	0	4:19:30 PM	0	0	0	4:49:30 PM	0	0	0
4:20:00 PM	0	0	0	4:35:00 PM	0	0	0	0	5:05:00 PM	0	0	0	4:20:00 PM	1	0	0	4:50:00 PM	0	0	0
4:20:30 PM	0	0	0	4:35:30 PM	0	0	0	0	5:05:30 PM	0	0	0	4:20:30 PM	0	0	0	4:50:30 PM	1	0	0
4:21:00 PM	0	0	0	4:36:00 PM	0	0	0	0	5:06:00 PM	0	0	0	4:21:00 PM	0	0	0	4:51:00 PM	1	0	0

Isolated Signals RTOR Counts

WIS 172 & CTH EB/Packerland				WIS 52 & S. 28th Ave					WIS 20/83 & WIS 36				WIS 67 & US 14				US 12 & CTH K			
4:00 - 5:00 PM				4:15 - 5:15 PM					4:45 - 5:45 PM				4:00 - 5:00 PM				4:30 - 5:30 PM			
East leg				South leg					North Leg				West Leg				West leg			
Total RTOR	54			Total RTOR	55				Total RTOR	23			Total RTOR	56			Total RTOR	51		
Time	Cars	Trucks/Buses	Semis	Time	Cars	Trucks/ Buses	Semis	RT during Prot LT phase	Time	Cars	Trucks/Buses	Semis	Time	Cars	Trucks/Buses	Semis	Time	Cars	Trucks/Buses	Semis
4:21:30 PM	0	0	0	4:36:30 PM	0	0	0	0	5:06:30 PM	0	0	0	4:21:30 PM	0	0	0	4:51:30 PM	1	0	0
4:22:00 PM	0	1	0	4:37:00 PM	0	0	0	0	5:07:00 PM	0	0	0	4:22:00 PM	0	0	0	4:52:00 PM	0	0	0
4:22:30 PM	0	0	0	4:37:30 PM	1	0	0	0	5:07:30 PM	0	0	0	4:22:30 PM	0	0	0	4:52:30 PM	0	0	0
4:23:00 PM	0	0	0	4:38:00 PM	1	0	0	0	5:08:00 PM	0	0	0	4:23:00 PM	3	0	0	4:53:00 PM	1	0	0
4:23:30 PM	0	0	0	4:38:30 PM	1	0	0	0	5:08:30 PM	1	0	0	4:23:30 PM	0	0	0	4:53:30 PM	0	0	0
4:24:00 PM	0	0	0	4:39:00 PM	0	0	0	0	5:09:00 PM	0	0	0	4:24:00 PM	0	0	0	4:54:00 PM	0	0	0
4:24:30 PM	0	0	0	4:39:30 PM	0	0	0	0	5:09:30 PM	0	0	0	4:24:30 PM	0	0	0	4:54:30 PM	0	0	0
4:25:00 PM	0	0	0	4:40:00 PM	0	0	0	0	5:10:00 PM	0	0	0	4:25:00 PM	0	0	0	4:55:00 PM	0	0	0
4:25:30 PM	0	0	0	4:40:30 PM	0	0	0	1	5:10:30 PM	0	0	0	4:25:30 PM	0	0	0	4:55:30 PM	0	0	0
4:26:00 PM	1	0	0	4:41:00 PM	0	0	0	0	5:11:00 PM	0	0	0	4:26:00 PM	0	0	0	4:56:00 PM	2	0	0
4:26:30 PM	0	0	0	4:41:30 PM	2	0	0	0	5:11:30 PM	0	0	0	4:26:30 PM	0	0	0	4:56:30 PM	0	0	0
4:27:00 PM	0	0	0	4:42:00 PM	0	0	0	0	5:12:00 PM	0	0	0	4:27:00 PM	0	0	0	4:57:00 PM	0	0	0
4:27:30 PM	0	0	0	4:42:30 PM	0	0	0	0	5:12:30 PM	0	0	0	4:27:30 PM	0	0	0	4:57:30 PM	0	0	0
4:28:00 PM	2	0	0	4:43:00 PM	3	0	0	0	5:13:00 PM	0	0	0	4:28:00 PM	0	0	0	4:58:00 PM	0	0	0
4:28:30 PM	0	0	0	4:43:30 PM	0	0	0	0	5:13:30 PM	0	0	0	4:28:30 PM	0	0	0	4:58:30 PM	0	0	0
4:29:00 PM	0	0	0	4:44:00 PM	0	0	0	0	5:14:00 PM	1	0	0	4:29:00 PM	0	0	0	4:59:00 PM	0	0	0
4:29:30 PM	0	0	0	4:44:30 PM	1	0	0	0	5:14:30 PM	0	0	0	4:29:30 PM	0	0	0	4:59:30 PM	0	0	0
4:30:00 PM	1	0	0	4:45:00 PM	0	0	0	0	5:15:00 PM	0	0	0	4:30:00 PM	0	0	0	5:00:00 PM	0	0	0
4:30:30 PM	0	0	0	4:45:30 PM	1	0	0	0	5:15:30 PM	0	0	0	4:30:30 PM	0	0	0	5:00:30 PM	0	0	0
4:31:00 PM	0	0	0	4:46:00 PM	1	0	0	0	5:16:00 PM	0	0	0	4:31:00 PM	2	0	0	5:01:00 PM	0	0	0
4:31:30 PM	1	0	0	4:46:30 PM	0	0	0	1	5:16:30 PM	0	0	0	4:31:30 PM	0	0	0	5:01:30 PM	0	0	0
4:32:00 PM	0	0	0	4:47:00 PM	0	0	0	0	5:17:00 PM	0	0	0	4:32:00 PM	0	0	0	5:02:00 PM	1	0	0
4:32:30 PM	1	0	0	4:47:30 PM	0	0	0	0	5:17:30 PM	0	0	0	4:32:30 PM	0	0	0	5:02:30 PM	0	0	0
4:33:00 PM	0	0	0	4:48:00 PM	0	0	0	0	5:18:00 PM	0	0	0	4:33:00 PM	0	0	0	5:03:00 PM	0	0	0
4:33:30 PM	0	0	0	4:48:30 PM	1	0	0	1	5:18:30 PM	0	0	0	4:33:30 PM	5	0	0	5:03:30 PM	1	0	0
4:34:00 PM	0	0	0	4:49:00 PM	0	0	0	0	5:19:00 PM	0	0	0	4:34:00 PM	0	0	0	5:04:00 PM	0	0	0
4:34:30 PM	0	0	0	4:49:30 PM	2	0	0	0	5:19:30 PM	0	0	0	4:34:30 PM	1	0	0	5:04:30 PM	0	0	0
4:35:00 PM	0	0	0	4:50:00 PM	0	0	0	1	5:20:00 PM	0	0	0	4:35:00 PM	0	0	0	5:05:00 PM	2	0	0
4:35:30 PM	0	0	0	4:50:30 PM	3	0	0	0	5:20:30 PM	0	0	0	4:35:30 PM	0	0	0	5:05:30 PM	1	0	0
4:36:00 PM	5	0	0	4:51:00 PM	1	0	0	0	5:21:00 PM	1	0	0	4:36:00 PM	0	0	0	5:06:00 PM	0	0	0
4:36:30 PM	0	0	0	4:51:30 PM	0	0	0	0	5:21:30 PM	0	0	0	4:36:30 PM	0	0	0	5:06:30 PM	0	0	0
4:37:00 PM	0	0	0	4:52:00 PM	0	0	0	0	5:22:00 PM	1	0	0	4:37:00 PM	0	0	0	5:07:00 PM	0	0	0
4:37:30 PM	3	0	0	4:52:30 PM	0	0	0	0	5:22:30 PM	0	0	0	4:37:30 PM	2	0	0	5:07:30 PM	0	0	0
4:38:00 PM	1	1	0	4:53:00 PM	0	0	0	2	5:23:00 PM	0	0	0	4:38:00 PM	0	0	0	5:08:00 PM	1	0	0
4:38:30 PM	0	0	0	4:53:30 PM	3	0	0	0	5:23:30 PM	0	0	0	4:38:30 PM	2	0	0	5:08:30 PM	0	0	0
4:39:00 PM	0	0	0	4:54:00 PM	0	0	0	2	5:24:00 PM	1	0	0	4:39:00 PM	0	0	0	5:09:00 PM	0	0	0
4:39:30 PM	2	0	0	4:54:30 PM	0	0	0	0	5:24:30 PM	0	0	0	4:39:30 PM	3	0	0	5:09:30 PM	1	0	0
4:40:00 PM	0	0	0	4:55:00 PM	0	0	0	0	5:25:00 PM	1	0	0	4:40:00 PM	0	0	0	5:10:00 PM	1	0	0
4:40:30 PM	0	0	0	4:55:30 PM	0	0	0	0	5:25:30 PM	0	0	0	4:40:30 PM	0	0	0	5:10:30 PM	0	0	0
4:41:00 PM	0	0	0	4:56:00 PM	0	0	0	0	5:26:00 PM	0	0	0	4:41:00 PM	1	0	0	5:11:00 PM	0	0	0
4:41:30 PM	0	0	0	4:56:30 PM	3	0	0	0	5:26:30 PM	0	0	0	4:41:30 PM	0	0	0	5:11:30 PM	0	0	0
4:42:00 PM	0	0	0	4:57:00 PM	1	0	0	0	5:27:00 PM	0	0	0	4:42:00 PM	0	0	0	5:12:00 PM	0	0	0
4:42:30 PM	0	0	0	4:57:30 PM	0	0	0	0	5:27:30 PM	1	0	0	4:42:30 PM	0	0	0	5:12:30 PM	1	0	0

Isolated Signals RTOR Counts

WIS 172 & CTH EB/Packerland				WIS 52 & S. 28th Ave					WIS 20/83 & WIS 36				WIS 67 & US 14				US 12 & CTH K			
4:00 - 5:00 PM				4:15 - 5:15 PM					4:45 - 5:45 PM				4:00 - 5:00 PM				4:30 - 5:30 PM			
East leg				South leg					North Leg				West Leg				West leg			
Total RTOR	54			Total RTOR	55				Total RTOR	23			Total RTOR	56			Total RTOR	51		
Time	Cars	Trucks/Buses	Semis	Time	Cars	Trucks/ Buses	Semis	RT during Prot LT phase	Time	Cars	Trucks/Buses	Semis	Time	Cars	Trucks/Buses	Semis	Time	Cars	Trucks/Buses	Semis
4:43:00 PM	0	0	0	4:58:00 PM	0	0	0	0	5:28:00 PM	0	0	0	4:43:00 PM	0	0	0	5:13:00 PM	1	0	0
4:43:30 PM	0	0	0	4:58:30 PM	0	0	0	0	5:28:30 PM	0	0	0	4:43:30 PM	1	0	0	5:13:30 PM	0	0	0
4:44:00 PM	3	1	0	4:59:00 PM	2	0	0	0	5:29:00 PM	0	0	0	4:44:00 PM	0	0	0	5:14:00 PM	0	0	0
4:44:30 PM	0	0	0	4:59:30 PM	0	0	0	2	5:29:30 PM	0	0	0	4:44:30 PM	0	0	0	5:14:30 PM	1	0	0
4:45:00 PM	0	0	0	5:00:00 PM	0	0	0	0	5:30:00 PM	0	0	0	4:45:00 PM	0	0	0	5:15:00 PM	0	0	0
4:45:30 PM	3	0	0	5:00:30 PM	0	0	0	0	5:30:30 PM	0	0	0	4:45:30 PM	0	0	0	5:15:30 PM	0	0	0
4:46:00 PM	0	0	0	5:01:00 PM	0	0	0	2	5:31:00 PM	1	0	0	4:46:00 PM	0	0	0	5:16:00 PM	1	0	0
4:46:30 PM	0	0	0	5:01:30 PM	0	0	0	0	5:31:30 PM	0	0	0	4:46:30 PM	0	0	0	5:16:30 PM	0	0	0
4:47:00 PM	1	0	0	5:02:00 PM	0	0	0	0	5:32:00 PM	0	0	0	4:47:00 PM	0	0	0	5:17:00 PM	0	0	0
4:47:30 PM	2	0	0	5:02:30 PM	0	0	0	0	5:32:30 PM	0	0	0	4:47:30 PM	1	0	0	5:17:30 PM	0	0	0
4:48:00 PM	0	0	0	5:03:00 PM	0	0	0	0	5:33:00 PM	0	0	0	4:48:00 PM	0	0	0	5:18:00 PM	2	0	0
4:48:30 PM	0	0	0	5:03:30 PM	0	0	0	0	5:33:30 PM	0	0	0	4:48:30 PM	0	0	0	5:18:30 PM	0	0	0
4:49:00 PM	0	0	0	5:04:00 PM	1	0	0	0	5:34:00 PM	0	0	0	4:49:00 PM	0	0	0	5:19:00 PM	0	0	0
4:49:30 PM	0	0	0	5:04:30 PM	0	0	0	0	5:34:30 PM	0	0	0	4:49:30 PM	1	0	0	5:19:30 PM	0	0	0
4:50:00 PM	1	0	0	5:05:00 PM	1	0	0	0	5:35:00 PM	1	0	0	4:50:00 PM	0	0	0	5:20:00 PM	1	0	0
4:50:30 PM	0	0	0	5:05:30 PM	0	0	0	0	5:35:30 PM	0	0	0	4:50:30 PM	0	0	0	5:20:30 PM	1	0	0
4:51:00 PM	0	0	0	5:06:00 PM	1	0	0	0	5:36:00 PM	0	0	0	4:51:00 PM	0	0	0	5:21:00 PM	1	0	0
4:51:30 PM	0	0	0	5:06:30 PM	0	0	0	0	5:36:30 PM	0	0	0	4:51:30 PM	0	0	0	5:21:30 PM	1	0	0
4:52:00 PM	0	0	0	5:07:00 PM	0	0	0	0	5:37:00 PM	0	0	0	4:52:00 PM	4	0	0	5:22:00 PM	0	0	0
4:52:30 PM	0	0	0	5:07:30 PM	0	0	0	0	5:37:30 PM	0	0	0	4:52:30 PM	0	0	0	5:22:30 PM	1	0	0
4:53:00 PM	0	0	0	5:08:00 PM	2	0	0	0	5:38:00 PM	1	0	0	4:53:00 PM	1	0	0	5:23:00 PM	1	0	0
4:53:30 PM	0	0	0	5:08:30 PM	1	0	0	0	5:38:30 PM	1	0	0	4:53:30 PM	4	0	0	5:23:30 PM	0	0	0
4:54:00 PM	0	0	0	5:09:00 PM	0	0	0	0	5:39:00 PM	1	0	0	4:54:00 PM	0	0	0	5:24:00 PM	0	0	0
4:54:30 PM	0	0	0	5:09:30 PM	0	0	1	0	5:39:30 PM	0	0	0	4:54:30 PM	0	0	0	5:24:30 PM	1	0	0
4:55:00 PM	0	0	0	5:10:00 PM	0	0	0	0	5:40:00 PM	1	0	0	4:55:00 PM	0	0	0	5:25:00 PM	0	0	0
4:55:30 PM	1	0	0	5:10:30 PM	1	0	0	0	5:40:30 PM	0	0	0	4:55:30 PM	0	0	0	5:25:30 PM	0	0	0
4:56:00 PM	0	0	0	5:11:00 PM	0	0	0	0	5:41:00 PM	0	0	0	4:56:00 PM	0	0	0	5:26:00 PM	0	0	0
4:56:30 PM	0	0	0	5:11:30 PM	0	0	0	3	5:41:30 PM	0	0	0	4:56:30 PM	1	0	0	5:26:30 PM	0	0	0
4:57:00 PM	3	0	0	5:12:00 PM	0	0	0	2	5:42:00 PM	1	0	0	4:57:00 PM	0	0	0	5:27:00 PM	1	0	0
4:57:30 PM	0	0	0	5:12:30 PM	0	0	0	0	5:42:30 PM	0	0	0	4:57:30 PM	0	0	0	5:27:30 PM	3	0	0
4:58:00 PM	0	0	0	5:13:00 PM	0	0	0	0	5:43:00 PM	0	0	0	4:58:00 PM	1	0	0	5:28:00 PM	0	0	0
4:58:30 PM	0	0	0	5:13:30 PM	0	0	0	0	5:43:30 PM	0	0	0	4:58:30 PM	0	0	0	5:28:30 PM	0	0	0
4:59:00 PM	1	0	0	5:14:00 PM	2	0	0	0	5:44:00 PM	0	0	0	4:59:00 PM	0	0	0	5:29:00 PM	2	0	0
4:59:30 PM	0	0	0	5:14:30 PM	1	0	0	1	5:44:30 PM	0	0	0	4:59:30 PM	0	0	0	5:29:30 PM	0	0	0
Note				*Note*					*Note*				*Note*	*RT sometimes obstructed by traffic at adjacent intersection. Rain degrades image quality*			*Note*	*RT sometimes obstructed by long queues*		

Right-Turn on Red Video Data
WIS 38 Signalized Corridor

WIS 38 Corridor RTOR Counts

WIS 38 & Drexel				WIS 38 & Town Square Way/Susan				WIS 38 & Forest Hill				WIS 38 & Puetz				WIS 38 & Centennial			
4:30 - 5:30 PM				4:30 - 5:30 PM				4:30 - 5:30 PM				4:30 - 5:30 PM				4:30 - 5:30 PM			
West leg				North leg				West leg				North leg				North leg			
Total RTOR	230			Total RTOR	22			Total RTOR	100			Total RTOR	71			Total RTOR	57		
Time	Cars	Trucks/Buses	Semis	Time	Cars	Trucks/Buses	Semis	Time	Cars	Trucks/Buses	Semis	Time	Cars	Trucks/Buses	Semis	Time	Cars	Trucks/Buses	Semis
4:30:00 PM	0	0	0	4:30:00 PM	0	0	0	4:30:00 PM	0	0	0	4:30:00 PM	0	0	0	4:30:00 PM	0	0	0
4:30:30 PM	1	0	0	4:30:30 PM	0	0	0	4:30:30 PM	1	0	0	4:30:30 PM	0	0	0	4:30:30 PM	0	0	0
4:31:00 PM	3	0	0	4:31:00 PM	0	0	0	4:31:00 PM	1	0	0	4:31:00 PM	0	0	0	4:31:00 PM	2	0	0
4:31:30 PM	6	0	0	4:31:30 PM	0	0	0	4:31:30 PM	1	0	0	4:31:30 PM	0	0	0	4:31:30 PM	1	0	0
4:32:00 PM	0	0	0	4:32:00 PM	0	0	0	4:32:00 PM	0	0	0	4:32:00 PM	2	0	0	4:32:00 PM	0	0	0
4:32:30 PM	0	0	0	4:32:30 PM	0	0	0	4:32:30 PM	1	0	0	4:32:30 PM	0	0	0	4:32:30 PM	0	0	0
4:33:00 PM	3	0	0	4:33:00 PM	0	0	0	4:33:00 PM	1	0	0	4:33:00 PM	1	0	0	4:33:00 PM	0	0	0
4:33:30 PM	3	0	0	4:33:30 PM	0	0	0	4:33:30 PM	0	0	0	4:33:30 PM	0	0	0	4:33:30 PM	3	0	0
4:34:00 PM	0	0	0	4:34:00 PM	0	0	0	4:34:00 PM	2	0	0	4:34:00 PM	0	0	0	4:34:00 PM	2	0	0
4:34:30 PM	1	0	0	4:34:30 PM	0	0	0	4:34:30 PM	0	0	0	4:34:30 PM	0	0	0	4:34:30 PM	0	0	0
4:35:00 PM	1	0	0	4:35:00 PM	0	0	0	4:35:00 PM	2	0	0	4:35:00 PM	1	0	0	4:35:00 PM	0	0	0
4:35:30 PM	1	0	0	4:35:30 PM	0	0	0	4:35:30 PM	1	0	0	4:35:30 PM	0	0	0	4:35:30 PM	0	0	0
4:36:00 PM	2	0	0	4:36:00 PM	0	0	0	4:36:00 PM	1	0	0	4:36:00 PM	0	0	0	4:36:00 PM	2	0	0
4:36:30 PM	0	0	0	4:36:30 PM	0	0	0	4:36:30 PM	0	0	0	4:36:30 PM	0	0	0	4:36:30 PM	0	0	0
4:37:00 PM	0	0	0	4:37:00 PM	0	0	0	4:37:00 PM	0	0	0	4:37:00 PM	1	0	0	4:37:00 PM	0	0	0
4:37:30 PM	1	0	0	4:37:30 PM	0	0	0	4:37:30 PM	0	0	0	4:37:30 PM	1	0	0	4:37:30 PM	0	0	0
4:38:00 PM	3	0	0	4:38:00 PM	0	0	0	4:38:00 PM	2	0	0	4:38:00 PM	0	0	0	4:38:00 PM	0	0	0
4:38:30 PM	0	0	0	4:38:30 PM	1	0	0	4:38:30 PM	5	0	0	4:38:30 PM	0	0	0	4:38:30 PM	1	0	0
4:39:00 PM	0	0	0	4:39:00 PM	0	0	0	4:39:00 PM	1	0	0	4:39:00 PM	1	0	0	4:39:00 PM	0	0	0
4:39:30 PM	7	0	0	4:39:30 PM	0	0	0	4:39:30 PM	1	0	0	4:39:30 PM	1	0	0	4:39:30 PM	0	0	0
4:40:00 PM	4	0	0	4:40:00 PM	0	0	0	4:40:00 PM	0	0	0	4:40:00 PM	1	0	0	4:40:00 PM	0	0	0
4:40:30 PM	2	0	0	4:40:30 PM	0	0	0	4:40:30 PM	3	0	0	4:40:30 PM	0	0	0	4:40:30 PM	4	0	0
4:41:00 PM	3	0	0	4:41:00 PM	0	0	0	4:41:00 PM	2	0	0	4:41:00 PM	0	0	0	4:41:00 PM	1	0	0
4:41:30 PM	1	0	0	4:41:30 PM	0	0	0	4:41:30 PM	0	0	0	4:41:30 PM	1	0	0	4:41:30 PM	1	0	0
4:42:00 PM	7	0	0	4:42:00 PM	0	0	0	4:42:00 PM	1	0	0	4:42:00 PM	2	0	0	4:42:00 PM	0	0	0
4:42:30 PM	1	0	0	4:42:30 PM	0	0	0	4:42:30 PM	4	0	0	4:42:30 PM	0	0	0	4:42:30 PM	0	0	0
4:43:00 PM	0	0	0	4:43:00 PM	0	0	0	4:43:00 PM	2	0	0	4:43:00 PM	0	0	0	4:43:00 PM	5	0	0
4:43:30 PM	1	0	0	4:43:30 PM	0	0	0	4:43:30 PM	0	0	0	4:43:30 PM	2	0	0	4:43:30 PM	0	0	0
4:44:00 PM	6	0	0	4:44:00 PM	0	0	0	4:44:00 PM	1	0	0	4:44:00 PM	1	0	0	4:44:00 PM	0	0	0
4:44:30 PM	4	0	0	4:44:30 PM	2	0	0	4:44:30 PM	0	0	0	4:44:30 PM	0	0	0	4:44:30 PM	0	0	0
4:45:00 PM	0	0	0	4:45:00 PM	3	0	0	4:45:00 PM	0	0	0	4:45:00 PM	0	0	0	4:45:00 PM	0	0	0
4:45:30 PM	0	0	0	4:45:30 PM	0	0	0	4:45:30 PM	1	0	0	4:45:30 PM	1	0	0	4:45:30 PM	0	0	0
4:46:00 PM	4	0	0	4:46:00 PM	0	0	0	4:46:00 PM	1	0	0	4:46:00 PM	0	0	0	4:46:00 PM	2	0	0
4:46:30 PM	2	0	0	4:46:30 PM	0	0	0	4:46:30 PM	1	0	0	4:46:30 PM	0	0	0	4:46:30 PM	2	0	0
4:47:00 PM	0	0	0	4:47:00 PM	0	0	0	4:47:00 PM	2	0	0	4:47:00 PM	0	0	0	4:47:00 PM	0	0	0
4:47:30 PM	1	0	0	4:47:30 PM	0	0	0	4:47:30 PM	0	0	0	4:47:30 PM	0	0	0	4:47:30 PM	0	0	0
4:48:00 PM	3	1	0	4:48:00 PM	0	0	0	4:48:00 PM	1	0	0	4:48:00 PM	0	0	0	4:48:00 PM	0	0	0
4:48:30 PM	0	0	0	4:48:30 PM	0	0	0	4:48:30 PM	1	0	0	4:48:30 PM	0	0	0	4:48:30 PM	1	0	0
4:49:00 PM	0	0	0	4:49:00 PM	0	0	0	4:49:00 PM	2	0	0	4:49:00 PM	0	0	0	4:49:00 PM	0	0	0
4:49:30 PM	0	0	0	4:49:30 PM	0	0	0	4:49:30 PM	0	0	0	4:49:30 PM	0	0	0	4:49:30 PM	1	0	0
4:50:00 PM	0	0	0	4:50:00 PM	0	0	0	4:50:00 PM	0	0	0	4:50:00 PM	0	0	0	4:50:00 PM	0	0	0
4:50:30 PM	5	0	0	4:50:30 PM	0	0	0	4:50:30 PM	0	0	0	4:50:30 PM	0	0	0	4:50:30 PM	0	0	0

WIS 38 Corridor RTOR Counts

WIS 38 & Drexel				WIS 38 & Town Square Way/Susan				WIS 38 & Forest Hill				WIS 38 & Puetz				WIS 38 & Centennial			
4:30 - 5:30 PM				4:30 - 5:30 PM				4:30 - 5:30 PM				4:30 - 5:30 PM				4:30 - 5:30 PM			
West leg				North leg				West leg				North leg				North leg			
Total RTOR	230			Total RTOR	22			Total RTOR	100			Total RTOR	71			Total RTOR	57		
Time	Cars	Trucks/Buses	Semis	Time	Cars	Trucks/Buses	Semis	Time	Cars	Trucks/Buses	Semis	Time	Cars	Trucks/Buses	Semis	Time	Cars	Trucks/Buses	Semis
4:51:00 PM	4	0	0	4:51:00 PM	0	0	0	4:51:00 PM	0	0	0	4:51:00 PM	0	0	0	4:51:00 PM	1	0	0
4:51:30 PM	0	0	0	4:51:30 PM	0	0	0	4:51:30 PM	4	0	0	4:51:30 PM	0	0	0	4:51:30 PM	0	0	0
4:52:00 PM	2	0	0	4:52:00 PM	0	0	0	4:52:00 PM	0	0	0	4:52:00 PM	0	0	0	4:52:00 PM	0	0	0
4:52:30 PM	2	0	0	4:52:30 PM	0	0	0	4:52:30 PM	0	0	0	4:52:30 PM	0	0	0	4:52:30 PM	0	0	0
4:53:00 PM	4	0	0	4:53:00 PM	0	0	0	4:53:00 PM	1	0	0	4:53:00 PM	0	0	0	4:53:00 PM	0	0	0
4:53:30 PM	0	0	0	4:53:30 PM	0	0	0	4:53:30 PM	3	0	0	4:53:30 PM	0	0	0	4:53:30 PM	0	0	0
4:54:00 PM	1	0	0	4:54:00 PM	0	0	0	4:54:00 PM	0	0	0	4:54:00 PM	3	0	0	4:54:00 PM	1	0	0
4:54:30 PM	2	0	0	4:54:30 PM	0	0	0	4:54:30 PM	0	0	0	4:54:30 PM	0	0	0	4:54:30 PM	0	0	0
4:55:00 PM	7	0	0	4:55:00 PM	0	0	0	4:55:00 PM	2	0	0	4:55:00 PM	0	0	0	4:55:00 PM	0	0	0
4:55:30 PM	1	0	0	4:55:30 PM	2	0	0	4:55:30 PM	2	1	0	4:55:30 PM	0	0	0	4:55:30 PM	0	0	0
4:56:00 PM	0	0	0	4:56:00 PM	0	0	0	4:56:00 PM	0	0	0	4:56:00 PM	2	0	0	4:56:00 PM	1	0	0
4:56:30 PM	0	0	0	4:56:30 PM	0	0	0	4:56:30 PM	0	0	0	4:56:30 PM	2	0	0	4:56:30 PM	1	0	0
4:57:00 PM	6	0	0	4:57:00 PM	0	0	0	4:57:00 PM	1	0	0	4:57:00 PM	0	0	0	4:57:00 PM	0	0	0
4:57:30 PM	0	0	0	4:57:30 PM	0	0	0	4:57:30 PM	1	0	0	4:57:30 PM	0	0	0	4:57:30 PM	0	0	0
4:58:00 PM	0	0	0	4:58:00 PM	1	0	0	4:58:00 PM	2	0	0	4:58:00 PM	1	0	0	4:58:00 PM	0	0	0
4:58:30 PM	2	0	0	4:58:30 PM	0	0	0	4:58:30 PM	0	0	0	4:58:30 PM	1	0	0	4:58:30 PM	0	0	0
4:59:00 PM	3	0	0	4:59:00 PM	0	0	0	4:59:00 PM	1	0	0	4:59:00 PM	2	0	0	4:59:00 PM	0	0	0
4:59:30 PM	6	0	0	4:59:30 PM	0	0	0	4:59:30 PM	1	0	0	4:59:30 PM	0	0	0	4:59:30 PM	2	0	0
5:00:00 PM	1	0	0	5:00:00 PM	0	0	0	5:00:00 PM	2	0	0	5:00:00 PM	0	0	0	5:00:00 PM	0	0	0
5:00:30 PM	0	0	0	5:00:30 PM	0	0	0	5:00:30 PM	0	0	0	5:00:30 PM	1	0	0	5:00:30 PM	0	0	0
5:01:00 PM	2	0	0	5:01:00 PM	0	0	0	5:01:00 PM	0	0	0	5:01:00 PM	0	0	0	5:01:00 PM	1	0	0
5:01:30 PM	6	0	1	5:01:30 PM	0	0	0	5:01:30 PM	0	0	0	5:01:30 PM	2	0	0	5:01:30 PM	0	0	0
5:02:00 PM	3	0	0	5:02:00 PM	0	0	0	5:02:00 PM	0	0	0	5:02:00 PM	0	0	0	5:02:00 PM	0	0	0
5:02:30 PM	0	0	0	5:02:30 PM	0	0	0	5:02:30 PM	3	0	0	5:02:30 PM	0	0	0	5:02:30 PM	0	0	0
5:03:00 PM	0	0	0	5:03:00 PM	0	0	0	5:03:00 PM	0	0	0	5:03:00 PM	5	0	0	5:03:00 PM	0	0	0
5:03:30 PM	4	0	0	5:03:30 PM	0	0	0	5:03:30 PM	1	0	0	5:03:30 PM	2	0	0	5:03:30 PM	0	0	0
5:04:00 PM	4	0	0	5:04:00 PM	0	0	0	5:04:00 PM	0	0	0	5:04:00 PM	0	0	0	5:04:00 PM	1	0	0
5:04:30 PM	0	0	0	5:04:30 PM	0	0	0	5:04:30 PM	2	0	0	5:04:30 PM	0	0	0	5:04:30 PM	2	0	0
5:05:00 PM	0	0	0	5:05:00 PM	0	0	0	5:05:00 PM	1	0	0	5:05:00 PM	3	0	0	5:05:00 PM	0	0	0
5:05:30 PM	5	0	0	5:05:30 PM	2	0	0	5:05:30 PM	0	0	0	5:05:30 PM	0	0	0	5:05:30 PM	0	0	0
5:06:00 PM	4	0	0	5:06:00 PM	1	0	0	5:06:00 PM	0	0	0	5:06:00 PM	0	0	0	5:06:00 PM	1	0	0
5:06:30 PM	1	0	0	5:06:30 PM	0	0	0	5:06:30 PM	0	0	0	5:06:30 PM	0	0	0	5:06:30 PM	0	0	0
5:07:00 PM	3	0	0	5:07:00 PM	0	0	0	5:07:00 PM	0	0	0	5:07:00 PM	0	0	0	5:07:00 PM	0	0	0
5:07:30 PM	1	0	0	5:07:30 PM	0	0	0	5:07:30 PM	0	0	0	5:07:30 PM	3	0	0	5:07:30 PM	0	0	0
5:08:00 PM	8	0	0	5:08:00 PM	2	0	0	5:08:00 PM	0	0	0	5:08:00 PM	2	0	0	5:08:00 PM	0	0	0
5:08:30 PM	1	0	0	5:08:30 PM	0	0	0	5:08:30 PM	1	0	0	5:08:30 PM	0	0	0	5:08:30 PM	1	0	0
5:09:00 PM	0	0	0	5:09:00 PM	0	0	0	5:09:00 PM	1	0	0	5:09:00 PM	0	0	0	5:09:00 PM	0	0	0
5:09:30 PM	0	0	0	5:09:30 PM	0	0	0	5:09:30 PM	0	0	0	5:09:30 PM	0	0	0	5:09:30 PM	0	0	0
5:10:00 PM	3	0	0	5:10:00 PM	1	0	0	5:10:00 PM	0	0	0	5:10:00 PM	0	0	0	5:10:00 PM	0	0	0
5:10:30 PM	3	1	0	5:10:30 PM	1	0	0	5:10:30 PM	0	0	0	5:10:30 PM	1	0	0	5:10:30 PM	0	0	0
5:11:00 PM	0	0	0	5:11:00 PM	0	0	0	5:11:00 PM	4	0	0	5:11:00 PM	2	0	0	5:11:00 PM	2	0	0
5:11:30 PM	0	0	0	5:11:30 PM	0	0	0	5:11:30 PM	0	0	0	5:11:30 PM	0	0	0	5:11:30 PM	4	0	0

WIS 38 Corridor RTOR Counts

WIS 38 & Drexel				WIS 38 & Town Square Way/Susan				WIS 38 & Forest Hill				WIS 38 & Puetz				WIS 38 & Centennial			
4:30 - 5:30 PM				4:30 - 5:30 PM				4:30 - 5:30 PM				4:30 - 5:30 PM				4:30 - 5:30 PM			
West leg				North leg				West leg				North leg				North leg			
Total RTOR	230			Total RTOR	22			Total RTOR	100			Total RTOR	71			Total RTOR	57		
Time	Cars	Trucks/Buses	Semis	Time	Cars	Trucks/Buses	Semis	Time	Cars	Trucks/Buses	Semis	Time	Cars	Trucks/Buses	Semis	Time	Cars	Trucks/Buses	Semis
5:12:00 PM	4	0	0	5:12:00 PM	0	0	0	5:12:00 PM	0	0	0	5:12:00 PM	0	0	0	5:12:00 PM	0	0	0
5:12:30 PM	6	0	0	5:12:30 PM	0	0	0	5:12:30 PM	1	0	0	5:12:30 PM	2	0	0	5:12:30 PM	0	0	0
5:13:00 PM	0	0	0	5:13:00 PM	2	0	0	5:13:00 PM	0	0	0	5:13:00 PM	2	0	0	5:13:00 PM	0	0	0
5:13:30 PM	0	0	0	5:13:30 PM	0	0	0	5:13:30 PM	0	0	0	5:13:30 PM	2	0	0	5:13:30 PM	0	0	0
5:14:00 PM	1	0	0	5:14:00 PM	0	0	0	5:14:00 PM	0	0	0	5:14:00 PM	0	0	0	5:14:00 PM	1	0	0
5:14:30 PM	6	0	0	5:14:30 PM	0	0	0	5:14:30 PM	0	0	0	5:14:30 PM	0	0	0	5:14:30 PM	1	0	0
5:15:00 PM	4	0	0	5:15:00 PM	0	0	0	5:15:00 PM	0	0	0	5:15:00 PM	1	0	0	5:15:00 PM	0	0	0
5:15:30 PM	0	0	0	5:15:30 PM	0	0	0	5:15:30 PM	4	0	0	5:15:30 PM	2	0	0	5:15:30 PM	0	0	0
5:16:00 PM	0	0	0	5:16:00 PM	0	0	0	5:16:00 PM	1	0	0	5:16:00 PM	0	0	0	5:16:00 PM	0	0	0
5:16:30 PM	5	0	0	5:16:30 PM	0	0	0	5:16:30 PM	0	0	0	5:16:30 PM	0	0	0	5:16:30 PM	0	0	0
5:17:00 PM	5	0	0	5:17:00 PM	0	0	0	5:17:00 PM	0	0	0	5:17:00 PM	0	0	0	5:17:00 PM	0	0	0
5:17:30 PM	0	0	0	5:17:30 PM	1	0	0	5:17:30 PM	2	0	0	5:17:30 PM	1	0	0	5:17:30 PM	0	0	0
5:18:00 PM	0	0	0	5:18:00 PM	0	0	0	5:18:00 PM	0	0	0	5:18:00 PM	0	0	0	5:18:00 PM	0	0	0
5:18:30 PM	1	0	0	5:18:30 PM	0	0	0	5:18:30 PM	0	0	0	5:18:30 PM	0	0	0	5:18:30 PM	1	0	0
5:19:00 PM	7	0	0	5:19:00 PM	0	0	0	5:19:00 PM	0	0	0	5:19:00 PM	0	0	0	5:19:00 PM	0	0	0
5:19:30 PM	0	0	0	5:19:30 PM	1	0	0	5:19:30 PM	2	0	0	5:19:30 PM	0	0	0	5:19:30 PM	0	0	0
5:20:00 PM	0	0	0	5:20:00 PM	0	0	0	5:20:00 PM	0	0	0	5:20:00 PM	0	0	0	5:20:00 PM	0	0	0
5:20:30 PM	0	0	0	5:20:30 PM	0	0	0	5:20:30 PM	0	0	0	5:20:30 PM	0	0	0	5:20:30 PM	0	0	0
5:21:00 PM	6	0	0	5:21:00 PM	0	0	0	5:21:00 PM	0	0	0	5:21:00 PM	0	0	0	5:21:00 PM	2	0	0
5:21:30 PM	2	0	0	5:21:30 PM	0	0	0	5:21:30 PM	4	0	0	5:21:30 PM	0	0	0	5:21:30 PM	0	0	0
5:22:00 PM	0	0	0	5:22:00 PM	0	0	0	5:22:00 PM	1	0	0	5:22:00 PM	0	0	0	5:22:00 PM	0	0	0
5:22:30 PM	0	0	0	5:22:30 PM	0	0	0	5:22:30 PM	0	0	0	5:22:30 PM	2	0	0	5:22:30 PM	0	0	0
5:23:00 PM	3	0	0	5:23:00 PM	0	0	0	5:23:00 PM	0	0	0	5:23:00 PM	0	0	0	5:23:00 PM	0	0	0
5:23:30 PM	1	0	0	5:23:30 PM	0	0	0	5:23:30 PM	0	0	0	5:23:30 PM	0	0	0	5:23:30 PM	0	0	0
5:24:00 PM	0	0	0	5:24:00 PM	1	0	0	5:24:00 PM	3	0	0	5:24:00 PM	0	0	0	5:24:00 PM	0	0	0
5:24:30 PM	0	0	0	5:24:30 PM	0	0	0	5:24:30 PM	0	0	0	5:24:30 PM	3	0	0	5:24:30 PM	1	0	0
5:25:00 PM	0	0	0	5:25:00 PM	0	0	0	5:25:00 PM	0	0	0	5:25:00 PM	0	0	0	5:25:00 PM	0	0	0
5:25:30 PM	4	0	0	5:25:30 PM	0	0	0	5:25:30 PM	0	0	0	5:25:30 PM	2	0	0	5:25:30 PM	0	0	0
5:26:00 PM	0	0	0	5:26:00 PM	0	0	0	5:26:00 PM	0	0	0	5:26:00 PM	0	0	0	5:26:00 PM	3	0	0
5:26:30 PM	0	0	0	5:26:30 PM	1	0	0	5:26:30 PM	1	0	0	5:26:30 PM	0	0	0	5:26:30 PM	1	0	0
5:27:00 PM	1	0	0	5:27:00 PM	0	0	0	5:27:00 PM	0	0	0	5:27:00 PM	3	0	0	5:27:00 PM	0	0	0
5:27:30 PM	2	0	0	5:27:30 PM	0	0	0	5:27:30 PM	0	0	0	5:27:30 PM	0	0	0	5:27:30 PM	0	0	0
5:28:00 PM	2	0	0	5:28:00 PM	0	0	0	5:28:00 PM	0	0	0	5:28:00 PM	0	0	0	5:28:00 PM	0	0	0
5:28:30 PM	0	0	0	5:28:30 PM	0	0	0	5:28:30 PM	1	0	0	5:28:30 PM	0	0	0	5:28:30 PM	0	0	0
5:29:00 PM	0	0	0	5:29:00 PM	0	0	0	5:29:00 PM	1	0	0	5:29:00 PM	1	0	0	5:29:00 PM	1	0	0
5:29:30 PM	2	0	0	5:29:30 PM	0	0	0	5:29:30 PM	3	0	0	5:29:30 PM	2	0	0	5:29:30 PM	0	0	0
Note				*Note*				*Note*				*Note*	*RT sometimes obstructed by long queues*			*Note*	*RT sometimes obstructed by long queues. There was an emergency vehicle included in the 5:26:00 PM data point.*		

Right-Turn on Red Video Data
WIS 67 Signalized Corridor

WIS 67 Corridor RTOR Counts

WIS 67 & I-94 EB Ramps				WIS 67 & I-94 WB Ramps							WIS 67 & Oconomowoc Dr				WIS 67 & CTH B/Valley Rd				WIS 67 & Oconomowoc Pkwy			
4:00 - 5:00 PM				4:00 - 5:00 PM							4:00 - 5:00 PM				4:00 - 5:00 PM				4:00 - 5:00 PM			
West leg (yield)				East leg (dual)							West leg (yield)				West leg (yield)				West leg (yield)			
Total RTOR	41			Total RTOR	312						Total RTOR	155			Total RTOR	133			Total RTOR	105		
					99			213														
					Inside Lane			Outside Lane														
Time	Cars	Trucks/Buses	Semis	Time	Cars	Trucks/Buses	Semis	Cars	Trucks/Buses	Semis	Time	Cars	Trucks/Buses	Semis	Time	Cars	Trucks/Buses	Semis	Time	Cars	Trucks/Buses	Semis
4:00:00 PM	0	0	0	4:00:00 PM	3	0	0	2	0	0	4:00:00 PM	2	0	0	4:00:00 PM	0	0	0	4:00:00 PM	2	0	0
4:00:30 PM	0	0	0	4:00:30 PM	2	0	0	1	0	0	4:00:30 PM	1	0	0	4:00:30 PM	0	0	0	4:00:30 PM	0	0	0
4:01:00 PM	0	0	0	4:01:00 PM	0	0	0	2	0	0	4:01:00 PM	1	0	0	4:01:00 PM	1	0	0	4:01:00 PM	3	0	0
4:01:30 PM	1	0	0	4:01:30 PM	0	0	0	0	0	0	4:01:30 PM	2	0	0	4:01:30 PM	0	0	0	4:01:30 PM	0	0	0
4:02:00 PM	0	0	0	4:02:00 PM	1	0	1	4	0	0	4:02:00 PM	0	0	1	4:02:00 PM	1	0	0	4:02:00 PM	2	0	0
4:02:30 PM	0	0	0	4:02:30 PM	0	0	0	1	0	0	4:02:30 PM	0	0	0	4:02:30 PM	0	0	0	4:02:30 PM	1	0	0
4:03:00 PM	0	0	0	4:03:00 PM	0	0	0	0	0	0	4:03:00 PM	0	0	0	4:03:00 PM	0	0	1	4:03:00 PM	0	0	0
4:03:30 PM	0	0	0	4:03:30 PM	2	0	0	2	0	0	4:03:30 PM	6	1	0	4:03:30 PM	3	0	0	4:03:30 PM	1	0	0
4:04:00 PM	0	0	0	4:04:00 PM	3	0	0	3	0	0	4:04:00 PM	0	0	0	4:04:00 PM	0	0	0	4:04:00 PM	1	0	0
4:04:30 PM	2	0	0	4:04:30 PM	0	0	0	0	0	0	4:04:30 PM	0	0	0	4:04:30 PM	0	0	0	4:04:30 PM	0	0	0
4:05:00 PM	0	0	0	4:05:00 PM	0	0	0	4	0	0	4:05:00 PM	3	0	0	4:05:00 PM	0	0	0	4:05:00 PM	1	0	0
4:05:30 PM	2	0	0	4:05:30 PM	0	0	0	3	0	0	4:05:30 PM	3	0	0	4:05:30 PM	0	0	0	4:05:30 PM	0	0	0
4:06:00 PM	0	0	0	4:06:00 PM	0	0	0	0	0	0	4:06:00 PM	0	0	0	4:06:00 PM	1	0	0	4:06:00 PM	3	0	0
4:06:30 PM	2	0	0	4:06:30 PM	1	0	0	3	0	0	4:06:30 PM	5	1	0	4:06:30 PM	2	0	0	4:06:30 PM	1	0	0
4:07:00 PM	0	0	0	4:07:00 PM	1	0	0	2	0	0	4:07:00 PM	0	0	0	4:07:00 PM	2	0	0	4:07:00 PM	2	0	0
4:07:30 PM	0	0	0	4:07:30 PM	0	0	0	2	0	0	4:07:30 PM	0	0	0	4:07:30 PM	1	0	0	4:07:30 PM	2	0	0
4:08:00 PM	0	0	0	4:08:00 PM	0	0	0	1	0	0	4:08:00 PM	0	0	0	4:08:00 PM	5	0	0	4:08:00 PM	2	0	0
4:08:30 PM	0	0	0	4:08:30 PM	0	0	0	3	0	0	4:08:30 PM	4	0	0	4:08:30 PM	7	0	0	4:08:30 PM	1	0	0
4:09:00 PM	0	0	0	4:09:00 PM	2	0	0	1	0	0	4:09:00 PM	1	0	0	4:09:00 PM	0	0	0	4:09:00 PM	2	0	0
4:09:30 PM	0	0	0	4:09:30 PM	1	0	0	2	0	0	4:09:30 PM	0	0	0	4:09:30 PM	4	0	0	4:09:30 PM	0	0	0
4:10:00 PM	0	0	0	4:10:00 PM	3	0	0	1	0	0	4:10:00 PM	3	0	0	4:10:00 PM	4	0	0	4:10:00 PM	2	0	0
4:10:30 PM	0	0	0	4:10:30 PM	4	0	0	4	0	0	4:10:30 PM	1	0	0	4:10:30 PM	0	0	0	4:10:30 PM	2	0	0
4:11:00 PM	0	0	0	4:11:00 PM	0	0	0	0	0	0	4:11:00 PM	2	0	0	4:11:00 PM	0	0	0	4:11:00 PM	0	0	0
4:11:30 PM	0	0	0	4:11:30 PM	1	0	0	4	0	0	4:11:30 PM	2	0	0	4:11:30 PM	4	0	0	4:11:30 PM	1	0	0
4:12:00 PM	2	0	0	4:12:00 PM	0	0	0	1	0	0	4:12:00 PM	3	0	0	4:12:00 PM	4	0	0	4:12:00 PM	0	0	0
4:12:30 PM	0	0	0	4:12:30 PM	2	0	0	2	0	0	4:12:30 PM	0	0	0	4:12:30 PM	2	0	0	4:12:30 PM	3	0	0
4:13:00 PM	2	0	0	4:13:00 PM	0	0	0	0	0	0	4:13:00 PM	0	0	0	4:13:00 PM	2	0	0	4:13:00 PM	0	0	0
4:13:30 PM	0	0	0	4:13:30 PM	1	0	0	3	0	0	4:13:30 PM	4	0	0	4:13:30 PM	3	0	0	4:13:30 PM	1	0	0
4:14:00 PM	0	0	0	4:14:00 PM	0	0	0	2	0	0	4:14:00 PM	0	0	0	4:14:00 PM	3	0	0	4:14:00 PM	0	0	0
4:14:30 PM	0	0	0	4:14:30 PM	1	0	0	1	0	0	4:14:30 PM	1	0	0	4:14:30 PM	3	0	0	4:14:30 PM	0	0	0
4:15:00 PM	0	0	0	4:15:00 PM	0	0	0	3	0	0	4:15:00 PM	2	0	0	4:15:00 PM	5	0	0	4:15:00 PM	0	0	0
4:15:30 PM	1	0	0	4:15:30 PM	0	0	0	4	1	0	4:15:30 PM	2	0	0	4:15:30 PM	2	0	0	4:15:30 PM	0	0	0
4:16:00 PM	0	0	0	4:16:00 PM	0	0	0	2	0	0	4:16:00 PM	0	0	0	4:16:00 PM	2	0	0	4:16:00 PM	2	0	0
4:16:30 PM	0	0	0	4:16:30 PM	0	0	0	1	0	0	4:16:30 PM	0	0	0	4:16:30 PM	2	0	0	4:16:30 PM	1	0	0
4:17:00 PM	0	0	0	4:17:00 PM	3	0	0	3	0	0	4:17:00 PM	0	0	0	4:17:00 PM	1	0	0	4:17:00 PM	0	0	0
4:17:30 PM	0	0	0	4:17:30 PM	2	0	0	1	0	0	4:17:30 PM	0	0	0	4:17:30 PM	0	0	0	4:17:30 PM	0	0	0
4:18:00 PM	1	0	0	4:18:00 PM	0	0	0	0	0	0	4:18:00 PM	0	0	0	4:18:00 PM	3	0	0	4:18:00 PM	0	0	0
4:18:30 PM	1	0	0	4:18:30 PM	0	0	0	1	0	0	4:18:30 PM	3	0	0	4:18:30 PM	3	0	0	4:18:30 PM	3	0	0
4:19:00 PM	0	0	0	4:19:00 PM	0	0	0	3	0	0	4:19:00 PM	1	0	0	4:19:00 PM	0	0	0	4:19:00 PM	1	0	0
4:19:30 PM	1	0	0	4:19:30 PM	0	0	0	0	0	0	4:19:30 PM	0	0	0	4:19:30 PM	1	0	0	4:19:30 PM	2	0	0
4:20:00 PM	1	0	0	4:20:00 PM	1	0	0	2	0	0	4:20:00 PM	1	0	0	4:20:00 PM	2	0	0	4:20:00 PM	0	0	0
4:20:30 PM	0	0	0	4:20:30 PM	0	0	0	6	0	0	4:20:30 PM	0	0	0	4:20:30 PM	0	0	0	4:20:30 PM	0	0	0
4:21:00 PM	0	0	0	4:21:00 PM	2	0	0	2	0	0	4:21:00 PM	3	0	0	4:21:00 PM	0	0	0	4:21:00 PM	1	0	0
4:21:30 PM	0	0	0	4:21:30 PM	0	0	0	0	0	0	4:21:30 PM	0	0	0	4:21:30 PM	1	0	2	4:21:30 PM	0	0	0
4:22:00 PM	0	0	0	4:22:00 PM	0	0	0	2	0	0	4:22:00 PM	5	0	0	4:22:00 PM	1	0	0	4:22:00 PM	3	0	0
4:22:30 PM	2	0	0	4:22:30 PM	0	0	1	1	0	0	4:22:30 PM	2	0	0	4:22:30 PM	0	0	0	4:22:30 PM	2	0	0

WIS 67 Corridor RTOR Counts

WIS 67 & I-94 EB Ramps				WIS 67 & I-94 WB Ramps							WIS 67 & Oconomowoc Dr				WIS 67 & CTH B/Valley Rd				WIS 67 & Oconomowoc Pkwy			
4:00 - 5:00 PM				4:00 - 5:00 PM							4:00 - 5:00 PM				4:00 - 5:00 PM				4:00 - 5:00 PM			
West leg (yield)				East leg (dual)							West leg (yield)				West leg (yield)				West leg (yield)			
Total RTOR	41			Total RTOR	312						Total RTOR	155			Total RTOR	133			Total RTOR	105		
					99			213														
					Inside Lane			Outside Lane														
Time	Cars	Trucks/Buses	Semis	Time	Cars	Trucks/Buses	Semis	Cars	Trucks/Buses	Semis	Time	Cars	Trucks/Buses	Semis	Time	Cars	Trucks/Buses	Semis	Time	Cars	Trucks/Buses	Semis
4:23:00 PM	0	0	0	4:23:00 PM	0	0	0	0	0	0	4:23:00 PM	3	0	0	4:23:00 PM	0	0	0	4:23:00 PM	0	0	0
4:23:30 PM	0	0	0	4:23:30 PM	0	0	0	2	0	0	4:23:30 PM	1	0	0	4:23:30 PM	0	0	0	4:23:30 PM	0	0	0
4:24:00 PM	0	0	0	4:24:00 PM	2	0	0	5	0	0	4:24:00 PM	0	0	0	4:24:00 PM	0	0	0	4:24:00 PM	0	0	0
4:24:30 PM	0	0	0	4:24:30 PM	0	0	0	0	0	0	4:24:30 PM	1	0	0	4:24:30 PM	0	0	0	4:24:30 PM	1	0	0
4:25:00 PM	1	0	0	4:25:00 PM	0	0	0	1	0	0	4:25:00 PM	0	0	0	4:25:00 PM	0	0	0	4:25:00 PM	0	0	0
4:25:30 PM	0	0	0	4:25:30 PM	0	0	0	0	0	0	4:25:30 PM	0	0	0	4:25:30 PM	0	0	0	4:25:30 PM	1	0	0
4:26:00 PM	1	0	0	4:26:00 PM	0	0	0	2	0	0	4:26:00 PM	0	0	0	4:26:00 PM	0	0	0	4:26:00 PM	1	0	0
4:26:30 PM	0	0	0	4:26:30 PM	2	0	0	2	0	0	4:26:30 PM	1	0	0	4:26:30 PM	1	1	0	4:26:30 PM	0	0	0
4:27:00 PM	0	0	0	4:27:00 PM	2	1	0	4	0	0	4:27:00 PM	0	0	0	4:27:00 PM	0	0	0	4:27:00 PM	0	0	0
4:27:30 PM	0	0	0	4:27:30 PM	1	0	0	2	0	0	4:27:30 PM	0	0	0	4:27:30 PM	0	0	0	4:27:30 PM	0	0	0
4:28:00 PM	1	0	0	4:28:00 PM	0	0	0	1	0	0	4:28:00 PM	0	0	0	4:28:00 PM	2	0	0	4:28:00 PM	0	0	0
4:28:30 PM	0	0	0	4:28:30 PM	2	0	0	3	0	0	4:28:30 PM	0	0	1	4:28:30 PM	0	0	0	4:28:30 PM	1	0	0
4:29:00 PM	2	0	0	4:29:00 PM	2	0	0	3	0	0	4:29:00 PM	0	0	0	4:29:00 PM	0	0	0	4:29:00 PM	0	0	0
4:29:30 PM	0	0	0	4:29:30 PM	0	0	0	0	0	0	4:29:30 PM	2	0	0	4:29:30 PM	2	0	0	4:29:30 PM	0	0	0
4:30:00 PM	0	0	0	4:30:00 PM	0	0	0	1	0	0	4:30:00 PM	1	0	0	4:30:00 PM	3	0	0	4:30:00 PM	2	0	0
4:30:30 PM	0	0	0	4:30:30 PM	2	0	0	4	0	0	4:30:30 PM	0	0	0	4:30:30 PM	0	0	0	4:30:30 PM	1	0	0
4:31:00 PM	0	0	0	4:31:00 PM	0	0	0	1	0	0	4:31:00 PM	2	0	0	4:31:00 PM	2	0	0	4:31:00 PM	0	0	0
4:31:30 PM	2	0	0	4:31:30 PM	1	0	0	2	0	0	4:31:30 PM	3	0	0	4:31:30 PM	1	0	0	4:31:30 PM	0	0	0
4:32:00 PM	0	0	0	4:32:00 PM	3	0	0	3	0	0	4:32:00 PM	1	0	0	4:32:00 PM	2	0	0	4:32:00 PM	1	0	0
4:32:30 PM	1	0	0	4:32:30 PM	2	0	0	4	0	0	4:32:30 PM	1	0	0	4:32:30 PM	0	0	0	4:32:30 PM	3	0	0
4:33:00 PM	0	0	0	4:33:00 PM	2	0	0	1	0	0	4:33:00 PM	0	0	0	4:33:00 PM	1	0	0	4:33:00 PM	0	0	0
4:33:30 PM	0	0	1	4:33:30 PM	1	0	0	3	0	0	4:33:30 PM	3	0	0	4:33:30 PM	1	0	1	4:33:30 PM	1	0	0
4:34:00 PM	0	0	0	4:34:00 PM	2	0	0	1	0	0	4:34:00 PM	0	0	0	4:34:00 PM	1	0	0	4:34:00 PM	1	0	0
4:34:30 PM	1	0	0	4:34:30 PM	0	0	0	0	0	0	4:34:30 PM	0	0	0	4:34:30 PM	1	0	0	4:34:30 PM	1	0	0
4:35:00 PM	0	0	0	4:35:00 PM	0	0	0	2	0	0	4:35:00 PM	1	0	0	4:35:00 PM	3	0	0	4:35:00 PM	1	0	0
4:35:30 PM	1	0	0	4:35:30 PM	1	0	0	3	0	0	4:35:30 PM	2	0	0	4:35:30 PM	1	0	0	4:35:30 PM	1	0	0
4:36:00 PM	0	0	0	4:36:00 PM	0	0	0	2	0	0	4:36:00 PM	5	0	0	4:36:00 PM	2	0	0	4:36:00 PM	1	0	0
4:36:30 PM	1	0	0	4:36:30 PM	1	0	0	1	0	0	4:36:30 PM	2	0	0	4:36:30 PM	0	0	0	4:36:30 PM	0	0	0
4:37:00 PM	1	0	0	4:37:00 PM	0	0	0	4	0	0	4:37:00 PM	1	0	0	4:37:00 PM	0	0	0	4:37:00 PM	1	0	0
4:37:30 PM	0	0	0	4:37:30 PM	2	0	0	2	0	0	4:37:30 PM	2	0	0	4:37:30 PM	0	0	1	4:37:30 PM	0	0	0
4:38:00 PM	0	0	0	4:38:00 PM	1	0	0	0	0	0	4:38:00 PM	2	0	0	4:38:00 PM	0	0	0	4:38:00 PM	0	0	0
4:38:30 PM	0	0	0	4:38:30 PM	1	0	0	2	0	0	4:38:30 PM	3	0	0	4:38:30 PM	0	0	0	4:38:30 PM	1	0	0
4:39:00 PM	1	0	0	4:39:00 PM	3	0	0	3	0	0	4:39:00 PM	1	0	0	4:39:00 PM	0	0	0	4:39:00 PM	1	0	0
4:39:30 PM	0	0	0	4:39:30 PM	0	0	0	0	0	0	4:39:30 PM	1	0	0	4:39:30 PM	1	0	0	4:39:30 PM	0	0	0
4:40:00 PM	0	0	0	4:40:00 PM	2	0	0	2	0	0	4:40:00 PM	0	0	0	4:40:00 PM	0	0	0	4:40:00 PM	0	0	0
4:40:30 PM	0	0	0	4:40:30 PM	2	0	0	3	0	0	4:40:30 PM	1	0	0	4:40:30 PM	1	0	0	4:40:30 PM	0	0	0
4:41:00 PM	0	0	0	4:41:00 PM	0	0	0	1	0	0	4:41:00 PM	0	0	0	4:41:00 PM	2	0	0	4:41:00 PM	2	0	0
4:41:30 PM	0	0	0	4:41:30 PM	0	0	0	0	0	0	4:41:30 PM	4	0	0	4:41:30 PM	0	0	0	4:41:30 PM	0	0	0
4:42:00 PM	2	0	0	4:42:00 PM	2	0	0	4	0	0	4:42:00 PM	0	0	0	4:42:00 PM	2	0	0	4:42:00 PM	2	0	0
4:42:30 PM	0	0	0	4:42:30 PM	2	0	0	2	0	0	4:42:30 PM	0	0	0	4:42:30 PM	0	0	0	4:42:30 PM	1	0	0
4:43:00 PM	0	0	0	4:43:00 PM	0	0	0	0	0	0	4:43:00 PM	1	0	0	4:43:00 PM	0	0	0	4:43:00 PM	0	0	0
4:43:30 PM	1	0	0	4:43:30 PM	2	0	0	2	0	0	4:43:30 PM	1	0	0	4:43:30 PM	0	0	0	4:43:30 PM	1	0	0
4:44:00 PM	0	0	0	4:44:00 PM	2	0	0	1	0	0	4:44:00 PM	0	0	0	4:44:00 PM	1	0	0	4:44:00 PM	1	0	0
4:44:30 PM	0	0	0	4:44:30 PM	0	0	0	0	0	0	4:44:30 PM	0	0	0	4:44:30 PM	0	0	0	4:44:30 PM	1	0	0
4:45:00 PM	0	0	0	4:45:00 PM	2	0	0	2	0	0	4:45:00 PM	1	0	0	4:45:00 PM	1	0	0	4:45:00 PM	1	0	0
4:45:30 PM	0	0	0	4:45:30 PM	3	0	0	6	0	0	4:45:30 PM	1	0	0	4:45:30 PM	0	0	0	4:45:30 PM	0	0	0

WIS 67 Corridor RTOR Counts

WIS 67 & I-94 EB Ramps				WIS 67 & I-94 WB Ramps							WIS 67 & Oconomowoc Dr				WIS 67 & CTH B/Valley Rd				WIS 67 & Oconomowoc Pkwy			
4:00 - 5:00 PM				4:00 - 5:00 PM							4:00 - 5:00 PM				4:00 - 5:00 PM				4:00 - 5:00 PM			
West leg (yield)				East leg (dual)							West leg (yield)				West leg (yield)				West leg (yield)			
Total RTOR	41			Total RTOR	312						Total RTOR	155			Total RTOR	133			Total RTOR	105		
					99			213														
					Inside Lane			Outside Lane														
Time	Cars	Trucks/Buses	Semis	Time	Cars	Trucks/Buses	Semis	Cars	Trucks/Buses	Semis	Time	Cars	Trucks/Buses	Semis	Time	Cars	Trucks/Buses	Semis	Time	Cars	Trucks/Buses	Semis
4:46:00 PM	0	0	0	4:46:00 PM	0	0	0	1	0	0	4:46:00 PM	1	0	0	4:46:00 PM	1	0	0	4:46:00 PM	0	0	0
4:46:30 PM	0	0	0	4:46:30 PM	0	0	0	1	0	0	4:46:30 PM	1	0	0	4:46:30 PM	0	0	0	4:46:30 PM	1	0	0
4:47:00 PM	0	0	0	4:47:00 PM	0	0	0	1	0	0	4:47:00 PM	2	0	0	4:47:00 PM	1	0	0	4:47:00 PM	2	0	0
4:47:30 PM	1	0	0	4:47:30 PM	0	0	0	0	0	0	4:47:30 PM	2	0	0	4:47:30 PM	1	0	0	4:47:30 PM	0	0	0
4:48:00 PM	0	0	0	4:48:00 PM	0	0	0	0	0	0	4:48:00 PM	0	0	0	4:48:00 PM	2	0	0	4:48:00 PM	0	0	0
4:48:30 PM	0	0	0	4:48:30 PM	0	0	0	3	0	0	4:48:30 PM	1	0	0	4:48:30 PM	0	0	0	4:48:30 PM	1	0	0
4:49:00 PM	0	0	0	4:49:00 PM	0	0	0	3	0	0	4:49:00 PM	1	0	0	4:49:00 PM	1	0	0	4:49:00 PM	2	0	0
4:49:30 PM	1	0	0	4:49:30 PM	0	0	0	0	0	0	4:49:30 PM	1	0	0	4:49:30 PM	1	0	0	4:49:30 PM	1	0	0
4:50:00 PM	0	0	0	4:50:00 PM	1	0	0	2	0	0	4:50:00 PM	0	0	0	4:50:00 PM	1	0	0	4:50:00 PM	2	0	0
4:50:30 PM	0	0	0	4:50:30 PM	1	0	0	1	0	0	4:50:30 PM	4	0	0	4:50:30 PM	0	0	0	4:50:30 PM	1	0	0
4:51:00 PM	0	0	0	4:51:00 PM	0	0	0	0	0	0	4:51:00 PM	2	0	0	4:51:00 PM	0	0	0	4:51:00 PM	1	0	0
4:51:30 PM	0	1	0	4:51:30 PM	0	0	0	0	0	0	4:51:30 PM	3	0	0	4:51:30 PM	1	0	0	4:51:30 PM	0	0	0
4:52:00 PM	0	0	0	4:52:00 PM	1	0	0	4	0	0	4:52:00 PM	2	0	0	4:52:00 PM	0	0	0	4:52:00 PM	0	0	0
4:52:30 PM	1	0	0	4:52:30 PM	2	0	0	3	0	0	4:52:30 PM	2	0	0	4:52:30 PM	0	0	0	4:52:30 PM	1	0	0
4:53:00 PM	0	0	0	4:53:00 PM	0	0	0	0	0	0	4:53:00 PM	2	0	0	4:53:00 PM	2	0	0	4:53:00 PM	0	0	0
4:53:30 PM	0	0	0	4:53:30 PM	0	0	0	3	0	0	4:53:30 PM	0	0	0	4:53:30 PM	0	0	0	4:53:30 PM	5	0	0
4:54:00 PM	0	0	0	4:54:00 PM	0	0	0	2	0	0	4:54:00 PM	0	0	0	4:54:00 PM	1	0	0	4:54:00 PM	1	0	0
4:54:30 PM	0	0	0	4:54:30 PM	0	0	0	0	0	0	4:54:30 PM	0	0	0	4:54:30 PM	0	0	0	4:54:30 PM	2	0	0
4:55:00 PM	0	0	0	4:55:00 PM	1	0	0	2	0	0	4:55:00 PM	1	0	0	4:55:00 PM	3	0	0	4:55:00 PM	0	0	0
4:55:30 PM	1	0	0	4:55:30 PM	2	0	0	2	0	0	4:55:30 PM	0	0	0	4:55:30 PM	1	0	0	4:55:30 PM	2	0	0
4:56:00 PM	0	0	0	4:56:00 PM	0	0	0	1	0	0	4:56:00 PM	5	0	0	4:56:00 PM	3	0	0	4:56:00 PM	0	0	0
4:56:30 PM	0	0	0	4:56:30 PM	0	0	0	1	0	0	4:56:30 PM	0	0	0	4:56:30 PM	2	0	0	4:56:30 PM	0	0	0
4:57:00 PM	0	0	0	4:57:00 PM	0	0	0	1	0	0	4:57:00 PM	2	0	0	4:57:00 PM	0	0	0	4:57:00 PM	1	0	0
4:57:30 PM	0	0	0	4:57:30 PM	1	0	0	1	0	0	4:57:30 PM	3	0	0	4:57:30 PM	0	0	0	4:57:30 PM	2	0	0
4:58:00 PM	1	0	0	4:58:00 PM	0	0	0	0	0	0	4:58:00 PM	3	0	0	4:58:00 PM	0	0	0	4:58:00 PM	0	0	0
4:58:30 PM	0	0	0	4:58:30 PM	0	0	0	2	0	0	4:58:30 PM	0	0	0	4:58:30 PM	0	0	0	4:58:30 PM	1	0	0
4:59:00 PM	0	0	0	4:59:00 PM	1	0	0	6	0	0	4:59:00 PM	1	0	0	4:59:00 PM	0	0	0	4:59:00 PM	1	0	0
4:59:30 PM	0	0	0	4:59:30 PM	0	0	0	0	0	0	4:59:30 PM	1	0	0	4:59:30 PM	0	0	0	4:59:30 PM	1	0	0

Right-Turn on Red Video Data
WIS 167 Signalized Corridor

WIS 167 RTOR Counts

WIS 167 & Port Washington Rd				WIS 167 & I-43 SB Ramps				WIS 167 & I-43 NB Ramps			
4:30 - 5:30 PM				4:30 - 5:30 PM				4:30 - 5:30 PM			
North leg				North leg				South Leg (yield)			
Total RTOR	107			Total RTOR	183			Total RTOR	28		
Time	Cars	Trucks/ Buses	Semis	Time	Cars	Trucks/ Buses	Semis	Time	Cars	Trucks/ Buses	Semis
4:30:00 PM	1	0	0	4:30:00 PM	5	0	0	4:30:00 PM	0	0	0
4:30:30 PM	0	0	0	4:30:30 PM	0	0	0	4:30:30 PM	0	0	0
4:31:00 PM	3	0	0	4:31:00 PM	0	0	0	4:31:00 PM	0	0	0
4:31:30 PM	2	0	0	4:31:30 PM	0	0	0	4:31:30 PM	0	0	0
4:32:00 PM	2	0	0	4:32:00 PM	5	0	0	4:32:00 PM	2	0	0
4:32:30 PM	2	0	0	4:32:30 PM	0	0	0	4:32:30 PM	0	0	0
4:33:00 PM	0	0	0	4:33:00 PM	0	0	0	4:33:00 PM	2	0	0
4:33:30 PM	0	0	0	4:33:30 PM	0	0	0	4:33:30 PM	0	0	0
4:34:00 PM	3	0	0	4:34:00 PM	4	0	1	4:34:00 PM	0	0	0
4:34:30 PM	0	0	0	4:34:30 PM	1	0	1	4:34:30 PM	1	0	0
4:35:00 PM	0	0	0	4:35:00 PM	0	0	0	4:35:00 PM	1	0	0
4:35:30 PM	1	0	0	4:35:30 PM	0	0	0	4:35:30 PM	0	0	0
4:36:00 PM	2	0	0	4:36:00 PM	2	0	0	4:36:00 PM	0	0	0
4:36:30 PM	1	0	0	4:36:30 PM	3	0	0	4:36:30 PM	1	0	0
4:37:00 PM	0	0	0	4:37:00 PM	0	0	0	4:37:00 PM	0	0	0
4:37:30 PM	0	0	0	4:37:30 PM	0	0	0	4:37:30 PM	0	0	0
4:38:00 PM	3	0	0	4:38:00 PM	1	0	0	4:38:00 PM	1	0	0
4:38:30 PM	3	0	0	4:38:30 PM	4	0	0	4:38:30 PM	0	0	0
4:39:00 PM	0	0	0	4:39:00 PM	2	0	0	4:39:00 PM	0	0	0
4:39:30 PM	0	0	0	4:39:30 PM	2	0	0	4:39:30 PM	0	0	0
4:40:00 PM	0	0	0	4:40:00 PM	0	0	0	4:40:00 PM	0	0	0
4:40:30 PM	2	0	0	4:40:30 PM	3	0	0	4:40:30 PM	1	0	0
4:41:00 PM	2	0	0	4:41:00 PM	2	0	0	4:41:00 PM	1	0	0
4:41:30 PM	0	0	0	4:41:30 PM	1	0	0	4:41:30 PM	0	0	0
4:42:00 PM	1	0	0	4:42:00 PM	1	0	0	4:42:00 PM	0	0	0
4:42:30 PM	1	0	0	4:42:30 PM	1	0	0	4:42:30 PM	0	0	0
4:43:00 PM	3	0	0	4:43:00 PM	3	0	1	4:43:00 PM	0	0	0
4:43:30 PM	0	0	0	4:43:30 PM	0	0	0	4:43:30 PM	0	0	0
4:44:00 PM	0	0	0	4:44:00 PM	2	0	0	4:44:00 PM	0	0	0
4:44:30 PM	1	0	0	4:44:30 PM	0	0	0	4:44:30 PM	0	0	0
4:45:00 PM	2	0	0	4:45:00 PM	4	0	0	4:45:00 PM	0	0	0
4:45:30 PM	0	0	0	4:45:30 PM	0	0	0	4:45:30 PM	0	0	0
4:46:00 PM	0	0	0	4:46:00 PM	1	0	0	4:46:00 PM	0	0	0
4:46:30 PM	1	0	0	4:46:30 PM	0	0	0	4:46:30 PM	0	0	0
4:47:00 PM	1	0	0	4:47:00 PM	1	0	0	4:47:00 PM	1	0	0
4:47:30 PM	1	0	0	4:47:30 PM	1	0	0	4:47:30 PM	0	0	0
4:48:00 PM	0	0	0	4:48:00 PM	0	0	0	4:48:00 PM	0	0	0
4:48:30 PM	3	0	0	4:48:30 PM	0	0	0	4:48:30 PM	0	0	0
4:49:00 PM	1	0	0	4:49:00 PM	3	0	0	4:49:00 PM	0	0	0

WIS 167 RTOR Counts

WIS 167 & Port Washington Rd				WIS 167 & I-43 SB Ramps				WIS 167 & I-43 NB Ramps			
4:30 - 5:30 PM				4:30 - 5:30 PM				4:30 - 5:30 PM			
North leg				North leg				South Leg (yield)			
Total RTOR	107			Total RTOR	183			Total RTOR	28		
Time	Cars	Trucks/ Buses	Semis	Time	Cars	Trucks/ Buses	Semis	Time	Cars	Trucks/ Buses	Semis
4:49:30 PM	2	0	0	4:49:30 PM	3	0	0	4:49:30 PM	0	0	0
4:50:00 PM	0	0	0	4:50:00 PM	0	0	0	4:50:00 PM	0	0	0
4:50:30 PM	0	0	0	4:50:30 PM	2	0	0	4:50:30 PM	0	0	0
4:51:00 PM	0	0	0	4:51:00 PM	0	0	0	4:51:00 PM	0	0	0
4:51:30 PM	3	0	0	4:51:30 PM	6	0	0	4:51:30 PM	0	0	0
4:52:00 PM	0	0	0	4:52:00 PM	2	0	0	4:52:00 PM	1	0	0
4:52:30 PM	0	0	0	4:52:30 PM	1	0	0	4:52:30 PM	0	0	0
4:53:00 PM	2	0	0	4:53:00 PM	0	0	0	4:53:00 PM	0	0	0
4:53:30 PM	2	0	0	4:53:30 PM	2	0	0	4:53:30 PM	0	0	0
4:54:00 PM	1	0	0	4:54:00 PM	1	0	0	4:54:00 PM	0	0	0
4:54:30 PM	0	0	0	4:54:30 PM	0	0	0	4:54:30 PM	1	0	0
4:55:00 PM	1	0	0	4:55:00 PM	0	0	0	4:55:00 PM	0	0	0
4:55:30 PM	0	0	0	4:55:30 PM	0	0	1	4:55:30 PM	0	0	0
4:56:00 PM	2	0	0	4:56:00 PM	2	0	0	4:56:00 PM	1	0	0
4:56:30 PM	0	0	0	4:56:30 PM	3	0	0	4:56:30 PM	0	0	0
4:57:00 PM	2	0	0	4:57:00 PM	0	0	0	4:57:00 PM	0	0	0
4:57:30 PM	0	0	0	4:57:30 PM	1	0	0	4:57:30 PM	0	0	0
4:58:00 PM	0	0	0	4:58:00 PM	2	0	0	4:58:00 PM	0	0	0
4:58:30 PM	0	0	0	4:58:30 PM	2	0	0	4:58:30 PM	2	0	0
4:59:00 PM	0	0	0	4:59:00 PM	1	0	0	4:59:00 PM	0	0	0
4:59:30 PM	3	0	0	4:59:30 PM	0	0	0	4:59:30 PM	0	0	0
5:00:00 PM	1	0	0	5:00:00 PM	5	0	0	5:00:00 PM	0	0	0
5:00:30 PM	1	0	0	5:00:30 PM	1	0	0	5:00:30 PM	0	0	0
5:01:00 PM	0	0	0	5:01:00 PM	1	0	0	5:01:00 PM	2	0	0
5:01:30 PM	2	0	0	5:01:30 PM	1	0	0	5:01:30 PM	0	0	0
5:02:00 PM	2	0	0	5:02:00 PM	2	0	0	5:02:00 PM	0	0	0
5:02:30 PM	2	0	0	5:02:30 PM	0	0	0	5:02:30 PM	0	0	0
5:03:00 PM	0	0	0	5:03:00 PM	2	0	0	5:03:00 PM	1	0	0
5:03:30 PM	0	0	0	5:03:30 PM	0	0	0	5:03:30 PM	0	0	0
5:04:00 PM	2	0	0	5:04:00 PM	0	0	0	5:04:00 PM	0	0	0
5:04:30 PM	3	0	0	5:04:30 PM	2	0	0	5:04:30 PM	0	0	0
5:05:00 PM	0	0	0	5:05:00 PM	2	0	0	5:05:00 PM	0	0	0
5:05:30 PM	0	0	0	5:05:30 PM	2	0	0	5:05:30 PM	0	0	0
5:06:00 PM	1	0	0	5:06:00 PM	0	0	0	5:06:00 PM	0	0	0
5:06:30 PM	2	0	0	5:06:30 PM	1	0	0	5:06:30 PM	1	0	0
5:07:00 PM	0	0	0	5:07:00 PM	0	0	0	5:07:00 PM	0	0	0
5:07:30 PM	0	0	0	5:07:30 PM	0	0	0	5:07:30 PM	0	0	0
5:08:00 PM	2	0	0	5:08:00 PM	0	0	0	5:08:00 PM	0	0	0
5:08:30 PM	2	0	0	5:08:30 PM	2	0	0	5:08:30 PM	0	0	0

WIS 167 RTOR Counts

WIS 167 & Port Washington Rd				WIS 167 & I-43 SB Ramps				WIS 167 & I-43 NB Ramps			
4:30 - 5:30 PM				4:30 - 5:30 PM				4:30 - 5:30 PM			
North leg				North leg				South Leg (yield)			
Total RTOR	107			Total RTOR	183			Total RTOR	28		
Time	Cars	Trucks/ Buses	Semis	Time	Cars	Trucks/ Buses	Semis	Time	Cars	Trucks/ Buses	Semis
5:09:00 PM	0	0	0	5:09:00 PM	4	0	0	5:09:00 PM	0	0	0
5:09:30 PM	0	0	0	5:09:30 PM	0	0	1	5:09:30 PM	0	0	0
5:10:00 PM	0	0	0	5:10:00 PM	1	0	0	5:10:00 PM	0	0	0
5:10:30 PM	3	0	0	5:10:30 PM	0	0	0	5:10:30 PM	0	0	0
5:11:00 PM	3	0	0	5:11:00 PM	2	0	1	5:11:00 PM	0	0	0
5:11:30 PM	0	0	0	5:11:30 PM	0	0	0	5:11:30 PM	0	0	0
5:12:00 PM	0	0	0	5:12:00 PM	2	0	0	5:12:00 PM	0	0	0
5:12:30 PM	0	0	0	5:12:30 PM	0	0	0	5:12:30 PM	0	0	0
5:13:00 PM	3	0	0	5:13:00 PM	3	0	0	5:13:00 PM	0	0	0
5:13:30 PM	1	0	0	5:13:30 PM	1	0	1	5:13:30 PM	0	0	0
5:14:00 PM	0	0	0	5:14:00 PM	1	0	0	5:14:00 PM	1	0	0
5:14:30 PM	1	0	0	5:14:30 PM	0	0	0	5:14:30 PM	0	0	0
5:15:00 PM	1	0	0	5:15:00 PM	2	0	0	5:15:00 PM	1	0	0
5:15:30 PM	0	0	0	5:15:30 PM	4	0	0	5:15:30 PM	0	0	0
5:16:00 PM	0	0	0	5:16:00 PM	2	0	0	5:16:00 PM	1	0	0
5:16:30 PM	1	1	0	5:16:30 PM	2	0	0	5:16:30 PM	0	0	0
5:17:00 PM	0	0	0	5:17:00 PM	2	0	0	5:17:00 PM	0	0	0
5:17:30 PM	1	0	0	5:17:30 PM	3	0	0	5:17:30 PM	1	0	0
5:18:00 PM	0	0	0	5:18:00 PM	3	0	0	5:18:00 PM	0	0	0
5:18:30 PM	0	0	0	5:18:30 PM	2	0	0	5:18:30 PM	0	0	0
5:19:00 PM	0	0	0	5:19:00 PM	0	0	0	5:19:00 PM	0	0	0
5:19:30 PM	3	0	0	5:19:30 PM	2	0	1	5:19:30 PM	0	0	0
5:20:00 PM	0	0	0	5:20:00 PM	3	0	0	5:20:00 PM	0	0	0
5:20:30 PM	0	0	0	5:20:30 PM	0	0	0	5:20:30 PM	0	0	0
5:21:00 PM	0	0	0	5:21:00 PM	2	0	0	5:21:00 PM	0	0	0
5:21:30 PM	0	0	0	5:21:30 PM	4	0	0	5:21:30 PM	0	0	0
5:22:00 PM	2	0	0	5:22:00 PM	1	0	0	5:22:00 PM	1	0	0
5:22:30 PM	0	0	0	5:22:30 PM	5	0	0	5:22:30 PM	1	0	0
5:23:00 PM	0	0	0	5:23:00 PM	2	0	0	5:23:00 PM	0	0	0
5:23:30 PM	1	0	0	5:23:30 PM	1	0	0	5:23:30 PM	0	0	0
5:24:00 PM	4	0	0	5:24:00 PM	6	0	0	5:24:00 PM	0	0	0
5:24:30 PM	0	0	0	5:24:30 PM	0	0	0	5:24:30 PM	0	0	0
5:25:00 PM	0	0	0	5:25:00 PM	1	0	0	5:25:00 PM	0	0	0
5:25:30 PM	0	0	0	5:25:30 PM	0	0	0	5:25:30 PM	0	0	0
5:26:00 PM	1	0	0	5:26:00 PM	3	0	0	5:26:00 PM	1	0	0
5:26:30 PM	0	0	0	5:26:30 PM	2	0	0	5:26:30 PM	1	0	0
5:27:00 PM	0	0	0	5:27:00 PM	1	0	0	5:27:00 PM	0	0	0
5:27:30 PM	1	0	0	5:27:30 PM	2	0	0	5:27:30 PM	0	0	0
5:28:00 PM	0	0	0	5:28:00 PM	0	0	0	5:28:00 PM	0	0	0

WIS 167 RTOR Counts

WIS 167 & Port Washington Rd				WIS 167 & I-43 SB Ramps				WIS 167 & I-43 NB Ramps			
4:30 - 5:30 PM				4:30 - 5:30 PM				4:30 - 5:30 PM			
North leg				North leg				South Leg (yield)			
Total RTOR	107			Total RTOR	183			Total RTOR	28		
Time	Cars	Trucks/ Buses	Semis	Time	Cars	Trucks/ Buses	Semis	Time	Cars	Trucks/ Buses	Semis
5:28:30 PM	0	0	0	5:28:30 PM	4	0	0	5:28:30 PM	0	0	0
5:29:00 PM	0	0	0	5:29:00 PM	0	0	0	5:29:00 PM	0	0	0
5:29:30 PM	0	0	0	5:29:30 PM	1	0	0	5:29:30 PM	0	0	0
5:29:00 PM	0	0	0	5:29:00 PM	0	0	0	5:29:00 PM	0	0	0
5:29:30 PM	0	0	0	5:29:30 PM	1	0	0	5:29:30 PM	0	0	0
Note	*RT sometimes obstructed by long queues. Red signal not visible in video. Assumptions made based on traffic flow and timings to identify RTOR movements.*			*Note*				*Note*	*RT sometimes obstructed by long queues*		

APPENDIX F

Analysis Methodology Details

ANALYSIS METHODOLOGY DETAILED SUMMARY

RIGHT-TURN ON RED (RTOR)

SIDRA

Sidra software evaluates signalized right-turn movements under two separate periods: one during the time when the signal is green and the other when the signal is red. During the red period, SIDRA applies gap acceptance modeling. The SIDRA user guide indicates the user does not identify RTOR volumes and instead the program determines this volume based on the geometric and operational characteristics of the analysis location. While the program does not report the RTOR volume, the SIDRA Solutions service team provided the following steps and general equations to calculate the value.

1. Calculate capacity for each right-turn period based on effective green time
2. Calculate proportion of lane capacity belonging to turn on red period
3. Multiply this proportion by the right-turn volume

$$c_{tor,tog} = s_{tor,tog} * \frac{g_{tor,tog}}{\boldsymbol{C}}$$

$$PC_{tor} = \frac{c_{tor}}{\left(c_{tor} + c_{tog}\right)}$$

$$vRTOR = P\boldsymbol{C}_{tor} * vRT$$

Where:

$c_{tor,tog}$ = Right-turn period (turn on red or turn on green) capacity
$s_{tor,tog}$ = Right-turn period (turn on red or turn on green) saturation flow rate
$g_{tor,tog}$ = Right-turn period (turn on red or turn on green) effective green time
$\boldsymbol{C}$ = Cycle length
$P\boldsymbol{C}_{tor}$= proportion of capacity due to turn on red phase
vRT = right-turn volume
vRTOR = right-turn on red volume

A more detailed calculation of the SIDRA RTOR volumes is provided in Table F-1 in this appendix.

Synchro

Synchro software accounts for the impact of RTOR traffic by calculating a saturation flow rate during the red phase and increasing the right-turn capacity (when the 'Right Turn on Red' box is checked). The Synchro user guide identifies that the calculation is 'quite complex' and is based on signal timing, volumes of subject approaches, and volumes on merging approaches. Trafficware (parent company for Synchro) provided the following equation as a way to estimate an equivalent RTOR volume resulting from the saturation flow rate.

$$vRTOR = sRTOR * \frac{r}{\boldsymbol{C}}$$

Where:

vRTOR = right-turn on red volume
sRTOR = right-turn on red saturation flow rate (software output)
r = effective red time (derived from software output)
C = cycle length

This value is also produced within the HCM 2000 report, which was used for this study.

SIGNAL OPTIMIZATION

Highway Capacity Software (HCS)

HCS provides two options for signal optimization: Quick Optimization and Full Optimization. Quick Optimization automatically transfers data to TRANSYT-7F (companion optimization program) and utilizes a hill-climb optimization method. The user manual describes Quick Optimization as being able to quickly find a reasonable and effective timing plan.

Full Optimization utilizes the HCM-based internal genetic algorithm to locate the global optimum (recommended) solution. Control delay is calculated using a multi-step process and is comprised of uniform delay, incremental delay, and initial queue delay. The user can tailor the optimization to one of several user-defined optimization objective functions: percent base free flow speed, travel time, arterial stops, overall delay, and balanced delay. The user can also define which signal parameters to optimize (cycle length, splits, offsets, phasing sequencing), along with statistical parameters (number of generations, population size, crossover and mutation probability, convergence threshold) for the optimization. Lead/lag left-turn phase optimization is accommodated, but on mainline approaches only. The optimization input parameters box is shown in Figure F-1. Optimization run times can be extensive (several minutes). The optimization process will terminate one of three ways, 1) convergence threshold (little additional improvement), 2) max number of generations (user-specified max), or 3) by user request.

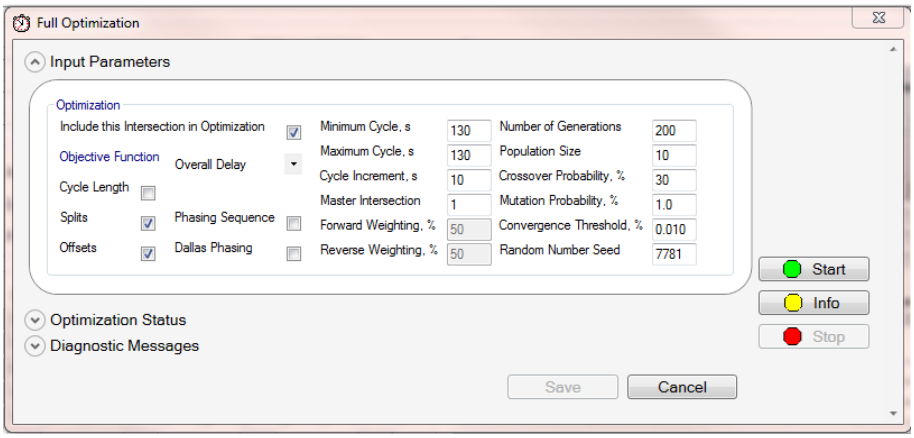


Figure F-1: HCS Example Full Optimization Input Parameters (user-defined)

For this study, overall delay was selected as the optimization objective function and default statistical parameters were used.

HCS does not provide an optimization method for isolated, actuated intersections. Instead a representative cycle length is automatically selected based on the volume and geometric inputs. For this study, fixed time operations were used which allowed an optimization. The existing cycle length was held and the splits were optimized.

SIDRA

SIDRA offers three options for optimizing cycle lengths and splits.

1. *Practical Cycle Time* – cycle and green times selected to satisfy target degree of saturation for critical movements (target value can be user defined)
2. *Optimum Cycle Time* – cycle time selected to optimize a user selected performance measure (delay, queue, stops, performance index, degree of saturation, capacity, costs, fuels, pollution factors)
3. *Optimum Maximum Green* – maximum green timings selected to optimize user selected performance measure

The specific mathematical optimization technique used within SIDRA was not identified.

Lead/lag left-turn phase optimization can be accommodated within SIDRA, but it requires a multi-step approach. Within the single ring equivalent approach, left-turn movement group phases can be identified as 'variable' (lead or lag optimization). However, various combinations of lead/lag by approach would need to be coded and evaluated separately.

Based on interim discussions with WisDOT, it was agreed that Sidra software would not be included in the optimization evaluation due to the additional modeling steps required to implement dual-ring signal phasing and lead/lag optimization.

Synchro

Synchro allows for the optimization of cycle lengths, split times, offset times and left-turn phase ordering (lead/lag). For optimization of a signalized network, Basic and Advanced Optimization options are available. A Basic Optimization will select a cycle length (and splits if selected) that result in the lowest 'Performance Index' (PI). The Performance Index is defined as:

$$PI = [D * 1 + St * 10]/3600$$

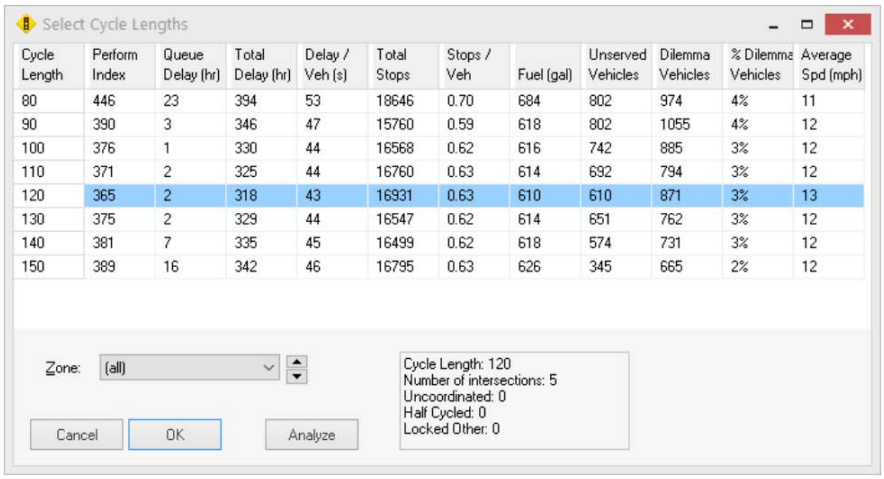
Where:

PI = Performance Index

D = Total (control + queue) Delay (sec)

St = Vehicle Stops (vph)

Synchro can automatically select a cycle length or the user may select manually from a summary table showing various measures of effectiveness (MOE) outputs, as shown in Figure F-2.



Cycle Length	Perform Index	Queue Delay (hr)	Total Delay (hr)	Delay / Veh (s)	Total Stops	Stops / Veh	Fuel (gal)	Unserved Vehicles	Dilemma Vehicles	% Dilemma Vehicles	Average Spd (mph)
80	446	23	394	53	18646	0.70	684	802	974	4%	11
90	390	3	346	47	15760	0.59	618	802	1055	4%	12
100	376	1	330	44	16568	0.62	616	742	885	3%	12
110	371	2	325	44	16760	0.63	614	692	794	3%	12
120	365	2	318	43	16931	0.63	610	610	871	3%	13
130	375	2	329	44	16547	0.62	614	651	762	3%	12
140	381	7	335	45	16499	0.62	618	574	731	3%	12
150	389	16	342	46	16795	0.63	626	345	665	2%	12

Figure F-2: Synchro 'Select Cycle Lengths' Summary Table

An Advanced Optimization is similar, however the user can assign weighting factors to favor or disfavor specific phases or offset optimization levels. For this study, a basic network optimization was used with no adjustments to the software defaults and no manual override of optimization parameters.

For individual intersections not within a signalized network, Synchro optimization will select the 'Natural Cycle Length'. The Natural Cycle Length is defined as the lowest acceptable cycle length from the following possibilities (evaluated in order shown):

1. Shortest cycle length that will clear critical percentile traffic demand each cycle
2. Cycle length with lowest PI (if shorter than length found in #1)
3. Shortest cycle length to provide satisfactory v/c for critical movements

There are no user inputs for the individual intersection optimization.

Vistro

For optimization of a signalized network, Genetic and Hill Climbing optimization algorithms are available. The Genetic option aims to minimize the objective function which is defined as the weighted (user can defined weights) sum of the following:

1. Total vehicle delay (hours)
2. Number of intersections where a vehicle has to stop divided by all vehicles

Solutions are generated, reproduced, and evaluated until a selected solution is found. Genetic optimization operations such as crossover and mutation are performed based on a set of parameters including max number of iterations, max number of solutions, number of generations without improvement before termination, and incremental improvement for consideration. The Hill Climbing option uses the same objective function but starts with a set of randomly generated solutions and attempts to find an improved solution by applying random, incremental changes to the variables. The user must define the number of initial random solutions. The user must select which network optimization method to use, however the Vistro user manual identified the Genetic as the default optimization algorithm and it was used for this study.

For individual intersections not within a signalized network (local optimization), a 'simplex' algorithm is used to optimize cycle lengths. V/C Balancing and Minimize Critical Movement Delay optimization methods are provided. V/C Balancing method aims to minimize overall intersection delay by equalizing the v/c ratio for critical signal groups. The objective of the Minimize Critical Movement Delay method is to minimize delay for the critical movements at the intersection. The Vistro user manual does not define a default method. The V/C balancing method (minimize overall intersection delay) is more in line with local evaluation practices and optimization strategies used by the comparison software programs and is noted as a 'common optimization objective' within the user manual. Therefore, it was selected for use in this study.

It should be noted that during the isolated intersection optimization process, it was identified that maximum green parameters were being violated and unrealistic split times were being produced. An example of the non-intuitive results included nearly all green time being assigned to a low volume left-turn movement. This occurred when using either intersection optimization method. PTV (parent company for Vistro) was contacted and their investigation revealed an error in the optimization coding at isolated intersections with actuated timing and recommended fixed timing be used for optimization. A software patch was released at a later date to address the issue, but the isolated intersection optimization in Vistro used with this study assumed fixed timing per PTVs recommendation.

Table F-1: SIDRA Right-Turn on Red Calculations

				SIDRA										
				Effective Green (sec)			Movement Sat Flow (veh/hr)		TOR Period Capacity (veh/hr)					
	Intersection	Movement	Right-Turn Volume	TOR Period 1	Period 2 (Green Period)	Cycle Time (sec)	TOR Period 1	Period 2 (Green Period)	TOR Period 1	Period 2 (Green Period)	Demand Flow (veh/hr)	Lane Capacity (veh/hr)	Prop of capacity due to TOR	TOR Volume (veh/hr)
			Vrt	g1	g2	C	s1	s2	c1	c2	f	c	ctor	Vtor
Isolated	WIS 172 & CTH EB	WBR	145	28	51	106	1579	1205	417	580	153	997	0.418	64
	WIS 52 & 28th	NBR	125	35	32	89	1015	1594	399	573	133	972	0.41	55
	WIS 20 & WIS 36	SBR	70	21	26	68	1594	1414	492	541	71	1033	0.476	34
	WIS 67 & US 14	EBR	175	25	15	50	1548	1429	774	429	190	1203	0.643	122
	US 12 & CTH K	EBR	55	80	13	140	929	1579	531	147	58	678	0.783	45
WIS 67	Oconomowoc Pkwy	EBR	150	31	49	100	852	1594	264	781	158	1045	0.253	40
	CTH B/Valley	EBR	165	44	31	100	1121	1563	493	485	170	978	0.504	86
	Oconomowoc Dr	EBR	175	36	38	100	1105	1579	398	600	177	998	0.399	71
	I-94 WB Ramps	WBR	555	46	32	100	1432	3097	659	991	572	1650	0.399	228
	I-94 EB Ramps	EBR	65	59	20	100	915	1579	540	316	66	856	0.631	42
WIS 38	Drexel	EBR	410	57	35	130	1133	1594	497	429	441	926	0.537	237
	Town Sq/Susan	SBR	125	53	60	130	1594	1230	650	568	130	1218	0.534	69
	Forest Hill	EBR	155	66	32	130	795	1579	404	389	161	792	0.51	82
	Puetz	SBR	145	48	59	130	1594	1118	589	507	151	1096	0.537	81
	Centennial	SBR	175	55	58	130	1594	1232	674	550	188	1224	0.551	104
WIS 167	Port Washington Rd	SBR	345	38	53	130	976	1594	285	650	359	935	0.305	109
	I-43 SB Ramps	SBR	285	77	40	130	551	1548	326	476	297	803	0.406	121
	I-43 NB Ramps	NBR	60	66	43	130	1376	1594	699	527	63	1226	0.57	36

Notes

= output from SIDRA

XX = two sat flows from SIDRA (two lanes)

Calculation Steps

$$ci = si\left(\frac{gi}{C}\right) \qquad ctor = \frac{ci}{c} \qquad Vtor = ctor * f$$

or

$$ctor = \frac{c1}{c1 + c2}$$

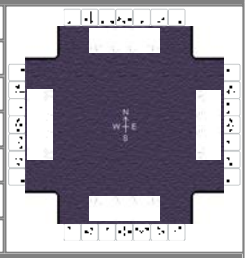
APPENDIX G

Software Output Reports

Software Output Reports – Existing Conditions
Isolated Signalized Intersections
HCS 2010 Version 6.9

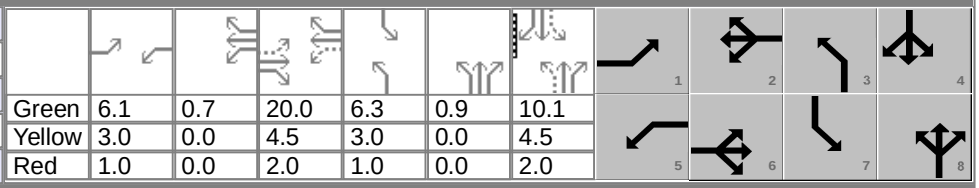
HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	raSmith			Duration, h	0.25
Analyst	LLZ	Analysis Date	Jan 23, 2018	Area Type	Other
Jurisdiction	NE - Brown County	Time Period	PM	PHF	0.95
Urban Street	WIS 172	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	County EB	File Name	WIS 172 & County EB - PM.xus		
Project Description	PM				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	105	505	115	170	560	145	175	480	315	120	220	85

Signal Information			
Cycle, s	65.1	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	6.1	0.7	20.0	6.3	0.9	10.1
Yellow	3.0	0.0	4.5	3.0	0.0	4.5
Red	1.0	0.0	2.0	1.0	0.0	2.0

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	1	6	5	2	3	8	7	4
Case Number	1.1	3.0	1.1	3.0	1.1	3.0	1.1	3.0
Phase Duration, s	10.1	26.5	10.7	27.2	11.2	17.6	10.3	16.6
Change Period, ($Y+R_c$), s	4.0	6.5	4.0	6.5	4.0	6.5	4.0	6.5
Max Allow Headway (*MAH*), s	1.0	2.0	1.0	2.0	1.2	1.2	1.1	1.2
Queue Clearance Time (g_s), s	4.6	10.0	6.3	10.9	7.5	10.9	5.7	5.8
Green Extension Time (g_e), s	0.0	1.1	0.0	1.1	0.0	0.2	0.0	0.2
Phase Call Probability	0.86	1.00	0.96	1.00	0.96	1.00	0.90	1.00
Max Out Probability	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	1	6	16	5	2	12	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	111	532	75	179	589	95	184	505	205	126	232	56
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1757	1756	1563	1774	1773	1579	1792	1791	1594	1774	1773	1579
Queue Service Time (g_s), s	2.6	8.0	2.3	4.3	8.9	2.8	5.5	8.9	8.0	3.7	3.8	2.0
Cycle Queue Clearance Time (g_c), s	2.6	8.0	2.3	4.3	8.9	2.8	5.5	8.9	8.0	3.7	3.8	2.0
Green Ratio (*g/C*)	0.41	0.31	0.31	0.41	0.32	0.32	0.27	0.17	0.17	0.27	0.16	0.16
Capacity (*c*), veh/h	409	1079	480	443	1126	501	416	609	271	307	553	246
Volume-to-Capacity Ratio (*X*)	0.270	0.493	0.156	0.404	0.523	0.189	0.443	0.829	0.757	0.411	0.419	0.227
Back of Queue (*Q*), ft/ln (95 th percentile)	39.2	130.2	32.7	65.3	143.2	40.9	97.5	166	134.9	64.2	69.5	32.6
Back of Queue (*Q*), veh/ln (95 th percentile)	1.5	5.1	1.3	2.6	5.6	1.6	3.9	6.6	5.4	2.5	2.7	1.3
Queue Storage Ratio (*RQ*) (95 th percentile)	0.13	0.00	0.18	0.18	0.00	0.23	0.37	0.00	0.67	0.46	0.00	0.65
Uniform Delay (d_1), s/veh	12.8	18.4	16.4	13.2	18.2	16.1	19.6	26.1	25.7	19.6	24.8	24.0
Incremental Delay (d_2), s/veh	0.1	0.1	0.1	0.2	0.1	0.1	0.3	1.1	1.6	0.3	0.2	0.2
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	12.9	18.5	16.5	13.4	18.3	16.2	19.9	27.2	27.4	19.9	25.0	24.2
Level of Service (LOS)	B	B	B	B	B	B	B	C	C	B	C	C
Approach Delay, s/veh / LOS	17.4	B		17.1	B		25.7	C		23.3	C	
Intersection Delay, s/veh / LOS	20.8						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	3.1	C	3.0	C	3.0	C	3.0	C
Bicycle LOS Score / LOS	1.1	A	1.2	A	1.2	A	0.8	A

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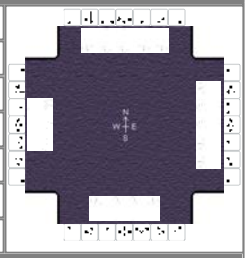
HCS 2010 Signalized Intersection Results Summary

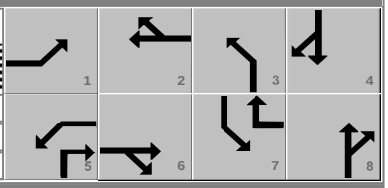
General Information				Intersection Information	
Agency	raSmith			Duration, h	0.25
Analyst	LLZ	Analysis Date	Jan 23, 2018	Area Type	Other
Jurisdiction	NC - Marathon	Time Period	PM	PHF	0.94
Urban Street	WIS 52	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	28th Avenue	File Name	WIS 52 & 28th Avenue - PM.xus		
Project Description	PM				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	50	255	1	230	435	100	5	150	125	310	280	105

Signal Information			
Cycle, s	64.5	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	4.9	3.0	16.0	0.7	3.9	10.0
Yellow	3.5	0.0	4.0	3.5	3.5	4.0
Red	0.5	0.0	3.0	0.5	0.5	3.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	1	6	5	2	3	8	7	4
Case Number	2.0	4.0	2.0	3.0	2.0	3.0	2.0	3.0
Phase Duration, s	8.9	23.0	11.9	26.0	4.7	17.0	12.6	24.9
Change Period, ($Y+R_c$), s	4.0	7.0	4.0	7.0	4.0	7.0	4.0	7.0
Max Allow Headway (*MAH*), s	3.1	4.1	3.1	4.1	3.3	3.2	3.3	3.2
Queue Clearance Time (g_s), s	3.8	5.8	6.3	8.8	2.2	4.5	7.9	6.2
Green Extension Time (g_e), s	0.1	3.3	0.5	3.3	0.0	1.4	0.8	1.5
Phase Call Probability	0.61	1.00	0.99	1.00	0.09	1.00	1.00	1.00
Max Out Probability	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	1	6	16	5	2	12	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	53	136	136	245	463	66	5	160	82	330	298	69
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1774	1863	1860	1723	1773	1579	1792	1791	1594	1740	1791	1594
Queue Service Time (g_s), s	1.8	3.8	3.8	4.3	6.8	1.6	0.2	2.5	2.5	5.9	4.2	2.1
Cycle Queue Clearance Time (g_c), s	1.8	3.8	3.8	4.3	6.8	1.6	0.2	2.5	2.5	5.9	4.2	2.1
Green Ratio (*g/C*)	0.08	0.25	0.25	0.12	0.29	0.43	0.01	0.16	0.28	0.13	0.28	0.28
Capacity (*c*), veh/h	135	462	461	422	1044	675	20	555	442	464	993	442
Volume-to-Capacity Ratio (*X*)	0.393	0.295	0.295	0.580	0.443	0.098	0.263	0.287	0.185	0.710	0.300	0.156
Back of Queue (*Q*), ft/ln (95 th percentile)	34.8	71.8	70.6	77.2	118	23	4.3	47.6	40.6	108.6	76.2	34
Back of Queue (*Q*), veh/ln (95 th percentile)	1.4	2.8	2.8	3.0	4.6	0.9	0.2	1.9	1.6	4.3	3.0	1.3
Queue Storage Ratio (*RQ*) (95 th percentile)	0.13	0.00	0.00	0.20	0.00	0.11	0.04	0.00	0.34	0.43	0.00	0.45
Uniform Delay (d_1), s/veh	28.4	19.7	19.7	26.7	18.5	11.0	31.6	24.1	17.8	26.8	18.4	17.6
Incremental Delay (d_2), s/veh	0.7	0.4	0.4	0.5	0.3	0.1	2.5	0.1	0.1	0.8	0.1	0.1
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	29.1	20.0	20.0	27.2	18.8	11.1	34.1	24.2	17.8	27.5	18.4	17.7
Level of Service (LOS)	C	C	C	C	B	B	C	C	B	C	B	B
Approach Delay, s/veh / LOS	21.5	C		20.8	C		22.3	C		22.7	C	
Intersection Delay, s/veh / LOS	21.7						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	3.0	C	3.1	C	3.1	C	2.8	C
Bicycle LOS Score / LOS	0.8	A	1.1	A	0.7	A	1.1	A

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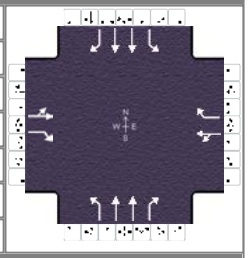
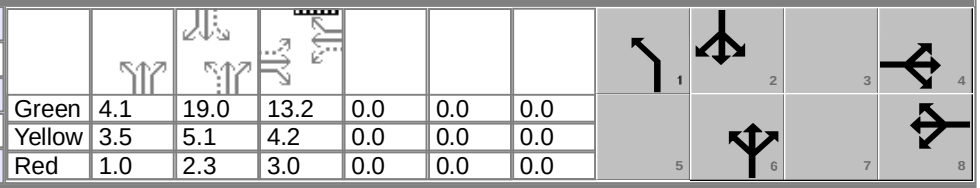
HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	raSmith			Duration, h	0.25
Analyst	LLZ	Analysis Date	Feb 23, 2018	Area Type	Other
Jurisdiction	SE - Racine Co	Time Period	PM	PHF	0.99
Urban Street	WIS 36	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	WIS 20/WIS 83	File Name	WIS 36 & WIS 20-83 - PM - no ph 5.xus		
Project Description	PM				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	45	95	95	15	255	45	75	495	5	55	720	70

Signal Information			
Cycle, s	55.4	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	4.1	19.0	13.2	0.0	0.0	0.0
Yellow	3.5	5.1	4.2	0.0	0.0	0.0
Red	1.0	2.3	3.0	0.0	0.0	0.0

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8	1	6		2
Case Number		7.0		7.0	1.0	3.0		5.3
Phase Duration, s		20.4		20.4	8.6	35.0		26.4
Change Period, ($Y+R_c$), s		7.2		7.2	4.5	7.4		7.4
Max Allow Headway (*MAH*), s		2.6		2.6	2.4	4.4		4.4
Queue Clearance Time (g_s), s		13.2		13.0	3.4	6.4		11.1
Green Extension Time (g_e), s		0.6		0.6	0.0	8.1		8.0
Phase Call Probability		1.00		1.00	0.68	1.00		1.00
Max Out Probability		0.00		0.00	0.00	0.01		0.03

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h		141	60		273	28	76	500	3	56	727	43
Adjusted Saturation Flow Rate (*s*), veh/h/ln		837	1594		1403	1594	1792	1791	1594	901	1791	1594
Queue Service Time (g_s), s		0.7	1.6		0.6	0.8	1.4	4.4	0.1	2.6	9.1	1.0
Cycle Queue Clearance Time (g_c), s		11.2	1.6		11.0	0.8	1.4	4.4	0.1	7.0	9.1	1.0
Green Ratio (*g/C*)		0.24	0.24		0.24	0.24	0.41	0.50	0.50	0.34	0.34	0.34
Capacity (*c*), veh/h		281	369		394	369	392	1797	800	512	1236	550
Volume-to-Capacity Ratio (*X*)		0.504	0.162		0.692	0.077	0.193	0.278	0.004	0.108	0.588	0.079
Back of Queue (*Q*), ft/ln (95 th percentile)		61.3	24.3		121.6	10.8	17.6	48.1	0.5	13.5	127.5	12.6
Back of Queue (*Q*), veh/ln (95 th percentile)		2.4	1.0		4.8	0.4	0.7	1.9	0.0	0.5	5.1	0.5
Queue Storage Ratio (*RQ*) (95 th percentile)		0.00	0.30		0.00	0.20	0.04	0.00	0.00	0.03	0.00	0.07
Uniform Delay (d_1), s/veh		17.9	16.8		19.0	16.4	10.4	7.9	6.8	15.7	14.7	12.1
Incremental Delay (d_2), s/veh		0.5	0.1		0.8	0.0	0.1	0.1	0.0	0.1	0.5	0.1
Initial Queue Delay (d_3), s/veh		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh		18.4	16.9		19.8	16.5	10.5	8.0	6.8	15.8	15.3	12.1
Level of Service (LOS)		B	B		B	B	B	A	A	B	B	B
Approach Delay, s/veh / LOS	18.0	B		19.5	B		8.3	A		15.1	B	
Intersection Delay, s/veh / LOS	14.1						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.9	C	3.0	C	2.3	B	2.3	B
Bicycle LOS Score / LOS	0.8	A	1.0	A	1.0	A	1.2	A

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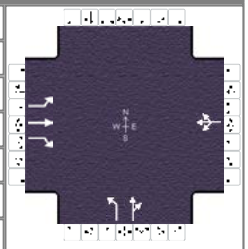
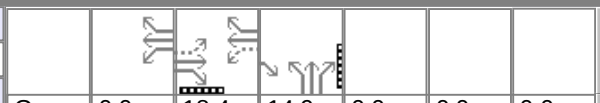
HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	raSmith			Duration, h	0.25
Analyst	LLZ	Analysis Date	Feb 23, 2018	Area Type	Other
Jurisdiction	SE - Walworth Co	Time Period	PM	PHF	0.92
Urban Street	WIS 67	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	US 14	File Name	WIS 67 & US 14 - PM.xus		
Project Description	PM				

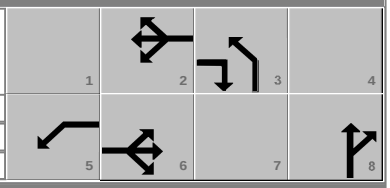


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	30	120	175	140	0	135	1	130	80			

Signal Information			
Cycle, s	79.8	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	0.0	18.4	14.9	0.0	0.0	0.0
Yellow	4.0	3.5	3.5	0.0	0.0	0.0
Red	2.0	2.0	2.5	0.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		6	5	2		8		
Case Number		5.3	0.0	14.0		10.0		
Phase Duration, s		23.9	0.0	23.9		20.9		
Change Period, ($Y+R_c$), s		5.5	6.0	5.5		6.0		
Max Allow Headway (*MAH*), s		3.5	0.0	3.5		2.7		
Queue Clearance Time (g_s), s		17.0		15.0		12.1		
Green Extension Time (g_e), s		1.3	0.0	1.4		0.3		
Phase Call Probability		1.00		1.00		0.99		
Max Out Probability		0.01		0.00		0.00		

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	1	6	16	5	2	12	3	8	18			
Adjusted Flow Rate (*v*), veh/h	33	130	117		299		1	228				
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1212	1827	1548		1192		1810	1693				
Queue Service Time (g_s), s	2.1	4.7	3.8		13.0		0.0	10.1				
Cycle Queue Clearance Time (g_c), s	15.0	4.7	3.8		13.0		0.0	10.1				
Green Ratio (*g/C*)	0.23	0.23	0.42		0.23		0.19	0.19				
Capacity (*c*), veh/h	173	422	647		347		338	316				
Volume-to-Capacity Ratio (*X*)	0.188	0.309	0.181		0.861		0.003	0.722				
Back of Queue (*Q*), ft/ln (95 th percentile)	28.4	94.7	60.8		248.4		0.7	192.1				
Back of Queue (*Q*), veh/ln (95 th percentile)	1.1	3.7	2.4		9.9		0.0	7.4				
Queue Storage Ratio (*RQ*) (95 th percentile)	0.24	0.79	0.51		0.00		0.00	0.00				
Uniform Delay (d_1), s/veh	35.6	25.4	14.6		32.0		26.4	30.5				
Incremental Delay (d_2), s/veh	0.2	0.2	0.0		2.5		0.0	1.2				
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0		0.0		0.0	0.0				
Control Delay (*d*), s/veh	35.8	25.6	14.7		34.5		26.4	31.7				
Level of Service (LOS)	D	C	B		C		C	C				
Approach Delay, s/veh / LOS	22.2	C		34.5	C		31.7	C		0.0		
Intersection Delay, s/veh / LOS	29.4						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.3	B	1.9	A	2.1	B	2.6	B
Bicycle LOS Score / LOS	1.0	A	1.0	A	0.9	A		

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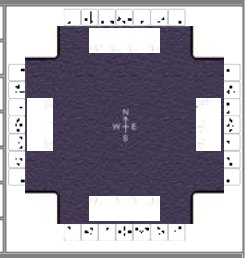
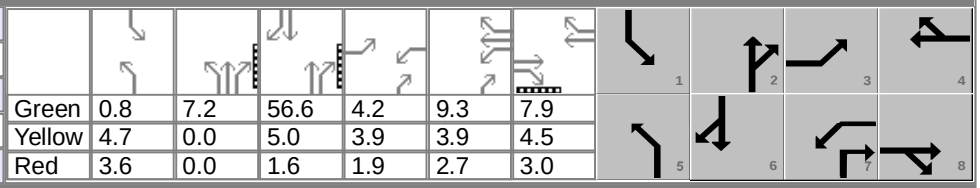
HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	raSmith			Duration, h	0.25
Analyst	LLZ	Analysis Date	Feb 23, 2018	Area Type	Other
Jurisdiction	SW - Dane Co	Time Period	PM	PHF	0.95
Urban Street	US 12	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	County K	File Name	US 12 & CTH K - PM.xus		
Project Description	PM				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	45	35	55	465	90	10	95	1690	755	5	510	40

Signal Information			
Cycle, s	120.8	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	0.8	7.2	56.6	4.2	9.3	7.9
Yellow	4.7	0.0	5.0	3.9	3.9	4.5
Red	3.6	0.0	1.6	1.9	2.7	3.0

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	3	8	7	4	5	2	1	6
Case Number	2.0	3.0	2.0	4.0	2.0	3.0	2.0	3.0
Phase Duration, s	10.0	15.4	25.9	31.4	16.3	70.3	9.1	63.2
Change Period, ($Y+R_c$), s	5.8	7.5	6.6	7.5	7.9	6.6	8.3	6.6
Max Allow Headway (*MAH*), s	2.5	2.0	2.0	2.0	1.9	3.4	1.9	3.4
Queue Clearance Time (g_s), s	5.2	4.6	18.8	7.9	8.6	58.3	2.4	13.5
Green Extension Time (g_e), s	0.0	0.0	0.5	0.1	0.0	5.4	0.0	19.7
Phase Call Probability	0.80	1.00	1.00	1.00	0.97	1.00	0.16	1.00
Max Out Probability	0.00	0.00	0.00	0.00	0.00	0.89	0.00	0.17

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	3	8	18	7	4	14	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	47	37	36	489	105		100	1779	795	5	537	26
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1774	1863	1579	1723	1830		1792	1791	1594	1774	1773	1579
Queue Service Time (g_s), s	3.2	2.3	2.6	16.8	5.9		6.6	56.3	37.5	0.4	11.5	1.1
Cycle Queue Clearance Time (g_c), s	3.2	2.3	2.6	16.8	5.9		6.6	56.3	37.5	0.4	11.5	1.1
Green Ratio (*g/C*)	0.03	0.07	0.07	0.16	0.20		0.07	0.53	0.69	0.01	0.47	0.47
Capacity (*c*), veh/h	61	123	104	550	361		124	1890	1096	12	1661	739
Volume-to-Capacity Ratio (*X*)	0.774	0.301	0.345	0.890	0.291		0.803	0.941	0.725	0.441	0.323	0.036
Back of Queue (*Q*), ft/ln (95 th percentile)	70	48.5	47.5	294.1	120		137.7	791.7	412.8	8.5	199	17
Back of Queue (*Q*), veh/ln (95 th percentile)	2.8	1.9	1.9	11.6	4.7		5.5	31.4	16.4	0.3	7.8	0.7
Queue Storage Ratio (*RQ*) (95 th percentile)	0.70	0.00	0.30	1.18	0.00		0.39	0.00	1.07	0.02	0.00	0.05
Uniform Delay (d_1), s/veh	57.9	53.8	53.9	49.7	41.3		55.4	26.8	11.8	59.8	20.1	17.4
Incremental Delay (d_2), s/veh	7.5	0.5	0.7	2.0	0.2		4.5	9.7	2.2	9.2	0.1	0.0
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	65.4	54.3	54.7	51.8	41.4		59.9	36.4	14.0	69.0	20.2	17.4
Level of Service (LOS)	E	D	D	D	D		E	D	B	E	C	B
Approach Delay, s/veh / LOS	58.8	E		49.9	D		30.6	C		20.5	C	
Intersection Delay, s/veh / LOS	32.9						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	3.0	C	3.0	C	2.4	B	2.5	B
Bicycle LOS Score / LOS	0.7	A	1.5	A	2.7	B	1.0	A

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--- Messages ---

WARNING: Since queue spillover from turn lanes and spillback into upstream intersections is not accounted for in the HCM procedures, use of a simulation tool may be advised in situations where the Queue Storage Ratio exceeds 1.0.

--- Comments ---

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Software Output Reports – Existing Conditions
Isolated Signalized Intersections
SIDRA Version 7.0

LANE SUMMARY

Site: 101 [WIS 172 & County EB/Packerland Dr PM - queue]

WIS 172 & County EB/Packerland Dr
Signals - Actuated Isolated Cycle Time = 106 seconds (Practical Cycle Time)

Lane Use and Performance

	Demand Flows Total veh/h	HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Queue Veh	Dist ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: County EB													
Lane 1	184	1.0	515	0.358	100	27.5	LOS C	6.3	159.8	Short	265	0.0	NA
Lane 2	253	1.0	461	0.548	100	39.5	LOS D	11.5	290.4	Full	1600	0.0	0.0
Lane 3	253	1.0	461	0.548	100	39.5	LOS D	11.5	290.4	Full	1600	0.0	0.0
Lane 4	332	1.0	1113	0.298	100	7.6	LOS A	4.6	116.1	Short	200	0.0	NA
Approach	1021	1.0		0.548		27.0	LOS C	11.5	290.4				
East: WIS 172													
Lane 1	179	2.0	412	0.434	100	29.9	LOS C	5.9	151.0	Short	370	0.0	NA
Lane 2	298	2.0	492	0.606	100	38.6	LOS D	13.6	346.4	Full	1600	0.0	0.0
Lane 3	292	2.0	481[1]	0.606	100	38.5	LOS D	13.3	337.5	Full	1600	0.0	0.0
Lane 4	95	2.0	417	0.227	100	40.9	LOS D	3.9	98.2	Short	180	0.0	NA
Approach	863	2.0		0.606		37.0	LOS D	13.6	346.4				
North: County EB													
Lane 1	126	2.0	412	0.306	100	28.6	LOS C	4.2	106.3	Short	140	0.0	NA
Lane 2	129	2.0	457	0.282	100	37.5	LOS D	5.4	137.9	Full	1600	0.0	0.0
Lane 3	103	2.0	366[1]	0.282	100	36.9	LOS D	4.3	108.6	Full	1600	0.0	0.0
Lane 4	89	2.0	1018	0.088	100	9.0	LOS A	1.2	30.3	Short	50	0.0	NA
Approach	447	2.0		0.306		29.1	LOS C	5.4	137.9				
West: WIS 172													
Lane 1	111	3.0	389	0.284	100	29.0	LOS C	3.5	89.8	Short	310	0.0	NA
Lane 2	266	3.0	487	0.545	100	37.9	LOS D	11.9	305.5	Full	1600	0.0	0.0
Lane 3	266	3.0	487	0.545	100	37.9	LOS D	11.9	305.5	Full	1600	0.0	0.0
Lane 4	75	3.0	413	0.182	100	40.4	LOS D	3.0	77.4	Short	185	0.0	NA
Approach	717	3.0		0.545		36.8	LOS D	11.9	305.5				
Intersection	3049	1.9		0.606		32.4	LOS C	13.6	346.4				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

1 Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

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Organisation: R.A. SMITH | Processed: Friday, June 08, 2018 4:10:47 PM
Project: T:\1172712.01\Traffic\Analysis\Isolated Signal\SIDRA\WIS 172 & County EB PM.sip7

LANE SUMMARY

Site: 101 [WIS 52 & 28th Street PM - queue]

WIS 52 & 28th Street
Signals - Actuated Isolated Cycle Time = 89 seconds (Practical Cycle Time)

Lane Use and Performance

	Demand Flows Total veh/h	HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Queue Veh	Dist ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: 28th Street													
Lane 1	5	1.0	20	0.264	100	59.4	LOS E	0.3	7.1	Short	105	0.0	NA
Lane 2	80	1.0	211	0.377	100	42.6	LOS D	3.4	84.8	Full	1600	0.0	0.0
Lane 3	80	1.0	211	0.377	100	42.6	LOS D	3.4	84.8	Full	1600	0.0	0.0
Lane 4	82	1.0	573	0.144	100	24.7	LOS C	2.4	61.1	Short	120	0.0	NA
Approach	247	1.0		0.377		37.0	LOS D	3.4	84.8				
East: WIS 52													
Lane 1	122	2.0	299	0.409	100	43.3	LOS D	4.9	124.6	Short	390	0.0	NA
Lane 2	122	2.0	299	0.409	100	43.3	LOS D	4.9	124.6	Short	390	0.0	NA
Lane 3	231	2.0	460	0.503	100	32.8	LOS C	8.8	223.4	Full	1600	0.0	0.0
Lane 4	231	2.0	460	0.503	100	32.8	LOS C	8.8	223.4	Full	1600	0.0	0.0
Lane 5	66	2.0	834	0.079	100	16.6	LOS B	1.4	35.4	Short	215	0.0	NA
Approach	773	2.0		0.503		34.7	LOS C	8.8	223.4				
North: 28th Street													
Lane 1	165	1.0	362	0.455	100	38.8	LOS D	6.5	162.8	Short	250	0.0	NA
Lane 2	165	1.0	362	0.455	100	38.8	LOS D	6.5	162.8	Short	250	0.0	NA
Lane 3	149	1.0	571	0.261	100	26.3	LOS C	4.9	124.0	Full	1600	0.0	0.0
Lane 4	149	1.0	571	0.261	100	26.3	LOS C	4.9	124.0	Full	1600	0.0	0.0
Lane 5	69	1.0	484	0.143	100	28.8	LOS C	2.2	55.6	Short	75	0.0	NA
Approach	697	1.0		0.455		32.5	LOS C	6.5	162.8				
West: WIS 52													
Lane 1	53	2.0	299	0.178	100	41.4	LOS D	2.0	51.6	Short	265	0.0	NA
Lane 2	136	2.0	460	0.296	100	30.8	LOS C	4.9	123.8	Full	1600	0.0	0.0
Lane 3	136	2.0	460	0.296	100	30.8	LOS C	4.9	123.6	Full	1600	0.0	0.0
Approach	326	2.0		0.296		32.5	LOS C	4.9	123.8				
Intersection	2043	1.5		0.503		33.9	LOS C	8.8	223.4				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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LANE SUMMARY

Site: 101 [WIS 36 & WIS 83/WIS 20 PM - queue]

WIS 36 & WIS 83/WIS 20
Signals - Actuated Isolated Cycle Time = 66 seconds (Practical Cycle Time)

Lane Use and Performance

	Demand Flows Total veh/h	HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Queue Veh	Dist ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
SouthEast: WIS 20													
Lane 1	273	1.0	500[1]	0.546	100	24.7	LOS C	7.5	190.2	Full	1600	0.0	0.0
Lane 2	28	1.0	459	0.061	100	25.7	LOS C	0.7	16.8	Short	55	0.0	NA
Approach	301	1.0		0.546		24.8	LOS C	7.5	190.2				
NorthEast: WIS 36													
Lane 1	56	1.0	363	0.153	100	26.1	LOS C	1.3	33.5	Short	435	0.0	NA
Lane 2	364	1.0	599	0.608	100	21.8	LOS C	10.1	255.5	Full	1600	0.0	0.0
Lane 3	364	1.0	599	0.608	100	21.8	LOS C	10.1	255.5	Full	1600	0.0	0.0
Lane 4	44	1.0	507	0.086	100	25.2	LOS C	1.0	25.3	Short	175	0.0	NA
Approach	827	1.0		0.608		22.3	LOS C	10.1	255.5				
NorthWest: WIS 20/WIS 83													
Lane 1	141	1.0	381	0.371	100	25.8	LOS C	3.9	99.3	Full	1600	0.0	0.0
Lane 2	96	1.0	1049	0.091	100	7.8	LOS A	0.8	20.2	Short	80	0.0	NA
Approach	237	1.0		0.371		18.5	LOS B	3.9	99.3				
SouthWest: WIS 36/WIS 83													
Lane 1	76	1.0	384	0.197	100	19.9	LOS B	1.4	34.5	Short	450	0.0	NA
Lane 2	250	1.0	941	0.266	100	10.7	LOS B	4.7	117.2	Full	1600	0.0	0.0
Lane 3	250	1.0	941	0.266	100	10.7	LOS B	4.7	117.2	Full	1600	0.0	0.0
Lane 4	3	1.0	797	0.004	100	16.3	LOS B	0.0	1.2	Short	190	0.0	NA
Approach	579	1.0		0.266		11.9	LOS B	4.7	117.2				
Intersection	1944	1.0		0.608		19.1	LOS B	10.1	255.5				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

1 Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

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LANE SUMMARY

Site: 101 [WIS 67 & US 14 PM - queue]

WIS 67 & US 14
Signals - Actuated Isolated Cycle Time = 49 seconds (Practical Cycle Time)

Lane Use and Performance

	Demand Flows Total veh/h	HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Queue Veh	Dist ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: US 14													
Lane 1	228	5.0	380	0.600	100	21.9	LOS C	5.2	135.2	Full	1600	0.0	0.0
Approach	228	5.0		0.600		21.9	LOS C	5.2	135.2				
East: WIS 67													
Lane 1	299	3.0	701	0.427	100	11.0	LOS B	4.2	106.5	Full	1600	0.0	0.0
Approach	299	3.0		0.427		11.0	LOS B	4.2	106.5				
North: US 14													
Lane 1	11	0.0	78	0.140	100	28.0	LOS C	0.3	7.2	Full	1600	0.0	0.0
Approach	11	0.0		0.140		28.0	LOS C	0.3	7.2				
West: WIS 67													
Lane 1	33	4.0	333	0.098	100	21.7	LOS C	0.7	17.1	Full	120	0.0	0.0
Lane 2	130	4.0	373	0.350	100	19.6	LOS B	2.8	72.8	Full	120	0.0	0.0
Lane 3	118	4.0	822	0.144	100	9.6	LOS A	1.5	37.5	Full	120	0.0	0.0
Approach	281	4.0		0.350		15.7	LOS B	2.8	72.8				
Intersection	819	3.9		0.600		15.9	LOS B	5.2	135.2				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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LANE SUMMARY

Site: 101 [US 12 & County K PM - queue]

US 12 & County K
Signals - Actuated Isolated Cycle Time = 134 seconds (Practical Cycle Time)

Lane Use and Performance

	Demand Flows Total veh/h	HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Queue Veh	95% Back of Queue Dist ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: US 12													
Lane 1	100	1.0	321	0.312	100	61.5	LOS E	5.7	144.6	Short	350	0.0	NA
Lane 2	1025	1.0	862[1]	1.189	100	135.8	LOS F	112.8	2842.5	Full	1600	0.0	58.0
Lane 3	754	1.0	634[1]	1.189	100	136.9	LOS F	83.1	2094.1	Full	1600	0.0	29.5
Lane 4	795	1.0	1225	0.649	100	16.0	LOS B	23.5	592.2	Short	385	0.0	NA
Approach	2674	1.0		1.189		97.7	LOS F	112.8	2842.5				
East: County K													
Lane 1	245	2.0	410	0.596	100	58.5	LOS E	14.4	365.0	Short	250	0.0	NA
Lane 2	245	2.0	410	0.596	100	58.5	LOS E	14.4	365.0	Short	250	0.0	NA
Lane 3	105	2.0	273	0.385	100	59.0	LOS E	6.3	160.4	Full	1600	0.0	0.0
Approach	595	2.0		0.596		58.6	LOS E	14.4	365.0				
North: US 12													
Lane 1	5	2.0	13	0.398	100	92.8	LOS F	0.4	10.7	Short	350	0.0	NA
Lane 2	268	2.0	584	0.460	100	41.0	LOS D	14.0	355.7	Full	1600	0.0	0.0
Lane 3	268	2.0	584	0.460	100	41.0	LOS D	14.0	355.7	Full	1600	0.0	0.0
Lane 4	26	2.0	495	0.053	100	42.6	LOS D	1.2	29.9	Short	375	0.0	NA
Approach	568	2.0		0.460		41.6	LOS D	14.0	355.7				
West: County K													
Lane 1	47	2.0	252	0.188	100	64.0	LOS E	2.8	70.3	Short	100	0.0	NA
Lane 2	37	2.0	111	0.331	100	70.4	LOS E	2.4	61.8	Full	1600	0.0	0.0
Lane 3	36	2.0	94	0.381	100	77.9	LOS E	2.4	61.1	Short	160	0.0	NA
Approach	120	2.0		0.381		70.1	LOS E	2.8	70.3				
Intersection	3957	1.3		1.189		82.9	LOS F	112.8	2842.5				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

1 Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

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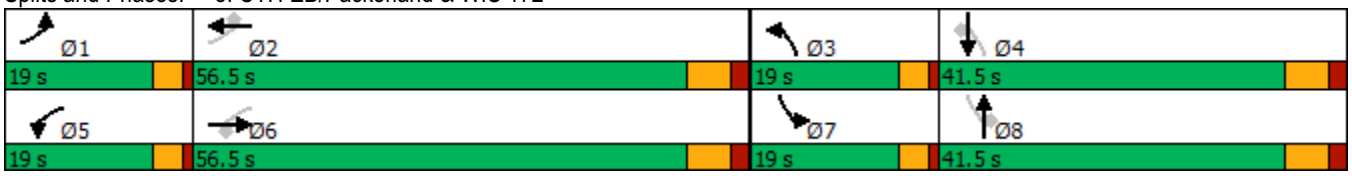
Organisation: R.A. SMITH | Processed: Friday, June 08, 2018 1:17:16 PM
Project: T:\1172712.01\Traffic\Analysis\Isolated Signal\SIDRA\US 12 & County K PM.sip7

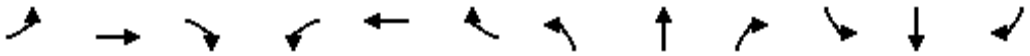
Software Output Reports – Existing Conditions
Isolated Signalized Intersections
Synchro Version 10.0.1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	505	115	170	560	145	175	480	315	120	220	85
Future Volume (vph)	105	505	115	170	560	145	175	480	315	120	220	85
Turn Type	D.P+P	NA	Perm	D.P+P	NA	Perm	D.P+P	NA	Perm	D.P+P	NA	Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	2		6	6		2	4		8	8		4
Detector Phase	1	6	6	5	2	2	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	11.0	26.5	26.5	11.0	26.5	26.5	11.0	16.5	16.5	11.0	34.5	34.5
Total Split (s)	19.0	56.5	56.5	19.0	56.5	56.5	19.0	41.5	41.5	19.0	41.5	41.5
Total Split (%)	14.0%	41.5%	41.5%	14.0%	41.5%	41.5%	14.0%	30.5%	30.5%	14.0%	30.5%	30.5%
Yellow Time (s)	3.0	4.5	4.5	3.0	4.5	4.5	3.0	4.5	4.5	3.0	4.5	4.5
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.5	6.5	4.0	6.5	6.5	4.0	6.5	6.5	4.0	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None	None
Act Effct Green (s)	35.1	22.5	22.5	35.1	24.3	24.3	29.4	18.3	18.3	29.4	16.8	16.8
Actuated g/C Ratio	0.43	0.28	0.28	0.43	0.30	0.30	0.36	0.23	0.23	0.36	0.21	0.21
v/c Ratio	0.29	0.55	0.17	0.41	0.55	0.20	0.37	0.62	0.57	0.35	0.32	0.17
Control Delay	14.8	28.5	26.0	16.2	26.9	24.2	18.6	32.5	35.6	18.7	29.6	29.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.8	28.5	26.0	16.2	26.9	24.2	18.6	32.5	35.6	18.7	29.6	29.9
LOS	B	C	C	B	C	C	B	C	D	B	C	C
Approach Delay		26.1			24.4			30.4			26.3	
Approach LOS		C			C			C			C	

Intersection Summary	
Cycle Length: 136	
Actuated Cycle Length: 80.9	
Natural Cycle: 85	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.62	
Intersection Signal Delay: 26.9	Intersection LOS: C
Intersection Capacity Utilization 63.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 3: CTH EB/Packerland & WIS 172





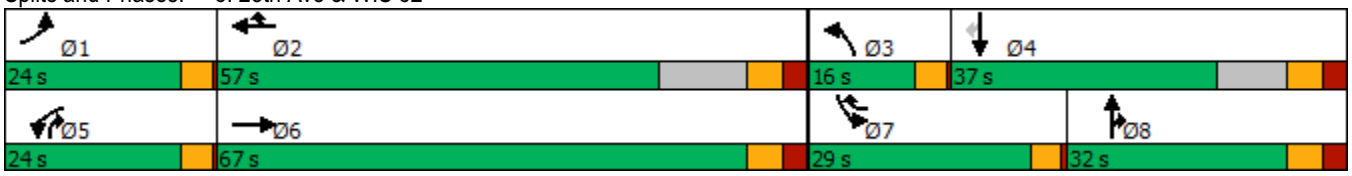
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	111	532	75	179	589	95	184	505	206	126	232	55
v/c Ratio	0.29	0.55	0.17	0.41	0.55	0.20	0.37	0.62	0.57	0.35	0.32	0.17
Control Delay	14.8	28.5	26.0	16.2	26.9	24.2	18.6	32.5	35.6	18.7	29.6	29.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.8	28.5	26.0	16.2	26.9	24.2	18.6	32.5	35.6	18.7	29.6	29.9
Queue Length 50th (ft)	29	116	28	48	125	34	55	113	86	36	49	22
Queue Length 95th (ft)	69	206	74	105	217	84	123	206	189	87	102	63
Internal Link Dist (ft)		513			420			327			376	
Turn Bay Length (ft)	310		185	370		180	265		200	140		50
Base Capacity (vph)	515	2216	991	533	2237	1000	585	1581	707	484	1566	700
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.24	0.08	0.34	0.26	0.10	0.31	0.32	0.29	0.26	0.15	0.08

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	50	255	230	435	100	5	150	125	310	280	105
Future Volume (vph)	50	255	230	435	100	5	150	125	310	280	105
Turn Type	Prot	NA	Prot	NA	pt+ov	Prot	NA	pt+ov	Prot	NA	Perm
Protected Phases	1	6	5	2	2 7	3	8	8 5	7	4	
Permitted Phases											4
Detector Phase	1	6	5	2	2 7	3	8	8 5	7	4	4
Switch Phase											
Minimum Initial (s)	8.0	16.0	8.0	16.0		8.0	10.0		8.0	10.0	10.0
Minimum Split (s)	12.0	37.0	12.0	35.0		12.0	31.0		12.0	29.0	29.0
Total Split (s)	24.0	67.0	24.0	57.0		16.0	32.0		29.0	37.0	37.0
Total Split (%)	15.8%	44.1%	15.8%	37.5%		10.5%	21.1%		19.1%	24.3%	24.3%
Yellow Time (s)	3.5	4.0	3.5	4.0		3.5	4.0		3.5	4.0	4.0
All-Red Time (s)	0.5	3.0	0.5	3.0		0.5	3.0		0.5	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	7.0	4.0	7.0		4.0	7.0		4.0	7.0	7.0
Lead/Lag	Lead	Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	Min	None	Min		None	None		None	None	None
Act Effct Green (s)	8.4	17.9	10.3	25.1	41.0	8.1	10.3	24.6	11.9	24.1	24.1
Actuated g/C Ratio	0.12	0.25	0.14	0.35	0.57	0.11	0.14	0.34	0.16	0.33	0.33
v/c Ratio	0.26	0.31	0.50	0.38	0.07	0.03	0.32	0.15	0.58	0.25	0.13
Control Delay	35.2	24.2	33.4	20.9	9.1	33.2	31.7	18.9	33.1	20.2	21.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.2	24.2	33.4	20.9	9.1	33.2	31.7	18.9	33.1	20.2	21.0
LOS	D	C	C	C	A	C	C	B	C	C	C
Approach Delay		26.0		23.9			27.5			26.4	
Approach LOS		C		C			C			C	

Intersection Summary	
Cycle Length: 152	
Actuated Cycle Length: 72.5	
Natural Cycle: 95	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.58	
Intersection Signal Delay: 25.5	Intersection LOS: C
Intersection Capacity Utilization 55.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 3: 28th Ave & WIS 52



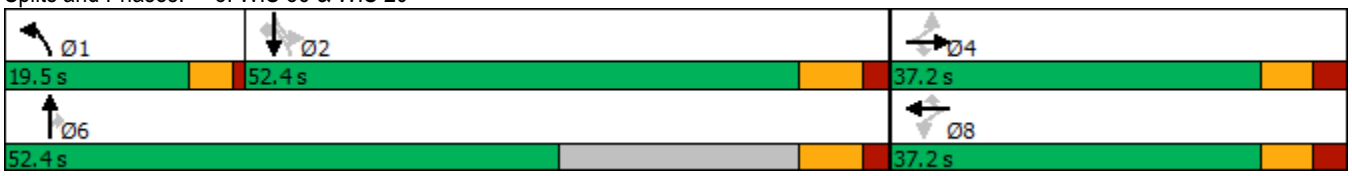
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	53	272	245	463	66	5	160	82	330	298	69
v/c Ratio	0.26	0.31	0.50	0.38	0.07	0.03	0.32	0.15	0.58	0.25	0.13
Control Delay	35.2	24.2	33.4	20.9	9.1	33.2	31.7	18.9	33.1	20.2	21.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.2	24.2	33.4	20.9	9.1	33.2	31.7	18.9	33.1	20.2	21.0
Queue Length 50th (ft)	21	51	51	88	14	2	33	24	69	45	19
Queue Length 95th (ft)	61	95	97	147	35	13	72	63	123	108	65
Internal Link Dist (ft)		459		610			461			358	
Turn Bay Length (ft)	265		390		215	105		120	250		75
Base Capacity (vph)	492	2954	956	2957	1322	298	1244	760	1207	1891	846
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.09	0.26	0.16	0.05	0.02	0.13	0.11	0.27	0.16	0.08

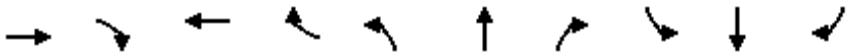
Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	95	95	15	255	45	75	495	5	55	720	70
Future Volume (vph)	45	95	95	15	255	45	75	495	5	55	720	70
Turn Type	Perm	NA	Perm	Perm	NA	Perm	D.P+P	NA	Perm	Perm	NA	Perm
Protected Phases		4			8		1	6			2	
Permitted Phases	4		4	8		8	2		6	2		2
Detector Phase	4	4	4	8	8	8	1	6	6	2	2	2
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	6.0	15.0	15.0	15.0	15.0	15.0
Minimum Split (s)	15.2	15.2	15.2	56.2	56.2	56.2	10.5	22.4	22.4	22.4	22.4	22.4
Total Split (s)	37.2	37.2	37.2	37.2	37.2	37.2	19.5	52.4	52.4	52.4	52.4	52.4
Total Split (%)	34.1%	34.1%	34.1%	34.1%	34.1%	34.1%	17.9%	48.0%	48.0%	48.0%	48.0%	48.0%
Yellow Time (s)	4.2	4.2	4.2	4.2	4.2	4.2	3.5	5.1	5.1	5.1	5.1	5.1
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	1.0	2.3	2.3	2.3	2.3	2.3
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		7.2	7.2		7.2	7.2	4.5	7.4	7.4	7.4	7.4	7.4
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?							Yes			Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	Min	Min	Min
Act Effct Green (s)		13.4	13.4		13.4	13.4	28.0	28.3	28.3	20.3	20.3	20.3
Actuated g/C Ratio		0.23	0.23		0.23	0.23	0.49	0.50	0.50	0.36	0.36	0.36
v/c Ratio		0.43	0.16		0.64	0.07	0.17	0.28	0.00	0.18	0.57	0.08
Control Delay		25.1	20.5		28.8	19.8	7.6	8.9	8.0	16.5	18.1	14.6
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		25.1	20.5		28.8	19.8	7.6	8.9	8.0	16.5	18.1	14.6
LOS		C	C		C	B	A	A	A	B	B	B
Approach Delay		23.8			27.9			8.7			17.8	
Approach LOS		C			C			A			B	

Intersection Summary	
Cycle Length: 109.1	
Actuated Cycle Length: 57.1	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.64	
Intersection Signal Delay: 17.3	Intersection LOS: B
Intersection Capacity Utilization 72.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 3: WIS 36 & WIS 20





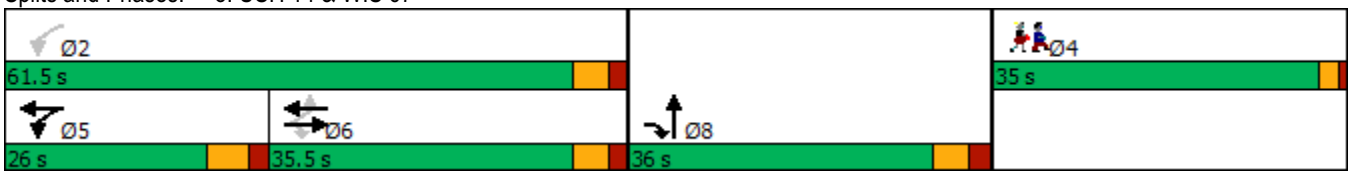
Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	141	59	273	28	76	500	3	56	727	44
v/c Ratio	0.43	0.16	0.64	0.07	0.17	0.28	0.00	0.18	0.57	0.08
Control Delay	25.1	20.5	28.8	19.8	7.6	8.9	8.0	16.5	18.1	14.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.1	20.5	28.8	19.8	7.6	8.9	8.0	16.5	18.1	14.6
Queue Length 50th (ft)	42	16	85	8	10	45	1	13	107	10
Queue Length 95th (ft)	103	49	183	28	32	90	4	42	188	33
Internal Link Dist (ft)	518		552			541			541	
Turn Bay Length (ft)		80		55	450		190	435		175
Base Capacity (vph)	782	886	1016	886	663	3466	1551	699	2832	1267
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.07	0.27	0.03	0.11	0.14	0.00	0.08	0.26	0.03

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	Ø2	Ø4
Lane Configurations								
Traffic Volume (vph)	30	120	175	140	0	130		
Future Volume (vph)	30	120	175	140	0	130		
Turn Type	Perm	NA	custom	custom	NA	NA		
Protected Phases		6	8	5	5 6	8	2	4
Permitted Phases	6		6	2				
Detector Phase	6	6	8	5	5 6	8		
Switch Phase								
Minimum Initial (s)	15.0	15.0	15.0	8.0		15.0	15.0	5.0
Minimum Split (s)	37.5	37.5	31.0	14.0		31.0	35.5	35.0
Total Split (s)	35.5	35.5	36.0	26.0		36.0	61.5	35.0
Total Split (%)	26.8%	26.8%	27.2%	19.6%		27.2%	46%	26%
Yellow Time (s)	3.5	3.5	3.5	4.0		3.5	3.5	2.0
All-Red Time (s)	2.0	2.0	2.5	2.0		2.5	2.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0		
Total Lost Time (s)	5.5	5.5	6.0			6.0		
Lead/Lag	Lag	Lag		Lead				
Lead-Lag Optimize?	Yes	Yes		Yes				
Recall Mode	Min	Min	Max	Max		Max	Min	None
Act Effct Green (s)	15.0	15.0	50.5		34.5	30.0		
Actuated g/C Ratio	0.18	0.18	0.61		0.42	0.36		
v/c Ratio	0.17	0.39	0.12		0.47	0.37		
Control Delay	31.2	33.8	7.1		16.1	21.4		
Queue Delay	0.0	0.0	0.0		0.0	0.0		
Total Delay	31.2	33.8	7.1		16.1	21.4		
LOS	C	C	A		B	C		
Approach Delay		22.3			16.1	21.4		
Approach LOS		C			B	C		

Intersection Summary	
Cycle Length: 132.5	
Actuated Cycle Length: 82.5	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.47	
Intersection Signal Delay: 19.8	Intersection LOS: B
Intersection Capacity Utilization 45.2%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 3: USH 14 & WIS 67



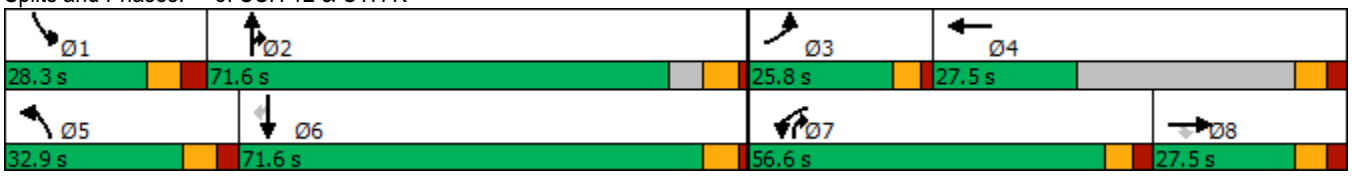
Lane Group	EBL	EBT	EBR	WBT	NBT
Lane Group Flow (vph)	33	130	118	299	228
v/c Ratio	0.17	0.39	0.12	0.47	0.37
Control Delay	31.2	33.8	7.1	16.1	21.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	31.2	33.8	7.1	16.1	21.4
Queue Length 50th (ft)	15	60	23	91	85
Queue Length 95th (ft)	40	112	44	148	144
Internal Link Dist (ft)		283		698	461
Turn Bay Length (ft)	120				
Base Capacity (vph)	384	664	950	883	623
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.09	0.20	0.12	0.34	0.37

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	45	35	55	465	90	95	1690	755	5	510	40
Future Volume (vph)	45	35	55	465	90	95	1690	755	5	510	40
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	pt+ov	Prot	NA	Perm
Protected Phases	3	8		7	4	5	2	2 7	1	6	
Permitted Phases			8								6
Detector Phase	3	8	8	7	4	5	2	2 7	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0	5.0	12.0		5.0	12.0	12.0
Minimum Split (s)	10.8	24.5	24.5	11.6	15.5	13.9	36.6		13.3	18.6	18.6
Total Split (s)	25.8	27.5	27.5	56.6	27.5	32.9	71.6		28.3	71.6	71.6
Total Split (%)	13.7%	14.6%	14.6%	30.0%	14.6%	17.4%	38.0%		15.0%	38.0%	38.0%
Yellow Time (s)	3.9	4.5	4.5	3.9	4.5	4.7	5.0		4.7	5.0	5.0
All-Red Time (s)	1.9	3.0	3.0	2.7	3.0	3.2	1.6		3.6	1.6	1.6
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.8	7.5	7.5	6.6	7.5	7.9	6.6		8.3	6.6	6.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min		None	Min	Min
Act Effct Green (s)	7.8	8.7	8.7	20.6	21.2	11.6	66.2	95.2	5.2	48.9	48.9
Actuated g/C Ratio	0.07	0.08	0.08	0.18	0.18	0.10	0.58	0.83	0.05	0.43	0.43
v/c Ratio	0.39	0.26	0.30	0.80	0.31	0.56	0.86	0.60	0.06	0.36	0.04
Control Delay	65.2	59.9	62.1	56.4	44.8	63.8	29.0	8.1	61.4	25.8	24.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.2	59.9	62.1	56.4	44.8	63.8	29.0	8.1	61.4	25.8	24.8
LOS	E	E	E	E	D	E	C	A	E	C	C
Approach Delay		62.6			54.4		24.1			26.1	
Approach LOS		E			D		C			C	

Intersection Summary	
Cycle Length: 188.6	
Actuated Cycle Length: 115	
Natural Cycle: 140	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 30.1	Intersection LOS: C
Intersection Capacity Utilization 89.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 3: USH 12 & CTH K



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	47	37	36	489	106	100	1779	795	5	537	26
v/c Ratio	0.39	0.26	0.30	0.80	0.31	0.56	0.86	0.60	0.06	0.36	0.04
Control Delay	65.2	59.9	62.1	56.4	44.8	63.8	29.0	8.1	61.4	25.8	24.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.2	59.9	62.1	56.4	44.8	63.8	29.0	8.1	61.4	25.8	24.8
Queue Length 50th (ft)	34	26	26	178	68	70	551	177	4	144	11
Queue Length 95th (ft)	85	71	69	275	139	147	#1086	506	20	239	36
Internal Link Dist (ft)		437			501		491			513	
Turn Bay Length (ft)	100		160	250		350		385	350		375
Base Capacity (vph)	313	329	280	1520	824	395	2203	1527	313	2037	911
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.11	0.13	0.32	0.13	0.25	0.81	0.52	0.02	0.26	0.03

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Software Output Reports – Existing Conditions
Isolated Signalized Intersections
Vistro Version 6.00-00

Intersection Level Of Service Report
Intersection 3: WIS 172 & County EB - PM

Control Type:	Signalized	Delay (sec / veh):	20.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.415

Intersection Setup

Name	CTH EB/Packerland			CTH EB/Packerland			WIS 172			WIS 172		
Approach	Northbound			Southbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Pocket Length [ft]	265.00	100.00	200.00	140.00	100.00	50.00	370.00	100.00	180.00	310.00	100.00	185.00
Speed [mph]	30.00			35.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	CTH EB/Packerland			CTH EB/Packerland			WIS 172			WIS 172		
Base Volume Input [veh/h]	175	480	315	120	220	85	170	560	145	105	505	115
Base Volume Adjustment Factor	1.0000	1.0000	0.6200	1.0000	1.0000	0.6200	1.0000	1.0000	0.6200	1.0000	1.0000	0.6200
Heavy Vehicles Percentage [%]	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00	3.00	3.00	3.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	175	480	195	120	220	53	170	560	90	105	505	71
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	46	126	51	32	58	14	45	147	24	28	133	19
Total Analysis Volume [veh/h]	184	505	205	126	232	56	179	589	95	111	532	75
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	136
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	3	8	8	7	4	4	5	2	2	1	6	6
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	10	10	7	10	10	7	20	20	7	20	20
Maximum Green [s]	15	35	35	15	35	35	15	50	50	15	50	50
Amber [s]	3.0	4.5	4.5	3.0	4.5	4.5	3.0	4.5	4.5	3.0	4.5	4.5
All red [s]	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Split [s]	19	42	42	19	42	42	19	57	57	19	57	57
Vehicle Extension [s]	2.0	3.0	3.0	2.0	3.0	3.0	2.0	4.0	4.0	2.0	4.0	4.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	0	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	4.5	4.5	2.0	4.5	4.5	2.0	4.5	4.5	2.0	4.5	4.5
Minimum Recall	No	No		No	No		No	Yes		No	Yes	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	6.0	6.0	20.0	6.0	6.0	20.0	6.0	6.0	20.0	6.0	6.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	67	67	67	67	67	67	67	67	67	67	67	67
L, Total Lost Time per Cycle [s]	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	4.50	4.50	0.00	4.50	4.50	0.00	4.50	4.50	0.00	4.50	4.50
g_i, Effective Green Time [s]	23	13	13	23	12	12	31	21	21	31	20	20
g / C, Green / Cycle	0.35	0.19	0.19	0.35	0.19	0.19	0.46	0.31	0.31	0.46	0.30	0.30
(v / s)_i Volume / Saturation Flow Rate	0.13	0.14	0.13	0.10	0.07	0.04	0.16	0.17	0.06	0.10	0.15	0.05
s, saturation flow rate [veh/h]	1399	3582	1599	1205	3547	1583	1127	3547	1583	1065	3512	1568
c, Capacity [veh/h]	585	699	312	465	658	294	566	1088	486	534	1045	467
d1, Uniform Delay [s]	16.01	25.39	25.01	16.01	23.89	23.14	11.67	19.39	17.20	11.31	19.57	17.44
k, delay calibration	0.06	0.11	0.11	0.11	0.11	0.11	0.15	0.15	0.15	0.04	0.15	0.15
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.17	1.43	2.35	0.31	0.32	0.31	0.45	0.60	0.28	0.07	0.55	0.23
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.31	0.72	0.66	0.27	0.35	0.19	0.32	0.54	0.20	0.21	0.51	0.16
d, Delay for Lane Group [s/veh]	16.18	26.82	27.37	16.32	24.21	23.45	12.13	19.99	17.48	11.38	20.12	17.67
Lane Group LOS	B	C	C	B	C	C	B	B	B	B	C	B
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.93	3.71	3.06	1.27	1.53	0.73	1.38	3.40	0.98	0.79	3.07	0.78
50th-Percentile Queue Length [ft/ln]	48.24	92.79	76.55	31.70	38.28	18.20	34.39	84.98	24.61	19.67	76.79	19.53
95th-Percentile Queue Length [veh/ln]	3.47	6.68	5.51	2.28	2.76	1.31	2.48	6.12	1.77	1.42	5.53	1.41
95th-Percentile Queue Length [ft/ln]	86.84	167.03	137.79	57.05	68.90	32.75	61.91	152.97	44.29	35.41	138.23	35.16

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	16.18	26.82	27.37	16.32	24.21	23.45	12.13	19.99	17.48	11.38	20.12	17.67
Movement LOS	B	C	C	B	C	C	B	B	B	B	C	B
d_A, Approach Delay [s/veh]	24.76			21.71			18.08			18.51		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	20.77											
Intersection LOS	C											
Intersection V/C	0.415											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 3: WIS 52 & 28th Ave - PM

Control Type:	Signalized	Delay (sec / veh):	21.6
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.300

Intersection Setup

Name	28th Ave			28th Ave			WIS 52			WIS 52		
Approach	Northbound			Southbound			Northeastbound			Southwestbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	2	0	1	1	0	0	2	0	1
Pocket Length [ft]	105.00	100.00	120.00	250.00	100.00	75.00	265.00	100.00	100.00	390.00	100.00	215.00
Speed [mph]	25.00			25.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	28th Ave			28th Ave			WIS 52			WIS 52		
Base Volume Input [veh/h]	5	150	125	310	280	105	50	255	1	230	435	100
Base Volume Adjustment Factor	1.0000	1.0000	0.6200	1.0000	1.0000	0.6200	1.0000	1.0000	1.0000	1.0000	1.0000	0.6200
Heavy Vehicles Percentage [%]	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	150	78	310	280	65	50	255	1	230	435	62
Peak Hour Factor	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	40	21	82	74	17	13	68	0	61	116	16
Total Analysis Volume [veh/h]	5	160	83	330	298	69	53	271	1	245	463	66
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	152
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal group	3	8	5	7	4	4	1	6	6	5	2	2
Auxiliary Signal Groups			5,8									2,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	8	10	8	8	10	10	8	16	16	8	16	16
Maximum Green [s]	12	25	20	25	30	30	20	60	60	20	50	50
Amber [s]	3.5	4.0	3.5	3.5	4.0	4.0	3.5	4.0	4.0	3.5	4.0	4.0
All red [s]	0.5	3.0	0.5	0.5	3.0	3.0	0.5	3.0	3.0	0.5	3.0	3.0
Split [s]	16	32	24	29	37	37	24	67	67	24	57	57
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	5.0	5.0	2.0	5.0	5.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	0	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	5.0	2.0	2.0	5.0	5.0	2.0	5.0	5.0	2.0	5.0	5.0
Minimum Recall	No	No	No	No	No		No	Yes		No	Yes	Yes
Maximum Recall	No	No	No	No	No		No	No		No	No	No
Pedestrian Recall	No	No	No	No	No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	6.0	6.0	20.0	6.0	6.0	20.0	6.0	6.0	20.0	6.0	6.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	7.00	4.00	4.00	7.00	7.00	4.00	7.00	7.00	4.00	7.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	5.00	0.00	2.00	5.00	5.00	2.00	5.00	5.00	2.00	5.00	0.00
g_i, Effective Green Time [s]	1	10	25	9	18	18	5	16	16	8	19	35
g / C, Green / Cycle	0.01	0.15	0.38	0.14	0.28	0.28	0.08	0.25	0.25	0.12	0.29	0.54
(v / s)_i Volume / Saturation Flow Rate	0.00	0.04	0.05	0.09	0.08	0.04	0.03	0.07	0.07	0.07	0.13	0.04
s, saturation flow rate [veh/h]	1792	3582	1599	3479	3582	1599	1774	1863	1860	3445	3547	1583
c, Capacity [veh/h]	20	548	614	481	1002	448	138	459	459	423	1035	852
d1, Uniform Delay [s]	31.76	24.33	12.98	26.59	18.33	17.56	28.42	19.84	19.84	26.84	18.69	7.22
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.23	0.23	0.04	0.23	0.23
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.34	0.11	0.04	0.66	0.06	0.06	0.66	0.76	0.76	0.47	0.65	0.08
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.25	0.29	0.14	0.69	0.30	0.15	0.39	0.30	0.30	0.58	0.45	0.08
d, Delay for Lane Group [s/veh]	34.10	24.44	13.01	27.24	18.39	17.62	29.07	20.60	20.60	27.31	19.34	7.30
Lane Group LOS	C	C	B	C	B	B	C	C	C	C	B	A
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.09	1.06	0.74	2.38	1.68	0.75	0.76	1.63	1.62	1.69	2.65	0.38
50th-Percentile Queue Length [ft/ln]	2.22	26.47	18.53	59.56	41.97	18.71	19.01	40.64	40.62	42.35	66.19	9.41
95th-Percentile Queue Length [veh/ln]	0.16	1.91	1.33	4.29	3.02	1.35	1.37	2.93	2.92	3.05	4.77	0.68
95th-Percentile Queue Length [ft/ln]	4.00	47.64	33.36	107.20	75.55	33.68	34.21	73.15	73.11	76.23	119.15	16.95

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	34.10	24.44	13.01	27.24	18.39	17.62	29.07	20.60	20.60	27.31	19.34	7.30
Movement LOS	C	C	B	C	B	B	C	C	C	C	B	A
d_A, Approach Delay [s/veh]	20.81			22.51			21.98			20.84		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	21.59											
Intersection LOS	C											
Intersection V/C	0.300											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 3: WIS 36 & WIS 20/83 - PM

Control Type:	Signalized	Delay (sec / veh):	22.7
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.758

Intersection Setup

Name	WIS 36			WIS 36			WIS 20			WIS 20		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	1	0	1	0	0	1	0	0	1
Pocket Length [ft]	450.00	100.00	190.00	435.00	100.00	175.00	100.00	100.00	55.00	100.00	100.00	80.00
Speed [mph]	55.00			55.00			45.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	WIS 36			WIS 36			WIS 20			WIS 20		
Base Volume Input [veh/h]	75	495	5	55	720	70	15	255	45	45	95	95
Base Volume Adjustment Factor	1.0000	1.0000	0.6200	1.0000	1.0000	0.6200	1.0000	1.0000	0.6200	1.0000	1.0000	0.6200
Heavy Vehicles Percentage [%]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	75	495	3	55	720	43	15	255	28	45	95	59
Peak Hour Factor	0.9900	0.9900	0.9900	0.9900	0.9900	0.9900	0.9900	0.9900	0.9900	0.9900	0.9900	0.9900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	19	125	1	14	182	11	4	64	7	11	24	15
Total Analysis Volume [veh/h]	76	500	3	56	727	43	15	258	28	45	96	60
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	109
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	1	6	6	5	2	2	8	8	8	4	4	4
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	6	15	15	6	15	15	8	8	8	8	8	8
Maximum Green [s]	15	45	45	15	45	45	30	30	30	30	30	30
Amber [s]	3.5	5.1	5.1	3.5	5.1	5.1	4.2	4.2	4.2	4.2	4.2	4.2
All red [s]	1.0	2.3	2.3	1.0	2.3	2.3	3.0	3.0	3.0	3.0	3.0	3.0
Split [s]	20	52	52	20	52	52	37	37	37	37	37	37
Vehicle Extension [s]	1.5	3.1	3.1	1.5	3.1	3.1	1.5	1.5	1.5	1.5	1.5	1.5
Walk [s]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	0	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.5	5.4	5.4	2.5	5.4	5.4	5.2	5.2	5.2	5.2	5.2	5.2
Minimum Recall	No	Yes		No	Yes			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	6.0	6.0	20.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	C	R	C	R
C, Cycle Length [s]	74	74	74	74	74	74	74	74	74	74
L, Total Lost Time per Cycle [s]	7.40	7.40	7.40	7.40	7.40	7.40	7.20	7.20	7.20	7.20
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	0.00	5.40	5.40	5.40	5.40	5.40	5.20	5.20	5.20	5.20
g_i, Effective Green Time [s]	30	30	30	20	20	20	30	30	30	30
g / C, Green / Cycle	0.40	0.40	0.40	0.27	0.27	0.27	0.40	0.40	0.40	0.40
(v / s)_i Volume / Saturation Flow Rate	0.08	0.14	0.00	0.06	0.20	0.03	0.24	0.02	0.53	0.04
s, saturation flow rate [veh/h]	990	3582	1599	903	3582	1599	1122	1599	268	1599
c, Capacity [veh/h]	409	1432	639	235	986	440	503	644	172	644
d1, Uniform Delay [s]	15.29	15.49	13.36	28.34	24.39	19.98	16.41	13.43	18.68	13.71
k, delay calibration	0.04	0.11	0.11	0.11	0.11	0.11	0.05	0.04	0.50	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.08	0.15	0.00	0.54	1.14	0.10	0.43	0.01	33.46	0.02
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.19	0.35	0.00	0.24	0.74	0.10	0.54	0.04	0.82	0.09
d, Delay for Lane Group [s/veh]	15.37	15.65	13.36	28.87	25.53	20.08	16.84	13.44	52.14	13.73
Lane Group LOS	B	B	B	C	C	C	B	B	D	B
Critical Lane Group	Yes	No	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.67	2.45	0.03	0.84	5.13	0.49	2.84	0.25	3.00	0.58
50th-Percentile Queue Length [ft/ln]	16.78	61.37	0.64	20.93	128.29	12.36	71.08	6.25	74.96	14.39
95th-Percentile Queue Length [veh/ln]	1.21	4.42	0.05	1.51	8.85	0.89	5.12	0.45	5.40	1.04
95th-Percentile Queue Length [ft/ln]	30.21	110.46	1.15	37.67	221.17	22.24	127.94	11.26	134.93	25.91

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	15.37	15.65	13.36	28.87	25.53	20.08	16.84	16.84	13.44	52.14	52.14	13.73
Movement LOS	B	B	B	C	C	C	B	B	B	D	D	B
d_A, Approach Delay [s/veh]	15.60			25.48			16.53			40.67		
Approach LOS	B			C			B			D		
d_I, Intersection Delay [s/veh]	22.67											
Intersection LOS	C											
Intersection V/C	0.758											

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 3: WIS 67 & US 14 - PM

Control Type:	Signalized	Delay (sec / veh):	31.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.304

Intersection Setup

Name	USH 14			USH 14			WIS 67			WIS 67		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	120.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			0.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	USH 14			USH 14			WIS 67			WIS 67		
Base Volume Input [veh/h]	0	130	80	0	0	0	30	120	175	140	0	135
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.6200	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	5.00	5.00	0.00	0.00	0.00	4.00	4.00	4.00	3.00	3.00	3.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	130	80	0	0	0	30	120	109	140	0	135
Peak Hour Factor	1.0000	0.9200	0.9200	1.0000	1.0000	1.0000	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	35	22	0	0	0	8	33	30	38	0	37
Total Analysis Volume [veh/h]	0	141	87	0	0	0	33	130	118	152	0	147
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	133
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap	Protecte	Overlap	Permiss
Signal group	0	8	8	0	0	0	6	6	6	5	2	0
Auxiliary Signal Groups									6,8		2,5	
Lead / Lag	-	-	-	-	-	-	Lag	-	-	Lead	-	-
Minimum Green [s]	0	15	15	0	0	0	15	15	15	5	5	0
Maximum Green [s]	0	30	30	0	0	0	30	30	30	20	56	0
Amber [s]	0.0	3.5	3.5	0.0	0.0	0.0	3.5	3.5	3.5	4.0	3.5	0.0
All red [s]	0.0	2.5	2.5	0.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
Split [s]	0	36	36	0	0	0	36	36	36	26	62	0
Vehicle Extension [s]	0.0	1.5	1.5	0.0	0.0	0.0	1.5	1.5	1.5	3.0	3.0	0.0
Walk [s]	0	7	7	0	0	0	7	7	7	5	5	0
Pedestrian Clearance [s]	0	18	18	0	0	0	25	25	25	10	10	0
Rest In Walk												
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	4.0	4.0	0.0	0.0	0.0	3.5	3.5	3.5	4.0	3.5	0.0
Minimum Recall		No						Yes	Yes	No	No	
Maximum Recall		Yes						No	No	No	No	
Pedestrian Recall		No						No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	6.0	6.0	0.0	0.0	0.0	20.0	20.0	20.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	4
Pedestrian Walk [s]	5
Pedestrian Clearance [s]	30

Lane Group Calculations

Lane Group	C		L	C	R	C
C, Cycle Length [s]	112		112	112	112	112
L, Total Lost Time per Cycle [s]	6.00		5.50	5.50	6.00	5.50
l1_p, Permitted Start-Up Lost Time [s]	0.00		2.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00		3.50	3.50	0.00	0.00
g_i, Effective Green Time [s]	30		30	30	65	41
g / C, Green / Cycle	0.27		0.27	0.27	0.58	0.36
(v / s)_i Volume / Saturation Flow Rate	0.13		0.03	0.07	0.08	0.23
s, saturation flow rate [veh/h]	1695		1212	1827	1553	1297
c, Capacity [veh/h]	453		107	485	903	498
d1, Uniform Delay [s]	34.85		53.72	32.62	10.64	29.17
k, delay calibration	0.50		0.04	0.04	0.04	0.11
I, Upstream Filtering Factor	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.96		0.60	0.11	0.02	1.16
d3, Initial Queue Delay [s]	0.00		0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00		1.00	1.00	1.00	1.00
PF, progression factor	1.00		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.50		0.31	0.27	0.13	0.60
d, Delay for Lane Group [s/veh]	38.81		54.32	32.73	10.67	30.33
Lane Group LOS	D		D	C	B	C
Critical Lane Group	Yes		No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	5.77		0.95	2.85	1.33	6.44
50th-Percentile Queue Length [ft/ln]	144.21		23.72	71.25	33.35	160.90
95th-Percentile Queue Length [veh/ln]	9.71		1.71	5.13	2.40	10.60
95th-Percentile Queue Length [ft/ln]	242.69		42.69	128.25	60.02	264.91

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	38.81	38.81	0.00	0.00	0.00	54.32	32.73	10.67	30.33	30.33	30.33
Movement LOS		D	D				D	C	B	C	C	C
d_A, Approach Delay [s/veh]	38.81			0.00			26.00			30.33		
Approach LOS	D			A			C			C		
d_I, Intersection Delay [s/veh]	31.22											
Intersection LOS	C											
Intersection V/C	0.304											

Sequence

Ring 1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	4	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 3: US 12 & County K - PM

Control Type:	Signalized	Delay (sec / veh):	33.4
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.679

Intersection Setup

Name	CTH K			CTH K			USH 12			USH 12		
Approach	Eastbound			Westbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	2	0	0	1	0	1	1	0	1
Pocket Length [ft]	100.00	100.00	160.00	250.00	100.00	100.00	350.00	100.00	385.00	350.00	100.00	375.00
Speed [mph]	45.00			45.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	CTH K			CTH K			USH 12			USH 12		
Base Volume Input [veh/h]	45	35	55	465	90	10	95	1690	755	5	510	40
Base Volume Adjustment Factor	1.0000	1.0000	0.6200	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.6200
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	45	35	34	465	90	10	95	1690	755	5	510	25
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	9	9	122	24	3	25	445	199	1	134	7
Total Analysis Volume [veh/h]	47	37	36	489	95	11	100	1779	795	5	537	26
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	190
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal group	3	8	8	7	4	4	5	2	2	1	6	6
Auxiliary Signal Groups									2,7			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	8	8	5	8	8	5	12	12	5	12	12
Maximum Green [s]	20	20	20	50	20	20	25	65	65	20	65	65
Amber [s]	3.9	4.5	4.5	3.9	4.5	4.5	4.7	5.0	5.0	4.7	5.0	5.0
All red [s]	1.9	3.0	3.0	2.7	3.0	3.0	3.2	1.6	1.6	3.6	1.6	1.6
Split [s]	26	28	28	57	28	28	33	72	72	29	72	72
Vehicle Extension [s]	1.5	1.5	1.5	1.5	1.5	1.5	1.5	5.0	5.0	1.5	5.0	5.0
Walk [s]	0	0	0	0	0	0	3	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	3	0	0	0	0	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Minimum Recall	No	No		No	No		No	Yes	Yes	No	Yes	
Maximum Recall	No	No		No	No		No	No	No	No	No	
Pedestrian Recall	No	No		No	No		No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	20.0	6.0	6.0	20.0	6.0	6.0	20.0	6.0	6.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	R	L	C	R
C, Cycle Length [s]	140	140	140	140	140	140	140	140	140	140	140
L, Total Lost Time per Cycle [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
g_i, Effective Green Time [s]	10	15	15	44	49	15	72	116	9	66	66
g / C, Green / Cycle	0.07	0.11	0.11	0.32	0.35	0.11	0.51	0.83	0.07	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.03	0.02	0.02	0.14	0.06	0.06	0.50	0.50	0.00	0.15	0.02
s, saturation flow rate [veh/h]	1774	1863	1583	3445	1829	1792	3582	1599	1774	3547	1583
c, Capacity [veh/h]	127	200	170	1089	644	195	1830	1247	116	1660	741
d1, Uniform Delay [s]	62.05	56.96	57.12	38.20	31.24	58.95	33.29	6.75	61.34	23.38	20.17
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.04	0.24	0.50	0.04	0.23	0.23
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.67	0.16	0.23	0.11	0.04	0.78	9.44	2.50	0.06	0.24	0.04
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.37	0.18	0.21	0.45	0.16	0.51	0.97	0.64	0.04	0.32	0.04
d, Delay for Lane Group [s/veh]	62.72	57.12	57.35	38.31	31.28	59.73	42.73	9.25	61.40	23.62	20.21
Lane Group LOS	E	E	E	D	C	E	D	A	E	C	C
Critical Lane Group	No	No	Yes	No	No	No	Yes	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.60	1.19	1.16	6.59	2.44	3.29	28.89	8.05	0.16	5.33	0.45
50th-Percentile Queue Length [ft/ln]	39.88	29.63	28.96	164.64	61.12	82.22	722.27	201.24	4.10	133.17	11.22
95th-Percentile Queue Length [veh/ln]	2.87	2.13	2.09	10.79	4.40	5.92	37.71	12.70	0.29	9.11	0.81
95th-Percentile Queue Length [ft/ln]	71.79	53.34	52.13	269.86	110.01	147.99	942.64	317.57	7.37	227.80	20.20

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	62.72	57.12	57.35	38.31	31.28	31.28	59.73	42.73	9.25	61.40	23.62	20.21
Movement LOS	E	E	E	D	C	C	E	D	A	E	C	C
d_A, Approach Delay [s/veh]	59.38			37.06			33.41			23.79		
Approach LOS	E			D			C			C		
d_I, Intersection Delay [s/veh]	33.37											
Intersection LOS	C											
Intersection V/C	0.679											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Software Output Reports – Existing Conditions
Isolated Two-Way Stop Controlled Intersections
HCS 2010 Version 6.9

HCS 2010 Two-Way Stop-Control Report

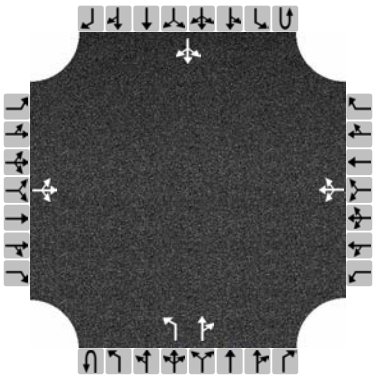
General Information

Analyst	LLZ
Agency/Co.	raSmith
Date Performed	1/12/2018
Analysis Year	2018
Time Analyzed	AM
Intersection Orientation	North-South
Project Description	WisDOT Software Evaluation

Site Information

Intersection	WIS 32 & Russell Road
Jurisdiction	SE - Kenosha Co
East/West Street	Russell Road
North/South Street	WIS 32
Peak Hour Factor	0.89
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	1	1	0	0	0	1	0
Configuration			LTR				LTR			L		TR			LTR	
Volume, V (veh/h)		35	1	80		1	1	5		85	205	1		1	480	110
Percent Heavy Vehicles (%)		7	7	7		33	33	33		3				2		
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.17	6.57	6.27		7.43	6.83	6.53		4.13				4.12		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.56	4.06	3.36		3.80	4.30	3.60		2.23				2.22		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			130				8			96				1		
Capacity, c (veh/h)			329				368			920				1336		
v/c Ratio			0.39				0.02			0.10				0.00		
95% Queue Length, Q_{95} (veh)			1.8				0.1			0.3				0.0		
Control Delay (s/veh)			22.9				15.0			9.4				7.7		
Level of Service, LOS			C				B			A				A		
Approach Delay (s/veh)		22.9				15.0				2.8				0.0		
Approach LOS		C				B										

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HCS 2010 Two-Way Stop-Control Report

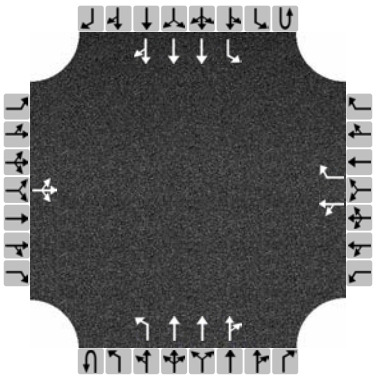
General Information

Analyst	LLZ
Agency/Co.	raSmith
Date Performed	1/12/2018
Analysis Year	2018
Time Analyzed	PM
Intersection Orientation	North-South
Project Description	WisDOT Software Evaluation

Site Information

Intersection	WIS 100 & N Mall Dwy
Jurisdiction	SE - Milwaukee Co
East/West Street	North Mayfair Mall Driway
North/South Street	WIS 100
Peak Hour Factor	0.91
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	1	0	1	3	0	0	1	3	0
Configuration			LTR			LT		R		L	T	TR		L	T	TR
Volume, V (veh/h)		20	1	35		30	1	155	30	15	1465	50	20	80	1550	10
Percent Heavy Vehicles (%)		1	1	1		3	3	3	2	2			2	2		
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Left + Thru								1						

Critical and Follow-up Headways

Base Critical Headway (sec)		6.4	6.5	7.1		6.4	6.5	7.1	5.6	5.3			5.6	5.3		
Critical Headway (sec)		6.42	6.52	7.12		6.46	6.56	7.16	5.64	5.34			5.64	5.34		
Base Follow-Up Headway (sec)		3.8	4.0	3.9		3.8	4.0	3.9	2.3	3.1			2.3	3.1		
Follow-Up Headway (sec)		3.81	4.01	3.91		3.83	4.03	3.93	2.32	3.12			2.32	3.12		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			61			34		170		49				110		
Capacity, c (veh/h)								267		230				167		
v/c Ratio								0.64		0.21				0.66		
95% Queue Length, Q_{95} (veh)								4.0		0.8				3.8		
Control Delay (s/veh)								39.6		24.8				60.7		
Level of Service, LOS								E		C				F		
Approach Delay (s/veh)										0.7				3.7		
Approach LOS																

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HCS 2010 Two-Way Stop-Control Report

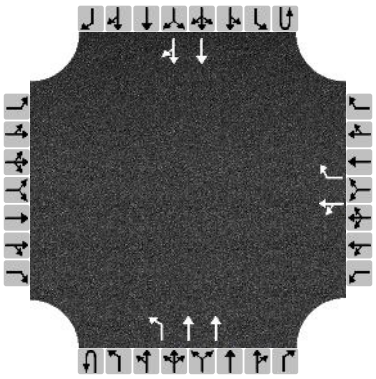
General Information

Analyst	LLZ
Agency/Co.	raSmith
Date Performed	1/12/2018
Analysis Year	2018
Time Analyzed	PM
Intersection Orientation	North-South
Project Description	WisDOT Software Evaluation

Site Information

Intersection	WIS 16 WB Ramp & CTH C
Jurisdiction	SE - Waukesha Co
East/West Street	WIS 16 WB Ramps
North/South Street	County C
Peak Hour Factor	0.93
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	1	0	1	2	0	0	0	2	0
Configuration						LT		R		L	T				T	TR
Volume, V (veh/h)						195	1	275		115	125				240	25
Percent Heavy Vehicles (%)						1	1	1		1						
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized		No				Yes				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)						7.5	6.5	6.9		4.1						
Critical Headway (sec)						6.82	6.52	6.92		4.12						
Base Follow-Up Headway (sec)						3.5	4.0	3.3		2.2						
Follow-Up Headway (sec)						3.51	4.01	3.31		2.21						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						211		296		124						
Capacity, c (veh/h)						494		986		1282						
v/c Ratio						0.43		0.30		0.10						
95% Queue Length, Q_{95} (veh)						2.1		1.3		0.3						
Control Delay (s/veh)						17.6		10.2		8.1						
Level of Service, LOS						C		B		A						
Approach Delay (s/veh)						13.3				3.9						
Approach LOS						B										

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HCS 2010 Two-Way Stop-Control Report

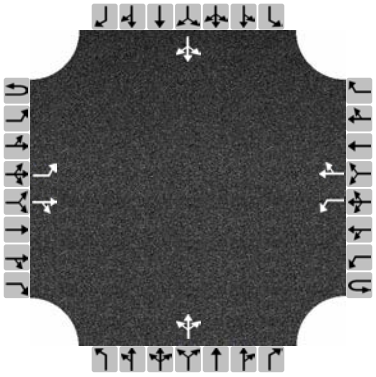
General Information

Analyst	LLZ
Agency/Co.	raSmith
Date Performed	1/8/2018
Analysis Year	2018
Time Analyzed	PM
Intersection Orientation	East-West
Project Description	WisDOT Software Evaluation

Site Information

Intersection	WIS 167 & Country Aire Dr
Jurisdiction	SE - Washington Co
East/West Street	WIS 167
North/South Street	Country Aire Dr
Peak Hour Factor	0.96
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		0	1	0
Configuration		L		TR		L		TR			LTR				LTR	
Volume, V (veh/h)		25	405	10		30	730	25		1	35	50		1	15	15
Percent Heavy Vehicles (%)		2				1				1	1	1		3	3	3
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.12				4.11				7.11	6.51	6.21		7.13	6.53	6.23
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.22				2.21				3.51	4.01	3.31		3.53	4.03	3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		26				31					89				33	
Capacity, c (veh/h)		832				1133					351				275	
v/c Ratio		0.03				0.03					0.25				0.12	
95% Queue Length, Q_{95} (veh)		0.1				0.1					1.0				0.4	
Control Delay (s/veh)		9.5				8.3					18.7				19.8	
Level of Service, LOS		A				A					C				C	
Approach Delay (s/veh)		0.5				0.3				18.7				19.8		
Approach LOS										C				C		

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HCS 2010 Two-Way Stop-Control Report

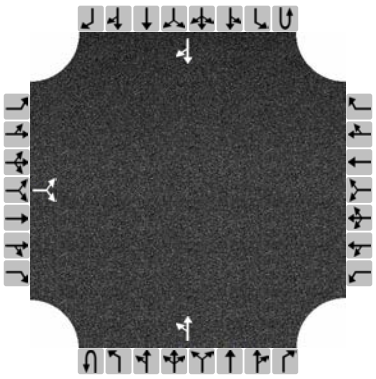
General Information

Analyst	LLZ
Agency/Co.	raSmith
Date Performed	1/12/2018
Analysis Year	2018
Time Analyzed	PM
Intersection Orientation	North-South
Project Description	WisDOT Software Evaluation

Site Information

Intersection	WIS 67 & County Z
Jurisdiction	SE - Waukesha Co
East/West Street	County Z
North/South Street	WIS 67
Peak Hour Factor	0.83
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume, V (veh/h)		120		65						55	185				265	140
Percent Heavy Vehicles (%)		5		5						4						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.45		6.25						4.14						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.54		3.34						2.24						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			223							66						
Capacity, c (veh/h)			414							1063						
v/c Ratio			0.54							0.06						
95% Queue Length, Q_{95} (veh)			3.1							0.2						
Control Delay (s/veh)			23.4							8.6						
Level of Service, LOS			C							A						
Approach Delay (s/veh)		23.4								2.4						
Approach LOS		C														

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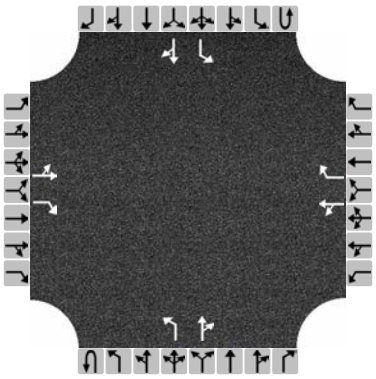
HCS 2010 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	LLZ	Intersection	US 51 & CTH B/CTH AB
Agency/Co.	raSmith	Jurisdiction	SW - Dane Co
Date Performed	1/12/2018	East/West Street	County B/County AB
Analysis Year	2018	North/South Street	US 51
Time Analyzed	PM	Peak Hour Factor	0.95
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	WisDOT Software Evaluation		

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	1		0	1	1	0	1	1	0	0	1	1	0
Configuration		LT		R		LT		R		L		TR		L		TR
Volume, V (veh/h)		25	25	245		15	5	15		50	365	15		20	690	10
Percent Heavy Vehicles (%)		1	1	1		1	1	1		2				1		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized	Yes				Yes				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.11	6.51	6.21		7.11	6.51	6.21		4.12				4.11		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.51	4.01	3.31		3.51	4.01	3.31		2.22				2.21		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		52		258		21		16		53				21		
Capacity, c (veh/h)		141		423		55		659		868				1164		
v/c Ratio		0.37		0.61		0.38		0.02		0.06				0.02		
95% Queue Length, Q_{95} (veh)		1.5		3.9		1.4		0.1		0.2				0.1		
Control Delay (s/veh)		44.9		26.0		107.1		10.6		9.4				8.2		
Level of Service, LOS		E		D		F		B		A				A		
Approach Delay (s/veh)	29.1				65.4				1.1				0.2			
Approach LOS	D				F											

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HCS 2010 Two-Way Stop-Control Report

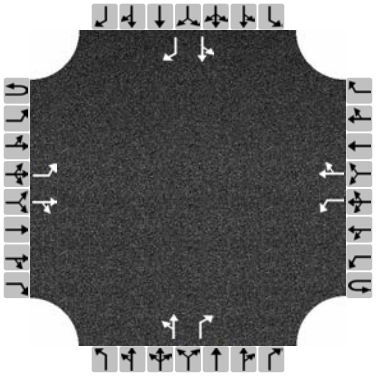
General Information

Analyst	LLZ
Agency/Co.	raSmith
Date Performed	1/12/2018
Analysis Year	2018
Time Analyzed	AM
Intersection Orientation	East-West
Project Description	WisDOT Software Evaluation

Site Information

Intersection	WIS 19 & Musket Ridge Dr
Jurisdiction	SW - Dane Co
East/West Street	WIS 19
North/South Street	Musket Ridge Drive
Peak Hour Factor	0.80
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	1		0	1	1
Configuration		L		TR		L		TR		LT		R		LT		R
Volume, V (veh/h)		35	170	20		5	330	10		35	5	5		10	5	190
Percent Heavy Vehicles (%)		4				3				12	12	12		2	2	2
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.14				4.13				7.22	6.62	6.32		7.12	6.52	6.22
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.24				2.23				3.61	4.11	3.41		3.52	4.02	3.32

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		44				6				50		6		18		238
Capacity, c (veh/h)		1123				1323				167		791		315		635
v/c Ratio		0.04				0.00				0.30		0.01		0.06		0.37
95% Queue Length, Q_{95} (veh)		0.1				0.0				1.2		0.0		0.2		1.7
Control Delay (s/veh)		8.3				7.7				35.5		9.6		17.1		14.0
Level of Service, LOS		A				A				E		A		C		B
Approach Delay (s/veh)		1.3				0.1				32.7				14.3		
Approach LOS										D				B		

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HCS 2010 Two-Way Stop-Control Report

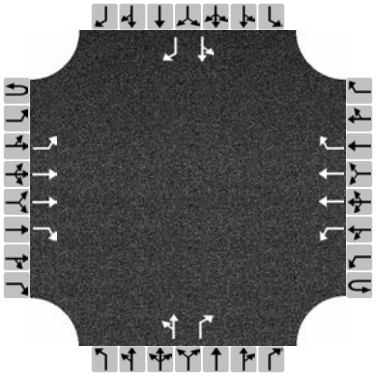
General Information

Analyst	LLZ
Agency/Co.	raSmith
Date Performed	1/15/2018
Analysis Year	2018
Time Analyzed	AM
Intersection Orientation	East-West
Project Description	WisDOT Signal Timings Evaluation

Site Information

Intersection	WIS 54 & Lacount Road
Jurisdiction	NE - Brown Co
East/West Street	WIS 54/Mason Street
North/South Street	Lacount Road
Peak Hour Factor	0.93
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	1	0	1	2	1		0	1	1		0	1	1
Configuration		L	T	R		L	T	R		LT		R		LT		R
Volume, V (veh/h)		1	435	15		35	225	5		25	1	150		25	5	1
Percent Heavy Vehicles (%)		2				6				2	2	2		4	4	4
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.5	6.5	6.9		7.5	6.5	6.9
Critical Headway (sec)		4.14				4.22				7.54	6.54	6.94		7.58	6.58	6.98
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.22				2.26				3.52	4.02	3.32		3.54	4.04	3.34

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		1				38				28		161		32		1
Capacity, c (veh/h)		1316				1048				328		768		313		901
v/c Ratio		0.00				0.04				0.09		0.21		0.10		0.00
95% Queue Length, Q_{95} (veh)		0.0				0.1				0.3		0.8		0.3		0.0
Control Delay (s/veh)		7.7				8.6				17.0		10.9		17.8		9.0
Level of Service, LOS		A				A				C		B		C		A
Approach Delay (s/veh)		0.0				1.1				11.8				17.5		
Approach LOS										B				C		

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HCS 2010 Two-Way Stop-Control Report

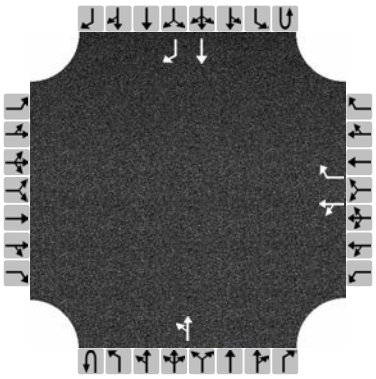
General Information

Analyst	LLZ
Agency/Co.	raSmith
Date Performed	1/15/2018
Analysis Year	2018
Time Analyzed	PM
Intersection Orientation	North-South
Project Description	WisDOT Software Evaluation

Site Information

Intersection	I-94 WB Ramp & County F
Jurisdiction	SW - Jeferson Co
East/West Street	I-94 WB Ramps
North/South Street	County F
Peak Hour Factor	0.95
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	1	0	0	1	0	0	0	1	1
Configuration						LT		R		LT					T	R
Volume, V (veh/h)						315	1	160		15	125				210	70
Percent Heavy Vehicles (%)						3	3	3		5						
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized		No				Yes				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1	6.5	6.2		4.1						
Critical Headway (sec)						6.43	6.53	6.23		4.15						
Base Follow-Up Headway (sec)						3.5	4.0	3.3		2.2						
Follow-Up Headway (sec)						3.53	4.03	3.33		2.24						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						333		168		16						
Capacity, c (veh/h)						615		914		1252						
v/c Ratio						0.54		0.18		0.01						
95% Queue Length, Q_{95} (veh)						3.2		0.7		0.0						
Control Delay (s/veh)						17.5		9.8		7.9						
Level of Service, LOS						C		A		A						
Approach Delay (s/veh)						14.9				1.0						
Approach LOS						B										

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HCS 2010 Two-Way Stop-Control Report

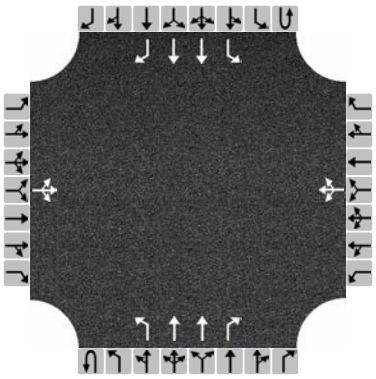
General Information

Analyst	LLZ
Agency/Co.	raSmith
Date Performed	1/15/2018
Analysis Year	2018
Time Analyzed	PM
Intersection Orientation	North-South
Project Description	WisDOT Software Evaluation

Site Information

Intersection	WIS 57 & County K
Jurisdiction	SE - Ozaukee Co
East/West Street	County K
North/South Street	WIS 57
Peak Hour Factor	0.94
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	1	2	1	0	1	2	1
Configuration			LTR				LTR			L	T	R		L	T	R
Volume, V (veh/h)		15	10	40		5	10	15		50	460	10		15	275	5
Percent Heavy Vehicles (%)		2	2	2		1	1	1		4				9		
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Left + Thru								2						

Critical and Follow-up Headways

Base Critical Headway (sec)		7.5	6.5	6.9		7.5	6.5	6.9		4.1				4.1		
Critical Headway (sec)		7.54	6.54	6.94		7.52	6.52	6.92		4.18				4.28		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.52	4.02	3.32		3.51	4.01	3.31		2.24				2.29		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			70				32			53				16		
Capacity, c (veh/h)			1149				807			1246				1013		
v/c Ratio			0.06				0.04			0.04				0.02		
95% Queue Length, Q_{95} (veh)			0.2				0.1			0.1				0.0		
Control Delay (s/veh)			8.3				9.6			8.0				8.6		
Level of Service, LOS			A				A			A				A		
Approach Delay (s/veh)		8.3				9.6				0.8				0.4		
Approach LOS		A				A										

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Software Output Reports – Existing Conditions
Isolated Two-Way Stop Controlled Intersections
SIDRA Version 7.0

LANE SUMMARY

Site: 101 [WIS 32 & Russell Road-AM]

WIS 32 & Russell Road
Stop (Two-Way)

Lane Use and Performance	Demand Flows Total veh/h	HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Queue Veh	Dist ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: WIS 32													
Lane 1	96	3.0	911	0.105	100	7.6	LOS A	0.4	10.7	Short	100	0.0	NA
Lane 2	231	3.0	1843	0.126	100	0.0	LOS A	0.0	0.0	Full	1600	0.0	0.0
Approach	327	3.0		0.126		2.3	NA	0.4	10.7				
East: Russell Rd													
Lane 1	8	33.0	357	0.022	100	14.3	LOS B	0.1	2.3	Full	1600	0.0	0.0
Approach	8	33.0		0.022		14.3	LOS B	0.1	2.3				
North: WIS 32													
Lane 1	664	2.0	1801	0.369	100	1.0	LOS A	0.0	0.4	Full	1600	0.0	0.0
Approach	664	2.0		0.369		1.0	NA	0.0	0.4				
West: Russell Rd													
Lane 1	130	7.0	361	0.361	100	20.4	LOS C	1.8	47.0	Full	1600	0.0	0.0
Approach	130	7.0		0.361		20.4	LOS C	1.8	47.0				
Intersection	1129	3.1		0.369		3.7	NA	1.8	47.0				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Lane LOS values are based on average delay per lane.
Minor Road Approach LOS values are based on average delay for all lanes.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Project: T:\1172712.01\Traffic\Analysis\Isolated TWSC\SIDRA\WIS 32 & Russell Rd AM.sip7

LANE SUMMARY

Site: 101 [WIS 100 & N Mall Dwy PM - SB & EB]

WIS 100 & N Mall Dwy
Stop (Two-Way)

Lane Use and Performance

	Demand Flows Total veh/h	HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Queue Veh	Dist ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
East: N. Mall Dwy													
Lane 1	84	3.0	75	1.111	100	170.2	LOS F	7.8	200.5	Full	25	0.0	100.0
Approach	84	3.0		1.111		170.2	LOS F	7.8	200.5				
North: WIS 100													
Lane 1	110	2.0	1774	0.062	100	5.9	LOS A	0.0	0.0	Short	200	0.0	NA
Lane 2	572	2.0	1863	0.307	100	0.0	LOS A	0.0	0.0	Full	1600	0.0	0.0
Lane 3	572	2.0	1863	0.307	100	0.0	LOS A	0.0	0.0	Full	1600	0.0	0.0
Lane 4	570	2.0	1856	0.307	100	0.2	LOS A	0.0	0.0	Full	1600	0.0	0.0
Approach	1824	2.0		0.307		0.4	NA	0.0	0.0				
West: Business Dwy													
Lane 1	62	1.0	351	0.175	100	16.1	LOS C	0.6	15.1	Full	1600	0.0	0.0
Approach	62	1.0		0.175		16.1	LOS C	0.6	15.1				
Intersection	1969	2.0		1.111		8.1	NA	7.8	200.5				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Lane LOS values are based on average delay per lane.
Minor Road Approach LOS values are based on average delay for all lanes.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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LANE SUMMARY

Site: 101 [WIS 100 & N Mall Dwy PM - NB & WB]

WIS 100 & N Mall Dwy
Stop (Two-Way)

Lane Use and Performance

	Demand Flows Total veh/h	HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Queue Veh	Dist ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: WIS 100													
Lane 1	49	2.0	1774	0.028	100	5.9	LOS A	0.0	0.0	Short	310	0.0	NA
Lane 2	558	2.0	1863	0.300	100	0.0	LOS A	0.0	0.0	Full	1600	0.0	0.0
Lane 3	558	2.0	1863	0.300	100	0.0	LOS A	0.0	0.0	Full	1600	0.0	0.0
Lane 4	548	2.0	1830	0.300	100	0.6	LOS A	0.0	0.0	Full	1600	0.0	0.0
Approach	1714	2.0		0.300		0.4	NA	0.0	0.0				
East: N. Mall Dwy													
Lane 1	34	3.0	220	0.155	100	23.5	LOS C	0.5	13.2	Full	1600	0.0	0.0
Lane 2	170	3.0	719	0.237	100	9.7	LOS A	0.9	23.6	Short	200	0.0	NA
Approach	204	3.0		0.237		12.0	LOS B	0.9	23.6				
West: Business Dwy													
Lane 1	133	1.0	100	1.327	100	220.9	LOS F	16.0	403.5	Full	25	0.0	100.0
Approach	133	1.0		1.327		220.9	LOS F	16.0	403.5				
Intersection	2052	2.0		1.327		15.8	NA	16.0	403.5				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Lane LOS values are based on average delay per lane.
Minor Road Approach LOS values are based on average delay for all lanes.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Organisation: R.A. SMITH | Processed: Monday, May 21, 2018 3:12:39 PM
Project: T:\1172712.01\Traffic\Analysis\Isolated TWSC\SIDRA\WIS 100 & N Mall Dwy PM.sip7

LANE SUMMARY

Site: 101 [WIS 16 WB Ramps & County C PM]

WIS 16 WB Ramps & County C
Stop (Two-Way)

Lane Use and Performance	Demand Flows Total veh/h	HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Queue Veh	Dist ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: County C													
Lane 1	124	1.0	1279	0.097	100	5.3	LOS A	0.4	10.4	Short	175	0.0	NA
Lane 2	109	1.0	1881	0.058	100	0.0	LOS A	0.0	0.0	Full	1600	0.0	0.0
Lane 3	25	1.0	1881	0.013	23[6]	0.0	LOS A	0.0	0.0	Full	1600	0.0	0.0
Approach	258	1.0		0.097		2.5	NA	0.4	10.4				
East: WIS 16 WB Off Ramp													
Lane 1	211	1.0	371	0.567	100	23.3	LOS C	4.2	105.7	Full	1600	0.0	0.0
Lane 2	296	1.0	1045	0.283	100	8.7	LOS A	1.8	46.0	Short	85	0.0	NA
Approach	506	1.0		0.567		14.8	LOS B	4.2	105.7				
North: County C													
Lane 1	145	1.0	1881	0.077	100	0.9	LOS A	0.0	0.0	Full	1600	0.0	0.0
Lane 2	140	1.0	1818	0.077	100	1.7	LOS A	0.0	0.0	Full	1600	0.0	0.0
Approach	285	1.0		0.077		1.3	NA	0.0	0.0				
Intersection	1049	1.0		0.567		8.1	NA	4.2	105.7				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Lane LOS values are based on average delay per lane.
Minor Road Approach LOS values are based on average delay for all lanes.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

6 Lane under-utilisation due to downstream effects

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LANE SUMMARY

Site: 101 [WIS 167 & Country Aire Drive PM]

WIS 167 & Country Aire Drive
Stop (Two-Way)

Lane Use and Performance

	Demand Flows Total veh/h	HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Queue Veh	Dist ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Country Aire Drive													
Lane 1	90	1.0	286	0.313	100	21.2	LOS C	1.2	31.0	Full	1600	0.0	0.0
Approach	90	1.0		0.313		21.2	LOS C	1.2	31.0				
East: WIS 167													
Lane 1	31	1.0	1110	0.028	100	7.7	LOS A	0.1	2.8	Full	1600	0.0	0.0
Lane 2	786	1.0	1870	0.421	100	0.3	LOS A	0.0	0.0	Short	200	0.0	NA
Approach	818	1.0		0.421		0.6	NA	0.1	2.8				
North: Country Aire Drive													
Lane 1	32	3.0	223	0.145	100	22.7	LOS C	0.5	11.8	Full	1600	0.0	0.0
Approach	32	3.0		0.145		22.7	LOS C	0.5	11.8				
West: WIS 167													
Lane 1	26	2.0	812	0.032	100	9.1	LOS A	0.1	3.1	Full	1600	0.0	0.0
Lane 2	432	2.0	1855	0.233	100	0.2	LOS A	0.0	0.0	Short	195	0.0	NA
Approach	458	2.0		0.233		0.7	NA	0.1	3.1				
Intersection	1398	1.4		0.421		2.4	NA	1.2	31.0				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Lane LOS values are based on average delay per lane.
Minor Road Approach LOS values are based on average delay for all lanes.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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LANE SUMMARY

Site: 101 [WIS 67 & County Z PM]

WIS 67 & County Z
Stop (Two-Way)

Lane Use and Performance	Demand Flows Total veh/h	HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Queue Veh	Dist ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: WIS 67													
Lane 1	289	4.0	1550	0.187	100	2.4	LOS A	0.7	17.1	Full	1600	0.0	0.0
Approach	289	4.0		0.187		2.4	NA	0.7	17.1				
North: WIS 67													
Lane 1	488	4.0	1720	0.284	100	2.1	LOS A	0.0	0.0	Full	1600	0.0	0.0
Approach	488	4.0		0.284		2.1	NA	0.0	0.0				
West: County Z													
Lane 1	223	5.0	462	0.483	100	16.3	LOS C	3.0	76.9	Full	1600	0.0	0.0
Approach	223	5.0		0.483		16.3	LOS C	3.0	76.9				
Intersection	1000	4.2		0.483		5.3	NA	3.0	76.9				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Lane LOS values are based on average delay per lane.
Minor Road Approach LOS values are based on average delay for all lanes.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Organisation: R.A. SMITH | Processed: Monday, April 09, 2018 8:26:22 AM
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LANE SUMMARY

Site: 101 [US 51 & County B/County AB PM]

US 51 & County B/County AB
Stop (Two-Way)

Lane Use and Performance	Demand Flows Total veh/h	HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Queue Veh	Dist ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: US 51													
Lane 1	53	2.0	863	0.061	100	10.0	LOS A	0.2	6.0	Full	1600	0.0	0.0
Lane 2	400	2.0	1850	0.216	100	0.3	LOS A	0.0	0.0	Short	245	0.0	NA
Approach	453	2.0		0.216		1.4	NA	0.2	6.0				
East: County AB													
Lane 1	21	1.0	145	0.145	100	33.3	LOS D	0.5	12.5	Full	1600	0.0	0.0
Lane 2	16	1.0	589	0.027	100	11.8	LOS B	0.1	2.9	Short	50	0.0	NA
Approach	37	1.0		0.145		24.1	LOS C	0.5	12.5				
North: US 51													
Lane 1	21	1.0	1159	0.018	100	8.5	LOS A	0.1	1.8	Full	1600	0.0	0.0
Lane 2	737	1.0	1876	0.393	100	0.2	LOS A	0.0	0.0	Short	145	0.0	NA
Approach	758	1.0		0.393		0.4	NA	0.1	1.8				
West: County B													
Lane 1	53	1.0	159	0.331	100	36.8	LOS E	1.3	31.5	Full	1600	0.0	0.0
Lane 2	258	1.0	358	0.720	100	33.1	LOS D	6.3	159.7	Short	50	0.0	NA
Approach	311	1.0		0.720		33.7	LOS D	6.3	159.7				
Intersection	1558	1.3		0.720		7.9	NA	6.3	159.7				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Lane LOS values are based on average delay per lane.
Minor Road Approach LOS values are based on average delay for all lanes.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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LANE SUMMARY

Site: 101 [WIS 19 & Musket Ridge Drive - AM]

WIS 19 & Musket Ridge Drive
Stop (Two-Way)

Lane Use and Performance	Demand Flows Total veh/h	HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Queue Veh	Dist ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Musket Ridge Drive													
Lane 1	50	12.0	205	0.243	100	26.9	LOS D	1.0	26.3	Full	1600	0.0	0.0
Lane 2	6	12.0	733	0.009	100	9.0	LOS A	0.0	1.0	Short	50	0.0	NA
Approach	56	12.0		0.243		24.9	LOS C	1.0	26.3				
East: WIS 19													
Lane 1	6	3.0	1312	0.005	100	5.9	LOS A	0.0	0.5	Full	1600	0.0	0.0
Lane 2	425	3.0	1835	0.232	100	0.2	LOS A	0.0	0.0	Short	200	0.0	NA
Approach	431	3.0		0.232		0.3	NA	0.0	0.5				
North: Musket Ridge Drive													
Lane 1	19	2.0	333	0.056	100	16.3	LOS C	0.2	5.4	Full	1600	0.0	0.0
Lane 2	238	2.0	582	0.408	100	13.6	LOS B	2.8	71.2	Short	50	0.0	NA
Approach	256	2.0		0.408		13.8	LOS B	2.8	71.2				
West: WIS 19													
Lane 1	44	4.0	1110	0.039	100	6.6	LOS A	0.2	4.0	Full	1600	0.0	0.0
Lane 2	238	4.0	1793	0.132	100	0.6	LOS A	0.0	0.0	Short	150	0.0	NA
Approach	281	4.0		0.132		1.5	NA	0.2	4.0				
Intersection	1025	3.5		0.408		5.3	NA	2.8	71.2				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Lane LOS values are based on average delay per lane.
Minor Road Approach LOS values are based on average delay for all lanes.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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LANE SUMMARY

Site: 101 [WIS 54/Mason Street & Lacount Rd AM]

WIS 54/Mason Street & Lacount Rd
Stop (Two-Way)

Lane Use and Performance

	Demand Flows Total veh/h	HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Queue Veh	Dist ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Lacount Road													
Lane 1	28	2.0	199	0.141	100	24.2	LOS C	0.5	12.5	Full	1600	0.0	0.0
Lane 2	161	2.0	762	0.212	100	9.3	LOS A	1.1	28.1	Short	165	0.0	NA
Approach	189	2.0		0.212		11.5	LOS B	1.1	28.1				
East: WIS 54/Mason Street													
Lane 1	38	6.0	710	0.053	100	7.7	LOS A	0.2	4.7	Short	200	0.0	NA
Lane 2	121	6.0	1792	0.067	100	0.0	LOS A	0.0	0.0	Full	1600	0.0	0.0
Lane 3	121	6.0	1792	0.067	100	0.0	LOS A	0.0	0.0	Full	1600	0.0	0.0
Lane 4	5	6.0	1519	0.004	100	5.3	LOS A	0.0	0.0	Short	165	0.0	NA
Approach	285	6.0		0.067		1.1	NA	0.2	4.7				
North: Lacount Road													
Lane 1	32	4.0	155	0.208	100	30.9	LOS D	0.7	18.5	Full	1600	0.0	0.0
Lane 2	1	4.0	888	0.001	100	7.8	LOS A	0.0	0.1	Short	50	0.0	NA
Approach	33	4.0		0.208		30.2	LOS D	0.7	18.5				
West: WIS 54/Mason Street													
Lane 1	1	2.0	925	0.001	100	6.2	LOS A	0.0	0.1	Short	100	0.0	NA
Lane 2	234	2.0	1863	0.126	100	0.0	LOS A	0.0	0.0	Full	1600	0.0	0.0
Lane 3	234	2.0	1863	0.126	100	0.0	LOS A	0.0	0.0	Full	1600	0.0	0.0
Lane 4	16	2.0	1579	0.010	100	5.2	LOS A	0.0	0.0	Short	100	0.0	NA
Approach	485	2.0		0.126		0.2	NA	0.0	0.1				
Intersection	992	3.2		0.212		3.6	NA	1.1	28.1				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Lane LOS values are based on average delay per lane.
Minor Road Approach LOS values are based on average delay for all lanes.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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LANE SUMMARY

Site: 101 [I-94 WB Ramps & County F PM]

I-94 WB Ramps & County F
Stop (Two-Way)

Lane Use and Performance	Demand Flows Total veh/h	HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Queue Veh	Dist ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: County F													
Lane 1	147	5.0	1715	0.086	100	0.9	LOS A	0.1	3.3	Full	1600	0.0	0.0
Approach	147	5.0		0.086		0.9	NA	0.1	3.3				
East: I-94 WB Off Ramp													
Lane 1	333	3.0	562	0.592	100	17.6	LOS C	5.9	151.8	Full	1600	0.0	0.0
Lane 2	168	3.0	903	0.186	100	9.6	LOS A	0.9	22.6	Short	50	0.0	NA
Approach	501	3.0		0.592		14.9	LOS B	5.9	151.8				
North: County F													
Lane 1	221	4.0	1827	0.121	100	0.0	LOS A	0.0	0.0	Full	1600	0.0	0.0
Lane 2	74	4.0	1548	0.048	100	6.6	LOS A	0.0	0.0	Short	115	0.0	NA
Approach	295	4.0		0.121		1.7	NA	0.0	0.0				
Intersection	943	3.6		0.592		8.6	NA	5.9	151.8				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Lane LOS values are based on average delay per lane.
Minor Road Approach LOS values are based on average delay for all lanes.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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LANE SUMMARY

Site: 101 [WIS 57 & County K PM - NB & WB]

Network: N101 [Network1]

WIS 57 & County K
Stop (Two-Way)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist ft		ft	%	%
South: WIS 57															
Lane 1	53	4.0	53	4.0	1740	0.031	100	7.2	LOS A	0.0	0.0	Short	250	0.0	NA
Lane 2	245	4.0	245	4.0	1827	0.134	100	0.0	LOS A	0.0	0.0	Full	1600	0.0	0.0
Lane 3	245	4.0	245	4.0	1827	0.134	100	0.0	LOS A	0.0	0.0	Full	1600	0.0	0.0
Lane 4	11	4.0	11	4.0	1548	0.007	100	7.5	LOS A	0.0	0.0	Short	345	0.0	NA
Approach	553	4.0	553	4.0		0.134		0.8	NA	0.0	0.0				
East: County K															
Lane 1	32	1.0	32	1.0	846	0.038	100	11.3	LOS B	0.1	3.6	Full	1600	0.0	0.0
Approach	32	1.0	32	1.0		0.038		11.3	LOS B	0.1	3.6				
West: County K															
Lane 1	43	2.0	43	2.0	507	0.084	100	9.5	LOS A	0.3	8.0	Full	50	0.0	0.0
Approach	43	2.0	43	2.0		0.084		9.5	LOS A	0.3	8.0				
Intersection	628	3.7	628	3.7		0.134		2.0	NA	0.3	8.0				

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.0 %
Number of Iterations: 5 (maximum specified: 10)

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Organisation: R.A. SMITH | Processed: Thursday, May 24, 2018 9:10:59 AM
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LANE SUMMARY

Site: 101 [WIS 57 & County K PM - SB & EB]

Network: N101 [Network1]

WIS 57 & County K
Stop (Two-Way)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist ft		ft	%	%
East: County K															
Lane 1	69	1.0	69	1.0	734	0.094	100	7.3	LOS A	0.4	9.8	Full	50	0.0	0.0
Approach	69	1.0	69	1.0		0.094		7.3	LOS A	0.4	9.8				
North: WIS 57															
Lane 1	16	9.0	16	9.0	1660	0.010	100	7.3	LOS A	0.0	0.0	Short	400	0.0	NA
Lane 2	146	9.0	146	9.0	1743	0.084	100	0.0	LOS A	0.0	0.0	Full	1600	0.0	0.0
Lane 3	146	9.0	146	9.0	1743	0.084	100	0.0	LOS A	0.0	0.0	Full	1600	0.0	0.0
Lane 4	5	9.0	5	9.0	1477	0.004	100	7.6	LOS A	0.0	0.0	Short	340	0.0	NA
Approach	314	9.0	314	9.0		0.084		0.5	NA	0.0	0.0				
West: County K															
Lane 1	69	2.0	69	2.0	1006	0.069	100	10.3	LOS B	0.3	6.8	Full	1600	0.0	0.0
Approach	69	2.0	69	2.0		0.069		10.3	LOS B	0.3	6.8				
Intersection	452	6.7	452	6.7		0.094		3.1	NA	0.4	9.8				

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.0 %
Number of Iterations: 5 (maximum specified: 10)

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Software Output Reports – Existing Conditions
Isolated Two-Way Stop Controlled Intersections
Synchro Version 10.0.1

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	35	1	80	1	1	5	85	205	1	1	480	110
Future Vol, veh/h	35	1	80	1	1	5	85	205	1	1	480	110
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	7	7	7	33	33	33	3	3	3	2	2	2
Mvmt Flow	39	1	90	1	1	6	96	230	1	1	539	124

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1029	1026	601	1072	1088	231	663	0	0	231	0	0
Stage 1	603	603	-	423	423	-	-	-	-	-	-	-
Stage 2	426	423	-	649	665	-	-	-	-	-	-	-
Critical Hdwy	7.17	6.57	6.27	7.43	6.83	6.53	4.13	-	-	4.12	-	-
Critical Hdwy Stg 1	6.17	5.57	-	6.43	5.83	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.17	5.57	-	6.43	5.83	-	-	-	-	-	-	-
Follow-up Hdwy	3.563	4.063	3.363	3.797	4.297	3.597	2.227	-	-	2.218	-	-
Pot Cap-1 Maneuver	207	230	491	173	190	737	921	-	-	1337	-	-
Stage 1	477	481	-	552	538	-	-	-	-	-	-	-
Stage 2	597	579	-	411	413	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	188	206	491	129	170	737	921	-	-	1337	-	-
Mov Cap-2 Maneuver	188	206	-	129	170	-	-	-	-	-	-	-
Stage 1	427	481	-	495	482	-	-	-	-	-	-	-
Stage 2	529	519	-	335	413	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	23	15.7	2.7	0
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	921	-	-	328	343	1337	-	-
HCM Lane V/C Ratio	0.104	-	-	0.397	0.023	0.001	-	-
HCM Control Delay (s)	9.4	-	-	23	15.7	7.7	0	-
HCM Lane LOS	A	-	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0.3	-	-	1.8	0.1	0	-	-

Intersection	
Int Delay, s/veh	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	20	1	35	30	1	155	30	15	1465	50	20	80	1550	10
Future Vol, veh/h	20	1	35	30	1	155	30	15	1465	50	20	80	1550	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	-	None	-	-	-	None
Storage Length	-	-	-	-	-	200	-	310	-	-	-	200	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	1	1	1	3	3	3	2	2	2	2	2	2	2	2
Mvmt Flow	22	1	38	33	1	170	33	16	1610	55	22	88	1703	11

Major/Minor	Minor2			Minor1			Major1				Major2			
Conflicting Flow All	2672	3692	857	2638	3670	833	1251	1714	0	0	1215	1665	0	0
Stage 1	1929	1929	-	1736	1736	-	-	-	-	-	-	-	-	-
Stage 2	743	1763	-	902	1934	-	-	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	7.12	6.46	6.56	7.16	5.64	5.34	-	-	5.64	5.34	-	-
Critical Hdwy Stg 1	7.32	5.52	-	7.36	5.56	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.72	5.52	-	6.76	5.56	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.81	4.01	3.91	3.83	4.03	3.93	2.32	3.12	-	-	2.32	3.12	-	-
Pot Cap-1 Maneuver	24	5	260	~ 25	5	266	318	174	-	-	334	184	-	-
Stage 1	44	113	-	59	139	-	-	-	-	-	-	-	-	-
Stage 2	341	137	-	269	110	-	-	-	-	-	-	-	-	-
Platoon blocked, %									-	-			-	-
Mov Cap-1 Maneuver	~ 4	~ 1	260	~ 12	~ 1	266	230	230	-	-	173	173	-	-
Mov Cap-2 Maneuver	~ -36	~	-	~ 22	~ -9	-	-	-	-	-	-	-	-	-
Stage 1	35	41	-	46	109	-	-	-	-	-	-	-	-	-
Stage 2	96	108	-	81	40	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	~	123	0.7	3.4
HCM LOS	-	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	230	-	-	~ 25	266	173	-	-	
HCM Lane V/C Ratio	0.215	-	-	~ 1.363	0.64	0.635	-	-	
HCM Control Delay (s)	24.8	-	-	~$ 538.7	39.8	56.5	-	-	
HCM Lane LOS	C	-	-	- F	E	F	-	-	
HCM 95th %tile Q(veh)	0.8	-	-	~ 4.2	4	3.6	-	-	

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	7.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	195	1	275	115	125	0	0	240	25
Future Vol, veh/h	0	0	0	195	1	275	115	125	0	0	240	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	-	-	-	85	175	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	1	1	1	1	1	1	1	1	1
Mvmt Flow	0	0	0	210	1	296	124	134	0	0	258	27

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	511	667	67	285	0	-	-	-	0
Stage 1	382	382	-	-	-	-	-	-	-
Stage 2	129	285	-	-	-	-	-	-	-
Critical Hdwy	6.82	6.52	6.92	4.12	-	-	-	-	-
Critical Hdwy Stg 1	5.82	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.82	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.51	4.01	3.31	2.21	-	-	-	-	-
Pot Cap-1 Maneuver	495	380	986	1281	-	0	0	-	-
Stage 1	662	614	-	-	-	0	0	-	-
Stage 2	886	677	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	447	0	986	1281	-	-	-	-	-
Mov Cap-2 Maneuver	447	0	-	-	-	-	-	-	-
Stage 1	598	0	-	-	-	-	-	-	-
Stage 2	886	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.3	3.9	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT	SBR
Capacity (veh/h)	1281	-	447	986	-	-
HCM Lane V/C Ratio	0.097	-	0.471	0.3	-	-
HCM Control Delay (s)	8.1	-	20	10.2	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.3	-	2.5	1.3	-	-

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	405	10	30	730	25	1	35	50	1	15	15
Future Vol, veh/h	25	405	10	30	730	25	1	35	50	1	15	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	1	1	1	1	1	1	3	3	3
Mvmt Flow	26	422	10	31	760	26	1	36	52	1	16	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	786	0	0	432	0	0	1330	1327	427	1358	1319	773
Stage 1	-	-	-	-	-	-	479	479	-	835	835	-
Stage 2	-	-	-	-	-	-	851	848	-	523	484	-
Critical Hdwy	4.12	-	-	4.11	-	-	7.11	6.51	6.21	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.13	5.53	-
Follow-up Hdwy	2.218	-	-	2.209	-	-	3.509	4.009	3.309	3.527	4.027	3.327
Pot Cap-1 Maneuver	833	-	-	1133	-	-	132	156	630	125	156	397
Stage 1	-	-	-	-	-	-	570	557	-	361	381	-
Stage 2	-	-	-	-	-	-	356	379	-	535	550	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	833	-	-	1133	-	-	111	147	630	89	147	397
Mov Cap-2 Maneuver	-	-	-	-	-	-	111	147	-	89	147	-
Stage 1	-	-	-	-	-	-	552	540	-	350	371	-
Stage 2	-	-	-	-	-	-	319	369	-	443	533	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.3	25.6	25.8
HCM LOS			D	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	263	833	-	-	1133	-	-	205
HCM Lane V/C Ratio	0.341	0.031	-	-	0.028	-	-	0.158
HCM Control Delay (s)	25.6	9.5	-	-	8.3	-	-	25.8
HCM Lane LOS	D	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	1.5	0.1	-	-	0.1	-	-	0.5

Intersection	
Int Delay, s/veh	5.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	120	65	55	185	265	140
Future Vol, veh/h	120	65	55	185	265	140
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	5	5	4	4	4	4
Mvmt Flow	145	78	66	223	319	169

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	759	404	488	0	-	0
Stage 1	404	-	-	-	-	-
Stage 2	355	-	-	-	-	-
Critical Hdwy	6.45	6.25	4.14	-	-	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	2.236	-	-	-
Pot Cap-1 Maneuver	370	640	1065	-	-	-
Stage 1	668	-	-	-	-	-
Stage 2	703	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	344	640	1065	-	-	-
Mov Cap-2 Maneuver	344	-	-	-	-	-
Stage 1	621	-	-	-	-	-
Stage 2	703	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	23.7	2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1065	-	411	-	-
HCM Lane V/C Ratio	0.062	-	0.542	-	-
HCM Control Delay (s)	8.6	0	23.7	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.2	-	3.1	-	-

Intersection	
Int Delay, s/veh	7.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	25	245	15	5	15	50	365	15	20	690	10
Future Vol, veh/h	25	25	245	15	5	15	50	365	15	20	690	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	50	-	-	50	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	1	1	2	2	2	1	1	1
Mvmt Flow	26	26	258	16	5	16	53	384	16	21	726	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1275	1280	732	1285	1277	392	737	0	0	400	0	0
Stage 1	774	774	-	498	498	-	-	-	-	-	-	-
Stage 2	501	506	-	787	779	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	7.11	6.51	6.21	4.12	-	-	4.11	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.509	4.009	3.309	2.218	-	-	2.209	-	-
Pot Cap-1 Maneuver	144	166	423	142	167	659	869	-	-	1164	-	-
Stage 1	393	410	-	556	546	-	-	-	-	-	-	-
Stage 2	554	541	-	386	408	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	129	153	423	45	154	659	869	-	-	1164	-	-
Mov Cap-2 Maneuver	129	153	-	45	154	-	-	-	-	-	-	-
Stage 1	369	403	-	522	513	-	-	-	-	-	-	-
Stage 2	503	508	-	138	401	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	29.2	65.3	1.1	0.2
HCM LOS	D	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	869	-	-	140	423	55	659	1164	-	-
HCM Lane V/C Ratio	0.061	-	-	0.376	0.61	0.383	0.024	0.018	-	-
HCM Control Delay (s)	9.4	-	-	45.4	25.9	106.4	10.6	8.2	-	-
HCM Lane LOS	A	-	-	E	D	F	B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	1.6	3.9	1.4	0.1	0.1	-	-

Intersection	
Int Delay, s/veh	5.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	35	170	20	5	330	10	35	5	5	10	5	190
Future Vol, veh/h	35	170	20	5	330	10	35	5	5	10	5	190
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	50	-	-	50
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	4	4	4	3	3	3	12	12	12	2	2	2
Mvmt Flow	44	213	25	6	413	13	44	6	6	13	6	238

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	426	0	0	238	0	0	868	752	226	752	758	420
Stage 1	-	-	-	-	-	-	314	314	-	432	432	-
Stage 2	-	-	-	-	-	-	554	438	-	320	326	-
Critical Hdwy	4.14	-	-	4.13	-	-	7.22	6.62	6.32	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.22	5.62	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.22	5.62	-	6.12	5.52	-
Follow-up Hdwy	2.236	-	-	2.227	-	-	3.608	4.108	3.408	3.518	4.018	3.318
Pot Cap-1 Maneuver	1123	-	-	1323	-	-	262	327	789	327	336	633
Stage 1	-	-	-	-	-	-	676	639	-	602	582	-
Stage 2	-	-	-	-	-	-	499	562	-	692	648	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1123	-	-	1323	-	-	156	313	789	309	321	633
Mov Cap-2 Maneuver	-	-	-	-	-	-	156	313	-	309	321	-
Stage 1	-	-	-	-	-	-	650	614	-	579	579	-
Stage 2	-	-	-	-	-	-	307	559	-	653	623	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.3	0.1	32.9	14.3
HCM LOS			D	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	166	789	1123	-	-	1323	-	-	313	633
HCM Lane V/C Ratio	0.301	0.008	0.039	-	-	0.005	-	-	0.06	0.375
HCM Control Delay (s)	35.8	9.6	8.3	-	-	7.7	-	-	17.2	14.1
HCM Lane LOS	E	A	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	1.2	0	0.1	-	-	0	-	-	0.2	1.7

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	435	15	35	225	5	25	1	150	25	5	1
Future Vol, veh/h	1	435	15	35	225	5	25	1	150	25	5	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	100	200	-	165	-	-	0	-	-	50
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	6	6	6	2	2	2	4	4	4
Mvmt Flow	1	468	16	38	242	5	27	1	161	27	5	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	247	0	0	484	0	0	670	793	234	555	804	121
Stage 1	-	-	-	-	-	-	470	470	-	318	318	-
Stage 2	-	-	-	-	-	-	200	323	-	237	486	-
Critical Hdwy	4.14	-	-	4.22	-	-	7.54	6.54	6.94	7.58	6.58	6.98
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.58	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.58	5.58	-
Follow-up Hdwy	2.22	-	-	2.26	-	-	3.52	4.02	3.32	3.54	4.04	3.34
Pot Cap-1 Maneuver	1316	-	-	1047	-	-	343	320	768	410	311	901
Stage 1	-	-	-	-	-	-	543	558	-	662	647	-
Stage 2	-	-	-	-	-	-	783	649	-	739	544	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1316	-	-	1047	-	-	328	308	768	314	299	901
Mov Cap-2 Maneuver	-	-	-	-	-	-	328	308	-	314	299	-
Stage 1	-	-	-	-	-	-	542	557	-	661	624	-
Stage 2	-	-	-	-	-	-	747	626	-	582	543	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.1	11.8	17.6
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	327	768	1316	-	-	1047	-	-	311	901
HCM Lane V/C Ratio	0.085	0.21	0.001	-	-	0.036	-	-	0.104	0.001
HCM Control Delay (s)	17	10.9	7.7	-	-	8.6	-	-	17.9	9
HCM Lane LOS	C	B	A	-	-	A	-	-	C	A
HCM 95th %tile Q(veh)	0.3	0.8	0	-	-	0.1	-	-	0.3	0

Intersection	
Int Delay, s/veh	8.7

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↰	↱					↰			↑	↱
Traffic Vol, veh/h	315	1	160	0	0	0	15	125	0	0	210	70
Future Vol, veh/h	315	1	160	0	0	0	15	125	0	0	210	70
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	-	-	-	-	-	-	-	115
Veh in Median Storage, #	-	0	-	-	17742	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	3	3	3	2	2	2	5	5	5	4	4	4
Mvmt Flow	332	1	168	0	0	0	16	132	0	0	221	74

Major/Minor	Minor1				Major1			Major2		
Conflicting Flow All	422	459	132		295	0	-	-	-	0
Stage 1	164	164	-		-	-	-	-	-	-
Stage 2	258	295	-		-	-	-	-	-	-
Critical Hdwy	6.43	6.53	6.23		4.15	-	-	-	-	-
Critical Hdwy Stg 1	5.43	5.53	-		-	-	-	-	-	-
Critical Hdwy Stg 2	5.43	5.53	-		-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327		2.245	-	-	-	-	-
Pot Cap-1 Maneuver	586	497	915		1249	-	0	0	-	-
Stage 1	863	761	-		-	-	0	0	-	-
Stage 2	783	667	-		-	-	0	0	-	-
Platoon blocked, %						-			-	-
Mov Cap-1 Maneuver	578	0	915		1249	-	-	-	-	-
Mov Cap-2 Maneuver	578	0	-		-	-	-	-	-	-
Stage 1	851	0	-		-	-	-	-	-	-
Stage 2	783	0	-		-	-	-	-	-	-

Approach	NB	NE	SW
HCM Control Delay, s	16.1	0.8	0
HCM LOS	C		

Minor Lane/Major Mvmt	NEL	NET	NBLn1	NBLn2	SWT	SWR
Capacity (veh/h)	1249	-	578	915	-	-
HCM Lane V/C Ratio	0.013	-	0.575	0.184	-	-
HCM Control Delay (s)	7.9	0	19.3	9.8	-	-
HCM Lane LOS	A	A	C	A	-	-
HCM 95th %tile Q(veh)	0	-	3.6	0.7	-	-

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	10	40	5	10	15	50	460	10	15	275	5
Future Vol, veh/h	15	10	40	5	10	15	50	460	10	15	275	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	250	-	345	400	-	340
Veh in Median Storage, #	-	2	-	-	2	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	1	1	1	4	4	4	9	9	9
Mvmt Flow	16	11	43	5	11	16	53	489	11	16	293	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	681	931	147	779	925	245	298	0	0	500	0	0
Stage 1	325	325	-	595	595	-	-	-	-	-	-	-
Stage 2	356	606	-	184	330	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.52	6.52	6.92	4.18	-	-	4.28	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.52	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.52	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.51	4.01	3.31	2.24	-	-	2.29	-	-
Pot Cap-1 Maneuver	336	265	873	288	269	758	1246	-	-	1013	-	-
Stage 1	661	648	-	460	493	-	-	-	-	-	-	-
Stage 2	634	485	-	803	647	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	308	250	873	257	253	758	1246	-	-	1013	-	-
Mov Cap-2 Maneuver	473	398	-	398	405	-	-	-	-	-	-	-
Stage 1	633	638	-	440	472	-	-	-	-	-	-	-
Stage 2	581	464	-	739	637	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.4	12.3	0.8	0.4
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1246	-	-	633	526	1013	-	-
HCM Lane V/C Ratio	0.043	-	-	0.109	0.061	0.016	-	-
HCM Control Delay (s)	8	-	-	11.4	12.3	8.6	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0.2	0	-	-

Software Output Reports – Existing Conditions
Isolated Two-Way Stop Controlled Intersections
Vistro Version 6.00-00

Intersection Level Of Service Report
Intersection 3: WIS 32 & Russell Rd - AM

Control Type:	Two-way stop	Delay (sec / veh):	32.9
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.008

Intersection Setup

Name	WIS 32			WIS 32			Russell Rd			Russell Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			45.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	WIS 32			WIS 32			Russell Rd			Russell Rd		
Base Volume Input [veh/h]	85	205	1	1	480	110	35	1	80	1	1	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.00	3.00	3.00	2.00	2.00	2.00	7.00	7.00	7.00	33.00	33.00	33.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	85	205	1	1	480	110	35	1	80	1	1	5
Peak Hour Factor	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	58	0	0	135	31	10	0	22	0	0	1
Total Analysis Volume [veh/h]	96	230	1	1	539	124	39	1	90	1	1	6
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

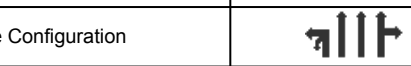
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.00	0.00	0.00	0.01	0.00	0.21	0.00	0.18	0.01	0.01	0.01
d_M, Delay for Movement [s/veh]	9.36	0.00	0.00	7.70	0.00	0.00	31.08	29.47	19.30	32.95	26.39	10.10
Movement LOS	A	A	A	A	A	A	D	D	C	D	D	B
95th-Percentile Queue Length [veh/ln]	0.35	0.00	0.00	0.00	0.00	0.00	1.83	1.83	1.83	0.07	0.07	0.07
95th-Percentile Queue Length [ft/ln]	8.70	0.00	0.00	0.06	0.06	0.06	45.65	45.65	45.65	1.66	1.66	1.66
d_A, Approach Delay [s/veh]	2.75			0.01			22.91			14.99		
Approach LOS	A			A			C			B		
d_I, Intersection Delay [s/veh]	3.55											
Intersection LOS	D											

Intersection Level Of Service Report
Intersection 3: WIS 100 & N Mayfair Dwy - PM

Control Type:	Two-way stop	Delay (sec / veh):	8,506.9
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.685

Intersection Setup

Name	WIS 100				WIS 100				Private Dwy			North Mayfair Dwy		
Approach	Northbound				Southbound				Eastbound			Westbound		
Lane Configuration														
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	1	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	310.0	100.0	100.0	100.0	200.0	100.0	100.0	100.0	100.00	100.00	100.00	100.00	100.00	200.00
Speed [mph]	40.00				40.00				30.00			30.00		
Grade [%]	0.00				0.00				0.00			0.00		
Crosswalk	No				No				Yes			No		

Volumes

Name	WIS 100				WIS 100				Private Dwy			North Mayfair Dwy		
Base Volume Input [veh/h]	30	15	1465	50	20	80	1550	10	20	1	35	30	1	155
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	3.00	3.00	3.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	30	15	1465	50	20	80	1550	10	20	1	35	30	1	155
Peak Hour Factor	0.910	0.910	0.910	0.910	0.910	0.910	0.910	0.910	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	4	402	14	5	22	426	3	5	0	10	8	0	43
Total Analysis Volume [veh/h]	33	16	1610	55	22	88	1703	11	22	1	38	33	1	170
Pedestrian Volume [ped/h]	0				0				0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			Yes	Yes
Number of Storage Spaces in Median	0	0	1	1

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.12	0.09	0.02	0.00	0.18	0.48	0.02	0.00	11.97	0.69	0.15	3.36	0.69	0.64
d_M, Delay for Movement [s/veh]	22.44	29.85	0.00	0.00	69.08	58.73	0.00	0.00	7998.45	8506.92	6052.99	2176.37	4294.65	39.65
Movement LOS	C	D	A	A	F	F	A	A	F	F	F	F	F	E
95th-Percentile Queue Length [veh/ln]	0.44	0.44	0.00	0.00	0.40	0.40	0.00	0.00	9.45	9.45	9.45	5.51	5.51	3.98
95th-Percentile Queue Length [ft/ln]	11.06	11.06	0.00	0.00	10.00	10.00	0.00	0.00	236.25	236.25	236.25	137.83	137.83	99.52
d_A, Approach Delay [s/veh]	0.71				3.67				6794.86			406.15		
Approach LOS	A				A				F			F		
d_I, Intersection Delay [s/veh]	132.85													
Intersection LOS	F													

Intersection Level Of Service Report
Intersection 3: WIS 16 WB Ramps & County C - PM

Control Type:	Two-way stop	Delay (sec / veh):	24.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name	CTH C			CTH C			WIS 16 WB ramps			WIS 16 WB ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	175.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	85.00
Speed [mph]	35.00			35.00			0.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	CTH C			CTH C			WIS 16 WB ramps			WIS 16 WB ramps		
Base Volume Input [veh/h]	115	125	0	0	240	25	0	0	0	195	1	275
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	115	125	0	0	240	25	0	0	0	195	1	275
Peak Hour Factor	0.9300	0.9300	1.0000	1.0000	0.9300	0.9300	1.0000	1.0000	1.0000	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	31	34	0	0	65	7	0	0	0	52	0	74
Total Analysis Volume [veh/h]	124	134	0	0	258	27	0	0	0	210	1	296
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance				No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.52	0.00	0.30
d_M, Delay for Movement [s/veh]	8.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.23	24.81	10.21
Movement LOS	A	A			A	A				C	C	B
95th-Percentile Queue Length [veh/ln]	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.92	2.92	1.27
95th-Percentile Queue Length [ft/ln]	8.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	73.08	73.08	31.71
d_A, Approach Delay [s/veh]	3.90			0.00			0.00			15.63		
Approach LOS	A			A			A			C		
d_I, Intersection Delay [s/veh]	8.50											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 3: WIS 167 & Country Aire - PM

Control Type:	Two-way stop	Delay (sec / veh):	48.6
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.011

Intersection Setup

Name	Country Aire			Country Aire			WIS 167			WIS 167		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	195.00	100.00	100.00	200.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Country Aire			Country Aire			WIS 167			WIS 167		
Base Volume Input [veh/h]	1	35	50	1	15	15	25	405	10	30	730	25
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.00	1.00	1.00	3.00	3.00	3.00	2.00	2.00	2.00	1.00	1.00	1.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	35	50	1	15	15	25	405	10	30	730	25
Peak Hour Factor	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	9	13	0	4	4	7	105	3	8	190	7
Total Analysis Volume [veh/h]	1	36	52	1	16	16	26	422	10	31	760	26
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.24	0.08	0.01	0.11	0.04	0.03	0.00	0.00	0.03	0.01	0.00
d_M, Delay for Movement [s/veh]	44.05	36.23	17.46	48.59	32.74	17.36	9.46	0.00	0.00	8.27	0.00	0.00
Movement LOS	E	E	C	E	D	C	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	1.43	1.43	1.43	0.56	0.56	0.56	0.10	0.00	0.00	0.08	0.00	0.00
95th-Percentile Queue Length [ft/ln]	35.70	35.70	35.70	13.94	13.94	13.94	2.41	0.00	0.00	2.11	0.00	0.00
d_A, Approach Delay [s/veh]	25.35			25.77			0.54			0.31		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	2.58											
Intersection LOS	E											

Intersection Level Of Service Report
Intersection 3: WIS 65 & County Z - PM

Control Type:	Two-way stop	Delay (sec / veh):	25.4
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.421

Intersection Setup

Name	WIS 67		WIS 67		CTH Z	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	WIS 67		WIS 67		CTH Z	
Base Volume Input [veh/h]	55	185	265	140	120	65
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.00	4.00	4.00	4.00	5.00	5.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	55	185	265	140	120	65
Peak Hour Factor	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	17	56	80	42	36	20
Total Analysis Volume [veh/h]	66	223	319	169	145	78
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.00	0.00	0.00	0.42	0.12
d_M, Delay for Movement [s/veh]	8.60	0.00	0.00	0.00	25.40	20.56
Movement LOS	A	A	A	A	D	C
95th-Percentile Queue Length [veh/ln]	0.16	0.16	0.00	0.00	3.14	3.14
95th-Percentile Queue Length [ft/ln]	4.08	4.08	0.00	0.00	78.61	78.61
d_A, Approach Delay [s/veh]	1.96		0.00		23.71	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	5.85					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 3: US 51 & County B/County AB - PM

Control Type:	Two-way stop	Delay (sec / veh):	158.0
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.432

Intersection Setup

Name	CTH B			CTH AB			USH 51			USH 51		
Approach	Eastbound			Westbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	1	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	50.00	100.00	100.00	50.00	100.00	100.00	245.00	100.00	100.00	145.00
Speed [mph]	55.00			30.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	CTH B			CTH AB			USH 51			USH 51		
Base Volume Input [veh/h]	25	25	245	15	5	15	50	365	15	20	690	10
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	25	25	245	15	5	15	50	365	15	20	690	10
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	7	64	4	1	4	13	96	4	5	182	3
Total Analysis Volume [veh/h]	26	26	258	16	5	16	53	384	16	21	726	11
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.20	0.17	0.61	0.43	0.03	0.02	0.06	0.00	0.00	0.02	0.01	0.00
d_M, Delay for Movement [s/veh]	47.71	43.00	25.93	158.04	84.28	10.60	9.41	0.00	0.00	8.15	0.00	0.00
Movement LOS	E	E	D	F	F	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	1.56	1.56	3.94	1.67	1.67	0.07	0.19	0.00	0.00	0.06	0.00	0.00
95th-Percentile Queue Length [ft/ln]	38.98	38.98	98.42	41.84	41.84	1.86	4.86	0.00	0.00	1.38	0.00	0.00
d_A, Approach Delay [s/veh]	29.19			84.31			1.10			0.23		
Approach LOS	D			F			A			A		
d_I, Intersection Delay [s/veh]	8.24											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 3: WIS 19 & Musket Ridge Dr - AM

Control Type:	Two-way stop	Delay (sec / veh):	36.3
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.276

Intersection Setup

Name	Musket Ridge Dr			Musket Ridge Dr			WIS 19			WIS 19		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	1	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	50.00	100.00	100.00	50.00	100.00	100.00	150.00	100.00	100.00	200.00
Speed [mph]	25.00			25.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Musket Ridge Dr			Musket Ridge Dr			WIS 19			WIS 19		
Base Volume Input [veh/h]	35	5	5	10	5	190	35	170	20	5	330	10
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	12.00	12.00	12.00	2.00	2.00	2.00	4.00	4.00	4.00	3.00	3.00	3.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	35	5	5	10	5	190	35	170	20	5	330	10
Peak Hour Factor	0.8000	0.8000	0.8000	0.8000	0.8000	0.8000	0.8000	0.8000	0.8000	0.8000	0.8000	0.8000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	2	2	3	2	59	11	53	6	2	103	3
Total Analysis Volume [veh/h]	44	6	6	13	6	238	44	213	25	6	413	13
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.28	0.02	0.01	0.04	0.02	0.37	0.04	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	36.27	25.04	9.52	17.32	16.89	13.94	8.34	0.00	0.00	7.73	0.00	0.00
Movement LOS	E	D	A	C	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	1.17	1.17	0.02	0.19	0.19	1.72	0.10	0.10	0.00	0.01	0.01	0.00
95th-Percentile Queue Length [ft/ln]	29.14	29.14	0.56	4.80	4.80	43.03	2.41	2.41	0.00	0.28	0.28	0.00
d_A, Approach Delay [s/veh]	32.20			14.18			1.30			0.11		
Approach LOS	D			B			A			A		
d_I, Intersection Delay [s/veh]	5.71											
Intersection LOS	E											

Intersection Level Of Service Report
Intersection 3: WIS 54 & Lacount - AM

Control Type:	Two-way stop	Delay (sec / veh):	18.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.017

Intersection Setup

Name	Lacount Rd			Lacount Rd			WIS 54			Mason St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1	1	0	1	1	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	50.00	100.00	100.00	100.00	200.00	100.00	165.00
Speed [mph]	25.00			25.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

Volumes

Name	Lacount Rd			Lacount Rd			WIS 54			Mason St		
Base Volume Input [veh/h]	25	1	150	25	5	1	1	435	15	35	225	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	4.00	4.00	4.00	2.00	2.00	2.00	6.00	6.00	6.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	25	1	150	25	5	1	1	435	15	35	225	5
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	0	40	7	1	0	0	117	4	9	60	1
Total Analysis Volume [veh/h]	27	1	161	27	5	1	1	468	16	38	242	5
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.00	0.21	0.09	0.02	0.00	0.00	0.00	0.00	0.04	0.00	0.00
d_M, Delay for Movement [s/veh]	16.98	17.72	10.93	17.76	18.33	9.00	7.74	0.00	0.00	8.57	0.00	0.00
Movement LOS	C	C	B	C	C	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.28	0.28	0.79	0.34	0.34	0.00	0.00	0.00	0.00	0.11	0.00	0.00
95th-Percentile Queue Length [ft/ln]	6.95	6.95	19.69	8.49	8.49	0.08	0.06	0.00	0.00	2.82	0.00	0.00
d_A, Approach Delay [s/veh]	11.83			17.58			0.02			1.14		
Approach LOS	B			C			A			A		
d_I, Intersection Delay [s/veh]	3.17											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 3: I-94 WB Ramps & County F - PM

Control Type:	Two-way stop	Delay (sec / veh):	22.9
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name	I-94 WB ramps			CTH F			CTH F			I-94 WB ramps		
Approach	Northbound			Northeastbound			Southwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	50.00	100.00	100.00	100.00	100.00	100.00	115.00	100.00	100.00	100.00
Speed [mph]	30.00			45.00			45.00			0.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	I-94 WB ramps			CTH F			CTH F			I-94 WB ramps		
Base Volume Input [veh/h]	315	1	160	15	125	0	0	210	70	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.00	3.00	3.00	5.00	5.00	0.00	0.00	4.00	4.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	315	1	160	15	125	0	0	210	70	0	0	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	1.0000	1.0000	0.9500	0.9500	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	83	0	42	4	33	0	0	55	18	0	0	0
Total Analysis Volume [veh/h]	332	1	168	16	132	0	0	221	74	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Free	Free	Stop
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No			
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.62	0.00	0.18	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	22.36	22.95	9.82	7.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS	C	C	A	A	A			A	A			
95th-Percentile Queue Length [veh/ln]	4.27	4.27	0.67	0.04	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	106.81	106.81	16.75	0.91	0.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	18.16			0.86			0.00			0.00		
Approach LOS	C			A			A			A		
d_I, Intersection Delay [s/veh]	9.77											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 3: WIS 57 & County K - PM

Control Type:	Two-way stop	Delay (sec / veh):	14.8
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.028

Intersection Setup

Name	WIS 57			WIS 57			CTH K			CTH K		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	1	0	1	0	0	0	0	0	0
Pocket Length [ft]	250.00	100.00	345.00	400.00	100.00	340.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	55.00			55.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	WIS 57			WIS 57			CTH K			CTH K		
Base Volume Input [veh/h]	50	460	10	15	275	5	15	10	40	5	10	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.00	4.00	4.00	9.00	9.00	9.00	2.00	2.00	2.00	1.00	1.00	1.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	50	460	10	15	275	5	15	10	40	5	10	15
Peak Hour Factor	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	13	122	3	4	73	1	4	3	11	1	3	4
Total Analysis Volume [veh/h]	53	489	11	16	293	5	16	11	43	5	11	16
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			Yes	Yes
Number of Storage Spaces in Median	0	0	2	2

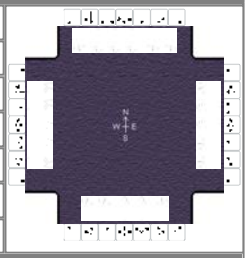
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.00	0.00	0.02	0.00	0.00	0.03	0.03	0.05	0.01	0.03	0.02
d_M, Delay for Movement [s/veh]	8.02	0.00	0.00	8.61	0.00	0.00	13.20	14.75	9.82	14.49	14.33	10.19
Movement LOS	A	A	A	A	A	A	B	B	A	B	B	B
95th-Percentile Queue Length [veh/ln]	0.13	0.00	0.00	0.05	0.00	0.00	0.37	0.37	0.37	0.19	0.19	0.19
95th-Percentile Queue Length [ft/ln]	3.33	0.00	0.00	1.20	0.00	0.00	9.24	9.24	9.24	4.84	4.84	4.84
d_A, Approach Delay [s/veh]	0.77			0.44			11.37			12.28		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	1.81											
Intersection LOS	B											

Software Output Reports – Existing Conditions
Signalized Corridors
HCS 2010 Version 6.9

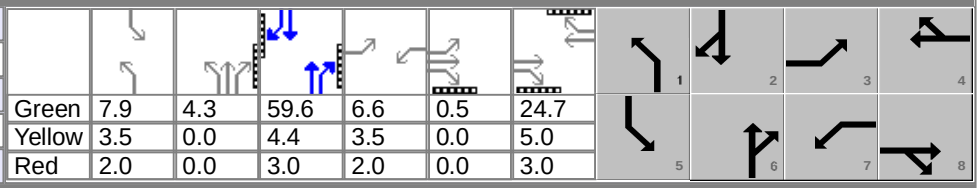
HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	raSmith			Duration, h	0.25
Analyst	LLZ	Analysis Date	Feb 22, 2018	Area Type	Other
Jurisdiction	SE - Milwaukee Co	Time Period	PM	PHF	0.93
Urban Street	WIS 38	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	Drexel Ave	File Name	WIS 38 PM.xus		
Project Description	PM				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	125	390	410	115	305	70	265	610	120	145	870	135

Signal Information			
Cycle, s	130.0	Reference Phase	2
Offset, s	7	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Float	Simult. Gap N/S	On



Green	7.9	4.3	59.6	6.6	0.5	24.7
Yellow	3.5	0.0	4.4	3.5	0.0	5.0
Red	2.0	0.0	3.0	2.0	0.0	3.0

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	3	8	7	4	1	6	5	2
Case Number	2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0
Phase Duration, s	12.5	33.2	12.1	32.7	17.7	71.4	13.4	67.0
Change Period, ($Y+R_c$), s	5.5	8.0	5.5	8.0	5.5	7.4	5.5	7.4
Max Allow Headway (*MAH*), s	2.6	2.6	2.6	2.6	2.5	0.0	2.5	0.0
Queue Clearance Time (g_s), s	6.9	23.7	6.5	12.6	11.9		7.7	
Green Extension Time (g_e), s	0.2	1.5	0.1	1.6	0.3	0.0	0.2	0.0
Phase Call Probability	0.99	1.00	0.99	1.00	1.00		1.00	
Max Out Probability	0.00	0.01	0.00	0.00	0.00		0.00	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	3	8	18	7	4	14	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	134	419	273	124	328	46	262	604	73	156	935	90
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1740	1791	1594	1740	1791	1594	1723	1773	1579	1740	1708	1594
Queue Service Time (g_s), s	4.9	13.9	21.7	4.5	10.6	3.1	9.9	10.4	1.8	5.7	15.7	4.2
Cycle Queue Clearance Time (g_c), s	4.9	13.9	21.7	4.5	10.6	3.1	9.9	10.4	1.8	5.7	15.7	4.2
Green Ratio (*g/C*)	0.05	0.19	0.19	0.05	0.19	0.19	0.09	0.49	0.49	0.06	0.46	0.46
Capacity (*c*), veh/h	189	694	309	176	681	303	324	1745	777	211	2351	731
Volume-to-Capacity Ratio (*X*)	0.713	0.604	0.884	0.703	0.482	0.153	0.811	0.346	0.094	0.739	0.398	0.124
Back of Queue (*Q*), ft/ln (95 th percentile)	100.6	259.5	369.8	92.8	209.2	56.7	204.2	172.8	29.4	115	259.4	72.5
Back of Queue (*Q*), veh/ln (95 th percentile)	4.0	10.3	14.7	3.7	8.3	2.3	8.0	6.8	1.2	4.6	10.3	2.9
Queue Storage Ratio (*RQ*) (95 th percentile)	0.41	0.00	0.99	0.55	0.00	0.32	0.54	0.00	0.11	0.26	0.00	0.17
Uniform Delay (d_1), s/veh	60.5	47.9	51.0	60.8	46.9	43.9	63.6	14.0	9.5	60.1	23.3	20.2
Incremental Delay (d_2), s/veh	1.9	0.3	12.0	1.9	0.2	0.1	1.7	0.5	0.2	1.9	0.5	0.3
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	62.3	48.2	63.0	62.7	47.1	44.0	65.3	14.5	9.7	62.0	23.8	20.5
Level of Service (LOS)	E	D	E	E	D	D	E	B	A	E	C	C
Approach Delay, s/veh / LOS	55.4	E		50.7	D		28.3	C		28.6	C	
Intersection Delay, s/veh / LOS	38.1						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	3.5	C	3.3	C	3.1	C	3.3	C
Bicycle LOS Score / LOS	1.2	A	0.9	A	1.3	A	1.1	A

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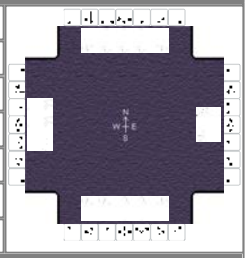
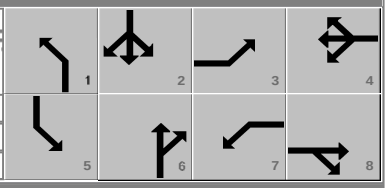
HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	raSmith			Duration, h	0.25
Analyst	LLZ	Analysis Date	Feb 22, 2018	Area Type	Other
Jurisdiction	SE - Milwaukee Co	Time Period	PM	PHF	0.96
Urban Street	WIS 38	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	Susan Dr/Town Square…	File Name	WIS 38 PM.xus		
Project Description	PM				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	135	5	155	5	5	15	120	850	10	25	1250	125

Signal Information			
Cycle, s	130.0	Reference Phase	2
Offset, s	125	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	3.7	2.8	79.9	1.0	0.7	10.0
Yellow	3.5	0.0	4.3	3.5	3.5	5.2
Red	2.0	0.0	2.9	2.0	2.0	3.0

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	3	8	7	4	1	6	5	2
Case Number	2.0	4.0	1.1	4.0	2.0	3.0	1.1	3.0
Phase Duration, s	12.7	24.4	6.5	18.2	12.0	89.8	9.2	87.1
Change Period, ($Y+R_c$), s	5.5	8.2	5.5	8.2	5.5	7.2	5.5	7.2
Max Allow Headway (*MAH*), s	2.8	3.0	2.8	3.0	2.5	0.0	2.5	0.0
Queue Clearance Time (g_s), s	7.2	15.2	2.3	3.5	6.4		2.7	
Green Extension Time (g_e), s	0.1	0.2	0.0	0.3	0.2	0.0	0.0	0.0
Phase Call Probability	0.99	1.00	0.17	1.00	0.99		0.62	
Max Out Probability	0.00	0.00	0.00	0.00	0.00		0.00	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	3	8	18	7	4	14	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	141	167		5	21		118	832	6	27	1341	83
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1740	1602		1792	1657		1706	1756	1563	1792	1708	1594
Queue Service Time (g_s), s	5.2	13.2		0.3	1.5		4.4	18.2	0.3	0.7	16.0	1.2
Cycle Queue Clearance Time (g_c), s	5.2	13.2		0.3	1.5		4.4	18.2	0.3	0.7	16.0	1.2
Green Ratio (*g/C*)	0.06	0.12		0.13	0.08		0.05	0.64	0.64	0.66	0.61	0.61
Capacity (*c*), veh/h	194	200		98	127		170	2233	994	434	3148	979
Volume-to-Capacity Ratio (*X*)	0.725	0.834		0.053	0.164		0.690	0.373	0.006	0.062	0.426	0.084
Back of Queue (*Q*), ft/ln (95 th percentile)	106.8	243		6.9	29.7		89.6	301.7	7.2	10.7	223.1	19
Back of Queue (*Q*), veh/ln (95 th percentile)	4.2	9.6		0.3	1.2		3.5	11.8	0.3	0.4	8.9	0.8
Queue Storage Ratio (*RQ*) (95 th percentile)	0.55	0.00		0.14	0.00		0.22	0.00	0.03	0.02	0.00	0.07
Uniform Delay (d_1), s/veh	60.4	55.6		49.7	56.1		61.8	15.6	12.9	8.9	11.2	4.4
Incremental Delay (d_2), s/veh	1.9	6.1		0.1	0.2		1.7	0.4	0.0	0.0	0.4	0.1
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	62.3	61.7		49.8	56.3		63.5	16.0	13.0	8.9	11.5	4.6
Level of Service (LOS)	E	E		D	E		E	B	B	A	B	A
Approach Delay, s/veh / LOS	62.0	E		55.0	E		21.8	C		11.1	B	
Intersection Delay, s/veh / LOS	21.0						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	3.4	C	3.2	C	2.2	B	2.8	C
Bicycle LOS Score / LOS	1.0	A	0.5	A	1.3	A	1.3	A

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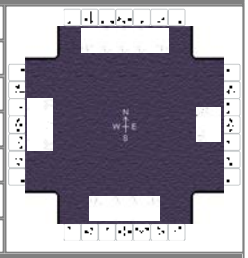
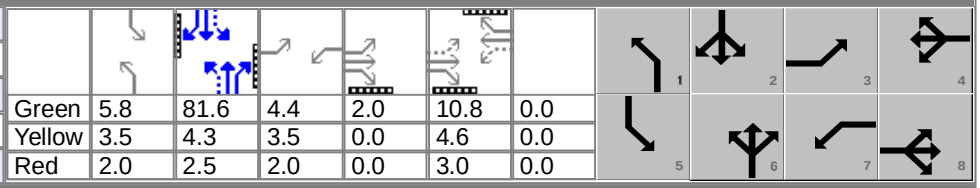
HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	raSmith			Duration, h	0.25
Analyst	LLZ	Analysis Date	Feb 22, 2018	Area Type	Other
Jurisdiction	SE - Milwaukee Co	Time Period	PM	PHF	0.96
Urban Street	WIS 38	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	Forest Hill Dr	File Name	WIS 38 PM.xus		
Project Description	PM				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	70	40	155	35	25	80	105	865	30	100	1230	55

Signal Information			
Cycle, s	130.0	Reference Phase	2
Offset, s	44	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	5.8	81.6	4.4	2.0	10.8	0.0
Yellow	3.5	4.3	3.5	0.0	4.6	0.0
Red	2.0	2.5	2.0	0.0	3.0	0.0

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	3	8	7	4	1	6	5	2
Case Number	1.1	3.0	1.1	4.0	1.1	3.0	1.1	3.0
Phase Duration, s	11.9	20.4	9.9	18.4	11.3	88.3	11.4	88.4
Change Period, ($Y+R_c$), s	5.5	7.6	5.5	7.6	5.5	6.8	5.5	6.8
Max Allow Headway (*MAH*), s	2.8	2.8	2.6	2.8	2.5	0.0	2.5	0.0
Queue Clearance Time (g_s), s	6.8	9.9	4.3	10.4	4.5		4.9	
Green Extension Time (g_e), s	0.1	0.3	0.0	0.3	0.1	0.0	0.1	0.0
Phase Call Probability	0.93	1.00	0.73	1.00	0.97		0.98	
Max Out Probability	0.00	0.00	0.32	0.00	0.00		0.00	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	3	8	18	7	4	14	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	73	42	100	36	109		98	804	18	109	1339	37
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1774	1863	1579	1792	1654		1774	1773	1579	1792	1708	1594
Queue Service Time (g_s), s	4.8	2.7	7.9	2.3	8.4		2.5	18.2	0.9	2.9	21.1	1.5
Cycle Queue Clearance Time (g_c), s	4.8	2.7	7.9	2.3	8.4		2.5	18.2	0.9	2.9	21.1	1.5
Green Ratio (*g/C*)	0.13	0.10	0.10	0.13	0.08		0.67	0.63	0.63	0.67	0.63	0.63
Capacity (*c*), veh/h	166	183	155	213	137		317	2224	990	463	3216	1001
Volume-to-Capacity Ratio (*X*)	0.440	0.227	0.644	0.171	0.797		0.307	0.361	0.018	0.235	0.416	0.037
Back of Queue (*Q*), ft/ln (95 th percentile)	101.1	58.8	149.1	48	166.3		39.2	307.1	25.5	39.2	326.5	39
Back of Queue (*Q*), veh/ln (95 th percentile)	4.0	2.3	5.9	1.9	6.6		1.5	12.1	1.0	1.6	13.0	1.5
Queue Storage Ratio (*RQ*) (95 th percentile)	0.31	0.00	0.88	0.40	0.00		0.08	0.00	0.09	0.11	0.00	0.14
Uniform Delay (d_1), s/veh	51.3	54.0	56.4	50.0	58.5		9.5	16.9	15.2	8.0	17.0	12.5
Incremental Delay (d_2), s/veh	0.7	0.2	1.7	0.1	3.9		0.2	0.4	0.0	0.1	0.4	0.1
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	52.0	54.3	58.1	50.1	62.5		9.7	17.3	15.3	8.1	17.3	12.6
Level of Service (LOS)	D	D	E	D	E		A	B	B	A	B	B
Approach Delay, s/veh / LOS	55.3	E		59.4	E		16.4	B		16.5	B	
Intersection Delay, s/veh / LOS	21.8						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	3.3	C	3.1	C	2.2	B	2.5	B
Bicycle LOS Score / LOS	0.8	A	0.7	A	1.3	A	1.3	A

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--- Messages ---

WARNING: According to input data, upstream feeding volume is equal to 89% of downstream exit volume during time period #1, for thru movement #6.

--- Comments ---

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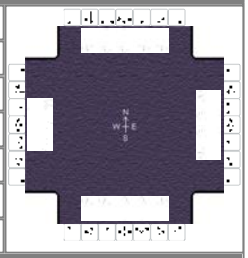
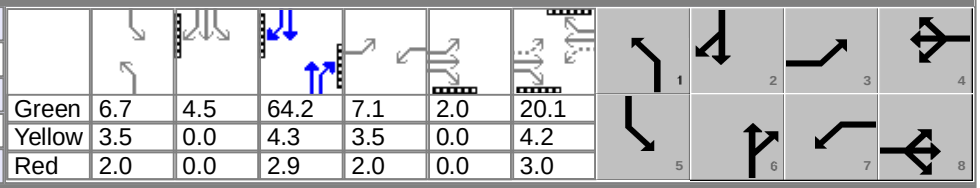
HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	raSmith			Duration, h	0.25
Analyst	LLZ	Analysis Date	Feb 22, 2018	Area Type	Other
Jurisdiction	SE - Milwaukee Co	Time Period	PM	PHF	0.96
Urban Street	WIS 38	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	Puetz Rd	File Name	WIS 38 PM.xus		
Project Description	PM				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	115	360	150	85	235	195	120	590	130	205	970	145

Signal Information			
Cycle, s	130.0	Reference Phase	2
Offset, s	68	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	6.7	4.5		64.2	7.1	2.0	20.1					
Yellow	3.5	0.0		4.3	3.5	0.0	4.2					
Red	2.0	0.0		2.9	2.0	0.0	3.0					

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	3	8	7	4	1	6	5	2
Case Number	1.1	4.0	1.1	3.0	2.0	3.0	2.0	3.0
Phase Duration, s	14.6	29.3	12.6	27.3	12.2	71.4	16.7	75.9
Change Period, ($Y+R_c$), s	5.5	7.2	5.5	7.2	5.5	7.2	5.5	7.2
Max Allow Headway (*MAH*), s	2.6	2.6	2.6	2.6	2.5	0.0	2.5	0.0
Queue Clearance Time (g_s), s	9.2	21.1	7.3	11.4	6.6		11.0	
Green Extension Time (g_e), s	0.0	1.1	0.0	1.2	0.2	0.0	0.3	0.0
Phase Call Probability	0.99	1.00	0.96	1.00	0.99		1.00	
Max Out Probability	1.00	0.03	1.00	0.00	0.00		0.00	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	3	8	18	7	4	14	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	120	277	254	89	245	126	124	608	82	240	1135	105
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1792	1881	1694	1792	1791	1594	1723	1773	1579	1740	1791	1594
Queue Service Time (g_s), s	7.2	18.6	19.1	5.3	8.1	9.4	4.6	10.8	3.0	9.0	18.1	1.6
Cycle Queue Clearance Time (g_c), s	7.2	18.6	19.1	5.3	8.1	9.4	4.6	10.8	3.0	9.0	18.1	1.6
Green Ratio (*g/C*)	0.22	0.17	0.17	0.21	0.15	0.15	0.05	0.49	0.49	0.09	0.53	0.53
Capacity (*c*), veh/h	275	320	288	160	553	246	177	1751	779	300	1894	843
Volume-to-Capacity Ratio (*X*)	0.436	0.865	0.883	0.554	0.443	0.512	0.697	0.347	0.106	0.798	0.599	0.125
Back of Queue (*Q*), ft/ln (95 th percentile)	146.1	370	350.8	109.7	164.2	172	93.9	180.9	49.9	187.3	211.6	25.4
Back of Queue (*Q*), veh/ln (95 th percentile)	5.8	14.7	14.0	4.4	6.5	6.8	3.7	7.1	2.0	7.4	8.4	1.0
Queue Storage Ratio (*RQ*) (95 th percentile)	0.38	0.00	0.00	0.35	0.00	1.91	0.44	0.00	0.16	0.83	0.00	0.10
Uniform Delay (d_1), s/veh	42.2	52.5	52.7	44.3	49.9	50.5	62.0	14.7	14.5	63.5	9.5	5.2
Incremental Delay (d_2), s/veh	0.4	10.0	13.1	1.1	0.2	0.6	1.7	0.5	0.2	1.7	1.3	0.3
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	42.6	62.5	65.8	45.4	50.1	51.1	63.7	15.2	14.7	65.2	10.7	5.5
Level of Service (LOS)	D	E	E	D	D	D	E	B	B	E	B	A
Approach Delay, s/veh / LOS	60.1	E		49.5	D		22.5	C		19.2	B	
Intersection Delay, s/veh / LOS	31.9						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	3.2	C	3.2	C	3.0	C	2.8	C
Bicycle LOS Score / LOS	1.0	A	0.9	A	1.2	A	1.6	A

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--- Messages ---

WARNING: Since queue spillover from turn lanes and spillback into upstream intersections is not accounted for in the HCM procedures, use of a simulation tool may be advised in situations where the Queue Storage Ratio exceeds 1.0.

WARNING: According to input data, upstream feeding volume is equal to 112% of downstream exit volume during time period #1, for thru movement #2.

--- Comments ---

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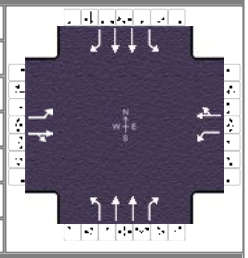
HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	raSmith			Duration, h	0.25
Analyst	LLZ	Analysis Date	Feb 22, 2018	Area Type	Other
Jurisdiction	SE - Milwaukee Co	Time Period	PM	PHF	0.93
Urban Street	WIS 38	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	Centennial Dr	File Name	WIS 38 PM.xus		
Project Description	PM				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	160	40	55	60	45	70	70	575	70	160	865	175

Signal Information			
Cycle, s	130.0	Reference Phase	2
Offset, s	94	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	5.6	2.1	72.5	5.4	2.3	11.7
Yellow	3.5	0.0	4.3	3.5	3.5	4.2
Red	2.0	0.0	2.4	2.0	2.0	3.0

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	3	8	7	4	1	6	5	2
Case Number	1.1	4.0	1.1	4.0	1.1	3.0	1.1	3.0
Phase Duration, s	18.7	26.7	10.9	18.9	11.1	79.2	13.2	81.3
Change Period, ($Y+R_c$), s	5.5	7.2	5.5	7.2	5.5	6.7	5.5	6.7
Max Allow Headway (*MAH*), s	2.8	2.8	2.7	2.8	2.5	0.0	2.5	0.0
Queue Clearance Time (g_s), s	13.2	9.1	6.0	11.4	4.2		7.6	
Green Extension Time (g_e), s	0.1	0.3	0.0	0.3	0.1	0.0	0.2	0.0
Phase Call Probability	1.00	1.00	0.90	1.00	0.93		1.00	
Max Out Probability	0.48	0.00	0.00	0.00	0.00		0.00	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	3	8	18	7	4	14	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	172	102		65	124		75	618	46	185	998	125
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1792	1704		1774	1679		1774	1773	1579	1792	1791	1594
Queue Service Time (g_s), s	11.2	7.1		4.0	9.4		2.2	12.1	1.7	5.6	14.4	1.6
Cycle Queue Clearance Time (g_c), s	11.2	7.1		4.0	9.4		2.2	12.1	1.7	5.6	14.4	1.6
Green Ratio (*g/C*)	0.19	0.15		0.19	0.09		0.62	0.56	0.56	0.62	0.57	0.57
Capacity (*c*), veh/h	260	255		252	151		363	1977	880	522	2056	915
Volume-to-Capacity Ratio (*X*)	0.662	0.400		0.256	0.820		0.207	0.313	0.053	0.354	0.486	0.136
Back of Queue (*Q*), ft/ln (95 th percentile)	226.4	139.4		81	190.9		37.2	212.1	28.3	100.3	183.9	24.7
Back of Queue (*Q*), veh/ln (95 th percentile)	9.0	5.5		3.2	7.5		1.5	8.3	1.1	4.0	7.3	1.0
Queue Storage Ratio (*RQ*) (95 th percentile)	0.54	0.00		0.46	0.00		0.10	0.00	0.15	0.28	0.00	0.09
Uniform Delay (d_1), s/veh	47.4	50.0		44.3	58.1		10.9	15.4	13.1	11.8	8.8	4.0
Incremental Delay (d_2), s/veh	2.6	0.4		0.2	4.1		0.1	0.4	0.1	0.1	0.6	0.2
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	50.0	50.4		44.5	62.3		11.0	15.8	13.2	11.9	9.4	4.2
Level of Service (LOS)	D	D		D	E		B	B	B	B	A	A
Approach Delay, s/veh / LOS	50.2	D		56.2	E		15.2	B		9.3	A	
Intersection Delay, s/veh / LOS	19.0						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	3.0	C	3.1	C	2.3	B	2.3	B
Bicycle LOS Score / LOS	0.9	A	0.8	A	1.1	A	1.5	A

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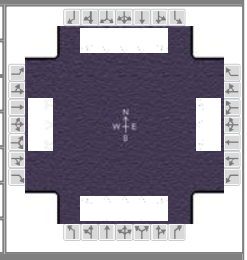
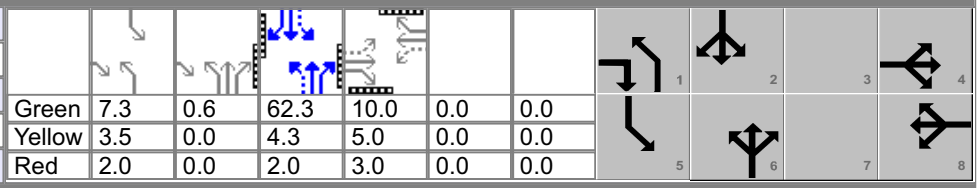
HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	raSmith			Duration, h	0.25
Analyst	LLZ	Analysis Date	Feb 22, 2018	Area Type	Other
Jurisdiction	SE - Waukesha Co	Time Period	PM	PHF	0.95
Urban Street	WIS 67	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	Oconomowoc Pkwy	File Name	WIS 67 PM.xus		
Project Description	PM				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	45	35	150	50	35	145	170	880	85	85	620	75

Signal Information			
Cycle, s	100.0	Reference Phase	2
Offset, s	96	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	7.3	0.6	62.3	10.0	0.0	0.0
Yellow	3.5	0.0	4.3	5.0	0.0	0.0
Red	2.0	0.0	2.0	3.0	0.0	0.0

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8	1	6	5	2
Case Number		5.0		5.0	1.1	3.0	1.1	3.0
Phase Duration, s		18.0		18.0	13.4	69.2	12.8	68.6
Change Period, (*Y+R c*), s		8.0		8.0	5.5	6.3	5.5	6.3
Max Allow Headway (*MAH*), s		2.9		2.9	2.5	0.0	2.5	0.0
Queue Clearance Time (*g s*), s		7.4		7.8	5.1		3.6	
Green Extension Time (*g e*), s		0.5		0.5	0.2	0.0	0.1	0.0
Phase Call Probability		1.00		1.00	0.99		0.92	
Max Out Probability		0.00		0.00	0.00		0.00	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	47	37	98	53	37	95	174	902	54	89	653	48
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1266	1881	1594	1250	1863	1579	1792	1708	1594	1774	1691	1579
Queue Service Time (*g s*), s	3.6	1.8	5.4	4.0	1.8	5.7	3.1	2.7	0.2	1.6	5.6	1.2
Cycle Queue Clearance Time (*g c*), s	5.4	1.8	5.4	5.8	1.8	5.7	3.1	2.7	0.2	1.6	5.6	1.2
Green Ratio (*g/C*)	0.10	0.10	0.18	0.10	0.10	0.10	0.70	0.63	0.63	0.70	0.62	0.62
Capacity (*c*), veh/h	176	188	286	175	186	158	639	3221	1002	554	3159	983
Volume-to-Capacity Ratio (*X*)	0.270	0.196	0.342	0.301	0.198	0.600	0.273	0.280	0.054	0.162	0.207	0.049
Back of Queue (*Q*), ft/ln (95 th percentile)	51.7	38.5	96	58.1	38.8	105.6	45.4	33.2	3.7	20.5	80.7	17
Back of Queue (*Q*), veh/ln (95 th percentile)	2.1	1.5	3.8	2.3	1.5	4.2	1.8	1.3	0.1	0.8	3.2	0.7
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.64	0.00	0.00	0.60	0.11	0.00	0.01	0.05	0.00	0.04
Uniform Delay (*d 1*), s/veh	43.8	41.3	35.9	44.0	41.3	43.1	5.6	2.3	1.0	4.7	8.2	7.3
Incremental Delay (*d 2*), s/veh	0.3	0.2	0.3	0.4	0.2	1.4	0.1	0.2	0.1	0.1	0.1	0.1
Initial Queue Delay (*d 3*), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	44.1	41.5	36.1	44.3	41.5	44.4	5.6	2.5	1.1	4.8	8.3	7.4
Level of Service (LOS)	D	D	D	D	D	D	A	A	A	A	A	A
Approach Delay, s/veh / LOS	39.3	D		43.8	D		2.9	A		7.9	A	
Intersection Delay, s/veh / LOS	10.8						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	3.4	C	3.4	C	2.5	B	2.5	B
Bicycle LOS Score / LOS	0.8	A	0.8	A	1.1	A	0.9	A

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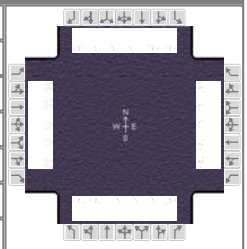
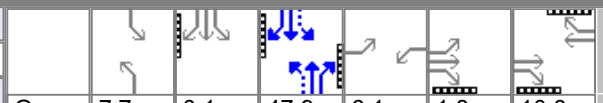
HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	raSmith			Duration, h	0.25
Analyst	LLZ	Analysis Date	Feb 22, 2018	Area Type	Other
Jurisdiction	SE - Waukesha Co	Time Period	PM	PHF	0.97
Urban Street	WIS 67	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	CTH B-Valley Rd	File Name	WIS 67 PM.xus		
Project Description	PM				

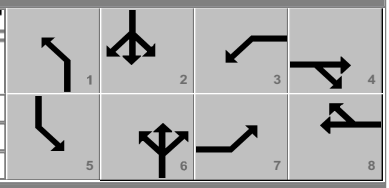


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	145	100	165	50	100	100	110	890	50	125	645	50

Signal Information			
Cycle, s	100.0	Reference Phase	2
Offset, s	53	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	7.7	0.1	47.9	6.1	1.8	10.0
Yellow	3.5	0.0	4.3	3.5	0.0	4.8
Red	2.5	0.0	2.3	2.5	0.0	3.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	7	4	3	8	1	6	5	2
Case Number	2.0	3.0	2.0	3.0	1.1	3.0	1.1	3.0
Phase Duration, s	13.9	19.6	12.1	17.8	13.7	54.5	13.8	54.7
Change Period, ($Y+R_c$), s	6.0	7.8	6.0	7.8	6.0	6.6	6.0	6.6
Max Allow Headway (*MAH*), s	2.7	2.7	2.6	2.7	2.5	0.0	2.5	0.0
Queue Clearance Time (g_s), s	6.2	8.4	3.4	5.8	3.6		3.8	
Green Extension Time (g_e), s	0.1	0.4	0.0	0.4	0.1	0.0	0.1	0.0
Phase Call Probability	0.98	1.00	0.76	1.00	0.96		0.97	
Max Out Probability	0.86	0.01	0.00	0.00	0.00		0.00	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	149	103	105	52	103	64	113	912	32	132	679	33
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1706	1756	1563	1740	1791	1594	1740	1708	1594	1723	1691	1579
Queue Service Time (g_s), s	4.2	2.7	6.4	1.4	2.7	3.8	1.6	3.6	0.2	1.8	9.7	1.6
Cycle Queue Clearance Time (g_c), s	4.2	2.7	6.4	1.4	2.7	3.8	1.6	3.6	0.2	1.8	9.7	1.6
Green Ratio (*g/C*)	0.08	0.12	0.12	0.06	0.10	0.10	0.56	0.48	0.48	0.56	0.48	0.48
Capacity (*c*), veh/h	269	414	184	212	358	159	981	2456	764	937	2439	759
Volume-to-Capacity Ratio (*X*)	0.556	0.249	0.571	0.243	0.288	0.401	0.115	0.371	0.042	0.140	0.278	0.043
Back of Queue (*Q*), ft/ln (95 th percentile)	83	53.2	114.7	27.6	53	67.2	25.1	45.5	3.6	27.8	172.6	42.5
Back of Queue (*Q*), veh/ln (95 th percentile)	3.2	2.1	4.5	1.1	2.1	2.7	1.0	1.8	0.1	1.1	6.8	1.7
Queue Storage Ratio (*RQ*) (95 th percentile)	0.25	0.00	0.88	0.06	0.00	0.29	0.07	0.00	0.01	0.06	0.00	0.09
Uniform Delay (d_1), s/veh	44.4	40.1	41.7	44.8	41.7	42.2	11.5	3.8	2.3	10.4	20.0	20.3
Incremental Delay (d_2), s/veh	0.7	0.1	1.0	0.2	0.2	0.6	0.0	0.4	0.1	0.0	0.3	0.1
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	45.1	40.2	42.7	45.0	41.9	42.8	11.6	4.2	2.4	10.4	20.3	20.4
Level of Service (LOS)	D	D	D	D	D	D	B	A	A	B	C	C
Approach Delay, s/veh / LOS	43.0	D		42.9	D		4.9	A		18.8	B	
Intersection Delay, s/veh / LOS	18.5						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	3.5	D	3.5	D	3.1	C	3.1	C
Bicycle LOS Score / LOS	0.8	A	0.7	A	1.1	A	0.9	A

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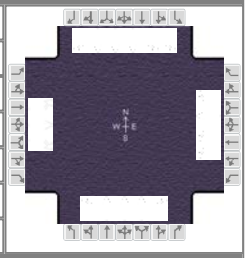
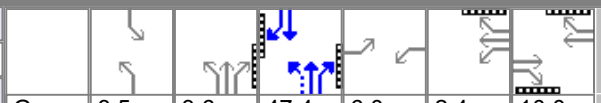
HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	raSmith			Duration, h	0.25
Analyst	LLZ	Analysis Date	Feb 22, 2018	Area Type	Other
Jurisdiction	SE - Waukesha Co	Time Period	PM	PHF	0.99
Urban Street	WIS 67	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	Oconomowoc Dr-Pabst…	File Name	WIS 67 PM.xus		
Project Description	PM				

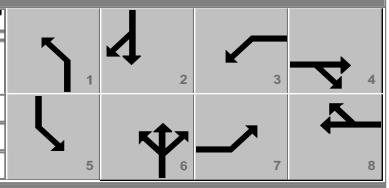


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	50	25	175	155	20	55	105	945	145	20	825	15

Signal Information			
Cycle, s	100.0	Reference Phase	2
Offset, s	48	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	3.5	3.6	47.4	6.0	2.4	10.0
Yellow	3.5	0.0	4.3	3.5	0.0	5.3
Red	2.5	0.0	3.0	2.0	0.0	3.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	7	4	3	8	1	6	5	2
Case Number	2.0	3.0	2.0	3.0	1.1	3.0	2.0	3.0
Phase Duration, s	11.5	18.3	13.9	20.7	13.1	58.3	9.5	54.7
Change Period, ($Y+R_c$), s	5.5	8.3	6.0	8.3	5.5	7.3	6.0	7.3
Max Allow Headway (*MAH*), s	2.7	2.8	2.7	2.8	2.5	0.0	2.5	0.0
Queue Clearance Time (g_s), s	4.8	8.7	6.3	3.9	4.9		2.6	
Green Extension Time (g_e), s	0.0	0.2	0.1	0.2	0.1	0.0	0.0	0.0
Phase Call Probability	0.75	1.00	0.99	1.00	0.95		0.44	
Max Out Probability	0.02	0.00	1.00	0.00	0.00		0.00	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	51	25	109	157	20	34	108	970	92	21	864	9
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1774	1863	1579	1740	1881	1594	1792	1708	1594	1706	1675	1563
Queue Service Time (g_s), s	2.8	1.2	6.7	4.3	1.0	1.9	2.9	11.3	3.9	0.6	7.5	0.2
Cycle Queue Clearance Time (g_c), s	2.8	1.2	6.7	4.3	1.0	1.9	2.9	11.3	3.9	0.6	7.5	0.2
Green Ratio (*g/C*)	0.06	0.10	0.10	0.08	0.12	0.12	0.55	0.51	0.51	0.04	0.47	0.47
Capacity (*c*), veh/h	107	186	158	275	232	197	463	2613	813	120	2383	741
Volume-to-Capacity Ratio (*X*)	0.472	0.136	0.692	0.570	0.087	0.174	0.233	0.371	0.114	0.174	0.363	0.013
Back of Queue (*Q*), ft/ln (95 th percentile)	56.8	26.2	122.5	85.6	20.1	34.5	46.7	179.4	97.6	11.9	107.4	2.6
Back of Queue (*Q*), veh/ln (95 th percentile)	2.2	1.0	4.8	3.4	0.8	1.4	1.9	7.1	3.9	0.5	4.2	0.1
Queue Storage Ratio (*RQ*) (95 th percentile)	0.35	0.00	0.41	0.19	0.00	0.08	0.11	0.00	0.17	0.03	0.00	0.01
Uniform Delay (d_1), s/veh	45.4	41.1	43.5	44.4	38.8	39.3	11.1	14.5	17.3	48.5	9.9	6.6
Incremental Delay (d_2), s/veh	1.2	0.1	2.0	0.7	0.1	0.2	0.1	0.4	0.3	0.2	0.4	0.0
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	46.6	41.2	45.5	45.1	38.9	39.4	11.2	14.9	17.6	48.7	10.4	6.6
Level of Service (LOS)	D	D	D	D	D	D	B	B	B	D	B	A
Approach Delay, s/veh / LOS	45.2	D		43.6	D		14.7	B		11.2	B	
Intersection Delay, s/veh / LOS	18.2						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	3.5	C	3.5	C	3.0	C	2.5	B
Bicycle LOS Score / LOS	0.8	A	0.8	A	1.1	A	1.0	A

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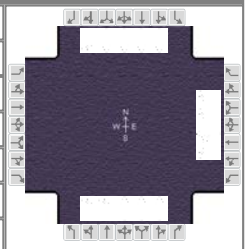
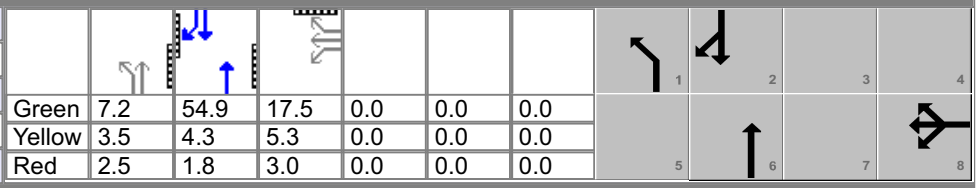
HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	raSmith			Duration, h	0.25
Analyst	LLZ	Analysis Date	Feb 22, 2018	Area Type	Other
Jurisdiction	SE - Waukesha Co	Time Period	PM	PHF	0.97
Urban Street	WIS 67	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	I-94 WB Ramps	File Name	WIS 67 PM.xus		
Project Description	PM				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h				220	1	555	80	640			945	210

Signal Information			
Cycle, s	100.0	Reference Phase	2
Offset, s	93	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	7.2	54.9	17.5	0.0	0.0	0.0
Yellow	3.5	4.3	5.3	0.0	0.0	0.0
Red	2.5	1.8	3.0	0.0	0.0	0.0

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase				8	1	6		2
Case Number				9.0	2.0	4.0		7.3
Phase Duration, s				25.8	13.2	74.2		61.0
Change Period, (*Y+R c*), s				8.3	6.0	6.1		6.1
Max Allow Headway (*MAH*), s				3.3	3.0	0.0		0.0
Queue Clearance Time (*g s*), s				16.1	4.2			
Green Extension Time (*g e*), s				1.4	0.1	0.0		0.0
Phase Call Probability				1.00	0.90			
Max Out Probability				0.00	0.00			

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement				3	8	18	1	6			2	12
Adjusted Flow Rate (*v*), veh/h				113	114	400	82	653			980	135
Adjusted Saturation Flow Rate (*s*), veh/h/ln				1740	1741	1370	1740	1708			1675	1563
Queue Service Time (*g s*), s				5.8	5.8	14.1	2.2	3.6			7.9	4.5
Cycle Queue Clearance Time (*g c*), s				5.8	5.8	14.1	2.2	3.6			7.9	4.5
Green Ratio (*g/C*)				0.18	0.18	0.18	0.07	0.68			0.55	0.55
Capacity (*c*), veh/h				305	305	480	250	3489			3679	858
Volume-to-Capacity Ratio (*X*)				0.372	0.375	0.833	0.327	0.187			0.267	0.157
Back of Queue (*Q*), ft/ln (95 th percentile)				112.6	113.8	214.1	41.9	45.2			123.2	68.7
Back of Queue (*Q*), veh/ln (95 th percentile)				4.4	4.4	8.3	1.7	1.8			4.8	2.7
Queue Storage Ratio (*RQ*) (95 th percentile)				0.26	0.00	0.31	0.08	0.00			0.00	0.13
Uniform Delay (*d 1*), s/veh				36.4	36.4	39.8	43.5	4.3			12.2	11.8
Incremental Delay (*d 2*), s/veh				0.3	0.3	1.5	0.3	0.1			0.2	0.4
Initial Queue Delay (*d 3*), s/veh				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Control Delay (*d*), s/veh				36.7	36.7	41.3	43.8	4.4			12.3	12.2
Level of Service (LOS)				D	D	D	D	A			B	B
Approach Delay, s/veh / LOS	0.0			39.6		D	8.7		A	12.3		B
Intersection Delay, s/veh / LOS	18.2						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	3.7	D	3.5	D	2.3	B	2.4	B
Bicycle LOS Score / LOS			1.5	A	0.9	A	0.9	A

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--- Messages ---

WARNING: The shared-plus-exclusive turn lane solution is an approximation of the HCM method, because more than three lane groups cannot be accommodated. Input data for Percent Turns in Shared Lane are used to specify proportion of turning vehicles in the shared lane.

--- Comments ---

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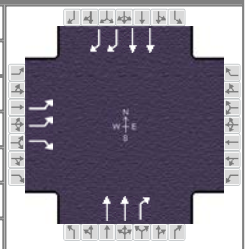
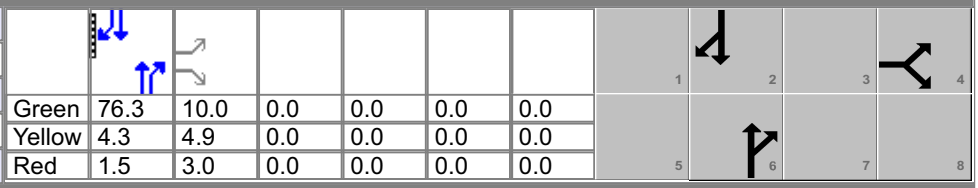
HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	raSmith			Duration, h	0.25
Analyst	LLZ	Analysis Date	Feb 22, 2018	Area Type	Other
Jurisdiction	SE - Waukesha Co	Time Period	PM	PHF	0.98
Urban Street	WIS 67	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	I-94 EB Ramps	File Name	WIS 67 PM.xus		
Project Description	PM				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	165		65					555	285		680	485

Signal Information			
Cycle, s	100.0	Reference Phase	2
Offset, s	18	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	76.3	10.0	0.0	0.0	0.0	0.0						
Yellow	4.3	4.9	0.0	0.0	0.0	0.0						
Red	1.5	3.0	0.0	0.0	0.0	0.0						

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4				6		2
Case Number		9.0				7.0		7.0
Phase Duration, s		17.9				82.1		82.1
Change Period, (*Y+R c*), s		7.9				5.8		5.8
Max Allow Headway (*MAH*), s		3.2				0.0		0.0
Queue Clearance Time (*g s*), s		6.6						
Green Extension Time (*g e*), s		0.3				0.0		0.0
Phase Call Probability		1.00						
Max Out Probability		0.01						

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7		14					6	16		2	12
Adjusted Flow Rate (*v*), veh/h	168		66					566	291		705	503
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1723		1579					1756	1563		1739	1370
Queue Service Time (*g s*), s	4.6		3.9					4.6	5.4		7.4	7.5
Cycle Queue Clearance Time (*g c*), s	4.6		3.9					4.6	5.4		7.4	7.5
Green Ratio (*g/C*)	0.10		0.10					0.76	0.76		0.76	0.76
Capacity (*c*), veh/h	344		158					2680	1193		2655	2091
Volume-to-Capacity Ratio (*X*)	0.489		0.421					0.211	0.244		0.265	0.240
Back of Queue (*Q*), ft/ln (95 th percentile)	89.5		70.7					49.5	56.6		87	73.6
Back of Queue (*Q*), veh/ln (95 th percentile)	3.5		2.8					1.9	2.2		3.4	2.9
Queue Storage Ratio (*RQ*) (95 th percentile)	0.31		0.25					0.00	0.17		0.00	0.00
Uniform Delay (*d 1*), s/veh	42.6		42.3					3.3	3.4		4.6	5.4
Incremental Delay (*d 2*), s/veh	0.4		0.7					0.2	0.5		0.2	0.3
Initial Queue Delay (*d 3*), s/veh	0.0		0.0					0.0	0.0		0.0	0.0
Control Delay (*d*), s/veh	43.0		43.0					3.5	3.9		4.8	0.0
Level of Service (LOS)	D		D					A	A		A	A
Approach Delay, s/veh / LOS	43.0	D		0.0			3.7	A		2.8	A	
Intersection Delay, s/veh / LOS	7.2						A					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.9	C	3.0	C	1.8	A	2.7	B
Bicycle LOS Score / LOS		F			1.2	A	1.5	A

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--- Messages ---

INFO: SBR was specified to have Unsignalized Delay of 0 seconds.

--- Comments ---

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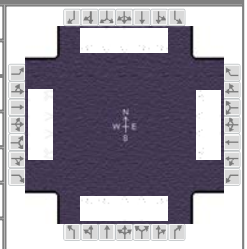
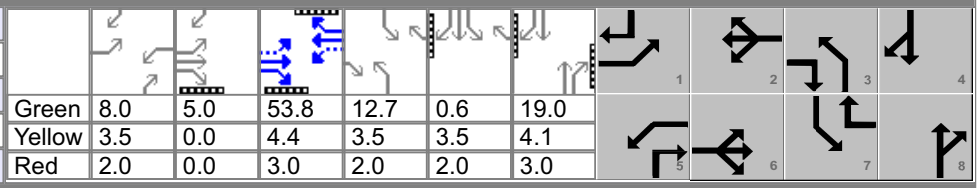
HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	raSmith			Duration, h	0.25
Analyst	LLZ	Analysis Date	Feb 22, 2018	Area Type	Other
Jurisdiction	SE - Ozaukee Co	Time Period	PM	PHF	0.96
Urban Street	WIS 167	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	Port Washington Rd	File Name	WIS 167 PM.xus		
Project Description	PM				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	245	620	230	215	510	380	270	320	320	425	355	345

Signal Information			
Cycle, s	130.0	Reference Phase	2
Offset, s	102	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	8.0	5.0	53.8	12.7	0.6	19.0	
Yellow	3.5	0.0	4.4	3.5	3.5	4.1	
Red	2.0	0.0	3.0	2.0	2.0	3.0	

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	1	6	5	2	3	8	7	4
Case Number	1.1	3.0	1.1	3.0	2.0	3.0	2.0	3.0
Phase Duration, s	18.4	66.2	13.5	61.2	18.2	26.1	24.3	32.2
Change Period, ($Y+R_c$), s	5.5	7.4	5.5	7.4	5.5	7.1	5.5	7.1
Max Allow Headway (*MAH*), s	2.6	0.0	2.6	0.0	2.6	2.7	2.6	2.7
Queue Clearance Time (g_s), s	12.6		7.7		12.3	17.3	18.2	17.0
Green Extension Time (g_e), s	0.3	0.0	0.2	0.0	0.4	1.7	0.6	1.8
Phase Call Probability	1.00		1.00		1.00	1.00	1.00	1.00
Max Out Probability	0.00		0.00		0.00	0.00	0.00	0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	1	6	16	5	2	12	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	255	646	149	149	353	163	281	333	206	443	370	223
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1774	1773	1579	1774	1773	1579	1740	1791	1594	1740	1791	1594
Queue Service Time (g_s), s	10.6	15.9	6.1	5.7	6.9	3.8	10.3	11.4	15.3	16.2	12.1	15.0
Cycle Queue Clearance Time (g_c), s	10.6	15.9	6.1	5.7	6.9	3.8	10.3	11.4	15.3	16.2	12.1	15.0
Green Ratio (*g/C*)	0.51	0.45	0.55	0.51	0.41	0.56	0.10	0.15	0.21	0.14	0.19	0.29
Capacity (*c*), veh/h	550	1603	868	388	1468	881	340	524	331	502	691	466
Volume-to-Capacity Ratio (*X*)	0.464	0.403	0.172	0.383	0.240	0.185	0.828	0.636	0.623	0.881	0.535	0.478
Back of Queue (*Q*), ft/ln (95 th percentile)	196.9	279.7	103.5	112	129.1	56.4	204.8	222.8	256	303.8	231.8	247.4
Back of Queue (*Q*), veh/ln (95 th percentile)	7.8	11.0	4.1	4.4	5.1	2.2	8.1	8.8	10.2	12.1	9.2	9.8
Queue Storage Ratio (*RQ*) (95 th percentile)	0.79	0.00	0.00	0.00	0.00	0.00	1.41	0.00	0.00	1.38	0.00	1.71
Uniform Delay (d_1), s/veh	18.2	23.9	14.6	18.6	19.3	7.2	57.6	52.2	46.9	54.5	47.2	37.8
Incremental Delay (d_2), s/veh	0.2	0.8	0.4	0.2	0.4	0.5	2.0	0.5	0.7	7.2	0.2	0.3
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	18.5	24.6	15.0	18.8	19.7	7.7	59.6	52.7	47.6	61.8	47.4	38.1
Level of Service (LOS)	B	C	B	B	B	A	E	D	D	E	D	D
Approach Delay, s/veh / LOS	21.8	C		16.6	B		53.8	D		51.6	D	
Intersection Delay, s/veh / LOS	36.8						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	3.2	C	3.2	C	3.2	C	3.1	C
Bicycle LOS Score / LOS	1.4	A	1.3	A	1.2	A	1.3	A

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--- Messages ---

WARNING: Since queue spillover from turn lanes and spillback into upstream intersections is not accounted for in the HCM procedures, use of a simulation tool may be advised in situations where the Queue Storage Ratio exceeds 1.0.

WARNING: According to input data, upstream feeding volume is equal to 86% of downstream exit volume during time period #1, for thru movement #2.

--- Comments ---

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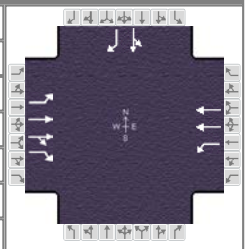
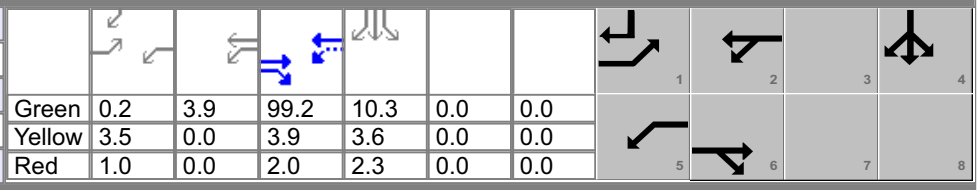
HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	raSmith			Duration, h	0.25
Analyst	LLZ	Analysis Date	Feb 22, 2018	Area Type	Other
Jurisdiction	SE - Ozaukee Co	Time Period	PM	PHF	0.96
Urban Street	WIS 167	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	I-43 SB Ramps	File Name	WIS 167 PM.xus		
Project Description	PM				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	1	665	700	35	820					35	1	285

Signal Information			
Cycle, s	130.0	Reference Phase	2
Offset, s	110	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	0.2	3.9	99.2	10.3	0.0	0.0
Yellow	3.5	0.0	3.9	3.6	0.0	0.0
Red	1.0	0.0	2.0	2.3	0.0	0.0

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	1	6	5	2				4
Case Number	2.0	3.0	1.1	4.0				11.0
Phase Duration, s	4.7	105.1	8.7	109.1				16.2
Change Period, (*Y+R c*), s	4.5	6.9	5.9	6.9				5.9
Max Allow Headway (*MAH*), s	3.1	0.0	3.1	0.0				3.3
Queue Clearance Time (*g s*), s	2.1		2.4					10.3
Green Extension Time (*g e*), s	0.0	0.0	0.0	0.0				0.0
Phase Call Probability	0.04		0.55					0.99
Max Out Probability	0.00		0.00					1.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	1	6	16	5	2					7	4	14
Adjusted Flow Rate (*v*), veh/h	1	692	510	22	518						38	101
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1792	1881	1594	1774	1773						1742	1548
Queue Service Time (*g s*), s	0.1	4.3	3.6	0.4	12.3						2.6	8.3
Cycle Queue Clearance Time (*g c*), s	0.1	4.3	3.6	0.4	12.3						2.6	8.3
Green Ratio (*g/C*)	0.00	0.76	0.76	0.78	0.79						0.08	0.08
Capacity (*c*), veh/h	3	2843	1205	428	2787						138	125
Volume-to-Capacity Ratio (*X*)	0.339	0.243	0.423	0.052	0.186						0.271	0.805
Back of Queue (*Q*), ft/ln (95 th percentile)	2.2	61	43	5.1	172.1						54.3	184.1
Back of Queue (*Q*), veh/ln (95 th percentile)	0.1	2.4	1.7	0.2	6.8						2.1	7.1
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00	0.02	0.00						0.00	3.68
Uniform Delay (*d 1*), s/veh	64.9	2.6	0.9	3.4	12.0						56.3	58.7
Incremental Delay (*d 2*), s/veh	17.5	0.2	0.8	0.0	0.0						0.4	20.5
Initial Queue Delay (*d 3*), s/veh	0.0	0.0	0.0	0.0	0.0						0.0	0.0
Control Delay (*d*), s/veh	82.4	2.7	1.8	3.4	12.0						56.7	79.3
Level of Service (LOS)	F	A	A	A	B						E	E
Approach Delay, s/veh / LOS	2.4	A		11.6	B		0.0			73.2	E	
Intersection Delay, s/veh / LOS	10.2						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.8	A	2.5	B	2.9	C	3.3	C
Bicycle LOS Score / LOS	1.5	A	1.2	A			0.7	A

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--- Messages ---

WARNING: Since queue spillover from turn lanes and spillback into upstream intersections is not accounted for in the HCM procedures, use of a simulation tool may be advised in situations where the Queue Storage Ratio exceeds 1.0.

WARNING: The shared-plus-exclusive turn lane solution is an approximation of the HCM method, because more than three lane groups cannot be accommodated. Input data for Percent Turns in Shared Lane are used to specify proportion of turning vehicles in the shared lane.

--- Comments ---

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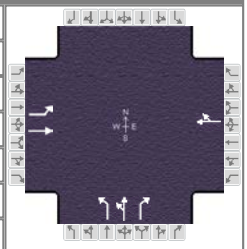
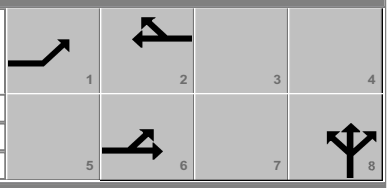
HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	raSmith			Duration, h	0.25
Analyst	LLZ	Analysis Date	Feb 22, 2018	Area Type	Other
Jurisdiction	SE - Ozaukee Co	Time Period	PM	PHF	0.96
Urban Street	WIS 167	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	I-43 NB Ramps	File Name	WIS 167 PM.xus		
Project Description	PM				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	540	160			120	30	735	1	60			

Signal Information			
Cycle, s	130.0	Reference Phase	2
Offset, s	3	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	21.1	62.0	30.1	0.0	0.0	0.0			
Yellow	3.5	3.6	3.6	0.0	0.0	0.0			
Red	1.0	2.1	3.0	0.0	0.0	0.0			

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	1	6		2		8		
Case Number	1.0	4.0		8.3		9.0		
Phase Duration, s	25.6	93.3		67.7		36.7		
Change Period, ($Y+R_c$), s	4.5	5.7		5.7		6.6		
Max Allow Headway (*MAH*), s	2.6	0.0		0.0		2.6		
Queue Clearance Time (g_s), s	20.3					29.2		
Green Extension Time (g_e), s	0.7	0.0		0.0		0.9		
Phase Call Probability	1.00					1.00		
Max Out Probability	0.00					0.00		

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	1	6			2	12	3	8	18			
Adjusted Flow Rate (*v*), veh/h	562	167			156		383	384	21			
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1792	1881			1781		1792	1792	1594			
Queue Service Time (g_s), s	18.3	4.1			6.5		27.1	27.2	1.3			
Cycle Queue Clearance Time (g_c), s	18.3	4.1			6.5		27.1	27.2	1.3			
Green Ratio (*g/C*)	0.64	0.67			0.48		0.23	0.23	0.23			
Capacity (*c*), veh/h	873	1267			849		415	415	370			
Volume-to-Capacity Ratio (*X*)	0.644	0.131			0.184		0.922	0.924	0.056			
Back of Queue (*Q*), ft/ln (95 th percentile)	339.5	74			129.8		490.7	493	23.7			
Back of Queue (*Q*), veh/ln (95 th percentile)	13.5	2.9			5.1		19.5	19.6	0.9			
Queue Storage Ratio (*RQ*) (95 th percentile)	0.75	0.00			0.00		0.93	0.00	0.26			
Uniform Delay (d_1), s/veh	13.9	7.5			19.5		48.8	48.8	38.9			
Incremental Delay (d_2), s/veh	0.3	0.2			0.5		12.7	13.0	0.0			
Initial Queue Delay (d_3), s/veh	0.0	0.0			0.0		0.0	0.0	0.0			
Control Delay (*d*), s/veh	14.1	7.7			20.0		61.5	61.8	38.9			
Level of Service (LOS)	B	A			B		E	E	D			
Approach Delay, s/veh / LOS	12.7	B		20.0	B		61.0	E		0.0		
Intersection Delay, s/veh / LOS	36.1						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.9	A	1.9	A	2.2	B	2.3	B
Bicycle LOS Score / LOS	1.7	A	0.7	A	1.8	A		

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--- Messages ---

WARNING: The shared-plus-exclusive turn lane solution is an approximation of the HCM method, because more than three lane groups cannot be accommodated. Input data for Percent Turns in Shared Lane are used to specify proportion of turning vehicles in the shared lane.

--- Comments ---

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Software Output Reports – Existing Conditions
Signalized Corridors
SIDRA Version 7.0

LANE SUMMARY

Site: 101 [WIS 38 & Drexel - PM]

Network: N101 [Network1]

WIS 38 & Drexel
Signals - Actuated Coordinated Cycle Time = 130 seconds (User-Given Phase Times)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist ft		ft	%	%
South: WIS 38															
Lane 1	142	2.0	142	2.0	323	0.438	100	60.1	LOS E	8.3	210.2	Short	375	0.0	NA
Lane 2	143	2.0	143	2.0	328	0.438	100	60.1	LOS E	8.4	212.8	Short	375	0.0	NA
Lane 3	328	2.0	328	2.0	459	0.715	100	28.4	LOS C	15.1	383.1	Full	1160	0.0	0.0
Lane 4	328	2.0	328	2.0	459	0.715	100	29.9	LOS C	15.5	392.7	Full	1160	0.0	0.0
Lane 5	80	2.0	80	2.0	389	0.206	100	32.3	LOS C	2.6	65.1	Short	260	0.0	NA
Approach	1021	2.0	1021	2.0		0.715		38.0	LOS D	15.5	392.7				
East: Drexel															
Lane 1	62	1.0	62	1.0	193	0.320	100	66.6	LOS E	3.7	94.0	Short	170	0.0	NA
Lane 2	62	1.0	62	1.0	193	0.320	100	66.6	LOS E	3.7	94.0	Short	170	0.0	NA
Lane 3	164	1.0	164	1.0	391	0.420	100	50.2	LOS D	9.1	229.0	Full	1600	0.0	0.0
Lane 4	164	1.0	164	1.0	391	0.420	100	50.2	LOS D	9.1	229.0	Full	1600	0.0	0.0
Lane 5	47	1.0	47	1.0	331	0.141	100	52.2	LOS D	2.4	61.2	Short	180	0.0	NA
Approach	498	1.0	498	1.0		0.420		54.5	LOS D	9.1	229.0				
North: WIS 38															
Lane 1	77	1.0	77	1.0	296	0.260	100	59.8	LOS E	4.3	108.4	Short	440	0.0	NA
Lane 2	79	1.0	79	1.0	303	0.260	100	59.7	LOS E	4.4	110.8	Short	440	0.0	NA
Lane 3	312	1.0	312	1.0	434	0.718	100	52.0	LOS D	18.4	463.0	Full	1600	0.0	0.0
Lane 4	312	1.0	312	1.0	434	0.718	100	52.0	LOS D	18.4	463.0	Full	1600	0.0	0.0
Lane 5	312	1.0	312	1.0	434	0.718	100	52.0	LOS D	18.4	463.0	Full	1600	0.0	0.0
Lane 6	145	1.0	145	1.0	1127	0.129	100	12.3	LOS B	1.9	48.7	Short	430	0.0	NA
Approach	1237	1.0	1237	1.0		0.718		48.3	LOS D	18.4	463.0				
West: Drexel															
Lane 1	67	1.0	67	1.0	303	0.222	100	57.6	LOS E	3.7	93.6	Short	245	0.0	NA
Lane 2	67	1.0	67	1.0	303	0.222	100	57.6	LOS E	3.7	93.6	Short	245	0.0	NA
Lane 3	210	1.0	210	1.0	506	0.414	100	43.6	LOS D	10.9	275.3	Full	1600	0.0	0.0
Lane 4	210	1.0	210	1.0	506	0.414	100	43.6	LOS D	10.9	275.3	Full	1600	0.0	0.0
Lane 5	273	1.0	273	1.0	429	0.637	100	52.5	LOS D	15.4	388.5	Short	375	0.0	NA
Approach	827	1.0	827	1.0		0.637		48.8	LOS D	15.4	388.5				
Intersection	3583	1.3	3583	1.3		0.718		46.4	LOS D	18.4	463.0				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.1 %
Number of Iterations: 8 (maximum specified: 10)

LANE SUMMARY

Site: 101 [WIS 38 & Susan/Town Square Way - PM]

Network: N101 [Network1]

WIS 38 & Susan/Town Square Way
Signals - Actuated Coordinated Cycle Time = 130 seconds (User-Given Phase Times)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist ft		ft	%	%
South: WIS 38															
Lane 1	63	3.0	63	3.0	324	0.193	100	57.0	LOS E	3.5	89.0	Short	410	0.0	NA
Lane 2	63	3.0	63	3.0	324	0.193	100	57.0	LOS E	3.5	89.0	Short	410	0.0	NA
Lane 3	444	3.0	444	3.0	993	0.447	100	36.7	LOS D	25.1	643.2	Full	1500	0.0	0.0
Lane 4	441	3.0	441	3.0	987[1]	0.447	100	36.7	LOS D	25.0	639.8	Full	1500	0.0	0.0
Lane 5	6	3.0	6	3.0	842	0.008	100	33.8	LOS C	0.3	8.6	Short	245	0.0	NA
Approach	1017	3.0	1017	3.0		0.447		39.2	LOS D	25.1	643.2				
East: Susan Dr															
Lane 1	5	1.0	5	1.0	190	0.027	100	46.9	LOS D	0.3	6.5	Short	50	0.0	NA
Lane 2	21	1.0	21	1.0	153	0.136	100	64.5	LOS E	1.3	31.6	Full	1600	0.0	0.0
Approach	26	1.0	26	1.0		0.136		61.0	LOS E	1.3	31.6				
North: WIS 38															
Lane 1	26	1.0	26	1.0	319	0.082	100	14.6	LOS B	0.3	8.1	Short	450	0.0	NA
Lane 2	435	1.0	435	1.0	767	0.568	100	16.0	LOS B	13.2	333.0	Full	1160	0.0	0.0
Lane 3	435	1.0	435	1.0	767	0.568	100	19.4	LOS B	15.1	381.4	Full	1160	0.0	0.0
Lane 4	431	1.0	431	1.0	760[1]	0.568	100	32.8	LOS C	20.1	505.8	Full	1160	0.0	0.0
Lane 5	81	1.0	81	1.0	650	0.124	100	32.9	LOS C	3.0	74.8	Short	280	0.0	NA
Approach	1409	1.0	1409	1.0		0.568		23.1	LOS C	20.1	505.8				
West: Town Square Way															
Lane 1	70	1.0	70	1.0	193	0.364	100	64.8	LOS E	4.3	107.6	Short	195	0.0	NA
Lane 2	70	1.0	70	1.0	193	0.364	100	64.8	LOS E	4.3	107.6	Short	195	0.0	NA
Lane 3	167	1.0	167	1.0	234	0.712	100	64.2	LOS E	10.4	261.8	Full	1600	0.0	0.0
Approach	307	1.0	307	1.0		0.712		64.5	LOS E	10.4	261.8				
Intersection	2759	1.7	2759	1.7		0.712		34.0	LOS C	25.1	643.2				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.1 %
Number of Iterations: 8 (maximum specified: 10)

1 Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

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Organisation: R.A. SMITH | Processed: Monday, December 03, 2018 10:13:17 AM
Project: C:\Users\MSCLLS\Desktop\SIDRA\WIS 38 PM.sip7

LANE SUMMARY

Site: 101 [WIS 38 & Forest Hill Ave - PM]

Network: N101 [Network1]

WIS 38 & Forest Hill Ave
Signals - Actuated Coordinated Cycle Time = 130 seconds (User-Given Phase Times)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist ft		ft	%	%
South: WIS 38															
Lane 1	109	2.0	109	2.0	300	0.364	100	28.5	LOS C	3.8	97.3	Short	470	0.0	NA
Lane 2	453	2.0	453	2.0	788	0.575	100	48.0	LOS D	26.8	681.2	Full	2645	0.0	0.0
Lane 3	448	2.0	448	2.0	778[1]	0.575	100	44.4	LOS D	25.6	649.2	Full	2645	0.0	0.0
Lane 4	19	2.0	19	2.0	668	0.029	100	40.0	LOS D	1.0	25.0	Short	280	0.0	NA
Approach	1030	2.0	1030	2.0		0.575		44.2	LOS D	26.8	681.2				
East: Forest Hill Avenue															
Lane 1	36	1.0	36	1.0	374	0.098	100	39.2	LOS D	1.6	41.4	Short	120	0.0	NA
Lane 2	109	1.0	109	1.0	242	0.452	100	62.0	LOS E	6.5	163.8	Full	1600	0.0	0.0
Approach	146	1.0	146	1.0		0.452		56.3	LOS E	6.5	163.8				
North: WIS 38															
Lane 1	104	1.0	104	1.0	282	0.369	100	31.7	LOS C	3.8	94.7	Short	350	0.0	NA
Lane 2	452	1.0	452	1.0	752	0.601	100	18.2	LOS B	15.4	387.8	Full	1500	0.0	0.0
Lane 3	452	1.0	452	1.0	752	0.601	100	28.6	LOS C	18.8	473.0	Full	1500	0.0	0.0
Lane 4	376	1.0	376	1.0	752	0.500	83[6]	32.4	LOS C	17.2	434.7	Full	1500	0.0	0.0
Lane 5	36	1.0	36	1.0	638	0.056	100	32.6	LOS C	1.3	32.8	Short	270	0.0	NA
Approach	1421	1.0	1421	1.0		0.601		26.6	LOS C	18.8	473.0				
West: Forest Hill Avenue															
Lane 1	73	2.0	73	2.0	416	0.175	100	38.8	LOS D	3.2	81.3	Short	325	0.0	NA
Lane 2	42	2.0	42	2.0	459	0.091	100	41.7	LOS D	2.0	51.3	Full	1600	0.0	0.0
Lane 3	100	2.0	100	2.0	389	0.258	100	49.4	LOS D	5.1	130.4	Short	170	0.0	NA
Approach	215	2.0	215	2.0		0.258		44.3	LOS D	5.1	130.4				
Intersection	2811	1.4	2811	1.4		0.601		36.0	LOS D	26.8	681.2				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.1 %
Number of Iterations: 8 (maximum specified: 10)

1 Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.
6 Lane under-utilisation due to downstream effects

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LANE SUMMARY

Site: 101 [WIS 38 & Puetz - PM]

Network: N101 [Network1]

WIS 38 & Puetz Rd
Signals - Actuated Coordinated Cycle Time = 130 seconds (User-Given Phase Times)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist ft		ft	%	%
South: WIS 38															
Lane 1	63	2.0	63	2.0	259	0.241	100	62.3	LOS E	3.4	86.4	Short	215	0.0	NA
Lane 2	63	2.0	63	2.0	259	0.241	100	62.3	LOS E	3.4	86.4	Short	215	0.0	NA
Lane 3	300	2.0	300	2.0	723[1]	0.414	100	43.2	LOS D	17.0	431.7	Full	1325	0.0	0.0
Lane 4	315	2.0	315	2.0	759	0.414	100	35.8	LOS D	16.5	420.0	Full	1325	0.0	0.0
Lane 5	135	2.0	135	2.0	1103	0.123	100	11.4	LOS B	2.2	55.6	Short	305	0.0	NA
Approach	875	2.0	875	2.0		0.414		38.3	LOS D	17.0	431.7				
East: Puetz Rd															
Lane 1	89	1.0	89	1.0	233	0.379	100	43.8	LOS D	4.2	105.5	Short	315	0.0	NA
Lane 2	131	1.0	131	1.0	405	0.323	100	48.2	LOS D	7.0	176.9	Full	1600	0.0	0.0
Lane 3	114	1.0	114	1.0	353[1]	0.323	100	47.6	LOS D	6.1	152.6	Full	1600	0.0	0.0
Lane 4	203	1.0	203	1.0	1037	0.196	100	10.3	LOS B	3.6	91.3	Short	90	0.0	NA
Approach	536	1.0	536	1.0		0.379		33.0	LOS C	7.0	176.9				
North: WIS 38															
Lane 1	107	1.0	107	1.0	193	0.553	100	76.5	LOS E	6.9	175.1	Short	225	0.0	NA
Lane 2	107	1.0	107	1.0	193	0.553	100	76.5	LOS E	6.9	175.1	Short	225	0.0	NA
Lane 3	505	1.0	505	1.0	695	0.727	100	10.6	LOS B	13.7	344.8	Full	2645	0.0	0.0
Lane 4	505	1.0	505	1.0	695	0.727	100	11.3	LOS B	14.3	360.3	Full	2645	0.0	0.0
Lane 5	94	1.0	94	1.0	589	0.159	100	15.3	LOS B	1.2	30.9	Short	260	0.0	NA
Approach	1318	1.0	1318	1.0		0.727		21.9	LOS C	14.3	360.3				
West: Puetz Rd															
Lane 1	120	1.0	120	1.0	343	0.349	100	42.9	LOS D	5.8	146.0	Short	380	0.0	NA
Lane 2	280	1.0	280	1.0	405	0.690	100	53.1	LOS D	16.5	415.9	Full	1600	0.0	0.0
Lane 3	252	1.0	252	1.0	364	0.690	100	56.5	LOS E	14.9	375.7	Full	1600	0.0	0.0
Approach	651	1.0	651	1.0		0.690		52.5	LOS D	16.5	415.9				
Intersection	3380	1.3	3380	1.3		0.727		33.8	LOS C	17.0	431.7				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.1 %
Number of Iterations: 8 (maximum specified: 10)

1 Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

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LANE SUMMARY

Site: 101 [WIS 38 & Centennial - PM]

Network: N101 [Network1]

WIS 38 & Centennial
Signals - Actuated Coordinated Cycle Time = 130 seconds (User-Given Phase Times)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist ft		ft	%	%
South: WIS 38															
Lane 1	75	2.0	75	2.0	354	0.212	100	24.5	LOS C	2.3	59.1	Short	380	0.0	NA
Lane 2	312	2.0	312	2.0	716	0.436	100	32.7	LOS C	14.5	368.1	Full	1600	0.0	0.0
Lane 3	306	2.0	306	2.0	703[1]	0.436	100	32.6	LOS C	14.2	359.6	Full	1600	0.0	0.0
Lane 4	47	2.0	47	2.0	607	0.077	100	34.3	LOS C	1.8	47.0	Short	185	0.0	NA
Approach	740	2.0	740	2.0		0.436		31.9	LOS C	14.5	368.1				
East: Centennial Dr															
Lane 1	65	2.0	65	2.0	400	0.161	100	38.1	LOS D	2.9	73.0	Short	175	0.0	NA
Lane 2	124	2.0	124	2.0	297	0.416	100	57.1	LOS E	7.1	179.9	Full	1600	0.0	0.0
Approach	188	2.0	188	2.0		0.416		50.6	LOS D	7.1	179.9				
North: WIS 38															
Lane 1	172	1.0	172	1.0	460	0.374	100	22.1	LOS C	4.2	107.0	Short	360	0.0	NA
Lane 2	465	1.0	465	1.0	796	0.584	100	9.0	LOS A	9.3	234.0	Full	1325	0.0	0.0
Lane 3	465	1.0	465	1.0	796	0.584	100	14.7	LOS B	13.6	343.5	Full	1325	0.0	0.0
Lane 4	117	1.0	117	1.0	674	0.173	100	18.4	LOS B	2.2	56.3	Short	290	0.0	NA
Approach	1219	1.0	1219	1.0		0.584		13.9	LOS B	13.6	343.5				
West: Centennial Dr															
Lane 1	172	1.0	172	1.0	396	0.434	100	39.7	LOS D	8.2	205.5	Short	420	0.0	NA
Lane 2	102	1.0	102	1.0	341	0.300	100	51.8	LOS D	5.6	140.2	Full	1600	0.0	0.0
Approach	274	1.0	274	1.0		0.434		44.2	LOS D	8.2	205.5				
Intersection	2421	1.4	2421	1.4		0.584		25.7	LOS C	14.5	368.1				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.1 %
Number of Iterations: 8 (maximum specified: 10)

1 Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

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Organisation: R.A. SMITH | Processed: Monday, December 03, 2018 10:13:17 AM
Project: C:\Users\MSCLLS\Desktop\SIDRA\WIS 38 PM.sip7

LANE SUMMARY

Site: 101 [WIS 67 & Oconomowoc Parkway PM]

Network: N101 [Network1]

WIS 67 & Oconomowoc Parkway
Signals - Actuated Coordinated Cycle Time = 100 seconds (User-Given Phase Times)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist ft		ft	%	%
South: WIS 67															
Lane 1	179	1.0	179	1.0	633	0.283	100	14.3	LOS B	2.6	64.8	Short	400	0.0	NA
Lane 2	309	1.0	309	1.0	922	0.335	100	4.0	LOS A	2.5	63.2	Full	1800	0.0	0.0
Lane 3	309	1.0	309	1.0	922	0.335	100	2.3	LOS A	1.4	36.4	Full	1800	0.0	0.0
Lane 4	309	1.0	309	1.0	922	0.335	100	7.1	LOS A	4.3	107.9	Full	1800	0.0	0.0
Lane 5	89	1.0	89	1.0	1299	0.069	100	7.3	LOS A	0.2	6.2	Short	310	0.0	NA
Approach	1195	1.0	1195	1.0		0.335		6.2	LOS A	4.3	107.9				
East: Oconomowoc Parkway															
Lane 1	53	2.0	53	2.0	318	0.166	100	41.9	LOS D	2.1	54.4	Short	240	0.0	NA
Lane 2	37	2.0	37	2.0	410	0.090	100	35.7	LOS D	1.4	36.5	Full	1600	0.0	0.0
Lane 3	153	2.0	153	2.0	953	0.160	100	6.3	LOS A	0.9	23.8	Short	300	0.0	NA
Approach	242	2.0	242	2.0		0.166		18.5	LOS B	2.1	54.4				
North: WIS 67															
Lane 1	89	2.0	89	2.0	474	0.189	100	15.5	LOS B	1.8	44.6	Short	375	0.0	NA
Lane 2	218	2.0	218	2.0	726	0.299	100	23.4	LOS C	7.3	185.4	Full	1600	0.0	0.0
Lane 3	218	2.0	218	2.0	726	0.299	100	23.4	LOS C	7.3	185.4	Full	1600	0.0	0.0
Lane 4	218	2.0	218	2.0	726	0.299	100	23.4	LOS C	7.3	185.4	Full	1600	0.0	0.0
Lane 5	79	2.0	79	2.0	1223	0.065	100	7.8	LOS A	0.4	10.3	Short	410	0.0	NA
Approach	821	2.0	821	2.0		0.299		21.1	LOS C	7.3	185.4				
West: Oconomowoc Parkway															
Lane 1	47	1.0	47	1.0	323	0.147	100	40.7	LOS D	1.9	48.3	Short	240	0.0	NA
Lane 2	37	1.0	37	1.0	414	0.089	100	34.6	LOS C	1.4	36.1	Full	1600	0.0	0.0
Lane 3	98	1.0	98	1.0	636	0.154	100	21.7	LOS C	2.7	69.2	Short	150	0.0	NA
Approach	182	1.0	182	1.0		0.154		29.2	LOS C	2.7	69.2				
Intersection	2440	1.4	2440	1.4		0.335		14.1	LOS B	7.3	185.4				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.0 %
Number of Iterations: 8 (maximum specified: 10)

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LANE SUMMARY

Site: 101 [WIS 67 & CTH B/Valley Rd PM]

Network: N101 [Network1]

WIS 67 & CTH B/Valley Rd
Signals - Actuated Coordinated Cycle Time = 100 seconds (User-Given Phase Times)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist ft		ft	%	%
South: WIS 67															
Lane 1	57	1.0	57	1.0	467	0.121	100	10.0	LOS B	0.3	8.5	Short	380	0.0	NA
Lane 2	57	1.0	57	1.0	467	0.121	100	10.0	LOS B	0.3	8.5	Short	380	0.0	NA
Lane 3	306	1.0	306	1.0	734	0.417	100	6.1	LOS A	3.5	87.3	Full	945	0.0	0.0
Lane 4	306	1.0	306	1.0	734	0.417	100	2.1	LOS A	1.3	31.9	Full	945	0.0	0.0
Lane 5	306	1.0	306	1.0	734	0.417	100	5.2	LOS A	3.0	75.1	Full	945	0.0	0.0
Lane 6	52	1.0	52	1.0	1228	0.042	100	7.0	LOS A	0.0	1.0	Short	470	0.0	NA
Approach	1082	1.0	1082	1.0		0.417		5.2	LOS A	3.5	87.3				
East: CTH B/Valley Rd															
Lane 1	26	1.0	26	1.0	143	0.180	100	55.1	LOS E	1.2	31.1	Short	450	0.0	NA
Lane 2	26	1.0	26	1.0	143	0.180	100	55.1	LOS E	1.2	31.1	Short	450	0.0	NA
Lane 3	52	1.0	52	1.0	245	0.211	100	45.6	LOS D	2.3	58.3	Full	1600	0.0	0.0
Lane 4	52	1.0	52	1.0	245	0.211	100	45.6	LOS D	2.3	58.3	Full	1600	0.0	0.0
Lane 5	103	1.0	103	1.0	1144	0.090	100	6.7	LOS A	0.8	19.2	Short	230	0.0	NA
Approach	258	1.0	258	1.0		0.211		31.9	LOS C	2.3	58.3				
North: WIS 67															
Lane 1	64	2.0	64	2.0	477	0.135	100	20.3	LOS C	1.8	45.4	Short	440	0.0	NA
Lane 2	64	2.0	64	2.0	477	0.135	100	20.3	LOS C	1.8	45.4	Short	440	0.0	NA
Lane 3	222	2.0	222	2.0	764	0.290	100	25.1	LOS C	8.5	215.6	Full	1800	0.0	0.0
Lane 4	222	2.0	222	2.0	764	0.290	100	30.3	LOS C	9.3	235.4	Full	1800	0.0	0.0
Lane 5	222	2.0	222	2.0	764	0.290	100	23.5	LOS C	8.1	204.7	Full	1800	0.0	0.0
Lane 6	52	2.0	52	2.0	1270	0.041	100	7.2	LOS A	0.1	3.0	Short	460	0.0	NA
Approach	845	2.0	845	2.0		0.290		24.2	LOS C	9.3	235.4				
West: CTH B/Valley Rd															
Lane 1	75	3.0	75	3.0	141	0.532	100	56.4	LOS E	3.7	95.7	Short	330	0.0	NA
Lane 2	75	3.0	75	3.0	141	0.532	100	56.4	LOS E	3.7	95.7	Short	330	0.0	NA
Lane 3	52	3.0	52	3.0	240	0.215	100	44.5	LOS D	2.3	59.3	Full	1600	0.0	0.0
Lane 4	52	3.0	52	3.0	240	0.215	100	44.5	LOS D	2.3	59.3	Full	1600	0.0	0.0
Lane 5	170	3.0	170	3.0	978	0.174	100	6.8	LOS A	1.8	45.6	Short	130	0.0	NA
Approach	423	3.0	423	3.0		0.532		33.5	LOS C	3.7	95.7				
Intersection	2608	1.6	2608	1.6		0.532		18.6	LOS B	9.3	235.4				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.0 %
Number of Iterations: 8 (maximum specified: 10)

LANE SUMMARY

Site: 101 [WIS 67 & Oconomowoc Dr/Pabst Farms Blvd PM] Network: N101 [Network1]

WIS 67 & Oconomowoc Dr/Pabst Farms Blvd
Signals - Actuated Coordinated Cycle Time = 100 seconds (User-Given Phase Times)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist ft		ft	%	%
South: WIS 67															
Lane 1	106	1.0	106	1.0	444	0.239	100	22.1	LOS C	2.6	64.9	Short	430	0.0	NA
Lane 2	318	1.0	318	1.0	621	0.513	100	33.6	LOS C	13.9	349.6	Full	1525	0.0	0.0
Lane 3	318	1.0	318	1.0	621	0.513	100	30.3	LOS C	11.5	290.7	Full	1525	0.0	0.0
Lane 4	318	1.0	318	1.0	621	0.513	100	30.4	LOS C	11.6	291.9	Full	1525	0.0	0.0
Lane 5	146	1.0	146	1.0	1360	0.108	100	7.9	LOS A	1.0	25.8	Short	570	0.0	NA
Approach	1207	1.0	1207	1.0		0.513		27.7	LOS C	13.9	349.6				
East: Pabst Farms Blvd															
Lane 1	78	1.0	78	1.0	143	0.546	100	56.5	LOS E	3.9	98.6	Short	300	0.0	NA
Lane 2	78	1.0	78	1.0	143	0.546	100	56.5	LOS E	3.9	98.6	Short	300	0.0	NA
Lane 3	20	1.0	20	1.0	320	0.063	100	38.9	LOS D	0.8	21.0	Full	500	0.0	0.0
Lane 4	56	1.0	56	1.0	1017	0.055	100	8.0	LOS A	0.7	17.3	Short	175	0.0	NA
Approach	232	1.0	232	1.0		0.546		43.3	LOS D	3.9	98.6				
North: WIS 67															
Lane 1	10	3.0	10	3.0	228	0.044	100	55.1	LOS E	0.5	12.6	Short	415	0.0	NA
Lane 2	10	3.0	10	3.0	228	0.044	100	55.1	LOS E	0.5	12.6	Short	415	0.0	NA
Lane 3	278	3.0	278	3.0	609	0.456	100	10.6	LOS B	5.0	128.2	Full	945	0.0	0.0
Lane 4	278	3.0	278	3.0	609	0.456	100	11.6	LOS B	5.4	138.0	Full	945	0.0	0.0
Lane 5	278	3.0	278	3.0	609	0.456	100	20.0	LOS B	8.2	209.5	Full	945	0.0	0.0
Lane 6	15	3.0	15	3.0	1255	0.012	100	7.4	LOS A	0.0	0.9	Short	465	0.0	NA
Approach	869	3.0	869	3.0		0.456		14.9	LOS B	8.2	209.5				
West: Oconomowoc Dr															
Lane 1	51	2.0	51	2.0	142	0.356	100	55.3	LOS E	2.5	62.8	Short	160	0.0	NA
Lane 2	25	2.0	25	2.0	317	0.080	100	39.2	LOS D	1.0	26.6	Full	1600	0.0	0.0
Lane 3	177	2.0	177	2.0	991	0.178	100	7.3	LOS A	2.1	53.2	Short	300	0.0	NA
Approach	253	2.0	253	2.0		0.356		20.1	LOS C	2.5	62.8				
Intersection	2561	1.8	2561	1.8		0.546		24.1	LOS C	13.9	349.6				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.0 %
Number of Iterations: 8 (maximum specified: 10)

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LANE SUMMARY

Site: 101 [WIS 67 & I-94 WB Ramps PM]

Network: N101 [Network1]

WIS 67 & I-94 WB Ramps
Signals - Actuated Coordinated Cycle Time = 100 seconds (User-Given Phase Times)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist ft		ft	%	%
South: WIS 67															
Lane 1	69	1.0	69	1.0	233	0.295	100	52.0	LOS D	3.3	82.8	Short	535	0.0	NA
Lane 2	14	1.0	14	1.0	233	0.059	20[6]	49.7	LOS D	0.6	16.0	Short	535	0.0	NA
Lane 3	220	1.0	220	1.0	1016	0.217	100	13.2	LOS B	4.9	122.8	Full	1055	0.0	0.0
Lane 4	220	1.0	220	1.0	1016	0.217	100	15.5	LOS B	6.8	170.8	Full	1055	0.0	0.0
Lane 5	220	1.0	220	1.0	1016	0.217	100	18.5	LOS B	7.9	198.1	Full	1055	0.0	0.0
Approach	742	1.0	742	1.0		0.295		19.7	LOS B	7.9	198.1				
East: I-94 WB Off Ramp															
Lane 1	114	4.0	114	4.0	557	0.205	100	32.9	LOS C	4.0	104.4	Short	425	0.0	NA
Lane 2	114	4.0	114	4.0	557	0.205	100	32.8	LOS C	4.0	104.5	Full	1600	0.0	0.0
Lane 3	200	4.0	200	4.0	495	0.404	100	35.3	LOS D	7.7	199.0	Short	680	0.0	NA
Lane 4	200	4.0	200	4.0	495	0.404	100	35.3	LOS D	7.7	199.0	Short	680	0.0	NA
Approach	628	4.0	628	4.0		0.404		34.4	LOS C	7.7	199.0				
North: WIS 67															
Lane 1	244	3.0	244	3.0	627	0.388	100	7.4	LOS A	3.0	77.9	Full	1525	0.0	0.0
Lane 2	244	3.0	244	3.0	627	0.388	100	11.2	LOS B	4.4	112.6	Full	1525	0.0	0.0
Lane 3	244	3.0	244	3.0	627	0.388	100	16.3	LOS B	6.0	153.2	Full	1525	0.0	0.0
Lane 4	244	3.0	244	3.0	627	0.388	100	27.4	LOS C	8.0	205.6	Full	1525	0.0	0.0
Lane 5	216	3.0	216	3.0	1266	0.171	100	7.3	LOS A	0.6	15.2	Short	515	0.0	NA
Approach	1191	3.0	1191	3.0		0.388		14.1	LOS B	8.0	205.6				
Intersection	2561	2.7	2561	2.7		0.404		20.7	LOS C	8.0	205.6				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.0 %
Number of Iterations: 8 (maximum specified: 10)

6 Lane under-utilisation due to downstream effects

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LANE SUMMARY

Site: 101 [WIS 67 & I-94 EB Ramps PM]

Network: N101 [Network1]

WIS 67 & I-94 EB Ramps
Signals - Actuated Coordinated Cycle Time = 100 seconds (Network Cycle Time - User-Given)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist ft		ft	%	%
South: WIS 67															
Lane 1	283	3.0	283	3.0	1217	0.233	100	7.5	LOS A	5.4	139.5	Full	1600	0.0	0.0
Lane 2	283	3.0	283	3.0	1217	0.233	100	7.5	LOS A	5.4	139.5	Full	1600	0.0	0.0
Lane 3	291	3.0	291	3.0	1563	0.186	100	7.0	LOS A	0.0	0.0	Short	340	0.0	NA
Approach	857	3.0	857	3.0		0.233		7.3	LOS A	5.4	139.5				
North: WIS 67															
Lane 1	347	4.0	347	4.0	1206	0.288	100	6.8	LOS A	5.4	139.8	Full	1055	0.0	0.0
Lane 2	347	4.0	347	4.0	1206	0.288	100	8.1	LOS A	7.6	197.2	Full	1055	0.0	0.0
Lane 3	247	4.0	247	4.0	1548	0.160	100	7.0	LOS A	0.0	0.0	Full	1055	0.0	0.0
Lane 4	247	4.0	247	4.0	1548	0.160	100	7.0	LOS A	0.0	0.0	Full	1055	0.0	0.0
Approach	1189	4.0	1189	4.0		0.288		7.2	LOS A	7.6	197.2				
West: I-94 EB On/Off Ramps															
Lane 1	84	2.0	84	2.0	355	0.237	100	43.3	LOS D	3.5	89.1	Short	285	0.0	NA
Lane 2	84	2.0	84	2.0	355	0.237	100	43.3	LOS D	3.5	89.1	Full	1600	0.0	0.0
Lane 3	66	2.0	66	2.0	850	0.078	100	7.0	LOS A	0.6	14.2	Full	1600	0.0	0.0
Approach	235	2.0	235	2.0		0.237		33.0	LOS C	3.5	89.1				
Intersection	2281	3.4	2281	3.4		0.288		9.9	LOS A	7.6	197.2				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.0 %
Number of Iterations: 8 (maximum specified: 10)

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LANE SUMMARY

Site: 102 [WIS 167 & Port Washington Rd PM]

Network: N101 [Network1]

New Site
Signals - Actuated Coordinated Cycle Time = 130 seconds (User-Given Phase Times)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist ft		ft	%	%
South: Port Washington Road															
Lane 1	141	1.0	141	1.0	331	0.425	100	58.2	LOS E	8.0	201.4	Short	145	0.0	NA
Lane 2	141	1.0	141	1.0	331	0.425	100	58.2	LOS E	8.0	201.4	Short	145	0.0	NA
Lane 3	167	1.0	167	1.0	362	0.461	100	52.5	LOS D	9.5	238.4	Full	1600	0.0	0.0
Lane 4	167	1.0	167	1.0	362	0.461	100	52.5	LOS D	9.5	238.4	Full	1600	0.0	0.0
Lane 5	207	1.0	207	1.0	517	0.400	100	39.9	LOS D	9.8	246.6	Full	1600	-10.3 N3	0.0
Approach	821	1.0	821	1.0		0.461		51.3	LOS D	9.8	246.6				
East: WIS 167															
Lane 1	224	2.0	224	2.0	325	0.689	100	35.7	LOS D	9.2	234.6	Full	390	0.0	0.0
Lane 2	266	2.0	266	2.0	487	0.545	100	46.3	LOS D	14.5	369.3	Full	390	0.0	0.1
Lane 3	266	2.0	266	2.0	487	0.545	100	61.5	LOS E	16.7	424.9	Full	390	0.0	12.7
Lane 4	245	2.0	245	2.0	814	0.302	100	25.1	LOS C	8.8	223.7	Full	390	0.0	0.0
Approach	1001	2.0	1001	2.0		0.689		42.8	LOS D	16.7	424.9				
North: Port Washington Road															
Lane 1	240	1.0	240	1.0	358	0.670	100	59.7	LOS E	14.2	359.1	Short	220	0.0	NA
Lane 2	203	1.0	203	1.0	303	0.670	100	60.1	LOS E	12.1	305.7	Short	220	-15.5 N3	NA
Lane 3	190	1.0	190	1.0	391	0.487	100	51.1	LOS D	10.7	269.9	Full	1600	0.0	0.0
Lane 4	180	1.0	180	1.0	369 1	0.487	100	50.8	LOS D	10.1	253.5	Full	1600	0.0	0.0
Lane 5	223	1.0	223	1.0	650	0.343	100	34.6	LOS C	9.7	243.3	Short	145	0.0	NA
Approach	1035	1.0	1035	1.0		0.670		51.2	LOS D	14.2	359.1				
West: WIS 167															
Lane 1	255	2.0	255	2.0	383	0.666	100	34.9	LOS C	10.6	269.9	Short	250	0.0	NA
Lane 2	309	2.0	309	2.0	447 1	0.691	100	45.6	LOS D	17.4	440.7	Full	1600	-15.5 N3	0.0
Lane 3	337	2.0	337	2.0	488	0.691	100	45.9	LOS D	19.0	483.7	Full	1600	-10.3 N3	0.0
Lane 4	149	2.0	149	2.0	838	0.177	100	22.5	LOS C	4.8	121.8	Full	1600	0.0	0.0
Approach	1050	2.0	1050	2.0		0.691		39.8	LOS D	19.0	483.7				
Intersection	3907	1.5	3907	1.5		0.691		46.0	LOS D	19.0	483.7				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.2 %
Number of Iterations: 10 (maximum specified: 10)

1 Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.
N3 Capacity Adjustment due to downstream lane blockage determined by the program.

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LANE SUMMARY

Site: 101 [WIS 167 & SB Ramps PM]

Network: N101 [Network1]

WIS 167 & SB Ramps
Signals - Actuated Coordinated Cycle Time = 130 seconds (User-Given Phase Times)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist ft		ft	%	%
East: WIS 167															
Lane 1	36	2.0	36	2.0	477	0.076	100	5.5	LOS A	0.0	0.8	Short	310	0.0	NA
Lane 2	398	2.0	398	2.0	975	0.408	100	0.8	LOS A	0.8	21.0	Full	590	-12.7 N3	0.0
Lane 3	456	2.0	456	2.0	1118	0.408	100	0.8	LOS A	0.9	24.0	Full	590	0.0	0.0
Approach	891	2.0	891	2.0		0.408		1.0	LOS A	0.9	24.0				
North: I-43 SB Off Ramp															
Lane 1	38	4.0	38	4.0	148	0.253	100	68.3	LOS E	2.3	59.3	Full	1600	-7.9 N3	0.0
Lane 2	101	4.0	101	4.0	422 1	0.239	100	42.3	LOS D	4.7	122.0	Short	50	0.0	NA
Approach	138	4.0	138	4.0		0.253		49.4	LOS D	4.7	122.0				
West: WIS 167															
Lane 1	408	1.0	408	1.0	1117	0.365	100	9.6	LOS A	8.9	223.3	Full	390	-8.1 N3	0.0
Lane 2	419	1.0	419	1.0	1149	0.365	100	19.0	LOS B	17.5	440.7	Full	390	0.0	16.1
Lane 3	376	1.0	376	1.0	1030	0.365	100	23.7	LOS C	16.5	416.2	Full	390	0.0	10.9
Approach	1203	1.0	1203	1.0		0.365		17.3	LOS B	17.5	440.7				
Intersection	2232	1.6	2232	1.6		0.408		12.8	LOS B	17.5	440.7				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.2 %
Number of Iterations: 10 (maximum specified: 10)

1 Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.
N3 Capacity Adjustment due to downstream lane blockage determined by the program.

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LANE SUMMARY

Site: 103 [WIS 167 & NB Ramps PM]

Network: N101 [Network1]

WIS 167 & NB Ramps
Signals - Actuated Coordinated Cycle Time = 130 seconds (User-Given Phase Times)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist ft		ft	%	%
South: I-43 NB Off Ramp															
Lane 1	411	1.0	411	1.0	593	0.694	100	47.4	LOS D	22.6	569.6	Short	530	0.0	NA
Lane 2	356	1.0	356	1.0	513[1]	0.694	100	45.7	LOS D	18.8	473.5	Full	1600	0.0	0.0
Lane 3	63	1.0	63	1.0	1226	0.051	100	6.4	LOS A	0.5	11.9	Short	90	0.0	NA
Approach	829	1.0	829	1.0		0.694		43.6	LOS D	22.6	569.6				
East: WIS 167															
Lane 1	156	3.0	156	3.0	342	0.456	100	53.6	LOS D	8.9	227.3	Full	1600	0.0	0.0
Approach	156	3.0	156	3.0		0.456		53.6	LOS D	8.9	227.3				
West: WIS 167															
Lane 1	562	1.0	562	1.0	782	0.719	100	29.4	LOS C	24.2	610.5	Full	590	0.0	8.1
Lane 2	167	1.0	167	1.0	1071	0.156	100	21.6	LOS C	7.5	189.9	Full	590	0.0	0.0
Approach	729	1.0	729	1.0		0.719		27.6	LOS C	24.2	610.5				
Intersection	1715	1.2	1715	1.2		0.719		37.7	LOS D	24.2	610.5				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.2 %
Number of Iterations: 10 (maximum specified: 10)

1 Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

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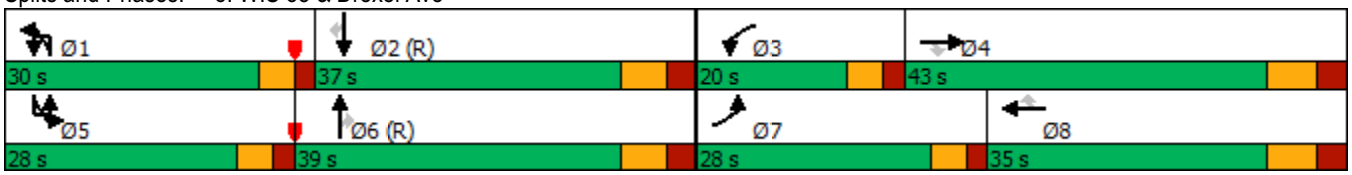
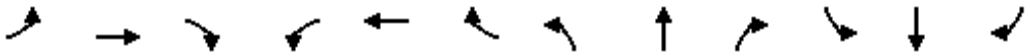
Software Output Reports – Existing Conditions
Signalized Corridors
Synchro Version 10.0.1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	390	410	115	305	70	260	610	120	140	870	135
Future Volume (vph)	125	390	410	115	305	70	260	610	120	140	870	135
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4			8			6			2
Detector Phase	7	4	4	3	8	8	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	6.0	10.0	10.0	6.0	10.0	10.0	6.0	15.0	15.0	6.0	15.0	15.0
Minimum Split (s)	11.5	51.0	51.0	11.5	49.0	49.0	11.5	44.4	44.4	11.5	49.4	49.4
Total Split (s)	28.0	43.0	43.0	20.0	35.0	35.0	30.0	39.0	39.0	28.0	37.0	37.0
Total Split (%)	21.5%	33.1%	33.1%	15.4%	26.9%	26.9%	23.1%	30.0%	30.0%	21.5%	28.5%	28.5%
Yellow Time (s)	3.5	5.0	5.0	3.5	5.0	5.0	3.5	4.4	4.4	3.5	4.4	4.4
All-Red Time (s)	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	8.0	8.0	5.5	8.0	8.0	5.5	7.4	7.4	5.5	7.4	7.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	8.9	26.4	26.4	8.6	26.1	26.1	14.7	58.8	58.8	9.8	53.9	53.9
Actuated g/C Ratio	0.07	0.20	0.20	0.07	0.20	0.20	0.11	0.45	0.45	0.08	0.41	0.41
v/c Ratio	0.56	0.58	0.84	0.54	0.46	0.15	0.73	0.41	0.11	0.60	0.44	0.14
Control Delay	67.6	49.1	71.2	67.3	46.7	41.0	70.8	30.4	27.6	67.6	30.1	28.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.6	49.1	71.2	67.3	46.7	41.0	70.8	30.4	27.6	67.6	30.1	28.5
LOS	E	D	E	E	D	D	E	C	C	E	C	C
Approach Delay		59.4			51.3			41.5			35.0	
Approach LOS		E			D			D			C	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 7 (5%), Referenced to phase 2:SBT and 6:NBT, Start of 1st Green	
Natural Cycle: 125	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 44.9	Intersection LOS: D
Intersection Capacity Utilization 67.1%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 3: WIS 38 & Drexel Ave





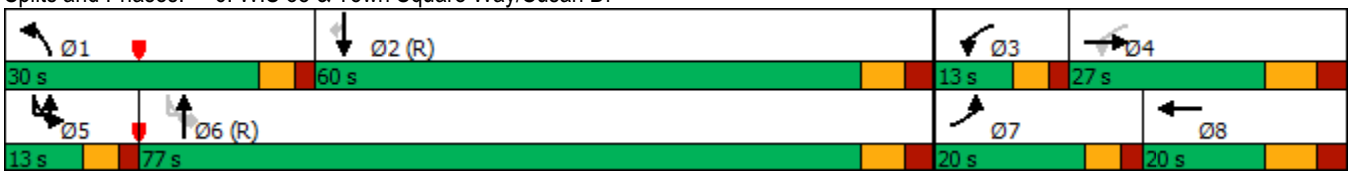
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	134	419	273	124	328	47	285	656	80	156	935	90
v/c Ratio	0.56	0.58	0.84	0.54	0.46	0.15	0.73	0.41	0.11	0.60	0.44	0.14
Control Delay	67.6	49.1	71.2	67.3	46.7	41.0	70.8	30.4	27.6	67.6	30.1	28.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.6	49.1	71.2	67.3	46.7	41.0	70.8	30.4	27.6	67.6	30.1	28.5
Queue Length 50th (ft)	57	169	223	53	129	33	132	202	47	67	203	46
Queue Length 95th (ft)	90	204	300	84	162	63	180	160	54	101	300	103
Internal Link Dist (ft)		486			309			1080			942	
Turn Bay Length (ft)	245		375	170		180	375		260	440		430
Base Capacity (vph)	600	965	431	386	804	359	646	1600	715	600	2128	662
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.43	0.63	0.32	0.41	0.13	0.44	0.41	0.11	0.26	0.44	0.14

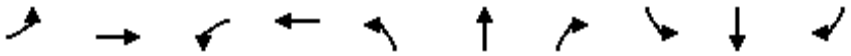
Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	135	5	5	5	120	850	10	15	10	1250	125
Future Volume (vph)	135	5	5	5	120	850	10	15	10	1250	125
Turn Type	Prot	NA	D.P+P	NA	Prot	NA	Perm	D.P+P	D.P+P	NA	Perm
Protected Phases	7	4	3	8	1	6		5	5	2	
Permitted Phases			4				6	6	6		2
Detector Phase	7	4	3	8	1	6	6	5	5	2	2
Switch Phase											
Minimum Initial (s)	6.0	10.0	6.0	10.0	6.0	15.0	15.0	6.0	6.0	15.0	15.0
Minimum Split (s)	11.5	47.2	11.5	54.2	21.5	36.2	36.2	11.5	11.5	43.2	43.2
Total Split (s)	20.0	27.0	13.0	20.0	30.0	77.0	77.0	13.0	13.0	60.0	60.0
Total Split (%)	15.4%	20.8%	10.0%	15.4%	23.1%	59.2%	59.2%	10.0%	10.0%	46.2%	46.2%
Yellow Time (s)	3.5	5.2	3.5	5.2	3.5	4.3	4.3	3.5	3.5	4.3	4.3
All-Red Time (s)	2.0	3.0	2.0	3.0	2.0	2.9	2.9	2.0	2.0	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.5	8.2	5.5	8.2	5.5	7.2	7.2		5.5	7.2	7.2
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Min	C-Min	None	None	C-Min	C-Min
Act Effct Green (s)	12.5	20.1	24.0	11.6	8.7	85.3	85.3		90.6	78.0	78.0
Actuated g/C Ratio	0.10	0.15	0.18	0.09	0.07	0.66	0.66		0.70	0.60	0.60
v/c Ratio	0.42	0.67	0.02	0.14	0.55	0.38	0.01		0.06	0.42	0.08
Control Delay	60.0	64.2	36.0	55.2	61.5	16.1	21.8		5.9	10.5	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	60.0	64.2	36.0	55.2	61.5	16.1	21.8		5.9	10.5	10.2
LOS	E	E	D	E	E	B	C		A	B	B
Approach Delay		62.3		51.5		21.7				10.4	
Approach LOS		E		D		C				B	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 125 (96%), Referenced to phase 2:SBT and 6:NBSB, Start of 1st Green	
Natural Cycle: 135	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay: 20.8	Intersection LOS: C
Intersection Capacity Utilization 57.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 6: WIS 38 & Town Square Way/Susan Dr





Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	141	166	5	21	125	885	6	26	1302	81
v/c Ratio	0.42	0.67	0.02	0.14	0.55	0.38	0.01	0.06	0.42	0.08
Control Delay	60.0	64.2	36.0	55.2	61.5	16.1	21.8	5.9	10.5	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.0	64.2	36.0	55.2	61.5	16.1	21.8	5.9	10.5	10.2
Queue Length 50th (ft)	60	128	3	17	57	110	1	4	145	24
Queue Length 95th (ft)	93	205	13	42	92	335	m8	m14	150	m40
Internal Link Dist (ft)		266		357		1421			1080	
Turn Bay Length (ft)	195		50		410		245	450		280
Base Capacity (vph)	402	278	238	167	640	2313	1035	441	3079	958
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.60	0.02	0.13	0.20	0.38	0.01	0.06	0.42	0.08

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBU	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	70	40	155	35	25	15	90	865	30	5	95	1230
Future Volume (vph)	70	40	155	35	25	15	90	865	30	5	95	1230
Turn Type	D.P+P	NA	Perm	D.P+P	NA	D.P+P	D.P+P	NA	Perm	D.P+P	D.P+P	NA
Protected Phases	7	4		3	8	1	1	6		5	5	2
Permitted Phases	8		4	4		2	2		6	6	6	
Detector Phase	7	4	4	3	8	1	1	6	6	5	5	2
Switch Phase												
Minimum Initial (s)	6.0	10.0	10.0	6.0	10.0	6.0	6.0	15.0	15.0	6.0	6.0	15.0
Minimum Split (s)	11.5	49.6	49.6	11.5	51.6	11.5	11.5	41.8	41.8	21.5	21.5	42.8
Total Split (s)	26.0	40.0	40.0	13.0	27.0	18.0	18.0	62.0	62.0	15.0	15.0	59.0
Total Split (%)	20.0%	30.8%	30.8%	10.0%	20.8%	13.8%	13.8%	47.7%	47.7%	11.5%	11.5%	45.4%
Yellow Time (s)	3.5	4.6	4.6	3.5	4.6	3.5	3.5	4.3	4.3	3.5	3.5	4.3
All-Red Time (s)	2.0	3.0	3.0	2.0	3.0	2.0	2.0	2.5	2.5	2.0	2.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.5	7.6	7.6	5.5	7.6		5.5	6.8	6.8		5.5	6.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	None	C-Min
Act Effct Green (s)	22.1	16.9	16.9	23.2	13.0		87.0	78.8	78.8		87.0	77.6
Actuated g/C Ratio	0.17	0.13	0.13	0.18	0.10		0.67	0.61	0.61		0.67	0.60
v/c Ratio	0.30	0.17	0.49	0.14	0.66		0.36	0.42	0.02		0.26	0.42
Control Delay	43.2	50.9	60.1	39.3	74.3		12.8	21.8	16.1		5.5	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Delay	43.2	50.9	60.1	39.3	74.3		12.8	21.8	16.1		5.5	8.5
LOS	D	D	E	D	E		B	C	B		A	A
Approach Delay		52.6			65.6			20.7				8.2
Approach LOS		D			E			C				A

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 44 (34%), Referenced to phase 2:NBSB and 6:NBSB, Start of 1st Green	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay: 19.1	Intersection LOS: B
Intersection Capacity Utilization 64.1%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 9: WIS 38 & Forest Hill Ave

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	55
Future Volume (vph)	55
Turn Type	Perm
Protected Phases	
Permitted Phases	2
Detector Phase	2
Switch Phase	
Minimum Initial (s)	15.0
Minimum Split (s)	42.8
Total Split (s)	59.0
Total Split (%)	45.4%
Yellow Time (s)	4.3
All-Red Time (s)	2.5
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.8
Lead/Lag	Lag
Lead-Lag Optimize?	Yes
Recall Mode	C-Min
Act Effct Green (s)	77.6
Actuated g/C Ratio	0.60
v/c Ratio	0.04
Control Delay	6.3
Queue Delay	0.0
Total Delay	6.3
LOS	A
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	73	42	100	36	109	110	901	19	104	1281	36
v/c Ratio	0.30	0.17	0.49	0.14	0.66	0.36	0.42	0.02	0.26	0.42	0.04
Control Delay	43.2	50.9	60.1	39.3	74.3	12.8	21.8	16.1	5.5	8.5	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.2	50.9	60.1	39.3	74.3	12.8	21.8	16.1	5.5	8.5	6.3
Queue Length 50th (ft)	51	33	81	25	90	32	286	9	9	173	5
Queue Length 95th (ft)	87	66	135	50	148	73	390	24	18	185	m9
Internal Link Dist (ft)		496			316		2565			1421	
Turn Bay Length (ft)	325		170	120		470		280	350		270
Base Capacity (vph)	354	464	394	273	248	362	2144	959	438	3066	954
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.09	0.25	0.13	0.44	0.30	0.42	0.02	0.24	0.42	0.04

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	115	360	85	235	195	120	590	130	205	970	145
Future Volume (vph)	115	360	85	235	195	120	590	130	205	970	145
Turn Type	D.P+P	NA	D.P+P	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		1	6		5	2	
Permitted Phases	8		4		8			6			2
Detector Phase	7	4	3	8	8	1	6	6	5	2	2
Switch Phase											
Minimum Initial (s)	6.0	10.0	6.0	10.0	10.0	6.0	15.0	15.0	6.0	15.0	15.0
Minimum Split (s)	11.5	48.2	11.5	47.2	47.2	11.5	40.2	40.2	11.5	43.2	43.2
Total Split (s)	15.0	35.0	15.0	35.0	35.0	25.0	60.0	60.0	20.0	55.0	55.0
Total Split (%)	11.5%	26.9%	11.5%	26.9%	26.9%	19.2%	46.2%	46.2%	15.4%	42.3%	42.3%
Yellow Time (s)	3.5	4.2	3.5	4.2	4.2	3.5	4.3	4.3	3.5	4.3	4.3
All-Red Time (s)	2.0	3.0	2.0	3.0	3.0	2.0	2.9	2.9	2.0	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	7.2	5.5	7.2	7.2	5.5	7.2	7.2	5.5	7.2	7.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	33.5	23.6	33.5	22.6	22.6	8.7	61.1	61.1	11.7	64.1	64.1
Actuated g/C Ratio	0.26	0.18	0.26	0.17	0.17	0.07	0.47	0.47	0.09	0.49	0.49
v/c Ratio	0.37	0.86	0.47	0.40	0.45	0.55	0.37	0.11	0.69	0.57	0.12
Control Delay	36.5	65.3	40.4	48.9	52.9	68.2	20.8	20.3	93.4	9.7	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.5	65.3	40.4	48.9	52.9	68.2	20.8	20.3	93.4	9.7	5.3
LOS	D	E	D	D	D	E	C	C	F	A	A
Approach Delay		60.0		48.4			27.9			23.0	
Approach LOS		E		D			C			C	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 68 (52%), Referenced to phase 2:SBT and 6:NBT, Start of 1st Green	
Natural Cycle: 115	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 35.2	Intersection LOS: D
Intersection Capacity Utilization 72.7%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 12: WIS 38 & Puetz Rd

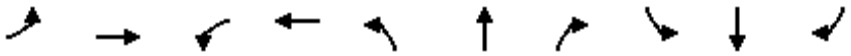
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	120	531	89	245	126	125	615	84	214	1010	94
v/c Ratio	0.37	0.86	0.47	0.40	0.45	0.55	0.37	0.11	0.69	0.57	0.12
Control Delay	36.5	65.3	40.4	48.9	52.9	68.2	20.8	20.3	93.4	9.7	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.5	65.3	40.4	48.9	52.9	68.2	20.8	20.3	93.4	9.7	5.3
Queue Length 50th (ft)	75	229	55	97	96	56	137	34	90	227	10
Queue Length 95th (ft)	120	286	93	133	154	89	227	77	141	56	15
Internal Link Dist (ft)		603		551			1245			2565	
Turn Bay Length (ft)	380		315		90	215		305	225		260
Base Capacity (vph)	338	730	210	764	341	514	1663	744	386	1762	788
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.73	0.42	0.32	0.37	0.24	0.37	0.11	0.55	0.57	0.12

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	160	40	60	45	70	575	70	160	865	175
Future Volume (vph)	160	40	60	45	70	575	70	160	865	175
Turn Type	D.P+P	NA	D.P+P	NA	D.P+P	NA	Perm	D.P+P	NA	Perm
Protected Phases	7	4	3	8	1	6		5	2	
Permitted Phases	8		4		2		6	6		2
Detector Phase	7	4	3	8	1	6	6	5	2	2
Switch Phase										
Minimum Initial (s)	6.0	10.0	6.0	10.0	6.0	15.0	15.0	6.0	15.0	15.0
Minimum Split (s)	11.5	49.2	11.5	48.2	11.5	35.7	35.7	11.5	37.7	37.7
Total Split (s)	22.0	33.0	19.0	30.0	17.0	56.0	56.0	22.0	61.0	61.0
Total Split (%)	16.9%	25.4%	14.6%	23.1%	13.1%	43.1%	43.1%	16.9%	46.9%	46.9%
Yellow Time (s)	3.5	4.2	3.5	4.2	3.5	4.3	4.3	3.5	4.3	4.3
All-Red Time (s)	2.0	3.0	2.0	3.0	2.0	2.4	2.4	2.0	2.4	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	7.2	5.5	7.2	5.5	6.7	6.7	5.5	6.7	6.7
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	29.1	22.1	30.2	13.8	80.0	68.5	68.5	78.9	73.3	73.3
Actuated g/C Ratio	0.22	0.17	0.23	0.11	0.62	0.53	0.53	0.61	0.56	0.56
v/c Ratio	0.53	0.35	0.20	0.68	0.22	0.33	0.06	0.34	0.46	0.13
Control Delay	43.5	50.9	35.5	74.6	11.5	19.8	18.7	5.9	7.8	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.5	50.9	35.5	74.6	11.5	19.8	18.7	5.9	7.8	7.2
LOS	D	D	D	E	B	B	B	A	A	A
Approach Delay		46.3		61.1		18.9			7.5	
Approach LOS		D		E		B			A	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 94 (72%), Referenced to phase 2:NBSB and 6:NBSB, Start of 1st Green	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.68	
Intersection Signal Delay: 19.5	Intersection LOS: B
Intersection Capacity Utilization 60.6%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 15: WIS 38 & Centennial Dr



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	172	102	65	123	75	618	47	172	930	117
v/c Ratio	0.53	0.35	0.20	0.68	0.22	0.33	0.06	0.34	0.46	0.13
Control Delay	43.5	50.9	35.5	74.6	11.5	19.8	18.7	5.9	7.8	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.5	50.9	35.5	74.6	11.5	19.8	18.7	5.9	7.8	7.2
Queue Length 50th (ft)	119	79	42	102	21	150	18	27	97	23
Queue Length 95th (ft)	166	127	73	163	50	242	49	m45	100	m0
Internal Link Dist (ft)		557		655		824			1245	
Turn Bay Length (ft)	420		175		380		185	360		290
Base Capacity (vph)	367	344	387	296	406	1864	833	591	2015	901
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.30	0.17	0.42	0.18	0.33	0.06	0.29	0.46	0.13

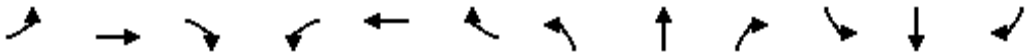
Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	35	150	50	35	145	170	880	85	85	620	75
Future Volume (vph)	45	35	150	50	35	145	170	880	85	85	620	75
Turn Type	D.Pm	NA	pt+ov	D.Pm	NA	Perm	D.P+P	NA	Perm	D.P+P	NA	Perm
Protected Phases		4	4 1		8		1	6		5	2	
Permitted Phases	8			4		8	2		6	6		2
Detector Phase	8	4	4 1	4	8	8	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	8.0	15.0	15.0	8.0	15.0	15.0
Minimum Split (s)	52.0	52.0		52.0	52.0	52.0	13.5	31.3	31.3	13.5	32.3	32.3
Total Split (s)	30.0	30.0		30.0	30.0	30.0	25.0	55.0	55.0	15.0	45.0	45.0
Total Split (%)	30.0%	30.0%		30.0%	30.0%	30.0%	25.0%	55.0%	55.0%	15.0%	45.0%	45.0%
Yellow Time (s)	5.0	5.0		5.0	5.0	5.0	3.5	4.3	4.3	3.5	4.3	4.3
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	8.0	8.0		8.0	8.0	8.0	5.5	6.3	6.3	5.5	6.3	6.3
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	11.3	11.3	23.5	11.3	11.3	11.3	73.3	68.5	68.5	74.4	63.1	63.1
Actuated g/C Ratio	0.11	0.11	0.24	0.11	0.11	0.11	0.73	0.68	0.68	0.74	0.63	0.63
v/c Ratio	0.30	0.17	0.26	0.34	0.18	0.53	0.28	0.26	0.05	0.18	0.20	0.05
Control Delay	45.4	41.3	30.4	46.8	41.4	52.7	3.6	3.1	2.6	4.4	9.3	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.4	41.3	30.4	46.8	41.4	52.7	3.6	3.1	2.6	4.4	9.3	9.9
LOS	D	D	C	D	D	D	A	A	A	A	A	A
Approach Delay		36.5			48.7			3.2			8.8	
Approach LOS		D			D			A			A	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 96 (96%), Referenced to phase 2:NBSB and 6:NBSB, Start of 1st Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.53	
Intersection Signal Delay: 11.3	Intersection LOS: B
Intersection Capacity Utilization 52.3%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 3: WIS 67 & Oconomowoc Pkwy



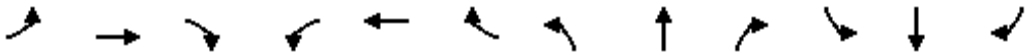
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	47	37	98	53	37	95	179	926	55	89	653	49
v/c Ratio	0.30	0.17	0.26	0.34	0.18	0.53	0.28	0.26	0.05	0.18	0.20	0.05
Control Delay	45.4	41.3	30.4	46.8	41.4	52.7	3.6	3.1	2.6	4.4	9.3	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.4	41.3	30.4	46.8	41.4	52.7	3.6	3.1	2.6	4.4	9.3	9.9
Queue Length 50th (ft)	28	22	51	32	22	59	18	15	2	11	60	11
Queue Length 95th (ft)	62	50	84	68	50	107	14	26	7	28	102	33
Internal Link Dist (ft)		1261			1367			1721			1220	
Turn Bay Length (ft)			150			175	400		310	375		410
Base Capacity (vph)	303	413	536	300	409	348	785	3516	1094	521	3207	998
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.09	0.18	0.18	0.09	0.27	0.23	0.26	0.05	0.17	0.20	0.05

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	145	100	165	50	100	100	110	890	50	125	645	50
Future Volume (vph)	145	100	165	50	100	100	110	890	50	125	645	50
Turn Type	Prot	NA	Perm	Prot	NA	Perm	D.P+P	NA	Perm	D.P+P	NA	Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4			8	2		6	6		2
Detector Phase	7	4	4	3	8	8	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	8.0	10.0	10.0	8.0	10.0	10.0	8.0	15.0	15.0	8.0	15.0	15.0
Minimum Split (s)	14.0	56.8	56.8	14.0	56.8	56.8	14.0	40.6	40.6	14.0	40.6	40.6
Total Split (s)	15.0	21.0	21.0	15.0	21.0	21.0	17.0	45.0	45.0	19.0	47.0	47.0
Total Split (%)	15.0%	21.0%	21.0%	15.0%	21.0%	21.0%	17.0%	45.0%	45.0%	19.0%	47.0%	47.0%
Yellow Time (s)	3.5	4.8	4.8	3.5	4.8	4.8	3.5	4.3	4.3	3.5	4.3	4.3
All-Red Time (s)	2.5	3.0	3.0	2.5	3.0	3.0	2.5	2.3	2.3	2.5	2.3	2.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	7.8	7.8	6.0	7.8	7.8	6.0	6.6	6.6	6.0	6.6	6.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	9.7	11.7	11.7	8.0	10.8	10.8	57.3	48.7	48.7	57.3	48.7	48.7
Actuated g/C Ratio	0.10	0.12	0.12	0.08	0.11	0.11	0.57	0.49	0.49	0.57	0.49	0.49
v/c Ratio	0.45	0.25	0.57	0.19	0.27	0.37	0.12	0.37	0.04	0.17	0.27	0.04
Control Delay	47.5	41.0	53.9	44.8	42.5	47.7	8.2	13.8	12.3	13.0	22.4	23.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.5	41.0	53.9	44.8	42.5	47.7	8.2	13.8	12.3	13.0	22.4	23.0
LOS	D	D	D	D	D	D	A	B	B	B	C	C
Approach Delay		47.5			44.6			13.2			21.0	
Approach LOS		D			D			B			C	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 53 (53%), Referenced to phase 2:NBSB and 6:NBSB, Start of 1st Green	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.57	
Intersection Signal Delay: 23.5	Intersection LOS: C
Intersection Capacity Utilization 51.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 6: WIS 67 & CTH B (Valley Rd)



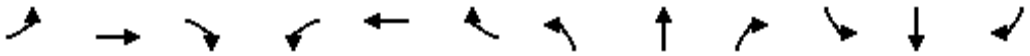
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	149	103	105	52	103	64	113	918	32	129	665	32
v/c Ratio	0.45	0.25	0.57	0.19	0.27	0.37	0.12	0.37	0.04	0.17	0.27	0.04
Control Delay	47.5	41.0	53.9	44.8	42.5	47.7	8.2	13.8	12.3	13.0	22.4	23.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.5	41.0	53.9	44.8	42.5	47.7	8.2	13.8	12.3	13.0	22.4	23.0
Queue Length 50th (ft)	47	32	65	16	32	39	8	176	6	23	114	14
Queue Length 95th (ft)	77	55	114	35	57	79	17	74	15	47	168	39
Internal Link Dist (ft)		1911			2288			865			1721	
Turn Bay Length (ft)	330		130	450		230	380		470	440		460
Base Capacity (vph)	341	478	213	312	471	211	1053	2499	778	914	2474	770
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.22	0.49	0.17	0.22	0.30	0.11	0.37	0.04	0.14	0.27	0.04

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	25	175	155	20	55	105	945	145	20	825	15
Future Volume (vph)	50	25	175	155	20	55	105	945	145	20	825	15
Turn Type	Prot	NA	Perm	Prot	NA	Perm	D.P+P	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4			8	2		6			2
Detector Phase	7	4	4	3	8	8	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	8.0	10.0	10.0	8.0	10.0	10.0	8.0	15.0	15.0	8.0	15.0	15.0
Minimum Split (s)	13.5	58.3	58.3	14.0	57.3	57.3	13.5	41.3	41.3	14.0	35.3	35.3
Total Split (s)	15.0	25.0	25.0	15.0	25.0	25.0	20.0	40.0	40.0	20.0	40.0	40.0
Total Split (%)	15.0%	25.0%	25.0%	15.0%	25.0%	25.0%	20.0%	40.0%	40.0%	20.0%	40.0%	40.0%
Yellow Time (s)	3.5	5.3	5.3	3.5	5.3	5.3	3.5	4.3	4.3	3.5	4.3	4.3
All-Red Time (s)	2.0	3.0	3.0	2.5	3.0	3.0	2.0	3.0	3.0	2.5	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	8.3	8.3	6.0	8.3	8.3	5.5	7.3	7.3	6.0	7.3	7.3
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	8.3	11.9	11.9	8.6	18.1	18.1	54.2	52.3	52.3	8.0	44.2	44.2
Actuated g/C Ratio	0.08	0.12	0.12	0.09	0.18	0.18	0.54	0.52	0.52	0.08	0.44	0.44
v/c Ratio	0.35	0.11	0.59	0.53	0.06	0.12	0.27	0.36	0.11	0.07	0.37	0.01
Control Delay	50.1	39.2	54.1	50.5	37.0	37.9	12.8	18.8	18.4	51.1	10.0	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.1	39.2	54.1	50.5	37.0	37.9	12.8	18.8	18.4	51.1	10.0	7.0
LOS	D	D	D	D	D	D	B	B	B	D	B	A
Approach Delay		51.0			47.2			18.2			10.9	
Approach LOS		D			D			B			B	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 48 (48%), Referenced to phase 2:NBSB and 6:NBT, Start of 1st Green	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.59	
Intersection Signal Delay: 20.7	Intersection LOS: C
Intersection Capacity Utilization 54.0%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 9: WIS 67 & Oconomowoc Dr/Pabst Farms Blvd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	51	25	110	157	20	34	106	955	91	20	833	9
v/c Ratio	0.35	0.11	0.59	0.53	0.06	0.12	0.27	0.36	0.11	0.07	0.37	0.01
Control Delay	50.1	39.2	54.1	50.5	37.0	37.9	12.8	18.8	18.4	51.1	10.0	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.1	39.2	54.1	50.5	37.0	37.9	12.8	18.8	18.4	51.1	10.0	7.0
Queue Length 50th (ft)	31	15	68	50	12	20	33	128	31	6	75	2
Queue Length 95th (ft)	68	38	119	82	32	48	64	176	70	m18	59	m5
Internal Link Dist (ft)		1460			1495			1446			865	
Turn Bay Length (ft)	160		300	300		175	430		570	415		465
Base Capacity (vph)	168	311	264	315	369	313	506	2686	836	476	2224	692
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.08	0.42	0.50	0.05	0.11	0.21	0.36	0.11	0.04	0.37	0.01

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	220	1	555	80	640	945	210
Future Volume (vph)	220	1	555	80	640	945	210
Turn Type	Perm	NA	Perm	Prot	NA	NA	Perm
Protected Phases		8		1	6	2	
Permitted Phases	8		8				2
Detector Phase	8	8	8	1	6	2	2
Switch Phase							
Minimum Initial (s)	10.0	10.0	10.0	8.0	15.0	15.0	15.0
Minimum Split (s)	56.3	56.3	56.3	14.0	36.1	24.1	24.1
Total Split (s)	40.0	40.0	40.0	20.0	60.0	40.0	40.0
Total Split (%)	40.0%	40.0%	40.0%	20.0%	60.0%	40.0%	40.0%
Yellow Time (s)	5.3	5.3	5.3	3.5	4.3	4.3	4.3
All-Red Time (s)	3.0	3.0	3.0	2.5	1.8	1.8	1.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	8.3	8.3	8.3	6.0	6.1	6.1	6.1
Lead/Lag				Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min
Act Effct Green (s)	19.2	19.2	19.2	8.1	66.4	55.1	55.1
Actuated g/C Ratio	0.19	0.19	0.19	0.08	0.66	0.55	0.55
v/c Ratio	0.36	0.36	0.76	0.29	0.19	0.28	0.16
Control Delay	36.8	37.0	47.7	45.9	5.4	13.5	12.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.8	37.0	47.7	45.9	5.4	13.5	12.5
LOS	D	D	D	D	A	B	B
Approach Delay		43.8			9.8	13.4	
Approach LOS		D			A	B	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 93 (93%), Referenced to phase 2:SBT and 6:NBT, Start of 1st Green	
Natural Cycle: 95	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 20.0	Intersection LOS: C
Intersection Capacity Utilization 45.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 12: WIS 67 & I-94 WB ramps

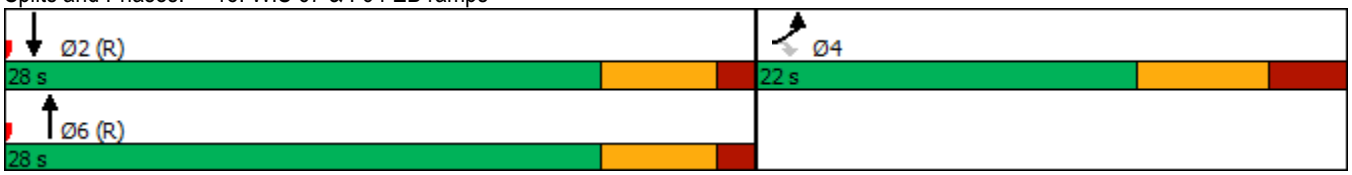
Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	113	115	401	82	660	974	134
v/c Ratio	0.36	0.36	0.76	0.29	0.19	0.28	0.16
Control Delay	36.8	37.0	47.7	45.9	5.4	13.5	12.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.8	37.0	47.7	45.9	5.4	13.5	12.5
Queue Length 50th (ft)	66	68	139	0	41	146	67
Queue Length 95th (ft)	110	112	180	41	58	175	111
Internal Link Dist (ft)		1547			975	1446	
Turn Bay Length (ft)	425			535			515
Base Capacity (vph)	522	524	866	485	3408	3496	863
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.22	0.46	0.17	0.19	0.28	0.16

Intersection Summary

Lane Group	EBL	EBR	NBT	NBR	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	165	22	555	285	680	485
Future Volume (vph)	165	22	555	285	680	485
Turn Type	Prot	Perm	NA	Free	NA	Free
Protected Phases	4		6		2	
Permitted Phases		4		Free		Free
Detector Phase	4	4	6		2	
Switch Phase						
Minimum Initial (s)	10.0	10.0	15.0		15.0	
Minimum Split (s)	17.9	17.9	21.8		23.8	
Total Split (s)	22.0	22.0	28.0		28.0	
Total Split (%)	44.0%	44.0%	56.0%		56.0%	
Yellow Time (s)	4.9	4.9	4.3		4.3	
All-Red Time (s)	3.0	3.0	1.5		1.5	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	7.9	7.9	5.8		5.8	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Min		C-Min	
Act Effct Green (s)	10.0	10.0	31.0	50.0	31.0	50.0
Actuated g/C Ratio	0.20	0.20	0.62	1.00	0.62	1.00
v/c Ratio	0.24	0.07	0.26	0.19	0.32	0.18
Control Delay	18.0	17.0	6.5	0.3	6.1	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.0	17.0	6.5	0.3	6.1	0.2
LOS	B	B	A	A	A	A
Approach Delay			4.4		3.6	
Approach LOS			A		A	

Intersection Summary	
Cycle Length: 50	
Actuated Cycle Length: 50	
Offset: 18 (36%), Referenced to phase 2:SBT and 6:NBT, Start of 1st Green	
Natural Cycle: 45	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.32	
Intersection Signal Delay: 5.1	Intersection LOS: A
Intersection Capacity Utilization 38.5%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 15: WIS 67 & I-94 EB ramps



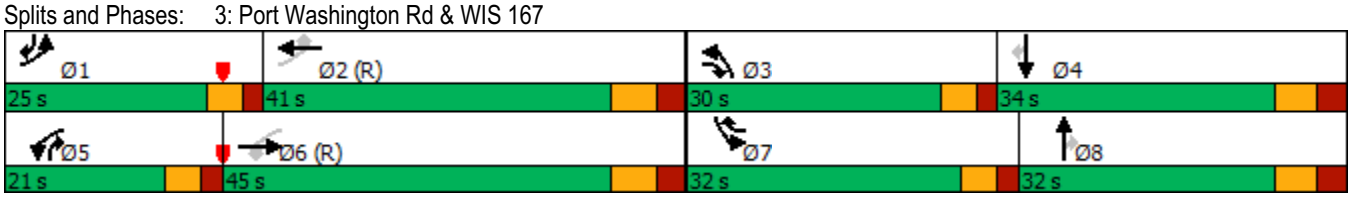
Lane Group	EBL	EBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	168	22	566	291	694	495
v/c Ratio	0.24	0.07	0.26	0.19	0.32	0.18
Control Delay	18.0	17.0	6.5	0.3	6.1	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.0	17.0	6.5	0.3	6.1	0.2
Queue Length 50th (ft)	21	5	43	0	155	0
Queue Length 95th (ft)	42	19	67	0	25	0
Internal Link Dist (ft)			612		975	
Turn Bay Length (ft)	285	100		340		
Base Capacity (vph)	968	446	2175	1568	2154	2733
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.05	0.26	0.19	0.32	0.18

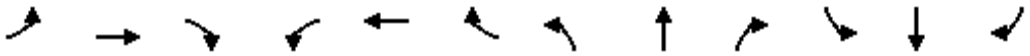
Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	245	620	230	215	510	380	270	320	320	425	355	345
Future Volume (vph)	245	620	230	215	510	380	270	320	320	425	355	345
Turn Type	D.P+P	NA	pm+ov	D.P+P	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	1	6	3	5	2	7	3	8	5	7	4	1
Permitted Phases	2		6	6		2			8			4
Detector Phase	1	6	3	5	2	7	3	8	5	7	4	1
Switch Phase												
Minimum Initial (s)	8.0	15.0	8.0	8.0	15.0	8.0	8.0	10.0	8.0	8.0	10.0	8.0
Minimum Split (s)	13.5	46.4	13.5	13.5	45.4	13.5	13.5	42.1	13.5	13.5	41.1	13.5
Total Split (s)	25.0	45.0	30.0	21.0	41.0	32.0	30.0	32.0	21.0	32.0	34.0	25.0
Total Split (%)	19.2%	34.6%	23.1%	16.2%	31.5%	24.6%	23.1%	24.6%	16.2%	24.6%	26.2%	19.2%
Yellow Time (s)	3.5	4.4	3.5	3.5	4.4	3.5	3.5	4.1	3.5	3.5	4.1	3.5
All-Red Time (s)	2.0	3.0	2.0	2.0	3.0	2.0	2.0	3.0	2.0	2.0	3.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	7.4	5.5	5.5	7.4	5.5	5.5	7.1	5.5	5.5	7.1	5.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	None	None	C-Min	None	None	None	None	None	None	None
Act Effct Green (s)	69.9	55.3	77.2	69.9	53.6	81.5	14.4	16.0	35.8	20.5	22.0	43.5
Actuated g/C Ratio	0.54	0.43	0.59	0.54	0.41	0.63	0.11	0.12	0.28	0.16	0.17	0.33
v/c Ratio	0.50	0.43	0.16	0.50	0.36	0.25	0.73	0.76	0.47	0.81	0.61	0.42
Control Delay	18.5	29.4	14.0	34.1	43.1	3.6	67.0	66.3	41.7	64.9	54.1	34.6
Queue Delay	0.0	0.0	0.0	0.0	0.5	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.5	29.5	14.0	34.1	43.6	3.9	67.0	66.3	41.7	64.9	54.1	34.6
LOS	B	C	B	C	D	A	E	E	D	E	D	C
Approach Delay		24.6			31.8			60.4			54.5	
Approach LOS		C			C			E			D	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 102 (78%), Referenced to phase 2:EBWB and 6:EBWB, Start of 1st Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 41.9	Intersection LOS: D
Intersection Capacity Utilization 71.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 3: Port Washington Rd & WIS 167





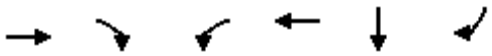
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	255	646	149	224	531	245	281	333	207	443	370	223
v/c Ratio	0.50	0.43	0.16	0.50	0.36	0.25	0.73	0.76	0.47	0.81	0.61	0.42
Control Delay	18.5	29.4	14.0	34.1	43.1	3.6	67.0	66.3	41.7	64.9	54.1	34.6
Queue Delay	0.0	0.0	0.0	0.0	0.5	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.5	29.5	14.0	34.1	43.6	3.9	67.0	66.3	41.7	64.9	54.1	34.6
Queue Length 50th (ft)	101	198	54	119	148	27	120	145	145	188	153	144
Queue Length 95th (ft)	179	306	108	220	269	43	162	191	199	236	197	189
Internal Link Dist (ft)		637			311			284			333	
Turn Bay Length (ft)	250						145			220		145
Base Capacity (vph)	576	1506	1062	489	1460	1065	653	684	481	706	742	600
Starvation Cap Reductn	0	0	0	0	509	414	0	0	0	0	0	0
Spillback Cap Reductn	0	40	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.44	0.14	0.46	0.56	0.38	0.43	0.49	0.43	0.63	0.50	0.37

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR	Ø1	Ø2	Ø3
Lane Configurations									
Traffic Volume (vph)	665	700	35	820	1	97			
Future Volume (vph)	665	700	35	820	1	97			
Turn Type	NA	Prot	D.P+P	NA	NA	custom			
Protected Phases	6	6	5	2 3	4	1 4	1	2	3
Permitted Phases			6			4			
Detector Phase	6	6	5	2 3	4	1 4			
Switch Phase									
Minimum Initial (s)	12.0	12.0	5.0		6.0		6.0	12.0	22.1
Minimum Split (s)	21.9	21.9	10.5		21.9		10.5	21.9	28.0
Total Split (s)	62.0	62.0	22.0		18.0		28.0	56.0	28.0
Total Split (%)	47.7%	47.7%	16.9%		13.8%		22%	43%	22%
Yellow Time (s)	3.9	3.9	3.5		3.6		3.5	3.9	3.9
All-Red Time (s)	2.0	2.0	2.0		2.3		1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0				
Total Lost Time (s)	5.9	5.9	5.5		5.9				
Lead/Lag	Lag	Lag	Lead		Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes		Yes		Yes	Yes	Yes
Recall Mode	C-Min	C-Min	Min		None		None	C-Min	Min
Act Effct Green (s)	68.2	68.2	74.0	96.6	11.1	23.0			
Actuated g/C Ratio	0.52	0.52	0.57	0.74	0.09	0.18			
v/c Ratio	0.52	0.40	0.12	0.32	0.25	0.37			
Control Delay	18.0	17.4	11.3	23.0	58.0	50.2			
Queue Delay	1.2	1.1	0.0	0.0	0.0	0.0			
Total Delay	19.2	18.5	11.3	23.0	58.0	50.2			
LOS	B	B	B	C	E	D			
Approach Delay	19.0			22.6	52.3				
Approach LOS	B			C	D				

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 12 (9%), Referenced to phase 2:WBT and 6:EBWB, Start of 1st Green	
Natural Cycle: 85	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.52	
Intersection Signal Delay: 22.5	Intersection LOS: C
Intersection Capacity Utilization 43.9%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 6: I-43 SB ramps & WIS 167



Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	897	306	36	854	37	101
v/c Ratio	0.52	0.40	0.12	0.32	0.25	0.37
Control Delay	18.0	17.4	11.3	23.0	58.0	50.2
Queue Delay	1.2	1.1	0.0	0.0	0.0	0.0
Total Delay	19.2	18.5	11.3	23.0	58.0	50.2
Queue Length 50th (ft)	229	150	12	349	30	76
Queue Length 95th (ft)	324	253	m27	407	64	126
Internal Link Dist (ft)	311			513	187	
Turn Bay Length (ft)			310			50
Base Capacity (vph)	1734	763	429	2629	175	472
Starvation Cap Reductn	573	257	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.60	0.08	0.32	0.21	0.21

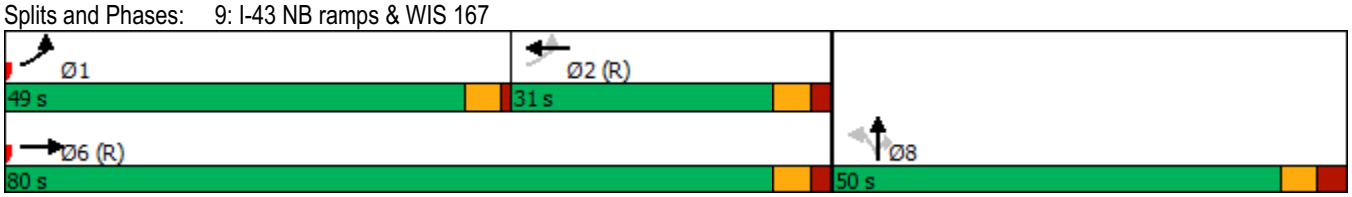
Intersection Summary

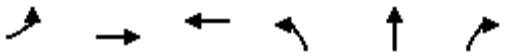
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	NBL	NBT	NBR
Lane Configurations						
Traffic Volume (vph)	540	160	120	735	1	20
Future Volume (vph)	540	160	120	735	1	20
Turn Type	D.P+P	NA	NA	Perm	NA	Perm
Protected Phases	1	6	2		8	
Permitted Phases	2			8		8
Detector Phase	1	6	2	8	8	8
Switch Phase						
Minimum Initial (s)	6.0	12.0	12.0	8.0	8.0	8.0
Minimum Split (s)	10.5	31.7	21.7	22.6	22.6	22.6
Total Split (s)	49.0	80.0	31.0	50.0	50.0	50.0
Total Split (%)	37.7%	61.5%	23.8%	38.5%	38.5%	38.5%
Yellow Time (s)	3.5	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	2.1	2.1	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.7	5.7	6.6	6.6	6.6
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	None	C-Min	C-Min	None	None	None
Act Effct Green (s)	80.0	83.3	39.1	34.4	34.4	34.4
Actuated g/C Ratio	0.62	0.64	0.30	0.26	0.26	0.26
v/c Ratio	0.63	0.14	0.29	0.85	0.85	0.05
Control Delay	6.1	1.1	40.5	62.8	62.9	32.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.1	1.1	40.5	62.8	62.9	32.1
LOS	A	A	D	E	E	C
Approach Delay		4.9	40.5		62.0	
Approach LOS		A	D		E	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 3 (2%), Referenced to phase 2:EBWB and 6:EBT, Start of 1st Green	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay: 35.1	Intersection LOS: D
Intersection Capacity Utilization 74.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 9: I-43 NB ramps & WIS 167





Lane Group	EBL	EBT	WBT	NBL	NBT	NBR
Lane Group Flow (vph)	563	167	156	383	384	21
v/c Ratio	0.63	0.14	0.29	0.85	0.85	0.05
Control Delay	6.1	1.1	40.5	62.8	62.9	32.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.1	1.1	40.5	62.8	62.9	32.1
Queue Length 50th (ft)	26	8	104	323	324	13
Queue Length 95th (ft)	33	11	186	410	411	32
Internal Link Dist (ft)		513	488		282	
Turn Bay Length (ft)						90
Base Capacity (vph)	948	1207	540	568	569	535
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.14	0.29	0.67	0.67	0.04

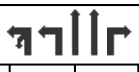
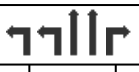
Intersection Summary

Software Output Reports – Existing Conditions
Signalized Corridors
Vistro Version 6.00-00

Intersection Level Of Service Report
Intersection 3: WIS 38 & Drexel - PM

Control Type:	Signalized	Delay (sec / veh):	40.8
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.599

Intersection Setup

Name	WIS 38				WIS 38				Drexel Ave			Drexel Ave		
Approach	Northbound				Southbound				Eastbound			Westbound		
Lane Configuration														
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	1	2	0	0	1	2	0	1	2	0	1
Pocket Length [ft]	375.0	100.0	100.0	260.0	440.0	100.0	100.0	430.0	245.00	100.00	375.00	170.00	100.00	180.00
Speed [mph]	45.00				45.00				35.00			35.00		
Grade [%]	0.00				0.00				0.00			0.00		
Crosswalk	No				No				No			No		

Volumes

Name	WIS 38				WIS 38				Drexel Ave			Drexel Ave		
Base Volume Input [veh/h]	5	260	610	120	5	140	870	135	125	390	410	115	305	70
Base Volume Adjustment Factor	1.000	1.000	1.000	0.620	1.000	1.000	1.000	0.620	1.0000	1.0000	0.6200	1.0000	1.0000	0.6200
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	260	610	74	5	140	870	84	125	390	254	115	305	43
Peak Hour Factor	0.930	0.930	0.930	0.930	0.930	0.930	0.930	0.930	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	70	164	20	1	38	234	23	34	105	68	31	82	12
Total Analysis Volume [veh/h]	5	280	656	80	5	151	935	90	134	419	273	124	328	46
Presence of On-Street Parking	No			No	No			No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0				0				0			0		
Bicycle Volume [bicycles/h]	0				0				0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	141
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	7.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	30.00

Phasing & Timing

Control Type	Permi	Prote	Permi	Permi	Permi	Prote	Permi	Permi	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	1	1	6	6	5	5	2	2	7	4	4	3	8	8
Auxiliary Signal Groups														
Lead / Lag	Lead	Lead	-	-	Lead	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	15	15	6	6	15	15	6	10	10	6	10	10
Maximum Green [s]	24	24	32	32	22	22	30	30	22	35	35	14	27	27
Amber [s]	3.5	3.5	4.4	4.4	3.5	3.5	4.4	4.4	3.5	5.0	5.0	3.5	5.0	5.0
All red [s]	2.0	2.0	3.0	3.0	2.0	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0
Split [s]	30	30	39	39	28	28	37	37	28	43	43	20	35	35
Vehicle Extension [s]	1.5	1.5	3.0	3.0	1.5	1.5	3.4	3.4	1.5	1.5	1.5	1.5	1.5	1.5
Walk [s]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rest In Walk			No				No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	3.5	3.5	5.4	5.4	3.5	3.5	5.4	5.4	3.5	6.0	6.0	3.5	6.0	6.0
Minimum Recall		No	Yes			No	Yes		No	No		No	No	
Maximum Recall		No	No			No	No		No	No		No	No	
Pedestrian Recall		No	No			No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	20.0	6.0	6.0	20.0	20.0	6.0	6.0	20.0	6.0	6.0	20.0	6.0	6.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	141	141	141	141	141	141	141	141	141	141	141	141
L, Total Lost Time per Cycle [s]	5.50	7.40	7.40	5.50	7.40	7.40	5.50	8.00	8.00	5.50	8.00	8.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.50	5.40	5.40	3.50	5.40	5.40	3.50	6.00	6.00	3.50	6.00	6.00
g_i, Effective Green Time [s]	14	73	73	8	68	68	7	26	26	7	26	26
g / C, Green / Cycle	0.10	0.52	0.52	0.06	0.48	0.48	0.05	0.18	0.18	0.05	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.08	0.18	0.05	0.04	0.18	0.06	0.04	0.12	0.17	0.04	0.09	0.03
s, saturation flow rate [veh/h]	3445	3547	1583	3479	5124	1599	3479	3582	1599	3479	3582	1599
c, Capacity [veh/h]	336	1841	822	207	2465	769	185	661	295	173	648	289
d1, Uniform Delay [s]	62.57	20.00	17.17	65.24	23.20	20.10	65.69	53.07	56.51	65.99	52.04	48.67
k, delay calibration	0.04	0.50	0.50	0.04	0.50	0.50	0.04	0.04	0.04	0.04	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.33	0.54	0.24	2.08	0.45	0.31	2.01	0.38	5.25	2.09	0.23	0.09
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.85	0.36	0.10	0.75	0.38	0.12	0.72	0.63	0.93	0.72	0.51	0.16
d, Delay for Lane Group [s/veh]	64.89	20.54	17.40	67.31	23.65	20.41	67.70	53.45	61.76	68.08	52.26	48.76
Lane Group LOS	E	C	B	E	C	C	E	D	E	E	D	D
Critical Lane Group	Yes	No	No	No	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.04	6.28	1.34	2.78	6.49	1.66	2.42	6.87	9.92	2.24	5.25	1.38
50th-Percentile Queue Length [ft/ln]	126.12	156.95	33.48	69.41	162.15	41.58	60.47	171.79	247.92	56.07	131.17	34.47
95th-Percentile Queue Length [veh/ln]	8.73	10.39	2.41	5.00	10.66	2.99	4.35	11.17	15.08	4.04	9.00	2.48
95th-Percentile Queue Length [ft/ln]	218.21	259.68	60.27	124.93	266.57	74.85	108.85	279.27	377.04	100.92	225.09	62.04

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	64.89	64.89	20.54	17.40	67.31	67.31	23.65	20.41	67.70	53.45	61.76	68.08	52.26	48.76
Movement LOS	E	E	C	B	E	E	C	C	E	D	E	E	D	D
d_A, Approach Delay [s/veh]	32.67				29.17				58.51			55.88		
Approach LOS	C				C				E			E		
d_I, Intersection Delay [s/veh]	40.83													
Intersection LOS	D													
Intersection V/C	0.599													

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 6: WIS 38 & Susan/Town Square Way - PM

Control Type:	Signalized	Delay (sec / veh):	22.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.491

Intersection Setup

Name	WIS 38			WIS 38				Town Square Way			Susan Dr		
Approach	Northbound			Southbound				Eastbound			Westbound		
Lane Configuration													
Turning Movement	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	1	0	0	1	2	0	0	1	0	0
Pocket Length [ft]	410.00	100.00	245.00	450.0	100.0	100.0	280.0	195.00	100.00	100.00	50.00	100.00	100.00
Speed [mph]	45.00			45.00				25.00			25.00		
Grade [%]	0.00			0.00				0.00			0.00		
Crosswalk	No			No				No			No		

Volumes

Name	WIS 38			WIS 38				Town Square Way			Susan Dr		
Base Volume Input [veh/h]	120	850	10	15	10	1250	125	135	5	155	5	5	15
Base Volume Adjustment Factor	1.0000	1.0000	0.6200	1.000	1.000	1.000	0.620	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.00	3.00	3.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	120	850	6	15	10	1250	78	135	5	155	5	5	15
Peak Hour Factor	0.9600	0.9600	0.9600	0.960	0.960	0.960	0.960	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	31	221	2	4	3	326	20	35	1	40	1	1	4
Total Analysis Volume [veh/h]	125	885	6	16	10	1302	81	141	5	161	5	5	16
Presence of On-Street Parking	No		No	No			No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0				0			0		
Bicycle Volume [bicycles/h]	0			0				0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	156
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	125.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	30.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permi	Prote	Permi	Permi	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	1	6	6	5	5	2	2	7	4	4	3	8	8
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	Lead	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	15	15	6	6	15	15	6	10	10	6	10	10
Maximum Green [s]	24	70	70	8	8	53	53	14	19	19	8	12	12
Amber [s]	3.5	4.3	4.3	3.5	3.5	4.3	4.3	3.5	5.2	5.2	3.5	5.2	5.2
All red [s]	2.0	2.9	2.9	2.0	2.0	2.9	2.9	2.0	3.0	3.0	2.0	3.0	3.0
Split [s]	30	77	77	13	13	60	60	20	27	27	13	20	20
Vehicle Extension [s]	1.5	3.4	3.4	1.5	1.5	3.9	3.9	1.5	1.5	1.5	1.5	1.5	1.5
Walk [s]	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	0	0	0
Rest In Walk		No				No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	3.5	5.2	5.2	3.5	3.5	5.2	5.2	3.5	6.2	6.2	3.5	6.2	6.2
Minimum Recall	No	Yes			No	Yes		No	No		No	No	
Maximum Recall	No	No			No	No		No	No		No	No	
Pedestrian Recall	No	No			No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	6.0	6.0	20.0	20.0	6.0	6.0	20.0	6.0	6.0	20.0	6.0	6.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	L	C
C, Cycle Length [s]	156	156	156	156	156	156	156	156	156	156
L, Total Lost Time per Cycle [s]	5.50	7.20	7.20	7.20	7.20	7.20	5.50	8.20	8.20	8.20
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.50	5.20	5.20	0.00	5.20	5.20	3.50	6.20	0.00	6.20
g_i, Effective Green Time [s]	8	106	106	116	103	103	8	18	25	11
g / C, Green / Cycle	0.05	0.68	0.68	0.74	0.66	0.66	0.05	0.12	0.16	0.07
(v / s)_i Volume / Saturation Flow Rate	0.04	0.25	0.00	0.04	0.25	0.05	0.04	0.10	0.00	0.01
s, saturation flow rate [veh/h]	3412	3512	1568	707	5124	1599	3479	1606	1334	1658
c, Capacity [veh/h]	169	2395	1069	525	3374	1053	185	185	155	115
d1, Uniform Delay [s]	73.09	10.54	7.91	6.21	12.19	9.58	72.83	68.10	56.25	68.37
k, delay calibration	0.04	0.50	0.50	0.50	0.50	0.50	0.04	0.05	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.35	0.44	0.01	0.18	0.33	0.14	2.44	7.96	0.03	0.28
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.74	0.37	0.01	0.05	0.39	0.08	0.76	0.90	0.03	0.18
d, Delay for Lane Group [s/veh]	75.44	10.98	7.92	6.39	12.52	9.72	75.27	76.06	56.28	68.65
Lane Group LOS	E	B	A	A	B	A	E	E	E	E
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	2.50	6.18	0.06	0.23	6.64	1.00	2.88	7.01	0.17	0.81
50th-Percentile Queue Length [ft/ln]	62.38	154.61	1.61	5.63	165.89	24.99	72.03	175.33	4.27	20.24
95th-Percentile Queue Length [veh/ln]	4.49	10.26	0.12	0.41	10.86	1.80	5.19	11.36	0.31	1.46
95th-Percentile Queue Length [ft/ln]	112.29	256.58	2.89	10.14	271.51	44.97	129.65	283.91	7.69	36.44

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	75.44	10.98	7.92	6.39	6.39	12.52	9.72	75.27	76.06	76.06	56.28	68.65	68.65
Movement LOS	E	B	A	A	A	B	A	E	E	E	E	E	E
d_A, Approach Delay [s/veh]	18.89			12.25				75.70			66.28		
Approach LOS	B			B				E			E		
d_I, Intersection Delay [s/veh]	22.27												
Intersection LOS	C												
Intersection V/C	0.491												

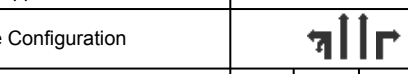
Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 9: WIS 38 & Forest Hill - PM

Control Type:	Signalized	Delay (sec / veh):	18.0
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.457

Intersection Setup

Name	WIS 38				WIS 38				Forest Hill Ave			Forest Hill Ave		
Approach	Northbound				Southbound				Eastbound			Westbound		
Lane Configuration														
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	1	0	0	1	1	0	1	1	0	0
Pocket Length [ft]	470.0	100.0	100.0	280.0	350.0	100.0	100.0	270.0	325.00	100.00	170.00	120.00	100.00	100.00
Speed [mph]	45.00				45.00				25.00			35.00		
Grade [%]	0.00				0.00				0.00			0.00		
Crosswalk	No				No				No			No		

Volumes

Name	WIS 38				WIS 38				Forest Hill Ave			Forest Hill Ave		
Base Volume Input [veh/h]	15	90	865	30	5	95	1230	55	70	40	155	35	25	80
Base Volume Adjustment Factor	1.000	1.000	1.000	0.620	1.000	1.000	1.000	0.620	1.0000	1.0000	0.6200	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	90	865	19	5	95	1230	34	70	40	96	35	25	80
Peak Hour Factor	0.960	0.960	0.960	0.960	0.960	0.960	0.960	0.960	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	23	225	5	1	25	320	9	18	10	25	9	7	21
Total Analysis Volume [veh/h]	16	94	901	20	5	99	1281	35	73	42	100	36	26	83
Presence of On-Street Parking	No			No	No			No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0				0				0			0		
Bicycle Volume [bicycles/h]	0				0				0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	147
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	44.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	26.00

Phasing & Timing

Control Type	Permi	Prote	Permi	Permi	Permi	Prote	Permi	Permi	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	1	1	6	6	5	5	2	2	7	4	4	3	8	8
Auxiliary Signal Groups														
Lead / Lag	Lead	Lead	-	-	Lead	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	15	15	6	6	15	15	6	10	10	6	10	10
Maximum Green [s]	12	12	55	55	10	10	52	52	20	32	32	8	19	19
Amber [s]	3.5	3.5	4.3	4.3	3.5	3.5	4.3	4.3	3.5	4.6	4.6	3.5	4.6	4.6
All red [s]	2.0	2.0	2.5	2.5	2.0	2.0	2.5	2.5	2.0	3.0	3.0	2.0	3.0	3.0
Split [s]	18	18	62	62	15	15	59	59	26	40	40	13	27	27
Vehicle Extension [s]	1.5	1.5	3.0	3.0	1.5	1.5	3.4	3.4	1.5	1.5	1.5	1.5	1.5	1.5
Walk [s]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rest In Walk			No				No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	3.5	3.5	4.8	4.8	3.5	3.5	4.8	4.8	3.5	5.6	5.6	3.5	5.6	5.6
Minimum Recall		No	Yes			No	Yes		No	No		No	No	
Maximum Recall		No	No			No	No		No	No		No	No	
Pedestrian Recall		No	No			No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	20.0	6.0	6.0	20.0	20.0	6.0	6.0	20.0	6.0	6.0	20.0	6.0	6.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C
C, Cycle Length [s]	147	147	147	147	147	147	147	147	147	147	147
L, Total Lost Time per Cycle [s]	6.80	6.80	6.80	6.80	6.80	6.80	7.60	7.60	7.60	7.60	7.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	4.80	4.80	0.00	4.80	4.80	0.00	5.60	5.60	0.00	5.60
g_i, Effective Green Time [s]	109	97	97	109	97	97	24	14	14	24	11
g / C, Green / Cycle	0.74	0.66	0.66	0.74	0.66	0.66	0.16	0.09	0.09	0.16	0.08
(v / s)_i Volume / Saturation Flow Rate	0.20	0.25	0.01	0.14	0.25	0.02	0.05	0.02	0.06	0.02	0.07
s, saturation flow rate [veh/h]	547	3547	1583	724	5124	1599	1495	1863	1583	1515	1658
c, Capacity [veh/h]	426	2345	1047	533	3387	1057	235	175	149	293	130
d1, Uniform Delay [s]	6.73	11.30	8.54	6.60	11.25	8.63	54.00	61.69	64.37	52.56	66.82
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.04	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.46	0.48	0.03	0.82	0.32	0.06	0.28	0.26	1.95	0.07	5.46
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.26	0.38	0.02	0.20	0.38	0.03	0.31	0.24	0.67	0.12	0.84
d, Delay for Lane Group [s/veh]	8.19	11.78	8.57	7.42	11.58	8.69	54.28	61.95	66.32	52.63	72.28
Lane Group LOS	A	B	A	A	B	A	D	E	E	D	E
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.00	6.35	0.22	0.90	5.94	0.38	2.42	1.49	3.75	1.15	4.22
50th-Percentile Queue Length [ft/ln]	25.10	158.76	5.44	22.58	148.62	9.61	60.44	37.19	93.63	28.67	105.61
95th-Percentile Queue Length [veh/ln]	1.81	10.48	0.39	1.63	9.94	0.69	4.35	2.68	6.74	2.06	7.60
95th-Percentile Queue Length [ft/ln]	45.18	262.08	9.79	40.64	248.58	17.30	108.79	66.95	168.53	51.61	189.88

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	8.19	8.19	11.78	8.57	7.42	7.42	11.58	8.69	54.28	61.95	66.32	52.63	72.28	72.28
Movement LOS	A	A	B	A	A	A	B	A	D	E	E	D	E	E
d_A, Approach Delay [s/veh]	11.34				11.20				61.38			67.40		
Approach LOS	B				B				E			E		
d_I, Intersection Delay [s/veh]	17.99													
Intersection LOS	B													
Intersection V/C	0.457													

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 12: WIS 38 & Puetz - PM

Control Type:	Signalized	Delay (sec / veh):	37.1
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.640

Intersection Setup

Name	WIS 38			WIS 38			Puetz Rd			Puetz Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	0	1	0	1
Pocket Length [ft]	215.00	100.00	305.00	225.00	100.00	260.00	380.00	100.00	100.00	315.00	100.00	90.00
Speed [mph]	45.00			45.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	WIS 38			WIS 38			Puetz Rd			Puetz Rd		
Base Volume Input [veh/h]	120	590	130	205	970	145	115	360	150	85	235	195
Base Volume Adjustment Factor	1.0000	1.0000	0.6200	1.0000	1.0000	0.6200	1.0000	1.0000	1.0000	1.0000	1.0000	0.6200
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	120	590	81	205	970	90	115	360	150	85	235	121
Peak Hour Factor	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	31	154	21	53	253	23	30	94	39	22	61	32
Total Analysis Volume [veh/h]	125	615	84	214	1010	94	120	375	156	89	245	126
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	136
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	68.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	28.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	1	6	6	5	2	2	7	4	4	3	8	8
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	15	15	6	15	15	6	10	10	6	10	10
Maximum Green [s]	20	53	53	14	48	48	10	28	28	10	28	28
Amber [s]	3.5	4.3	4.3	3.5	4.3	4.3	3.5	4.2	4.2	3.5	4.2	4.2
All red [s]	2.0	2.9	2.9	2.0	2.9	2.9	2.0	3.0	3.0	2.0	3.0	3.0
Split [s]	25	60	60	20	55	55	15	35	35	15	35	35
Vehicle Extension [s]	1.5	3.4	3.4	1.5	3.4	3.4	1.5	1.5	1.5	1.5	1.5	1.5
Walk [s]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	0	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	3.5	5.2	5.2	3.5	5.2	5.2	3.5	5.2	5.2	3.5	5.2	5.2
Minimum Recall	No	Yes		No	Yes		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	6.0	6.0	20.0	6.0	6.0	20.0	6.0	6.0	20.0	6.0	6.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	136	136	136	136	136	136	136	136	136	136	136	136
L, Total Lost Time per Cycle [s]	5.50	7.20	7.20	5.50	7.20	7.20	7.20	7.20	7.20	7.20	7.20	7.20
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.50	5.20	5.20	3.50	5.20	5.20	0.00	5.20	5.20	0.00	5.20	5.20
g_i, Effective Green Time [s]	7	71	71	10	74	74	35	22	22	35	20	20
g / C, Green / Cycle	0.05	0.52	0.52	0.08	0.55	0.55	0.26	0.16	0.16	0.26	0.15	0.15
(v / s)_i Volume / Saturation Flow Rate	0.04	0.17	0.05	0.06	0.28	0.06	0.09	0.15	0.15	0.08	0.07	0.08
s, saturation flow rate [veh/h]	3445	3547	1583	3479	3582	1599	1377	1881	1697	1154	3582	1599
c, Capacity [veh/h]	176	1849	826	265	1956	873	362	308	278	247	532	238
d1, Uniform Delay [s]	63.50	18.84	16.45	61.84	19.50	14.87	40.59	55.75	55.86	41.17	52.90	53.50
k, delay calibration	0.04	0.50	0.50	0.04	0.50	0.50	0.04	0.10	0.11	0.29	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.95	0.48	0.25	2.25	0.98	0.25	0.20	8.91	11.02	2.39	0.23	0.68
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.71	0.33	0.10	0.81	0.52	0.11	0.33	0.90	0.91	0.36	0.46	0.53
d, Delay for Lane Group [s/veh]	65.46	19.32	16.69	64.09	20.48	15.12	40.79	64.66	66.87	43.56	53.14	54.18
Lane Group LOS	E	B	B	E	C	B	D	E	E	D	D	D
Critical Lane Group	Yes	No	No	No	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.14	5.52	1.34	3.66	9.81	1.41	3.23	10.04	9.33	2.50	3.84	4.02
50th-Percentile Queue Length [ft/ln]	53.54	138.06	33.60	91.38	245.14	35.37	80.83	251.02	233.14	62.60	95.94	100.48
95th-Percentile Queue Length [veh/ln]	3.85	9.38	2.42	6.58	14.94	2.55	5.82	15.24	14.33	4.51	6.91	7.23
95th-Percentile Queue Length [ft/ln]	96.37	234.41	60.47	164.49	373.53	63.67	145.49	380.93	358.35	112.67	172.69	180.86

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	65.46	19.32	16.69	64.09	20.48	15.12	40.79	65.24	66.87	43.56	53.14	54.18
Movement LOS	E	B	B	E	C	B	D	E	E	D	D	D
d_A, Approach Delay [s/veh]	26.05			27.17			61.12			51.57		
Approach LOS	C			C			E			D		
d_I, Intersection Delay [s/veh]	37.13											
Intersection LOS	D											
Intersection V/C	0.640											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 15: WIS 38 & Centennial - PM

Control Type:	Signalized	Delay (sec / veh):	22.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.534

Intersection Setup

Name	WIS 38			WIS 38			Centennial Dr			Centennial Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	1	0	1	1	0	0	1	0	0
Pocket Length [ft]	380.00	100.00	185.00	360.00	100.00	290.00	420.00	100.00	100.00	175.00	100.00	100.00
Speed [mph]	45.00			45.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	WIS 38			WIS 38			Centennial Dr			Centennial Dr		
Base Volume Input [veh/h]	70	575	70	160	865	175	160	40	55	60	45	70
Base Volume Adjustment Factor	1.0000	1.0000	0.6200	1.0000	1.0000	0.6200	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	70	575	43	160	865	109	160	40	55	60	45	70
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	19	155	12	43	233	29	43	11	15	16	12	19
Total Analysis Volume [veh/h]	75	618	46	172	930	117	172	43	59	65	48	75
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	141
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	94.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	26.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	1	6	6	5	2	2	7	4	4	3	8	8
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	15	15	6	15	15	6	10	10	6	10	10
Maximum Green [s]	12	49	49	16	54	54	16	26	26	14	23	23
Amber [s]	3.5	4.3	4.3	3.5	4.3	4.3	3.5	4.2	4.2	3.5	4.2	4.2
All red [s]	2.0	2.4	2.4	2.0	2.4	2.4	2.0	3.0	3.0	2.0	3.0	3.0
Split [s]	17	56	56	22	61	61	22	33	33	19	30	30
Vehicle Extension [s]	1.5	3.4	3.4	1.5	3.1	3.1	1.5	1.5	1.5	1.5	1.5	1.5
Walk [s]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	0	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	3.5	4.7	4.7	3.5	4.7	4.7	3.5	5.2	5.2	3.5	5.2	5.2
Minimum Recall	No	Yes		No	Yes		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	6.0	6.0	20.0	6.0	6.0	20.0	6.0	6.0	20.0	6.0	6.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	L	C
C, Cycle Length [s]	141	141	141	141	141	141	141	141	141	141
L, Total Lost Time per Cycle [s]	6.70	6.70	6.70	6.70	6.70	6.70	7.20	7.20	7.20	7.20
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	4.70	4.70	0.00	4.70	4.70	0.00	5.20	0.00	5.20
g_i, Effective Green Time [s]	96	83	83	96	85	85	31	20	31	12
g / C, Green / Cycle	0.68	0.59	0.59	0.68	0.60	0.60	0.22	0.14	0.22	0.09
(v / s)_i Volume / Saturation Flow Rate	0.11	0.17	0.03	0.19	0.26	0.07	0.11	0.06	0.05	0.07
s, saturation flow rate [veh/h]	713	3547	1583	920	3582	1599	1558	1707	1431	1682
c, Capacity [veh/h]	472	2089	933	625	2147	959	334	243	325	146
d1, Uniform Delay [s]	9.32	14.41	12.26	8.82	15.27	12.19	47.55	55.12	44.47	63.43
k, delay calibration	0.46	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.66	0.36	0.10	1.09	0.64	0.26	0.46	0.43	0.11	5.02
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.16	0.30	0.05	0.28	0.43	0.12	0.52	0.42	0.20	0.84
d, Delay for Lane Group [s/veh]	9.99	14.78	12.36	9.91	15.91	12.46	48.01	55.54	44.58	68.45
Lane Group LOS	A	B	B	A	B	B	D	E	D	E
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.79	4.79	0.62	1.90	7.80	1.60	5.33	3.38	1.87	4.57
50th-Percentile Queue Length [ft/ln]	19.79	119.67	15.47	47.53	194.91	39.95	133.28	84.56	46.76	114.18
95th-Percentile Queue Length [veh/ln]	1.42	8.38	1.11	3.42	12.38	2.88	9.12	6.09	3.37	8.07
95th-Percentile Queue Length [ft/ln]	35.62	209.38	27.84	85.56	309.40	71.92	227.94	152.21	84.16	201.80

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	9.99	14.78	12.36	9.91	15.91	12.46	48.01	55.54	55.54	44.58	68.45	68.45
Movement LOS	A	B	B	A	B	B	D	E	E	D	E	E
d_A, Approach Delay [s/veh]	14.14			14.73			50.81			60.19		
Approach LOS	B			B			D			E		
d_I, Intersection Delay [s/veh]	22.17											
Intersection LOS	C											
Intersection V/C	0.534											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 3: WIS 67 & Oconomowoc Pkwy - PM

Control Type:	Signalized	Delay (sec / veh):	13.6
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.340

Intersection Setup

Name	WIS 67			WIS 67			Oconomowoc Pkwy			Oconomowoc Pkwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	1	0	1	0	0	1	0	0	1
Pocket Length [ft]	400.00	100.00	310.00	375.00	100.00	410.00	100.00	100.00	150.00	100.00	100.00	175.00
Speed [mph]	45.00			45.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	WIS 67			WIS 67			Oconomowoc Pkwy			Oconomowoc Pkwy		
Base Volume Input [veh/h]	170	880	85	85	620	75	45	35	150	50	35	145
Base Volume Adjustment Factor	1.0000	1.0000	0.6200	1.0000	1.0000	0.6200	1.0000	1.0000	0.6200	1.0000	1.0000	0.6200
Heavy Vehicles Percentage [%]	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	170	880	53	85	620	47	45	35	93	50	35	90
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	45	232	14	22	163	12	12	9	24	13	9	24
Total Analysis Volume [veh/h]	179	926	56	89	653	49	47	37	98	53	37	95
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	114
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	96.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	28.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Overlap	Permiss	Permiss	Permiss
Signal group	1	6	6	5	2	2	8	4	1	4	8	8
Auxiliary Signal Groups									1,4			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	10	15	15	8	15	15	10	10	10	10	10	10
Maximum Green [s]	20	49	49	10	39	39	22	22	20	22	22	22
Amber [s]	3.5	4.3	4.3	3.5	4.3	4.3	5.0	5.0	3.5	5.0	5.0	5.0
All red [s]	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	2.0	3.0	3.0	3.0
Split [s]	25	55	55	15	45	45	30	30	25	30	30	30
Vehicle Extension [s]	1.5	3.3	3.3	1.5	3.3	3.3	1.5	1.5	1.5	1.5	1.5	1.5
Walk [s]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	0	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	3.5	4.3	4.3	3.5	4.3	4.3	6.0	6.0	3.5	6.0	6.0	6.0
Minimum Recall	No	Yes		No	Yes			No	No		No	
Maximum Recall	No	No		No	No			No	No		No	
Pedestrian Recall	No	No		No	No			No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	6.0	6.0	20.0	6.0	6.0	6.0	6.0	6.0	20.0	20.0	20.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	114	114	114	114	114	114	114	114	114	114	114	114
L, Total Lost Time per Cycle [s]	6.30	6.30	6.30	6.30	6.30	6.30	8.00	8.00	5.50	8.00	8.00	8.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	4.30	4.30	0.00	4.30	4.30	6.00	6.00	0.00	6.00	6.00	6.00
g_i, Effective Green Time [s]	90	76	76	90	74	74	10	10	28	10	10	10
g / C, Green / Cycle	0.79	0.67	0.67	0.79	0.65	0.65	0.09	0.09	0.25	0.09	0.09	0.09
(v / s)_i Volume / Saturation Flow Rate	0.19	0.18	0.04	0.12	0.13	0.03	0.03	0.02	0.06	0.04	0.02	0.06
s, saturation flow rate [veh/h]	936	5124	1599	746	5074	1583	1379	1881	1599	1365	1863	1583
c, Capacity [veh/h]	782	3442	1074	632	3296	1029	140	166	395	139	165	140
d1, Uniform Delay [s]	3.18	7.49	6.36	3.18	8.02	7.21	52.60	48.28	34.42	52.84	48.29	50.35
k, delay calibration	0.43	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.04	0.04	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.59	0.19	0.09	0.47	0.13	0.09	0.52	0.25	0.12	0.64	0.25	2.15
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.23	0.27	0.05	0.14	0.20	0.05	0.34	0.22	0.25	0.38	0.22	0.68
d, Delay for Lane Group [s/veh]	3.77	7.69	6.46	3.65	8.16	7.30	53.13	48.53	34.54	53.48	48.54	52.49
Lane Group LOS	A	A	A	A	A	A	D	D	C	D	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.77	2.64	0.42	0.38	1.92	0.41	1.34	1.00	2.22	1.53	1.00	2.73
50th-Percentile Queue Length [ft/ln]	19.21	65.94	10.61	9.59	48.03	10.14	33.62	24.99	55.61	38.13	25.00	68.23
95th-Percentile Queue Length [veh/ln]	1.38	4.75	0.76	0.69	3.46	0.73	2.42	1.80	4.00	2.75	1.80	4.91
95th-Percentile Queue Length [ft/ln]	34.58	118.70	19.10	17.26	86.46	18.25	60.52	44.98	100.10	68.64	45.00	122.82

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	3.77	7.69	6.46	3.65	8.16	7.30	53.13	48.53	34.54	53.48	48.54	52.49
Movement LOS	A	A	A	A	A	A	D	D	C	D	D	D
d_A, Approach Delay [s/veh]	7.02			7.60			42.18			51.99		
Approach LOS	A			A			D			D		
d_I, Intersection Delay [s/veh]	13.57											
Intersection LOS	B											
Intersection V/C	0.340											

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 6: WIS 67 & County B/Valley Rd - PM

Control Type:	Signalized	Delay (sec / veh):	22.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.348

Intersection Setup

Name	WIS 67			WIS 67			CTH B (Valley Rd)			CTH B (Valley Rd)		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	2	0	1	2	0	1
Pocket Length [ft]	380.00	100.00	470.00	440.00	100.00	460.00	330.00	100.00	130.00	450.00	100.00	230.00
Speed [mph]	45.00			45.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	WIS 67			WIS 67			CTH B (Valley Rd)			CTH B (Valley Rd)		
Base Volume Input [veh/h]	110	890	50	125	645	50	145	100	165	50	100	100
Base Volume Adjustment Factor	1.0000	1.0000	0.6200	1.0000	1.0000	0.6200	1.0000	1.0000	0.6200	1.0000	1.0000	0.6200
Heavy Vehicles Percentage [%]	1.00	1.00	1.00	2.00	2.00	2.00	3.00	3.00	3.00	1.00	1.00	1.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	110	890	31	125	645	31	145	100	102	50	100	62
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	229	8	32	166	8	37	26	26	13	26	16
Total Analysis Volume [veh/h]	113	918	32	129	665	32	149	103	105	52	103	64
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	128
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	53.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	26.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	1	6	6	5	2	2	7	4	4	3	8	8
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	8	15	15	8	15	15	8	10	10	8	10	10
Maximum Green [s]	11	38	38	13	40	40	9	13	13	9	13	13
Amber [s]	3.5	4.3	4.3	3.5	4.3	4.3	3.5	4.8	4.8	3.5	4.8	4.8
All red [s]	2.5	2.3	2.3	2.5	2.3	2.3	2.5	3.0	3.0	2.5	3.0	3.0
Split [s]	17	45	45	19	47	47	15	21	21	15	21	21
Vehicle Extension [s]	1.5	3.3	3.3	1.5	3.3	3.3	1.5	1.5	1.5	1.5	1.5	1.5
Walk [s]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	0	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	4.0	4.6	4.6	4.0	4.6	4.6	4.0	5.8	5.8	4.0	5.8	5.8
Minimum Recall	No	Yes		No	Yes		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	6.0	6.0	20.0	6.0	6.0	20.0	6.0	6.0	20.0	6.0	6.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	128	128	128	128	128	128	128	128	128	128	128	128
L, Total Lost Time per Cycle [s]	6.60	6.60	6.60	6.60	6.60	6.60	6.00	7.80	7.80	6.00	7.80	7.80
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	4.60	4.60	0.00	4.60	4.60	4.00	5.80	5.80	4.00	5.80	5.80
g_i, Effective Green Time [s]	90	76	76	90	76	76	8	11	11	7	10	10
g / C, Green / Cycle	0.70	0.59	0.59	0.70	0.59	0.59	0.06	0.09	0.09	0.05	0.08	0.08
(v / s)_i Volume / Saturation Flow Rate	0.06	0.18	0.02	0.09	0.13	0.02	0.04	0.03	0.07	0.01	0.03	0.04
s, saturation flow rate [veh/h]	1767	5124	1599	1479	5074	1583	3412	3512	1568	3479	3582	1599
c, Capacity [veh/h]	1248	3029	945	1035	3003	937	212	308	137	183	280	125
d1, Uniform Delay [s]	6.25	13.02	10.91	6.62	12.27	10.88	58.80	54.83	57.04	58.26	55.96	56.62
k, delay calibration	0.04	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.04	0.04	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.01	0.26	0.07	0.25	0.17	0.07	1.57	0.23	3.29	0.31	0.30	1.21
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.09	0.30	0.03	0.12	0.22	0.03	0.70	0.33	0.76	0.28	0.37	0.51
d, Delay for Lane Group [s/veh]	6.26	13.28	10.97	6.86	12.44	10.95	60.37	55.07	60.33	58.57	56.26	57.82
Lane Group LOS	A	B	B	A	B	B	E	E	E	E	E	E
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.42	4.16	0.38	0.51	2.84	0.37	2.42	1.58	3.45	0.81	1.58	2.02
50th-Percentile Queue Length [ft/ln]	10.39	103.89	9.38	12.76	70.92	9.37	60.45	39.44	86.26	20.36	39.61	50.48
95th-Percentile Queue Length [veh/ln]	0.75	7.48	0.68	0.92	5.11	0.67	4.35	2.84	6.21	1.47	2.85	3.63
95th-Percentile Queue Length [ft/ln]	18.71	187.01	16.88	22.97	127.66	16.87	108.82	70.99	155.26	36.65	71.29	90.86

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	6.26	13.28	10.97	6.86	12.44	10.95	60.37	55.07	60.33	58.57	56.26	57.82
Movement LOS	A	B	B	A	B	B	E	E	E	E	E	E
d_A, Approach Delay [s/veh]	12.46			11.51			58.83			57.26		
Approach LOS	B			B			E			E		
d_I, Intersection Delay [s/veh]	22.84											
Intersection LOS	C											
Intersection V/C	0.348											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 9: WIS 67 & Oconomowoc Dr - PM

Control Type:	Signalized	Delay (sec / veh):	20.7
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.404

Intersection Setup

Name	WIS 67			WIS 67			Oconomowoc Dr			Pabst Farms Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	2	0	1	1	0	1	2	0	1
Pocket Length [ft]	430.00	100.00	570.00	415.00	100.00	465.00	160.00	100.00	300.00	300.00	100.00	175.00
Speed [mph]	45.00			45.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	WIS 67			WIS 67			Oconomowoc Dr			Pabst Farms Blvd		
Base Volume Input [veh/h]	105	945	145	20	825	15	50	25	175	155	20	55
Base Volume Adjustment Factor	1.0000	1.0000	0.6200	1.0000	1.0000	0.6200	1.0000	1.0000	0.6200	1.0000	1.0000	0.6200
Heavy Vehicles Percentage [%]	1.00	1.00	1.00	3.00	3.00	3.00	2.00	2.00	2.00	1.00	1.00	1.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	105	945	90	20	825	9	50	25	109	155	20	34
Peak Hour Factor	0.9900	0.9900	0.9900	0.9900	0.9900	0.9900	0.9900	0.9900	0.9900	0.9900	0.9900	0.9900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	239	23	5	208	2	13	6	28	39	5	9
Total Analysis Volume [veh/h]	106	955	91	20	833	9	51	25	110	157	20	34
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	125
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	48.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	30.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	1	6	6	5	2	2	7	4	4	3	8	8
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	8	15	15	8	15	15	8	10	10	8	10	10
Maximum Green [s]	14	33	33	14	33	33	10	17	17	9	17	17
Amber [s]	3.5	4.3	4.3	3.5	4.3	4.3	3.5	5.3	5.3	3.5	5.3	5.3
All red [s]	2.0	3.0	3.0	2.5	3.0	3.0	2.0	3.0	3.0	2.5	3.0	3.0
Split [s]	20	40	40	20	40	40	15	25	25	15	25	25
Vehicle Extension [s]	1.5	3.3	3.3	1.5	3.4	3.4	1.5	1.5	1.5	1.5	1.5	1.5
Walk [s]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	0	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	3.5	5.3	5.3	4.0	5.3	5.3	3.5	6.3	6.3	4.0	6.3	6.3
Minimum Recall	No	Yes		No	Yes		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	6.0	6.0	20.0	6.0	6.0	20.0	6.0	6.0	20.0	6.0	6.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	125	125	125	125	125	125	125	125	125	125	125	125
L, Total Lost Time per Cycle [s]	7.30	7.30	7.30	6.00	7.30	7.30	5.50	8.30	8.30	6.00	8.30	8.30
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	5.30	5.30	4.00	5.30	5.30	3.50	6.30	6.30	4.00	6.30	6.30
g_i, Effective Green Time [s]	85	75	75	4	72	72	7	10	10	8	12	12
g / C, Green / Cycle	0.68	0.60	0.60	0.03	0.57	0.57	0.05	0.08	0.08	0.06	0.10	0.10
(v / s)_i Volume / Saturation Flow Rate	0.13	0.19	0.06	0.01	0.17	0.01	0.03	0.01	0.07	0.05	0.01	0.02
s, saturation flow rate [veh/h]	813	5124	1599	3412	5025	1568	1774	1863	1583	3479	1881	1599
c, Capacity [veh/h]	579	3070	958	110	2878	898	94	156	133	222	185	158
d1, Uniform Delay [s]	7.43	12.34	10.65	58.83	13.67	11.47	57.65	53.13	56.33	57.33	51.29	51.85
k, delay calibration	0.41	0.50	0.50	0.04	0.50	0.50	0.04	0.04	0.04	0.04	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.57	0.26	0.20	0.29	0.25	0.02	1.78	0.18	4.91	1.55	0.09	0.25
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.18	0.31	0.09	0.18	0.29	0.01	0.54	0.16	0.83	0.71	0.11	0.22
d, Delay for Lane Group [s/veh]	8.00	12.60	10.84	59.12	13.92	11.49	59.43	53.30	61.23	58.88	51.39	52.10
Lane Group LOS	A	B	B	E	B	B	E	D	E	E	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.94	4.12	1.05	0.31	3.82	0.11	1.62	0.74	3.60	2.48	0.58	1.00
50th-Percentile Queue Length [ft/ln]	23.60	103.06	26.26	7.66	95.38	2.67	40.53	18.51	89.97	62.05	14.48	24.94
95th-Percentile Queue Length [veh/ln]	1.70	7.42	1.89	0.55	6.87	0.19	2.92	1.33	6.48	4.47	1.04	1.80
95th-Percentile Queue Length [ft/ln]	42.48	185.50	47.28	13.79	171.68	4.81	72.95	33.31	161.94	111.70	26.06	44.90

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	8.00	12.60	10.84	59.12	13.92	11.49	59.43	53.30	61.23	58.88	51.39	52.10
Movement LOS	A	B	B	E	B	B	E	D	E	E	D	D
d_A, Approach Delay [s/veh]	12.04			14.94			59.67			57.07		
Approach LOS	B			B			E			E		
d_I, Intersection Delay [s/veh]	20.69											
Intersection LOS	C											
Intersection V/C	0.404											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 12: WIS 67 & I-94 WB Ramps - PM

Control Type:	Signalized	Delay (sec / veh):	19.4
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.386

Intersection Setup

Name	WIS 67			WIS 67			I-94 WB ramps			I-94 WB ramps		
Approach	Northbound			Southbound			Eastbound			Northwestbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	0	0	1	0	0	0	1	0	0
Pocket Length [ft]	535.00	100.00	100.00	100.00	100.00	515.00	100.00	100.00	100.00	425.00	100.00	100.00
Speed [mph]	45.00			45.00			0.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	WIS 67			WIS 67			I-94 WB ramps			I-94 WB ramps		
Base Volume Input [veh/h]	80	640	0	0	945	210	0	0	0	220	1	555
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	0.6200	1.0000	1.0000	1.0000	1.0000	1.0000	0.7000
Heavy Vehicles Percentage [%]	1.00	1.00	0.00	0.00	3.00	3.00	0.00	0.00	0.00	4.00	4.00	4.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	80	640	0	0	945	130	0	0	0	220	1	389
Peak Hour Factor	0.9700	0.9700	1.0000	1.0000	0.9700	0.9700	1.0000	1.0000	1.0000	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	165	0	0	244	34	0	0	0	57	0	100
Total Analysis Volume [veh/h]	82	660	0	0	974	134	0	0	0	227	1	401
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	108
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	93.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	20.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Split	Split
Signal group	1	6	0	0	2	2	0	0	0	8	8	8
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	Lag	-	-
Minimum Green [s]	8	15	0	0	15	15	0	0	0	10	10	10
Maximum Green [s]	14	54	0	0	34	34	0	0	0	32	32	32
Amber [s]	3.5	4.3	0.0	0.0	4.3	4.3	0.0	0.0	0.0	5.3	5.3	5.3
All red [s]	2.5	1.8	0.0	0.0	1.8	1.8	0.0	0.0	0.0	3.0	3.0	3.0
Split [s]	20	60	0	0	40	40	0	0	0	40	40	40
Vehicle Extension [s]	1.5	3.3	0.0	0.0	3.3	3.3	0.0	0.0	0.0	1.5	1.5	1.5
Walk [s]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	0	0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	4.0	4.1	0.0	0.0	4.1	4.1	0.0	0.0	0.0	6.3	6.3	6.3
Minimum Recall	No	Yes			Yes						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	6.0	0.0	0.0	6.0	6.0	0.0	0.0	0.0	20.0	20.0	20.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R		L	C	R
C, Cycle Length [s]	108	108	108	108		108	108	108
L, Total Lost Time per Cycle [s]	6.00	6.10	6.10	6.10		8.30	8.30	8.30
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.10	4.10	4.10		6.30	6.30	6.30
g_i, Effective Green Time [s]	7	76	62	62		18	18	18
g / C, Green / Cycle	0.07	0.70	0.58	0.58		0.17	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.02	0.13	0.15	0.09		0.07	0.07	0.15
s, saturation flow rate [veh/h]	3479	5124	6700	1568		1740	1741	2749
c, Capacity [veh/h]	237	3589	3862	904		289	289	457
d1, Uniform Delay [s]	47.99	5.56	11.33	10.58		40.14	40.14	43.92
k, delay calibration	0.04	0.50	0.50	0.50		0.04	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	0.32	0.11	0.16	0.35		0.32	0.32	2.17
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.35	0.18	0.25	0.15		0.39	0.39	0.88
d, Delay for Lane Group [s/veh]	48.31	5.68	11.48	10.93		40.47	40.46	46.09
Lane Group LOS	D	A	B	B		D	D	D
Critical Lane Group	Yes	No	Yes	No		No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.03	1.41	2.64	1.42		2.72	2.73	5.33
50th-Percentile Queue Length [ft/ln]	25.86	35.16	66.06	35.61		68.10	68.13	133.26
95th-Percentile Queue Length [veh/ln]	1.86	2.53	4.76	2.56		4.90	4.91	9.12
95th-Percentile Queue Length [ft/ln]	46.56	63.30	118.91	64.09		122.58	122.63	227.92

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	48.31	5.68	0.00	0.00	11.48	10.93	0.00	0.00	0.00	40.47	40.46	46.09
Movement LOS	D	A			B	B				D	D	D
d_A, Approach Delay [s/veh]	10.39			11.42			0.00			44.05		
Approach LOS	B			B			A			D		
d_I, Intersection Delay [s/veh]	19.39											
Intersection LOS	B											
Intersection V/C	0.386											

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 15: WIS 67 & I-94 EB Ramps - PM

Control Type:	Signalized	Delay (sec / veh):	8.4
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.376

Intersection Setup

Name	WIS 67			WIS 67			I-94 EB ramps			I-94 EB ramps		
Approach	Northbound			Southbound			Eastbound			Southwestbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Left	Right	Left	Right	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	2	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	340.00	100.00	100.00	100.00	285.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		45.00			45.00			30.00			0.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		No			No			No			No	

Volumes

Name	WIS 67			WIS 67			I-94 EB ramps			I-94 EB ramps		
Base Volume Input [veh/h]	0	555	285	0	680	485	165	0	65	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.3400	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	3.00	3.00	0.00	4.00	4.00	2.00	0.00	2.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	555	285	0	680	485	165	0	22	0	0	0
Peak Hour Factor	1.0000	0.9800	0.9800	1.0000	0.9800	0.9800	0.9800	1.0000	0.9800	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	142	73	0	173	124	42	0	6	0	0	0
Total Analysis Volume [veh/h]	0	566	291	0	694	495	168	0	22	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	50
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	18.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	17.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna	Split	Split	Split	Permiss	Permiss	Permiss
Signal group	0	6	0	0	2	0	4	0	4	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lag	-	-	-	-	-
Minimum Green [s]	0	15	0	0	15	0	10	0	10	0	0	0
Maximum Green [s]	0	22	0	0	22	0	14	0	14	0	0	0
Amber [s]	0.0	4.3	0.0	0.0	4.3	0.0	4.9	0.0	4.9	0.0	0.0	0.0
All red [s]	0.0	1.5	0.0	0.0	1.5	0.0	3.0	0.0	3.0	0.0	0.0	0.0
Split [s]	0	28	0	0	28	0	22	0	22	0	0	0
Vehicle Extension [s]	0.0	3.3	0.0	0.0	3.3	0.0	1.5	0.0	1.5	0.0	0.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	0	0
Rest In Walk		No			No		No					
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	0.0	2.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	3.8	0.0	0.0	3.8	0.0	5.9	0.0	5.9	0.0	0.0	0.0
Minimum Recall		Yes			Yes		No					
Maximum Recall		No			No		No					
Pedestrian Recall		No			No		No					
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	6.0	0.0	0.0	6.0	0.0	20.0	0.0	20.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	R	
C, Cycle Length [s]	50	50	50	50	
L, Total Lost Time per Cycle [s]	5.80	5.80	7.90	7.90	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	3.80	3.80	5.90	5.90	
g_i, Effective Green Time [s]	27	27	9	9	
g / C, Green / Cycle	0.54	0.54	0.19	0.19	
(v / s)_i Volume / Saturation Flow Rate	0.16	0.20	0.05	0.01	
s, saturation flow rate [veh/h]	3512	3478	3445	1583	
c, Capacity [veh/h]	1887	1869	650	299	
d1, Uniform Delay [s]	6.38	6.69	17.30	16.69	
k, delay calibration	0.50	0.50	0.04	0.04	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	0.41	0.57	0.08	0.04	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.30	0.37	0.26	0.07	
d, Delay for Lane Group [s/veh]	6.79	7.25	17.37	16.72	
Lane Group LOS	A	A	B	B	
Critical Lane Group	No	Yes	Yes	No	
50th-Percentile Queue Length [veh/ln]	1.07	1.38	0.75	0.19	
50th-Percentile Queue Length [ft/ln]	26.63	34.46	18.73	4.77	
95th-Percentile Queue Length [veh/ln]	1.92	2.48	1.35	0.34	
95th-Percentile Queue Length [ft/ln]	47.93	62.03	33.71	8.58	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	6.79	0.00	0.00	7.25	0.00	17.37	0.00	16.72	0.00	0.00	0.00
Movement LOS		A			A		B		B			
d_A, Approach Delay [s/veh]	6.79			7.25			17.30			0.00		
Approach LOS	A			A			B			A		
d_I, Intersection Delay [s/veh]	8.39											
Intersection LOS	A											
Intersection V/C	0.376											

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 3: WIS 167 & Port Washington Rd - PM

Control Type:	Signalized	Delay (sec / veh):	54.8
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.638

Intersection Setup

Name	Port Washington Rd			Port Washington Rd			WIS 167			WIS 167		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	2	0	1	1	0	0	0	0	0
Pocket Length [ft]	145.00	100.00	100.00	220.00	100.00	145.00	250.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Port Washington Rd			Port Washington Rd			WIS 167			WIS 167		
Base Volume Input [veh/h]	270	320	320	425	355	345	245	620	230	215	510	380
Base Volume Adjustment Factor	1.0000	1.0000	0.6200	1.0000	1.0000	0.6200	1.0000	1.0000	0.6200	1.0000	1.0000	0.6200
Heavy Vehicles Percentage [%]	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	270	320	198	425	355	214	245	620	143	215	510	236
Peak Hour Factor	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	70	83	52	111	92	56	64	161	37	56	133	61
Total Analysis Volume [veh/h]	281	333	206	443	370	223	255	646	149	224	531	246
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	102.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	28.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap
Signal group	3	8	5	7	4	1	1	6	3	5	2	2
Auxiliary Signal Groups			5,8			1,4			3,6			2,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	8	10	8	8	10	8	8	15	8	8	15	15
Maximum Green [s]	24	25	16	26	27	20	20	38	24	16	34	34
Amber [s]	3.5	4.1	3.5	3.5	4.1	3.5	3.5	4.4	3.5	3.5	4.4	4.4
All red [s]	2.0	3.0	2.0	2.0	3.0	2.0	2.0	3.0	2.0	2.0	3.0	3.0
Split [s]	17	43	14	16	42	14	14	47	17	14	47	47
Vehicle Extension [s]	1.5	1.5	1.5	1.5	1.5	1.5	1.5	4.9	1.5	1.5	4.2	4.2
Walk [s]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	0	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	3.5	5.1	3.5	3.5	5.1	3.5	3.5	5.4	3.5	3.5	5.4	5.4
Minimum Recall	No	No	No	No	No	No	No	Yes	No	No	Yes	Yes
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	100.0	100.0	20.0	100.0	100.0	20.0	100.0	100.0	20.0	100.0	100.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.50	7.10	5.50	5.50	7.10	5.50	7.40	7.40	5.50	7.40	7.40	5.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.50	5.10	0.00	3.50	5.10	0.00	0.00	5.40	0.00	0.00	5.40	0.00
g_i, Effective Green Time [s]	12	17	32	11	16	31	73	59	78	73	59	77
g / C, Green / Cycle	0.10	0.14	0.27	0.09	0.13	0.26	0.61	0.49	0.65	0.61	0.49	0.64
(v / s)_i Volume / Saturation Flow Rate	0.08	0.09	0.13	0.13	0.10	0.14	0.25	0.18	0.09	0.24	0.15	0.16
s, saturation flow rate [veh/h]	3479	3582	1599	3479	3582	1599	1020	3547	1583	946	3547	1583
c, Capacity [veh/h]	336	499	431	308	470	419	622	1733	1024	568	1732	1011
d1, Uniform Delay [s]	53.31	49.04	36.76	54.73	50.55	38.02	11.71	19.19	8.26	11.91	18.48	9.29
k, delay calibration	0.04	0.04	0.31	0.04	0.04	0.24	0.50	0.50	0.04	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.13	0.58	2.34	199.31	1.13	2.29	1.99	0.62	0.02	2.05	0.46	0.57
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.84	0.67	0.48	1.44	0.79	0.53	0.41	0.37	0.15	0.39	0.31	0.24
d, Delay for Lane Group [s/veh]	55.44	49.62	39.11	254.04	51.68	40.31	13.70	19.81	8.29	13.96	18.94	9.86
Lane Group LOS	E	D	D	F	D	D	B	B	A	B	B	A
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.23	4.74	5.31	13.13	5.41	5.84	3.33	5.64	1.43	2.89	4.46	2.76
50th-Percentile Queue Length [ft/ln]	105.75	118.47	132.67	328.18	135.27	146.09	83.18	141.07	35.74	72.27	111.40	69.02
95th-Percentile Queue Length [veh/ln]	7.60	8.31	9.08	21.39	9.23	9.81	5.99	9.54	2.57	5.20	7.92	4.97
95th-Percentile Queue Length [ft/ln]	190.08	207.72	227.12	534.87	230.64	245.21	149.72	238.47	64.32	130.09	197.95	124.24

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	55.44	49.62	39.11	254.04	51.68	40.31	13.70	19.81	8.29	13.96	18.94	9.86
Movement LOS	E	D	D	F	D	D	B	B	A	B	B	A
d_A, Approach Delay [s/veh]	48.97			135.76			16.69			15.59		
Approach LOS	D			F			B			B		
d_I, Intersection Delay [s/veh]	54.76											
Intersection LOS	D											
Intersection V/C	0.638											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 6: WIS 167 & I-43 SB Ramps - PM

Control Type:	Signalized	Delay (sec / veh):	15.5
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.441

Intersection Setup

Name	I-43 SB ramps			I-43 SB ramps			WIS 167			WIS 167		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1	0	0	1	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	50.00	100.00	100.00	250.00	310.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	I-43 SB ramps			I-43 SB ramps			WIS 167			WIS 167		
Base Volume Input [veh/h]	0	0	1	35	1	285	0	665	700	35	820	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	0.3400	1.0000	1.0000	0.7000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	4.00	4.00	4.00	0.00	1.00	1.00	2.00	2.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	1	35	1	97	0	665	490	35	820	0
Peak Hour Factor	1.0000	1.0000	0.9600	0.9600	0.9600	0.9600	1.0000	0.9600	0.9600	0.9600	0.9600	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	9	0	25	0	173	128	9	214	0
Total Analysis Volume [veh/h]	0	0	1	36	1	101	0	693	510	36	854	0
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	110.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	20.00

Phasing & Timing

Control Type	Split	Split	Split	Permiss	Permiss	Overlap	Permiss	Permiss	Permiss	Protecte	Overlap	Permiss
Signal group	0	3	3	4	4	1	0	6	6	5	2	0
Auxiliary Signal Groups						1,4					2,3	
Lead / Lag	-	-	-	Lag	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	21	21	6	6	6	0	12	12	5	12	0
Maximum Green [s]	0	21	21	12	12	24	0	56	56	16	30	0
Amber [s]	0.0	3.9	3.9	3.6	3.6	3.5	0.0	3.9	3.9	3.5	3.9	0.0
All red [s]	0.0	3.0	3.0	2.3	2.3	1.0	0.0	2.0	2.0	2.0	2.0	0.0
Split [s]	0	28	28	18	18	28	0	62	62	22	56	0
Vehicle Extension [s]	0.0	1.5	1.5	1.5	1.5	2.0	0.0	4.0	4.0	1.5	0.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	0	0
Rest In Walk			No		No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	4.9	4.9	3.9	3.9	2.5	0.0	3.9	3.9	3.5	3.9	0.0
Minimum Recall			No		No	No		Yes		No	Yes	
Maximum Recall			No		No	No		No		No	No	
Pedestrian Recall			No		No	No		No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	20.0	20.0	20.0	0.0	100.0	100.0	20.0	100.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	R	C	R	C	C	R	L	C
C, Cycle Length [s]	130	130	130	130	130	130	130	130
L, Total Lost Time per Cycle [s]	6.90	5.90	4.50	5.90	5.90	5.90	5.50	6.90
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.90	3.90	0.00	3.90	3.90	3.90	3.50	0.00
g_i, Effective Green Time [s]	21	6	21	75	75	75	4	97
g / C, Green / Cycle	0.16	0.05	0.16	0.58	0.58	0.58	0.03	0.75
(v / s)_i Volume / Saturation Flow Rate	0.00	0.02	0.07	0.21	0.25	0.25	0.02	0.24
s, saturation flow rate [veh/h]	1615	1742	1553	1881	1636	1599	1774	3547
c, Capacity [veh/h]	261	80	255	1087	946	924	50	2654
d1, Uniform Delay [s]	45.72	60.43	48.58	14.72	15.34	15.46	62.64	5.43
k, delay calibration	0.04	0.04	0.04	0.50	0.50	0.50	0.04	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.00	1.52	0.37	0.96	1.39	1.48	6.85	0.32
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.00	0.46	0.40	0.37	0.42	0.43	0.72	0.32
d, Delay for Lane Group [s/veh]	45.73	61.95	48.95	15.69	16.74	16.94	69.48	5.75
Lane Group LOS	D	E	D	B	B	B	E	A
Critical Lane Group	No	No	Yes	No	No	Yes	Yes	Yes
50th-Percentile Queue Length [veh/ln]	0.03	1.23	2.98	6.47	6.80	6.87	1.27	3.48
50th-Percentile Queue Length [ft/ln]	0.69	30.68	74.41	161.72	170.12	171.72	31.77	86.97
95th-Percentile Queue Length [veh/ln]	0.05	2.21	5.36	10.64	11.08	11.17	2.29	6.26
95th-Percentile Queue Length [ft/ln]	1.24	55.23	133.93	266.00	277.07	279.18	57.19	156.54

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	45.73	61.95	61.95	48.95	0.00	15.82	16.90	69.48	5.75	0.00
Movement LOS			D	E	E	D		B	B	E	A	
d_A, Approach Delay [s/veh]	45.73			52.43			16.46			8.33		
Approach LOS	D			D			B			A		
d_I, Intersection Delay [s/veh]	15.45											
Intersection LOS	B											
Intersection V/C	0.441											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 9: WIS 167 & I-43 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	34.6
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.530

Intersection Setup

Name	I-43 NB ramps			I-43 NB ramps			WIS 167			WIS 167		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	90.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			0.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	I-43 NB ramps			I-43 NB ramps			WIS 167			WIS 167		
Base Volume Input [veh/h]	735	1	60	0	0	0	540	160	0	0	120	30
Base Volume Adjustment Factor	1.0000	1.0000	0.3400	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	3.00	3.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	735	1	20	0	0	0	540	160	0	0	120	30
Peak Hour Factor	0.9600	0.9600	0.9600	1.0000	1.0000	1.0000	0.9600	0.9600	1.0000	1.0000	0.9600	0.9600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	191	0	5	0	0	0	141	42	0	0	31	8
Total Analysis Volume [veh/h]	766	1	21	0	0	0	563	167	0	0	125	31
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	3.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	8	8	8	0	0	0	1	6	0	0	2	2
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	8	8	8	0	0	0	6	12	0	0	12	12
Maximum Green [s]	43	43	43	0	0	0	44	74	0	0	25	25
Amber [s]	3.6	3.6	3.6	0.0	0.0	0.0	3.5	3.6	0.0	0.0	3.6	3.6
All red [s]	3.0	3.0	3.0	0.0	0.0	0.0	1.0	2.1	0.0	0.0	2.1	2.1
Split [s]	50	50	50	0	0	0	49	80	0	0	31	31
Vehicle Extension [s]	1.5	1.5	1.5	0.0	0.0	0.0	2.5	4.9	0.0	0.0	4.9	4.9
Walk [s]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	0	0
Rest In Walk		No						No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	4.6	4.6	4.6	0.0	0.0	0.0	2.5	3.7	0.0	0.0	3.7	3.7
Minimum Recall		No					No	Yes			Yes	
Maximum Recall		No					No	No			No	
Pedestrian Recall		No					No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	20.0	20.0	0.0	0.0	0.0	20.0	100.0	0.0	0.0	100.0	100.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R		L	C	C
C, Cycle Length [s]	130	130	130		130	130	130
L, Total Lost Time per Cycle [s]	6.60	6.60	6.60		5.70	5.70	5.70
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00		0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.60	4.60	4.60		0.00	3.70	3.70
g_i, Effective Green Time [s]	30	30	30		88	88	61
g / C, Green / Cycle	0.23	0.23	0.23		0.68	0.68	0.47
(v / s)_i Volume / Saturation Flow Rate	0.21	0.21	0.01		0.40	0.09	0.09
s, saturation flow rate [veh/h]	1792	1792	1599		1398	1881	1782
c, Capacity [veh/h]	413	413	368		956	1270	829
d1, Uniform Delay [s]	49.00	49.00	39.03		10.39	7.53	20.39
k, delay calibration	0.11	0.11	0.04		0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	9.95	9.94	0.02		2.66	0.21	0.50
d3, Initial Queue Delay [s]	0.00	0.00	0.00		0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00		1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00		1.00	1.00	1.00

Lane Group Results

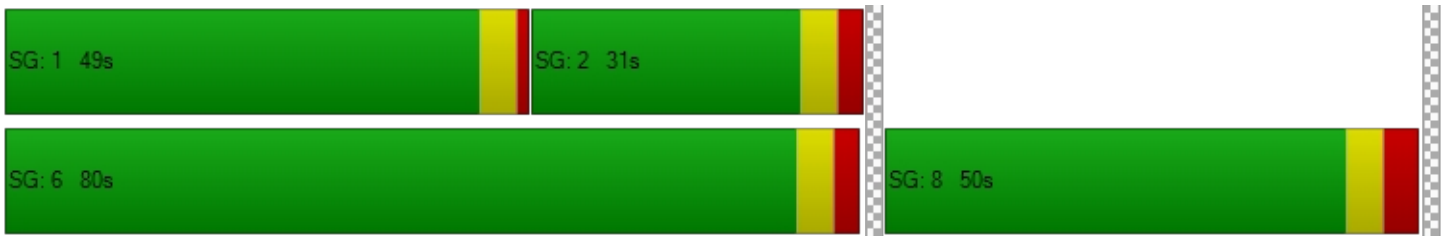
X, volume / capacity	0.93	0.93	0.06		0.59	0.13	0.19
d, Delay for Lane Group [s/veh]	58.95	58.94	39.05		13.05	7.74	20.89
Lane Group LOS	E	E	D		B	A	C
Critical Lane Group	Yes	No	No		Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	13.30	13.30	0.53		7.78	1.66	2.88
50th-Percentile Queue Length [ft/ln]	332.38	332.38	13.31		194.56	41.38	72.07
95th-Percentile Queue Length [veh/ln]	19.27	19.28	0.96		12.36	2.98	5.19
95th-Percentile Queue Length [ft/ln]	481.87	481.88	23.96		308.94	74.49	129.73

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	58.94	58.94	39.05	0.00	0.00	0.00	13.05	7.74	0.00	0.00	20.89	20.89
Movement LOS	E	E	D				B	A			C	C
d_A, Approach Delay [s/veh]	58.41			0.00			11.83			20.89		
Approach LOS	E			A			B			C		
d_I, Intersection Delay [s/veh]	34.60											
Intersection LOS	C											
Intersection V/C	0.530											

Sequence

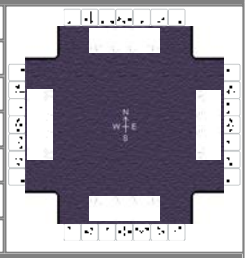
Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Software Output Reports – Optimized Timings
Isolated Signalized Intersections
HCS 2010 Version 6.9

HCS 2010 Signalized Intersection Results Summary

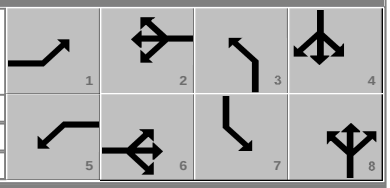
General Information				Intersection Information	
Agency	raSmith			Duration, h	0.25
Analyst	LLZ	Analysis Date	Jan 23, 2018	Area Type	Other
Jurisdiction	NE - Brown County	Time Period	PM	PHF	0.95
Urban Street	WIS 172	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	County EB	File Name	WIS 172 & County EB - PM - OPT.xus		
Project Description	PM				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	105	505	115	170	560	145	175	480	315	120	220	85

Signal Information			
Cycle, s	136.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	7.0	58.5	7.0	42.5	0.0	0.0
Yellow	3.0	4.5	3.0	4.5	0.0	0.0
Red	1.0	2.0	1.0	2.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	1	6	5	2	3	8	7	4
Case Number	1.1	3.0	1.1	3.0	1.1	3.0	1.1	3.0
Phase Duration, s	11.0	65.0	11.0	65.0	11.0	49.0	11.0	49.0
Change Period, ($Y+R_c$), s	4.0	6.5	4.0	6.5	4.0	6.5	4.0	6.5
Max Allow Headway (*MAH*), s	1.0	0.0	1.0	0.0	1.2	1.2	1.1	1.2
Queue Clearance Time (g_s), s	6.7		9.0		9.0	17.4	8.6	8.5
Green Extension Time (g_e), s	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.2
Phase Call Probability	1.00		1.00		1.00	1.00	1.00	1.00
Max Out Probability	1.00		1.00		1.00	0.00	1.00	0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	1	6	16	5	2	12	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	111	532	75	179	589	95	184	505	205	126	232	56
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1757	1756	1563	1774	1773	1579	1792	1791	1594	1774	1773	1579
Queue Service Time (g_s), s	4.7	13.8	3.9	7.0	15.4	4.9	7.0	15.4	13.8	6.6	6.5	3.4
Cycle Queue Clearance Time (g_c), s	4.7	13.8	3.9	7.0	15.4	4.9	7.0	15.4	13.8	6.6	6.5	3.4
Green Ratio (*g/C*)	0.48	0.43	0.43	0.48	0.43	0.43	0.36	0.31	0.31	0.36	0.31	0.31
Capacity (*c*), veh/h	380	1511	672	411	1526	679	436	1119	498	291	1108	493
Volume-to-Capacity Ratio (*X*)	0.291	0.352	0.111	0.436	0.386	0.140	0.423	0.451	0.412	0.434	0.209	0.113
Back of Queue (*Q*), ft/ln (95 th percentile)	96.1	248	67.8	162.7	271.1	86.5	76.6	285.4	245	146.8	132.4	63.3
Back of Queue (*Q*), veh/ln (95 th percentile)	3.8	9.7	2.6	6.4	10.7	3.4	3.0	11.3	9.7	5.8	5.2	2.5
Queue Storage Ratio (*RQ*) (95 th percentile)	0.31	0.00	0.37	0.44	0.00	0.48	0.29	0.00	1.23	1.05	0.00	1.27
Uniform Delay (d_1), s/veh	20.5	26.0	23.2	22.3	26.5	23.5	32.5	37.4	36.9	30.7	34.4	33.3
Incremental Delay (d_2), s/veh	1.9	0.6	0.3	3.3	0.7	0.4	3.0	1.3	2.5	4.7	0.4	0.5
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	22.5	26.7	23.5	25.7	27.2	23.9	35.5	38.7	39.4	35.3	34.8	33.8
Level of Service (LOS)	C	C	C	C	C	C	D	D	D	D	C	C
Approach Delay, s/veh / LOS	25.7	C		26.5	C		38.2	D		34.8	C	
Intersection Delay, s/veh / LOS	31.1						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	3.1	C	3.0	C	3.0	C	3.0	C
Bicycle LOS Score / LOS	1.1	A	1.2	A	1.2	A	0.8	A

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--- Messages ---

WARNING: Since queue spillover from turn lanes and spillback into upstream intersections is not accounted for in the HCM procedures, use of a simulation tool may be advised in situations where the Queue Storage Ratio exceeds 1.0.

--- Comments ---

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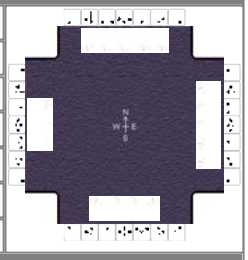
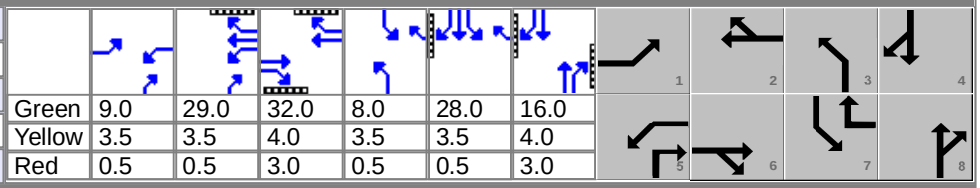
HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	raSmith			Duration, h	0.25
Analyst	LLZ	Analysis Date	Jan 23, 2018	Area Type	Other
Jurisdiction	NC - Marathon	Time Period	PM	PHF	0.94
Urban Street	WIS 52	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	28th Avenue	File Name	WIS 52 & 28th Avenue - PM - OPT.xus		
Project Description	PM				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	50	255	1	230	435	100	5	150	125	310	280	105

Signal Information			
Cycle, s	152.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	9.0	29.0	32.0	8.0	28.0	16.0
Yellow	3.5	3.5	4.0	3.5	3.5	4.0
Red	0.5	0.5	3.0	0.5	0.5	3.0

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	1	6	5	2	3	8	7	4
Case Number	2.0	4.0	2.0	3.0	2.0	3.0	2.0	3.0
Phase Duration, s	13.0	39.0	46.0	72.0	12.0	23.0	44.0	55.0
Change Period, ($Y+R_c$), s	4.0	7.0	4.0	7.0	4.0	7.0	4.0	7.0
Max Allow Headway (*MAH*), s	3.1	0.0	3.1	0.0	3.3	3.2	3.3	3.2
Queue Clearance Time (g_s), s	6.4		10.4		2.4	8.3	13.7	11.4
Green Extension Time (g_e), s	0.0	0.0	0.6	0.0	0.0	1.1	0.8	1.5
Phase Call Probability	1.00		1.00		1.00	1.00	1.00	1.00
Max Out Probability	1.00		0.00		0.00	0.09	0.00	0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	1	6	16	5	2	12	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	53	136	136	245	463	66	5	160	82	330	298	69
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1774	1863	1860	1723	1773	1579	1792	1791	1594	1740	1791	1594
Queue Service Time (g_s), s	4.4	9.5	9.5	8.4	13.1	2.0	0.4	6.3	5.1	11.7	9.4	4.7
Cycle Queue Clearance Time (g_c), s	4.4	9.5	9.5	8.4	13.1	2.0	0.4	6.3	5.1	11.7	9.4	4.7
Green Ratio (*g/C*)	0.06	0.21	0.21	0.28	0.43	0.69	0.05	0.11	0.38	0.26	0.32	0.32
Capacity (*c*), veh/h	105	392	392	952	1517	1090	94	377	608	916	1131	503
Volume-to-Capacity Ratio (*X*)	0.506	0.347	0.348	0.257	0.305	0.060	0.056	0.423	0.135	0.360	0.263	0.137
Back of Queue (*Q*), ft/ln (95 th percentile)	113.6	209.8	206.4	169.1	244.5	32.7	10.4	141.1	95.3	229.4	195.7	89.5
Back of Queue (*Q*), veh/ln (95 th percentile)	4.5	8.3	8.3	6.7	9.6	1.3	0.4	5.6	3.8	9.1	7.8	3.6
Queue Storage Ratio (*RQ*) (95 th percentile)	0.43	0.00	0.00	0.43	0.00	0.15	0.10	0.00	0.79	0.92	0.00	1.19
Uniform Delay (d_1), s/veh	69.3	51.1	51.1	42.8	28.6	7.6	68.4	63.7	30.6	45.6	38.8	37.2
Incremental Delay (d_2), s/veh	16.4	2.4	2.4	0.7	0.5	0.1	1.1	3.5	0.5	1.1	0.6	0.6
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	85.7	53.5	53.5	43.5	29.2	7.7	69.6	67.1	31.1	46.7	39.4	37.8
Level of Service (LOS)	F	D	D	D	C	A	E	E	C	D	D	D
Approach Delay, s/veh / LOS	58.8	E		31.9	C		55.2	E		42.7	D	
Intersection Delay, s/veh / LOS	42.7						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	3.0	C	3.1	C	3.2	C	2.8	C
Bicycle LOS Score / LOS	0.8	A	1.1	A	0.7	A	1.1	A

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--- Messages ---

WARNING: Since queue spillover from turn lanes and spillback into upstream intersections is not accounted for in the HCM procedures, use of a simulation tool may be advised in situations where the Queue Storage Ratio exceeds 1.0.

--- Comments ---

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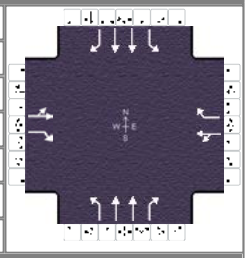
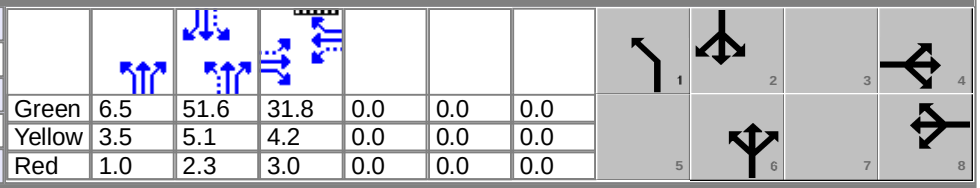
HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	raSmith			Duration, h	0.25
Analyst	LLZ	Analysis Date	Feb 23, 2018	Area Type	Other
Jurisdiction	SE - Racine Co	Time Period	PM	PHF	0.99
Urban Street	WIS 36	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	WIS 20/WIS 83	File Name	WIS 36 & WIS 20-83 - PM - OPT - no ph 5.xus		
Project Description	PM				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	45	95	95	15	255	45	75	495	5	55	720	70

Signal Information			
Cycle, s	109.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	6.5	51.6	31.8	0.0	0.0	0.0
Yellow	3.5	5.1	4.2	0.0	0.0	0.0
Red	1.0	2.3	3.0	0.0	0.0	0.0

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8	1	6		2
Case Number		7.0		7.0	1.0	3.0		5.3
Phase Duration, s		39.0		39.0	11.0	70.0		59.0
Change Period, ($Y+R_c$), s		7.2		7.2	4.5	7.4		7.4
Max Allow Headway (*MAH*), s		2.6		2.6	2.4	0.0		0.0
Queue Clearance Time (g_s), s		18.6		15.1	4.2			
Green Extension Time (g_e), s		0.5		0.6	0.0	0.0		0.0
Phase Call Probability		1.00		1.00	1.00			
Max Out Probability		0.00		0.00	1.00			

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h		141	60		273	28	76	500	3	56	727	43
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1150	1594		1857	1594	1792	1791	1594	901	1791	1594
Queue Service Time (g_s), s		3.5	3.0		0.0	1.4	2.2	7.5	0.1	4.3	14.6	1.6
Cycle Queue Clearance Time (g_c), s		16.6	3.0		13.1	1.4	2.2	7.5	0.1	11.8	14.6	1.6
Green Ratio (*g/C*)		0.29	0.29		0.29	0.29	0.53	0.57	0.57	0.47	0.47	0.47
Capacity (*c*), veh/h		379	465		577	465	411	2057	916	521	1696	755
Volume-to-Capacity Ratio (*X*)		0.373	0.128		0.473	0.061	0.184	0.243	0.003	0.107	0.429	0.058
Back of Queue (*Q*), ft/ln (95 th percentile)		158.4	54.7		257.7	24.8	41.4	120.5	1.3	32.2	240	25.5
Back of Queue (*Q*), veh/ln (95 th percentile)		6.3	2.2		10.2	1.0	1.6	4.8	0.1	1.3	9.5	1.0
Queue Storage Ratio (*RQ*) (95 th percentile)		0.00	0.68		0.00	0.45	0.09	0.00	0.01	0.07	0.00	0.15
Uniform Delay (d_1), s/veh		32.3	28.4		32.0	27.8	13.5	11.5	9.9	20.6	19.0	15.5
Incremental Delay (d_2), s/veh		2.8	0.6		2.8	0.3	1.0	0.3	0.0	0.4	0.8	0.1
Initial Queue Delay (d_3), s/veh		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh		35.1	29.0		34.7	28.1	14.5	11.8	9.9	21.0	19.8	15.7
Level of Service (LOS)		D	C		C	C	B	B	A	C	B	B
Approach Delay, s/veh / LOS	33.3	C		34.1	C		12.1	B		19.6	B	
Intersection Delay, s/veh / LOS	21.1						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	3.0	C	3.0	C	2.3	B	2.3	B
Bicycle LOS Score / LOS	0.8	A	1.0	A	1.0	A	1.2	A

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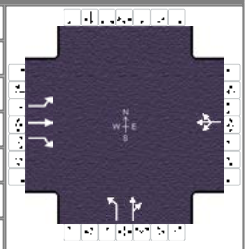
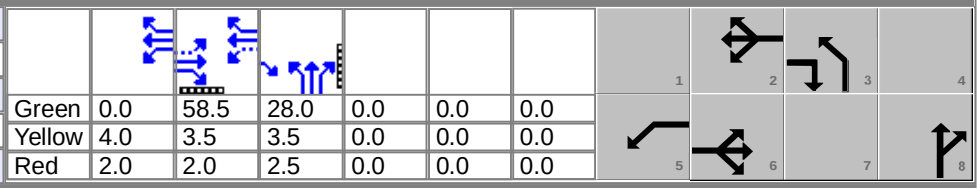
HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	raSmith			Duration, h	0.25
Analyst	LLZ	Analysis Date	Feb 23, 2018	Area Type	Other
Jurisdiction	SE - Walworth Co	Time Period	PM	PHF	0.92
Urban Street	WIS 67	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	US 14	File Name	WIS 67 & US 14 - PM - OPT.xus		
Project Description	PM				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	30	120	175	140	0	135	1	130	80			

Signal Information			
Cycle, s	98.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	0.0	58.5	28.0	0.0	0.0	0.0
Yellow	4.0	3.5	3.5	0.0	0.0	0.0
Red	2.0	2.0	2.5	0.0	0.0	0.0

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		6	5	2		8		
Case Number		5.3	0.0	14.0		10.0		
Phase Duration, s		64.0	0.0	64.0		34.0		
Change Period, ($Y+R_c$), s		5.5	6.0	5.5		6.0		
Max Allow Headway (*MAH*), s		0.0	0.0	0.0		2.7		
Queue Clearance Time (g_s), s						12.9		
Green Extension Time (g_e), s		0.0	0.0	0.0		0.3		
Phase Call Probability						1.00		
Max Out Probability						0.00		

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	1	6	16	5	2	12	3	8	18			
Adjusted Flow Rate (*v*), veh/h	33	130	117		299		1	228				
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1212	1827	1548		1328		1810	1693				
Queue Service Time (g_s), s	1.3	3.0	0.9		6.0		0.0	10.9				
Cycle Queue Clearance Time (g_c), s	9.8	3.0	0.9		8.5		0.0	10.9				
Green Ratio (*g/C*)	0.44	0.44	0.73		0.44		0.21	0.21				
Capacity (*c*), veh/h	692	1091	1367		851		517	484				
Volume-to-Capacity Ratio (*X*)	0.047	0.120	0.086		0.351		0.002	0.472				
Back of Queue (*Q*), ft/ln (95 th percentile)	17.8	57.5	5.2		155.3		0.9	218.3				
Back of Queue (*Q*), veh/ln (95 th percentile)	0.7	2.2	0.2		6.2		0.0	8.4				
Queue Storage Ratio (*RQ*) (95 th percentile)	0.15	0.48	0.04		0.00		0.00	0.00				
Uniform Delay (d_1), s/veh	12.1	8.6	0.7		10.4		25.0	28.9				
Incremental Delay (d_2), s/veh	0.1	0.2	0.1		1.1		0.0	3.3				
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0		0.0		0.0	0.0				
Control Delay (*d*), s/veh	12.2	8.8	0.9		11.5		25.0	32.2				
Level of Service (LOS)	B	A	A		B		C	C				
Approach Delay, s/veh / LOS	5.9	A		11.5	B		32.1	C		0.0		
Intersection Delay, s/veh / LOS	15.4						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.2	B	1.9	A	2.1	B	2.6	B
Bicycle LOS Score / LOS	1.0	A	1.0	A	0.9	A		

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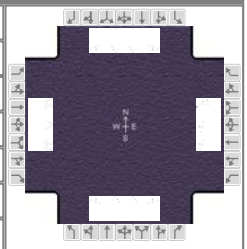
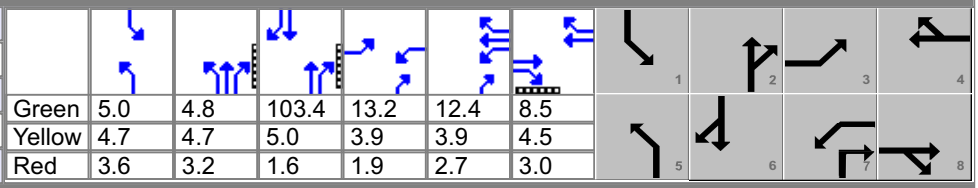
HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	raSmith			Duration, h	0.25
Analyst	LLZ	Analysis Date	Feb 23, 2018	Area Type	Other
Jurisdiction	SW - Dane Co	Time Period	PM	PHF	0.95
Urban Street	US 12	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	County K	File Name	US 12 & CTH K - PM - OPT.xus		
Project Description	PM				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	45	35	55	465	90	10	95	1690	755	5	510	40

Signal Information			
Cycle, s	190.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	5.0	4.8	103.4	13.2	12.4	8.5						
Yellow	4.7	4.7	5.0	3.9	3.9	4.5						
Red	3.6	3.2	1.6	1.9	2.7	3.0						

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	3	8	7	4	5	2	1	6
Case Number	2.0	3.0	2.0	4.0	2.0	3.0	2.0	3.0
Phase Duration, s	19.0	16.0	38.0	35.0	26.0	122.7	13.3	110.0
Change Period, ($Y+R_c$), s	5.8	7.5	6.6	7.5	7.9	6.6	8.3	6.6
Max Allow Headway (*MAH*), s	2.5	2.0	2.0	2.0	1.9	0.0	1.9	0.0
Queue Clearance Time (g_s), s	6.9	6.2	28.3	11.9	12.2		2.6	
Green Extension Time (g_e), s	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0
Phase Call Probability	1.00	1.00	1.00	1.00	1.00		1.00	
Max Out Probability	0.00	0.63	0.22	0.00	0.00		0.13	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	3	8	18	7	4	14	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	47	37	36	489	105		100	1779	795	5	537	26
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1774	1863	1579	1723	1830		1792	1791	1594	1774	1773	1579
Queue Service Time (g_s), s	4.9	3.7	4.2	26.3	9.9		10.2	72.9	42.2	0.6	15.4	1.5
Cycle Queue Clearance Time (g_c), s	4.9	3.7	4.2	26.3	9.9		10.2	72.9	42.2	0.6	15.4	1.5
Green Ratio (*g/C*)	0.07	0.04	0.04	0.17	0.14		0.10	0.61	0.78	0.03	0.54	0.54
Capacity (*c*), veh/h	123	83	71	569	265		171	2189	1238	47	1930	859
Volume-to-Capacity Ratio (*X*)	0.384	0.442	0.507	0.860	0.397		0.586	0.813	0.642	0.113	0.278	0.031
Back of Queue (*Q*), ft/ln (95 th percentile)	115.1	97.5	99.7	473.5	218.9		228.5	989.5	484.2	14.3	269.1	25.3
Back of Queue (*Q*), veh/ln (95 th percentile)	4.5	3.8	3.9	18.6	8.6		9.1	39.3	19.2	0.6	10.6	1.0
Queue Storage Ratio (*RQ*) (95 th percentile)	1.15	0.00	0.62	1.89	0.00		0.65	0.00	1.26	0.04	0.00	0.07
Uniform Delay (d_1), s/veh	84.5	88.4	88.7	77.2	73.7		82.4	28.6	9.5	90.3	23.3	20.1
Incremental Delay (d_2), s/veh	8.8	16.1	23.7	15.5	4.4		13.9	3.4	2.6	4.8	0.4	0.1
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	93.4	104.5	112.4	92.7	78.1		96.2	32.0	12.0	95.2	23.6	20.1
Level of Service (LOS)	F	F	F	F	E		F	C	B	F	C	C
Approach Delay, s/veh / LOS	102.5	F		90.1	F		28.5	C		24.1	C	
Intersection Delay, s/veh / LOS	39.3						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	3.0	C	3.0	C	2.4	B	2.5	B
Bicycle LOS Score / LOS	0.7	A	1.5	A	2.7	B	1.0	A

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--- Messages ---

WARNING: Since queue spillover from turn lanes and spillback into upstream intersections is not accounted for in the HCM procedures, use of a simulation tool may be advised in situations where the Queue Storage Ratio exceeds 1.0.

--- Comments ---

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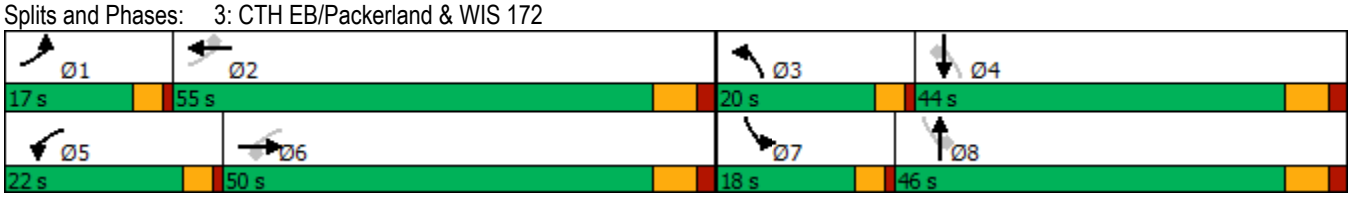
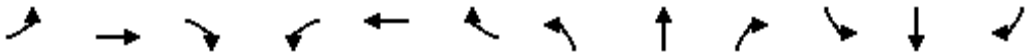
Software Output Reports – Optimized Timings
Isolated Signalized Intersections
Synchro Version 10.0.1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	505	115	170	560	145	175	480	315	120	220	85
Future Volume (vph)	105	505	115	170	560	145	175	480	315	120	220	85
Turn Type	D.P+P	NA	Perm	D.P+P	NA	Perm	D.P+P	NA	Perm	D.P+P	NA	Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	2		6	6		2	4		8	8		4
Detector Phase	1	6	6	5	2	2	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	11.0	26.5	26.5	11.0	26.5	26.5	11.0	16.5	16.5	11.0	16.5	16.5
Total Split (s)	17.0	50.0	50.0	22.0	55.0	55.0	20.0	46.0	46.0	18.0	44.0	44.0
Total Split (%)	12.5%	36.8%	36.8%	16.2%	40.4%	40.4%	14.7%	33.8%	33.8%	13.2%	32.4%	32.4%
Yellow Time (s)	3.0	4.5	4.5	3.0	4.5	4.5	3.0	4.5	4.5	3.0	4.5	4.5
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.5	6.5	4.0	6.5	6.5	4.0	6.5	6.5	4.0	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None	None
Act Effct Green (s)	35.1	22.5	22.5	35.1	24.3	24.3	29.7	18.7	18.7	29.7	17.1	17.1
Actuated g/C Ratio	0.43	0.28	0.28	0.43	0.30	0.30	0.37	0.23	0.23	0.37	0.21	0.21
v/c Ratio	0.29	0.55	0.17	0.42	0.56	0.20	0.37	0.62	0.56	0.35	0.31	0.17
Control Delay	15.1	28.7	26.2	16.5	27.1	24.4	18.4	32.2	35.2	18.5	29.4	29.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.1	28.7	26.2	16.5	27.1	24.4	18.4	32.2	35.2	18.5	29.4	29.7
LOS	B	C	C	B	C	C	B	C	D	B	C	C
Approach Delay		26.3			24.6			30.0			26.1	
Approach LOS		C			C			C			C	

Intersection Summary	
Cycle Length: 136	
Actuated Cycle Length: 81.2	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.62	
Intersection Signal Delay: 26.9	Intersection LOS: C
Intersection Capacity Utilization 63.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 3: CTH EB/Packerland & WIS 172





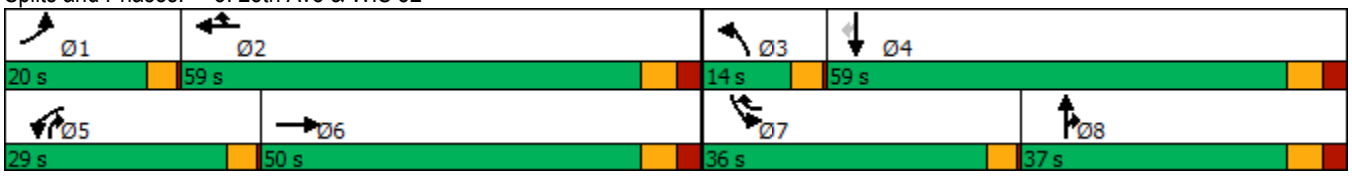
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	111	532	75	179	589	95	184	505	206	126	232	55
v/c Ratio	0.29	0.55	0.17	0.42	0.56	0.20	0.37	0.62	0.56	0.35	0.31	0.17
Control Delay	15.1	28.7	26.2	16.5	27.1	24.4	18.4	32.2	35.2	18.5	29.4	29.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.1	28.7	26.2	16.5	27.1	24.4	18.4	32.2	35.2	18.5	29.4	29.7
Queue Length 50th (ft)	29	117	28	48	126	34	54	113	86	36	49	22
Queue Length 95th (ft)	70	208	74	107	220	85	123	206	190	88	102	63
Internal Link Dist (ft)		513			420			327			376	
Turn Bay Length (ft)	310		185	370		180	265		200	140		50
Base Capacity (vph)	482	1921	859	576	2163	967	599	1779	796	471	1672	748
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.28	0.09	0.31	0.27	0.10	0.31	0.28	0.26	0.27	0.14	0.07

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	50	255	230	435	100	5	150	125	310	280	105
Future Volume (vph)	50	255	230	435	100	5	150	125	310	280	105
Turn Type	Prot	NA	Prot	NA	pt+ov	Prot	NA	pt+ov	Prot	NA	Perm
Protected Phases	1	6	5	2	2 7	3	8	8 5	7	4	
Permitted Phases											4
Detector Phase	1	6	5	2	2 7	3	8	8 5	7	4	4
Switch Phase											
Minimum Initial (s)	8.0	16.0	8.0	16.0		8.0	10.0		8.0	10.0	10.0
Minimum Split (s)	12.0	37.0	12.0	35.0		12.0	31.0		12.0	29.0	29.0
Total Split (s)	20.0	50.0	29.0	59.0		14.0	37.0		36.0	59.0	59.0
Total Split (%)	13.2%	32.9%	19.1%	38.8%		9.2%	24.3%		23.7%	38.8%	38.8%
Yellow Time (s)	3.5	4.0	3.5	4.0		3.5	4.0		3.5	4.0	4.0
All-Red Time (s)	0.5	3.0	0.5	3.0		0.5	3.0		0.5	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	7.0	4.0	7.0		4.0	7.0		4.0	7.0	7.0
Lead/Lag	Lead	Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	Min	None	Min		None	None		None	None	None
Act Effct Green (s)	8.4	17.8	10.2	24.9	40.8	8.1	10.2	24.5	11.8	24.1	24.1
Actuated g/C Ratio	0.12	0.25	0.14	0.34	0.56	0.11	0.14	0.34	0.16	0.33	0.33
v/c Ratio	0.26	0.31	0.50	0.38	0.07	0.03	0.32	0.15	0.58	0.25	0.13
Control Delay	35.1	24.1	33.4	20.9	9.1	33.0	31.6	18.8	33.0	20.2	20.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.1	24.1	33.4	20.9	9.1	33.0	31.6	18.8	33.0	20.2	20.9
LOS	D	C	C	C	A	C	C	B	C	C	C
Approach Delay		25.9		23.9			27.4			26.3	
Approach LOS		C		C			C			C	

Intersection Summary	
Cycle Length: 152	
Actuated Cycle Length: 72.3	
Natural Cycle: 95	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.58	
Intersection Signal Delay: 25.5	Intersection LOS: C
Intersection Capacity Utilization 55.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 3: 28th Ave & WIS 52



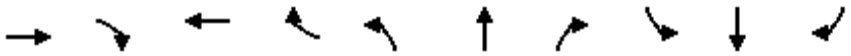
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	53	272	245	463	66	5	160	82	330	298	69
v/c Ratio	0.26	0.31	0.50	0.38	0.07	0.03	0.32	0.15	0.58	0.25	0.13
Control Delay	35.1	24.1	33.4	20.9	9.1	33.0	31.6	18.8	33.0	20.2	20.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.1	24.1	33.4	20.9	9.1	33.0	31.6	18.8	33.0	20.2	20.9
Queue Length 50th (ft)	21	51	51	88	14	2	33	24	68	45	19
Queue Length 95th (ft)	61	94	97	146	34	13	71	63	123	108	65
Internal Link Dist (ft)		459		610			461			358	
Turn Bay Length (ft)	265		390		215	105		120	250		75
Base Capacity (vph)	395	2122	1197	2568	1341	249	1496	873	1548	2593	1160
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.13	0.20	0.18	0.05	0.02	0.11	0.09	0.21	0.11	0.06

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	95	95	15	255	45	75	495	5	55	720	70
Future Volume (vph)	45	95	95	15	255	45	75	495	5	55	720	70
Turn Type	Perm	NA	Perm	Perm	NA	Perm	D.P+P	NA	Perm	Perm	NA	Perm
Protected Phases		4			8		1	6			2	
Permitted Phases	4		4	8		8	2		6	2		2
Detector Phase	4	4	4	8	8	8	1	6	6	2	2	2
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	6.0	15.0	15.0	15.0	15.0	15.0
Minimum Split (s)	15.2	15.2	15.2	15.2	15.2	15.2	10.5	22.4	22.4	22.4	22.4	22.4
Total Split (s)	44.0	44.0	44.0	44.0	44.0	44.0	14.0	65.1	65.1	51.1	51.1	51.1
Total Split (%)	40.3%	40.3%	40.3%	40.3%	40.3%	40.3%	12.8%	59.7%	59.7%	46.8%	46.8%	46.8%
Yellow Time (s)	4.2	4.2	4.2	4.2	4.2	4.2	3.5	5.1	5.1	5.1	5.1	5.1
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	1.0	2.3	2.3	2.3	2.3	2.3
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		7.2	7.2		7.2	7.2	4.5	7.4	7.4	7.4	7.4	7.4
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?							Yes			Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	Min	Min	Min
Act Effct Green (s)		13.4	13.4		13.4	13.4	27.7	28.1	28.1	20.0	20.0	20.0
Actuated g/C Ratio		0.24	0.24		0.24	0.24	0.49	0.49	0.49	0.35	0.35	0.35
v/c Ratio		0.42	0.16		0.63	0.07	0.18	0.28	0.00	0.18	0.58	0.08
Control Delay		24.7	20.2		28.3	19.4	7.7	9.0	8.0	16.7	18.3	14.8
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		24.7	20.2		28.3	19.4	7.7	9.0	8.0	16.7	18.3	14.8
LOS		C	C		C	B	A	A	A	B	B	B
Approach Delay		23.4			27.4			8.9			18.0	
Approach LOS		C			C			A			B	

Intersection Summary	
Cycle Length: 109.1	
Actuated Cycle Length: 56.9	
Natural Cycle: 55	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.63	
Intersection Signal Delay: 17.3	Intersection LOS: B
Intersection Capacity Utilization 72.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 3: WIS 36 & WIS 20



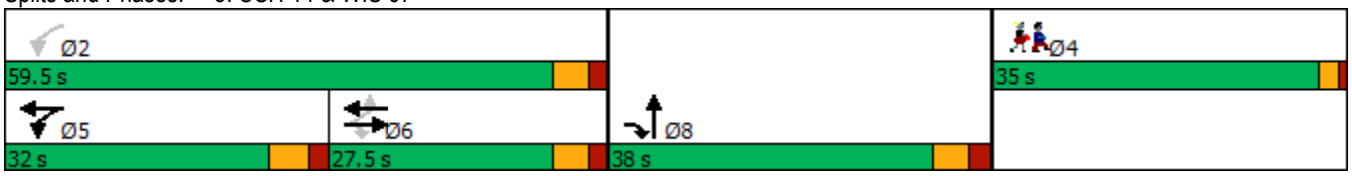
Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	141	59	273	28	76	500	3	56	727	44
v/c Ratio	0.42	0.16	0.63	0.07	0.18	0.28	0.00	0.18	0.58	0.08
Control Delay	24.7	20.2	28.3	19.4	7.7	9.0	8.0	16.7	18.3	14.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.7	20.2	28.3	19.4	7.7	9.0	8.0	16.7	18.3	14.8
Queue Length 50th (ft)	41	16	85	8	10	46	1	13	107	10
Queue Length 95th (ft)	101	48	181	28	32	91	4	42	189	33
Internal Link Dist (ft)	518		552			541			541	
Turn Bay Length (ft)		80		55	450		190	435		175
Base Capacity (vph)	966	1090	1249	1090	532	3349	1498	685	2779	1243
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.05	0.22	0.03	0.14	0.15	0.00	0.08	0.26	0.04

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	Ø2	Ø4
Lane Configurations								
Traffic Volume (vph)	30	120	175	140	0	130		
Future Volume (vph)	30	120	175	140	0	130		
Turn Type	Perm	NA	custom	custom	NA	NA		
Protected Phases		6	8	5	5 6	8	2	4
Permitted Phases	6		6	2				
Detector Phase	6	6	8	5	5 6	8		
Switch Phase								
Minimum Initial (s)	15.0	15.0	15.0	8.0		15.0	15.0	5.0
Minimum Split (s)	20.5	20.5	21.0	14.0		21.0	20.5	35.0
Total Split (s)	27.5	27.5	38.0	32.0		38.0	59.5	35.0
Total Split (%)	20.8%	20.8%	28.7%	24.2%		28.7%	45%	26%
Yellow Time (s)	3.5	3.5	3.5	4.0		3.5	3.5	2.0
All-Red Time (s)	2.0	2.0	2.5	2.0		2.5	2.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0		
Total Lost Time (s)	5.5	5.5	6.0			6.0		
Lead/Lag	Lag	Lag		Lead				
Lead-Lag Optimize?	Yes	Yes		Yes				
Recall Mode	Min	Min	Max	Max		Max	Min	None
Act Effct Green (s)	15.0	15.0	52.5		40.5	32.0		
Actuated g/C Ratio	0.17	0.17	0.58		0.45	0.35		
v/c Ratio	0.19	0.43	0.13		0.43	0.38		
Control Delay	35.7	39.0	9.1		15.6	24.1		
Queue Delay	0.0	0.0	0.0		0.0	0.0		
Total Delay	35.7	39.0	9.1		15.6	24.1		
LOS	D	D	A		B	C		
Approach Delay		26.1			15.6	24.1		
Approach LOS		C			B	C		

Intersection Summary	
Cycle Length: 132.5	
Actuated Cycle Length: 90.5	
Natural Cycle: 95	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.43	
Intersection Signal Delay: 21.6	Intersection LOS: C
Intersection Capacity Utilization 45.2%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 3: USH 14 & WIS 67



Lane Group	EBL	EBT	EBR	WBT	NBT
Lane Group Flow (vph)	33	130	118	299	228
v/c Ratio	0.19	0.43	0.13	0.43	0.38
Control Delay	35.7	39.0	9.1	15.6	24.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	35.7	39.0	9.1	15.6	24.1
Queue Length 50th (ft)	16	68	28	96	96
Queue Length 95th (ft)	44	123	53	153	159
Internal Link Dist (ft)		283		698	461
Turn Bay Length (ft)	120				
Base Capacity (vph)	256	444	900	790	606
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.13	0.29	0.13	0.38	0.38

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	45	35	55	465	90	95	1690	755	5	510	40
Future Volume (vph)	45	35	55	465	90	95	1690	755	5	510	40
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	pt+ov	Prot	NA	Perm
Protected Phases	3	8		7	4	5	2	2 7	1	6	
Permitted Phases			8								6
Detector Phase	3	8	8	7	4	5	2	2 7	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0	5.0	12.0		5.0	12.0	12.0
Minimum Split (s)	10.8	15.5	15.5	11.6	15.5	12.9	18.6		13.3	18.6	18.6
Total Split (s)	16.4	17.0	17.0	42.0	42.6	26.5	116.3		13.3	103.1	103.1
Total Split (%)	8.7%	9.0%	9.0%	22.3%	22.6%	14.1%	61.7%		7.1%	54.7%	54.7%
Yellow Time (s)	3.9	4.5	4.5	3.9	4.5	4.7	5.0		4.7	5.0	5.0
All-Red Time (s)	1.9	3.0	3.0	2.7	3.0	3.2	1.6		3.6	1.6	1.6
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.8	7.5	7.5	6.6	7.5	7.9	6.6		8.3	6.6	6.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min		None	Min	Min
Act Effct Green (s)	8.0	8.7	8.7	26.1	26.5	12.7	95.8	130.1	5.1	77.1	77.1
Actuated g/C Ratio	0.05	0.06	0.06	0.17	0.18	0.08	0.64	0.87	0.03	0.51	0.51
v/c Ratio	0.50	0.35	0.40	0.82	0.33	0.67	0.78	0.57	0.08	0.30	0.03
Control Delay	93.3	84.7	88.9	73.1	59.4	91.4	25.6	6.0	85.6	23.4	22.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	93.3	84.7	88.9	73.1	59.4	91.4	25.6	6.0	85.6	23.4	22.4
LOS	F	F	F	E	E	F	C	A	F	C	C
Approach Delay		89.3			70.6		22.2			23.9	
Approach LOS		F			E		C			C	

Intersection Summary	
Cycle Length: 188.6	
Actuated Cycle Length: 150.3	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 31.8	Intersection LOS: C
Intersection Capacity Utilization 89.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 3: USH 12 & CTH K

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	47	37	36	489	106	100	1779	795	5	537	26
v/c Ratio	0.50	0.35	0.40	0.82	0.33	0.67	0.78	0.57	0.08	0.30	0.03
Control Delay	93.3	84.7	88.9	73.1	59.4	91.4	25.6	6.0	85.6	23.4	22.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	93.3	84.7	88.9	73.1	59.4	91.4	25.6	6.0	85.6	23.4	22.4
Queue Length 50th (ft)	43	34	33	222	85	90	648	177	5	164	13
Queue Length 95th (ft)	108	91	89	370	182	193	1050	440	24	243	35
Internal Link Dist (ft)		437			501		491			513	
Turn Bay Length (ft)	100		160	250		350		385	350		375
Base Capacity (vph)	127	120	102	827	437	226	2668	1443	60	2324	1039
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.31	0.35	0.59	0.24	0.44	0.67	0.55	0.08	0.23	0.03

Intersection Summary

Software Output Reports – Optimized Timings
Isolated Signalized Intersections
Vistro Version 6.00-00

Intersection Level Of Service Report
Intersection 3: WIS 172 & County EB - PM

Control Type:	Signalized	Delay (sec / veh):	36.6
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.408

Intersection Setup

Name	CTH EB/Packerland			CTH EB/Packerland			WIS 172			WIS 172		
Approach	Northbound			Southbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Pocket Length [ft]	265.00	100.00	200.00	140.00	100.00	50.00	370.00	100.00	180.00	310.00	100.00	185.00
Speed [mph]	30.00			35.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	CTH EB/Packerland			CTH EB/Packerland			WIS 172			WIS 172		
Base Volume Input [veh/h]	175	480	315	120	220	85	170	560	145	105	505	115
Base Volume Adjustment Factor	1.0000	1.0000	0.6200	1.0000	1.0000	0.6200	1.0000	1.0000	0.6200	1.0000	1.0000	0.6200
Heavy Vehicles Percentage [%]	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00	3.00	3.00	3.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	175	480	195	120	220	53	170	560	90	105	505	71
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	46	126	51	32	58	14	45	147	24	28	133	19
Total Analysis Volume [veh/h]	184	505	205	126	232	56	179	589	95	111	532	75
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	136
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	3	8	8	7	4	4	5	2	2	1	6	6
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	10	10	7	10	10	7	20	20	7	20	20
Maximum Green [s]	15	35	35	15	35	35	15	50	50	15	50	50
Amber [s]	3.0	4.5	4.5	3.0	4.5	4.5	3.0	4.5	4.5	3.0	4.5	4.5
All red [s]	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Split [s]	32	47	47	11	26	26	27	56	56	22	51	51
Vehicle Extension [s]	2.0	3.0	3.0	2.0	3.0	3.0	2.0	4.0	4.0	2.0	4.0	4.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	0	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	4.5	4.5	2.0	4.5	4.5	2.0	4.5	4.5	2.0	4.5	4.5
Minimum Recall	No	No		No	No		No	Yes		No	Yes	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	6.0	6.0	20.0	6.0	6.0	20.0	6.0	6.0	20.0	6.0	6.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	136	136	136	136	136	136	136	136	136	136	136	136
L, Total Lost Time per Cycle [s]	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	4.50	4.50	0.00	4.50	4.50	0.00	4.50	4.50	0.00	4.50	4.50
g_i, Effective Green Time [s]	52	41	41	52	20	20	72	50	50	72	45	45
g / C, Green / Cycle	0.38	0.30	0.30	0.38	0.14	0.14	0.53	0.36	0.36	0.53	0.33	0.33
(v / s)_i Volume / Saturation Flow Rate	0.12	0.14	0.13	0.12	0.07	0.04	0.15	0.17	0.06	0.10	0.15	0.05
s, saturation flow rate [veh/h]	1526	3582	1599	1045	3547	1583	1185	3547	1583	1079	3512	1568
c, Capacity [veh/h]	588	1067	476	372	509	227	598	1291	576	543	1149	513
d1, Uniform Delay [s]	29.55	39.03	38.46	29.31	53.39	51.73	18.25	32.99	29.26	17.59	36.27	32.33
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.39	1.51	2.83	2.46	2.93	2.58	1.28	1.16	0.62	0.85	1.34	0.60
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.31	0.47	0.43	0.34	0.46	0.25	0.30	0.46	0.16	0.20	0.46	0.15
d, Delay for Lane Group [s/veh]	30.94	40.54	41.29	31.77	56.32	54.30	19.53	34.15	29.88	18.44	37.62	32.93
Lane Group LOS	C	D	D	C	E	D	B	C	C	B	D	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	4.45	7.17	5.93	3.02	3.84	1.86	3.07	7.44	2.17	1.83	7.06	1.81
50th-Percentile Queue Length [ft/ln]	111.21	179.33	148.34	75.39	95.94	46.51	76.75	185.88	54.16	45.72	176.61	45.17
95th-Percentile Queue Length [veh/ln]	7.91	11.57	9.93	5.43	6.91	3.35	5.53	11.91	3.90	3.29	11.42	3.25
95th-Percentile Queue Length [ft/ln]	197.69	289.14	248.21	135.70	172.70	83.73	138.15	297.68	97.50	82.29	285.58	81.30

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	30.94	40.54	41.29	31.77	56.32	54.30	19.53	34.15	29.88	18.44	37.62	32.93
Movement LOS	C	D	D	C	E	D	B	C	C	B	D	C
d_A, Approach Delay [s/veh]	38.74			48.58			30.65			34.16		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	36.59											
Intersection LOS	D											
Intersection V/C	0.408											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 3: WIS 52 & 28th Ave - PM

Control Type:	Signalized	Delay (sec / veh):	42.9
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.307

Intersection Setup

Name	28th Ave			28th Ave			WIS 52			WIS 52		
Approach	Northbound			Southbound			Northeastbound			Southwestbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	2	0	1	1	0	0	2	0	1
Pocket Length [ft]	105.00	100.00	120.00	250.00	100.00	75.00	265.00	100.00	100.00	390.00	100.00	215.00
Speed [mph]	25.00			25.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	28th Ave			28th Ave			WIS 52			WIS 52		
Base Volume Input [veh/h]	5	150	125	310	280	105	50	255	1	230	435	100
Base Volume Adjustment Factor	1.0000	1.0000	0.6200	1.0000	1.0000	0.6200	1.0000	1.0000	1.0000	1.0000	1.0000	0.6200
Heavy Vehicles Percentage [%]	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	150	78	310	280	65	50	255	1	230	435	62
Peak Hour Factor	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	40	21	82	74	17	13	68	0	61	116	16
Total Analysis Volume [veh/h]	5	160	83	330	298	69	53	271	1	245	463	66
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	152
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal group	3	8	5	7	4	4	1	6	6	5	2	2
Auxiliary Signal Groups			5,8									2,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	8	10	8	8	10	10	8	16	16	8	16	16
Maximum Green [s]	12	25	20	25	30	30	20	60	60	20	50	50
Amber [s]	3.5	4.0	3.5	3.5	4.0	4.0	3.5	4.0	4.0	3.5	4.0	4.0
All red [s]	0.5	3.0	0.5	0.5	3.0	3.0	0.5	3.0	3.0	0.5	3.0	3.0
Split [s]	12	27	39	45	60	60	17	41	41	39	63	63
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	5.0	5.0	2.0	5.0	5.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	0	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	5.0	2.0	2.0	5.0	5.0	2.0	5.0	5.0	2.0	5.0	5.0
Minimum Recall	No	No	No	No	No		No	Yes		No	Yes	Yes
Maximum Recall	No	No	No	No	No		No	No		No	No	No
Pedestrian Recall	No	No	No	No	No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	6.0	6.0	20.0	6.0	6.0	20.0	6.0	6.0	20.0	6.0	6.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	152	152	152	152	152	152	152	152	152	152	152	152
L, Total Lost Time per Cycle [s]	4.00	7.00	4.00	4.00	7.00	7.00	4.00	7.00	7.00	4.00	7.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	5.00	2.00	2.00	5.00	5.00	2.00	5.00	5.00	2.00	5.00	2.00
g_i, Effective Green Time [s]	8	20	62	41	53	53	13	34	34	35	56	104
g / C, Green / Cycle	0.05	0.13	0.41	0.27	0.35	0.35	0.09	0.22	0.22	0.23	0.37	0.68
(v / s)_i Volume / Saturation Flow Rate	0.00	0.04	0.05	0.09	0.08	0.04	0.03	0.07	0.07	0.07	0.13	0.04
s, saturation flow rate [veh/h]	1792	3582	1599	3479	3582	1599	1774	1863	1860	3445	3547	1583
c, Capacity [veh/h]	94	471	652	938	1249	558	152	417	416	793	1307	1083
d1, Uniform Delay [s]	68.40	60.00	28.10	44.78	35.17	33.69	65.51	49.41	49.41	48.48	34.87	7.91
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.07	1.95	0.40	1.04	0.45	0.46	6.24	2.08	2.08	1.01	0.75	0.11
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.05	0.34	0.13	0.35	0.24	0.12	0.35	0.33	0.33	0.31	0.35	0.06
d, Delay for Lane Group [s/veh]	69.47	61.95	28.51	45.81	35.62	34.15	71.75	51.49	51.50	49.49	35.62	8.02
Lane Group LOS	E	E	C	D	D	C	E	D	D	D	D	A
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.22	2.98	2.03	5.27	4.12	1.86	2.20	4.59	4.59	3.99	6.41	0.74
50th-Percentile Queue Length [ft/ln]	5.38	74.39	50.72	131.78	102.89	46.55	55.06	114.87	114.81	99.68	160.22	18.41
95th-Percentile Queue Length [veh/ln]	0.39	5.36	3.65	9.04	7.41	3.35	3.96	8.11	8.11	7.18	10.56	1.33
95th-Percentile Queue Length [ft/ln]	9.68	133.90	91.29	225.91	185.20	83.79	99.10	202.76	202.67	179.42	264.01	33.14

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	69.47	61.95	28.51	45.81	35.62	34.15	71.75	51.49	51.50	49.49	35.62	8.02
Movement LOS	E	E	C	D	D	C	E	D	D	D	D	A
d_A, Approach Delay [s/veh]	50.91			40.30			54.80			37.66		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	42.89											
Intersection LOS	D											
Intersection V/C	0.307											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 3: WIS 36 & WIS 20/83 - PM

Control Type:	Signalized	Delay (sec / veh):	22.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.373

Intersection Setup

Name	WIS 36			WIS 36			WIS 20			WIS 20		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	1	0	1	0	0	1	0	0	1
Pocket Length [ft]	450.00	100.00	190.00	435.00	100.00	175.00	100.00	100.00	55.00	100.00	100.00	80.00
Speed [mph]	55.00			55.00			45.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	WIS 36			WIS 36			WIS 20			WIS 20		
Base Volume Input [veh/h]	75	495	5	55	720	70	15	255	45	45	95	95
Base Volume Adjustment Factor	1.0000	1.0000	0.6200	1.0000	1.0000	0.6200	1.0000	1.0000	0.6200	1.0000	1.0000	0.6200
Heavy Vehicles Percentage [%]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	75	495	3	55	720	43	15	255	28	45	95	59
Peak Hour Factor	0.9900	0.9900	0.9900	0.9900	0.9900	0.9900	0.9900	0.9900	0.9900	0.9900	0.9900	0.9900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	19	125	1	14	182	11	4	64	7	11	24	15
Total Analysis Volume [veh/h]	76	500	3	56	727	43	15	258	28	45	96	60
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	109
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	1	6	6	5	2	2	8	8	8	4	4	4
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	6	15	15	6	15	15	8	8	8	8	8	8
Maximum Green [s]	15	45	45	15	45	45	30	30	30	30	30	30
Amber [s]	3.5	5.1	5.1	3.5	5.1	5.1	4.2	4.2	4.2	4.2	4.2	4.2
All red [s]	1.0	2.3	2.3	1.0	2.3	2.3	3.0	3.0	3.0	3.0	3.0	3.0
Split [s]	11	65	65	15	54	54	44	44	44	44	44	44
Vehicle Extension [s]	1.5	3.1	3.1	1.5	3.1	3.1	1.5	1.5	1.5	1.5	1.5	1.5
Walk [s]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	0	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.5	5.4	5.4	2.5	5.4	5.4	5.2	5.2	5.2	5.2	5.2	5.2
Minimum Recall	No	Yes		No	Yes			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	6.0	6.0	20.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	C	R	C	R
C, Cycle Length [s]	109	109	109	109	109	109	109	109	109	109
L, Total Lost Time per Cycle [s]	7.40	7.40	7.40	7.40	7.40	7.40	7.20	7.20	7.20	7.20
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	0.00	5.40	5.40	5.40	5.40	5.40	5.20	5.20	5.20	5.20
g_i, Effective Green Time [s]	58	58	58	58	47	47	37	37	37	37
g / C, Green / Cycle	0.53	0.53	0.53	0.53	0.43	0.43	0.34	0.34	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.08	0.14	0.00	0.06	0.20	0.03	0.15	0.02	0.12	0.04
s, saturation flow rate [veh/h]	897	3582	1599	903	3582	1599	1861	1599	1168	1599
c, Capacity [veh/h]	466	1893	845	458	1531	684	663	540	438	540
d1, Uniform Delay [s]	13.95	14.09	12.14	18.64	22.41	18.35	27.97	24.34	28.36	24.84
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.75	0.34	0.01	0.55	1.06	0.18	1.89	0.18	1.94	0.42
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.16	0.26	0.00	0.12	0.47	0.06	0.41	0.05	0.32	0.11
d, Delay for Lane Group [s/veh]	14.70	14.43	12.15	19.19	23.47	18.53	29.86	24.52	30.30	25.26
Lane Group LOS	B	B	B	B	C	B	C	C	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	0.91	3.07	0.03	0.85	6.30	0.62	5.61	0.50	3.26	1.12
50th-Percentile Queue Length [ft/ln]	22.78	76.75	0.82	21.34	157.41	15.55	140.34	12.43	81.39	27.97
95th-Percentile Queue Length [veh/ln]	1.64	5.53	0.06	1.54	10.41	1.12	9.50	0.90	5.86	2.01
95th-Percentile Queue Length [ft/ln]	41.00	138.15	1.47	38.40	260.29	27.98	237.48	22.38	146.50	50.35

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	14.70	14.43	12.15	19.19	23.47	18.53	29.86	29.86	24.52	30.30	30.30	25.26
Movement LOS	B	B	B	B	C	B	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	14.45			22.92			29.36			28.80		
Approach LOS	B			C			C			C		
d_I, Intersection Delay [s/veh]	21.98											
Intersection LOS	C											
Intersection V/C	0.373											

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 3: WIS 67 & US 14 - PM

Control Type:	Signalized	Delay (sec / veh):	38.3
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.347

Intersection Setup

Name	USH 14			USH 14			WIS 67			WIS 67		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	120.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			0.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	USH 14			USH 14			WIS 67			WIS 67		
Base Volume Input [veh/h]	0	130	80	0	0	0	30	120	175	140	0	135
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.6200	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	5.00	5.00	0.00	0.00	0.00	4.00	4.00	4.00	3.00	3.00	3.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	130	80	0	0	0	30	120	109	140	0	135
Peak Hour Factor	1.0000	0.9200	0.9200	1.0000	1.0000	1.0000	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	35	22	0	0	0	8	33	30	38	0	37
Total Analysis Volume [veh/h]	0	141	87	0	0	0	33	130	118	152	0	147
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	133
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap	Protecte	Overlap	Permiss
Signal group	0	8	8	0	0	0	6	6	6	5	2	0
Auxiliary Signal Groups									6,8		2,5	
Lead / Lag	-	-	-	-	-	-	Lag	-	-	Lead	-	-
Minimum Green [s]	0	15	15	0	0	0	15	15	15	5	5	0
Maximum Green [s]	0	30	30	0	0	0	30	30	30	20	56	0
Amber [s]	0.0	3.5	3.5	0.0	0.0	0.0	3.5	3.5	3.5	4.0	3.5	0.0
All red [s]	0.0	2.5	2.5	0.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
Split [s]	0	36	36	0	0	0	36	36	36	26	62	0
Vehicle Extension [s]	0.0	1.5	1.5	0.0	0.0	0.0	1.5	1.5	1.5	3.0	3.0	0.0
Walk [s]	0	7	7	0	0	0	7	7	7	5	5	0
Pedestrian Clearance [s]	0	18	18	0	0	0	25	25	25	10	10	0
Rest In Walk												
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	4.0	4.0	0.0	0.0	0.0	3.5	3.5	3.5	4.0	3.5	0.0
Minimum Recall		No						Yes	Yes	No	No	
Maximum Recall		Yes						No	No	No	No	
Pedestrian Recall		No						No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	6.0	6.0	0.0	0.0	0.0	20.0	20.0	20.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	4
Pedestrian Walk [s]	5
Pedestrian Clearance [s]	30

Lane Group Calculations

Lane Group	C		L	C	R	C
C, Cycle Length [s]	133		133	133	133	133
L, Total Lost Time per Cycle [s]	6.00		5.50	5.50	6.00	5.50
l1_p, Permitted Start-Up Lost Time [s]	0.00		2.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00		3.50	3.50	4.00	0.00
g_i, Effective Green Time [s]	30		31	31	66	57
g / C, Green / Cycle	0.23		0.23	0.23	0.50	0.42
(v / s)_i Volume / Saturation Flow Rate	0.13		0.03	0.07	0.08	0.22
s, saturation flow rate [veh/h]	1695		1212	1827	1553	1366
c, Capacity [veh/h]	382		161	419	771	595
d1, Uniform Delay [s]	46.08		56.89	42.52	18.26	27.01
k, delay calibration	0.50		0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.70		2.88	1.92	0.42	3.01
d3, Initial Queue Delay [s]	0.00		0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00		1.00	1.00	1.00	1.00
PF, progression factor	1.00		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.60		0.21	0.31	0.15	0.50
d, Delay for Lane Group [s/veh]	52.78		59.76	44.44	18.69	30.02
Lane Group LOS	D		E	D	B	C
Critical Lane Group	Yes		No	No	Yes	Yes
50th-Percentile Queue Length [veh/ln]	7.49		1.18	3.84	2.13	7.28
50th-Percentile Queue Length [ft/ln]	187.23		29.54	95.91	53.19	181.99
95th-Percentile Queue Length [veh/ln]	11.98		2.13	6.91	3.83	11.70
95th-Percentile Queue Length [ft/ln]	299.43		53.16	172.64	95.74	292.62

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	52.78	52.78	0.00	0.00	0.00	59.76	44.44	18.69	30.02	30.02	30.02
Movement LOS		D	D				E	D	B	C	C	C
d_A, Approach Delay [s/veh]	52.78			0.00			35.43			30.02		
Approach LOS	D			A			D			C		
d_I, Intersection Delay [s/veh]	38.32											
Intersection LOS	D											
Intersection V/C	0.347											

Sequence

Ring 1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	4	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 3: US 12 & County K - PM

Control Type:	Signalized	Delay (sec / veh):	31.7
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.523

Intersection Setup

Name	CTH K			CTH K			USH 12			USH 12		
Approach	Eastbound			Westbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	2	0	0	1	0	1	1	0	1
Pocket Length [ft]	100.00	100.00	160.00	250.00	100.00	100.00	350.00	100.00	385.00	350.00	100.00	375.00
Speed [mph]	45.00			45.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	CTH K			CTH K			USH 12			USH 12		
Base Volume Input [veh/h]	45	35	55	465	90	10	95	1690	755	5	510	40
Base Volume Adjustment Factor	1.0000	1.0000	0.6200	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.6200
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	45	35	34	465	90	10	95	1690	755	5	510	25
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	9	9	122	24	3	25	445	199	1	134	7
Total Analysis Volume [veh/h]	47	37	36	489	95	11	100	1779	795	5	537	26
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	190
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal group	3	8	8	7	4	4	5	2	2	1	6	6
Auxiliary Signal Groups									2,7			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	8	8	5	8	8	5	12	12	5	12	12
Maximum Green [s]	20	20	20	50	20	20	25	65	65	20	65	65
Amber [s]	3.9	4.5	4.5	3.9	4.5	4.5	4.7	5.0	5.0	4.7	5.0	5.0
All red [s]	1.9	3.0	3.0	2.7	3.0	3.0	3.2	1.6	1.6	3.6	1.6	1.6
Split [s]	14	16	16	36	38	38	20	124	124	14	118	118
Vehicle Extension [s]	1.5	1.5	1.5	1.5	1.5	1.5	1.5	5.0	5.0	1.5	5.0	5.0
Walk [s]	0	0	0	0	0	0	3	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	3	0	0	0	0	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Minimum Recall	No	No		No	No		No	Yes	Yes	No	Yes	
Maximum Recall	No	No		No	No		No	No	No	No	No	
Pedestrian Recall	No	No		No	No		No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	20.0	6.0	6.0	20.0	6.0	6.0	20.0	6.0	6.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	R	L	C	R
C, Cycle Length [s]	190	190	190	190	190	190	190	190	190	190	190
L, Total Lost Time per Cycle [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
g_i, Effective Green Time [s]	14	16	16	36	38	20	124	160	14	118	118
g / C, Green / Cycle	0.07	0.08	0.08	0.19	0.20	0.11	0.65	0.84	0.07	0.62	0.62
(v / s)_i Volume / Saturation Flow Rate	0.03	0.02	0.02	0.14	0.06	0.06	0.50	0.50	0.00	0.15	0.02
s, saturation flow rate [veh/h]	1774	1863	1583	3445	1829	1792	3582	1599	1774	3547	1583
c, Capacity [veh/h]	131	157	133	653	366	189	2338	1347	131	2203	983
d1, Uniform Delay [s]	83.73	81.29	81.53	72.73	64.54	80.55	22.78	4.71	81.75	16.08	13.87
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.53	3.51	4.92	7.71	1.99	10.27	2.40	1.91	0.55	0.26	0.05
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.36	0.24	0.27	0.75	0.29	0.53	0.76	0.59	0.04	0.24	0.03
d, Delay for Lane Group [s/veh]	91.27	84.79	86.45	80.44	66.53	90.82	25.17	6.62	82.29	16.34	13.92
Lane Group LOS	F	F	F	F	E	F	C	A	F	B	B
Critical Lane Group	No	No	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.46	1.84	1.83	11.87	4.55	5.11	26.07	7.53	0.24	5.14	0.44
50th-Percentile Queue Length [ft/ln]	61.54	46.07	45.78	296.80	113.81	127.84	651.82	188.30	6.12	128.41	10.90
95th-Percentile Queue Length [veh/ln]	4.43	3.32	3.30	17.52	8.05	8.82	34.45	12.03	0.44	8.85	0.78
95th-Percentile Queue Length [ft/ln]	110.78	82.93	82.41	438.07	201.29	220.56	861.18	300.82	11.02	221.33	19.62

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	91.27	84.79	86.45	80.44	66.53	66.53	90.82	25.17	6.62	82.29	16.34	13.92
Movement LOS	F	F	F	F	E	E	F	C	A	F	B	B
d_A, Approach Delay [s/veh]	87.83			77.96			22.11			16.81		
Approach LOS	F			E			C			B		
d_I, Intersection Delay [s/veh]	31.74											
Intersection LOS	C											
Intersection V/C	0.523											

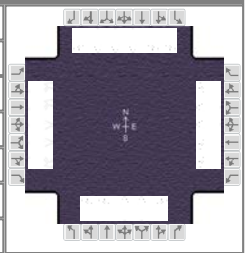
Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Software Output Reports – Optimized Timings
Signalized Corridors
HCS 2010 Version 6.9

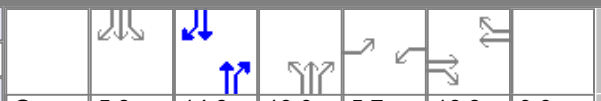
HCS 2010 Signalized Intersection Input Data

General Information				Intersection Information	
Agency	raSmith			Duration, h	0.25
Analyst	LLZ	Analysis Date	Feb 22, 2018	Area Type	Other
Jurisdiction	SE - Milwaukee Co	Time Period	PM	PHF	0.93
Urban Street	WIS 38	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	Drexel Ave	File Name	WIS 38 PM_180312.xus		
Project Description	PM				

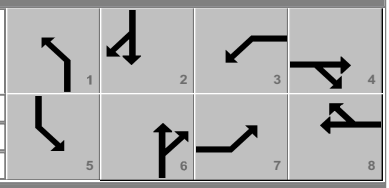


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	125	390	410	115	305	70	265	610	120	145	870	135

Signal Information			
Cycle, s	85.0	Reference Phase	2
Offset, s	7	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Float	Simult. Gap N/S	On



Green	5.8	14.8	10.0	5.7	16.8	0.0
Yellow	3.5	4.4	3.5	3.5	5.0	0.0
Red	2.0	3.0	2.0	2.0	3.0	0.0



Traffic Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	125	390	410	115	305	70	265	610	120	145	870	135
Initial Queue (Q_b), veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Base Saturation Flow Rate (s_o), veh/h	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Parking (N_m), man/h		None			None			None			None	
Heavy Vehicles (P_{HV}), %	1	1	1	1	1	1	2	2	2	1	1	1
Ped / Bike / RTOR, /h	0	0	156	0	0	27	0	0	46	0	0	51
Buses (N_b), buses/h	0	0	0	0	0	0	0	0	0	0	0	0
Arrival Type (*AT*)	3	3	3	3	3	3	3	3	3	3	3	3
Upstream Filtering (*I*)	1.00	1.00	1.00	1.00	1.00	1.00	0.85	0.85	0.85	1.00	1.00	1.00
Lane Width (*W*), ft	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Turn Bay Length, ft	245	0	375	170	0	180	375	0	260	440	0	430
Grade (*Pg*), %		0			0			0			0	
Speed Limit, mi/h	35	35	35	35	35	35	45	45	45	45	45	45

Phase Information	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Maximum Green (G_{max}) or Phase Split, s	19.0	29.0	14.0	24.0	16.0	28.0	14.0	26.0
Yellow Change Interval (*Y*), s	3.5	5.0	3.5	5.0	3.5	4.4	3.5	4.4
Red Clearance Interval (R_c), s	2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0
Minimum Green (G_{min}), s	6	10	6	10	6	15	6	15
Start-Up Lost Time (*lt*), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green (*e*), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Passage (*PT*), s	1.5	1.5	1.5	1.5	1.5	2.0	1.5	2.0
Recall Mode	Off	Off	Off	Off	Off	Min	Off	Min
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Walk (*Walk*), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Clearance Time (*PC*), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Multimodal Information	EB			WB			NB			SB		
85th % Speed / Rest in Walk / Corner Radius	0	No	25	0	No	25	0	No	25	0	No	25
Walkway / Crosswalk Width / Length, ft	9.0	12	0	9.0	12	0	9.0	12	0	9.0	12	0
Street Width / Island / Curb	0	0	No	0	0	No	0	0	No	0	0	No
Width Outside / Bike Lane / Shoulder, ft	12	5.0	2.0	12	5.0	2.0	12	5.0	2.0	12	5.0	2.0
Pedestrian Signal / Occupied Parking	No	0.50		No	0.50		No	0.50		No	0.50	

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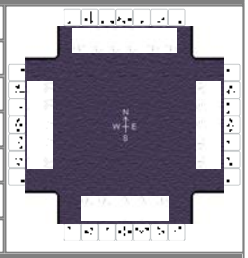
HCS 2010 Signalized Intersection Results Summary

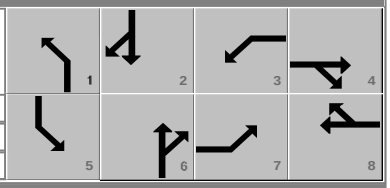
General Information				Intersection Information	
Agency	raSmith			Duration, h	0.25
Analyst	LLZ	Analysis Date	Feb 22, 2018	Area Type	Other
Jurisdiction	SE - Milwaukee Co	Time Period	PM	PHF	0.93
Urban Street	WIS 38	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	Drexel Ave	File Name	WIS 38 PM_180312.xus		
Project Description	PM				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	125	390	410	115	305	70	265	610	120	145	870	135

Signal Information			
Cycle, s	85.0	Reference Phase	2
Offset, s	7	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Float	Simult. Gap N/S	On

Green	5.8	14.8	10.0	5.7	16.8	0.0
Yellow	3.5	4.4	3.5	3.5	5.0	0.0
Red	2.0	3.0	2.0	2.0	3.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	7	4	3	8	1	6	5	2
Case Number	2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0
Phase Duration, s	11.2	24.8	11.2	24.7	15.5	37.7	11.3	33.5
Change Period, ($Y+R_c$), s	5.5	8.0	5.5	8.0	7.4	7.4	5.5	7.4
Max Allow Headway (*MAH*), s	2.6	2.6	2.6	2.6	2.5	0.0	2.5	0.0
Queue Clearance Time (g_s), s	5.2	16.1	4.9	8.9	8.0		5.7	
Green Extension Time (g_e), s	0.1	0.7	0.1	1.3	0.2	0.0	0.1	0.0
Phase Call Probability	0.96	1.00	0.95	1.00	1.00		0.97	
Max Out Probability	0.00	0.33	0.18	0.11	1.00		0.63	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	134	419	273	124	328	46	262	604	73	156	935	90
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1740	1791	1594	1740	1791	1594	1723	1773	1579	1740	1708	1594
Queue Service Time (g_s), s	3.2	9.0	14.1	2.9	6.9	2.0	6.0	9.6	1.9	3.7	13.2	3.5
Cycle Queue Clearance Time (g_c), s	3.2	9.0	14.1	2.9	6.9	2.0	6.0	9.6	1.9	3.7	13.2	3.5
Green Ratio (*g/C*)	0.07	0.20	0.20	0.07	0.20	0.20	0.10	0.36	0.36	0.07	0.31	0.31
Capacity (*c*), veh/h	235	708	315	232	705	314	329	1263	562	239	1574	490
Volume-to-Capacity Ratio (*X*)	0.571	0.592	0.867	0.532	0.465	0.147	0.797	0.478	0.130	0.651	0.594	0.184
Back of Queue (*Q*), ft/ln (95 th percentile)	61.2	172	192.3	56.1	130.5	34.5	106.7	154.3	30	69.9	222.5	57.5
Back of Queue (*Q*), veh/ln (95 th percentile)	2.4	6.8	7.6	2.2	5.2	1.4	4.2	6.1	1.2	2.8	8.8	2.3
Queue Storage Ratio (*RQ*) (95 th percentile)	0.25	0.00	0.51	0.33	0.00	0.19	0.28	0.00	0.12	0.16	0.00	0.13
Uniform Delay (d_1), s/veh	38.4	31.0	14.4	38.4	30.2	28.2	29.0	16.3	12.5	38.6	25.0	1.2
Incremental Delay (d_2), s/veh	0.8	0.3	13.3	0.7	0.2	0.1	9.1	1.1	0.4	1.1	1.7	0.8
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	39.2	31.3	27.7	39.1	30.4	28.3	38.1	17.4	12.9	39.7	26.6	2.1
Level of Service (LOS)	D	C	C	D	C	C	D	B	B	D	C	A
Approach Delay, s/veh / LOS	31.4	C		32.3	C		22.8	C		26.5	C	
Intersection Delay, s/veh / LOS	27.5						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	3.4	C	3.2	C	3.1	C	3.3	C
Bicycle LOS Score / LOS	1.2	A	0.9	A	1.3	A	1.1	A

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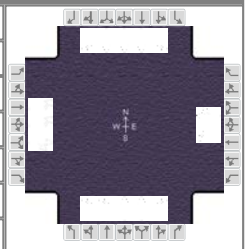
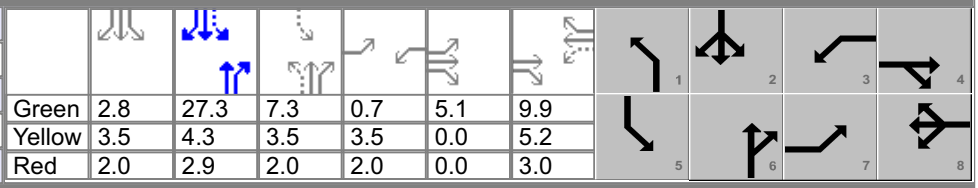
HCS 2010 Signalized Intersection Input Data

General Information				Intersection Information	
Agency	raSmith			Duration, h	0.25
Analyst	LLZ	Analysis Date	Feb 22, 2018	Area Type	Other
Jurisdiction	SE - Milwaukee Co	Time Period	PM	PHF	0.96
Urban Street	WIS 38	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	Susan Dr/Town Square…	File Name	WIS 38 PM_180312.xus		
Project Description	PM				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	135	5	155	5	5	15	120	850	10	25	1250	125

Signal Information			
Cycle, s	85.0	Reference Phase	2
Offset, s	85	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	2.8	27.3	7.3	0.7	5.1	9.9	
Yellow	3.5	4.3	3.5	3.5	0.0	5.2	
Red	2.0	2.9	2.0	2.0	0.0	3.0	

Traffic Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	135	5	155	5	5	15	120	850	10	25	1250	125
Initial Queue (Q_b), veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Base Saturation Flow Rate (s_o), veh/h	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Parking (N_m), man/h		None			None			None			None	
Heavy Vehicles (P_{HV}), %	1	1		1	1		3	3	3	1	1	1
Ped / Bike / RTOR, /h	0	0	0	0	0	0	0	0	4	0	0	48
Buses (N_b), buses/h	0	0	0	0	0	0	0	0	0	0	0	0
Arrival Type (*AT*)	3	3	3	3	3	3	3	3	3	3	3	3
Upstream Filtering (*I*)	1.00	1.00	1.00	1.00	1.00	1.00	0.87	0.87	0.87	0.87	0.87	0.87
Lane Width (*W*), ft	12.0	12.0		12.0	12.0		12.0	12.0	12.0	12.0	12.0	12.0
Turn Bay Length, ft	195	0		50	0		410	0	245	450	0	280
Grade (*Pg*), %		0			0			0			0	
Speed Limit, mi/h	25	25	25	25	25	25	45	45	45	45	45	45

Phase Information	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Maximum Green (G_{max}) or Phase Split, s	12.0	18.2	12.0	18.2	14.0	41.8	13.0	40.8
Yellow Change Interval (*Y*), s	3.5	5.2	3.5	5.2	3.5	4.3	3.5	4.3
Red Clearance Interval (R_c), s	2.0	3.0	2.0	3.0	2.0	2.9	2.0	2.9
Minimum Green (G_{min}), s	6	10	6	10	6	15	6	15
Start-Up Lost Time (*lt*), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green (*e*), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Passage (*PT*), s	1.5	1.5	1.5	1.5	1.5	2.0	1.5	2.0
Recall Mode	Off	Off	Off	Off	Off	Min	Off	Min
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Walk (*Walk*), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Clearance Time (*PC*), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Multimodal Information	EB			WB			NB			SB		
85th % Speed / Rest in Walk / Corner Radius	0	No	25	0	No	25	0	No	25	0	No	25
Walkway / Crosswalk Width / Length, ft	9.0	12	0	9.0	12	0	9.0	12	0	9.0	12	0
Street Width / Island / Curb	0	0	No	0	0	No	0	0	No	0	0	No
Width Outside / Bike Lane / Shoulder, ft	12	5.0	2.0	12	5.0	2.0	12	5.0	2.0	12	5.0	2.0
Pedestrian Signal / Occupied Parking	No	0.50		No	0.50		No	0.50		No	0.50	

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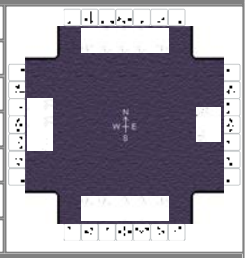
HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	raSmith			Duration, h	0.25
Analyst	LLZ	Analysis Date	Feb 22, 2018	Area Type	Other
Jurisdiction	SE - Milwaukee Co	Time Period	PM	PHF	0.96
Urban Street	WIS 38	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	Susan Dr/Town Square…	File Name	WIS 38 PM_180312.xus		
Project Description	PM				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	135	5	155	5	5	15	120	850	10	25	1250	125

Signal Information			
Cycle, s	85.0	Reference Phase	2
Offset, s	85	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	2.8	27.3	7.3	0.7	5.1	9.9	1	2	3	4		
Yellow	3.5	4.3	3.5	3.5	0.0	5.2	5	6	7	8		
Red	2.0	2.9	2.0	2.0	0.0	3.0						

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	7	4	3	8	1	6	5	2
Case Number	2.0	4.0	1.1	4.0	2.0	3.0	1.2	3.0
Phase Duration, s	11.3	23.2	6.2	18.1	12.8	47.3	8.3	42.8
Change Period, ($Y+R_c$), s	5.5	8.2	5.5	8.2	7.2	7.2	5.5	7.2
Max Allow Headway (*MAH*), s	2.8	3.0	2.8	3.0	2.5	0.0	2.5	0.0
Queue Clearance Time (g_s), s	5.3	10.1	2.2	3.0	4.8		2.6	
Green Extension Time (g_e), s	0.0	0.2	0.0	0.2	0.5	0.0	0.0	0.0
Phase Call Probability	0.96	1.00	0.12	0.99	0.94		0.47	
Max Out Probability	1.00	0.01	0.00	0.00	1.00		0.00	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	141	167		5	21		118	832	6	27	1341	83
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1740	1602		1792	1657		1706	1756	1563	1792	1708	1594
Queue Service Time (g_s), s	3.3	8.1		0.2	1.0		2.8	12.6	0.1	0.6	11.6	1.2
Cycle Queue Clearance Time (g_c), s	3.3	8.1		0.2	1.0		2.8	12.6	0.1	0.6	11.6	1.2
Green Ratio (*g/C*)	0.07	0.18		0.18	0.12		0.07	0.47	0.47	0.50	0.42	0.42
Capacity (*c*), veh/h	237	282		198	193		226	1657	738	358	2146	668
Volume-to-Capacity Ratio (*X*)	0.594	0.590		0.026	0.108		0.520	0.502	0.008	0.075	0.625	0.124
Back of Queue (*Q*), ft/ln (95 th percentile)	65.6	145.6		4	17.6		51.2	187.7	1.9	10.2	127.6	18.5
Back of Queue (*Q*), veh/ln (95 th percentile)	2.6	5.8		0.2	0.7		2.0	7.3	0.1	0.4	5.1	0.7
Queue Storage Ratio (*RQ*) (95 th percentile)	0.34	0.00		0.08	0.00		0.12	0.00	0.01	0.02	0.00	0.07
Uniform Delay (d_1), s/veh	38.5	32.2		28.7	33.6		37.3	13.0	8.8	11.7	8.9	0.4
Incremental Delay (d_2), s/veh	0.9	1.1		0.0	0.1		0.6	1.0	0.0	0.0	1.0	0.3
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	39.4	33.3		28.8	33.7		37.9	14.0	8.8	11.7	9.9	0.6
Level of Service (LOS)	D	C		C	C		D	B	A	B	A	A
Approach Delay, s/veh / LOS	36.1	D		32.7	C		16.9	B		9.4	A	
Intersection Delay, s/veh / LOS	15.2						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	3.4	C	3.1	C	2.3	B	2.9	C
Bicycle LOS Score / LOS	1.0	A	0.5	A	1.3	A	1.3	A

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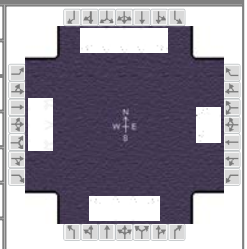
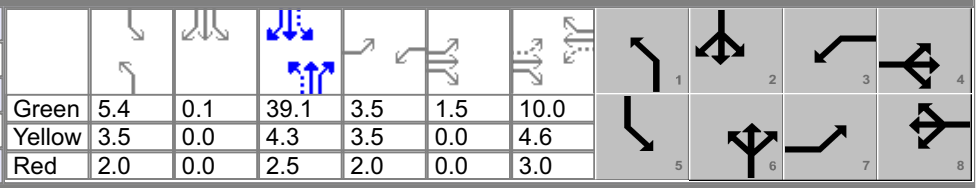
HCS 2010 Signalized Intersection Input Data

General Information				Intersection Information	
Agency	raSmith			Duration, h	0.25
Analyst	LLZ	Analysis Date	Feb 22, 2018	Area Type	Other
Jurisdiction	SE - Milwaukee Co	Time Period	PM	PHF	0.96
Urban Street	WIS 38	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	Forest Hill Dr	File Name	WIS 38 PM_180312.xus		
Project Description	PM				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	70	40	155	35	25	80	105	865	30	100	1230	55

Signal Information			
Cycle, s	85.0	Reference Phase	2
Offset, s	23	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	5.4	0.1		39.1	3.5	1.5	10.0					
Yellow	3.5	0.0		4.3	3.5	0.0	4.6					
Red	2.0	0.0		2.5	2.0	0.0	3.0					

Traffic Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	70	40	155	35	25	80	105	865	30	100	1230	55
Initial Queue (Q_b), veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Base Saturation Flow Rate (s_o), veh/h	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Parking (N_m), man/h		None			None			None			None	
Heavy Vehicles (P_{HV}), %	2	2	2	1	1		2	2	2	1	1	1
Ped / Bike / RTOR, /h	0	0	59	0	0	0	0	0	11	0	0	21
Buses (N_b), buses/h	0	0	0	0	0	0	0	0	0	0	0	0
Arrival Type (*AT*)	3	3	3	3	3	3	3	3	3	3	3	3
Upstream Filtering (*I*)	1.00	1.00	1.00	1.00	1.00	1.00	0.89	0.89	0.89	0.75	0.75	0.75
Lane Width (*W*), ft	12.0	12.0	12.0	12.0	12.0		12.0	12.0	12.0	12.0	12.0	12.0
Turn Bay Length, ft	325	0	170	120	0		470	0	280	350	0	270
Grade (*Pg*), %		0			0			0			0	
Speed Limit, mi/h	25	25	25	35	35	35	45	45	45	45	45	45

Phase Information	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Maximum Green (G_{max}) or Phase Split, s	13.0	18.0	13.0	18.0	29.0	38.0	16.0	25.0
Yellow Change Interval (*Y*), s	3.5	4.6	3.5	4.6	3.5	4.3	3.5	4.3
Red Clearance Interval (R_c), s	2.0	3.0	2.0	3.0	2.0	2.5	2.0	2.5
Minimum Green (G_{min}), s	6	10	6	10	6	15	6	15
Start-Up Lost Time (*lt*), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green (*e*), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Passage (*PT*), s	1.5	1.5	1.5	1.5	1.5	2.0	1.5	2.0
Recall Mode	Off	Off	Off	Off	Off	Min	Off	Min
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Walk (*Walk*), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Clearance Time (*PC*), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Multimodal Information	EB			WB			NB			SB		
85th % Speed / Rest in Walk / Corner Radius	0	No	25	0	No	25	0	No	25	0	No	25
Walkway / Crosswalk Width / Length, ft	9.0	12	0	9.0	12	0	9.0	12	0	9.0	12	0
Street Width / Island / Curb	0	0	No	0	0	No	0	0	No	0	0	No
Width Outside / Bike Lane / Shoulder, ft	12	5.0	2.0	12	5.0	2.0	12	5.0	2.0	12	5.0	2.0
Pedestrian Signal / Occupied Parking	No	0.50		No	0.50		No	0.50		No	0.50	

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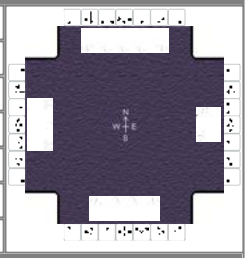
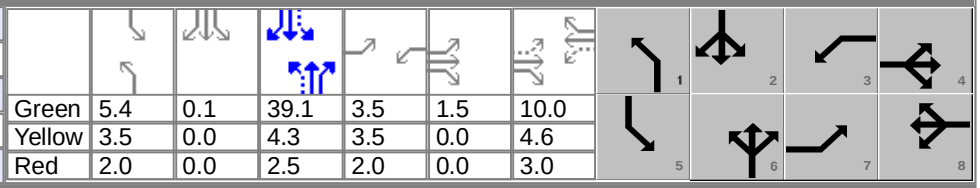
HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	raSmith			Duration, h	0.25
Analyst	LLZ	Analysis Date	Feb 22, 2018	Area Type	Other
Jurisdiction	SE - Milwaukee Co	Time Period	PM	PHF	0.96
Urban Street	WIS 38	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	Forest Hill Dr	File Name	WIS 38 PM_180312.xus		
Project Description	PM				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	70	40	155	35	25	80	105	865	30	100	1230	55

Signal Information			
Cycle, s	85.0	Reference Phase	2
Offset, s	23	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	5.4	0.1	39.1	3.5	1.5	10.0
Yellow	3.5	0.0	4.3	3.5	0.0	4.6
Red	2.0	0.0	2.5	2.0	0.0	3.0

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	7	4	3	8	1	6	5	2
Case Number	1.1	3.0	1.1	4.0	1.1	3.0	1.1	3.0
Phase Duration, s	10.4	19.1	9.0	17.6	10.9	45.9	11.0	46.1
Change Period, ($Y+R_c$), s	5.5	7.6	5.5	7.6	5.5	6.8	5.5	6.8
Max Allow Headway (*MAH*), s	2.8	2.8	2.6	2.8	2.5	0.0	2.5	0.0
Queue Clearance Time (g_s), s	5.0	7.0	3.5	7.3	4.4		4.6	
Green Extension Time (g_e), s	0.0	0.2	0.0	0.2	0.1	0.0	0.1	0.0
Phase Call Probability	0.82	1.00	0.58	1.00	0.90		0.92	
Max Out Probability	1.00	0.01	0.05	0.06	0.00		0.00	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	73	42	100	36	109		98	804	18	109	1339	37
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1774	1863	1579	1792	1654		1774	1773	1579	1792	1708	1594
Queue Service Time (g_s), s	3.0	1.7	5.0	1.5	5.3		2.4	9.5	0.2	2.6	12.7	0.8
Cycle Queue Clearance Time (g_c), s	3.0	1.7	5.0	1.5	5.3		2.4	9.5	0.2	2.6	12.7	0.8
Green Ratio (*g/C*)	0.18	0.13	0.13	0.18	0.12		0.53	0.46	0.46	0.53	0.46	0.46
Capacity (*c*), veh/h	258	251	213	302	194		320	1633	727	435	2368	737
Volume-to-Capacity Ratio (*X*)	0.283	0.166	0.470	0.121	0.563		0.305	0.492	0.024	0.250	0.566	0.050
Back of Queue (*Q*), ft/ln (95 th percentile)	59	35	88.2	27.8	96.6		39	130.3	2.8	43.4	156.5	11.7
Back of Queue (*Q*), veh/ln (95 th percentile)	2.3	1.4	3.5	1.1	3.8		1.5	5.1	0.1	1.7	6.2	0.5
Queue Storage Ratio (*RQ*) (95 th percentile)	0.18	0.00	0.52	0.23	0.00		0.08	0.00	0.01	0.12	0.00	0.04
Uniform Delay (d_1), s/veh	30.3	32.5	34.0	29.5	35.4		12.1	9.2	3.9	11.6	10.7	8.7
Incremental Delay (d_2), s/veh	0.2	0.1	0.6	0.1	0.9		0.2	0.9	0.1	0.1	0.7	0.1
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	30.5	32.7	34.6	29.6	36.4		12.3	10.2	4.0	11.7	11.4	8.8
Level of Service (LOS)	C	C	C	C	D		B	B	A	B	B	A
Approach Delay, s/veh / LOS	32.8	C		34.7	C		10.3	B		11.4	B	
Intersection Delay, s/veh / LOS	13.9						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	3.3	C	3.1	C	2.3	B	2.5	B
Bicycle LOS Score / LOS	0.8	A	0.7	A	1.3	A	1.3	A

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--- Messages ---

WARNING: According to input data, upstream feeding volume is equal to 89% of downstream exit volume during time period #1, for thru movement #6.

--- Comments ---

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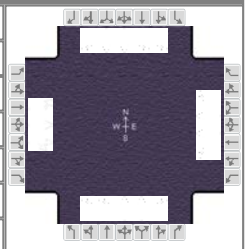
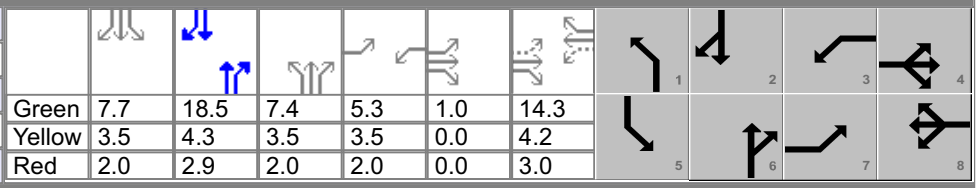
HCS 2010 Signalized Intersection Input Data

General Information				Intersection Information	
Agency	raSmith			Duration, h	0.25
Analyst	LLZ	Analysis Date	Feb 22, 2018	Area Type	Other
Jurisdiction	SE - Milwaukee Co	Time Period	PM	PHF	0.96
Urban Street	WIS 38	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	Puetz Rd	File Name	WIS 38 PM_180312.xus		
Project Description	PM				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	115	360	150	85	235	195	120	590	130	205	970	145

Signal Information			
Cycle, s	85.0	Reference Phase	2
Offset, s	48	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	7.7	18.5	7.4	5.3	1.0	14.3						
Yellow	3.5	4.3	3.5	3.5	0.0	4.2						
Red	2.0	2.9	2.0	2.0	0.0	3.0						

Traffic Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	115	360	150	85	235	195	120	590	130	205	970	145
Initial Queue (Q_b), veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Base Saturation Flow Rate (s_o), veh/h	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Parking (N_m), man/h		None			None			None			None	
Heavy Vehicles (P_{HV}), %	1	1		1	1	1	2	2	2	1	1	1
Ped / Bike / RTOR, /h	0	0	0	0	0	74	0	0	50	0	0	55
Buses (N_b), buses/h	0	0	0	0	0	0	0	0	0	0	0	0
Arrival Type (*AT*)	3	3	3	3	3	3	3	3	3	3	3	3
Upstream Filtering (*I*)	1.00	1.00	1.00	1.00	1.00	1.00	0.88	0.88	0.88	0.88	0.88	0.88
Lane Width (*W*), ft	12.0	12.0		12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Turn Bay Length, ft	380	0		315	0	90	215	0	305	225	0	260
Grade (*Pg*), %		0			0			0			0	
Speed Limit, mi/h	35	35	35	35	35	35	45	45	45	45	45	45

Phase Information	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Maximum Green (G_{max}) or Phase Split, s	14.0	22.0	14.0	22.0	17.0	37.0	12.0	32.0
Yellow Change Interval (*Y*), s	3.5	4.2	3.5	4.2	3.5	4.3	3.5	4.3
Red Clearance Interval (R_c), s	2.0	3.0	2.0	3.0	2.0	2.9	2.0	2.9
Minimum Green (G_{min}), s	6	10	6	10	6	15	6	15
Start-Up Lost Time (*lt*), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green (*e*), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Passage (*PT*), s	1.5	1.5	1.5	1.5	1.5	2.0	1.5	2.0
Recall Mode	Off	Off	Off	Off	Off	Min	Off	Min
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Walk (*Walk*), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Clearance Time (*PC*), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Multimodal Information	EB			WB			NB			SB		
85th % Speed / Rest in Walk / Corner Radius	0	No	25	0	No	25	0	No	25	0	No	25
Walkway / Crosswalk Width / Length, ft	9.0	12	0	9.0	12	0	9.0	12	0	9.0	12	0
Street Width / Island / Curb	0	0	No	0	0	No	0	0	No	0	0	No
Width Outside / Bike Lane / Shoulder, ft	12	5.0	2.0	12	5.0	2.0	12	5.0	2.0	12	5.0	2.0
Pedestrian Signal / Occupied Parking	No	0.50		No	0.50		No	0.50		No	0.50	

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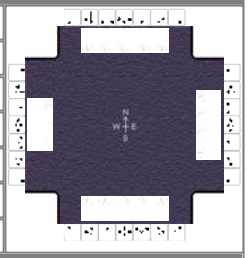
HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	raSmith			Duration, h	0.25
Analyst	LLZ	Analysis Date	Feb 22, 2018	Area Type	Other
Jurisdiction	SE - Milwaukee Co	Time Period	PM	PHF	0.96
Urban Street	WIS 38	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	Puetz Rd	File Name	WIS 38 PM_180312.xus		
Project Description	PM				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	115	360	150	85	235	195	120	590	130	205	970	145

Signal Information			
Cycle, s	85.0	Reference Phase	2
Offset, s	48	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	7.7	18.5	7.4	5.3	1.0	14.3	1	2	3	4		
Yellow	3.5	4.3	3.5	3.5	0.0	4.2	5	6	7	8		
Red	2.0	2.9	2.0	2.0	0.0	3.0						

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	7	4	3	8	1	6	5	2
Case Number	1.1	4.0	1.1	3.0	2.0	3.0	2.0	3.0
Phase Duration, s	11.8	22.5	10.8	21.5	12.9	38.6	13.2	38.9
Change Period, ($Y+R_c$), s	5.5	7.2	5.5	7.2	7.2	7.2	5.5	7.2
Max Allow Headway (*MAH*), s	2.6	2.6	2.6	2.6	2.5	0.0	2.5	0.0
Queue Clearance Time (g_s), s	6.6	14.3	5.4	8.1	4.9		7.5	
Green Extension Time (g_e), s	0.1	1.0	0.0	1.1	0.8	0.0	0.2	0.0
Phase Call Probability	0.94	1.00	0.88	1.00	0.95		1.00	
Max Out Probability	0.01	0.06	0.00	0.00	0.20		0.01	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	120	277	254	89	245	126	124	608	82	240	1135	105
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1792	1881	1694	1792	1791	1594	1723	1773	1579	1740	1791	1594
Queue Service Time (g_s), s	4.6	12.0	12.3	3.4	5.2	6.1	2.9	7.8	1.5	5.5	19.6	1.5
Cycle Queue Clearance Time (g_c), s	4.6	12.0	12.3	3.4	5.2	6.1	2.9	7.8	1.5	5.5	19.6	1.5
Green Ratio (*g/C*)	0.24	0.18	0.18	0.23	0.17	0.17	0.07	0.37	0.37	0.09	0.37	0.37
Capacity (*c*), veh/h	326	339	305	206	602	268	230	1309	583	313	1334	594
Volume-to-Capacity Ratio (*X*)	0.367	0.817	0.834	0.430	0.406	0.470	0.537	0.464	0.141	0.766	0.851	0.177
Back of Queue (*Q*), ft/ln (95 th percentile)	87.1	241.8	229.4	65	99.2	104.2	52.5	114.9	24.6	90.7	190.7	23
Back of Queue (*Q*), veh/ln (95 th percentile)	3.5	9.6	9.2	2.6	3.9	4.1	2.1	4.5	1.0	3.6	7.6	0.9
Queue Storage Ratio (*RQ*) (95 th percentile)	0.23	0.00	0.00	0.21	0.00	1.16	0.24	0.00	0.08	0.40	0.00	0.09
Uniform Delay (d_1), s/veh	26.3	33.5	33.6	27.7	31.6	31.9	36.6	11.7	8.7	32.2	10.4	0.4
Incremental Delay (d_2), s/veh	0.3	4.4	6.0	0.5	0.2	0.5	0.6	1.0	0.4	1.2	5.8	0.5
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	26.6	37.9	39.6	28.2	31.7	32.4	37.3	12.8	9.1	33.4	16.2	1.0
Level of Service (LOS)	C	D	D	C	C	C	D	B	A	C	B	A
Approach Delay, s/veh / LOS	36.5	D		31.2	C		16.1	B		17.9	B	
Intersection Delay, s/veh / LOS	22.8						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	3.1	C	3.1	C	3.0	C	2.9	C
Bicycle LOS Score / LOS	1.0	A	0.9	A	1.2	A	1.6	A

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--- Messages ---

WARNING: Since queue spillover from turn lanes and spillback into upstream intersections is not accounted for in the HCM procedures, use of a simulation tool may be advised in situations where the Queue Storage Ratio exceeds 1.0.

WARNING: According to input data, upstream feeding volume is equal to 112% of downstream exit volume during time period #1, for thru movement #2.

--- Comments ---

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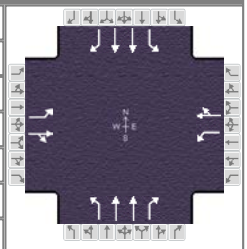
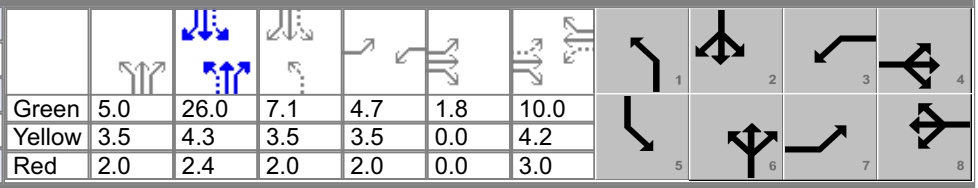
HCS 2010 Signalized Intersection Input Data

General Information				Intersection Information	
Agency	raSmith			Duration, h	0.25
Analyst	LLZ	Analysis Date	Feb 22, 2018	Area Type	Other
Jurisdiction	SE - Milwaukee Co	Time Period	PM	PHF	0.93
Urban Street	WIS 38	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	Centennial Dr	File Name	WIS 38 PM_180312.xus		
Project Description	PM				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	160	40	55	60	45	70	70	575	70	160	865	175

Signal Information			
Cycle, s	85.0	Reference Phase	2
Offset, s	63	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	5.0	26.0	7.1	4.7	1.8	10.0						
Yellow	3.5	4.3	3.5	3.5	0.0	4.2						
Red	2.0	2.4	2.0	2.0	0.0	3.0						

Traffic Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	160	40	55	60	45	70	70	575	70	160	865	175
Initial Queue (Q_b), veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Base Saturation Flow Rate (s_o), veh/h	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Parking (N_m), man/h		None			None			None			None	
Heavy Vehicles (P_{HV}), %	1	1		2	2		2	2	2	1	1	1
Ped / Bike / RTOR, /h	0	0	0	0	0	0	0	0	27	0	0	67
Buses (N_b), buses/h	0	0	0	0	0	0	0	0	0	0	0	0
Arrival Type (*AT*)	3	3	3	3	3	3	3	3	3	3	3	3
Upstream Filtering (*I*)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.46	0.46	0.46
Lane Width (*W*), ft	12.0	12.0		12.0	12.0		12.0	12.0	12.0	12.0	12.0	12.0
Turn Bay Length, ft	420	0		175	0		380	0	185	360	0	290
Grade (*Pg*), %		0			0			0			0	
Speed Limit, mi/h	25	25	25	30	30	30	45	45	45	45	45	45

Phase Information	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Maximum Green (G_{max}) or Phase Split, s	12.0	17.2	12.0	17.2	16.0	27.8	28.0	39.8
Yellow Change Interval (*Y*), s	3.5	4.2	3.5	4.2	3.5	4.3	3.5	4.3
Red Clearance Interval (R_c), s	2.0	3.0	2.0	3.0	2.0	2.4	2.0	2.4
Minimum Green (G_{min}), s	6	10	6	10	6	15	6	15
Start-Up Lost Time (*lt*), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green (*e*), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Passage (*PT*), s	1.5	1.5	1.5	1.5	1.5	2.0	1.5	2.0
Recall Mode	Off	Off	Off	Off	Off	Min	Off	Min
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Walk (*Walk*), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Clearance Time (*PC*), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Multimodal Information	EB			WB			NB			SB		
85th % Speed / Rest in Walk / Corner Radius	0	No	25	0	No	25	0	No	25	0	No	25
Walkway / Crosswalk Width / Length, ft	9.0	12	0	9.0	12	0	9.0	12	0	9.0	12	0
Street Width / Island / Curb	0	0	No	0	0	No	0	0	No	0	0	No
Width Outside / Bike Lane / Shoulder, ft	12	5.0	2.0	12	5.0	2.0	12	5.0	2.0	12	5.0	2.0
Pedestrian Signal / Occupied Parking	No	0.50		No	0.50		No	0.50		No	0.50	

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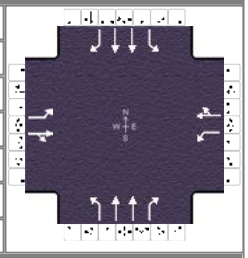
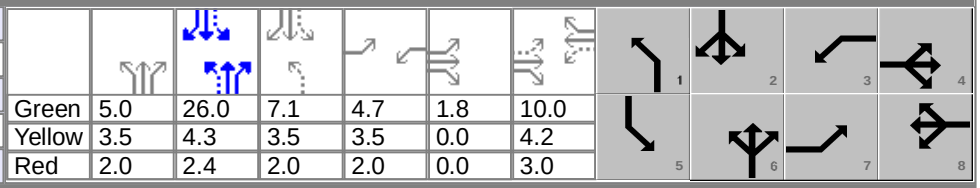
HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	raSmith			Duration, h	0.25
Analyst	LLZ	Analysis Date	Feb 22, 2018	Area Type	Other
Jurisdiction	SE - Milwaukee Co	Time Period	PM	PHF	0.93
Urban Street	WIS 38	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	Centennial Dr	File Name	WIS 38 PM_180312.xus		
Project Description	PM				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	160	40	55	60	45	70	70	575	70	160	865	175

Signal Information			
Cycle, s	85.0	Reference Phase	2
Offset, s	63	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	5.0	26.0	7.1	4.7	1.8	10.0
Yellow	3.5	4.3	3.5	3.5	0.0	4.2
Red	2.0	2.4	2.0	2.0	0.0	3.0

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	7	4	3	8	1	6	5	2
Case Number	1.1	4.0	1.1	4.0	1.2	3.0	1.3	3.0
Phase Duration, s	12.0	19.0	10.2	17.2	10.5	43.2	12.6	45.3
Change Period, ($Y+R_c$), s	5.5	7.2	5.5	7.2	5.5	6.7	6.7	6.7
Max Allow Headway (*MAH*), s	2.8	2.8	2.7	2.8	2.5	0.0	2.5	0.0
Queue Clearance Time (g_s), s	8.5	6.7	4.6	8.0	3.8		2.0	
Green Extension Time (g_e), s	0.0	0.2	0.0	0.1	0.0	0.0	1.2	0.0
Phase Call Probability	0.98	1.00	0.78	1.00	0.83		0.99	
Max Out Probability	1.00	0.08	1.00	1.00	0.00		0.53	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	172	102		65	124		75	618	46	185	998	125
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1792	1704		1774	1679		1774	1773	1579	1792	1791	1594
Queue Service Time (g_s), s	6.5	4.7		2.6	6.0		1.8	10.2	1.5	0.0	9.8	0.7
Cycle Queue Clearance Time (g_c), s	6.5	4.7		2.6	6.0		1.8	10.2	1.5	0.0	9.8	0.7
Green Ratio (*g/C*)	0.19	0.14		0.19	0.12		0.51	0.43	0.43	0.50	0.45	0.45
Capacity (*c*), veh/h	282	236		291	197		358	1522	678	449	1628	724
Volume-to-Capacity Ratio (*X*)	0.610	0.432		0.222	0.627		0.210	0.406	0.068	0.411	0.613	0.172
Back of Queue (*Q*), ft/ln (95 th percentile)	150.8	88.5		49.8	121.3		28.9	177.4	23.1	110.1	98.6	11
Back of Queue (*Q*), veh/ln (95 th percentile)	6.0	3.5		2.0	4.8		1.1	7.0	0.9	4.4	3.9	0.4
Queue Storage Ratio (*RQ*) (95 th percentile)	0.36	0.00		0.28	0.00		0.08	0.00	0.12	0.31	0.00	0.04
Uniform Delay (d_1), s/veh	31.4	33.5		28.8	35.7		11.2	16.8	9.6	20.5	6.1	2.2
Incremental Delay (d_2), s/veh	2.8	0.5		0.1	4.6		0.1	0.8	0.2	0.1	0.8	0.2
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	34.2	34.0		28.9	40.4		11.3	17.6	9.8	20.6	6.9	2.4
Level of Service (LOS)	C	C		C	D		B	B	A	C	A	A
Approach Delay, s/veh / LOS	34.1	C		36.5	D		16.4	B		8.4	A	
Intersection Delay, s/veh / LOS	15.7						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	3.0	C	3.1	C	2.3	B	2.3	B
Bicycle LOS Score / LOS	0.9	A	0.8	A	1.1	A	1.5	A

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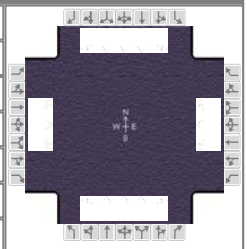
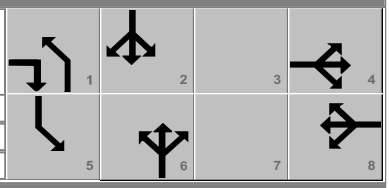
HCS 2010 Signalized Intersection Input Data

General Information				Intersection Information	
Agency	raSmith			Duration, h	0.25
Analyst	LLZ	Analysis Date	Feb 22, 2018	Area Type	Other
Jurisdiction	SE - Waukesha Co	Time Period	PM	PHF	0.95
Urban Street	WIS 67	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	Oconomowoc Pkwy	File Name	WIS 67 PM_180312 - June Opt.xus		
Project Description	PM				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	45	35	150	50	35	145	170	880	85	85	620	75

Signal Information					EB			WB			NB			SB		
Cycle, s	80.0	Reference Phase	2													
Offset, s	16	Reference Point	Begin	Green	6.9	0.9		42.4	10.0	0.0	0.0					
Uncoordinated	No	Simult. Gap E/W	On	Yellow	3.5	0.0		4.3	5.0	0.0	0.0					
Force Mode	Fixed	Simult. Gap N/S	On	Red	2.0	0.0		2.0	3.0	0.0	0.0					



Traffic Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	45	35	150	50	35	145	170	880	85	85	620	75
Initial Queue (Q_b), veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Base Saturation Flow Rate (s_o), veh/h	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Parking (N_m), man/h		None			None			None			None	
Heavy Vehicles (P_{HV}), %	1	1	1	2	2	2	1	1	1	2	2	2
Ped / Bike / RTOR, /h	0	0	57	0	0	55	0	0	32	0	0	29
Buses (N_b), buses/h	0	0	0	0	0	0	0	0	0	0	0	0
Arrival Type (*AT*)	3	3	3	3	3	3	3	3	3	3	3	3
Upstream Filtering (*I*)	1.00	1.00	1.00	1.00	1.00	1.00	0.87	0.87	0.87	1.00	1.00	1.00
Lane Width (*W*), ft	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Turn Bay Length, ft	0	0	150	0	0	175	400	0	310	375	0	410
Grade (*Pg*), %		0			0			0			0	
Speed Limit, mi/h	25	25	25	25	25	25	45	45	45	45	45	45

Phase Information	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Maximum Green (G_{max}) or Phase Split, s		34.0		34.0	22.0	31.0	15.0	24.0
Yellow Change Interval (*Y*), s		5.0		5.0	3.5	4.3	3.5	4.3
Red Clearance Interval (R_c), s		3.0		3.0	2.0	2.0	2.0	2.0
Minimum Green (G_{min}), s	6	10	6	10	8	15	8	15
Start-Up Lost Time (*l1*), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green (*e*), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Passage (*PT*), s	2.0	1.5	2.0	1.5	1.5	2.0	1.5	2.0
Recall Mode	Off	Off	Off	Off	Off	Min	Off	Min
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Walk (*Walk*), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Clearance Time (*PC*), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Multimodal Information	EB			WB			NB			SB		
85th % Speed / Rest in Walk / Corner Radius	0	No	25	0	No	25	0	No	25	0	No	25
Walkway / Crosswalk Width / Length, ft	9.0	12	0	9.0	12	0	9.0	12	0	9.0	12	0
Street Width / Island / Curb	0	0	No	0	0	No	0	0	No	0	0	No
Width Outside / Bike Lane / Shoulder, ft	12	5.0	2.0	12	5.0	2.0	12	5.0	2.0	12	5.0	2.0
Pedestrian Signal / Occupied Parking	No	0.50		No	0.50		No	0.50		No	0.50	

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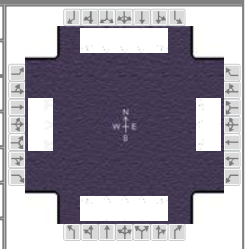
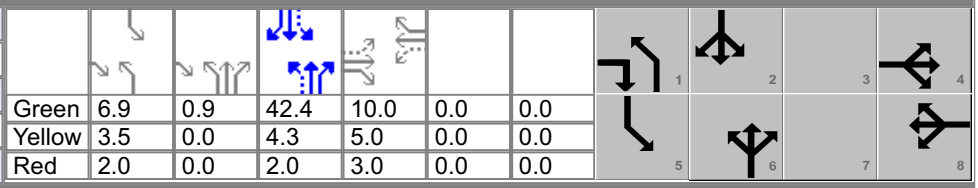
HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	raSmith			Duration, h	0.25
Analyst	LLZ	Analysis Date	Feb 22, 2018	Area Type	Other
Jurisdiction	SE - Waukesha Co	Time Period	PM	PHF	0.95
Urban Street	WIS 67	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	Oconomowoc Pkwy	File Name	WIS 67 PM_180312 - June Opt.xus		
Project Description	PM				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	45	35	150	50	35	145	170	880	85	85	620	75

Signal Information			
Cycle, s	80.0	Reference Phase	2
Offset, s	16	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	6.9	0.9	42.4	10.0	0.0	0.0
Yellow	3.5	0.0	4.3	5.0	0.0	0.0
Red	2.0	0.0	2.0	3.0	0.0	0.0

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8	1	6	5	2
Case Number		5.0		5.0	1.1	3.0	1.1	3.0
Phase Duration, s		18.0		18.0	13.3	49.6	12.4	48.7
Change Period, ($Y+R_c$), s		8.0		8.0	5.5	6.3	5.5	6.3
Max Allow Headway (*MAH*), s		2.9		2.9	2.5	0.0	2.5	0.0
Queue Clearance Time (g_s), s		6.2		6.5	5.2		3.6	
Green Extension Time (g_e), s		0.5		0.5	0.2	0.0	0.1	0.0
Phase Call Probability		1.00		1.00	0.98		0.86	
Max Out Probability		0.00		0.00	0.00		0.00	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	47	37	98	53	37	95	174	902	54	89	653	48
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1266	1881	1594	1250	1863	1579	1792	1708	1594	1774	1691	1579
Queue Service Time (g_s), s	2.8	1.4	4.1	3.1	1.4	4.5	3.2	2.1	0.1	1.6	5.6	1.2
Cycle Queue Clearance Time (g_c), s	4.2	1.4	4.1	4.5	1.4	4.5	3.2	2.1	0.1	1.6	5.6	1.2
Green Ratio (*g/C*)	0.12	0.12	0.22	0.12	0.12	0.12	0.63	0.54	0.54	0.62	0.53	0.53
Capacity (*c*), veh/h	226	235	355	224	233	197	610	2773	863	529	2687	836
Volume-to-Capacity Ratio (*X*)	0.210	0.157	0.275	0.235	0.158	0.480	0.285	0.325	0.063	0.169	0.243	0.058
Back of Queue (*Q*), ft/ln (95 th percentile)	38.9	29	69.6	43.7	29.2	78.9	46.6	24.9	2.8	21.6	80.9	17.1
Back of Queue (*Q*), veh/ln (95 th percentile)	1.5	1.1	2.8	1.7	1.2	3.1	1.8	1.0	0.1	0.9	3.2	0.7
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.46	0.00	0.00	0.45	0.12	0.00	0.01	0.06	0.00	0.04
Uniform Delay (d_1), s/veh	33.1	31.2	25.7	33.3	31.2	32.6	7.1	2.0	0.8	6.3	10.2	9.1
Incremental Delay (d_2), s/veh	0.2	0.1	0.2	0.2	0.1	0.7	0.1	0.3	0.1	0.1	0.2	0.1
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	33.3	31.4	25.9	33.5	31.4	33.3	7.2	2.3	0.9	6.3	10.4	9.3
Level of Service (LOS)	C	C	C	C	C	C	A	A	A	A	B	A
Approach Delay, s/veh / LOS	28.9	C		32.9	C		3.0	A		9.8	A	
Intersection Delay, s/veh / LOS	9.8						A					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	3.4	C	3.4	C	2.5	B	2.5	B
Bicycle LOS Score / LOS	0.8	A	0.8	A	1.1	A	0.9	A

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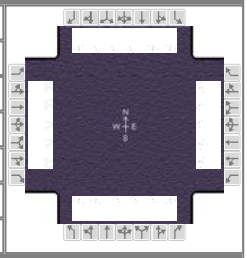
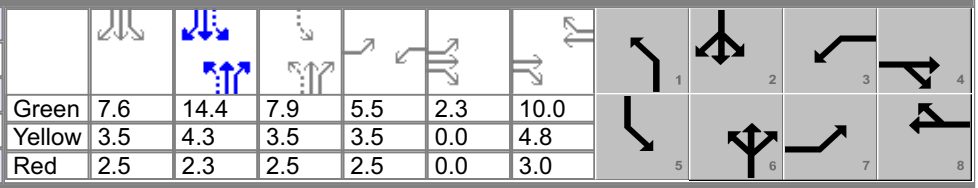
HCS 2010 Signalized Intersection Input Data

General Information				Intersection Information	
Agency	raSmith			Duration, h	0.25
Analyst	LLZ	Analysis Date	Feb 22, 2018	Area Type	Other
Jurisdiction	SE - Waukesha Co	Time Period	PM	PHF	0.97
Urban Street	WIS 67	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	CTH B-Valley Rd	File Name	WIS 67 PM_180312 - June Opt.xus		
Project Description	PM				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	145	100	165	50	100	100	110	890	50	125	645	50

Signal Information			
Cycle, s	80.0	Reference Phase	2
Offset, s	42	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	7.6	14.4	7.9	5.5	2.3	10.0						
Yellow	3.5	4.3	3.5	3.5	0.0	4.8						
Red	2.5	2.3	2.5	2.5	0.0	3.0						

Traffic Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	145	100	165	50	100	100	110	890	50	125	645	50
Initial Queue (Q_b), veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Base Saturation Flow Rate (s_o), veh/h	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Parking (N_m), man/h		None			None			None			None	
Heavy Vehicles (P_{HV}), %	3	3	3	1	1	1	1	1	1	2	2	2
Ped / Bike / RTOR, /h	0	0	63	0	0	38	0	0	19	0	0	19
Buses (N_b), buses/h	0	0	0	0	0	0	0	0	0	0	0	0
Arrival Type (*AT*)	3	3	3	3	3	3	3	3	3	3	3	3
Upstream Filtering (*I*)	1.00	1.00	1.00	1.00	1.00	1.00	0.88	0.88	0.88	0.88	0.88	0.88
Lane Width (*W*), ft	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Turn Bay Length, ft	330	0	130	450	0	230	380	0	470	440	0	460
Grade (*Pg*), %		0			0			0			0	
Speed Limit, mi/h	30	30	30	35	35	35	45	45	45	45	45	45

Phase Information	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Maximum Green (G_{max}) or Phase Split, s	15.0	18.0	15.0	18.0	24.0	32.0	15.0	23.0
Yellow Change Interval (*Y*), s	3.5	4.8	3.5	4.8	3.5	4.3	3.5	4.3
Red Clearance Interval (R_c), s	2.5	3.0	2.5	3.0	2.5	2.3	2.5	2.3
Minimum Green (G_{min}), s	8	10	8	10	8	15	8	15
Start-Up Lost Time (*lt*), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green (*e*), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Passage (*PT*), s	1.5	1.5	1.5	1.5	1.5	2.0	1.5	2.0
Recall Mode	Off	Off	Off	Off	Off	Min	Off	Min
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Walk (*Walk*), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Clearance Time (*PC*), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Multimodal Information	EB			WB			NB			SB		
85th % Speed / Rest in Walk / Corner Radius	0	No	25	0	No	25	0	No	25	0	No	25
Walkway / Crosswalk Width / Length, ft	9.0	12	0	9.0	12	0	9.0	12	0	9.0	12	0
Street Width / Island / Curb	0	0	No	0	0	No	0	0	No	0	0	No
Width Outside / Bike Lane / Shoulder, ft	12	5.0	2.0	12	5.0	2.0	12	5.0	2.0	12	5.0	2.0
Pedestrian Signal / Occupied Parking	No	0.50		No	0.50		No	0.50		No	0.50	

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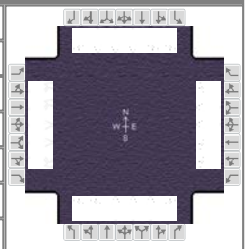
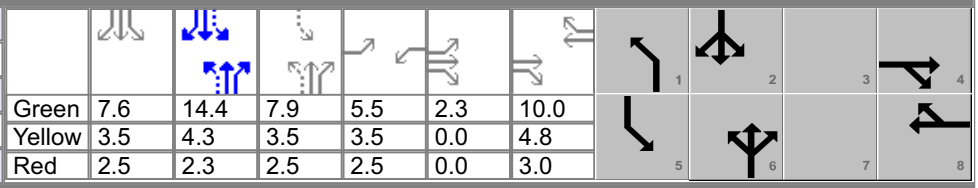
HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	raSmith			Duration, h	0.25
Analyst	LLZ	Analysis Date	Feb 22, 2018	Area Type	Other
Jurisdiction	SE - Waukesha Co	Time Period	PM	PHF	0.97
Urban Street	WIS 67	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	CTH B-Valley Rd	File Name	WIS 67 PM_180312 - June Opt.xus		
Project Description	PM				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	145	100	165	50	100	100	110	890	50	125	645	50

Signal Information			
Cycle, s	80.0	Reference Phase	2
Offset, s	42	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	7.6	14.4	7.9	5.5	2.3	10.0						
Yellow	3.5	4.3	3.5	3.5	0.0	4.8						
Red	2.5	2.3	2.5	2.5	0.0	3.0						

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	7	4	3	8	1	6	5	2
Case Number	2.0	3.0	2.0	3.0	1.3	3.0	1.2	3.0
Phase Duration, s	13.7	20.1	11.5	17.8	13.9	34.9	13.6	34.5
Change Period, ($Y+R_c$), s	6.0	7.8	6.0	7.8	6.6	6.6	6.0	6.6
Max Allow Headway (*MAH*), s	2.7	2.7	2.6	2.7	2.5	0.0	2.5	0.0
Queue Clearance Time (g_s), s	5.3	6.9	3.1	4.9	2.0		3.7	
Green Extension Time (g_e), s	0.2	0.5	0.0	0.5	1.7	0.0	0.2	0.0
Phase Call Probability	0.96	1.00	0.68	1.00	0.92		0.95	
Max Out Probability	0.00	0.00	0.00	0.00	0.00		0.00	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	149	103	105	52	103	64	113	912	32	132	679	33
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1706	1756	1563	1740	1791	1594	1740	1708	1594	1723	1691	1579
Queue Service Time (g_s), s	3.3	2.0	4.9	1.1	2.1	2.9	0.0	4.1	0.2	1.7	8.2	1.1
Cycle Queue Clearance Time (g_c), s	3.3	2.0	4.9	1.1	2.1	2.9	0.0	4.1	0.2	1.7	8.2	1.1
Green Ratio (*g/C*)	0.10	0.15	0.15	0.07	0.12	0.12	0.44	0.35	0.35	0.45	0.35	0.35
Capacity (*c*), veh/h	329	538	239	237	448	199	866	1814	564	865	1772	551
Volume-to-Capacity Ratio (*X*)	0.455	0.192	0.439	0.217	0.230	0.321	0.130	0.503	0.056	0.152	0.383	0.059
Back of Queue (*Q*), ft/ln (95 th percentile)	62.7	39.2	81.5	21.1	39.6	50.1	30.6	46.6	4	26.3	139.2	17.4
Back of Queue (*Q*), veh/ln (95 th percentile)	2.4	1.5	3.2	0.8	1.6	2.0	1.2	1.8	0.2	1.0	5.5	0.7
Queue Storage Ratio (*RQ*) (95 th percentile)	0.19	0.00	0.63	0.05	0.00	0.22	0.08	0.00	0.01	0.06	0.00	0.04
Uniform Delay (d_1), s/veh	34.2	29.6	11.8	35.3	31.5	31.9	18.8	4.6	3.1	12.3	20.2	1.4
Incremental Delay (d_2), s/veh	0.4	0.1	0.5	0.2	0.1	0.3	0.0	0.9	0.2	0.0	0.6	0.2
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	34.5	29.6	12.3	35.4	31.6	32.2	18.8	5.5	3.2	12.4	20.8	1.6
Level of Service (LOS)	C	C	B	D	C	C	B	A	A	B	C	A
Approach Delay, s/veh / LOS	26.6	C		32.7	C		6.9	A		18.7	B	
Intersection Delay, s/veh / LOS	16.0						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	3.5	D	3.5	D	3.1	C	3.2	C
Bicycle LOS Score / LOS	0.8	A	0.7	A	1.1	A	0.9	A

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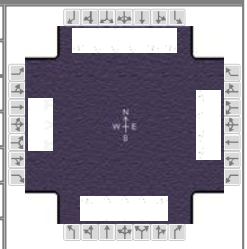
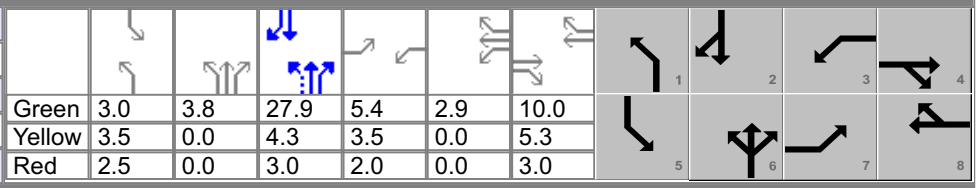
HCS 2010 Signalized Intersection Input Data

General Information				Intersection Information	
Agency	raSmith			Duration, h	0.25
Analyst	LLZ	Analysis Date	Feb 22, 2018	Area Type	Other
Jurisdiction	SE - Waukesha Co	Time Period	PM	PHF	0.99
Urban Street	WIS 67	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	Oconomowoc Dr-Pabst…	File Name	WIS 67 PM_180312 - June Opt.xus		
Project Description	PM				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	50	25	175	155	20	55	105	945	145	20	825	15

Signal Information			
Cycle, s	80.0	Reference Phase	2
Offset, s	38	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	3.0	3.8	27.9	5.4	2.9	10.0						
Yellow	3.5	0.0	4.3	3.5	0.0	5.3						
Red	2.5	0.0	3.0	2.0	0.0	3.0						

Traffic Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	50	25	175	155	20	55	105	945	145	20	825	15
Initial Queue (Q_b), veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Base Saturation Flow Rate (s_o), veh/h	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Parking (N_m), man/h		None			None			None			None	
Heavy Vehicles (P_{HV}), %	2	2	2	1	1	1	1	1	1	3	3	3
Ped / Bike / RTOR, /h	0	0	67	0	0	21	0	0	55	0	0	6
Buses (N_b), buses/h	0	0	0	0	0	0	0	0	0	0	0	0
Arrival Type (*AT*)	3	3	3	3	3	3	3	3	3	3	3	3
Upstream Filtering (*I*)	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.91	0.93	0.93	0.93
Lane Width (*W*), ft	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Turn Bay Length, ft	160	0	300	450	0	440	430	0	570	415	0	465
Grade (*Pg*), %		0			0			0			0	
Speed Limit, mi/h	30	30	30	30	30	30	45	45	45	45	45	45

Phase Information	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Maximum Green (G_{max}) or Phase Split, s	16.0	19.3	15.0	18.3	16.0	27.7	18.0	29.7
Yellow Change Interval (*Y*), s	3.5	5.3	3.5	5.3	3.5	4.3	3.5	4.3
Red Clearance Interval (R_c), s	2.0	3.0	2.5	3.0	2.0	3.0	2.5	3.0
Minimum Green (G_{min}), s	8	10	8	10	8	15	8	15
Start-Up Lost Time (*lt*), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green (*e*), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Passage (*PT*), s	1.5	1.5	1.5	1.5	1.5	2.0	1.5	2.0
Recall Mode	Off	Off	Off	Off	Off	Min	Off	Min
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Walk (*Walk*), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Clearance Time (*PC*), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Multimodal Information	EB			WB			NB			SB		
85th % Speed / Rest in Walk / Corner Radius	0	No	25	0	No	25	0	No	25	0	No	25
Walkway / Crosswalk Width / Length, ft	9.0	12	0	9.0	12	0	9.0	12	0	9.0	12	0
Street Width / Island / Curb	0	0	No	0	0	No	0	0	No	0	0	No
Width Outside / Bike Lane / Shoulder, ft	12	5.0	2.0	12	5.0	2.0	12	5.0	2.0	12	5.0	2.0
Pedestrian Signal / Occupied Parking	No	0.50		No	0.50		No	0.50		No	0.50	

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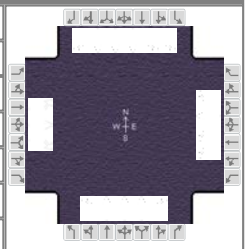
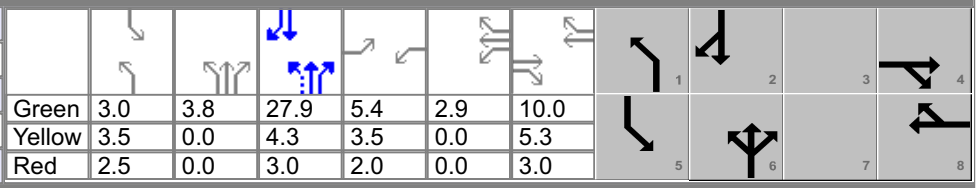
HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	raSmith			Duration, h	0.25
Analyst	LLZ	Analysis Date	Feb 22, 2018	Area Type	Other
Jurisdiction	SE - Waukesha Co	Time Period	PM	PHF	0.99
Urban Street	WIS 67	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	Oconomowoc Dr-Pabst…	File Name	WIS 67 PM_180312 - June Opt.xus		
Project Description	PM				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	50	25	175	155	20	55	105	945	145	20	825	15

Signal Information			
Cycle, s	80.0	Reference Phase	2
Offset, s	38	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	3.0	3.8	27.9	5.4	2.9	10.0			
Yellow	3.5	0.0	4.3	3.5	0.0	5.3			
Red	2.5	0.0	3.0	2.0	0.0	3.0			

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	7	4	3	8	1	6	5	2
Case Number	2.0	3.0	2.0	3.0	1.1	3.0	2.0	3.0
Phase Duration, s	10.9	18.3	13.8	21.1	12.8	39.0	9.0	35.2
Change Period, ($Y+R_c$), s	5.5	8.3	6.0	8.3	5.5	7.3	6.0	7.3
Max Allow Headway (*MAH*), s	2.7	2.8	2.7	2.8	2.5	0.0	2.5	0.0
Queue Clearance Time (g_s), s	4.2	7.2	5.4	3.5	4.9		2.5	
Green Extension Time (g_e), s	0.0	0.1	0.1	0.2	0.1	0.0	0.0	0.0
Phase Call Probability	0.67	1.00	0.97	1.00	0.91		0.37	
Max Out Probability	0.00	0.08	0.24	0.00	0.00		0.00	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	51	25	109	157	20	34	108	970	92	21	864	9
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1774	1863	1579	1740	1881	1594	1792	1708	1594	1706	1675	1563
Queue Service Time (g_s), s	2.2	1.0	5.2	3.4	0.7	1.5	2.9	10.8	3.6	0.5	6.8	0.1
Cycle Queue Clearance Time (g_c), s	2.2	1.0	5.2	3.4	0.7	1.5	2.9	10.8	3.6	0.5	6.8	0.1
Green Ratio (*g/C*)	0.07	0.12	0.12	0.10	0.16	0.16	0.44	0.40	0.40	0.04	0.35	0.35
Capacity (*c*), veh/h	120	232	196	337	301	255	421	2032	632	127	1754	546
Volume-to-Capacity Ratio (*X*)	0.422	0.109	0.556	0.464	0.067	0.135	0.256	0.477	0.146	0.165	0.493	0.017
Back of Queue (*Q*), ft/ln (95 th percentile)												
Back of Queue (*Q*), veh/ln (95 th percentile)												
Queue Storage Ratio (*RQ*) (95 th percentile)												
Uniform Delay (d_1), s/veh	35.8	31.1	32.9	34.2	28.5	28.8	13.6	16.7	19.1	38.7	9.7	6.4
Incremental Delay (d_2), s/veh	0.9	0.1	0.9	0.4	0.0	0.1	0.1	0.7	0.4	0.2	0.9	0.1
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh												
Level of Service (LOS)												
Approach Delay, s/veh / LOS												
Intersection Delay, s/veh / LOS												

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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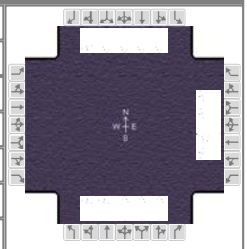
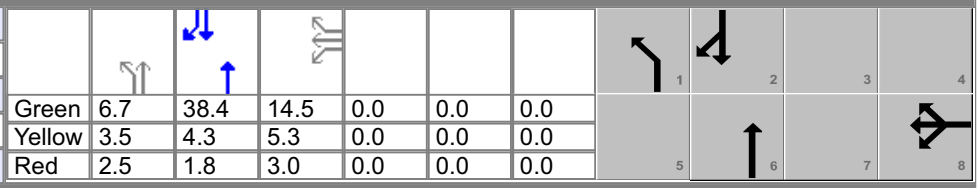
HCS 2010 Signalized Intersection Input Data

General Information				Intersection Information	
Agency	raSmith			Duration, h	0.25
Analyst	LLZ	Analysis Date	Feb 22, 2018	Area Type	Other
Jurisdiction	SE - Waukesha Co	Time Period	PM	PHF	0.97
Urban Street	WIS 67	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	I-94 WB Ramps	File Name	WIS 67 PM_180312 - June Opt.xus		
Project Description	PM				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h				220	1	555	80	640			945	210

Signal Information			
Cycle, s	80.0	Reference Phase	2
Offset, s	72	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	6.7	38.4	14.5	0.0	0.0	0.0						
Yellow	3.5	4.3	5.3	0.0	0.0	0.0						
Red	2.5	1.8	3.0	0.0	0.0	0.0						

Traffic Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h				220	1	555	80	640			945	210
Initial Queue (Q_b), veh/h				0	0	0	0	0			0	0
Base Saturation Flow Rate (s_o), veh/h				1900	1900	1900	1900	1900			1900	1900
Parking (N_m), man/h					None			None			None	
Heavy Vehicles (P_{HV}), %				4	4	4	1	1			3	3
Ped / Bike / RTOR, /h				0	0	167	0	0		0	0	80
Buses (N_b), buses/h				0	0	0	0	0			0	0
Arrival Type (*AT*)				3	3	3	3	3			3	3
Upstream Filtering (*I*)				1.00	1.00	1.00	0.97	0.97			0.86	0.86
Lane Width (*W*), ft				12.0	12.0	12.0	12.0	12.0			12.0	12.0
Turn Bay Length, ft				425	0	680	535	0			0	515
Grade (*Pg*), %		0			0			0			0	
Speed Limit, mi/h				35	35	35	45	45			45	45

Phase Information	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Maximum Green (G_{max}) or Phase Split, s				33.0	17.0	47.0		30.0
Yellow Change Interval (*Y*), s				5.3	3.5	4.3		4.3
Red Clearance Interval (R_c), s				3.0	2.5	1.8		1.8
Minimum Green (G_{min}), s			6	10	8	15		15
Start-Up Lost Time (*l1*), s			2.0	2.0	2.0	2.0		2.0
Extension of Effective Green (*e*), s			2.0	2.0	2.0	2.0		2.0
Passage (*PT*), s			2.0	2.0	2.0	2.0		2.0
Recall Mode			Off	Off	Off	Min		Min
Dual Entry			No	Yes	No	Yes		Yes
Walk (*Walk*), s			0.0	0.0	0.0	0.0		0.0
Pedestrian Clearance Time (*PC*), s			0.0	0.0	0.0	0.0		0.0

Multimodal Information	EB			WB			NB			SB		
85th % Speed / Rest in Walk / Corner Radius				0	No	25	0	No	25	0	No	25
Walkway / Crosswalk Width / Length, ft				9.0	12	0	9.0	12	0	9.0	12	0
Street Width / Island / Curb				0	0	No	0	0	No	0	0	No
Width Outside / Bike Lane / Shoulder, ft				12	5.0	2.0	12	5.0	2.0	12	5.0	2.0
Pedestrian Signal / Occupied Parking				No	0.50		No	0.50		No	0.50	

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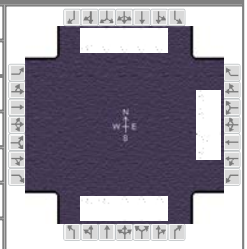
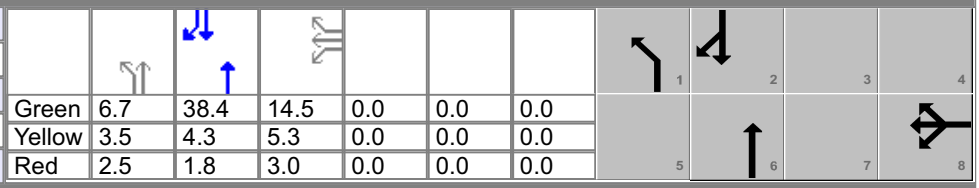
HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	raSmith			Duration, h	0.25
Analyst	LLZ	Analysis Date	Feb 22, 2018	Area Type	Other
Jurisdiction	SE - Waukesha Co	Time Period	PM	PHF	0.97
Urban Street	WIS 67	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	I-94 WB Ramps	File Name	WIS 67 PM_180312 - June Opt.xus		
Project Description	PM				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h				220	1	555	80	640			945	210

Signal Information			
Cycle, s	80.0	Reference Phase	2
Offset, s	72	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	6.7	38.4	14.5	0.0	0.0	0.0		
Yellow	3.5	4.3	5.3	0.0	0.0	0.0		
Red	2.5	1.8	3.0	0.0	0.0	0.0		

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase				8	1	6		2
Case Number				9.0	2.0	4.0		7.3
Phase Duration, s				22.8	12.7	57.2		44.5
Change Period, ($Y+R_c$), s				8.3	6.0	6.1		6.1
Max Allow Headway (*MAH*), s				3.3	3.0	0.0		0.0
Queue Clearance Time (g_s), s				13.2	3.7			
Green Extension Time (g_e), s				1.3	0.1	0.0		0.0
Phase Call Probability				1.00	0.84			
Max Out Probability				0.01	0.00			

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement				3	8	18	1	6			2	12
Adjusted Flow Rate (*v*), veh/h				113	114	400	82	653			980	135
Adjusted Saturation Flow Rate (*s*), veh/h/ln				1740	1741	1370	1740	1708			1675	1563
Queue Service Time (g_s), s				4.6	4.6	11.2	1.7	3.6			3.4	1.0
Cycle Queue Clearance Time (g_c), s				4.6	4.6	11.2	1.7	3.6			3.4	1.0
Green Ratio (*g/C*)				0.18	0.18	0.18	0.08	0.64			0.48	0.48
Capacity (*c*), veh/h				315	315	497	291	3273			3216	750
Volume-to-Capacity Ratio (*X*)				0.360	0.363	0.805	0.280	0.200			0.305	0.180
Back of Queue (*Q*), ft/ln (95 th percentile)				86	87	167.9	31.7	43.4			42.5	16.1
Back of Queue (*Q*), veh/ln (95 th percentile)				3.3	3.4	6.5	1.3	1.7			1.7	0.6
Queue Storage Ratio (*RQ*) (95 th percentile)				0.20	0.00	0.25	0.06	0.00			0.00	0.03
Uniform Delay (d_1), s/veh				28.7	28.7	31.4	33.8	5.0			4.9	2.6
Incremental Delay (d_2), s/veh				0.3	0.3	1.2	0.2	0.1			0.2	0.5
Initial Queue Delay (d_3), s/veh				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Control Delay (*d*), s/veh				28.9	29.0	32.6	34.0	5.1			5.1	3.0
Level of Service (LOS)				C	C	C	C	A			A	A
Approach Delay, s/veh / LOS	0.0			31.3		C	8.3		A	4.9		A
Intersection Delay, s/veh / LOS	12.6						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	3.7	D	3.5	D	2.3	B	2.4	B
Bicycle LOS Score / LOS			1.5	A	0.9	A	0.9	A

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--- Messages ---

WARNING: The shared-plus-exclusive turn lane solution is an approximation of the HCM method, because more than three lane groups cannot be accommodated. Input data for Percent Turns in Shared Lane are used to specify proportion of turning vehicles in the shared lane.

--- Comments ---

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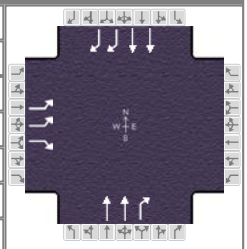
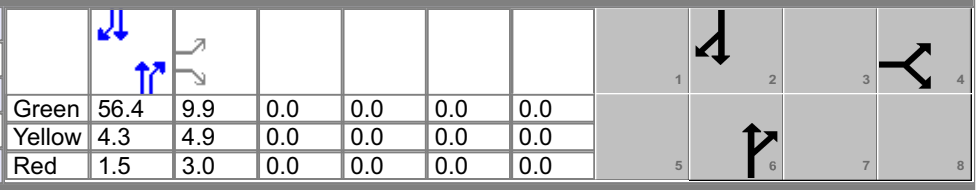
HCS 2010 Signalized Intersection Input Data

General Information				Intersection Information	
Agency	raSmith			Duration, h	0.25
Analyst	LLZ	Analysis Date	Feb 22, 2018	Area Type	Other
Jurisdiction	SE - Waukesha Co	Time Period	PM	PHF	0.98
Urban Street	WIS 67	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	I-94 EB Ramps	File Name	WIS 67 PM_180312 - June Opt.xus		
Project Description	PM				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	165		65					555	285		680	485

Signal Information			
Cycle, s	80.0	Reference Phase	2
Offset, s	25	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	56.4	9.9	0.0	0.0	0.0	0.0						
Yellow	4.3	4.9	0.0	0.0	0.0	0.0						
Red	1.5	3.0	0.0	0.0	0.0	0.0						

Traffic Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	165		65					555	285		680	485
Initial Queue (Q_b), veh/h	0		0					0	0		0	0
Base Saturation Flow Rate (s_o), veh/h	1900		1900					1900	1900		1900	1900
Parking (N_m), man/h		None						None			None	
Heavy Vehicles (P_{HV}), %	2		2					3	3		4	4
Ped / Bike / RTOR, /h							0	0	0	0	0	0
Buses (N_b), buses/h	0		0					0	0		0	0
Arrival Type (*AT*)	3		3					3	3		3	3
Upstream Filtering (*I*)	1.00		1.00					1.00	1.00		0.93	0.93
Lane Width (*W*), ft	12.0		12.0					12.0	12.0		12.0	12.0
Turn Bay Length, ft	285		285					0	340		0	0
Grade (*Pg*), %		0			0			0			0	
Speed Limit, mi/h	35		35					45	45		45	45

Phase Information	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Maximum Green (G_{max}) or Phase Split, s		43.0				37.0		37.0
Yellow Change Interval (*Y*), s		4.9				4.3		4.3
Red Clearance Interval (R_c), s		3.0				1.5		1.5
Minimum Green (G_{min}), s	6					15		15
Start-Up Lost Time (*lt*), s	2.0					2.0		2.0
Extension of Effective Green (*e*), s	2.0					2.0		2.0
Passage (*PT*), s	2.0					2.0		2.0
Recall Mode	Off					Min		Min
Dual Entry	No					Yes		Yes
Walk (*Walk*), s	0.0					0.0		0.0
Pedestrian Clearance Time (*PC*), s	0.0					0.0		0.0

Multimodal Information	EB			WB			NB			SB		
85th % Speed / Rest in Walk / Corner Radius	0	No	25				0	No	25	0	No	25
Walkway / Crosswalk Width / Length, ft	9.0	12	0				9.0	12	0	9.0	12	0
Street Width / Island / Curb	0	0	No				0	0	No	0	0	No
Width Outside / Bike Lane / Shoulder, ft	12	5.0	2.0				12	5.0	2.0	12	5.0	2.0
Pedestrian Signal / Occupied Parking	No	0.50					No	0.50		No	0.50	

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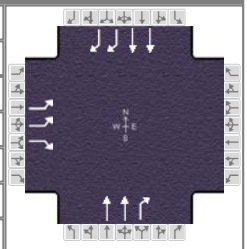
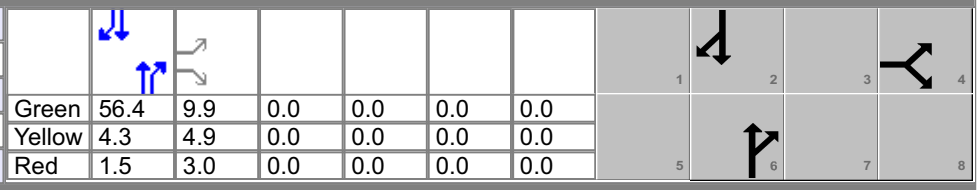
HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	raSmith			Duration, h	0.25
Analyst	LLZ	Analysis Date	Feb 22, 2018	Area Type	Other
Jurisdiction	SE - Waukesha Co	Time Period	PM	PHF	0.98
Urban Street	WIS 67	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	I-94 EB Ramps	File Name	WIS 67 PM_180312 - June Opt.xus		
Project Description	PM				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	165		65					555	285		680	485

Signal Information			
Cycle, s	80.0	Reference Phase	2
Offset, s	25	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	56.4	9.9	0.0	0.0	0.0	0.0		
Yellow	4.3	4.9	0.0	0.0	0.0	0.0		
Red	1.5	3.0	0.0	0.0	0.0	0.0		

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4				6		2
Case Number		9.0				7.0		7.0
Phase Duration, s		17.8				62.2		62.2
Change Period, ($Y+R_c$), s		7.9				5.8		5.8
Max Allow Headway (*MAH*), s		3.2				0.0		0.0
Queue Clearance Time (g_s), s		5.6						
Green Extension Time (g_e), s		0.5				0.0		0.0
Phase Call Probability		0.99						
Max Out Probability		0.00						

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7		14					6	16		2	12
Adjusted Flow Rate (*v*), veh/h	168		66					566	291		705	503
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1723		1579					1756	1563		1739	1370
Queue Service Time (g_s), s	3.6		3.1					4.5	5.4		1.8	1.7
Cycle Queue Clearance Time (g_c), s	3.6		3.1					4.5	5.4		1.8	1.7
Green Ratio (*g/C*)	0.12		0.12					0.70	0.70		0.70	0.70
Capacity (*c*), veh/h	428		196					2474	1101		2450	1930
Volume-to-Capacity Ratio (*X*)	0.393		0.338					0.229	0.264		0.288	0.260
Back of Queue (*Q*), ft/ln (95 th percentile)	66.8		52.7					49.8	57.4		18.5	14.6
Back of Queue (*Q*), veh/ln (95 th percentile)	2.6		2.1					1.9	2.2		0.7	0.6
Queue Storage Ratio (*RQ*) (95 th percentile)	0.23		0.18					0.00	0.17		0.00	0.00
Uniform Delay (d_1), s/veh	32.2		32.0					4.2	4.3		1.0	1.1
Incremental Delay (d_2), s/veh	0.2		0.4					0.2	0.6		0.3	0.3
Initial Queue Delay (d_3), s/veh	0.0		0.0					0.0	0.0		0.0	0.0
Control Delay (*d*), s/veh	32.5		32.4					4.4	4.9		1.3	0.0
Level of Service (LOS)	C		C					A	A		A	A
Approach Delay, s/veh / LOS	32.4		C	0.0			4.6		A	0.8		A
Intersection Delay, s/veh / LOS	5.4						A					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.9	C	3.0	C	1.8	A	2.8	C
Bicycle LOS Score / LOS		F			1.2	A	1.5	A

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--- Messages ---

INFO: SBR was specified to have Unsignalized Delay of 0 seconds.

--- Comments ---

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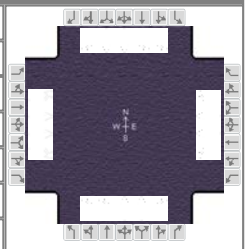
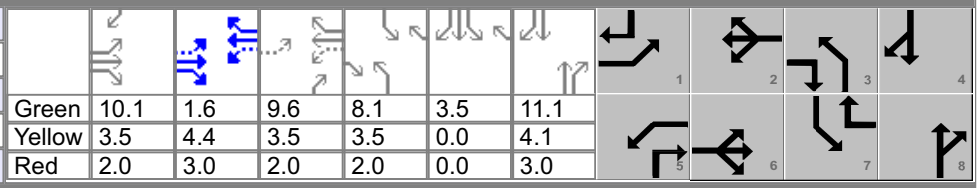
HCS 2010 Signalized Intersection Input Data

General Information				Intersection Information	
Agency	raSmith			Duration, h	0.25
Analyst	LLZ	Analysis Date	Feb 22, 2018	Area Type	Other
Jurisdiction	SE - Ozaukee Co	Time Period	PM	PHF	0.96
Urban Street	WIS 167	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	Port Washington Rd	File Name	WIS 167 PM_180312 - June Opt.xus		
Project Description	PM				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	245	620	230	215	510	380	270	320	320	425	355	345

Signal Information			
Cycle, s	75.0	Reference Phase	2
Offset, s	102	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	10.1	1.6	9.6	8.1	3.5	11.1						
Yellow	3.5	4.4	3.5	3.5	0.0	4.1						
Red	2.0	3.0	2.0	2.0	0.0	3.0						

Traffic Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	245	620	230	215	510	380	270	320	320	425	355	345
Initial Queue (Q_b), veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Base Saturation Flow Rate (s_o), veh/h	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Parking (N_m), man/h		None			None			None			None	
Heavy Vehicles (P_{HV}), %	2	2	2	2	2	2	1	1	1	1	1	1
Ped / Bike / RTOR, /h	0	0	87	0	0	144	0	0	122	0	0	131
Buses (N_b), buses/h	0	0	0	0	0	0	0	0	0	0	0	0
Arrival Type (*AT*)	3	3	3	3	3	3	3	3	3	3	3	3
Upstream Filtering (*I*)	1.00	1.00	1.00	0.98	0.98	0.98	1.00	1.00	1.00	1.00	1.00	1.00
Lane Width (*W*), ft	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Turn Bay Length, ft	250	0	0	0	0	0	145	0	0	220	0	145
Grade (*Pg*), %		0			0			0			0	
Speed Limit, mi/h	35	35	35	35	35	35	35	35	35	35	35	35

Phase Information	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Maximum Green (G_{max}) or Phase Split, s	15.0	22.9	15.0	22.9	18.0	17.1	20.0	19.1
Yellow Change Interval (*Y*), s	3.5	4.4	3.5	4.4	3.5	4.1	3.5	4.1
Red Clearance Interval (R_c), s	2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0
Minimum Green (G_{min}), s	8	15	8	15	8	10	8	10
Start-Up Lost Time (*lt*), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green (*e*), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Passage (*PT*), s	1.5	2.0	1.5	2.0	1.5	1.5	1.5	1.5
Recall Mode	Min	Min	Off	Min	Off	Off	Off	Off
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Walk (*Walk*), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Clearance Time (*PC*), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Multimodal Information	EB			WB			NB			SB		
85th % Speed / Rest in Walk / Corner Radius	0	No	25	0	No	25	0	No	25	0	No	25
Walkway / Crosswalk Width / Length, ft	9.0	12	0	9.0	12	0	9.0	12	0	9.0	12	0
Street Width / Island / Curb	0	0	No	0	0	No	0	0	No	0	0	No
Width Outside / Bike Lane / Shoulder, ft	12	5.0	2.0	12	5.0	2.0	12	5.0	2.0	12	5.0	2.0
Pedestrian Signal / Occupied Parking	No	0.50		No	0.50		No	0.50		No	0.50	

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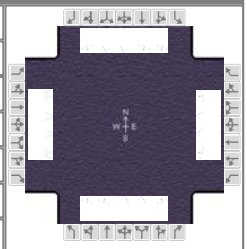
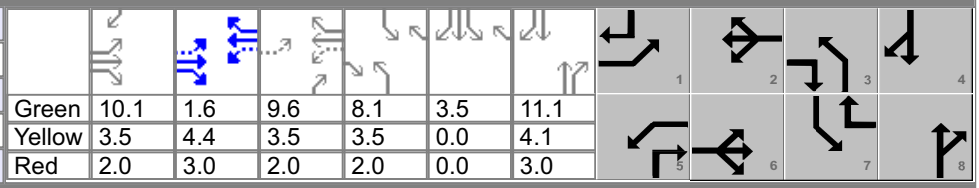
HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	raSmith			Duration, h	0.25
Analyst	LLZ	Analysis Date	Feb 22, 2018	Area Type	Other
Jurisdiction	SE - Ozaukee Co	Time Period	PM	PHF	0.96
Urban Street	WIS 167	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	Port Washington Rd	File Name	WIS 167 PM_180312 - June Opt.xus		
Project Description	PM				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	245	620	230	215	510	380	270	320	320	425	355	345

Signal Information			
Cycle, s	75.0	Reference Phase	2
Offset, s	102	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	10.1	1.6	9.6	8.1	3.5	11.1	1	2	3	4		
Yellow	3.5	4.4	3.5	3.5	0.0	4.1	5	6	7	8		
Red	2.0	3.0	2.0	2.0	0.0	3.0						

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	1	6	5	2	3	8	7	4
Case Number	1.2	3.0	1.3	3.0	2.0	3.0	2.0	3.0
Phase Duration, s	15.6	24.7	15.1	24.1	13.6	18.2	17.1	21.7
Change Period, ($Y+R_c$), s	5.5	7.4	7.4	7.4	5.5	7.1	5.5	7.1
Max Allow Headway (*MAH*), s	2.6	0.0	2.6	0.0	2.6	2.7	2.6	2.7
Queue Clearance Time (g_s), s	10.1		2.0		7.9	10.4	11.2	10.2
Green Extension Time (g_e), s	0.1	0.0	0.7	0.0	0.2	0.7	0.3	1.3
Phase Call Probability	1.00		0.96		1.00	1.00	1.00	1.00
Max Out Probability	1.00		0.10		0.08	1.00	0.54	0.20

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	1	6	16	5	2	12	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	255	646	149	154	365	169	281	333	206	443	370	223
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1774	1773	1579	1774	1773	1579	1740	1791	1594	1740	1791	1594
Queue Service Time (g_s), s	8.1	12.9	5.2	0.0	6.4	5.2	5.9	6.6	8.4	9.2	7.0	8.2
Cycle Queue Clearance Time (g_c), s	8.1	12.9	5.2	0.0	6.4	5.2	5.9	6.6	8.4	9.2	7.0	8.2
Green Ratio (*g/C*)	0.36	0.23	0.34	0.33	0.22	0.38	0.11	0.15	0.25	0.15	0.19	0.33
Capacity (*c*), veh/h	454	817	534	318	791	595	375	529	399	536	695	525
Volume-to-Capacity Ratio (*X*)	0.563	0.791	0.279	0.484	0.462	0.284	0.750	0.630	0.517	0.826	0.532	0.425
Back of Queue (*Q*), ft/ln (95 th percentile)	142.9	253.6	45.9	108.2	123.1	81.8	110.2	125.1	82	185.7	128.9	128.9
Back of Queue (*Q*), veh/ln (95 th percentile)	5.6	10.0	1.8	4.3	4.8	3.2	4.4	5.0	3.3	7.4	5.1	5.1
Queue Storage Ratio (*RQ*) (95 th percentile)	0.57	0.00	0.00	0.00	0.00	0.00	0.76	0.00	0.00	0.84	0.00	0.89
Uniform Delay (d_1), s/veh	18.5	27.2	6.8	28.7	23.6	14.3	32.5	30.0	4.0	30.7	27.2	19.6
Incremental Delay (d_2), s/veh	0.7	7.7	1.3	0.4	1.9	1.2	1.1	0.9	0.4	5.5	0.2	0.2
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	19.1	34.9	8.1	29.1	25.5	15.5	33.6	30.9	4.3	36.3	27.4	19.8
Level of Service (LOS)	B	C	A	C	C	B	C	C	A	D	C	B
Approach Delay, s/veh / LOS	27.2	C		23.9	C		25.2	C		29.6	C	
Intersection Delay, s/veh / LOS	26.8						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	3.2	C	3.2	C	3.2	C	3.1	C
Bicycle LOS Score / LOS	1.4	A	1.3	A	1.2	A	1.3	A

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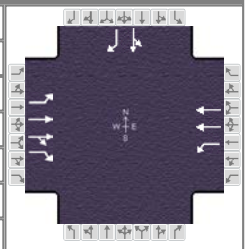
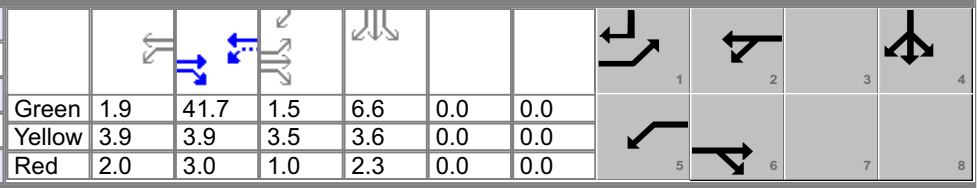
HCS 2010 Signalized Intersection Input Data

General Information				Intersection Information	
Agency	raSmith			Duration, h	0.25
Analyst	LLZ	Analysis Date	Feb 22, 2018	Area Type	Other
Jurisdiction	SE - Ozaukee Co	Time Period	PM	PHF	0.96
Urban Street	WIS 167	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	I-43 SB Ramps	File Name	WIS 167 PM_180312 - June Opt.xus		
Project Description	PM				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	1	665	700	35	820					35	1	285

Signal Information			
Cycle, s	75.0	Reference Phase	2
Offset, s	3	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	1.9	41.7	1.5	6.6	0.0	0.0						
Yellow	3.9	3.9	3.5	3.6	0.0	0.0						
Red	2.0	3.0	1.0	2.3	0.0	0.0						

Traffic Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	1	665	700	35	820					35	1	285
Initial Queue (Q_b), veh/h	0	0	0	0	0					0	0	0
Base Saturation Flow Rate (s_o), veh/h	1900	1900	1900	1900	1900					1900	1900	1900
Parking (N_m), man/h		None			None						None	
Heavy Vehicles (P_{HV}), %	1	1	1	2	2						4	4
Ped / Bike / RTOR, /h	0	0	210	0	0					0	0	188
Buses (N_b), buses/h	0	0	0	0	0					0	0	0
Arrival Type (*AT*)	3	3	3	3	3					3	3	3
Upstream Filtering (*I*)	0.57	0.57	0.57	0.57	0.57					1.00	1.00	1.00
Lane Width (*W*), ft	12.0	12.0	12.0	12.0	12.0						12.0	12.0
Turn Bay Length, ft	0	0	0	310	0						0	50
Grade (*Pg*), %		0			0			0			0	
Speed Limit, mi/h	35	35	35	35	35					35	35	35

Phase Information	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Maximum Green (G_{max}) or Phase Split, s	24.0	46.0	12.0	34.0				17.0
Yellow Change Interval (*Y*), s	3.5	3.9	3.9	3.9				3.6
Red Clearance Interval (R_c), s	1.0	2.0	2.0	3.0				2.3
Minimum Green (G_{min}), s	6	12	5	17			6	6
Start-Up Lost Time (*l*t), s	2.0	2.0	2.0	2.0			2.0	2.0
Extension of Effective Green (*e*), s	2.0	2.0	2.0	2.0			2.0	2.0
Passage (*PT*), s	2.0	2.0	2.0	2.0			2.0	2.0
Recall Mode	Off	Min	Off	Min			Off	Off
Dual Entry	No	Yes	No	Yes			No	Yes
Walk (*Walk*), s	0.0	0.0	0.0	0.0			0.0	0.0
Pedestrian Clearance Time (*PC*), s	0.0	0.0	0.0	0.0			0.0	0.0

Multimodal Information	EB			WB			NB			SB		
85th % Speed / Rest in Walk / Corner Radius	0	No	25	0	No	25				0	No	25
Walkway / Crosswalk Width / Length, ft	9.0	12	0	9.0	12	0				9.0	12	0
Street Width / Island / Curb	0	0	No	0	0	No				0	0	No
Width Outside / Bike Lane / Shoulder, ft	12	5.0	2.0	12	5.0	2.0				12	5.0	2.0
Pedestrian Signal / Occupied Parking	No	0.50		No	0.50					No	0.50	

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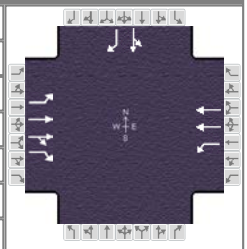
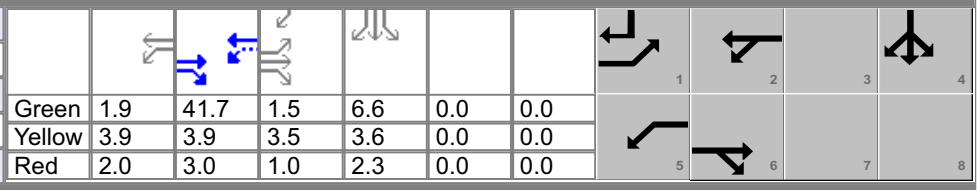
HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	raSmith			Duration, h	0.25
Analyst	LLZ	Analysis Date	Feb 22, 2018	Area Type	Other
Jurisdiction	SE - Ozaukee Co	Time Period	PM	PHF	0.96
Urban Street	WIS 167	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	I-43 SB Ramps	File Name	WIS 167 PM_180312 - June Opt.xus		
Project Description	PM				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	1	665	700	35	820					35	1	285

Signal Information			
Cycle, s	75.0	Reference Phase	2
Offset, s	3	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	1.9	41.7	1.5	6.6	0.0	0.0
Yellow	3.9	3.9	3.5	3.6	0.0	0.0
Red	2.0	3.0	1.0	2.3	0.0	0.0

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	1	6	5	2				4
Case Number	2.0	3.0	1.2	4.0				11.0
Phase Duration, s	6.0	54.7	7.8	56.4				12.5
Change Period, (*Y+R c*), s	5.9	5.9	5.9	6.9				5.9
Max Allow Headway (*MAH*), s	3.1	0.0	3.1	0.0				3.3
Queue Clearance Time (*g s*), s	2.0		2.4					6.8
Green Extension Time (*g e*), s	2.8	0.0	0.0	0.0				0.2
Phase Call Probability	0.02		0.38					0.94
Max Out Probability	0.02		0.00					0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	1	6	16	5	2					7	4	14
Adjusted Flow Rate (*v*), veh/h	1	820	382	23	541						38	101
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1792	1837	1594	1774	1773						1742	1548
Queue Service Time (*g s*), s	0.0	1.9	2.2	0.4	0.2						1.5	4.8
Cycle Queue Clearance Time (*g c*), s	0.0	1.9	2.2	0.4	0.2						1.5	4.8
Green Ratio (*g/C*)	0.00	0.65	0.65	0.61	0.66						0.09	0.09
Capacity (*c*), veh/h	4	2388	1036	383	2342						154	140
Volume-to-Capacity Ratio (*X*)	0.266	0.343	0.369	0.060	0.231						0.244	0.723
Back of Queue (*Q*), ft/ln (95 th percentile)	1.2	21.9	25.4	5.4	2.3						28.9	84.1
Back of Queue (*Q*), veh/ln (95 th percentile)	0.0	0.9	1.0	0.2	0.1						1.1	3.3
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00	0.02	0.00						0.00	1.68
Uniform Delay (*d 1*), s/veh	37.4	1.1	1.2	6.0	0.2						31.9	33.2
Incremental Delay (*d 2*), s/veh	7.4	0.2	0.6	0.0	0.0						0.3	2.6
Initial Queue Delay (*d 3*), s/veh	0.0	0.0	0.0	0.0	0.0						0.0	0.0
Control Delay (*d*), s/veh	44.8	1.3	1.7	6.0	0.2						32.2	35.8
Level of Service (LOS)	D	A	A	A	A						C	D
Approach Delay, s/veh / LOS	1.5	A		0.4	A		0.0			34.8	C	
Intersection Delay, s/veh / LOS	3.6						A					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.9	A	2.6	B	2.9	C	3.3	C
Bicycle LOS Score / LOS	1.5	A	1.2	A			0.7	A

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--- Messages ---

WARNING: Since queue spillover from turn lanes and spillback into upstream intersections is not accounted for in the HCM procedures, use of a simulation tool may be advised in situations where the Queue Storage Ratio exceeds 1.0.

WARNING: The shared-plus-exclusive turn lane solution is an approximation of the HCM method, because more than three lane groups cannot be accommodated. Input data for Percent Turns in Shared Lane are used to specify proportion of turning vehicles in the shared lane.

--- Comments ---

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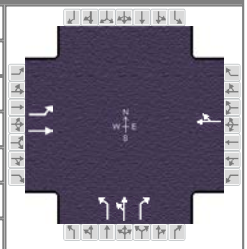
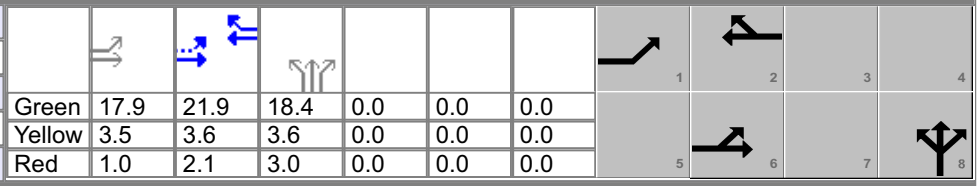
HCS 2010 Signalized Intersection Input Data

General Information				Intersection Information	
Agency	raSmith			Duration, h	0.25
Analyst	LLZ	Analysis Date	Feb 22, 2018	Area Type	Other
Jurisdiction	SE - Ozaukee Co	Time Period	PM	PHF	0.96
Urban Street	WIS 167	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	I-43 NB Ramps	File Name	WIS 167 PM_180312 - June Opt.xus		
Project Description	PM				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	540	160			120	30	735	1	60			

Signal Information			
Cycle, s	75.0	Reference Phase	2
Offset, s	49	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	17.9	21.9	18.4	0.0	0.0	0.0						
Yellow	3.5	3.6	3.6	0.0	0.0	0.0						
Red	1.0	2.1	3.0	0.0	0.0	0.0						

Traffic Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	540	160			120	30	735	1	60			
Initial Queue (Q_b), veh/h	0	0			0	0	0	0	0			
Base Saturation Flow Rate (s_o), veh/h	1900	1900			1900	1900	1900	1900	1900			
Parking (N_m), man/h		None			None			None				
Heavy Vehicles (P_{HV}), %	1	1			3		1	1	1			
Ped / Bike / RTOR, /h	0	0		0	0	0	0	0	40			
Buses (N_b), buses/h	0	0			0	0	0	0	0			
Arrival Type (*AT*)	3	3			3	3	3	3	3			
Upstream Filtering (*I*)	0.97	0.97			1.00	1.00	1.00	1.00	1.00			
Lane Width (*W*), ft	12.0	12.0			12.0		12.0	12.0	12.0			
Turn Bay Length, ft	450	0			0		530	0	90			
Grade (*Pg*), %		0			0			0			0	
Speed Limit, mi/h	35	35			35	35	35	35	35			

Phase Information	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Maximum Green (G_{max}) or Phase Split, s	11.0	30.0		19.0		45.0		
Yellow Change Interval (*Y*), s	3.5	3.6		3.6		3.6		
Red Clearance Interval (R_c), s	1.0	2.1		2.1		3.0		
Minimum Green (G_{min}), s	6	12		12	6	8		
Start-Up Lost Time (*lt*), s	2.0	2.0		2.0	2.0	2.0		
Extension of Effective Green (*e*), s	2.0	2.0		2.0	2.0	2.0		
Passage (*PT*), s	1.5	2.0		2.0	2.0	1.5		
Recall Mode	Off	Min		Min	Off	Off		
Dual Entry	No	Yes		Yes	No	Yes		
Walk (*Walk*), s	0.0	0.0		0.0	0.0	0.0		
Pedestrian Clearance Time (*PC*), s	0.0	0.0		0.0	0.0	0.0		

Multimodal Information	EB			WB			NB			SB		
85th % Speed / Rest in Walk / Corner Radius	0	No	25	0	No	25	0	No	25			
Walkway / Crosswalk Width / Length, ft	9.0	12	0	9.0	12	0	9.0	12	0			
Street Width / Island / Curb	0	0	No	0	0	No	0	0	No			
Width Outside / Bike Lane / Shoulder, ft	12	5.0	2.0	12	5.0	2.0	12	5.0	2.0			
Pedestrian Signal / Occupied Parking	No		0.50	No		0.50	No		0.50			

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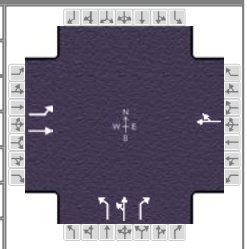
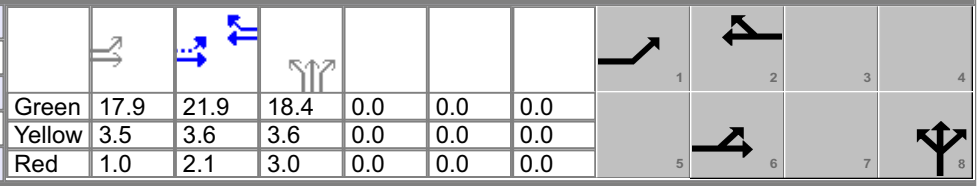
HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	raSmith			Duration, h	0.25
Analyst	LLZ	Analysis Date	Feb 22, 2018	Area Type	Other
Jurisdiction	SE - Ozaukee Co	Time Period	PM	PHF	0.96
Urban Street	WIS 167	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	I-43 NB Ramps	File Name	WIS 167 PM_180312 - June Opt.xus		
Project Description	PM				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	540	160			120	30	735	1	60			

Signal Information			
Cycle, s	75.0	Reference Phase	2
Offset, s	49	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	17.9	21.9	18.4	0.0	0.0	0.0						
Yellow	3.5	3.6	3.6	0.0	0.0	0.0						
Red	1.0	2.1	3.0	0.0	0.0	0.0						

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	1	6		2		8		
Case Number	1.0	4.0		8.3		9.0		
Phase Duration, s	22.4	50.0		27.6		25.0		
Change Period, ($Y+R_c$), s	4.5	5.7		5.7		6.6		
Max Allow Headway (*MAH*), s	2.6	0.0		0.0		2.6		
Queue Clearance Time (g_s), s	18.1					17.4		
Green Extension Time (g_e), s	0.6	0.0		0.0		0.9		
Phase Call Probability	1.00					1.00		
Max Out Probability	0.02					0.00		

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	1	6			2	12	3	8	18			
Adjusted Flow Rate (*v*), veh/h	562	167			156		383	384	21			
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1792	1881			1781		1792	1792	1594			
Queue Service Time (g_s), s	16.1	2.4			5.0		15.4	15.4	0.7			
Cycle Queue Clearance Time (g_c), s	16.1	2.4			5.0		15.4	15.4	0.7			
Green Ratio (*g/C*)	0.57	0.59			0.29		0.25	0.25	0.25			
Capacity (*c*), veh/h	821	1112			538		439	439	391			
Volume-to-Capacity Ratio (*X*)	0.685	0.150			0.290		0.872	0.874	0.053			
Back of Queue (*Q*), ft/ln (95 th percentile)	197.9	39.6			99.6		266.1	267.2	12.2			
Back of Queue (*Q*), veh/ln (95 th percentile)	7.9	1.6			3.9		10.6	10.6	0.5			
Queue Storage Ratio (*RQ*) (95 th percentile)	0.44	0.00			0.00		0.50	0.00	0.14			
Uniform Delay (d_1), s/veh	10.1	5.5			20.0		27.2	27.2	21.7			
Incremental Delay (d_2), s/veh	0.7	0.3			1.4		2.2	2.2	0.0			
Initial Queue Delay (d_3), s/veh	0.0	0.0			0.0		0.0	0.0	0.0			
Control Delay (*d*), s/veh	10.8	5.8			21.4		29.3	29.4	21.7			
Level of Service (LOS)	B	A			C		C	C	C			
Approach Delay, s/veh / LOS	9.7	A		21.4	C		29.2	C		0.0		
Intersection Delay, s/veh / LOS	19.9						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.9	A	1.9	A	2.1	B	2.3	B
Bicycle LOS Score / LOS	1.7	A	0.7	A	1.8	A		

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--- Messages ---

WARNING: The shared-plus-exclusive turn lane solution is an approximation of the HCM method, because more than three lane groups cannot be accommodated. Input data for Percent Turns in Shared Lane are used to specify proportion of turning vehicles in the shared lane.

--- Comments ---

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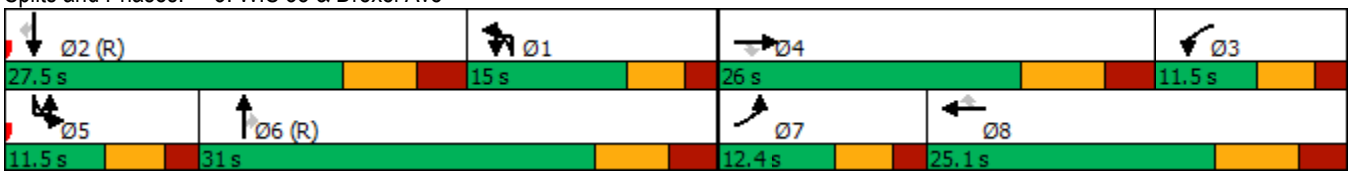
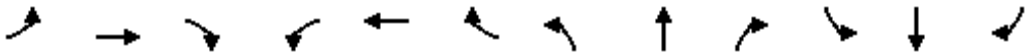
Software Output Reports – Optimized Timings
Signalized Corridors
Synchro Version 10.0.1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	390	410	115	305	70	260	610	120	140	870	135
Future Volume (vph)	125	390	410	115	305	70	260	610	120	140	870	135
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4			8			6			2
Detector Phase	7	4	4	3	8	8	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	6.0	10.0	10.0	6.0	10.0	10.0	6.0	15.0	15.0	6.0	15.0	15.0
Minimum Split (s)	11.5	18.0	18.0	11.5	18.0	18.0	11.5	22.4	22.4	11.5	22.4	22.4
Total Split (s)	12.4	26.0	26.0	11.5	25.1	25.1	15.0	31.0	31.0	11.5	27.5	27.5
Total Split (%)	15.5%	32.5%	32.5%	14.4%	31.4%	31.4%	18.8%	38.8%	38.8%	14.4%	34.4%	34.4%
Yellow Time (s)	3.5	5.0	5.0	3.5	5.0	5.0	3.5	4.4	4.4	3.5	4.4	4.4
All-Red Time (s)	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	8.0	8.0	5.5	8.0	8.0	5.5	7.4	7.4	5.5	7.4	7.4
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	6.6	18.2	18.2	6.0	15.3	15.3	9.0	25.6	25.6	6.1	22.7	22.7
Actuated g/C Ratio	0.08	0.23	0.23	0.08	0.19	0.19	0.11	0.32	0.32	0.08	0.28	0.28
v/c Ratio	0.47	0.52	0.75	0.48	0.48	0.15	0.74	0.58	0.16	0.59	0.64	0.20
Control Delay	40.8	29.9	44.3	42.0	30.9	27.2	33.3	14.7	9.9	45.6	28.3	24.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.8	29.9	44.3	42.0	30.9	27.2	33.3	14.7	9.9	45.6	28.3	24.9
LOS	D	C	D	D	C	C	C	B	A	D	C	C
Approach Delay		36.4			33.3			19.5			30.3	
Approach LOS		D			C			B			C	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 59 (74%), Referenced to phase 2:SBT and 6:NBT, Start of 1st Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 29.0	Intersection LOS: C
Intersection Capacity Utilization 67.1%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 3: WIS 38 & Drexel Ave





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	134	419	273	124	328	47	285	656	80	156	935	90
v/c Ratio	0.47	0.52	0.75	0.48	0.48	0.15	0.74	0.58	0.16	0.59	0.64	0.20
Control Delay	40.8	29.9	44.3	42.0	30.9	27.2	33.3	14.7	9.9	45.6	28.3	24.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.8	29.9	44.3	42.0	30.9	27.2	33.3	14.7	9.9	45.6	28.3	24.9
Queue Length 50th (ft)	33	97	128	31	75	19	71	0	19	39	156	36
Queue Length 95th (ft)	60	142	#243	57	114	47	#96	83	30	#71	201	74
Internal Link Dist (ft)		486			309			1080			942	
Turn Bay Length (ft)	245		375	170		180	375		260	440		430
Base Capacity (vph)	299	835	373	260	763	341	407	1134	507	264	1458	453
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.50	0.73	0.48	0.43	0.14	0.70	0.58	0.16	0.59	0.64	0.20

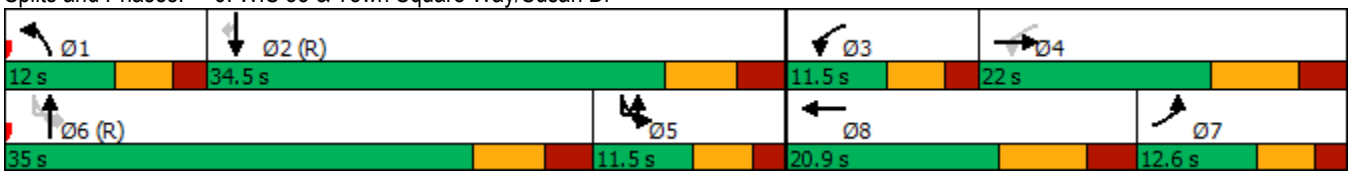
Intersection Summary

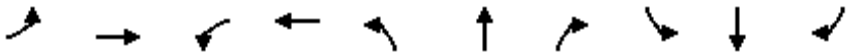
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	135	5	5	5	120	850	10	15	10	1250	125
Future Volume (vph)	135	5	5	5	120	850	10	15	10	1250	125
Turn Type	Prot	NA	D.P+P	NA	Prot	NA	Perm	D.P+P	D.P+P	NA	Perm
Protected Phases	7	4	3	8	1	6		5	5	2	
Permitted Phases			4				6	6	6		2
Detector Phase	7	4	3	8	1	6	6	5	5	2	2
Switch Phase											
Minimum Initial (s)	6.0	10.0	6.0	10.0	6.0	15.0	15.0	6.0	6.0	15.0	15.0
Minimum Split (s)	11.5	18.2	11.5	18.2	11.5	22.2	22.2	11.5	11.5	22.2	22.2
Total Split (s)	12.6	22.0	11.5	20.9	12.0	35.0	35.0	11.5	11.5	34.5	34.5
Total Split (%)	15.8%	27.5%	14.4%	26.1%	15.0%	43.8%	43.8%	14.4%	14.4%	43.1%	43.1%
Yellow Time (s)	3.5	5.2	3.5	5.2	3.5	4.3	4.3	3.5	3.5	4.3	4.3
All-Red Time (s)	2.0	3.0	2.0	3.0	2.0	2.9	2.9	2.0	2.0	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.5	8.2	5.5	8.2	5.5	7.2	7.2		5.5	7.2	7.2
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead	Lag	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Min	C-Min	None	None	C-Min	C-Min
Act Effct Green (s)	11.6	13.9	17.8	10.0	6.6	43.8	43.8		47.9	38.6	38.6
Actuated g/C Ratio	0.14	0.17	0.22	0.12	0.08	0.55	0.55		0.60	0.48	0.48
v/c Ratio	0.28	0.59	0.02	0.10	0.45	0.46	0.01		0.07	0.53	0.11
Control Delay	32.8	39.2	18.8	32.4	40.5	8.2	6.7		2.6	5.2	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	32.8	39.2	18.8	32.4	40.5	8.2	6.7		2.6	5.2	5.1
LOS	C	D	B	C	D	A	A		A	A	A
Approach Delay		36.3		29.8		12.1				5.2	
Approach LOS		D		C		B				A	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 56 (70%), Referenced to phase 2:SBT and 6:NBSB, Start of 1st Green	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.59	
Intersection Signal Delay: 11.4	Intersection LOS: B
Intersection Capacity Utilization 57.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 6: WIS 38 & Town Square Way/Susan Dr





Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	141	166	5	21	125	885	6	26	1302	81
v/c Ratio	0.28	0.59	0.02	0.10	0.45	0.46	0.01	0.07	0.53	0.11
Control Delay	32.8	39.2	18.8	32.4	40.5	8.2	6.7	2.6	5.2	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.8	39.2	18.8	32.4	40.5	8.2	6.7	2.6	5.2	5.1
Queue Length 50th (ft)	31	80	2	9	28	23	0	1	59	8
Queue Length 95th (ft)	60	140	9	30	45	286	m2	m3	101	m17
Internal Link Dist (ft)		266		357		1421			1080	
Turn Bay Length (ft)	195		50		410		245	450		280
Base Capacity (vph)	503	316	314	264	289	1919	858	376	2478	771
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.53	0.02	0.08	0.43	0.46	0.01	0.07	0.53	0.11

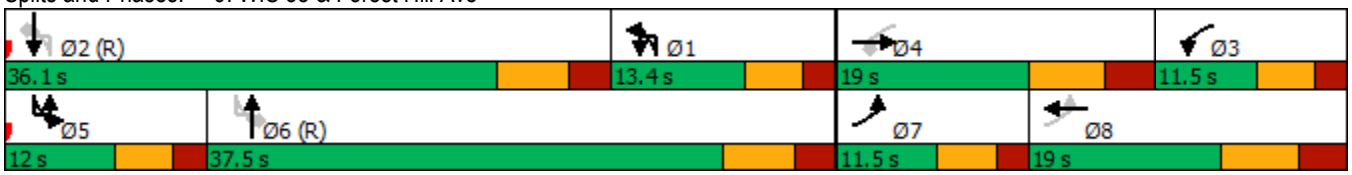
Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBU	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	70	40	155	35	25	15	90	865	30	5	95	1230
Future Volume (vph)	70	40	155	35	25	15	90	865	30	5	95	1230
Turn Type	D.P+P	NA	Perm	D.P+P	NA	D.P+P	D.P+P	NA	Perm	D.P+P	D.P+P	NA
Protected Phases	7	4		3	8	1	1	6		5	5	2
Permitted Phases	8		4	4		2	2		6	6	6	
Detector Phase	7	4	4	3	8	1	1	6	6	5	5	2
Switch Phase												
Minimum Initial (s)	6.0	10.0	10.0	6.0	10.0	6.0	6.0	15.0	15.0	6.0	6.0	15.0
Minimum Split (s)	11.5	17.6	17.6	11.5	17.6	11.5	11.5	21.8	21.8	11.5	11.5	21.8
Total Split (s)	11.5	19.0	19.0	11.5	19.0	13.4	13.4	37.5	37.5	12.0	12.0	36.1
Total Split (%)	14.4%	23.8%	23.8%	14.4%	23.8%	16.8%	16.8%	46.9%	46.9%	15.0%	15.0%	45.1%
Yellow Time (s)	3.5	4.6	4.6	3.5	4.6	3.5	3.5	4.3	4.3	3.5	3.5	4.3
All-Red Time (s)	2.0	3.0	3.0	2.0	3.0	2.0	2.0	2.5	2.5	2.0	2.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.5	7.6	7.6	5.5	7.6		5.5	6.8	6.8		5.5	6.8
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	None	C-Min
Act Effct Green (s)	16.5	12.7	12.7	17.6	10.4		47.1	41.0	41.0		46.0	40.8
Actuated g/C Ratio	0.21	0.16	0.16	0.22	0.13		0.59	0.51	0.51		0.58	0.51
v/c Ratio	0.24	0.14	0.40	0.11	0.50		0.39	0.50	0.02		0.29	0.49
Control Delay	22.3	31.3	36.2	20.7	40.9		19.3	17.4	14.4		6.5	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Delay	22.3	31.3	36.2	20.7	40.9		19.3	17.4	14.4		6.5	6.5
LOS	C	C	D	C	D		B	B	B		A	A
Approach Delay		30.5			35.9			17.5				6.5
Approach LOS		C			D			B				A

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 13 (16%), Referenced to phase 2:NBSB and 6:NBSB, Start of 1st Green	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.50	
Intersection Signal Delay: 13.9	Intersection LOS: B
Intersection Capacity Utilization 64.1%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 9: WIS 38 & Forest Hill Ave



Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	55
Future Volume (vph)	55
Turn Type	Perm
Protected Phases	
Permitted Phases	2
Detector Phase	2
Switch Phase	
Minimum Initial (s)	15.0
Minimum Split (s)	21.8
Total Split (s)	36.1
Total Split (%)	45.1%
Yellow Time (s)	4.3
All-Red Time (s)	2.5
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.8
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Recall Mode	C-Min
Act Effct Green (s)	40.8
Actuated g/C Ratio	0.51
v/c Ratio	0.04
Control Delay	4.7
Queue Delay	0.0
Total Delay	4.7
LOS	A
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	73	42	100	36	109	110	901	19	104	1281	36
v/c Ratio	0.24	0.14	0.40	0.11	0.50	0.39	0.50	0.02	0.29	0.49	0.04
Control Delay	22.3	31.3	36.2	20.7	40.9	19.3	17.4	14.4	6.5	6.5	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.3	31.3	36.2	20.7	40.9	19.3	17.4	14.4	6.5	6.5	4.7
Queue Length 50th (ft)	26	19	48	13	52	24	195	7	12	104	6
Queue Length 95th (ft)	56	47	93	33	100	64	247	m18	23	34	m4
Internal Link Dist (ft)		496			316		2565			1421	
Turn Bay Length (ft)	325		170	120		470		280	350		270
Base Capacity (vph)	302	312	265	334	237	312	1823	815	363	2619	815
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.13	0.38	0.11	0.46	0.35	0.49	0.02	0.29	0.49	0.04

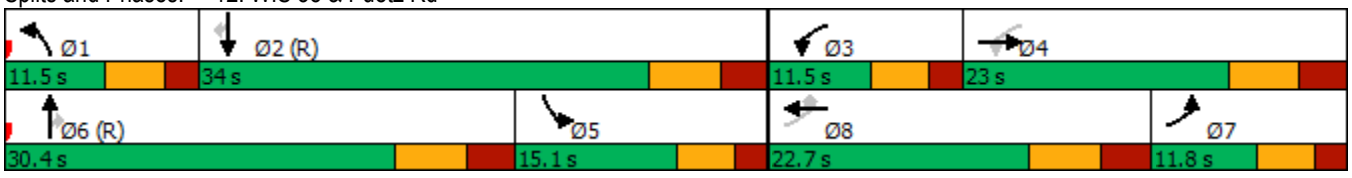
Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	115	360	85	235	195	120	590	130	205	970	145
Future Volume (vph)	115	360	85	235	195	120	590	130	205	970	145
Turn Type	D.P+P	NA	D.P+P	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		1	6		5	2	
Permitted Phases	8		4		8			6			2
Detector Phase	7	4	3	8	8	1	6	6	5	2	2
Switch Phase											
Minimum Initial (s)	6.0	10.0	6.0	10.0	10.0	6.0	15.0	15.0	6.0	15.0	15.0
Minimum Split (s)	11.5	17.2	11.5	17.2	17.2	11.5	22.2	22.2	11.5	22.2	22.2
Total Split (s)	11.8	23.0	11.5	22.7	22.7	11.5	30.4	30.4	15.1	34.0	34.0
Total Split (%)	14.8%	28.8%	14.4%	28.4%	28.4%	14.4%	38.0%	38.0%	18.9%	42.5%	42.5%
Yellow Time (s)	3.5	4.2	3.5	4.2	4.2	3.5	4.3	4.3	3.5	4.3	4.3
All-Red Time (s)	2.0	3.0	2.0	3.0	3.0	2.0	2.9	2.9	2.0	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	7.2	5.5	7.2	7.2	5.5	7.2	7.2	5.5	7.2	7.2
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	22.5	14.8	21.3	11.9	11.9	6.0	25.5	25.5	10.6	32.4	32.4
Actuated g/C Ratio	0.28	0.18	0.27	0.15	0.15	0.08	0.32	0.32	0.13	0.40	0.40
v/c Ratio	0.31	0.84	0.36	0.46	0.53	0.49	0.55	0.17	0.47	0.70	0.15
Control Delay	21.4	44.7	22.2	34.0	40.1	34.2	19.2	16.0	16.5	7.7	3.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.4	44.7	22.2	34.0	40.1	34.2	19.2	16.0	16.5	7.7	3.7
LOS	C	D	C	C	D	C	B	B	B	A	A
Approach Delay		40.4		33.4			21.1			8.9	
Approach LOS		D		C			C			A	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 39 (49%), Referenced to phase 2:SBT and 6:NBT, Start of 1st Green	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 21.8	Intersection LOS: C
Intersection Capacity Utilization 72.7%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 12: WIS 38 & Puetz Rd



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	120	531	89	245	126	125	615	84	214	1010	94
v/c Ratio	0.31	0.84	0.36	0.46	0.53	0.49	0.55	0.17	0.47	0.70	0.15
Control Delay	21.4	44.7	22.2	34.0	40.1	34.2	19.2	16.0	16.5	7.7	3.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.4	44.7	22.2	34.0	40.1	34.2	19.2	16.0	16.5	7.7	3.7
Queue Length 50th (ft)	40	133	29	61	61	32	137	33	39	30	5
Queue Length 95th (ft)	77	#205	60	90	107	55	201	72	64	#52	12
Internal Link Dist (ft)		603		551			1245			2565	
Turn Bay Length (ft)	380		315		90	215		305	225		260
Base Capacity (vph)	392	674	244	692	309	257	1186	531	484	1447	647
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.79	0.36	0.35	0.41	0.49	0.52	0.16	0.44	0.70	0.15

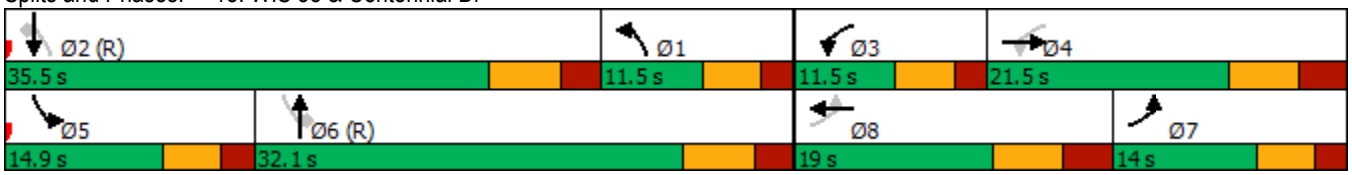
Intersection Summary

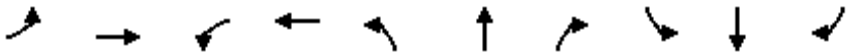
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	160	40	60	45	70	575	70	160	865	175
Future Volume (vph)	160	40	60	45	70	575	70	160	865	175
Turn Type	D.P+P	NA	D.P+P	NA	D.P+P	NA	Perm	D.P+P	NA	Perm
Protected Phases	7	4	3	8	1	6		5	2	
Permitted Phases	8		4		2		6	6		2
Detector Phase	7	4	3	8	1	6	6	5	2	2
Switch Phase										
Minimum Initial (s)	6.0	10.0	6.0	10.0	6.0	15.0	15.0	6.0	15.0	15.0
Minimum Split (s)	11.5	17.2	11.5	17.2	11.5	21.7	21.7	11.5	21.7	21.7
Total Split (s)	14.0	21.5	11.5	19.0	11.5	32.1	32.1	14.9	35.5	35.5
Total Split (%)	17.5%	26.9%	14.4%	23.8%	14.4%	40.1%	40.1%	18.6%	44.4%	44.4%
Yellow Time (s)	3.5	4.2	3.5	4.2	3.5	4.3	4.3	3.5	4.3	4.3
All-Red Time (s)	2.0	3.0	2.0	3.0	2.0	2.4	2.4	2.0	2.4	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	7.2	5.5	7.2	5.5	6.7	6.7	5.5	6.7	6.7
Lead/Lag	Lag	Lag	Lead	Lead	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	17.4	10.8	17.4	10.7	42.8	32.5	32.5	41.7	36.8	36.8
Actuated g/C Ratio	0.22	0.14	0.22	0.13	0.54	0.41	0.41	0.52	0.46	0.46
v/c Ratio	0.53	0.44	0.21	0.55	0.24	0.43	0.07	0.37	0.57	0.16
Control Delay	30.2	37.9	21.9	42.0	13.2	19.7	18.0	7.0	6.9	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.2	37.9	21.9	42.0	13.2	19.7	18.0	7.0	6.9	6.1
LOS	C	D	C	D	B	B	B	A	A	A
Approach Delay		33.0		35.0		19.0			6.8	
Approach LOS		C		D		B			A	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 68 (85%), Referenced to phase 2:NBSB and 6:NBSB, Start of 1st Green	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.57	
Intersection Signal Delay: 15.7	Intersection LOS: B
Intersection Capacity Utilization 60.6%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 15: WIS 38 & Centennial Dr





Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	172	102	65	123	75	618	47	172	930	117
v/c Ratio	0.53	0.44	0.21	0.55	0.24	0.43	0.07	0.37	0.57	0.16
Control Delay	30.2	37.9	21.9	42.0	13.2	19.7	18.0	7.0	6.9	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.2	37.9	21.9	42.0	13.2	19.7	18.0	7.0	6.9	6.1
Queue Length 50th (ft)	67	48	24	59	15	116	14	14	57	14
Queue Length 95th (ft)	113	92	50	110	36	184	40	m20	71	m20
Internal Link Dist (ft)		557		655		824			1245	
Turn Bay Length (ft)	420		175		380		185	360		290
Base Capacity (vph)	364	307	315	249	316	1439	643	505	1645	736
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.33	0.21	0.49	0.24	0.43	0.07	0.34	0.57	0.16

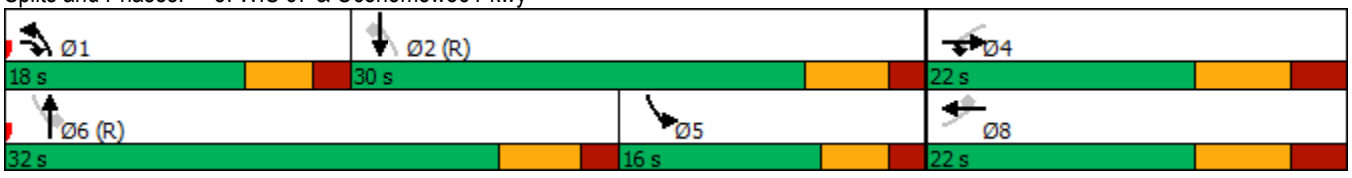
Intersection Summary

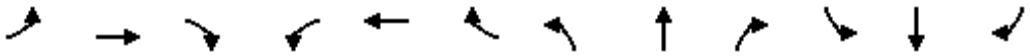
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	35	150	50	35	145	170	880	85	85	620	75
Future Volume (vph)	45	35	150	50	35	145	170	880	85	85	620	75
Turn Type	D.Pm	NA	pt+ov	D.Pm	NA	Perm	D.P+P	NA	Perm	D.P+P	NA	Perm
Protected Phases		4	4 1		8		1	6		5	2	
Permitted Phases	8			4		8	2		6	6		2
Detector Phase	8	4	4 1	4	8	8	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	8.0	15.0	15.0	8.0	15.0	15.0
Minimum Split (s)	18.0	18.0		18.0	18.0	18.0	13.5	21.3	21.3	13.5	21.3	21.3
Total Split (s)	22.0	22.0		22.0	22.0	22.0	18.0	32.0	32.0	16.0	30.0	30.0
Total Split (%)	31.4%	31.4%		31.4%	31.4%	31.4%	25.7%	45.7%	45.7%	22.9%	42.9%	42.9%
Yellow Time (s)	5.0	5.0		5.0	5.0	5.0	3.5	4.3	4.3	3.5	4.3	4.3
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	8.0	8.0		8.0	8.0	8.0	5.5	6.3	6.3	5.5	6.3	6.3
Lead/Lag							Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	10.4	10.4	21.4	10.4	10.4	10.4	44.2	38.3	38.3	46.4	35.2	35.2
Actuated g/C Ratio	0.15	0.15	0.31	0.15	0.15	0.15	0.63	0.55	0.55	0.66	0.50	0.50
v/c Ratio	0.23	0.13	0.20	0.26	0.13	0.40	0.30	0.33	0.06	0.18	0.26	0.06
Control Delay	29.1	26.8	17.1	29.8	26.9	32.5	5.7	4.1	4.5	6.7	11.6	11.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.1	26.8	17.1	29.8	26.9	32.5	5.7	4.1	4.5	6.7	11.6	11.7
LOS	C	C	B	C	C	C	A	A	A	A	B	B
Approach Delay		22.2			30.6			4.4			11.1	
Approach LOS		C			C			A			B	

Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 70	
Offset: 34 (49%), Referenced to phase 2:NBSB and 6:NBSB, Start of 1st Green	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.40	
Intersection Signal Delay: 10.1	Intersection LOS: B
Intersection Capacity Utilization 52.3%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 3: WIS 67 & Oconomowoc Pkwy





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	47	37	98	53	37	95	179	926	55	89	653	49
v/c Ratio	0.23	0.13	0.20	0.26	0.13	0.40	0.30	0.33	0.06	0.18	0.26	0.06
Control Delay	29.1	26.8	17.1	29.8	26.9	32.5	5.7	4.1	4.5	6.7	11.6	11.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.1	26.8	17.1	29.8	26.9	32.5	5.7	4.1	4.5	6.7	11.6	11.7
Queue Length 50th (ft)	18	14	29	21	14	38	12	33	5	11	60	11
Queue Length 95th (ft)	45	37	57	50	37	78	52	39	m12	27	91	31
Internal Link Dist (ft)		1261			1367			1721			1220	
Turn Bay Length (ft)			150			175	400		310	375		410
Base Capacity (vph)	275	376	502	273	372	316	697	2808	874	544	2555	795
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.10	0.20	0.19	0.10	0.30	0.26	0.33	0.06	0.16	0.26	0.06

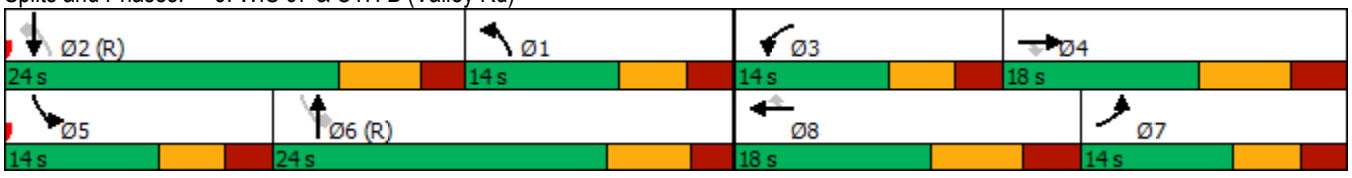
Intersection Summary

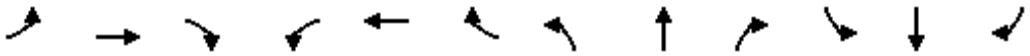
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	145	100	165	50	100	100	110	890	50	125	645	50
Future Volume (vph)	145	100	165	50	100	100	110	890	50	125	645	50
Turn Type	Prot	NA	Perm	Prot	NA	Perm	D.P+P	NA	Perm	D.P+P	NA	Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4			8	2		6	6		2
Detector Phase	7	4	4	3	8	8	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	8.0	10.0	10.0	8.0	10.0	10.0	8.0	15.0	15.0	8.0	15.0	15.0
Minimum Split (s)	14.0	17.8	17.8	14.0	17.8	17.8	14.0	21.6	21.6	14.0	21.6	21.6
Total Split (s)	14.0	18.0	18.0	14.0	18.0	18.0	14.0	24.0	24.0	14.0	24.0	24.0
Total Split (%)	20.0%	25.7%	25.7%	20.0%	25.7%	25.7%	20.0%	34.3%	34.3%	20.0%	34.3%	34.3%
Yellow Time (s)	3.5	4.8	4.8	3.5	4.8	4.8	3.5	4.3	4.3	3.5	4.3	4.3
All-Red Time (s)	2.5	3.0	3.0	2.5	3.0	3.0	2.5	2.3	2.3	2.5	2.3	2.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	7.8	7.8	6.0	7.8	7.8	6.0	6.6	6.6	6.0	6.6	6.6
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	8.1	12.9	12.9	8.0	10.0	10.0	33.7	28.0	28.0	33.7	27.1	27.1
Actuated g/C Ratio	0.12	0.18	0.18	0.11	0.14	0.14	0.48	0.40	0.40	0.48	0.39	0.39
v/c Ratio	0.38	0.16	0.36	0.13	0.20	0.28	0.12	0.45	0.05	0.18	0.34	0.05
Control Delay	31.7	25.9	30.4	28.8	27.6	30.5	4.1	5.9	4.4	7.9	14.3	14.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.7	25.9	30.4	28.8	27.6	30.5	4.1	5.9	4.4	7.9	14.3	14.2
LOS	C	C	C	C	C	C	A	A	A	A	B	B
Approach Delay		29.6			28.8			5.6			13.3	
Approach LOS		C			C			A			B	

Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 70	
Offset: 64 (91%), Referenced to phase 2:NBSB and 6:NBSB, Start of 1st Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.45	
Intersection Signal Delay: 13.7	Intersection LOS: B
Intersection Capacity Utilization 51.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 6: WIS 67 & CTH B (Valley Rd)





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	149	103	105	52	103	64	113	918	32	129	665	32
v/c Ratio	0.38	0.16	0.36	0.13	0.20	0.28	0.12	0.45	0.05	0.18	0.34	0.05
Control Delay	31.7	25.9	30.4	28.8	27.6	30.5	4.1	5.9	4.4	7.9	14.3	14.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.7	25.9	30.4	28.8	27.6	30.5	4.1	5.9	4.4	7.9	14.3	14.2
Queue Length 50th (ft)	31	21	42	10	21	25	3	30	3	6	44	6
Queue Length 95th (ft)	57	42	87	25	42	58	2	19	m4	13	64	18
Internal Link Dist (ft)		1911			2288			865			1721	
Turn Bay Length (ft)	330		130	450		230	380		470	440		460
Base Capacity (vph)	392	648	290	396	520	232	913	2054	639	705	2027	631
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.16	0.36	0.13	0.20	0.28	0.12	0.45	0.05	0.18	0.33	0.05

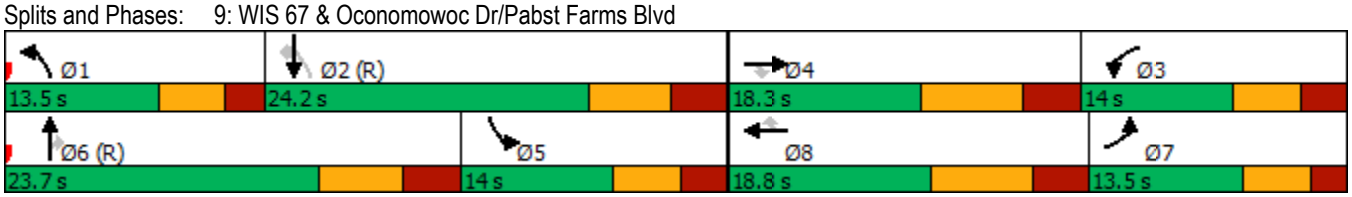
Intersection Summary

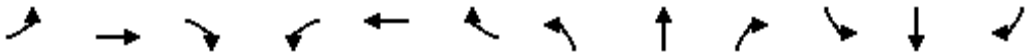
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	25	175	155	20	55	105	945	145	20	825	15
Future Volume (vph)	50	25	175	155	20	55	105	945	145	20	825	15
Turn Type	Prot	NA	Perm	Prot	NA	Perm	D.P+P	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4			8	2		6			2
Detector Phase	7	4	4	3	8	8	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	8.0	10.0	10.0	8.0	10.0	10.0	8.0	15.0	15.0	8.0	15.0	15.0
Minimum Split (s)	13.5	18.3	18.3	14.0	18.3	18.3	13.5	22.3	22.3	14.0	22.3	22.3
Total Split (s)	13.5	18.3	18.3	14.0	18.8	18.8	13.5	23.7	23.7	14.0	24.2	24.2
Total Split (%)	19.3%	26.1%	26.1%	20.0%	26.9%	26.9%	19.3%	33.9%	33.9%	20.0%	34.6%	34.6%
Yellow Time (s)	3.5	5.3	5.3	3.5	5.3	5.3	3.5	4.3	4.3	3.5	4.3	4.3
All-Red Time (s)	2.0	3.0	3.0	2.5	3.0	3.0	2.0	3.0	3.0	2.5	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	8.3	8.3	6.0	8.3	8.3	5.5	7.3	7.3	6.0	7.3	7.3
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	8.3	10.0	10.0	8.0	12.8	12.8	34.3	35.5	35.5	8.0	27.5	27.5
Actuated g/C Ratio	0.12	0.14	0.14	0.11	0.18	0.18	0.49	0.51	0.51	0.11	0.39	0.39
v/c Ratio	0.24	0.09	0.49	0.40	0.06	0.12	0.26	0.37	0.11	0.05	0.42	0.01
Control Delay	31.2	27.1	35.7	32.0	26.4	26.9	13.1	14.6	14.0	10.2	6.4	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.2	27.1	35.7	32.0	26.4	26.9	13.1	14.6	14.0	10.2	6.4	5.0
LOS	C	C	D	C	C	C	B	B	B	B	A	A
Approach Delay		33.3			30.7			14.5			6.5	
Approach LOS		C			C			B			A	

Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 70	
Offset: 64 (91%), Referenced to phase 2:NBSB and 6:NBT, Start of 1st Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.49	
Intersection Signal Delay: 14.5	Intersection LOS: B
Intersection Capacity Utilization 54.0%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 9: WIS 67 & Oconomowoc Dr/Pabst Farms Blvd





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	51	25	110	157	20	34	106	955	91	20	833	9
v/c Ratio	0.24	0.09	0.49	0.40	0.06	0.12	0.26	0.37	0.11	0.05	0.42	0.01
Control Delay	31.2	27.1	35.7	32.0	26.4	26.9	13.1	14.6	14.0	10.2	6.4	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.2	27.1	35.7	32.0	26.4	26.9	13.1	14.6	14.0	10.2	6.4	5.0
Queue Length 50th (ft)	20	10	44	32	8	13	33	113	29	2	32	1
Queue Length 95th (ft)	51	30	91	59	26	37	41	168	m48	m7	42	m3
Internal Link Dist (ft)		1460			1495			1446			865	
Turn Bay Length (ft)	160		300	300		175	430		570	415		465
Base Capacity (vph)	209	266	226	396	354	301	405	2606	811	388	1979	616
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.09	0.49	0.40	0.06	0.11	0.26	0.37	0.11	0.05	0.42	0.01

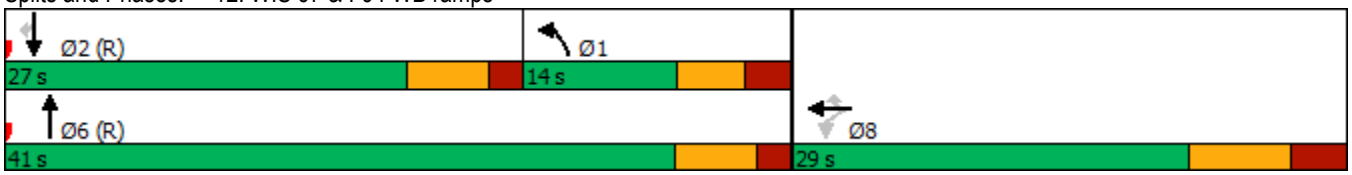
Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	220	1	555	80	640	945	210
Future Volume (vph)	220	1	555	80	640	945	210
Turn Type	Perm	NA	Perm	Prot	NA	NA	Perm
Protected Phases		8		1	6	2	
Permitted Phases	8		8				2
Detector Phase	8	8	8	1	6	2	2
Switch Phase							
Minimum Initial (s)	10.0	10.0	10.0	8.0	15.0	15.0	15.0
Minimum Split (s)	18.3	18.3	18.3	14.0	21.1	21.1	21.1
Total Split (s)	29.0	29.0	29.0	14.0	41.0	27.0	27.0
Total Split (%)	41.4%	41.4%	41.4%	20.0%	58.6%	38.6%	38.6%
Yellow Time (s)	5.3	5.3	5.3	3.5	4.3	4.3	4.3
All-Red Time (s)	3.0	3.0	3.0	2.5	1.8	1.8	1.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	8.3	8.3	8.3	6.0	6.1	6.1	6.1
Lead/Lag				Lag		Lead	Lead
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min
Act Effct Green (s)	14.7	14.7	14.7	8.0	40.9	29.7	29.7
Actuated g/C Ratio	0.21	0.21	0.21	0.11	0.58	0.42	0.42
v/c Ratio	0.33	0.33	0.70	0.21	0.22	0.36	0.20
Control Delay	24.8	24.8	31.9	27.6	6.1	8.7	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.8	24.8	31.9	27.6	6.1	8.7	9.1
LOS	C	C	C	C	A	A	A
Approach Delay		29.3			8.5	8.8	
Approach LOS		C			A	A	

Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 70	
Offset: 42 (60%), Referenced to phase 2:SBT and 6:NBT, Start of 1st Green	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.70	
Intersection Signal Delay: 13.9	Intersection LOS: B
Intersection Capacity Utilization 45.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 12: WIS 67 & I-94 WB ramps



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	113	115	401	82	660	974	134
v/c Ratio	0.33	0.33	0.70	0.21	0.22	0.36	0.20
Control Delay	24.8	24.8	31.9	27.6	6.1	8.7	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.8	24.8	31.9	27.6	6.1	8.7	9.1
Queue Length 50th (ft)	44	45	92	17	25	20	10
Queue Length 95th (ft)	78	80	125	37	67	155	93
Internal Link Dist (ft)		1547			975	1446	
Turn Bay Length (ft)	425			535			515
Base Capacity (vph)	487	489	808	396	2999	2690	664
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.24	0.50	0.21	0.22	0.36	0.20

Intersection Summary

Lane Group	EBL	EBR	NBT	NBR	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	165	22	555	285	680	485
Future Volume (vph)	165	22	555	285	680	485
Turn Type	Prot	Perm	NA	Free	NA	Free
Protected Phases	4		6		2	
Permitted Phases		4		Free		Free
Detector Phase	4	4	6		2	
Switch Phase						
Minimum Initial (s)	10.0	10.0	15.0		15.0	
Minimum Split (s)	17.9	17.9	20.8		20.8	
Total Split (s)	26.0	26.0	44.0		44.0	
Total Split (%)	37.1%	37.1%	62.9%		62.9%	
Yellow Time (s)	4.9	4.9	4.3		4.3	
All-Red Time (s)	3.0	3.0	1.5		1.5	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	7.9	7.9	5.8		5.8	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Min		C-Min	
Act Effct Green (s)	10.0	10.0	46.3	70.0	46.3	70.0
Actuated g/C Ratio	0.14	0.14	0.66	1.00	0.66	1.00
v/c Ratio	0.34	0.10	0.24	0.19	0.30	0.18
Control Delay	29.3	27.4	5.1	0.3	1.9	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.3	27.4	5.1	0.3	1.9	0.2
LOS	C	C	A	A	A	A
Approach Delay			3.5		1.2	
Approach LOS			A		A	

Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 70	
Offset: 62 (89%), Referenced to phase 2:SBT and 6:NBT, Start of 1st Green	
Natural Cycle: 40	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.34	
Intersection Signal Delay: 4.4	Intersection LOS: A
Intersection Capacity Utilization 38.5%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 15: WIS 67 & I-94 EB ramps

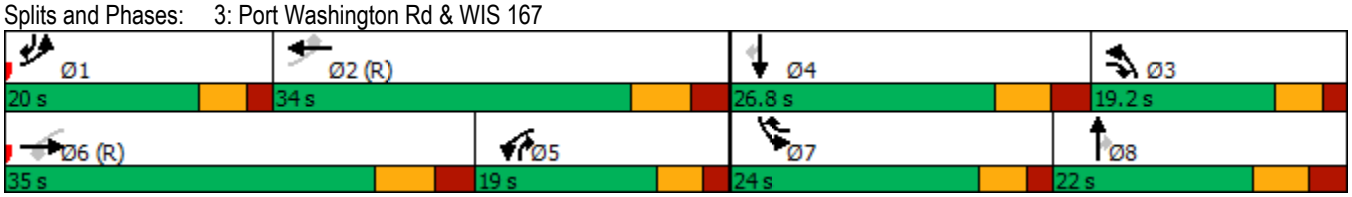
Lane Group	EBL	EBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	168	22	566	291	694	495
v/c Ratio	0.34	0.10	0.24	0.19	0.30	0.18
Control Delay	29.3	27.4	5.1	0.3	1.9	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.3	27.4	5.1	0.3	1.9	0.2
Queue Length 50th (ft)	34	8	43	0	2	0
Queue Length 95th (ft)	61	27	63	0	6	1
Internal Link Dist (ft)			612		975	
Turn Bay Length (ft)	285	100		340		
Base Capacity (vph)	887	409	2318	1568	2295	2733
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.05	0.24	0.19	0.30	0.18

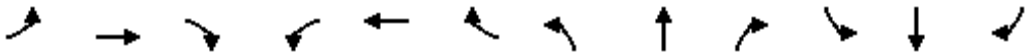
Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	245	620	230	215	510	380	270	320	320	425	355	345
Future Volume (vph)	245	620	230	215	510	380	270	320	320	425	355	345
Turn Type	D.P+P	NA	pm+ov	D.P+P	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	1	6	3	5	2	7	3	8	5	7	4	1
Permitted Phases	2		6	6		2			8			4
Detector Phase	1	6	3	5	2	7	3	8	5	7	4	1
Switch Phase												
Minimum Initial (s)	8.0	15.0	8.0	8.0	15.0	8.0	8.0	10.0	8.0	8.0	10.0	8.0
Minimum Split (s)	13.5	22.4	13.5	13.5	22.4	13.5	13.5	17.1	13.5	13.5	17.1	13.5
Total Split (s)	20.0	35.0	19.2	19.0	34.0	24.0	19.2	22.0	19.0	24.0	26.8	20.0
Total Split (%)	20.0%	35.0%	19.2%	19.0%	34.0%	24.0%	19.2%	22.0%	19.0%	24.0%	26.8%	20.0%
Yellow Time (s)	3.5	4.4	3.5	3.5	4.4	3.5	3.5	4.1	3.5	3.5	4.1	3.5
All-Red Time (s)	2.0	3.0	2.0	2.0	3.0	2.0	2.0	3.0	2.0	2.0	3.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	7.4	5.5	5.5	7.4	5.5	5.5	7.1	5.5	5.5	7.1	5.5
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lead	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	None	None	C-Min	None	None	None	None	None	None	None
Act Effct Green (s)	47.5	33.8	55.9	47.5	33.8	57.3	14.7	12.9	26.2	16.0	14.2	27.6
Actuated g/C Ratio	0.48	0.34	0.56	0.48	0.34	0.57	0.15	0.13	0.26	0.16	0.14	0.28
v/c Ratio	0.54	0.54	0.17	0.54	0.44	0.27	0.55	0.73	0.49	0.80	0.73	0.51
Control Delay	18.9	30.0	12.2	10.4	9.1	5.4	43.8	51.3	20.6	51.5	49.6	20.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.9	30.0	12.2	10.4	9.1	5.4	43.8	51.3	20.6	51.5	49.6	20.0
LOS	B	C	B	B	A	A	D	D	C	D	D	B
Approach Delay		24.7			8.5			41.0			44.0	
Approach LOS		C			A			D			D	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 67 (67%), Referenced to phase 2:EBWB and 6:EBWB, Start of 1st Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 29.1	Intersection LOS: C
Intersection Capacity Utilization 71.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 3: Port Washington Rd & WIS 167





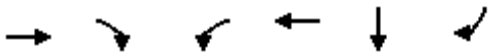
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	255	646	149	224	531	245	281	333	207	443	370	223
v/c Ratio	0.54	0.54	0.17	0.54	0.44	0.27	0.55	0.73	0.49	0.80	0.73	0.51
Control Delay	18.9	30.0	12.2	10.4	9.1	5.4	43.8	51.3	20.6	51.5	49.6	20.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.9	30.0	12.2	10.4	9.1	5.4	43.8	51.3	20.6	51.5	49.6	20.0
Queue Length 50th (ft)	87	173	43	27	48	41	86	108	67	140	120	72
Queue Length 95th (ft)	149	253	87	46	62	30	128	153	94	190	162	98
Internal Link Dist (ft)		637			311			284			333	
Turn Bay Length (ft)	250						145			220		145
Base Capacity (vph)	515	1196	873	445	1196	945	522	532	446	641	704	484
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.54	0.17	0.50	0.44	0.26	0.54	0.63	0.46	0.69	0.53	0.46

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR	Ø1
Lane Configurations							
Traffic Volume (vph)	665	700	35	820	1	97	
Future Volume (vph)	665	700	35	820	1	97	
Turn Type	NA	Prot	D.P+P	NA	NA	custom	
Protected Phases	6	6	5	2	4	1 4	1
Permitted Phases			6			4	
Detector Phase	6	6	5	2	4	1 4	
Switch Phase							
Minimum Initial (s)	12.0	12.0	5.0	12.0	6.0		6.0
Minimum Split (s)	17.9	17.9	10.5	17.9	11.9		10.5
Total Split (s)	67.0	67.0	15.0	64.0	18.0		18.0
Total Split (%)	67.0%	67.0%	15.0%	64.0%	18.0%		18%
Yellow Time (s)	3.9	3.9	3.5	3.9	3.6		3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.3		1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	5.9	5.9	5.5	5.9	5.9		
Lead/Lag	Lag	Lag	Lead	Lag			Lead
Lead-Lag Optimize?							
Recall Mode	C-Min	C-Min	None	C-Min	None		None
Act Effct Green (s)	76.2	76.2	78.4	74.1	9.2	19.0	
Actuated g/C Ratio	0.76	0.76	0.78	0.74	0.09	0.19	
v/c Ratio	0.36	0.28	0.08	0.33	0.23	0.34	
Control Delay	5.1	5.2	1.6	3.9	44.3	36.4	
Queue Delay	0.2	0.3	0.0	0.0	0.0	0.0	
Total Delay	5.4	5.6	1.6	3.9	44.3	36.4	
LOS	A	A	A	A	D	D	
Approach Delay	5.4			3.8	38.5		
Approach LOS	A			A	D		

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 97 (97%), Referenced to phase 2:WBT and 6:EBWB, Start of 1st Green	
Natural Cycle: 45	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.36	
Intersection Signal Delay: 6.8	Intersection LOS: A
Intersection Capacity Utilization 69.1%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 6: I-43 SB ramps & WIS 167



Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	897	306	36	854	37	101
v/c Ratio	0.36	0.28	0.08	0.33	0.23	0.34
Control Delay	5.1	5.2	1.6	3.9	44.3	36.4
Queue Delay	0.2	0.3	0.0	0.0	0.0	0.0
Total Delay	5.4	5.6	1.6	3.9	44.3	36.4
Queue Length 50th (ft)	90	61	2	40	22	55
Queue Length 95th (ft)	114	78	m5	160	52	98
Internal Link Dist (ft)	311			513	187	
Turn Bay Length (ft)			310			50
Base Capacity (vph)	2519	1108	548	2623	213	393
Starvation Cap Reductn	826	376	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.42	0.07	0.33	0.17	0.26

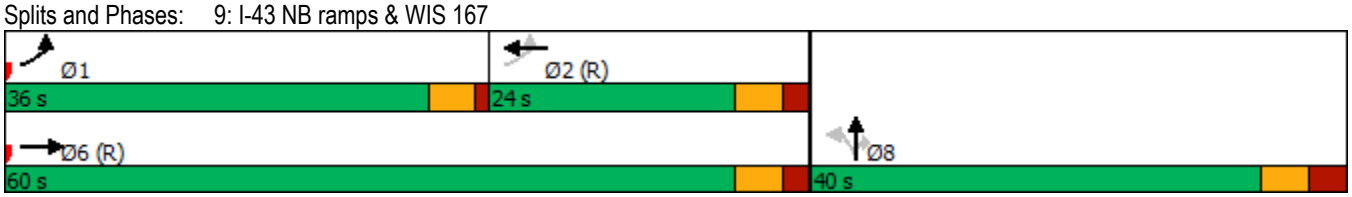
Intersection Summary

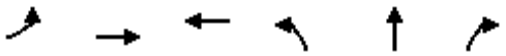
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	NBL	NBT	NBR
Lane Configurations						
Traffic Volume (vph)	540	160	120	735	1	20
Future Volume (vph)	540	160	120	735	1	20
Turn Type	D.P+P	NA	NA	Perm	NA	Perm
Protected Phases	1	6	2		8	
Permitted Phases	2			8		8
Detector Phase	1	6	2	8	8	8
Switch Phase						
Minimum Initial (s)	6.0	12.0	12.0	8.0	8.0	8.0
Minimum Split (s)	10.5	31.7	21.7	22.6	22.6	22.6
Total Split (s)	36.0	60.0	24.0	40.0	40.0	40.0
Total Split (%)	36.0%	60.0%	24.0%	40.0%	40.0%	40.0%
Yellow Time (s)	3.5	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	2.1	2.1	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.7	5.7	6.6	6.6	6.6
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	None	C-Min	C-Min	None	None	None
Act Effct Green (s)	57.7	61.0	29.2	26.7	26.7	26.7
Actuated g/C Ratio	0.58	0.61	0.29	0.27	0.27	0.27
v/c Ratio	0.66	0.15	0.30	0.85	0.85	0.05
Control Delay	17.3	8.5	33.1	51.5	51.5	24.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.3	8.5	33.1	51.5	51.5	24.5
LOS	B	A	C	D	D	C
Approach Delay		15.3	33.1		50.8	
Approach LOS		B	C		D	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 4 (4%), Referenced to phase 2:EBWB and 6:EBT, Start of 1st Green	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay: 33.6	Intersection LOS: C
Intersection Capacity Utilization 69.1%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 9: I-43 NB ramps & WIS 167





Lane Group	EBL	EBT	WBT	NBL	NBT	NBR
Lane Group Flow (vph)	563	167	156	383	384	21
v/c Ratio	0.66	0.15	0.30	0.85	0.85	0.05
Control Delay	17.3	8.5	33.1	51.5	51.5	24.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.3	8.5	33.1	51.5	51.5	24.5
Queue Length 50th (ft)	280	74	81	241	241	10
Queue Length 95th (ft)	322	72	153	330	331	26
Internal Link Dist (ft)		513	488		282	
Turn Bay Length (ft)						90
Base Capacity (vph)	907	1147	524	567	568	534
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.15	0.30	0.68	0.68	0.04

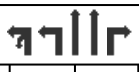
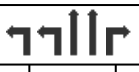
Intersection Summary

Software Output Reports – Optimized Timings
Signalized Corridors
Vistro Version 6.00-00

Intersection Level Of Service Report
Intersection 3: WIS 38 & Drexel - PM

Control Type:	Signalized	Delay (sec / veh):	28.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.754

Intersection Setup

Name	WIS 38				WIS 38				Drexel Ave			Drexel Ave		
Approach	Northbound				Southbound				Eastbound			Westbound		
Lane Configuration														
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	1	2	0	0	1	2	0	1	2	0	1
Pocket Length [ft]	375.0	100.0	100.0	260.0	440.0	100.0	100.0	430.0	245.00	100.00	375.00	170.00	100.00	180.00
Speed [mph]	45.00				45.00				35.00			35.00		
Grade [%]	0.00				0.00				0.00			0.00		
Crosswalk	No				No				No			No		

Volumes

Name	WIS 38				WIS 38				Drexel Ave			Drexel Ave		
Base Volume Input [veh/h]	5	260	610	120	5	140	870	135	125	390	410	115	305	70
Base Volume Adjustment Factor	1.000	1.000	1.000	0.620	1.000	1.000	1.000	0.620	1.0000	1.0000	0.6200	1.0000	1.0000	0.6200
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	260	610	74	5	140	870	84	125	390	254	115	305	43
Peak Hour Factor	0.930	0.930	0.930	0.930	0.930	0.930	0.930	0.930	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	70	164	20	1	38	234	23	34	105	68	31	82	12
Total Analysis Volume [veh/h]	5	280	656	80	5	151	935	90	134	419	273	124	328	46
Presence of On-Street Parking	No			No	No			No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0				0				0			0		
Bicycle Volume [bicycles/h]	0				0				0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	30.00

Phasing & Timing

Control Type	Permi	Prote	Permi	Permi	Permi	Prote	Permi	Permi	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	1	1	6	6	5	5	2	2	7	4	4	3	8	8
Auxiliary Signal Groups														
Lead / Lag	Lead	Lead	-	-	Lead	Lead	-	-	Lead	-	-	Lag	-	-
Minimum Green [s]	6	6	15	15	6	6	15	15	6	10	10	6	10	10
Maximum Green [s]	24	24	32	32	22	22	30	30	22	35	35	14	27	27
Amber [s]	3.5	3.5	4.4	4.4	3.5	3.5	4.4	4.4	3.5	5.0	5.0	3.5	5.0	5.0
All red [s]	2.0	2.0	3.0	3.0	2.0	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0
Split [s]	15	15	30	30	12	12	27	27	12	26	26	12	26	26
Vehicle Extension [s]	1.5	1.5	3.0	3.0	1.5	1.5	3.4	3.4	1.5	1.5	1.5	1.5	1.5	1.5
Walk [s]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rest In Walk			No				No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	3.5	3.5	5.4	5.4	3.5	3.5	5.4	5.4	3.5	6.0	6.0	3.5	6.0	6.0
Minimum Recall		No	Yes			No	Yes		No	No		No	No	
Maximum Recall		No	No			No	No		No	No		No	No	
Pedestrian Recall		No	No			No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	20.0	6.0	6.0	20.0	20.0	6.0	6.0	20.0	6.0	6.0	20.0	6.0	6.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	5.50	7.40	7.40	5.50	7.40	7.40	5.50	8.00	8.00	5.50	8.00	8.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.50	5.40	5.40	3.50	5.40	5.40	3.50	6.00	6.00	3.50	6.00	6.00
g_i, Effective Green Time [s]	9	27	27	6	24	24	6	16	16	6	15	15
g / C, Green / Cycle	0.11	0.33	0.33	0.07	0.30	0.30	0.07	0.19	0.19	0.07	0.19	0.19
(v / s)_i Volume / Saturation Flow Rate	0.08	0.18	0.05	0.04	0.18	0.06	0.04	0.12	0.17	0.04	0.09	0.03
s, saturation flow rate [veh/h]	3445	3547	1583	3479	5124	1599	3479	3582	1599	3479	3582	1599
c, Capacity [veh/h]	370	1181	527	255	1533	478	250	699	312	241	689	308
d1, Uniform Delay [s]	34.84	21.88	18.79	36.04	24.09	20.87	35.92	29.41	31.32	36.02	28.79	26.93
k, delay calibration	0.04	0.50	0.50	0.04	0.50	0.50	0.04	0.04	0.04	0.04	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.30	1.89	0.61	0.88	1.82	0.87	0.66	0.31	3.06	0.63	0.19	0.08
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.77	0.56	0.15	0.61	0.61	0.19	0.54	0.60	0.87	0.52	0.48	0.15
d, Delay for Lane Group [s/veh]	36.13	23.77	19.40	36.92	25.90	21.74	36.58	29.72	34.38	36.66	28.98	27.01
Lane Group LOS	D	C	B	D	C	C	D	C	C	D	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.60	4.84	1.04	1.42	4.84	1.26	1.25	3.54	5.14	1.15	2.70	0.71
50th-Percentile Queue Length [ft/ln]	65.01	121.12	25.97	35.61	120.99	31.54	31.14	88.61	128.54	28.80	67.50	17.77
95th-Percentile Queue Length [veh/ln]	4.68	8.45	1.87	2.56	8.45	2.27	2.24	6.38	8.86	2.07	4.86	1.28
95th-Percentile Queue Length [ft/ln]	117.02	211.36	46.75	64.09	211.18	56.78	56.05	159.50	221.51	51.84	121.50	31.98

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	36.13	36.13	23.77	19.40	36.92	36.92	25.90	21.74	36.58	29.72	34.38	36.66	28.98	27.01
Movement LOS	D	D	C	B	D	D	C	C	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	26.88				27.04				32.37			30.71		
Approach LOS	C				C				C			C		
d_I, Intersection Delay [s/veh]	28.76													
Intersection LOS	C													
Intersection V/C	0.754													

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 6: WIS 38 & Susan/Town Square Way - PM

Control Type:	Signalized	Delay (sec / veh):	18.8
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.634

Intersection Setup

Name	WIS 38			WIS 38				Town Square Way			Susan Dr		
Approach	Northbound			Southbound				Eastbound			Westbound		
Lane Configuration													
Turning Movement	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	1	0	0	1	2	0	0	1	0	0
Pocket Length [ft]	410.00	100.00	245.00	450.0	100.0	100.0	280.0	195.00	100.00	100.00	50.00	100.00	100.00
Speed [mph]	45.00			45.00				25.00			25.00		
Grade [%]	0.00			0.00				0.00			0.00		
Crosswalk	No			No				No			No		

Volumes

Name	WIS 38			WIS 38				Town Square Way			Susan Dr		
Base Volume Input [veh/h]	120	850	10	15	10	1250	125	135	5	155	5	5	15
Base Volume Adjustment Factor	1.0000	1.0000	0.6200	1.000	1.000	1.000	0.620	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.00	3.00	3.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	120	850	6	15	10	1250	78	135	5	155	5	5	15
Peak Hour Factor	0.9600	0.9600	0.9600	0.960	0.960	0.960	0.960	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	31	221	2	4	3	326	20	35	1	40	1	1	4
Total Analysis Volume [veh/h]	125	885	6	16	10	1302	81	141	5	161	5	5	16
Presence of On-Street Parking	No		No	No			No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0				0			0		
Bicycle Volume [bicycles/h]	0			0				0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	36.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	30.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permi	Prote	Permi	Permi	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	1	6	6	5	5	2	2	7	4	4	3	8	8
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	Lead	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	15	15	6	6	15	15	6	10	10	6	10	10
Maximum Green [s]	24	70	70	8	8	53	53	14	19	19	8	12	12
Amber [s]	3.5	4.3	4.3	3.5	3.5	4.3	4.3	3.5	5.2	5.2	3.5	5.2	5.2
All red [s]	2.0	2.9	2.9	2.0	2.0	2.9	2.9	2.0	3.0	3.0	2.0	3.0	3.0
Split [s]	12	36	36	12	12	36	36	13	20	20	12	19	19
Vehicle Extension [s]	1.5	3.4	3.4	1.5	1.5	3.9	3.9	1.5	1.5	1.5	1.5	1.5	1.5
Walk [s]	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	0	0	0
Rest In Walk		No				No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	3.5	5.2	5.2	3.5	3.5	5.2	5.2	3.5	6.2	6.2	3.5	6.2	6.2
Minimum Recall	No	Yes			No	Yes		No	No		No	No	
Maximum Recall	No	No			No	No		No	No		No	No	
Pedestrian Recall	No	No			No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	6.0	6.0	20.0	20.0	6.0	6.0	20.0	6.0	6.0	20.0	6.0	6.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	L	C
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	5.50	7.20	7.20	7.20	7.20	7.20	5.50	8.20	8.20	8.20
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.50	5.20	5.20	0.00	5.20	5.20	3.50	6.20	0.00	6.20
g_i, Effective Green Time [s]	6	40	40	49	37	37	6	10	16	5
g / C, Green / Cycle	0.07	0.50	0.50	0.61	0.47	0.47	0.07	0.12	0.20	0.06
(v / s)_i Volume / Saturation Flow Rate	0.04	0.25	0.00	0.03	0.25	0.05	0.04	0.10	0.00	0.01
s, saturation flow rate [veh/h]	3412	3512	1568	779	5124	1599	3479	1606	1372	1658
c, Capacity [veh/h]	243	1769	790	499	2388	745	251	201	291	102
d1, Uniform Delay [s]	35.90	13.20	9.91	7.52	15.33	12.05	35.98	34.22	25.99	35.77
k, delay calibration	0.04	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.63	1.01	0.02	0.20	0.90	0.29	0.73	3.24	0.01	0.37
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.51	0.50	0.01	0.05	0.55	0.11	0.56	0.83	0.02	0.21
d, Delay for Lane Group [s/veh]	36.53	14.22	9.93	7.72	16.23	12.34	36.72	37.47	26.00	36.14
Lane Group LOS	D	B	A	A	B	B	D	D	C	D
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	1.13	4.66	0.05	0.16	5.03	0.77	1.35	3.30	0.08	0.40
50th-Percentile Queue Length [ft/ln]	28.28	116.57	1.22	4.11	125.66	19.22	33.69	82.38	1.91	9.96
95th-Percentile Queue Length [veh/ln]	2.04	8.20	0.09	0.30	8.70	1.38	2.43	5.93	0.14	0.72
95th-Percentile Queue Length [ft/ln]	50.90	205.10	2.19	7.40	217.58	34.60	60.64	148.28	3.44	17.92

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	36.53	14.22	9.93	7.72	7.72	16.23	12.34	36.72	37.47	37.47	26.00	36.14	36.14
Movement LOS	D	B	A	A	A	B	B	D	D	D	C	D	D
d_A, Approach Delay [s/veh]	16.94			15.85				37.12			34.19		
Approach LOS	B			B				D			C		
d_I, Intersection Delay [s/veh]	18.79												
Intersection LOS	B												
Intersection V/C	0.634												

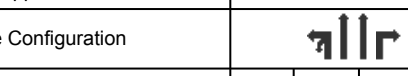
Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 9: WIS 38 & Forest Hill - PM

Control Type:	Signalized	Delay (sec / veh):	19.1
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.572

Intersection Setup

Name	WIS 38				WIS 38				Forest Hill Ave			Forest Hill Ave		
Approach	Northbound				Southbound				Eastbound			Westbound		
Lane Configuration														
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	1	0	0	1	1	0	1	1	0	0
Pocket Length [ft]	470.0	100.0	100.0	280.0	350.0	100.0	100.0	270.0	325.00	100.00	170.00	120.00	100.00	100.00
Speed [mph]	45.00				45.00				25.00			35.00		
Grade [%]	0.00				0.00				0.00			0.00		
Crosswalk	No				No				No			No		

Volumes

Name	WIS 38				WIS 38				Forest Hill Ave			Forest Hill Ave		
Base Volume Input [veh/h]	15	90	865	30	5	95	1230	55	70	40	155	35	25	80
Base Volume Adjustment Factor	1.000	1.000	1.000	0.620	1.000	1.000	1.000	0.620	1.0000	1.0000	0.6200	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	90	865	19	5	95	1230	34	70	40	96	35	25	80
Peak Hour Factor	0.960	0.960	0.960	0.960	0.960	0.960	0.960	0.960	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	23	225	5	1	25	320	9	18	10	25	9	7	21
Total Analysis Volume [veh/h]	16	94	901	20	5	99	1281	35	73	42	100	36	26	83
Presence of On-Street Parking	No			No	No			No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0				0				0			0		
Bicycle Volume [bicycles/h]	0				0				0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	61.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	26.00

Phasing & Timing

Control Type	Permi	Prote	Permi	Permi	Permi	Prote	Permi	Permi	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	1	1	6	6	5	5	2	2	7	4	4	3	8	8
Auxiliary Signal Groups														
Lead / Lag	Lead	Lead	-	-	Lead	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	15	15	6	6	15	15	6	10	10	6	10	10
Maximum Green [s]	12	12	55	55	10	10	52	52	20	32	32	8	19	19
Amber [s]	3.5	3.5	4.3	4.3	3.5	3.5	4.3	4.3	3.5	4.6	4.6	3.5	4.6	4.6
All red [s]	2.0	2.0	2.5	2.5	2.0	2.0	2.5	2.5	2.0	3.0	3.0	2.0	3.0	3.0
Split [s]	12	12	38	38	12	12	38	38	12	18	18	12	18	18
Vehicle Extension [s]	1.5	1.5	3.0	3.0	1.5	1.5	3.4	3.4	1.5	1.5	1.5	1.5	1.5	1.5
Walk [s]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rest In Walk			No				No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	3.5	3.5	4.8	4.8	3.5	3.5	4.8	4.8	3.5	5.6	5.6	3.5	5.6	5.6
Minimum Recall		No	Yes			No	Yes		No	No		No	No	
Maximum Recall		No	No			No	No		No	No		No	No	
Pedestrian Recall		No	No			No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	20.0	6.0	6.0	20.0	20.0	6.0	6.0	20.0	6.0	6.0	20.0	6.0	6.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	6.80	6.80	6.80	6.80	6.80	6.80	7.60	7.60	7.60	7.60	7.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	4.80	4.80	0.00	4.80	4.80	0.00	5.60	5.60	0.00	5.60
g_i, Effective Green Time [s]	46	35	35	46	35	35	20	11	11	20	9
g / C, Green / Cycle	0.58	0.44	0.44	0.58	0.44	0.44	0.24	0.13	0.13	0.24	0.11
(v / s)_i Volume / Saturation Flow Rate	0.16	0.25	0.01	0.12	0.25	0.02	0.05	0.02	0.06	0.02	0.07
s, saturation flow rate [veh/h]	693	3547	1583	849	5124	1599	1493	1863	1583	1520	1658
c, Capacity [veh/h]	452	1559	696	504	2247	701	420	250	212	484	190
d1, Uniform Delay [s]	9.61	16.92	12.79	9.43	16.90	12.96	24.08	30.84	32.18	23.41	33.75
k, delay calibration	0.34	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.04	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.86	1.57	0.08	0.93	1.06	0.13	0.07	0.12	0.60	0.02	1.02
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.24	0.58	0.03	0.21	0.57	0.05	0.17	0.17	0.47	0.07	0.58
d, Delay for Lane Group [s/veh]	10.47	18.49	12.86	10.36	17.95	13.09	24.15	30.96	32.78	23.43	34.77
Lane Group LOS	B	B	B	B	B	B	C	C	C	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.80	5.72	0.20	0.78	5.30	0.35	1.09	0.72	1.81	0.51	1.99
50th-Percentile Queue Length [ft/ln]	19.91	142.99	4.88	19.44	132.61	8.65	27.21	18.08	45.31	12.69	49.83
95th-Percentile Queue Length [veh/ln]	1.43	9.64	0.35	1.40	9.08	0.62	1.96	1.30	3.26	0.91	3.59
95th-Percentile Queue Length [ft/ln]	35.84	241.05	8.79	34.99	227.04	15.56	48.98	32.55	81.56	22.85	89.69

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	10.47	10.47	18.49	12.86	10.36	10.36	17.95	13.09	24.15	30.96	32.78	23.43	34.77	34.77
Movement LOS	B	B	B	B	B	B	B	B	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	17.53				17.28				29.49			31.96		
Approach LOS	B				B				C			C		
d_I, Intersection Delay [s/veh]	19.06													
Intersection LOS	B													
Intersection V/C	0.572													

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 12: WIS 38 & Puetz - PM

Control Type:	Signalized	Delay (sec / veh):	27.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.780

Intersection Setup

Name	WIS 38			WIS 38			Puetz Rd			Puetz Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	1	0	0	1	0	1
Pocket Length [ft]	215.00	100.00	305.00	225.00	100.00	260.00	380.00	100.00	100.00	315.00	100.00	90.00
Speed [mph]	45.00			45.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	WIS 38			WIS 38			Puetz Rd			Puetz Rd		
Base Volume Input [veh/h]	120	590	130	205	970	145	115	360	150	85	235	195
Base Volume Adjustment Factor	1.0000	1.0000	0.6200	1.0000	1.0000	0.6200	1.0000	1.0000	1.0000	1.0000	1.0000	0.6200
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	120	590	81	205	970	90	115	360	150	85	235	121
Peak Hour Factor	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	31	154	21	53	253	23	30	94	39	22	61	32
Total Analysis Volume [veh/h]	125	615	84	214	1010	94	120	375	156	89	245	126
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	25.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	28.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	1	6	6	5	2	2	7	4	4	3	8	8
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	15	15	6	15	15	6	10	10	6	10	10
Maximum Green [s]	20	53	53	14	48	48	10	28	28	10	28	28
Amber [s]	3.5	4.3	4.3	3.5	4.3	4.3	3.5	4.2	4.2	3.5	4.2	4.2
All red [s]	2.0	2.9	2.9	2.0	2.9	2.9	2.0	3.0	3.0	2.0	3.0	3.0
Split [s]	12	32	32	14	34	34	12	22	22	12	22	22
Vehicle Extension [s]	1.5	3.4	3.4	1.5	3.4	3.4	1.5	1.5	1.5	1.5	1.5	1.5
Walk [s]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	0	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	3.5	5.2	5.2	3.5	5.2	5.2	3.5	5.2	5.2	3.5	5.2	5.2
Minimum Recall	No	Yes		No	Yes		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	6.0	6.0	20.0	6.0	6.0	20.0	6.0	6.0	20.0	6.0	6.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	5.50	7.20	7.20	5.50	7.20	7.20	7.20	7.20	7.20	7.20	7.20	7.20
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.50	5.20	5.20	3.50	5.20	5.20	0.00	5.20	5.20	0.00	5.20	5.20
g_i, Effective Green Time [s]	6	29	29	7	30	30	25	14	14	25	13	13
g / C, Green / Cycle	0.07	0.36	0.36	0.09	0.37	0.37	0.31	0.17	0.17	0.31	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.04	0.17	0.05	0.06	0.28	0.06	0.09	0.15	0.15	0.07	0.07	0.08
s, saturation flow rate [veh/h]	3445	3547	1583	3479	3582	1599	1383	1881	1697	1198	3582	1599
c, Capacity [veh/h]	245	1274	569	299	1339	598	489	328	296	376	602	269
d1, Uniform Delay [s]	35.91	19.92	17.39	35.71	21.89	16.70	20.82	32.07	32.13	21.20	29.80	30.14
k, delay calibration	0.04	0.50	0.50	0.04	0.50	0.50	0.04	0.04	0.04	0.04	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.61	1.31	0.55	1.21	3.98	0.56	0.10	2.35	2.77	0.12	0.16	0.47
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.51	0.48	0.15	0.72	0.75	0.16	0.25	0.85	0.86	0.24	0.41	0.47
d, Delay for Lane Group [s/veh]	36.52	21.23	17.94	36.92	25.87	17.26	20.91	34.41	34.90	21.31	29.97	30.61
Lane Group LOS	D	C	B	D	C	B	C	C	C	C	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.13	4.21	1.03	1.96	8.03	1.13	1.60	5.19	4.77	1.17	2.04	2.14
50th-Percentile Queue Length [ft/ln]	28.26	105.19	25.86	49.10	200.68	28.20	39.92	129.77	119.36	29.14	50.98	53.55
95th-Percentile Queue Length [veh/ln]	2.03	7.57	1.86	3.53	12.67	2.03	2.87	8.93	8.36	2.10	3.67	3.86
95th-Percentile Queue Length [ft/ln]	50.87	189.29	46.55	88.37	316.84	50.75	71.86	223.18	208.94	52.46	91.76	96.39

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	36.52	21.23	17.94	36.92	25.87	17.26	20.91	34.54	34.90	21.31	29.97	30.61
Movement LOS	D	C	B	D	C	B	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	23.22			27.05			32.12			28.47		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	27.29											
Intersection LOS	C											
Intersection V/C	0.780											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 15: WIS 38 & Centennial - PM

Control Type:	Signalized	Delay (sec / veh):	19.4
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.649

Intersection Setup

Name	WIS 38			WIS 38			Centennial Dr			Centennial Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	1	0	1	1	0	0	1	0	0
Pocket Length [ft]	380.00	100.00	185.00	360.00	100.00	290.00	420.00	100.00	100.00	175.00	100.00	100.00
Speed [mph]	45.00			45.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	WIS 38			WIS 38			Centennial Dr			Centennial Dr		
Base Volume Input [veh/h]	70	575	70	160	865	175	160	40	55	60	45	70
Base Volume Adjustment Factor	1.0000	1.0000	0.6200	1.0000	1.0000	0.6200	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	70	575	43	160	865	109	160	40	55	60	45	70
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	19	155	12	43	233	29	43	11	15	16	12	19
Total Analysis Volume [veh/h]	75	618	46	172	930	117	172	43	59	65	48	75
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	45.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	26.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	1	6	6	5	2	2	7	4	4	3	8	8
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	15	15	6	15	15	6	10	10	6	10	10
Maximum Green [s]	12	49	49	16	54	54	16	26	26	14	23	23
Amber [s]	3.5	4.3	4.3	3.5	4.3	4.3	3.5	4.2	4.2	3.5	4.2	4.2
All red [s]	2.0	2.4	2.4	2.0	2.4	2.4	2.0	3.0	3.0	2.0	3.0	3.0
Split [s]	12	38	38	12	38	38	12	18	18	12	18	18
Vehicle Extension [s]	1.5	3.4	3.4	1.5	3.1	3.1	1.5	1.5	1.5	1.5	1.5	1.5
Walk [s]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	0	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	3.5	4.7	4.7	3.5	4.7	4.7	3.5	5.2	5.2	3.5	5.2	5.2
Minimum Recall	No	Yes		No	Yes		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	6.0	6.0	20.0	6.0	6.0	20.0	6.0	6.0	20.0	6.0	6.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	L	C
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	6.70	6.70	6.70	6.70	6.70	6.70	7.20	7.20	7.20	7.20
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	4.70	4.70	0.00	4.70	4.70	0.00	5.20	0.00	5.20
g_i, Effective Green Time [s]	45	33	33	45	34	34	21	11	21	9
g / C, Green / Cycle	0.56	0.42	0.42	0.56	0.43	0.43	0.27	0.14	0.27	0.12
(v / s)_i Volume / Saturation Flow Rate	0.09	0.17	0.03	0.17	0.26	0.07	0.11	0.06	0.04	0.07
s, saturation flow rate [veh/h]	820	3547	1583	1016	3582	1599	1518	1707	1473	1682
c, Capacity [veh/h]	475	1481	661	606	1540	687	449	239	455	196
d1, Uniform Delay [s]	9.90	16.48	14.02	9.33	17.61	14.06	24.08	31.53	22.51	33.75
k, delay calibration	0.04	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.06	0.87	0.20	1.17	1.77	0.54	0.20	0.45	0.05	1.22
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.16	0.42	0.07	0.28	0.60	0.17	0.38	0.43	0.14	0.63
d, Delay for Lane Group [s/veh]	9.96	17.35	14.22	10.50	19.37	14.60	24.27	31.97	22.56	34.97
Lane Group LOS	A	B	B	B	B	B	C	C	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.50	3.70	0.48	1.38	6.11	1.25	2.62	1.82	0.91	2.29
50th-Percentile Queue Length [ft/ln]	12.39	92.39	12.07	34.59	152.68	31.35	65.57	45.40	22.82	57.29
95th-Percentile Queue Length [veh/ln]	0.89	6.65	0.87	2.49	10.16	2.26	4.72	3.27	1.64	4.12
95th-Percentile Queue Length [ft/ln]	22.31	166.31	21.72	62.26	254.00	56.43	118.02	81.71	41.07	103.12

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	9.96	17.35	14.22	10.50	19.37	14.60	24.27	31.97	31.97	22.56	34.97	34.97
Movement LOS	A	B	B	B	B	B	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	16.40			17.66			27.14			30.68		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	19.36											
Intersection LOS	B											
Intersection V/C	0.649											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 3: WIS 67 & Oconomowoc Pkwy - PM

Control Type:	Signalized	Delay (sec / veh):	13.1
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.403

Intersection Setup

Name	WIS 67			WIS 67			Oconomowoc Pkwy			Oconomowoc Pkwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	1	0	1	0	0	1	0	0	1
Pocket Length [ft]	400.00	100.00	310.00	375.00	100.00	410.00	100.00	100.00	150.00	100.00	100.00	175.00
Speed [mph]	45.00			45.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	WIS 67			WIS 67			Oconomowoc Pkwy			Oconomowoc Pkwy		
Base Volume Input [veh/h]	170	880	85	85	620	75	45	35	150	50	35	145
Base Volume Adjustment Factor	1.0000	1.0000	0.6200	1.0000	1.0000	0.6200	1.0000	1.0000	0.6200	1.0000	1.0000	0.6200
Heavy Vehicles Percentage [%]	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	170	880	53	85	620	47	45	35	93	50	35	90
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	45	232	14	22	163	12	12	9	24	13	9	24
Total Analysis Volume [veh/h]	179	926	56	89	653	49	47	37	98	53	37	95
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	28.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Overlap	Permiss	Permiss	Permiss
Signal group	1	6	6	5	2	2	8	4	1	4	8	8
Auxiliary Signal Groups									1,4			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	10	15	15	8	15	15	10	10	10	10	10	10
Maximum Green [s]	20	49	49	10	39	39	22	22	20	22	22	22
Amber [s]	3.5	4.3	4.3	3.5	4.3	4.3	5.0	5.0	3.5	5.0	5.0	5.0
All red [s]	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	2.0	3.0	3.0	3.0
Split [s]	25	45	45	14	34	34	21	21	25	21	21	21
Vehicle Extension [s]	1.5	3.3	3.3	1.5	3.3	3.3	1.5	1.5	1.5	1.5	1.5	1.5
Walk [s]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	0	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	3.5	4.3	4.3	3.5	4.3	4.3	6.0	6.0	3.5	6.0	6.0	6.0
Minimum Recall	No	Yes		No	Yes			No	No		No	
Maximum Recall	No	No		No	No			No	No		No	
Pedestrian Recall	No	No		No	No			No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	6.0	6.0	20.0	6.0	6.0	6.0	6.0	6.0	20.0	20.0	20.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	6.30	6.30	6.30	6.30	6.30	6.30	8.00	8.00	5.50	8.00	8.00	8.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	4.30	4.30	0.00	4.30	4.30	6.00	6.00	0.00	6.00	6.00	6.00
g_i, Effective Green Time [s]	56	43	43	56	41	41	10	10	28	10	10	10
g / C, Green / Cycle	0.70	0.54	0.54	0.70	0.51	0.51	0.12	0.12	0.35	0.12	0.12	0.12
(v / s)_i Volume / Saturation Flow Rate	0.17	0.18	0.04	0.11	0.13	0.03	0.03	0.02	0.06	0.04	0.02	0.06
s, saturation flow rate [veh/h]	1025	5124	1599	820	5074	1583	1379	1881	1599	1365	1863	1583
c, Capacity [veh/h]	790	2779	867	645	2565	800	206	233	555	206	231	196
d1, Uniform Delay [s]	4.38	10.24	8.70	4.35	11.25	10.11	34.77	31.37	18.19	34.93	31.38	32.72
k, delay calibration	0.13	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.04	0.04	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.17	0.32	0.14	0.45	0.24	0.15	0.21	0.12	0.06	0.24	0.12	0.69
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.23	0.33	0.06	0.14	0.25	0.06	0.23	0.16	0.18	0.26	0.16	0.48
d, Delay for Lane Group [s/veh]	4.55	10.57	8.84	4.80	11.49	10.26	34.98	31.49	18.25	35.17	31.50	33.41
Lane Group LOS	A	B	A	A	B	B	C	C	B	D	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.66	2.57	0.42	0.38	1.91	0.41	0.87	0.64	1.25	0.99	0.64	1.74
50th-Percentile Queue Length [ft/ln]	16.62	64.28	10.44	9.39	47.76	10.19	21.85	16.08	31.22	24.77	16.08	43.48
95th-Percentile Queue Length [veh/ln]	1.20	4.63	0.75	0.68	3.44	0.73	1.57	1.16	2.25	1.78	1.16	3.13
95th-Percentile Queue Length [ft/ln]	29.91	115.70	18.80	16.90	85.97	18.35	39.32	28.94	56.19	44.58	28.95	78.27

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	4.55	10.57	8.84	4.80	11.49	10.26	34.98	31.49	18.25	35.17	31.50	33.41
Movement LOS	A	B	A	A	B	B	C	C	B	D	C	C
d_A, Approach Delay [s/veh]	9.56			10.66			25.26			33.53		
Approach LOS	A			B			C			C		
d_I, Intersection Delay [s/veh]	13.08											
Intersection LOS	B											
Intersection V/C	0.403											

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 6: WIS 67 & County B/Valley Rd - PM

Control Type:	Signalized	Delay (sec / veh):	22.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.423

Intersection Setup

Name	WIS 67			WIS 67			CTH B (Valley Rd)			CTH B (Valley Rd)		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	1	2	0	1	2	0	1	2	0	1
Pocket Length [ft]	380.00	100.00	470.00	440.00	100.00	460.00	330.00	100.00	130.00	450.00	100.00	230.00
Speed [mph]	45.00			45.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	WIS 67			WIS 67			CTH B (Valley Rd)			CTH B (Valley Rd)		
Base Volume Input [veh/h]	110	890	50	125	645	50	145	100	165	50	100	100
Base Volume Adjustment Factor	1.0000	1.0000	0.6200	1.0000	1.0000	0.6200	1.0000	1.0000	0.6200	1.0000	1.0000	0.6200
Heavy Vehicles Percentage [%]	1.00	1.00	1.00	2.00	2.00	2.00	3.00	3.00	3.00	1.00	1.00	1.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	110	890	31	125	645	31	145	100	102	50	100	62
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	229	8	32	166	8	37	26	26	13	26	16
Total Analysis Volume [veh/h]	113	918	32	129	665	32	149	103	105	52	103	64
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	50.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	26.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	1	6	6	5	2	2	7	4	4	3	8	8
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	8	15	15	8	15	15	8	10	10	8	10	10
Maximum Green [s]	11	38	38	13	40	40	9	13	13	9	13	13
Amber [s]	3.5	4.3	4.3	3.5	4.3	4.3	3.5	4.8	4.8	3.5	4.8	4.8
All red [s]	2.5	2.3	2.3	2.5	2.3	2.3	2.5	3.0	3.0	2.5	3.0	3.0
Split [s]	14	34	34	14	34	34	14	18	18	14	18	18
Vehicle Extension [s]	1.5	3.3	3.3	1.5	3.3	3.3	1.5	1.5	1.5	1.5	1.5	1.5
Walk [s]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	0	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	4.0	4.6	4.6	4.0	4.6	4.6	4.0	5.8	5.8	4.0	5.8	5.8
Minimum Recall	No	Yes		No	Yes		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	6.0	6.0	20.0	6.0	6.0	20.0	6.0	6.0	20.0	6.0	6.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	6.60	6.60	6.60	6.60	6.60	6.60	6.00	7.80	7.80	6.00	7.80	7.80
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	4.60	4.60	0.00	4.60	4.60	4.00	5.80	5.80	4.00	5.80	5.80
g_i, Effective Green Time [s]	42	29	29	42	29	29	8	12	12	6	10	10
g / C, Green / Cycle	0.53	0.36	0.36	0.53	0.36	0.36	0.10	0.15	0.15	0.07	0.12	0.12
(v / s)_i Volume / Saturation Flow Rate	0.06	0.18	0.02	0.07	0.13	0.02	0.04	0.03	0.07	0.01	0.03	0.04
s, saturation flow rate [veh/h]	2039	5124	1599	1801	5074	1583	3412	3512	1568	3479	3582	1599
c, Capacity [veh/h]	1110	1831	571	962	1827	570	329	523	234	242	438	195
d1, Uniform Delay [s]	9.65	20.21	16.92	10.19	18.93	16.79	34.28	29.95	31.16	35.28	31.85	32.23
k, delay calibration	0.04	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.04	0.04	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.01	0.98	0.19	0.29	0.56	0.19	0.36	0.07	0.50	0.16	0.10	0.36
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.10	0.50	0.06	0.13	0.36	0.06	0.45	0.20	0.45	0.21	0.24	0.33
d, Delay for Lane Group [s/veh]	9.67	21.19	17.11	10.48	19.49	16.97	34.64	30.02	31.66	35.45	31.96	32.59
Lane Group LOS	A	C	B	B	B	B	C	C	C	D	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.41	4.17	0.38	0.51	2.82	0.38	1.36	0.86	1.84	0.47	0.88	1.12
50th-Percentile Queue Length [ft/ln]	10.23	104.31	9.51	12.64	70.54	9.47	33.98	21.42	45.98	11.76	21.94	27.88
95th-Percentile Queue Length [veh/ln]	0.74	7.51	0.68	0.91	5.08	0.68	2.45	1.54	3.31	0.85	1.58	2.01
95th-Percentile Queue Length [ft/ln]	18.41	187.76	17.12	22.75	126.98	17.05	61.16	38.55	82.77	21.17	39.49	50.18

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	9.67	21.19	17.11	10.48	19.49	16.97	34.64	30.02	31.66	35.45	31.96	32.59
Movement LOS	A	C	B	B	B	B	C	C	C	D	C	C
d_A, Approach Delay [s/veh]	19.84			17.99			32.43			32.97		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	22.21											
Intersection LOS	C											
Intersection V/C	0.423											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 9: WIS 67 & Oconomowoc Dr - PM

Control Type:	Signalized	Delay (sec / veh):	21.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.507

Intersection Setup

Name	WIS 67			WIS 67			Oconomowoc Dr			Pabst Farms Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	2	0	1	1	0	1	2	0	1
Pocket Length [ft]	430.00	100.00	570.00	415.00	100.00	465.00	160.00	100.00	300.00	300.00	100.00	175.00
Speed [mph]	45.00			45.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	WIS 67			WIS 67			Oconomowoc Dr			Pabst Farms Blvd		
Base Volume Input [veh/h]	105	945	145	20	825	15	50	25	175	155	20	55
Base Volume Adjustment Factor	1.0000	1.0000	0.6200	1.0000	1.0000	0.6200	1.0000	1.0000	0.6200	1.0000	1.0000	0.6200
Heavy Vehicles Percentage [%]	1.00	1.00	1.00	3.00	3.00	3.00	2.00	2.00	2.00	1.00	1.00	1.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	105	945	90	20	825	9	50	25	109	155	20	34
Peak Hour Factor	0.9900	0.9900	0.9900	0.9900	0.9900	0.9900	0.9900	0.9900	0.9900	0.9900	0.9900	0.9900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	239	23	5	208	2	13	6	28	39	5	9
Total Analysis Volume [veh/h]	106	955	91	20	833	9	51	25	110	157	20	34
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	21.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	30.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	1	6	6	5	2	2	7	4	4	3	8	8
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lag	-	-
Minimum Green [s]	8	15	15	8	15	15	8	10	10	8	10	10
Maximum Green [s]	14	33	33	14	33	33	10	17	17	9	17	17
Amber [s]	3.5	4.3	4.3	3.5	4.3	4.3	3.5	5.3	5.3	3.5	5.3	5.3
All red [s]	2.0	3.0	3.0	2.5	3.0	3.0	2.0	3.0	3.0	2.5	3.0	3.0
Split [s]	14	33	33	14	33	33	14	19	19	14	19	19
Vehicle Extension [s]	1.5	3.3	3.3	1.5	3.4	3.4	1.5	1.5	1.5	1.5	1.5	1.5
Walk [s]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	0	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	3.5	5.3	5.3	4.0	5.3	5.3	3.5	6.3	6.3	4.0	6.3	6.3
Minimum Recall	No	Yes		No	Yes		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	6.0	6.0	20.0	6.0	6.0	20.0	6.0	6.0	20.0	6.0	6.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	7.30	7.30	7.30	6.00	7.30	7.30	5.50	8.30	8.30	6.00	8.30	8.30
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	5.30	5.30	4.00	5.30	5.30	3.50	6.30	6.30	4.00	6.30	6.30
g_i, Effective Green Time [s]	41	32	32	3	28	28	5	10	10	8	12	12
g / C, Green / Cycle	0.51	0.40	0.40	0.04	0.36	0.36	0.07	0.12	0.12	0.10	0.15	0.15
(v / s)_i Volume / Saturation Flow Rate	0.11	0.19	0.06	0.01	0.17	0.01	0.03	0.01	0.07	0.05	0.01	0.02
s, saturation flow rate [veh/h]	958	5124	1599	3412	5025	1568	1774	1863	1583	3479	1881	1599
c, Capacity [veh/h]	545	2066	645	127	1786	557	122	223	189	333	288	245
d1, Uniform Delay [s]	10.77	17.55	15.14	37.37	19.97	16.75	35.80	31.50	33.40	34.32	29.06	29.38
k, delay calibration	0.05	0.50	0.50	0.04	0.50	0.50	0.04	0.04	0.04	0.04	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.07	0.75	0.46	0.21	0.88	0.05	0.85	0.08	1.05	0.38	0.04	0.09
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.19	0.46	0.14	0.16	0.47	0.02	0.42	0.11	0.58	0.47	0.07	0.14
d, Delay for Lane Group [s/veh]	10.84	18.30	15.60	37.58	20.84	16.80	36.66	31.58	34.45	34.70	29.10	29.48
Lane Group LOS	B	B	B	D	C	B	D	C	C	C	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.83	3.94	1.02	0.18	3.73	0.11	0.97	0.43	2.03	1.43	0.33	0.56
50th-Percentile Queue Length [ft/ln]	20.64	98.55	25.48	4.59	93.33	2.64	24.14	10.71	50.77	35.83	8.13	14.01
95th-Percentile Queue Length [veh/ln]	1.49	7.10	1.83	0.33	6.72	0.19	1.74	0.77	3.66	2.58	0.59	1.01
95th-Percentile Queue Length [ft/ln]	37.16	177.39	45.86	8.26	167.99	4.76	43.46	19.28	91.38	64.49	14.64	25.22

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	10.84	18.30	15.60	37.58	20.84	16.80	36.66	31.58	34.45	34.70	29.10	29.48
Movement LOS	B	B	B	D	C	B	D	C	C	C	C	C
d_A, Approach Delay [s/veh]	17.40			21.19			34.67			33.33		
Approach LOS	B			C			C			C		
d_I, Intersection Delay [s/veh]	21.48											
Intersection LOS	C											
Intersection V/C	0.507											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 12: WIS 67 & I-94 WB Ramps - PM

Control Type:	Signalized	Delay (sec / veh):	16.5
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.420

Intersection Setup

Name	WIS 67			WIS 67			I-94 WB ramps			I-94 WB ramps		
Approach	Northbound			Southbound			Eastbound			Northwestbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	0	0	1	0	0	0	1	0	0
Pocket Length [ft]	535.00	100.00	100.00	100.00	100.00	515.00	100.00	100.00	100.00	425.00	100.00	100.00
Speed [mph]	45.00			45.00			0.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	WIS 67			WIS 67			I-94 WB ramps			I-94 WB ramps		
Base Volume Input [veh/h]	80	640	0	0	945	210	0	0	0	220	1	555
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	0.6200	1.0000	1.0000	1.0000	1.0000	1.0000	0.7000
Heavy Vehicles Percentage [%]	1.00	1.00	0.00	0.00	3.00	3.00	0.00	0.00	0.00	4.00	4.00	4.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	80	640	0	0	945	130	0	0	0	220	1	389
Peak Hour Factor	0.9700	0.9700	1.0000	1.0000	0.9700	0.9700	1.0000	1.0000	1.0000	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	165	0	0	244	34	0	0	0	57	0	100
Total Analysis Volume [veh/h]	82	660	0	0	974	134	0	0	0	227	1	401
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	33.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	20.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Split	Split
Signal group	1	6	0	0	2	2	0	0	0	8	8	8
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	Lag	-	-
Minimum Green [s]	8	15	0	0	15	15	0	0	0	10	10	10
Maximum Green [s]	14	54	0	0	34	34	0	0	0	32	32	32
Amber [s]	3.5	4.3	0.0	0.0	4.3	4.3	0.0	0.0	0.0	5.3	5.3	5.3
All red [s]	2.5	1.8	0.0	0.0	1.8	1.8	0.0	0.0	0.0	3.0	3.0	3.0
Split [s]	14	46	0	0	32	32	0	0	0	34	34	34
Vehicle Extension [s]	1.5	3.3	0.0	0.0	3.3	3.3	0.0	0.0	0.0	1.5	1.5	1.5
Walk [s]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	0	0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	4.0	4.1	0.0	0.0	4.1	4.1	0.0	0.0	0.0	6.3	6.3	6.3
Minimum Recall	No	Yes			Yes						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	6.0	0.0	0.0	6.0	6.0	0.0	0.0	0.0	20.0	20.0	20.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R		L	C	R
C, Cycle Length [s]	80	80	80	80		80	80	80
L, Total Lost Time per Cycle [s]	6.00	6.10	6.10	6.10		8.30	8.30	8.30
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.10	4.10	4.10		6.30	6.30	6.30
g_i, Effective Green Time [s]	7	52	39	39		14	14	14
g / C, Green / Cycle	0.08	0.65	0.49	0.49		0.17	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.02	0.13	0.15	0.09		0.07	0.07	0.15
s, saturation flow rate [veh/h]	3479	5124	6700	1568		1740	1741	2749
c, Capacity [veh/h]	295	3308	3256	762		304	304	480
d1, Uniform Delay [s]	34.39	5.78	12.39	11.58		29.20	29.20	31.95
k, delay calibration	0.04	0.50	0.50	0.50		0.04	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	0.19	0.14	0.24	0.50		0.28	0.28	1.48
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.28	0.20	0.30	0.18		0.37	0.37	0.83
d, Delay for Lane Group [s/veh]	34.58	5.92	12.63	12.08		29.49	29.49	33.44
Lane Group LOS	C	A	B	B		C	C	C
Critical Lane Group	Yes	No	Yes	No		No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.71	1.13	2.29	1.26		1.91	1.91	3.73
50th-Percentile Queue Length [ft/ln]	17.83	28.23	57.24	31.41		47.83	47.84	93.37
95th-Percentile Queue Length [veh/ln]	1.28	2.03	4.12	2.26		3.44	3.44	6.72
95th-Percentile Queue Length [ft/ln]	32.10	50.81	103.03	56.55		86.09	86.12	168.06

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	34.58	5.92	0.00	0.00	12.63	12.08	0.00	0.00	0.00	29.49	29.49	33.44
Movement LOS	C	A			B	B				C	C	C
d_A, Approach Delay [s/veh]	9.08			12.56			0.00			32.01		
Approach LOS	A			B			A			C		
d_I, Intersection Delay [s/veh]	16.45											
Intersection LOS	B											
Intersection V/C	0.420											

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 15: WIS 67 & I-94 EB Ramps - PM

Control Type:	Signalized	Delay (sec / veh):	8.2
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.315

Intersection Setup

Name	WIS 67			WIS 67			I-94 EB ramps			I-94 EB ramps		
Approach	Northbound			Southbound			Eastbound			Southwestbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Left	Right	Left	Right	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	2	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	340.00	100.00	100.00	100.00	285.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		45.00			45.00			30.00			0.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		No			No			No			No	

Volumes

Name	WIS 67			WIS 67			I-94 EB ramps			I-94 EB ramps		
Base Volume Input [veh/h]	0	555	285	0	680	485	165	0	65	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.3400	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	3.00	3.00	0.00	4.00	4.00	2.00	0.00	2.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	555	285	0	680	485	165	0	22	0	0	0
Peak Hour Factor	1.0000	0.9800	0.9800	1.0000	0.9800	0.9800	0.9800	1.0000	0.9800	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	142	73	0	173	124	42	0	6	0	0	0
Total Analysis Volume [veh/h]	0	566	291	0	694	495	168	0	22	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	65.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	17.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna	Split	Split	Split	Permiss	Permiss	Permiss
Signal group	0	6	0	0	2	0	4	0	4	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lag	-	-	-	-	-
Minimum Green [s]	0	15	0	0	15	0	10	0	10	0	0	0
Maximum Green [s]	0	22	0	0	22	0	14	0	14	0	0	0
Amber [s]	0.0	4.3	0.0	0.0	4.3	0.0	4.9	0.0	4.9	0.0	0.0	0.0
All red [s]	0.0	1.5	0.0	0.0	1.5	0.0	3.0	0.0	3.0	0.0	0.0	0.0
Split [s]	0	59	0	0	59	0	21	0	21	0	0	0
Vehicle Extension [s]	0.0	3.3	0.0	0.0	3.3	0.0	1.5	0.0	1.5	0.0	0.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	0	0
Rest In Walk		No			No		No					
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	0.0	2.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	3.8	0.0	0.0	3.8	0.0	5.9	0.0	5.9	0.0	0.0	0.0
Minimum Recall		Yes			Yes		No					
Maximum Recall		No			No		No					
Pedestrian Recall		No			No		No					
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	6.0	0.0	0.0	6.0	0.0	20.0	0.0	20.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	R	
C, Cycle Length [s]	80	80	80	80	
L, Total Lost Time per Cycle [s]	5.80	5.80	7.90	7.90	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	3.80	3.80	5.90	5.90	
g_i, Effective Green Time [s]	56	56	10	10	
g / C, Green / Cycle	0.71	0.71	0.12	0.12	
(v / s)_i Volume / Saturation Flow Rate	0.16	0.20	0.05	0.01	
s, saturation flow rate [veh/h]	3512	3478	3445	1583	
c, Capacity [veh/h]	2476	2452	425	195	
d1, Uniform Delay [s]	4.14	4.34	32.26	31.12	
k, delay calibration	0.50	0.50	0.04	0.04	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	0.22	0.29	0.22	0.09	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.23	0.28	0.39	0.11	
d, Delay for Lane Group [s/veh]	4.36	4.63	32.48	31.21	
Lane Group LOS	A	A	C	C	
Critical Lane Group	No	Yes	Yes	No	
50th-Percentile Queue Length [veh/ln]	1.08	1.39	1.48	0.38	
50th-Percentile Queue Length [ft/ln]	26.97	34.74	36.94	9.38	
95th-Percentile Queue Length [veh/ln]	1.94	2.50	2.66	0.68	
95th-Percentile Queue Length [ft/ln]	48.55	62.54	66.49	16.88	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	4.36	0.00	0.00	4.63	0.00	32.48	0.00	31.21	0.00	0.00	0.00
Movement LOS		A			A		C		C			
d_A, Approach Delay [s/veh]	4.36			4.63			32.33			0.00		
Approach LOS	A			A			C			A		
d_I, Intersection Delay [s/veh]	8.15											
Intersection LOS	A											
Intersection V/C	0.315											

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 3: WIS 167 & Port Washington Rd - PM

Control Type:	Signalized	Delay (sec / veh):	29.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.919

Intersection Setup

Name	Port Washington Rd			Port Washington Rd			WIS 167			WIS 167		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	2	0	1	1	0	0	0	0	0
Pocket Length [ft]	145.00	100.00	100.00	220.00	100.00	145.00	250.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Port Washington Rd			Port Washington Rd			WIS 167			WIS 167		
Base Volume Input [veh/h]	270	320	320	425	355	345	245	620	230	215	510	380
Base Volume Adjustment Factor	1.0000	1.0000	0.6200	1.0000	1.0000	0.6200	1.0000	1.0000	0.6200	1.0000	1.0000	0.6200
Heavy Vehicles Percentage [%]	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	270	320	198	425	355	214	245	620	143	215	510	236
Peak Hour Factor	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	70	83	52	111	92	56	64	161	37	56	133	61
Total Analysis Volume [veh/h]	281	333	206	443	370	223	255	646	149	224	531	246
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	28.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap
Signal group	3	8	5	7	4	1	1	6	3	5	2	2
Auxiliary Signal Groups			5,8			1,4			3,6			2,7
Lead / Lag	Lag	-	-	Lag	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	8	10	8	8	10	8	8	15	8	8	15	15
Maximum Green [s]	30	32	21	32	34	25	25	45	30	21	41	41
Amber [s]	3.5	4.1	3.5	3.5	4.1	3.5	3.5	4.4	3.5	3.5	4.4	4.4
All red [s]	2.0	3.0	2.0	2.0	3.0	2.0	2.0	3.0	2.0	2.0	3.0	3.0
Split [s]	16	18	16	19	21	19	19	27	16	16	24	24
Vehicle Extension [s]	1.5	1.5	1.5	1.5	1.5	1.5	1.5	4.9	1.5	1.5	4.2	4.2
Walk [s]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	0	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	3.5	5.1	3.5	3.5	5.1	3.5	3.5	5.4	3.5	3.5	5.4	5.4
Minimum Recall	No	No	No	No	No	No	No	Yes	No	No	Yes	Yes
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	100.0	100.0	20.0	100.0	100.0	20.0	100.0	100.0	20.0	100.0	100.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	5.50	7.10	5.50	5.50	7.10	5.50	7.40	7.40	7.40	7.40	7.40	7.40
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	3.50	5.10	0.00	3.50	5.10	0.00	0.00	5.40	0.00	0.00	5.40	0.00
g_i, Effective Green Time [s]	14	10	47	14	11	50	36	20	55	36	17	56
g / C, Green / Cycle	0.17	0.13	0.59	0.18	0.13	0.63	0.45	0.25	0.68	0.45	0.21	0.69
(v / s)_i Volume / Saturation Flow Rate	0.10	0.09	0.13	0.16	0.10	0.14	0.29	0.18	0.09	0.29	0.15	0.16
s, saturation flow rate [veh/h]	2769	3582	1599	2769	3582	1599	869	3547	1583	781	3547	1583
c, Capacity [veh/h]	480	448	947	507	482	1007	315	875	1084	270	742	1098
d1, Uniform Delay [s]	32.87	33.77	7.64	34.34	33.43	6.38	21.96	27.76	4.40	23.90	29.43	4.44
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.04	0.50	0.50	0.04	0.50	0.04	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.42	0.92	0.04	1.90	0.98	0.04	19.85	5.54	0.02	24.68	0.49	0.47
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.59	0.74	0.22	0.87	0.77	0.22	0.81	0.74	0.14	0.83	0.72	0.22
d, Delay for Lane Group [s/veh]	33.30	34.69	7.69	36.24	34.41	6.42	41.81	33.31	4.42	48.58	29.92	4.92
Lane Group LOS	C	C	A	D	C	A	D	C	A	D	C	A
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.52	3.06	1.42	4.29	3.39	1.33	3.54	6.06	0.65	3.27	4.57	1.22
50th-Percentile Queue Length [ft/ln]	63.12	76.41	35.39	107.18	84.84	33.36	88.39	151.61	16.21	81.84	114.31	30.52
95th-Percentile Queue Length [veh/ln]	4.54	5.50	2.55	7.68	6.11	2.40	6.36	10.10	1.17	5.89	8.08	2.20
95th-Percentile Queue Length [ft/ln]	113.62	137.54	63.70	192.08	152.71	60.05	159.11	252.57	29.18	147.31	201.99	54.93

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	33.30	34.69	7.69	36.24	34.41	6.42	41.81	33.31	4.42	48.58	29.92	4.92
Movement LOS	C	C	A	D	C	A	D	C	A	D	C	A
d_A, Approach Delay [s/veh]	27.43			29.17			31.27			27.95		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	29.06											
Intersection LOS	C											
Intersection V/C	0.919											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 6: WIS 167 & I-43 SB Ramps - PM

Control Type:	Signalized	Delay (sec / veh):	22.4
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.532

Intersection Setup

Name	I-43 SB ramps			I-43 SB ramps			WIS 167			WIS 167		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1	0	0	1	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	50.00	100.00	100.00	250.00	310.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	I-43 SB ramps			I-43 SB ramps			WIS 167			WIS 167		
Base Volume Input [veh/h]	0	0	1	35	1	285	0	665	700	35	820	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	0.3400	1.0000	1.0000	0.7000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	4.00	4.00	4.00	0.00	1.00	1.00	2.00	2.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	1	35	1	97	0	665	490	35	820	0
Peak Hour Factor	1.0000	1.0000	0.9600	0.9600	0.9600	0.9600	1.0000	0.9600	0.9600	0.9600	0.9600	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	9	0	25	0	173	128	9	214	0
Total Analysis Volume [veh/h]	0	0	1	36	1	101	0	693	510	36	854	0
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	43.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	20.00

Phasing & Timing

Control Type	Split	Split	Split	Permiss	Permiss	Overlap	Permiss	Permiss	Permiss	Protecte	Overlap	Permiss
Signal group	0	3	3	4	4	1	0	6	6	5	2	0
Auxiliary Signal Groups						1,4					2,3	
Lead / Lag	-	-	-	Lag	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	21	21	6	6	6	0	12	12	5	12	0
Maximum Green [s]	0	21	21	12	12	24	0	56	56	16	30	0
Amber [s]	0.0	3.9	3.9	3.6	3.6	3.5	0.0	3.9	3.9	3.5	3.9	0.0
All red [s]	0.0	3.0	3.0	2.3	2.3	1.0	0.0	2.0	2.0	2.0	2.0	0.0
Split [s]	0	28	28	12	12	11	0	29	29	11	29	0
Vehicle Extension [s]	0.0	1.5	1.5	1.5	1.5	2.0	0.0	4.0	4.0	1.5	0.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	0	0
Rest In Walk			No		No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	4.9	4.9	3.9	3.9	2.5	0.0	3.9	3.9	3.5	3.9	0.0
Minimum Recall			No		No	No		Yes		No	Yes	
Maximum Recall			No		No	No		No		No	No	
Pedestrian Recall			No		No	No		No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	20.0	20.0	20.0	0.0	100.0	100.0	20.0	100.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	R	C	R	C	C	R	L	C
C, Cycle Length [s]	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	6.90	5.90	4.50	5.90	5.90	5.90	5.50	6.90
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.90	3.90	0.00	3.90	3.90	3.90	3.50	0.00
g_i, Effective Green Time [s]	21	6	17	26	26	26	3	51
g / C, Green / Cycle	0.26	0.07	0.22	0.33	0.33	0.33	0.03	0.64
(v / s)_i Volume / Saturation Flow Rate	0.00	0.02	0.07	0.21	0.25	0.25	0.02	0.24
s, saturation flow rate [veh/h]	1615	1742	1553	1881	1636	1599	1774	3547
c, Capacity [veh/h]	423	125	338	619	539	526	63	2270
d1, Uniform Delay [s]	21.86	35.29	26.24	22.93	23.90	24.08	38.08	6.84
k, delay calibration	0.04	0.04	0.04	0.50	0.50	0.50	0.04	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.00	0.48	0.18	5.17	9.02	10.00	3.05	0.48
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.00	0.30	0.30	0.65	0.74	0.76	0.57	0.38
d, Delay for Lane Group [s/veh]	21.86	35.78	26.42	28.10	32.92	34.08	41.13	7.32
Lane Group LOS	C	D	C	C	C	C	D	A
Critical Lane Group	No	No	Yes	No	No	Yes	Yes	Yes
50th-Percentile Queue Length [veh/ln]	0.01	0.69	1.59	6.91	7.63	7.79	0.73	2.90
50th-Percentile Queue Length [ft/ln]	0.34	17.21	39.68	172.79	190.67	194.67	18.19	72.48
95th-Percentile Queue Length [veh/ln]	0.02	1.24	2.86	11.22	12.16	12.36	1.31	5.22
95th-Percentile Queue Length [ft/ln]	0.61	30.98	71.42	280.57	303.89	309.08	32.75	130.47

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	21.86	35.78	35.78	26.42	0.00	28.74	33.84	41.13	7.32	0.00
Movement LOS			C	D	D	C		C	C	D	A	
d_A, Approach Delay [s/veh]	21.86			28.93			31.70			8.69		
Approach LOS	C			C			C			A		
d_I, Intersection Delay [s/veh]	22.35											
Intersection LOS	C											
Intersection V/C	0.532											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 9: WIS 167 & I-43 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	21.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.630

Intersection Setup

Name	I-43 NB ramps			I-43 NB ramps			WIS 167			WIS 167		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	90.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			0.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	I-43 NB ramps			I-43 NB ramps			WIS 167			WIS 167		
Base Volume Input [veh/h]	735	1	60	0	0	0	540	160	0	0	120	30
Base Volume Adjustment Factor	1.0000	1.0000	0.3400	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	3.00	3.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	735	1	20	0	0	0	540	160	0	0	120	30
Peak Hour Factor	0.9600	0.9600	0.9600	1.0000	1.0000	1.0000	0.9600	0.9600	1.0000	1.0000	0.9600	0.9600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	191	0	5	0	0	0	141	42	0	0	31	8
Total Analysis Volume [veh/h]	766	1	21	0	0	0	563	167	0	0	125	31
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	62.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	8	8	8	0	0	0	1	6	0	0	2	2
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	8	8	8	0	0	0	6	12	0	0	12	12
Maximum Green [s]	43	43	43	0	0	0	44	74	0	0	25	25
Amber [s]	3.6	3.6	3.6	0.0	0.0	0.0	3.5	3.6	0.0	0.0	3.6	3.6
All red [s]	3.0	3.0	3.0	0.0	0.0	0.0	1.0	2.1	0.0	0.0	2.1	2.1
Split [s]	33	33	33	0	0	0	29	47	0	0	18	18
Vehicle Extension [s]	1.5	1.5	1.5	0.0	0.0	0.0	2.5	4.9	0.0	0.0	4.9	4.9
Walk [s]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	0	0
Rest In Walk		No						No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	4.6	4.6	4.6	0.0	0.0	0.0	2.5	3.7	0.0	0.0	3.7	3.7
Minimum Recall		No					No	Yes			Yes	
Maximum Recall		No					No	No			No	
Pedestrian Recall		No					No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	20.0	20.0	0.0	0.0	0.0	20.0	100.0	0.0	0.0	100.0	100.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R		L	C	C
C, Cycle Length [s]	80	80	80		80	80	80
L, Total Lost Time per Cycle [s]	6.60	6.60	6.60		5.70	5.70	5.70
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00		0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.60	4.60	4.60		0.00	3.70	3.70
g_i, Effective Green Time [s]	19	19	19		49	49	27
g / C, Green / Cycle	0.24	0.24	0.24		0.61	0.61	0.33
(v / s)_i Volume / Saturation Flow Rate	0.21	0.21	0.01		0.38	0.09	0.09
s, saturation flow rate [veh/h]	1792	1792	1599		1467	1881	1782
c, Capacity [veh/h]	430	430	384		939	1141	590
d1, Uniform Delay [s]	29.41	29.41	23.43		9.39	6.81	19.64
k, delay calibration	0.04	0.04	0.04		0.22	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	2.62	2.62	0.02		1.23	0.27	1.10
d3, Initial Queue Delay [s]	0.00	0.00	0.00		0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00		1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00		1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.89	0.89	0.05		0.60	0.15	0.26
d, Delay for Lane Group [s/veh]	32.03	32.03	23.45		10.62	7.08	20.74
Lane Group LOS	C	C	C		B	A	C
Critical Lane Group	Yes	No	No		Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	7.15	7.15	0.30		4.95	1.12	2.19
50th-Percentile Queue Length [ft/ln]	178.78	178.79	7.51		123.68	27.97	54.67
95th-Percentile Queue Length [veh/ln]	11.54	11.54	0.54		8.59	2.01	3.94
95th-Percentile Queue Length [ft/ln]	288.42	288.43	13.52		214.87	50.34	98.40

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	32.03	32.03	23.45	0.00	0.00	0.00	10.62	7.08	0.00	0.00	20.74	20.74
Movement LOS	C	C	C				B	A			C	C
d_A, Approach Delay [s/veh]	31.81			0.00			9.81			20.74		
Approach LOS	C			A			A			C		
d_I, Intersection Delay [s/veh]	21.18											
Intersection LOS	C											
Intersection V/C	0.630											

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

APPENDIX H

Summary of WisBOOM Performance Measures

WIS 38 Signalized Corridor

Southeast Region

Optimized and Baseline WisBOOM Data

WIS 38 Intersection with:	Timing Plan	Dates	Time Period	Split Monitor												Purdue Coordination Diagram	
				Phase 1		Phase 3		Phase 4		Phase 5		Phase 7		Phase 8		Phase 2	Phase 6
				% Force Offs	% Gap Outs	% Force Offs	% Gap Outs	% Force Offs	% Gap Outs	% Force Offs	% Gap Outs	% Force Offs	% Gap Outs	% Force Offs	% Gap Outs	Platoon Ratio	Platoon Ratio
Drexel Ave	Baseline	6/5/2018	4:30 - 5:30 PM	30.8	65.4	19.2	76.9	65.4	34.6	19.2	76.9	3.8	92.3	57.7	38.5		1.47
		6/6/2018	4:30 - 5:30 PM	15.4	84.6	11.5	84.6	65.4	30.8	7.7	88.5	0.0	96.2	61.5	30.8		1.39
		6/7/2018	4:30 - 5:30 PM	34.6	65.4	11.5	84.6	65.4	30.8	30.8	65.4	0.0	100.0	69.2	26.9		1.34
	HCS	6/19/2018	4:30 - 5:30 PM	100.0	0.0	92.3	2.6	92.3	5.1	84.6	12.8	30.8	64.1	89.7	7.7		1.20
		6/20/2018	4:30 - 5:30 PM	100.0	0.0	81.6	18.4	92.1	7.9	81.6	18.4	31.6	63.2	94.7	5.3		1.23
		6/21/2018	4:30 - 5:30 PM	100.0	0.0	80.5	4.9	90.2	0.0	78.0	7.3	41.5	46.3	90.2	0.0		1.36
	Synchro	6/26/2018	4:30 - 5:30 PM	80.0	15.0	95.0	2.5	92.5	5.0	90.0	7.5	97.5	2.5	92.5	5.0		1.17
		6/27/2018	4:30 - 5:30 PM	82.5	17.5	85.0	7.5	97.5	0.0	95.0	5.0	87.5	7.5	97.5	0.0		1.60
		6/28/2018	4:30 - 5:30 PM	97.4	2.6	92.3	7.7	97.4	2.6	89.7	7.7	97.4	2.6	97.4	2.6		1.17
	Vistro	6/12/2018	4:30 - 5:30 PM	87.2	12.8	84.6	10.3	84.6	12.8	97.4	0.0	84.6	10.3	92.3	2.6		1.20
		6/13/2018	4:30 - 5:30 PM	86.8	13.2	71.1	21.1	78.9	18.4	97.4	0.0	86.8	13.2	86.8	10.5		1.26
		6/14/2018	4:30 - 5:30 PM	87.2	10.3	79.5	12.8	79.5	15.4	92.3	2.6	84.6	2.6	92.3	2.6		1.17
Susan/Town Square Way	Baseline	6/5/2018	4:30 - 5:30 PM	0.0	100.0	16.0	8.0	12.0	80.0	4.0	8.0	48.0	52.0	8.0	8.0	1.17	1.01
		6/6/2018	4:30 - 5:30 PM	0.0	100.0	16.0	16.0	8.0	84.0	12.0	0.0	44.0	56.0	4.0	20.0	1.20	0.97
		6/7/2018	4:30 - 5:30 PM	3.7	92.6	25.9	7.4	3.7	77.8	3.7	0.0	48.1	48.1	3.7	11.1	1.11	0.99
	HCS	6/19/2018	4:30 - 5:30 PM	92.3	2.6	10.3	7.7	20.5	64.1	2.6	2.6	89.7	0.0	15.4	17.9	1.11	0.93
		6/20/2018	4:30 - 5:30 PM	87.8	2.4	7.3	7.3	7.3	82.9	0.0	9.8	92.7	2.4	7.3	7.3	1.05	0.89
		6/21/2018	4:30 - 5:30 PM	95.1	0.0	7.3	12.2	4.9	80.5	4.9	7.3	90.2	0.0	2.4	12.2	0.95	1.00
	Synchro	6/26/2018	4:30 - 5:30 PM	41.0	46.2	12.8	2.6	28.2	64.1	20.5	15.4	28.2	64.1	0.0	69.2	1.06	1.04
		6/27/2018	4:30 - 5:30 PM	38.5	46.2	10.3	17.9	33.3	59.0	0.0	25.6	20.5	74.4	0.0	84.6	0.93	1.09
		6/28/2018	4:30 - 5:30 PM	41.0	43.6	15.4	2.6	30.8	51.3	15.4	15.4	25.6	69.2	2.6	64.1	1.17	1.05
	Vistro	6/12/2018	4:30 - 5:30 PM	15.9	65.9	11.4	6.8	2.3	88.6	2.3	9.1	90.9	0.0	4.5	15.9	1.06	1.01
		6/13/2018	4:30 - 5:30 PM	20.9	69.8	14.0	7.0	7.0	81.4	2.3	23.3	97.7	0.0	2.3	18.6	1.12	1.08
		6/14/2018	4:30 - 5:30 PM	14.0	58.1	18.6	0.0	7.0	79.1	7.0	11.6	90.7	2.3	4.7	14.0	1.11	1.04
Forest Hill Ave	Baseline	6/5/2018	4:30 - 5:30 PM	59.3	0.0	40.7	11.1	3.7	77.8	3.7	44.4	3.7	92.6	3.7	59.3	1.25	0.99
		6/6/2018	4:30 - 5:30 PM	69.2	0.0	42.3	19.2	0.0	100.0	0.0	46.2	19.2	61.5	0.0	80.8	1.29	1.06
		6/7/2018	4:30 - 5:30 PM	69.2	3.8	34.6	15.4	0.0	88.5	0.0	53.8	11.5	80.8	0.0	73.1	1.32	1.07
	HCS	6/19/2018	4:30 - 5:30 PM	0.0	61.0	24.4	12.2	36.6	53.7	24.4	61.0	56.1	9.8	31.7	36.6	1.18	1.33
		6/20/2018	4:30 - 5:30 PM	4.9	39.0	43.9	7.3	24.4	48.8	0.0	51.2	56.1	7.3	24.4	36.6	1.27	1.20
		6/21/2018	4:30 - 5:30 PM	7.9	57.9	23.7	21.1	44.7	34.2	36.8	36.8	44.7	13.2	34.2	34.2	1.04	1.18
	Synchro	6/26/2018	4:30 - 5:30 PM	17.1	41.5	12.2	26.8	51.2	41.5	22.0	48.8	51.2	7.3	29.3	41.5	1.03	1.04
		6/27/2018	4:30 - 5:30 PM	25.0	37.5	15.0	30.0	45.0	50.0	25.0	37.5	45.0	17.5	20.0	50.0	1.15	1.13
		6/28/2018	4:30 - 5:30 PM	9.8	39.0	4.9	26.8	36.6	63.4	24.4	31.7	63.4	0.0	26.8	43.9	1.05	1.16
	Vistro	6/12/2018	4:30 - 5:30 PM	19.0	16.7	40.5	7.1	28.6	57.1	19.0	35.7	47.6	4.8	28.6	45.2	1.35	1.28
		6/13/2018	4:30 - 5:30 PM	50.0	17.5	25.0	17.5	45.0	42.5	22.5	35.0	67.5	5.0	40.0	32.5	1.24	1.25
		6/14/2018	4:30 - 5:30 PM	25.6	30.2	30.2	7.0	16.3	65.1	25.6	30.2	60.5	7.0	18.6	41.9	1.28	1.16
Puetz Rd	Baseline	6/5/2018	4:30 - 5:30 PM	46.2	53.8	15.4	65.4	57.7	42.3	38.5	61.5	57.7	38.5	57.7	42.3	1.44	1.21
		6/6/2018	4:30 - 5:30 PM	48.0	44.0	12.0	72.0	56.0	44.0	32.0	68.0	40.0	56.0	56.0	44.0	1.42	1.28
		6/7/2018	4:30 - 5:30 PM	51.6	35.5	12.9	58.1	45.2	41.9	29.0	54.8	35.5	38.7	45.2	41.9	1.42	1.12
	HCS	6/19/2018	4:30 - 5:30 PM	92.2	0.0	3.9	35.3	56.9	43.1	76.5	21.6	51.0	29.4	54.9	39.2	1.05	1.20
		6/20/2018	4:30 - 5:30 PM	92.9	0.0	31.0	31.0	73.8	21.4	85.7	14.3	47.6	28.6	73.8	23.8	1.05	1.17
		6/21/2018	4:30 - 5:30 PM	81.0	4.8	23.8	28.6	83.3	9.5	76.2	11.9	47.6	33.3	83.3	7.1	1.03	1.07
	Synchro	6/26/2018	4:30 - 5:30 PM	30.8	59.0	23.1	38.5	53.8	43.6	100.0	0.0	10.3	56.4	43.6	53.8	1.14	0.95
		6/27/2018	4:30 - 5:30 PM	42.5	55.0	35.0	27.5	60.0	37.5	92.5	2.5	15.0	35.0	52.5	45.0	1.12	1.05
		6/28/2018	4:30 - 5:30 PM	38.5	59.0	41.0	25.6	46.2	51.3	94.9	0.0	25.6	38.5	51.3	48.7	1.10	1.05
	Vistro	6/12/2018	4:30 - 5:30 PM	90.9	2.3	45.5	6.8	59.1	34.1	90.9	2.3	54.5	4.5	56.8	38.6	1.20	1.02
		6/13/2018	4:30 - 5:30 PM	86.0	9.3	32.6	30.2	69.8	27.9	93.0	2.3	62.8	23.3	69.8	30.2	1.22	1.18
		6/14/2018	4:30 - 5:30 PM	70.7	19.5	39.0	14.6	80.5	14.6	87.8	7.3	63.4	22.0	78.0	12.2	1.21	1.08
Centennial Dr	Baseline	6/5/2018	4:30 - 5:30 PM	34.6	0.0	46.2	38.5	26.9	53.8	3.8	73.1	34.6	53.8	26.9	73.1	1.31	
		6/6/2018	4:30 - 5:30 PM	26.9	0.0	11.5	65.4	11.5	73.1	11.5	57.7	38.5	53.8	19.2	57.7	1.19	
		6/7/2018	4:30 - 5:30 PM	17.4	0.0	39.1	52.2	30.4	39.1	4.3	69.6	39.1	56.5	34.8	60.9	1.41	
	HCS	6/19/2018	4:30 - 5:30 PM	7.7	33.3	61.5	10.3	46.2	30.8	76.9	0.0	94.9	2.6	46.2	12.8	1.31	
		6/20/2018	4:30 - 5:30 PM	5.6	36.1	50.0	16.7	38.9	44.4	88.9	0.0	86.1	8.3	41.7	22.2	1.21	
		6/21/2018	4:30 - 5:30 PM	0.0	30.8	56.4	7.7	38.5	35.9	92.3	0.0	84.6	5.1	46.2	15.4	1.32	
	Synchro	6/26/2018	4:30 - 5:30 PM	17.9	7.7	51.3	12.8	41.0	51.3	35.9	35.9	30.8	46.2	56.4	33.3	1.07	
		6/27/2018	4:30 - 5:30 PM	14.3	2.4	66.7	7.1	26.2	52.4	33.3	38.1	21.4	54.8	45.2	45.2	1.18	
		6/28/2018	4:30 - 5:30 PM	16.7	0.0	69.0	9.5	16.7	45.2	28.6	47.6	19.0	47.6	57.1	40.5	1.18	
	Vistro	6/12/2018	4:30 - 5:30 PM	12.5	17.5	57.5	15.0	35.0	35.0	37.5	37.5	87.5	7.5	37.5	27.5	1.22	
		6/13/2018	4:30 - 5:30 PM	23.7	7.9	60.5	15.8	42.1	36.8	36.8	28.9	86.8	7.9	42.1	15.8	1.28	
		6/14/2018	4:30 - 5:30 PM	30.6	16.7	61.1	5.6	44.4	33.3	50.0	16.7	86.1	8.3	44.4	19.4	1.27	

WIS 67 Signalized Corridor

Southeast Region

Optimized and Baseline WisBOOM Data

WIS 67 Intersection with:	Timing Plan	Dates	Time Period	Split Monitor												Purdue Coordination Diagram	
				Phase 1		Phase 3		Phase 4		Phase 5		Phase 7		Phase 8		Phase 2	Phase 6
				% Force Offs	% Gap Outs	% Force Offs	% Gap Outs	% Force Offs	% Gap Outs	% Force Offs	% Gap Outs	% Force Offs	% Gap Outs	% Force Offs	% Gap Outs	Platoon Ratio	Platoon Ratio
Oconomowoc Pkwy	Baseline	6/5/2018	4:00 - 5:00 PM	5.6	33.3			36.1	63.9	--	--			36.1	63.9		1.11
		6/6/2018	4:00 - 5:00 PM	5.7	57.1			57.1	42.9	2.9	0.0			57.1	42.9		0.99
		6/7/2018	4:00 - 5:00 PM	8.3	47.2			44.4	55.6	--	--			44.4	55.6		1.04
	HCS	6/19/2018	4:00 - 5:00 PM	9.3	39.5			20.9	76.7	16.3	23.3			20.9	76.7		1.00
		6/20/2018	4:00 - 5:00 PM	20.5	47.7			36.4	63.6	15.9	20.5			36.4	63.6		0.98
		6/21/2018	4:00 - 5:00 PM	4.7	48.8			11.6	88.4	11.6	32.6			11.6	88.4		1.03
	Synchro	6/26/2018	4:00 - 5:00 PM	13.7	31.4			54.9	41.2	25.5	0.0			54.9	41.2		1.05
		6/27/2018	4:00 - 5:00 PM	30.0	22.0			80.0	16.0	14.0	0.0			80	16		1.20
		6/28/2018	4:00 - 5:00 PM	29.2	25.0			72.9	27.1	22.9	0.0			72.9	27.1		1.02
	Vistro	6/12/2018	4:00 - 5:00 PM	28.6	28.6			76.2	23.8	21.4	11.9			76.2	23.8		1.07
		6/13/2018	4:00 - 5:00 PM	26.8	31.7			82.9	17.1	22.0	0.0			82.9	17.1		1.08
		6/14/2018	4:00 - 5:00 PM	30.2	27.9			81.4	16.3	32.6	9.3			81.4	16.3		1.02
County B/ Valley Rd	Baseline	6/5/2018	4:00 - 5:00 PM	2.8	16.7	33.3	25.0	52.8	44.4	16.7	0.0	80.6	16.7	44.4	38.9	1.07	1.32
		6/6/2018	4:00 - 5:00 PM	2.9	8.6	22.9	45.7	42.9	54.3	--	--	85.7	11.4	42.9	48.6	1.28	1.30
		6/7/2018	4:00 - 5:00 PM	5.9	8.8	26.5	44.1	41.2	47.1	8.8	0.0	73.5	17.6	44.1	38.2	1.11	1.18
	HCS	6/19/2018	4:00 - 5:00 PM	43.2	0.0	31.8	31.8	43.2	38.6	0.0	0.0	81.8	13.6	47.7	29.5	1.23	1.30
		6/20/2018	4:00 - 5:00 PM	47.7	0.0	27.3	25.0	70.5	25.0	0.0	4.5	84.1	13.6	59.1	15.9	1.42	1.28
		6/21/2018	4:00 - 5:00 PM	37.8	0.0	15.6	35.6	66.7	28.9	0.0	0.0	77.8	15.6	60	11.1	1.23	1.33
	Synchro	6/26/2018	4:00 - 5:00 PM	9.1	22.7	25.0	34.1	52.3	36.4	2.3	2.3	52.3	38.6	47.7	38.6	1.06	1.26
		6/27/2018	4:00 - 5:00 PM	2.3	18.6	23.3	32.6	65.1	30.2	0.0	0.0	39.5	48.8	41.9	55.8	1.02	1.06
		6/28/2018	4:00 - 5:00 PM	2.3	9.1	25.0	34.1	63.6	22.7	4.5	2.3	45.5	45.5	40.9	59.1	0.94	1.54
	Vistro	6/12/2018	4:00 - 5:00 PM	9.3	4.7	39.5	7.0	69.8	25.6	2.3	0.0	93.0	4.7	65.1	20.9	1.09	1.14
		6/13/2018	4:00 - 5:00 PM	11.6	9.3	39.5	2.3	62.8	34.9	4.7	0.0	90.7	4.7	55.8	25.6	1.15	1.07
		6/14/2018	4:00 - 5:00 PM	20.5	9.1	56.8	4.5	65.9	29.5	2.3	2.3	93.2	6.8	59.1	9.1	1.15	1.02
Oconomowoc Dr	Baseline	6/5/2018	4:00 - 5:00 PM	0.0	40.0	74.3	17.1	0.0	45.7	34.3	0.0	42.9	34.3	0	42.9	1.23	1.02
		6/6/2018	4:00 - 5:00 PM	0.0	14.7	85.3	5.9	2.9	47.1	35.3	0.0	35.3	23.5	2.9	58.8	1.13	1.02
		6/7/2018	4:00 - 5:00 PM	0.0	42.9	82.9	11.4	2.9	37.1	48.6	0.0	45.7	34.3	2.9	42.9	1.17	1.08
	HCS	6/19/2018	4:00 - 5:00 PM	4.8	42.9	71.4	14.3	16.7	31.0	0.0	31.0	35.7	26.2	9.5	50	0.88	1.10
		6/20/2018	4:00 - 5:00 PM	9.5	28.6	76.2	11.9	11.9	42.9	2.4	26.2	28.6	33.3	7.1	59.5	0.85	1.12
		6/21/2018	4:00 - 5:00 PM	0.0	42.9	78.6	9.5	9.5	31.0	2.4	47.6	19.0	40.5	7.1	54.8	0.73	1.08
	Synchro	6/26/2018	4:00 - 5:00 PM	8.9	44.4	22.2	60.0	13.3	53.3	8.9	22.2	26.7	26.7	37.8	35.6	1.12	1.08
		6/27/2018	4:00 - 5:00 PM	19.6	23.9	34.8	60.9	26.1	34.8	8.7	26.1	30.4	30.4	30.4	43.5	0.94	1.10
		6/28/2018	4:00 - 5:00 PM	8.9	48.9	35.6	60.0	11.1	40.0	13.3	20.0	22.2	37.8	31.1	35.6	1.27	1.06
	Vistro	6/12/2018	4:00 - 5:00 PM	19.5	26.8	46.3	51.2	9.8	68.3	14.6	26.8	46.3	7.3	34.1	29.3	0.98	1.04
		6/13/2018	4:00 - 5:00 PM	24.4	22.0	36.6	58.5	9.8	75.6	9.8	17.1	46.3	9.8	43.9	22	1.08	0.98
		6/14/2018	4:00 - 5:00 PM	24.4	31.7	34.1	58.5	14.6	65.9	12.2	24.4	43.9	9.8	24.4	34.1	0.98	1.02
I-94 WB Ramps	Baseline	6/5/2018	4:00 - 5:00 PM	5.6	63.9									19.4	80.6	1.16	1.07
		6/6/2018	4:00 - 5:00 PM	5.6	66.7									19.4	80.6	1.12	1.10
		6/7/2018	4:00 - 5:00 PM	0.0	86.1									13.9	86.1	1.17	1.07
	HCS	6/19/2018	4:00 - 5:00 PM	6.8	61.4									40.9	56.8	0.96	1.08
		6/20/2018	4:00 - 5:00 PM	6.7	57.8									42.2	55.6	0.94	1.11
		6/21/2018	4:00 - 5:00 PM	2.2	55.6									31.1	68.9	0.94	1.11
	Synchro	6/26/2018	4:00 - 5:00 PM	64.0	0.0									54	40	0.98	1.06
		6/27/2018	4:00 - 5:00 PM	62.7	0.0									47.1	49	1.16	1.00
		6/28/2018	4:00 - 5:00 PM	78.4	0.0									39.2	60.8	1.20	1.00
	Vistro	6/12/2018	4:00 - 5:00 PM	28.9	31.1									33.3	66.7	1.12	0.98
		6/13/2018	4:00 - 5:00 PM	26.7	44.4									31.1	68.9	1.12	1.02
		6/14/2018	4:00 - 5:00 PM	17.4	34.8									32.6	65.2	1.10	0.90
I-94 EB Ramps	Baseline	6/5/2018	4:00 - 5:00 PM					28.6	71.4							1.11	
		6/6/2018	4:00 - 5:00 PM					20.0	80.0							1.21	
		6/7/2018	4:00 - 5:00 PM					25.0	73.2							1.17	
	HCS	6/19/2018	4:00 - 5:00 PM					0.0	97.7							0.95	
		6/20/2018	4:00 - 5:00 PM					0.0	100.0							0.96	
		6/21/2018	4:00 - 5:00 PM					0.0	100.0							0.93	
	Synchro	6/26/2018	4:00 - 5:00 PM					26.2	73.8							1.00	
		6/27/2018	4:00 - 5:00 PM					13.3	86.7							0.89	
		6/28/2018	4:00 - 5:00 PM					19.6	80.4							0.93	
	Vistro	6/12/2018	4:00 - 5:00 PM					40.0	60.0							1.09	
		6/13/2018	4:00 - 5:00 PM					33.3	66.7							1.11	
		6/14/2018	4:00 - 5:00 PM					42.9	57.1							1.08	

WIS 172 &County EB/Packerland Drive
Northeast Region
Optimized and Baseline WisBOOM Data
Isolated Signalized Intersection

WisBOOM Data				Split Monitor															
				Phase 1		Phase 2		Phase 3		Phase 4		Phase 5		Phase 6		Phase 7		Phase 8	
Timing Plan	Dates	Time Periods		85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split
Baseline	8/7/2018	Peak Period	3:00 - 6:00 PM	17.2	13.9	55.5	43.6	19.0	16.6	41.5	31.8	19.0	15.4	51.9	41.1	19.0	16.7	40.8	31.6
	8/7/2018	Peak Hour	4:00 - 5:00 PM	17.2	14.3	51.5	42.5	19.0	17.1	42.5	35.5	19.0	15.9	54.1	41.1	19.0	17.6	41.5	35.1
	8/8/2018	Peak Period	3:00 - 6:00 PM	18.6	14.9	56.6	49.1	19.0	16.5	41.5	31.6	19.0	16.0	56.5	45.1	19.0	17.2	41.5	31.6
	8/8/2018	Peak Hour	4:00 - 5:00 PM	19.0	15.6	56.5	45.1	19.0	17.3	41.5	33.3	19.0	16.7	56.5	42.8	19.0	17.1	41.5	34.6
	8/9/2018	Peak Period	3:00 - 6:00 PM	19.0	17.5	56.3	42.3	19.0	17.0	41.5	36.0	19.0	16.0	56.7	45.9	19.0	17.4	41.5	36.2
	8/9/2018	Peak Hour	4:00 - 5:00 PM	19.0	17.6	53.6	42.3	19.0	17.6	41.5	38.0	19.0	16.9	56.5	45.2	19.0	17.4	41.5	38.1
HCS	7/31/2018	Peak Period	3:00 - 6:00 PM	11.0	11.0	59.9	45.9	11.0	11.1	39.4	31.4	11.0	11.0	63.6	45.1	11.0	11.0	40.1	32.3
	7/31/2018	Peak Hour	4:00 - 5:00 PM	11.0	11.0	55.4	45.4	11.0	11.1	42.0	34.2	11.0	11.0	63.2	45.4	11.0	11.0	43.9	36.1
	8/1/2018	Peak Period	3:00 - 6:00 PM	11.0	11.0	65.5	54.0	11.0	11.1	40.5	32.4	11.0	11.0	65.5	53.6	11.0	11.0	40.6	33.0
	8/1/2018	Peak Hour	4:00 - 5:00 PM	11.0	11.0	65.4	49.5	11.0	11.0	44.8	36.5	11.0	11.0	62.5	49.0	11.0	11.0	44.8	36.5
	8/2/2018	Peak Period	3:00 - 6:00 PM	11.0	11.0	57.4	44.2	11.0	11.3	42.3	33.3	11.0	11.0	61.7	43.6	11.0	11.2	43.0	32.5
	8/2/2018	Peak Hour	4:00 - 5:00 PM	11.0	11.0	64.4	47.5	11.0	11.0	44.8	35.0	11.0	11.0	65.5	49.1	11.0	11.0	43.5	35.3
Synchro	7/17/2018	Peak Period	3:00 - 6:00 PM	17.0	14.3	55.5	45.1	20.0	16.7	40.9	32.2	22.0	17.0	51.7	42.3	18.0	16.0	41.5	33.5
	7/17/2018	Peak Hour	4:00 - 5:00 PM	17.0	13.9	55.5	46.8	20.0	16.3	43.9	35.3	22.0	17.4	51.7	43.2	18.0	16.0	44.6	36.1
	7/18/2018	Peak Period	3:00 - 6:00 PM	17.0	14.6	56.9	46.0	20.0	17.3	43.2	33.2	22.0	16.9	50.9	43.4	18.0	16.4	41.1	34.4
	7/18/2018	Peak Hour	4:00 - 5:00 PM	17.0	14.7	60.6	49.6	20.0	17.9	45.4	35.1	22.0	18.2	50.7	44.3	18.0	16.7	43.0	35.7
	7/19/2018	Peak Period	3:00 - 6:00 PM	17.0	13.8	55.6	46.3	20.0	17.0	39.8	32.3	22.0	16.6	53.3	43.1	18.0	16.0	45.1	34.7
	7/19/2018	Peak Hour	4:00 - 5:00 PM	17.0	14.2	59.2	50.9	20.0	17.8	40.5	32.8	21.5	16.0	57.7	48.5	18.0	16.7	44.8	36.8
Vistro	7/24/2018	Peak Period	3:00 - 6:00 PM	17.3	14.3	58.7	44.5	21.2	17.3	34.5	27.1	20.6	16.3	52.5	41.3	11.0	11.2	41.3	33.2
	7/24/2018	Peak Hour	4:00 - 5:00 PM	20.5	14.9	59.7	45.6	24.1	18.7	34.4	27.6	25.0	18.6	52.8	41.7	11.0	11.0	45.0	35.9
	7/25/2018	Peak Period	3:00 - 6:00 PM	18.7	15.0	56.5	45.1	21.5	17.2	34.4	28.0	24.1	17.6	53.0	42.2	11.0	11.1	40.3	33.2
	7/25/2018	Peak Hour	4:00 - 5:00 PM	18.6	14.8	56.5	47.5	21.3	18.6	33.3	29.2	25.7	16.9	57.1	46.8	11.0	11.0	45.4	37.9
	7/26/2018	Peak Period	3:00 - 6:00 PM	18.1	14.0	56.2	44.4	23.4	17.7	30.5	25.8	21.5	15.9	52.7	42.7	11.0	11.3	42.0	32.7
	7/26/2018	Peak Hour	4:00 - 5:00 PM	17.9	14.9	62.4	49.7	21.9	18.9	29.2	27.0	25.1	17.0	57.6	50.8	11.0	11.0	43.3	36.4

WIS 52 & 28th Avenue
North Central Region
Optimized and Baseline WisBOOM Data
Isolated Signalized Intersection

Requested WisBOOM Data				Split Monitor													
				Phase 1		Phase 2		Phase 3		Phase 4		Phase 5		Phase 6		Phase 7		Phase 8	
Timing Plan	Dates	Time Periods		85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split
Baseline	7/17/2018	Peak Period	3:00 - 6:00 PM	14.7	13.2	50.8	39.3	12.0	12.0	42.5	34.0	20.1	16.0	41.7	32.3	22.9	17.6	24.1	20.4
	7/17/2018	Peak Hour	4:15 - 5:15 PM	16.7	13.8	51.5	42.0	12.1	12.1	42.9	36.9	19.1	17.0	40.3	33.6	25.1	20.1	23.0	19.7
	7/18/2018	Peak Period	3:00 - 6:00 PM	15.3	13.7	49.4	38.5	12.0	12.0	42.0	35.4	21.1	16.9	41.7	32.5	21.8	17.1	25.0	23.5
	7/18/2018	Peak Hour	4:15 - 5:15 PM	16.1	14.3	58.4	43.4	12.0	12.0	46.8	38.6	23.8	18.8	45.8	34.8	24.2	19.5	27.3	21.3
	7/19/2018	Peak Period	3:00 - 6:00 PM	15.0	13.2	46.8	38.1	12.4	12.3	41.0	34.9	21.3	18.4	35.7	28.8	21.8	17.1	25.5	21.1
	7/19/2018	Peak Hour	4:15 - 5:15 PM	14.0	12.8	54.8	44.4	12.0	12.0	47.0	39.2	23.2	22.7	36.5	28.5	24.4	19.1	27.4	22.9
HCS	7/24/2018	Peak Period	3:00 - 6:00 PM	15.7	13.4	49.4	38.3	14.2	12.9	44.5	34.7	21.0	17.1	41.3	31.1	21.5	17.7	27.4	22.2
	7/24/2018	Peak Hour	4:15 - 5:15 PM	17.0	14.1	51.6	40.8	12.0	12.0	48.4	37.2	22.2	18.8	43.5	32.3	24.5	19.0	25.5	21.8
	7/25/2018	Peak Period	3:00 - 6:00 PM	15.4	13.2	50.5	39.5	12.0	12.2	47.0	36.1	20.6	16.7	42.4	31.7	22.8	18.1	29.5	22.7
	7/25/2018	Peak Hour	4:15 - 5:15 PM	15.7	13.5	55.6	44.7	12.0	12.0	53.4	40.7	24.7	18.8	44.5	33.6	26.7	20.6	29.9	23.4
	7/26/2018	Peak Period	3:00 - 6:00 PM	14.2	12.8	49.8	40.3	12.4	12.4	46.1	35.3	20.9	16.8	40.0	30.5	22.0	17.2	27.6	21.8
	7/26/2018	Peak Hour	4:15 - 5:15 PM	13.6	12.8	50.0	41.6	unknown	12.0	48.4	40.2	21.3	17.1	40.0	31.5	25.0	19.2	27.6	22.1
Synchro	8/7/2018	Peak Period	3:00 - 6:00 PM	15.4	13.4	47.2	36.3	12.0	12.2	46.4	37.4	20.0	16.1	34.8	29.6	24.0	18.2	28.1	22.3
	8/7/2018	Peak Hour	4:15 - 5:15 PM	15.9	13.7	48.6	38.7	12.9	12.5	52.1	42.5	21.0	17.4	37.7	32.0	30.1	21.8	29.2	22.7
	8/8/2018	Peak Period	3:00 - 6:00 PM	15.2	13.3	46.6	37.3	12.0	12.0	44.5	35.4	20.2	16.2	37.0	29.3	22.8	17.7	27.7	21.7
	8/8/2018	Peak Hour	4:15 - 5:15 PM	16.4	14.6	52.7	42.6	12.0	12.0	52.3	41.4	23.8	19.0	41.0	32.5	25.9	20.6	32.9	23.8
	8/9/2018	Peak Period	3:00 - 6:00 PM	14.9	13.0	48.5	37.4	12.0	12.0	44.8	34.1	20.4	16.5	36.7	29.1	22.9	17.3	25.4	21.4
	8/9/2018	Peak Hour	4:15 - 5:15 PM	15.0	13.2	48.6	39.0	12.0	12.0	51.3	38.4	22.2	18.0	37.9	30.0	25.8	19.5	29.5	21.8
Vistro	8/21/2018	Peak Period	3:00 - 6:00 PM	15.8	13.5	45.9	38.0	12.0	12.0	46.5	36.4	20.1	16.3	36.0	29.1	22.3	17.4	27.8	22.7
	8/21/2018	Peak Hour	4:15 - 5:15 PM	16.8	14.2	49.0	38.3	12.0	12.0	51.4	40.8	20.2	17.2	43.1	31.2	28.7	23.6	28.7	23.6
	8/22/2018	Peak Period	3:00 - 6:00 PM	14.8	13.2	46.7	37.8	15.1	13.0	44.6	33.8	20.9	17.2	34.5	28.0	22.0	17.2	32.3	24.2
	8/22/2018	Peak Hour	4:15 - 5:15 PM	13.9	13.8	48.2	40.3	15.8	13.3	46.9	35.6	22.8	18.1	34.9	28.7	25.2	20.0	34.7	26.8
	8/23/2018	Peak Period	3:00 - 6:00 PM	14.6	13.0	44.3	35.7	12.0	15.8	49.1	37.8	20.8	16.5	32.1	27.7	21.9	18.9	32.3	23.6
	8/23/2018	Peak Hour	4:15 - 5:15 PM	15.0	13.2	45.7	37.9	22.6	18.7	54.2	43.7	22.7	18.5	31.9	28.6	24.6	19.5	35.3	27.1

WIS 36 & WIS 20/83
Southeast Region
Optimized and Baseline WisBOOM Data
Isolated Signalized Intersection

Requested WisBOOM Data				Split Monitor															
				Phase 1		Phase 2		Phase 3		Phase 4		Phase 5		Phase 6		Phase 7		Phase 8	
Timing Plan	Dates	Time Periods		85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split
Baseline	10/23/2018	Peak Period	3:00 - 6:00 PM	14.5	12.4	52.4	47.4			37.2	39.1			62.3	52.3			37.2	39.1
	10/23/2018	Peak Hour	4:45 - 5:45 PM	14.4	12.2	54.0	57.2			37.2	30.3			66.8	56.8			37.2	30.3
	10/24/2018	Peak Period	3:00 - 6:00 PM	14.3	12.5	53.3	42.3			37.2	49.5			60.1	48.4			37.2	49.5
	10/24/2018	Peak Hour	4:45 - 5:45 PM	14.4	12.4	55.0	40.5			37.2	44.4			57.6	44.1			37.2	44.4
	10/25/2018	Peak Period	3:00 - 6:00 PM	18.9	13.1	52.9	49.3			37.2	41.1			64.3	58.0			37.2	41.1
	10/25/2018	Peak Hour	4:45 - 5:45 PM	18.5	13.7	53.7	47.7			37.2	37.6			63.2	53.8			37.2	37.6
HCS	10/9/2018	Peak Period	3:00 - 6:00 PM	10.5	10.5	64.1	52.8			38.2	35.3			69.0	56.2			38.2	35.3
	10/9/2018	Peak Hour	4:45 - 5:45 PM	10.5	10.5	63.7	55.7			38.2	29.1			65.9	59.5			38.2	29.1
	10/10/2018	Peak Period	3:00 - 6:00 PM	10.5	10.5	58.4	48.3			38.0	29.2			63.3	52.1			38.0	29.2
	10/10/2018	Peak Hour	4:45 - 5:45 PM	10.5	10.5	53.1	45.1			36.7	28.5			61.6	48.2			36.7	28.5
	10/11/2018	Peak Period	3:00 - 6:00 PM	10.5	23.7	63.6	52.6			38.2	32.2			70.2	59.7			38.2	32.2
	10/11/2018	Peak Hour	4:45 - 5:45 PM	149.5	66.1	68.1	60.5			38.2	29.0			97.6	75.4			38.2	29.0
Syncrho	10/16/2018	Peak Period	3:00 - 6:00 PM	13.5	12.5	81.2	72.8			33.3	26.8			85.6	76.3			33.3	26.8
	10/16/2018	Peak Hour	4:45 - 5:45 PM	13.5	12.5	79.4	81.7			33.0	24.2			84.7	81.0			33.0	24.2
	10/17/2018	Peak Period	3:00 - 6:00 PM	13.5	11.8	58.6	49.0			43.2	32.3			65.2	53.9			43.2	32.3
	10/17/2018	Peak Hour	4:45 - 5:45 PM	13.5	11.5	61.3	50.0			43.2	33.9			65.3	53.5			43.2	33.9
	10/18/2018	Peak Period	3:00 - 6:00 PM	13.5	12.2	72.1	63.1			43.2	39.1			72.8	65.1			43.2	39.1
	10/18/2018	Peak Hour	4:45 - 5:45 PM	13.5	12.9	70.6	63.6			43.2	44.5			74.2	68.9			43.2	44.5
Vistro	10/2/2018	Peak Period	3:00 - 6:00 PM	10.5	35.7	64.8	53.7			30.8	34.5	13.4	11.8	68.1	57.6			30.8	34.5
	10/2/2018	Peak Hour	4:45 - 5:45 PM	10.5	10.5	68.9	50.4			35.9	48.6	13.4	12.1	68.8	50.8			35.9	48.6
	10/3/2018	Peak Period	3:00 - 6:00 PM	10.5	10.5	67.3	54.7			31.7	29.5	15.5	12.4	68.6	54.8			31.7	29.5
	10/3/2018	Peak Hour	4:45 - 5:45 PM	10.5	10.5	67.1	52.7			34.6	24.1	15.8	12.8	66.9	52.5			34.6	24.1
	10/4/2018	Peak Period	3:00 - 6:00 PM	10.5	16.2	65.0	54.9			34.8	35.2	14.2	12.1	66.3	55.3			34.8	35.2
	10/4/2018	Peak Hour	4:45 - 5:45 PM	10.5	10.5	62.8	52.6			32.5	26.9	14.7	13.0	64.5	51.7			32.5	26.9

= The WisBOOM data for the optimized Vistro signal timings showed outputs for the southbound left turn phase (phase 5). Optimized timings produced from this study excluded the southbound left-turn phase, consistent with the existing timings. The optimized HCS and Synchro timings did not include the southbound left-turn phase.

= Phase 1 of the HCS timings had one ocurance (10/11/18) where a very high phase duration was reported (almost 300 seconds). This resulted in a unusually high 85th percentile split and average split.

WIS 67 & US 14
Southeast Region
Optimized and Baseline WisBOOM Data
Isolated Signalized Intersection

Requested WisBOOM Data				Split Monitor													
				Phase 1		Phase 2		Phase 3		Phase 4		Phase 5		Phase 6		Phase 7		Phase 8	
Timing Plan	Dates	Time Periods		85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split
Baseline	10/23/2018	Peak Period	3:00 - 6:00 PM			58.6	57.0	36.0	32.1			18.0	27.0	37.5	33.7			36.0	32.1
	10/23/2018	Peak Hour	4:00 - 5:00 PM			53.5	49.4	34.0	27.7			18.0	18.0	36.4	37.7			34.0	27.7
	10/24/2018	Peak Period	3:00 - 6:00 PM			58.0	58.6	35.9	36.3			18.0	28.6	37.5	33.9			35.9	36.3
	10/24/2018	Peak Hour	4:00 - 5:00 PM			56.9	53.9	36.0	38.0			18.0	18.0	41.0	42.0			36.0	38.0
	10/25/2018	Peak Period	3:00 - 6:00 PM			55.5	55.6	36.0	33.1			18.0	19.1	37.5	38.5			36.0	33.1
	10/25/2018	Peak Hour	4:00 - 5:00 PM			56.9	59.4	35.9	27.7			18.0	18.0	38.6	41.1			35.9	27.7
HCS	10/9/2018	Peak Period	3:00 - 6:00 PM			80.5	78.2	34.0	35.5			43.0	54.7	37.5	29.2			34.0	35.5
	10/9/2018	Peak Hour	4:00 - 5:00 PM			80.5	78.8	34.0	29.6			43.0	54.3	28.1	24.4			34.0	29.6
	10/10/2018	Peak Period	3:00 - 6:00 PM			80.5	89.9	34.0	30.9			43.0	51.7	37.5	44.9			34.0	30.9
	10/10/2018	Peak Hour	4:00 - 5:00 PM			89.5	97.4	34.0	25.0			43.0	49.1	37.5	48.5			34.0	25.0
	10/11/2018	Peak Period	3:00 - 6:00 PM			80.5	75.1	34.0	40.4			43.0	44.8	37.5	30.3			34.0	40.4
	10/11/2018	Peak Hour	4:00 - 5:00 PM			79.6	73.6	34.0	39.1			43.0	48.5	33.9	24.8			34.0	39.1
Synchro	10/16/2018	Peak Period	3:00 - 6:00 PM			76.1	79.3	38.0	29.8			32.0	40.6	39.2	45.5			38.0	29.8
	10/16/2018	Peak Hour	4:00 - 5:00 PM			72.6	73.6	38.0	27.7			32.0	37.2	43.4	54.9			38.0	27.7
	10/17/2018	Peak Period	3:00 - 6:00 PM			69.5	76.8	38.0	29.2			32.0	38.2	37.5	42.2			38.0	29.2
	10/17/2018	Peak Hour	4:00 - 5:00 PM			69.5	65.6	34.7	25.9			32.0	36.7	37.5	35.1			34.7	25.9
	10/18/2018	Peak Period	3:00 - 6:00 PM			69.5	68.4	37.9	34.1			32.0	41.6	37.5	34.0			37.9	34.1
	10/18/2018	Peak Hour	4:00 - 5:00 PM			67.7	59.6	32.7	30.1			32.0	32.0	35.6	27.7			32.7	30.1
Vistro	10/2/2018	Peak Period	3:00 - 6:00 PM			70.0	69.4	36.0	29.1			26.0	31.5	44.3	48.9			36.0	29.1
	10/2/2018	Peak Hour	4:00 - 5:00 PM			69.5	64.8	36.0	25.5			26.0	26.0	49.9	55.1			36.0	25.5
	10/3/2018	Peak Period	3:00 - 6:00 PM			66.6	66.3	36.0	39.2			26.0	30.7	40.2	39.0			36.0	39.2
	10/3/2018	Peak Hour	4:00 - 5:00 PM			64.3	69.3	35.4	40.9			26.0	39.6	37.6	30.2			35.4	40.9
	10/4/2018	Peak Period	3:00 - 6:00 PM			64.4	59.4	36.0	31.4			26.0	27.5	37.8	31.9			36.0	31.4
	10/4/2018	Peak Hour	4:00 - 5:00 PM			63.3	63.3	36.0	37.3			26.0	30.8	36.2	32.0			36.0	37.3

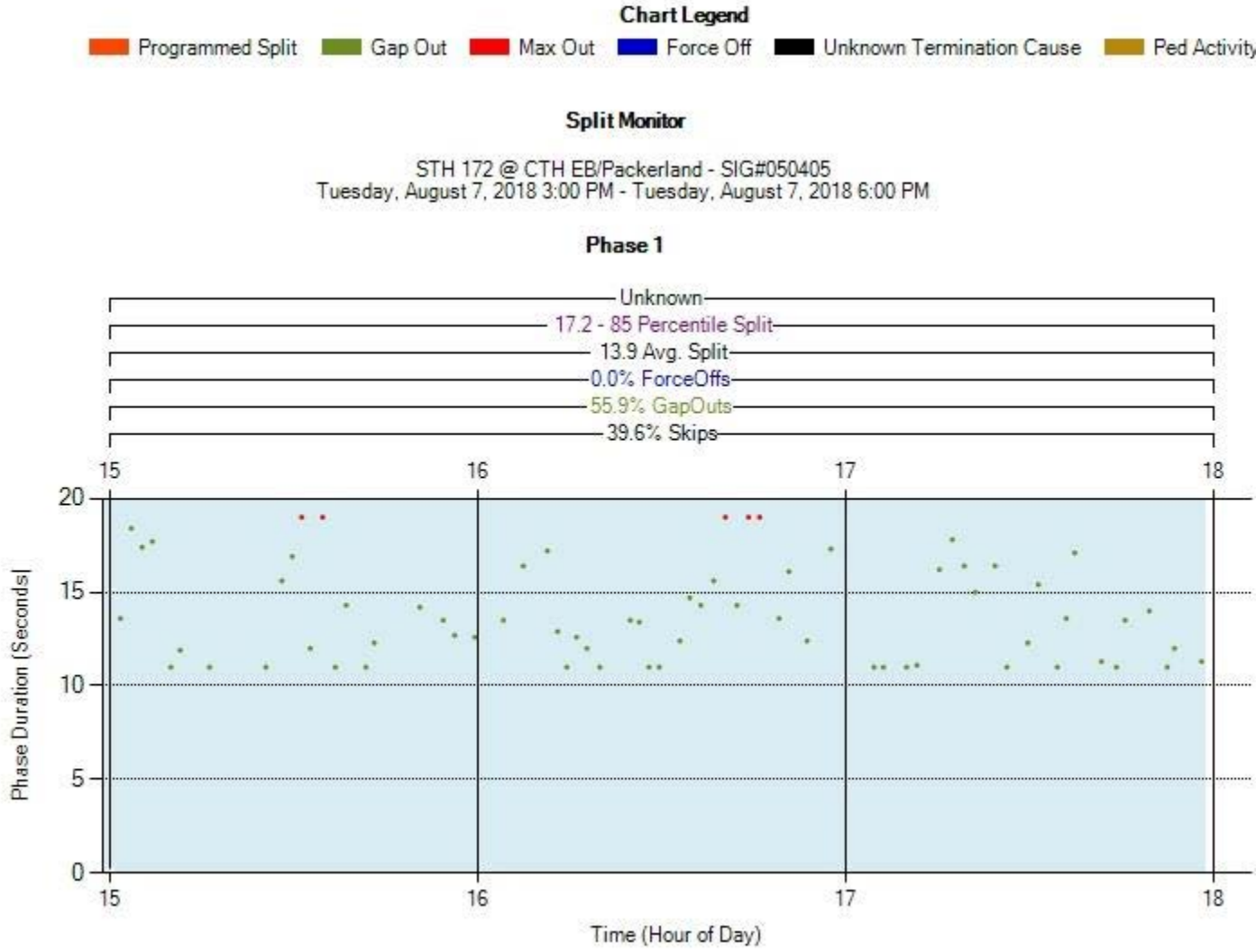
= All-ped phase, not included in optimization.

APPENDIX I

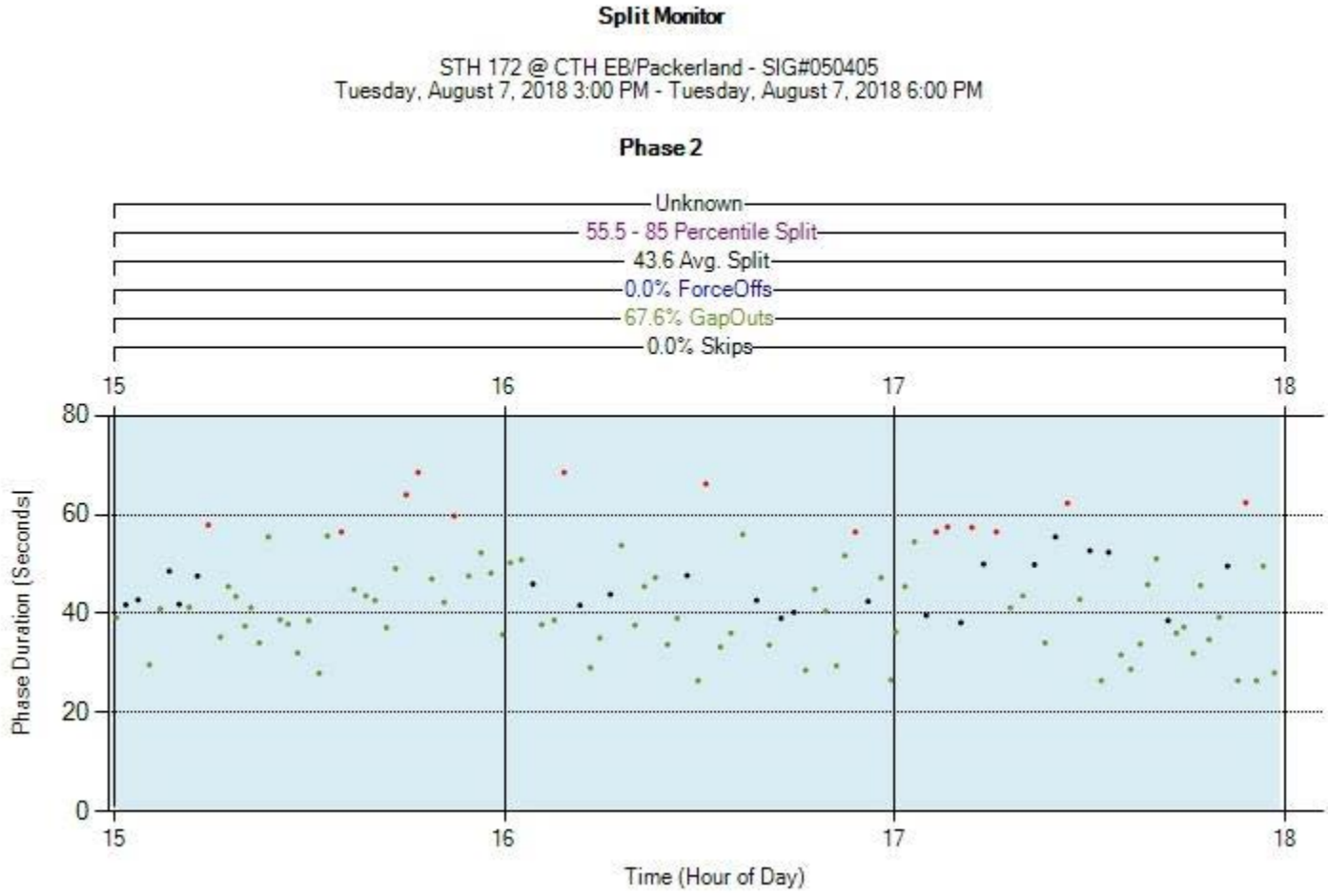
WisBOOM Output Reports

WisBOOM Outputs
WIS 172 & County EB
Existing Timings

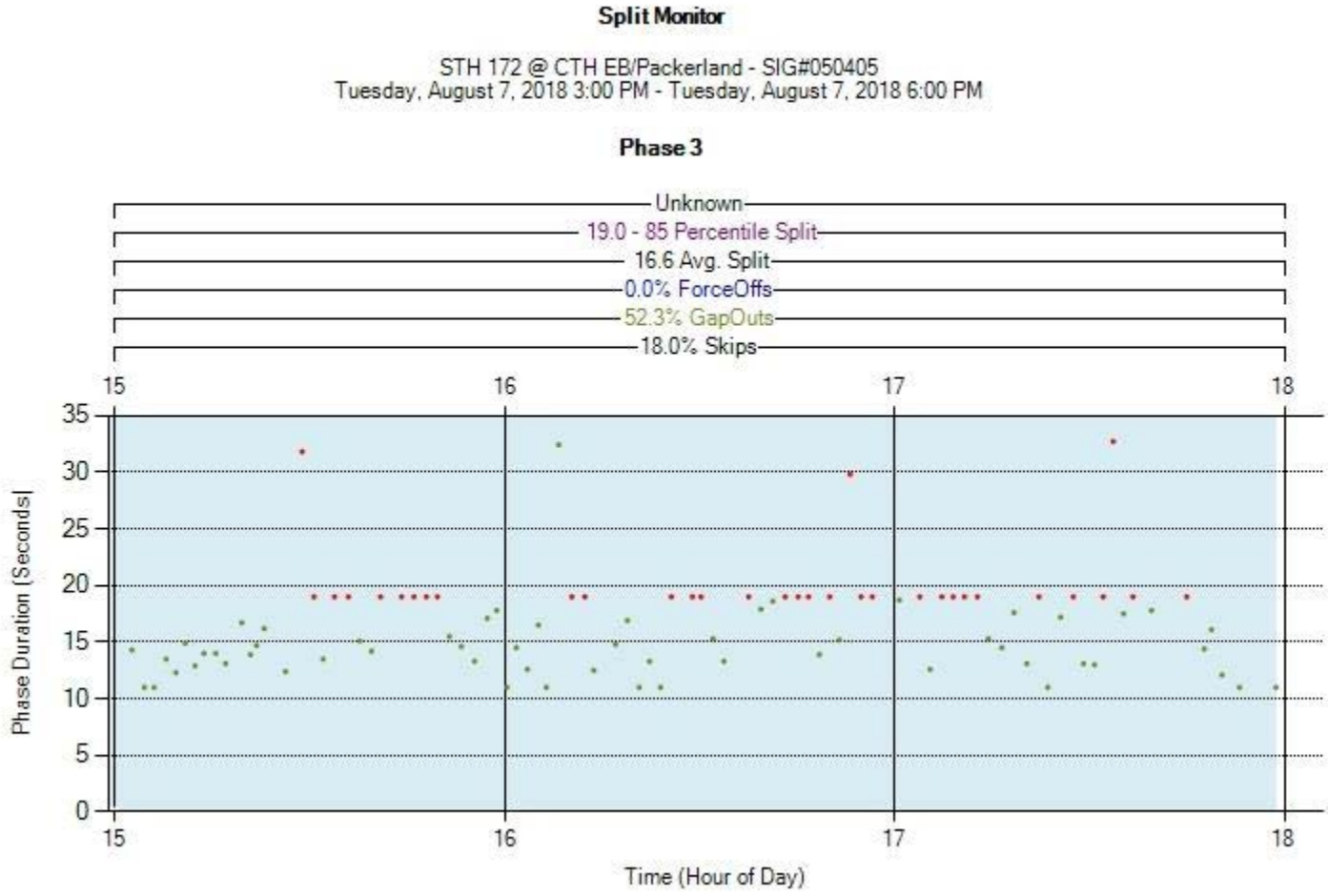
Isolated Signal – WIS 172 & County EB/Packerland Drive
Baseline Timings
8/7/2018 – 3:00 PM – 6:00 PM



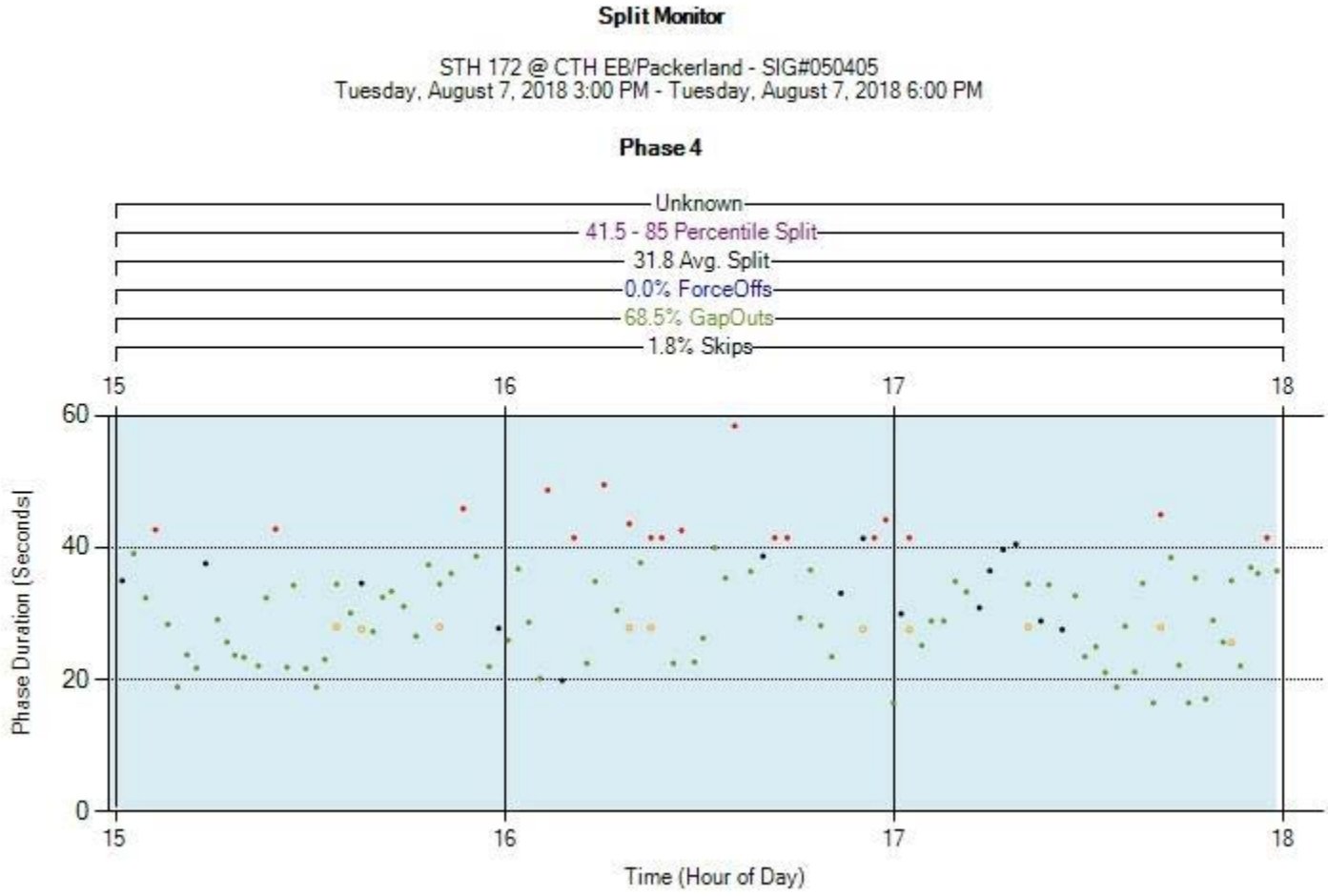
Isolated Signal – WIS 172 & County EB/Packerland Drive
Baseline Timings
8/7/2018 – 3:00 PM – 6:00 PM



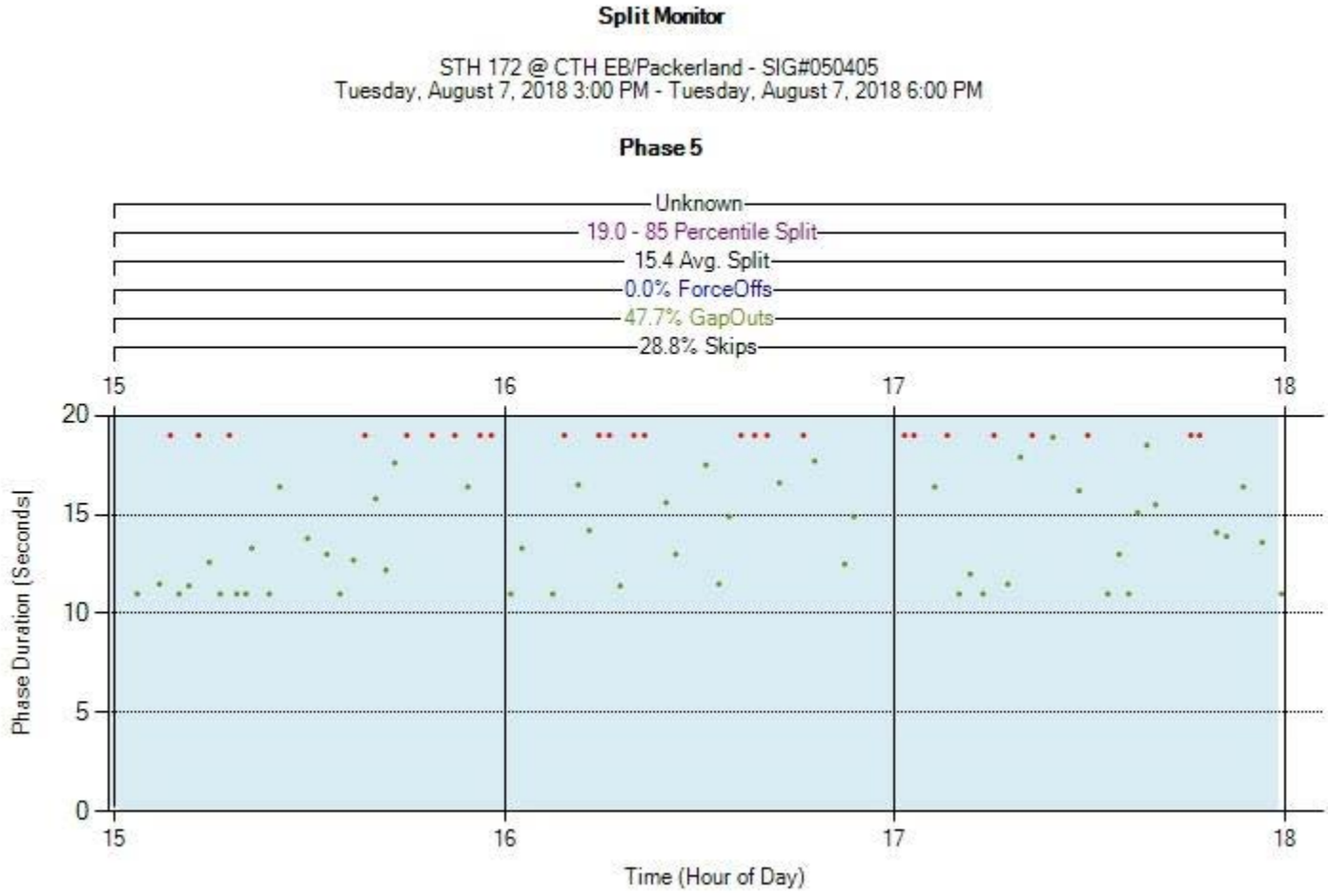
Isolated Signal – WIS 172 & County EB/Packerland Drive
Baseline Timings
8/7/2018 – 3:00 PM – 6:00 PM



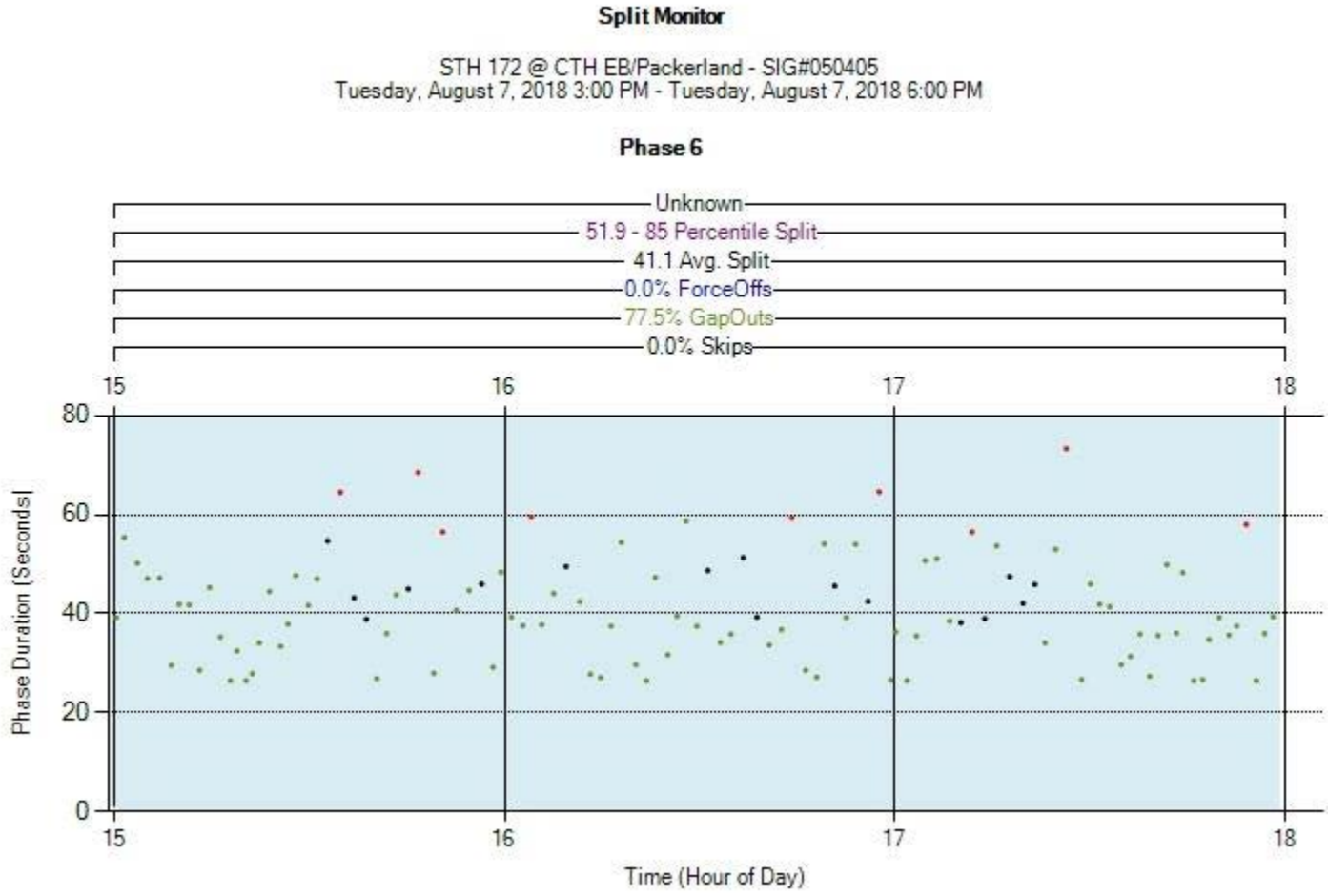
Isolated Signal – WIS 172 & County EB/Packerland Drive
Baseline Timings
8/7/2018 – 3:00 PM – 6:00 PM



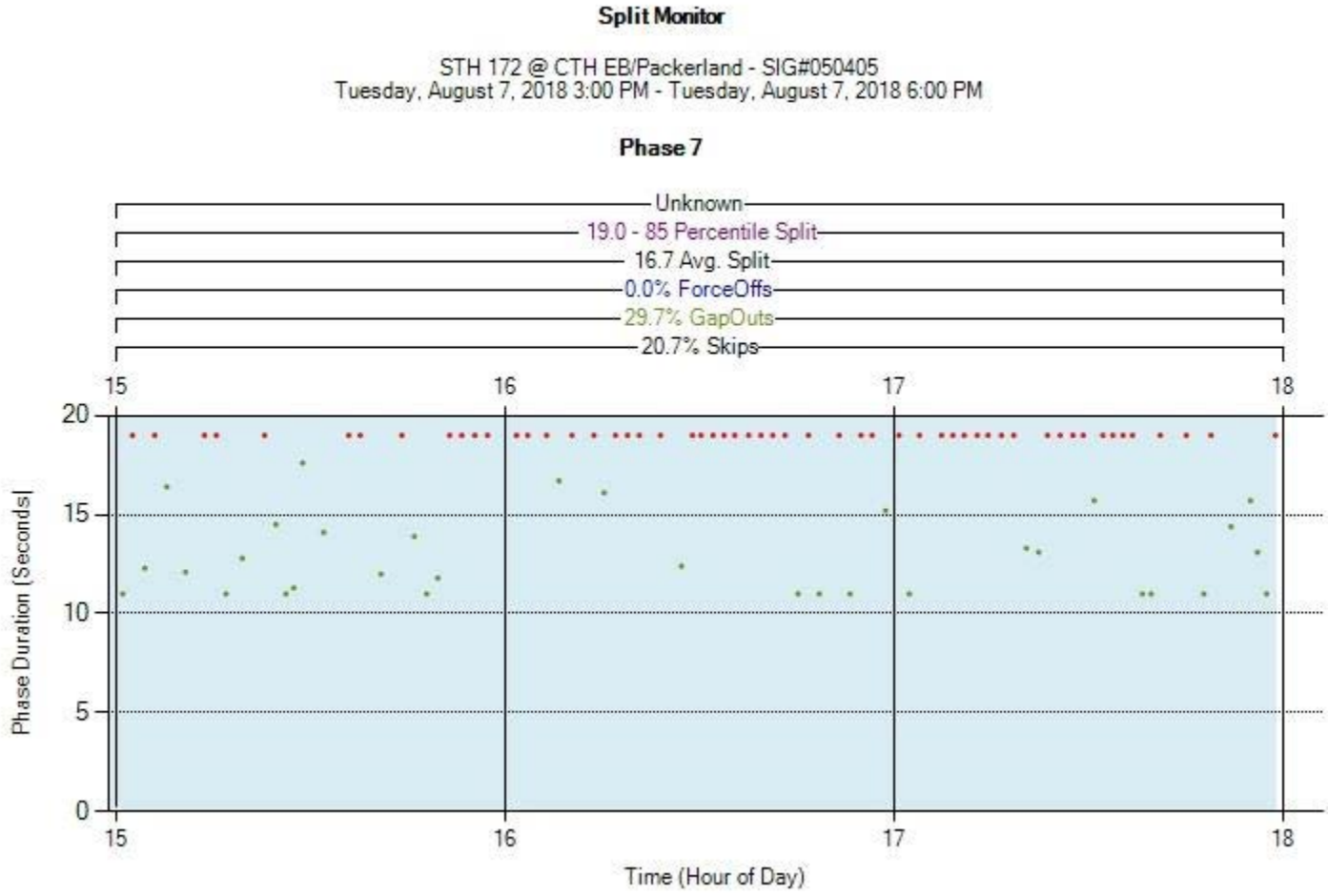
Isolated Signal – WIS 172 & County EB/Packerland Drive
Baseline Timings
8/7/2018 – 3:00 PM – 6:00 PM



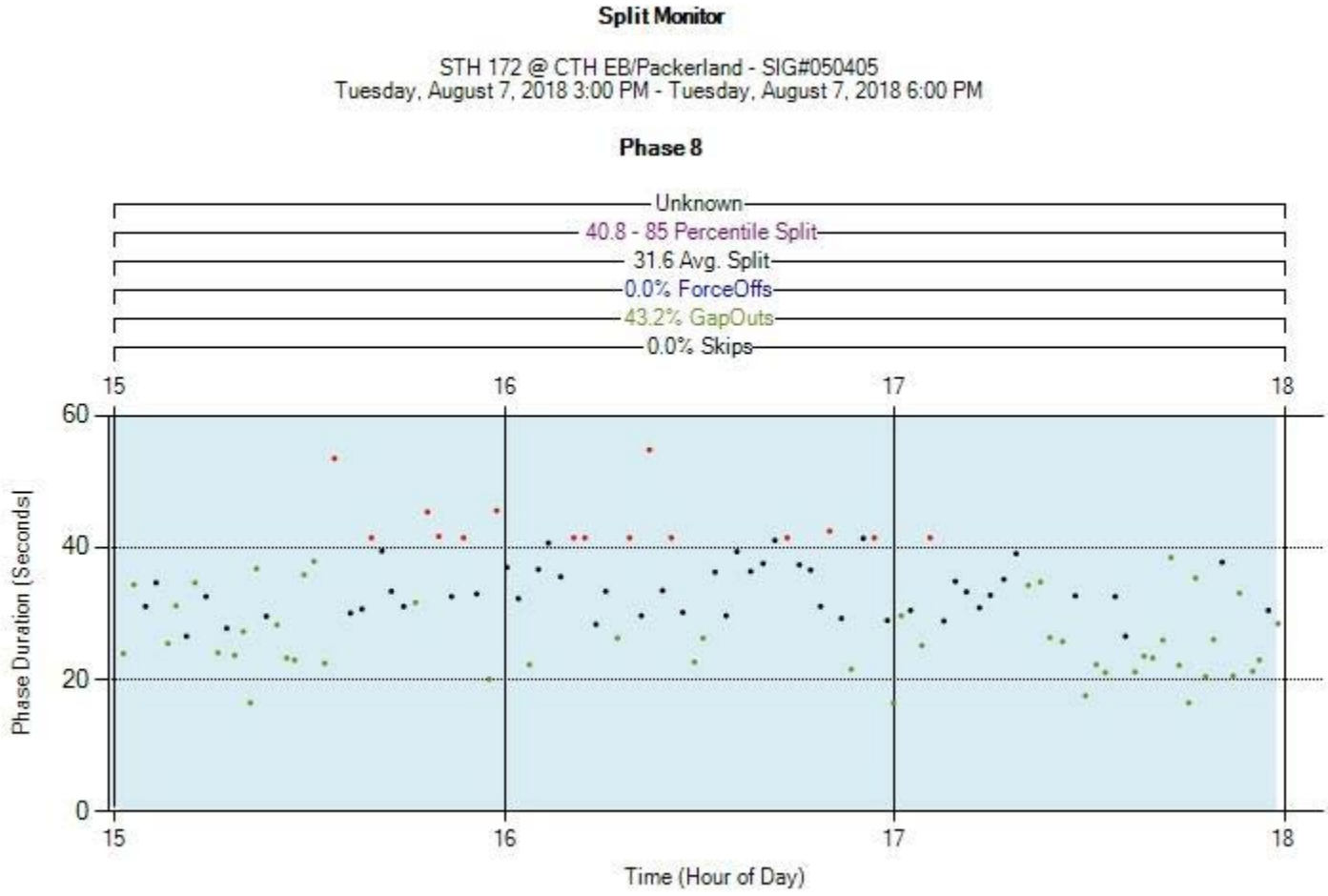
Isolated Signal – WIS 172 & County EB/Packerland Drive
Baseline Timings
8/7/2018 – 3:00 PM – 6:00 PM



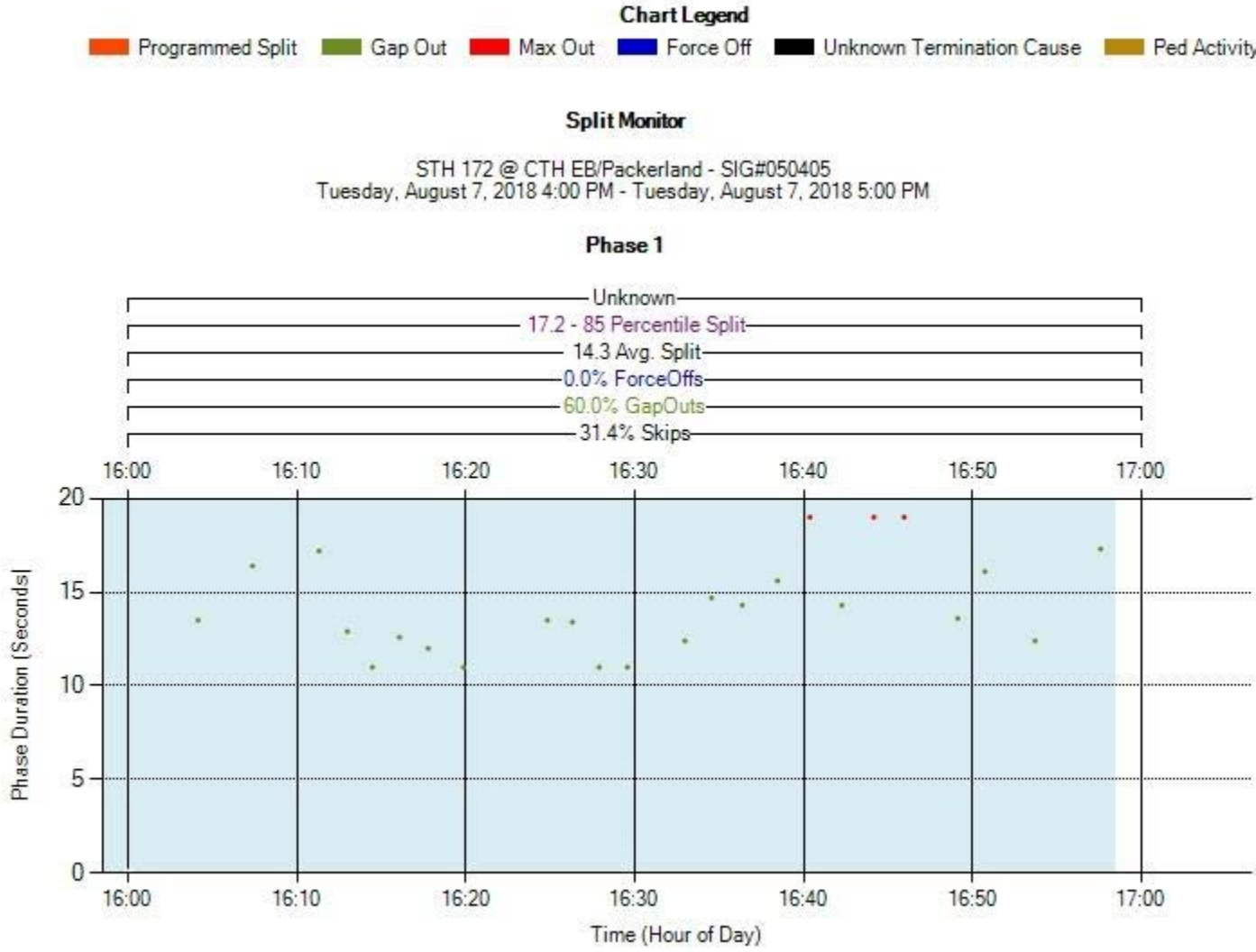
Isolated Signal – WIS 172 & County EB/Packerland Drive
Baseline Timings
8/7/2018 – 3:00 PM – 6:00 PM



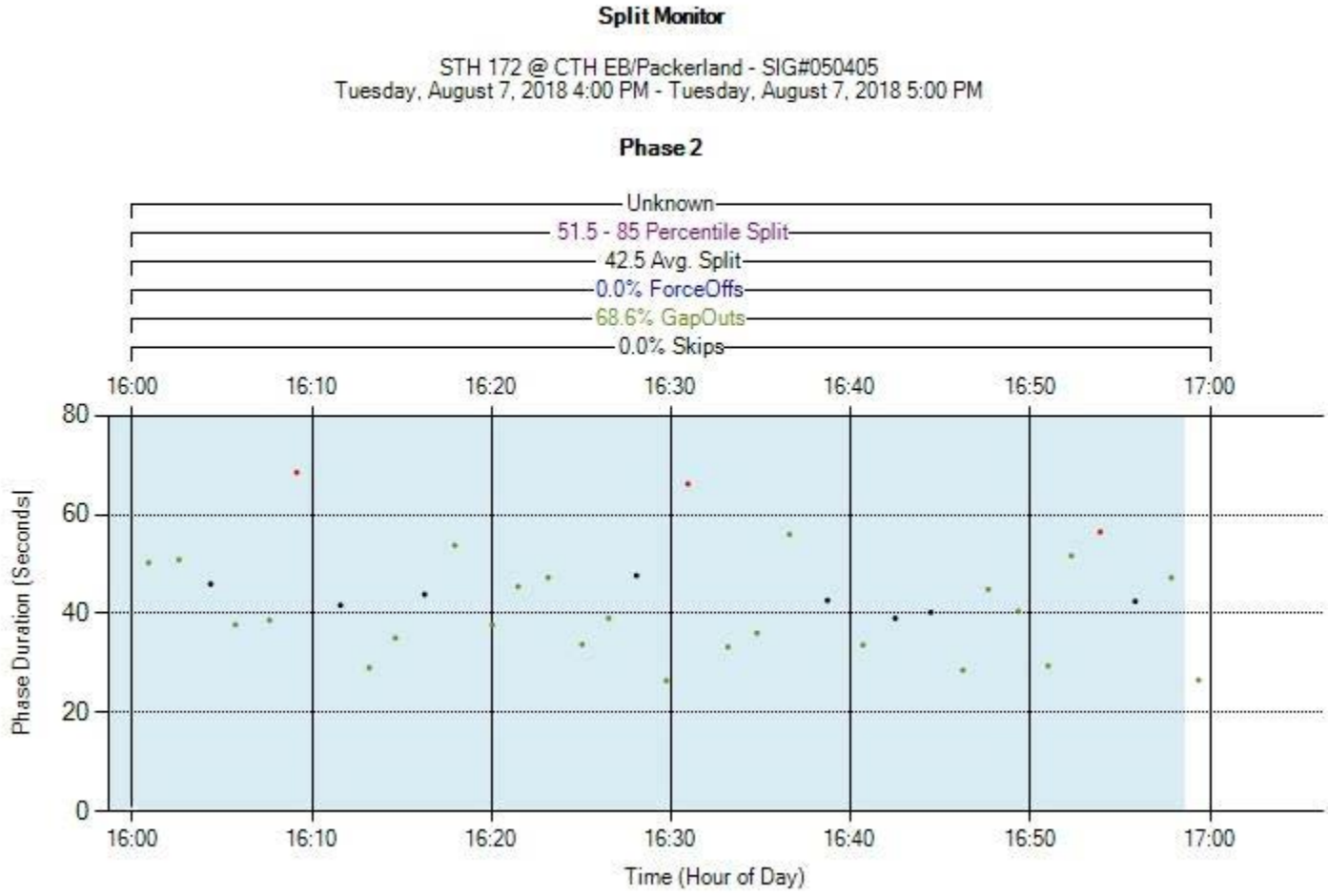
Isolated Signal – WIS 172 & County EB/Packerland Drive
Baseline Timings
8/7/2018 – 3:00 PM – 6:00 PM



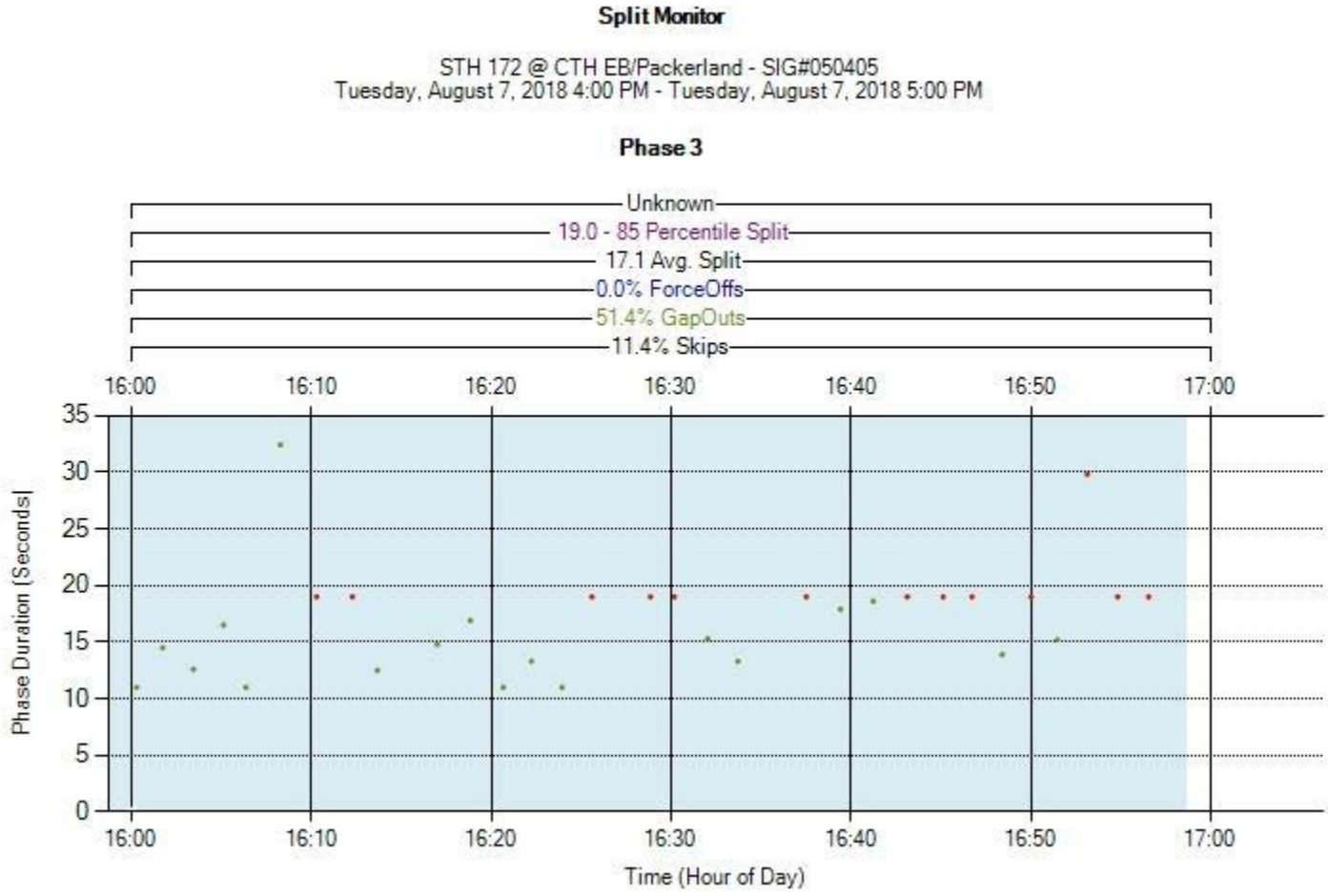
Isolated Signal – WIS 172 & County EB/Packerland Drive
Baseline Timings
8/7/2018 – 4:00 PM – 5:00 PM



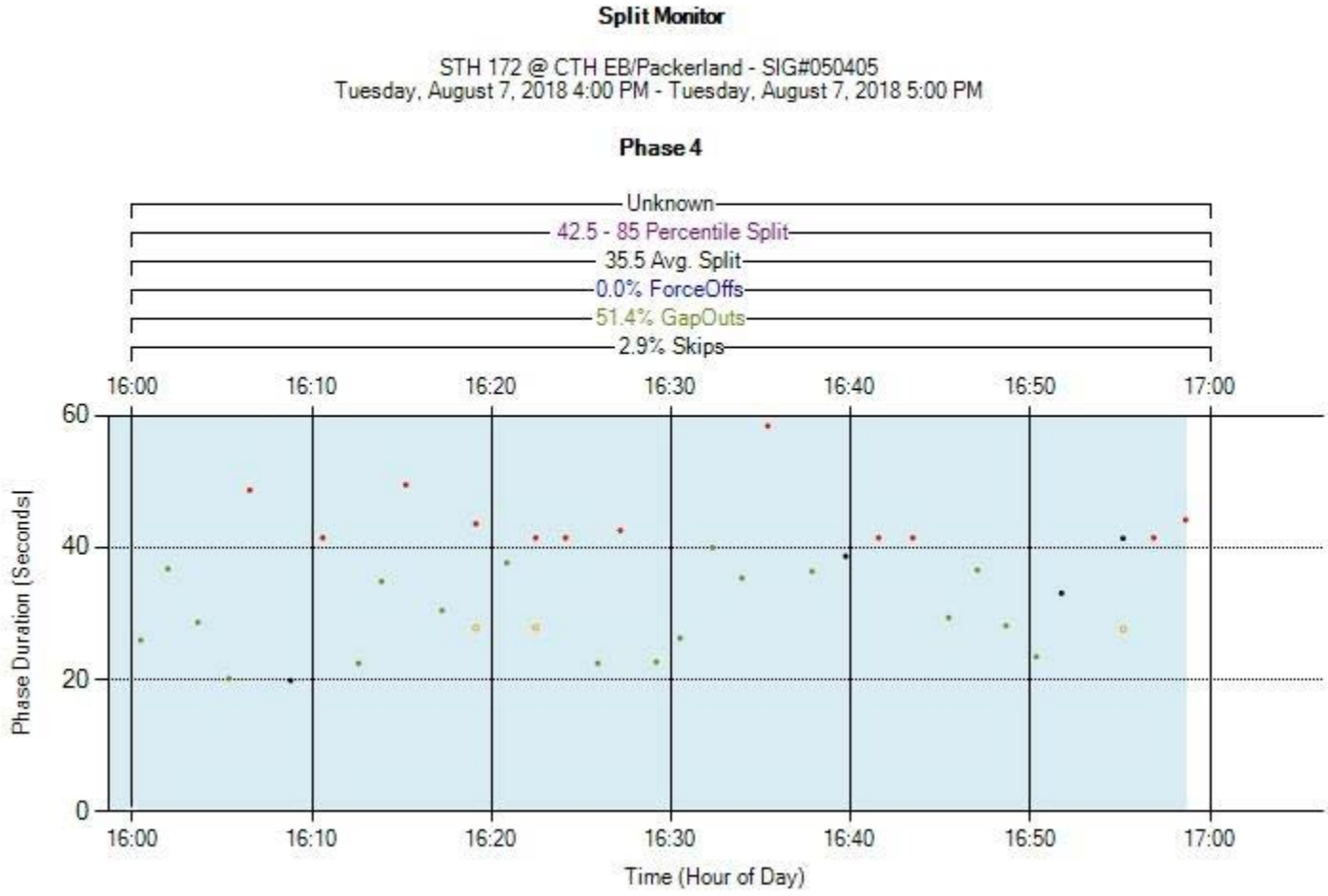
Isolated Signal – WIS 172 & County EB/Packerland Drive
Baseline Timings
8/7/2018 – 4:00 PM – 5:00 PM



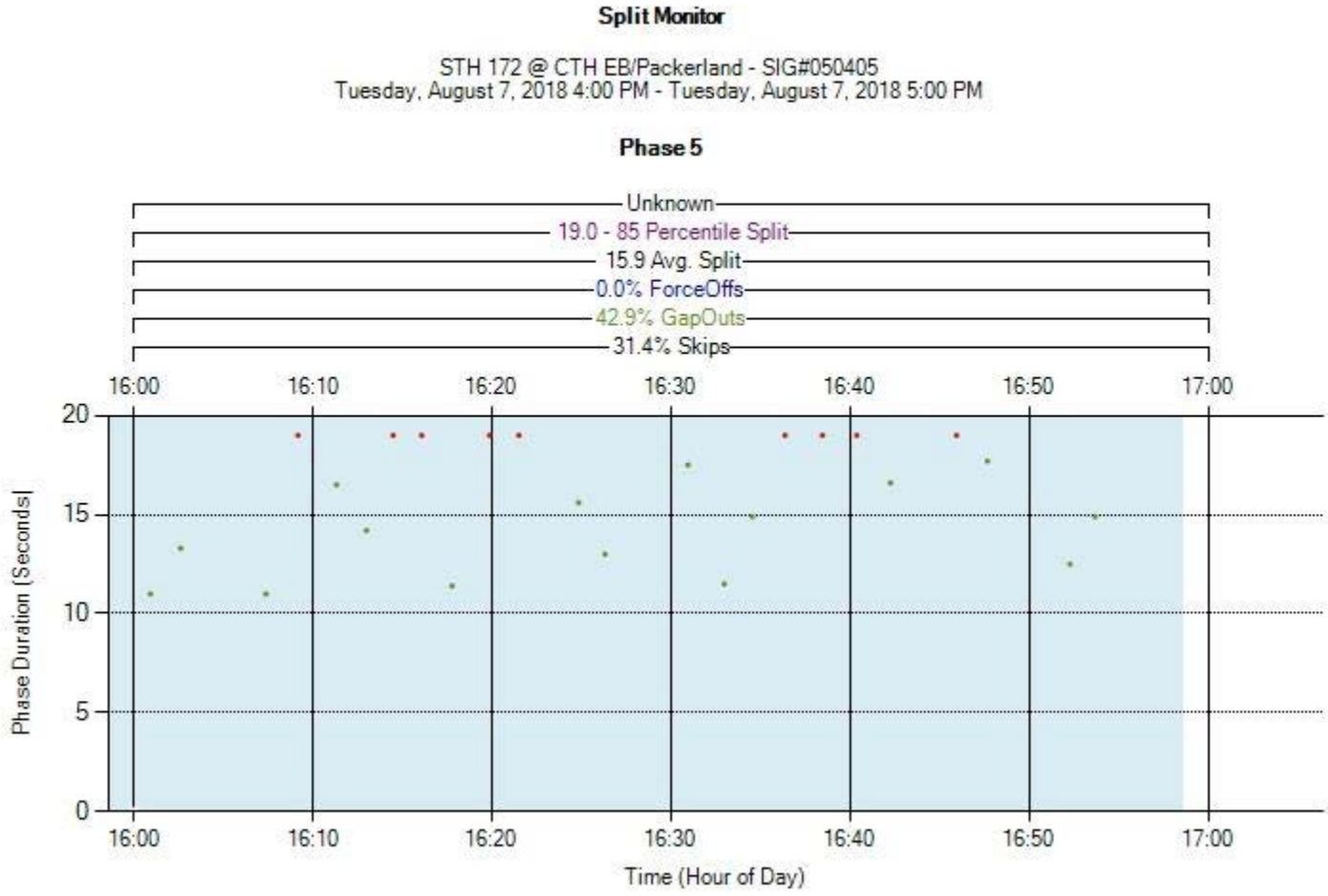
Isolated Signal – WIS 172 & County EB/Packerland Drive
Baseline Timings
8/7/2018 – 4:00 PM – 5:00 PM



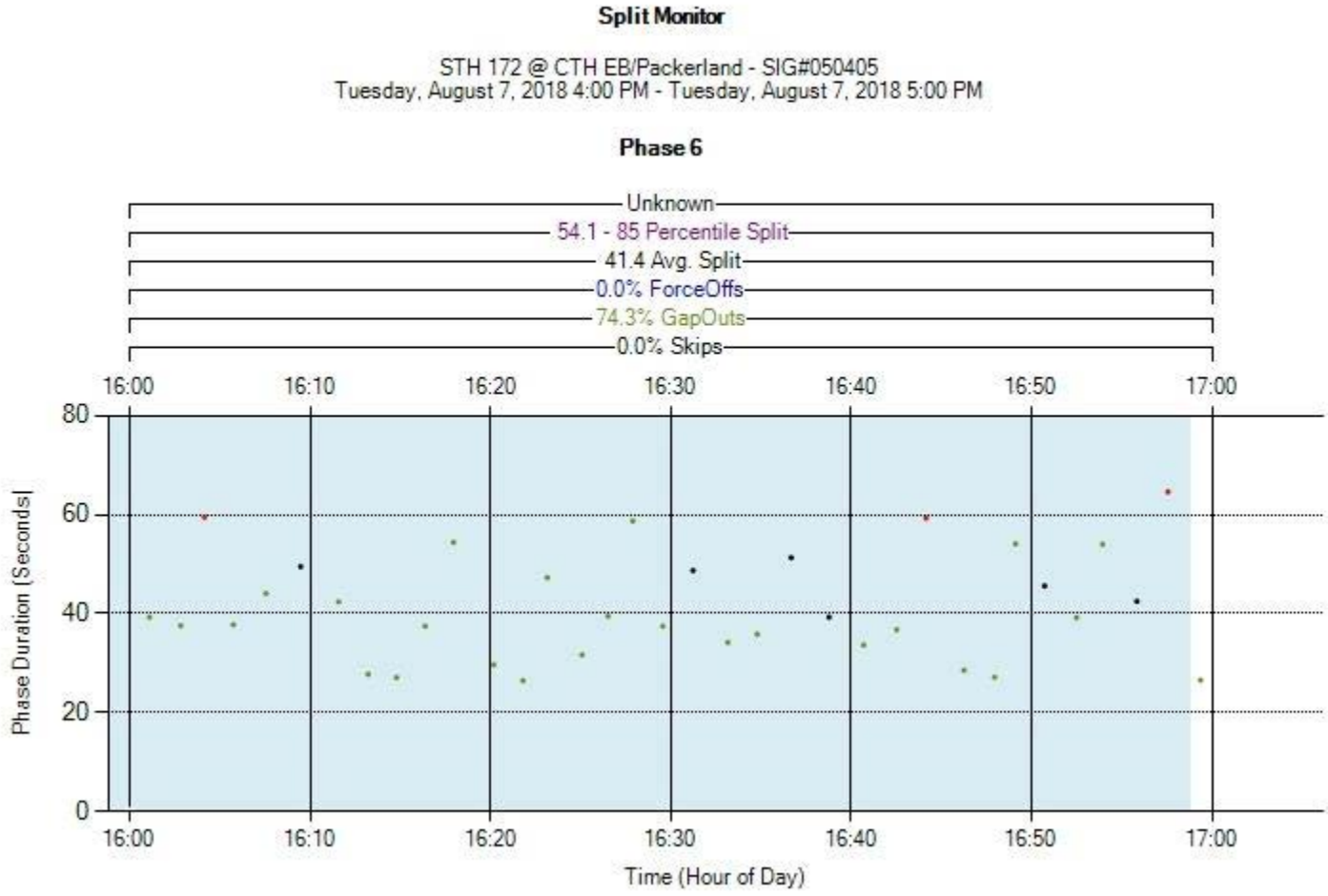
Isolated Signal – WIS 172 & County EB/Packerland Drive
Baseline Timings
8/7/2018 – 4:00 PM – 5:00 PM



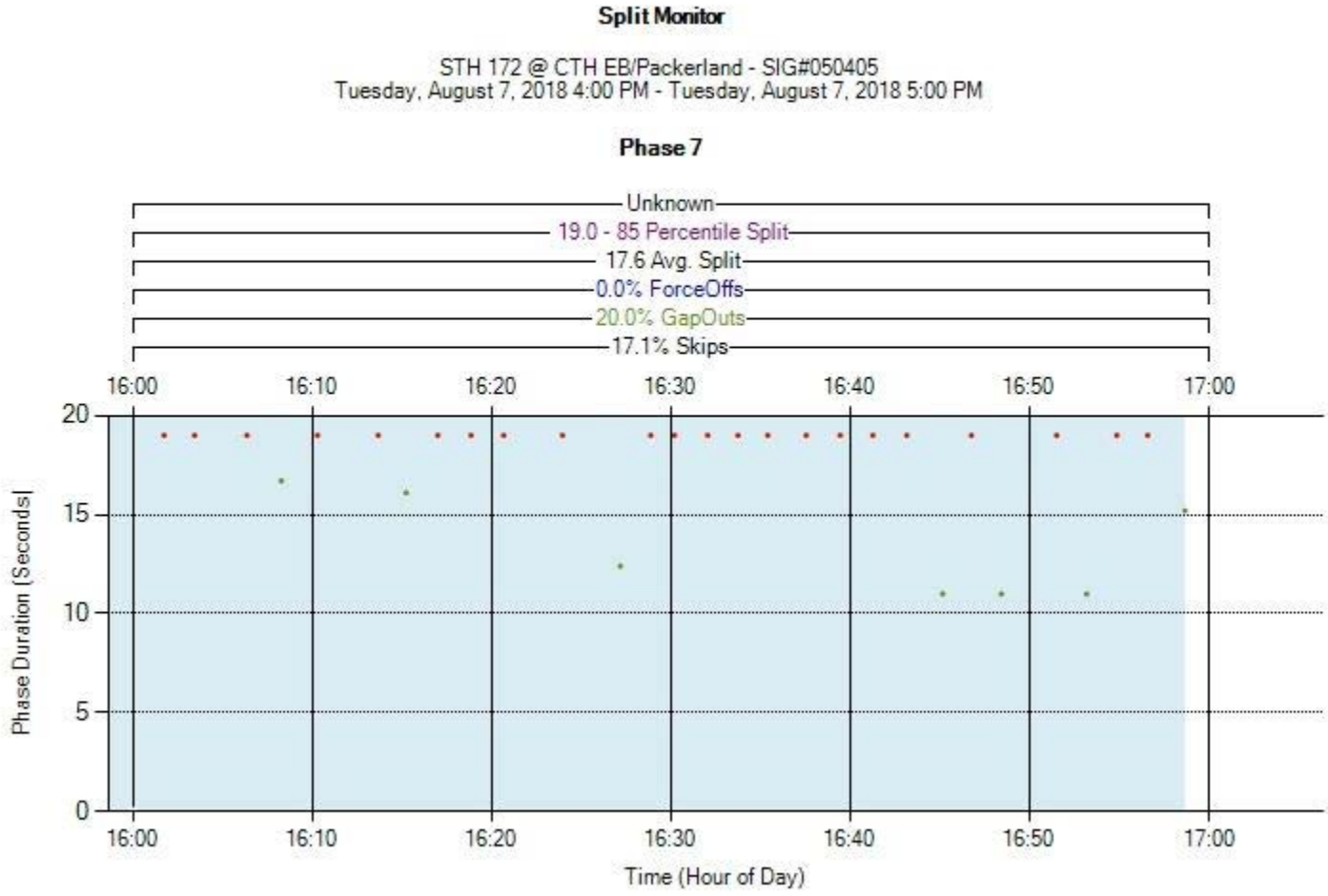
Isolated Signal – WIS 172 & County EB/Packerland Drive
Baseline Timings
8/7/2018 – 4:00 PM – 5:00 PM



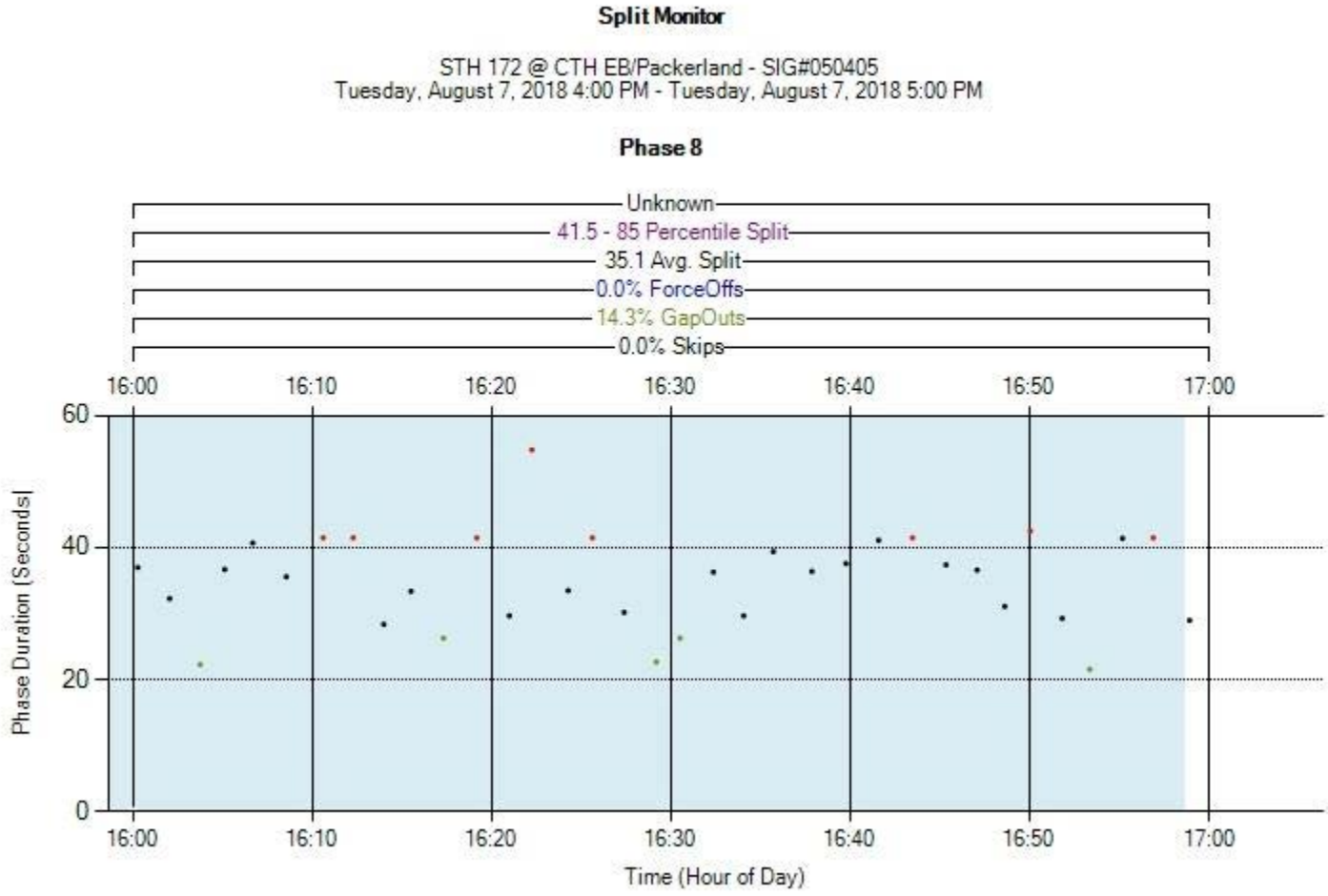
Isolated Signal – WIS 172 & County EB/Packerland Drive
Baseline Timings
8/7/2018 – 4:00 PM – 5:00 PM



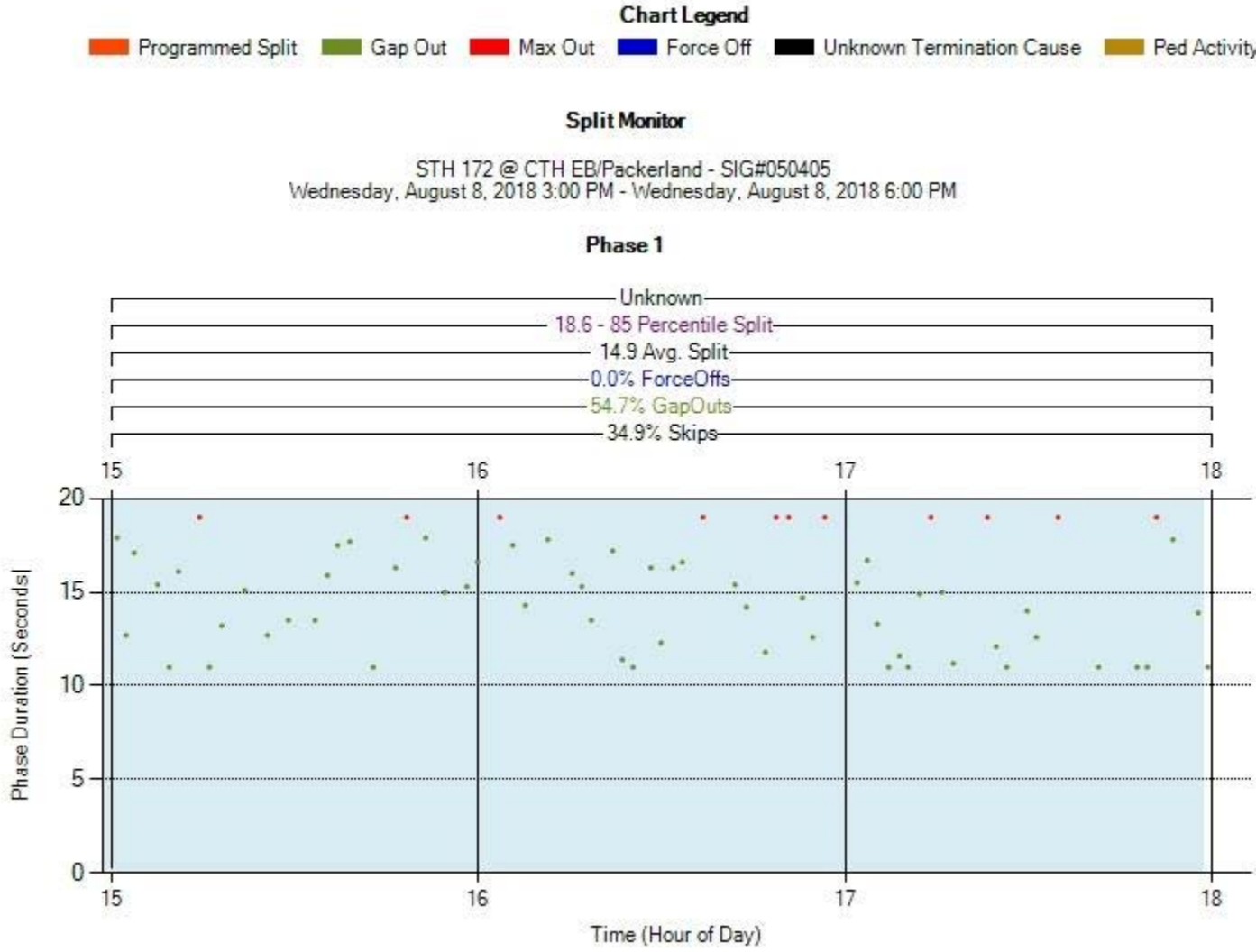
Isolated Signal – WIS 172 & County EB/Packerland Drive
Baseline Timings
8/7/2018 – 4:00 PM – 5:00 PM



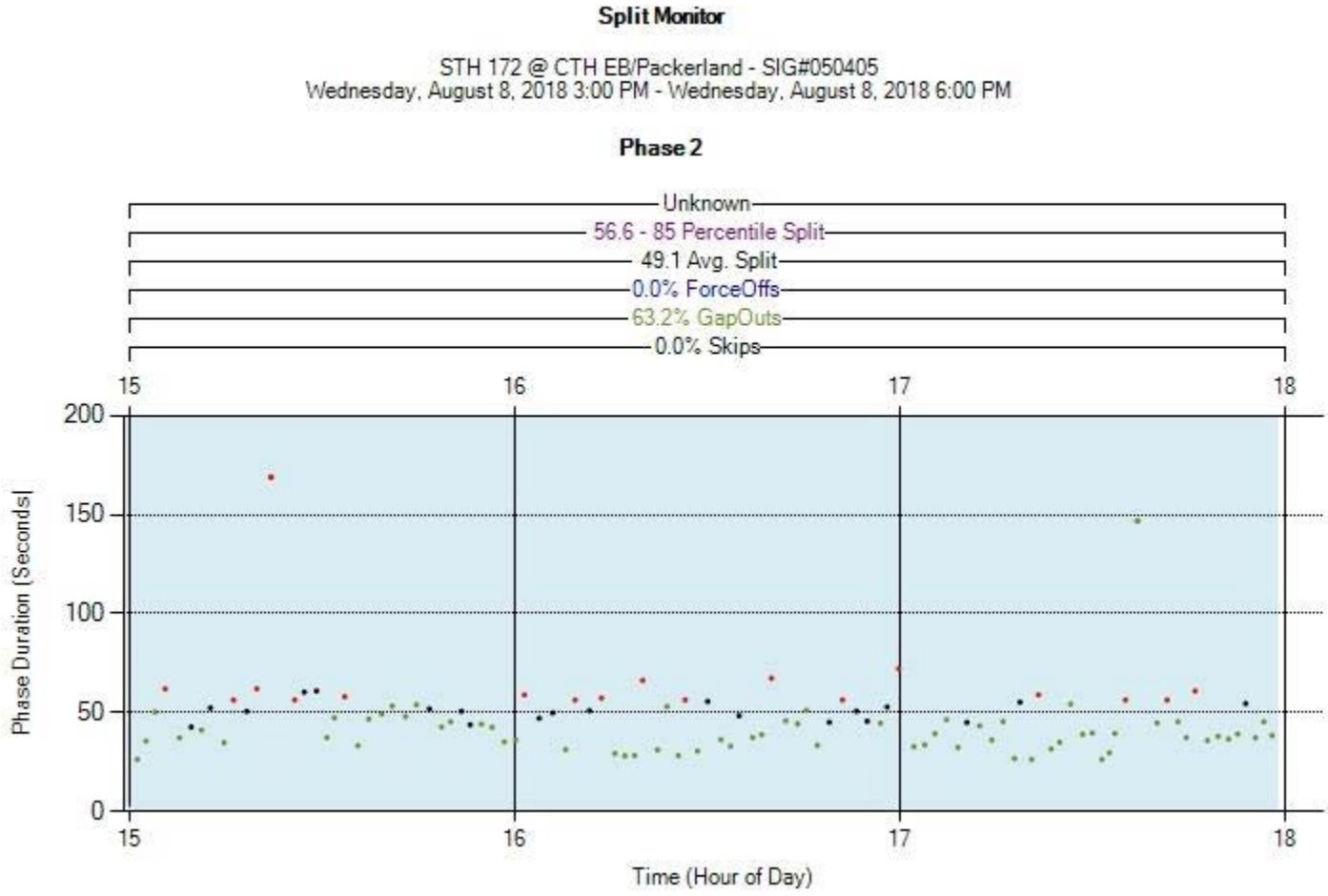
Isolated Signal – WIS 172 & County EB/Packerland Drive
Baseline Timings
8/7/2018 – 4:00 PM – 5:00 PM



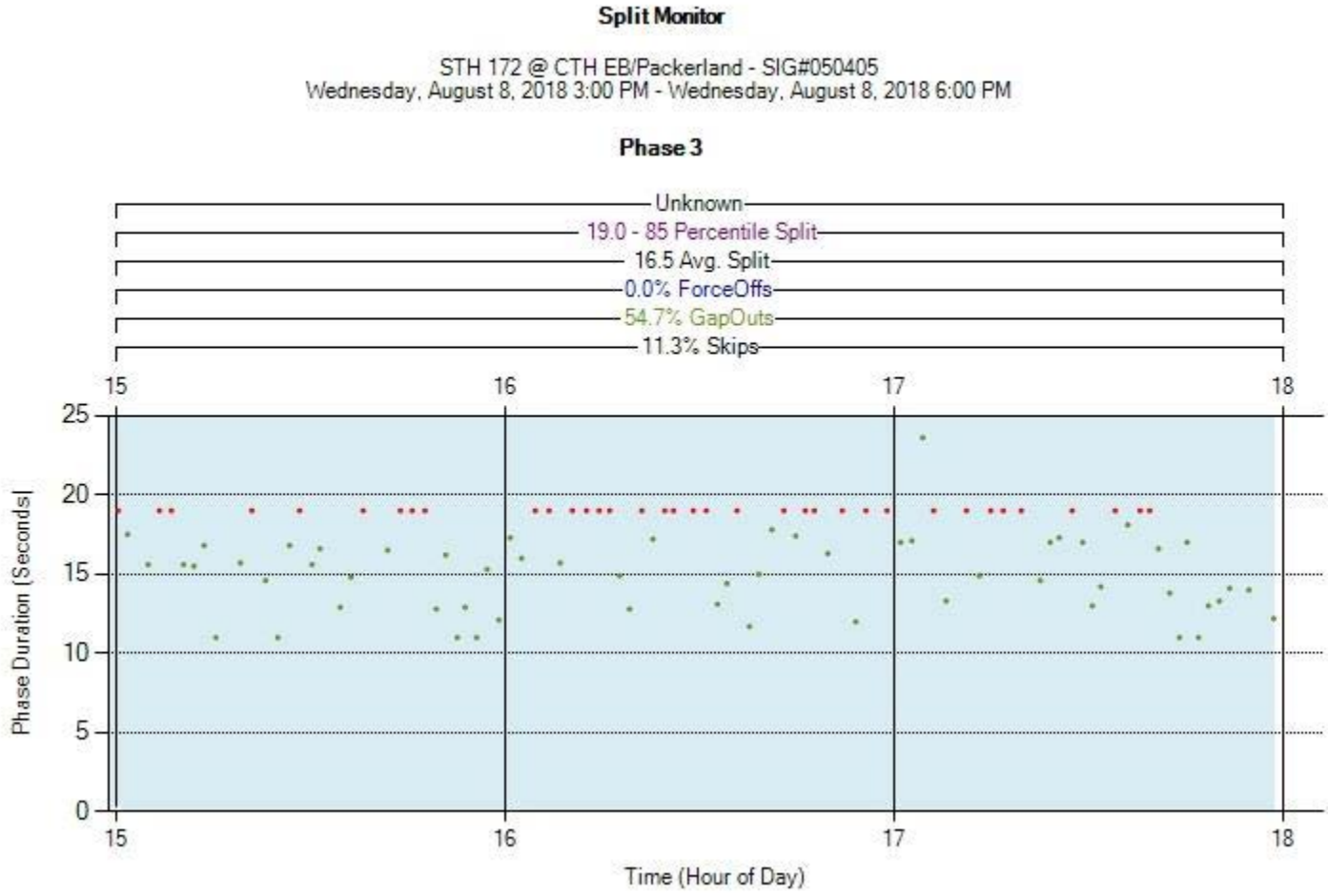
Isolated Signal – WIS 172 & County EB/Packerland Drive
Baseline Timings
8/8/2018 – 3:00 PM – 6:00 PM



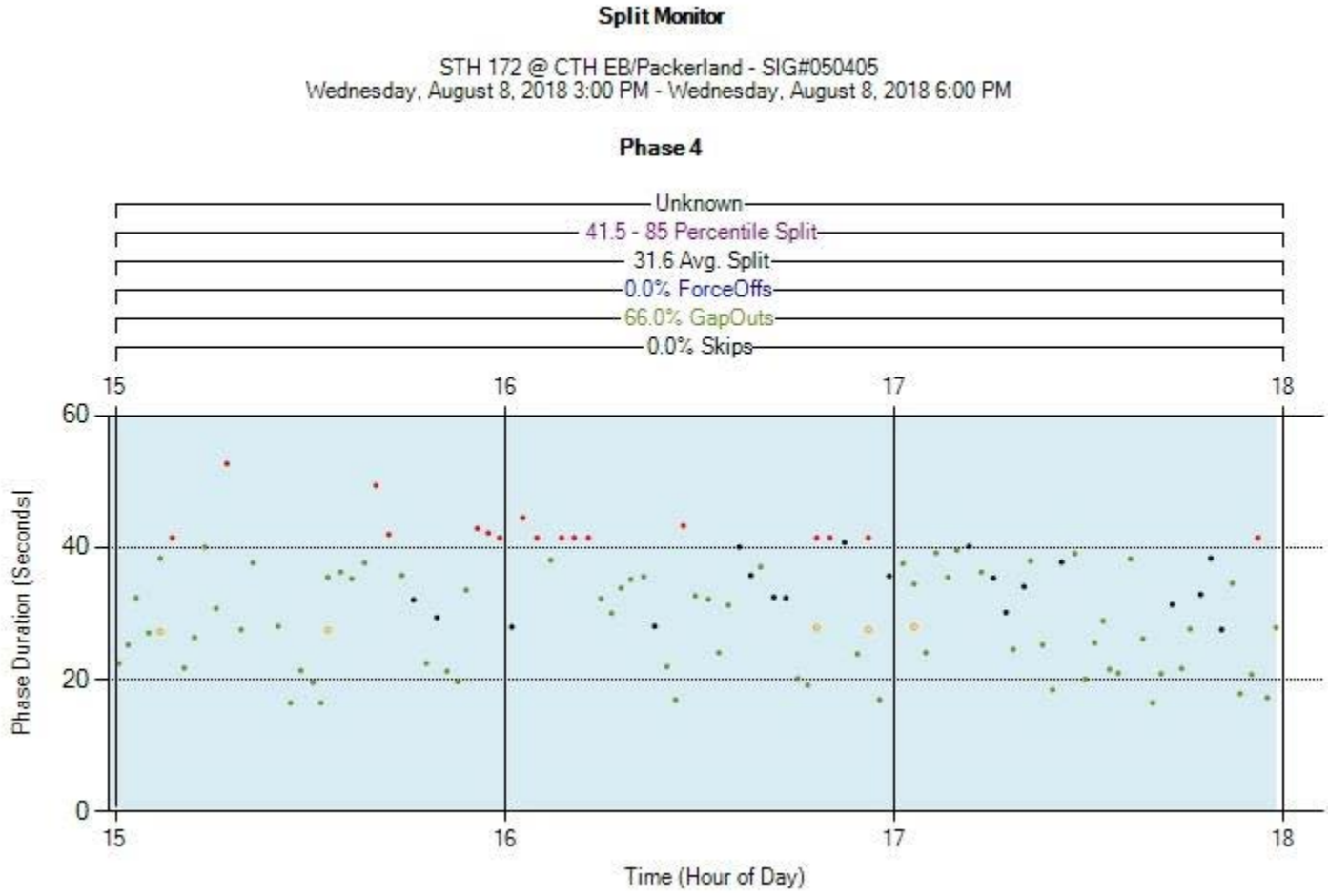
Isolated Signal – WIS 172 & County EB/Packerland Drive
Baseline Timings
8/8/2018 – 3:00 PM – 6:00 PM



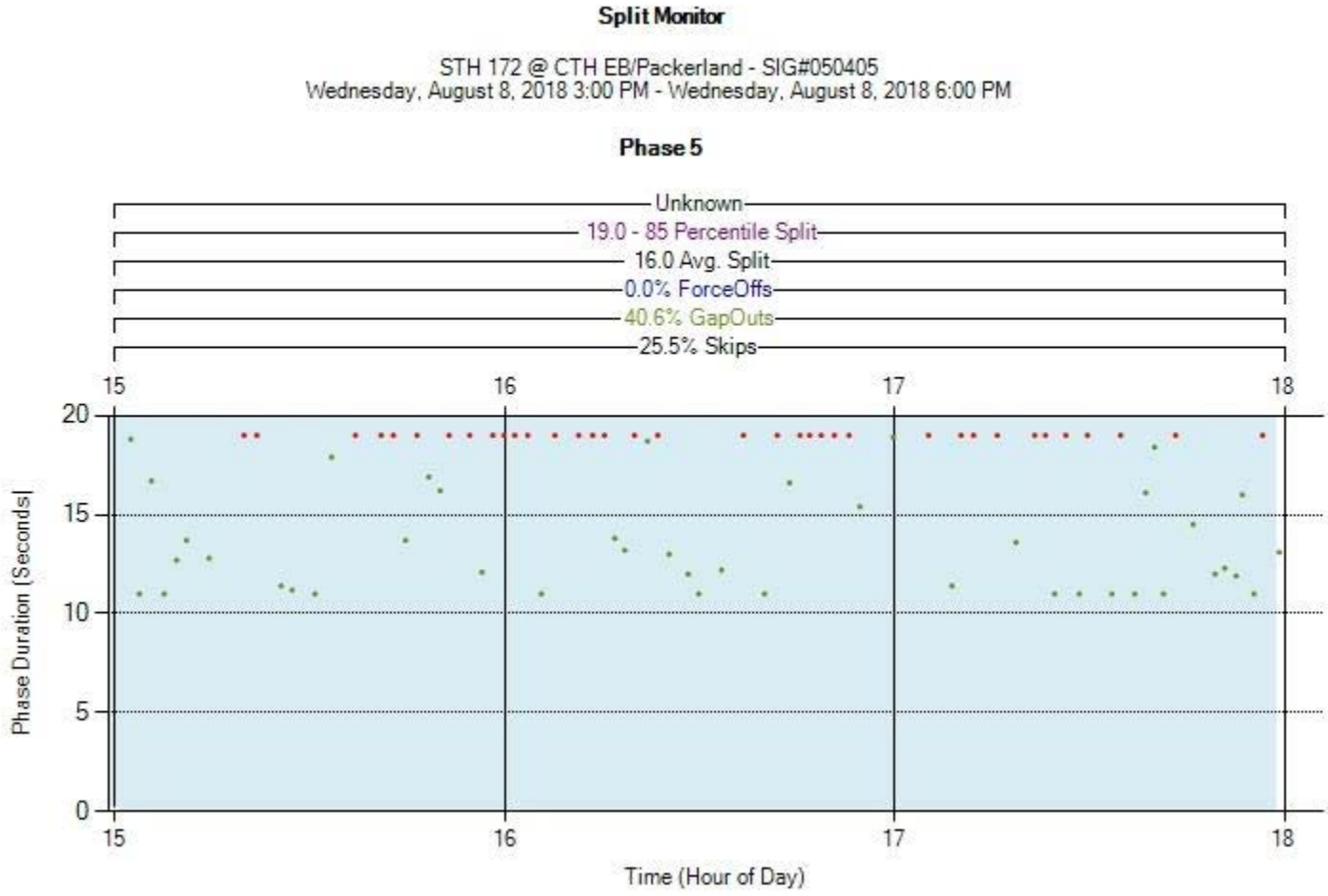
Isolated Signal – WIS 172 & County EB/Packerland Drive
Baseline Timings
8/8/2018 – 3:00 PM – 6:00 PM



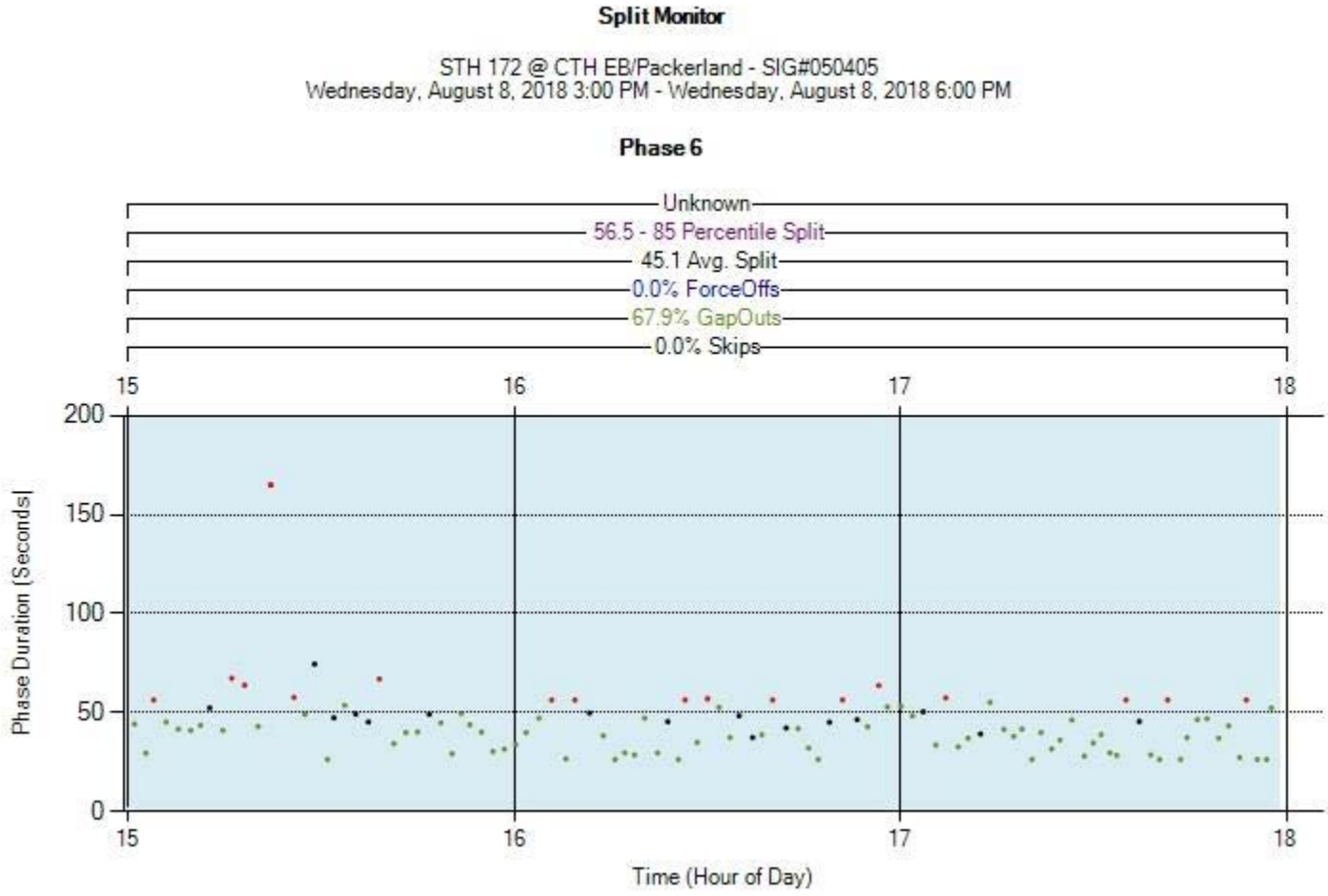
Isolated Signal – WIS 172 & County EB/Packerland Drive
Baseline Timings
8/8/2018 – 3:00 PM – 6:00 PM



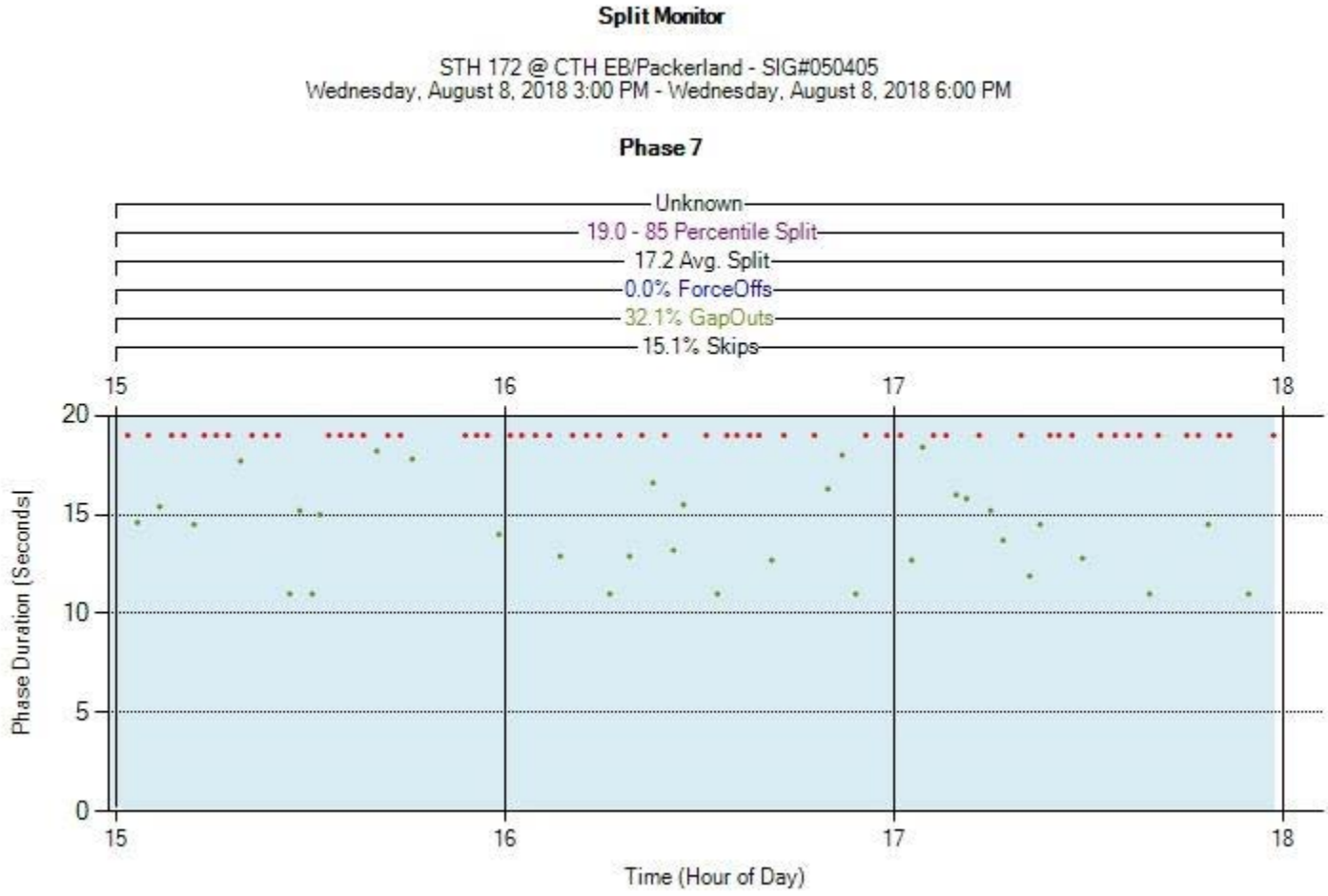
Isolated Signal – WIS 172 & County EB/Packerland Drive
Baseline Timings
8/8/2018 – 3:00 PM – 6:00 PM



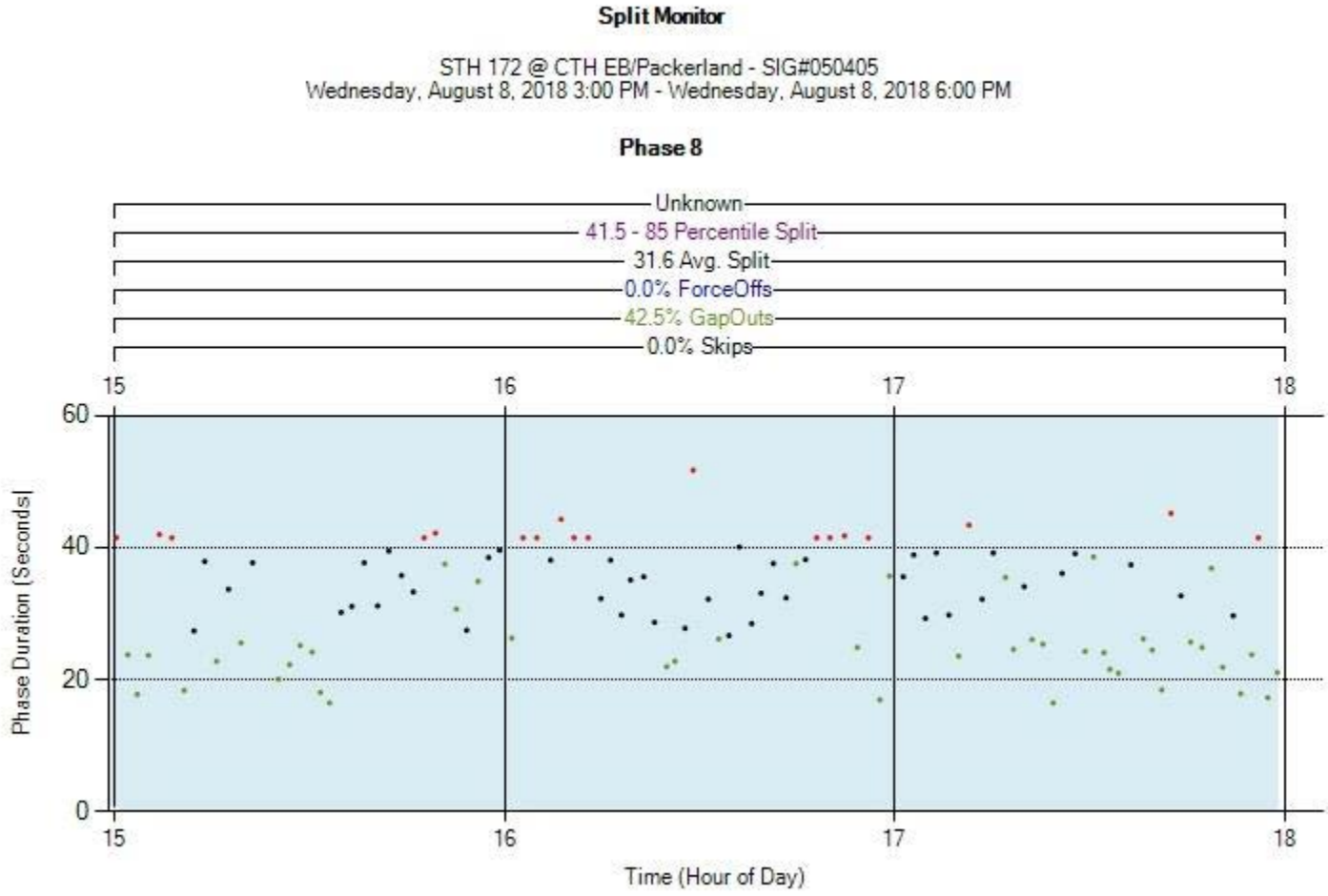
Isolated Signal – WIS 172 & County EB/Packerland Drive
Baseline Timings
8/8/2018 – 3:00 PM – 6:00 PM



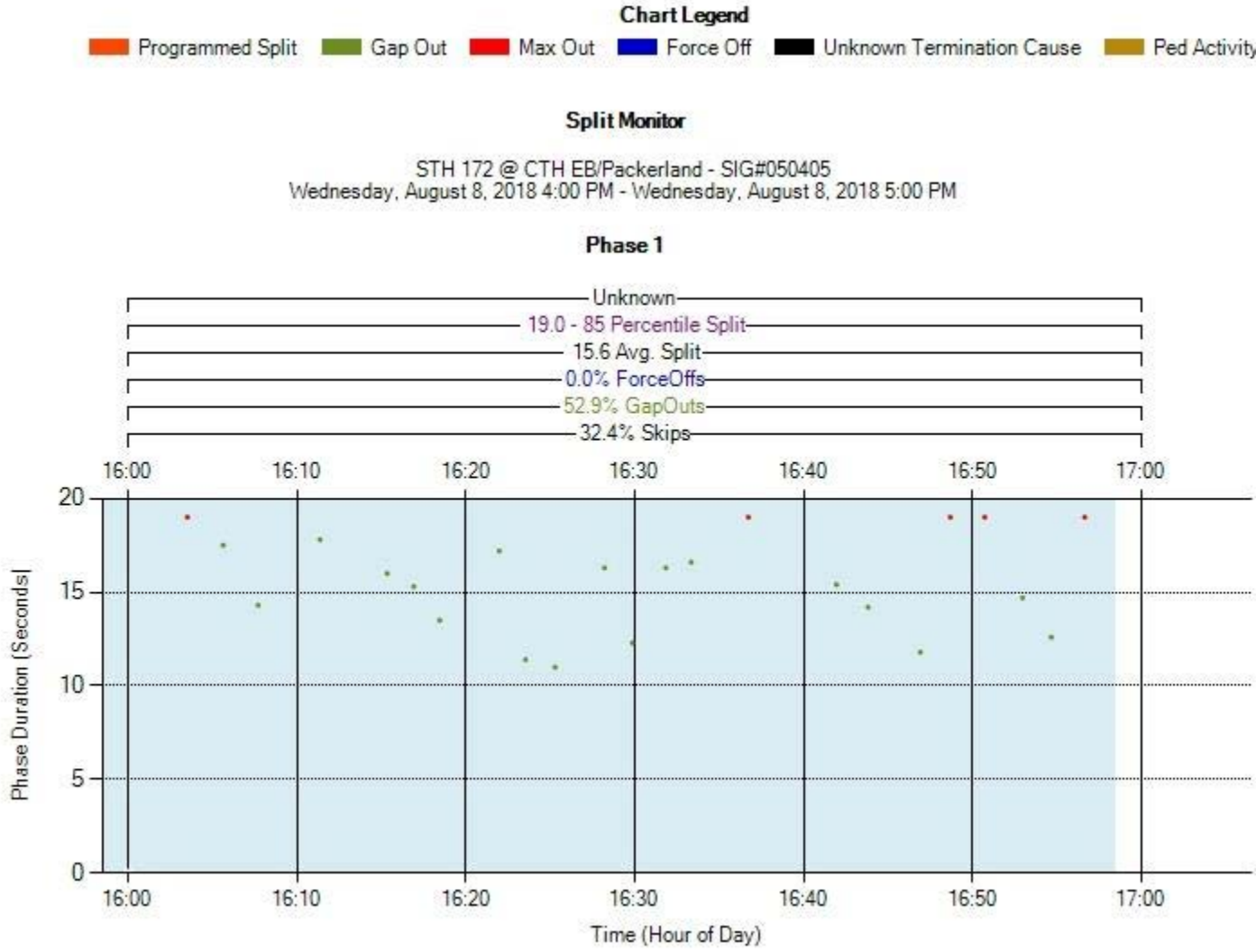
Isolated Signal – WIS 172 & County EB/Packerland Drive
Baseline Timings
8/8/2018 – 3:00 PM – 6:00 PM



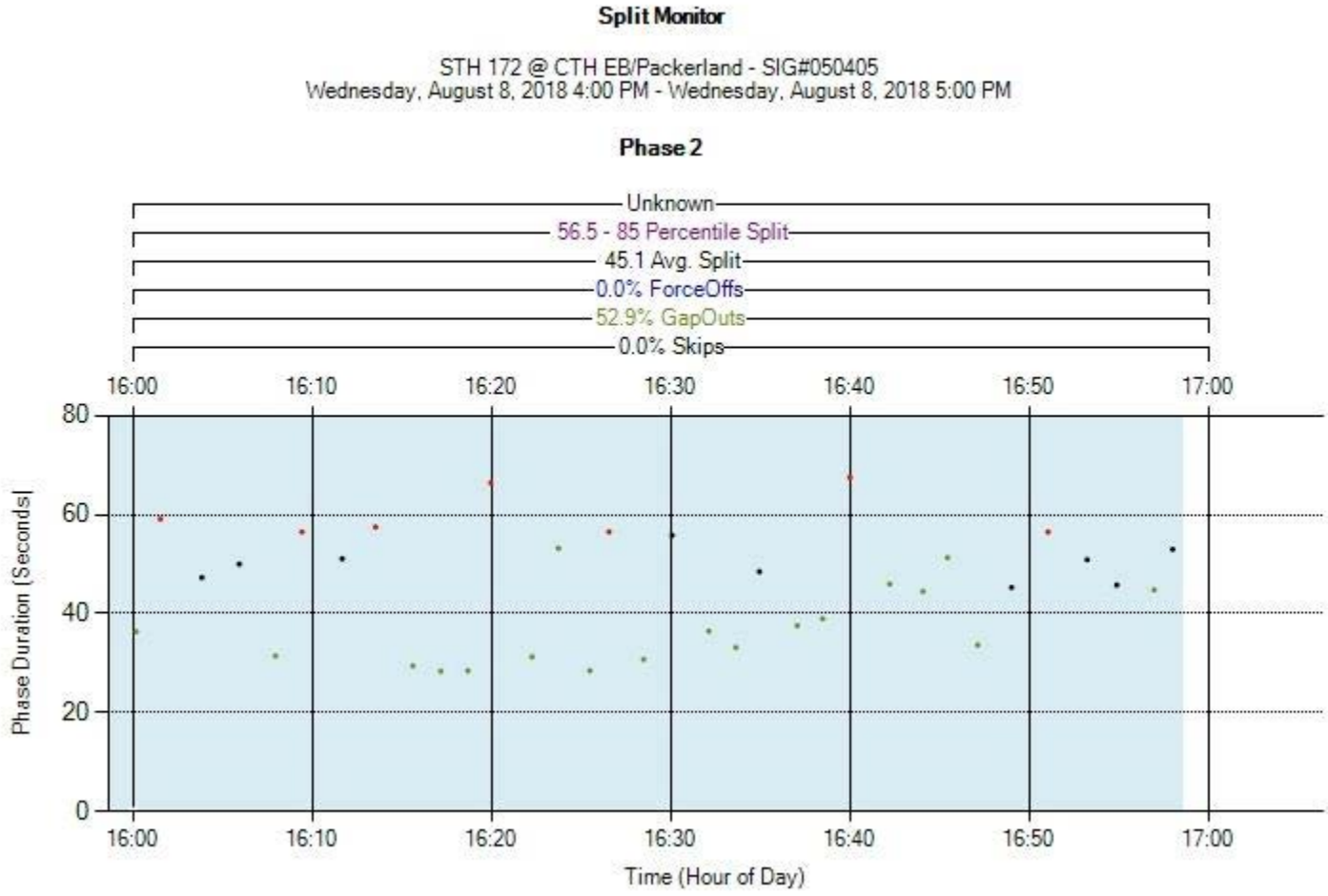
Isolated Signal – WIS 172 & County EB/Packerland Drive
Baseline Timings
8/8/2018 – 3:00 PM – 6:00 PM



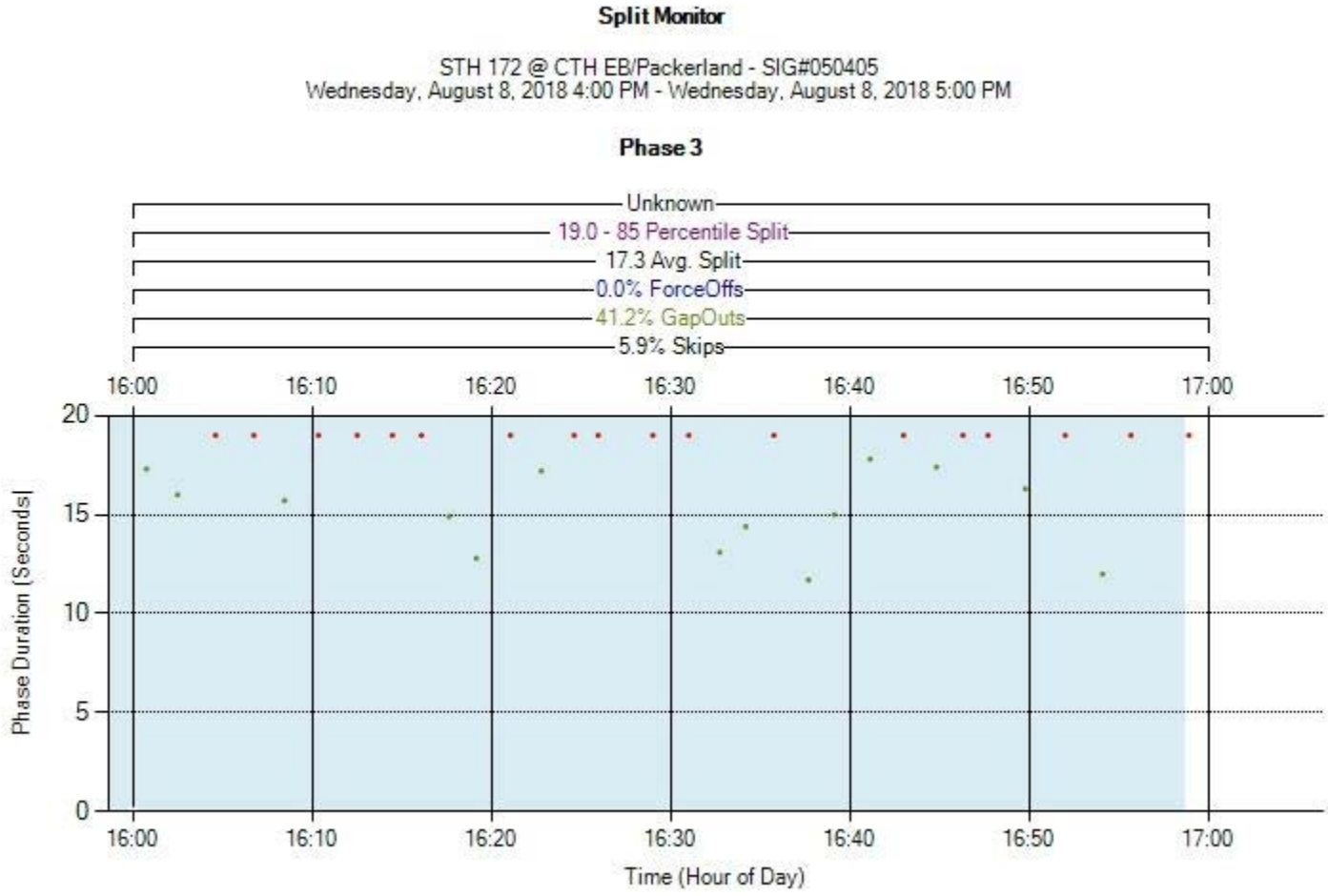
Isolated Signal – WIS 172 & County EB/Packerland Drive
Baseline Timings
8/8/2018 – 4:00 PM – 5:00 PM



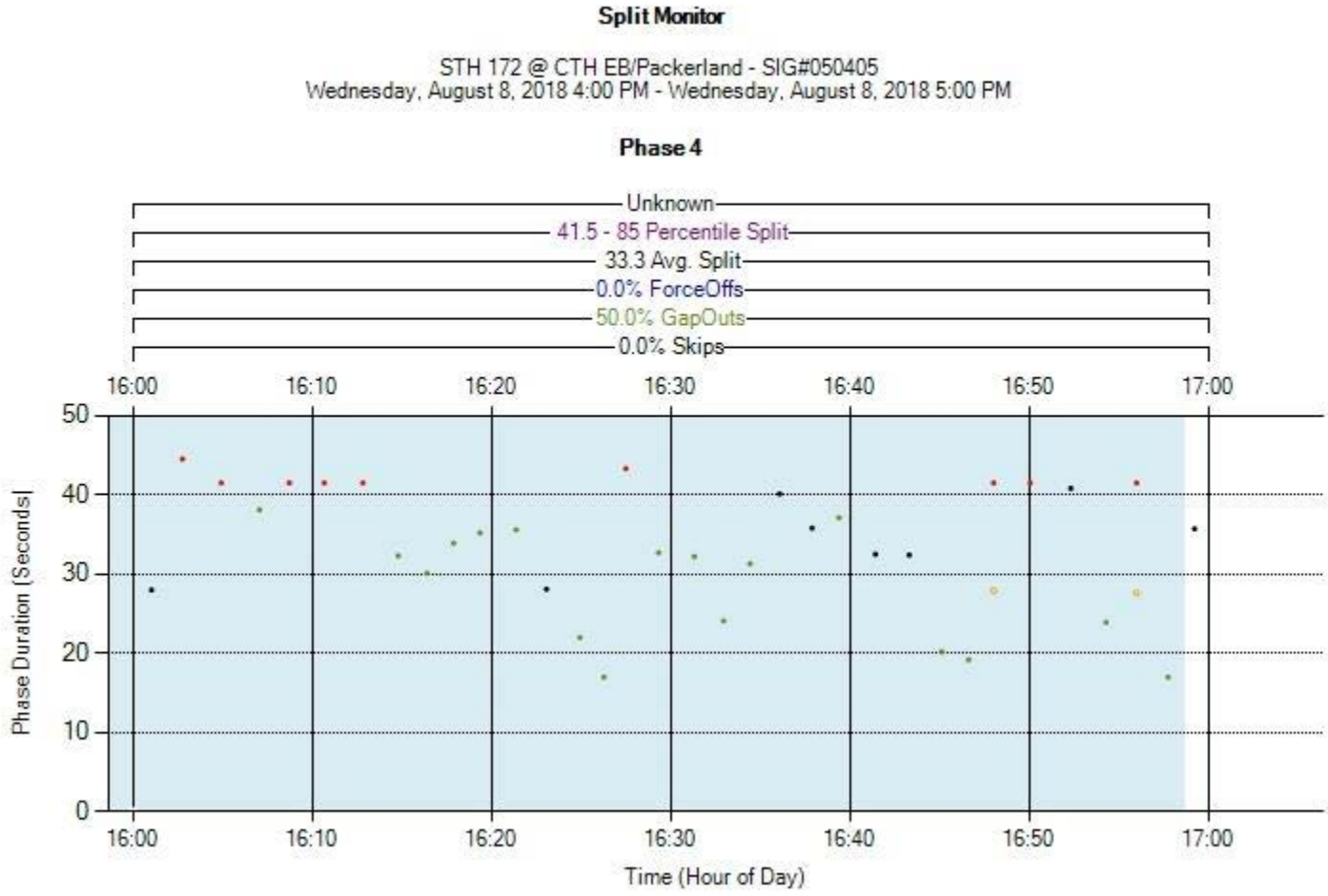
Isolated Signal – WIS 172 & County EB/Packerland Drive
Baseline Timings
8/8/2018 – 4:00 PM – 5:00 PM



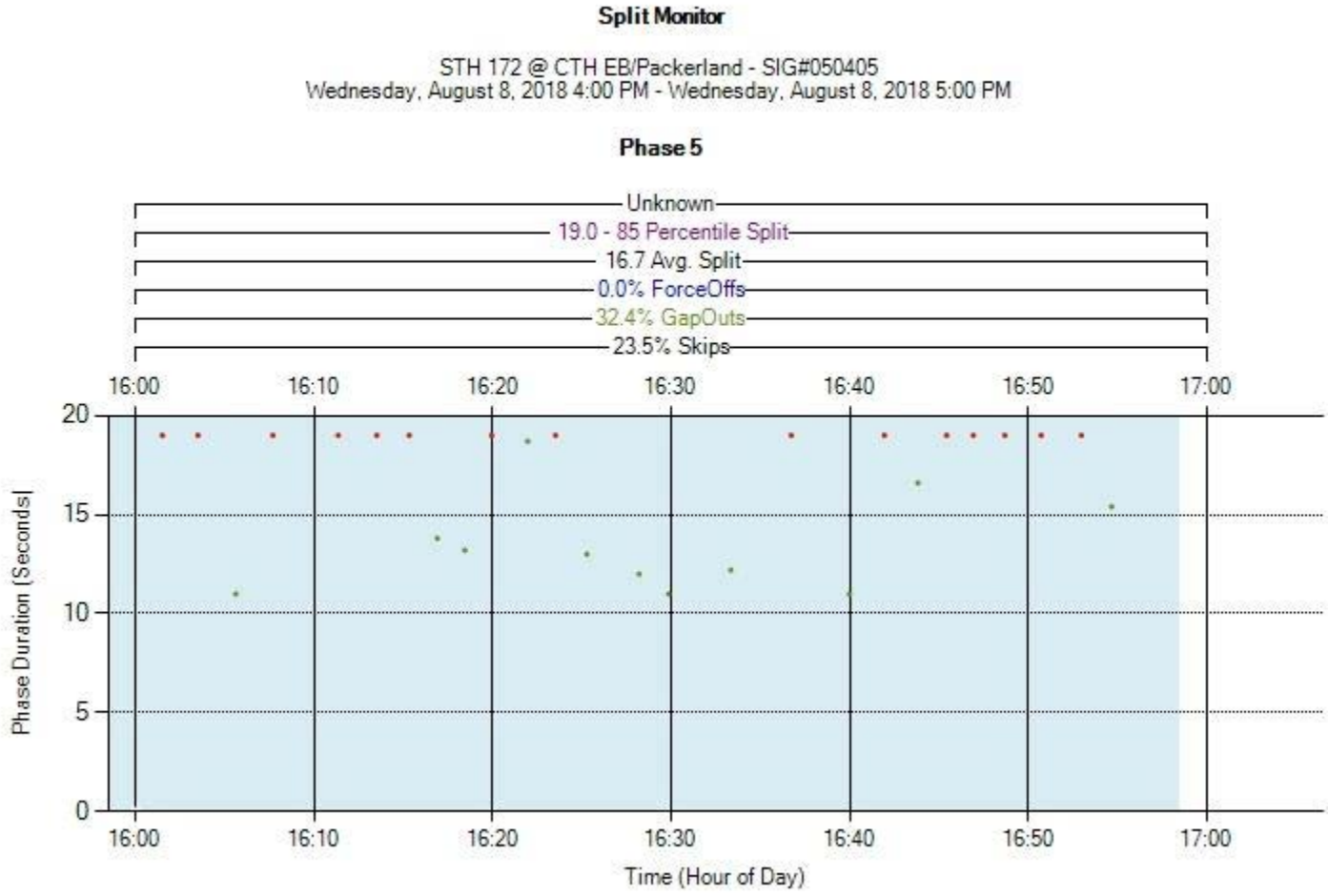
Isolated Signal – WIS 172 & County EB/Packerland Drive
Baseline Timings
8/8/2018 – 4:00 PM – 5:00 PM



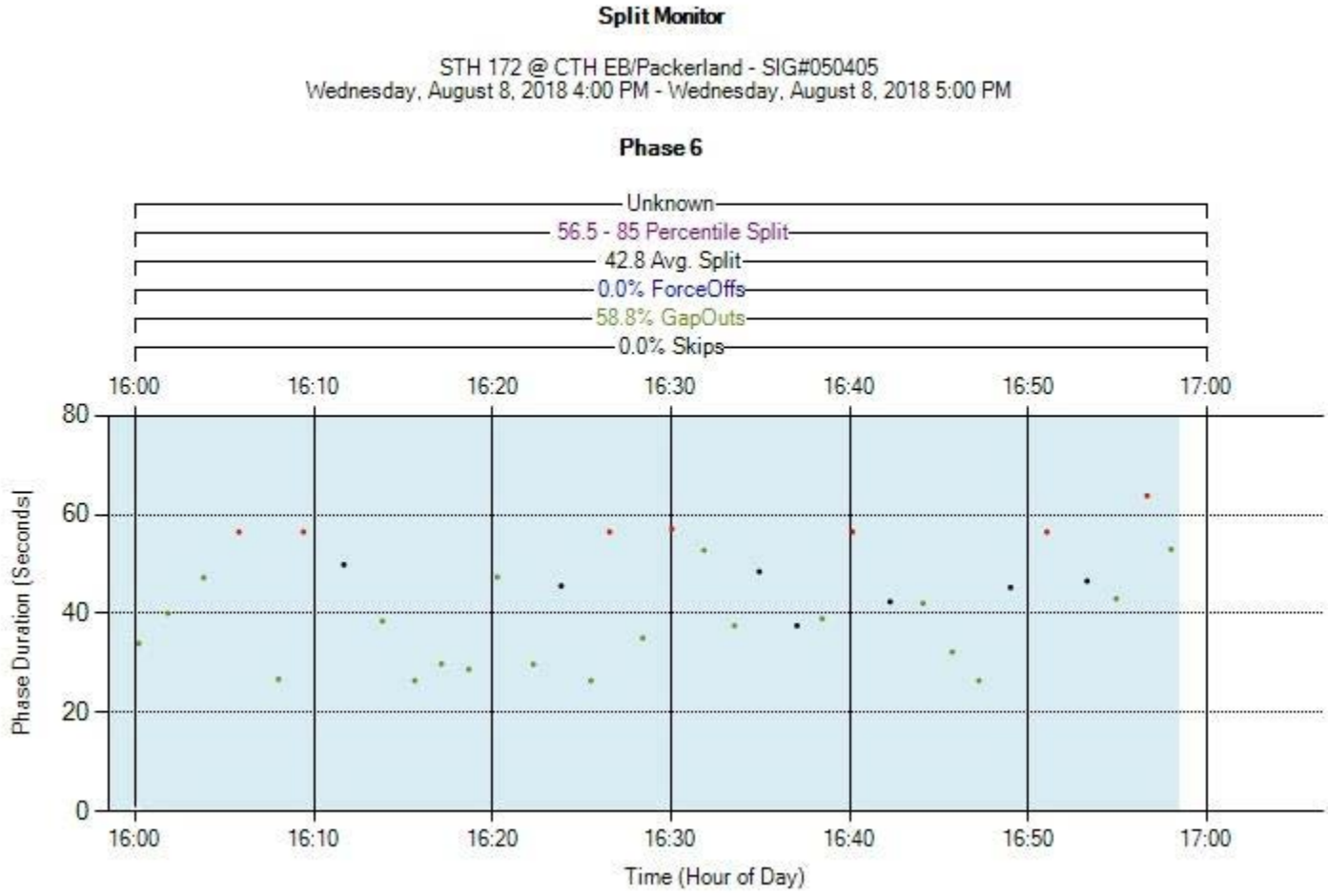
Isolated Signal – WIS 172 & County EB/Packerland Drive
Baseline Timings
8/8/2018 – 4:00 PM – 5:00 PM



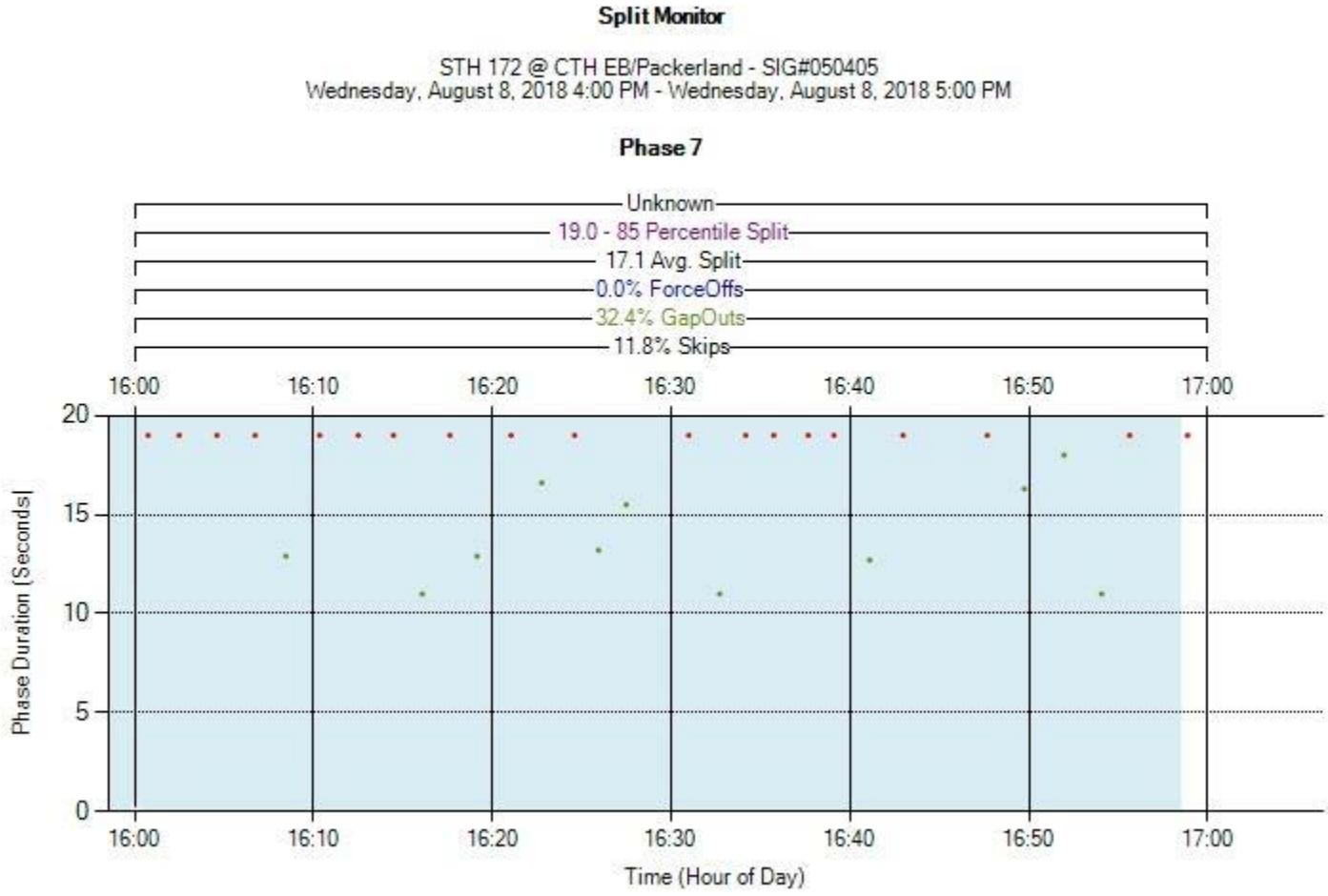
Isolated Signal – WIS 172 & County EB/Packerland Drive
Baseline Timings
8/8/2018 – 4:00 PM – 5:00 PM



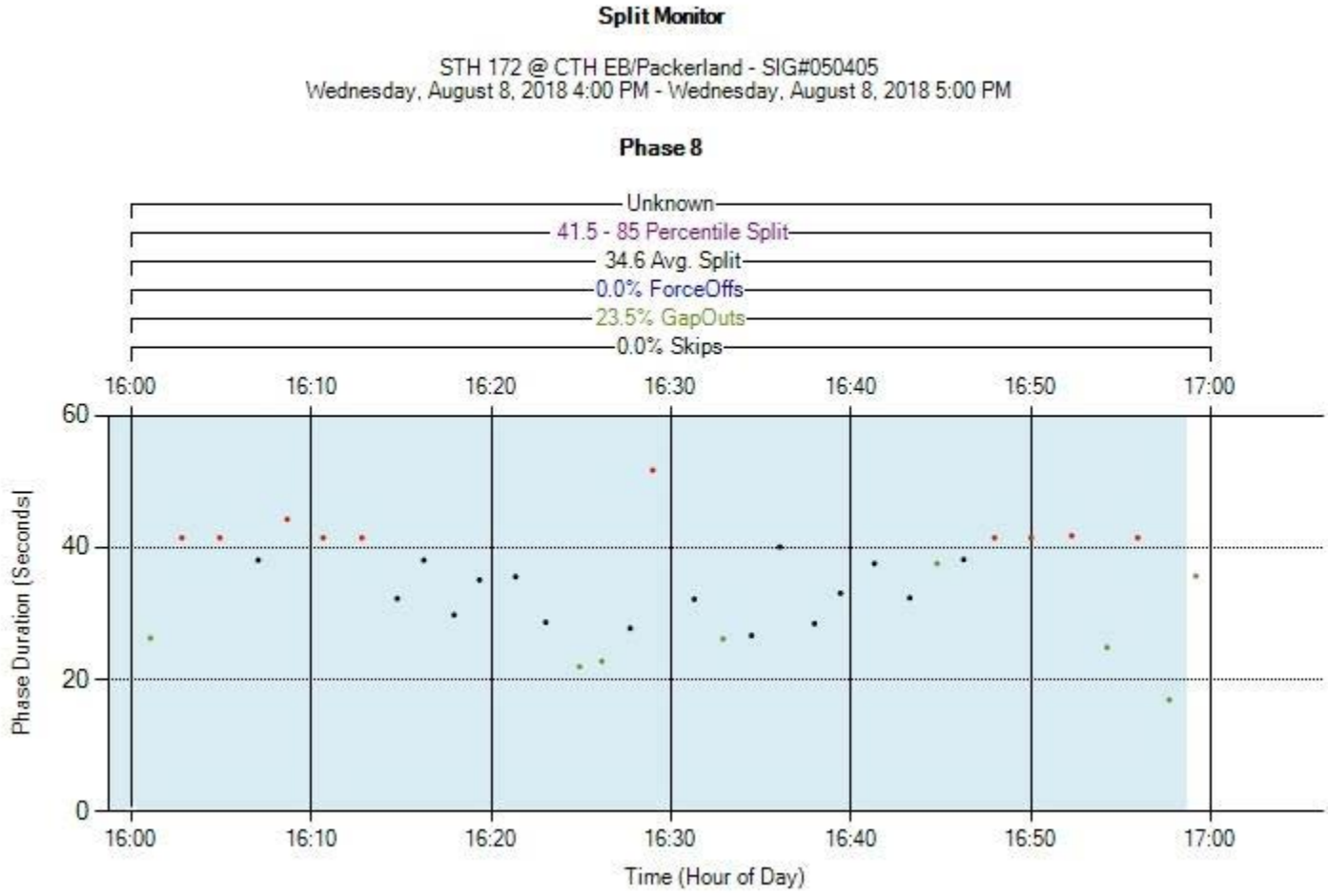
Isolated Signal – WIS 172 & County EB/Packerland Drive
Baseline Timings
8/8/2018 – 4:00 PM – 5:00 PM



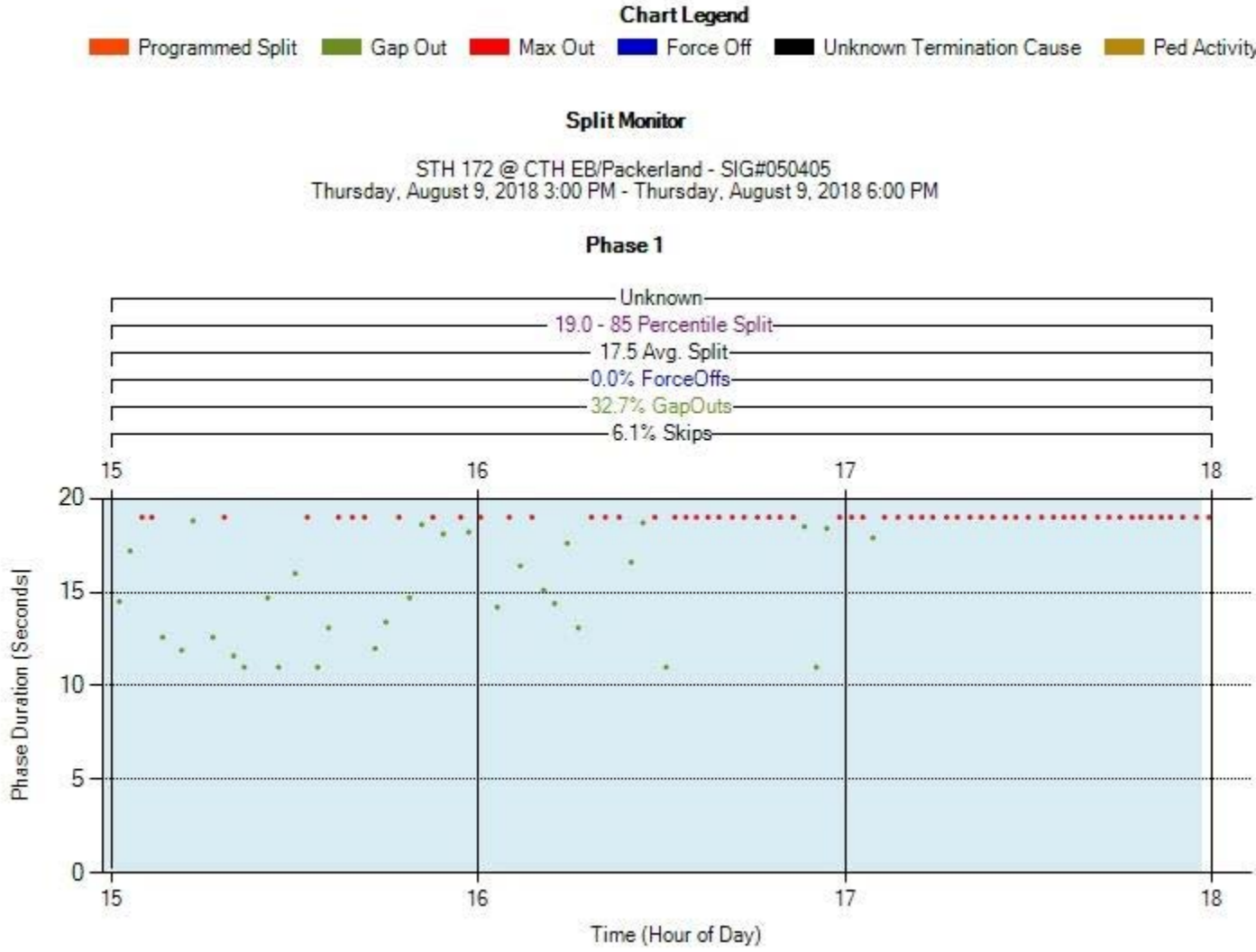
Isolated Signal – WIS 172 & County EB/Packerland Drive
Baseline Timings
8/8/2018 – 4:00 PM – 5:00 PM



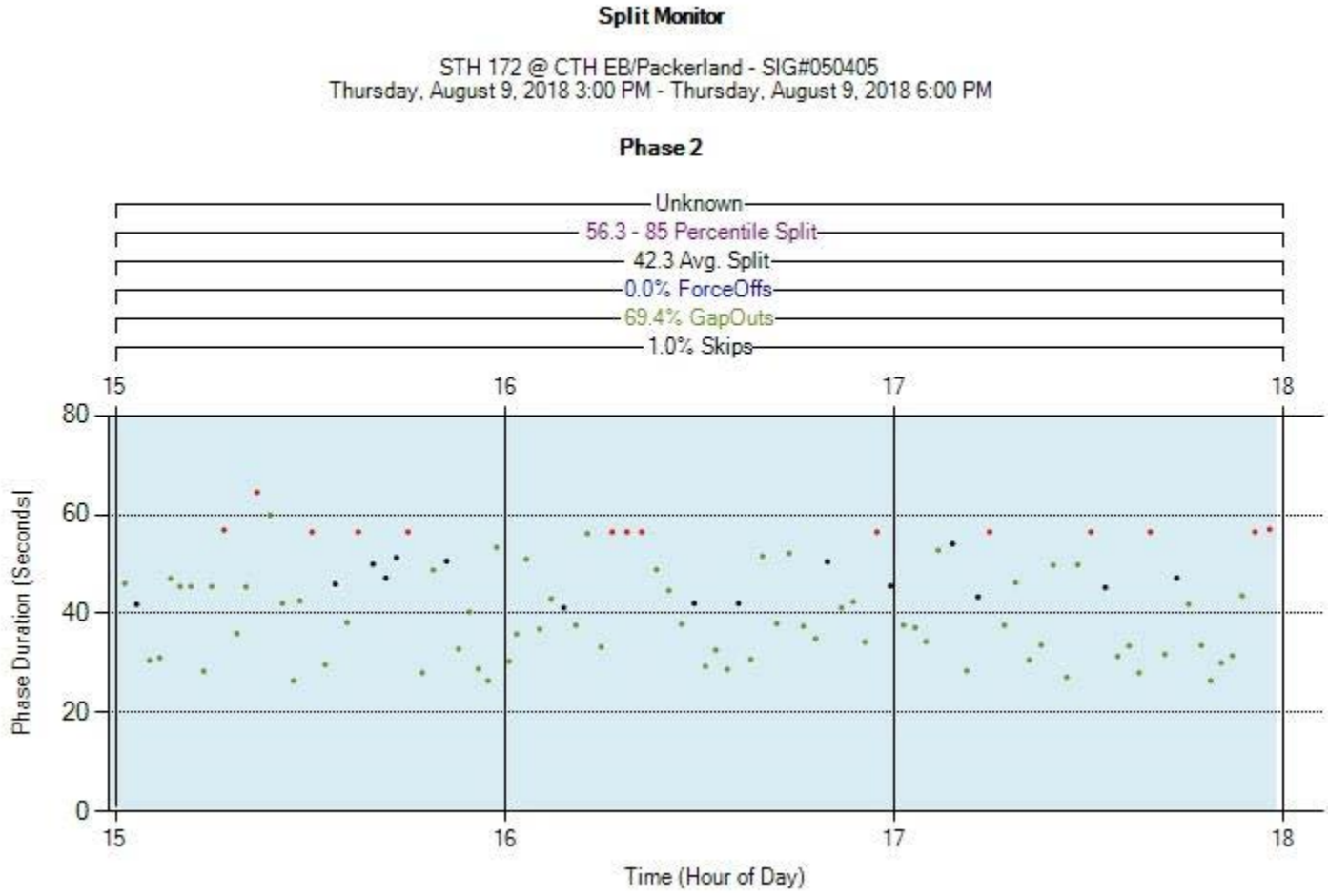
Isolated Signal – WIS 172 & County EB/Packerland Drive
Baseline Timings
8/8/2018 – 4:00 PM – 5:00 PM



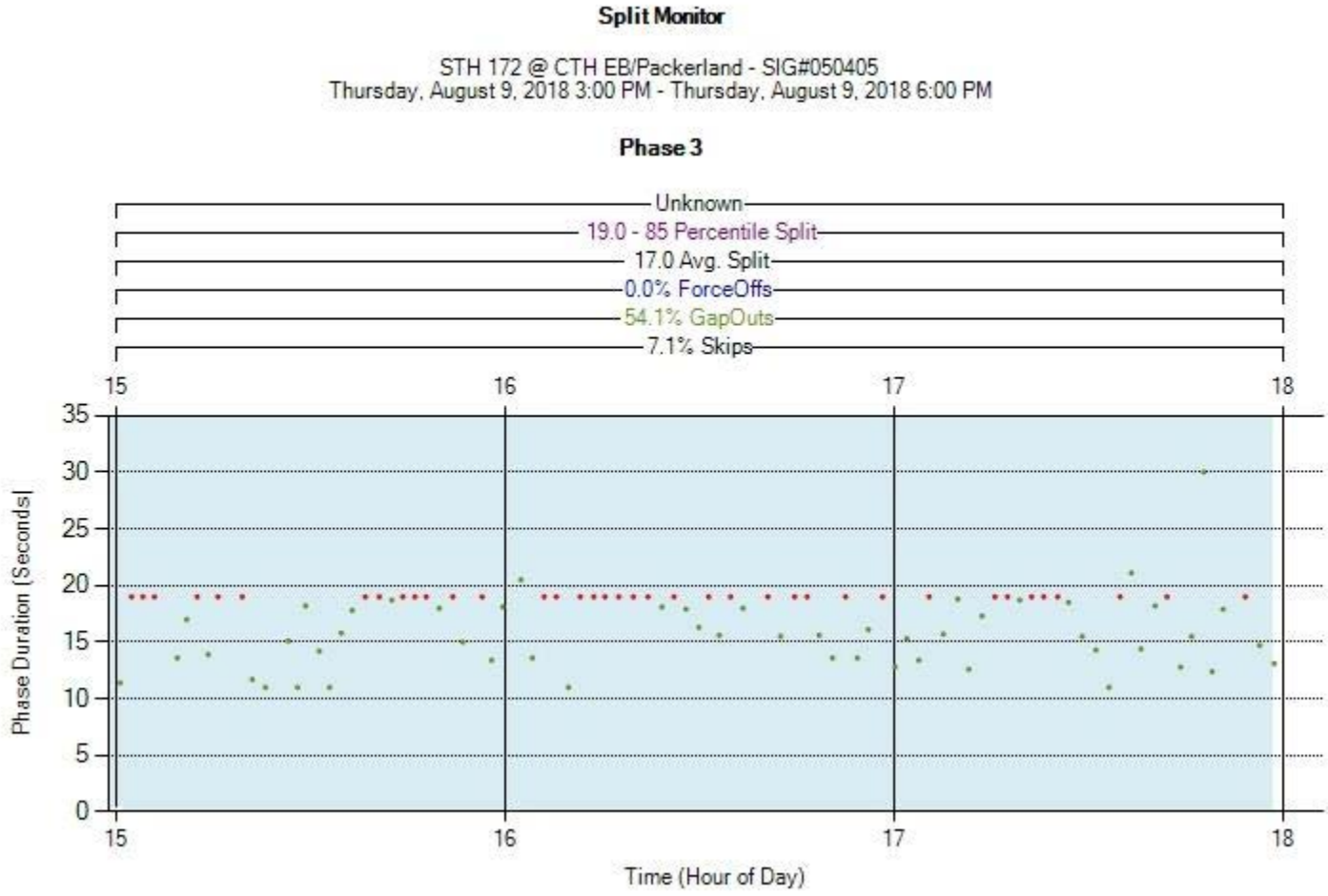
Isolated Signal – WIS 172 & County EB/Packerland Drive
Baseline Timings
8/9/2018 – 3:00 PM – 6:00 PM



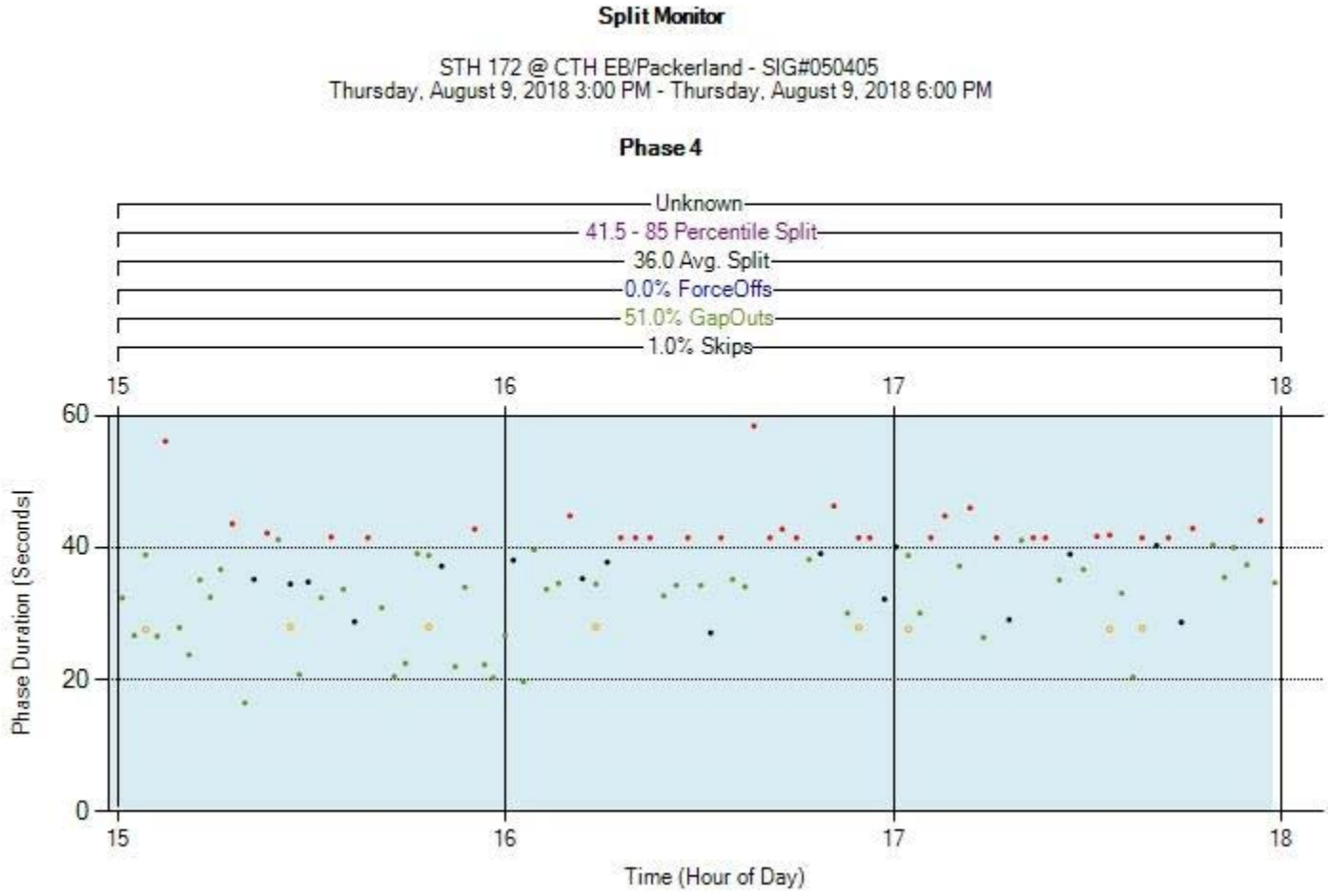
Isolated Signal – WIS 172 & County EB/Packerland Drive
Baseline Timings
8/9/2018 – 3:00 PM – 6:00 PM



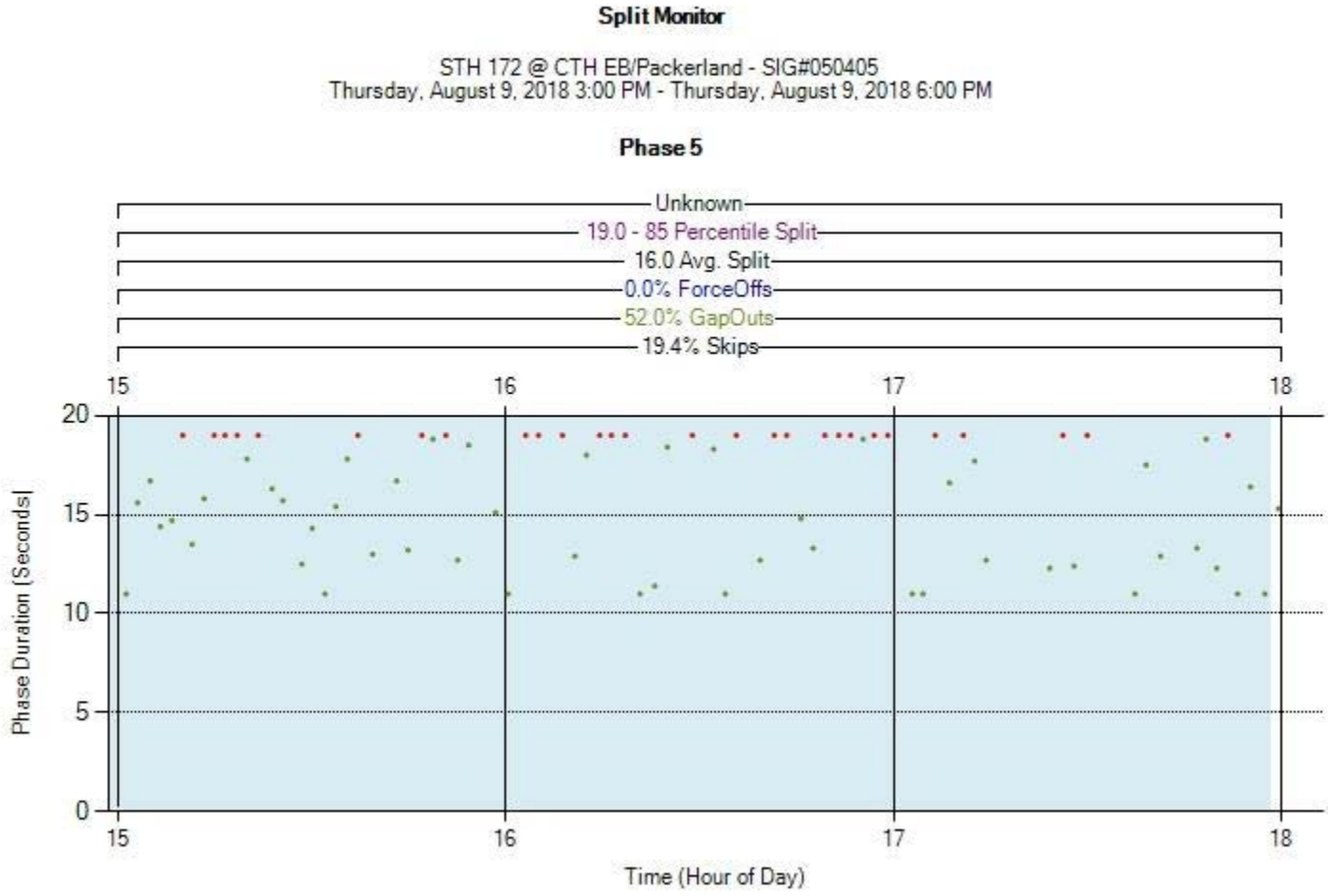
Isolated Signal – WIS 172 & County EB/Packerland Drive
Baseline Timings
8/9/2018 – 3:00 PM – 6:00 PM



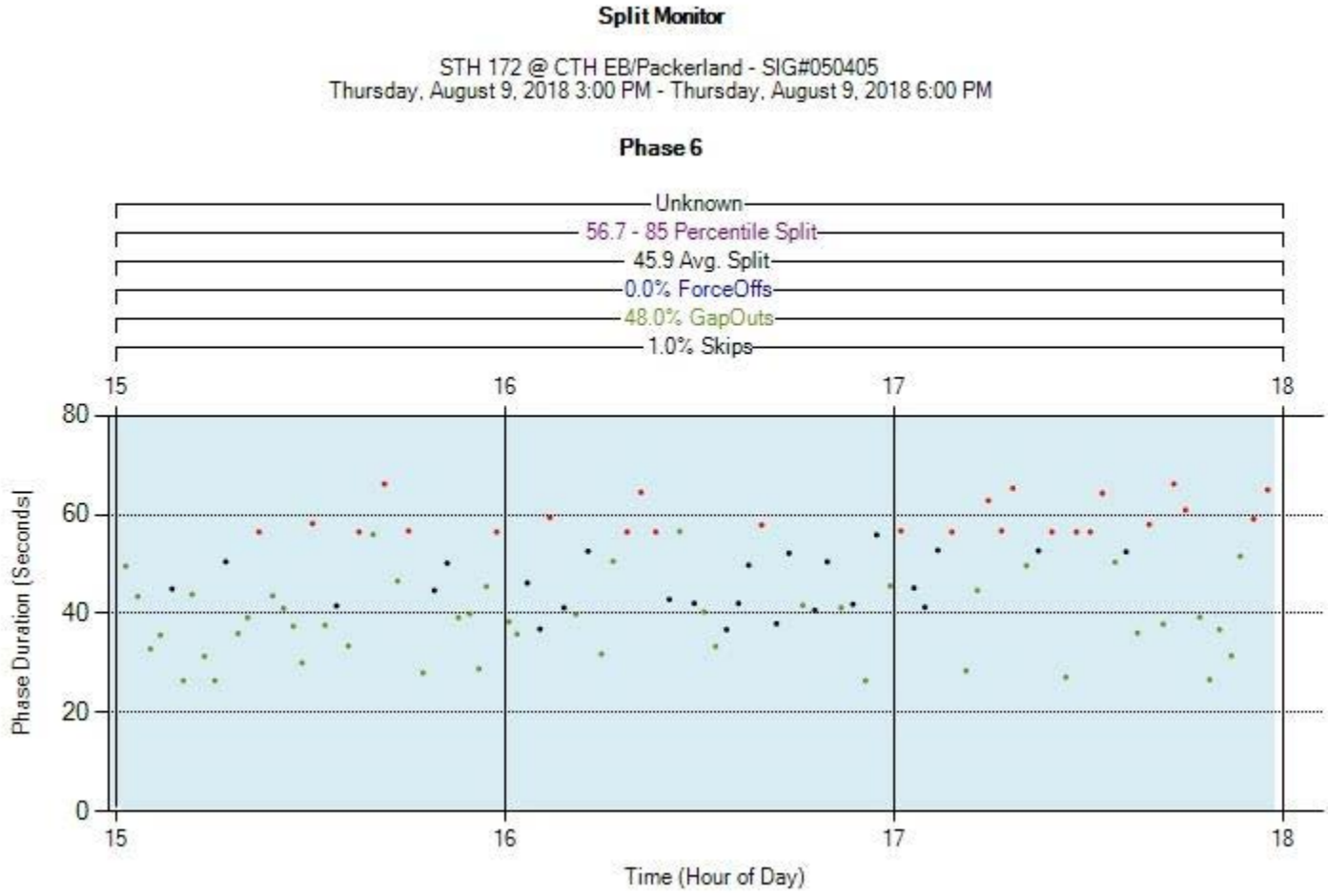
Isolated Signal – WIS 172 & County EB/Packerland Drive
Baseline Timings
8/9/2018 – 3:00 PM – 6:00 PM



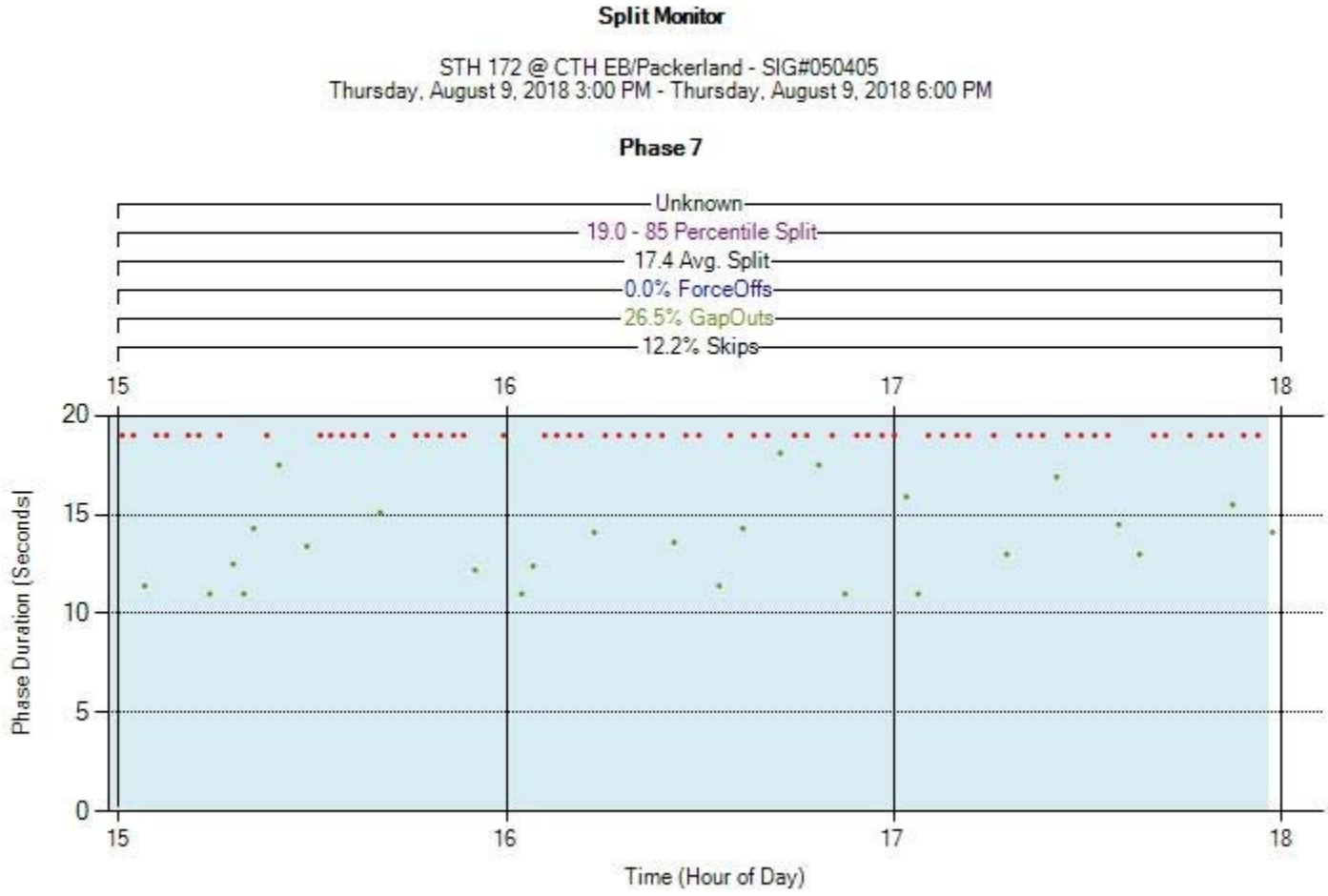
Isolated Signal – WIS 172 & County EB/Packerland Drive
Baseline Timings
8/9/2018 – 3:00 PM – 6:00 PM



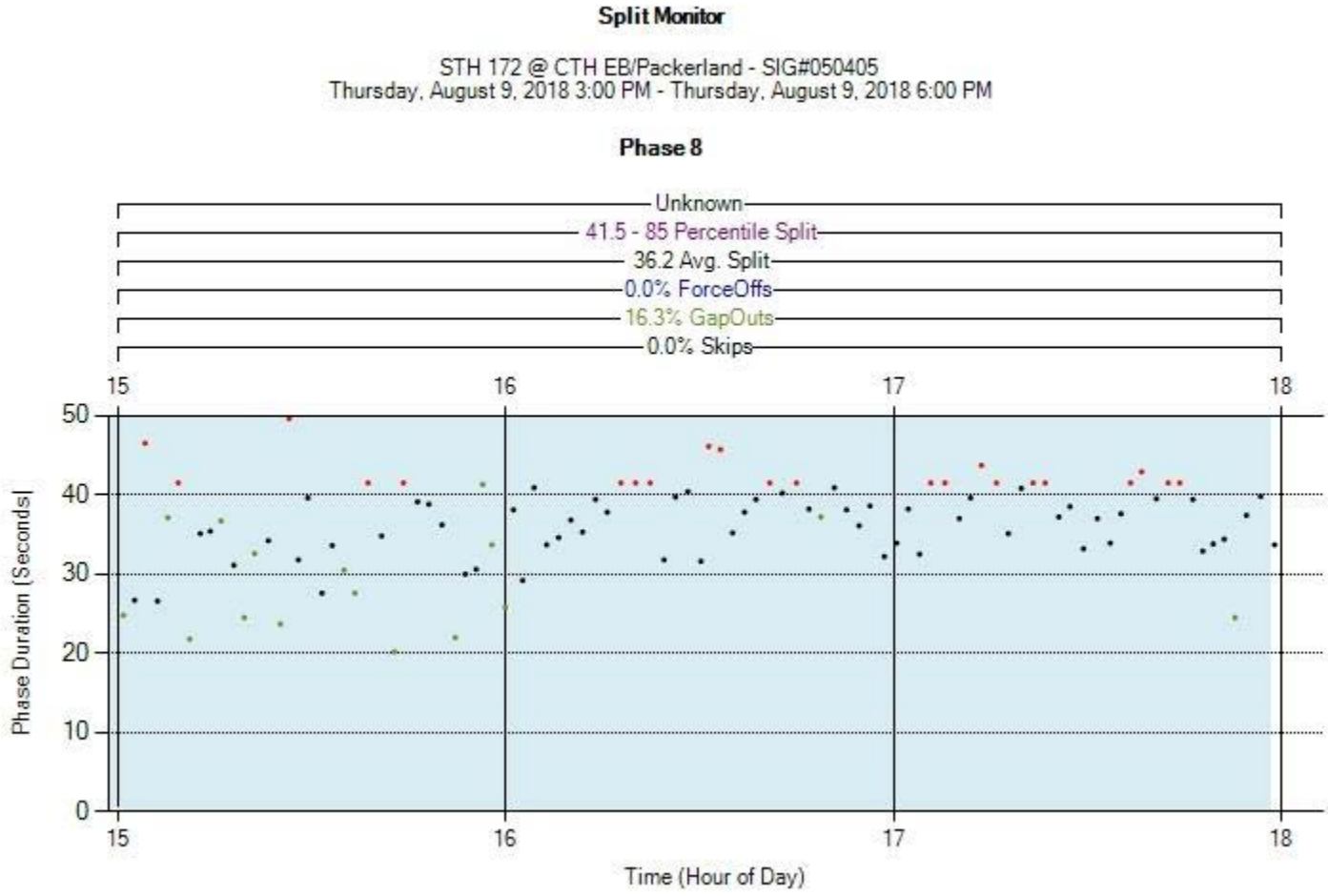
Isolated Signal – WIS 172 & County EB/Packerland Drive
Baseline Timings
8/9/2018 – 3:00 PM – 6:00 PM



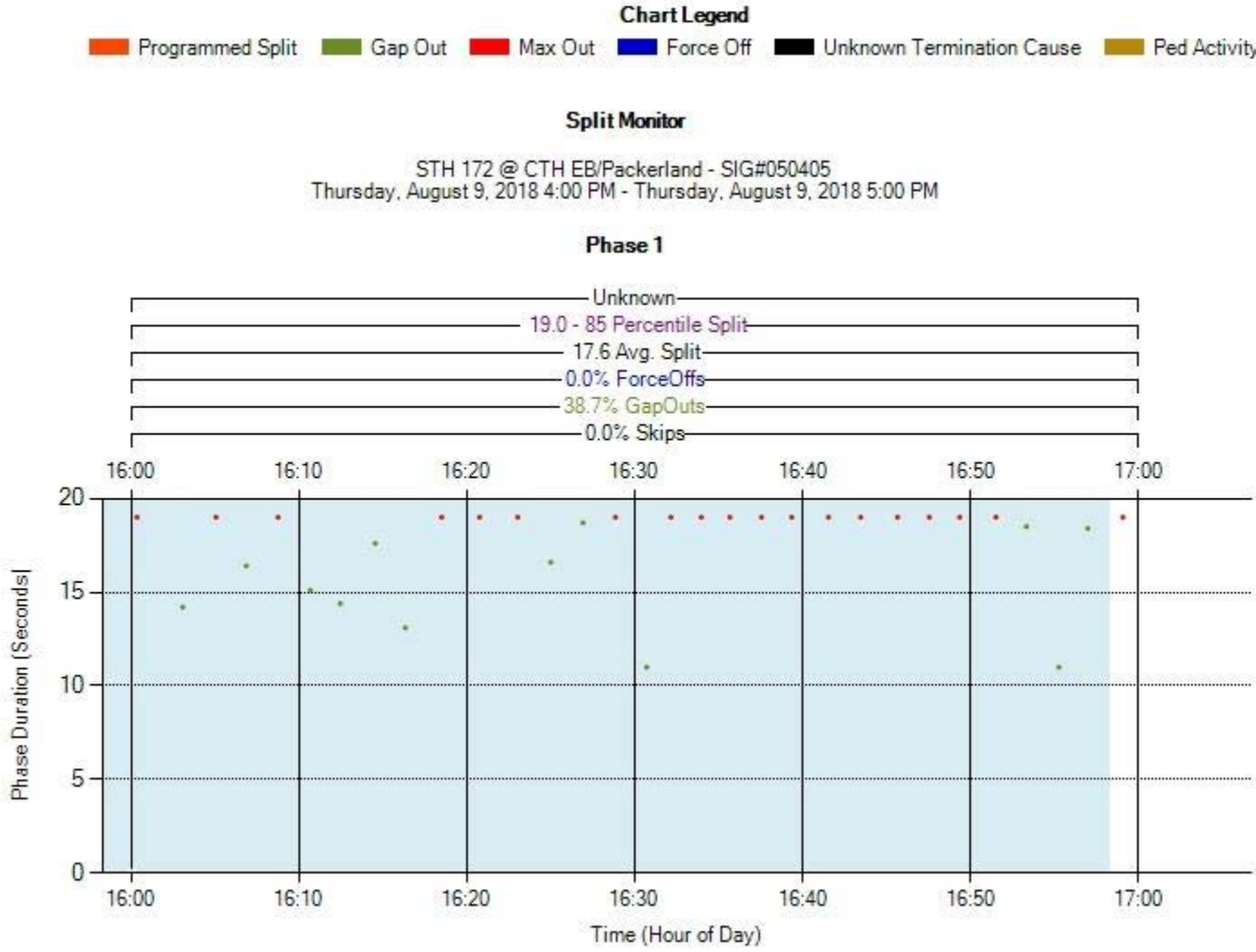
Isolated Signal – WIS 172 & County EB/Packerland Drive
Baseline Timings
8/9/2018 – 3:00 PM – 6:00 PM



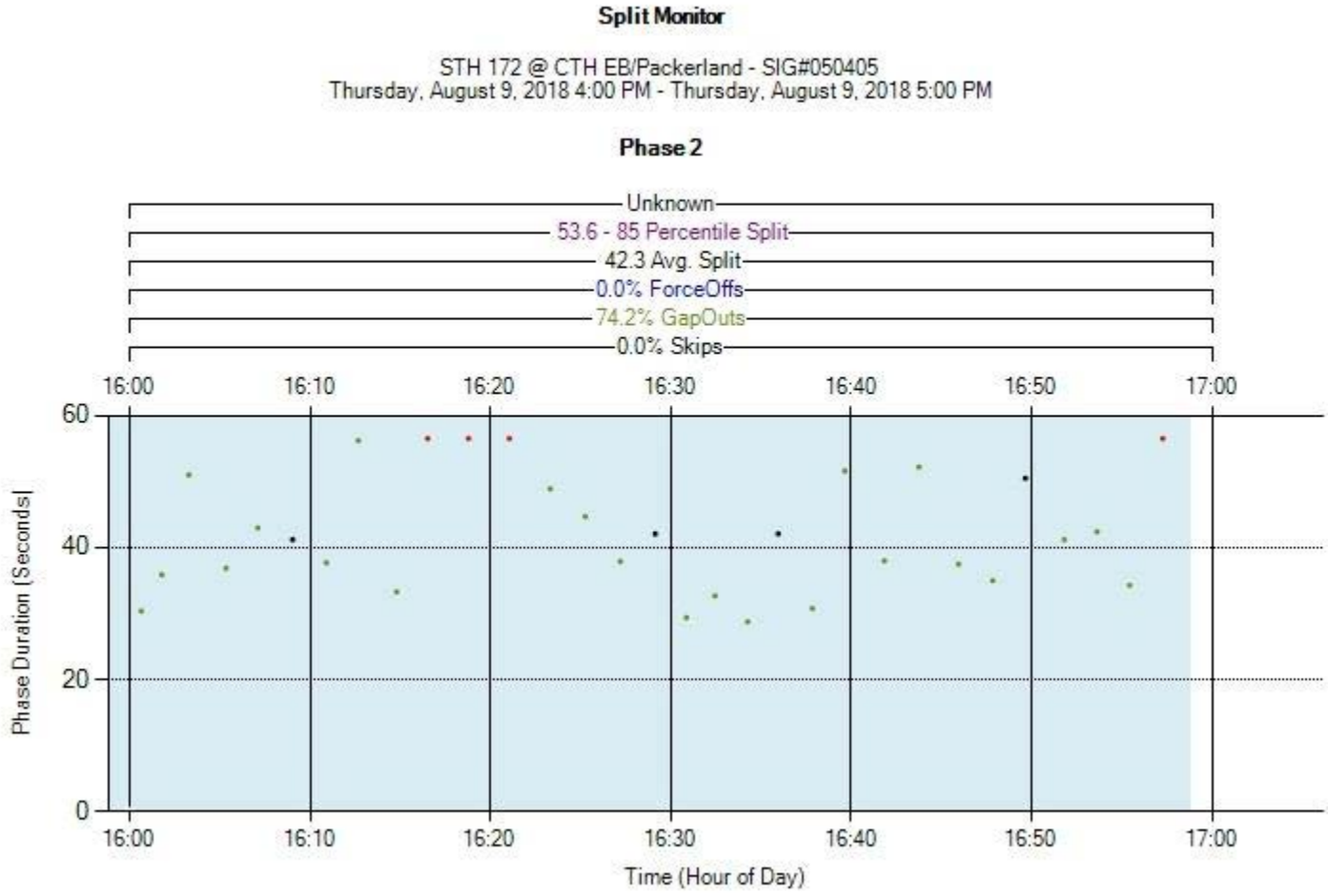
Isolated Signal – WIS 172 & County EB/Packerland Drive
Baseline Timings
8/9/2018 – 3:00 PM – 6:00 PM



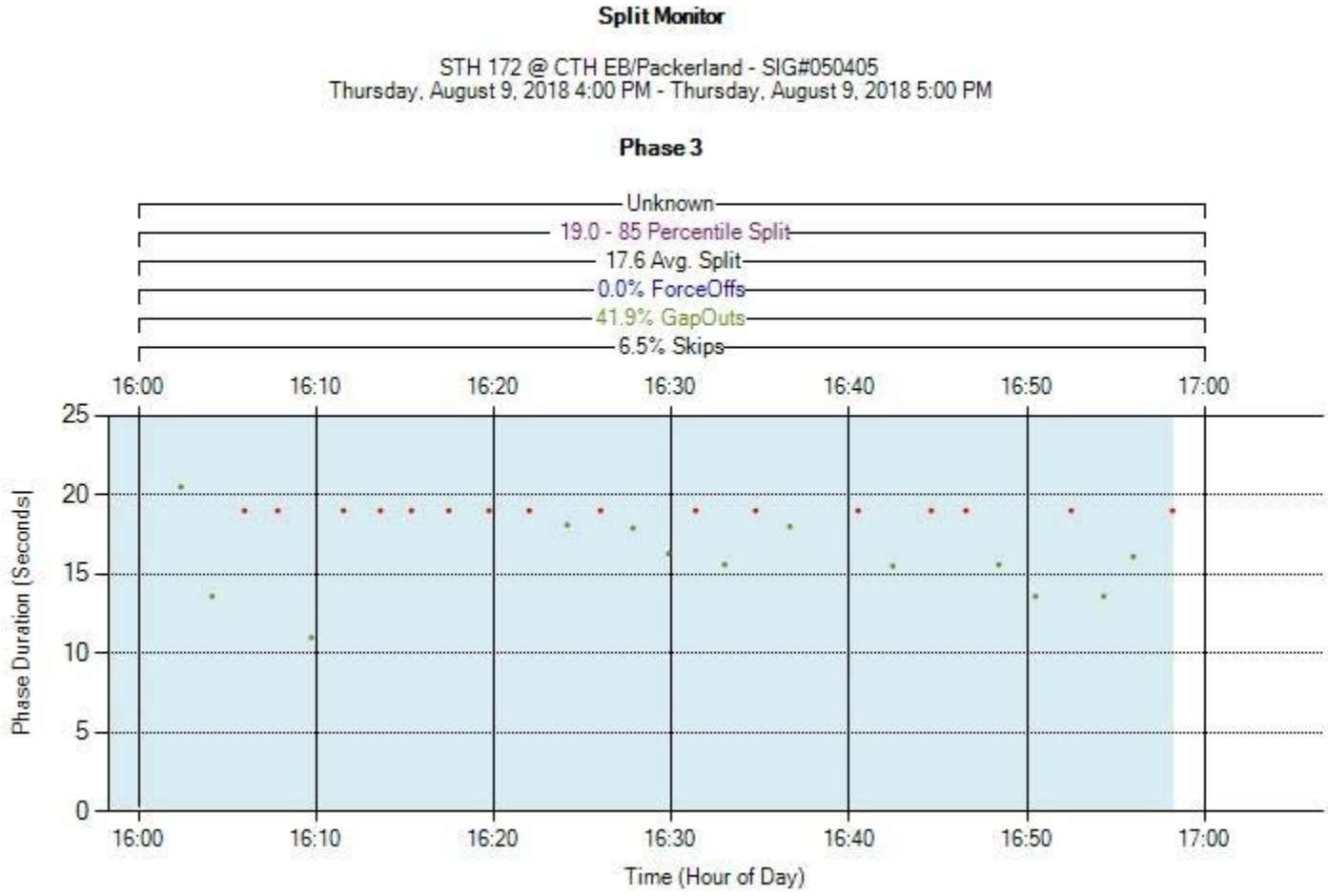
Isolated Signal – WIS 172 & County EB/Packerland Drive
Baseline Timings
8/9/2018 – 4:00 PM – 5:00 PM



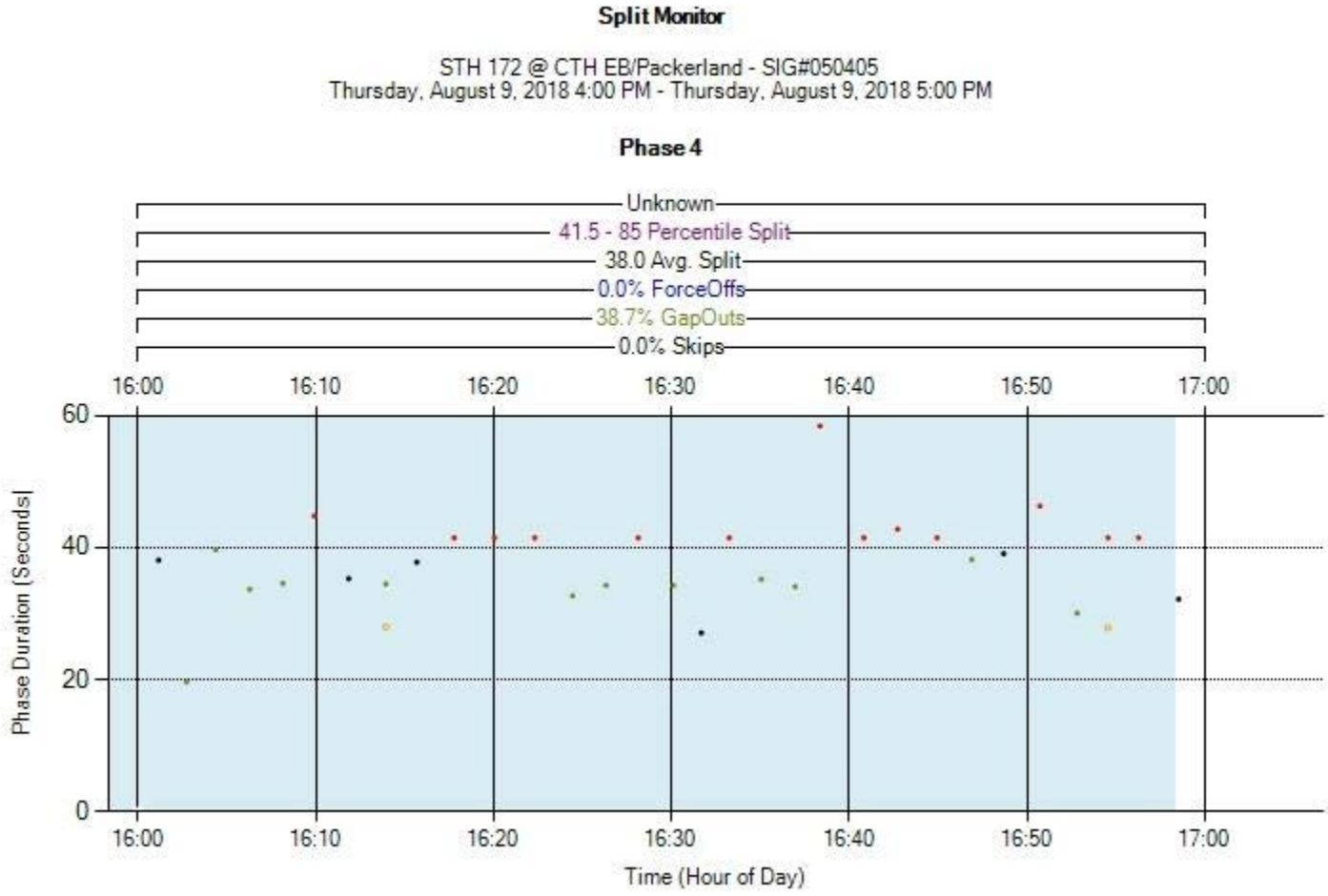
Isolated Signal – WIS 172 & County EB/Packerland Drive
Baseline Timings
8/9/2018 – 4:00 PM – 5:00 PM



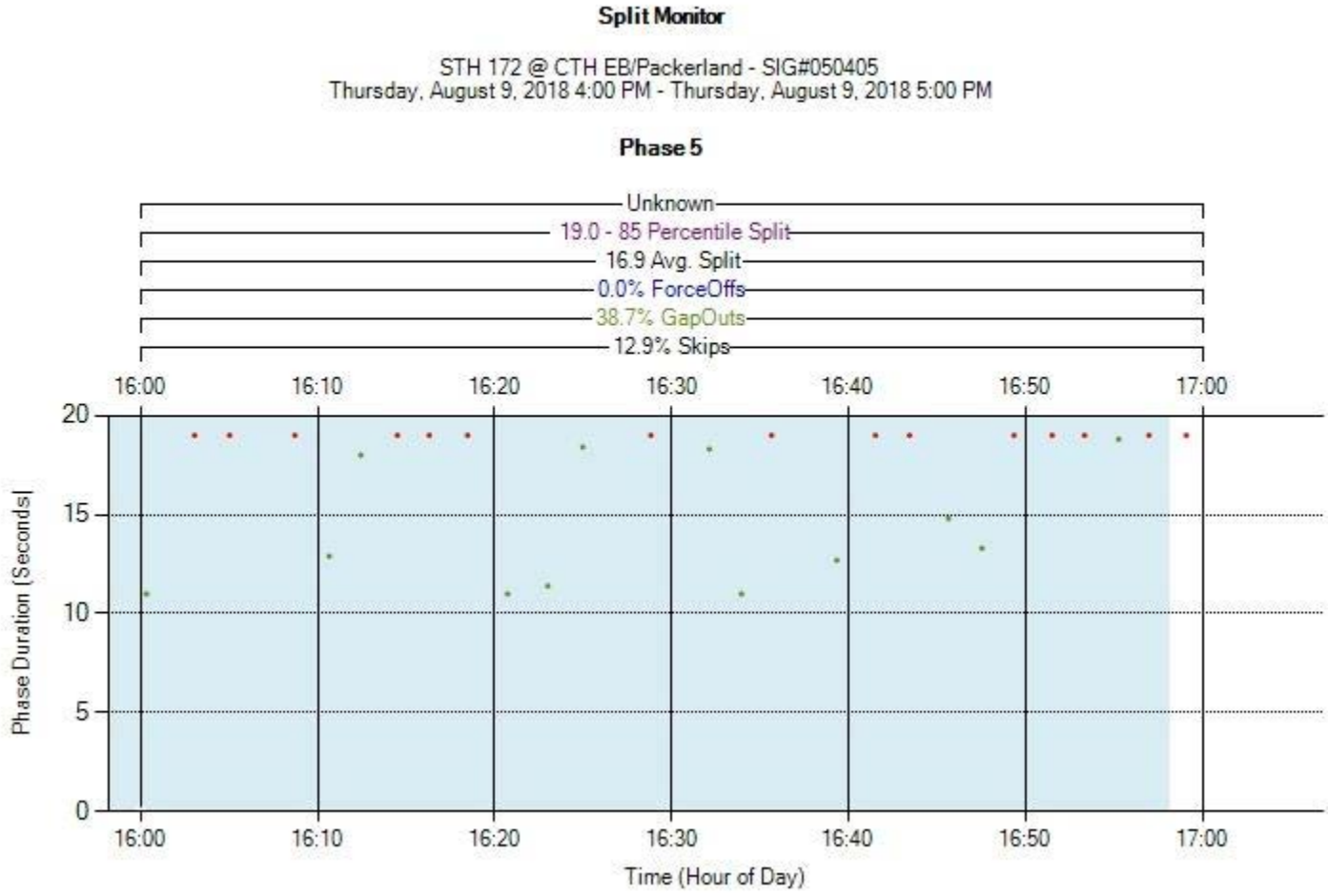
Isolated Signal – WIS 172 & County EB/Packerland Drive
Baseline Timings
8/9/2018 – 4:00 PM – 5:00 PM



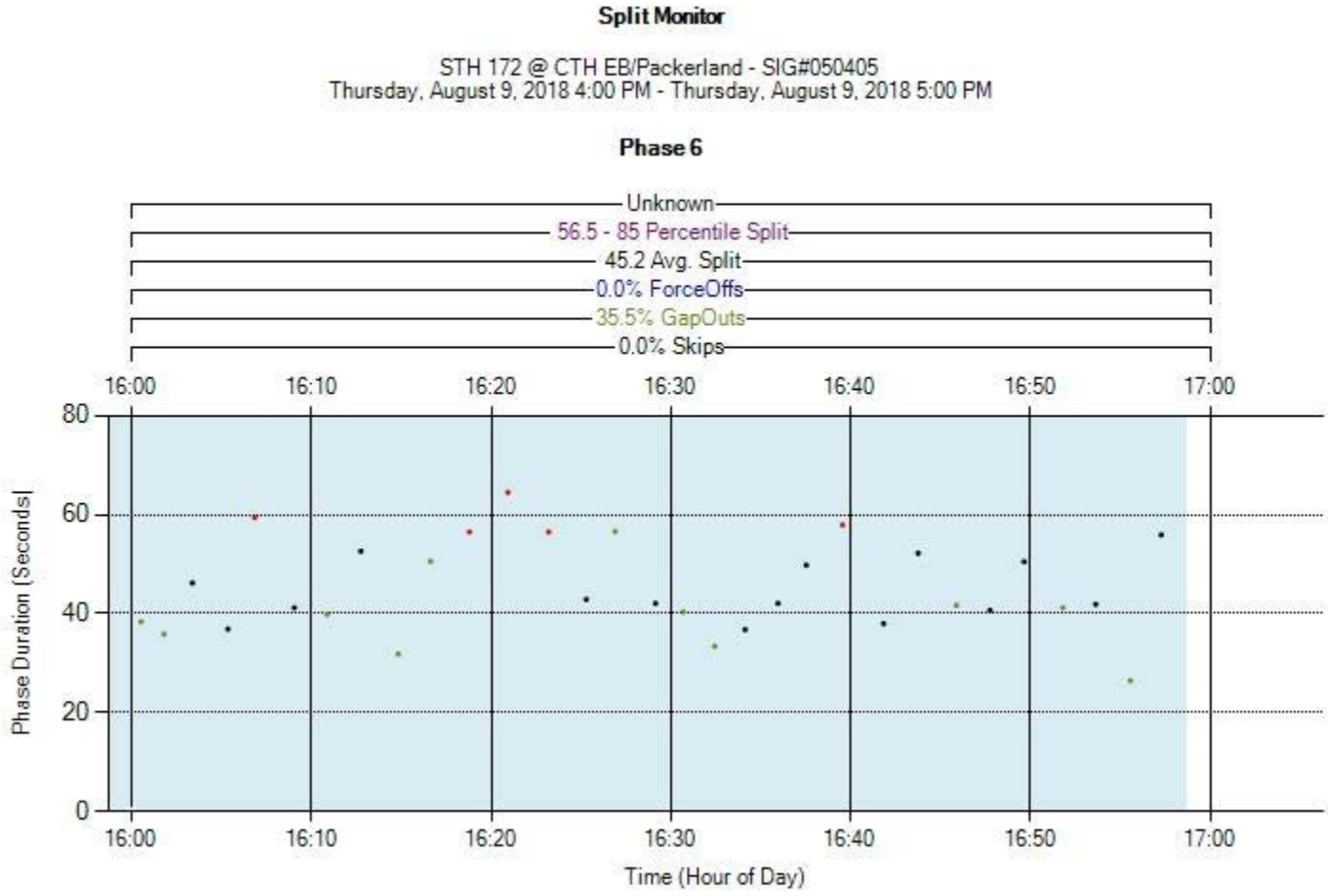
Isolated Signal – WIS 172 & County EB/Packerland Drive
Baseline Timings
8/9/2018 – 4:00 PM – 5:00 PM



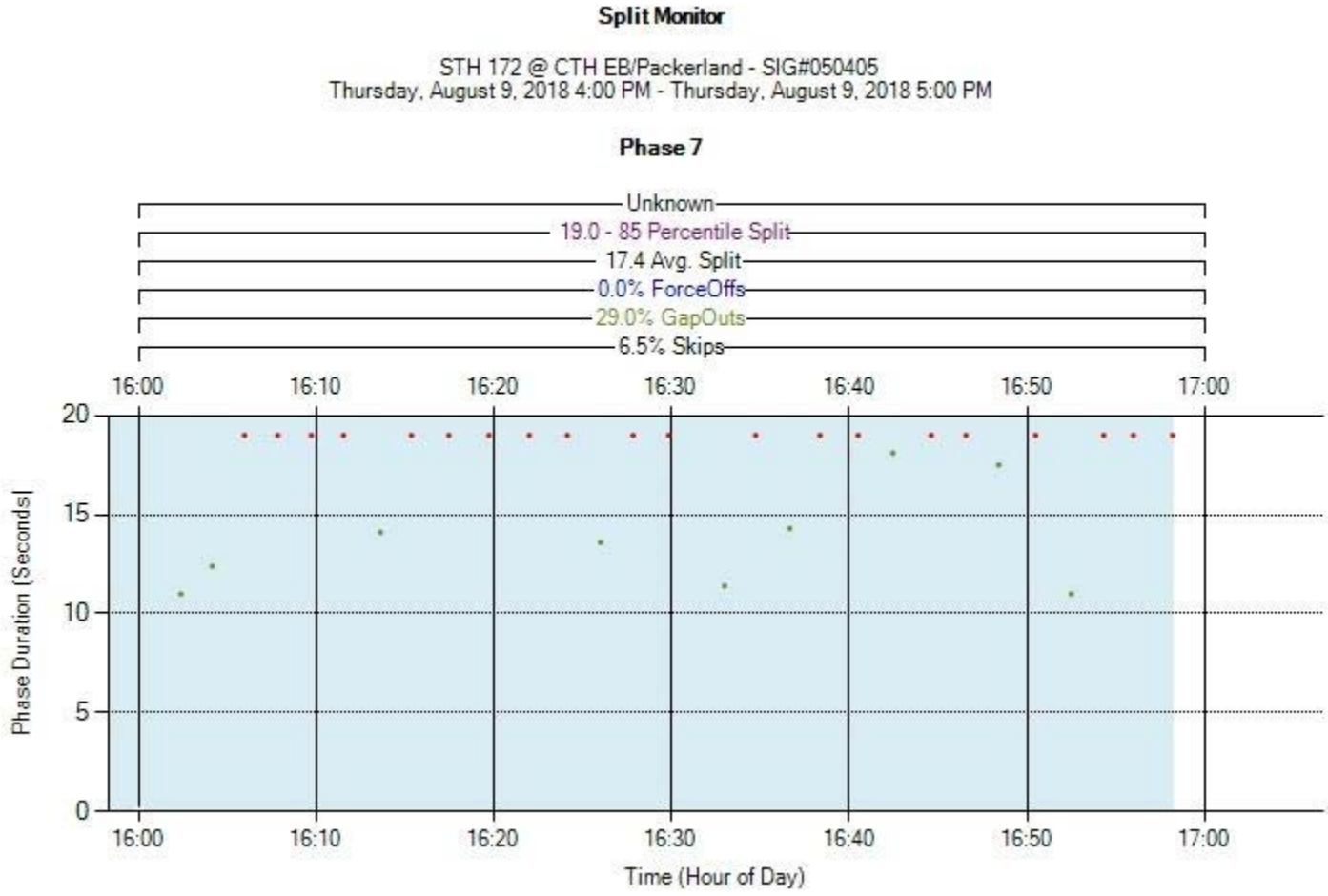
Isolated Signal – WIS 172 & County EB/Packerland Drive
Baseline Timings
8/9/2018 – 4:00 PM – 5:00 PM



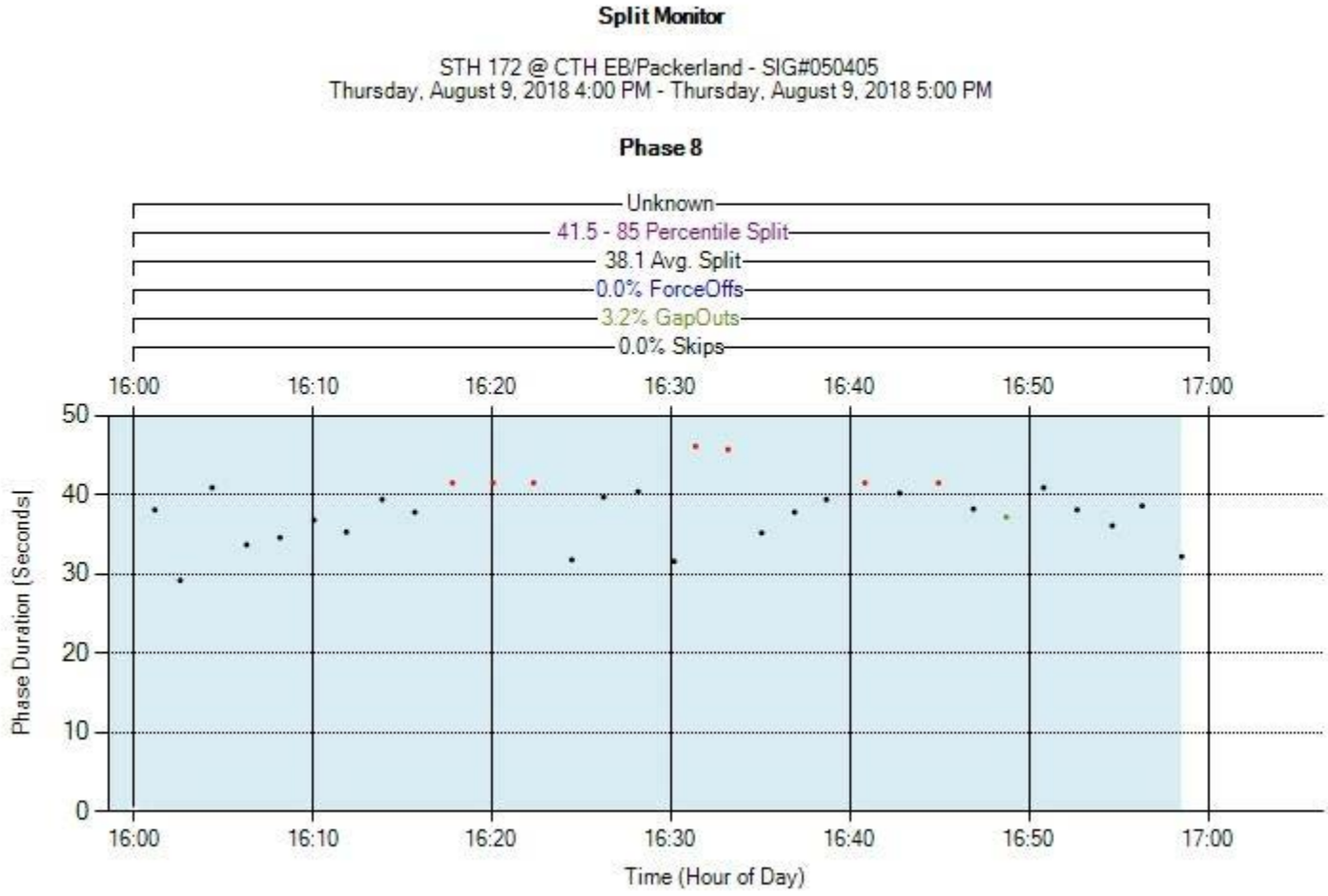
Isolated Signal – WIS 172 & County EB/Packerland Drive
Baseline Timings
8/9/2018 – 4:00 PM – 5:00 PM



Isolated Signal – WIS 172 & County EB/Packerland Drive
Baseline Timings
8/9/2018 – 4:00 PM – 5:00 PM

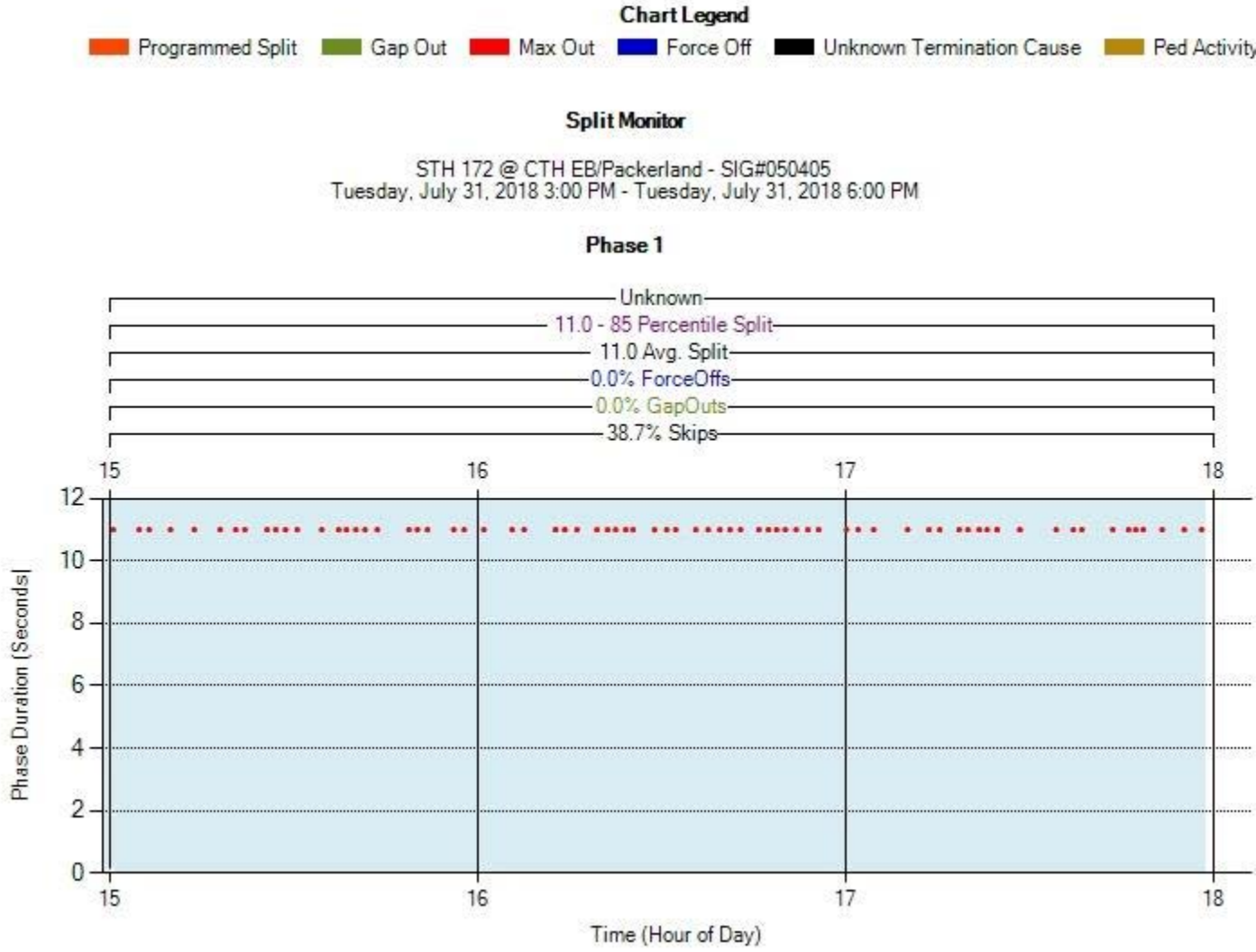


Isolated Signal – WIS 172 & County EB/Packerland Drive
Baseline Timings
8/9/2018 – 4:00 PM – 5:00 PM

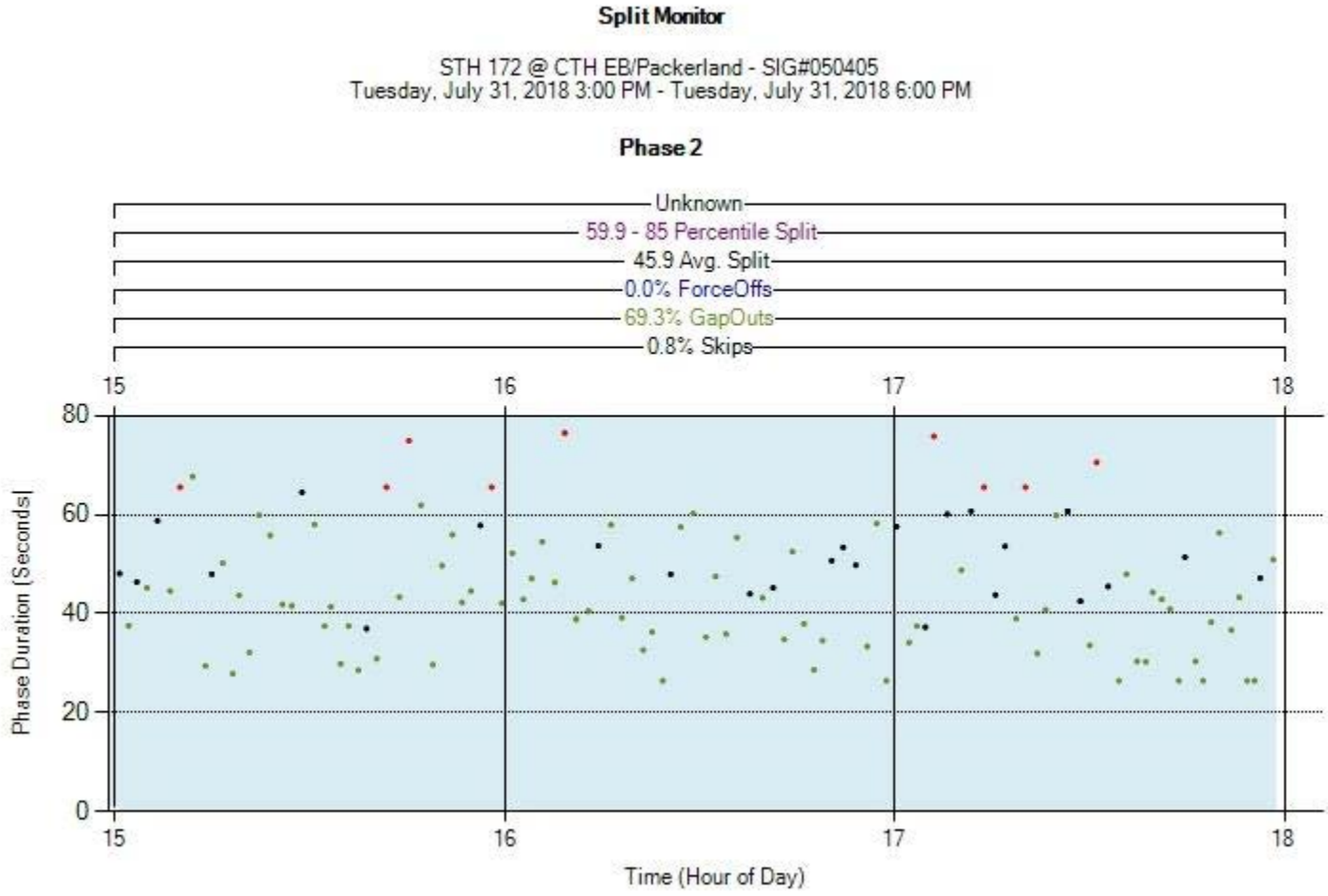


WisBOOM Outputs
WIS 172 & County EB
HCS Optimized Timings

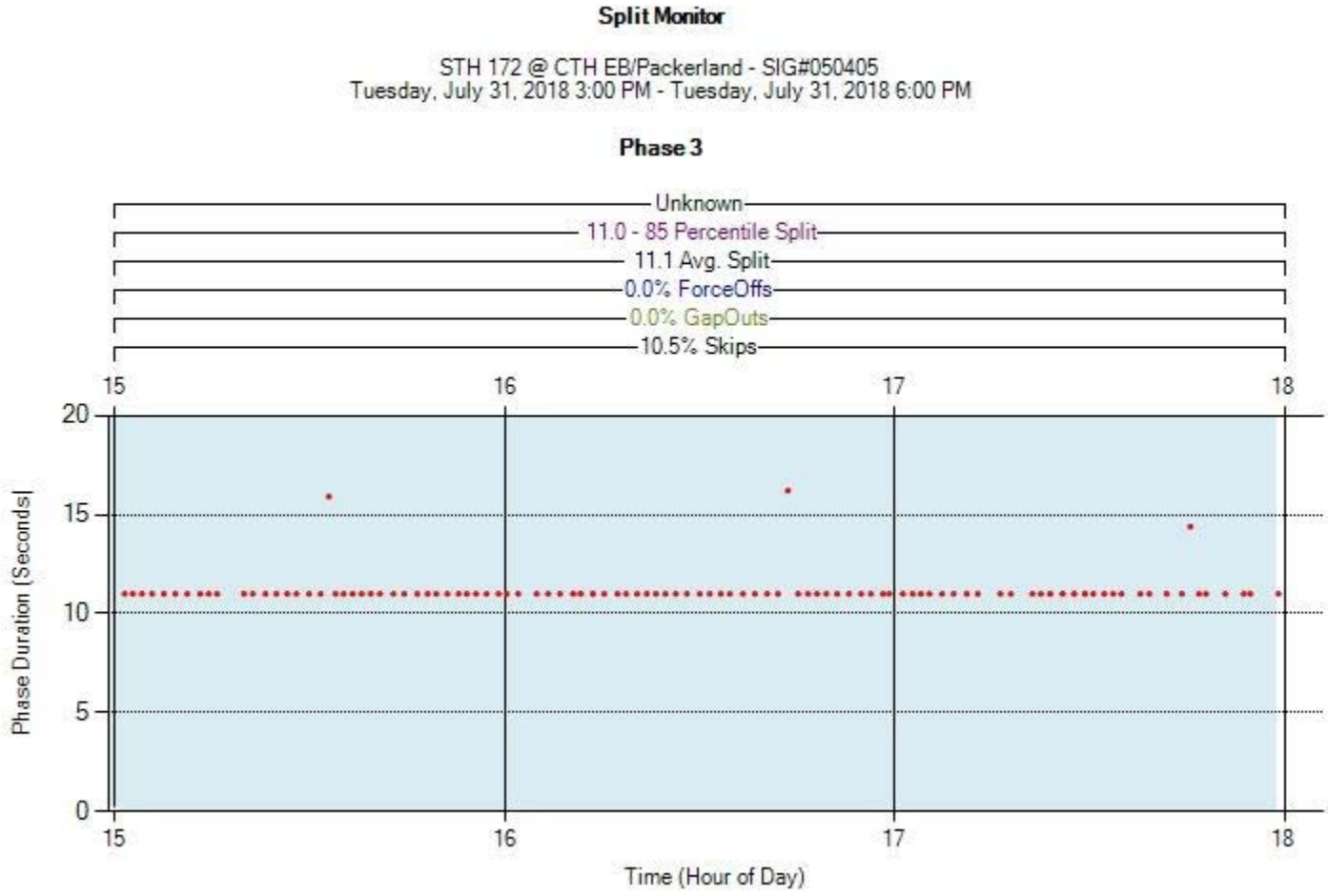
Isolated Signal – WIS 172 & County EB/Packerland Drive
HCS Timings
7/31/2018 – 3:00 PM – 6:00 PM



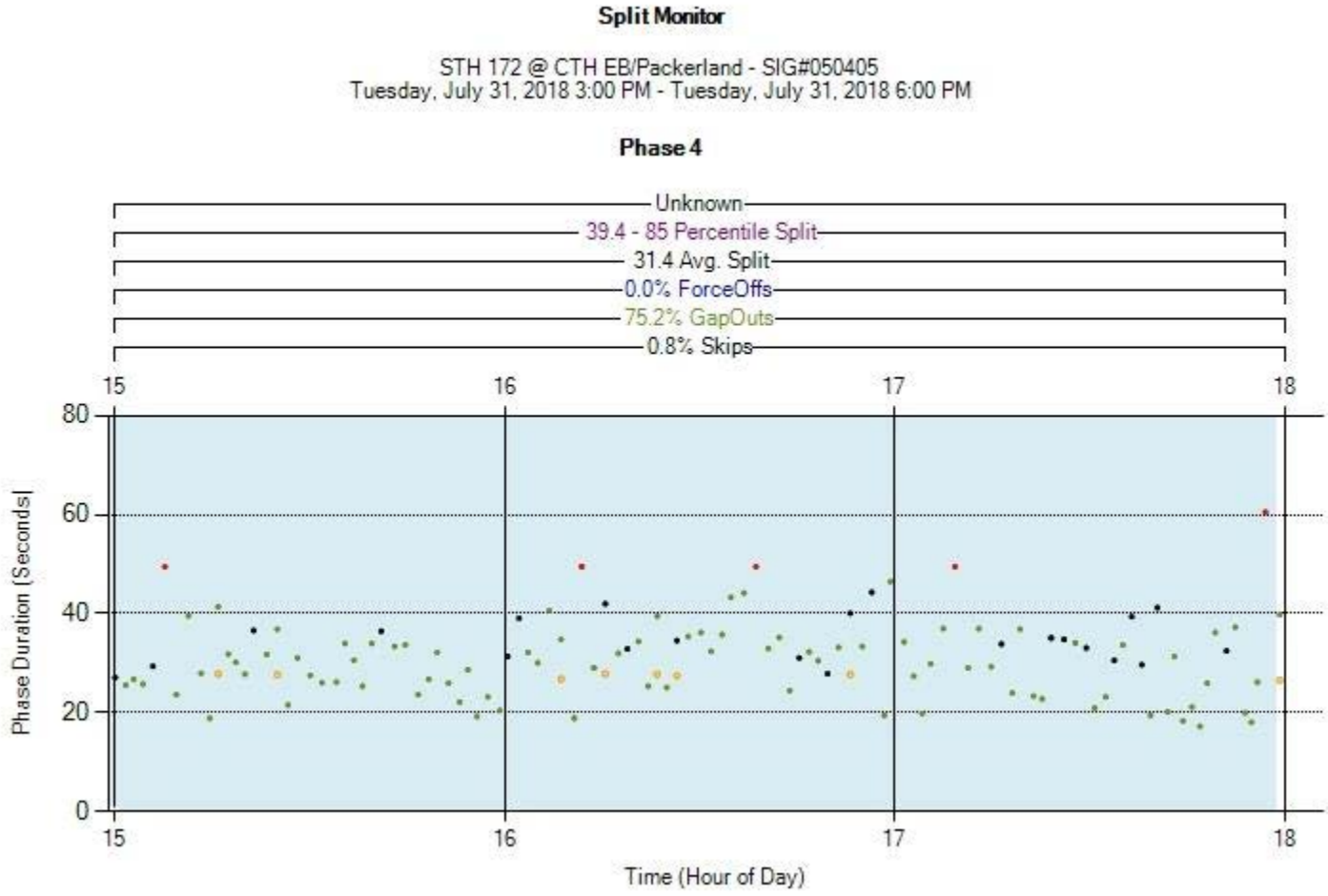
Isolated Signal – WIS 172 & County EB/Packerland Drive
HCS Timings
7/31/2018 – 3:00 PM – 6:00 PM



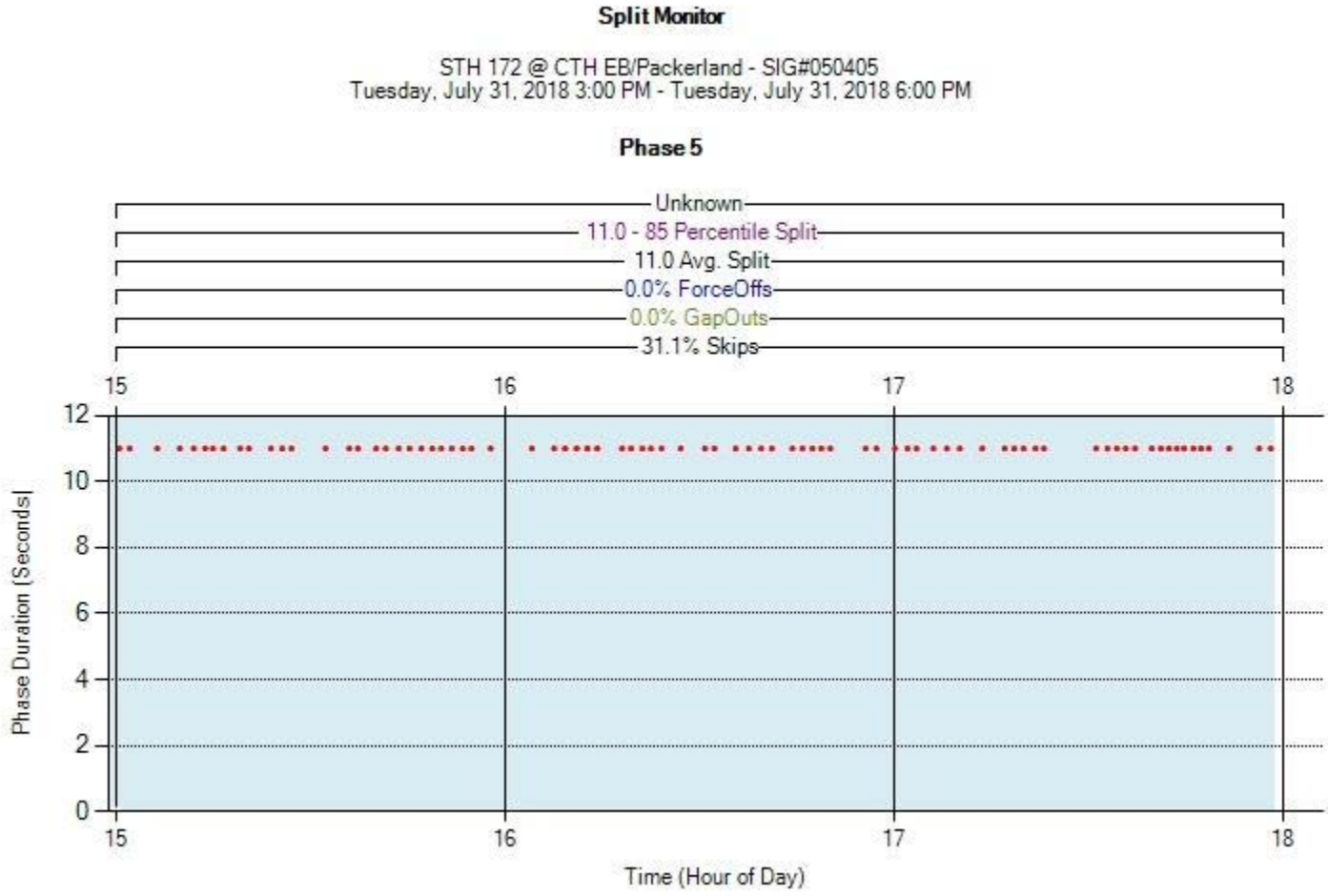
Isolated Signal – WIS 172 & County EB/Packerland Drive
HCS Timings
7/31/2018 – 3:00 PM – 6:00 PM



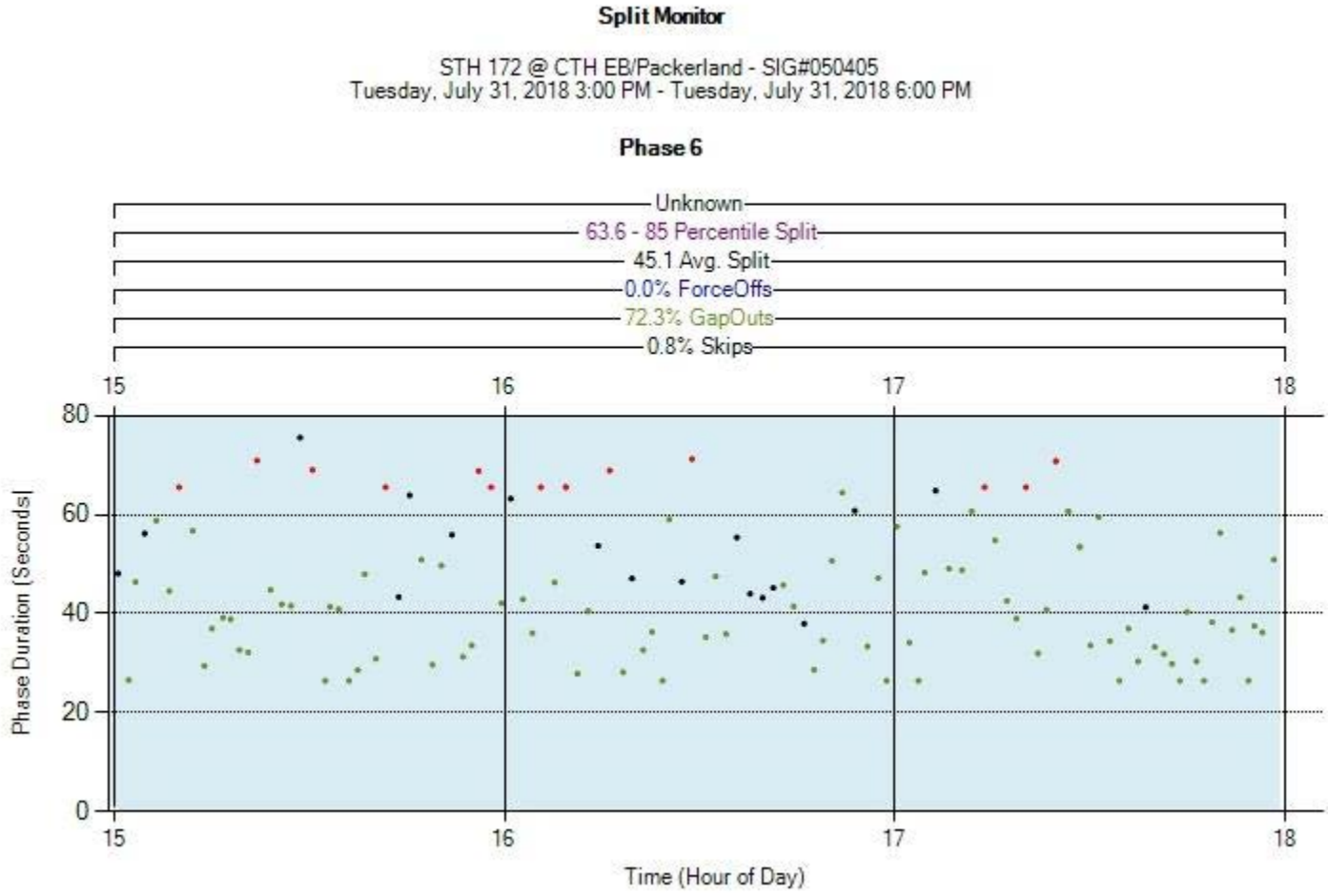
Isolated Signal – WIS 172 & County EB/Packerland Drive
HCS Timings
7/31/2018 – 3:00 PM – 6:00 PM



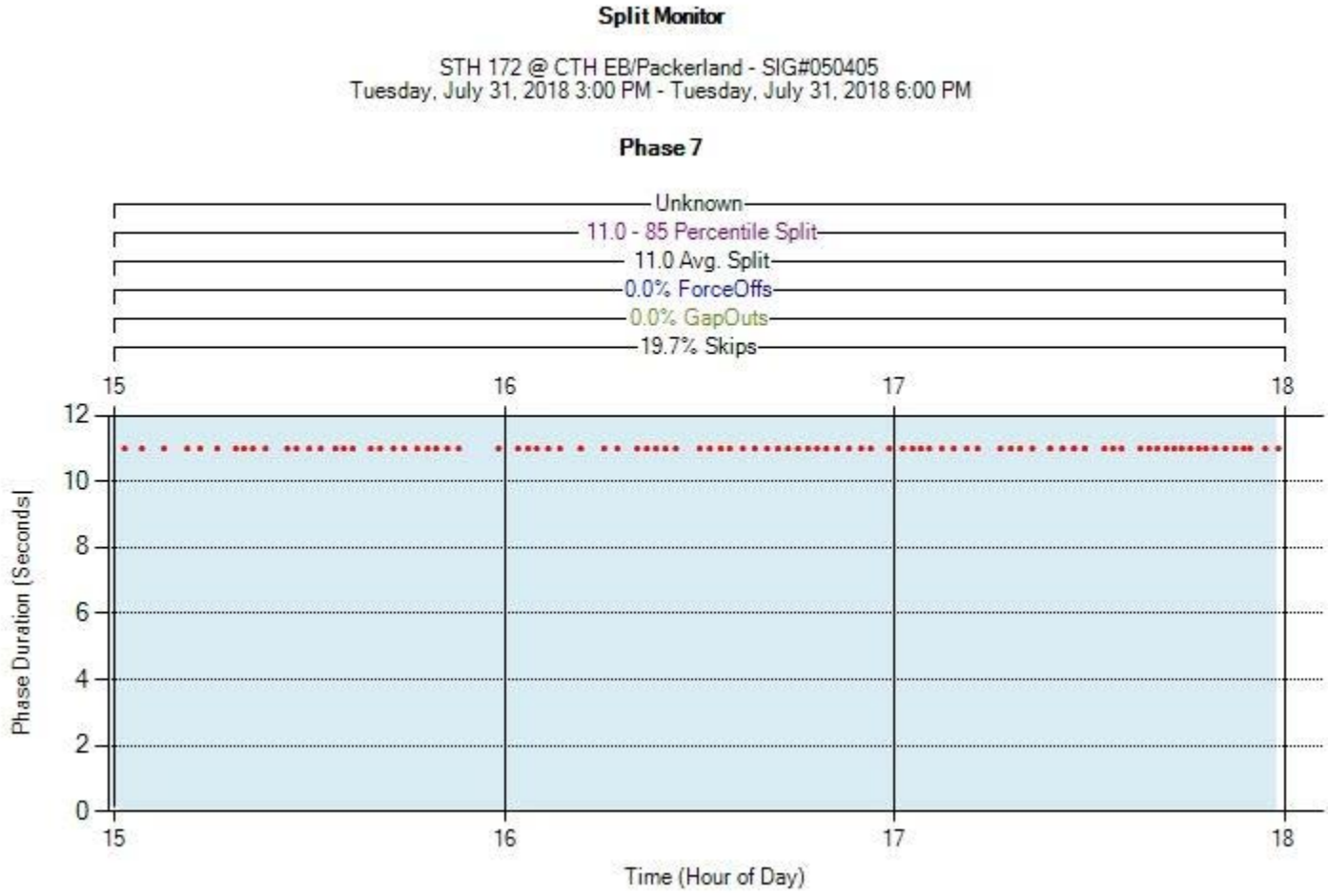
Isolated Signal – WIS 172 & County EB/Packerland Drive
HCS Timings
7/31/2018 – 3:00 PM – 6:00 PM



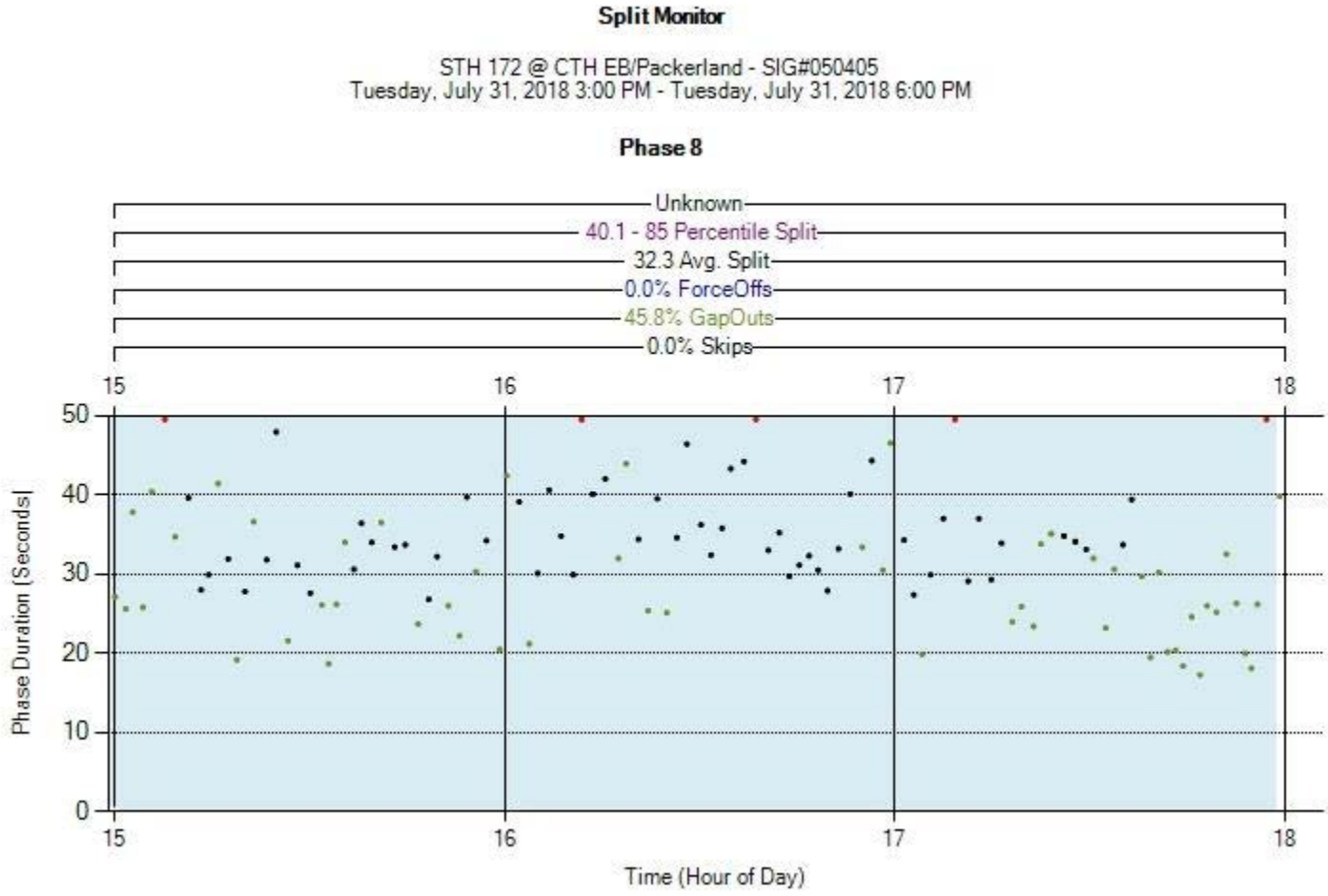
Isolated Signal – WIS 172 & County EB/Packerland Drive
HCS Timings
7/31/2018 – 3:00 PM – 6:00 PM



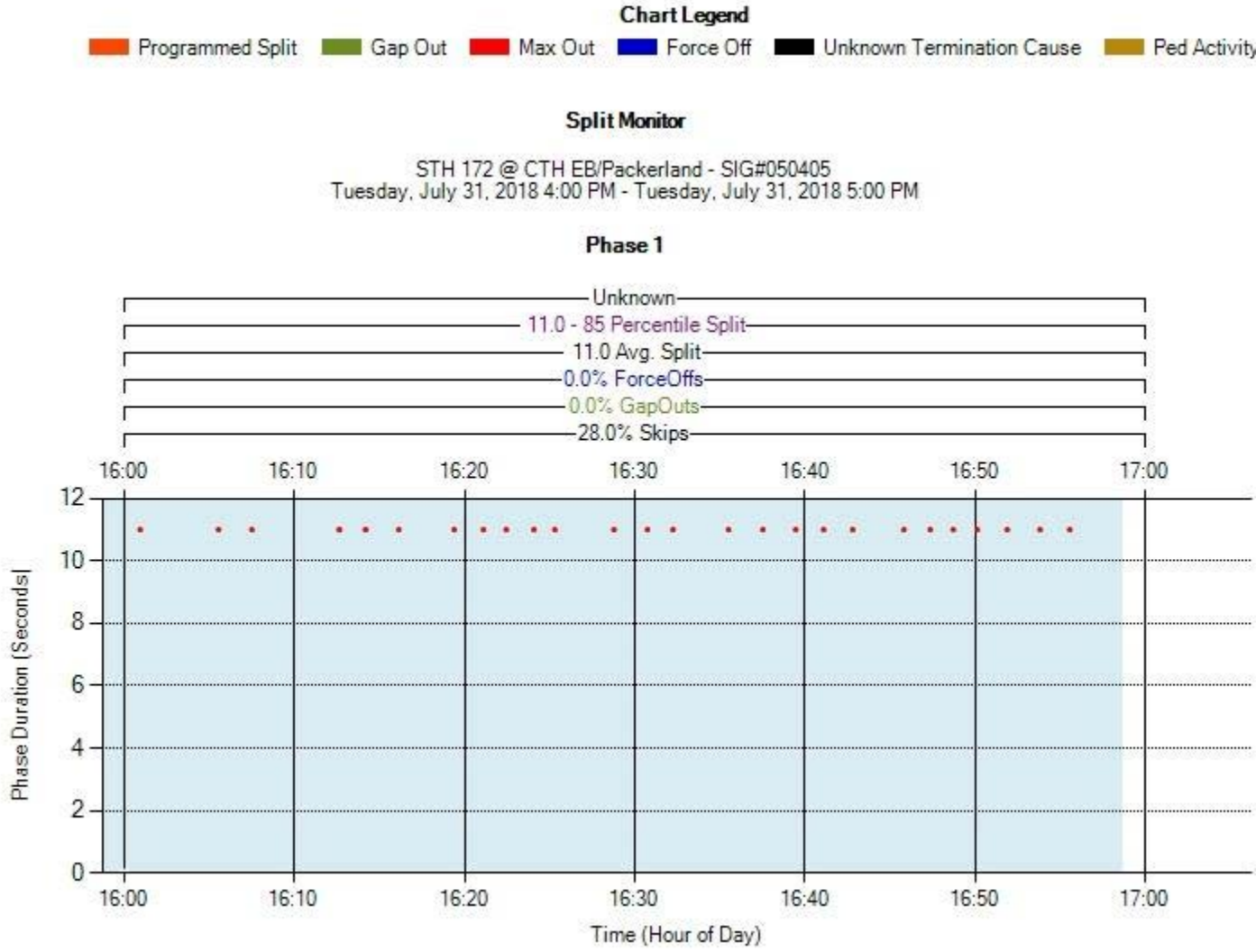
Isolated Signal – WIS 172 & County EB/Packerland Drive
HCS Timings
7/31/2018 – 3:00 PM – 6:00 PM



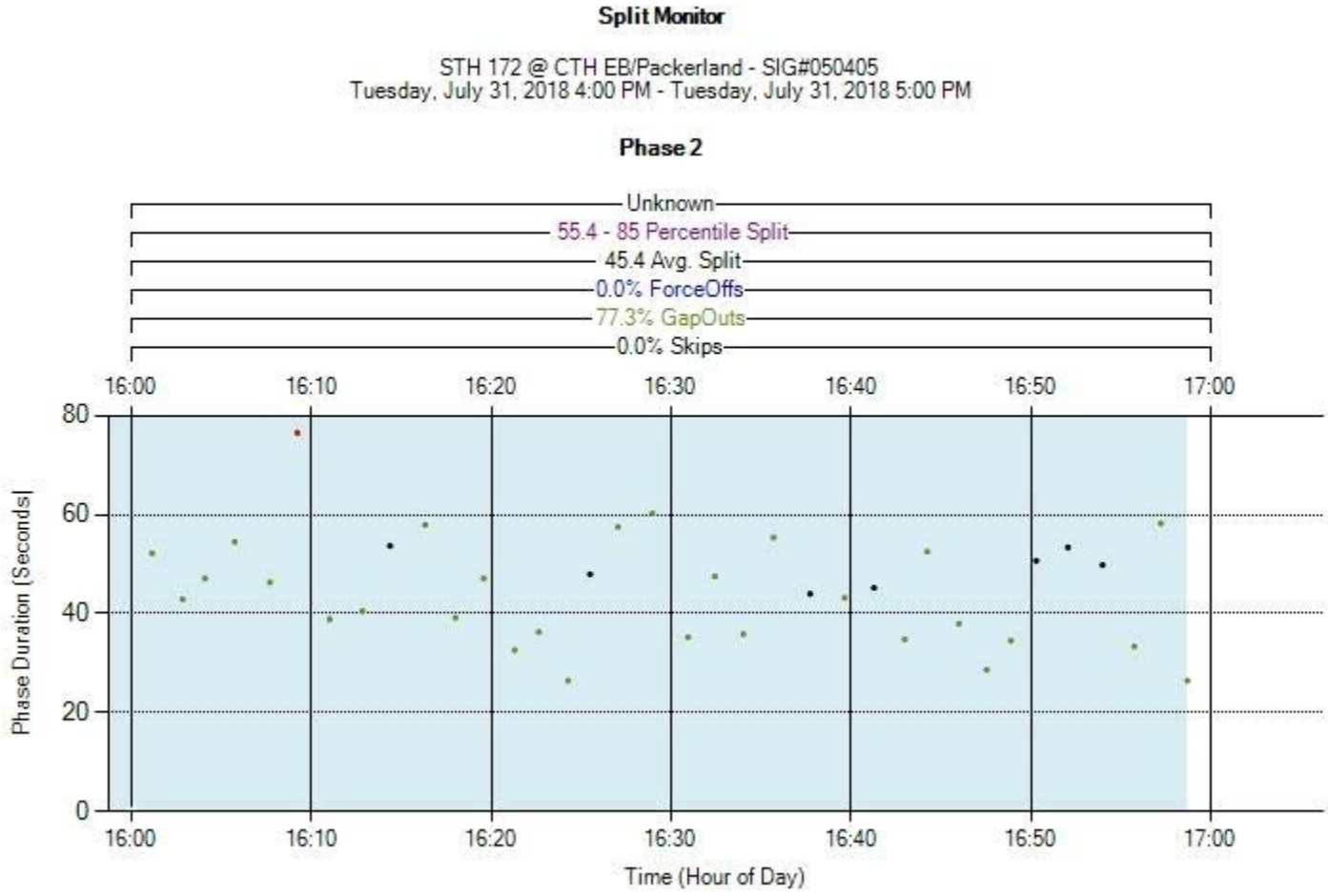
Isolated Signal – WIS 172 & County EB/Packerland Drive
HCS Timings
7/31/2018 – 3:00 PM – 6:00 PM



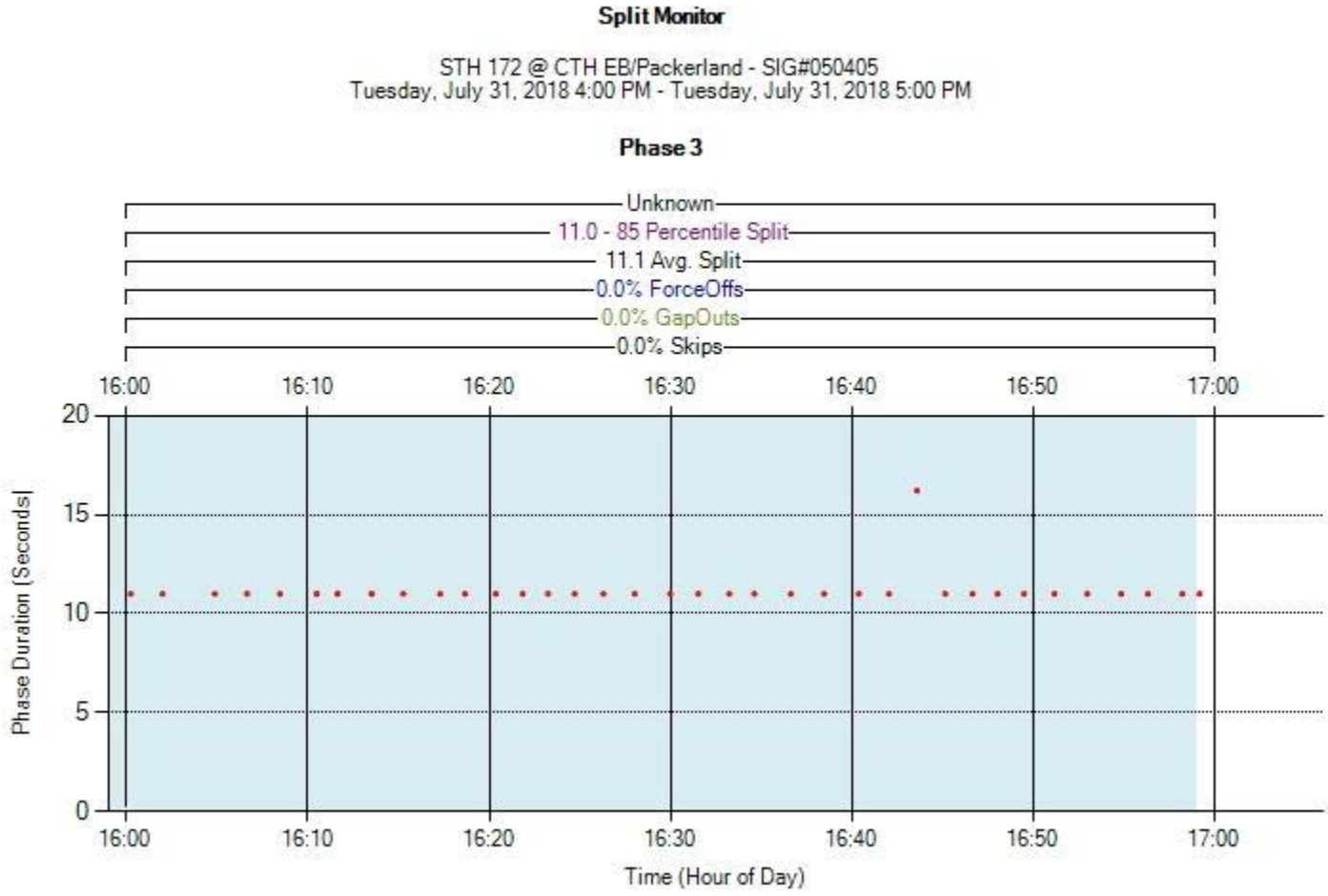
Isolated Signal – WIS 172 & County EB/Packerland Drive
HCS Timings
7/31/2018 – 4:00 PM – 5:00 PM



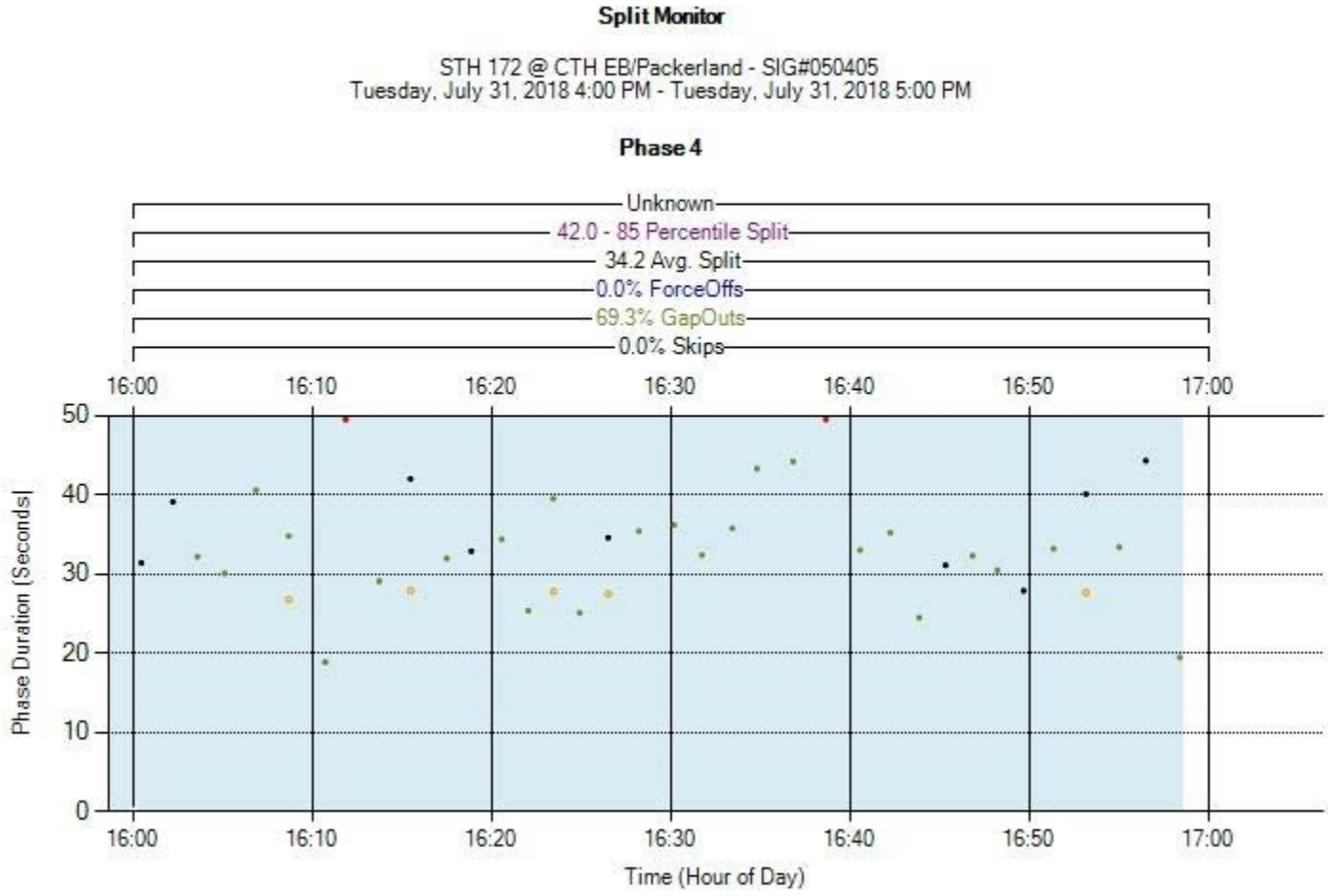
Isolated Signal – WIS 172 & County EB/Packerland Drive
HCS Timings
7/31/2018 – 4:00 PM – 5:00 PM



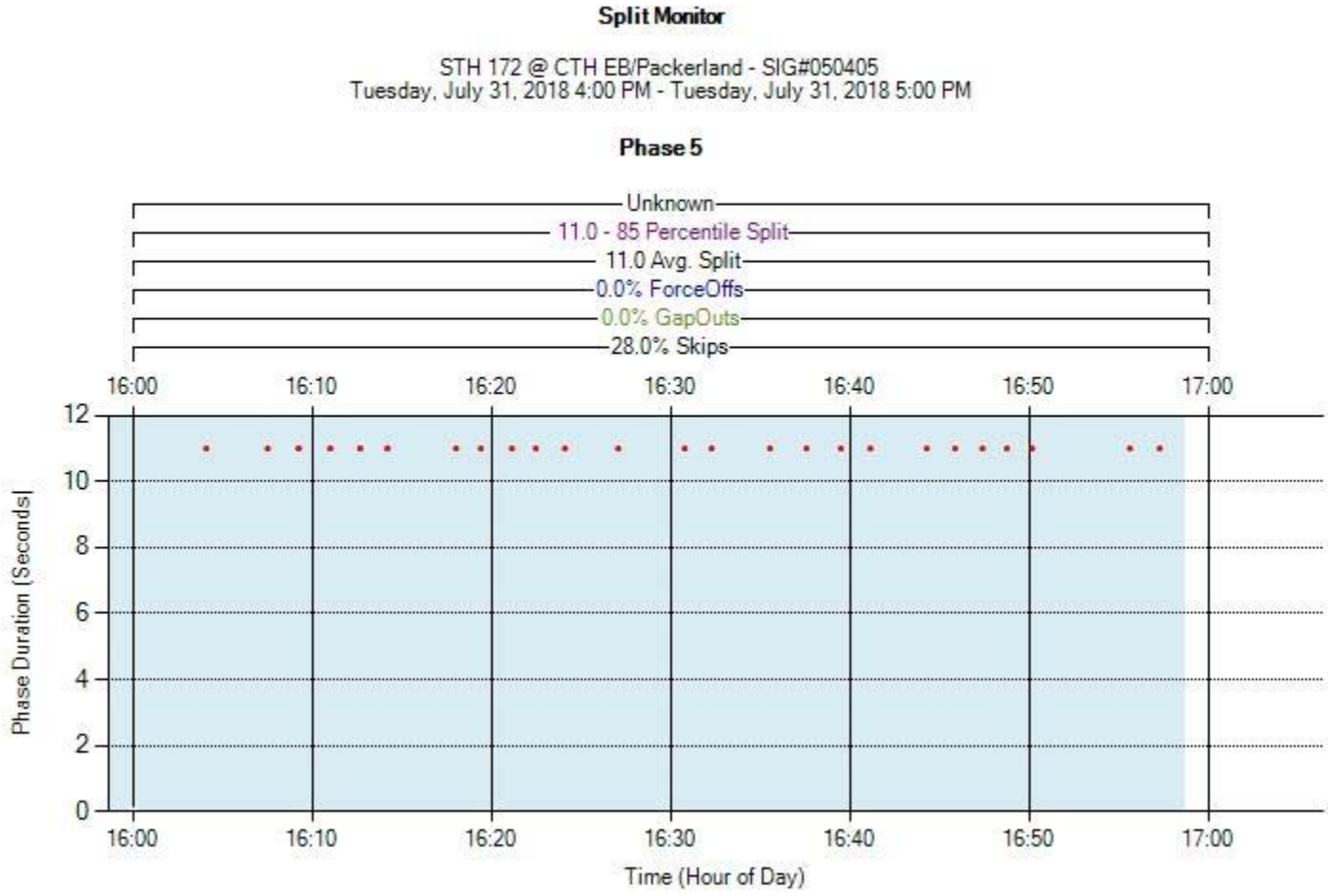
Isolated Signal – WIS 172 & County EB/Packerland Drive
HCS Timings
7/31/2018 – 4:00 PM – 5:00 PM



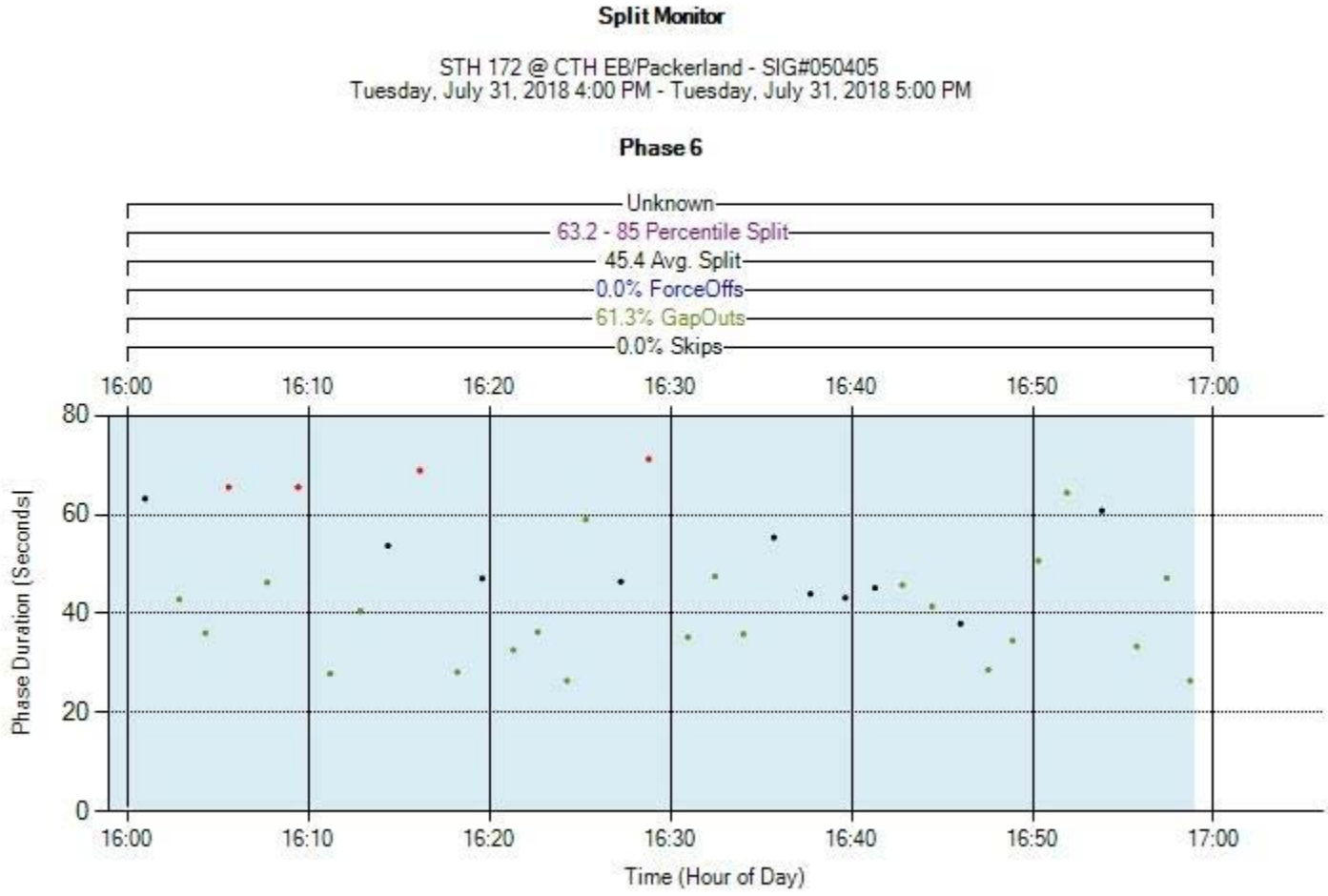
Isolated Signal – WIS 172 & County EB/Packerland Drive
HCS Timings
7/31/2018 – 4:00 PM – 5:00 PM



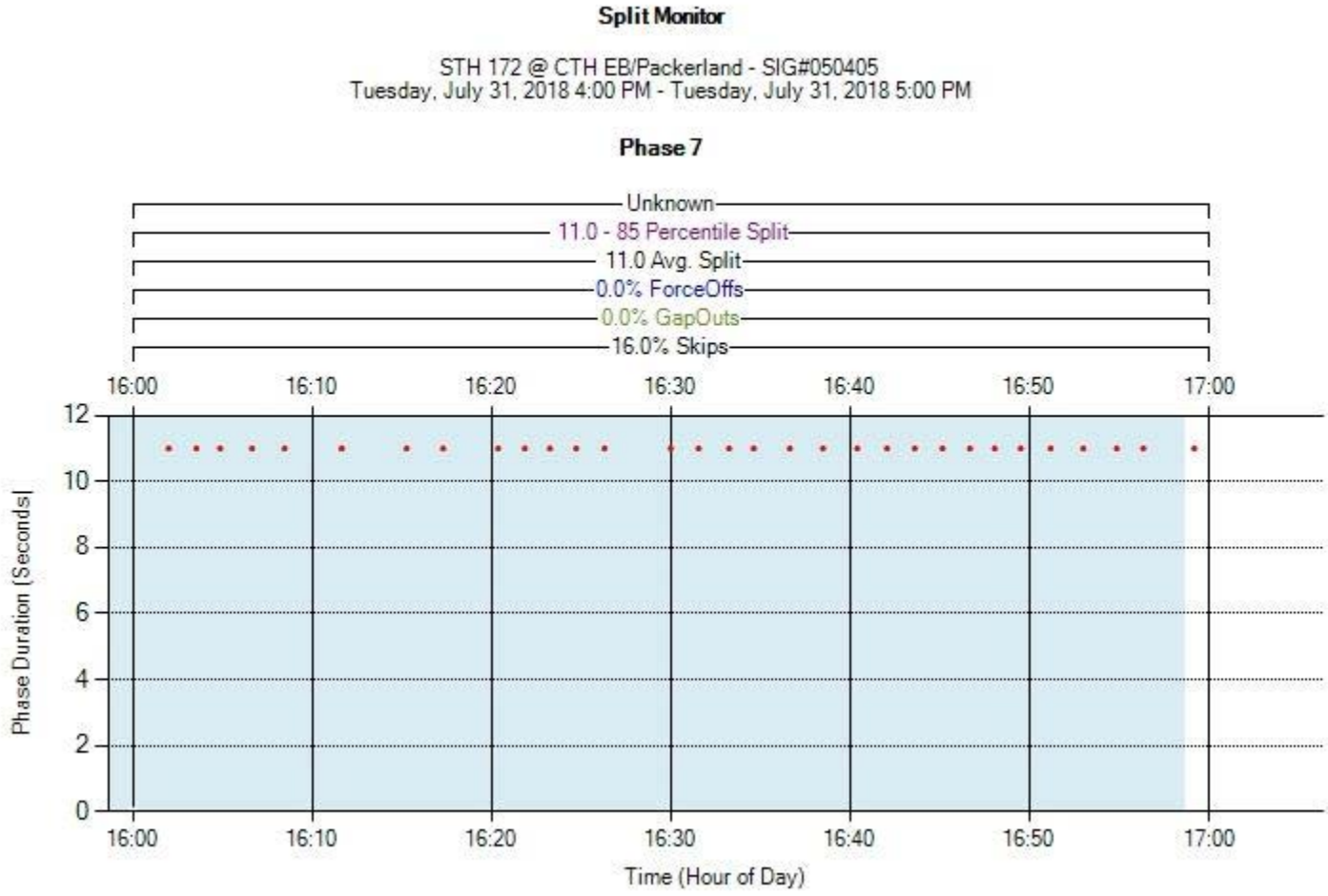
Isolated Signal – WIS 172 & County EB/Packerland Drive
HCS Timings
7/31/2018 – 4:00 PM – 5:00 PM



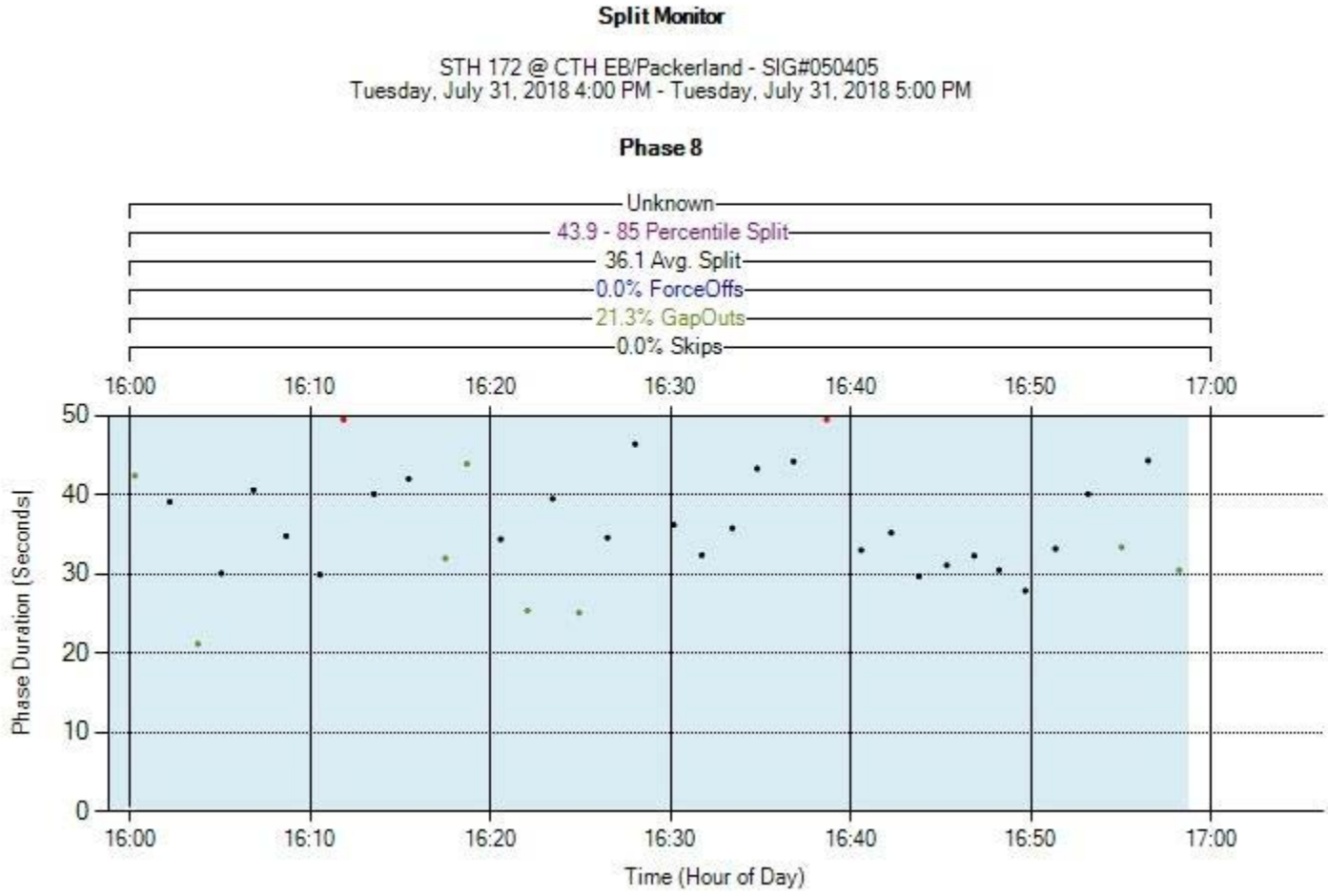
Isolated Signal – WIS 172 & County EB/Packerland Drive
HCS Timings
7/31/2018 – 4:00 PM – 5:00 PM



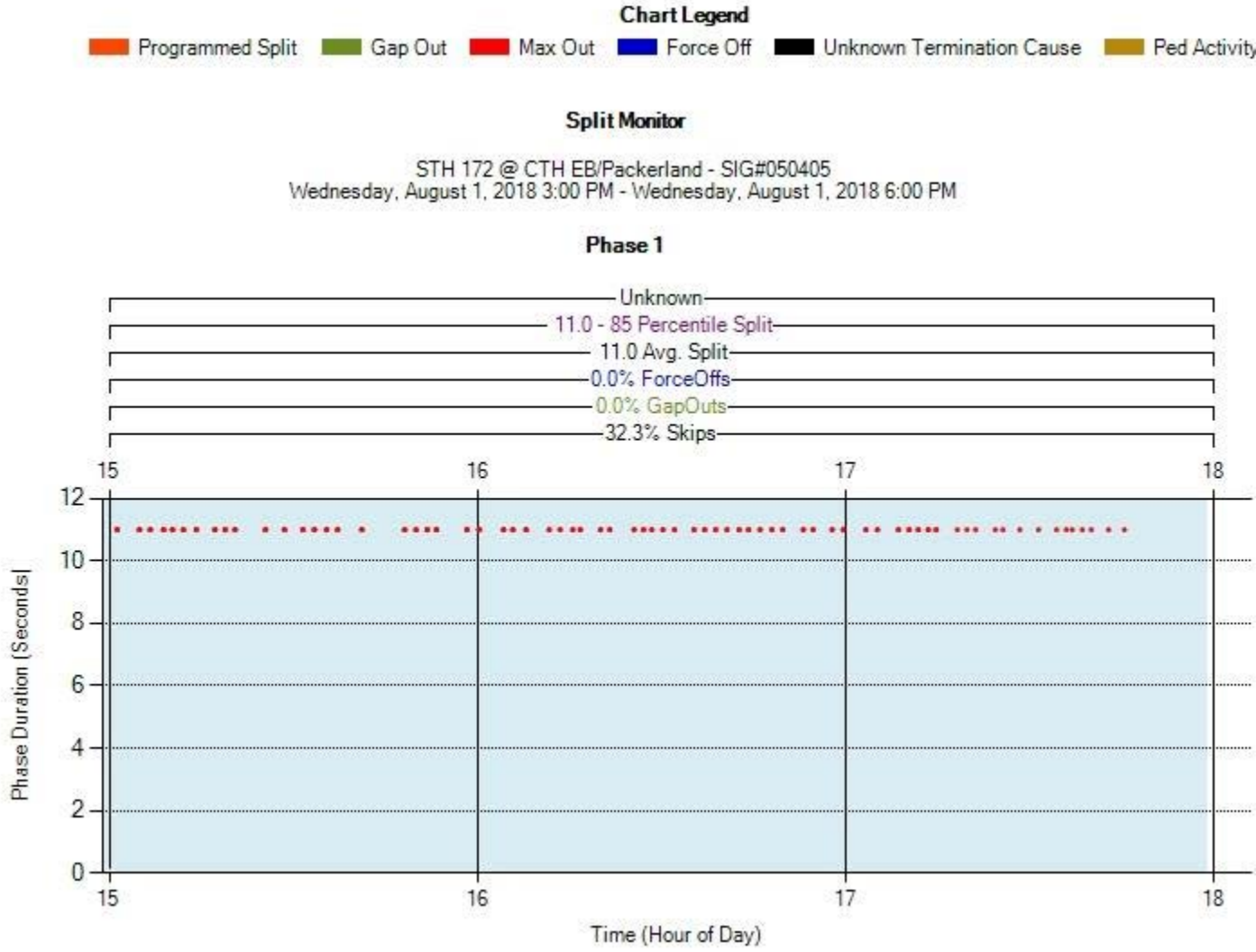
Isolated Signal – WIS 172 & County EB/Packerland Drive
HCS Timings
7/31/2018 – 4:00 PM – 5:00 PM



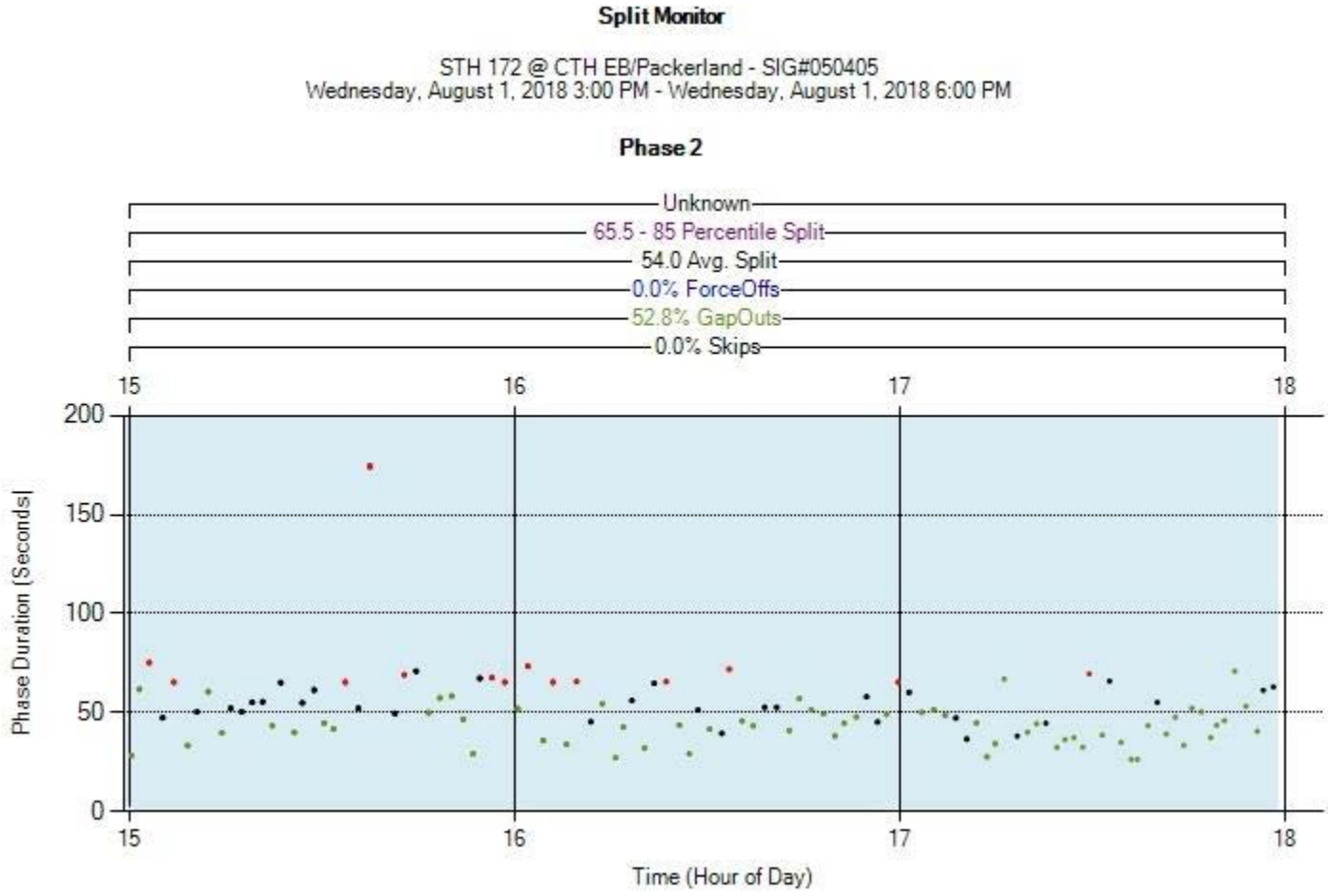
Isolated Signal – WIS 172 & County EB/Packerland Drive
HCS Timings
7/31/2018 – 4:00 PM – 5:00 PM



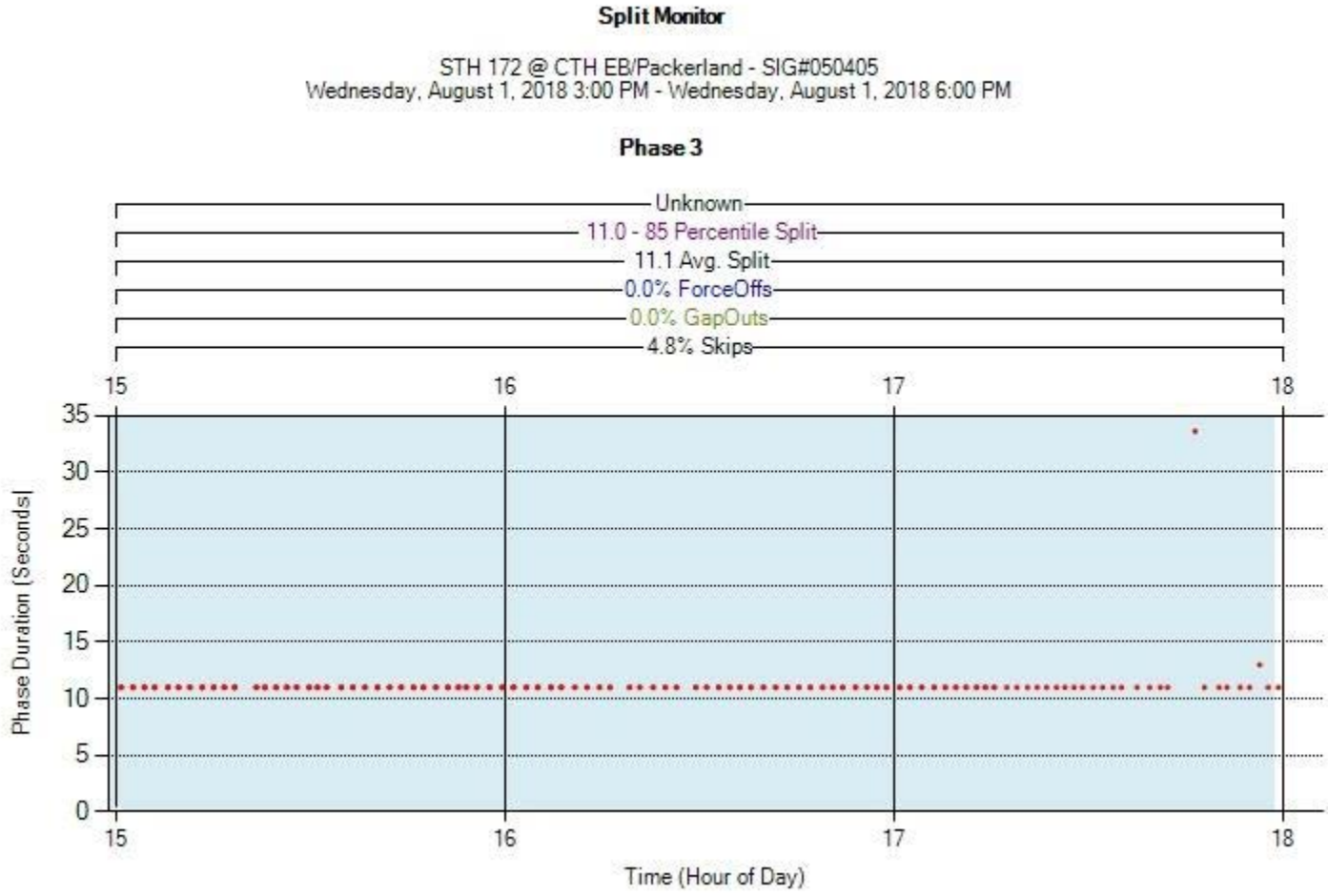
Isolated Signal – WIS 172 & County EB/Packerland Drive
HCS Timings
8/1//2018 – 3:00 PM – 6:00 PM



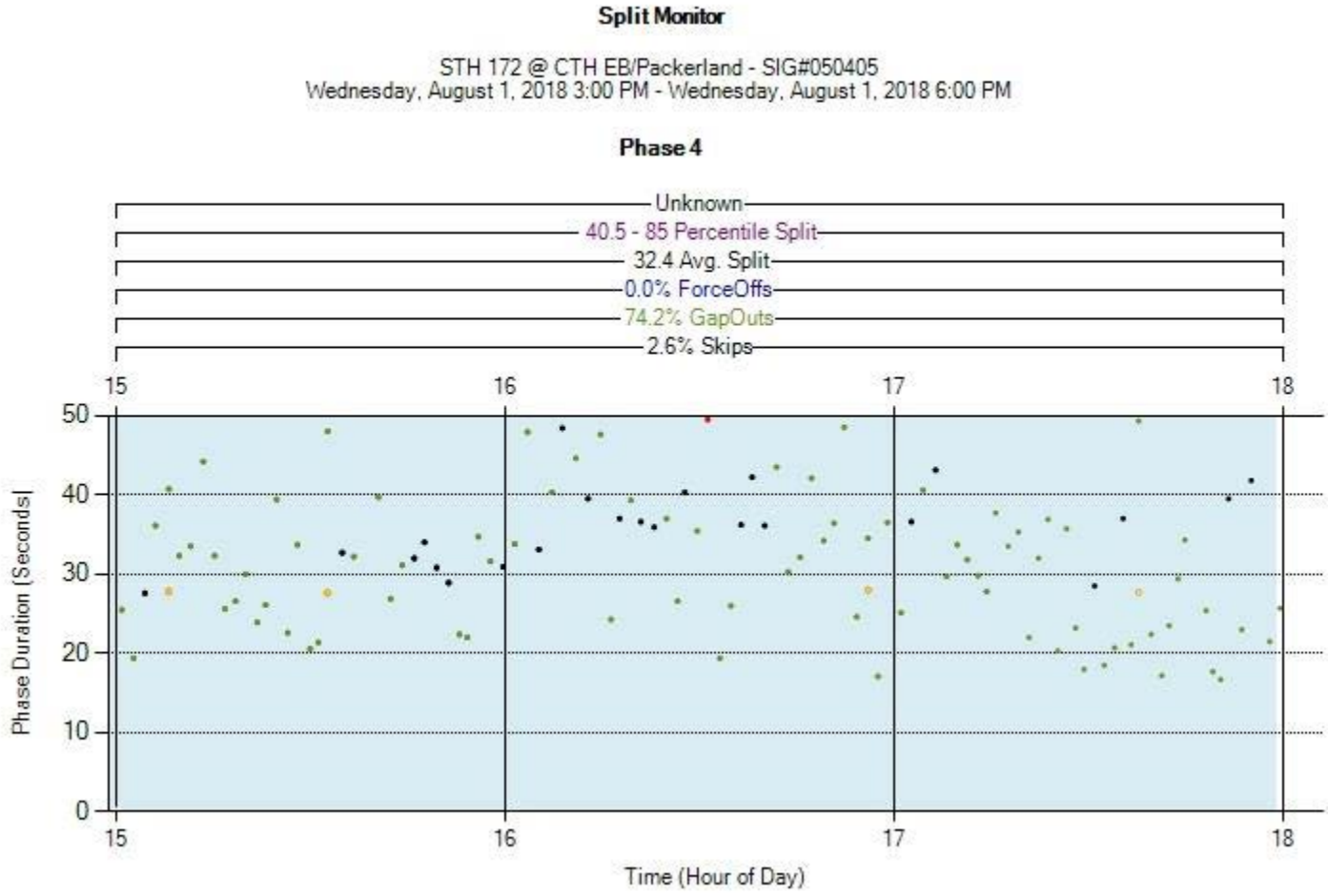
Isolated Signal – WIS 172 & County EB/Packerland Drive
HCS Timings
8/1//2018 – 3:00 PM – 6:00 PM



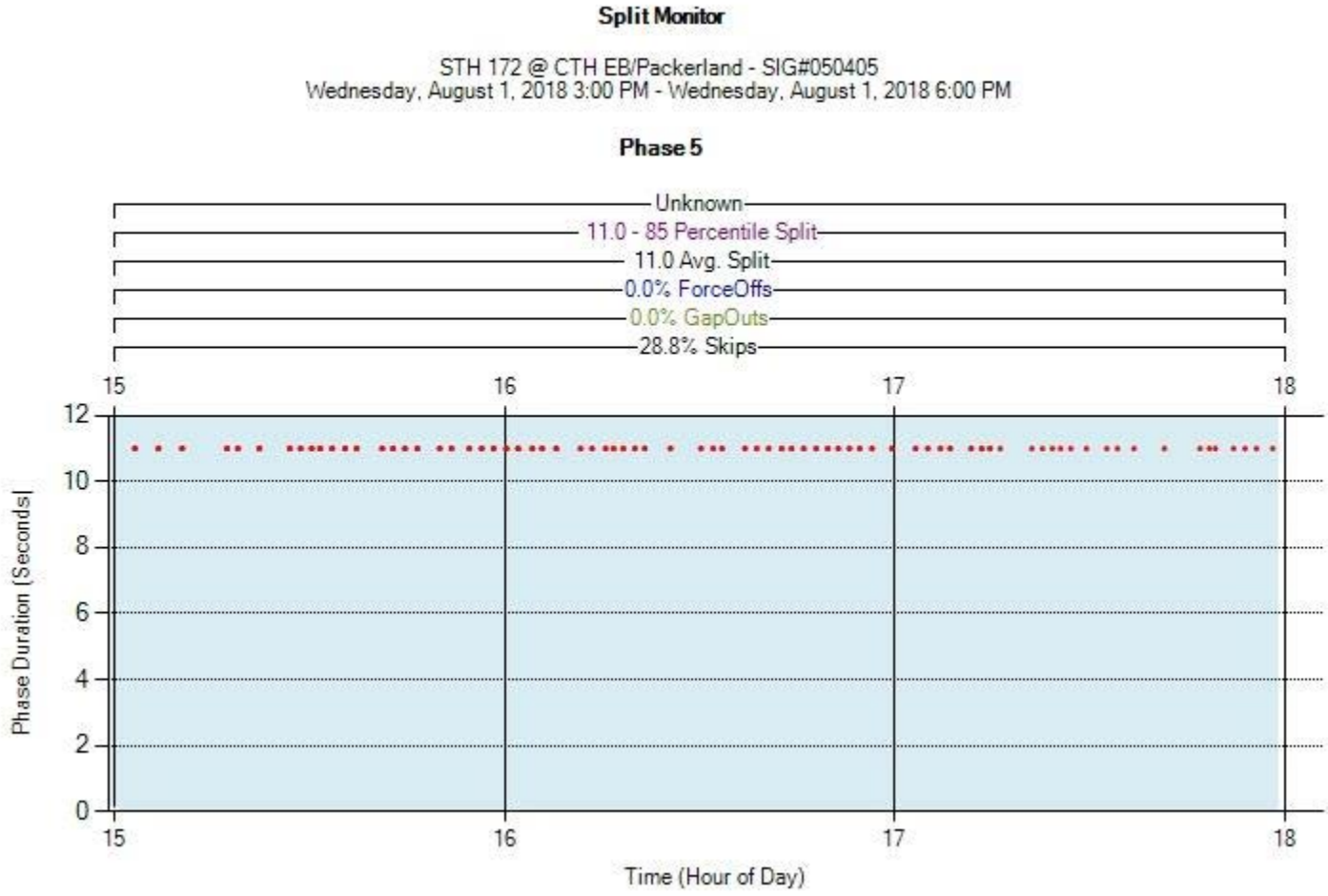
Isolated Signal – WIS 172 & County EB/Packerland Drive
HCS Timings
8/1//2018 – 3:00 PM – 6:00 PM



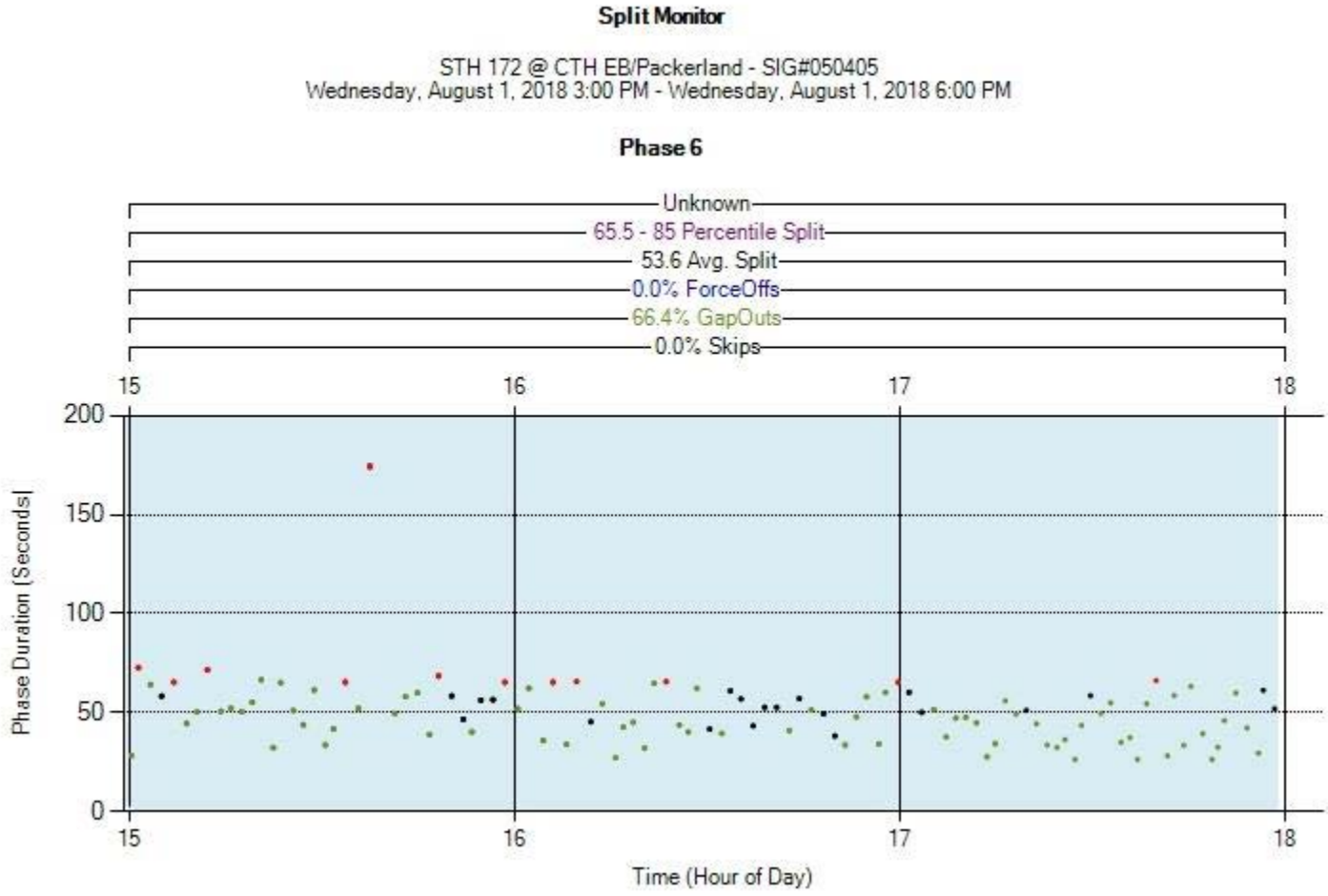
Isolated Signal – WIS 172 & County EB/Packerland Drive
HCS Timings
8/1//2018 – 3:00 PM – 6:00 PM



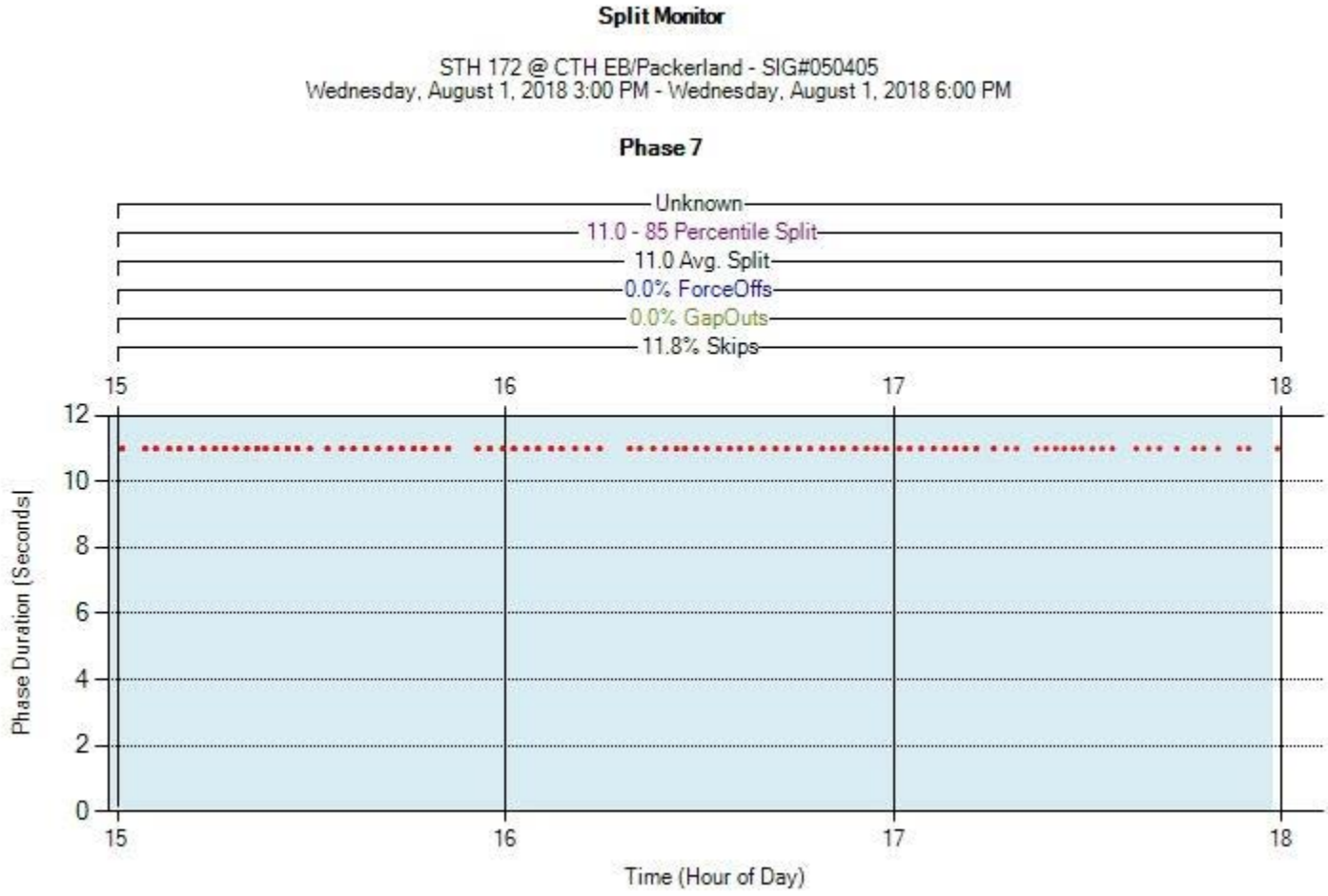
Isolated Signal – WIS 172 & County EB/Packerland Drive
HCS Timings
8/1//2018 – 3:00 PM – 6:00 PM



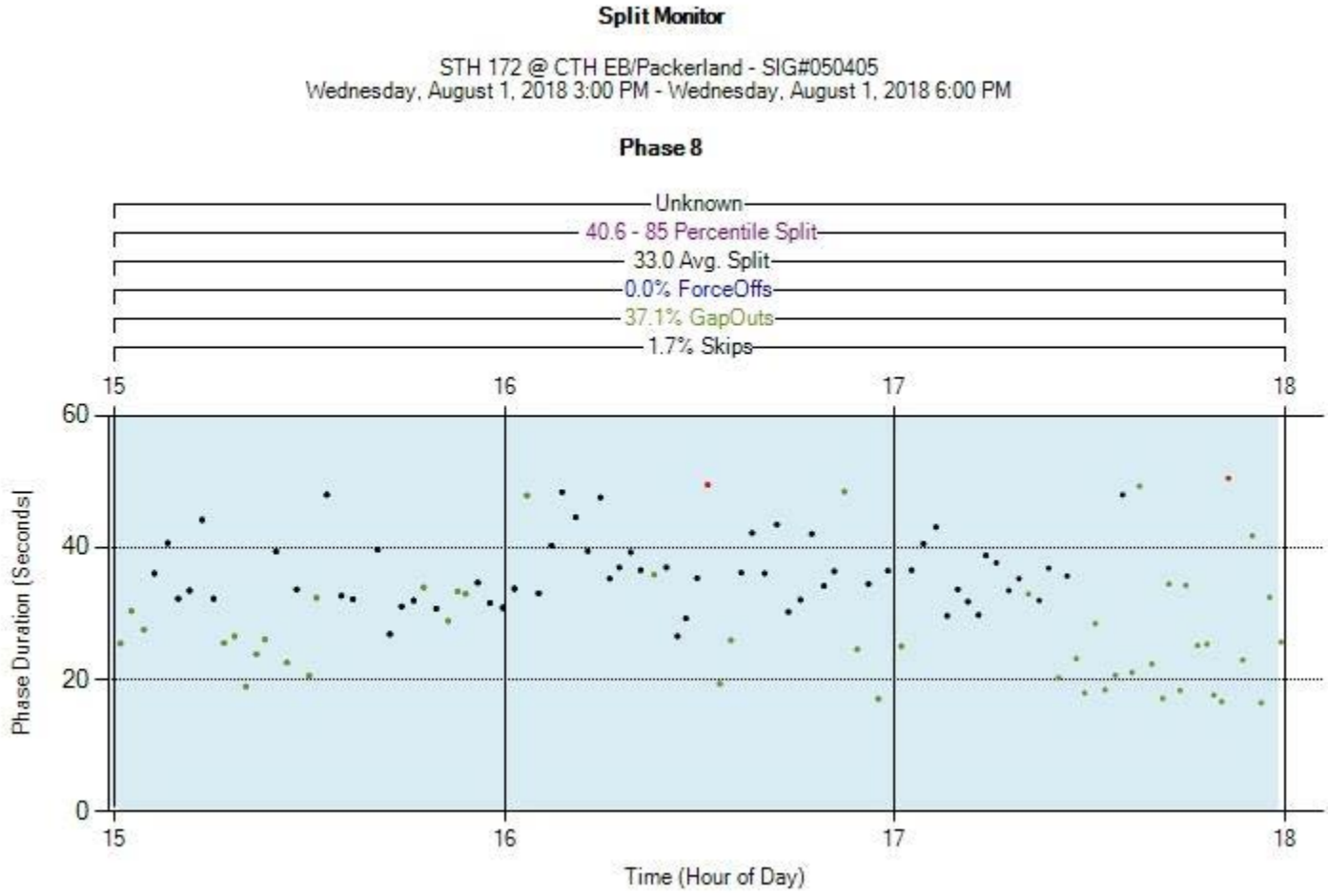
Isolated Signal – WIS 172 & County EB/Packerland Drive
HCS Timings
8/1//2018 – 3:00 PM – 6:00 PM



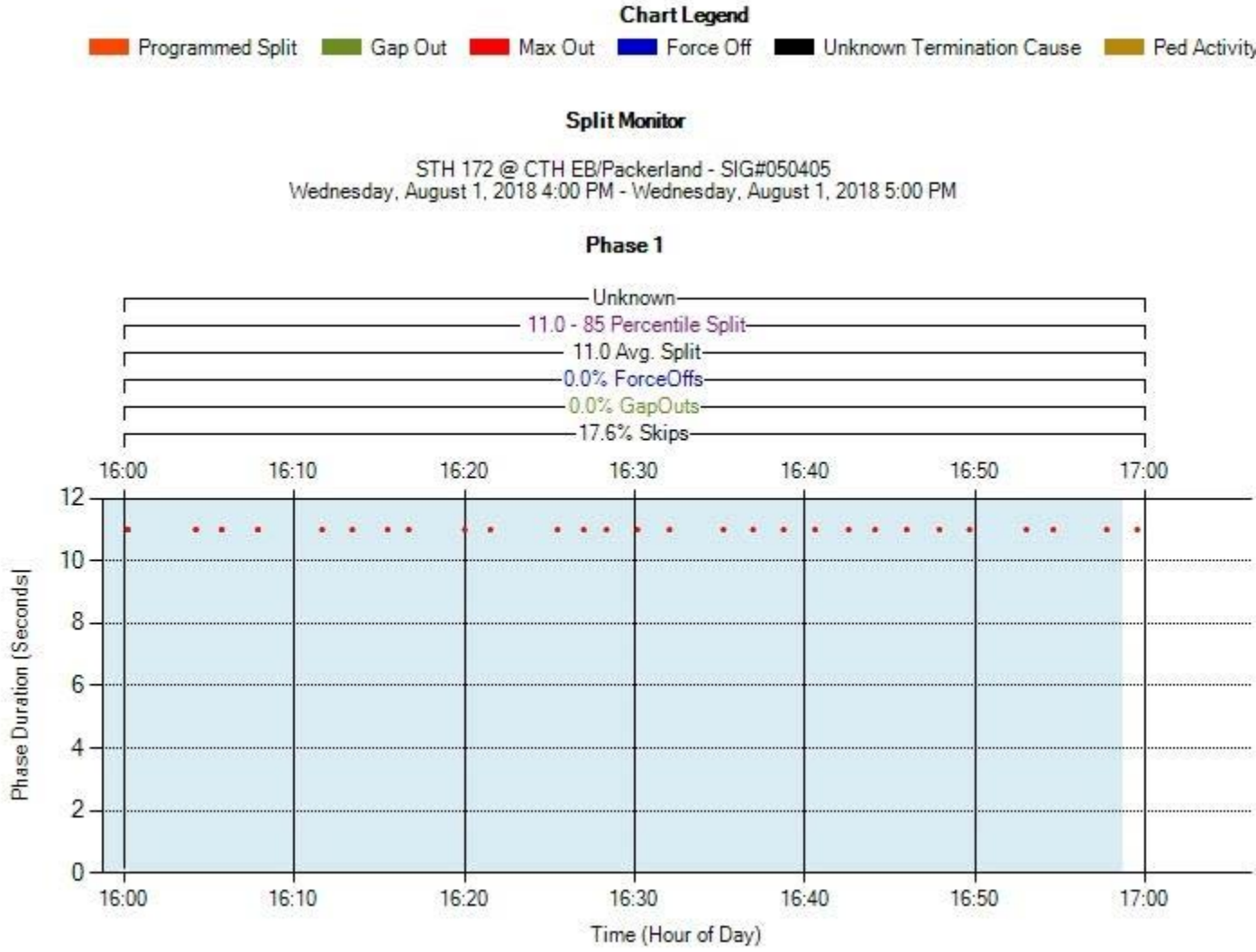
Isolated Signal – WIS 172 & County EB/Packerland Drive
HCS Timings
8/1//2018 – 3:00 PM – 6:00 PM



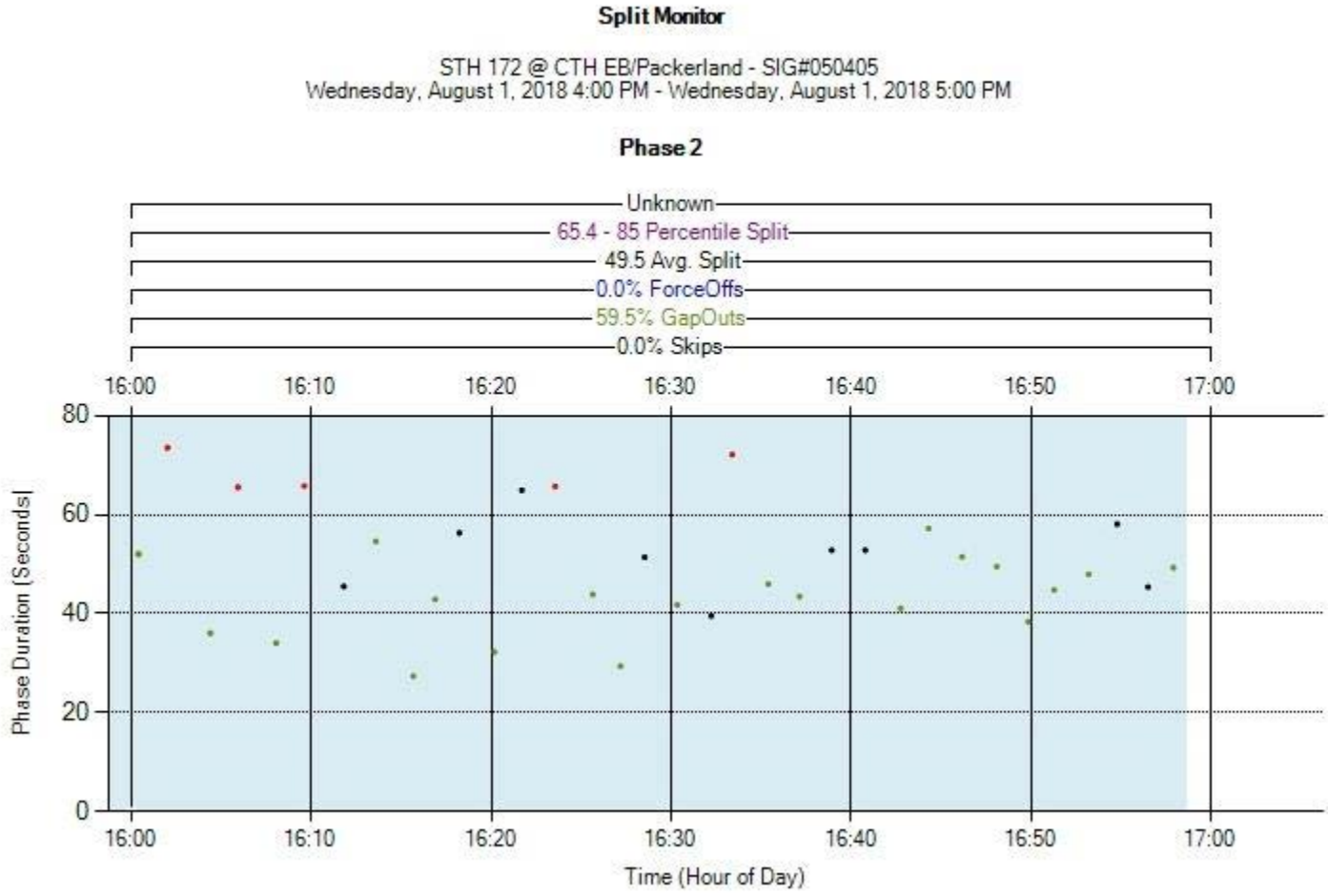
Isolated Signal – WIS 172 & County EB/Packerland Drive
HCS Timings
8/1//2018 – 3:00 PM – 6:00 PM



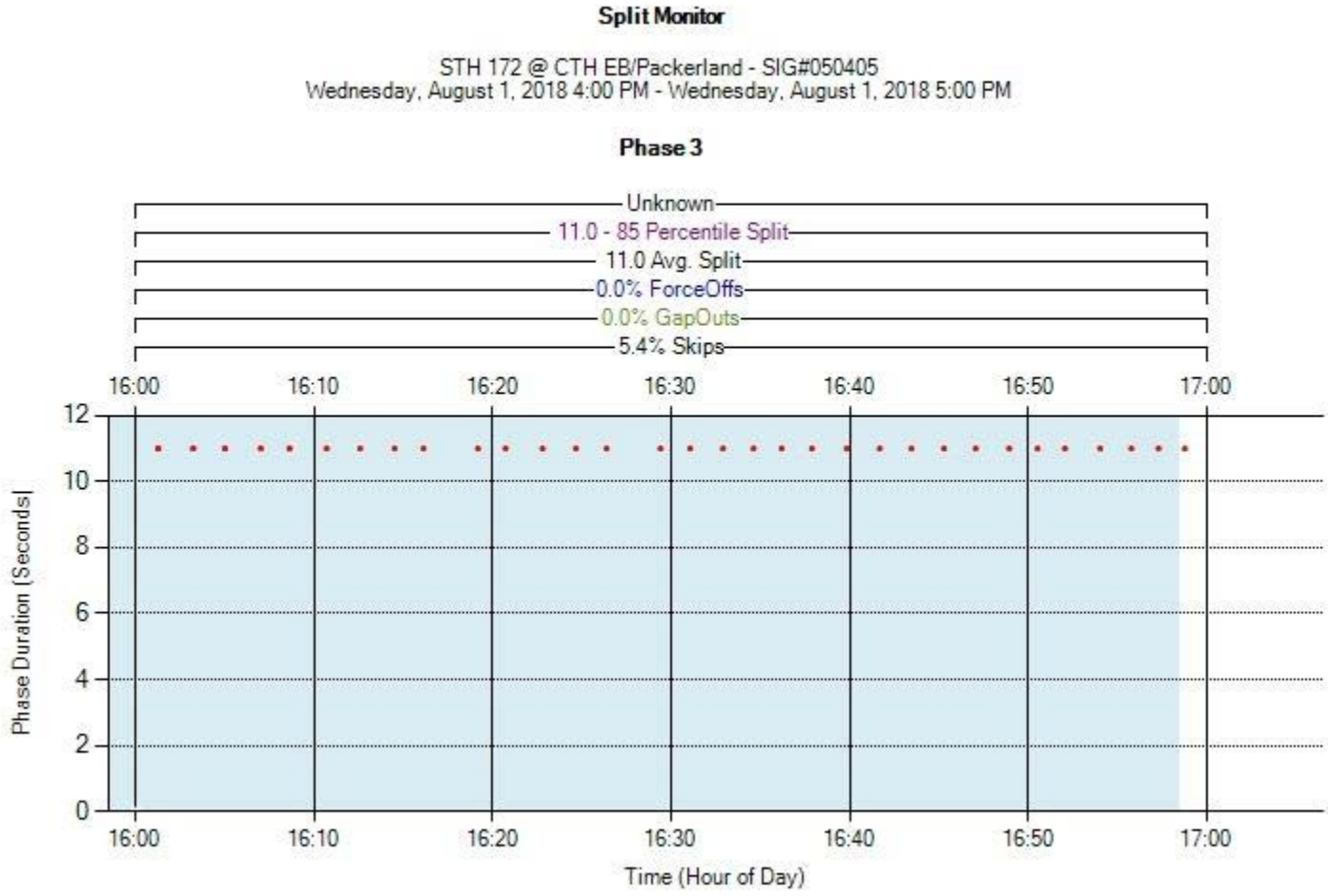
Isolated Signal – WIS 172 & County EB/Packerland Drive
HCS Timings
8/1/2018 – 4:00 PM – 5:00 PM



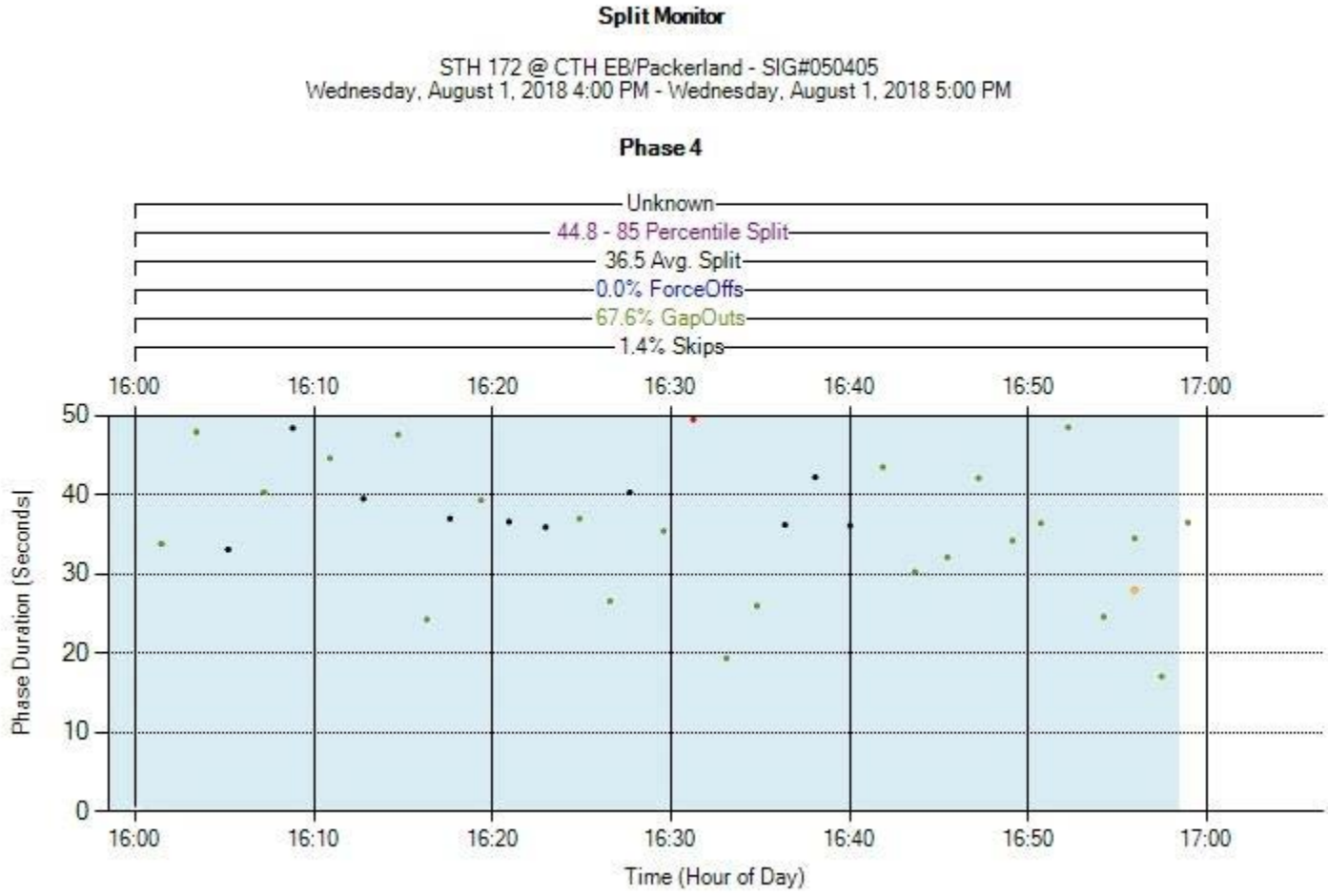
Isolated Signal – WIS 172 & County EB/Packerland Drive
HCS Timings
8/1/2018 – 4:00 PM – 5:00 PM



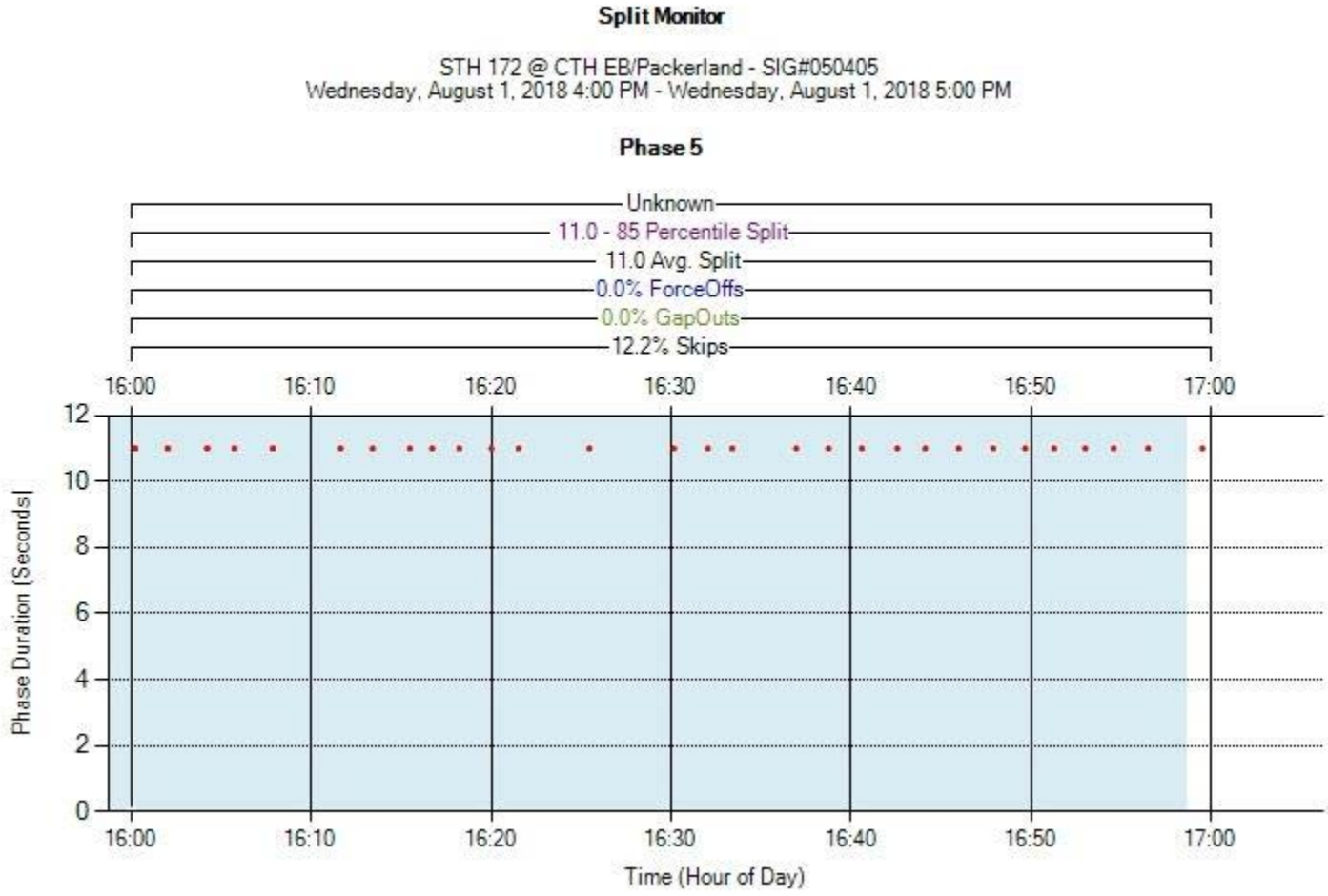
Isolated Signal – WIS 172 & County EB/Packerland Drive
HCS Timings
8/1/2018 – 4:00 PM – 5:00 PM



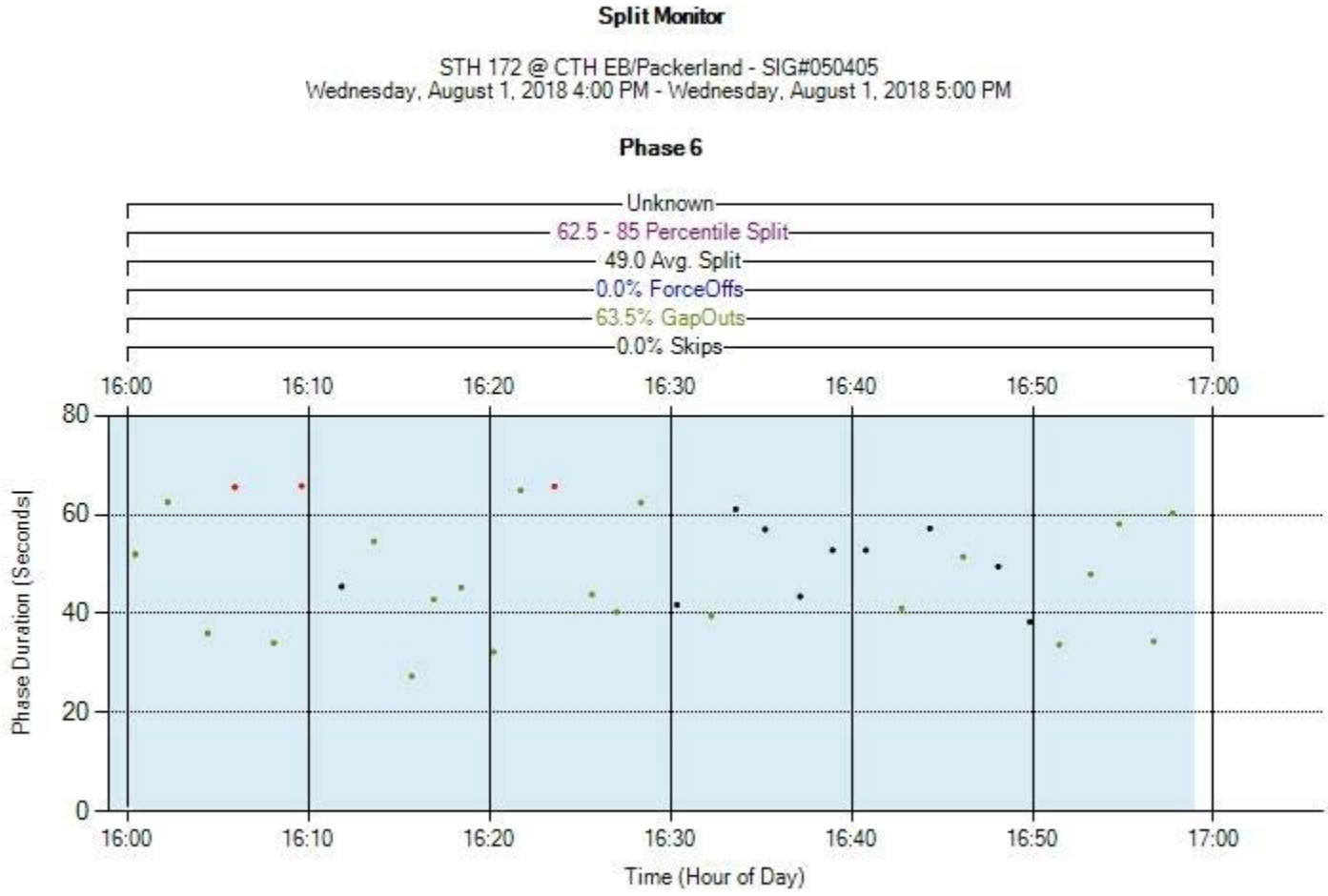
Isolated Signal – WIS 172 & County EB/Packerland Drive
HCS Timings
8/1/2018 – 4:00 PM – 5:00 PM



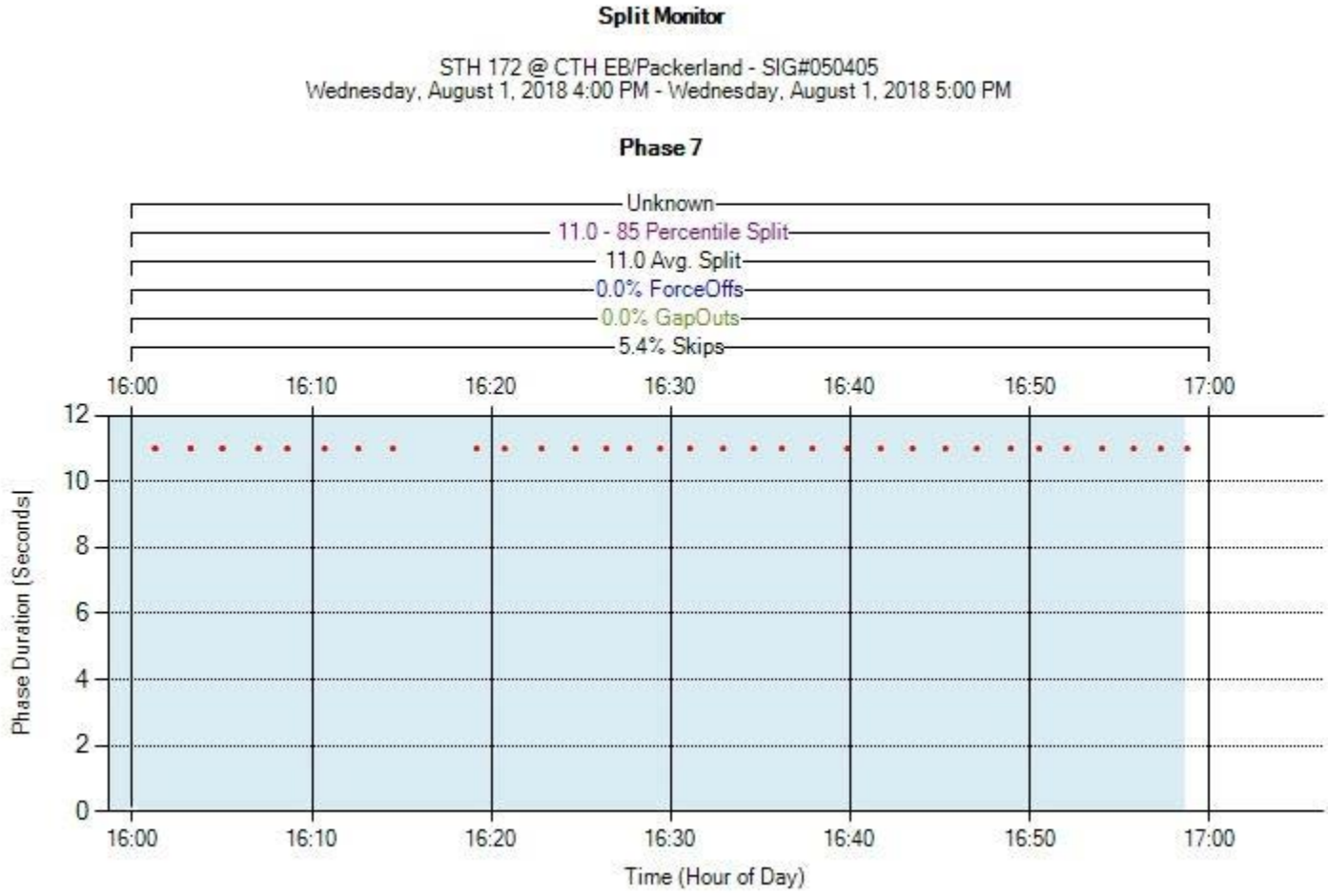
Isolated Signal – WIS 172 & County EB/Packerland Drive
HCS Timings
8/1/2018 – 4:00 PM – 5:00 PM



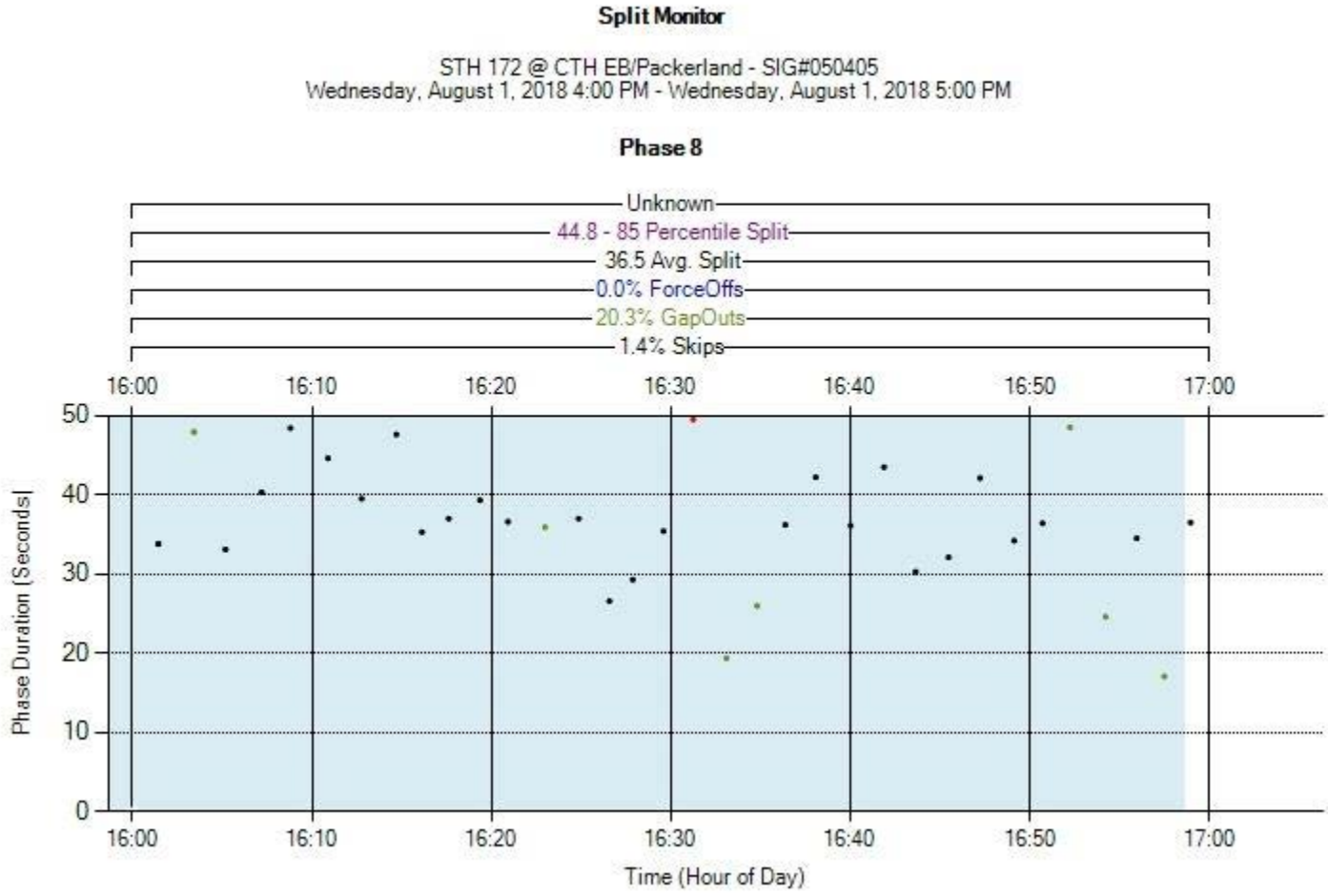
Isolated Signal – WIS 172 & County EB/Packerland Drive
HCS Timings
8/1/2018 – 4:00 PM – 5:00 PM



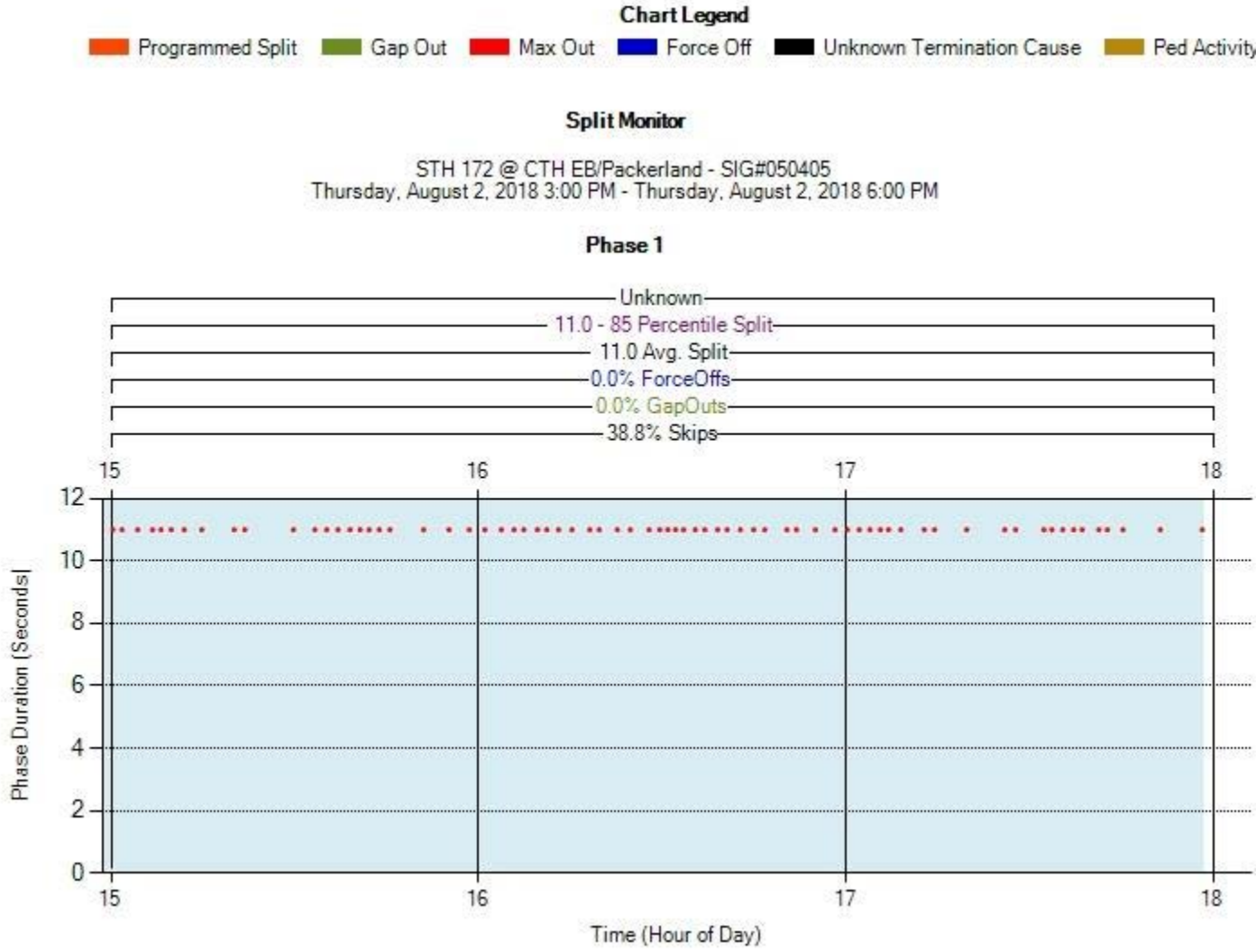
Isolated Signal – WIS 172 & County EB/Packerland Drive
HCS Timings
8/1/2018 – 4:00 PM – 5:00 PM



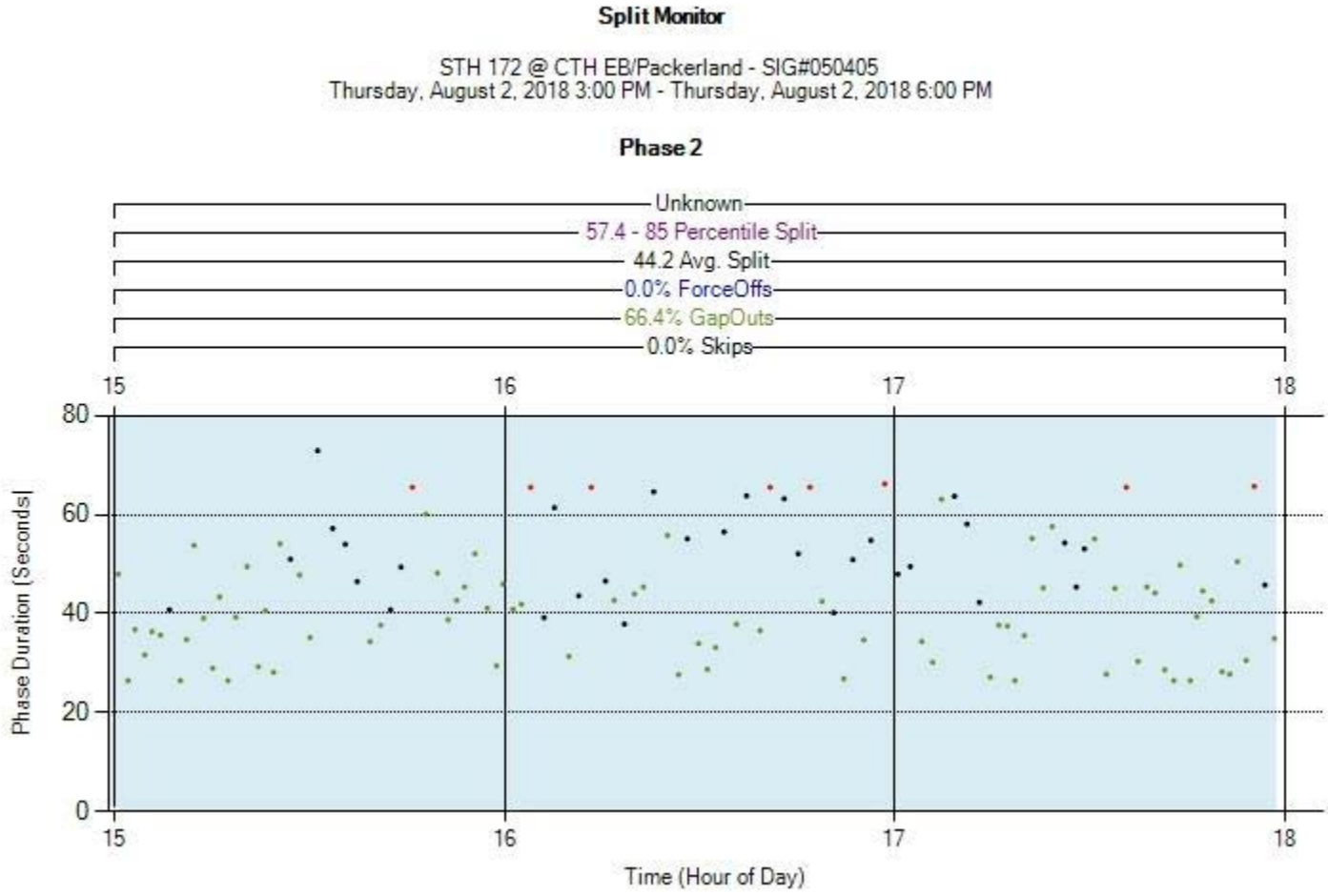
Isolated Signal – WIS 172 & County EB/Packerland Drive
HCS Timings
8/1/2018 – 4:00 PM – 5:00 PM



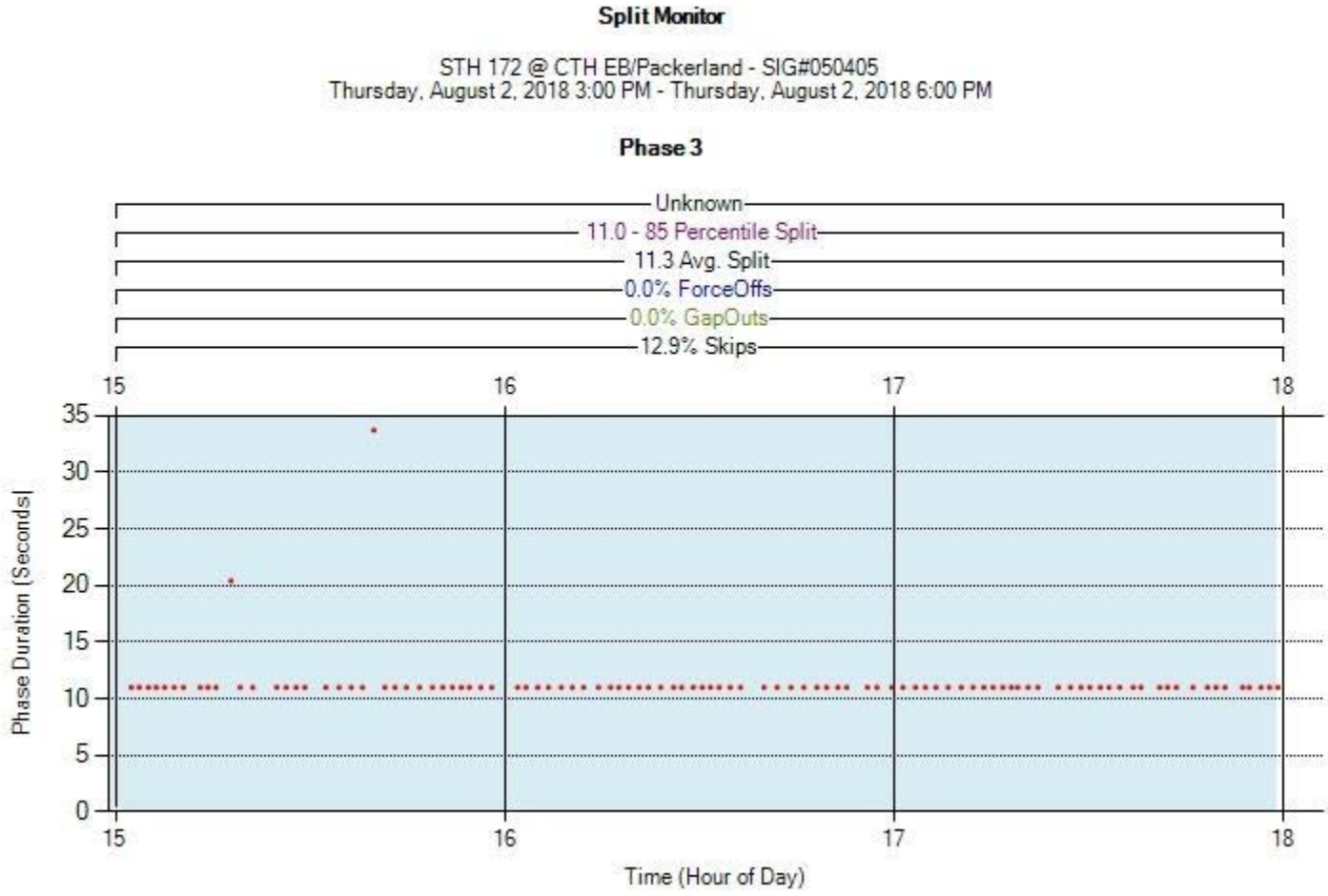
Isolated Signal – WIS 172 & County EB/Packerland Drive
HCS Timings
8/2/2018 – 3:00 PM – 6:00 PM



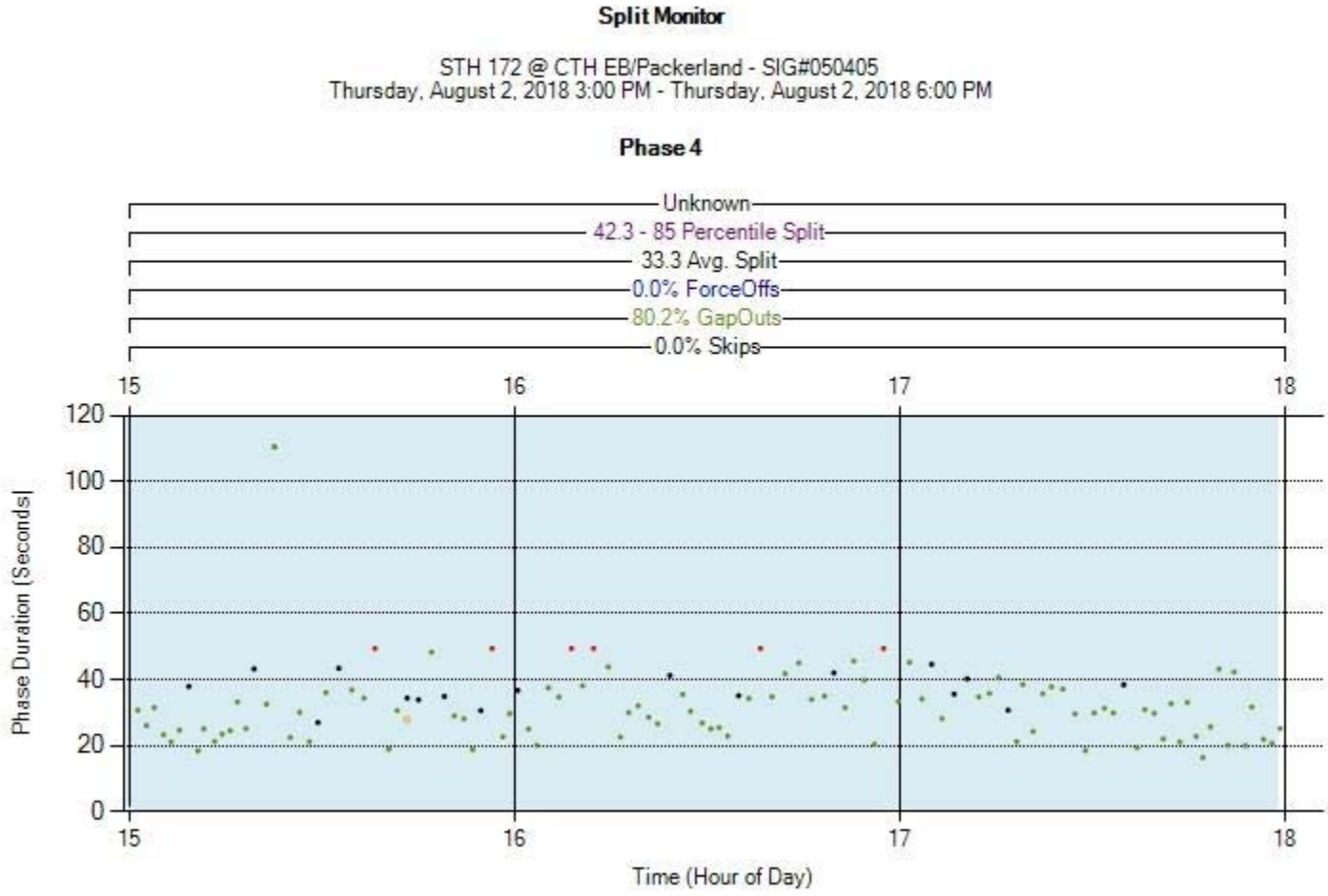
Isolated Signal – WIS 172 & County EB/Packerland Drive
HCS Timings
8/2/2018 – 3:00 PM – 6:00 PM



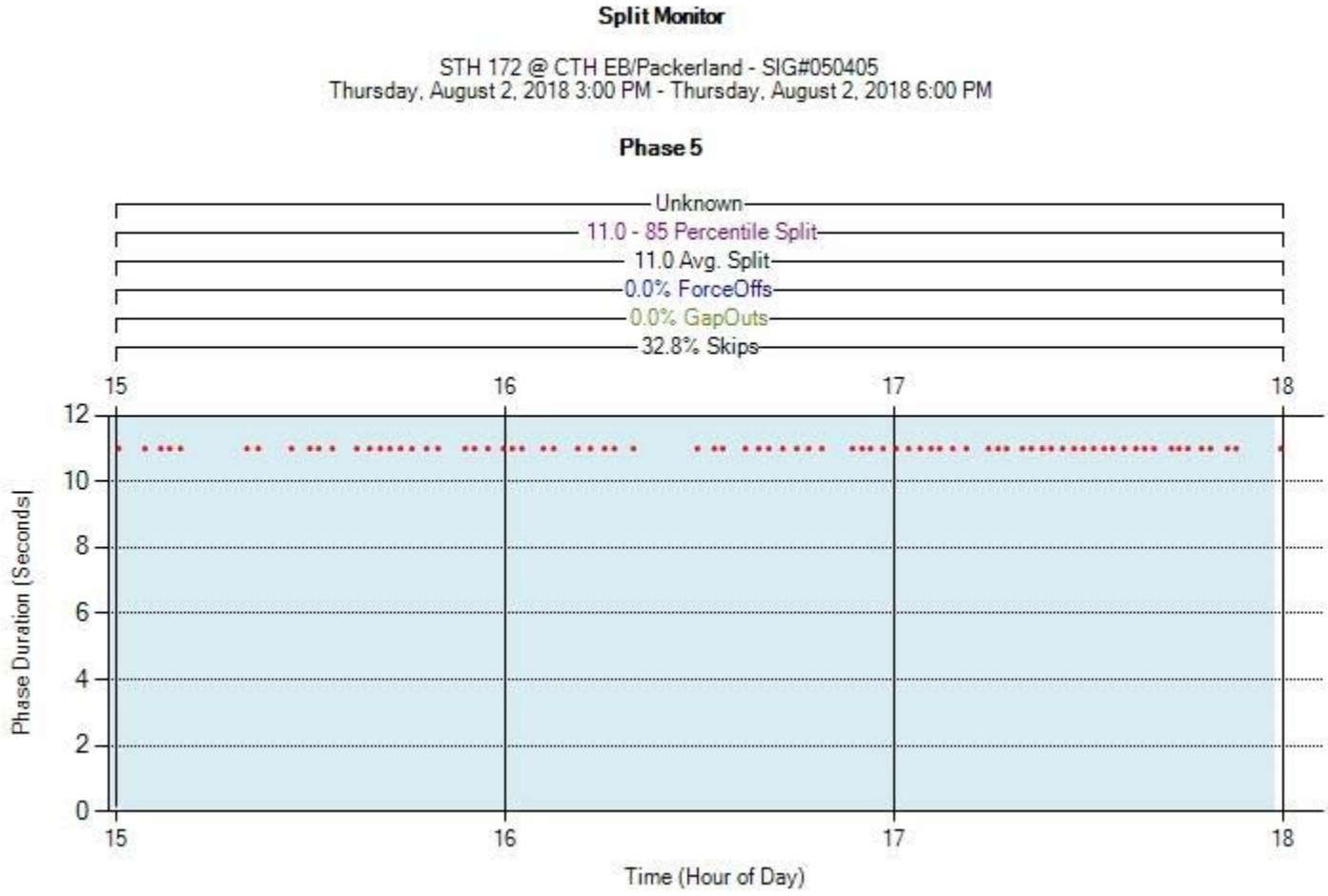
Isolated Signal – WIS 172 & County EB/Packerland Drive
HCS Timings
8/2/2018 – 3:00 PM – 6:00 PM



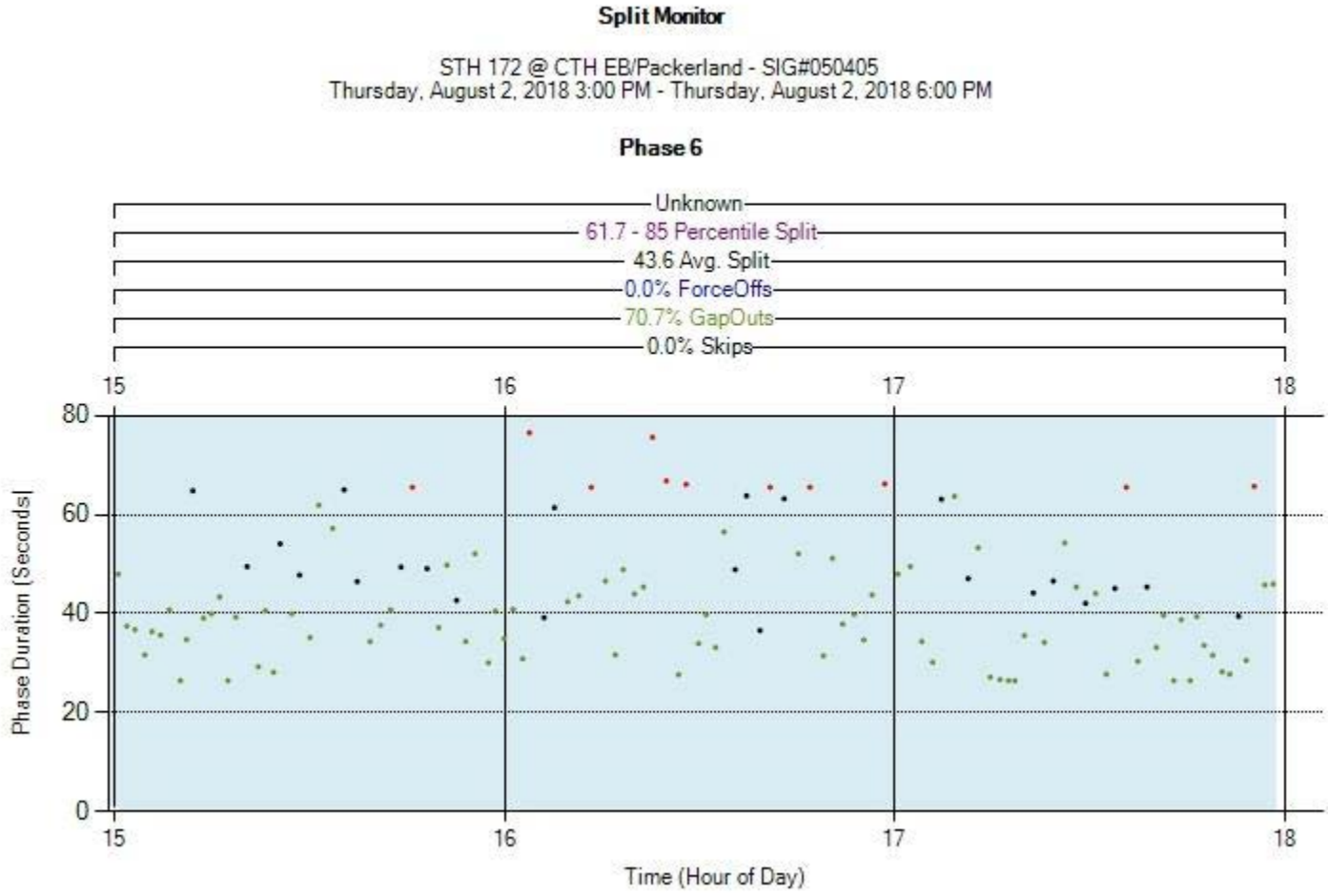
Isolated Signal – WIS 172 & County EB/Packerland Drive
HCS Timings
8/2/2018 – 3:00 PM – 6:00 PM



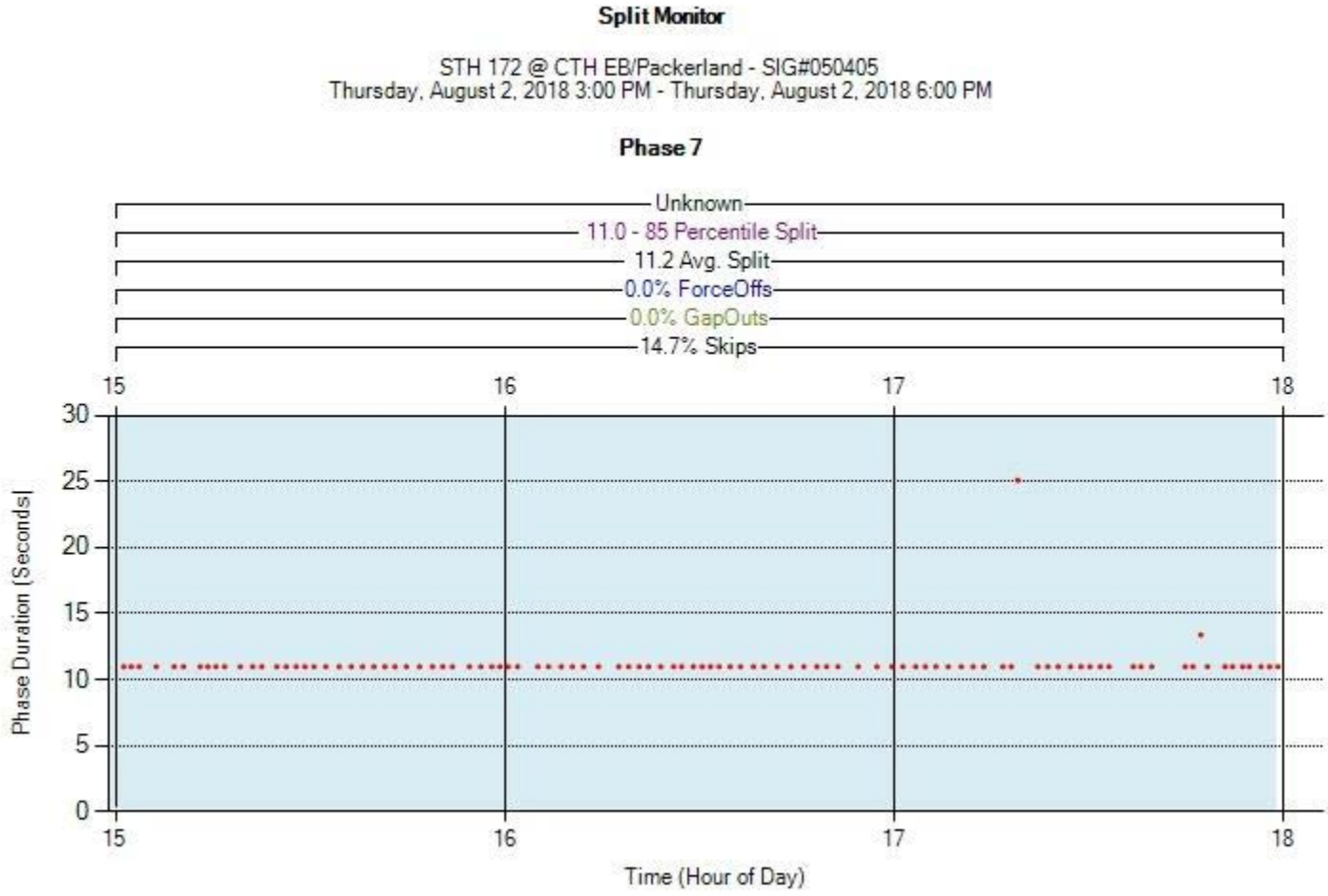
Isolated Signal – WIS 172 & County EB/Packerland Drive
HCS Timings
8/2/2018 – 3:00 PM – 6:00 PM



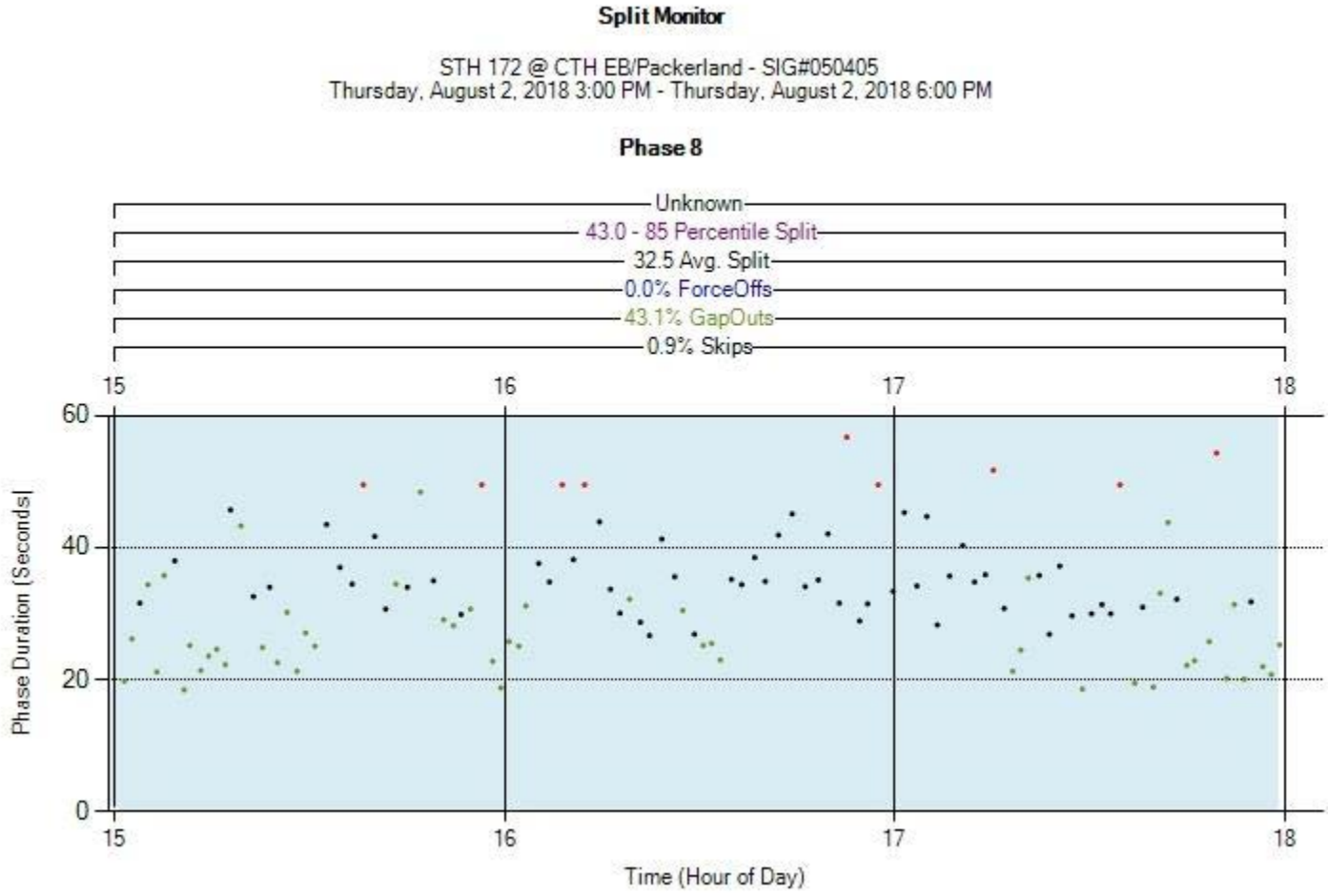
Isolated Signal – WIS 172 & County EB/Packerland Drive
HCS Timings
8/2/2018 – 3:00 PM – 6:00 PM



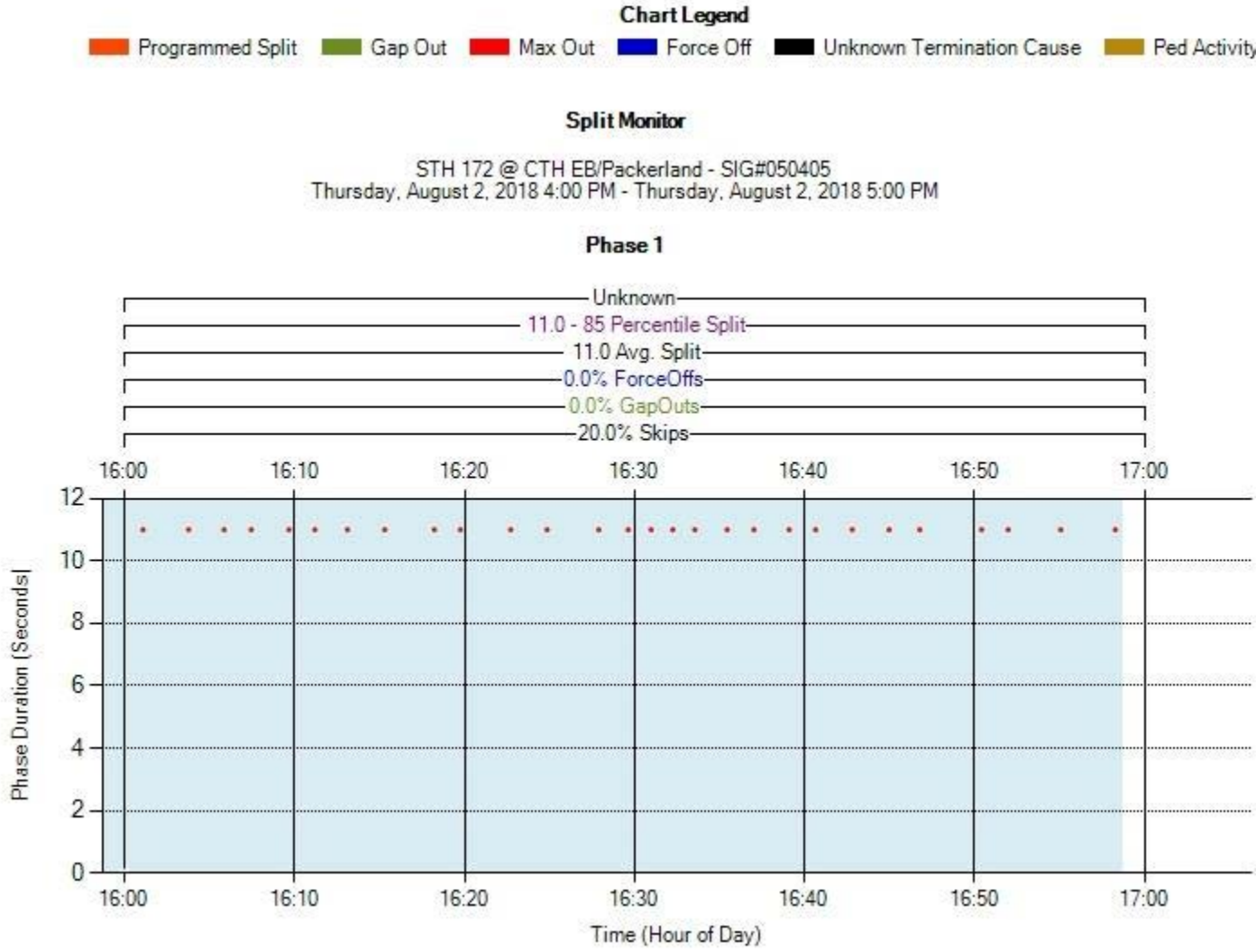
Isolated Signal – WIS 172 & County EB/Packerland Drive
HCS Timings
8/2/2018 – 3:00 PM – 6:00 PM



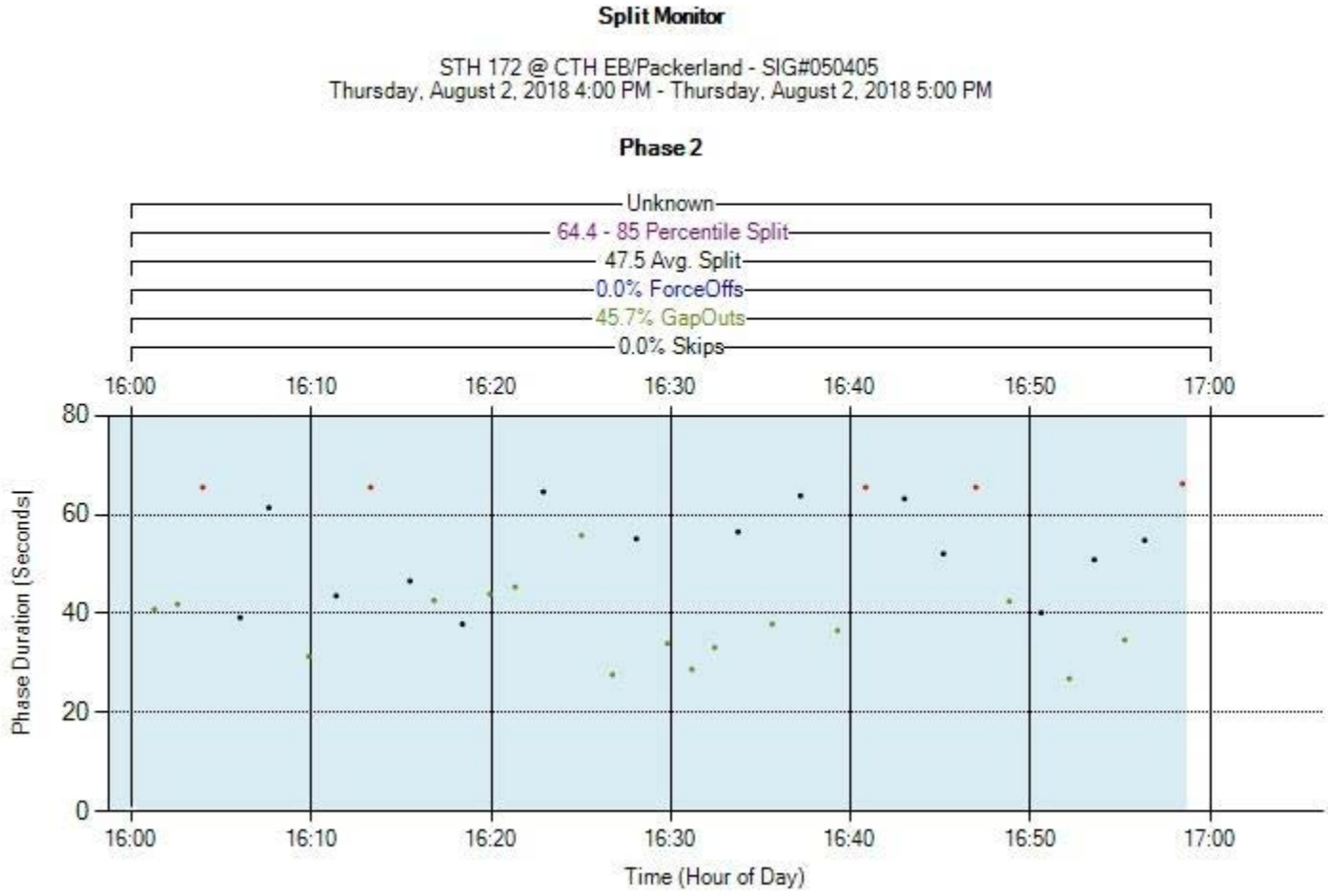
Isolated Signal – WIS 172 & County EB/Packerland Drive
HCS Timings
8/2/2018 – 3:00 PM – 6:00 PM



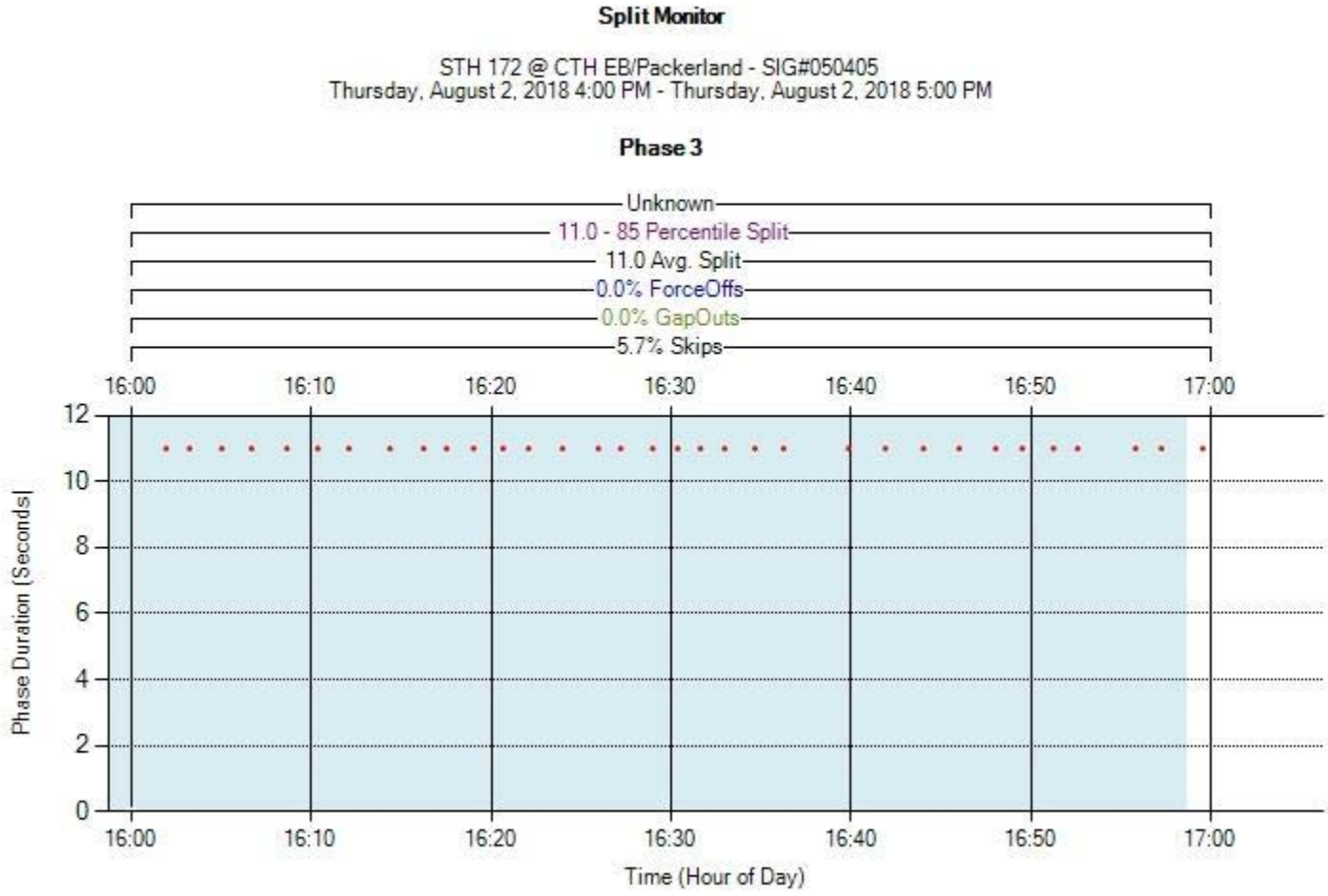
Isolated Signal – WIS 172 & County EB/Packerland Drive
HCS Timings
8/2/2018 – 4:00 PM – 5:00 PM



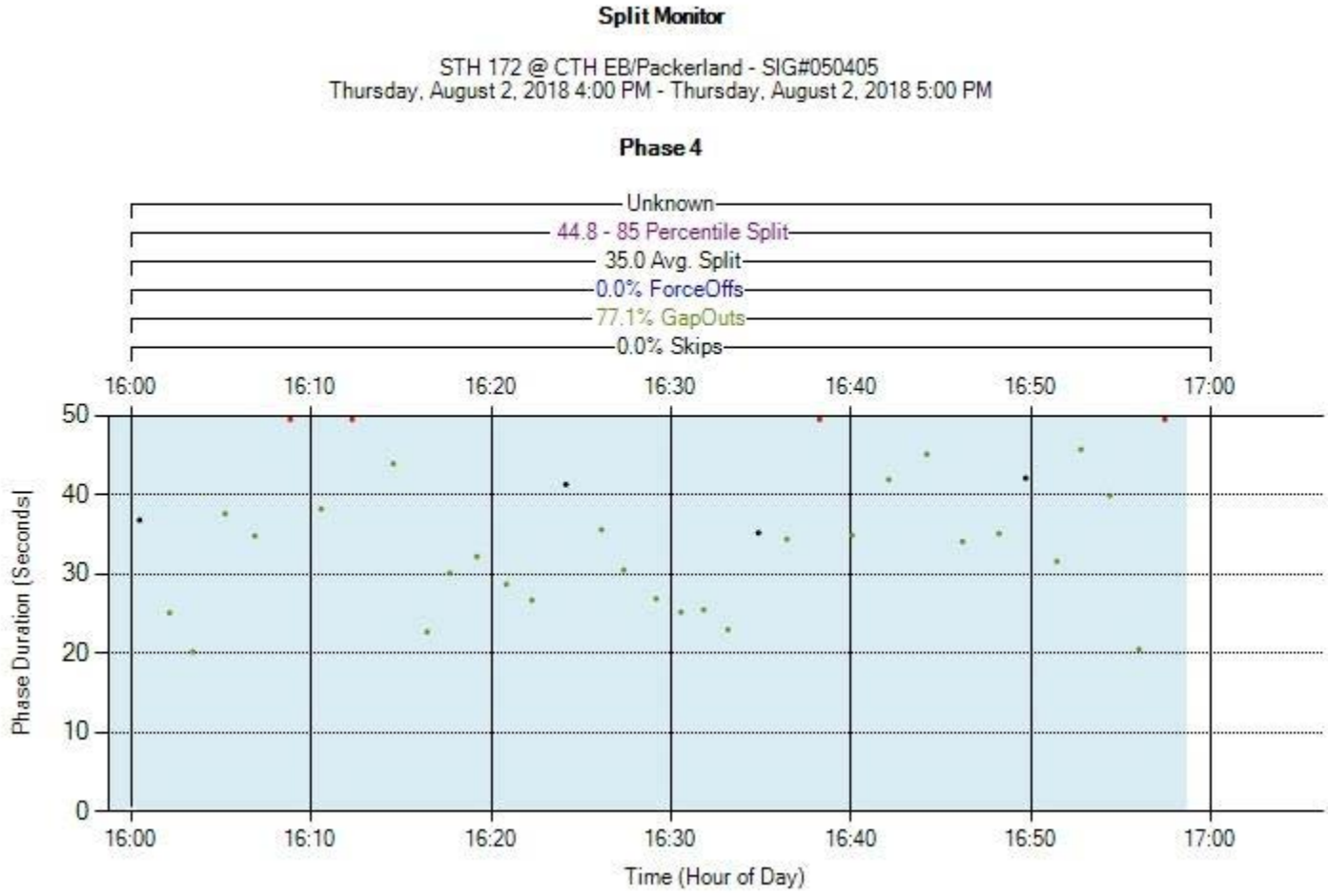
Isolated Signal – WIS 172 & County EB/Packerland Drive
HCS Timings
8/2/2018 – 4:00 PM – 5:00 PM



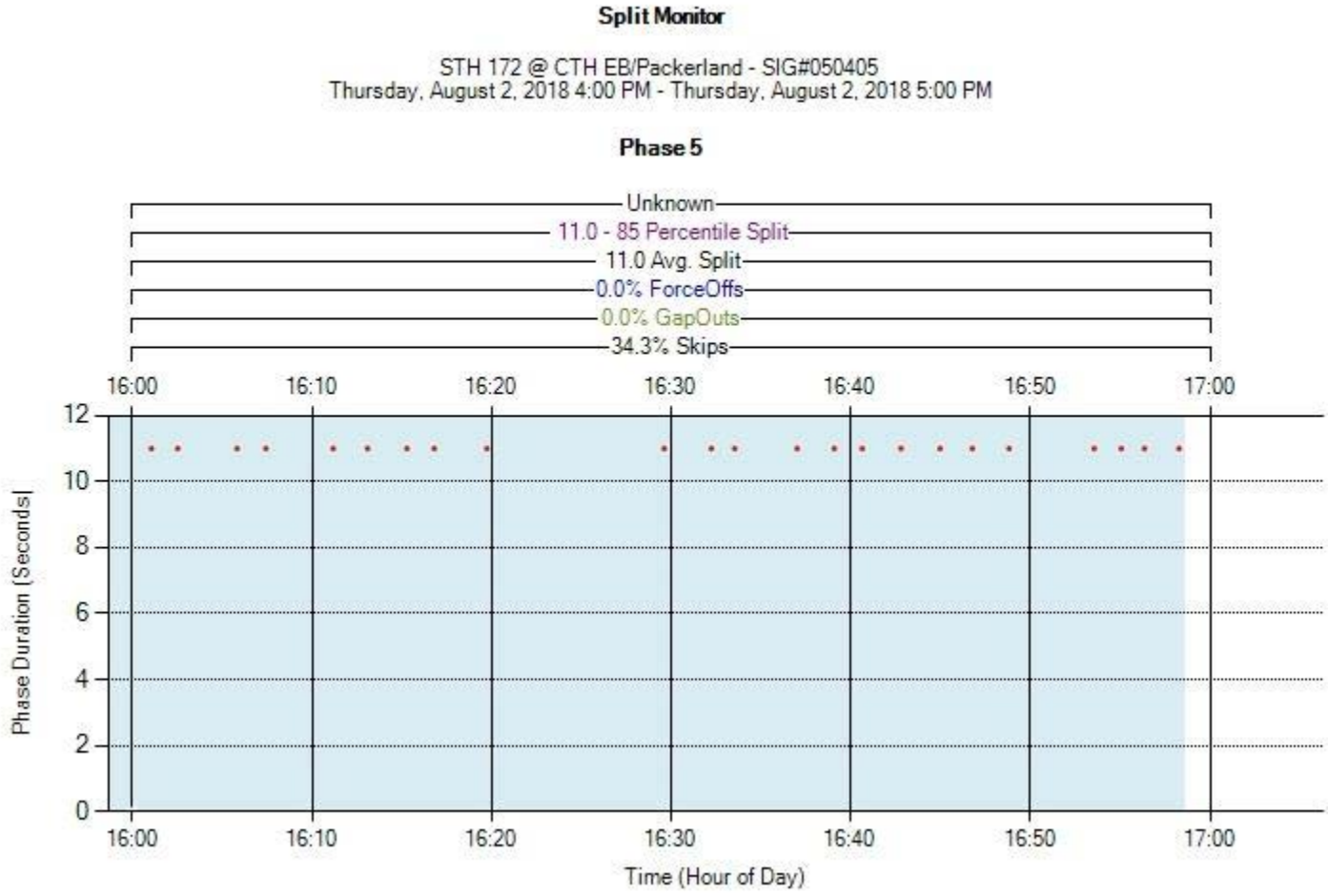
Isolated Signal – WIS 172 & County EB/Packerland Drive
HCS Timings
8/2/2018 – 4:00 PM – 5:00 PM



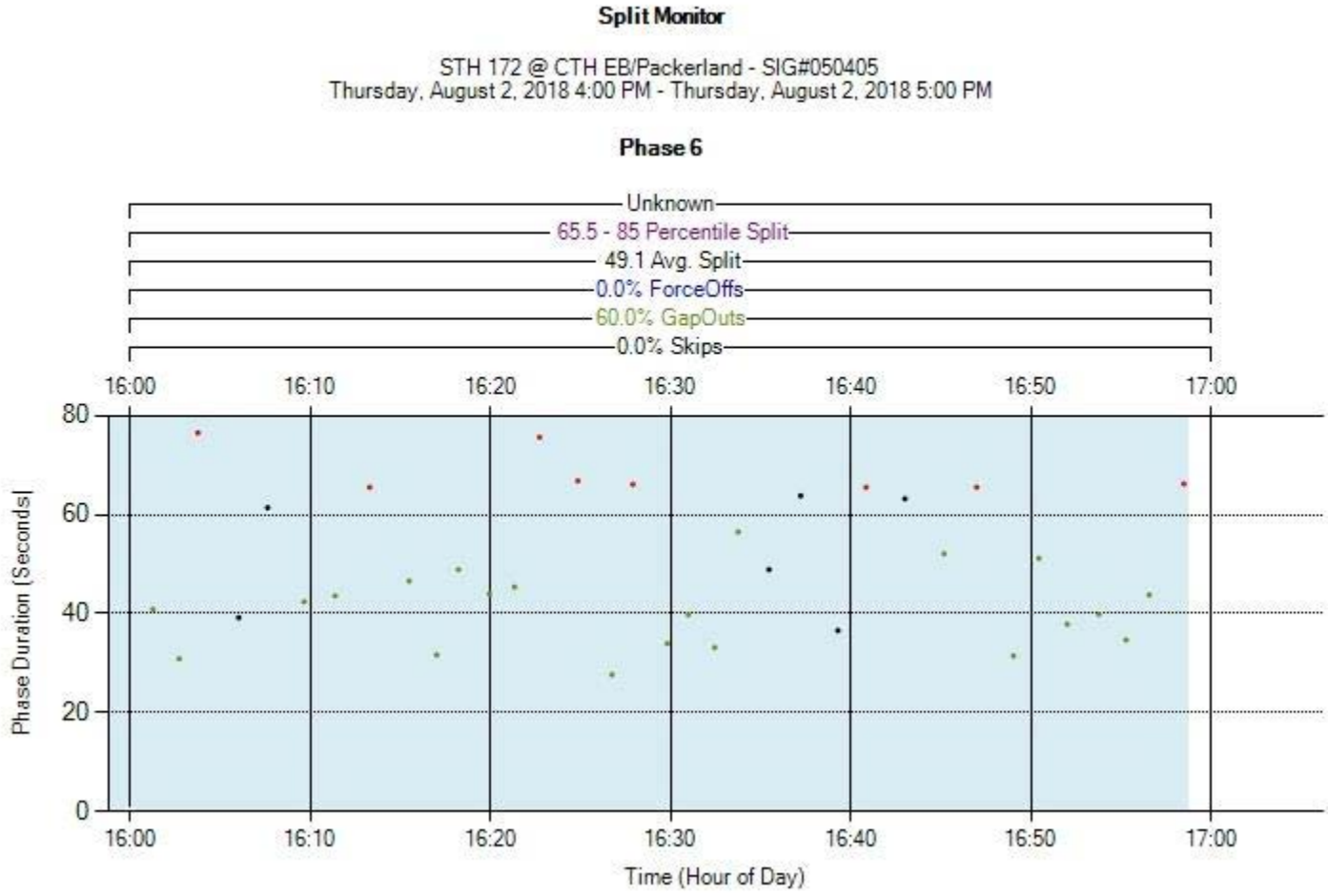
Isolated Signal – WIS 172 & County EB/Packerland Drive
HCS Timings
8/2/2018 – 4:00 PM – 5:00 PM



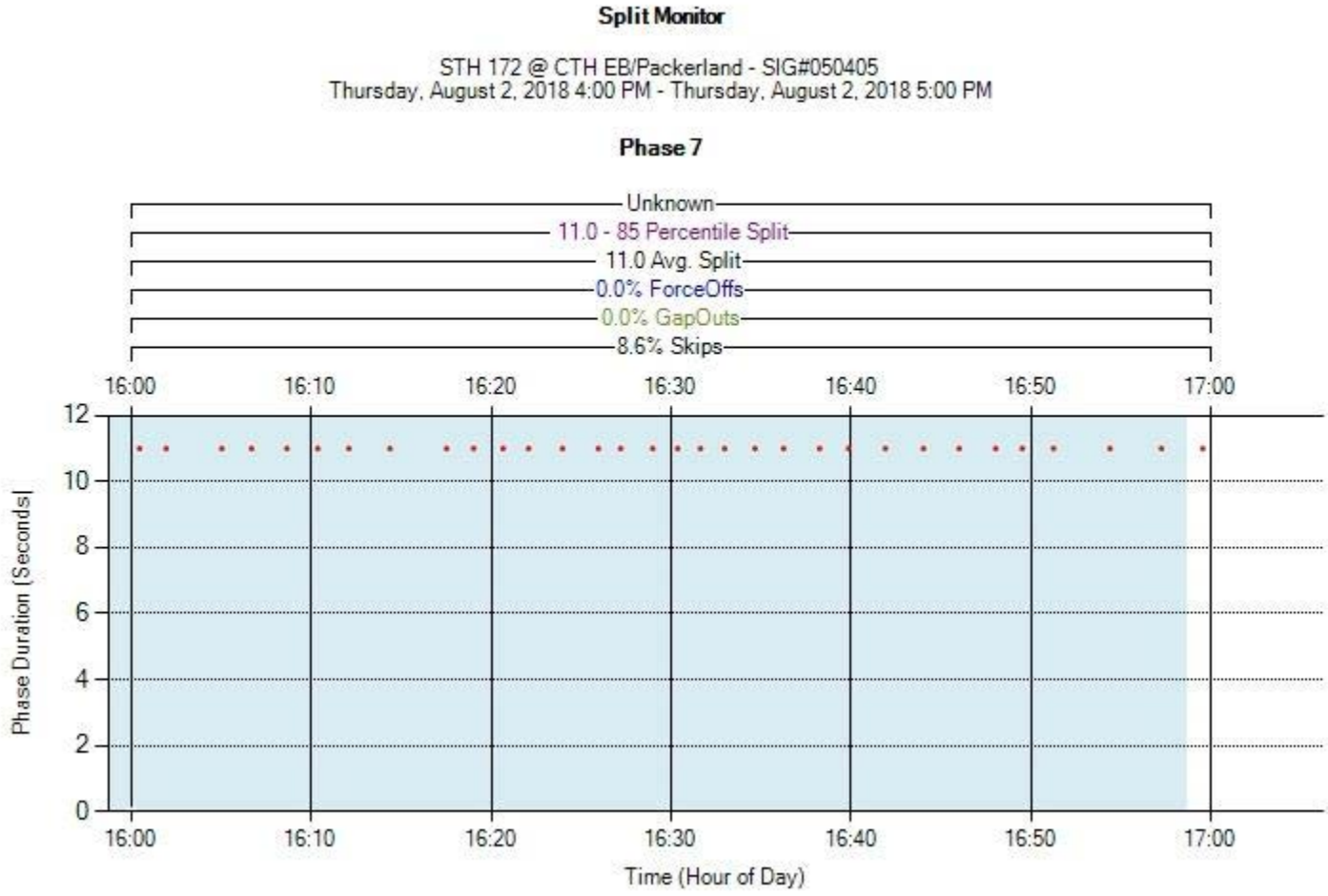
Isolated Signal – WIS 172 & County EB/Packerland Drive
HCS Timings
8/2/2018 – 4:00 PM – 5:00 PM



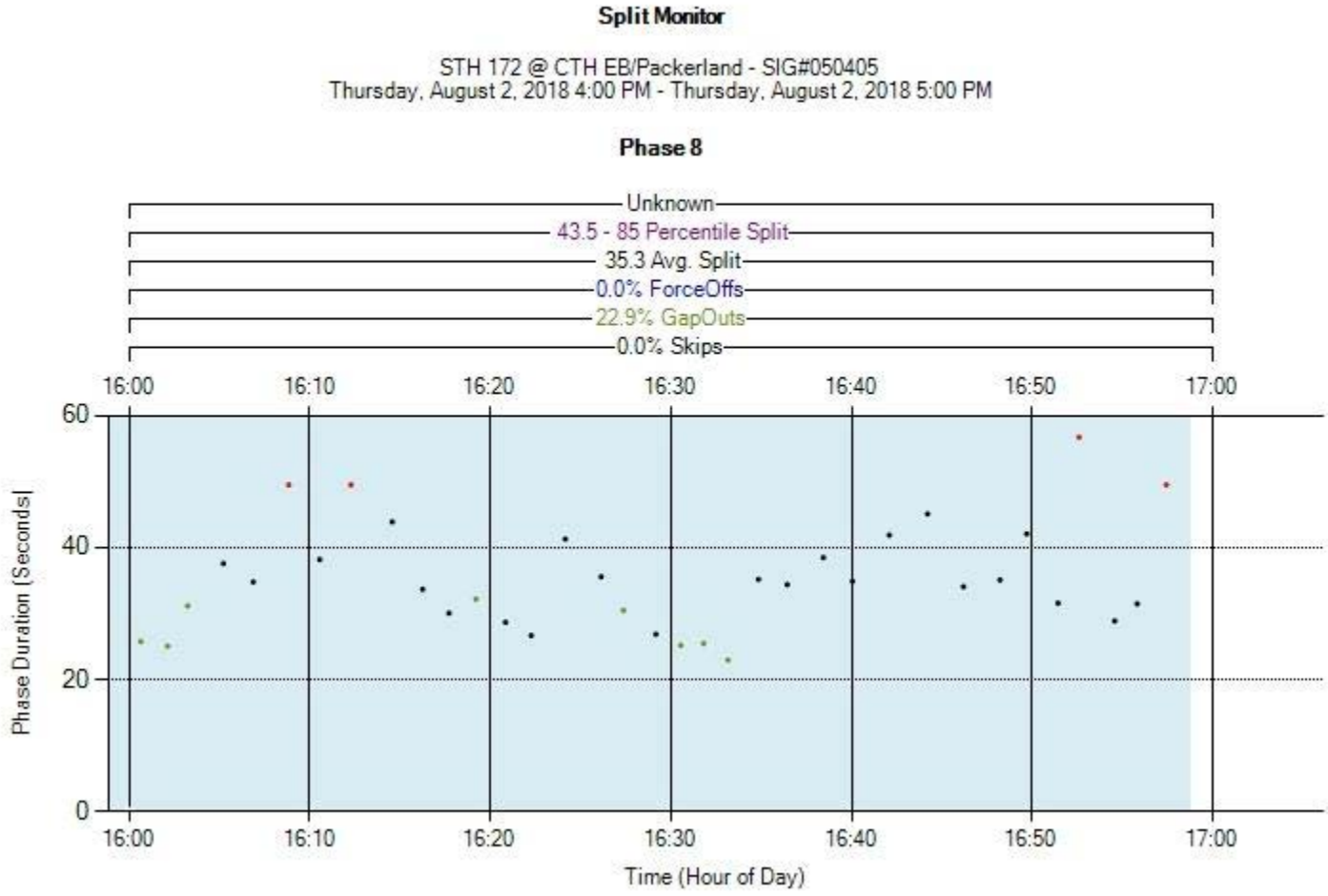
Isolated Signal – WIS 172 & County EB/Packerland Drive
HCS Timings
8/2/2018 – 4:00 PM – 5:00 PM



Isolated Signal – WIS 172 & County EB/Packerland Drive
HCS Timings
8/2/2018 – 4:00 PM – 5:00 PM

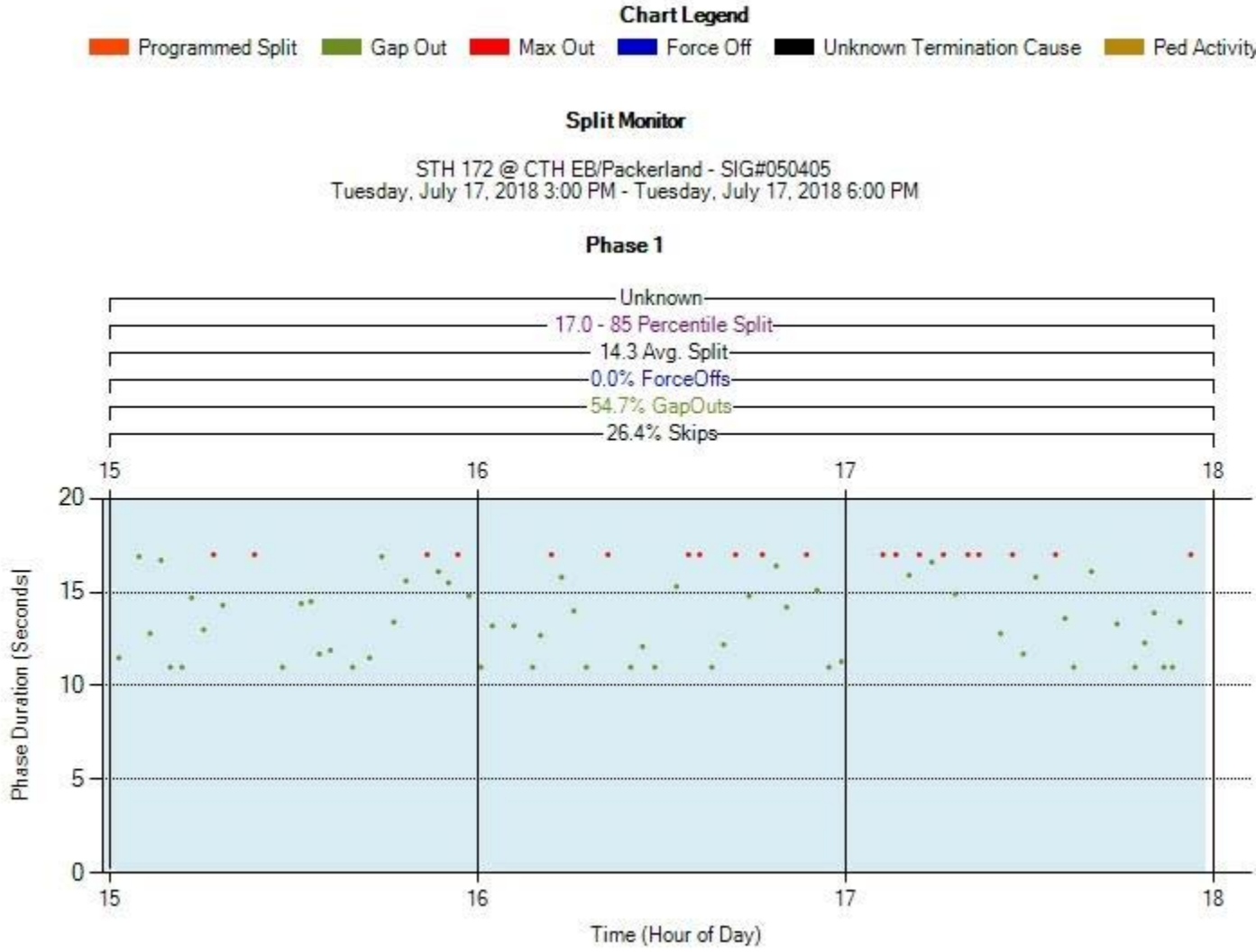


Isolated Signal – WIS 172 & County EB/Packerland Drive
HCS Timings
8/2/2018 – 4:00 PM – 5:00 PM

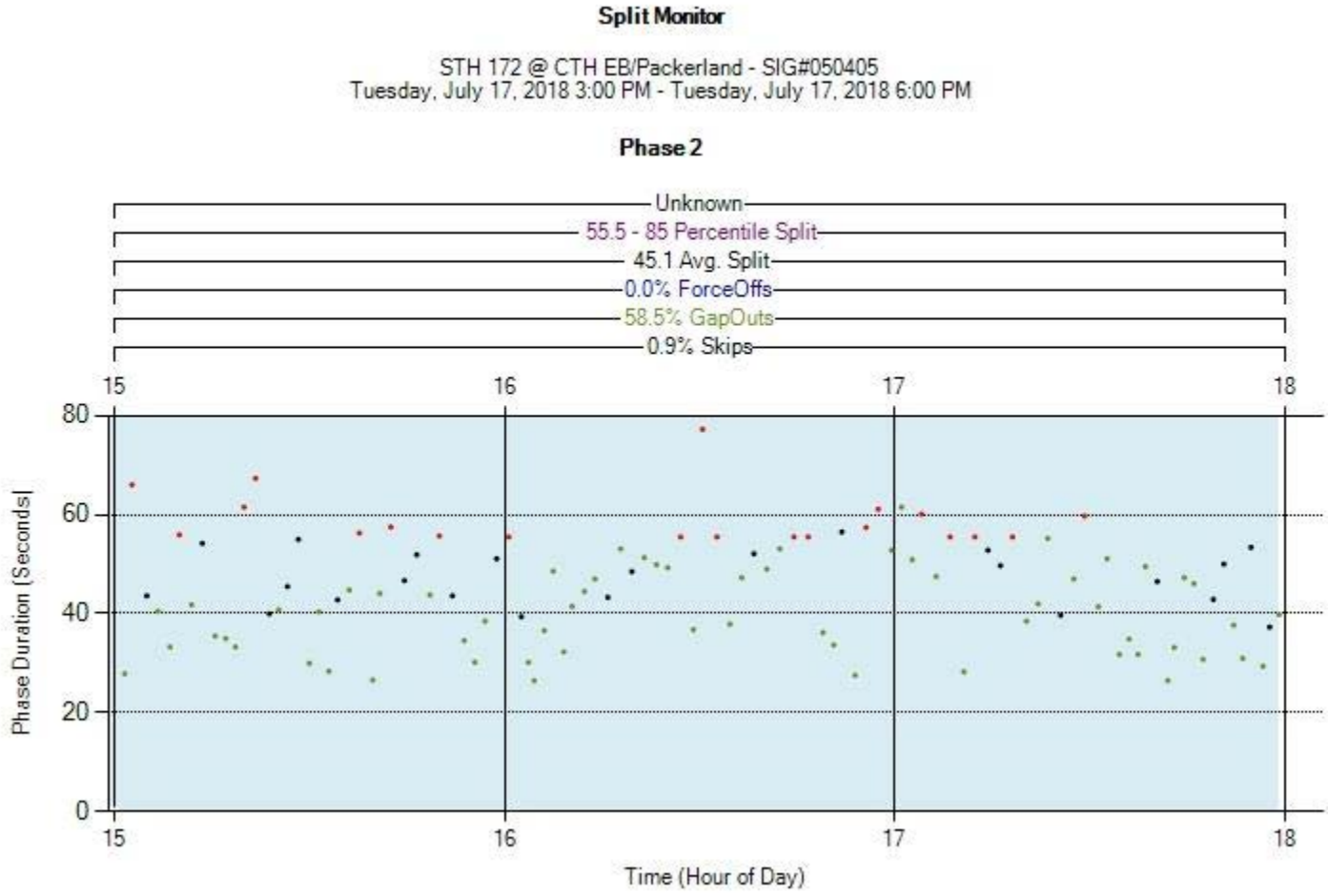


WisBOOM Outputs
WIS 172 & County EB
Synchro Optimized Timings

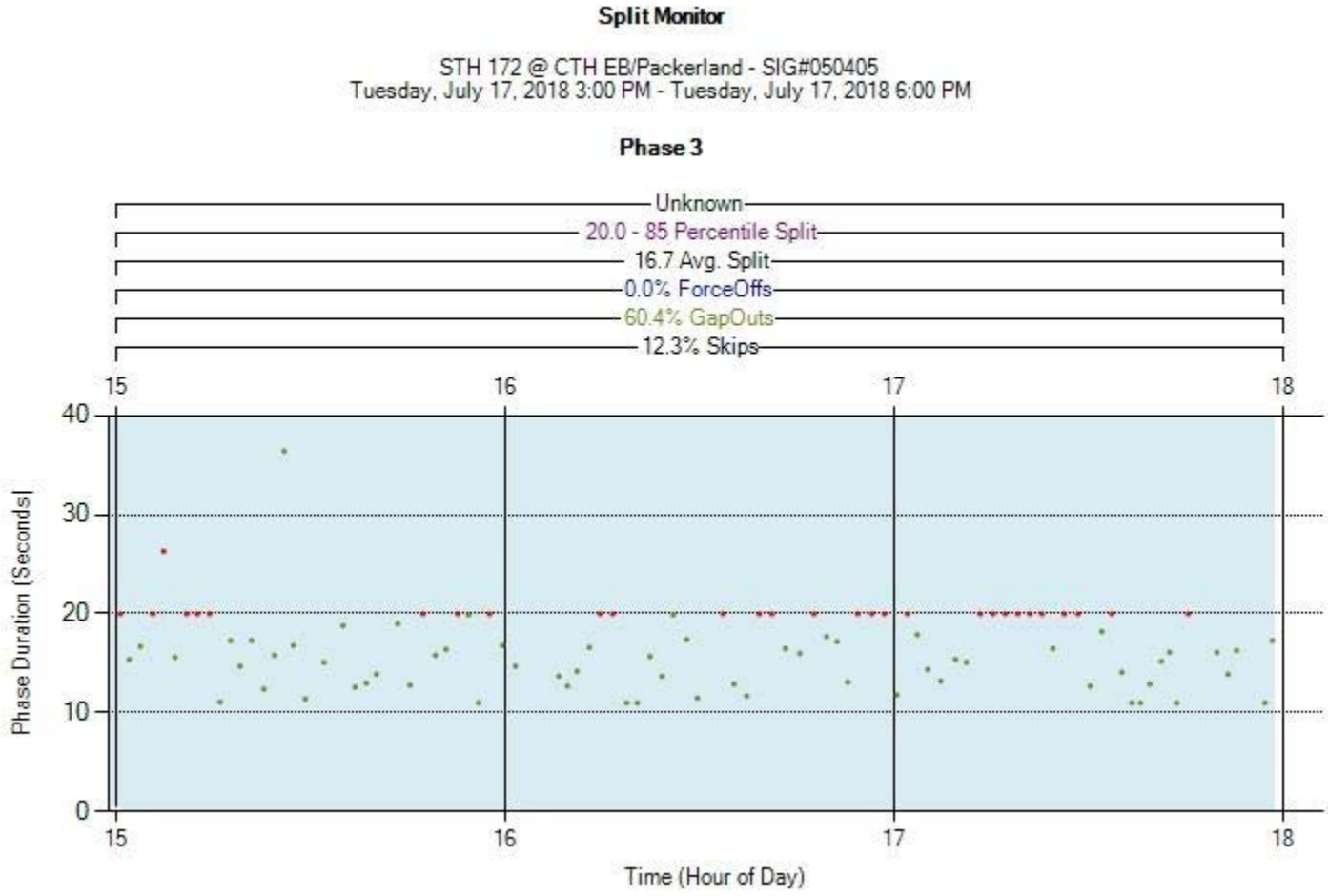
Isolated Signal – WIS 172 & County EB/Packerland Drive
Synchro Timings
7/17/2018 – 3:00 PM – 6:00 PM



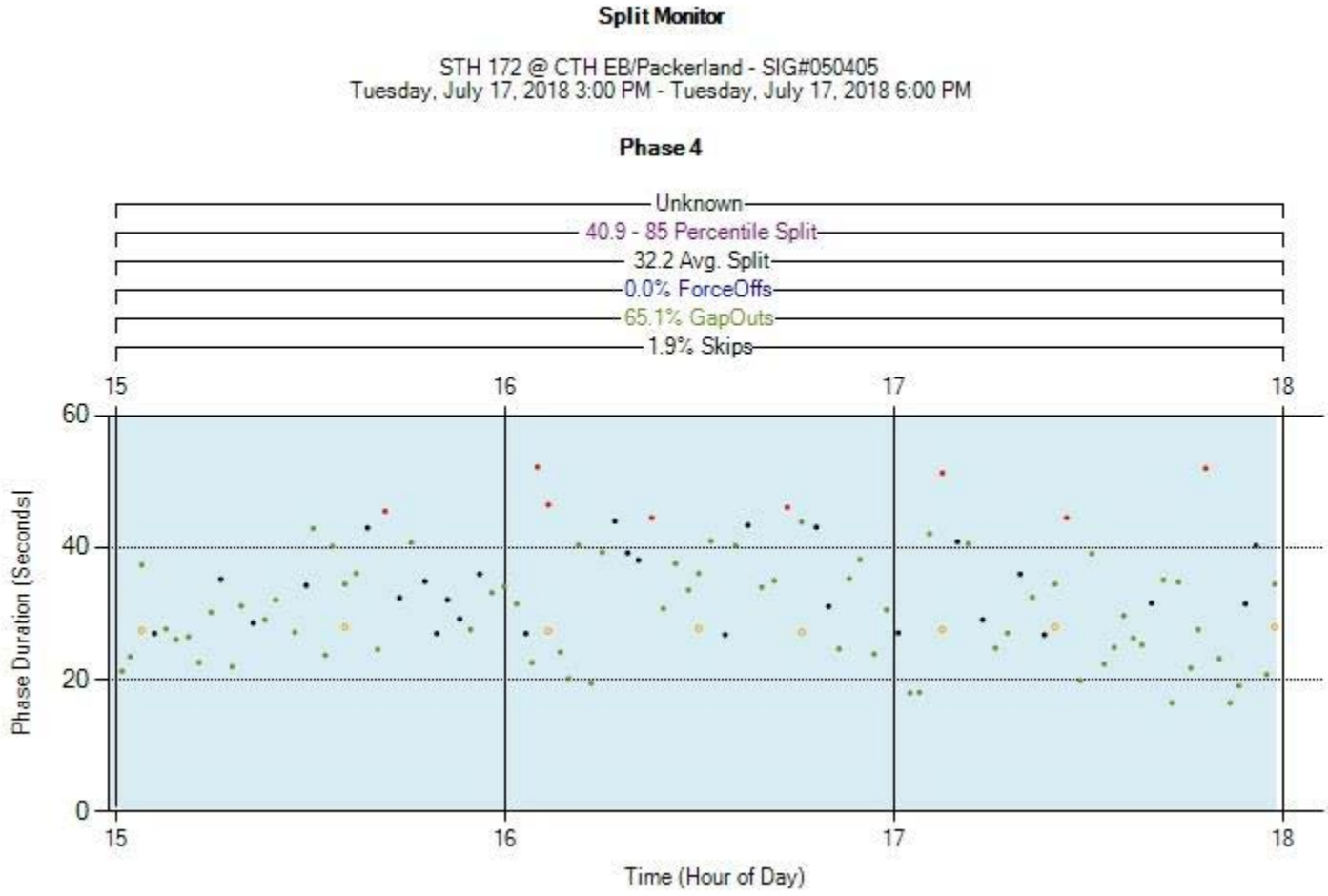
Isolated Signal – WIS 172 & County EB/Packerland Drive
Synchro Timings
7/17/2018 – 3:00 PM – 6:00 PM



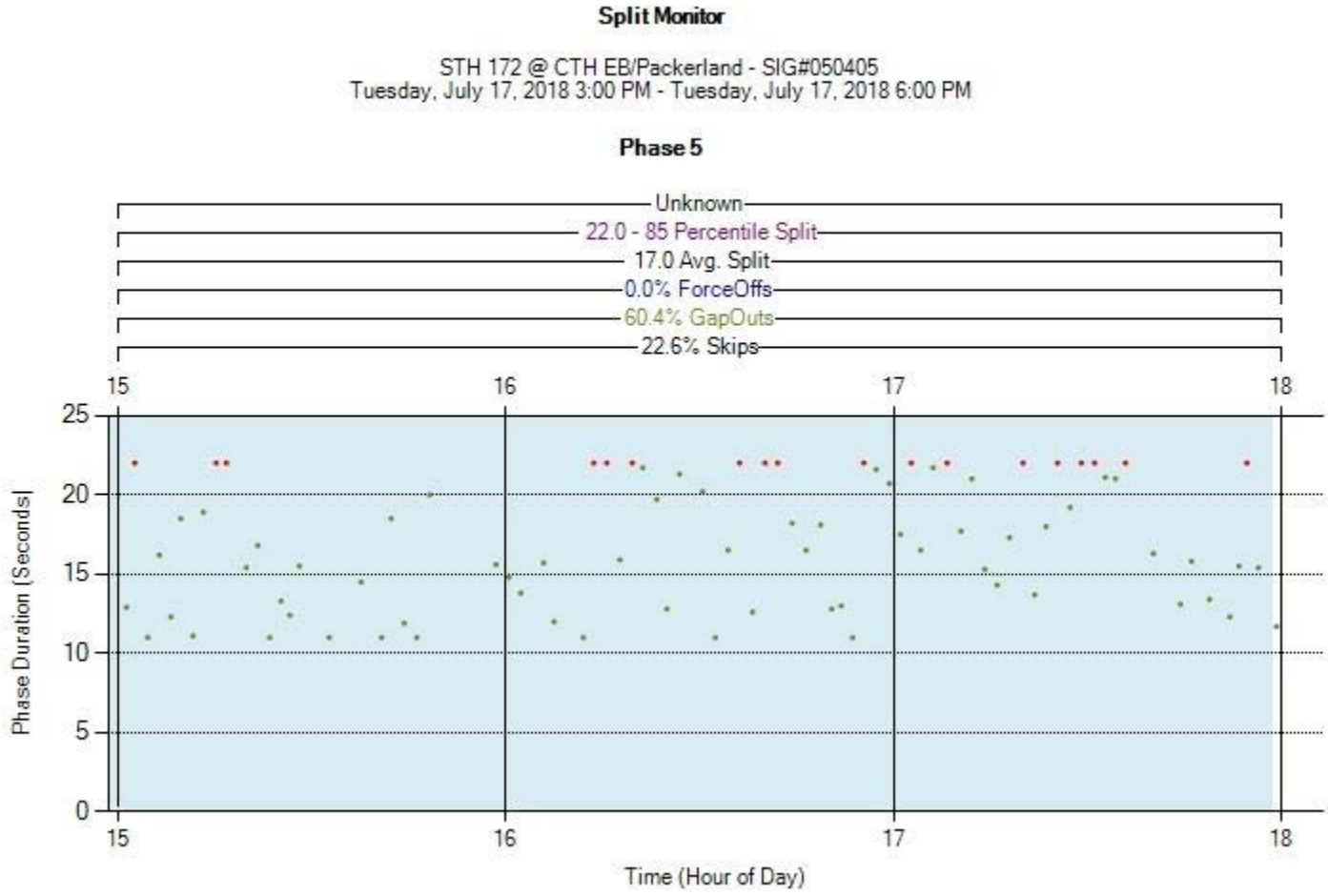
Isolated Signal – WIS 172 & County EB/Packerland Drive
Synchro Timings
7/17/2018 – 3:00 PM – 6:00 PM



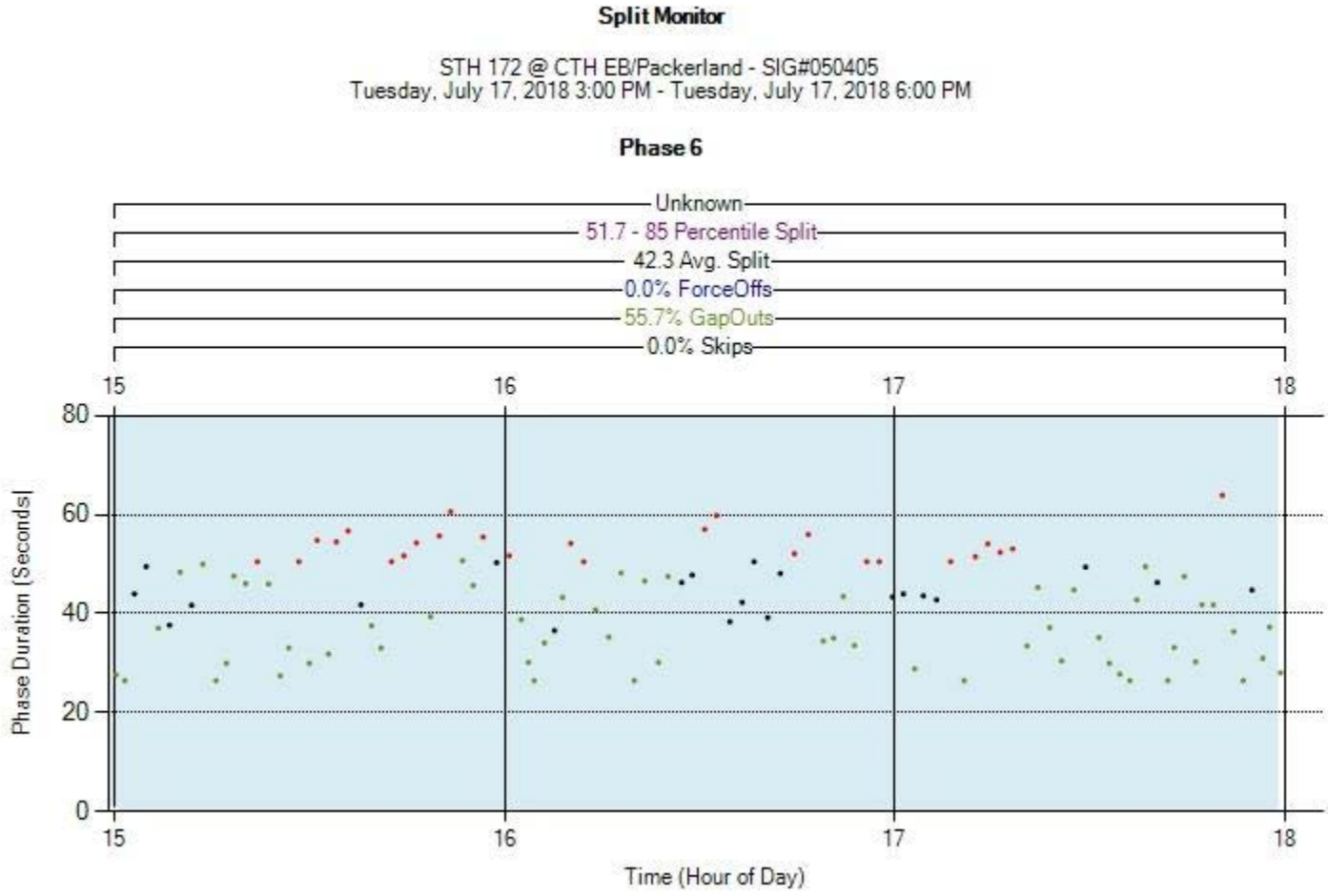
Isolated Signal – WIS 172 & County EB/Packerland Drive
Synchro Timings
7/17/2018 – 3:00 PM – 6:00 PM



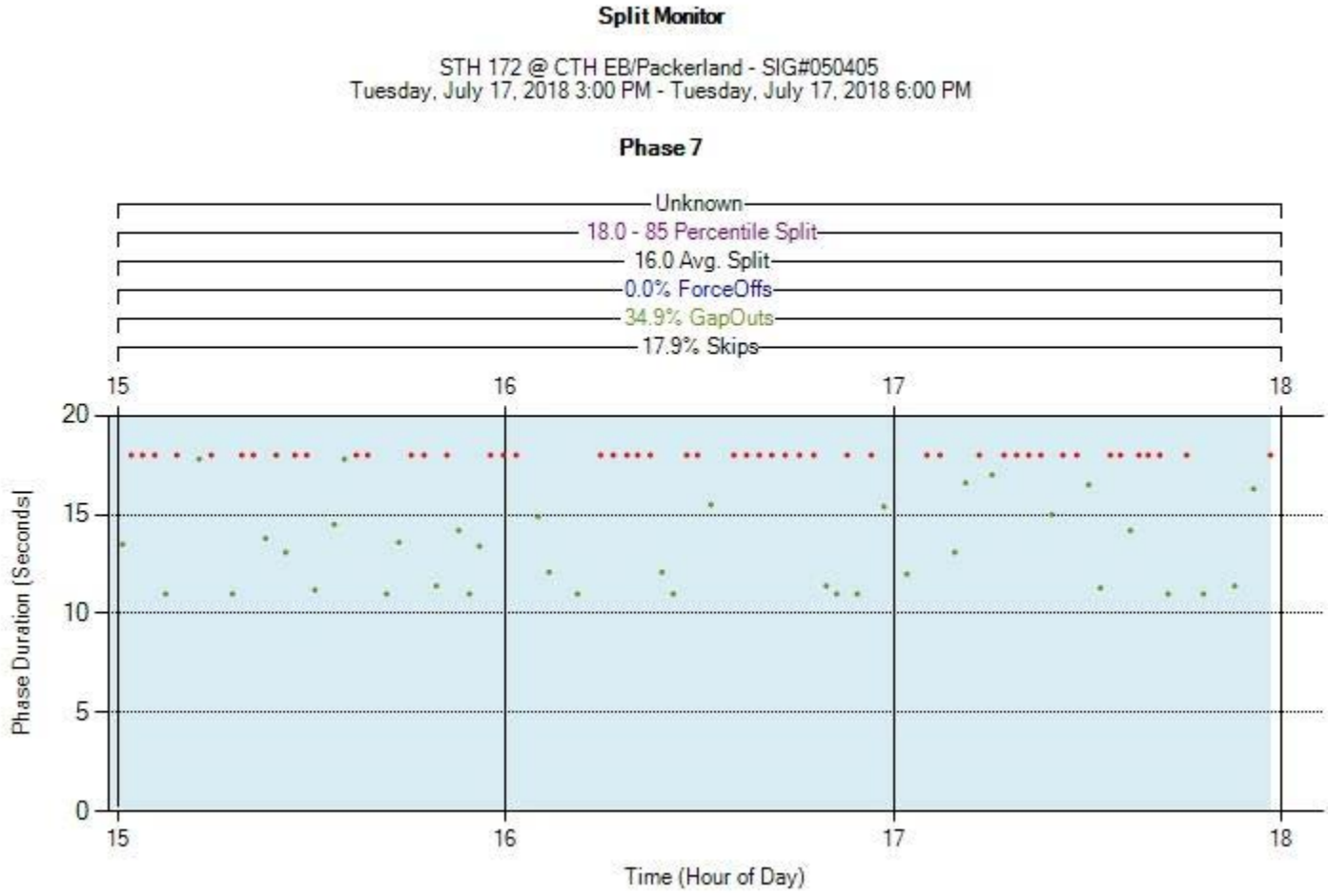
Isolated Signal – WIS 172 & County EB/Packerland Drive
Synchro Timings
7/17/2018 – 3:00 PM – 6:00 PM



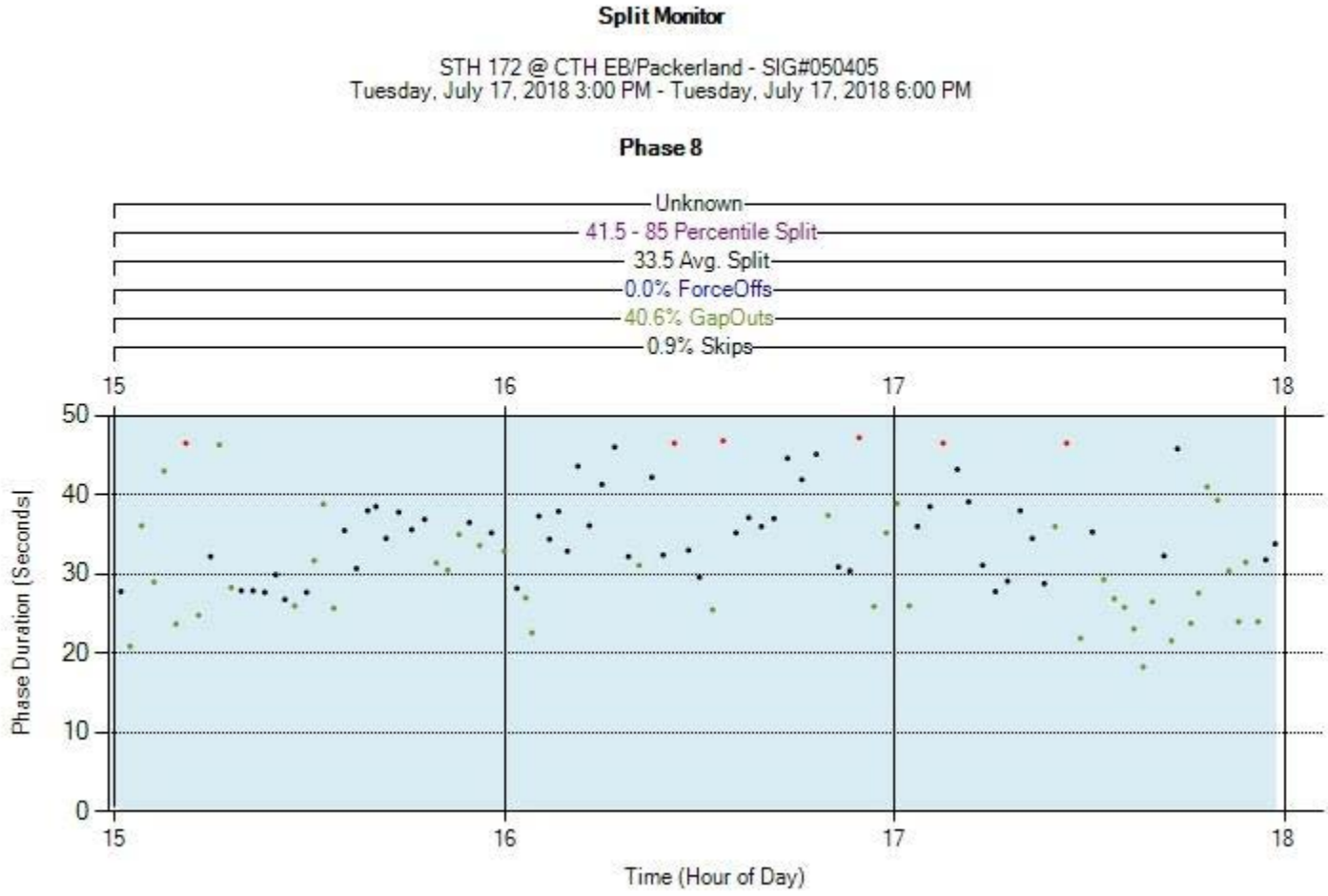
Isolated Signal – WIS 172 & County EB/Packerland Drive
Synchro Timings
7/17/2018 – 3:00 PM – 6:00 PM



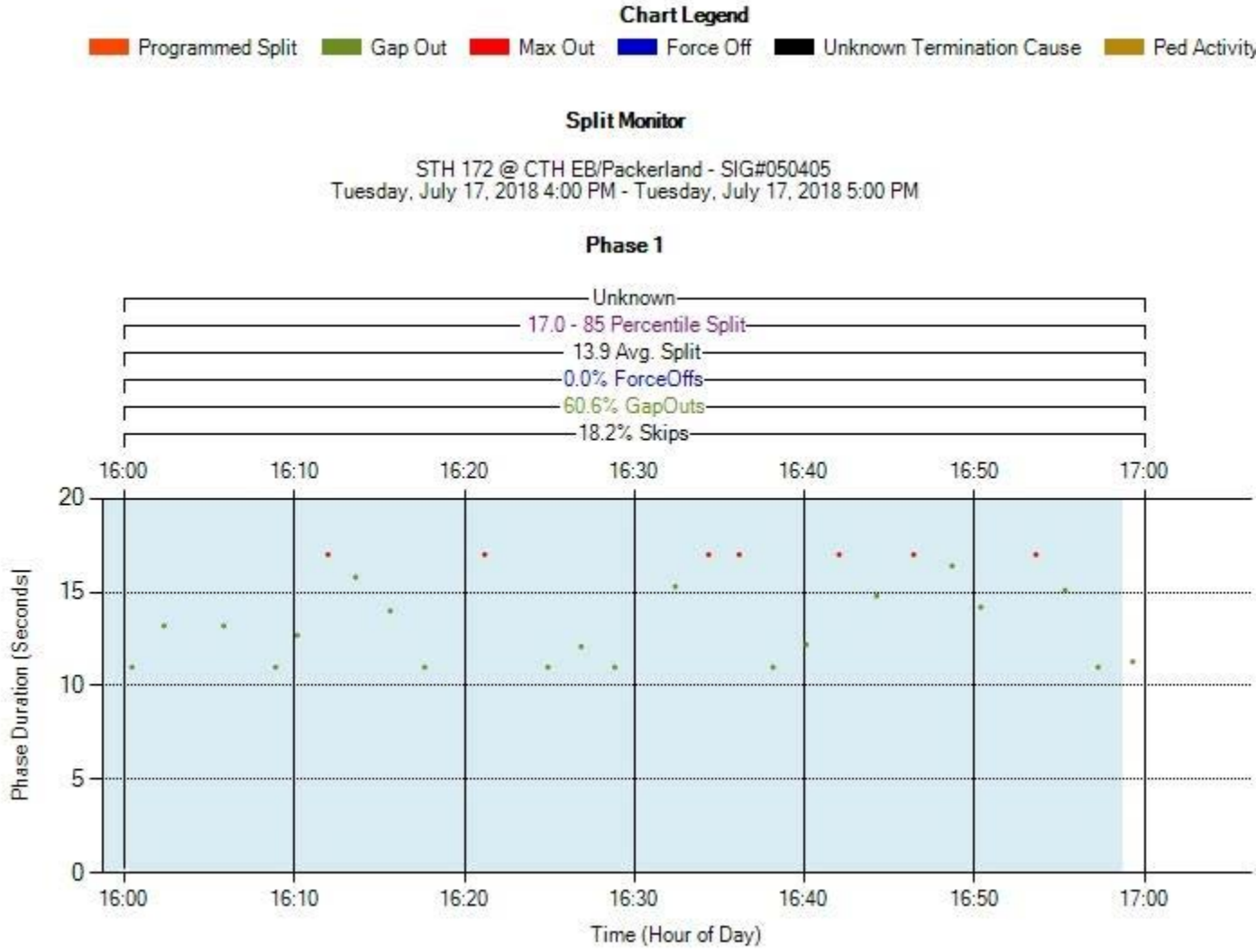
Isolated Signal – WIS 172 & County EB/Packerland Drive
Synchro Timings
7/17/2018 – 3:00 PM – 6:00 PM



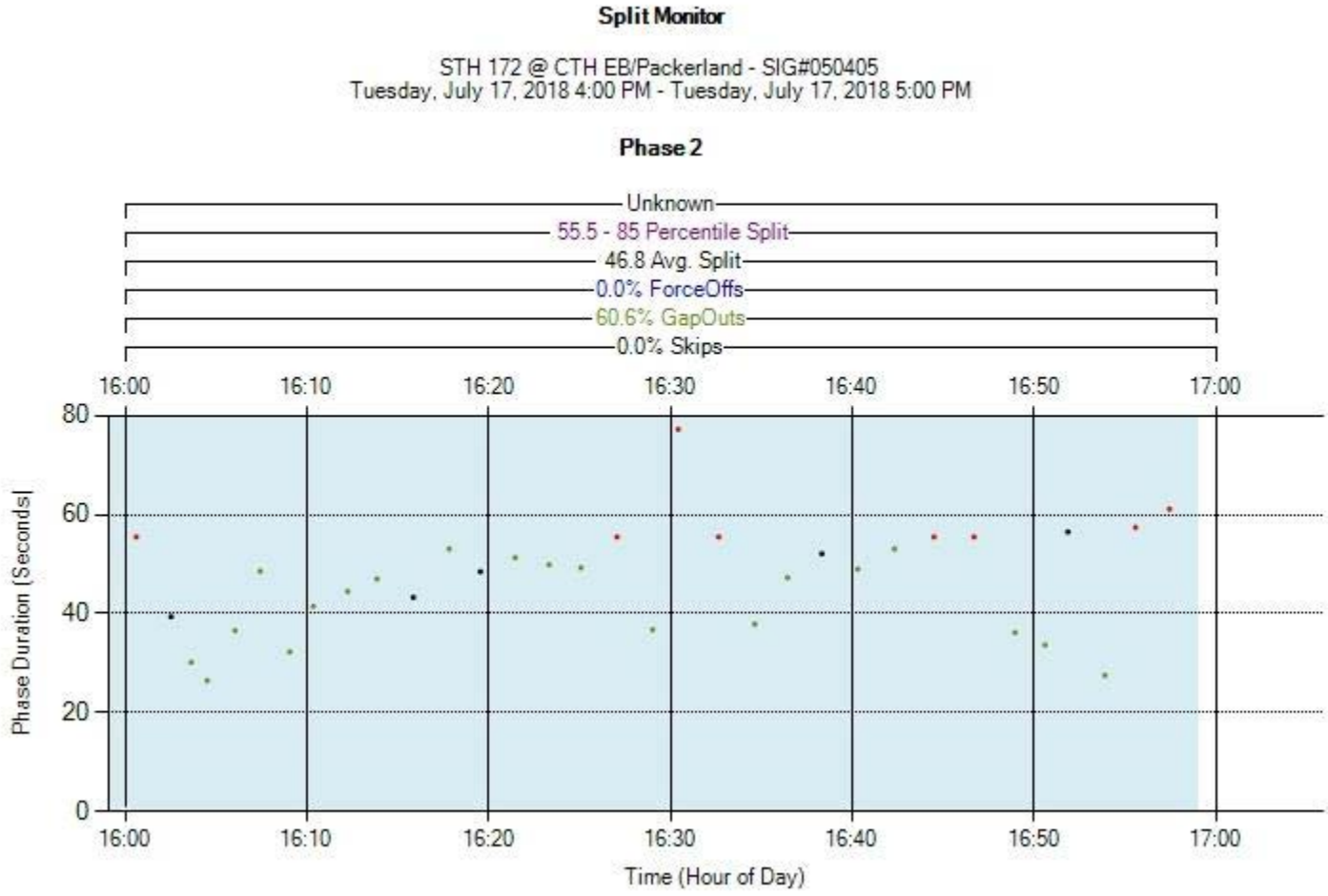
Isolated Signal – WIS 172 & County EB/Packerland Drive
Synchro Timings
7/17/2018 – 3:00 PM – 6:00 PM



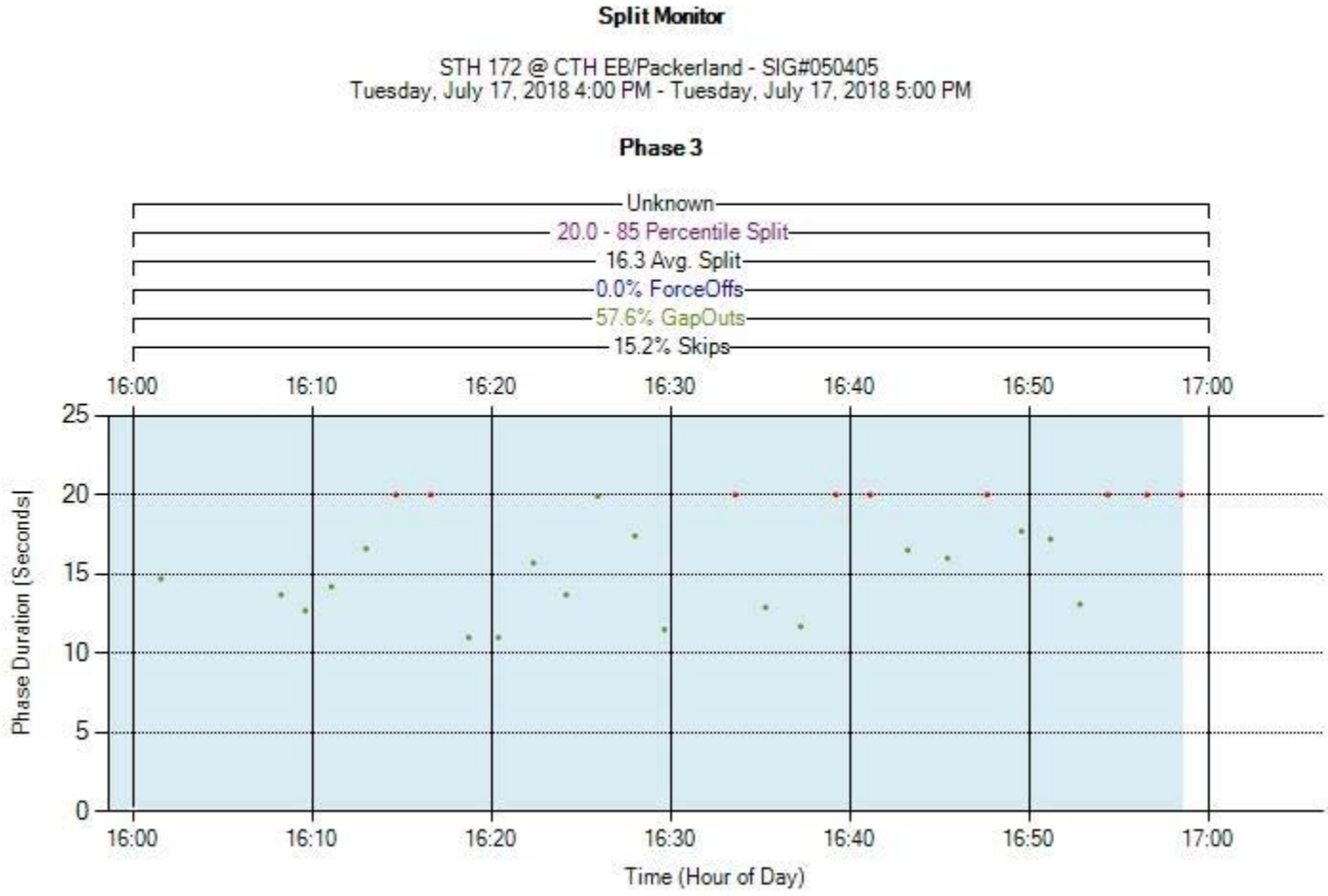
Isolated Signal – WIS 172 & County EB/Packerland Drive
Synchro Timings
7/17/2018 – 4:00 PM – 5:00 PM



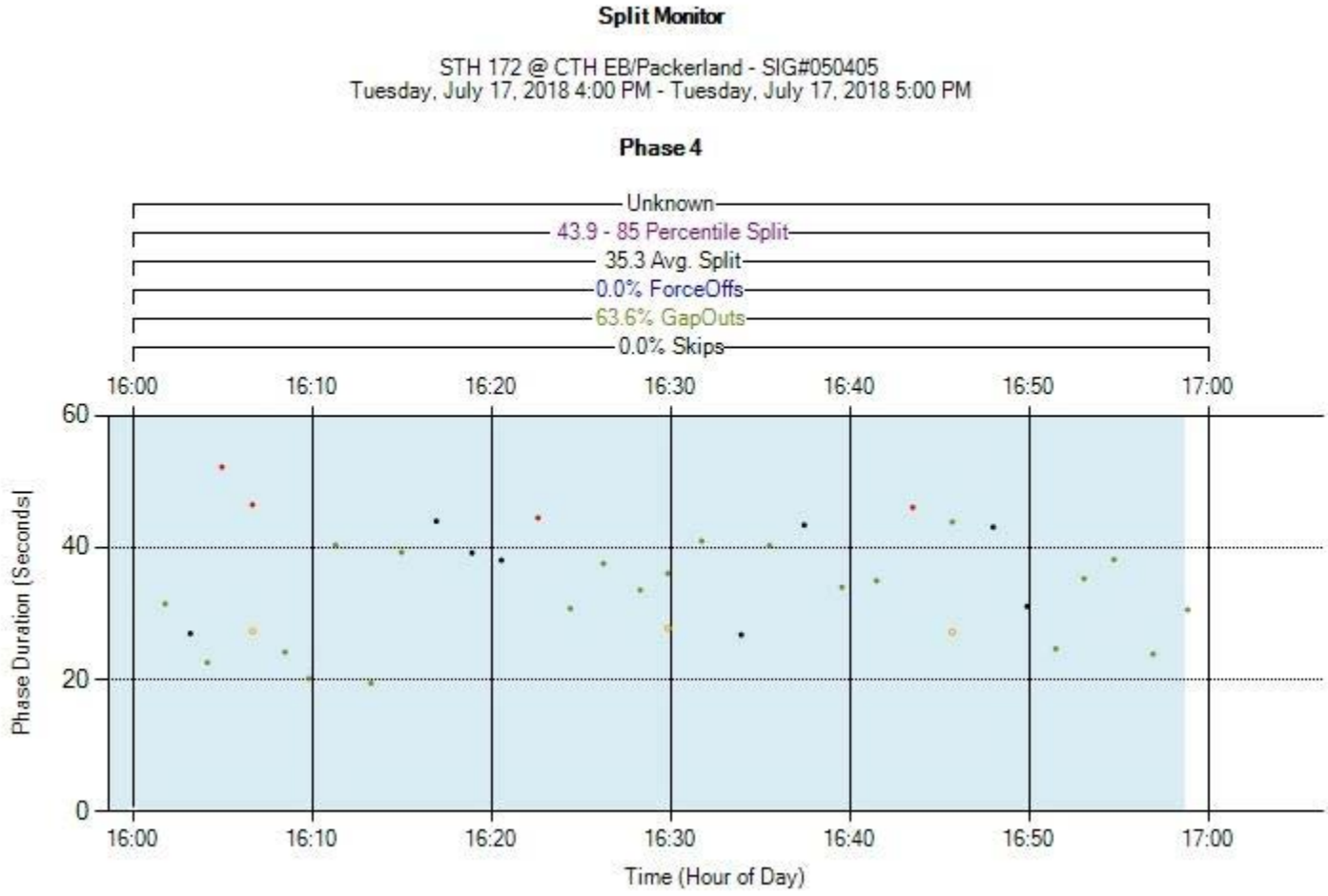
Isolated Signal – WIS 172 & County EB/Packerland Drive
Synchro Timings
7/17/2018 – 4:00 PM – 5:00 PM



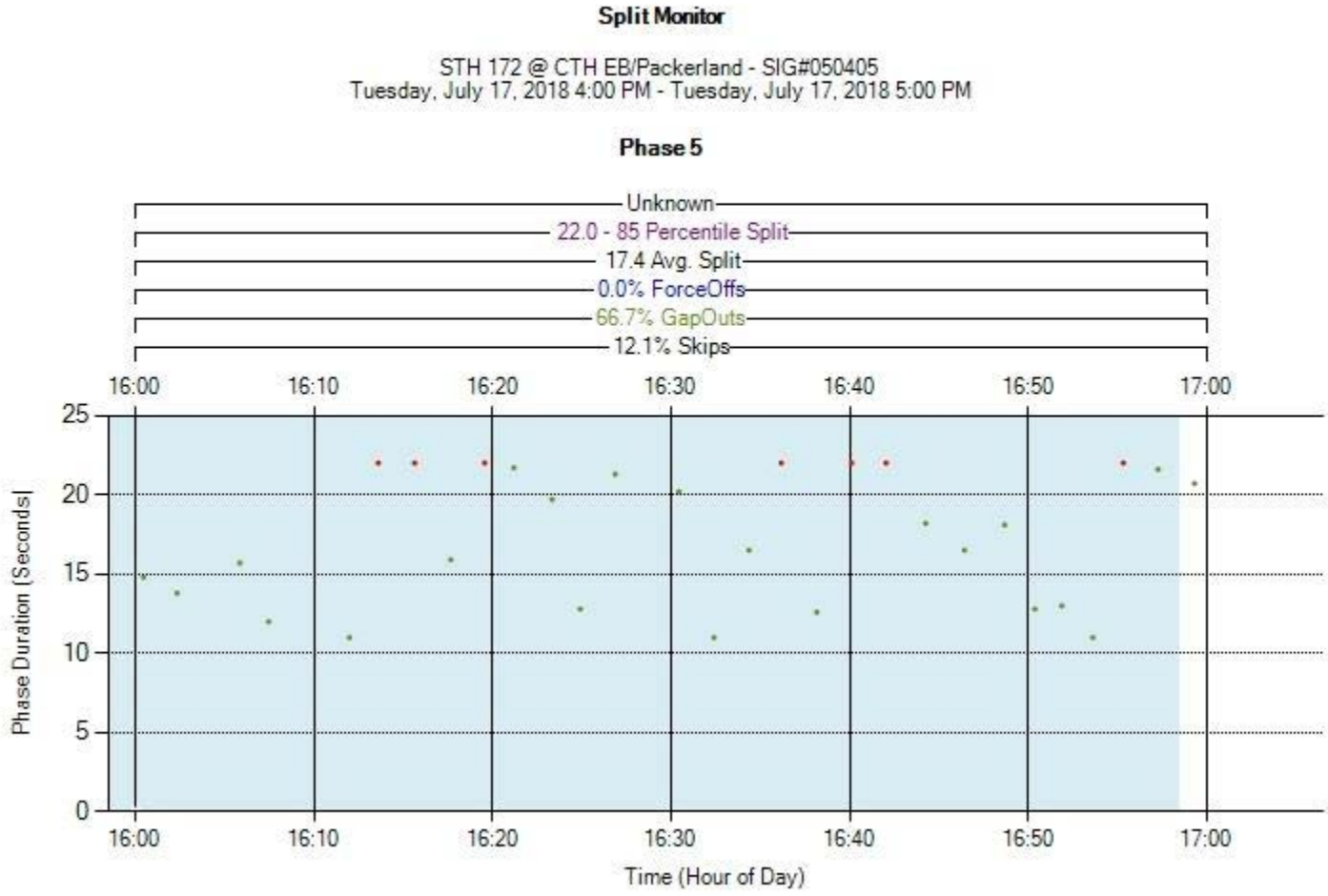
Isolated Signal – WIS 172 & County EB/Packerland Drive
Synchro Timings
7/17/2018 – 4:00 PM – 5:00 PM



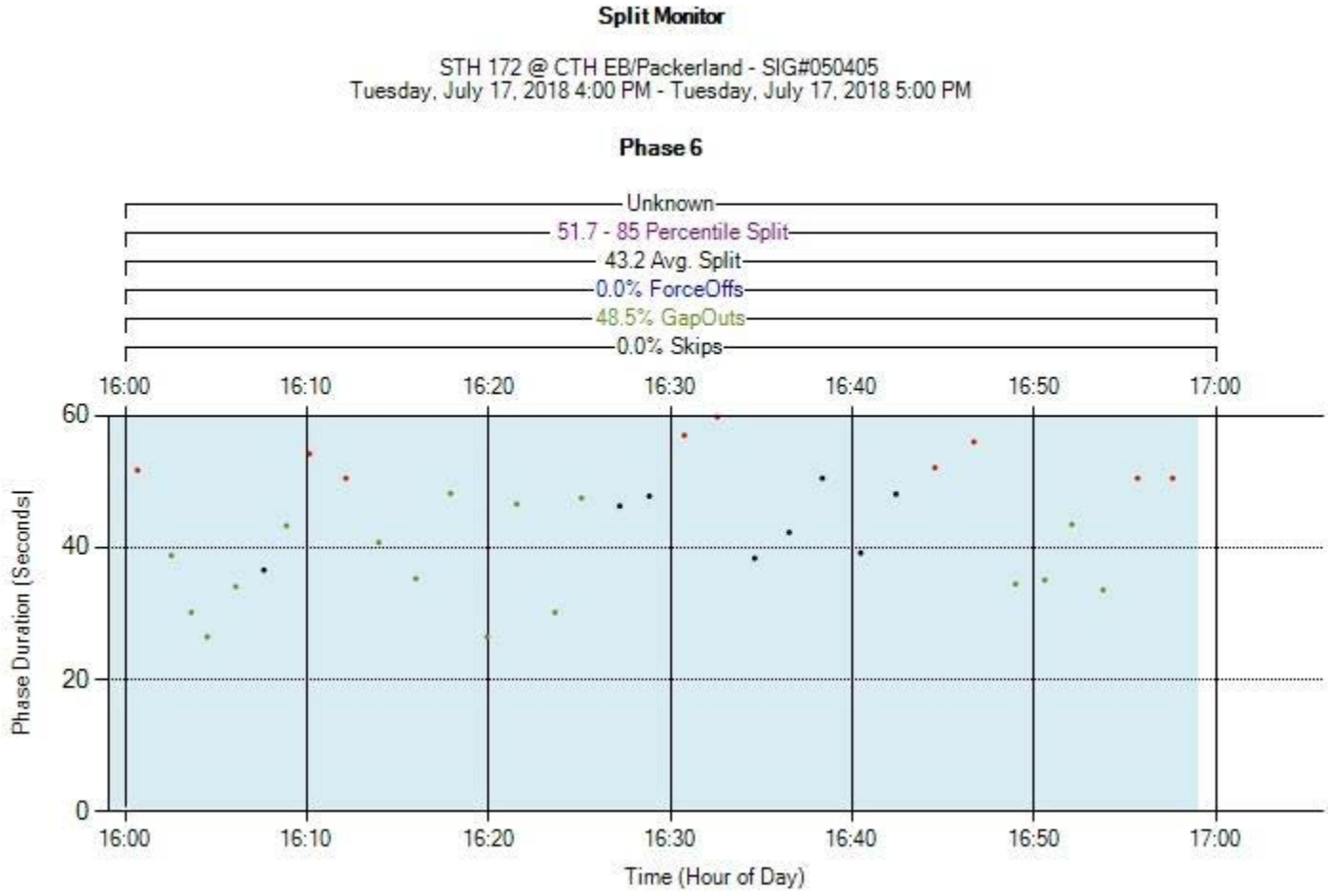
Isolated Signal – WIS 172 & County EB/Packerland Drive
Synchro Timings
7/17/2018 – 4:00 PM – 5:00 PM



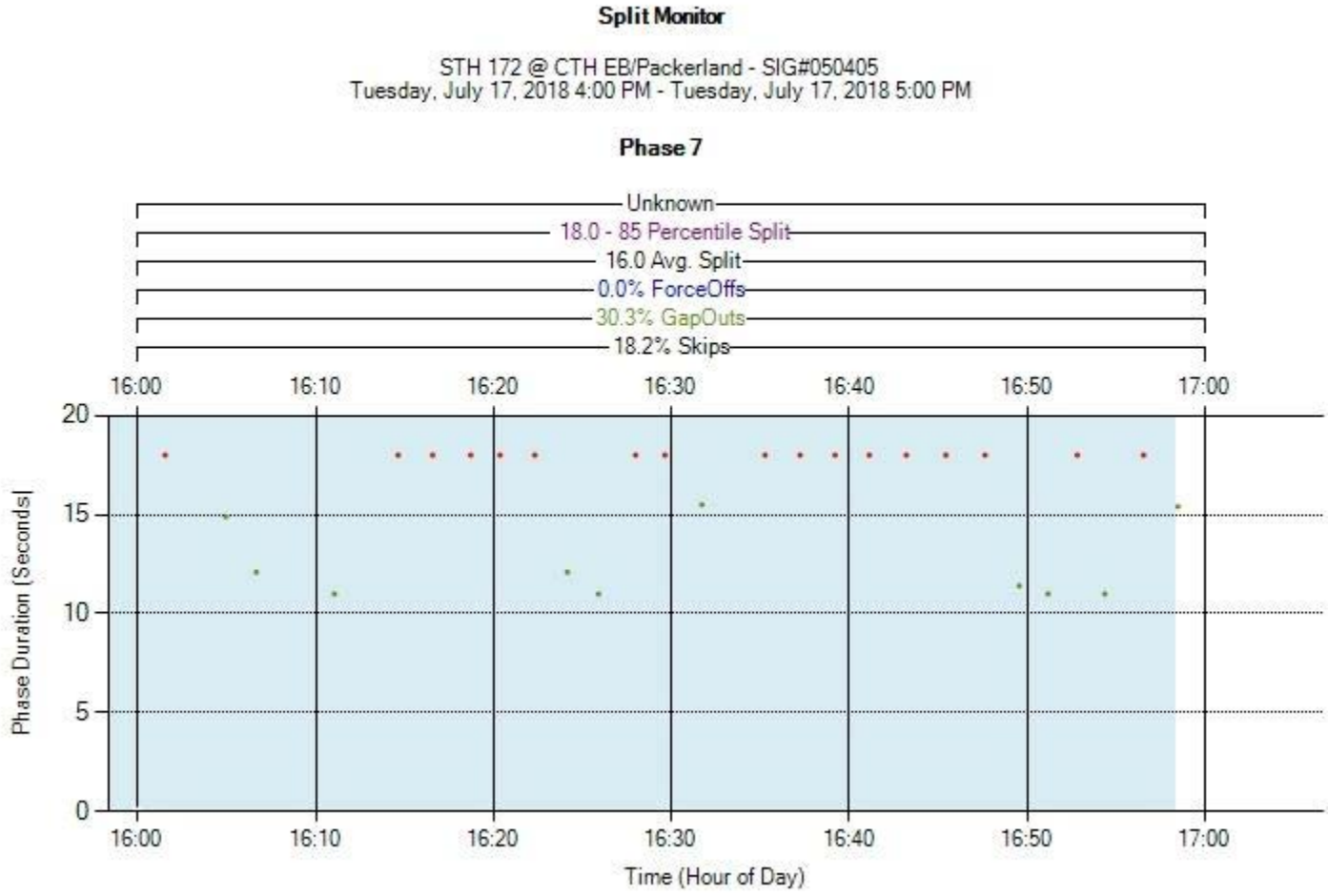
Isolated Signal – WIS 172 & County EB/Packerland Drive
Synchro Timings
7/17/2018 – 4:00 PM – 5:00 PM



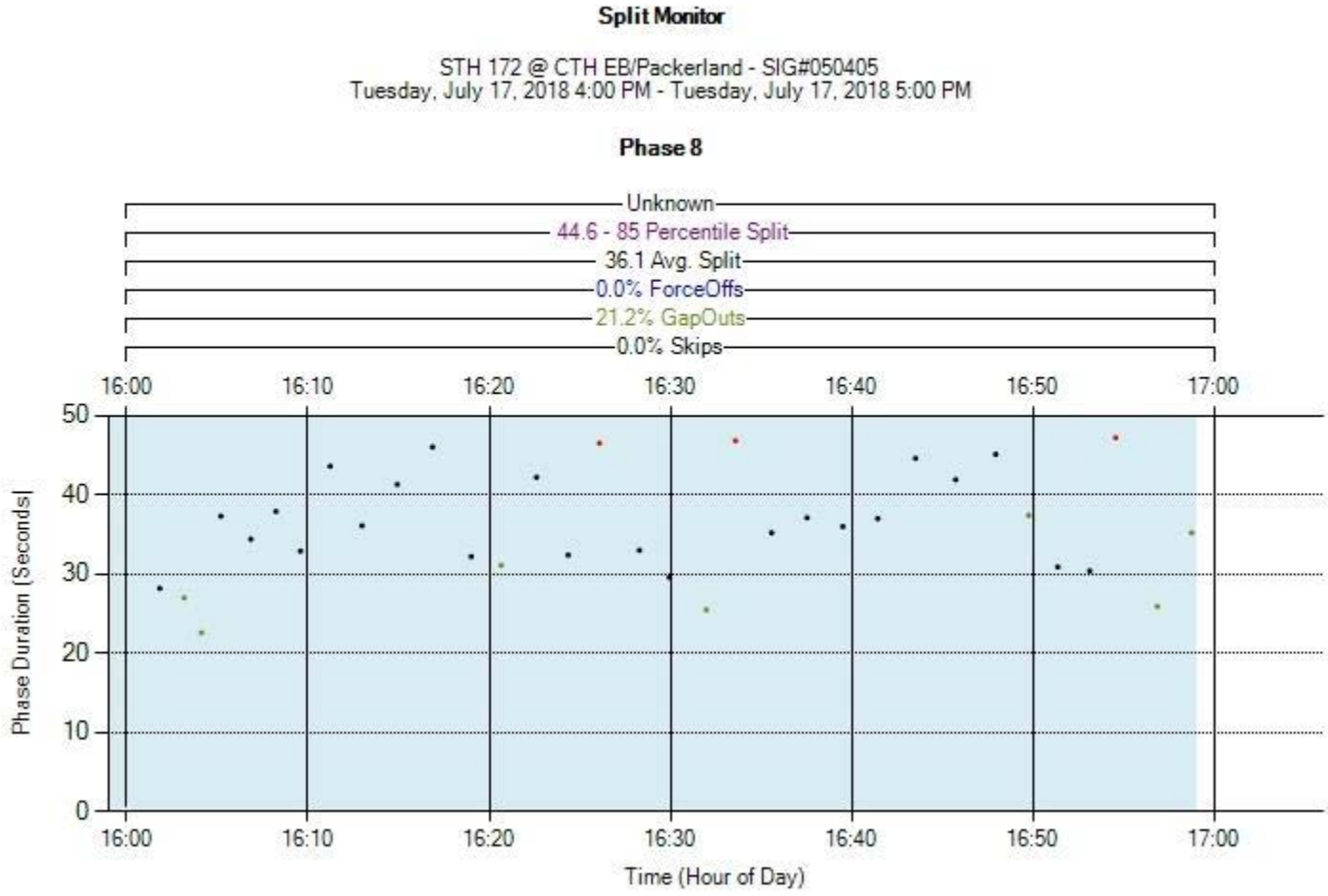
Isolated Signal – WIS 172 & County EB/Packerland Drive
Synchro Timings
7/17/2018 – 4:00 PM – 5:00 PM



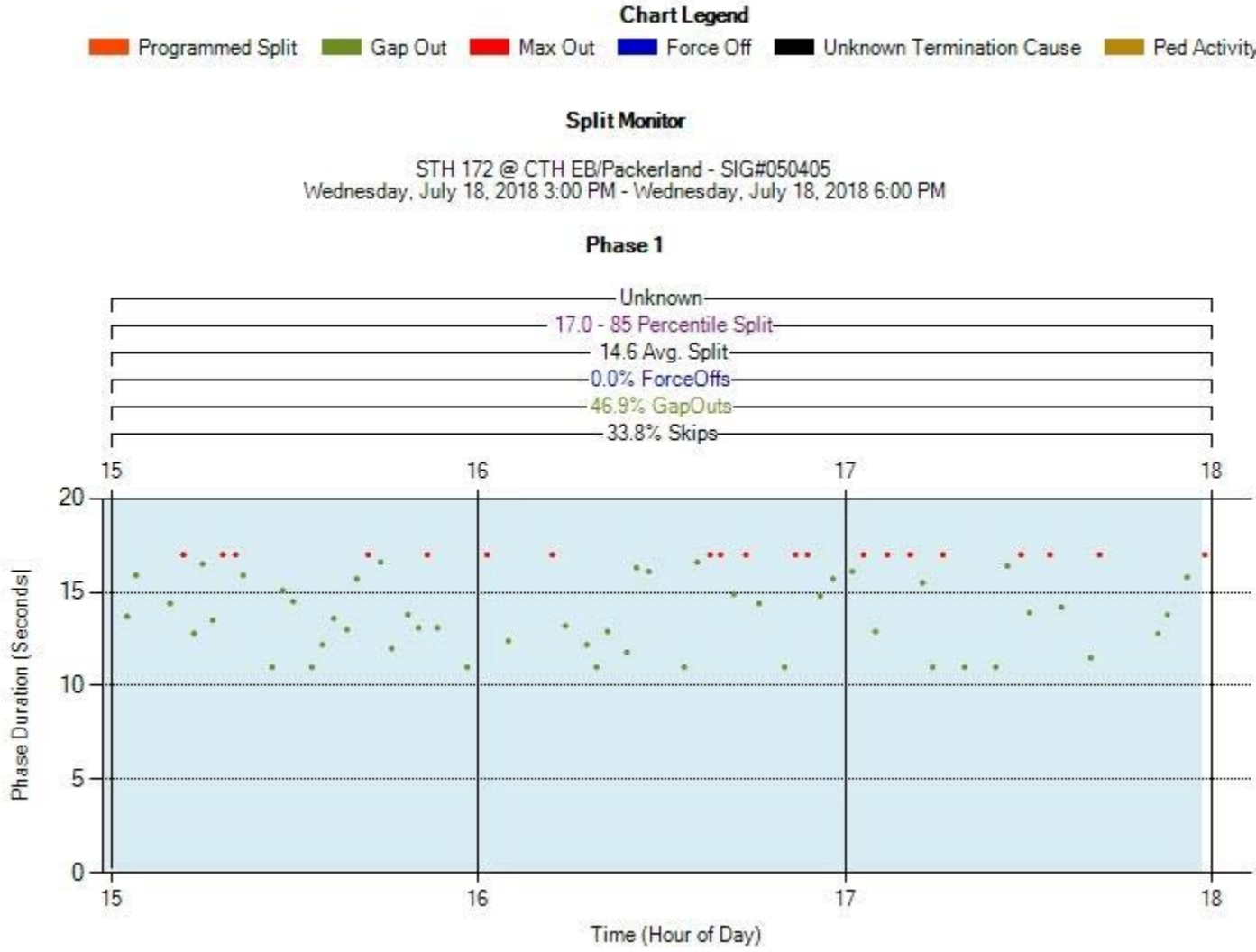
Isolated Signal – WIS 172 & County EB/Packerland Drive
Synchro Timings
7/17/2018 – 4:00 PM – 5:00 PM



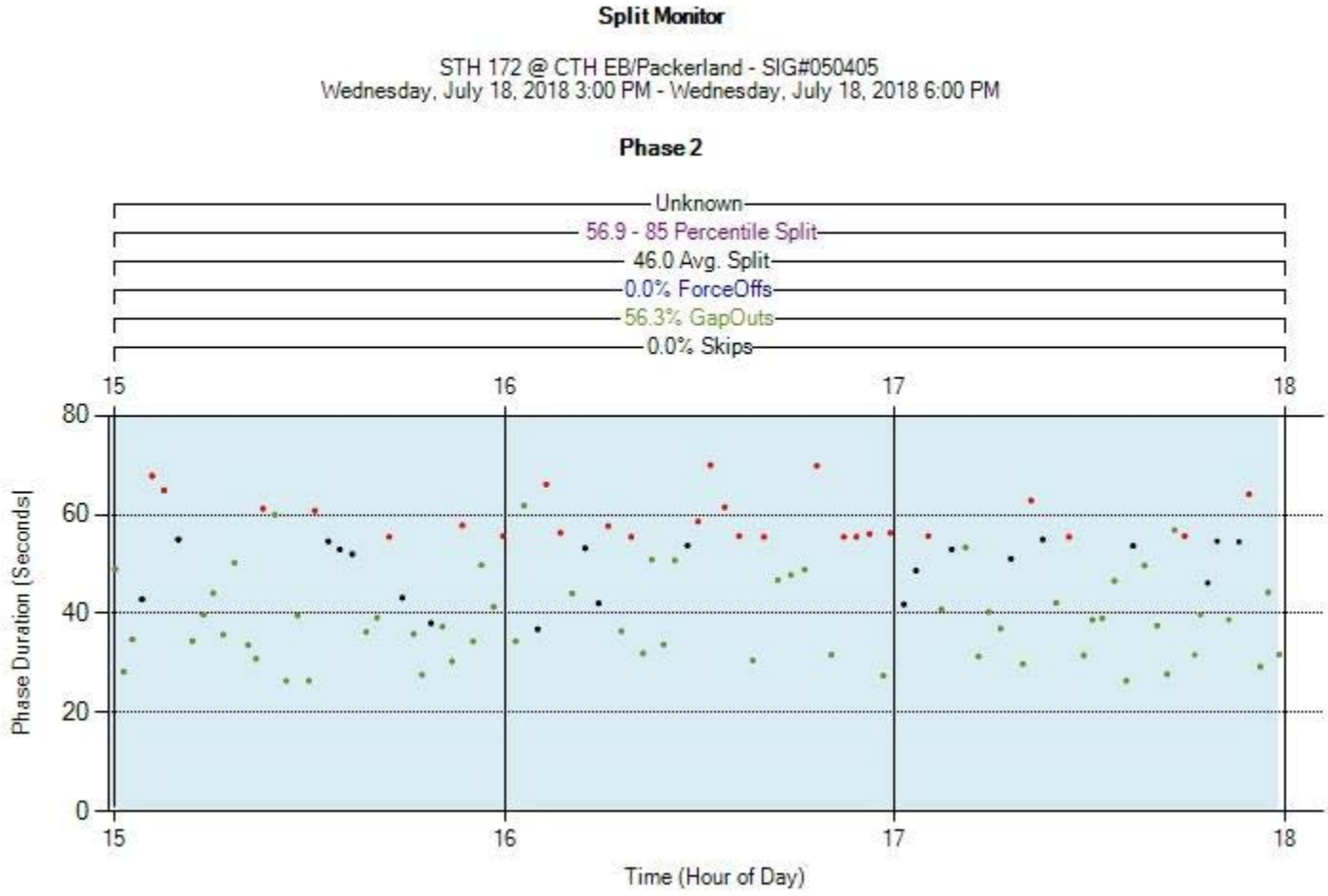
Isolated Signal – WIS 172 & County EB/Packerland Drive
Synchro Timings
7/17/2018 – 4:00 PM – 5:00 PM



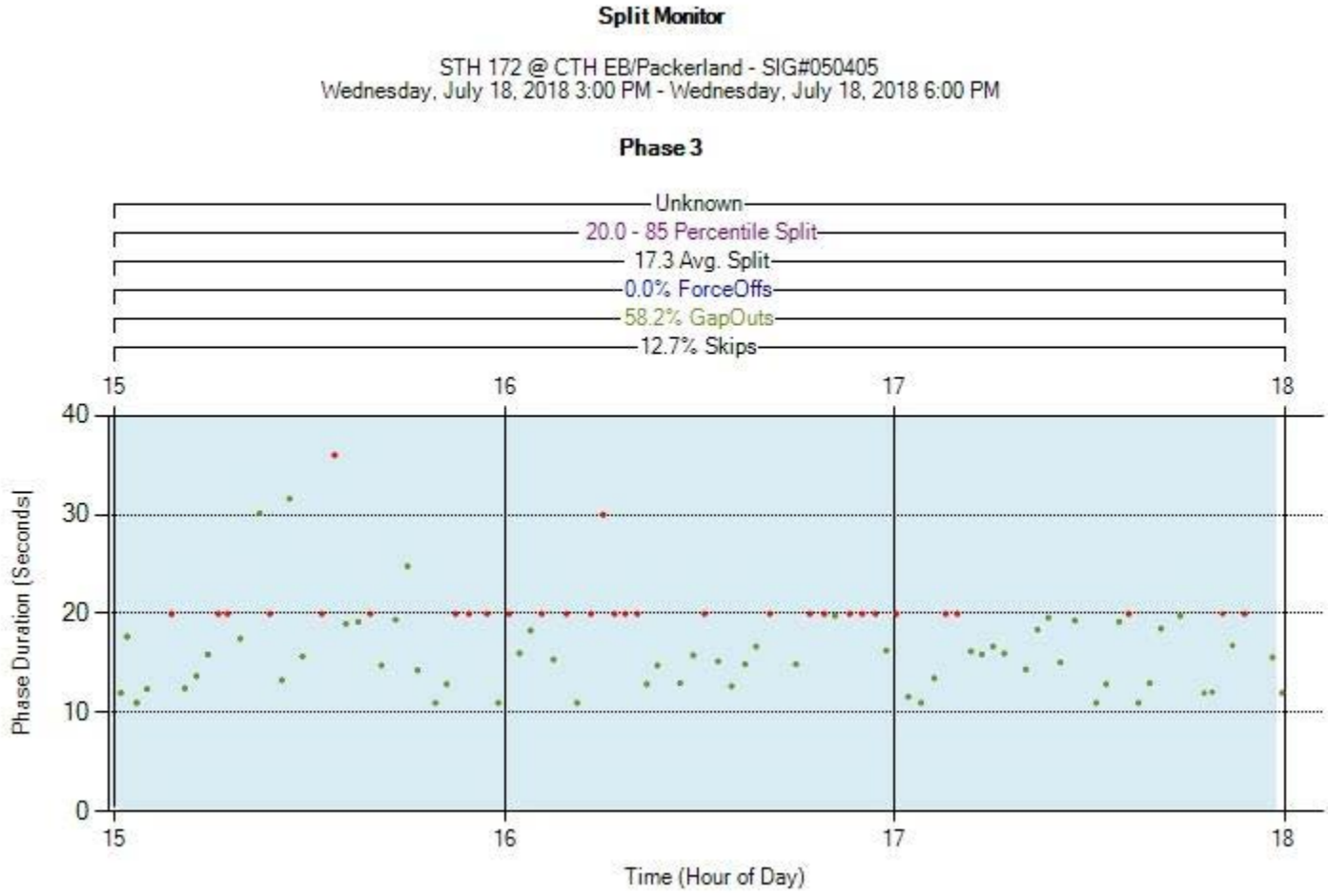
Isolated Signal – WIS 172 & County EB/Packerland Drive
Synchro Timings
7/18/2018 – 3:00 PM – 6:00 PM



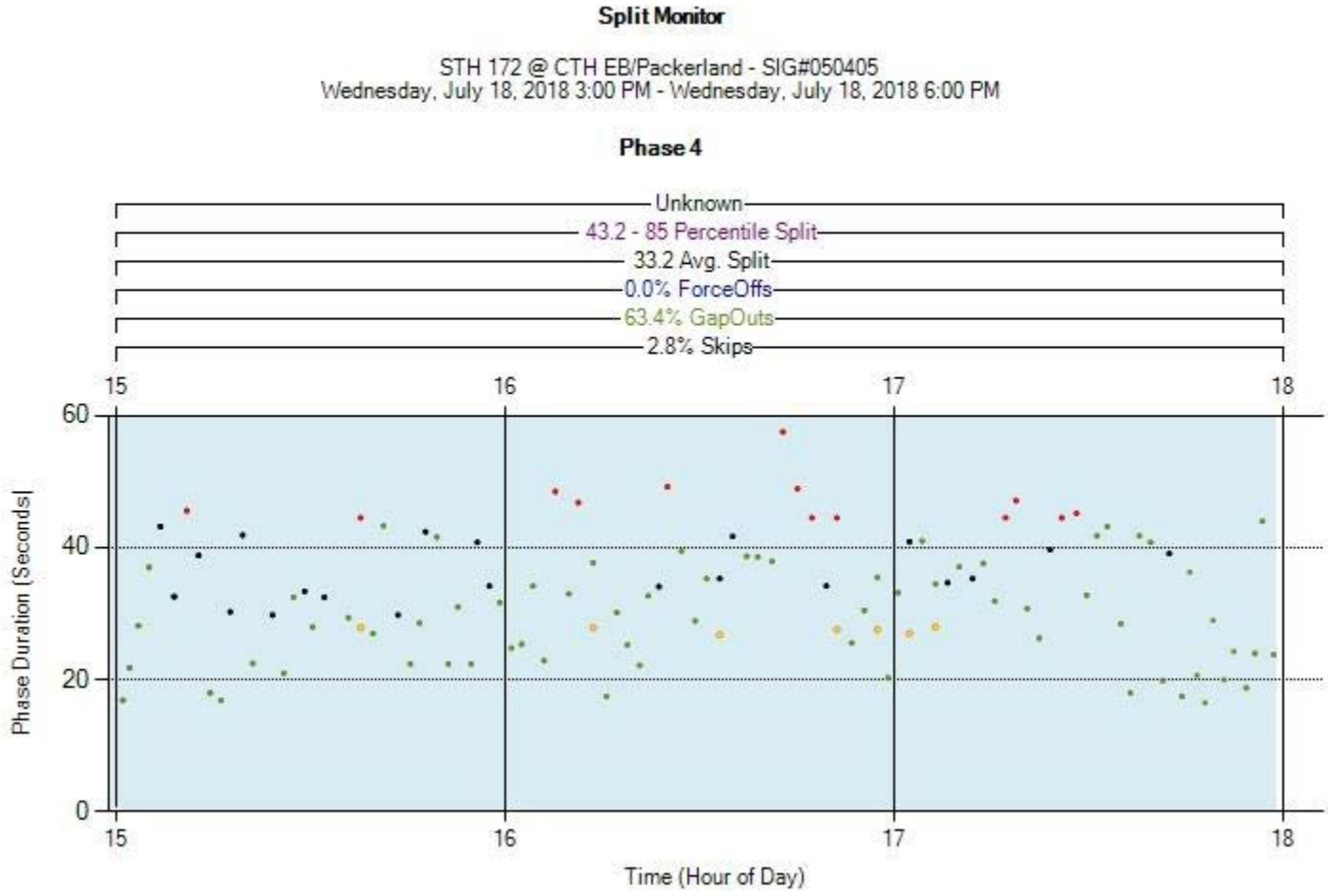
Isolated Signal – WIS 172 & County EB/Packerland Drive
Synchro Timings
7/18/2018 – 3:00 PM – 6:00 PM



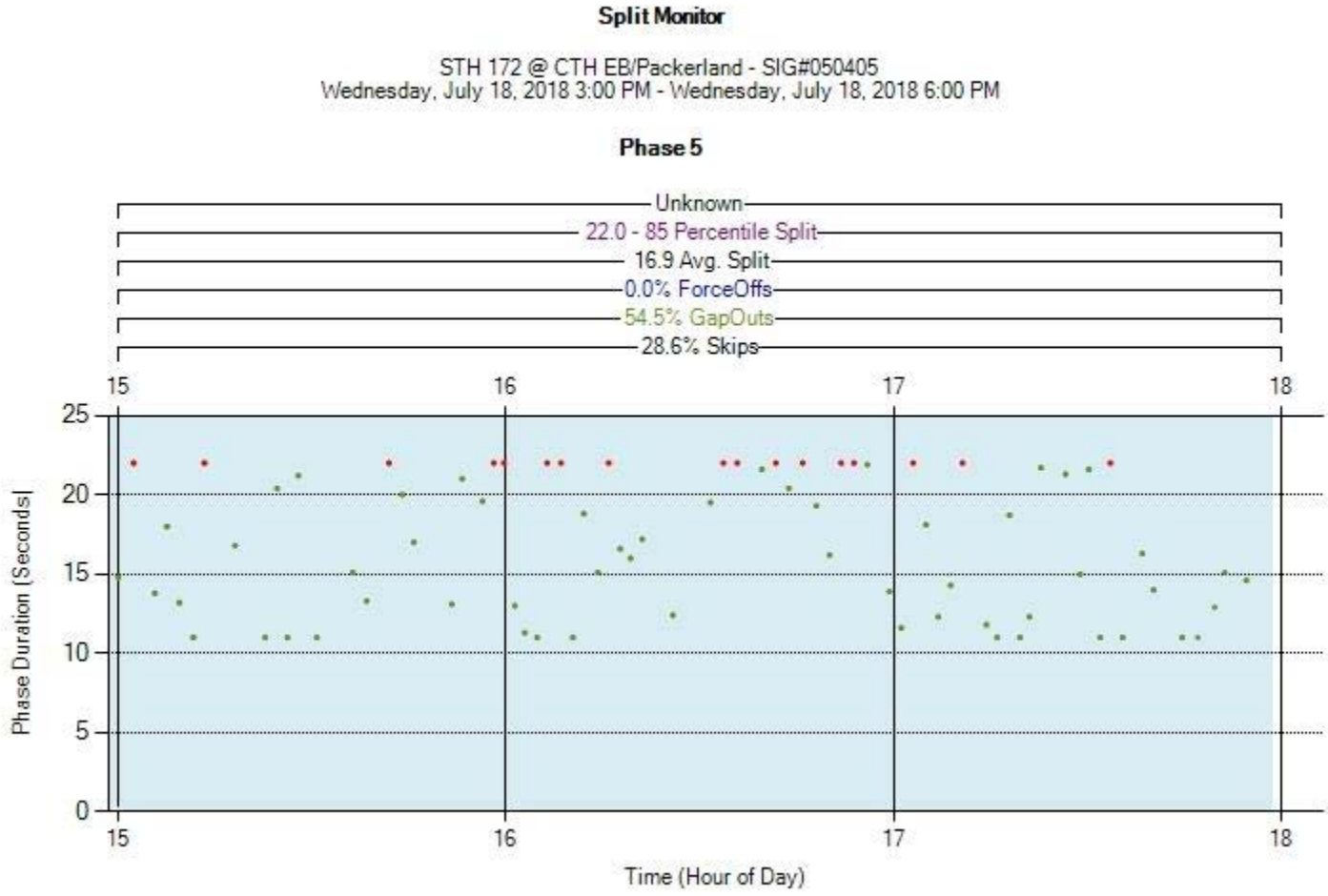
Isolated Signal – WIS 172 & County EB/Packerland Drive
Synchro Timings
7/18/2018 – 3:00 PM – 6:00 PM



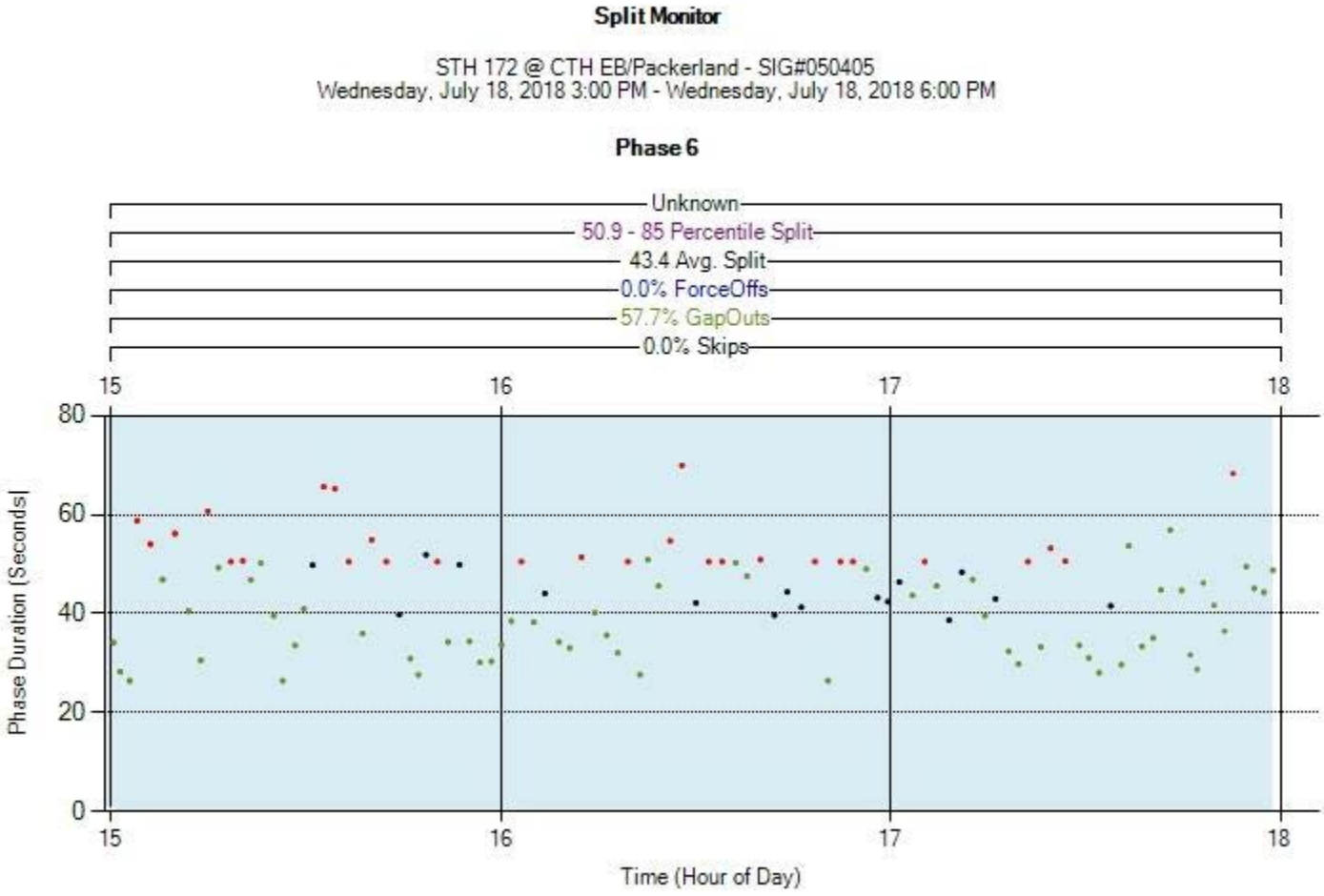
Isolated Signal – WIS 172 & County EB/Packerland Drive
Synchro Timings
7/18/2018 – 3:00 PM – 6:00 PM



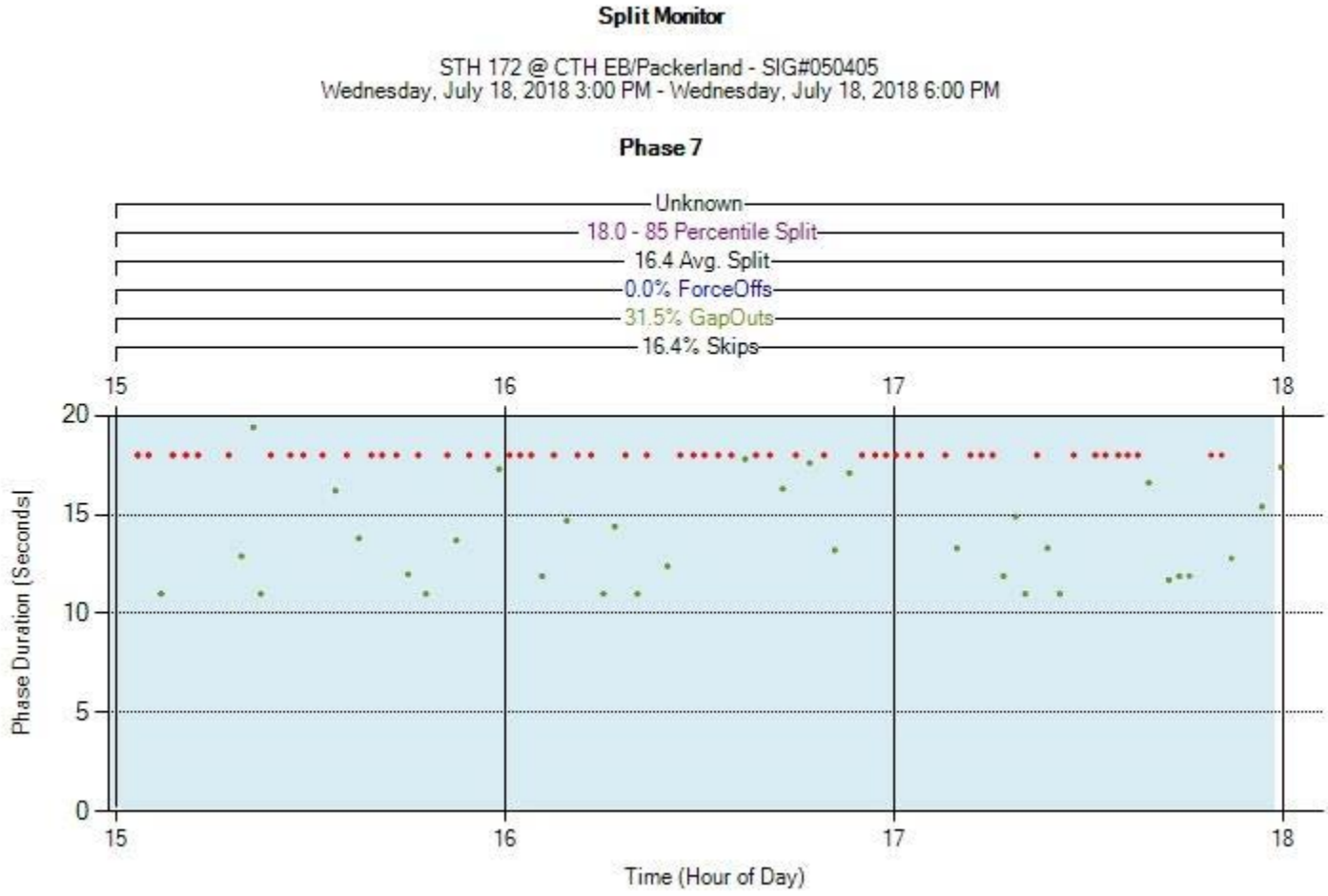
Isolated Signal – WIS 172 & County EB/Packerland Drive
Synchro Timings
7/18/2018 – 3:00 PM – 6:00 PM



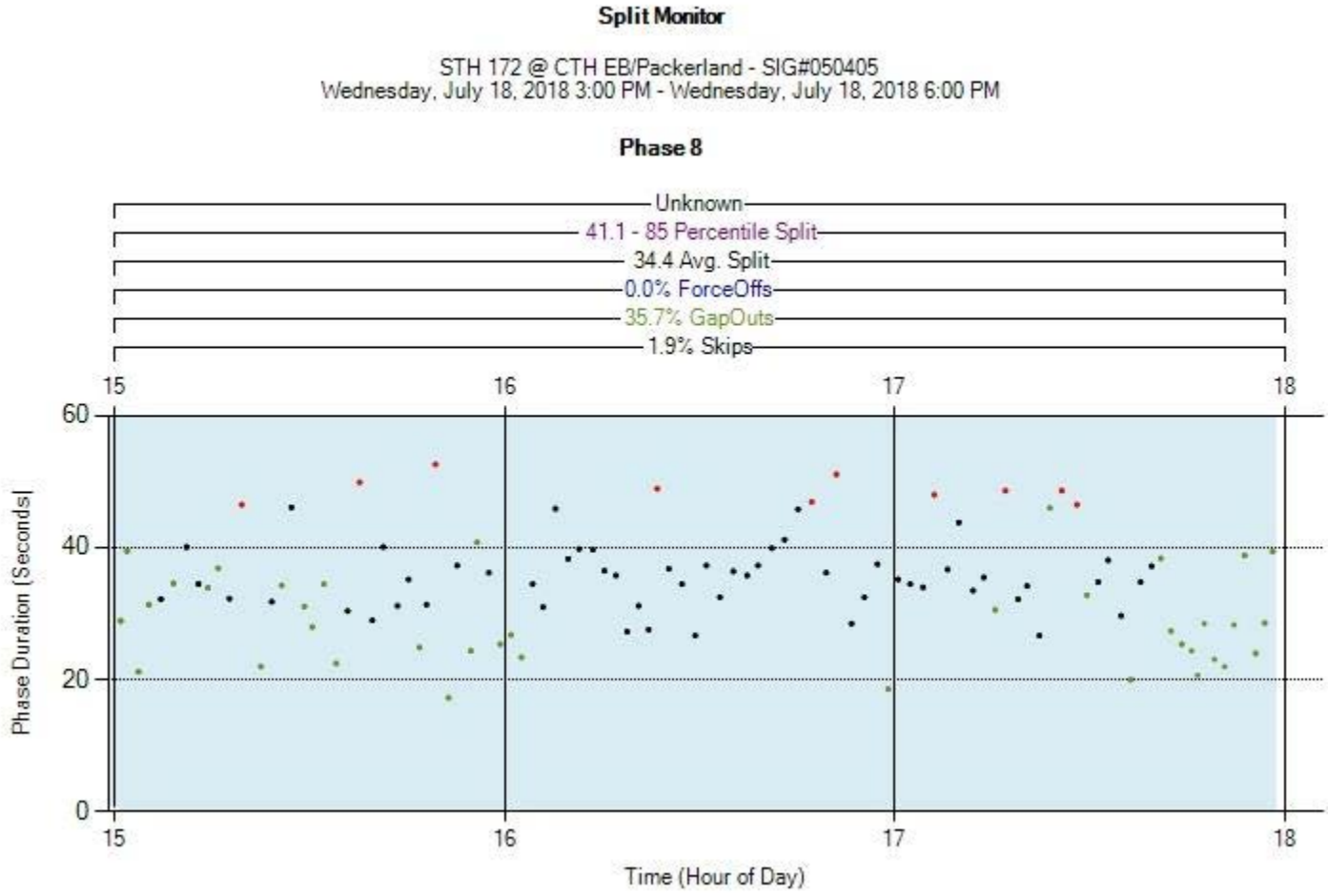
Isolated Signal – WIS 172 & County EB/Packerland Drive
Synchro Timings
7/18/2018 – 3:00 PM – 6:00 PM



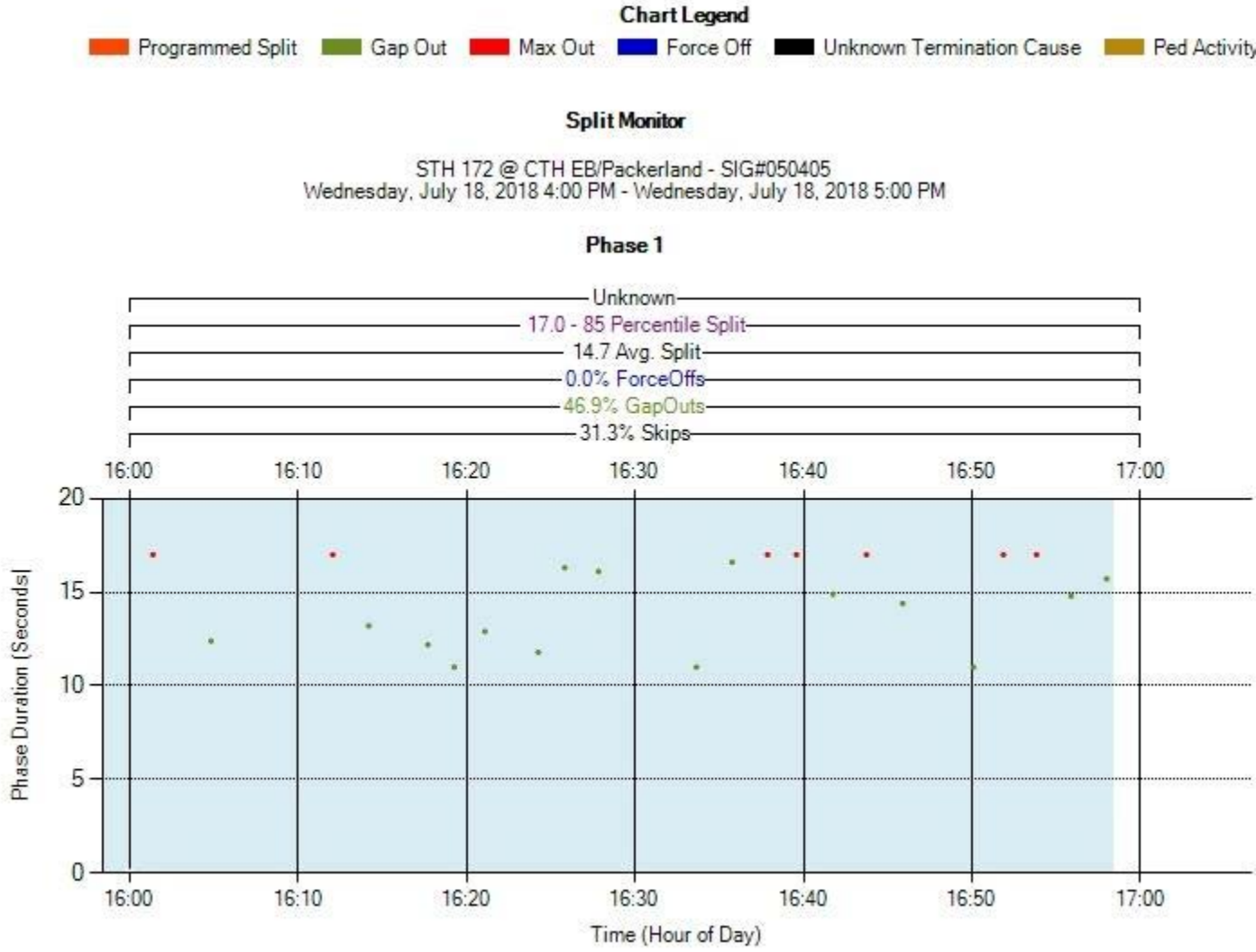
Isolated Signal – WIS 172 & County EB/Packerland Drive
Synchro Timings
7/18/2018 – 3:00 PM – 6:00 PM



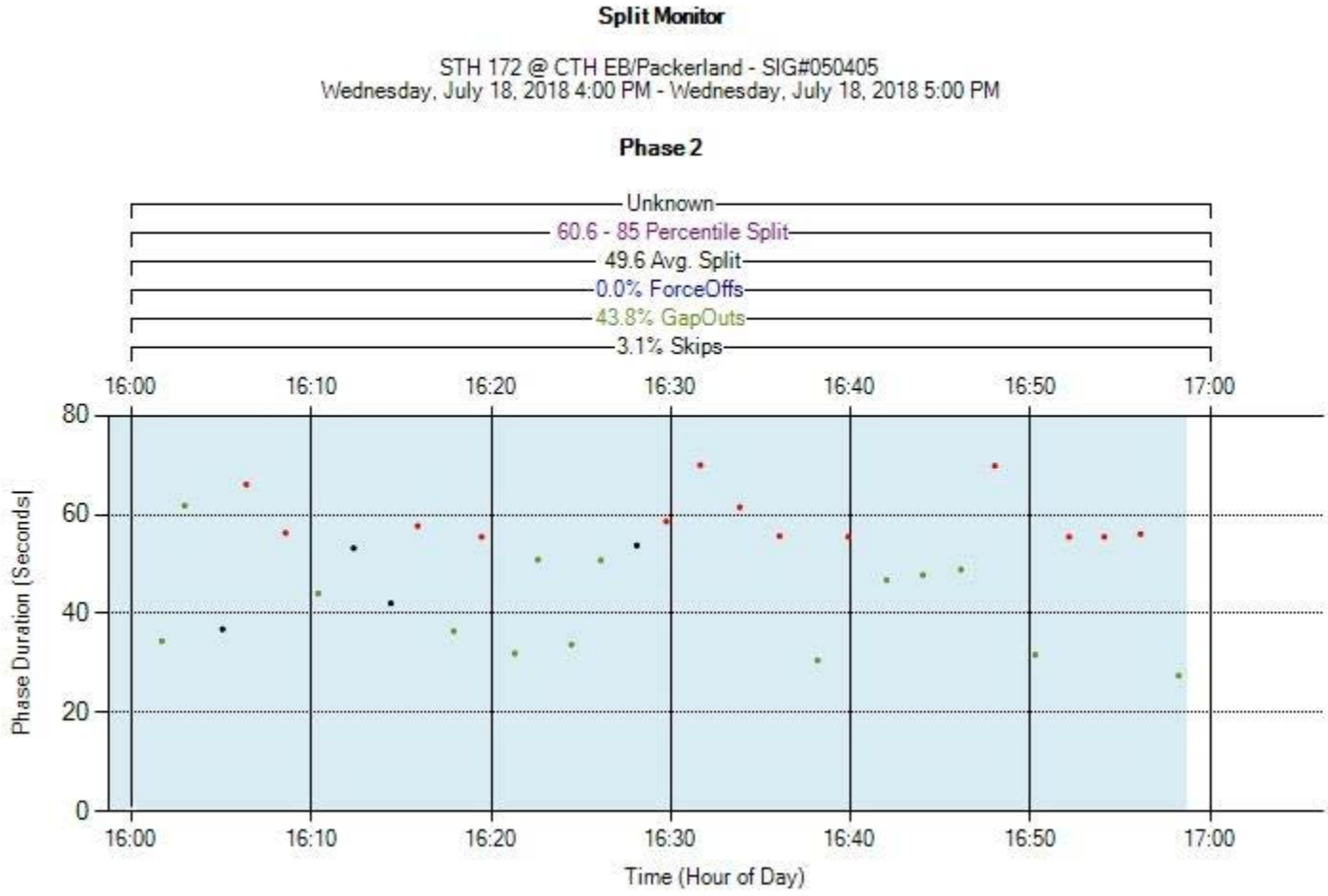
Isolated Signal – WIS 172 & County EB/Packerland Drive
Synchro Timings
7/18/2018 – 3:00 PM – 6:00 PM



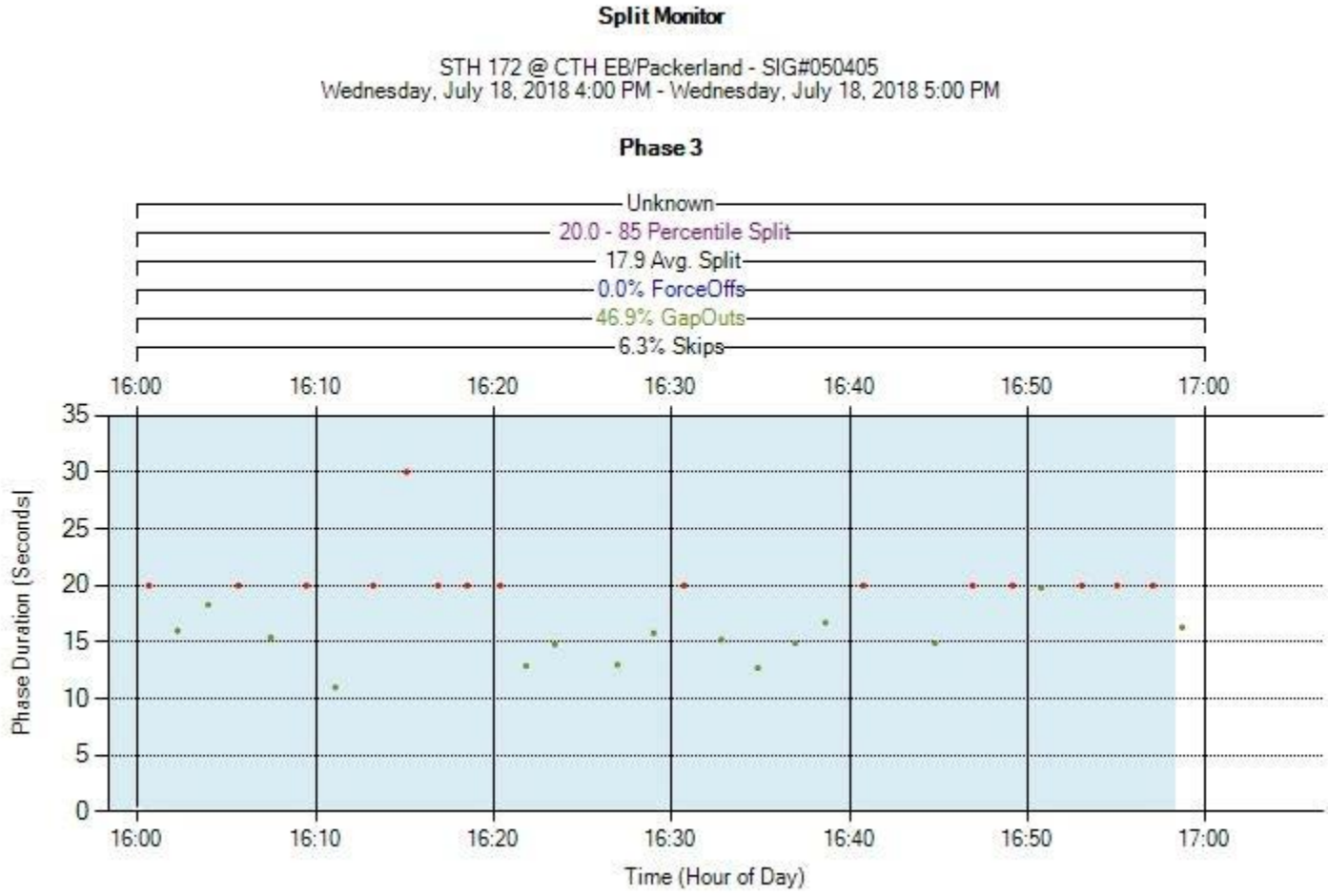
Isolated Signal – WIS 172 & County EB/Packerland Drive
Synchro Timings
7/18/2018 – 4:00 PM – 5:00 PM



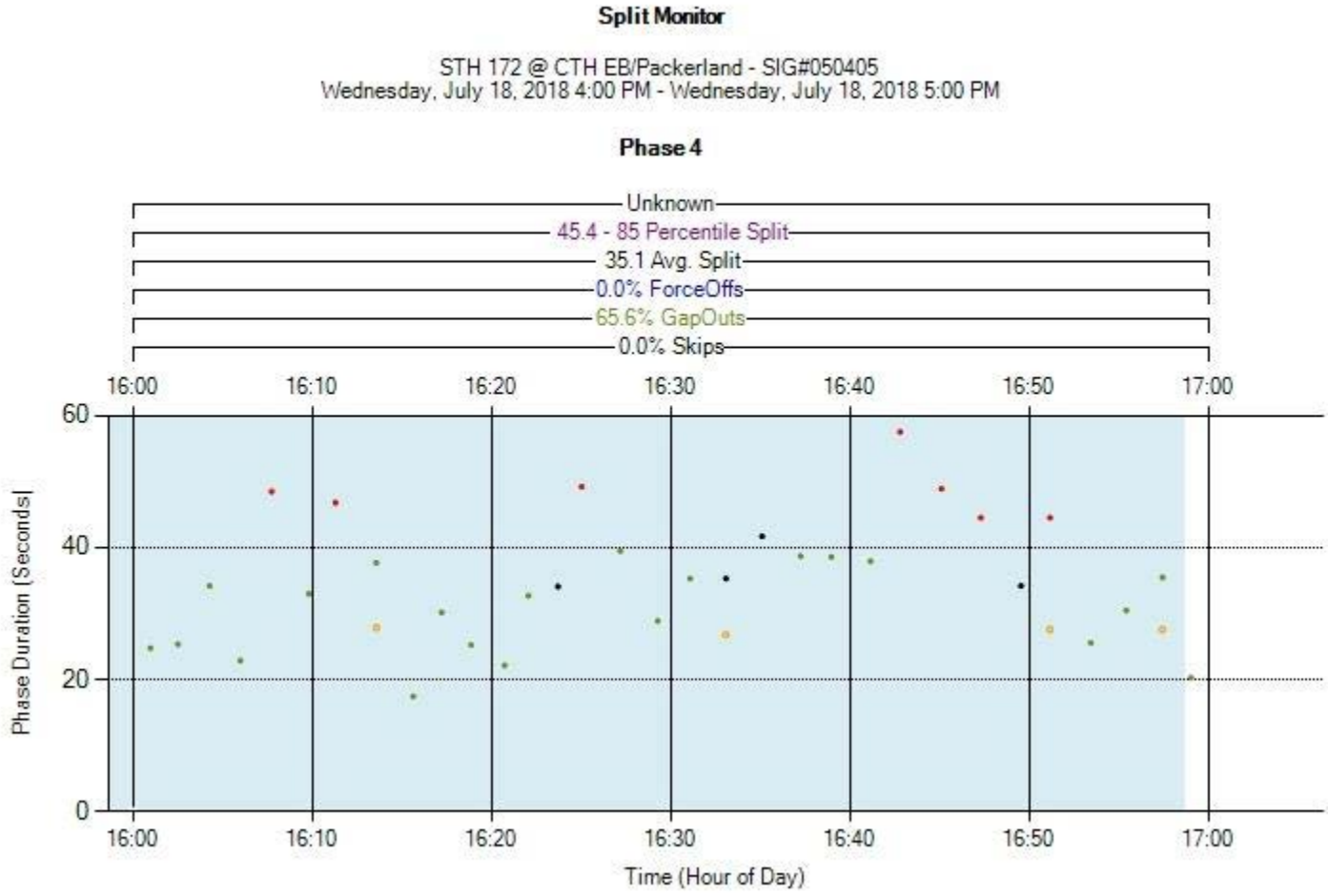
Isolated Signal – WIS 172 & County EB/Packerland Drive
Synchro Timings
7/18/2018 – 4:00 PM – 5:00 PM



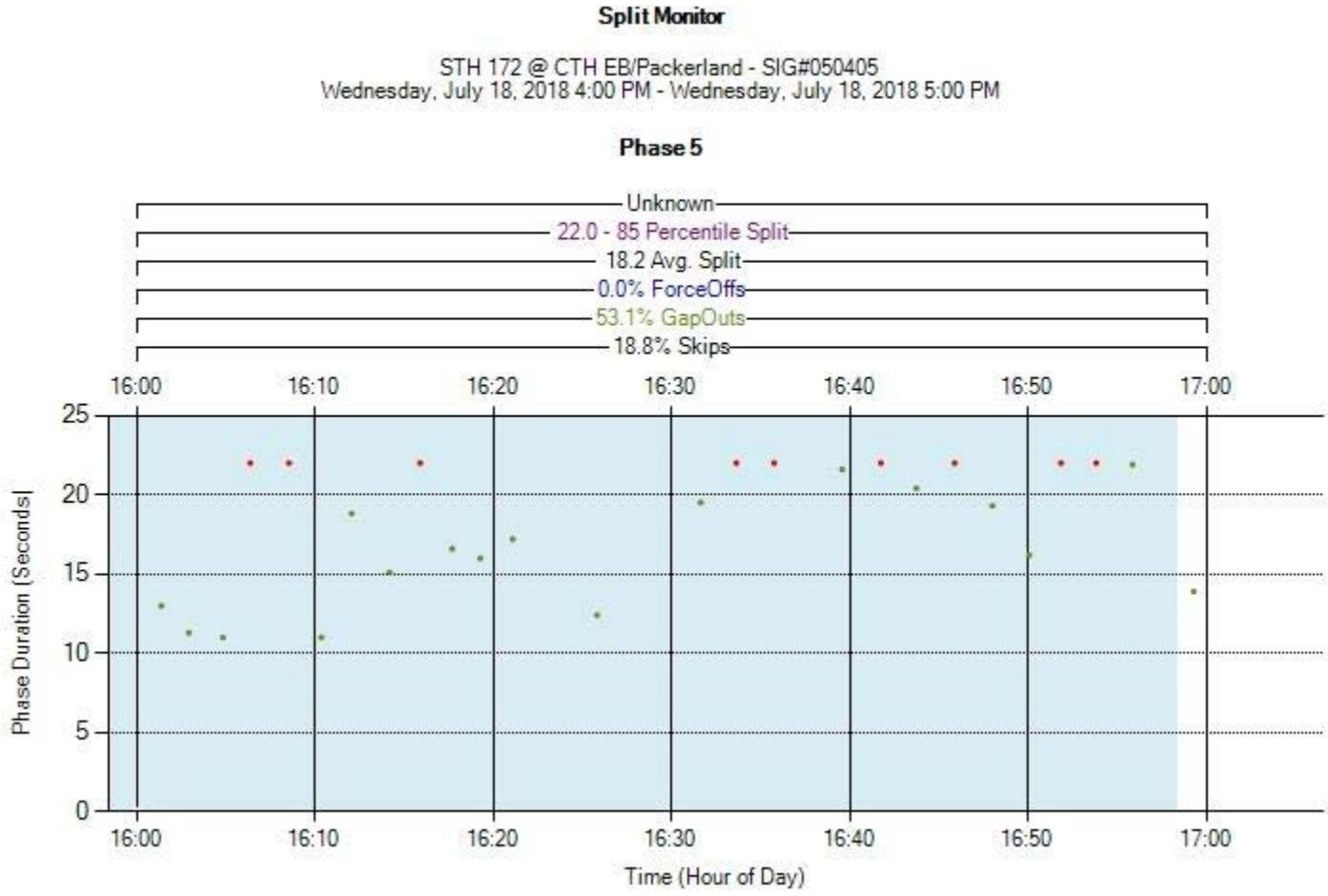
Isolated Signal – WIS 172 & County EB/Packerland Drive
Synchro Timings
7/18/2018 – 4:00 PM – 5:00 PM



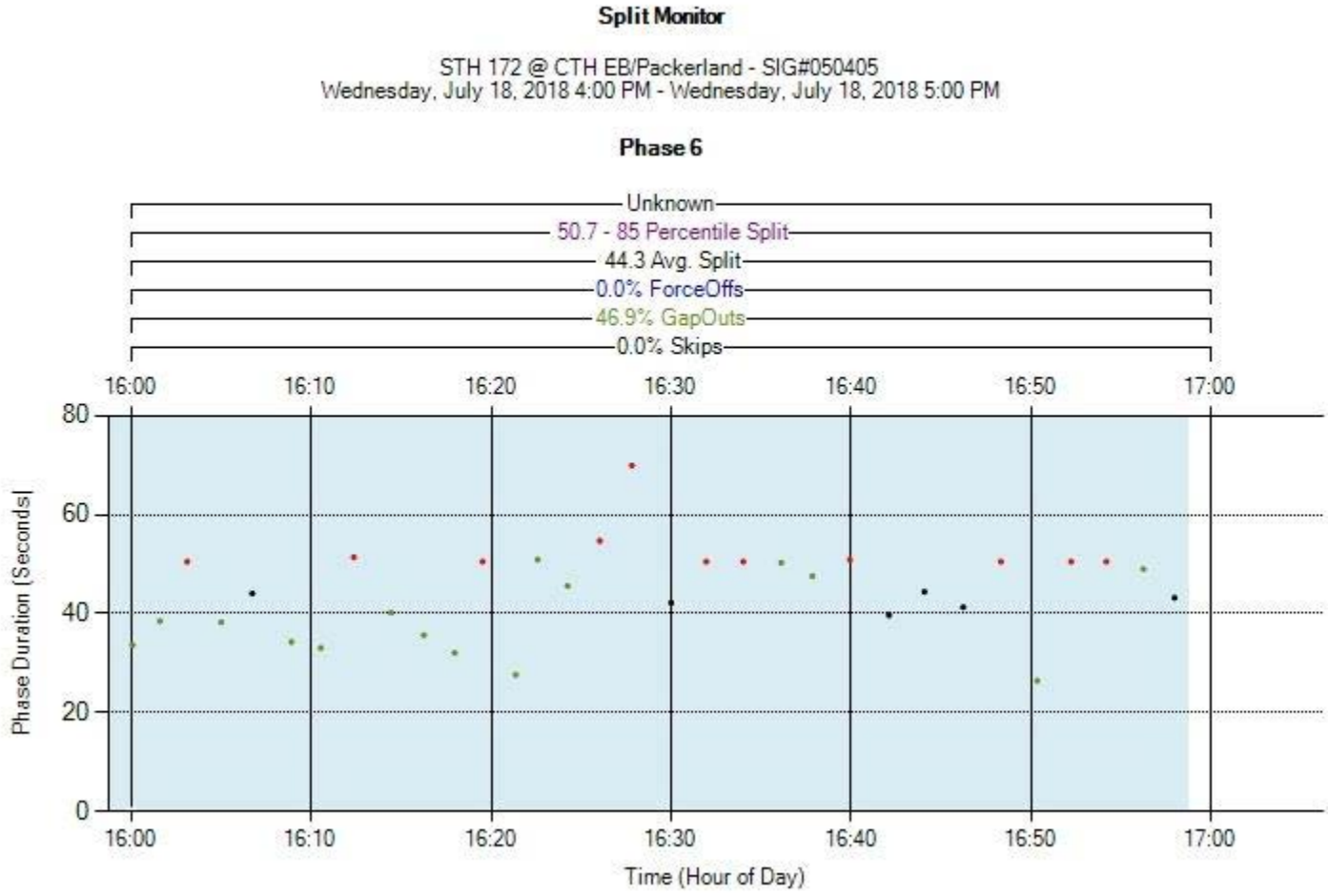
Isolated Signal – WIS 172 & County EB/Packerland Drive
Synchro Timings
7/18/2018 – 4:00 PM – 5:00 PM



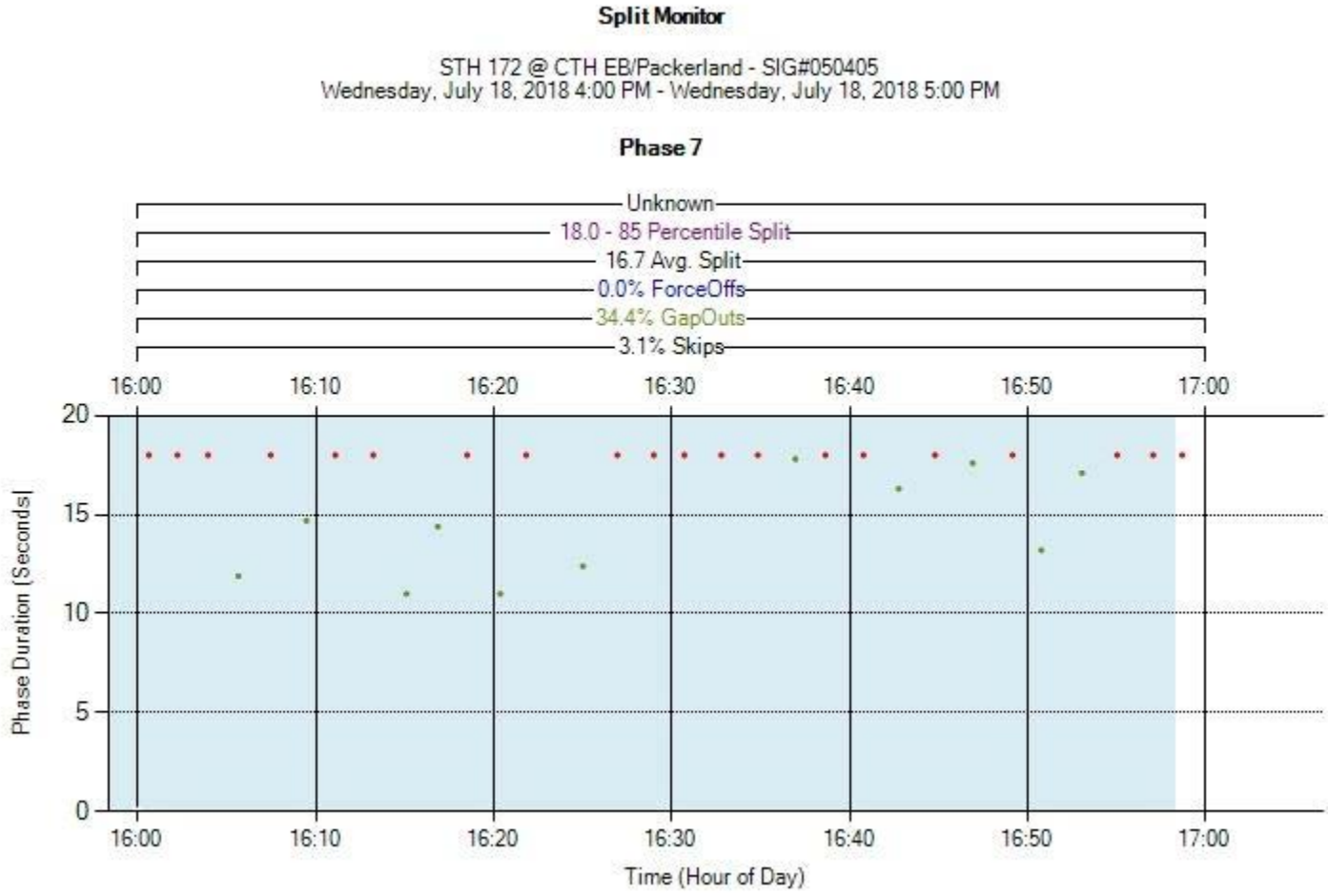
Isolated Signal – WIS 172 & County EB/Packerland Drive
Synchro Timings
7/18/2018 – 4:00 PM – 5:00 PM



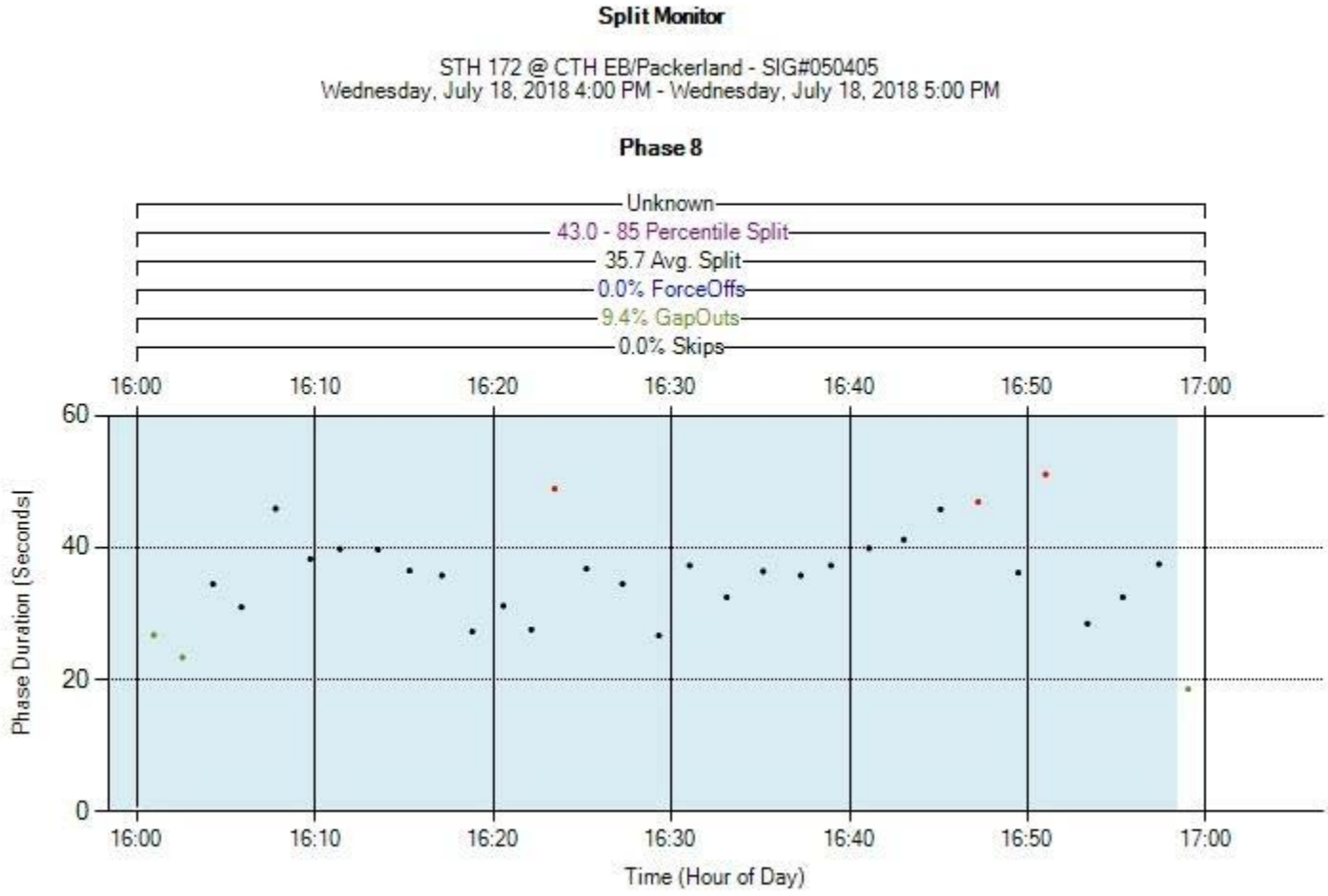
Isolated Signal – WIS 172 & County EB/Packerland Drive
Synchro Timings
7/18/2018 – 4:00 PM – 5:00 PM



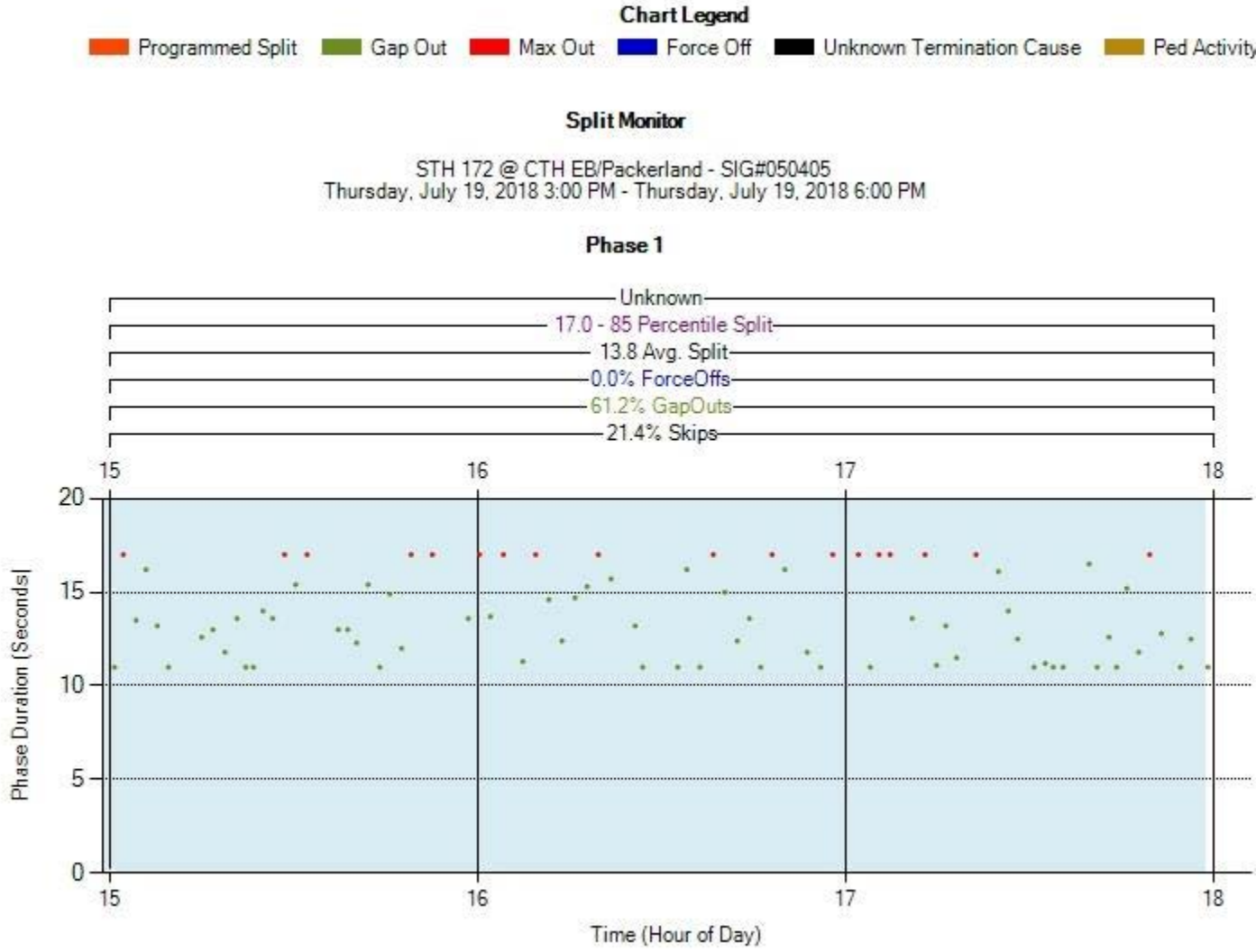
Isolated Signal – WIS 172 & County EB/Packerland Drive
Synchro Timings
7/18/2018 – 4:00 PM – 5:00 PM



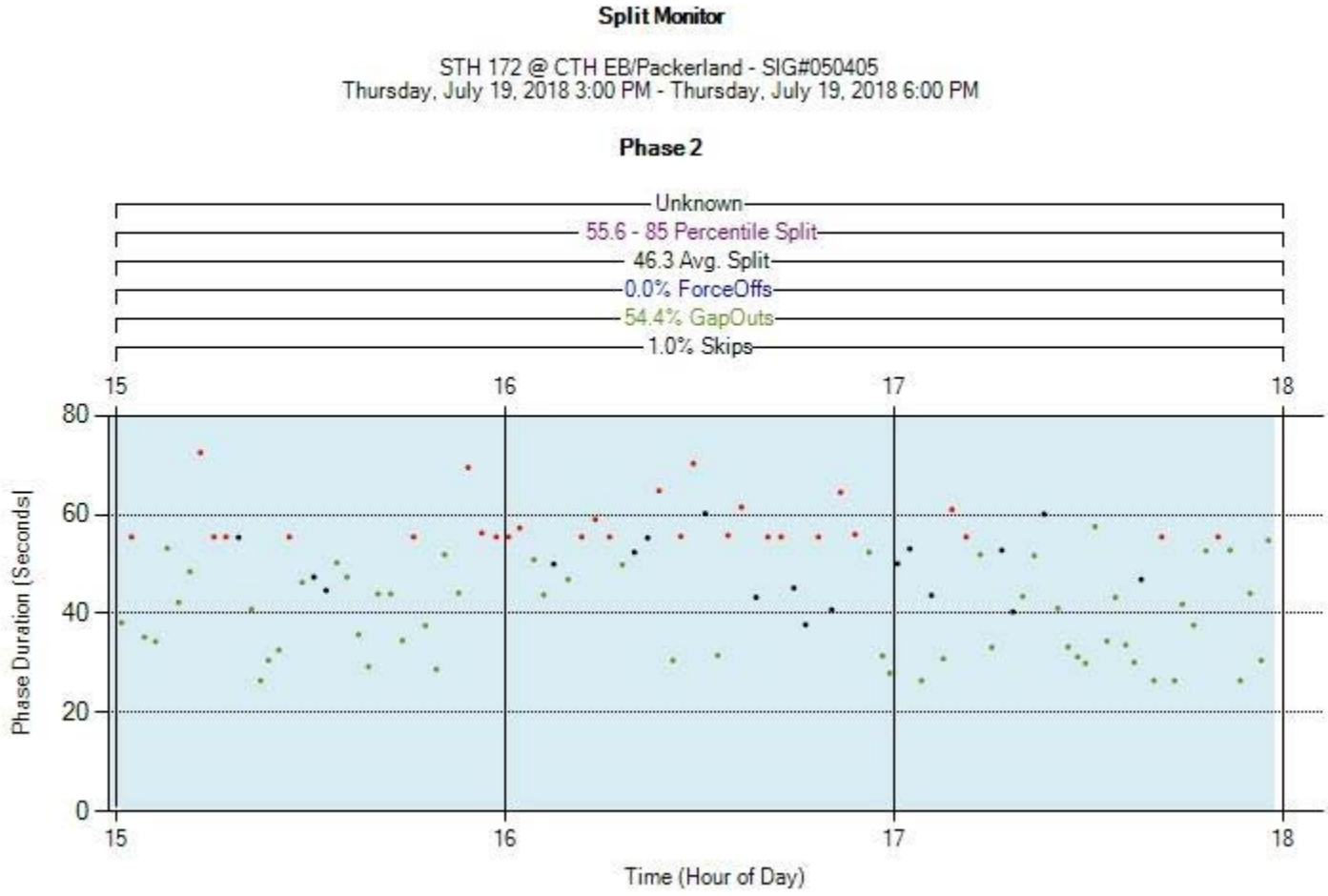
Isolated Signal – WIS 172 & County EB/Packerland Drive
Synchro Timings
7/18/2018 – 4:00 PM – 5:00 PM



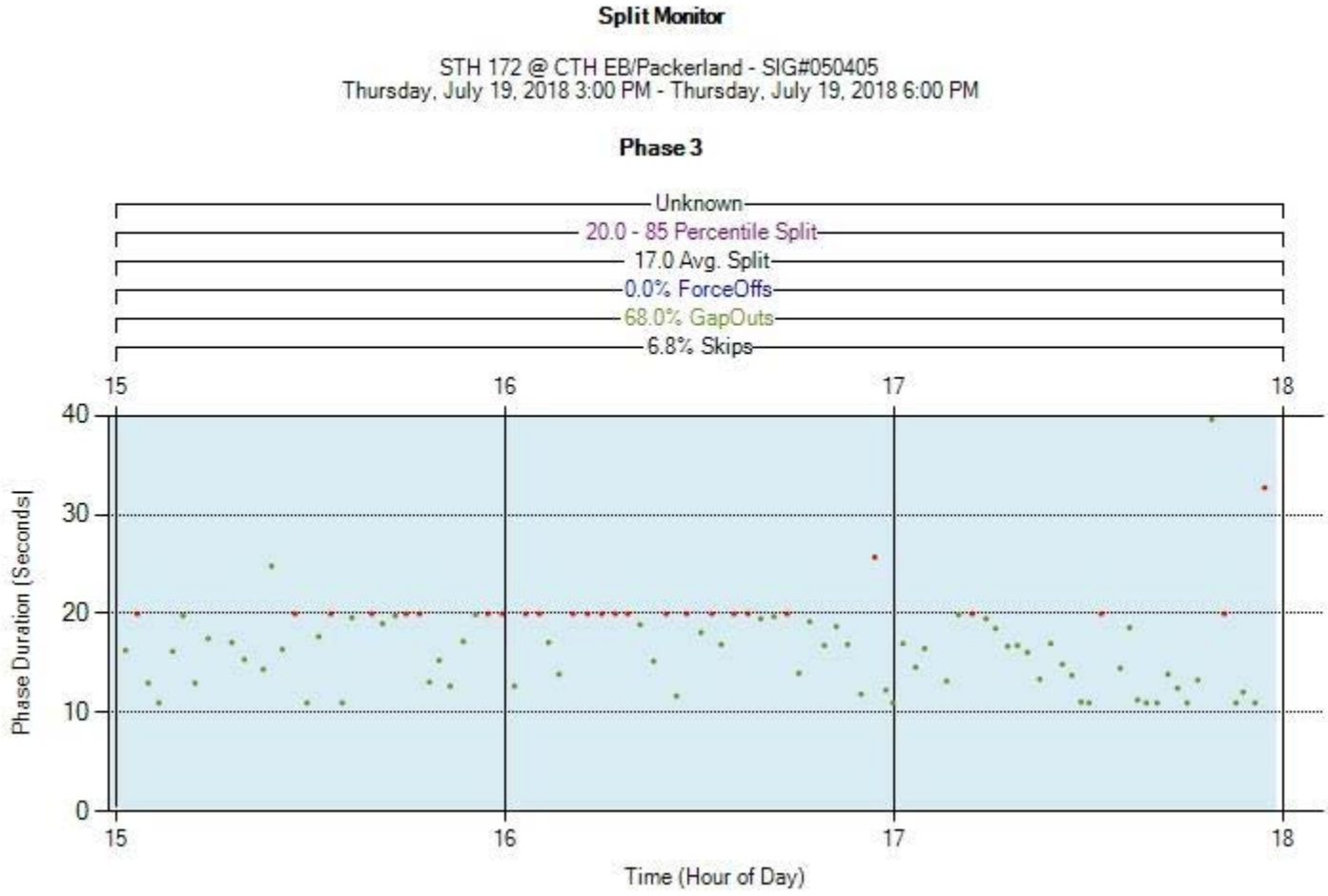
Isolated Signal – WIS 172 & County EB/Packerland Drive
Synchro Timings
7/19/2018 – 3:00 PM – 6:00 PM



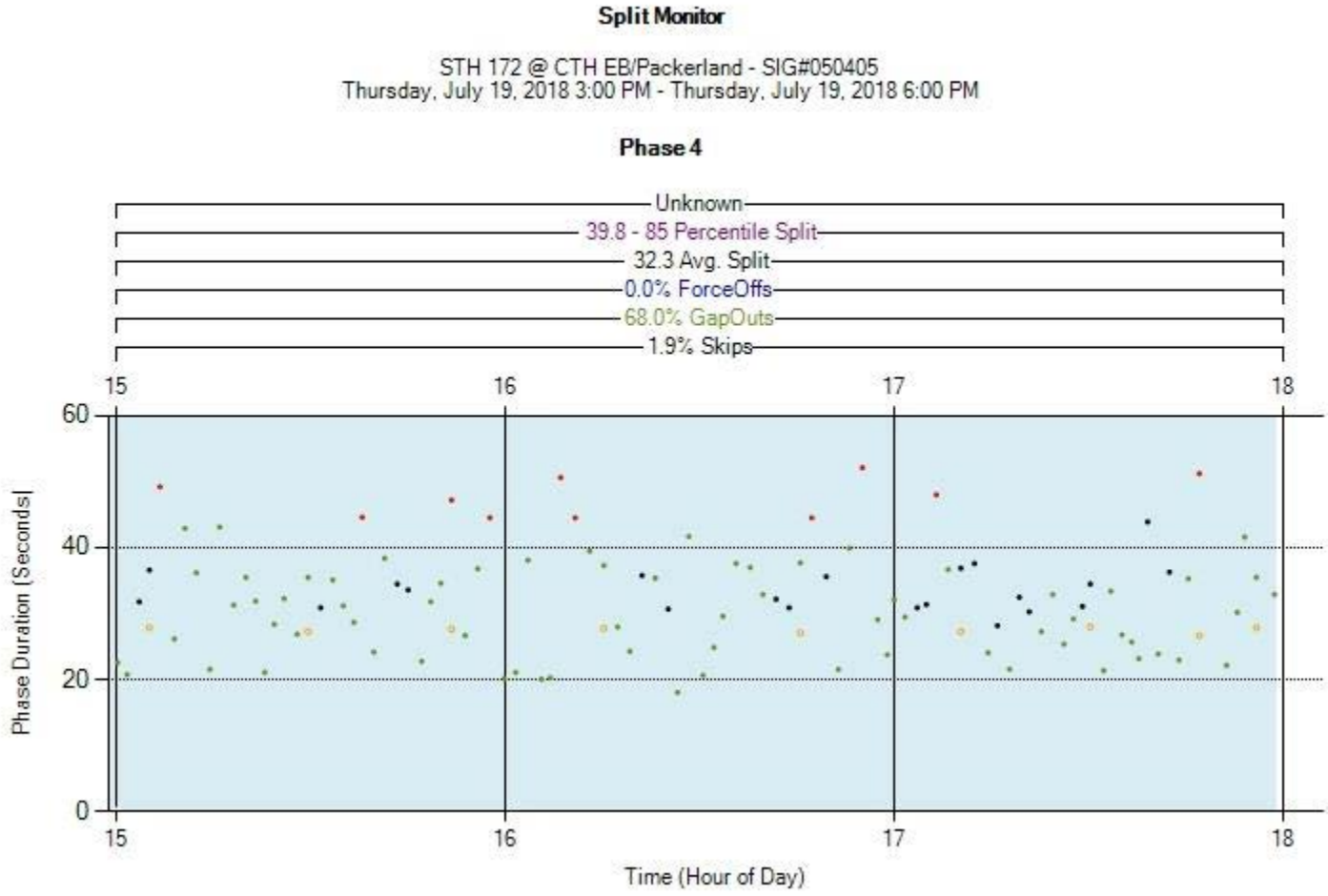
Isolated Signal – WIS 172 & County EB/Packerland Drive
Synchro Timings
7/19/2018 – 3:00 PM – 6:00 PM



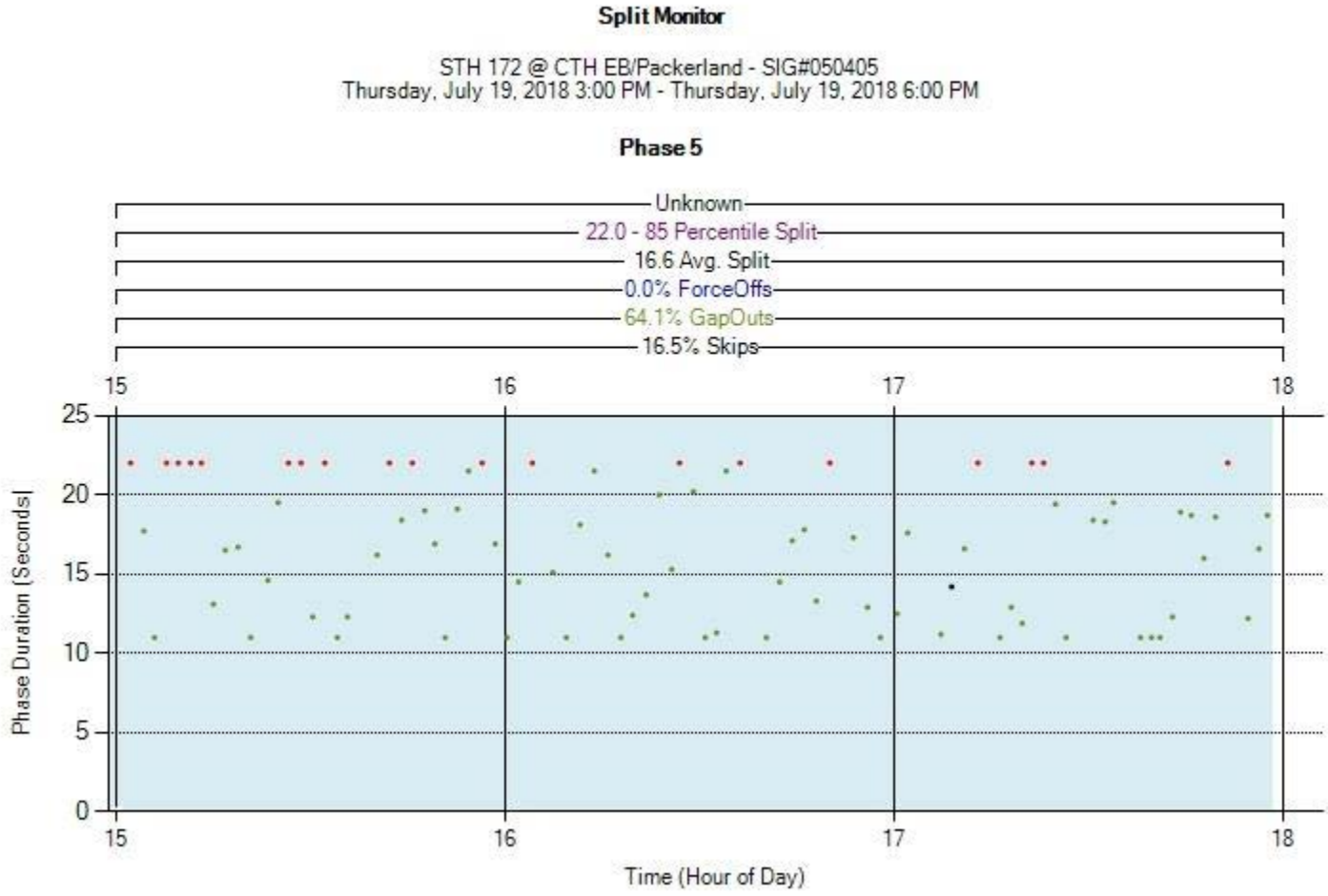
Isolated Signal – WIS 172 & County EB/Packerland Drive
Synchro Timings
7/19/2018 – 3:00 PM – 6:00 PM



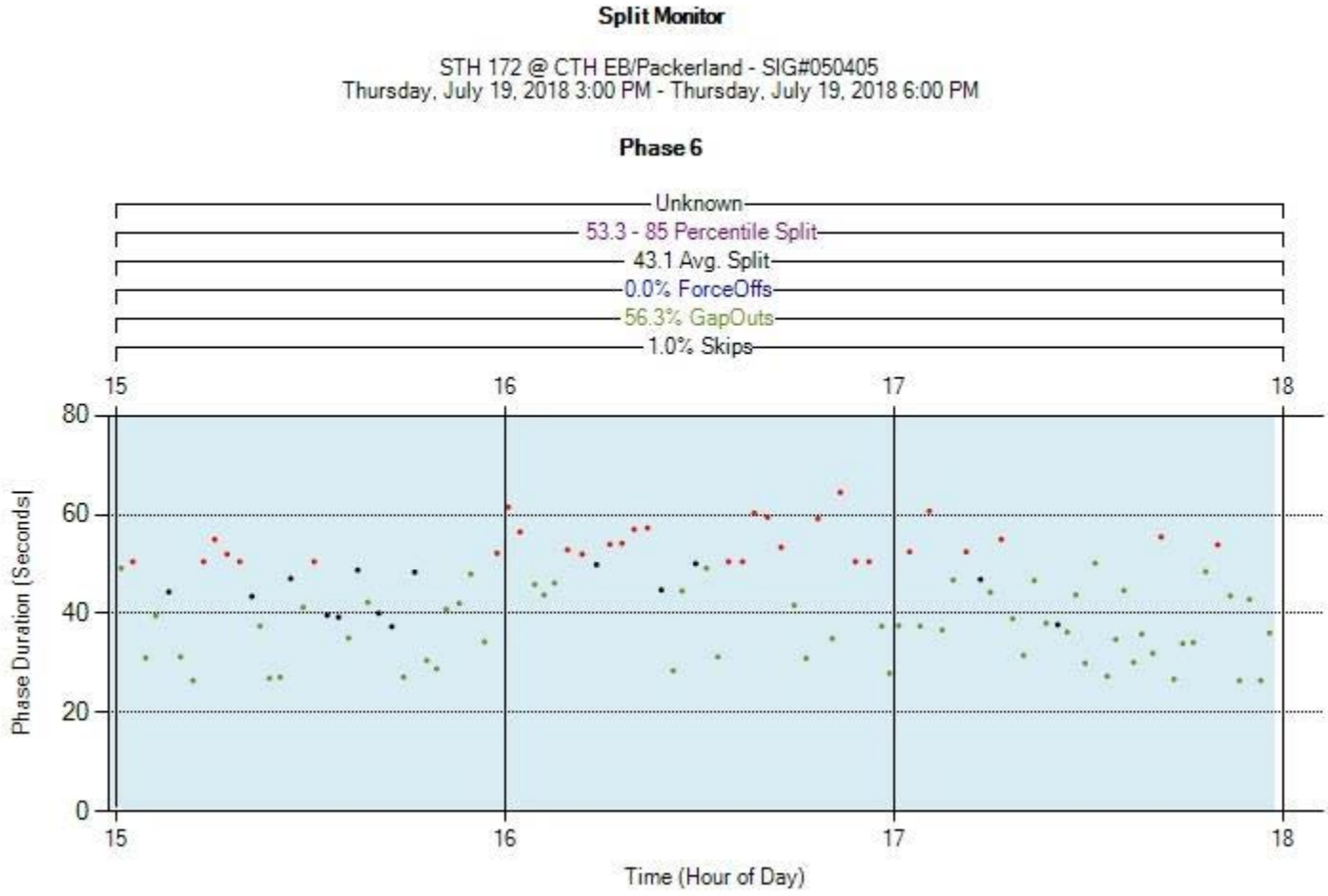
Isolated Signal – WIS 172 & County EB/Packerland Drive
Synchro Timings
7/19/2018 – 3:00 PM – 6:00 PM



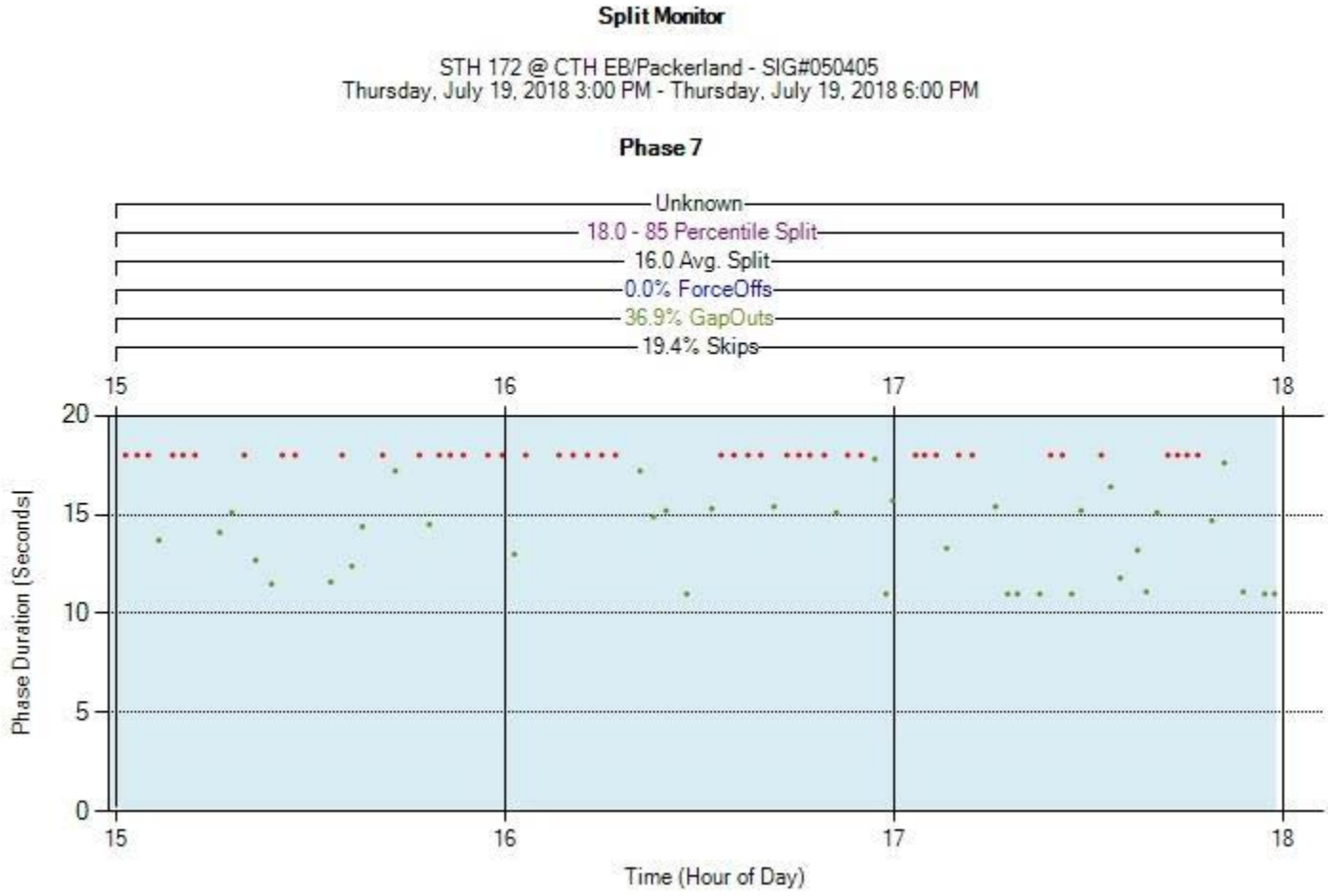
Isolated Signal – WIS 172 & County EB/Packerland Drive
Synchro Timings
7/19/2018 – 3:00 PM – 6:00 PM



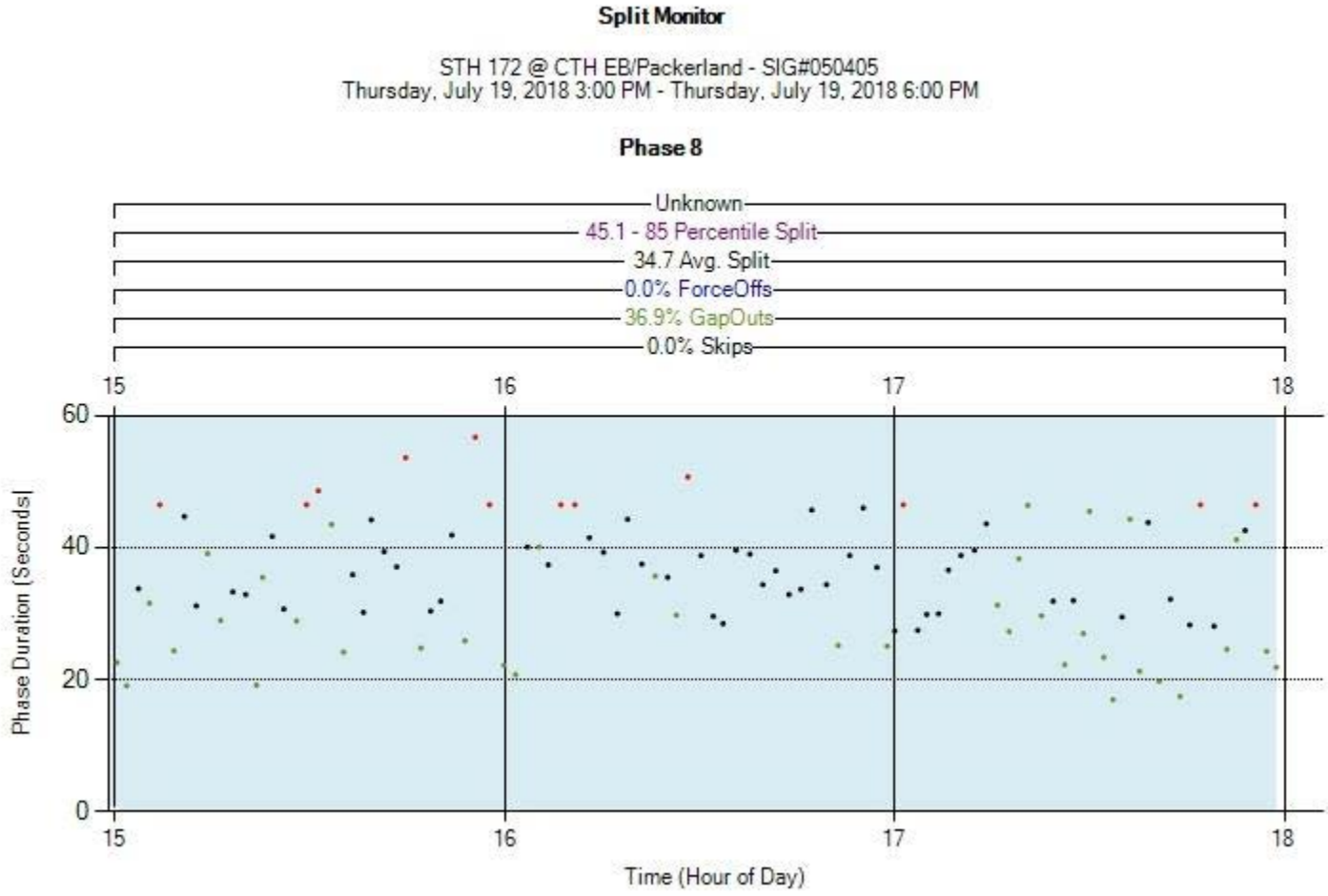
Isolated Signal – WIS 172 & County EB/Packerland Drive
Synchro Timings
7/19/2018 – 3:00 PM – 6:00 PM



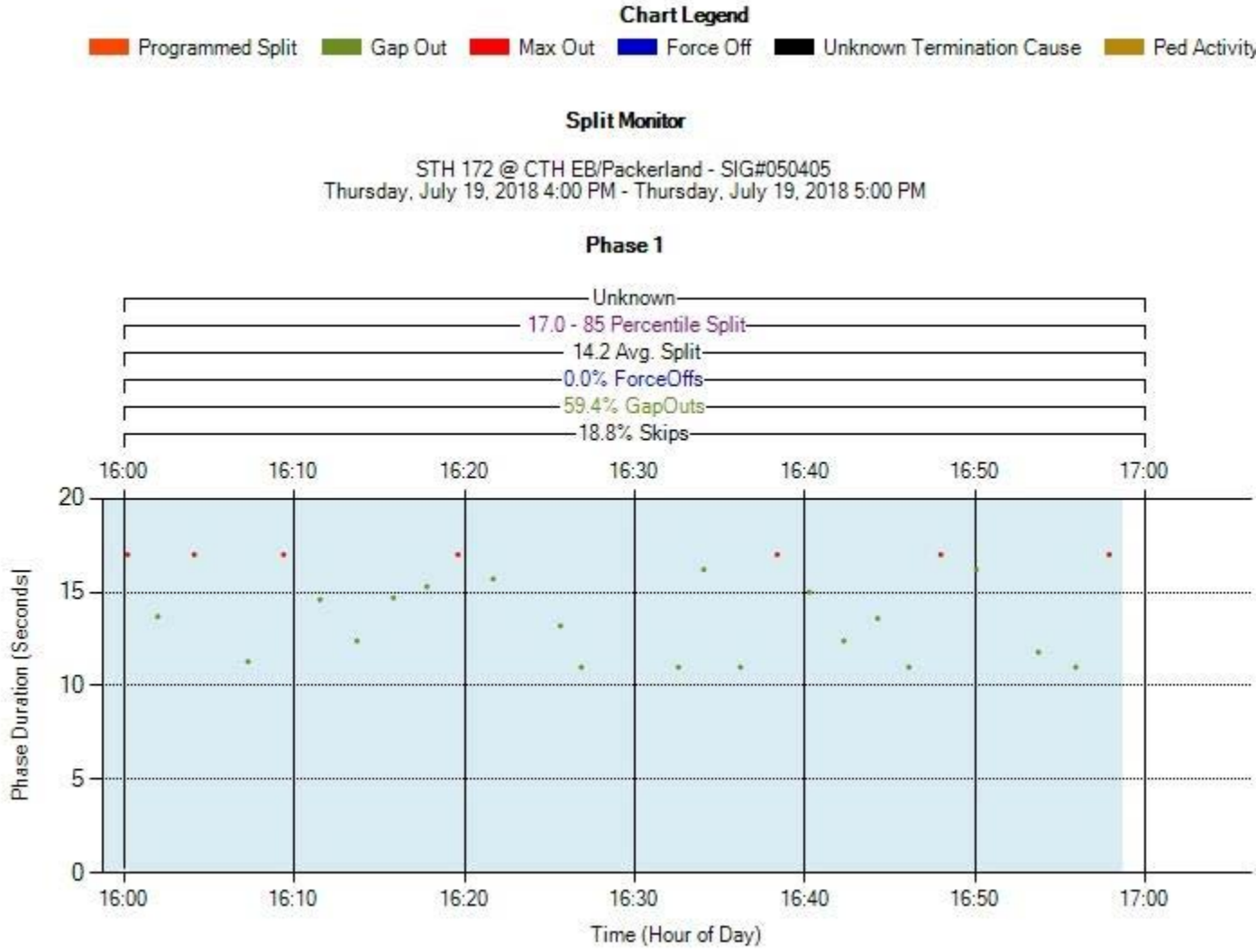
Isolated Signal – WIS 172 & County EB/Packerland Drive
Synchro Timings
7/19/2018 – 3:00 PM – 6:00 PM



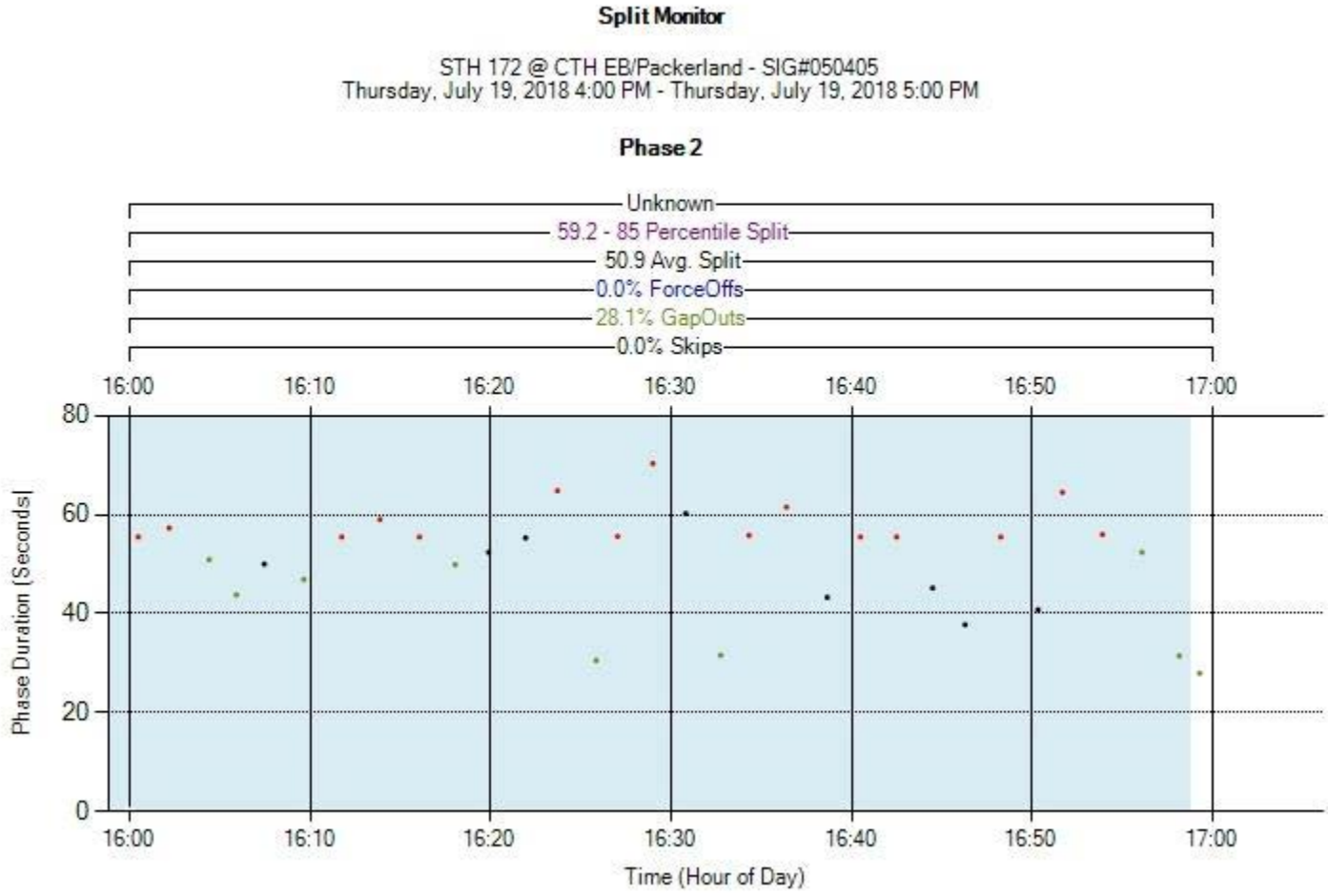
Isolated Signal – WIS 172 & County EB/Packerland Drive
Synchro Timings
7/19/2018 – 3:00 PM – 6:00 PM



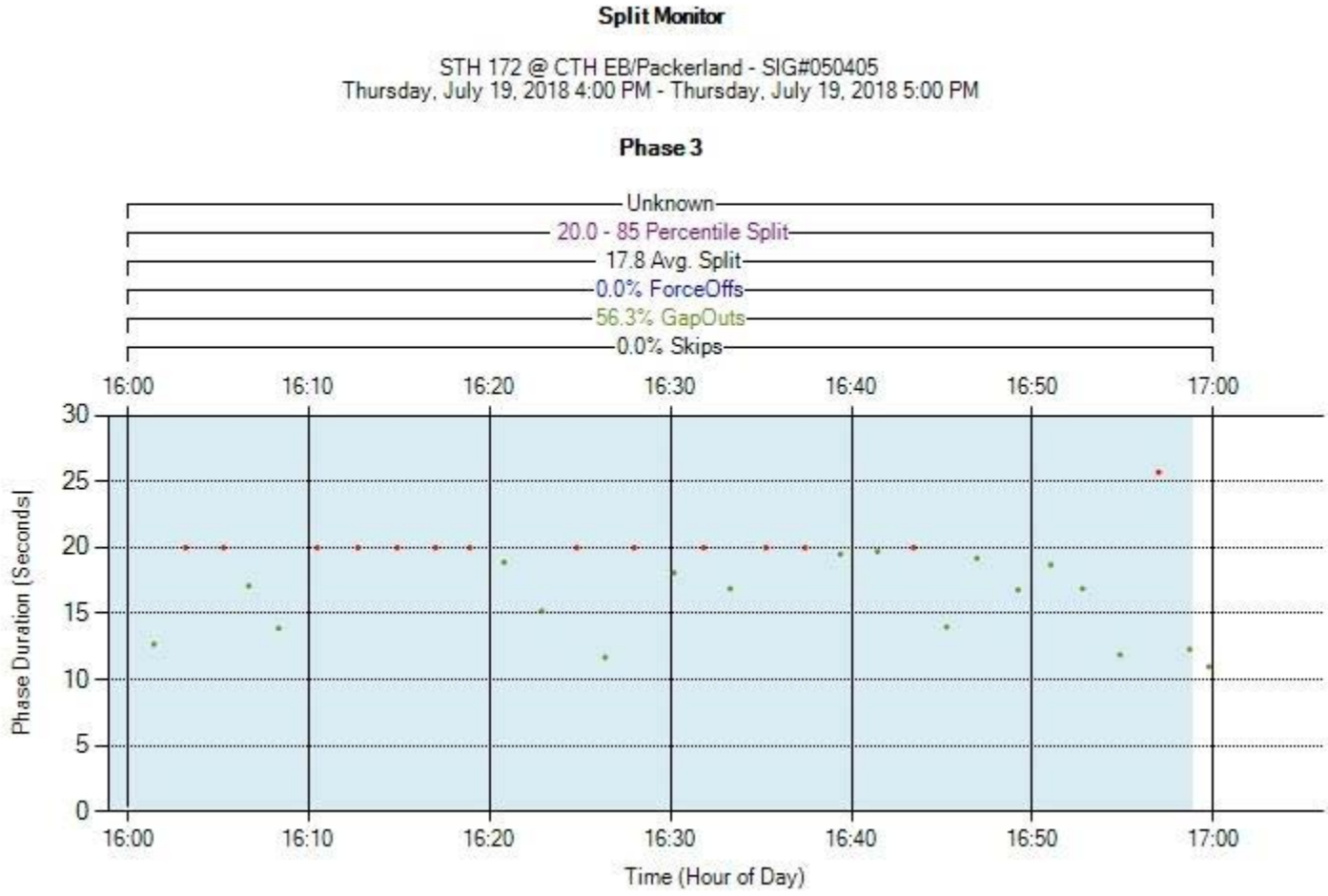
Isolated Signal – WIS 172 & County EB/Packerland Drive
Synchro Timings
7/19/2018 – 4:00 PM – 5:00 PM



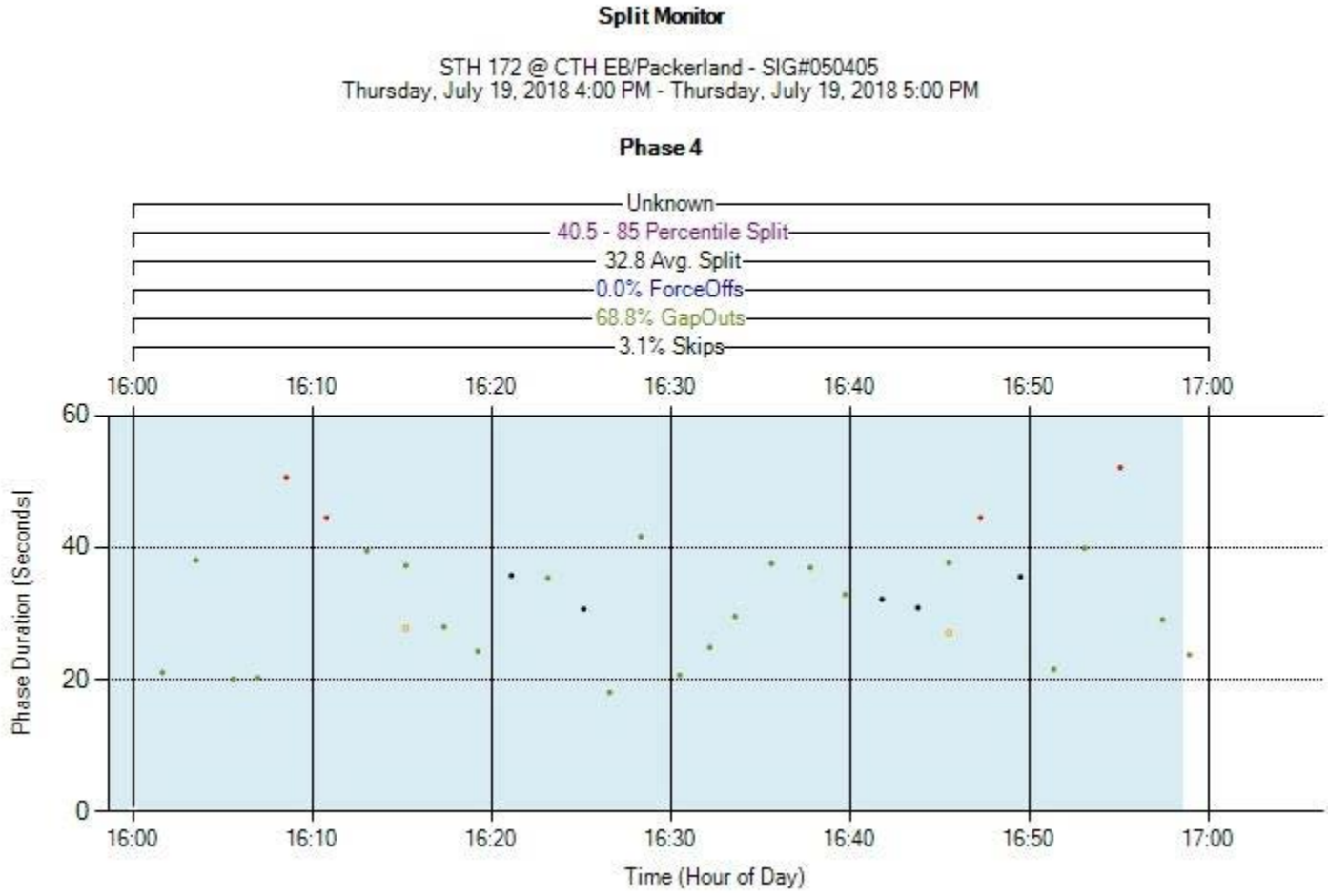
Isolated Signal – WIS 172 & County EB/Packerland Drive
Synchro Timings
7/19/2018 – 4:00 PM – 5:00 PM



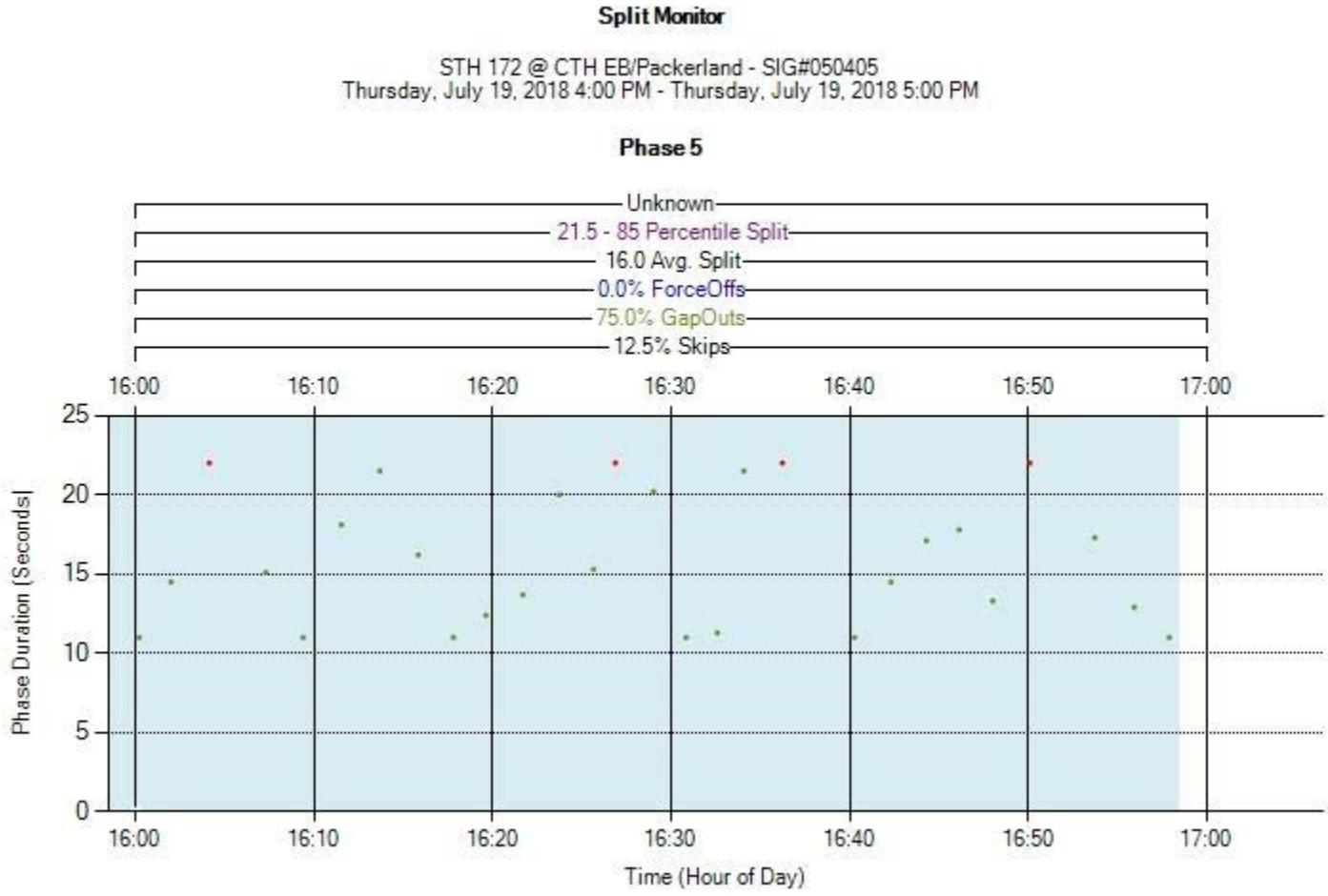
Isolated Signal – WIS 172 & County EB/Packerland Drive
Synchro Timings
7/19/2018 – 4:00 PM – 5:00 PM



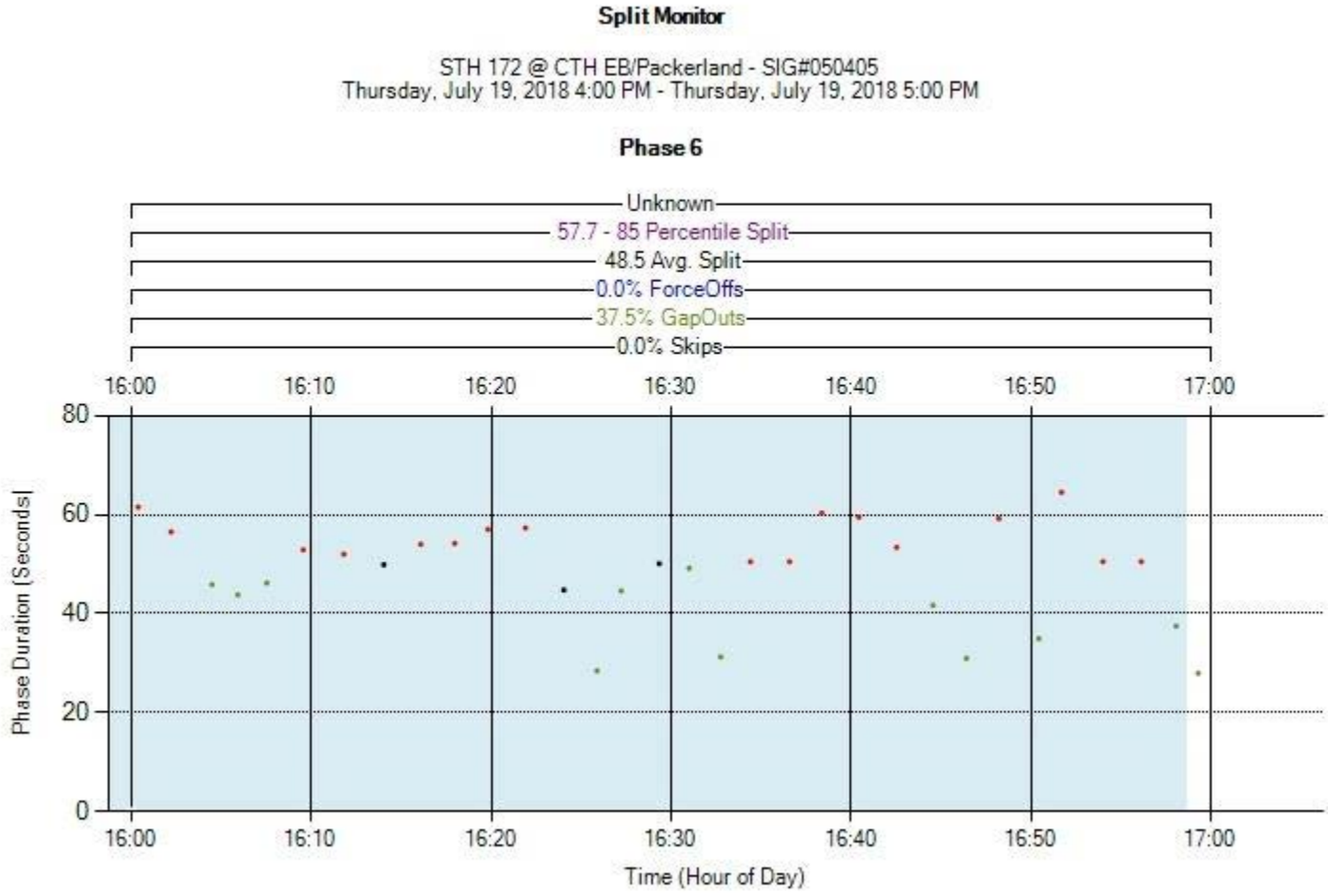
Isolated Signal – WIS 172 & County EB/Packerland Drive
Synchro Timings
7/19/2018 – 4:00 PM – 5:00 PM



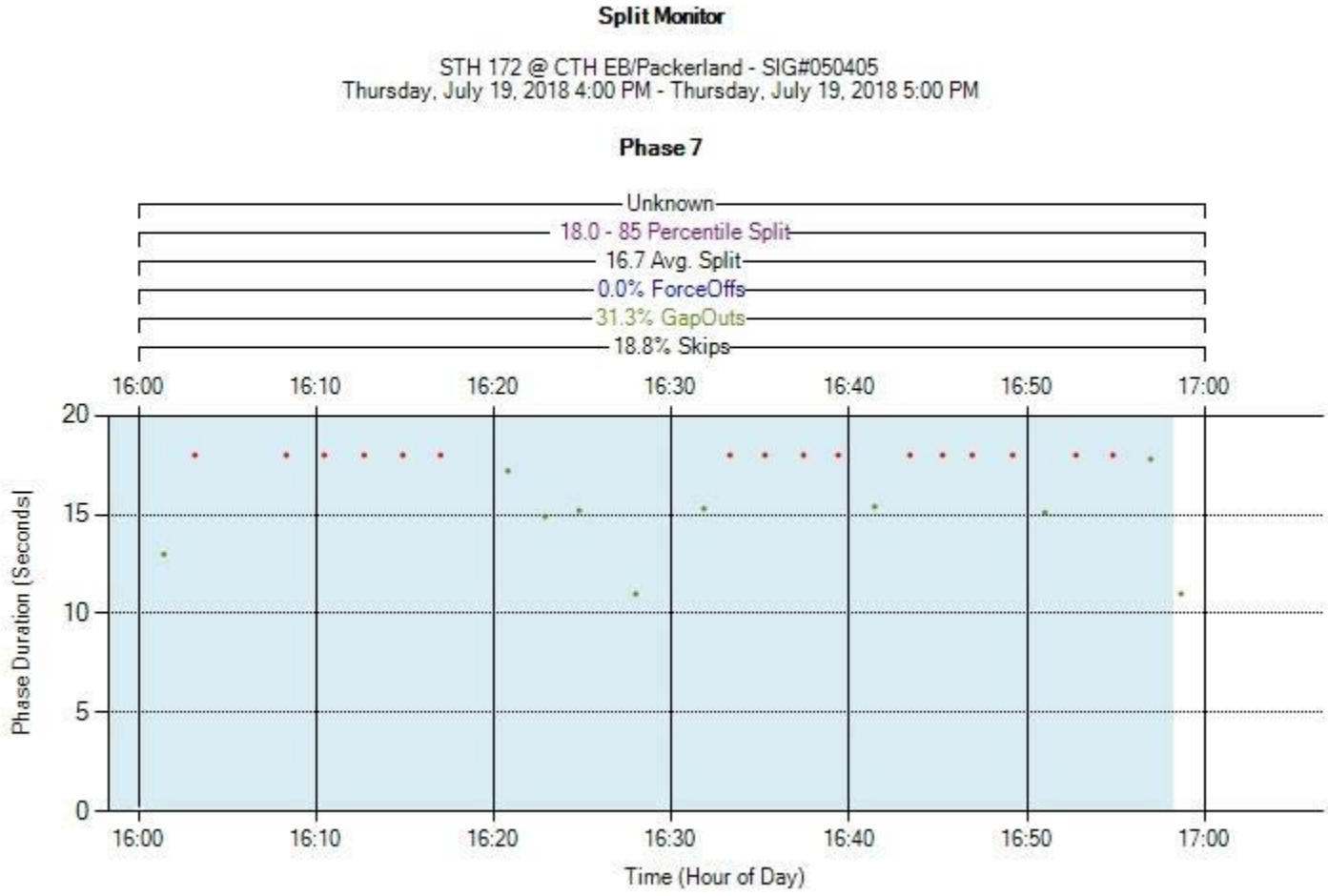
Isolated Signal – WIS 172 & County EB/Packerland Drive
Synchro Timings
7/19/2018 – 4:00 PM – 5:00 PM



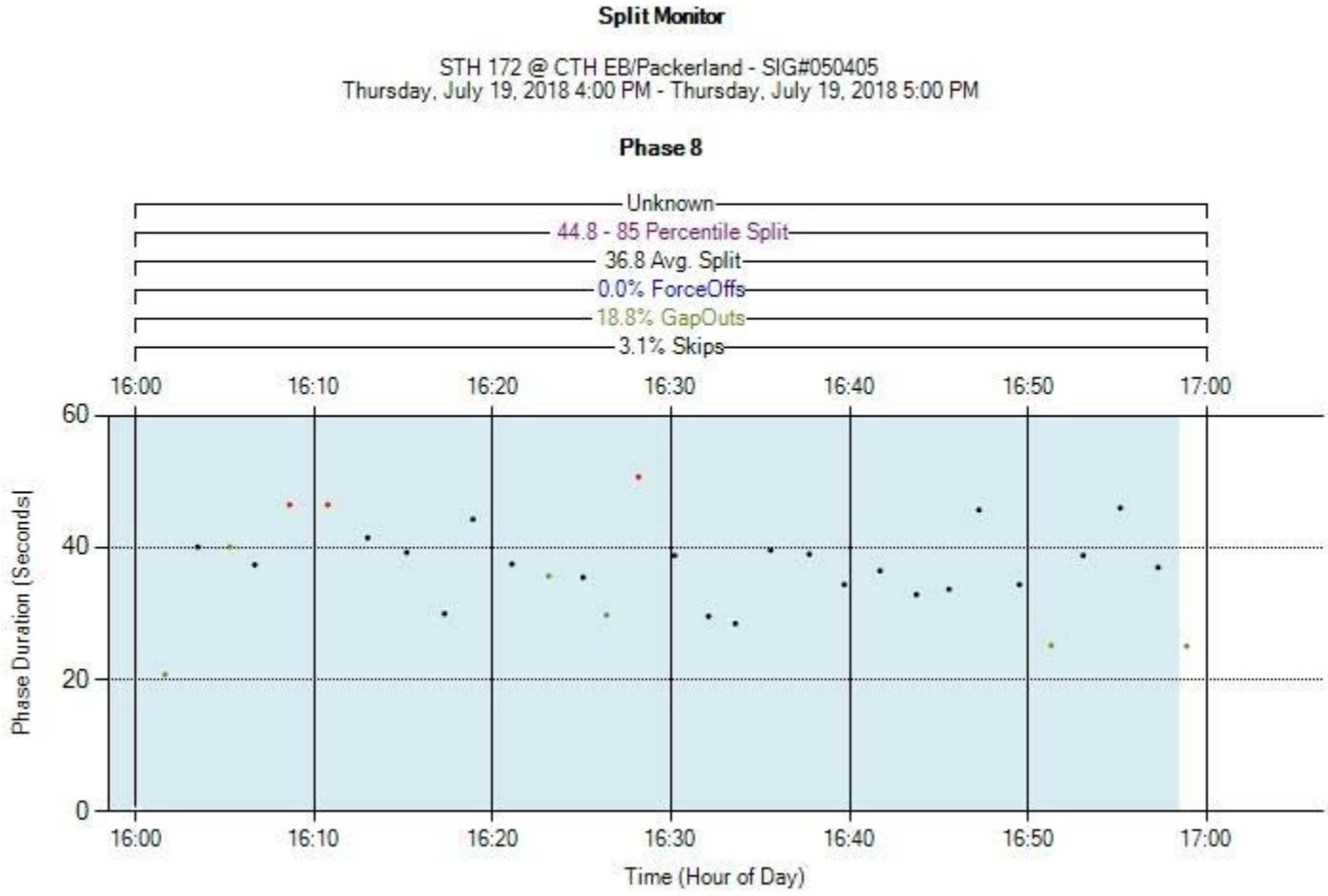
Isolated Signal – WIS 172 & County EB/Packerland Drive
Synchro Timings
7/19/2018 – 4:00 PM – 5:00 PM



Isolated Signal – WIS 172 & County EB/Packerland Drive
Synchro Timings
7/19/2018 – 4:00 PM – 5:00 PM

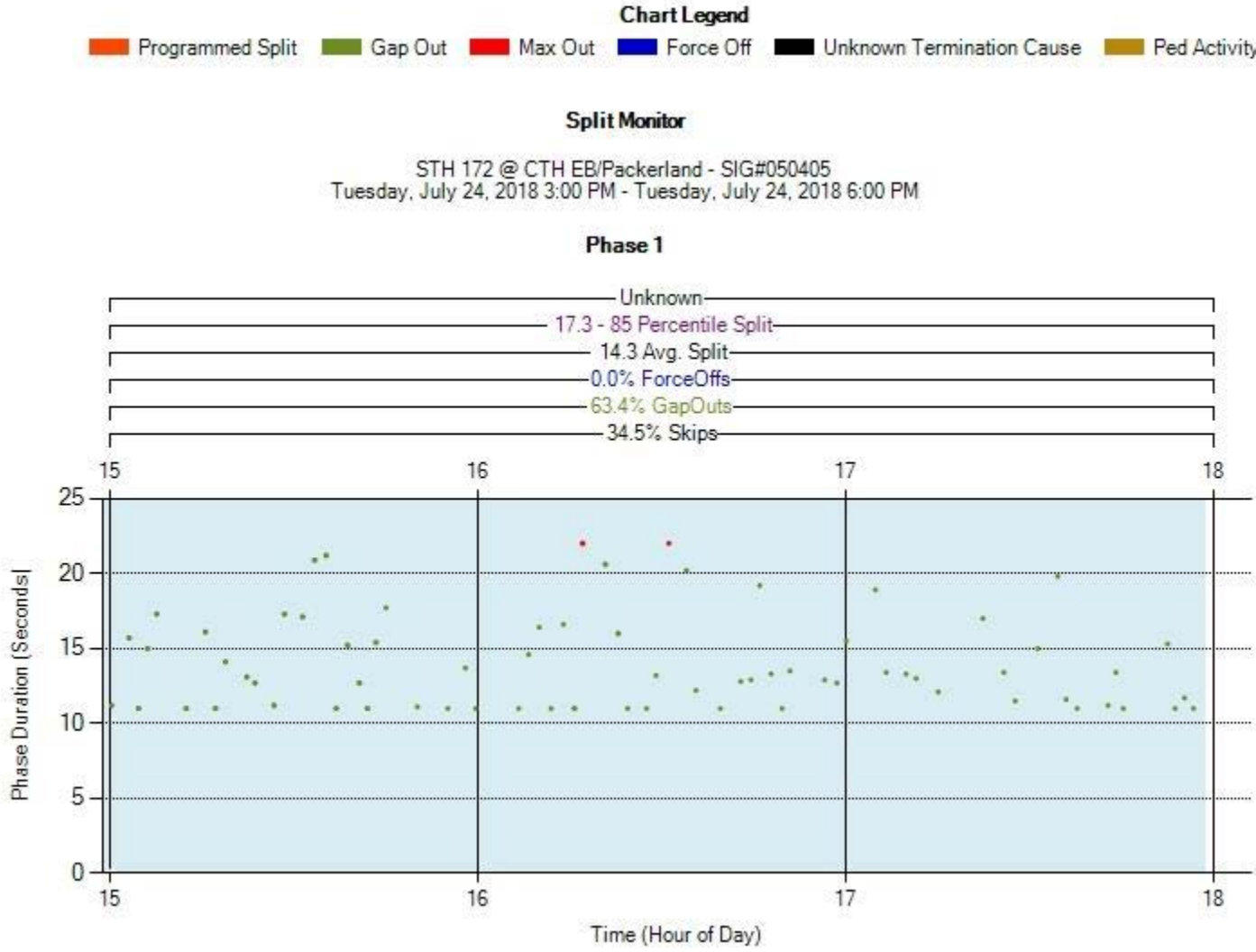


Isolated Signal – WIS 172 & County EB/Packerland Drive
Synchro Timings
7/19/2018 – 4:00 PM – 5:00 PM

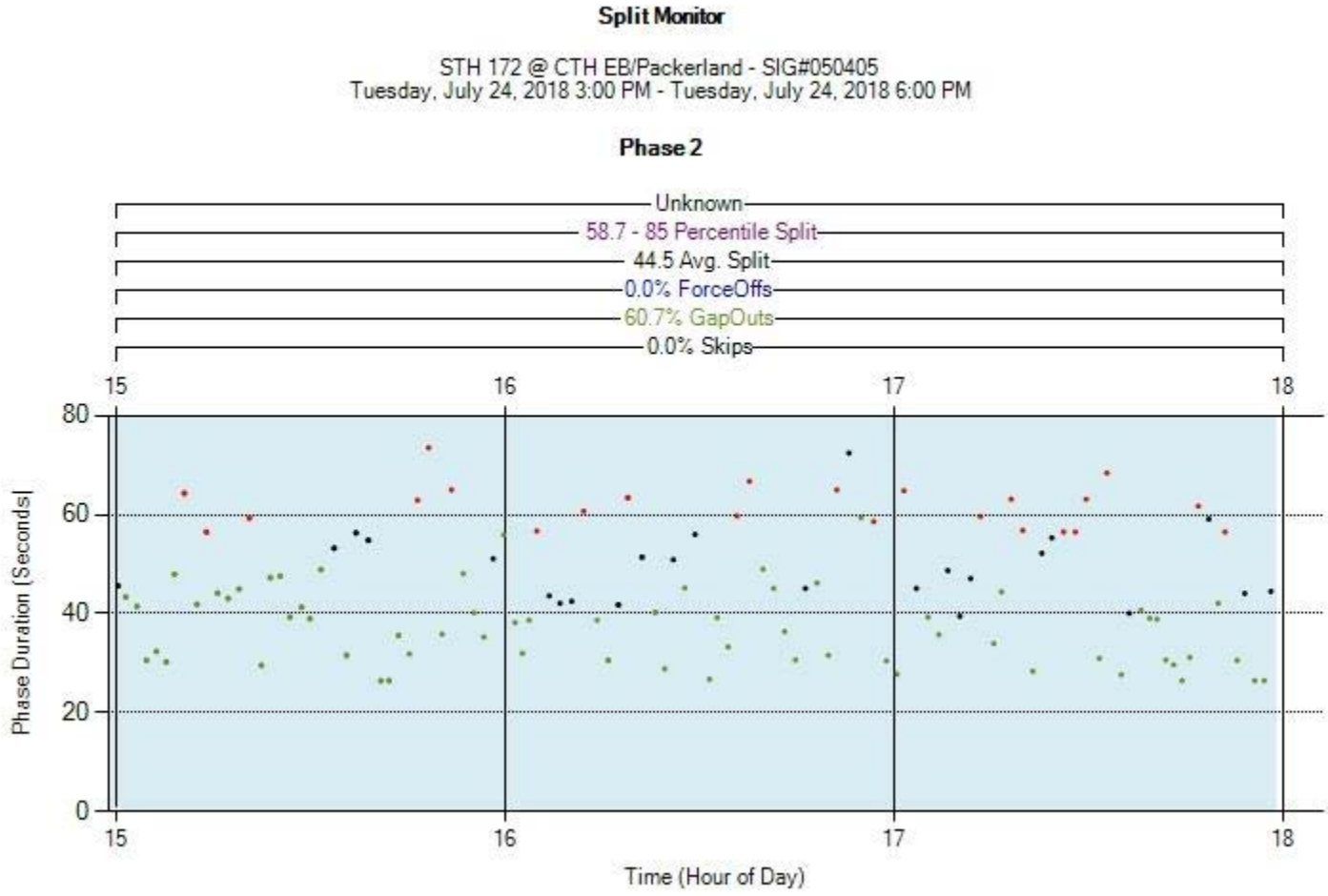


WisBOOM Outputs
WIS 172 & County EB
Vistro Optimized Timings

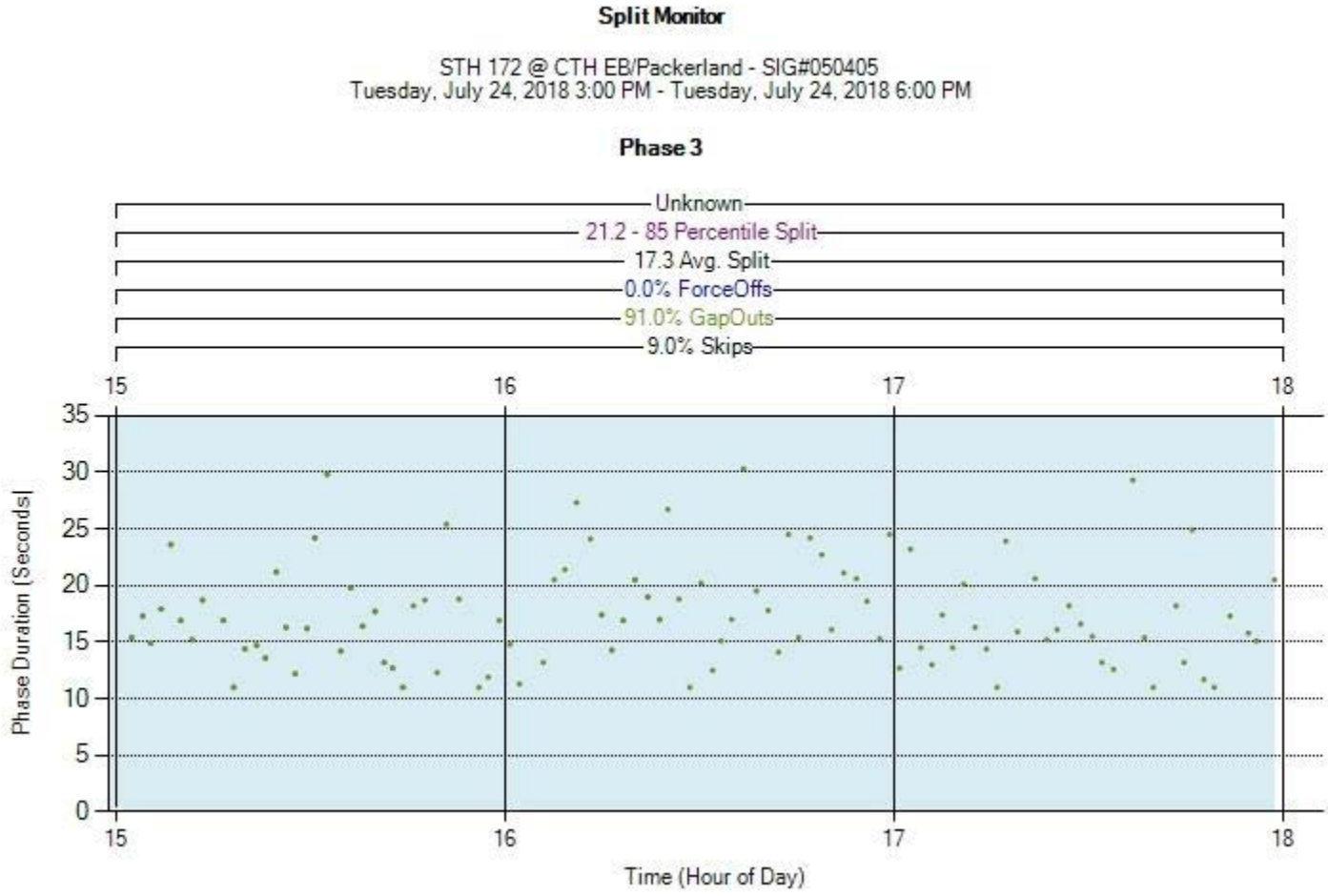
Isolated Signal – WIS 172 & County EB/Packerland Drive
Vistro Timings
7/24/2018 – 3:00 PM – 6:00 PM



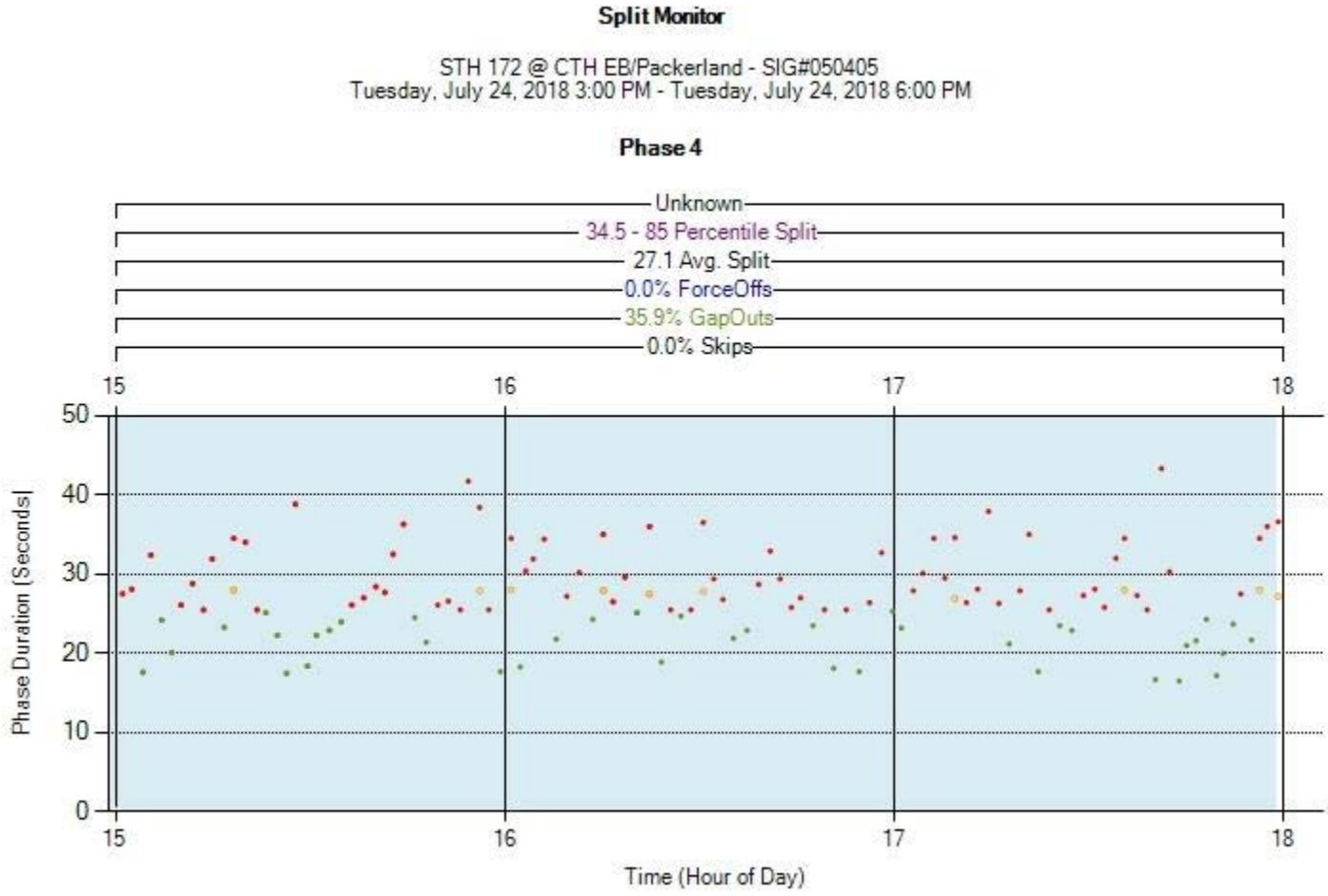
Isolated Signal – WIS 172 & County EB/Packerland Drive
Vistro Timings
7/24/2018 – 3:00 PM – 6:00 PM



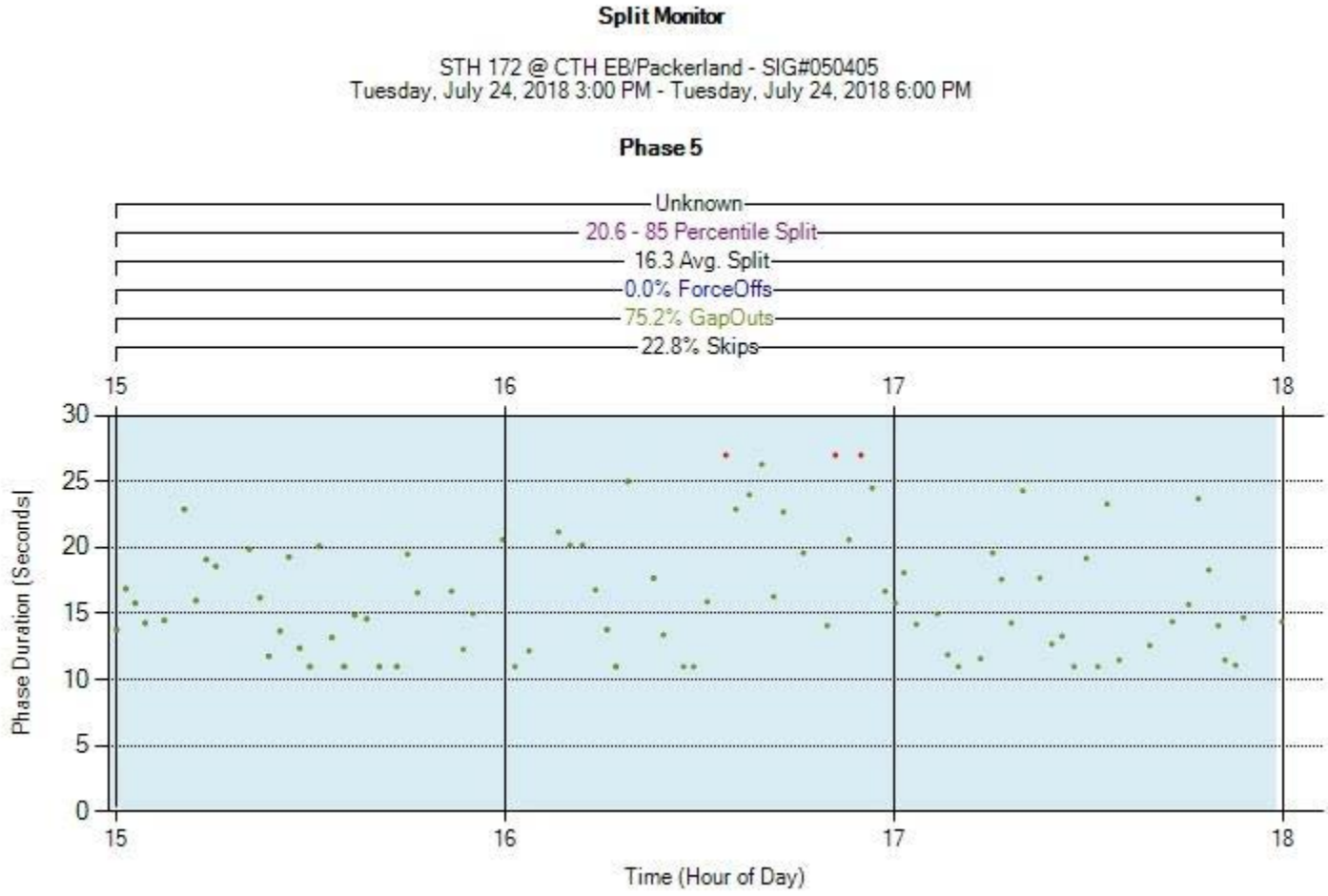
Isolated Signal – WIS 172 & County EB/Packerland Drive
Vistro Timings
7/24/2018 – 3:00 PM – 6:00 PM



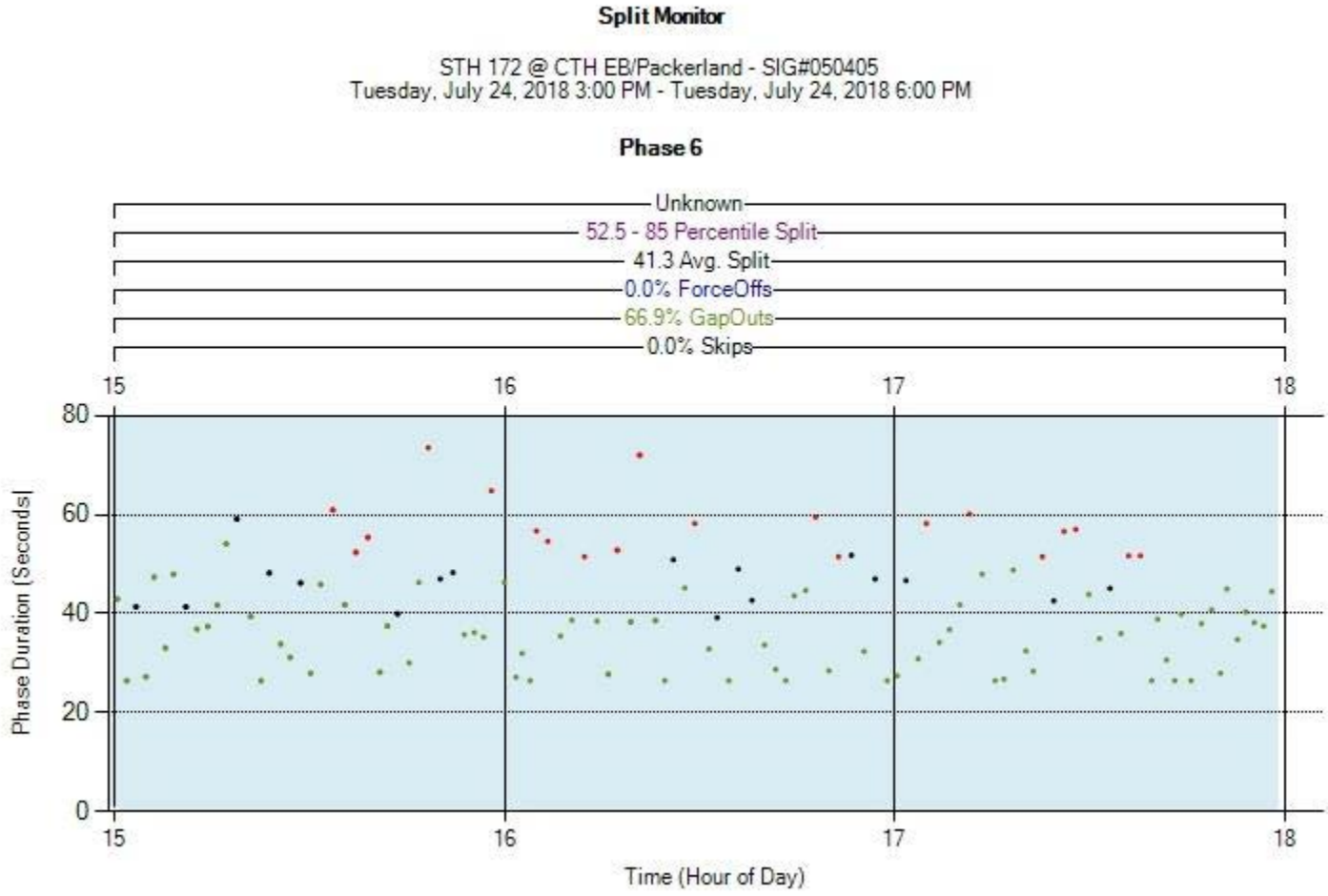
Isolated Signal – WIS 172 & County EB/Packerland Drive
Vistro Timings
7/24/2018 – 3:00 PM – 6:00 PM



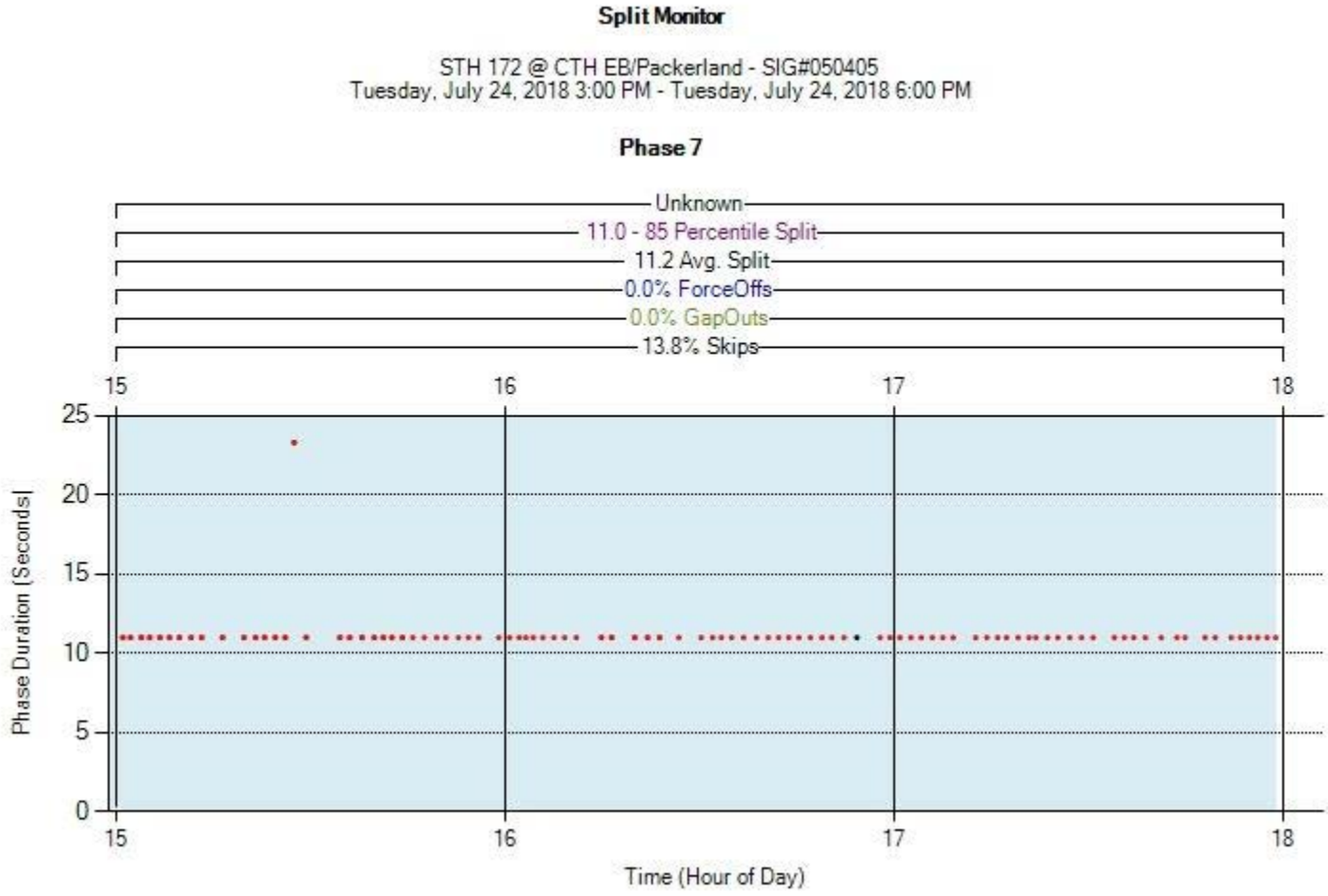
Isolated Signal – WIS 172 & County EB/Packerland Drive
Vistro Timings
7/24/2018 – 3:00 PM – 6:00 PM



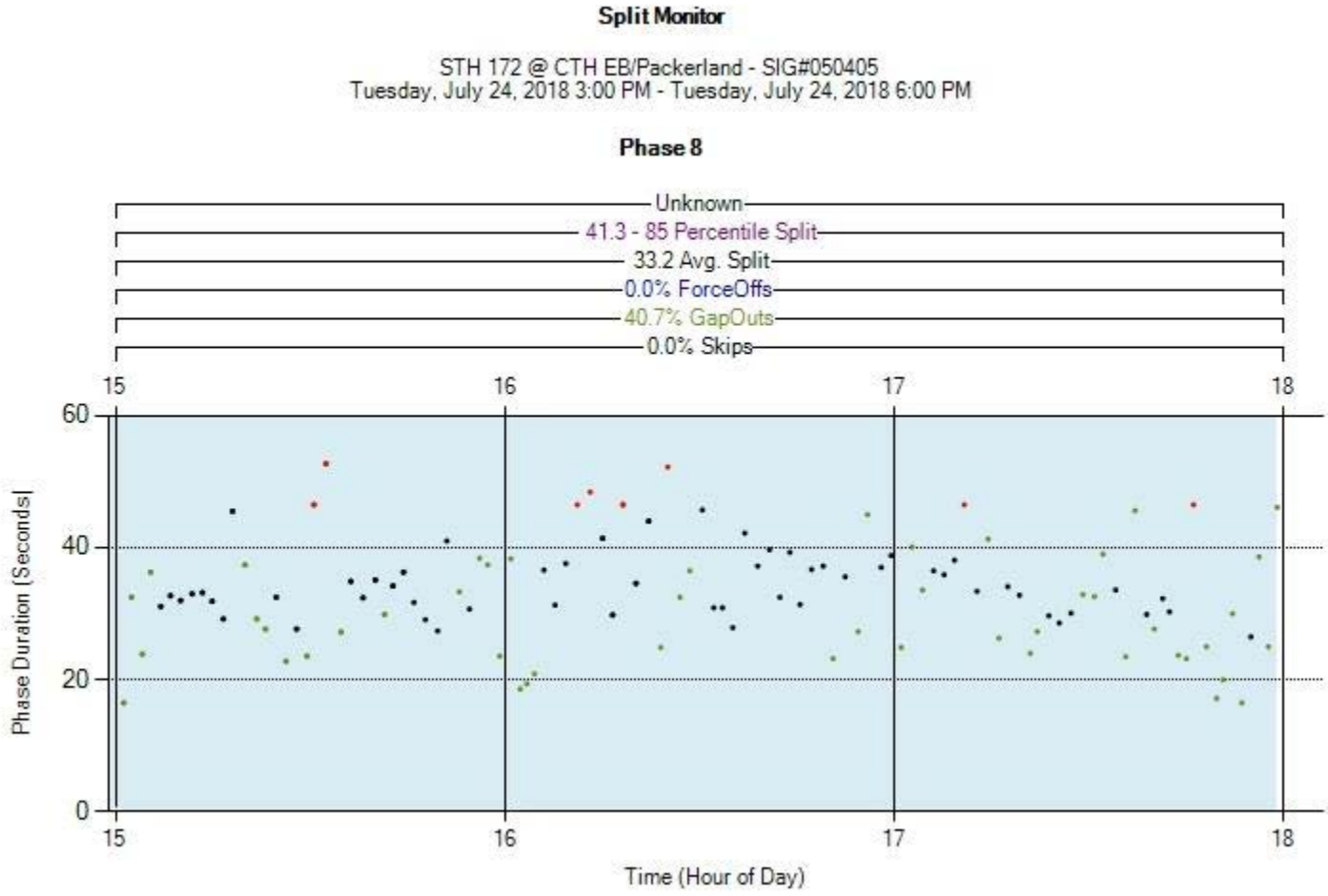
Isolated Signal – WIS 172 & County EB/Packerland Drive
Vistro Timings
7/24/2018 – 3:00 PM – 6:00 PM



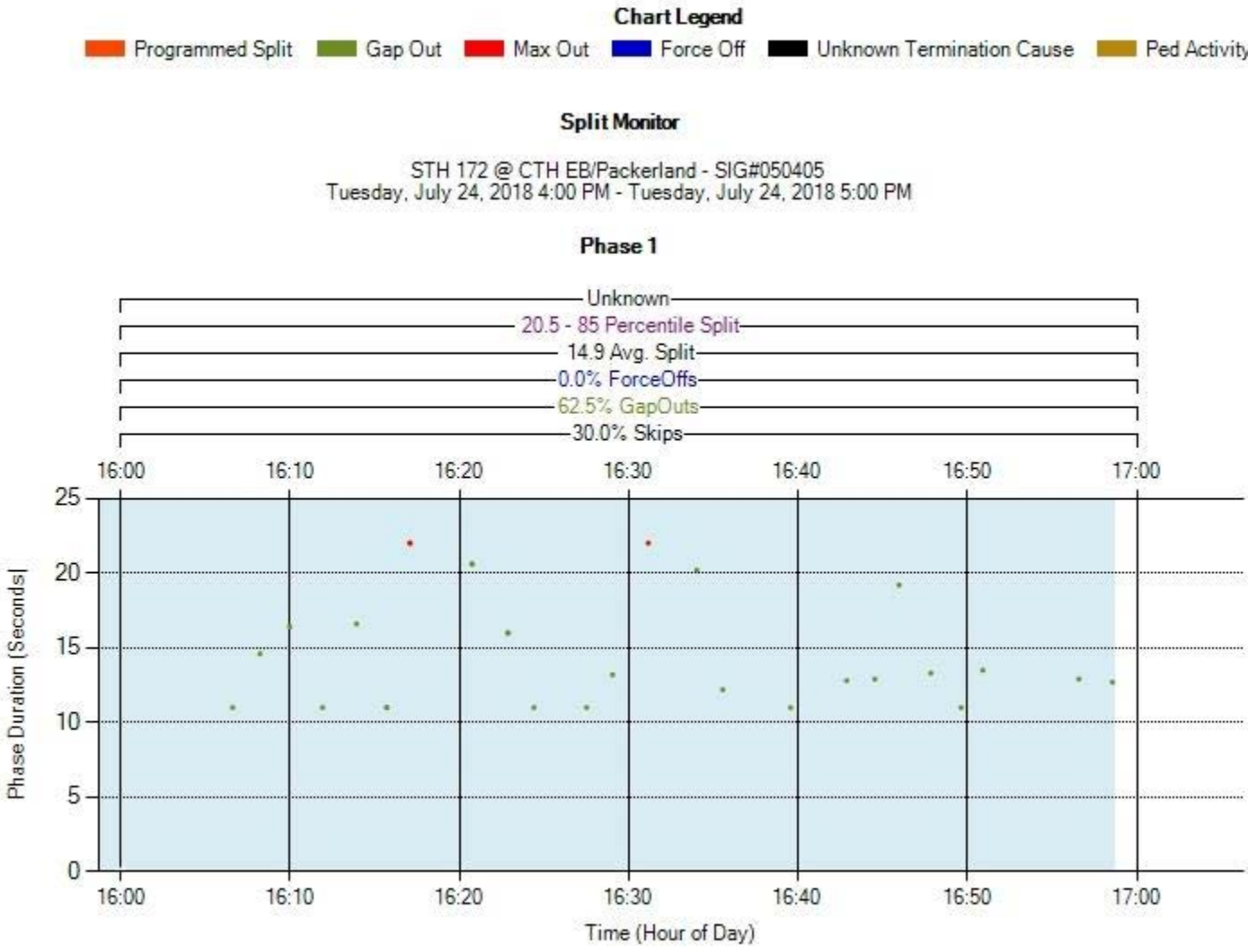
Isolated Signal – WIS 172 & County EB/Packerland Drive
Vistro Timings
7/24/2018 – 3:00 PM – 6:00 PM



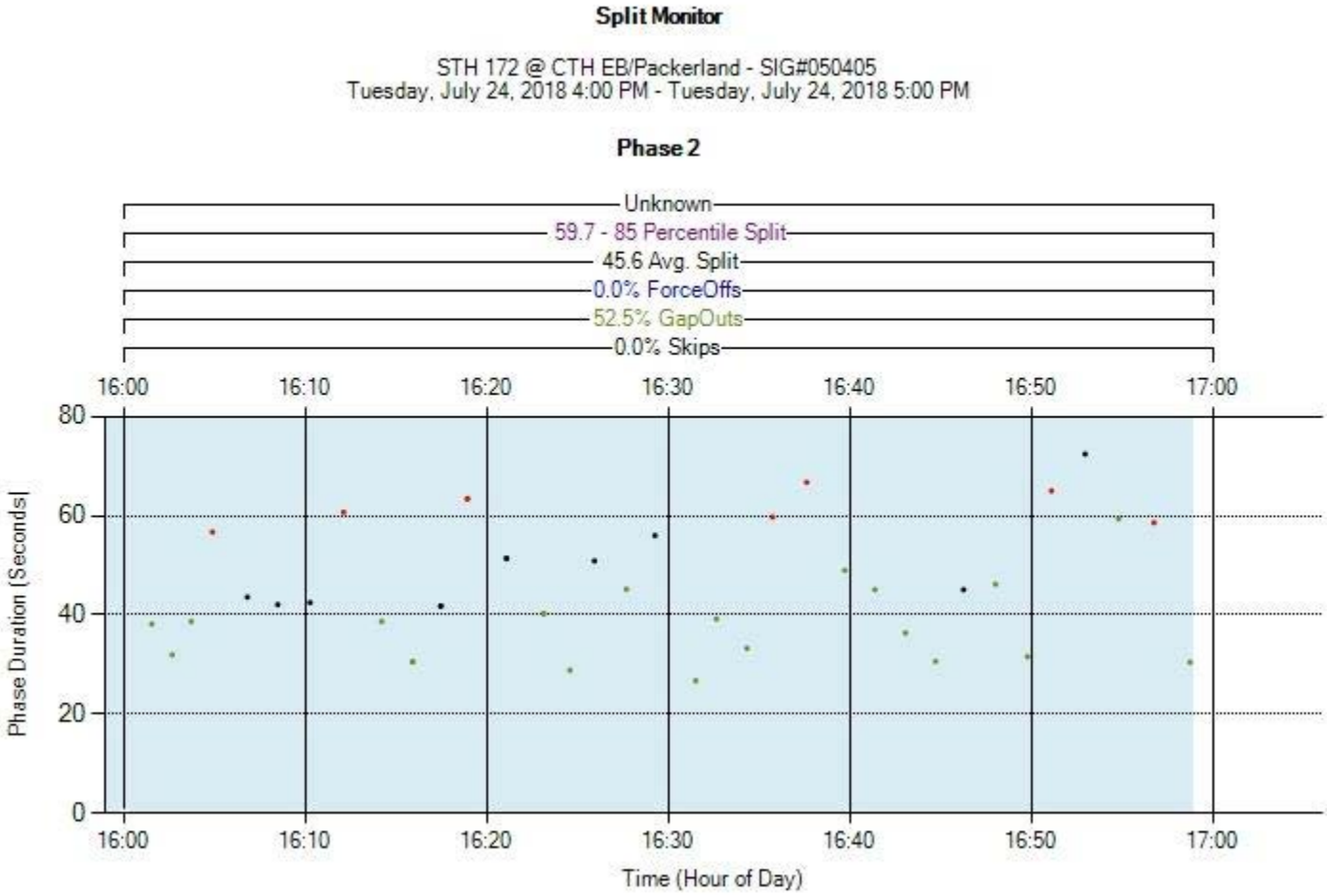
Isolated Signal – WIS 172 & County EB/Packerland Drive
Vistro Timings
7/24/2018 – 3:00 PM – 6:00 PM



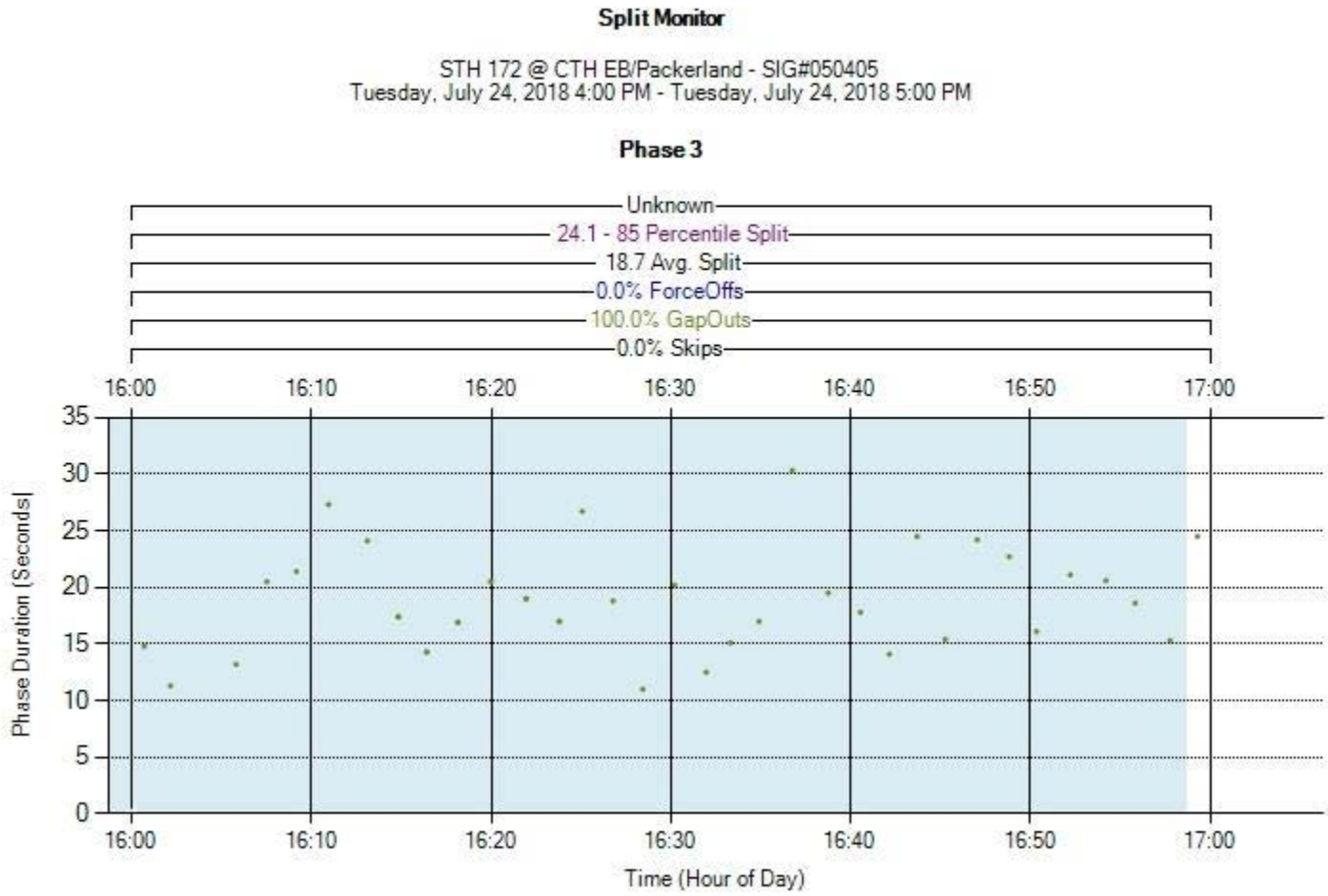
Isolated Signal – WIS 172 & County EB/Packerland Drive
Vistro Timings
7/24/2018 – 4:00 PM – 5:00 PM



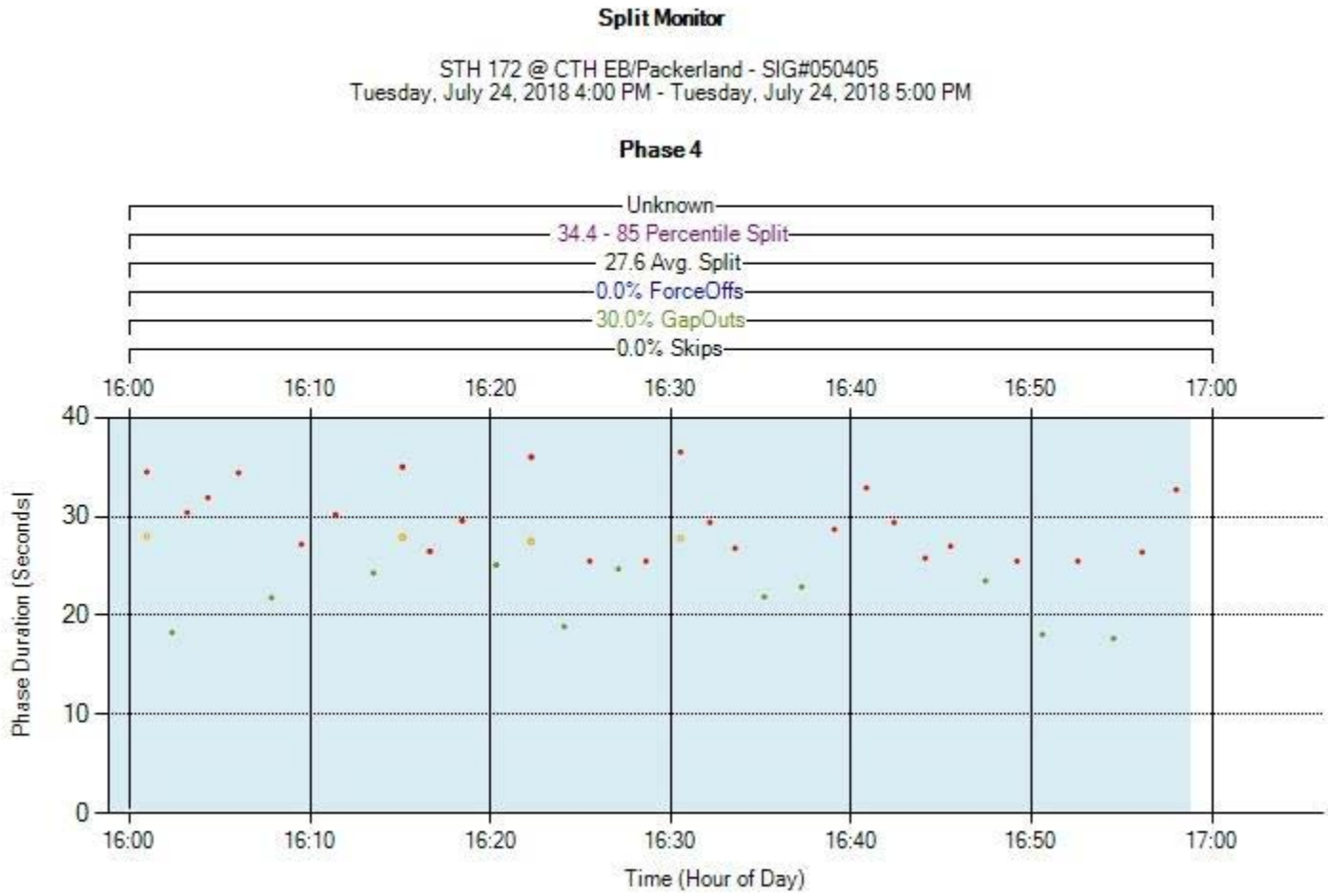
Isolated Signal – WIS 172 & County EB/Packerland Drive
Vistro Timings
7/24/2018 – 4:00 PM – 5:00 PM



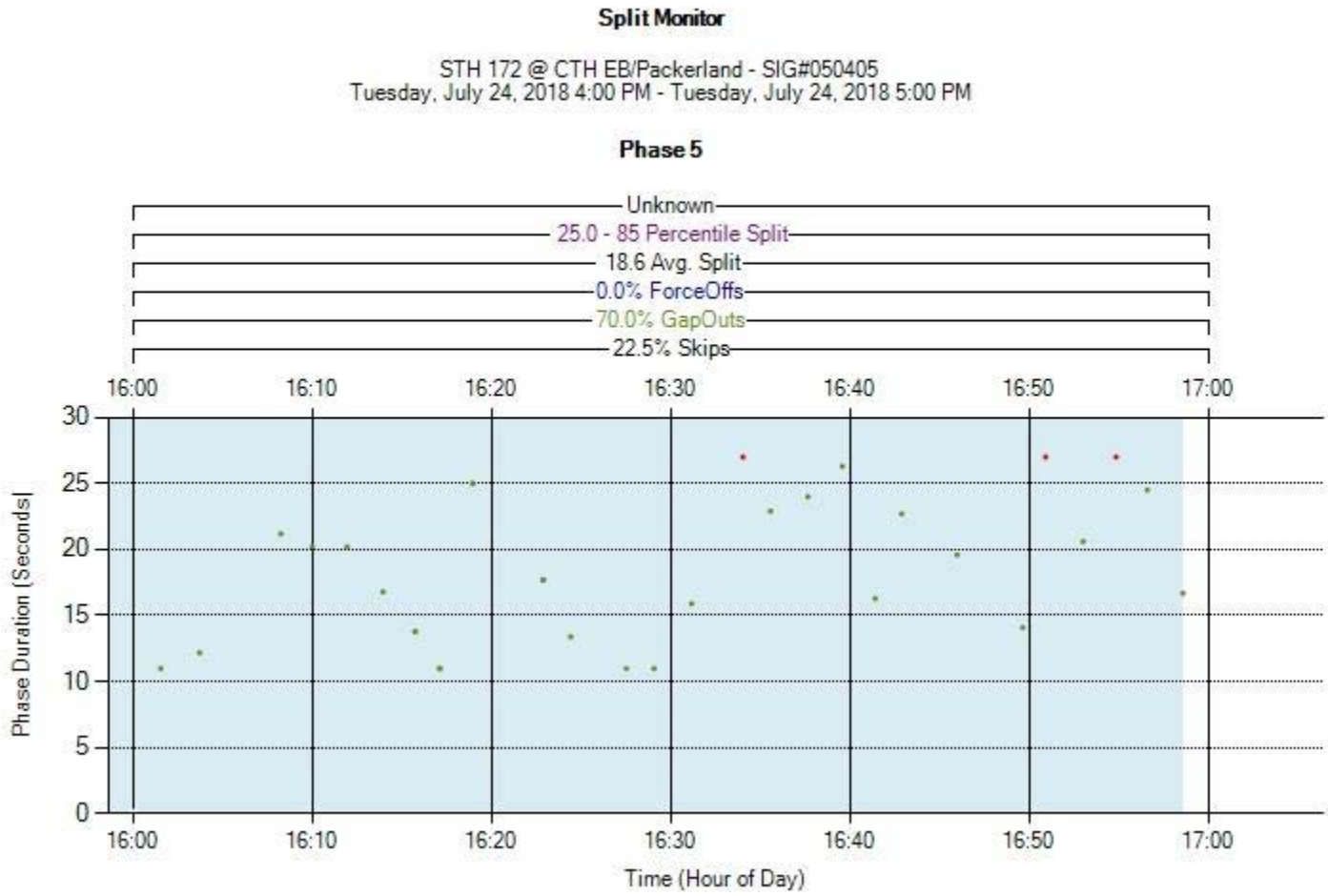
Isolated Signal – WIS 172 & County EB/Packerland Drive
Vistro Timings
7/24/2018 – 4:00 PM – 5:00 PM



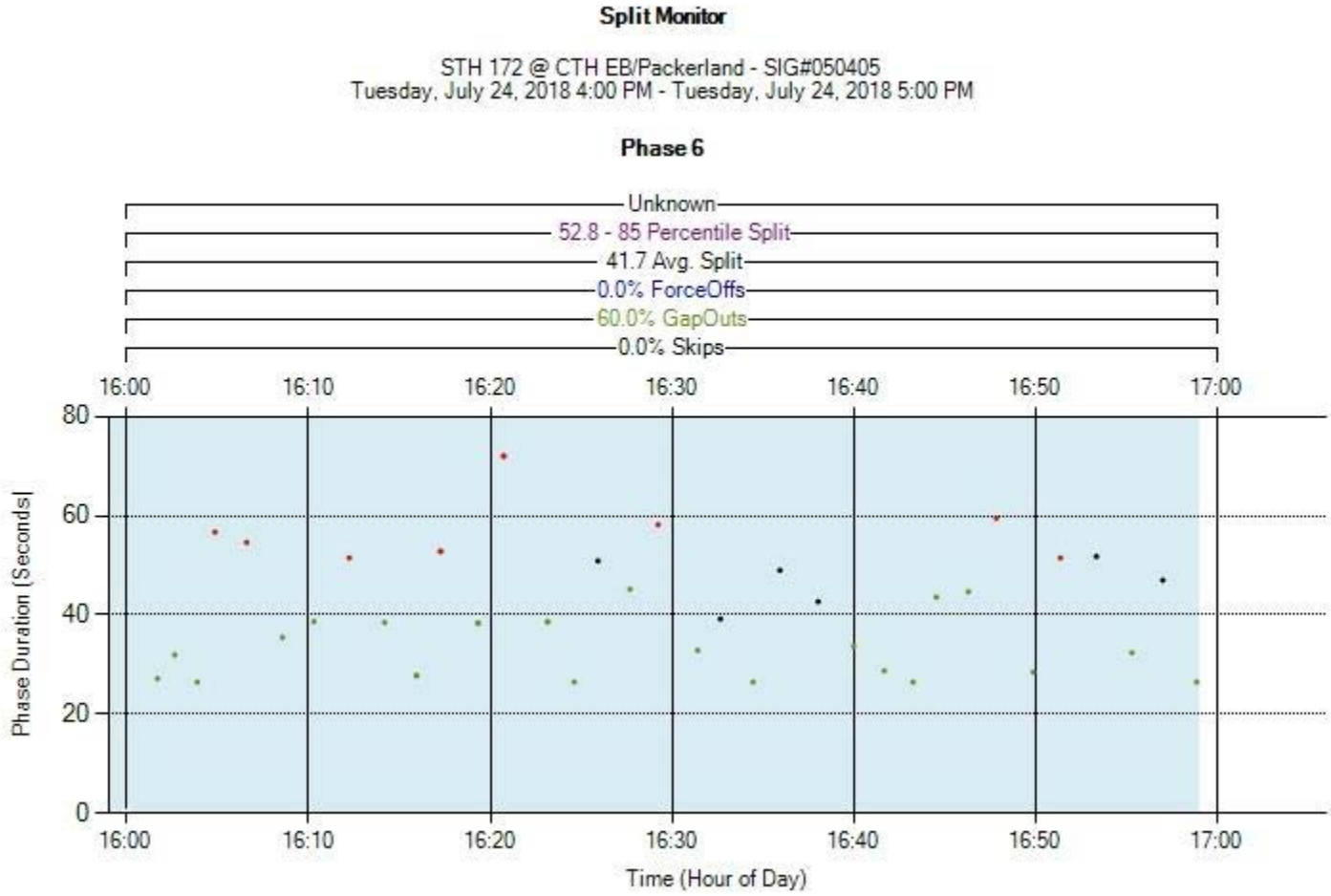
Isolated Signal – WIS 172 & County EB/Packerland Drive
Vistro Timings
7/24/2018 – 4:00 PM – 5:00 PM



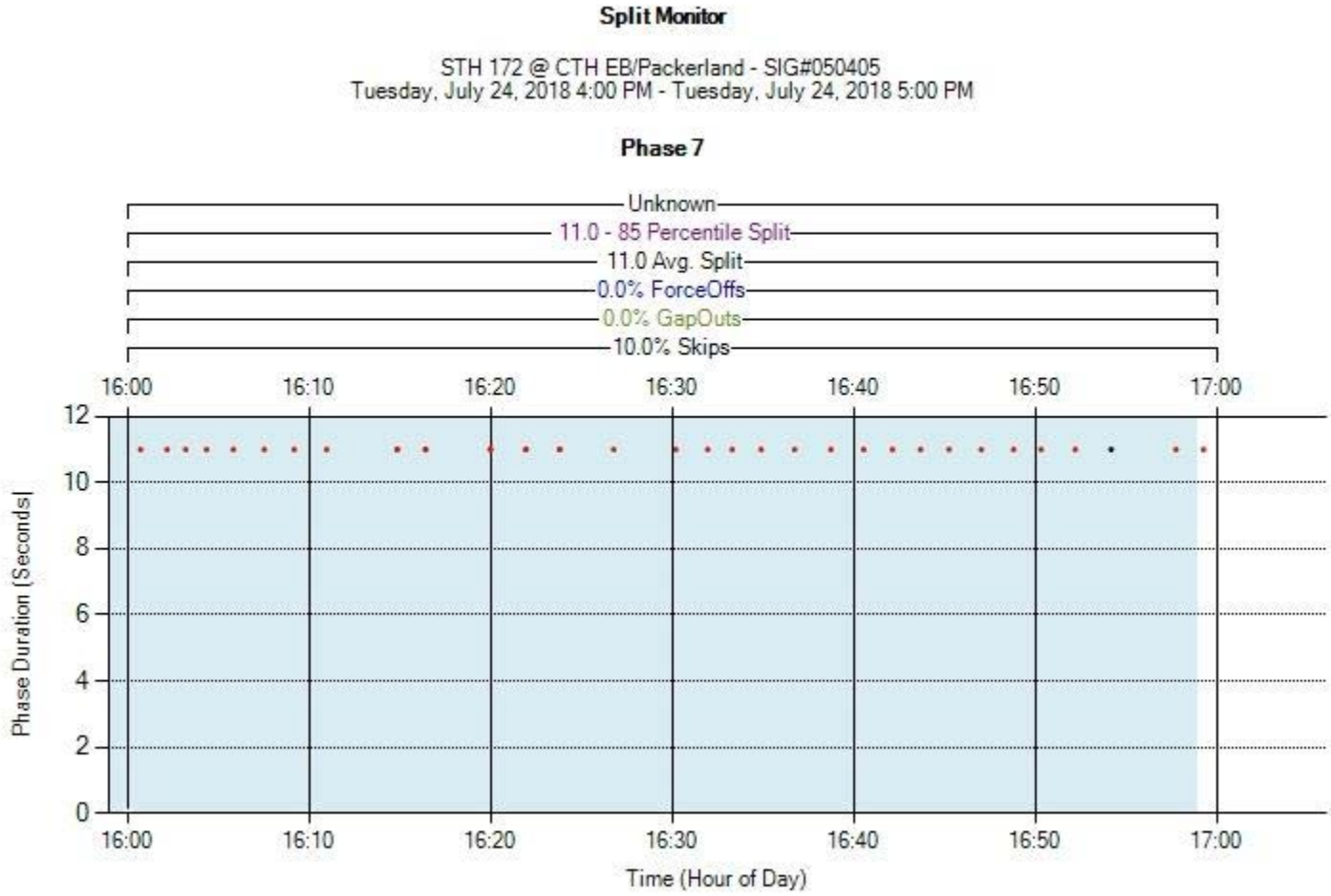
Isolated Signal – WIS 172 & County EB/Packerland Drive
Vistro Timings
7/24/2018 – 4:00 PM – 5:00 PM



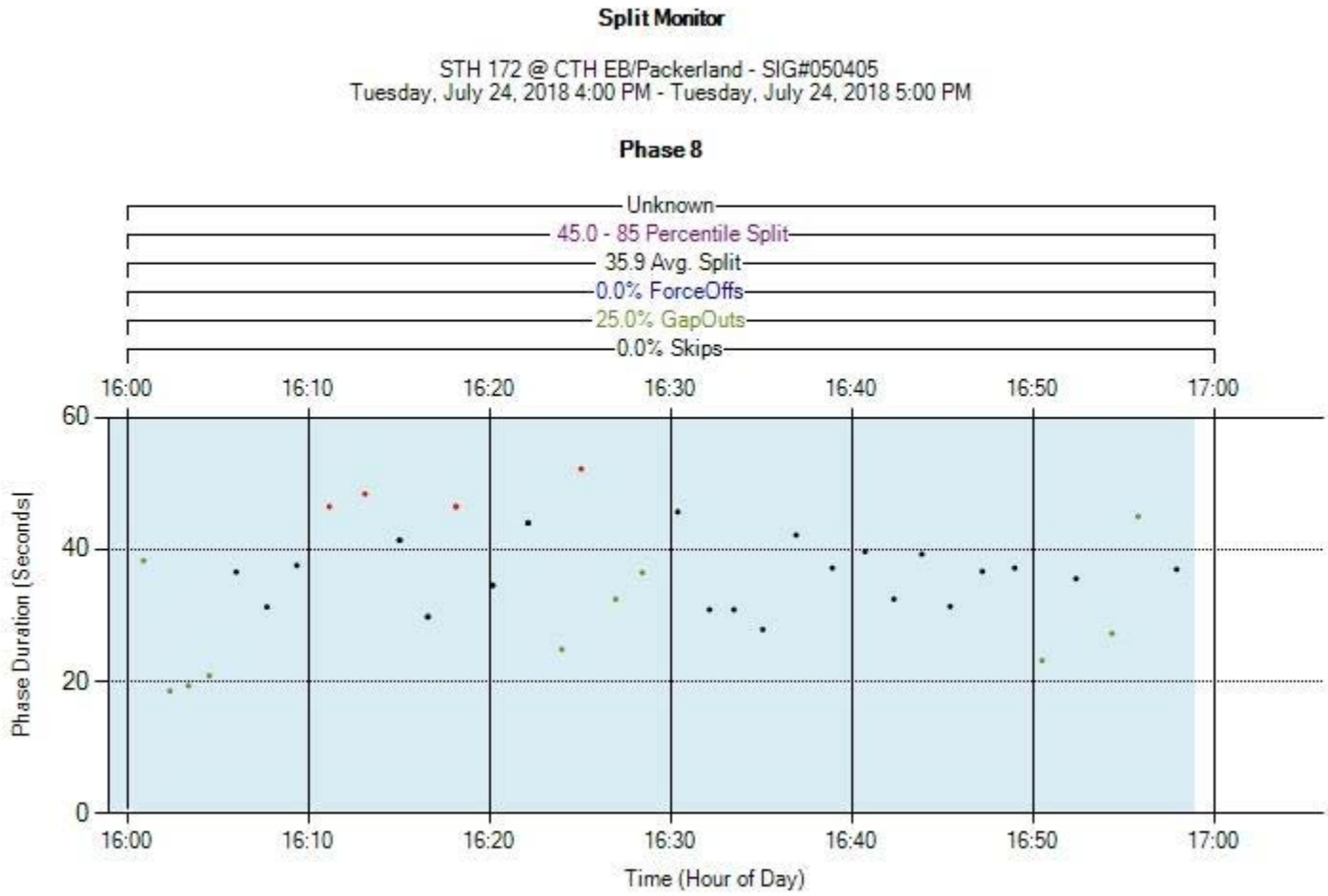
Isolated Signal – WIS 172 & County EB/Packerland Drive
Vistro Timings
7/24/2018 – 4:00 PM – 5:00 PM



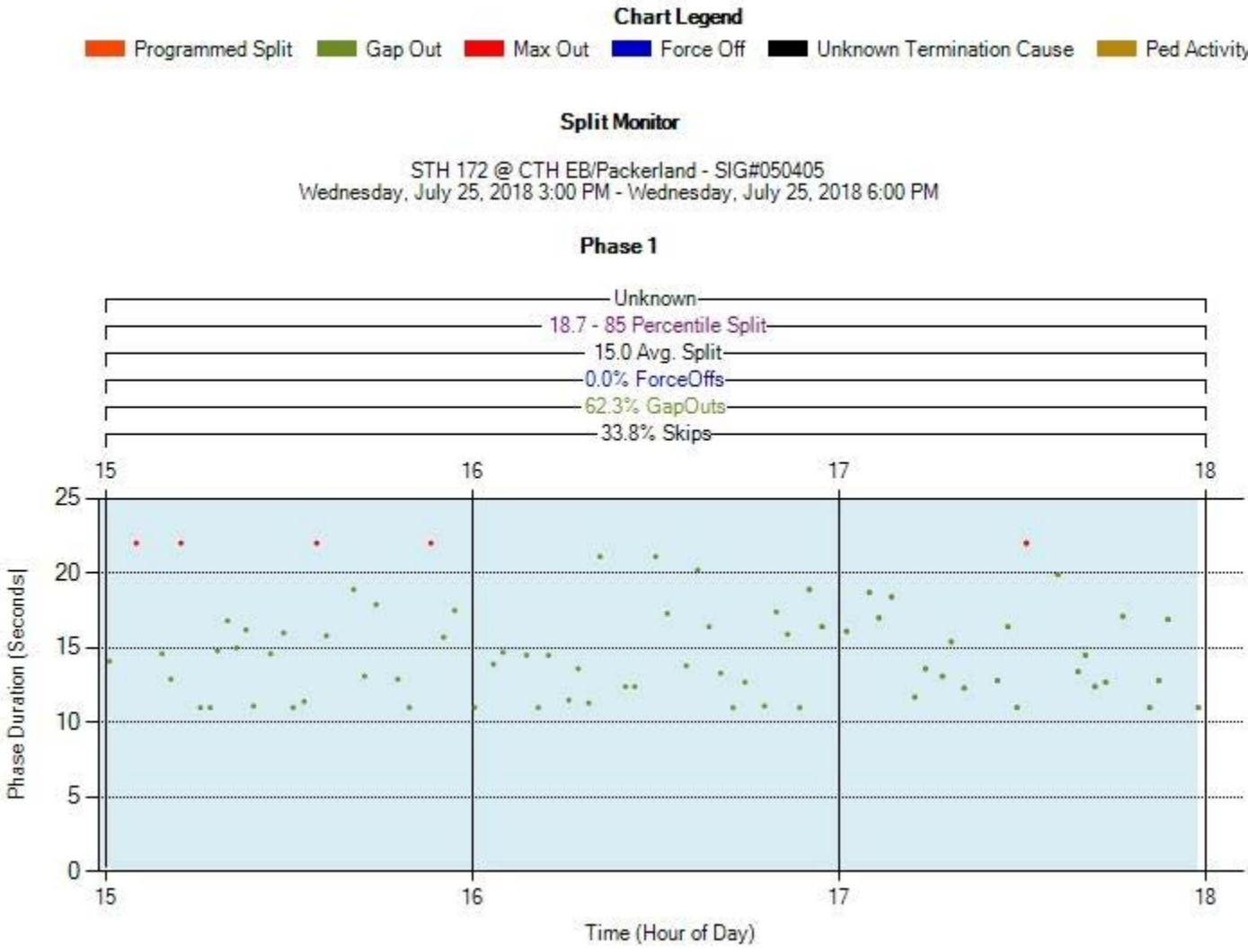
Isolated Signal – WIS 172 & County EB/Packerland Drive
Vistro Timings
7/24/2018 – 4:00 PM – 5:00 PM



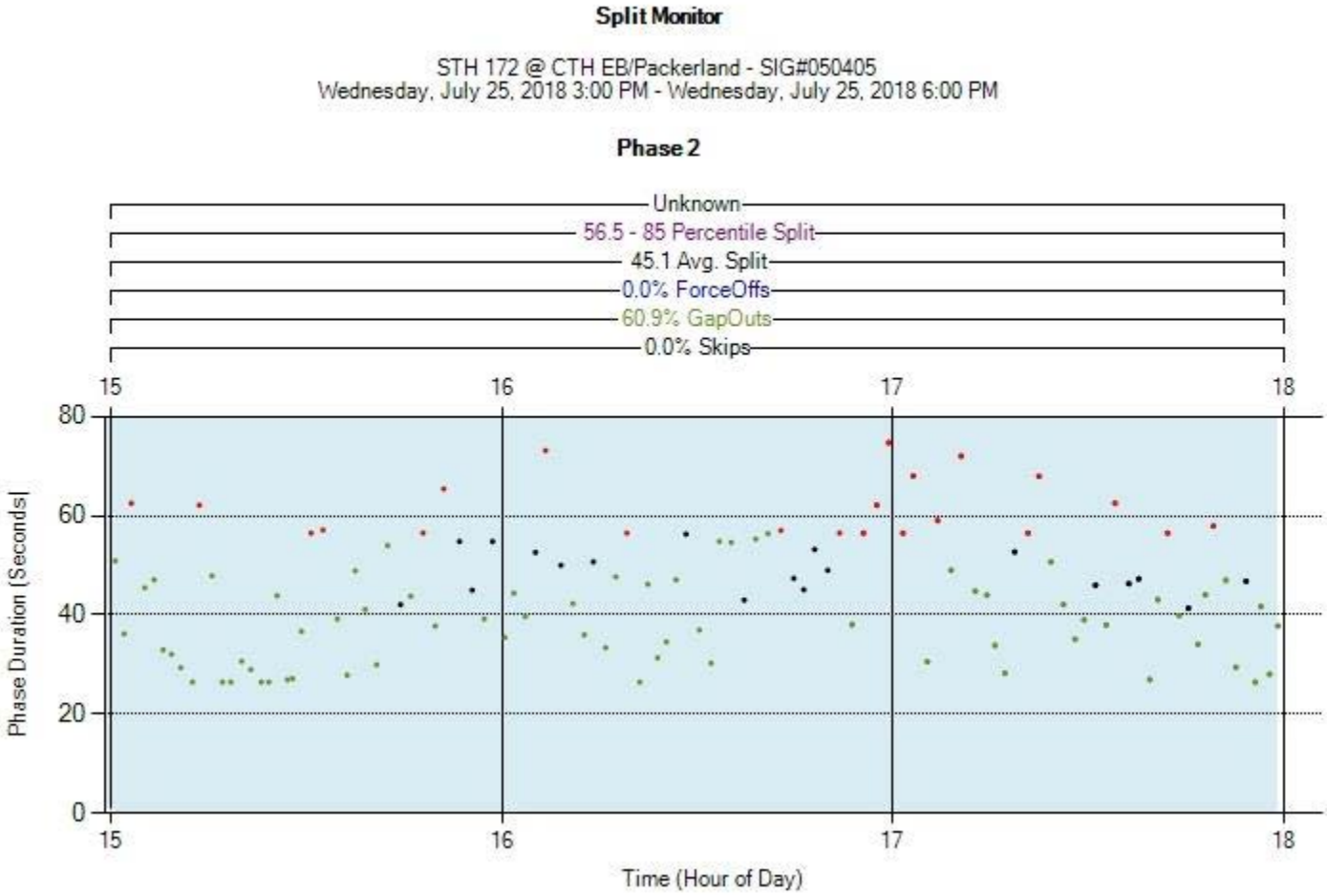
Isolated Signal – WIS 172 & County EB/Packerland Drive
Vistro Timings
7/24/2018 – 4:00 PM – 5:00 PM



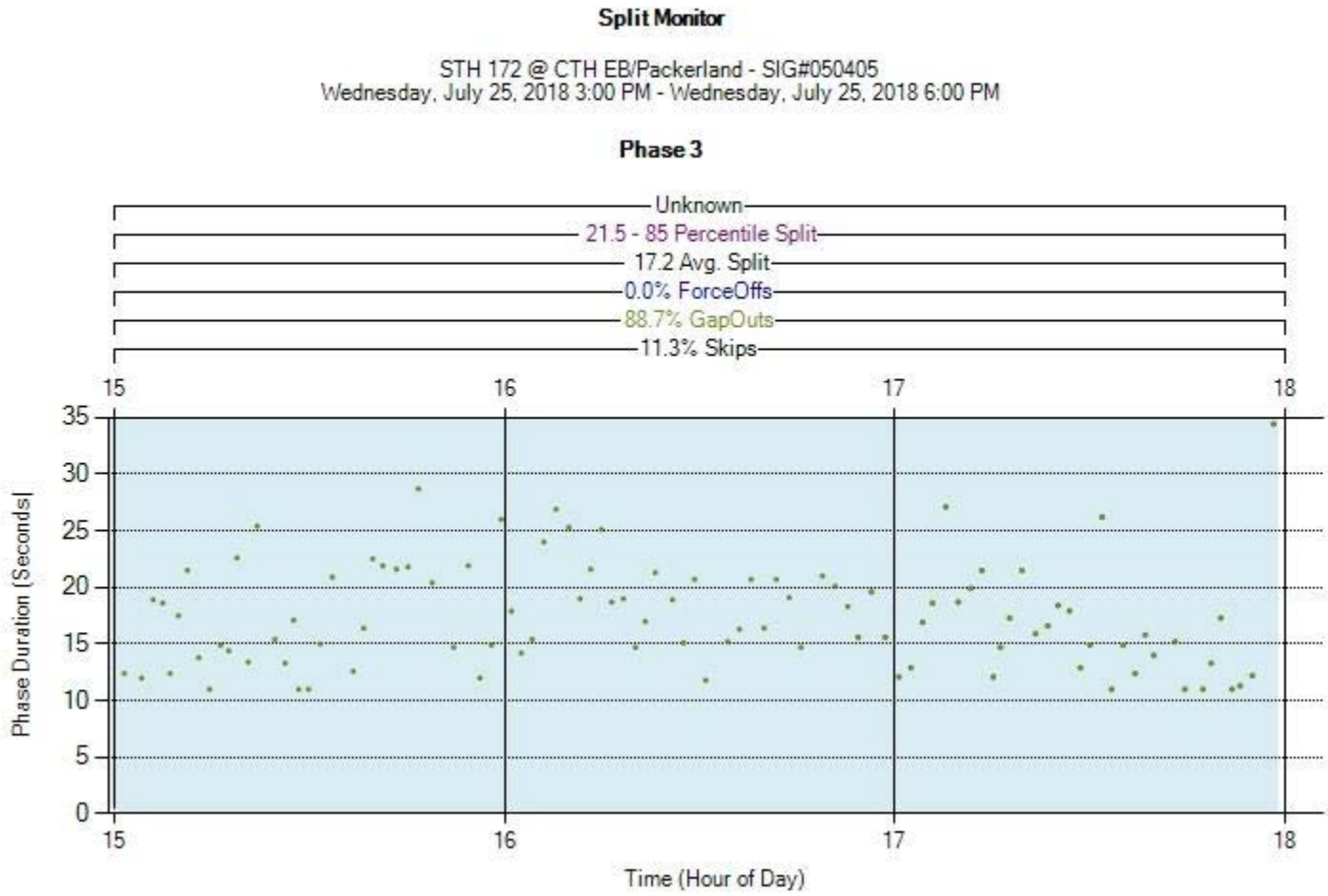
Isolated Signal – WIS 172 & County EB/Packerland Drive
Vistro Timings
7/25/2018 – 3:00 PM – 6:00 PM



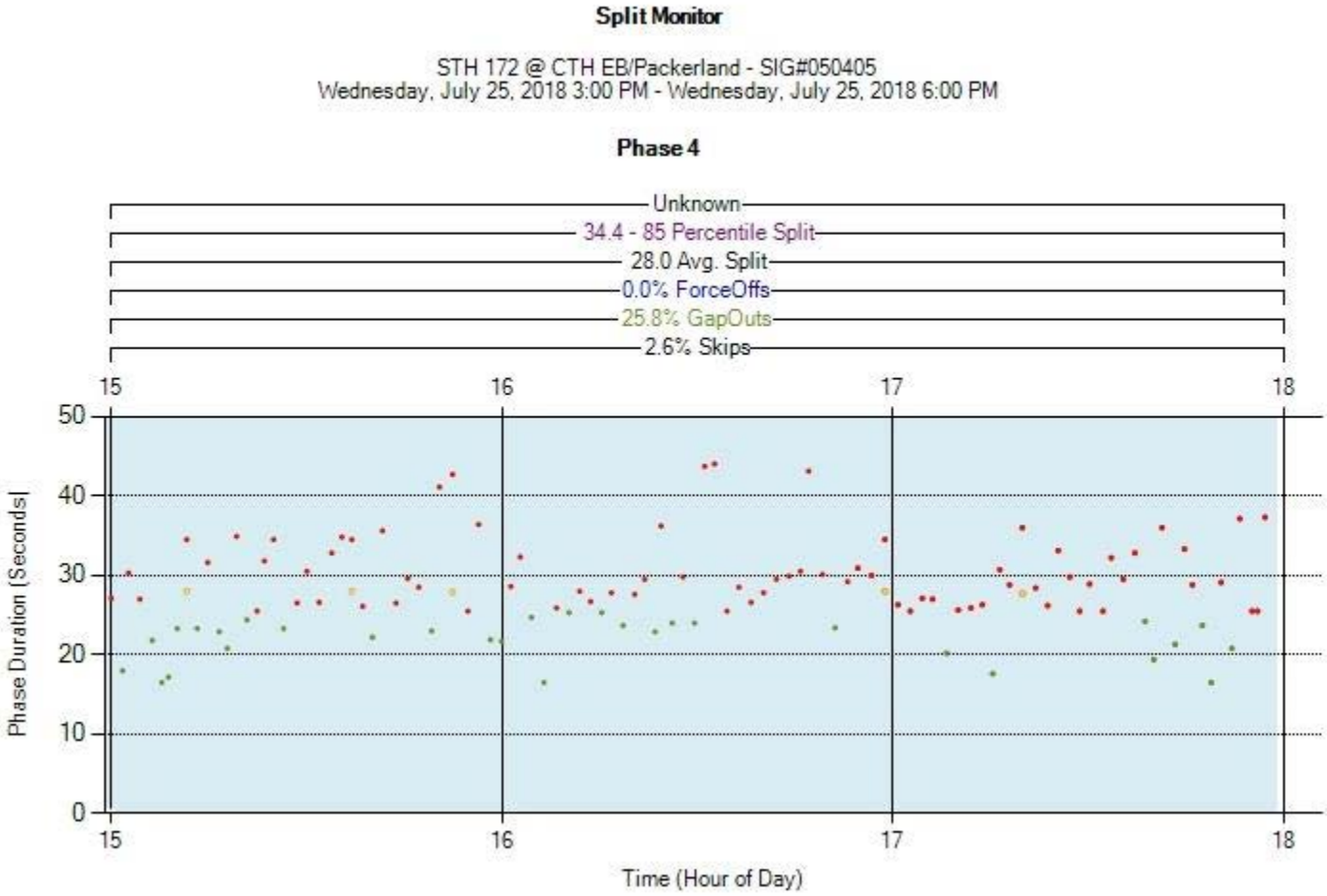
Isolated Signal – WIS 172 & County EB/Packerland Drive
Vistro Timings
7/25/2018 – 3:00 PM – 6:00 PM



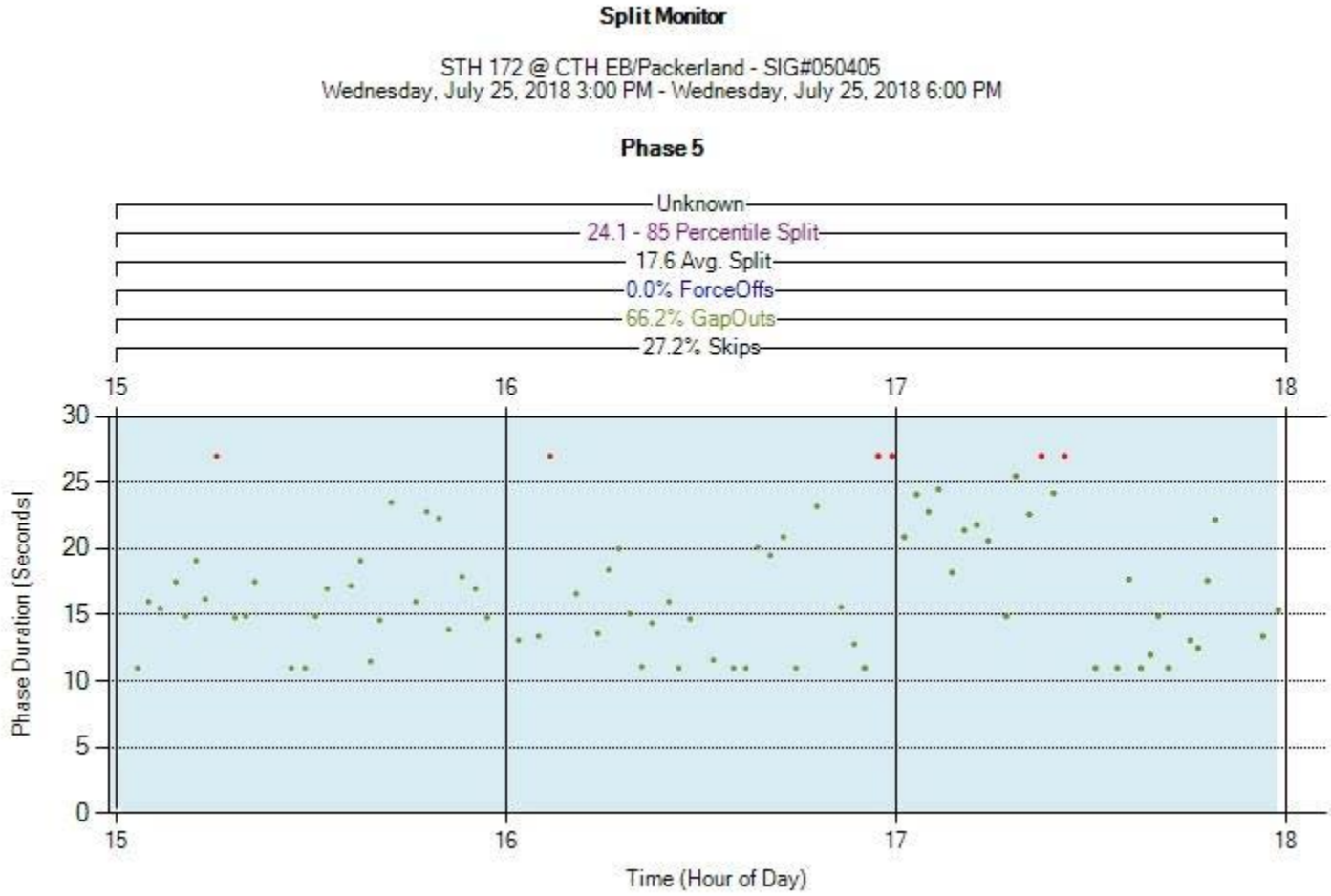
Isolated Signal – WIS 172 & County EB/Packerland Drive
Vistro Timings
7/25/2018 – 3:00 PM – 6:00 PM



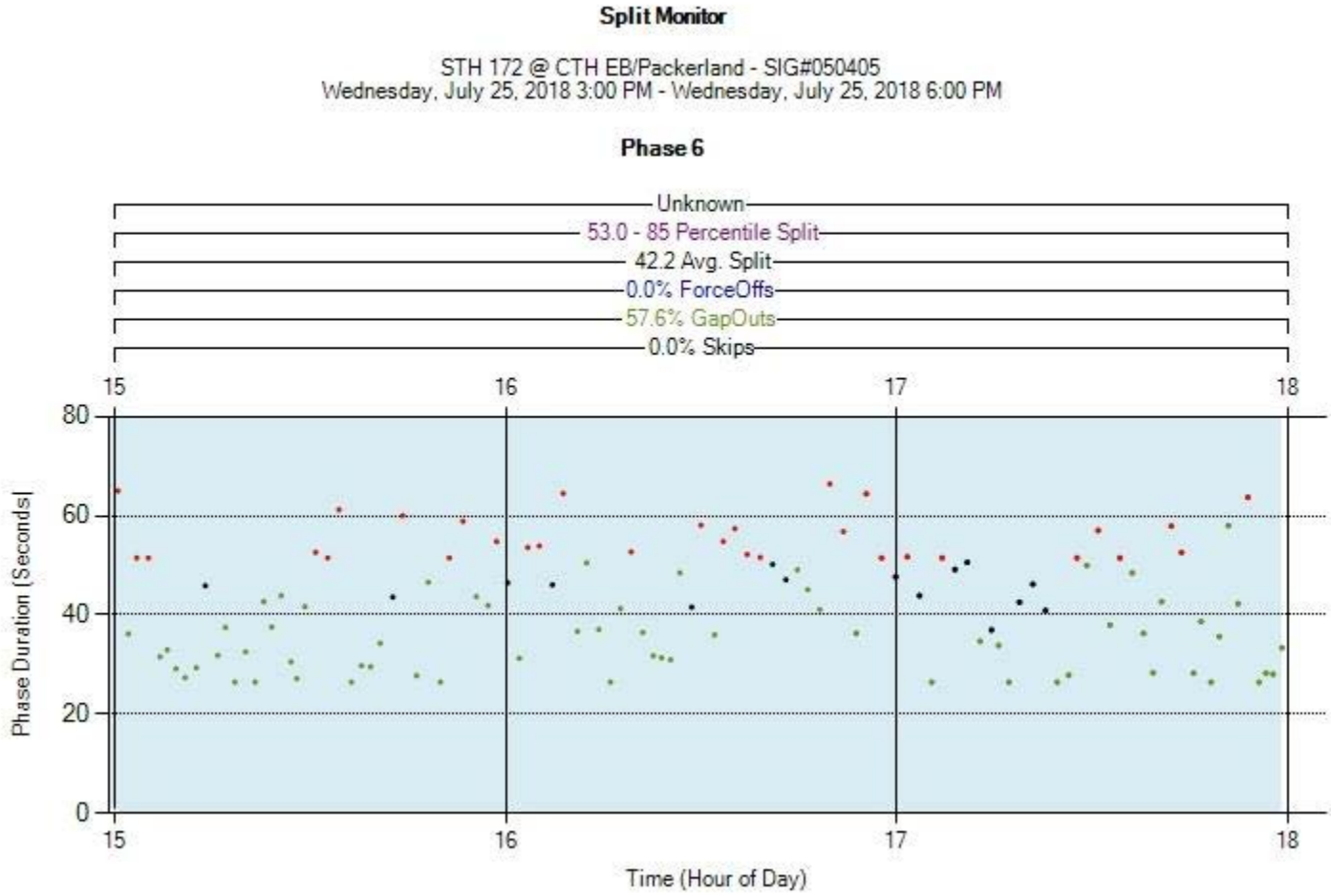
Isolated Signal – WIS 172 & County EB/Packerland Drive
Vistro Timings
7/25/2018 – 3:00 PM – 6:00 PM



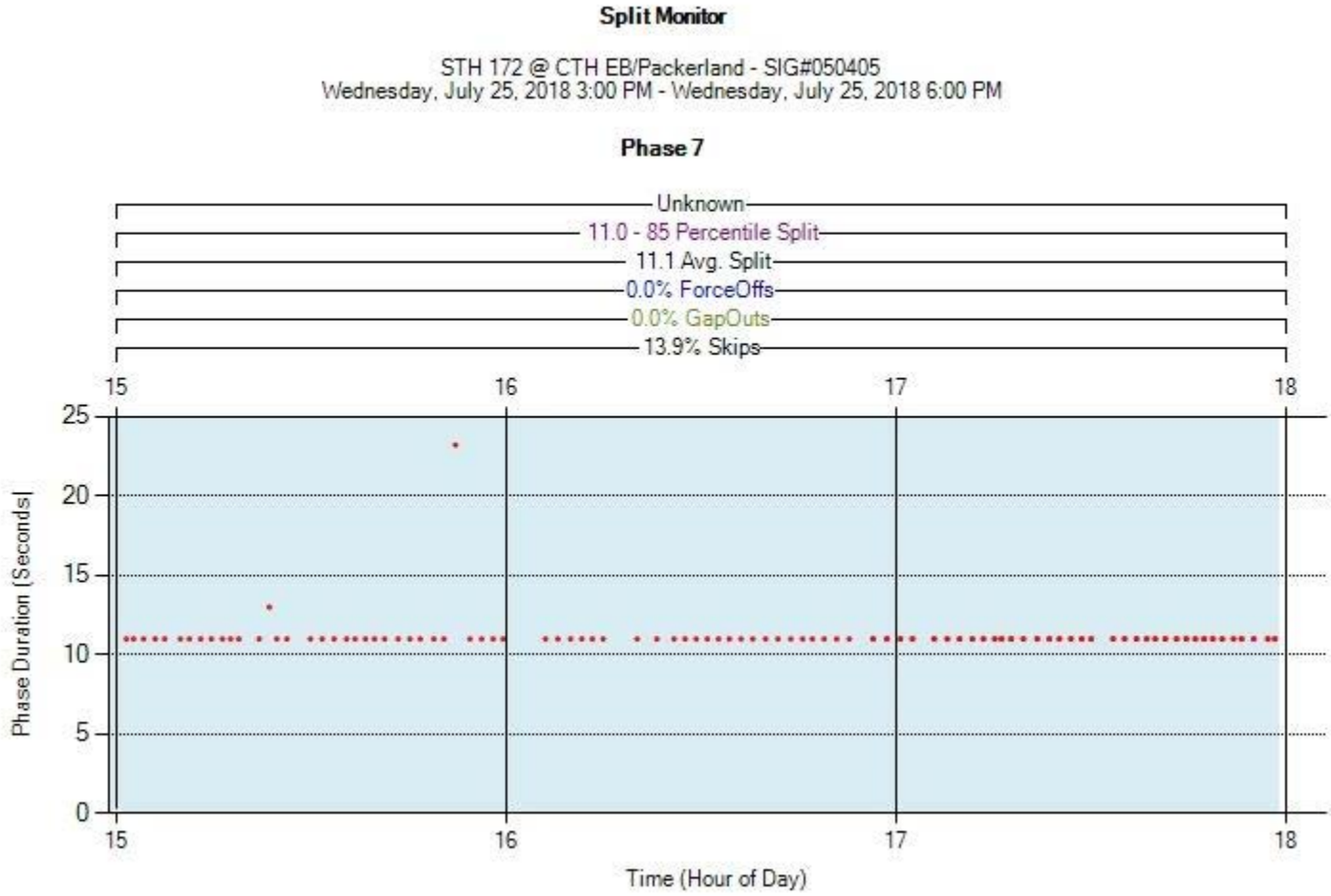
Isolated Signal – WIS 172 & County EB/Packerland Drive
Vistro Timings
7/25/2018 – 3:00 PM – 6:00 PM



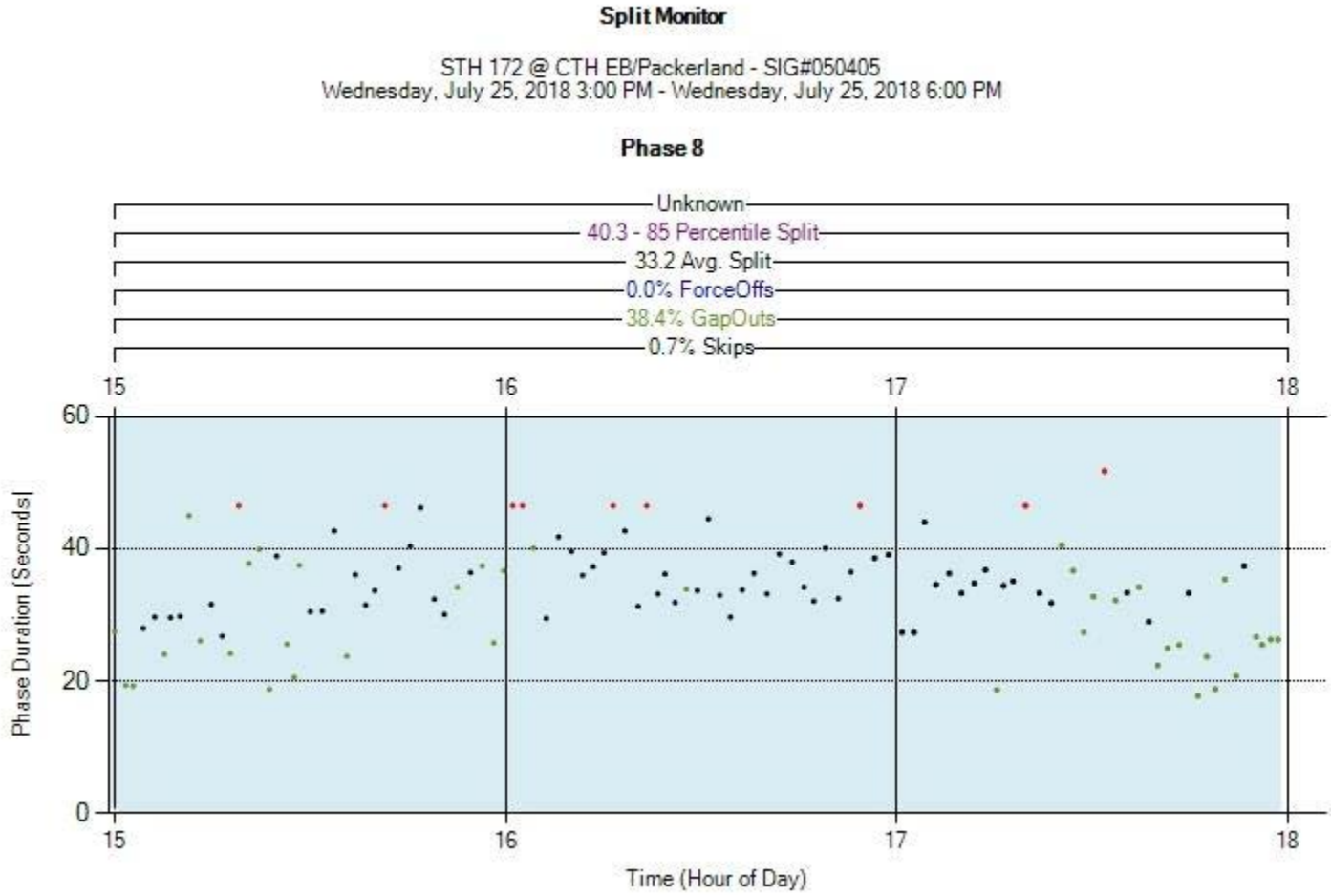
Isolated Signal – WIS 172 & County EB/Packerland Drive
Vistro Timings
7/25/2018 – 3:00 PM – 6:00 PM



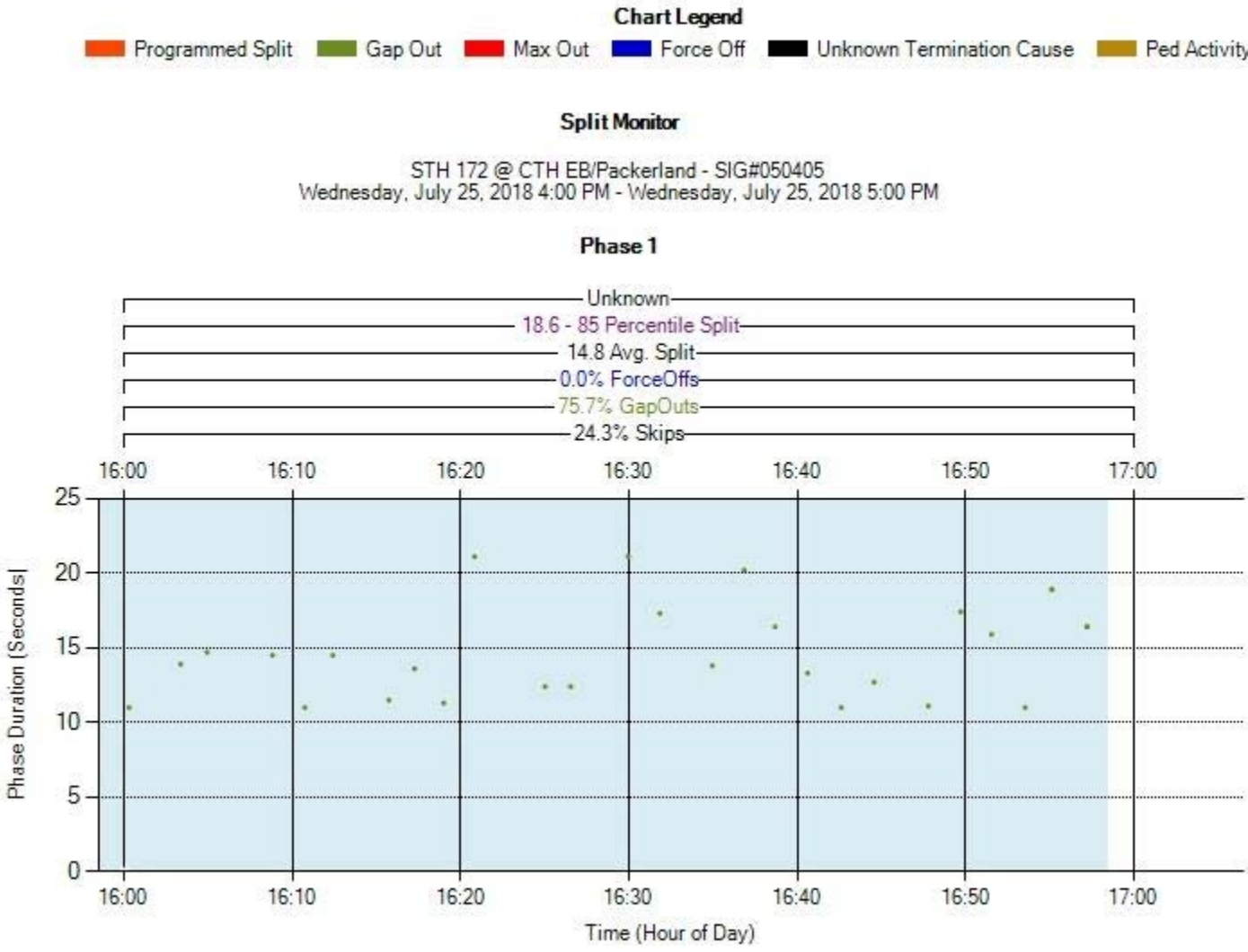
Isolated Signal – WIS 172 & County EB/Packerland Drive
Vistro Timings
7/25/2018 – 3:00 PM – 6:00 PM



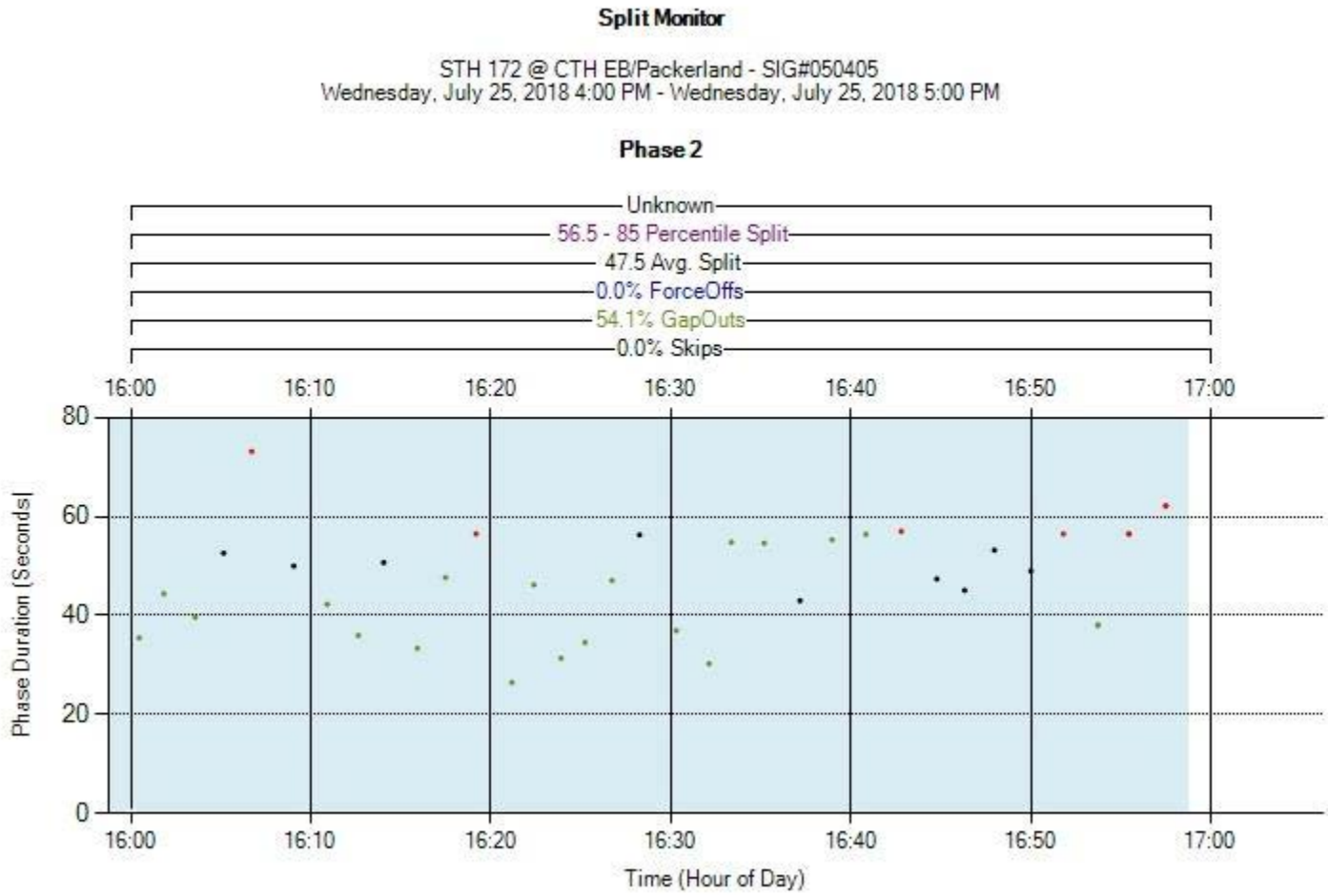
Isolated Signal – WIS 172 & County EB/Packerland Drive
Vistro Timings
7/25/2018 – 3:00 PM – 6:00 PM



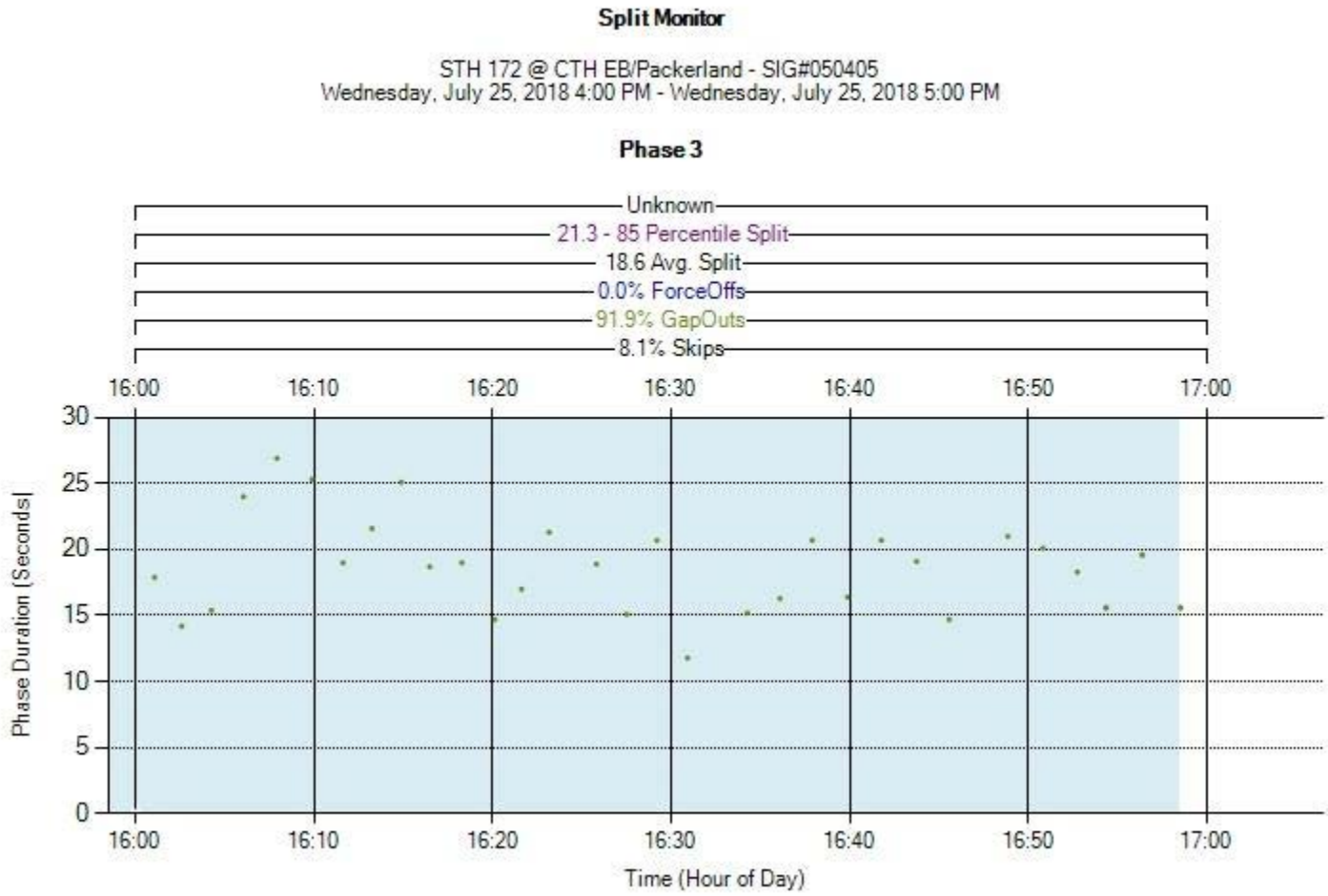
Isolated Signal – WIS 172 & County EB/Packerland Drive
Vistro Timings
7/25/2018 – 4:00 PM – 5:00 PM



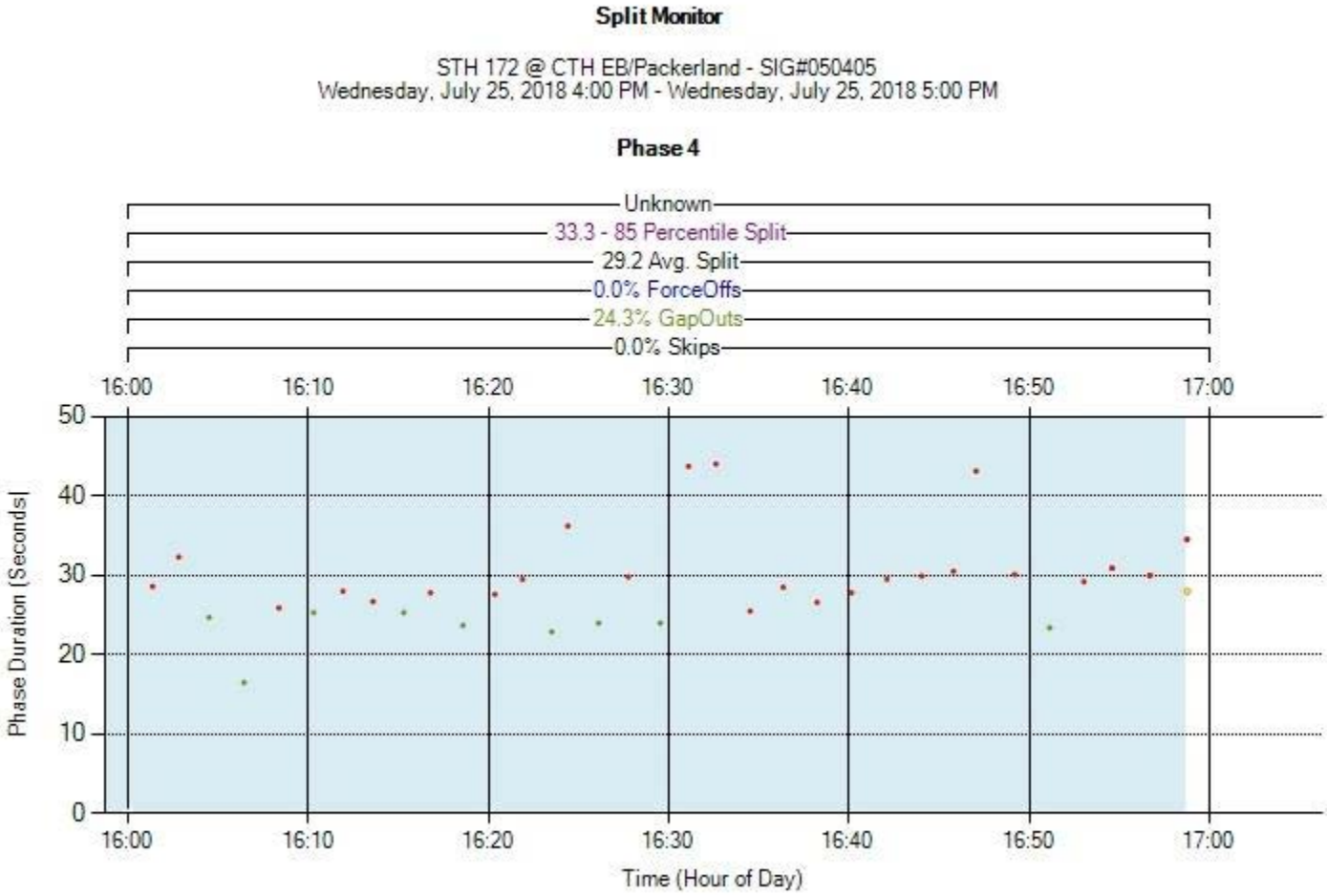
Isolated Signal – WIS 172 & County EB/Packerland Drive
Vistro Timings
7/25/2018 – 4:00 PM – 5:00 PM



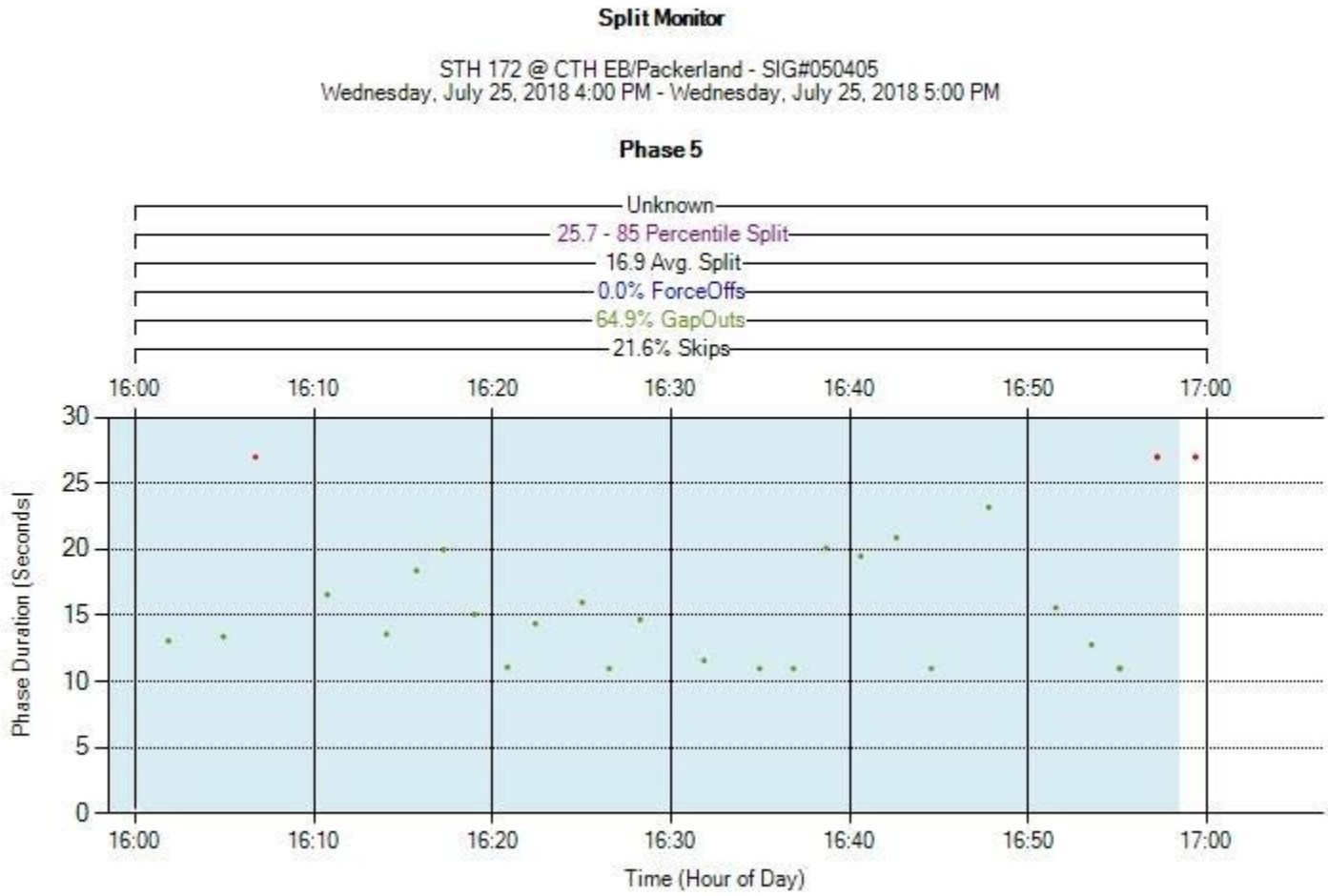
Isolated Signal – WIS 172 & County EB/Packerland Drive
Vistro Timings
7/25/2018 – 4:00 PM – 5:00 PM



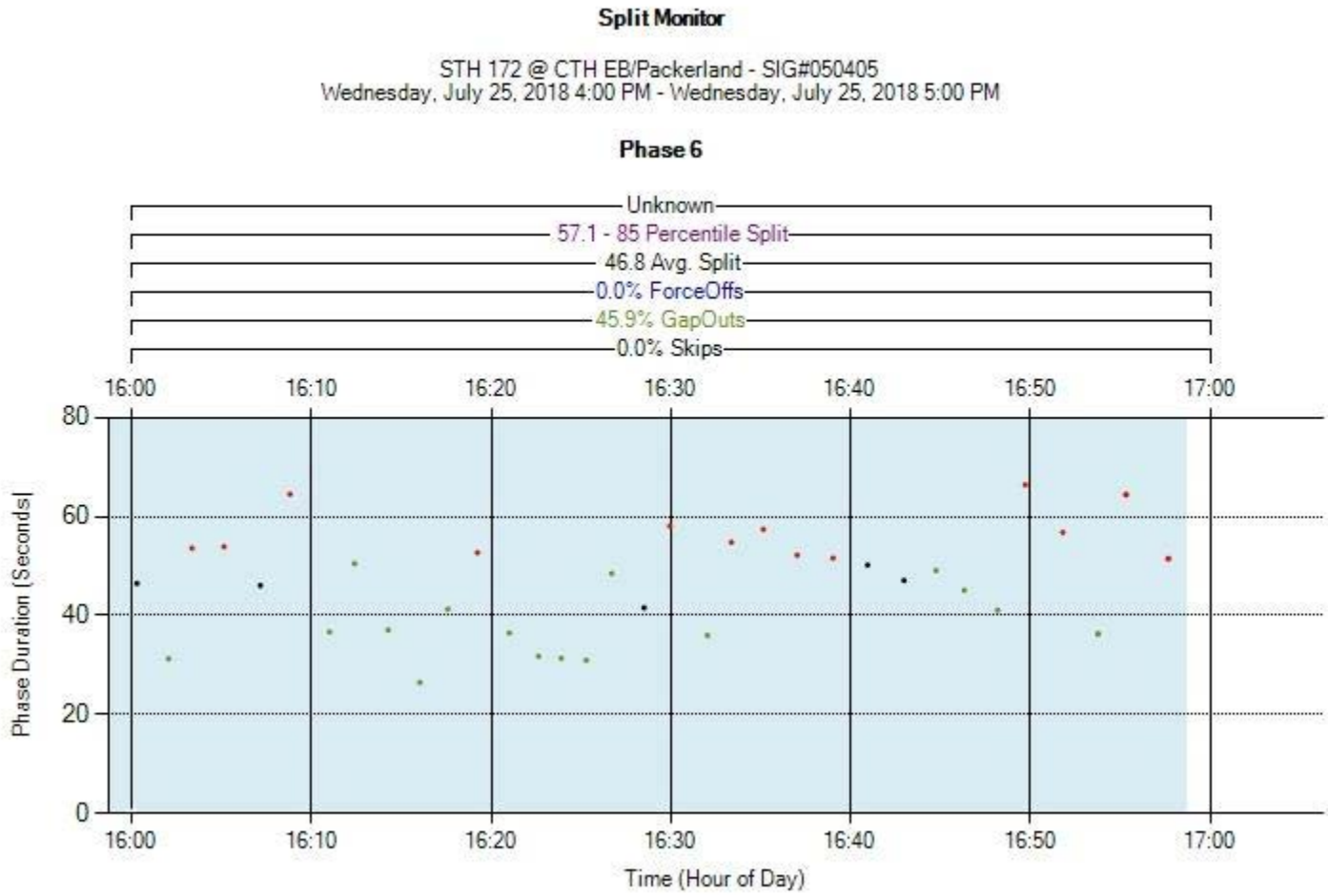
Isolated Signal – WIS 172 & County EB/Packerland Drive
Vistro Timings
7/25/2018 – 4:00 PM – 5:00 PM



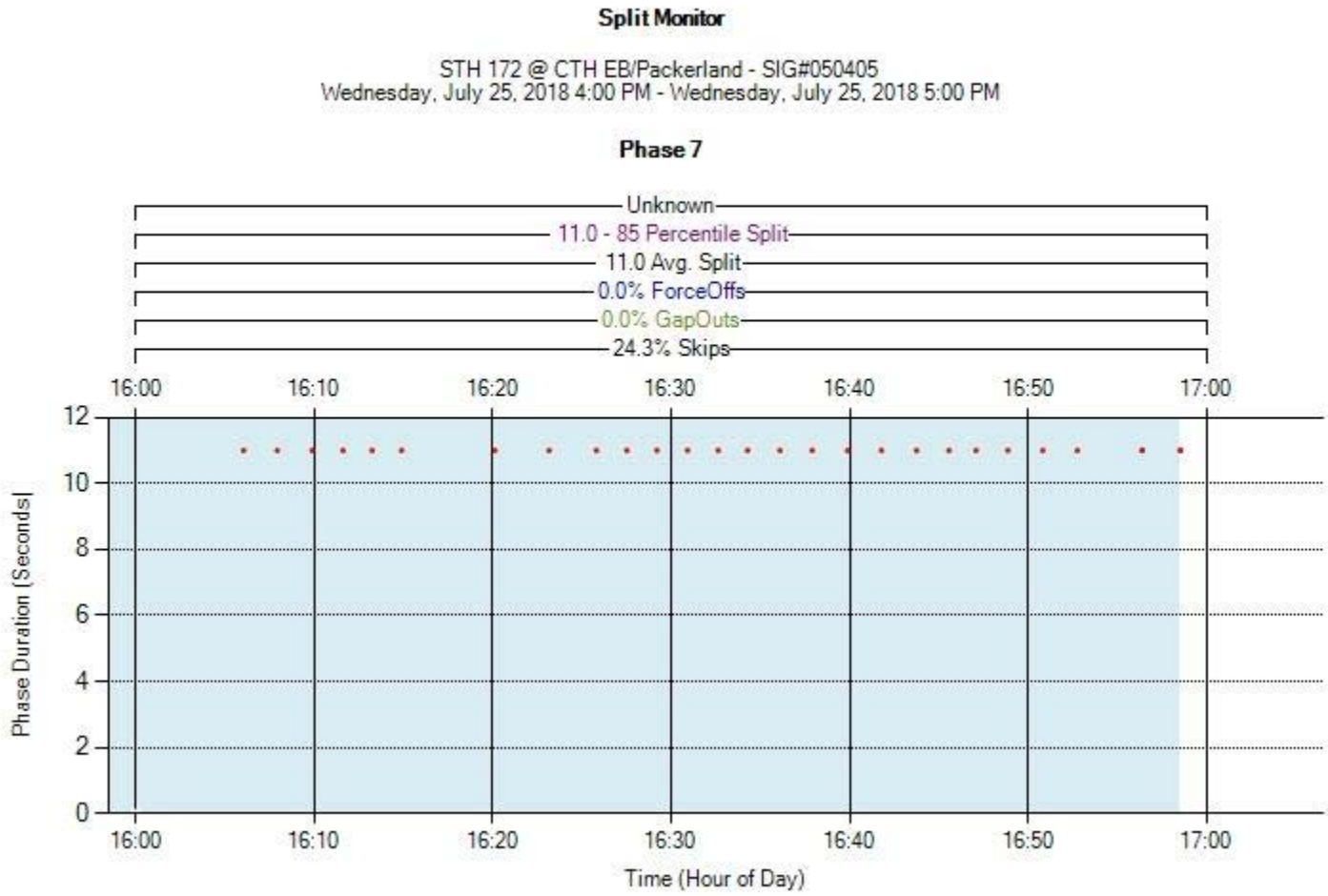
Isolated Signal – WIS 172 & County EB/Packerland Drive
Vistro Timings
7/25/2018 – 4:00 PM – 5:00 PM



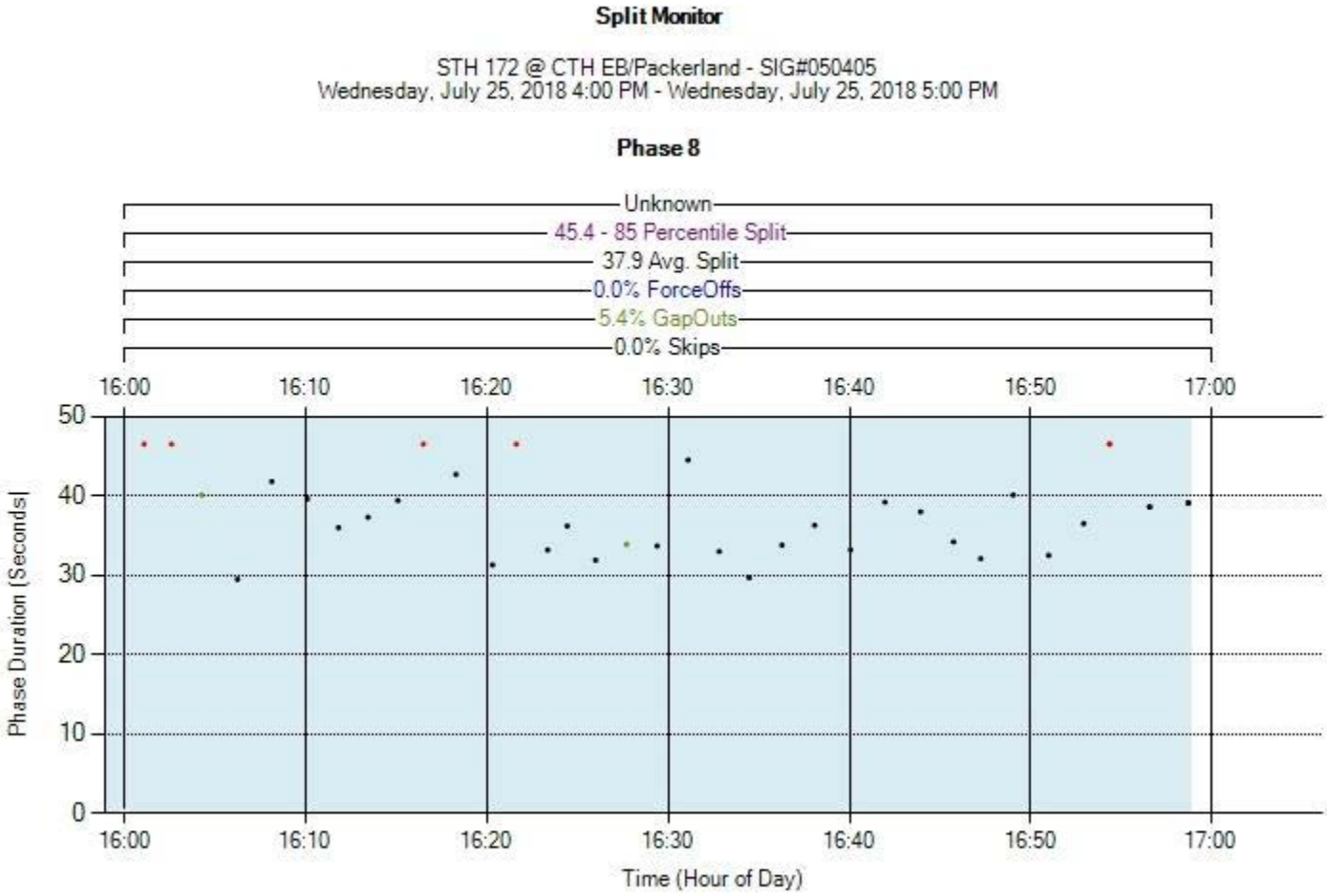
Isolated Signal – WIS 172 & County EB/Packerland Drive
Vistro Timings
7/25/2018 – 4:00 PM – 5:00 PM



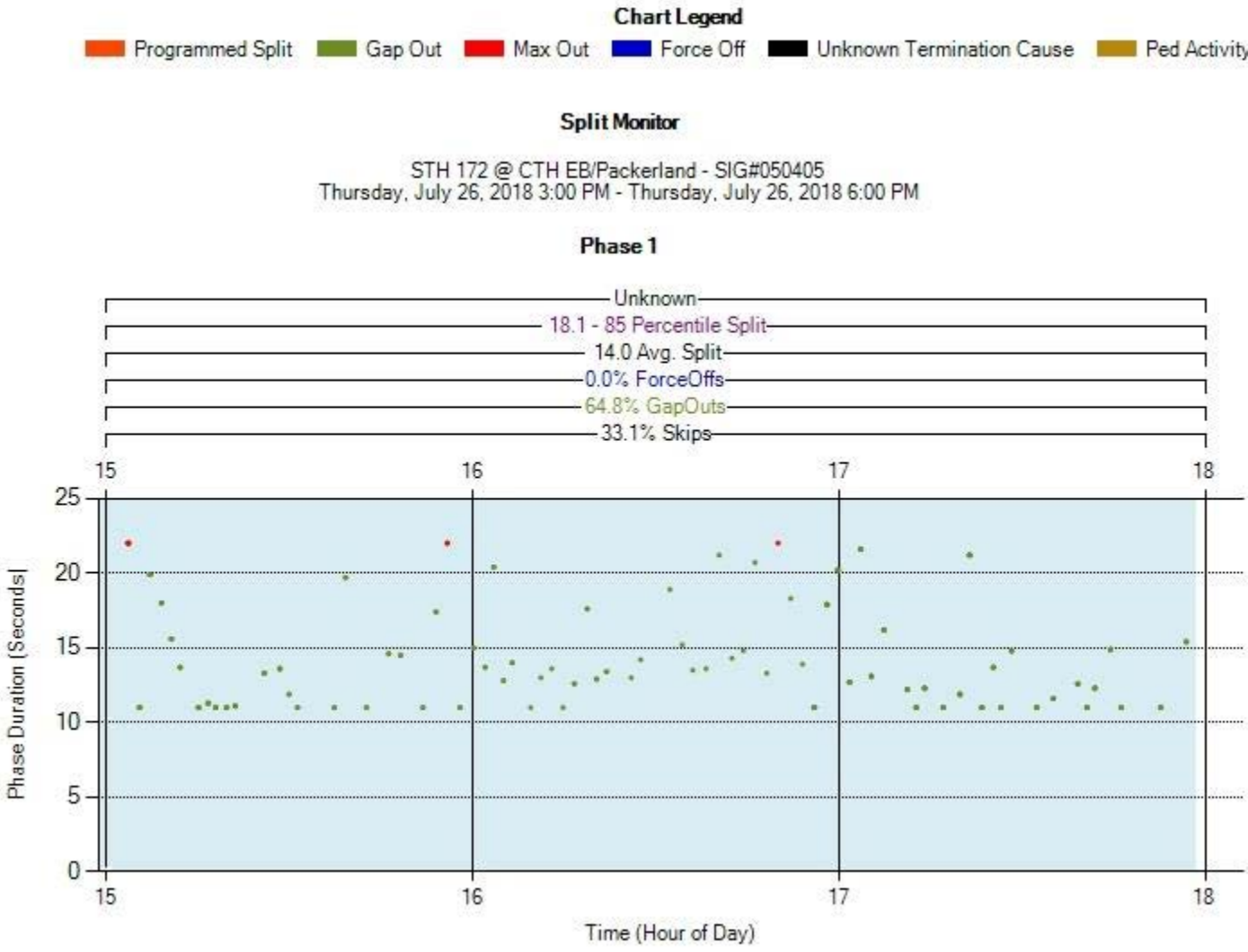
Isolated Signal – WIS 172 & County EB/Packerland Drive
Vistro Timings
7/25/2018 – 4:00 PM – 5:00 PM



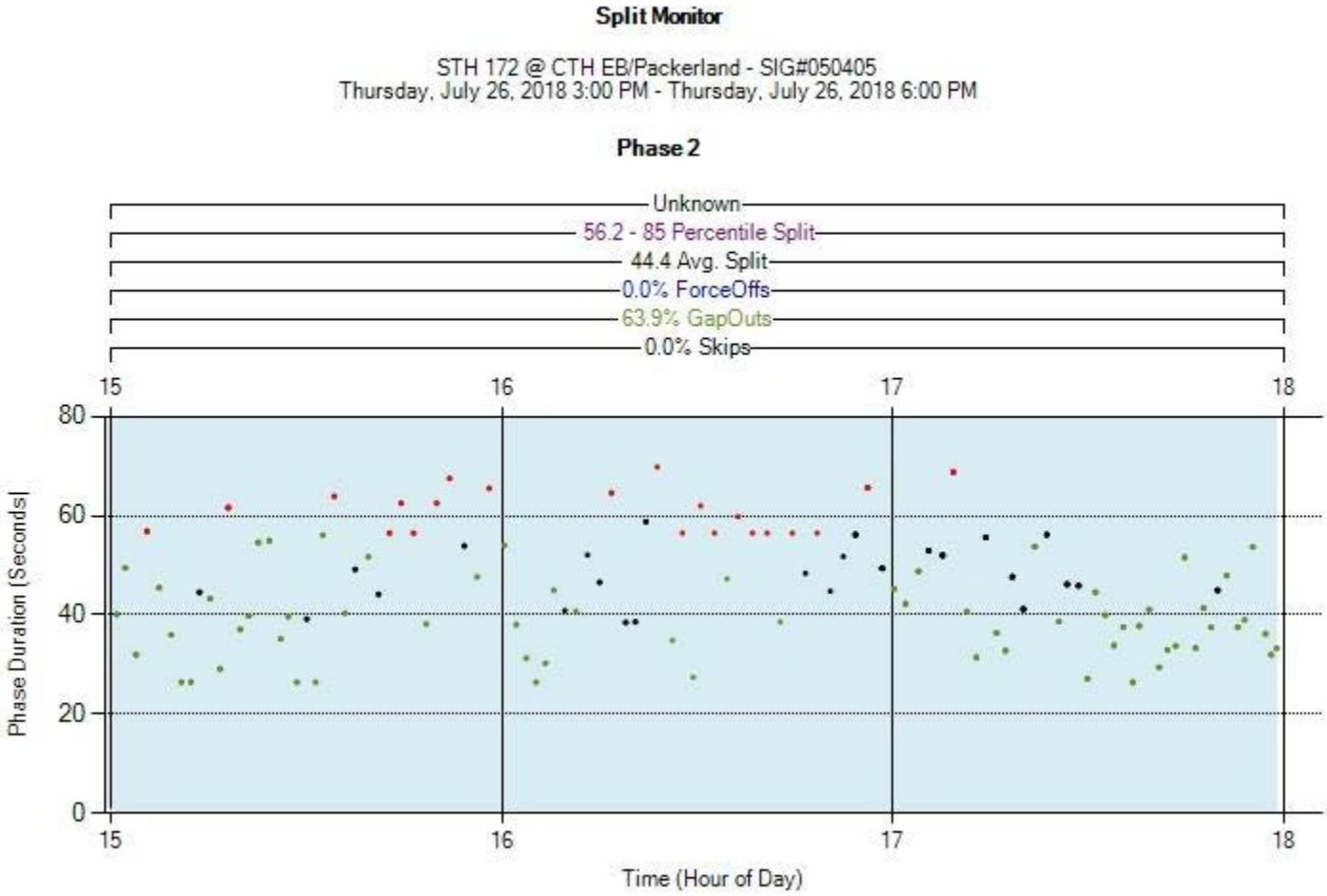
Isolated Signal – WIS 172 & County EB/Packerland Drive
Vistro Timings
7/25/2018 – 4:00 PM – 5:00 PM



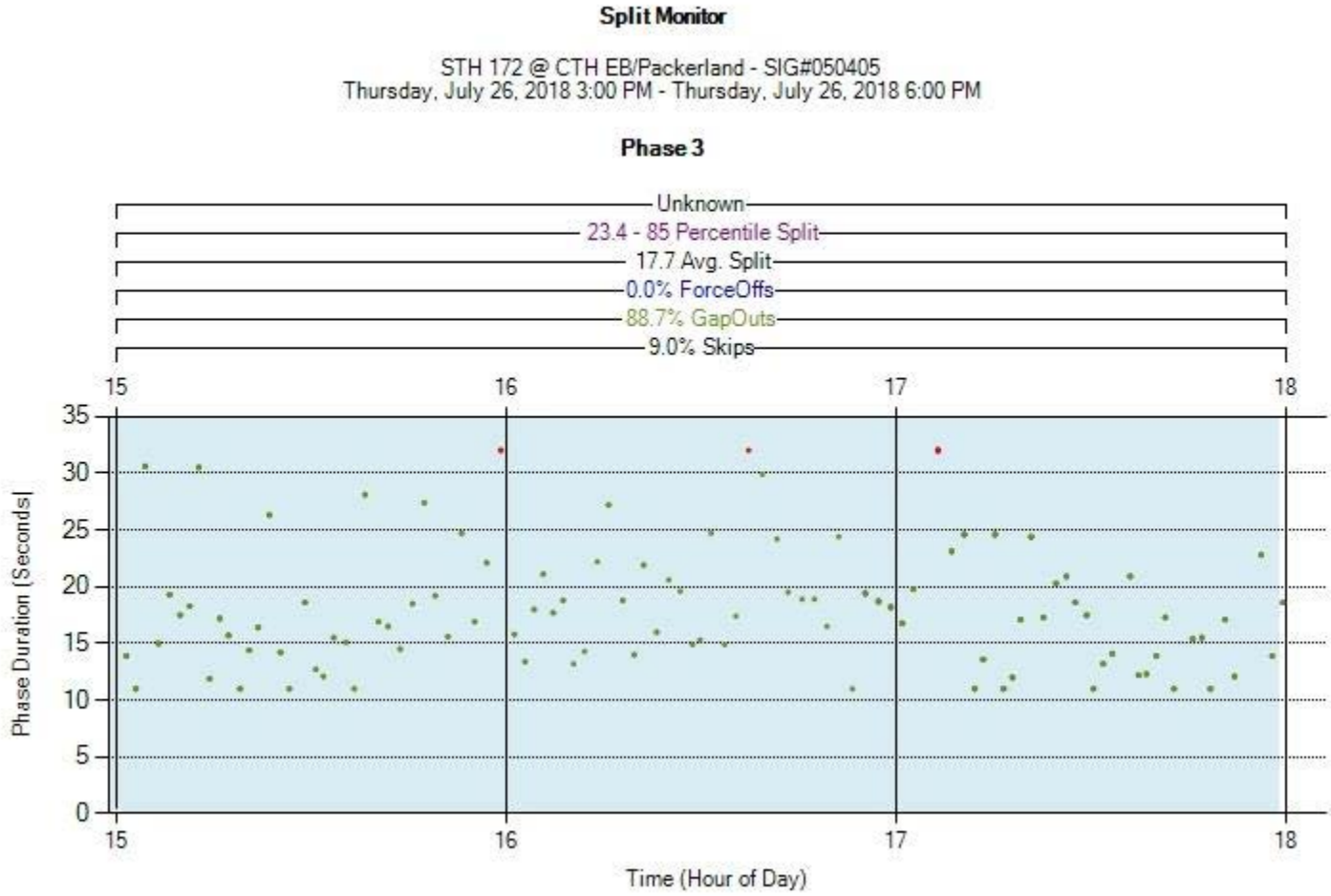
Isolated Signal – WIS 172 & County EB/Packerland Drive
Vistro Timings
7/26/2018 – 3:00 PM – 6:00 PM



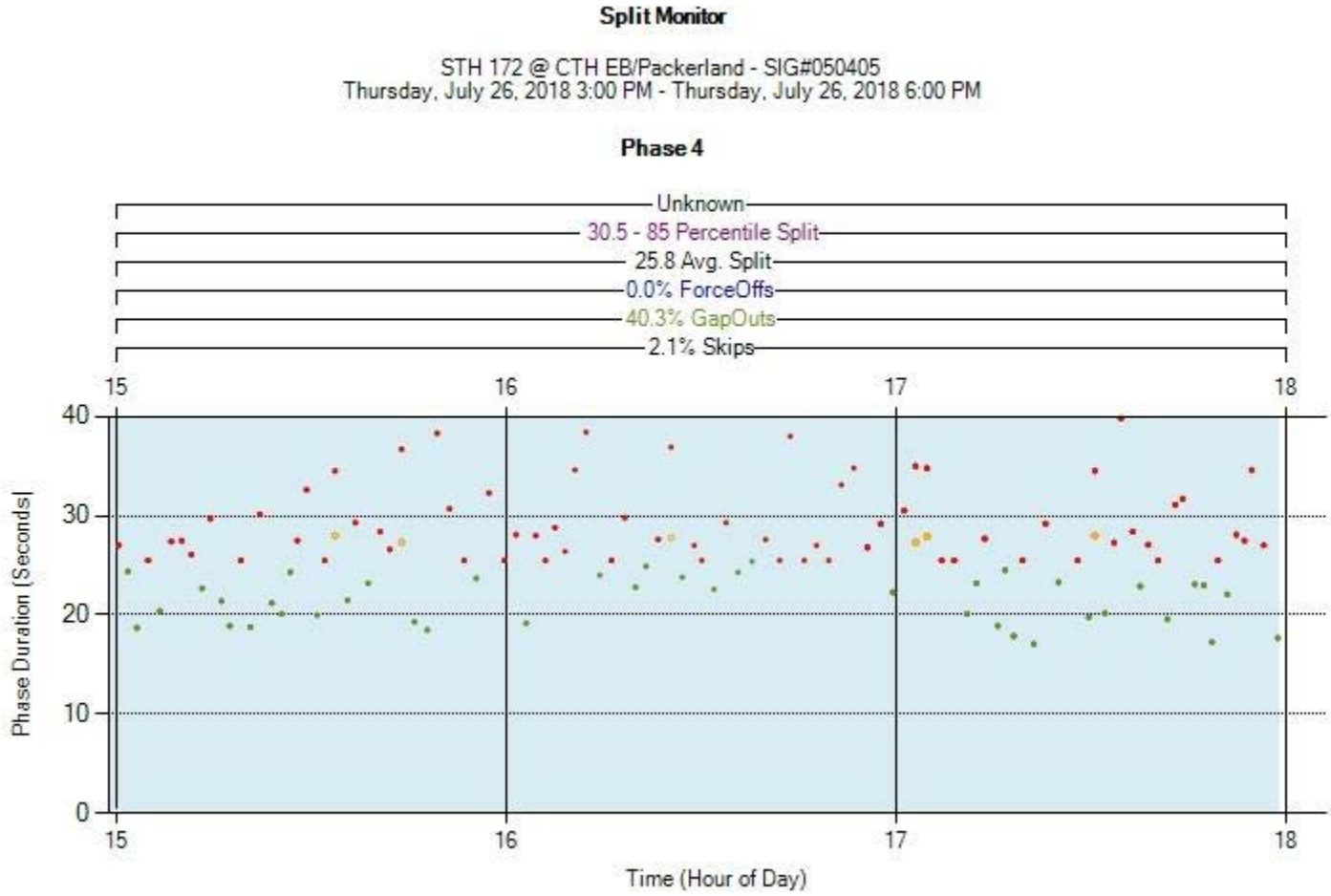
Isolated Signal – WIS 172 & County EB/Packerland Drive
Vistro Timings
7/26/2018 – 3:00 PM – 6:00 PM



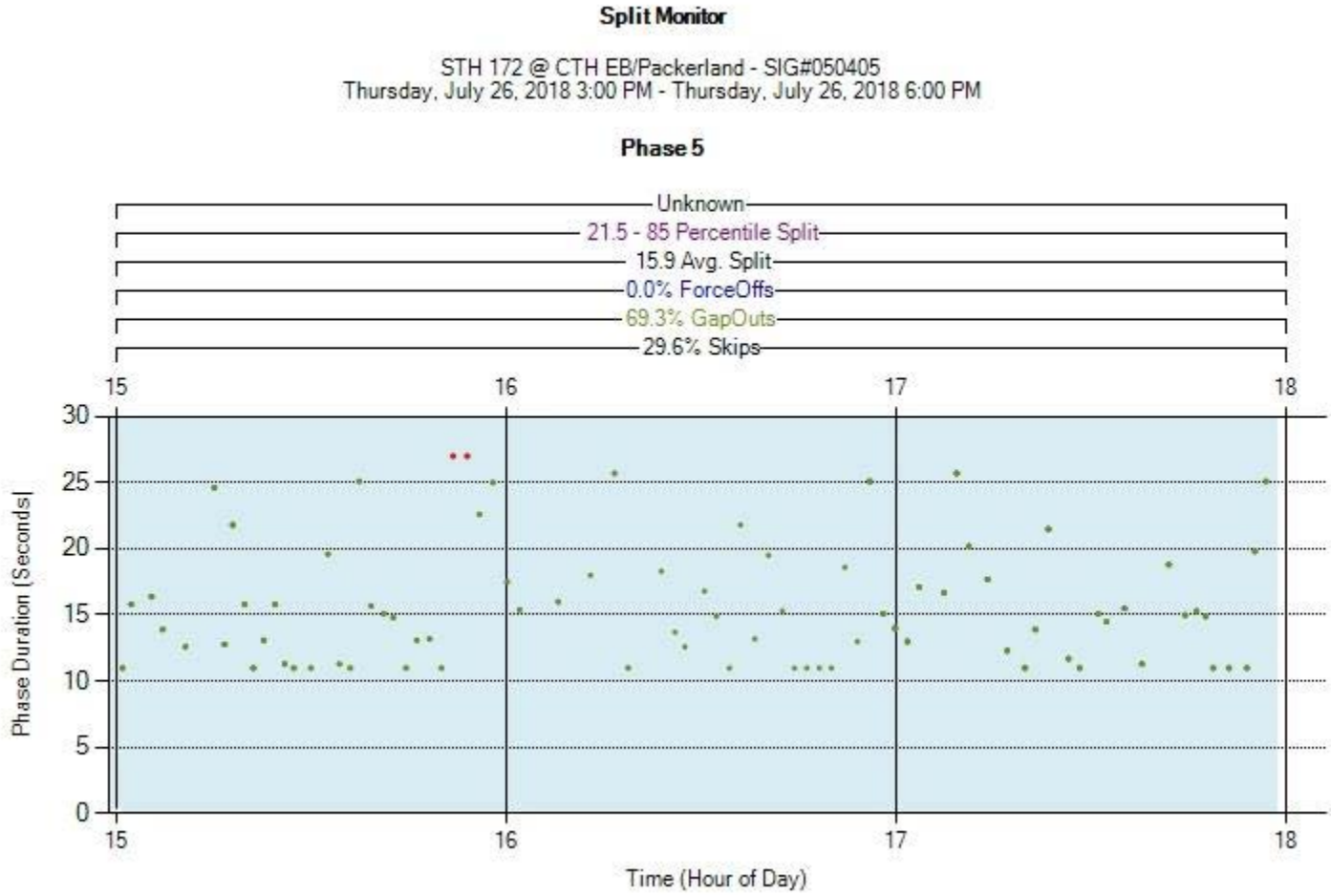
Isolated Signal – WIS 172 & County EB/Packerland Drive
Vistro Timings
7/26/2018 – 3:00 PM – 6:00 PM



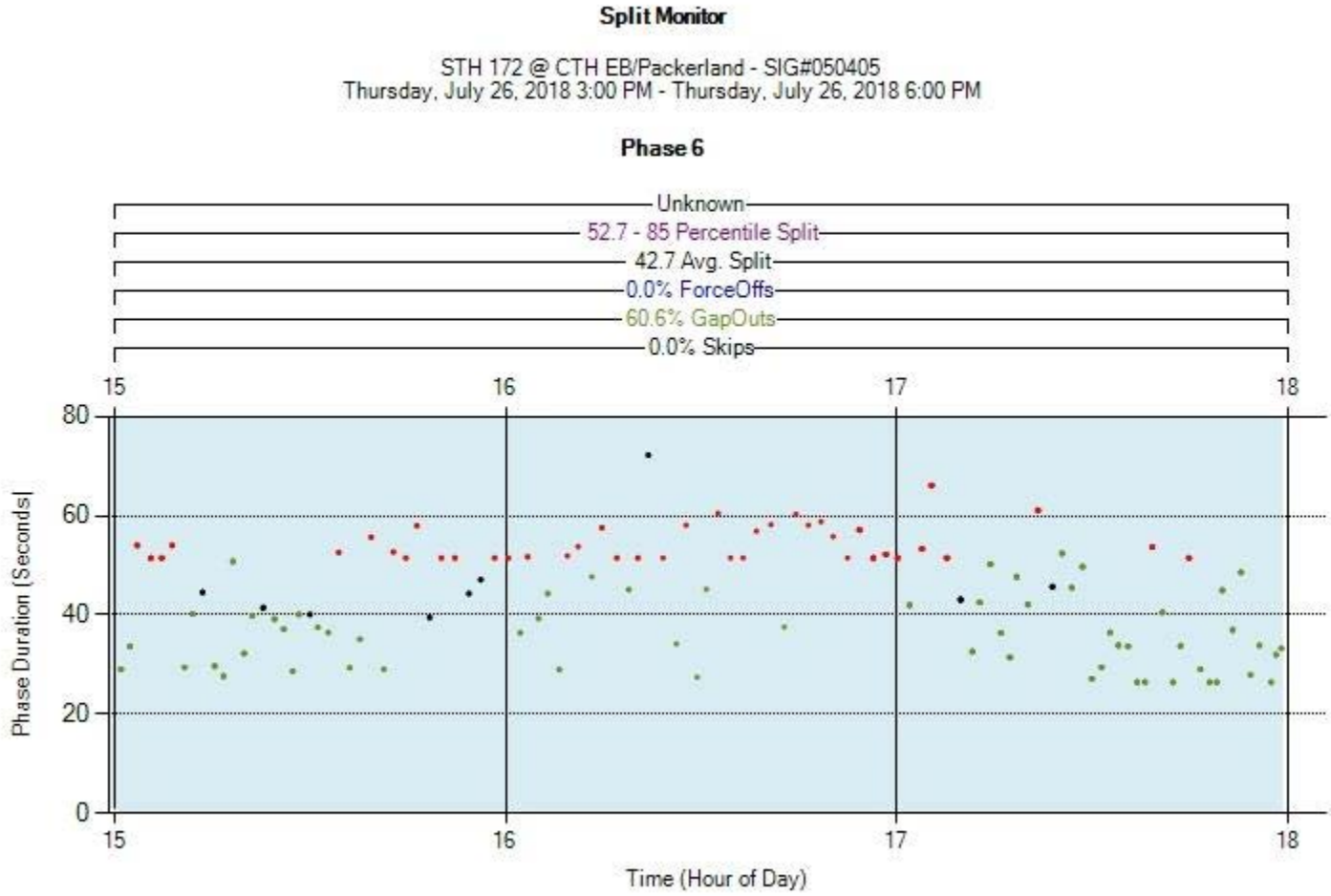
Isolated Signal – WIS 172 & County EB/Packerland Drive
Vistro Timings
7/26/2018 – 3:00 PM – 6:00 PM



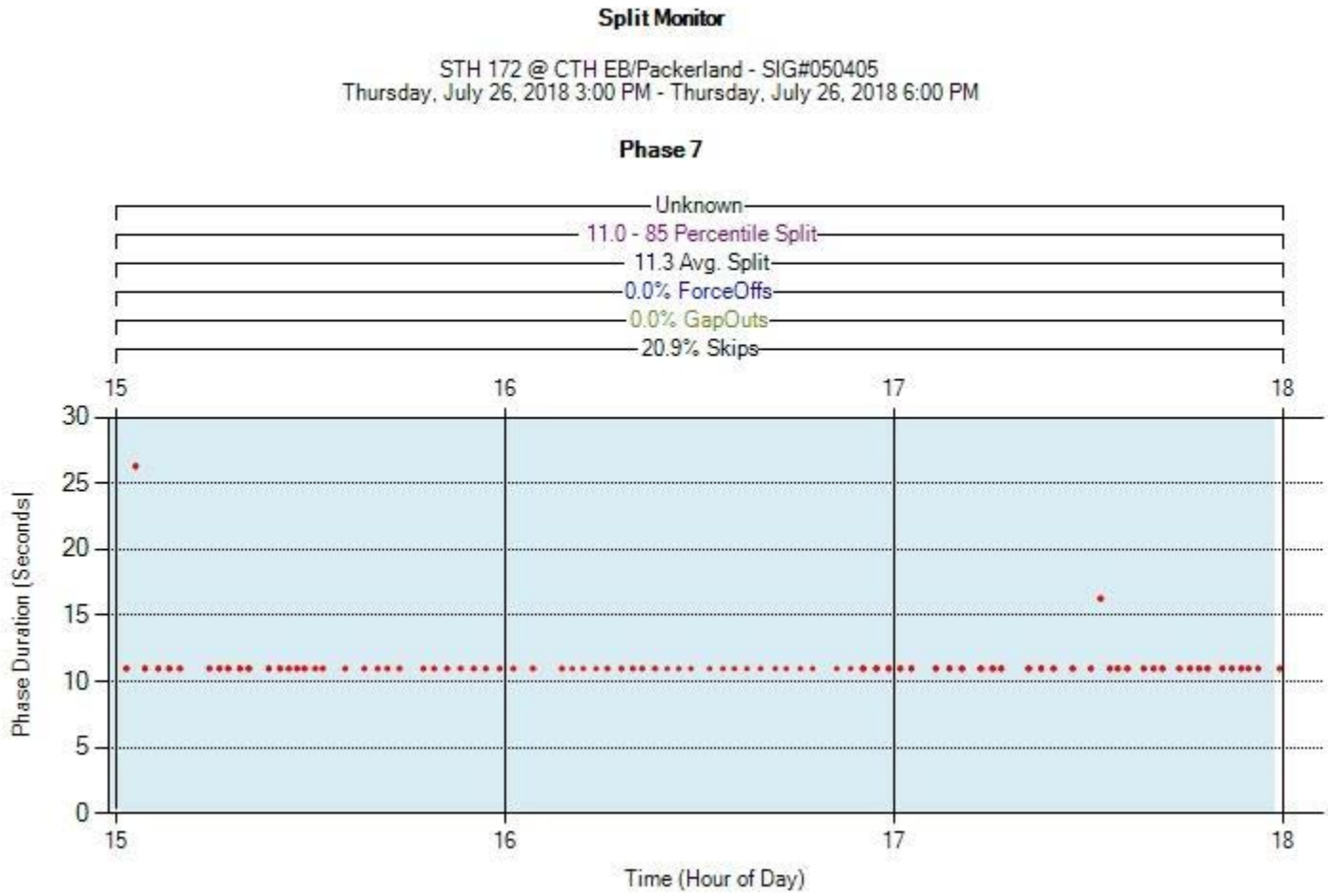
Isolated Signal – WIS 172 & County EB/Packerland Drive
Vistro Timings
7/26/2018 – 3:00 PM – 6:00 PM



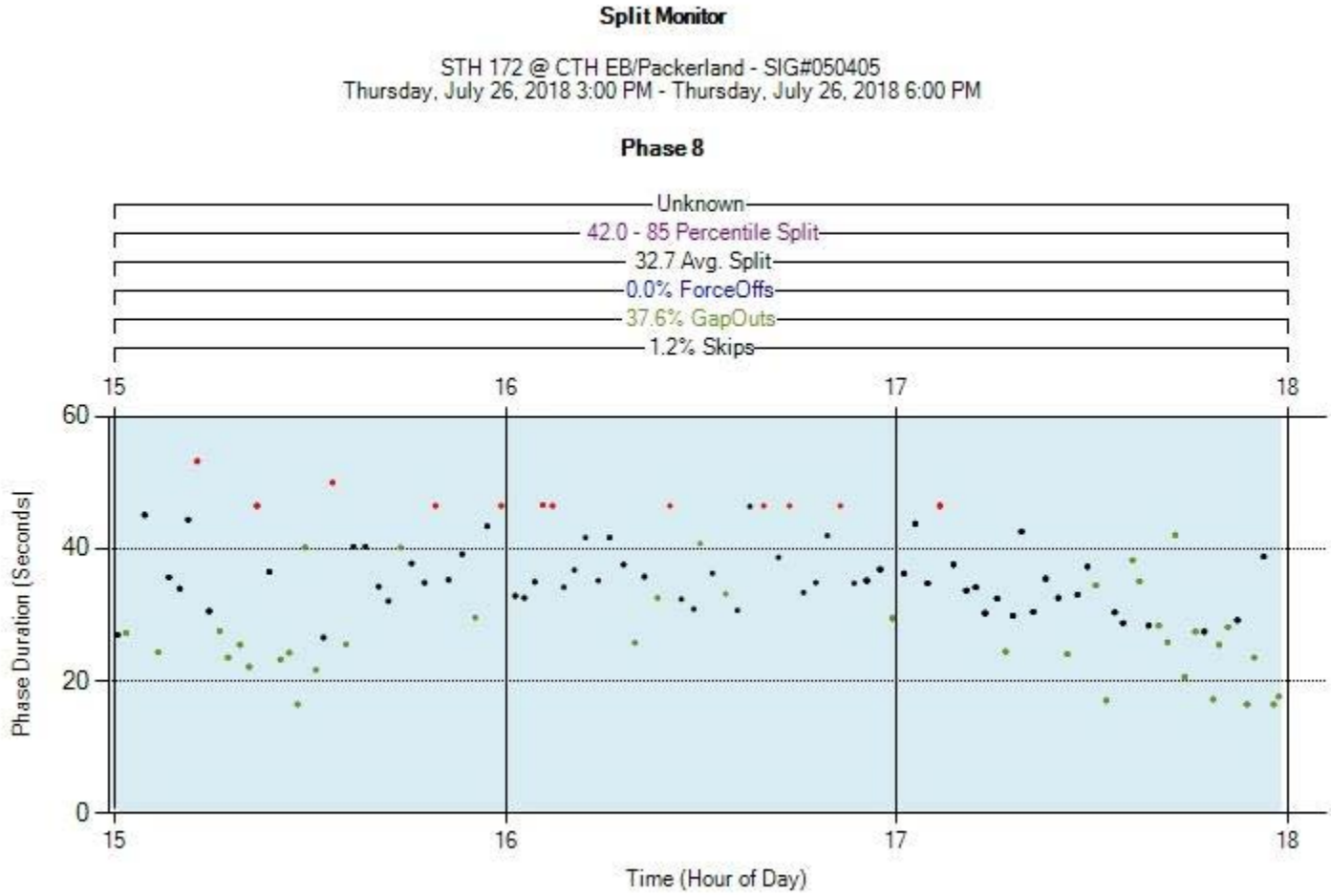
Isolated Signal – WIS 172 & County EB/Packerland Drive
Vistro Timings
7/26/2018 – 3:00 PM – 6:00 PM



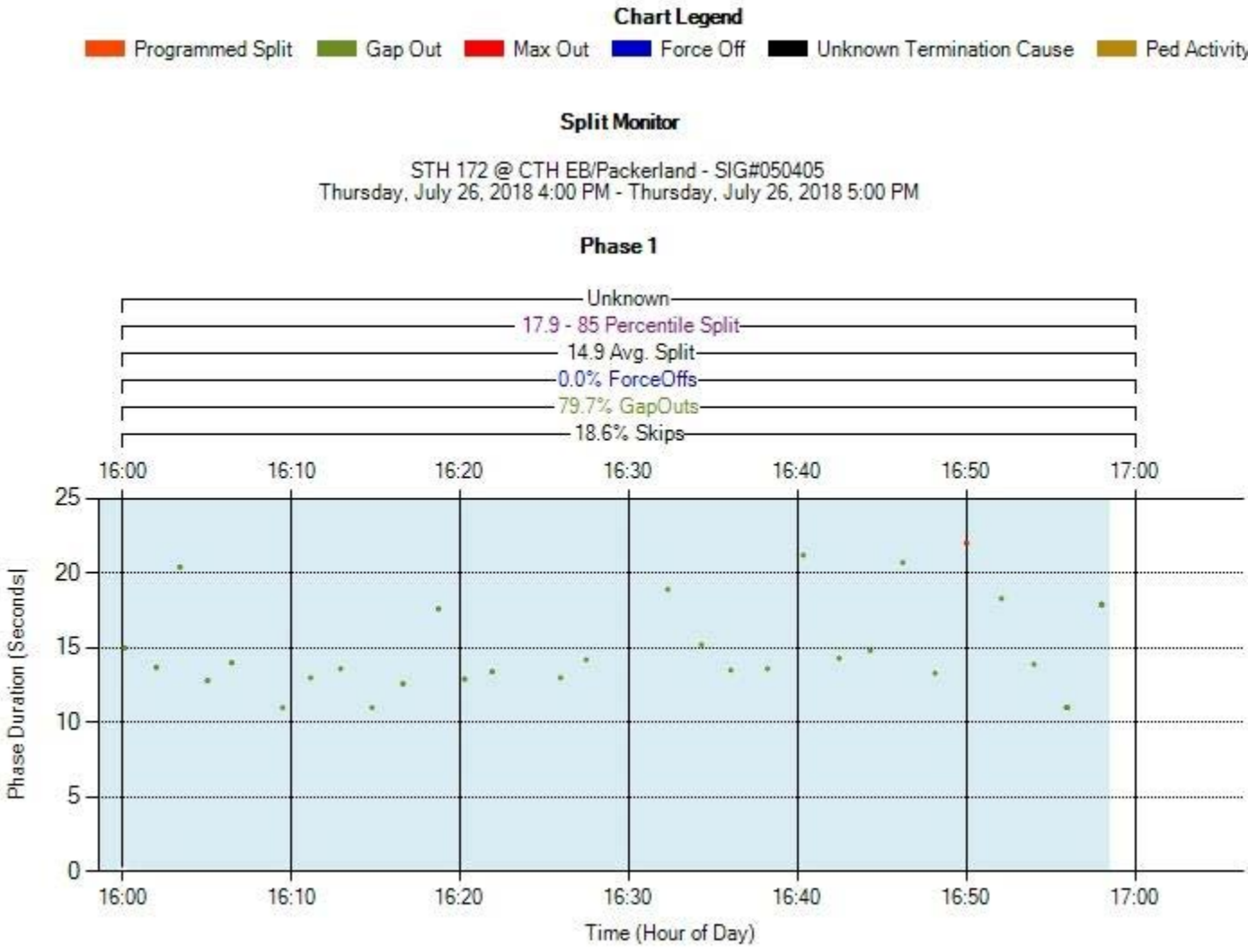
Isolated Signal – WIS 172 & County EB/Packerland Drive
Vistro Timings
7/26/2018 – 3:00 PM – 6:00 PM



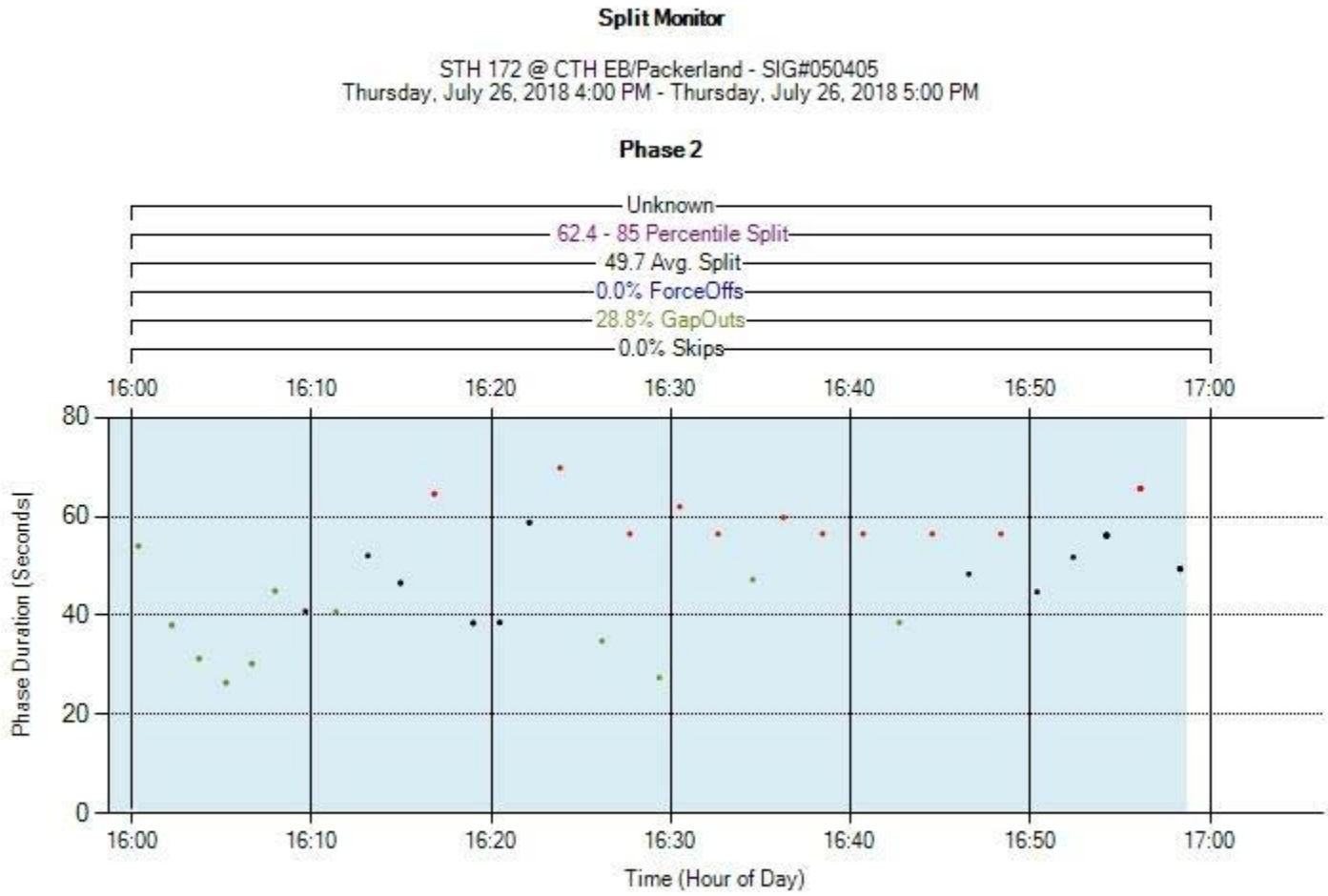
Isolated Signal – WIS 172 & County EB/Packerland Drive
Vistro Timings
7/26/2018 – 3:00 PM – 6:00 PM



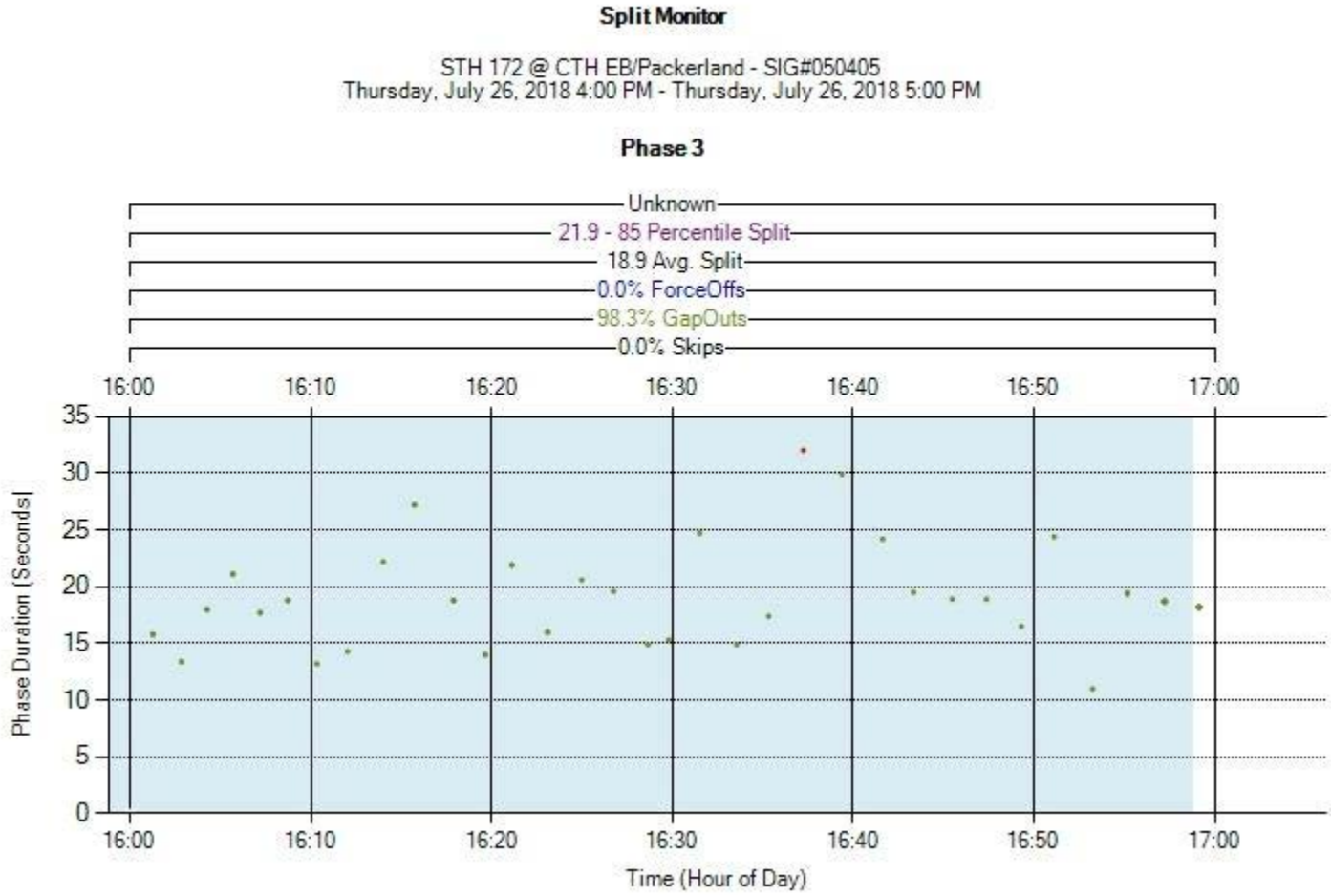
Isolated Signal – WIS 172 & County EB/Packerland Drive
Vistro Timings
7/26/2018 – 4:00 PM – 5:00 PM



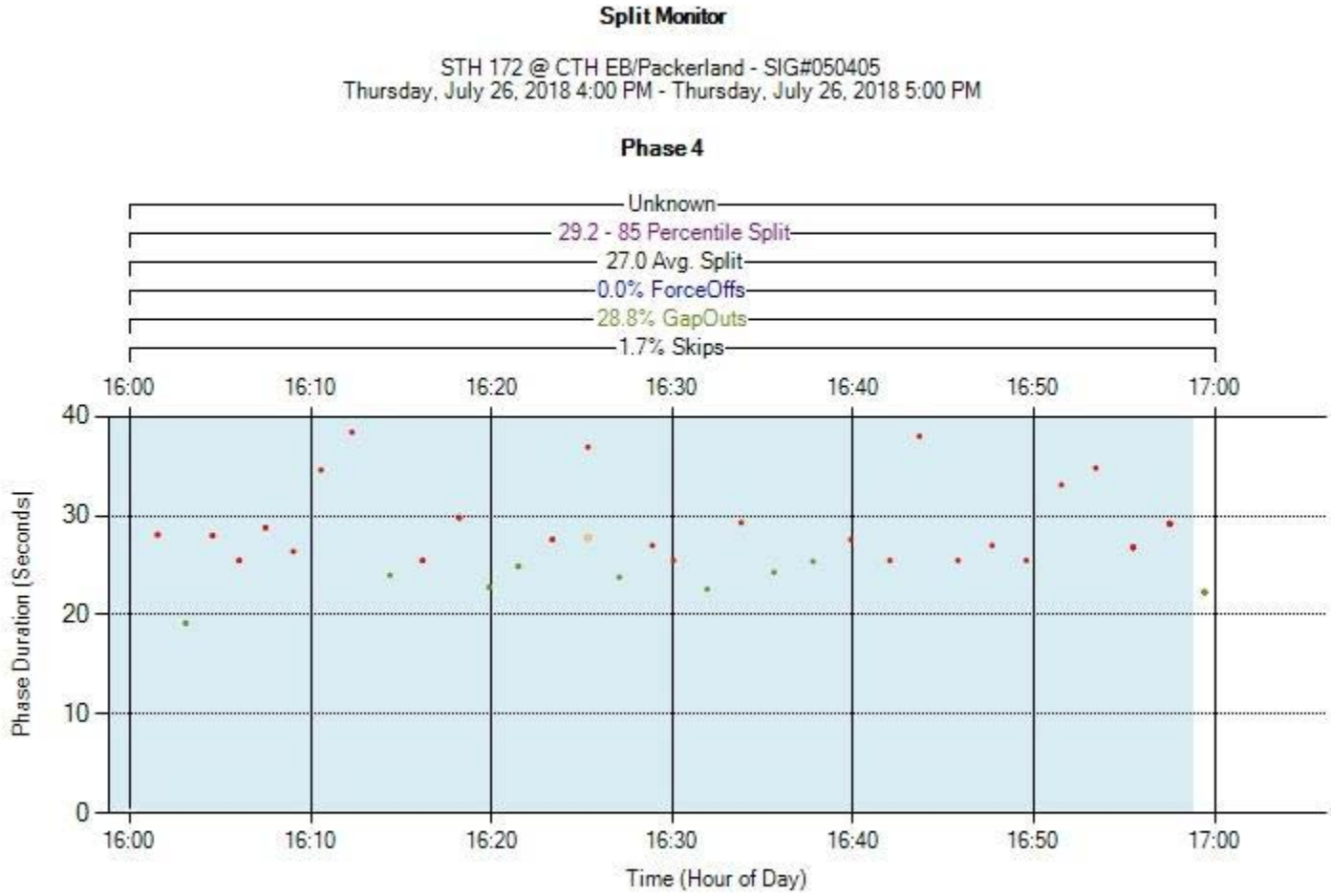
Isolated Signal – WIS 172 & County EB/Packerland Drive
Vistro Timings
7/26/2018 – 4:00 PM – 5:00 PM



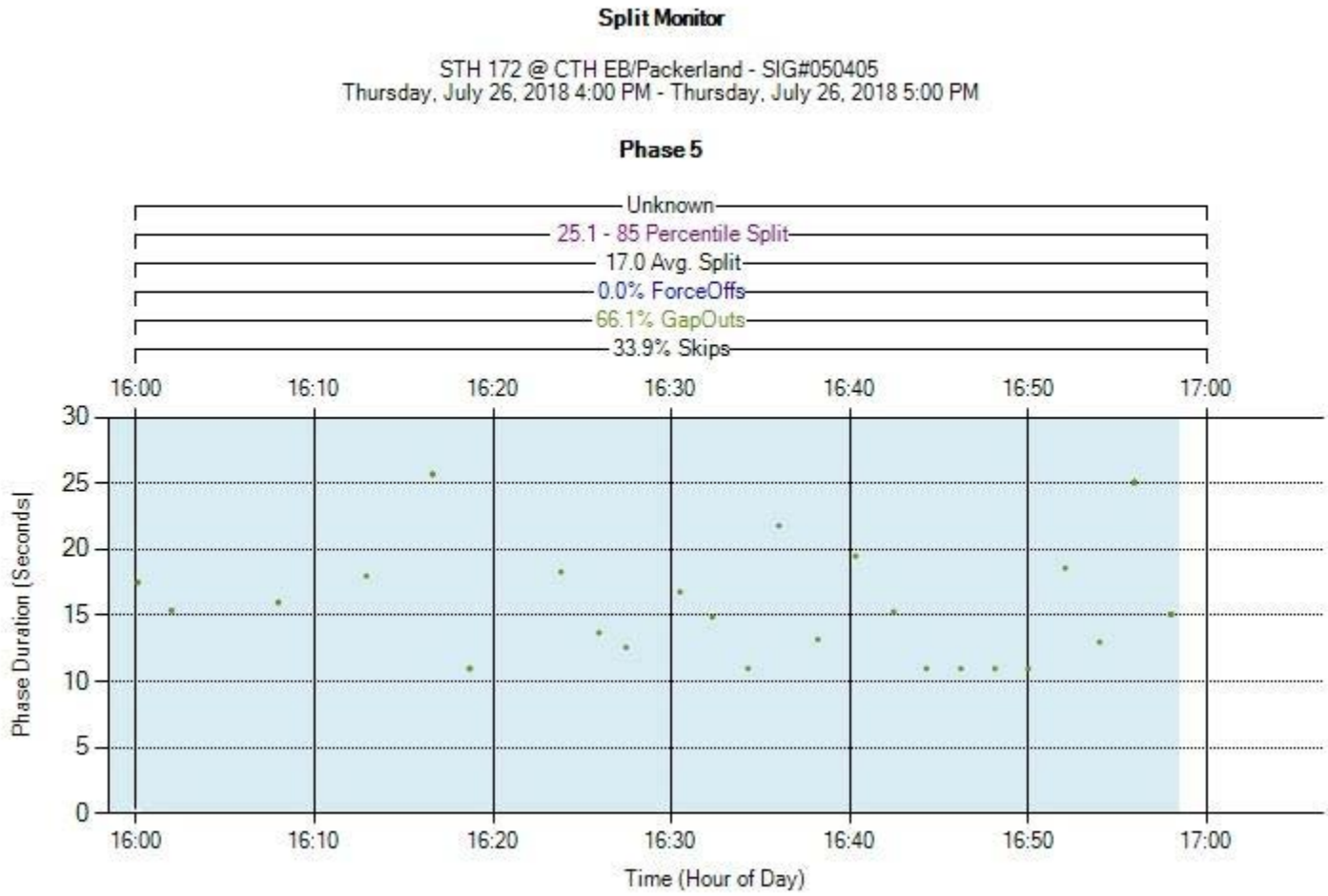
Isolated Signal – WIS 172 & County EB/Packerland Drive
Vistro Timings
7/26/2018 – 4:00 PM – 5:00 PM



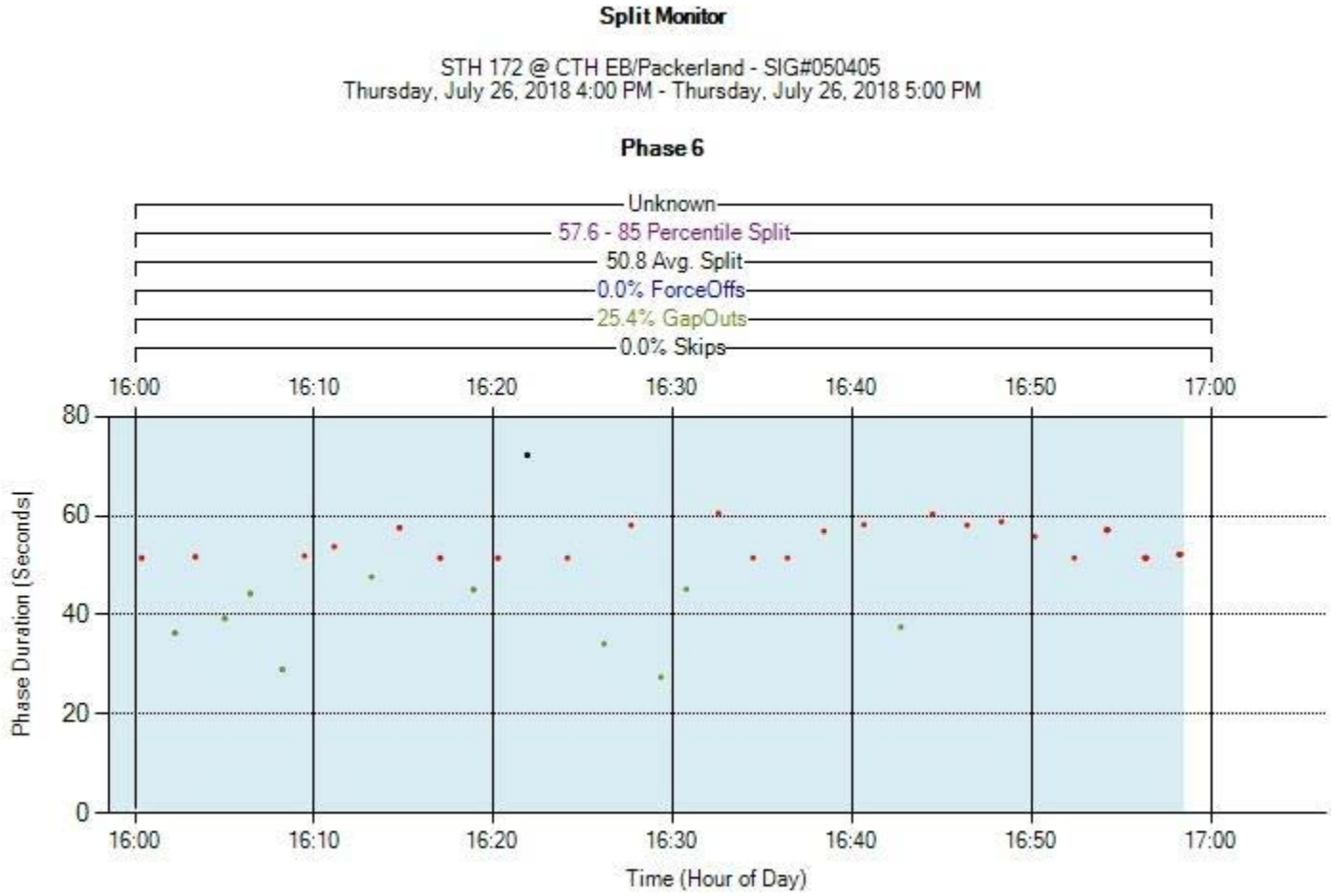
Isolated Signal – WIS 172 & County EB/Packerland Drive
Vistro Timings
7/26/2018 – 4:00 PM – 5:00 PM



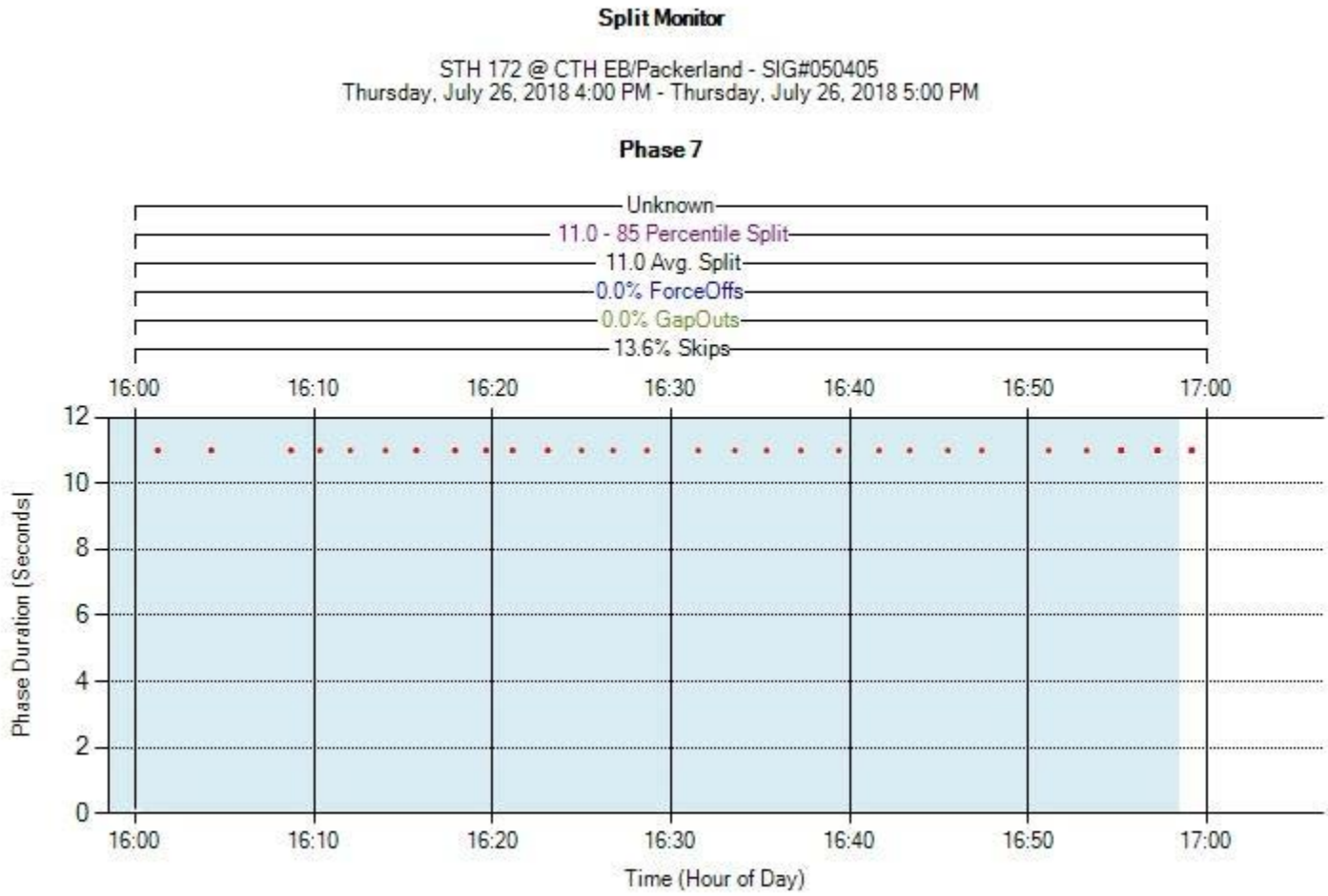
Isolated Signal – WIS 172 & County EB/Packerland Drive
Vistro Timings
7/26/2018 – 4:00 PM – 5:00 PM



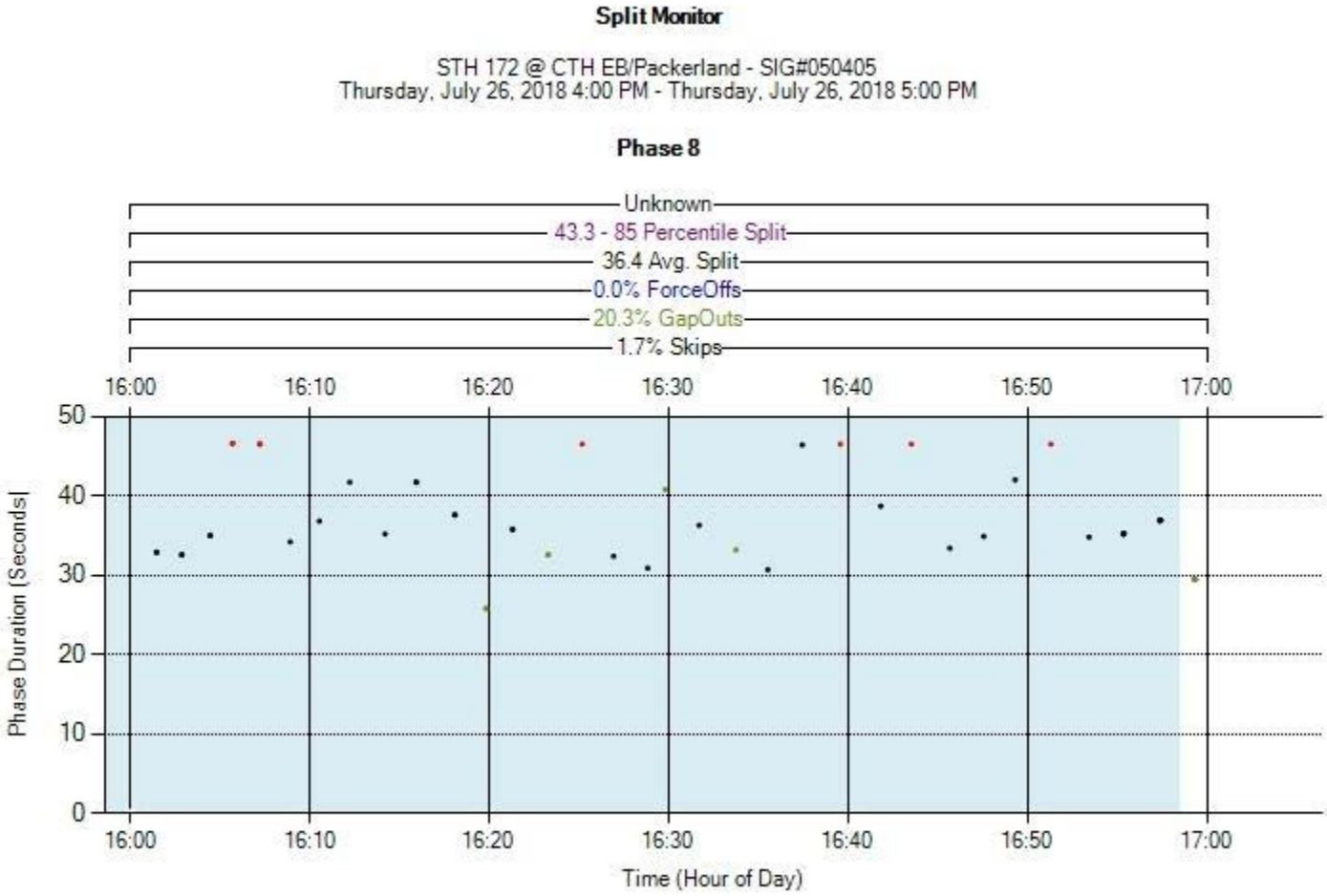
Isolated Signal – WIS 172 & County EB/Packerland Drive
Vistro Timings
7/26/2018 – 4:00 PM – 5:00 PM



Isolated Signal – WIS 172 & County EB/Packerland Drive
Vistro Timings
7/26/2018 – 4:00 PM – 5:00 PM

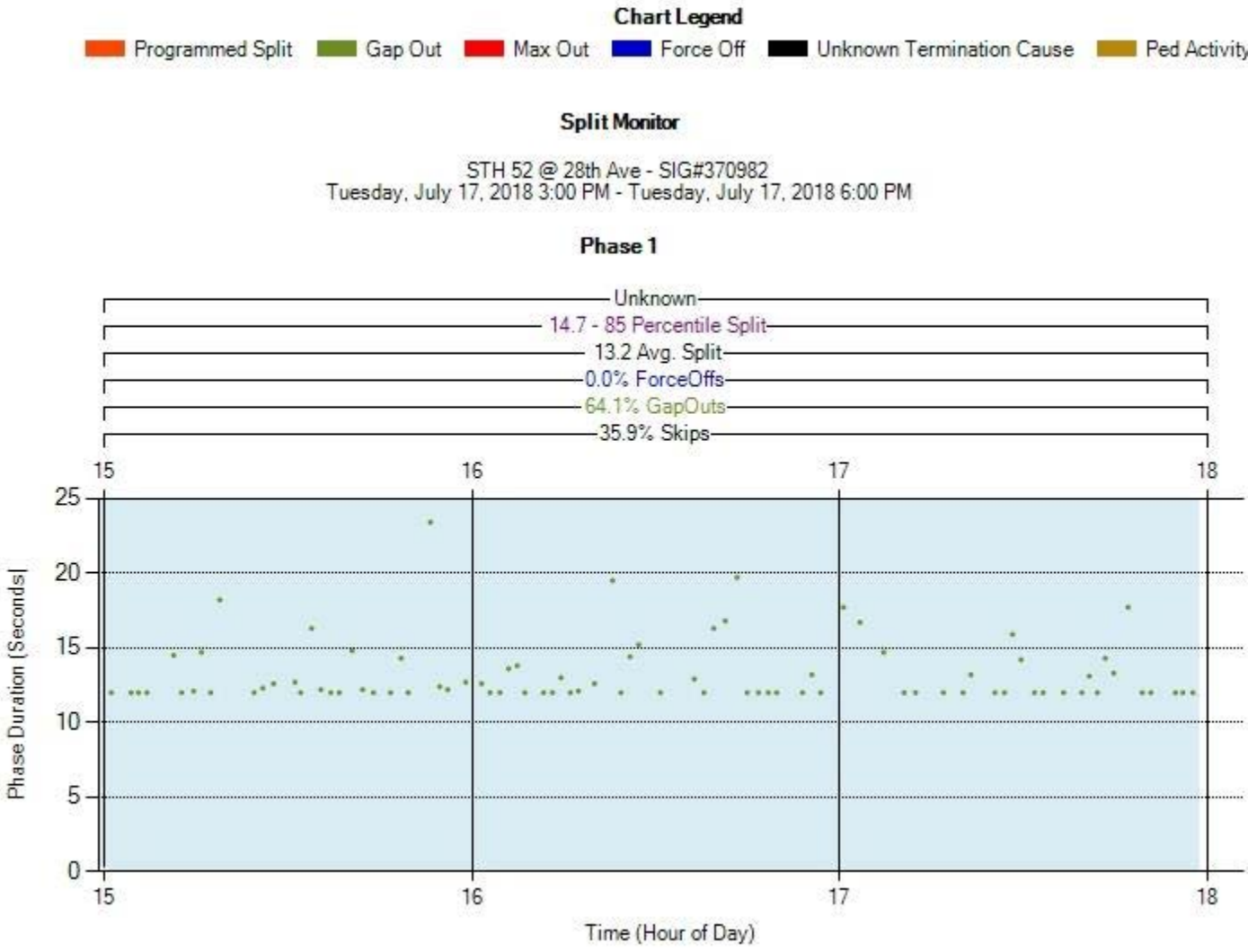


Isolated Signal – WIS 172 & County EB/Packerland Drive
Vistro Timings
7/26/2018 – 4:00 PM – 5:00 PM

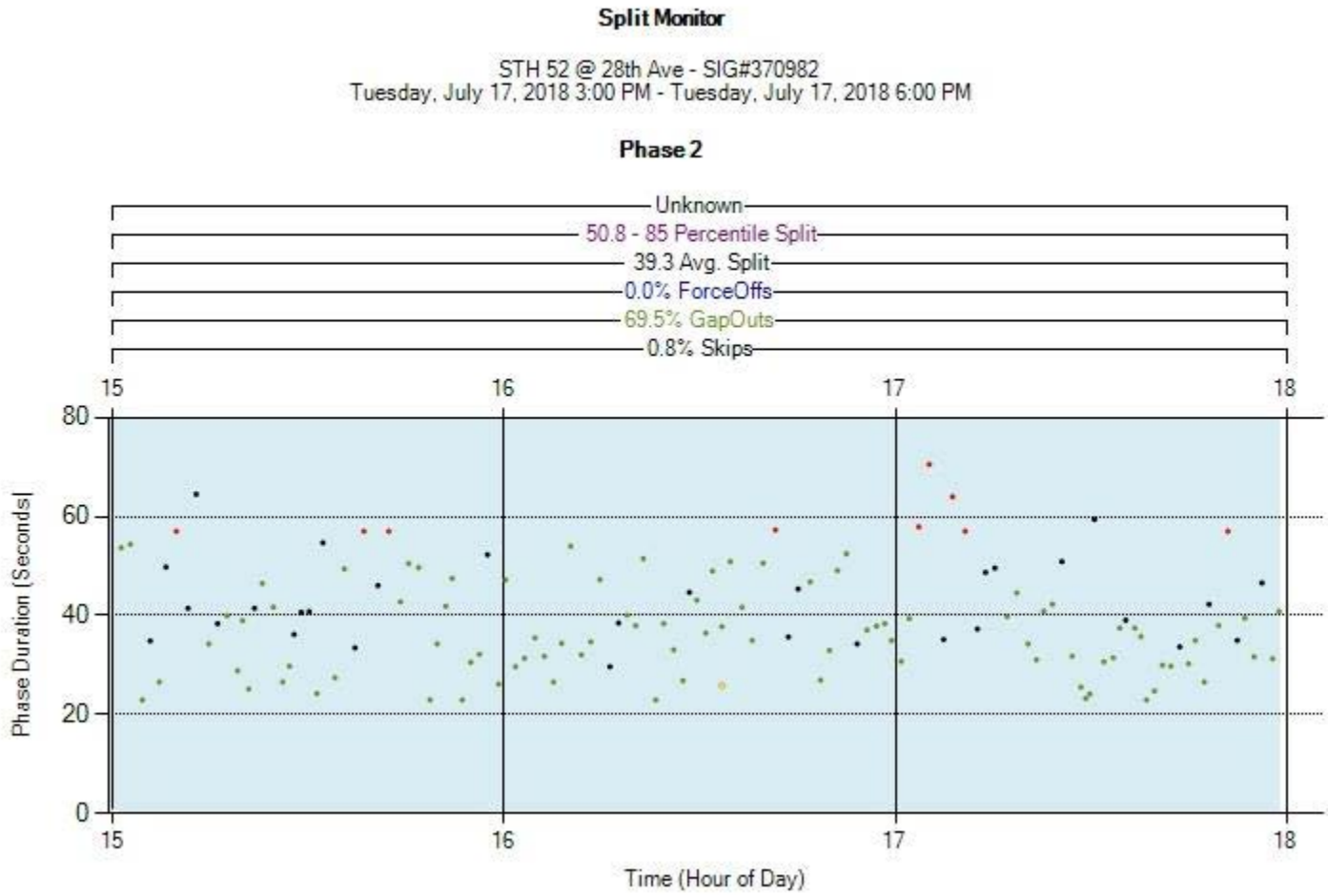


WisBOOM Outputs
WIS 52 & 28th Avenue
Existing Timings

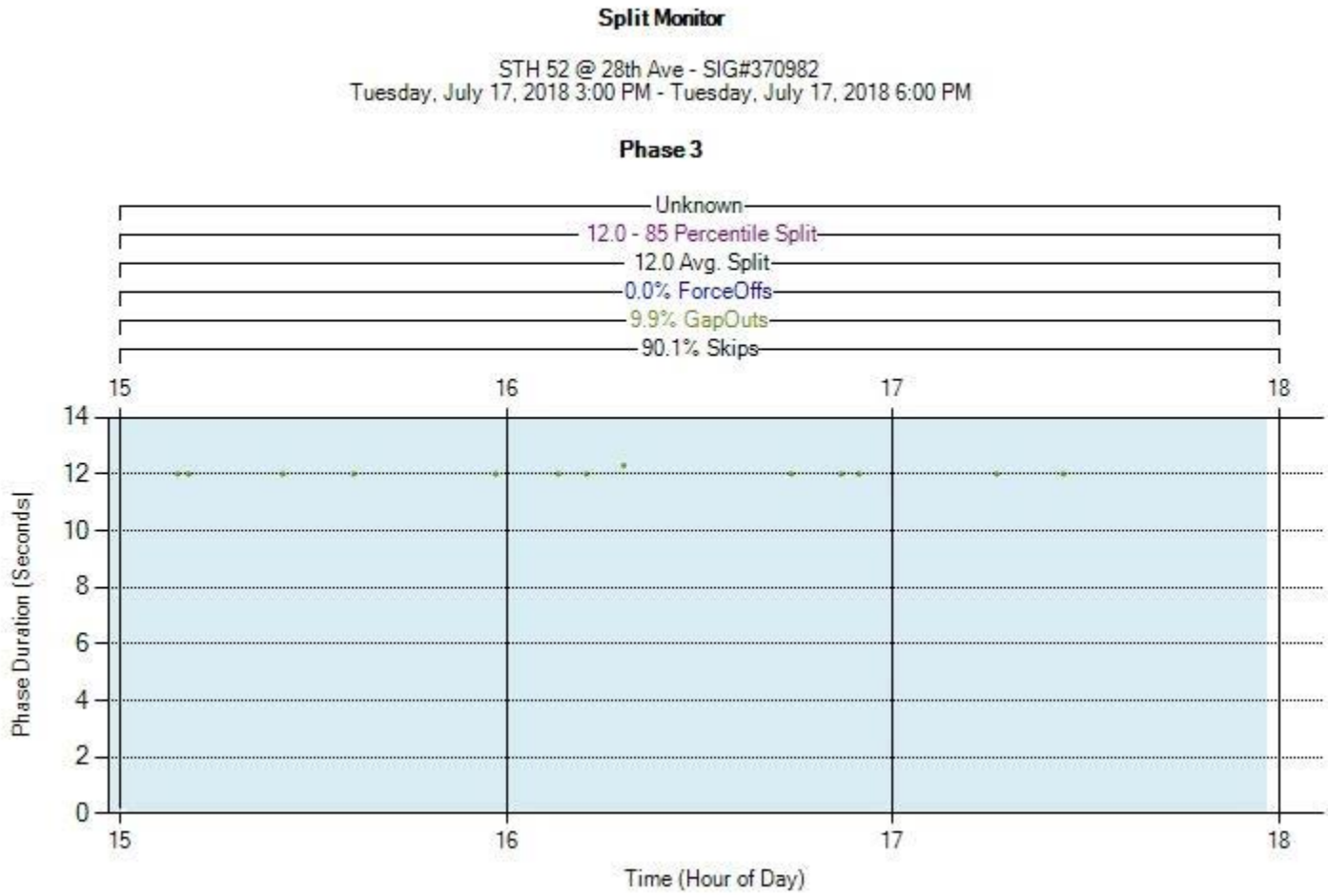
Isolated Signal – WIS 52 & 28th Avenue
Baseline Timings
7/17/2018 – 3:00 PM – 6:00 PM



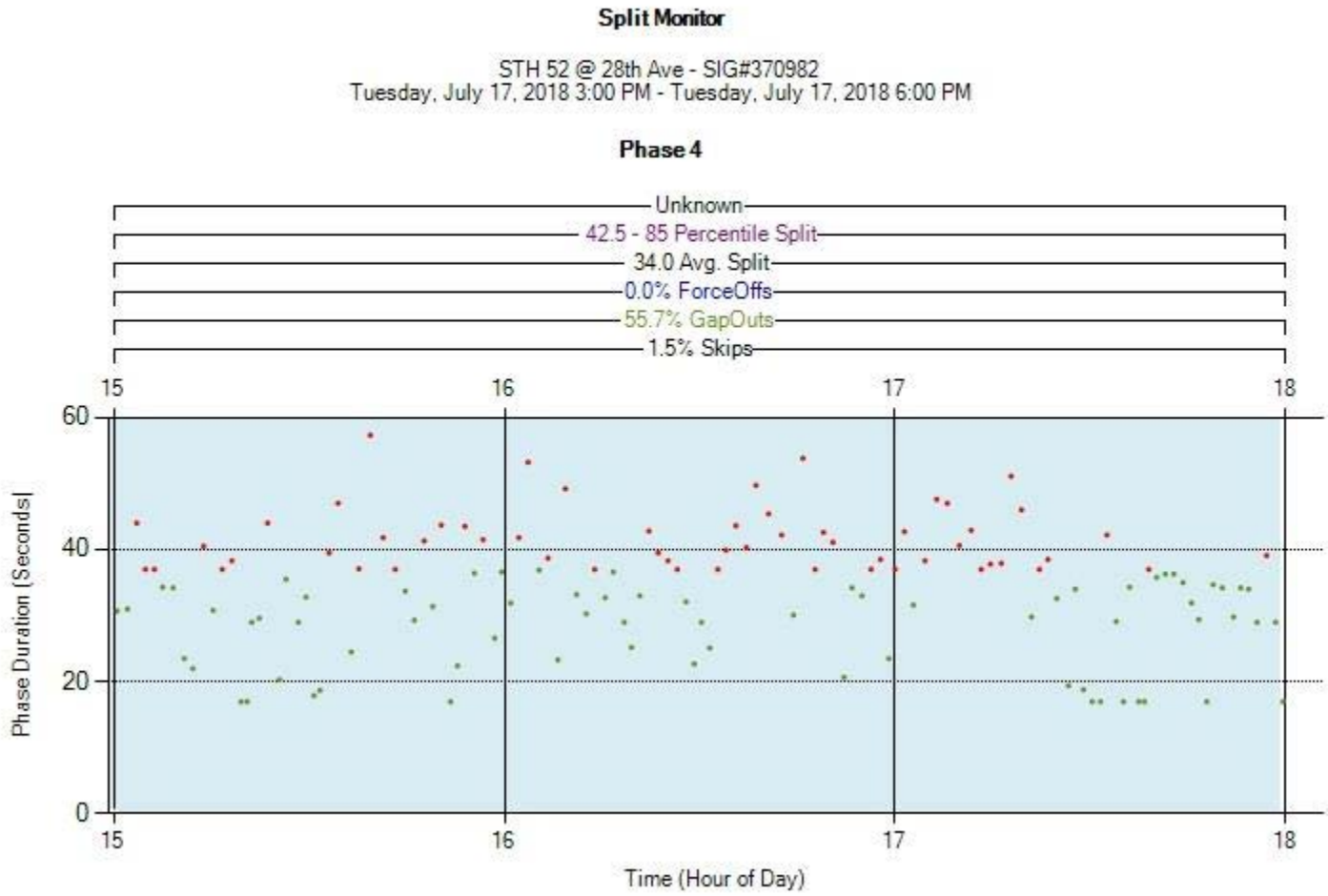
Isolated Signal – WIS 52 & 28th Avenue
Baseline Timings
7/17/2018 – 3:00 PM – 6:00 PM



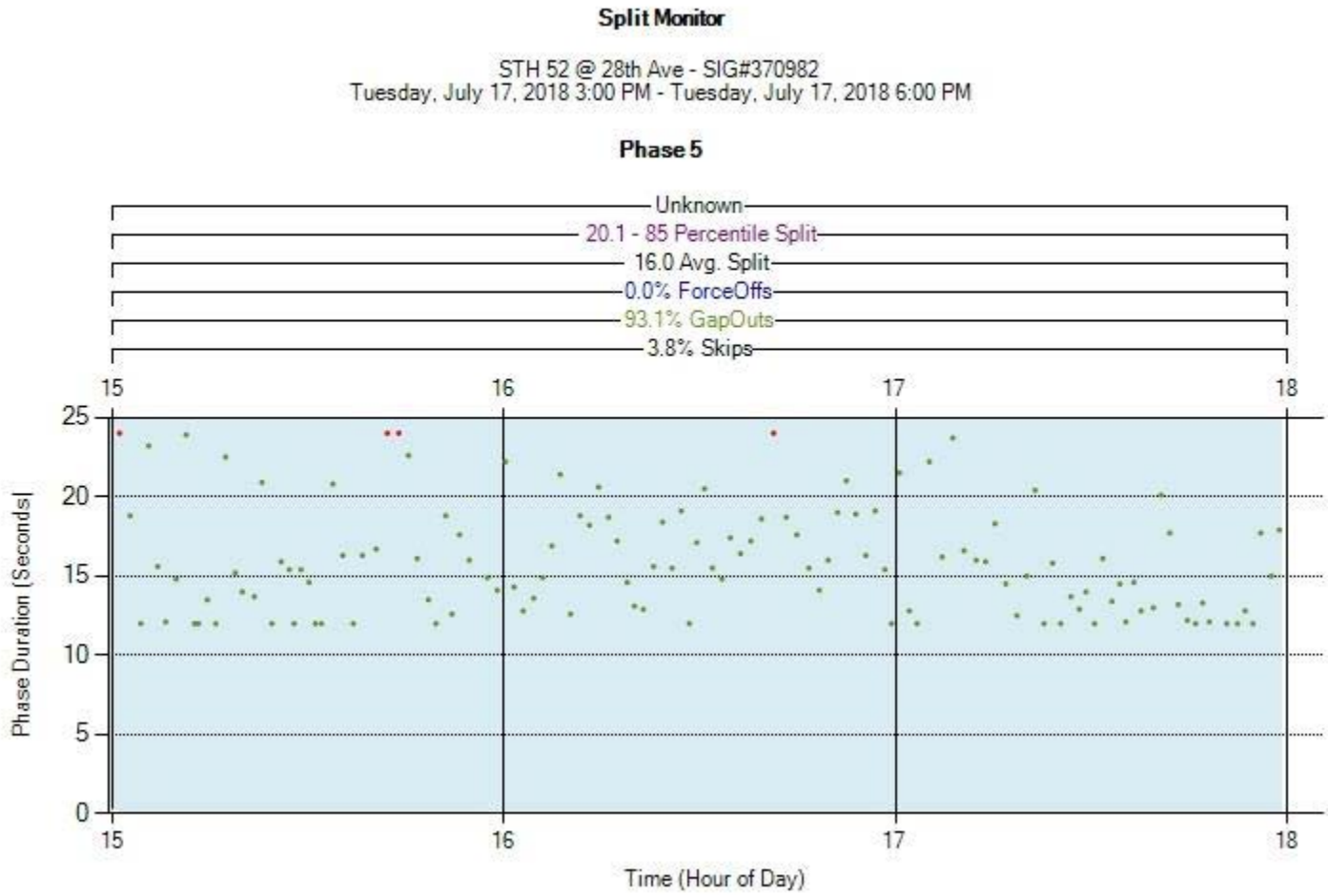
Isolated Signal – WIS 52 & 28th Avenue
Baseline Timings
7/17/2018 – 3:00 PM – 6:00 PM



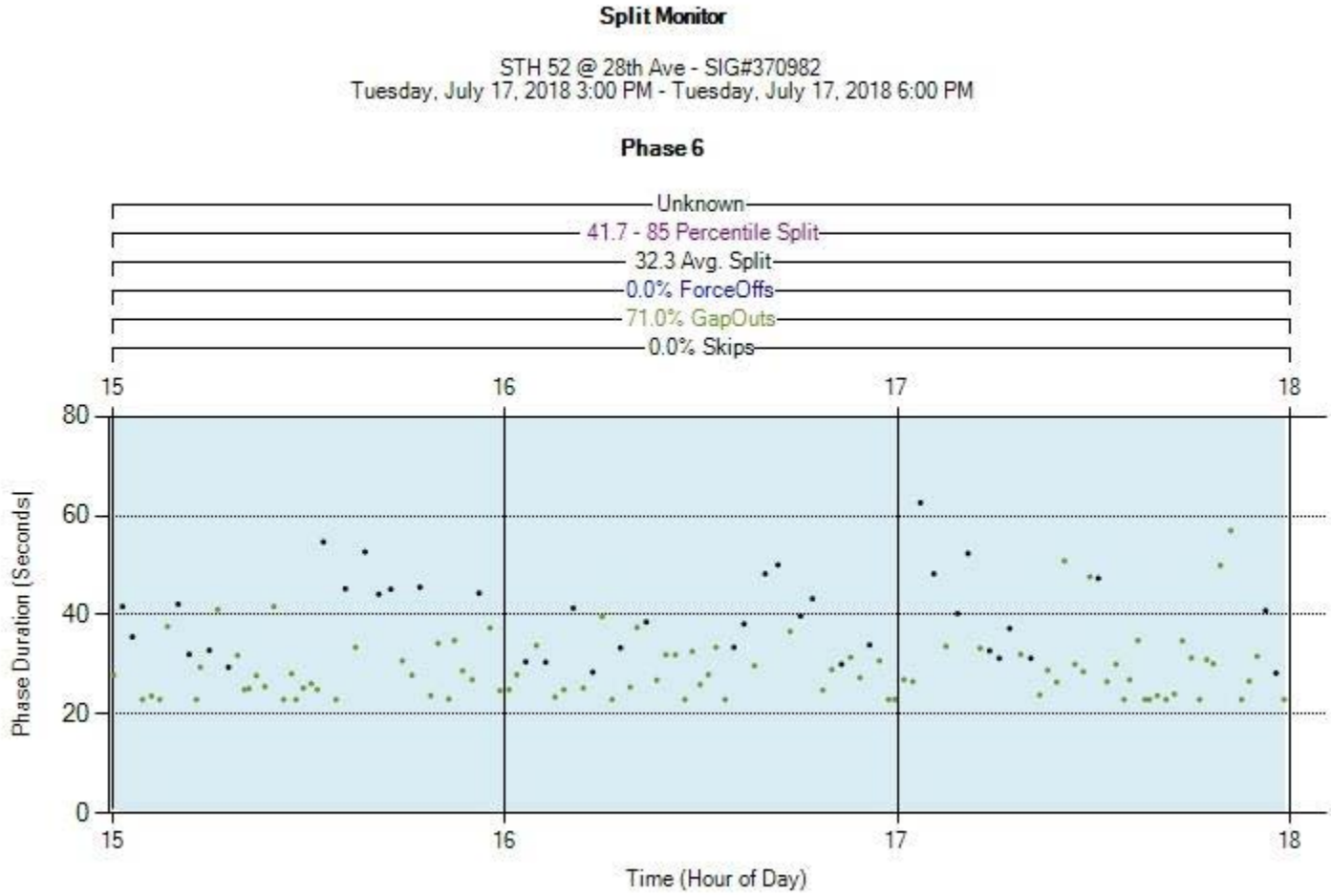
Isolated Signal – WIS 52 & 28th Avenue
Baseline Timings
7/17/2018 – 3:00 PM – 6:00 PM



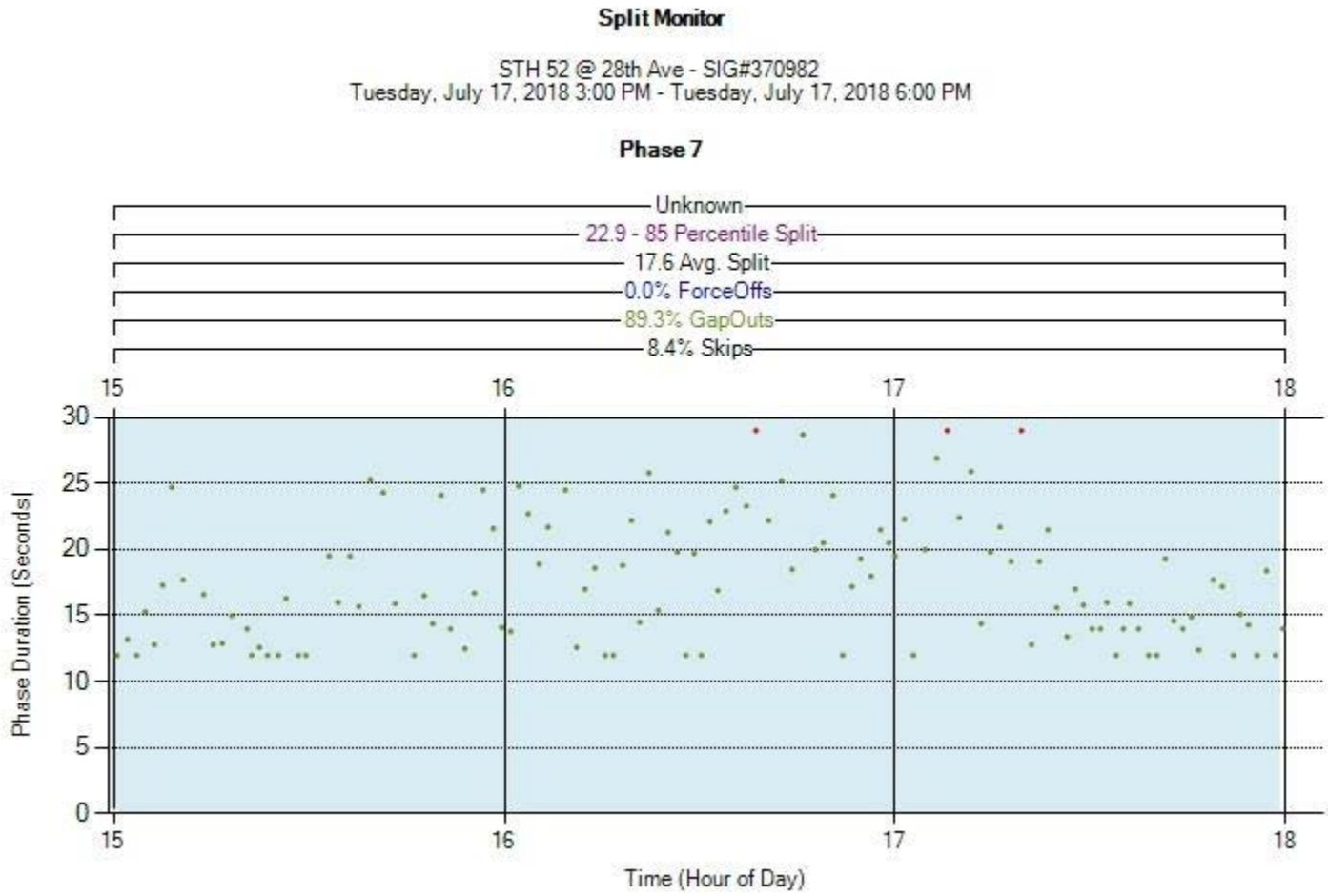
Isolated Signal – WIS 52 & 28th Avenue
Baseline Timings
7/17/2018 – 3:00 PM – 6:00 PM



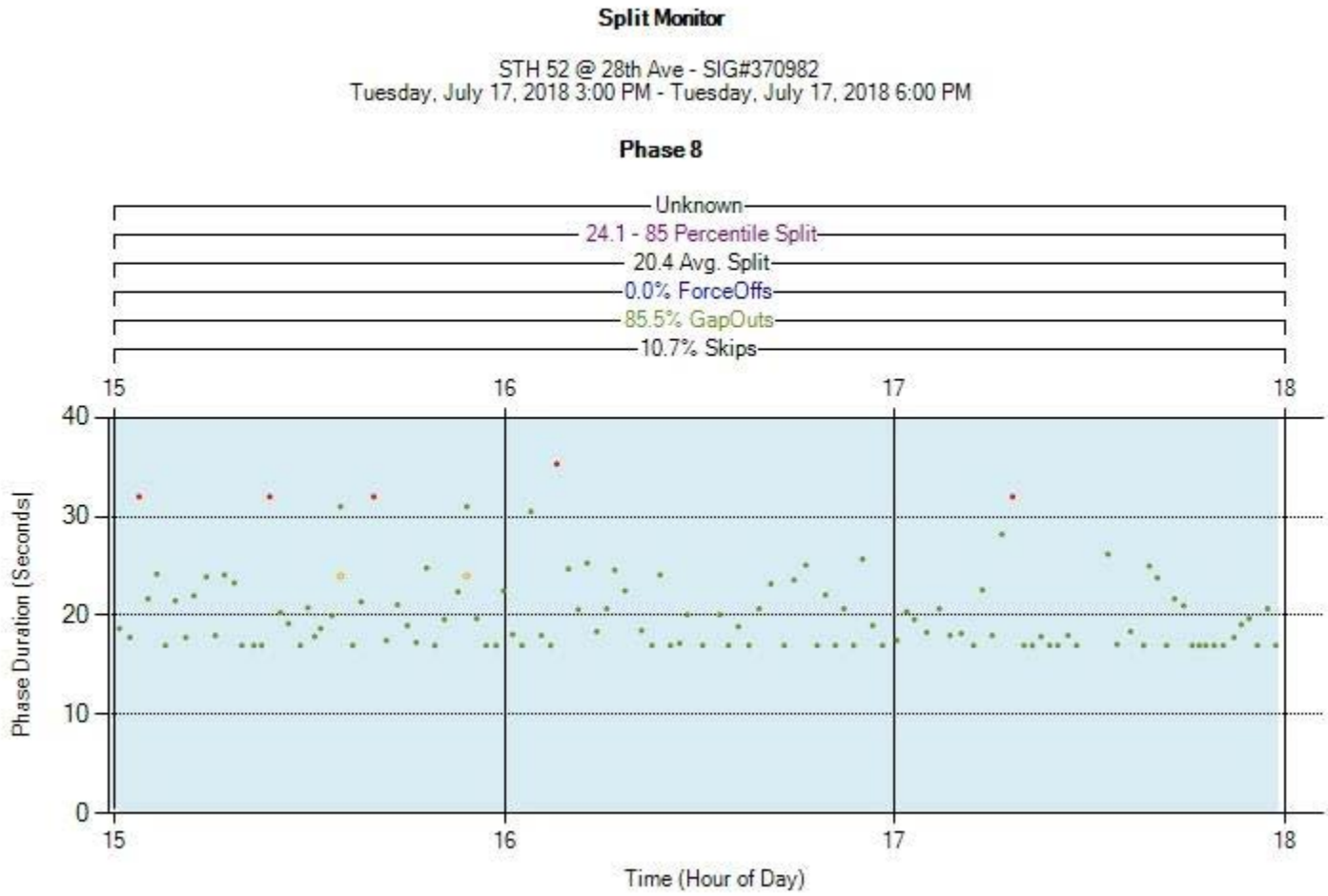
Isolated Signal – WIS 52 & 28th Avenue
Baseline Timings
7/17/2018 – 3:00 PM – 6:00 PM



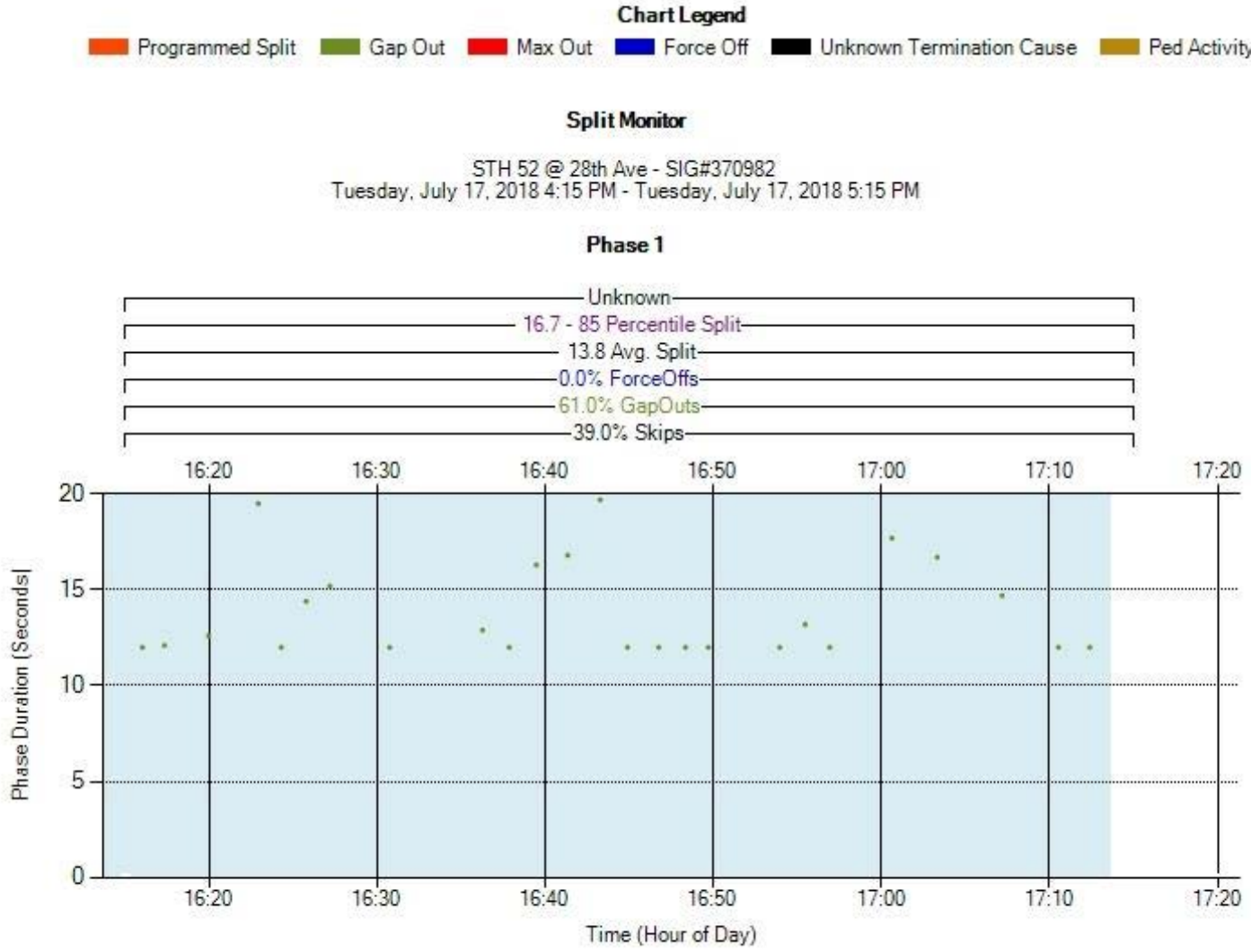
Isolated Signal – WIS 52 & 28th Avenue
Baseline Timings
7/17/2018 – 3:00 PM – 6:00 PM



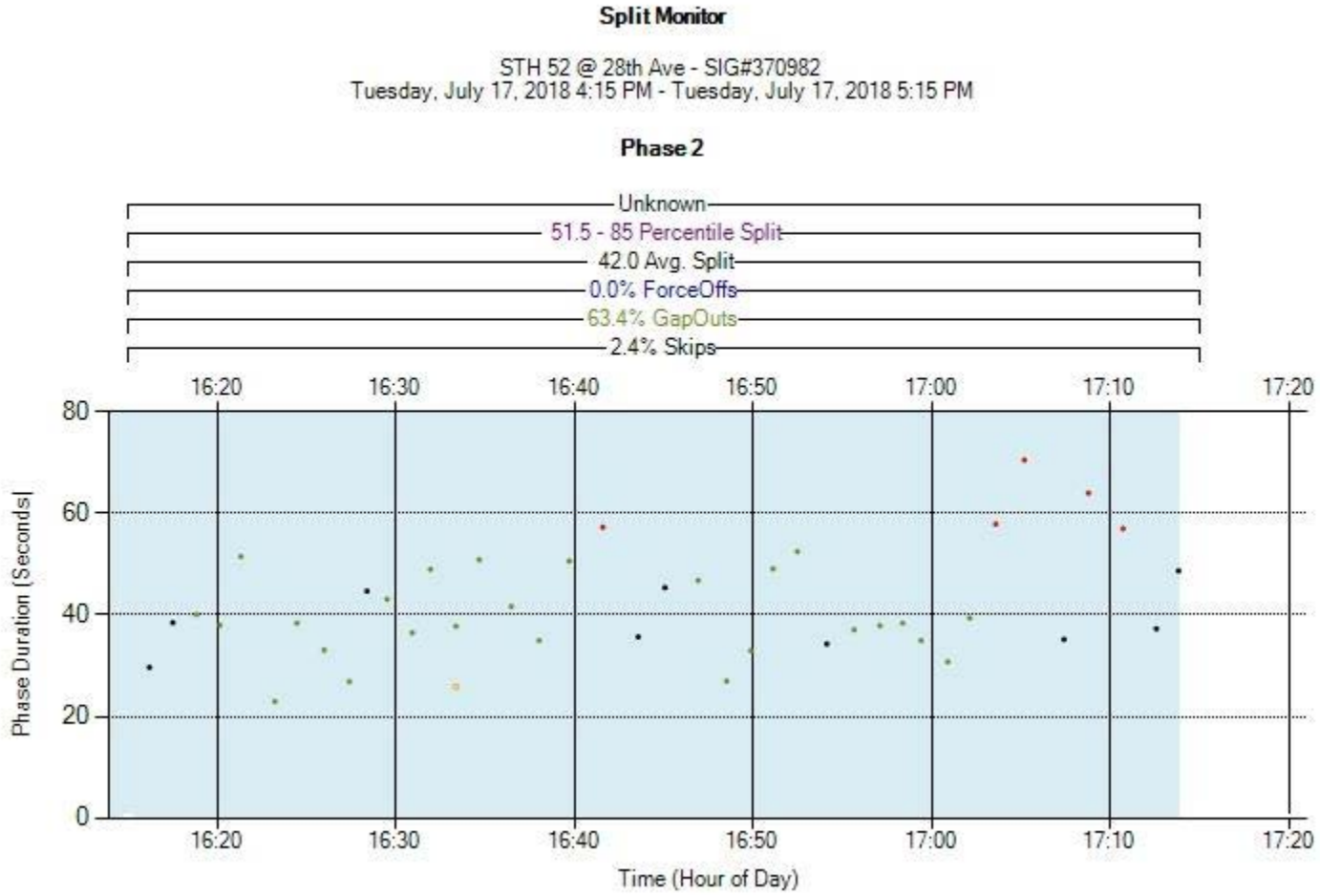
Isolated Signal – WIS 52 & 28th Avenue
Baseline Timings
7/17/2018 – 3:00 PM – 6:00 PM



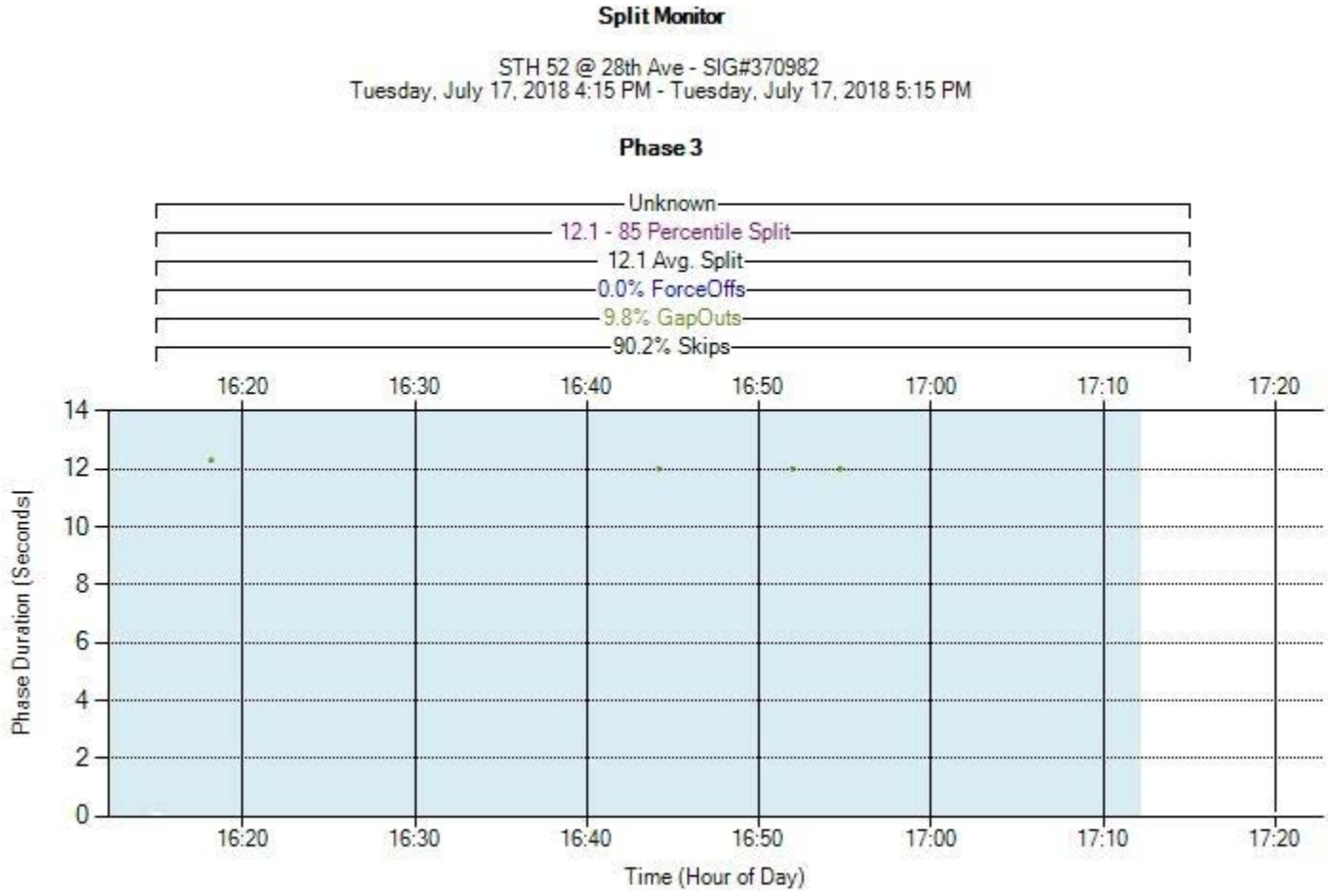
Isolated Signal – WIS 52 & 28th Avenue
Baseline Timings
7/17/2018 – 4:15 PM – 5:15 PM



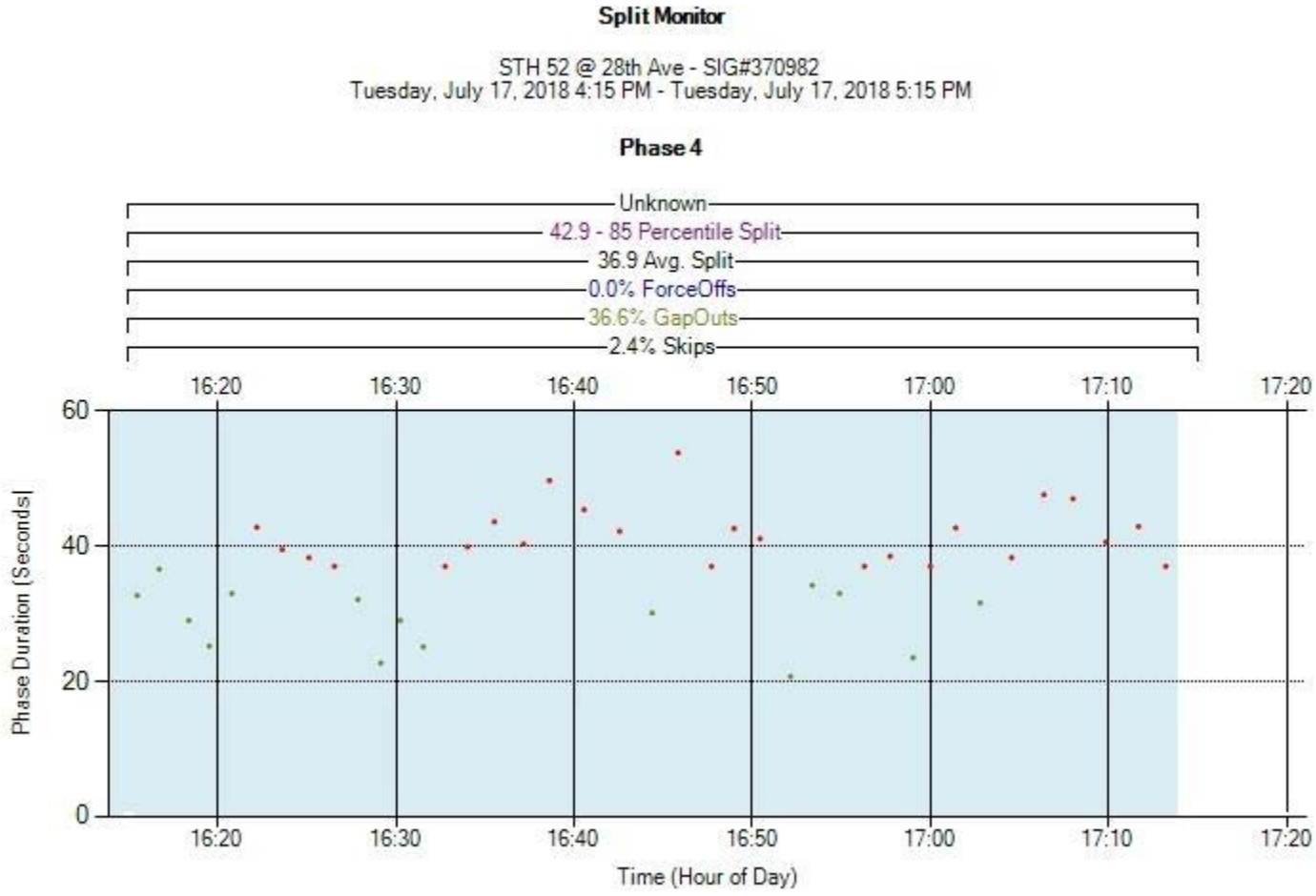
Isolated Signal – WIS 52 & 28th Avenue
Baseline Timings
7/17/2018 – 4:15 PM – 5:15 PM



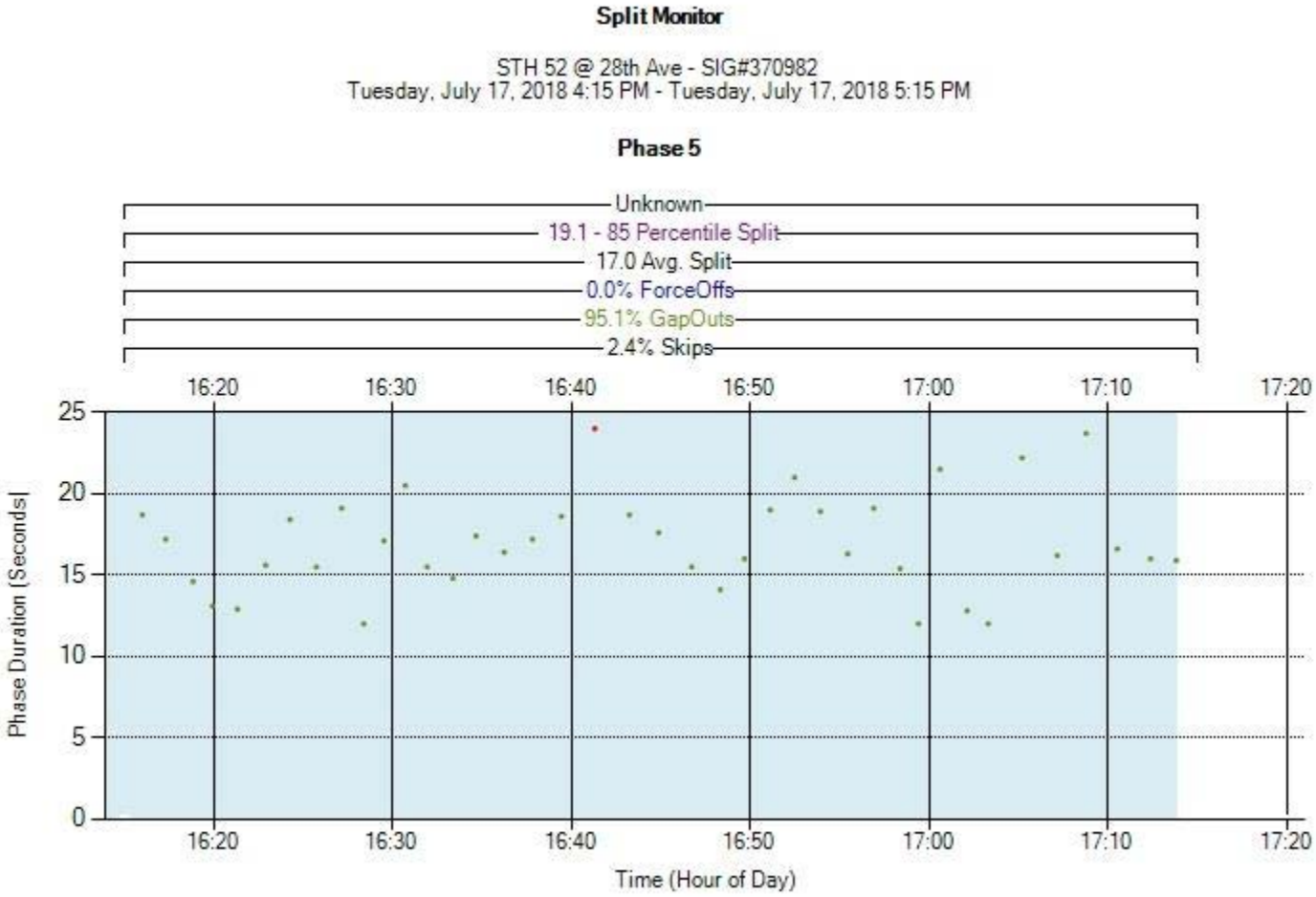
Isolated Signal – WIS 52 & 28th Avenue
Baseline Timings
7/17/2018 – 4:15 PM – 5:15 PM



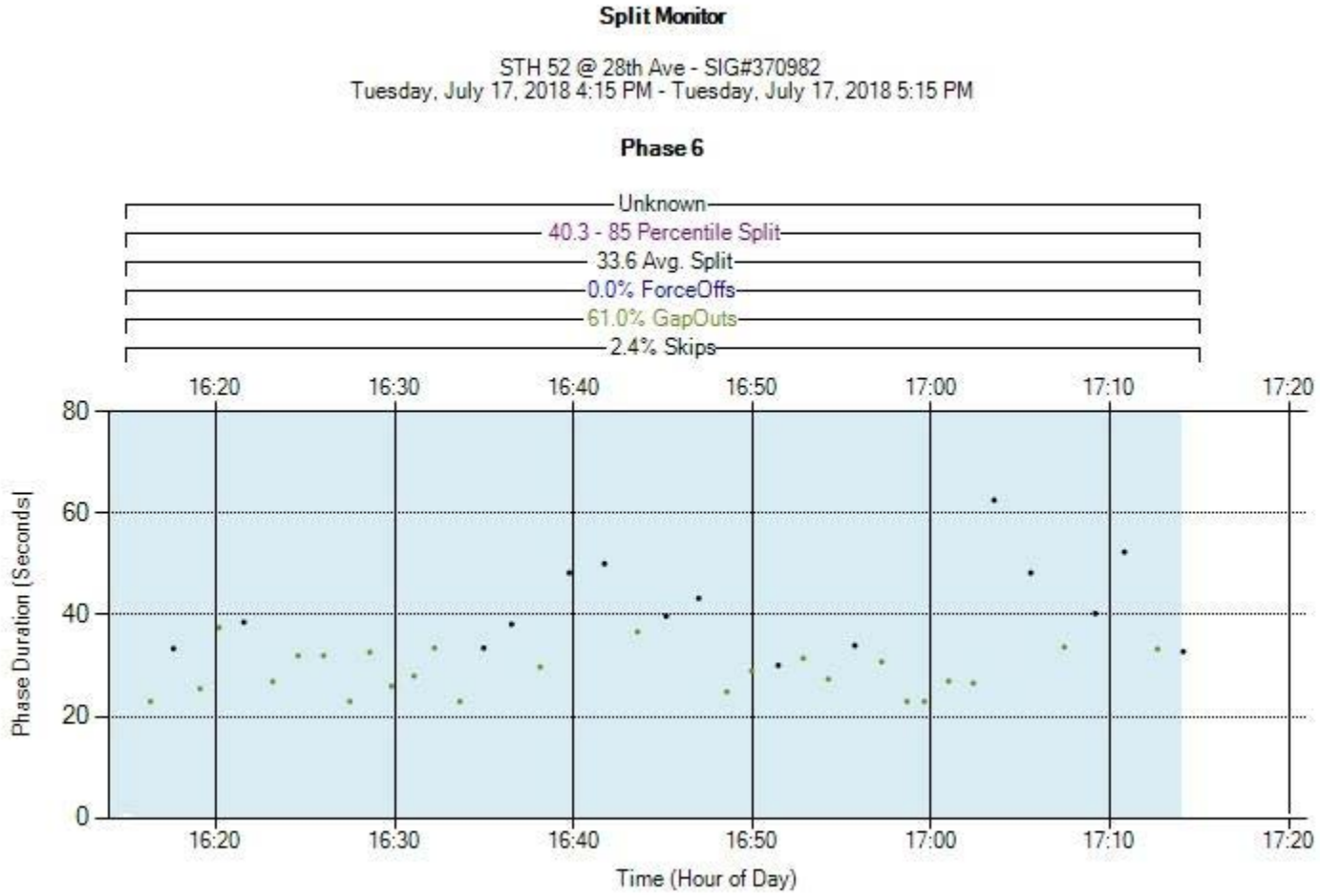
Isolated Signal – WIS 52 & 28th Avenue
Baseline Timings
7/17/2018 – 4:15 PM – 5:15 PM



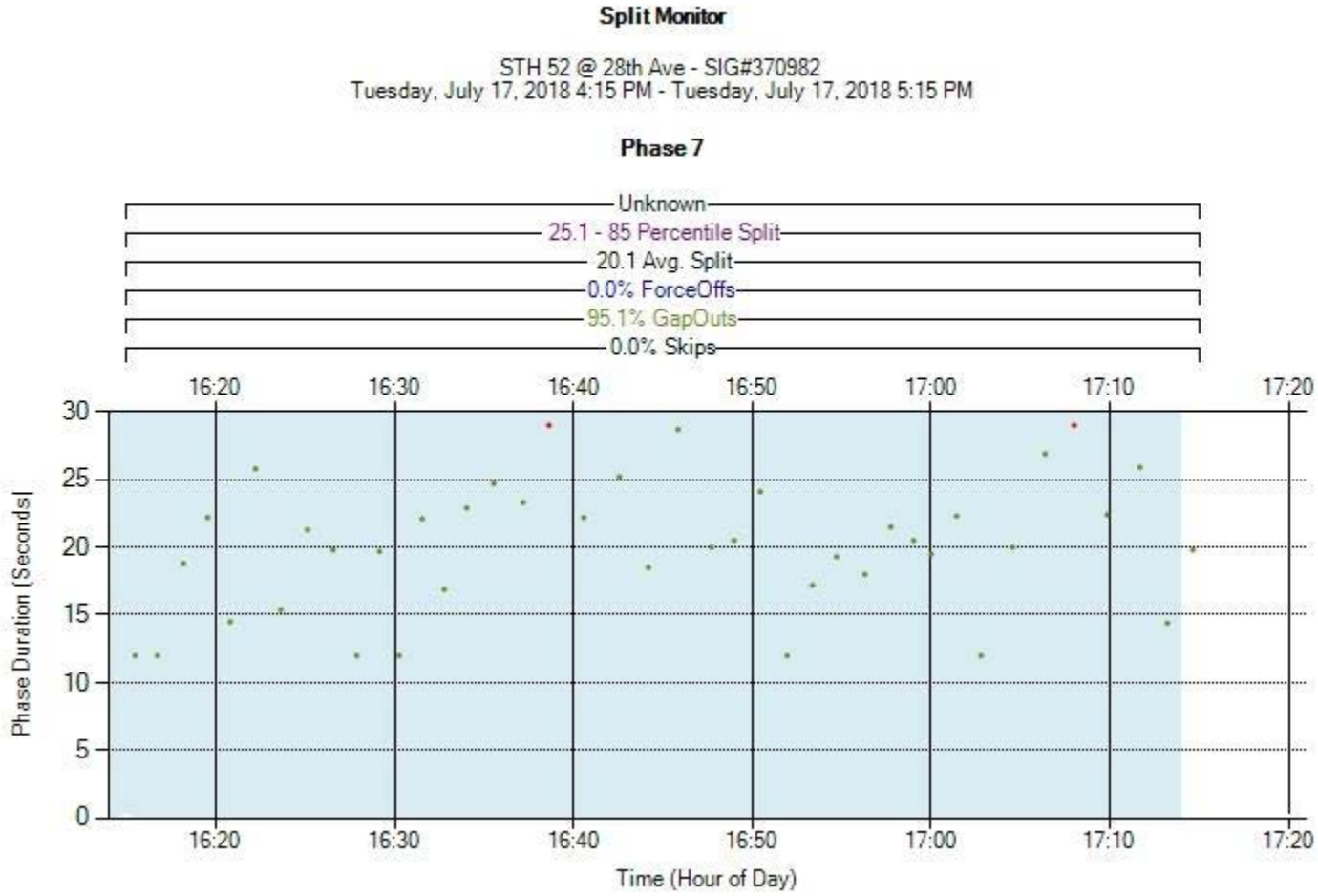
Isolated Signal – WIS 52 & 28th Avenue
Baseline Timings
7/17/2018 – 4:15 PM – 5:15 PM



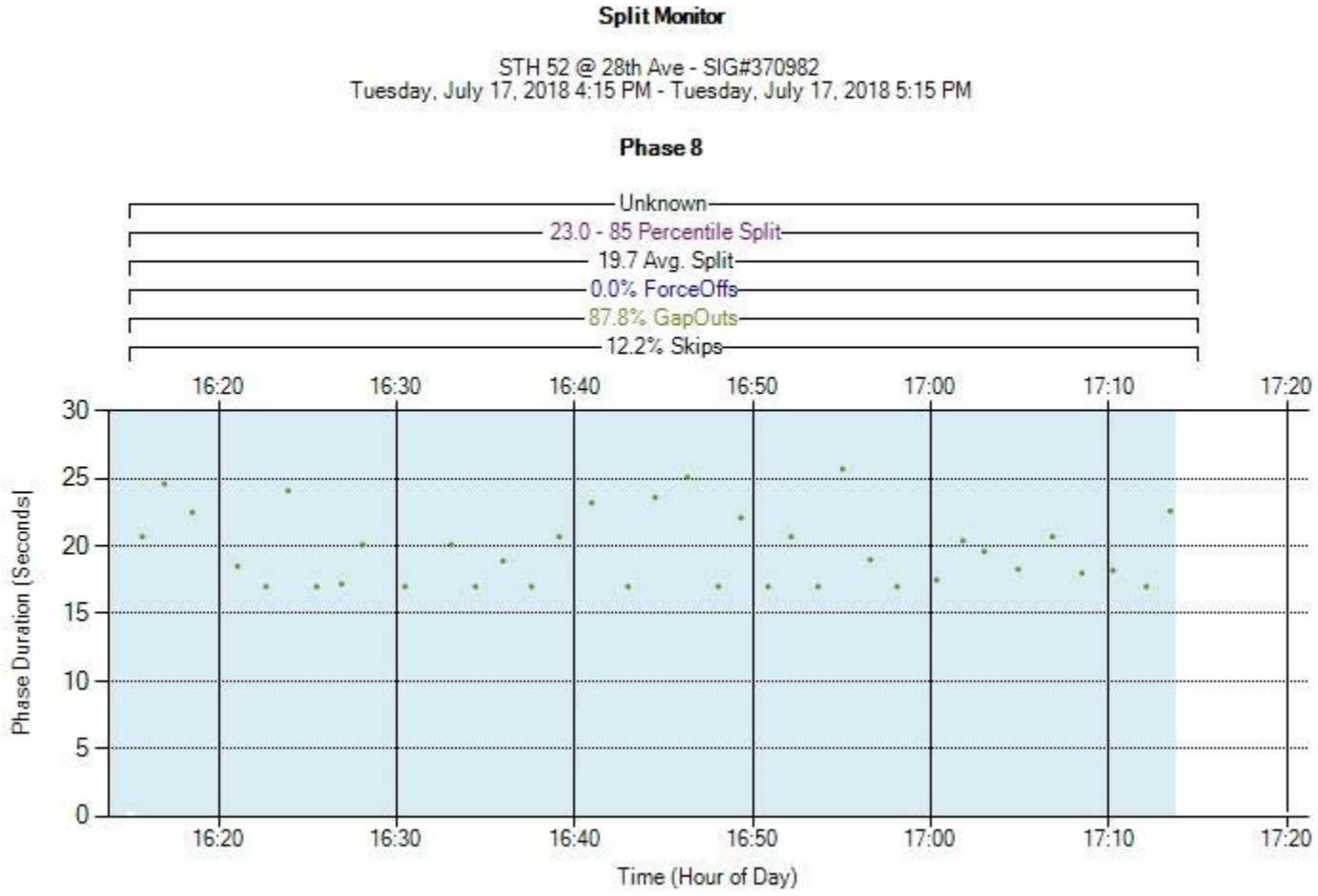
Isolated Signal – WIS 52 & 28th Avenue
Baseline Timings
7/17/2018 – 4:15 PM – 5:15 PM



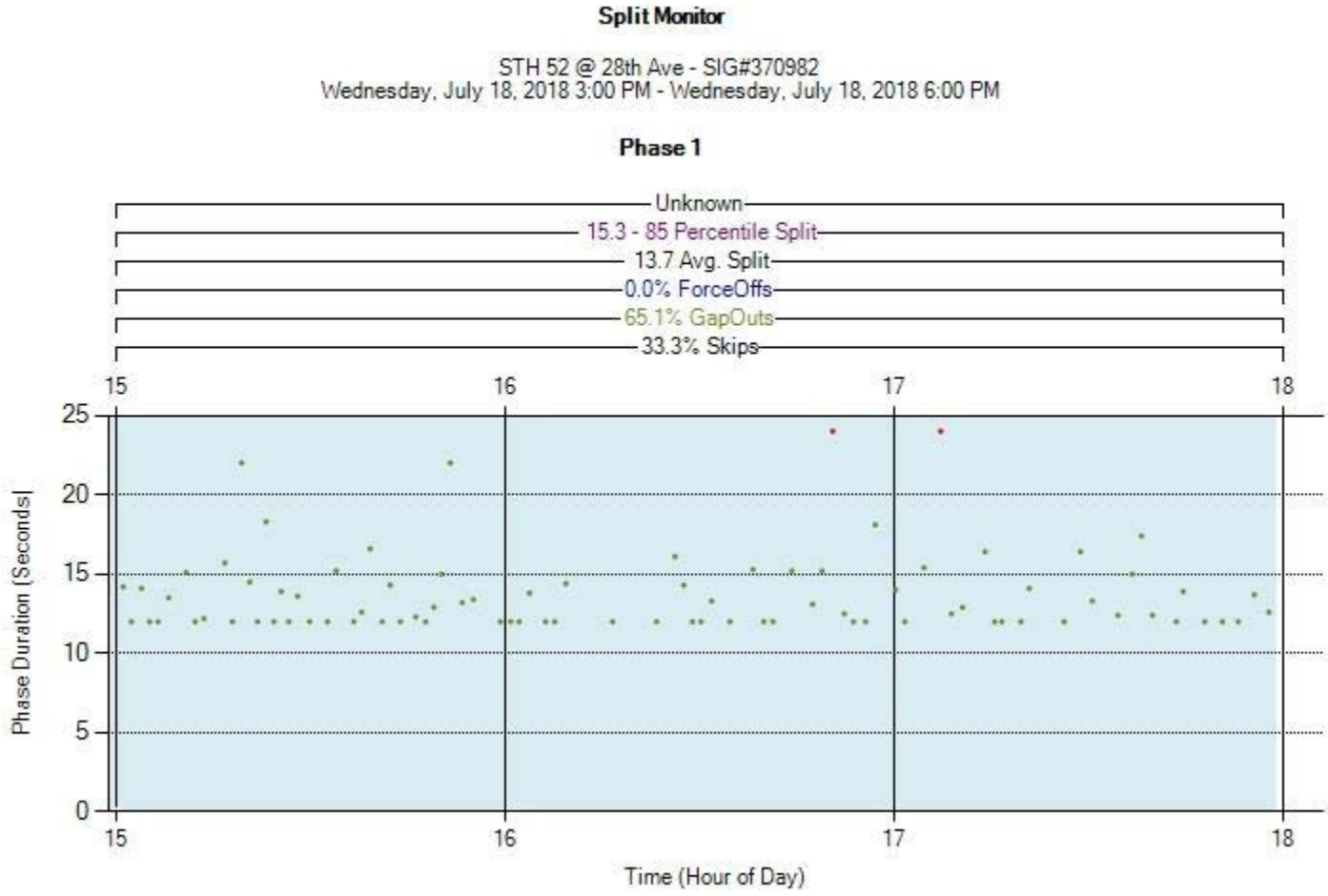
Isolated Signal – WIS 52 & 28th Avenue
Baseline Timings
7/17/2018 – 4:15 PM – 5:15 PM



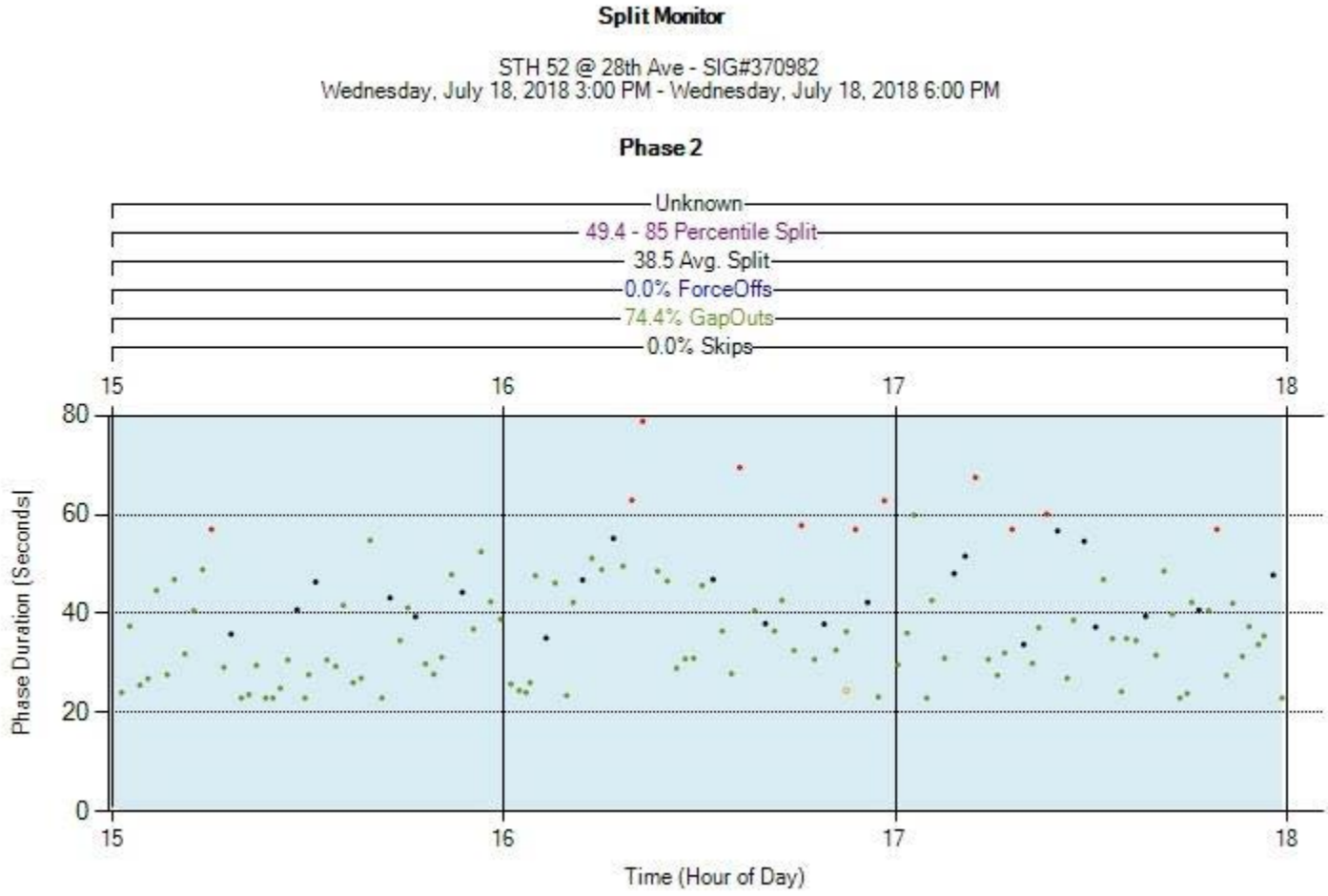
Isolated Signal – WIS 52 & 28th Avenue
Baseline Timings
7/17/2018 – 4:15 PM – 5:15 PM



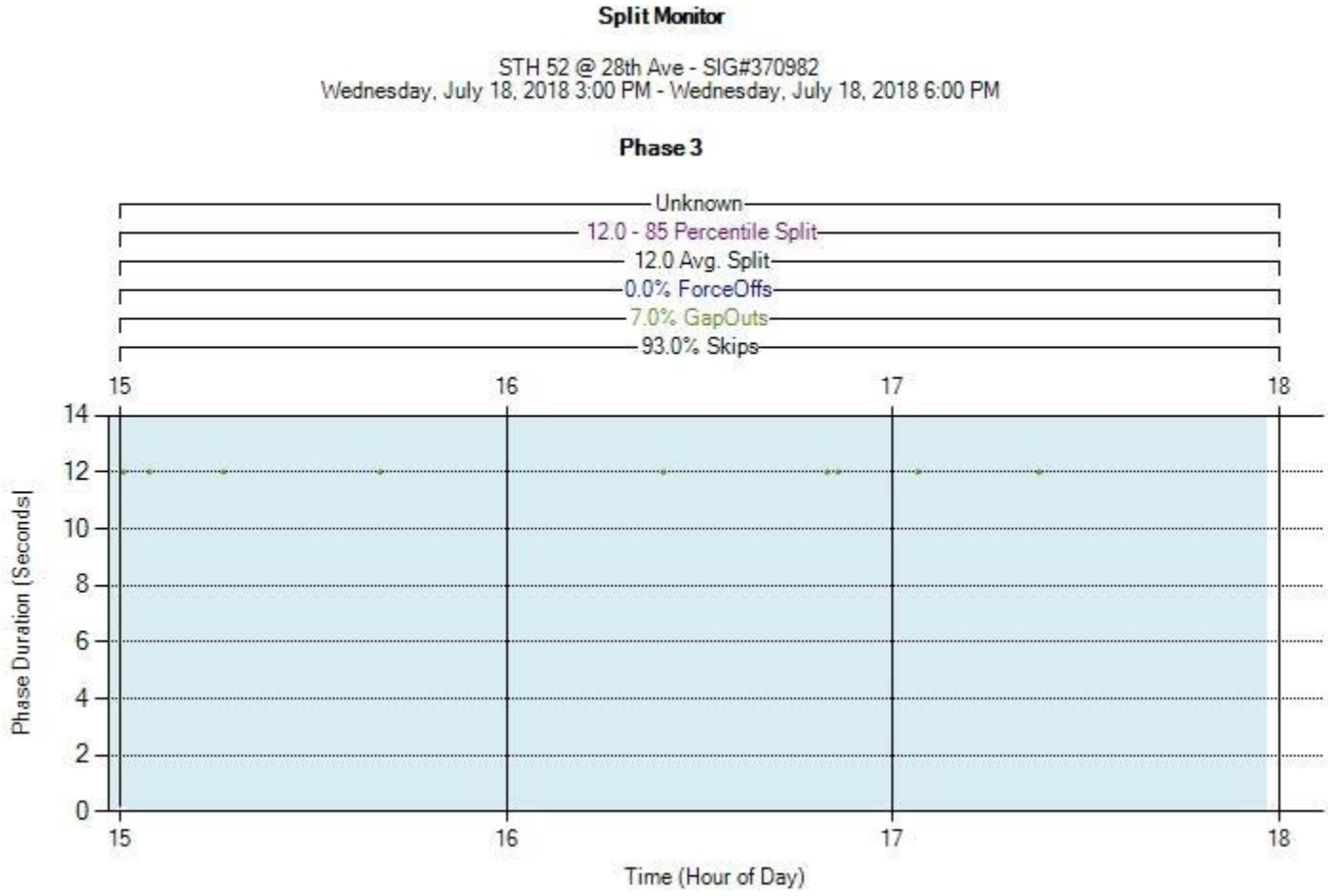
Isolated Signal – WIS 52 & 28th Avenue
Baseline Timings
7/18/2018 – 3:00 PM – 6:00 PM



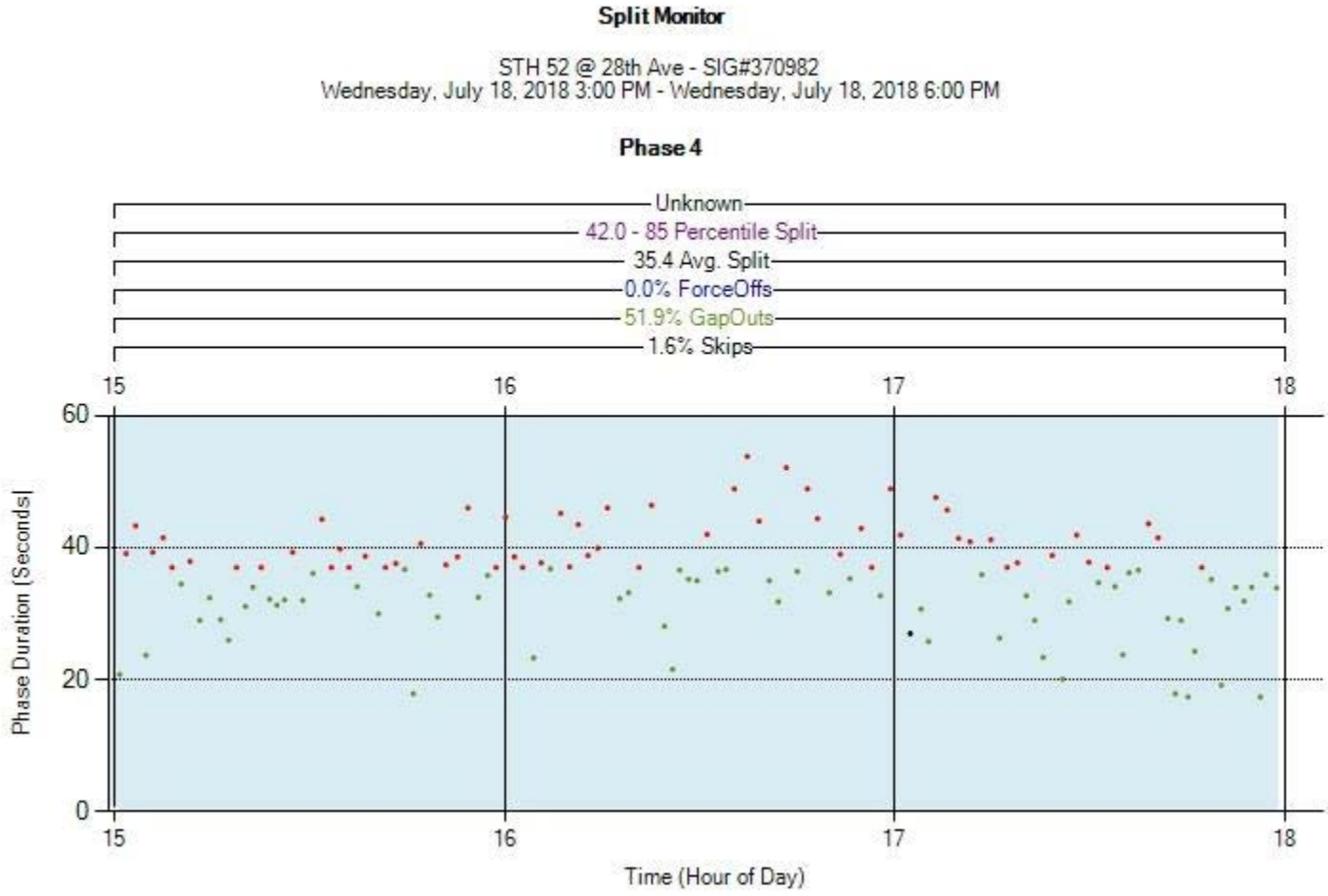
Isolated Signal – WIS 52 & 28th Avenue
Baseline Timings
7/18/2018 – 3:00 PM – 6:00 PM



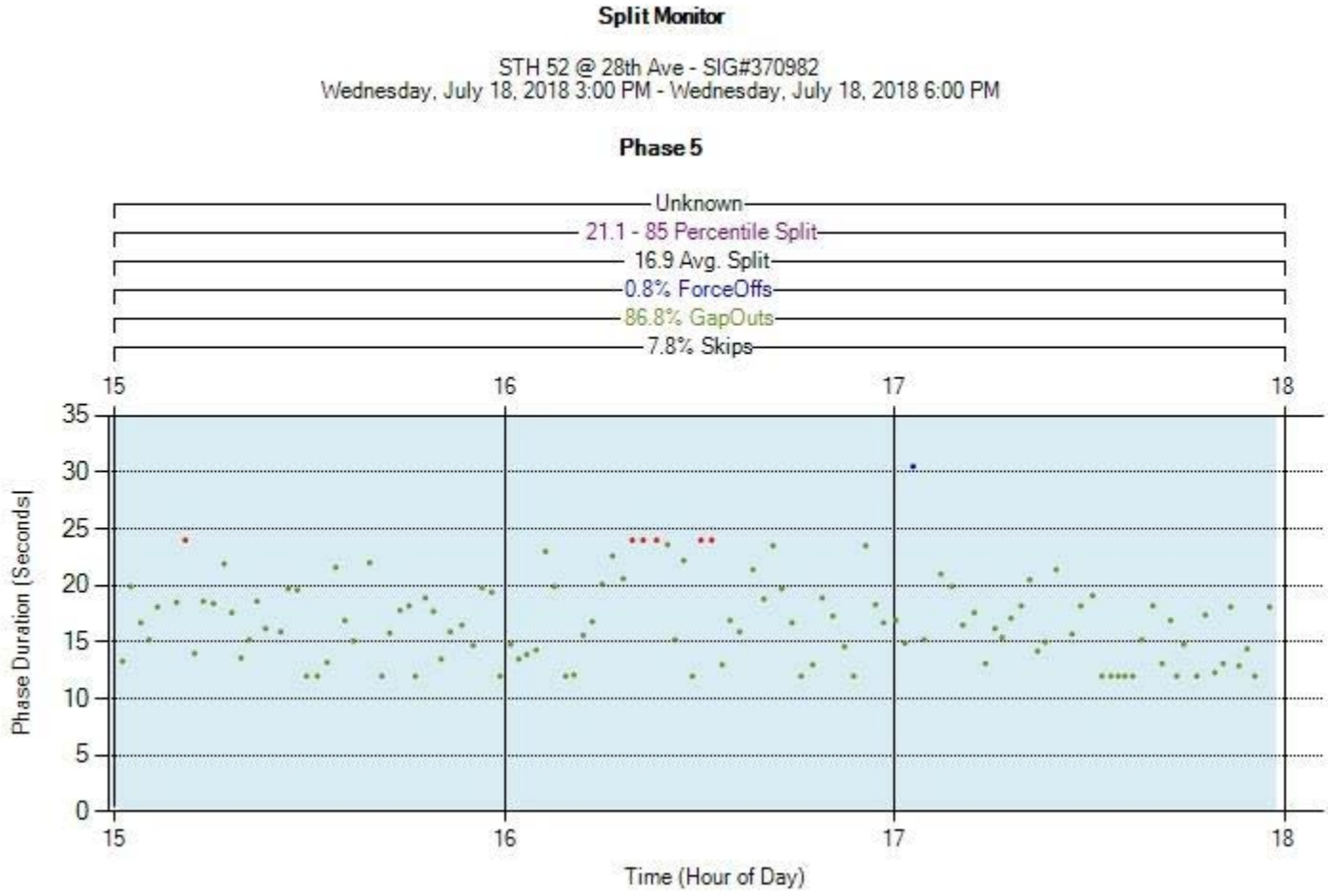
Isolated Signal – WIS 52 & 28th Avenue
Baseline Timings
7/18/2018 – 3:00 PM – 6:00 PM



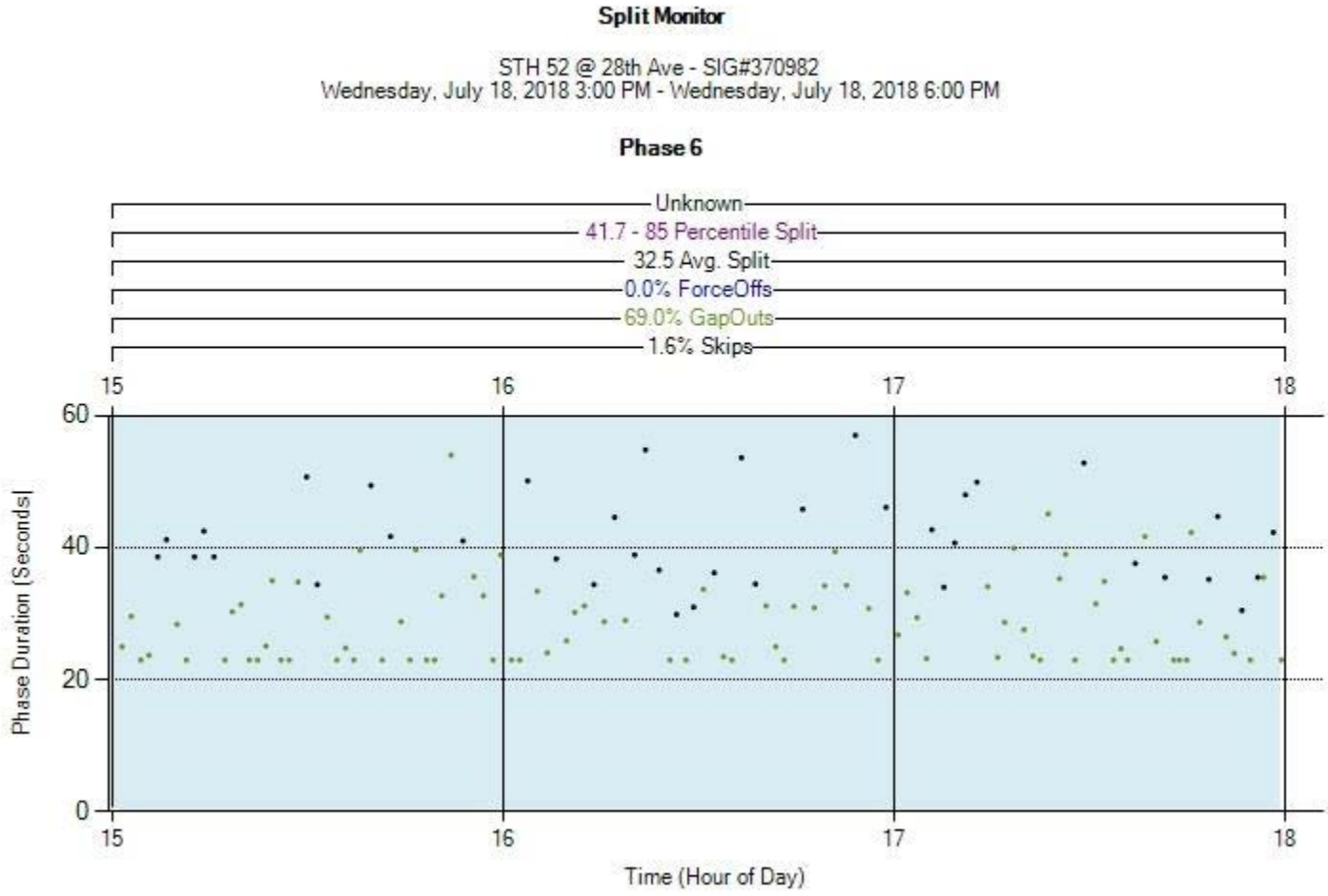
Isolated Signal – WIS 52 & 28th Avenue
Baseline Timings
7/18/2018 – 3:00 PM – 6:00 PM



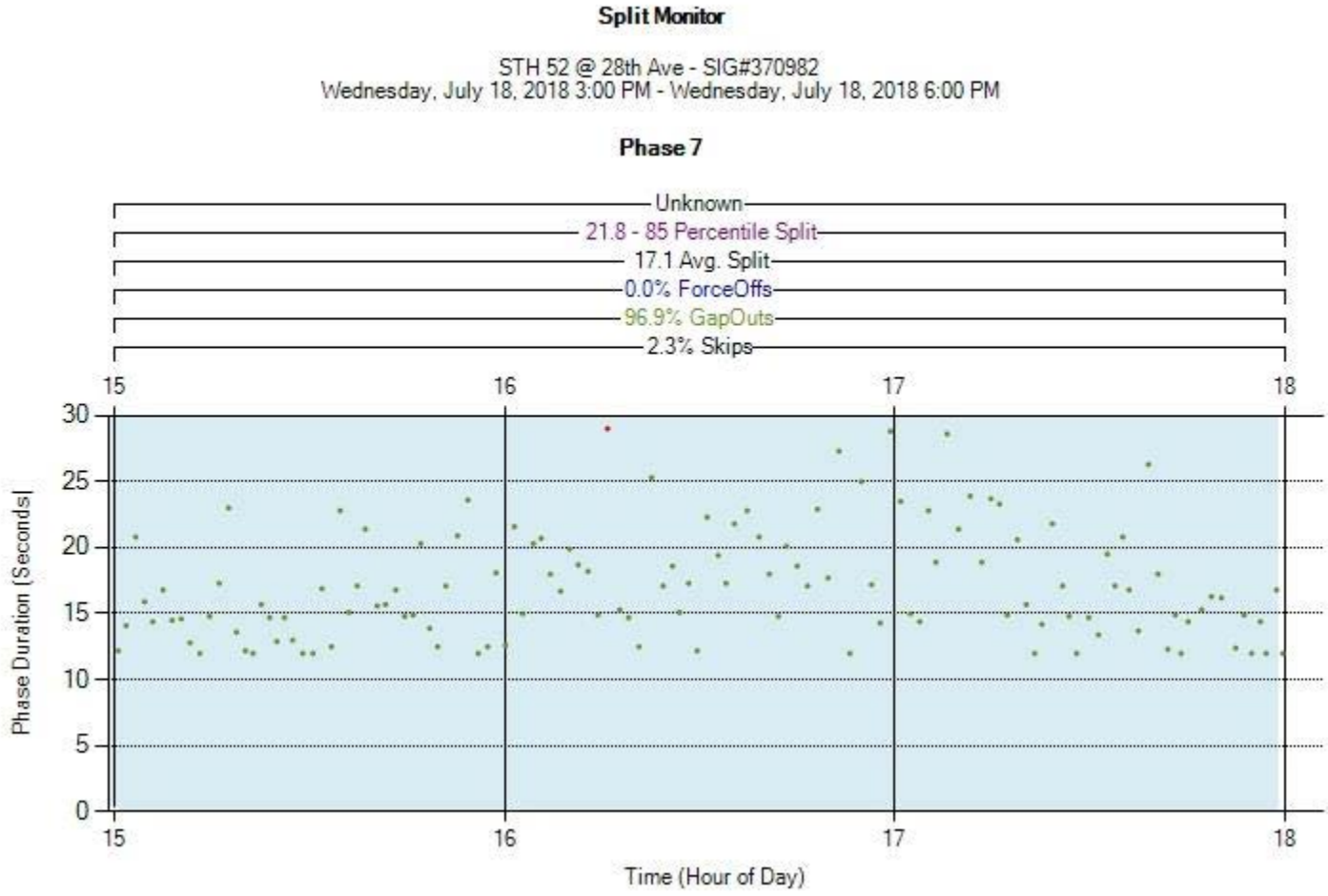
Isolated Signal – WIS 52 & 28th Avenue
Baseline Timings
7/18/2018 – 3:00 PM – 6:00 PM



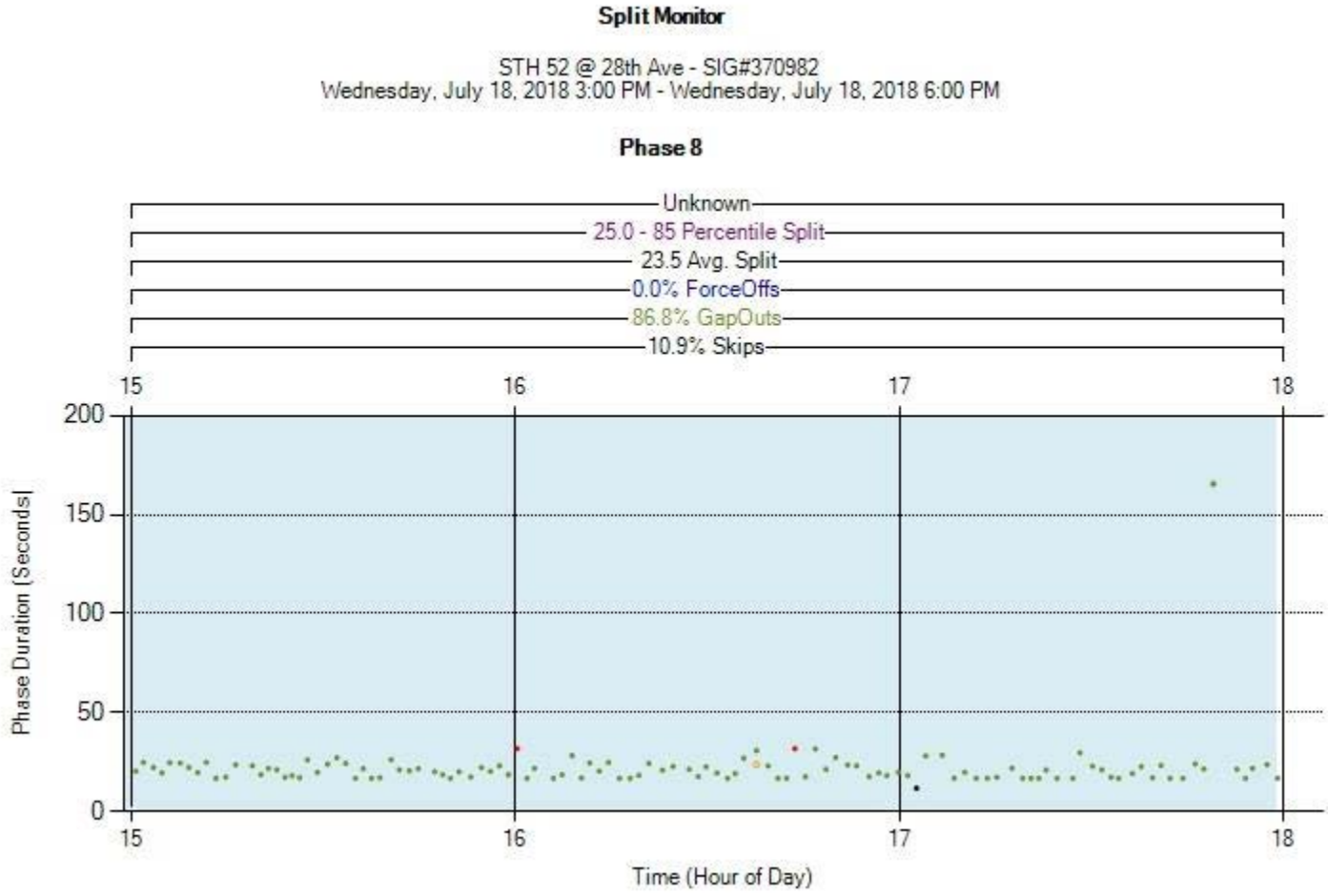
Isolated Signal – WIS 52 & 28th Avenue
Baseline Timings
7/18/2018 – 3:00 PM – 6:00 PM



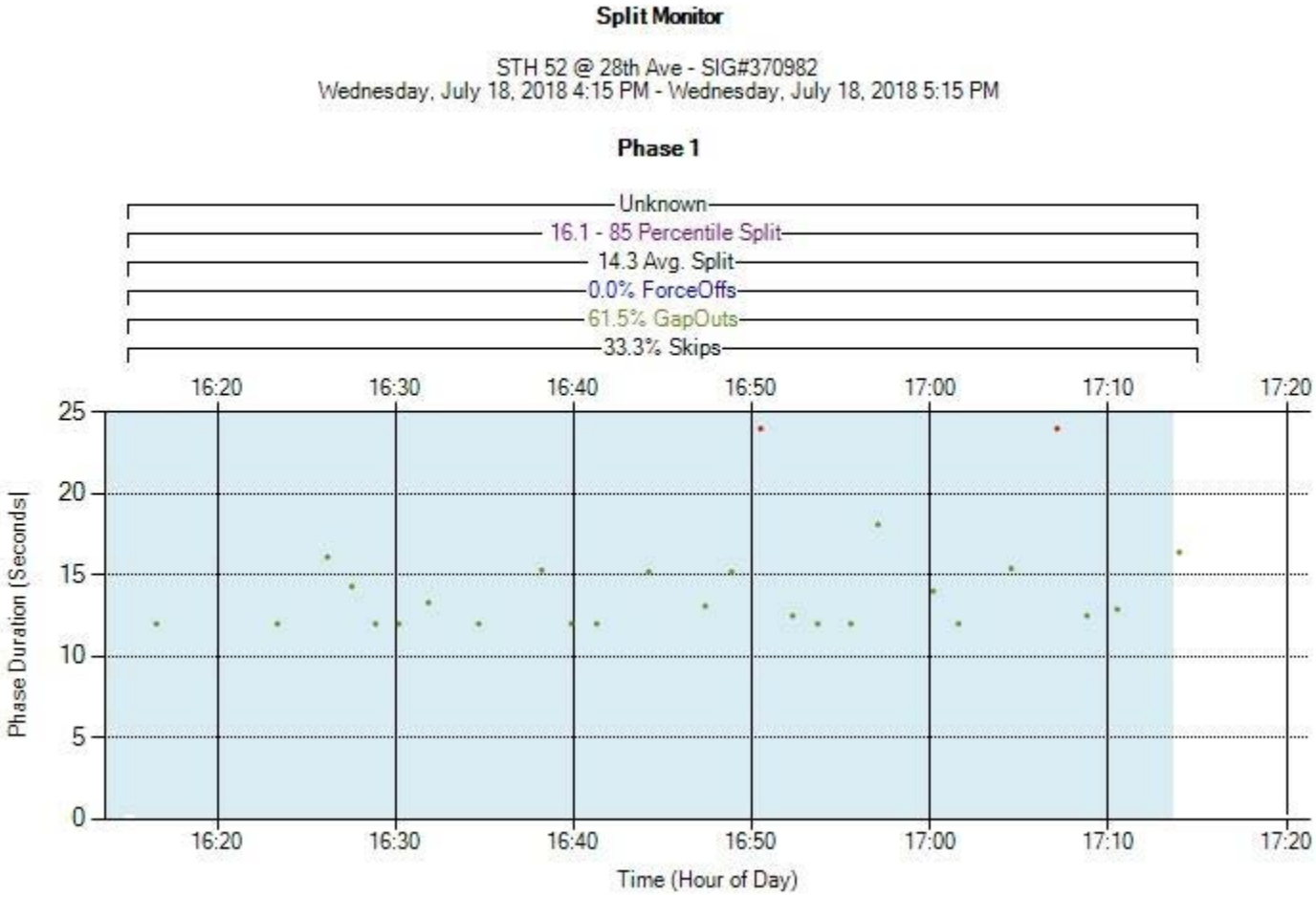
Isolated Signal – WIS 52 & 28th Avenue
Baseline Timings
7/18/2018 – 3:00 PM – 6:00 PM



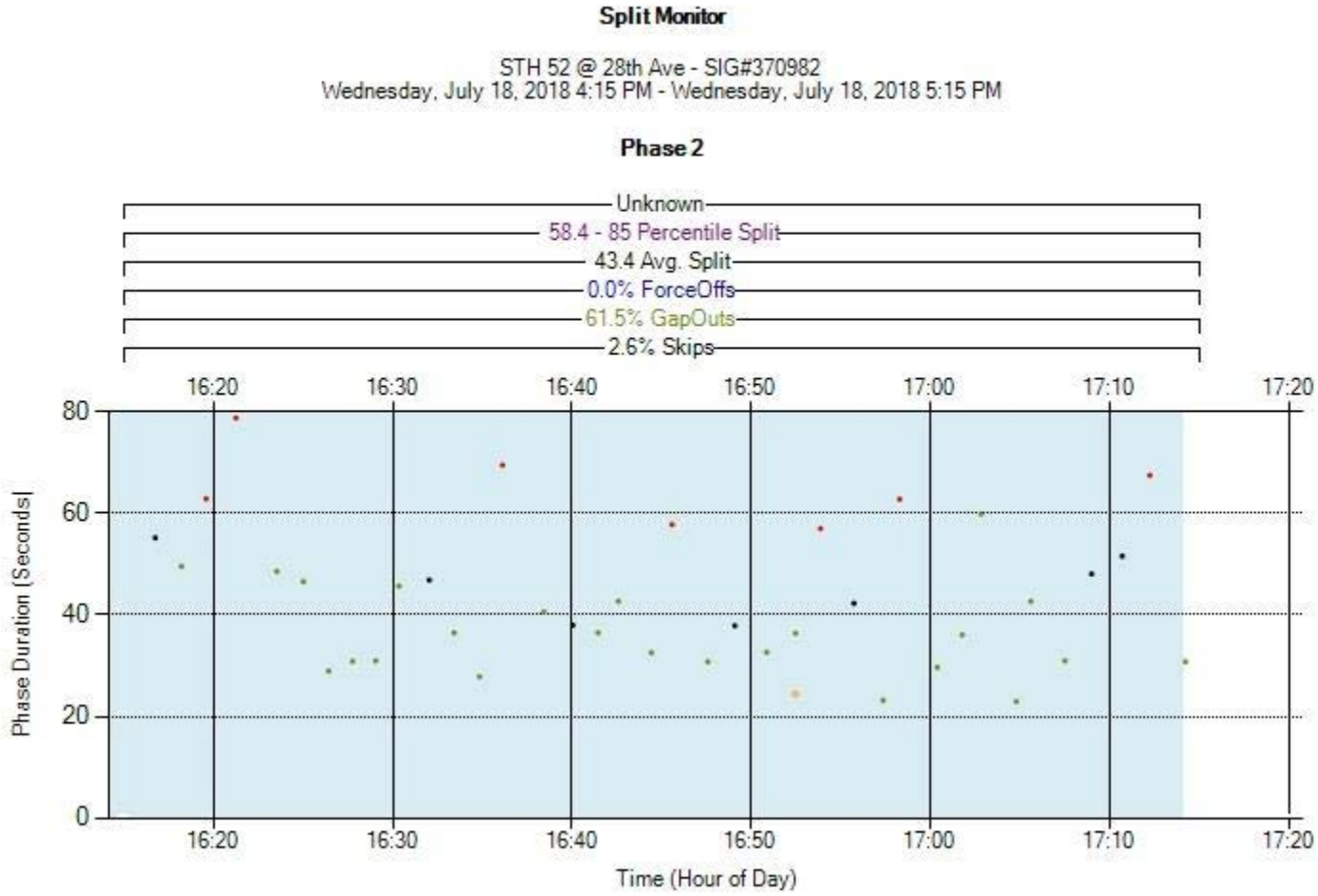
Isolated Signal – WIS 52 & 28th Avenue
Baseline Timings
7/18/2018 – 3:00 PM – 6:00 PM



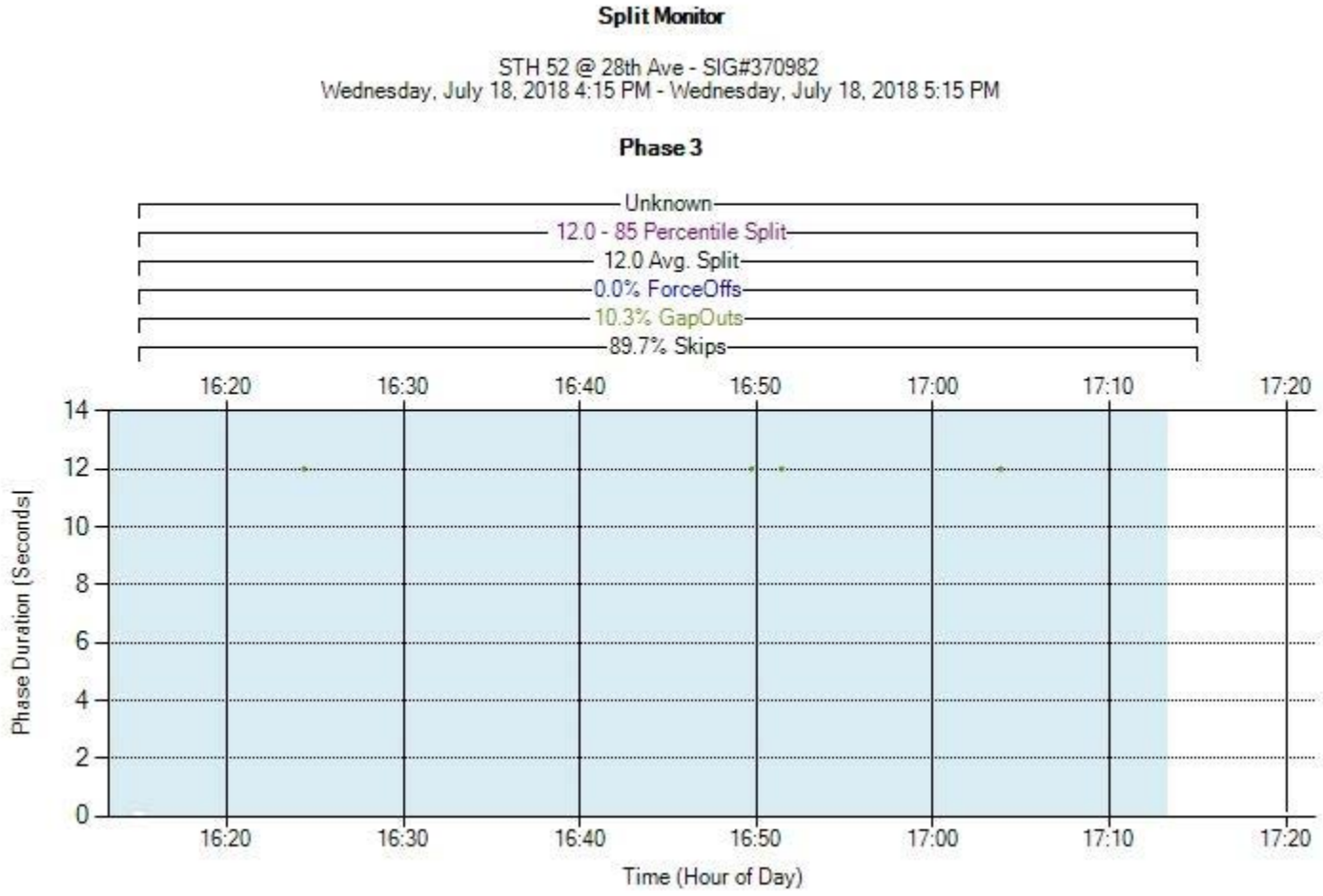
Isolated Signal – WIS 52 & 28th Avenue
Baseline Timings
7/18/2018 – 4:15 PM – 5:15 PM



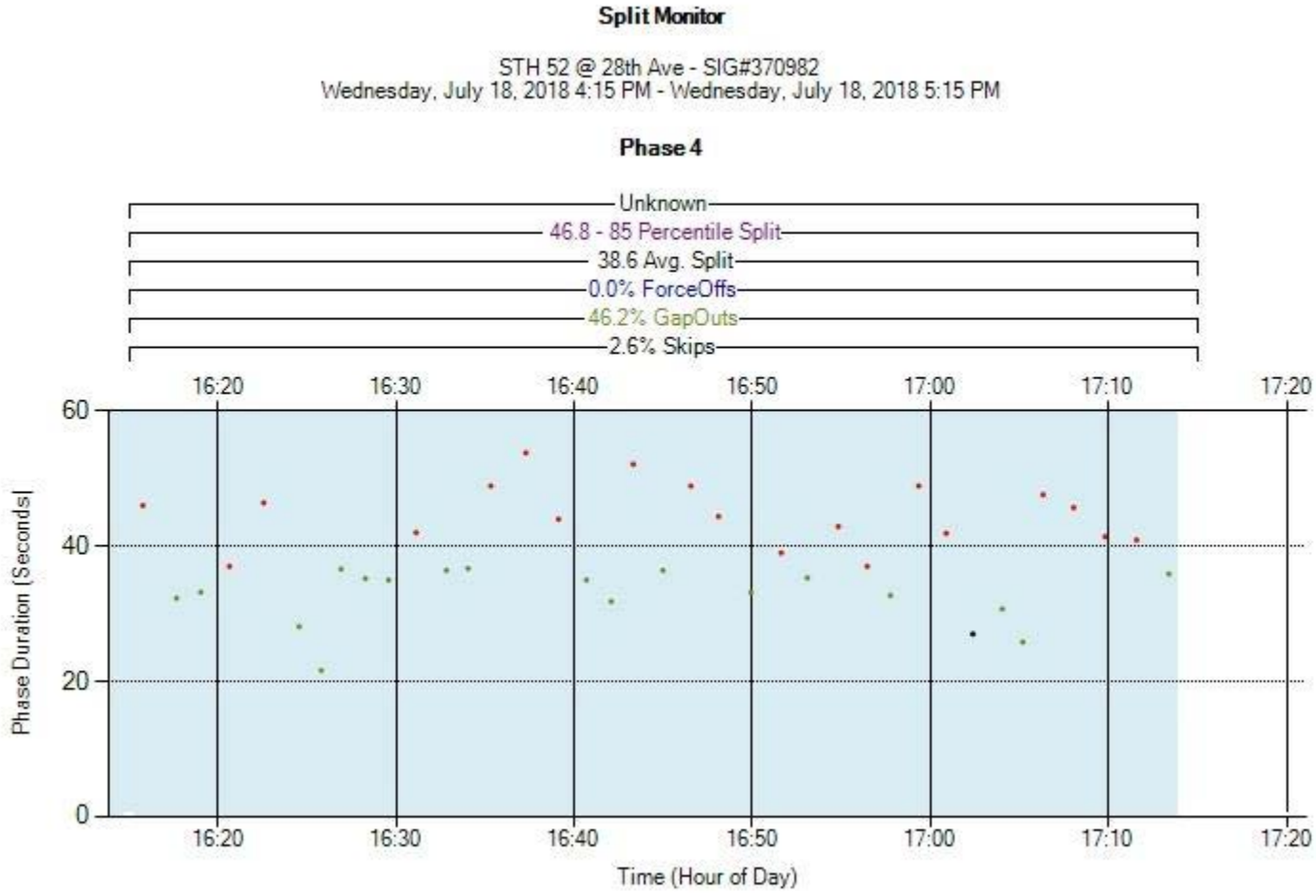
Isolated Signal – WIS 52 & 28th Avenue
Baseline Timings
7/18/2018 – 4:15 PM – 5:15 PM



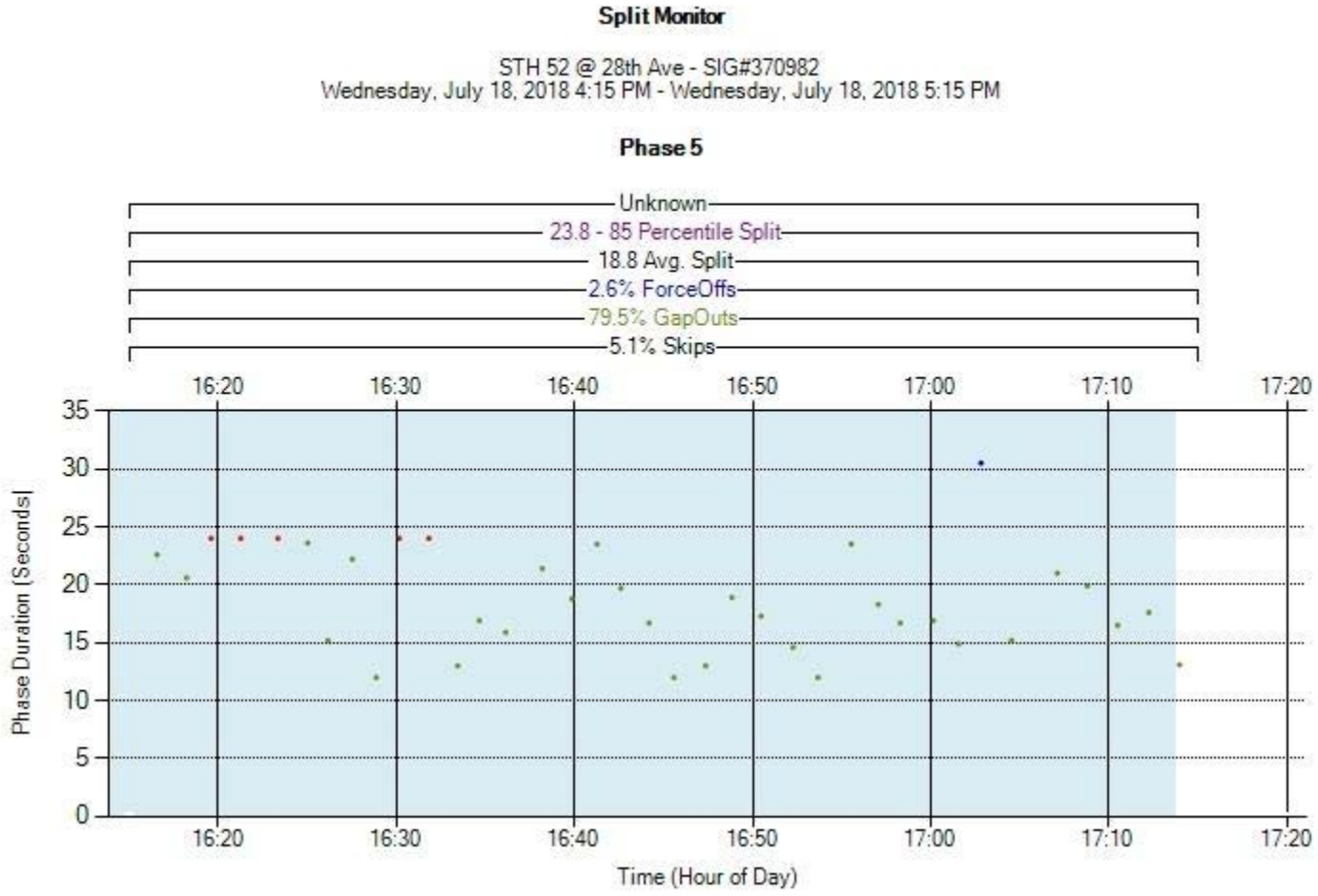
Isolated Signal – WIS 52 & 28th Avenue
Baseline Timings
7/18/2018 – 4:15 PM – 5:15 PM



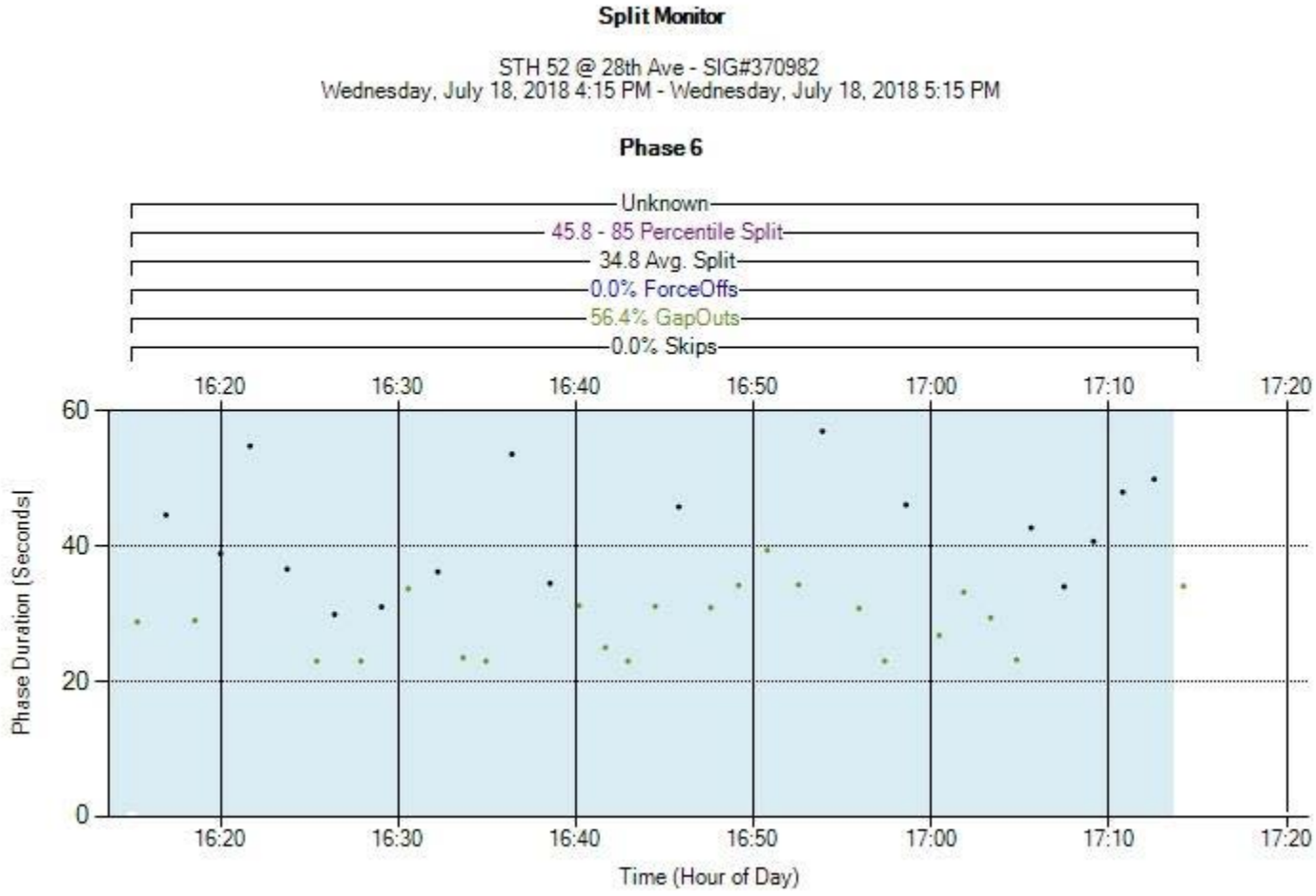
Isolated Signal – WIS 52 & 28th Avenue
Baseline Timings
7/18/2018 – 4:15 PM – 5:15 PM



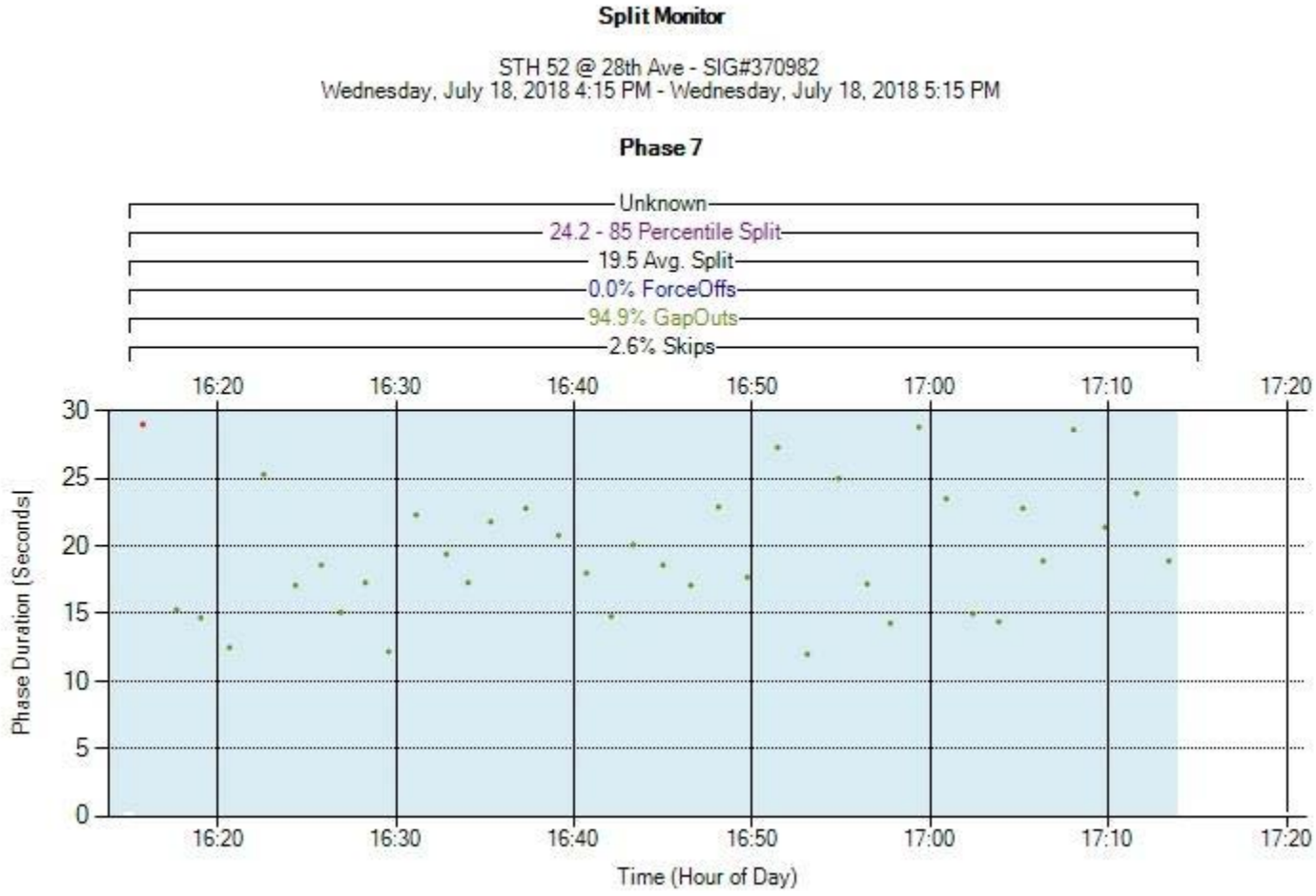
Isolated Signal – WIS 52 & 28th Avenue
Baseline Timings
7/18/2018 – 4:15 PM – 5:15 PM



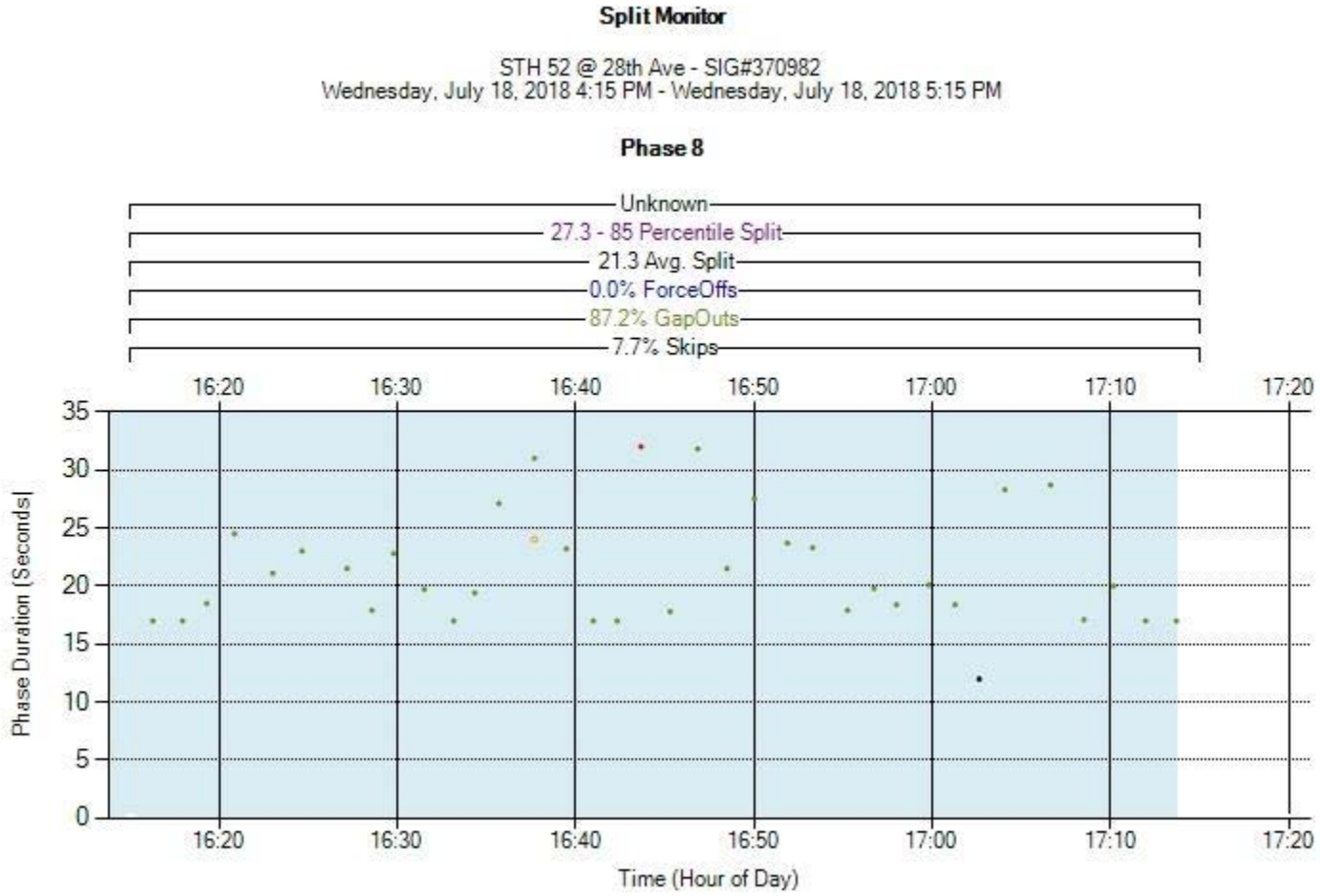
Isolated Signal – WIS 52 & 28th Avenue
Baseline Timings
7/18/2018 – 4:15 PM – 5:15 PM



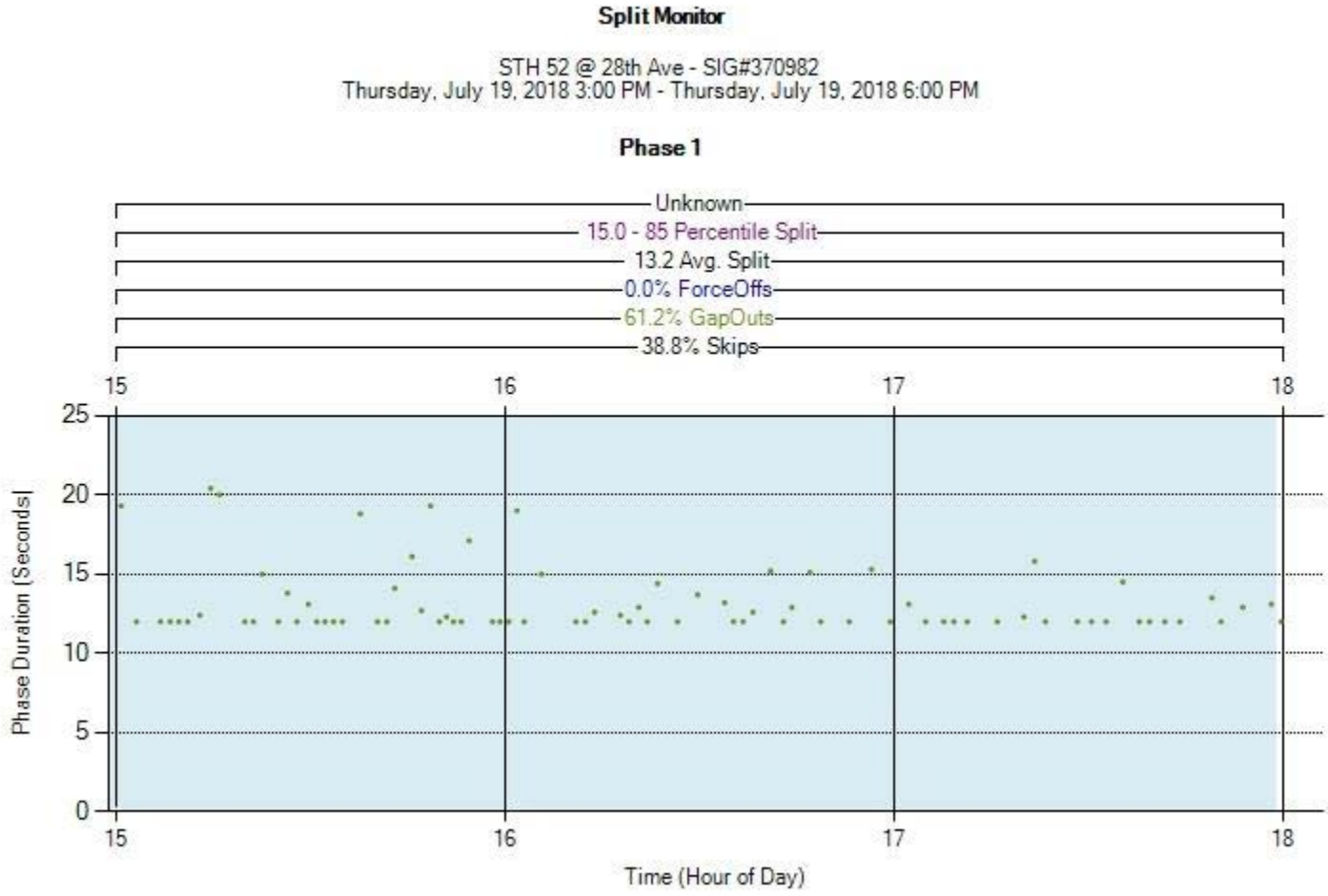
Isolated Signal – WIS 52 & 28th Avenue
Baseline Timings
7/18/2018 – 4:15 PM – 5:15 PM



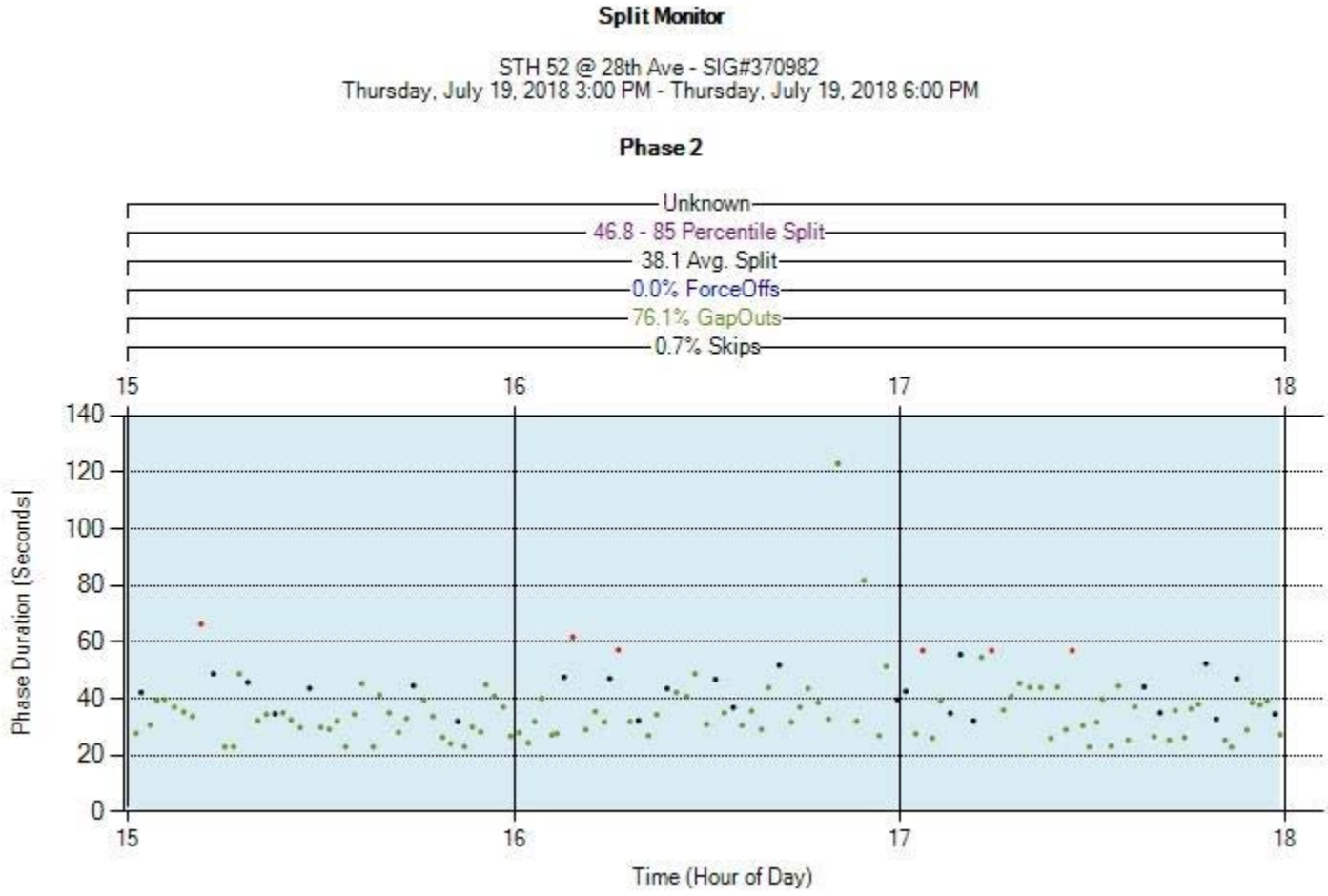
Isolated Signal – WIS 52 & 28th Avenue
Baseline Timings
7/18/2018 – 4:15 PM – 5:15 PM



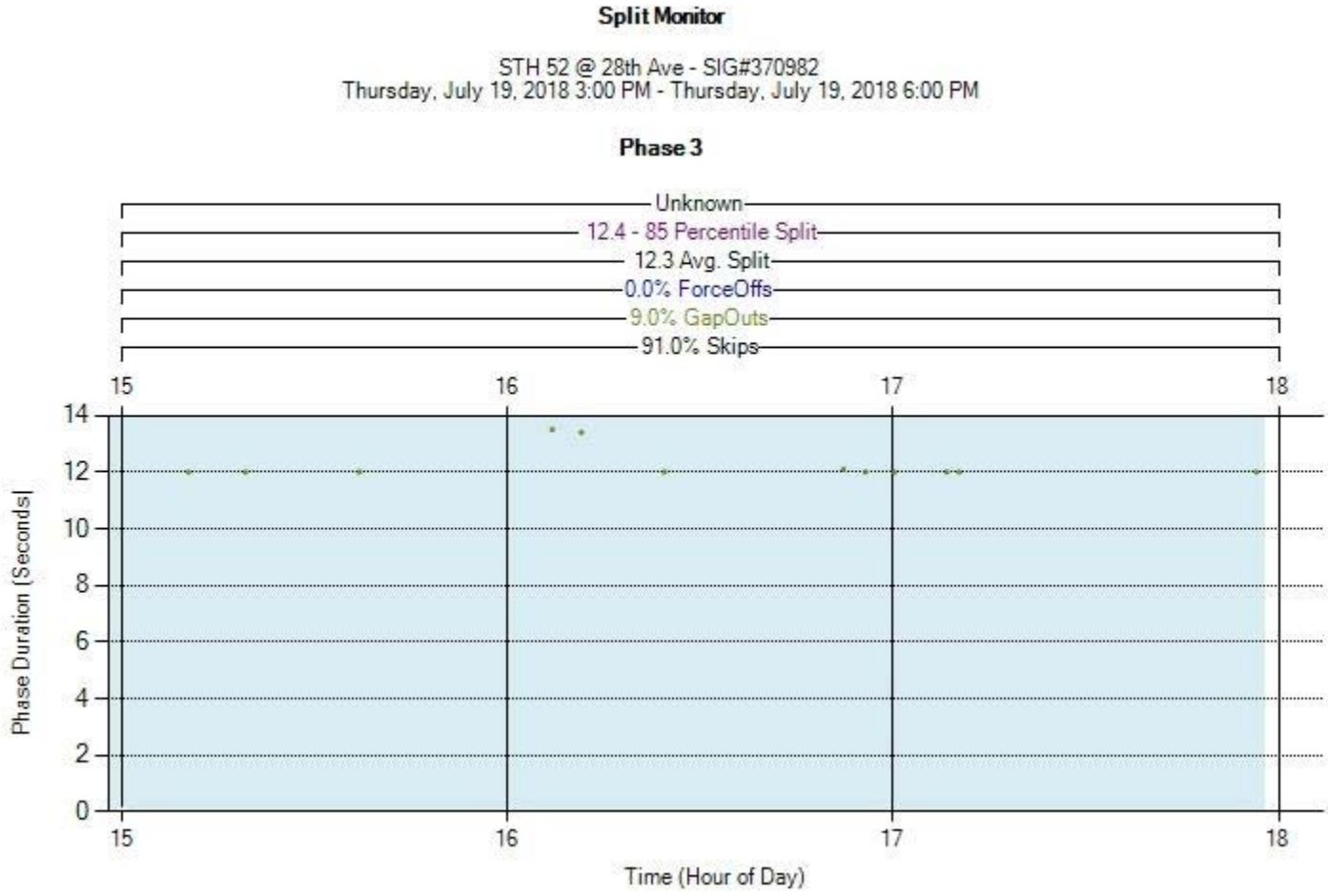
Isolated Signal – WIS 52 & 28th Avenue
Baseline Timings
7/19/2018 – 3:00 PM – 6:00 PM



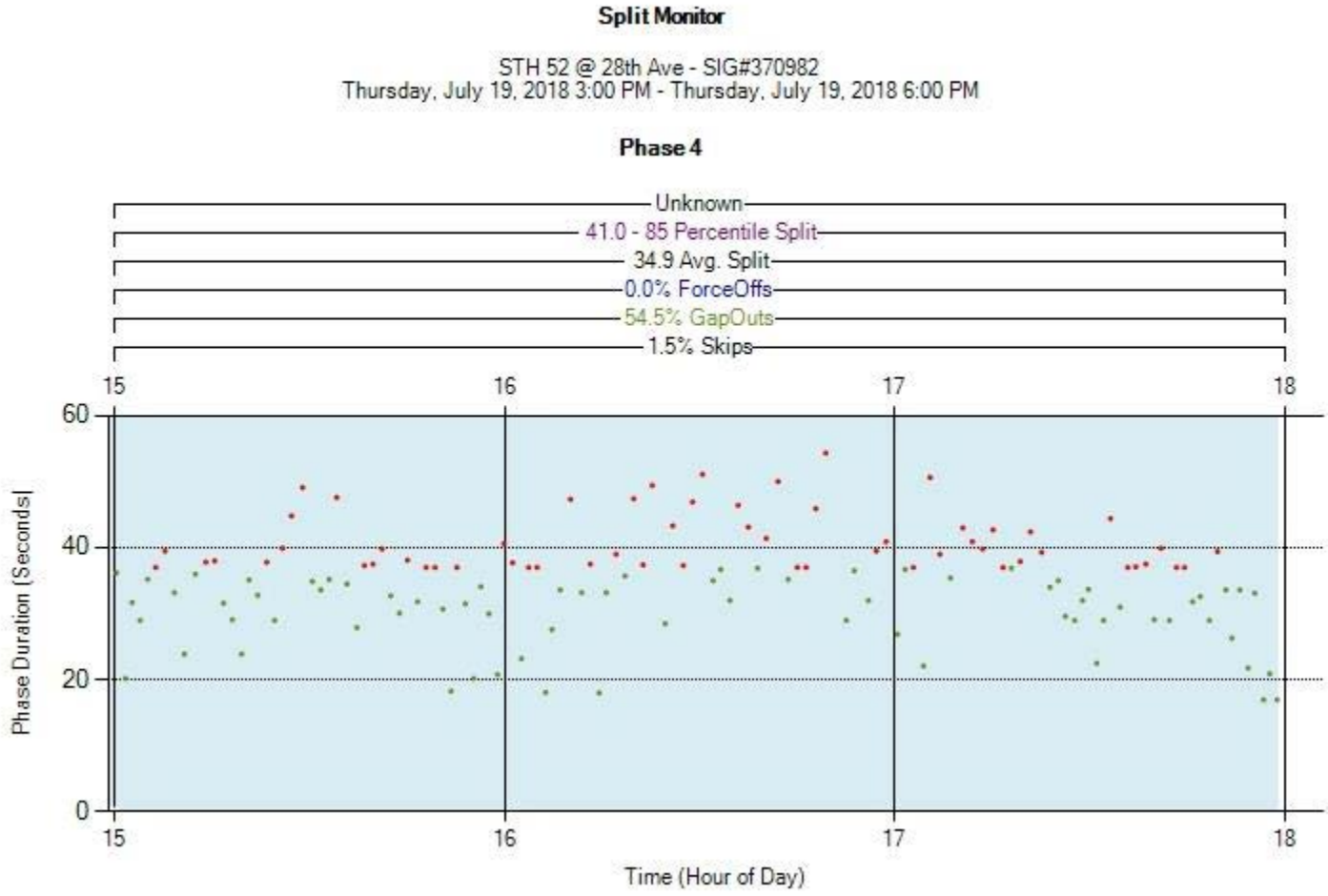
Isolated Signal – WIS 52 & 28th Avenue
Baseline Timings
7/19/2018 – 3:00 PM – 6:00 PM



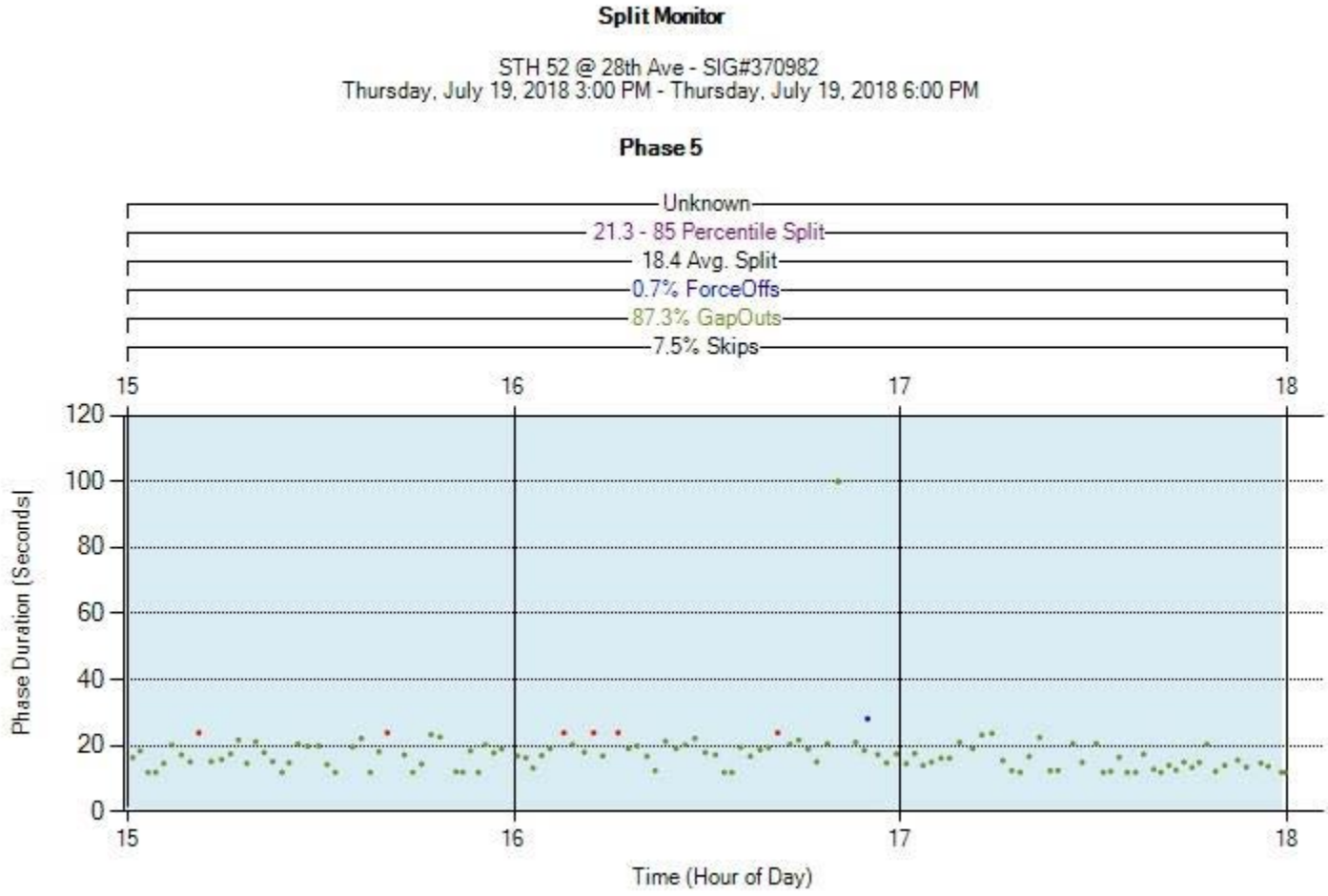
Isolated Signal – WIS 52 & 28th Avenue
Baseline Timings
7/19/2018 – 3:00 PM – 6:00 PM



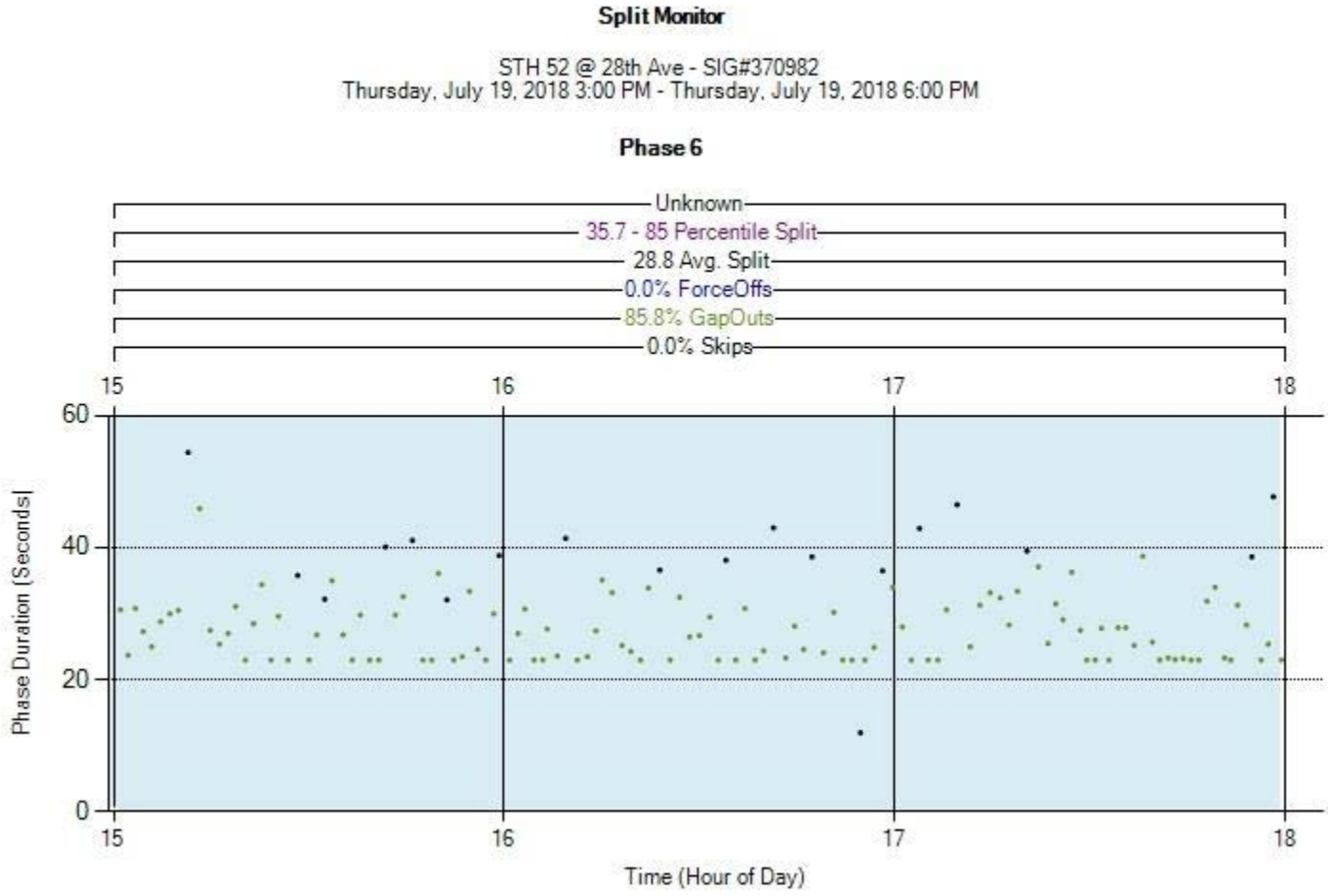
Isolated Signal – WIS 52 & 28th Avenue
Baseline Timings
7/19/2018 – 3:00 PM – 6:00 PM



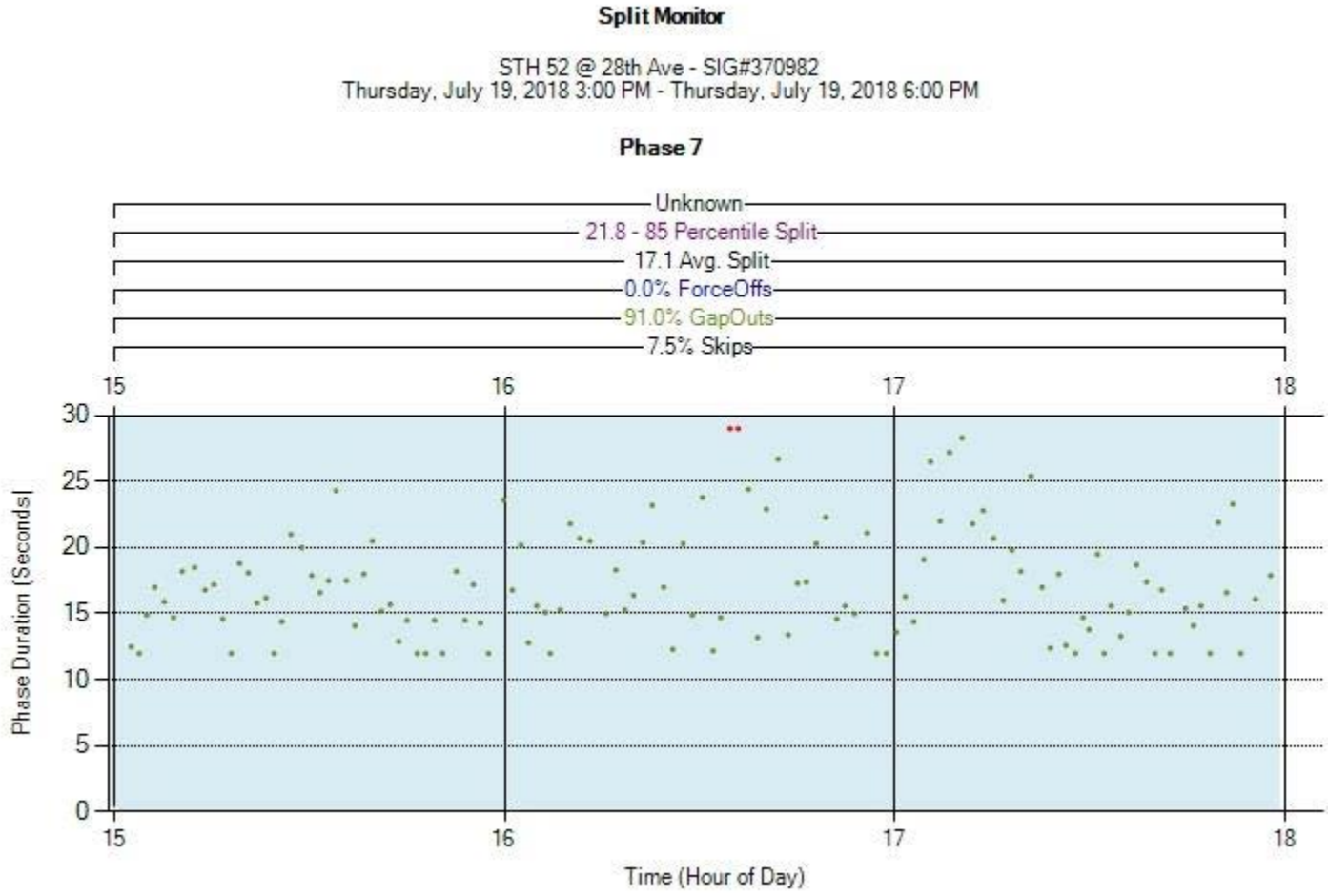
Isolated Signal – WIS 52 & 28th Avenue
Baseline Timings
7/19/2018 – 3:00 PM – 6:00 PM



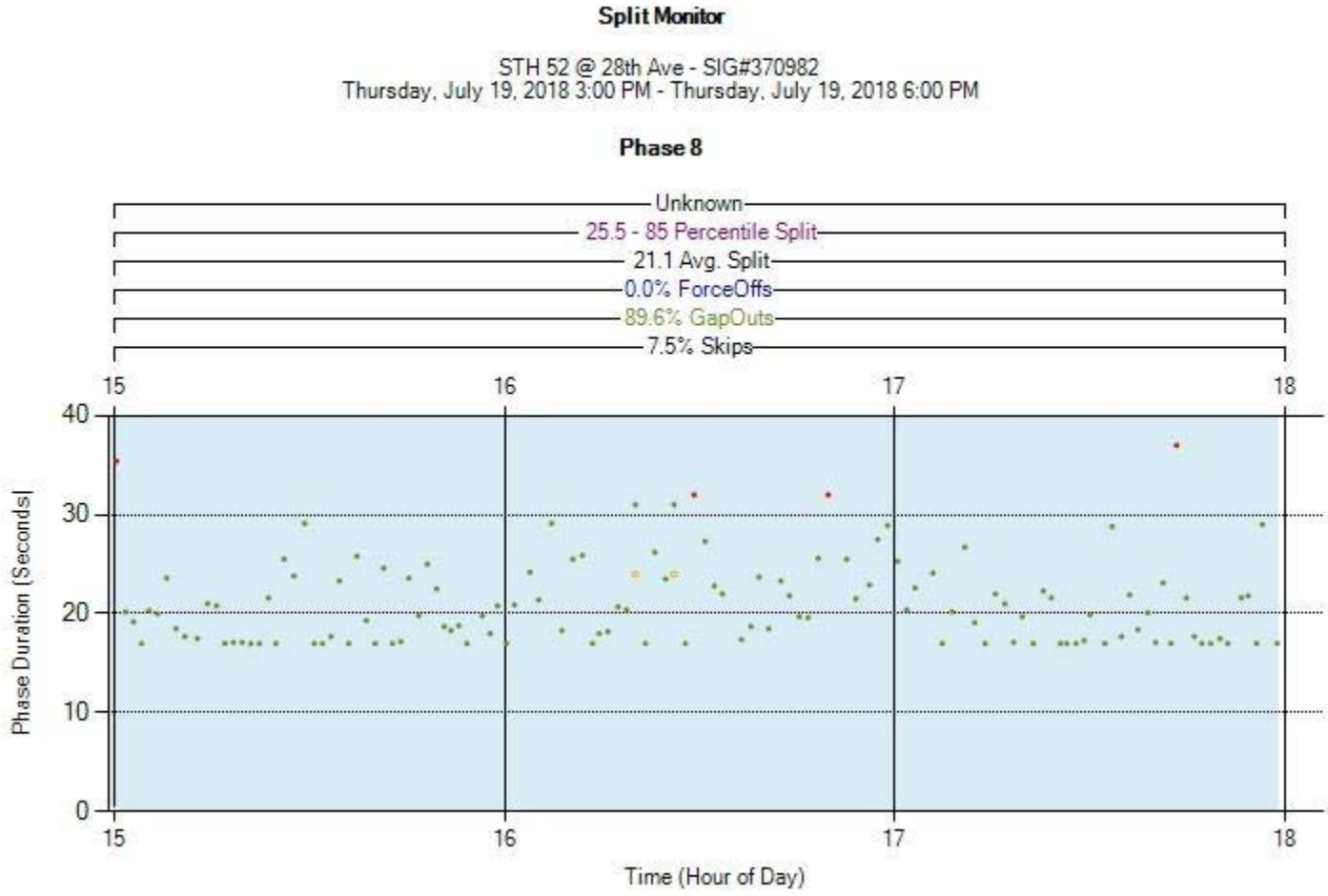
Isolated Signal – WIS 52 & 28th Avenue
Baseline Timings
7/19/2018 – 3:00 PM – 6:00 PM



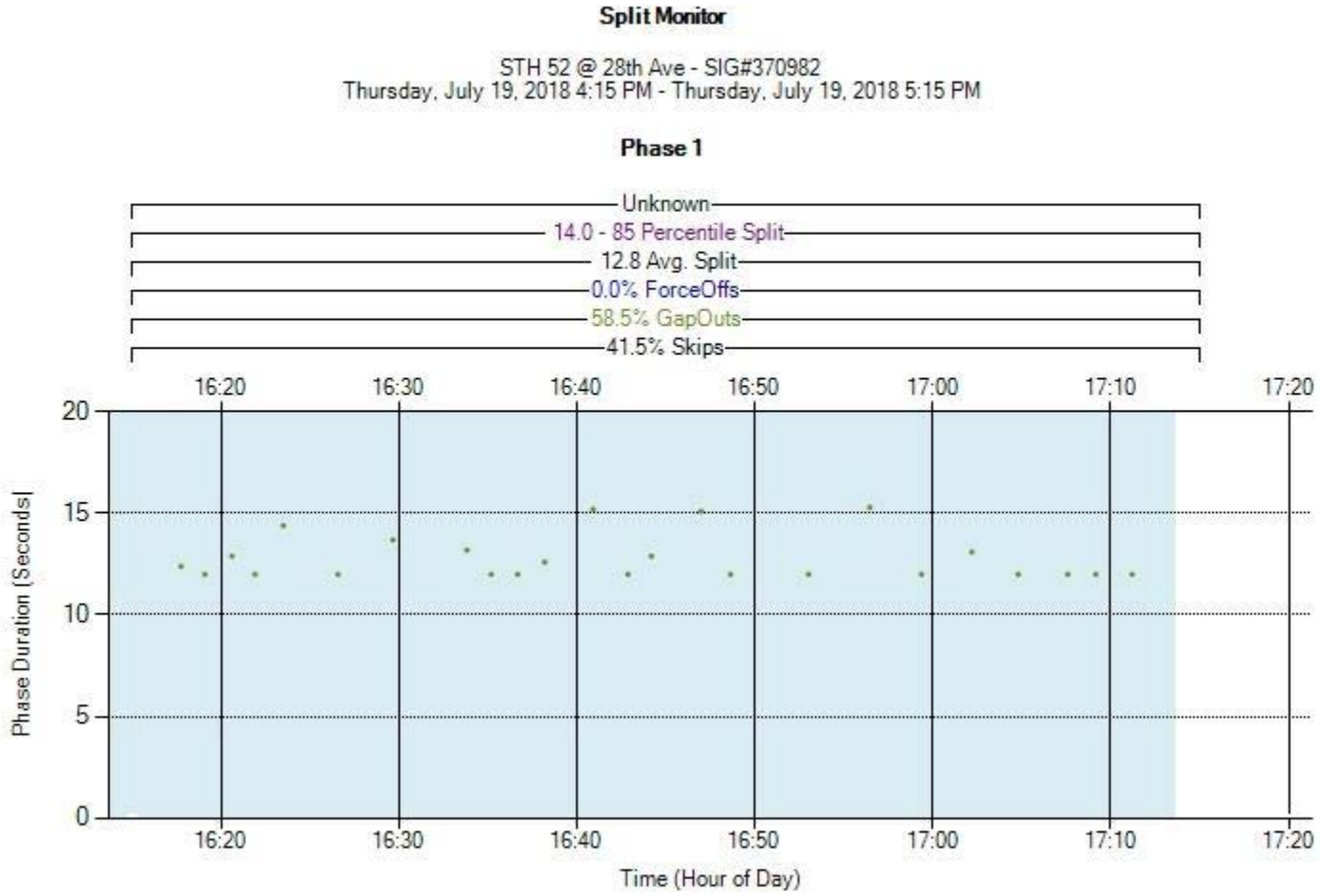
Isolated Signal – WIS 52 & 28th Avenue
Baseline Timings
7/19/2018 – 3:00 PM – 6:00 PM



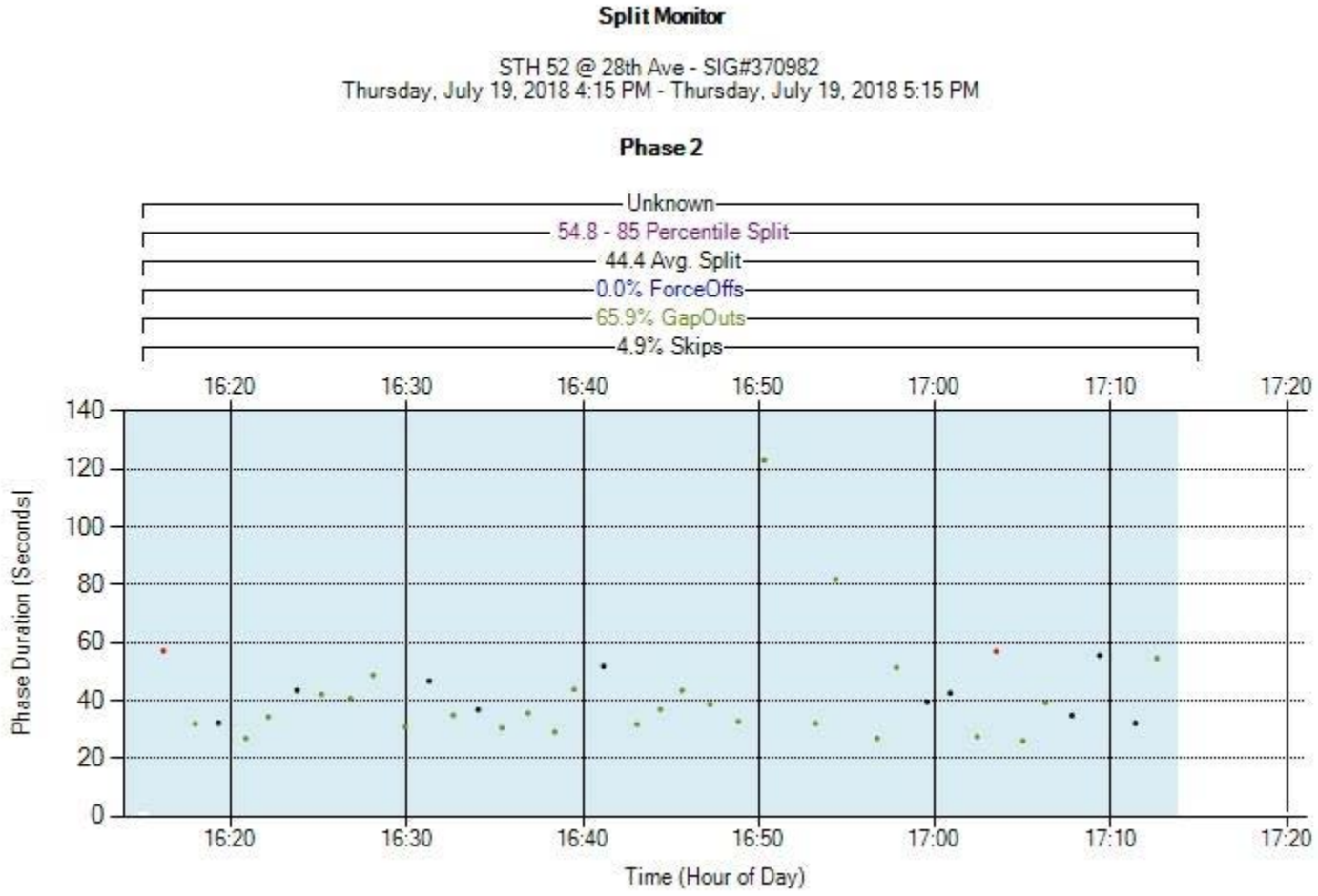
Isolated Signal – WIS 52 & 28th Avenue
Baseline Timings
7/19/2018 – 3:00 PM – 6:00 PM



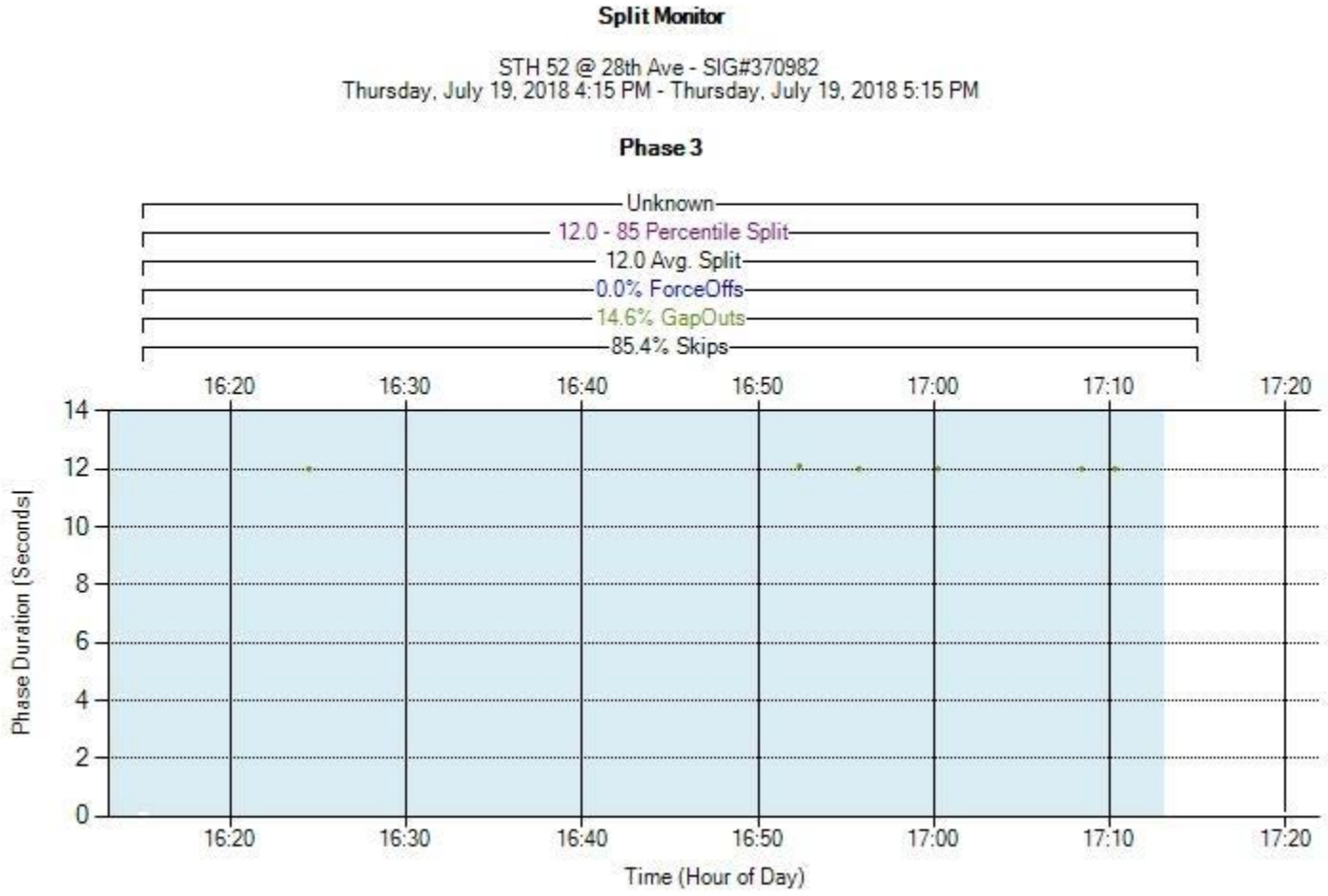
Isolated Signal – WIS 52 & 28th Avenue
Baseline Timings
7/19/2018 – 4:15 PM – 5:15 PM



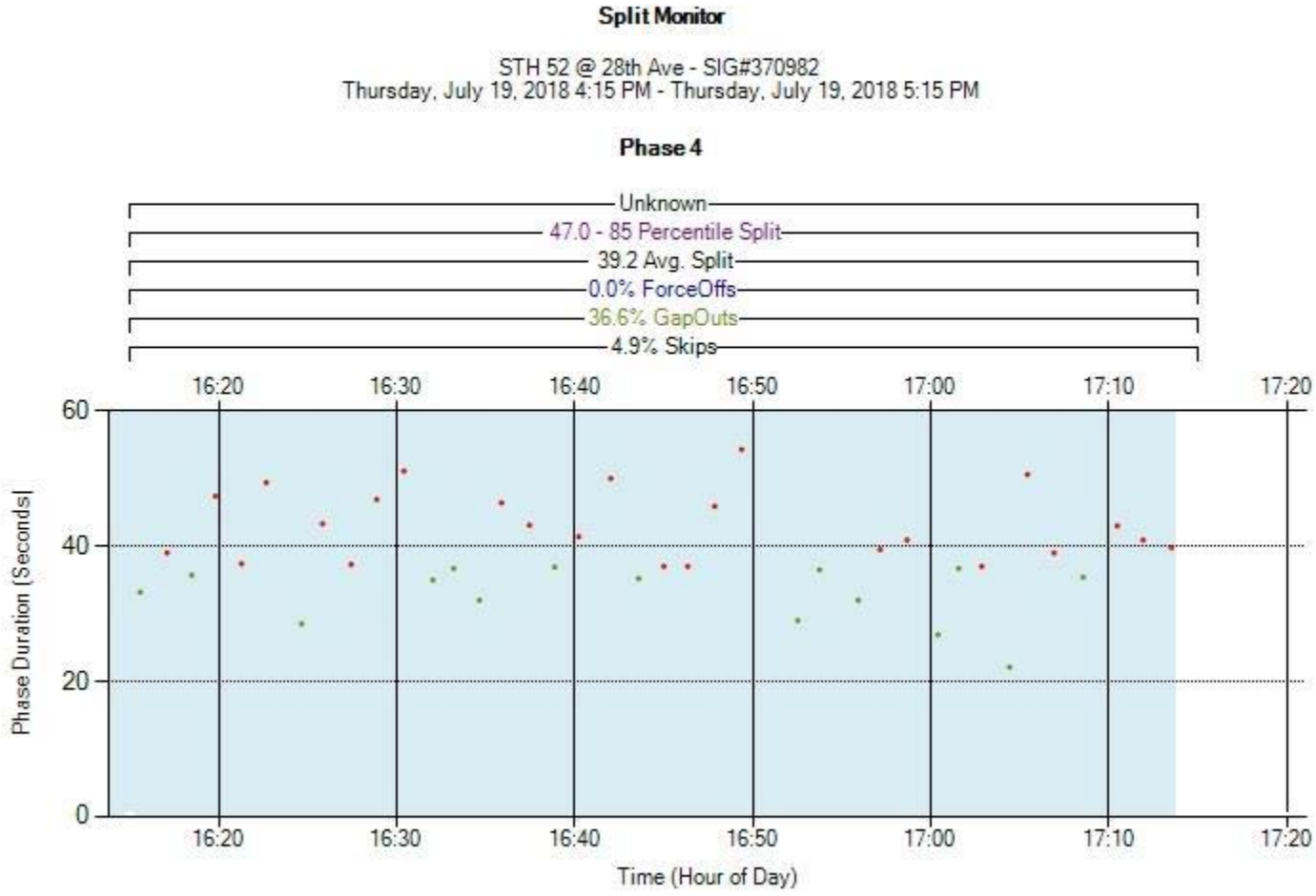
Isolated Signal – WIS 52 & 28th Avenue
Baseline Timings
7/19/2018 – 4:15 PM – 5:15 PM



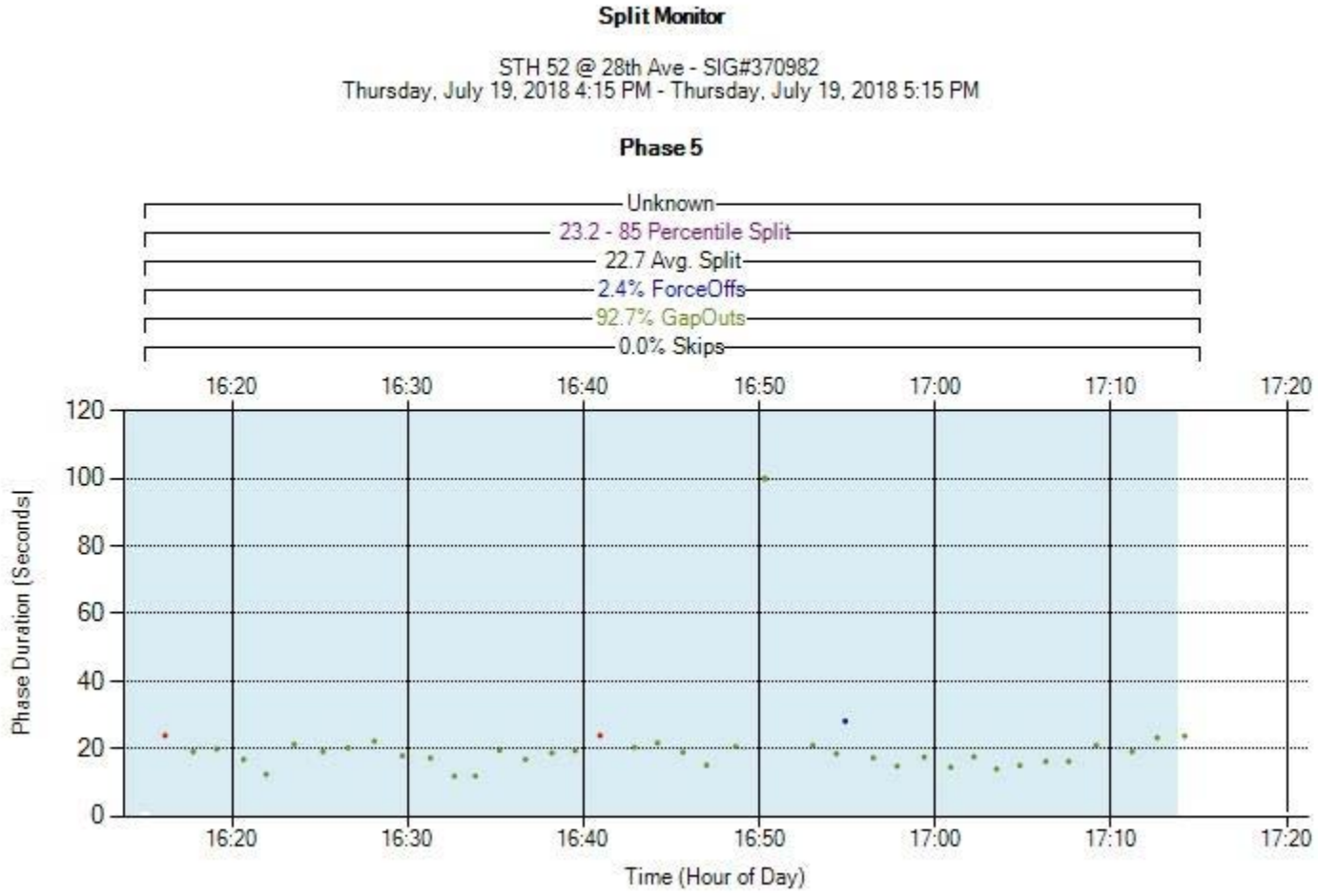
Isolated Signal – WIS 52 & 28th Avenue
Baseline Timings
7/19/2018 – 4:15 PM – 5:15 PM



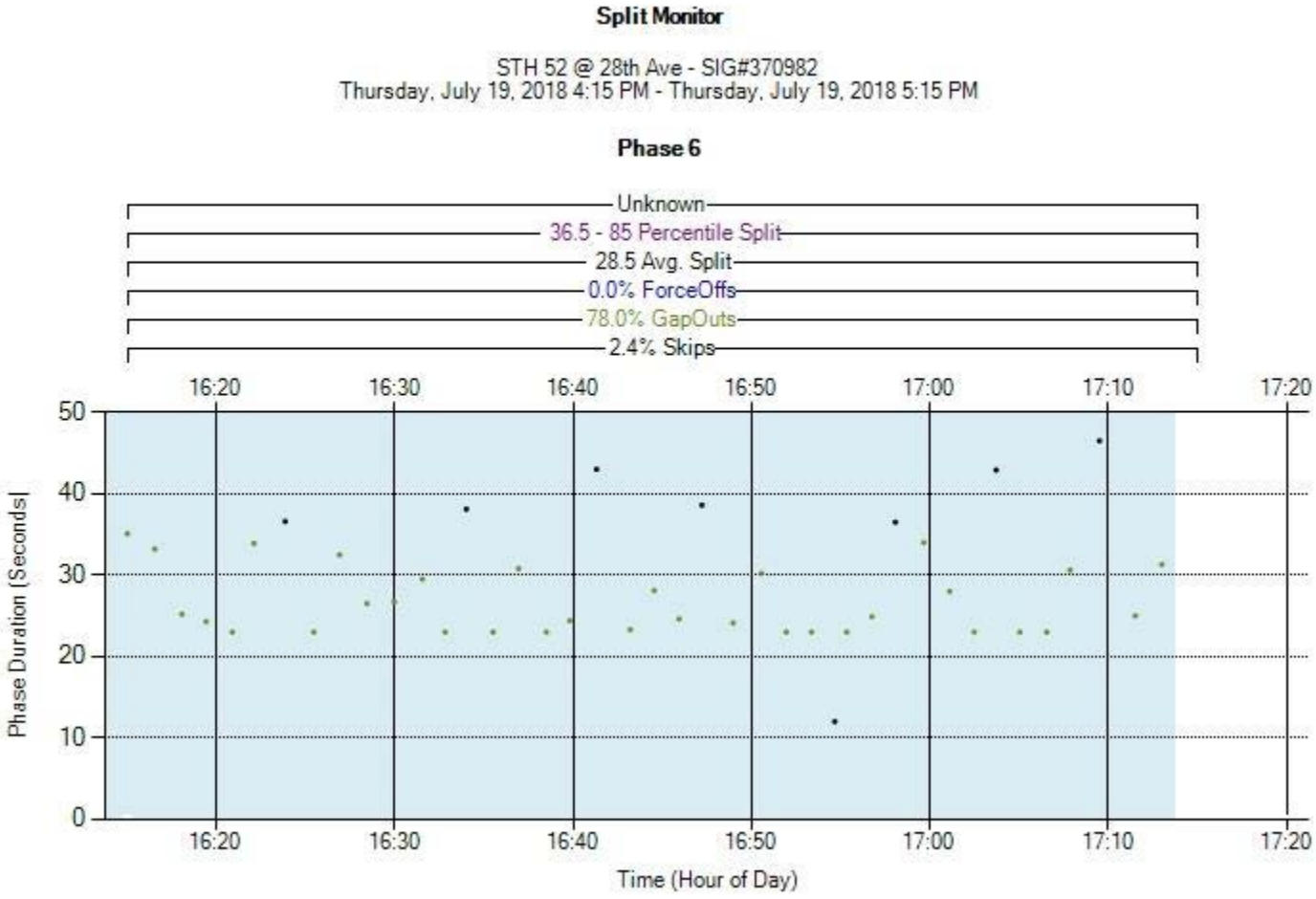
Isolated Signal – WIS 52 & 28th Avenue
Baseline Timings
7/19/2018 – 4:15 PM – 5:15 PM



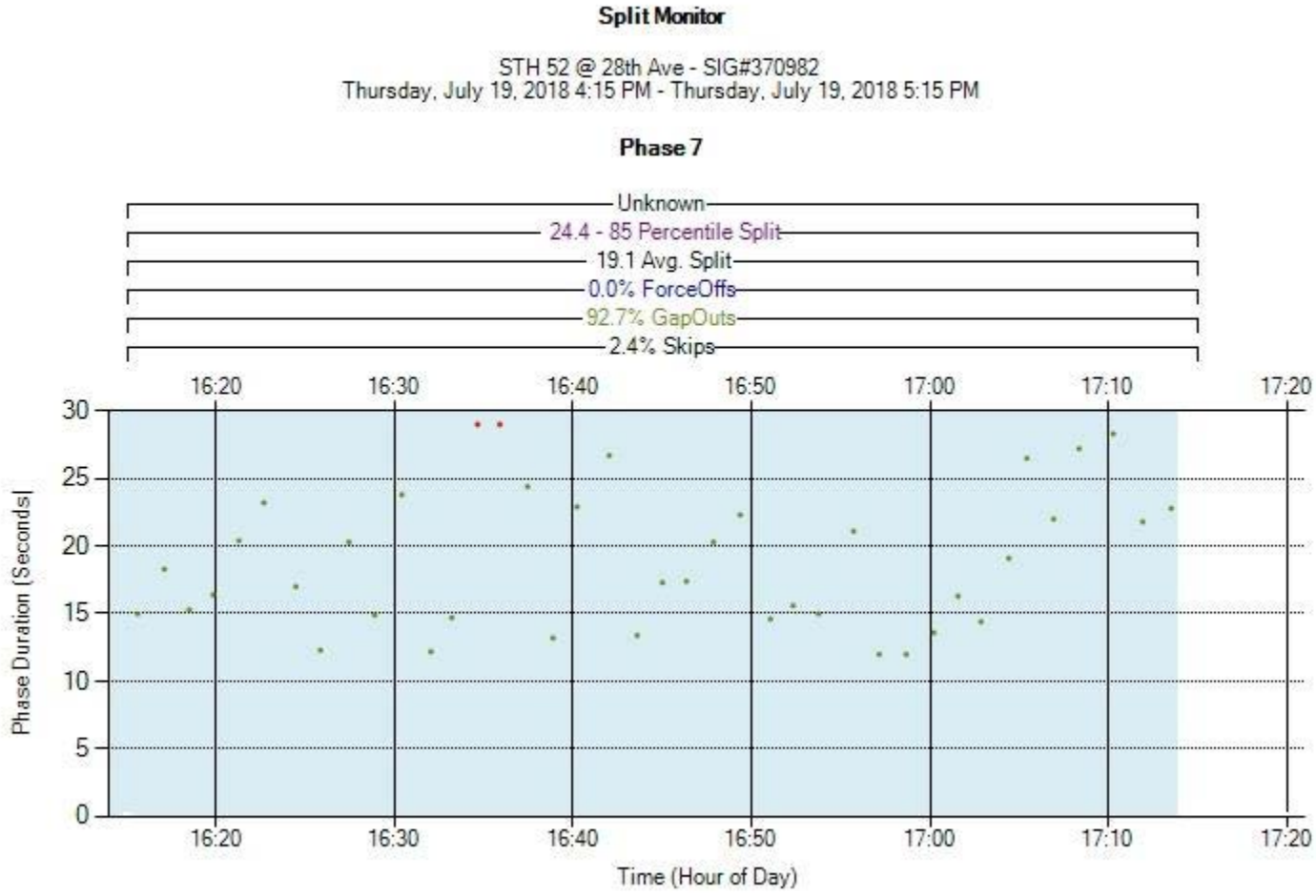
Isolated Signal – WIS 52 & 28th Avenue
Baseline Timings
7/19/2018 – 4:15 PM – 5:15 PM



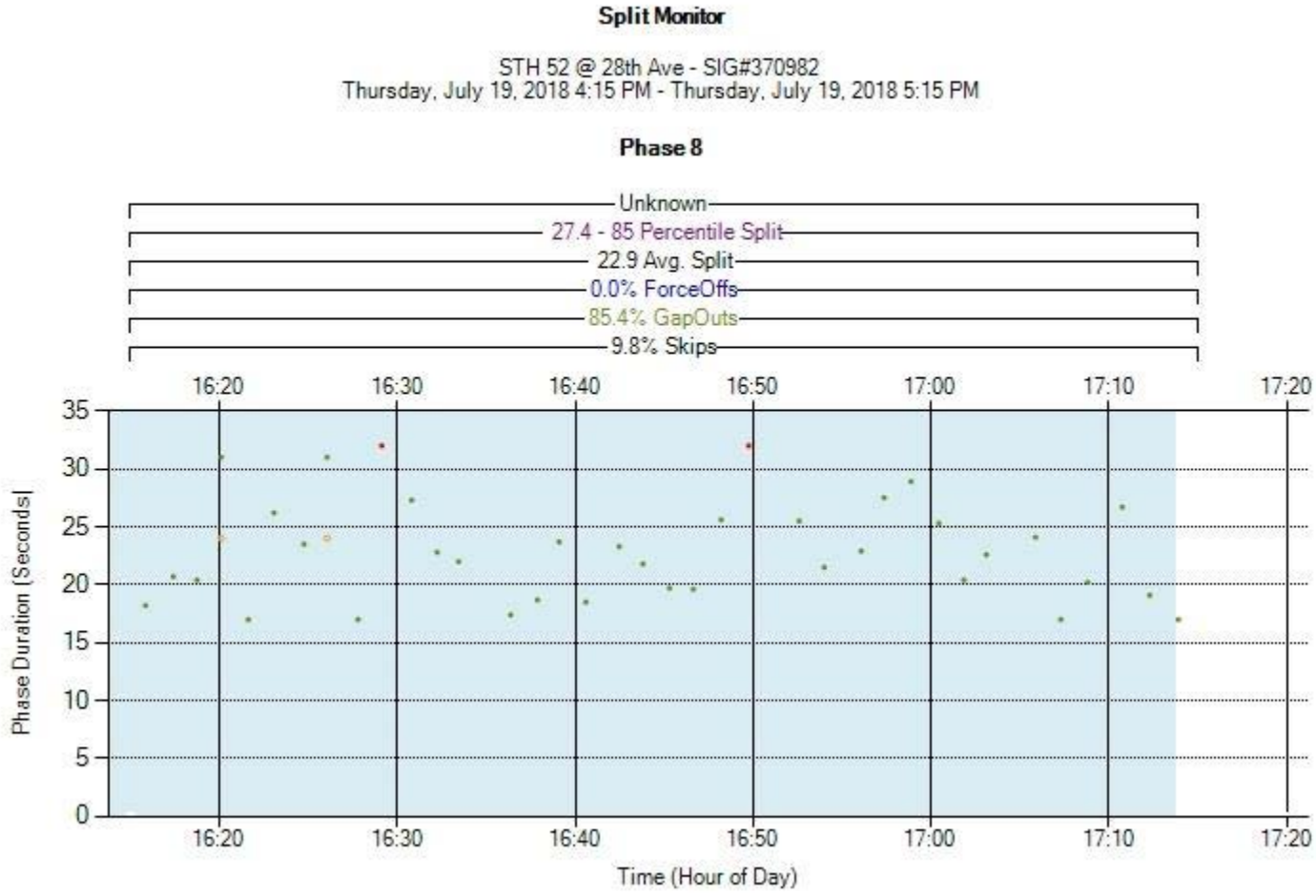
Isolated Signal – WIS 52 & 28th Avenue
Baseline Timings
7/19/2018 – 4:15 PM – 5:15 PM



Isolated Signal – WIS 52 & 28th Avenue
Baseline Timings
7/19/2018 – 4:15 PM – 5:15 PM

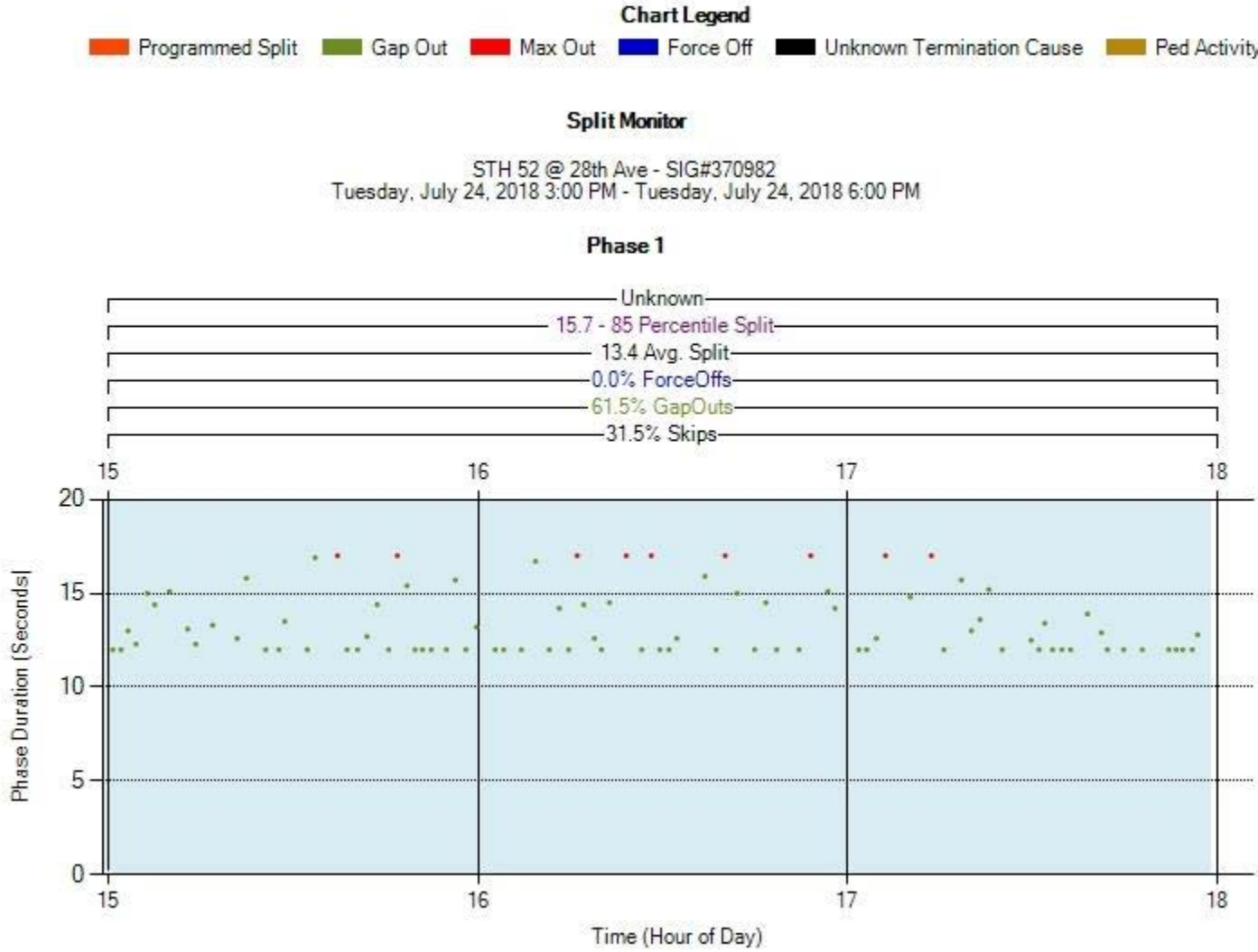


Isolated Signal – WIS 52 & 28th Avenue
Baseline Timings
7/19/2018 – 4:15 PM – 5:15 PM

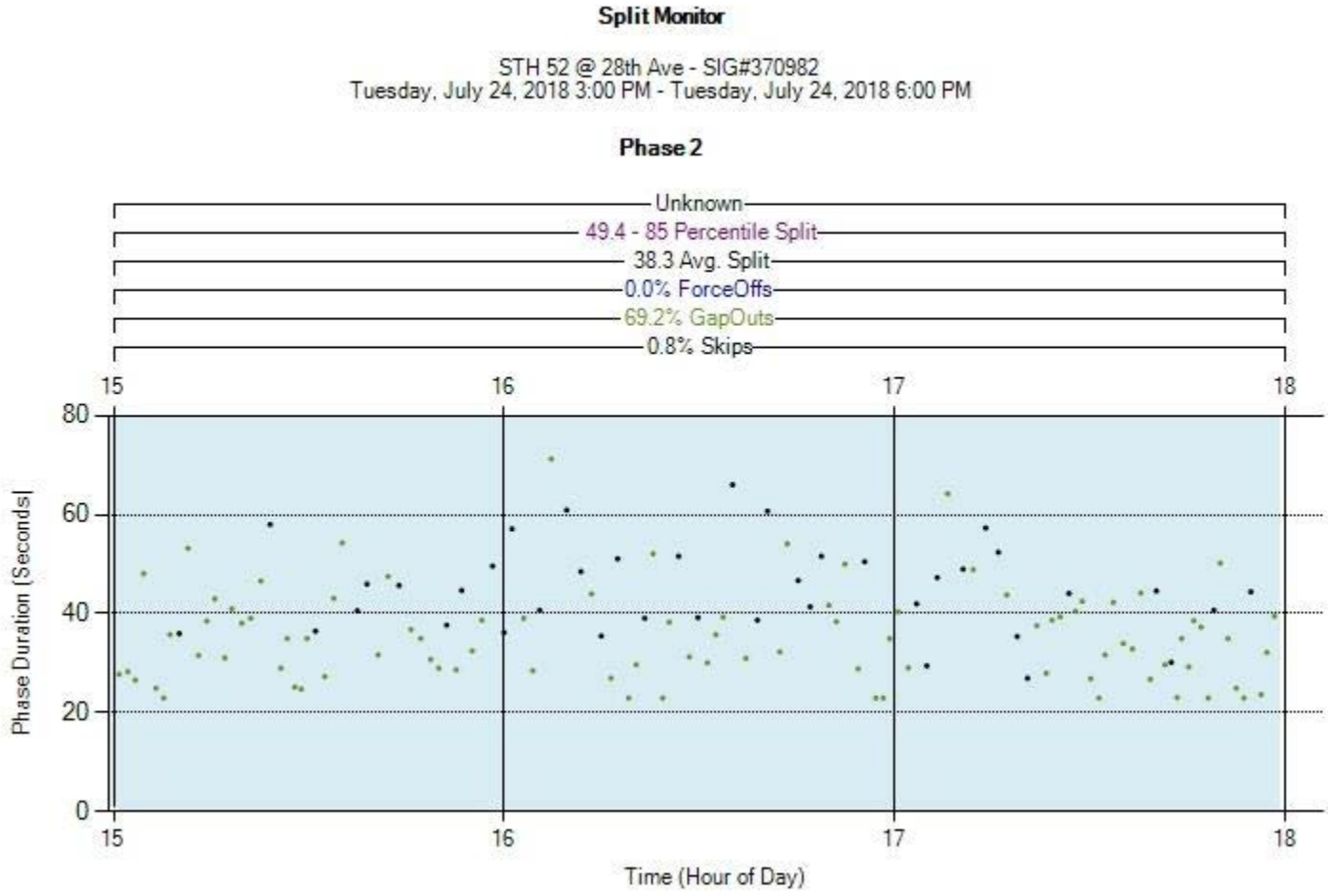


WisBOOM Outputs
WIS 52 & 28th Avenue
HCS Optimized Timings

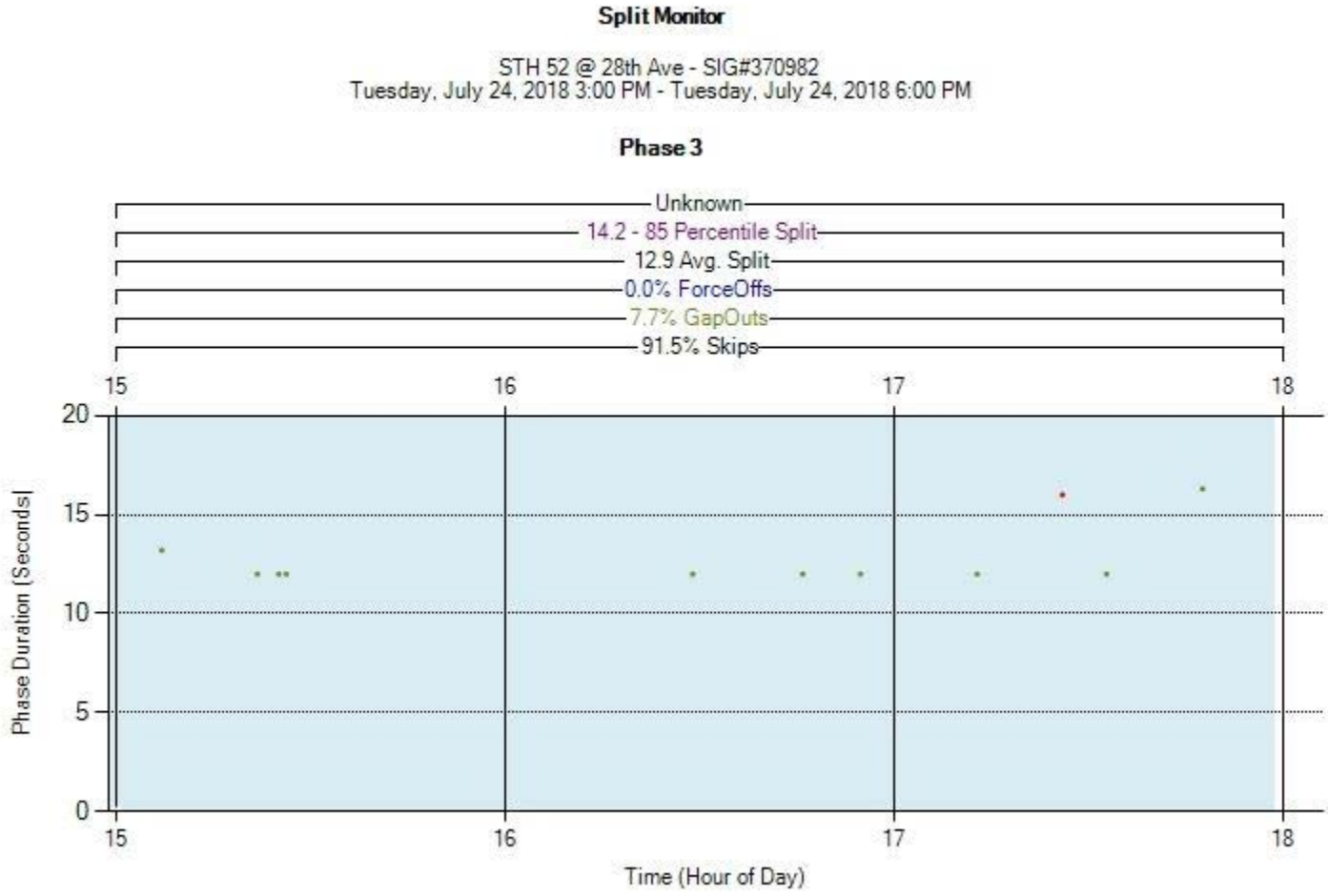
Isolated Signal – WIS 52 & 28th Avenue
HCS Timings
7/24/2018 – 3:00 PM – 6:00 PM



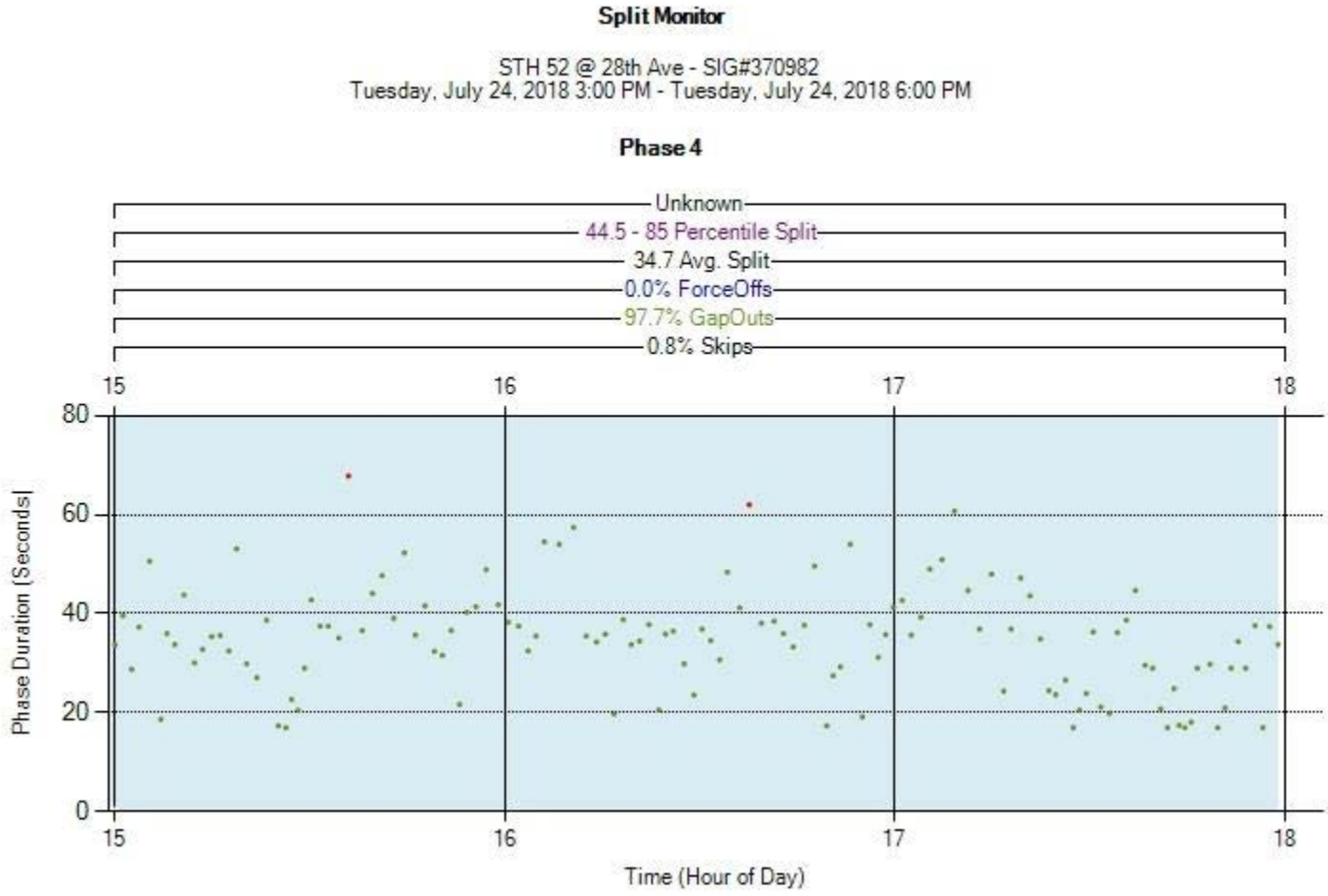
Isolated Signal – WIS 52 & 28th Avenue
HCS Timings
7/24/2018 – 3:00 PM – 6:00 PM



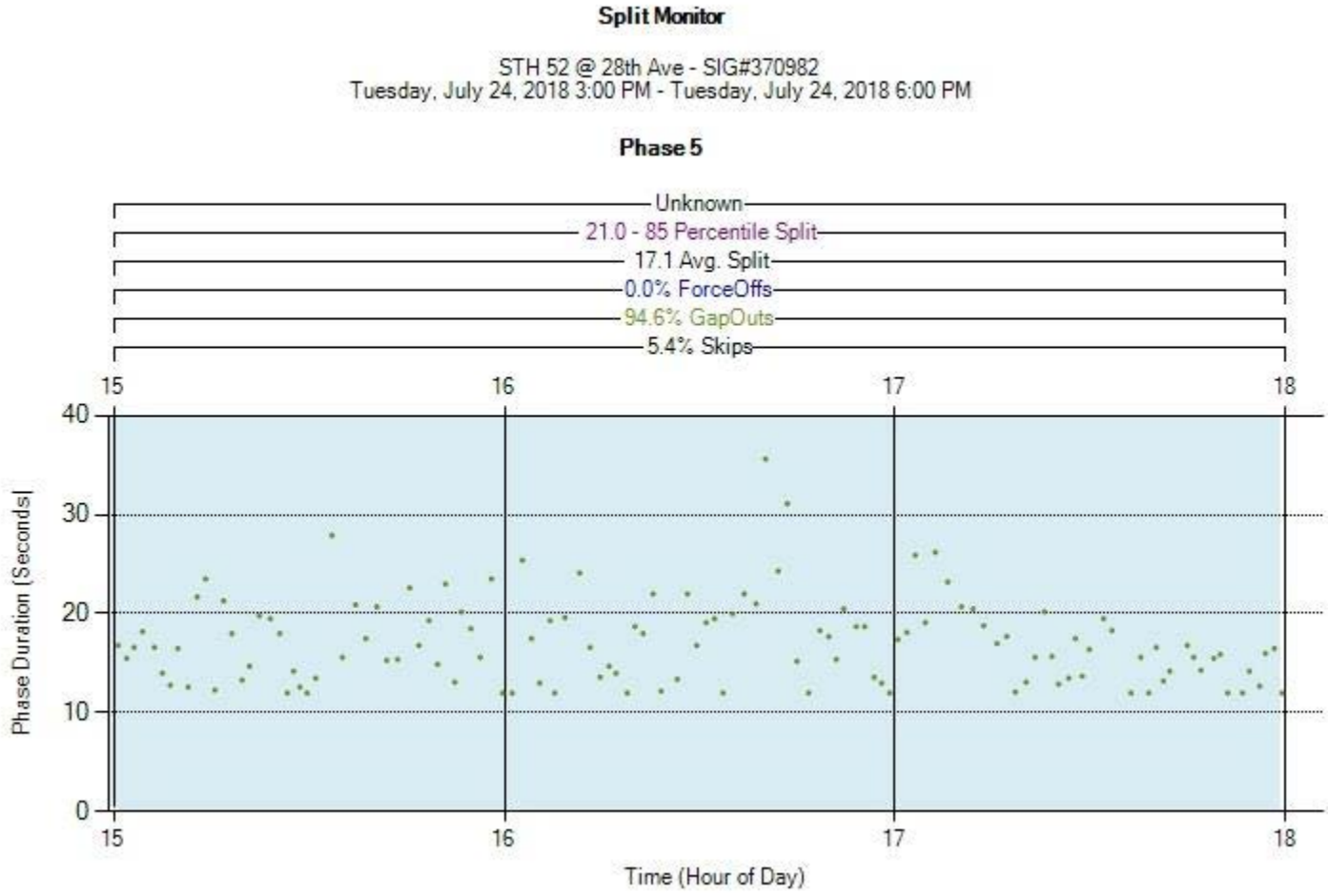
Isolated Signal – WIS 52 & 28th Avenue
HCS Timings
7/24/2018 – 3:00 PM – 6:00 PM



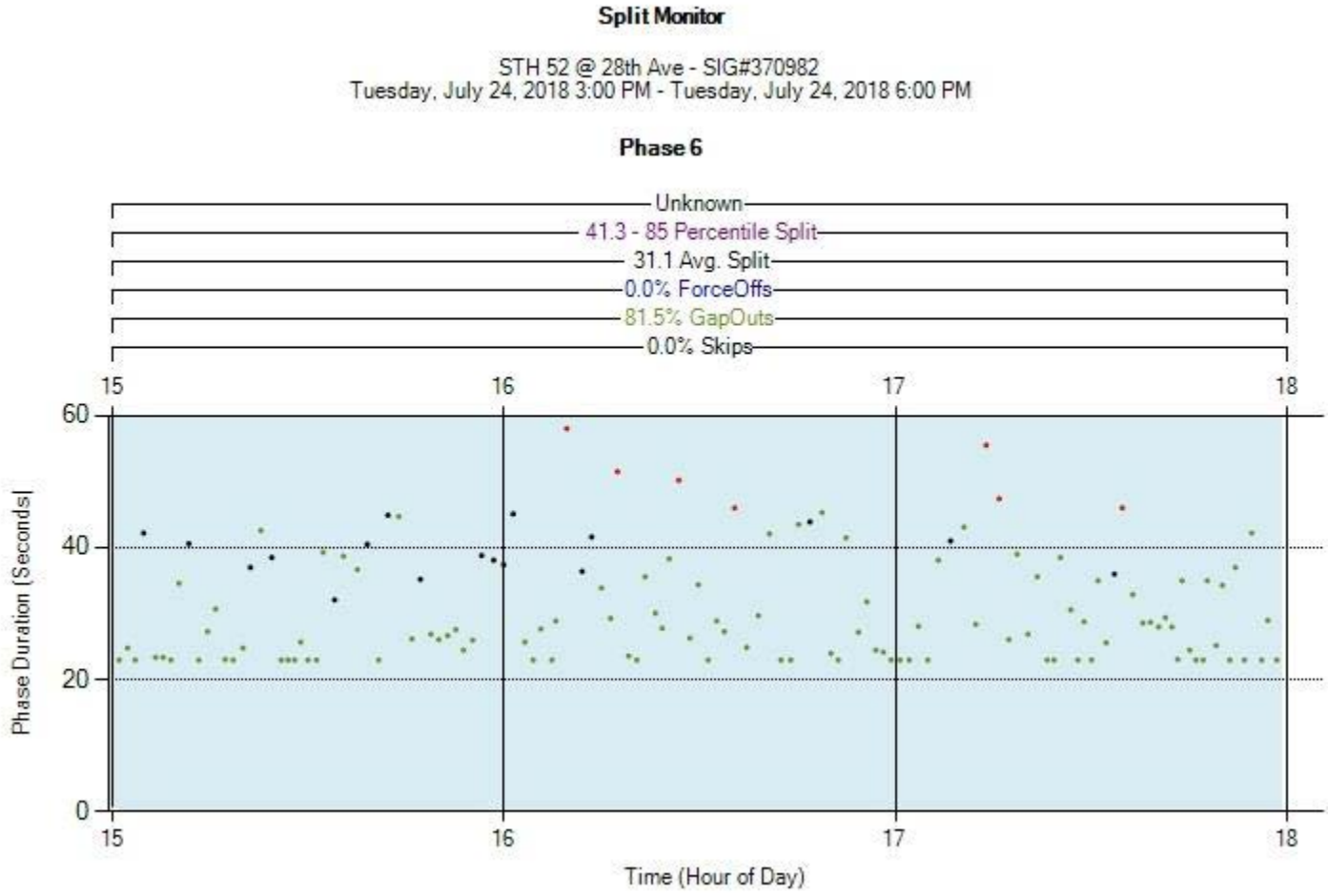
Isolated Signal – WIS 52 & 28th Avenue
HCS Timings
7/24/2018 – 3:00 PM – 6:00 PM



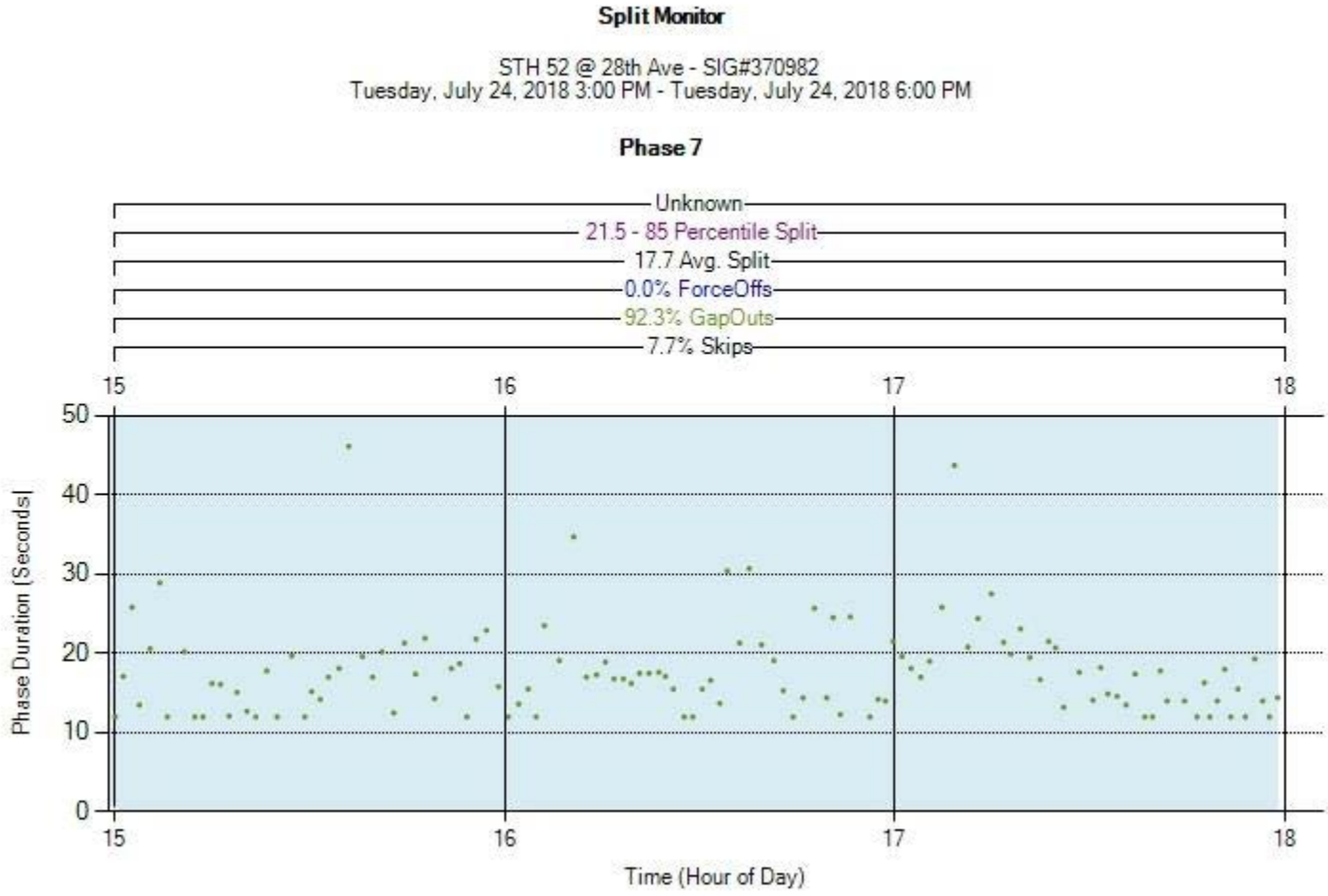
Isolated Signal – WIS 52 & 28th Avenue
HCS Timings
7/24/2018 – 3:00 PM – 6:00 PM



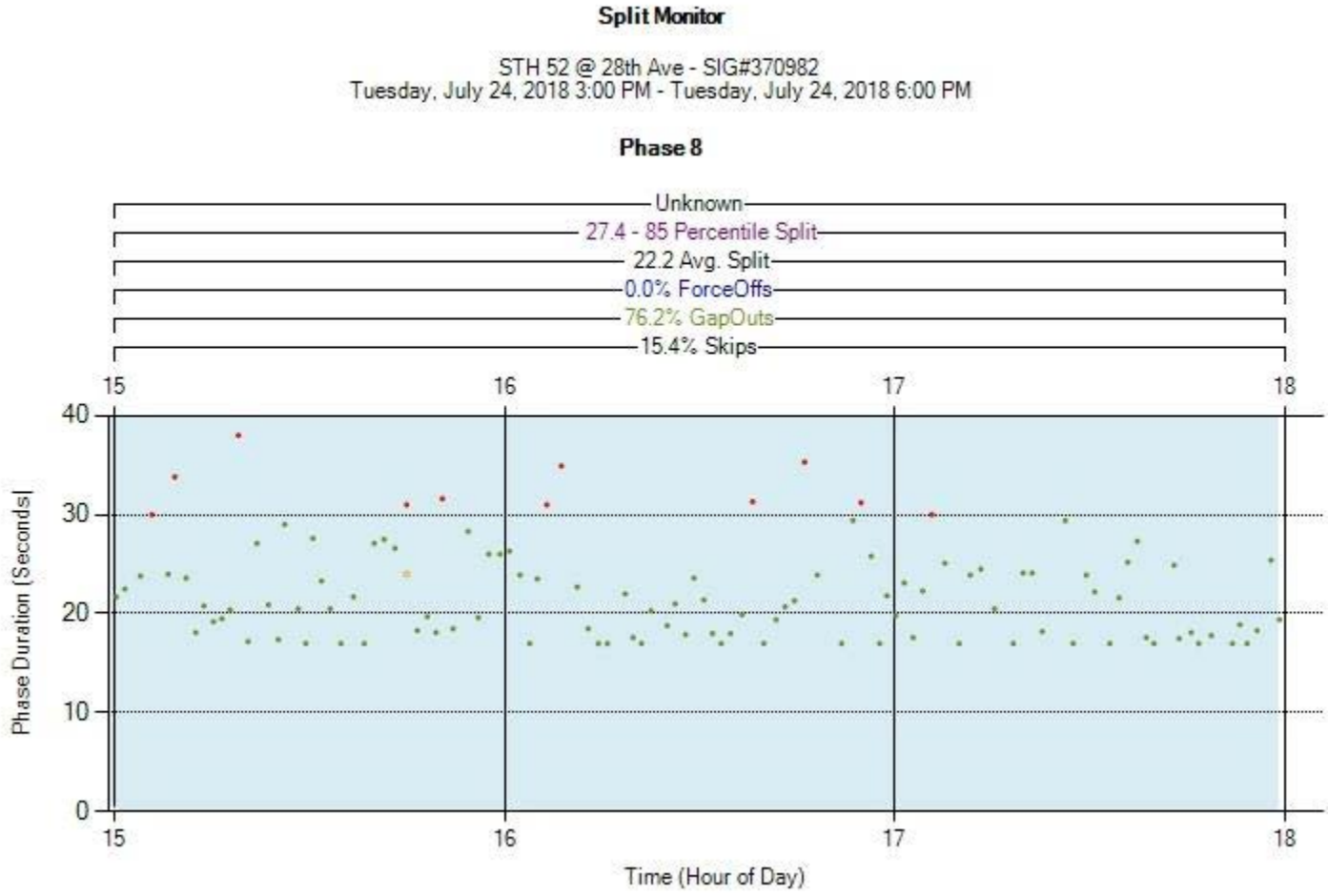
Isolated Signal – WIS 52 & 28th Avenue
HCS Timings
7/24/2018 – 3:00 PM – 6:00 PM



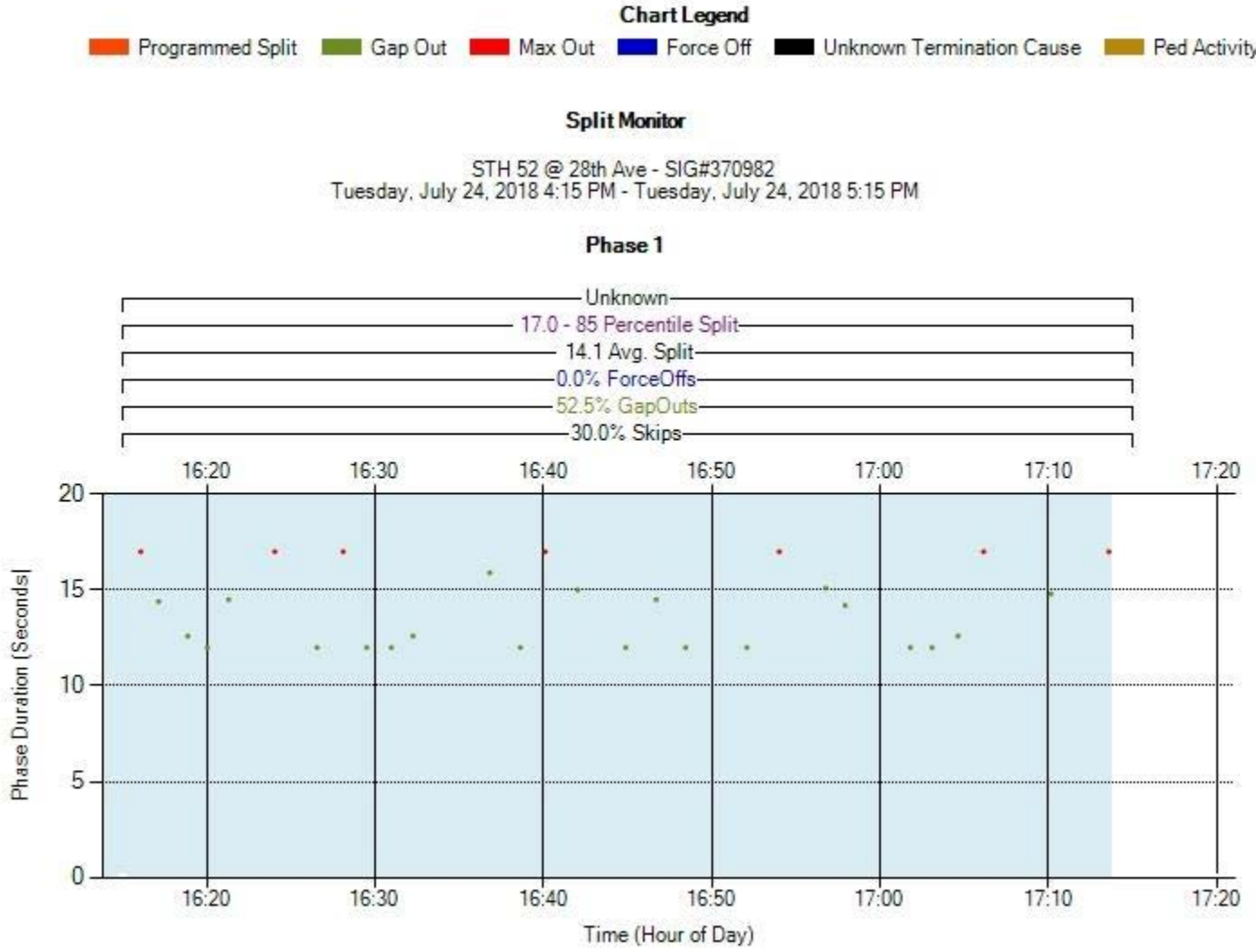
Isolated Signal – WIS 52 & 28th Avenue
HCS Timings
7/24/2018 – 3:00 PM – 6:00 PM



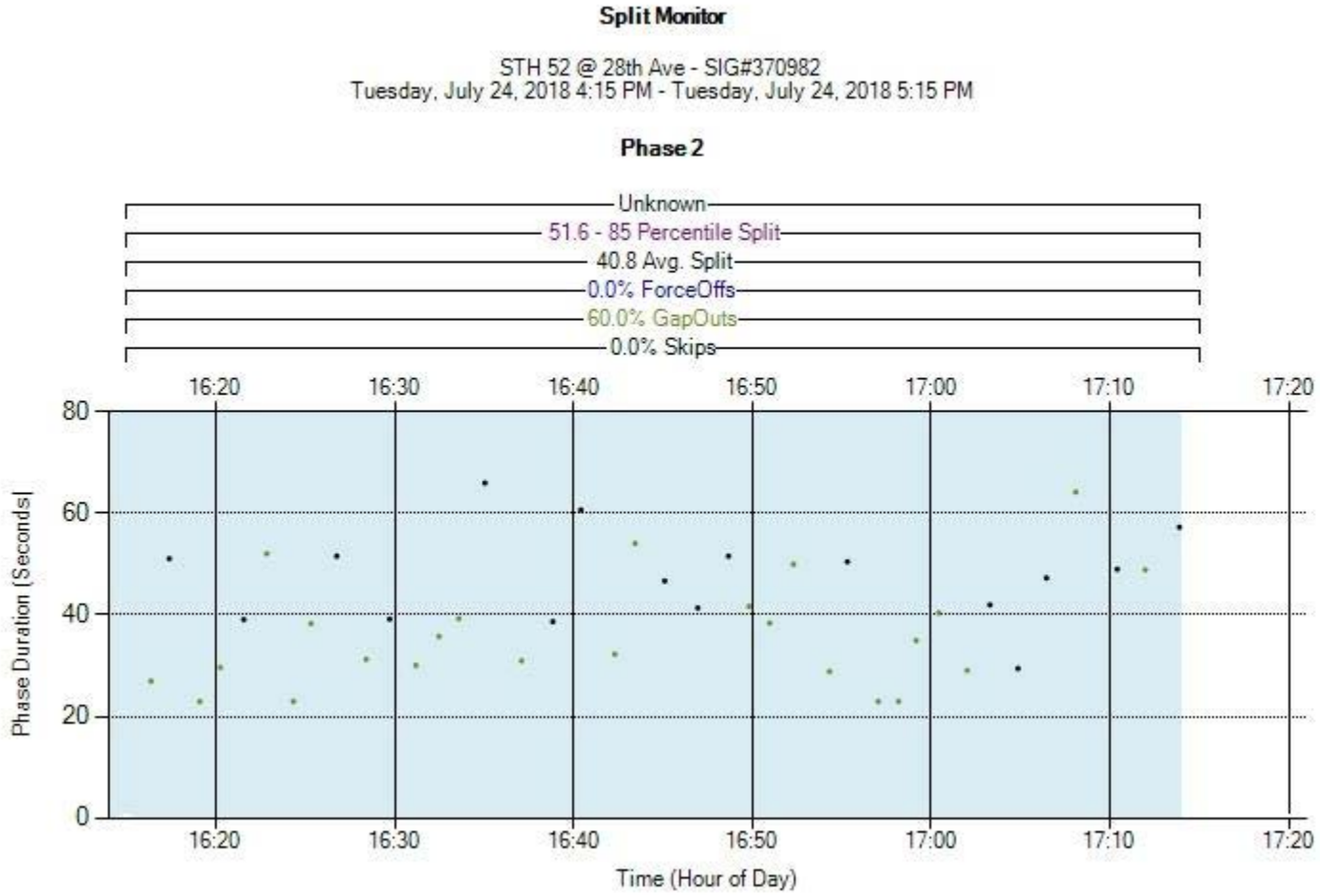
Isolated Signal – WIS 52 & 28th Avenue
HCS Timings
7/24/2018 – 3:00 PM – 6:00 PM



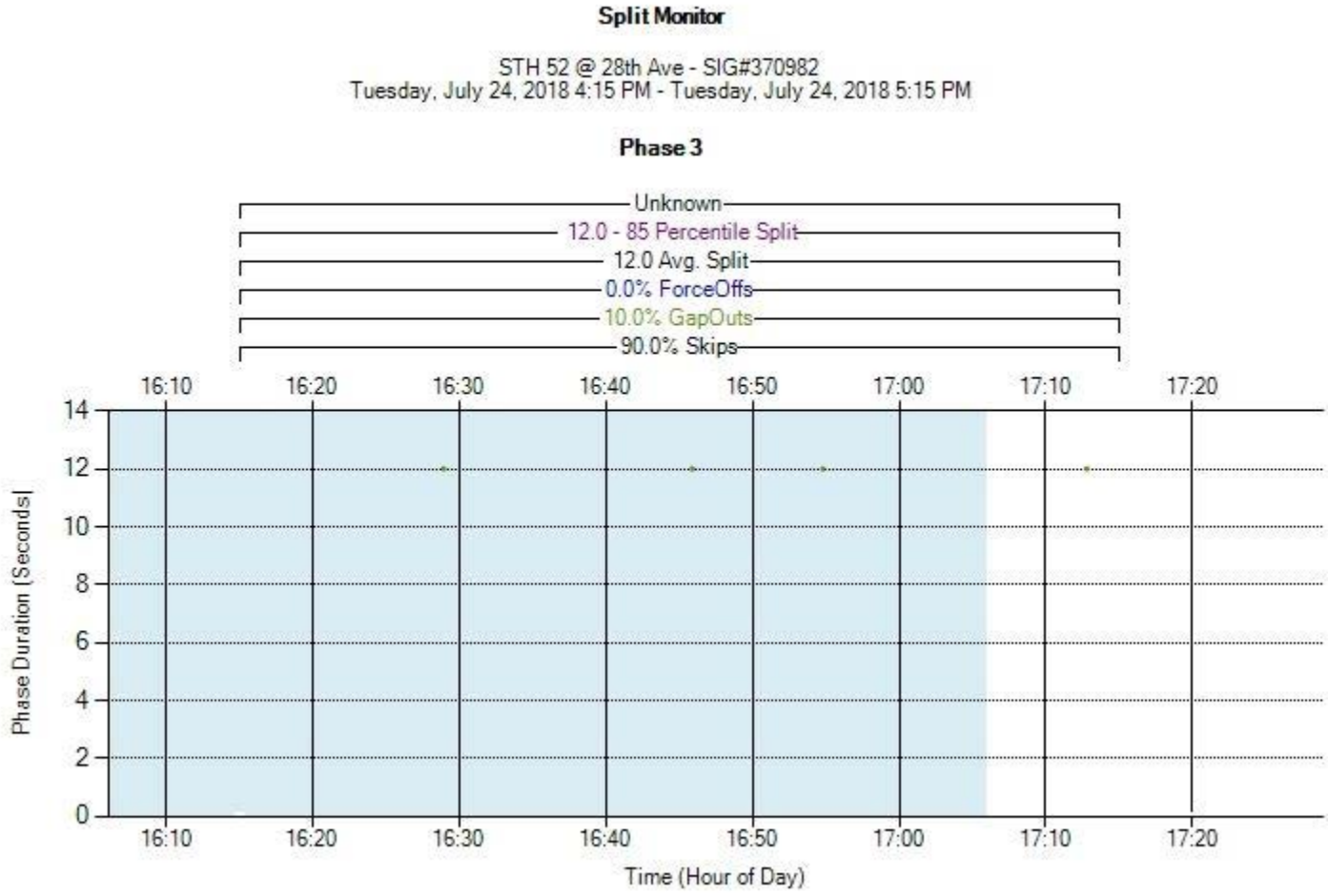
Isolated Signal – WIS 52 & 28th Avenue
HCS Timings
7/24/2018 – 4:15 PM – 5:15 PM



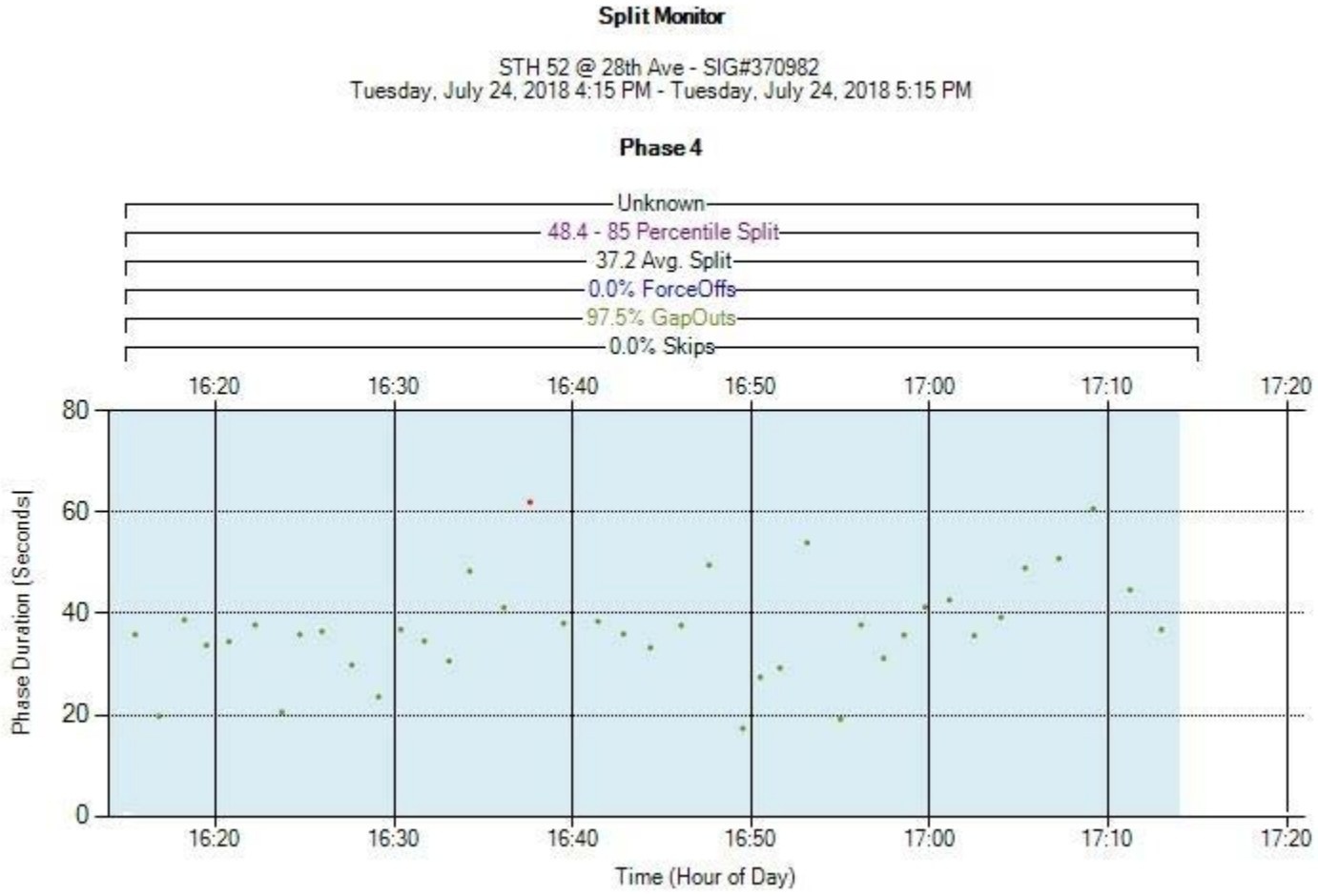
Isolated Signal – WIS 52 & 28th Avenue
HCS Timings
7/24/2018 – 4:15 PM – 5:15 PM



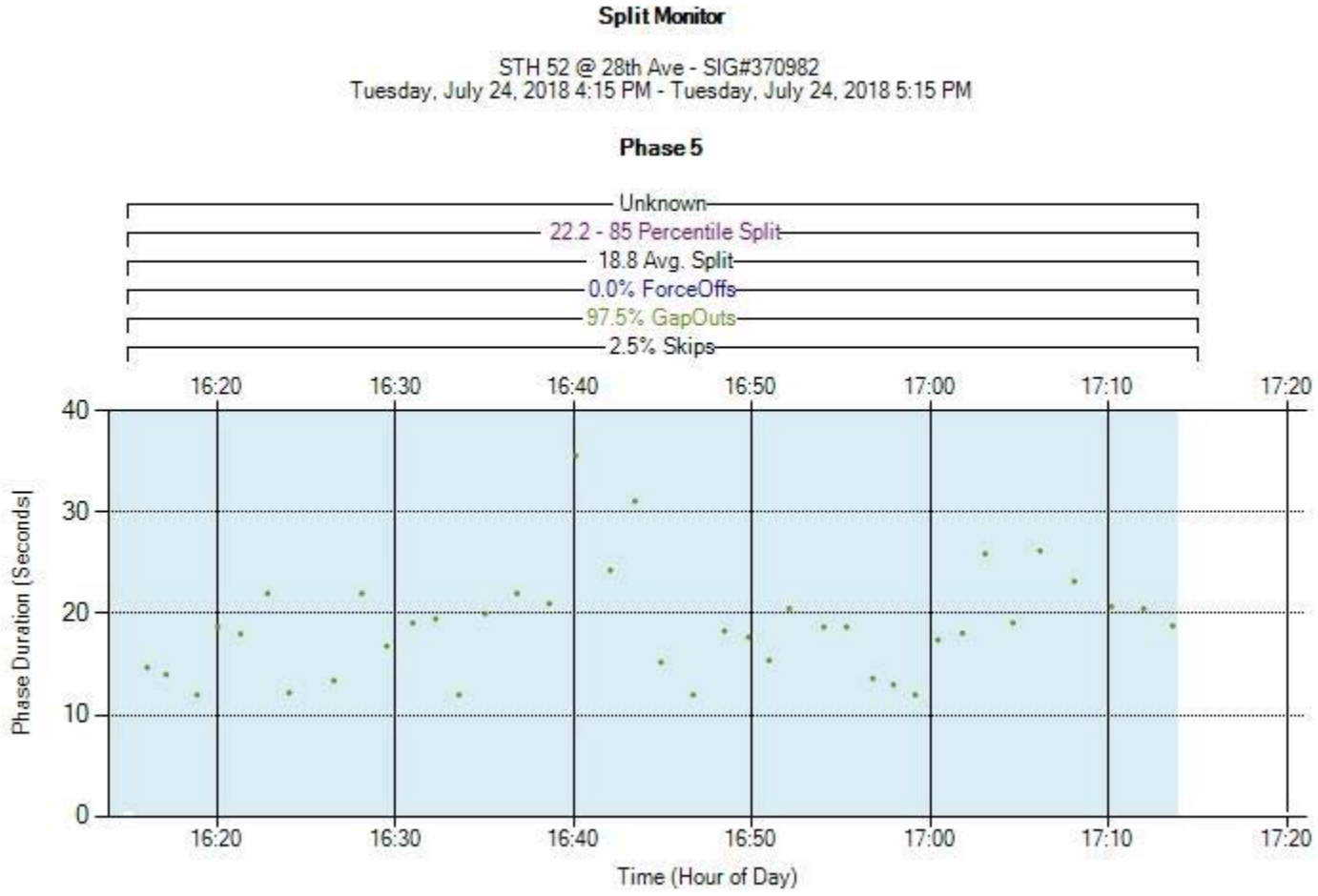
Isolated Signal – WIS 52 & 28th Avenue
HCS Timings
7/24/2018 – 4:15 PM – 5:15 PM



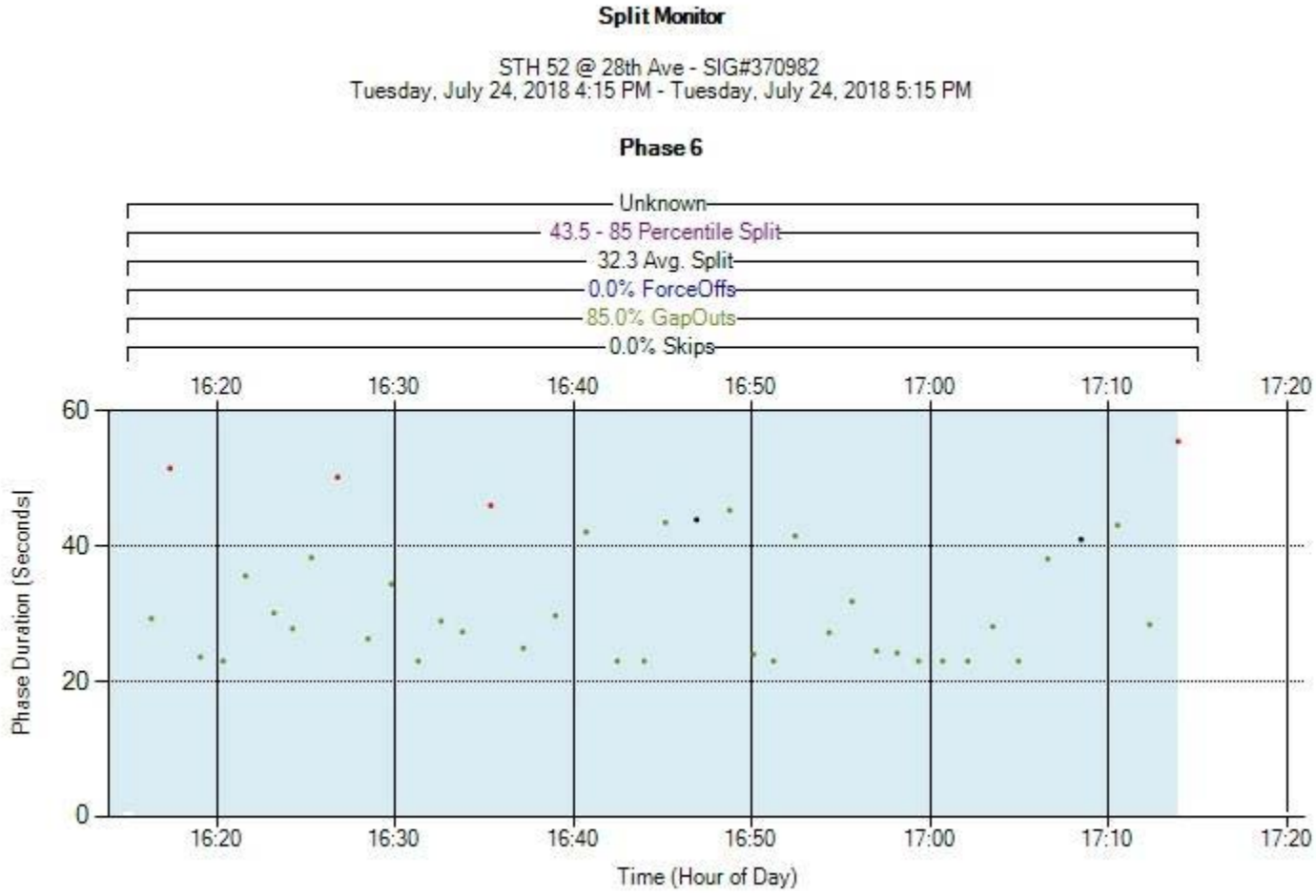
Isolated Signal – WIS 52 & 28th Avenue
HCS Timings
7/24/2018 – 4:15 PM – 5:15 PM



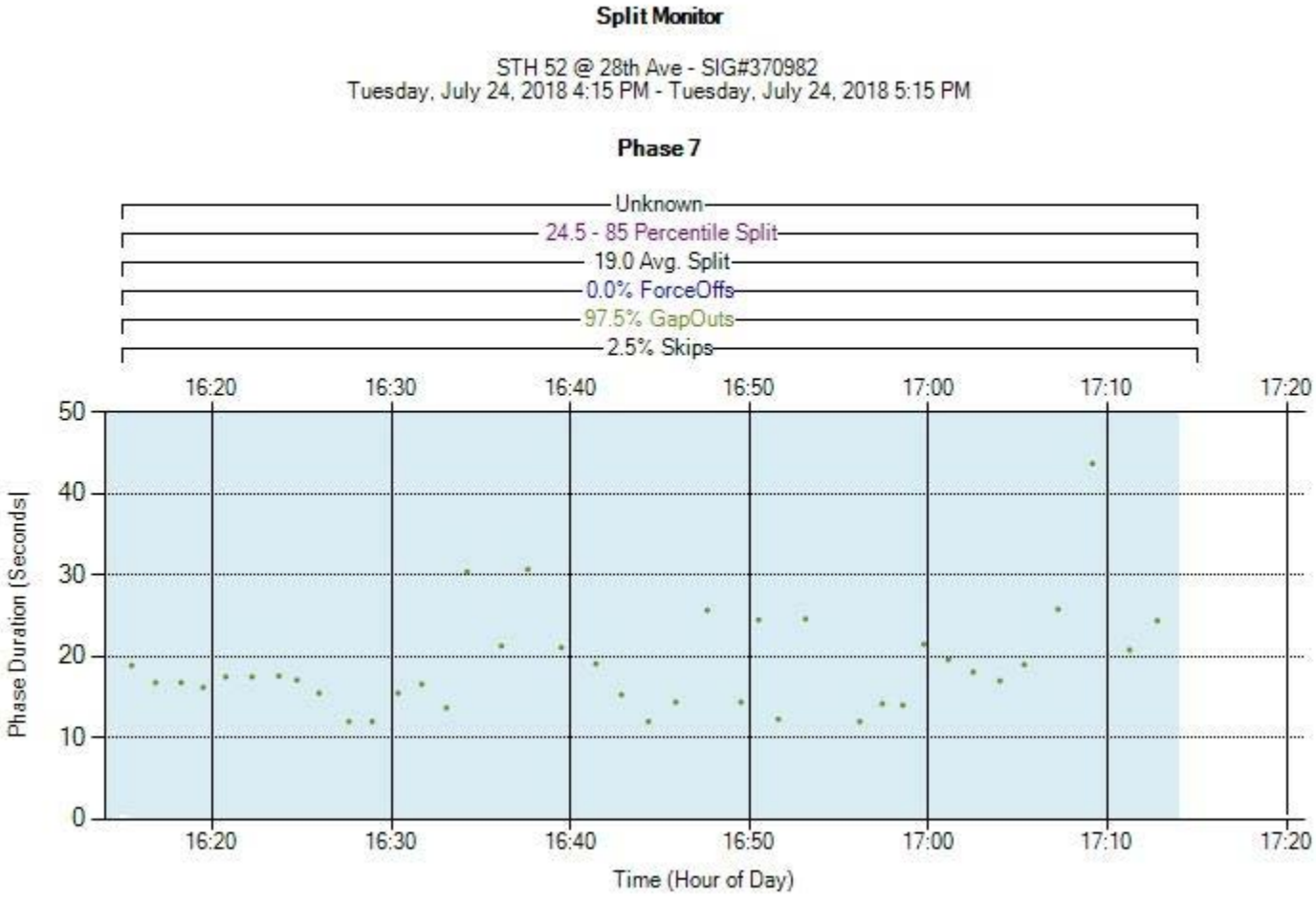
Isolated Signal – WIS 52 & 28th Avenue
HCS Timings
7/24/2018 – 4:15 PM – 5:15 PM



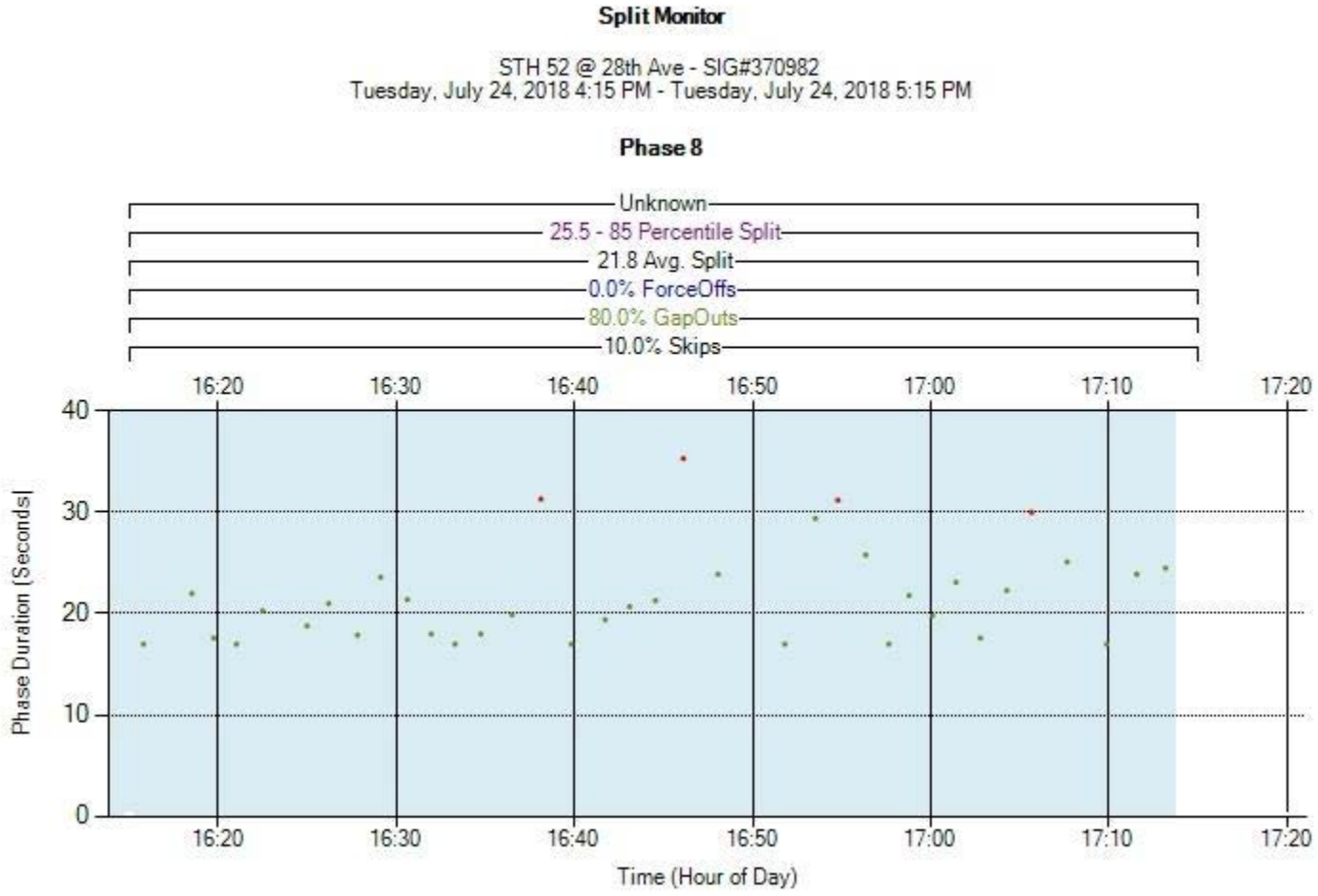
Isolated Signal – WIS 52 & 28th Avenue
HCS Timings
7/24/2018 – 4:15 PM – 5:15 PM



Isolated Signal – WIS 52 & 28th Avenue
HCS Timings
7/24/2018 – 4:15 PM – 5:15 PM

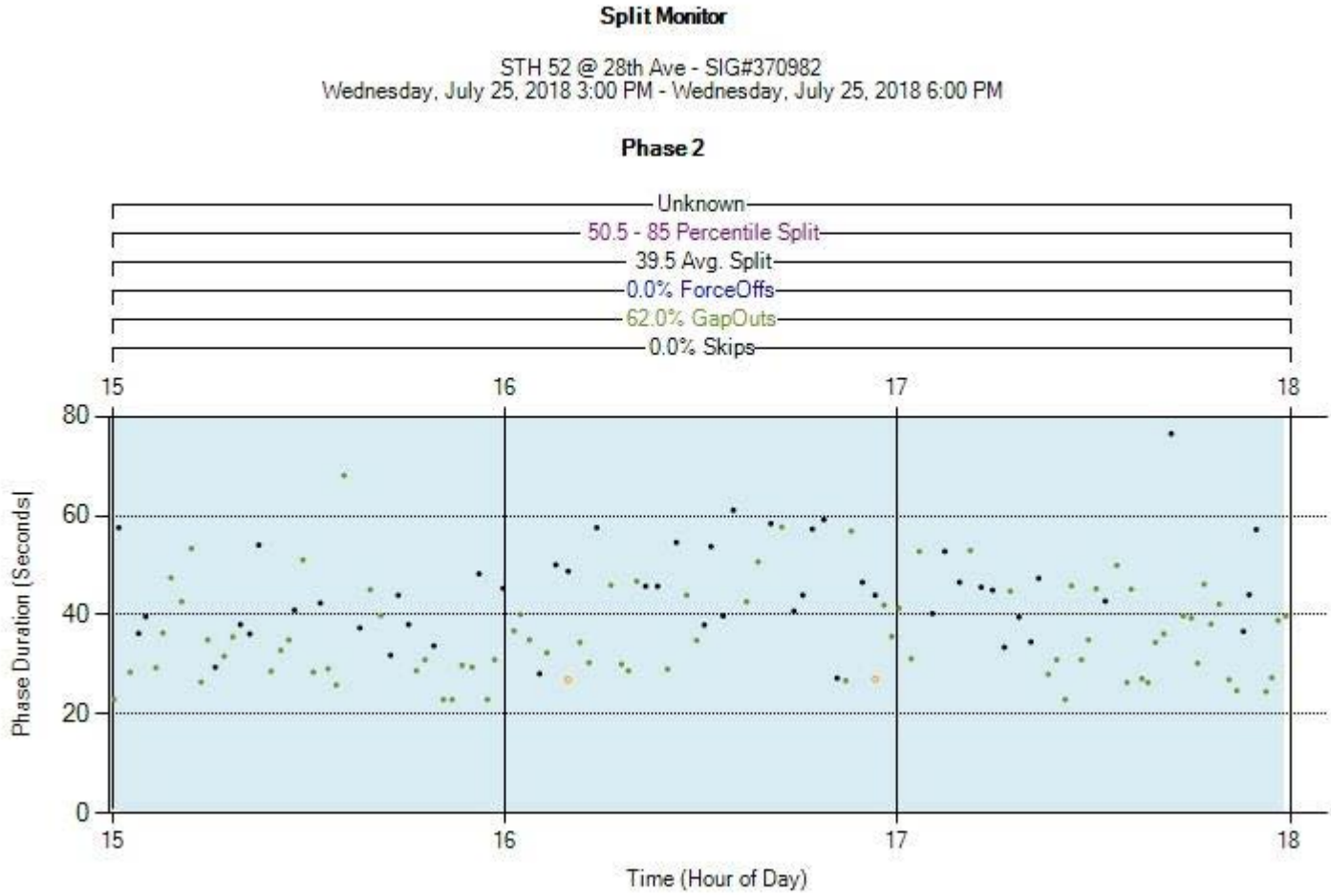


Isolated Signal – WIS 52 & 28th Avenue
HCS Timings
7/24/2018 – 4:15 PM – 5:15 PM

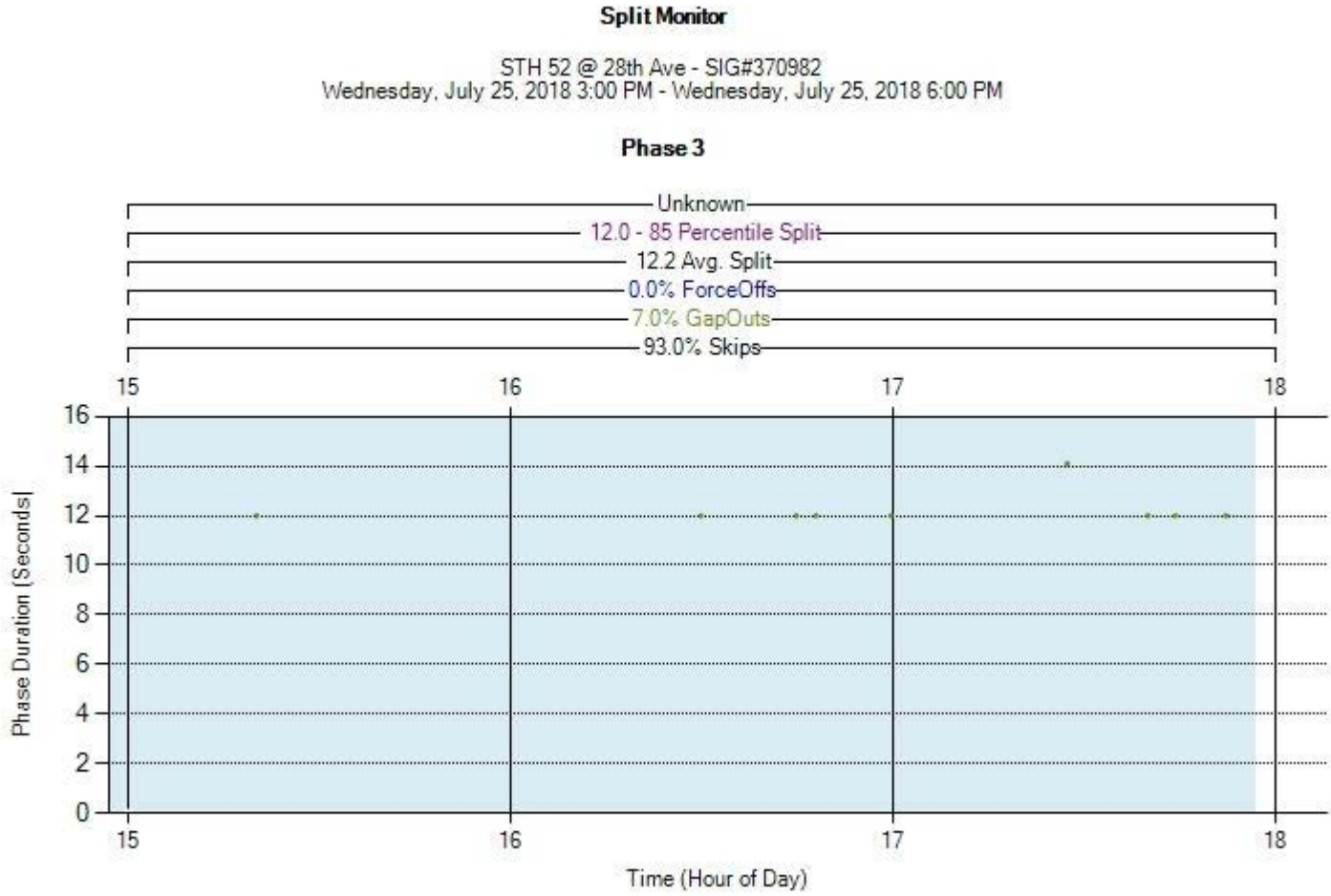


Isolated Signal – WIS 52 & 28th Avenue
HCS Timings
7/25/2018 – 3:00 PM – 6:00 PM

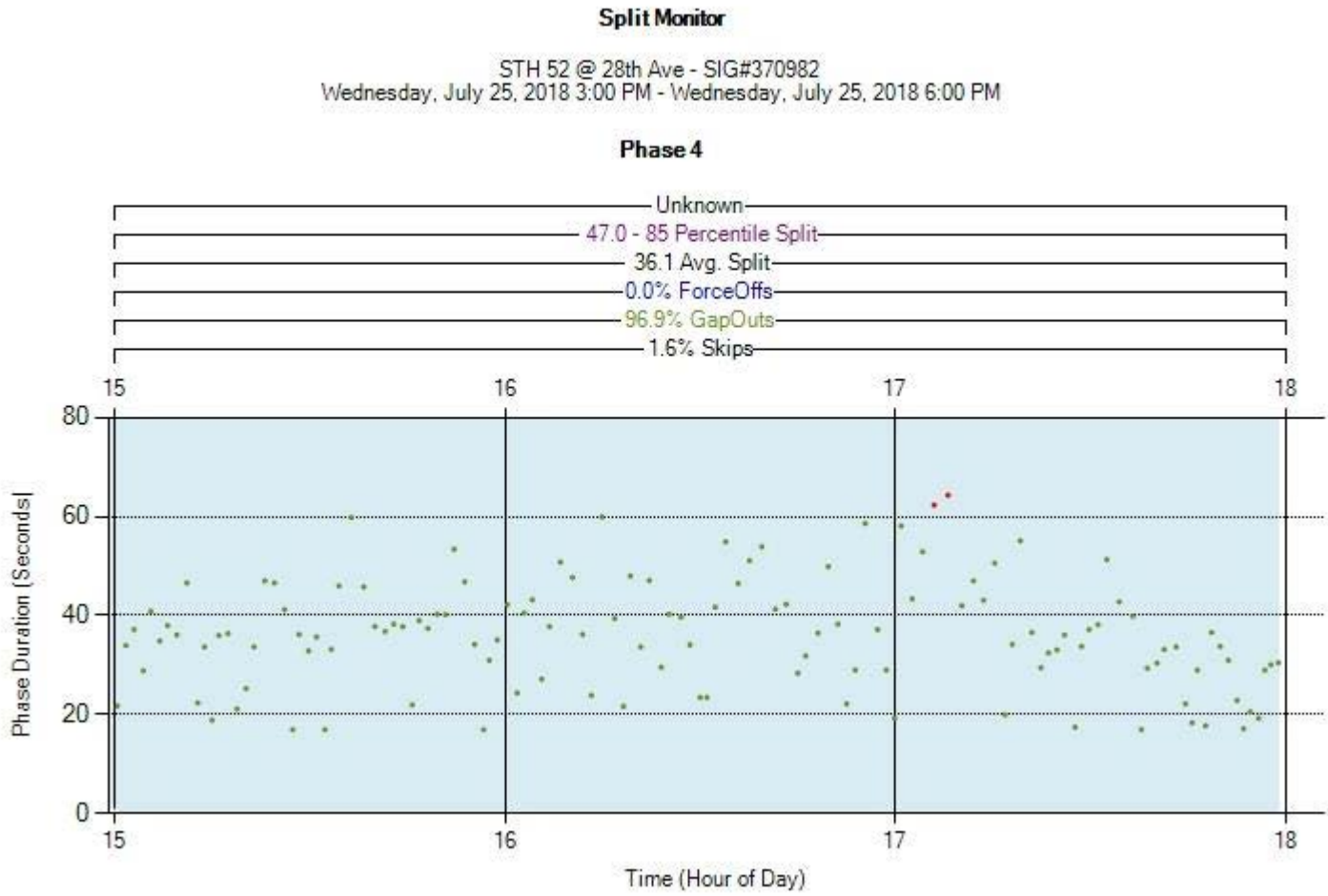
Isolated Signal – WIS 52 & 28th Avenue
HCS Timings
7/25/2018 – 3:00 PM – 6:00 PM



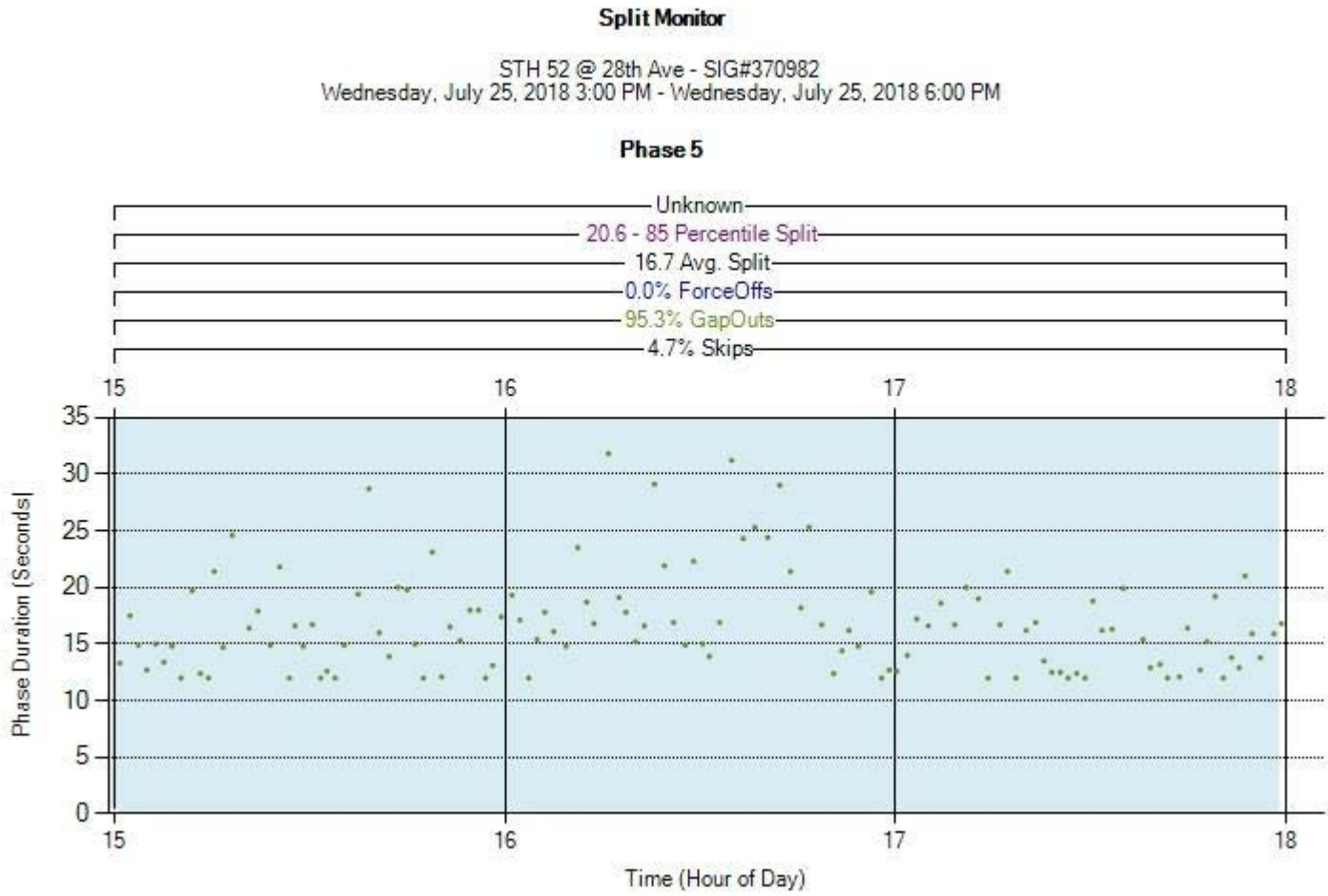
Isolated Signal – WIS 52 & 28th Avenue
HCS Timings
7/25/2018 – 3:00 PM – 6:00 PM



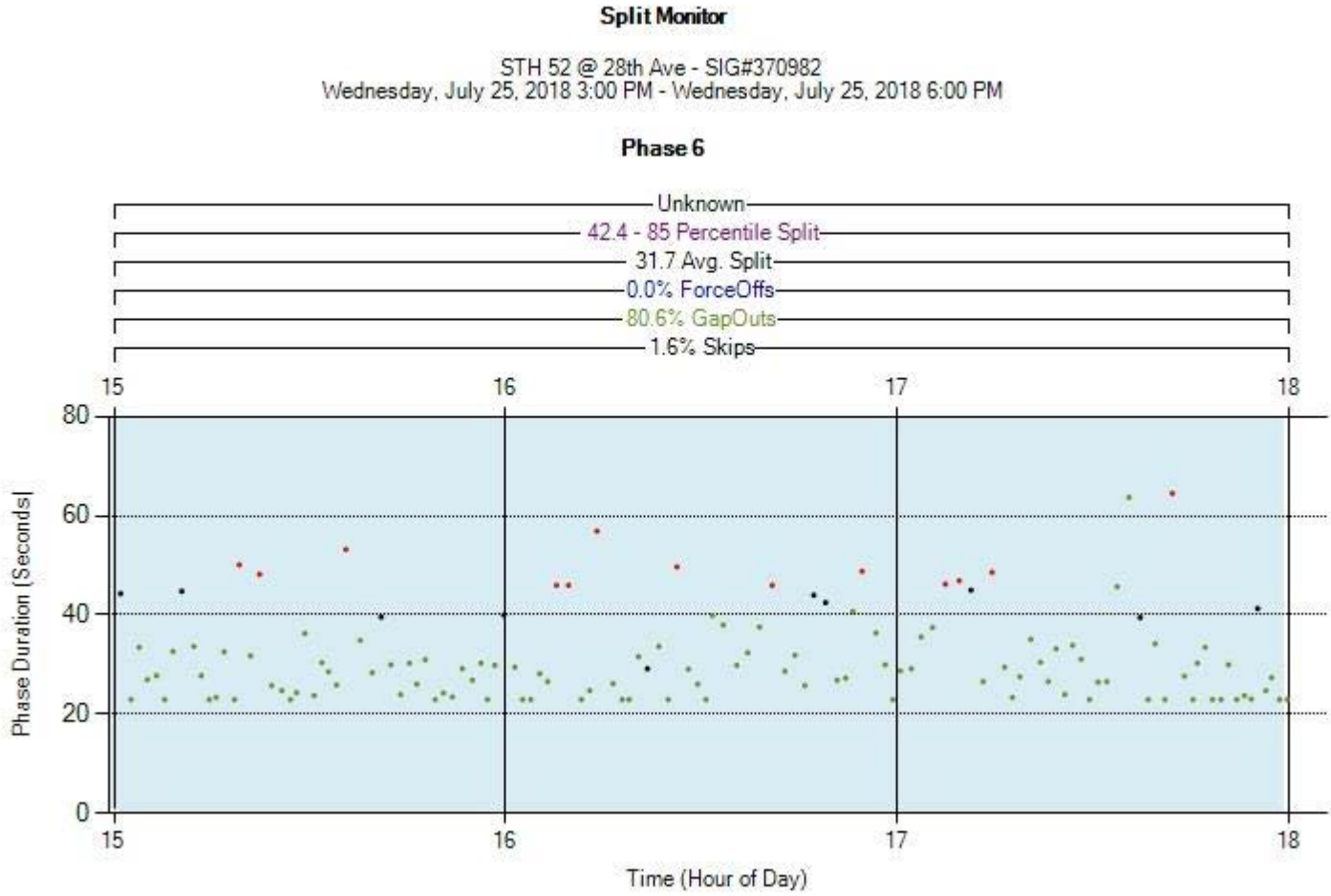
Isolated Signal – WIS 52 & 28th Avenue
HCS Timings
7/25/2018 – 3:00 PM – 6:00 PM



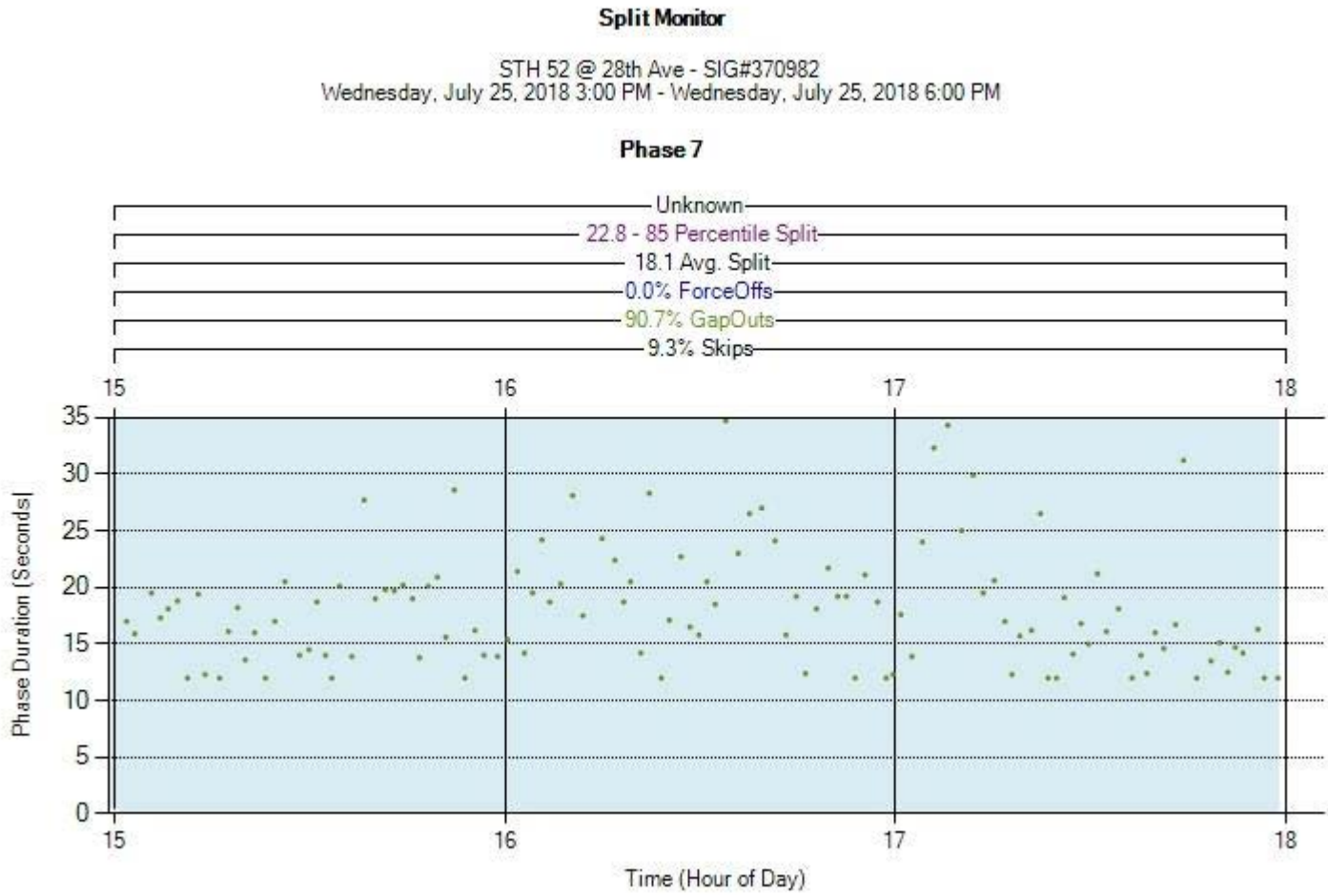
Isolated Signal – WIS 52 & 28th Avenue
HCS Timings
7/25/2018 – 3:00 PM – 6:00 PM



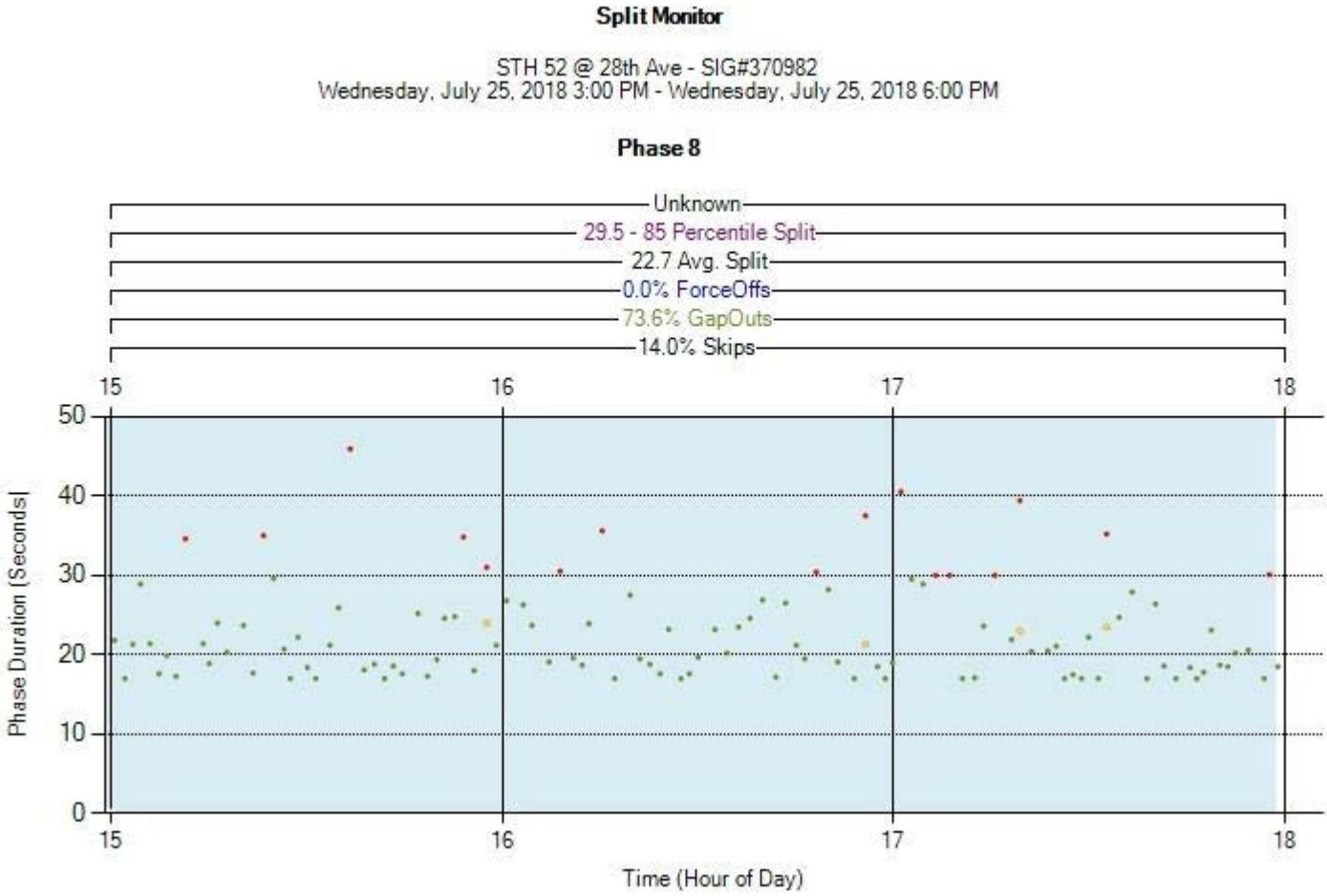
Isolated Signal – WIS 52 & 28th Avenue
HCS Timings
7/25/2018 – 3:00 PM – 6:00 PM



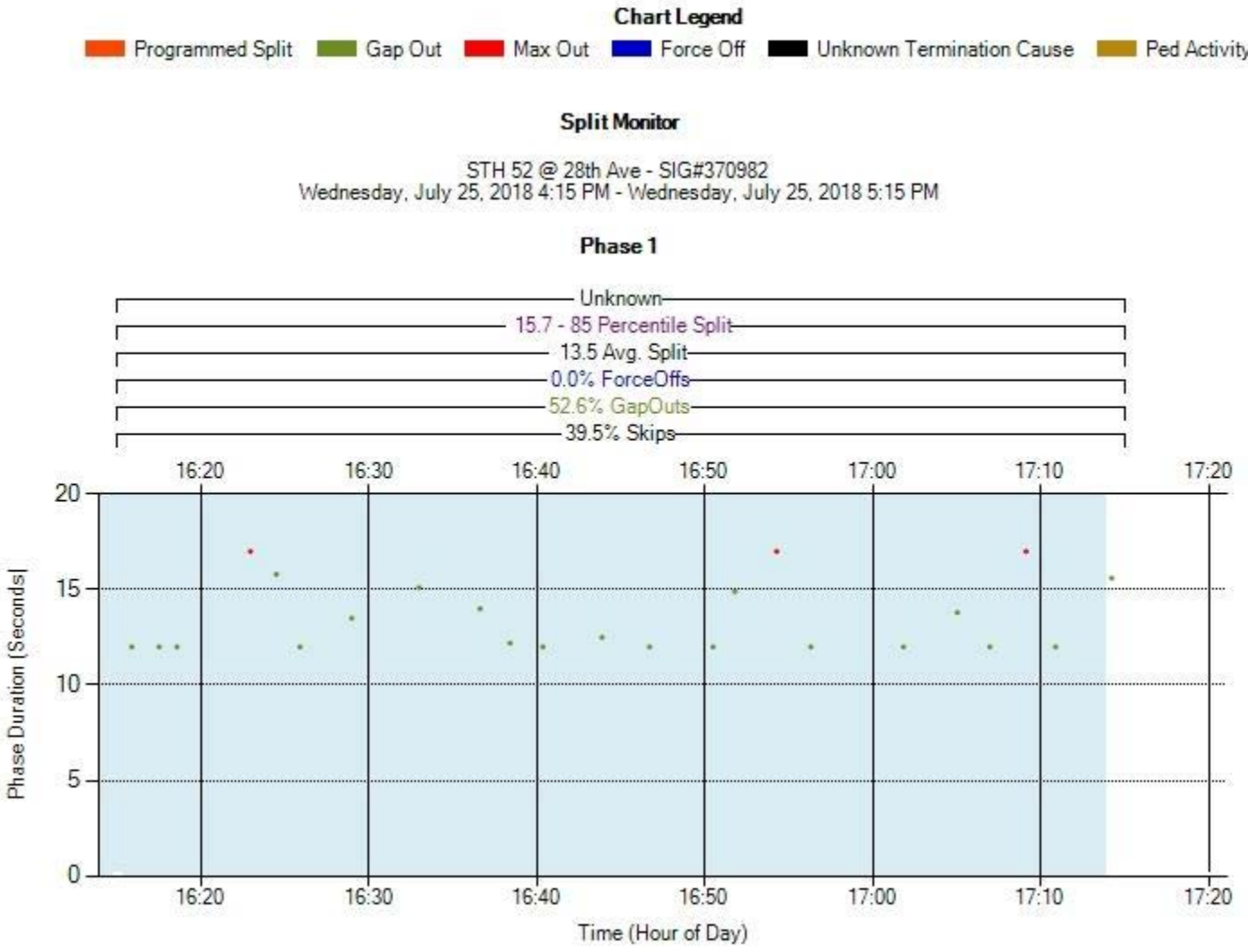
Isolated Signal – WIS 52 & 28th Avenue
HCS Timings
7/25/2018 – 3:00 PM – 6:00 PM



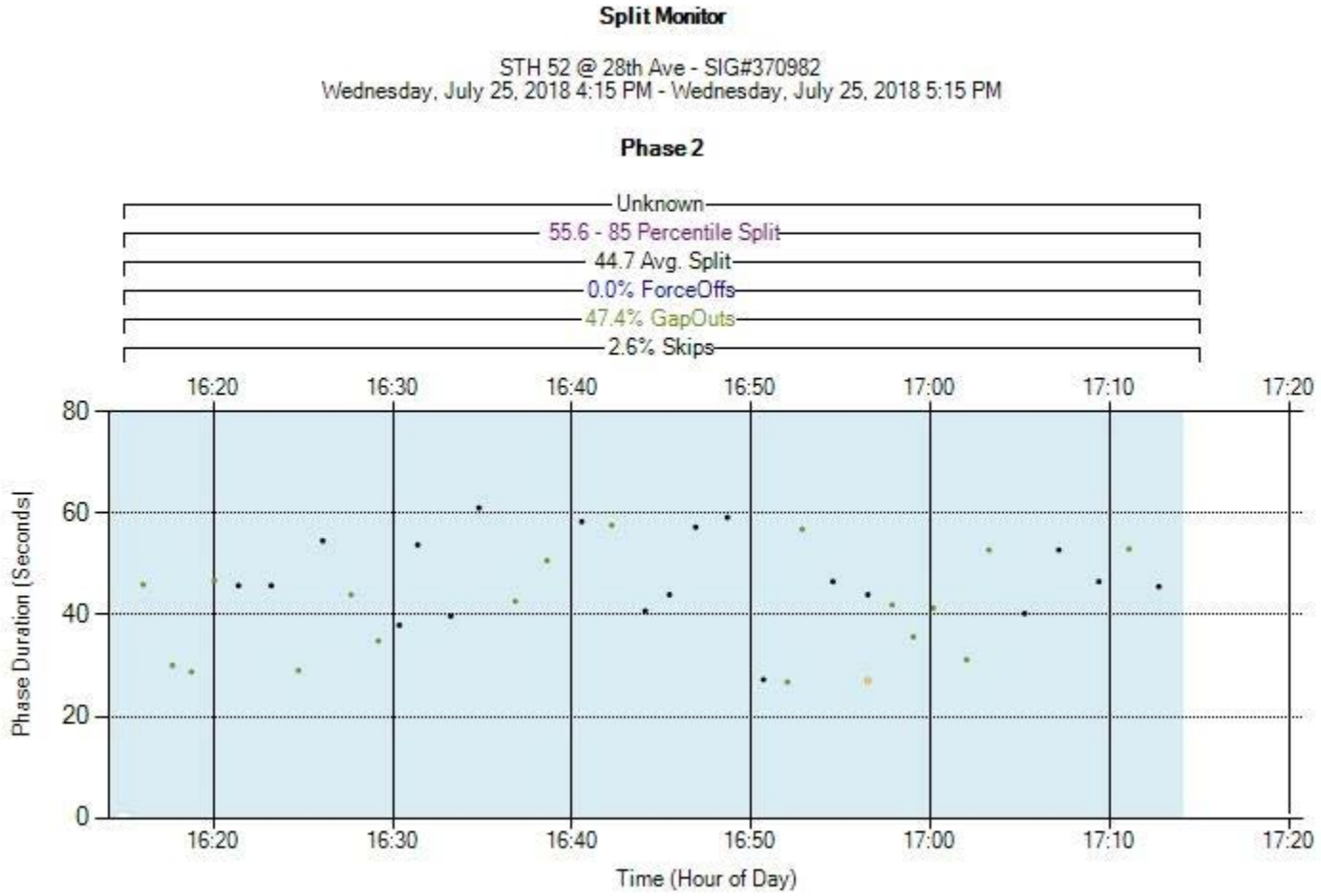
Isolated Signal – WIS 52 & 28th Avenue
HCS Timings
7/25/2018 – 3:00 PM – 6:00 PM



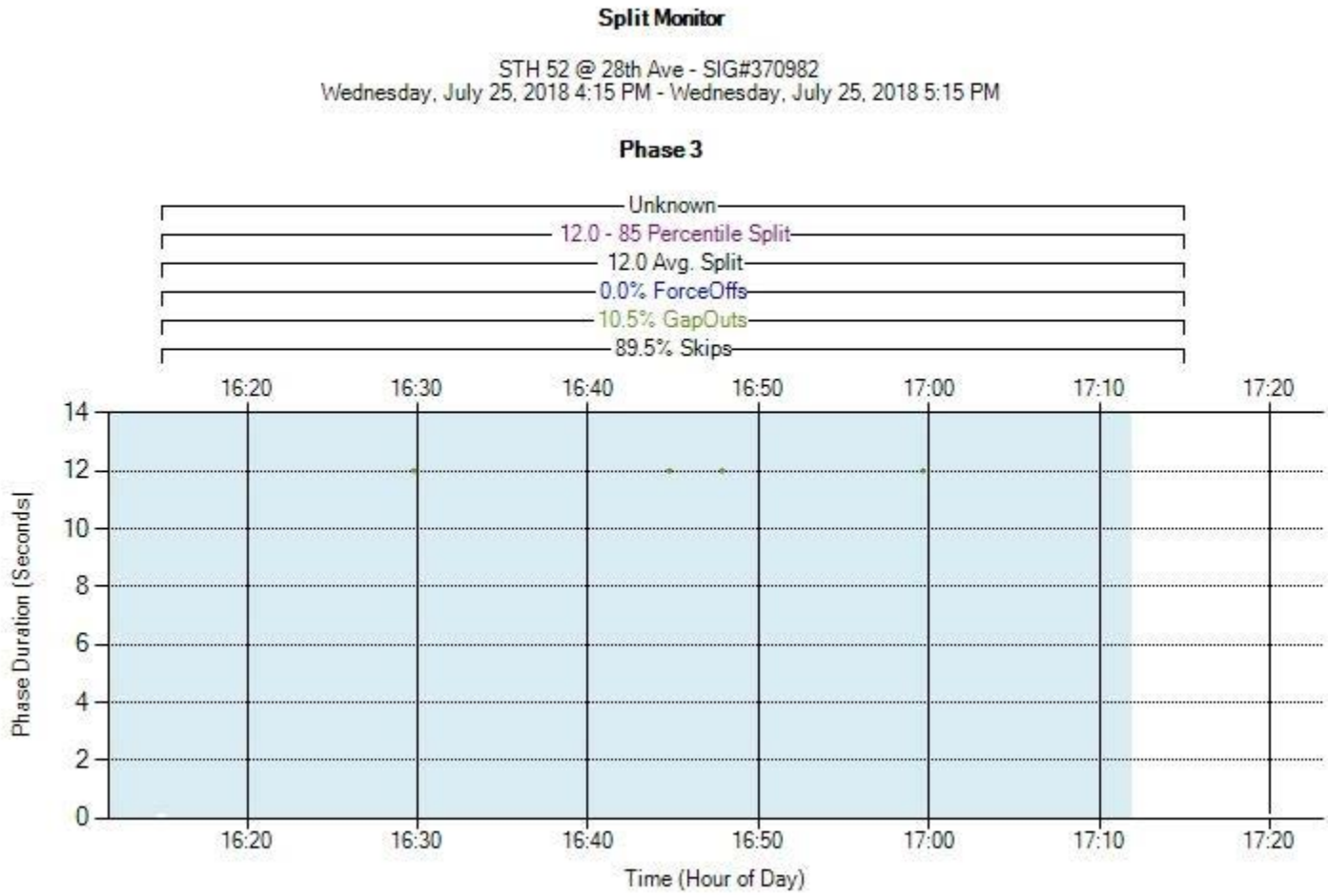
Isolated Signal – WIS 52 & 28th Avenue
HCS Timings
7/25/2018 – 4:15 PM – 5:15 PM



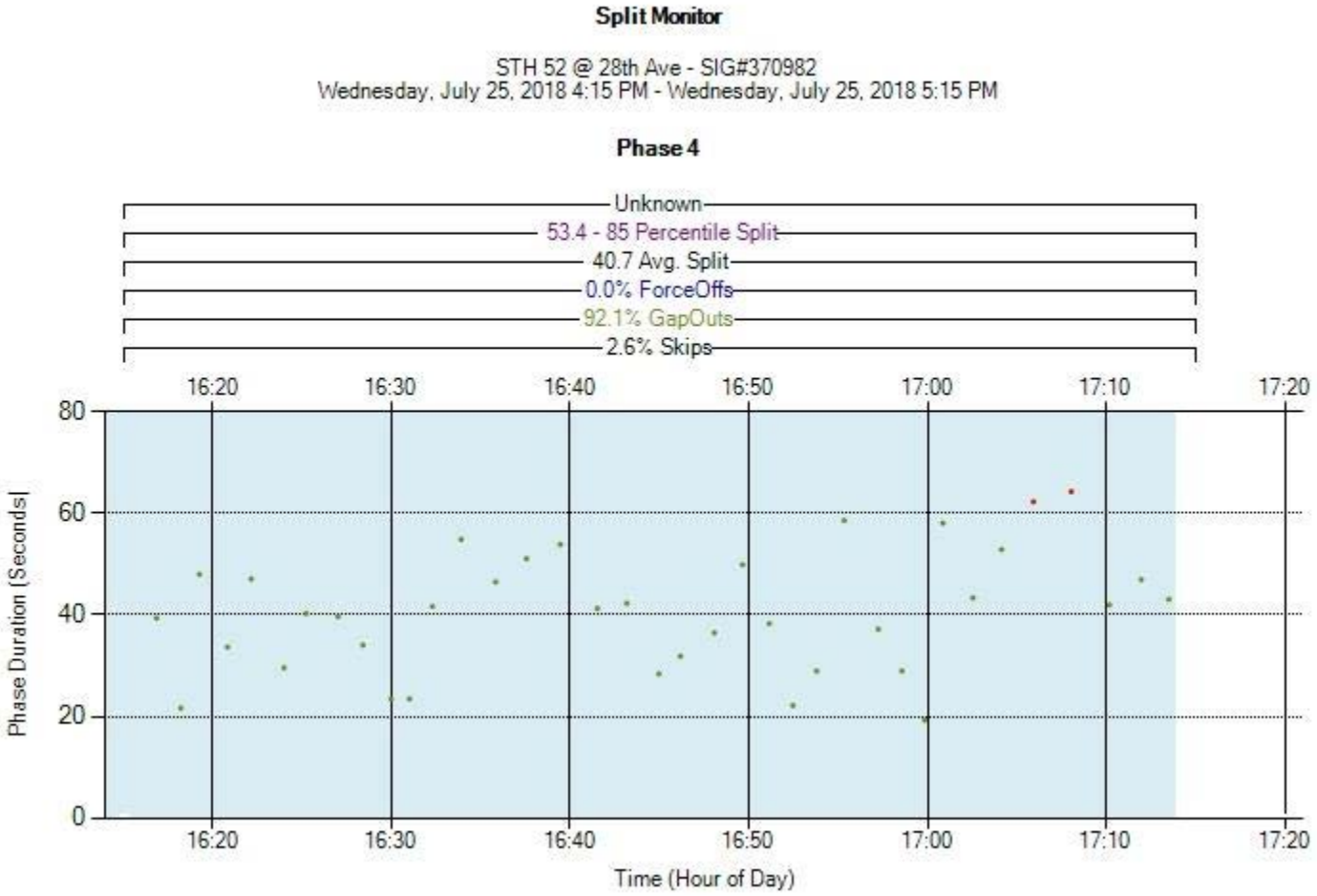
Isolated Signal – WIS 52 & 28th Avenue
HCS Timings
7/25/2018 – 4:15 PM – 5:15 PM



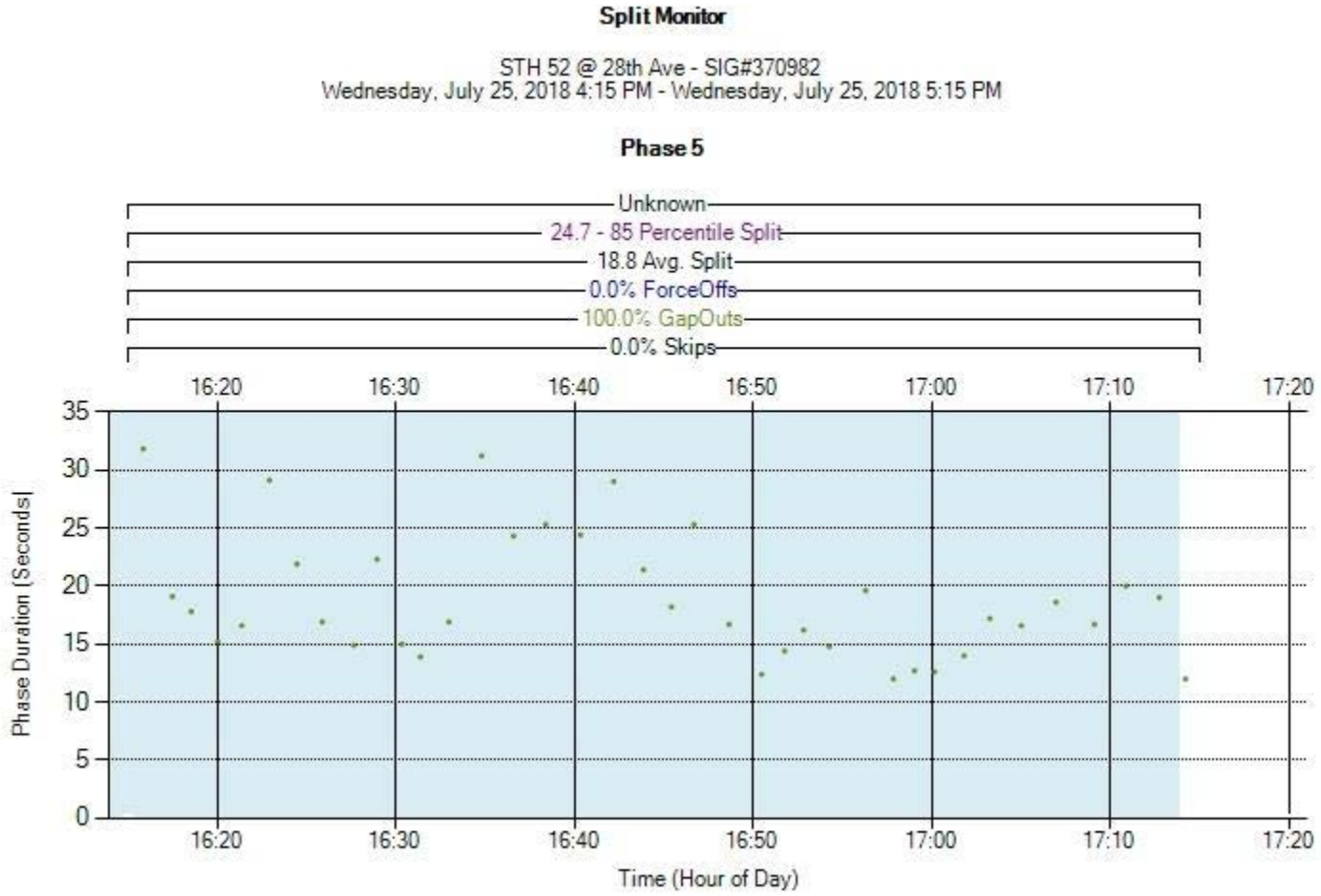
Isolated Signal – WIS 52 & 28th Avenue
HCS Timings
7/25/2018 – 4:15 PM – 5:15 PM



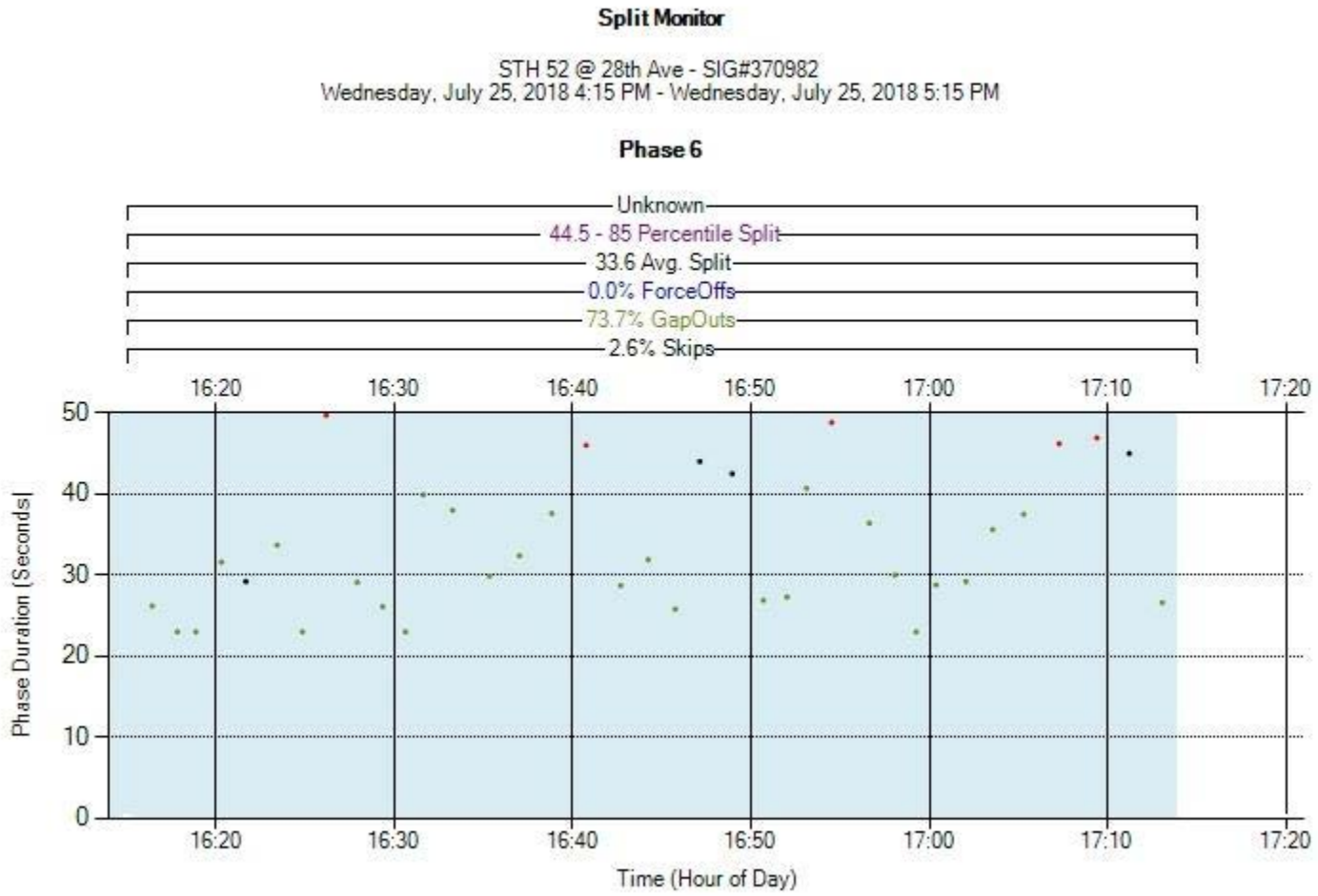
Isolated Signal – WIS 52 & 28th Avenue
HCS Timings
7/25/2018 – 4:15 PM – 5:15 PM



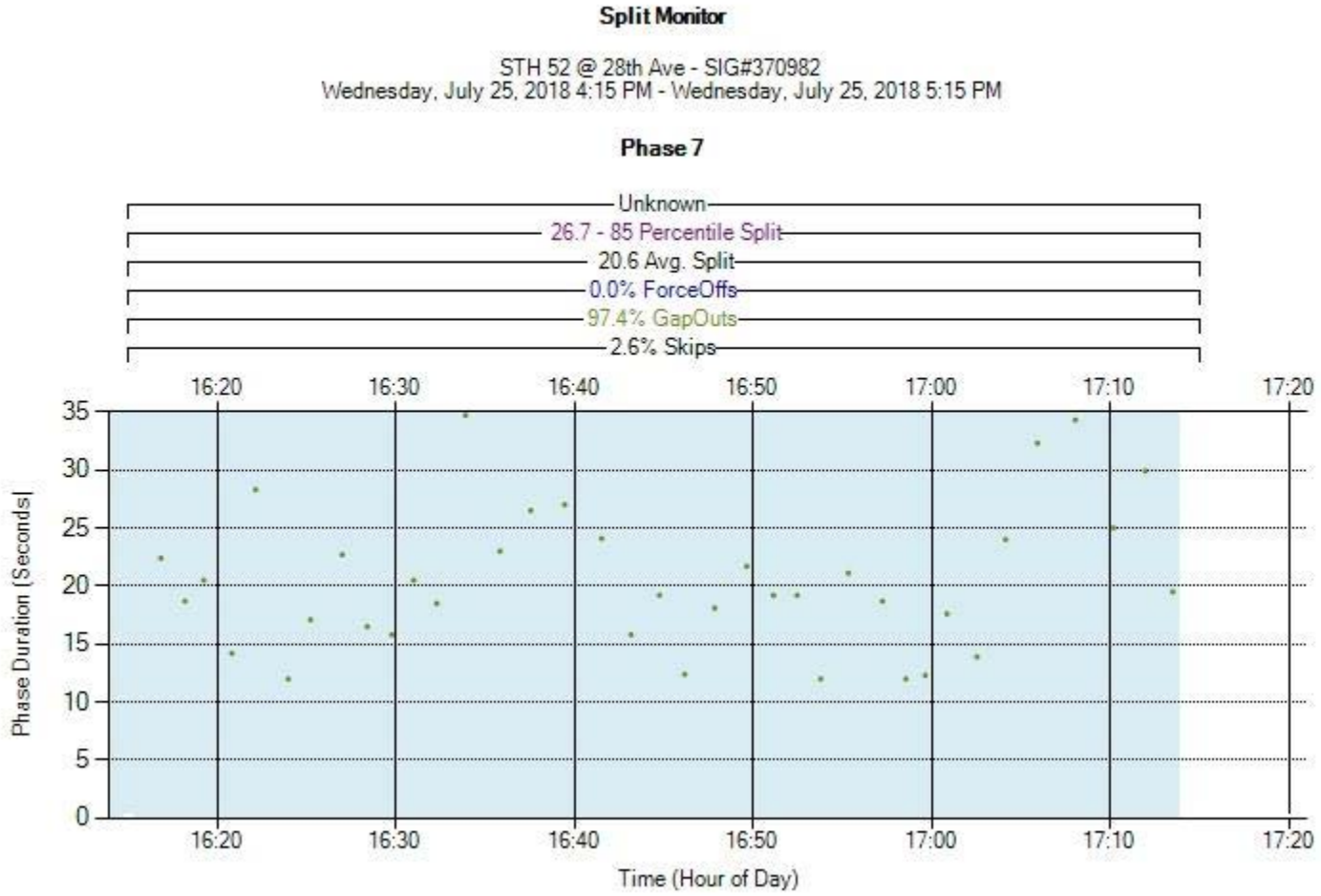
Isolated Signal – WIS 52 & 28th Avenue
HCS Timings
7/25/2018 – 4:15 PM – 5:15 PM



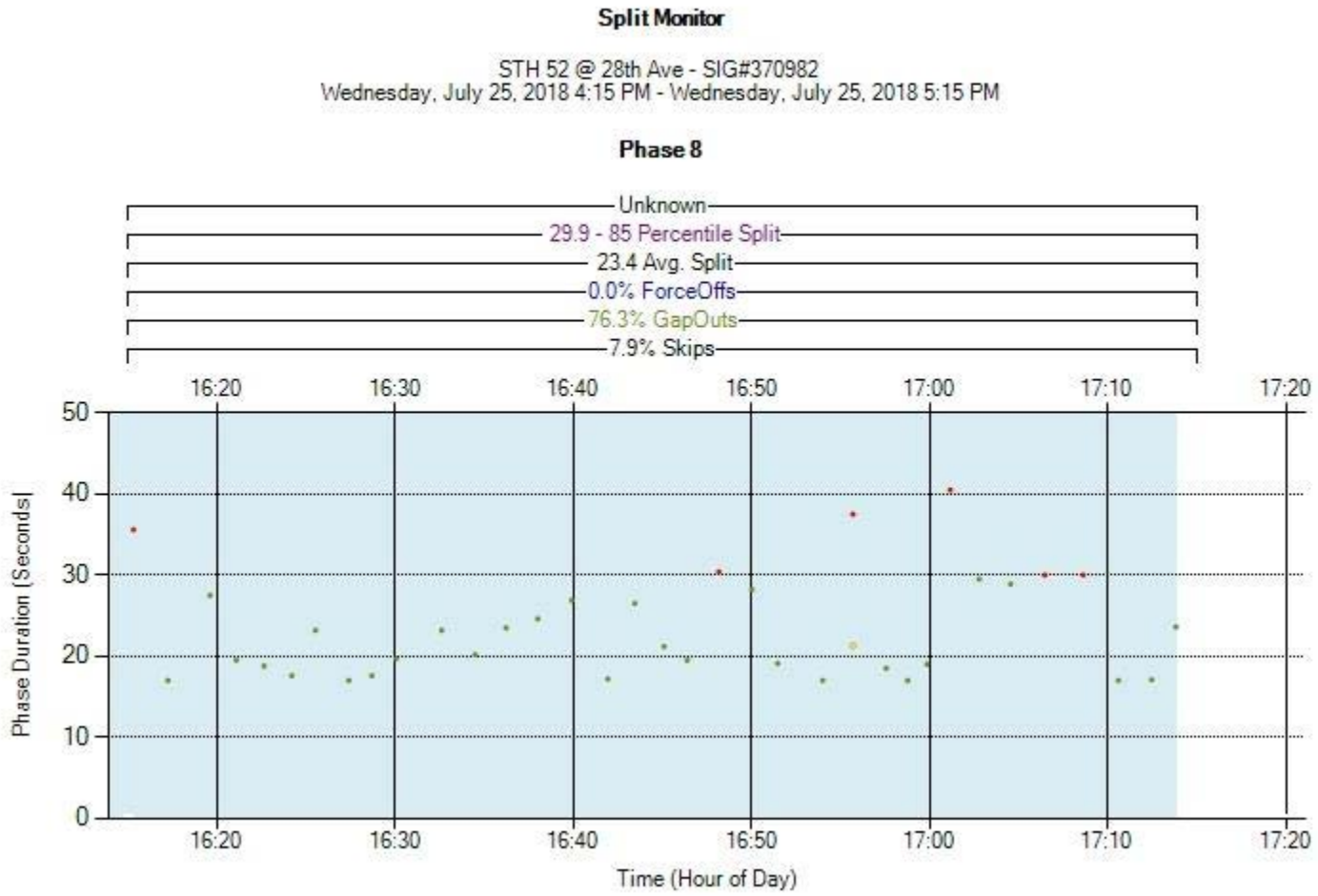
Isolated Signal – WIS 52 & 28th Avenue
HCS Timings
7/25/2018 – 4:15 PM – 5:15 PM



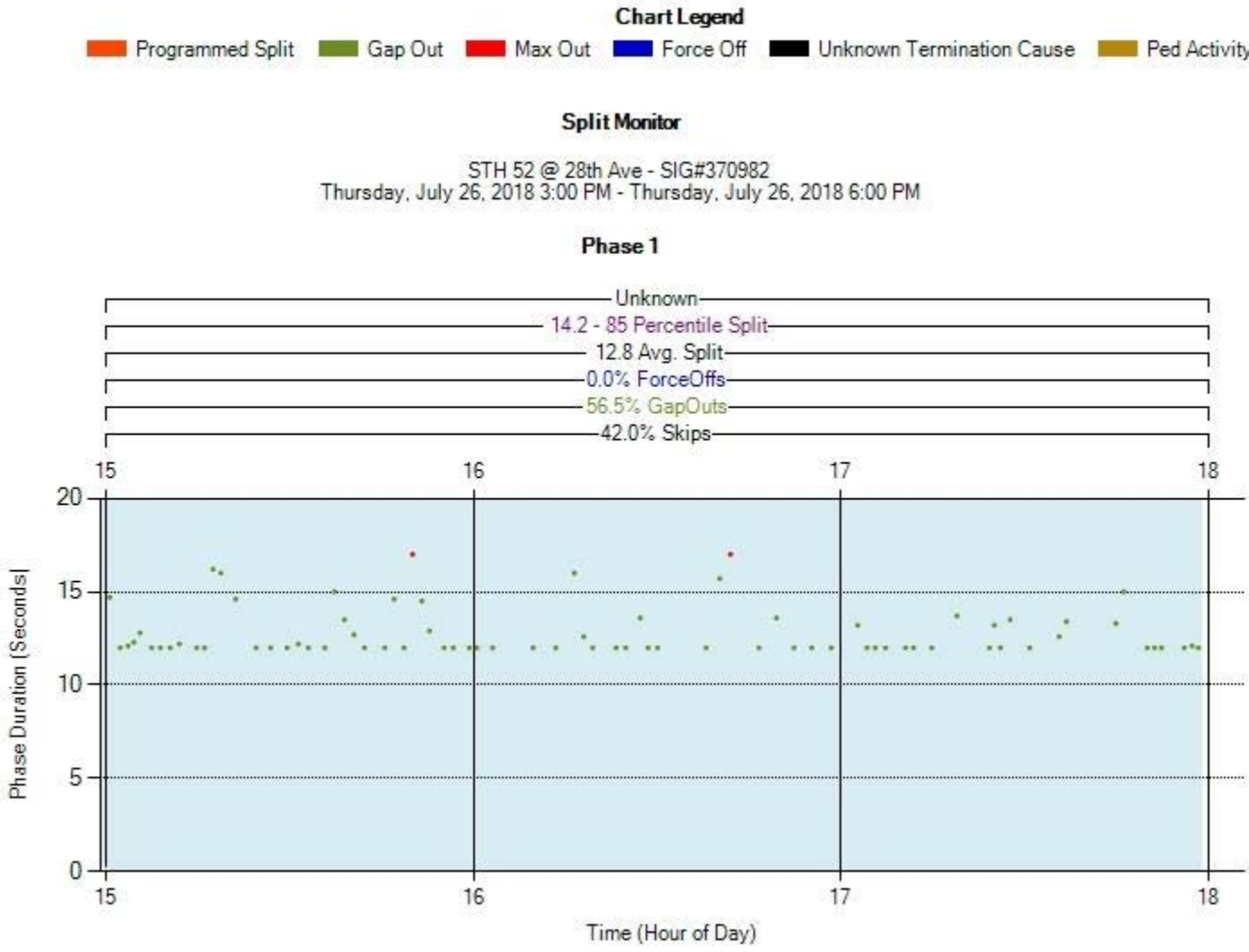
Isolated Signal – WIS 52 & 28th Avenue
HCS Timings
7/25/2018 – 4:15 PM – 5:15 PM



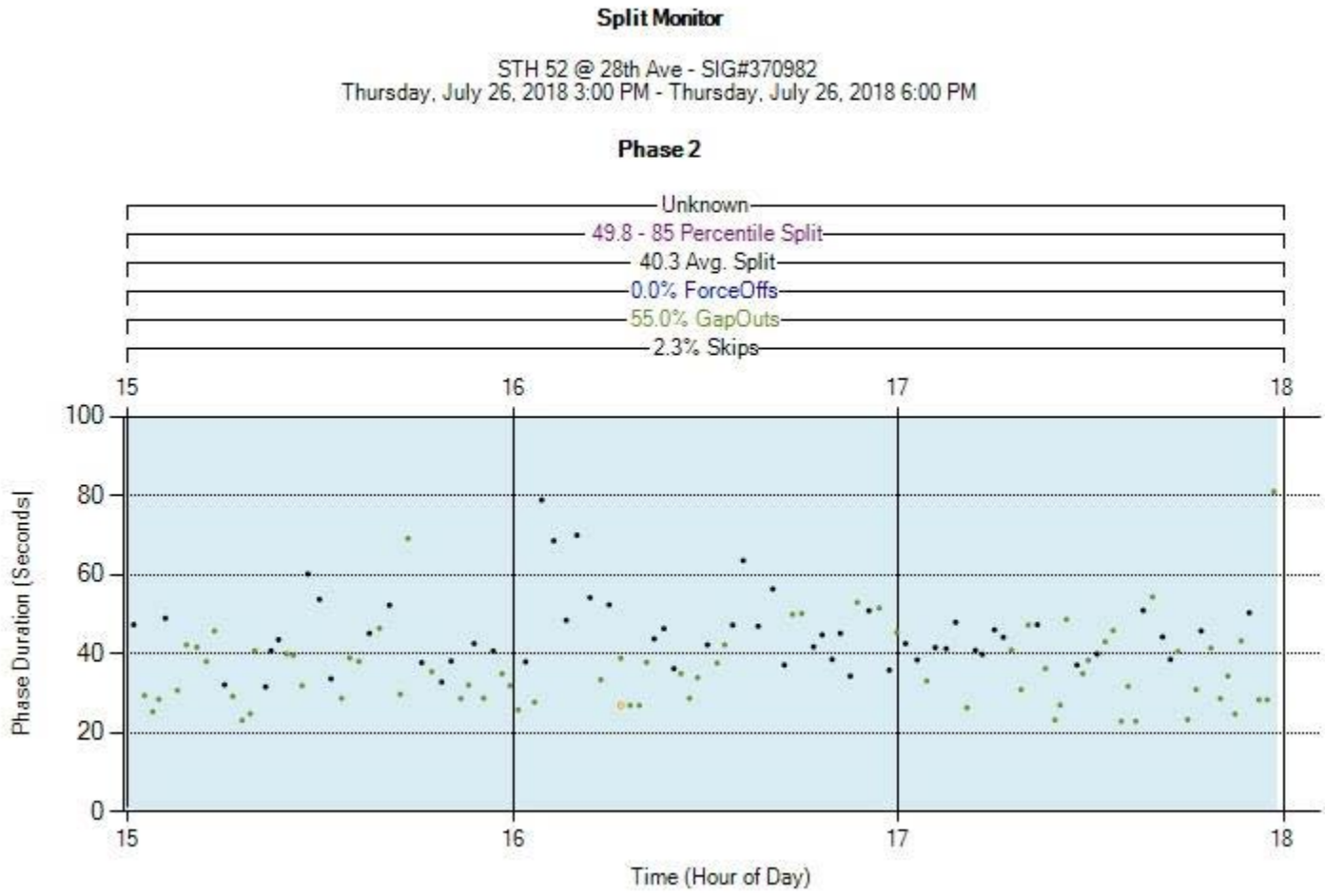
Isolated Signal – WIS 52 & 28th Avenue
HCS Timings
7/25/2018 – 4:15 PM – 5:15 PM



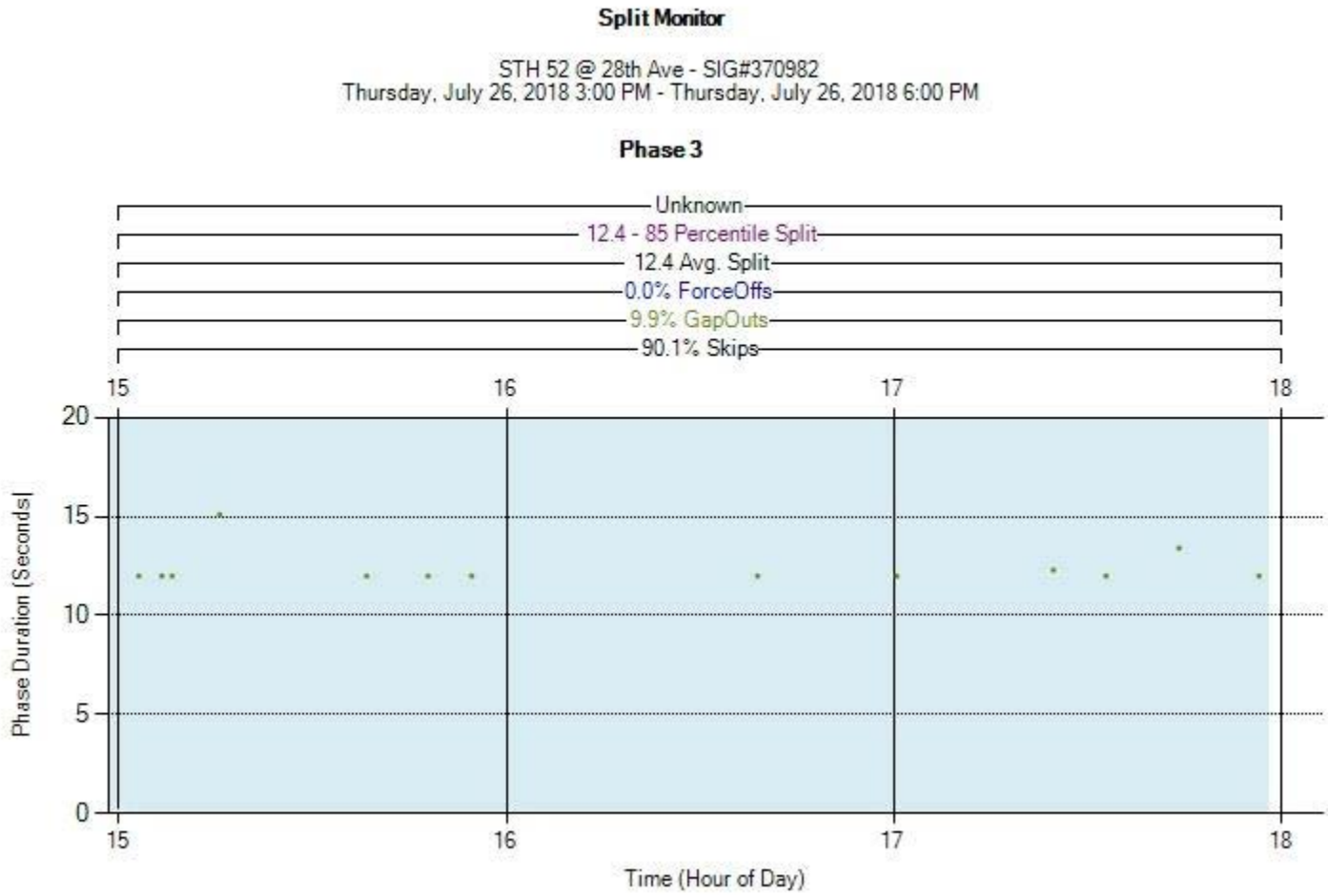
Isolated Signal – WIS 52 & 28th Avenue
HCS Timings
7/26/2018 – 3:00 PM – 6:00 PM



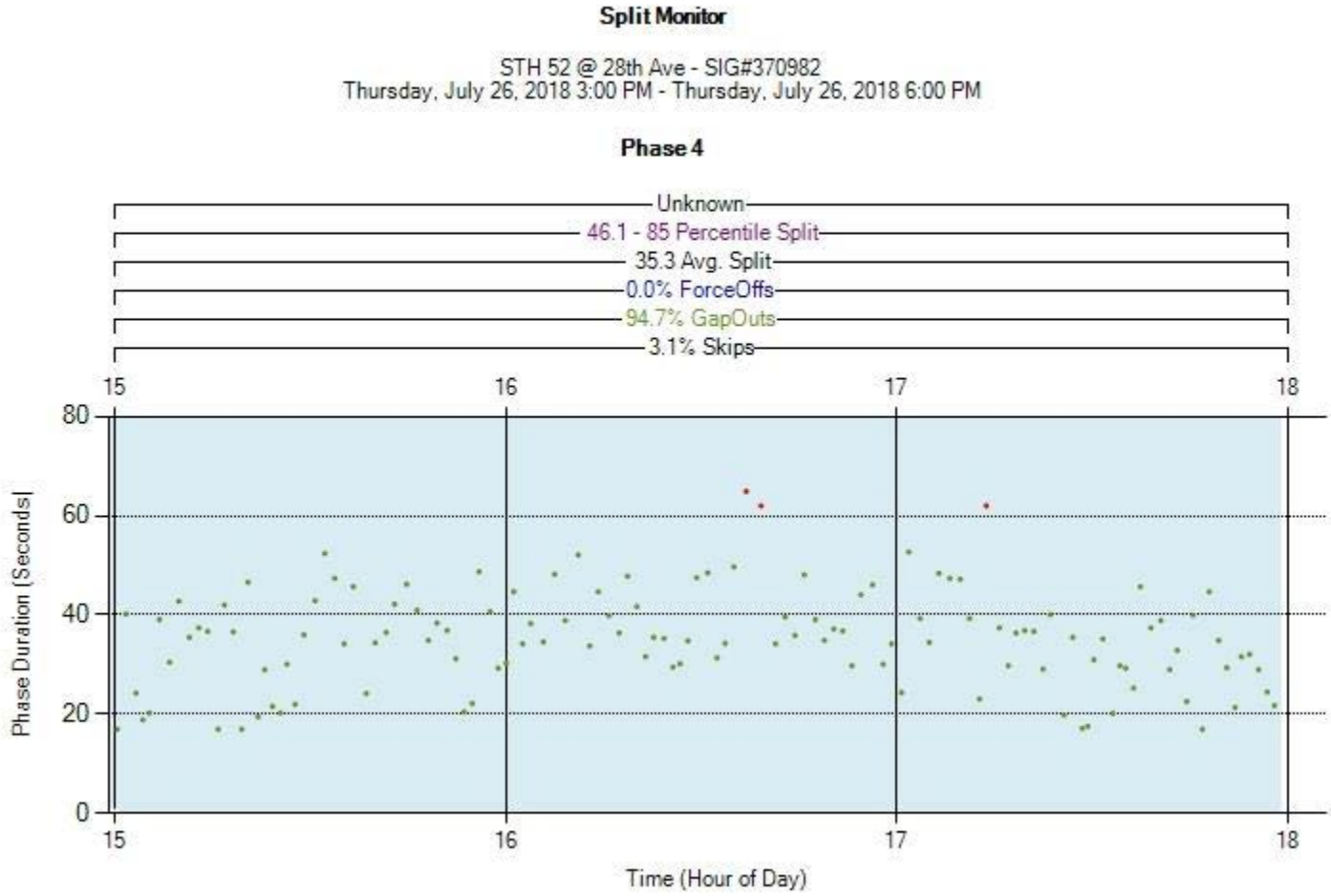
Isolated Signal – WIS 52 & 28th Avenue
HCS Timings
7/26/2018 – 3:00 PM – 6:00 PM



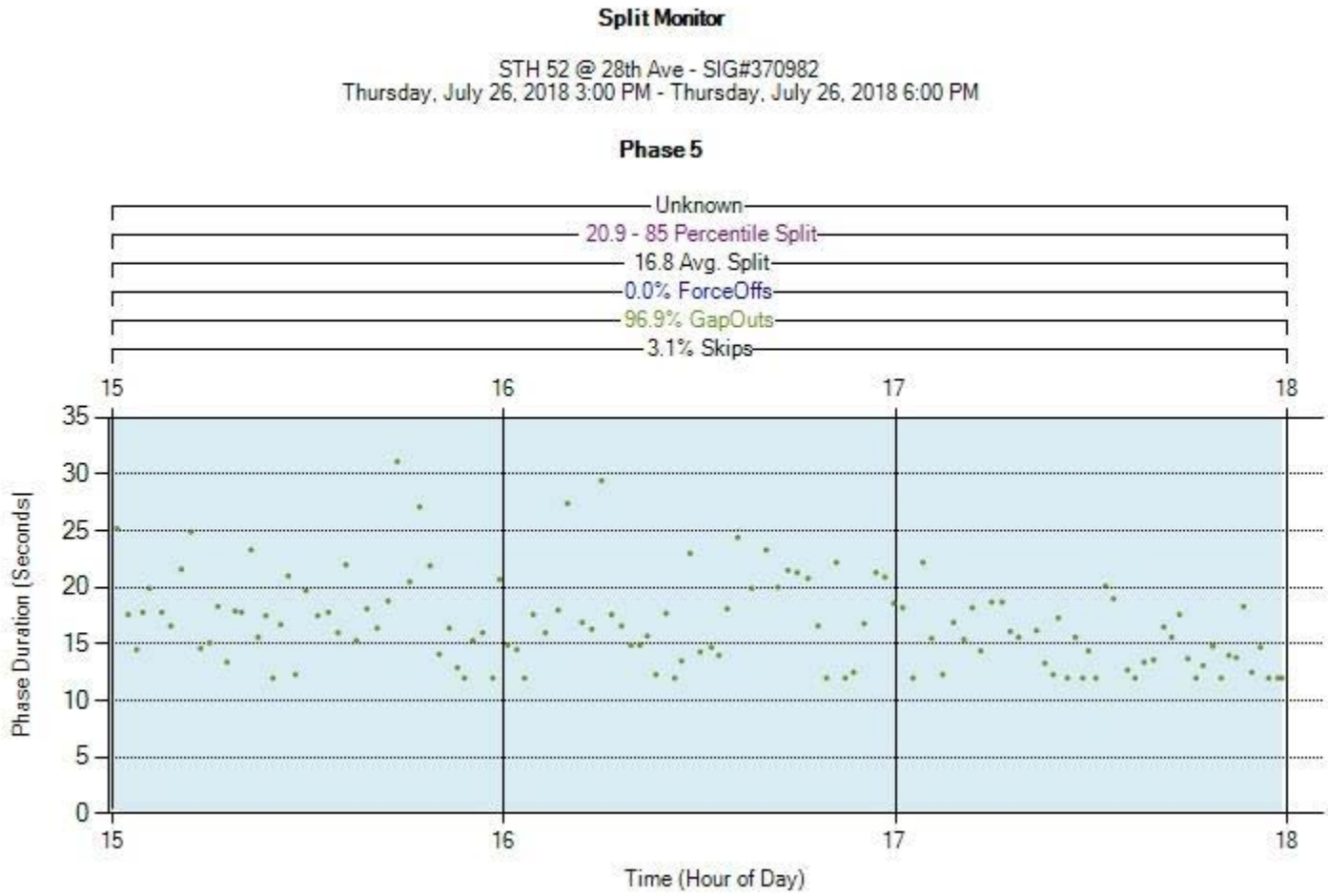
Isolated Signal – WIS 52 & 28th Avenue
HCS Timings
7/26/2018 – 3:00 PM – 6:00 PM



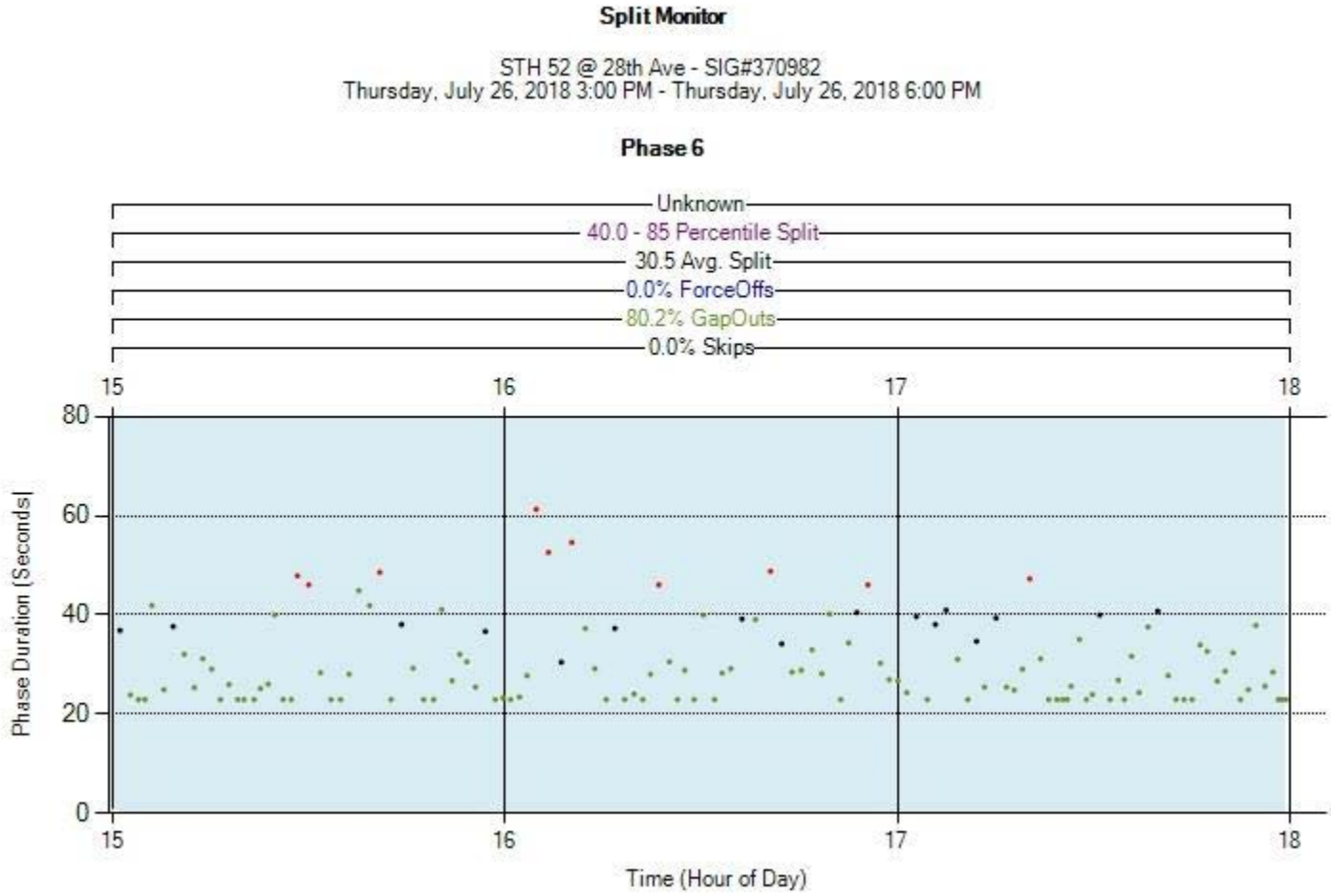
Isolated Signal – WIS 52 & 28th Avenue
HCS Timings
7/26/2018 – 3:00 PM – 6:00 PM



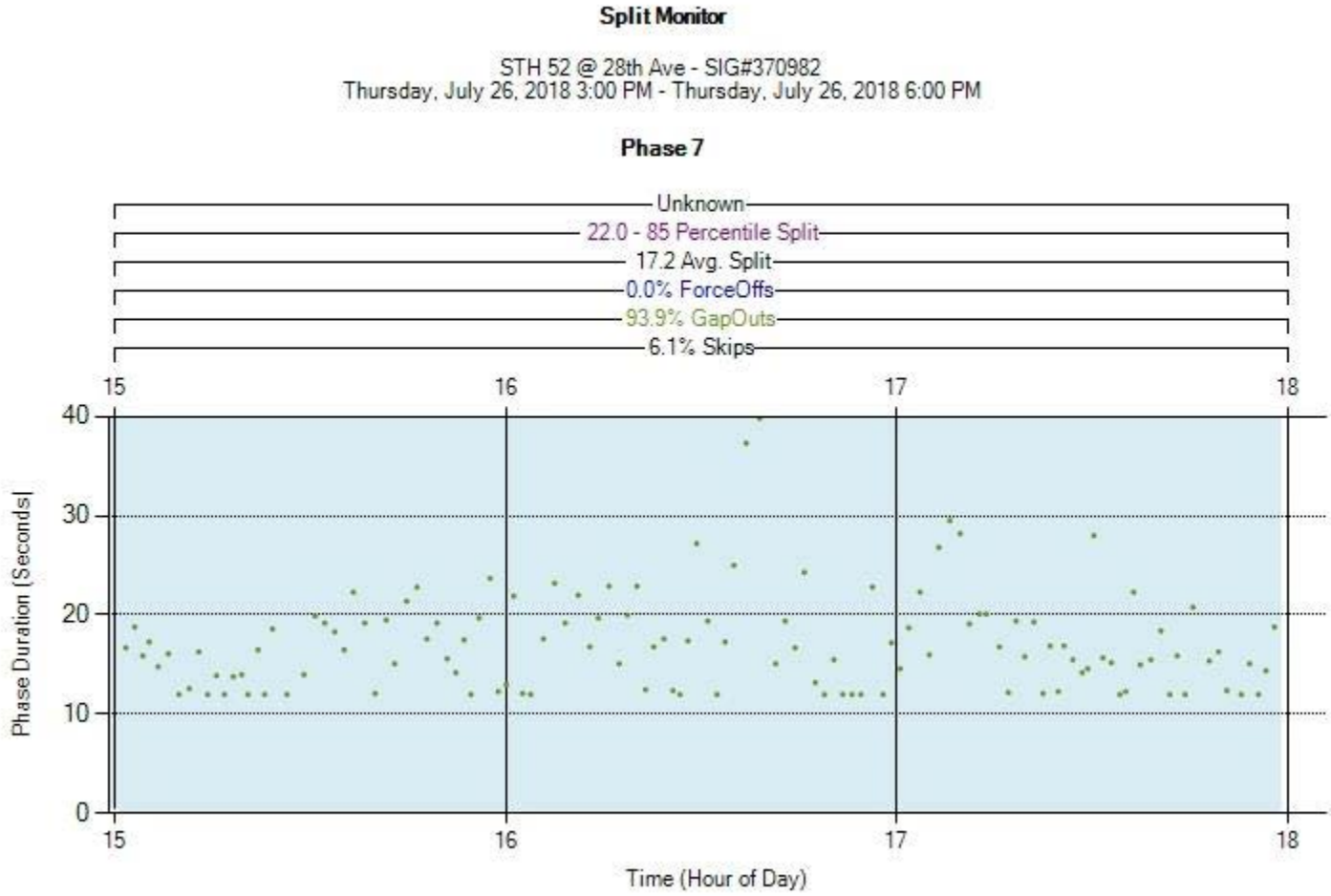
Isolated Signal – WIS 52 & 28th Avenue
HCS Timings
7/26/2018 – 3:00 PM – 6:00 PM



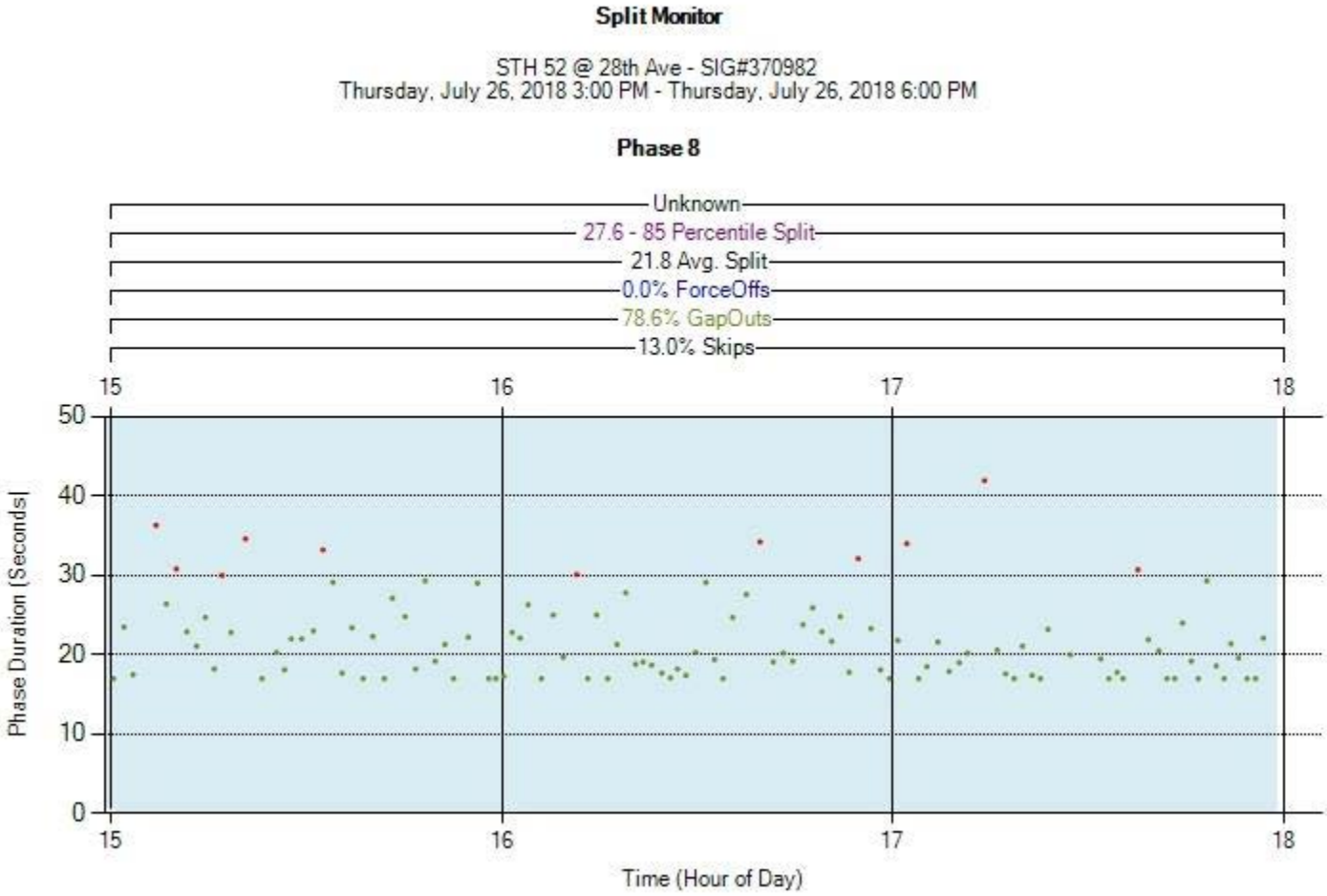
Isolated Signal – WIS 52 & 28th Avenue
HCS Timings
7/26/2018 – 3:00 PM – 6:00 PM



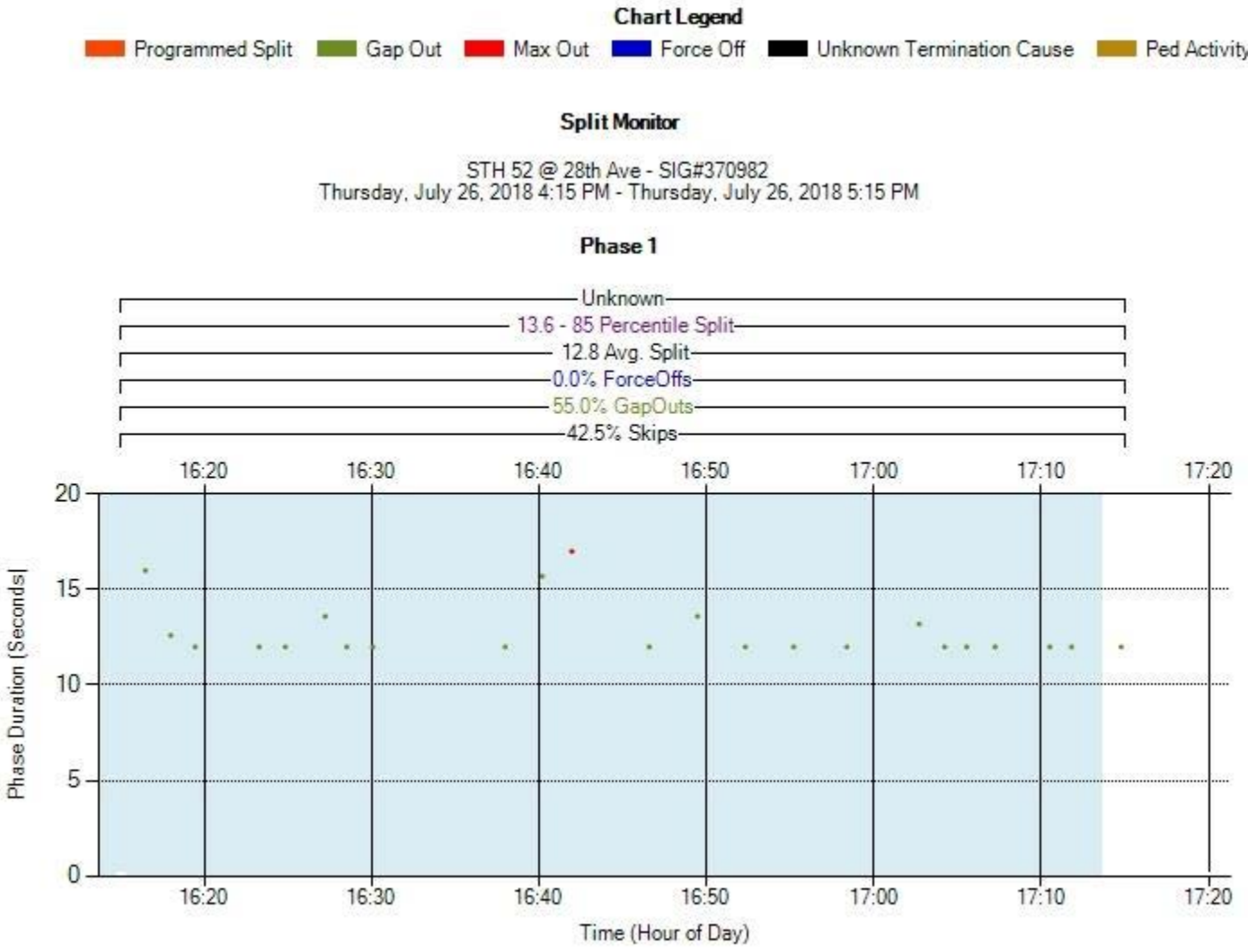
Isolated Signal – WIS 52 & 28th Avenue
HCS Timings
7/26/2018 – 3:00 PM – 6:00 PM



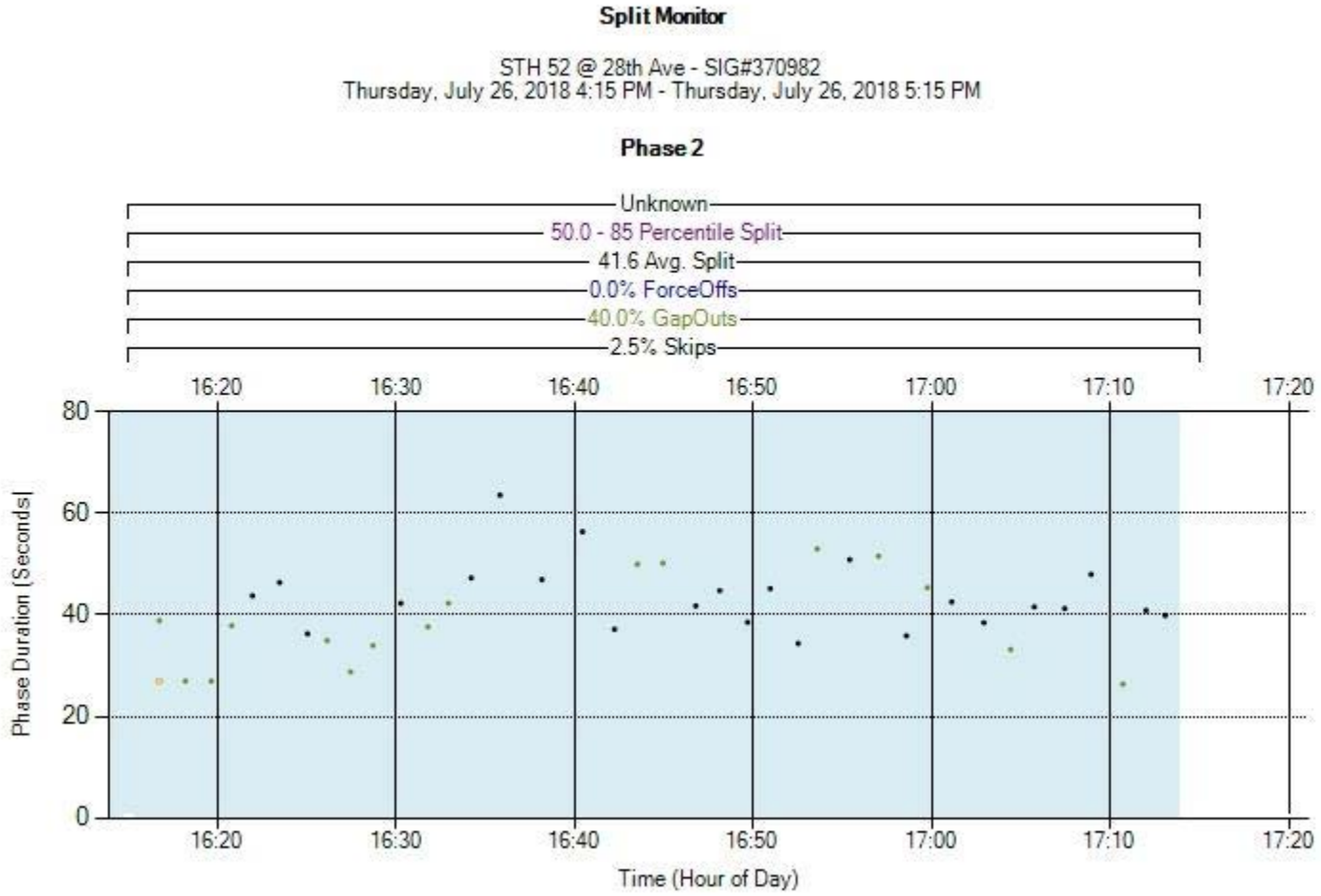
Isolated Signal – WIS 52 & 28th Avenue
HCS Timings
7/26/2018 – 3:00 PM – 6:00 PM



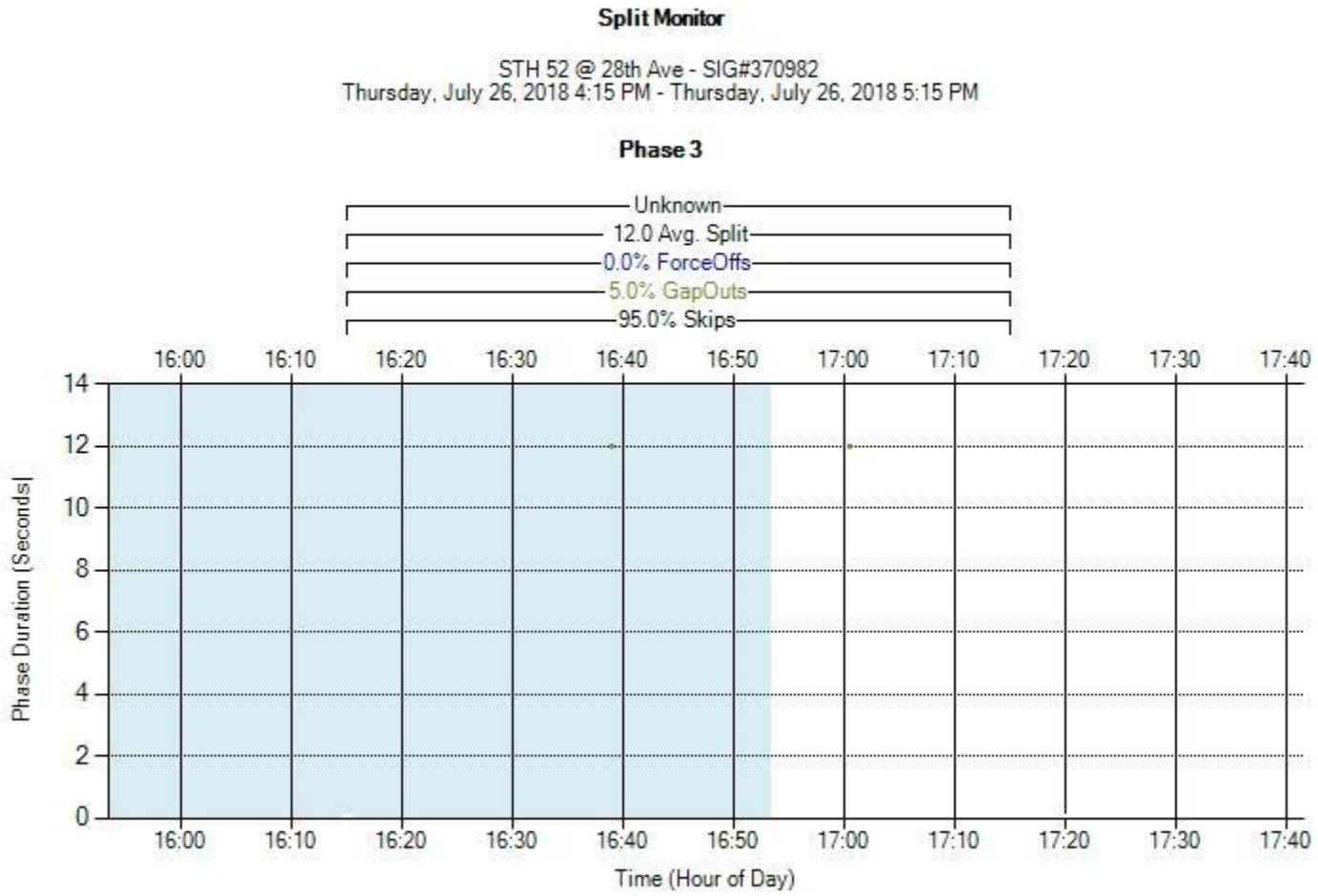
Isolated Signal – WIS 52 & 28th Avenue
HCS Timings
7/26/2018 – 4:15 PM – 5:15 PM



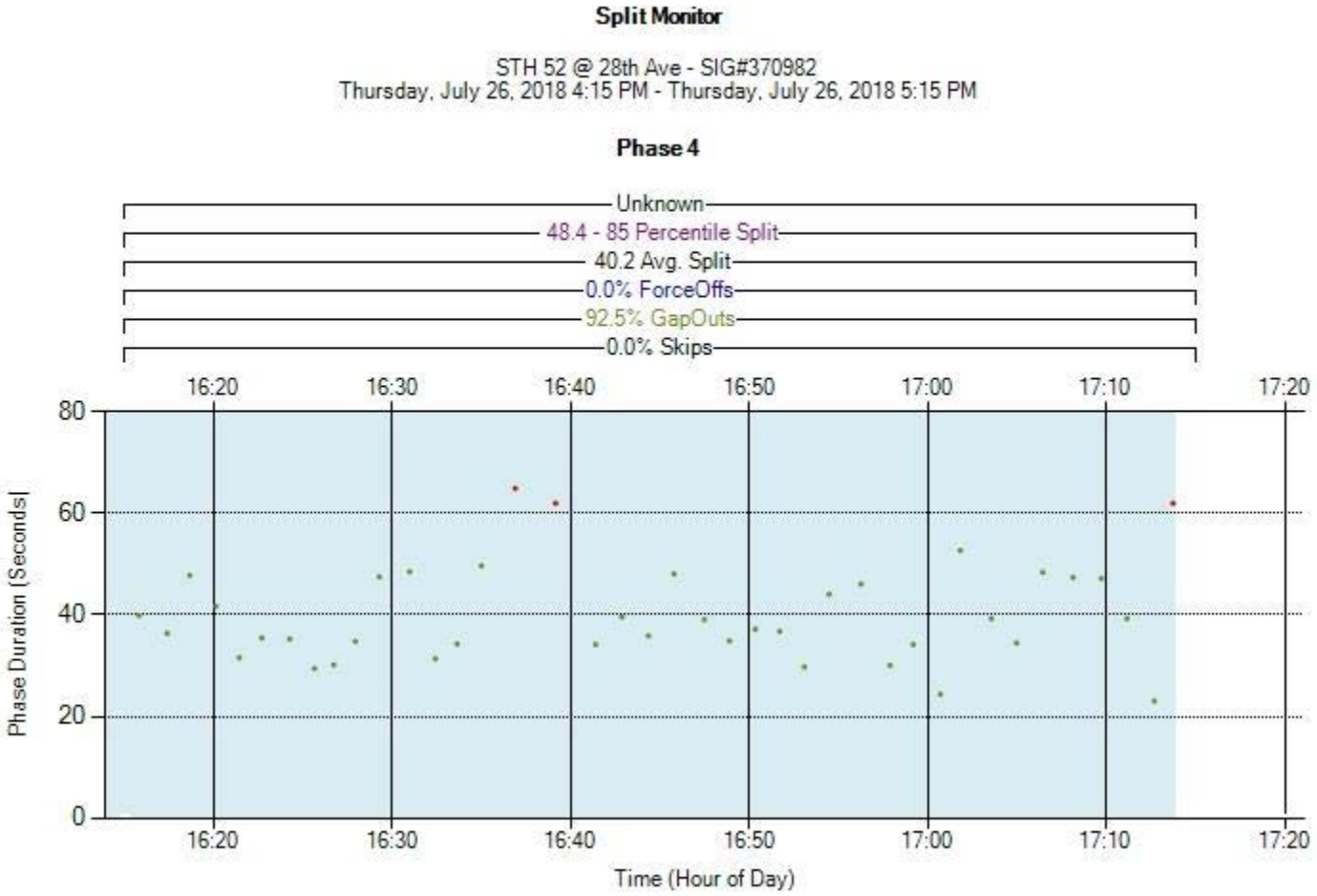
Isolated Signal – WIS 52 & 28th Avenue
HCS Timings
7/26/2018 – 4:15 PM – 5:15 PM



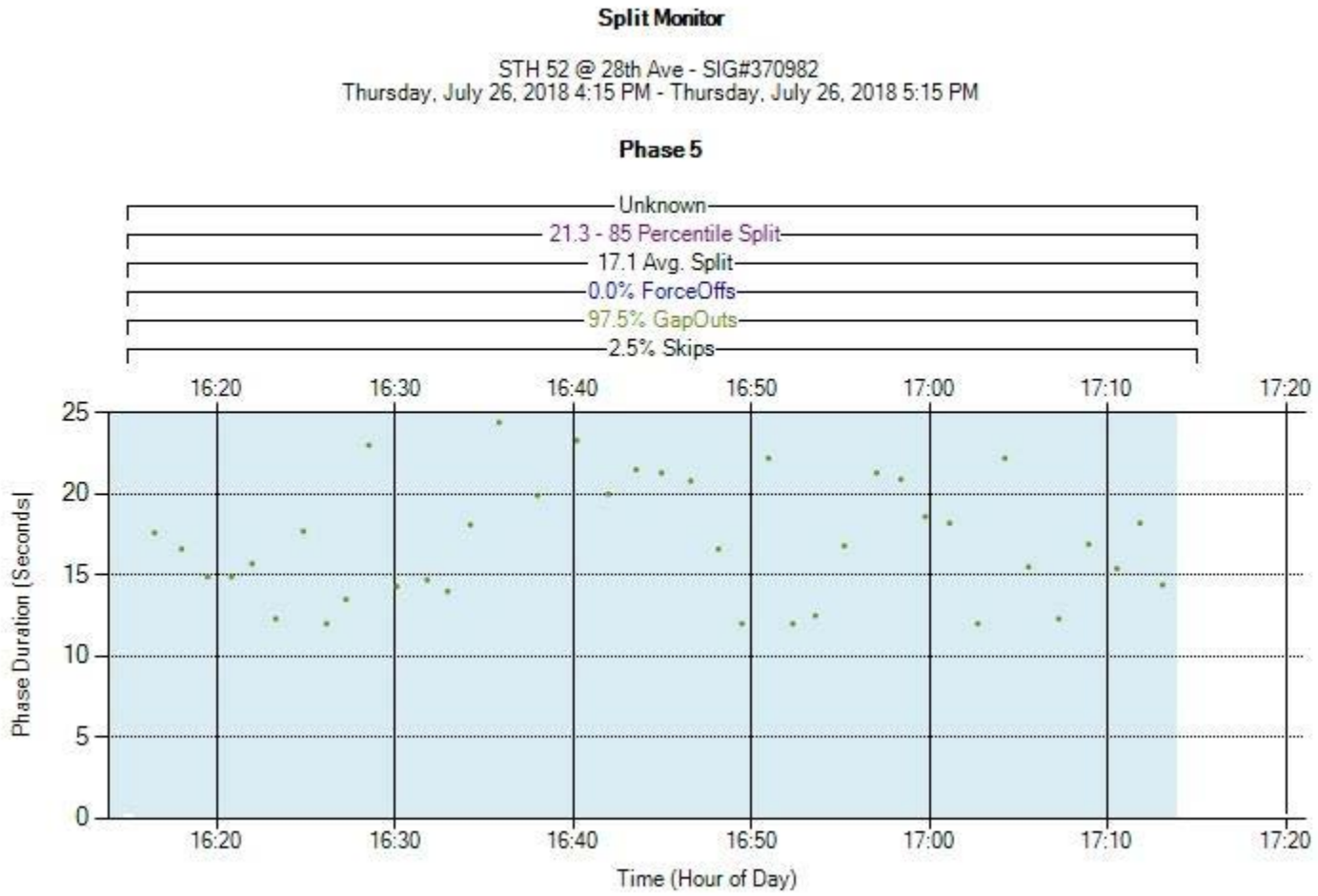
Isolated Signal – WIS 52 & 28th Avenue
HCS Timings
7/26/2018 – 4:15 PM – 5:15 PM



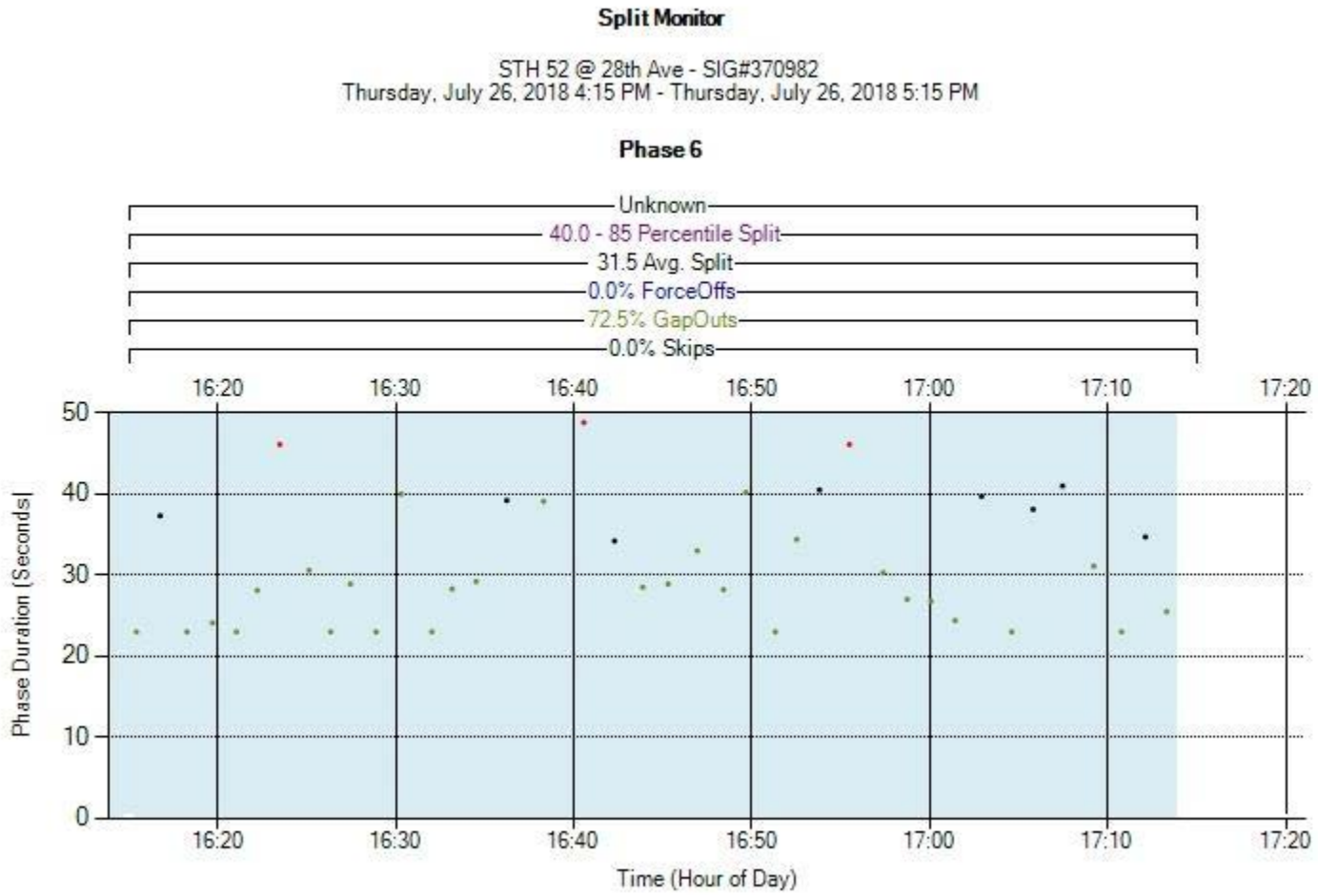
Isolated Signal – WIS 52 & 28th Avenue
HCS Timings
7/26/2018 – 4:15 PM – 5:15 PM



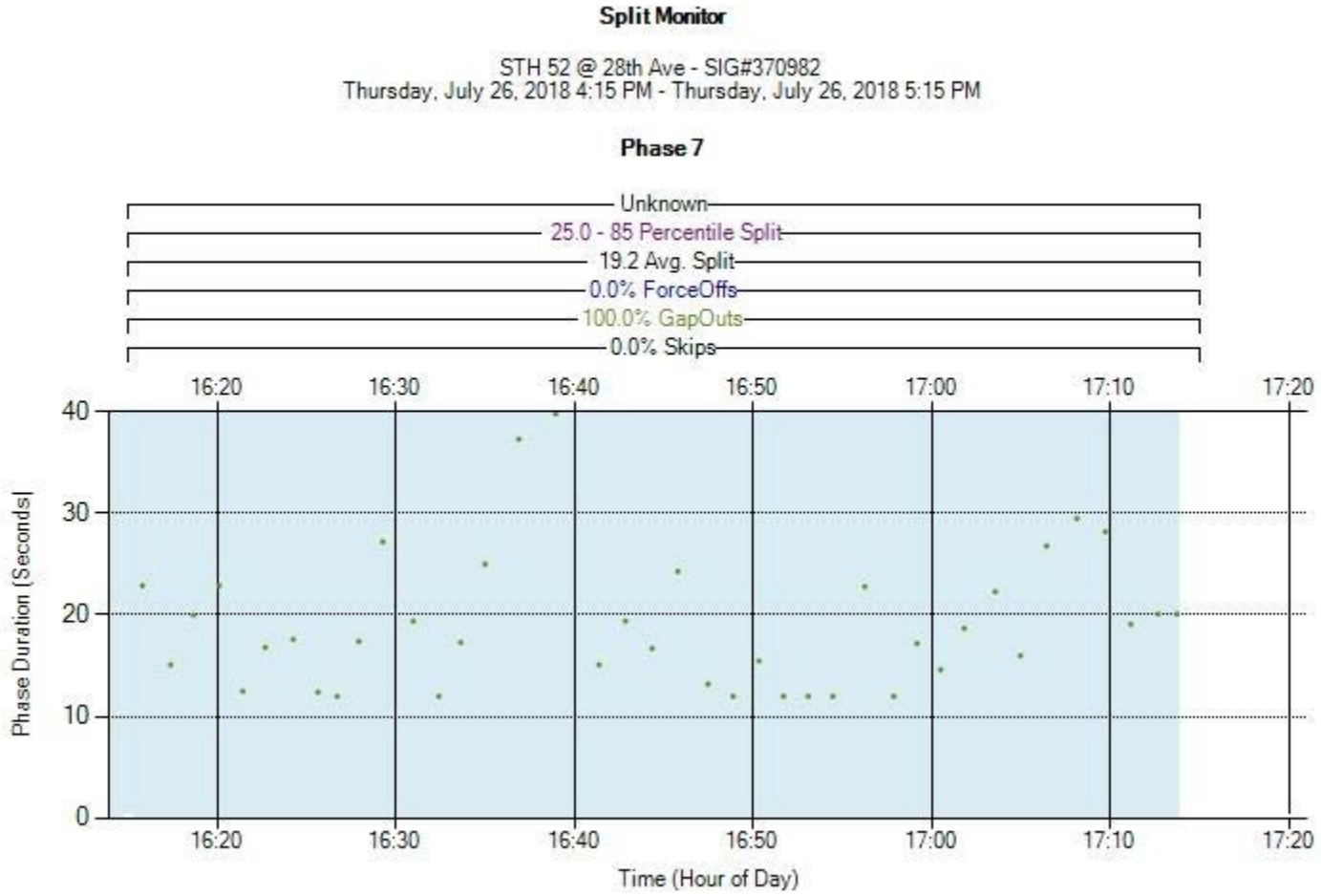
Isolated Signal – WIS 52 & 28th Avenue
HCS Timings
7/26/2018 – 4:15 PM – 5:15 PM



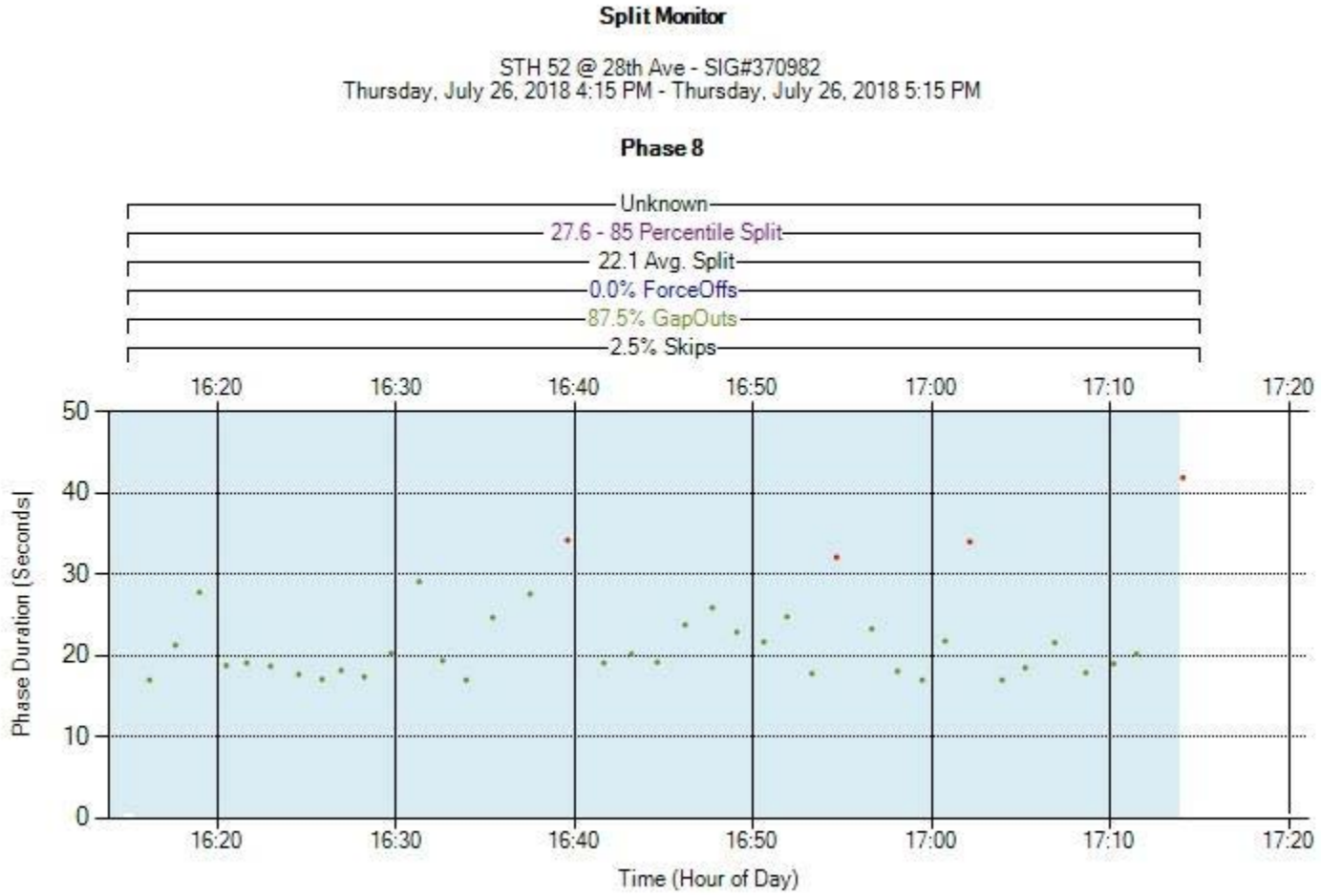
Isolated Signal – WIS 52 & 28th Avenue
HCS Timings
7/26/2018 – 4:15 PM – 5:15 PM



Isolated Signal – WIS 52 & 28th Avenue
HCS Timings
7/26/2018 – 4:15 PM – 5:15 PM

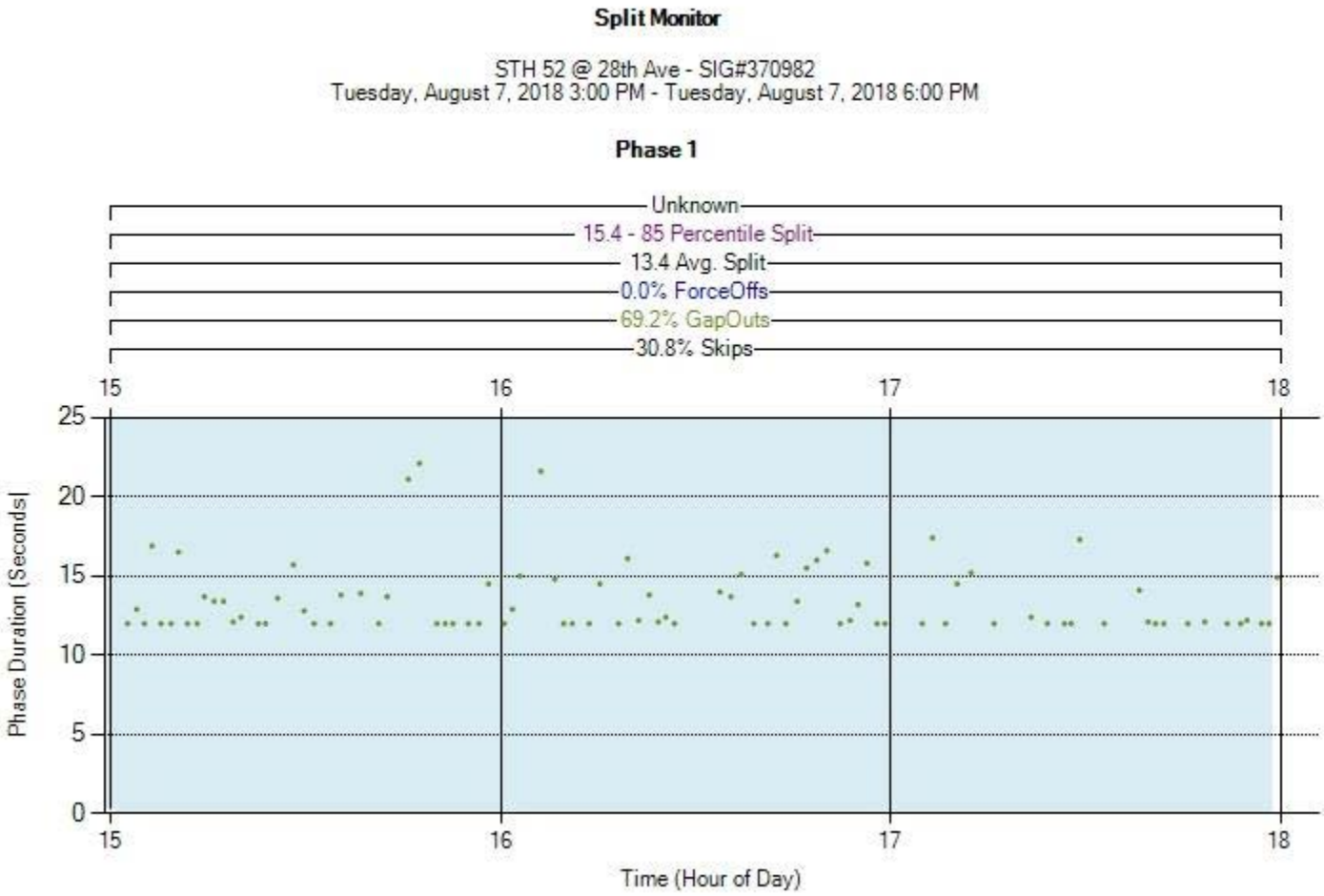


Isolated Signal – WIS 52 & 28th Avenue
HCS Timings
7/26/2018 – 4:15 PM – 5:15 PM

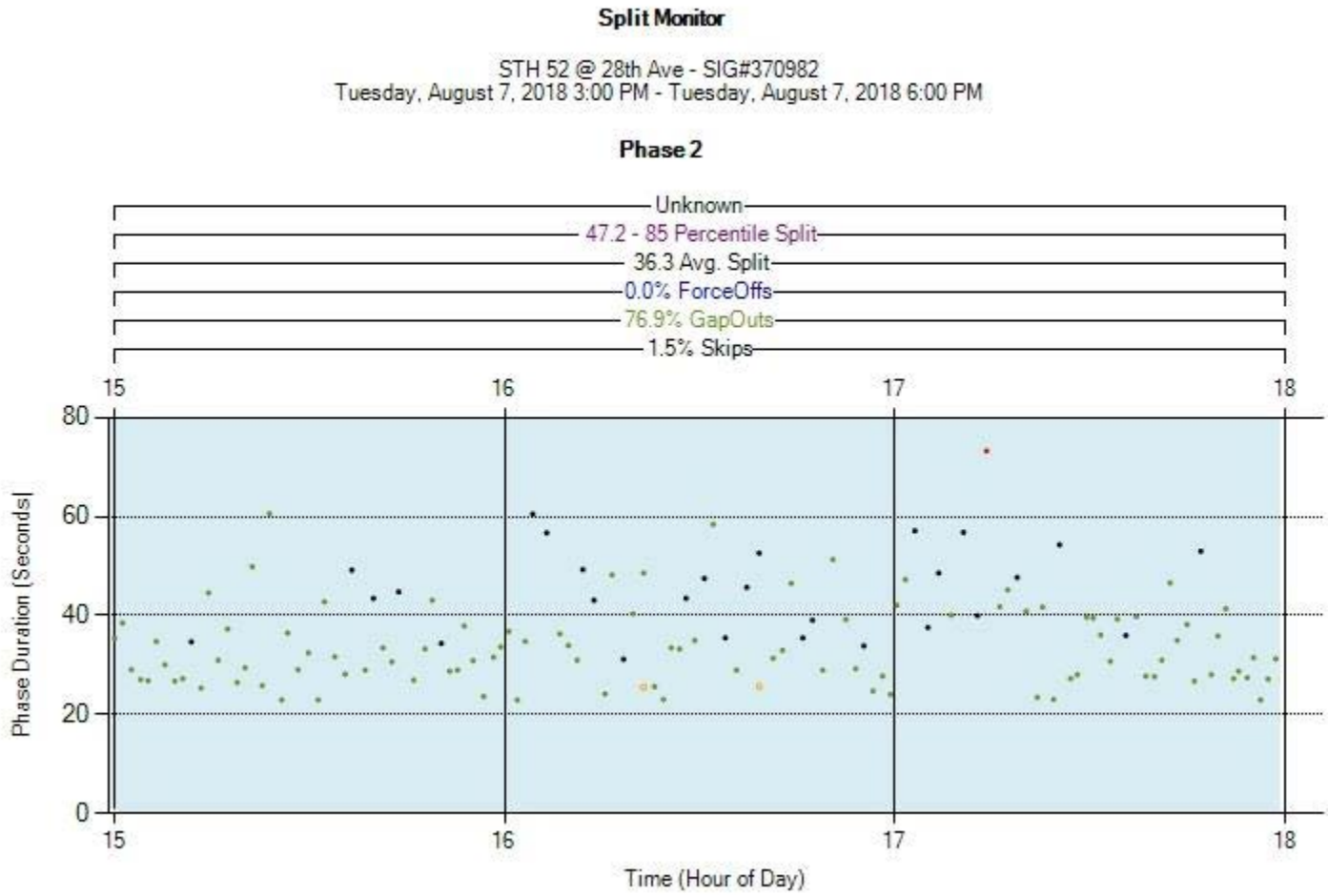


WisBOOM Outputs
WIS 52 & 28th Avenue
Synchro Optimized Timings

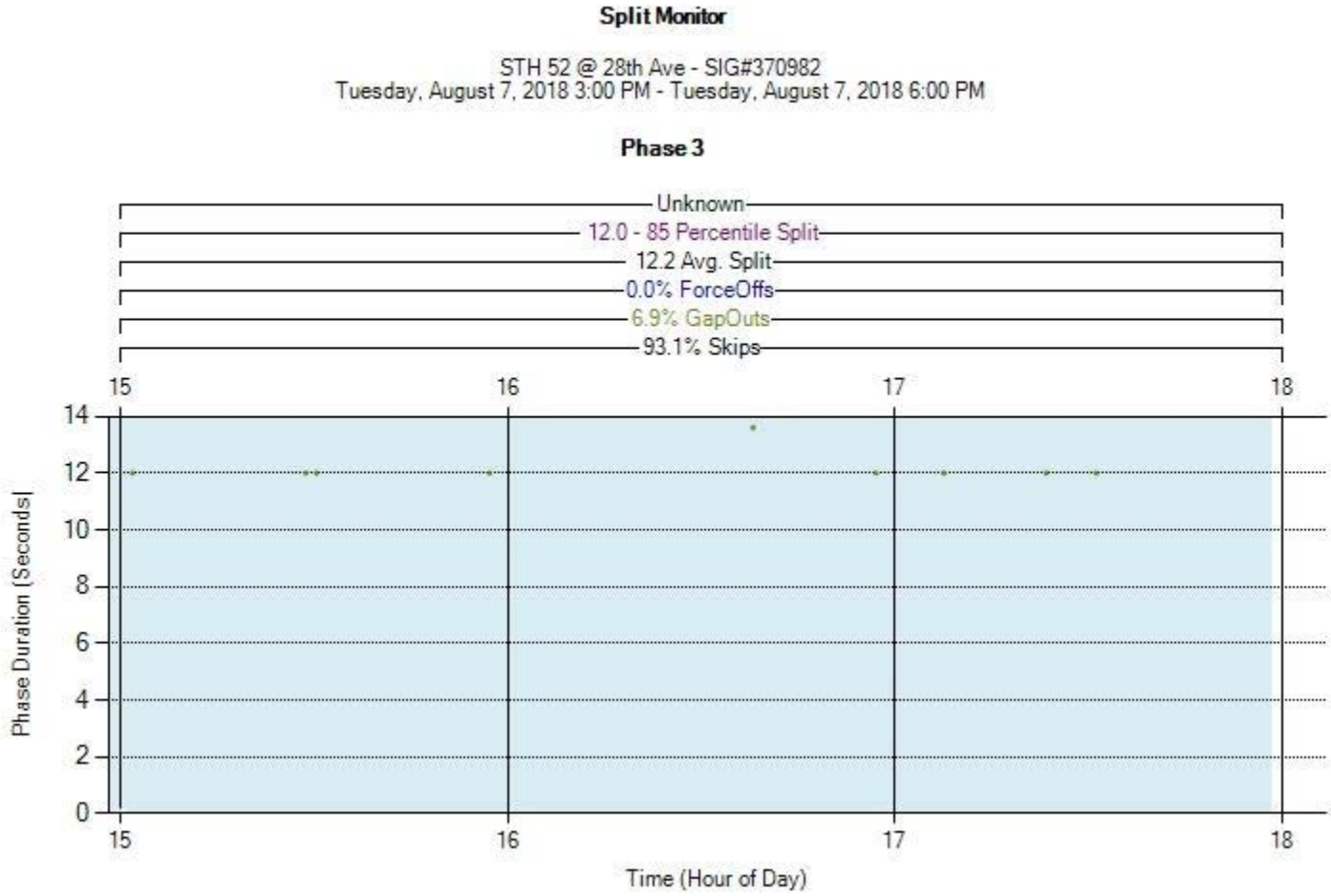
Isolated Signal – WIS 52 & 28th Avenue
Synchro Timings
8/7/2018 – 3:00 PM – 6:00 PM



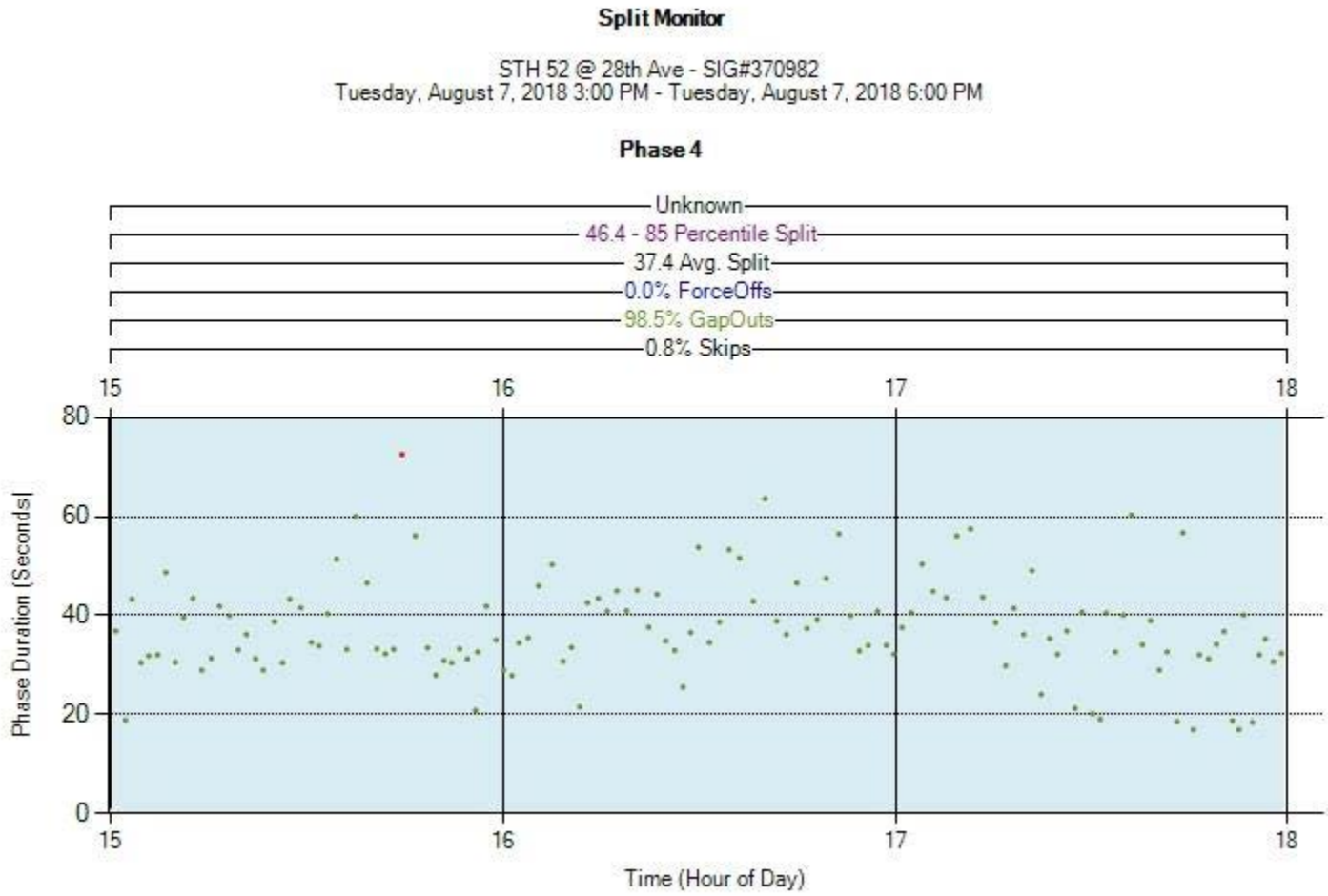
Isolated Signal – WIS 52 & 28th Avenue
Synchro Timings
8/7/2018 – 3:00 PM – 6:00 PM



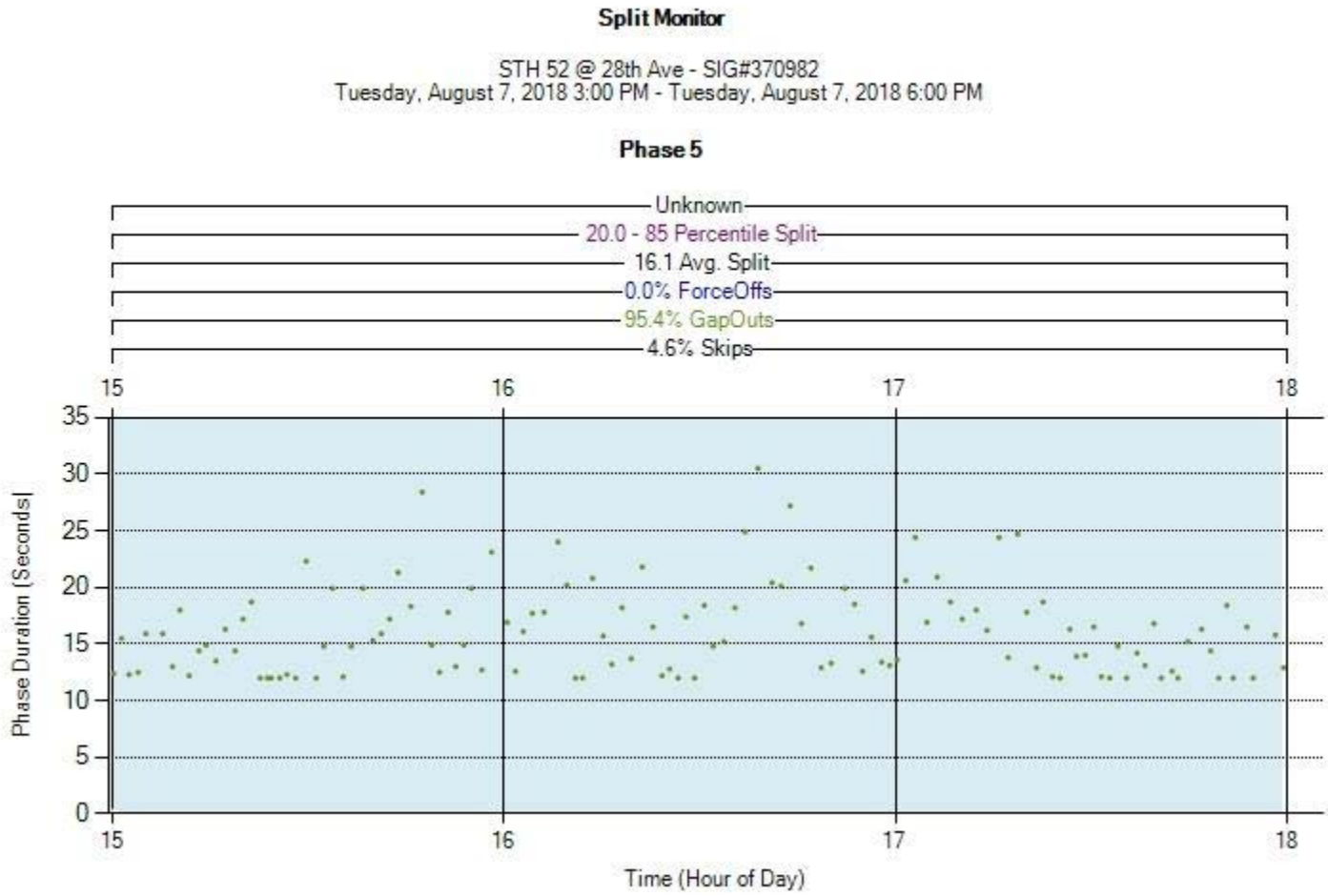
Isolated Signal – WIS 52 & 28th Avenue
Synchro Timings
8/7/2018 – 3:00 PM – 6:00 PM



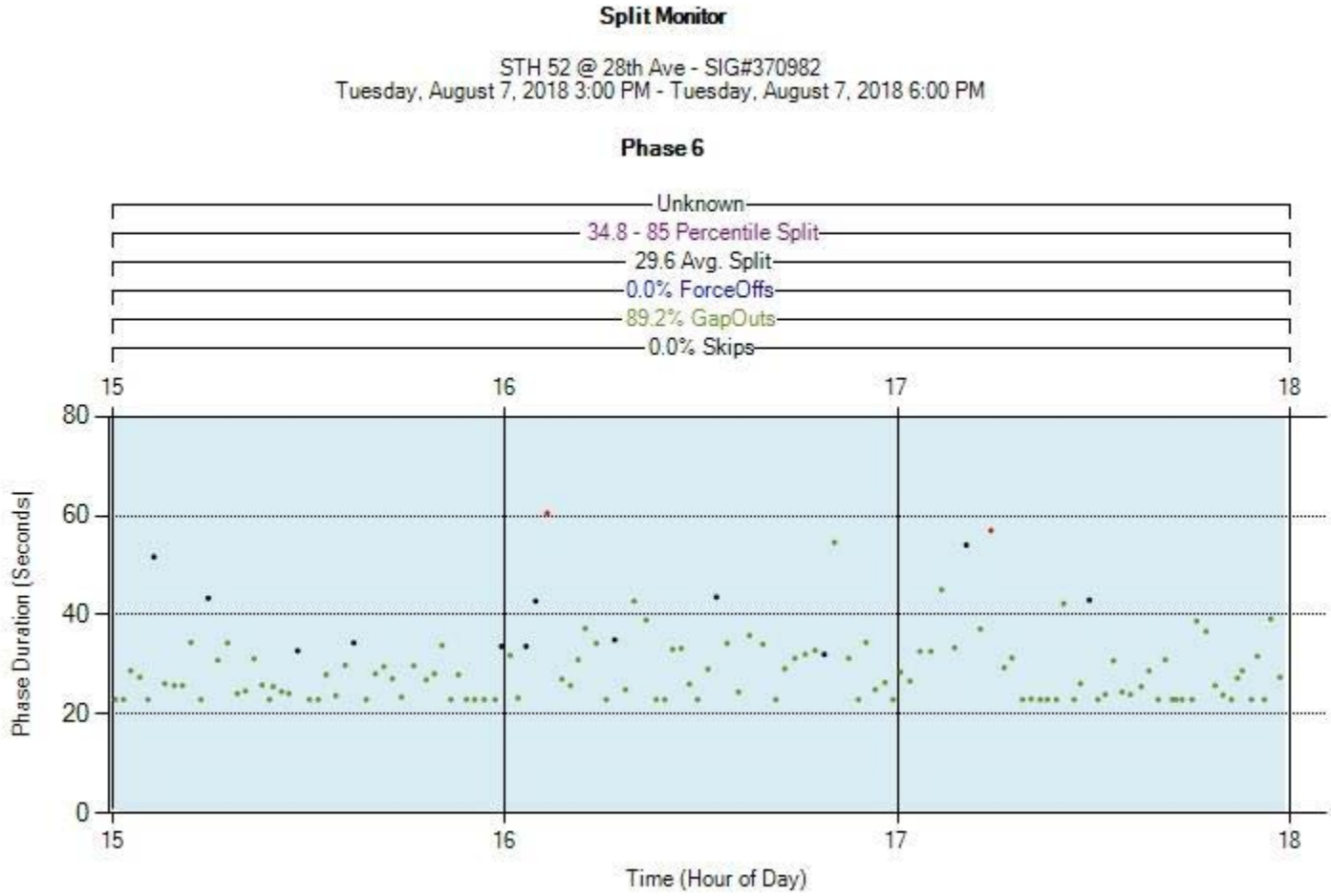
Isolated Signal – WIS 52 & 28th Avenue
Synchro Timings
8/7/2018 – 3:00 PM – 6:00 PM



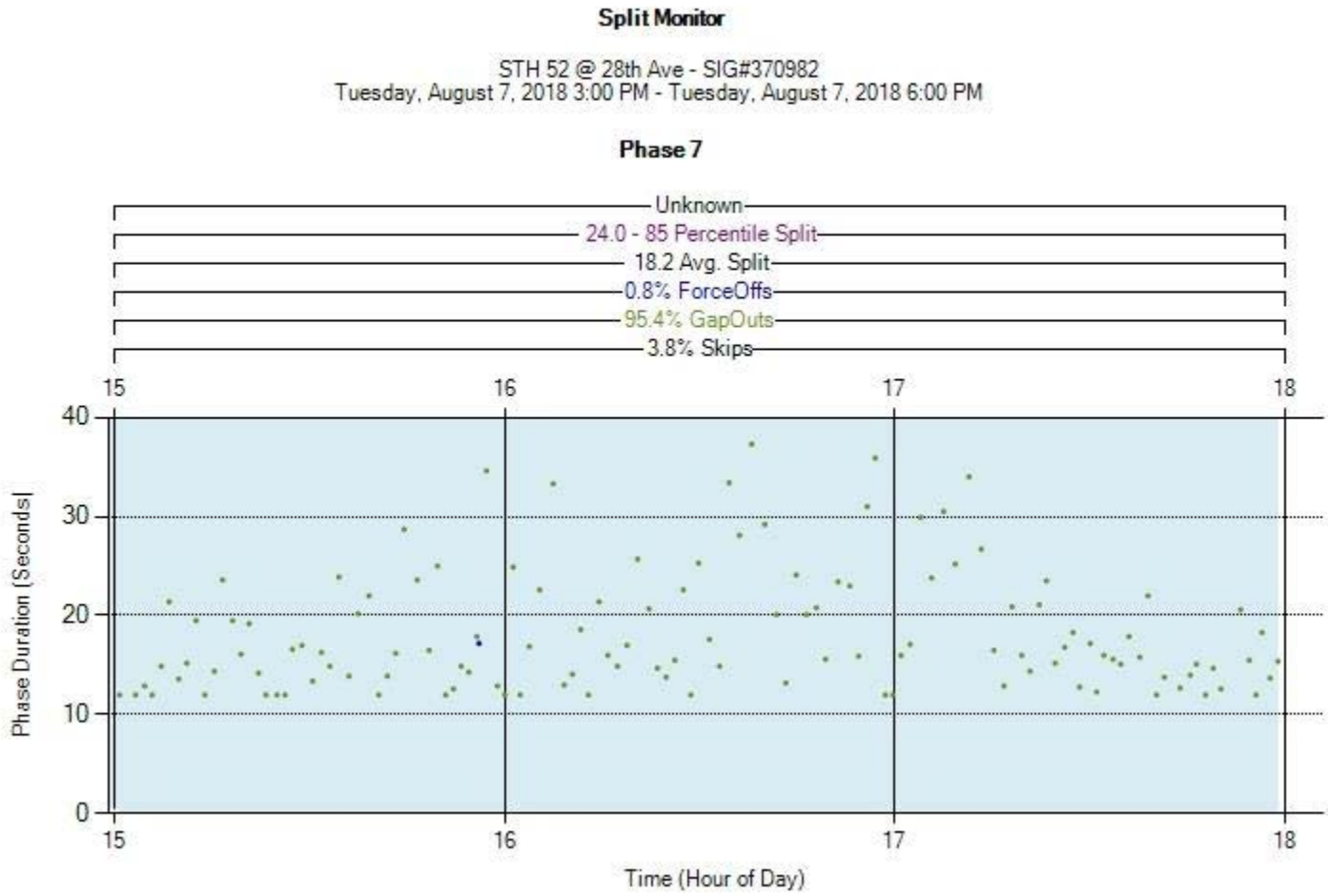
Isolated Signal – WIS 52 & 28th Avenue
Synchro Timings
8/7/2018 – 3:00 PM – 6:00 PM



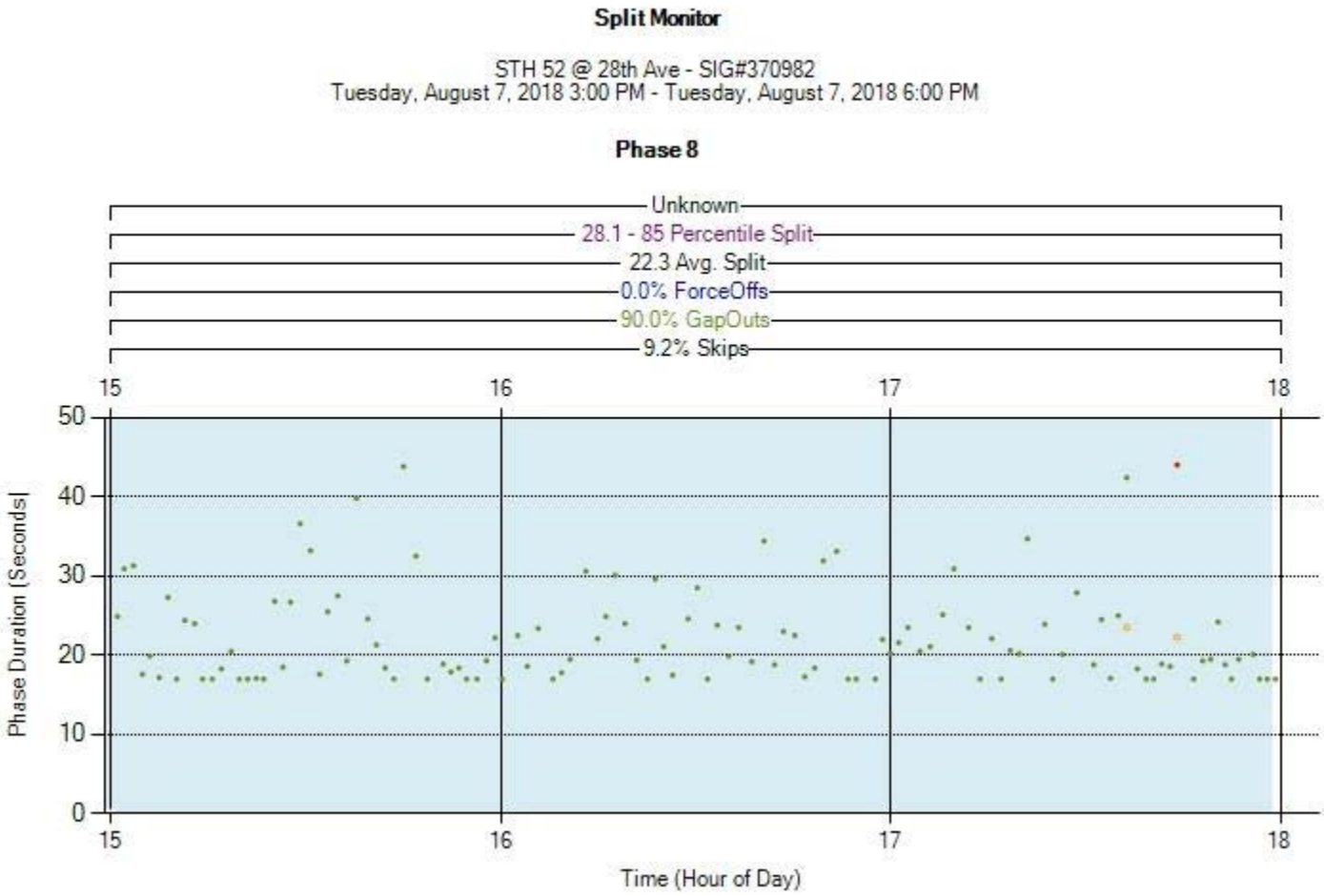
Isolated Signal – WIS 52 & 28th Avenue
Synchro Timings
8/7/2018 – 3:00 PM – 6:00 PM



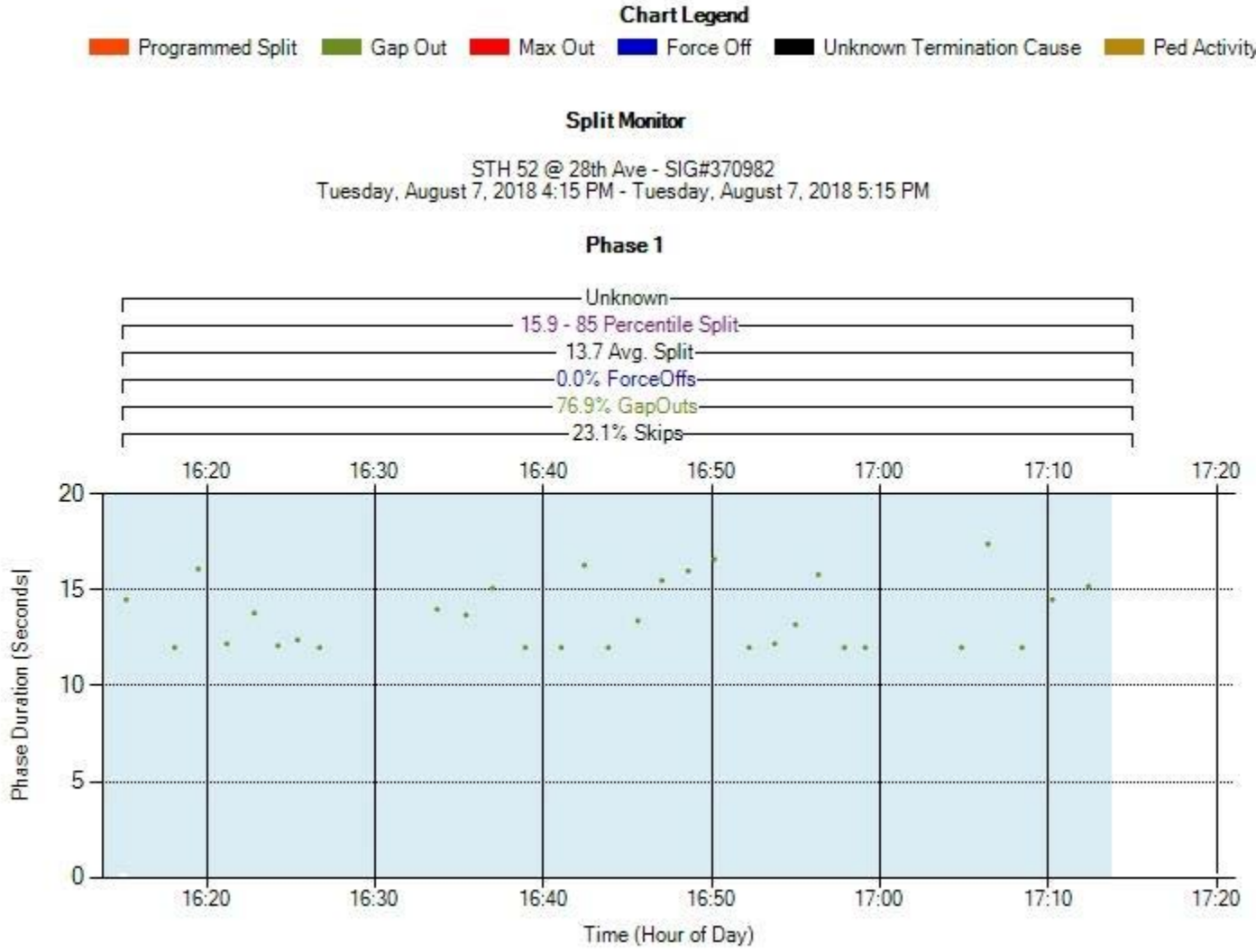
Isolated Signal – WIS 52 & 28th Avenue
Synchro Timings
8/7/2018 – 3:00 PM – 6:00 PM



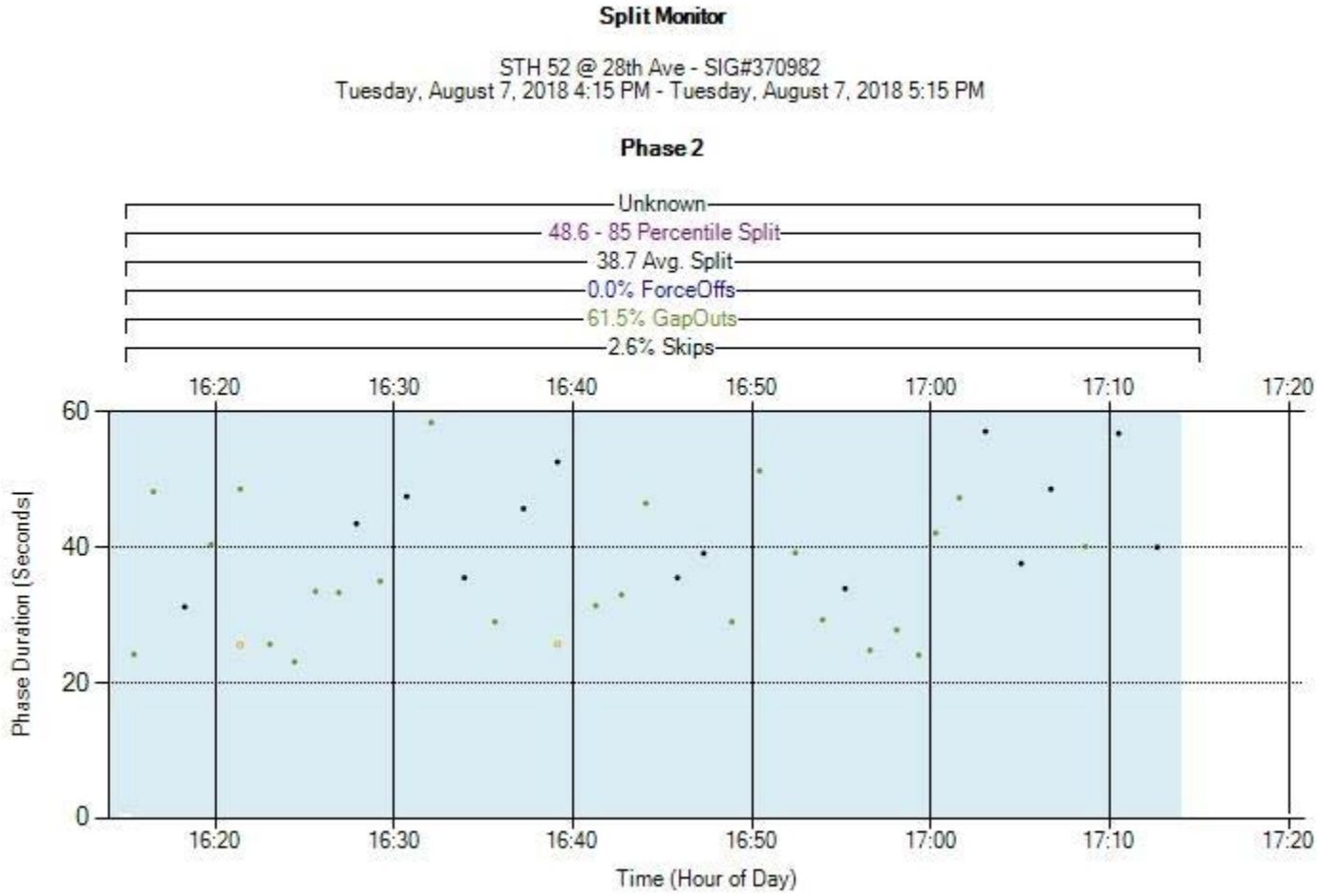
Isolated Signal – WIS 52 & 28th Avenue
Synchro Timings
8/7/2018 – 3:00 PM – 6:00 PM



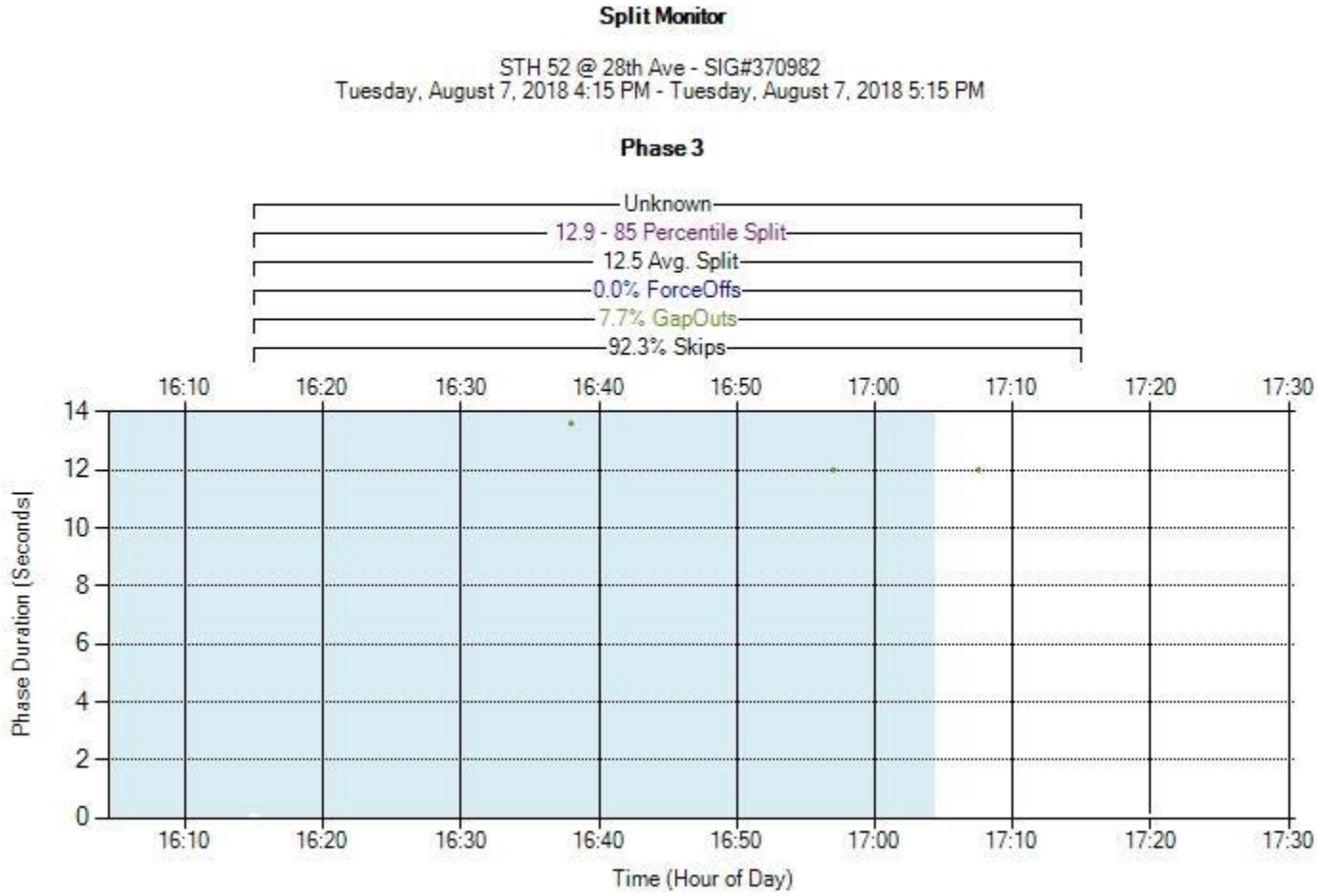
Isolated Signal – WIS 52 & 28th Avenue
Synchro Timings
8/7/2018 – 4:15 PM – 5:15 PM



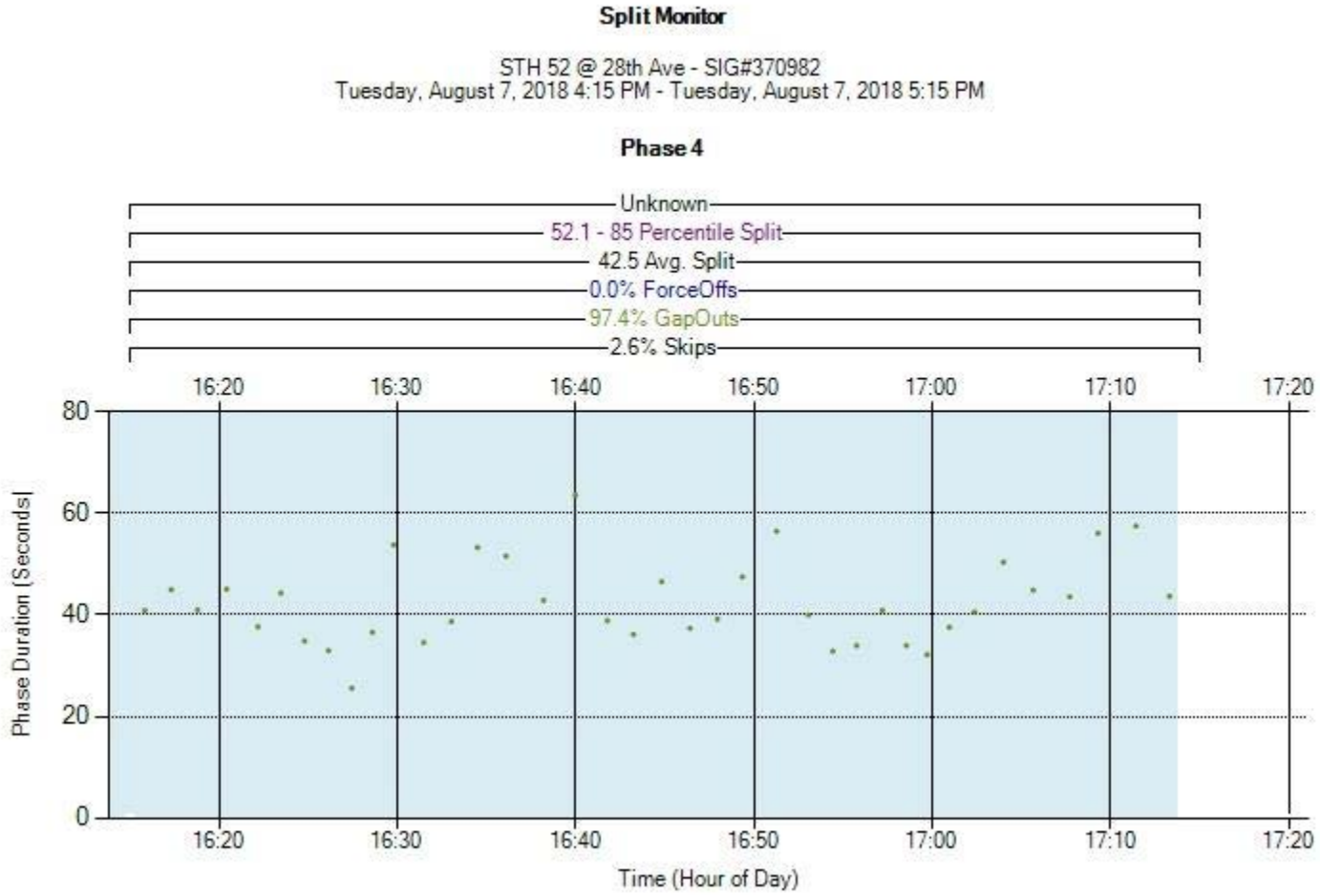
Isolated Signal – WIS 52 & 28th Avenue
Synchro Timings
8/7/2018 – 4:15 PM – 5:15 PM



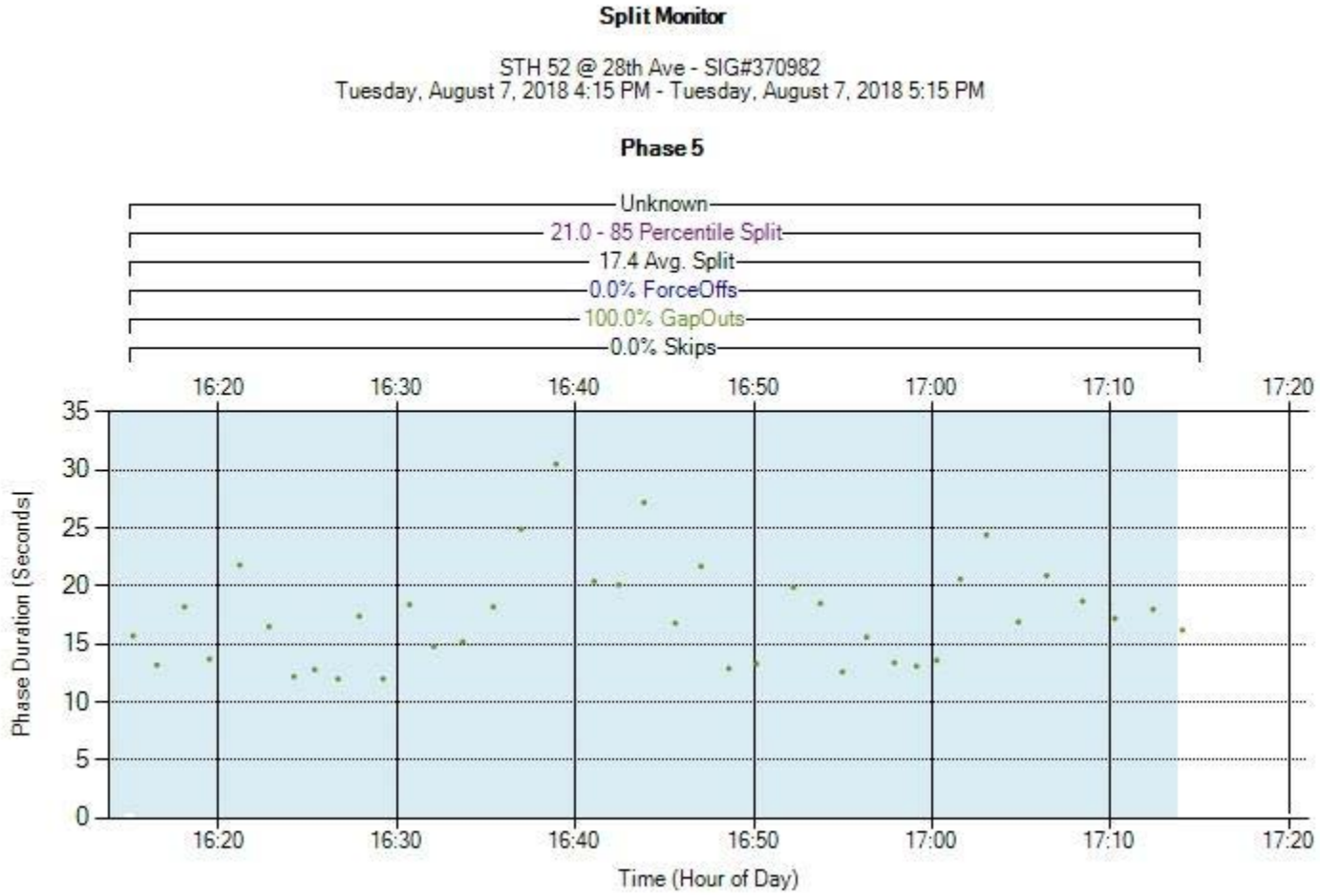
Isolated Signal – WIS 52 & 28th Avenue
Synchro Timings
8/7/2018 – 4:15 PM – 5:15 PM



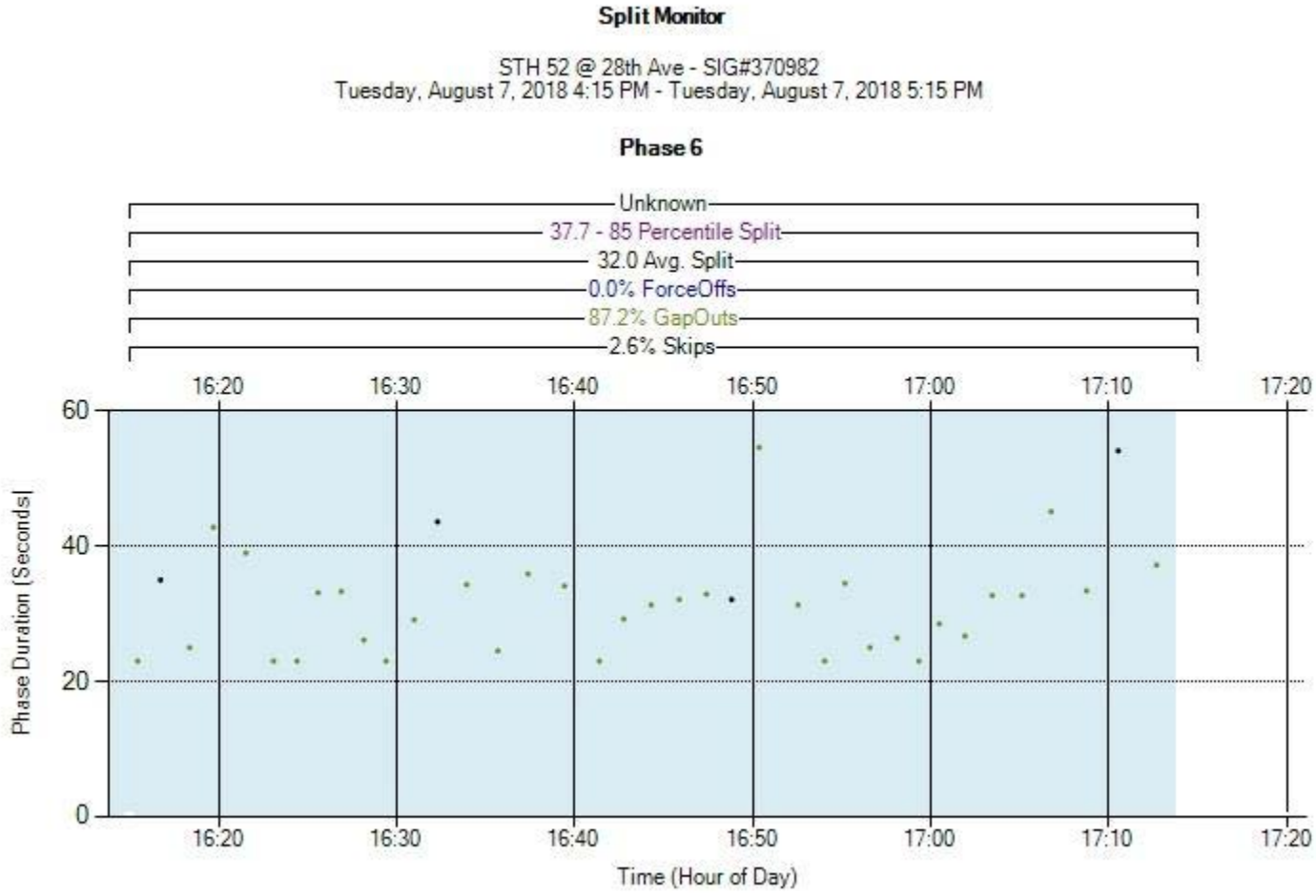
Isolated Signal – WIS 52 & 28th Avenue
Synchro Timings
8/7/2018 – 4:15 PM – 5:15 PM



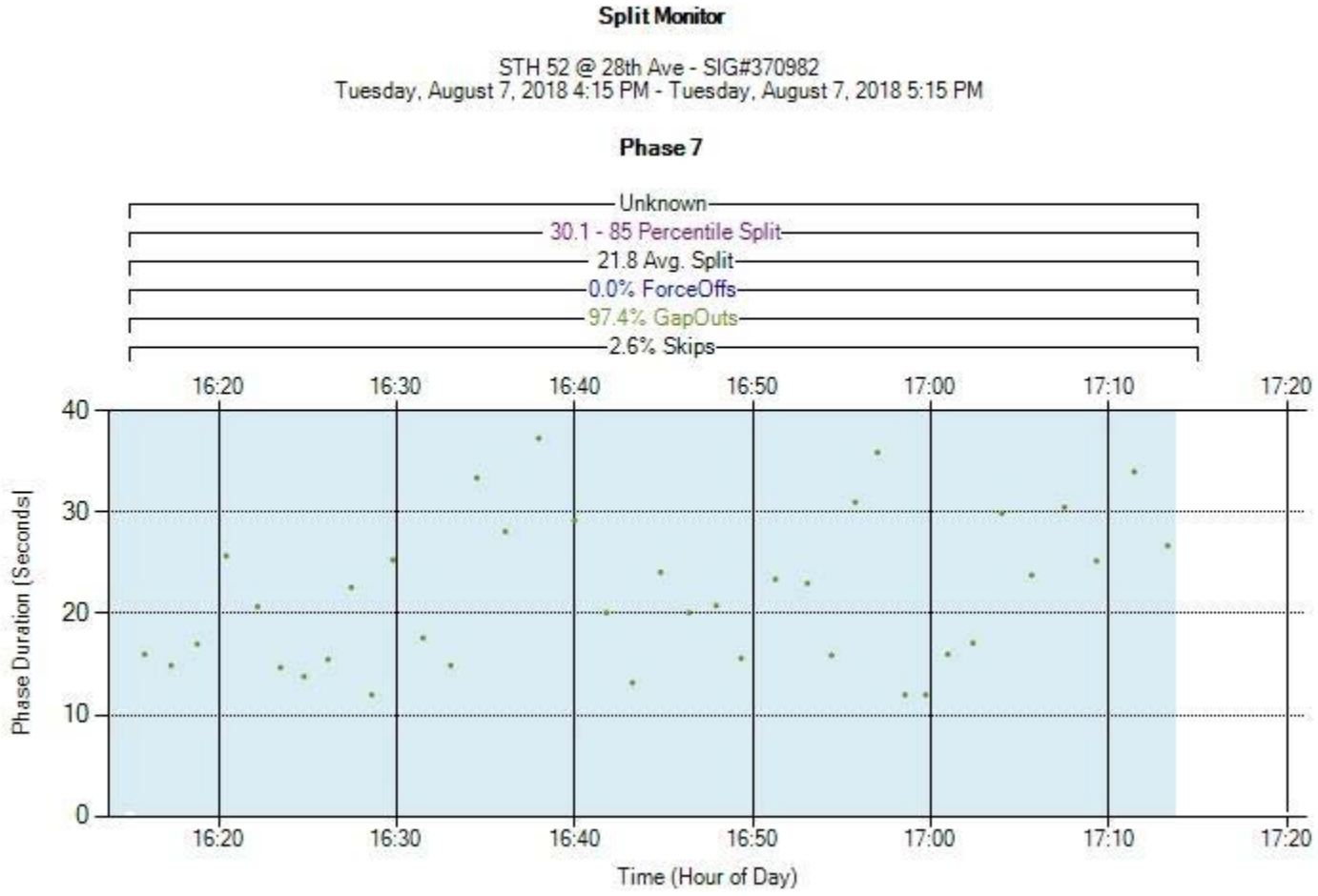
Isolated Signal – WIS 52 & 28th Avenue
Synchro Timings
8/7/2018 – 4:15 PM – 5:15 PM



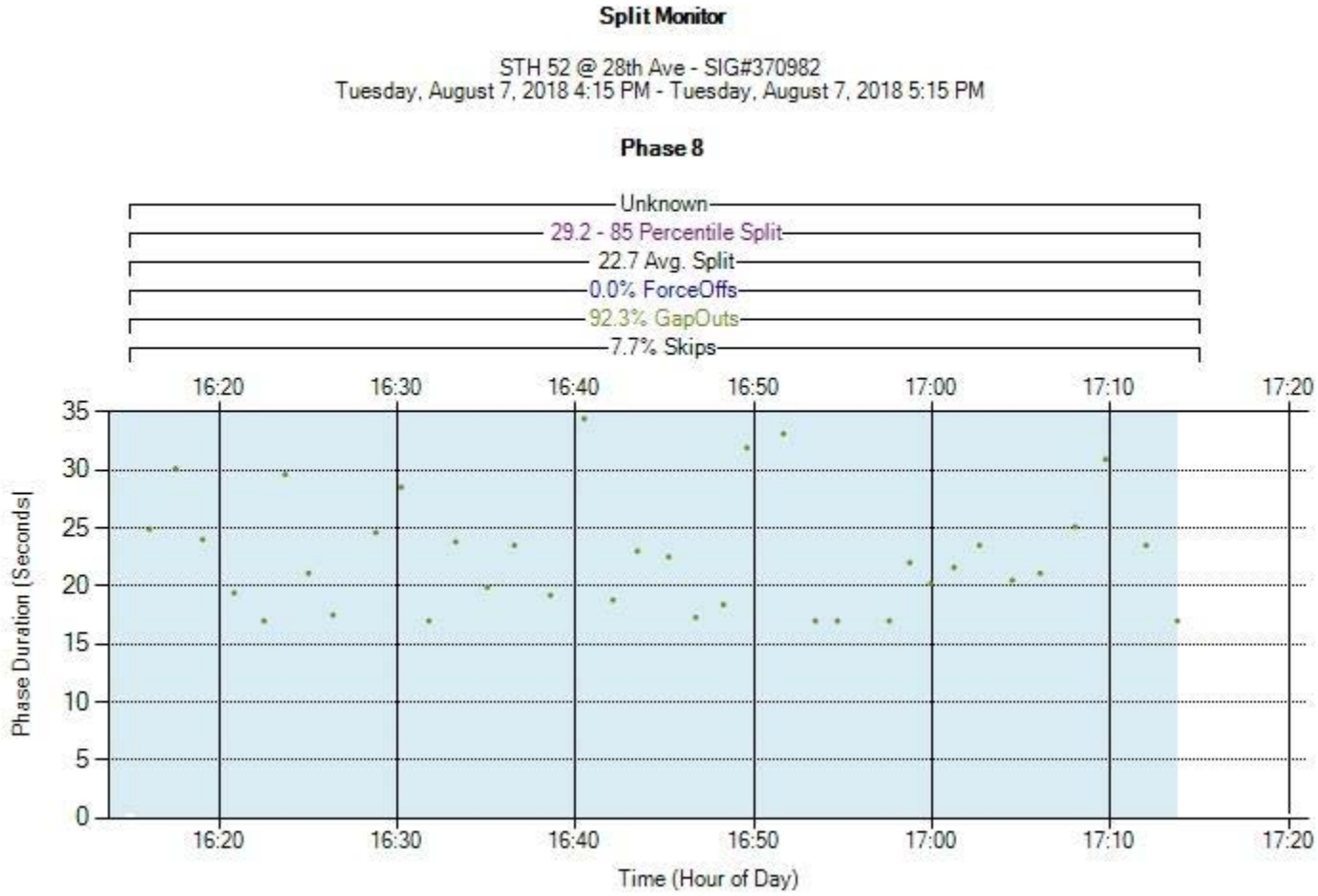
Isolated Signal – WIS 52 & 28th Avenue
Synchro Timings
8/7/2018 – 4:15 PM – 5:15 PM



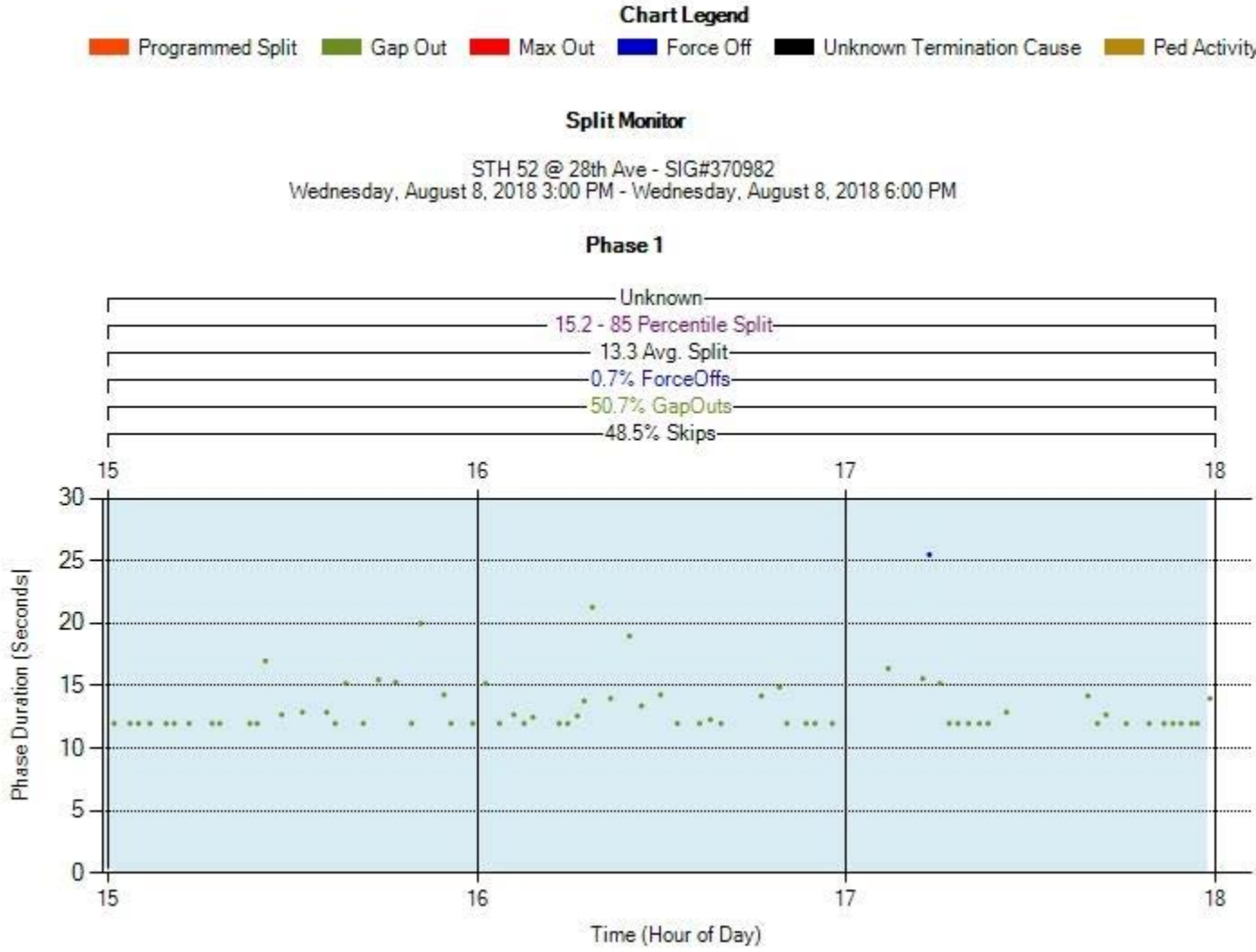
Isolated Signal – WIS 52 & 28th Avenue
Synchro Timings
8/7/2018 – 4:15 PM – 5:15 PM



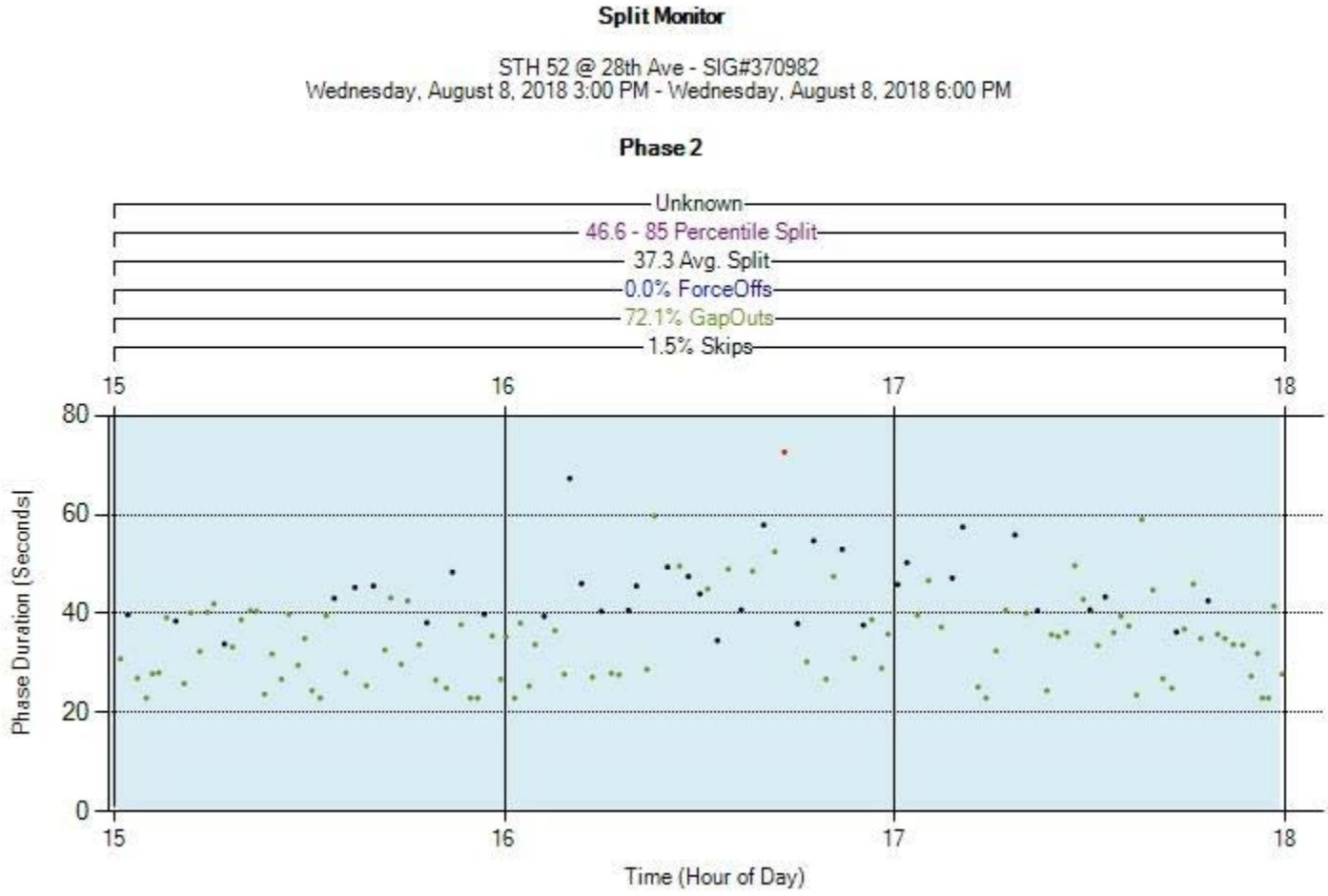
Isolated Signal – WIS 52 & 28th Avenue
Synchro Timings
8/7/2018 – 4:15 PM – 5:15 PM



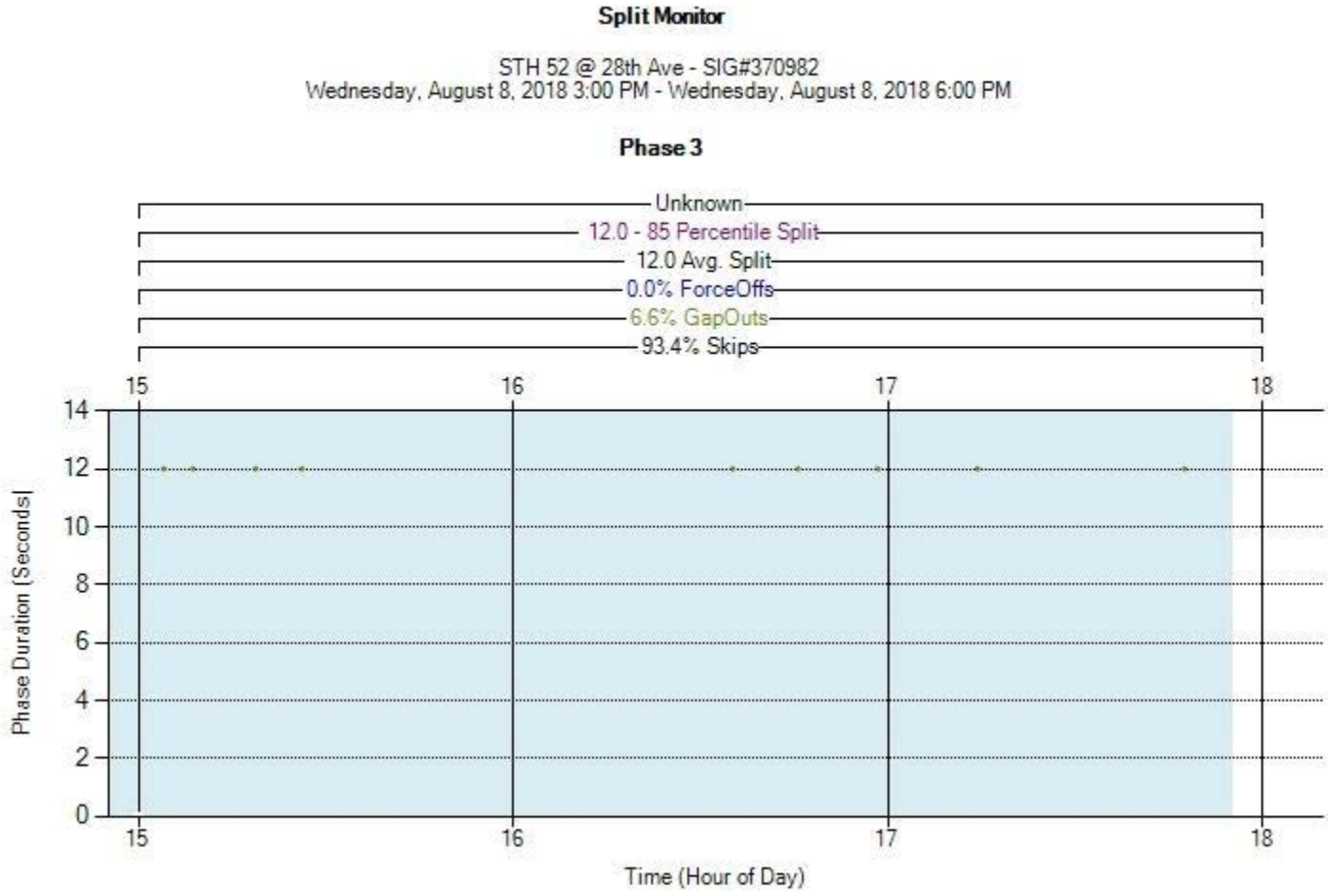
Isolated Signal – WIS 52 & 28th Avenue
Synchro Timings
8/8/2018 – 3:00 PM – 6:00 PM



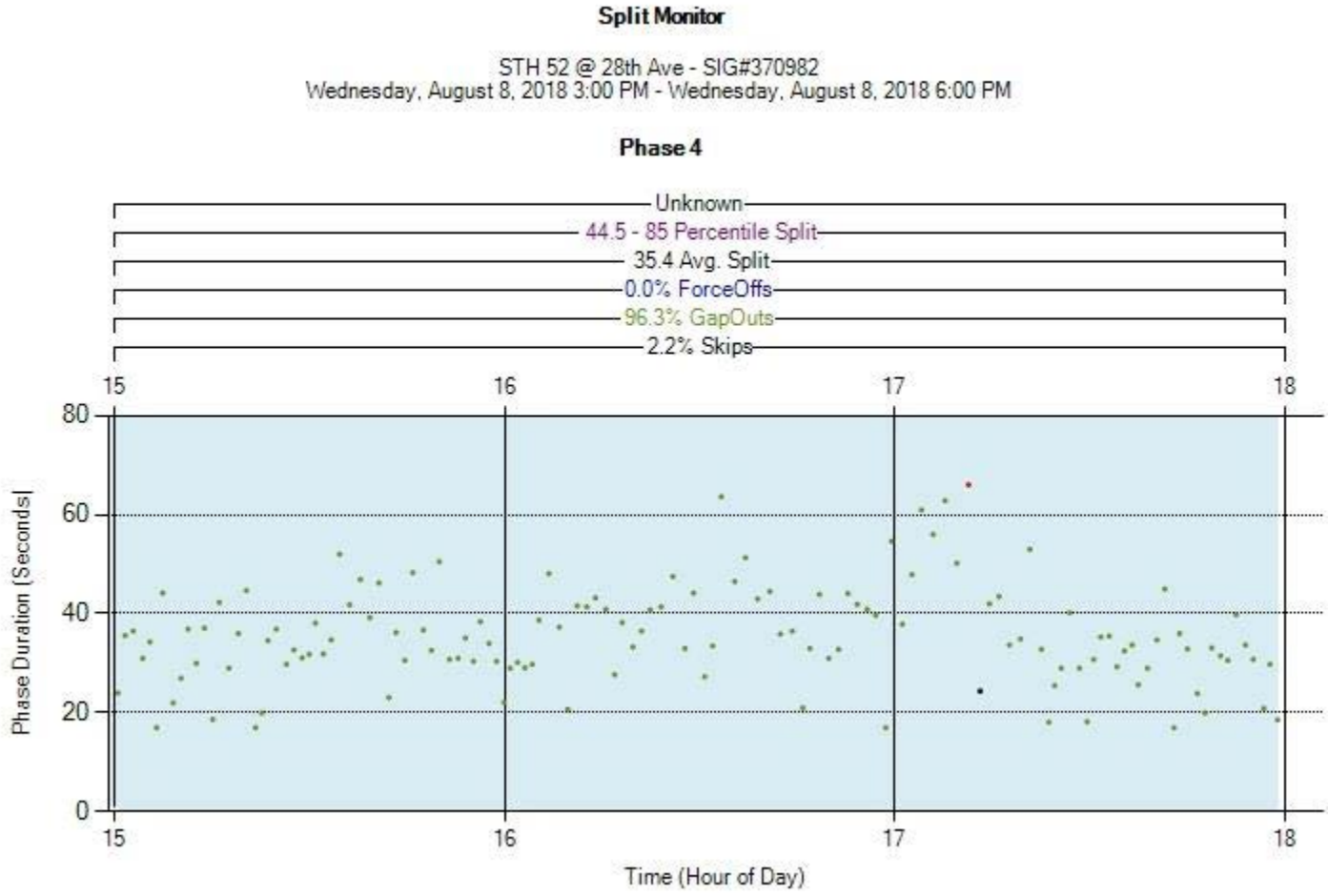
Isolated Signal – WIS 52 & 28th Avenue
Synchro Timings
8/8/2018 – 3:00 PM – 6:00 PM



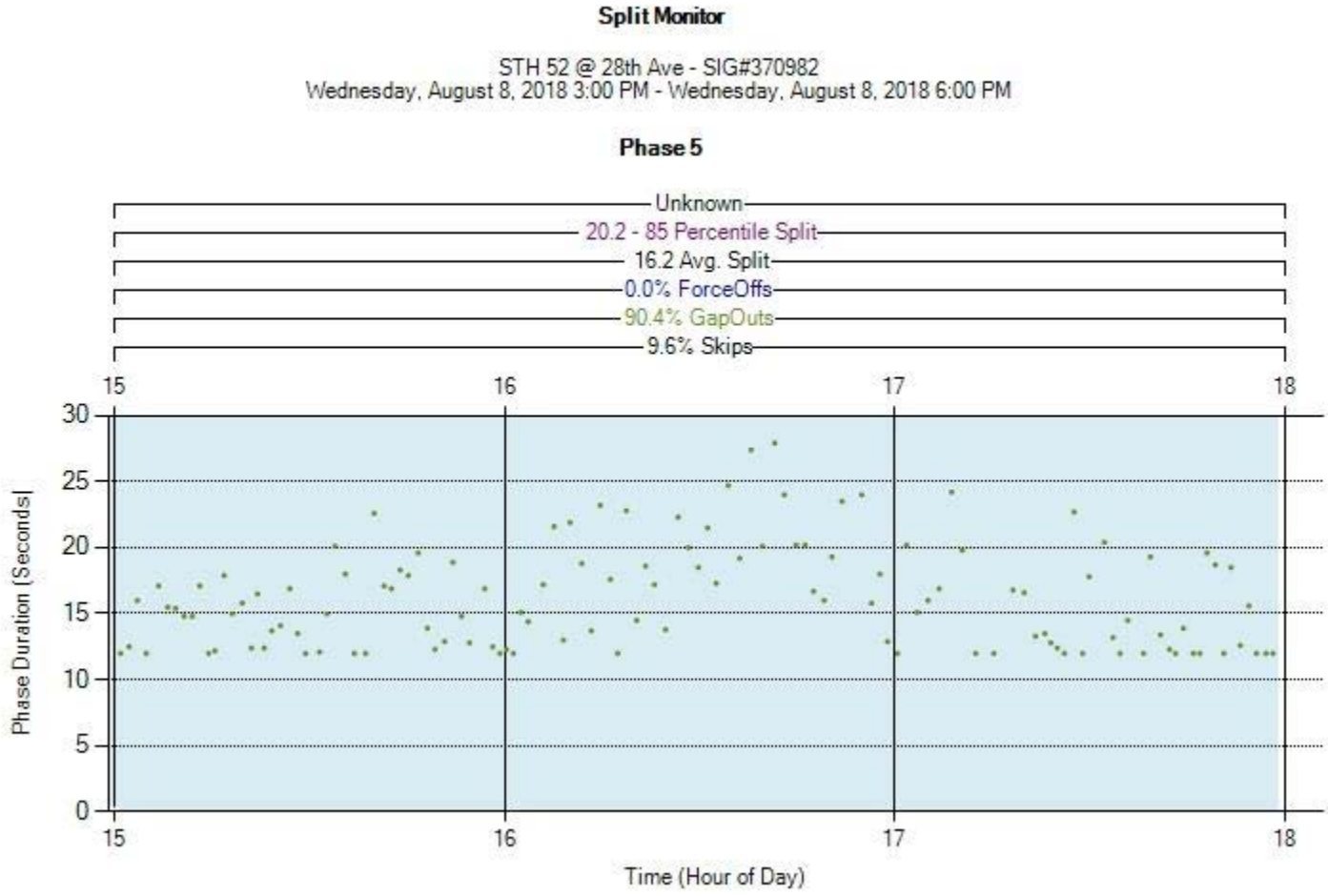
Isolated Signal – WIS 52 & 28th Avenue
Synchro Timings
8/8/2018 – 3:00 PM – 6:00 PM



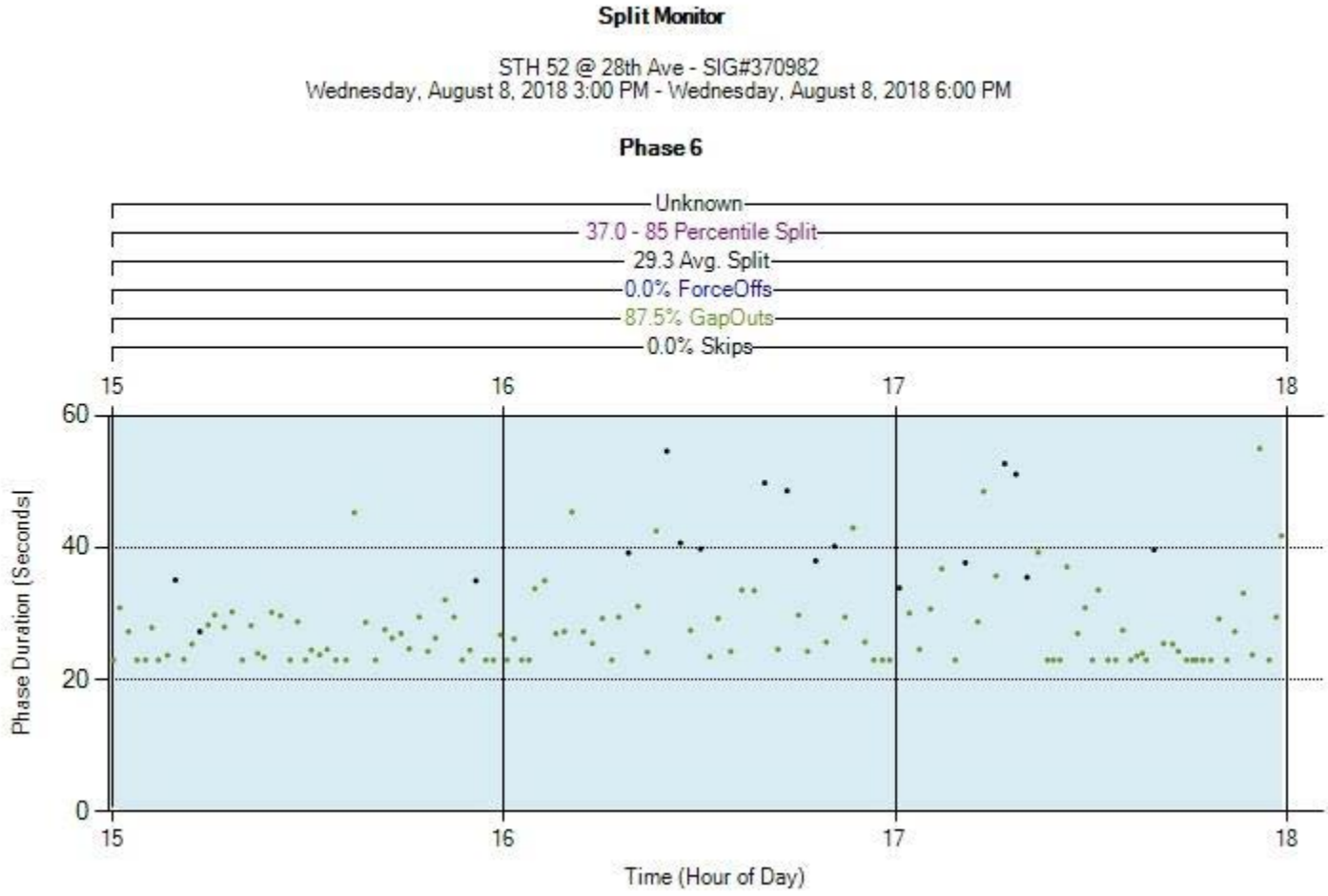
Isolated Signal – WIS 52 & 28th Avenue
Synchro Timings
8/8/2018 – 3:00 PM – 6:00 PM



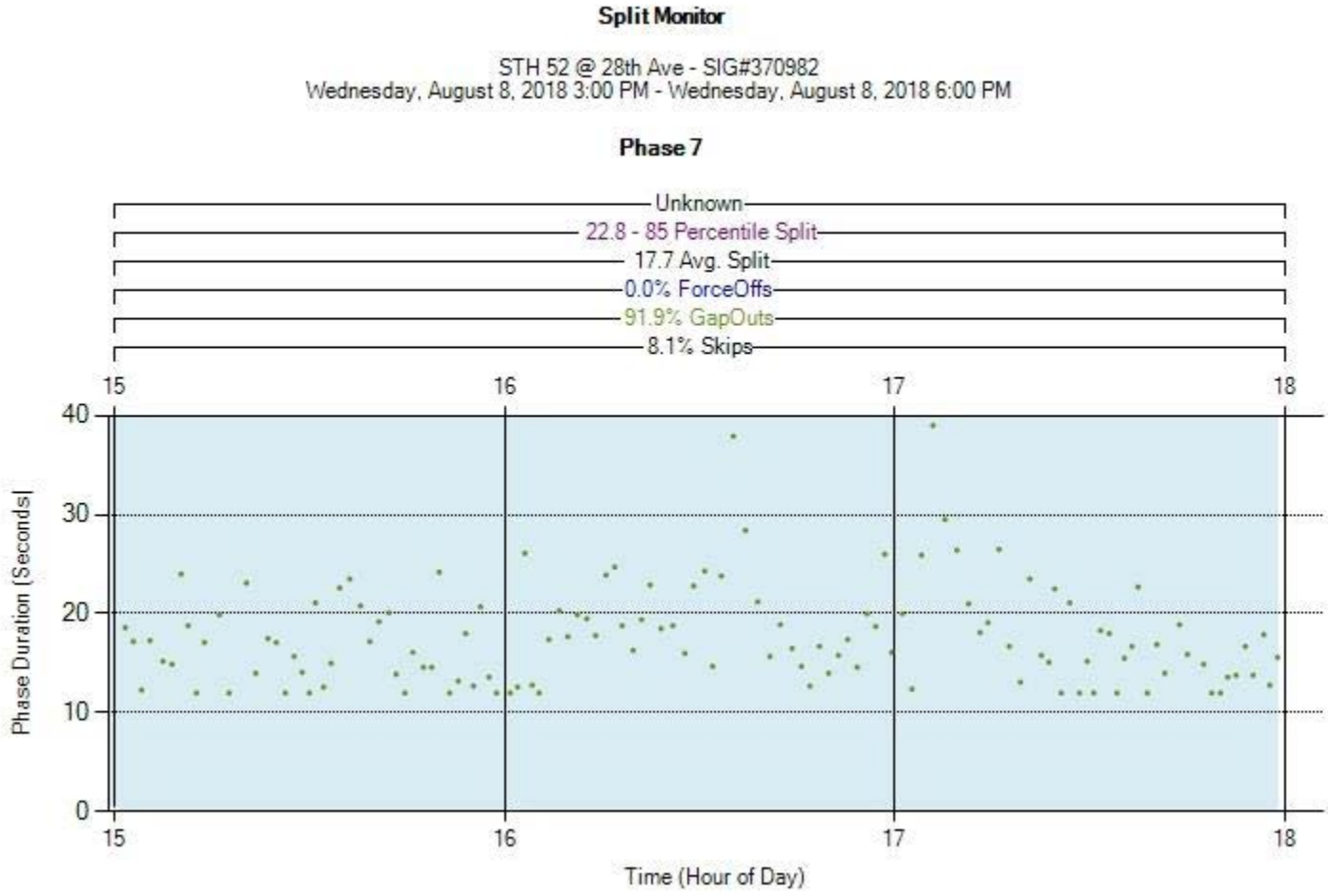
Isolated Signal – WIS 52 & 28th Avenue
Synchro Timings
8/8/2018 – 3:00 PM – 6:00 PM



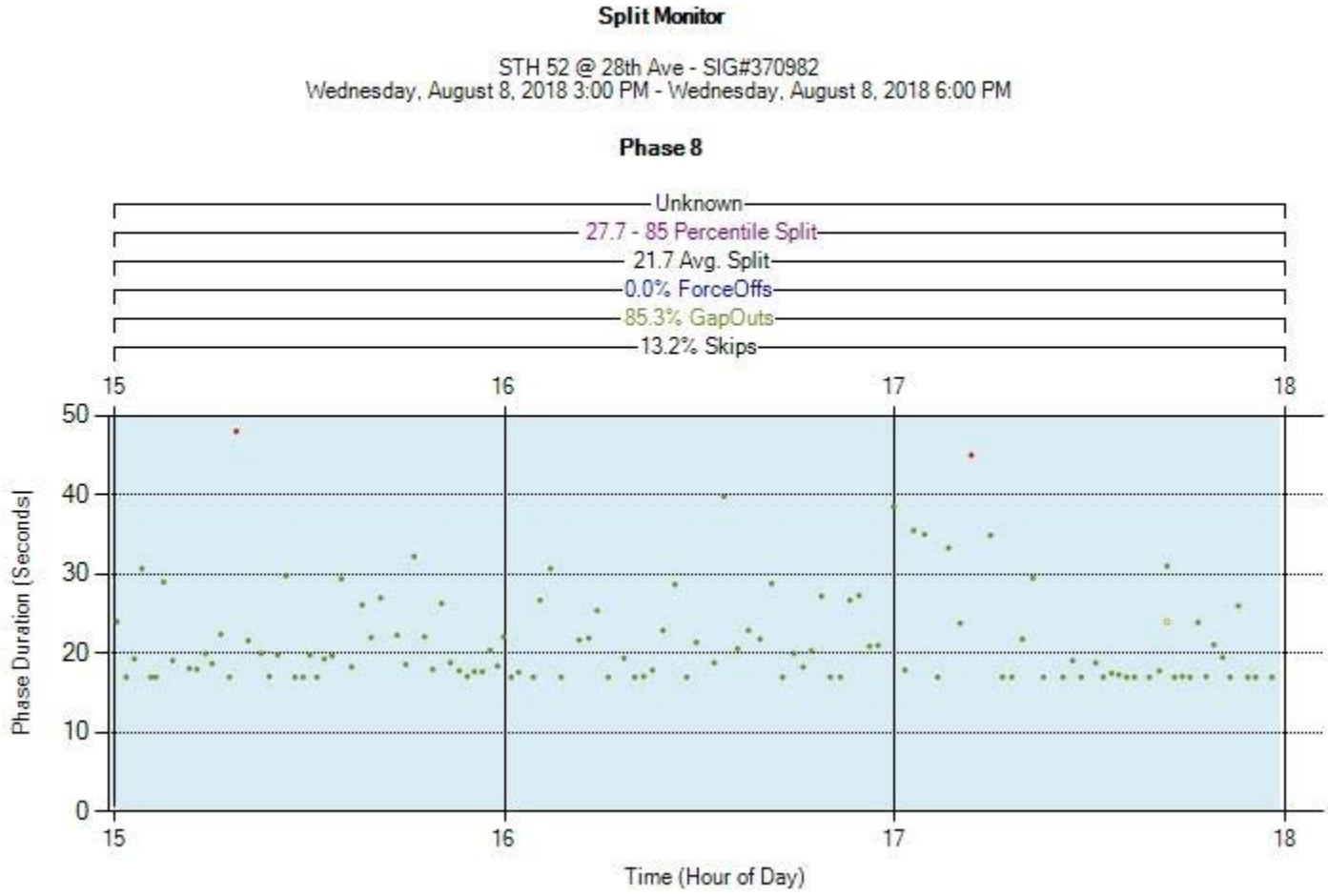
Isolated Signal – WIS 52 & 28th Avenue
Synchro Timings
8/8/2018 – 3:00 PM – 6:00 PM



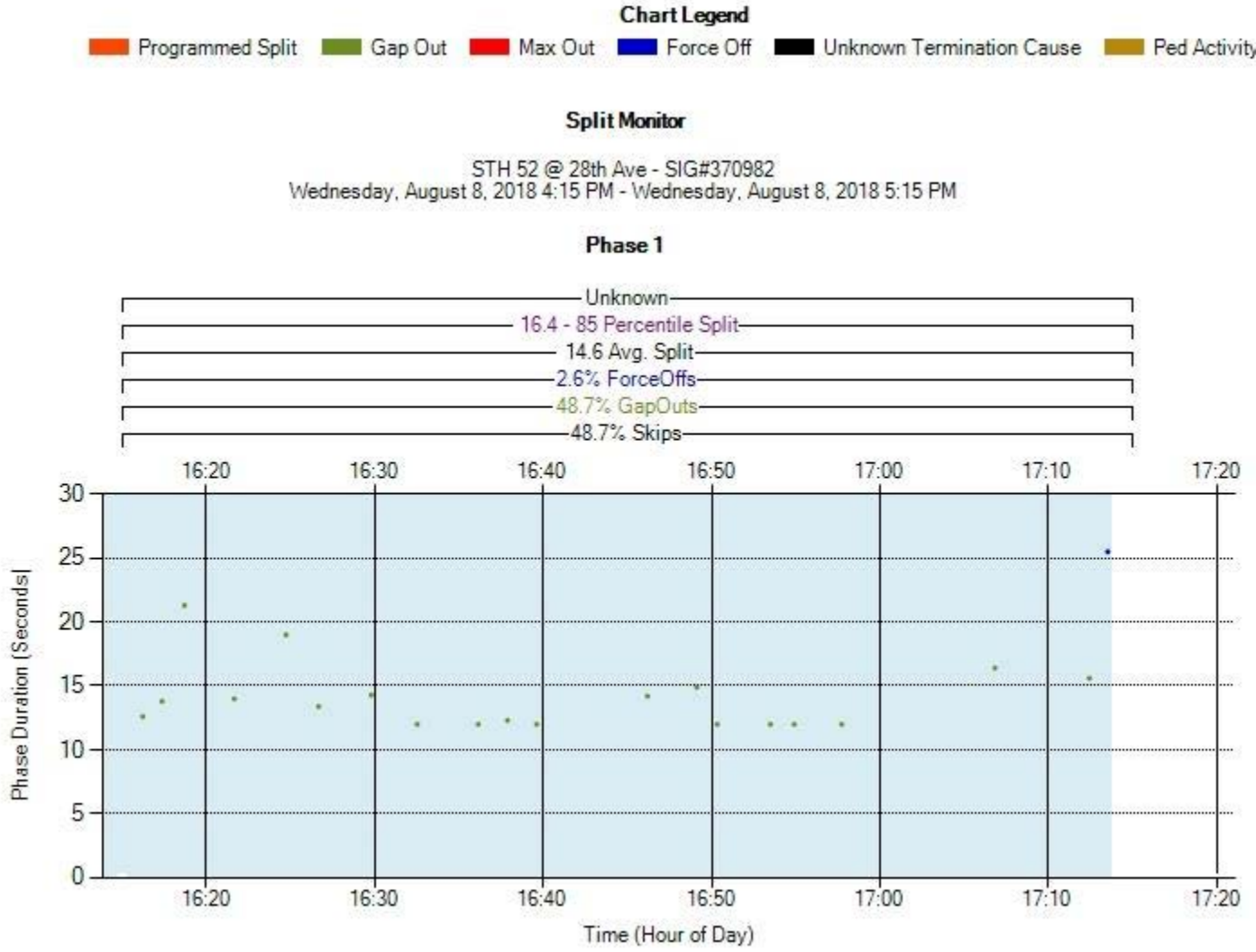
Isolated Signal – WIS 52 & 28th Avenue
Synchro Timings
8/8/2018 – 3:00 PM – 6:00 PM



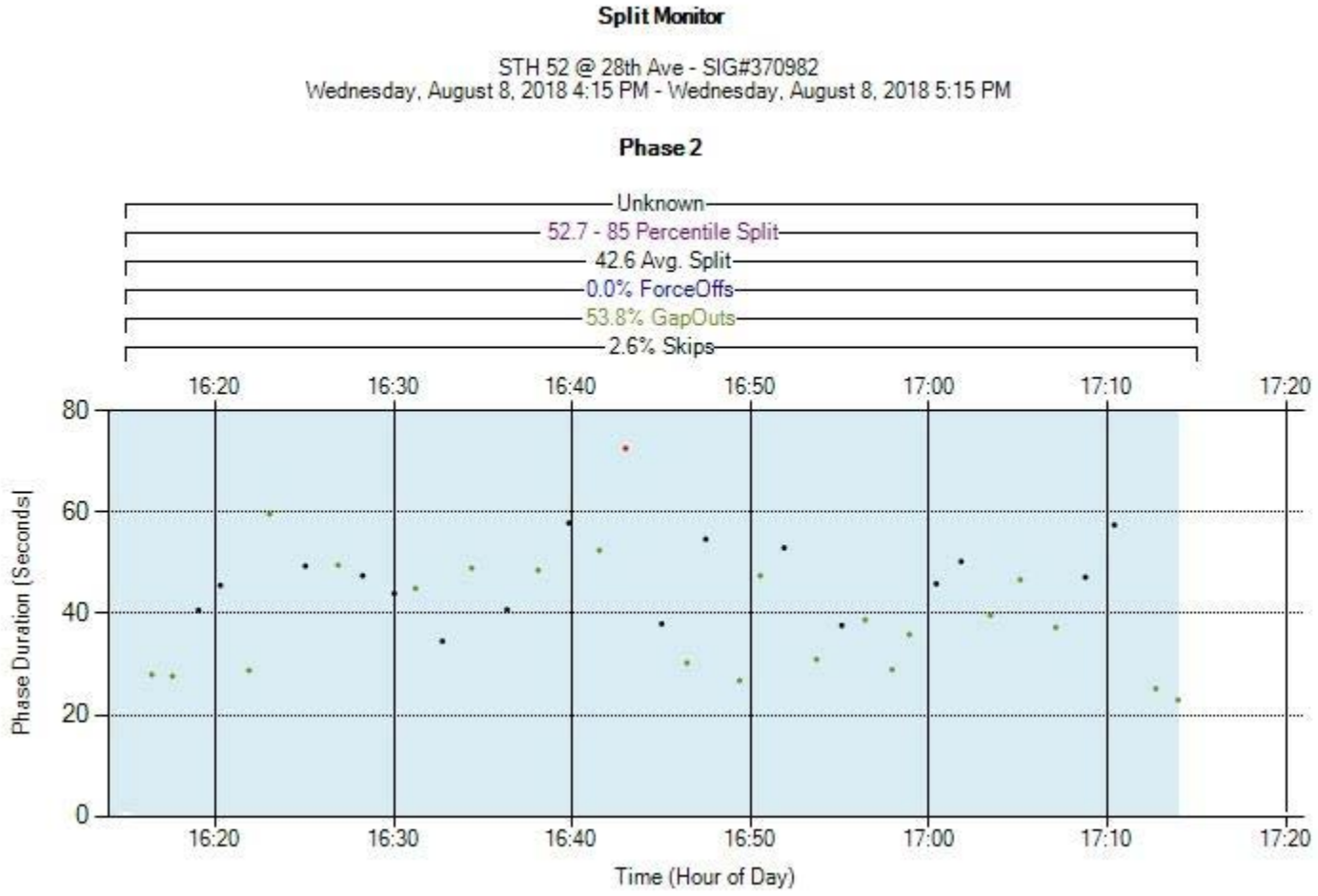
Isolated Signal – WIS 52 & 28th Avenue
Synchro Timings
8/8/2018 – 3:00 PM – 6:00 PM



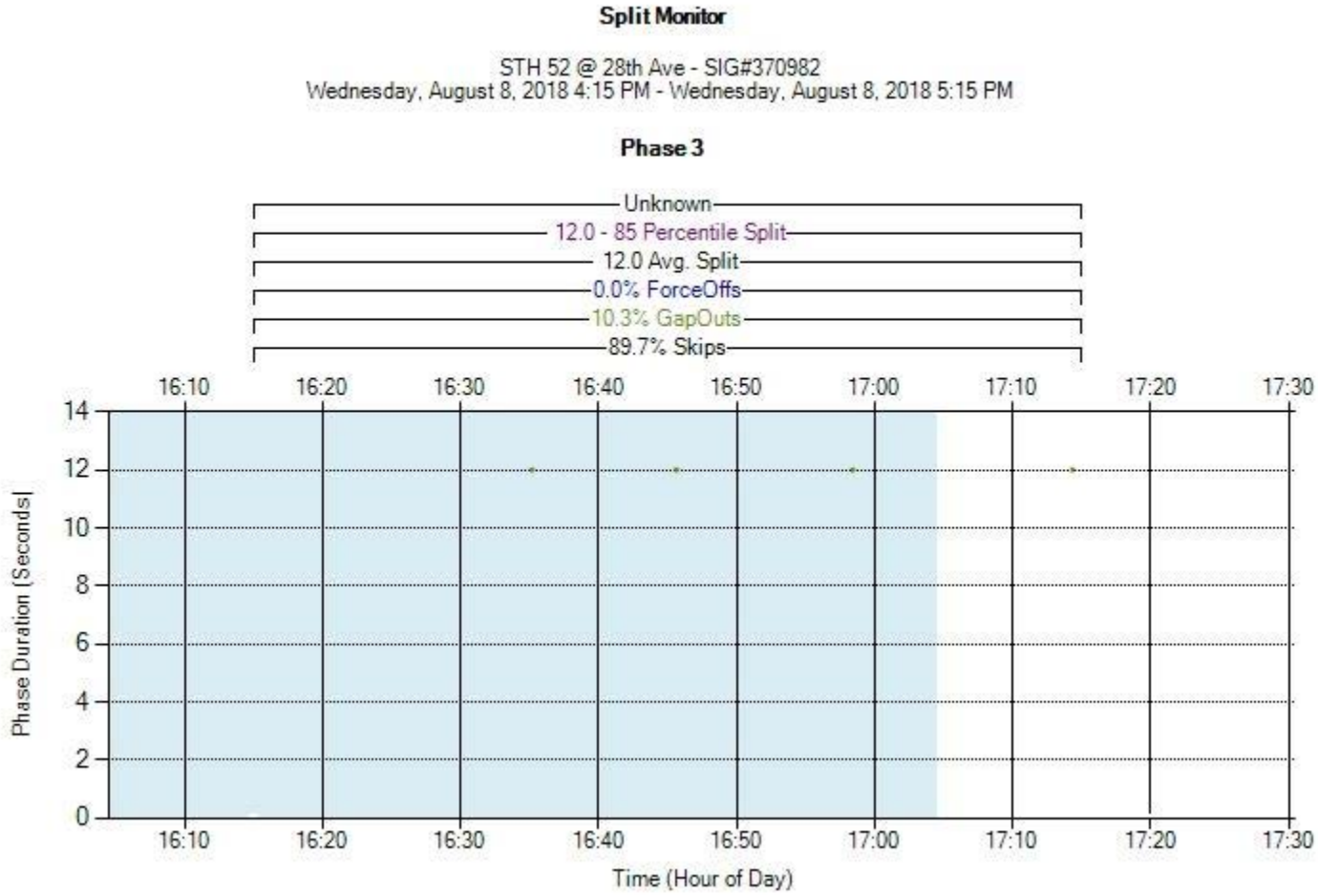
Isolated Signal – WIS 52 & 28th Avenue
Synchro Timings
8/8/2018 – 4:15 PM – 5:15 PM



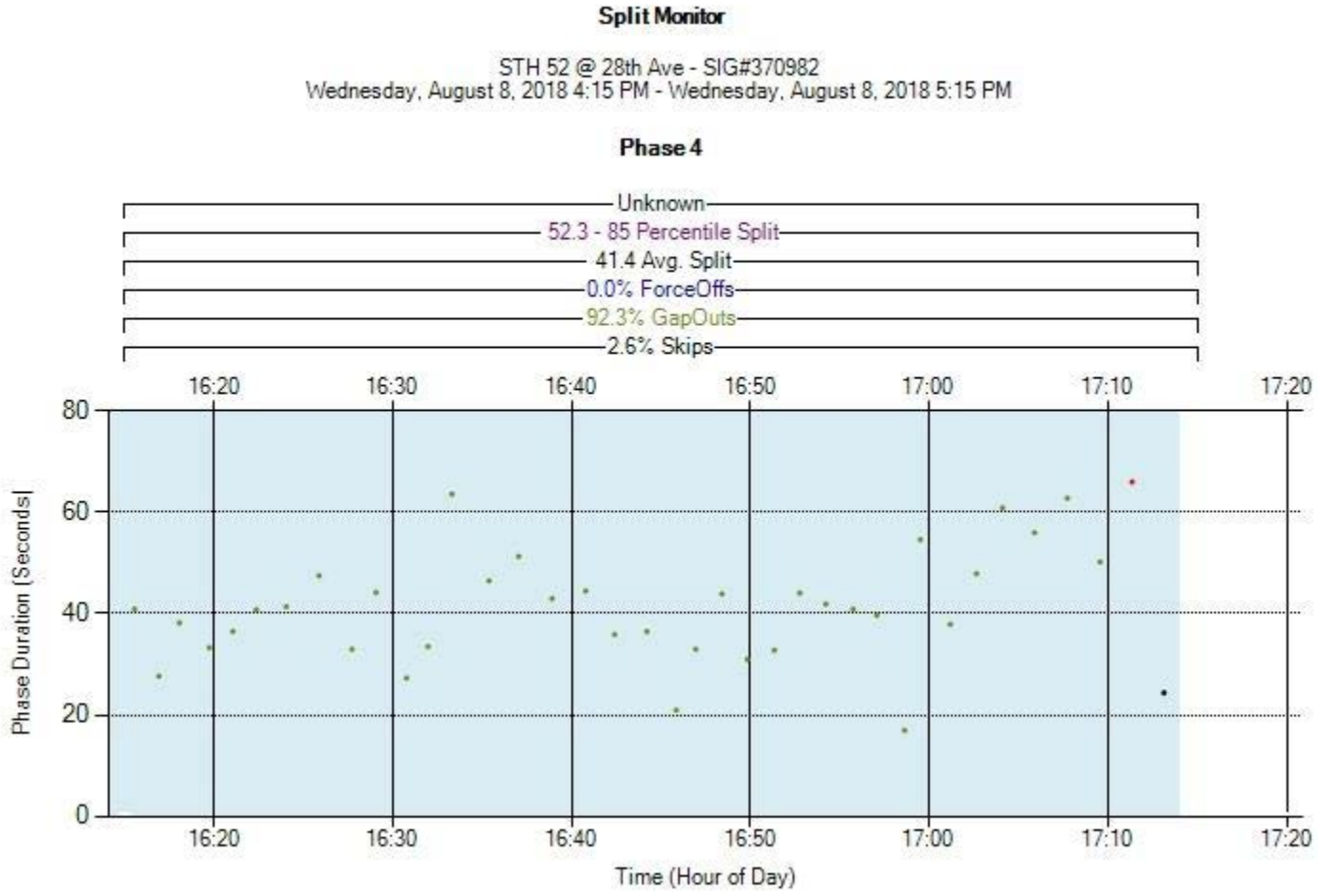
Isolated Signal – WIS 52 & 28th Avenue
Synchro Timings
8/8/2018 – 4:15 PM – 5:15 PM



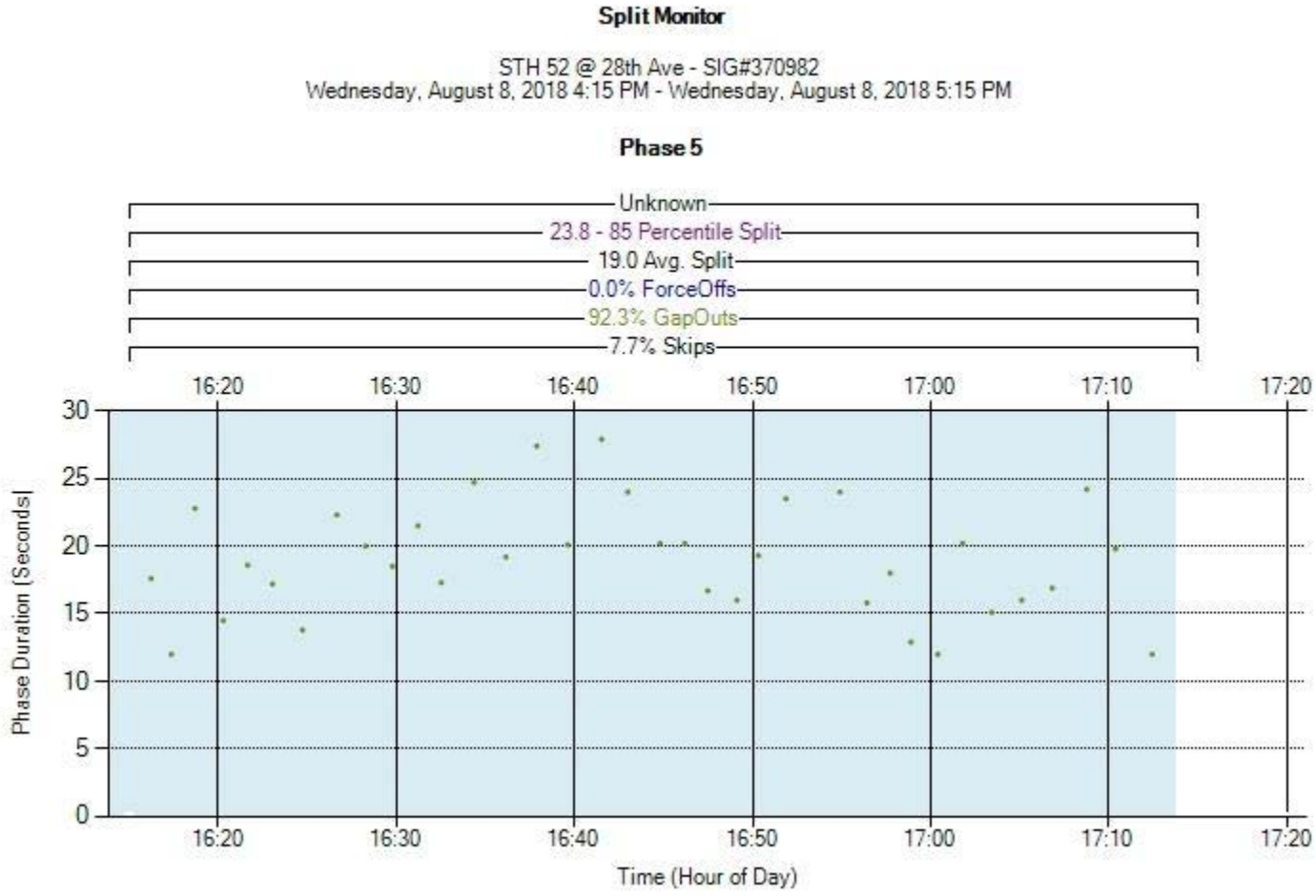
Isolated Signal – WIS 52 & 28th Avenue
Synchro Timings
8/8/2018 – 4:15 PM – 5:15 PM



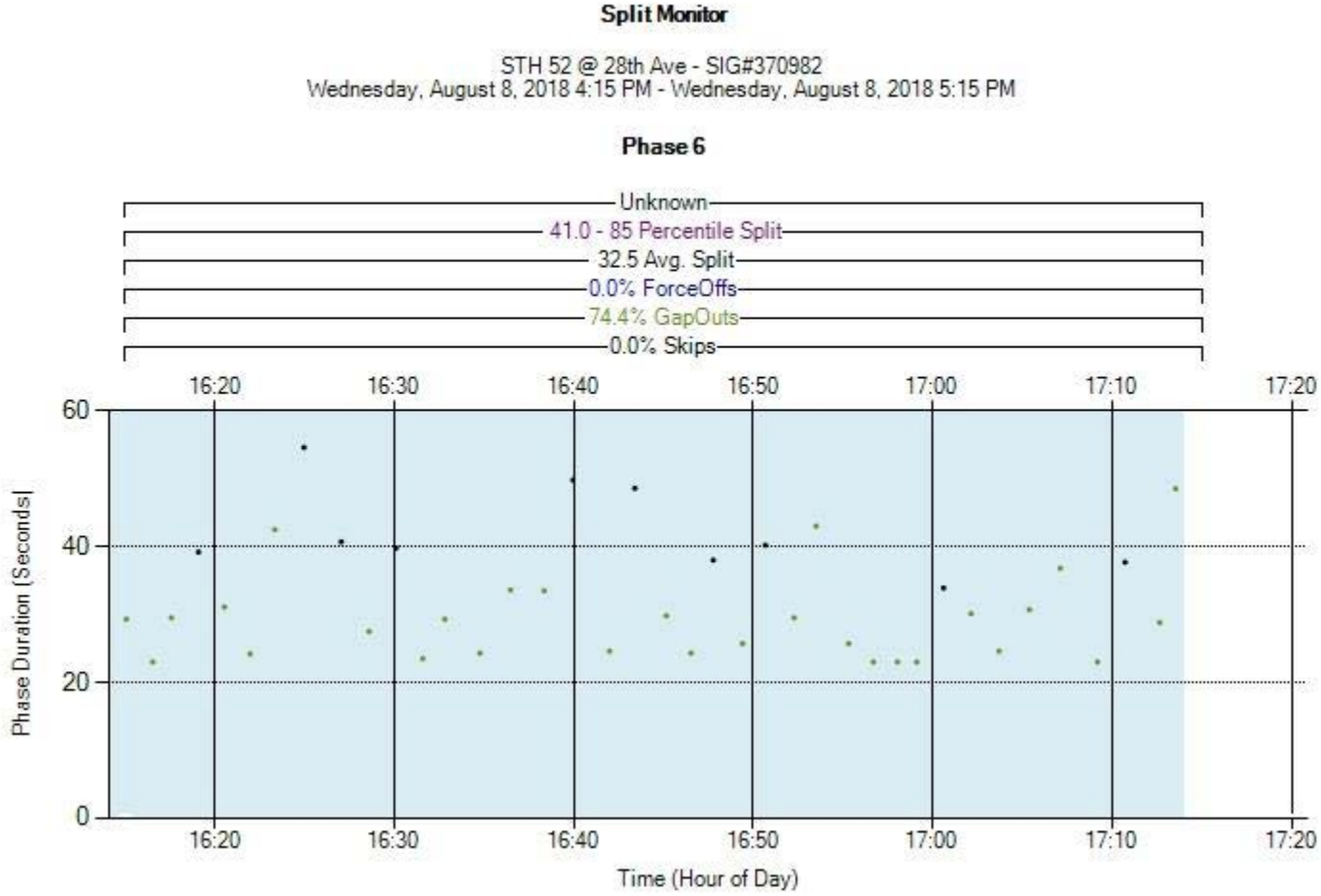
Isolated Signal – WIS 52 & 28th Avenue
Synchro Timings
8/8/2018 – 4:15 PM – 5:15 PM



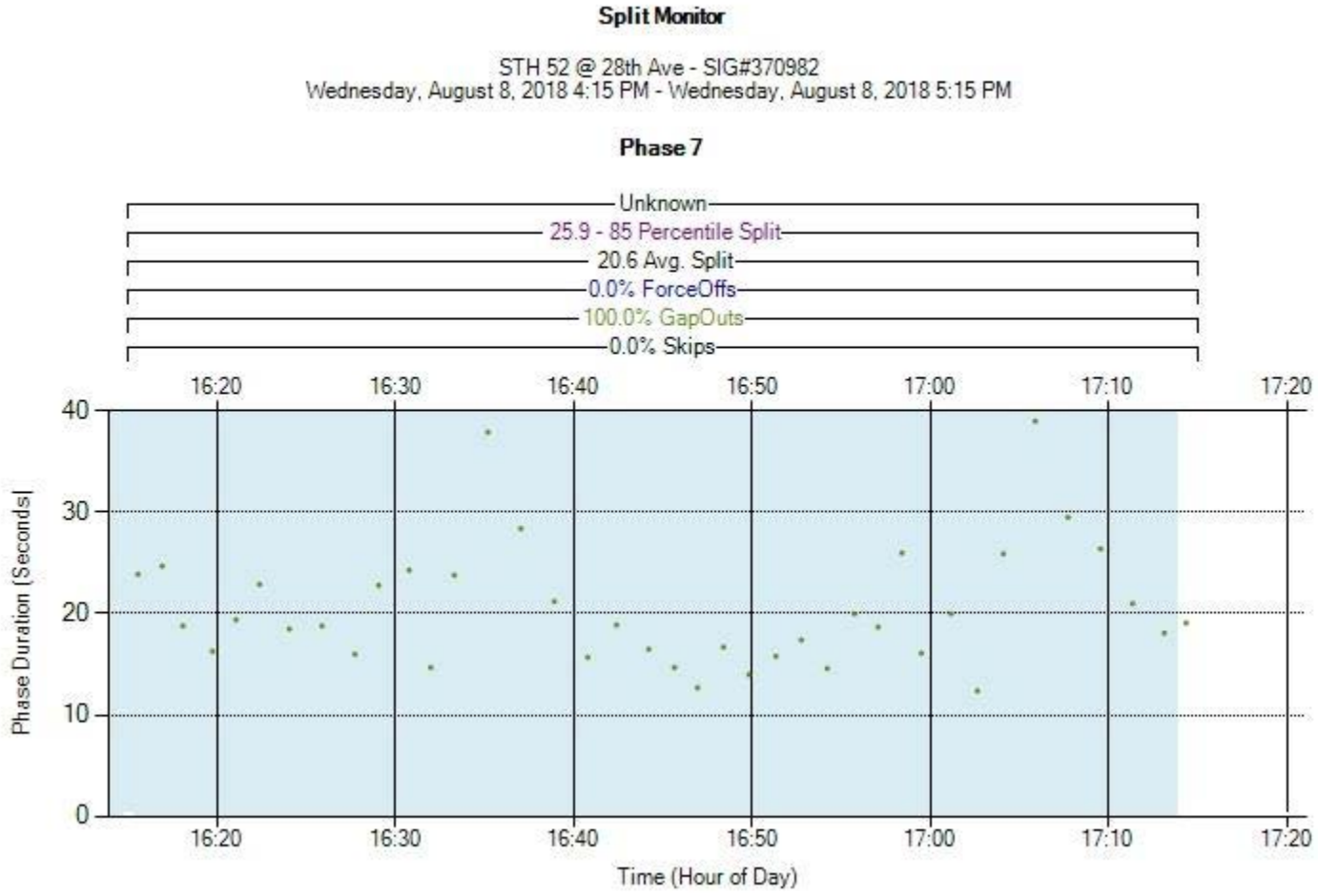
Isolated Signal – WIS 52 & 28th Avenue
Synchro Timings
8/8/2018 – 4:15 PM – 5:15 PM



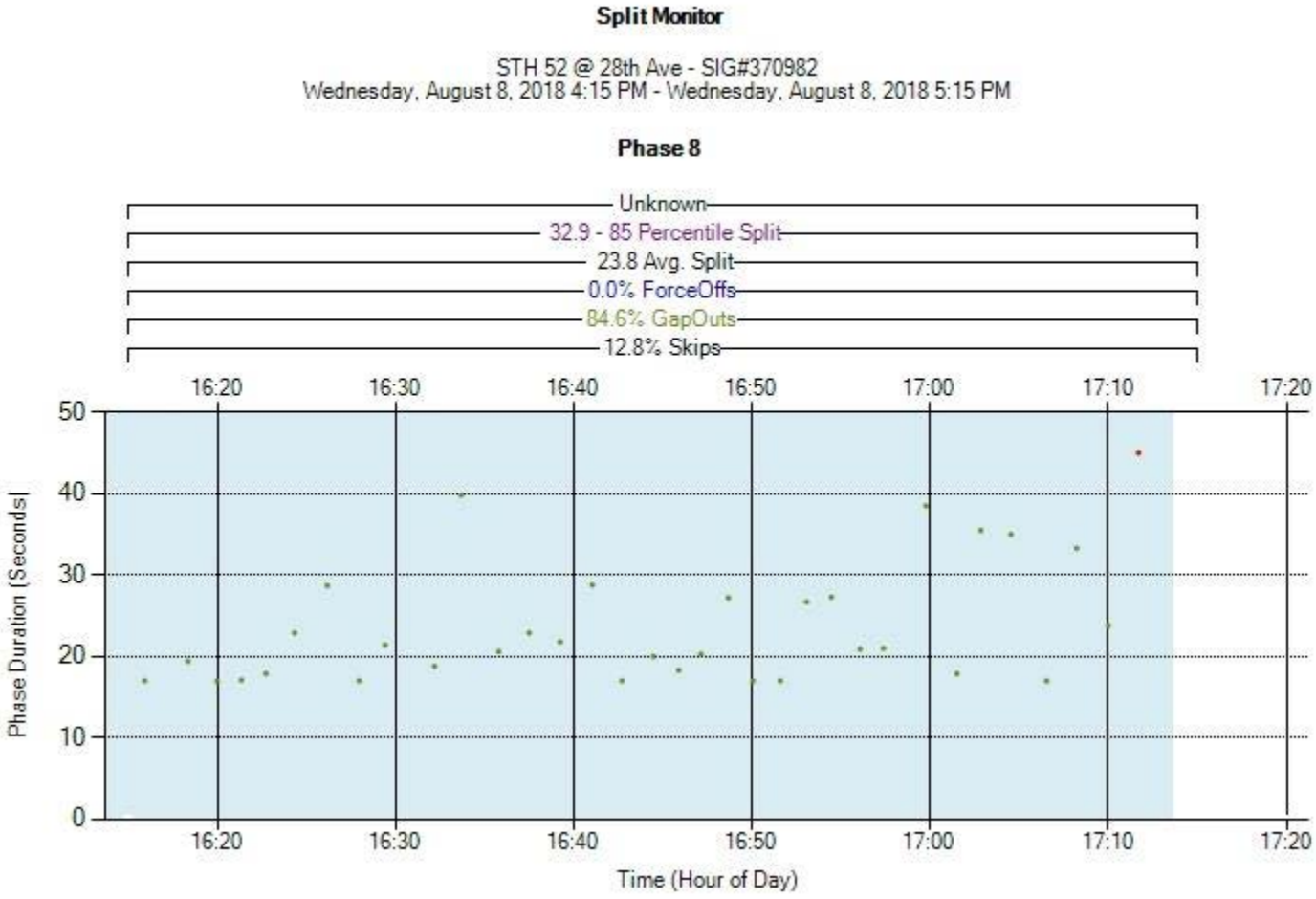
Isolated Signal – WIS 52 & 28th Avenue
Synchro Timings
8/8/2018 – 4:15 PM – 5:15 PM



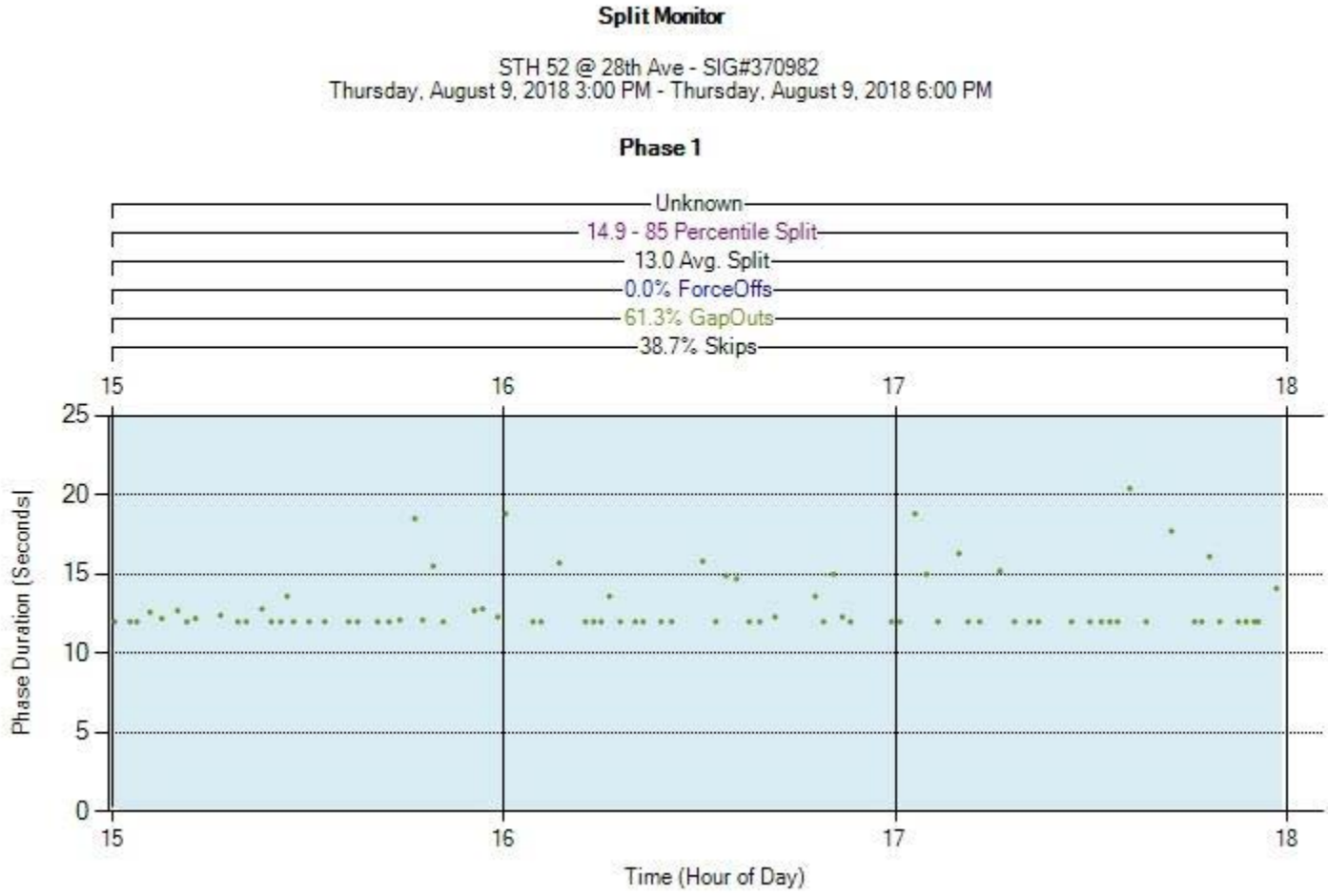
Isolated Signal – WIS 52 & 28th Avenue
Synchro Timings
8/8/2018 – 4:15 PM – 5:15 PM



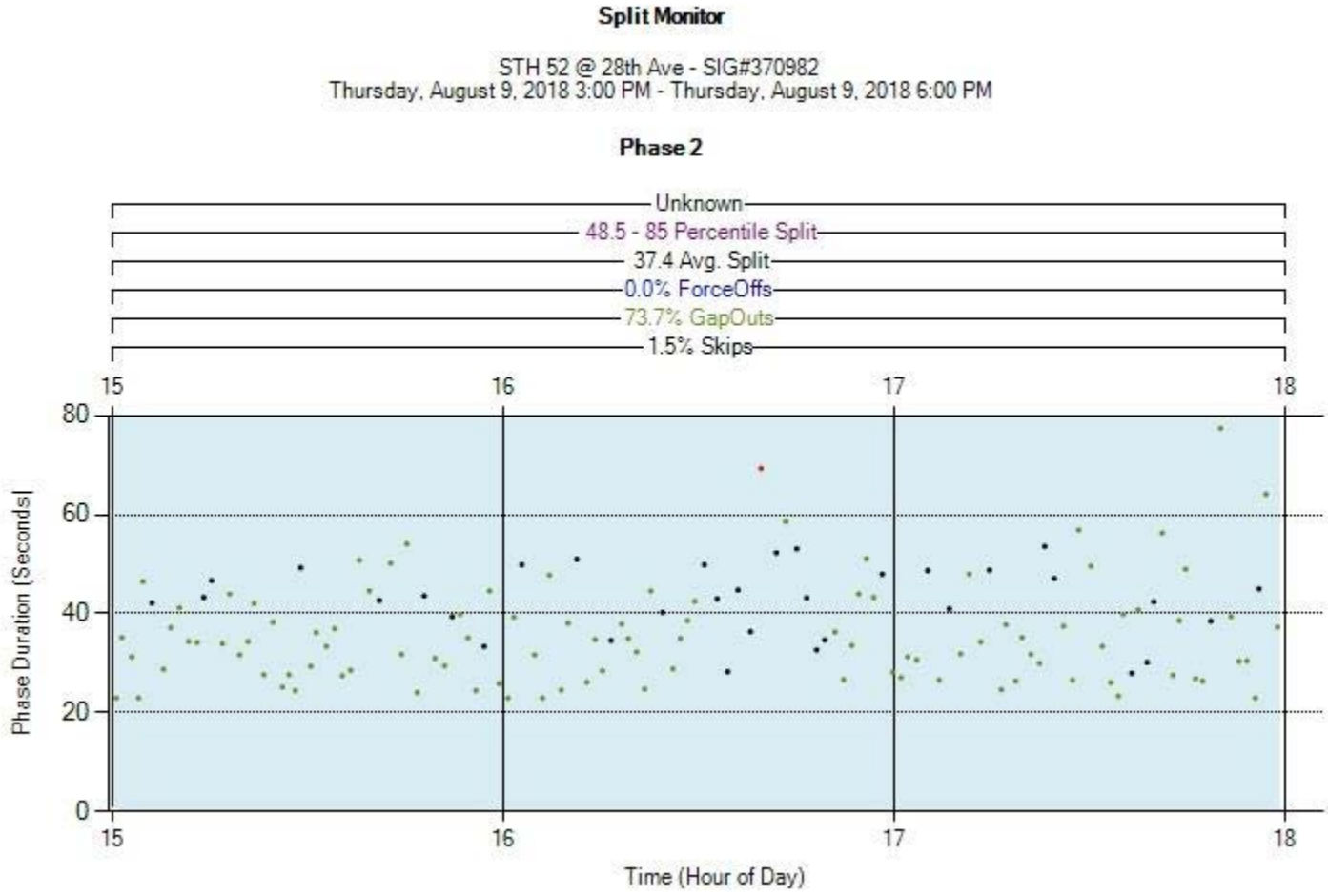
Isolated Signal – WIS 52 & 28th Avenue
Synchro Timings
8/8/2018 – 4:15 PM – 5:15 PM



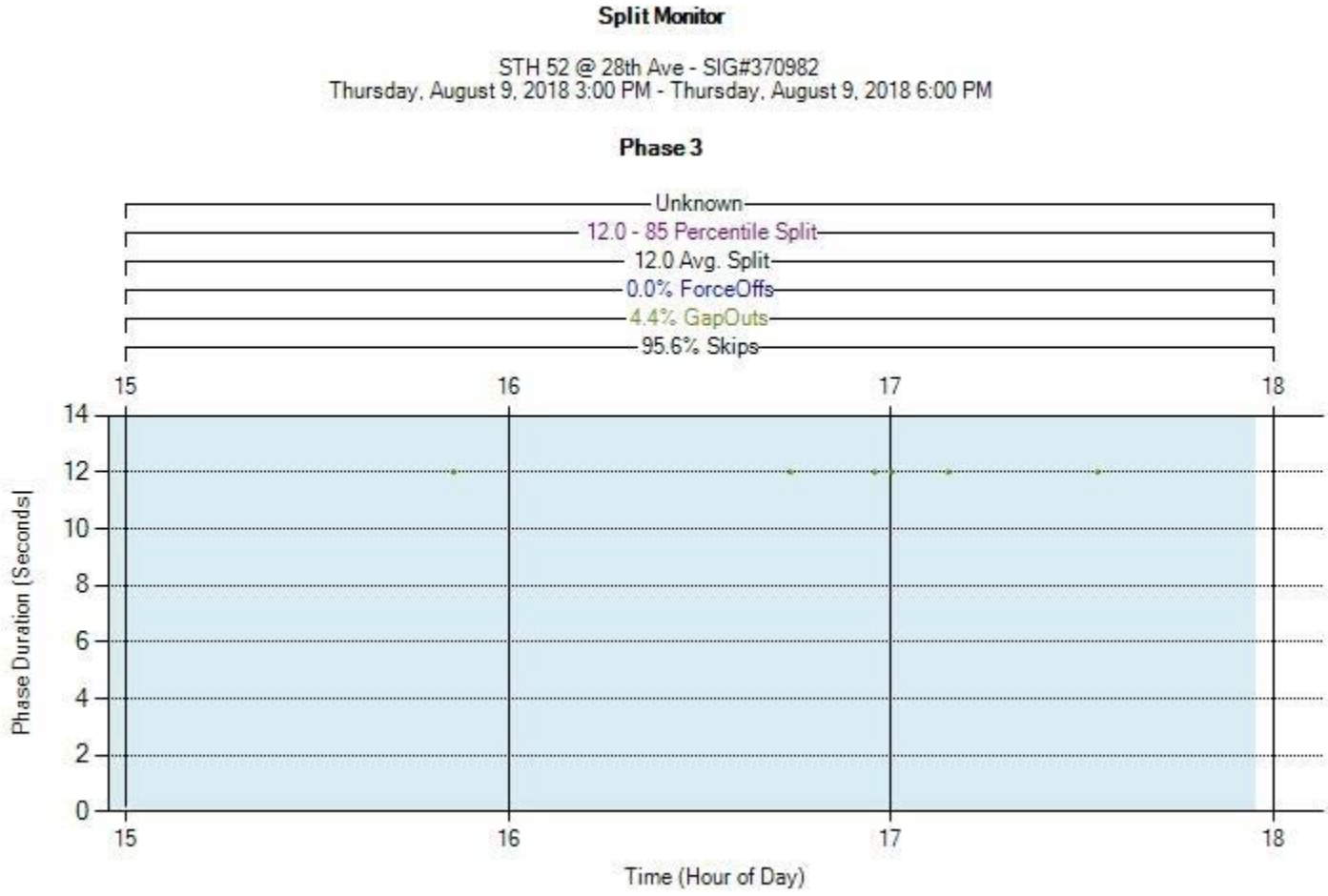
Isolated Signal – WIS 52 & 28th Avenue
Synchro Timings
8/9/2018 – 3:00 PM – 6:00 PM



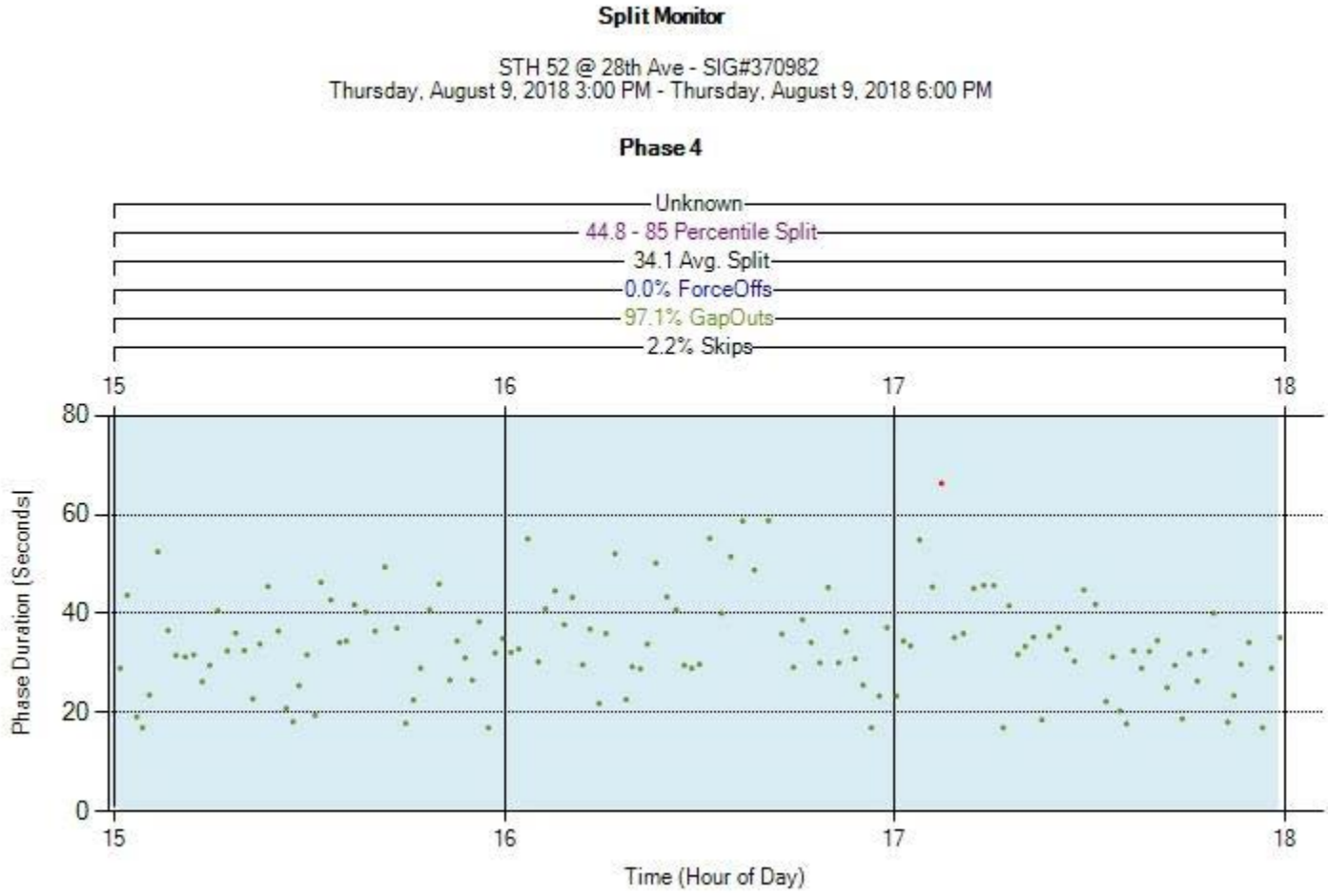
Isolated Signal – WIS 52 & 28th Avenue
Synchro Timings
8/9/2018 – 3:00 PM – 6:00 PM



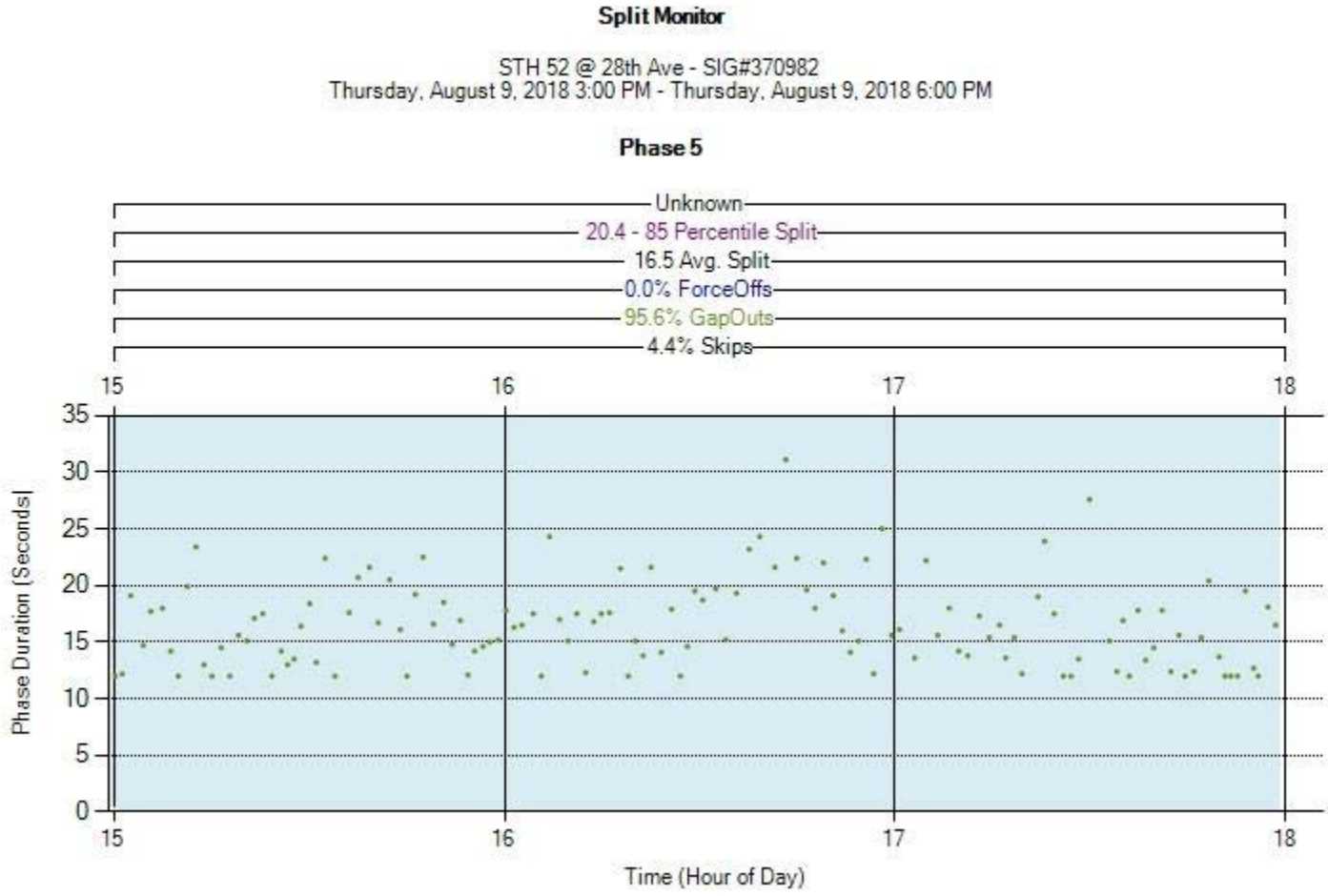
Isolated Signal – WIS 52 & 28th Avenue
Synchro Timings
8/9/2018 – 3:00 PM – 6:00 PM



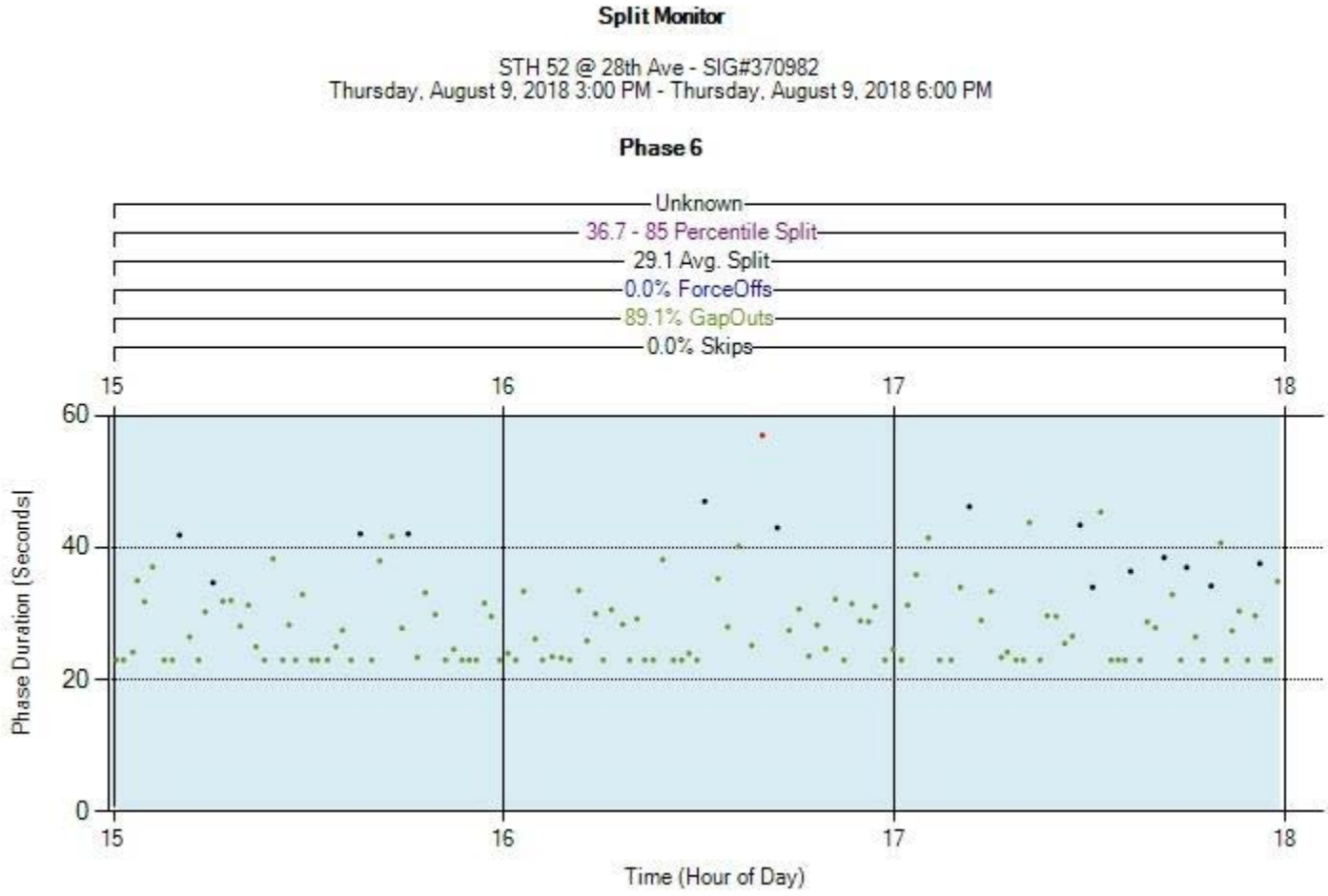
Isolated Signal – WIS 52 & 28th Avenue
Synchro Timings
8/9/2018 – 3:00 PM – 6:00 PM



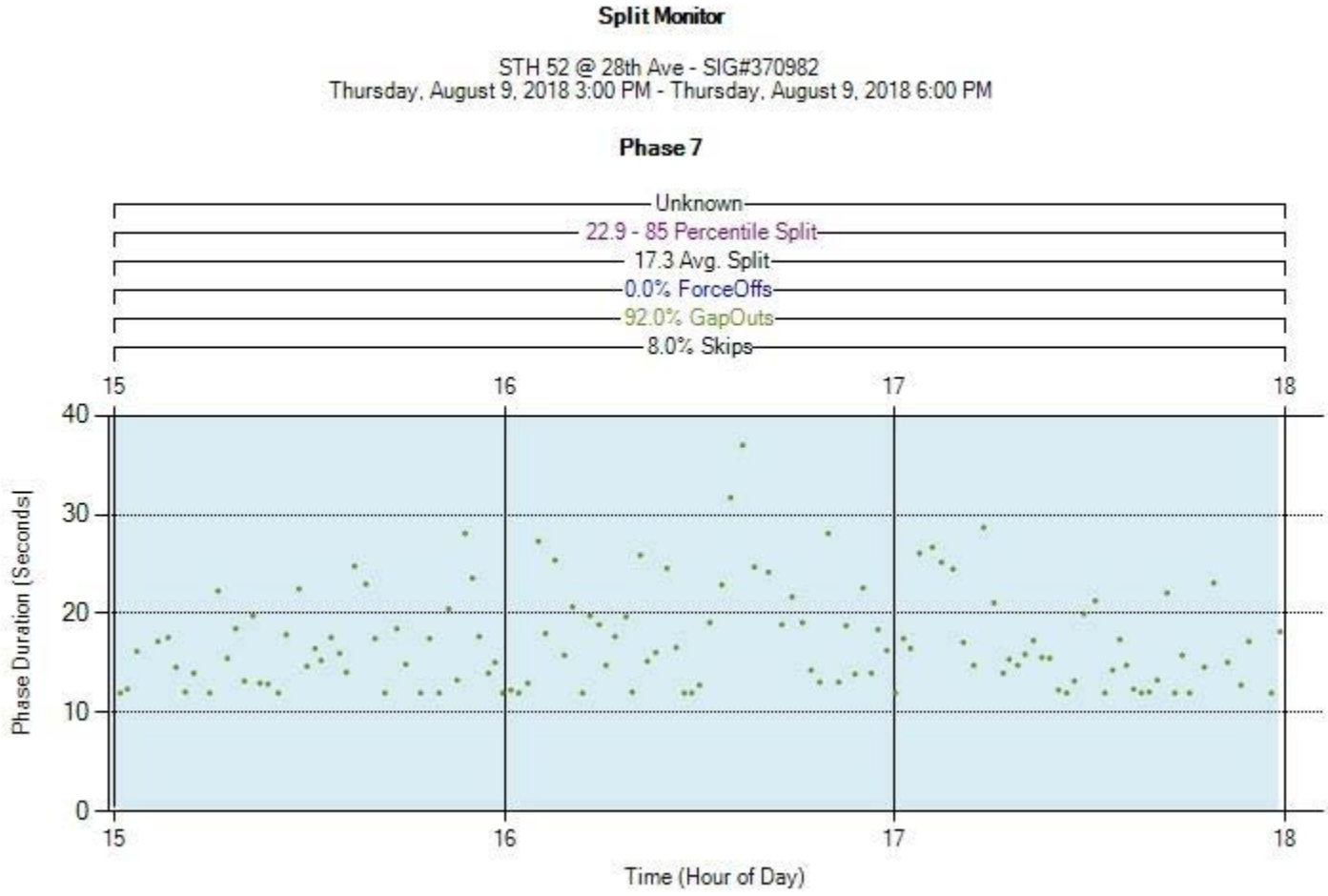
Isolated Signal – WIS 52 & 28th Avenue
Synchro Timings
8/9/2018 – 3:00 PM – 6:00 PM



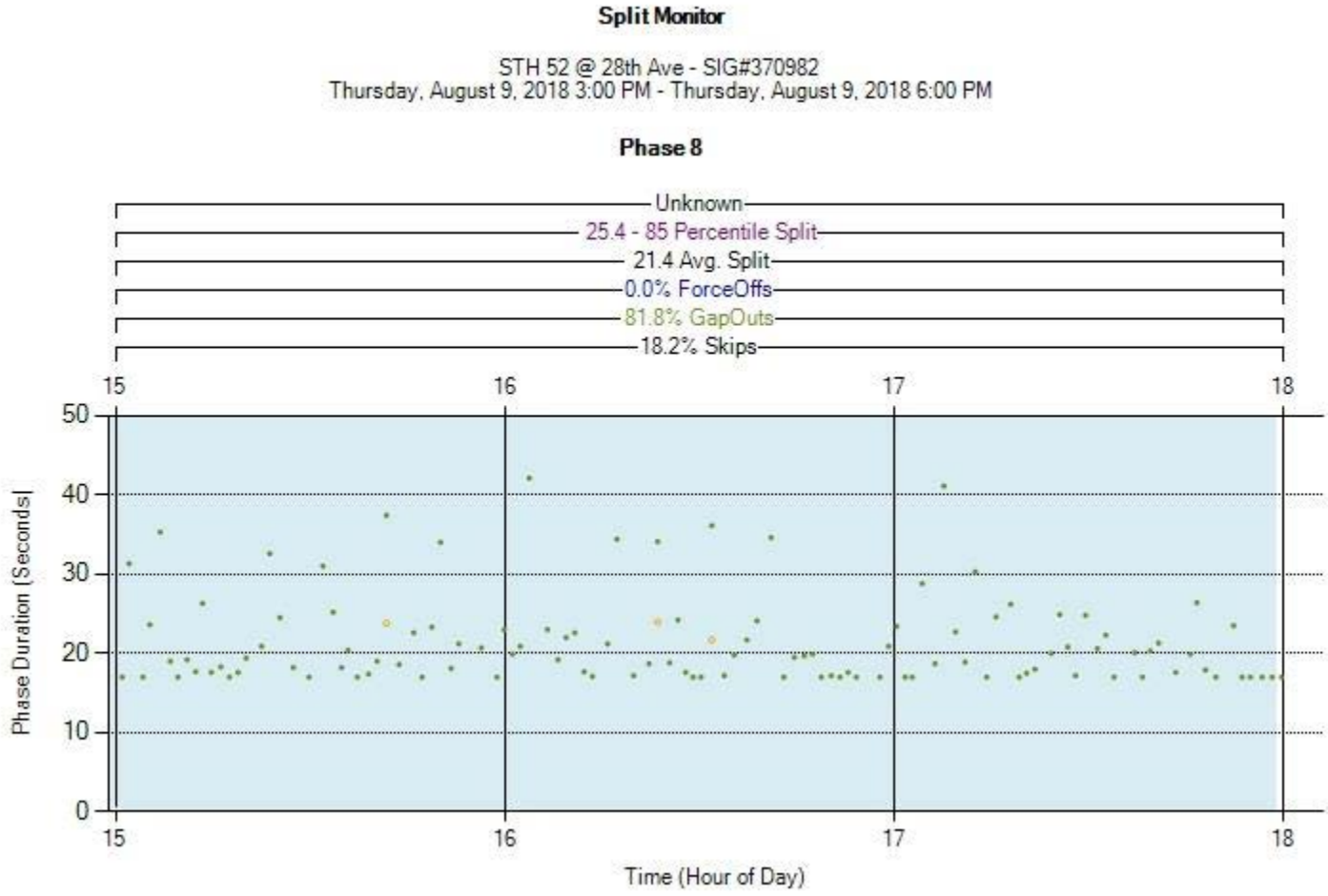
Isolated Signal – WIS 52 & 28th Avenue
Synchro Timings
8/9/2018 – 3:00 PM – 6:00 PM



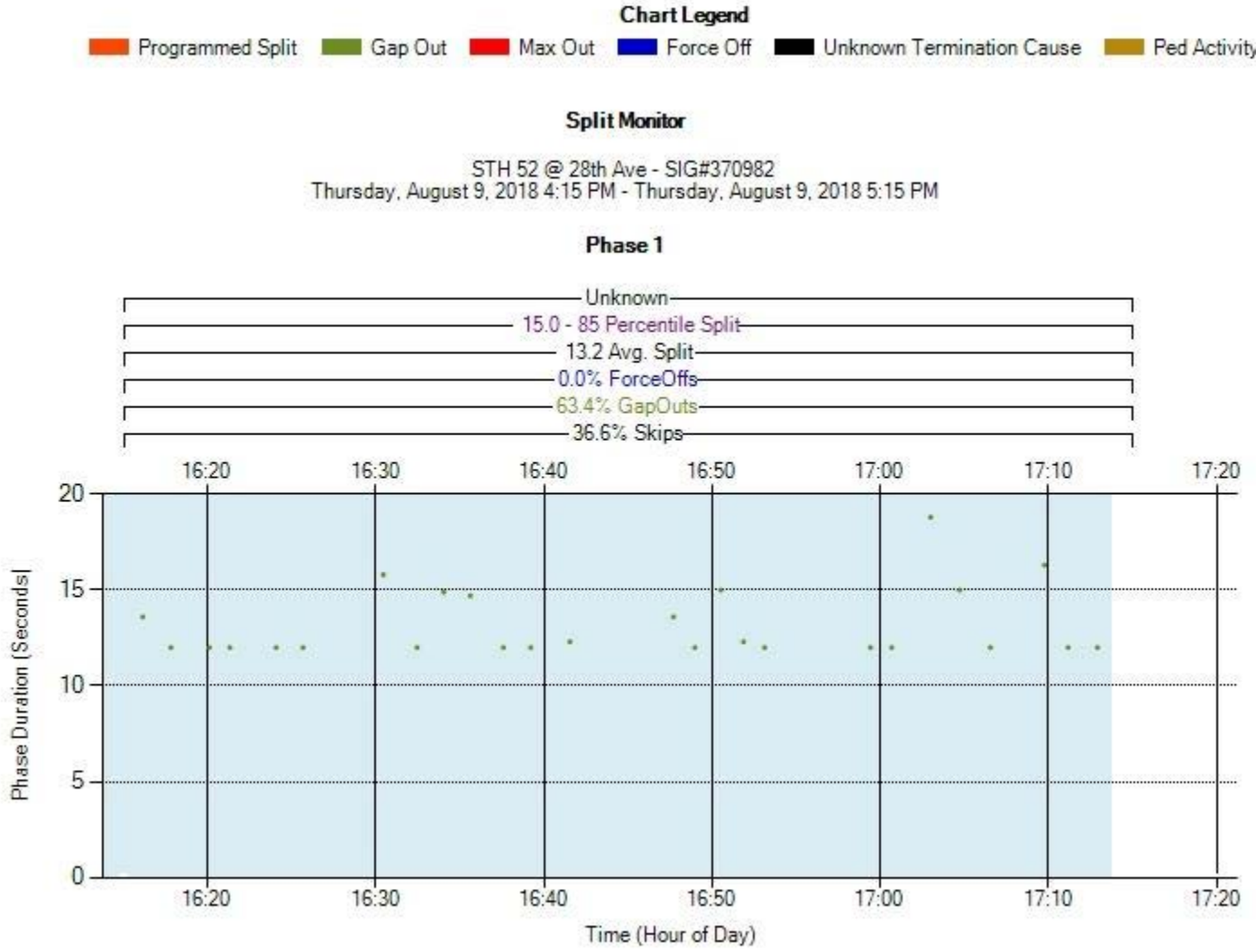
Isolated Signal – WIS 52 & 28th Avenue
Synchro Timings
8/9/2018 – 3:00 PM – 6:00 PM



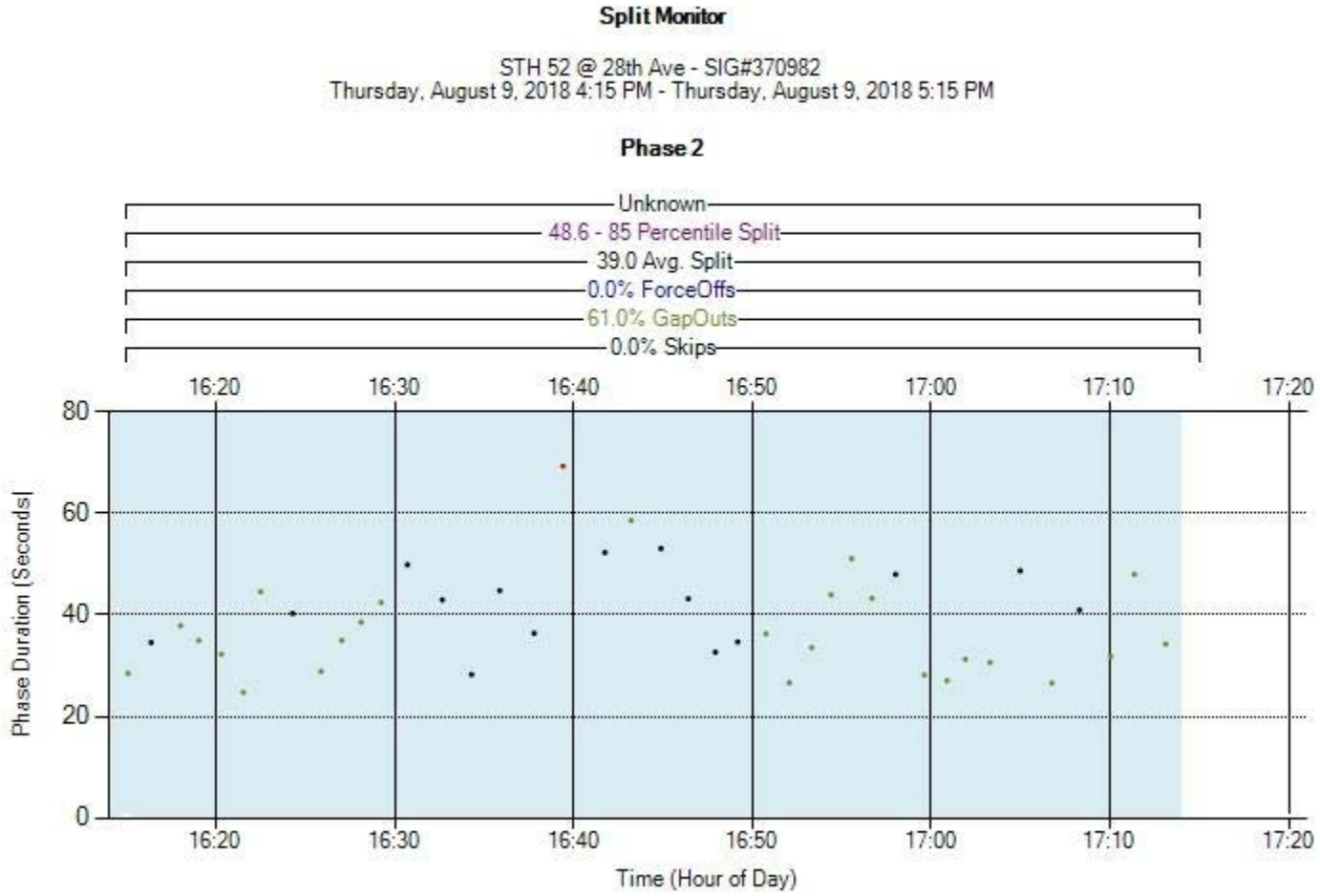
Isolated Signal – WIS 52 & 28th Avenue
Synchro Timings
8/9/2018 – 3:00 PM – 6:00 PM



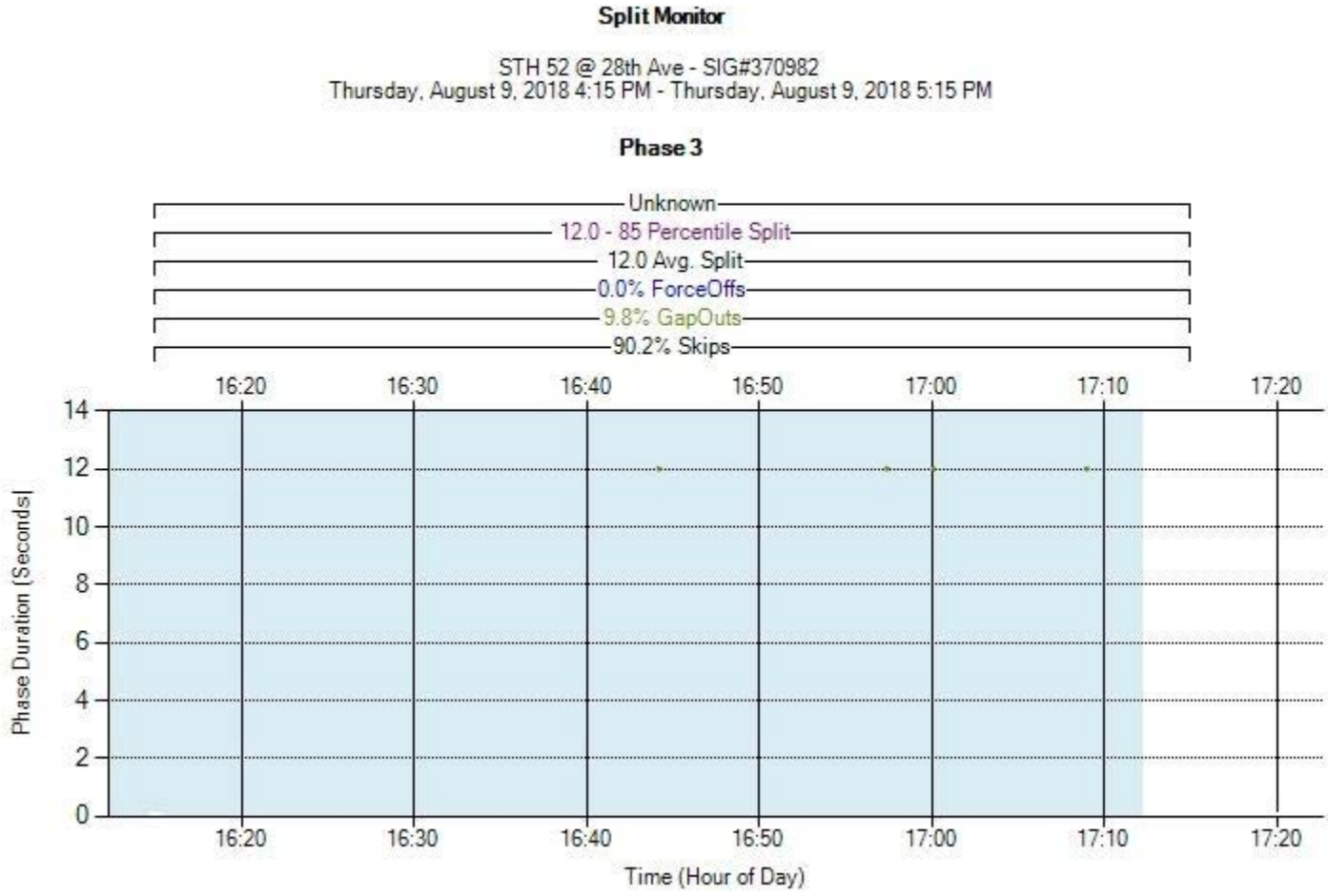
Isolated Signal – WIS 52 & 28th Avenue
Synchro Timings
8/9/2018 – 4:15 PM – 5:15 PM



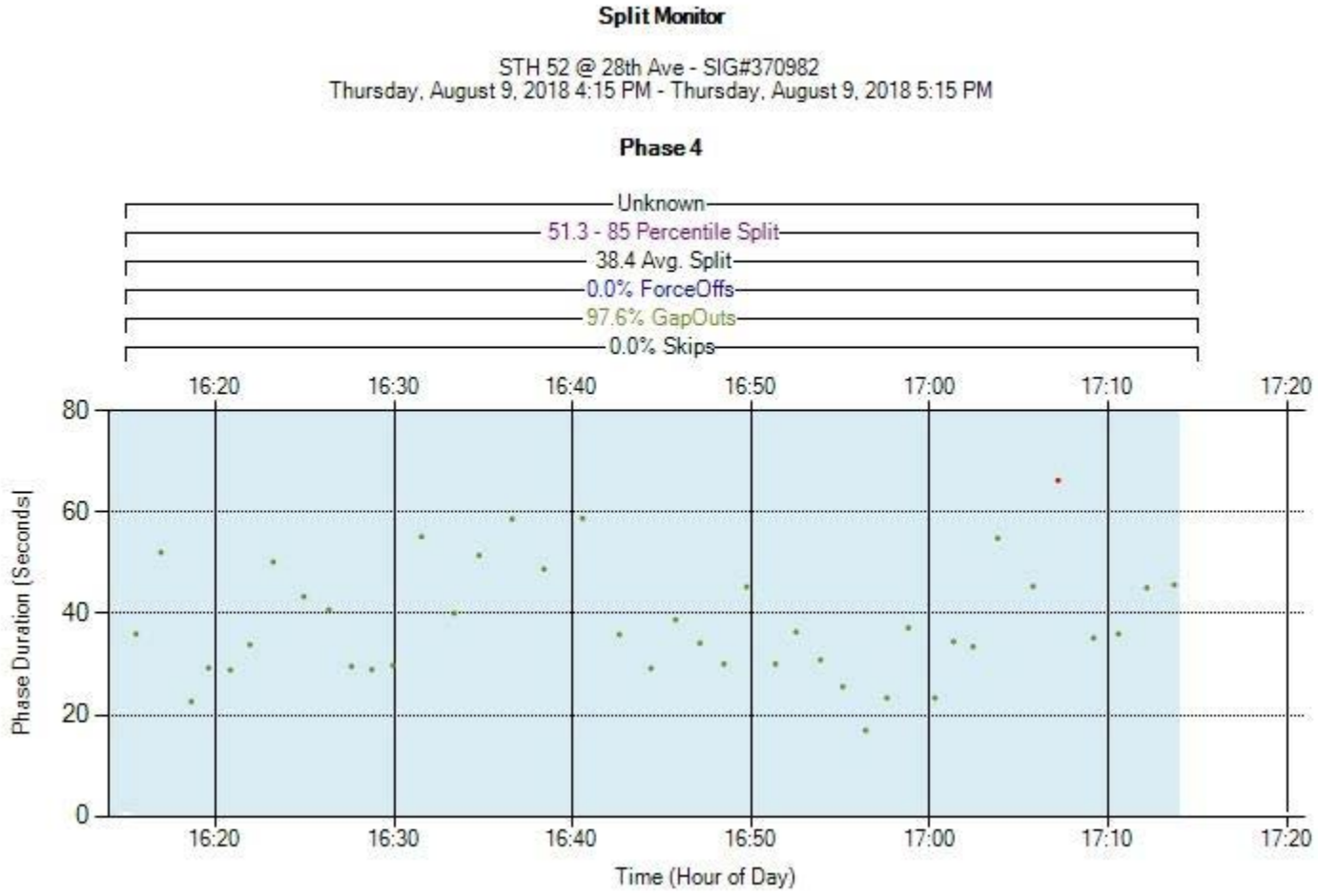
Isolated Signal – WIS 52 & 28th Avenue
Synchro Timings
8/9/2018 – 4:15 PM – 5:15 PM



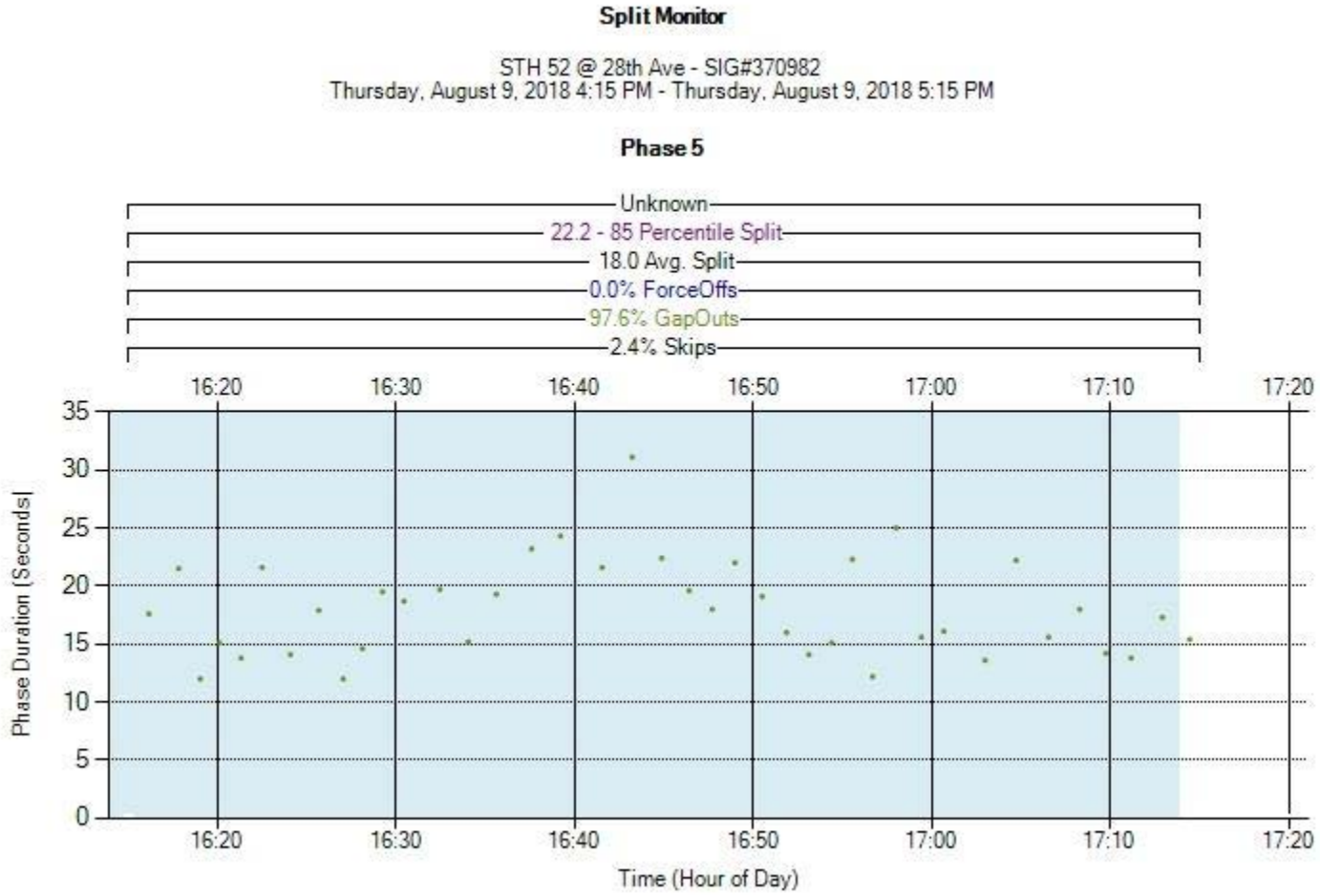
Isolated Signal – WIS 52 & 28th Avenue
Synchro Timings
8/9/2018 – 4:15 PM – 5:15 PM



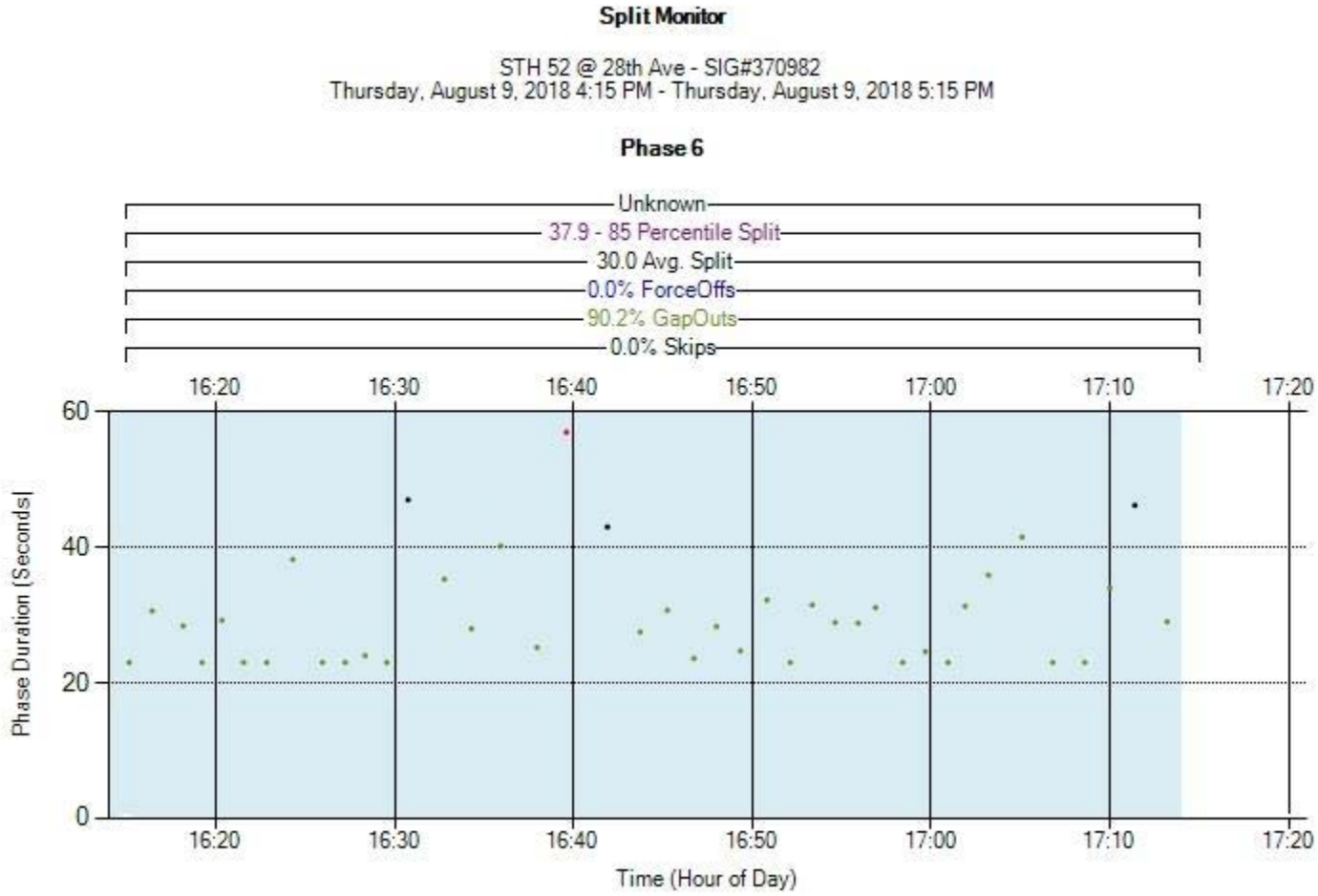
Isolated Signal – WIS 52 & 28th Avenue
Synchro Timings
8/9/2018 – 4:15 PM – 5:15 PM



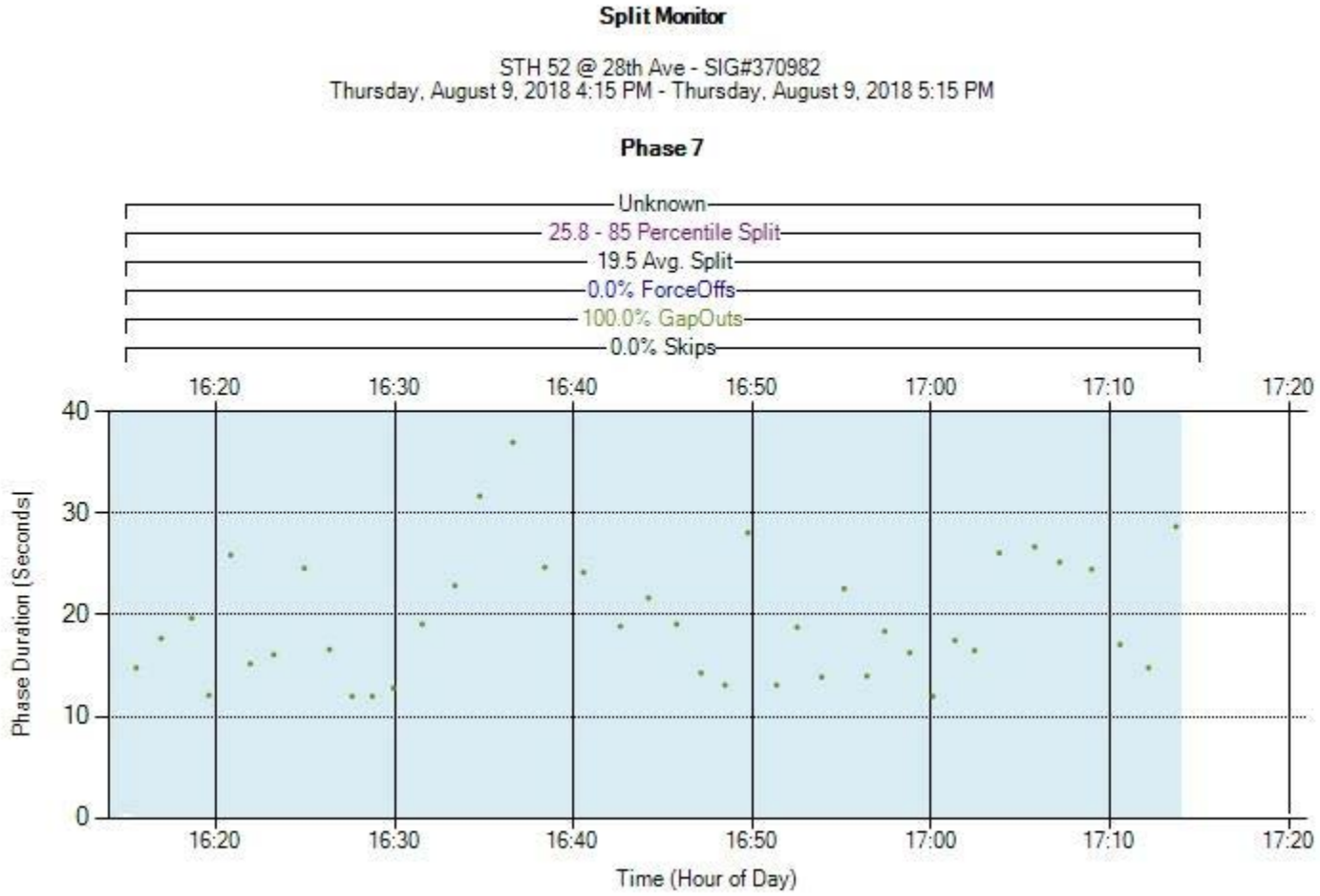
Isolated Signal – WIS 52 & 28th Avenue
Synchro Timings
8/9/2018 – 4:15 PM – 5:15 PM



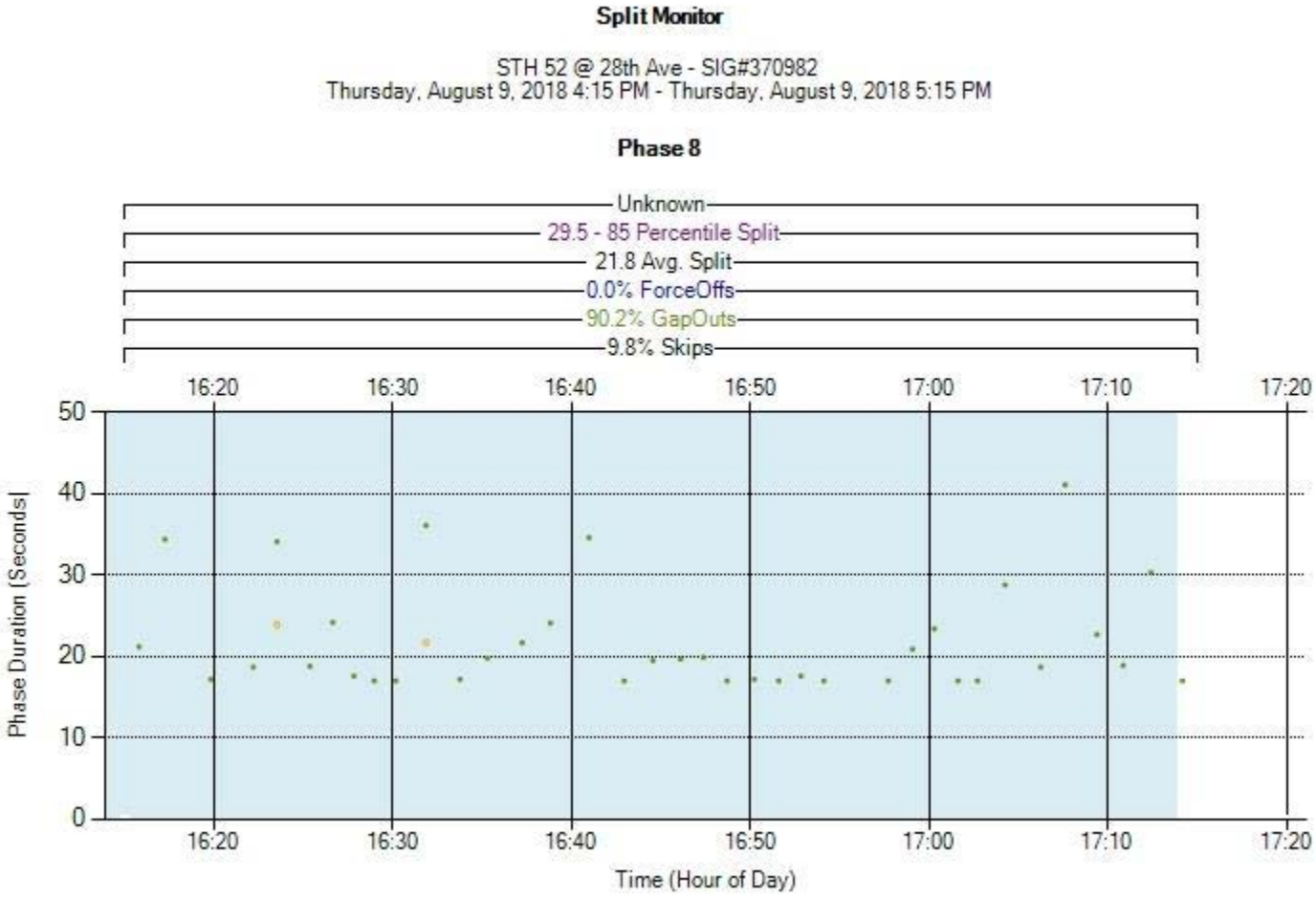
Isolated Signal – WIS 52 & 28th Avenue
Synchro Timings
8/9/2018 – 4:15 PM – 5:15 PM



Isolated Signal – WIS 52 & 28th Avenue
Synchro Timings
8/9/2018 – 4:15 PM – 5:15 PM

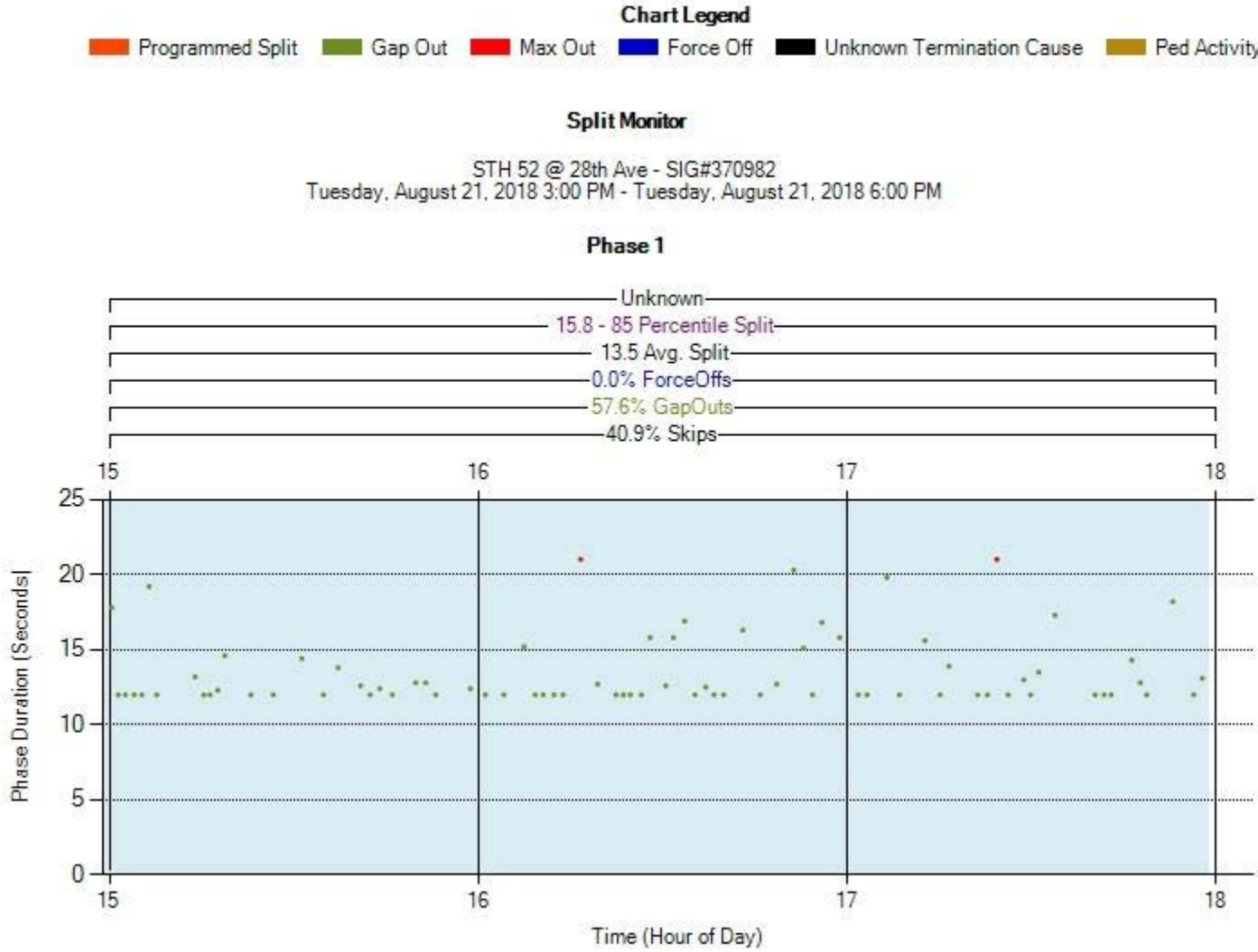


Isolated Signal – WIS 52 & 28th Avenue
Synchro Timings
8/9/2018 – 4:15 PM – 5:15 PM

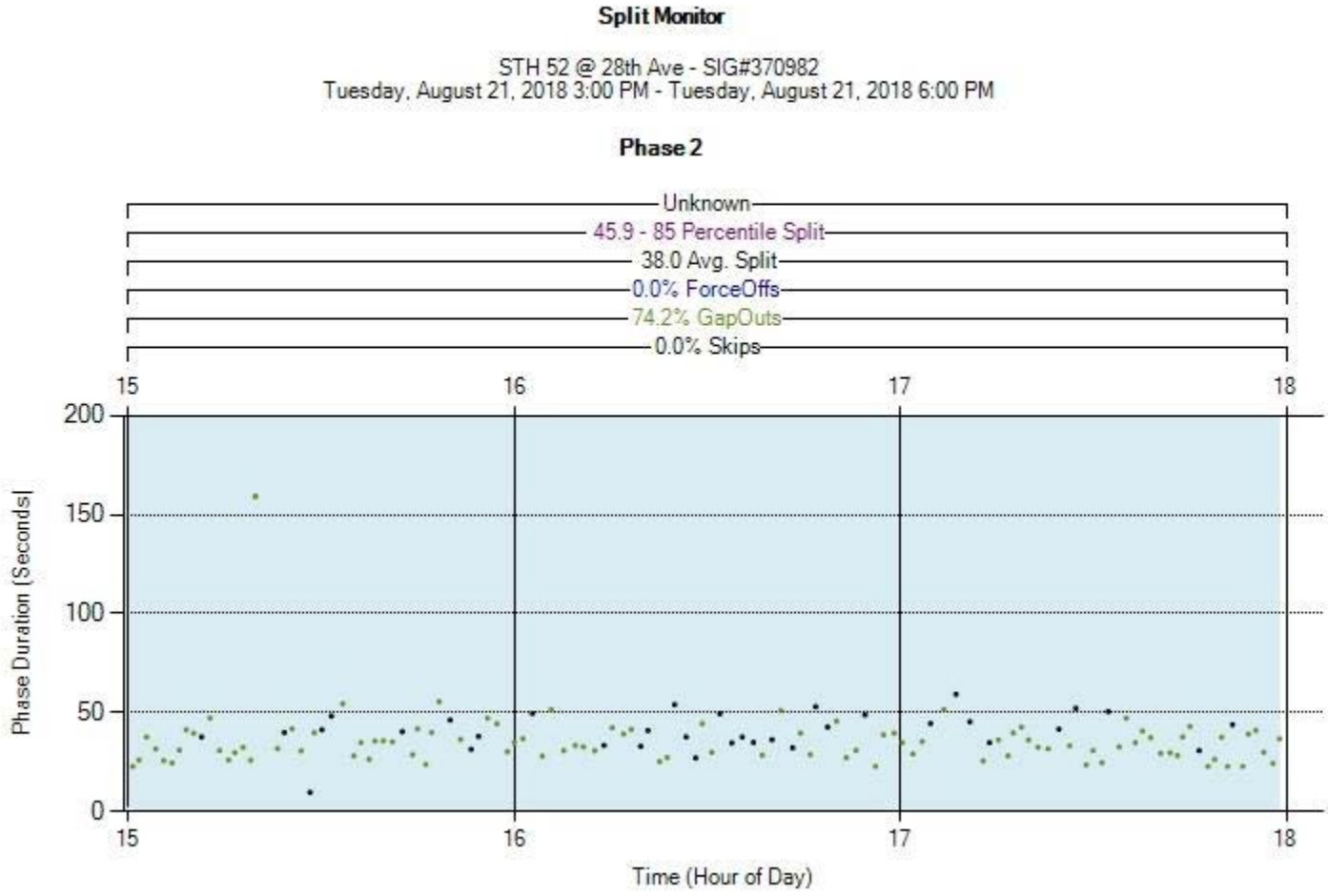


WisBOOM Outputs
WIS 52 & 28th Avenue
Vistro Optimized Timings

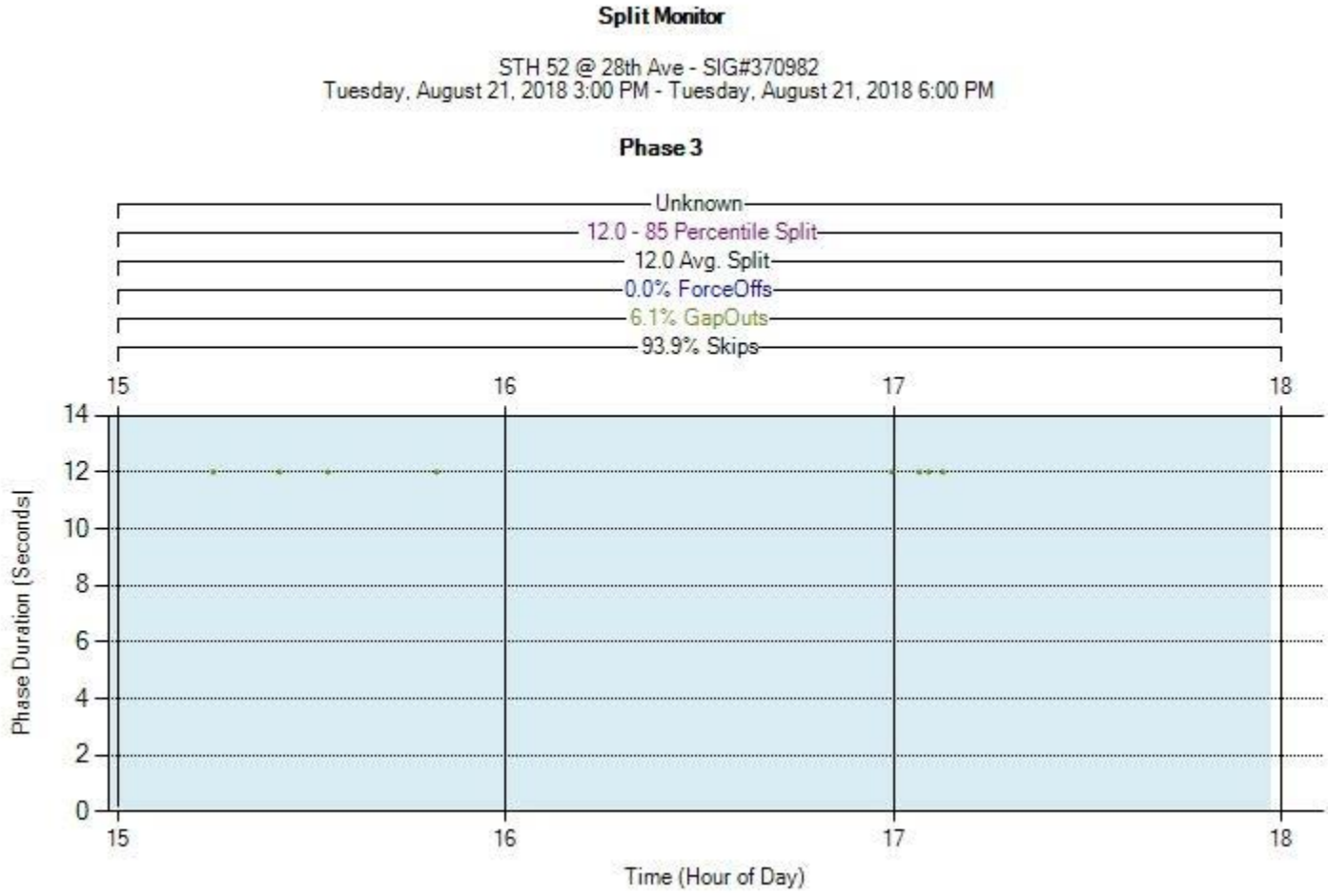
Isolated Signal – WIS 52 & 28th Avenue
Vistro Timings
8/21/2018 – 3:00 PM – 6:00 PM



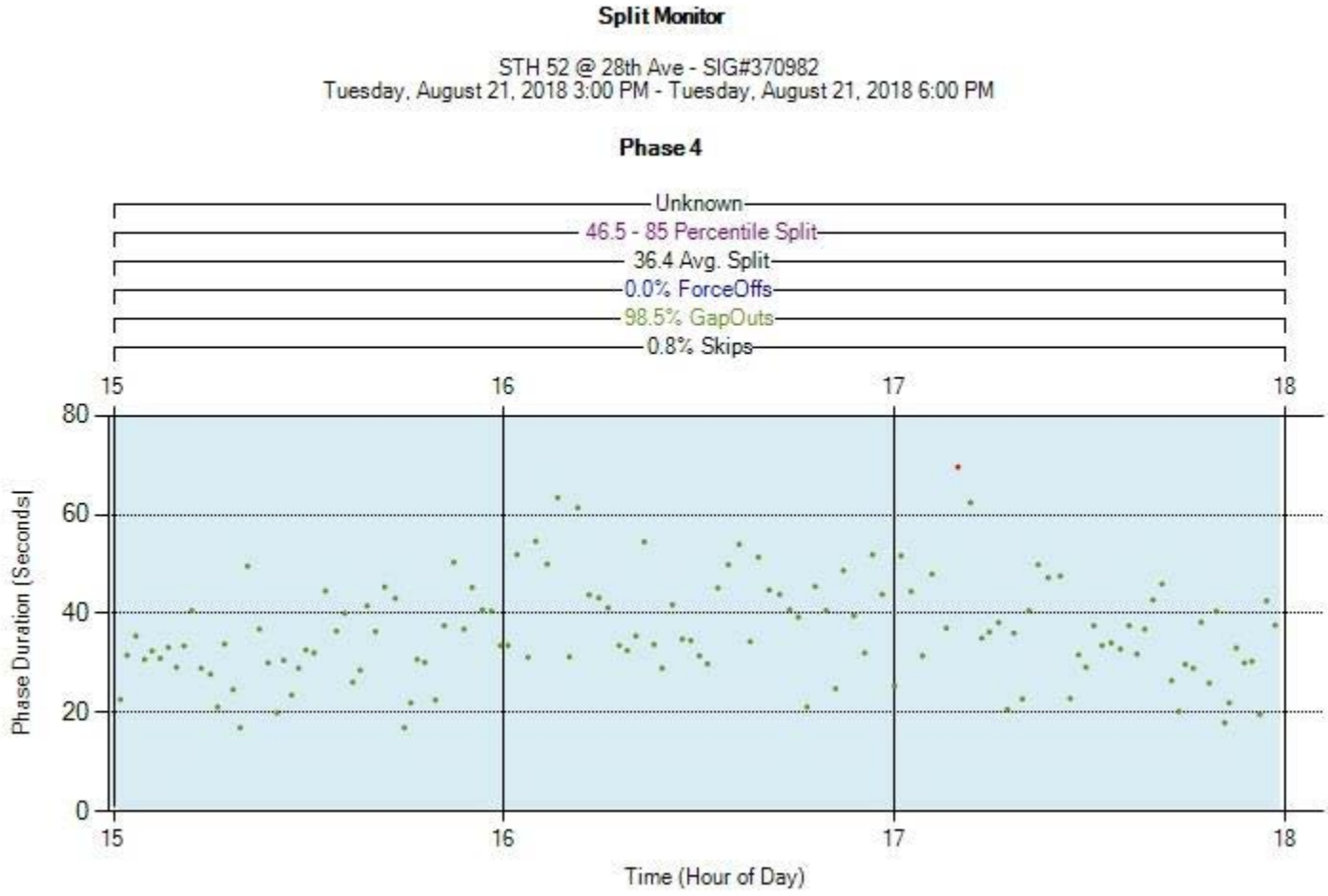
Isolated Signal – WIS 52 & 28th Avenue
Vistro Timings
8/21/2018 – 3:00 PM – 6:00 PM



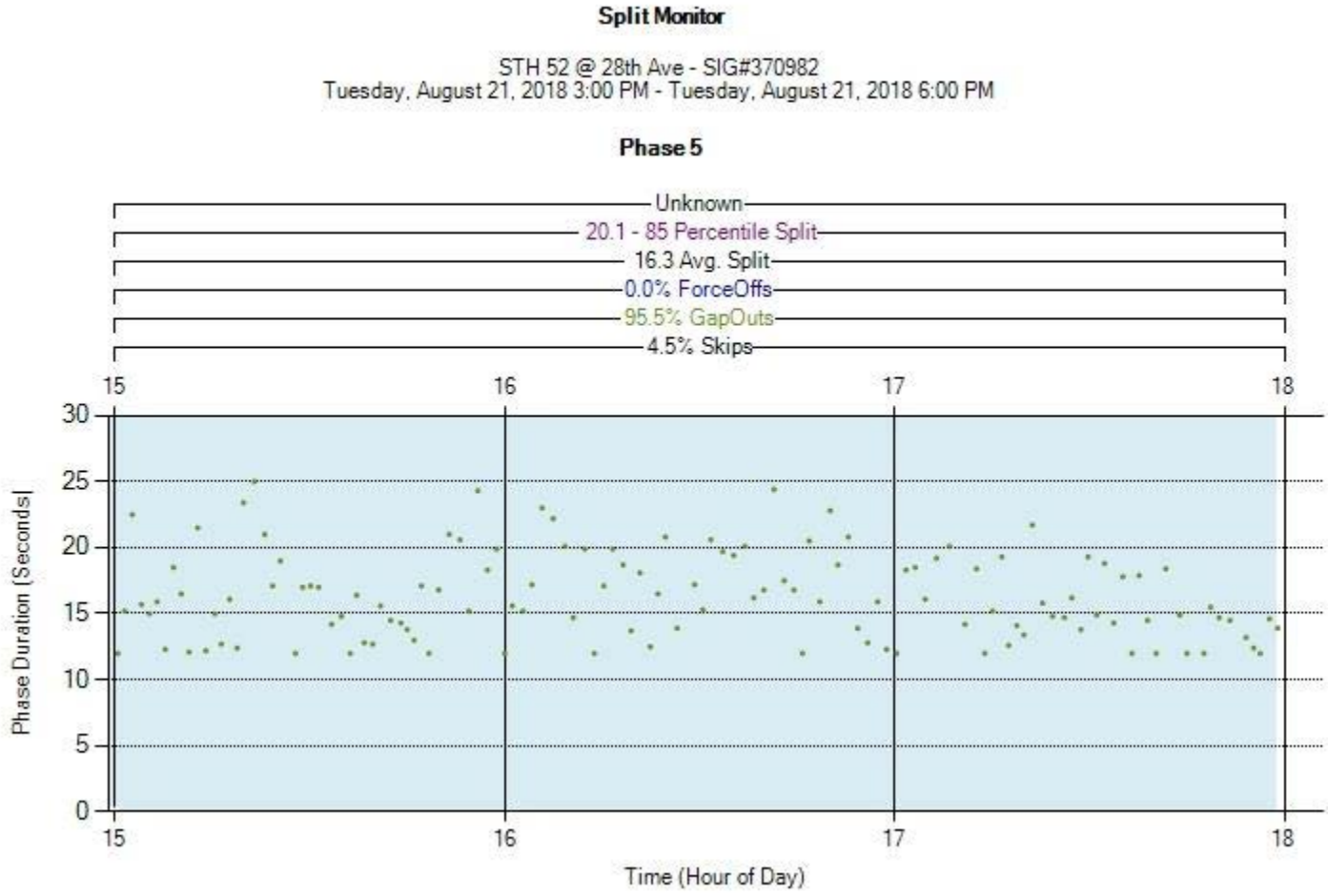
Isolated Signal – WIS 52 & 28th Avenue
Vistro Timings
8/21/2018 – 3:00 PM – 6:00 PM



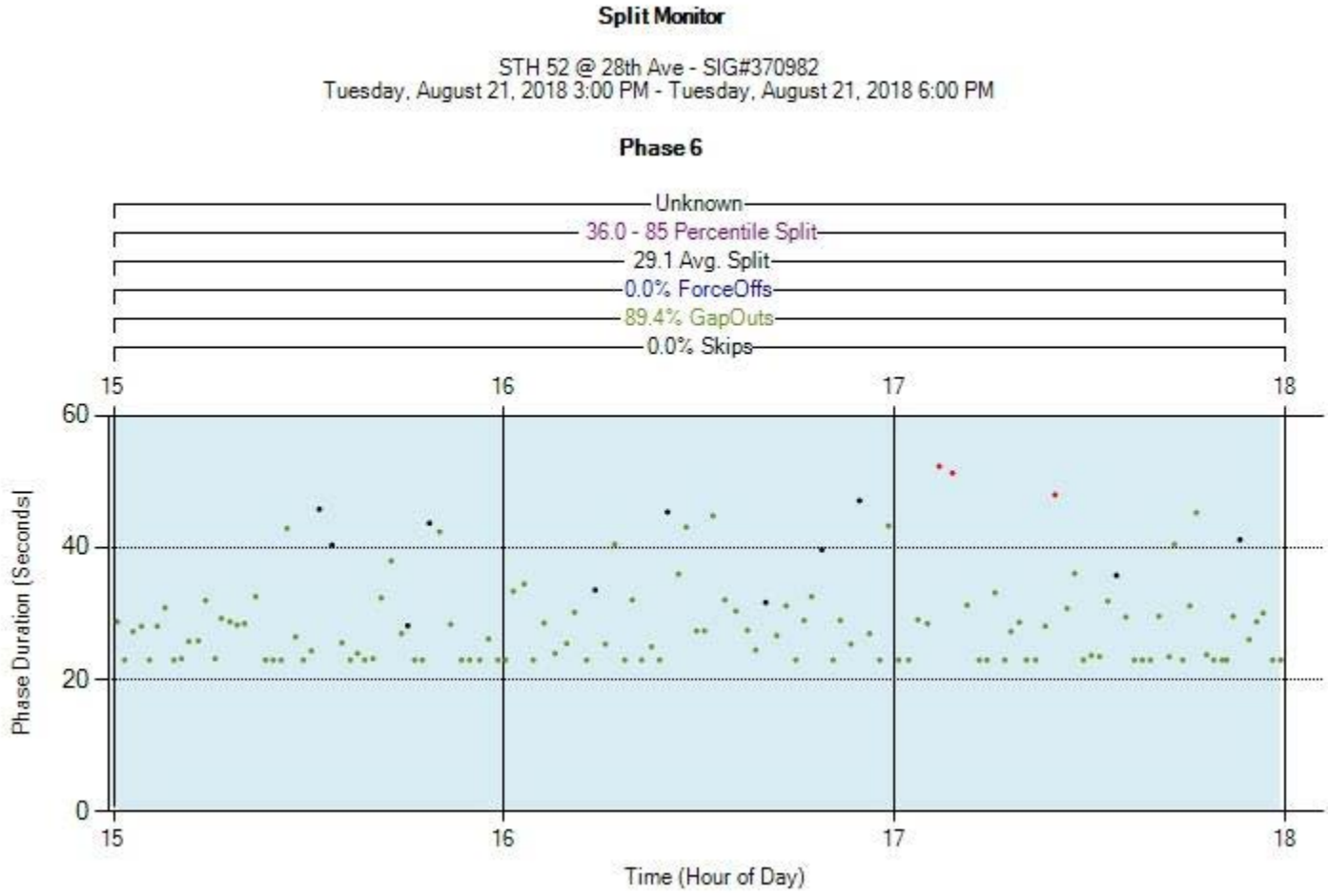
Isolated Signal – WIS 52 & 28th Avenue
Vistro Timings
8/21/2018 – 3:00 PM – 6:00 PM



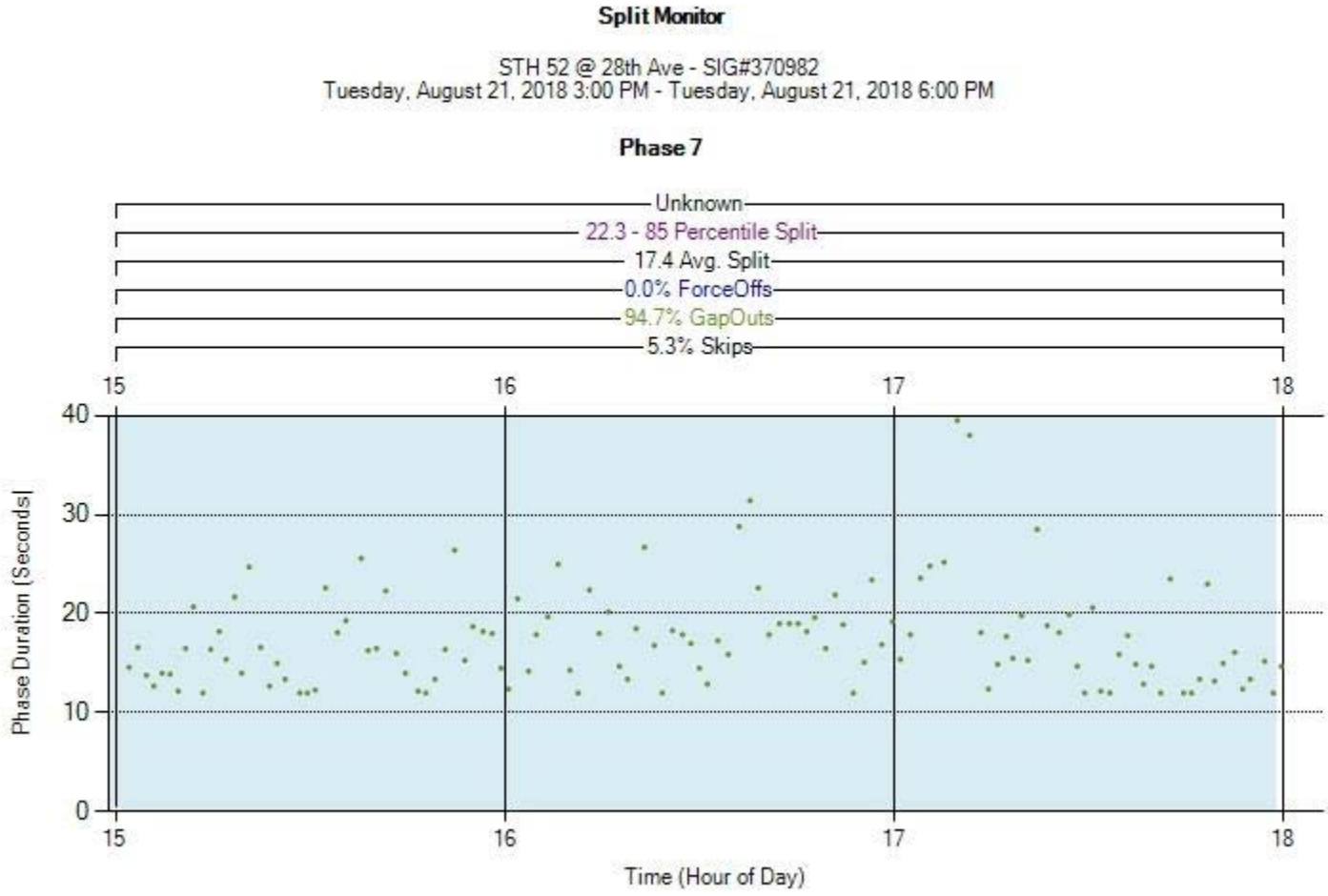
Isolated Signal – WIS 52 & 28th Avenue
Vistro Timings
8/21/2018 – 3:00 PM – 6:00 PM



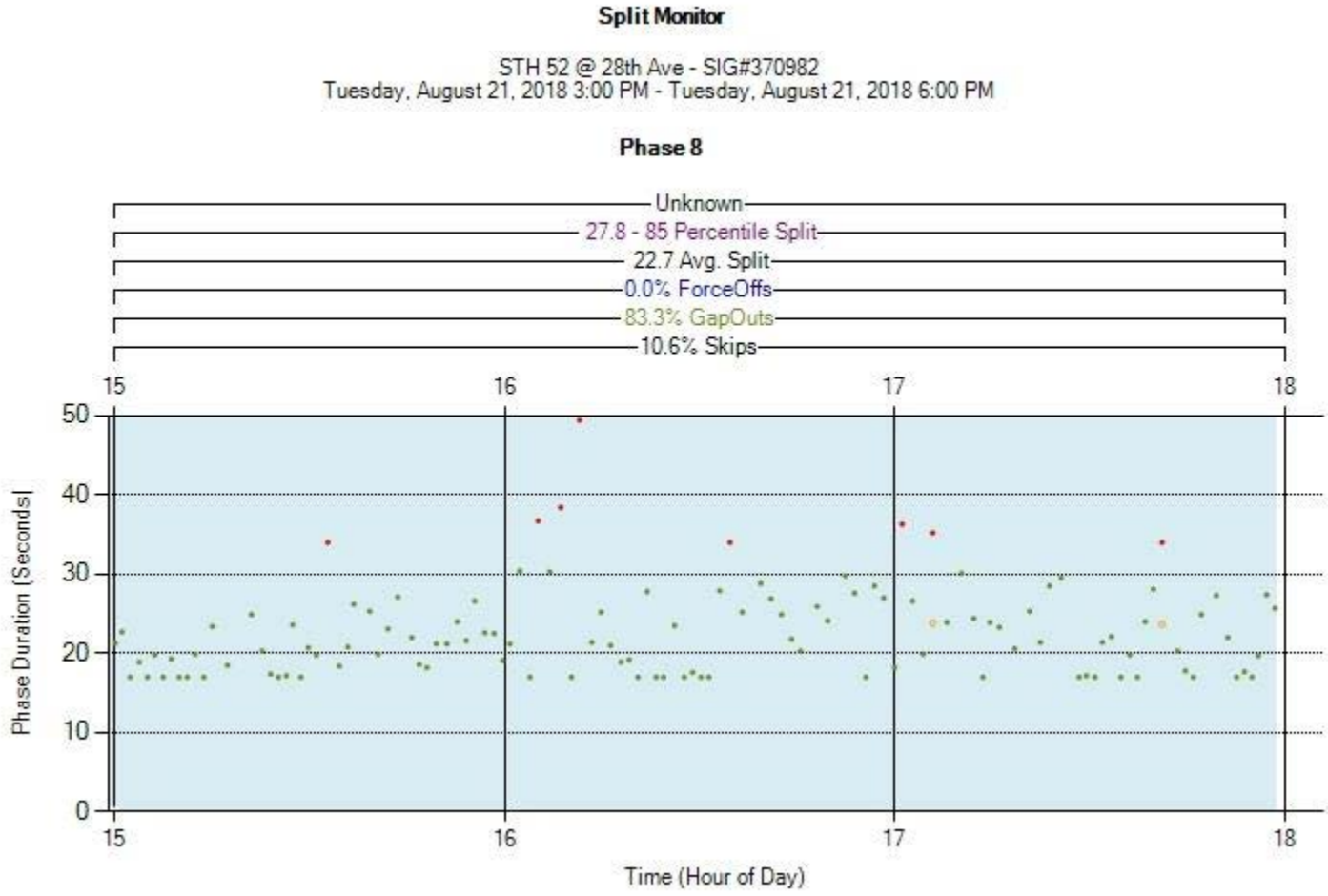
Isolated Signal – WIS 52 & 28th Avenue
Vistro Timings
8/21/2018 – 3:00 PM – 6:00 PM



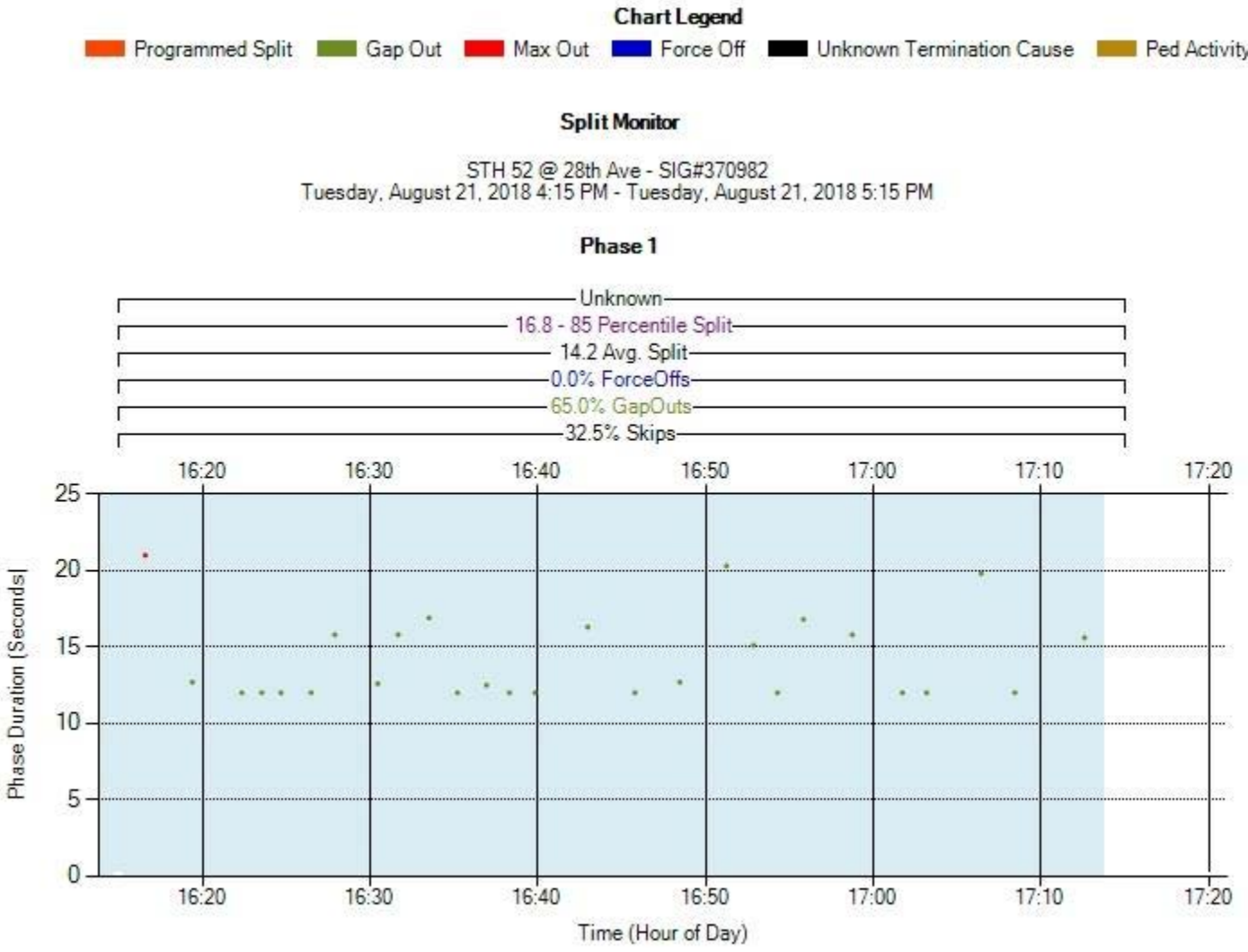
Isolated Signal – WIS 52 & 28th Avenue
Vistro Timings
8/21/2018 – 3:00 PM – 6:00 PM



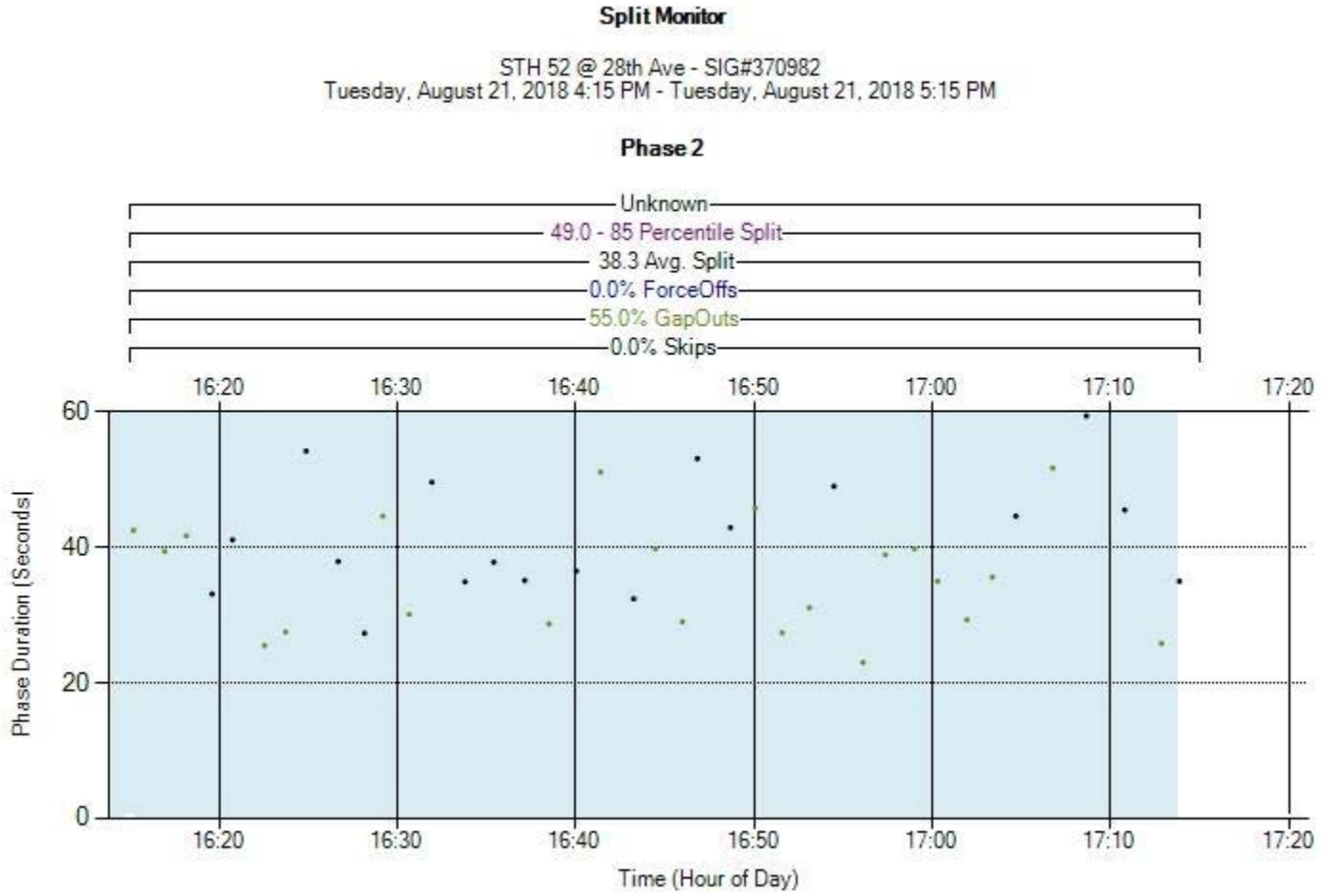
Isolated Signal – WIS 52 & 28th Avenue
Vistro Timings
8/21/2018 – 3:00 PM – 6:00 PM



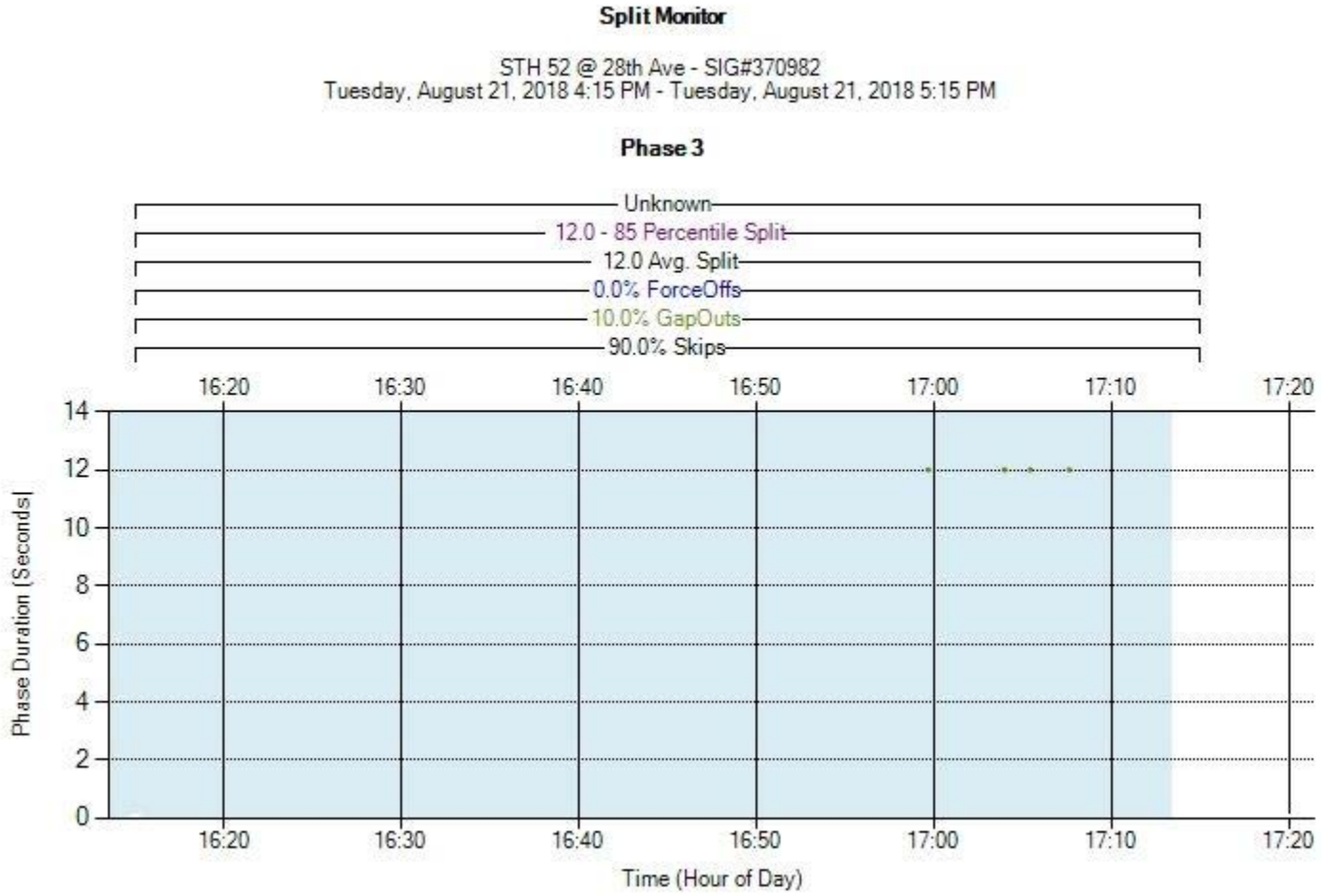
Isolated Signal – WIS 52 & 28th Avenue
Vistro Timings
8/21/2018 – 4:15 PM – 5:15 PM



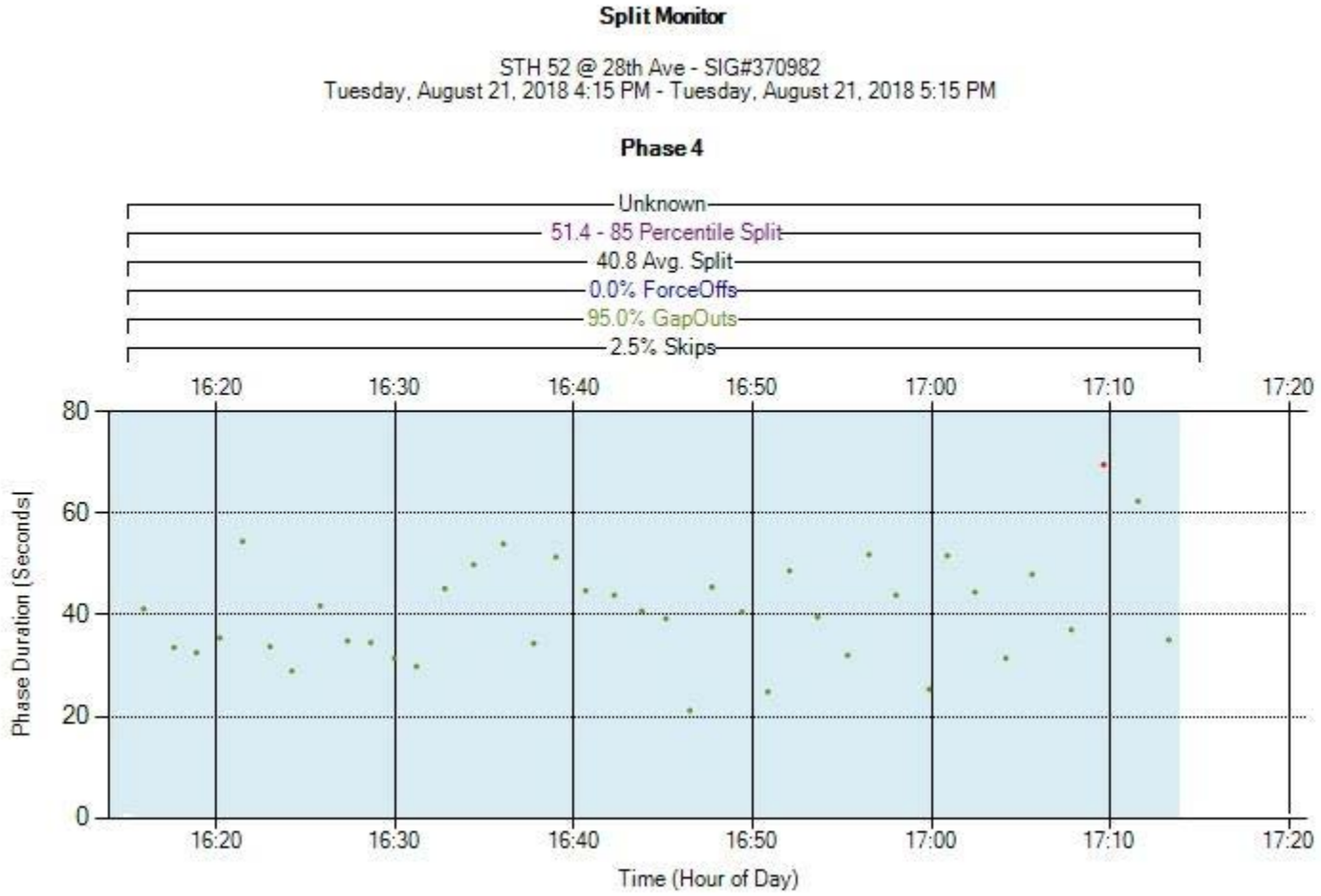
Isolated Signal – WIS 52 & 28th Avenue
Vistro Timings
8/21/2018 – 4:15 PM – 5:15 PM



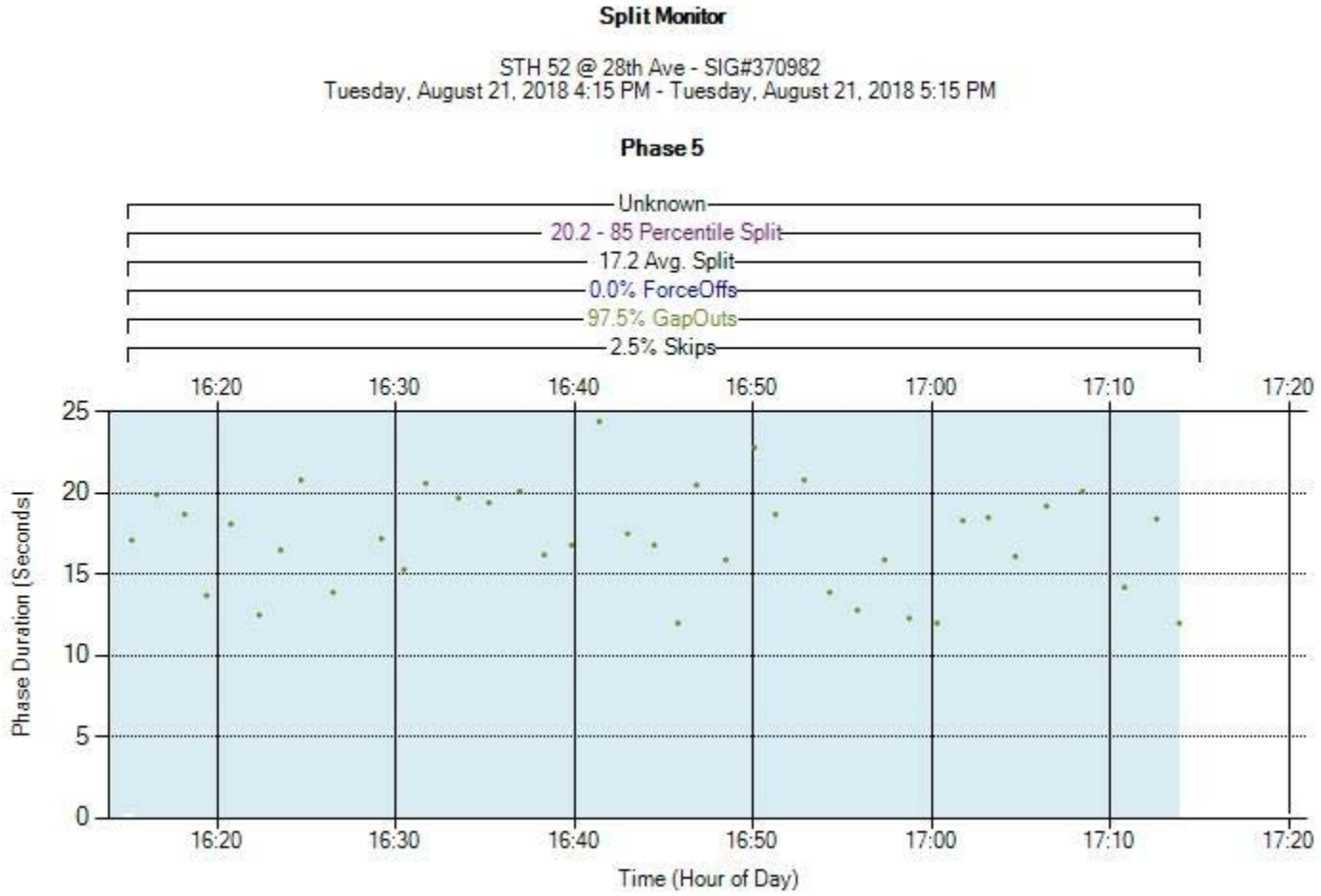
Isolated Signal – WIS 52 & 28th Avenue
Vistro Timings
8/21/2018 – 4:15 PM – 5:15 PM



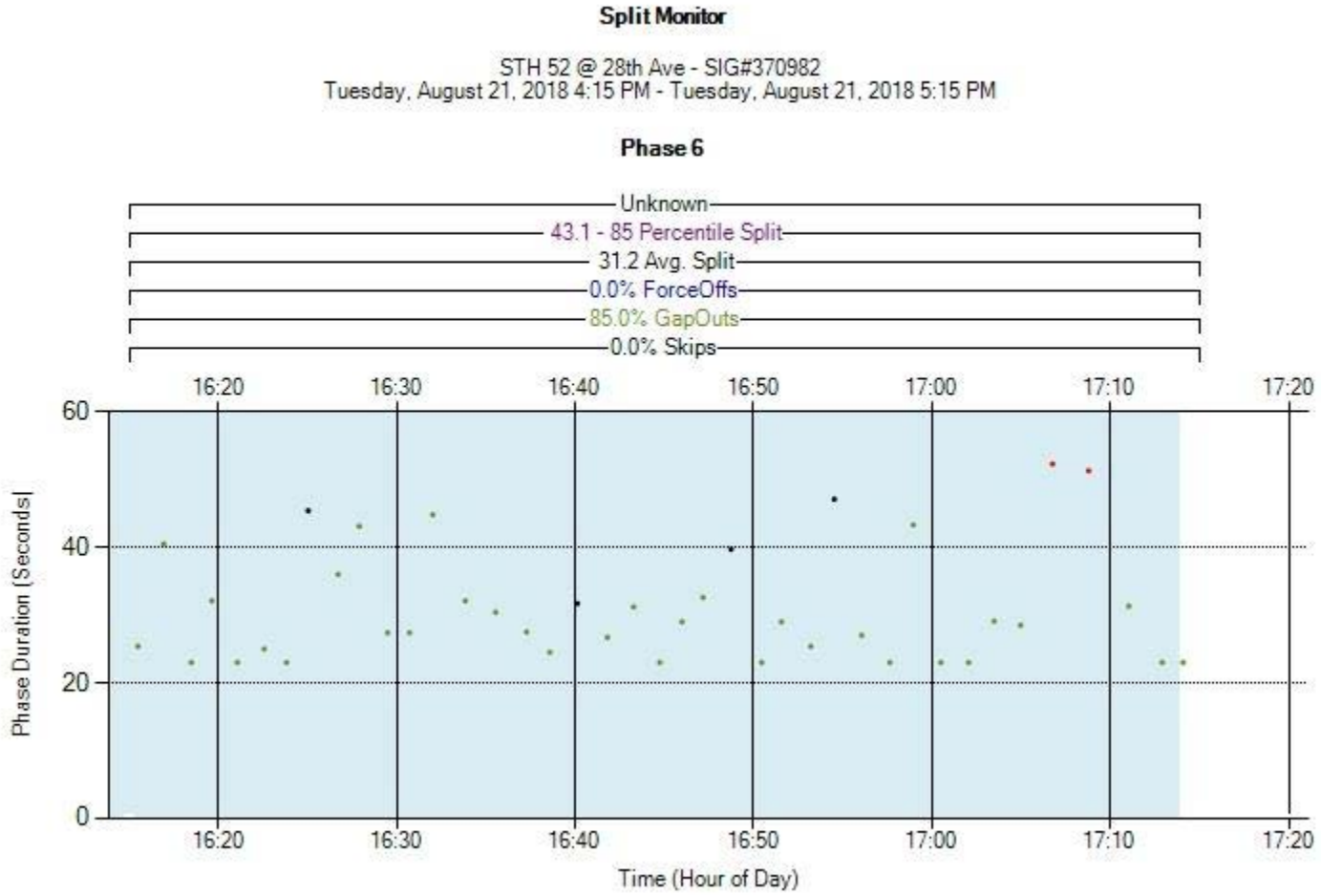
Isolated Signal – WIS 52 & 28th Avenue
Vistro Timings
8/21/2018 – 4:15 PM – 5:15 PM



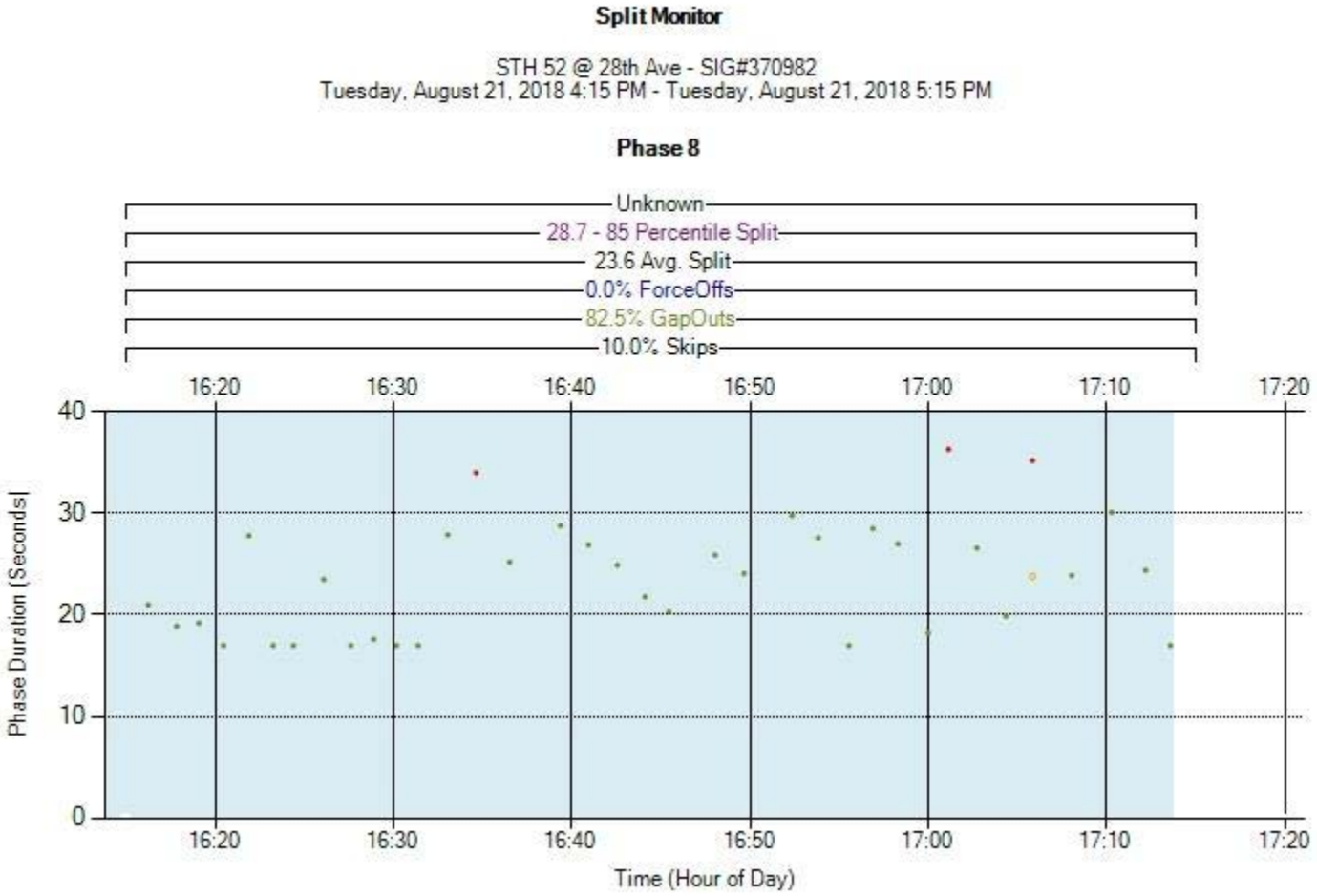
Isolated Signal – WIS 52 & 28th Avenue
Vistro Timings
8/21/2018 – 4:15 PM – 5:15 PM



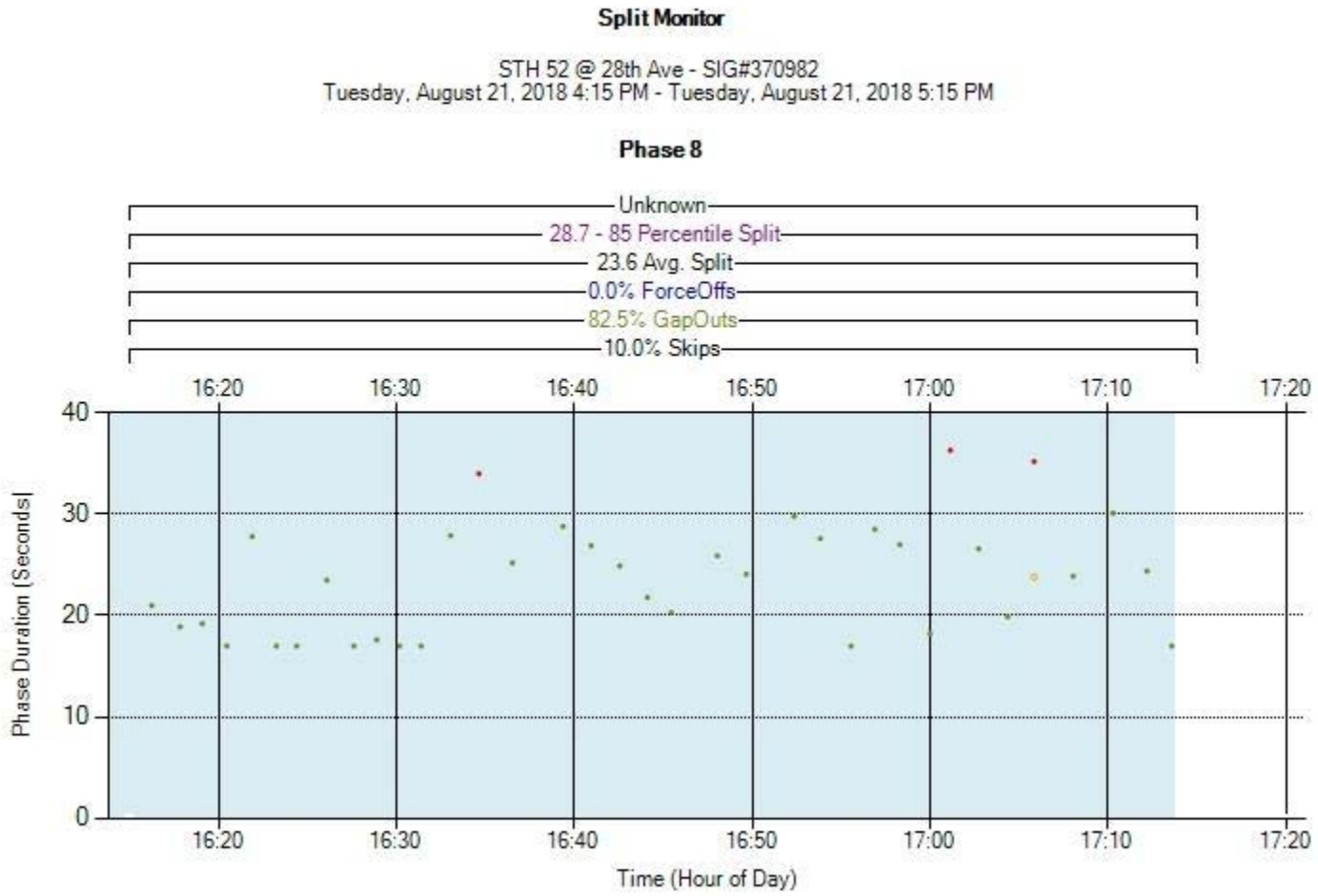
Isolated Signal – WIS 52 & 28th Avenue
Vistro Timings
8/21/2018 – 4:15 PM – 5:15 PM



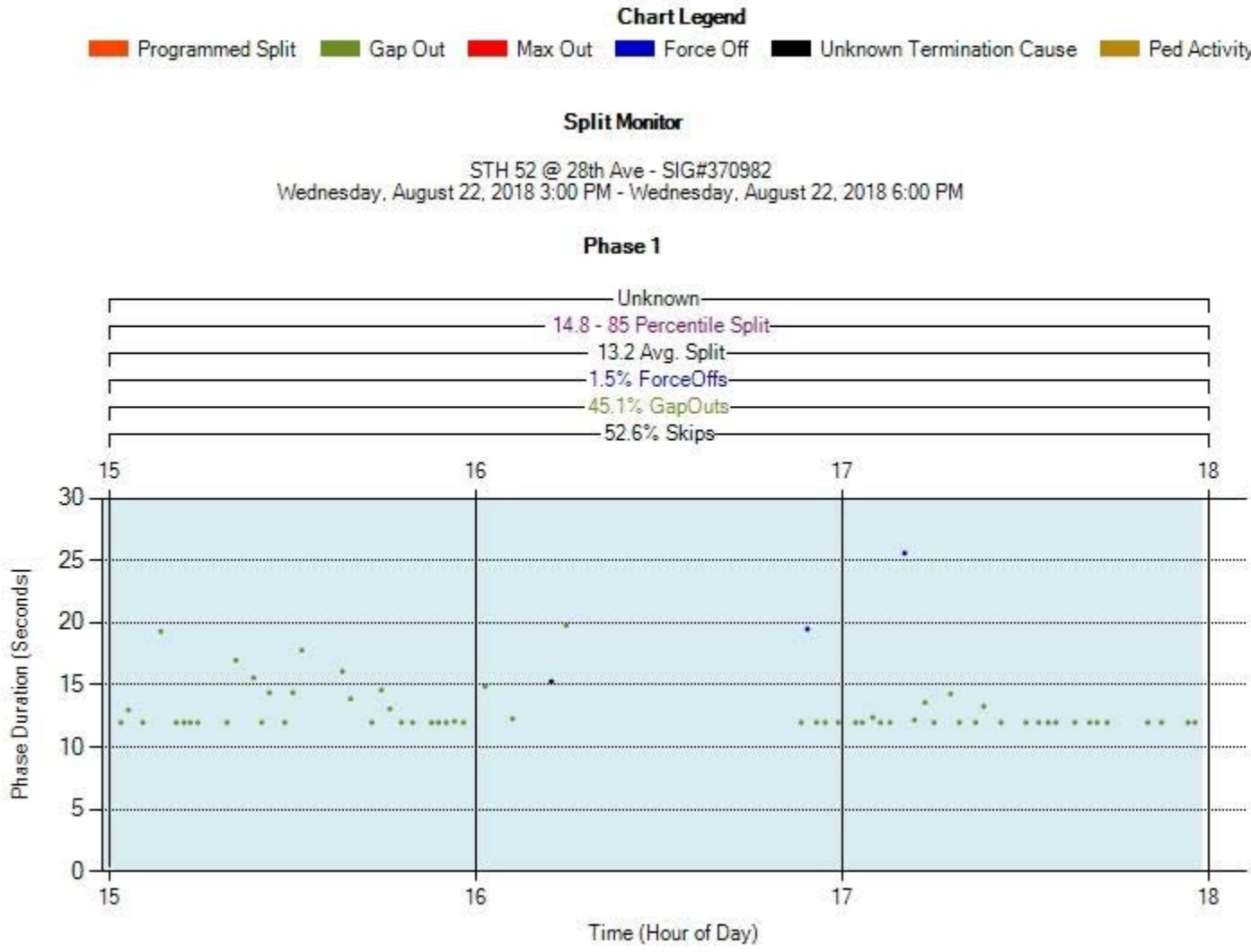
Isolated Signal – WIS 52 & 28th Avenue
Vistro Timings
8/21/2018 – 4:15 PM – 5:15 PM



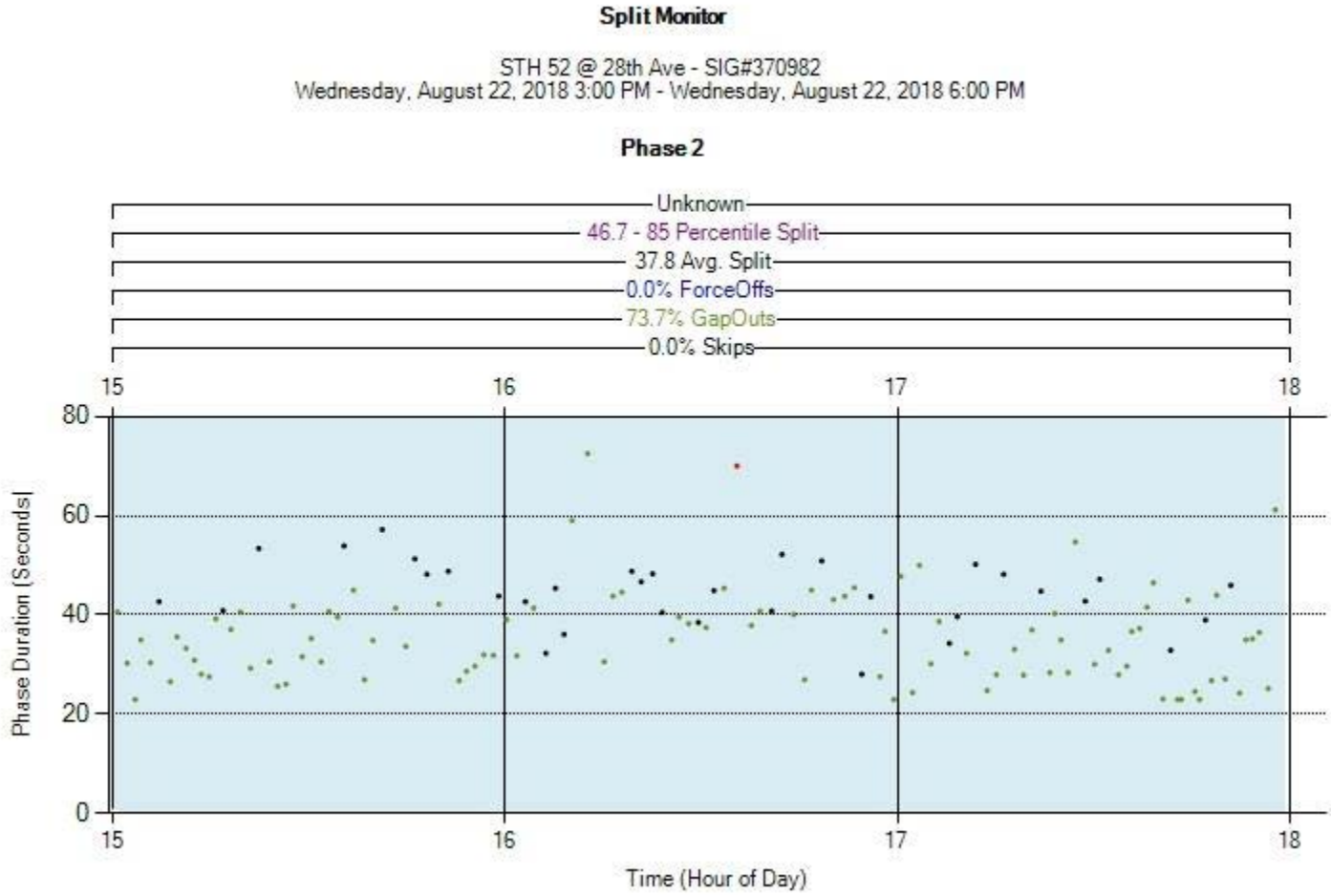
Isolated Signal – WIS 52 & 28th Avenue
Vistro Timings
8/21/2018 – 4:15 PM – 5:15 PM



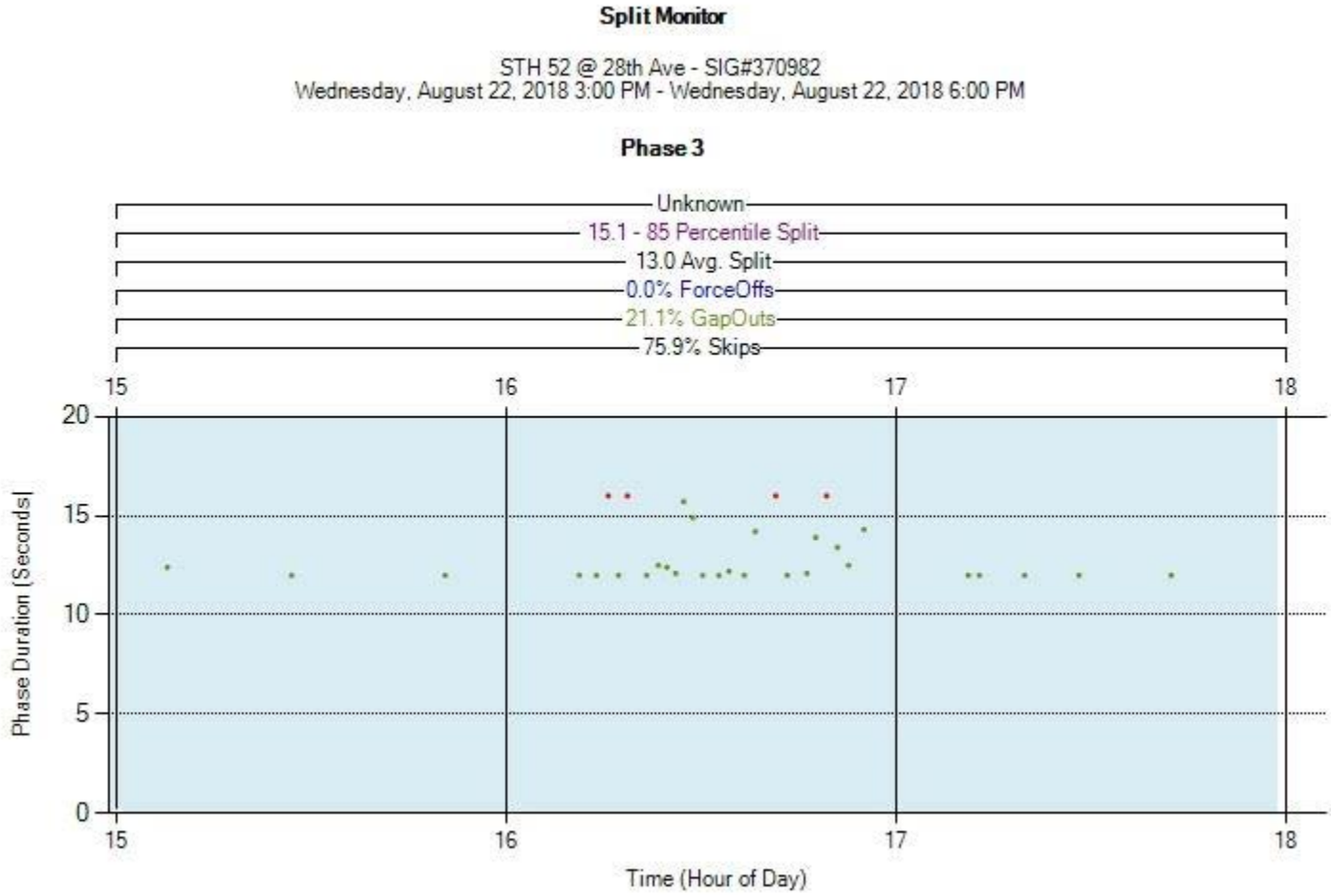
Isolated Signal – WIS 52 & 28th Avenue
Vistro Timings
8/22/2018 – 3:00 PM – 6:00 PM



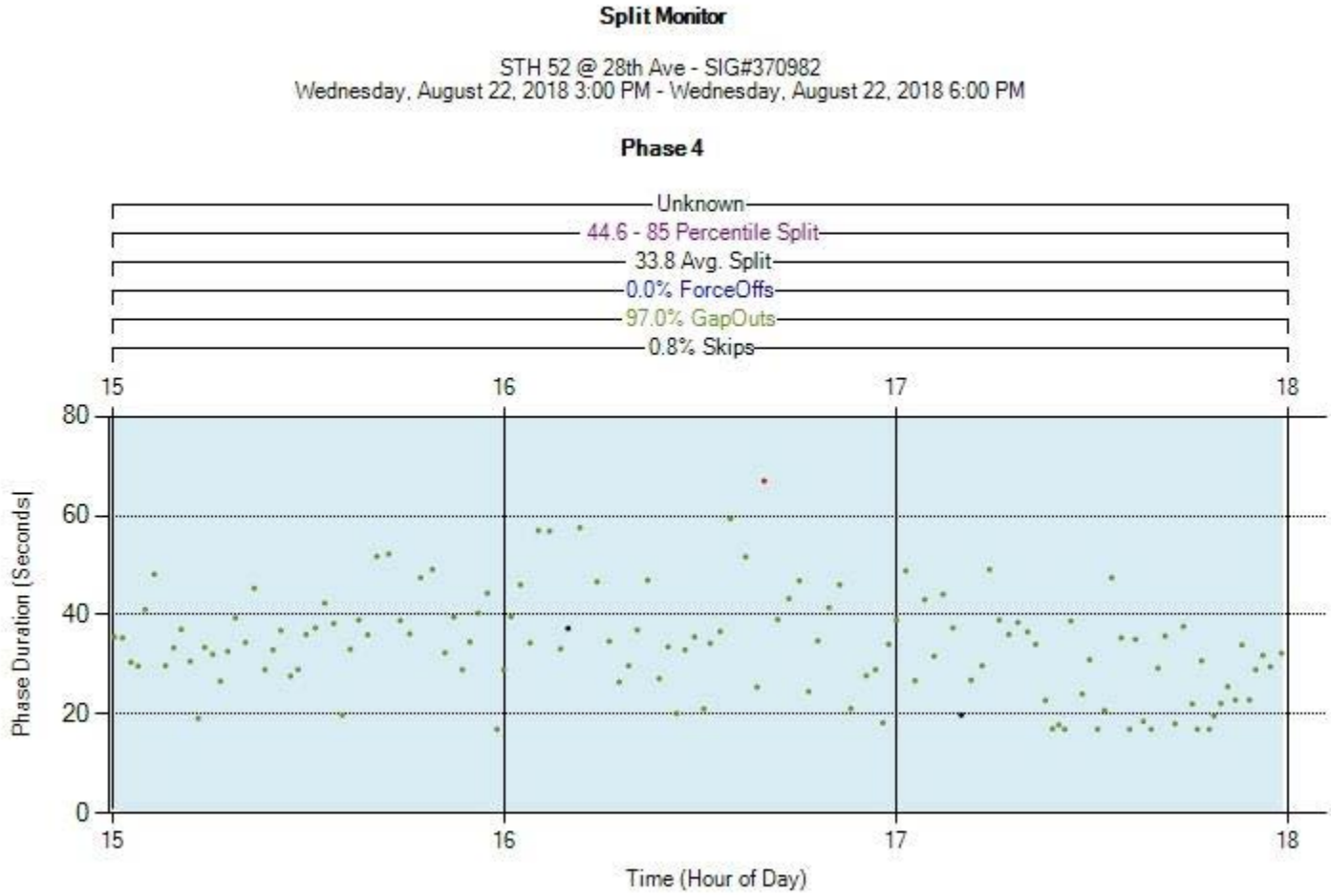
Isolated Signal – WIS 52 & 28th Avenue
Vistro Timings
8/22/2018 – 3:00 PM – 6:00 PM



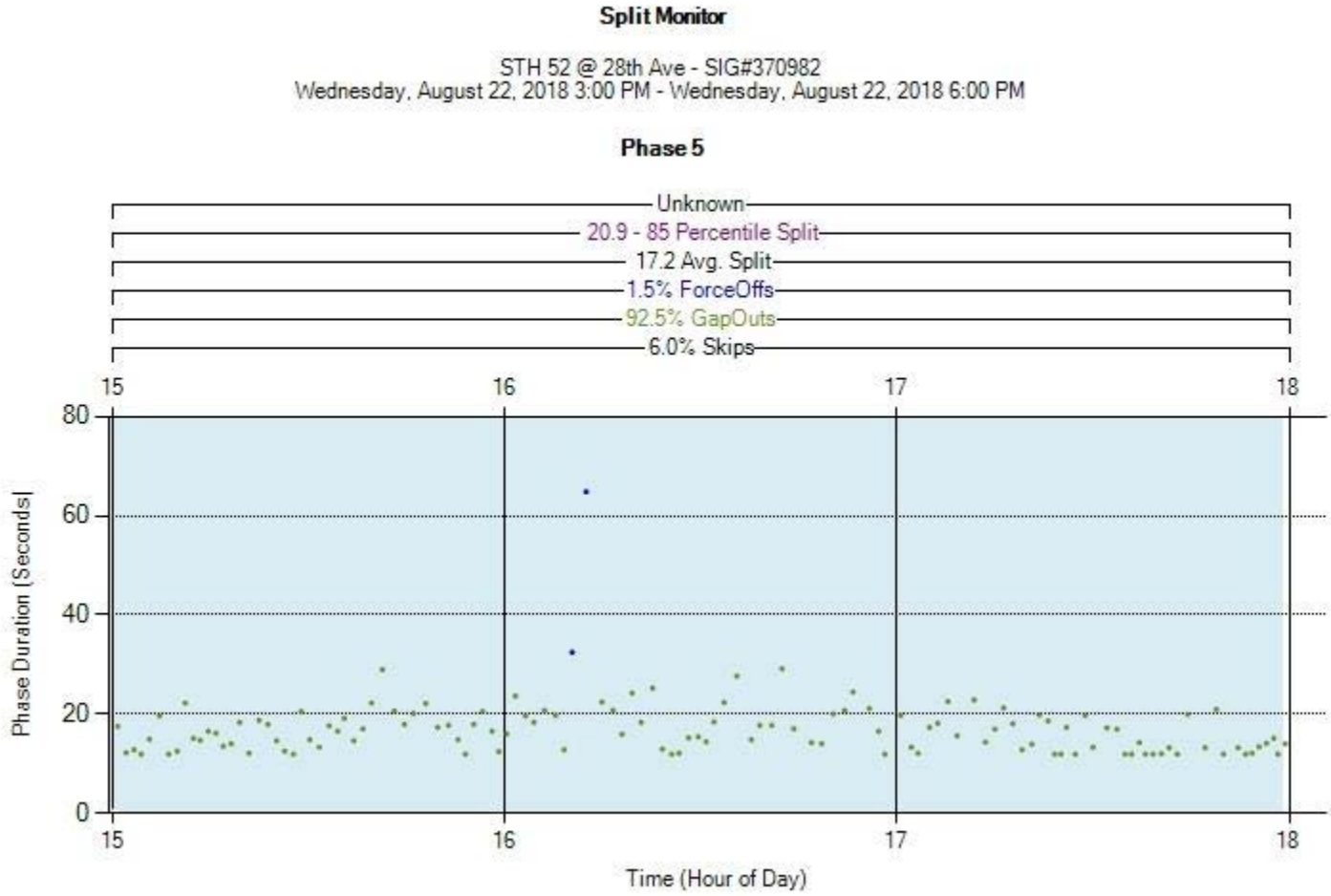
Isolated Signal – WIS 52 & 28th Avenue
Vistro Timings
8/22/2018 – 3:00 PM – 6:00 PM



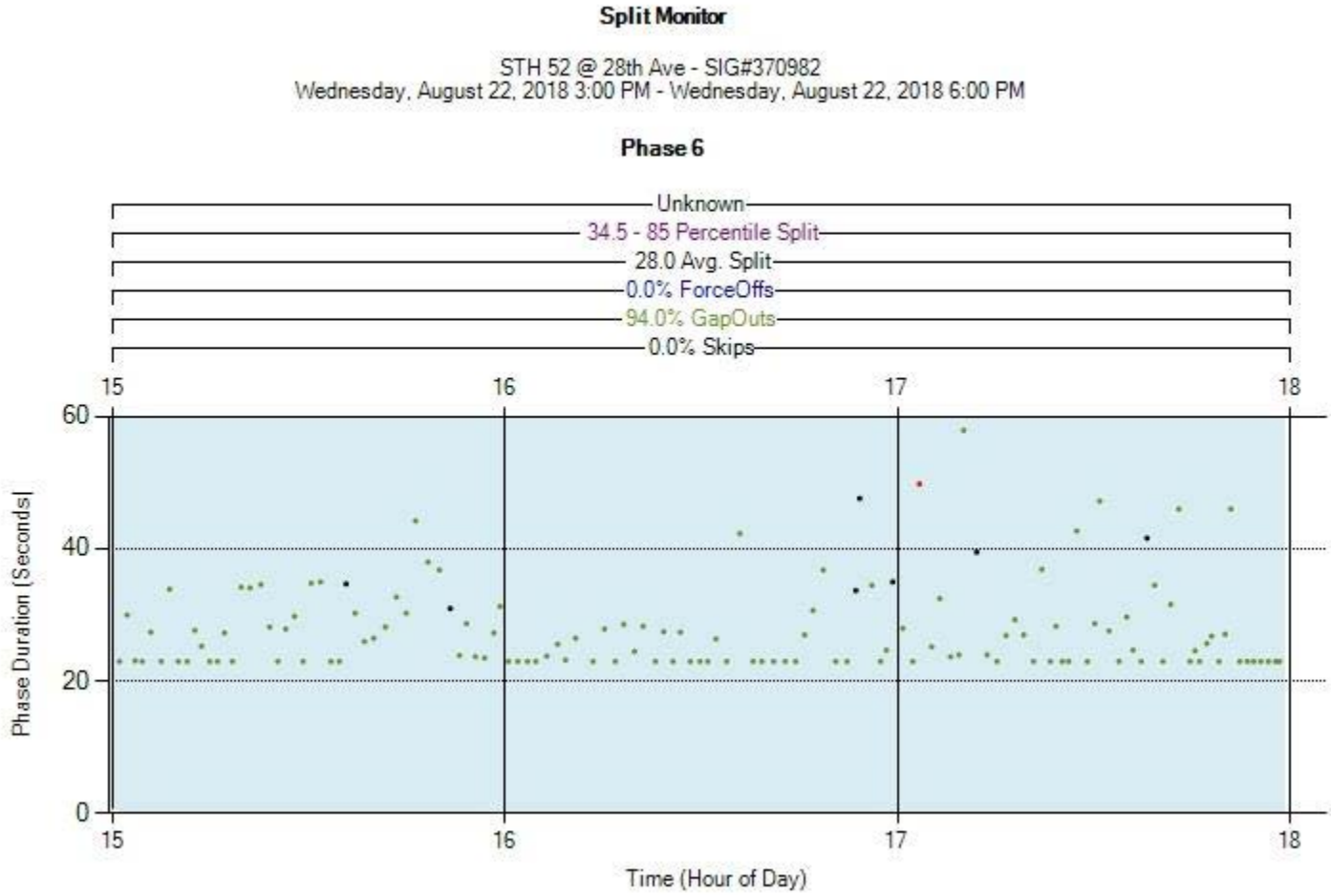
Isolated Signal – WIS 52 & 28th Avenue
Vistro Timings
8/22/2018 – 3:00 PM – 6:00 PM



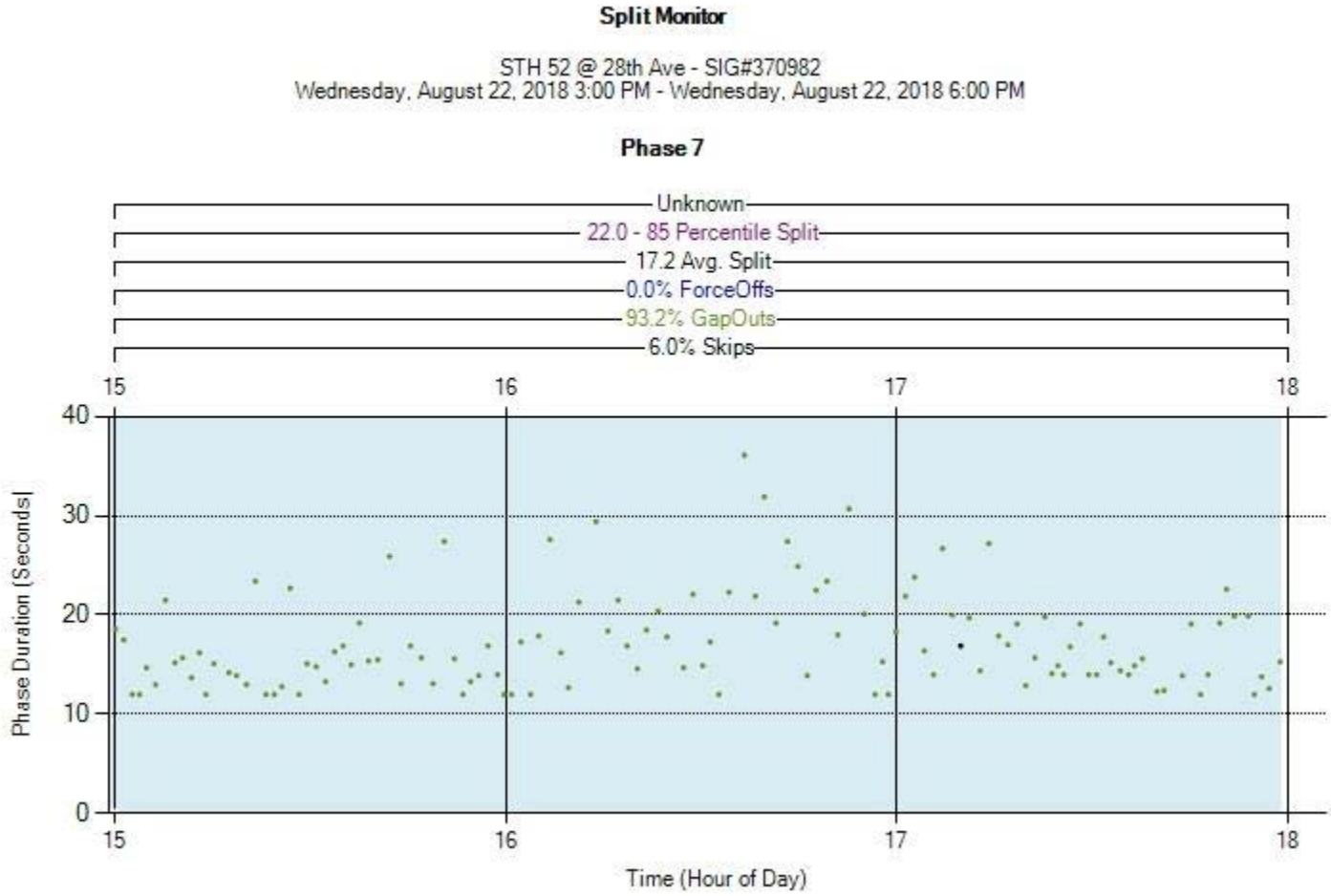
Isolated Signal – WIS 52 & 28th Avenue
Vistro Timings
8/22/2018 – 3:00 PM – 6:00 PM



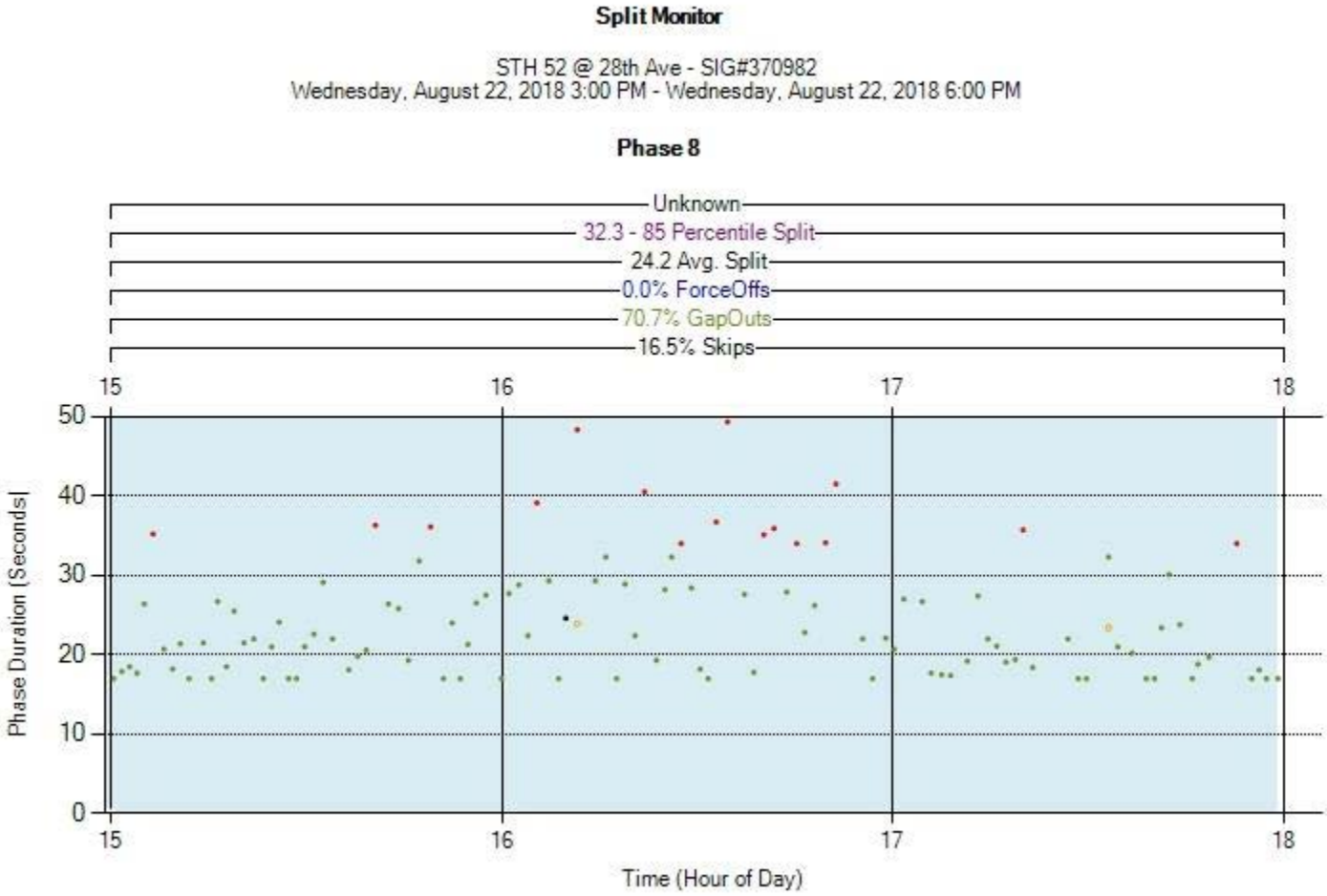
Isolated Signal – WIS 52 & 28th Avenue
Vistro Timings
8/22/2018 – 3:00 PM – 6:00 PM



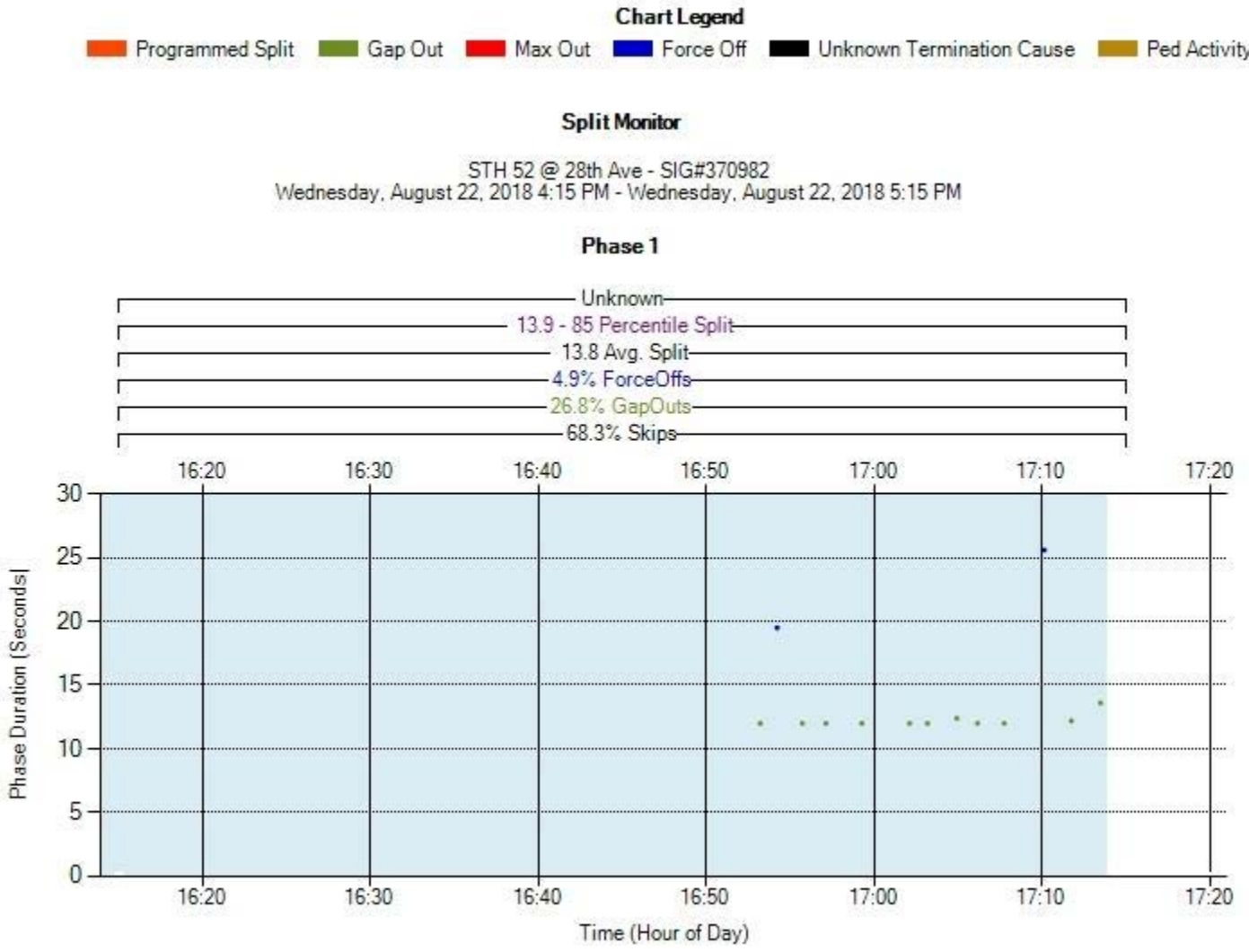
Isolated Signal – WIS 52 & 28th Avenue
Vistro Timings
8/22/2018 – 3:00 PM – 6:00 PM



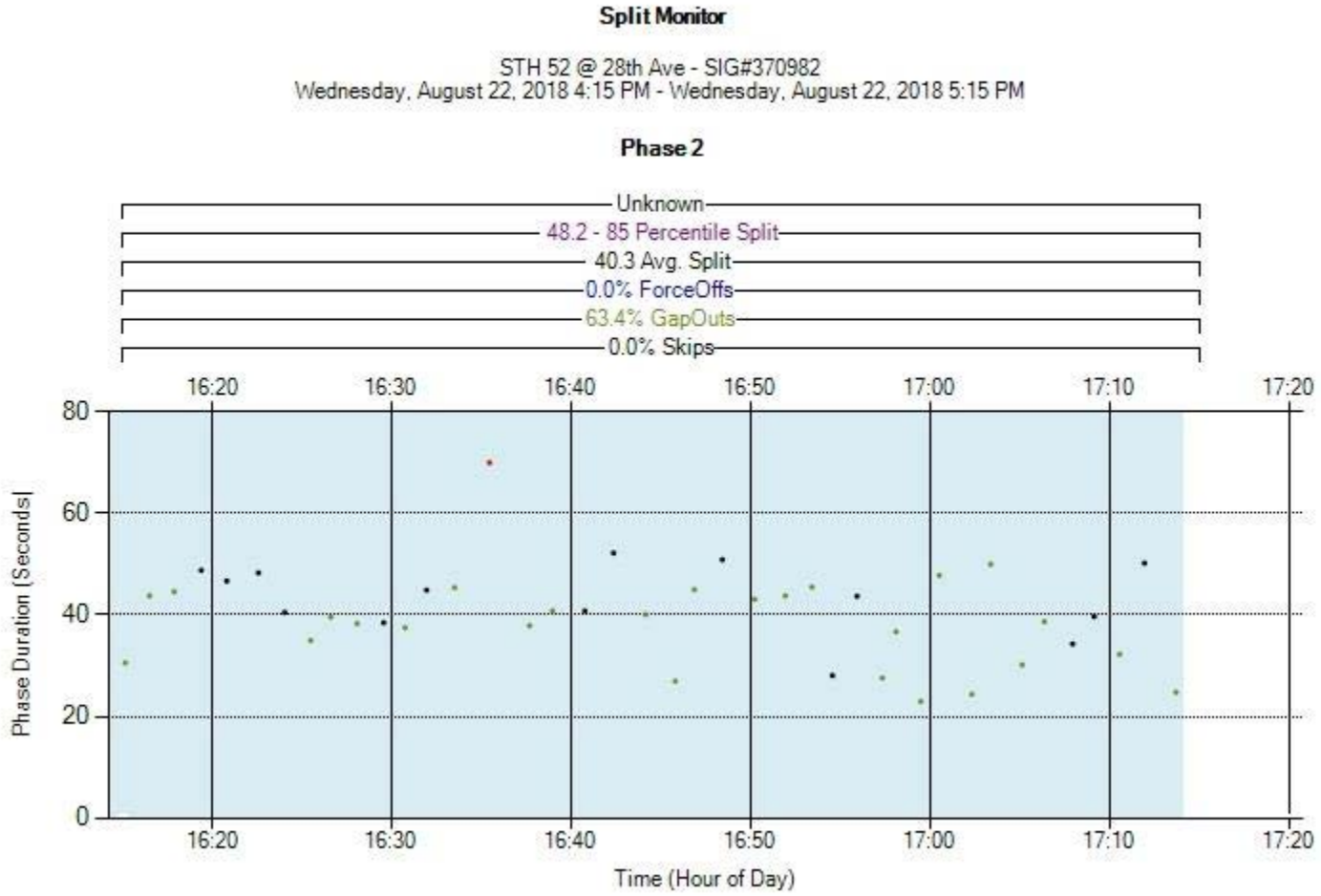
Isolated Signal – WIS 52 & 28th Avenue
Vistro Timings
8/22/2018 – 3:00 PM – 6:00 PM



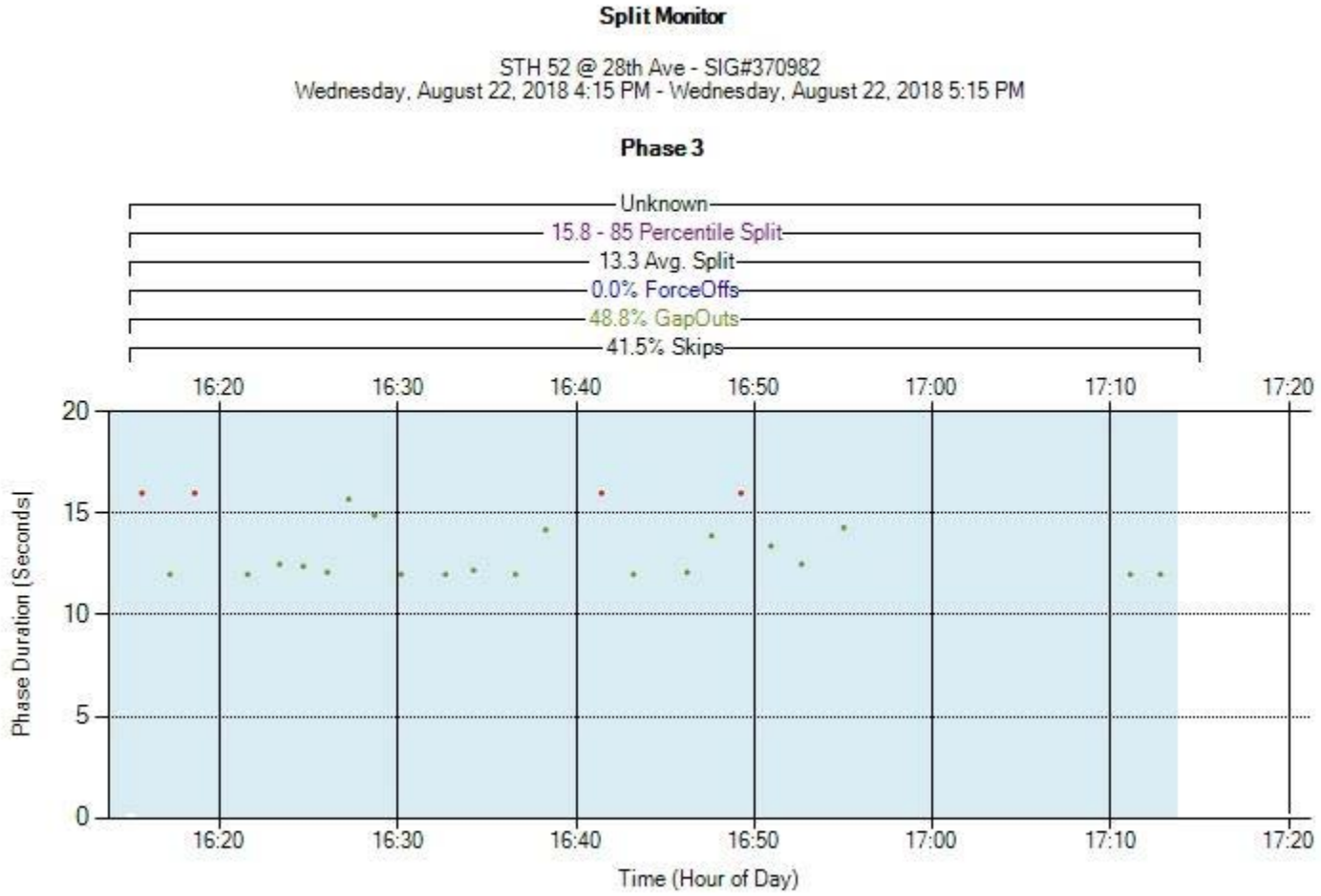
Isolated Signal – WIS 52 & 28th Avenue
Vistro Timings
8/22/2018 – 4:15 PM – 5:15 PM



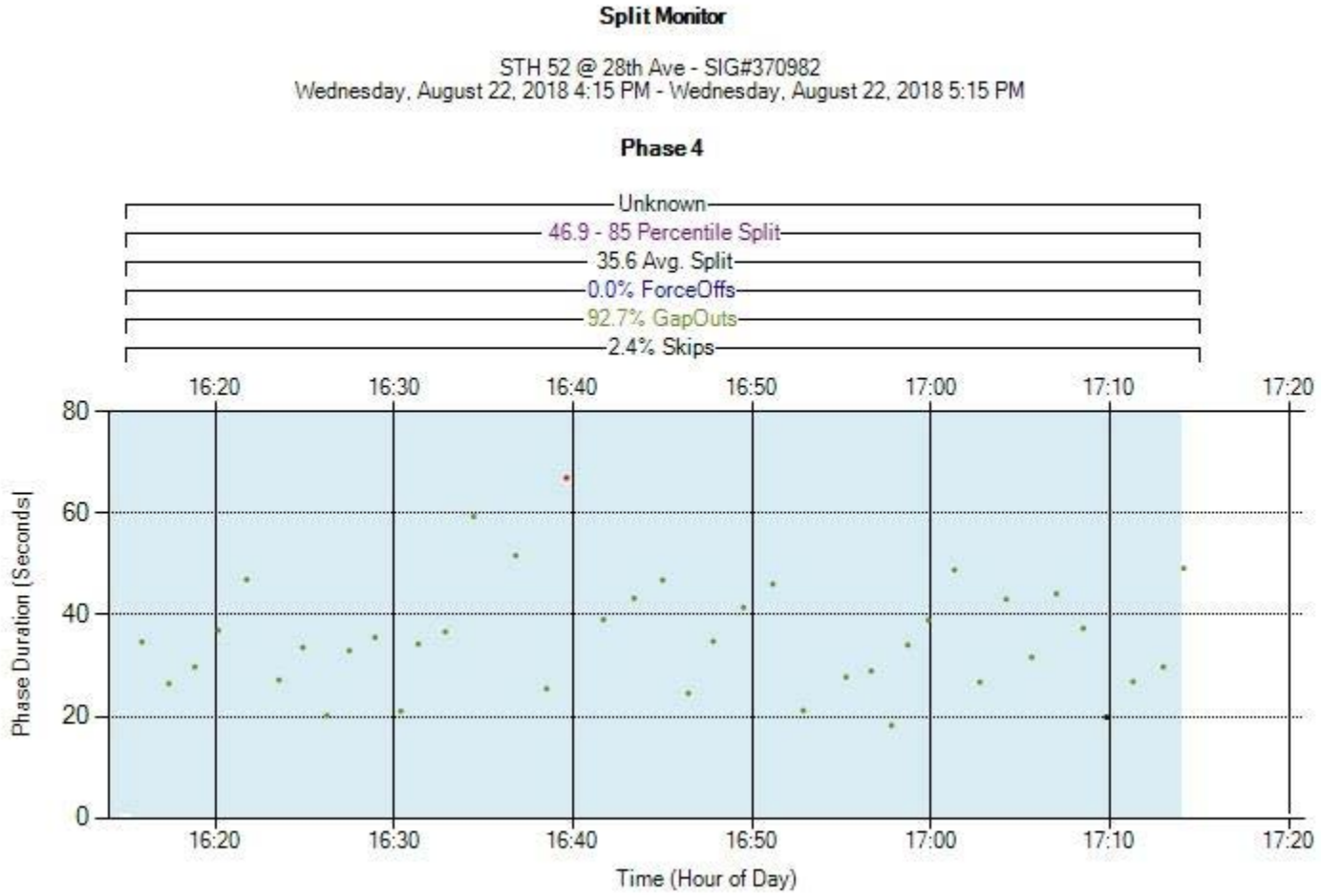
Isolated Signal – WIS 52 & 28th Avenue
Vistro Timings
8/22/2018 – 4:15 PM – 5:15 PM



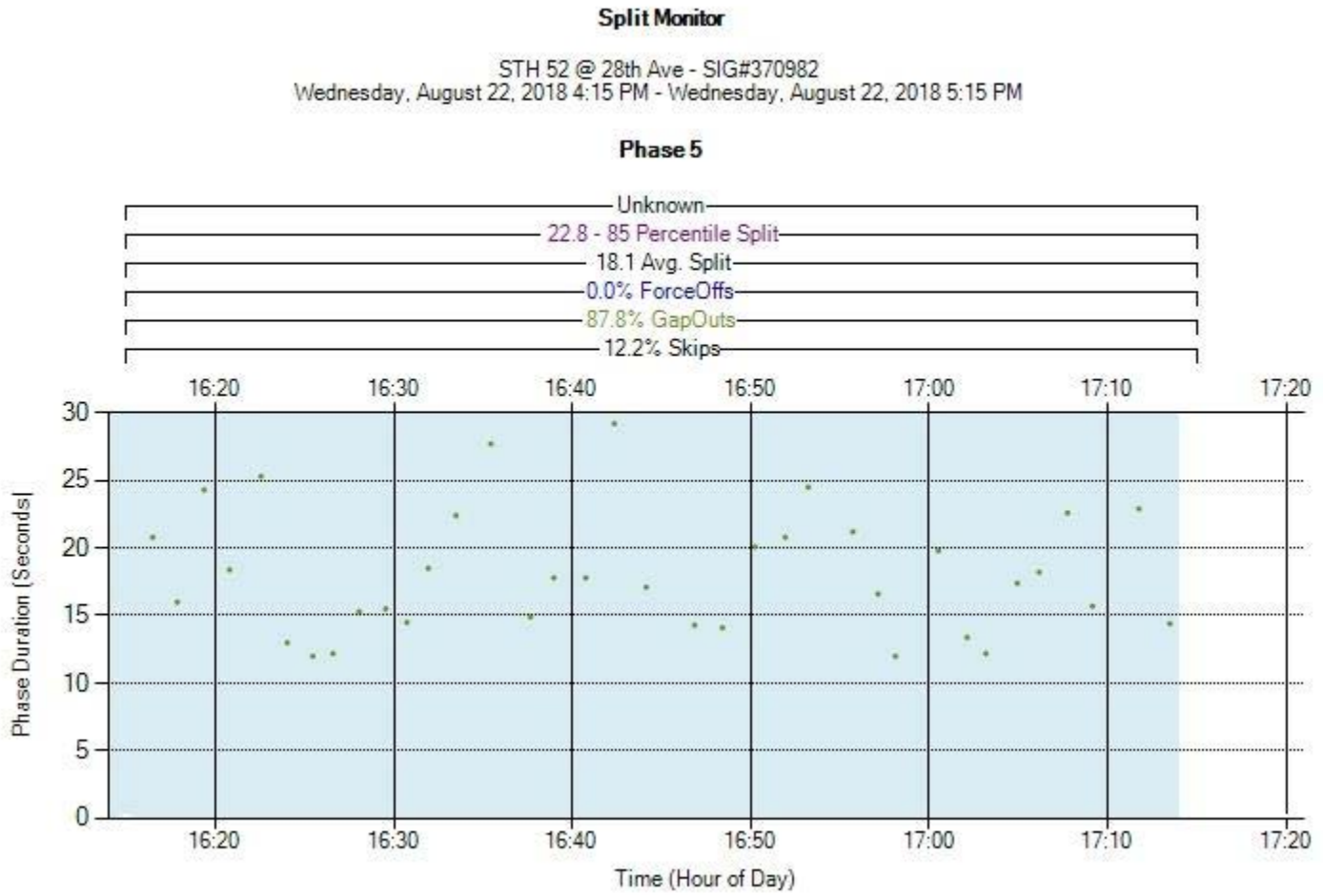
Isolated Signal – WIS 52 & 28th Avenue
Vistro Timings
8/22/2018 – 4:15 PM – 5:15 PM



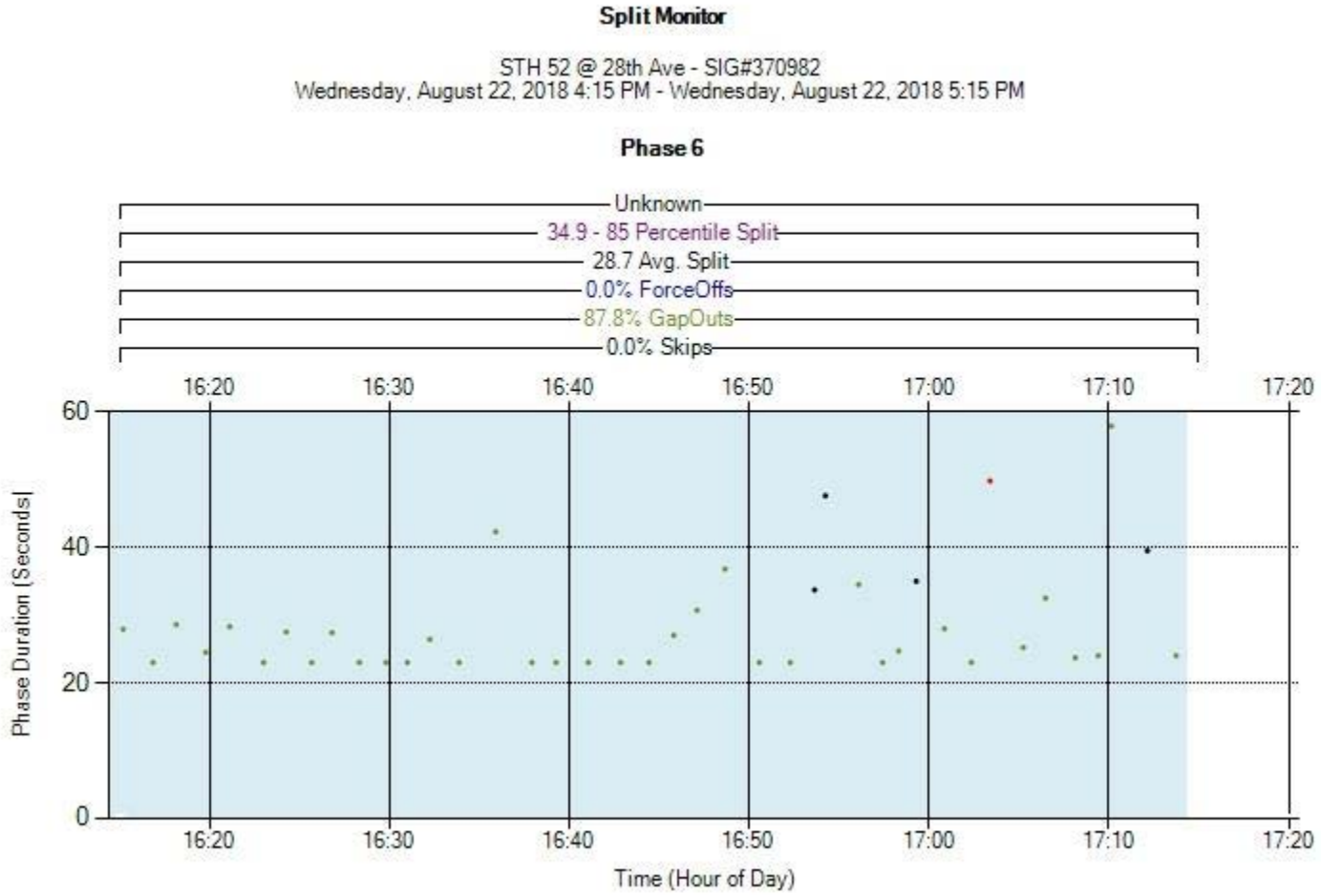
Isolated Signal – WIS 52 & 28th Avenue
Vistro Timings
8/22/2018 – 4:15 PM – 5:15 PM



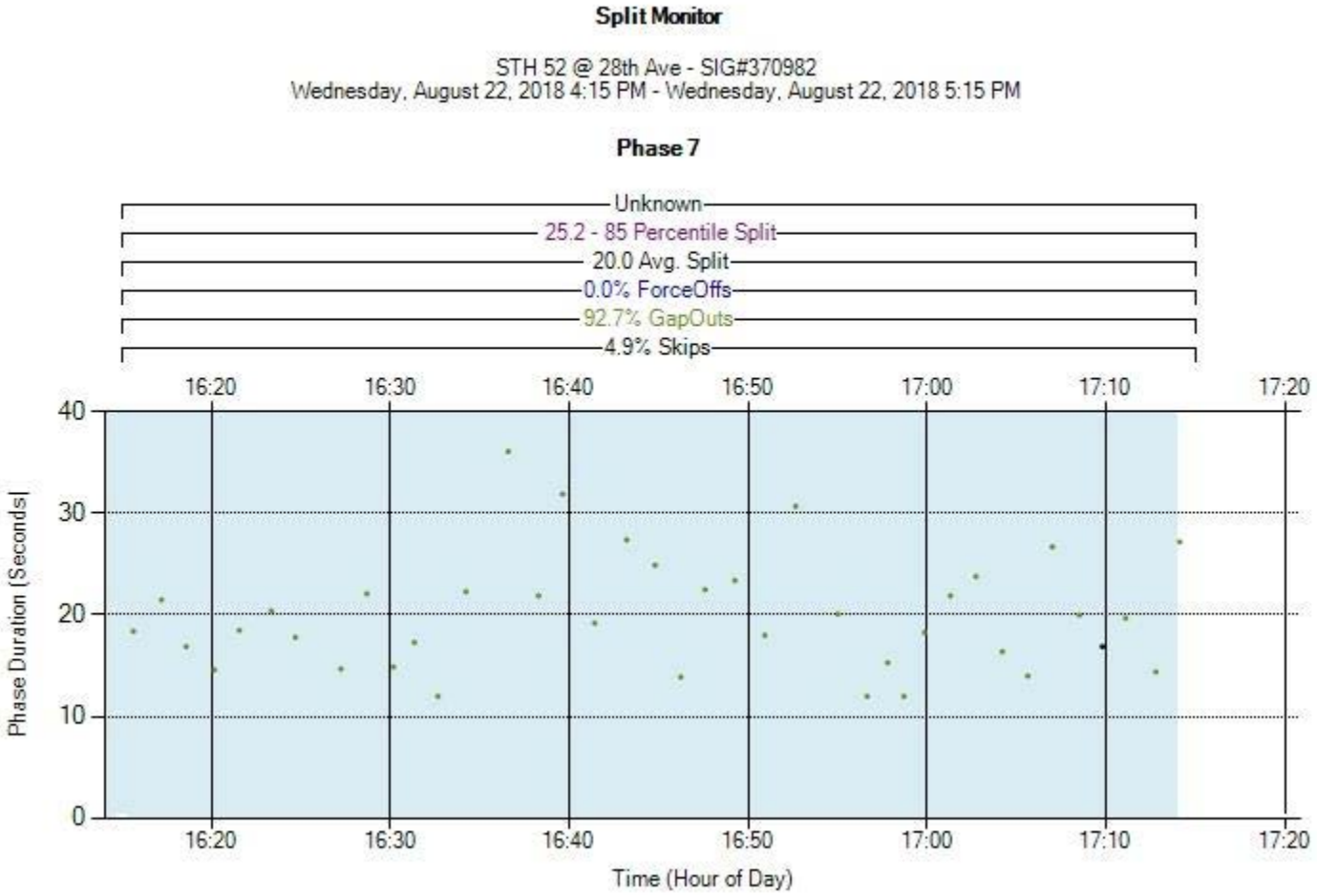
Isolated Signal – WIS 52 & 28th Avenue
Vistro Timings
8/22/2018 – 4:15 PM – 5:15 PM



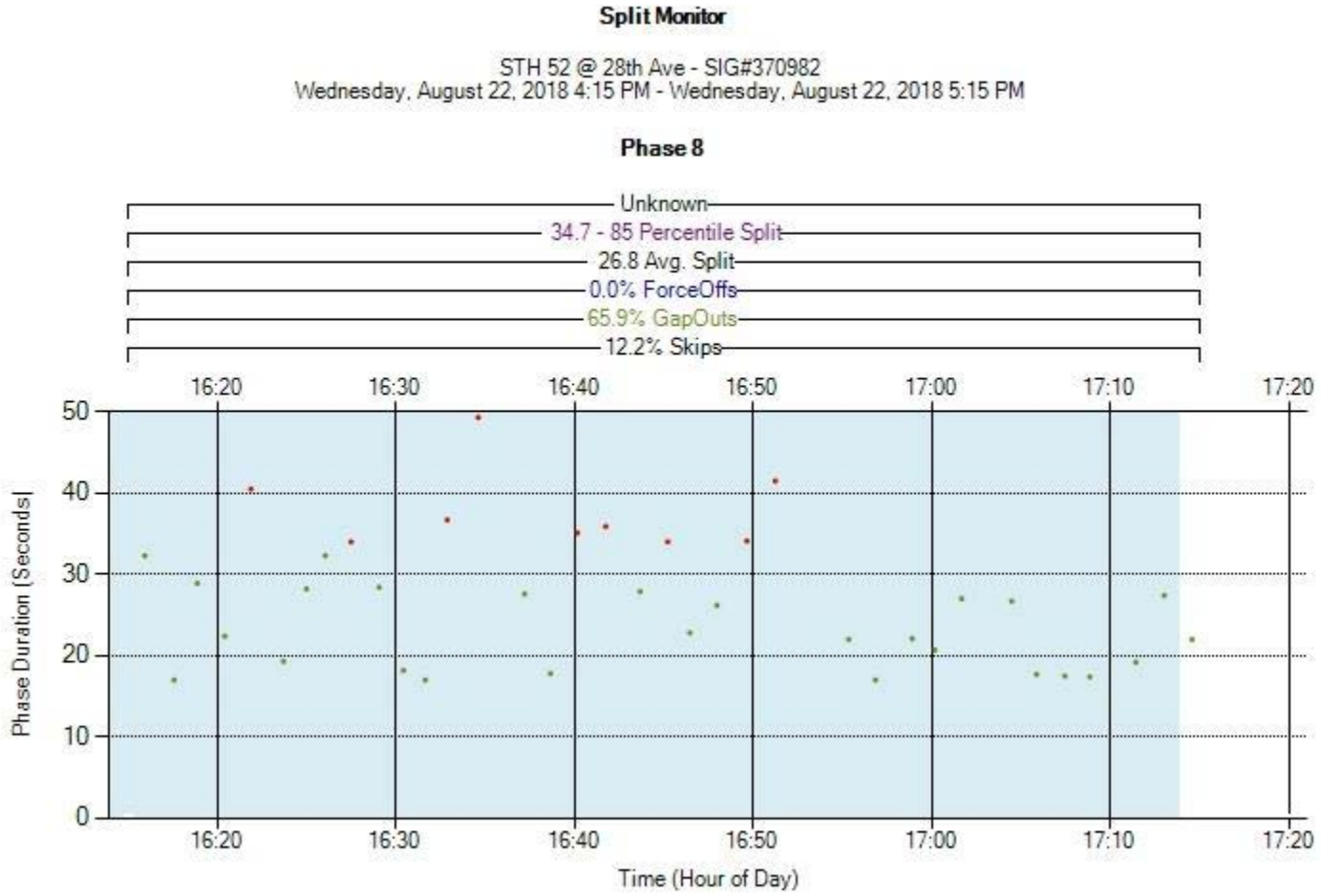
Isolated Signal – WIS 52 & 28th Avenue
Vistro Timings
8/22/2018 – 4:15 PM – 5:15 PM



Isolated Signal – WIS 52 & 28th Avenue
Vistro Timings
8/22/2018 – 4:15 PM – 5:15 PM

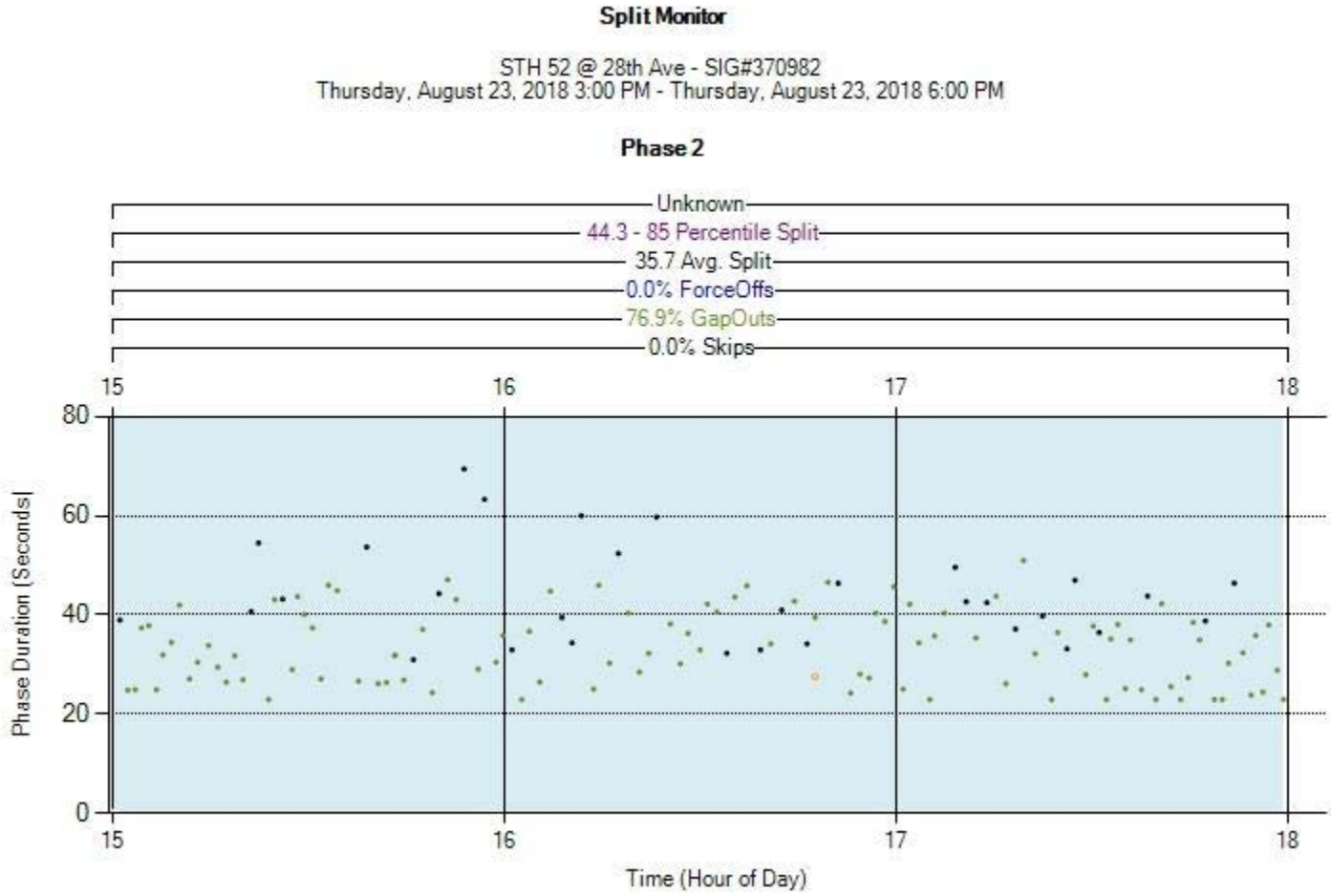


Isolated Signal – WIS 52 & 28th Avenue
Vistro Timings
8/22/2018 – 4:15 PM – 5:15 PM

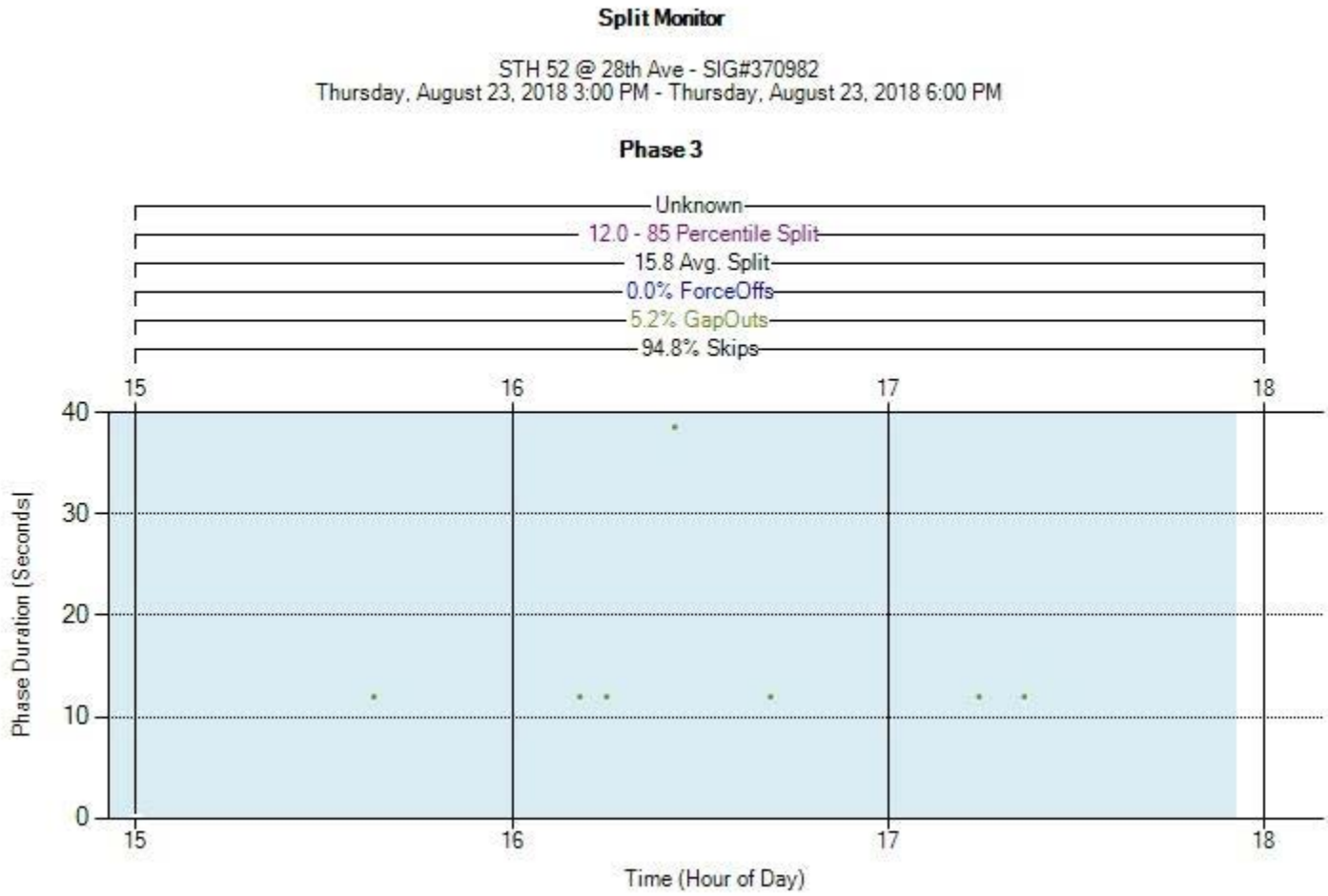


Isolated Signal – WIS 52 & 28th Avenue
Vistro Timings
8/23/2018 – 3:00 PM – 6:00 PM

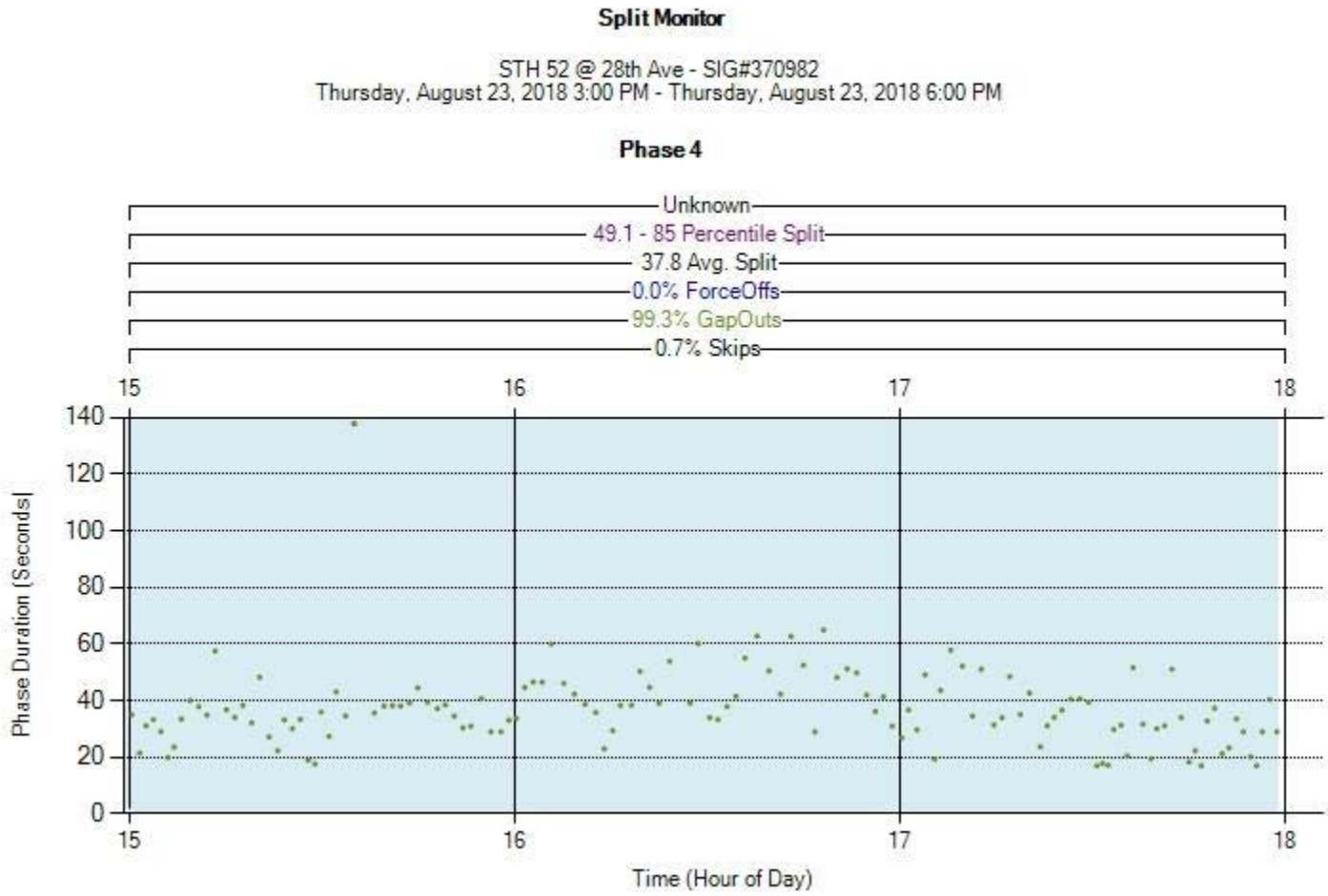
Isolated Signal – WIS 52 & 28th Avenue
Vistro Timings
8/23/2018 – 3:00 PM – 6:00 PM



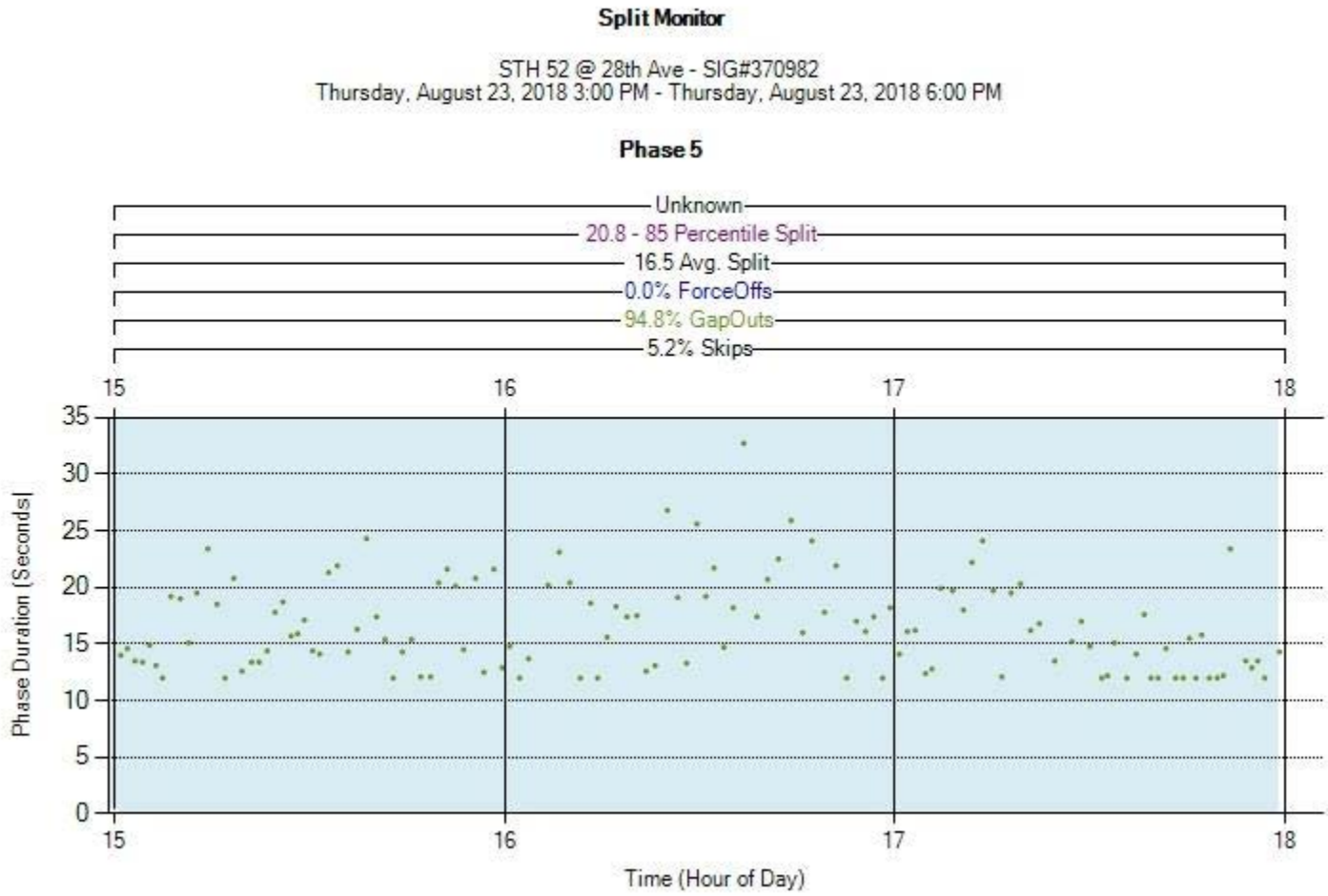
Isolated Signal – WIS 52 & 28th Avenue
Vistro Timings
8/23/2018 – 3:00 PM – 6:00 PM



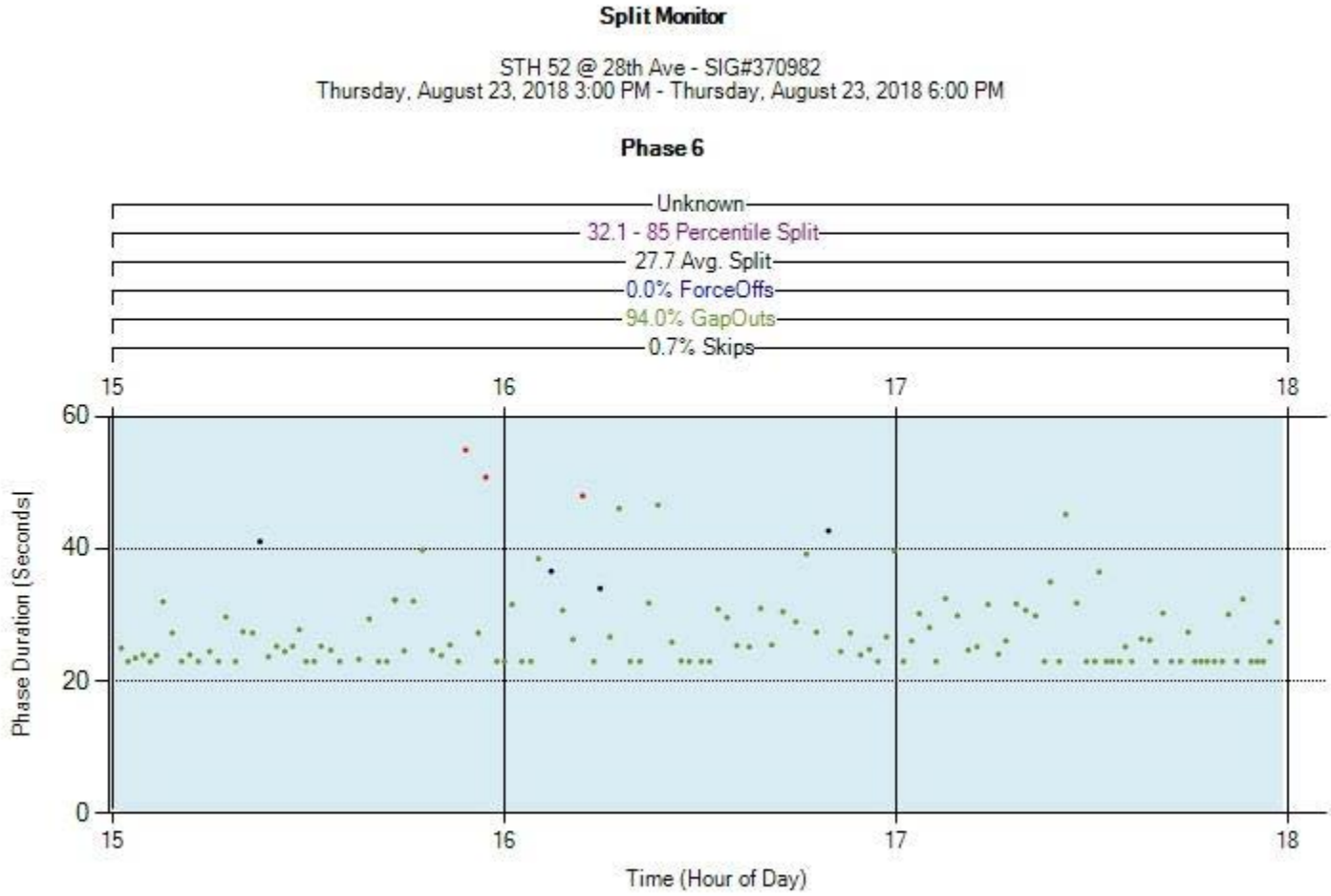
Isolated Signal – WIS 52 & 28th Avenue
Vistro Timings
8/23/2018 – 3:00 PM – 6:00 PM



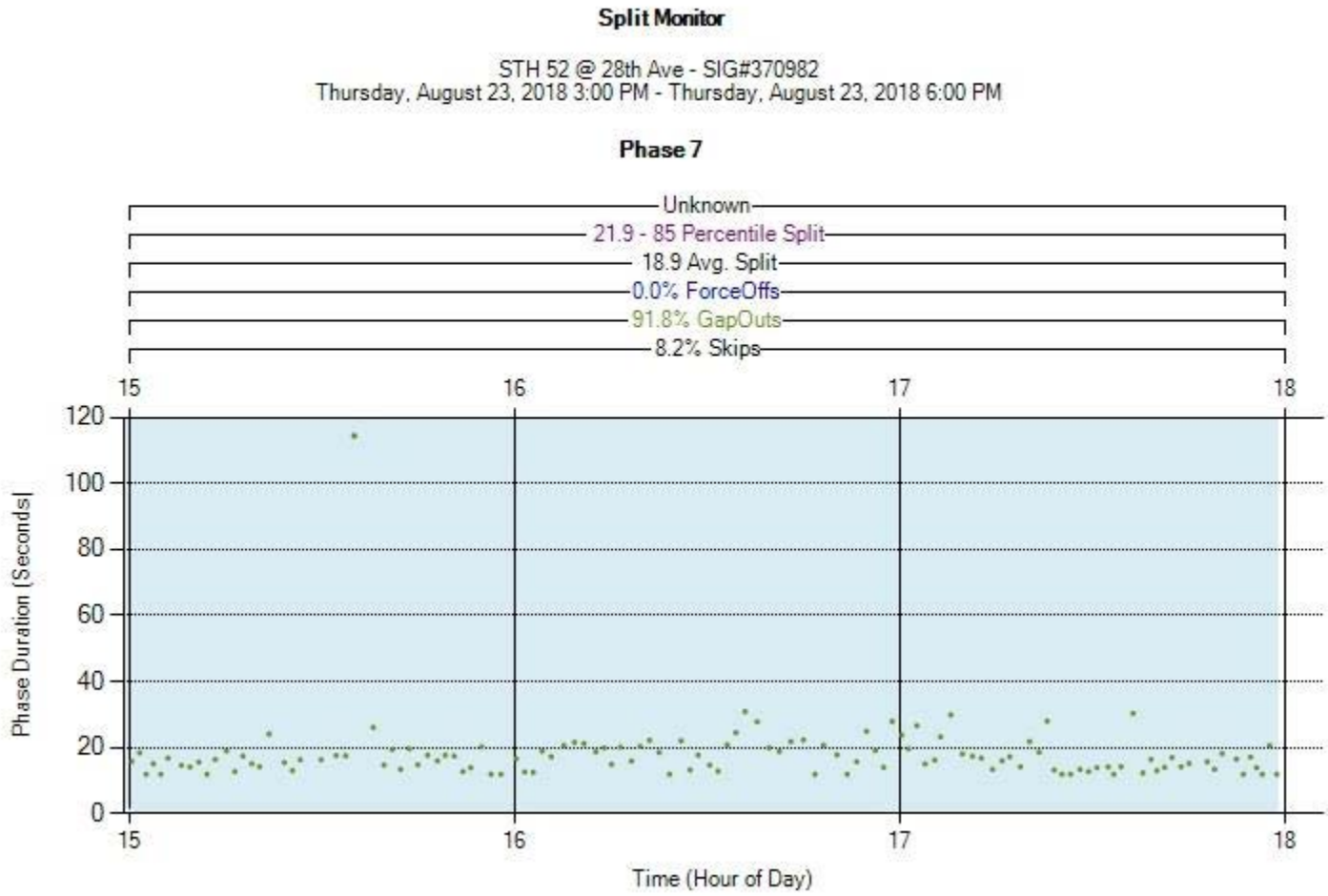
Isolated Signal – WIS 52 & 28th Avenue
Vistro Timings
8/23/2018 – 3:00 PM – 6:00 PM



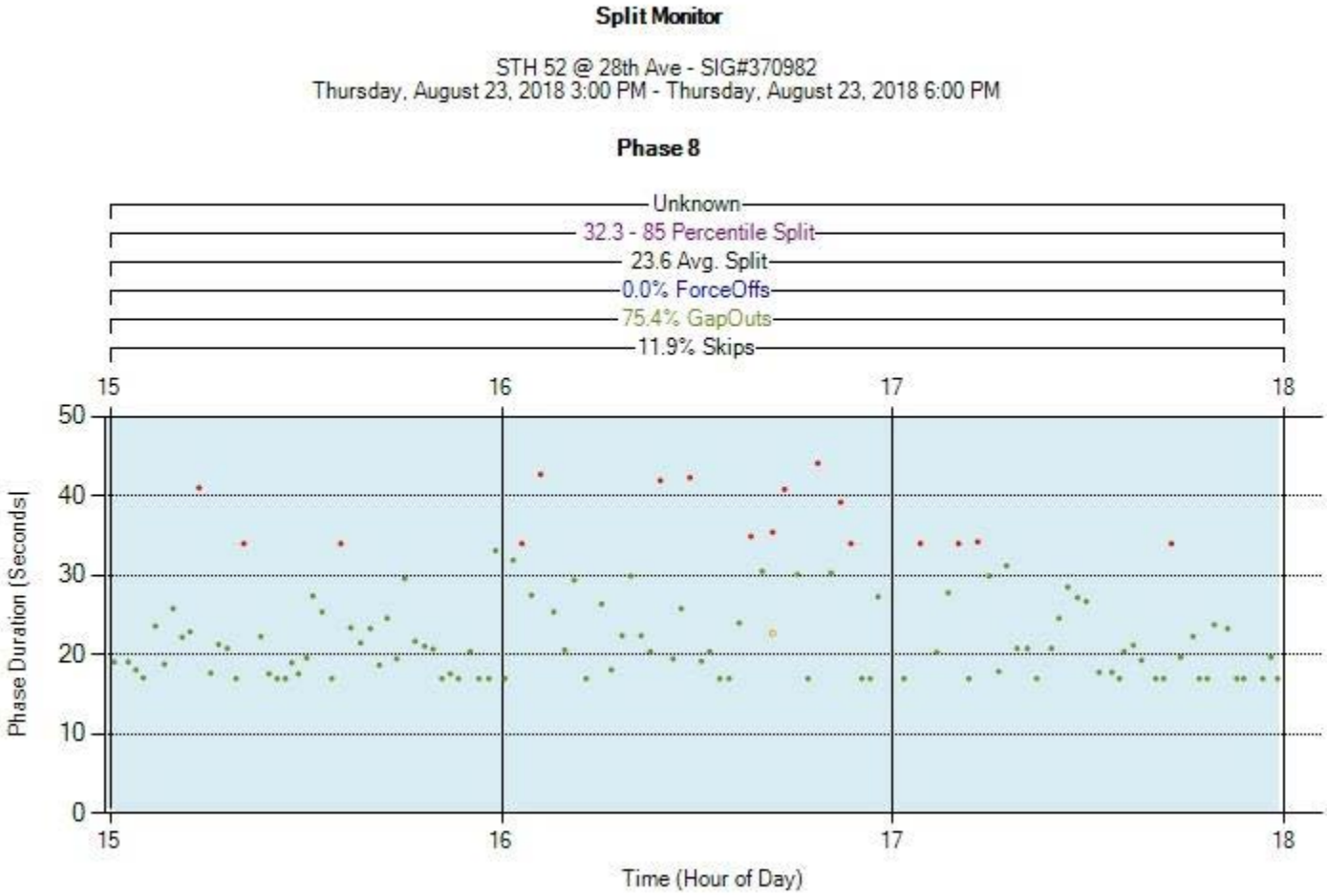
Isolated Signal – WIS 52 & 28th Avenue
Vistro Timings
8/23/2018 – 3:00 PM – 6:00 PM



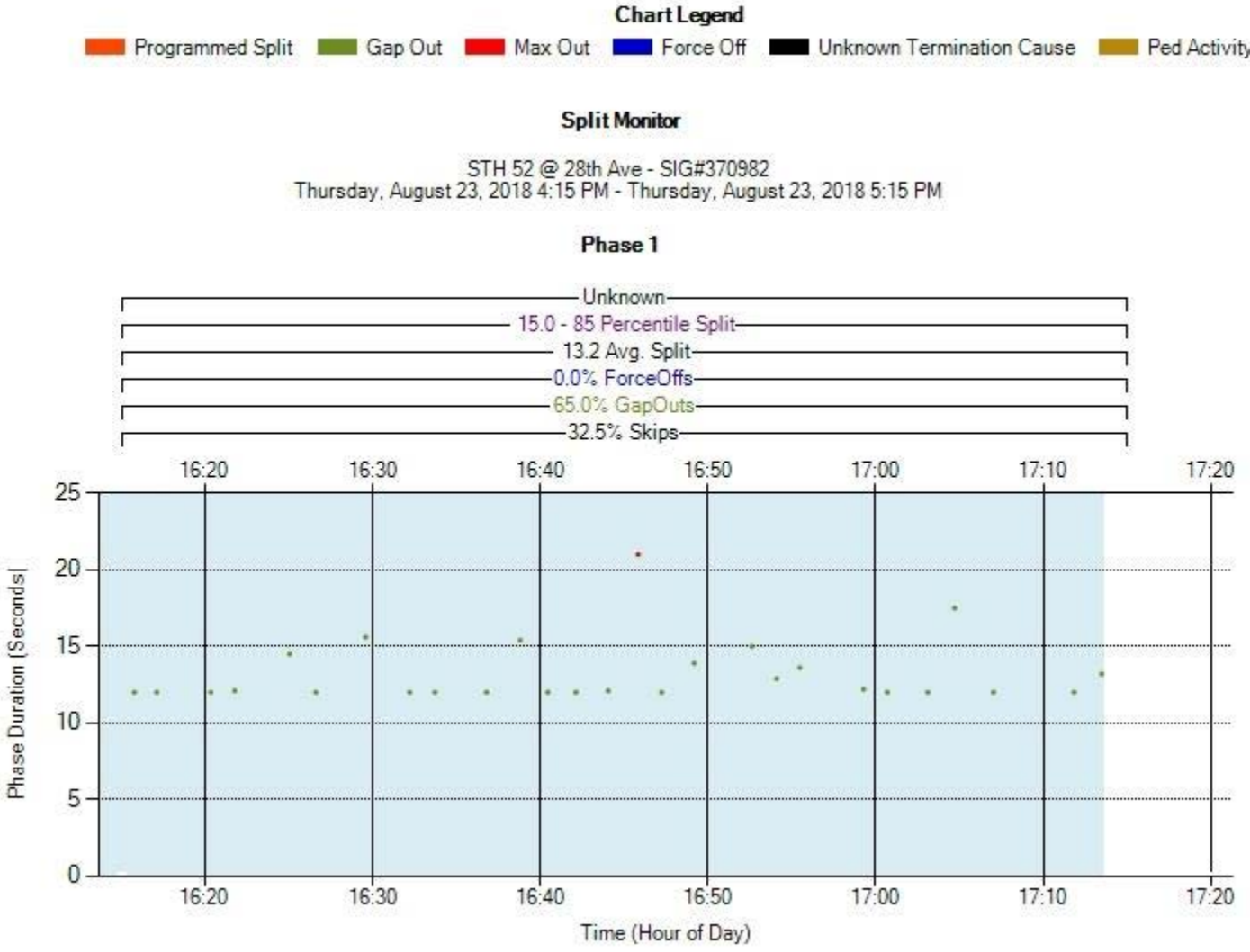
Isolated Signal – WIS 52 & 28th Avenue
Vistro Timings
8/23/2018 – 3:00 PM – 6:00 PM



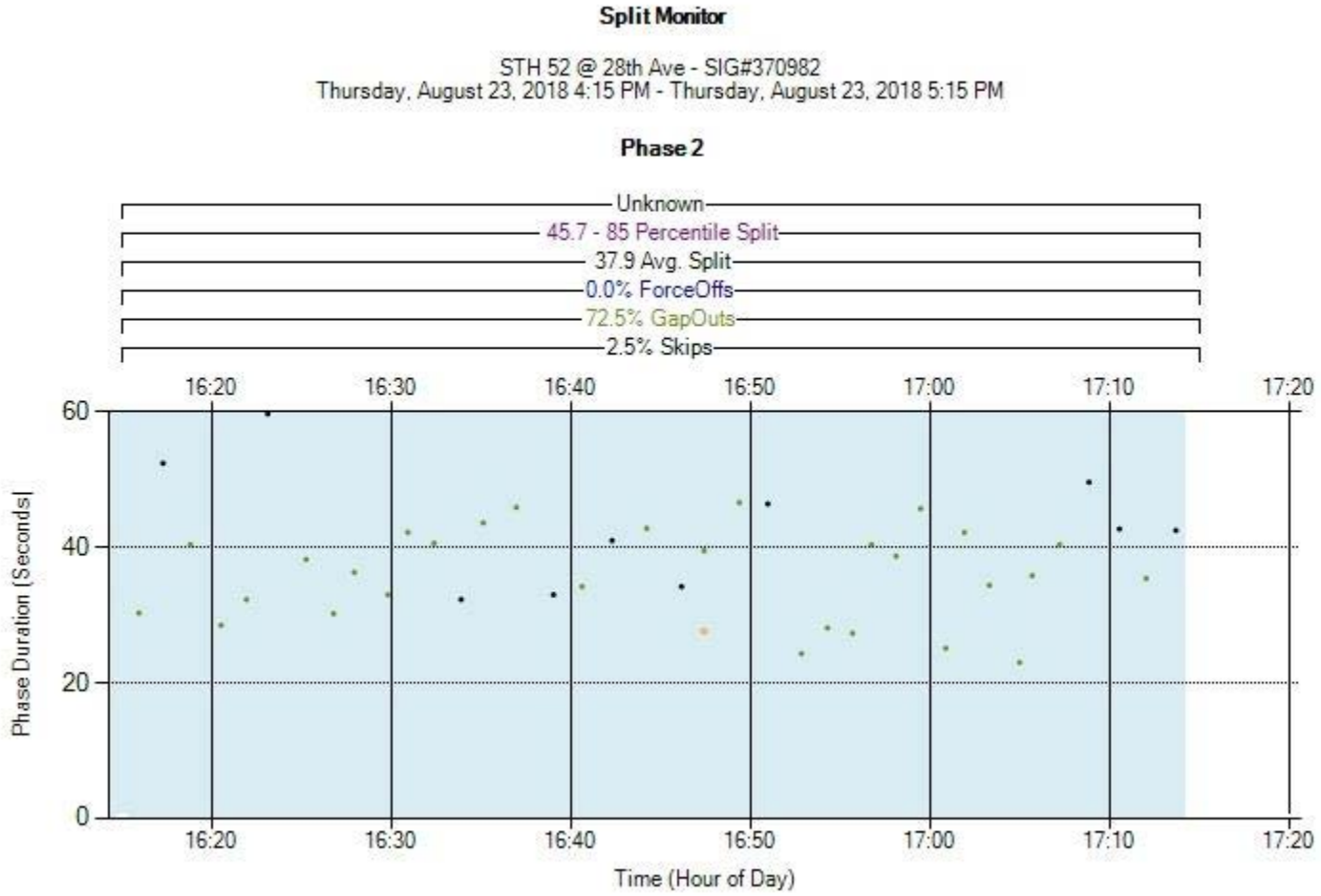
Isolated Signal – WIS 52 & 28th Avenue
Vistro Timings
8/23/2018 – 3:00 PM – 6:00 PM



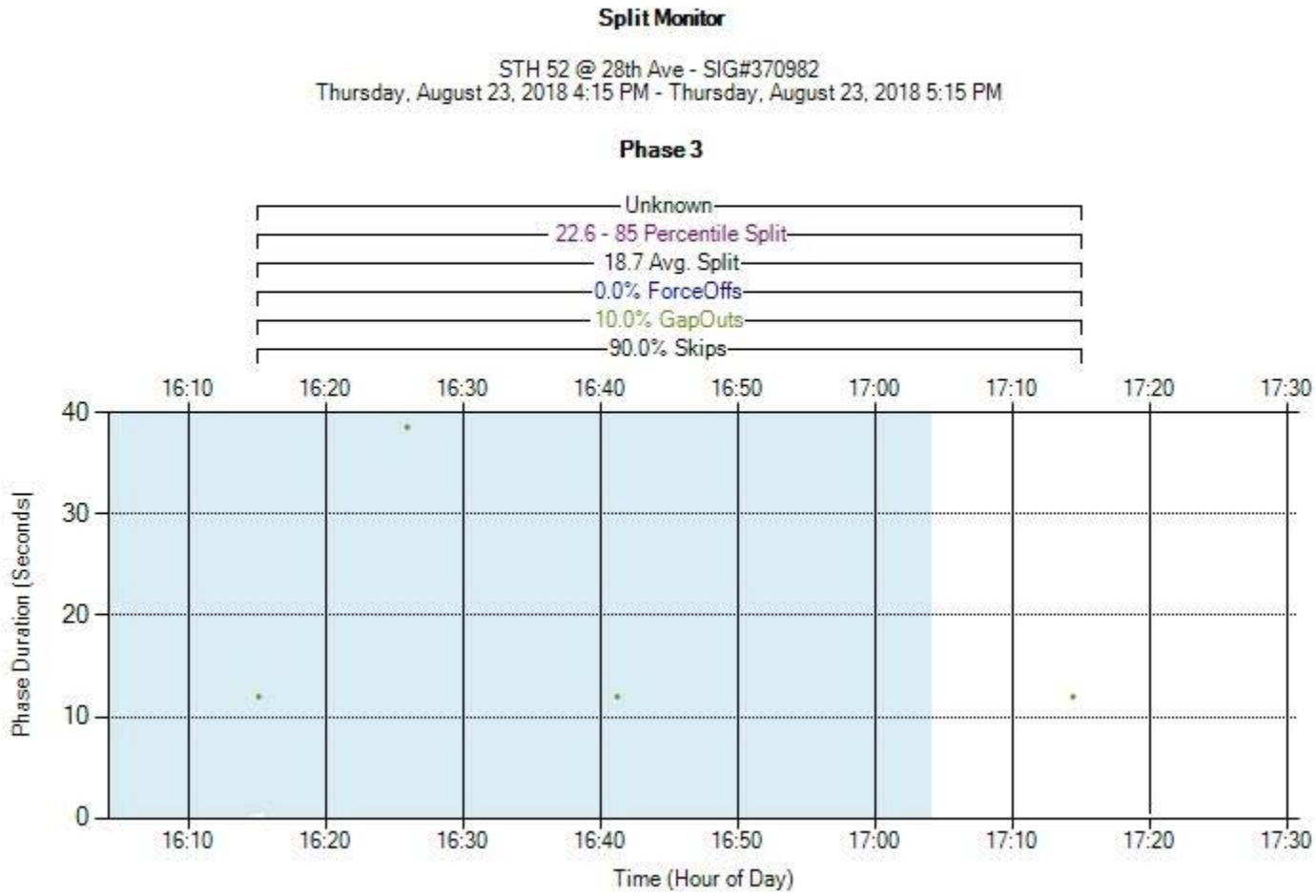
Isolated Signal – WIS 52 & 28th Avenue
Vistro Timings
8/23/2018 – 4:15 PM – 5:15 PM



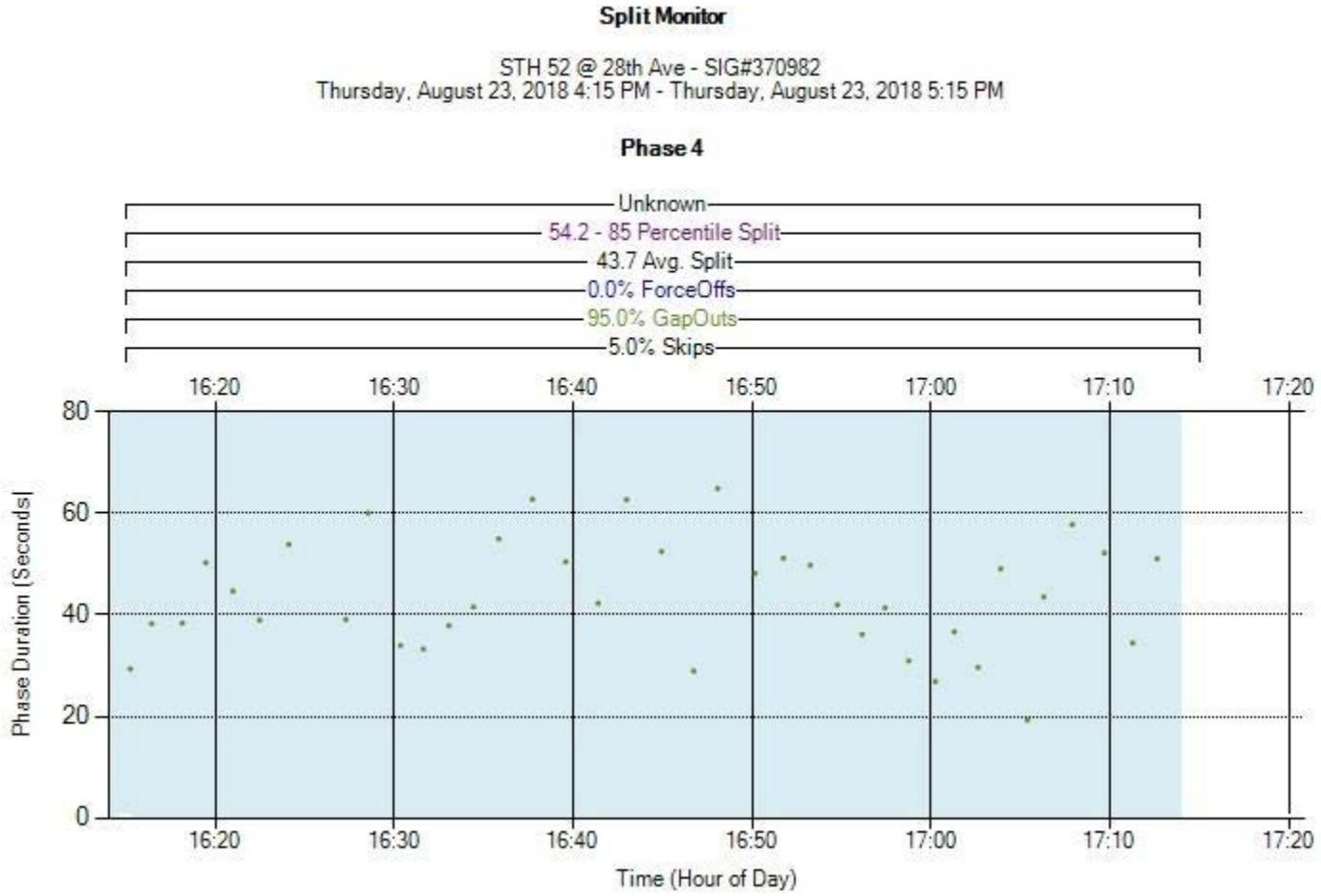
Isolated Signal – WIS 52 & 28th Avenue
Vistro Timings
8/23/2018 – 4:15 PM – 5:15 PM



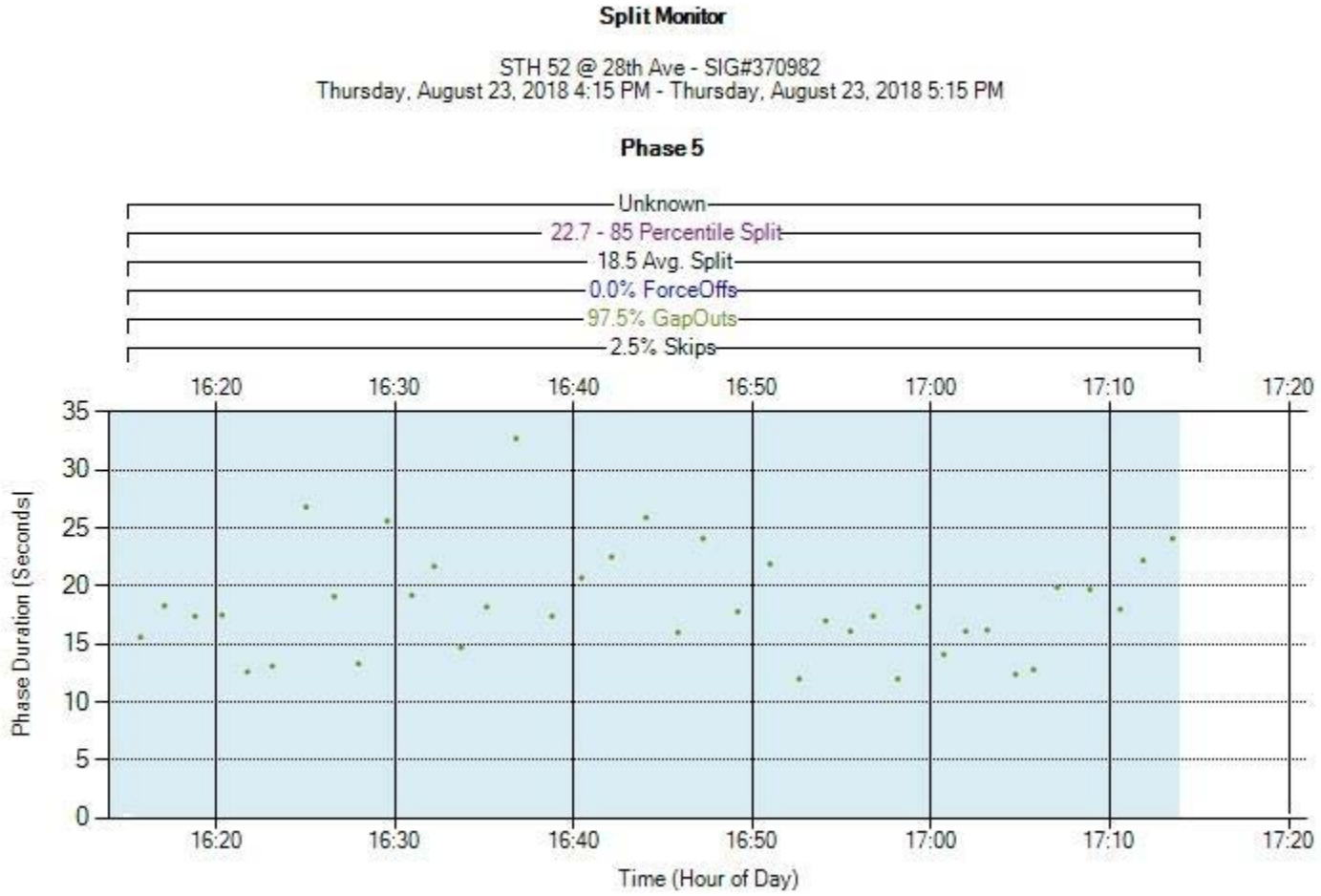
Isolated Signal – WIS 52 & 28th Avenue
Vistro Timings
8/23/2018 – 4:15 PM – 5:15 PM



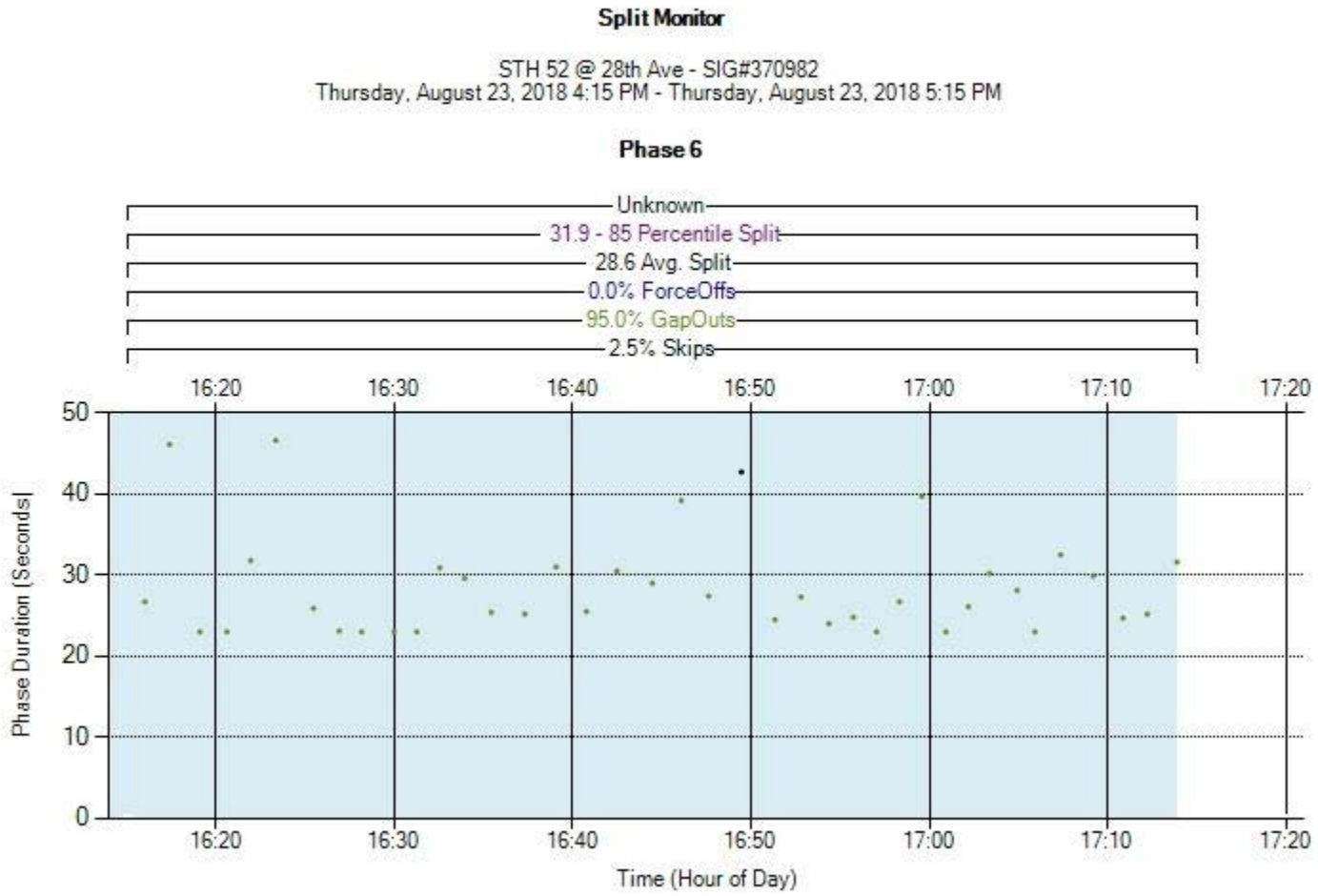
Isolated Signal – WIS 52 & 28th Avenue
Vistro Timings
8/23/2018 – 4:15 PM – 5:15 PM



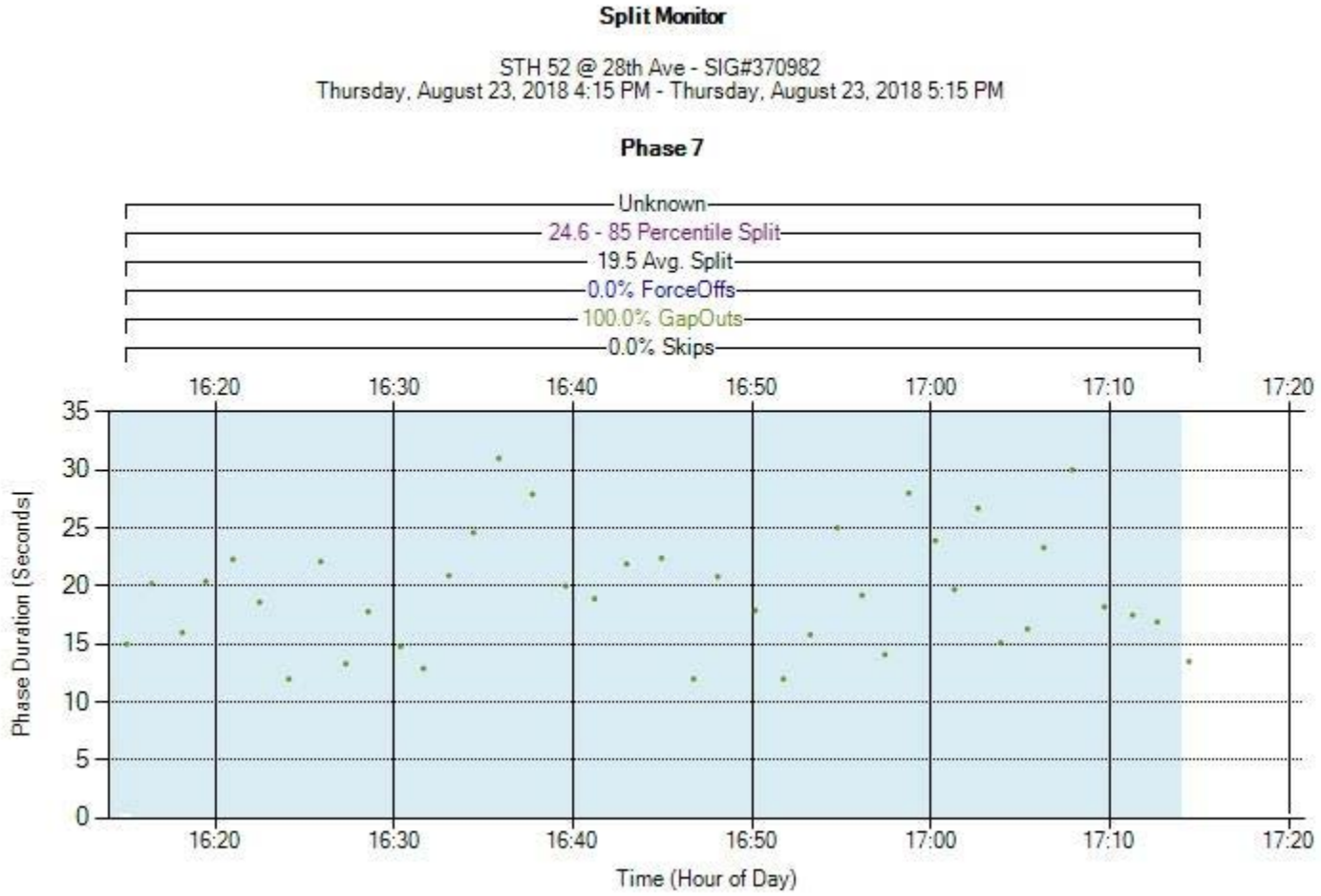
Isolated Signal – WIS 52 & 28th Avenue
Vistro Timings
8/23/2018 – 4:15 PM – 5:15 PM



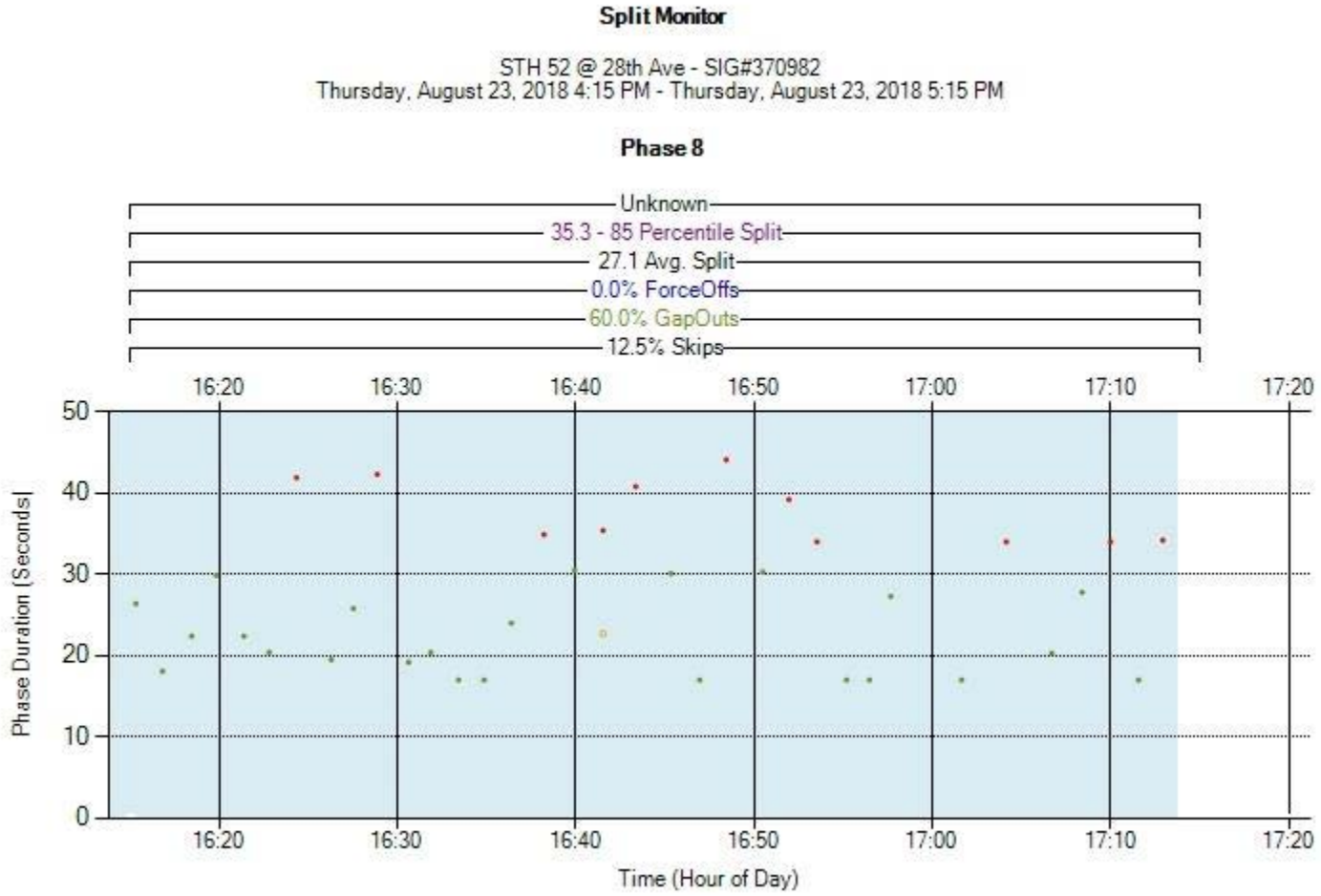
Isolated Signal – WIS 52 & 28th Avenue
Vistro Timings
8/23/2018 – 4:15 PM – 5:15 PM



Isolated Signal – WIS 52 & 28th Avenue
Vistro Timings
8/23/2018 – 4:15 PM – 5:15 PM

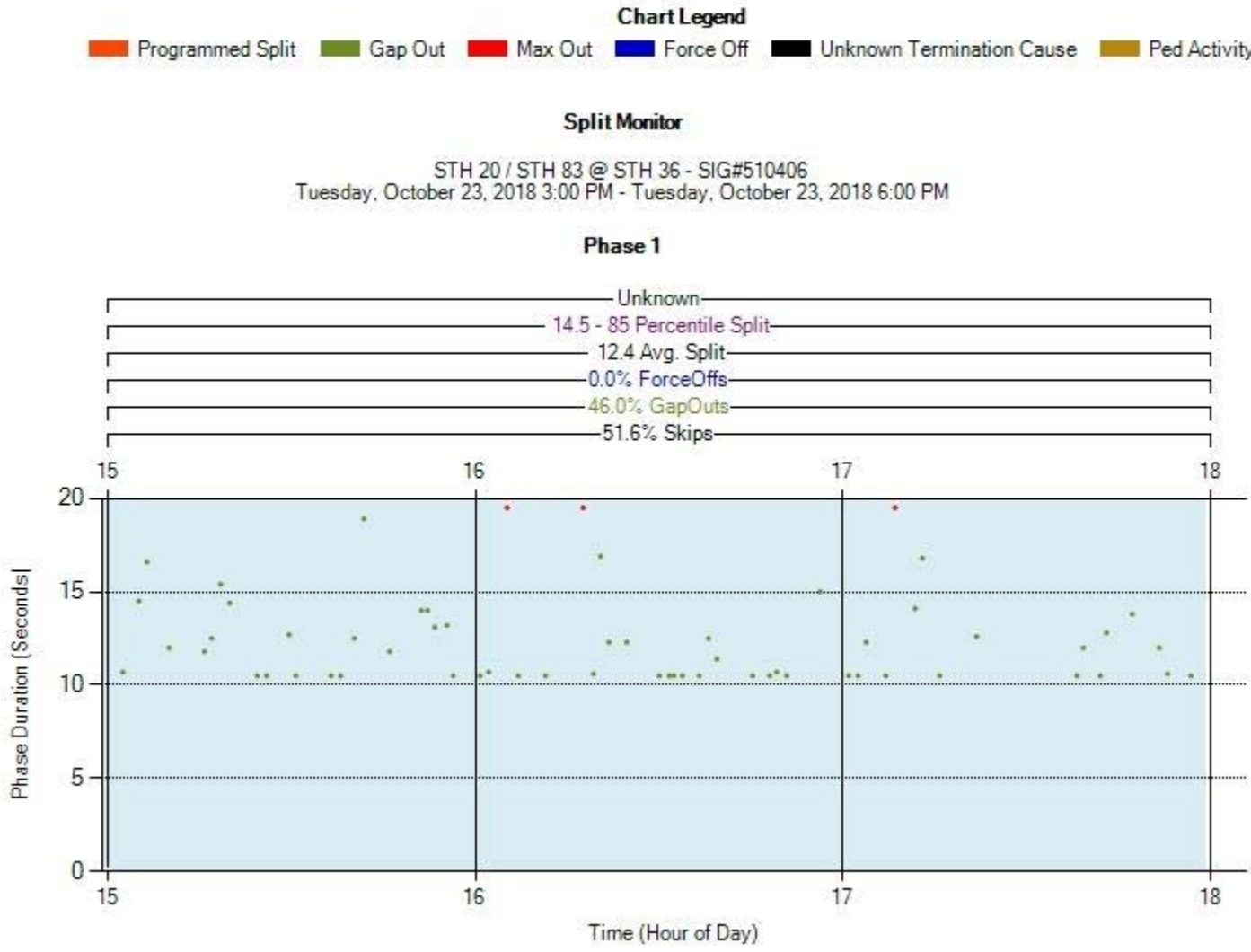


Isolated Signal – WIS 52 & 28th Avenue
Vistro Timings
8/23/2018 – 4:15 PM – 5:15 PM

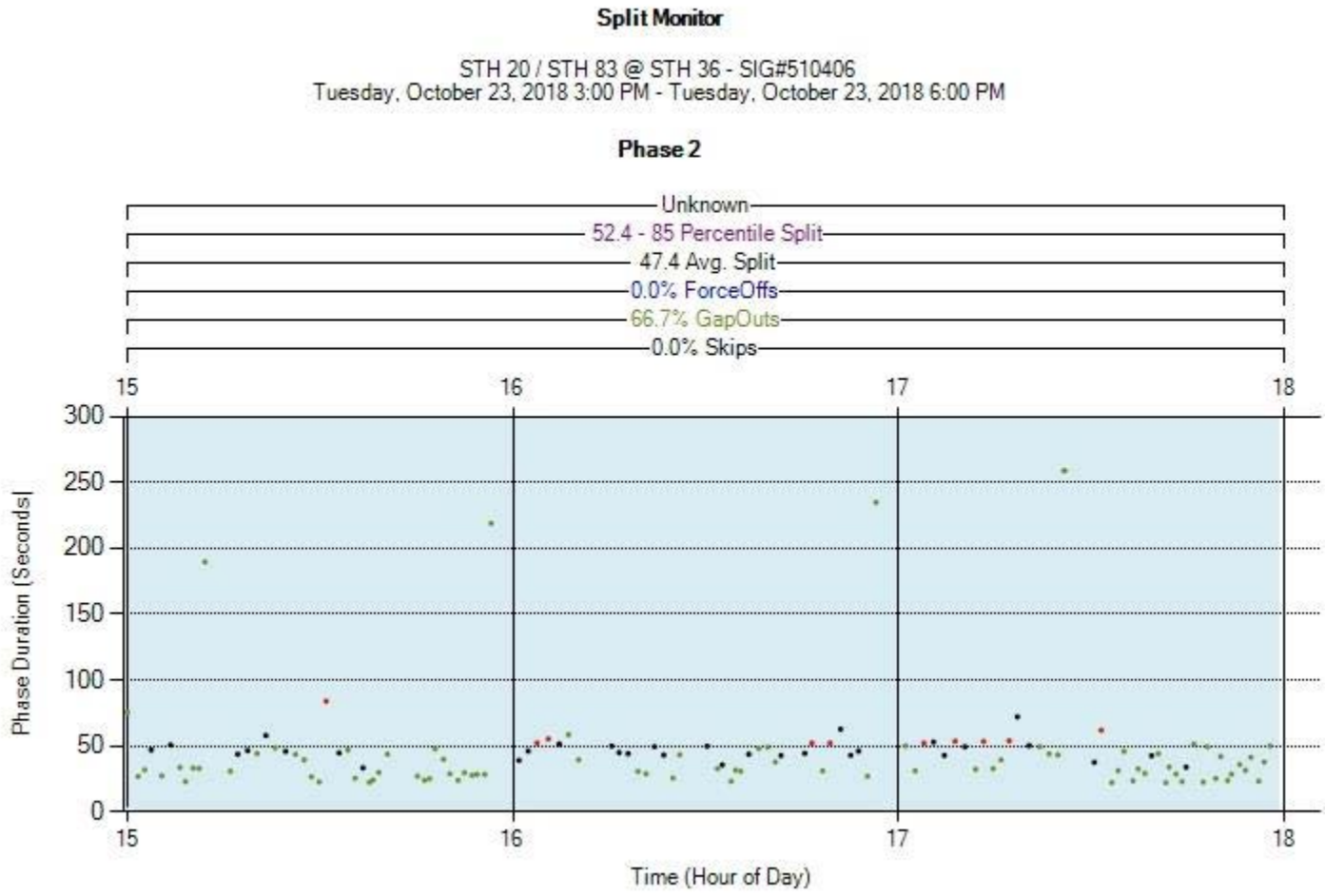


WisBOOM Outputs
WIS 20/83 & WIS 36
Existing Timings

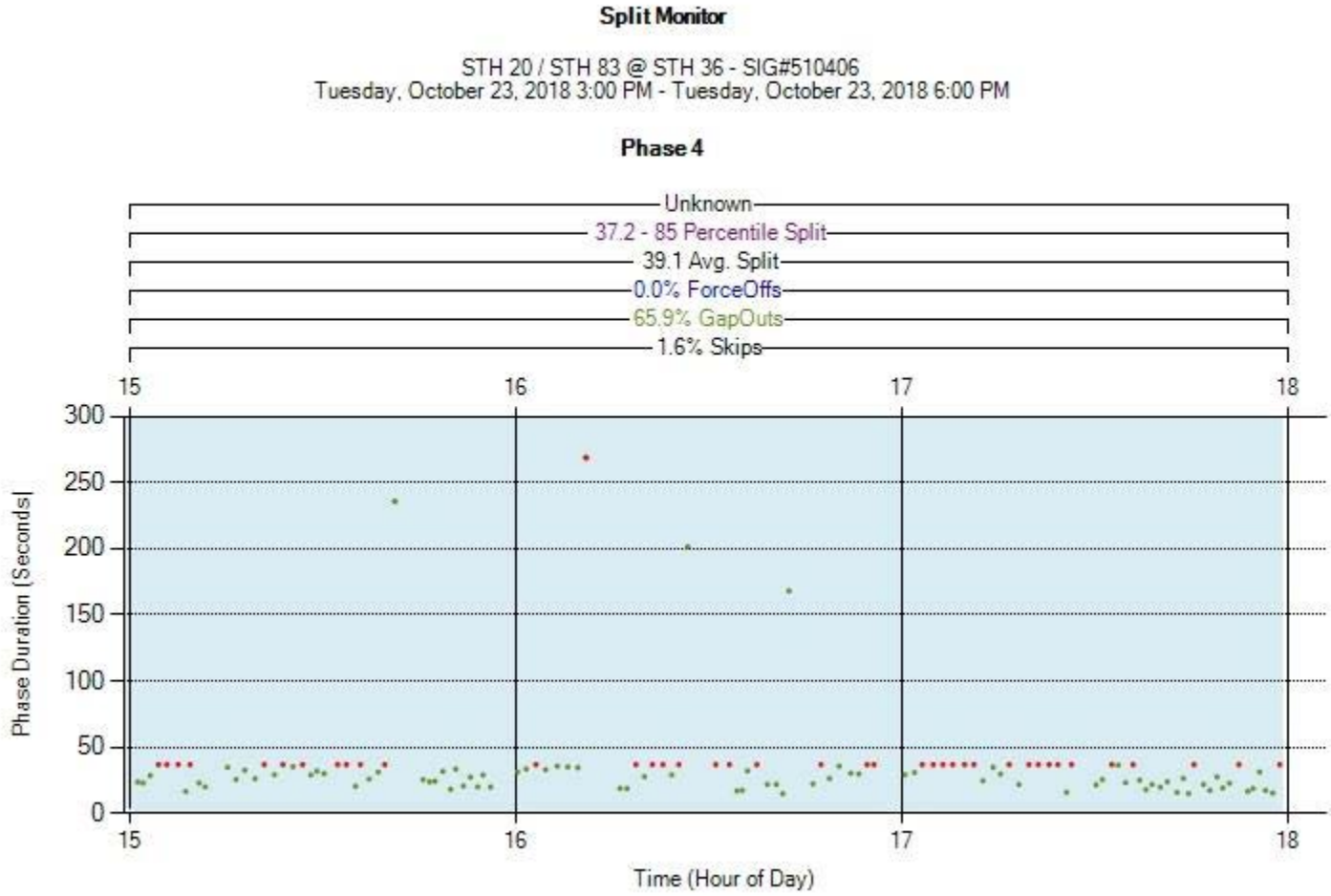
Isolated Signal – WIS 36 & 20/83
Baseline Timings
10/23/2018 – 3:00 PM – 6:00 PM



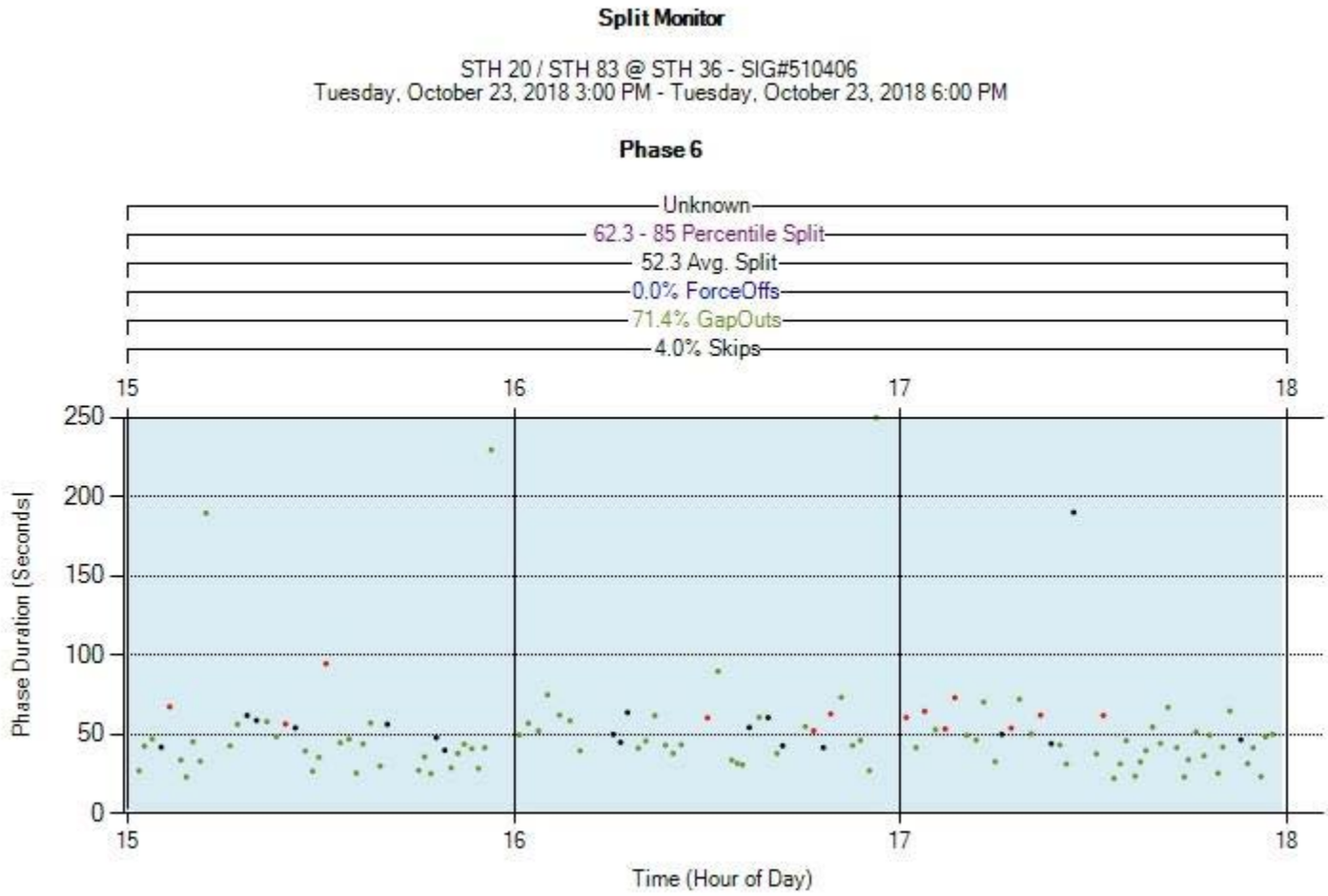
Isolated Signal – WIS 36 & 20/83
Baseline Timings
10/23/2018 – 3:00 PM – 6:00 PM



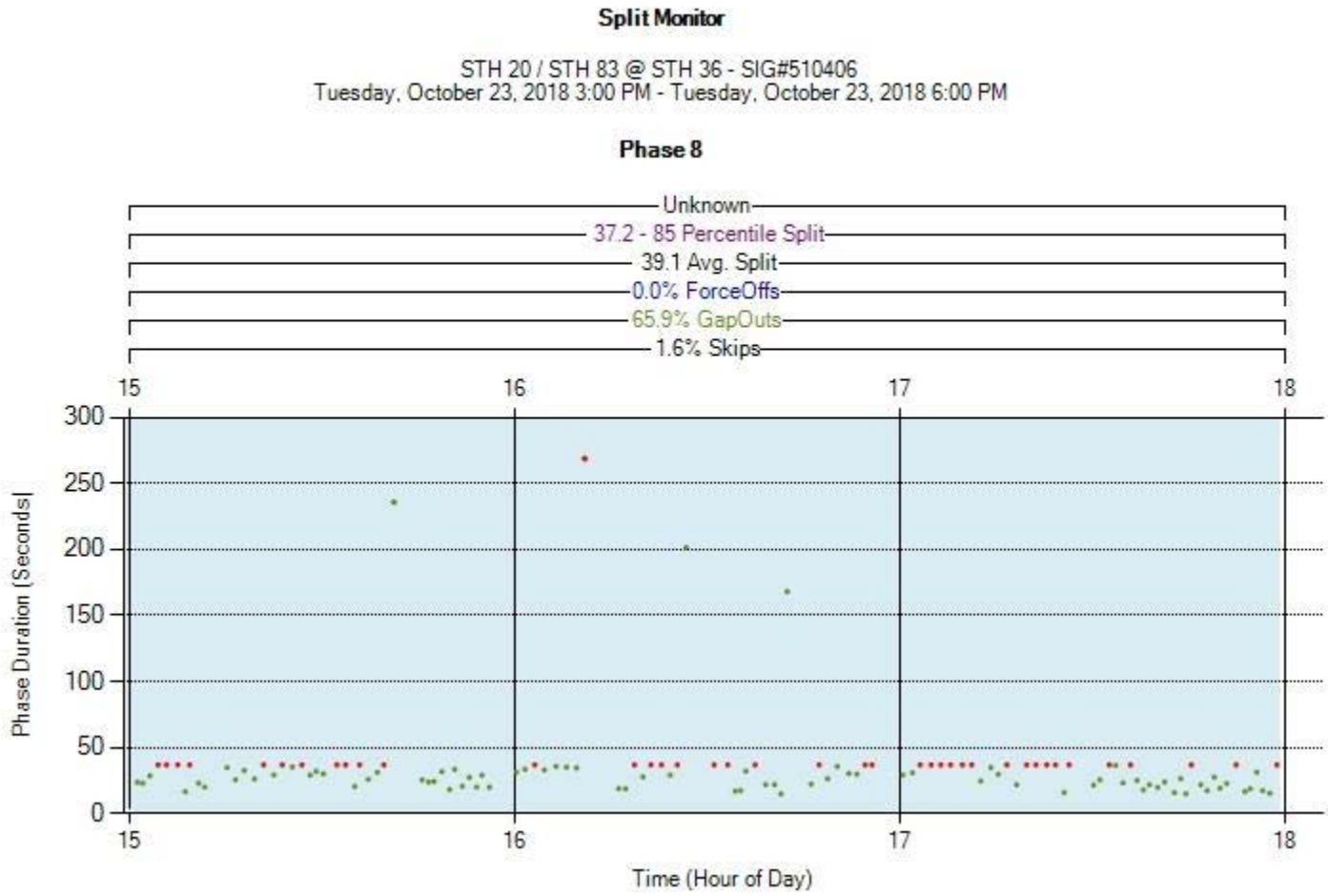
Isolated Signal – WIS 36 & 20/83
Baseline Timings
10/23/2018 – 3:00 PM – 6:00 PM



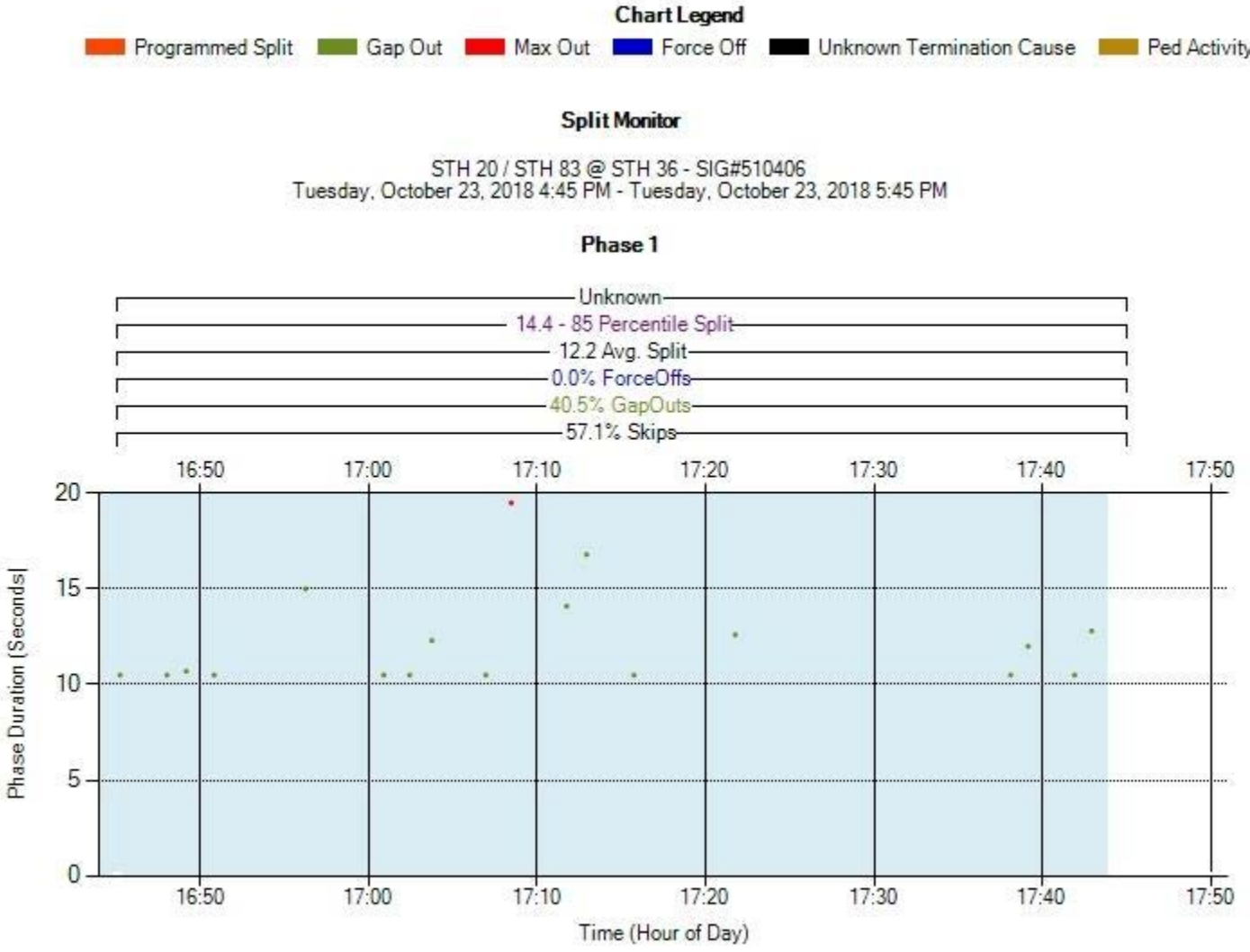
Isolated Signal – WIS 36 & 20/83
Baseline Timings
10/23/2018 – 3:00 PM – 6:00 PM



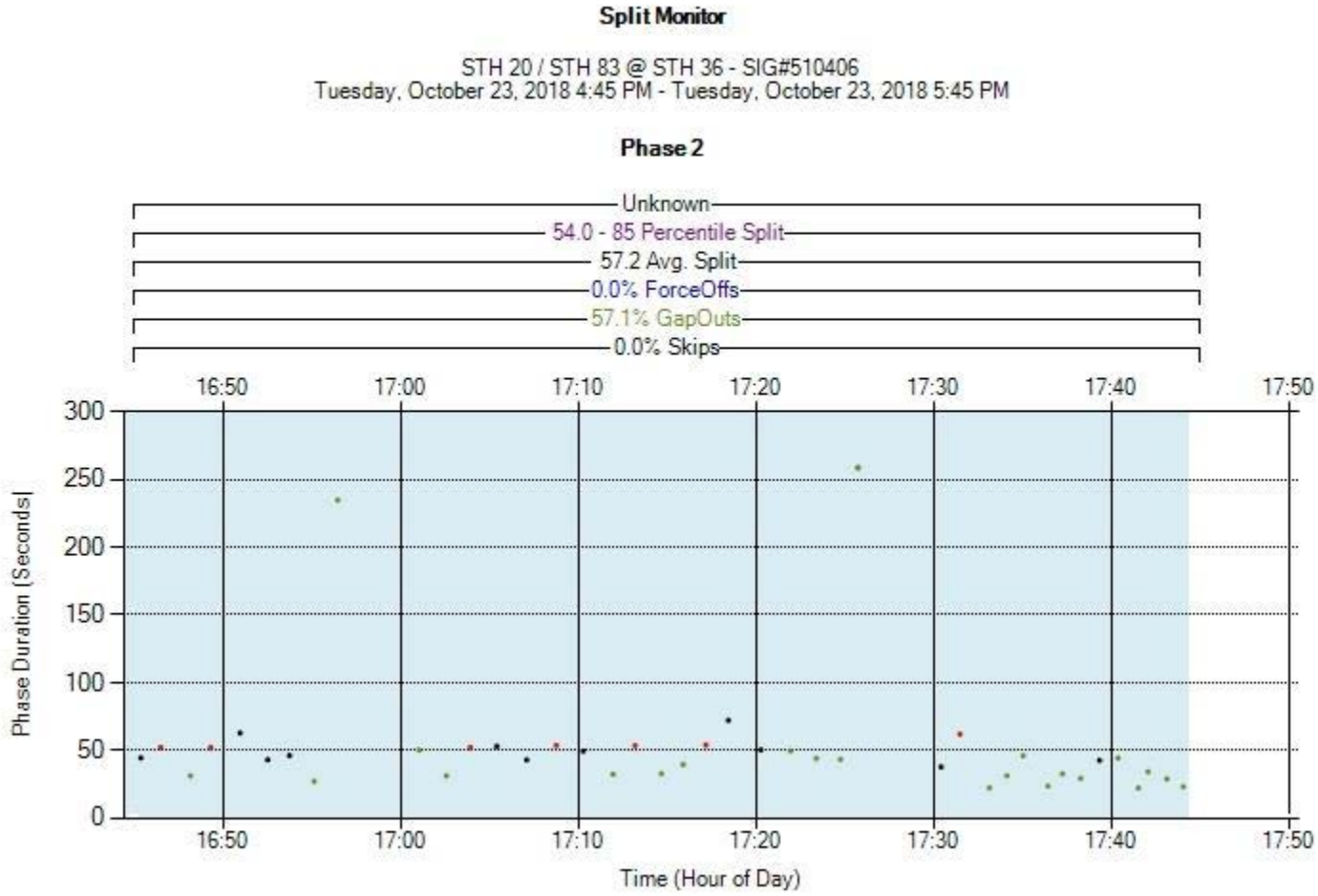
Isolated Signal – WIS 36 & 20/83
Baseline Timings
10/23/2018 – 3:00 PM – 6:00 PM



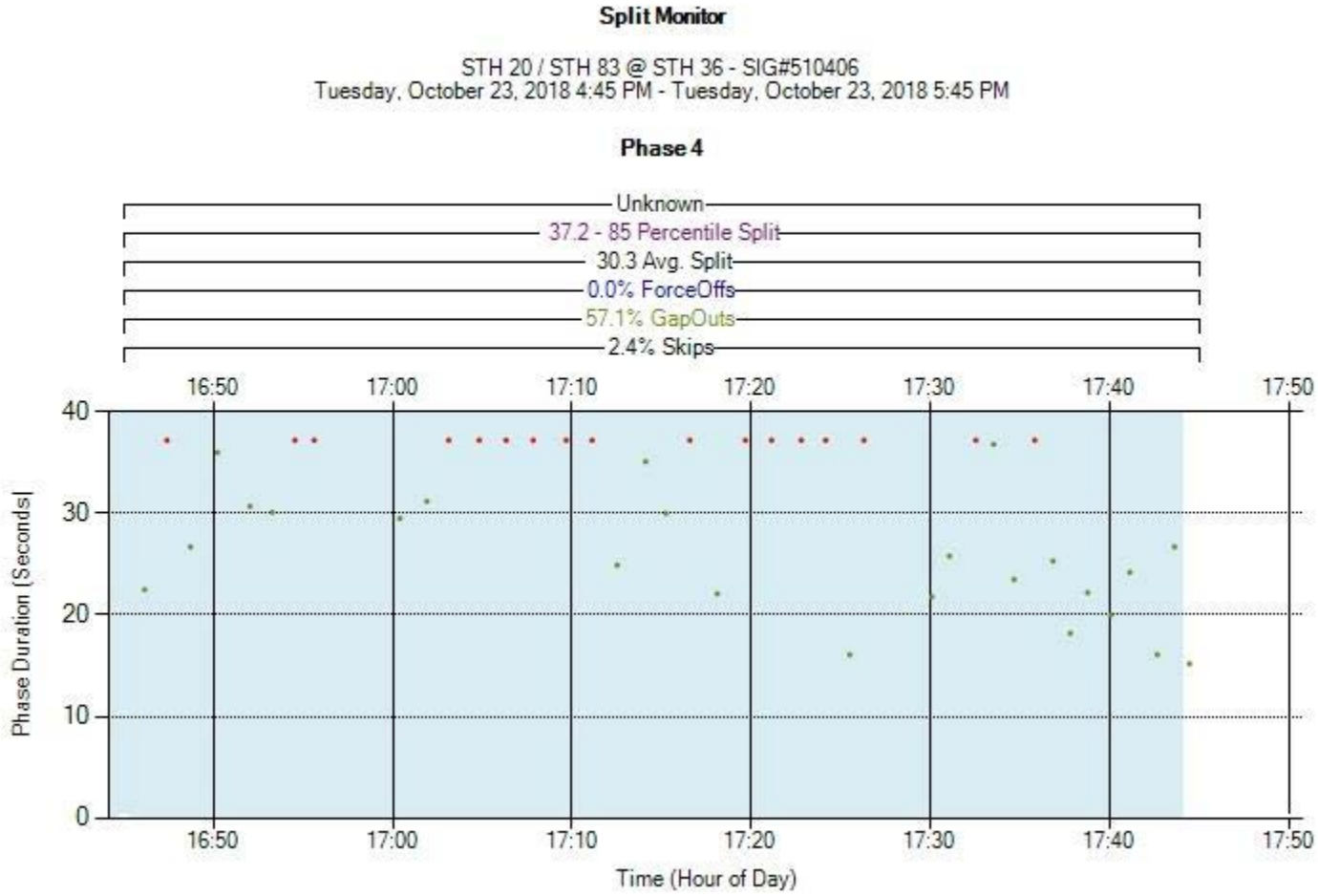
Isolated Signal – WIS 36 & 20/83
Baseline Timings
10/23/2018 – 4:45 PM – 5:45 PM



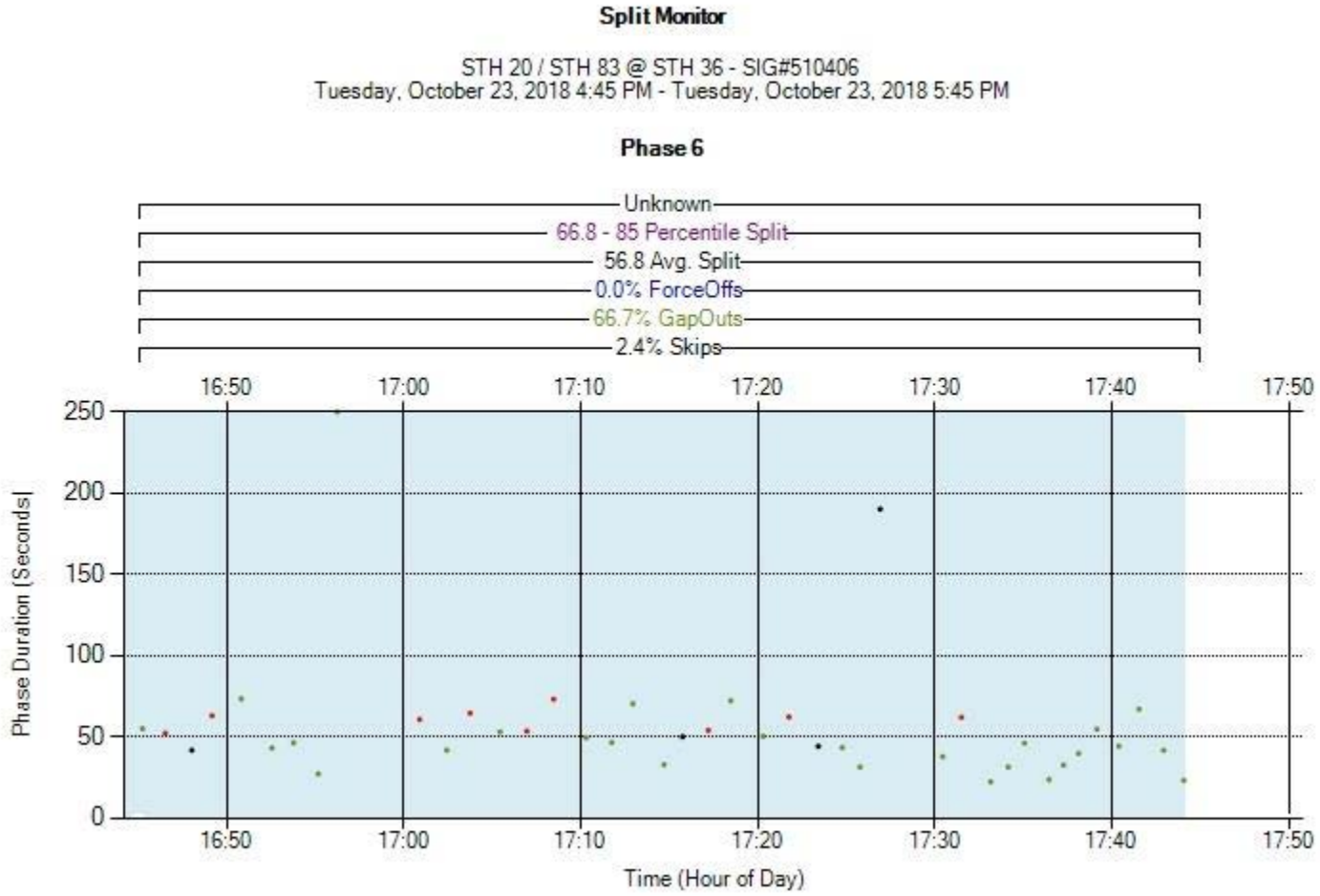
Isolated Signal – WIS 36 & 20/83
Baseline Timings
10/23/2018 – 4:45 PM – 5:45 PM



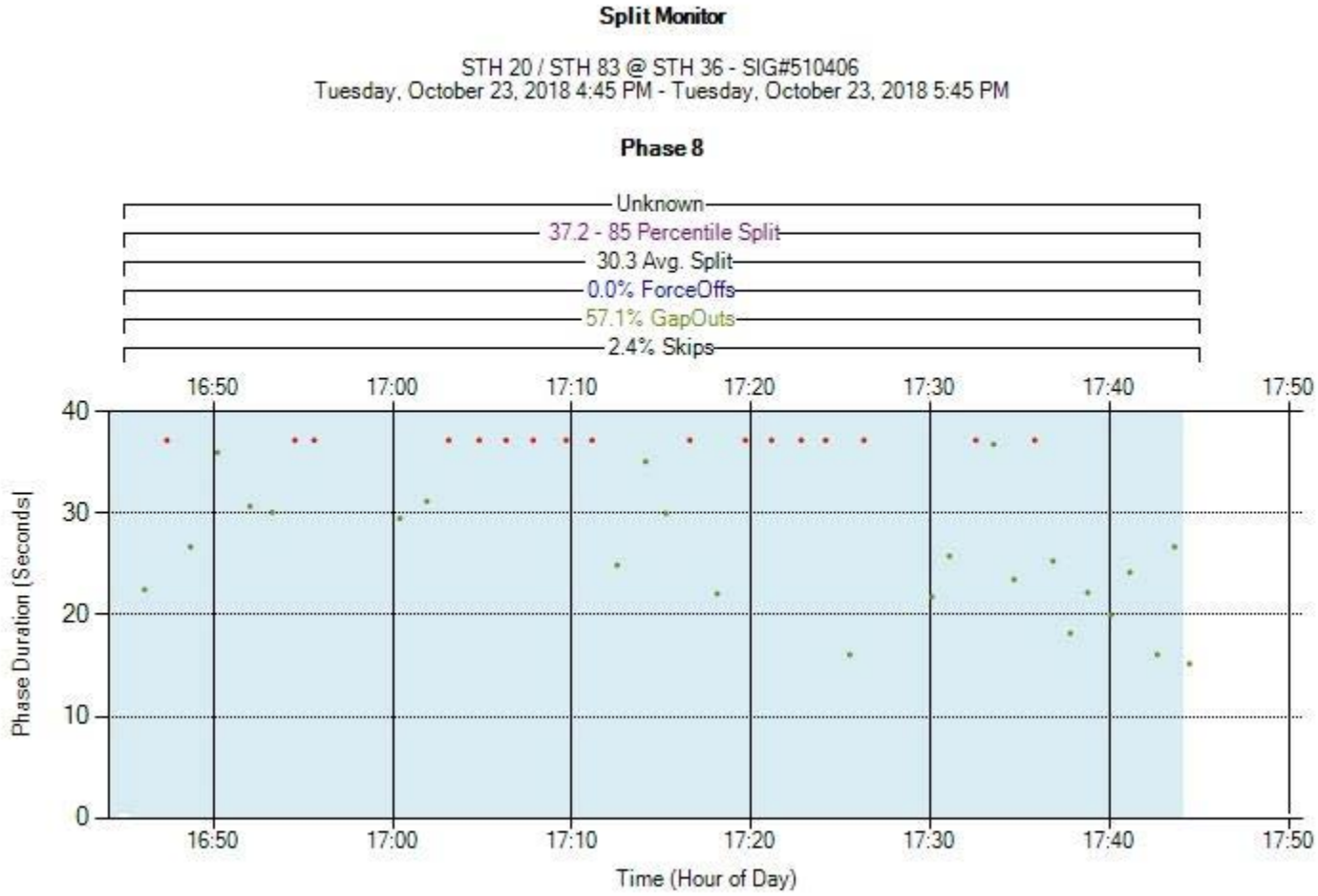
Isolated Signal – WIS 36 & 20/83
Baseline Timings
10/23/2018 – 4:45 PM – 5:45 PM



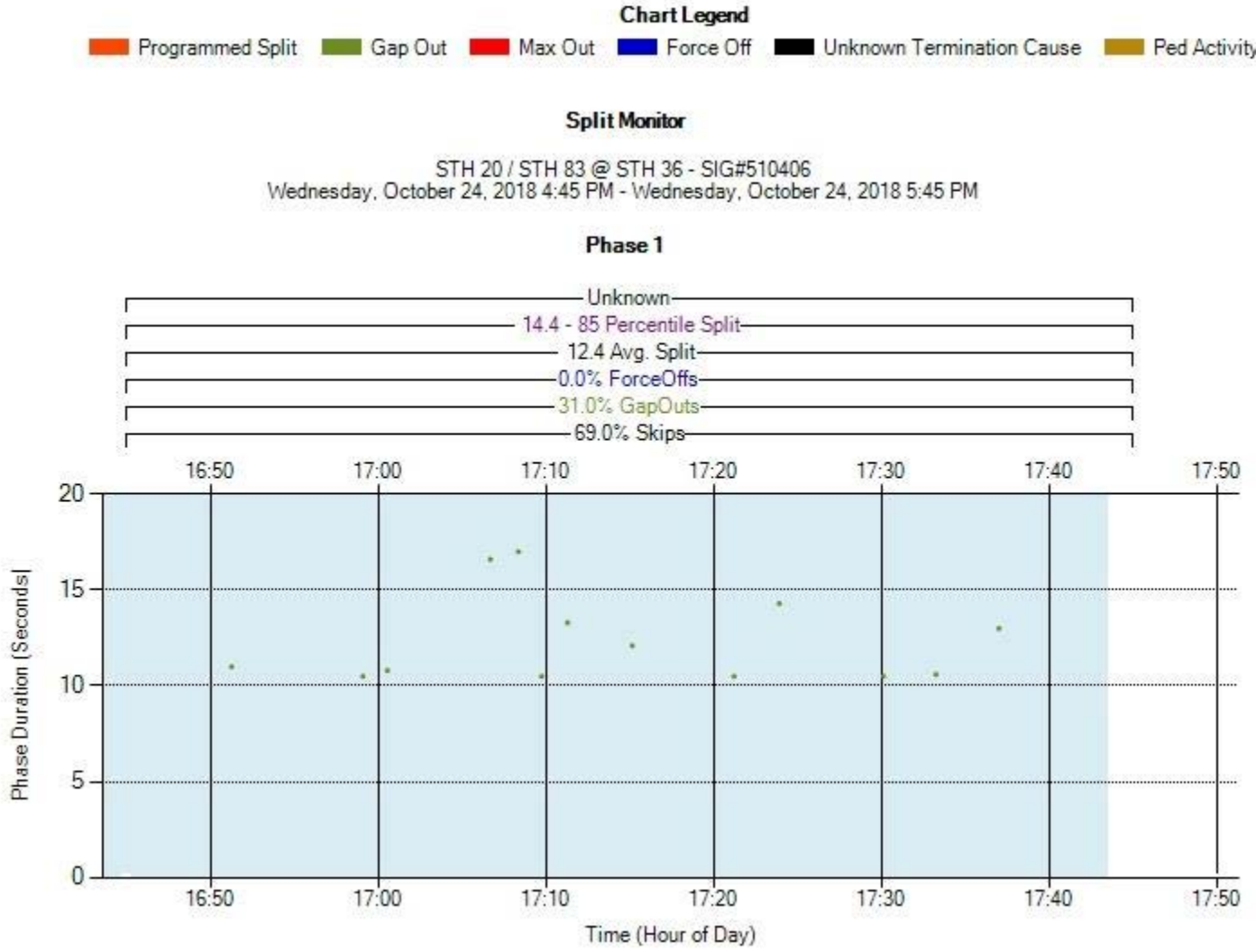
Isolated Signal – WIS 36 & 20/83
Baseline Timings
10/23/2018 – 4:45 PM – 5:45 PM



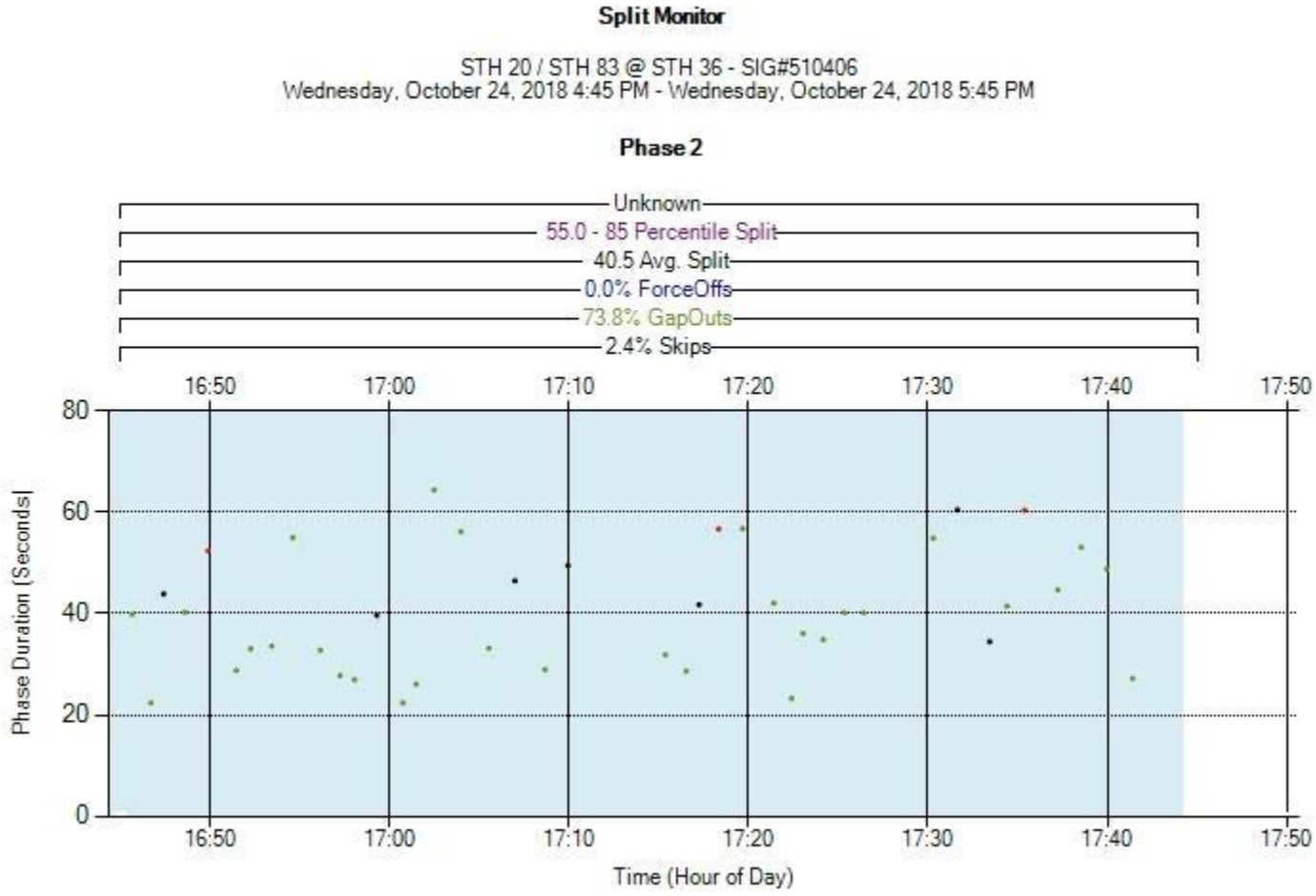
Isolated Signal – WIS 36 & 20/83
Baseline Timings
10/23/2018 – 4:45 PM – 5:45 PM



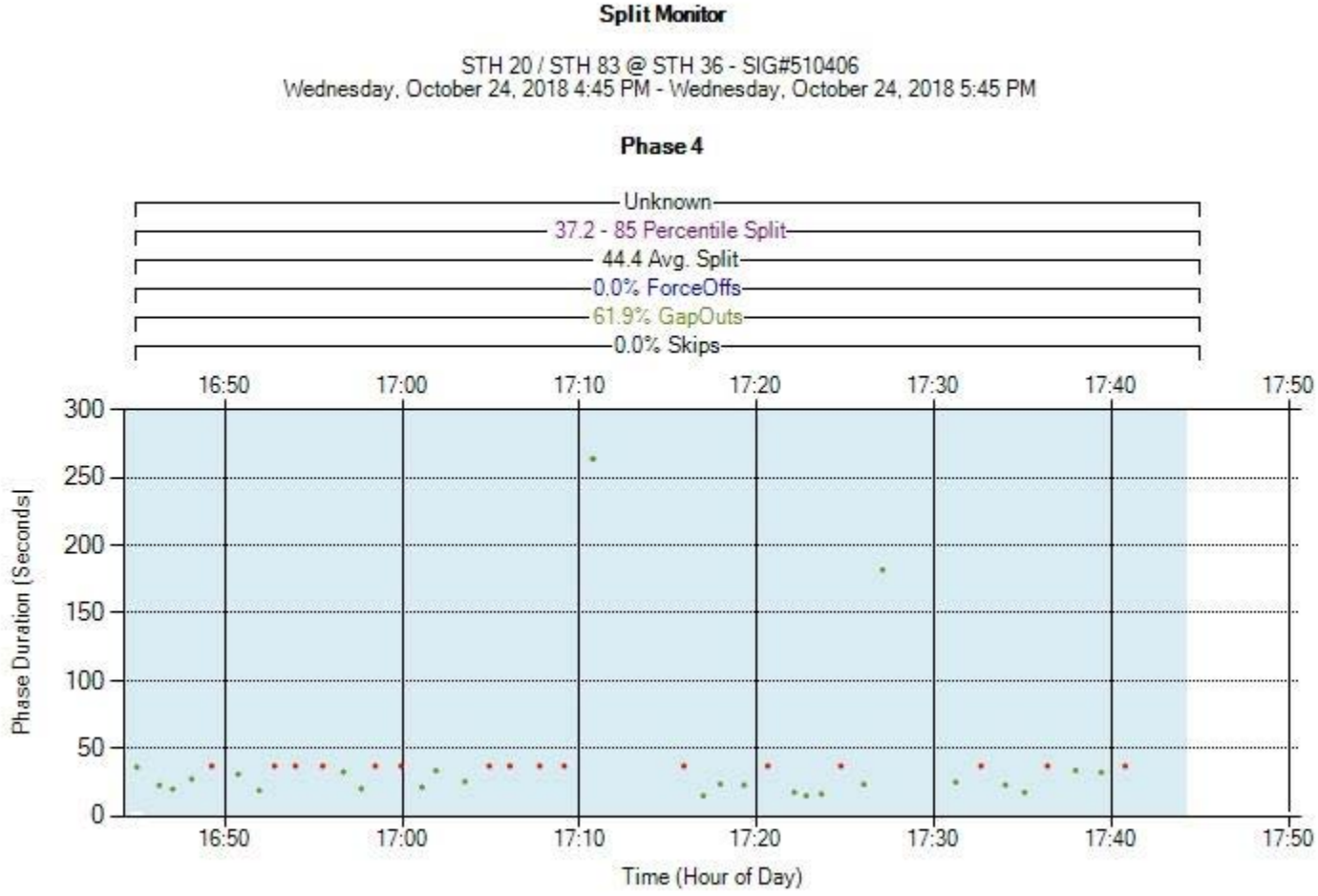
Isolated Signal – WIS 36 & 20/83
Baseline Timings
10/24/2018 – 4:45 PM – 5:45 PM



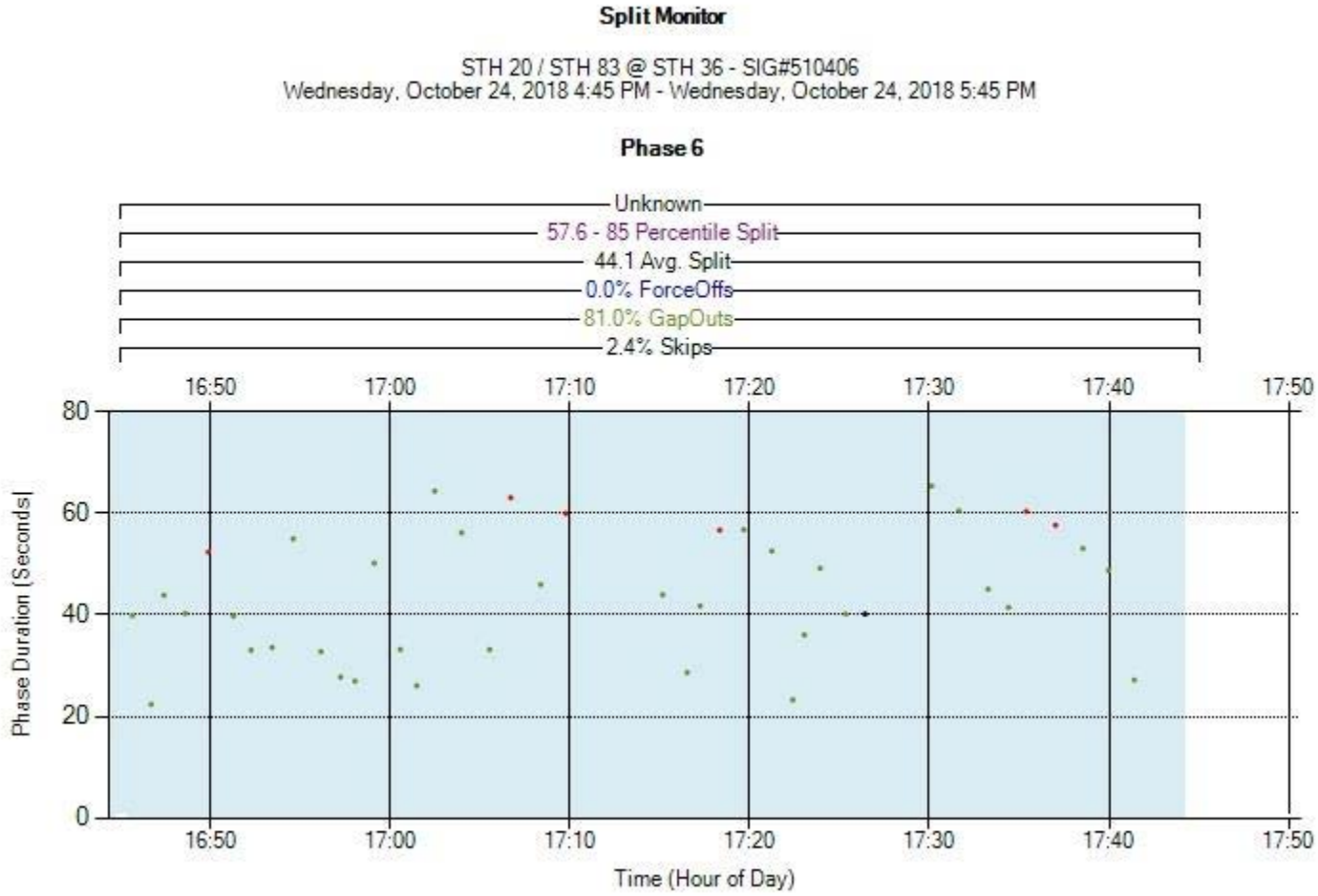
Isolated Signal – WIS 36 & 20/83
Baseline Timings
10/24/2018 – 4:45 PM – 5:45 PM



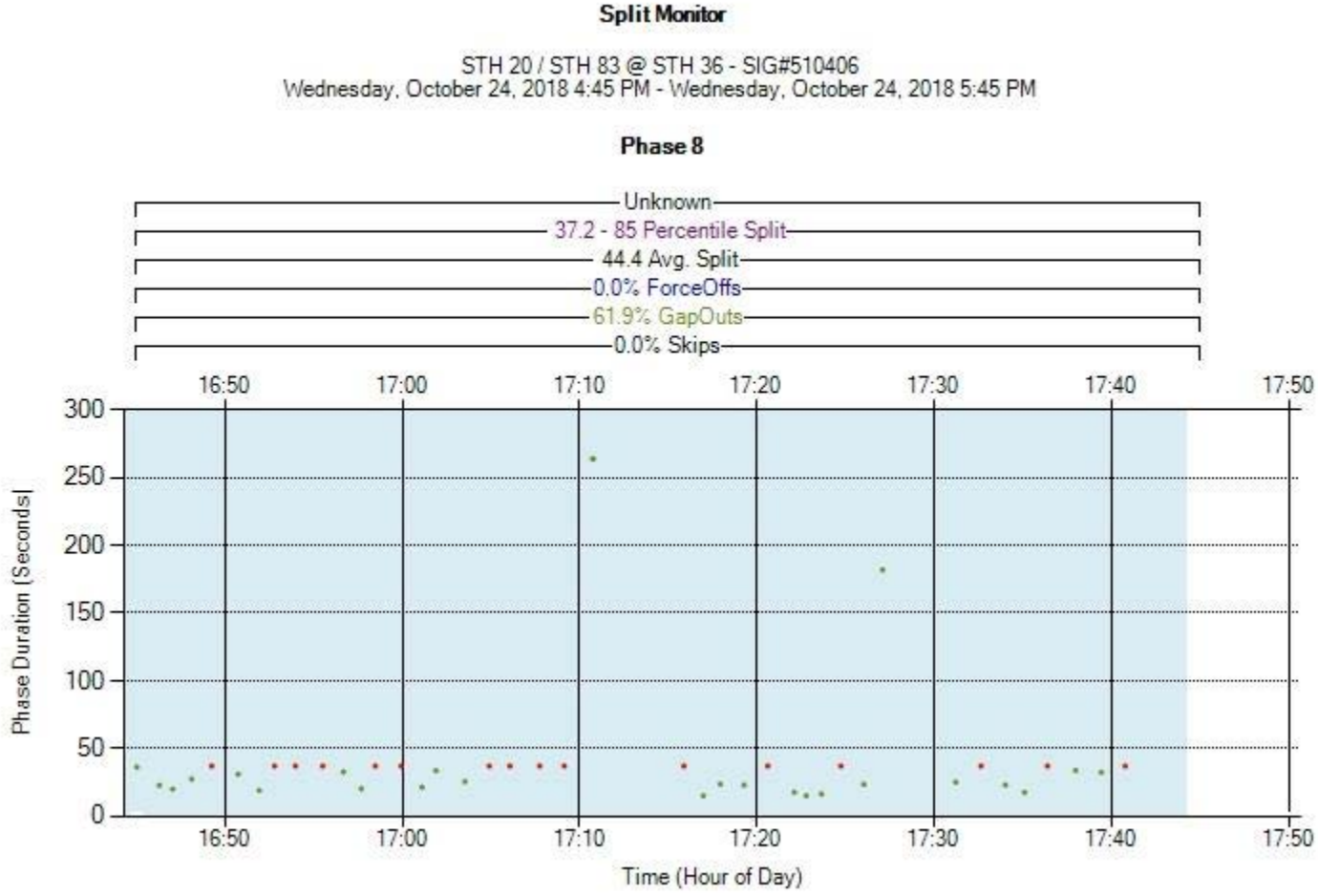
Isolated Signal – WIS 36 & 20/83
Baseline Timings
10/24/2018 – 4:45 PM – 5:45 PM



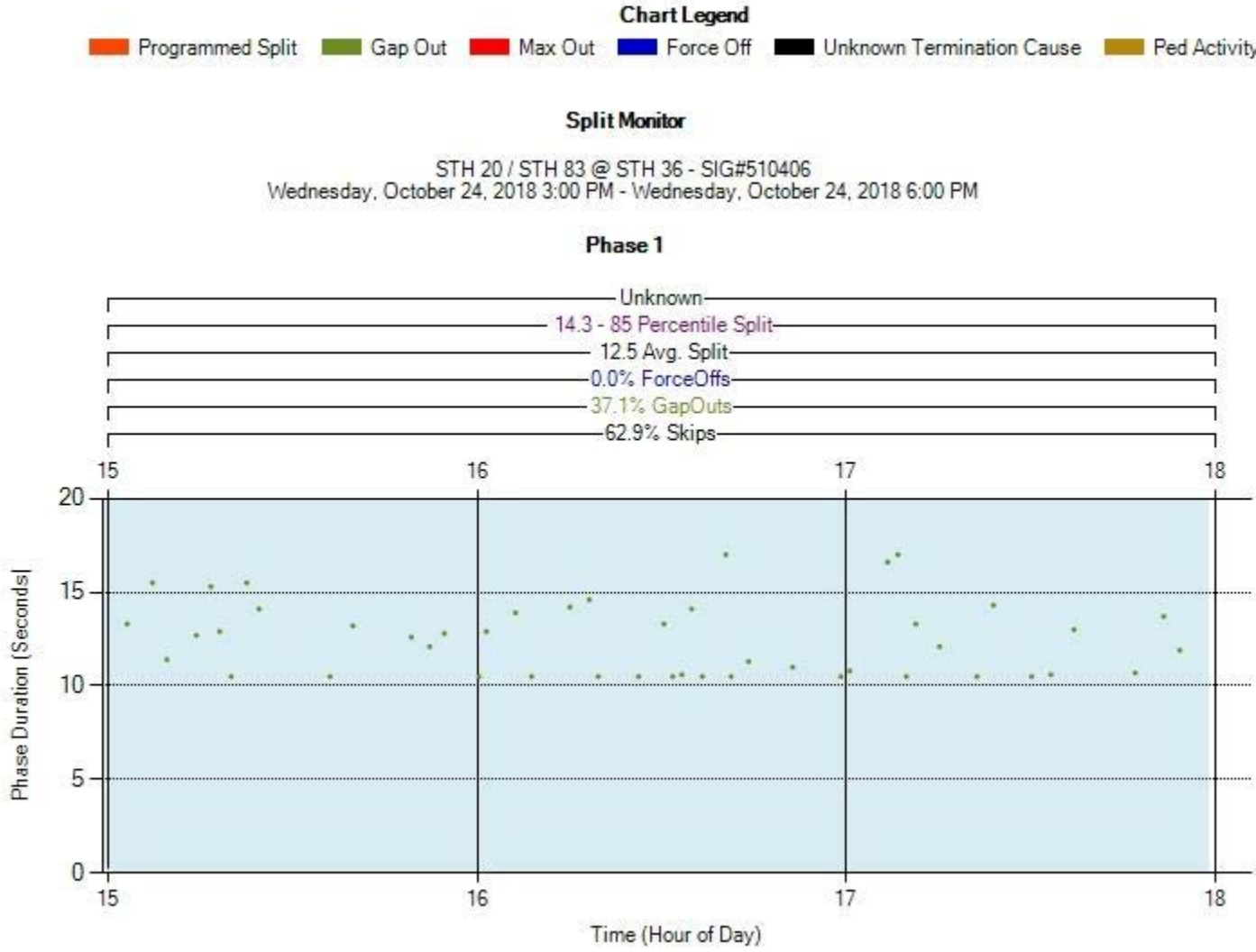
Isolated Signal – WIS 36 & 20/83
Baseline Timings
10/24/2018 – 4:45 PM – 5:45 PM



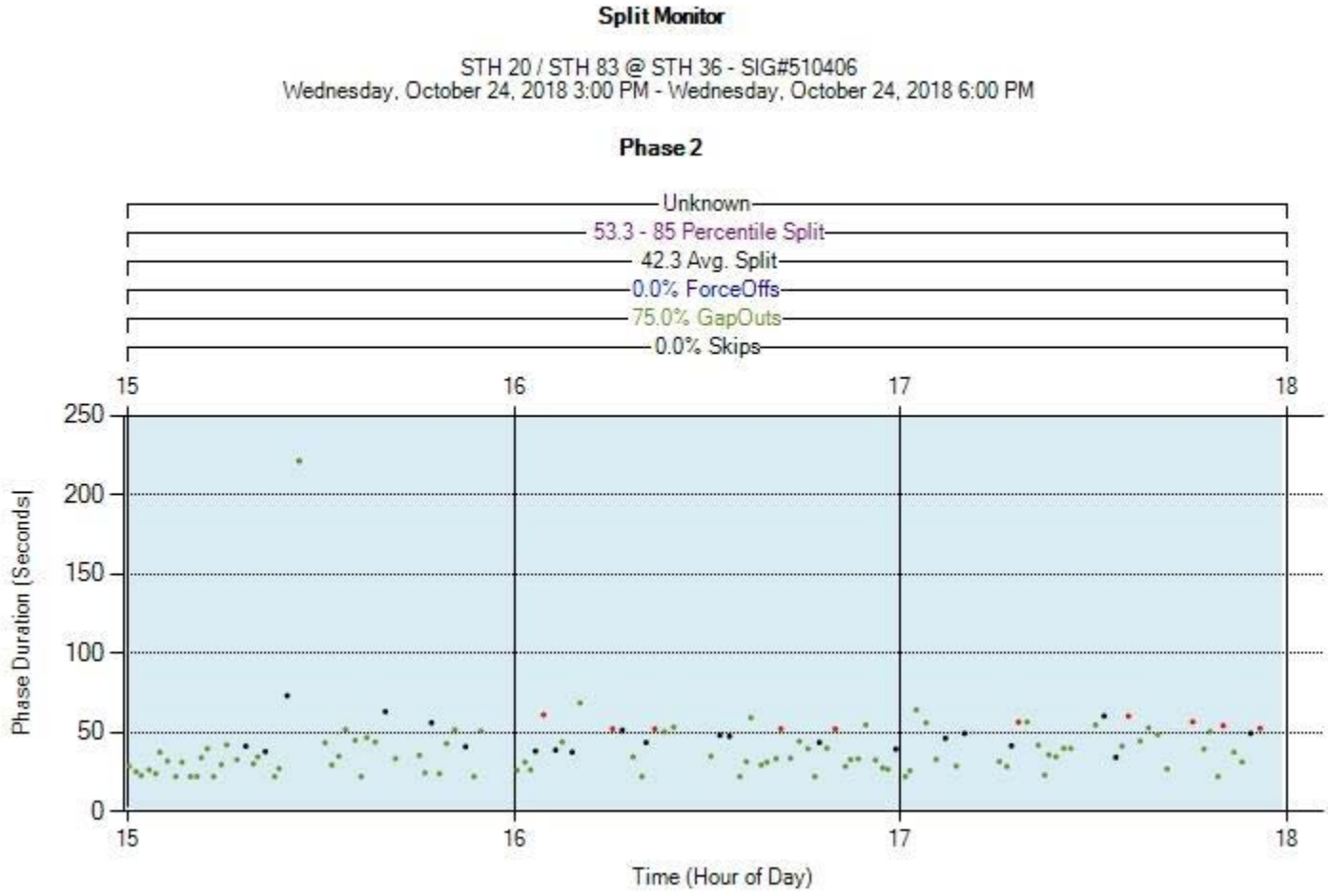
Isolated Signal – WIS 36 & 20/83
Baseline Timings
10/24/2018 – 4:45 PM – 5:45 PM



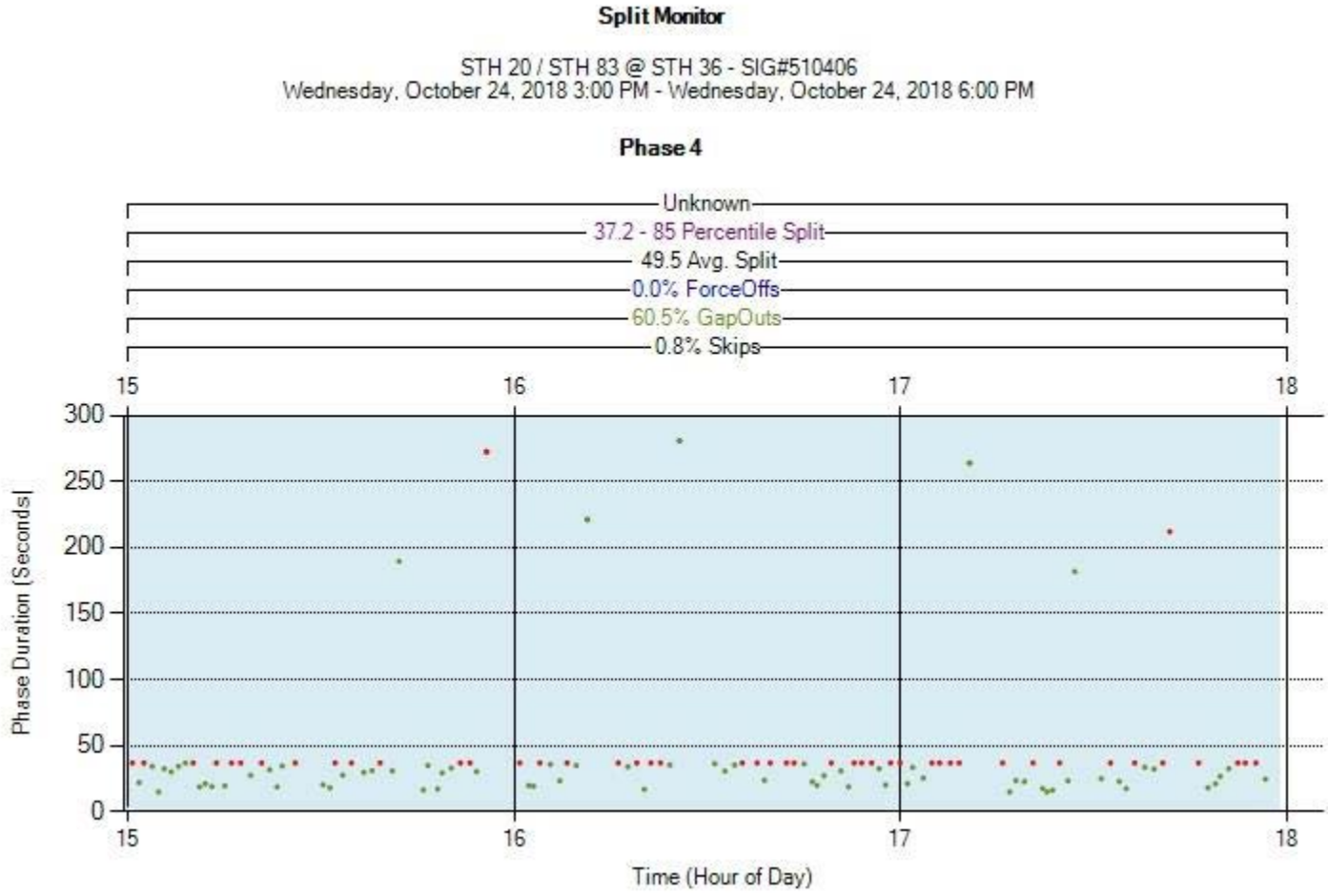
Isolated Signal – WIS 36 & 20/83
Baseline Timings
10/24/2018 – 3:00 PM – 6:00 PM



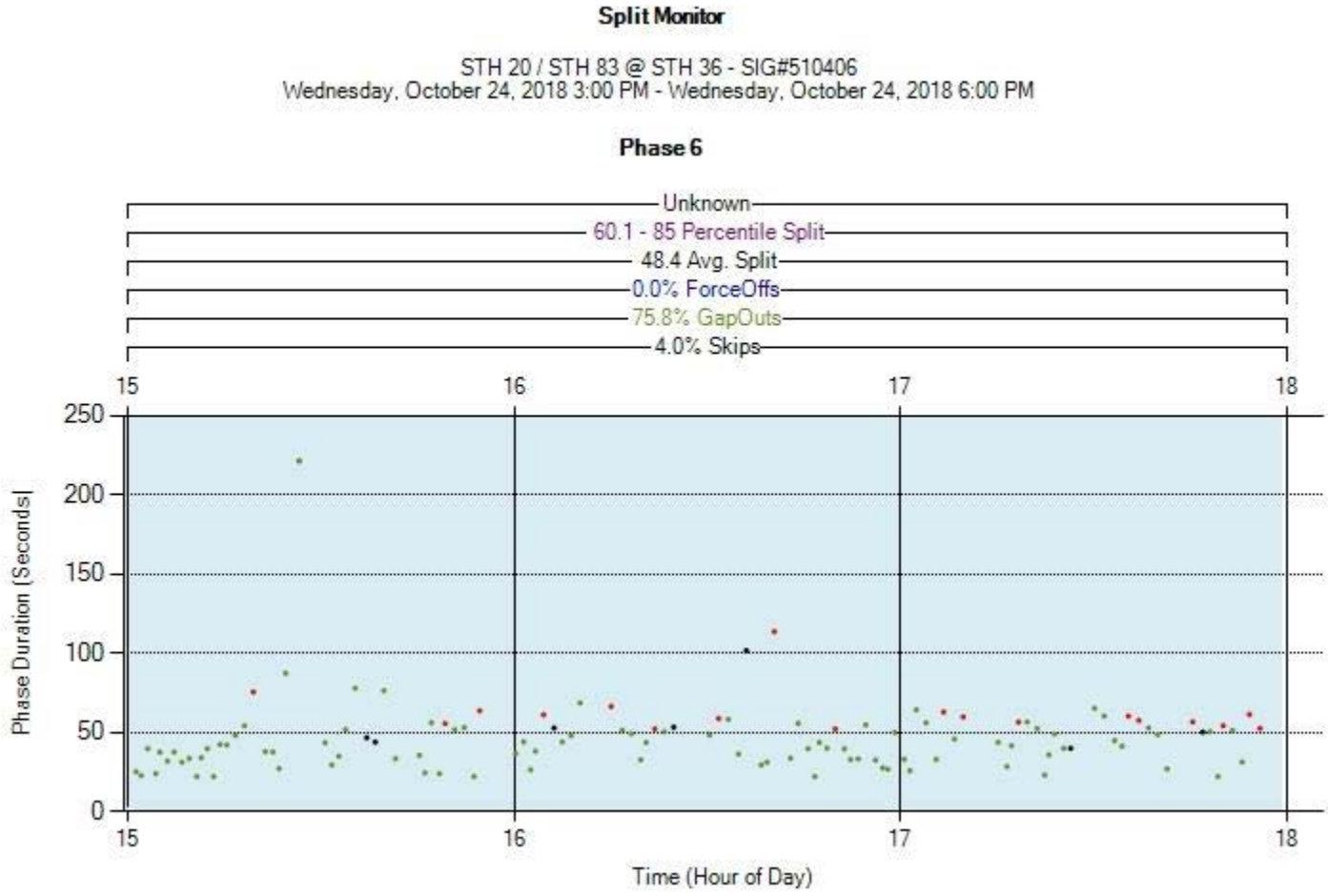
Isolated Signal – WIS 36 & 20/83
Baseline Timings
10/24/2018 – 3:00 PM – 6:00 PM



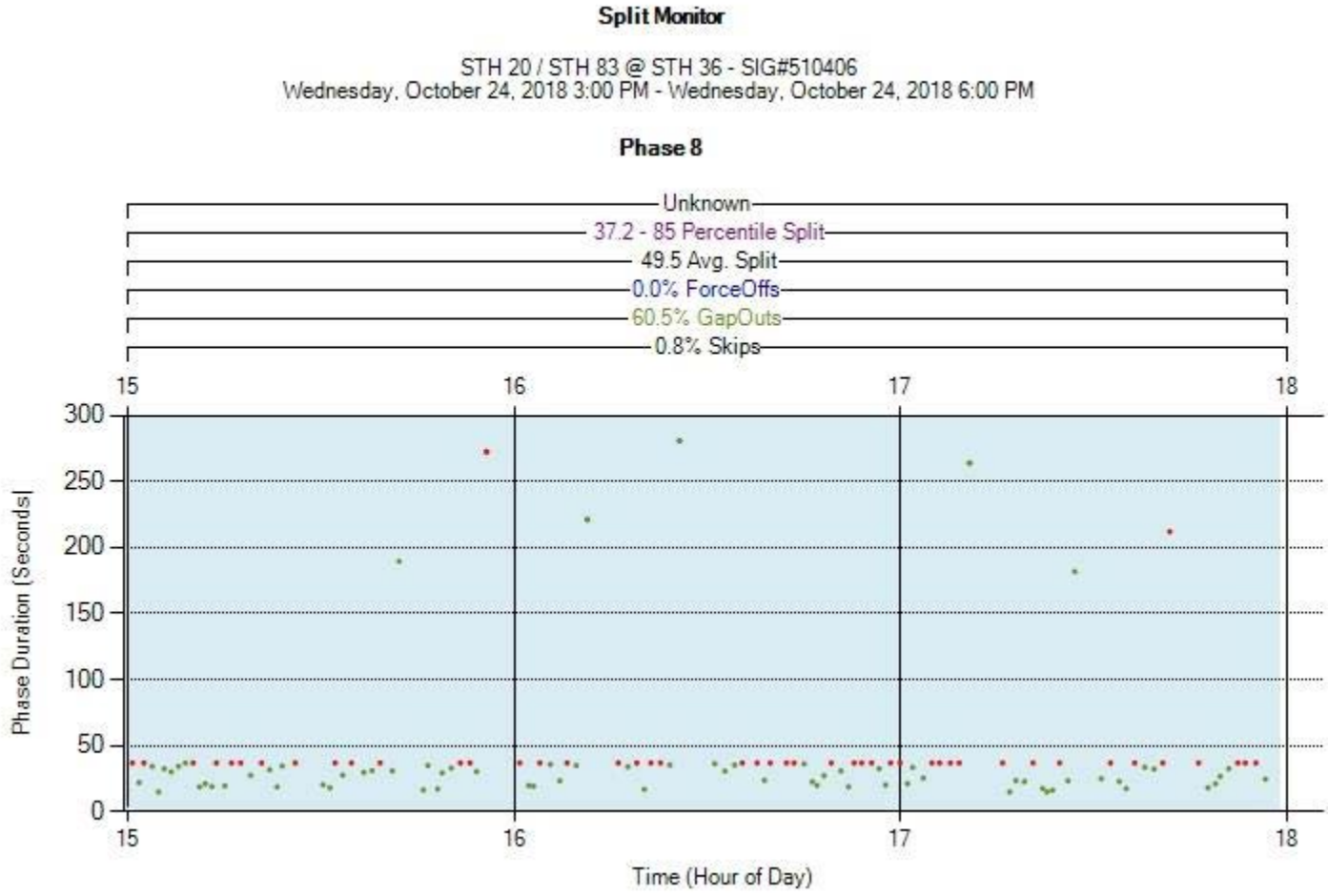
Isolated Signal – WIS 36 & 20/83
Baseline Timings
10/24/2018 – 3:00 PM – 6:00 PM



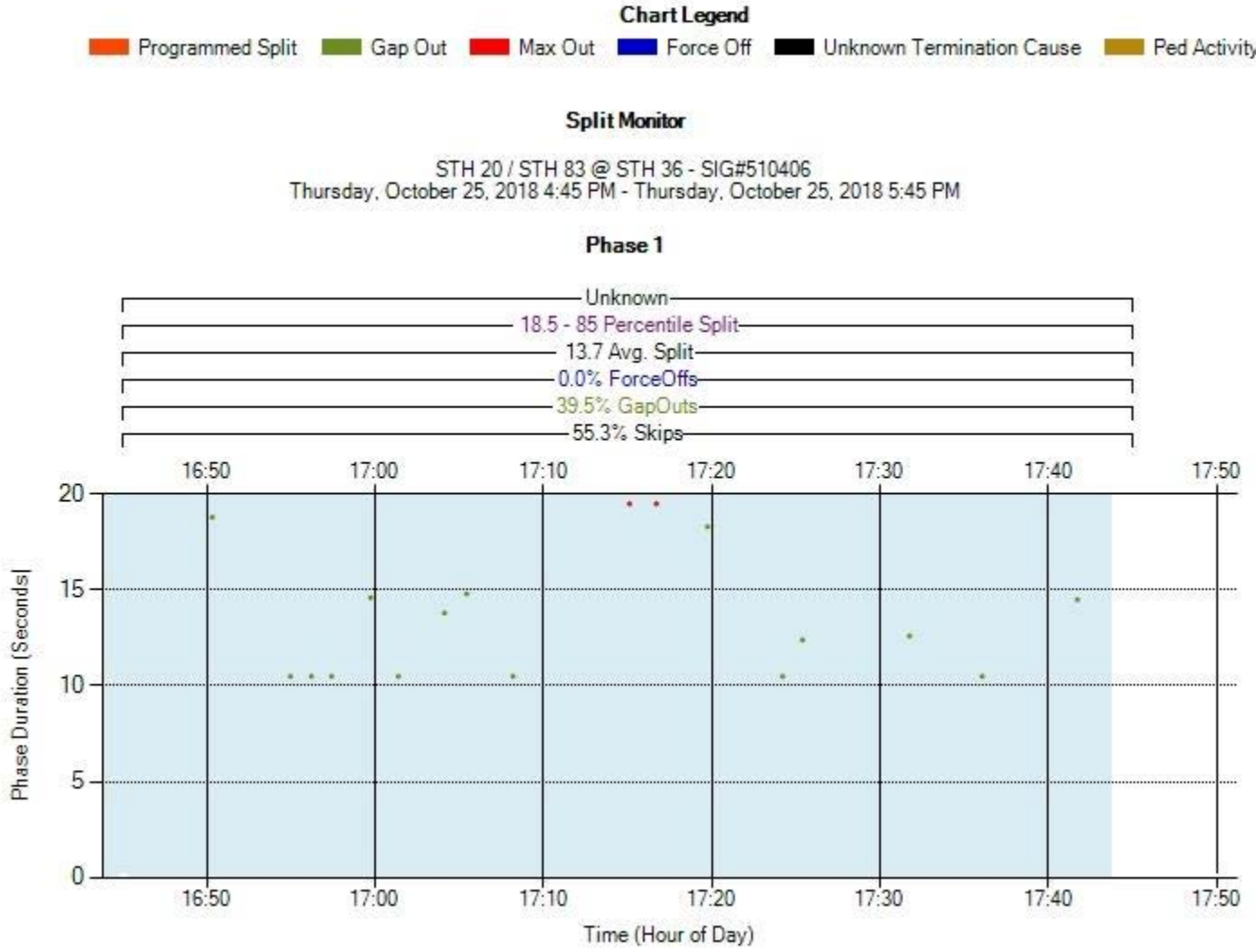
Isolated Signal – WIS 36 & 20/83
Baseline Timings
10/24/2018 – 3:00 PM – 6:00 PM



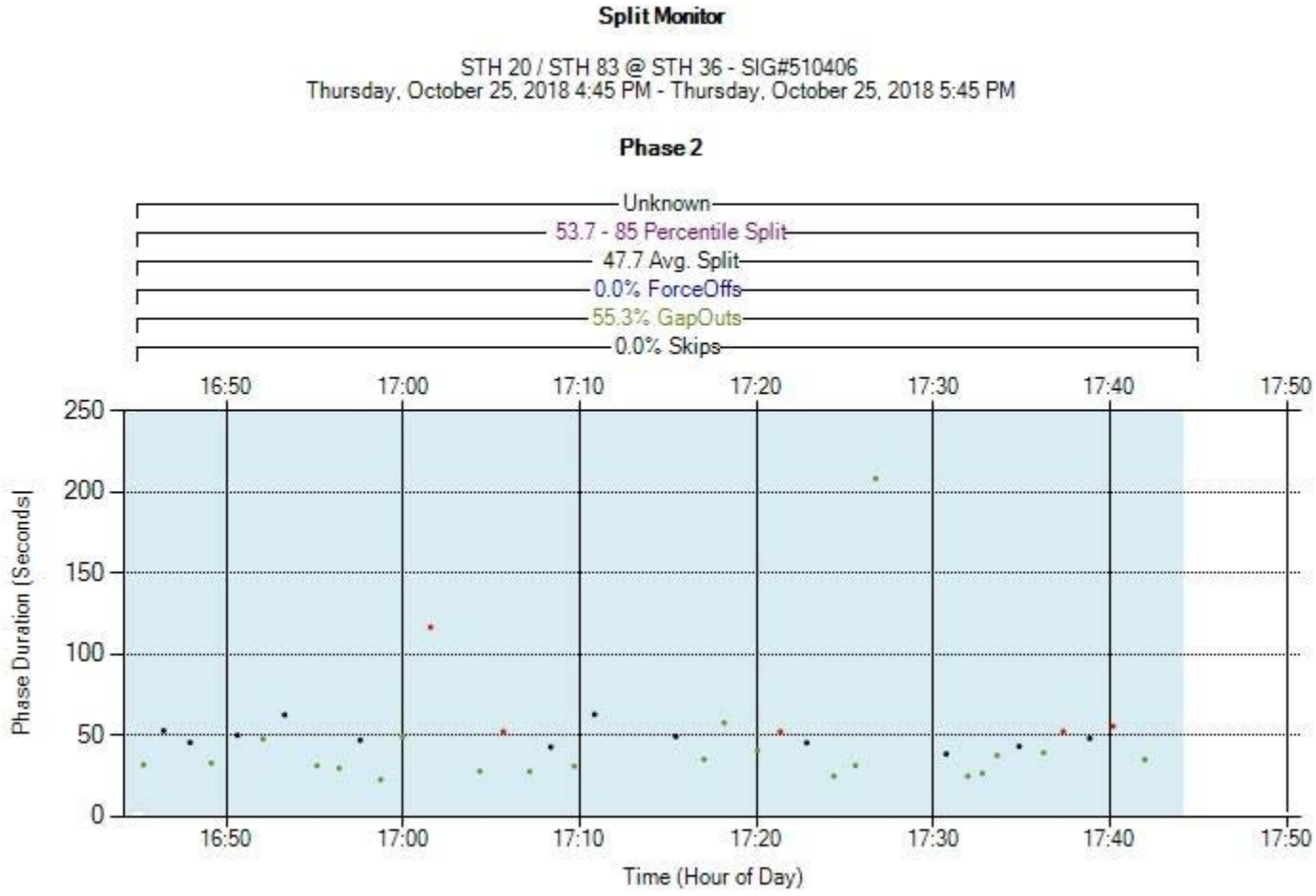
Isolated Signal – WIS 36 & 20/83
Baseline Timings
10/24/2018 – 3:00 PM – 6:00 PM



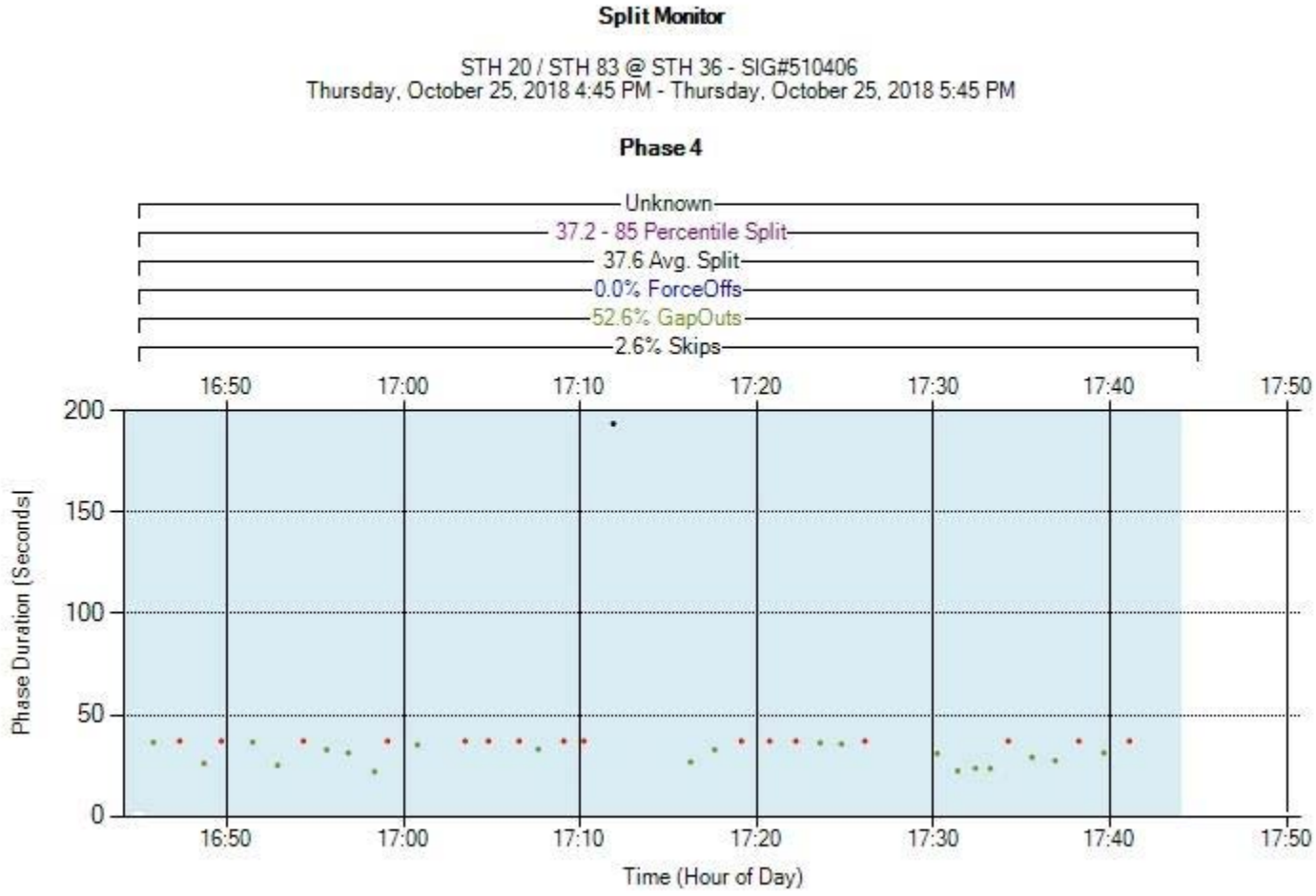
Isolated Signal – WIS 36 & 20/83
Baseline Timings
10/25/2018 – 4:45 PM – 5:45 PM



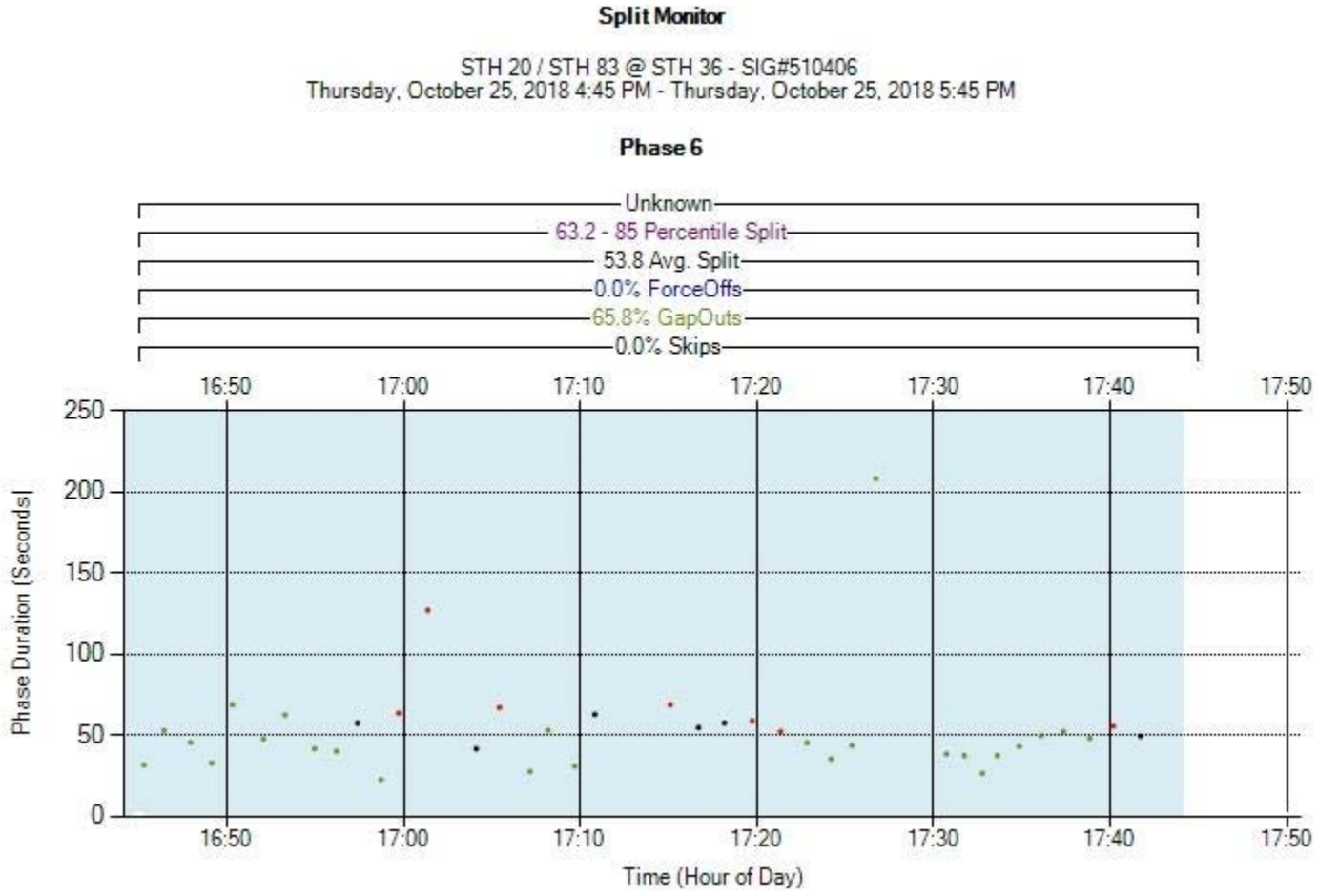
Isolated Signal – WIS 36 & 20/83
Baseline Timings
10/25/2018 – 4:45 PM – 5:45 PM



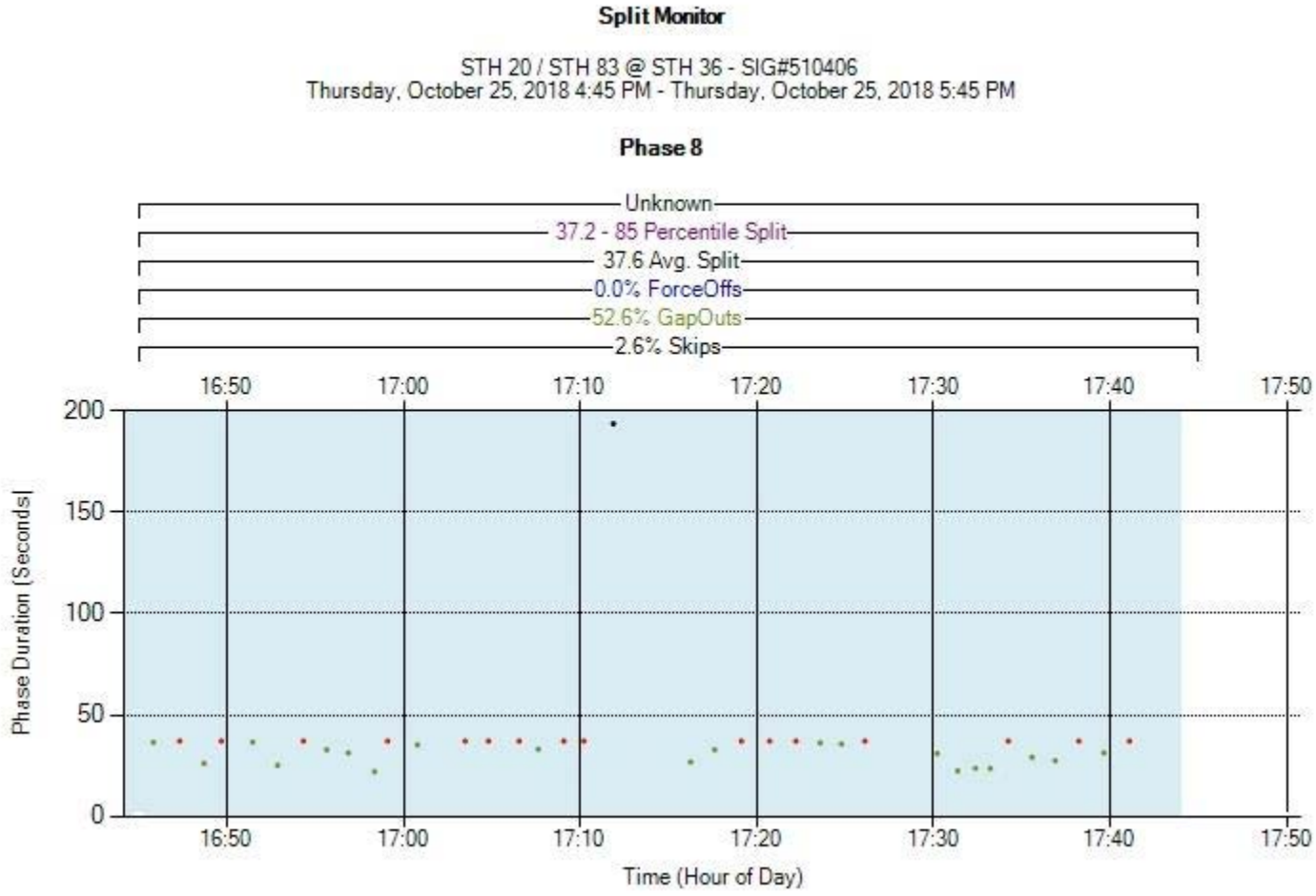
Isolated Signal – WIS 36 & 20/83
Baseline Timings
10/25/2018 – 4:45 PM – 5:45 PM



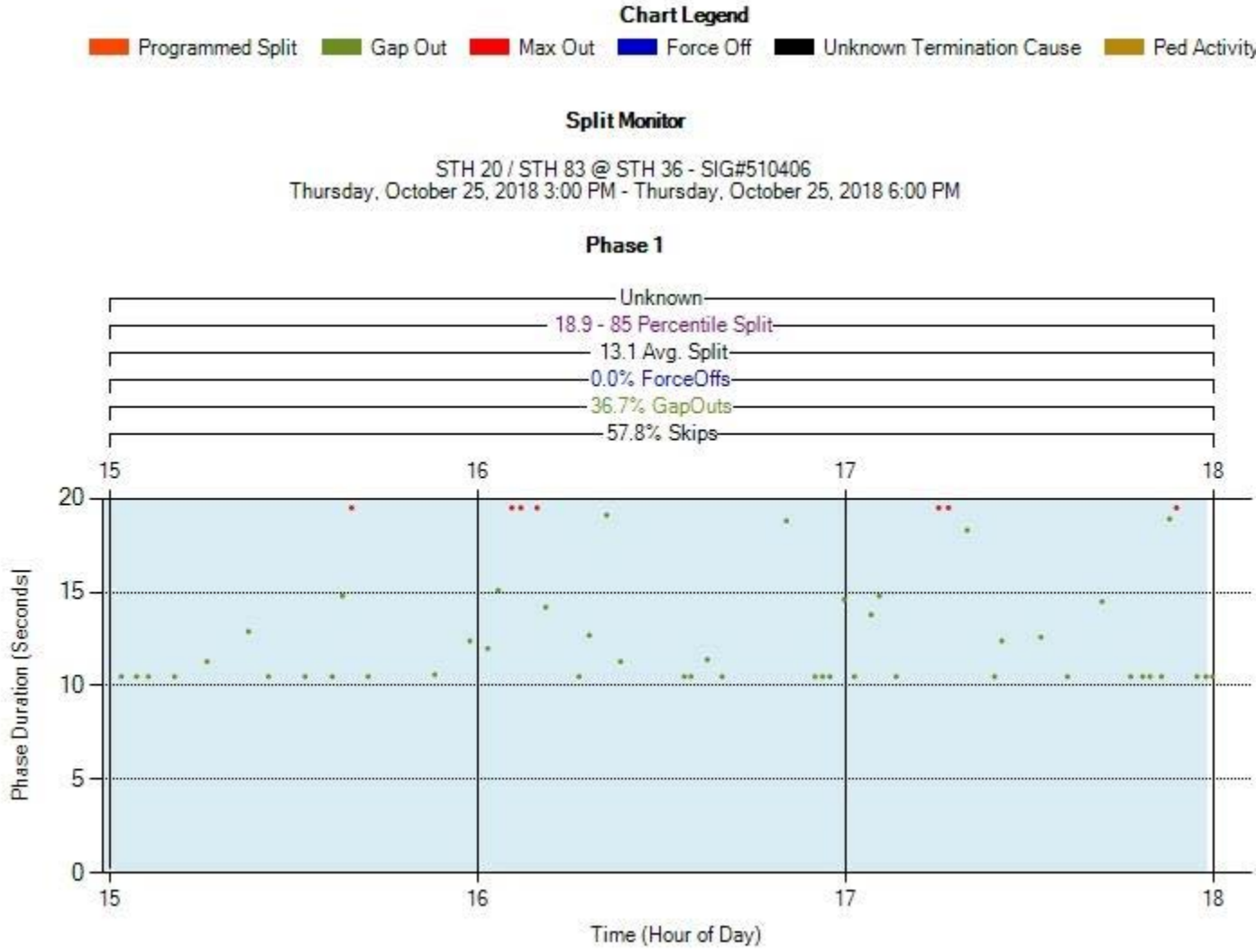
Isolated Signal – WIS 36 & 20/83
Baseline Timings
10/25/2018 – 4:45 PM – 5:45 PM



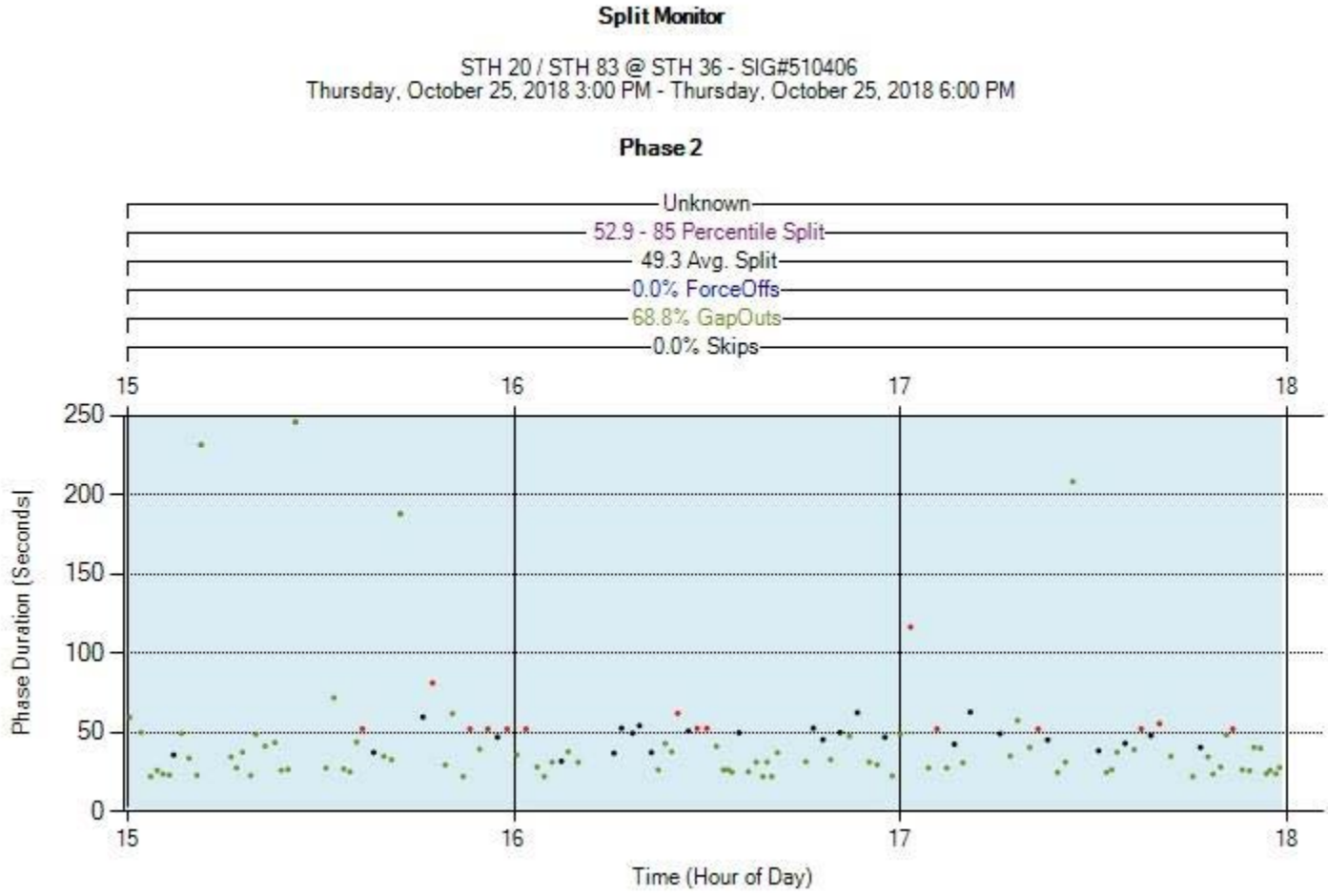
Isolated Signal – WIS 36 & 20/83
Baseline Timings
10/25/2018 – 4:45 PM – 5:45 PM



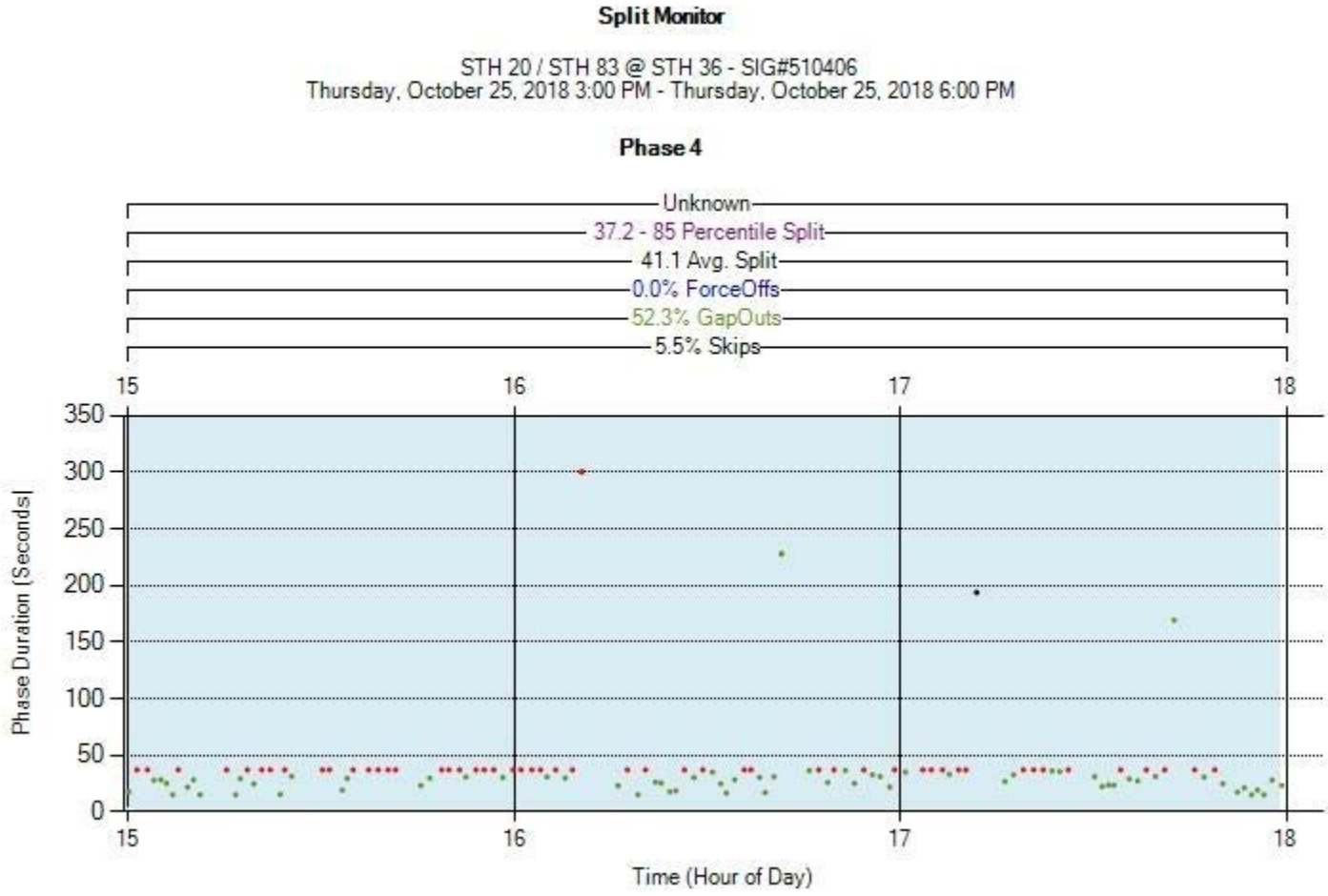
Isolated Signal – WIS 36 & 20/83
Baseline Timings
10/25/2018 – 3:00 PM – 6:00 PM



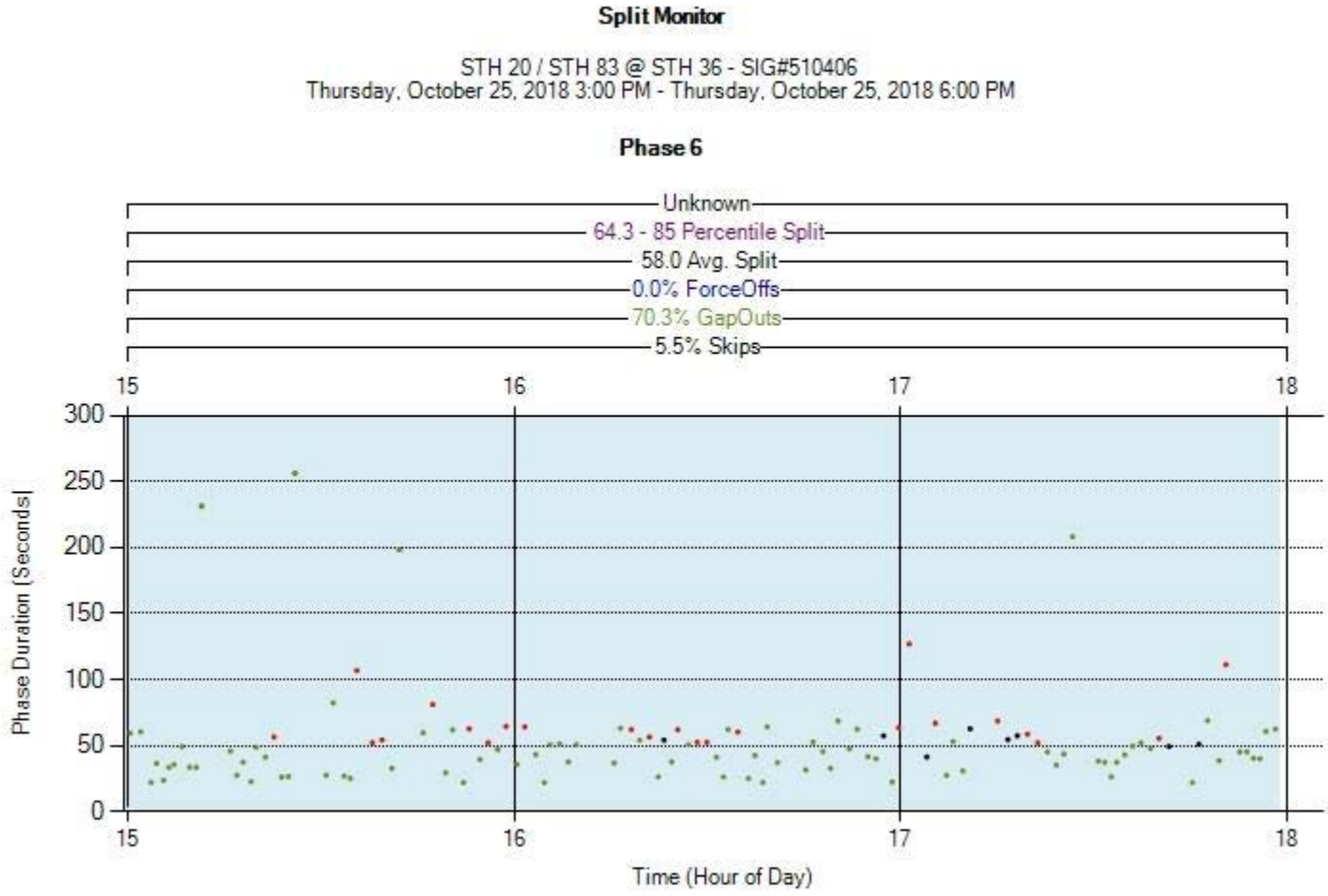
Isolated Signal – WIS 36 & 20/83
Baseline Timings
10/25/2018 – 3:00 PM – 6:00 PM



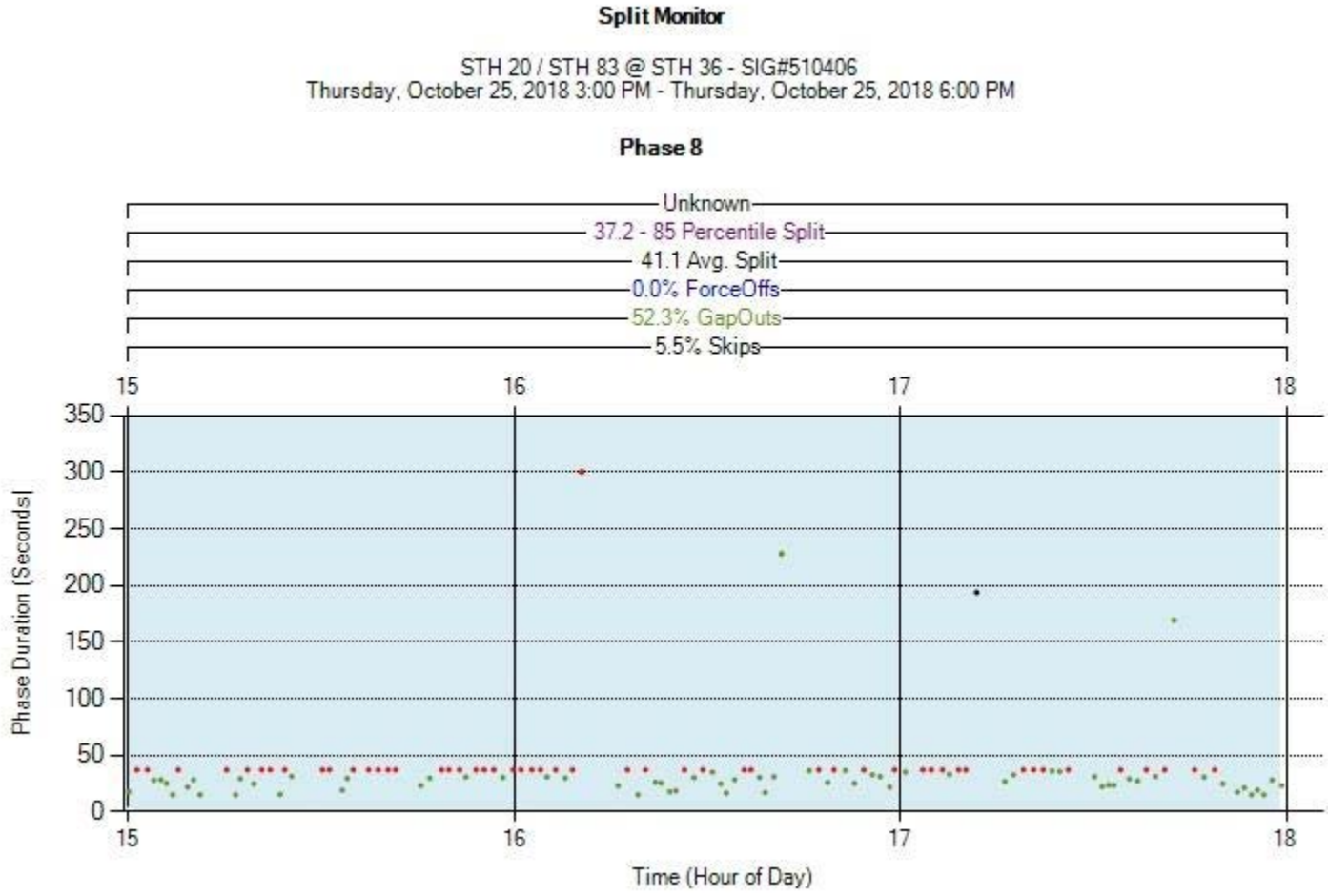
Isolated Signal – WIS 36 & 20/83
Baseline Timings
10/25/2018 – 3:00 PM – 6:00 PM



Isolated Signal – WIS 36 & 20/83
Baseline Timings
10/25/2018 – 3:00 PM – 6:00 PM

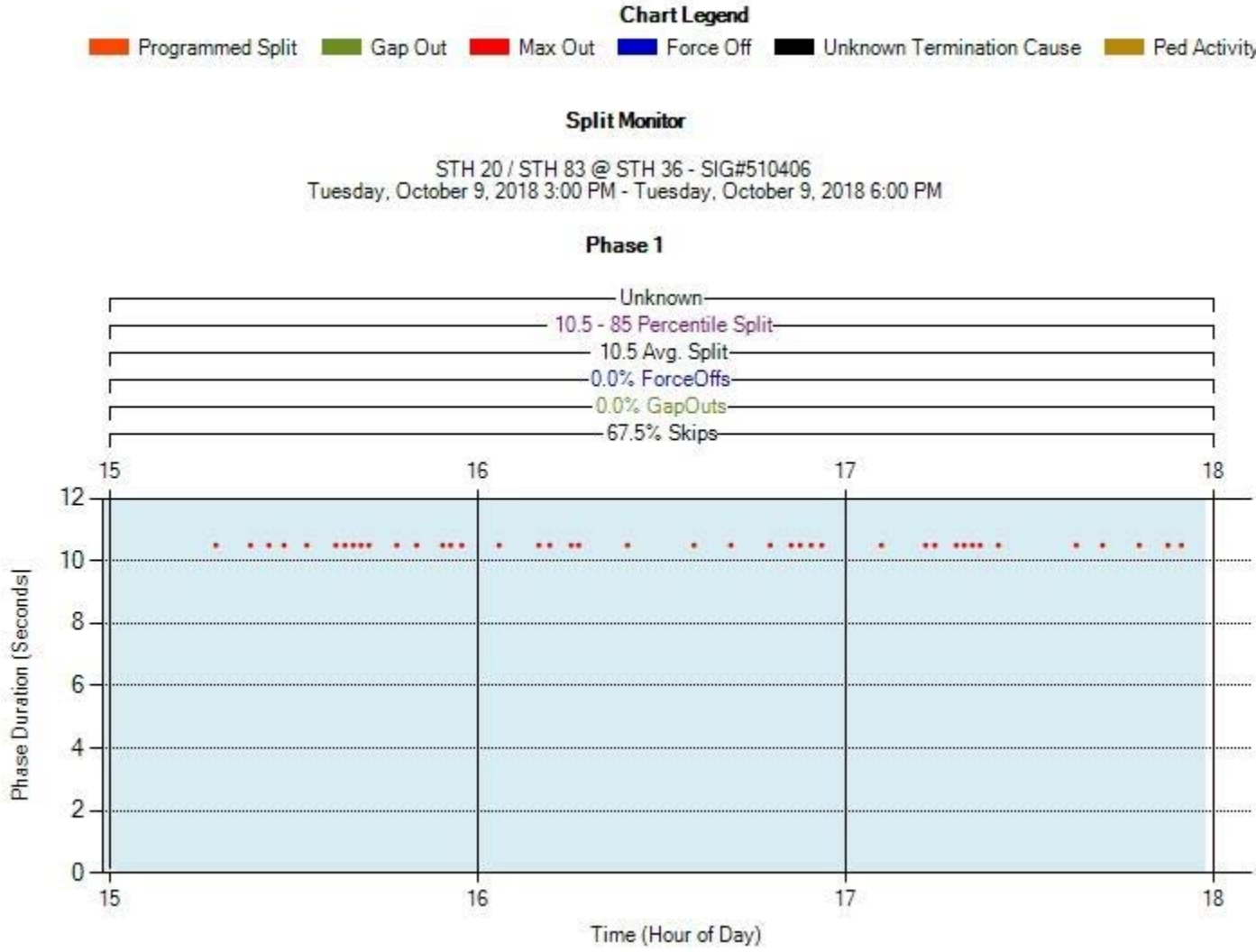


Isolated Signal – WIS 36 & 20/83
Baseline Timings
10/25/2018 – 3:00 PM – 6:00 PM

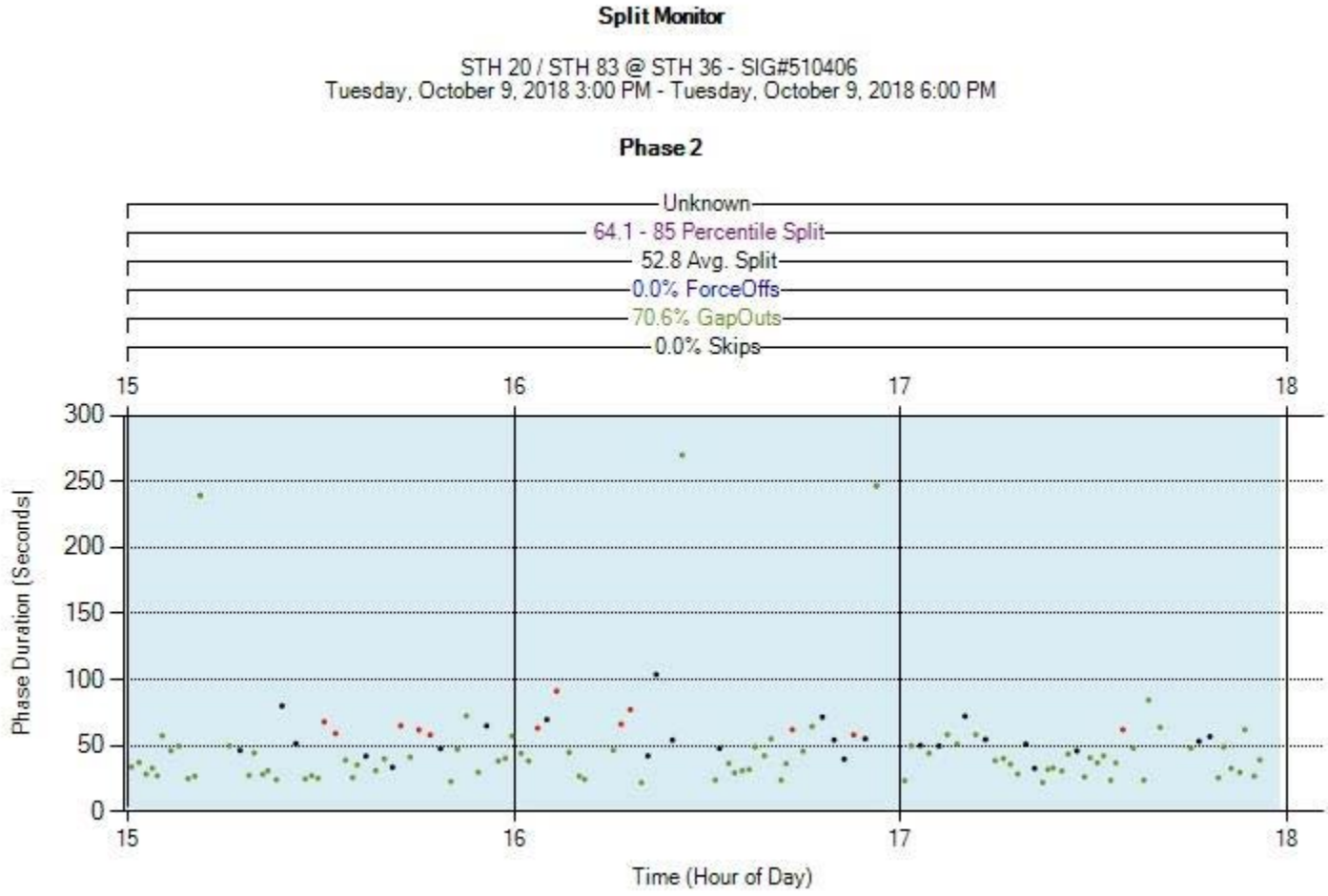


WisBOOM Outputs
WIS 20/83 & WIS 36
HCS Optimized Timings

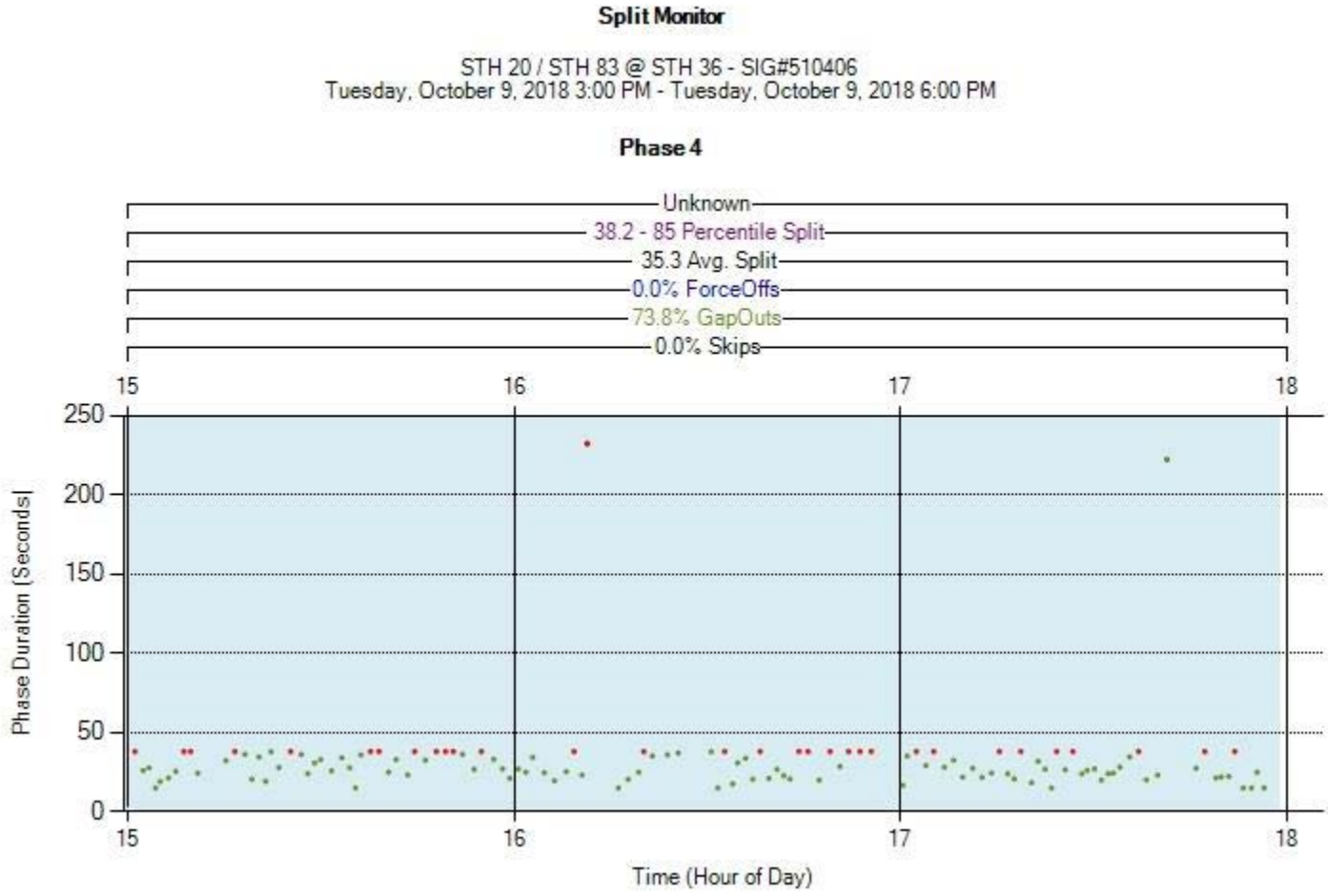
Isolated Signal – WIS 36 & 20/83
HCS Timings
10/9/2018 – 3:00 PM – 6:00 PM



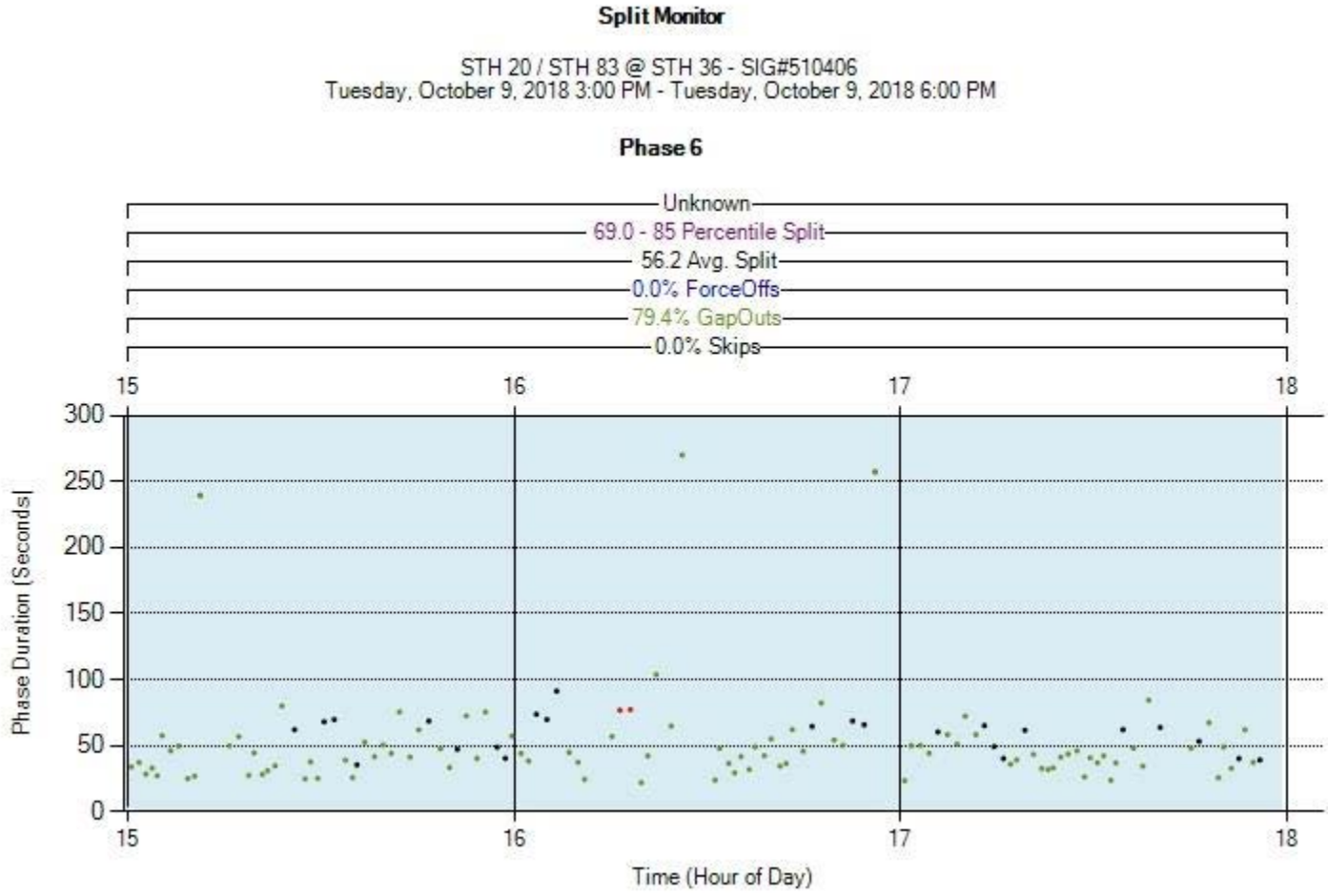
Isolated Signal – WIS 36 & 20/83
HCS Timings
10/9/2018 – 3:00 PM – 6:00 PM



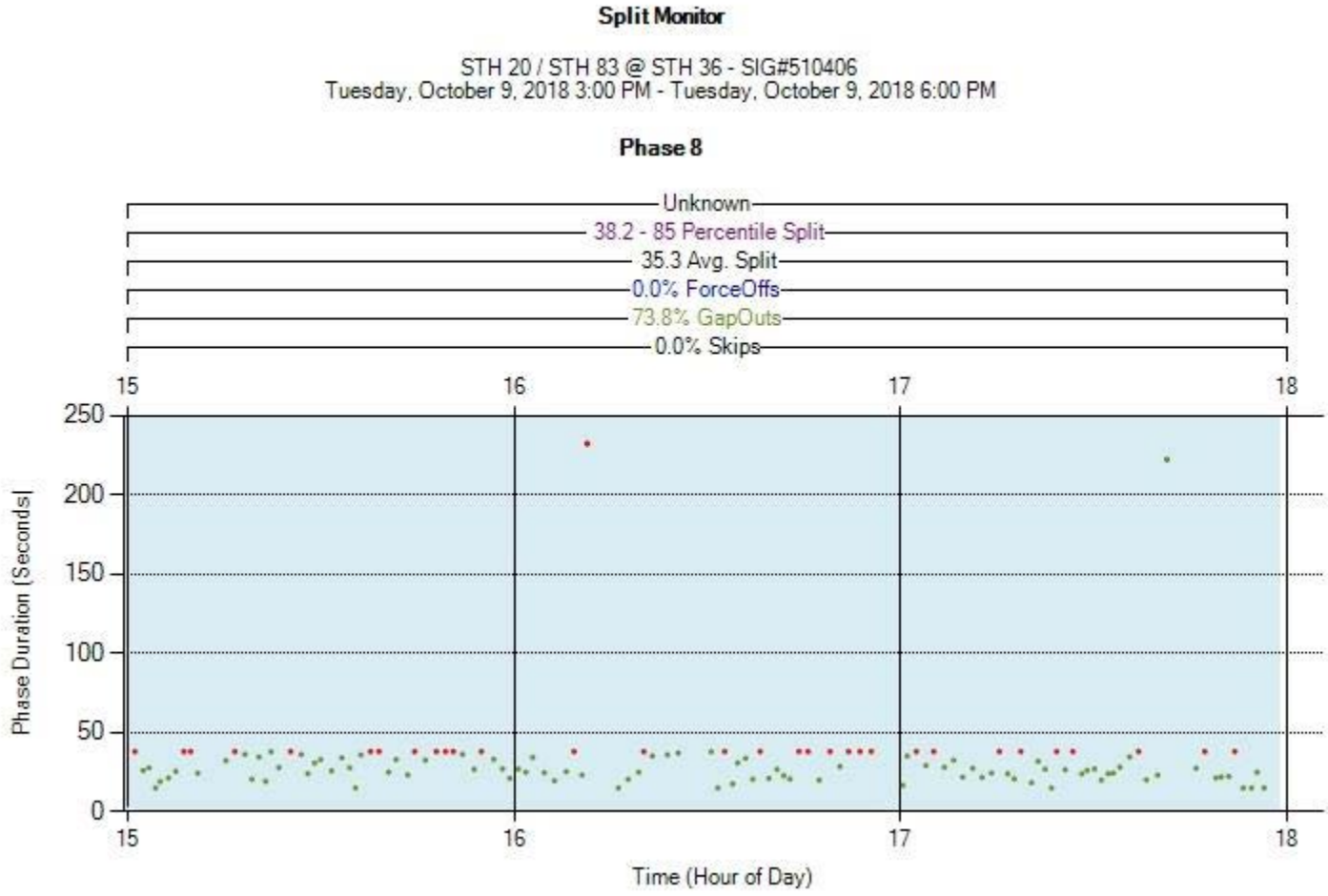
Isolated Signal – WIS 36 & 20/83
HCS Timings
10/9/2018 – 3:00 PM – 6:00 PM



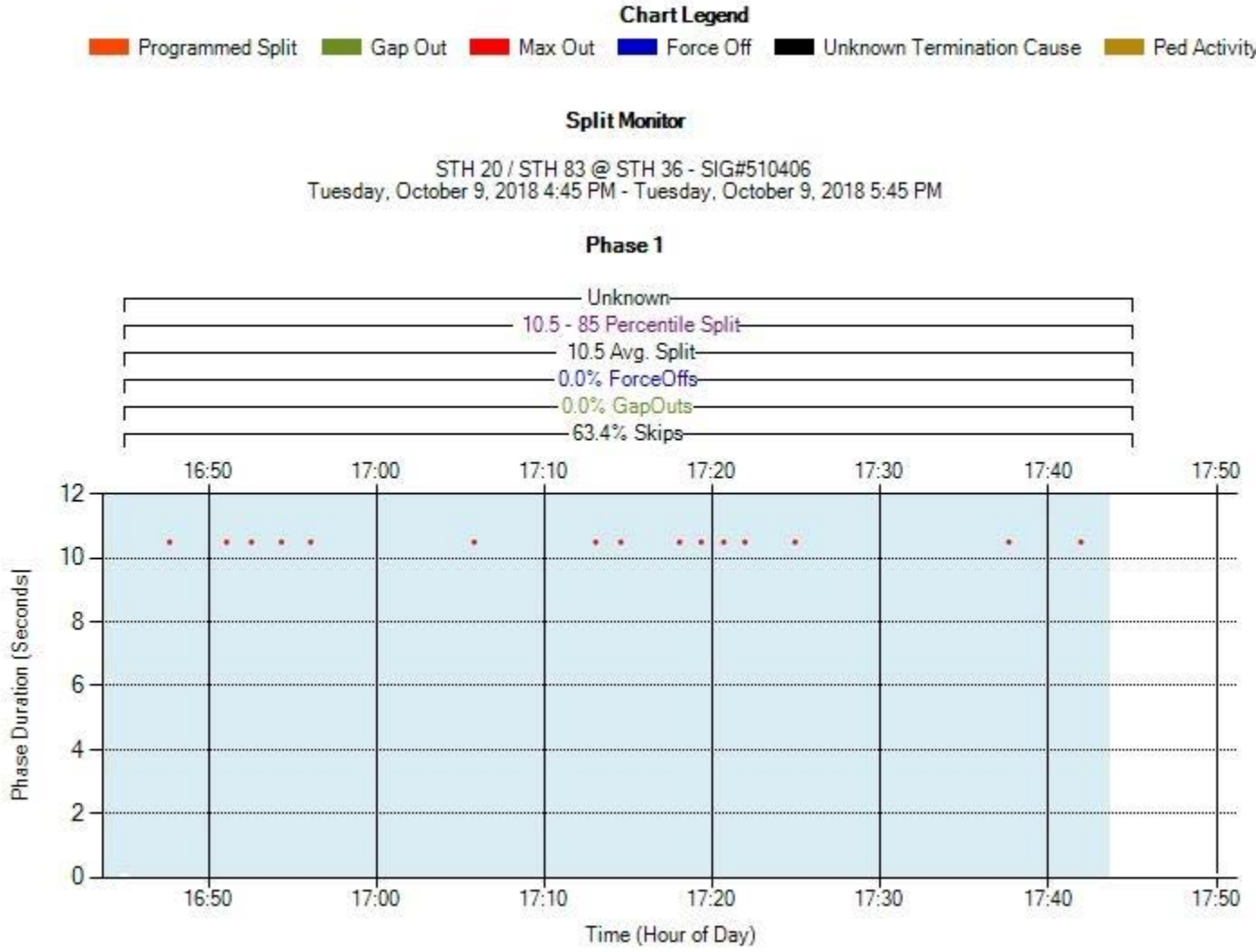
Isolated Signal – WIS 36 & 20/83
HCS Timings
10/9/2018 – 3:00 PM – 6:00 PM



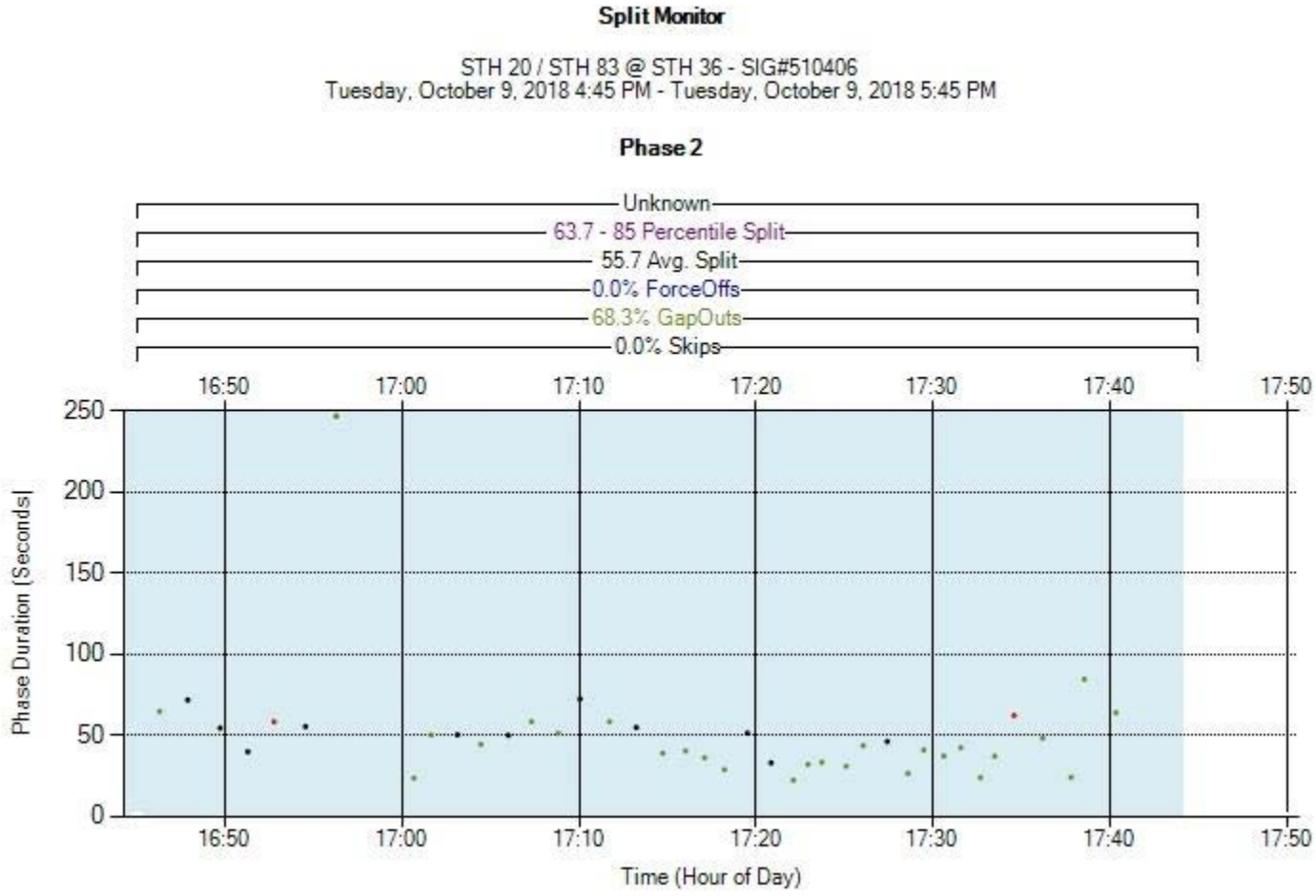
Isolated Signal – WIS 36 & 20/83
HCS Timings
10/9/2018 – 3:00 PM – 6:00 PM



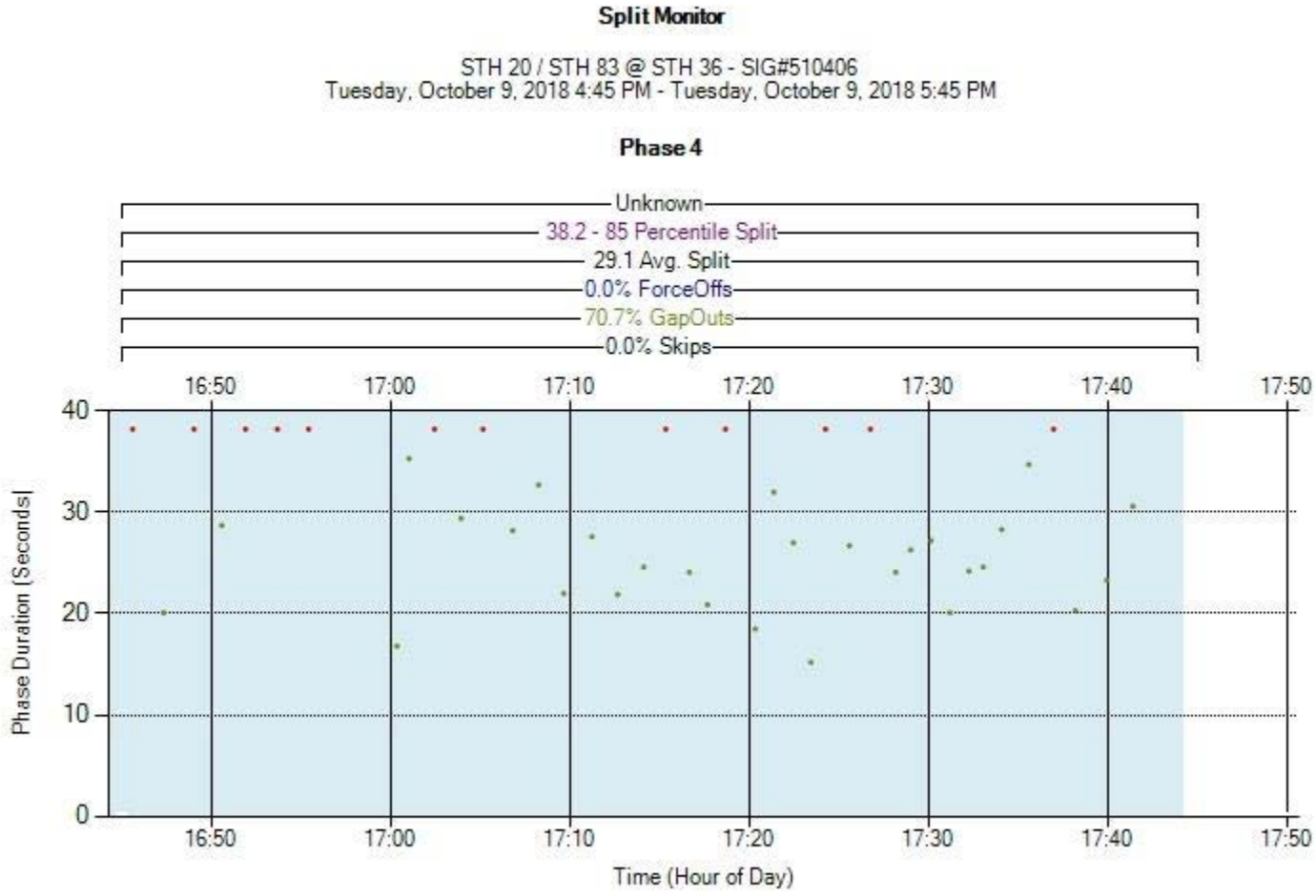
Isolated Signal – WIS 36 & 20/83
HCS Timings
10/9/2018 – 4:45 PM – 5:45 PM



Isolated Signal – WIS 36 & 20/83
HCS Timings
10/9/2018 – 4:45 PM – 5:45 PM



Isolated Signal – WIS 36 & 20/83
HCS Timings
10/9/2018 – 4:45 PM – 5:45 PM



Isolated Signal – WIS 36 & 20/83
HCS Timings
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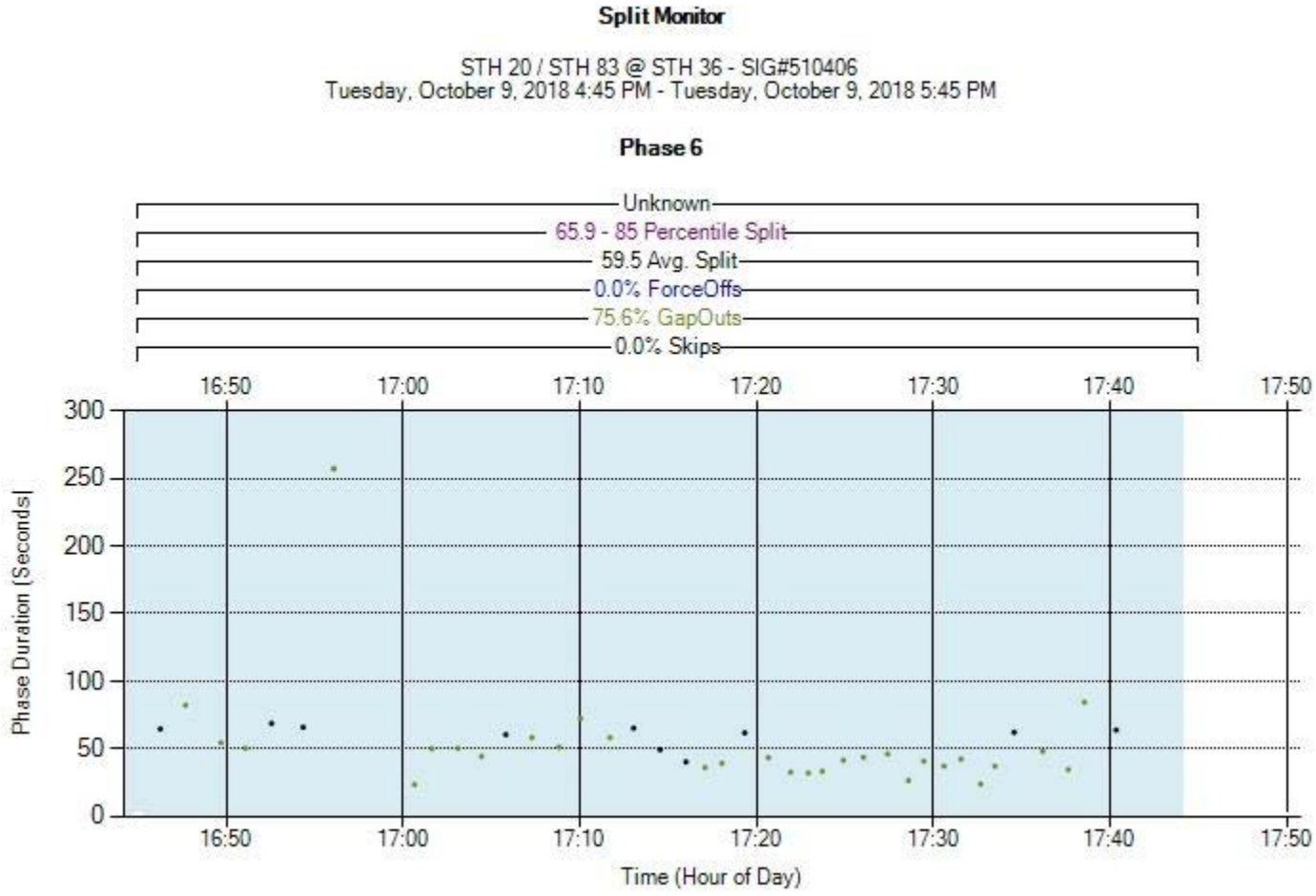
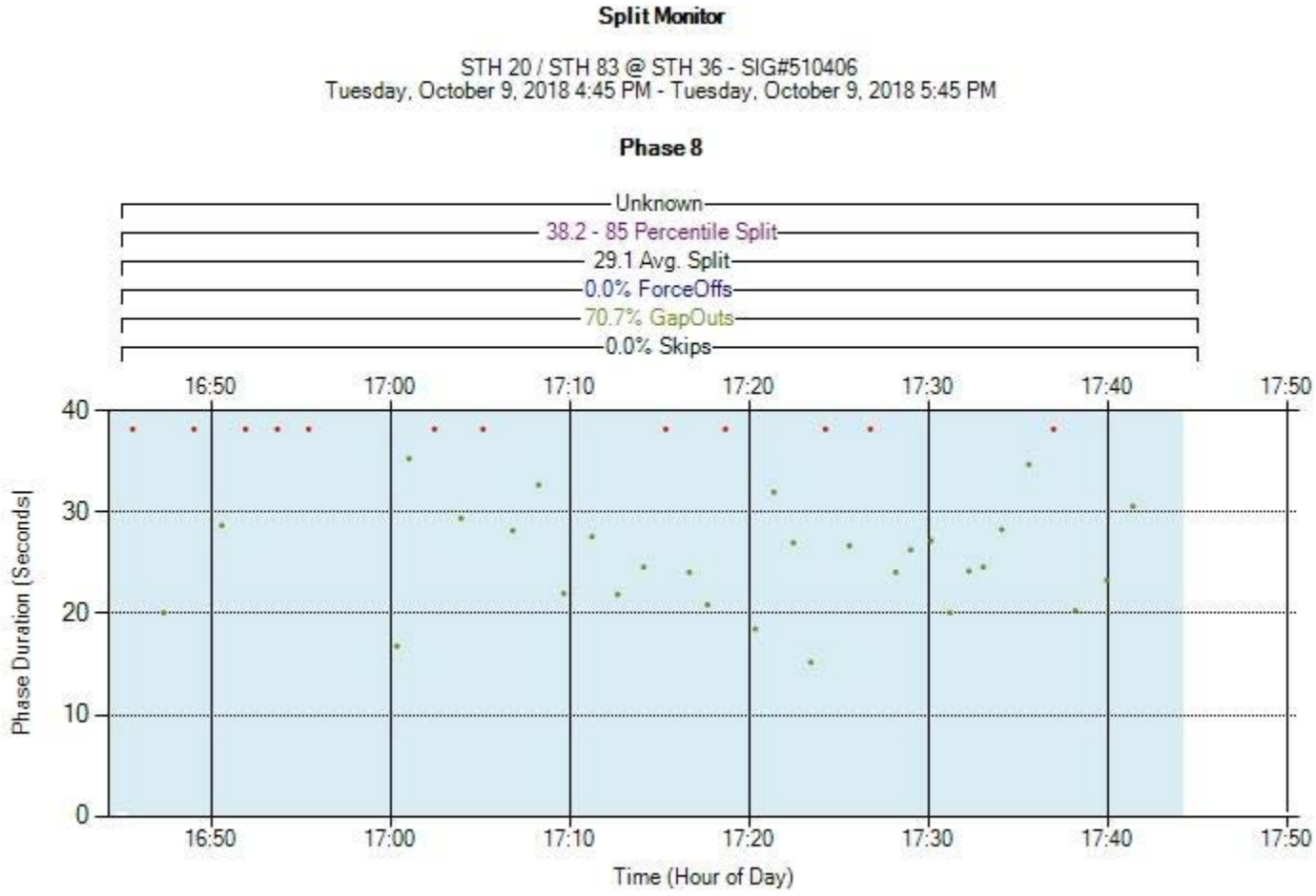
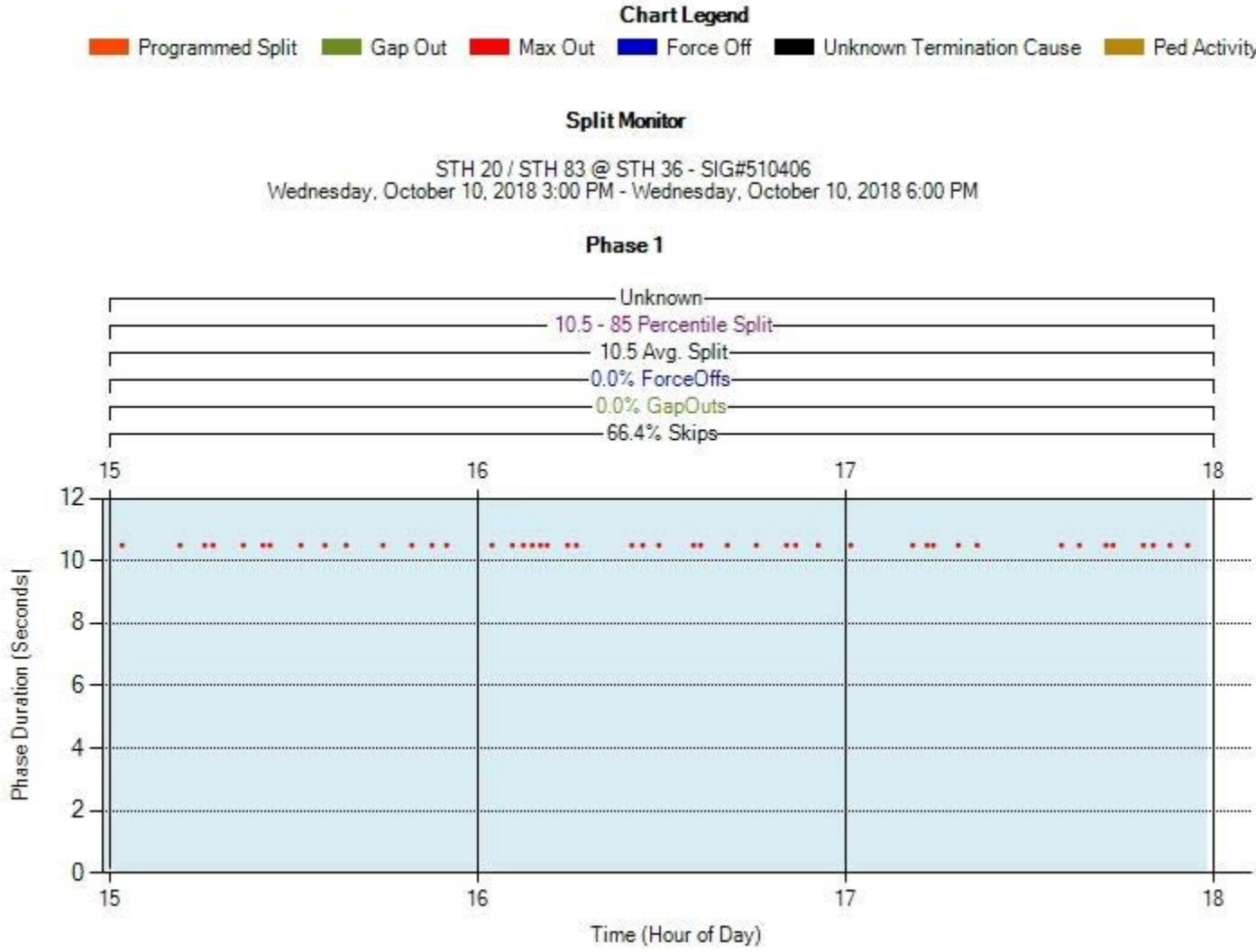


Isolated Signal – WIS 36 & 20/83
HCS Timings
10/9/2018 – 4:45 PM – 5:45 PM



Isolated Signal – WIS 36 & 20/83
HCS Timings
10/10/2018 – 3:00 PM – 6:00 PM



Isolated Signal – WIS 36 & 20/83
HCS Timings
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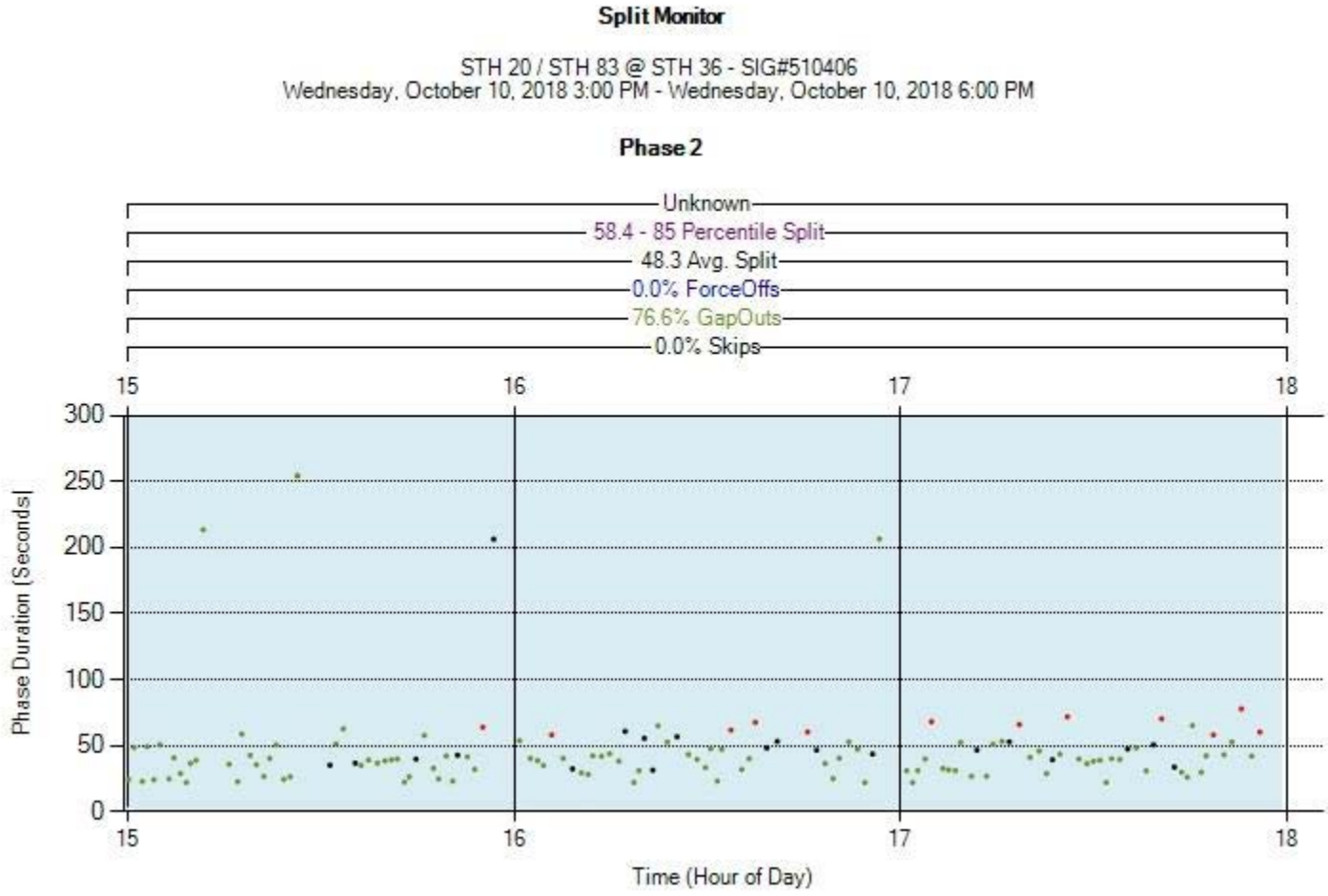
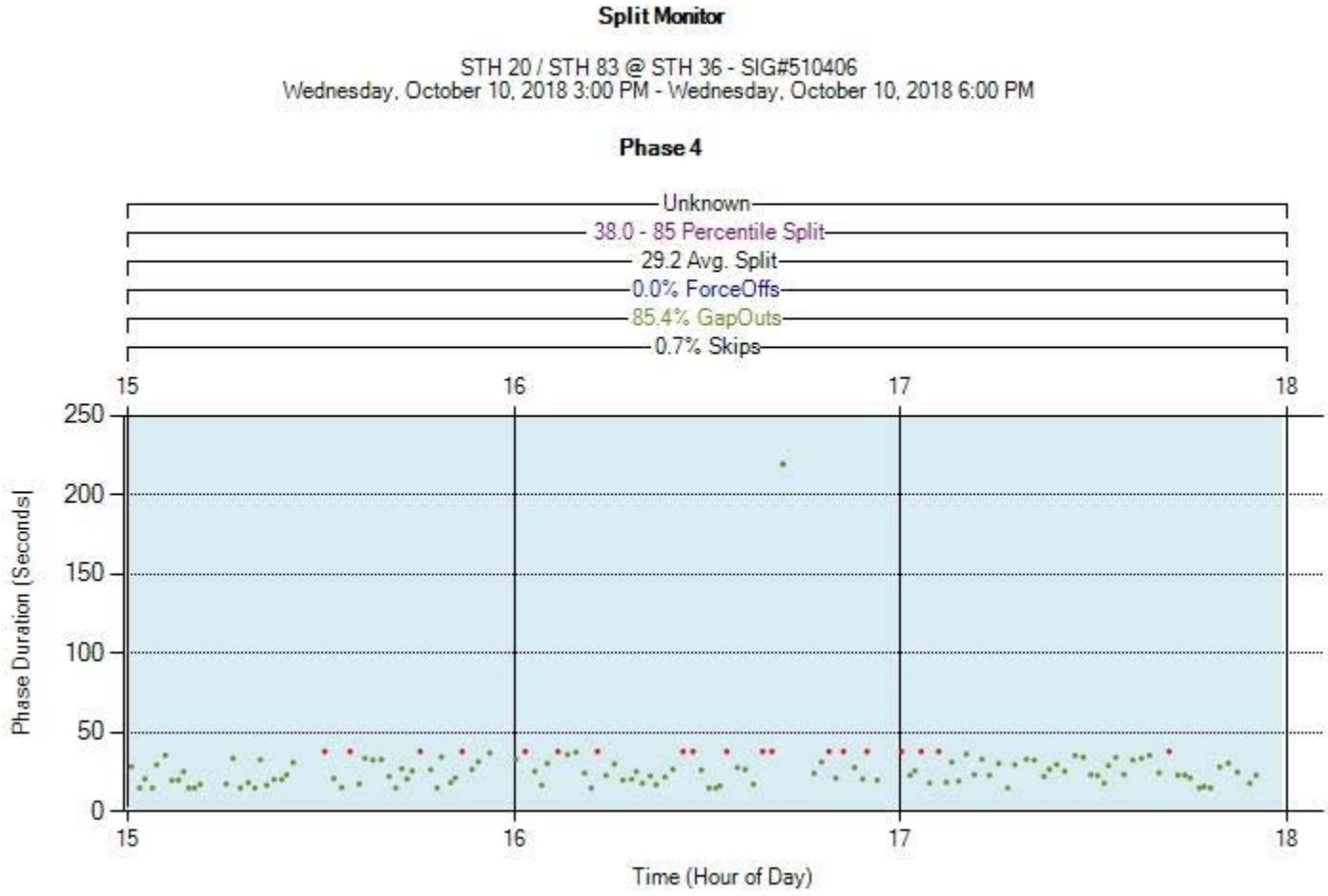
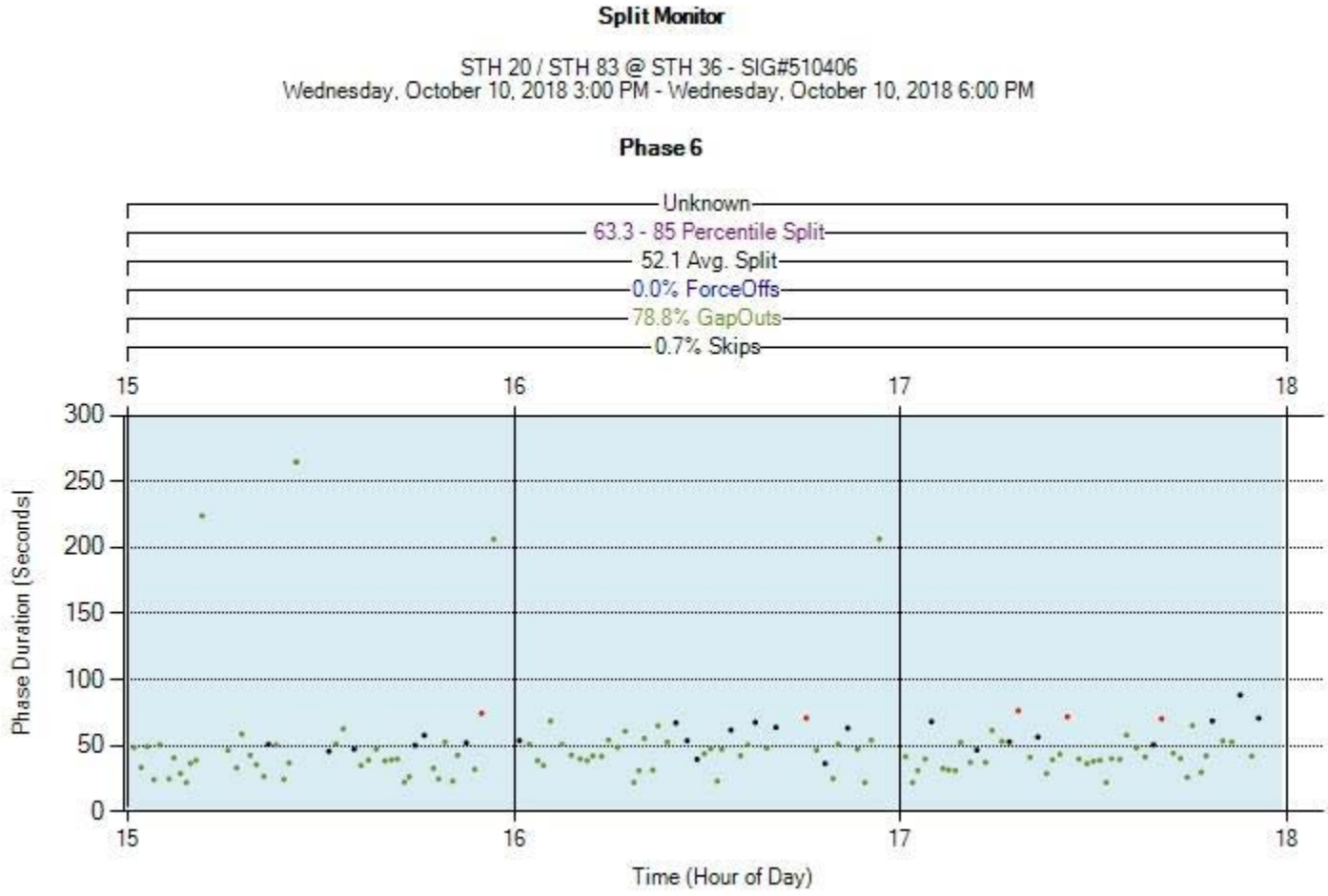


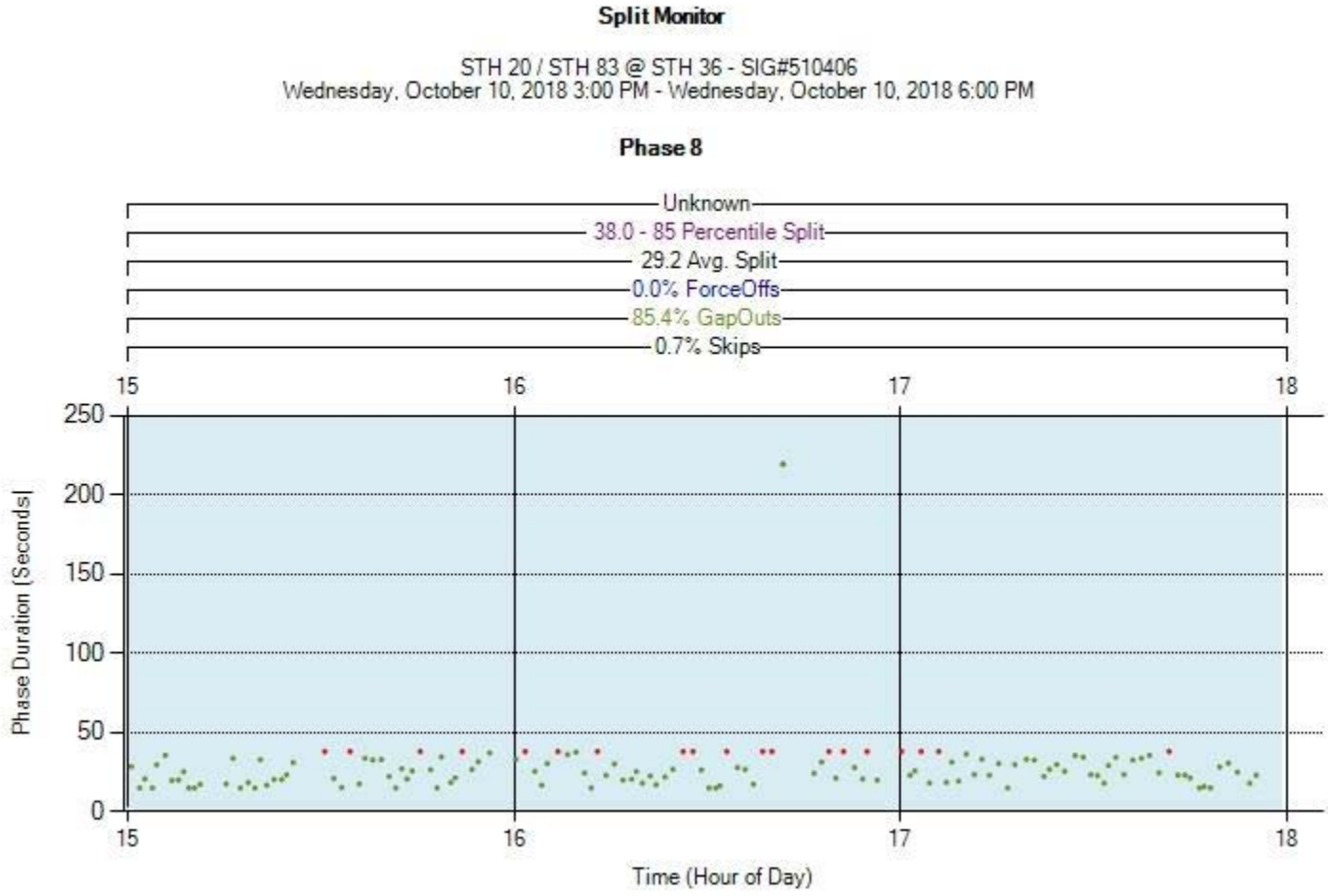
Isolated Signal – WIS 36 & 20/83
HCS Timings
10/10/2018 – 3:00 PM – 6:00 PM



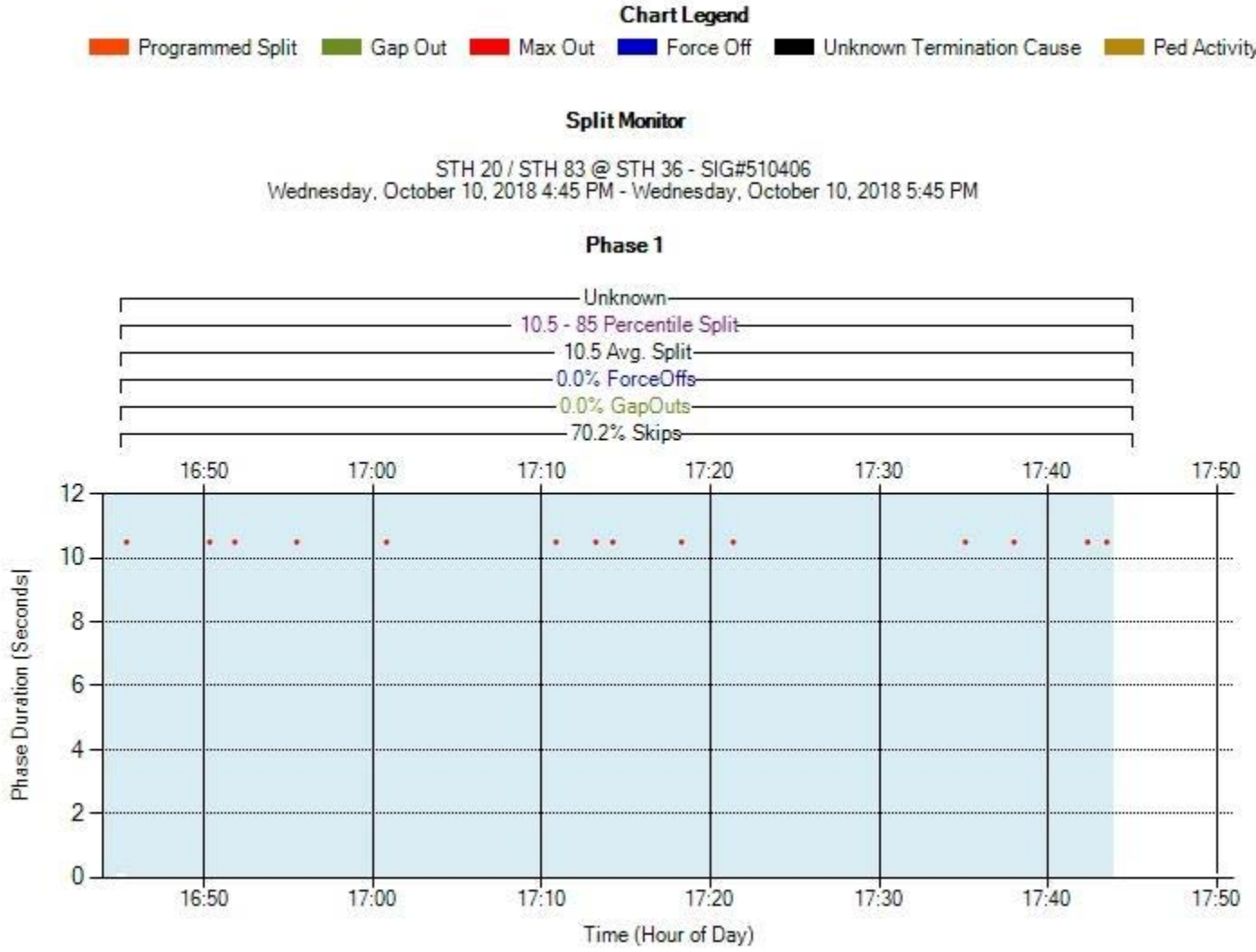
Isolated Signal – WIS 36 & 20/83
HCS Timings
10/10/2018 – 3:00 PM – 6:00 PM



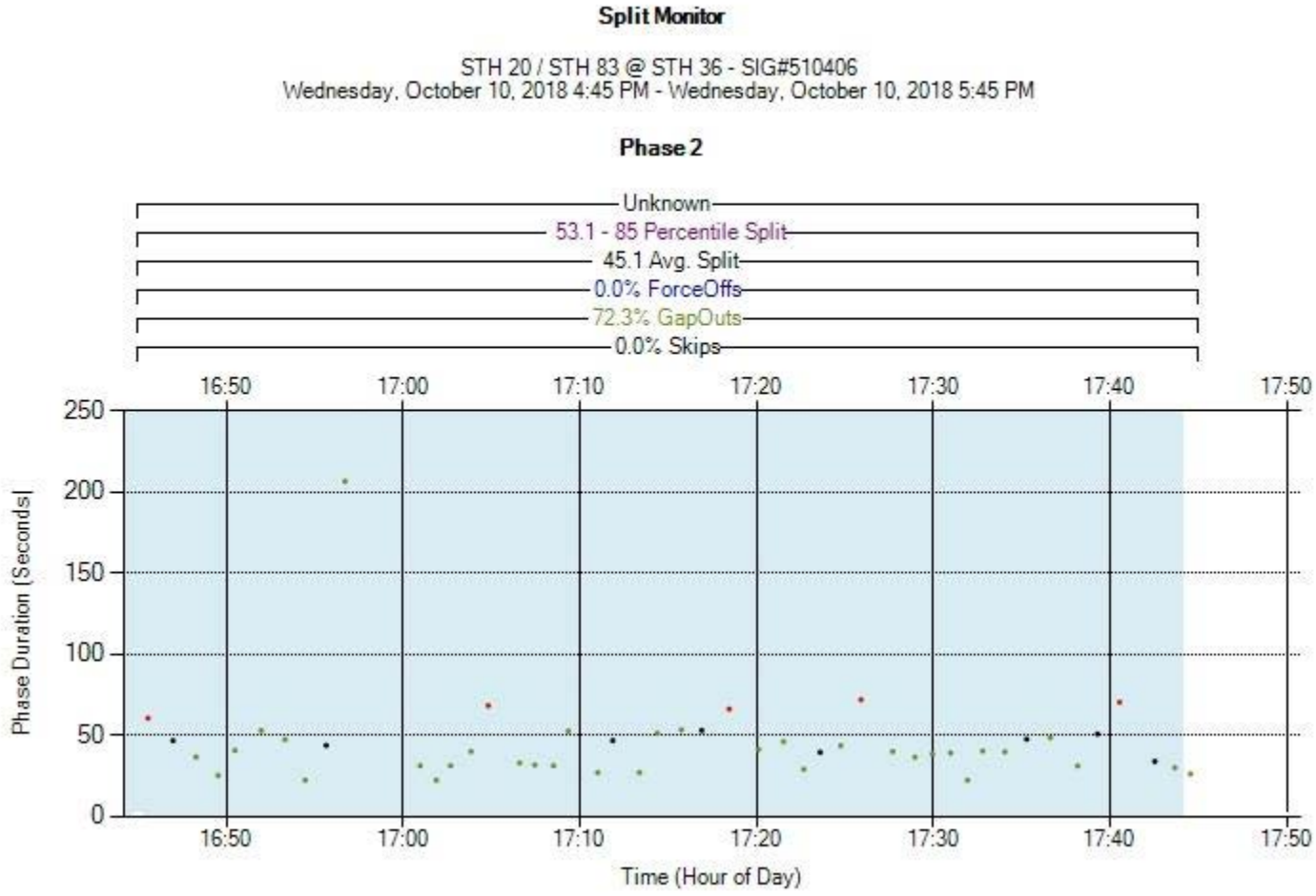
Isolated Signal – WIS 36 & 20/83
HCS Timings
10/10/2018 – 3:00 PM – 6:00 PM



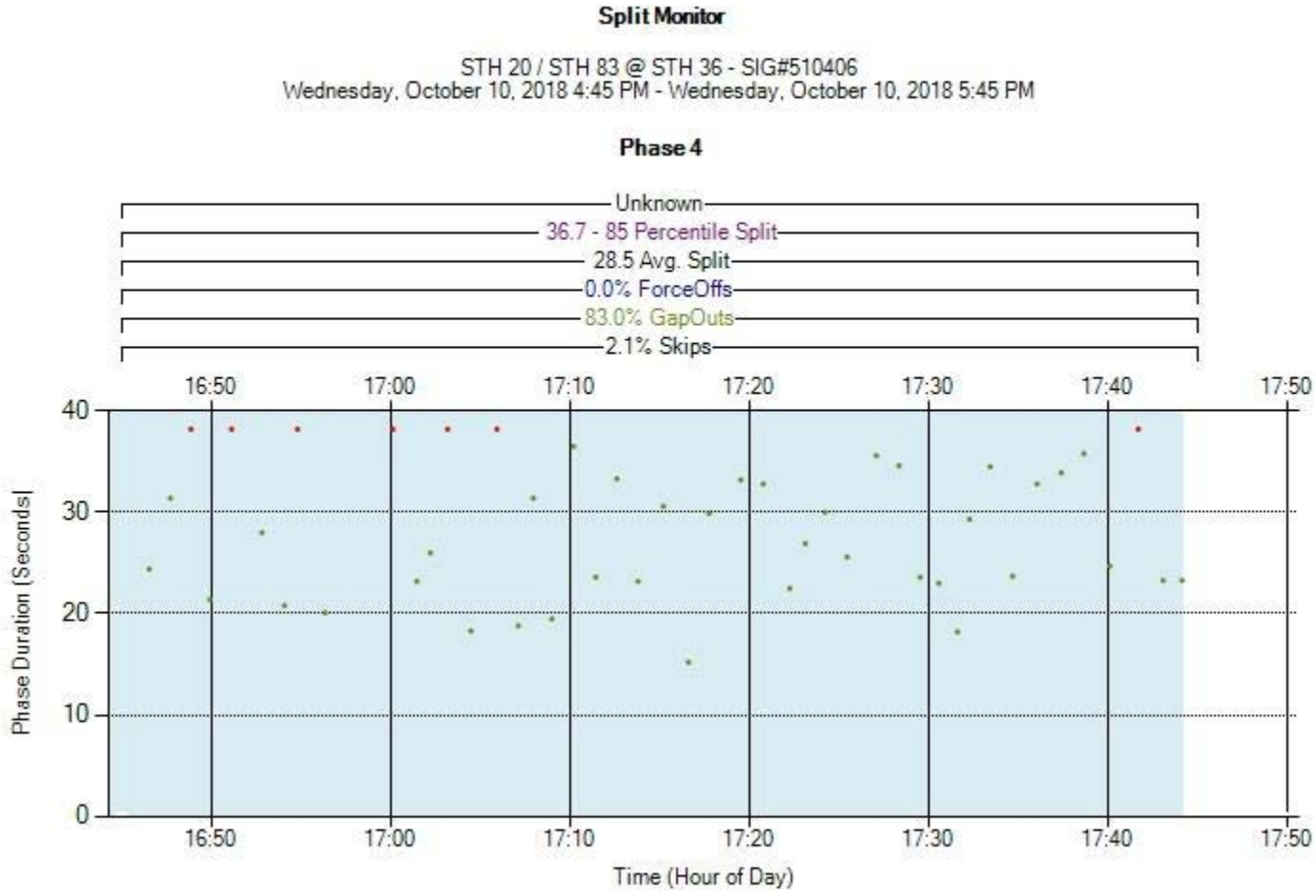
Isolated Signal – WIS 36 & 20/83
HCS Timings
10/10/2018 – 4:45 PM – 5:45 PM



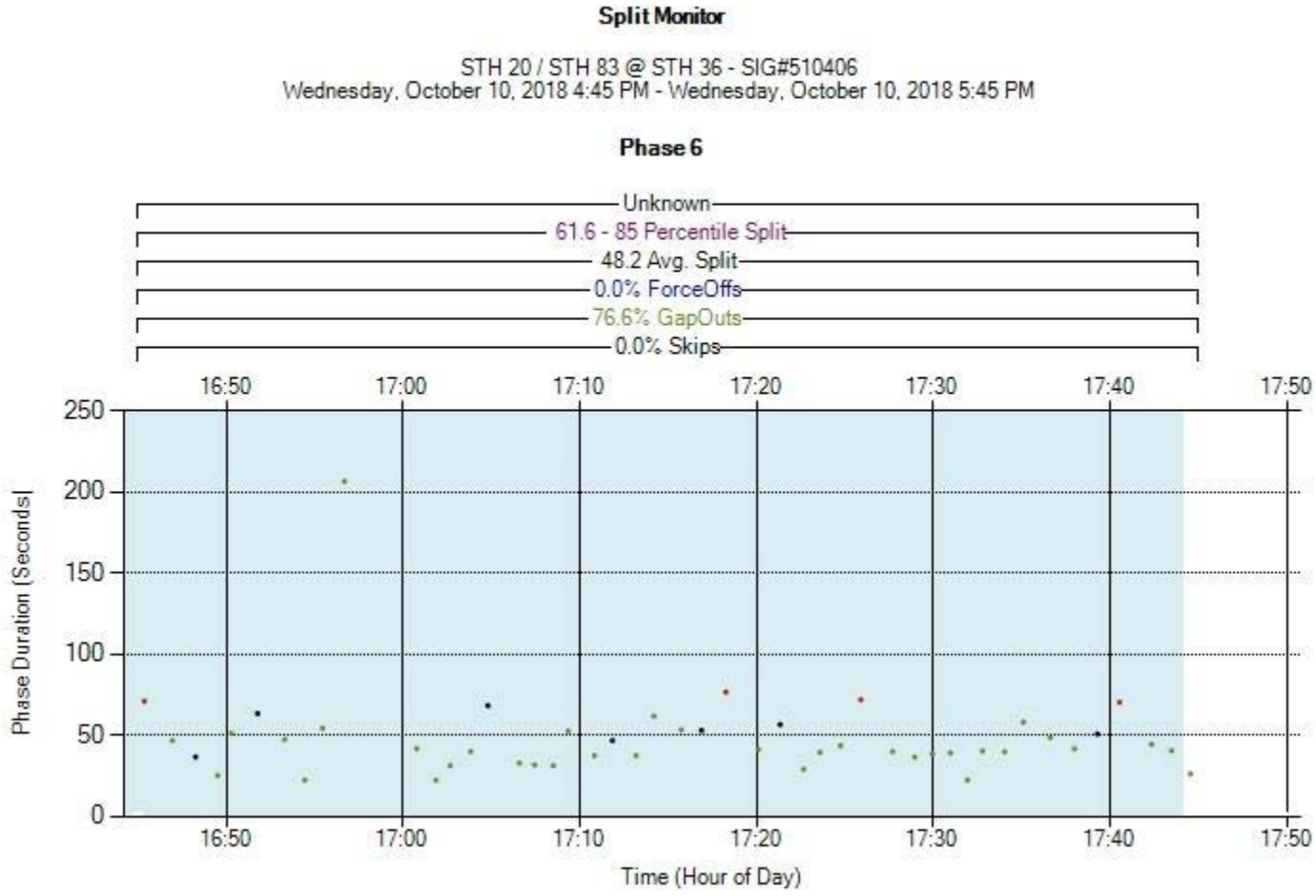
Isolated Signal – WIS 36 & 20/83
HCS Timings
10/10/2018 – 4:45 PM – 5:45 PM



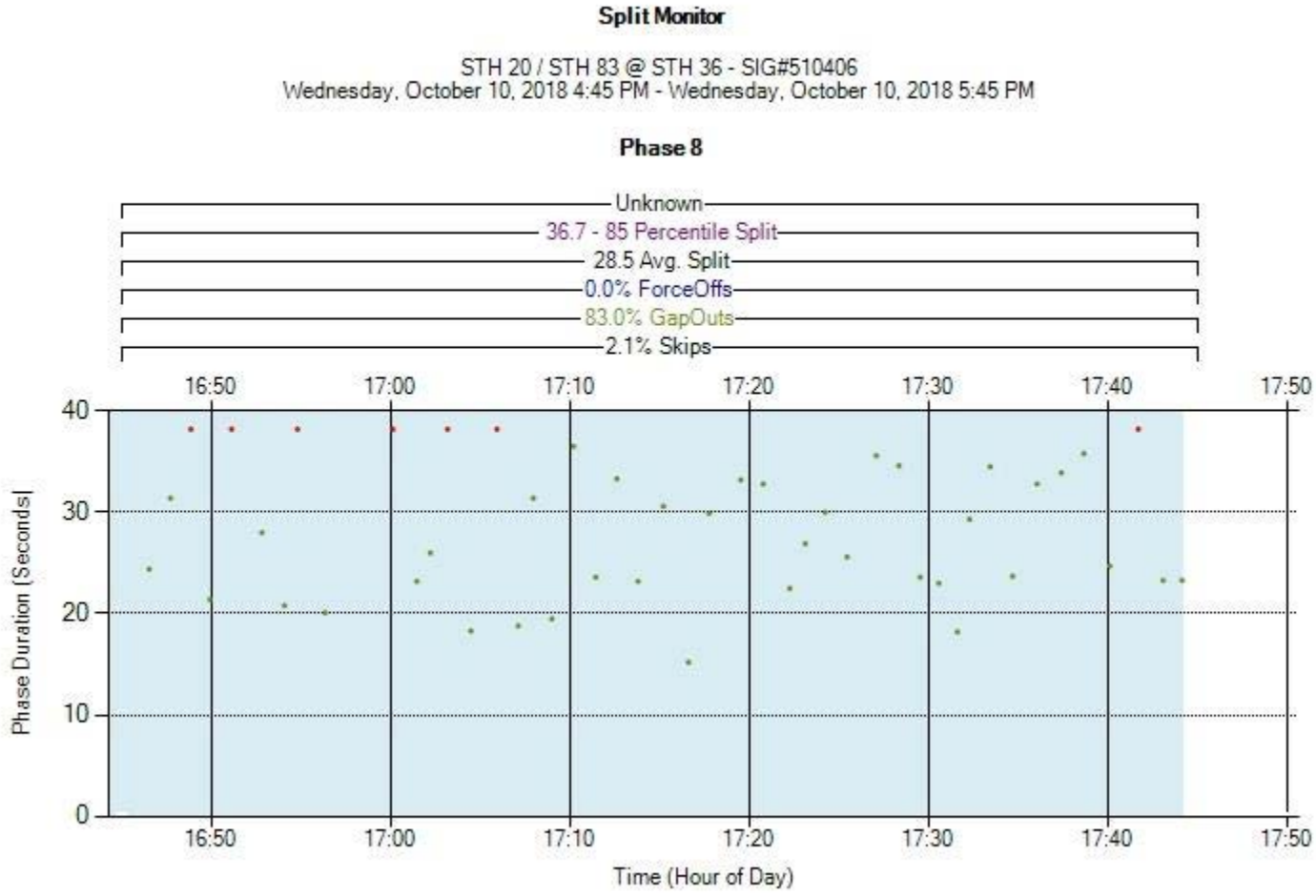
Isolated Signal – WIS 36 & 20/83
HCS Timings
10/10/2018 – 4:45 PM – 5:45 PM



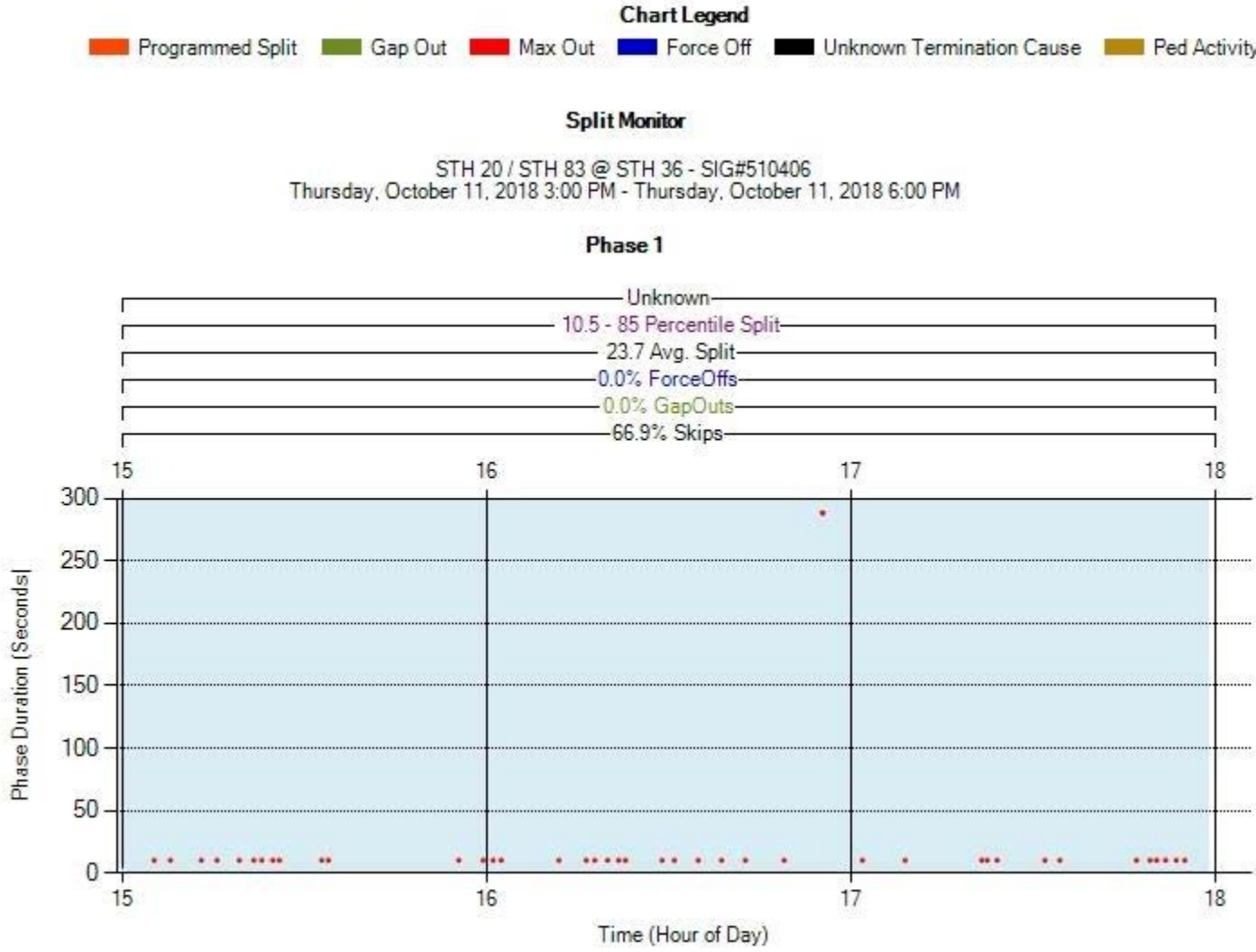
Isolated Signal – WIS 36 & 20/83
HCS Timings
10/10/2018 – 4:45 PM – 5:45 PM



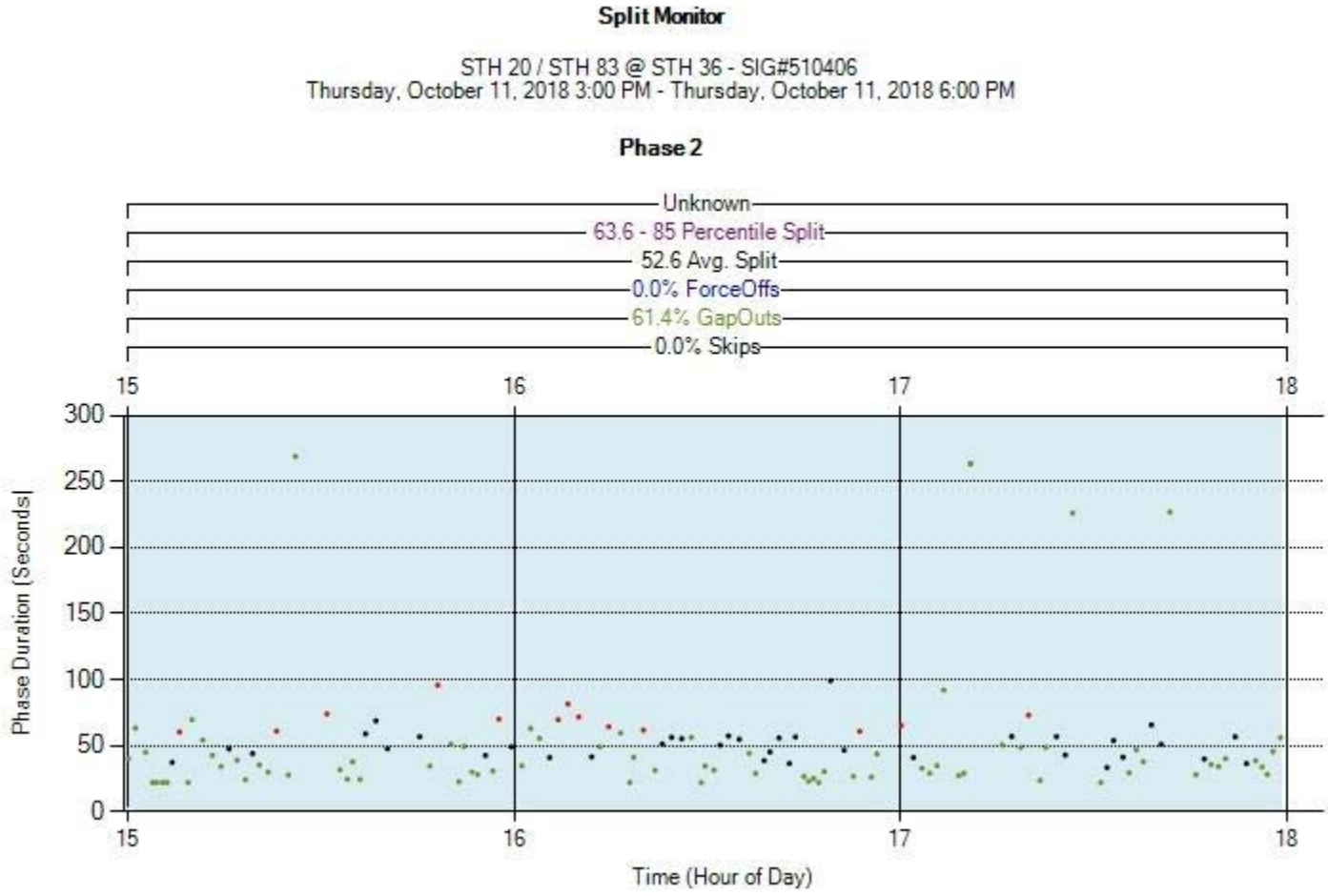
Isolated Signal – WIS 36 & 20/83
HCS Timings
10/10/2018 – 4:45 PM – 5:45 PM



Isolated Signal – WIS 36 & 20/83
HCS Timings
10/11/2018 – 3:00 PM – 6:00 PM



Isolated Signal – WIS 36 & 20/83
HCS Timings
10/11/2018 – 3:00 PM – 6:00 PM



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HCS Timings
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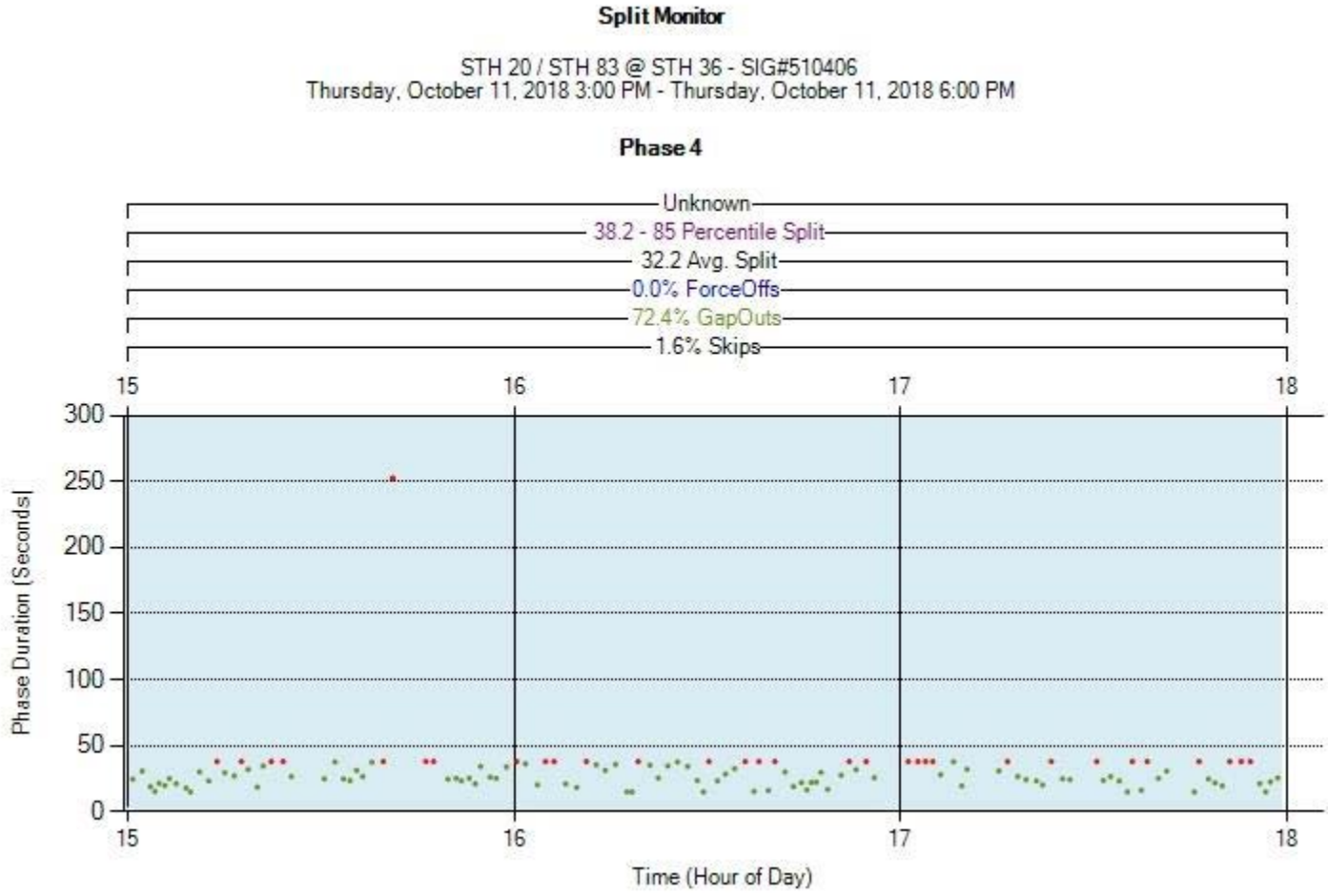
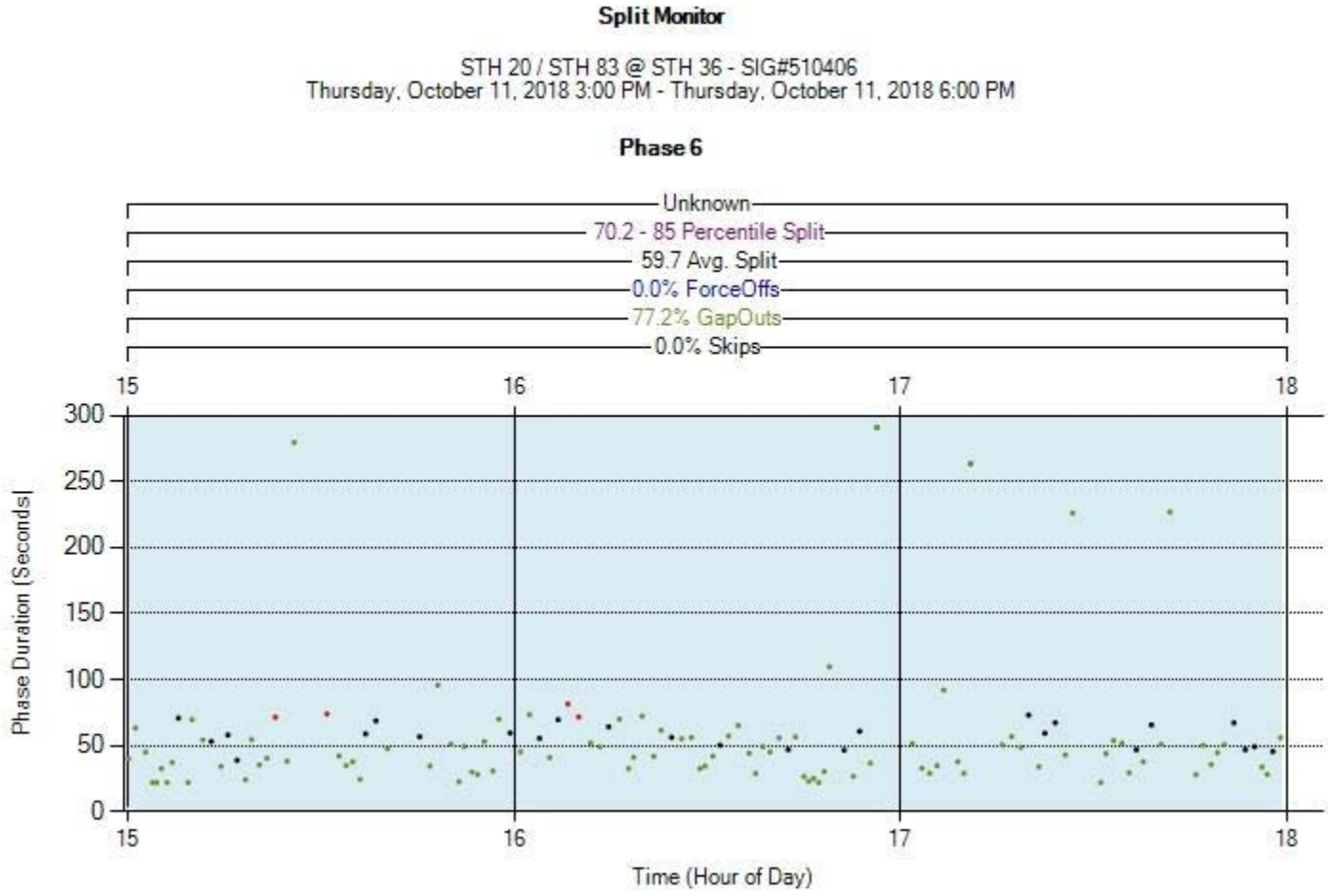


Isolated Signal – WIS 36 & 20/83
HCS Timings
10/11/2018 – 3:00 PM – 6:00 PM



Isolated Signal – WIS 36 & 20/83
HCS Timings
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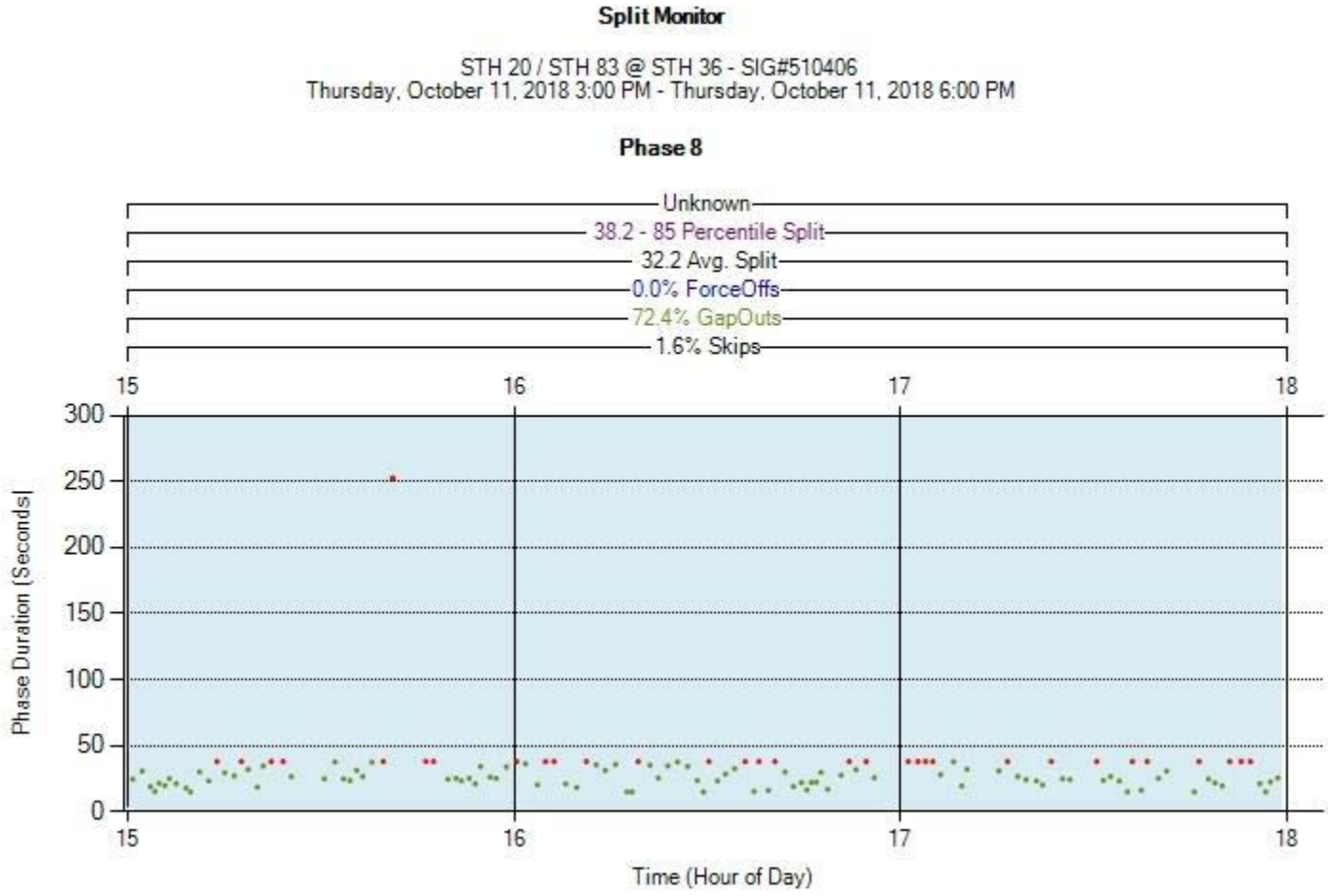

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HCS Timings
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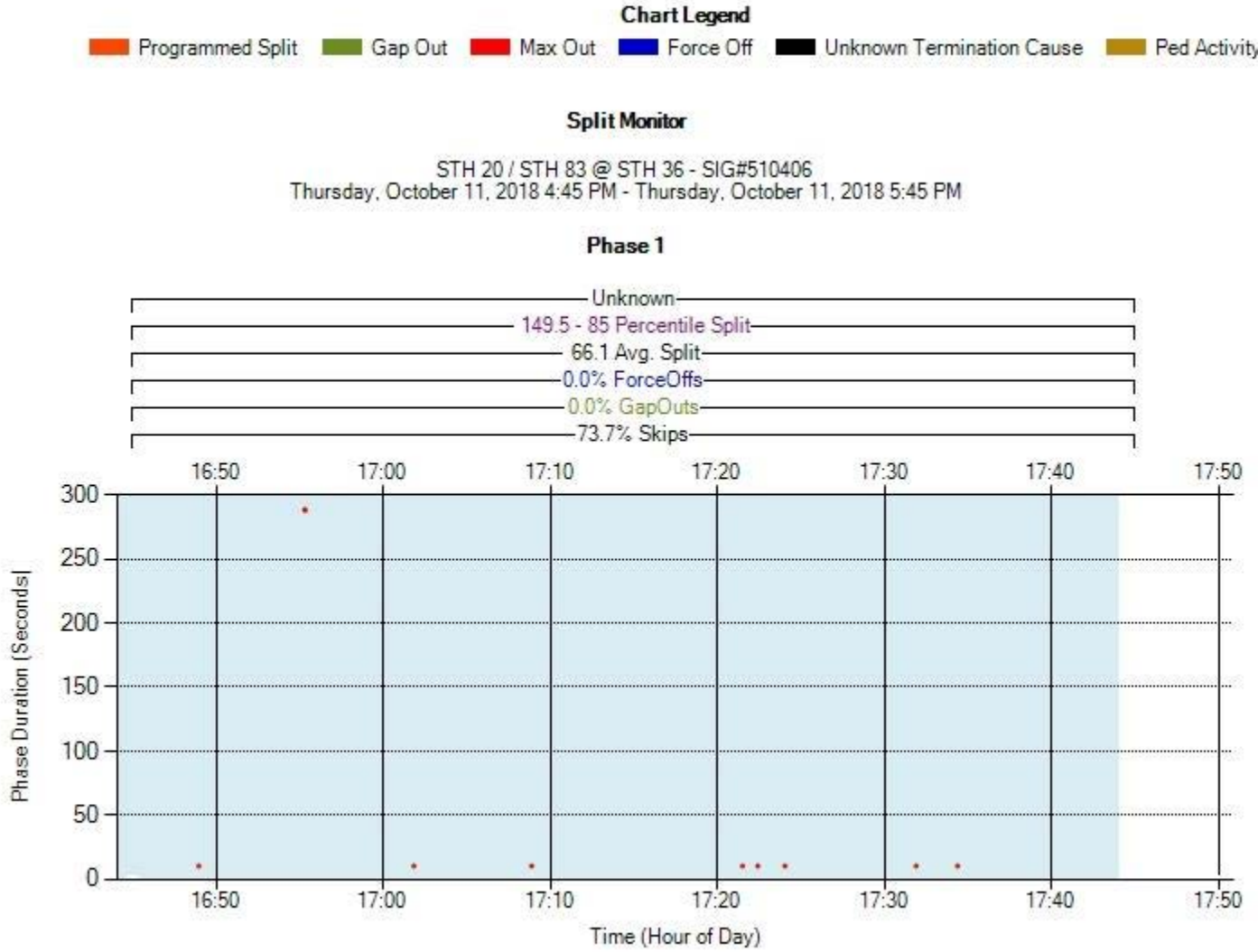

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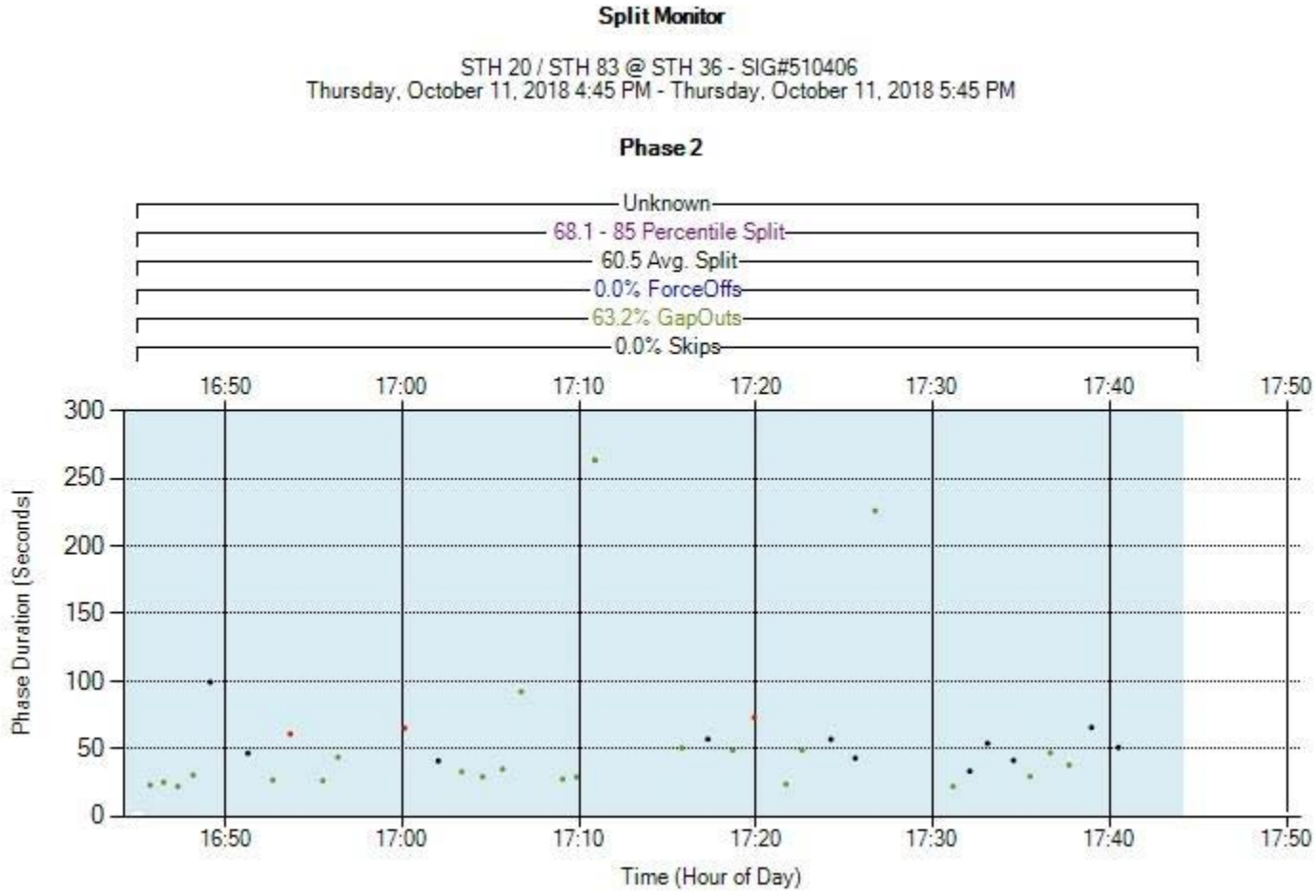

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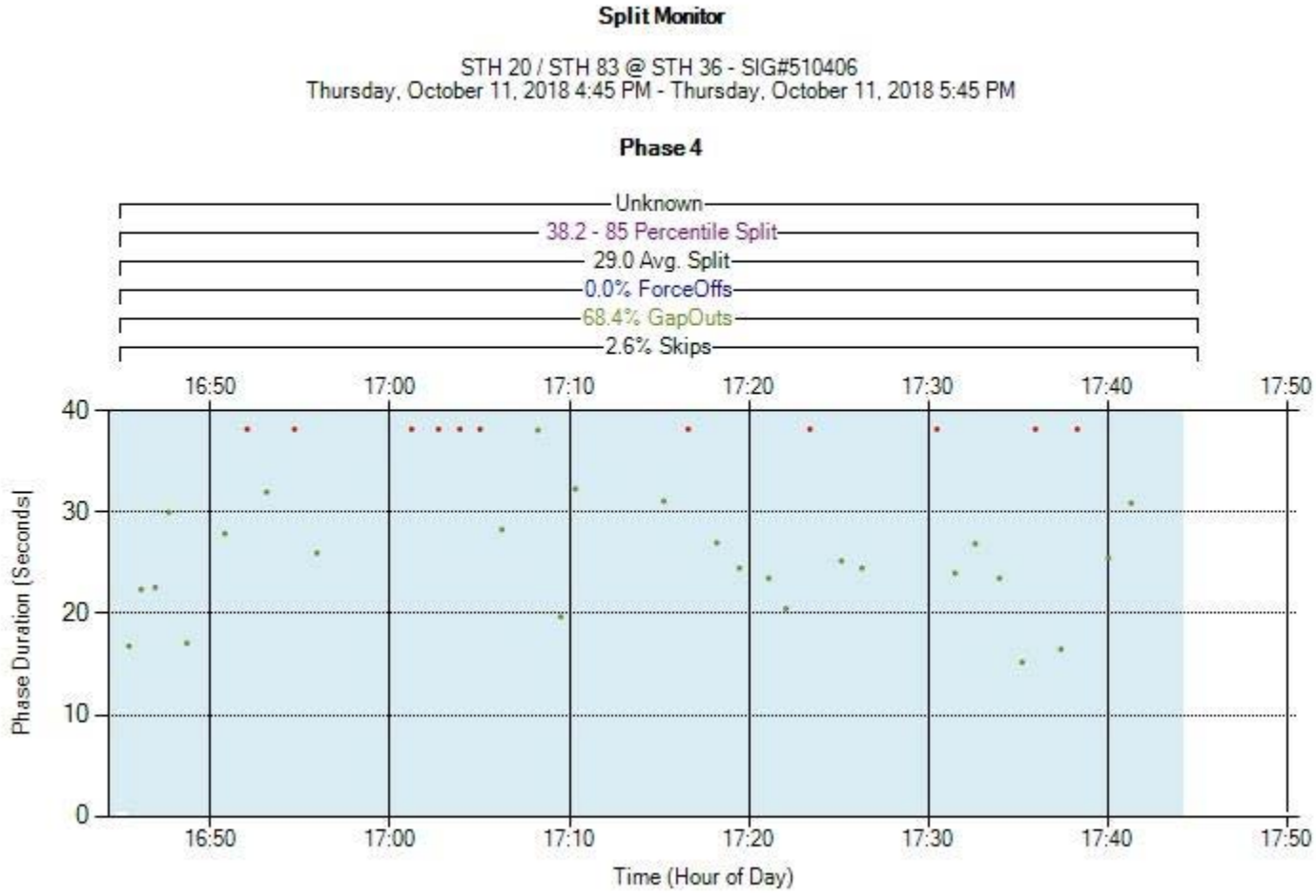
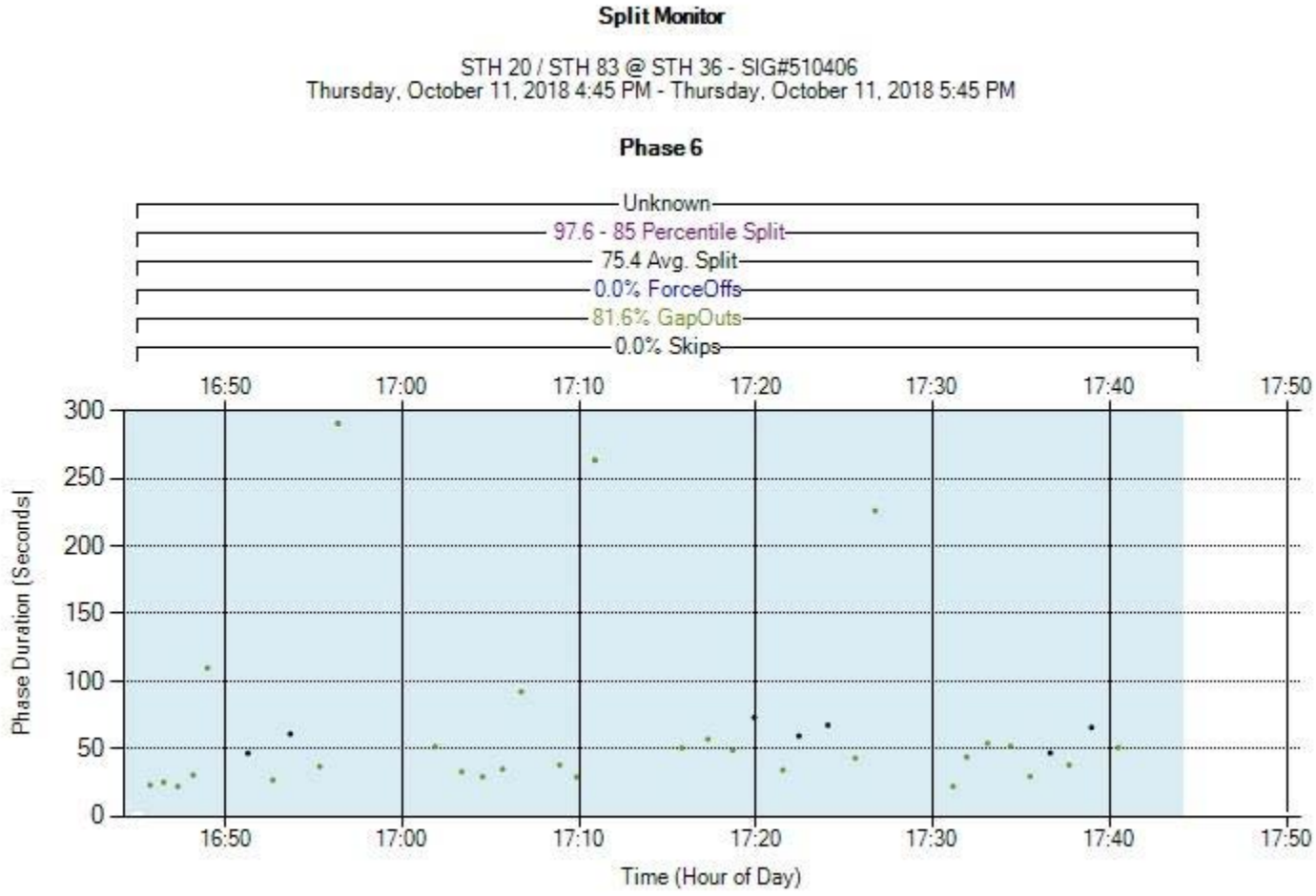
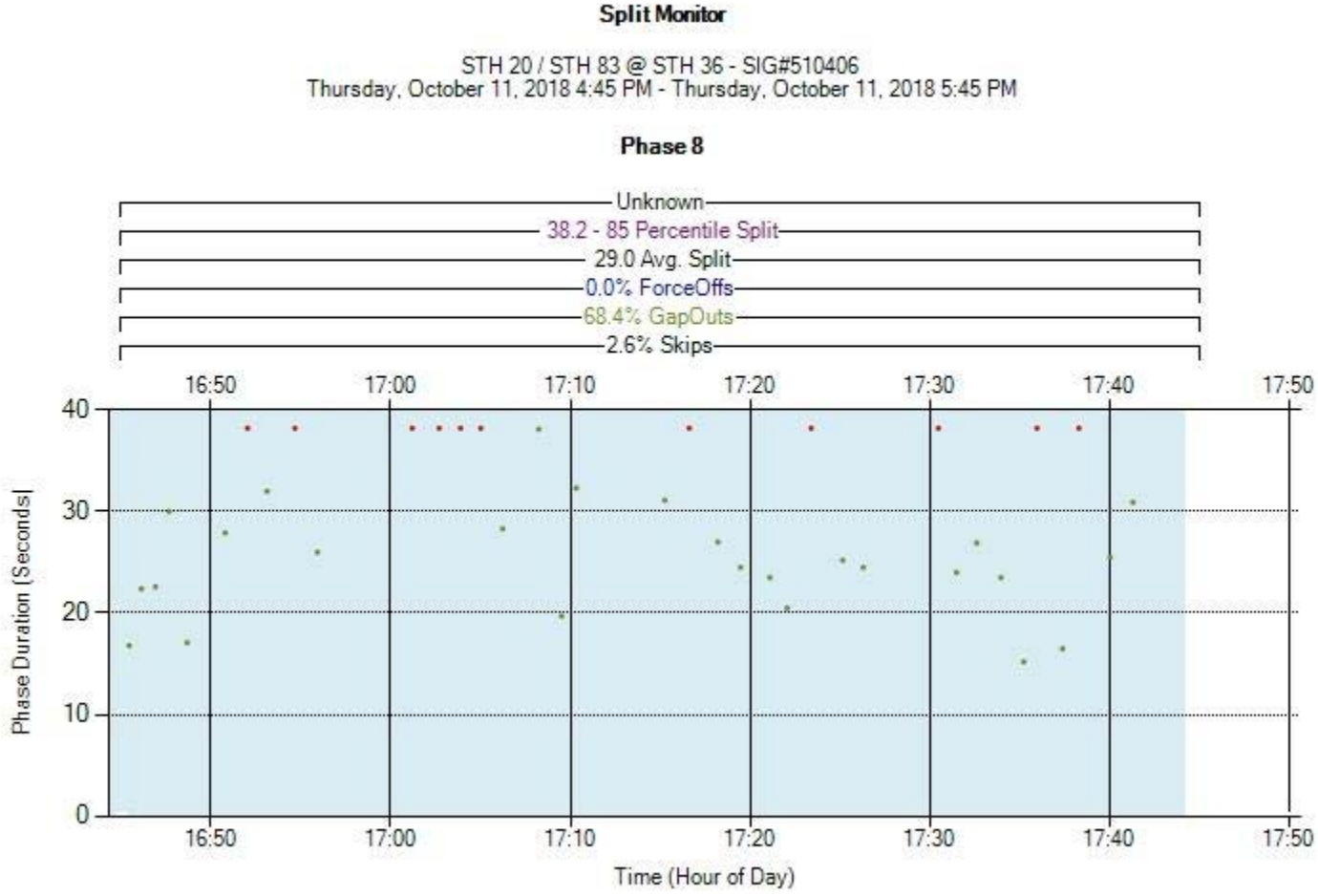
HCS Timings
10/11/2018 – 4:45 PM – 5:45 PM



Isolated Signal – WIS 36 & 20/83
HCS Timings
10/11/2018 – 4:45 PM – 5:45 PM

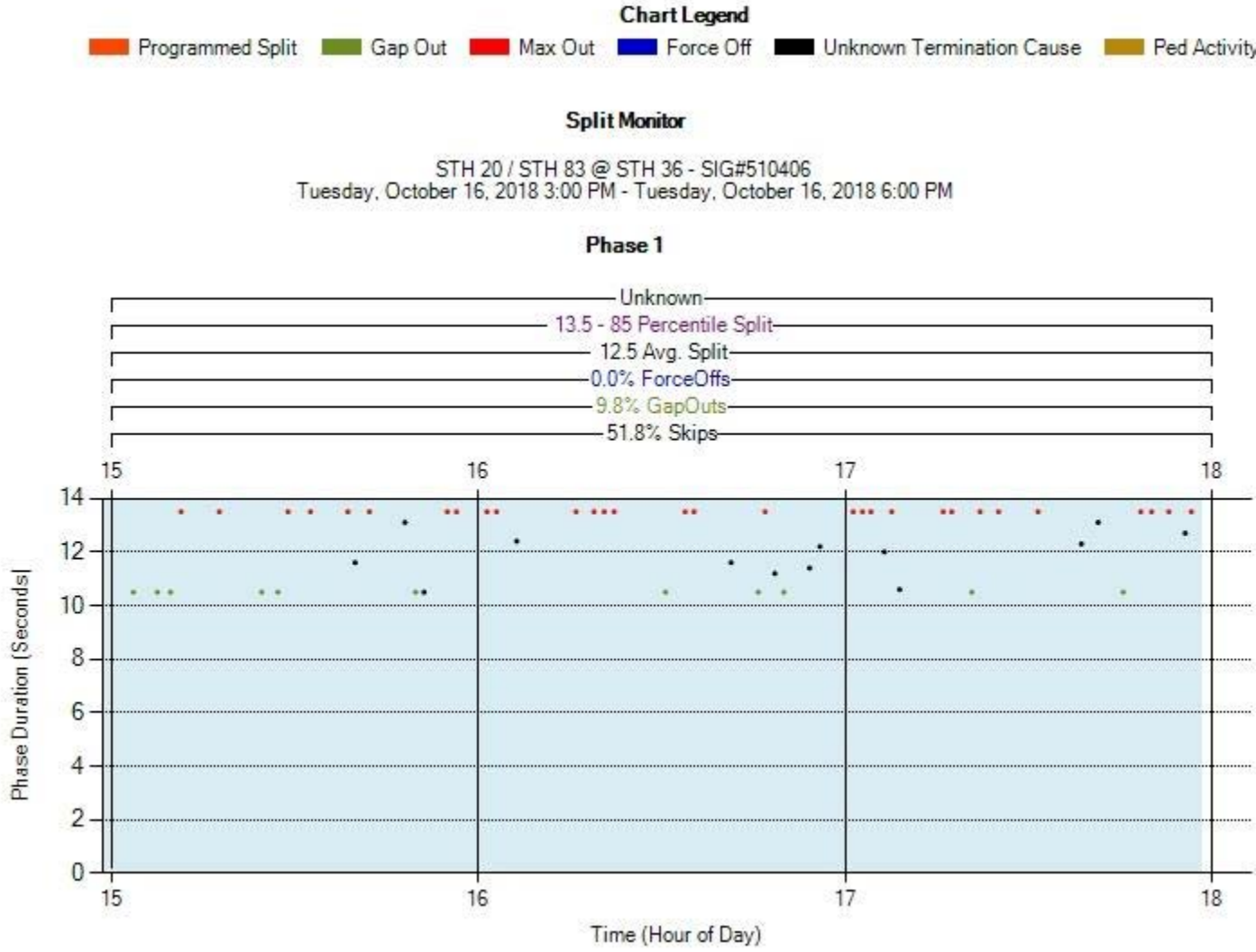


Isolated Signal – WIS 36 & 20/83
HCS Timings
10/11/2018 – 4:45 PM – 5:45 PM

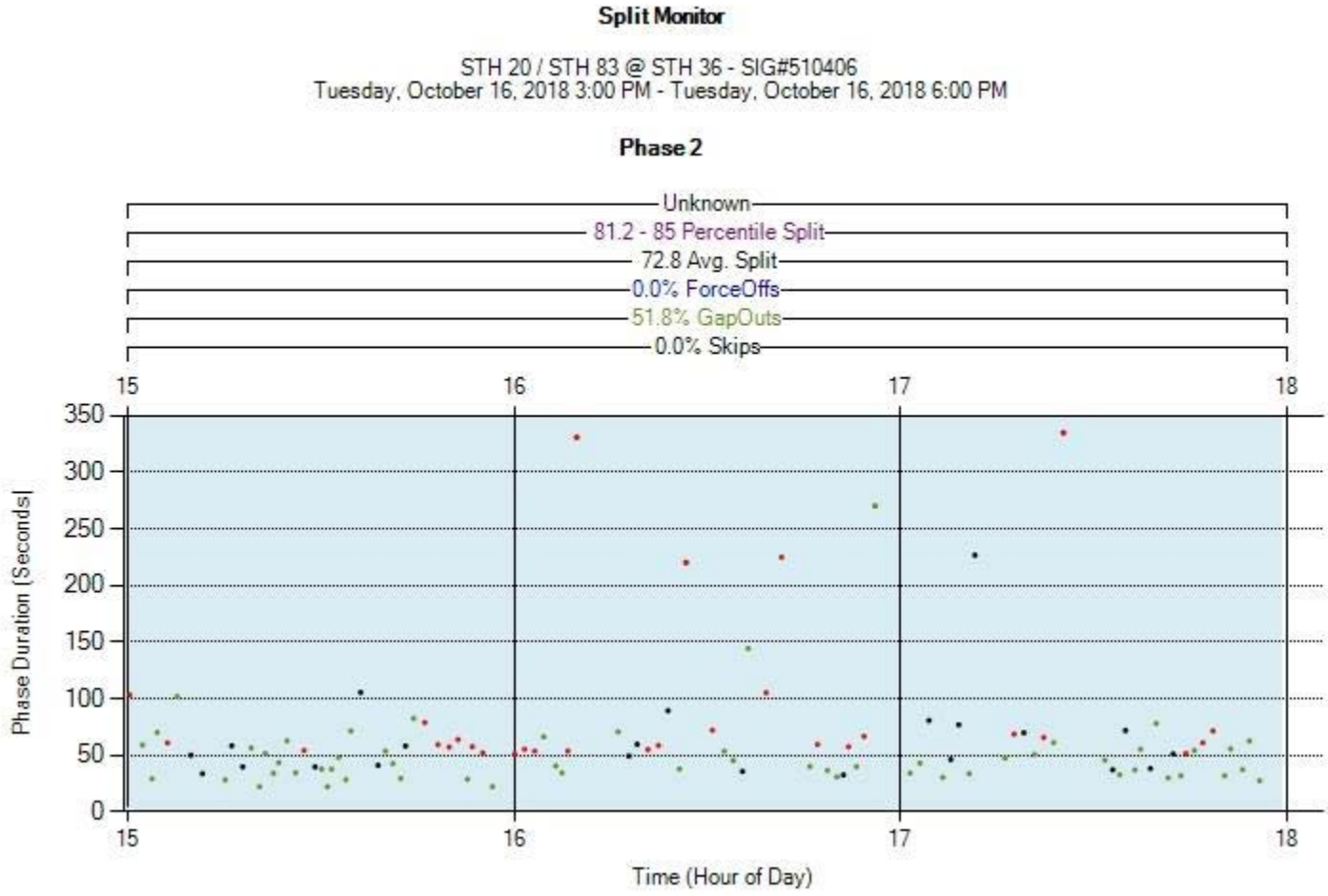


WisBOOM Outputs
WIS 20/83 & WIS 36
Synchro Optimized Timings

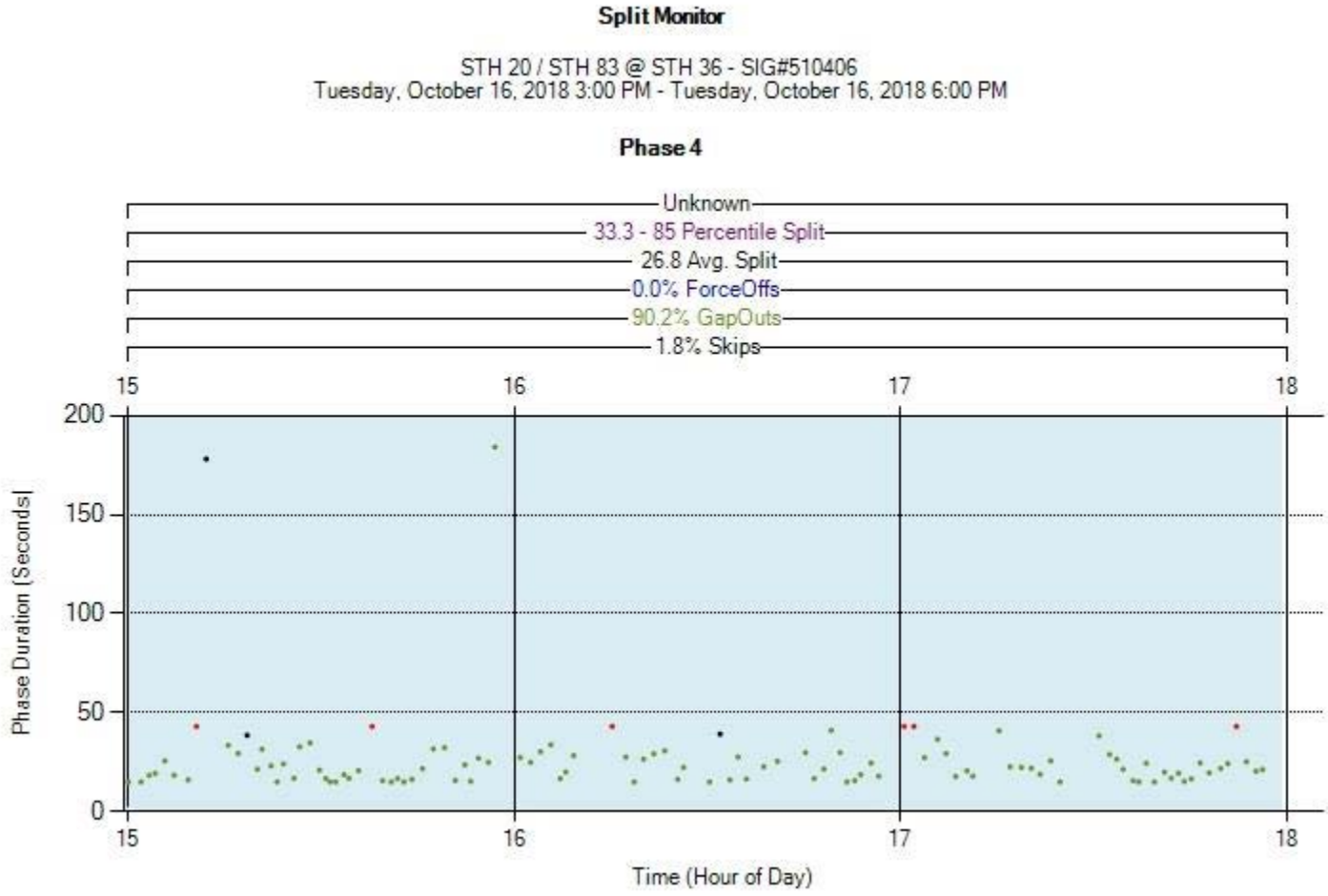
Isolated Signal – WIS 36 & 20/83
Synchro Timings
10/16/2018 – 3:00 PM – 6:00 PM



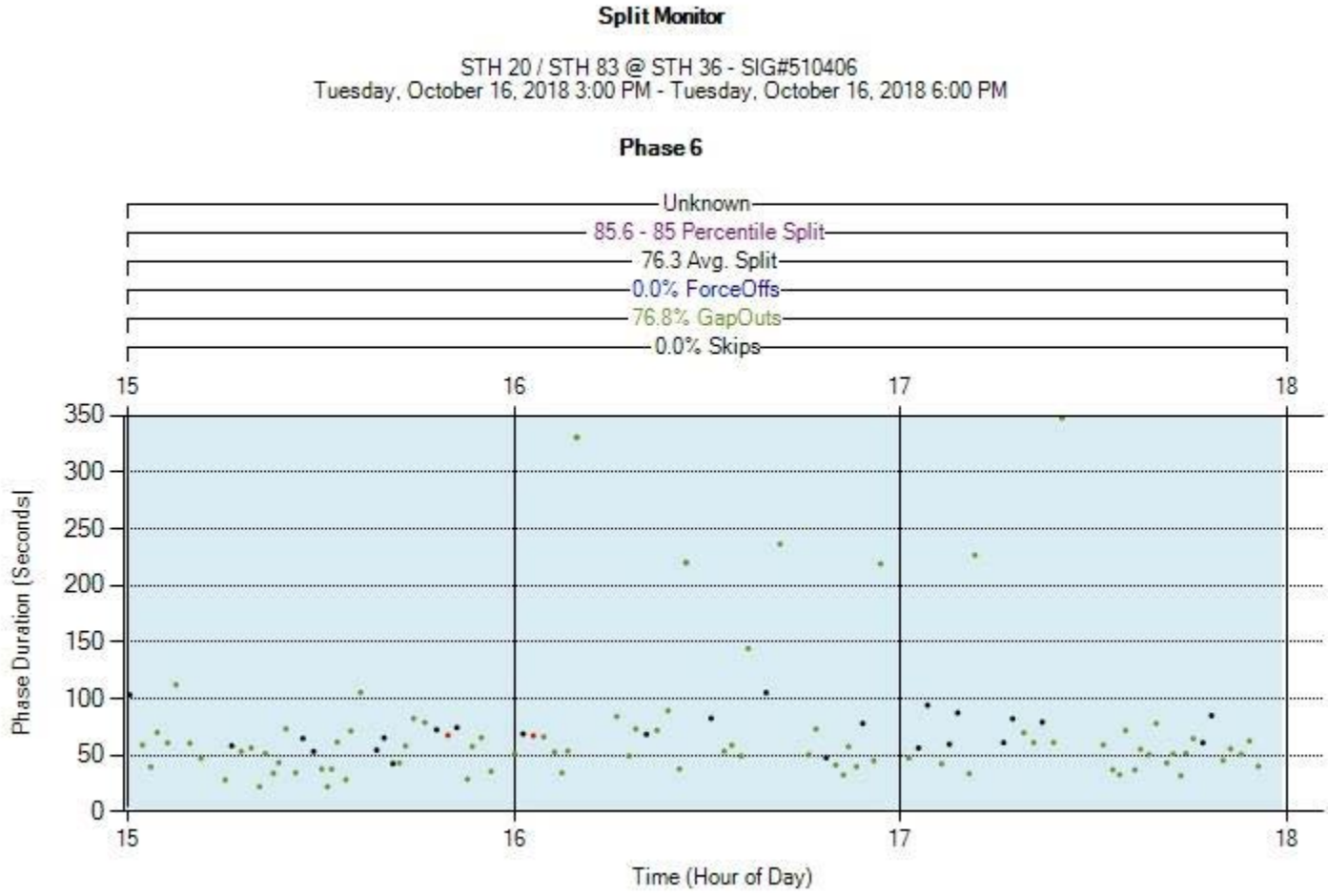
Isolated Signal – WIS 36 & 20/83
Synchro Timings
10/16/2018 – 3:00 PM – 6:00 PM



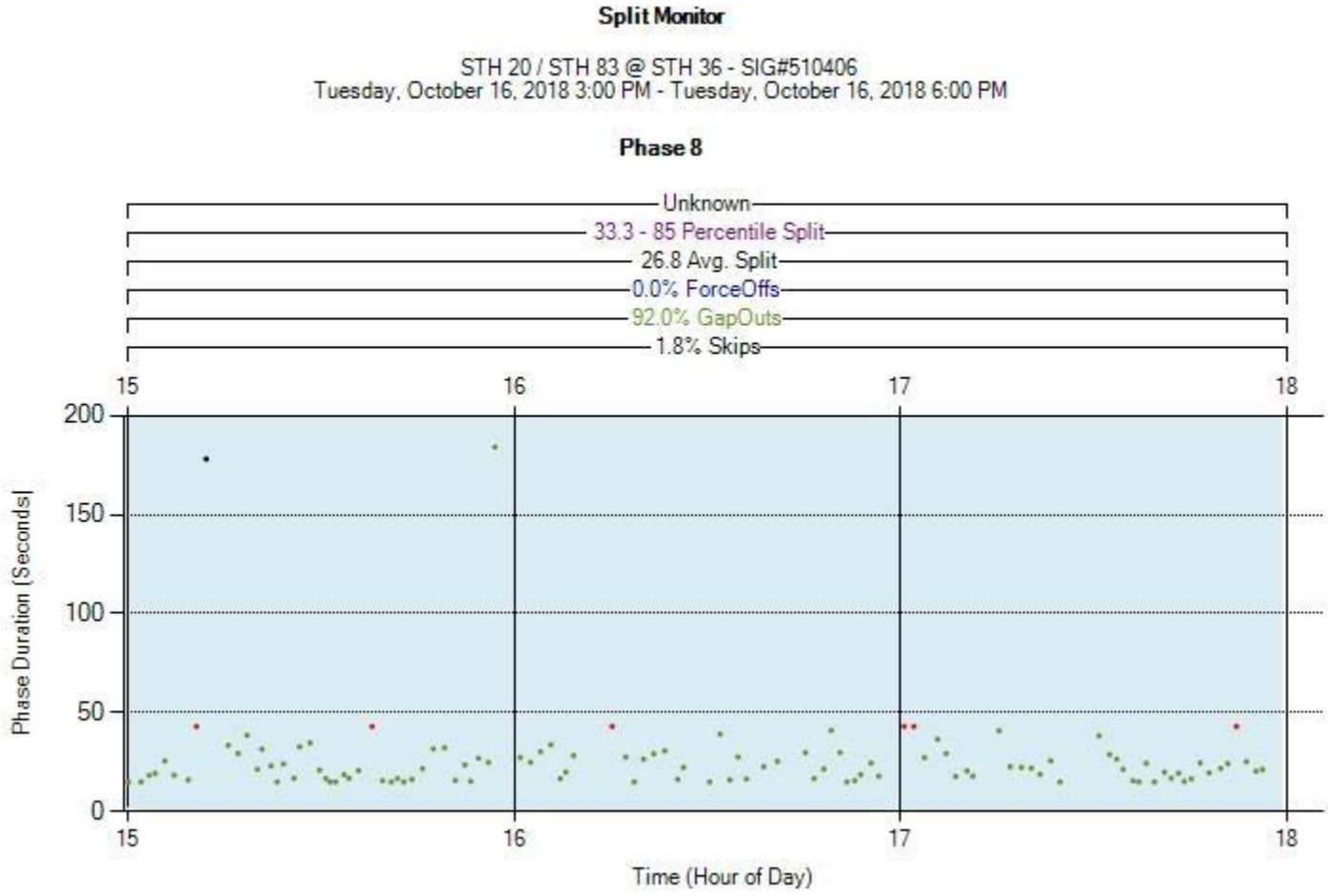
Isolated Signal – WIS 36 & 20/83
Synchro Timings
10/16/2018 – 3:00 PM – 6:00 PM



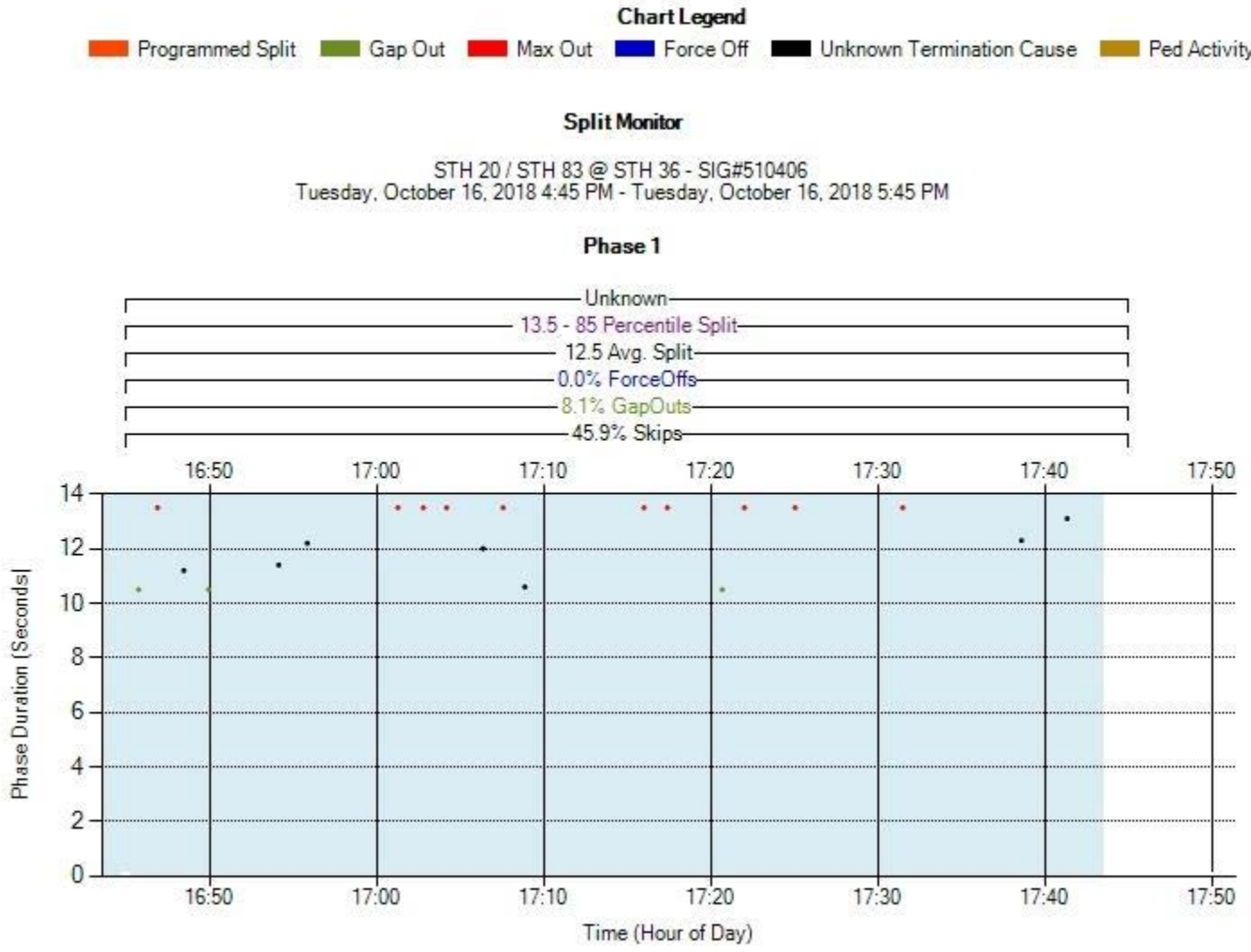
Isolated Signal – WIS 36 & 20/83
Synchro Timings
10/16/2018 – 3:00 PM – 6:00 PM



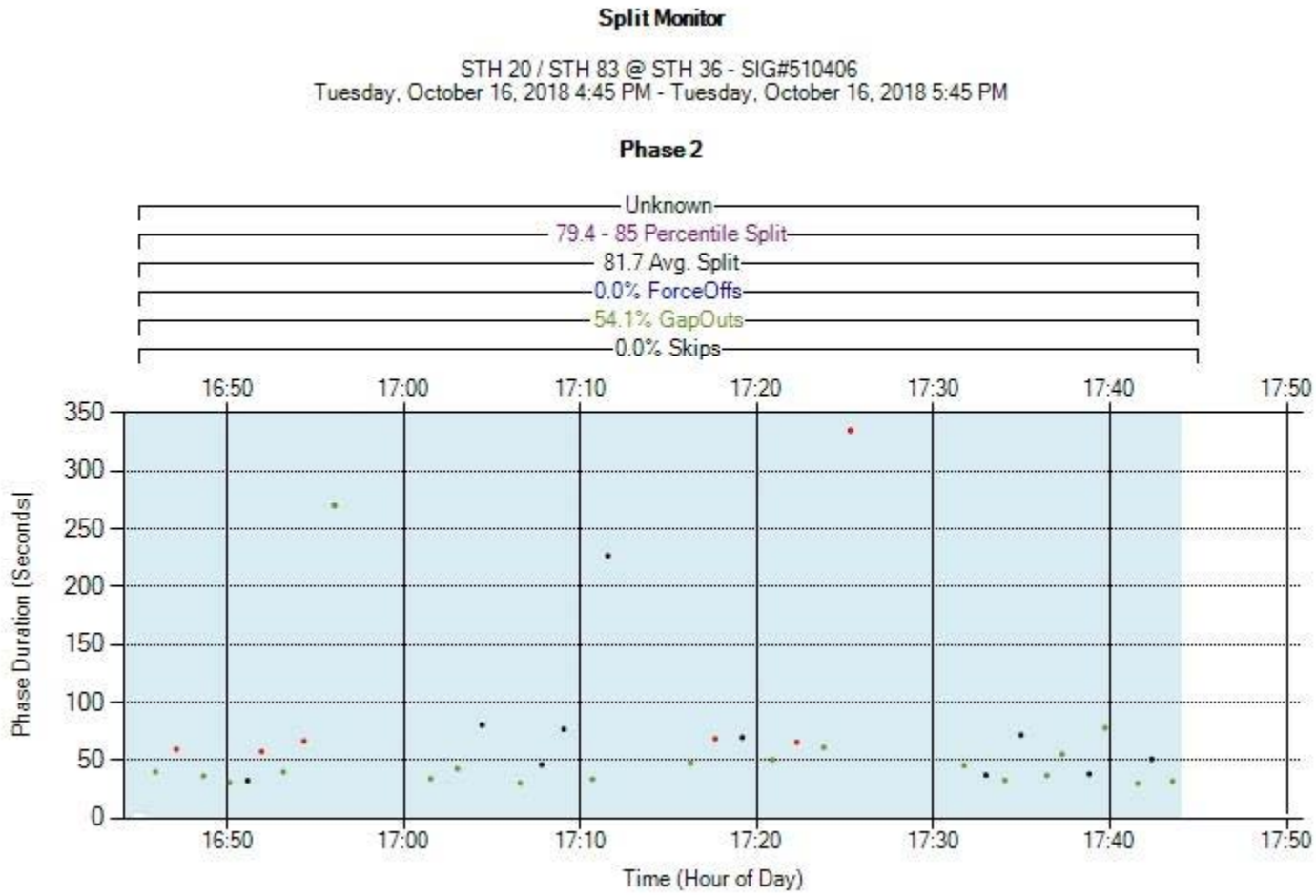
Isolated Signal – WIS 36 & 20/83
Synchro Timings
10/16/2018 – 3:00 PM – 6:00 PM



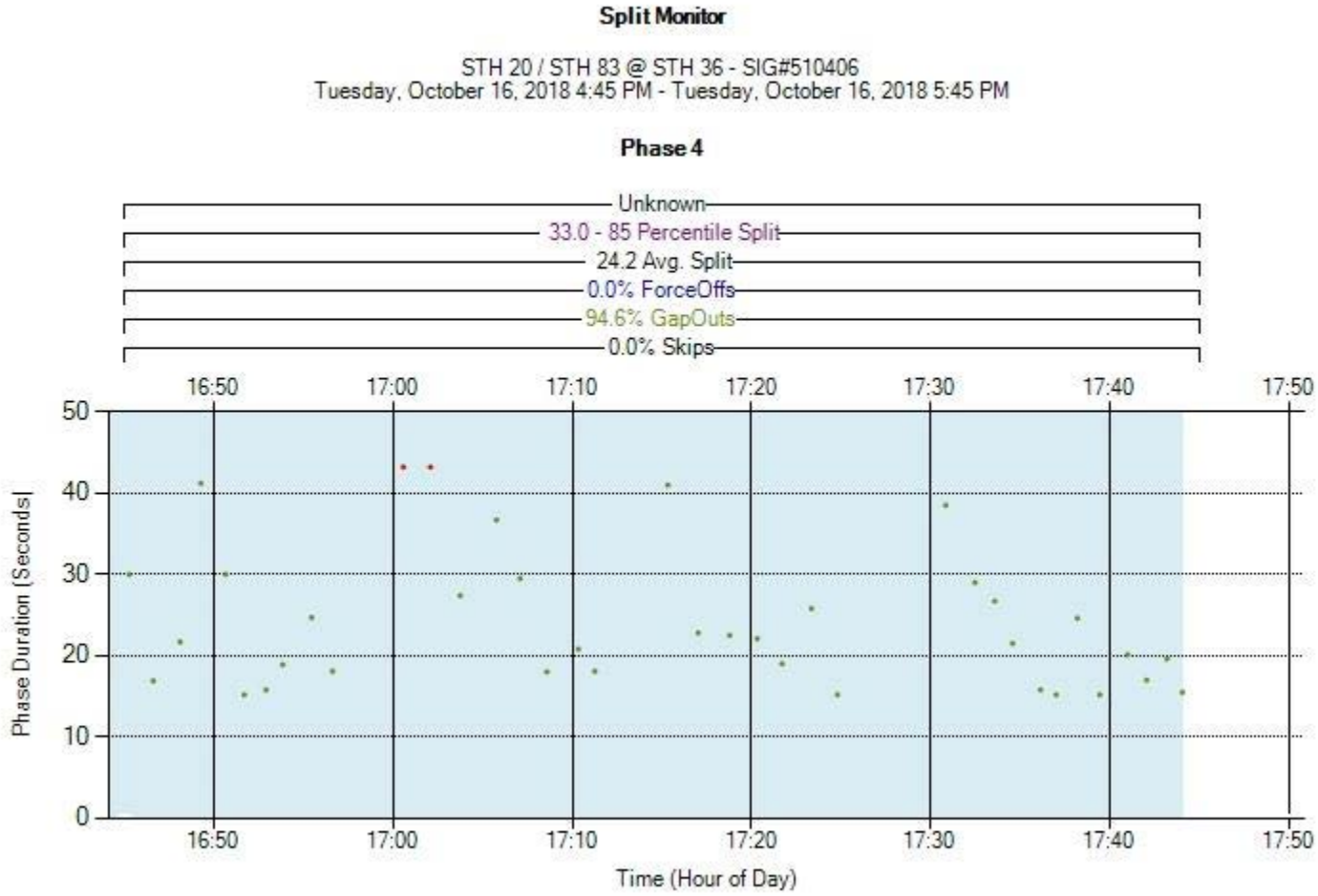
Isolated Signal – WIS 36 & 20/83
Synchro Timings
10/16/2018 – 4:45 PM – 5:45 PM



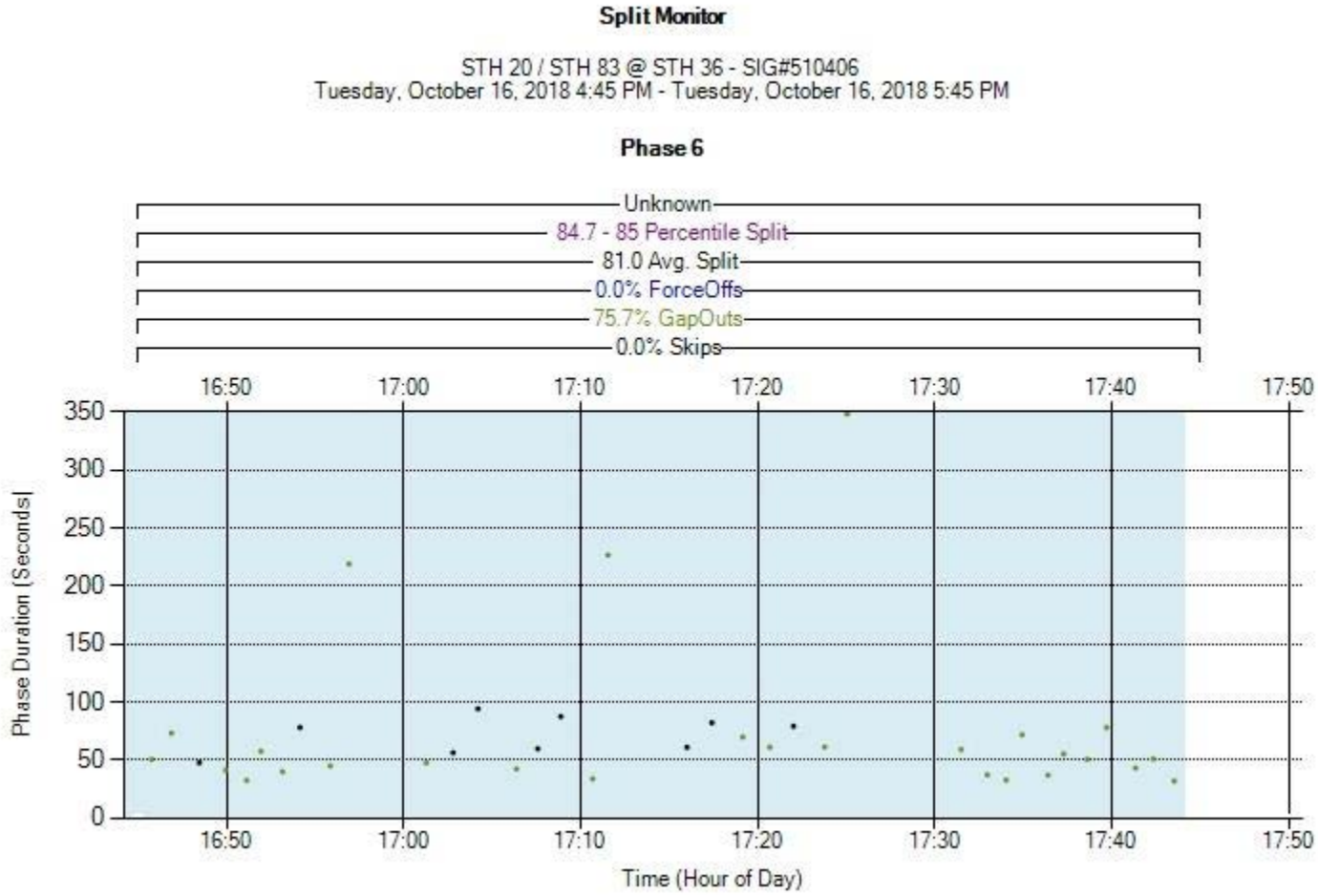
Isolated Signal – WIS 36 & 20/83
Synchro Timings
10/16/2018 – 4:45 PM – 5:45 PM



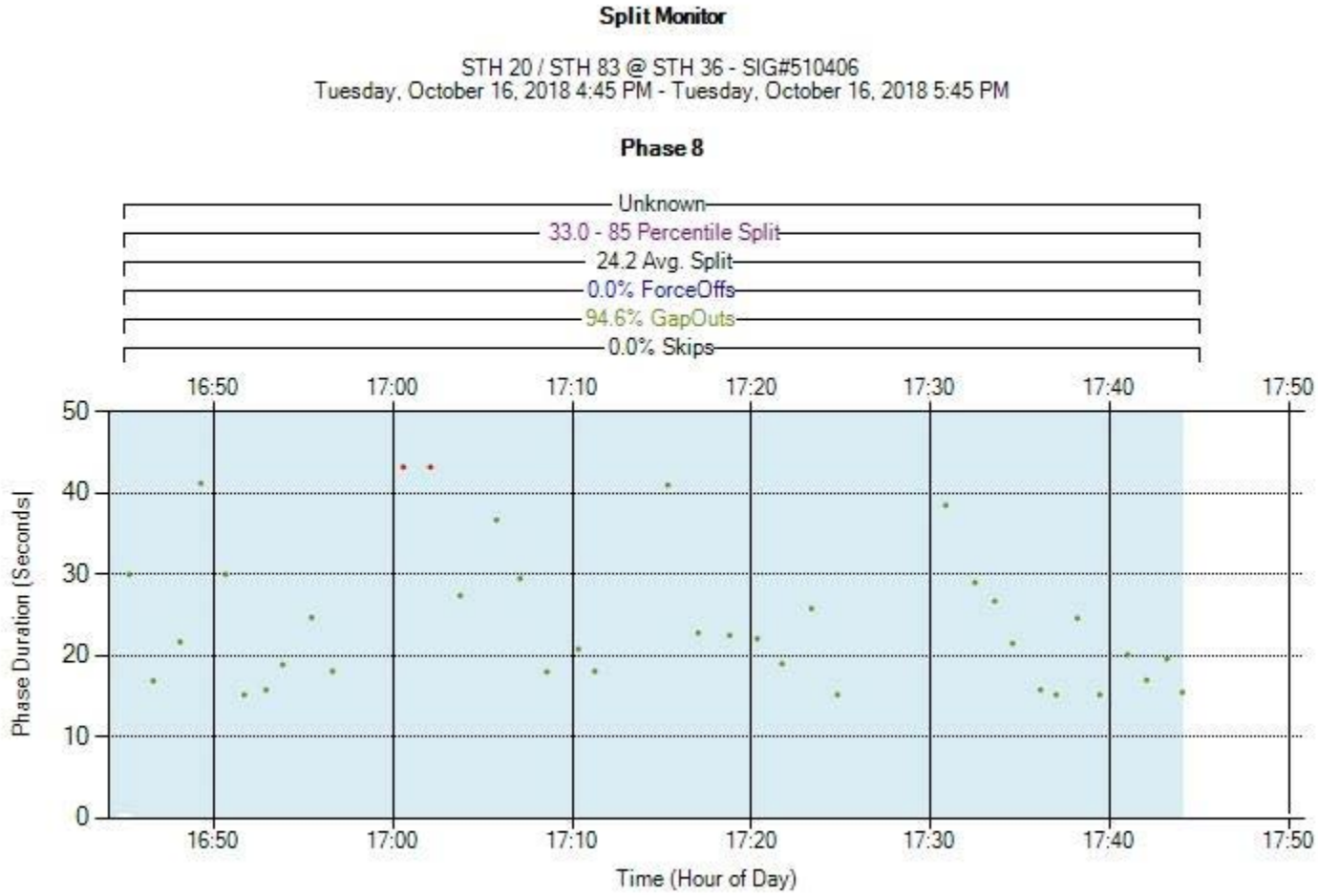
Isolated Signal – WIS 36 & 20/83
Synchro Timings
10/16/2018 – 4:45 PM – 5:45 PM



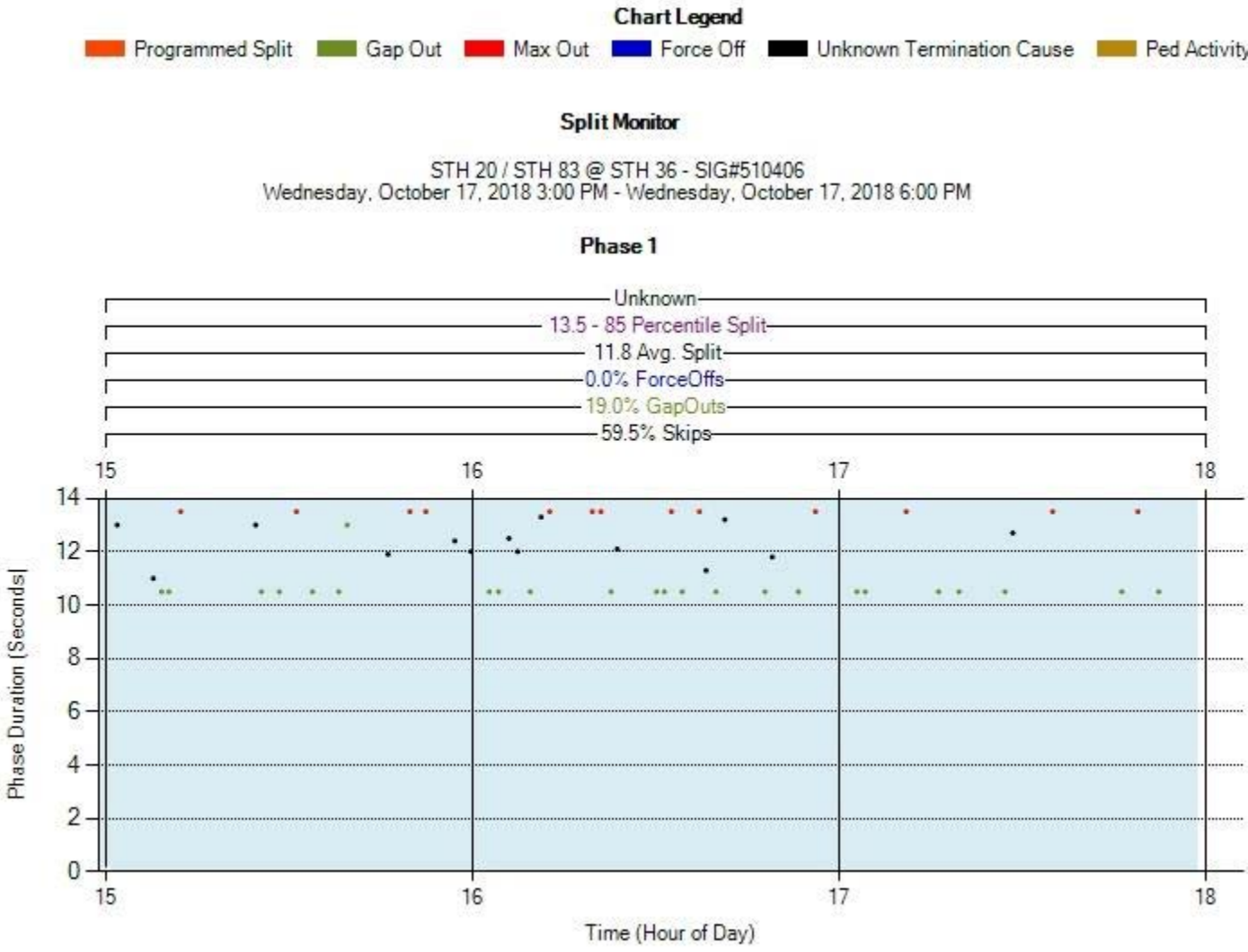
Isolated Signal – WIS 36 & 20/83
Synchro Timings
10/16/2018 – 4:45 PM – 5:45 PM



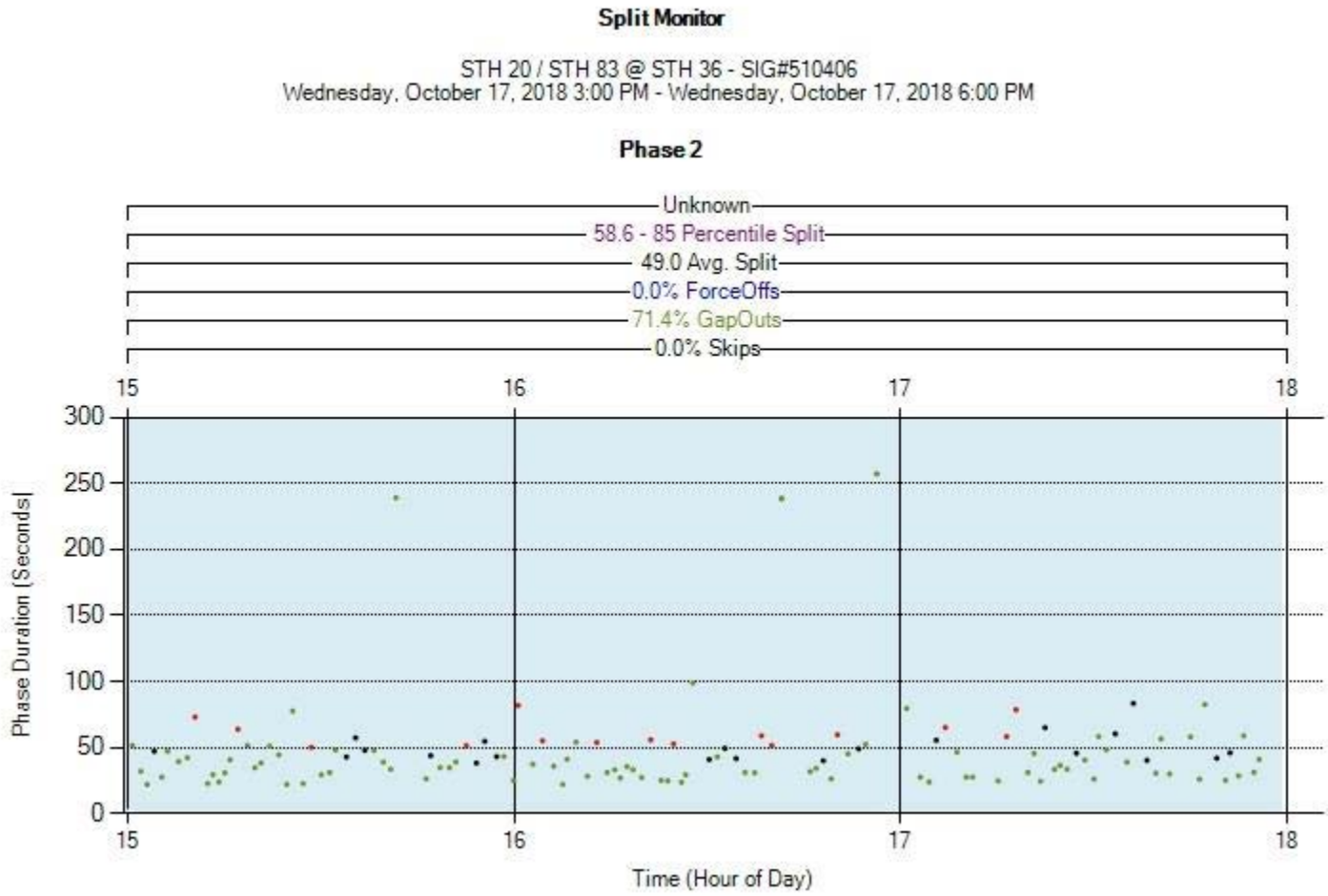
Isolated Signal – WIS 36 & 20/83
Synchro Timings
10/16/2018 – 4:45 PM – 5:45 PM



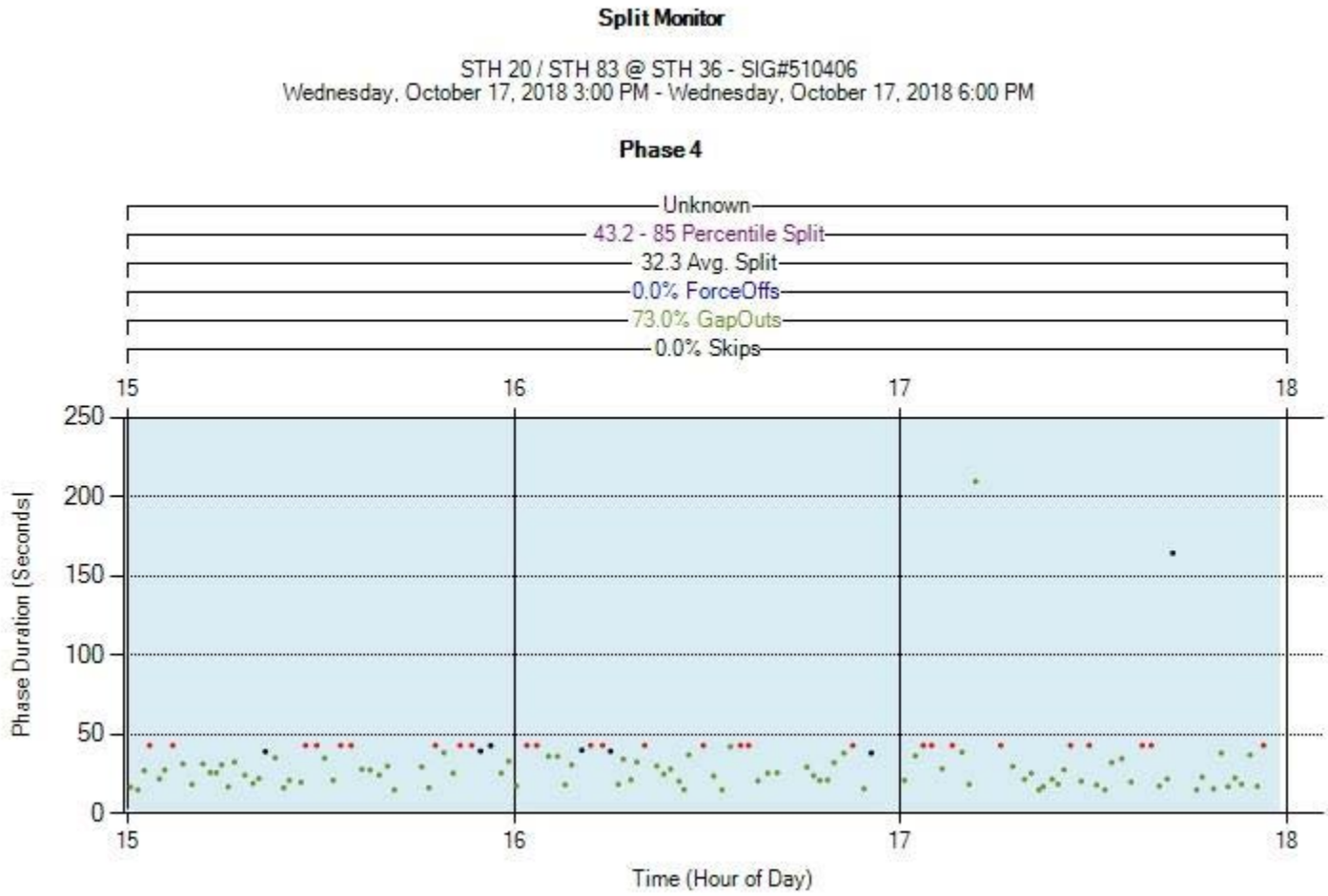
Isolated Signal – WIS 36 & 20/83
Synchro Timings
10/17/2018 – 3:00 PM – 6:00 PM



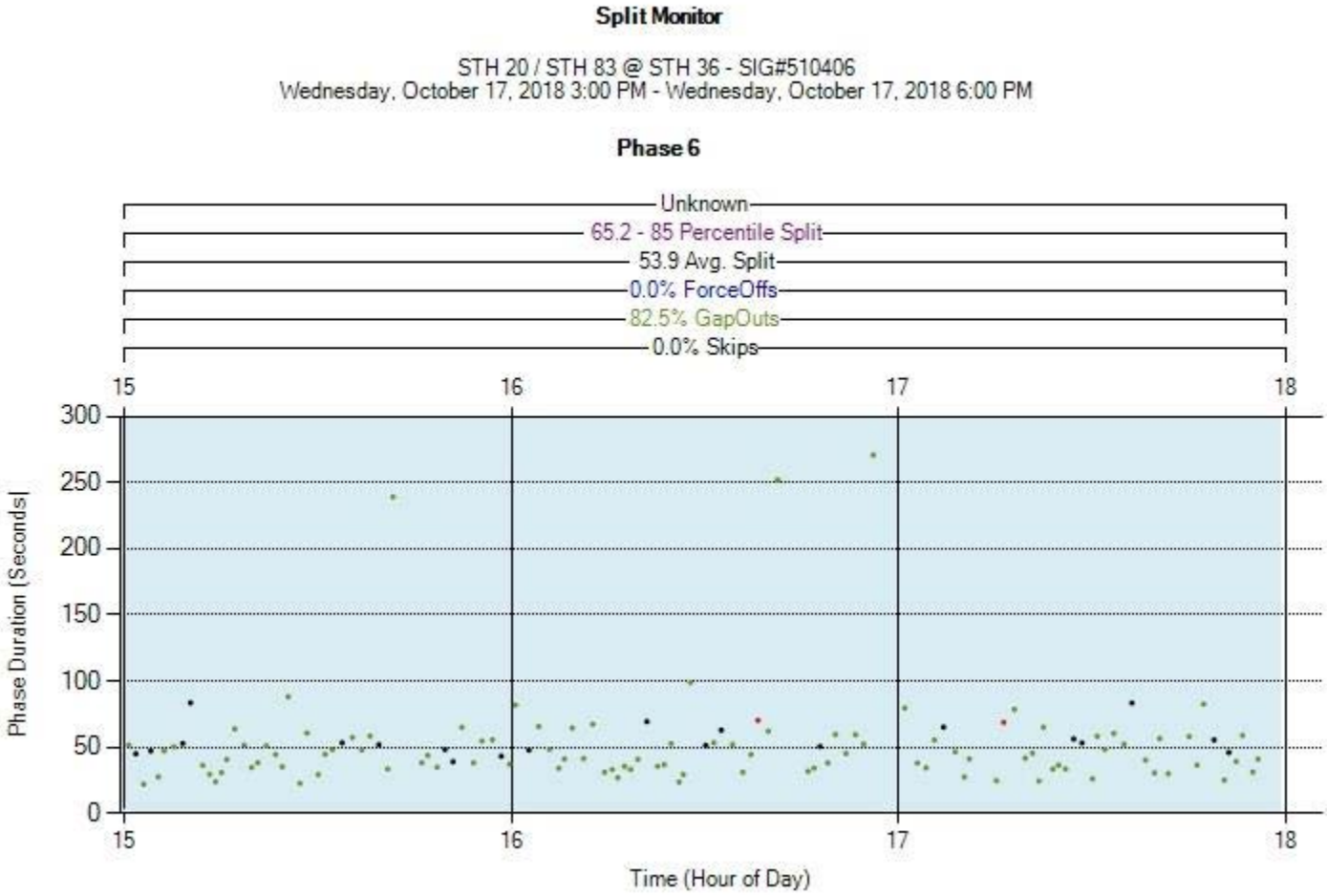
Isolated Signal – WIS 36 & 20/83
Synchro Timings
10/17/2018 – 3:00 PM – 6:00 PM



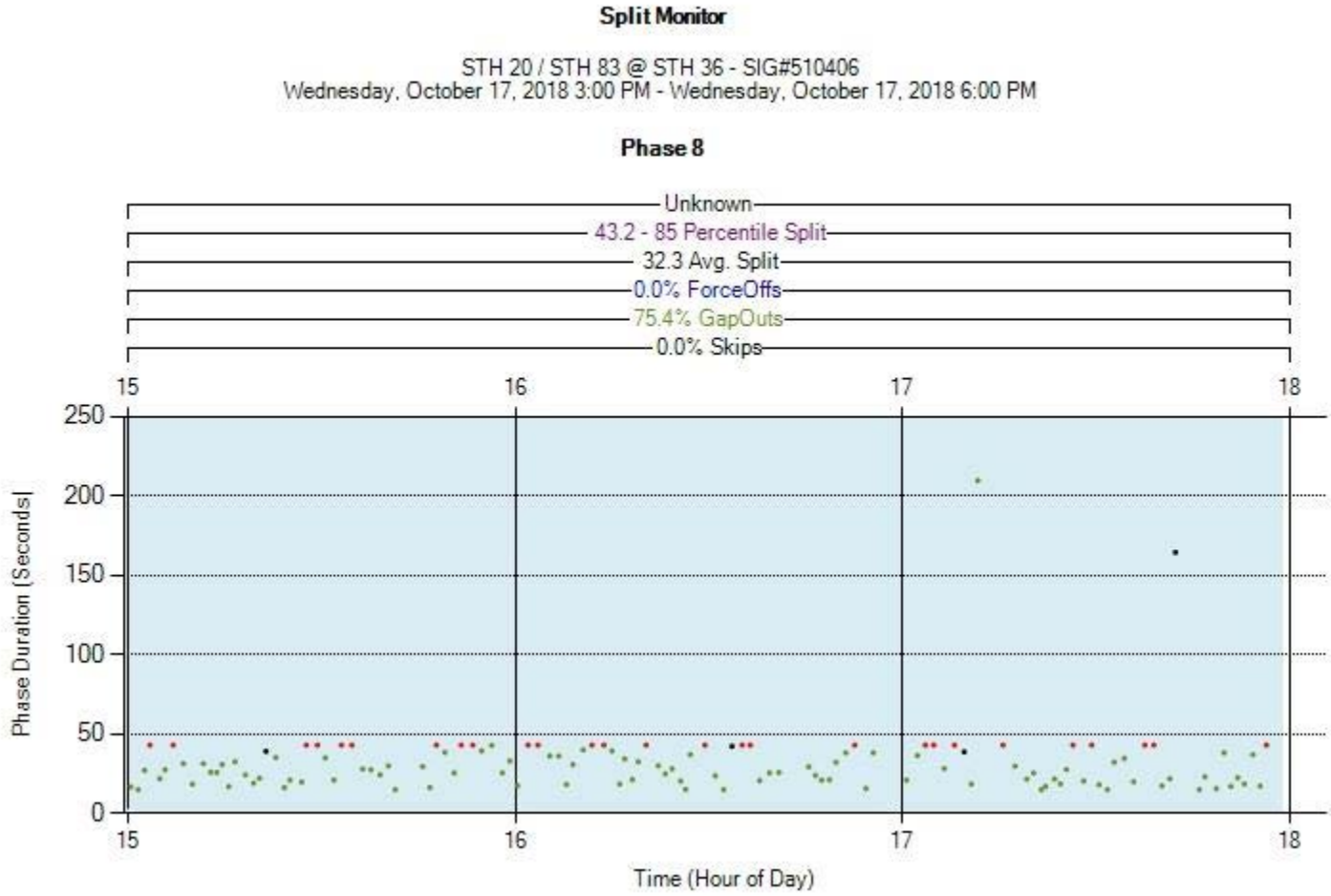
Isolated Signal – WIS 36 & 20/83
Synchro Timings
10/17/2018 – 3:00 PM – 6:00 PM



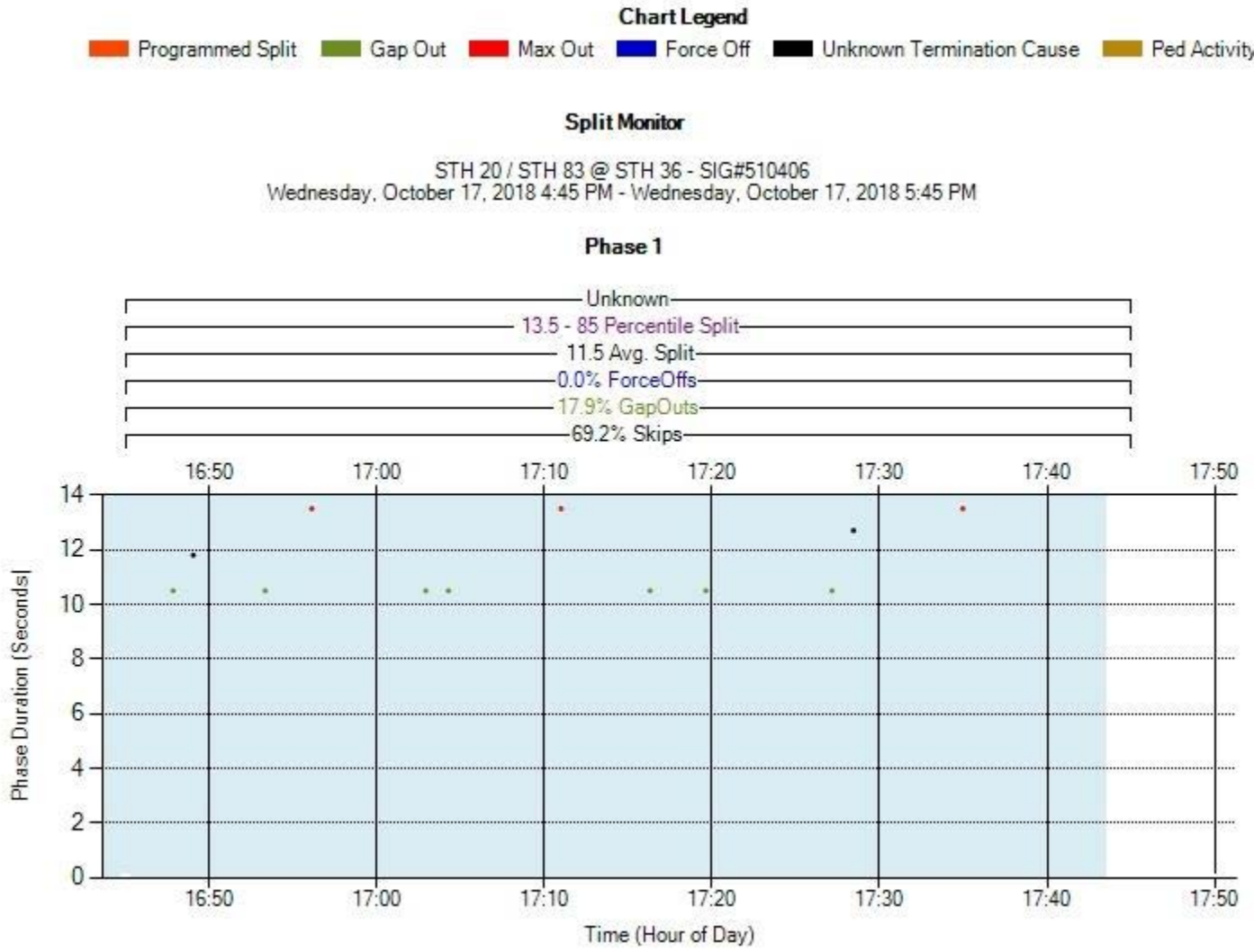
Isolated Signal – WIS 36 & 20/83
Synchro Timings
10/17/2018 – 3:00 PM – 6:00 PM



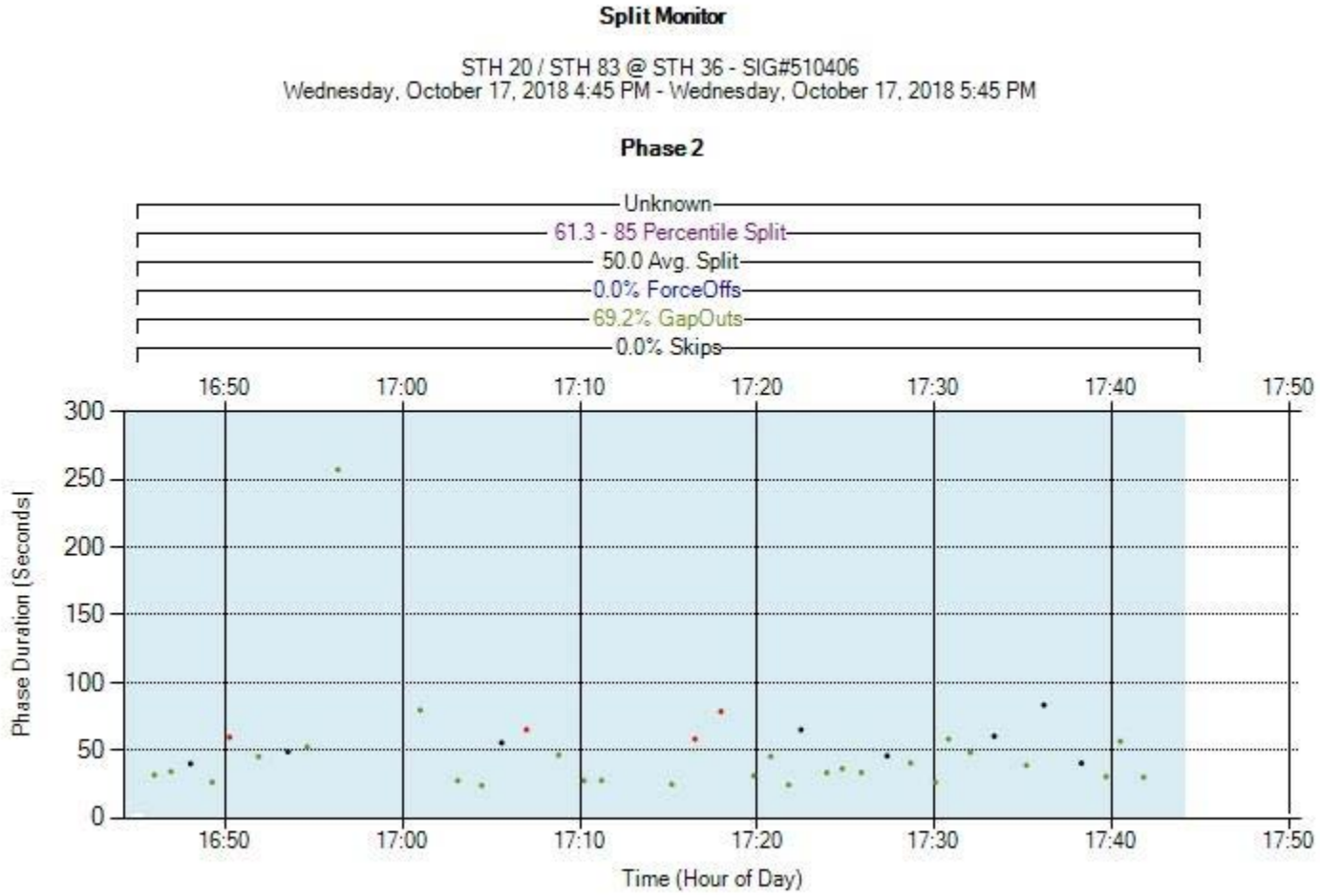
Isolated Signal – WIS 36 & 20/83
Synchro Timings
10/17/2018 – 3:00 PM – 6:00 PM



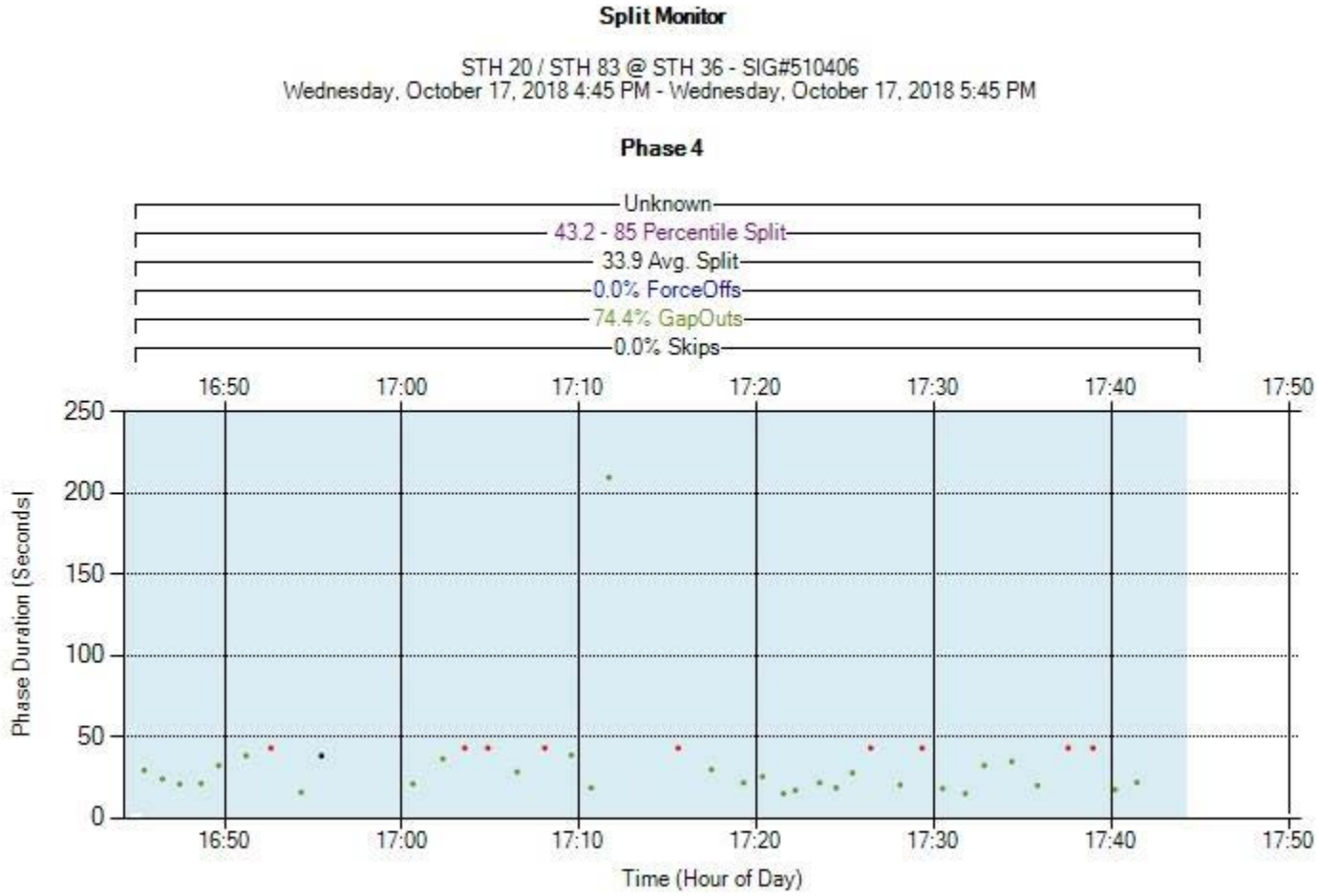
Isolated Signal – WIS 36 & 20/83
Synchro Timings
10/17/2018 – 4:45 PM – 5:45 PM



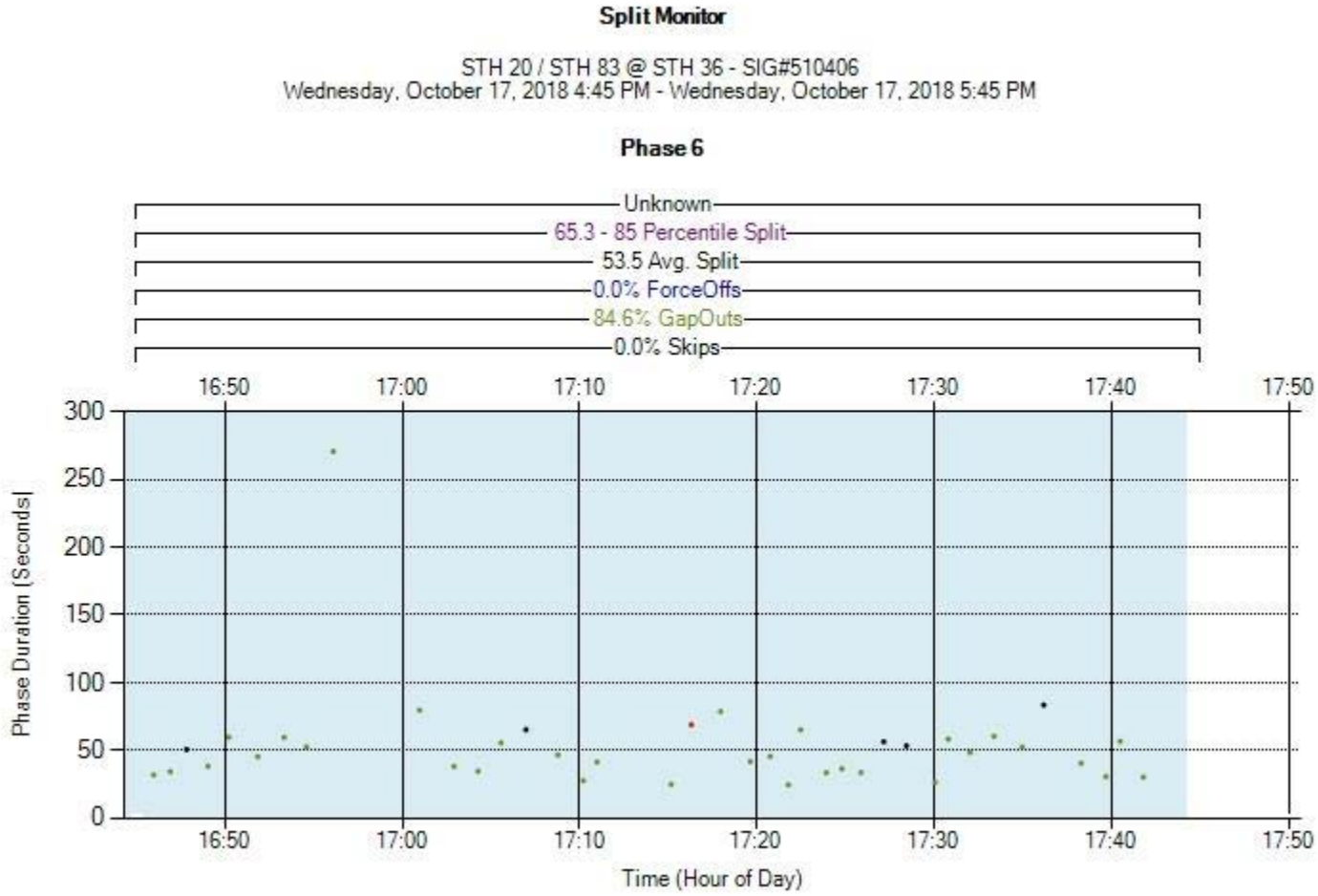
Isolated Signal – WIS 36 & 20/83
Synchro Timings
10/17/2018 – 4:45 PM – 5:45 PM



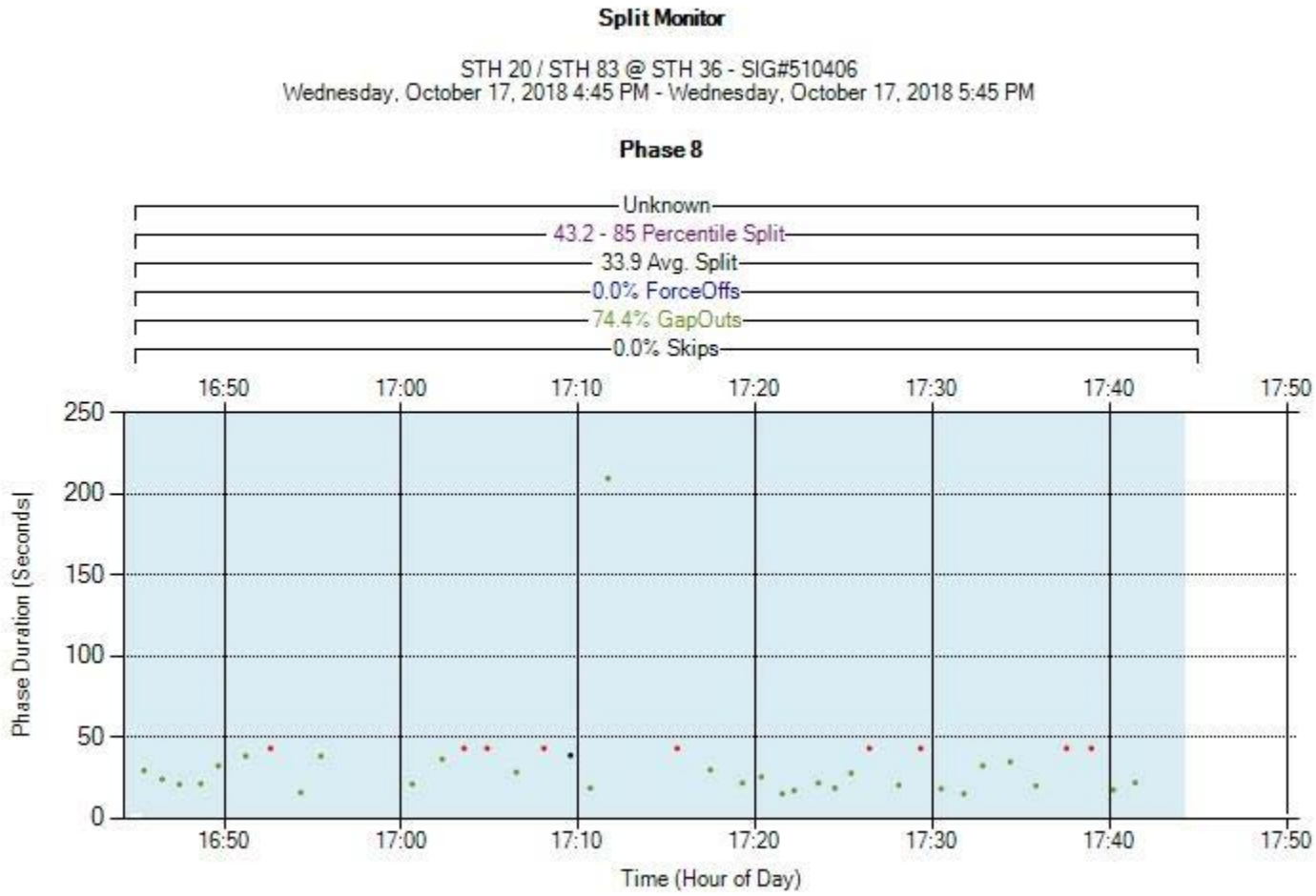
Isolated Signal – WIS 36 & 20/83
Synchro Timings
10/17/2018 – 4:45 PM – 5:45 PM



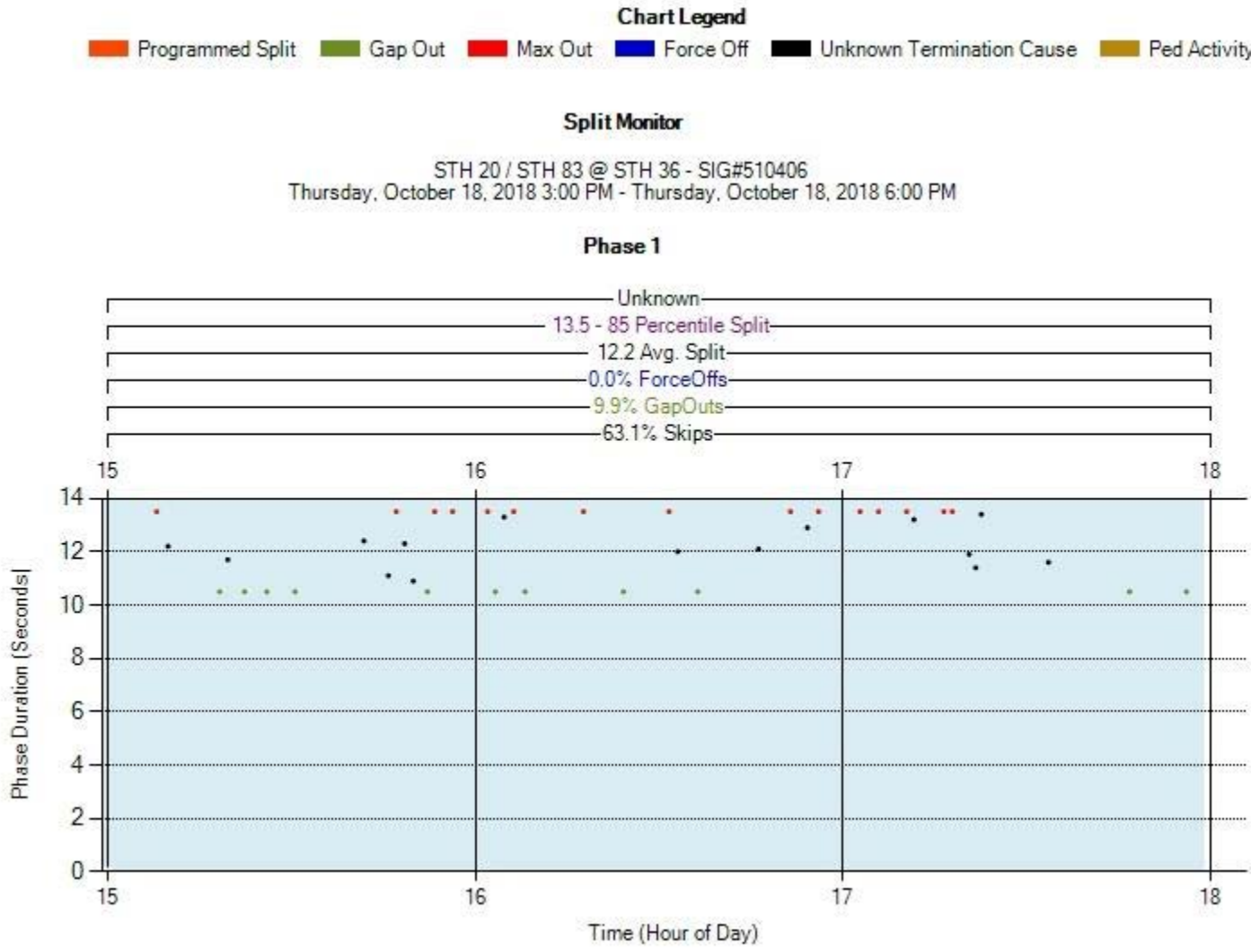
Isolated Signal – WIS 36 & 20/83
Synchro Timings
10/17/2018 – 4:45 PM – 5:45 PM



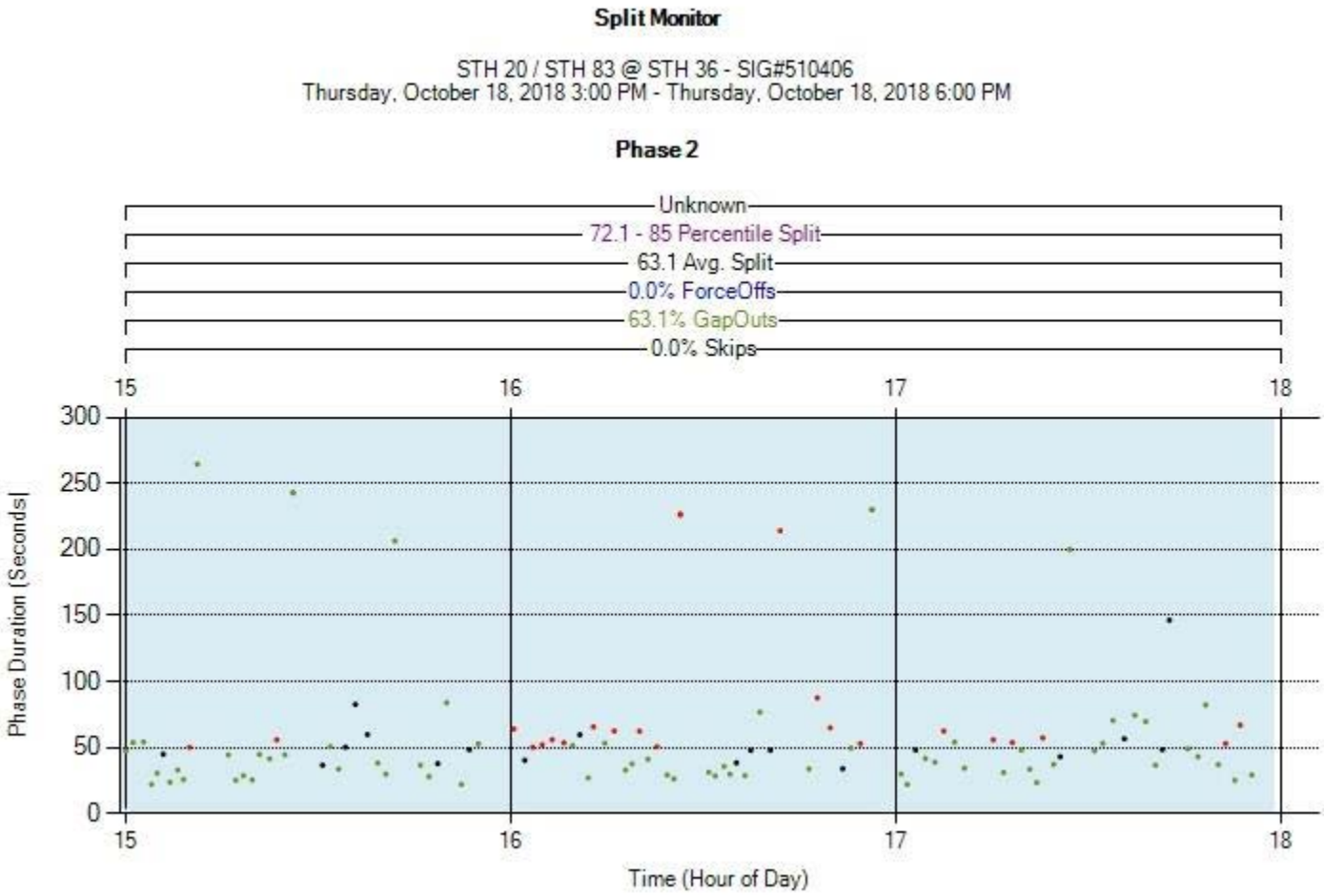
Isolated Signal – WIS 36 & 20/83
Synchro Timings
10/17/2018 – 4:45 PM – 5:45 PM



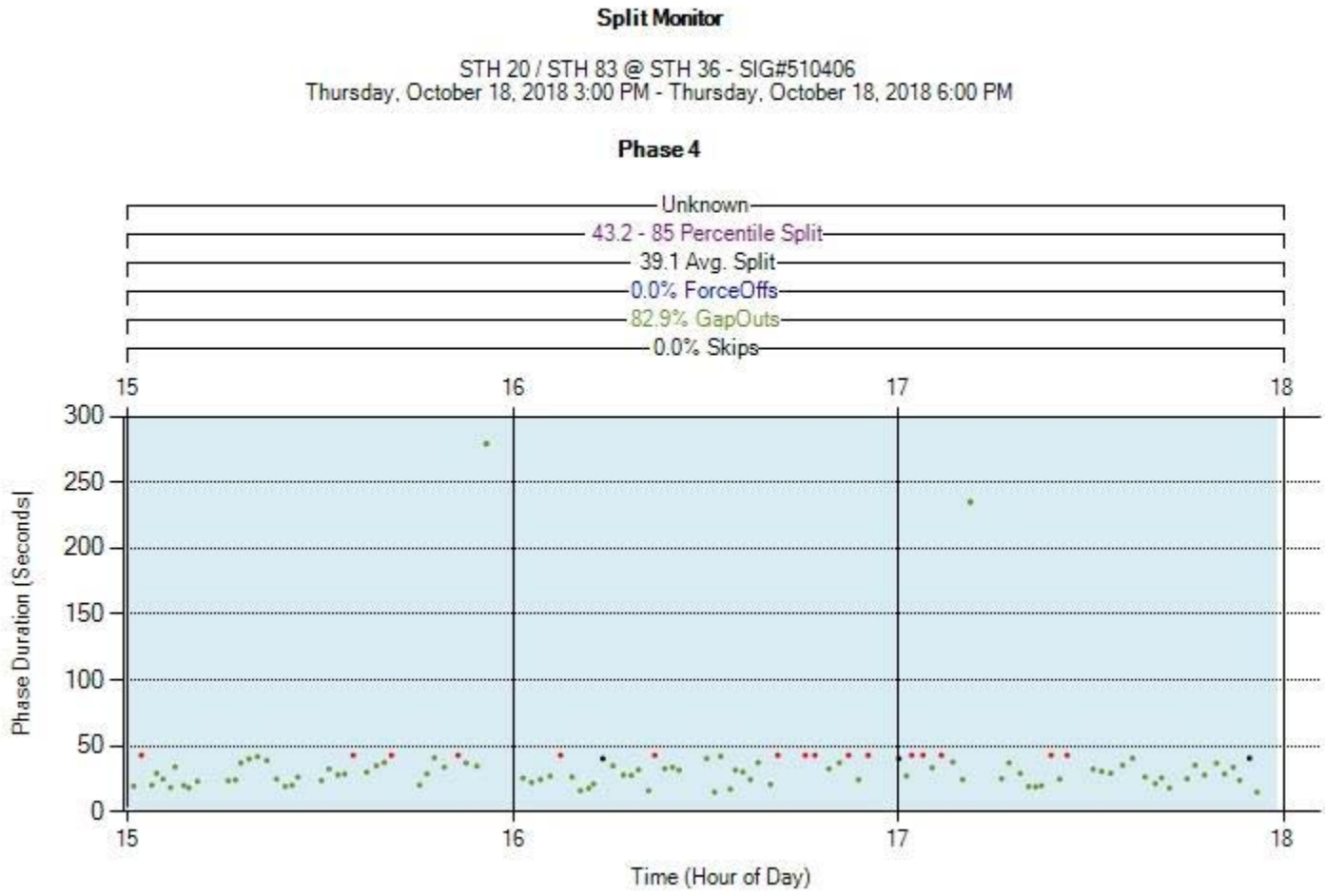
Isolated Signal – WIS 36 & 20/83
Synchro Timings
10/18/2018 – 3:00 PM – 6:00 PM



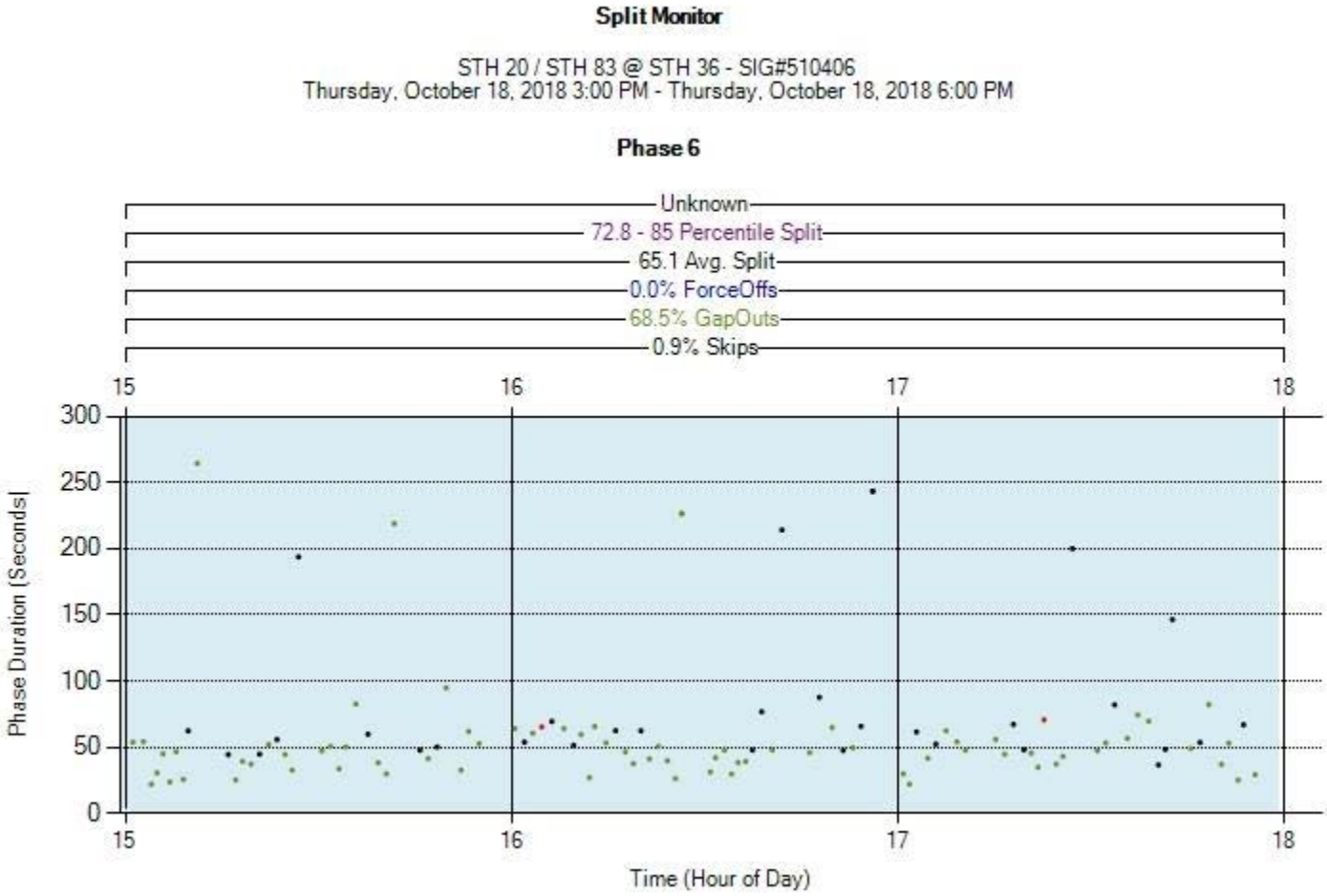
Isolated Signal – WIS 36 & 20/83
Synchro Timings
10/18/2018 – 3:00 PM – 6:00 PM



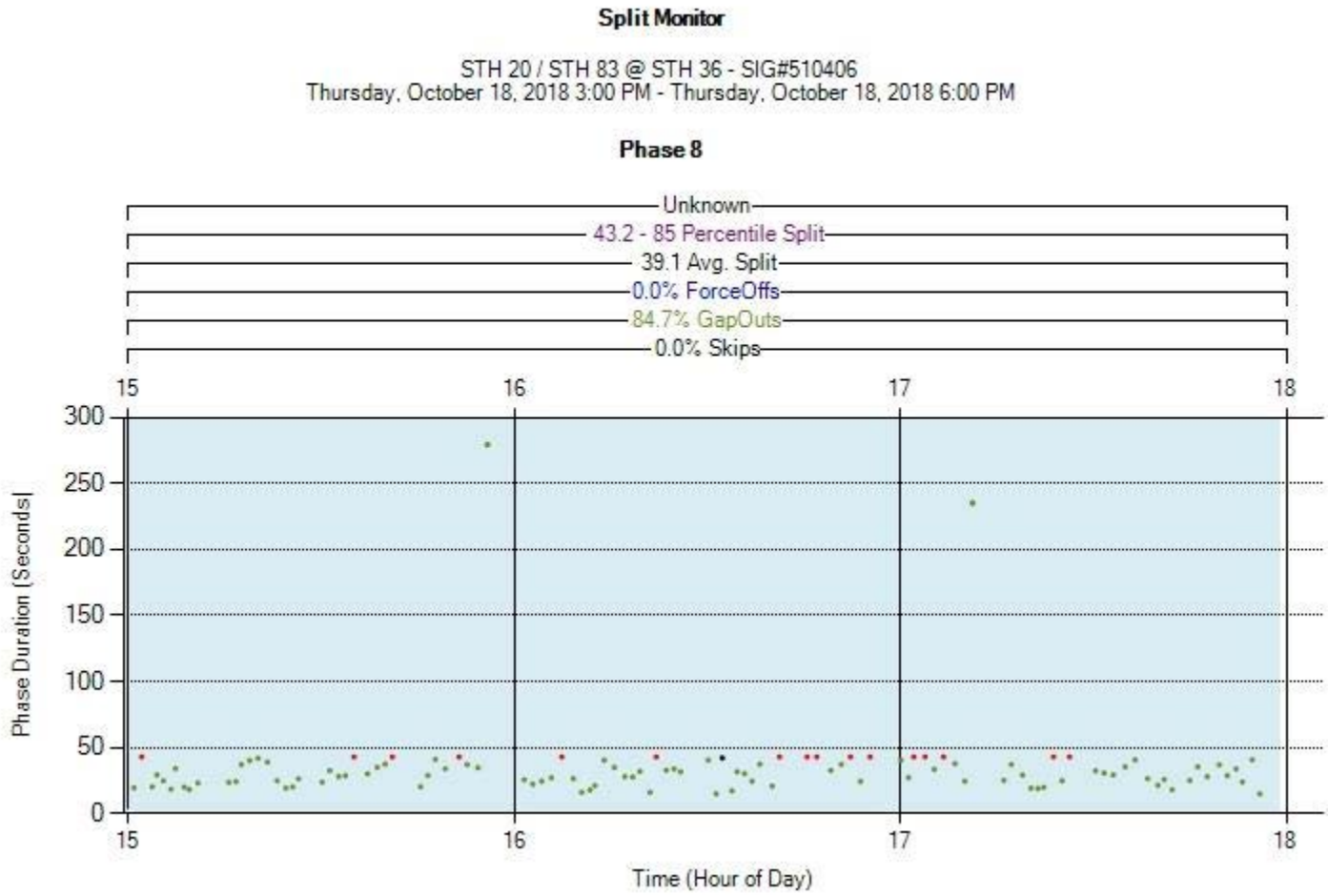
Isolated Signal – WIS 36 & 20/83
Synchro Timings
10/18/2018 – 3:00 PM – 6:00 PM



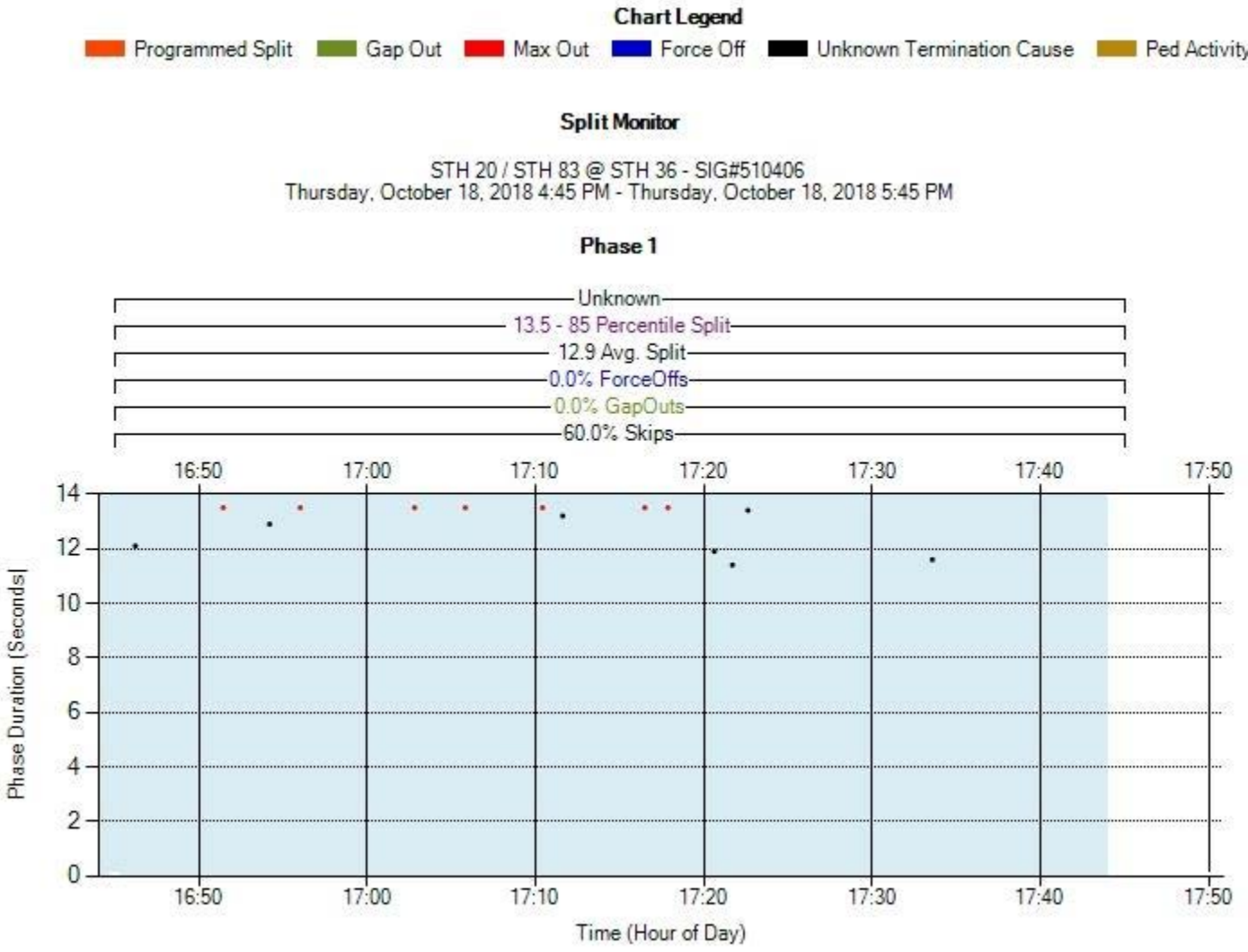
Isolated Signal – WIS 36 & 20/83
Synchro Timings
10/18/2018 – 3:00 PM – 6:00 PM



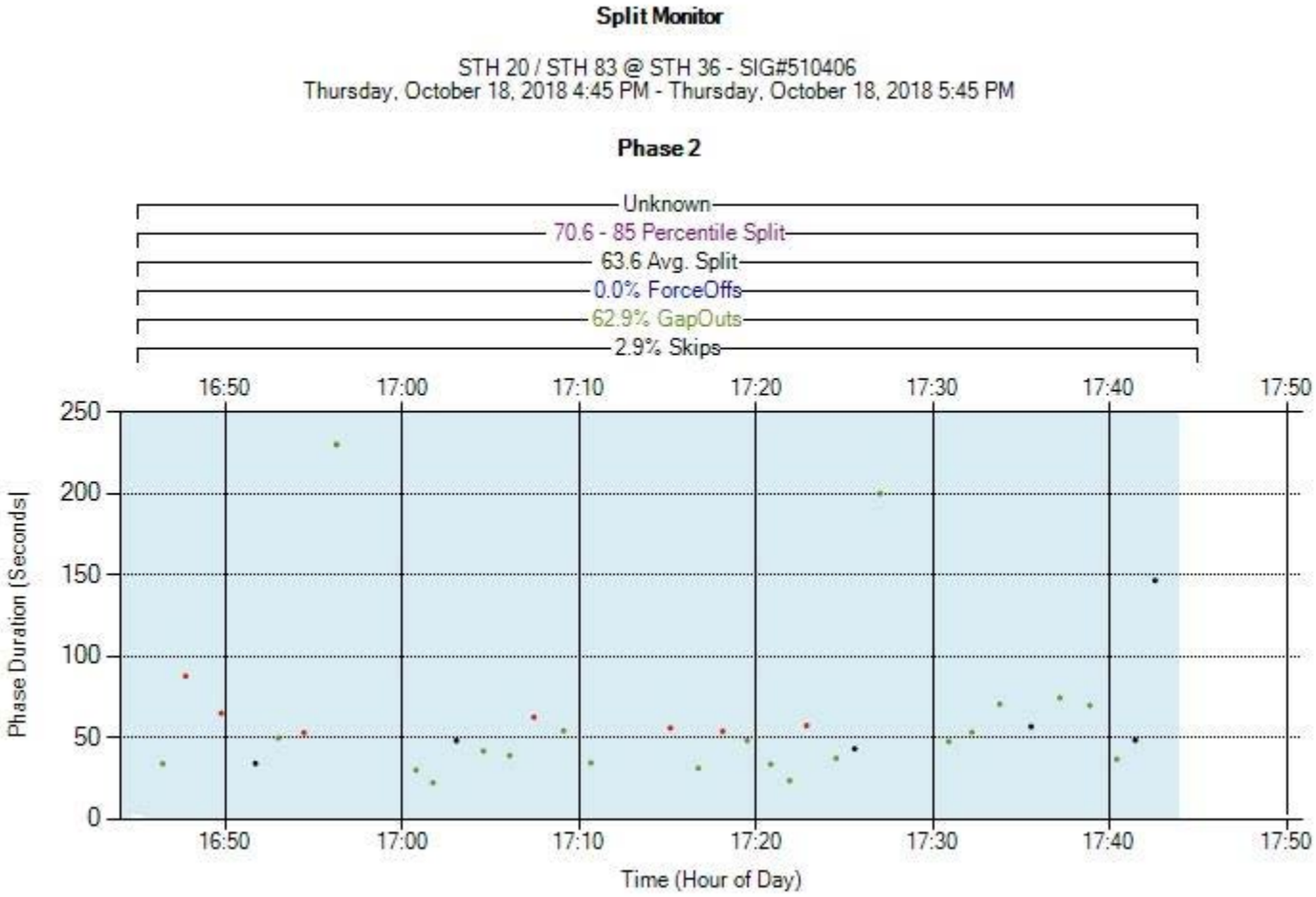
Isolated Signal – WIS 36 & 20/83
Synchro Timings
10/18/2018 – 3:00 PM – 6:00 PM



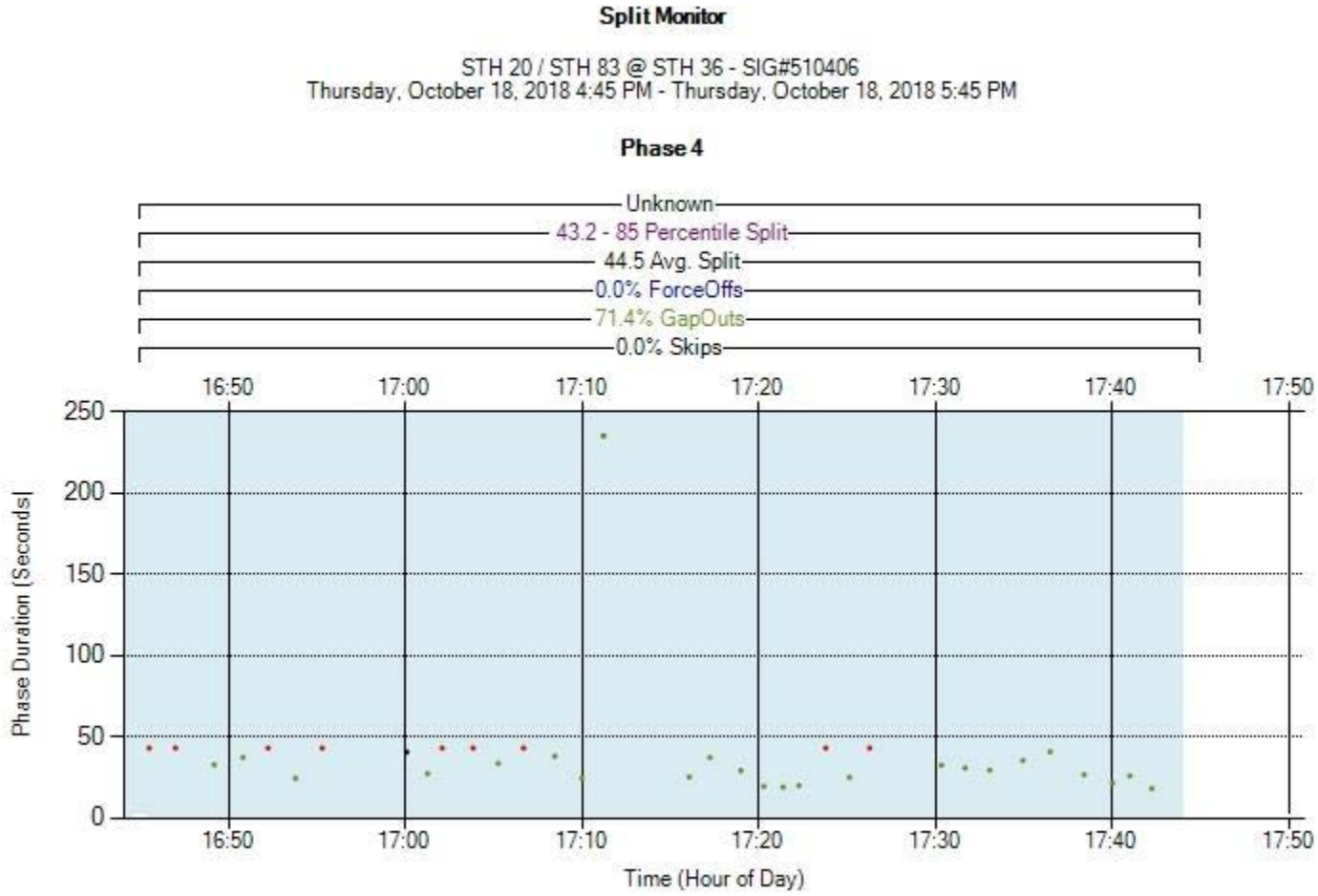
Isolated Signal – WIS 36 & 20/83
Synchro Timings
10/18/2018 – 4:45 PM – 5:45 PM



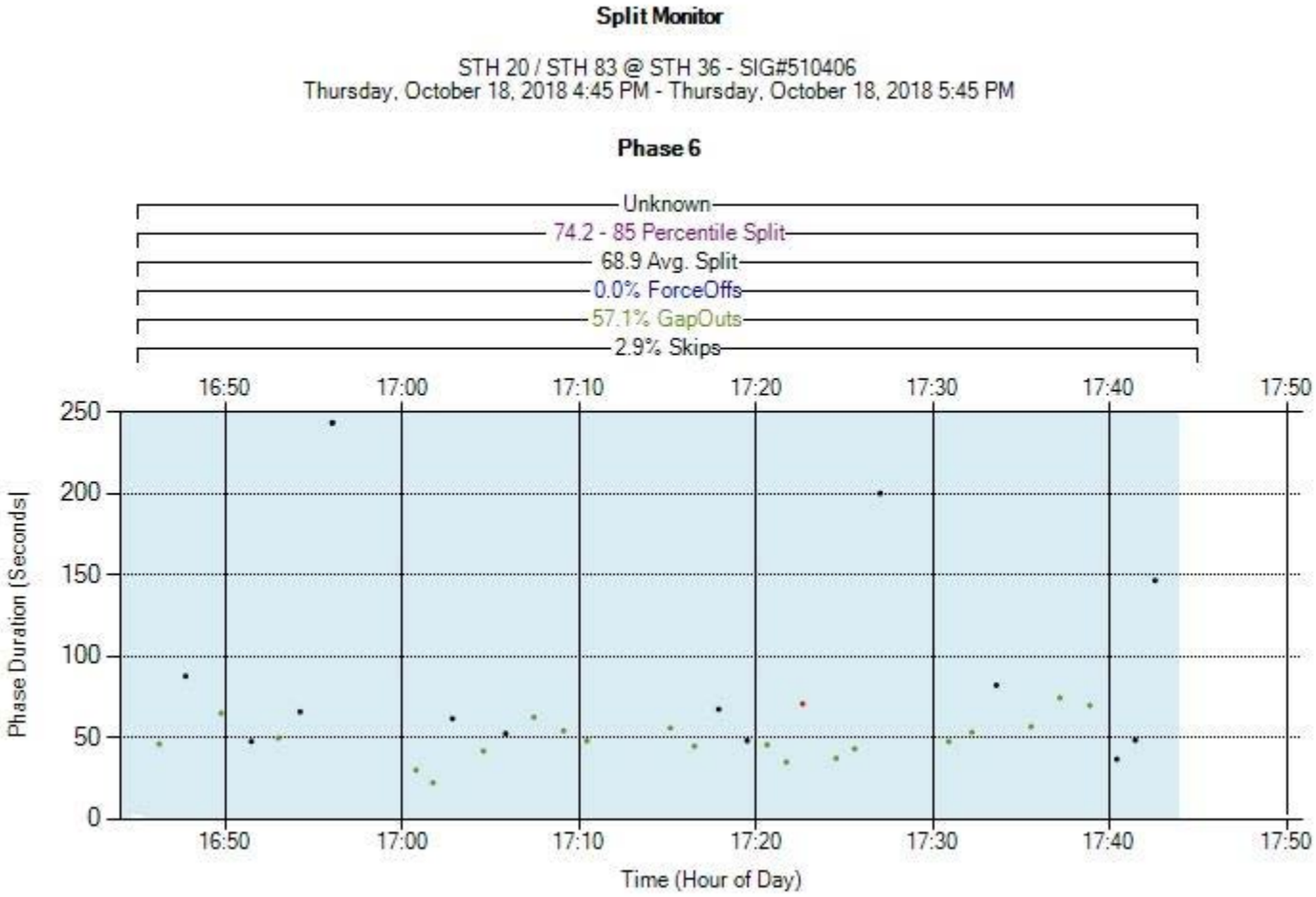
Isolated Signal – WIS 36 & 20/83
Synchro Timings
10/18/2018 – 4:45 PM – 5:45 PM



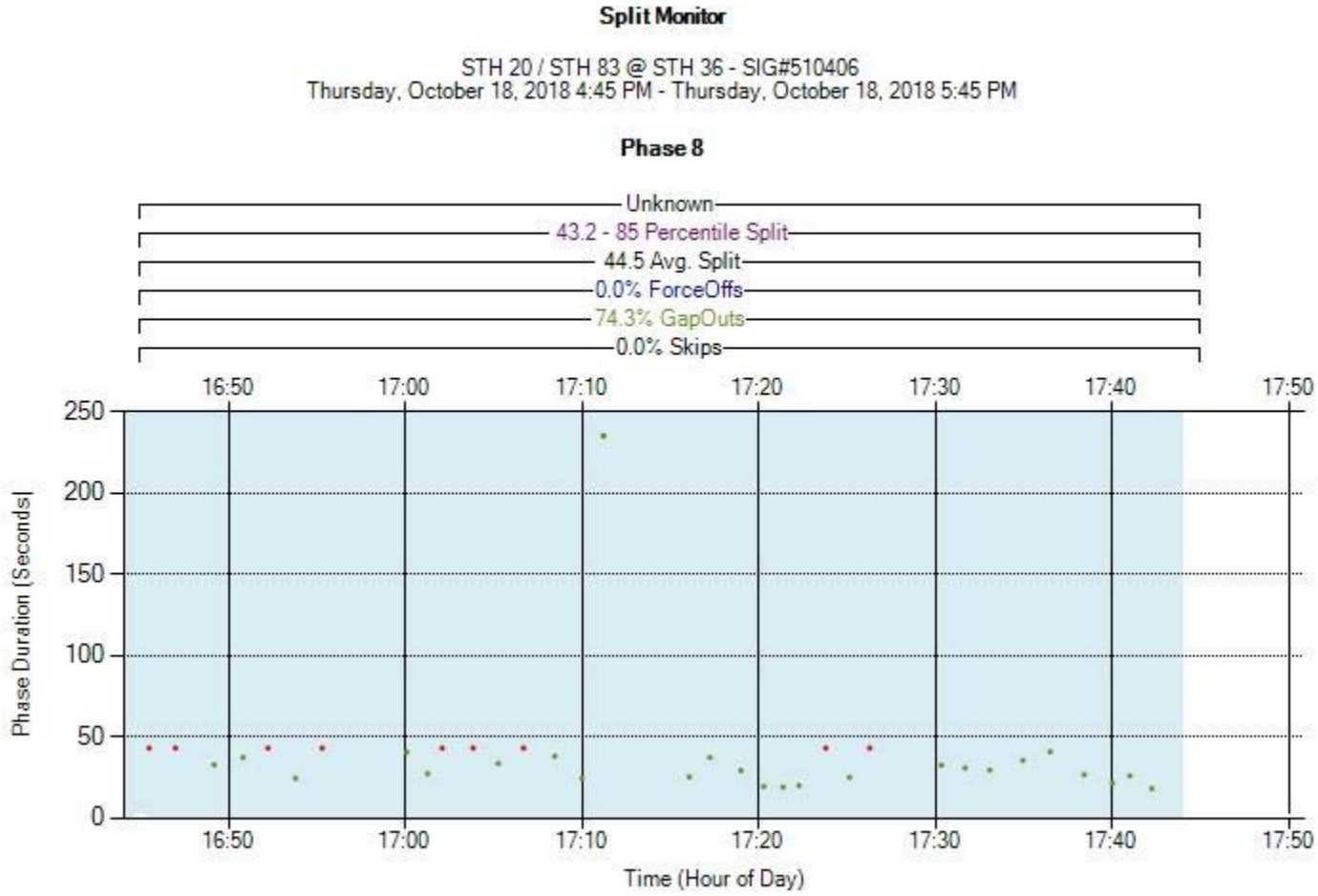
Isolated Signal – WIS 36 & 20/83
Synchro Timings
10/18/2018 – 4:45 PM – 5:45 PM



Isolated Signal – WIS 36 & 20/83
Synchro Timings
10/18/2018 – 4:45 PM – 5:45 PM

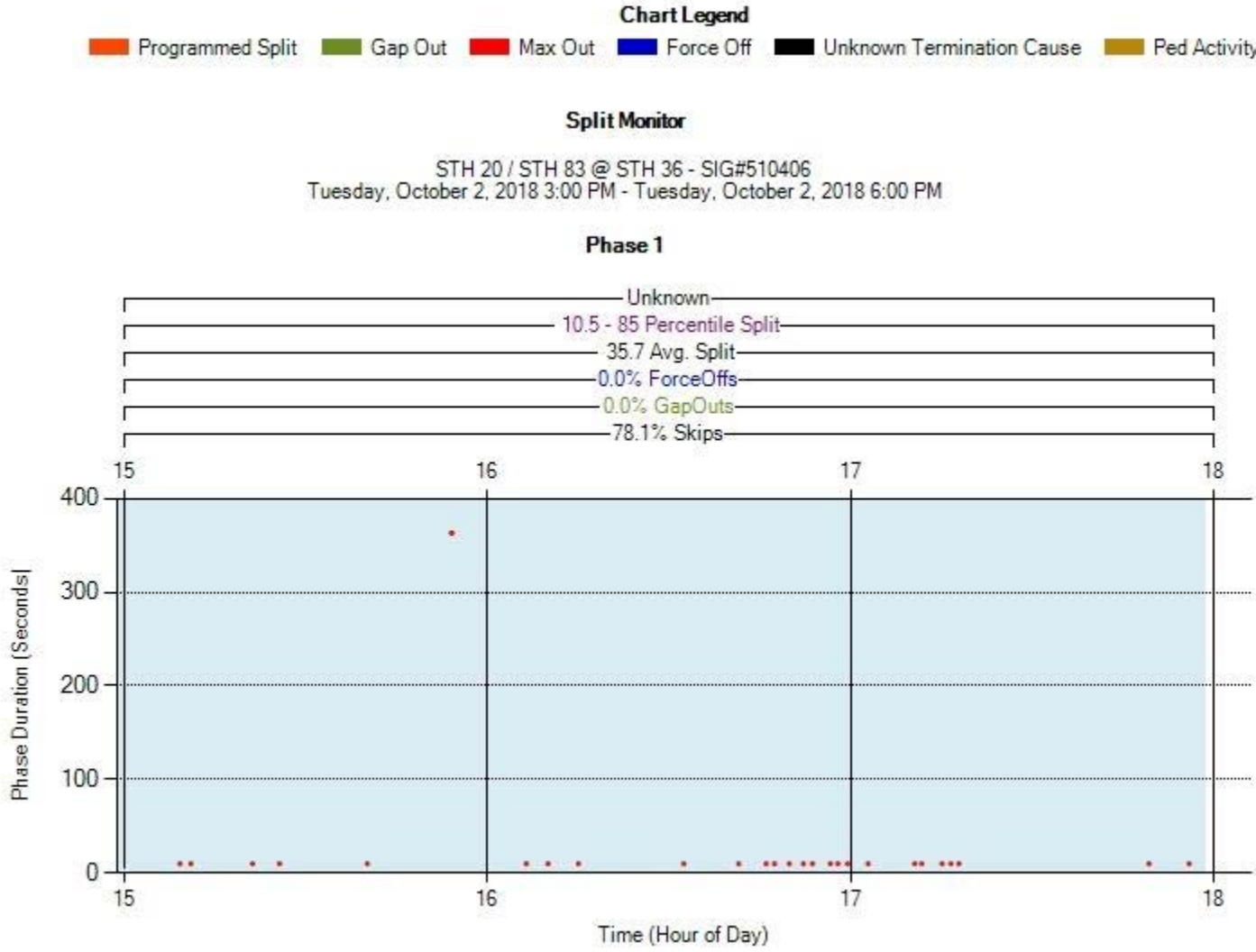


Isolated Signal – WIS 36 & 20/83
Synchro Timings
10/18/2018 – 4:45 PM – 5:45 PM

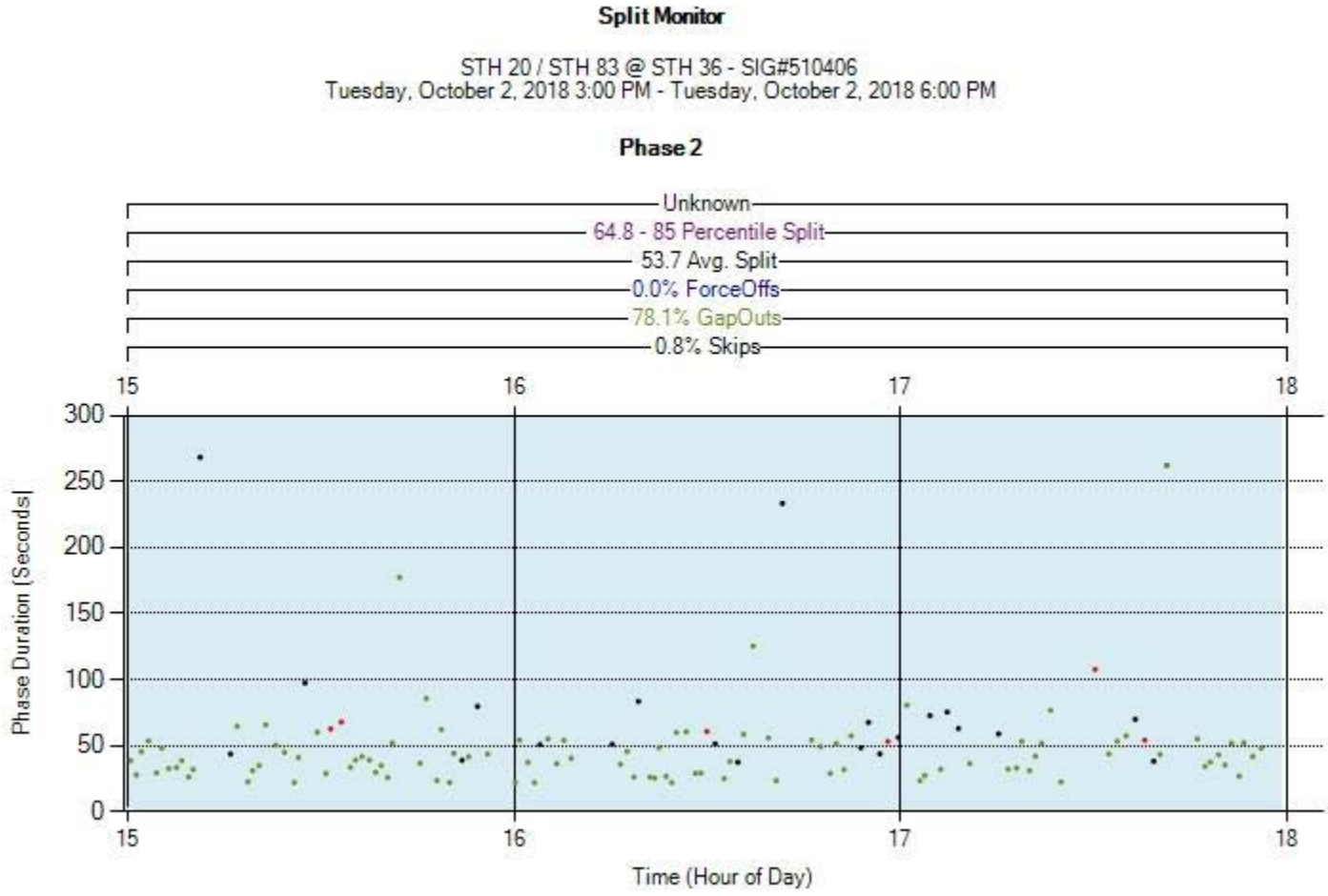


WisBOOM Outputs
WIS 20/83 & WIS 36
Vistro Optimized Timings

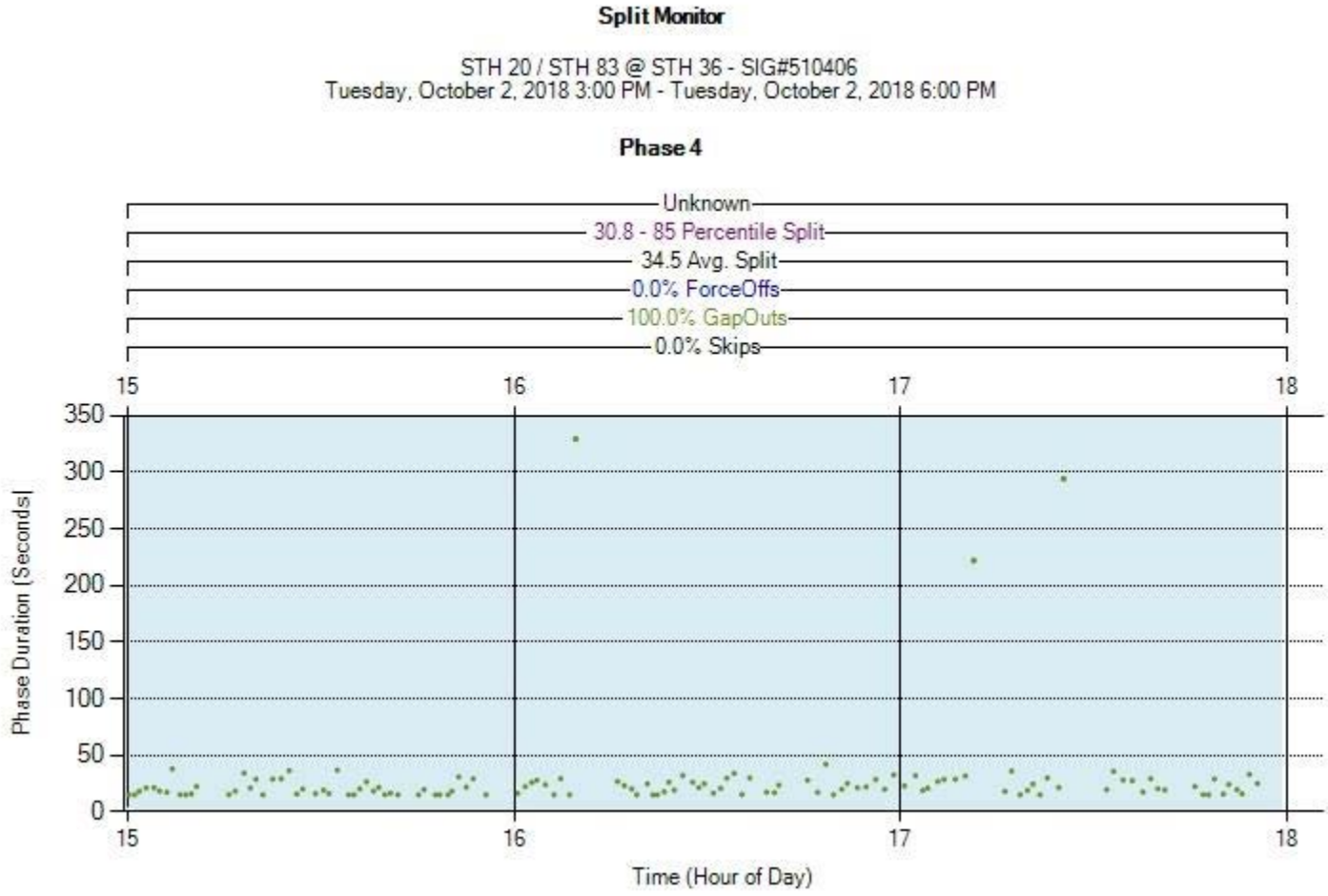
Isolated Signal – WIS 36 & 20/83
Vistro Timings
10/2/2018 – 3:00 PM – 6:00 PM



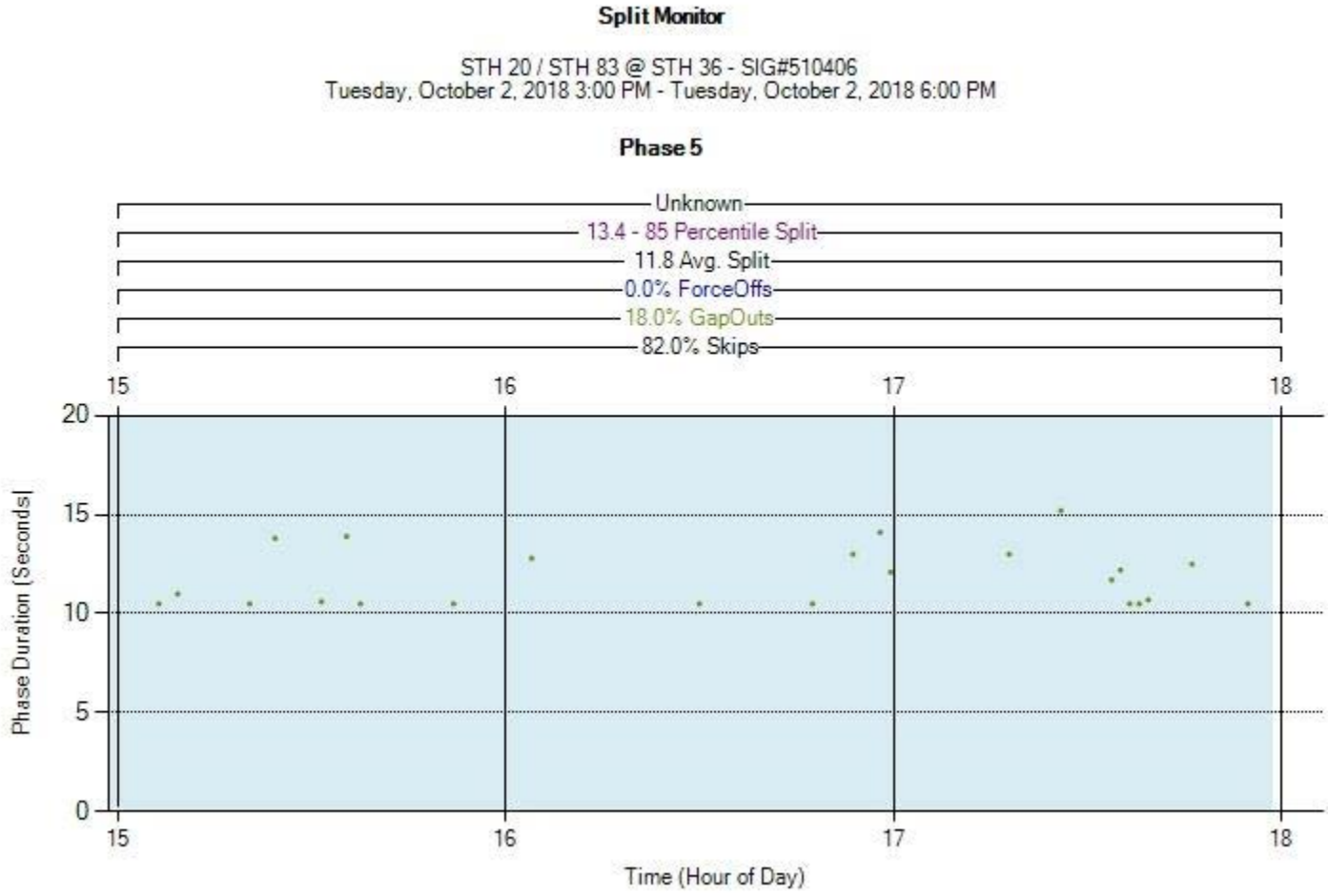
Isolated Signal – WIS 36 & 20/83
Vistro Timings
10/2/2018 – 3:00 PM – 6:00 PM



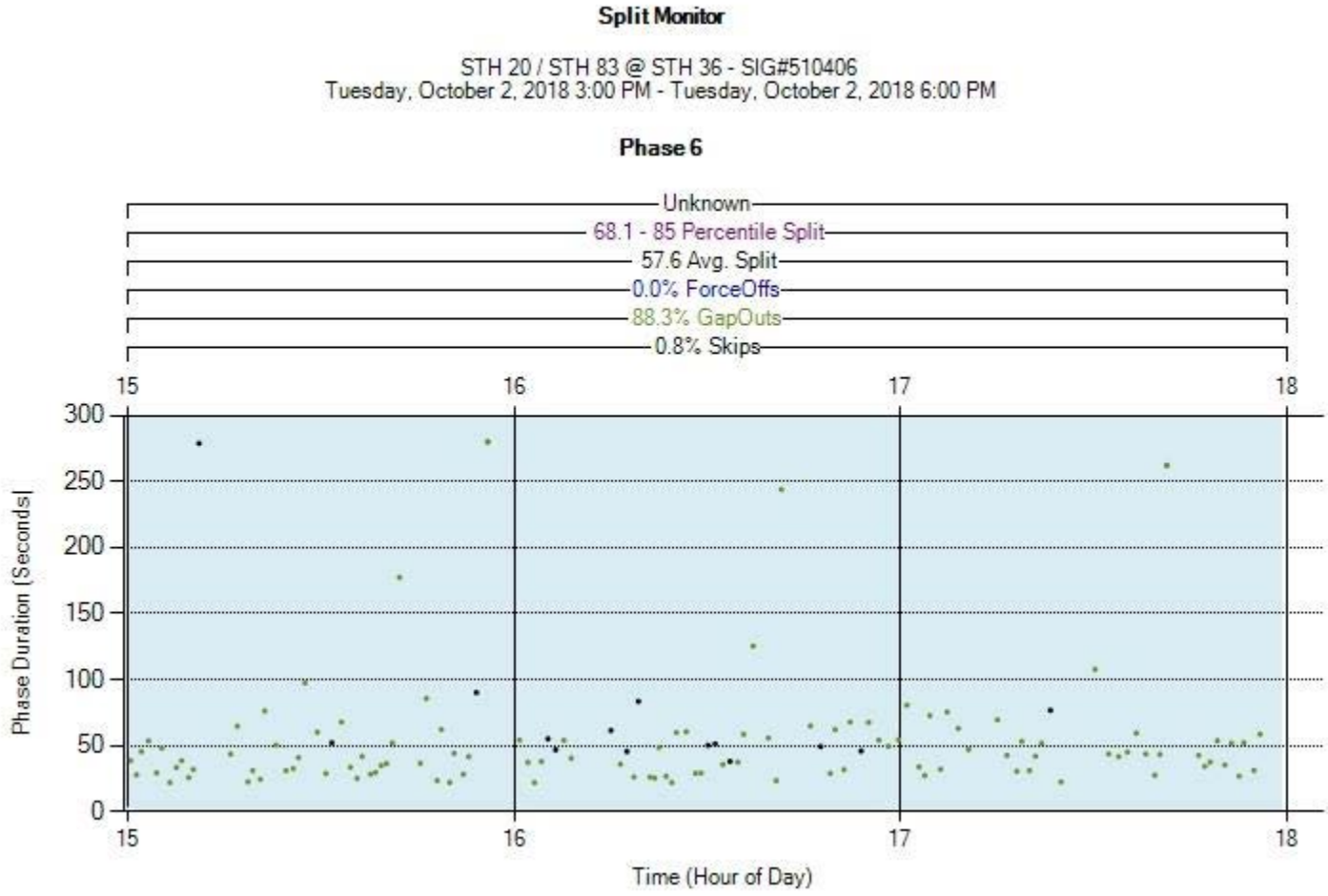
Isolated Signal – WIS 36 & 20/83
Vistro Timings
10/2/2018 – 3:00 PM – 6:00 PM



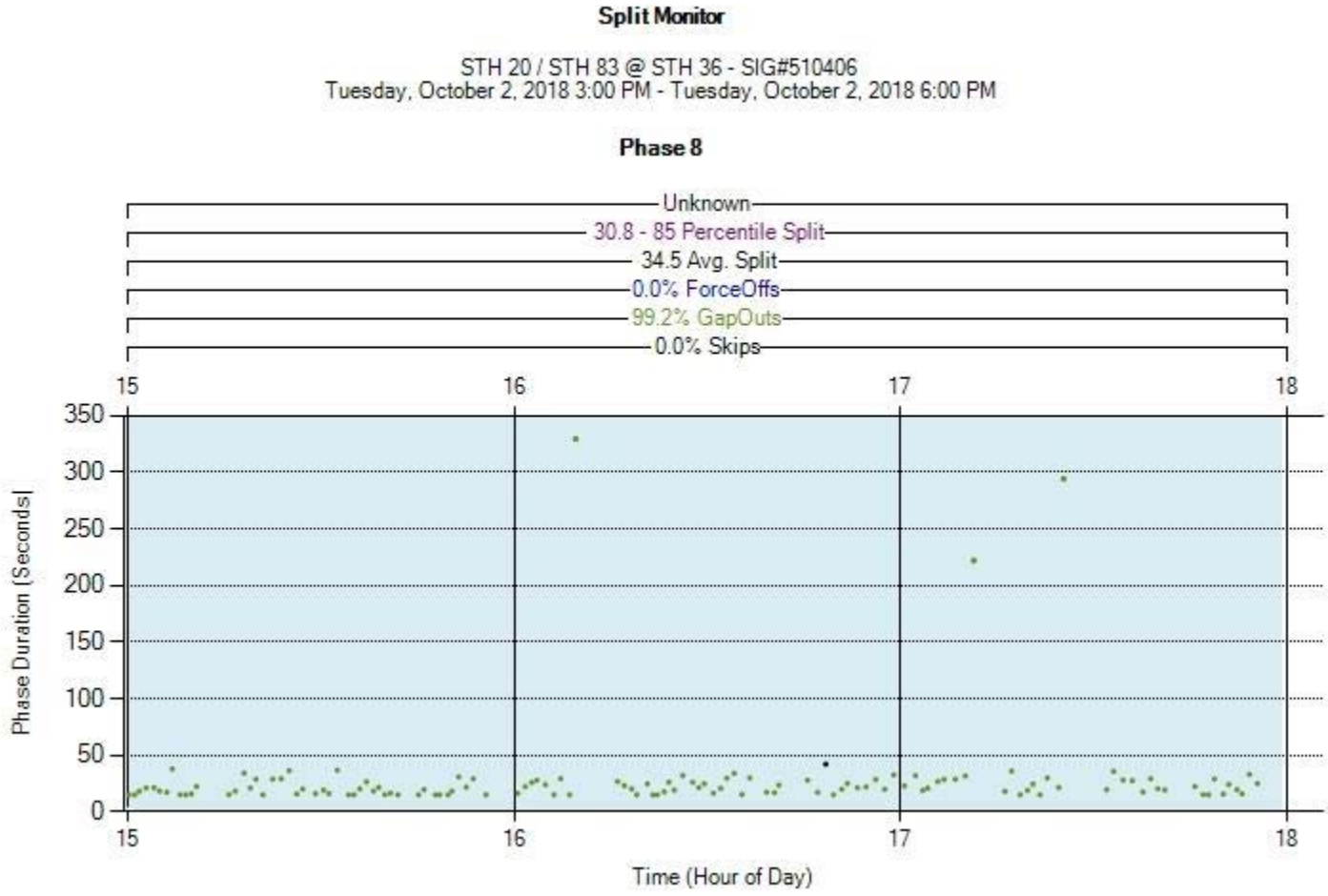
Isolated Signal – WIS 36 & 20/83
Vistro Timings
10/2/2018 – 3:00 PM – 6:00 PM



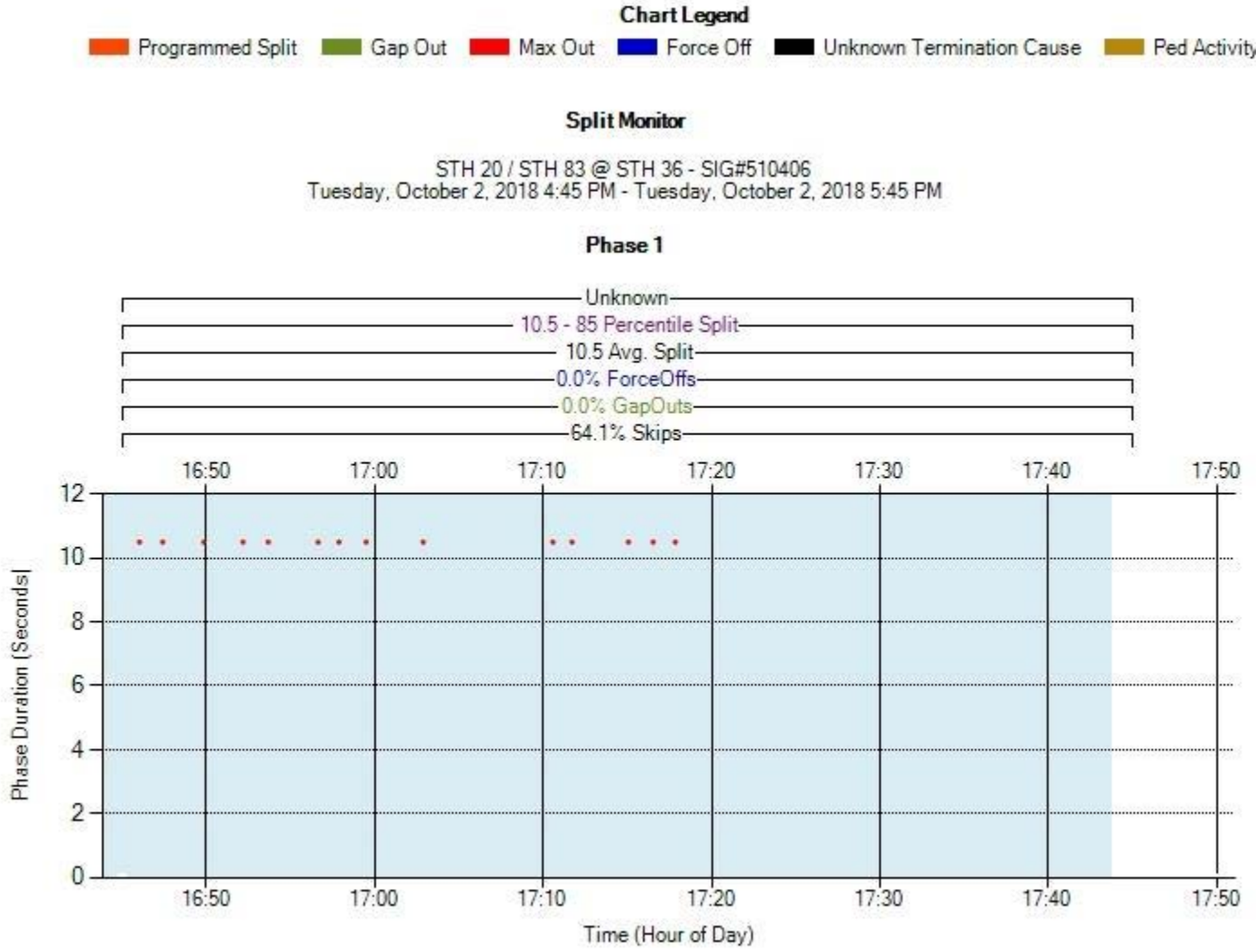
Isolated Signal – WIS 36 & 20/83
Vistro Timings
10/2/2018 – 3:00 PM – 6:00 PM



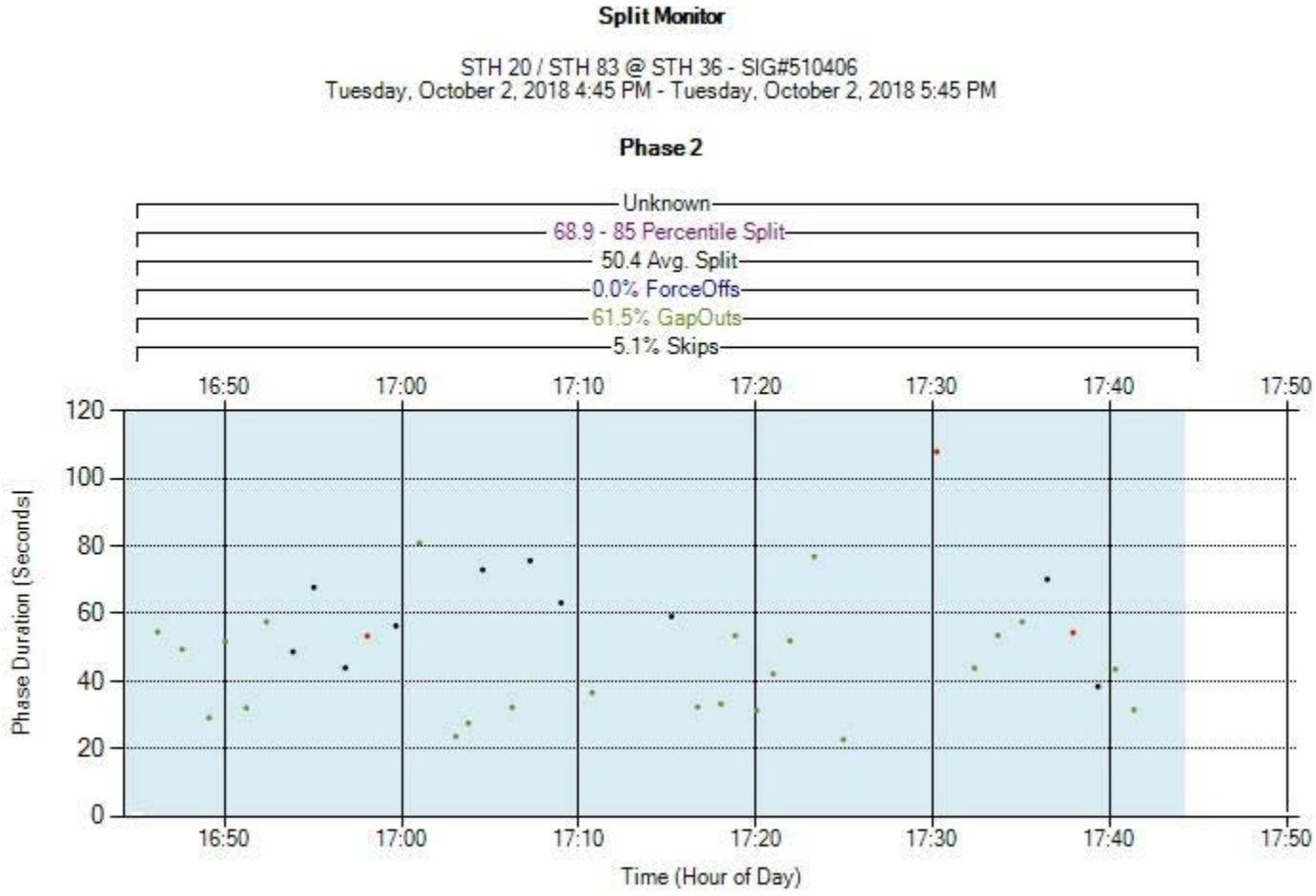
Isolated Signal – WIS 36 & 20/83
Vistro Timings
10/2/2018 – 3:00 PM – 6:00 PM



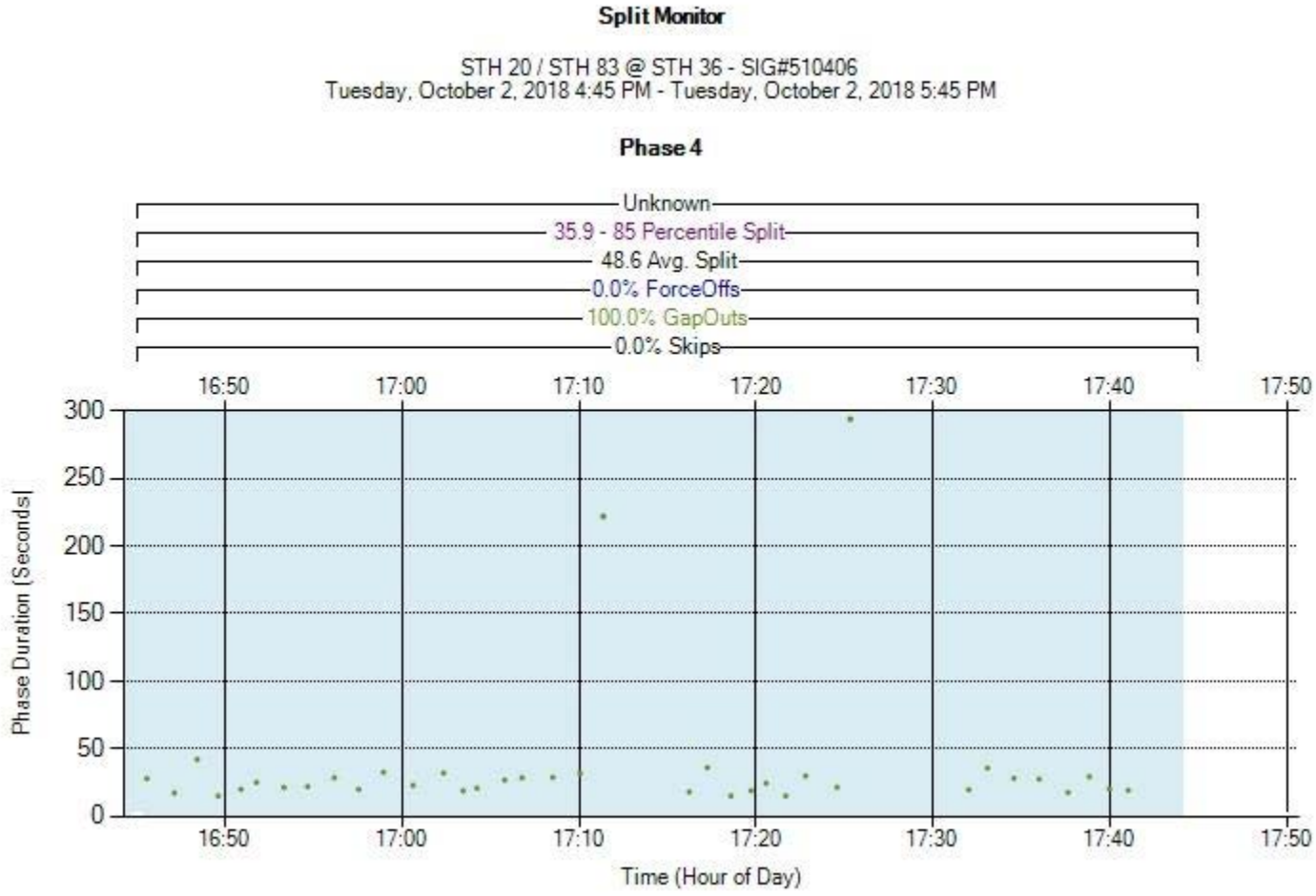
Isolated Signal – WIS 36 & 20/83
Vistro Timings
10/2/2018 – 4:45 PM – 5:45 PM



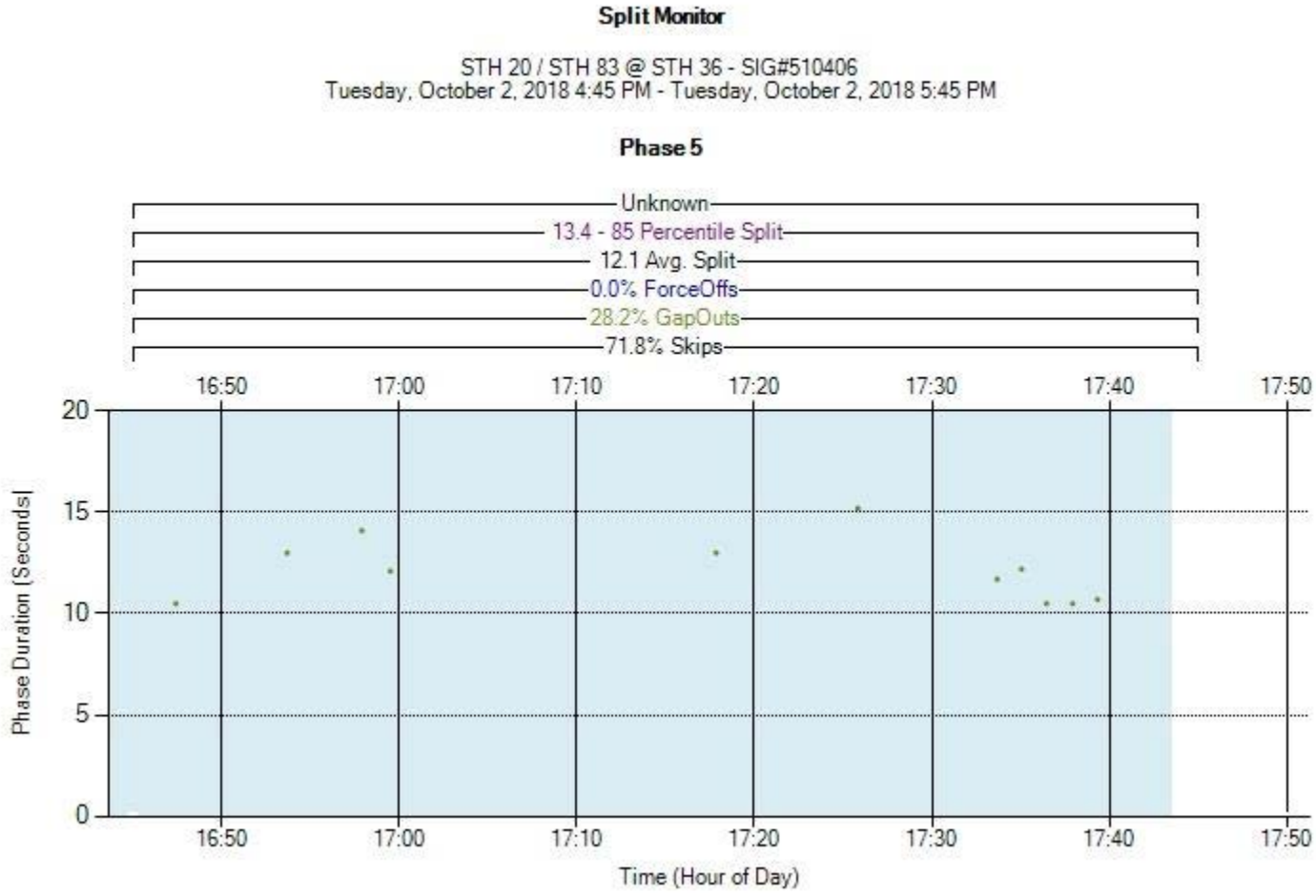
Isolated Signal – WIS 36 & 20/83
Vistro Timings
10/2/2018 – 4:45 PM – 5:45 PM



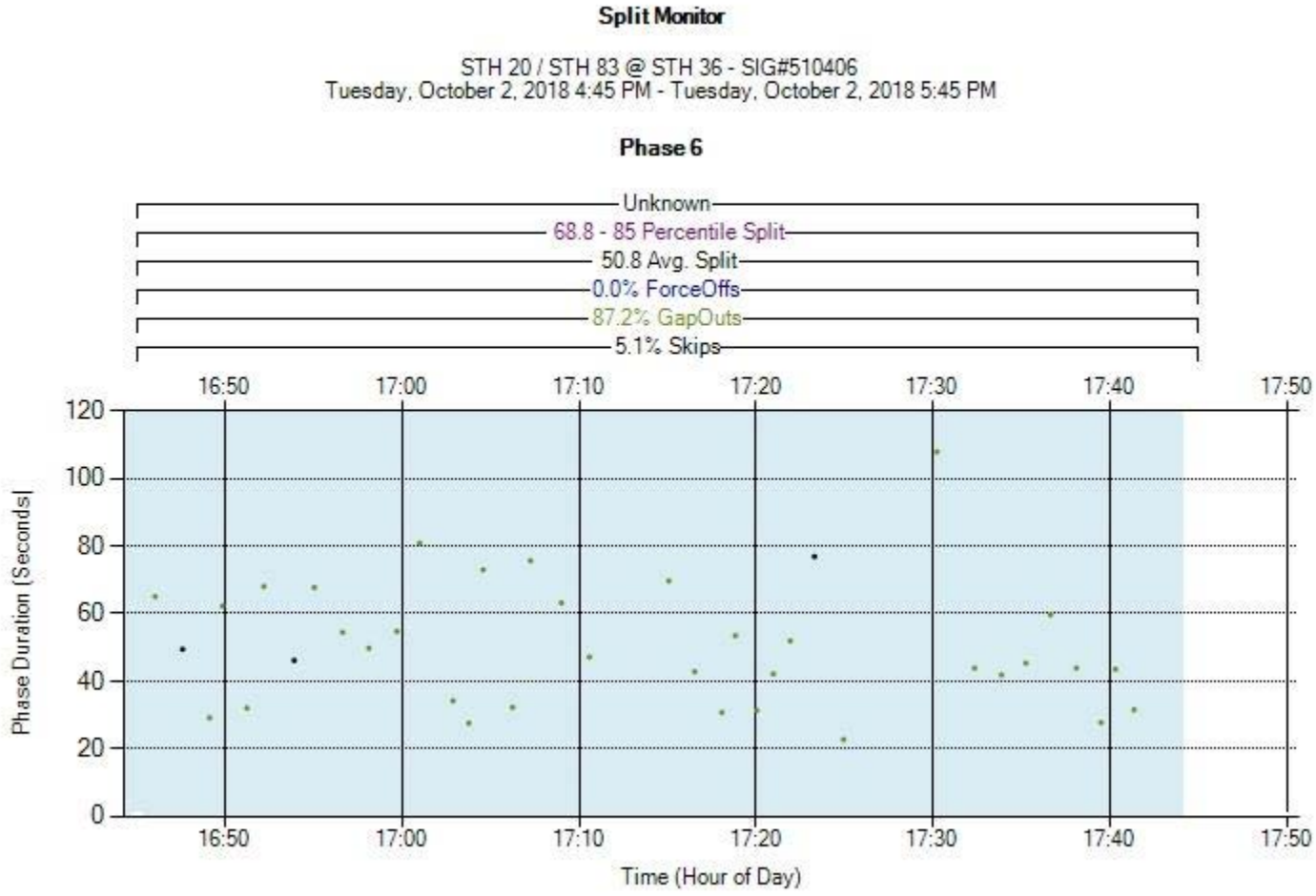
Isolated Signal – WIS 36 & 20/83
Vistro Timings
10/2/2018 – 4:45 PM – 5:45 PM



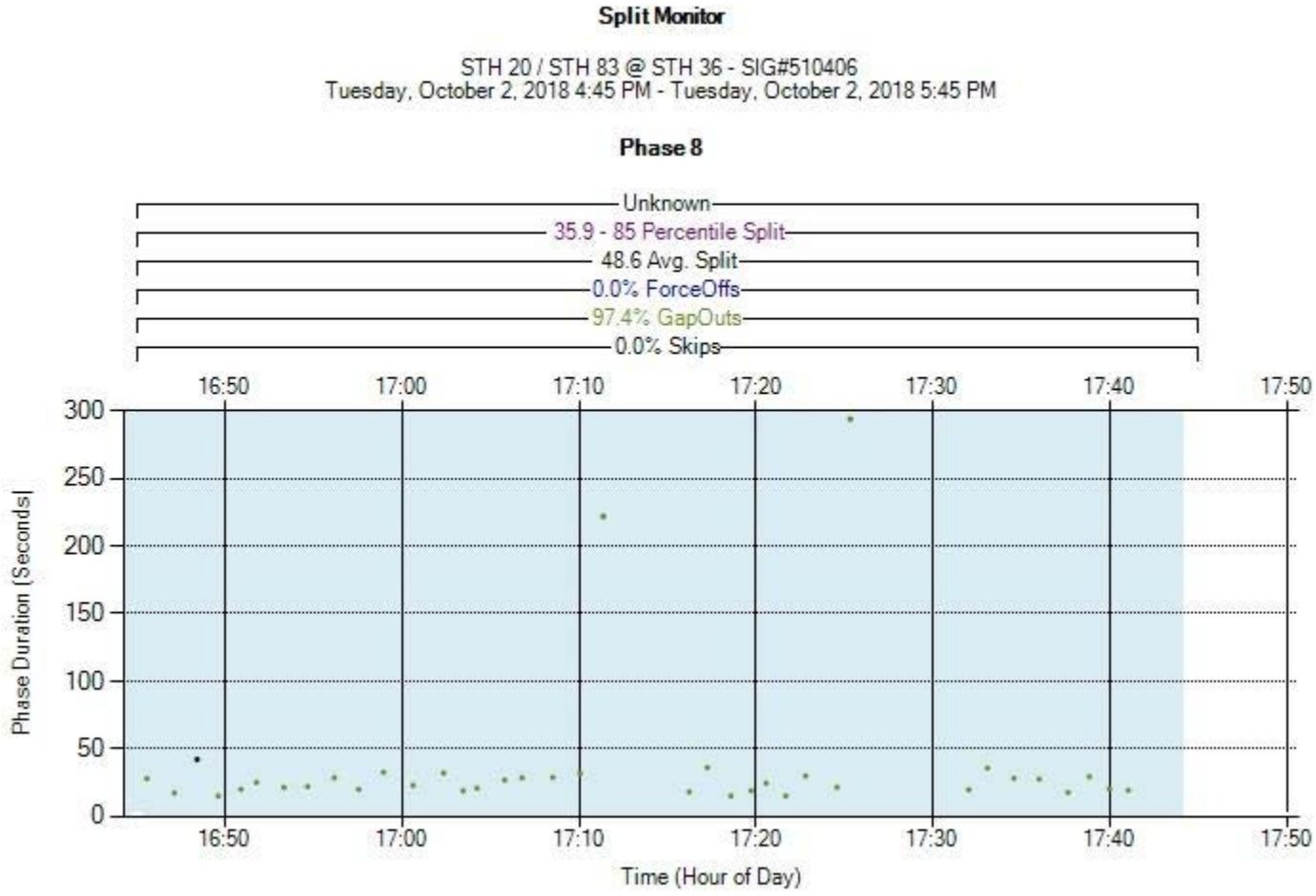
Isolated Signal – WIS 36 & 20/83
Vistro Timings
10/2/2018 – 4:45 PM – 5:45 PM



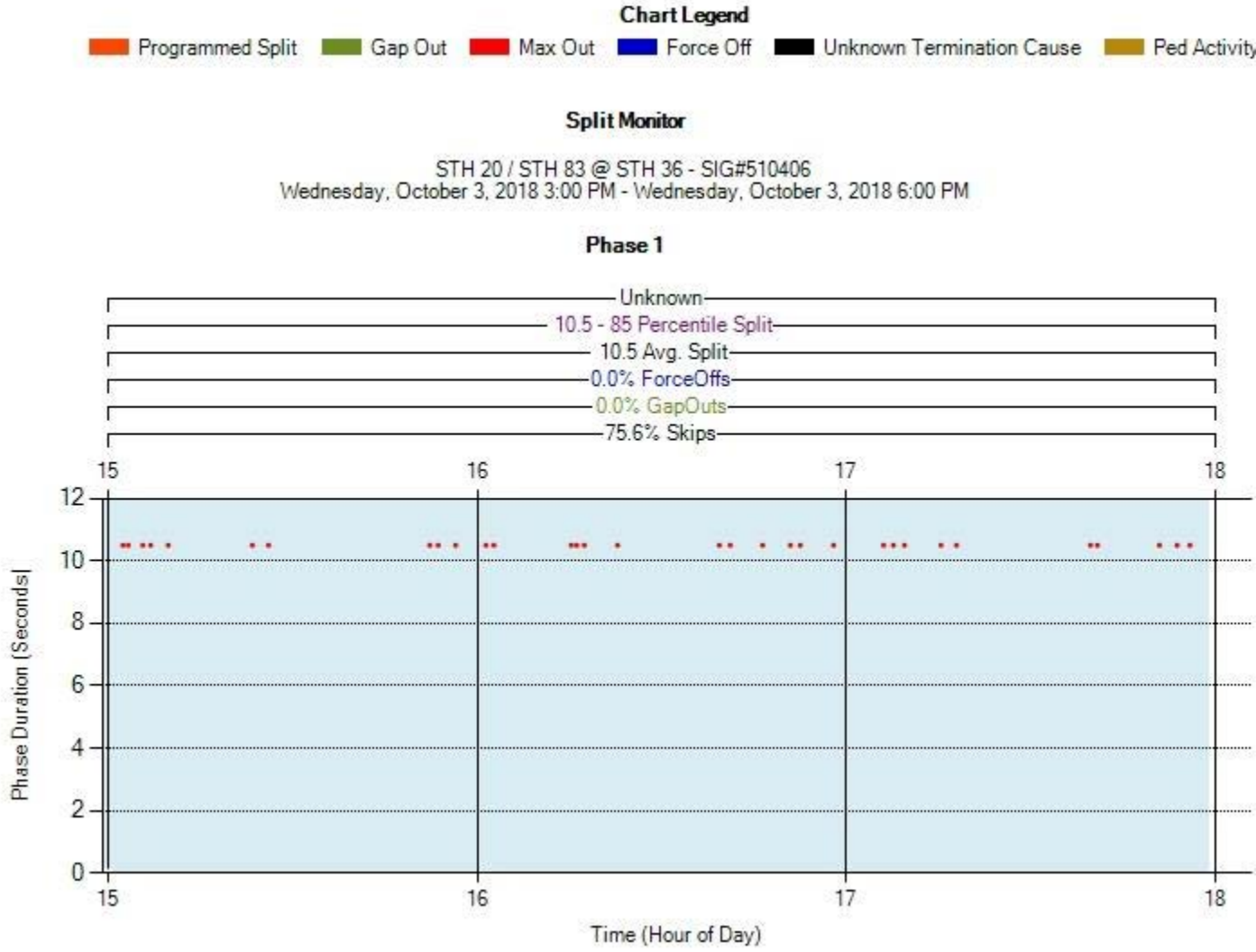
Isolated Signal – WIS 36 & 20/83
Vistro Timings
10/2/2018 – 4:45 PM – 5:45 PM



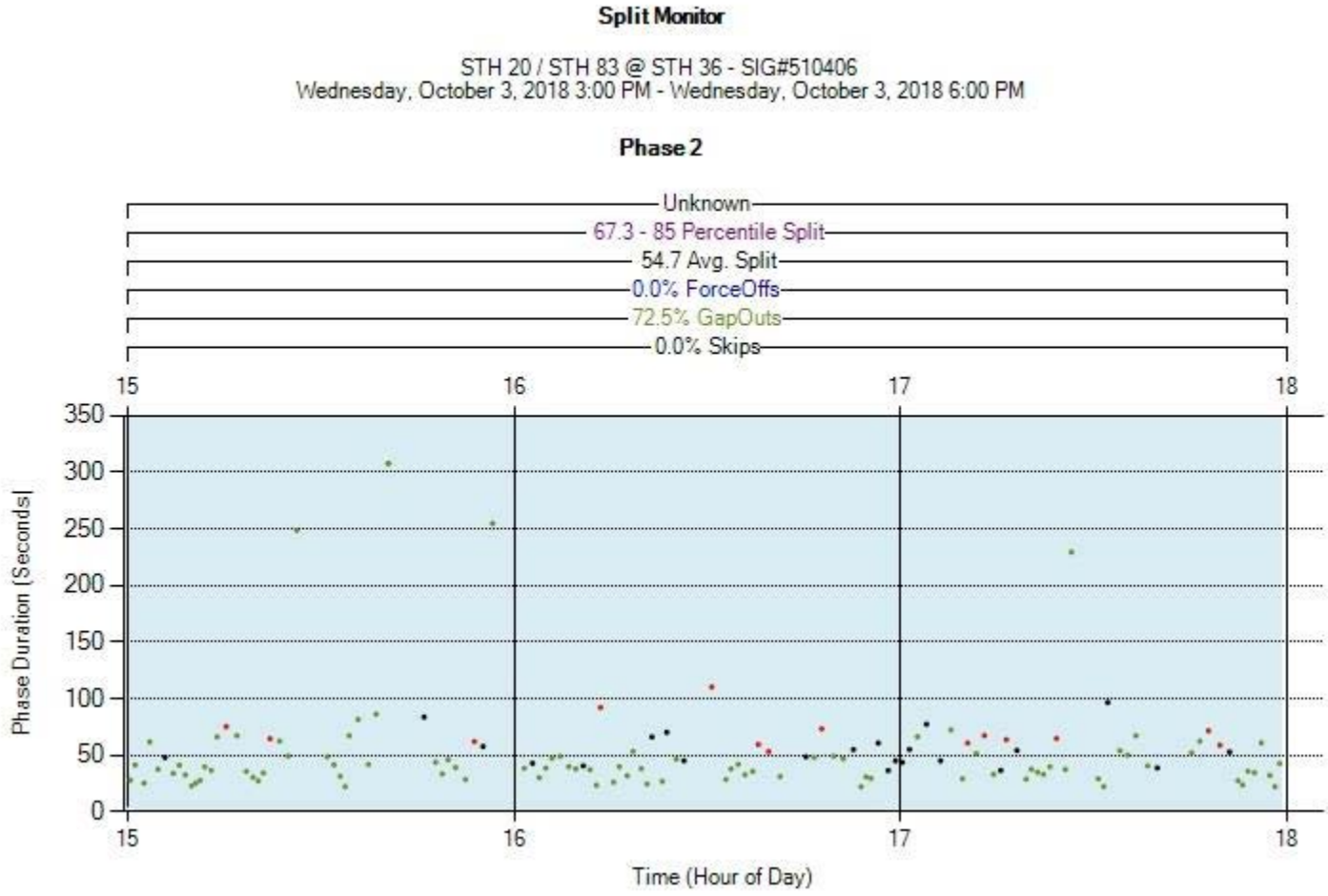
Isolated Signal – WIS 36 & 20/83
Vistro Timings
10/2/2018 – 4:45 PM – 5:45 PM



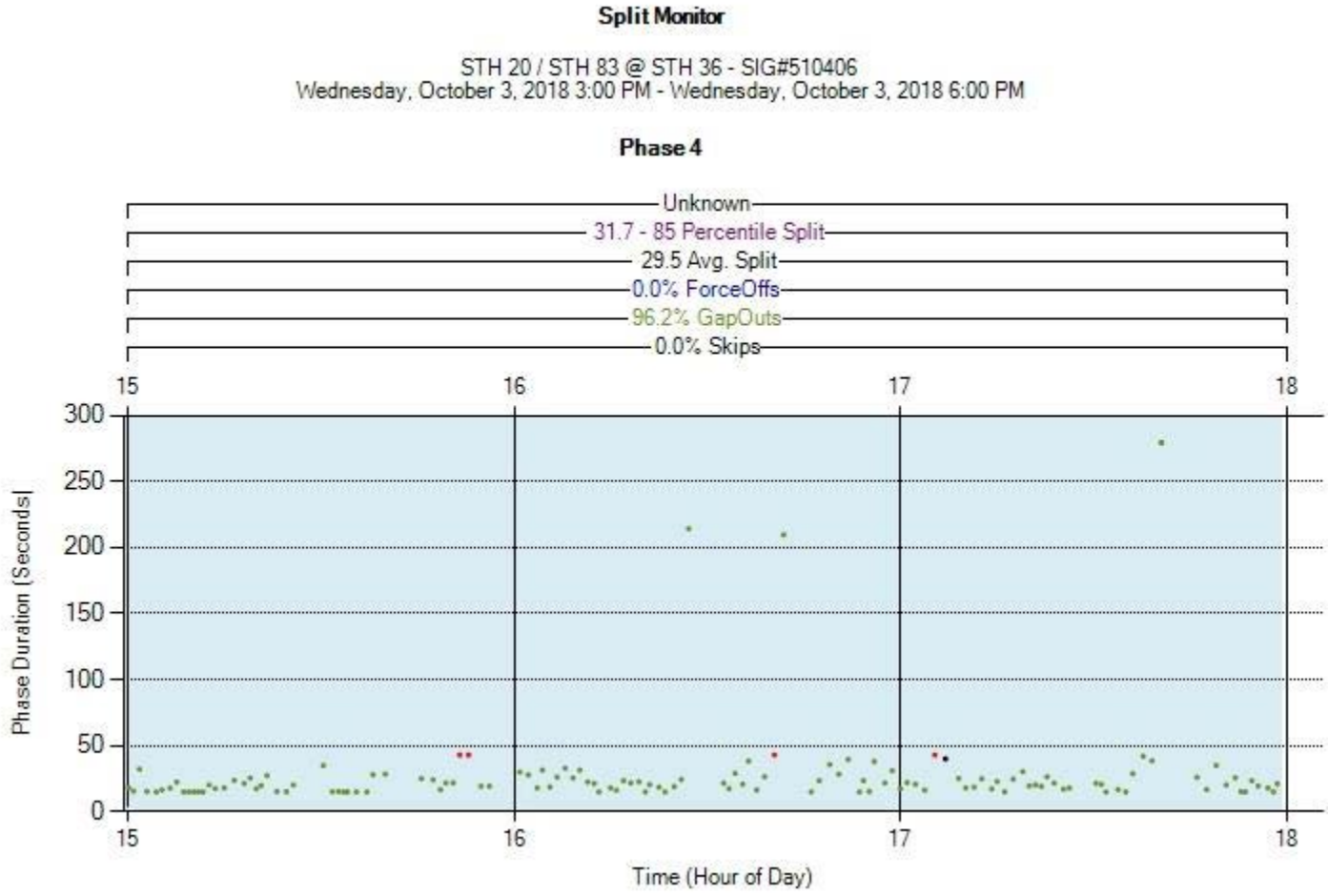
Isolated Signal – WIS 36 & 20/83
Vistro Timings
10/3/2018 – 3:00 PM – 6:00 PM



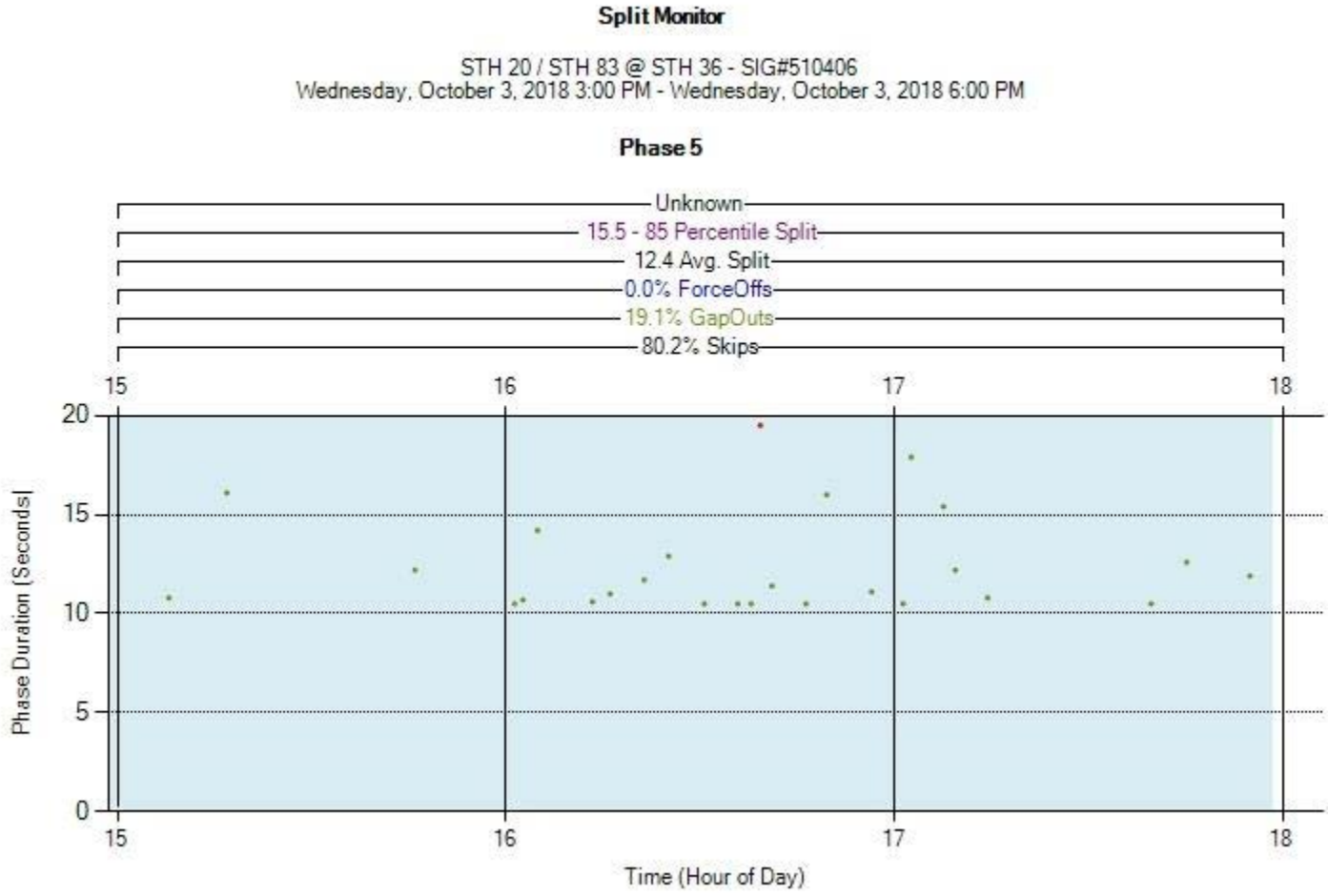
Isolated Signal – WIS 36 & 20/83
Vistro Timings
10/3/2018 – 3:00 PM – 6:00 PM



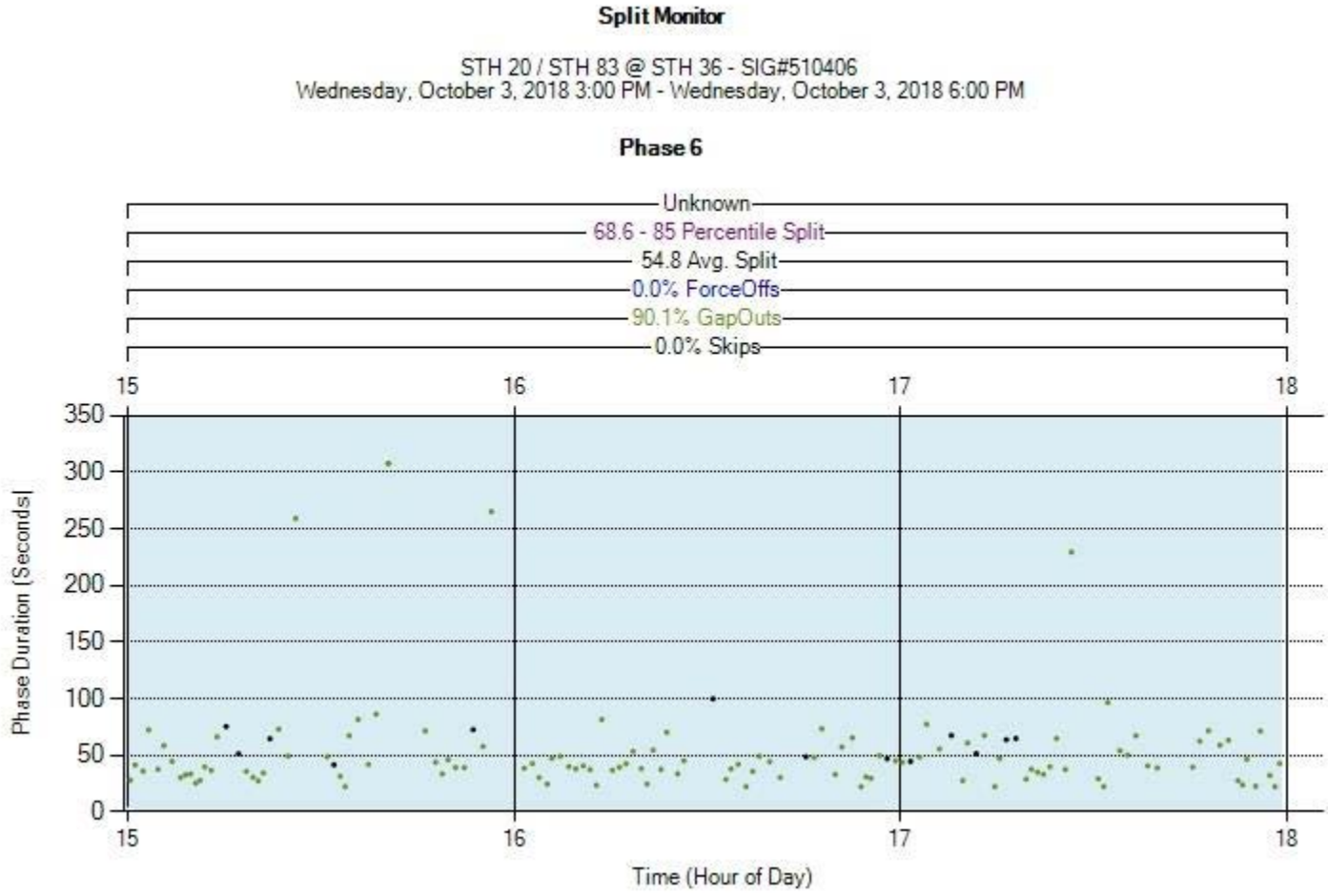
Isolated Signal – WIS 36 & 20/83
Vistro Timings
10/3/2018 – 3:00 PM – 6:00 PM



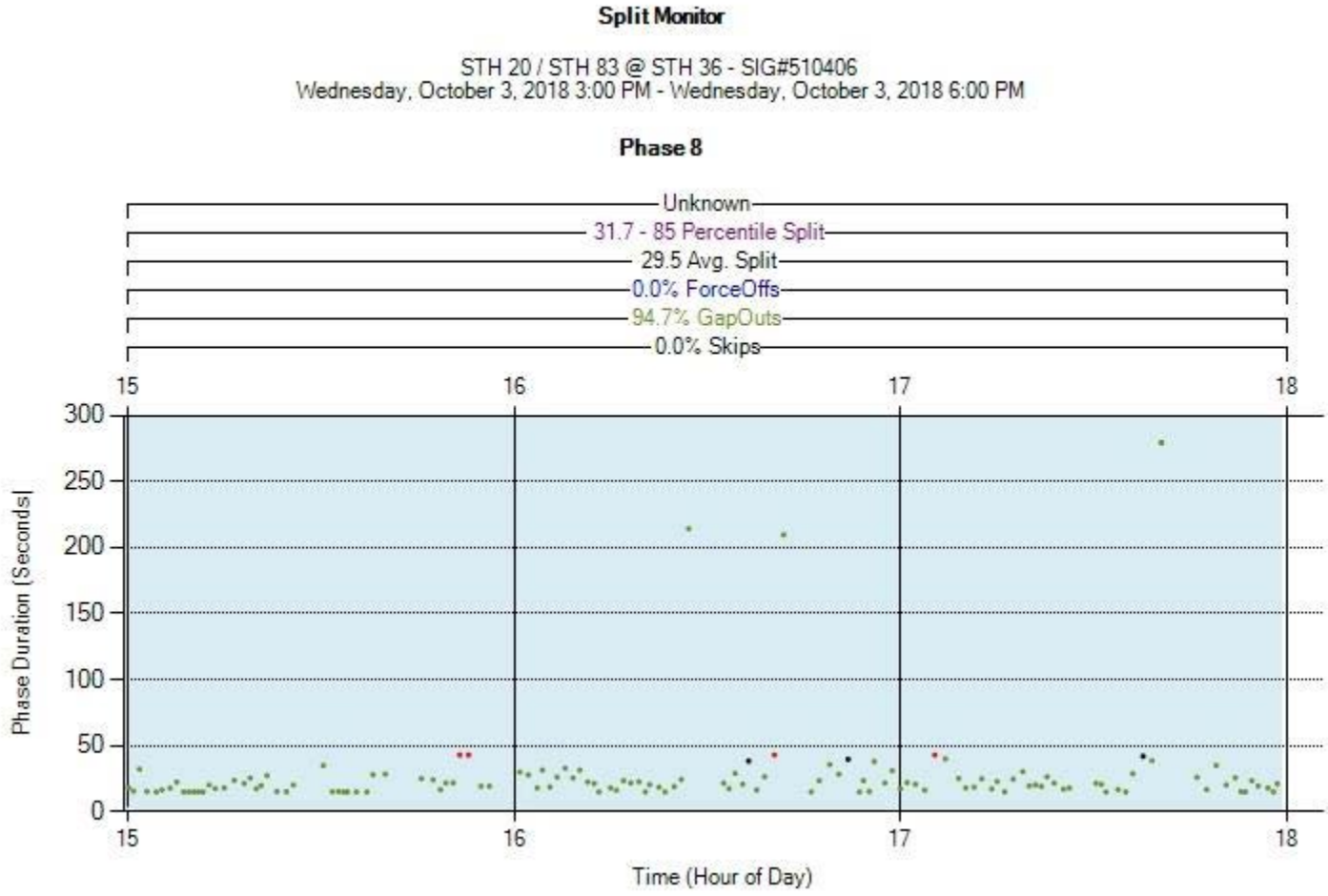
Isolated Signal – WIS 36 & 20/83
Vistro Timings
10/3/2018 – 3:00 PM – 6:00 PM



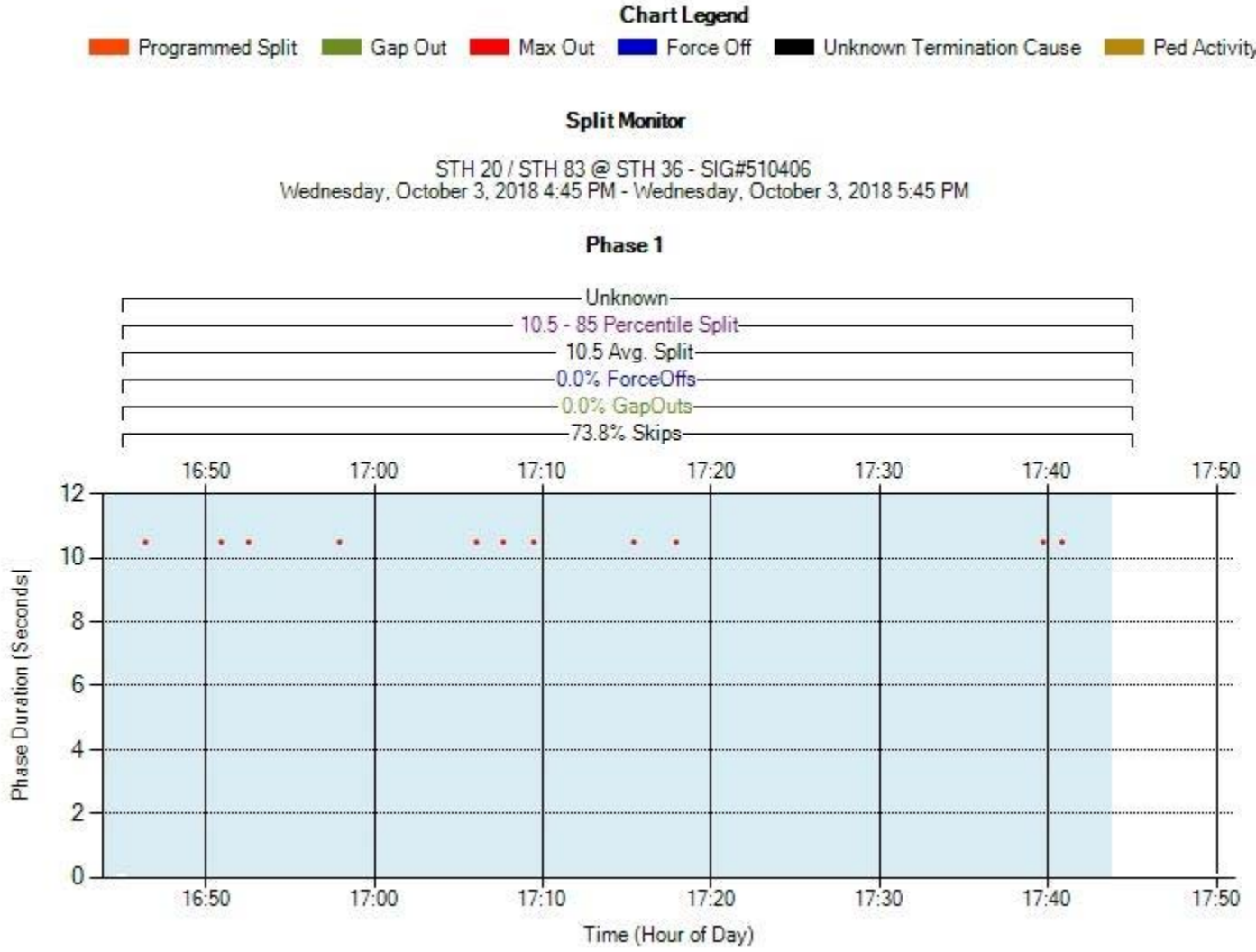
Isolated Signal – WIS 36 & 20/83
Vistro Timings
10/3/2018 – 3:00 PM – 6:00 PM



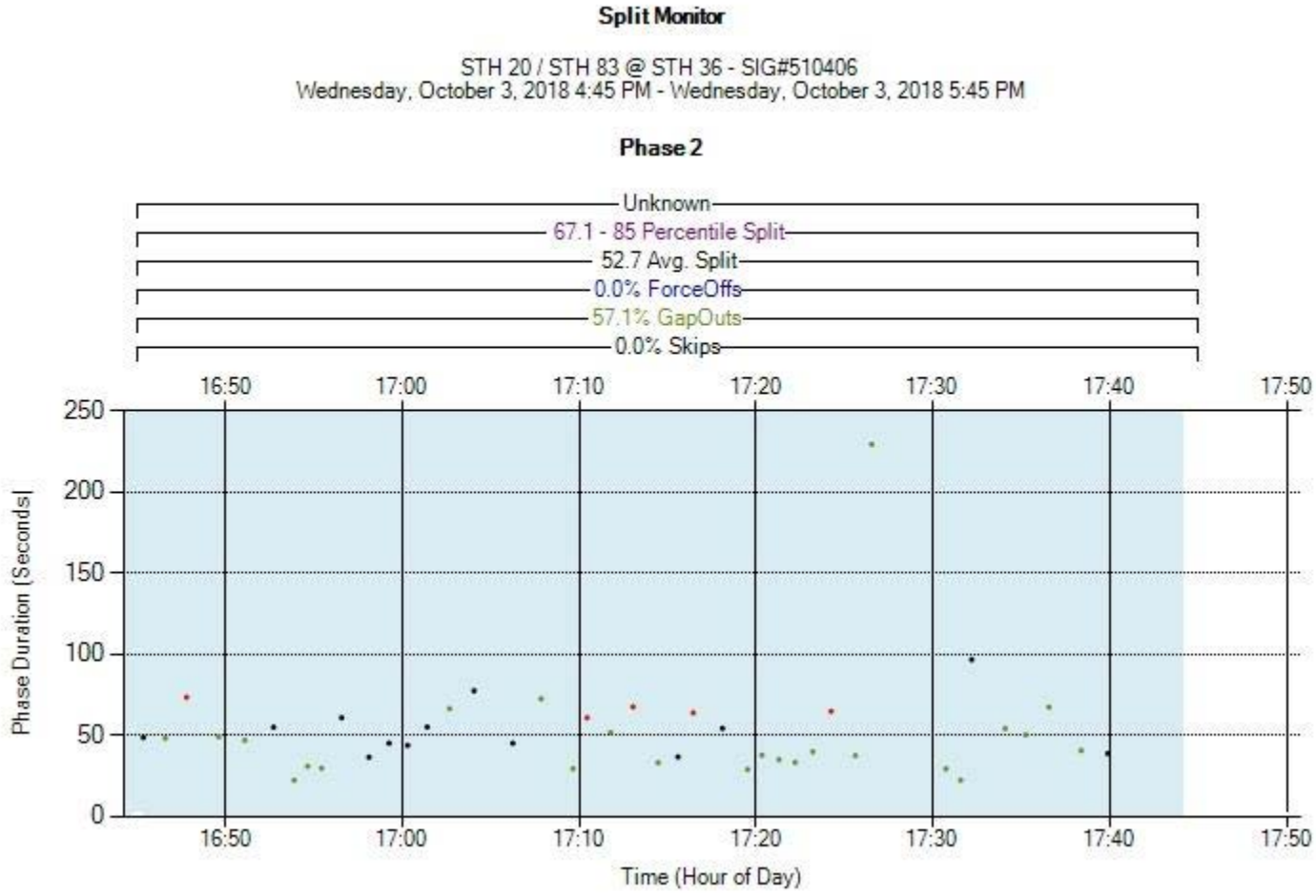
Isolated Signal – WIS 36 & 20/83
Vistro Timings
10/3/2018 – 3:00 PM – 6:00 PM



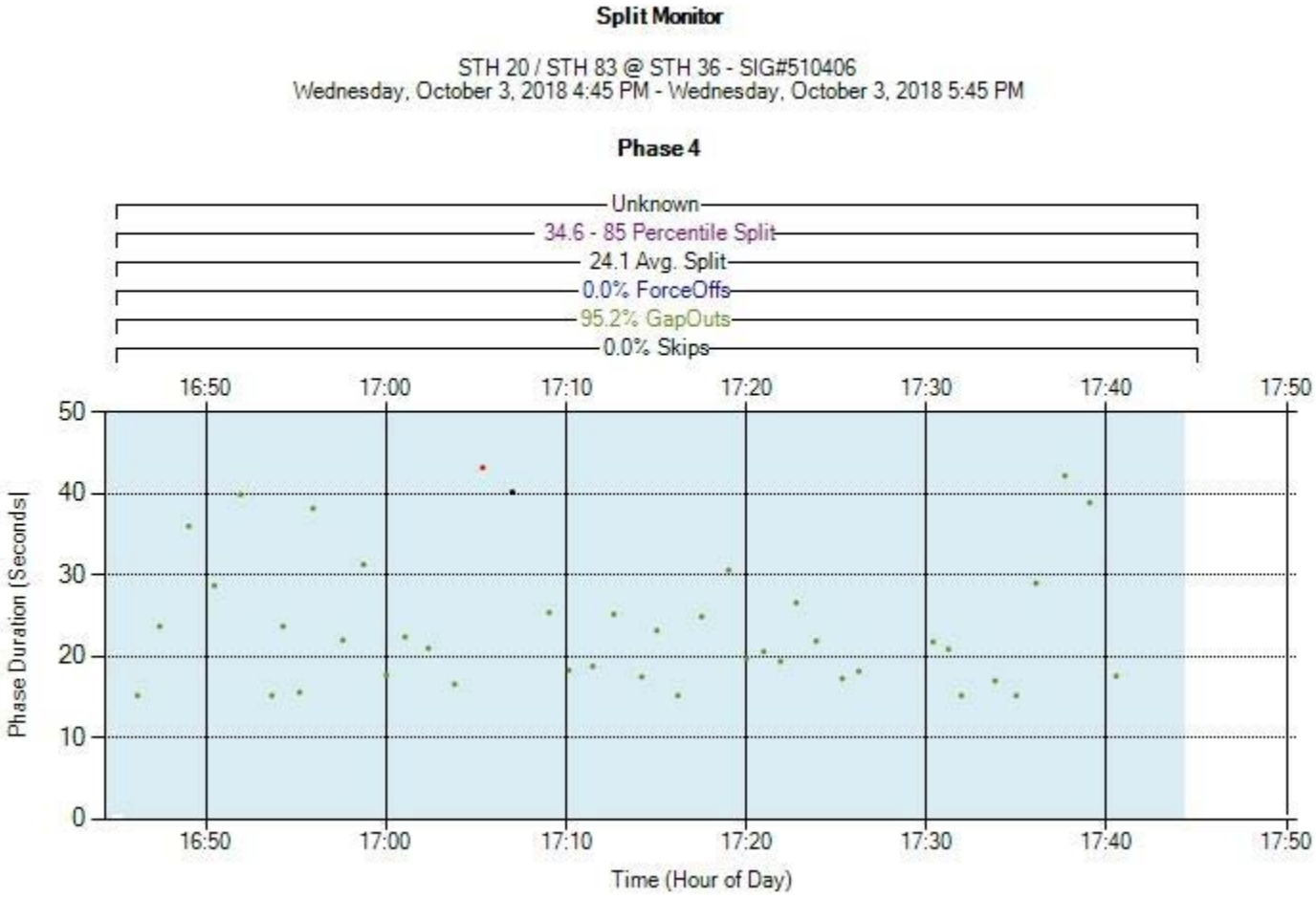
Isolated Signal – WIS 36 & 20/83
Vistro Timings
10/3/2018 – 4:45 PM – 5:45 PM



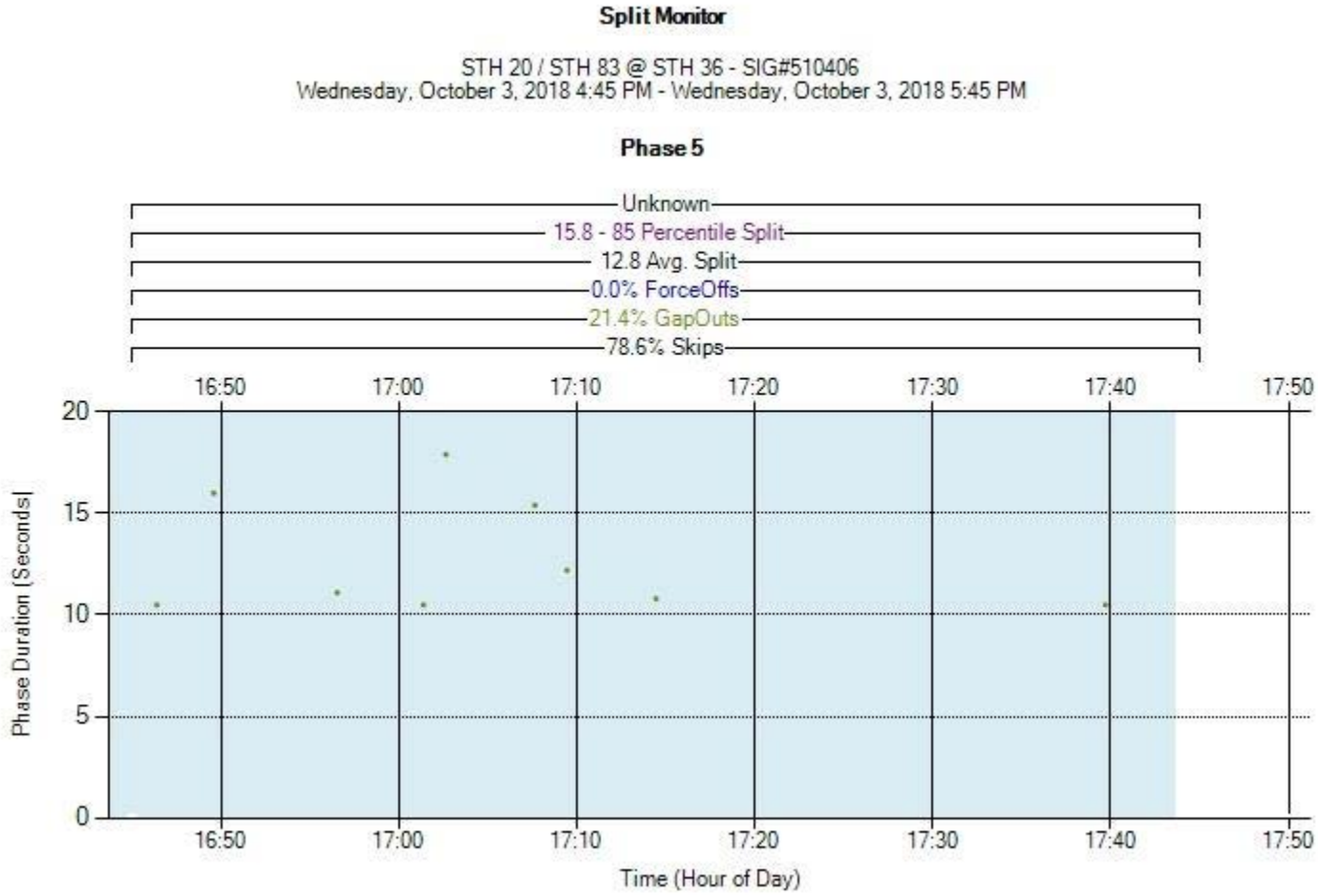
Isolated Signal – WIS 36 & 20/83
Vistro Timings
10/3/2018 – 4:45 PM – 5:45 PM



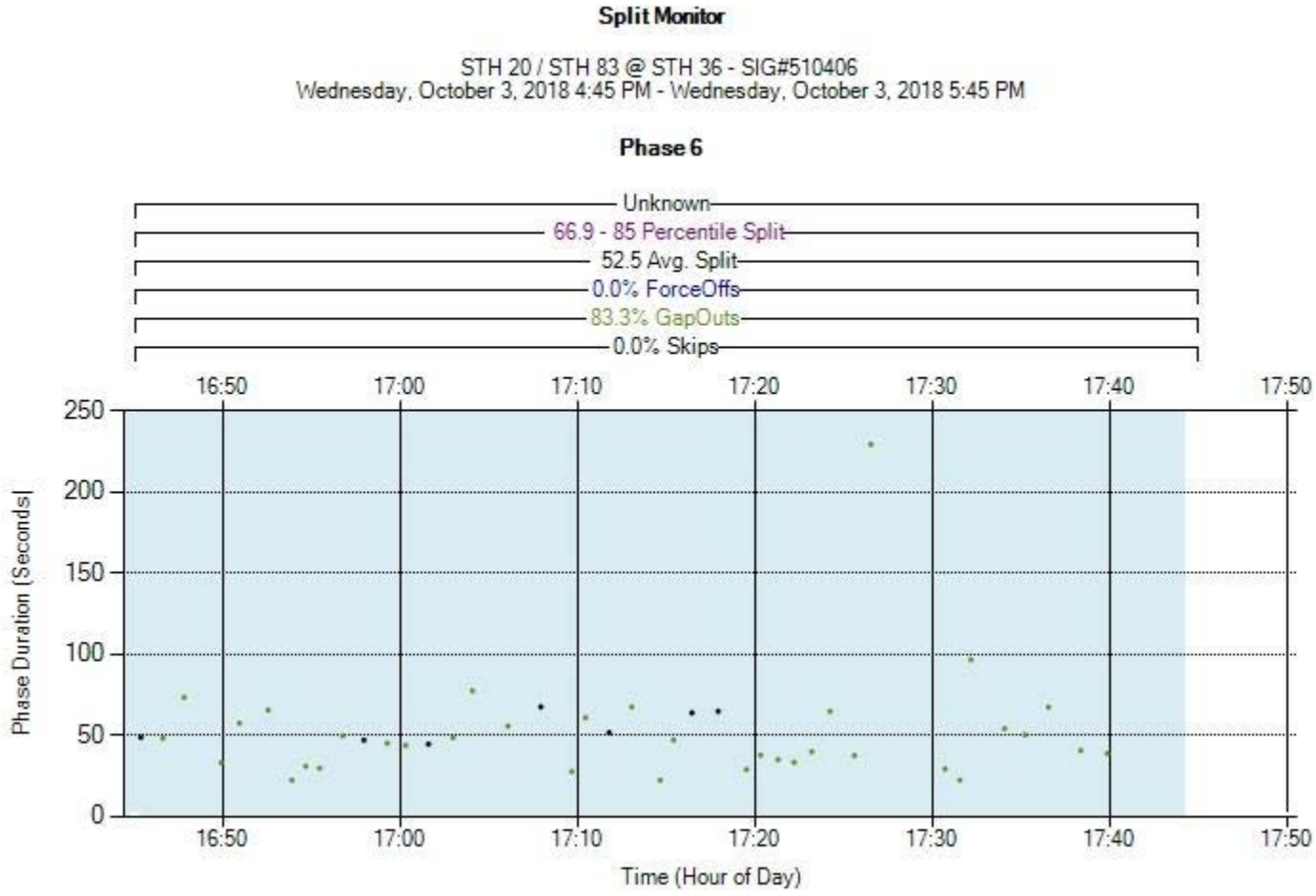
Isolated Signal – WIS 36 & 20/83
Vistro Timings
10/3/2018 – 4:45 PM – 5:45 PM



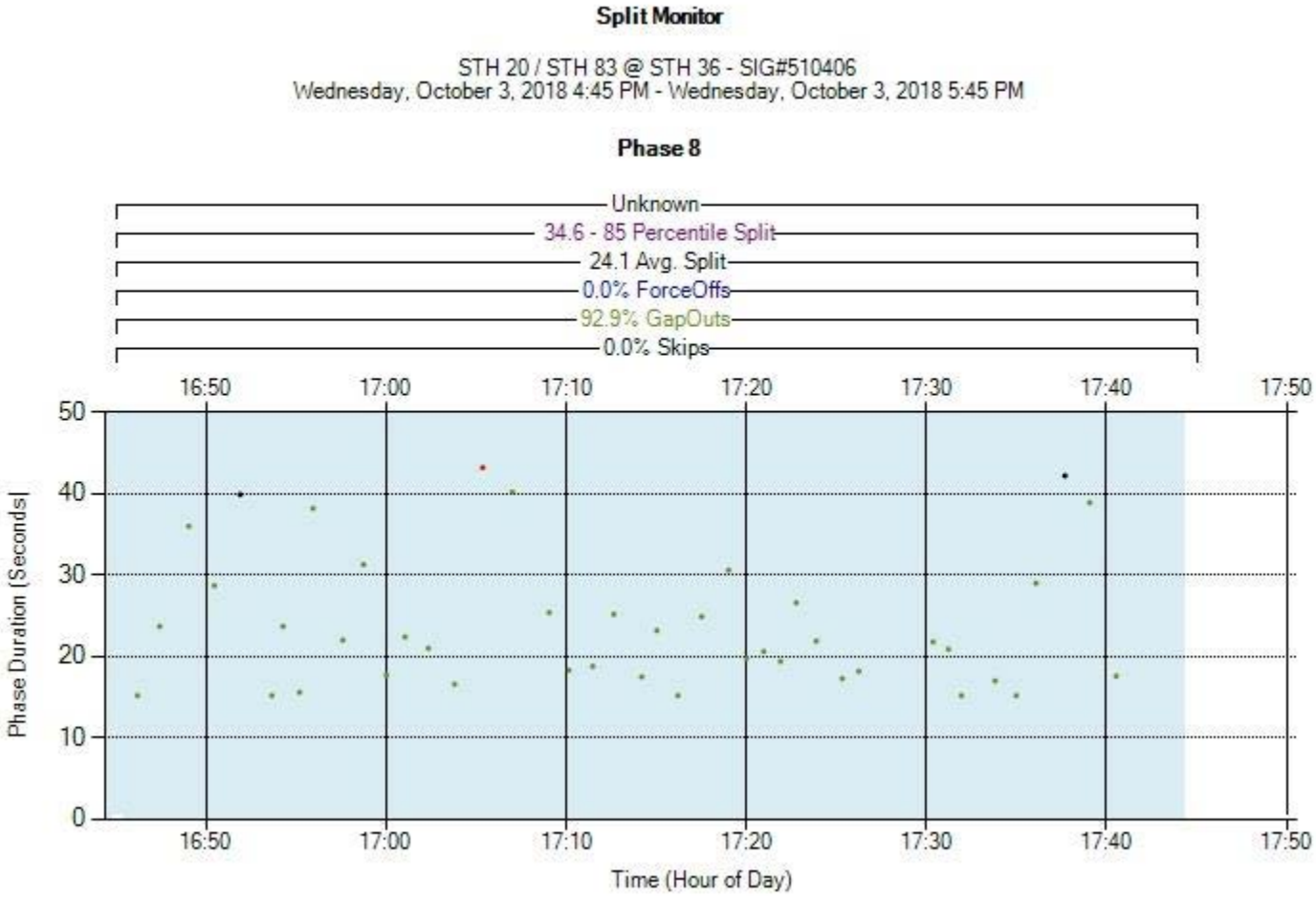
Isolated Signal – WIS 36 & 20/83
Vistro Timings
10/3/2018 – 4:45 PM – 5:45 PM



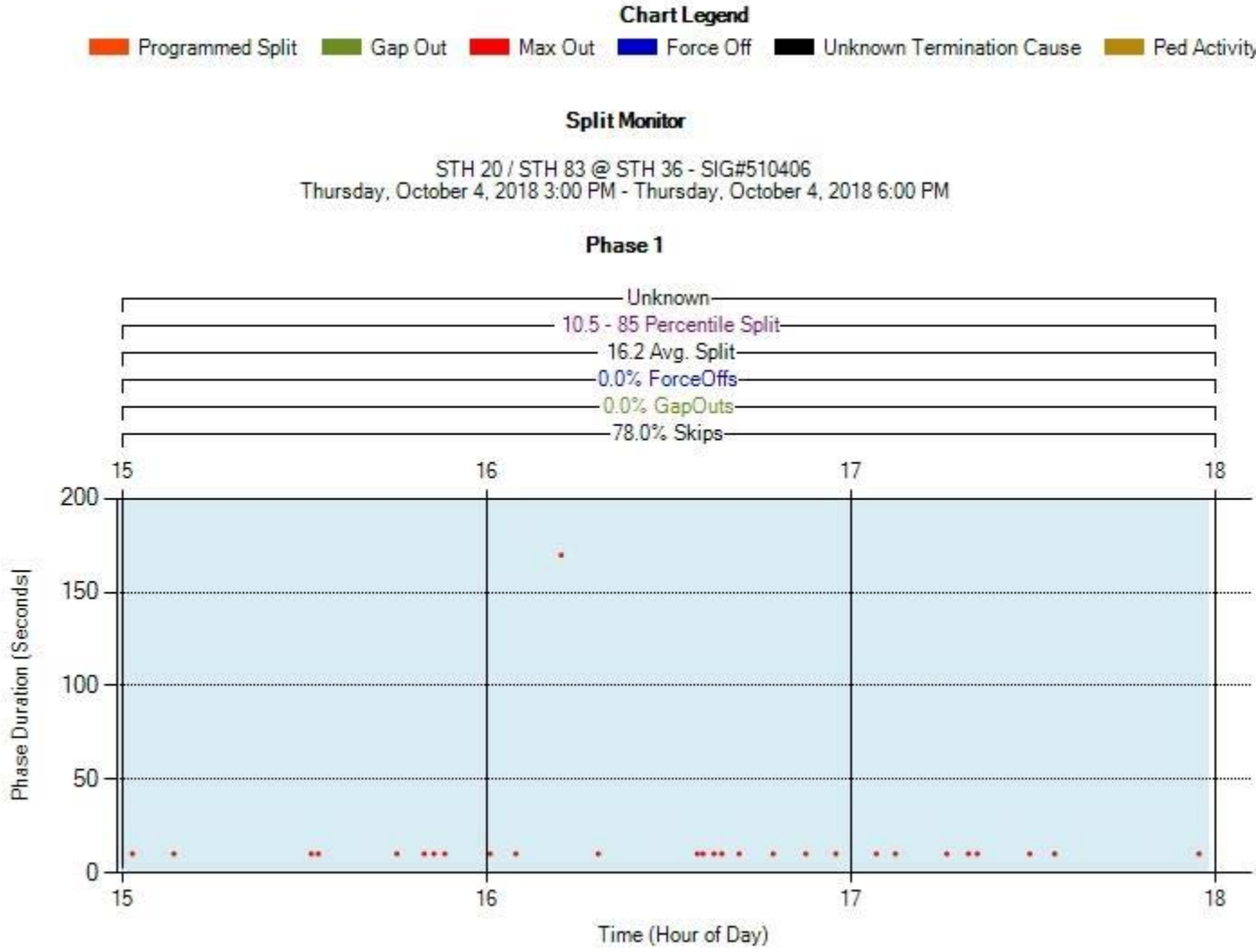
Isolated Signal – WIS 36 & 20/83
Vistro Timings
10/3/2018 – 4:45 PM – 5:45 PM



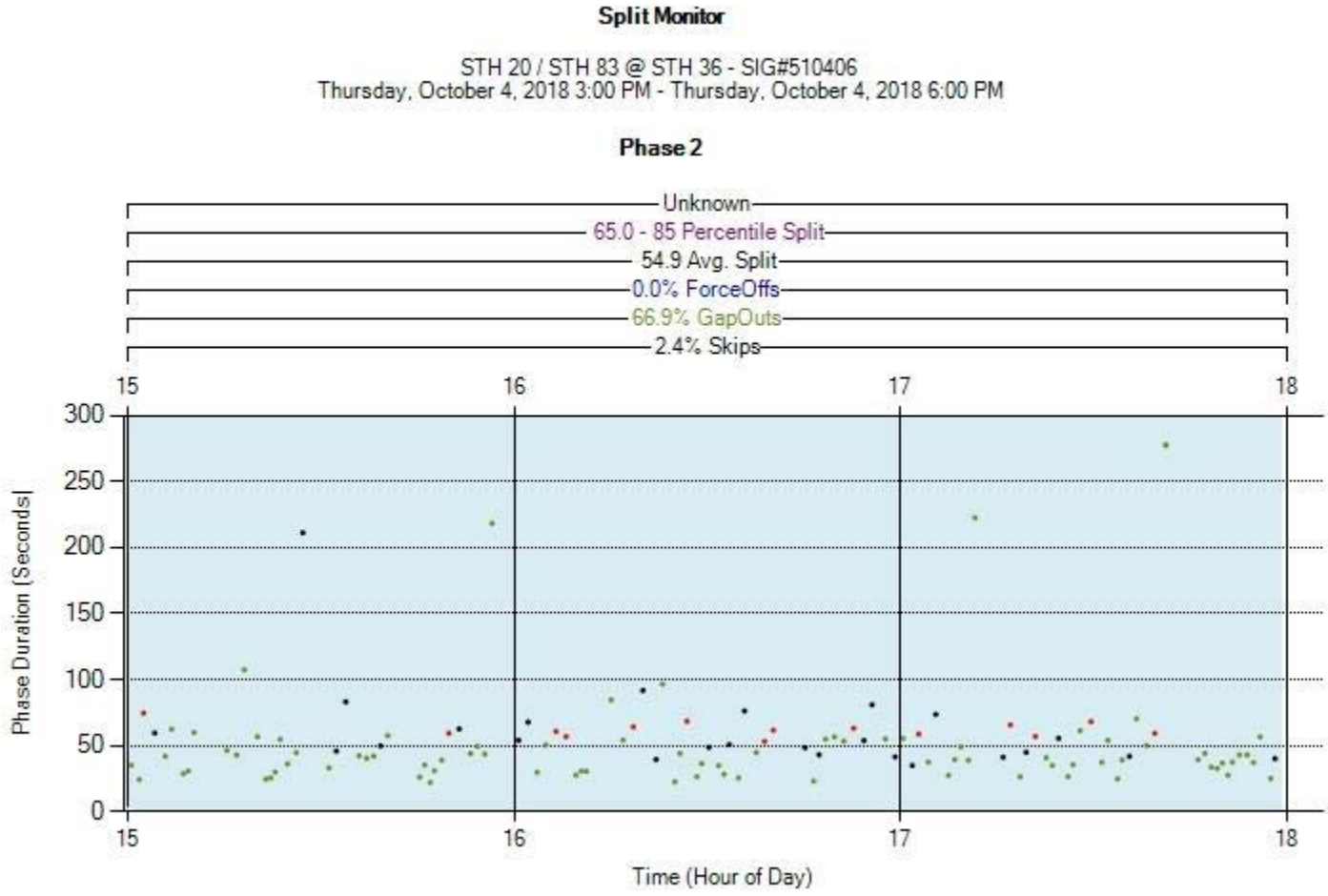
Isolated Signal – WIS 36 & 20/83
Vistro Timings
10/3/2018 – 4:45 PM – 5:45 PM



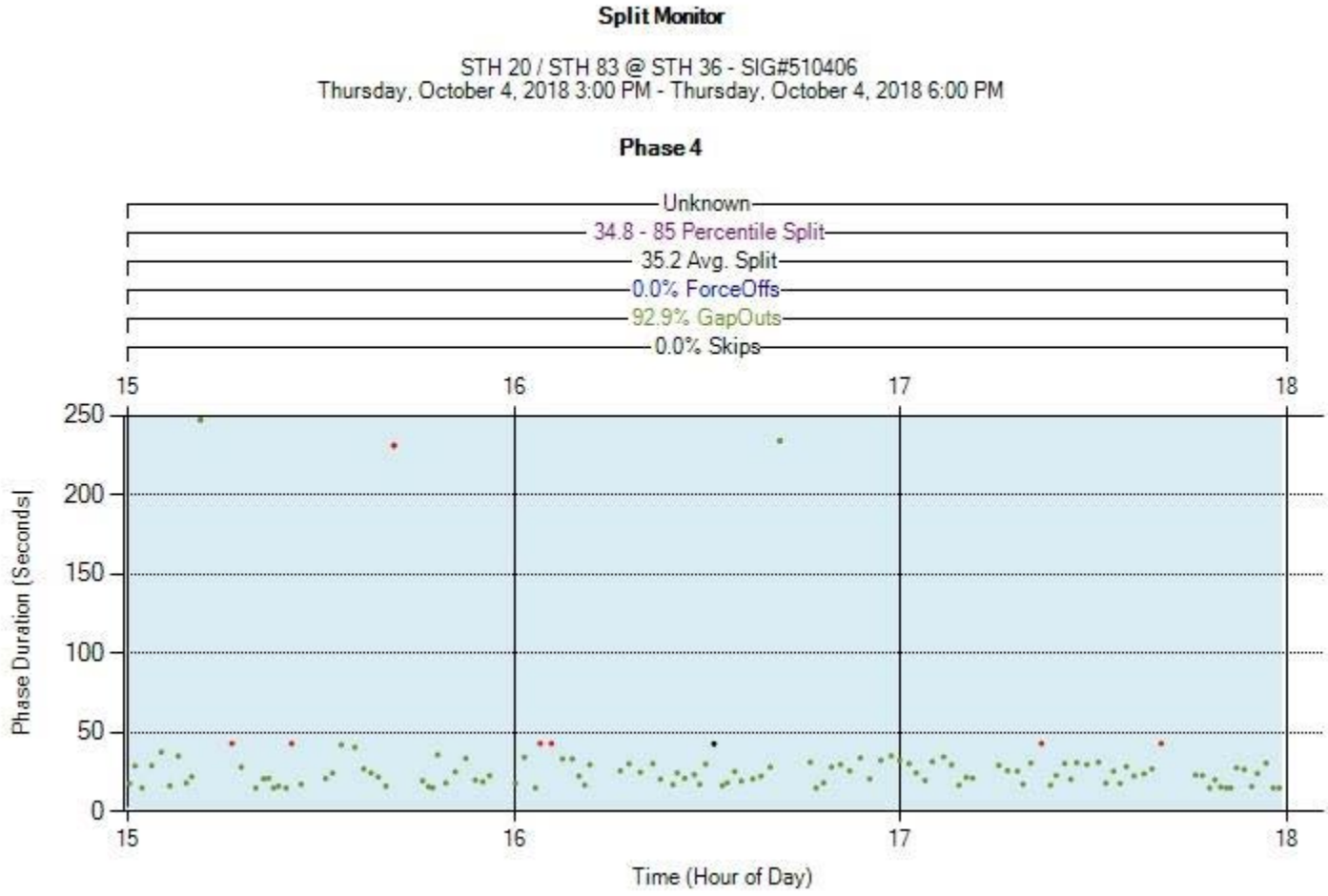
Isolated Signal – WIS 36 & 20/83
Vistro Timings
10/4/2018 – 3:00 PM – 6:00 PM



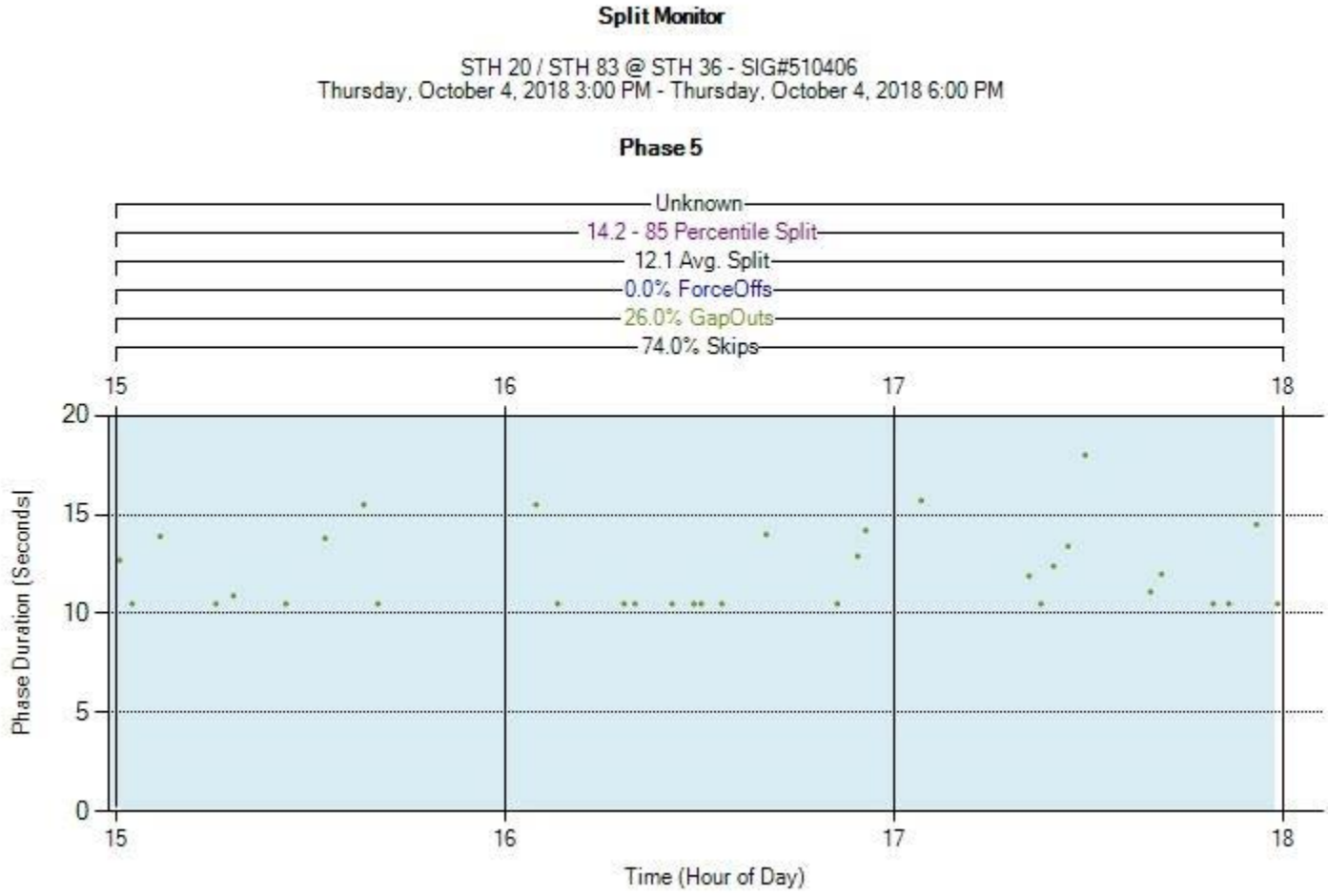
Isolated Signal – WIS 36 & 20/83
Vistro Timings
10/4/2018 – 3:00 PM – 6:00 PM



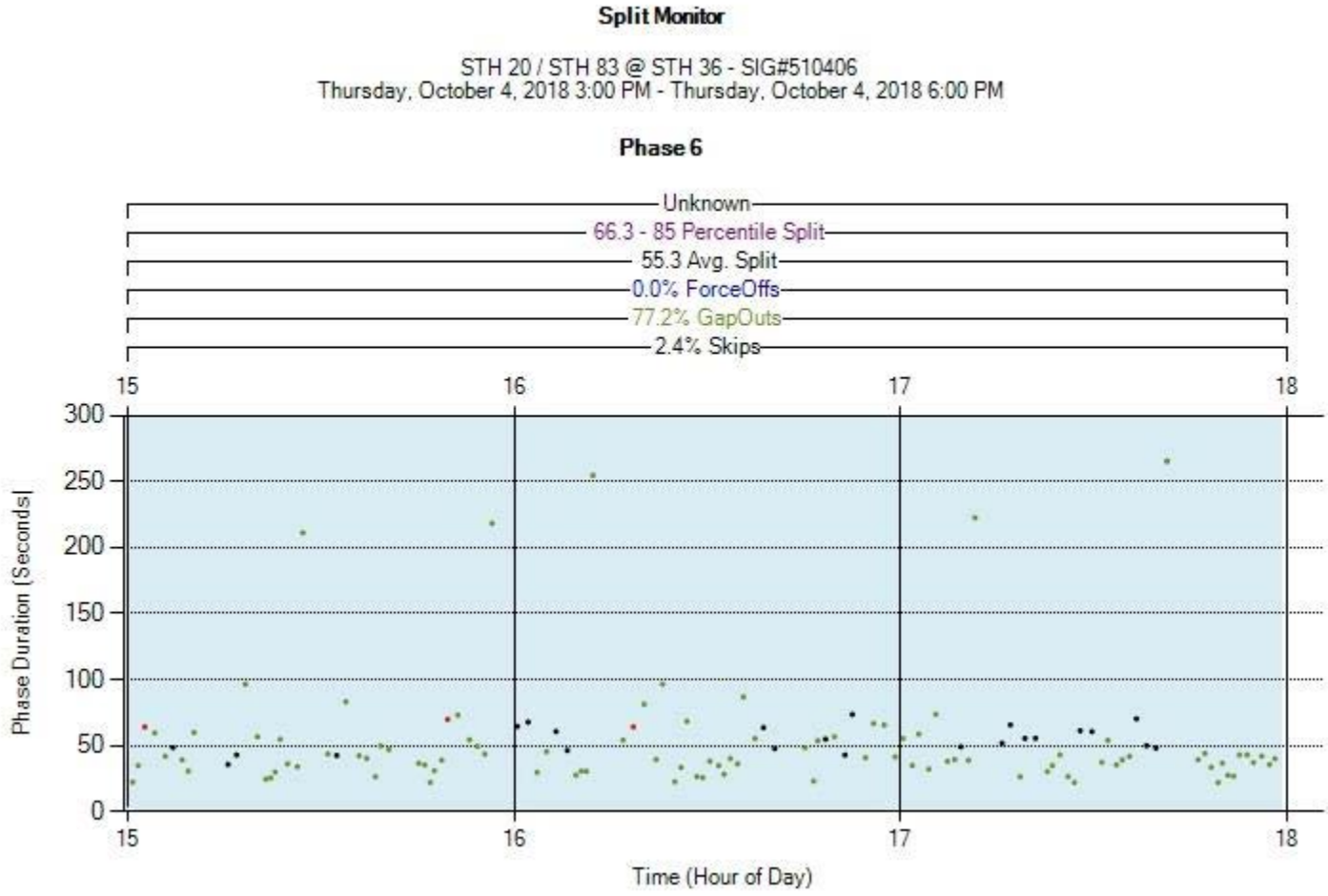
Isolated Signal – WIS 36 & 20/83
Vistro Timings
10/4/2018 – 3:00 PM – 6:00 PM



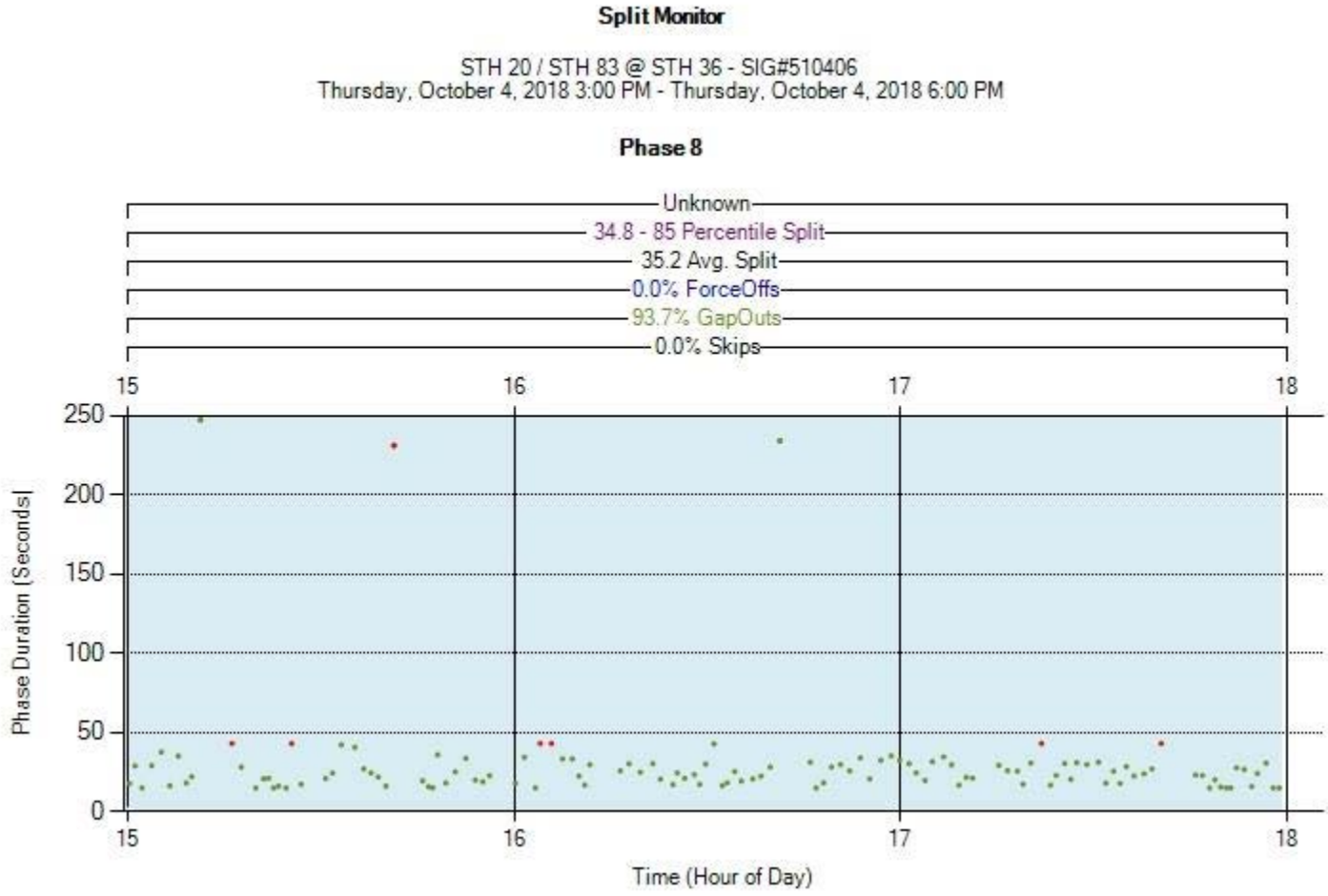
Isolated Signal – WIS 36 & 20/83
Vistro Timings
10/4/2018 – 3:00 PM – 6:00 PM



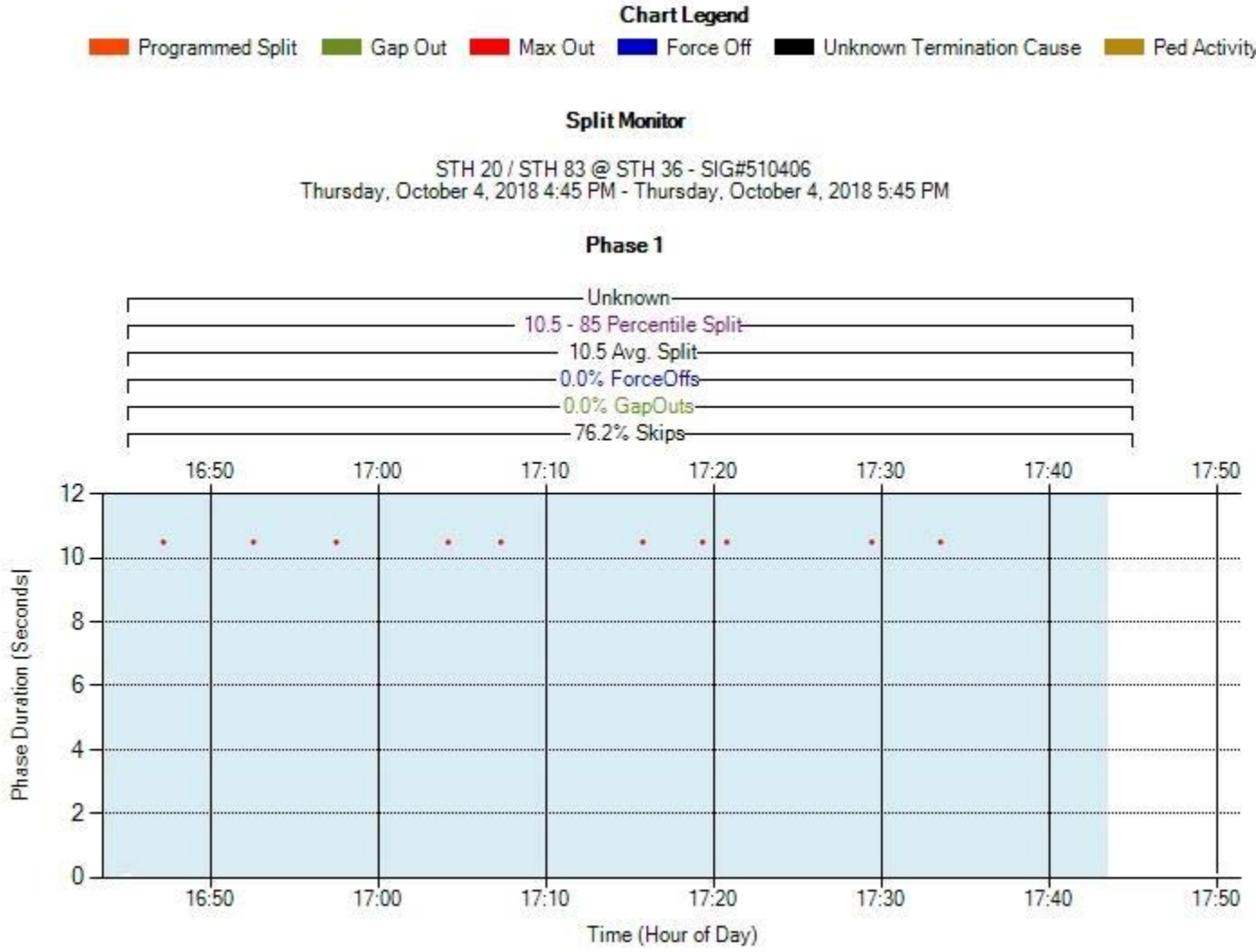
Isolated Signal – WIS 36 & 20/83
Vistro Timings
10/4/2018 – 3:00 PM – 6:00 PM



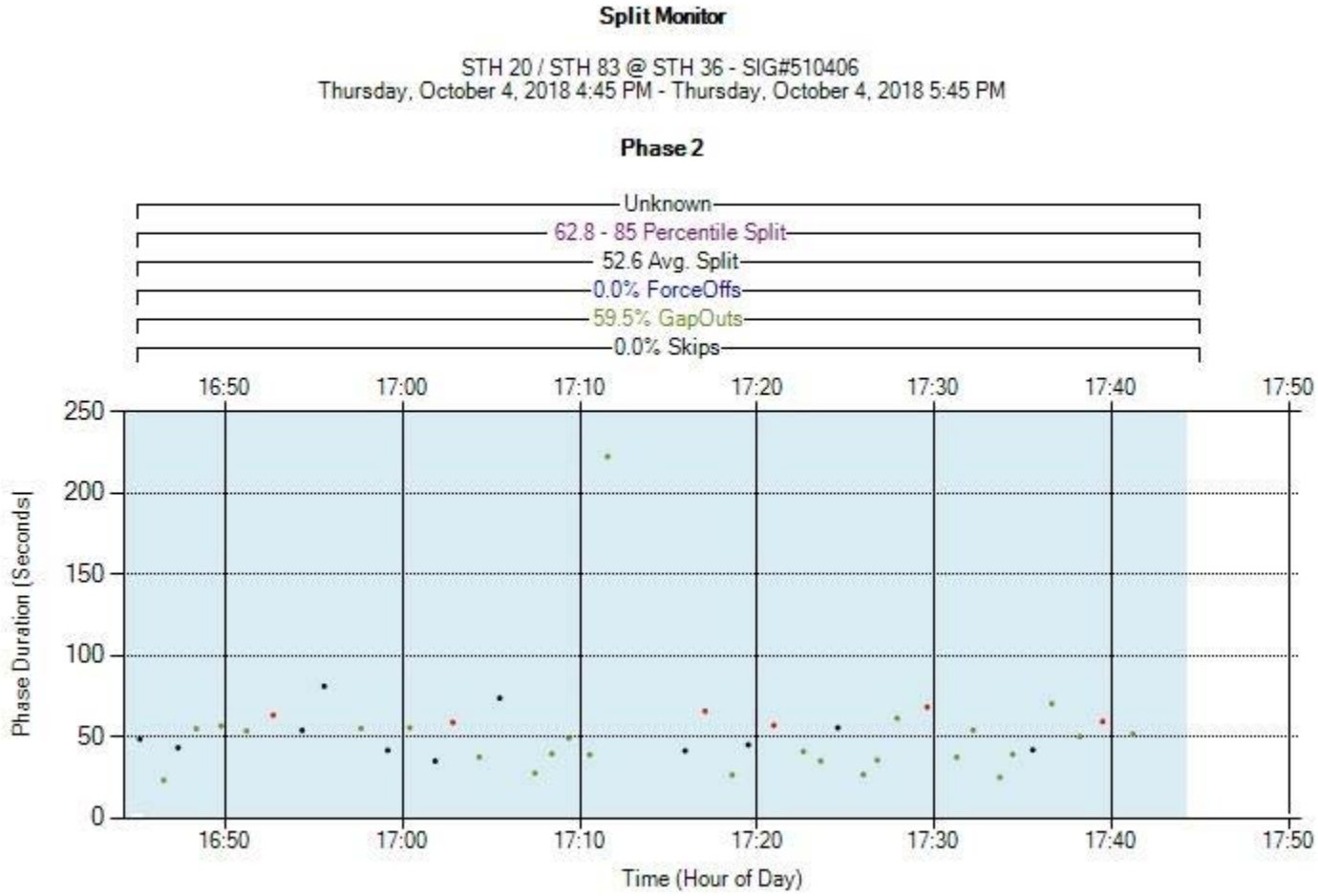
Isolated Signal – WIS 36 & 20/83
Vistro Timings
10/4/2018 – 3:00 PM – 6:00 PM



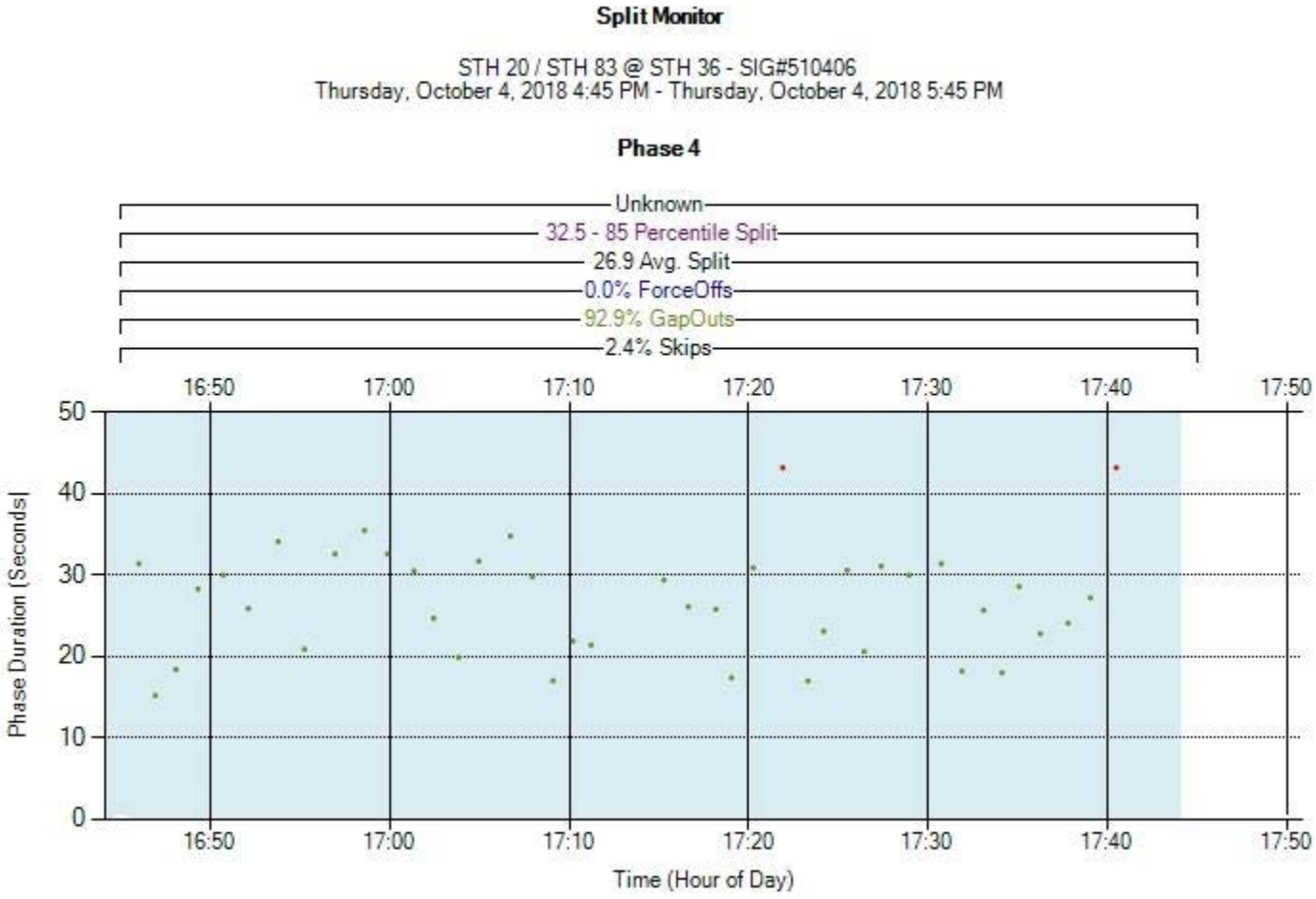
Isolated Signal – WIS 36 & 20/83
Vistro Timings
10/4/2018 – 4:45 PM – 5:45 PM



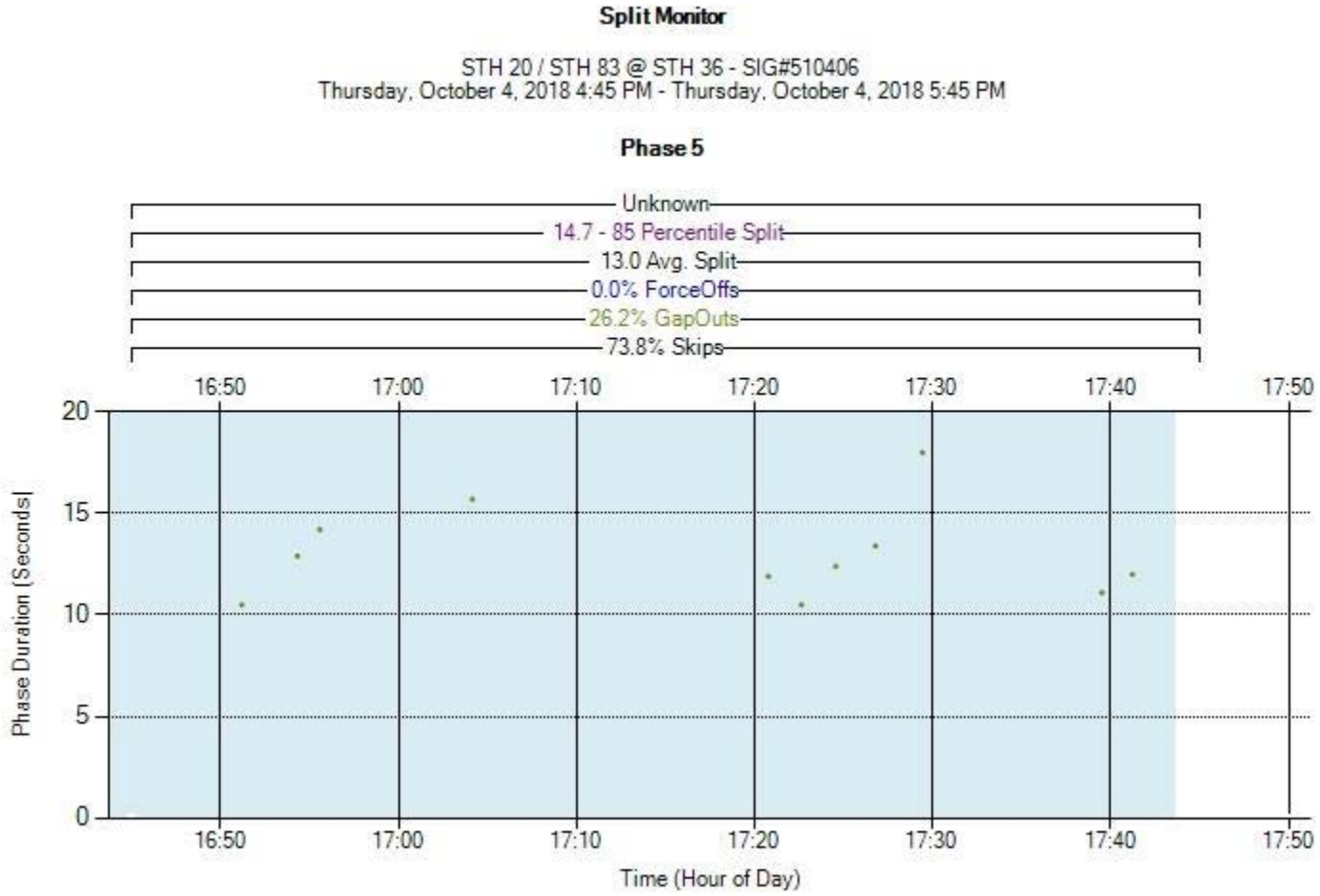
Isolated Signal – WIS 36 & 20/83
Vistro Timings
10/4/2018 – 4:45 PM – 5:45 PM



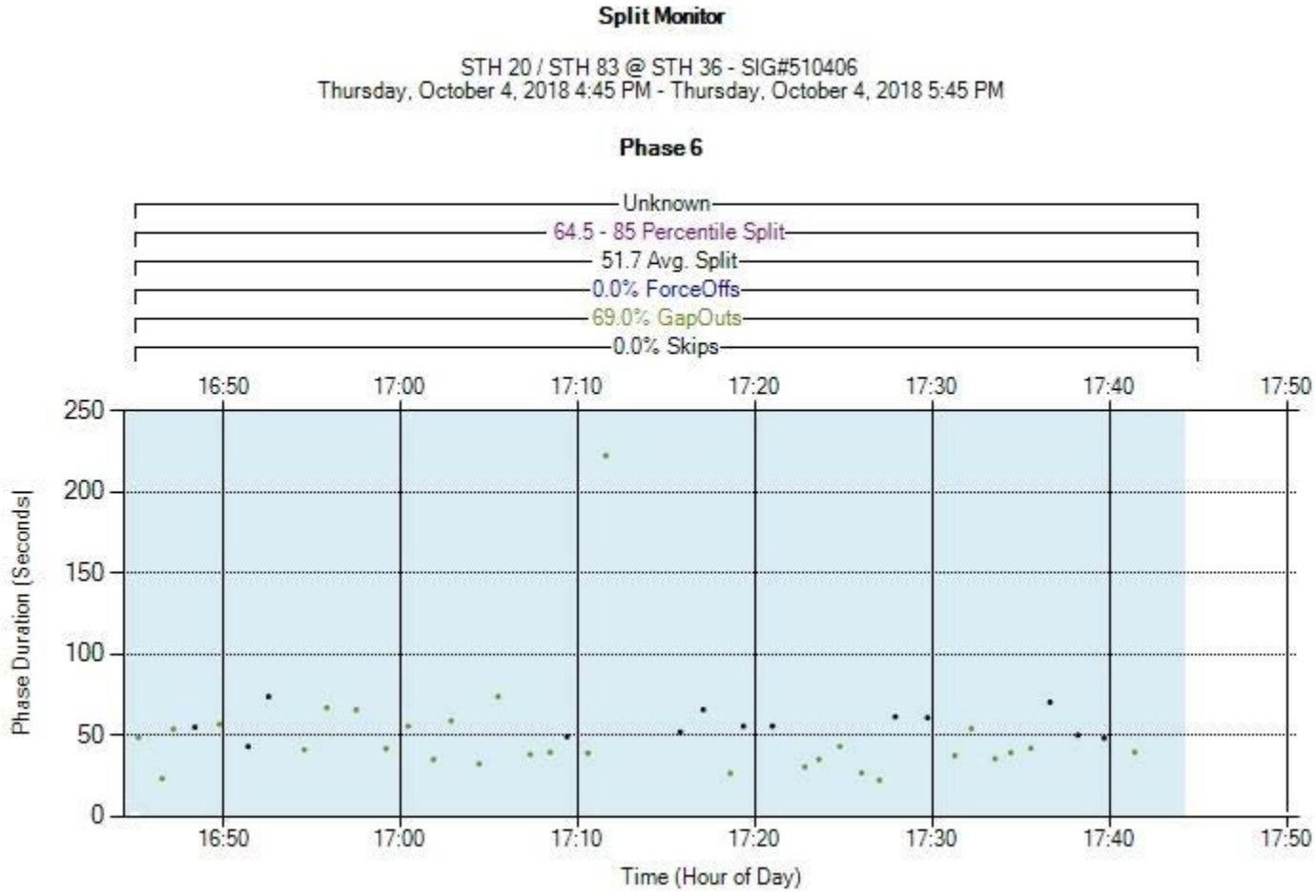
Isolated Signal – WIS 36 & 20/83
Vistro Timings
10/4/2018 – 4:45 PM – 5:45 PM



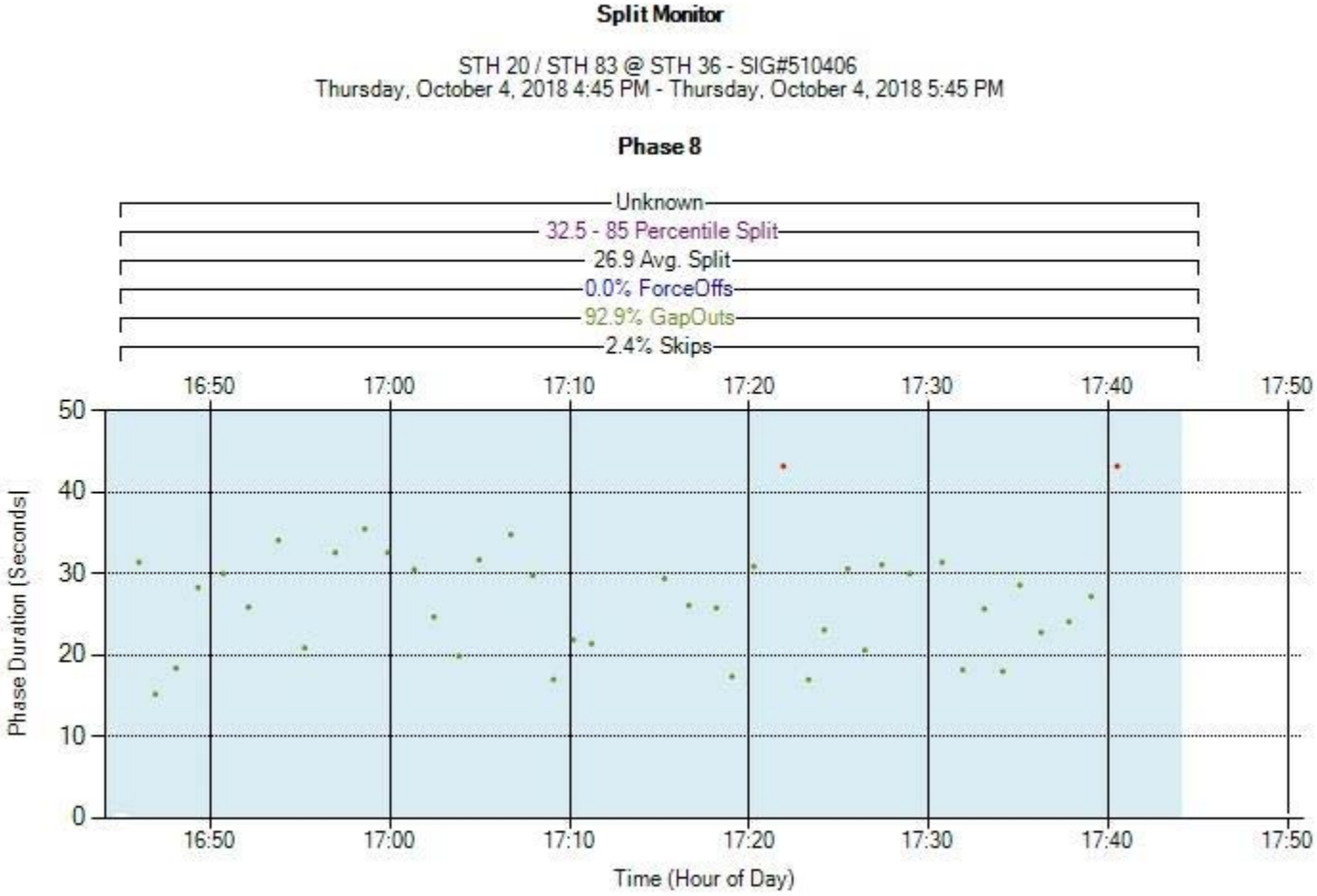
Isolated Signal – WIS 36 & 20/83
Vistro Timings
10/4/2018 – 4:45 PM – 5:45 PM



Isolated Signal – WIS 36 & 20/83
Vistro Timings
10/4/2018 – 4:45 PM – 5:45 PM

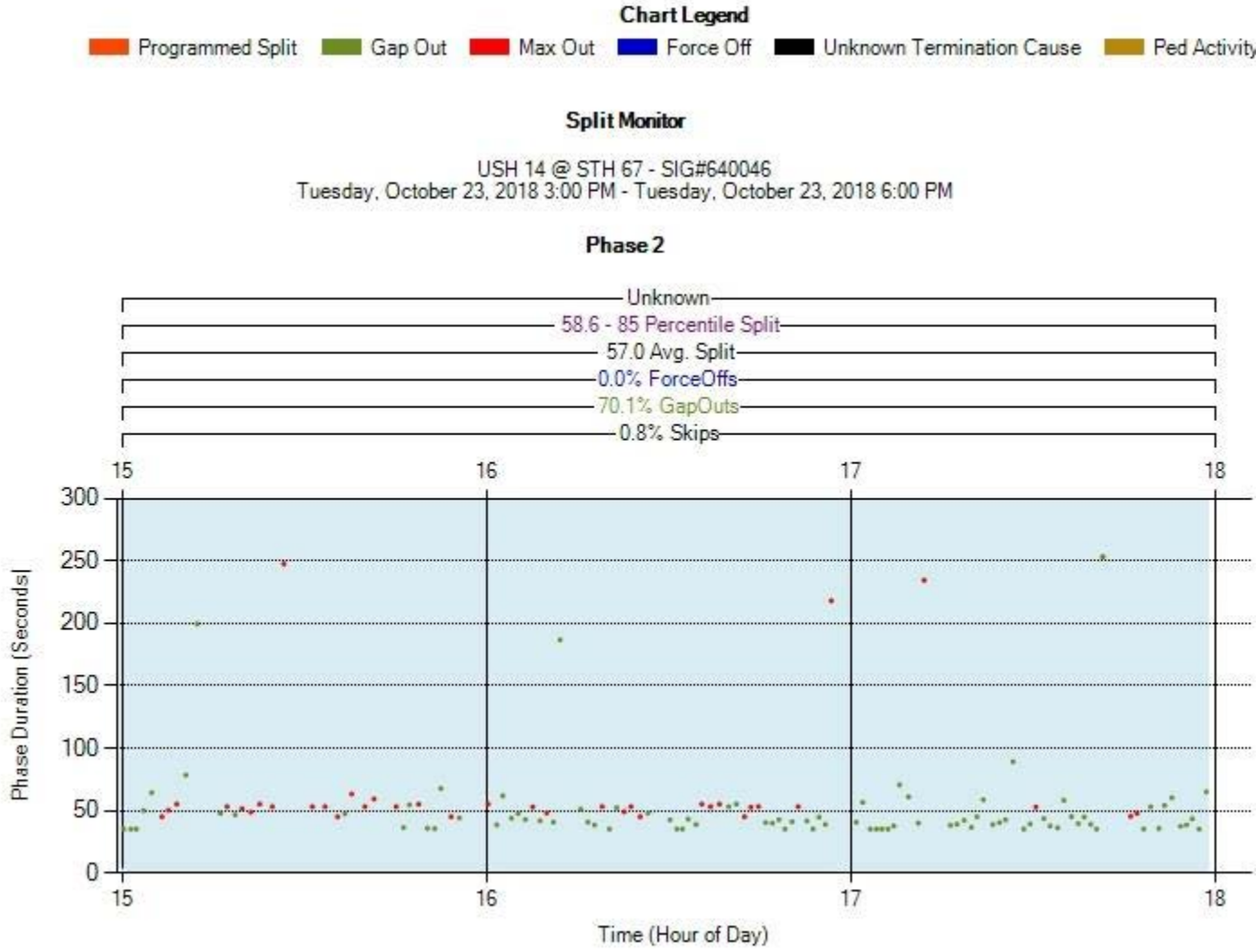


Isolated Signal – WIS 36 & 20/83
Vistro Timings
10/4/2018 – 4:45 PM – 5:45 PM

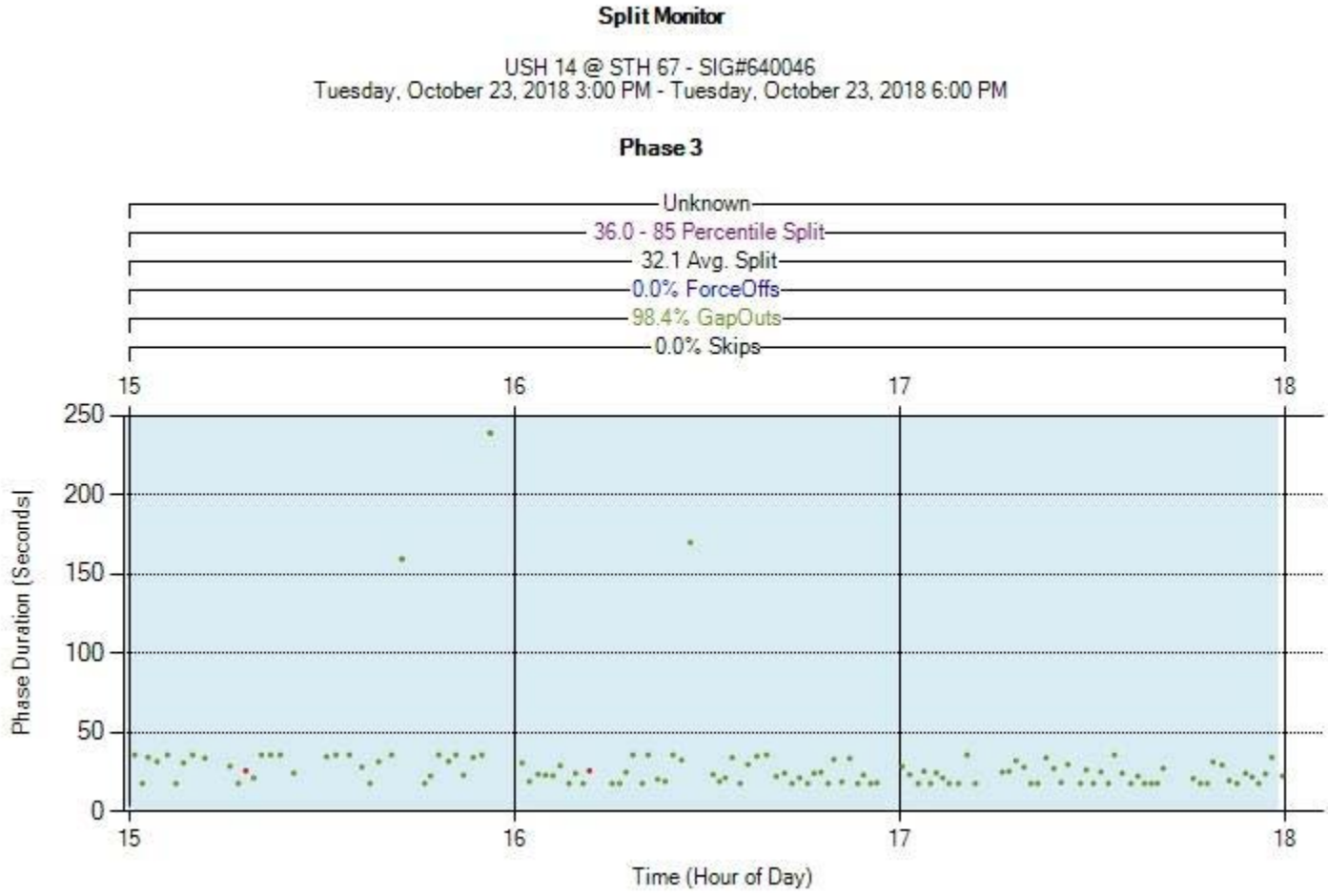


WisBOOM Outputs
WIS 67 & US 14
Existing Timings

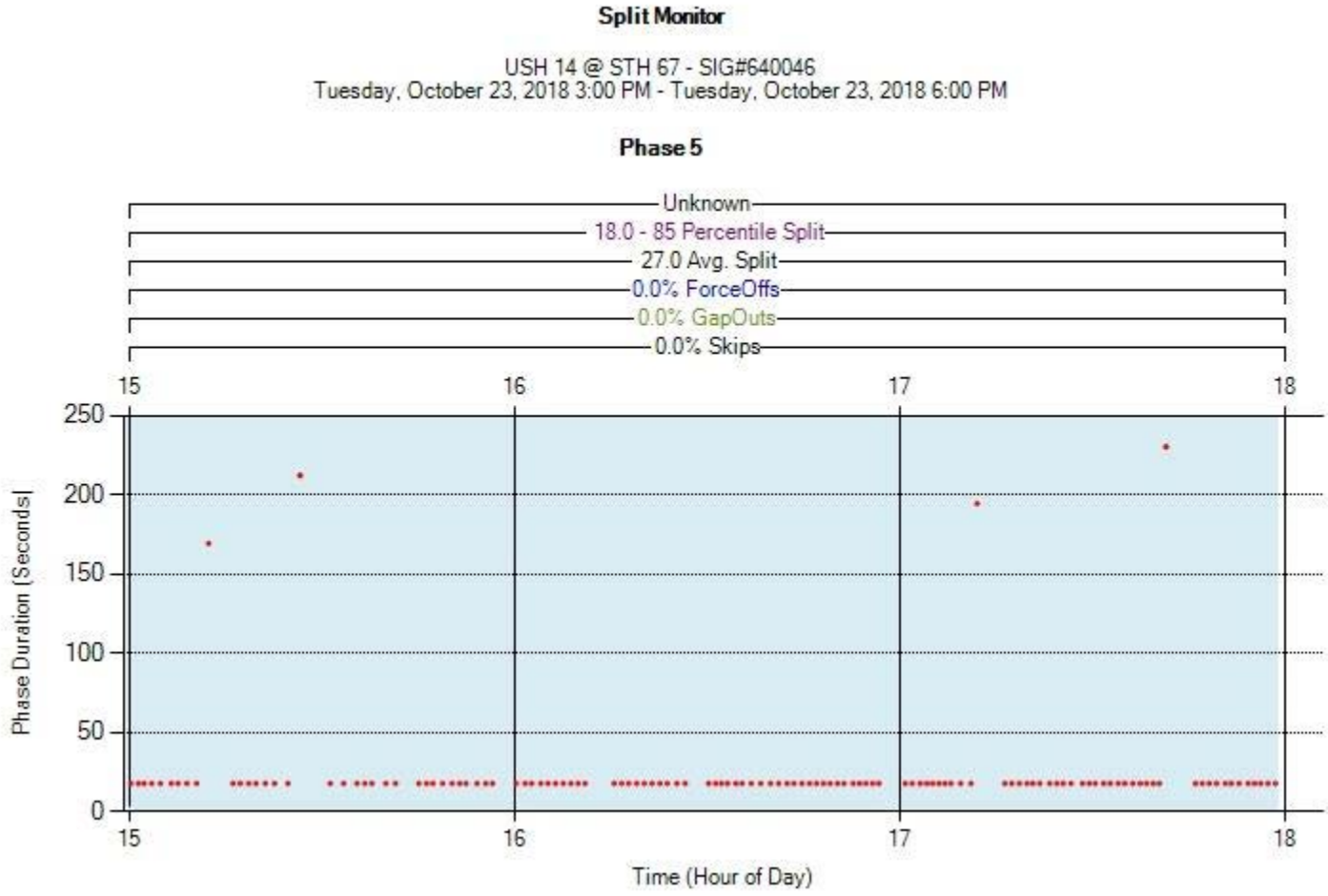
Isolated Signal – WIS 67 & US 14
Baseline Timings
10/23/2018 – 3:00 PM – 6:00 PM



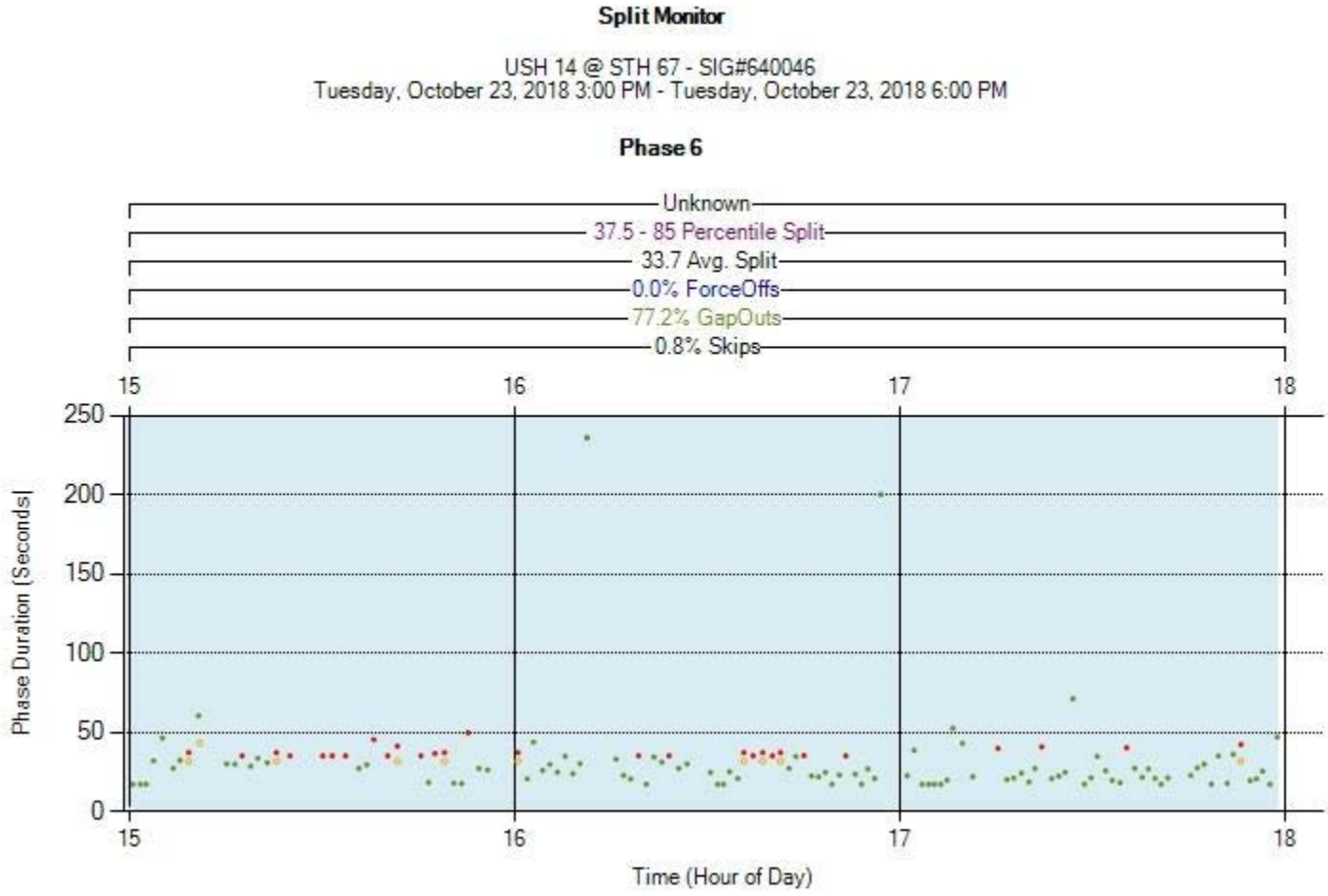
Isolated Signal – WIS 67 & US 14
Baseline Timings
10/23/2018 – 3:00 PM – 6:00 PM



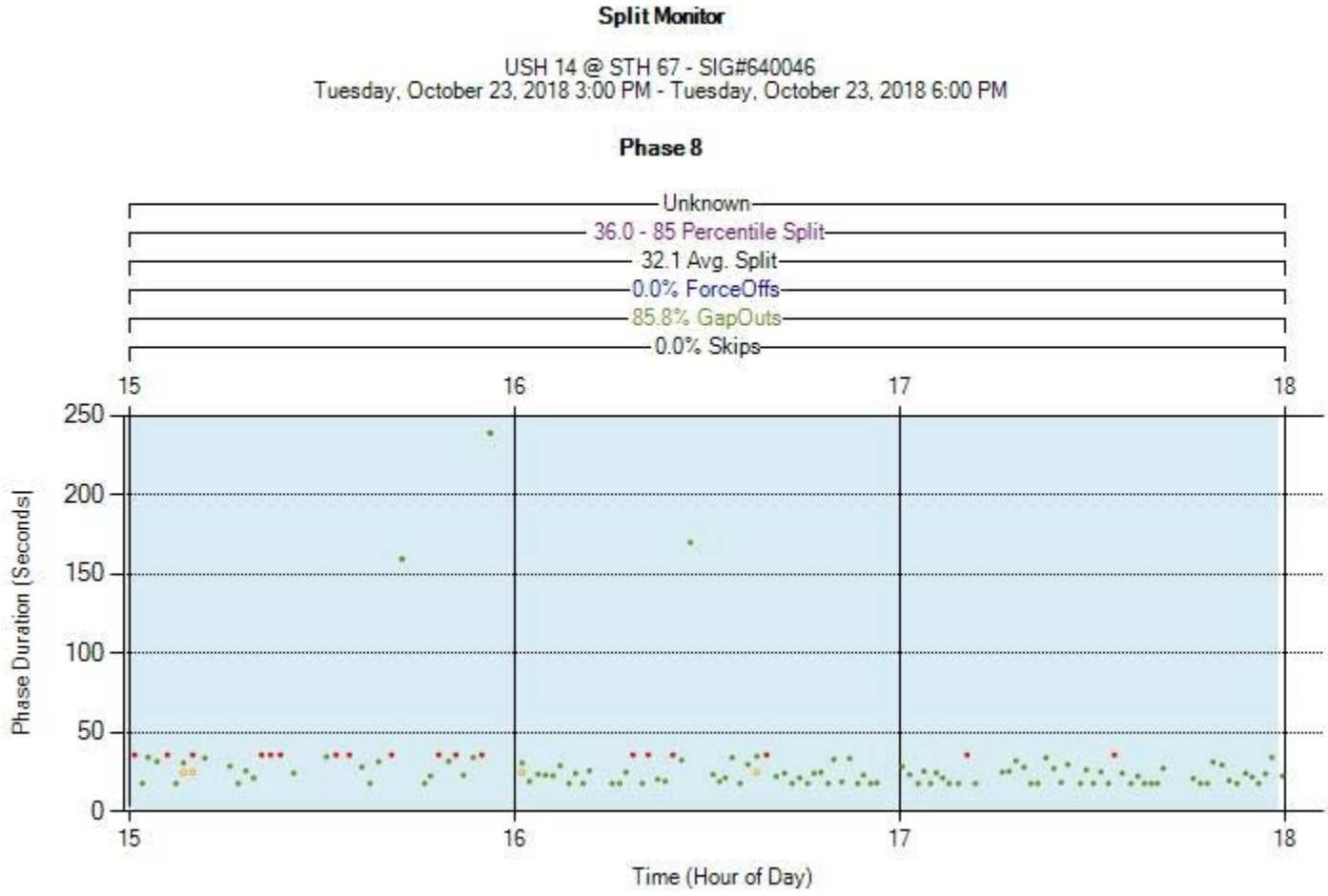
Isolated Signal – WIS 67 & US 14
Baseline Timings
10/23/2018 – 3:00 PM – 6:00 PM



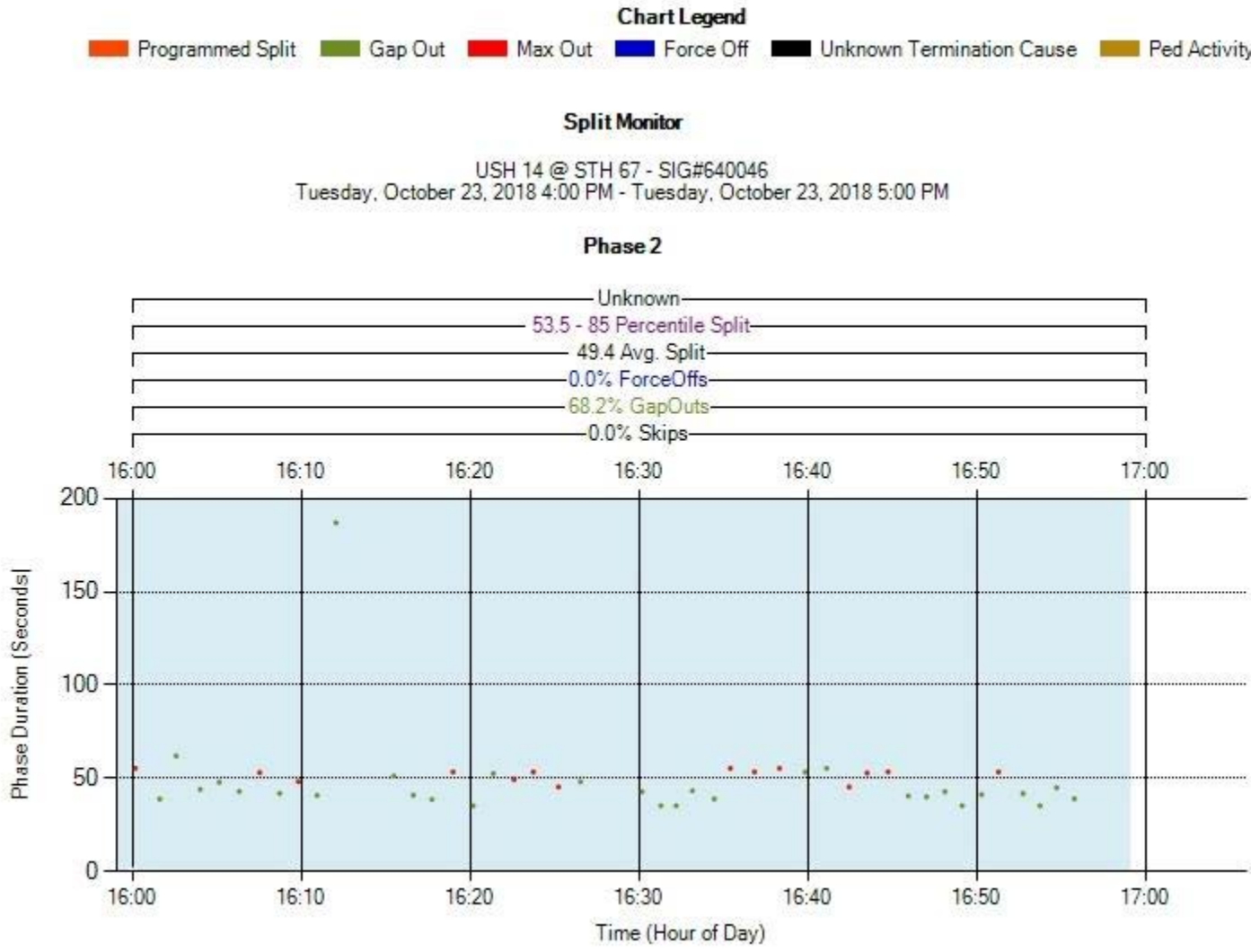
Isolated Signal – WIS 67 & US 14
Baseline Timings
10/23/2018 – 3:00 PM – 6:00 PM



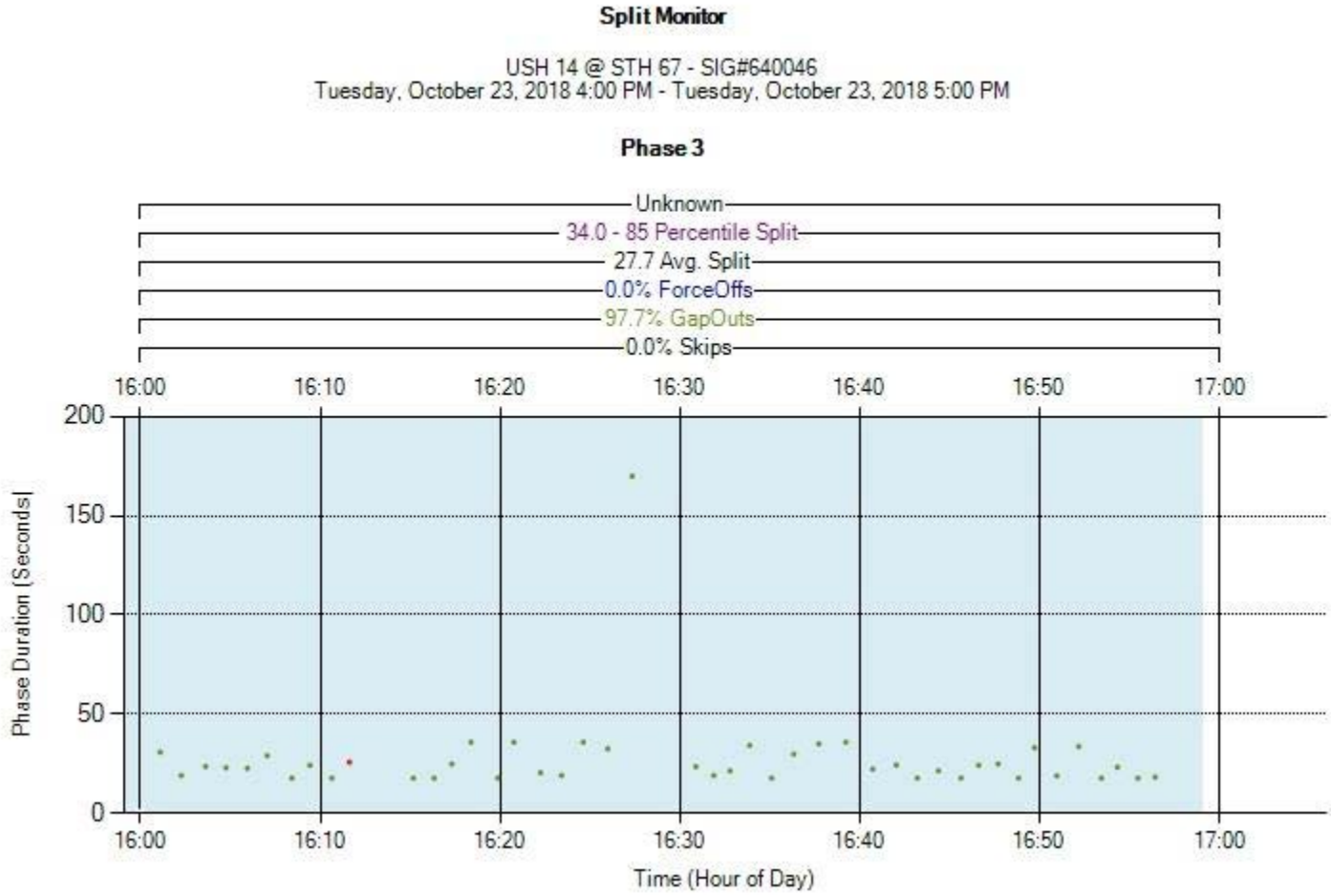
Isolated Signal – WIS 67 & US 14
Baseline Timings
10/23/2018 – 3:00 PM – 6:00 PM



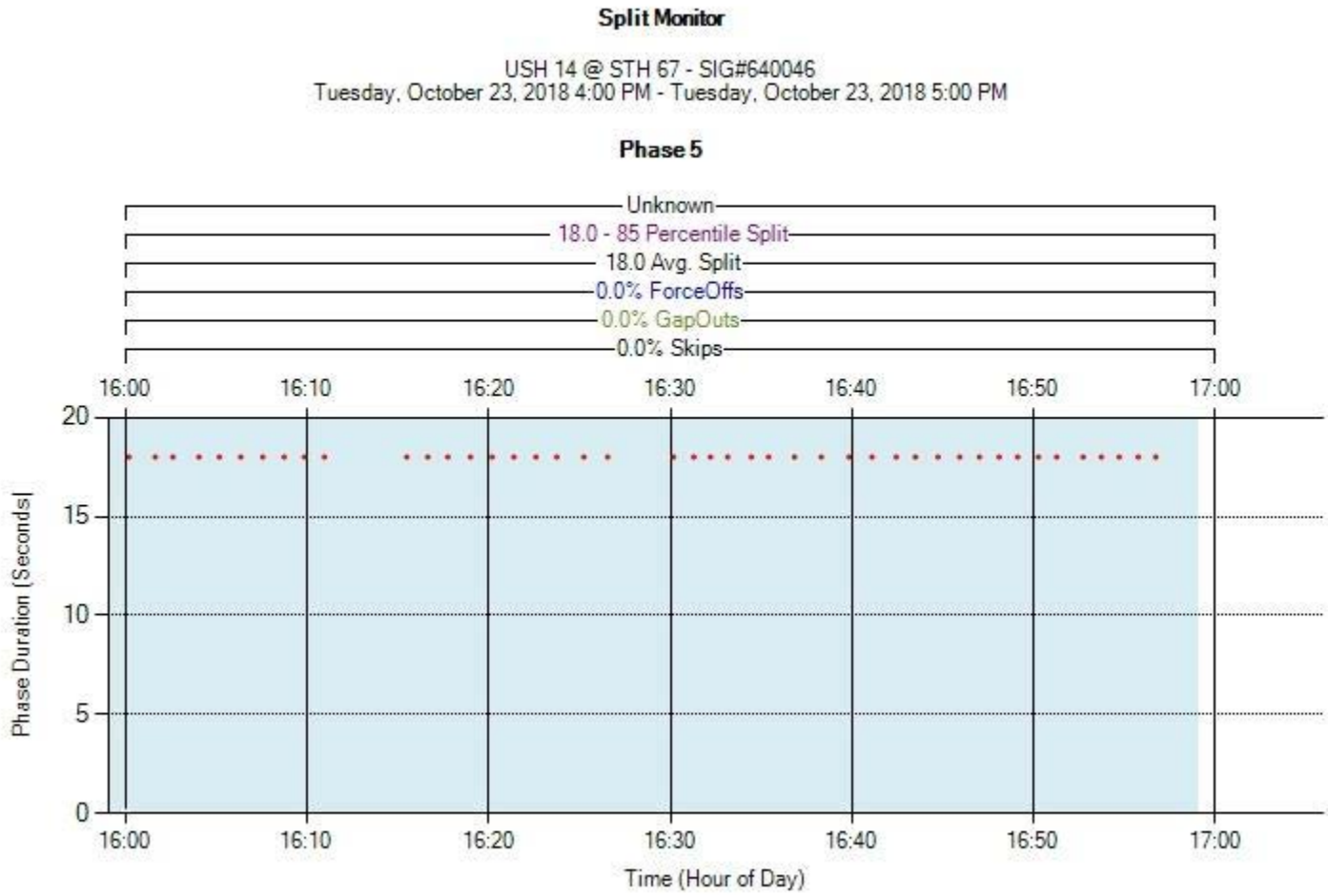
Isolated Signal – WIS 67 & US 14
Baseline Timings
10/23/2018 – 4:00 PM – 5:00 PM



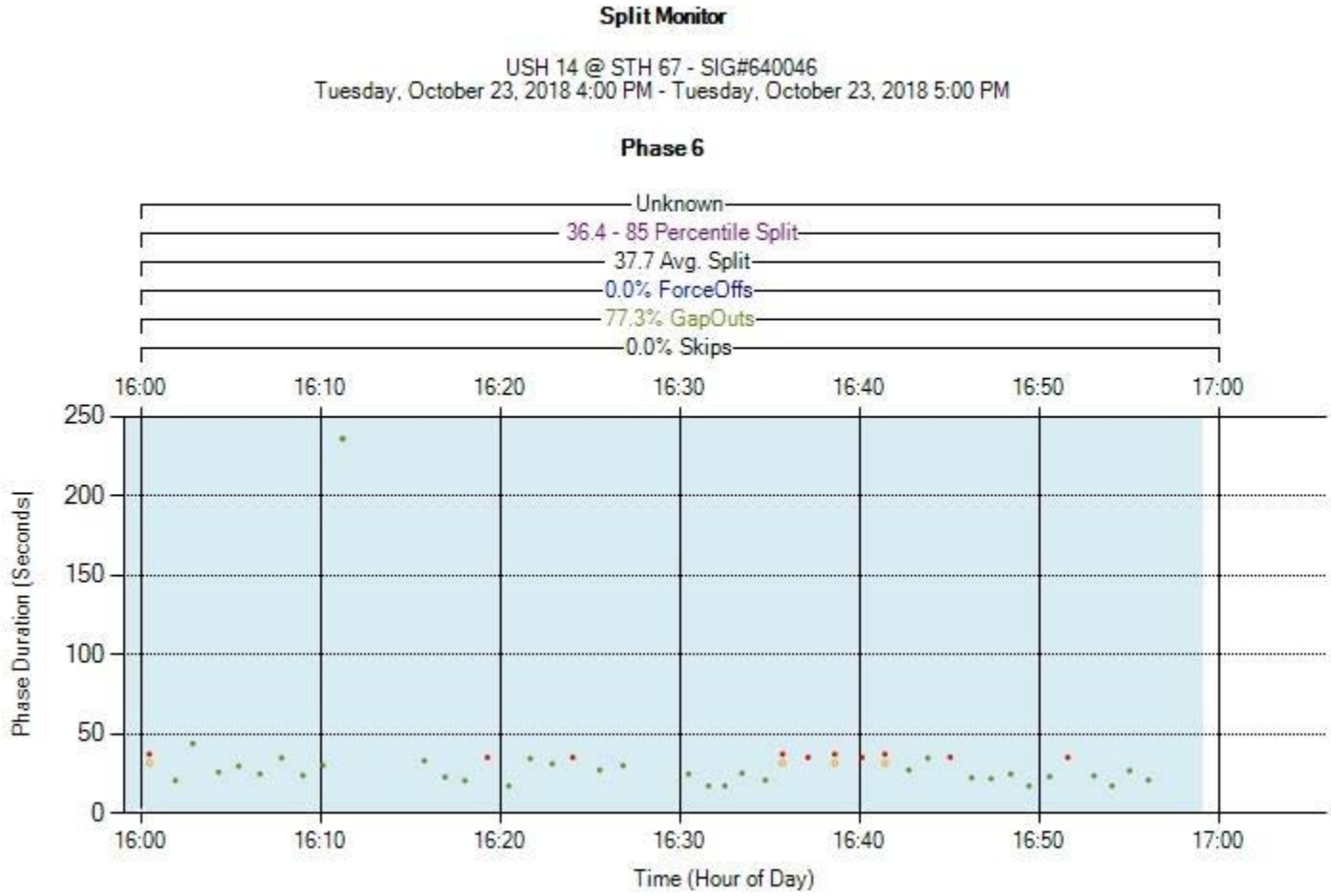
Isolated Signal – WIS 67 & US 14
Baseline Timings
10/23/2018 – 4:00 PM – 5:00 PM



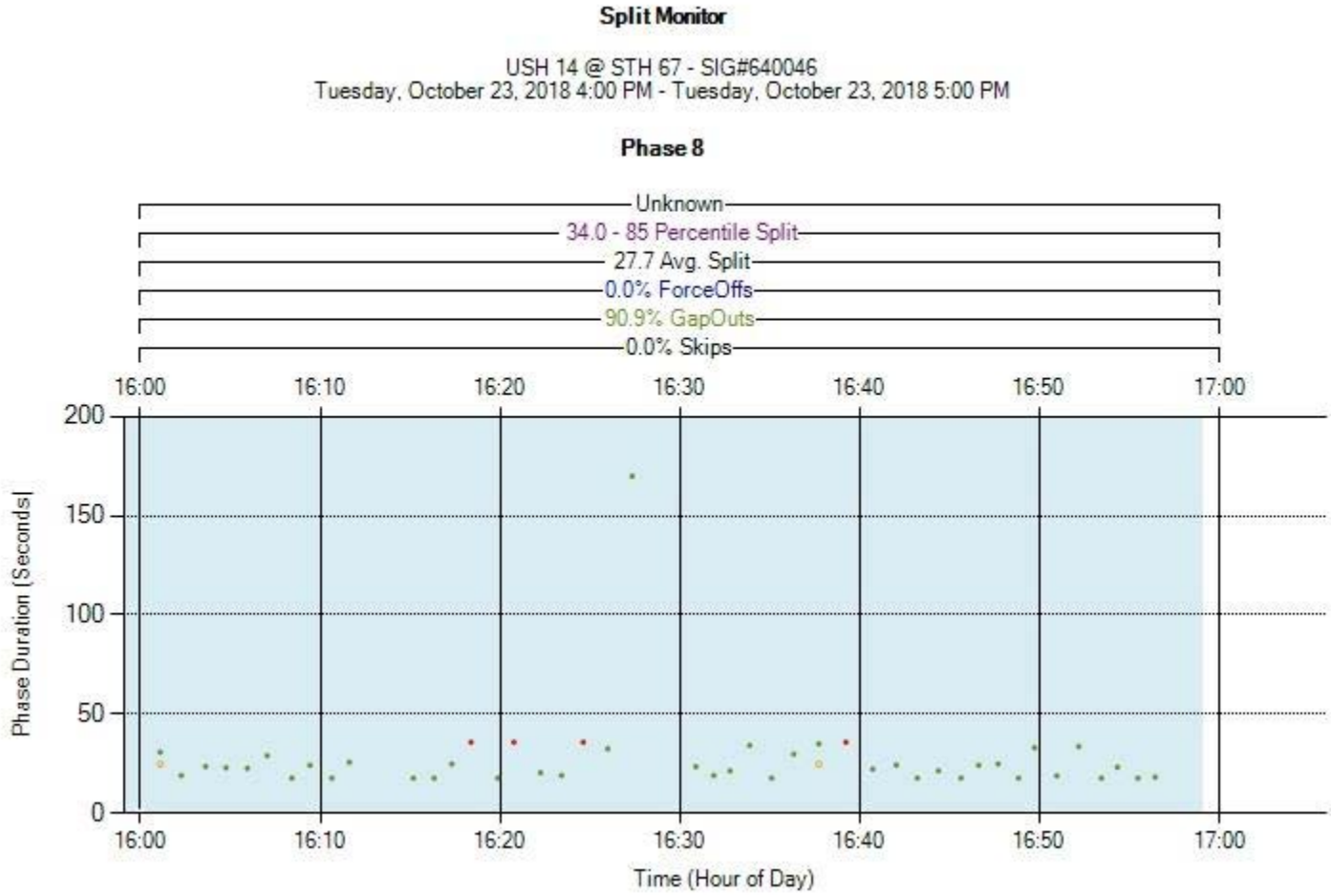
Isolated Signal – WIS 67 & US 14
Baseline Timings
10/23/2018 – 4:00 PM – 5:00 PM



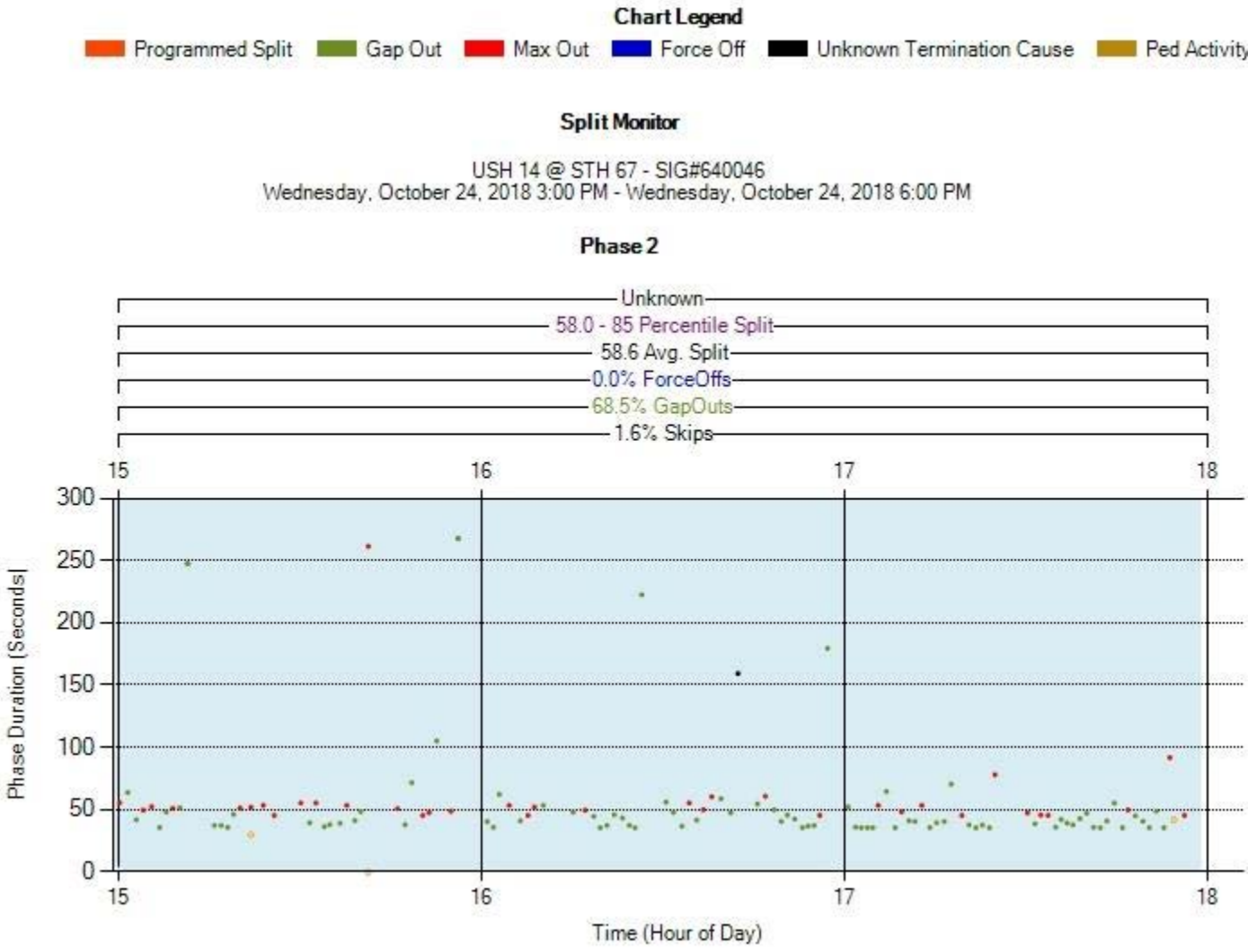
Isolated Signal – WIS 67 & US 14
Baseline Timings
10/23/2018 – 4:00 PM – 5:00 PM



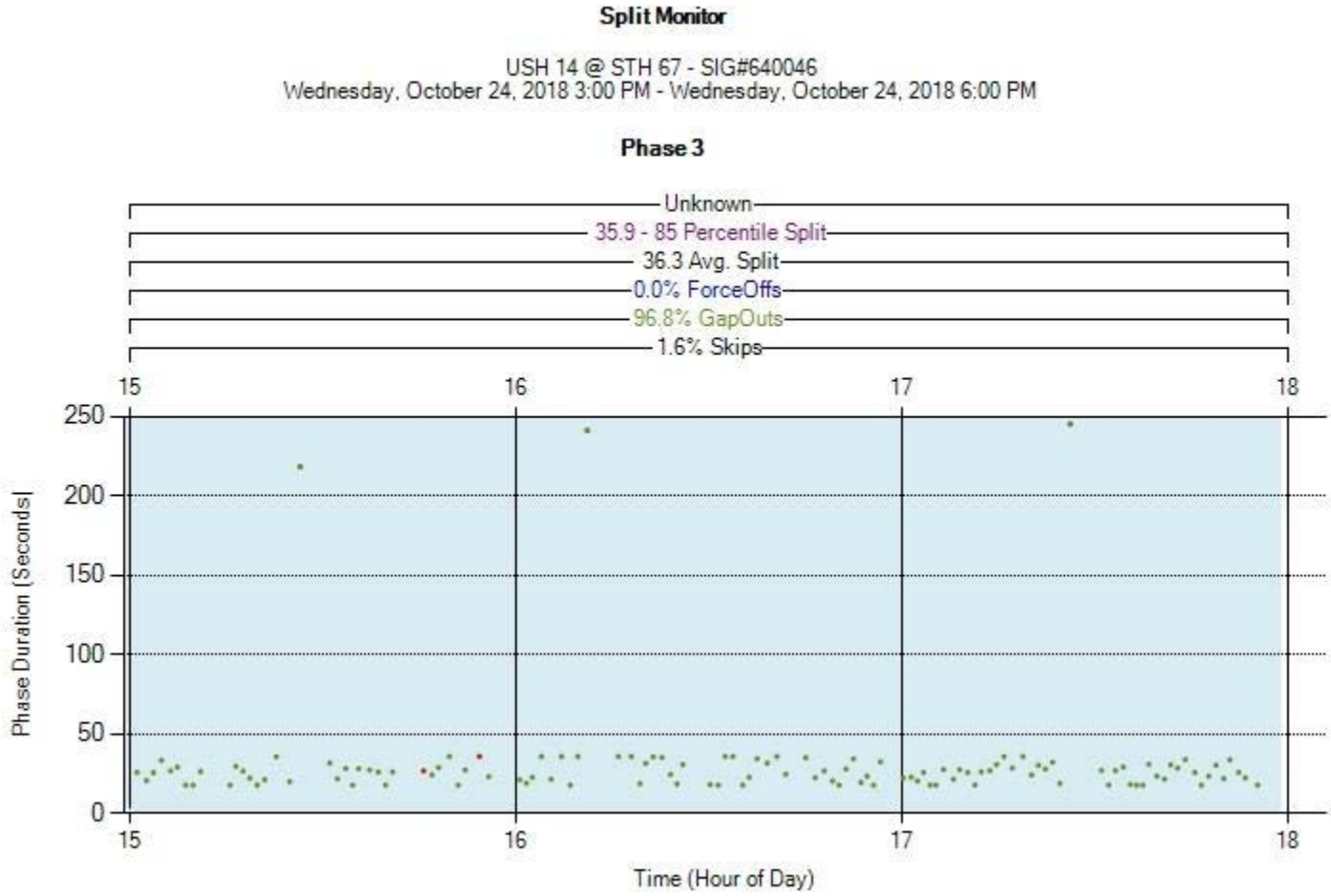
Isolated Signal – WIS 67 & US 14
Baseline Timings
10/23/2018 – 4:00 PM – 5:00 PM



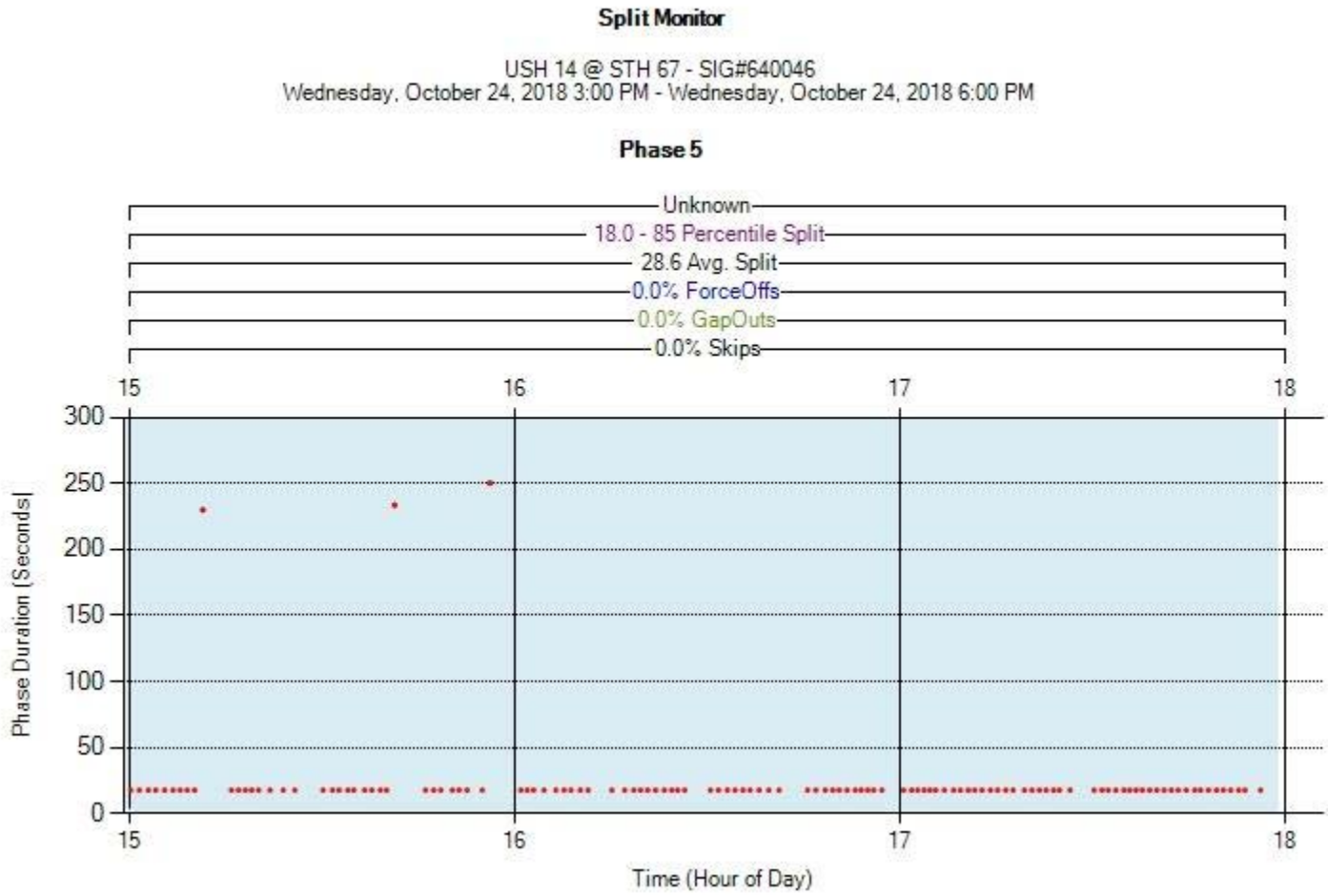
Isolated Signal – WIS 67 & US 14
Baseline Timings
10/24/2018 – 3:00 PM – 6:00 PM



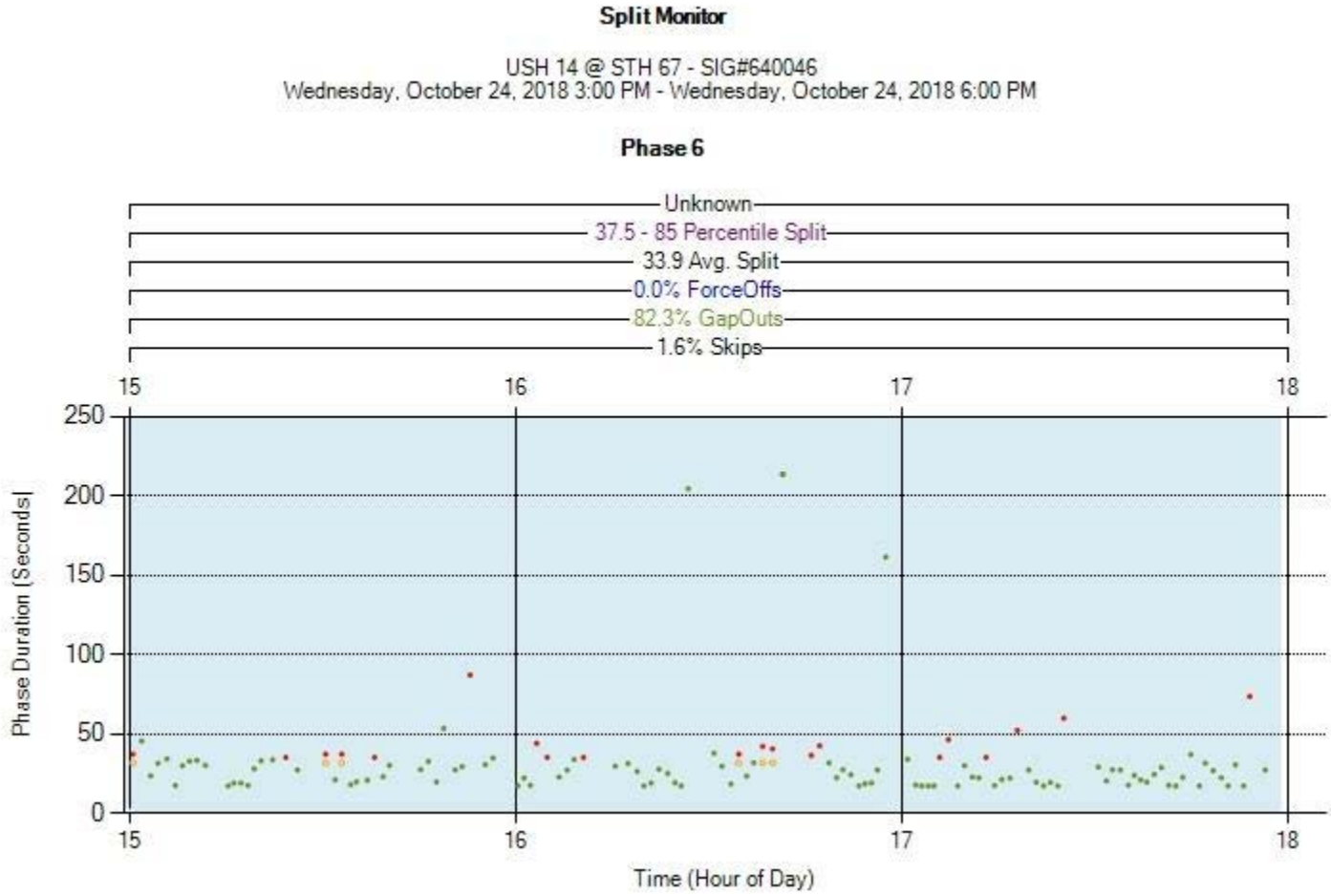
Isolated Signal – WIS 67 & US 14
Baseline Timings
10/24/2018 – 3:00 PM – 6:00 PM



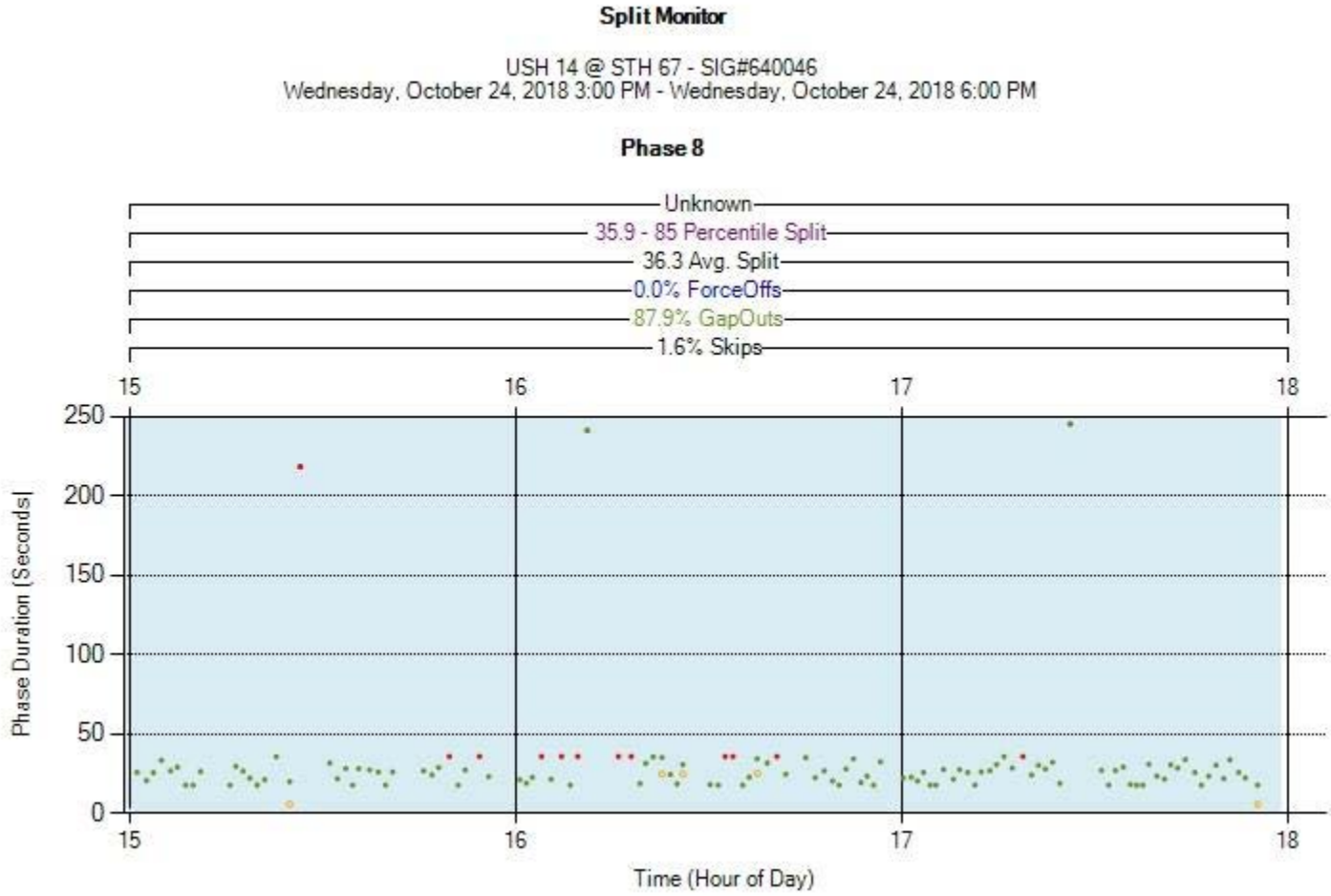
Isolated Signal – WIS 67 & US 14
Baseline Timings
10/24/2018 – 3:00 PM – 6:00 PM



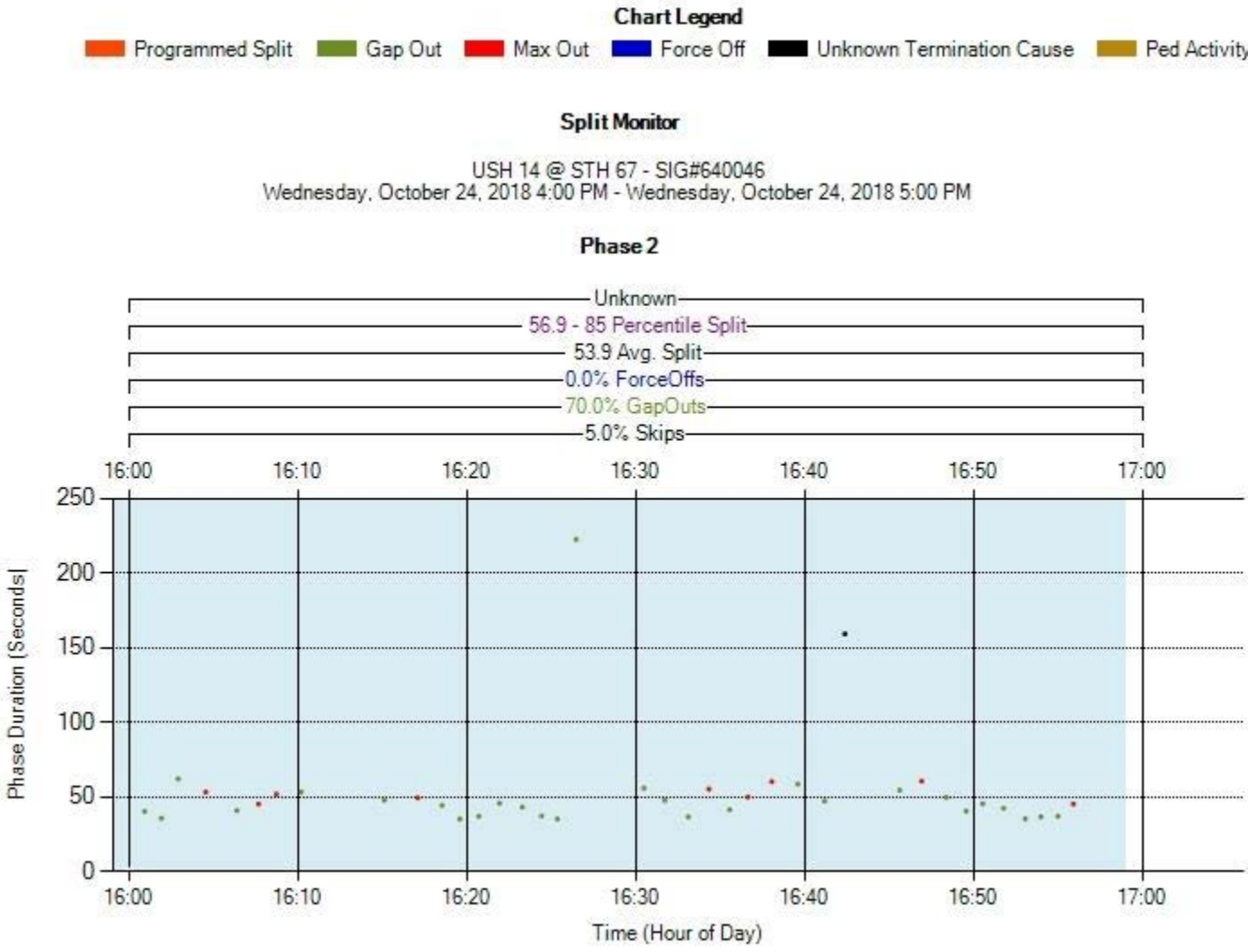
Isolated Signal – WIS 67 & US 14
Baseline Timings
10/24/2018 – 3:00 PM – 6:00 PM



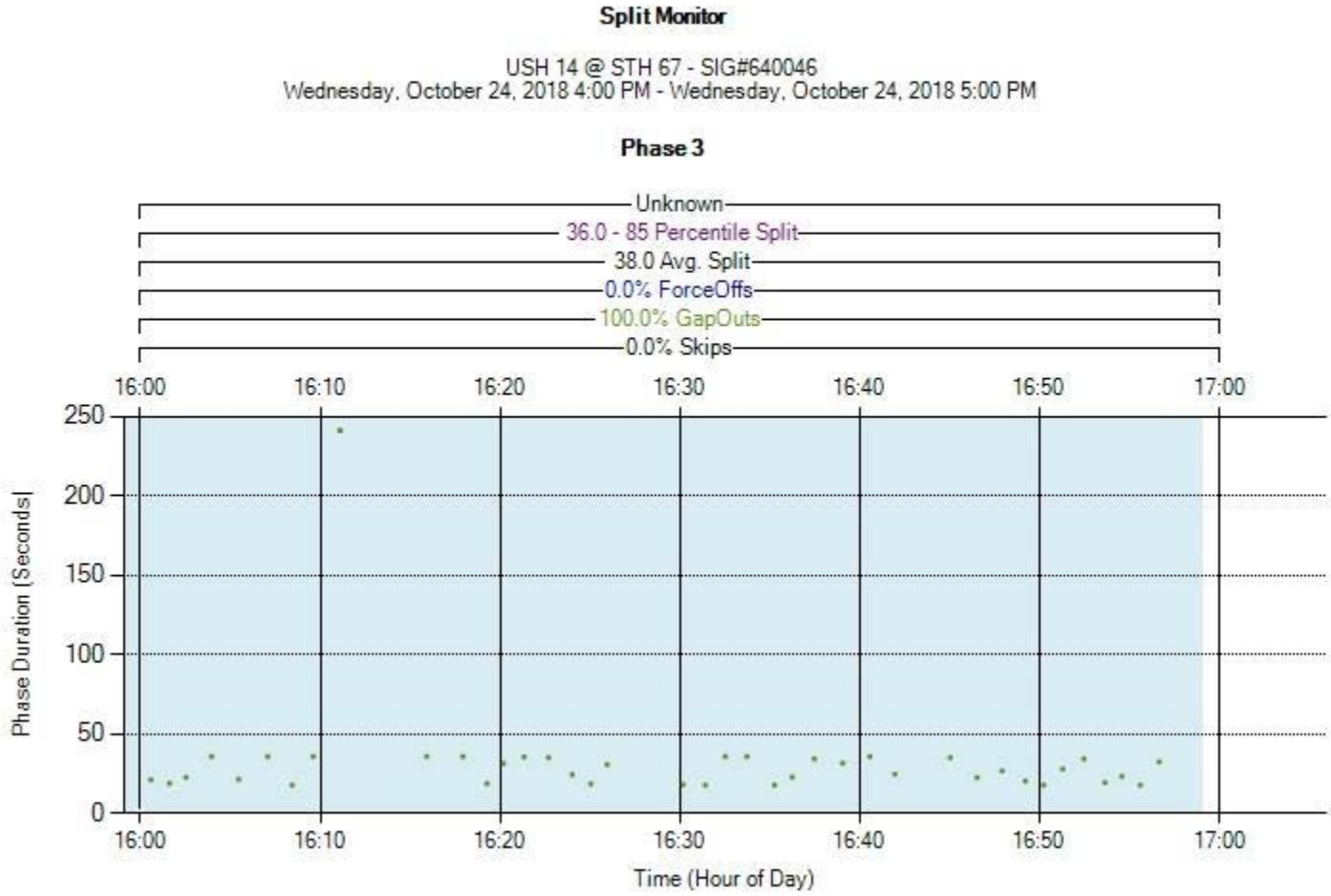
Isolated Signal – WIS 67 & US 14
Baseline Timings
10/24/2018 – 3:00 PM – 6:00 PM



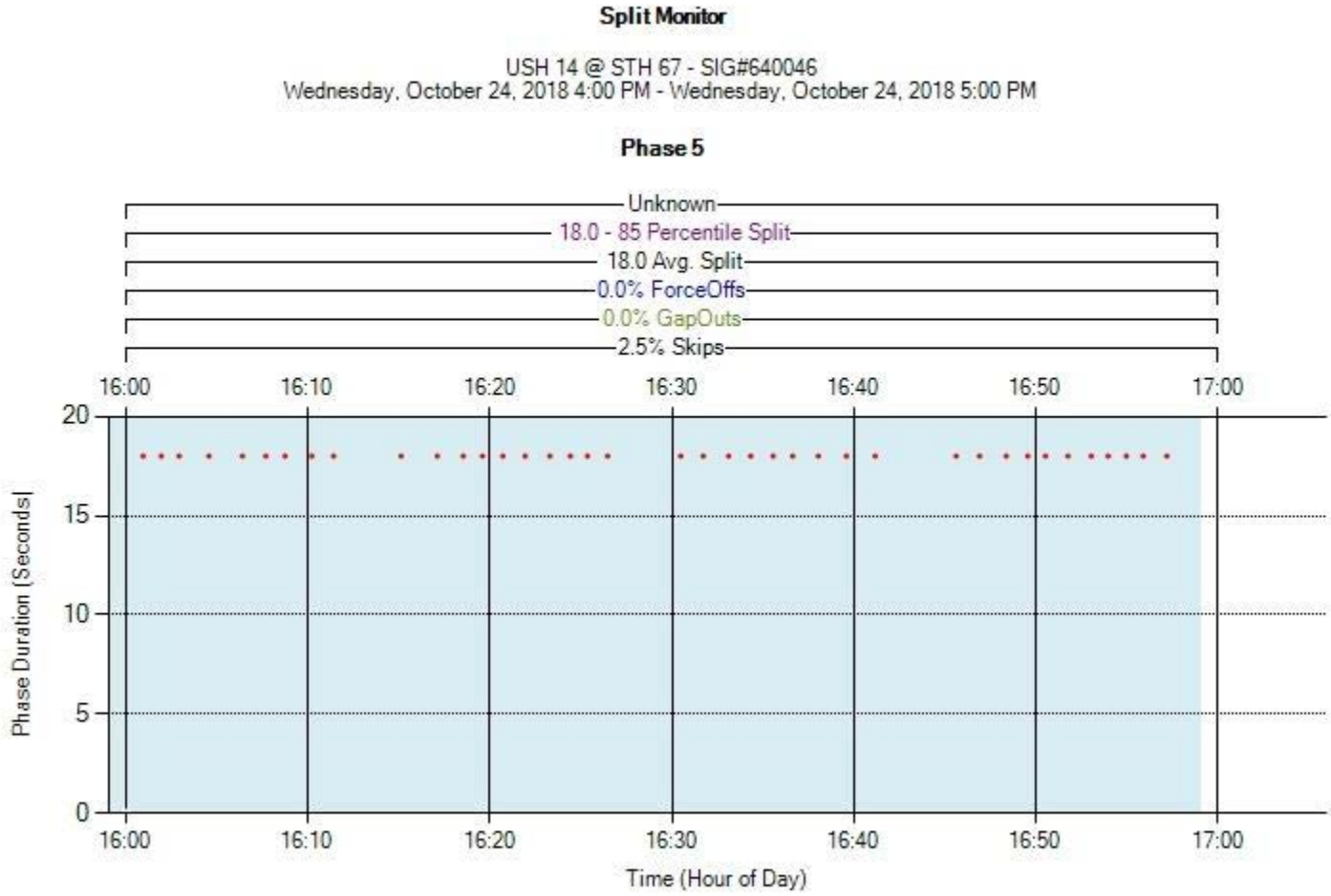
Isolated Signal – WIS 67 & US 14
Baseline Timings
10/24/2018 – 4:00 PM – 5:00 PM



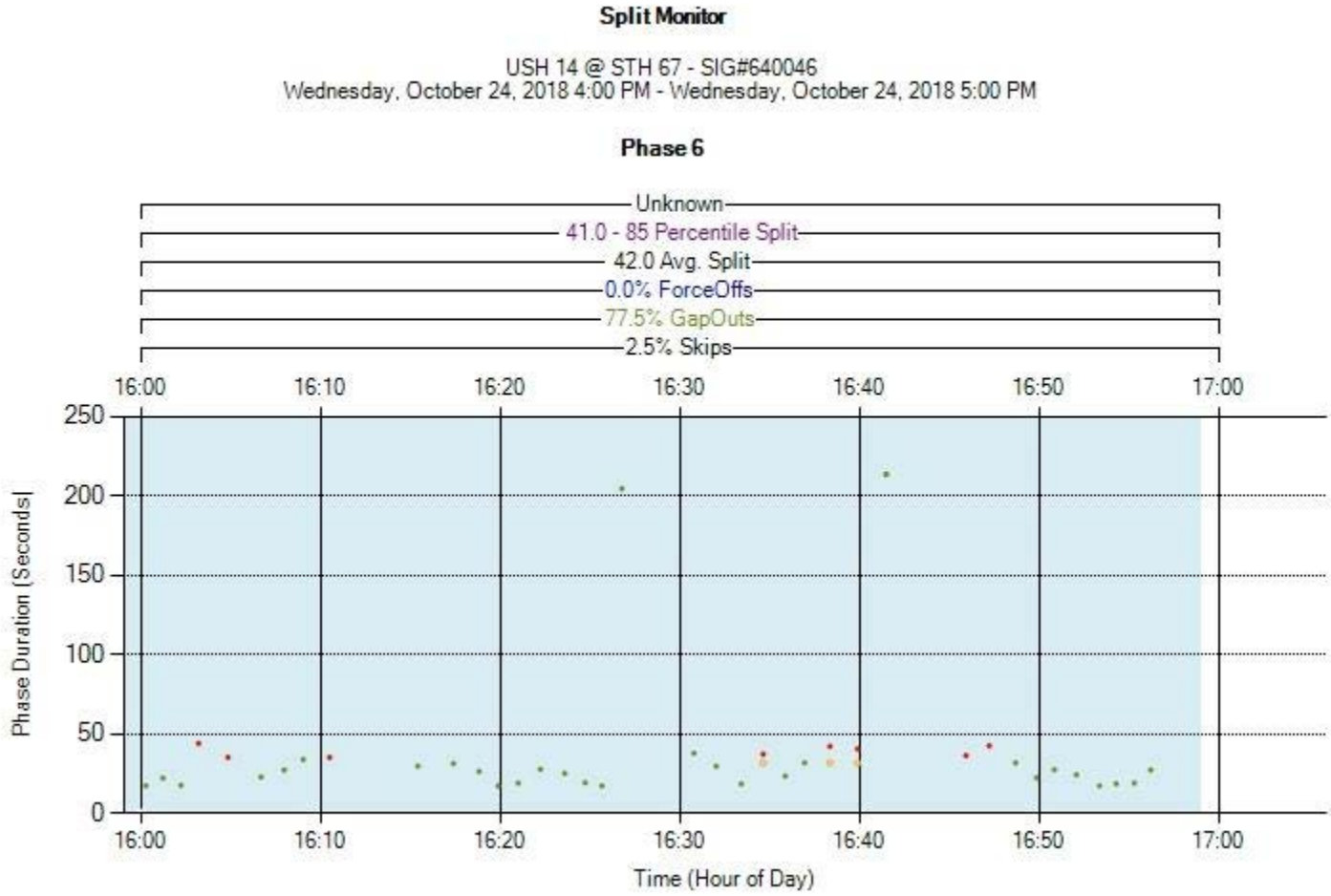
Isolated Signal – WIS 67 & US 14
Baseline Timings
10/24/2018 – 4:00 PM – 5:00 PM



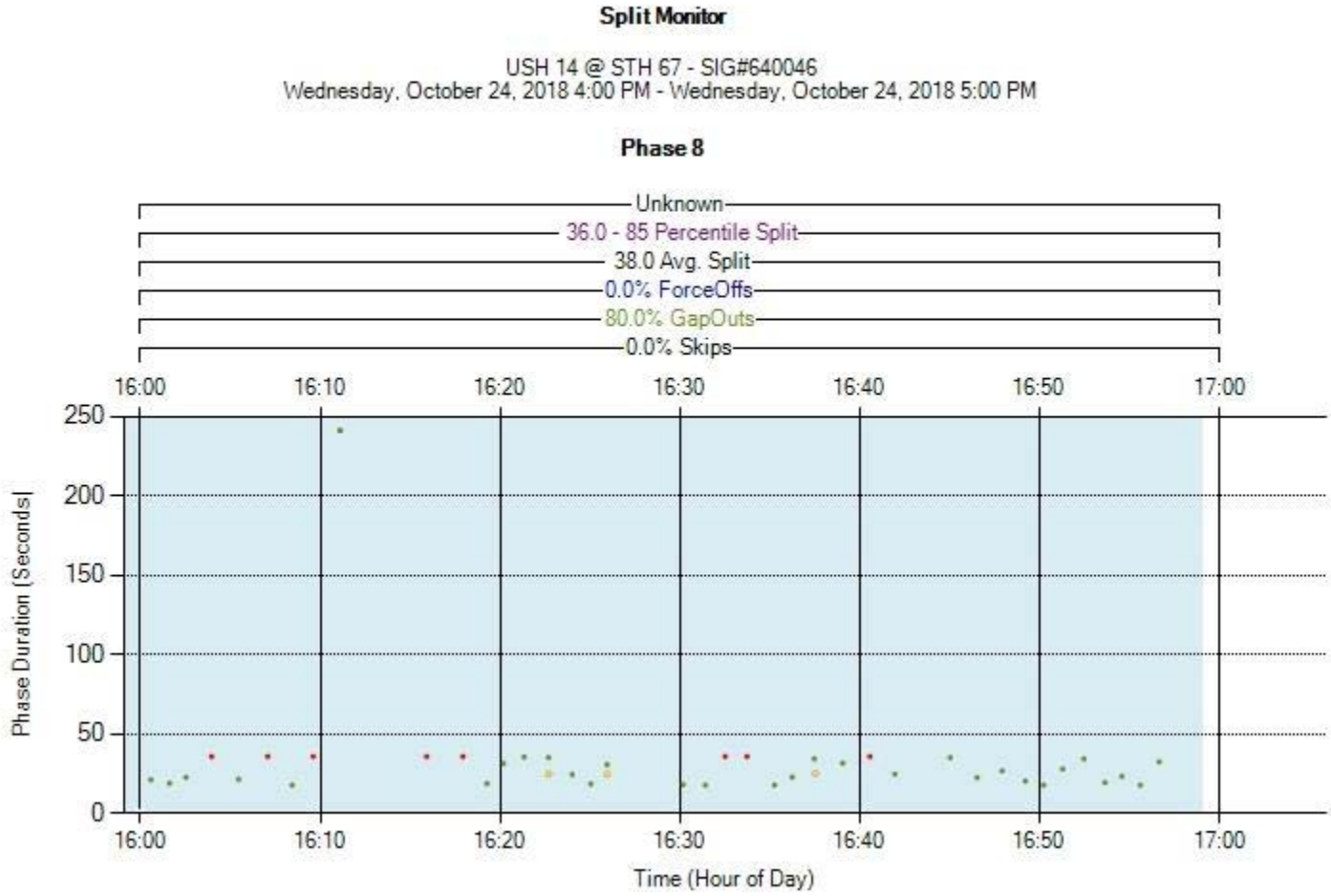
Isolated Signal – WIS 67 & US 14
Baseline Timings
10/24/2018 – 4:00 PM – 5:00 PM



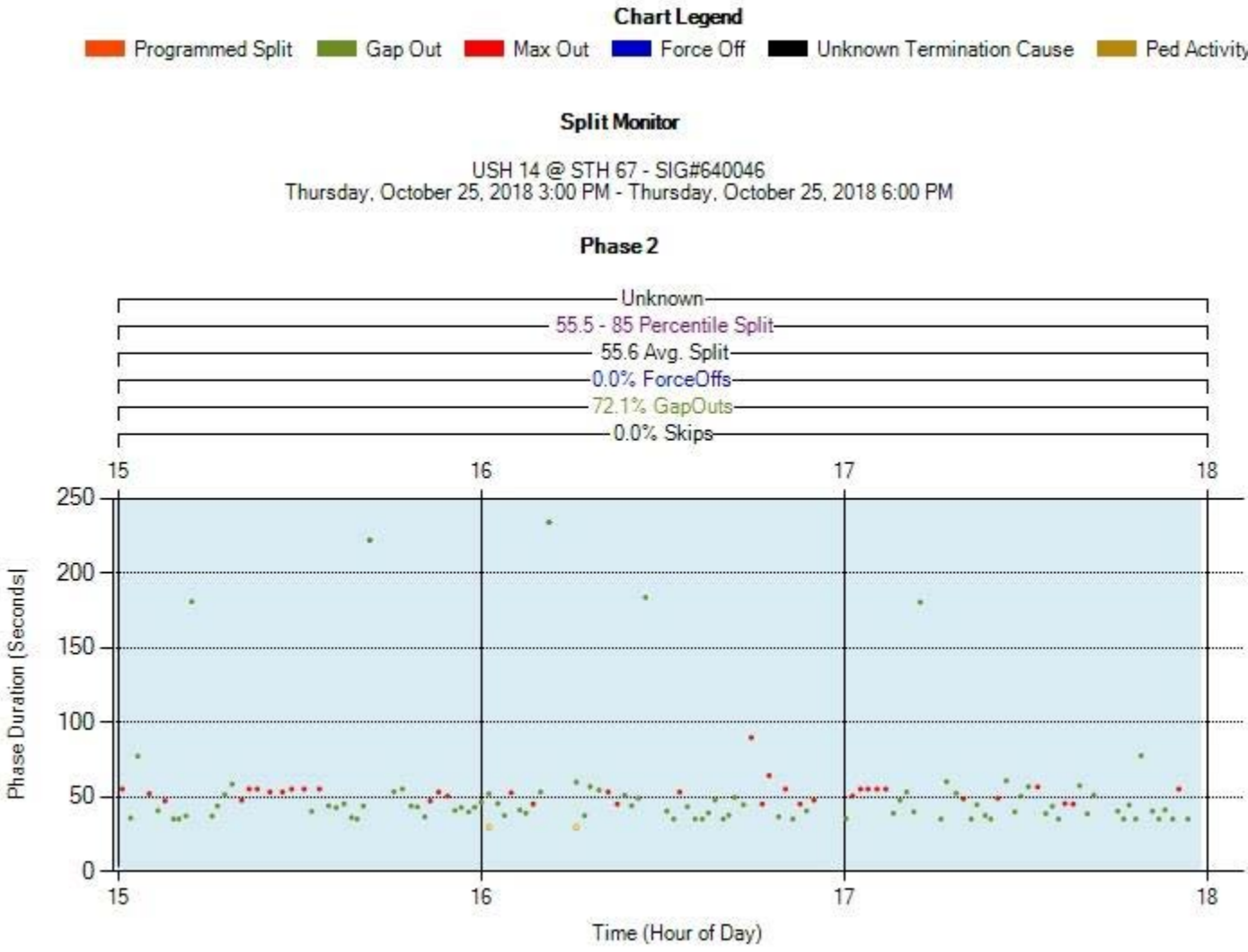
Isolated Signal – WIS 67 & US 14
Baseline Timings
10/24/2018 – 4:00 PM – 5:00 PM



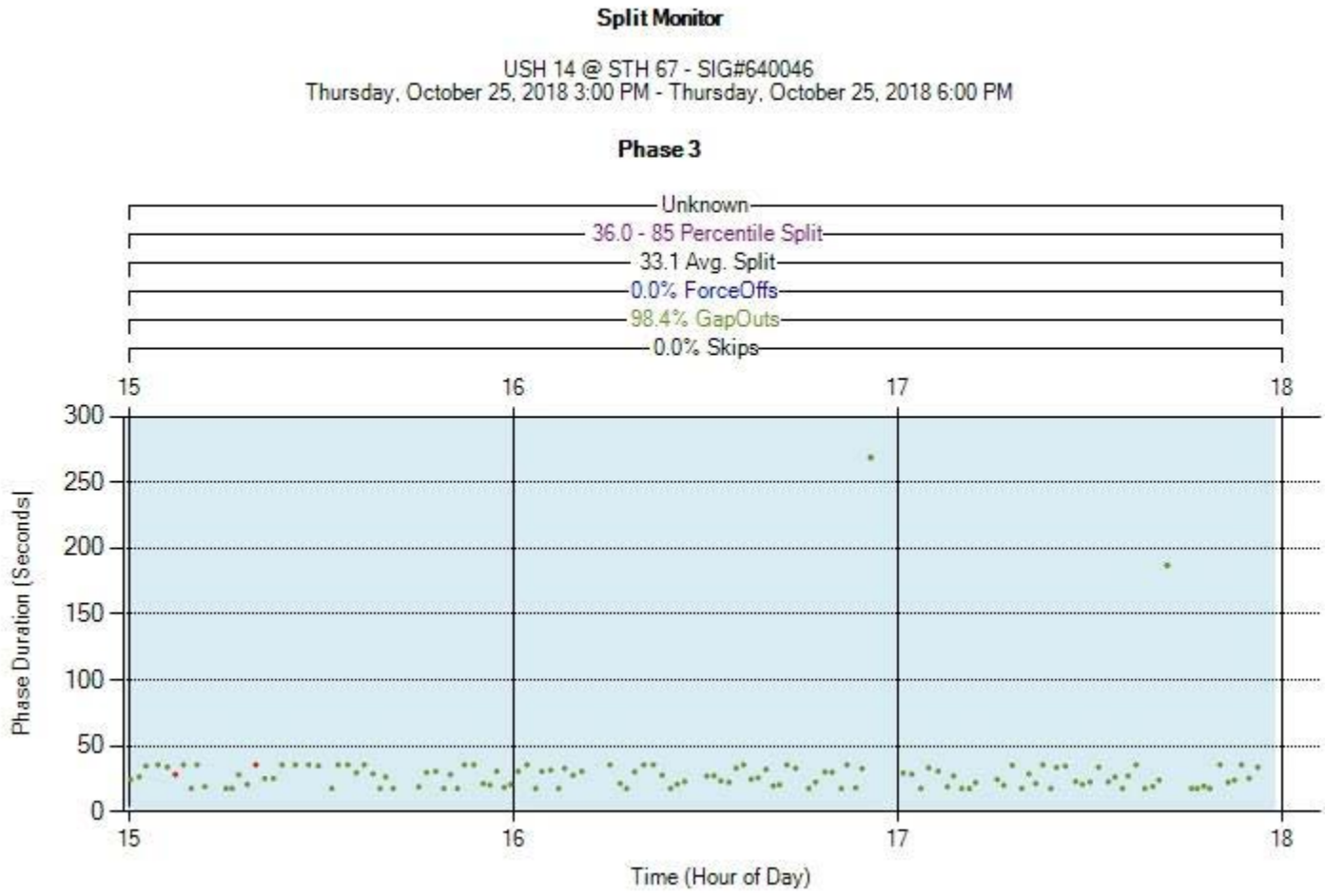
Isolated Signal – WIS 67 & US 14
Baseline Timings
10/24/2018 – 4:00 PM – 5:00 PM



Isolated Signal – WIS 67 & US 14
Baseline Timings
10/25/2018 – 3:00 PM – 6:00 PM



Isolated Signal – WIS 67 & US 14
Baseline Timings
10/25/2018 – 3:00 PM – 6:00 PM



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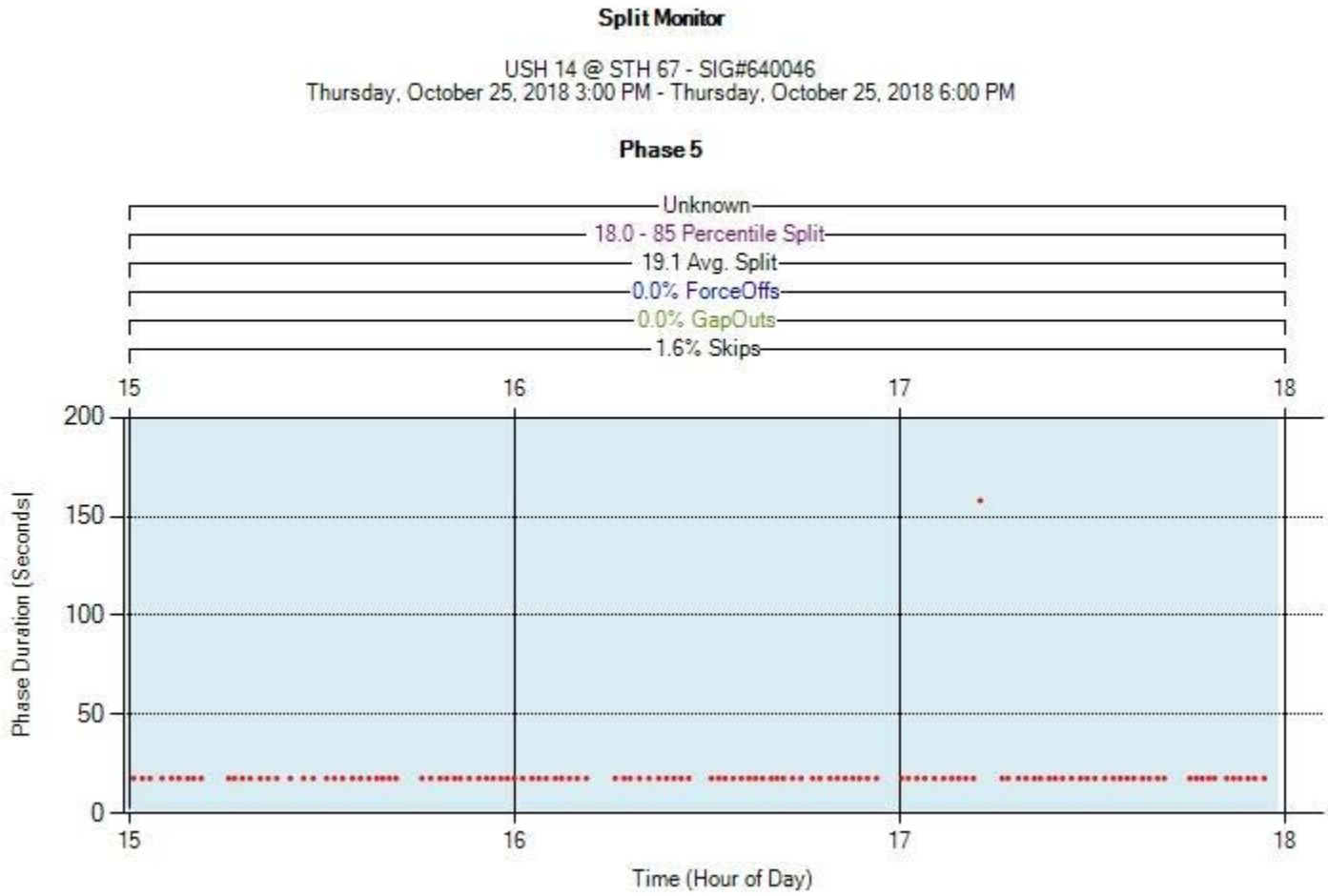
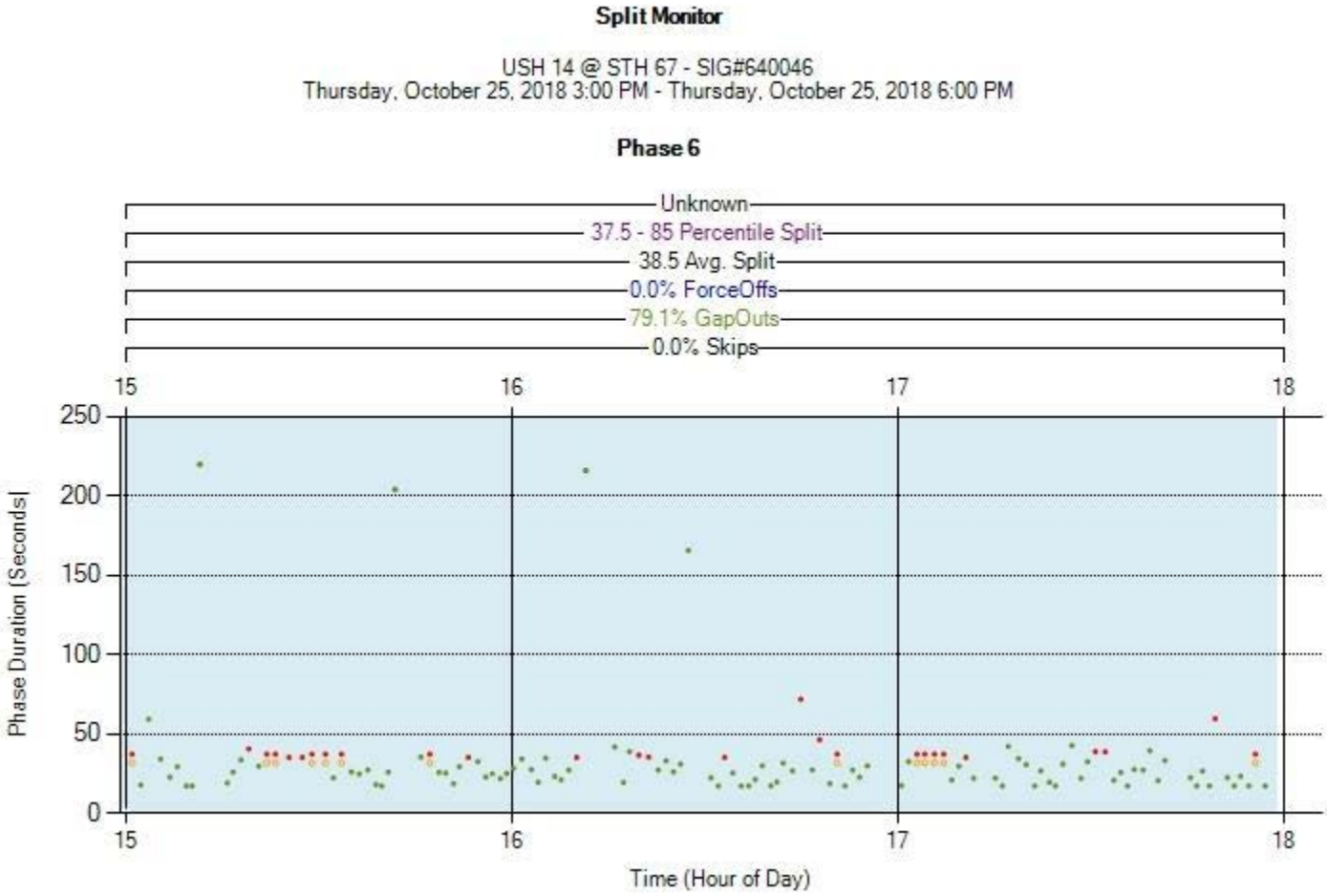
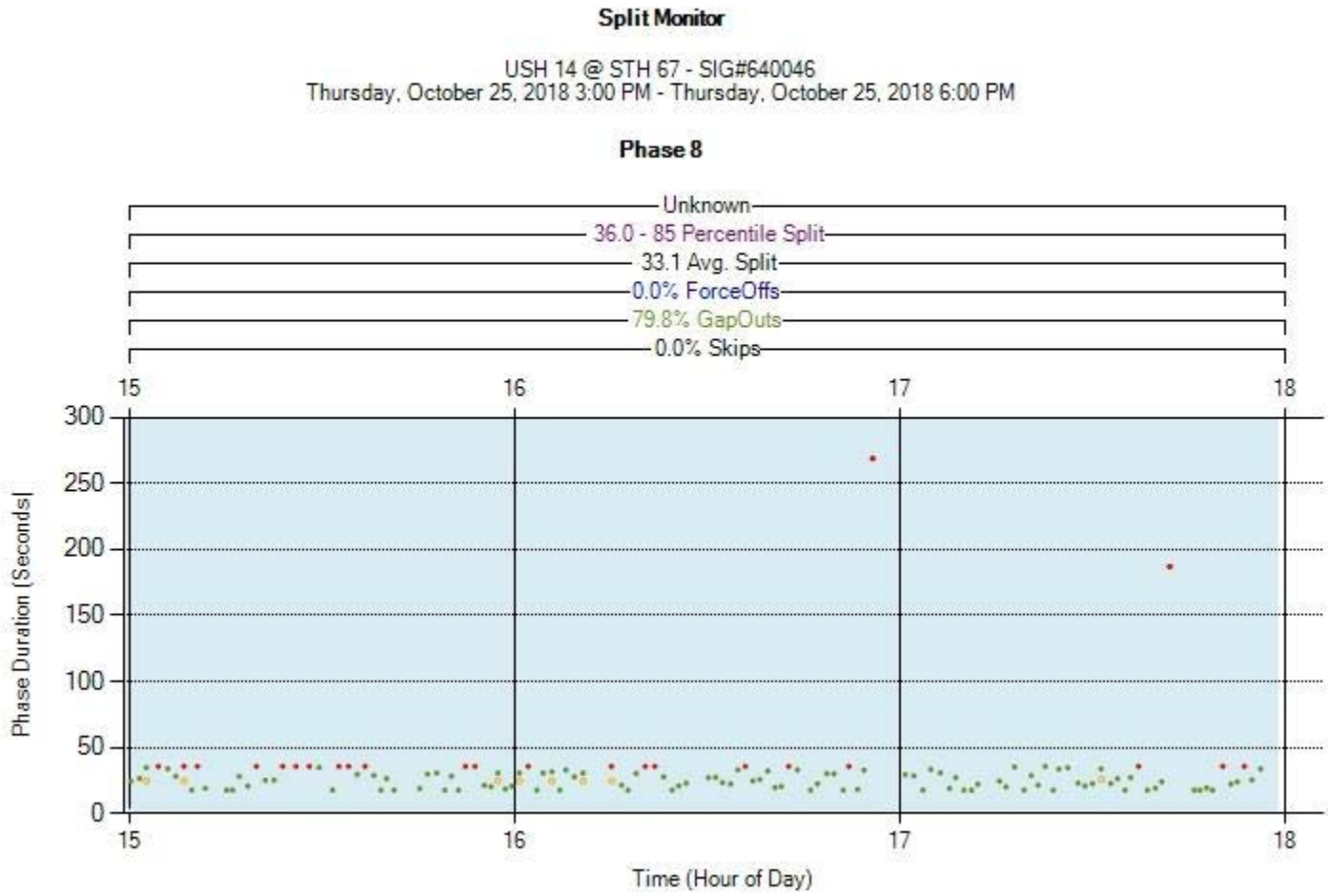
Baseline Timings
10/25/2018 – 3:00 PM – 6:00 PM



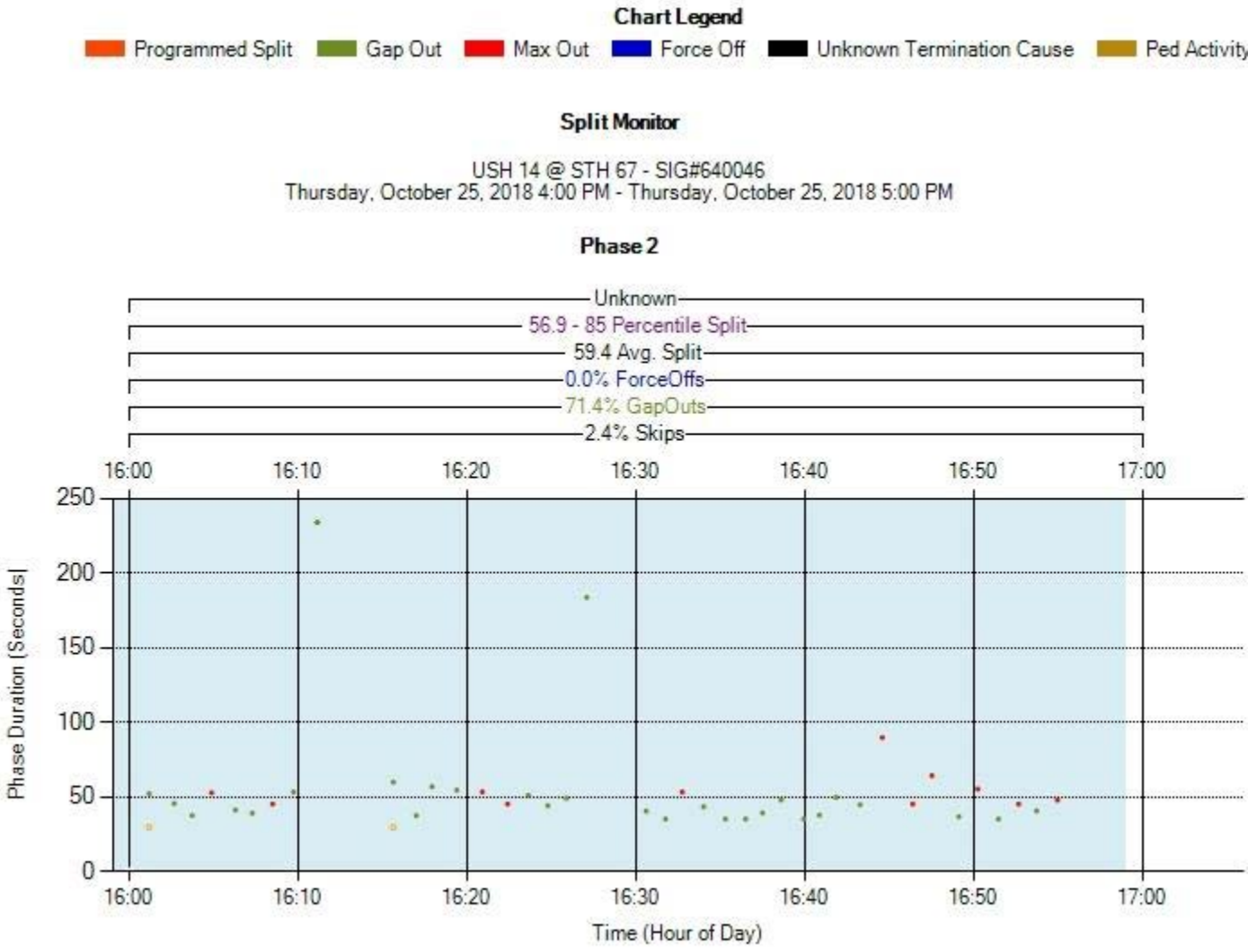
Isolated Signal – WIS 67 & US 14
Baseline Timings
10/25/2018 – 3:00 PM – 6:00 PM



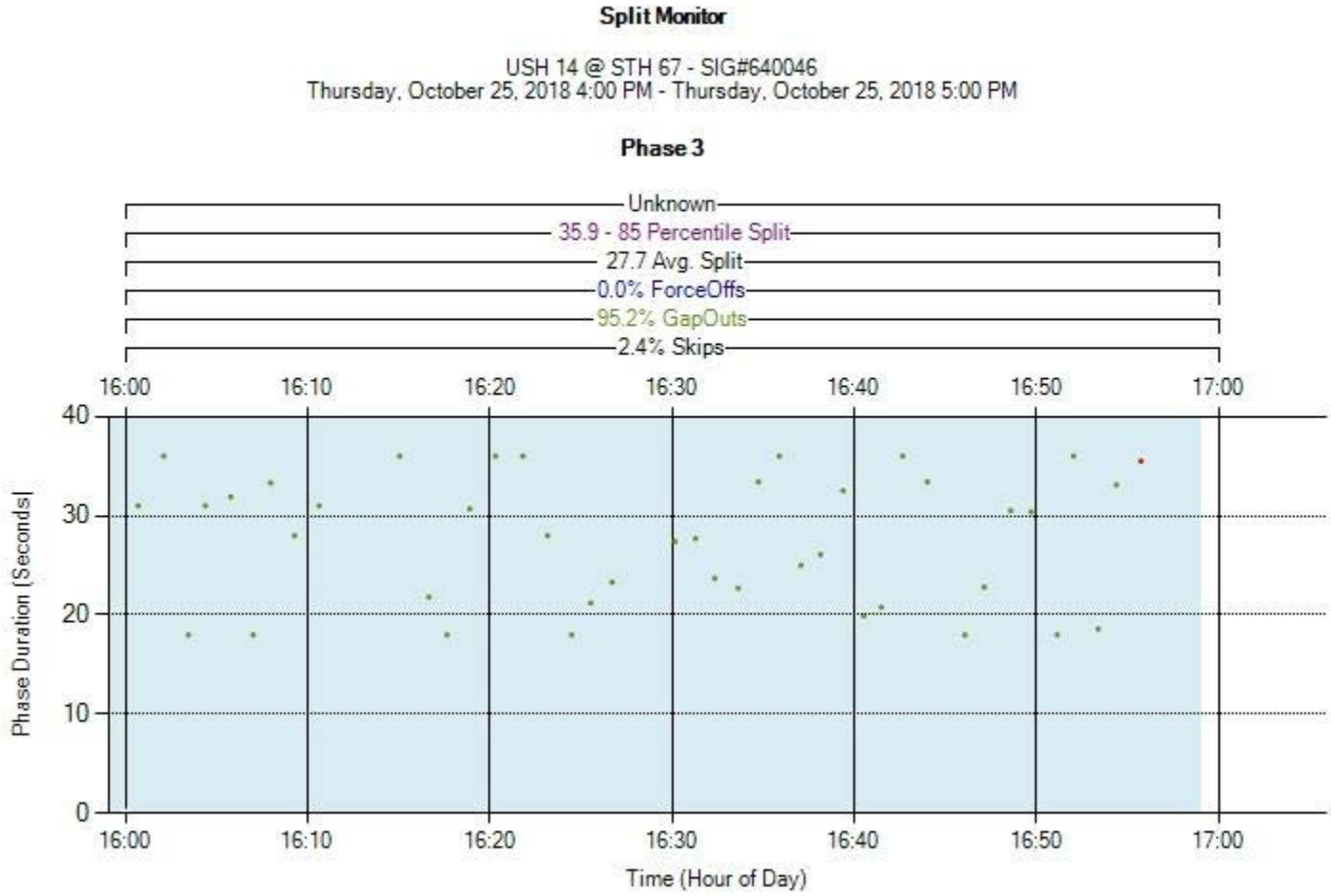
Isolated Signal – WIS 67 & US 14
Baseline Timings
10/25/2018 – 3:00 PM – 6:00 PM



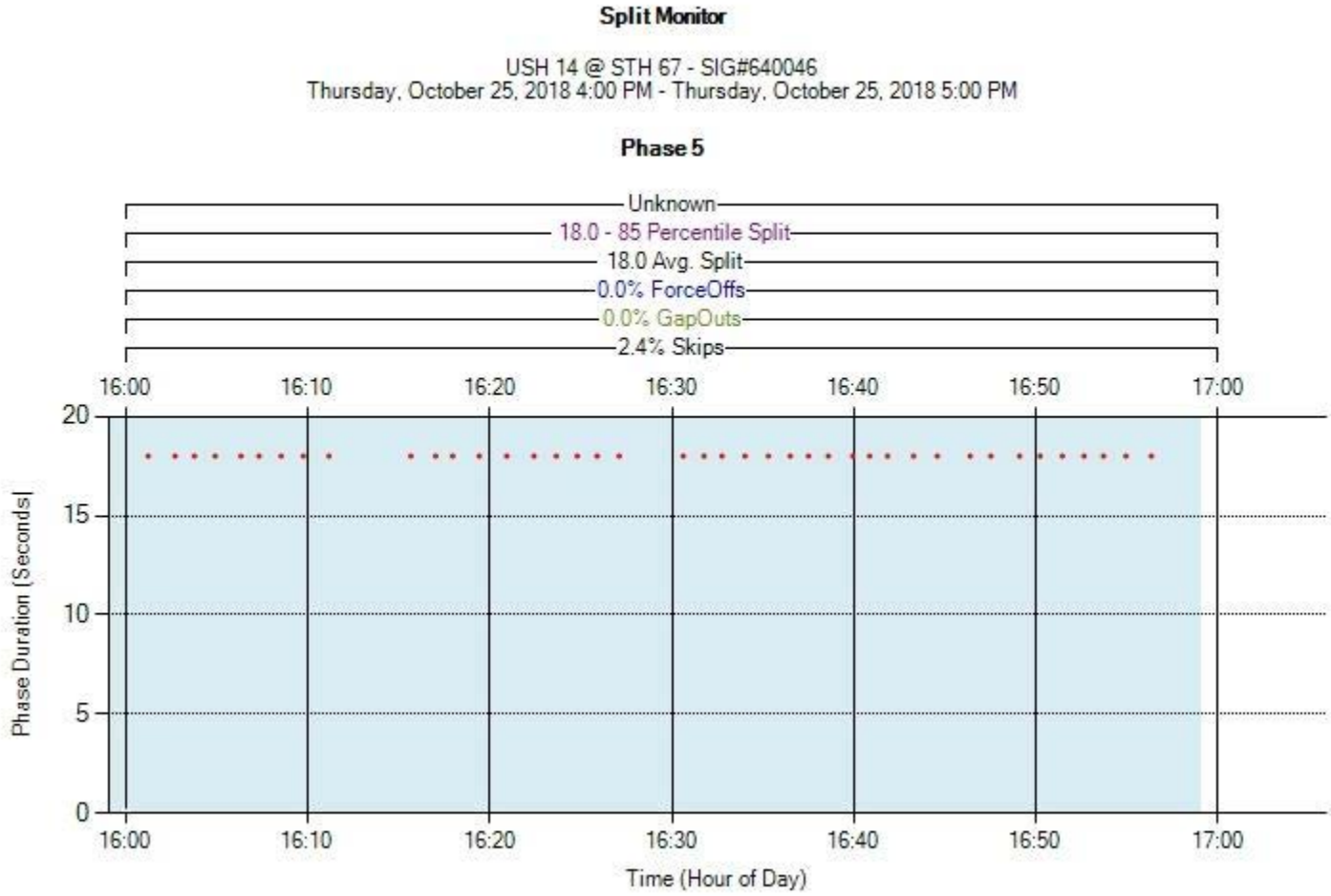
Isolated Signal – WIS 67 & US 14
Baseline Timings
10/25/2018 – 4:00 PM – 5:00 PM



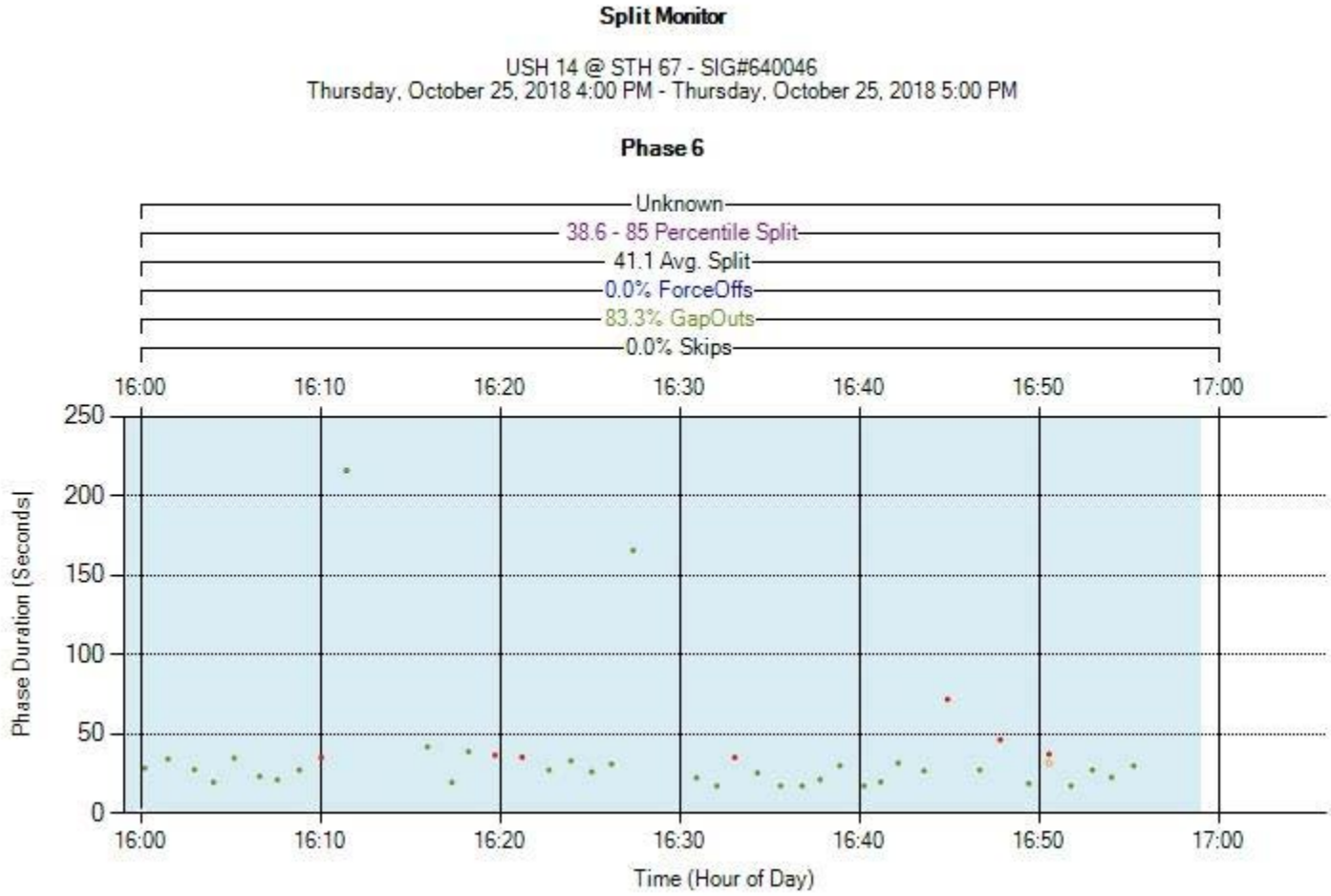
Isolated Signal – WIS 67 & US 14
Baseline Timings
10/25/2018 – 4:00 PM – 5:00 PM



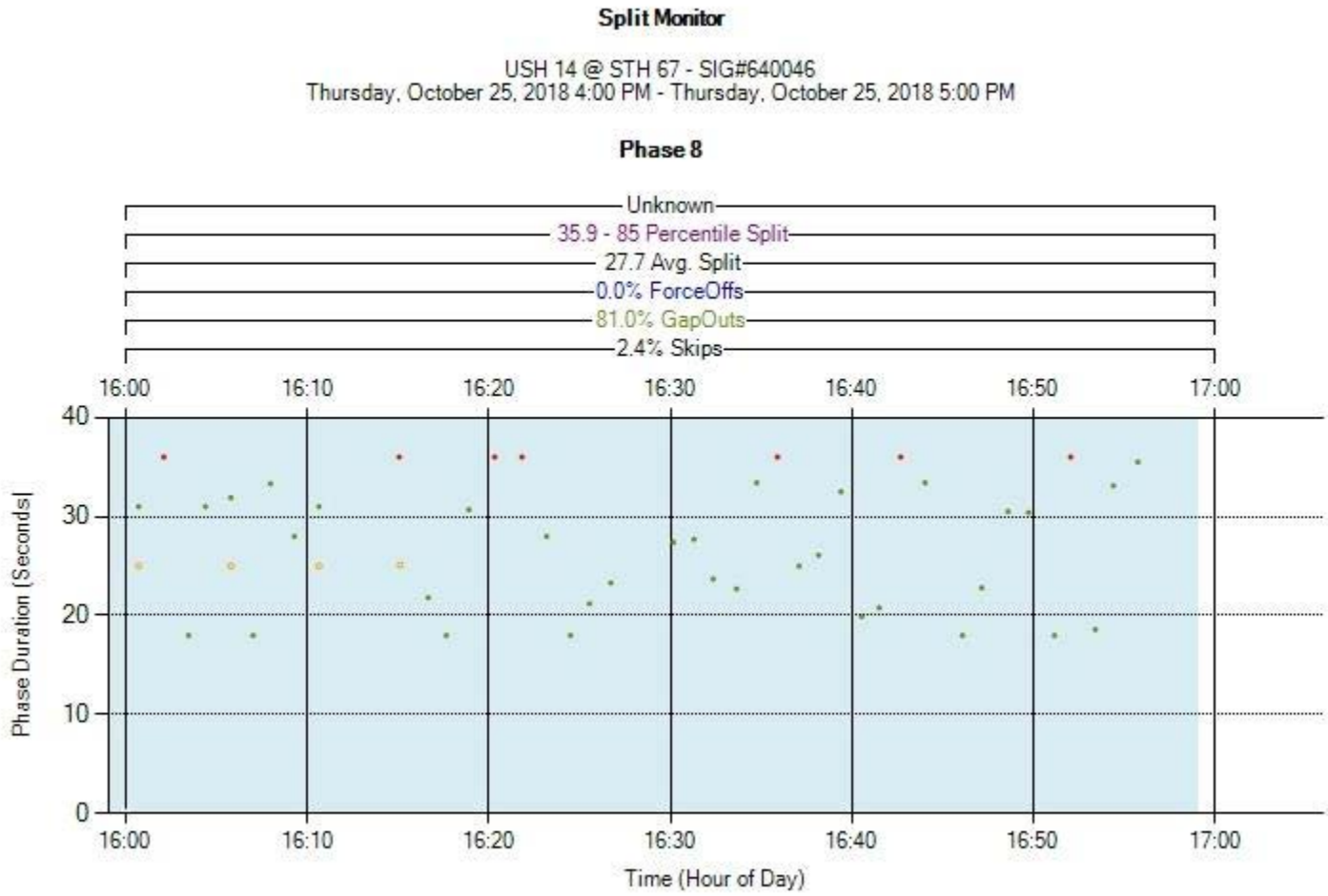
Isolated Signal – WIS 67 & US 14
Baseline Timings
10/25/2018 – 4:00 PM – 5:00 PM



Isolated Signal – WIS 67 & US 14
Baseline Timings
10/25/2018 – 4:00 PM – 5:00 PM

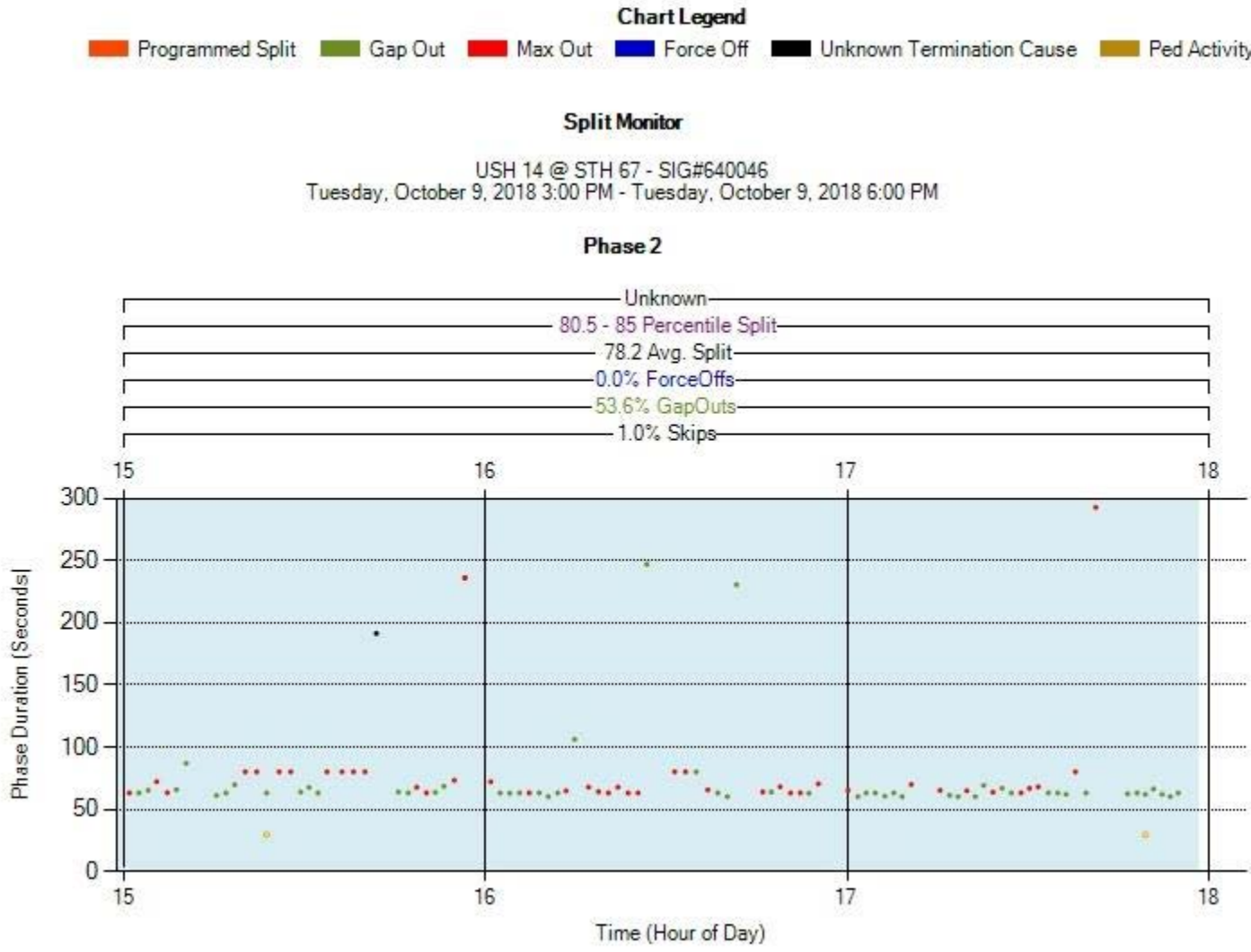


Isolated Signal – WIS 67 & US 14
Baseline Timings
10/25/2018 – 4:00 PM – 5:00 PM

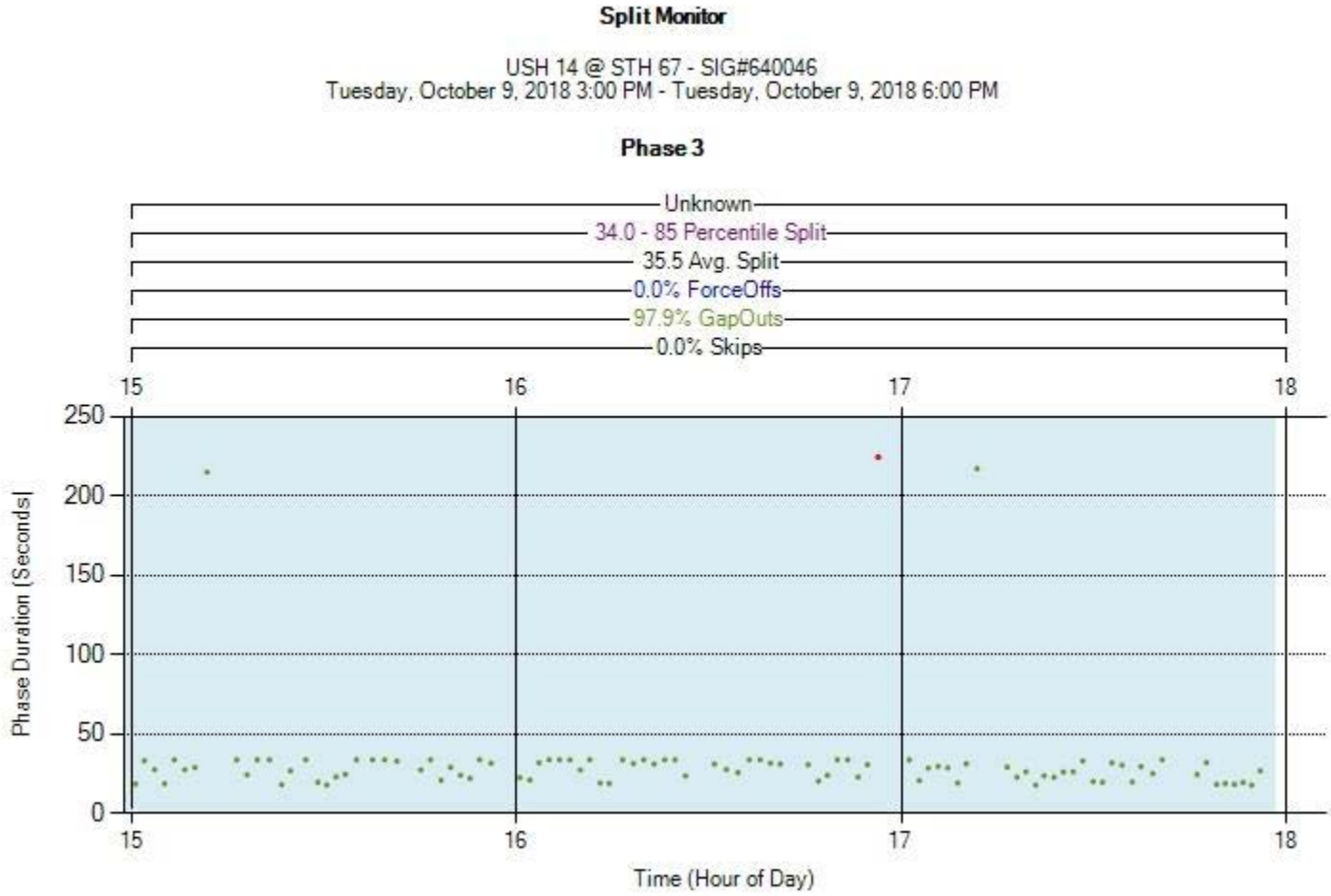


WisBOOM Outputs
WIS 67 & US 14
HCS Optimized Timings

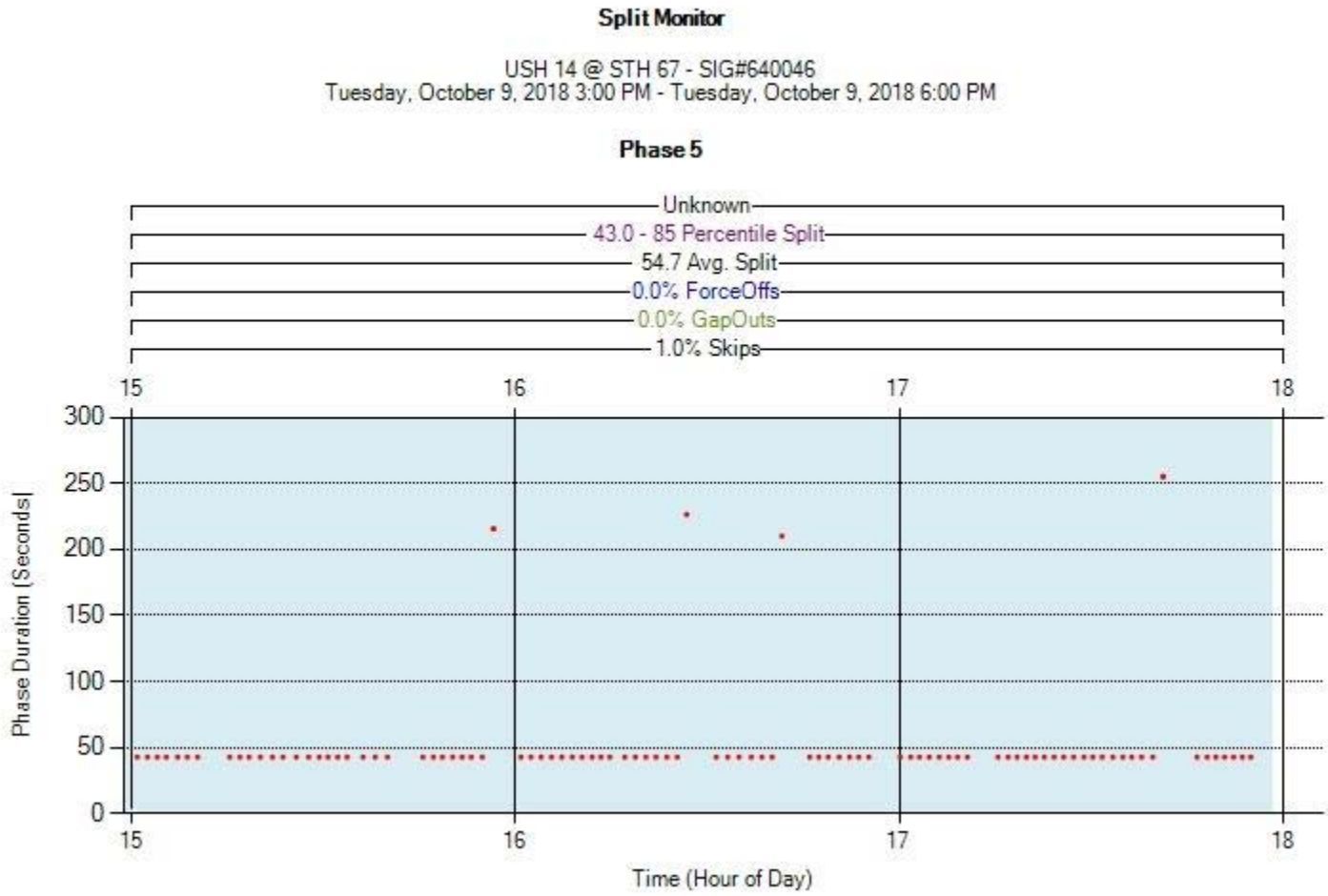
Isolated Signal – WIS 67 & US 14
HCS Timings
10/9/2018 – 3:00 PM – 6:00 PM



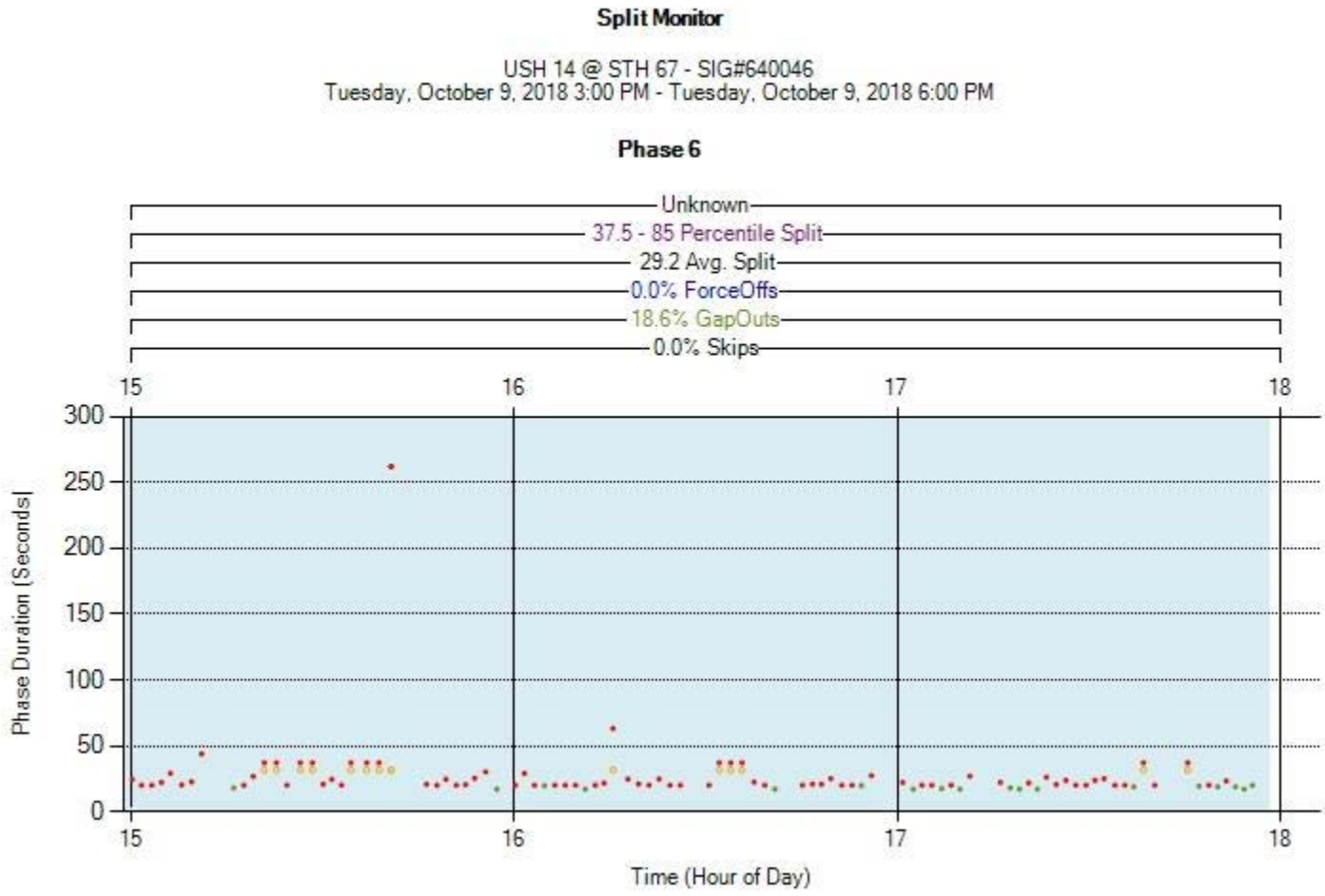
Isolated Signal – WIS 67 & US 14
HCS Timings
10/9/2018 – 3:00 PM – 6:00 PM



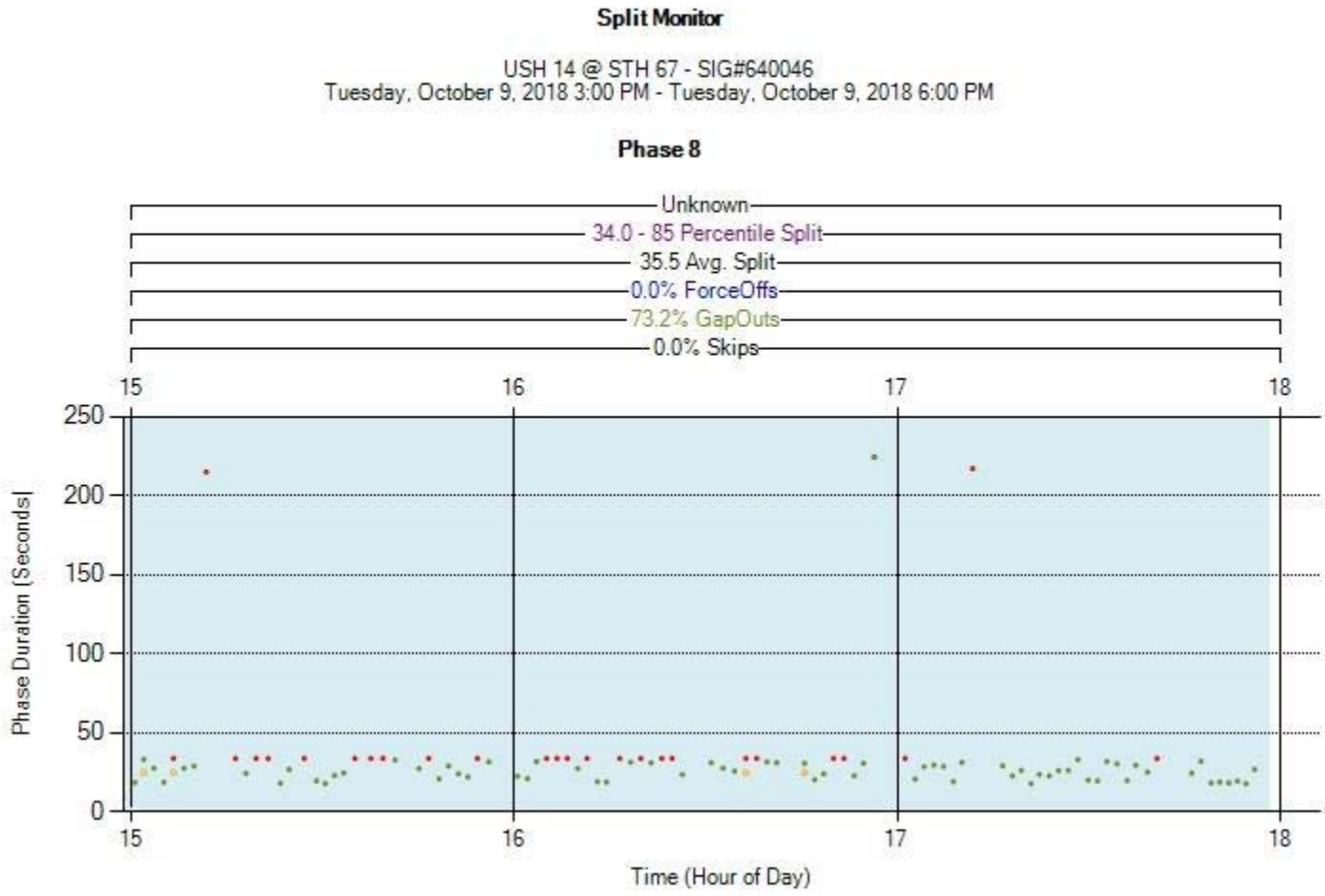
Isolated Signal – WIS 67 & US 14
HCS Timings
10/9/2018 – 3:00 PM – 6:00 PM



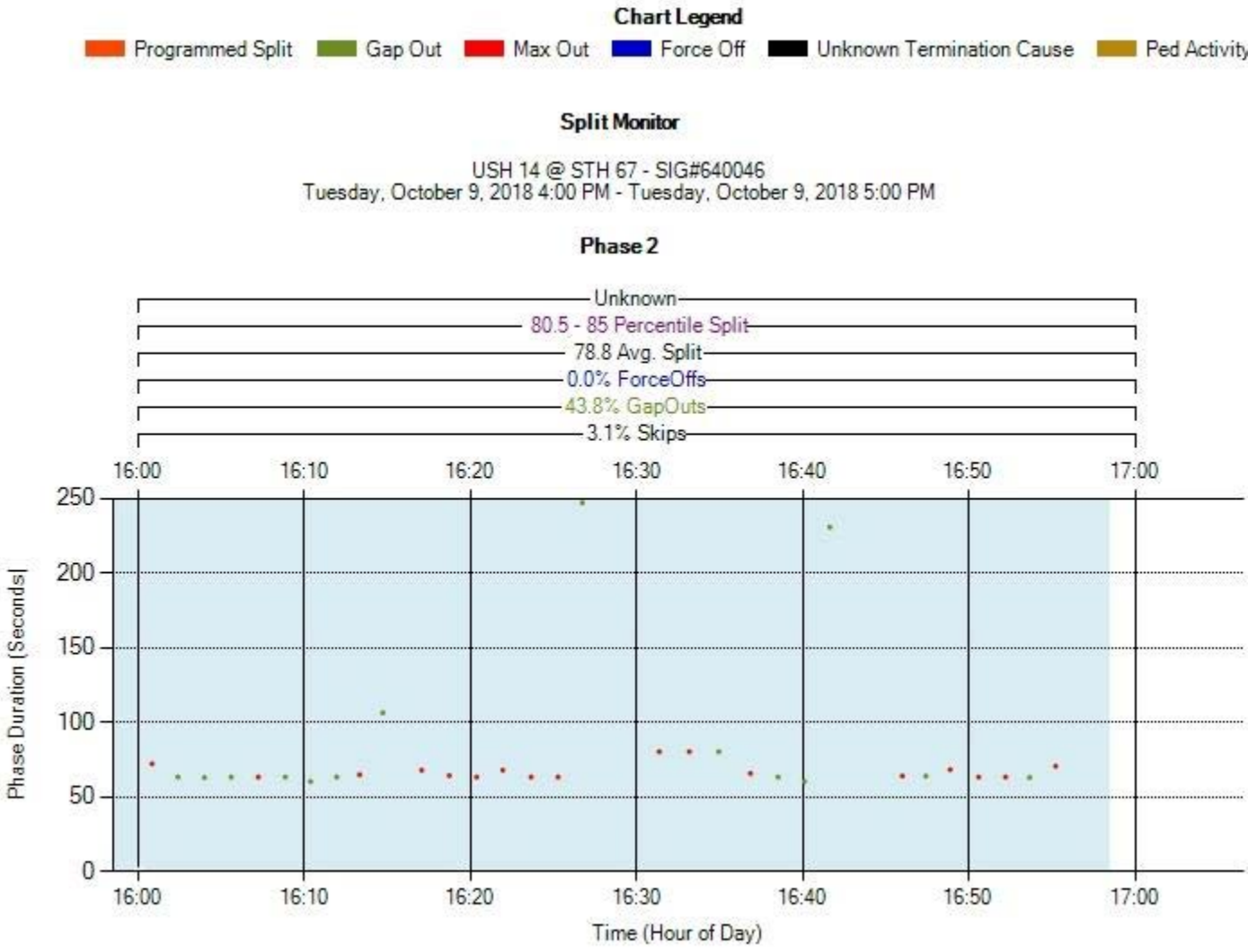
Isolated Signal – WIS 67 & US 14
HCS Timings
10/9/2018 – 3:00 PM – 6:00 PM



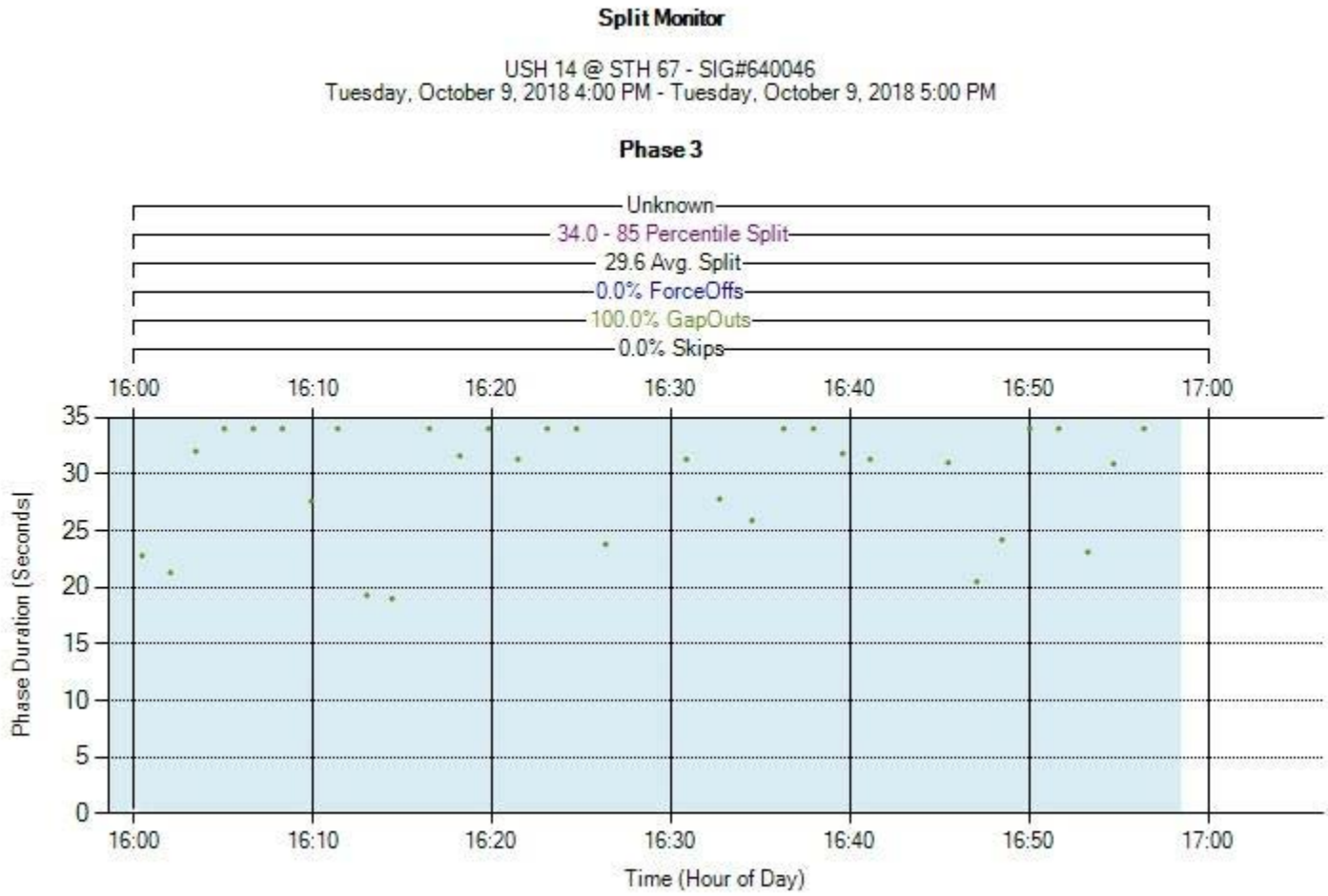
Isolated Signal – WIS 67 & US 14
HCS Timings
10/9/2018 – 3:00 PM – 6:00 PM



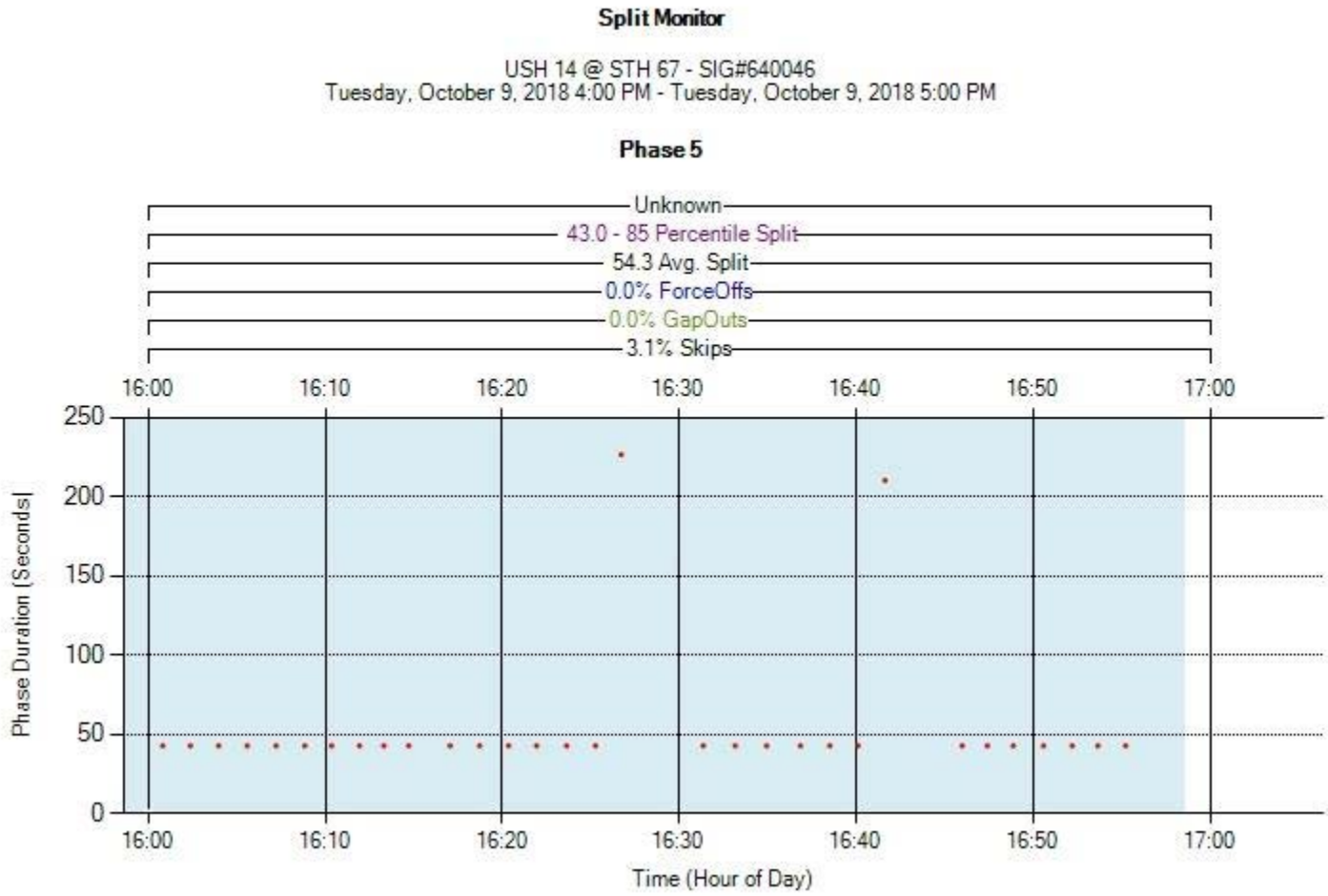
Isolated Signal – WIS 67 & US 14
HCS Timings
10/9/2018 – 4:00 PM – 5:00 PM



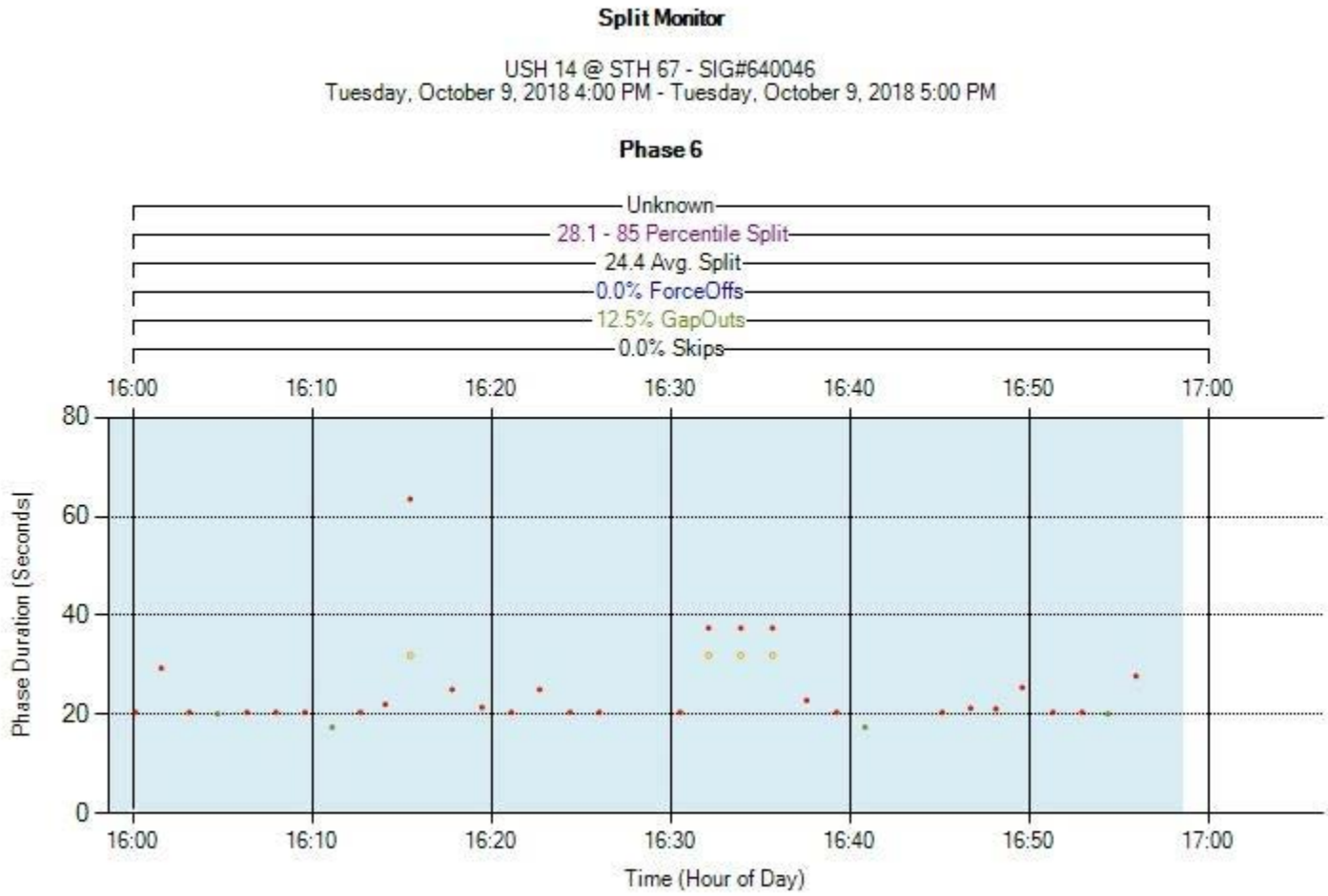
Isolated Signal – WIS 67 & US 14
HCS Timings
10/9/2018 – 4:00 PM – 5:00 PM



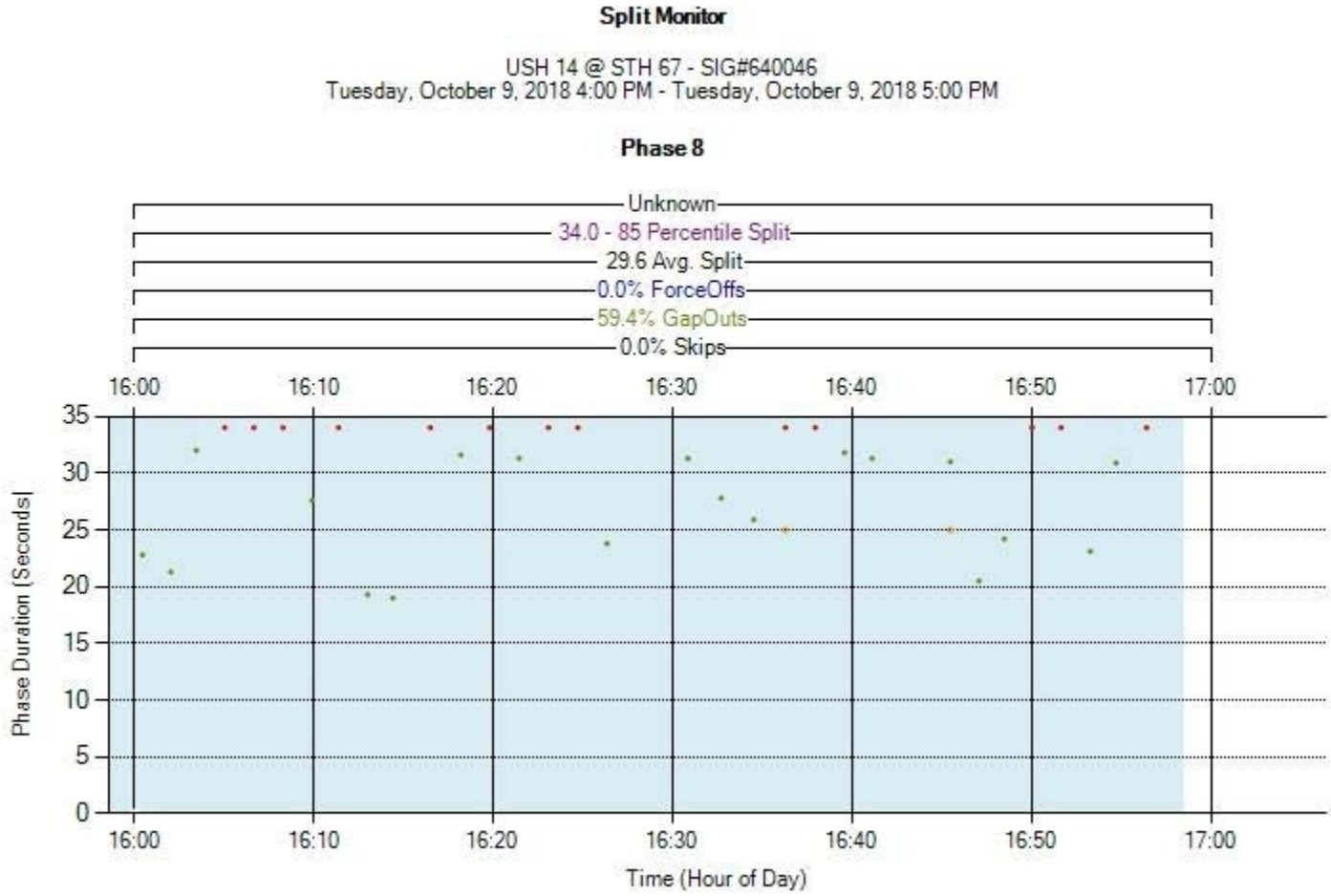
Isolated Signal – WIS 67 & US 14
HCS Timings
10/9/2018 – 4:00 PM – 5:00 PM



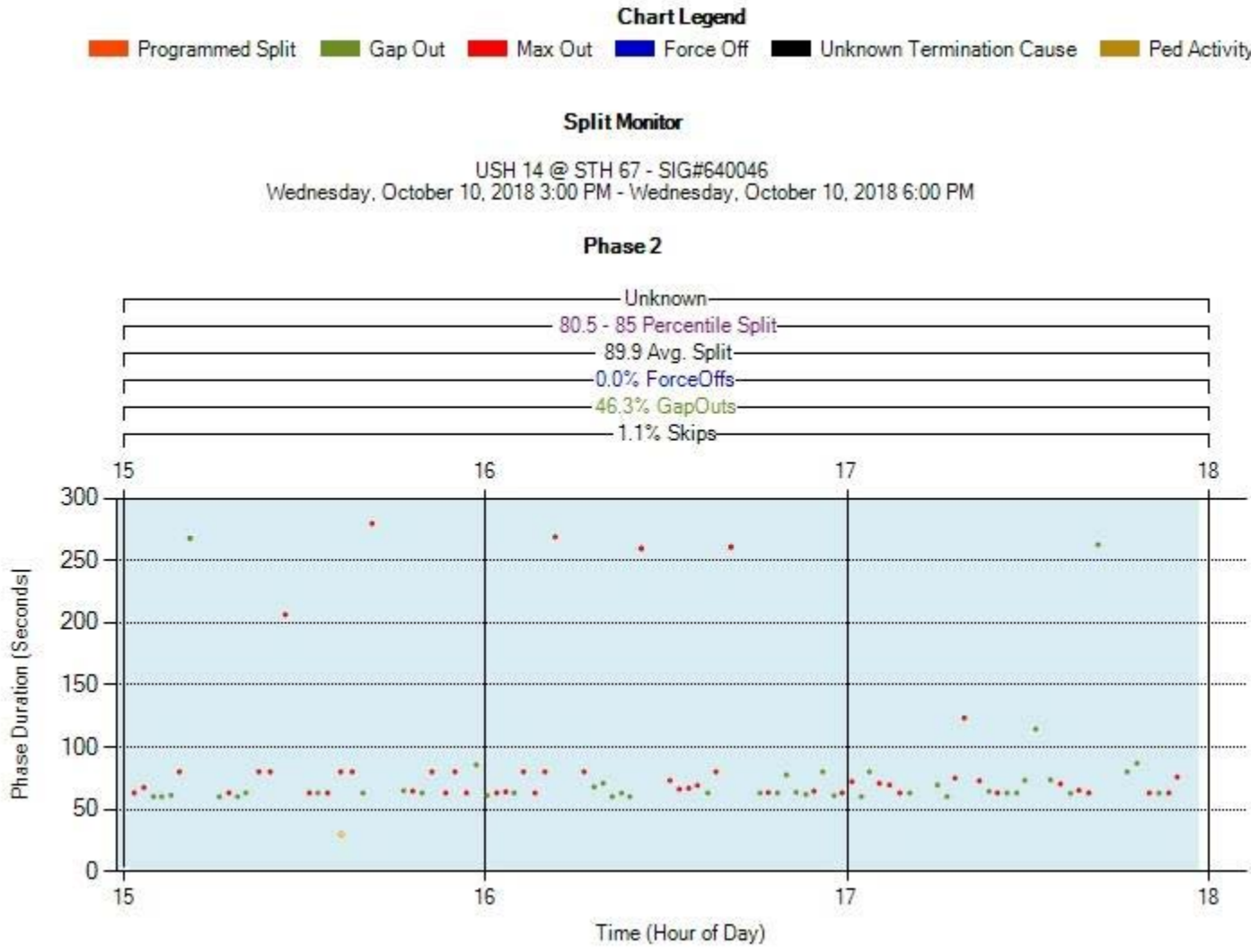
Isolated Signal – WIS 67 & US 14
HCS Timings
10/9/2018 – 4:00 PM – 5:00 PM



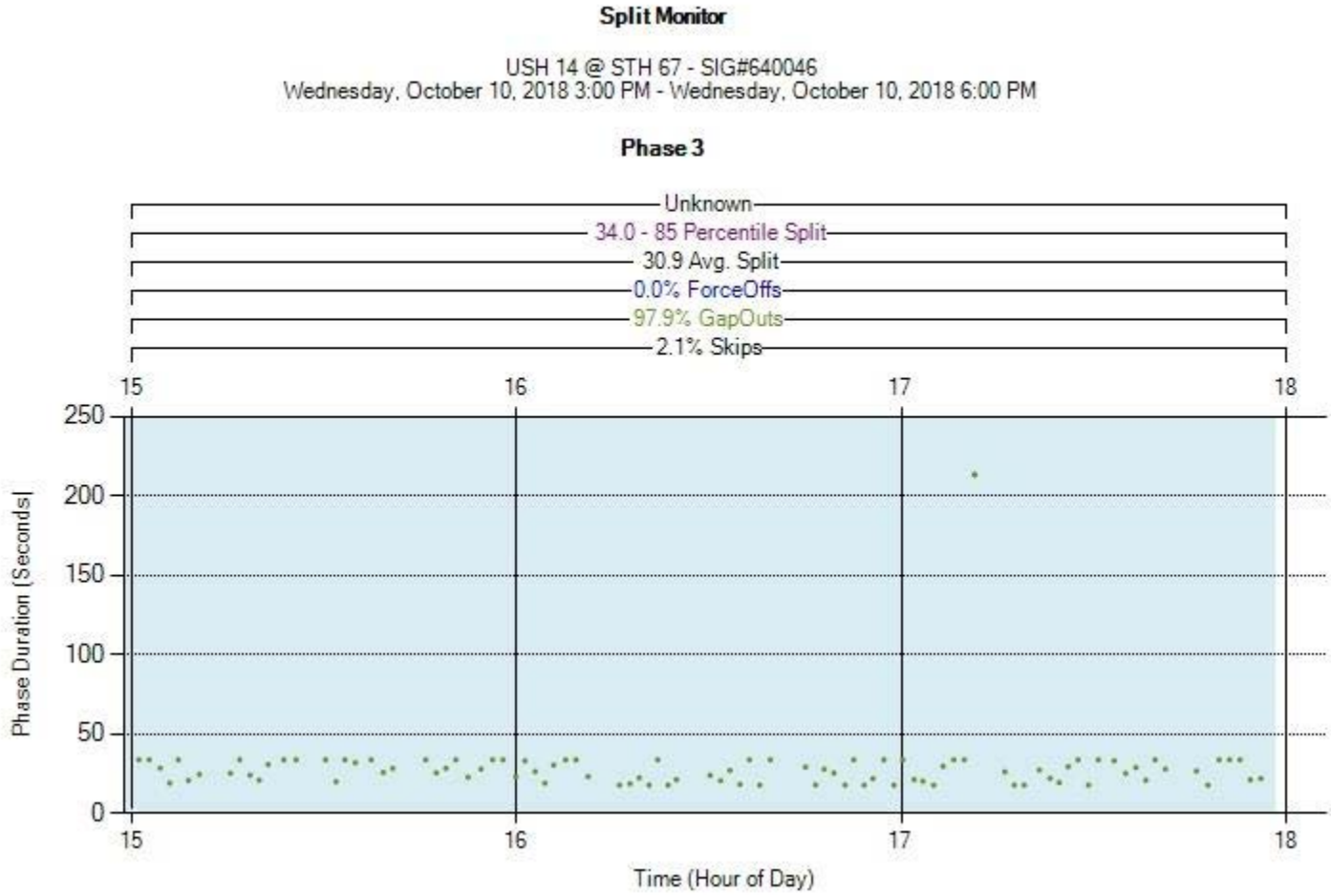
Isolated Signal – WIS 67 & US 14
HCS Timings
10/9/2018 – 4:00 PM – 5:00 PM



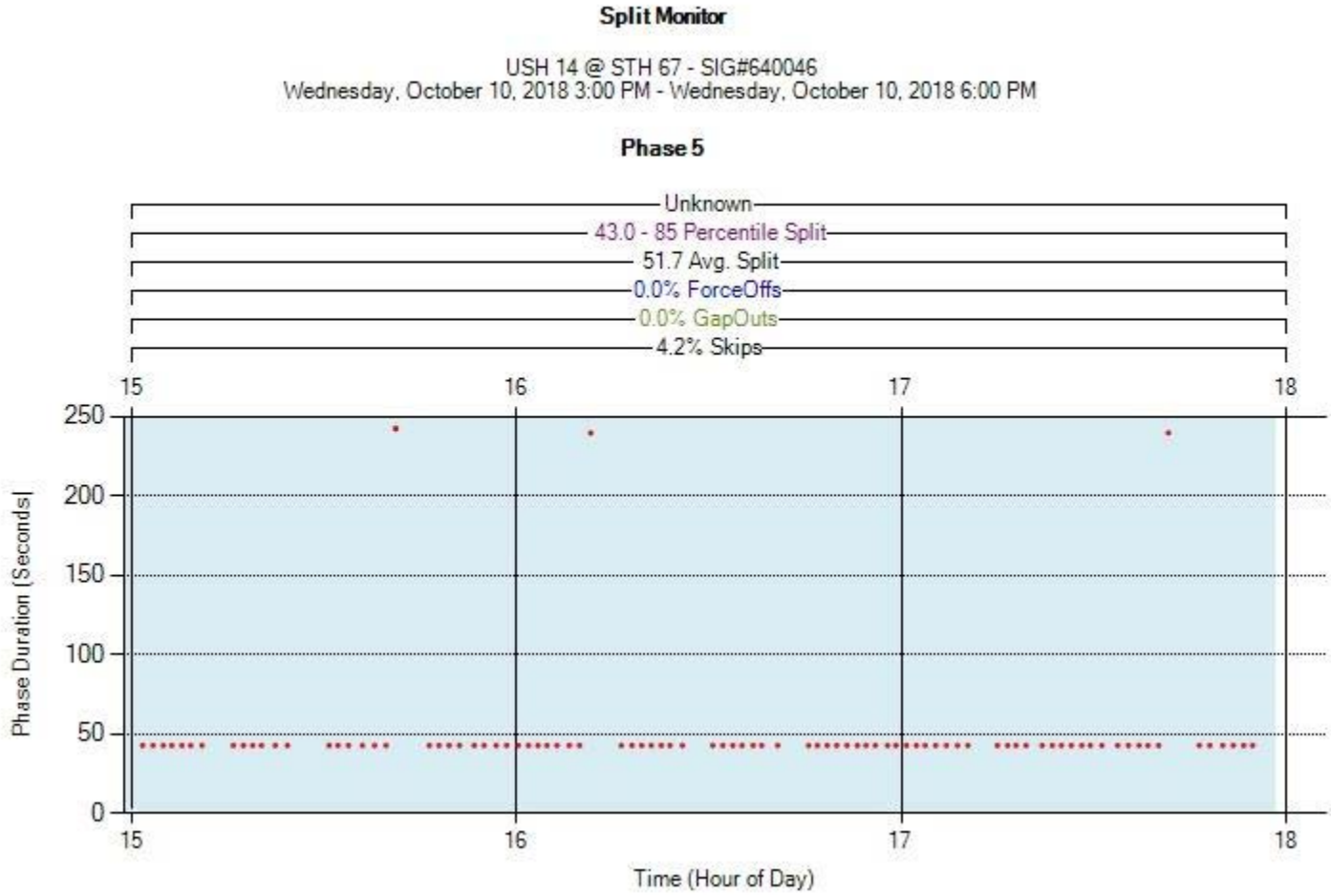
Isolated Signal – WIS 67 & US 14
HCS Timings
10/10/2018 – 3:00 PM – 6:00 PM



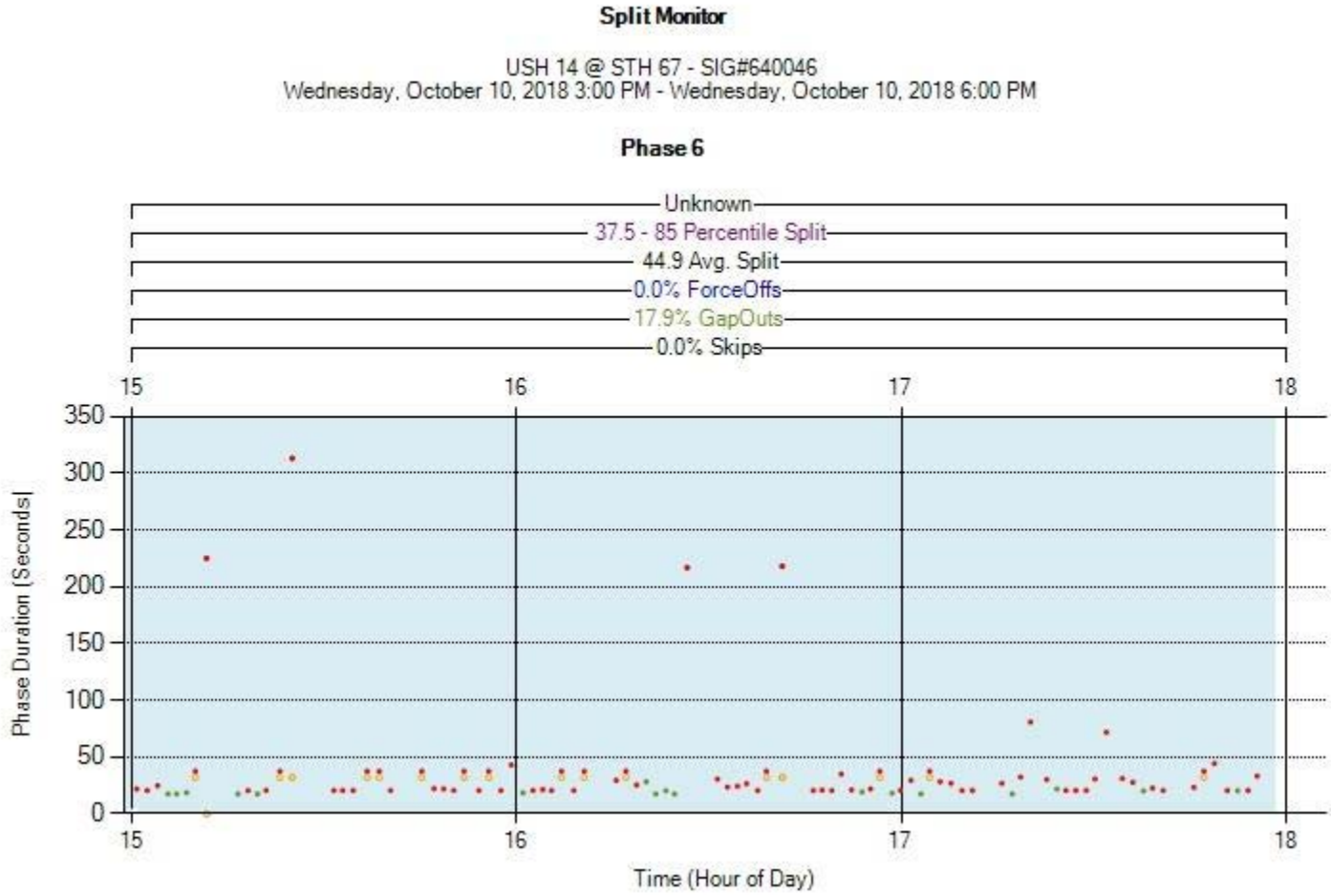
Isolated Signal – WIS 67 & US 14
HCS Timings
10/10/2018 – 3:00 PM – 6:00 PM



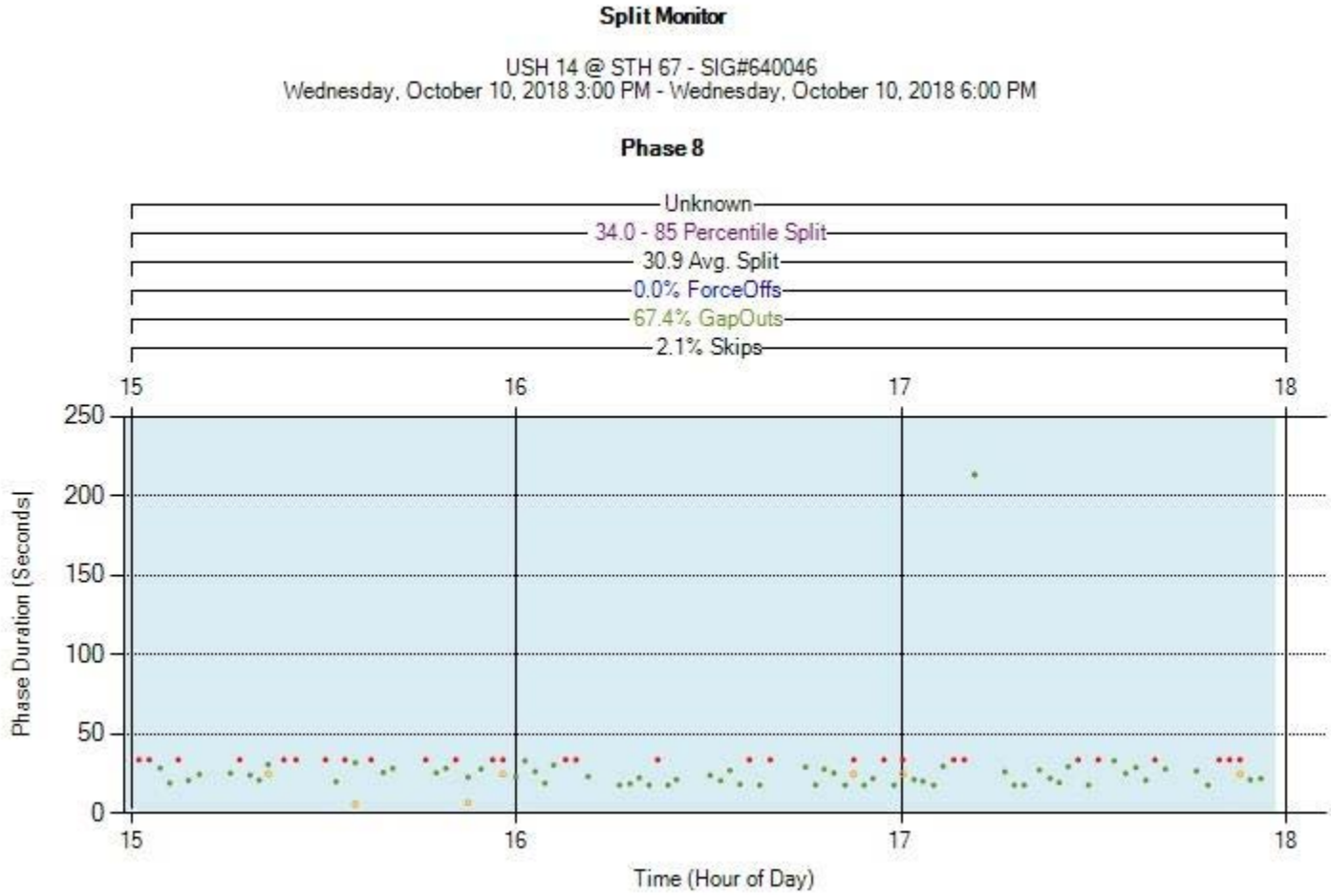
Isolated Signal – WIS 67 & US 14
HCS Timings
10/10/2018 – 3:00 PM – 6:00 PM



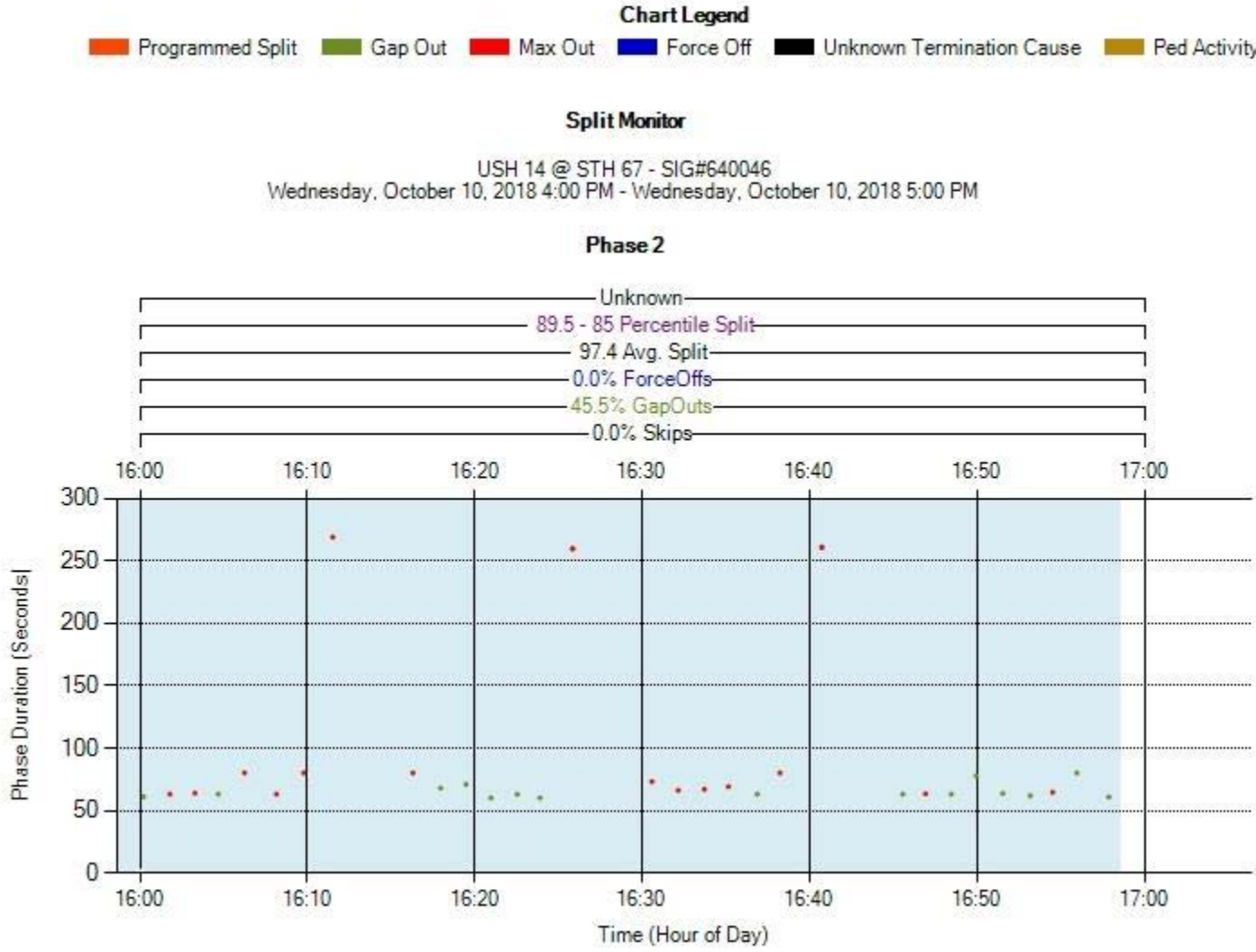
Isolated Signal – WIS 67 & US 14
HCS Timings
10/10/2018 – 3:00 PM – 6:00 PM



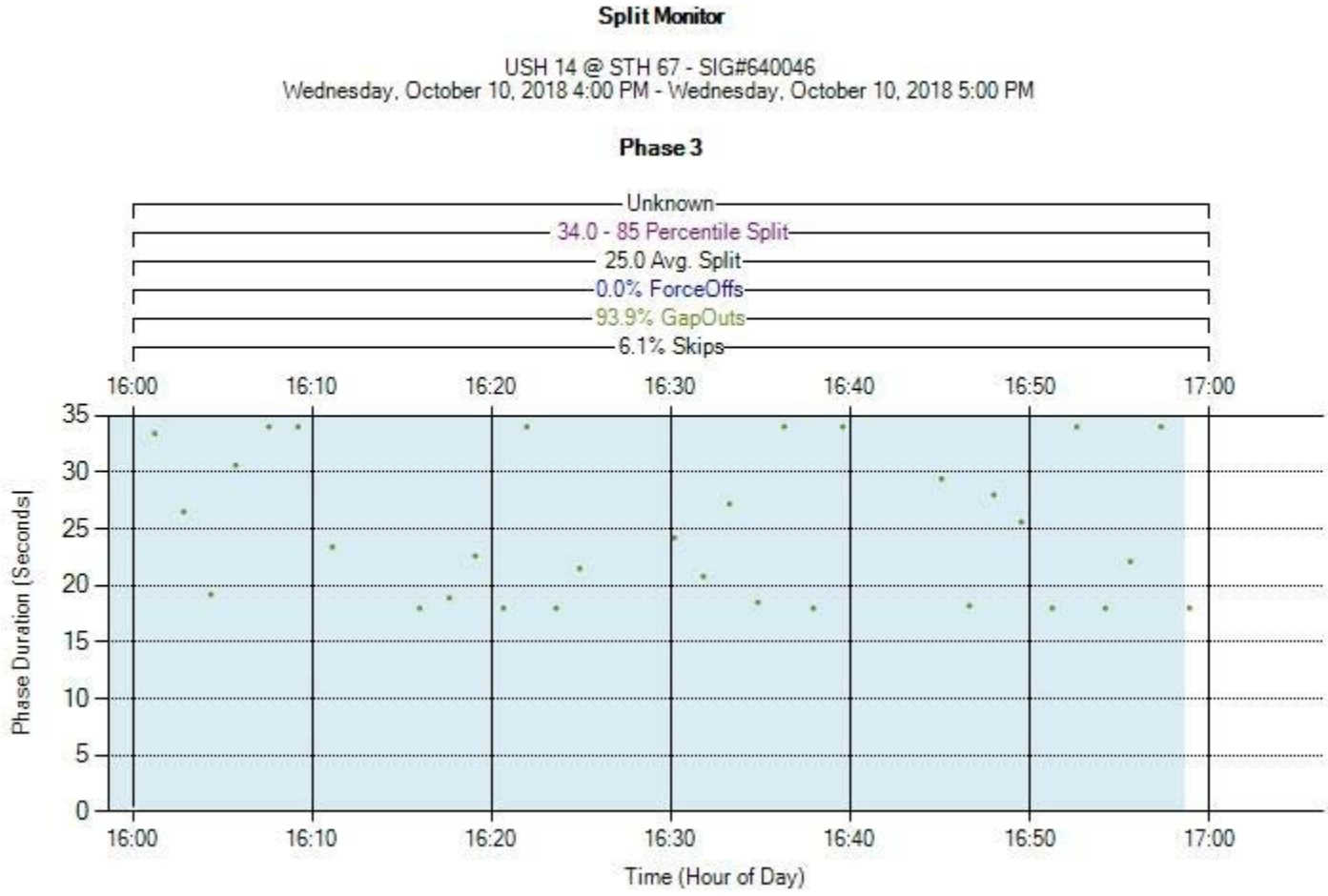
Isolated Signal – WIS 67 & US 14
HCS Timings
10/10/2018 – 3:00 PM – 6:00 PM



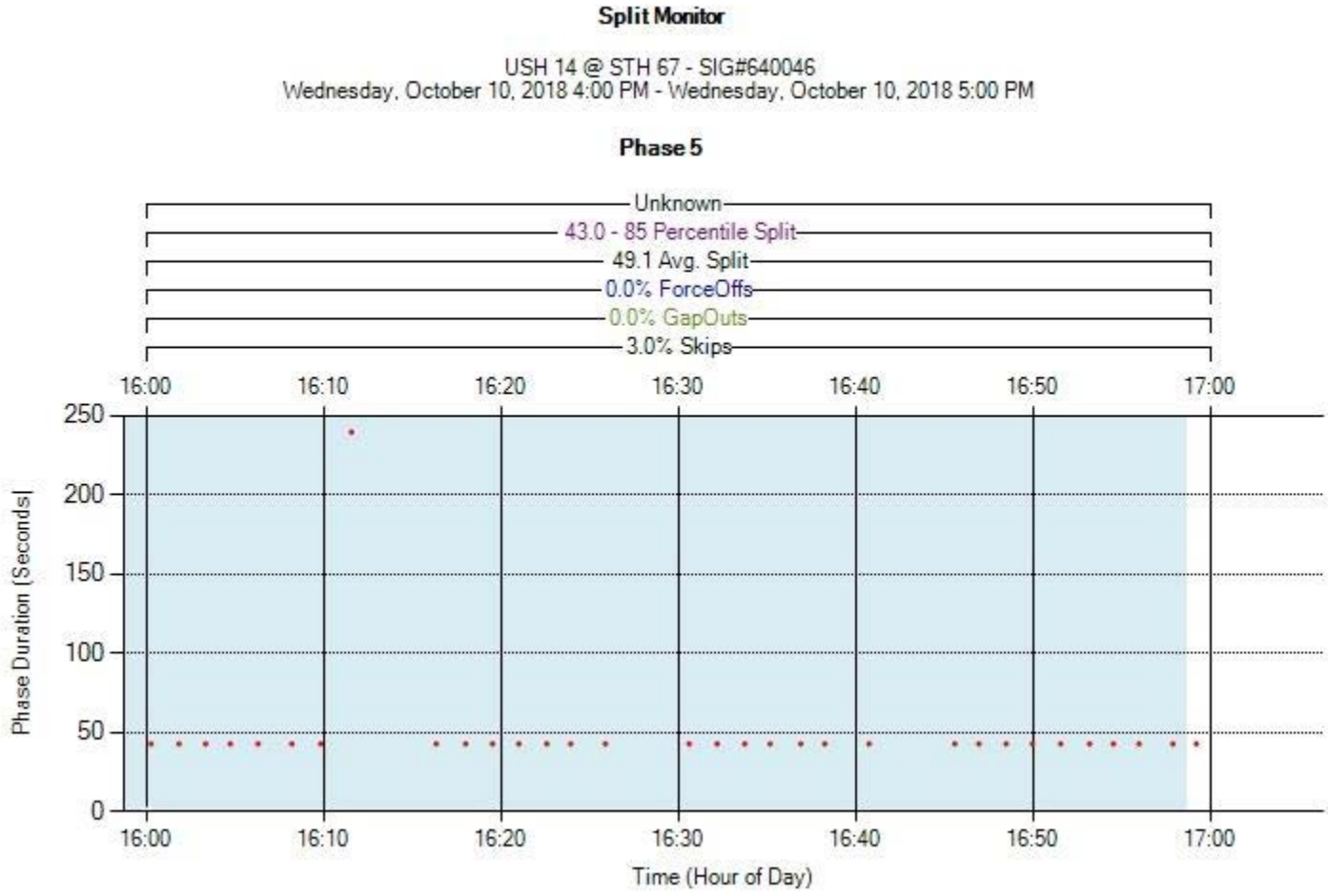
Isolated Signal – WIS 67 & US 14
HCS Timings
10/10/2018 – 4:00 PM – 5:00 PM



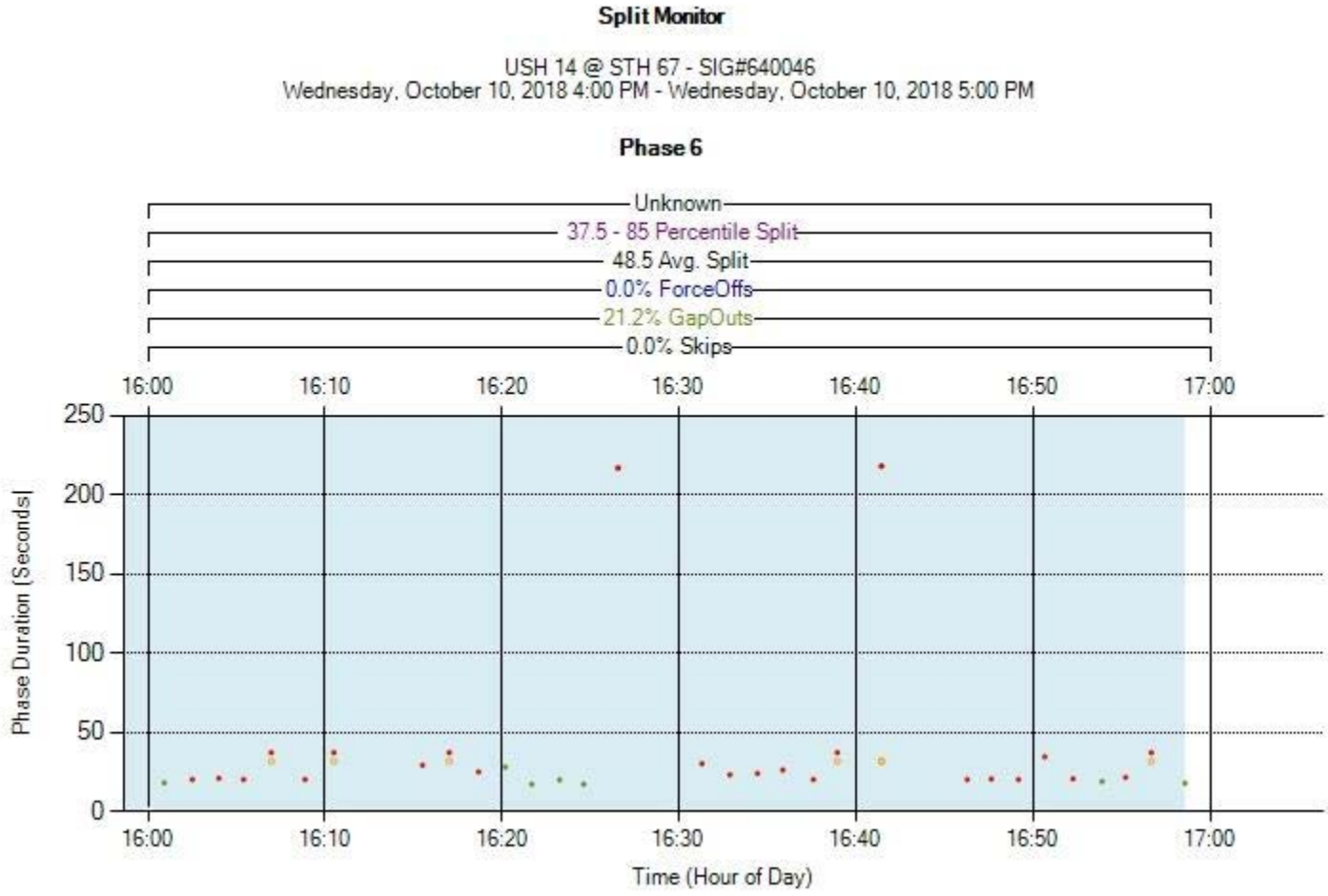
Isolated Signal – WIS 67 & US 14
HCS Timings
10/10/2018 – 4:00 PM – 5:00 PM



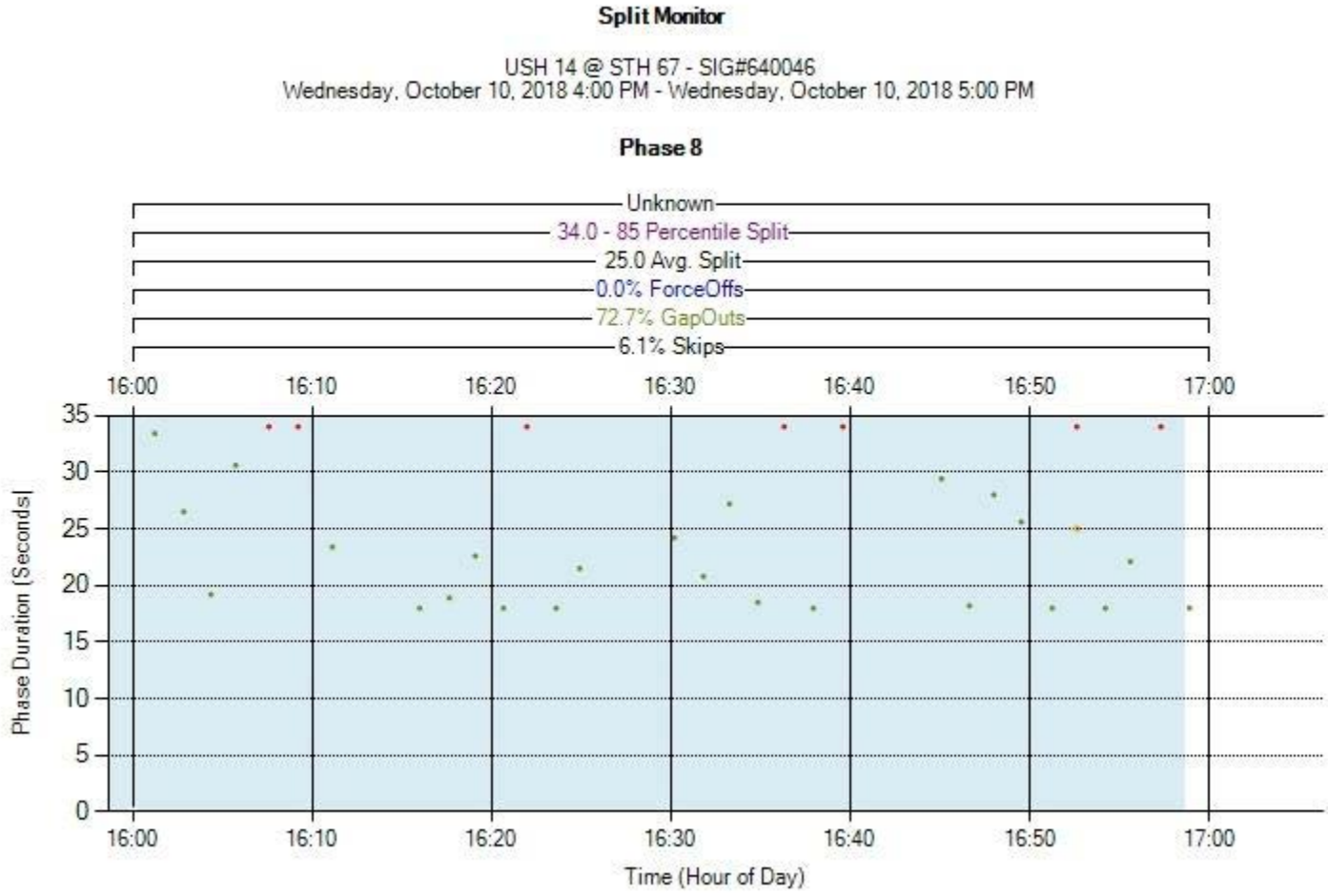
Isolated Signal – WIS 67 & US 14
HCS Timings
10/10/2018 – 4:00 PM – 5:00 PM



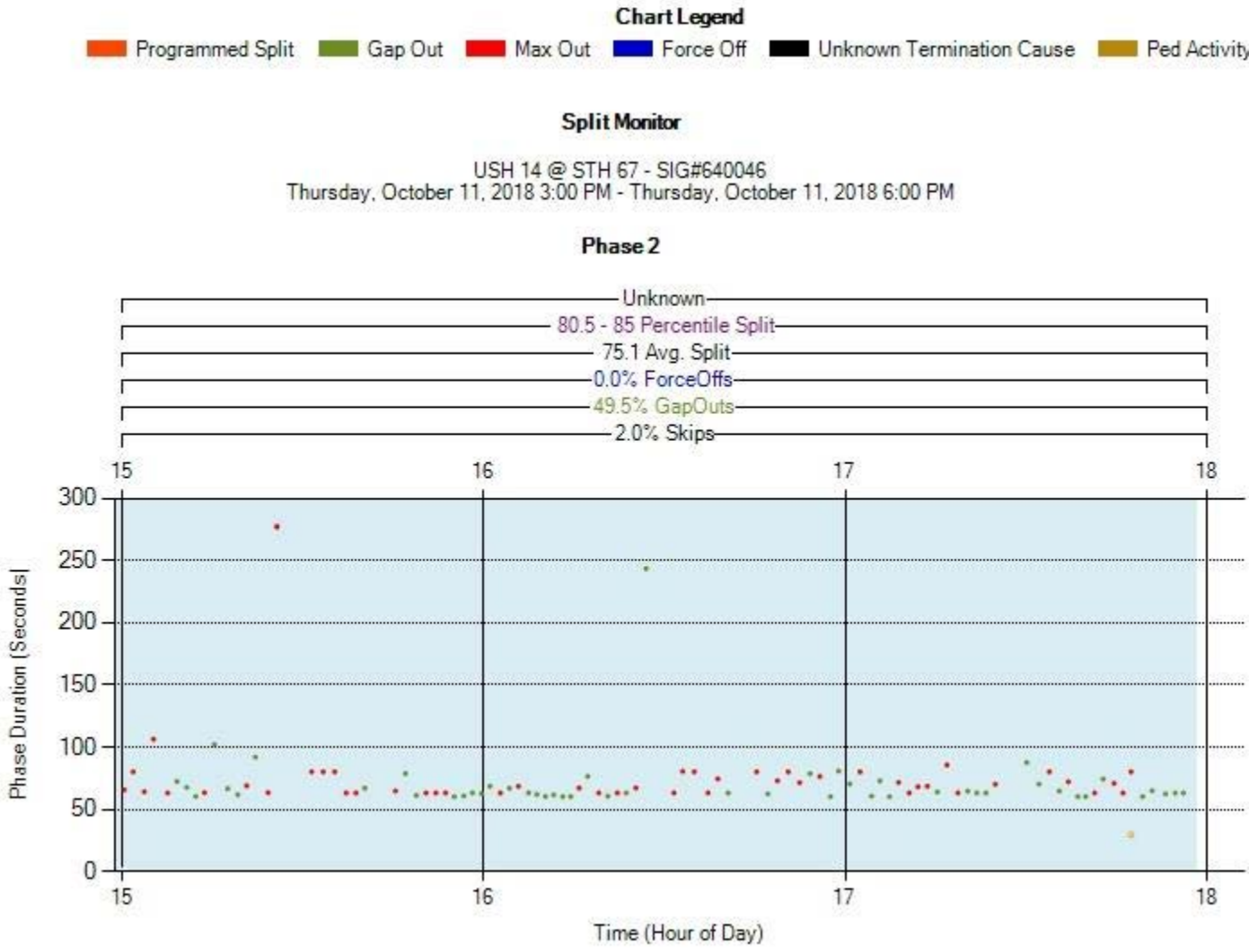
Isolated Signal – WIS 67 & US 14
HCS Timings
10/10/2018 – 4:00 PM – 5:00 PM



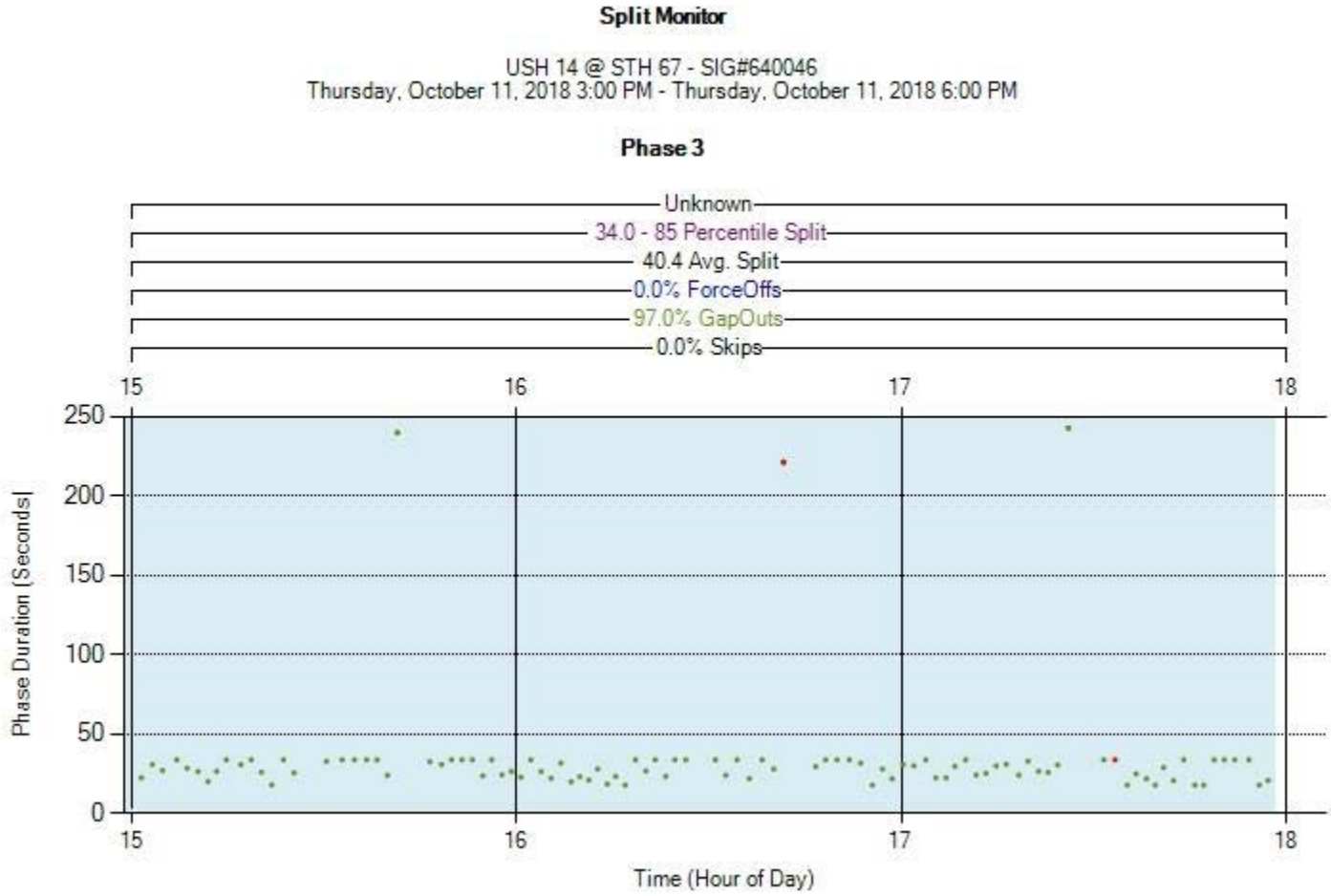
Isolated Signal – WIS 67 & US 14
HCS Timings
10/10/2018 – 4:00 PM – 5:00 PM



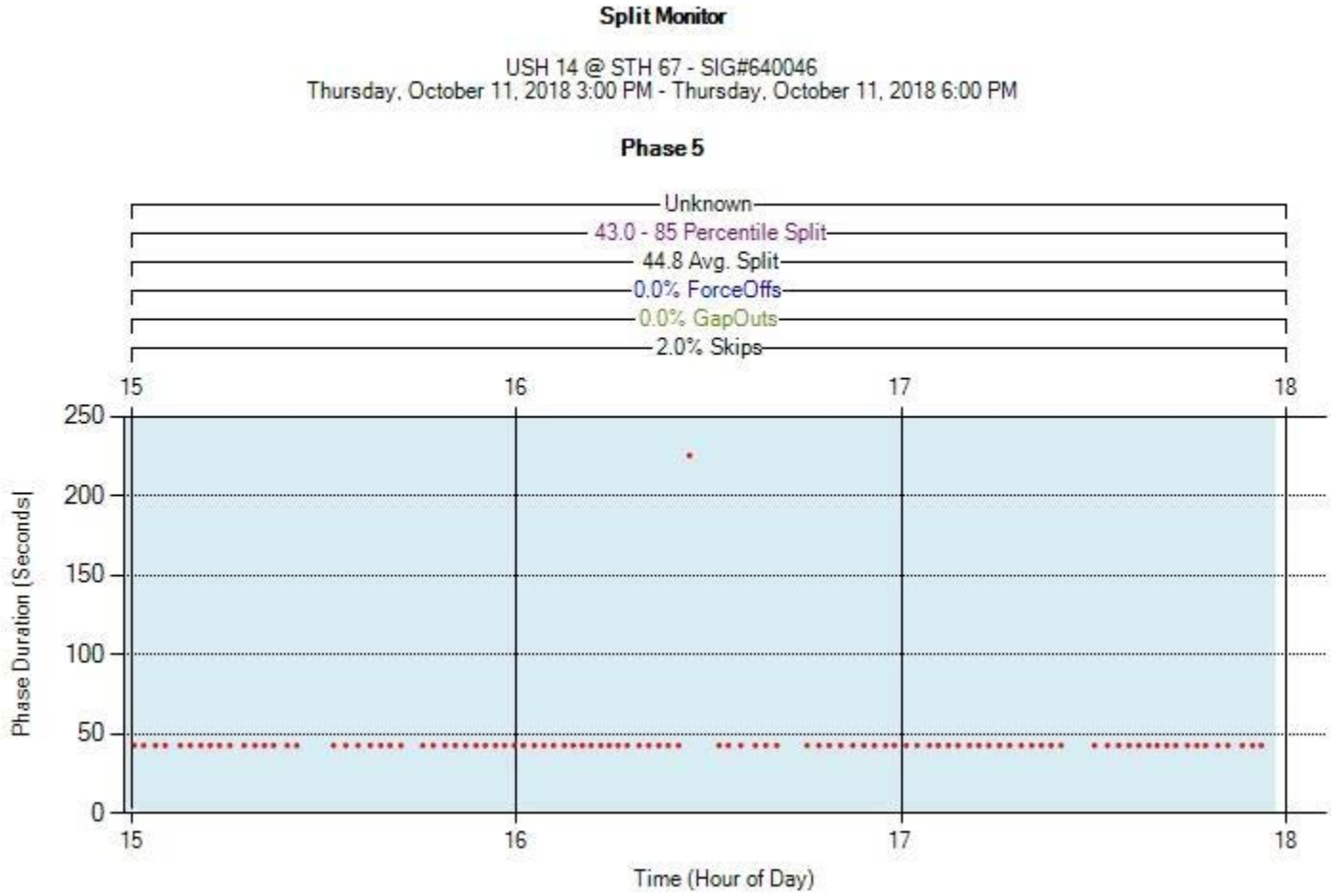
Isolated Signal – WIS 67 & US 14
HCS Timings
10/11/2018 – 3:00 PM – 6:00 PM



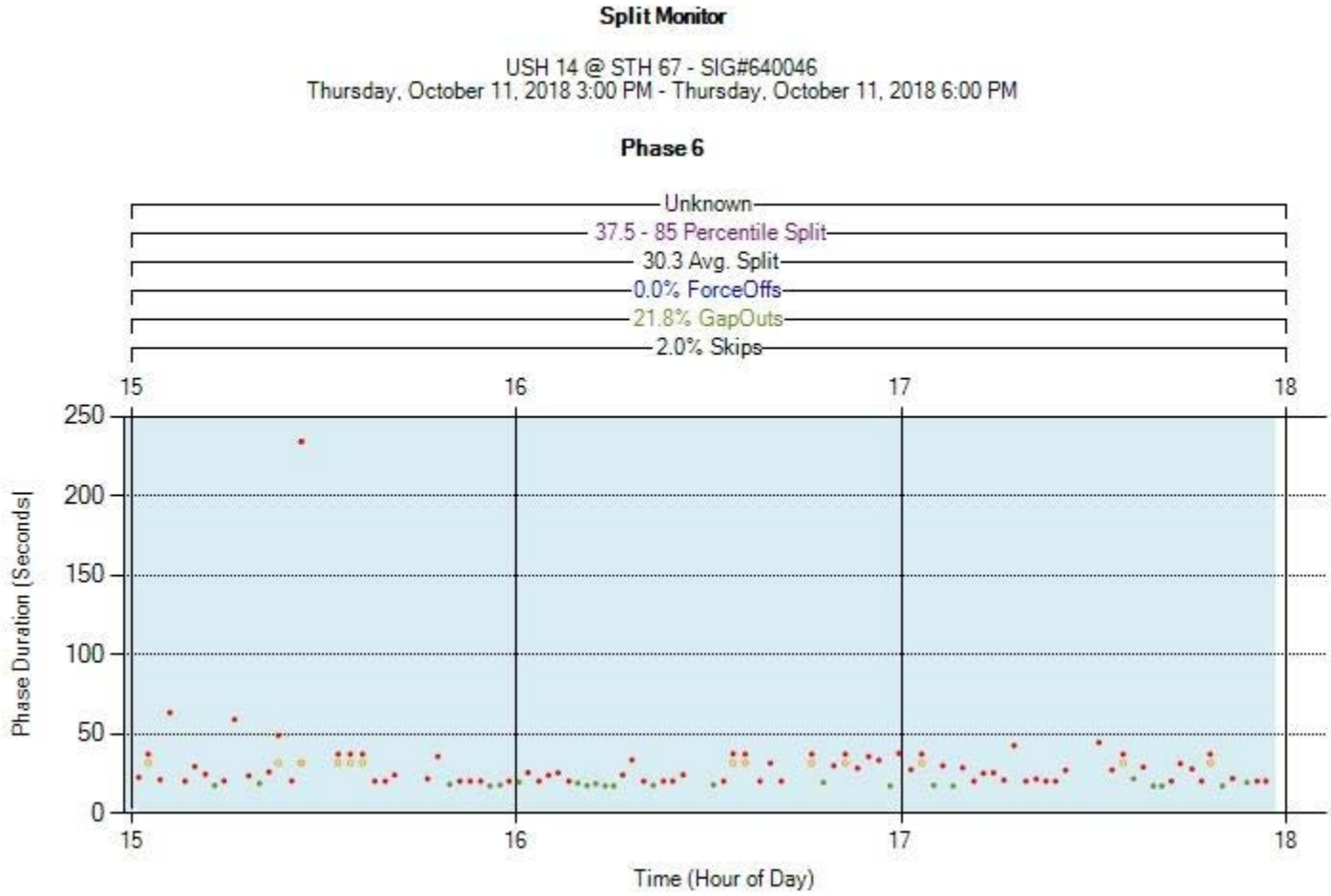
Isolated Signal – WIS 67 & US 14
HCS Timings
10/11/2018 – 3:00 PM – 6:00 PM



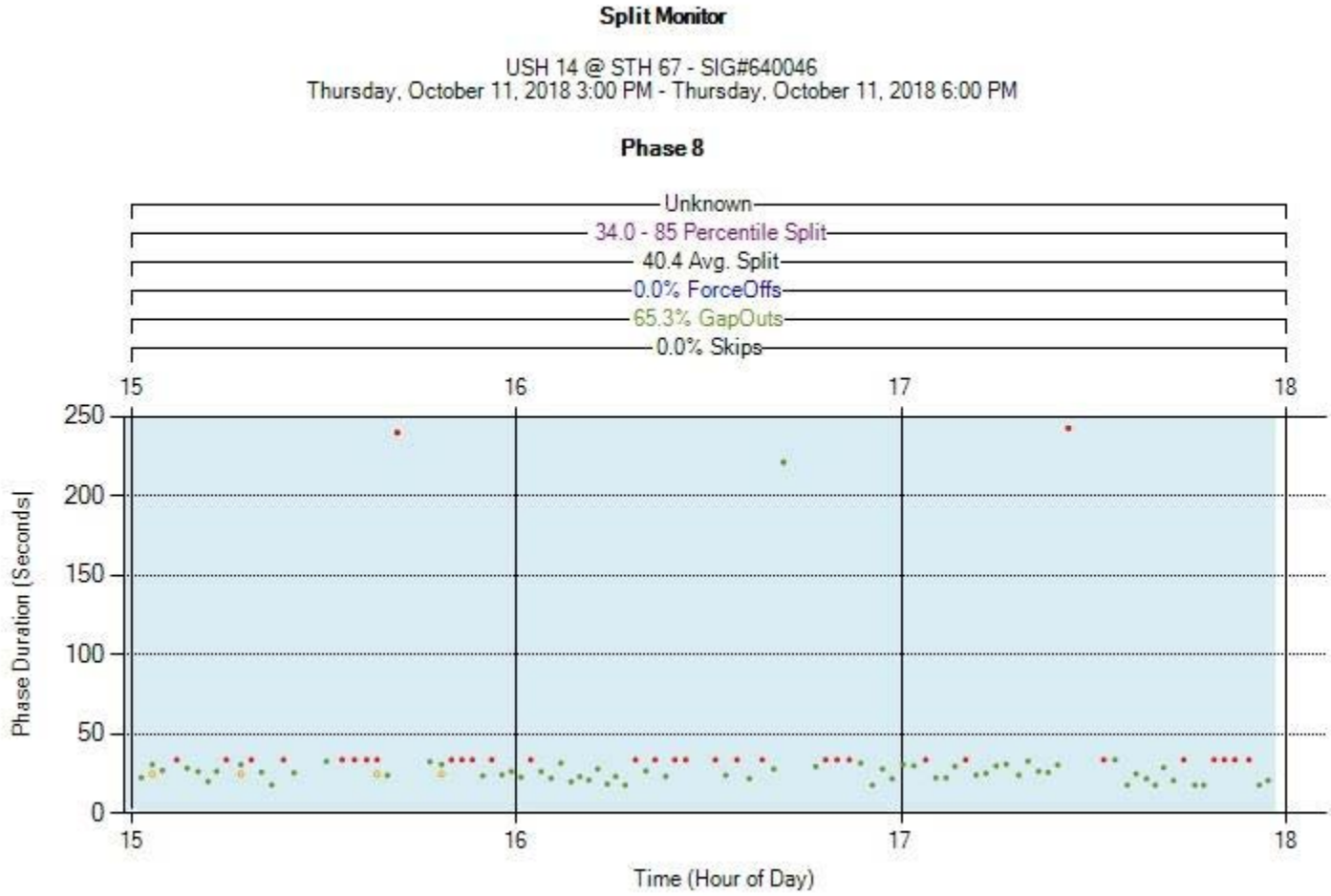
Isolated Signal – WIS 67 & US 14
HCS Timings
10/11/2018 – 3:00 PM – 6:00 PM



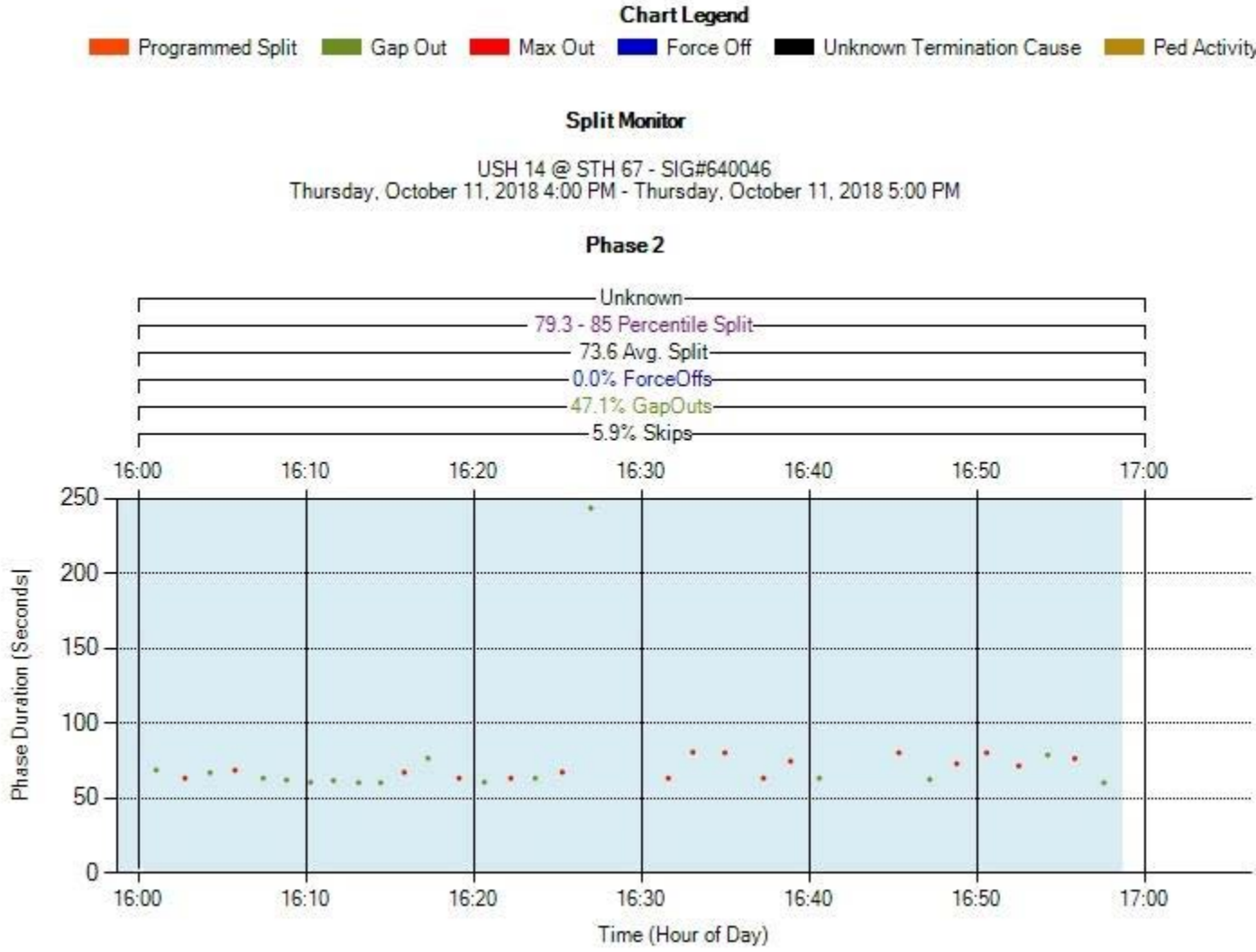
Isolated Signal – WIS 67 & US 14
HCS Timings
10/11/2018 – 3:00 PM – 6:00 PM

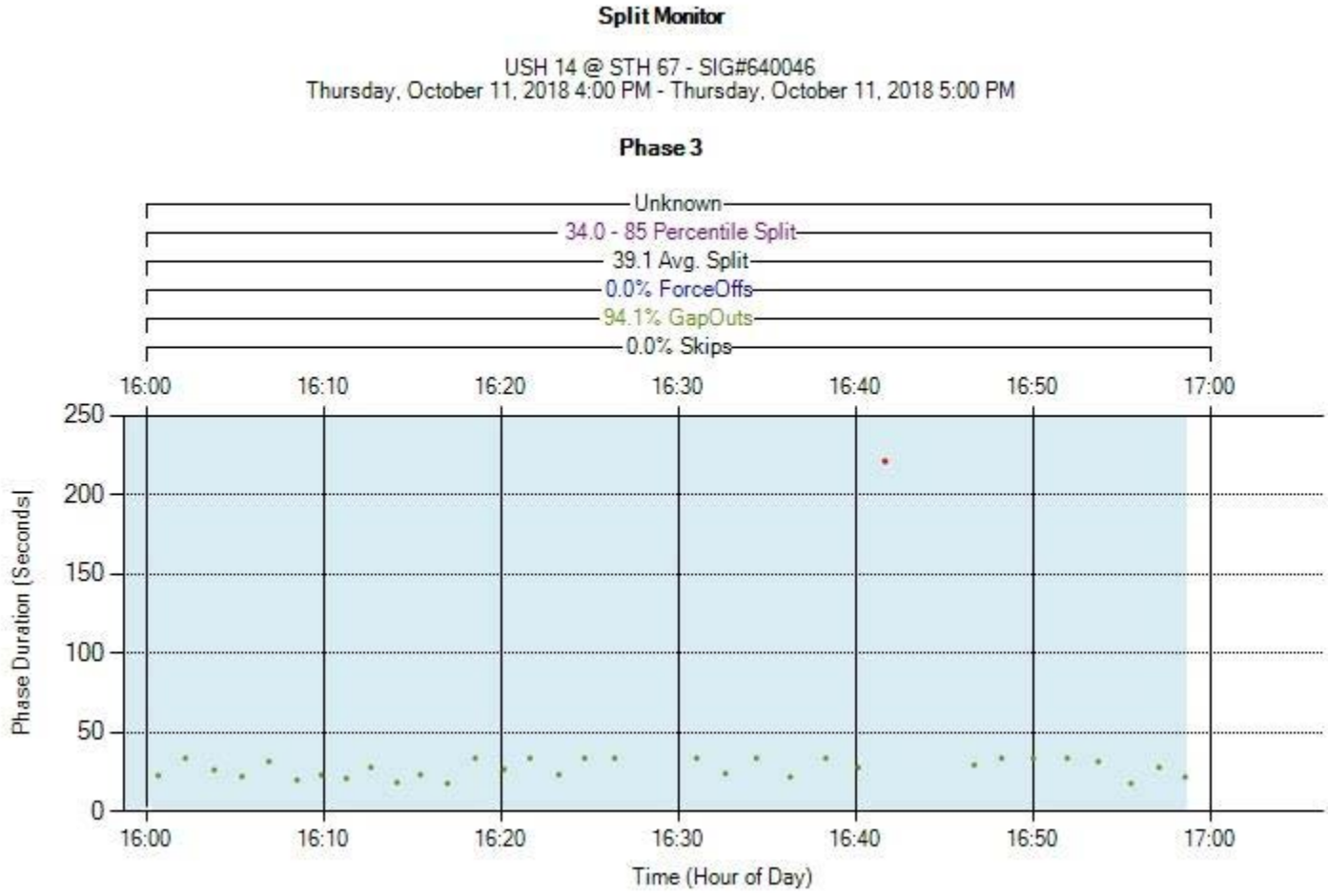


Isolated Signal – WIS 67 & US 14
HCS Timings
10/11/2018 – 3:00 PM – 6:00 PM

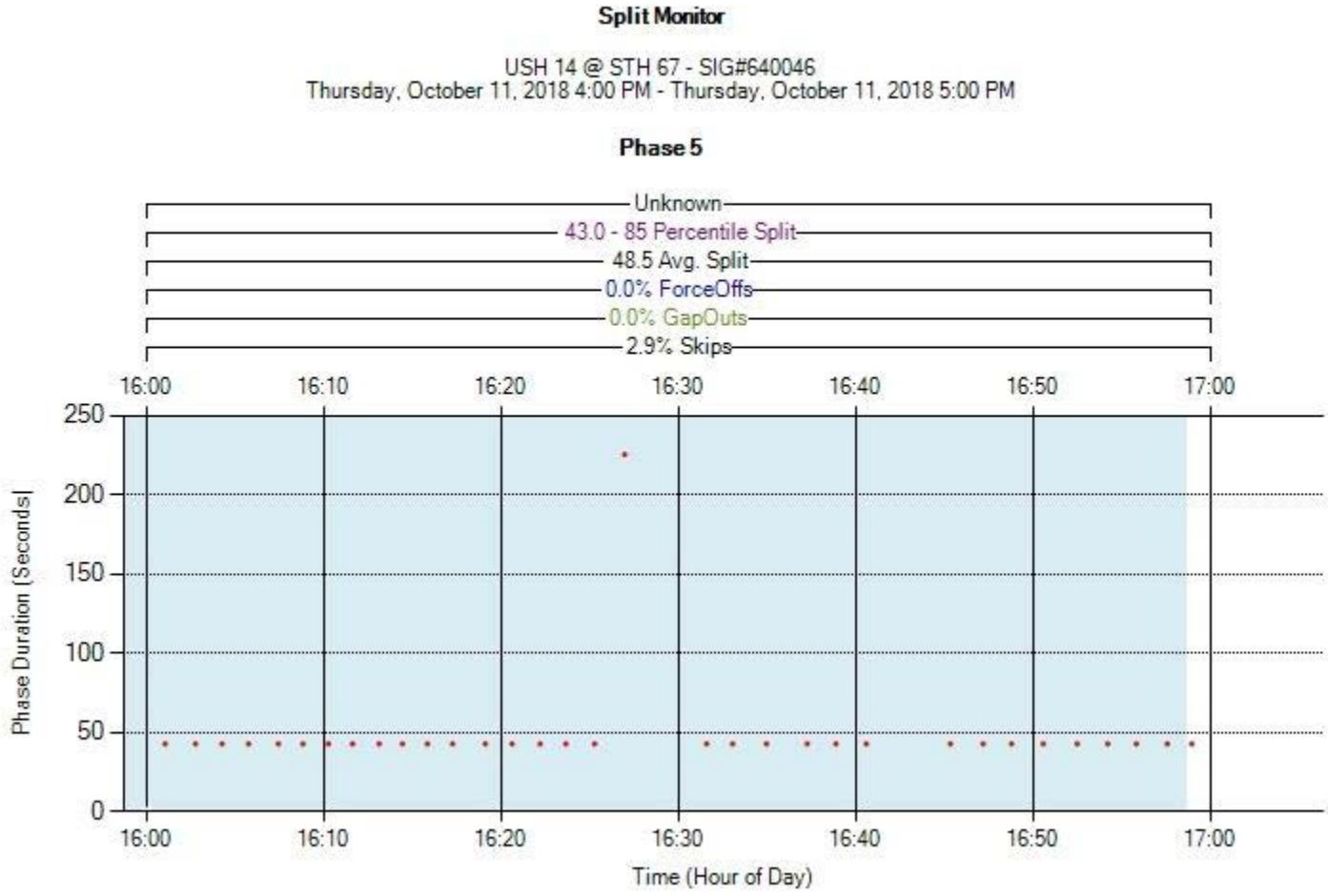


Isolated Signal – WIS 67 & US 14
HCS Timings
10/11/2018 – 4:00 PM – 5:00 PM

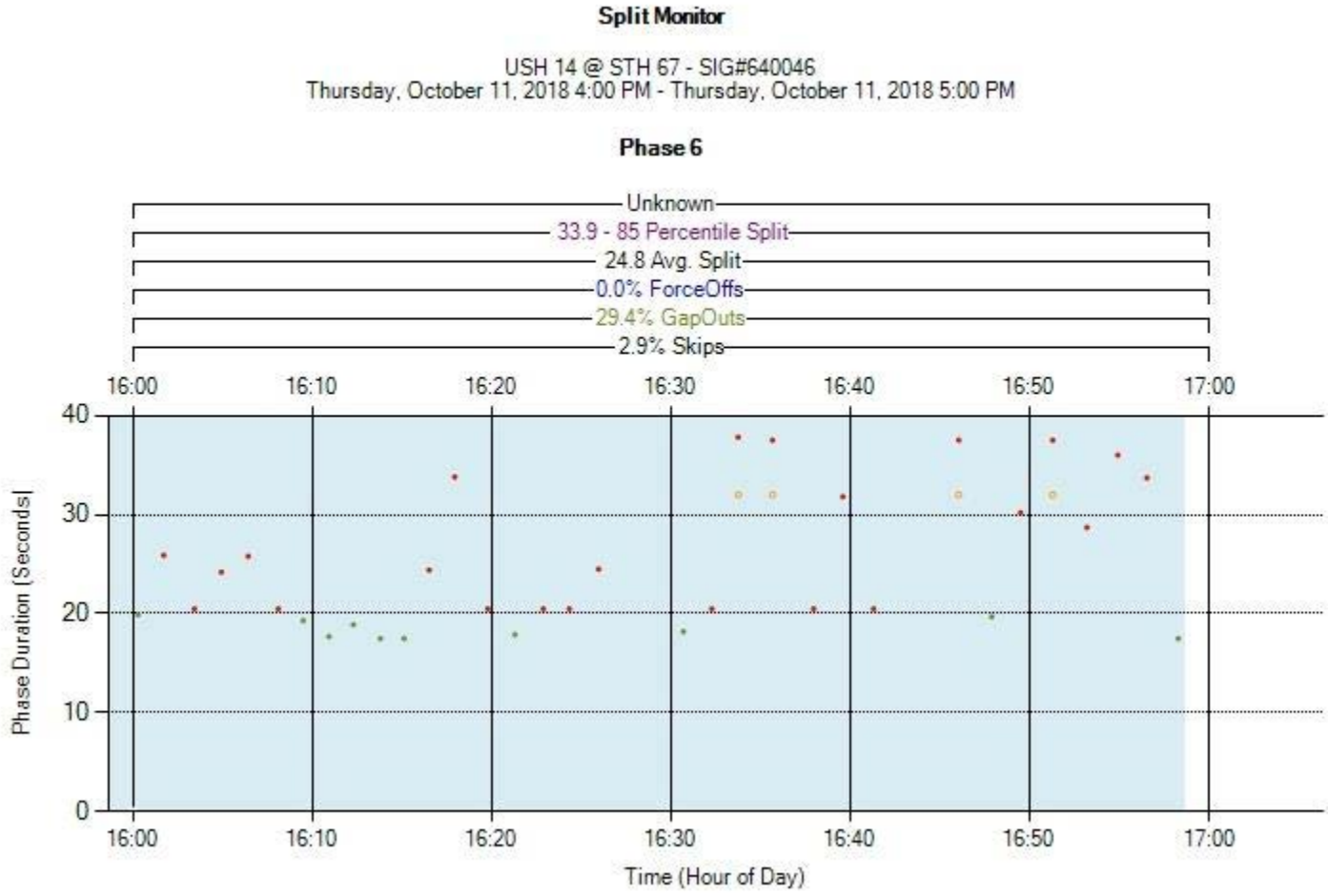



Split Monitor
USH 14 @ STH 67 - SIG#640046
Thursday, October 11, 2018 4:00 PM - Thursday, October 11, 2018 5:00 PM
Phase 3
Unknown
34.0 - 85 Percentile Split
39.1 Avg. Split
0.0% ForceOffs
94.1% GapOuts
0.0% Skips
16:00
16:10
16:20
16:30
16:40
16:50
17:00
250
200
150
100
50
0
Phase Duration (Seconds)
Time (Hour of Day)

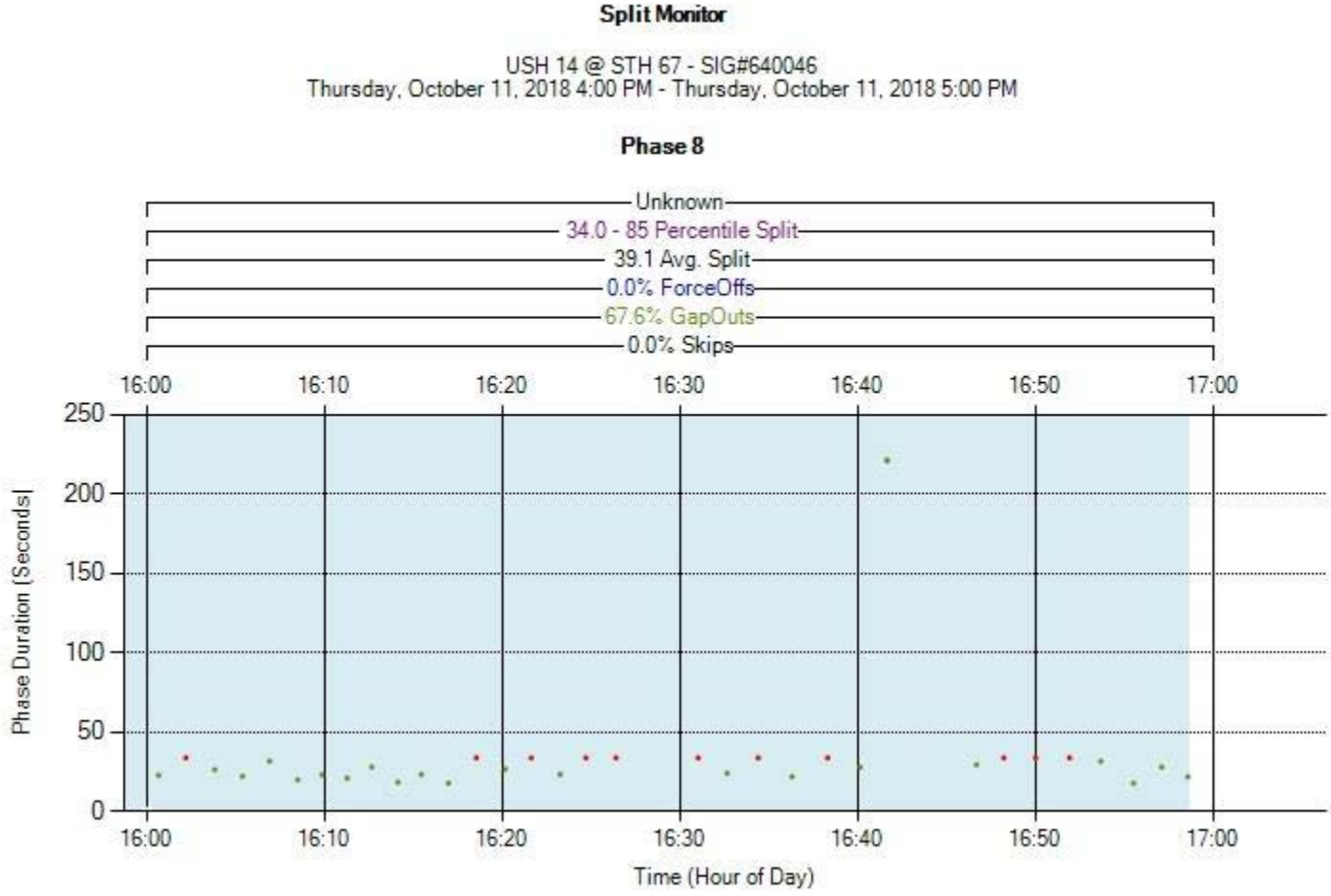
Isolated Signal – WIS 67 & US 14
HCS Timings
10/11/2018 – 4:00 PM – 5:00 PM



Isolated Signal – WIS 67 & US 14
HCS Timings
10/11/2018 – 4:00 PM – 5:00 PM

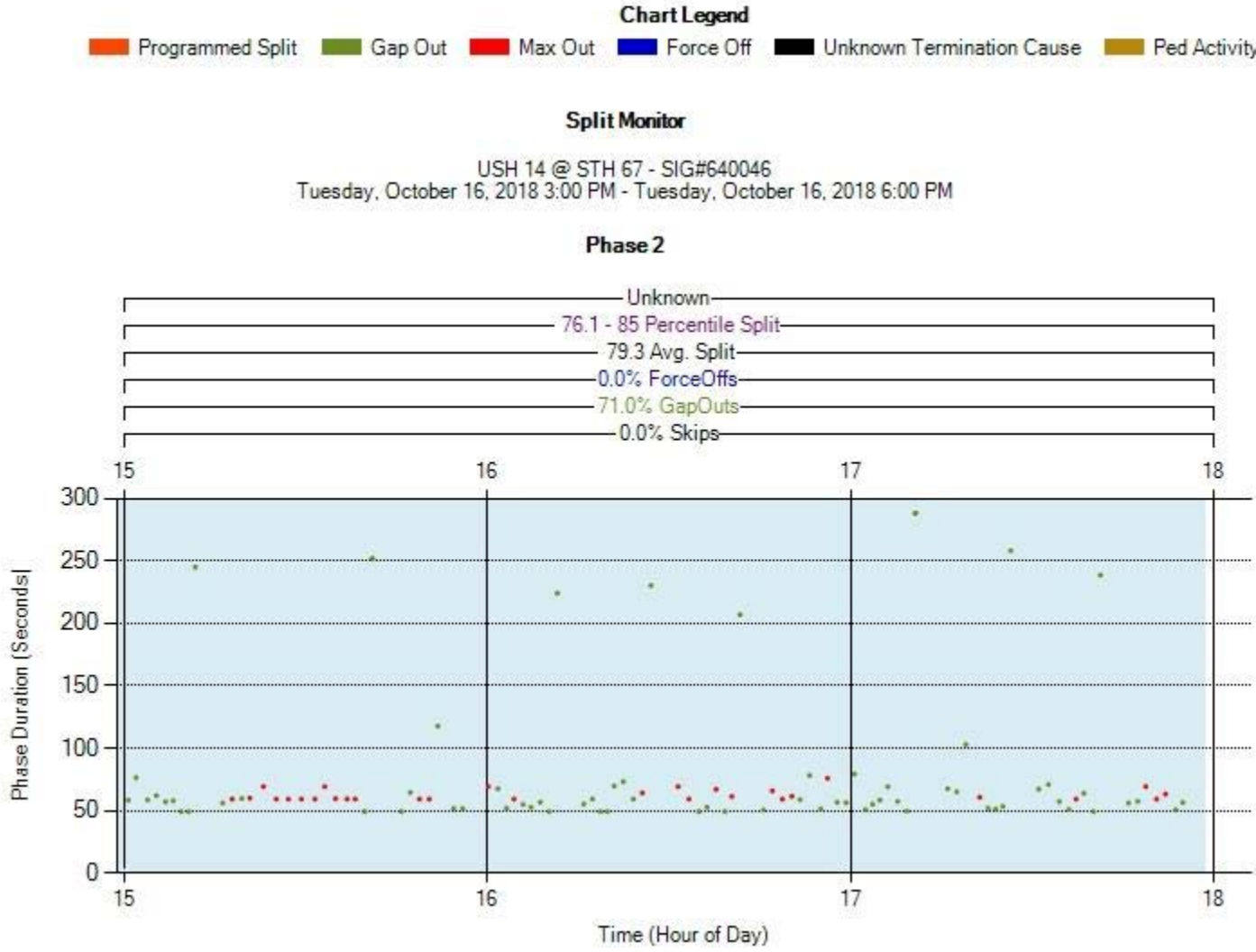


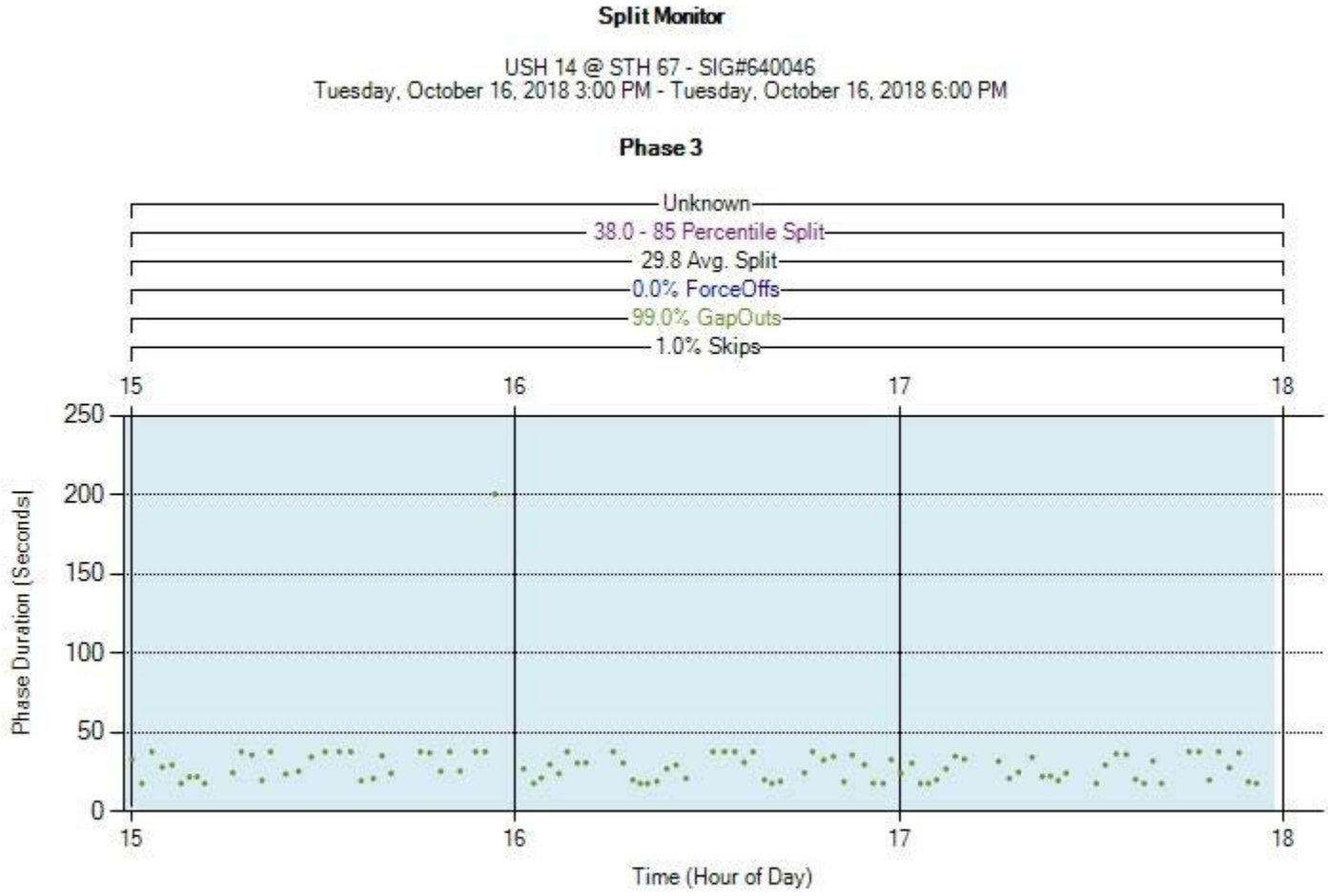
Isolated Signal – WIS 67 & US 14
HCS Timings
10/11/2018 – 4:00 PM – 5:00 PM



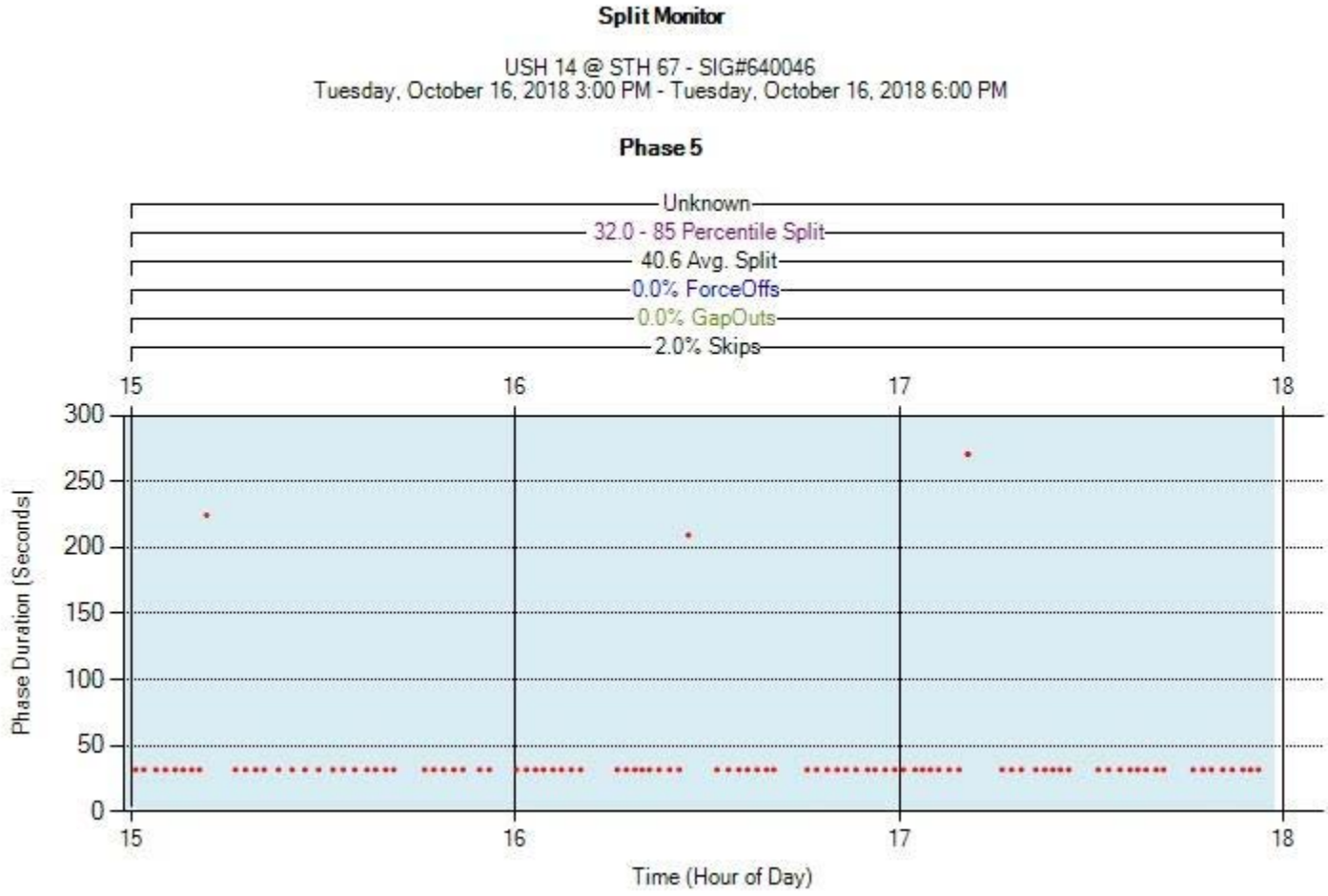
WisBOOM Outputs
WIS 67 & US 14
Synchro Optimized Timings

Isolated Signal – WIS 67 & US 14
Synchro Timings
10/16/2018 – 3:00 PM – 6:00 PM

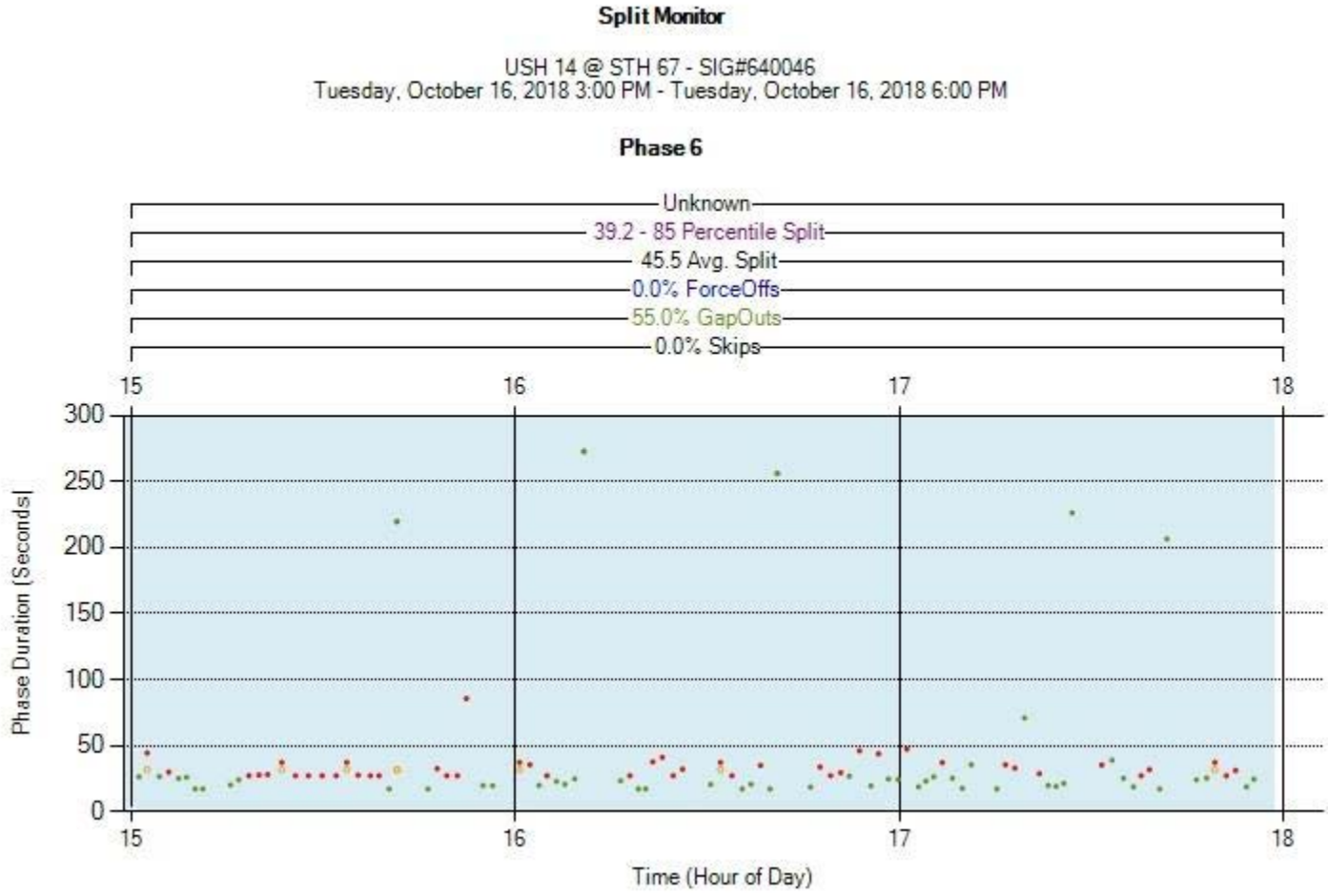



Split Monitor
USH 14 @ STH 67 - SIG#640046
Tuesday, October 16, 2018 3:00 PM - Tuesday, October 16, 2018 6:00 PM
Phase 3
Unknown
38.0 - 85 Percentile Split
29.8 Avg. Split
0.0% ForceOffs
99.0% GapOuts
1.0% Skips
15
16
17
18
250
200
150
100
50
0
Phase Duration (Seconds)
Time (Hour of Day)

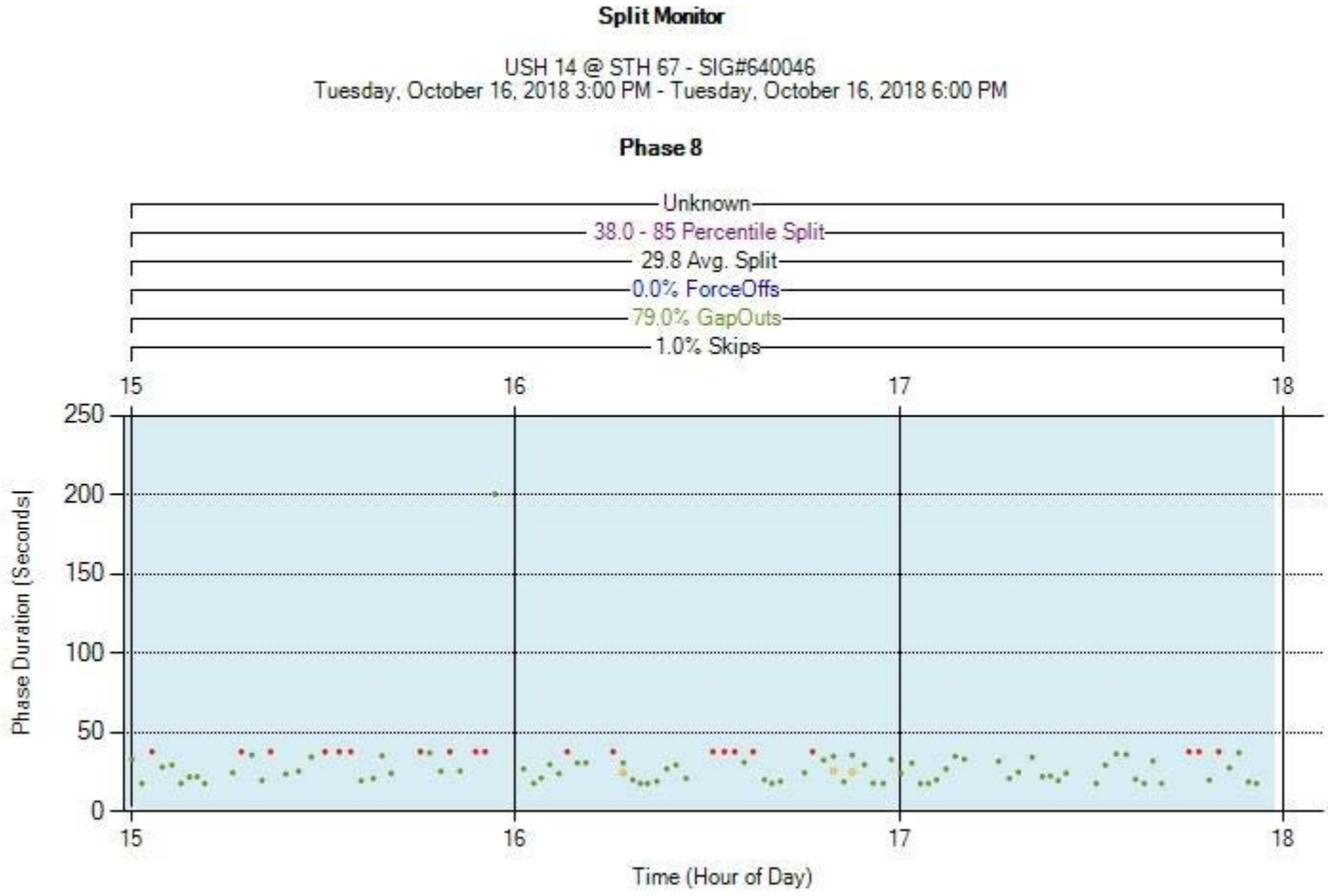
Isolated Signal – WIS 67 & US 14
Synchro Timings
10/16/2018 – 3:00 PM – 6:00 PM



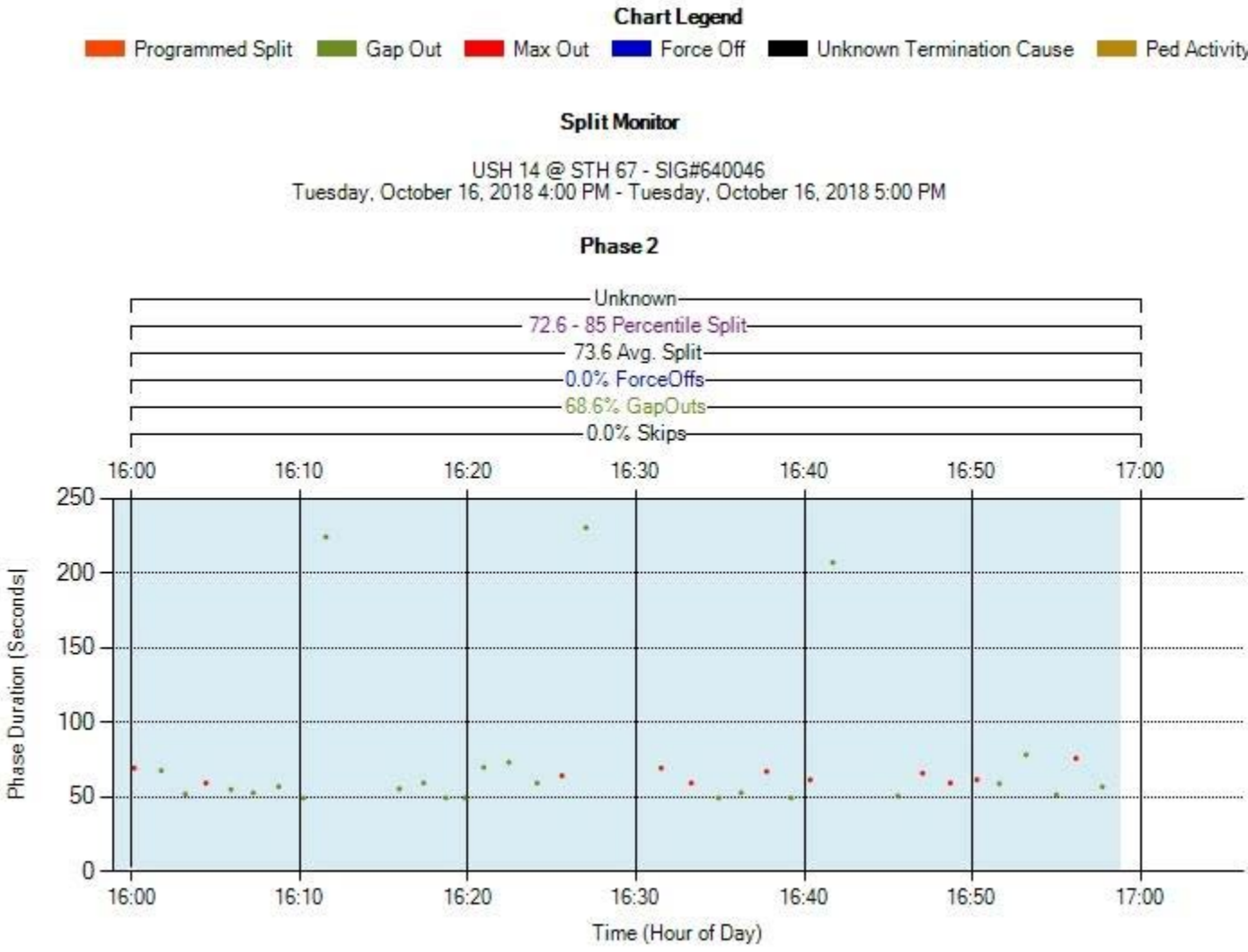
Isolated Signal – WIS 67 & US 14
Synchro Timings
10/16/2018 – 3:00 PM – 6:00 PM



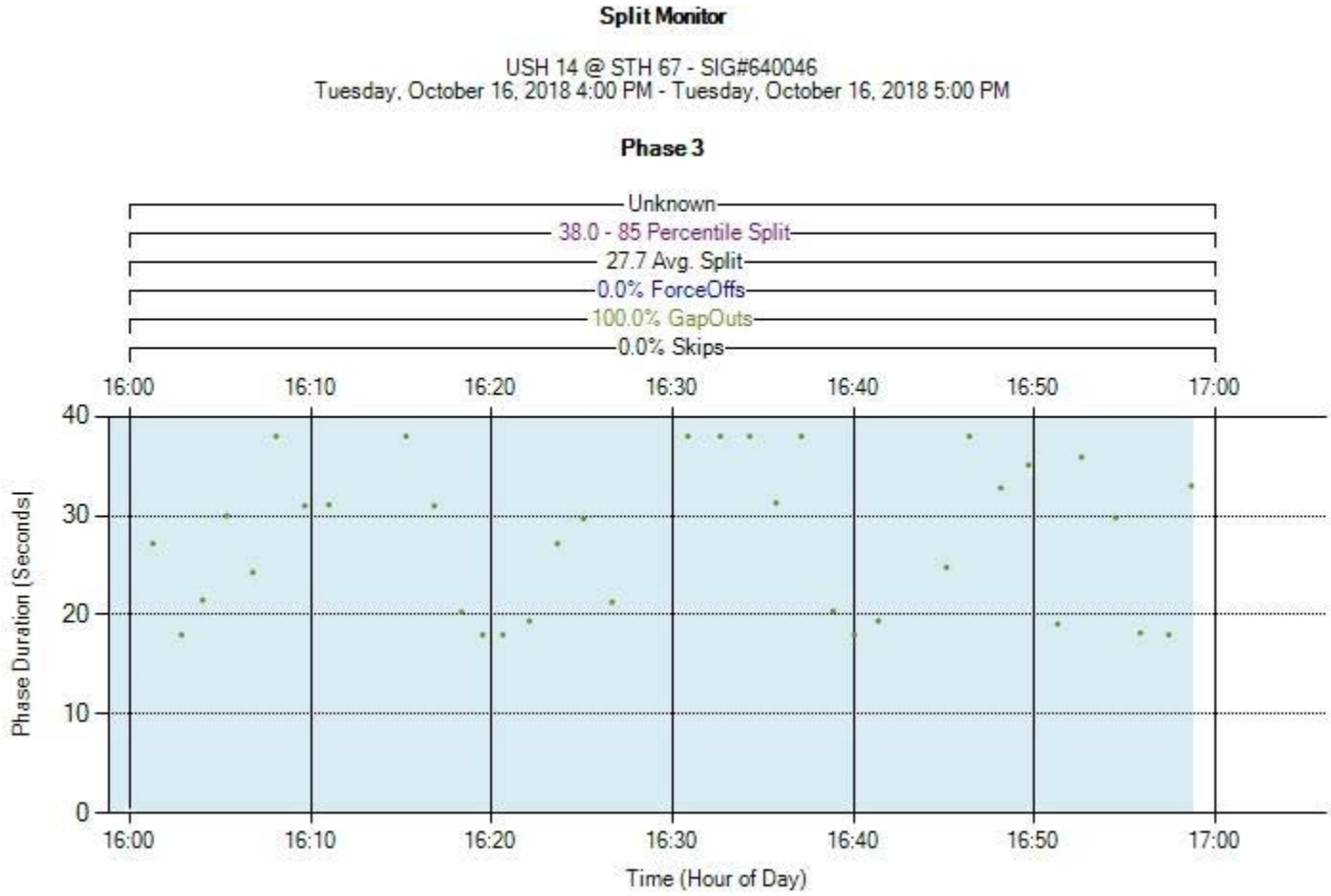
Isolated Signal – WIS 67 & US 14
Synchro Timings
10/16/2018 – 3:00 PM – 6:00 PM



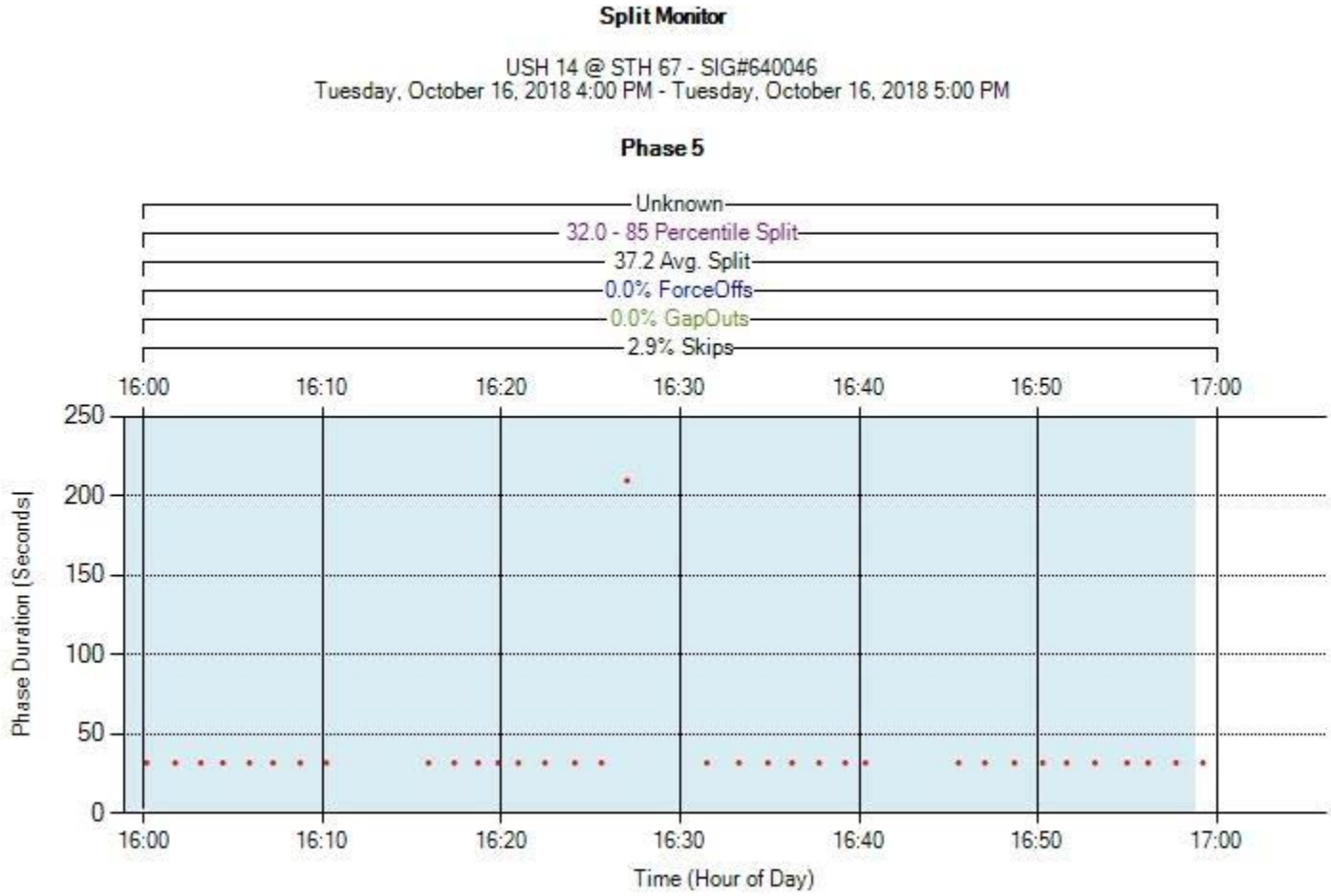
Isolated Signal – WIS 67 & US 14
Synchro Timings
10/16/2018 – 4:00 PM – 5:00 PM



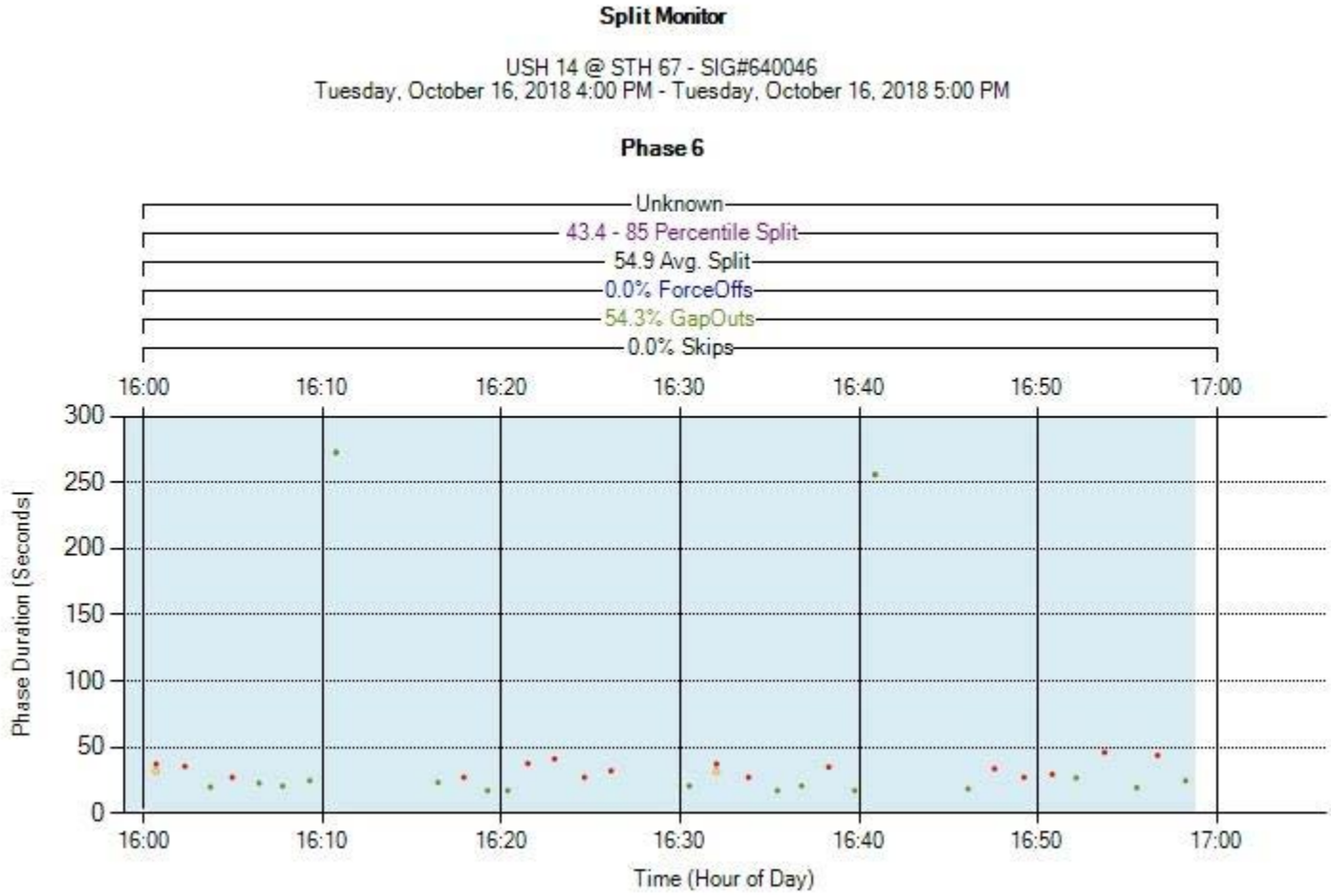
Isolated Signal – WIS 67 & US 14
Synchro Timings
10/16/2018 – 4:00 PM – 5:00 PM



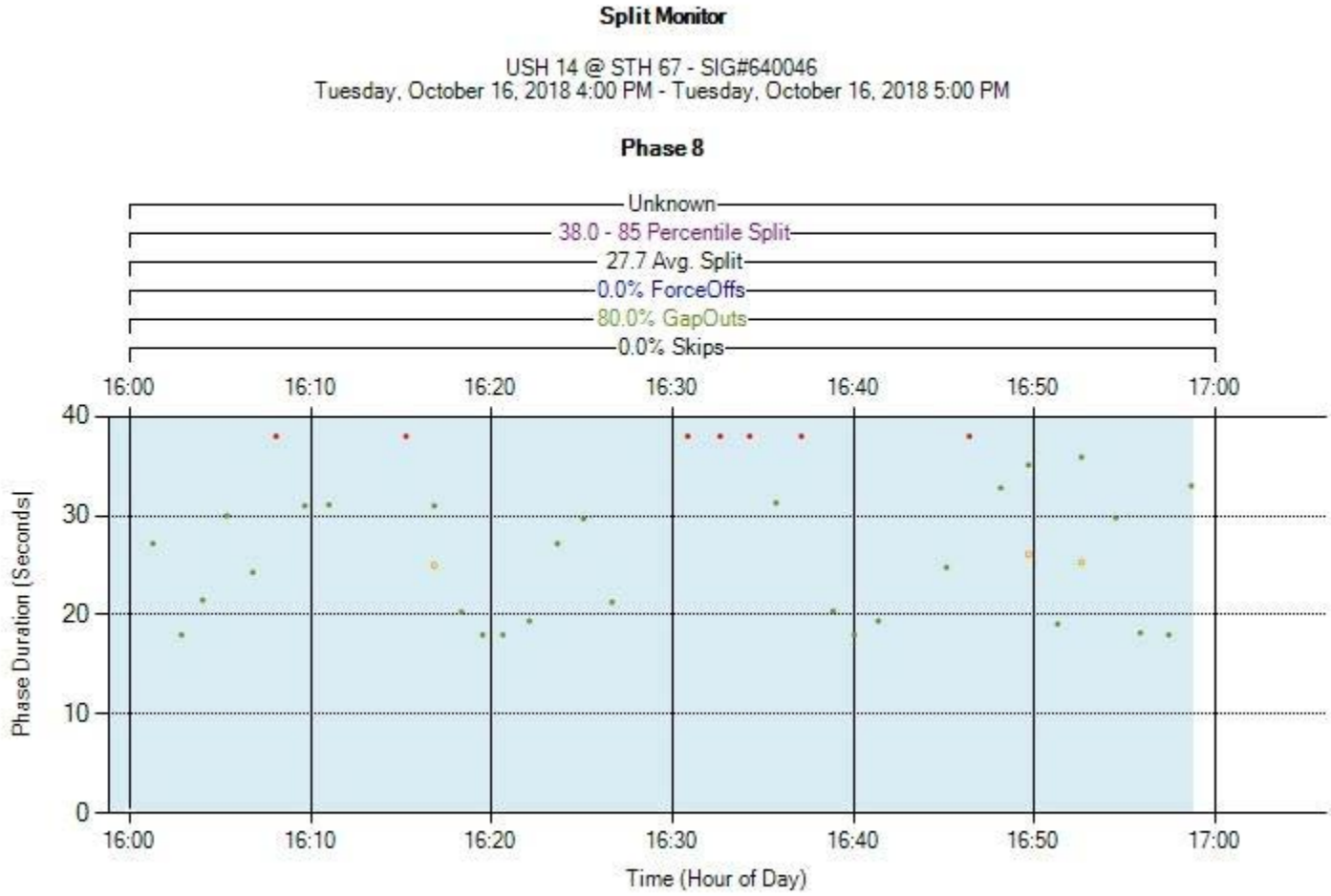
Isolated Signal – WIS 67 & US 14
Synchro Timings
10/16/2018 – 4:00 PM – 5:00 PM



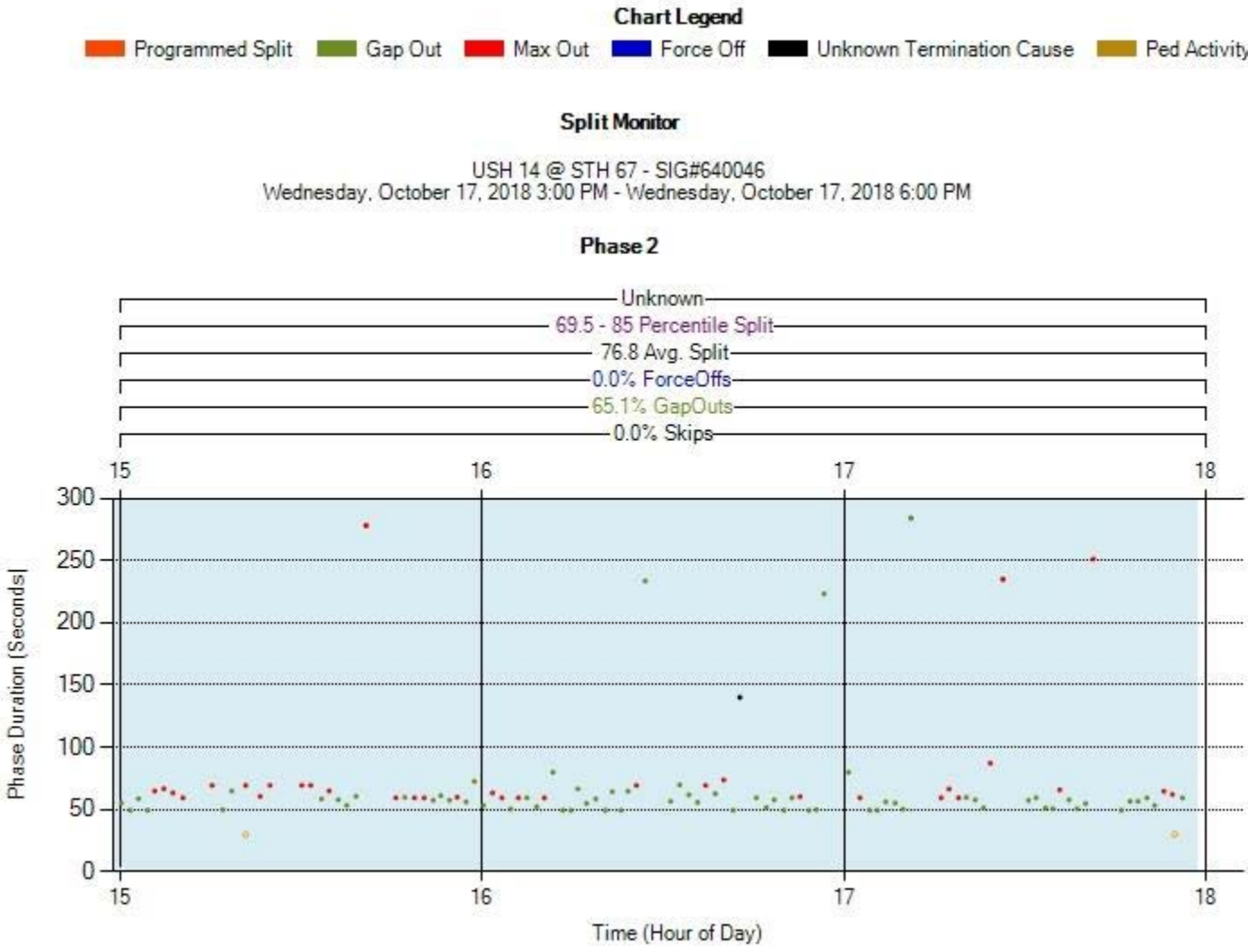
Isolated Signal – WIS 67 & US 14
Synchro Timings
10/16/2018 – 4:00 PM – 5:00 PM



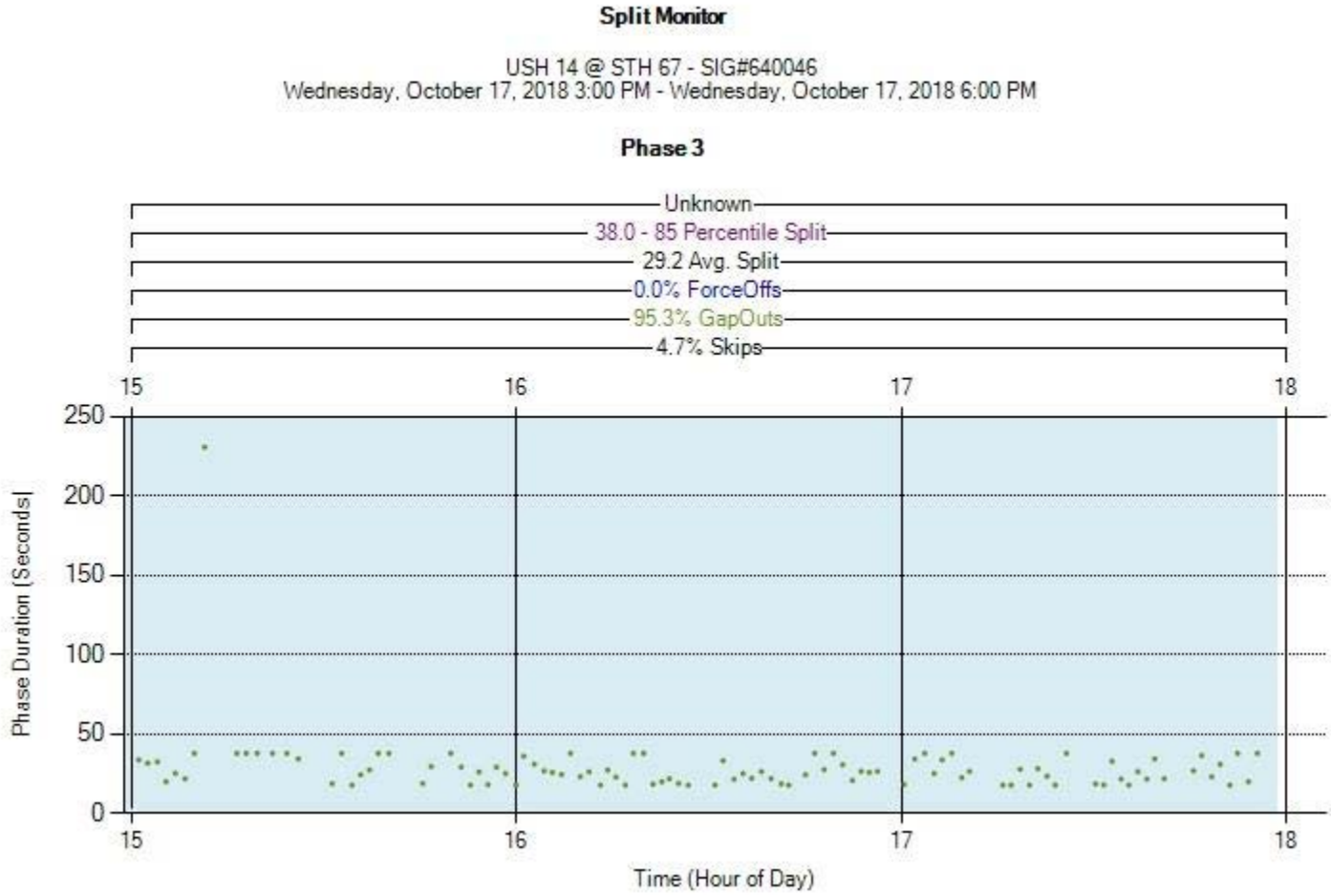
Isolated Signal – WIS 67 & US 14
Synchro Timings
10/16/2018 – 4:00 PM – 5:00 PM



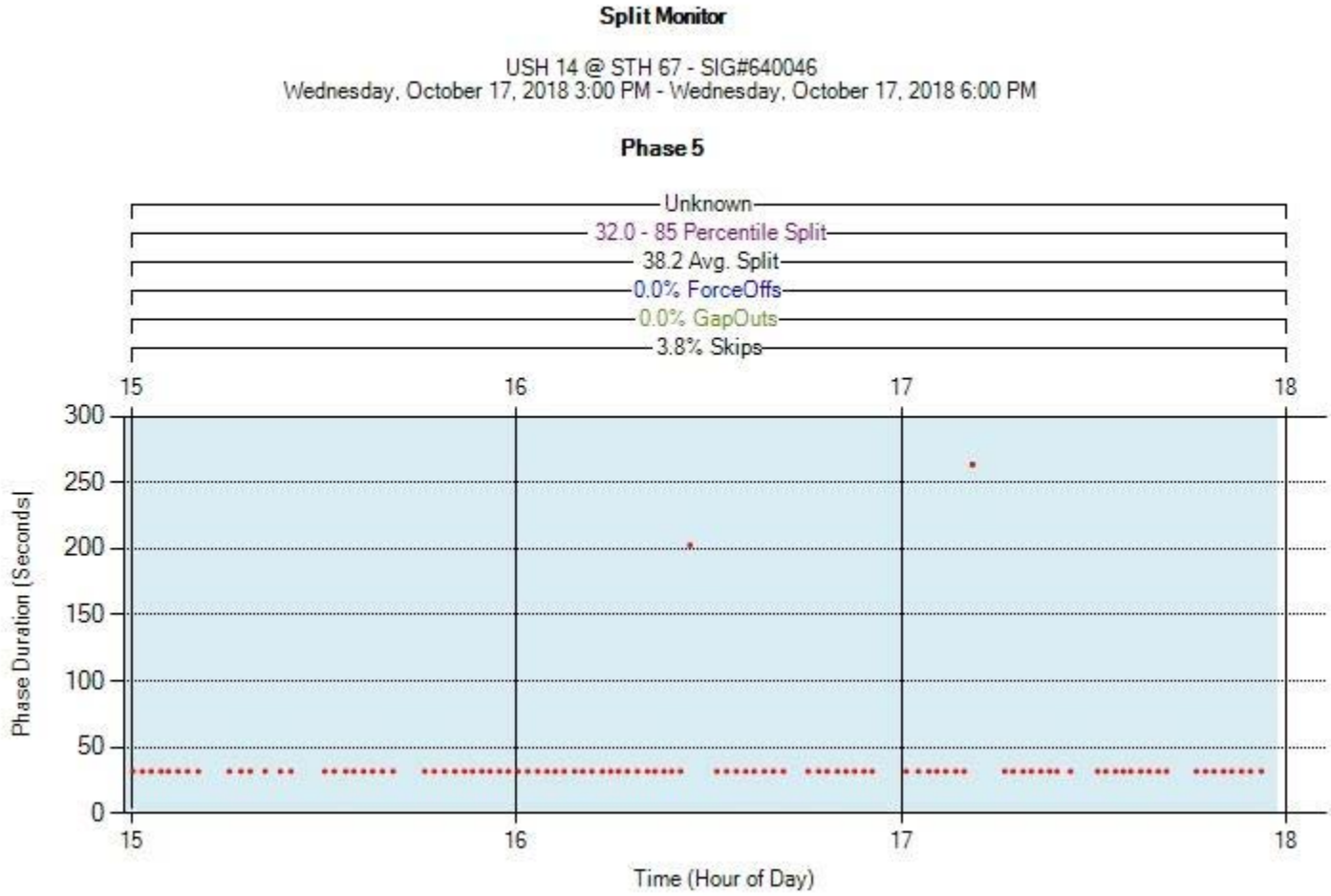
Isolated Signal – WIS 67 & US 14
Synchro Timings
10/17/2018 – 3:00 PM – 6:00 PM



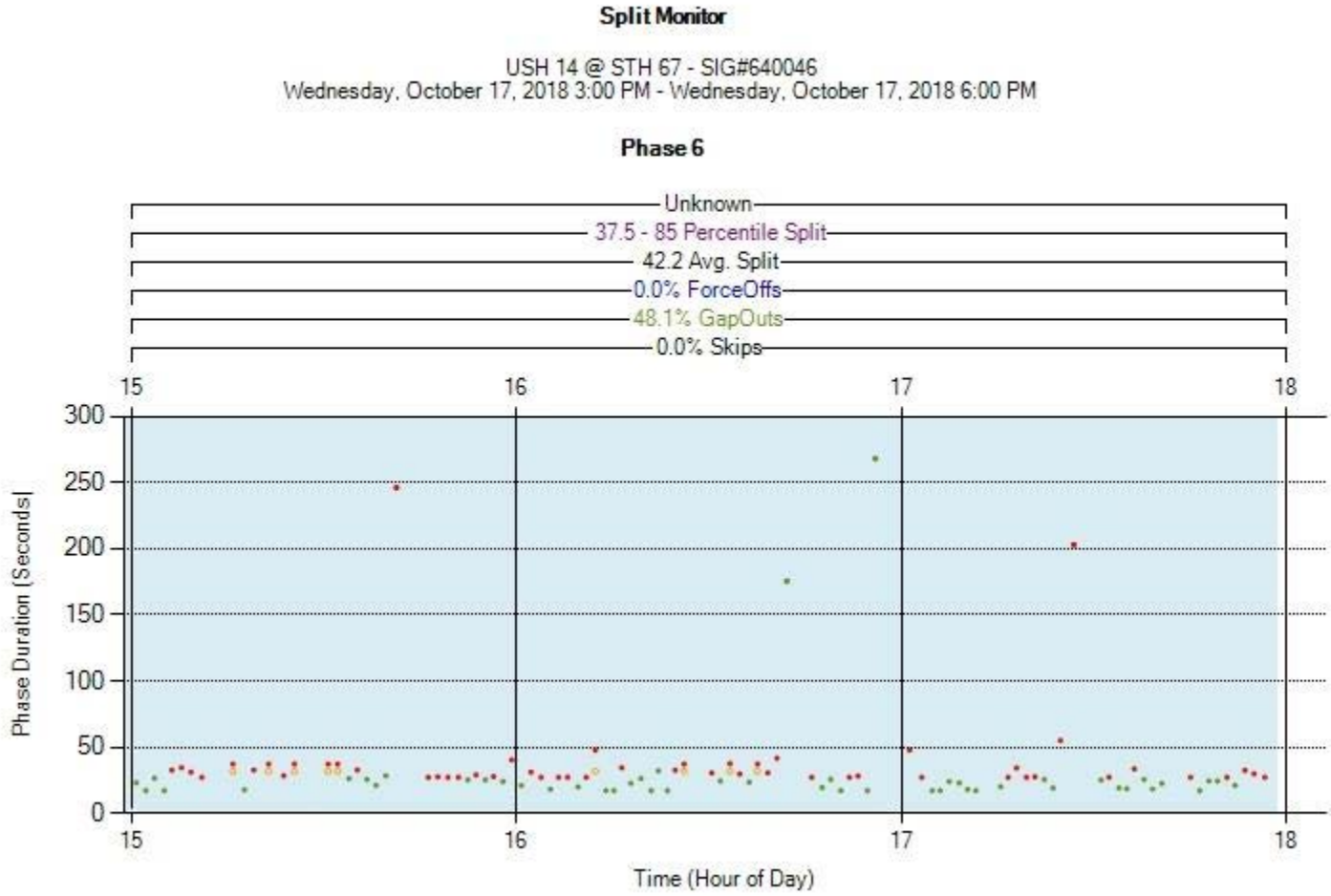
Isolated Signal – WIS 67 & US 14
Synchro Timings
10/17/2018 – 3:00 PM – 6:00 PM



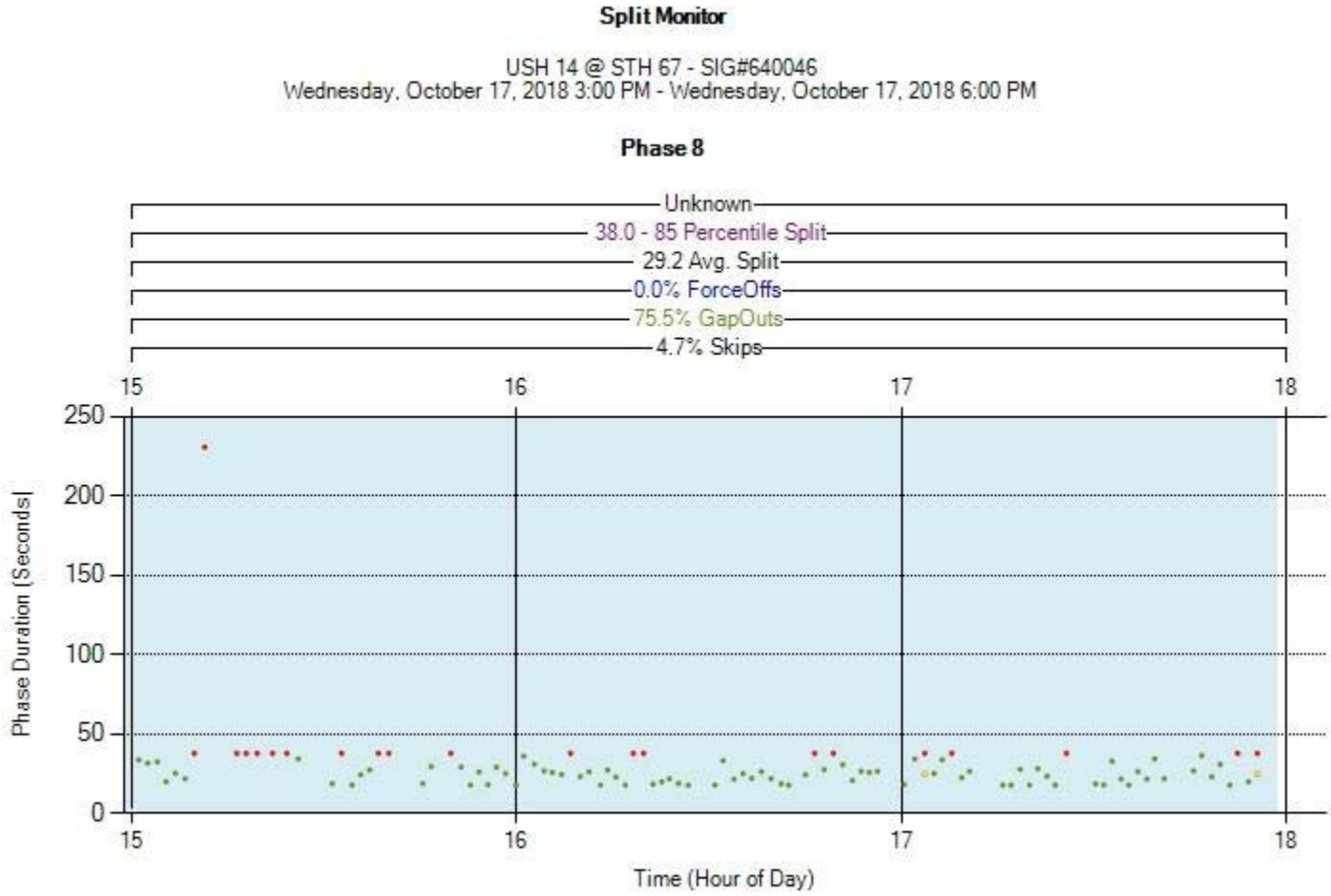
Isolated Signal – WIS 67 & US 14
Synchro Timings
10/17/2018 – 3:00 PM – 6:00 PM



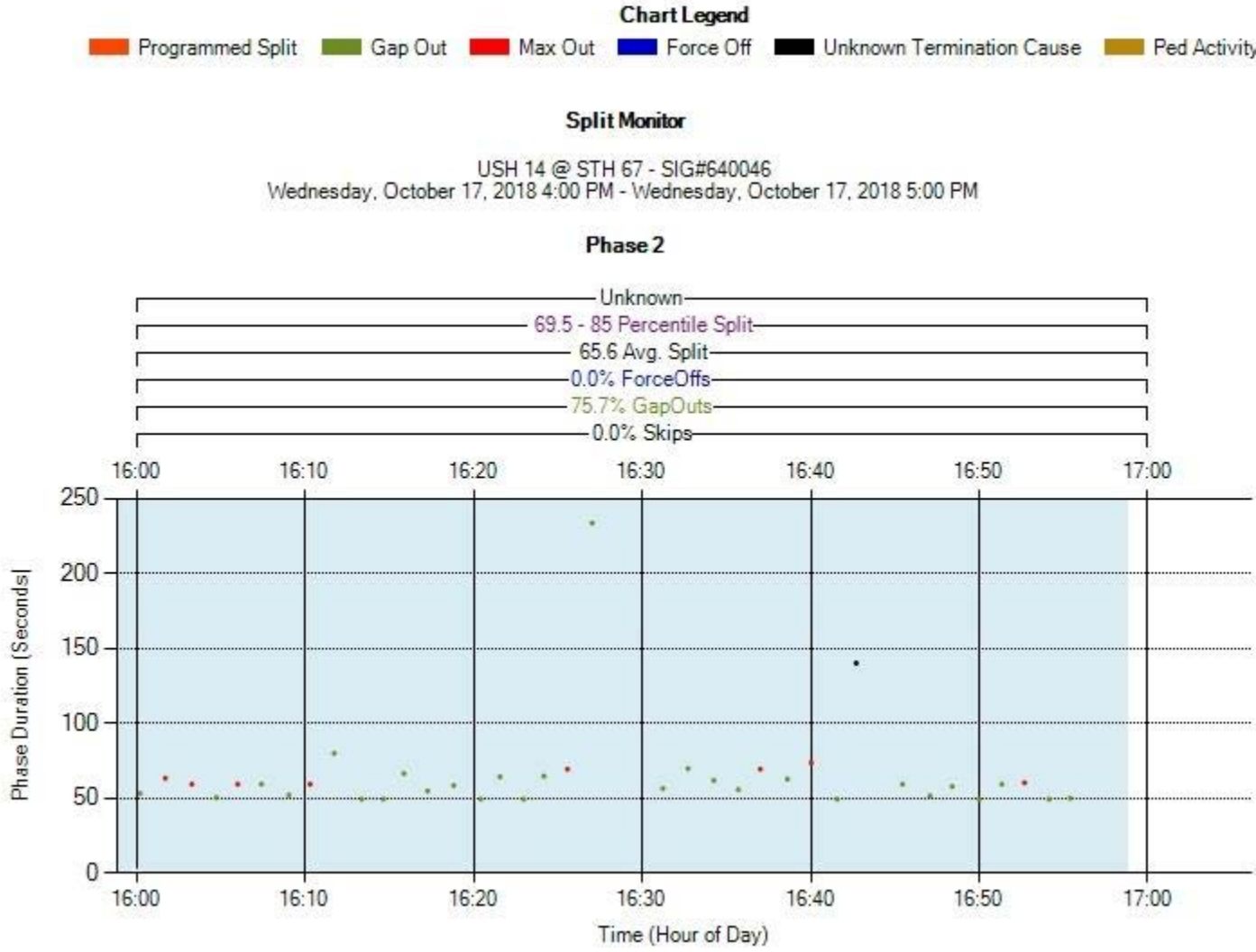
Isolated Signal – WIS 67 & US 14
Synchro Timings
10/17/2018 – 3:00 PM – 6:00 PM



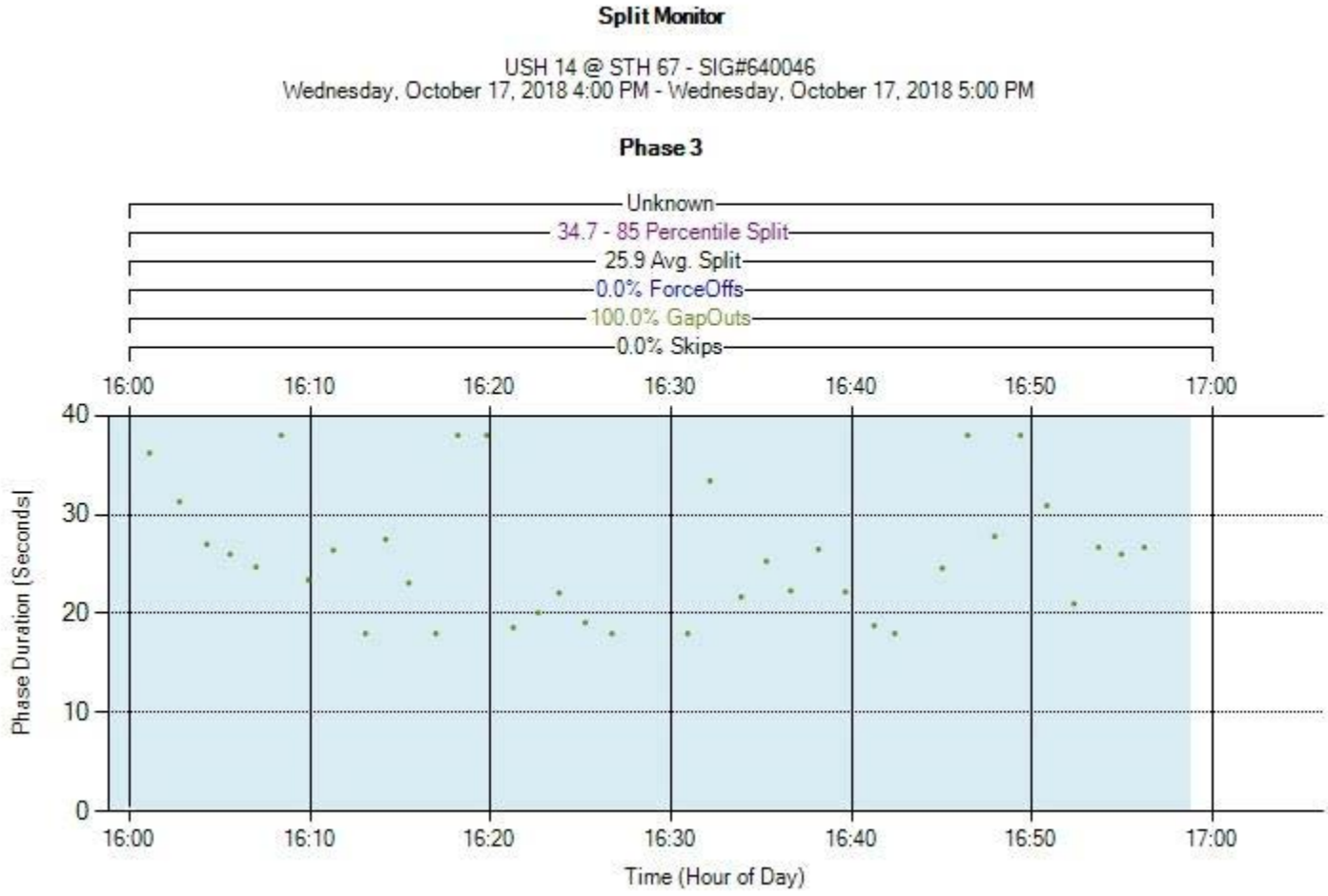
Isolated Signal – WIS 67 & US 14
Synchro Timings
10/17/2018 – 3:00 PM – 6:00 PM



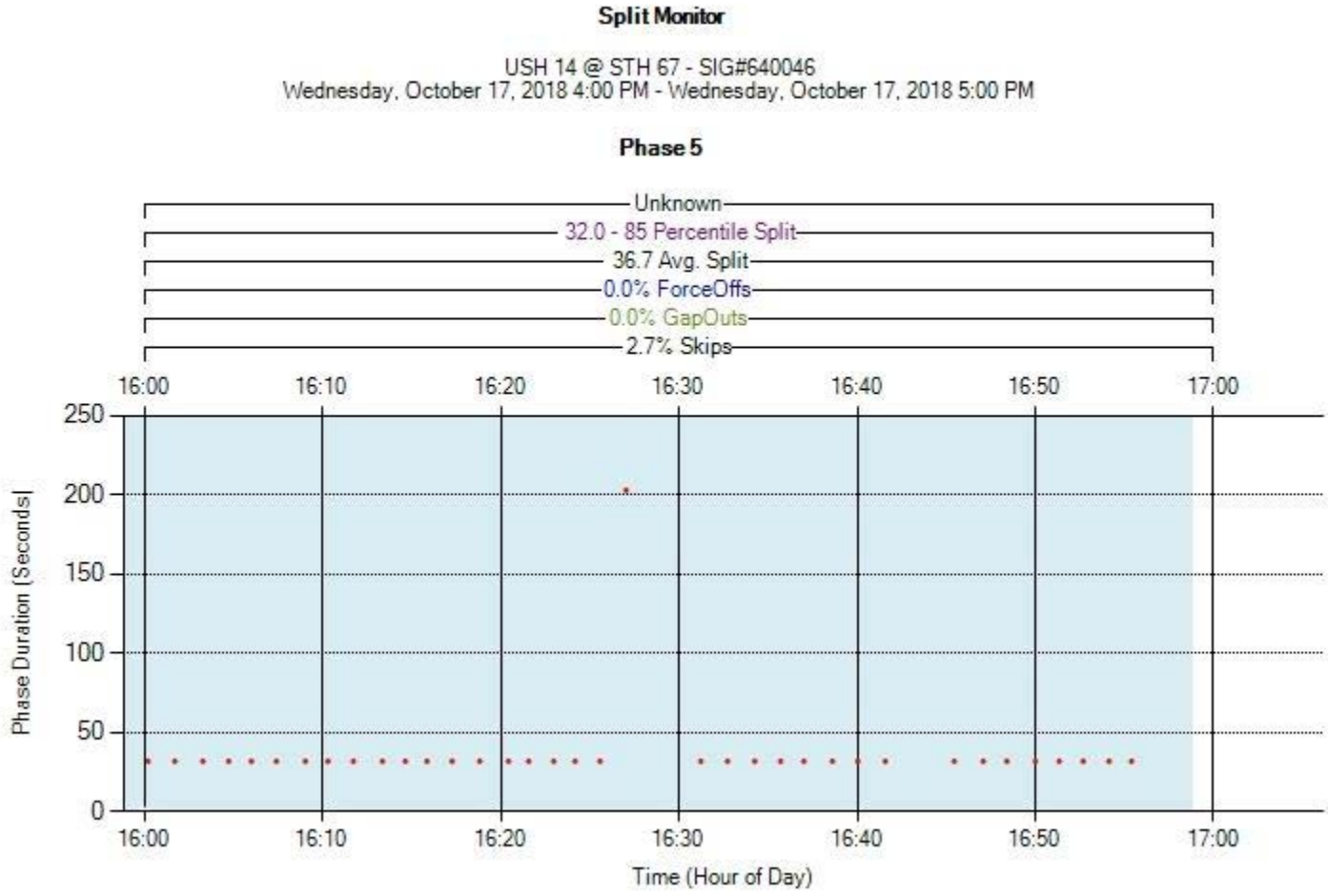
Isolated Signal – WIS 67 & US 14
Synchro Timings
10/17/2018 – 4:00 PM – 5:00 PM



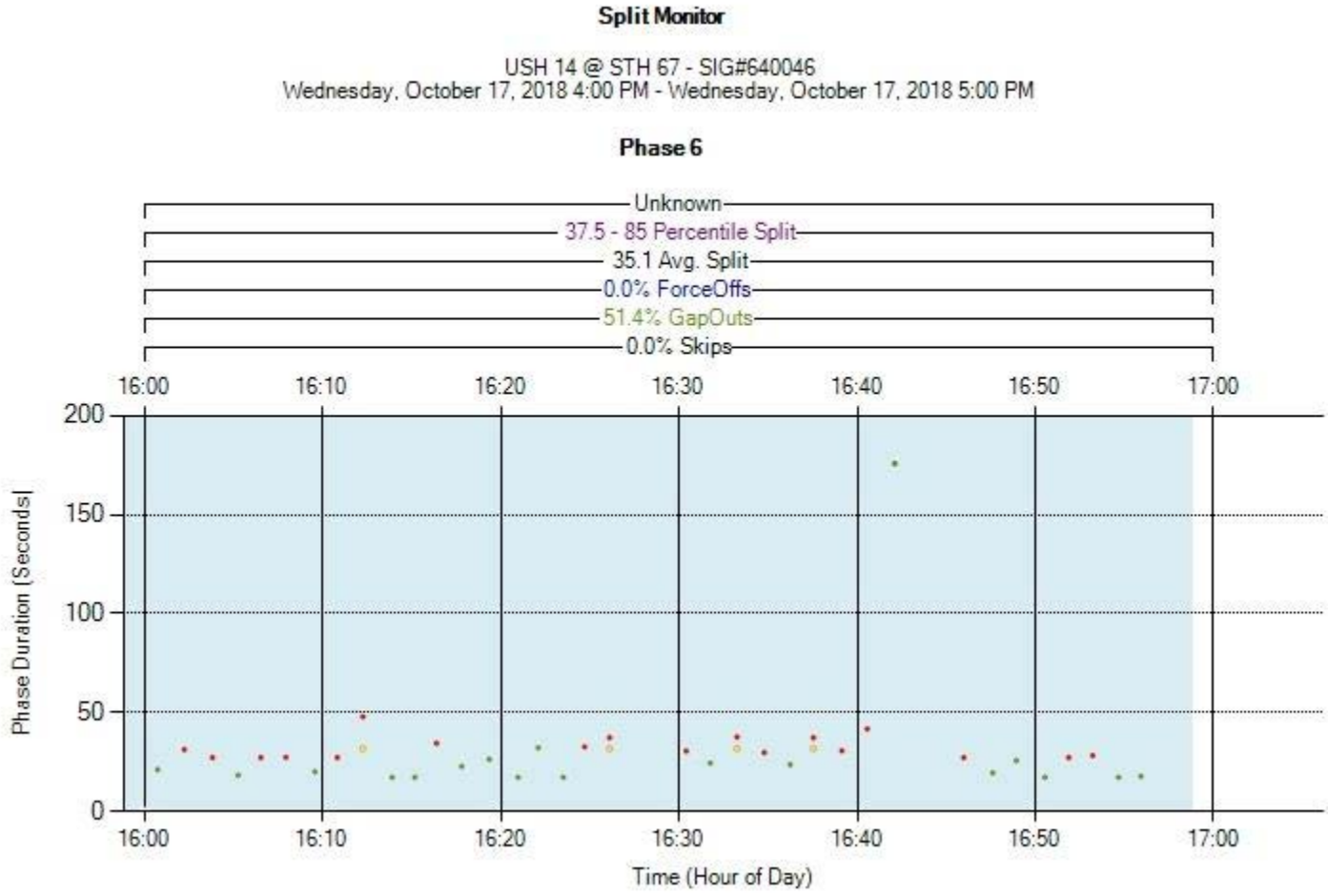
Isolated Signal – WIS 67 & US 14
Synchro Timings
10/17/2018 – 4:00 PM – 5:00 PM



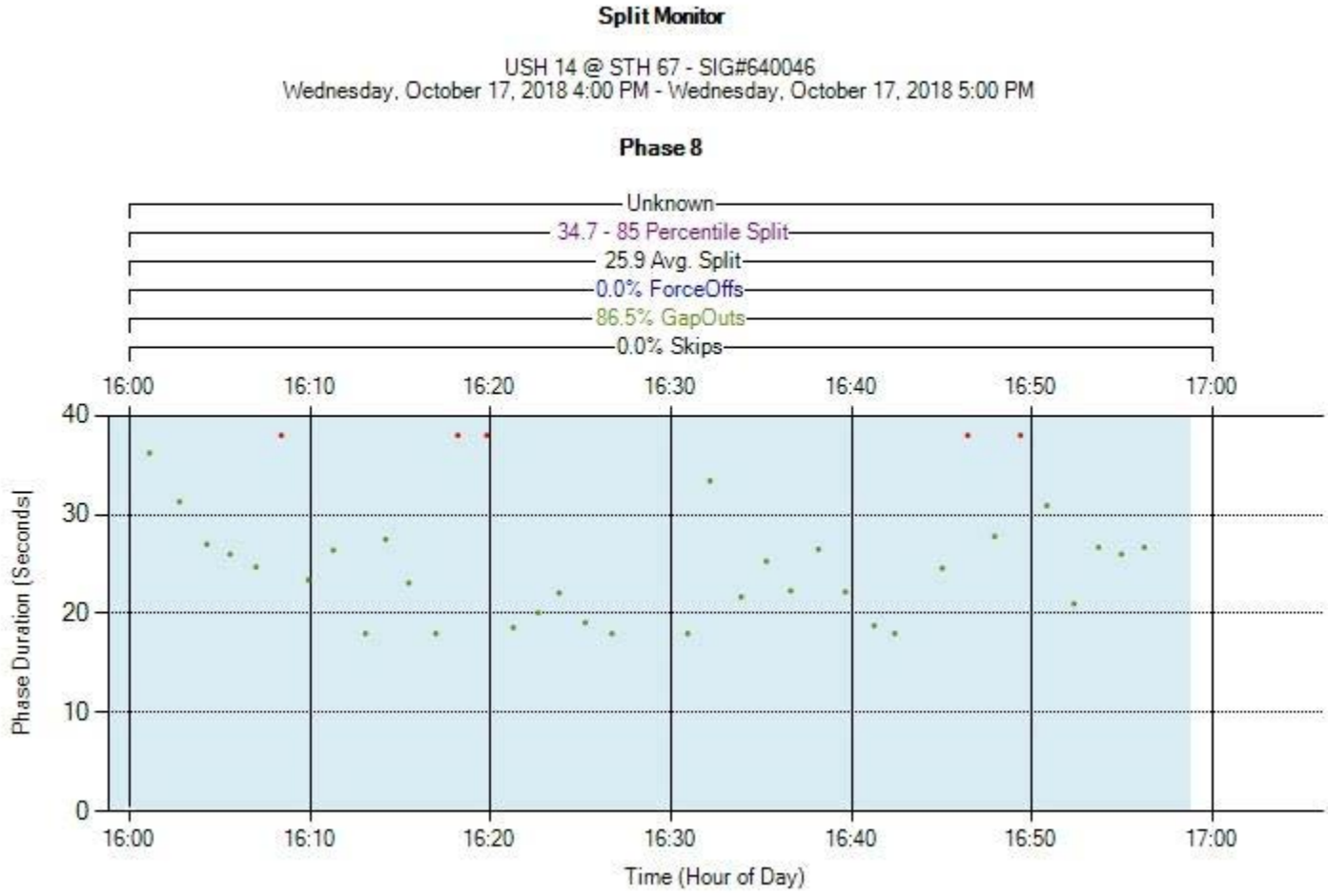
Isolated Signal – WIS 67 & US 14
Synchro Timings
10/17/2018 – 4:00 PM – 5:00 PM



Isolated Signal – WIS 67 & US 14
Synchro Timings
10/17/2018 – 4:00 PM – 5:00 PM

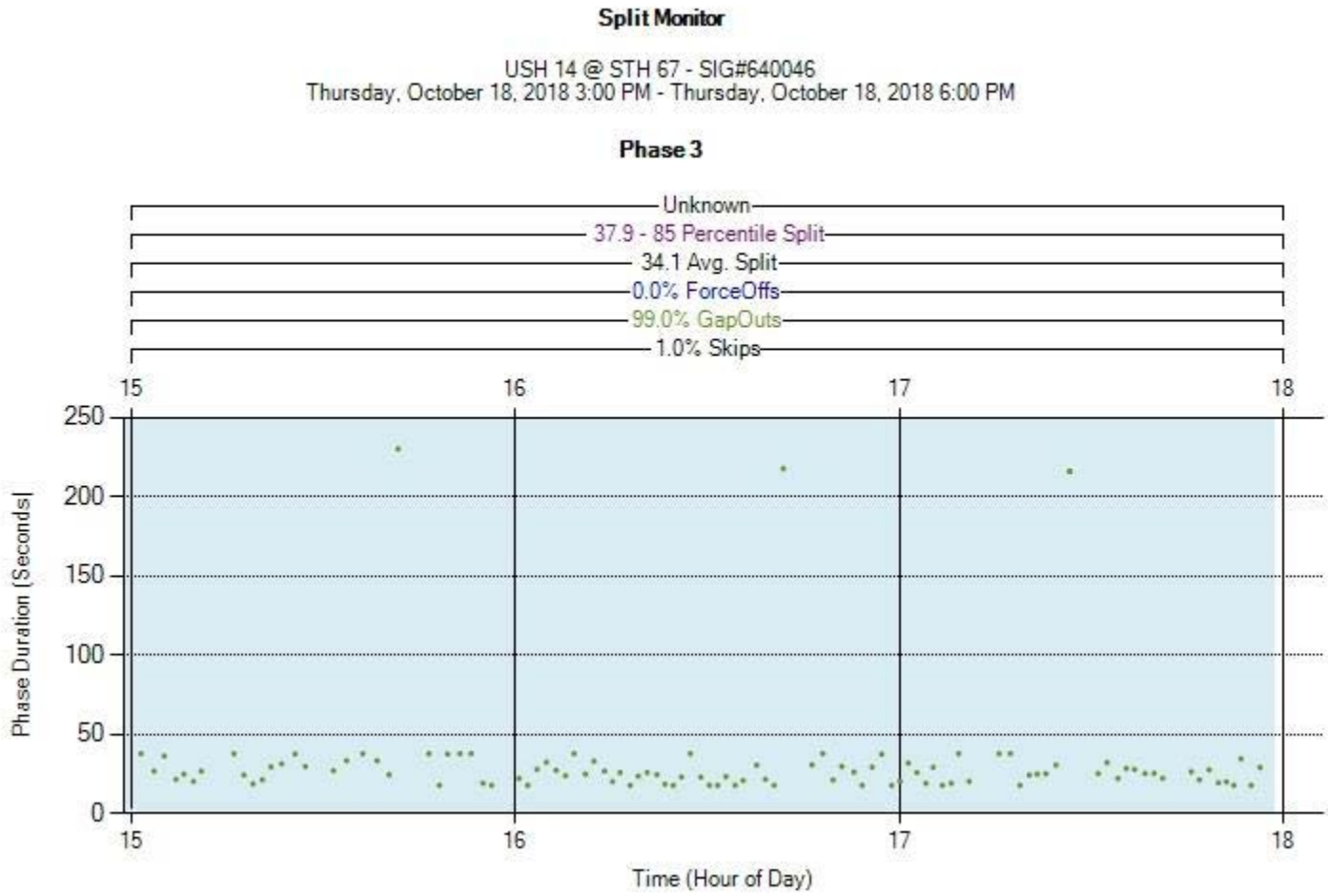


Isolated Signal – WIS 67 & US 14
Synchro Timings
10/17/2018 – 4:00 PM – 5:00 PM

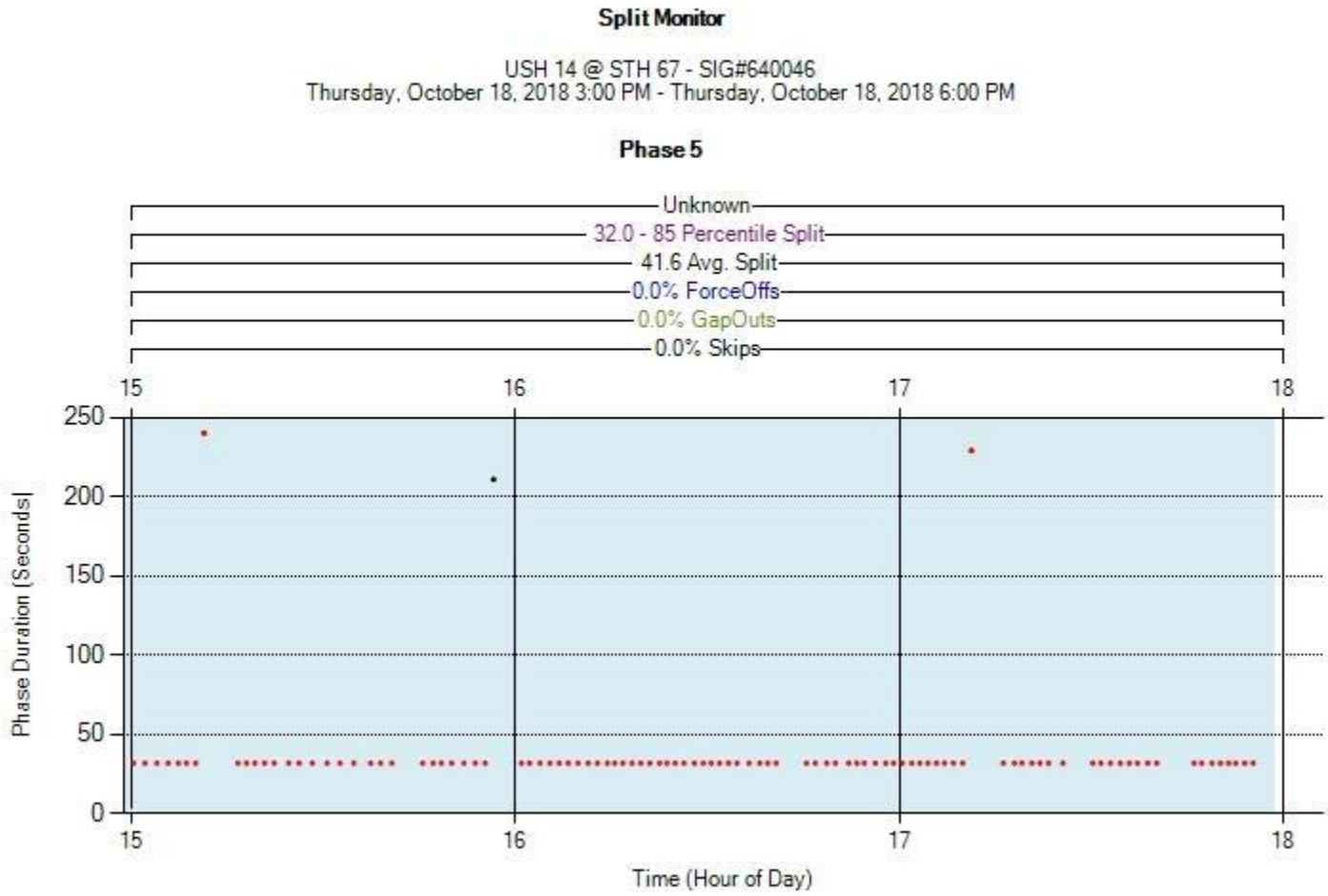


Isolated Signal – WIS 67 & US 14
Synchro Timings
10/18/2018 – 3:00 PM – 6:00 PM

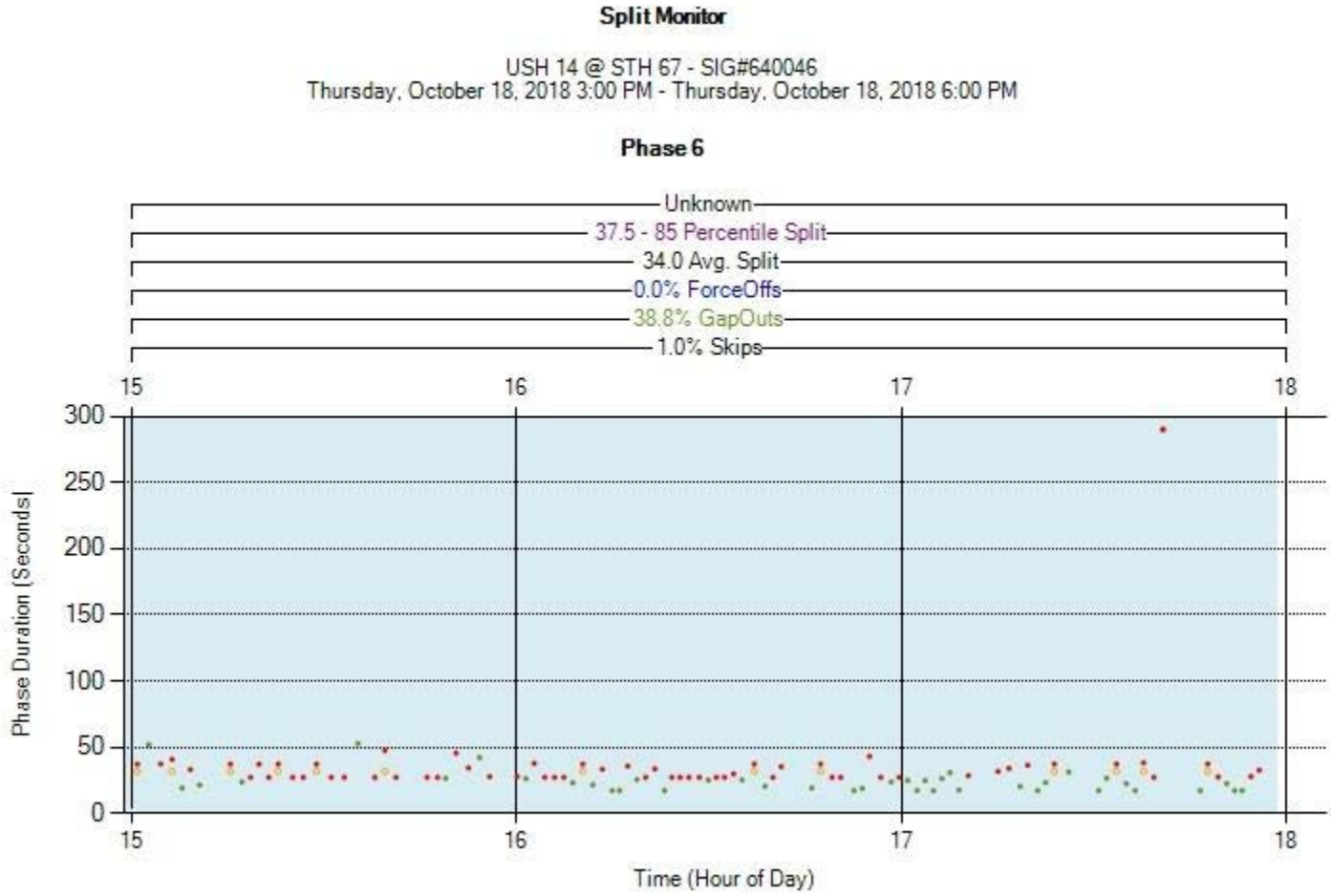
Isolated Signal – WIS 67 & US 14
Synchro Timings
10/18/2018 – 3:00 PM – 6:00 PM



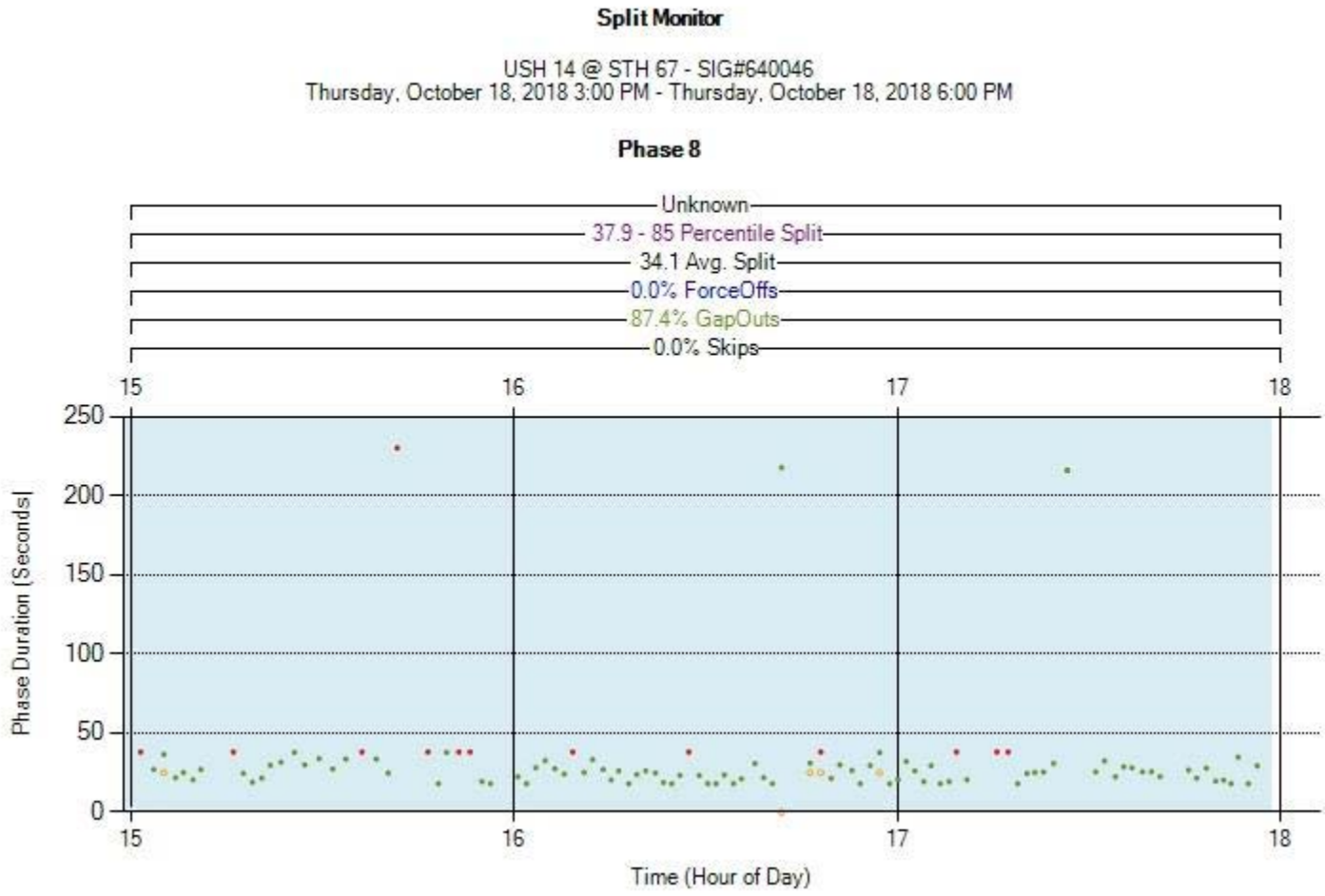
Isolated Signal – WIS 67 & US 14
Synchro Timings
10/18/2018 – 3:00 PM – 6:00 PM



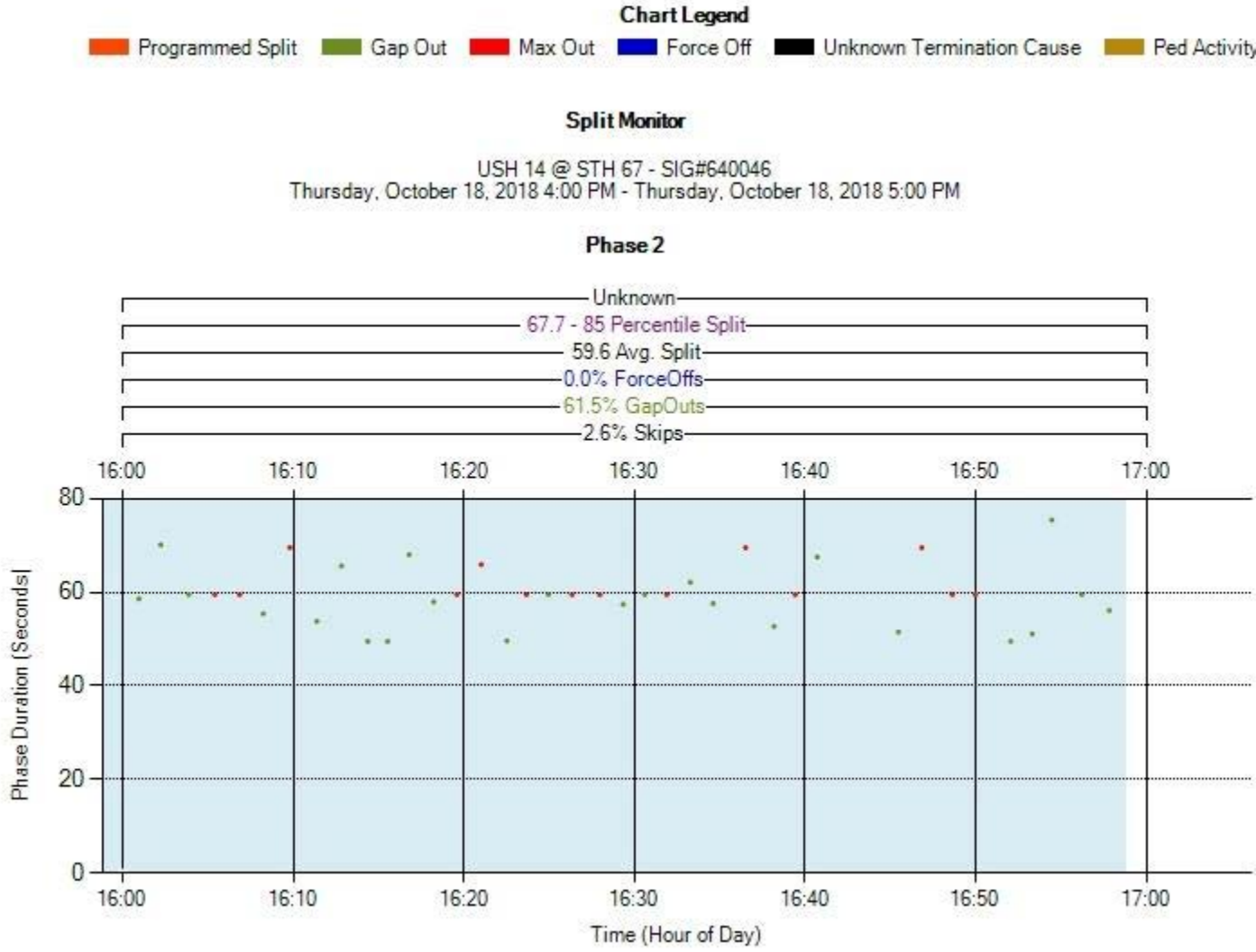
Isolated Signal – WIS 67 & US 14
Synchro Timings
10/18/2018 – 3:00 PM – 6:00 PM



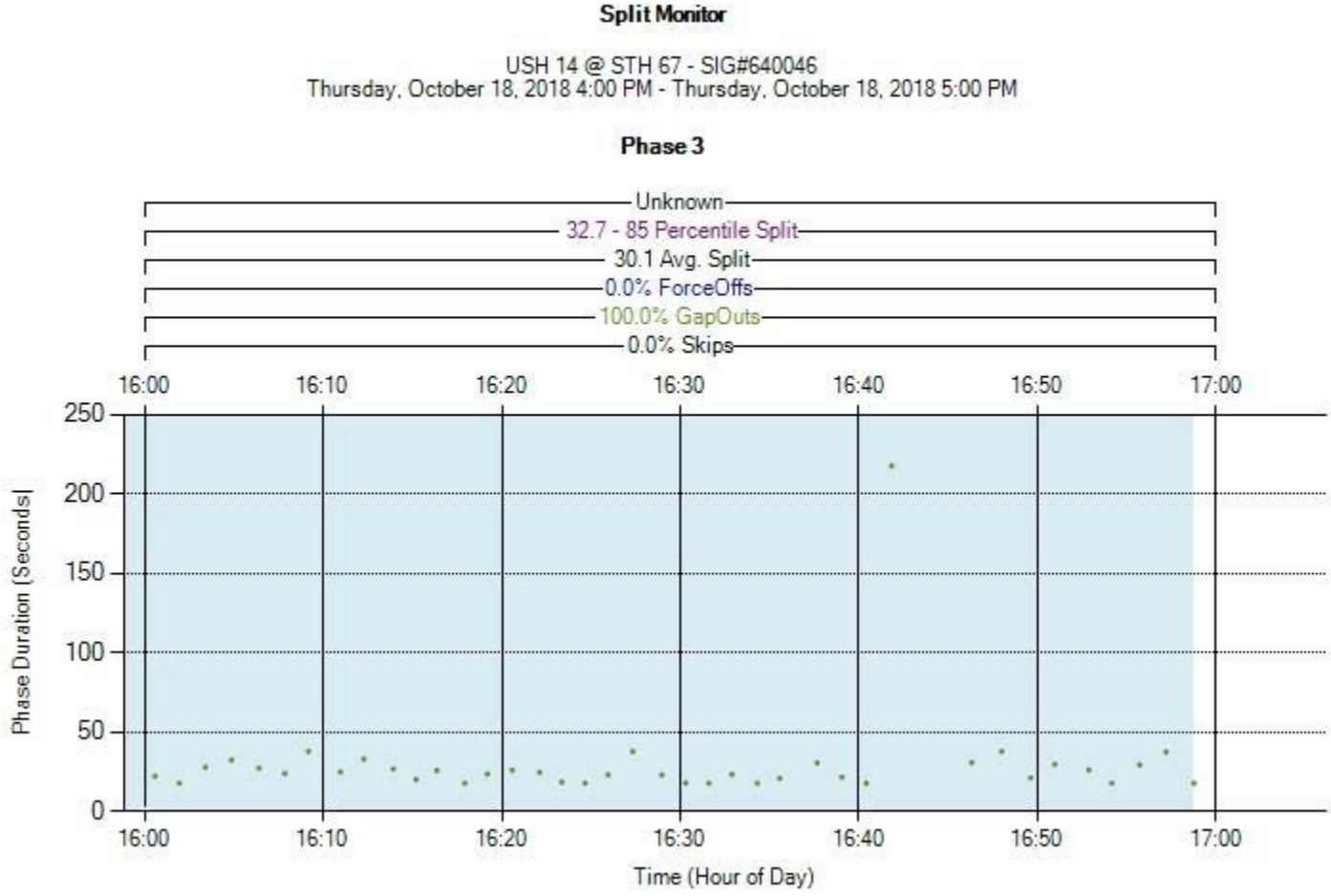
Isolated Signal – WIS 67 & US 14
Synchro Timings
10/18/2018 – 3:00 PM – 6:00 PM



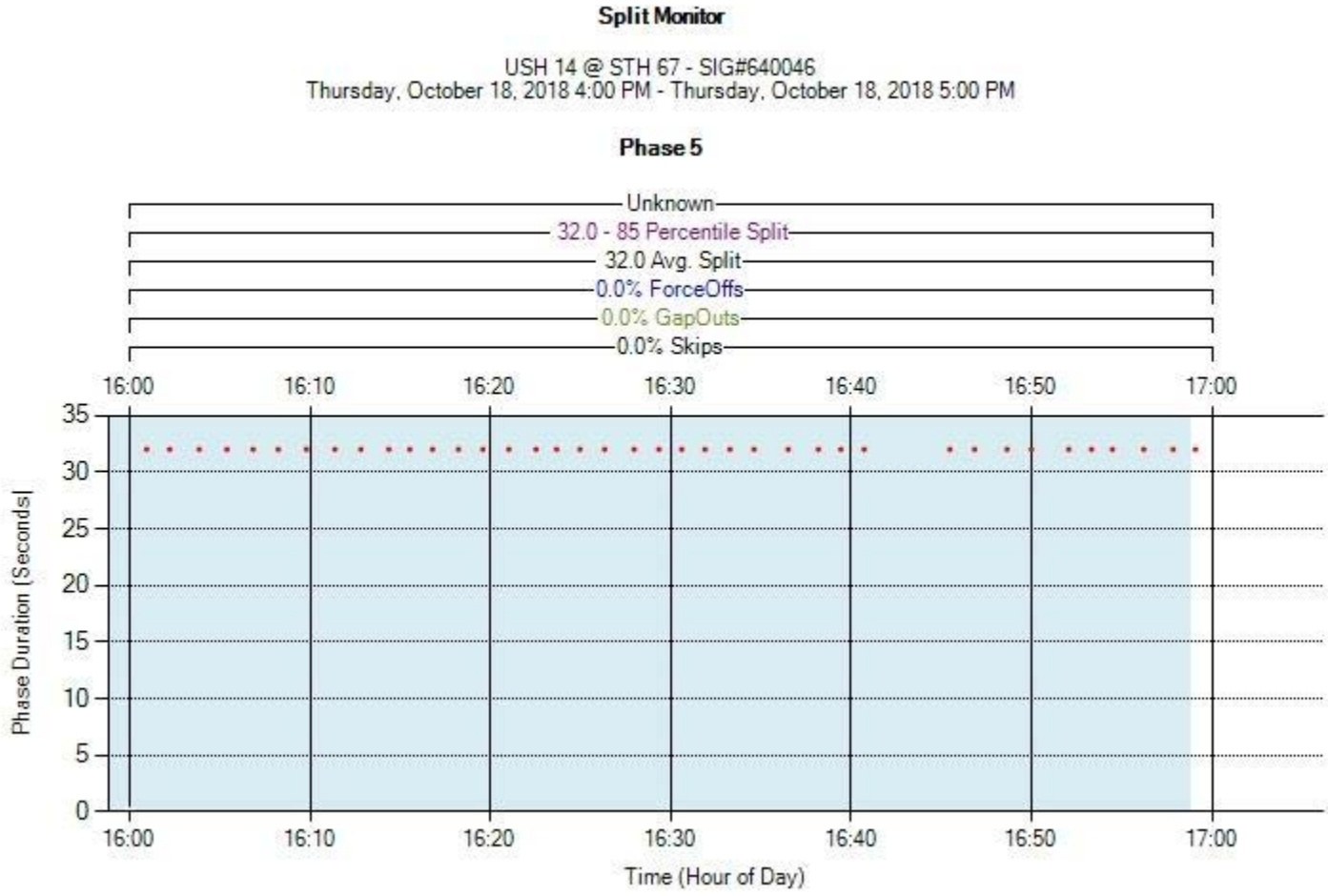
Isolated Signal – WIS 67 & US 14
Synchro Timings
10/18/2018 – 4:00 PM – 5:00 PM



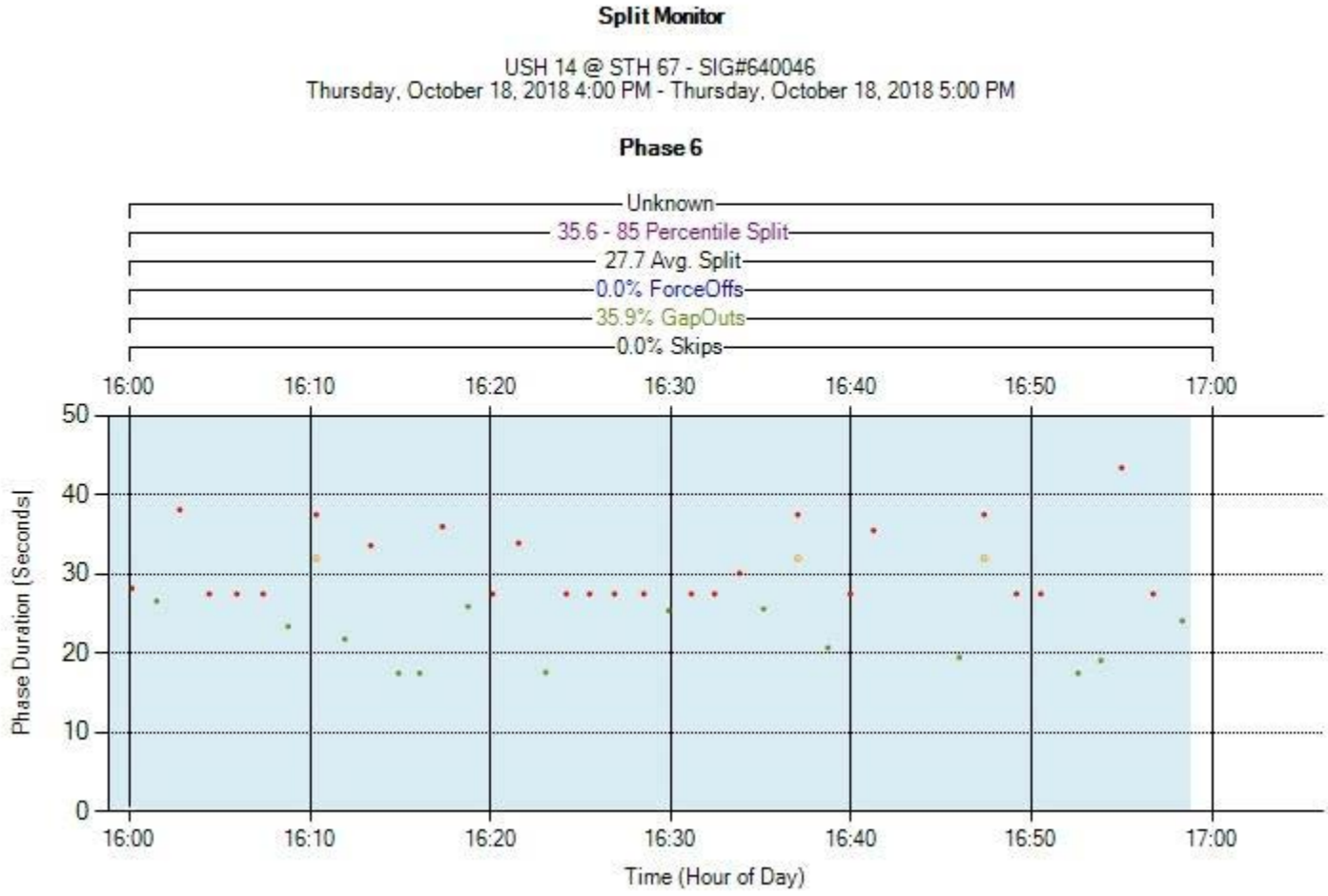
Isolated Signal – WIS 67 & US 14
Synchro Timings
10/18/2018 – 4:00 PM – 5:00 PM



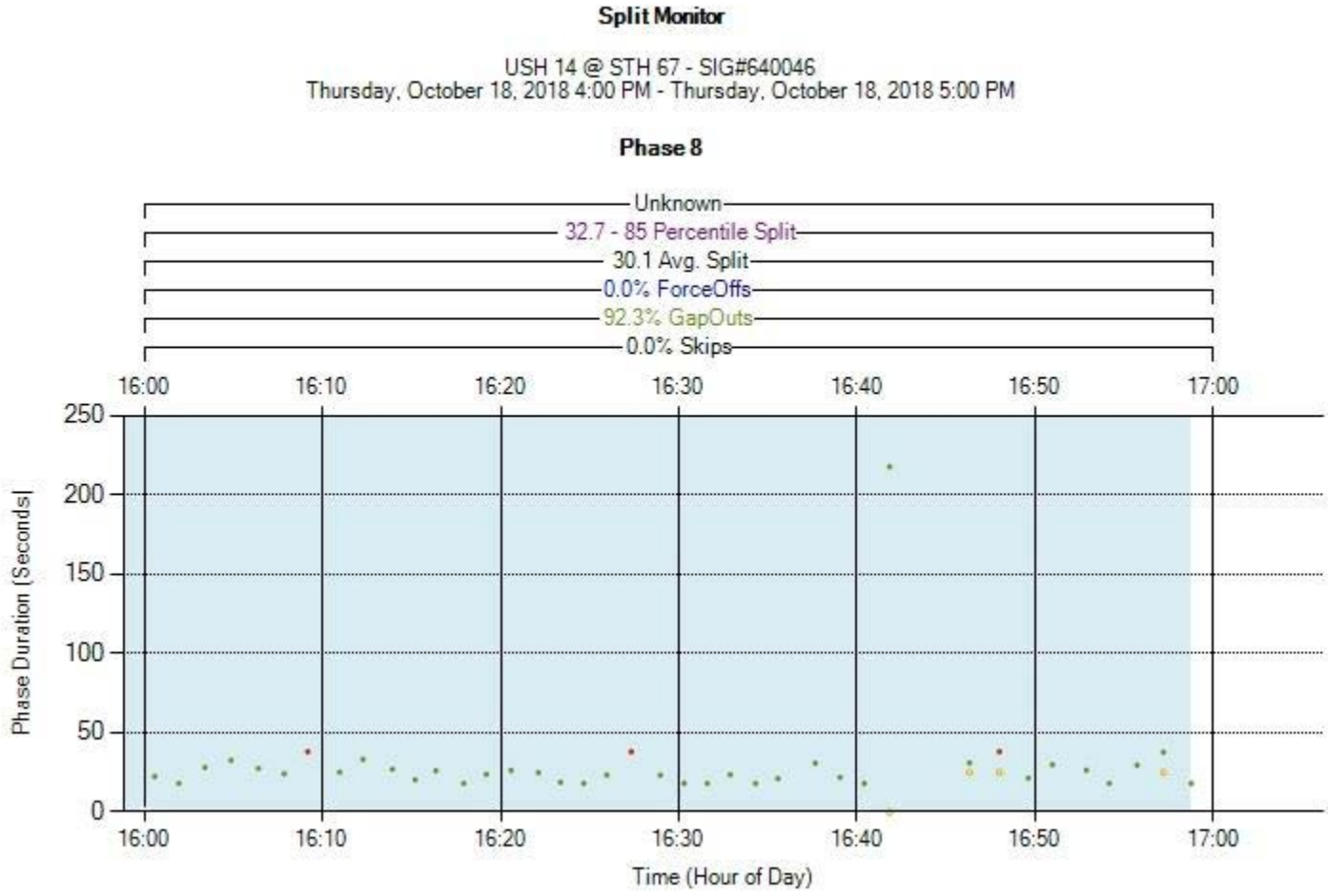
Isolated Signal – WIS 67 & US 14
Synchro Timings
10/18/2018 – 4:00 PM – 5:00 PM



Isolated Signal – WIS 67 & US 14
Synchro Timings
10/18/2018 – 4:00 PM – 5:00 PM

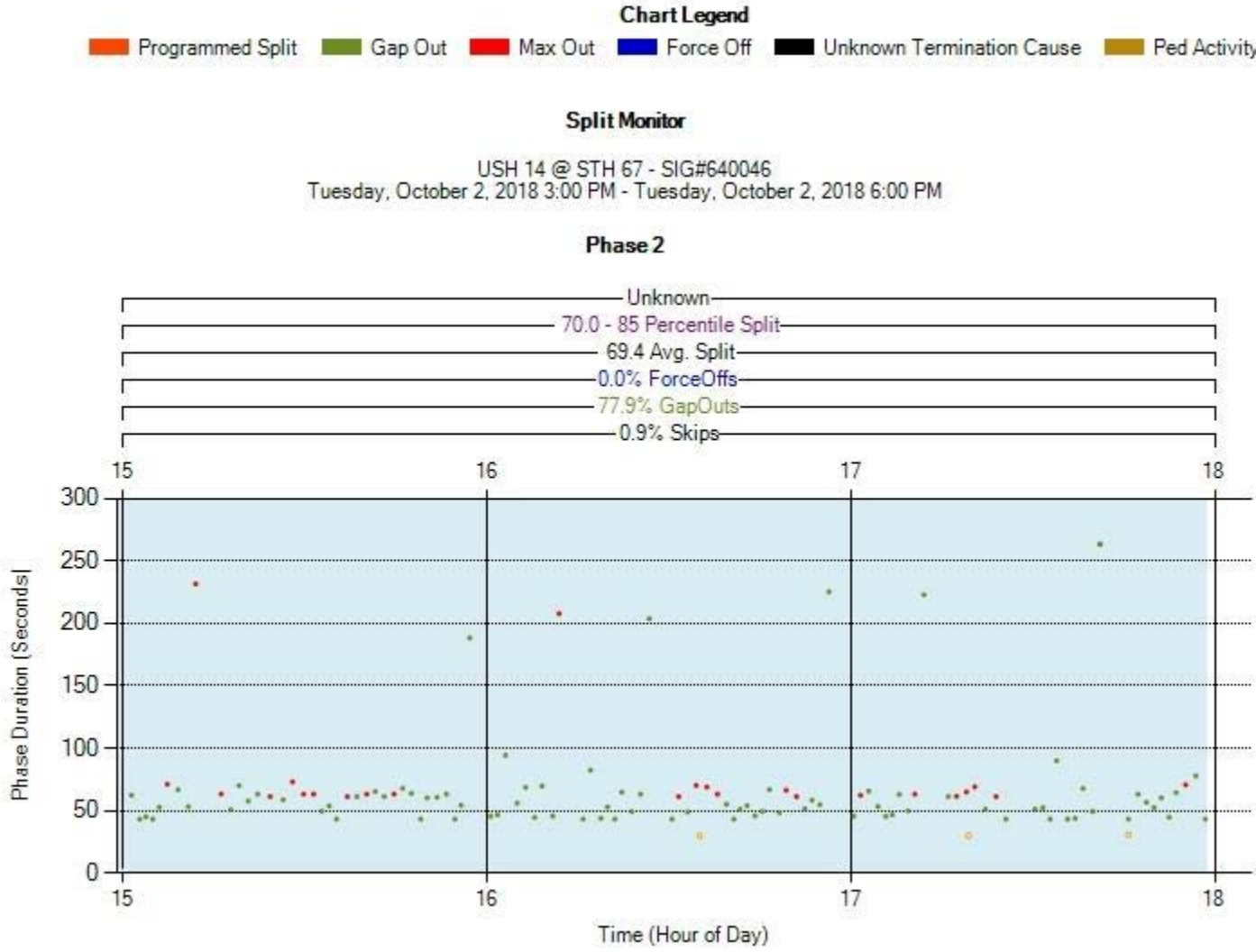


Isolated Signal – WIS 67 & US 14
Synchro Timings
10/18/2018 – 4:00 PM – 5:00 PM

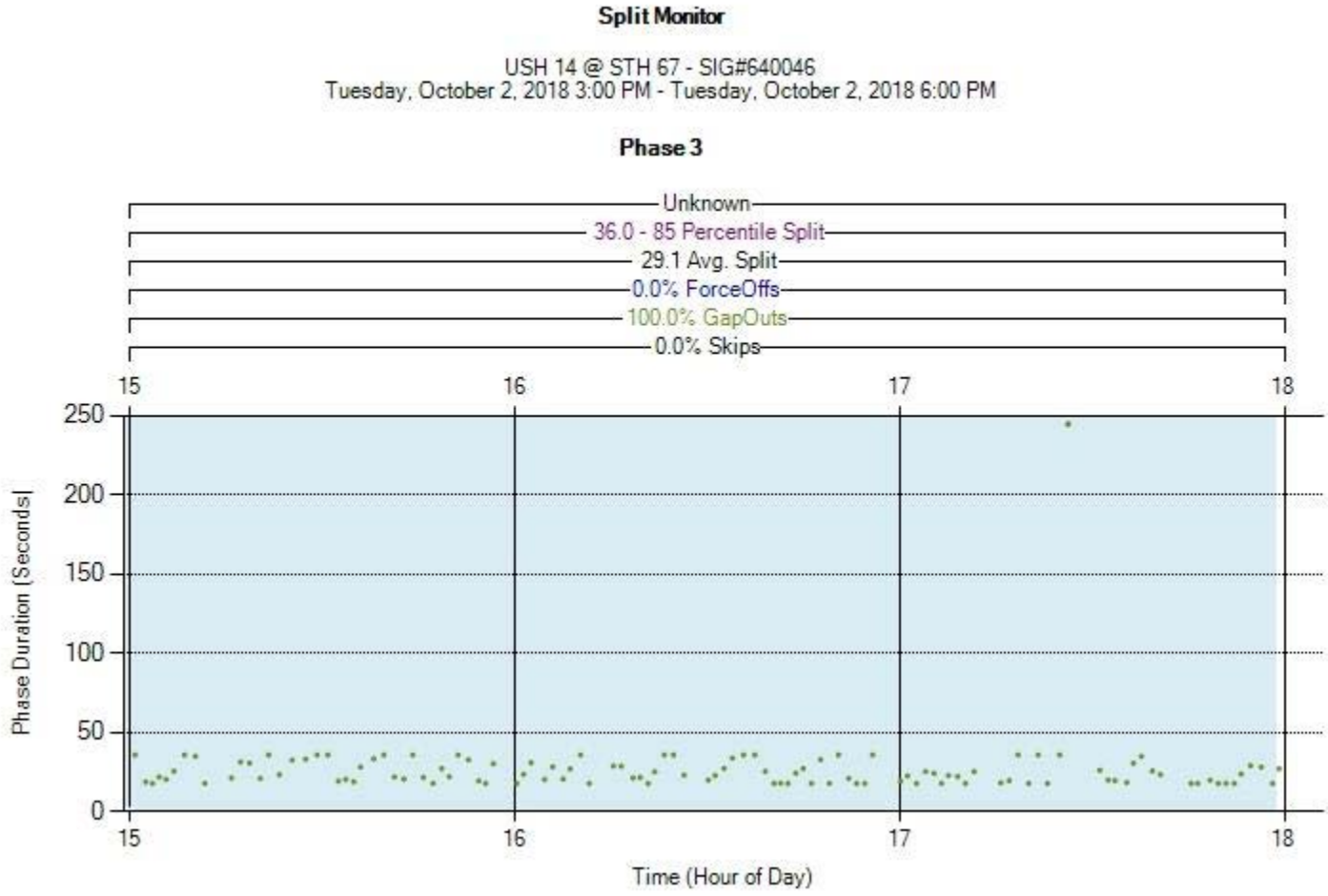


WisBOOM Outputs
WIS 67 & US 14
Vistro Optimized Timings

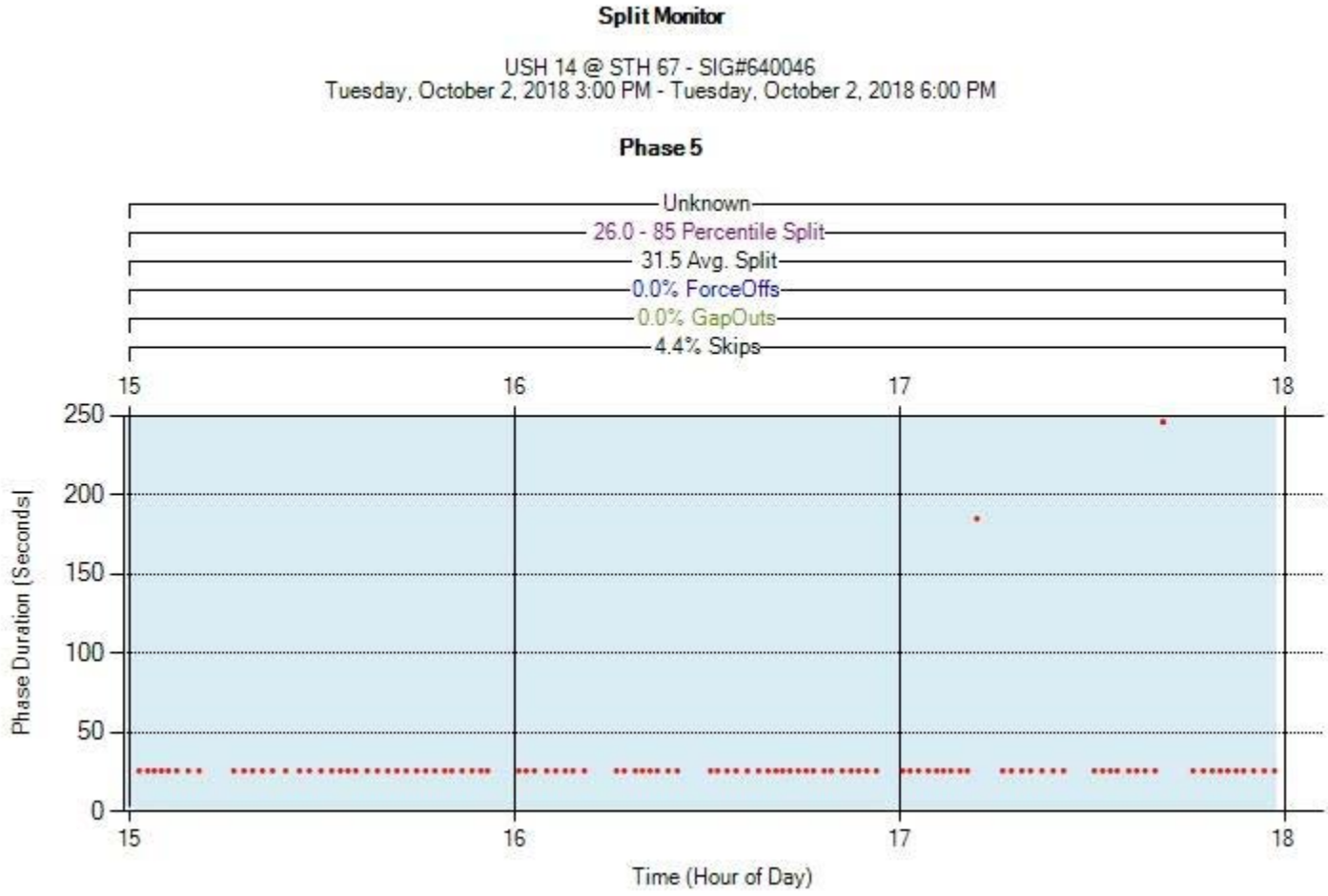
Isolated Signal – WIS 67 & US 14
Vistro Timings
10/2/2018 – 3:00 PM – 6:00 PM



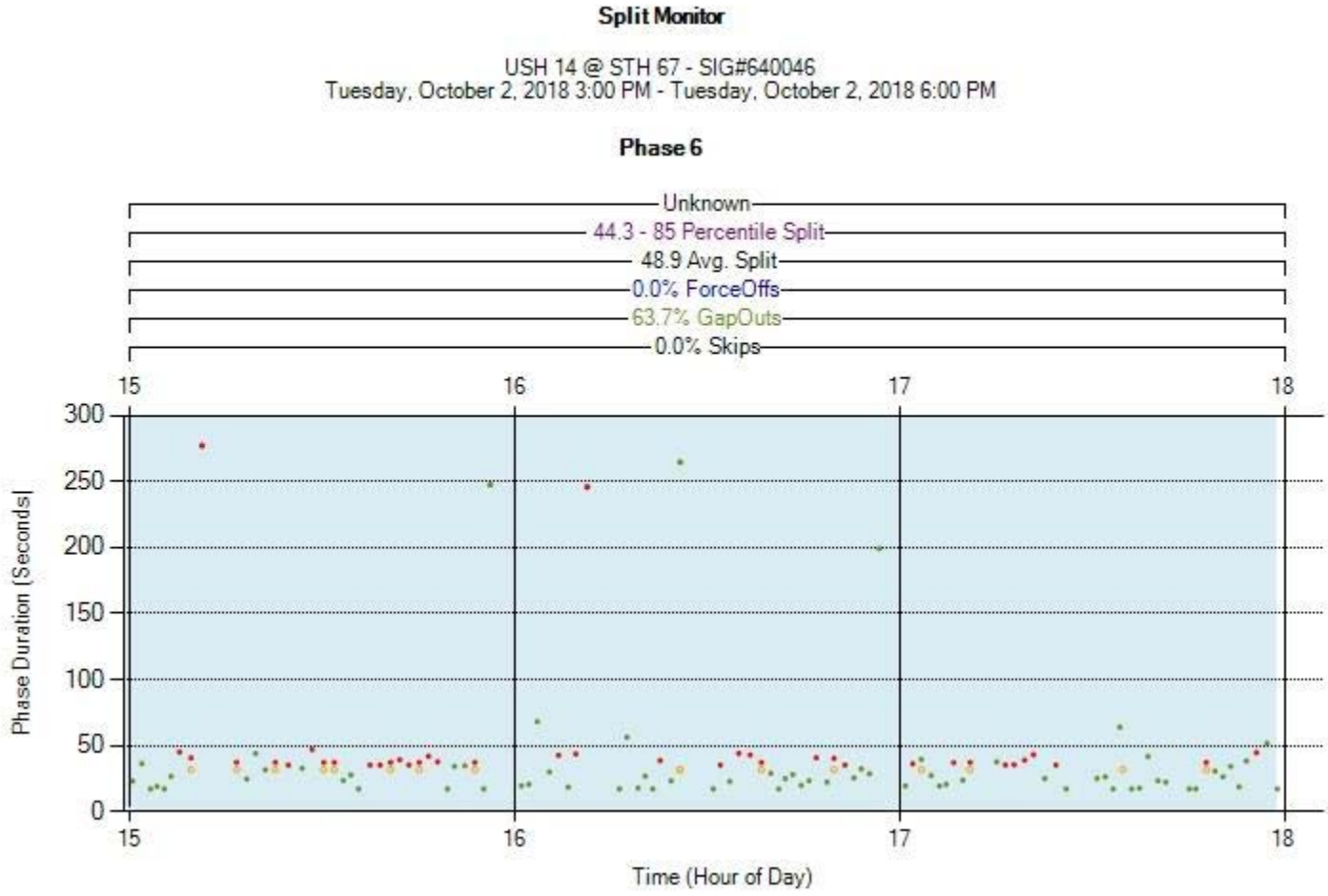
Isolated Signal – WIS 67 & US 14
Vistro Timings
10/2/2018 – 3:00 PM – 6:00 PM



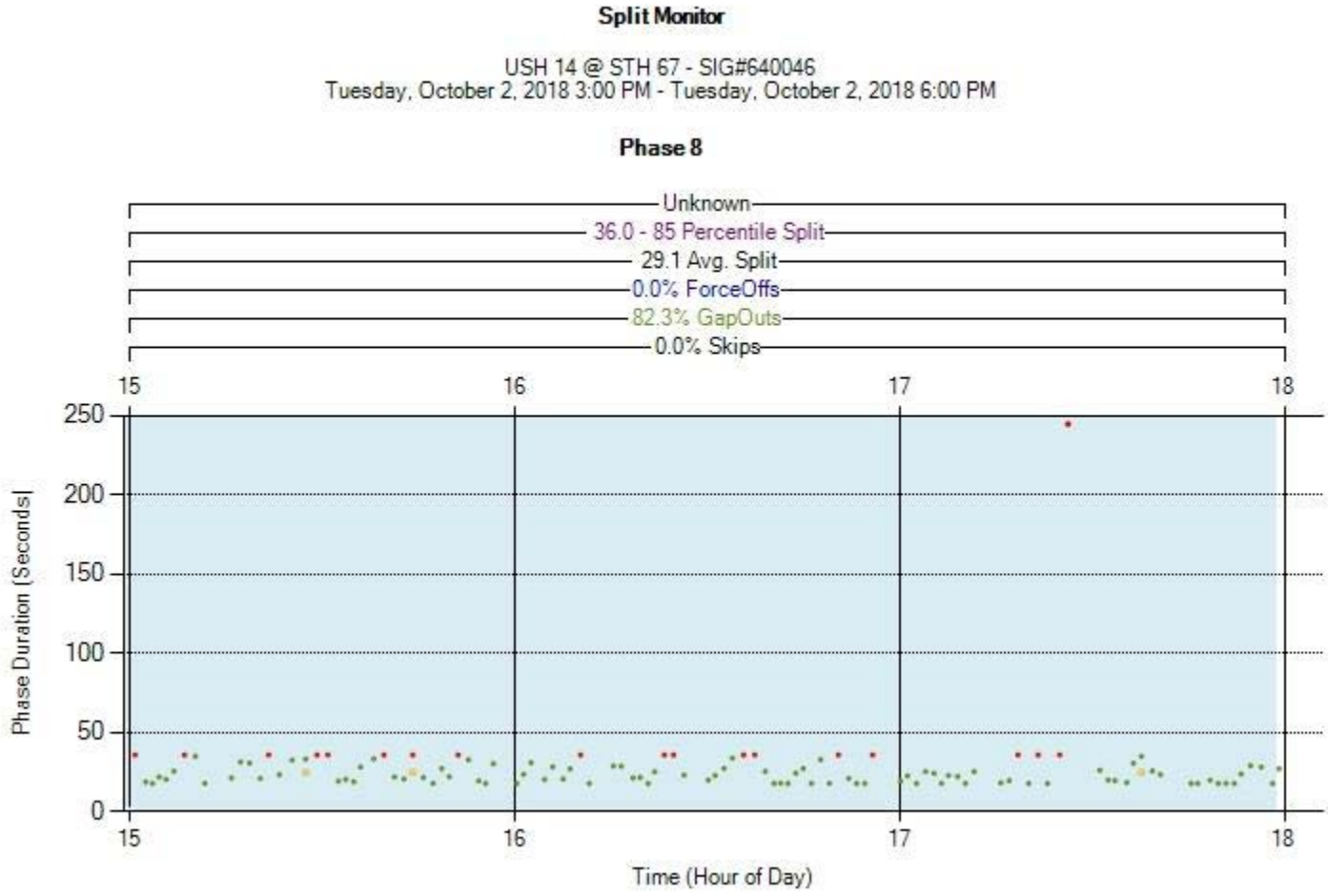
Isolated Signal – WIS 67 & US 14
Vistro Timings
10/2/2018 – 3:00 PM – 6:00 PM



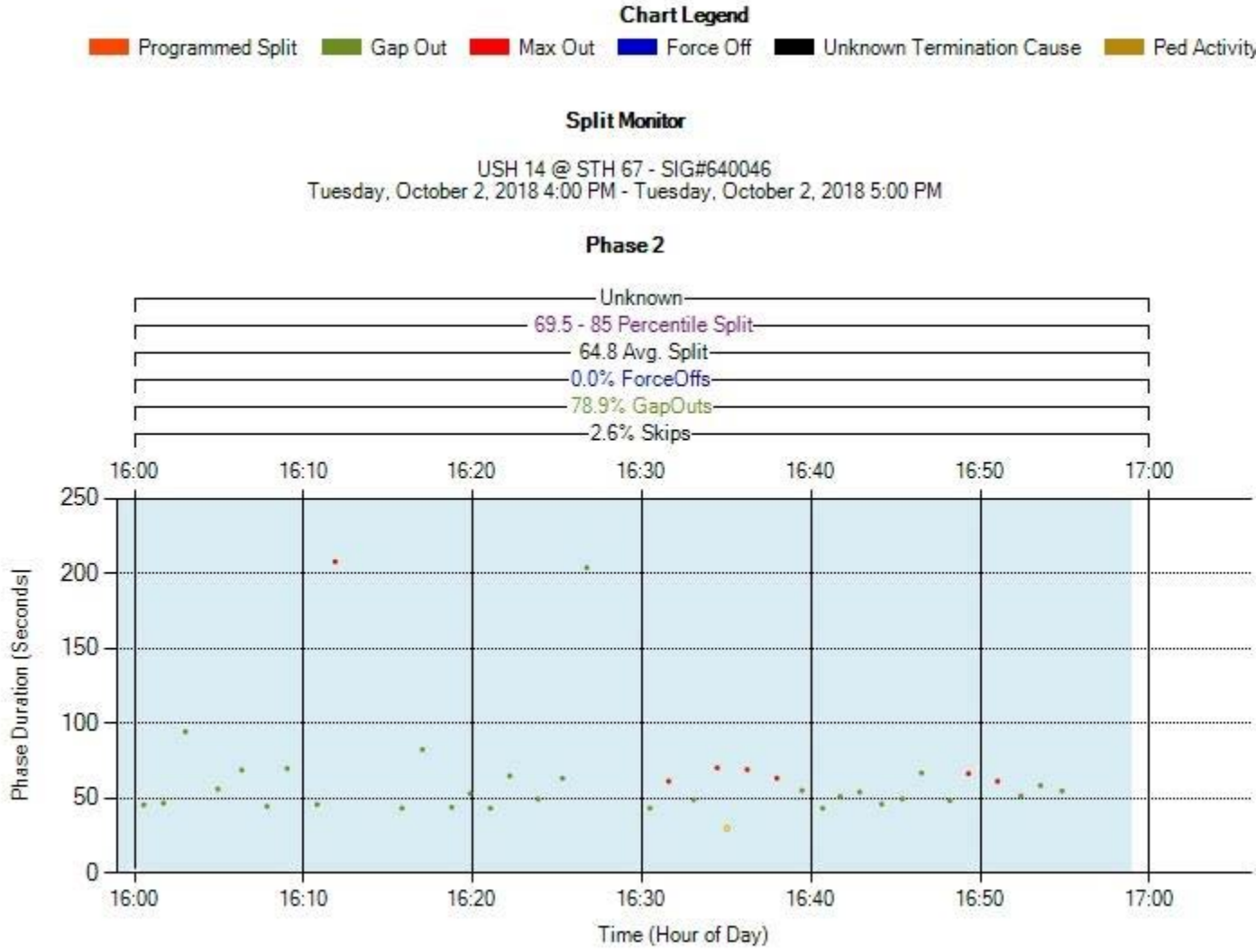
Isolated Signal – WIS 67 & US 14
Vistro Timings
10/2/2018 – 3:00 PM – 6:00 PM



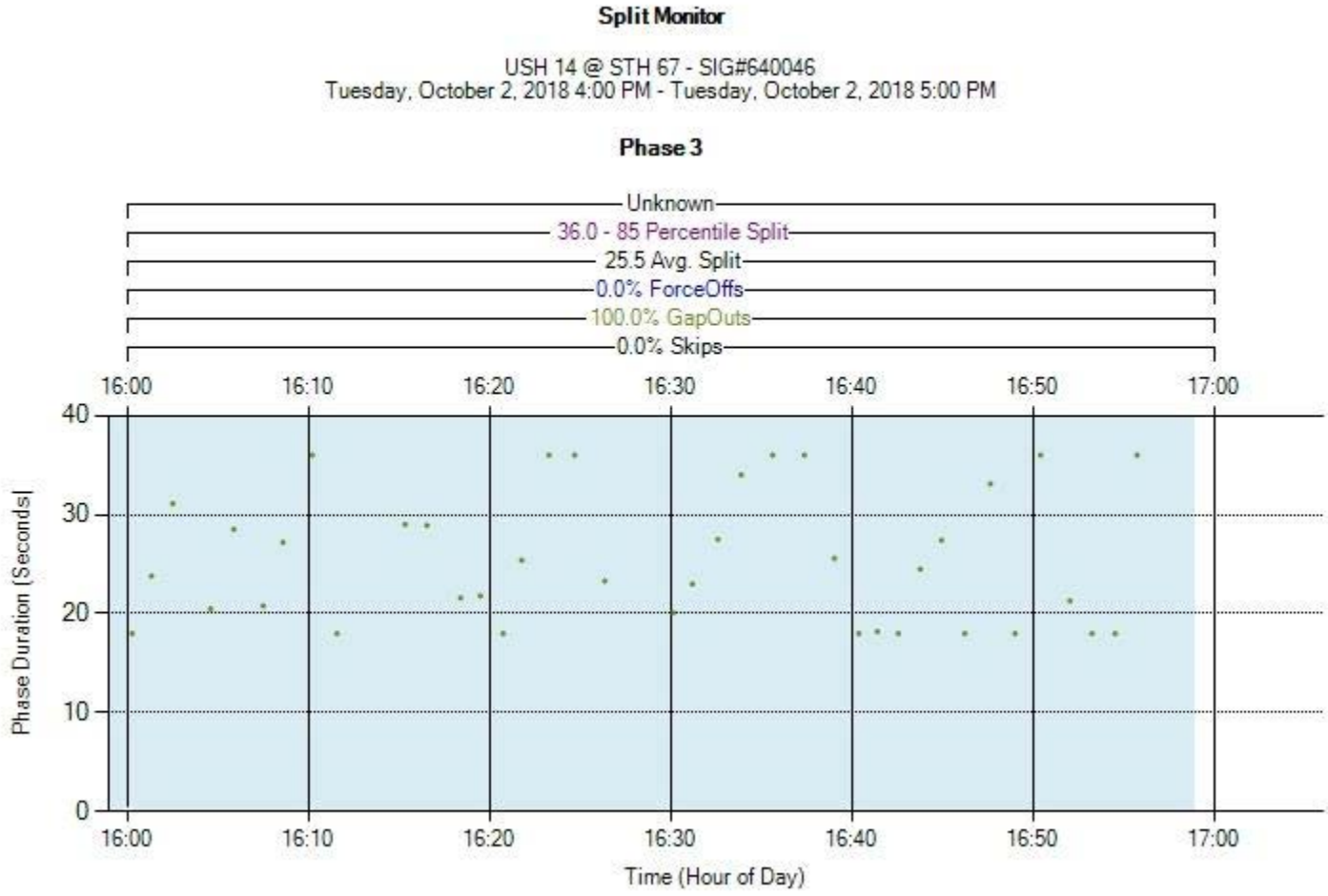
Isolated Signal – WIS 67 & US 14
Vistro Timings
10/2/2018 – 3:00 PM – 6:00 PM



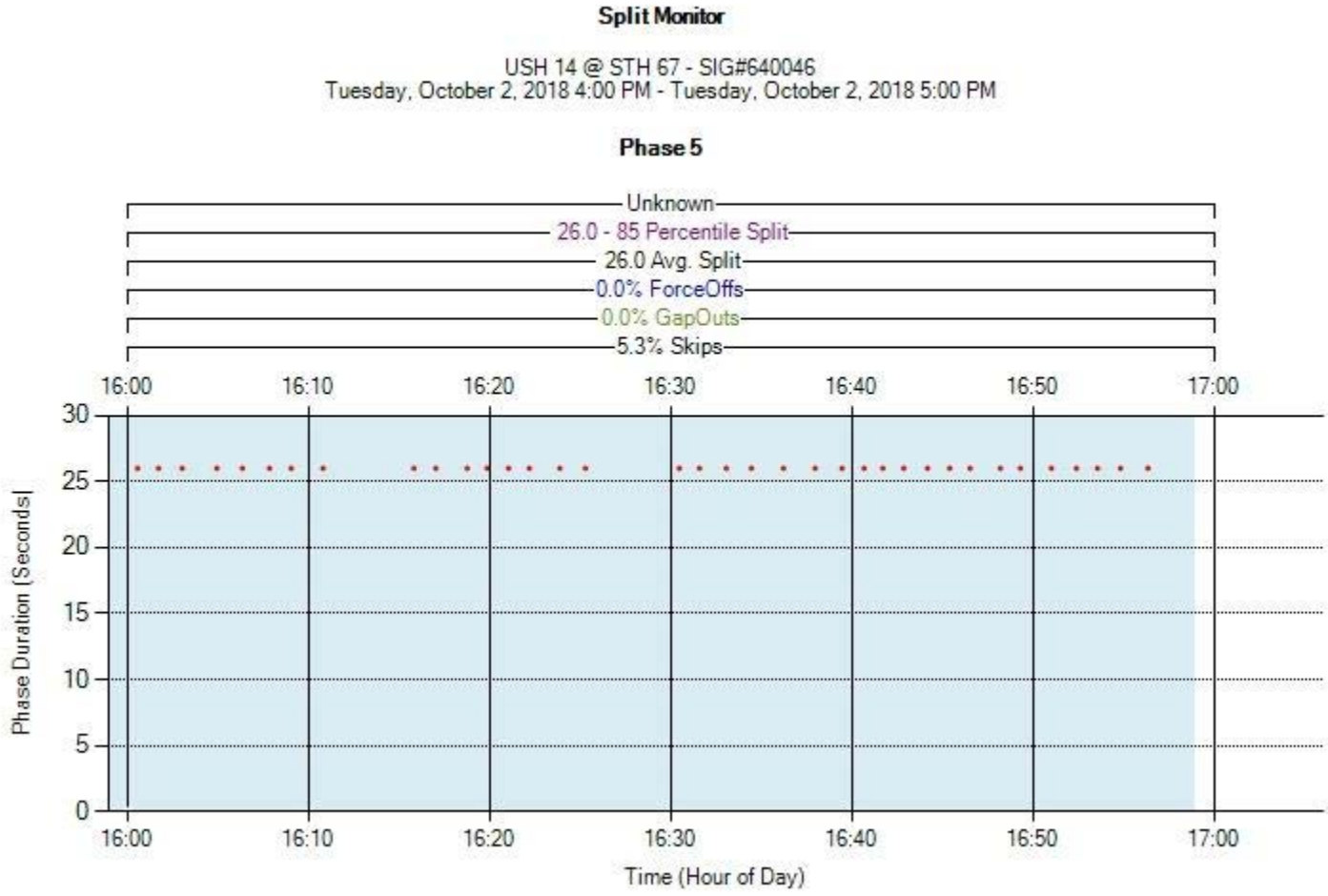
Isolated Signal – WIS 67 & US 14
Vistro Timings
10/2/2018 – 4:00 PM – 5:00 PM



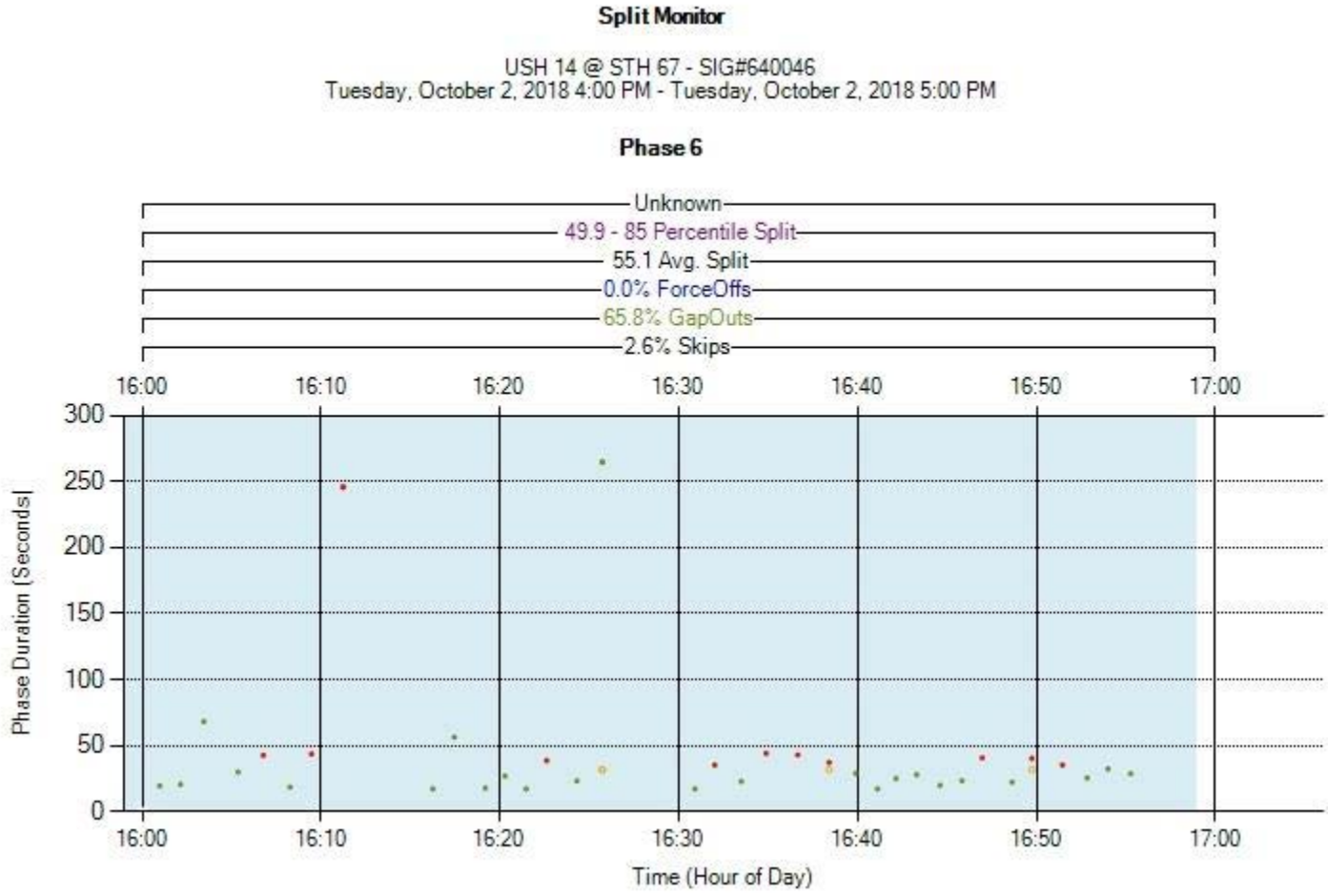
Isolated Signal – WIS 67 & US 14
Vistro Timings
10/2/2018 – 4:00 PM – 5:00 PM



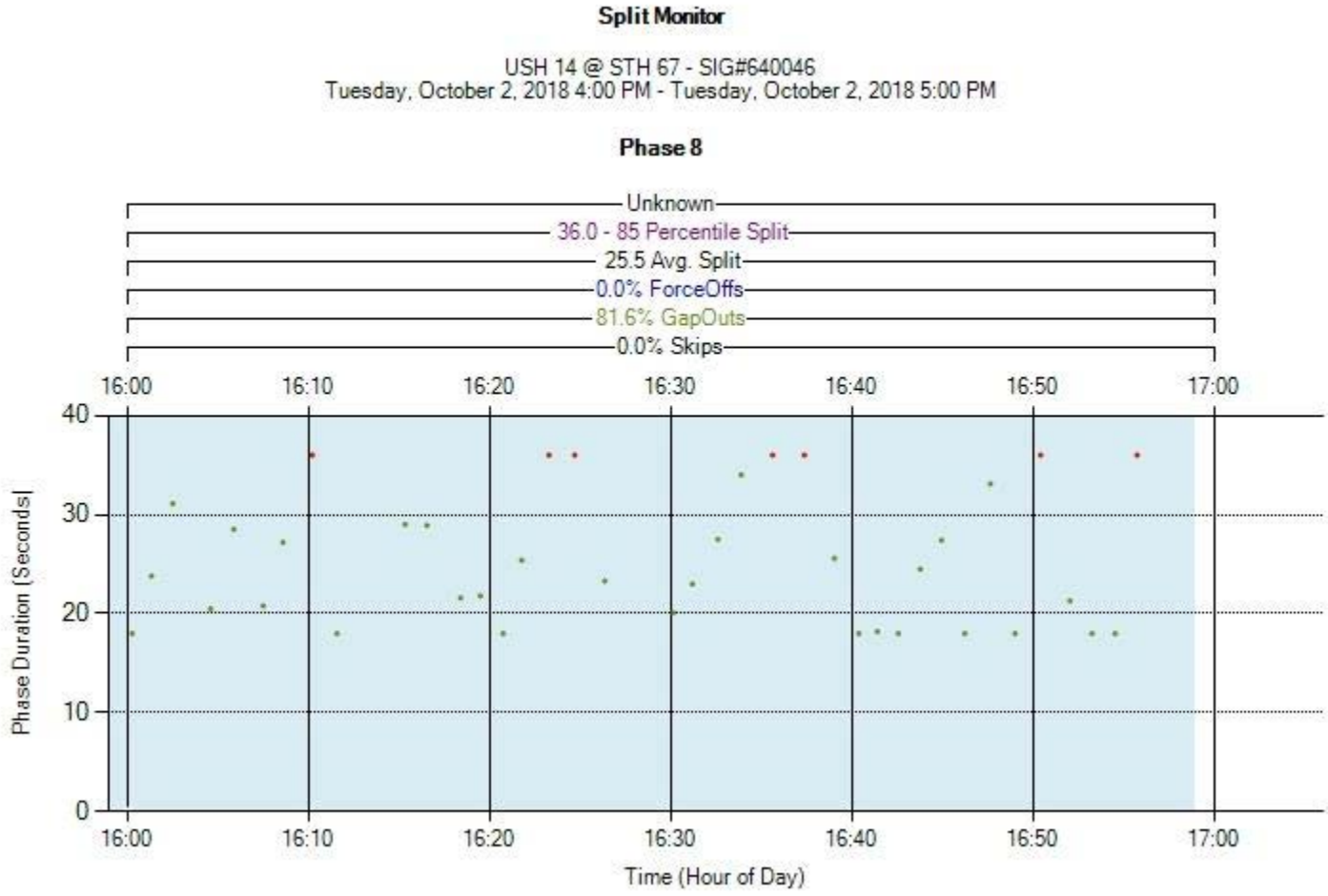
Isolated Signal – WIS 67 & US 14
Vistro Timings
10/2/2018 – 4:00 PM – 5:00 PM



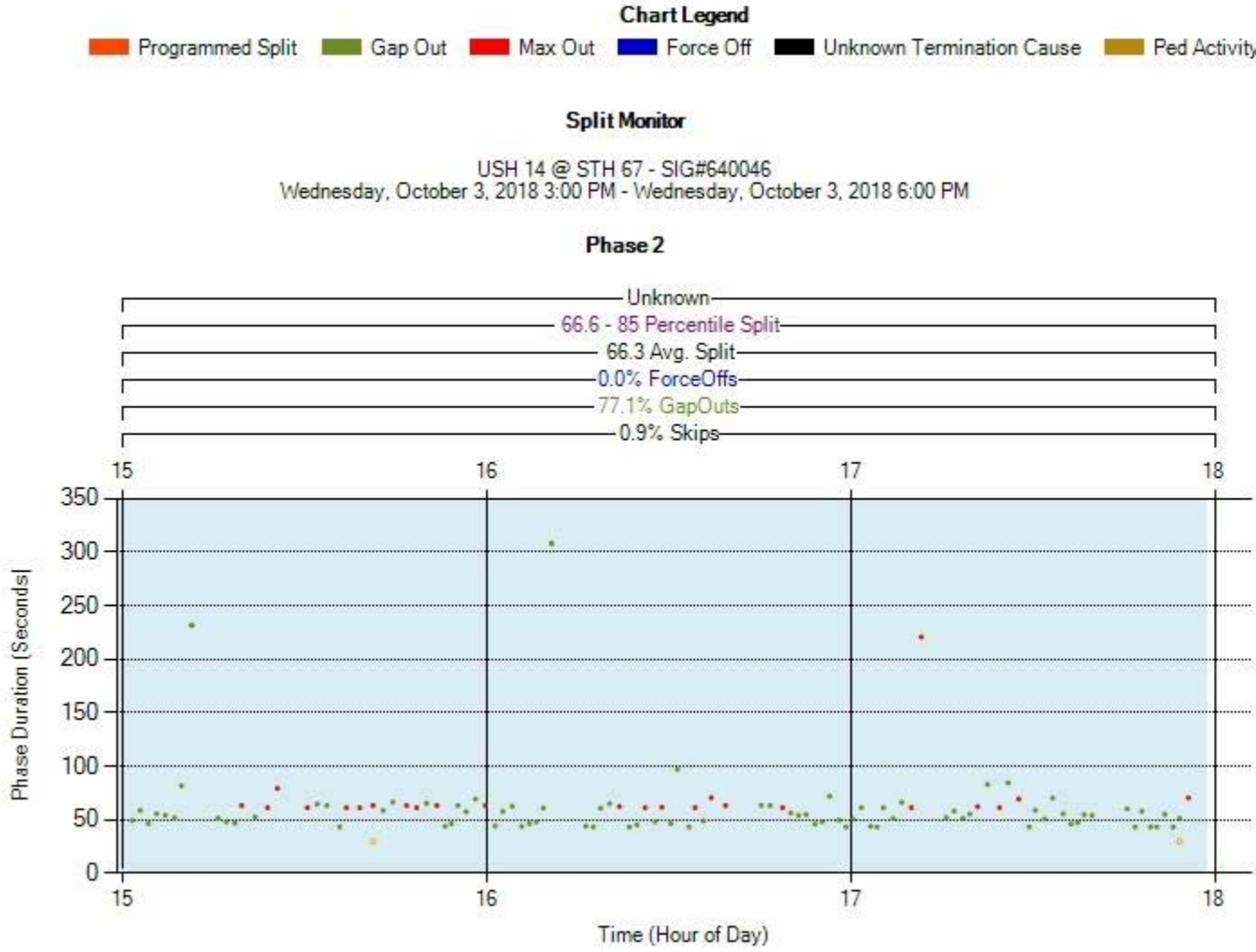
Isolated Signal – WIS 67 & US 14
Vistro Timings
10/2/2018 – 4:00 PM – 5:00 PM



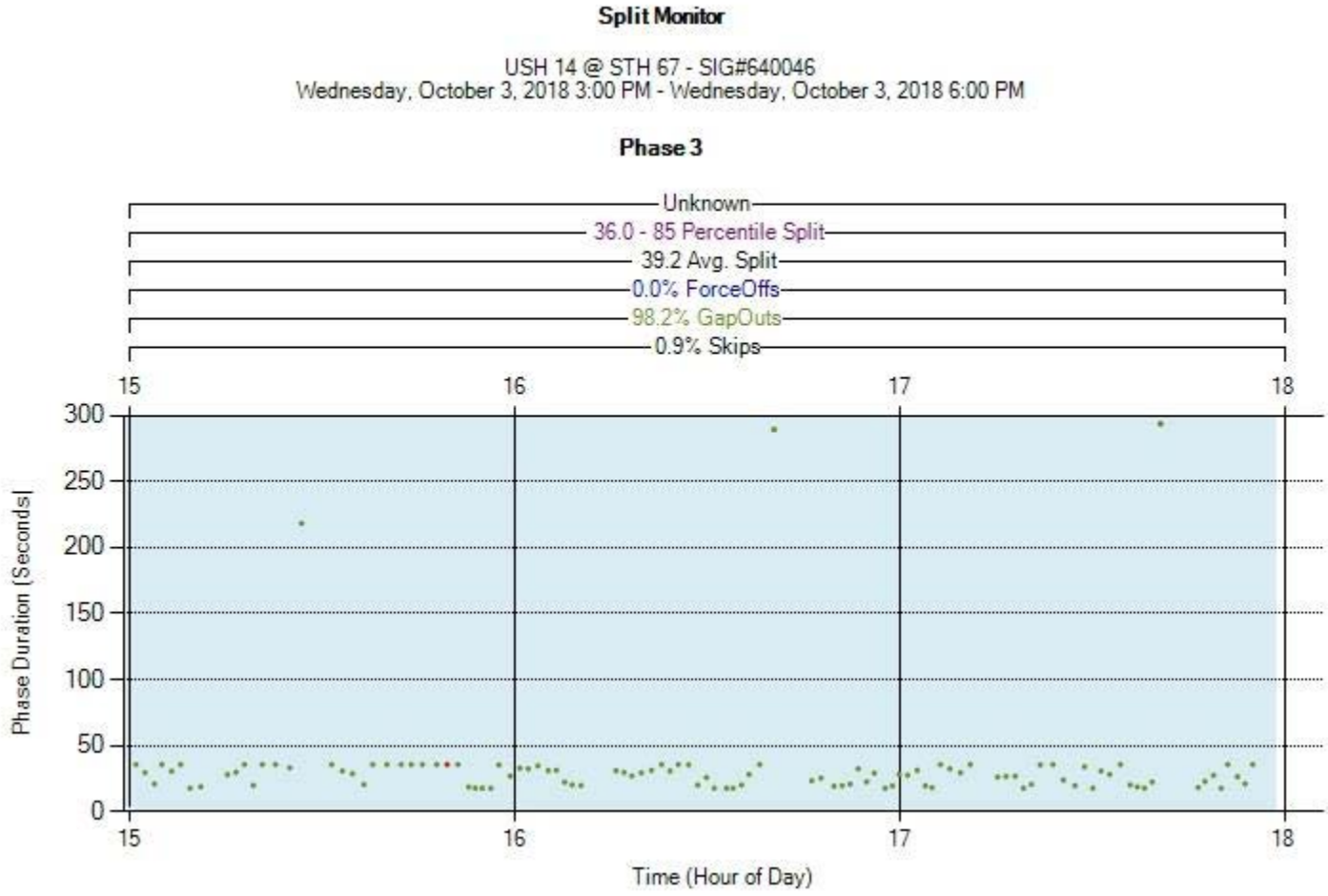
Isolated Signal – WIS 67 & US 14
Vistro Timings
10/2/2018 – 4:00 PM – 5:00 PM



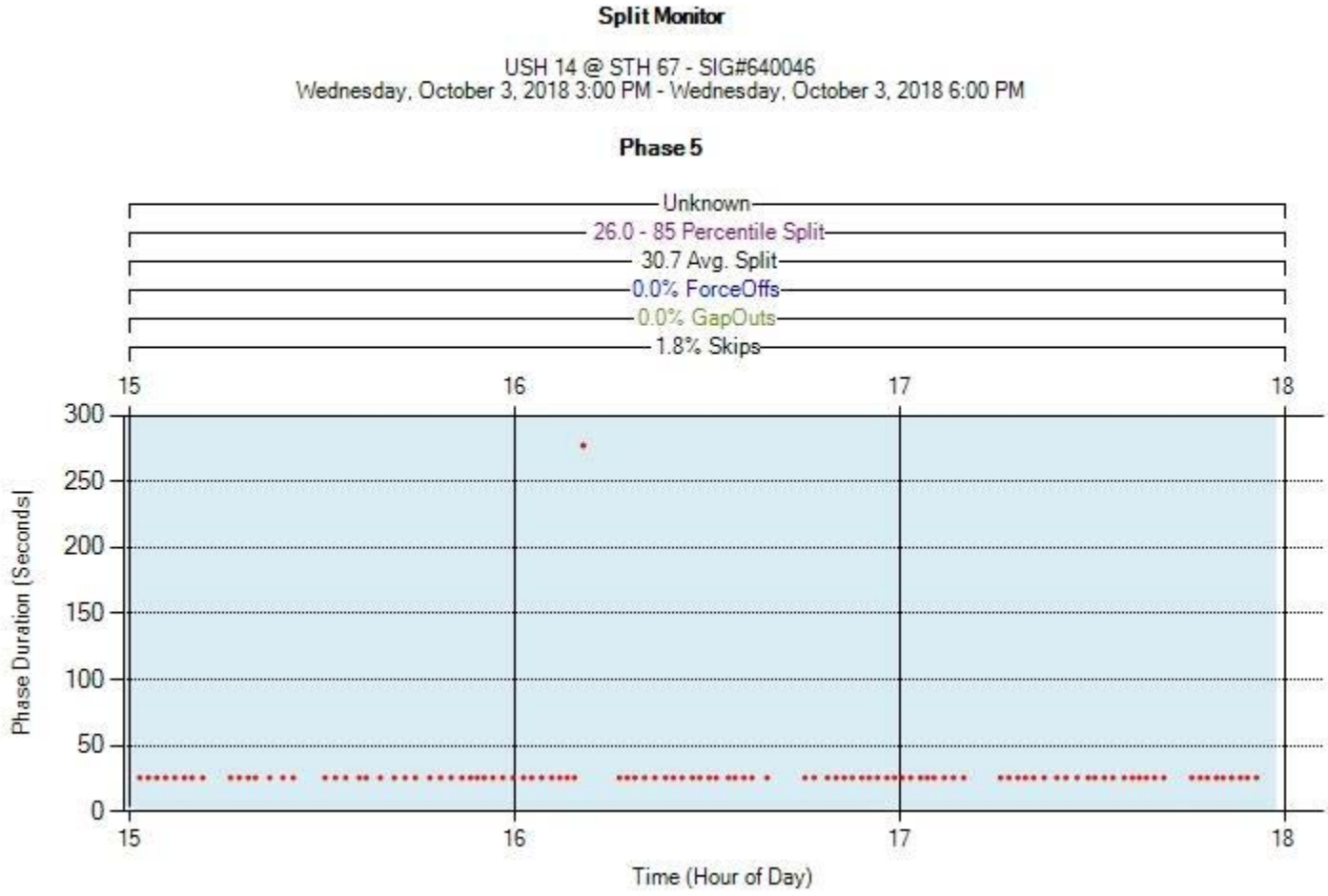
Isolated Signal – WIS 67 & US 14
Vistro Timings
10/3/2018 – 3:00 PM – 6:00 PM



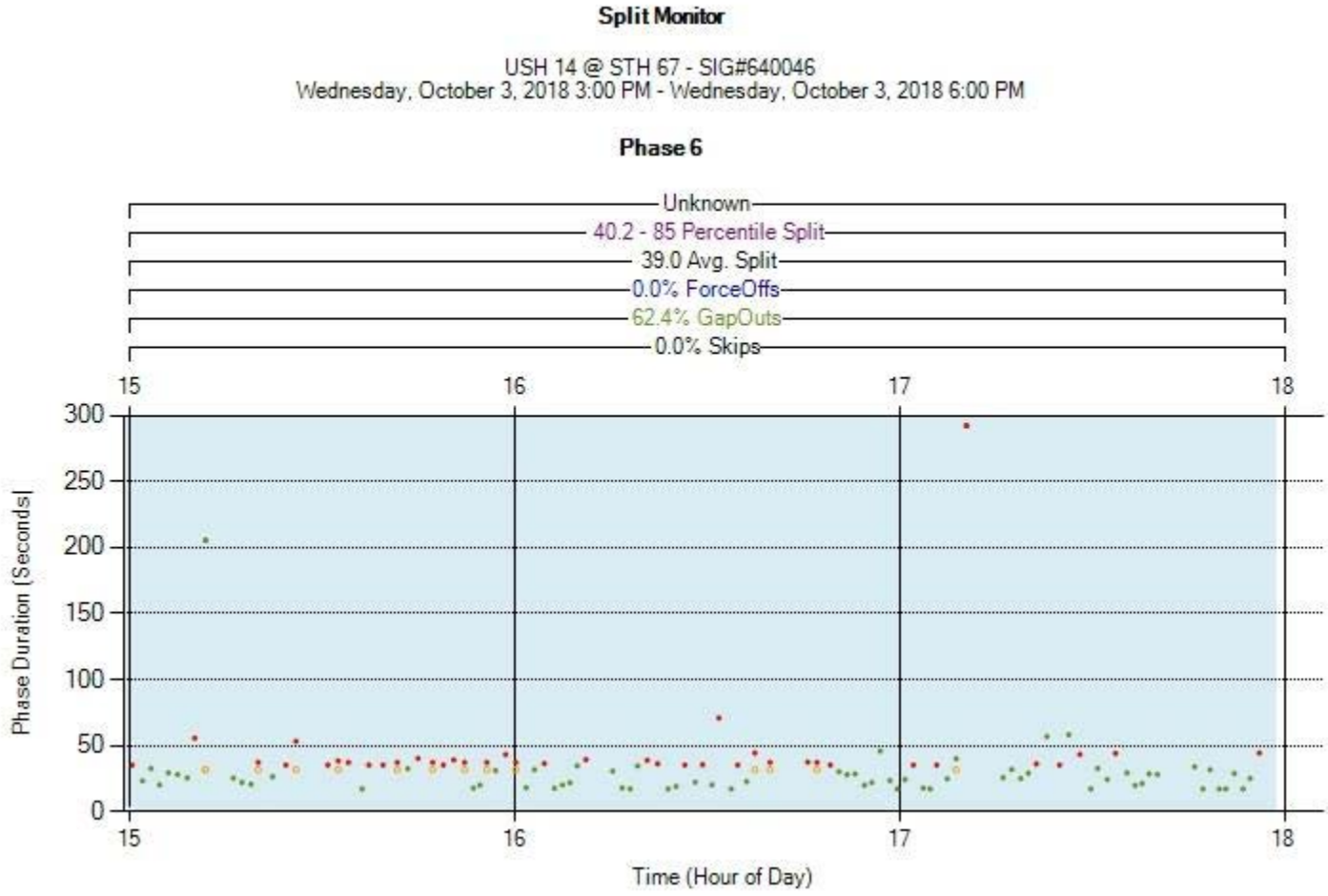
Isolated Signal – WIS 67 & US 14
Vistro Timings
10/3/2018 – 3:00 PM – 6:00 PM



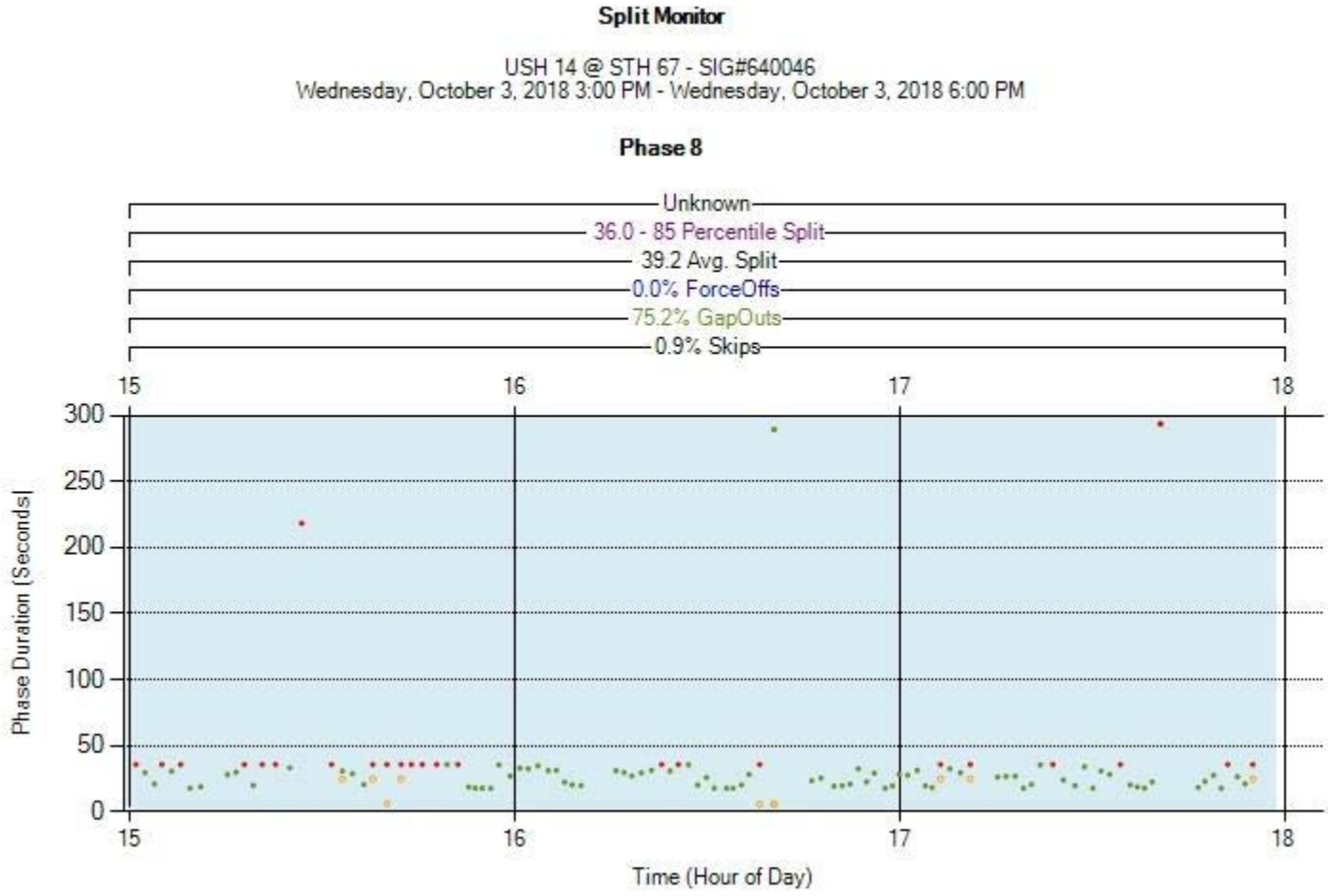
Isolated Signal – WIS 67 & US 14
Vistro Timings
10/3/2018 – 3:00 PM – 6:00 PM



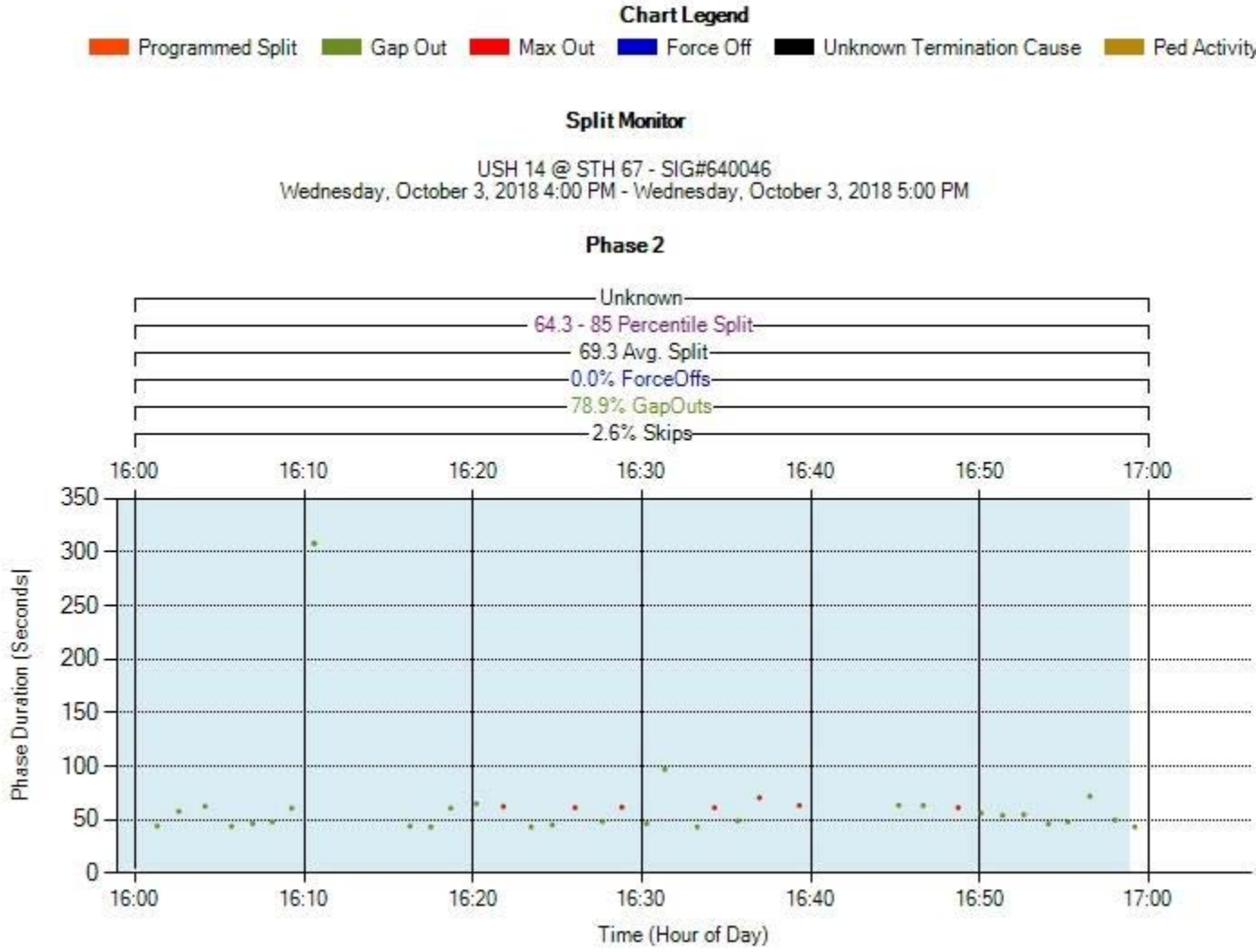
Isolated Signal – WIS 67 & US 14
Vistro Timings
10/3/2018 – 3:00 PM – 6:00 PM



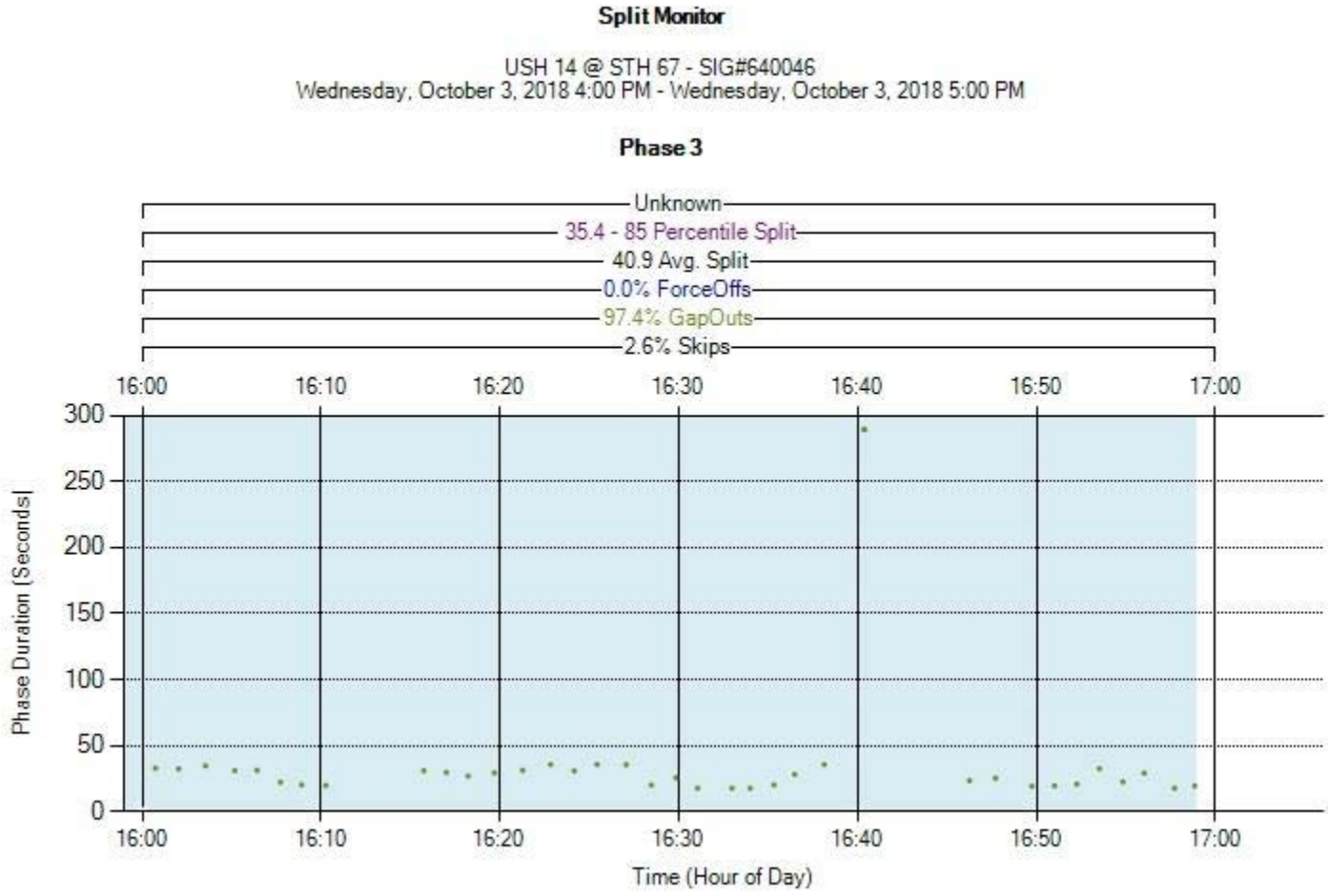
Isolated Signal – WIS 67 & US 14
Vistro Timings
10/3/2018 – 3:00 PM – 6:00 PM



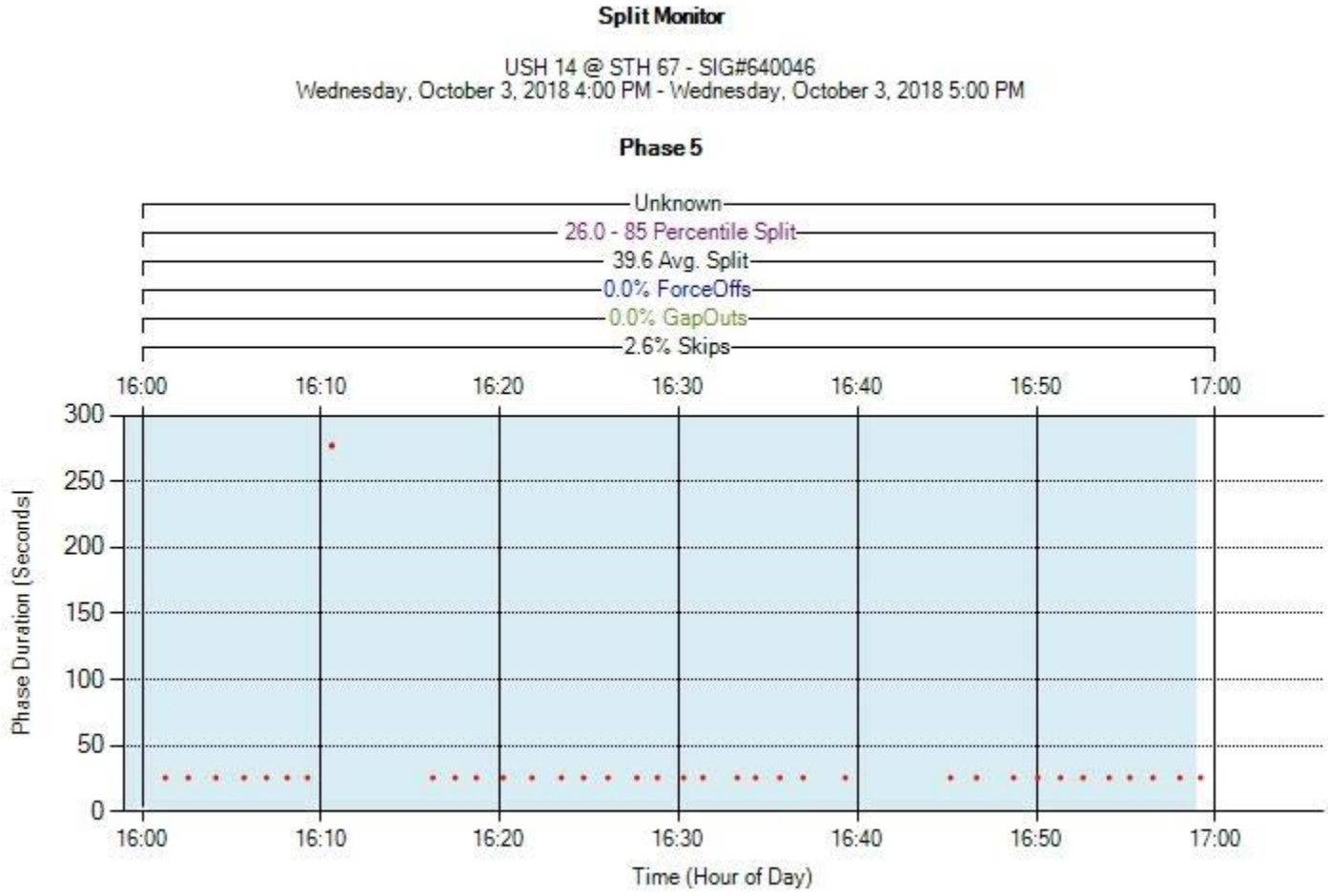
Isolated Signal – WIS 67 & US 14
Vistro Timings
10/3/2018 – 4:00 PM – 5:00 PM



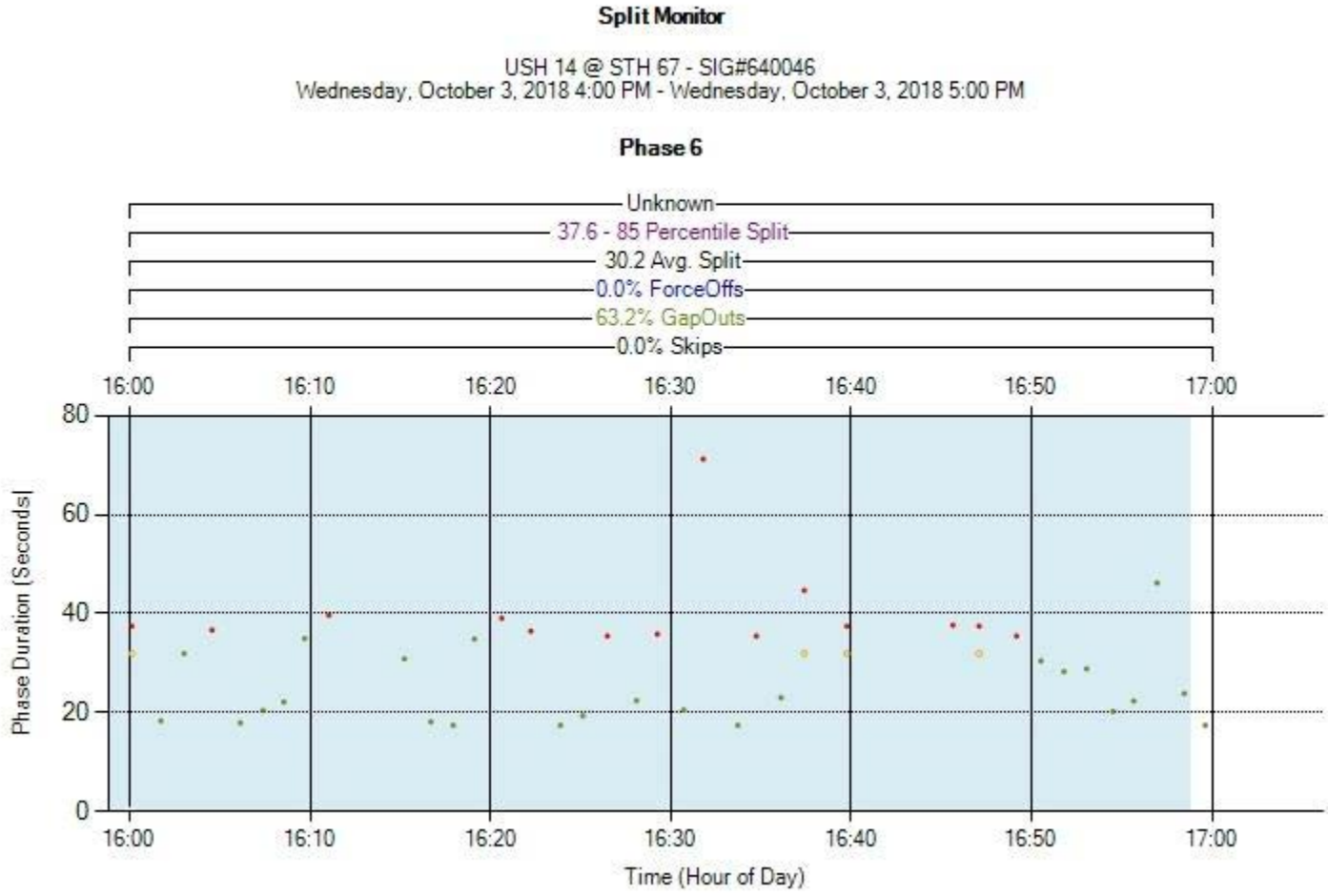
Isolated Signal – WIS 67 & US 14
Vistro Timings
10/3/2018 – 4:00 PM – 5:00 PM



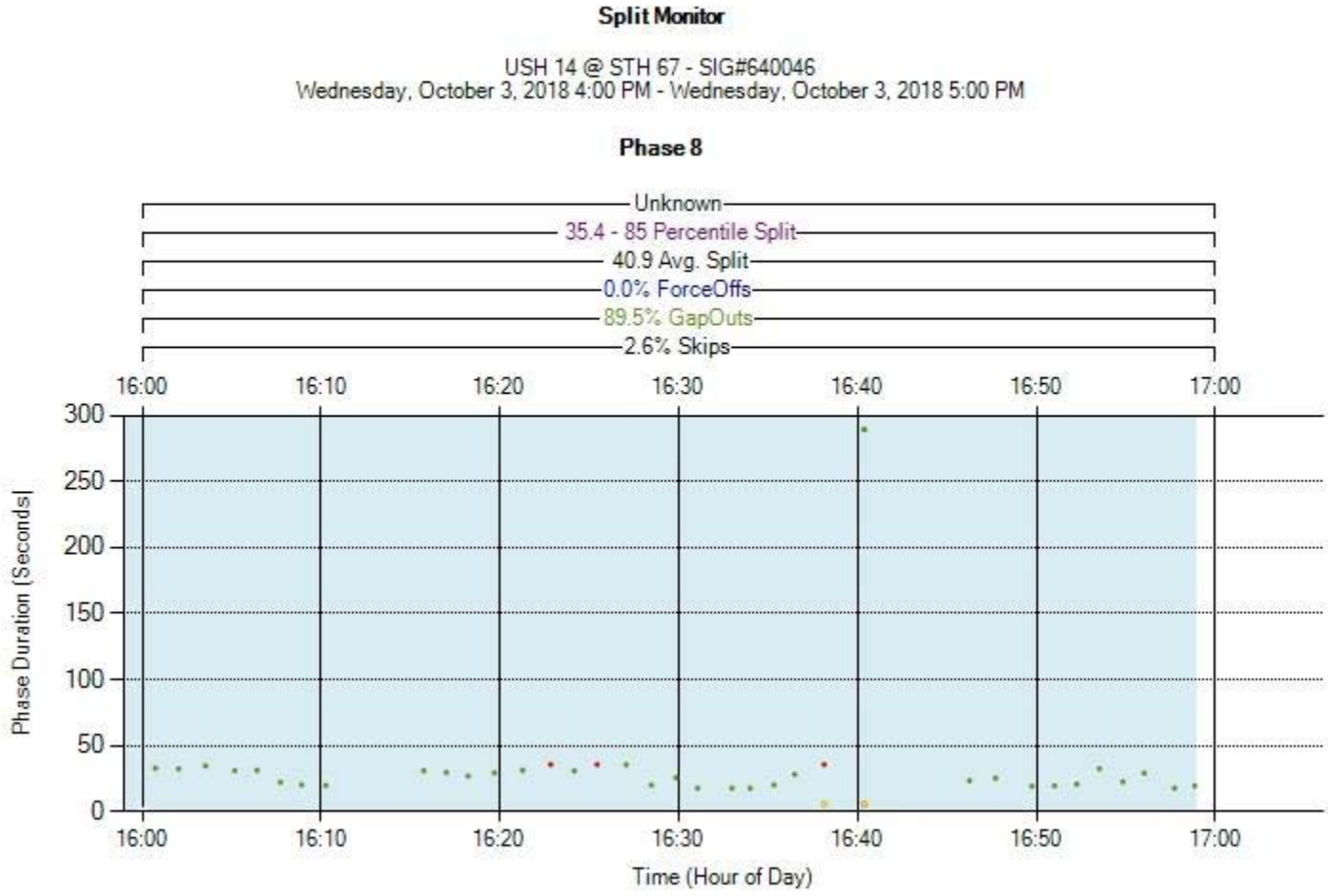
Isolated Signal – WIS 67 & US 14
Vistro Timings
10/3/2018 – 4:00 PM – 5:00 PM



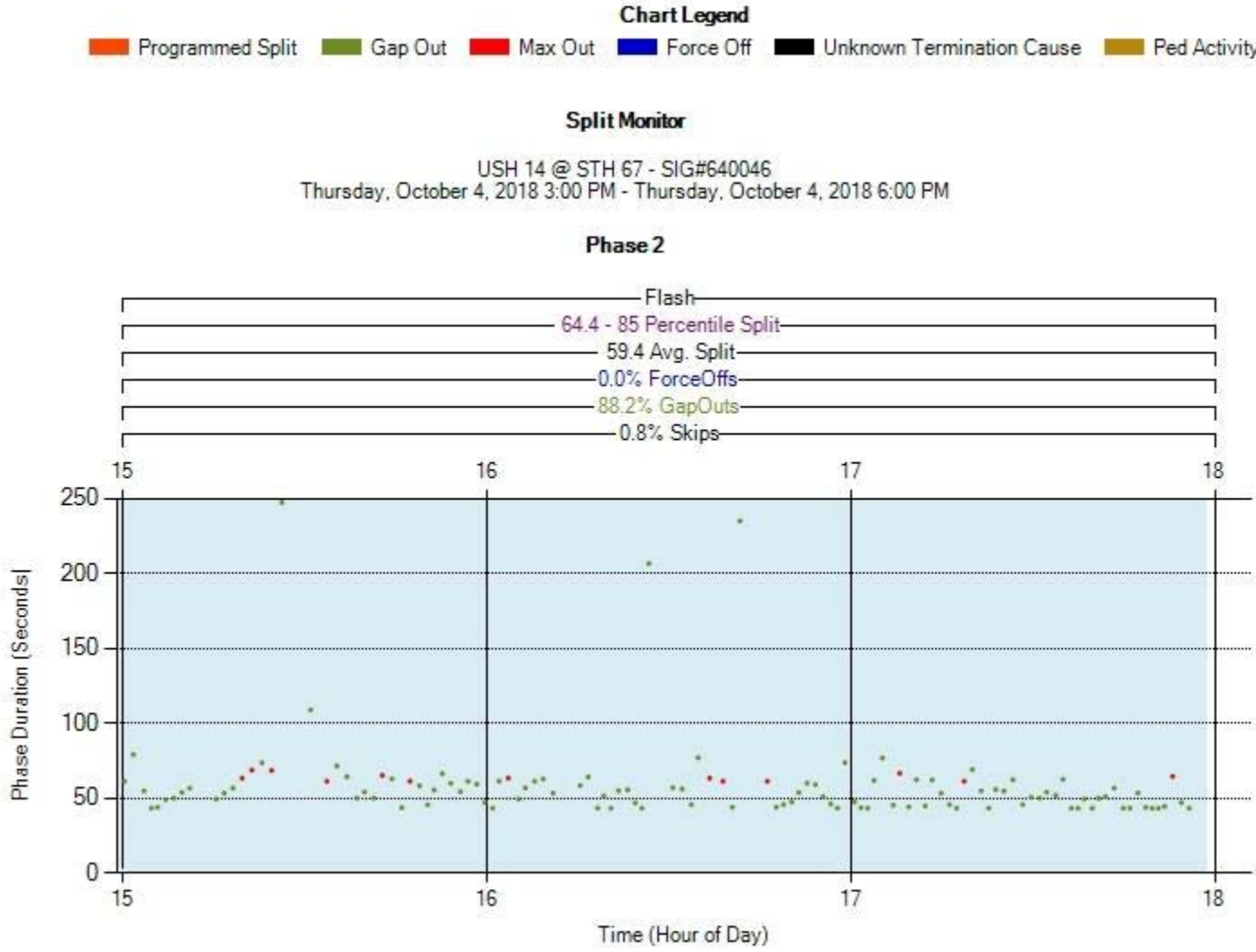
Isolated Signal – WIS 67 & US 14
Vistro Timings
10/3/2018 – 4:00 PM – 5:00 PM



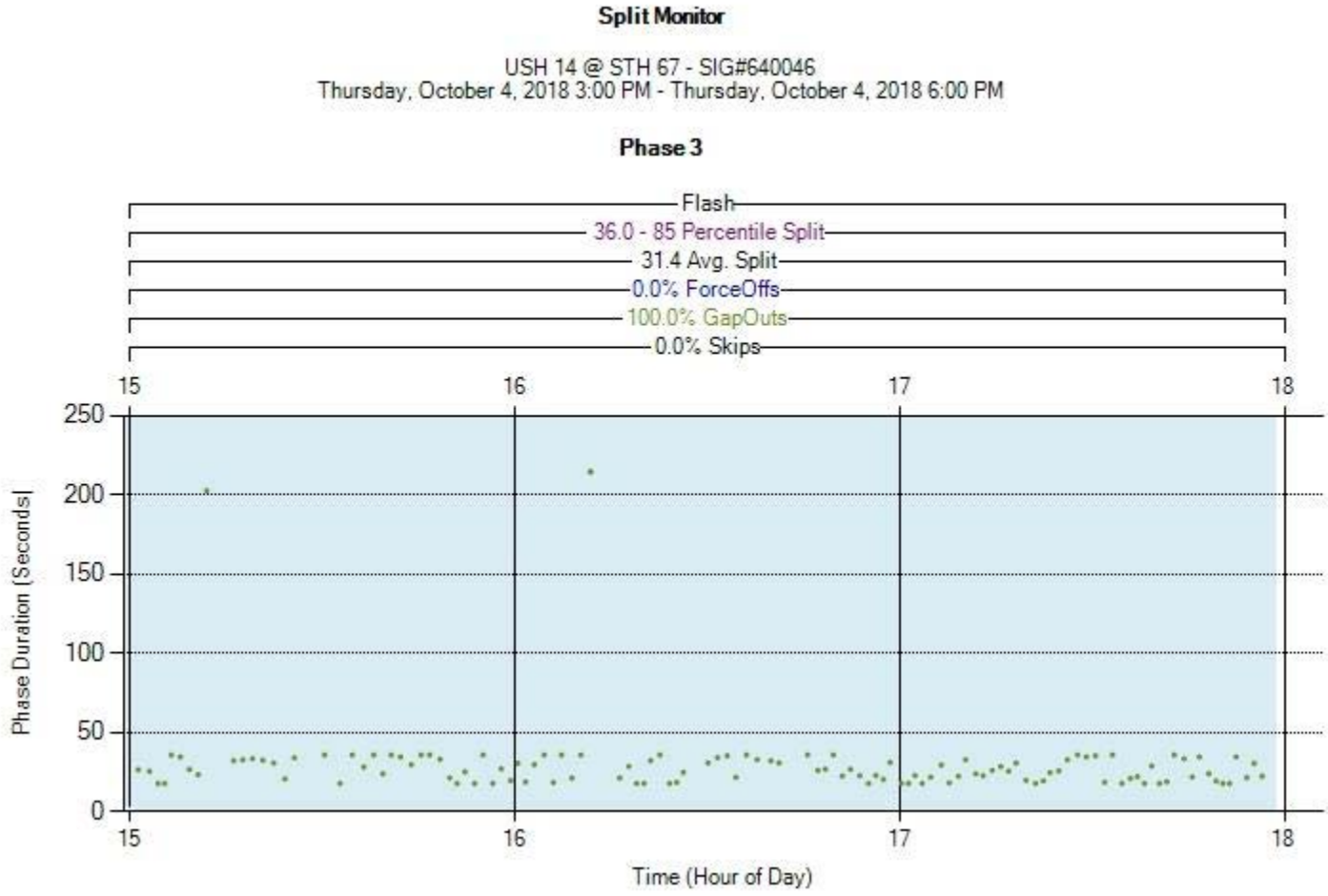
Isolated Signal – WIS 67 & US 14
Vistro Timings
10/3/2018 – 4:00 PM – 5:00 PM



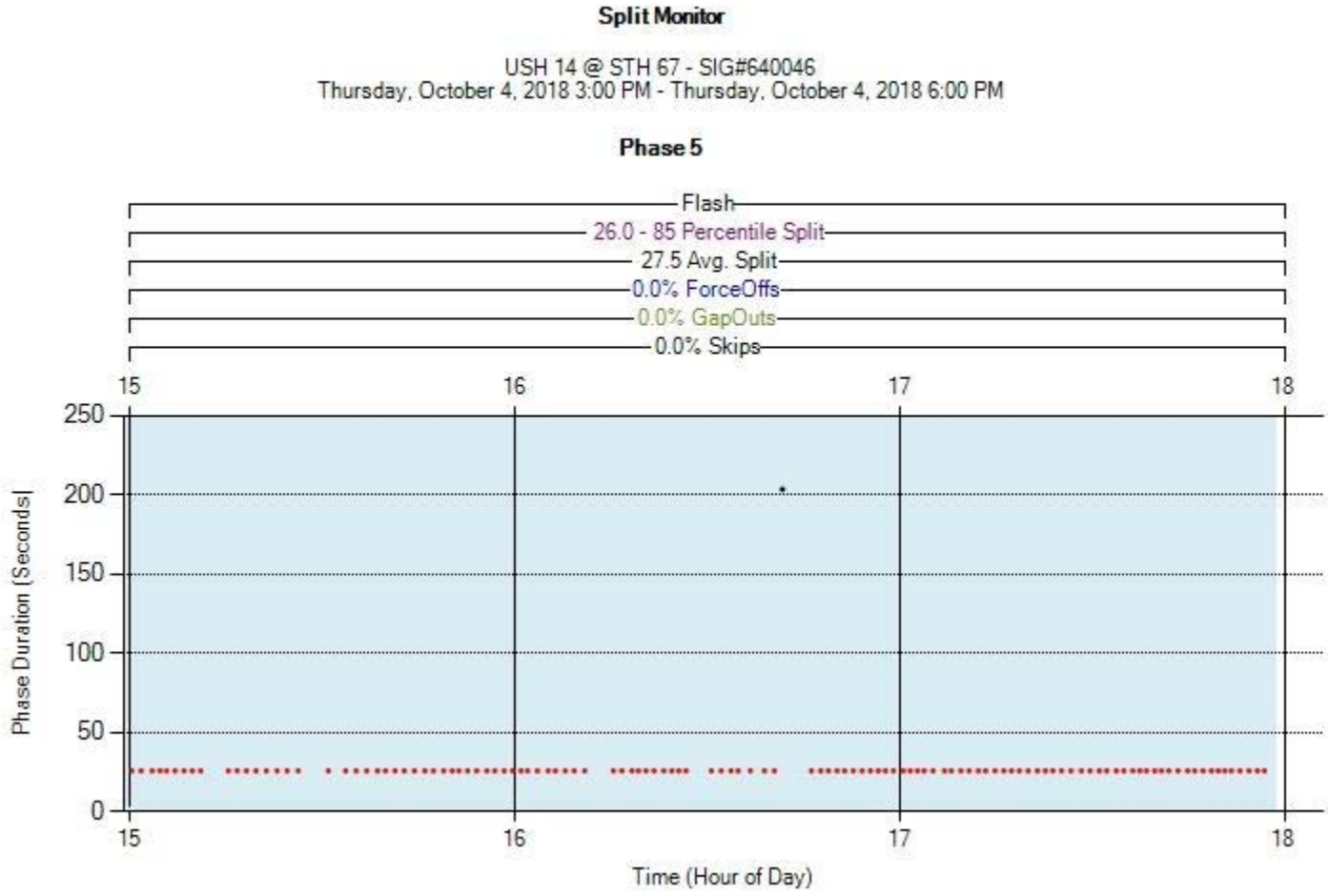
Isolated Signal – WIS 67 & US 14
Vistro Timings
10/4/2018 – 3:00 PM – 6:00 PM



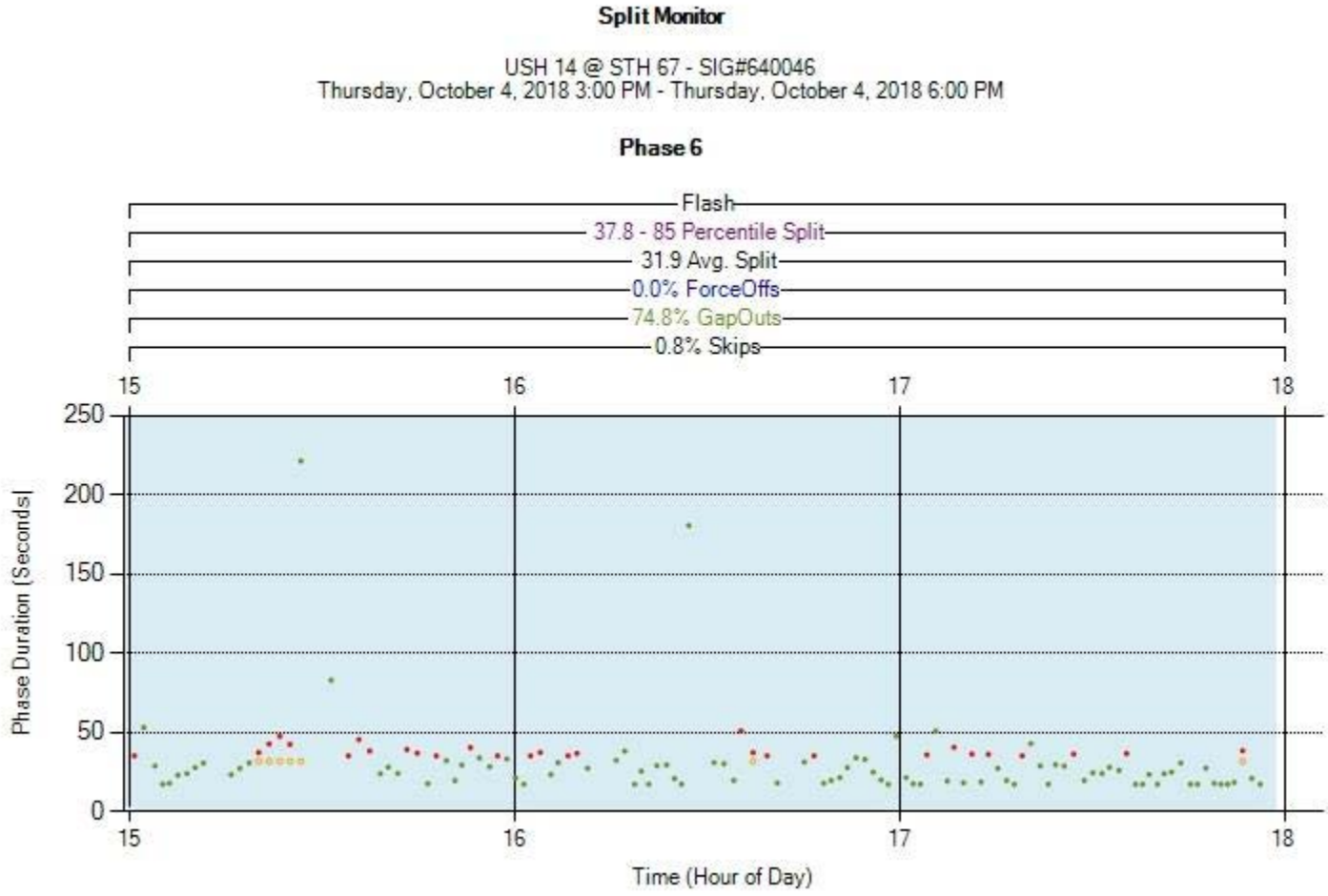
Isolated Signal – WIS 67 & US 14
Vistro Timings
10/4/2018 – 3:00 PM – 6:00 PM



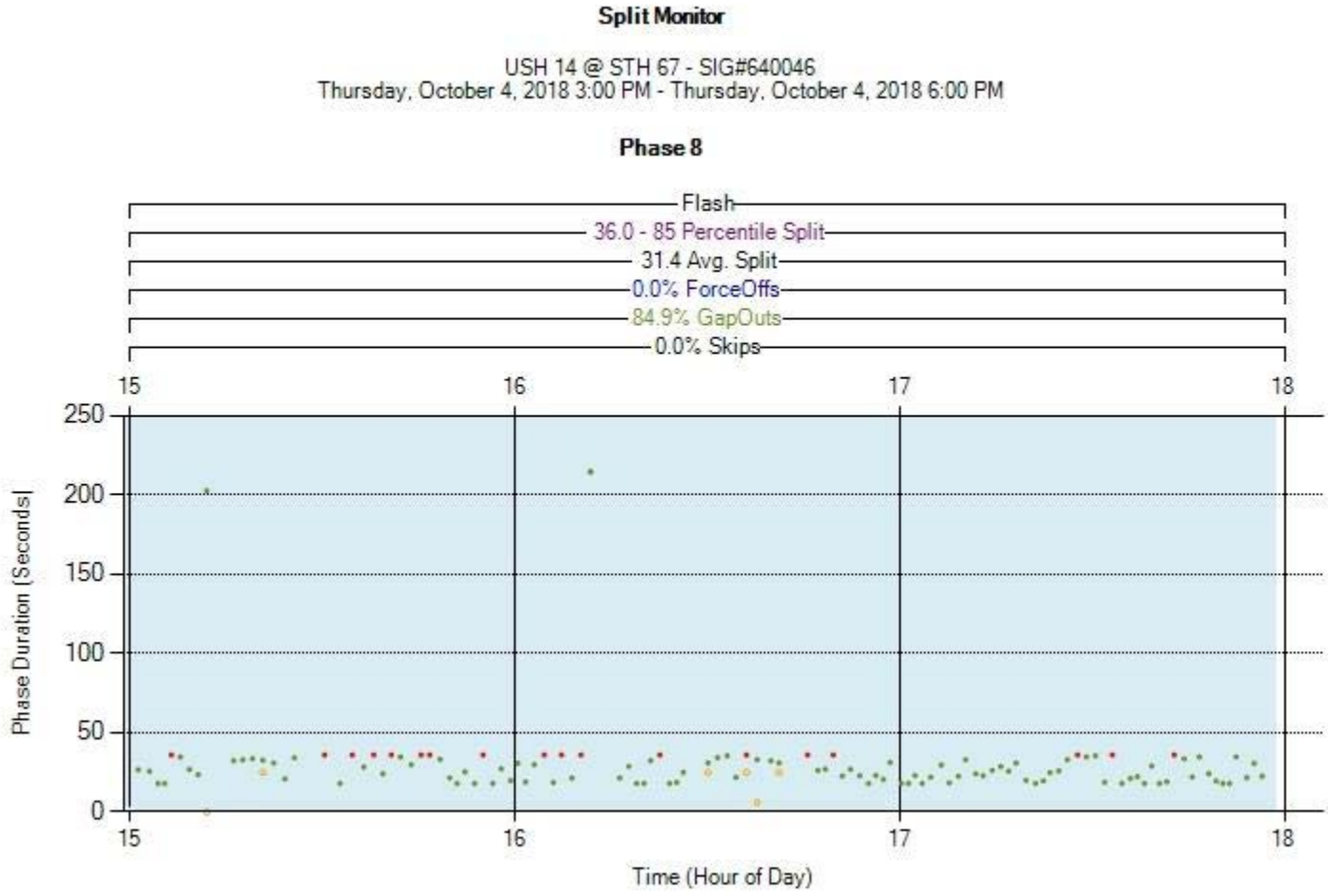
Isolated Signal – WIS 67 & US 14
Vistro Timings
10/4/2018 – 3:00 PM – 6:00 PM



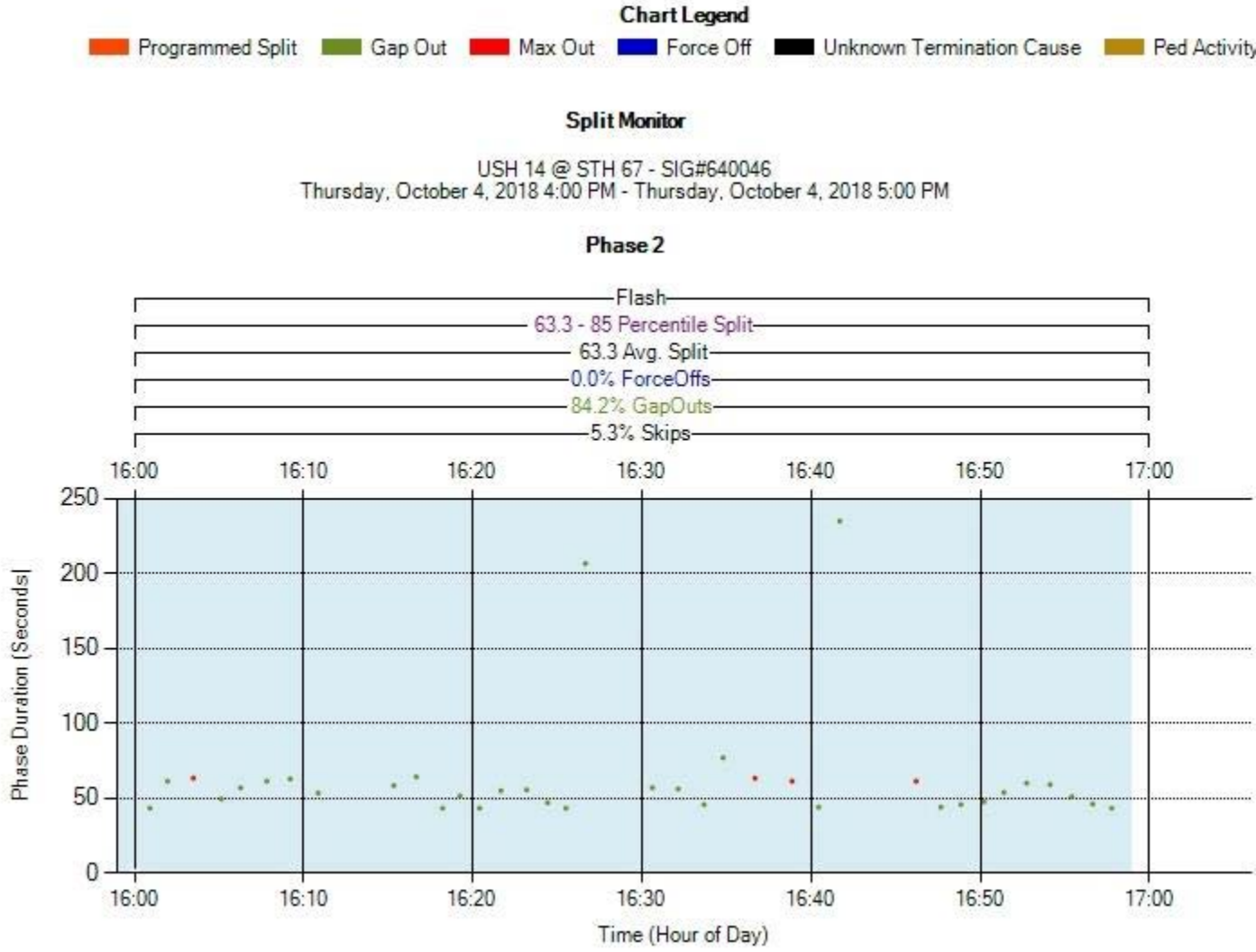
Isolated Signal – WIS 67 & US 14
Vistro Timings
10/4/2018 – 3:00 PM – 6:00 PM



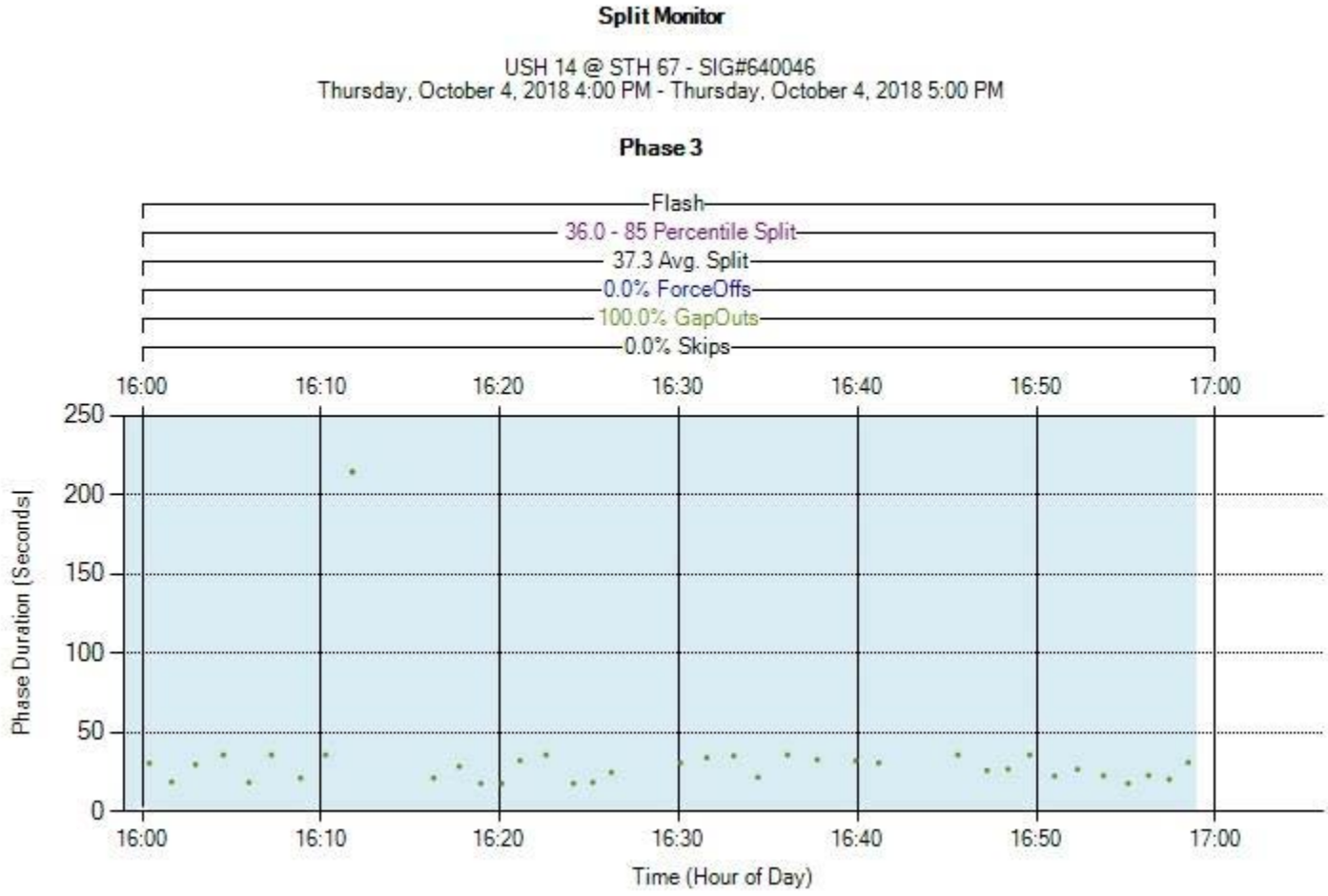
Isolated Signal – WIS 67 & US 14
Vistro Timings
10/4/2018 – 3:00 PM – 6:00 PM



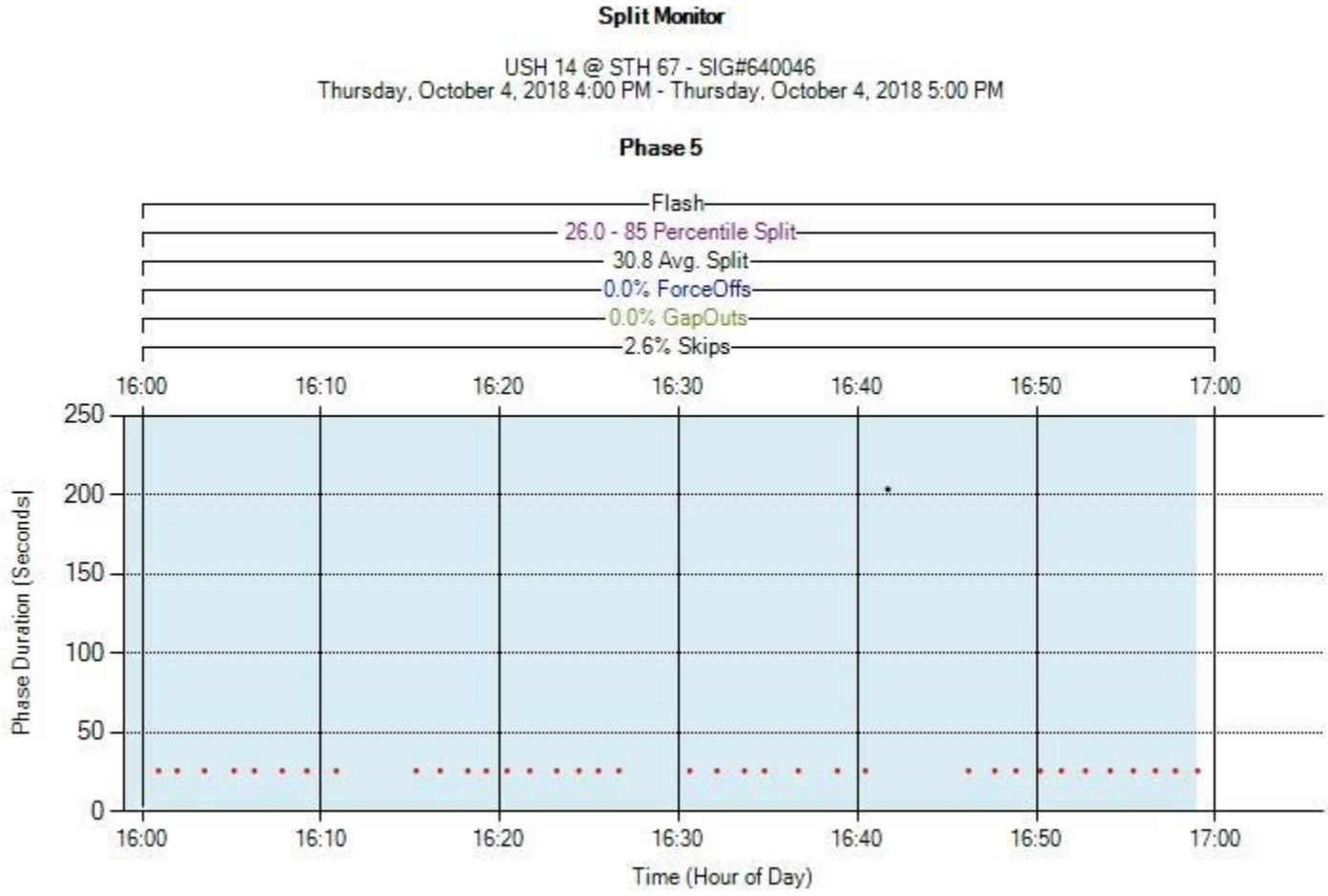
Isolated Signal – WIS 67 & US 14
Vistro Timings
10/4/2018 – 4:00 PM – 5:00 PM



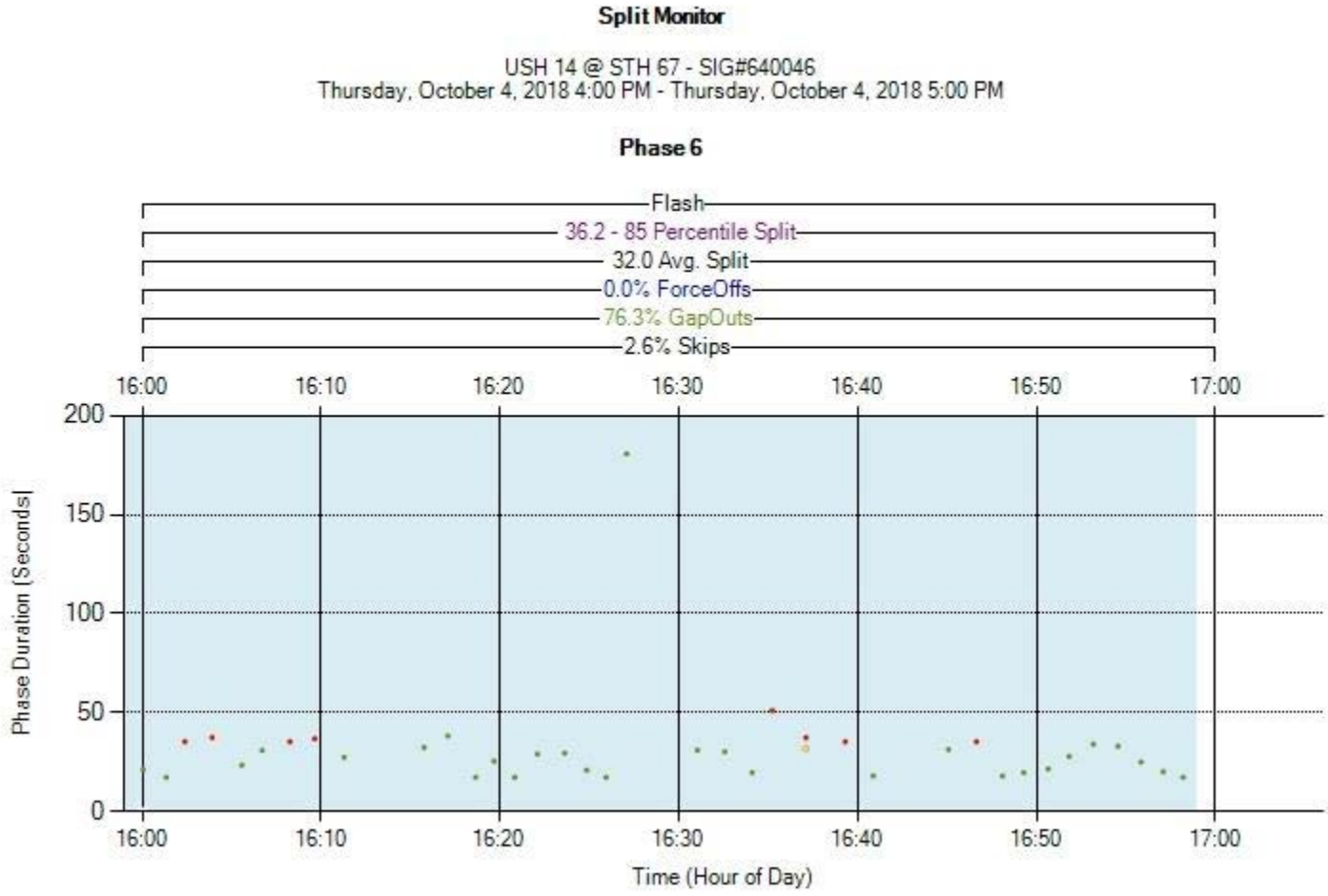
Isolated Signal – WIS 67 & US 14
Vistro Timings
10/4/2018 – 4:00 PM – 5:00 PM



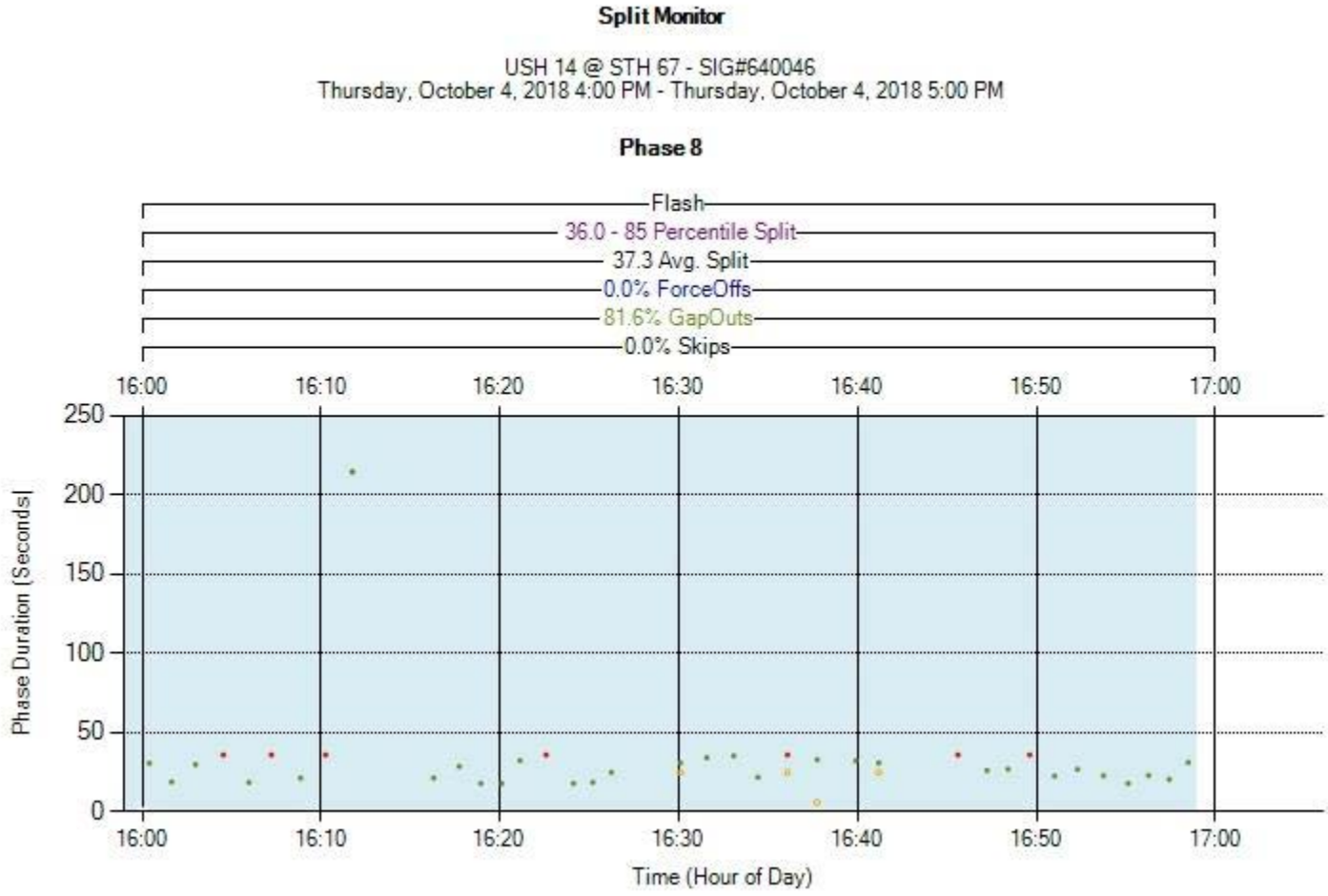
Isolated Signal – WIS 67 & US 14
Vistro Timings
10/4/2018 – 4:00 PM – 5:00 PM



Isolated Signal – WIS 67 & US 14
Vistro Timings
10/4/2018 – 4:00 PM – 5:00 PM



Isolated Signal – WIS 67 & US 14
Vistro Timings
10/4/2018 – 4:00 PM – 5:00 PM



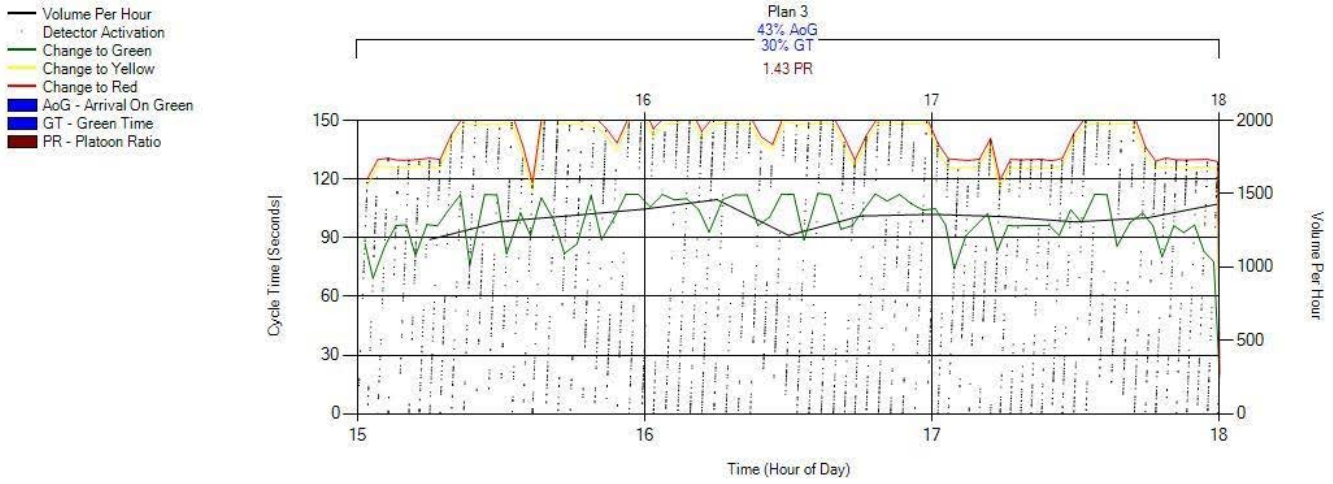
WisBOOM Outputs
WIS 38 Corridor
Existing Timings

Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Drexel Ave. - SIG#401094
Tuesday, June 5, 2018 3:00 PM - Tuesday, June 5, 2018 6:00 PM
Advanced detector located 351 ft. upstream of stop bar

Phase 2: Southbound

AoG = 43%

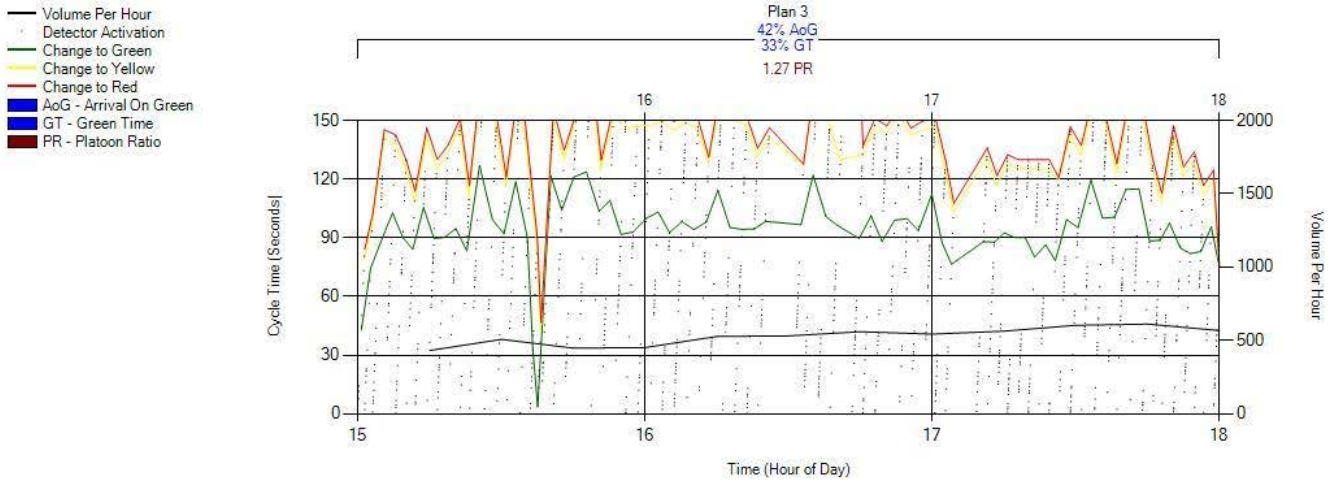


Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Drexel Ave. - SIG#401094
Tuesday, June 5, 2018 3:00 PM - Tuesday, June 5, 2018 6:00 PM
Advanced detector located 256 ft. upstream of stop bar

Phase 4: Eastbound

AoG = 42%

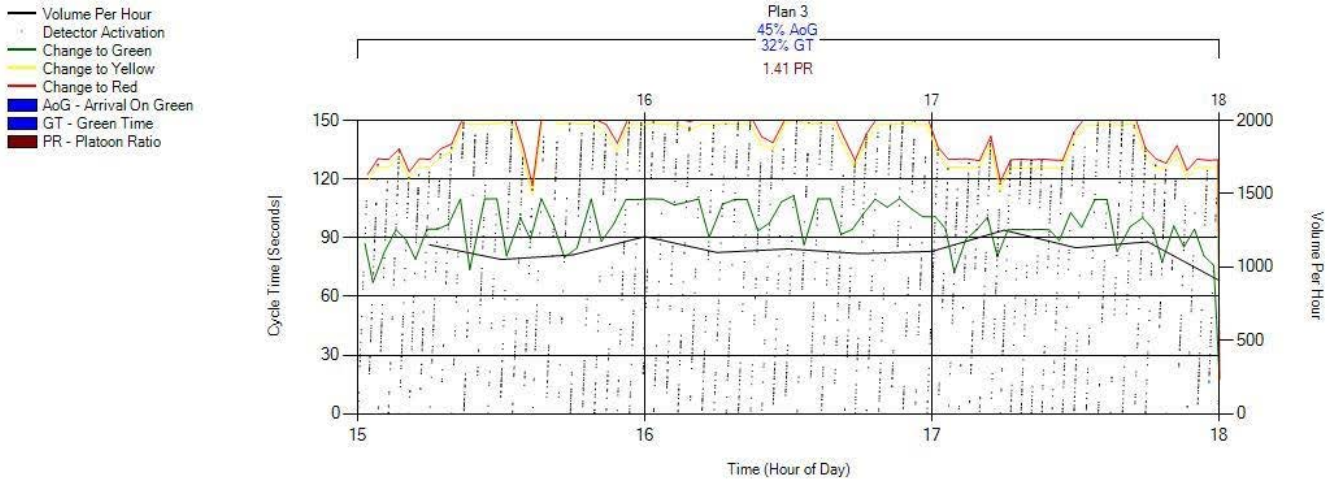


Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Drexel Ave. - SIG#401094
Tuesday, June 5, 2018 3:00 PM - Tuesday, June 5, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar

Phase 6: Northbound

AoG = 45%

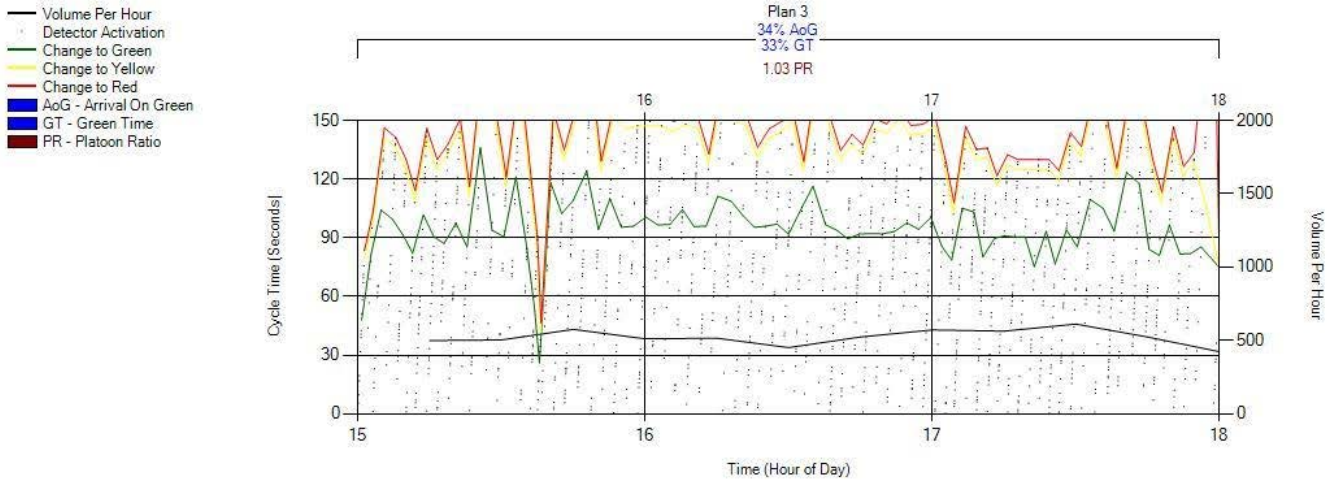


Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Drexel Ave. - SIG#401094
Tuesday, June 5, 2018 3:00 PM - Tuesday, June 5, 2018 6:00 PM
Advanced detector located 256 ft. upstream of stop bar

Phase 8: Westbound

AoG = 34%

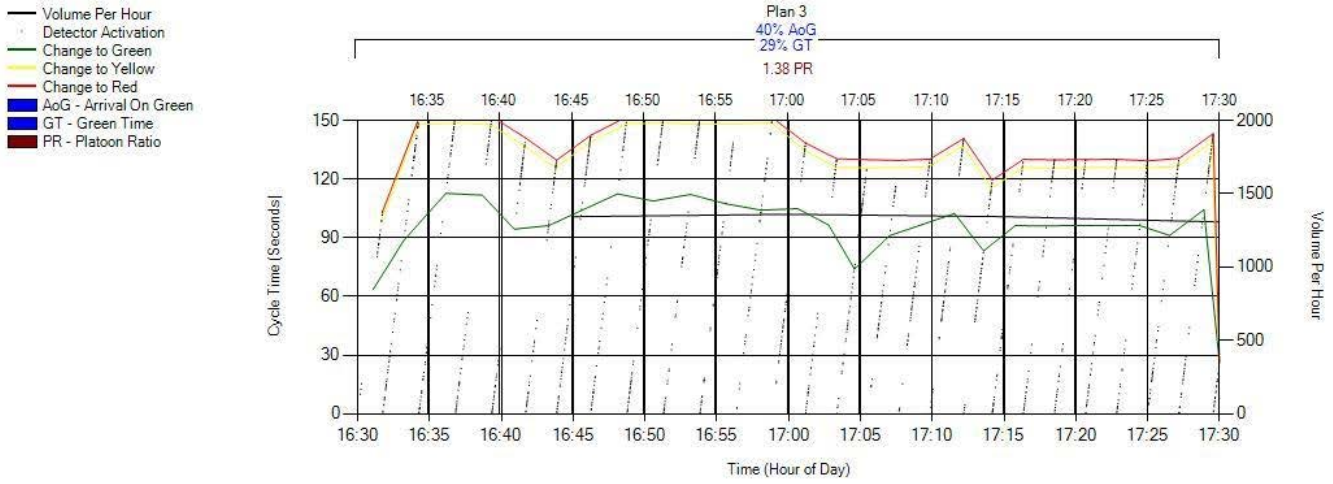


Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Drexel Ave. - SIG#401094
Tuesday, June 5, 2018 4:30 PM - Tuesday, June 5, 2018 5:30 PM
Advanced detector located 351 ft. upstream of stop bar

Phase 2: Southbound

AoG = 40%

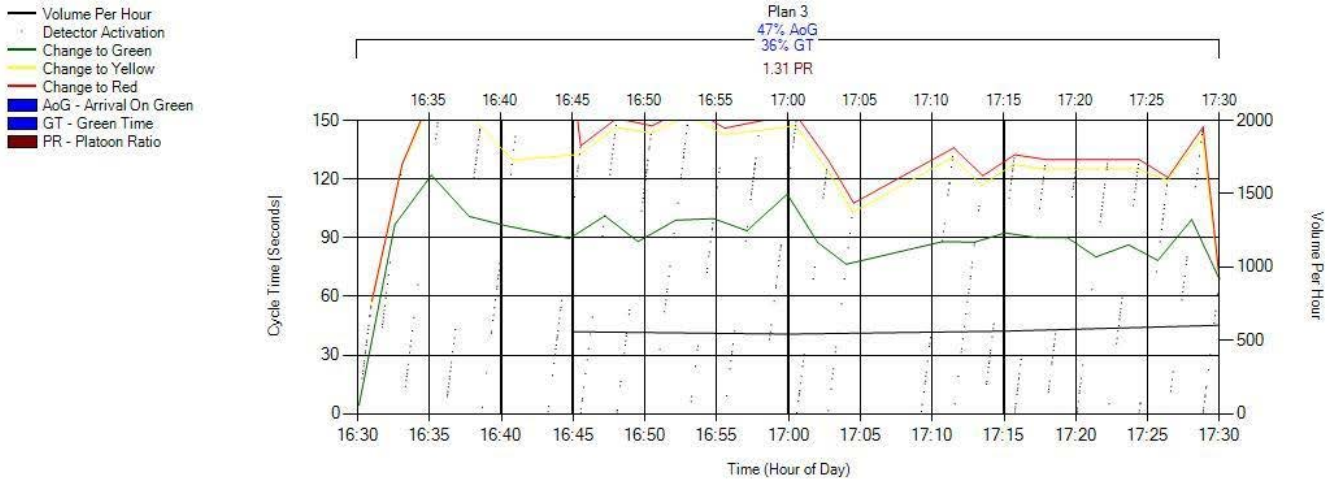


Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Drexel Ave. - SIG#401094
Tuesday, June 5, 2018 4:30 PM - Tuesday, June 5, 2018 5:30 PM
Advanced detector located 256 ft. upstream of stop bar

Phase 4: Eastbound

AoG = 47%

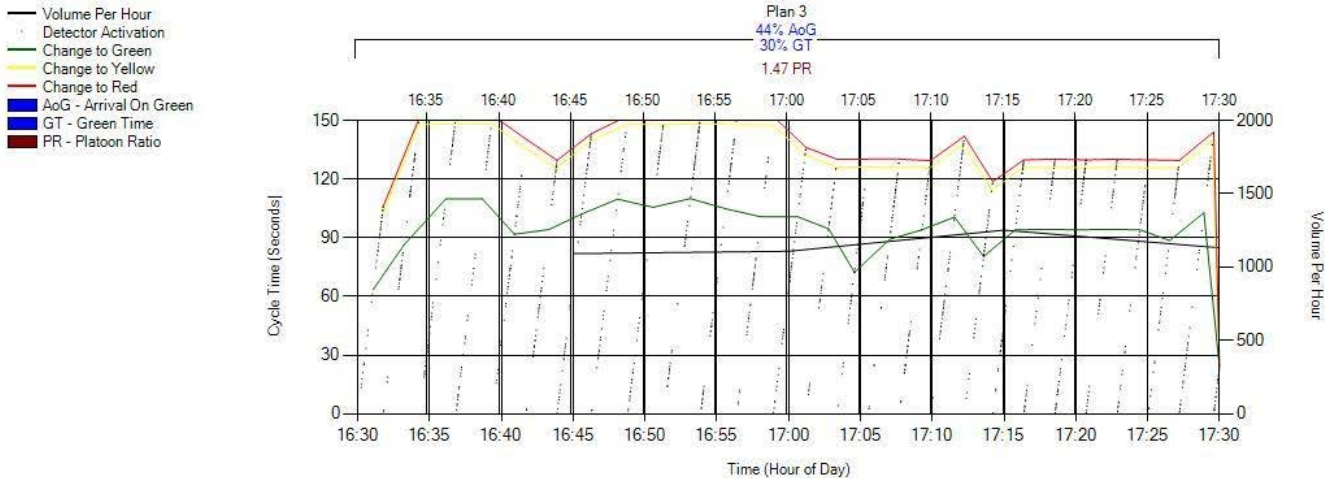


Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Drexel Ave. - SIG#401094
Tuesday, June 5, 2018 4:30 PM - Tuesday, June 5, 2018 5:30 PM
Advanced detector located 376 ft. upstream of stop bar

Phase 6: Northbound

AoG = 44%

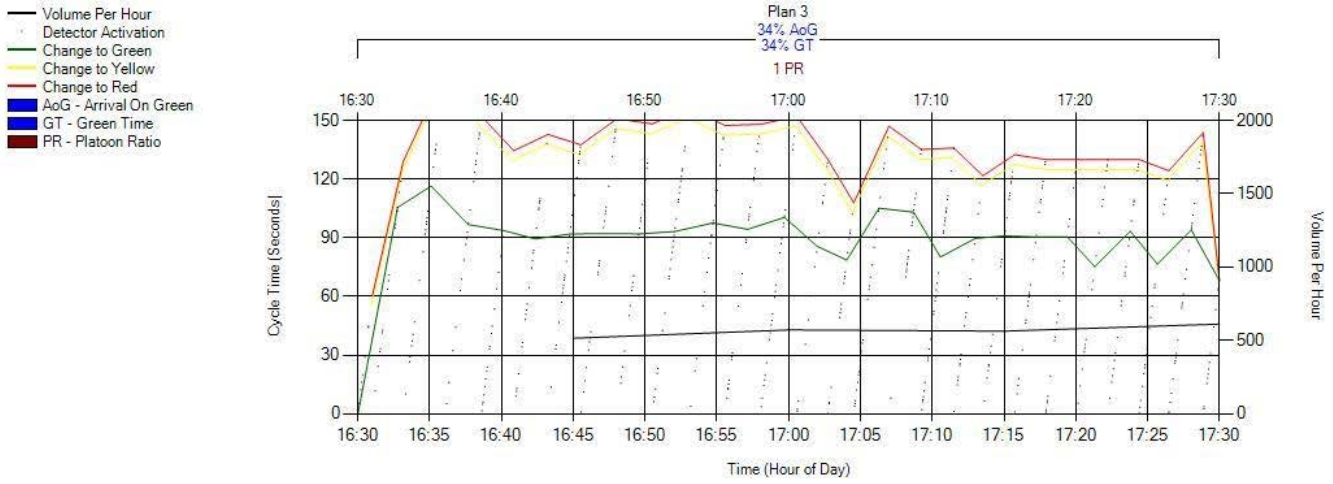


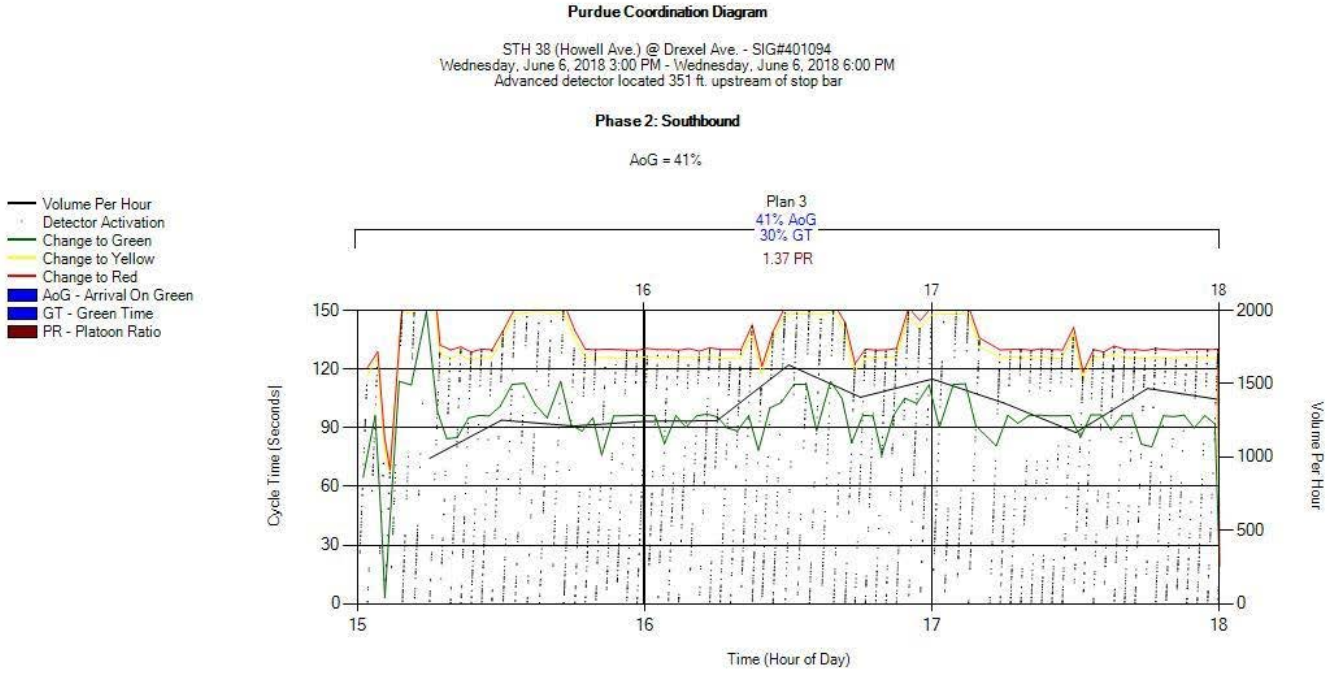
Purdue Coordination Diagram

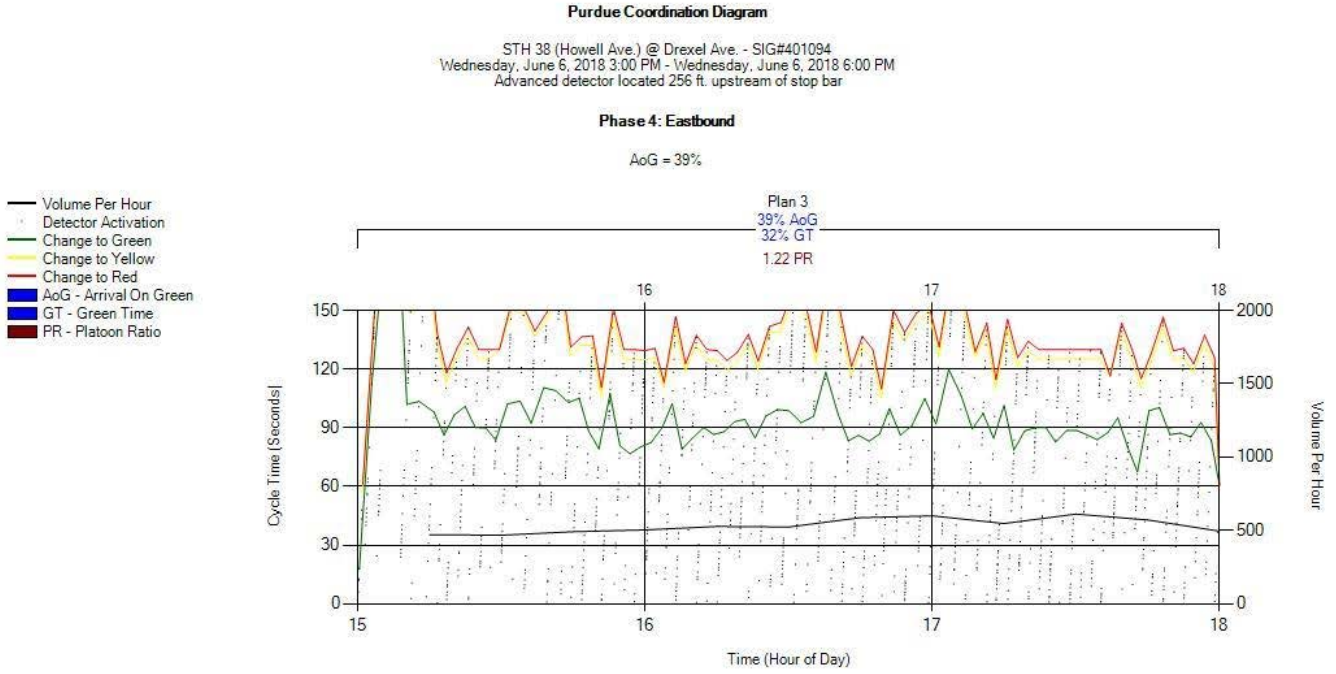
STH 38 (Howell Ave.) @ Drexel Ave. - SIG#401094
Tuesday, June 5, 2018 4:30 PM - Tuesday, June 5, 2018 5:30 PM
Advanced detector located 256 ft. upstream of stop bar

Phase 8: Westbound

AoG = 34%




Purdue Coordination Diagram
STH 38 (Howell Ave.) @ Drexel Ave. - SIG#401094
Wednesday, June 6, 2018 3:00 PM - Wednesday, June 6, 2018 6:00 PM
Advanced detector located 351 ft. upstream of stop bar
Phase 2: Southbound
AoG = 41%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
41% AoG
30% GT
1.37 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)

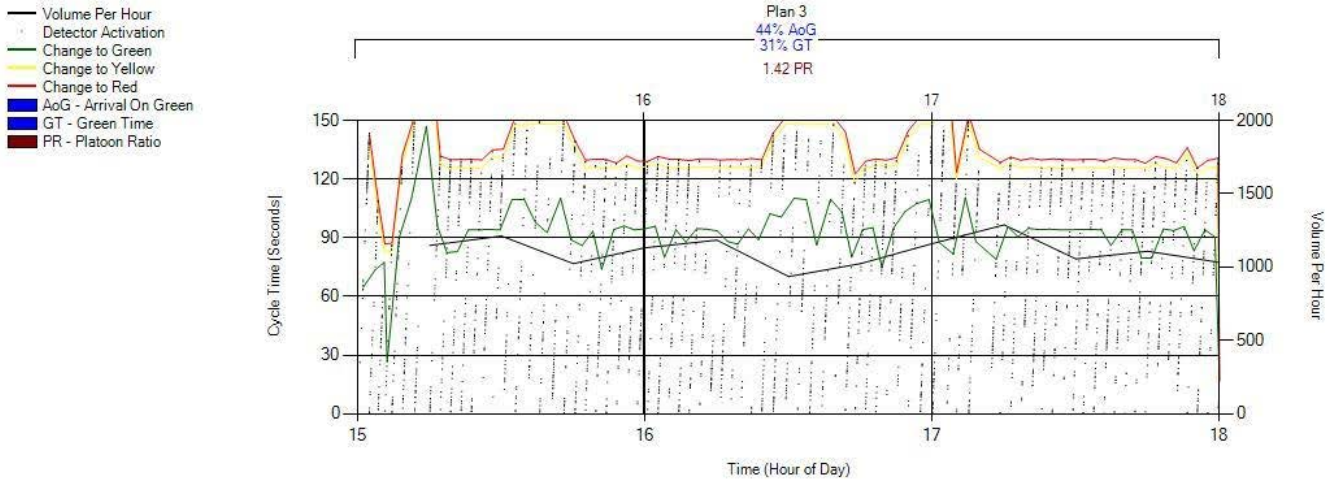

Purdue Coordination Diagram
STH 38 (Howell Ave.) @ Drexel Ave. - SIG#401094
Wednesday, June 6, 2018 3:00 PM - Wednesday, June 6, 2018 6:00 PM
Advanced detector located 256 ft. upstream of stop bar
Phase 4: Eastbound
AoG = 39%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
39% AoG
32% GT
1.22 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)

Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Drexel Ave. - SIG#401094
Wednesday, June 6, 2018 3:00 PM - Wednesday, June 6, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar

Phase 6: Northbound

AoG = 44%

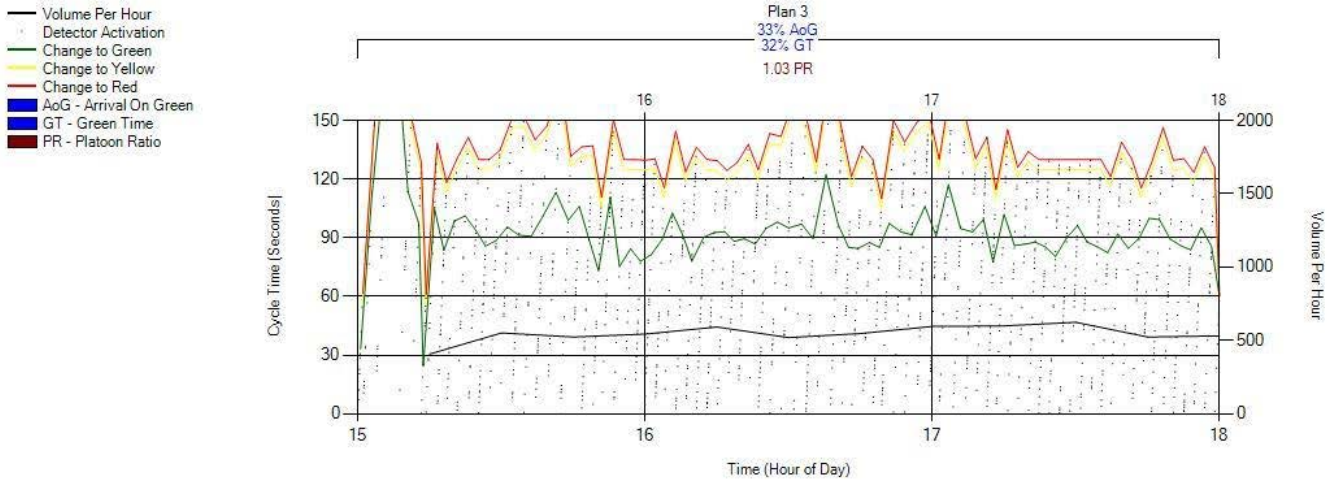


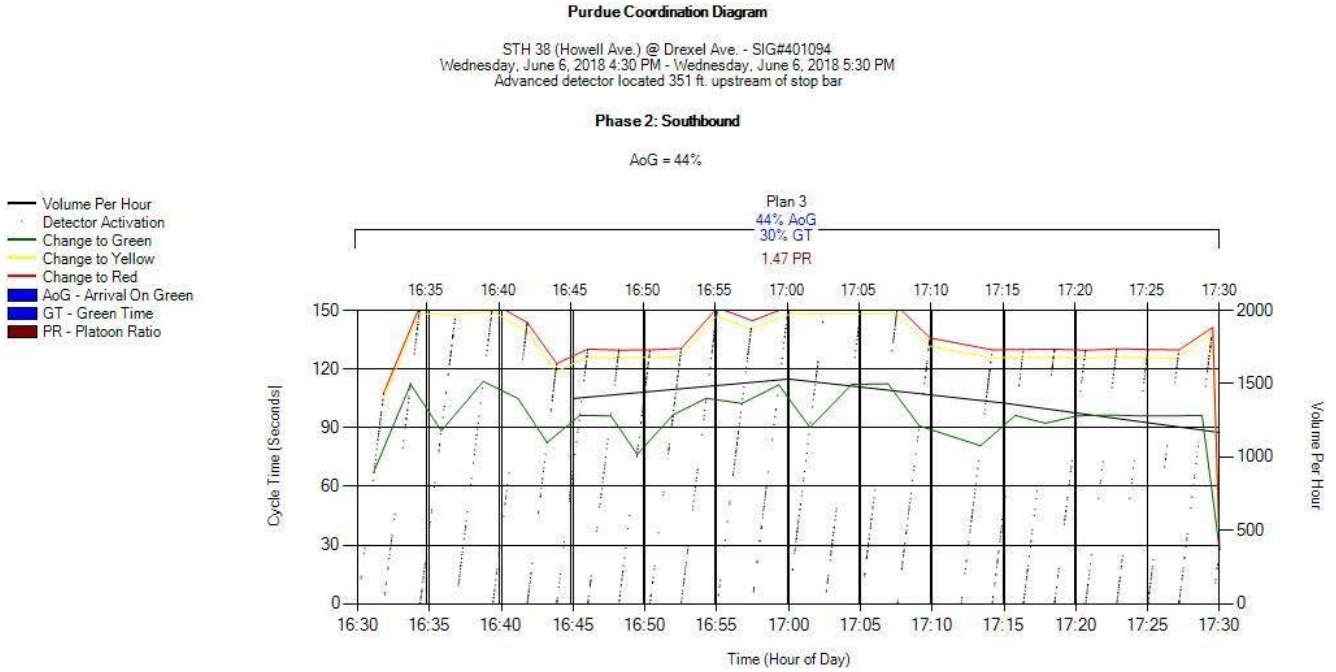
Purdue Coordination Diagram

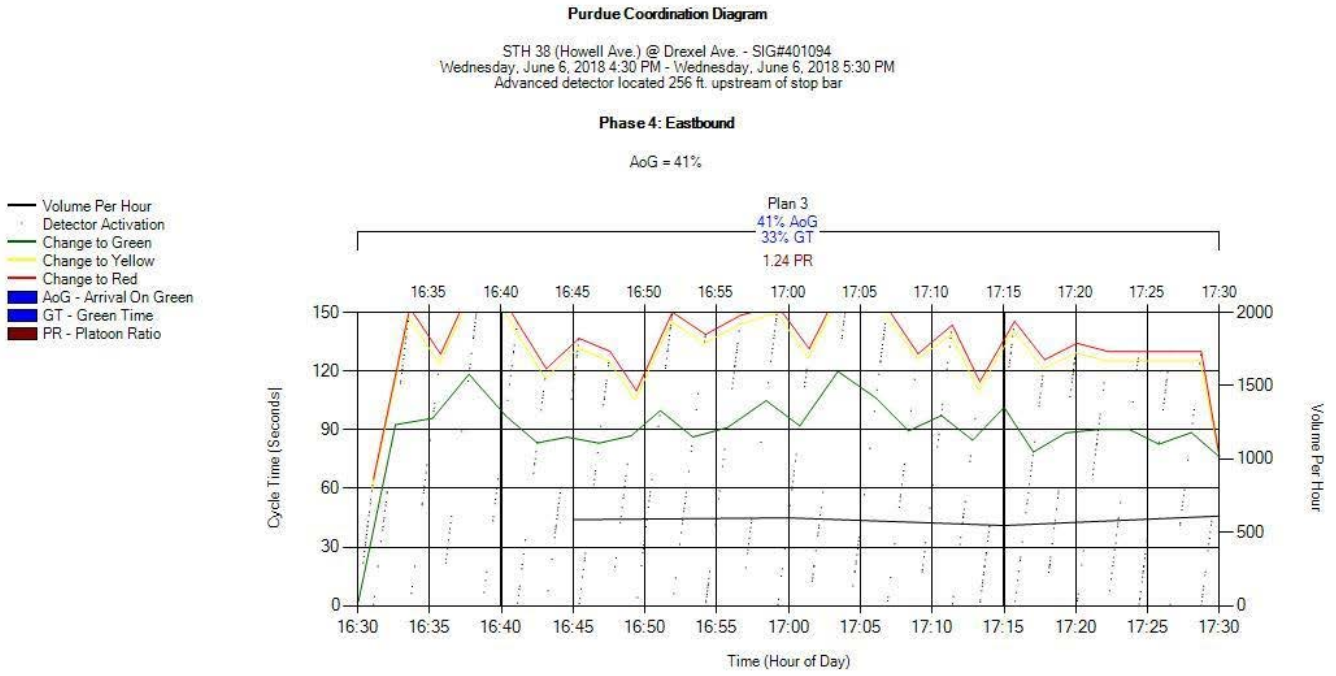
STH 38 (Howell Ave.) @ Drexel Ave. - SIG#401094
Wednesday, June 6, 2018 3:00 PM - Wednesday, June 6, 2018 6:00 PM
Advanced detector located 256 ft. upstream of stop bar

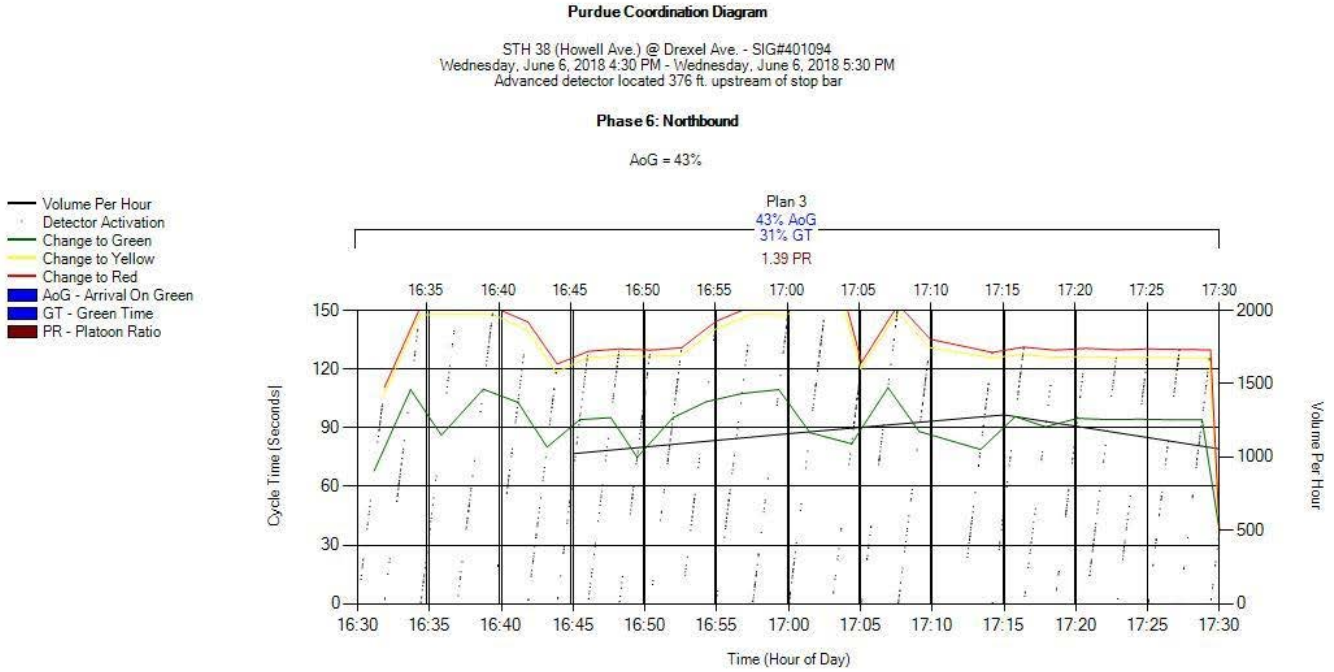
Phase 8: Westbound

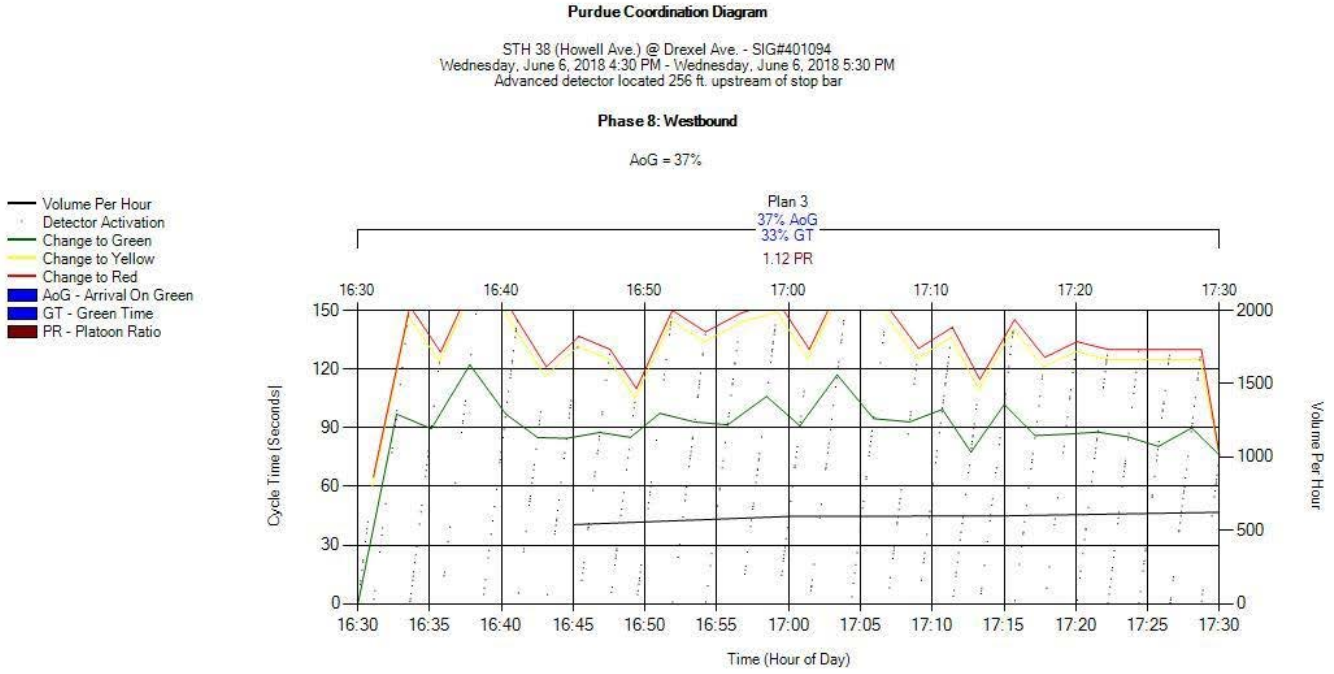
AoG = 33%




Purdue Coordination Diagram
STH 38 (Howell Ave.) @ Drexel Ave. - SIG#401094
Wednesday, June 6, 2018 4:30 PM - Wednesday, June 6, 2018 5:30 PM
Advanced detector located 351 ft. upstream of stop bar
Phase 2: Southbound
AoG = 44%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
44% AoG
30% GT
1.47 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)


Purdue Coordination Diagram
STH 38 (Howell Ave.) @ Drexel Ave. - SIG#401094
Wednesday, June 6, 2018 4:30 PM - Wednesday, June 6, 2018 5:30 PM
Advanced detector located 256 ft. upstream of stop bar
Phase 4: Eastbound
AoG = 41%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
41% AoG
33% GT
1.24 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)


Purdue Coordination Diagram
STH 38 (Howell Ave.) @ Drexel Ave. - SIG#401094
Wednesday, June 6, 2018 4:30 PM - Wednesday, June 6, 2018 5:30 PM
Advanced detector located 376 ft. upstream of stop bar
Phase 6: Northbound
AoG = 43%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
43% AoG
31% GT
1.39 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)

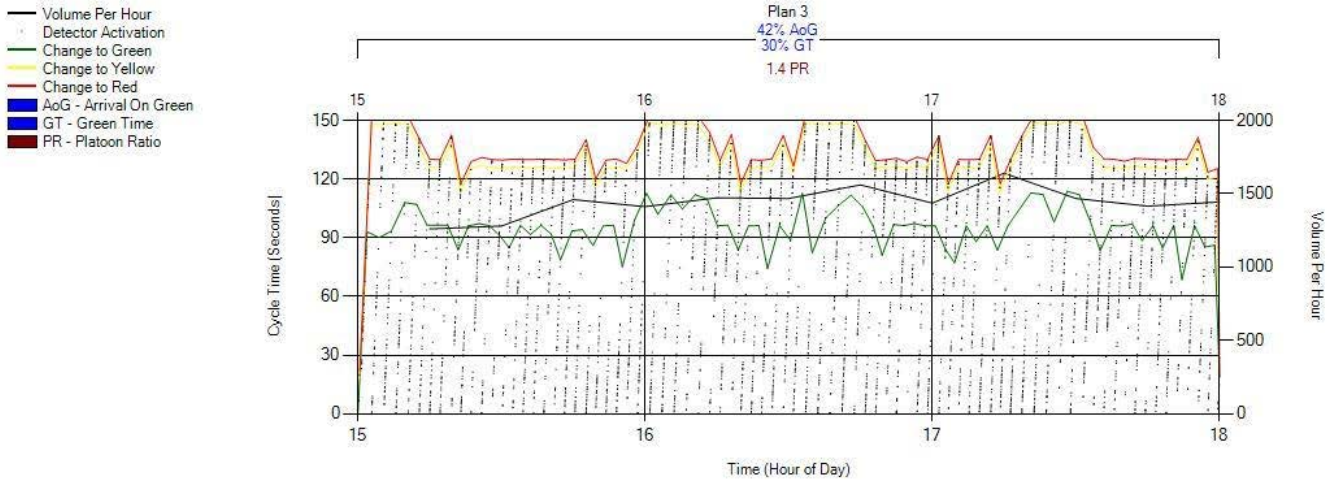

Purdue Coordination Diagram
STH 38 (Howell Ave.) @ Drexel Ave. - SIG#401094
Wednesday, June 6, 2018 4:30 PM - Wednesday, June 6, 2018 5:30 PM
Advanced detector located 256 ft. upstream of stop bar
Phase 8: Westbound
AoG = 37%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
37% AoG
33% GT
1.12 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)

Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Drexel Ave. - SIG#401094
Thursday, June 7, 2018 3:00 PM - Thursday, June 7, 2018 6:00 PM
Advanced detector located 351 ft. upstream of stop bar

Phase 2: Southbound

AoG = 42%

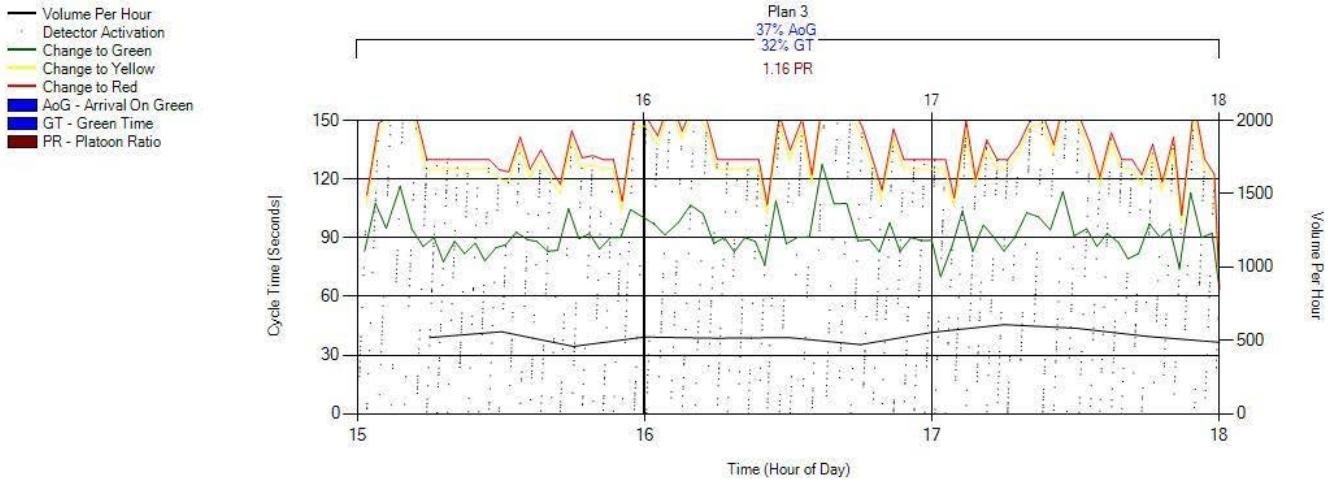


Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Drexel Ave. - SIG#401094
Thursday, June 7, 2018 3:00 PM - Thursday, June 7, 2018 6:00 PM
Advanced detector located 256 ft. upstream of stop bar

Phase 4: Eastbound

AoG = 37%

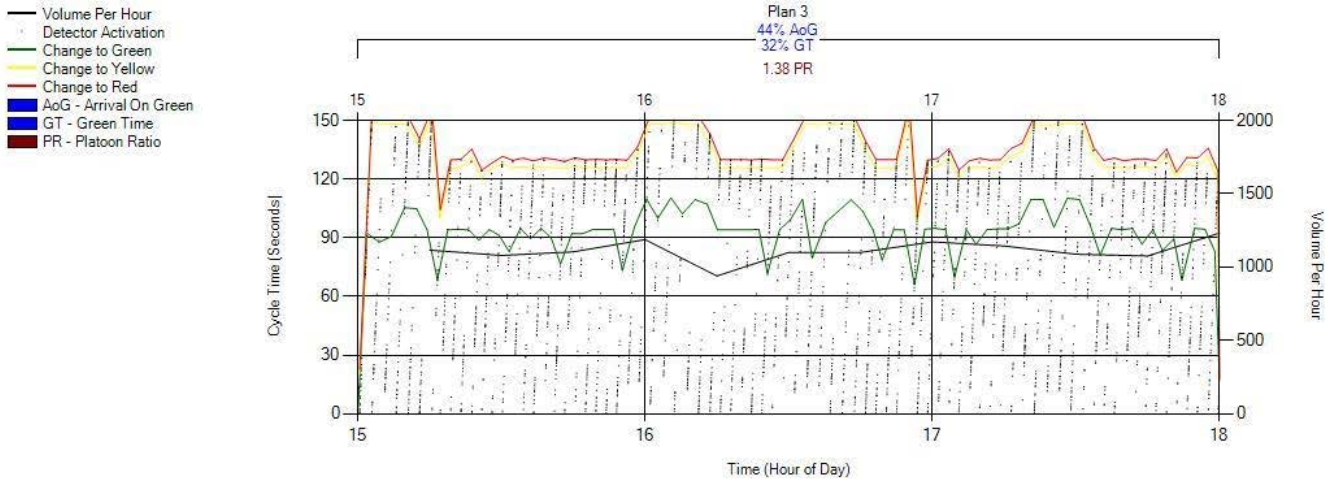


Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Drexel Ave. - SIG#401094
Thursday, June 7, 2018 3:00 PM - Thursday, June 7, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar

Phase 6: Northbound

AoG = 44%

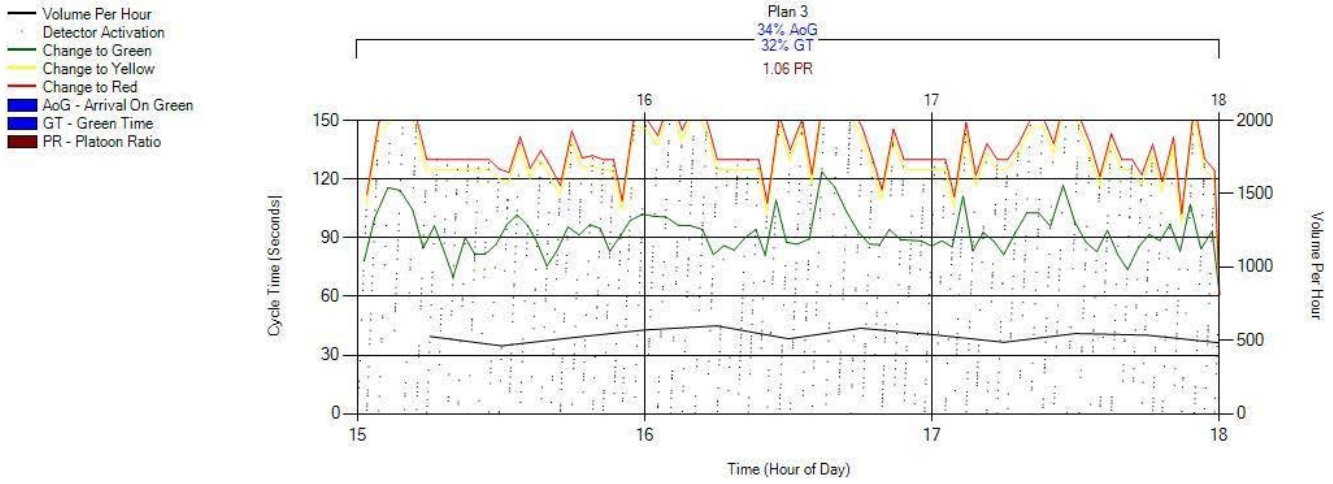


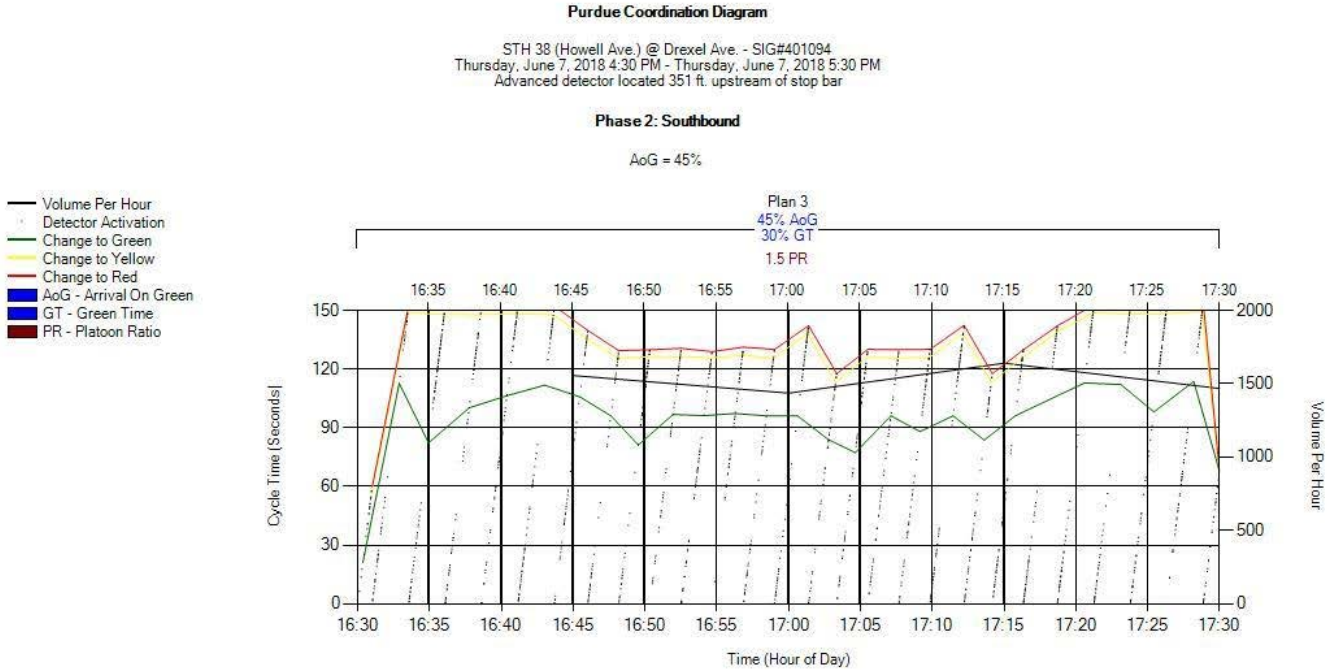
Purdue Coordination Diagram

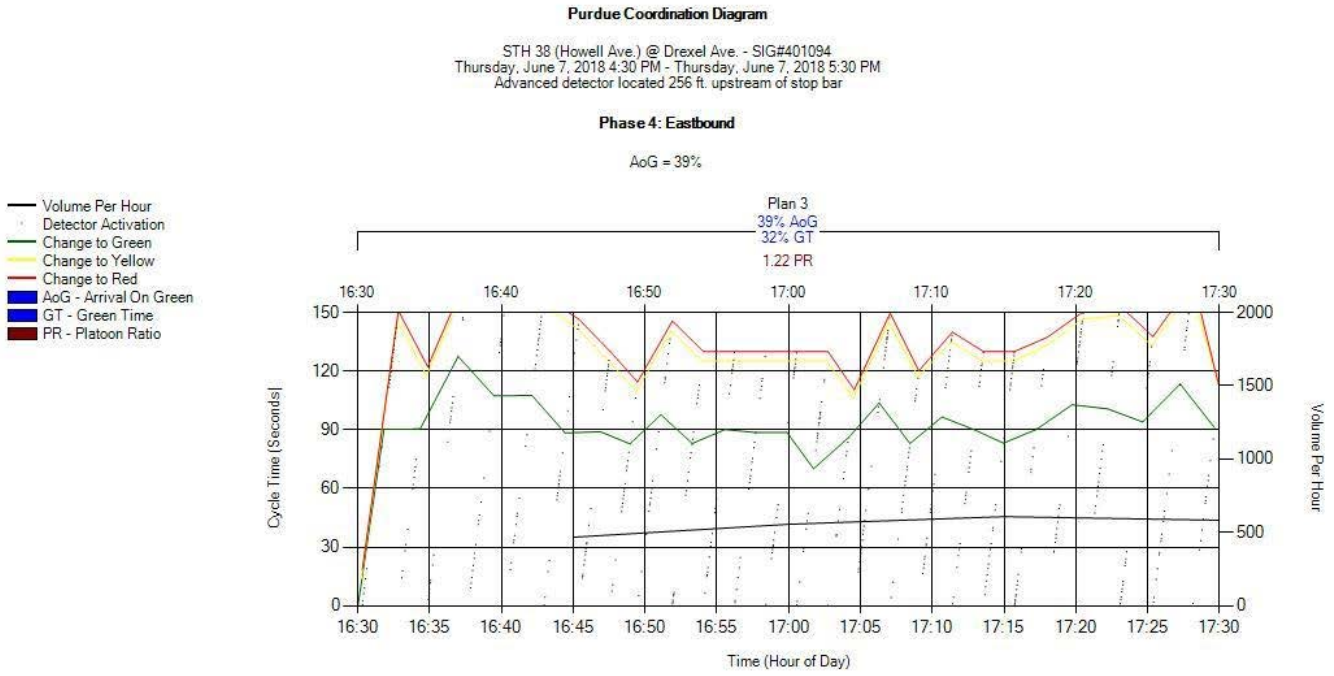
STH 38 (Howell Ave.) @ Drexel Ave. - SIG#401094
Thursday, June 7, 2018 3:00 PM - Thursday, June 7, 2018 6:00 PM
Advanced detector located 256 ft. upstream of stop bar

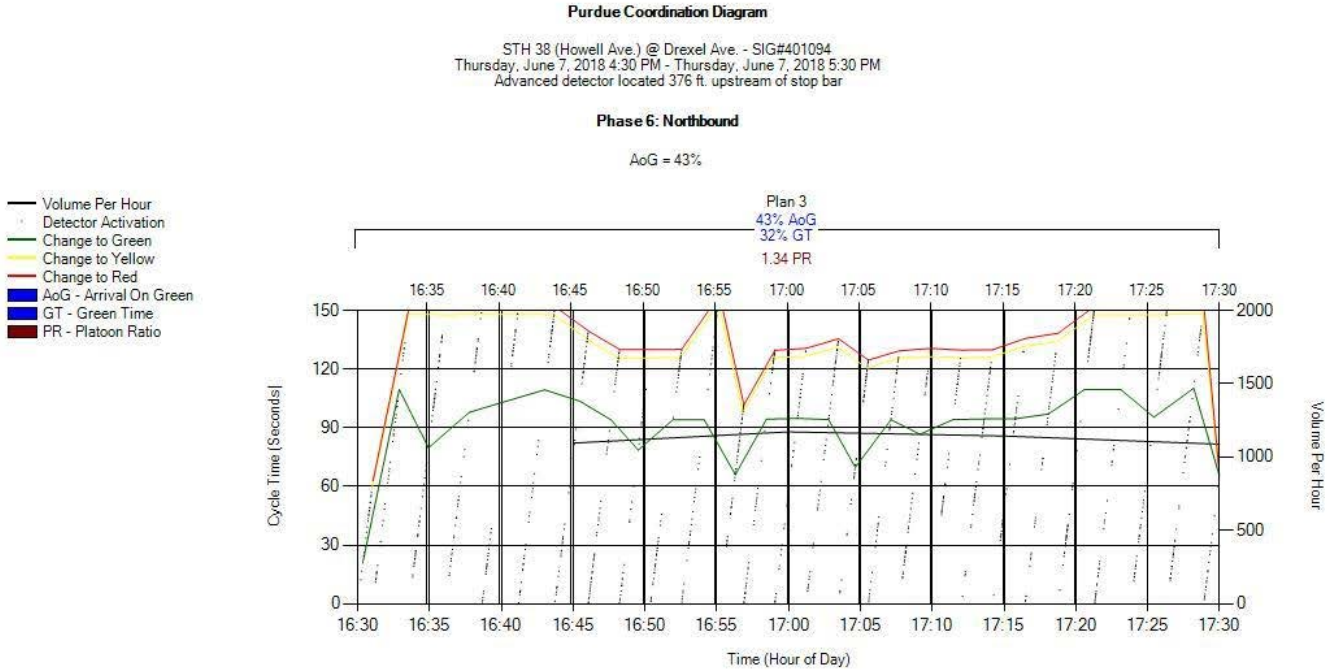
Phase 8: Westbound

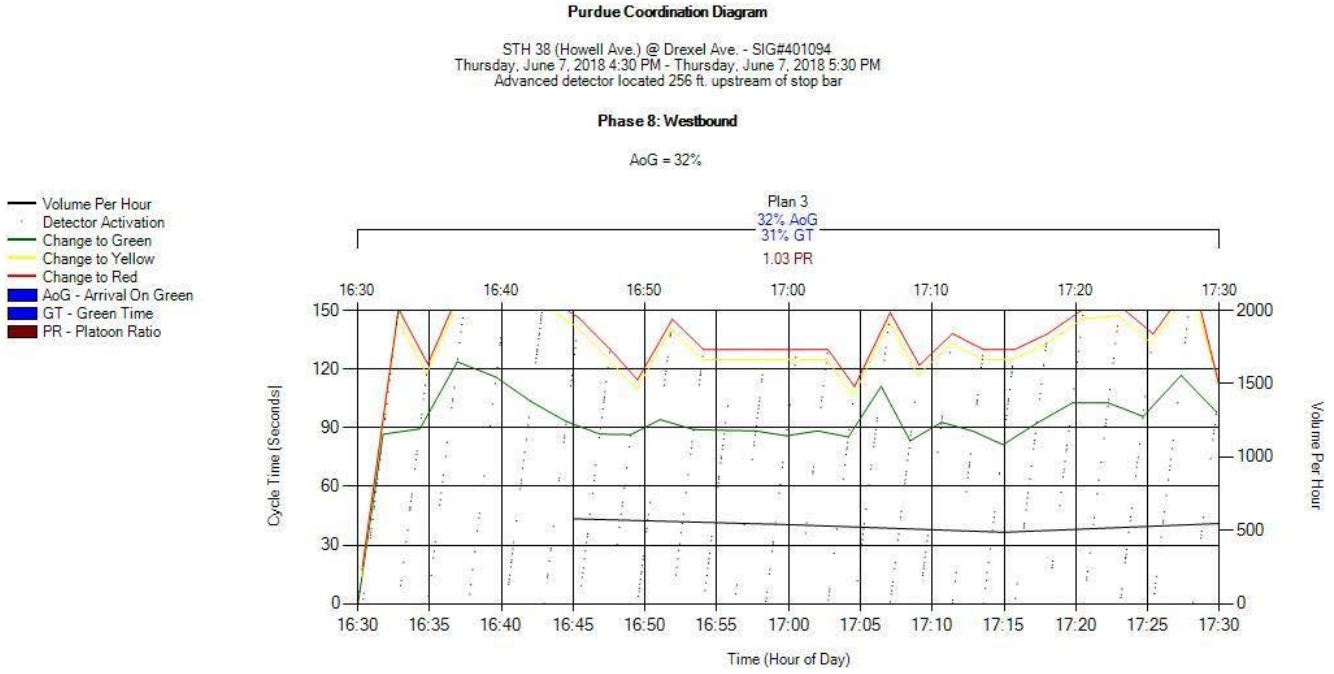
AoG = 34%




Purdue Coordination Diagram
STH 38 (Howell Ave.) @ Drexel Ave. - SIG#401094
Thursday, June 7, 2018 4:30 PM - Thursday, June 7, 2018 5:30 PM
Advanced detector located 351 ft. upstream of stop bar
Phase 2: Southbound
AoG = 45%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
45% AoG
30% GT
1.5 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)


Purdue Coordination Diagram
STH 38 (Howell Ave.) @ Drexel Ave. - SIG#401094
Thursday, June 7, 2018 4:30 PM - Thursday, June 7, 2018 5:30 PM
Advanced detector located 256 ft. upstream of stop bar
Phase 4: Eastbound
AoG = 39%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
39% AoG
32% GT
1.22 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)


Purdue Coordination Diagram
STH 38 (Howell Ave.) @ Drexel Ave. - SIG#401094
Thursday, June 7, 2018 4:30 PM - Thursday, June 7, 2018 5:30 PM
Advanced detector located 376 ft. upstream of stop bar
Phase 6: Northbound
AoG = 43%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
43% AoG
32% GT
1.34 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)

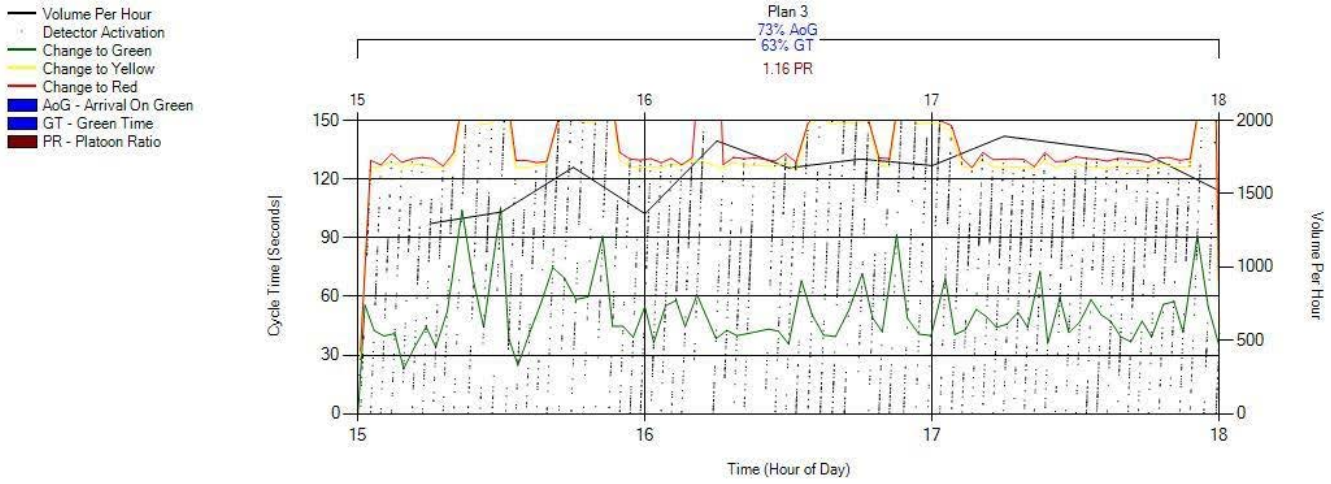

Purdue Coordination Diagram
STH 38 (Howell Ave.) @ Drexel Ave. - SIG#401094
Thursday, June 7, 2018 4:30 PM - Thursday, June 7, 2018 5:30 PM
Advanced detector located 256 ft. upstream of stop bar
Phase 8: Westbound
AoG = 32%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
32% AoG
31% GT
1.03 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)

Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Susan Dr. - SIG#401411
Tuesday, June 5, 2018 3:00 PM - Tuesday, June 5, 2018 6:00 PM
Advanced detector located 418 ft. upstream of stop bar

Phase 2: Southbound

AoG = 73%

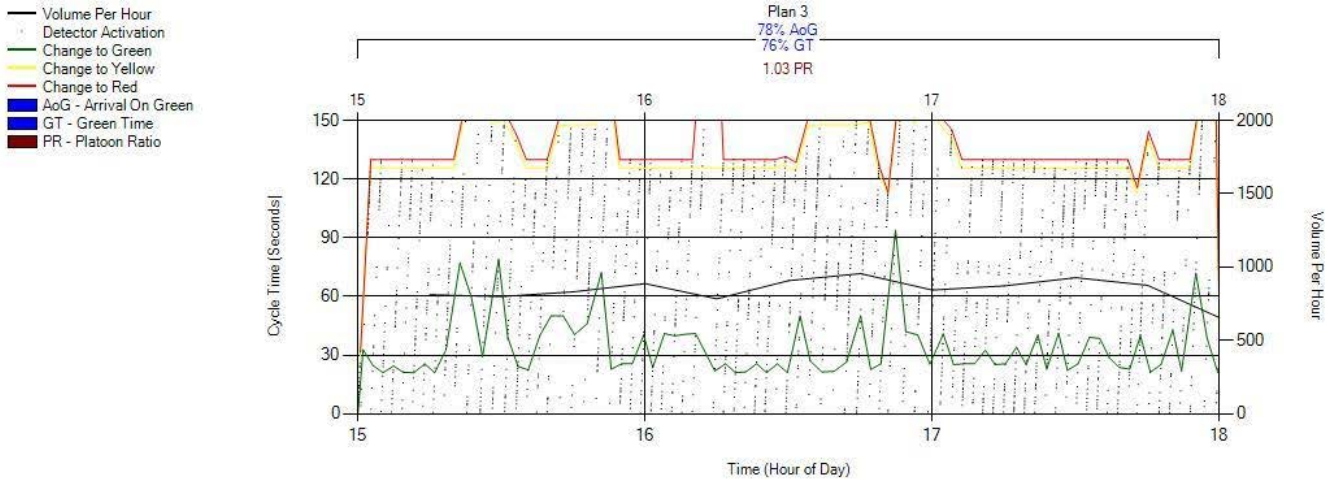


Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Susan Dr. - SIG#401411
Tuesday, June 5, 2018 3:00 PM - Tuesday, June 5, 2018 6:00 PM
Advanced detector located 330 ft. upstream of stop bar

Phase 6: Northbound

AoG = 78%



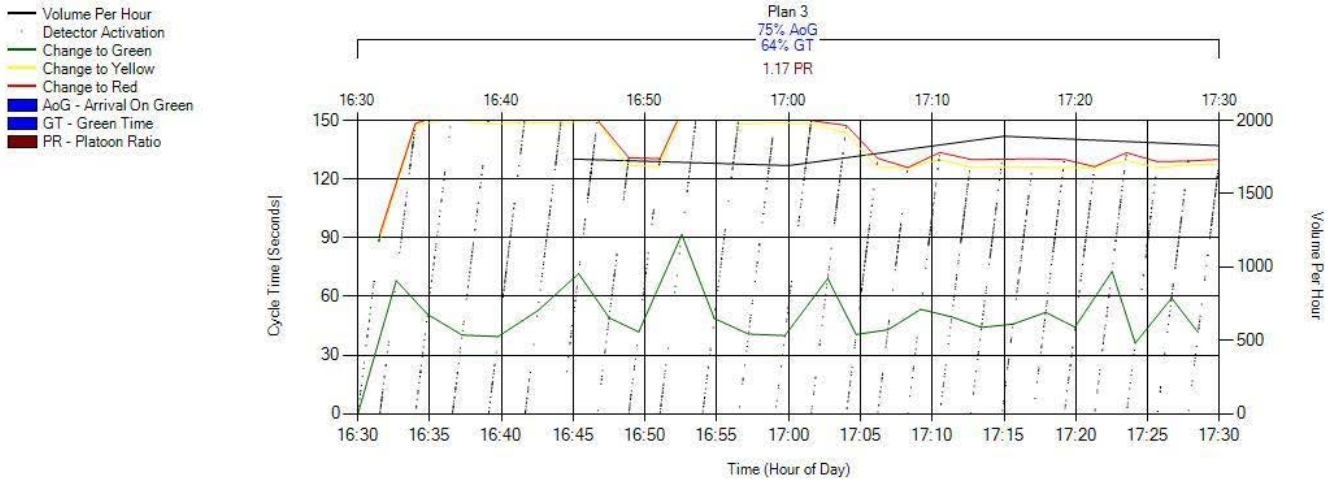
WIS 38 Corridor – STH 38 & Susan Dr.
Baseline Timings
6/5/2018 – 4:30 PM – 5:30 PM

Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Susan Dr. - SIG#401411
Tuesday, June 5, 2018 4:30 PM - Tuesday, June 5, 2018 5:30 PM
Advanced detector located 418 ft. upstream of stop bar

Phase 2: Southbound

AoG = 75%

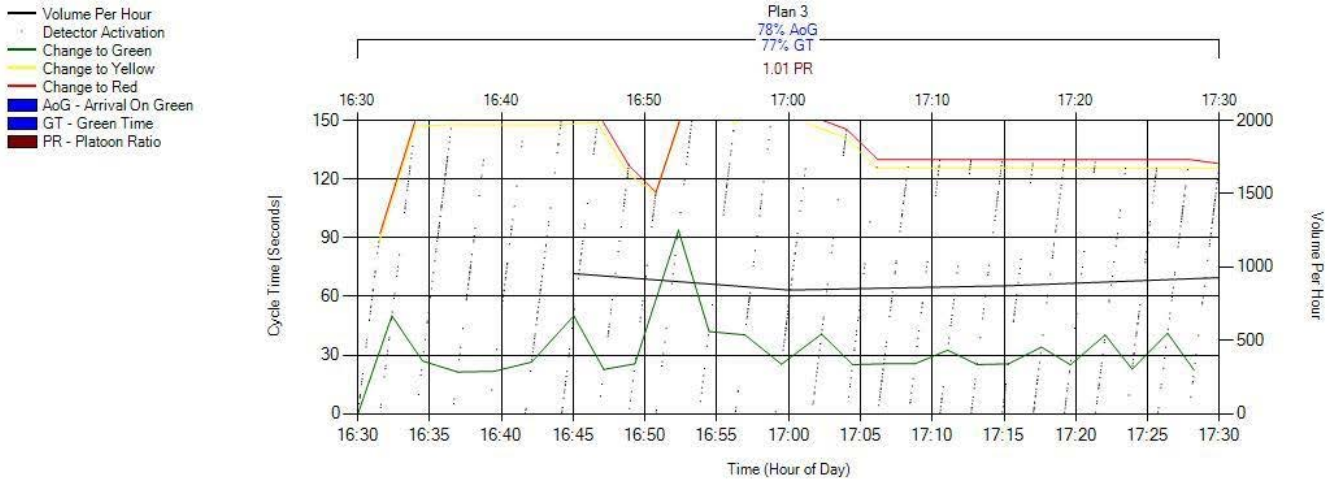


Purdue Coordination Diagram

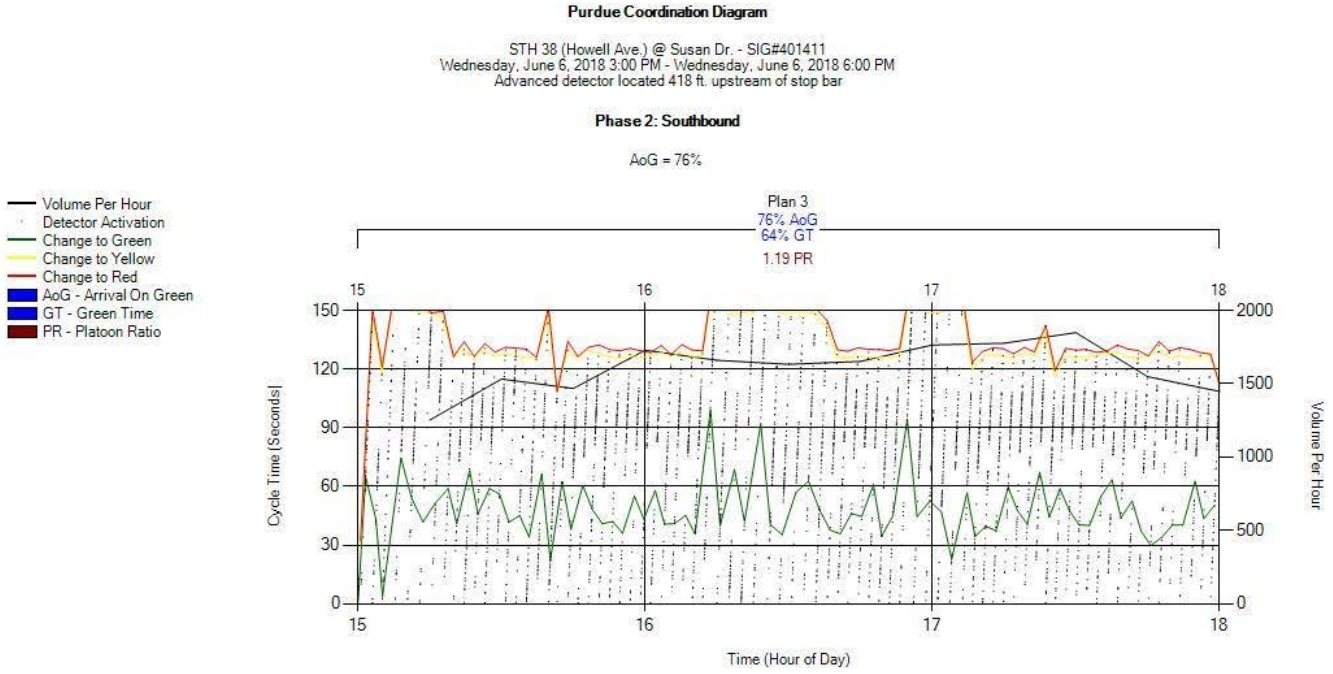
STH 38 (Howell Ave.) @ Susan Dr. - SIG#401411
Tuesday, June 5, 2018 4:30 PM - Tuesday, June 5, 2018 5:30 PM
Advanced detector located 330 ft. upstream of stop bar

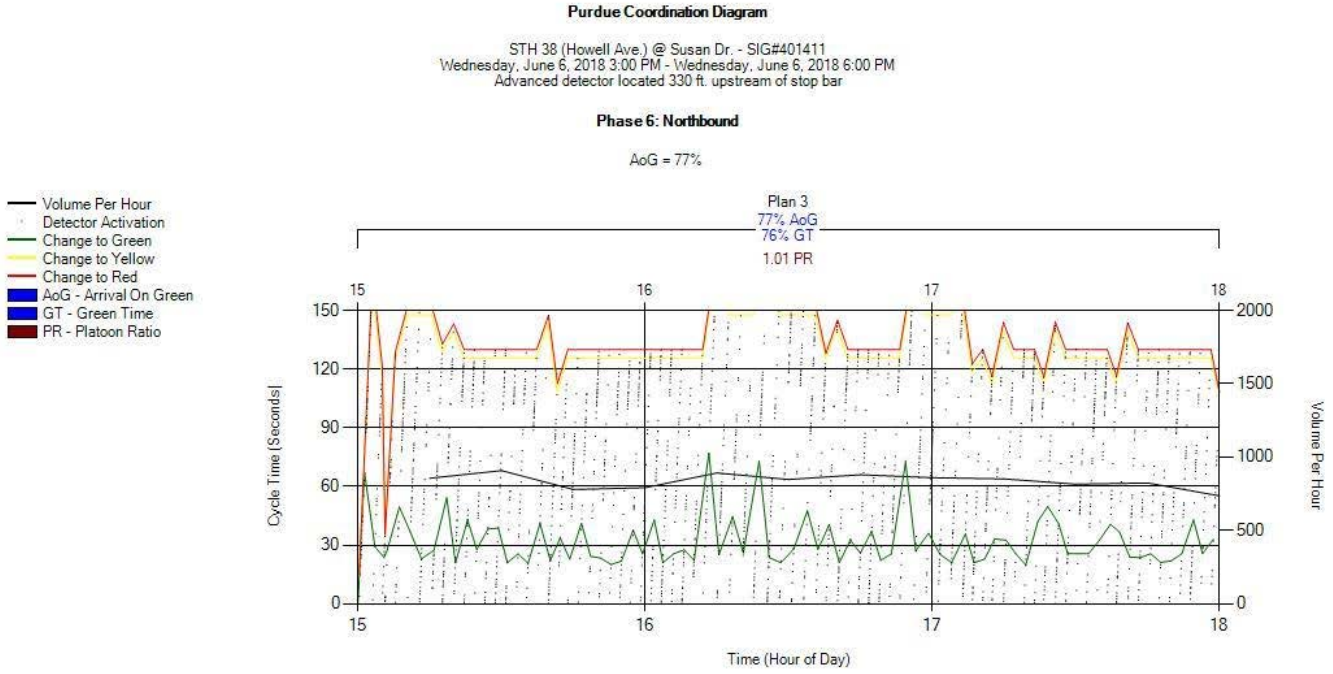
Phase 6: Northbound

AoG = 78%



WIS 38 Corridor – STH 38 & Susan Dr.
Baseline Timings
6/6/2018 – 3:00 PM – 6:00 PM



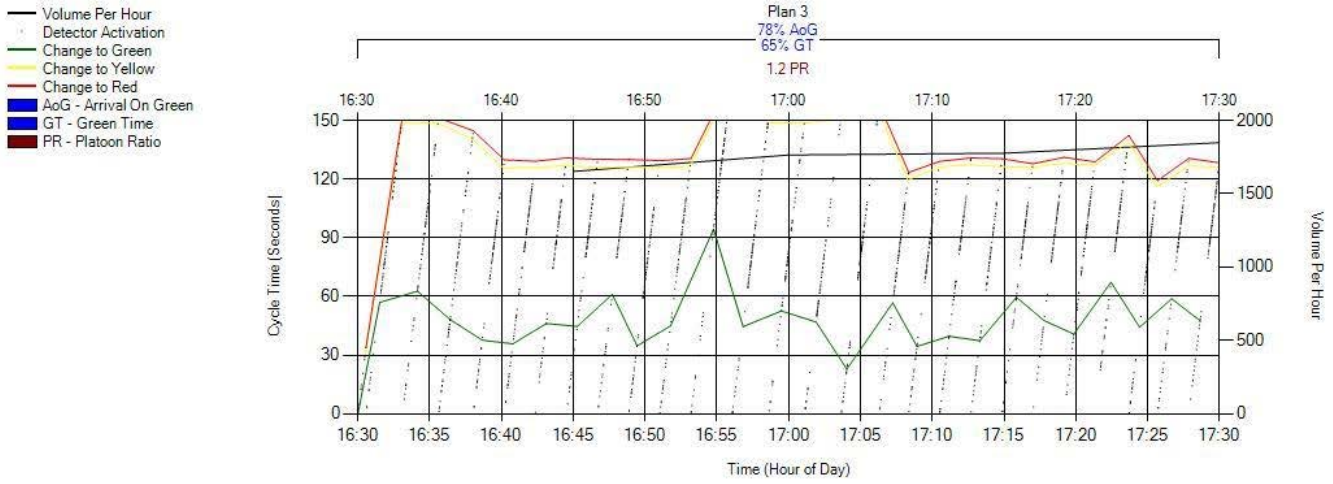


Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Susan Dr. - SIG#401411
Wednesday, June 6, 2018 4:30 PM - Wednesday, June 6, 2018 5:30 PM
Advanced detector located 418 ft. upstream of stop bar

Phase 2: Southbound

AoG = 78%

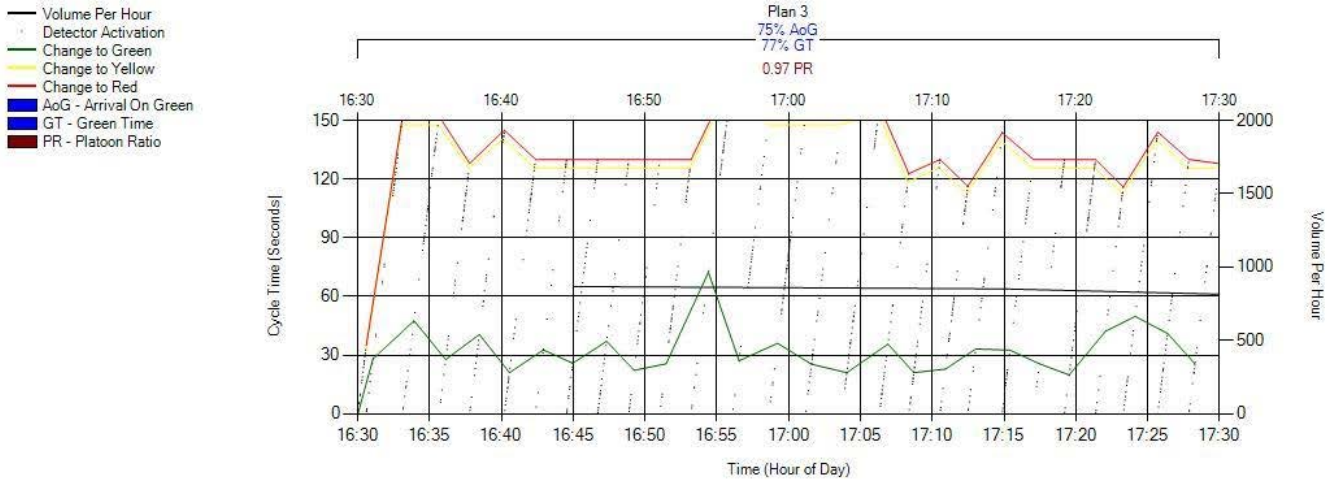


Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Susan Dr. - SIG#401411
Wednesday, June 6, 2018 4:30 PM - Wednesday, June 6, 2018 5:30 PM
Advanced detector located 330 ft. upstream of stop bar

Phase 6: Northbound

AoG = 75%

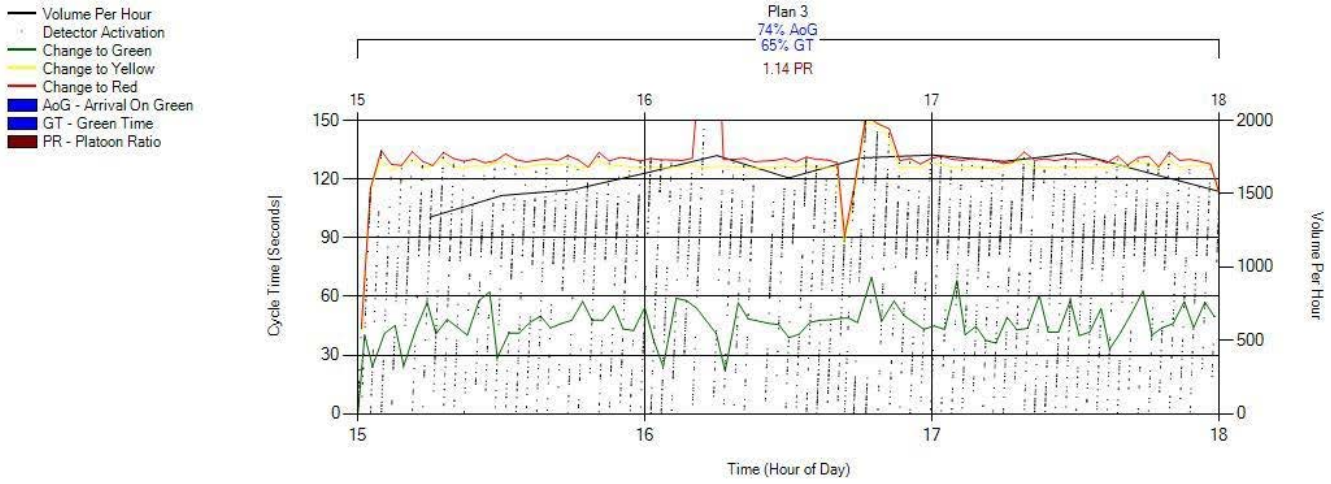


Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Susan Dr. - SIG#401411
Thursday, June 7, 2018 3:00 PM - Thursday, June 7, 2018 6:00 PM
Advanced detector located 418 ft. upstream of stop bar

Phase 2: Southbound

AoG = 74%

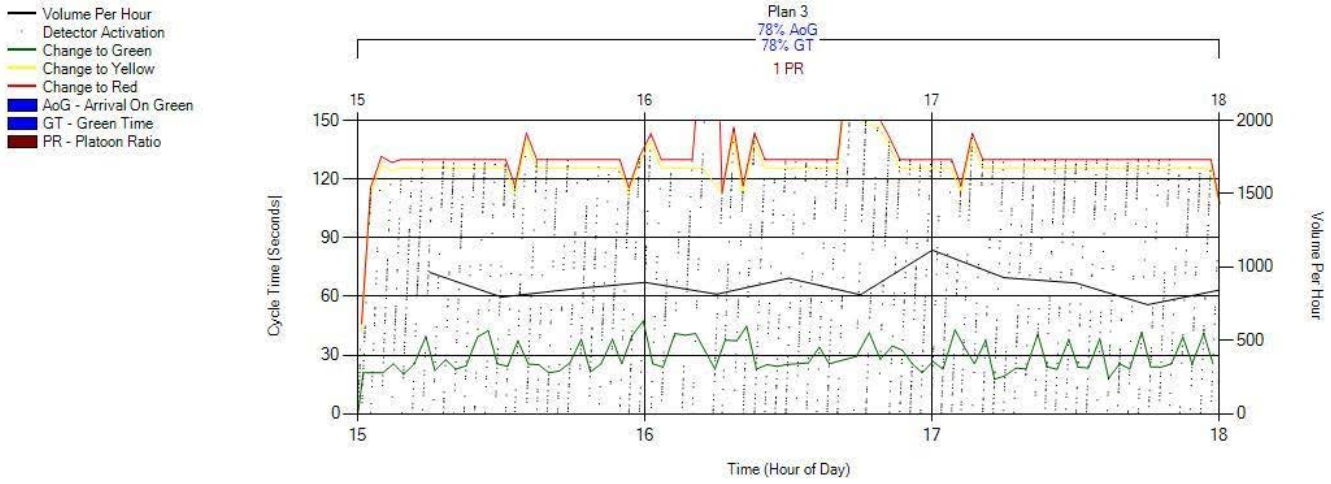


Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Susan Dr. - SIG#401411
Thursday, June 7, 2018 3:00 PM - Thursday, June 7, 2018 6:00 PM
Advanced detector located 330 ft. upstream of stop bar

Phase 6: Northbound

AoG = 78%

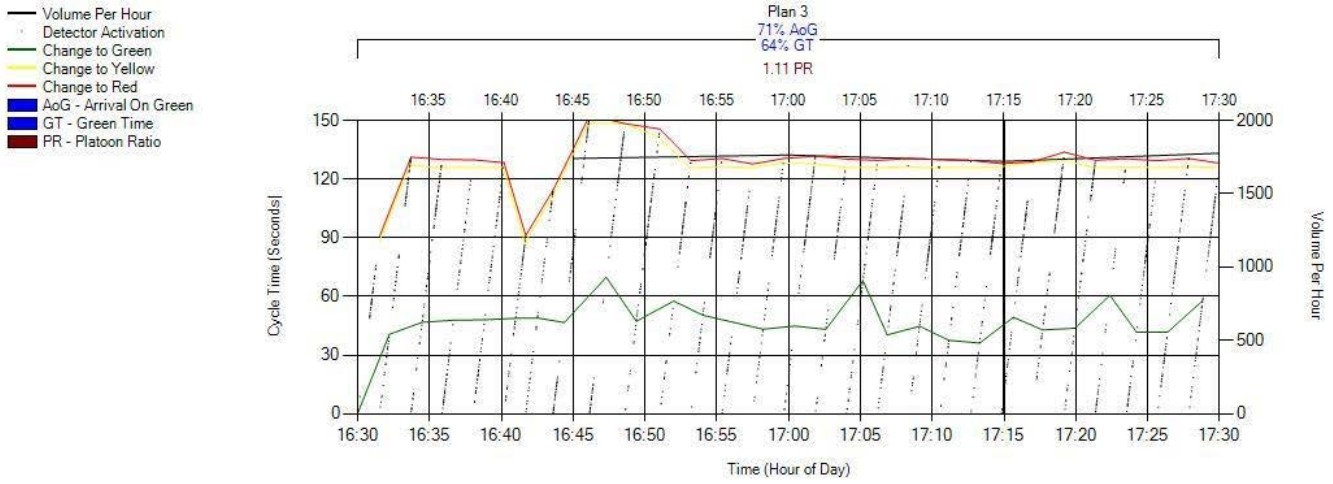


Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Susan Dr. - SIG#401411
Thursday, June 7, 2018 4:30 PM - Thursday, June 7, 2018 5:30 PM
Advanced detector located 418 ft. upstream of stop bar

Phase 2: Southbound

AoG = 71%

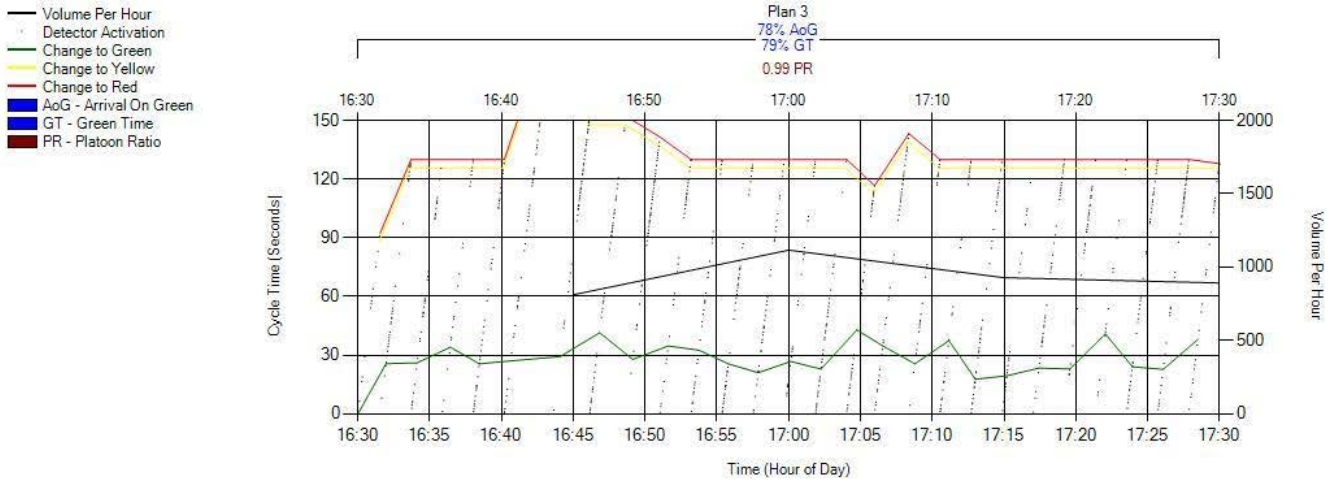


Purdue Coordination Diagram

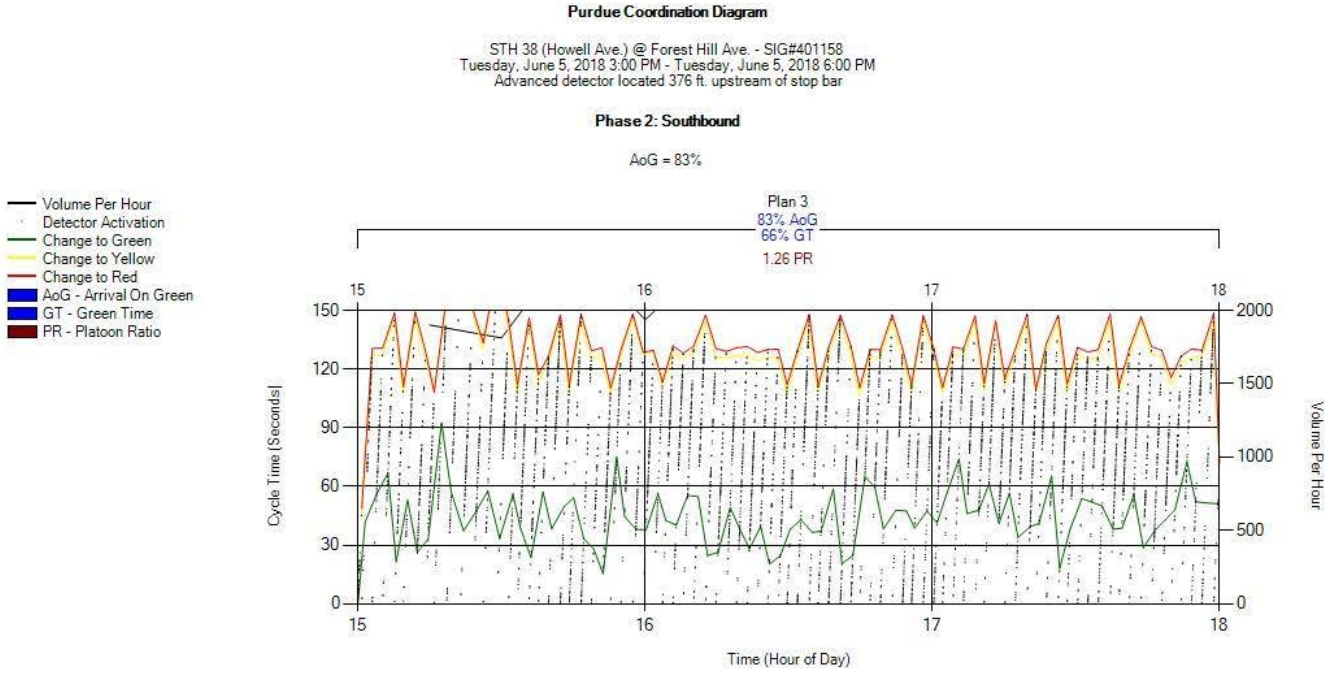
STH 38 (Howell Ave.) @ Susan Dr. - SIG#401411
Thursday, June 7, 2018 4:30 PM - Thursday, June 7, 2018 5:30 PM
Advanced detector located 330 ft. upstream of stop bar

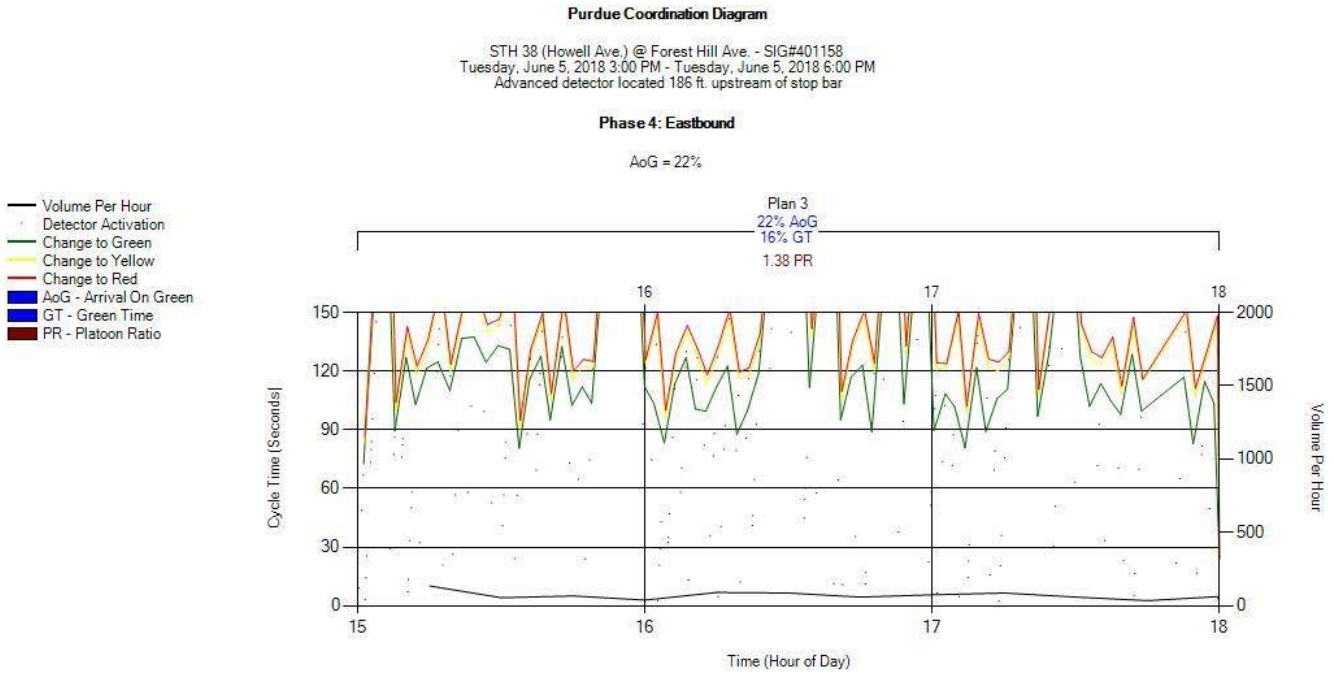
Phase 6: Northbound

AoG = 78%

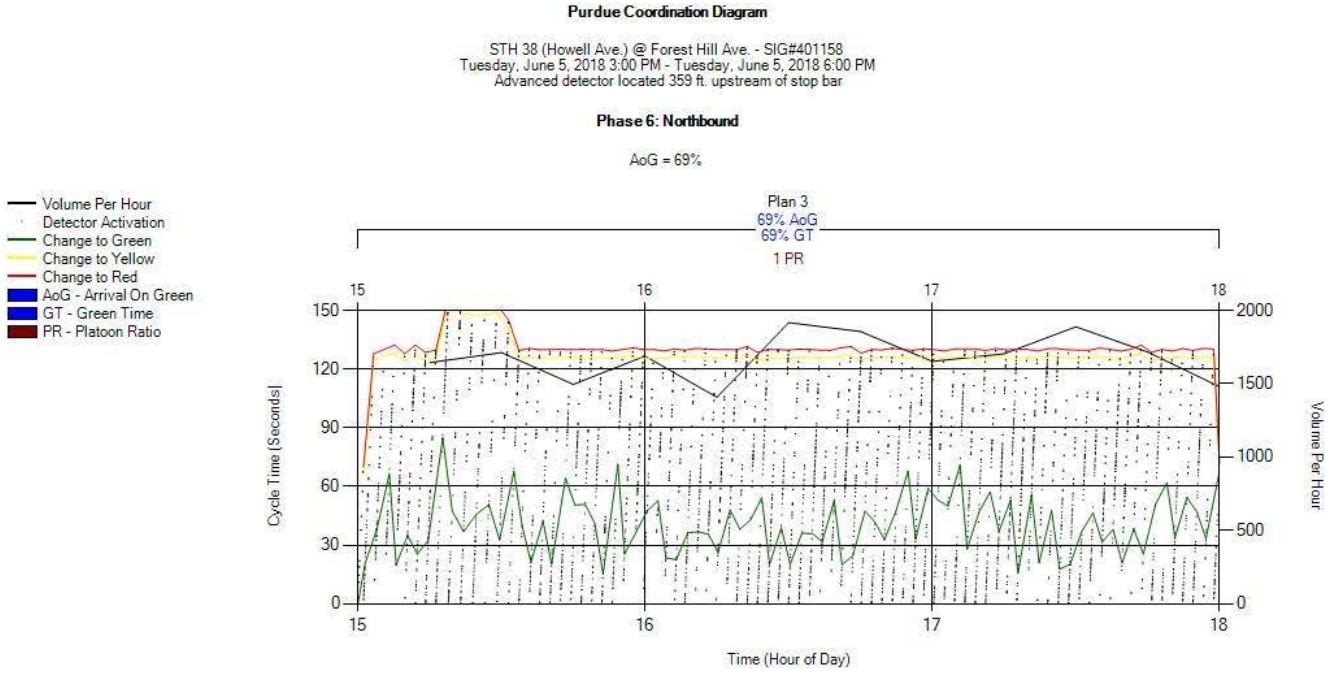


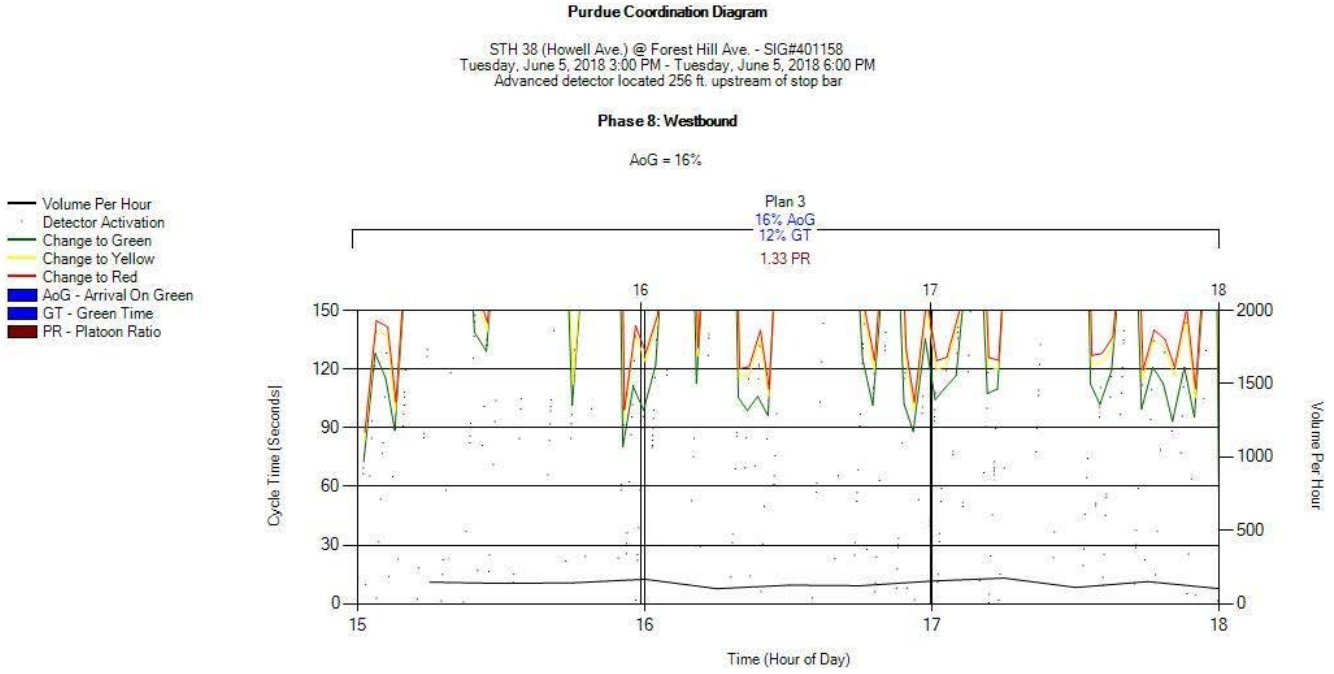
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM





WIS 38 Corridor – STH 38 & Forest Hill Ave.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM





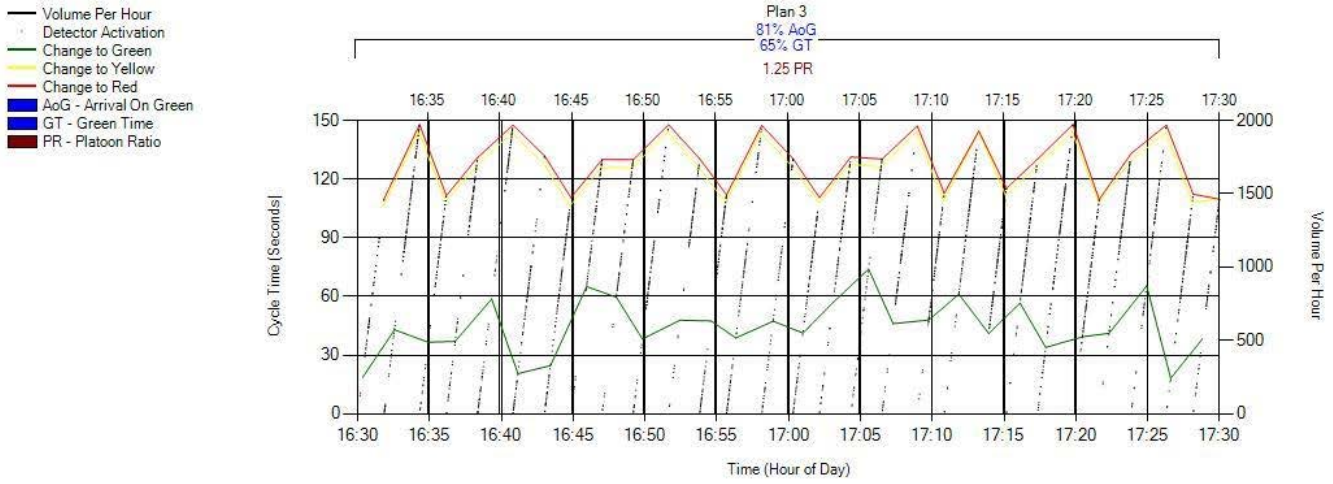
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Baseline Timings
6/5/2018 – 4:30 PM – 5:30 PM

Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Forest Hill Ave. - SIG#401158
Tuesday, June 5, 2018 4:30 PM - Tuesday, June 5, 2018 5:30 PM
Advanced detector located 376 ft. upstream of stop bar

Phase 2: Southbound

AoG = 81%

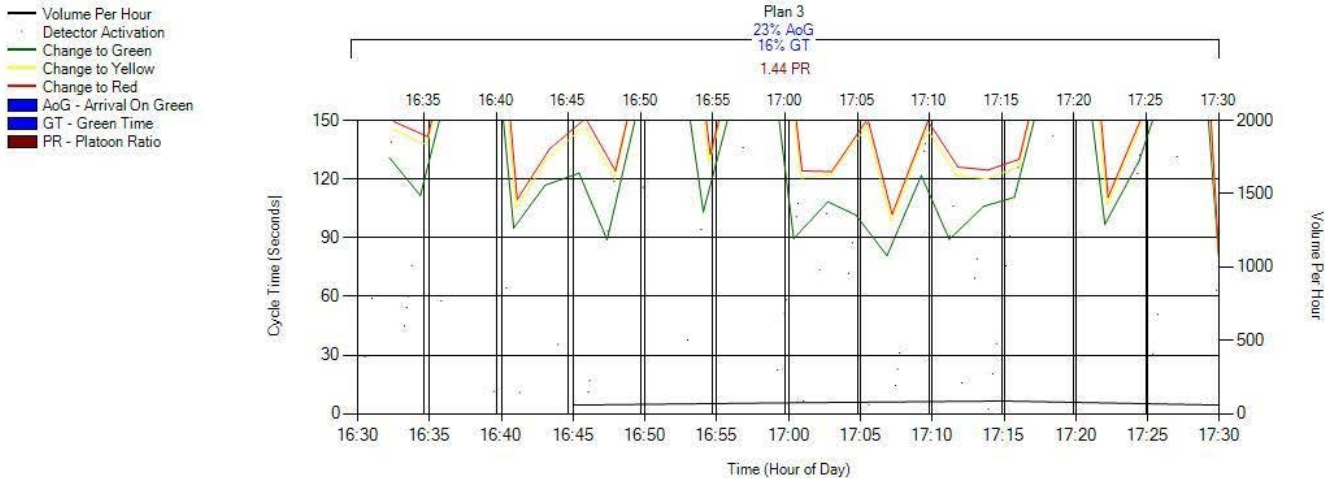


Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Forest Hill Ave. - SIG#401158
Tuesday, June 5, 2018 4:30 PM - Tuesday, June 5, 2018 5:30 PM
Advanced detector located 186 ft. upstream of stop bar

Phase 4: Eastbound

AoG = 23%



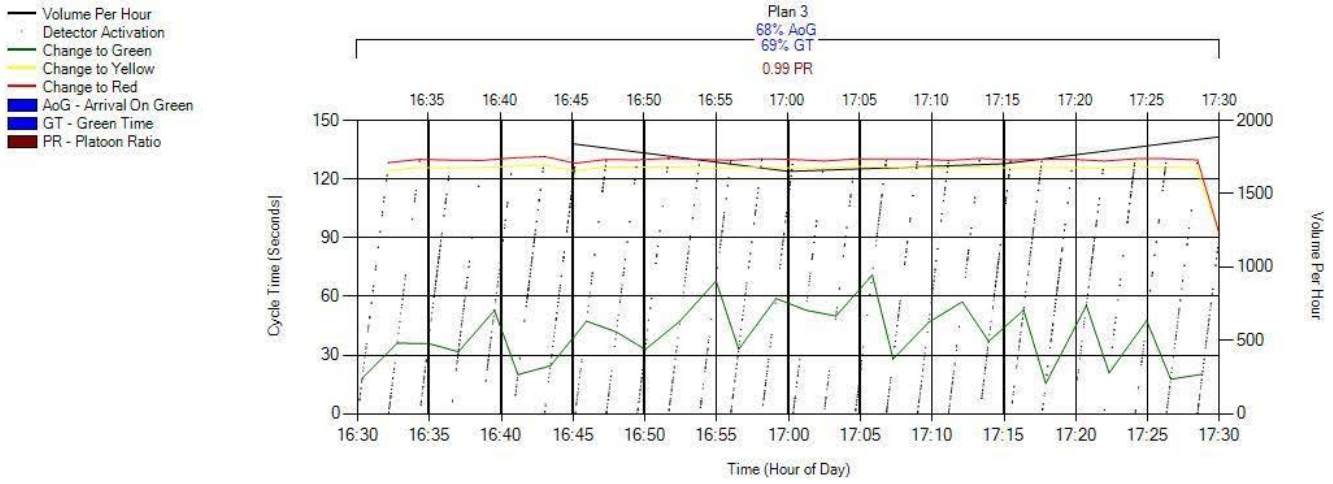
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Baseline Timings
6/5/2018 – 4:30 PM – 5:30 PM

Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Forest Hill Ave. - SIG#401158
Tuesday, June 5, 2018 4:30 PM - Tuesday, June 5, 2018 5:30 PM
Advanced detector located 359 ft. upstream of stop bar

Phase 6: Northbound

AoG = 68%

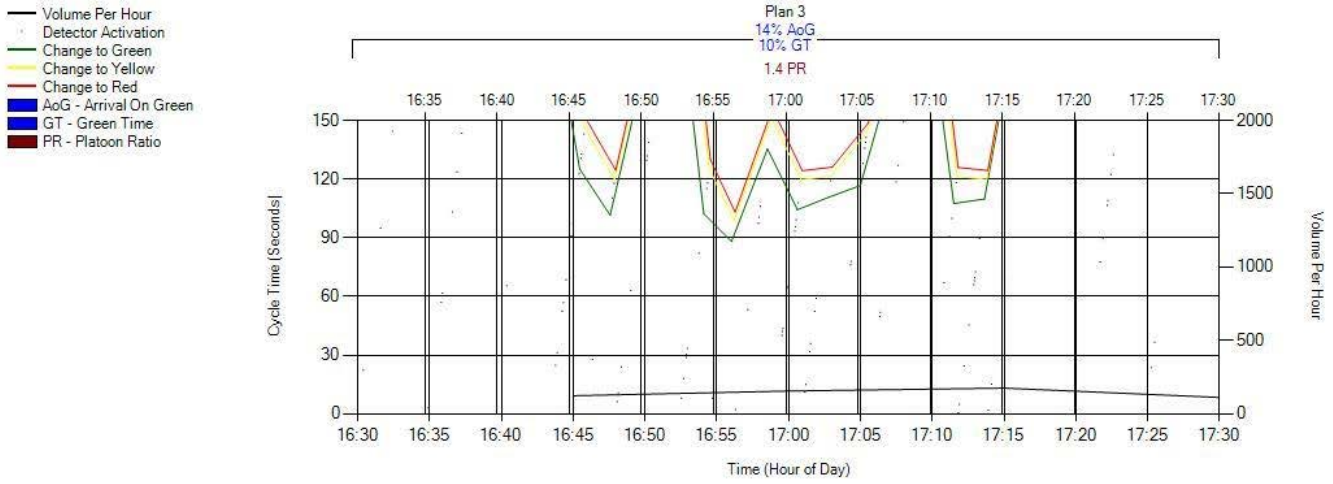


Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Forest Hill Ave. - SIG#401158
Tuesday, June 5, 2018 4:30 PM - Tuesday, June 5, 2018 5:30 PM
Advanced detector located 256 ft. upstream of stop bar

Phase 8: Westbound

AoG = 14%

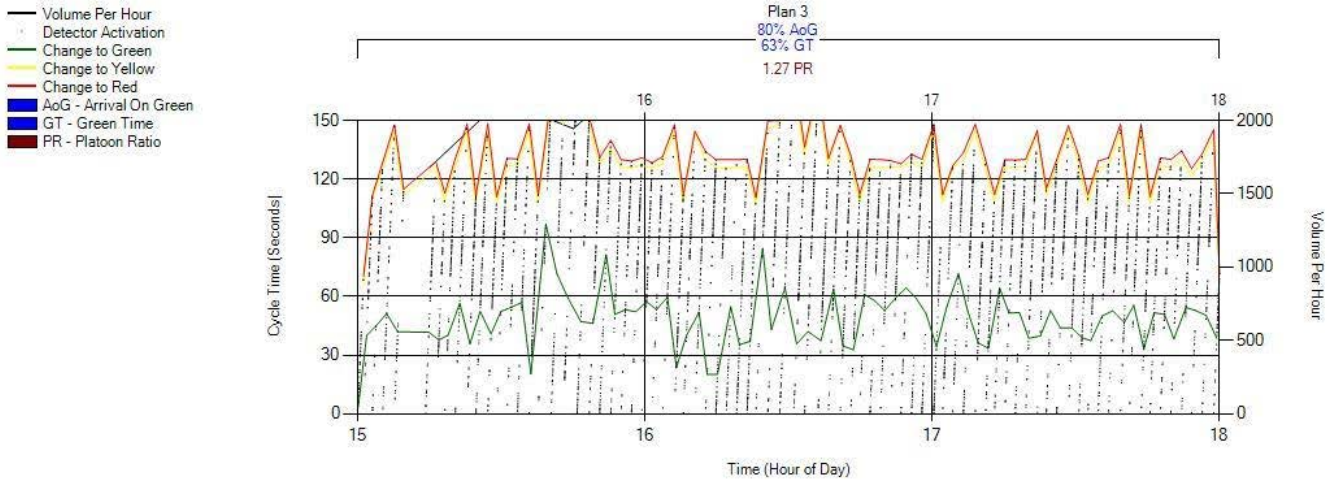


Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Forest Hill Ave. - SIG#401158
Wednesday, June 6, 2018 3:00 PM - Wednesday, June 6, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar

Phase 2: Southbound

AoG = 80%

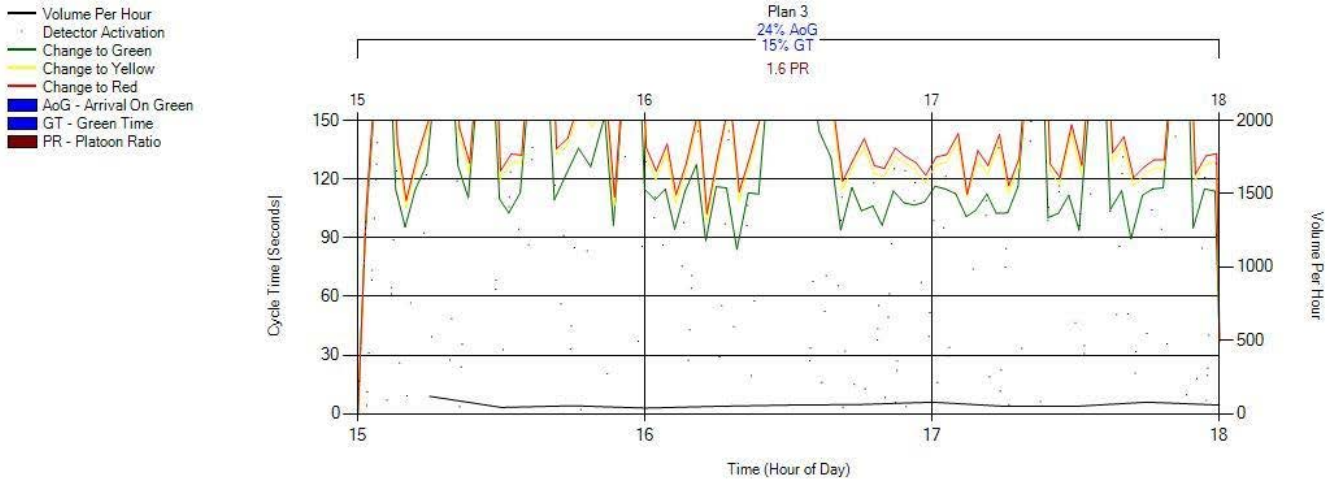


Purdue Coordination Diagram

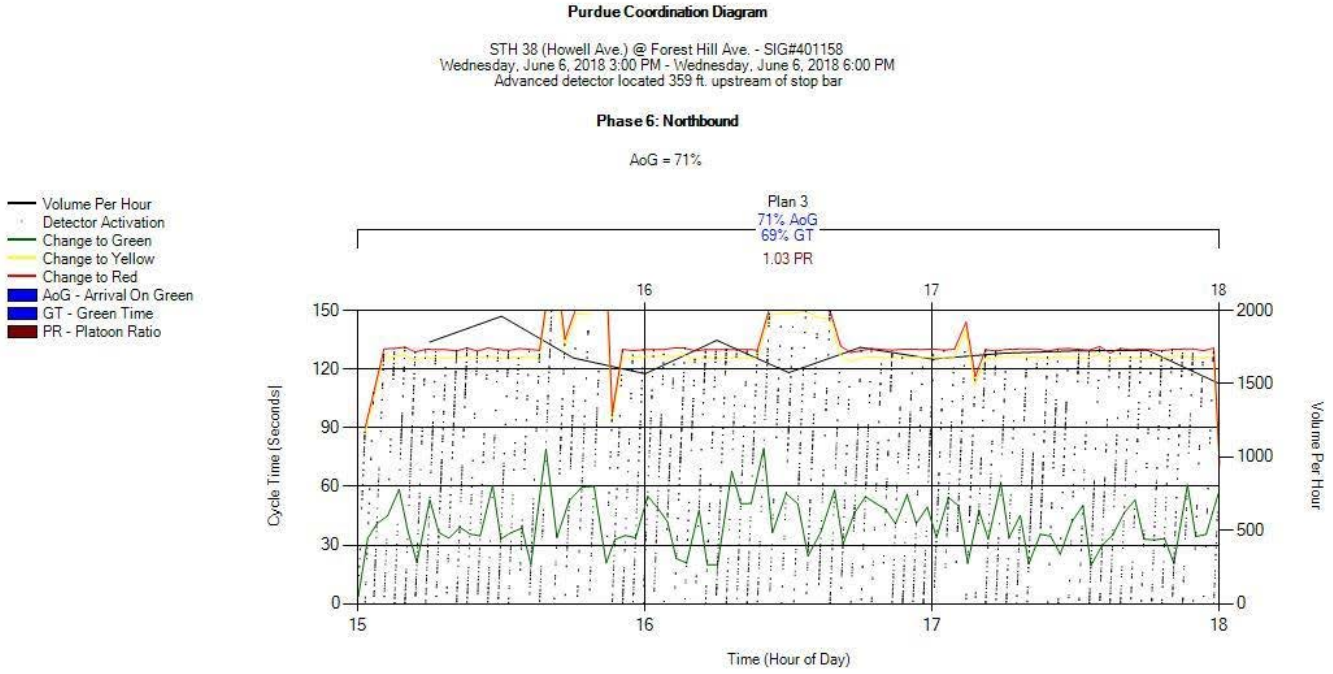
STH 38 (Howell Ave.) @ Forest Hill Ave. - SIG#401158
Wednesday, June 6, 2018 3:00 PM - Wednesday, June 6, 2018 6:00 PM
Advanced detector located 186 ft. upstream of stop bar

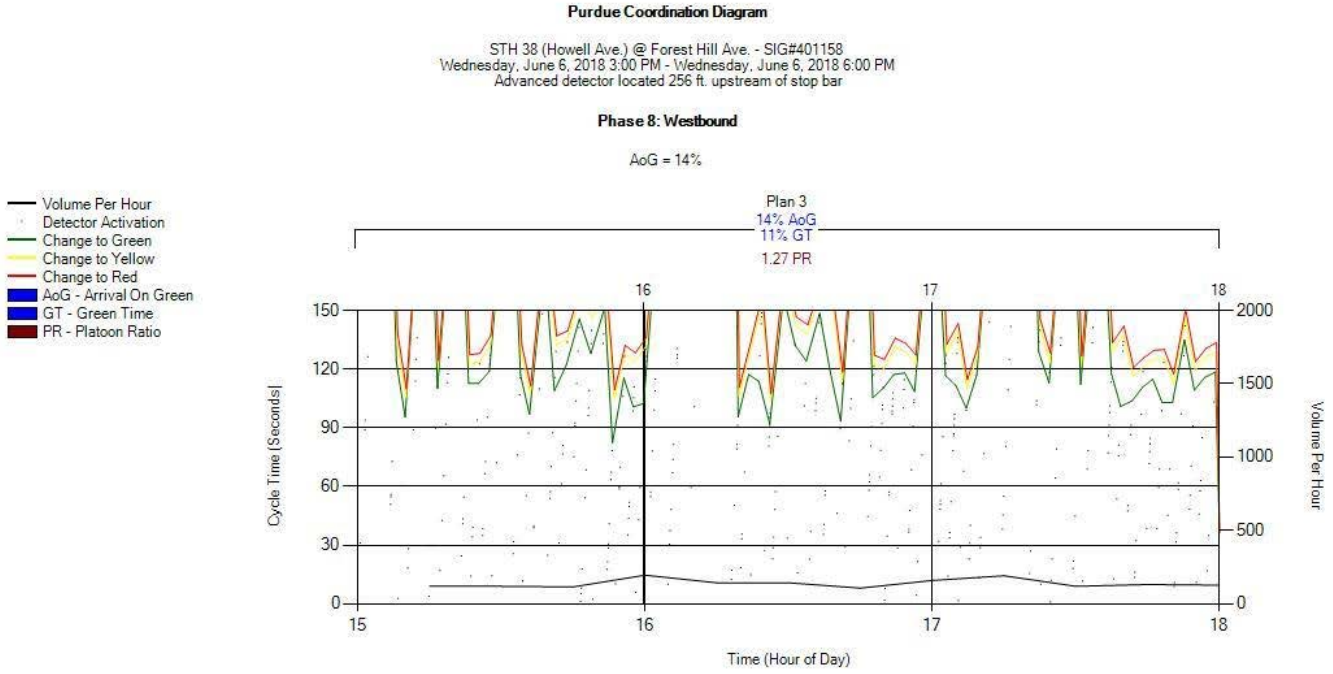
Phase 4: Eastbound

AoG = 24%

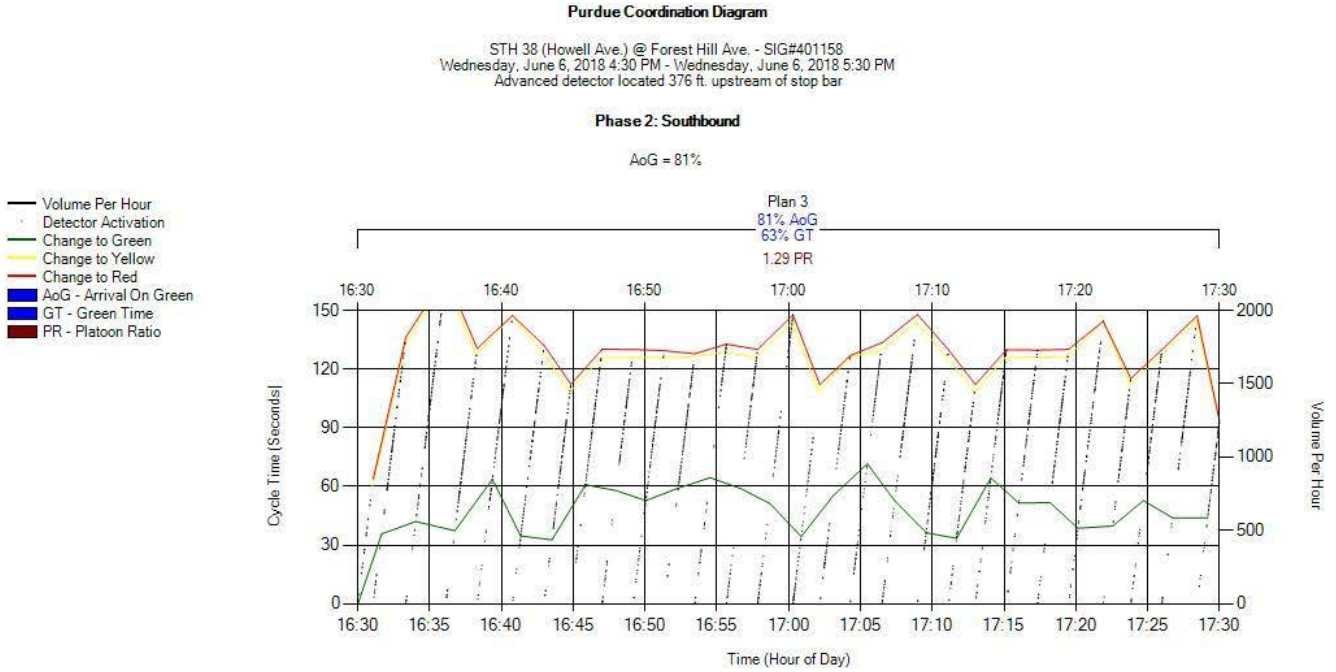


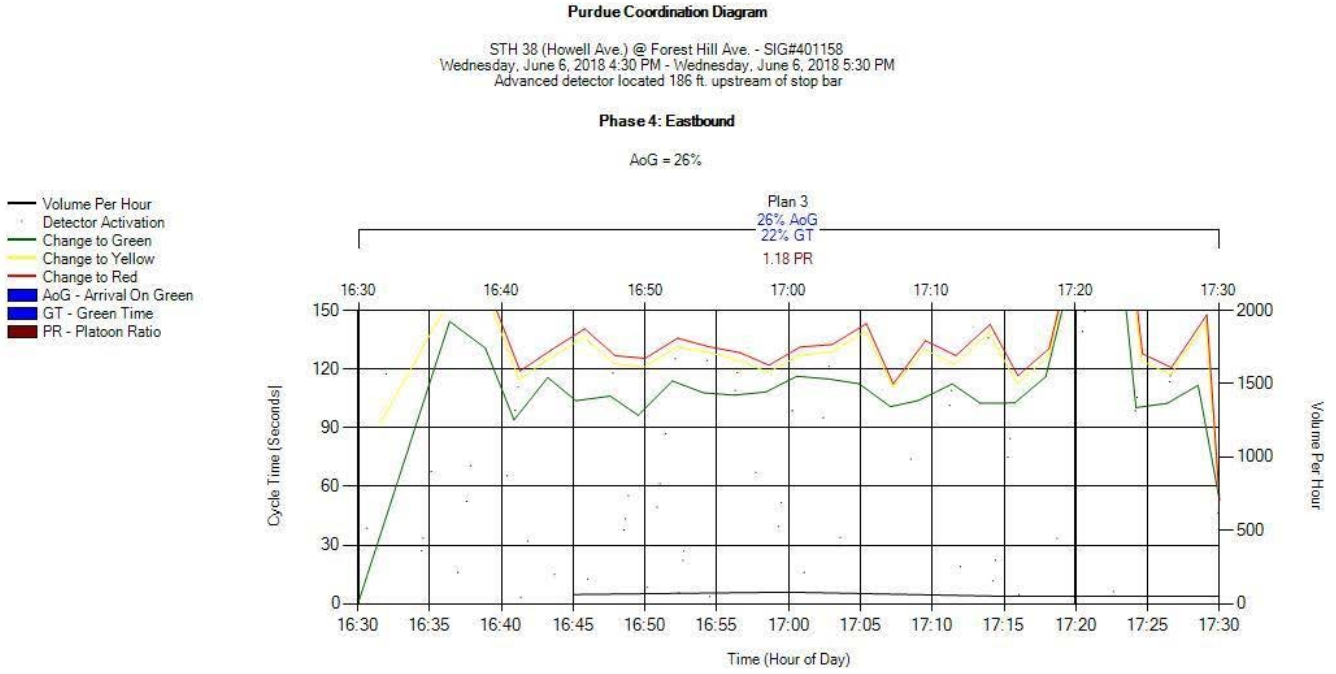
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Baseline Timings
6/6/2018 – 3:00 PM – 6:00 PM





WIS 38 Corridor – STH 38 & Forest Hill Ave.
Baseline Timings
6/6/2018 – 4:30 PM – 5:30 PM





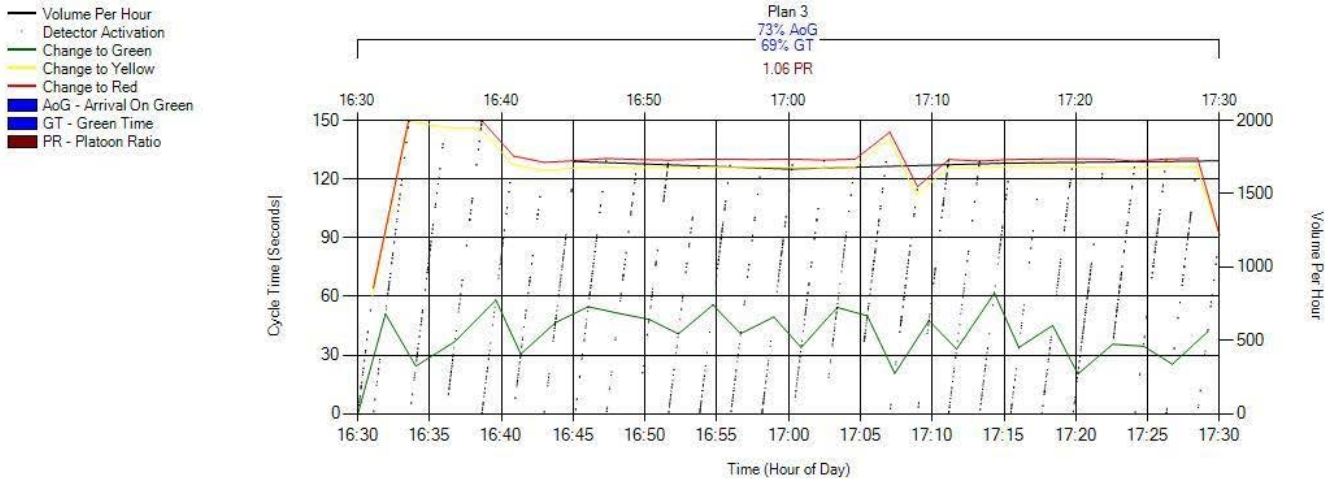
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Baseline Timings
6/6/2018 – 4:30 PM – 5:30 PM

Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Forest Hill Ave. - SIG#401158
Wednesday, June 6, 2018 4:30 PM - Wednesday, June 6, 2018 5:30 PM
Advanced detector located 359 ft. upstream of stop bar

Phase 6: Northbound

AoG = 73%

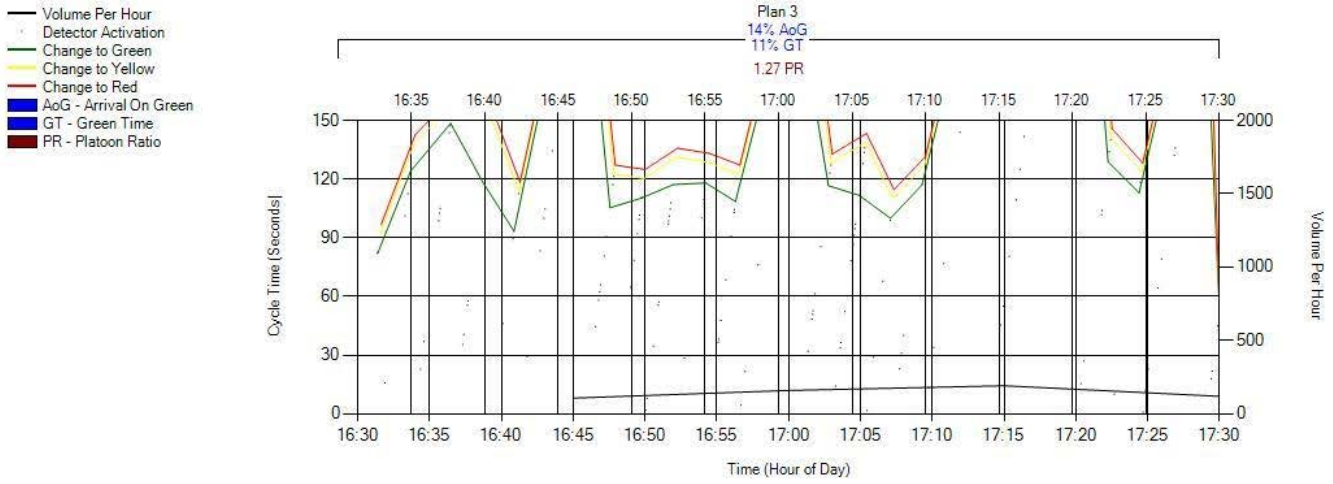


Purdue Coordination Diagram

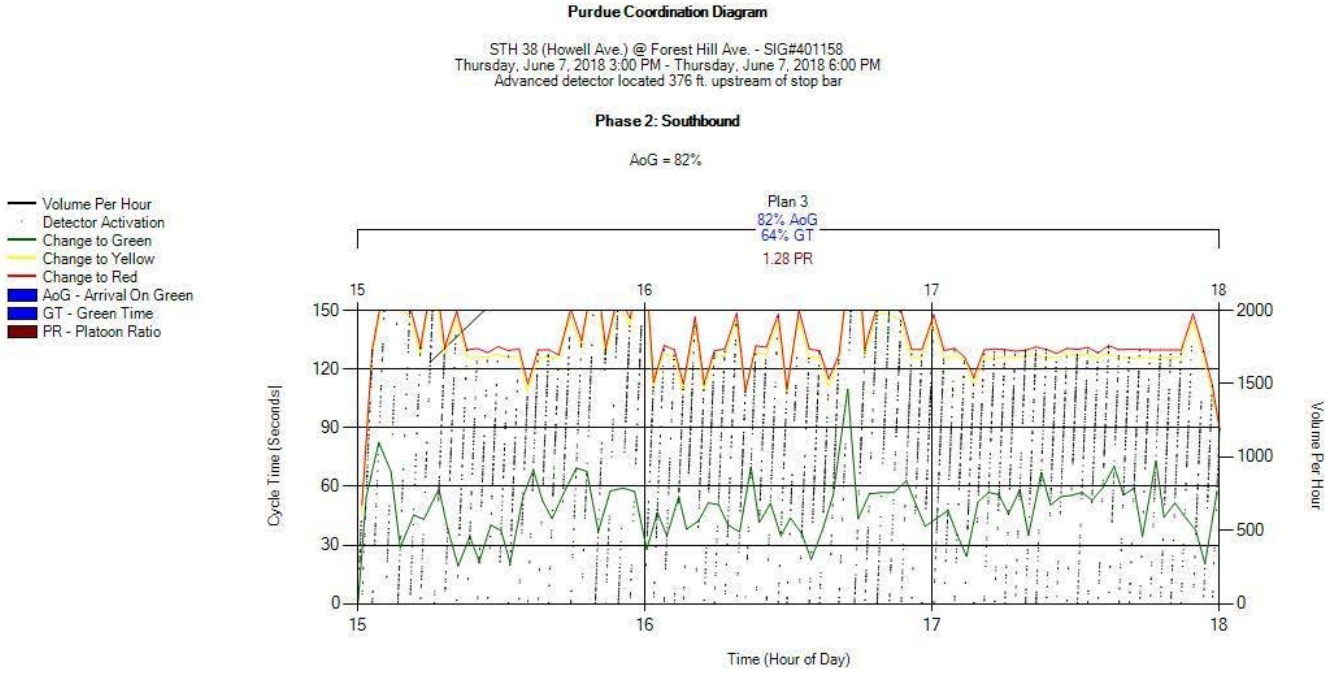
STH 38 (Howell Ave.) @ Forest Hill Ave. - SIG#401158
Wednesday, June 6, 2018 4:30 PM - Wednesday, June 6, 2018 5:30 PM
Advanced detector located 256 ft. upstream of stop bar

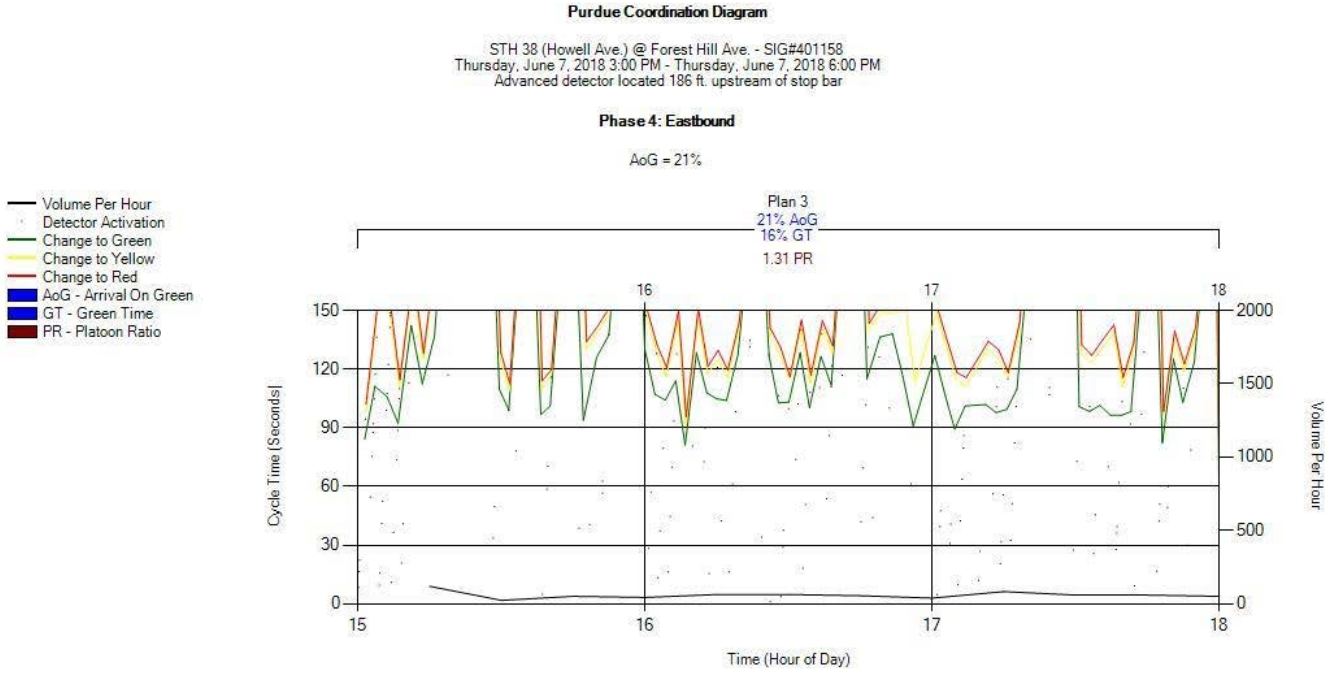
Phase 8: Westbound

AoG = 14%

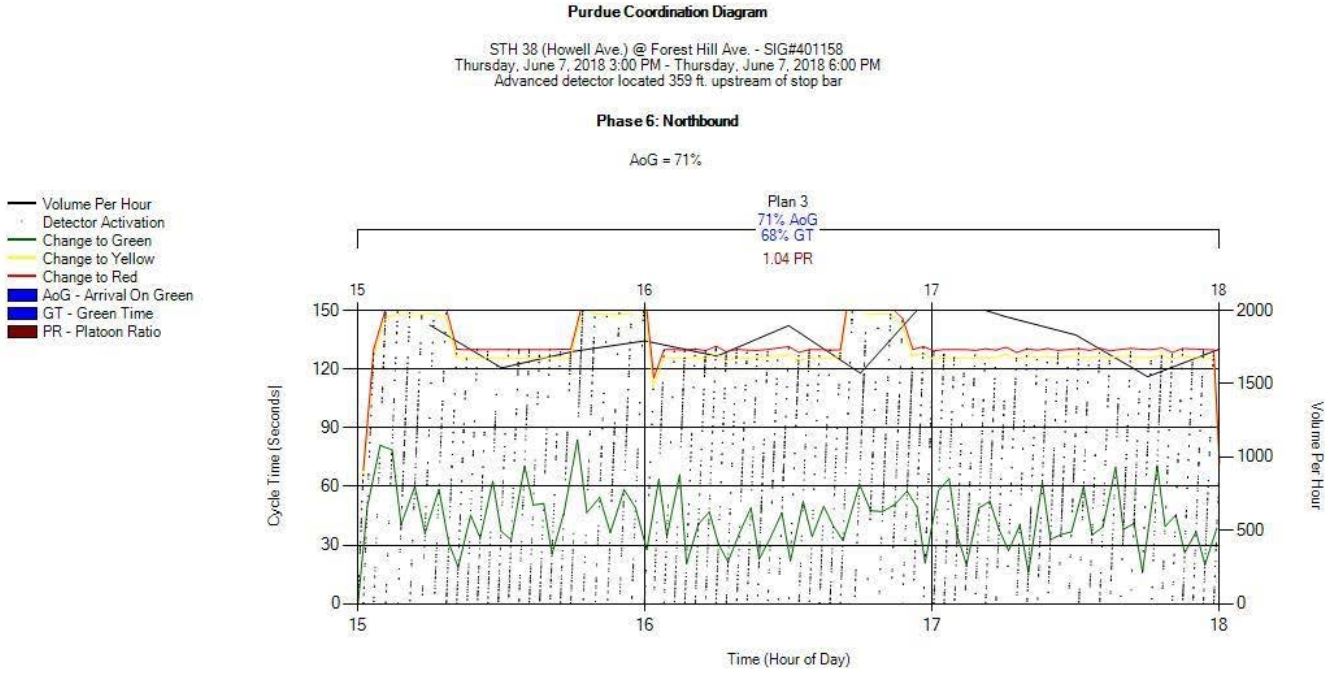


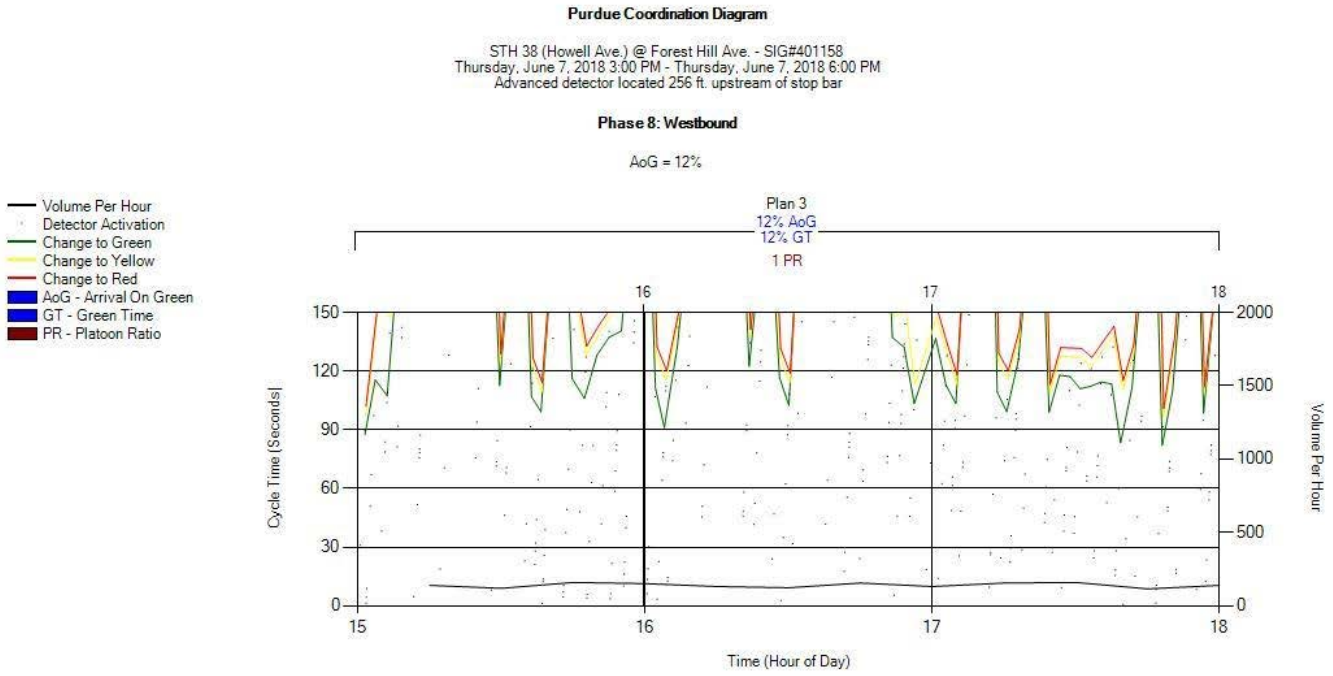
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Baseline Timings
6/7/2018 – 3:00 PM – 6:00 PM





WIS 38 Corridor – STH 38 & Forest Hill Ave.
Baseline Timings
6/7/2018 – 3:00 PM – 6:00 PM





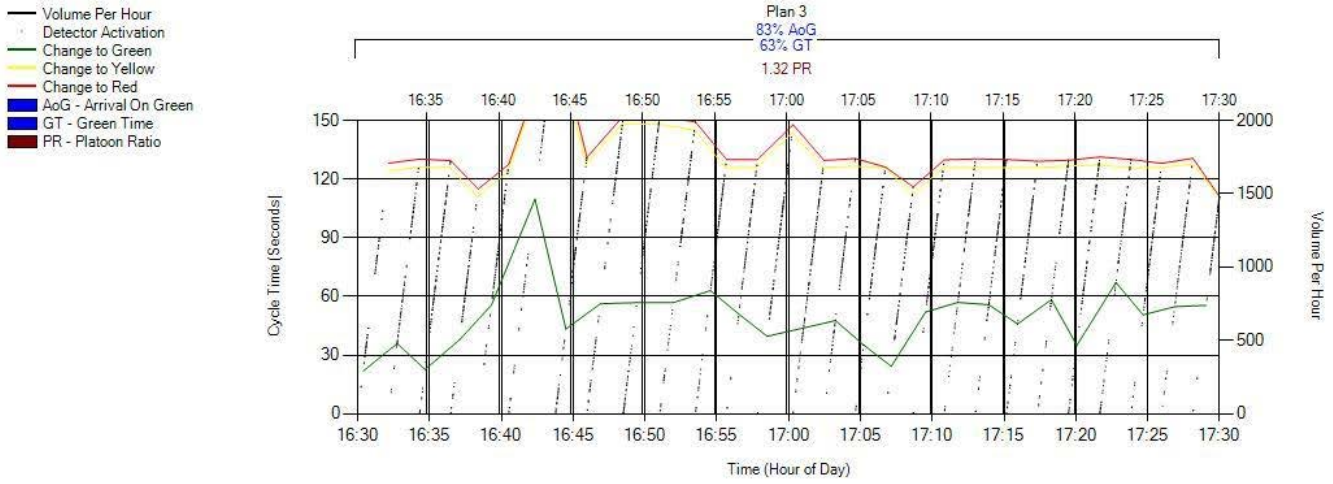
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Baseline Timings
6/7/2018 – 4:30 PM – 5:30 PM

Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Forest Hill Ave. - SIG#401158
Thursday, June 7, 2018 4:30 PM - Thursday, June 7, 2018 5:30 PM
Advanced detector located 376 ft. upstream of stop bar

Phase 2: Southbound

AoG = 83%

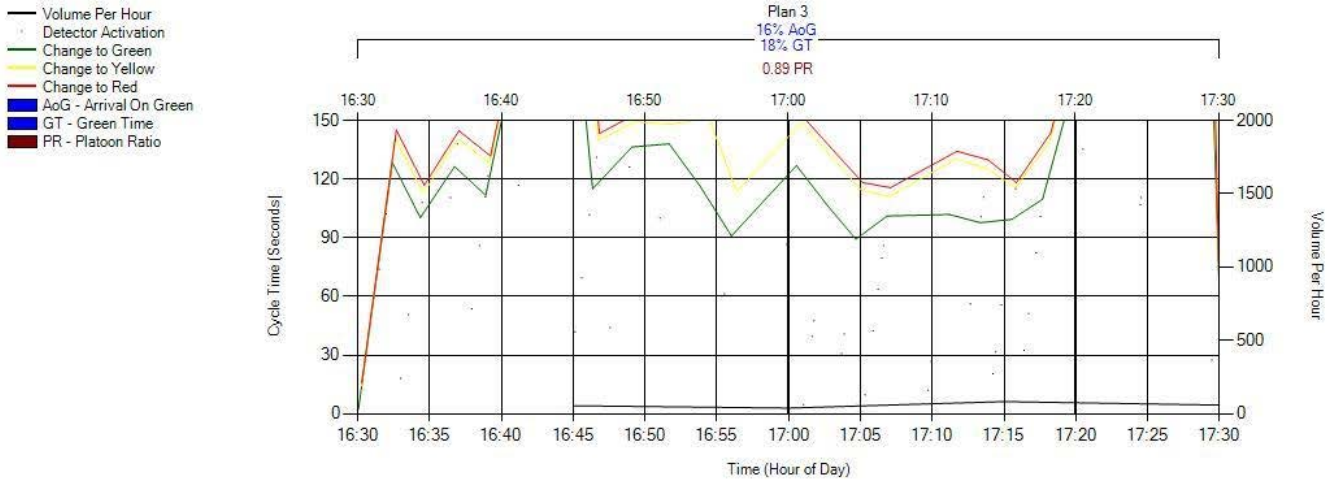


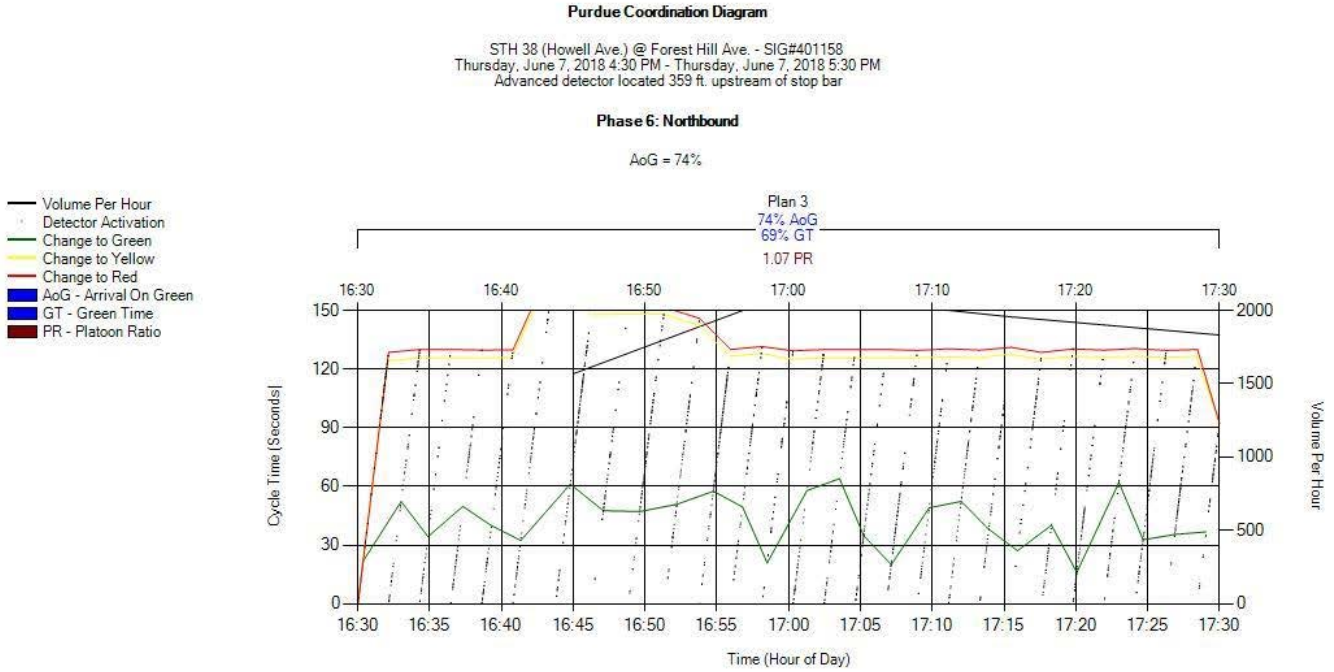
Purdue Coordination Diagram

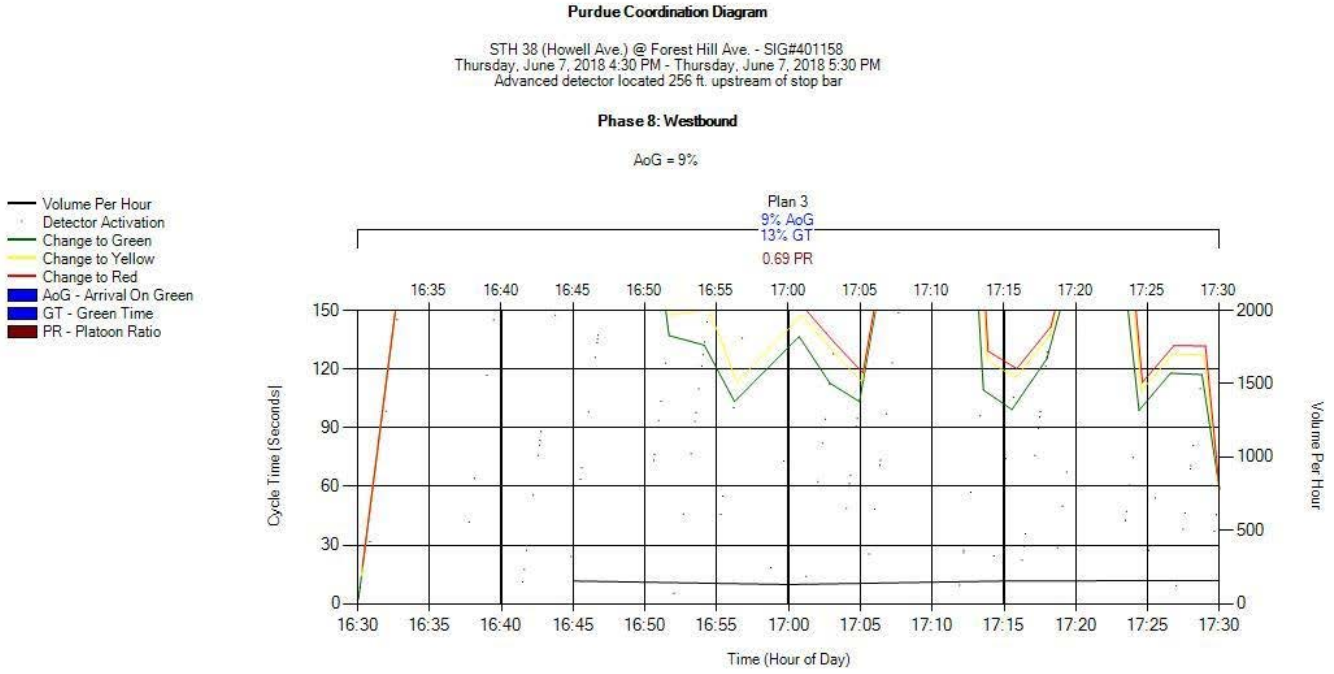
STH 38 (Howell Ave.) @ Forest Hill Ave. - SIG#401158
Thursday, June 7, 2018 4:30 PM - Thursday, June 7, 2018 5:30 PM
Advanced detector located 186 ft. upstream of stop bar

Phase 4: Eastbound

AoG = 16%




Purdue Coordination Diagram
STH 38 (Howell Ave.) @ Forest Hill Ave. - SIG#401158
Thursday, June 7, 2018 4:30 PM - Thursday, June 7, 2018 5:30 PM
Advanced detector located 359 ft. upstream of stop bar
Phase 6: Northbound
AoG = 74%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
74% AoG
69% GT
1.07 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)

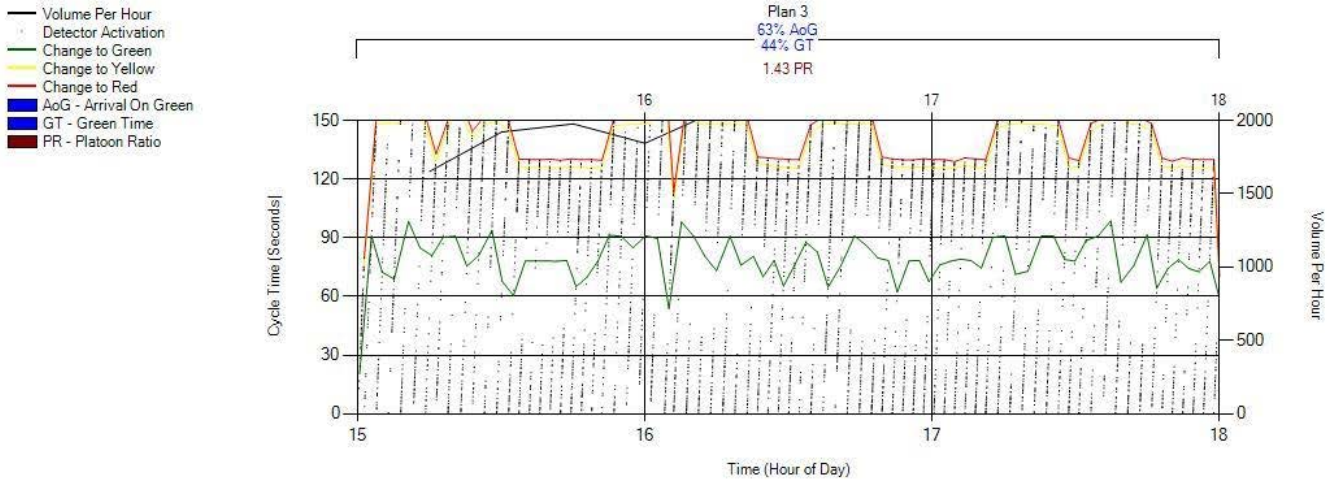

Purdue Coordination Diagram
STH 38 (Howell Ave.) @ Forest Hill Ave. - SIG#401158
Thursday, June 7, 2018 4:30 PM - Thursday, June 7, 2018 5:30 PM
Advanced detector located 256 ft. upstream of stop bar
Phase 8: Westbound
AoG = 9%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
9% AoG
13% GT
0.69 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)

Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Puetz Rd. - SIG#401140
Tuesday, June 5, 2018 3:00 PM - Tuesday, June 5, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar

Phase 2: Southbound

AoG = 63%

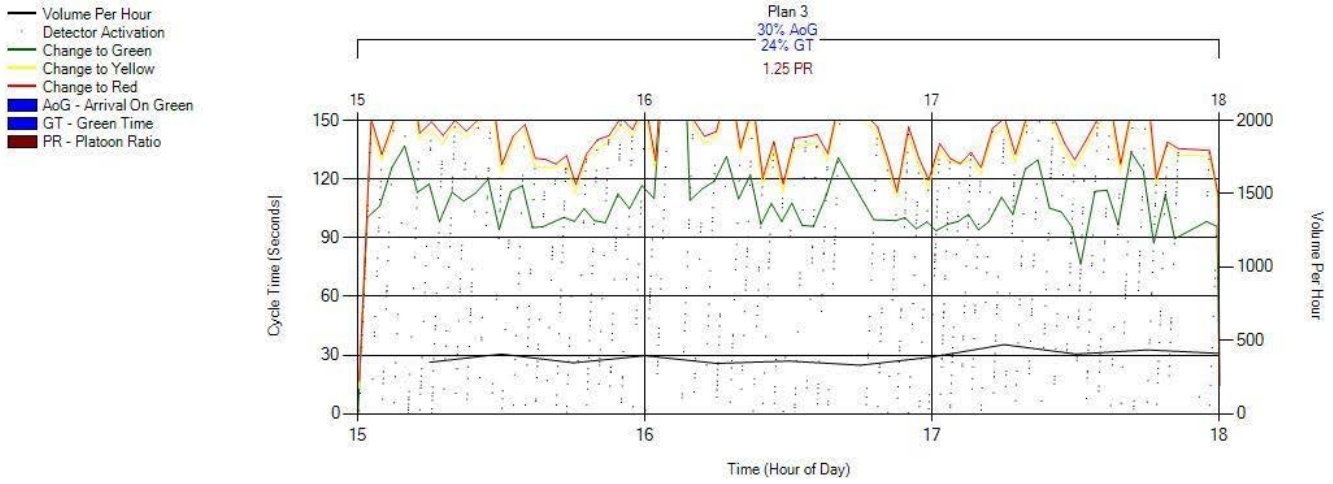


Purdue Coordination Diagram

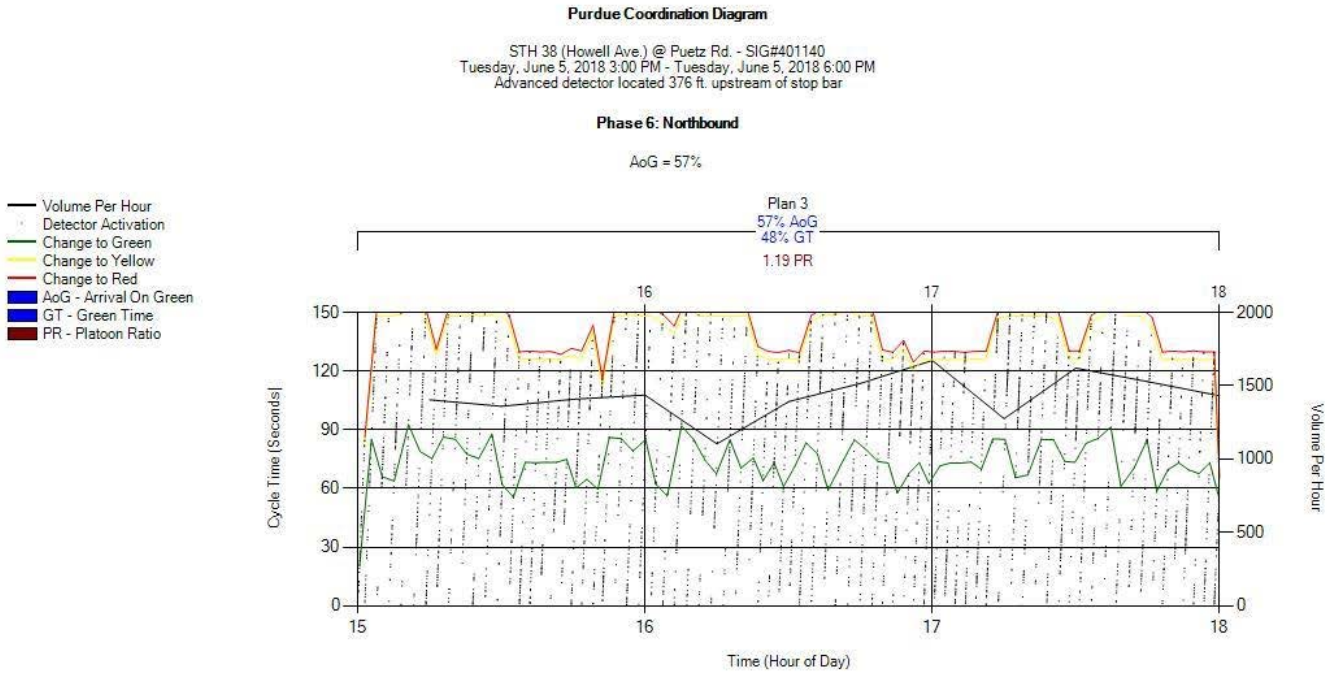
STH 38 (Howell Ave.) @ Puetz Rd. - SIG#401140
Tuesday, June 5, 2018 3:00 PM - Tuesday, June 5, 2018 6:00 PM
Advanced detector located 256 ft. upstream of stop bar

Phase 4: Eastbound

AoG = 30%



WIS 38 Corridor – STH 38 & Puetz Rd.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM

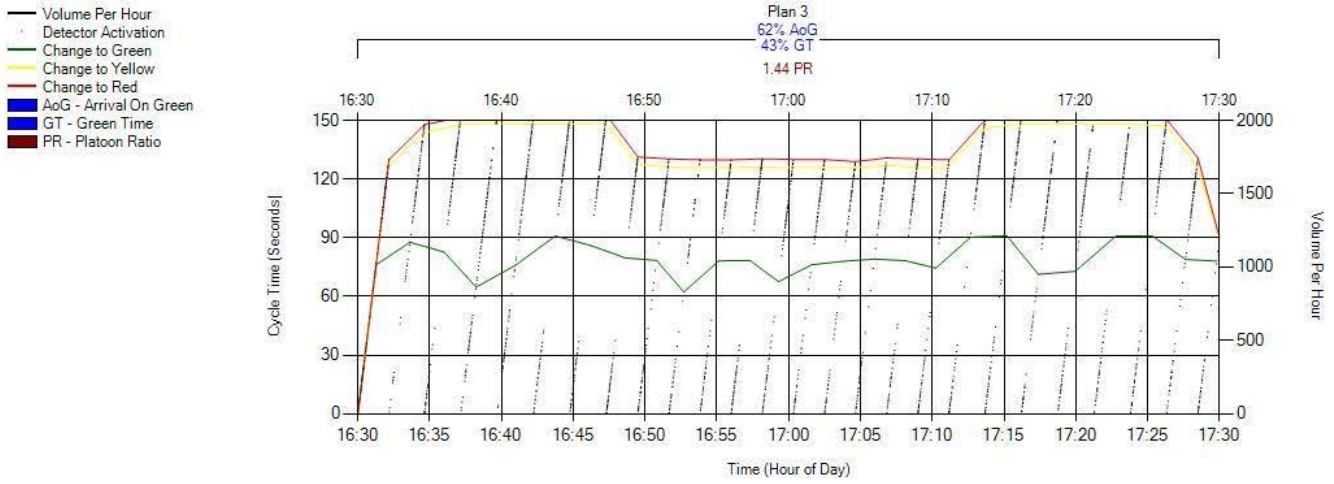


Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Puetz Rd. - SIG#401140
Tuesday, June 5, 2018 4:30 PM - Tuesday, June 5, 2018 5:30 PM
Advanced detector located 376 ft. upstream of stop bar

Phase 2: Southbound

AoG = 62%

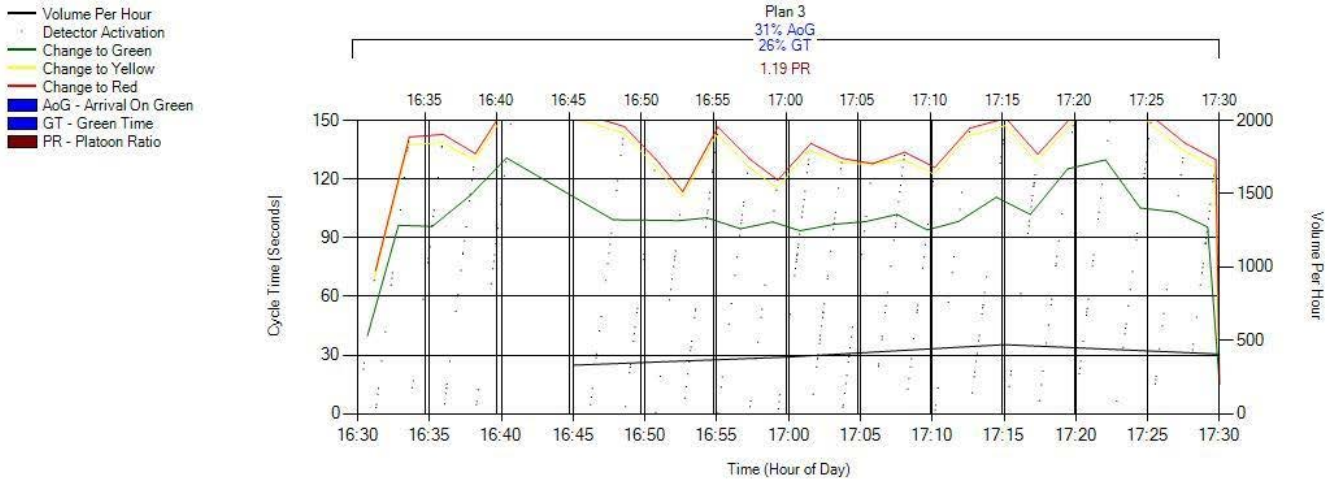


Purdue Coordination Diagram

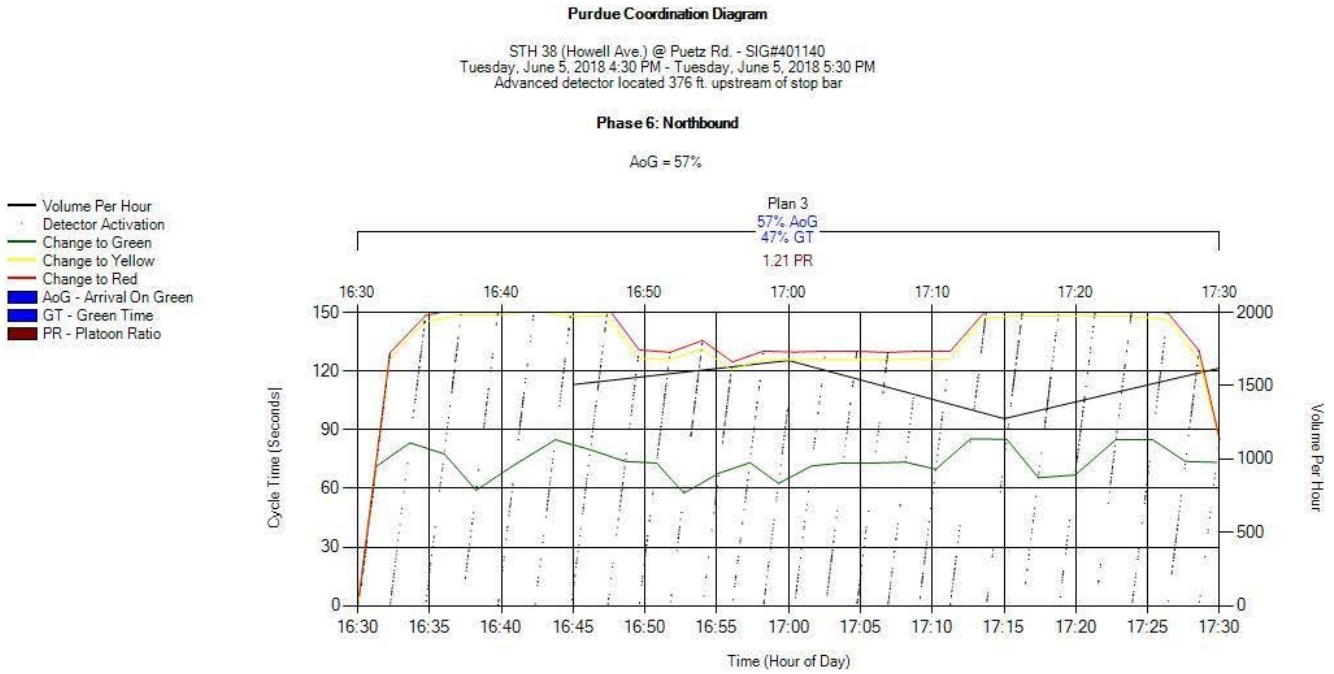
STH 38 (Howell Ave.) @ Puetz Rd. - SIG#401140
Tuesday, June 5, 2018 4:30 PM - Tuesday, June 5, 2018 5:30 PM
Advanced detector located 256 ft. upstream of stop bar

Phase 4: Eastbound

AoG = 31%



WIS 38 Corridor – STH 38 & Puetz Rd.
Baseline Timings
6/5/2018 – 4:30 PM – 5:30 PM

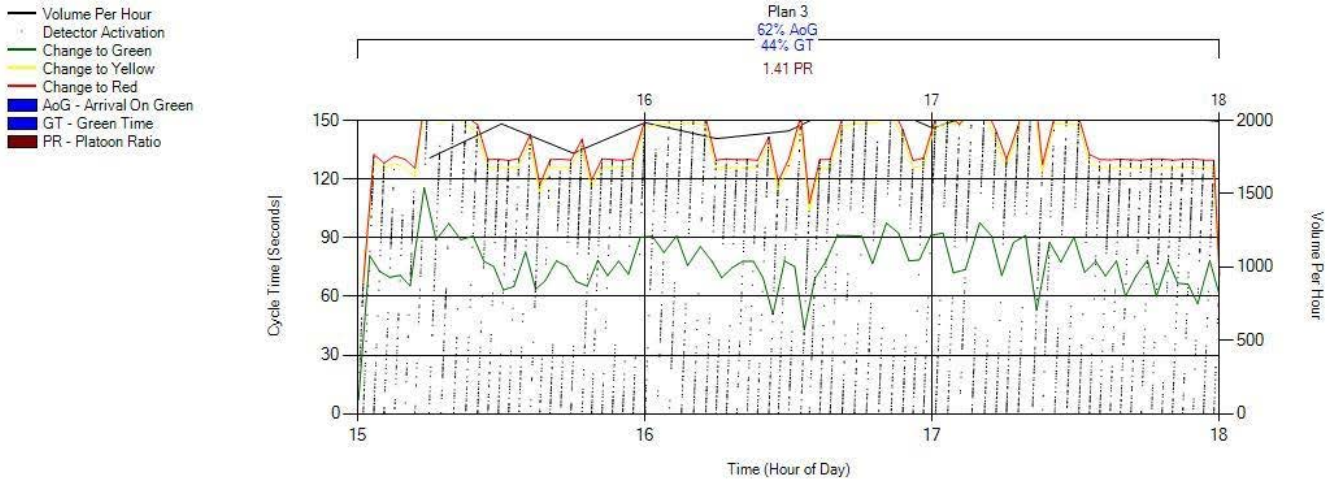


Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Puetz Rd. - SIG#401140
Wednesday, June 6, 2018 3:00 PM - Wednesday, June 6, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar

Phase 2: Southbound

AoG = 62%

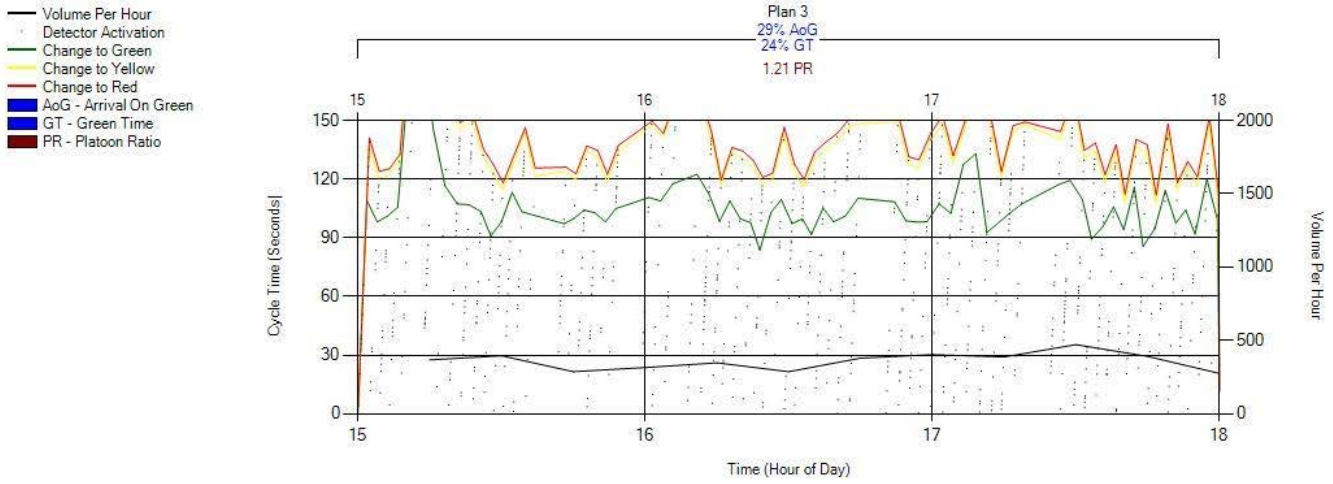


Purdue Coordination Diagram

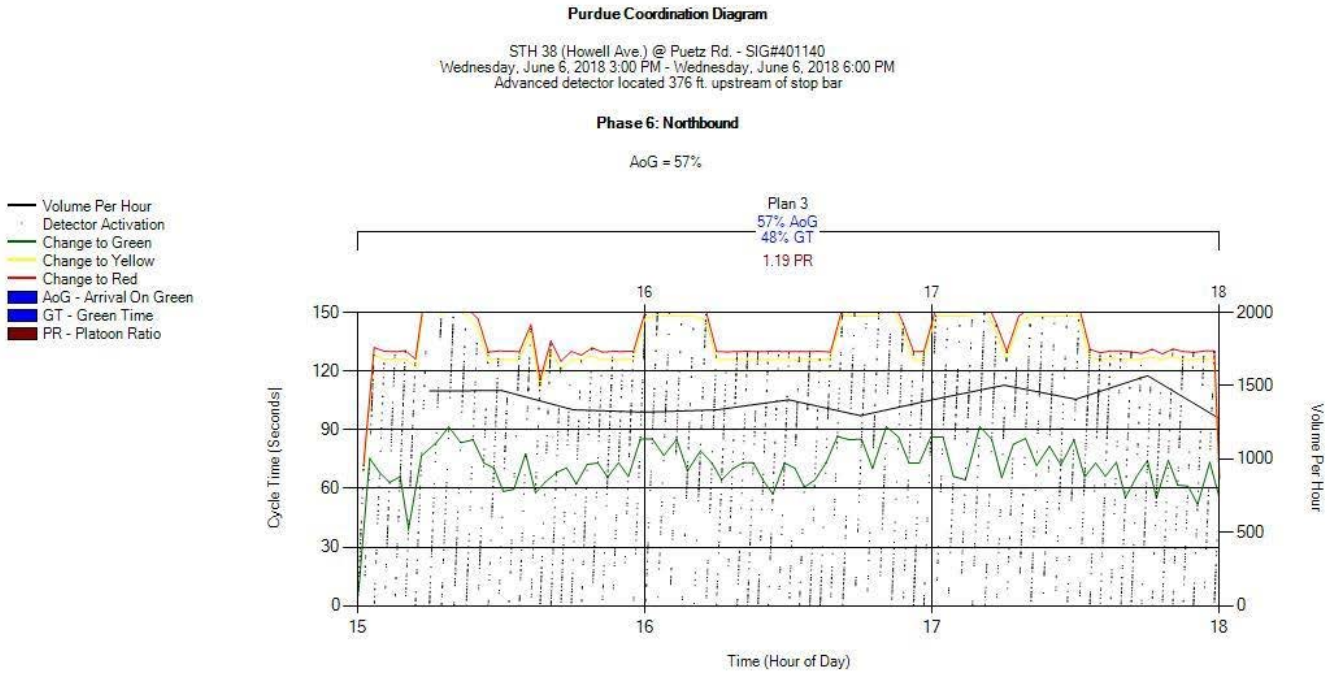
STH 38 (Howell Ave.) @ Puetz Rd. - SIG#401140
Wednesday, June 6, 2018 3:00 PM - Wednesday, June 6, 2018 6:00 PM
Advanced detector located 256 ft. upstream of stop bar

Phase 4: Eastbound

AoG = 29%



WIS 38 Corridor – STH 38 & Puetz Rd.
Baseline Timings
6/6/2018 – 3:00 PM – 6:00 PM

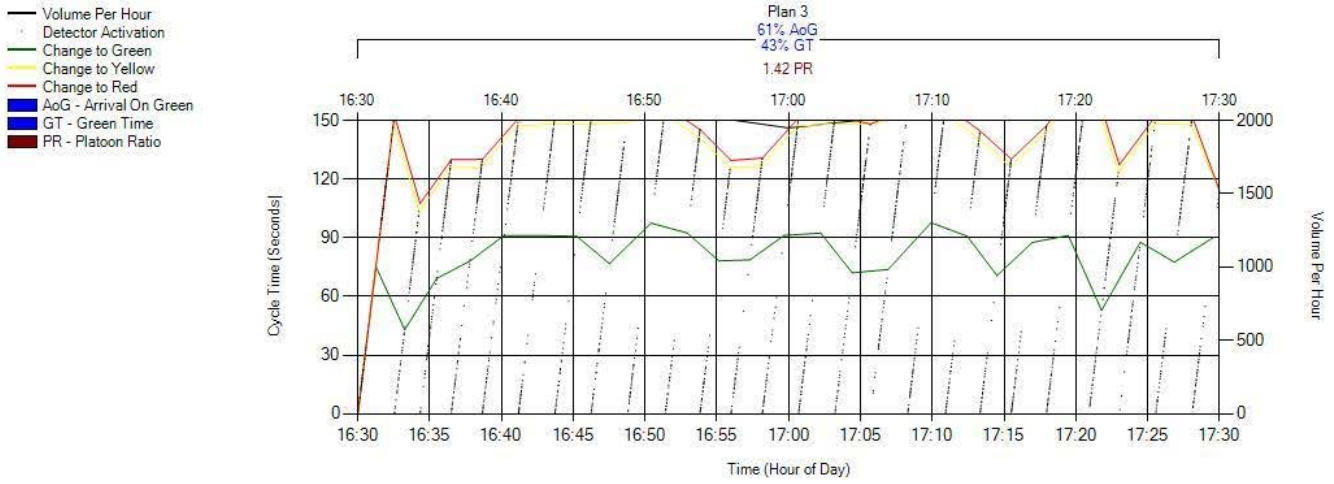


Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Puetz Rd. - SIG#401140
Wednesday, June 6, 2018 4:30 PM - Wednesday, June 6, 2018 5:30 PM
Advanced detector located 376 ft. upstream of stop bar

Phase 2: Southbound

AoG = 61%

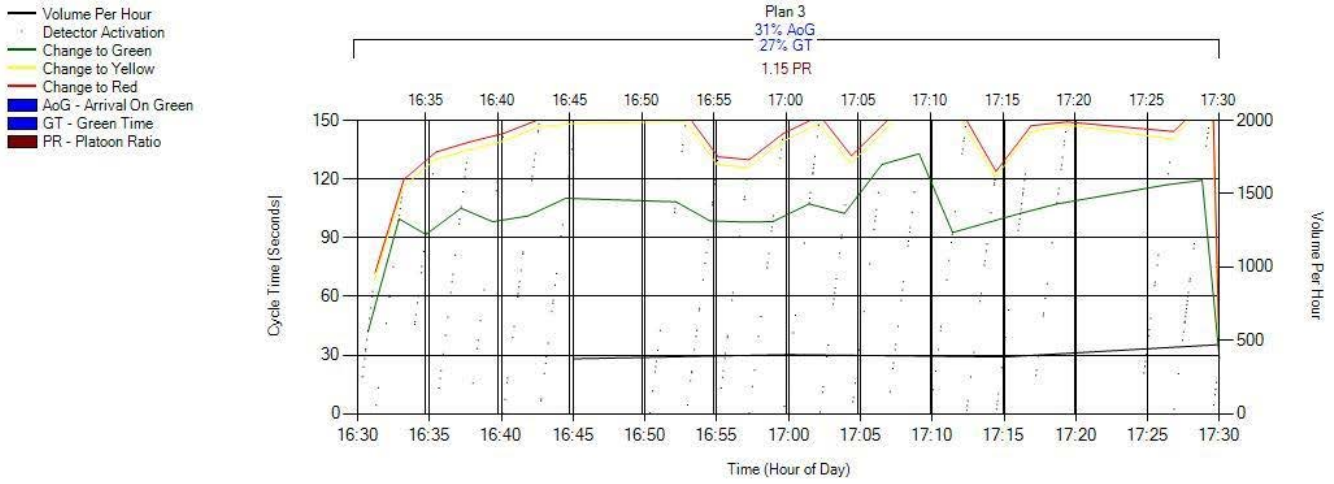


Purdue Coordination Diagram

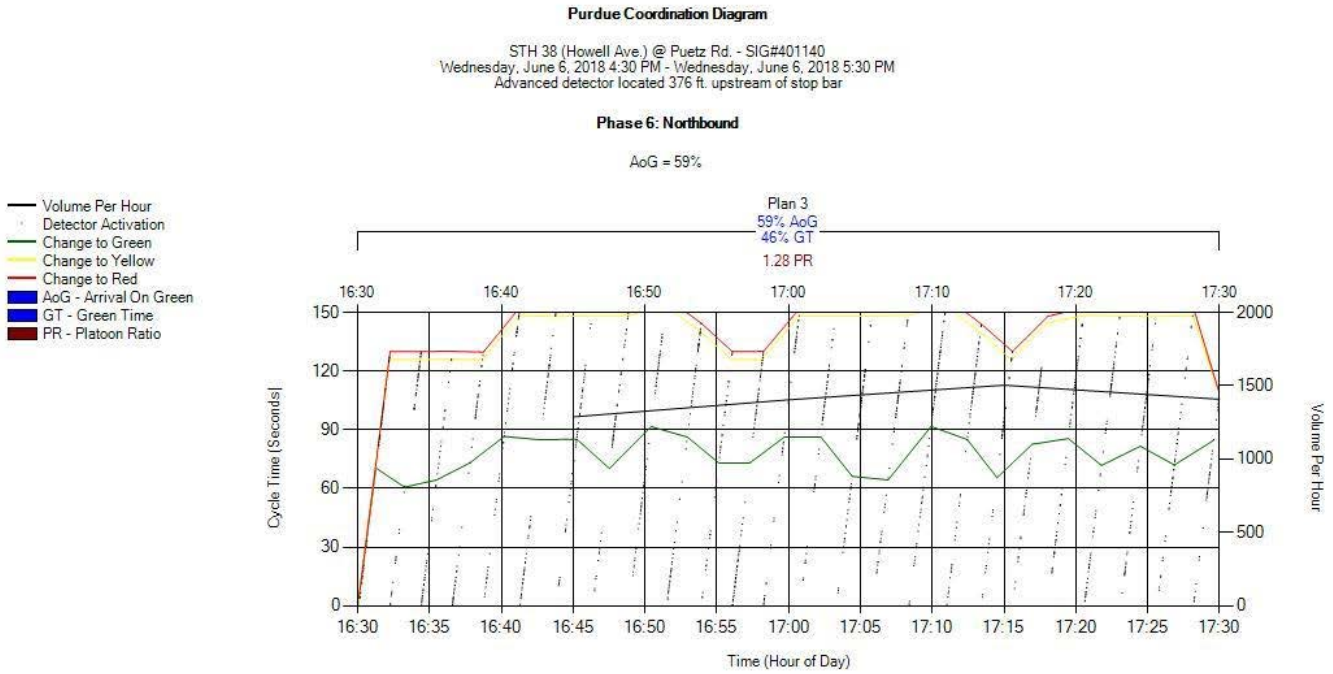
STH 38 (Howell Ave.) @ Puetz Rd. - SIG#401140
Wednesday, June 6, 2018 4:30 PM - Wednesday, June 6, 2018 5:30 PM
Advanced detector located 256 ft. upstream of stop bar

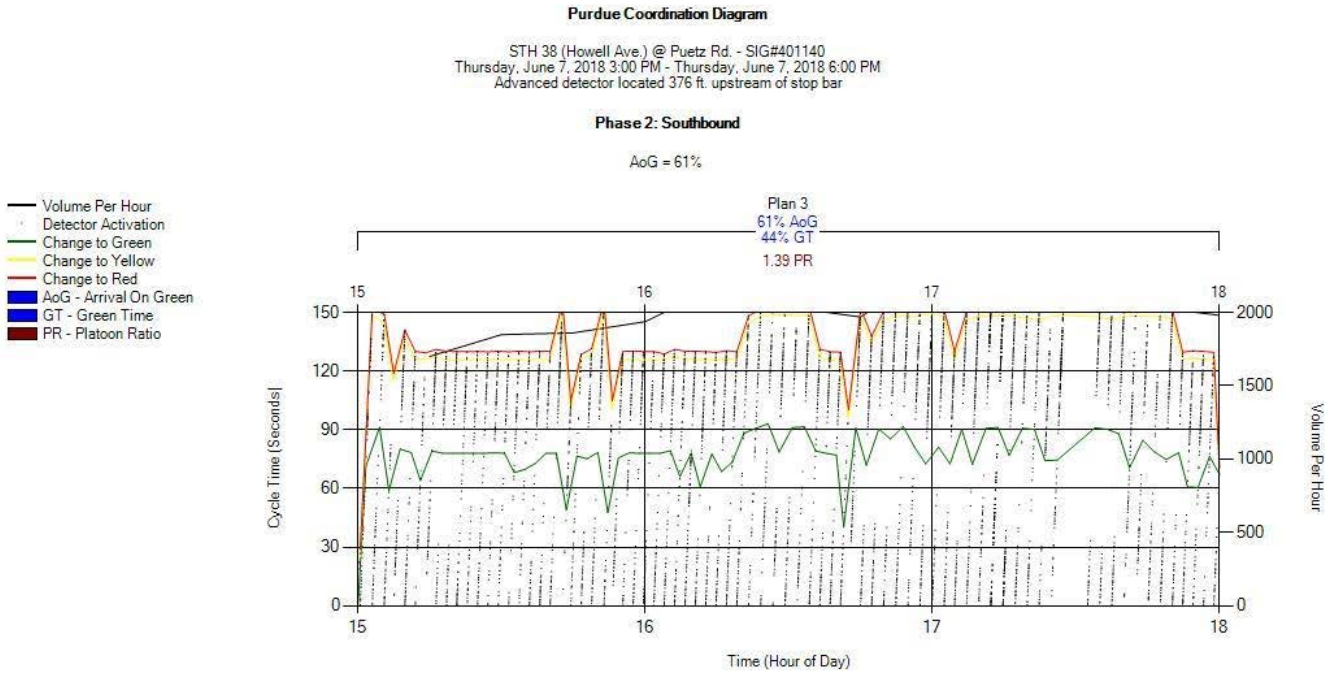
Phase 4: Eastbound

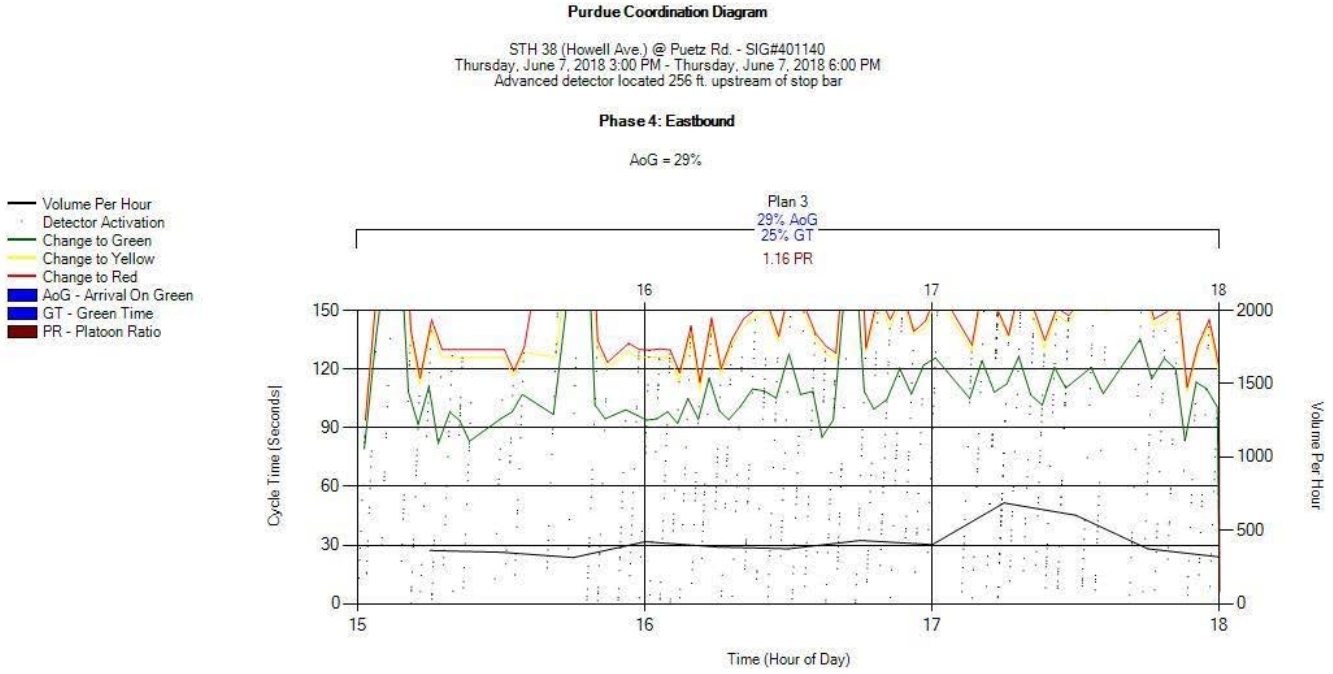
AoG = 31%



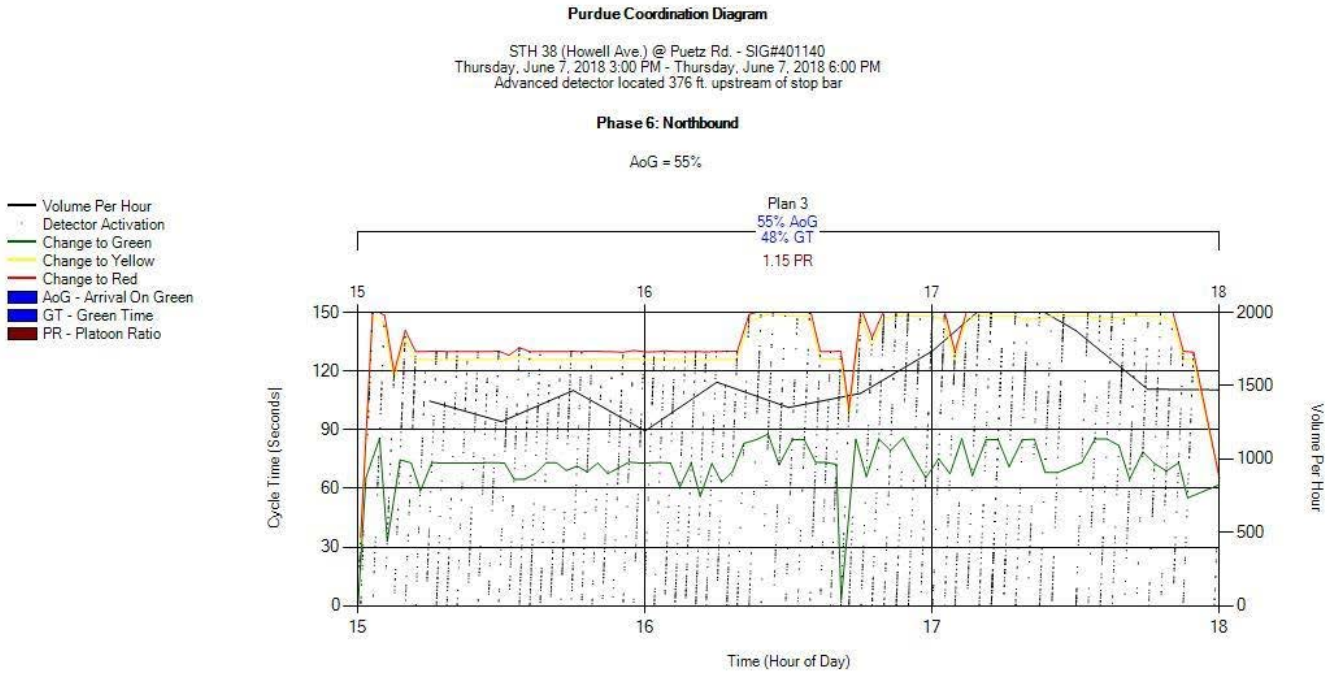
WIS 38 Corridor – STH 38 & Puetz Rd.
Baseline Timings
6/6/2018 – 4:30 PM – 5:30 PM




Purdue Coordination Diagram
STH 38 (Howell Ave.) @ Puetz Rd. - SIG#401140
Thursday, June 7, 2018 3:00 PM - Thursday, June 7, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar
Phase 2: Southbound
AoG = 61%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
61% AoG
44% GT
1.39 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)


Purdue Coordination Diagram
STH 38 (Howell Ave.) @ Puetz Rd. - SIG#401140
Thursday, June 7, 2018 3:00 PM - Thursday, June 7, 2018 6:00 PM
Advanced detector located 256 ft. upstream of stop bar
Phase 4: Eastbound
AoG = 29%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
29% AoG
25% GT
1.16 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)

WIS 38 Corridor – STH 38 & Puetz Rd.
Baseline Timings
6/7/2018 – 3:00 PM – 6:00 PM

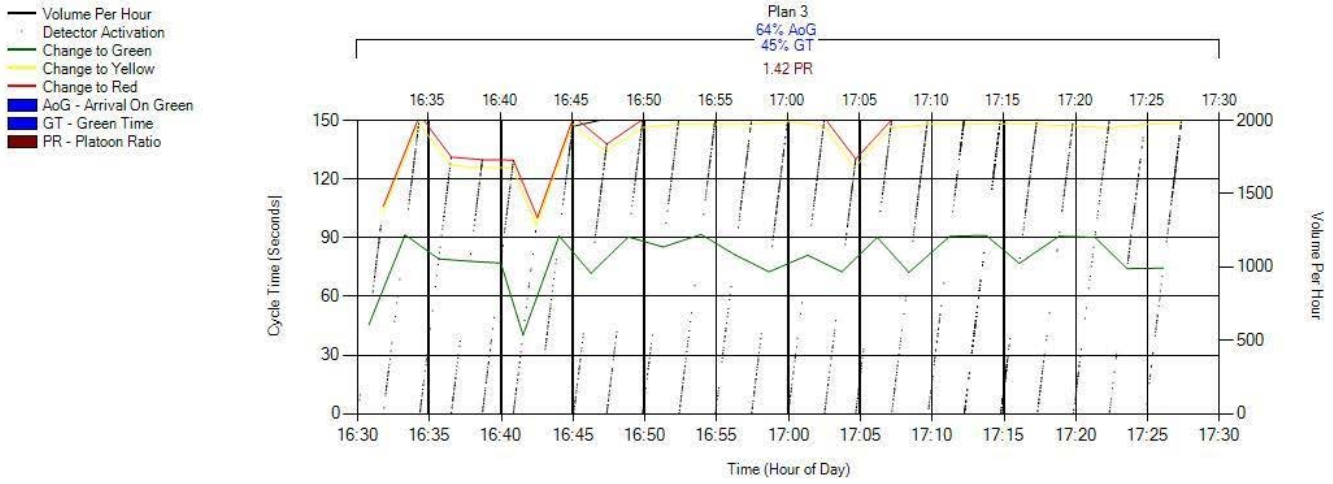


Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Puetz Rd. - SIG#401140
Thursday, June 7, 2018 4:30 PM - Thursday, June 7, 2018 5:30 PM
Advanced detector located 376 ft. upstream of stop bar

Phase 2: Southbound

AoG = 64%

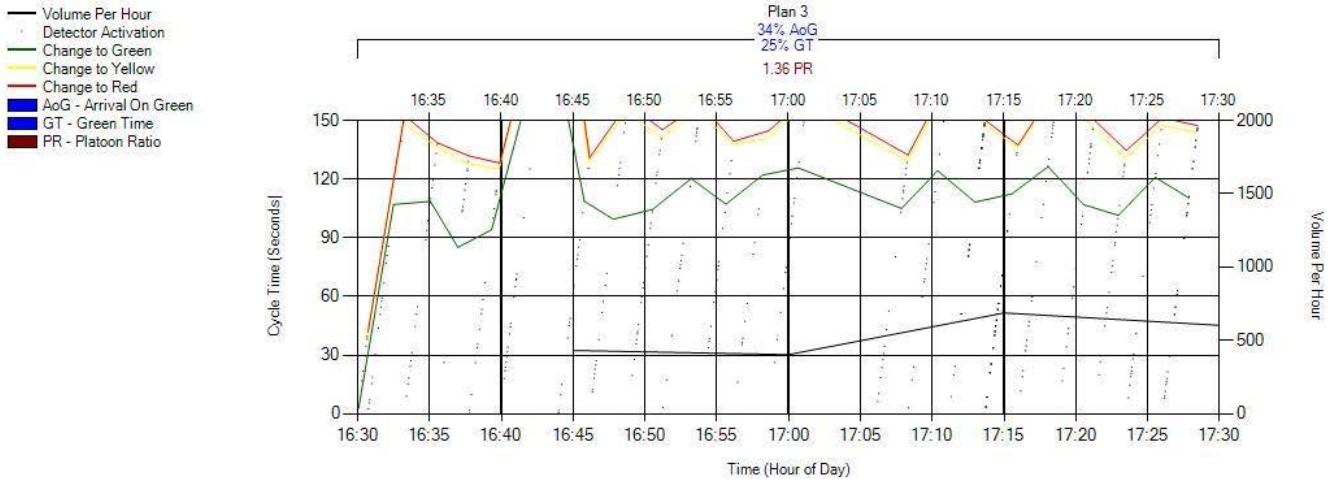


Purdue Coordination Diagram

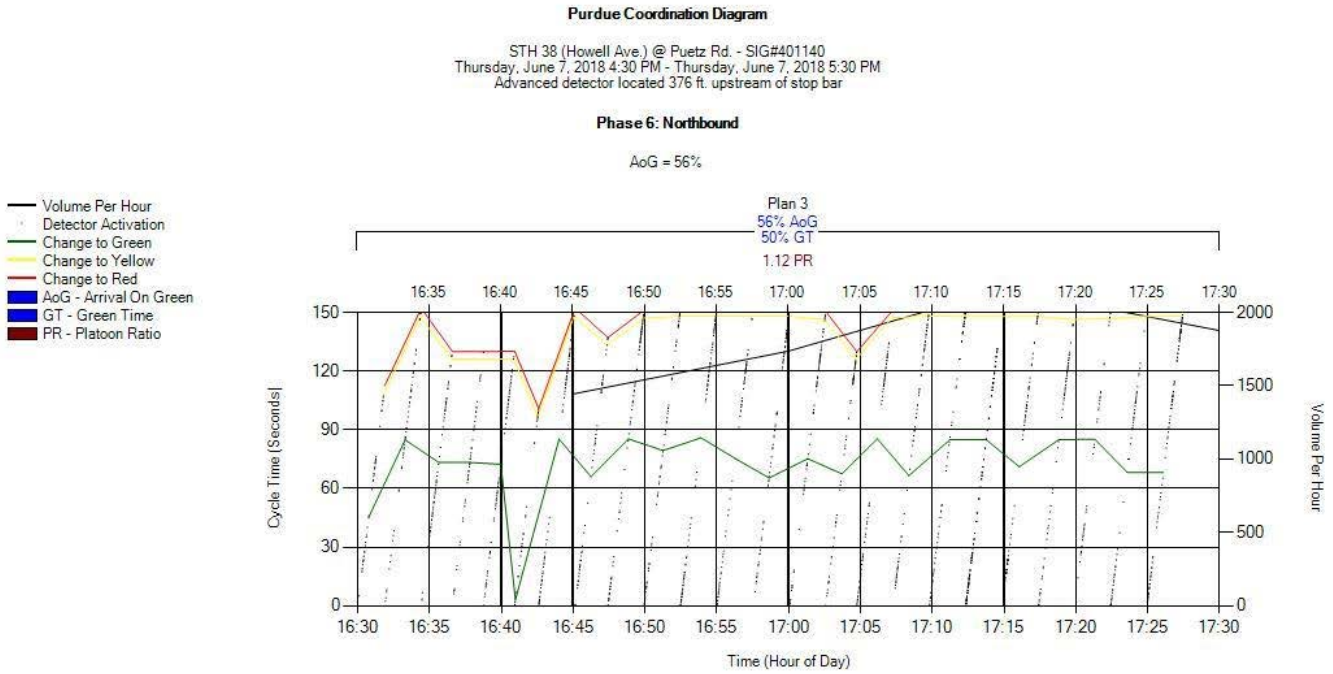
STH 38 (Howell Ave.) @ Puetz Rd. - SIG#401140
Thursday, June 7, 2018 4:30 PM - Thursday, June 7, 2018 5:30 PM
Advanced detector located 256 ft. upstream of stop bar

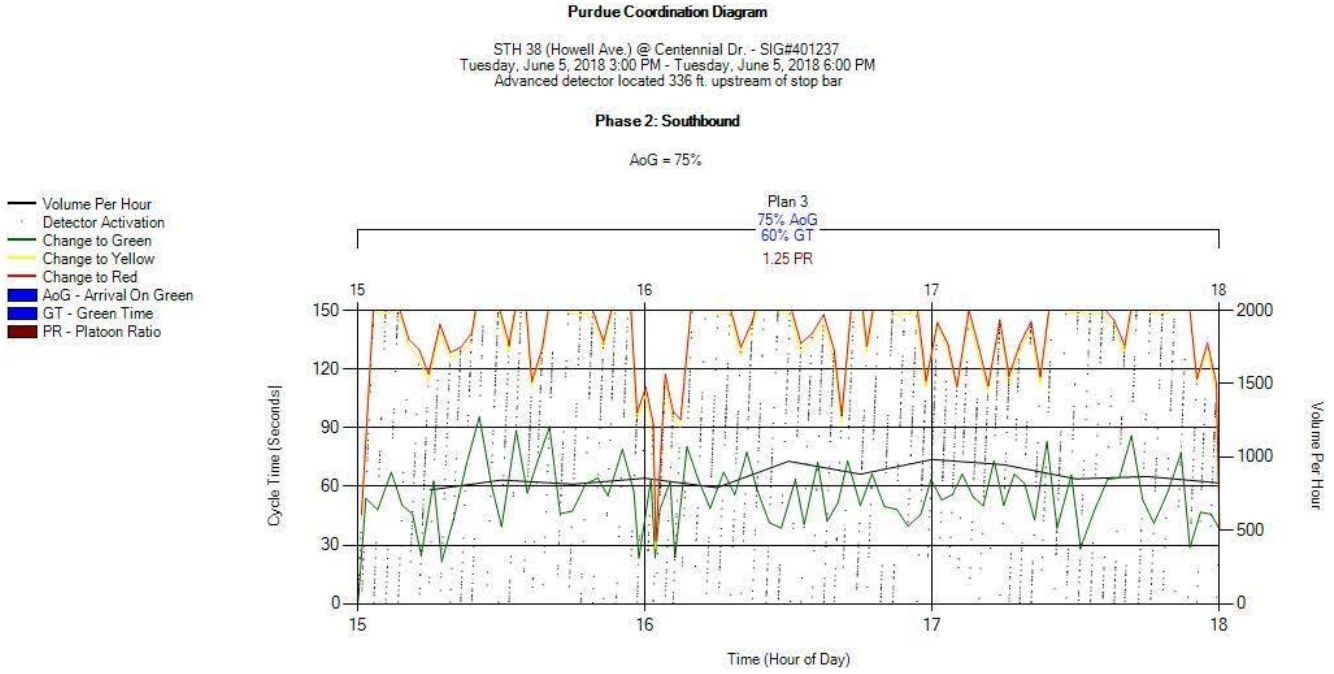
Phase 4: Eastbound

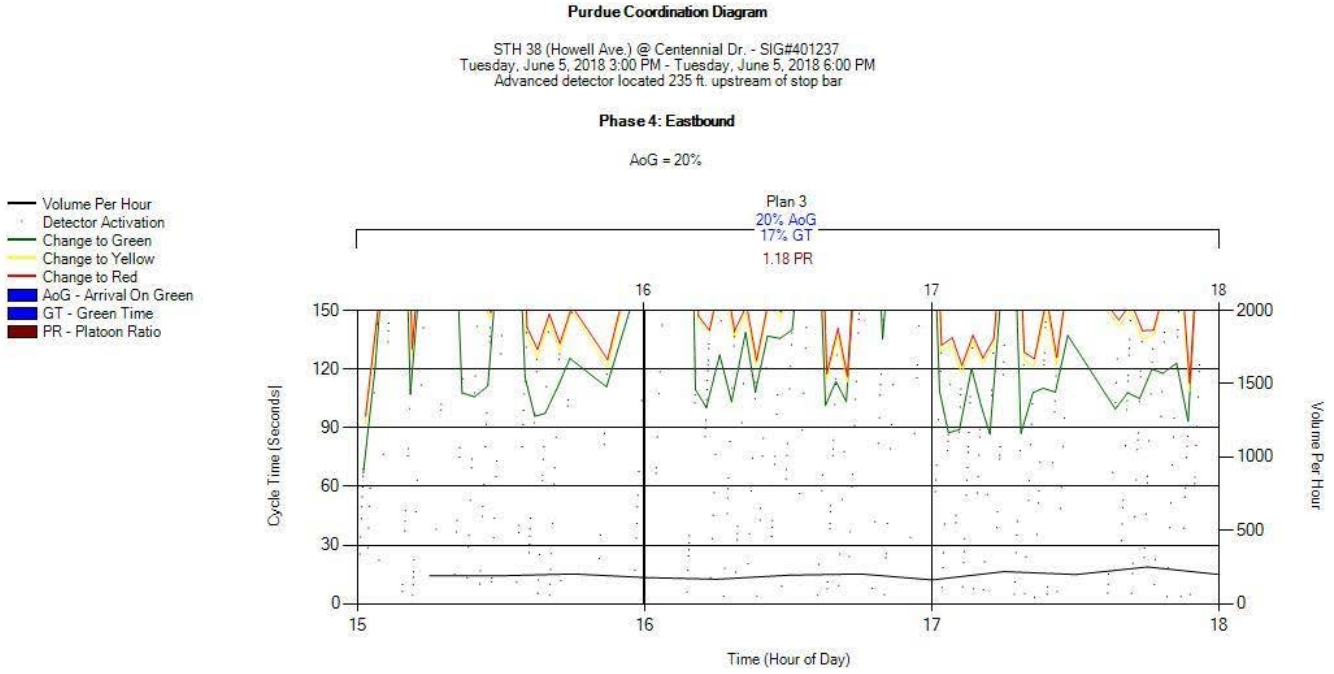
AoG = 34%



WIS 38 Corridor – STH 38 & Puetz Rd.
Baseline Timings
6/7/2018 – 4:30 PM – 5:30 PM




Purdue Coordination Diagram
STH 38 (Howell Ave.) @ Centennial Dr. - SIG#401237
Tuesday, June 5, 2018 3:00 PM - Tuesday, June 5, 2018 6:00 PM
Advanced detector located 336 ft. upstream of stop bar
Phase 2: Southbound
AoG = 75%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
75% AoG
60% GT
1.25 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)

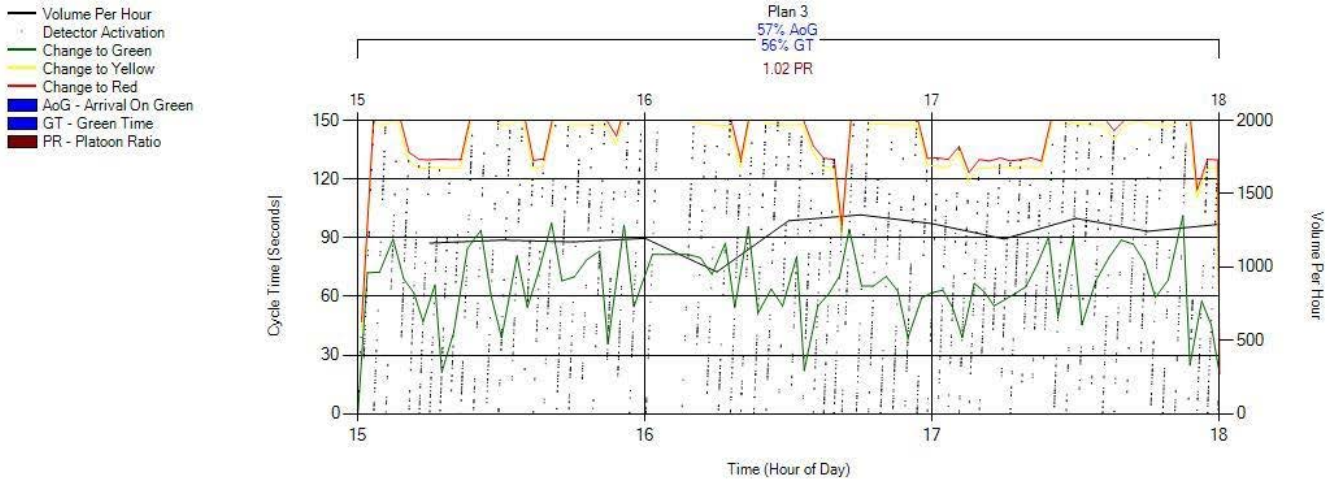

Purdue Coordination Diagram
STH 38 (Howell Ave.) @ Centennial Dr. - SIG#401237
Tuesday, June 5, 2018 3:00 PM - Tuesday, June 5, 2018 6:00 PM
Advanced detector located 235 ft. upstream of stop bar
Phase 4: Eastbound
AoG = 20%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
20% AoG
17% GT
1.18 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)

Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Centennial Dr. - SIG#401237
Tuesday, June 5, 2018 3:00 PM - Tuesday, June 5, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar

Phase 6: Northbound

AoG = 57%

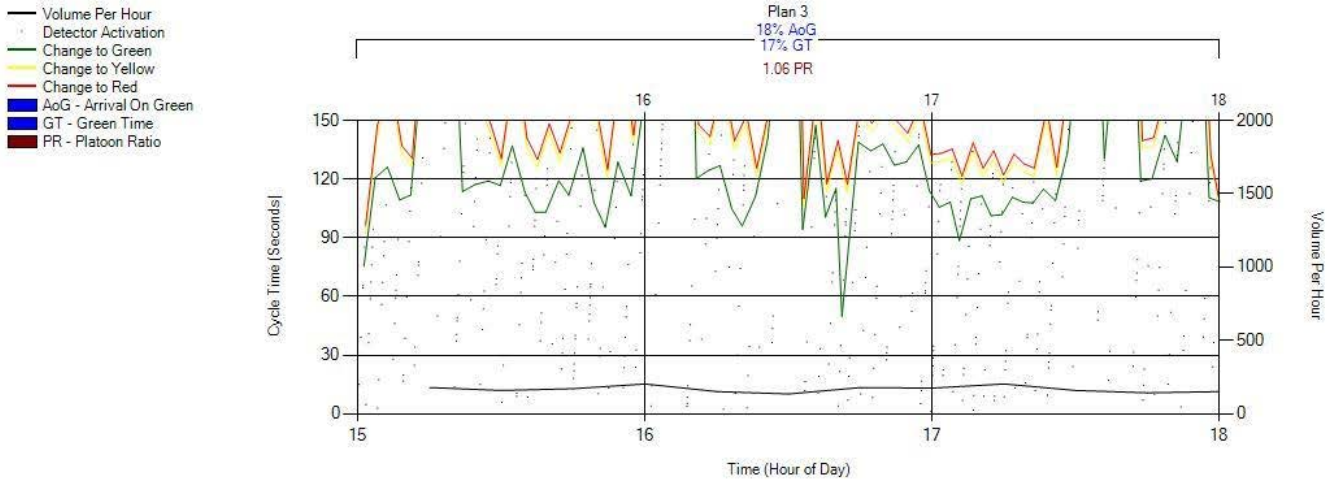


Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Centennial Dr. - SIG#401237
Tuesday, June 5, 2018 3:00 PM - Tuesday, June 5, 2018 6:00 PM
Advanced detector located 235 ft. upstream of stop bar

Phase 8: Westbound

AoG = 18%

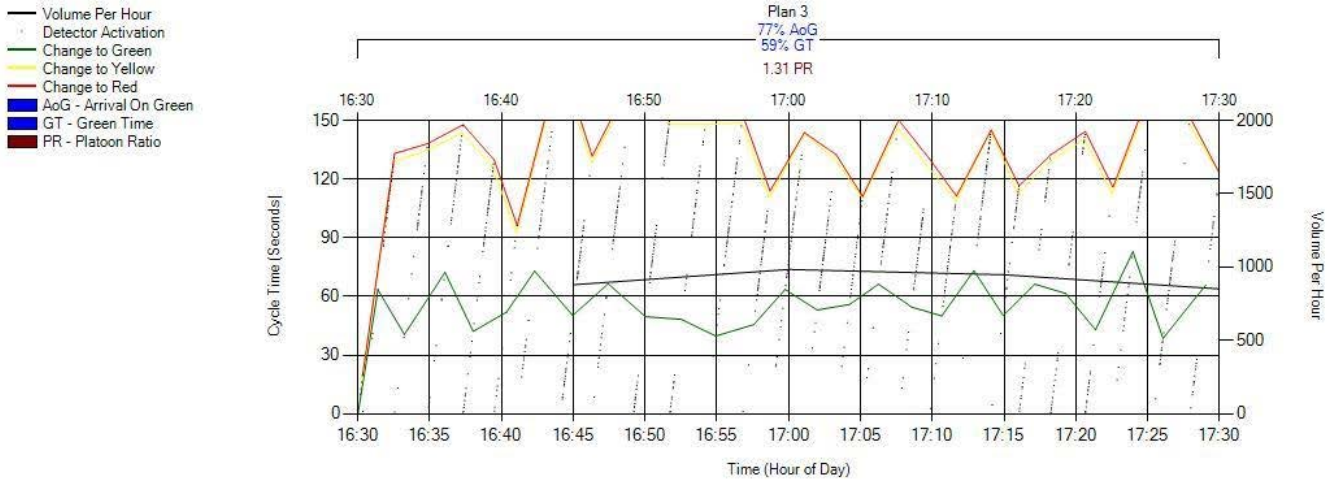


Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Centennial Dr. - SIG#401237
Tuesday, June 5, 2018 4:30 PM - Tuesday, June 5, 2018 5:30 PM
Advanced detector located 336 ft. upstream of stop bar

Phase 2: Southbound

AoG = 77%

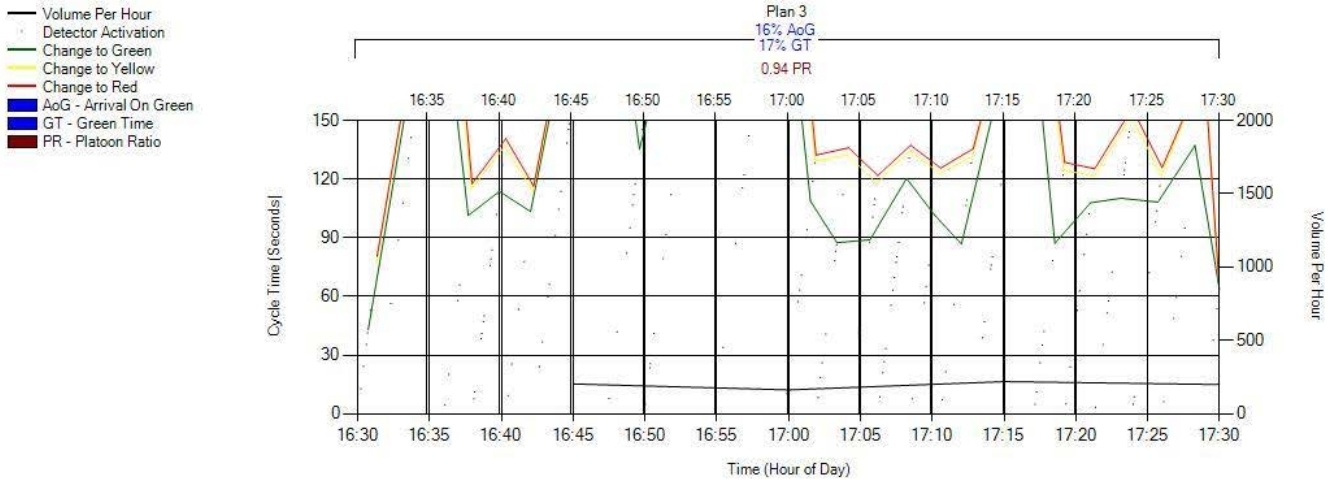


Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Centennial Dr. - SIG#401237
Tuesday, June 5, 2018 4:30 PM - Tuesday, June 5, 2018 5:30 PM
Advanced detector located 235 ft. upstream of stop bar

Phase 4: Eastbound

AoG = 16%

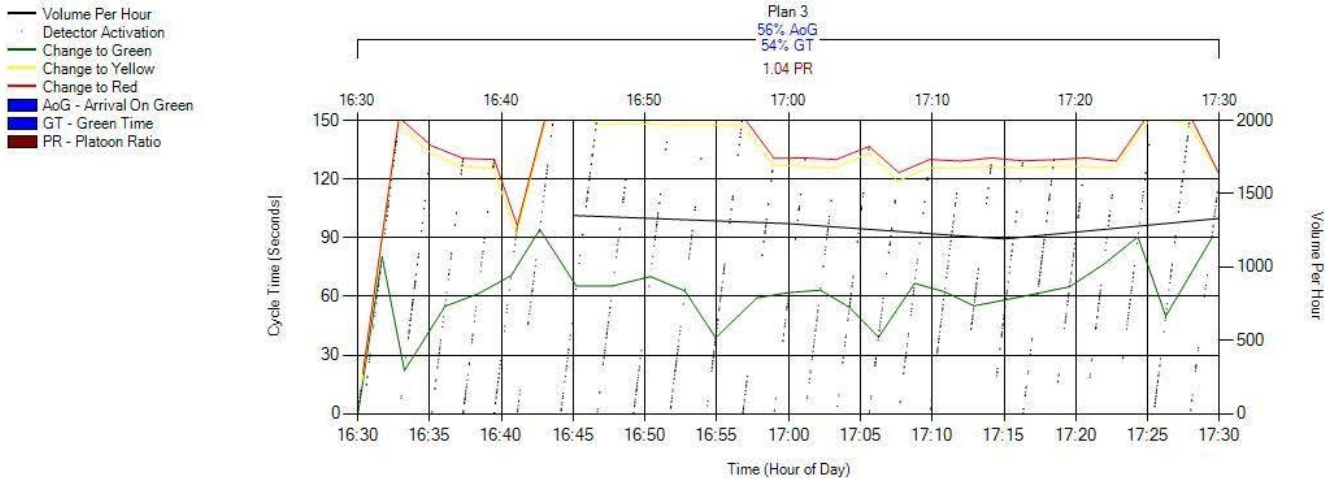


Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Centennial Dr. - SIG#401237
Tuesday, June 5, 2018 4:30 PM - Tuesday, June 5, 2018 5:30 PM
Advanced detector located 376 ft. upstream of stop bar

Phase 6: Northbound

AoG = 56%

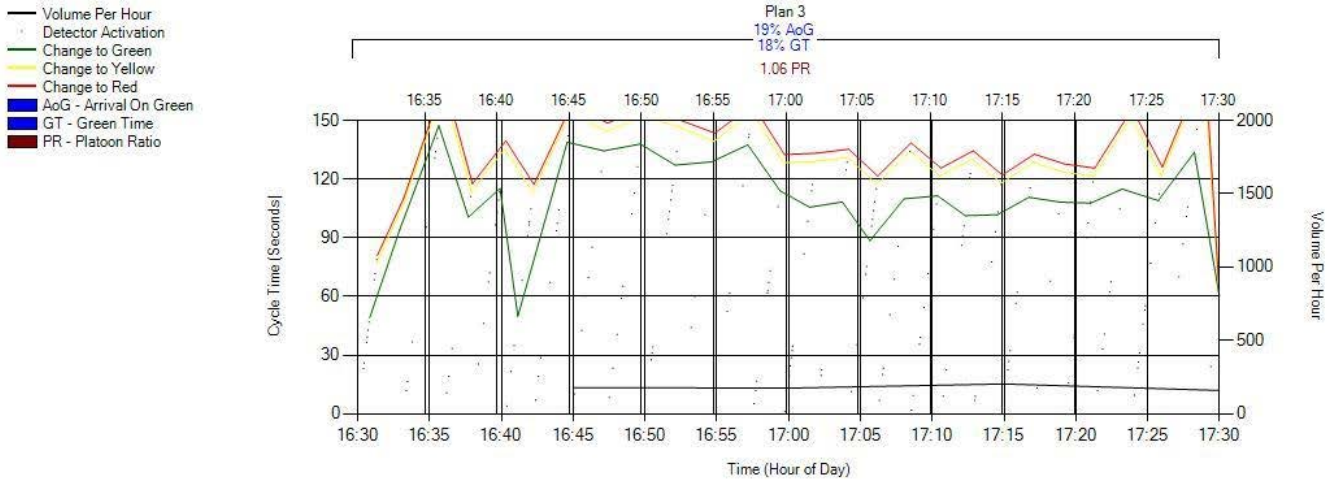


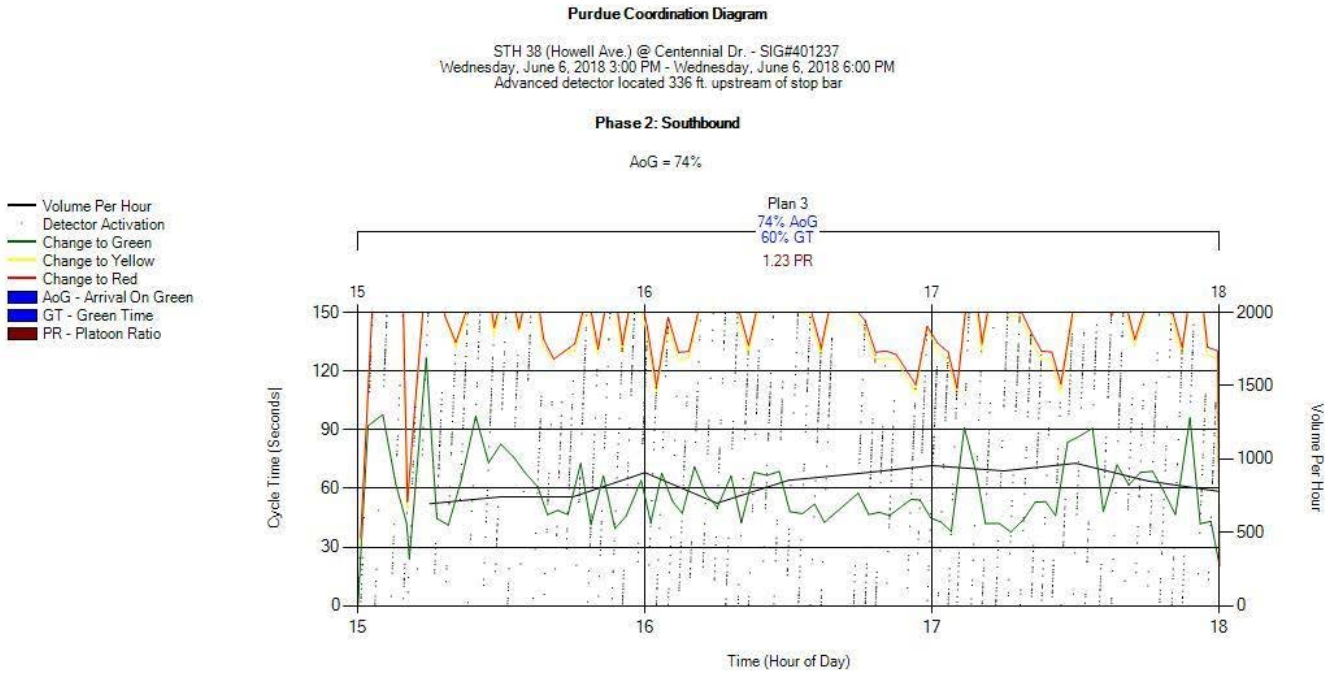
Purdue Coordination Diagram

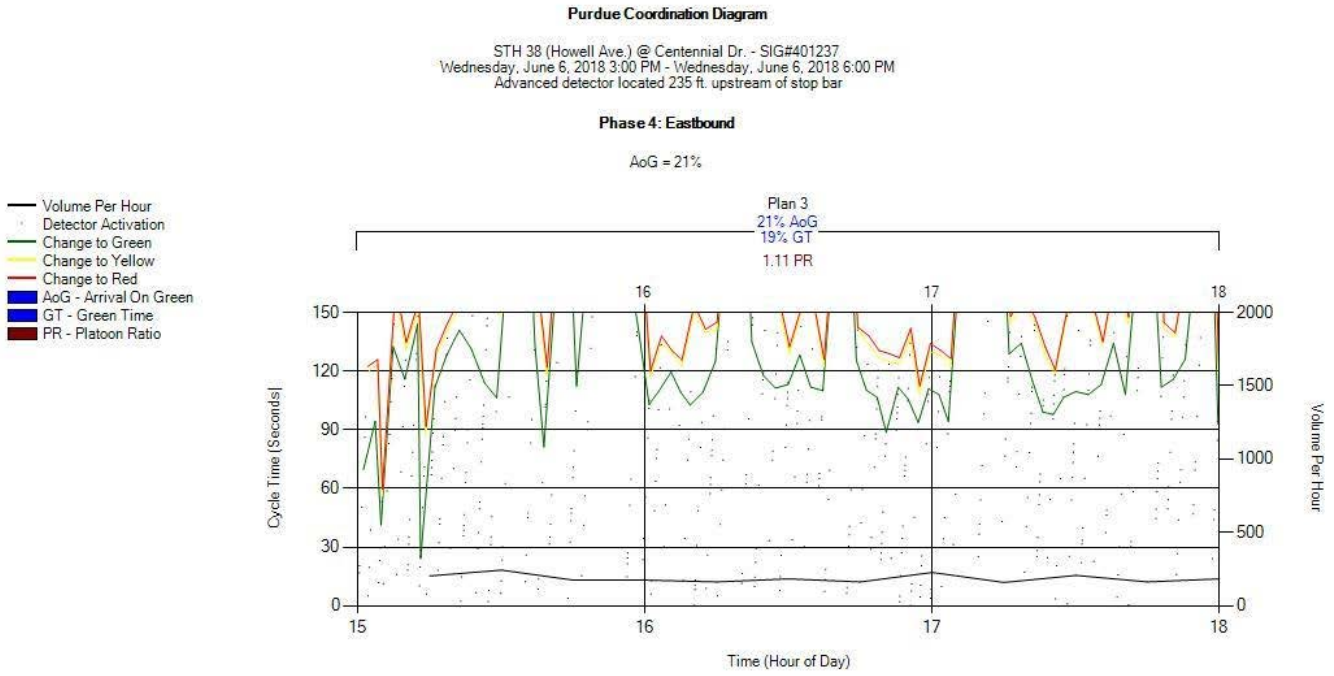
STH 38 (Howell Ave.) @ Centennial Dr. - SIG#401237
Tuesday, June 5, 2018 4:30 PM - Tuesday, June 5, 2018 5:30 PM
Advanced detector located 235 ft. upstream of stop bar

Phase 8: Westbound

AoG = 19%




Purdue Coordination Diagram
STH 38 (Howell Ave.) @ Centennial Dr. - SIG#401237
Wednesday, June 6, 2018 3:00 PM - Wednesday, June 6, 2018 6:00 PM
Advanced detector located 336 ft. upstream of stop bar
Phase 2: Southbound
AoG = 74%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
74% AoG
60% GT
1.23 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)

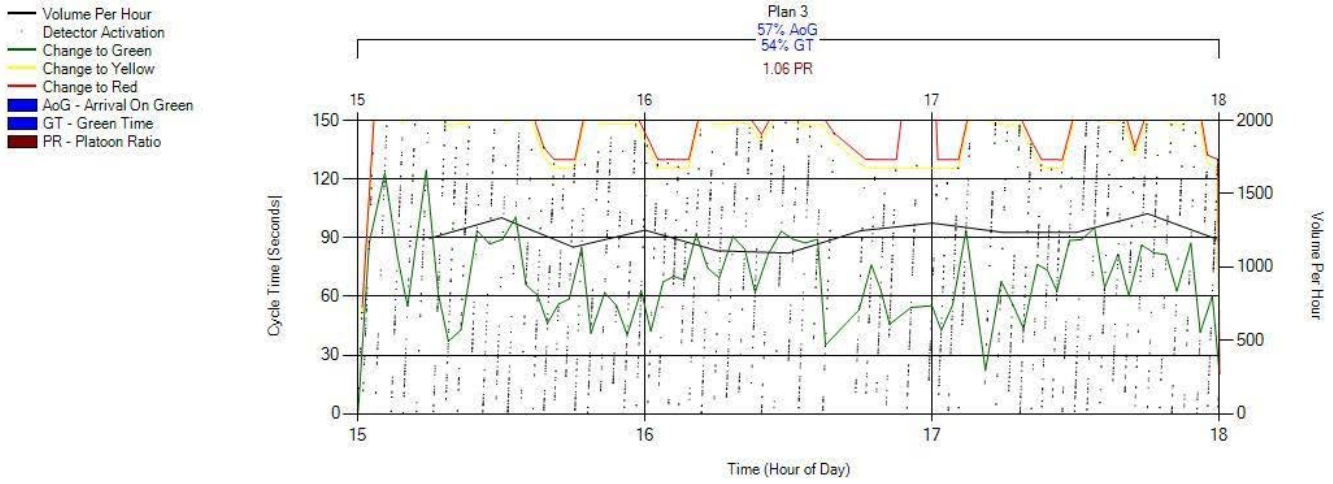

Purdue Coordination Diagram
STH 38 (Howell Ave.) @ Centennial Dr. - SIG#401237
Wednesday, June 6, 2018 3:00 PM - Wednesday, June 6, 2018 6:00 PM
Advanced detector located 235 ft. upstream of stop bar
Phase 4: Eastbound
AoG = 21%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
21% AoG
19% GT
1.11 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)

Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Centennial Dr. - SIG#401237
Wednesday, June 6, 2018 3:00 PM - Wednesday, June 6, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar

Phase 6: Northbound

AoG = 57%

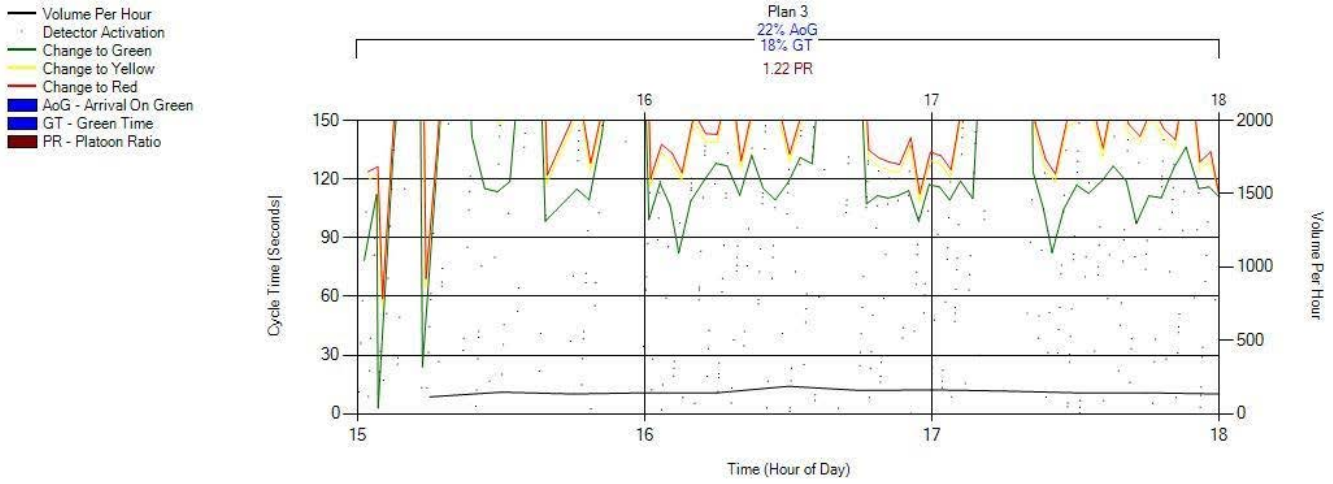


Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Centennial Dr. - SIG#401237
Wednesday, June 6, 2018 3:00 PM - Wednesday, June 6, 2018 6:00 PM
Advanced detector located 235 ft. upstream of stop bar

Phase 8: Westbound

AoG = 22%

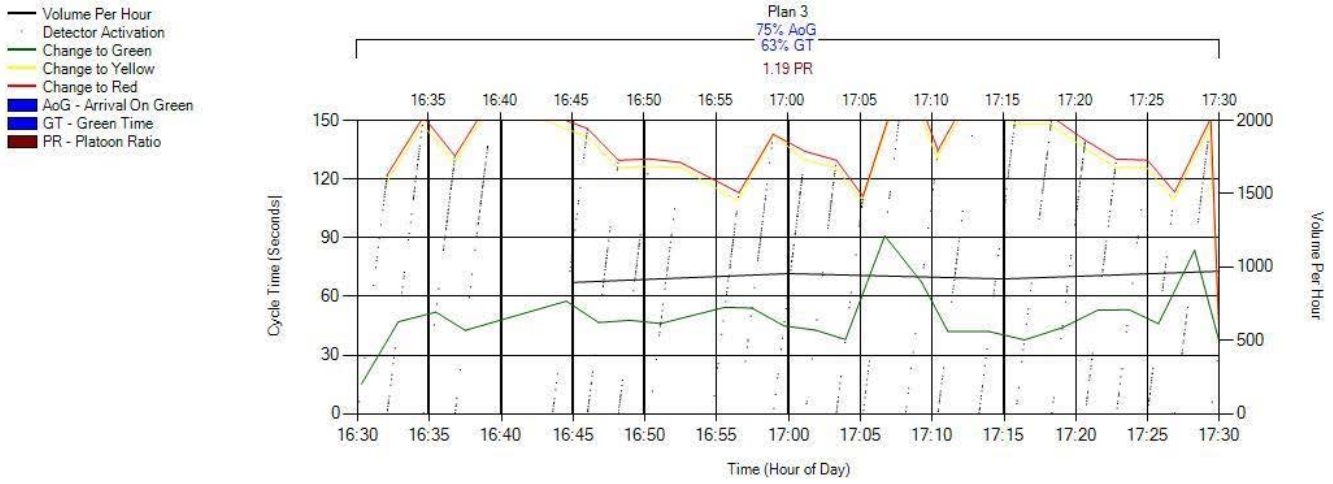


Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Centennial Dr. - SIG#401237
Wednesday, June 6, 2018 4:30 PM - Wednesday, June 6, 2018 5:30 PM
Advanced detector located 336 ft. upstream of stop bar

Phase 2: Southbound

AoG = 75%

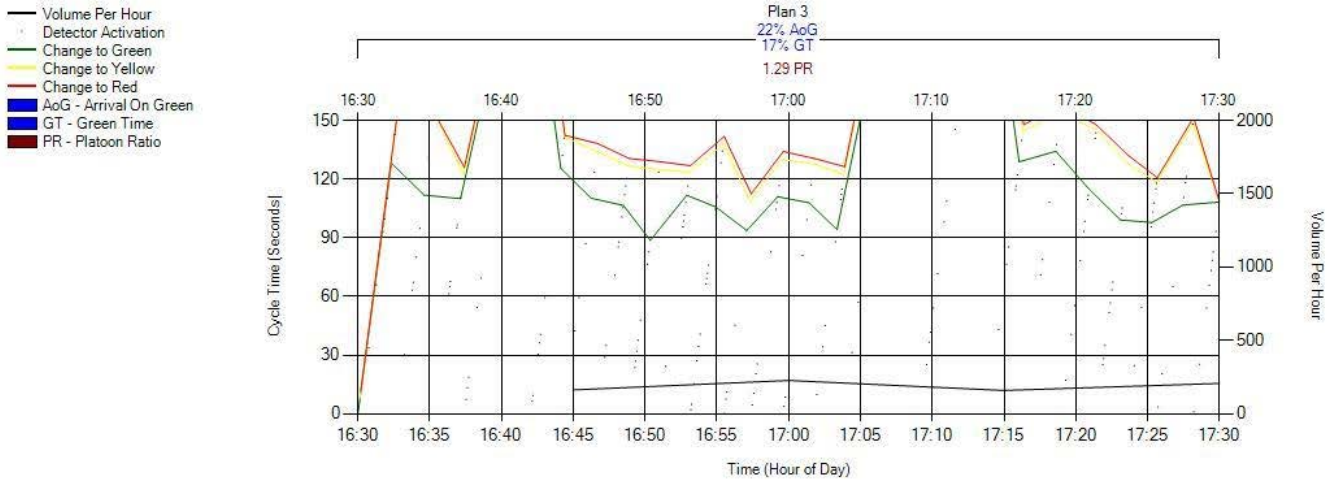


Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Centennial Dr. - SIG#401237
Wednesday, June 6, 2018 4:30 PM - Wednesday, June 6, 2018 5:30 PM
Advanced detector located 235 ft. upstream of stop bar

Phase 4: Eastbound

AoG = 22%

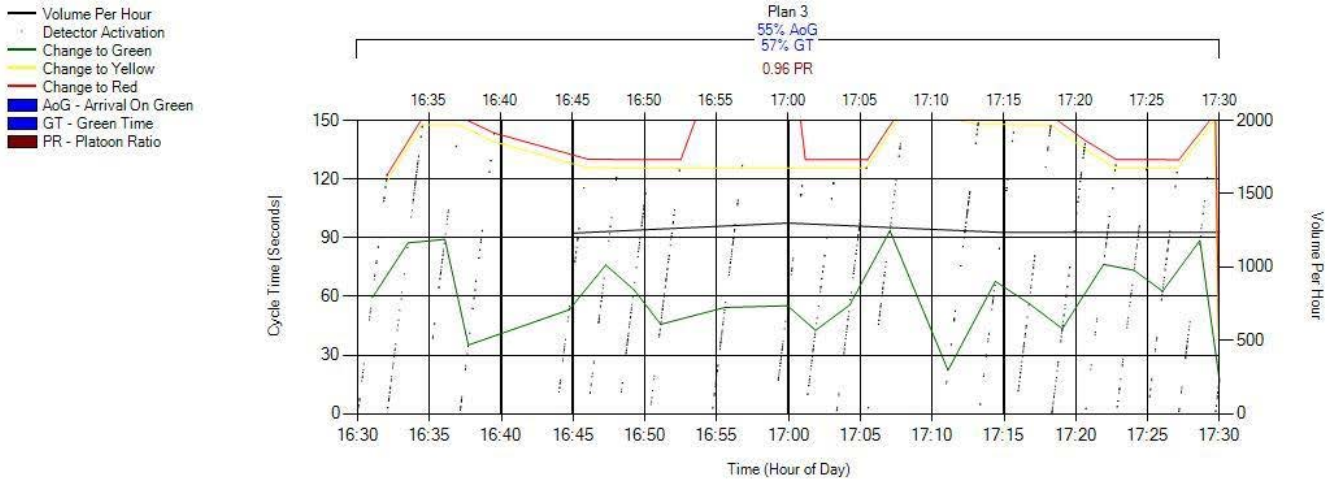


Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Centennial Dr. - SIG#401237
Wednesday, June 6, 2018 4:30 PM - Wednesday, June 6, 2018 5:30 PM
Advanced detector located 376 ft. upstream of stop bar

Phase 6: Northbound

AoG = 55%

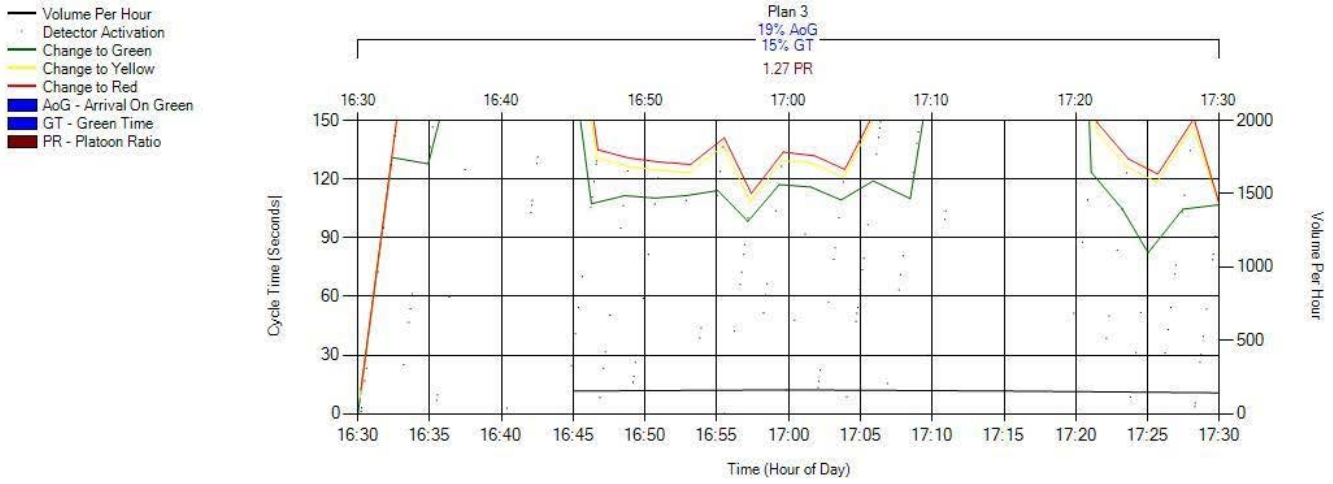


Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Centennial Dr. - SIG#401237
Wednesday, June 6, 2018 4:30 PM - Wednesday, June 6, 2018 5:30 PM
Advanced detector located 235 ft. upstream of stop bar

Phase 8: Westbound

AoG = 19%

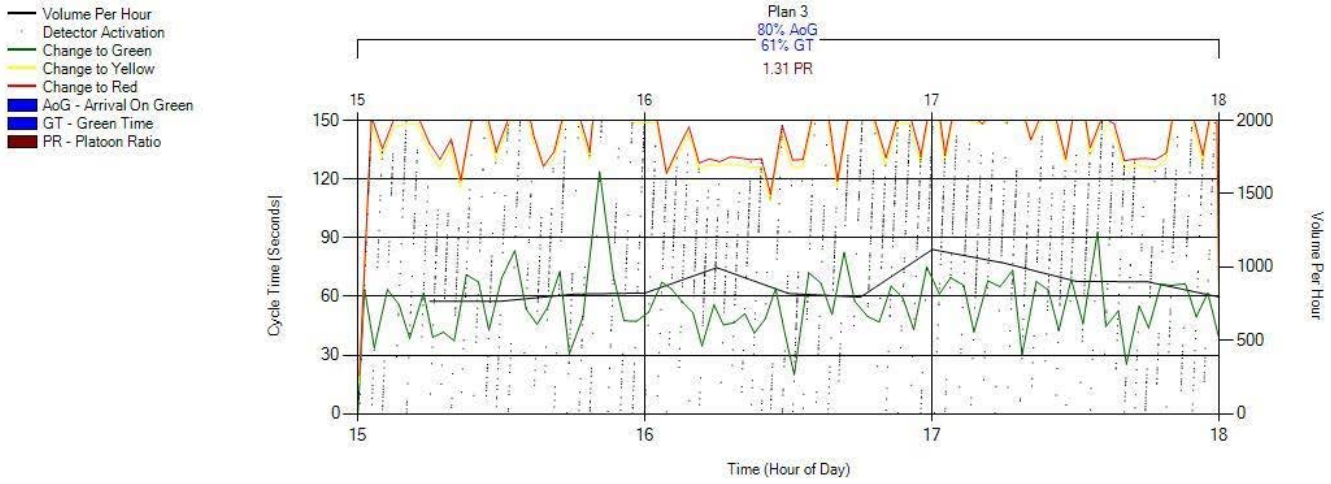


Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Centennial Dr. - SIG#401237
Thursday, June 7, 2018 3:00 PM - Thursday, June 7, 2018 6:00 PM
Advanced detector located 336 ft. upstream of stop bar

Phase 2: Southbound

AoG = 80%

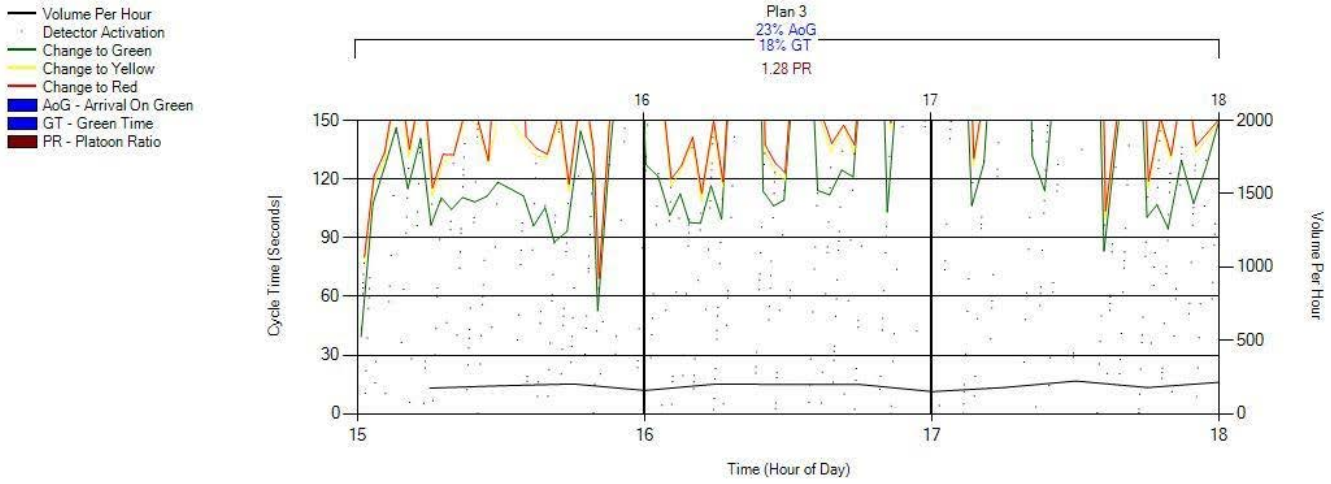


Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Centennial Dr. - SIG#401237
Thursday, June 7, 2018 3:00 PM - Thursday, June 7, 2018 6:00 PM
Advanced detector located 235 ft. upstream of stop bar

Phase 4: Eastbound

AoG = 23%

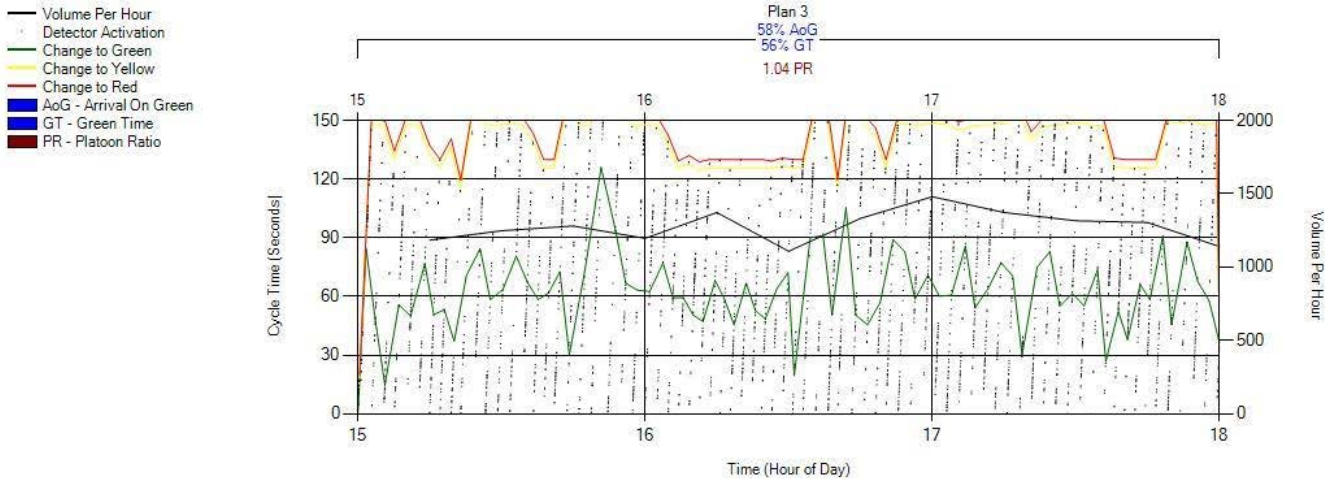


Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Centennial Dr. - SIG#401237
Thursday, June 7, 2018 3:00 PM - Thursday, June 7, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar

Phase 6: Northbound

AoG = 58%

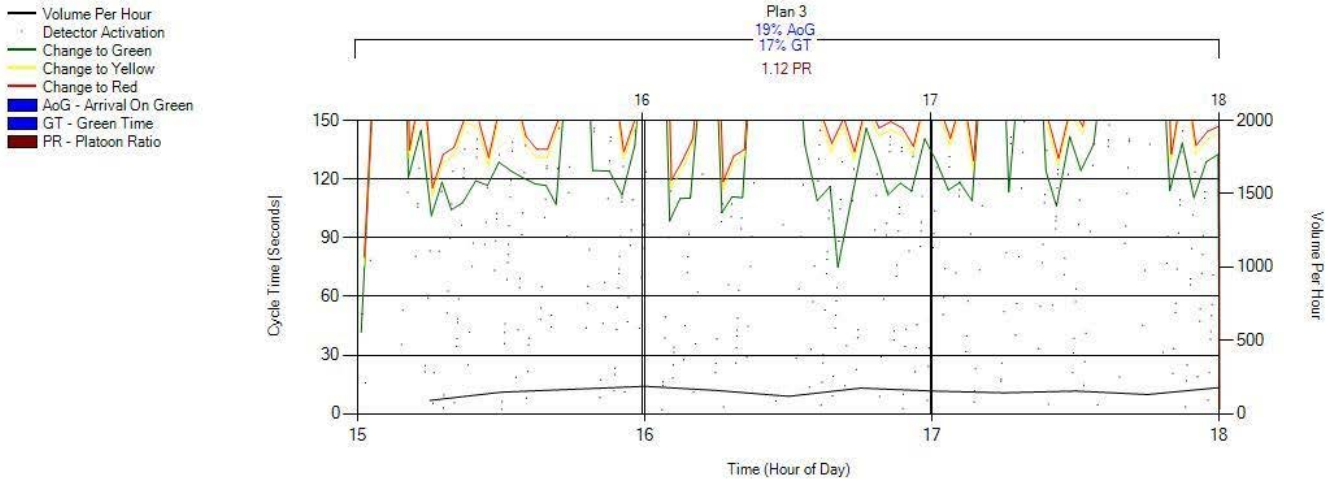


Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Centennial Dr. - SIG#401237
Thursday, June 7, 2018 3:00 PM - Thursday, June 7, 2018 6:00 PM
Advanced detector located 235 ft. upstream of stop bar

Phase 8: Westbound

AoG = 19%

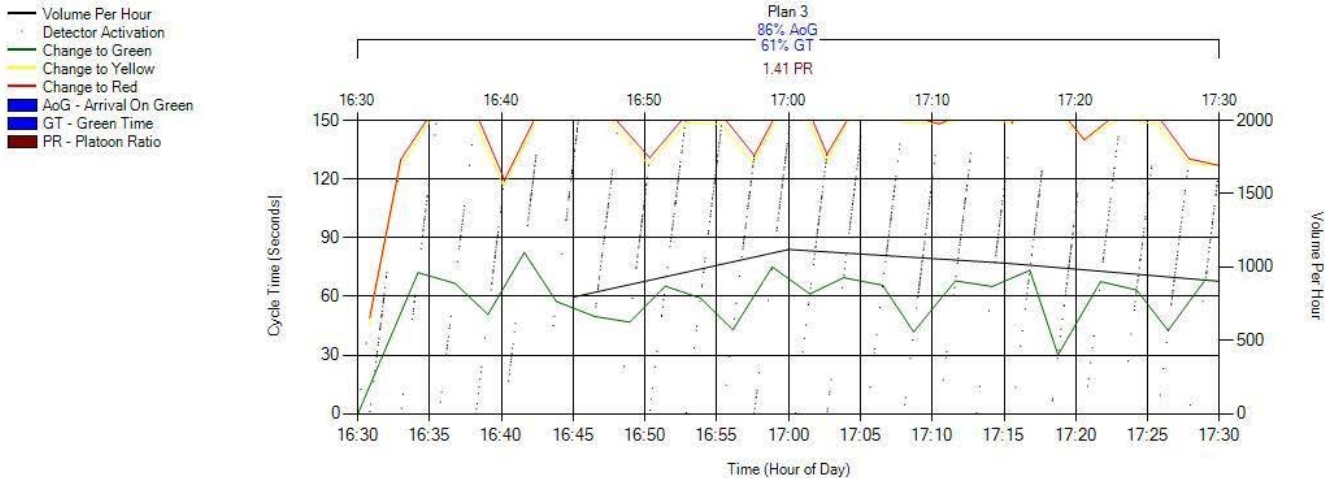


Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Centennial Dr. - SIG#401237
Thursday, June 7, 2018 4:30 PM - Thursday, June 7, 2018 5:30 PM
Advanced detector located 336 ft. upstream of stop bar

Phase 2: Southbound

AoG = 86%

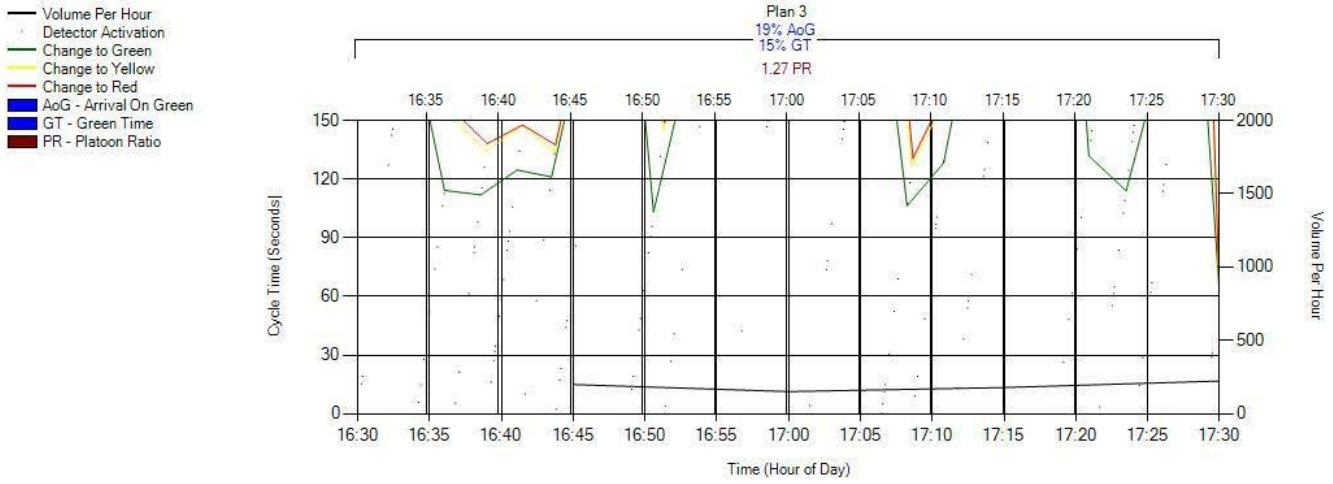


Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Centennial Dr. - SIG#401237
Thursday, June 7, 2018 4:30 PM - Thursday, June 7, 2018 5:30 PM
Advanced detector located 235 ft. upstream of stop bar

Phase 4: Eastbound

AoG = 19%

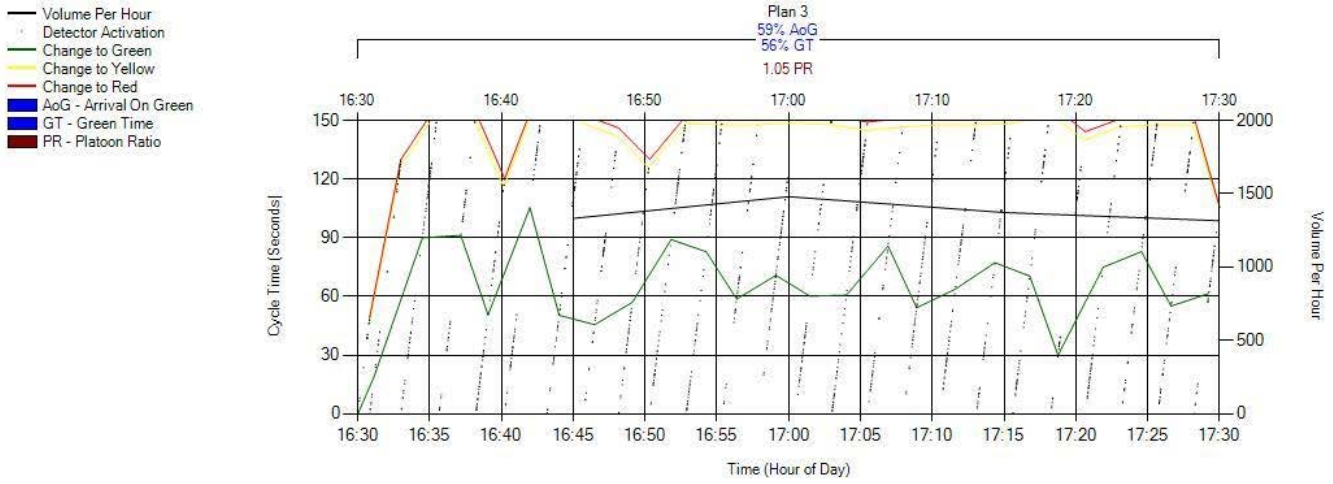


Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Centennial Dr. - SIG#401237
Thursday, June 7, 2018 4:30 PM - Thursday, June 7, 2018 5:30 PM
Advanced detector located 376 ft. upstream of stop bar

Phase 6: Northbound

AoG = 59%

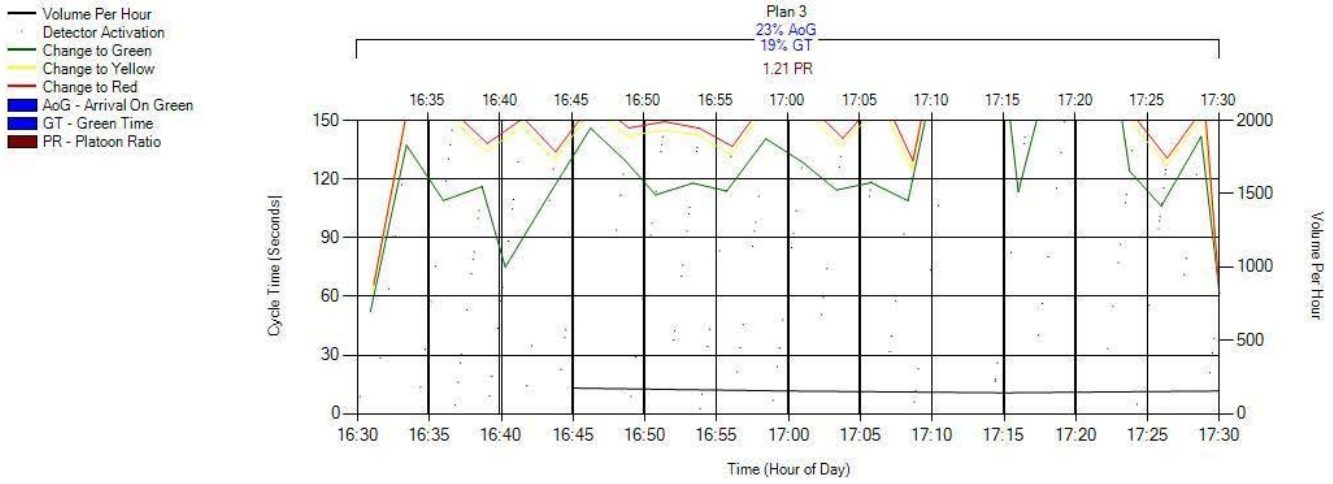


Purdue Coordination Diagram

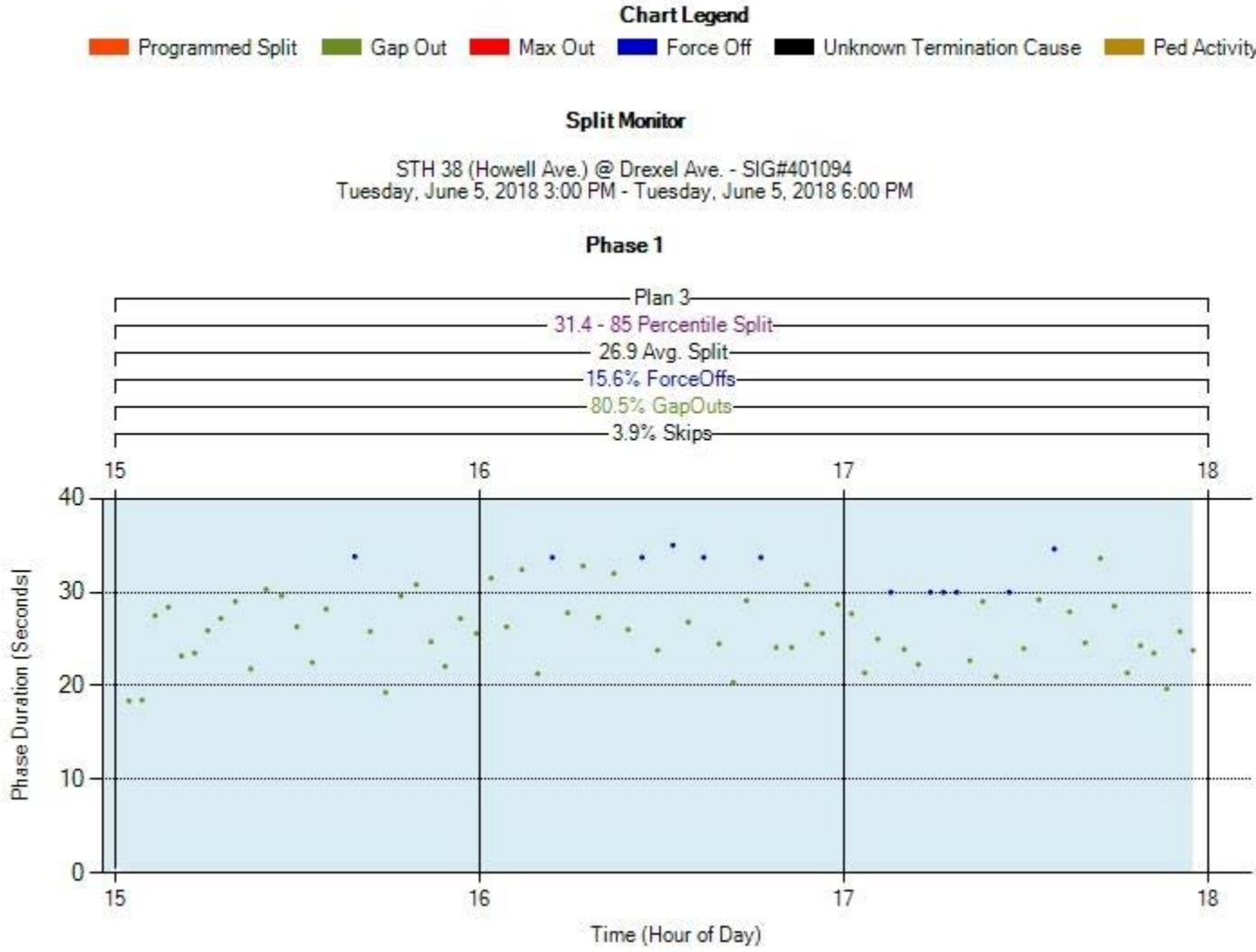
STH 38 (Howell Ave.) @ Centennial Dr. - SIG#401237
Thursday, June 7, 2018 4:30 PM - Thursday, June 7, 2018 5:30 PM
Advanced detector located 235 ft. upstream of stop bar

Phase 8: Westbound

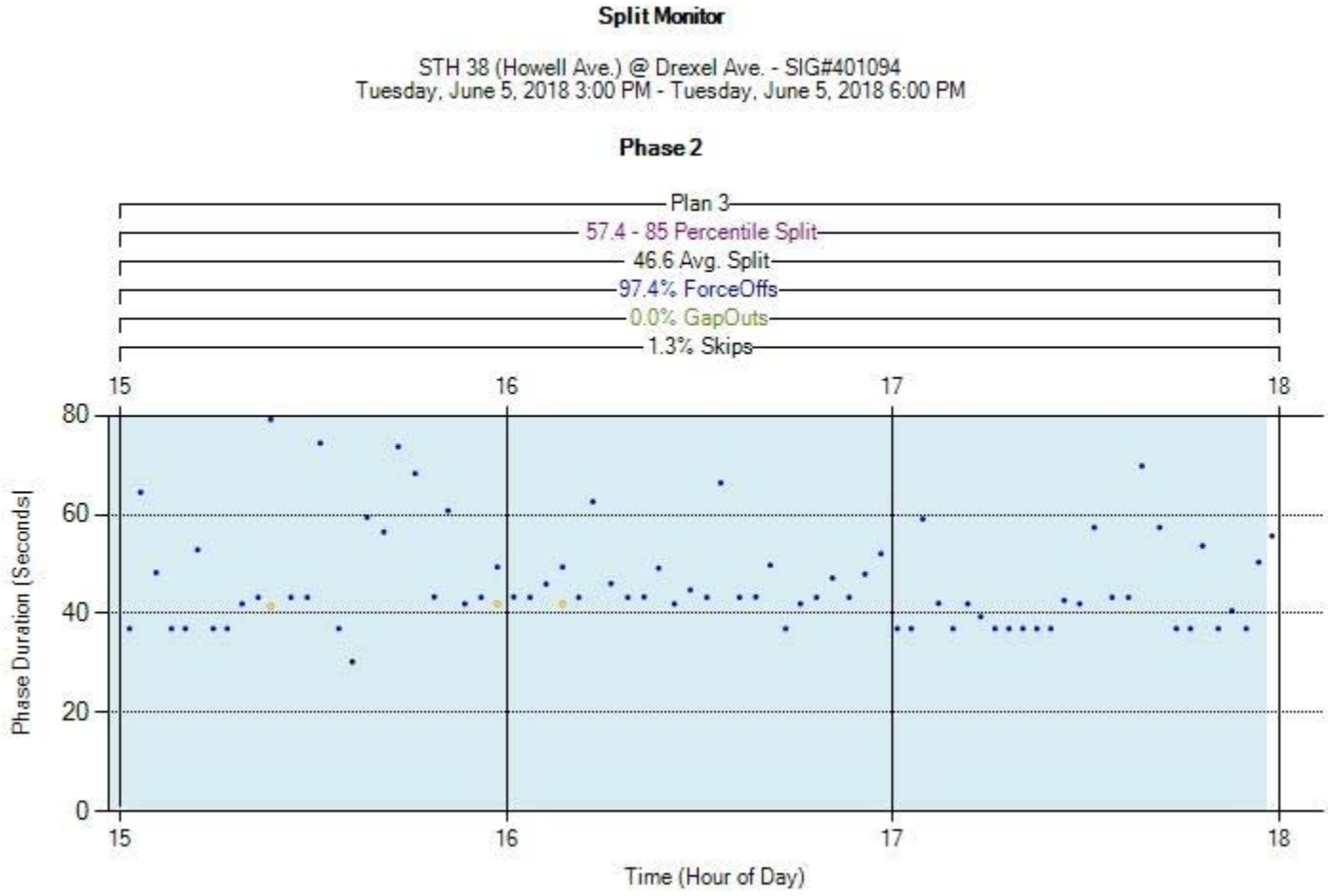
AoG = 23%



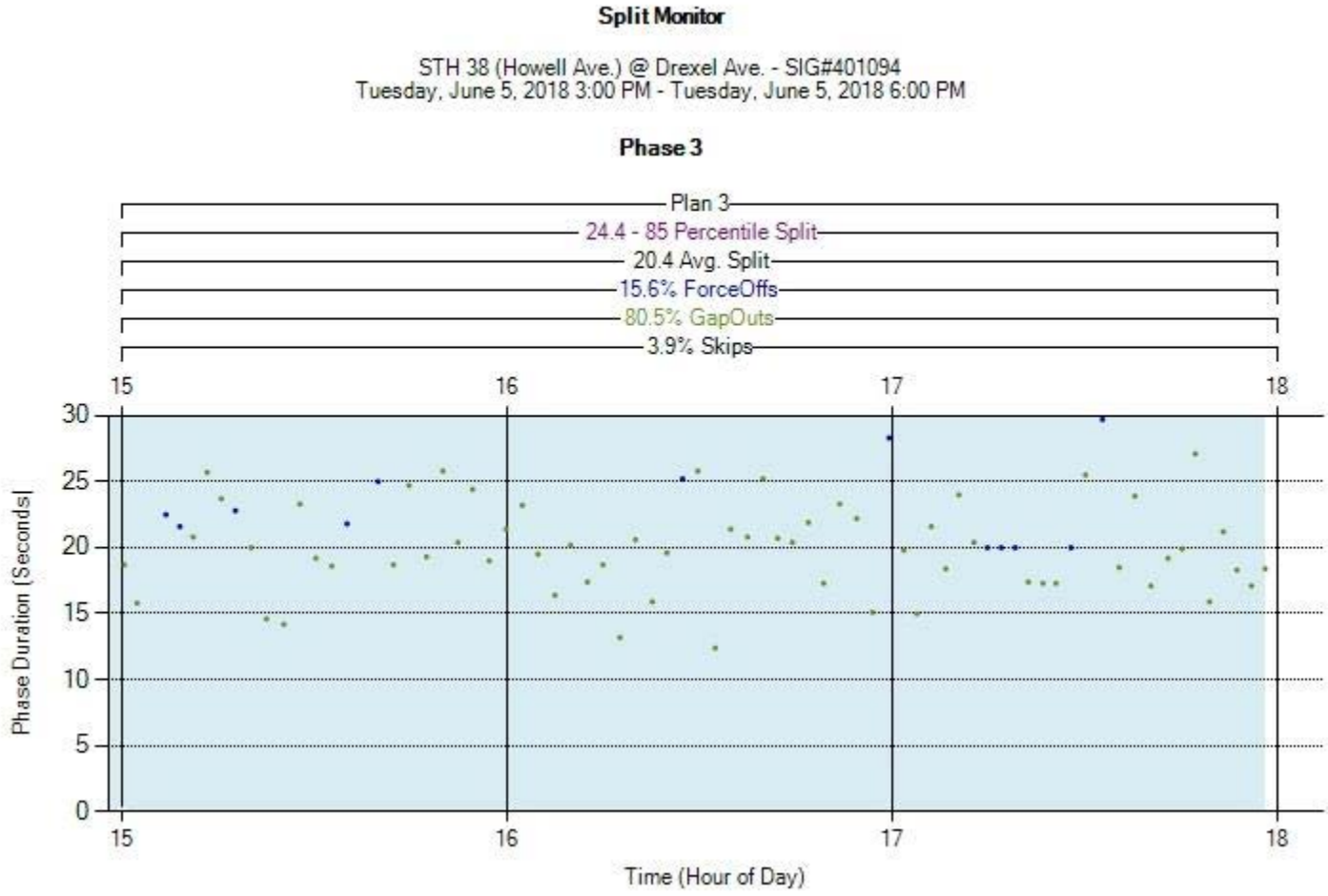
WIS 38 Corridor – STH 38 & Drexel Ave.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



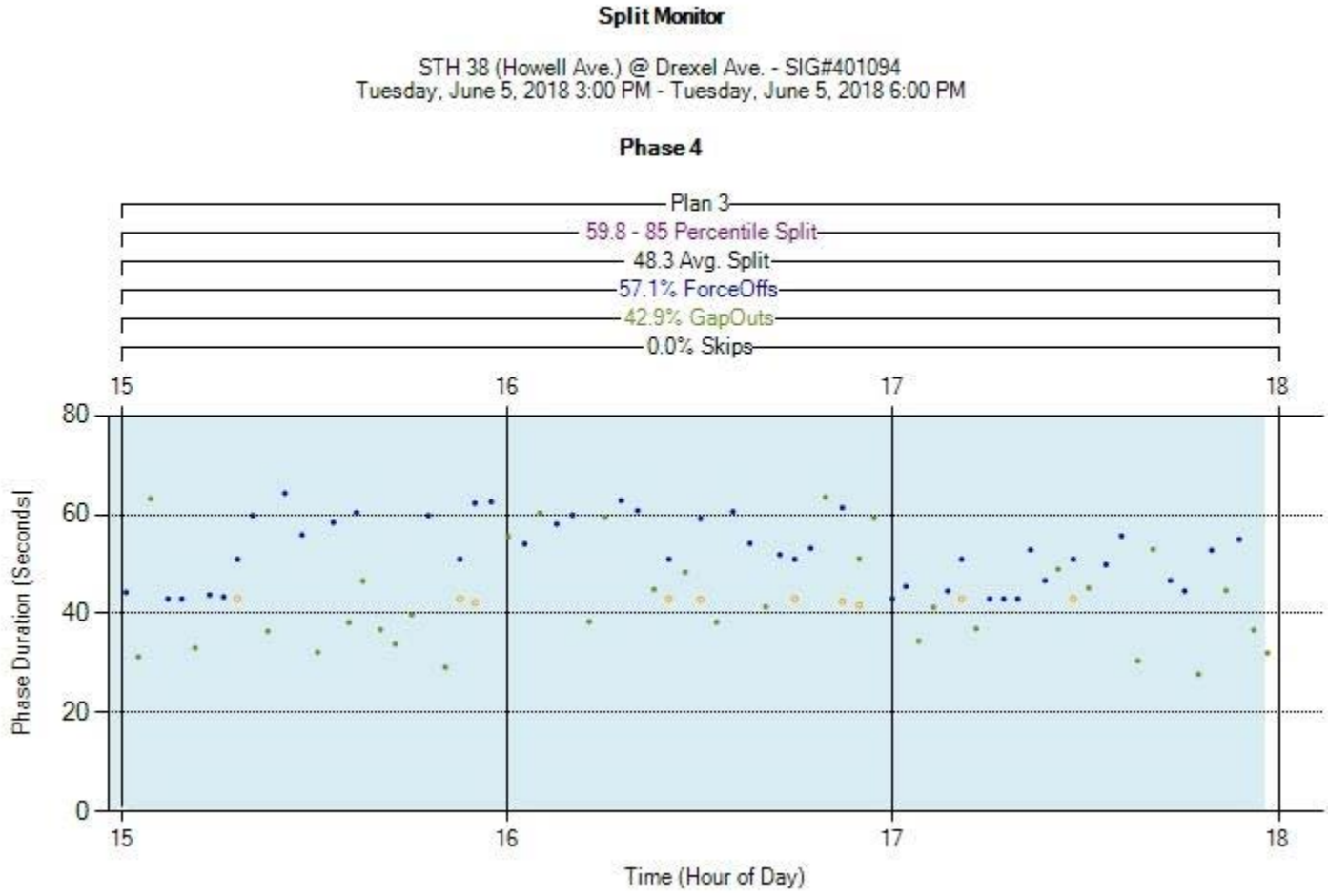
WIS 38 Corridor – STH 38 & Drexel Ave.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



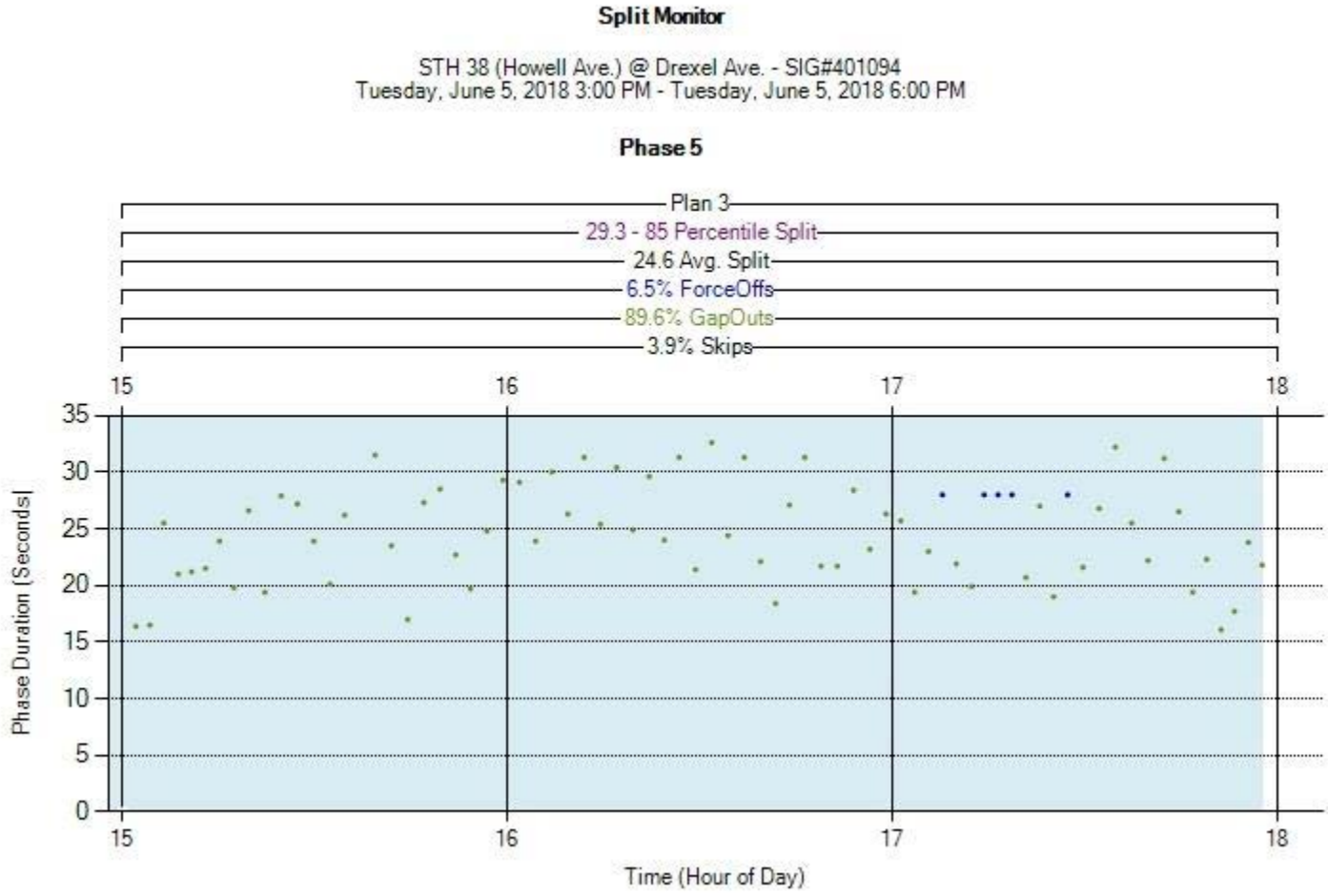
WIS 38 Corridor – STH 38 & Drexel Ave.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



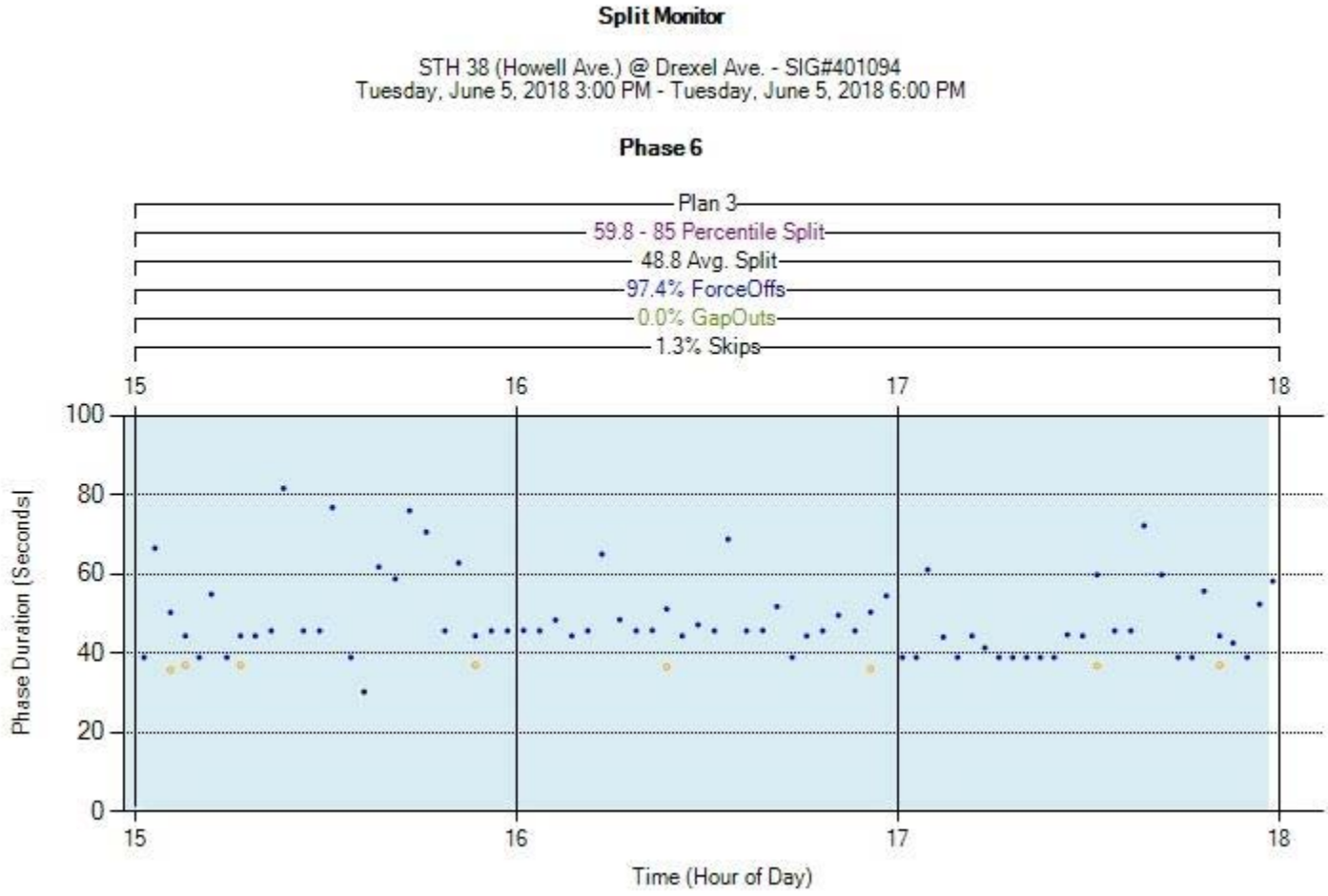
WIS 38 Corridor – STH 38 & Drexel Ave.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Drexel Ave.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Drexel Ave.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Drexel Ave.
Baseline Timings
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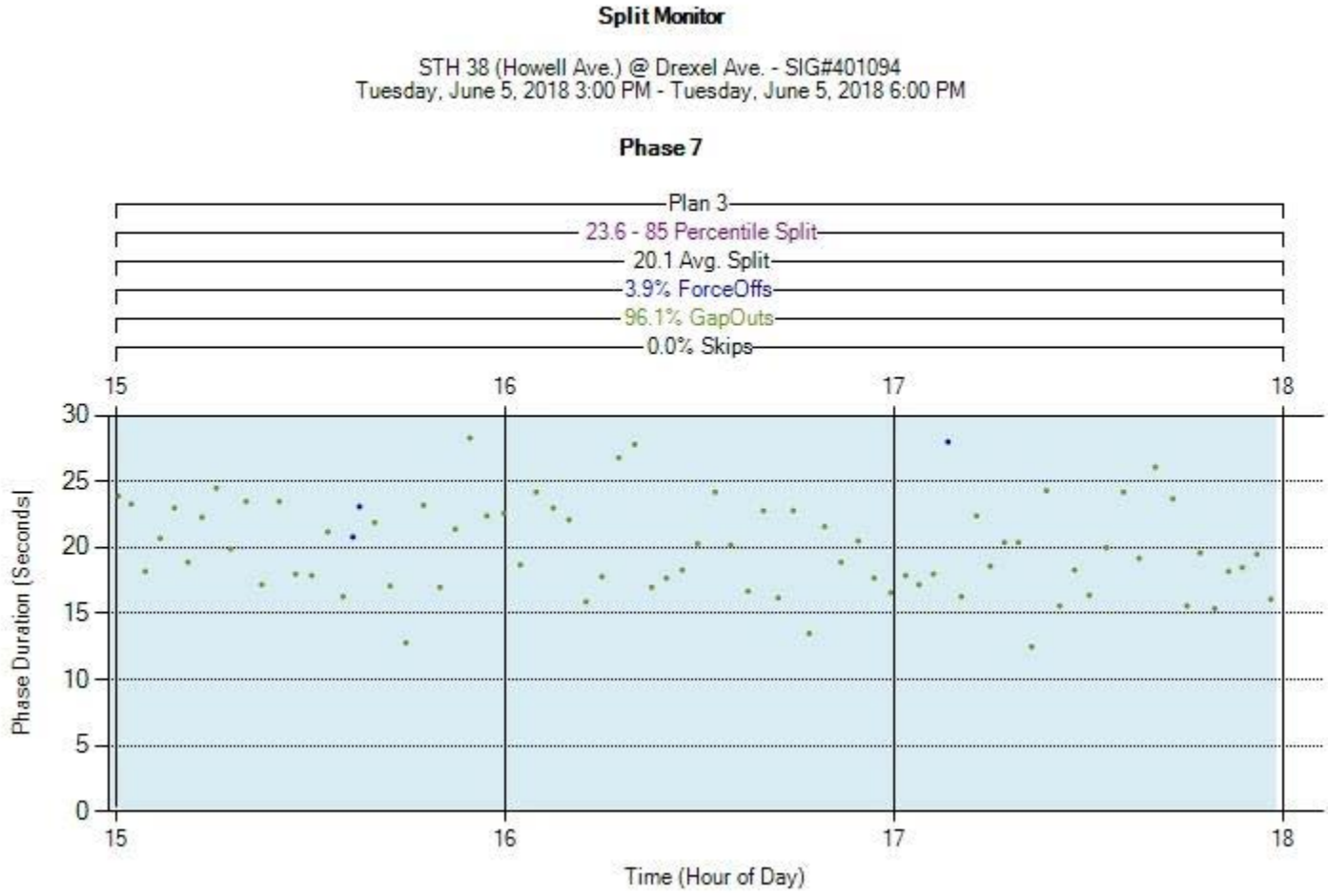

WIS 38 Corridor – STH 38 & Drexel Ave.
Baseline Timings
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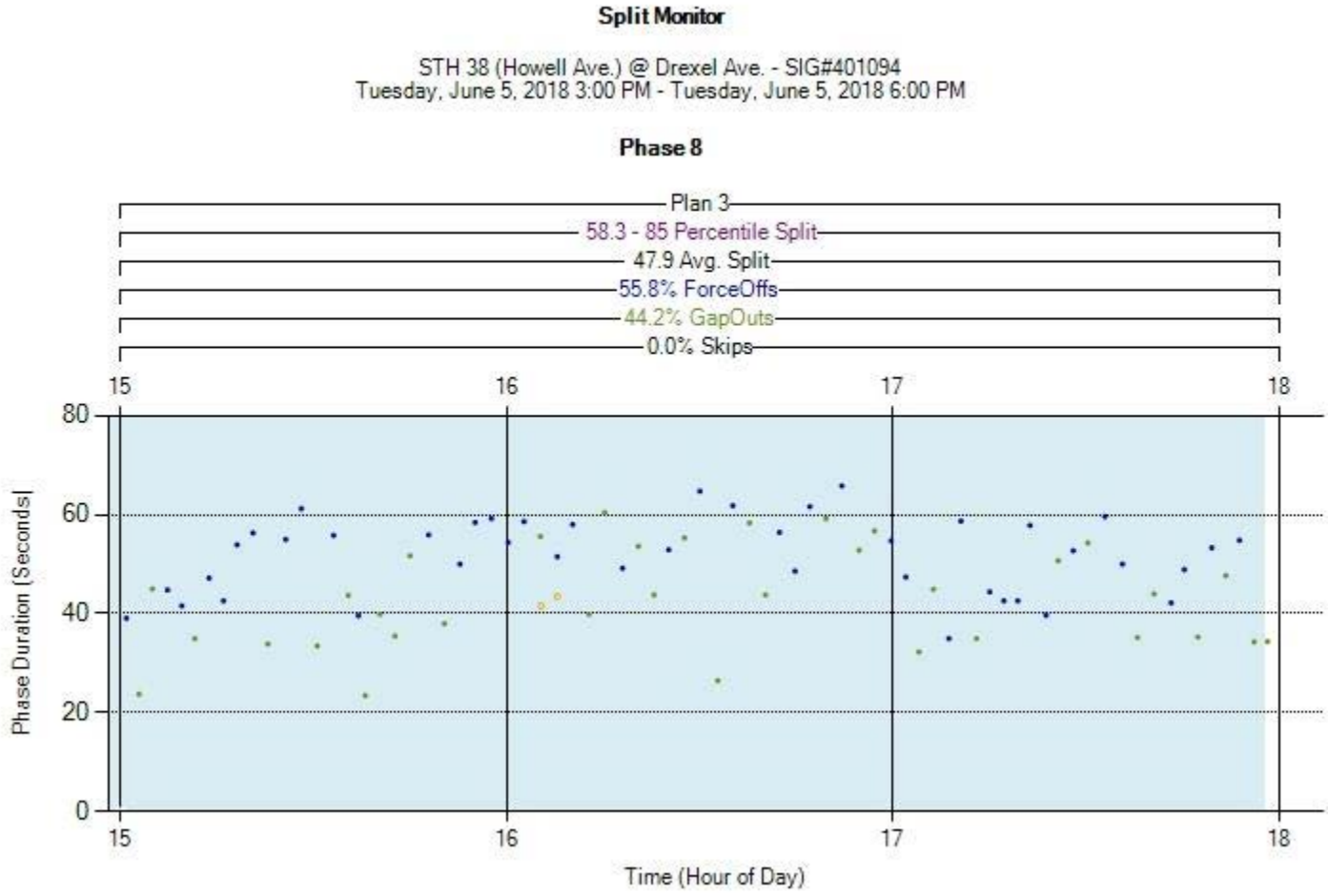
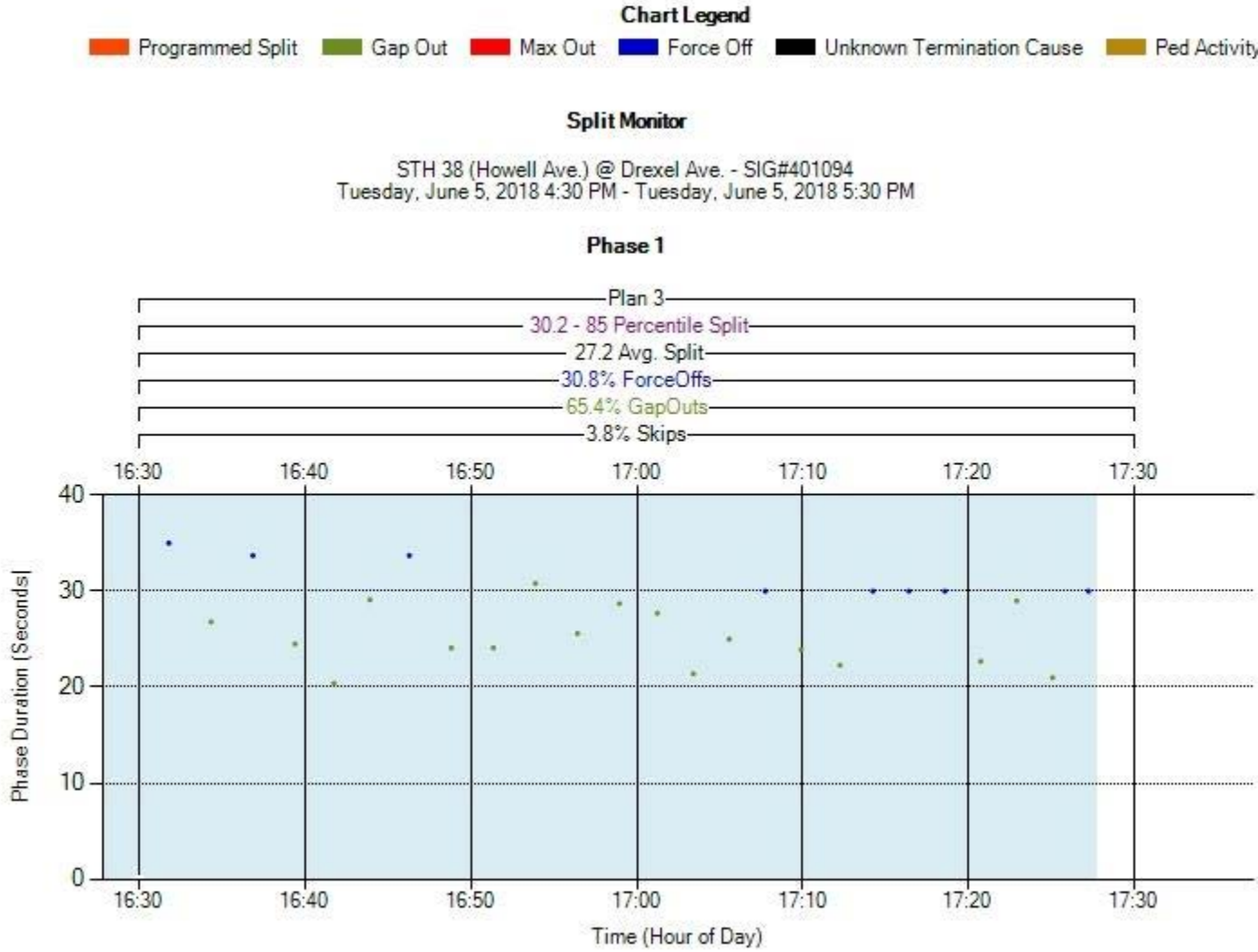
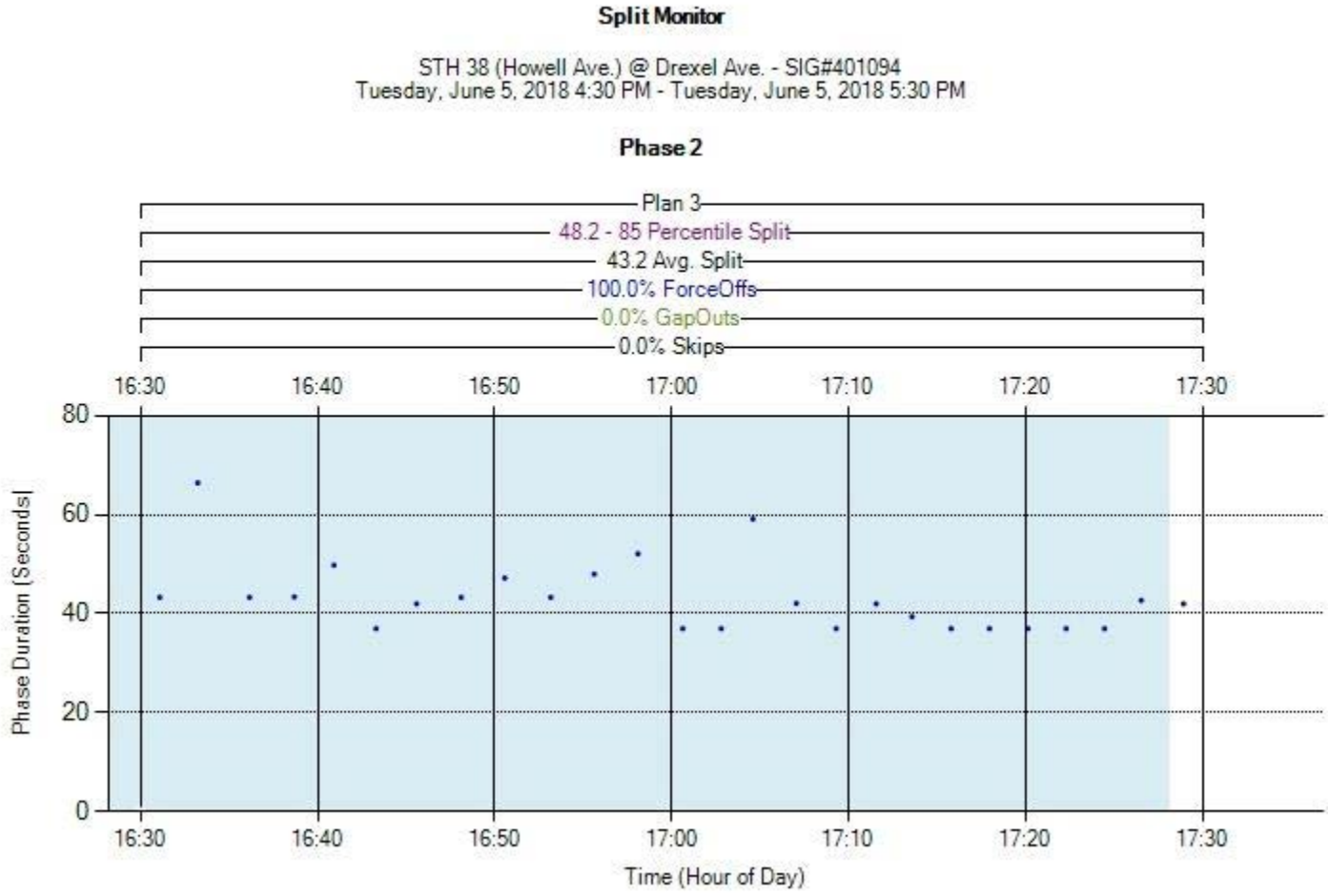


WIS 38 Corridor – STH 38 & Drexel Ave.
Baseline Timings
6/5/2018 – 4:30 PM – 5:30 PM



WIS 38 Corridor – STH 38 & Drexel Ave.
Baseline Timings
6/5/2018 – 4:30 PM – 5:30 PM



WIS 38 Corridor – STH 38 & Drexel Ave.
Baseline Timings
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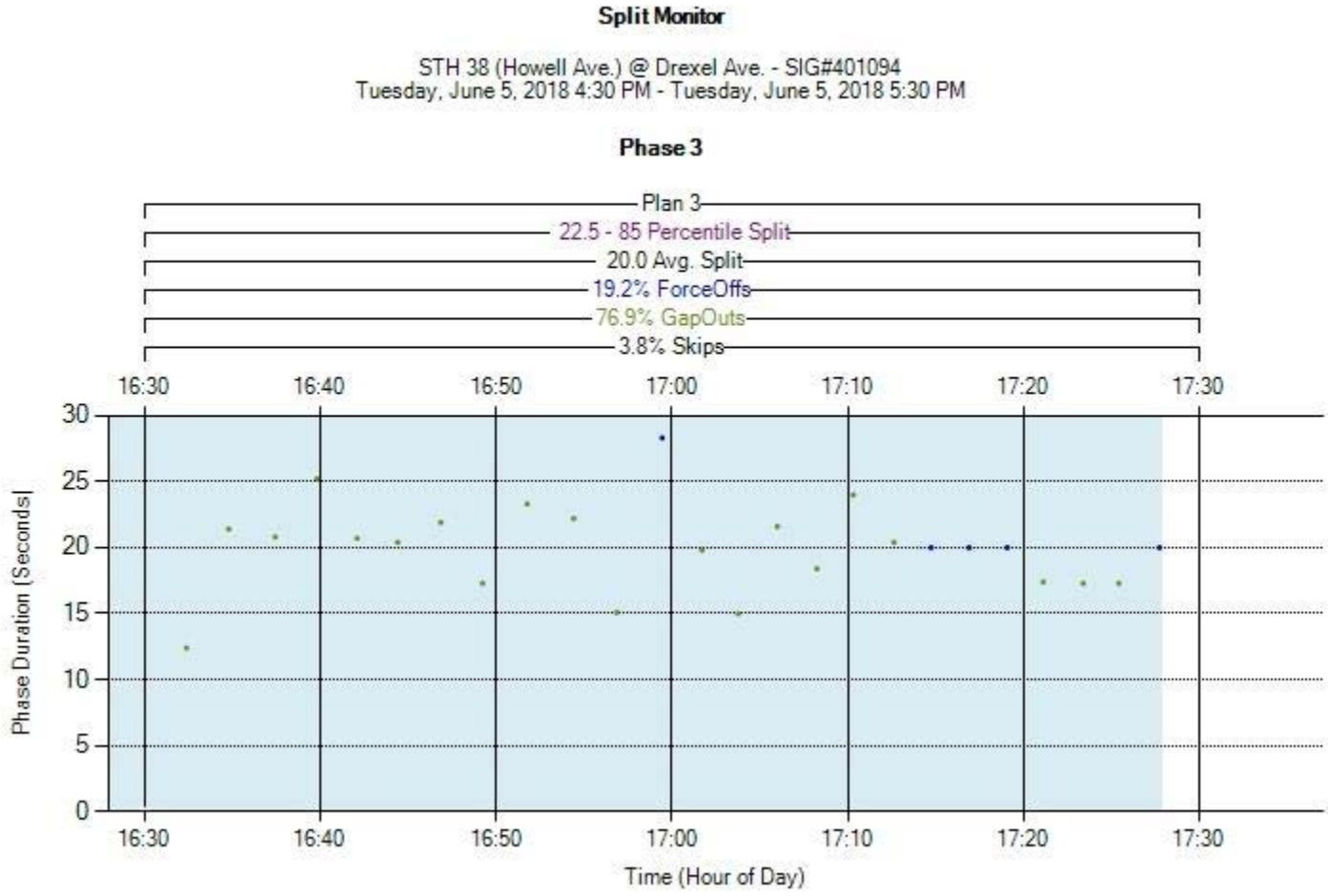

WIS 38 Corridor – STH 38 & Drexel Ave.
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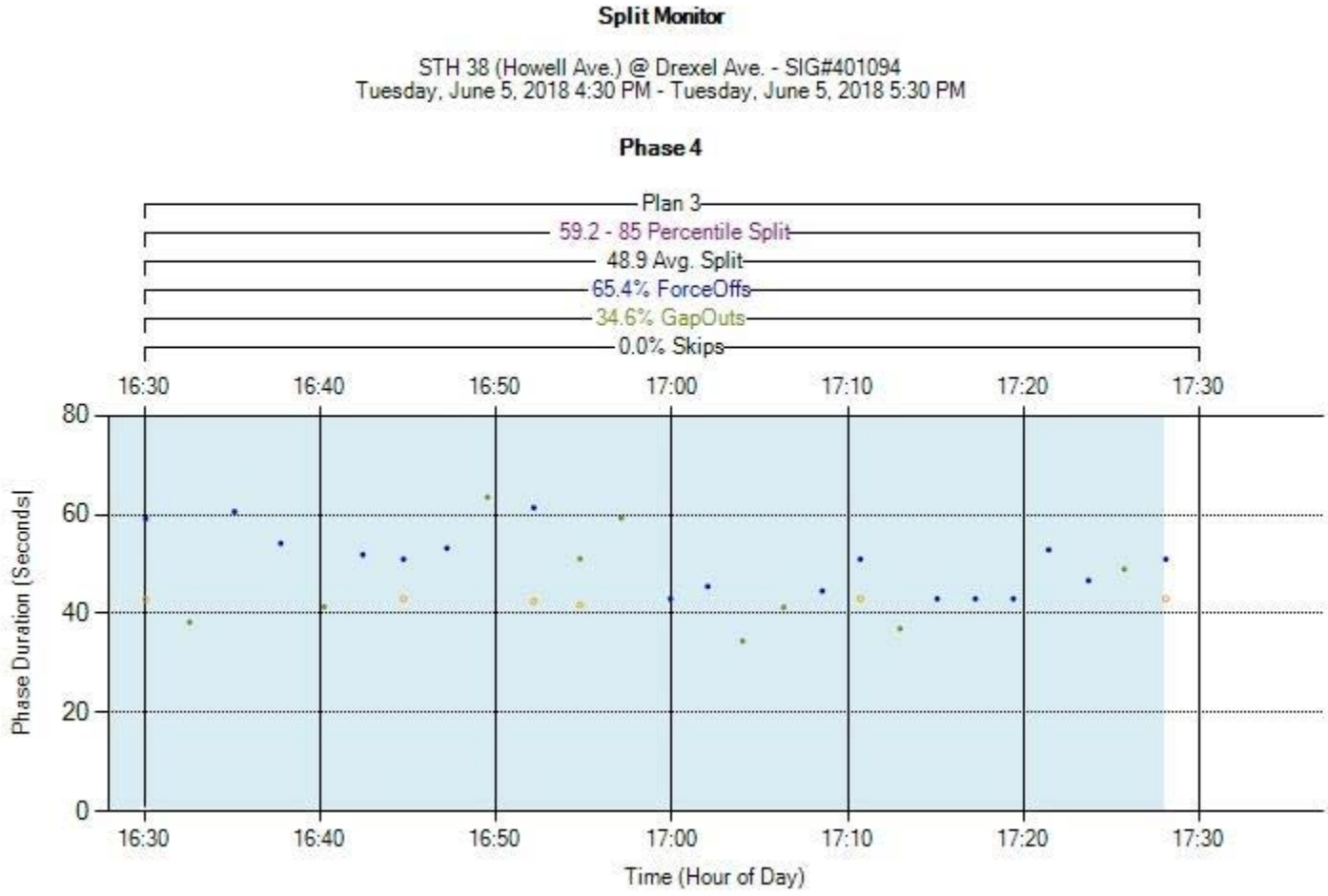

WIS 38 Corridor – STH 38 & Drexel Ave.
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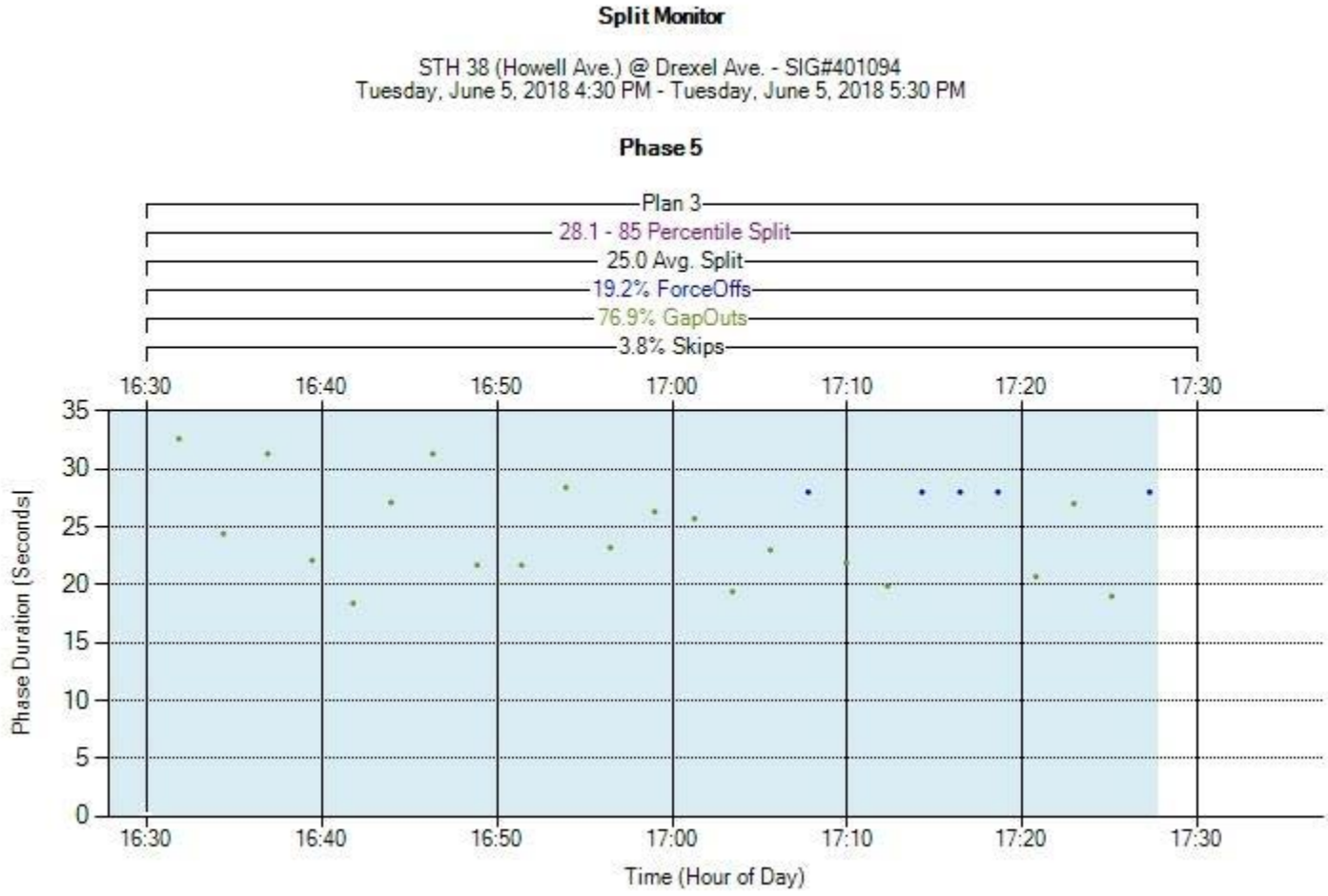

WIS 38 Corridor – STH 38 & Drexel Ave.
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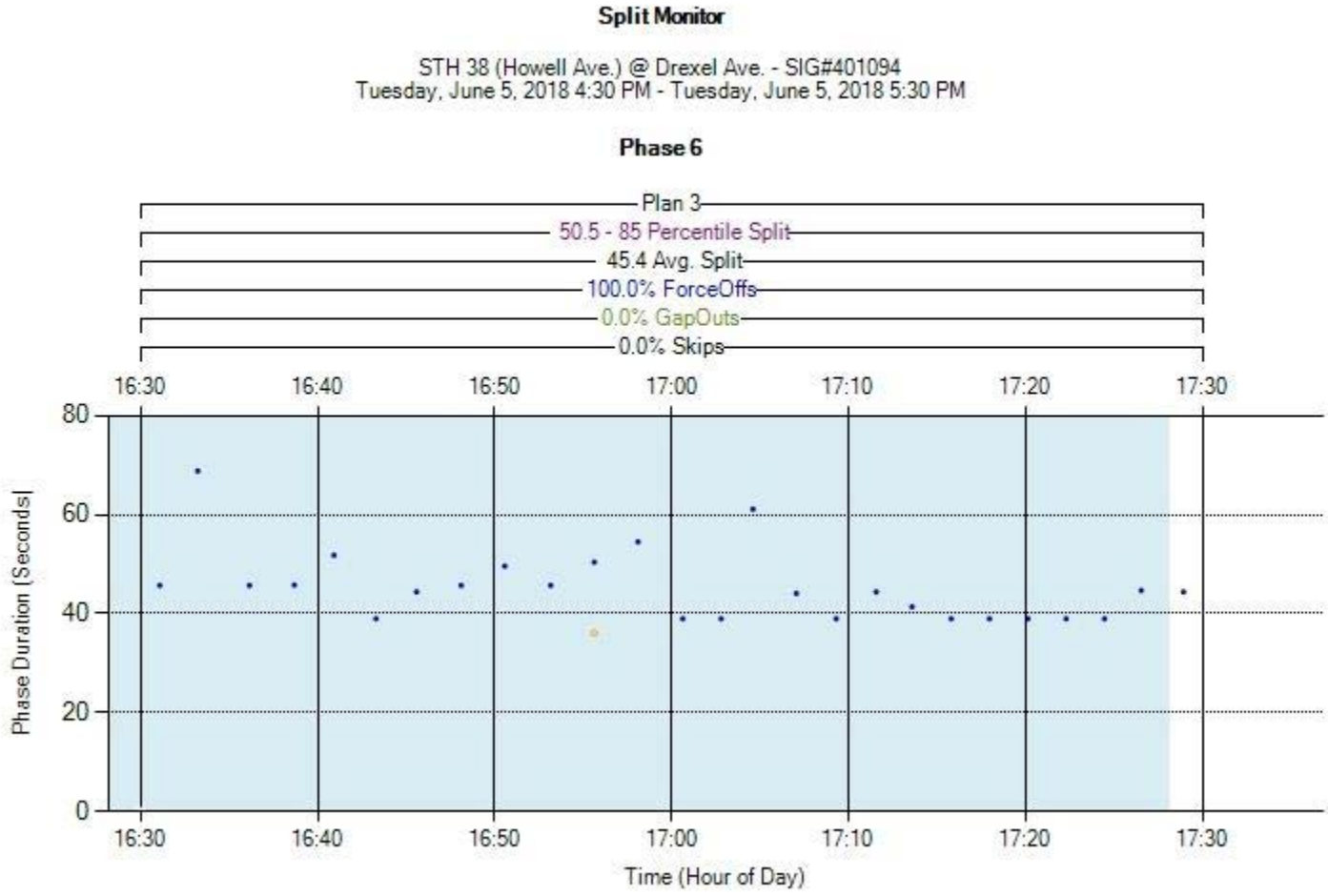

WIS 38 Corridor – STH 38 & Drexel Ave.
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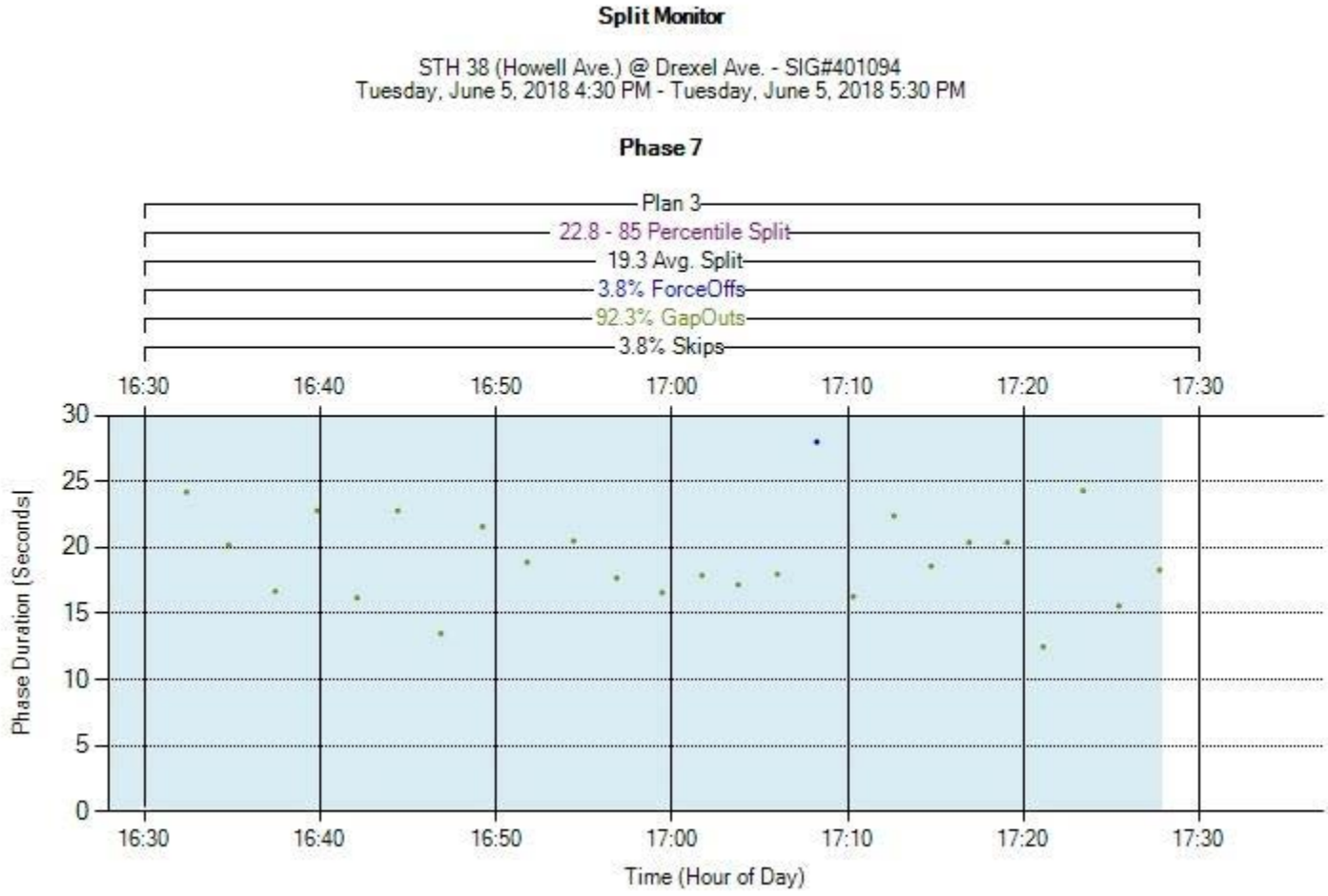

WIS 38 Corridor – STH 38 & Drexel Ave.
Baseline Timings
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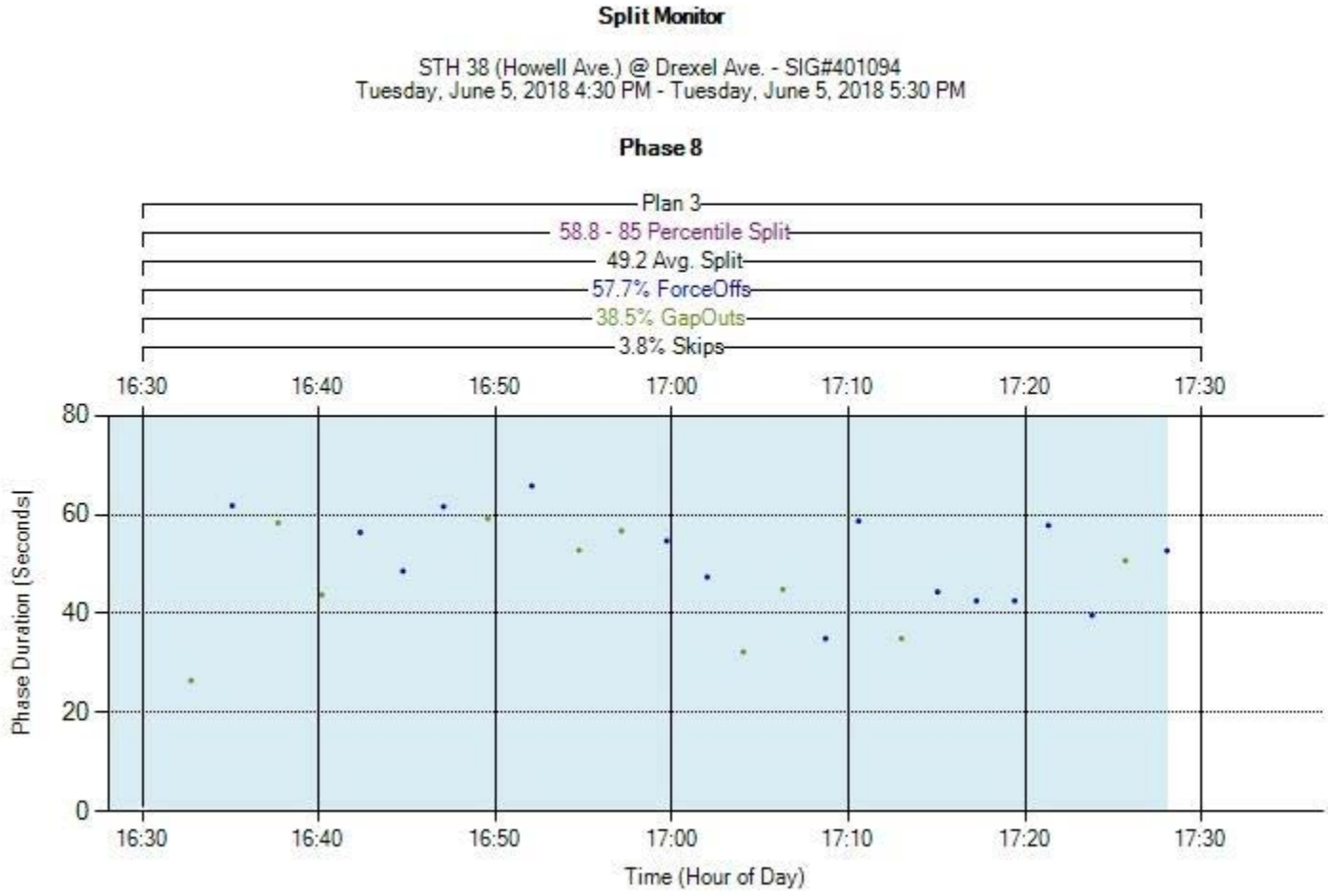
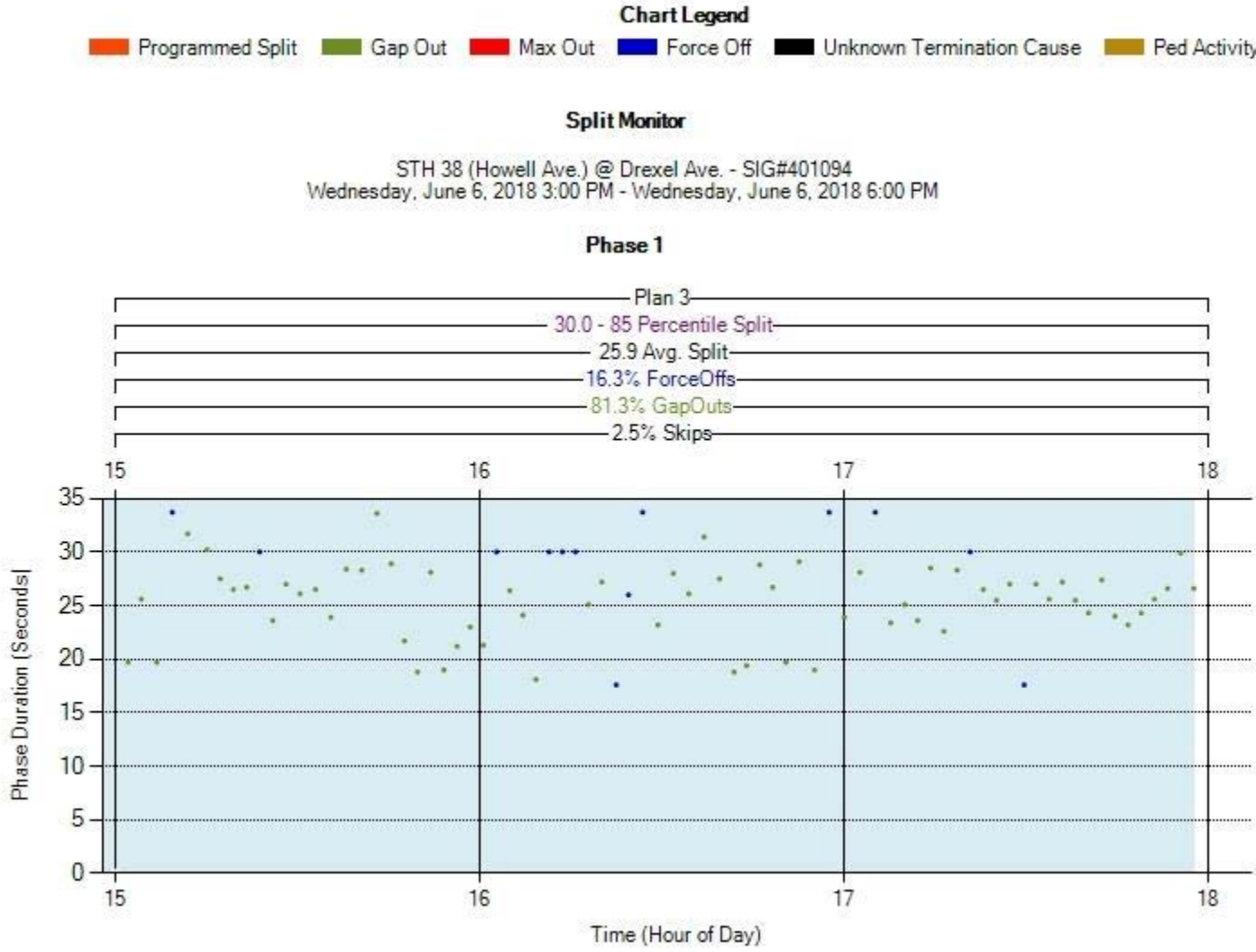


WIS 38 Corridor – STH 38 & Drexel Ave.
Baseline Timings
6/6/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Drexel Ave.
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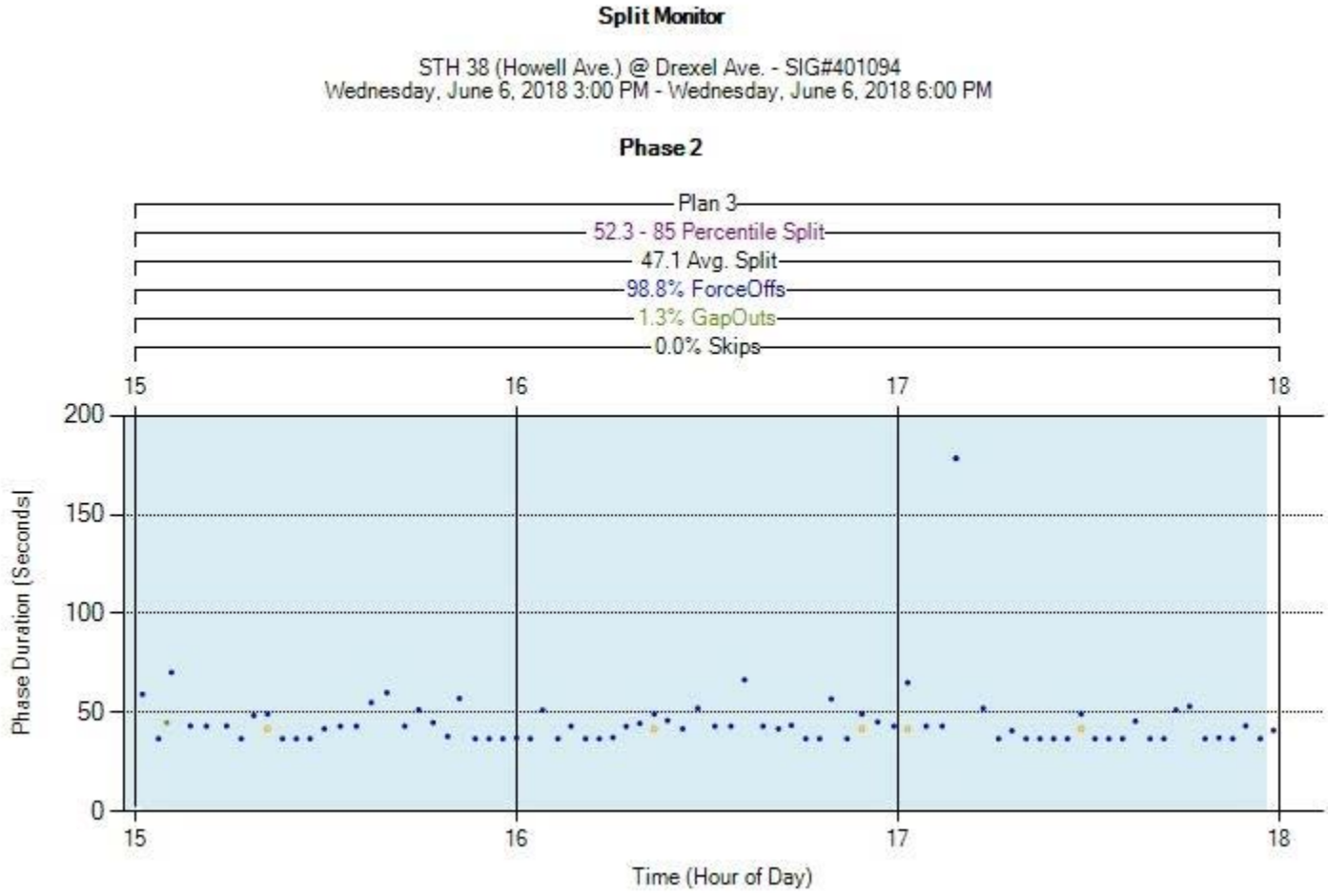

WIS 38 Corridor – STH 38 & Drexel Ave.
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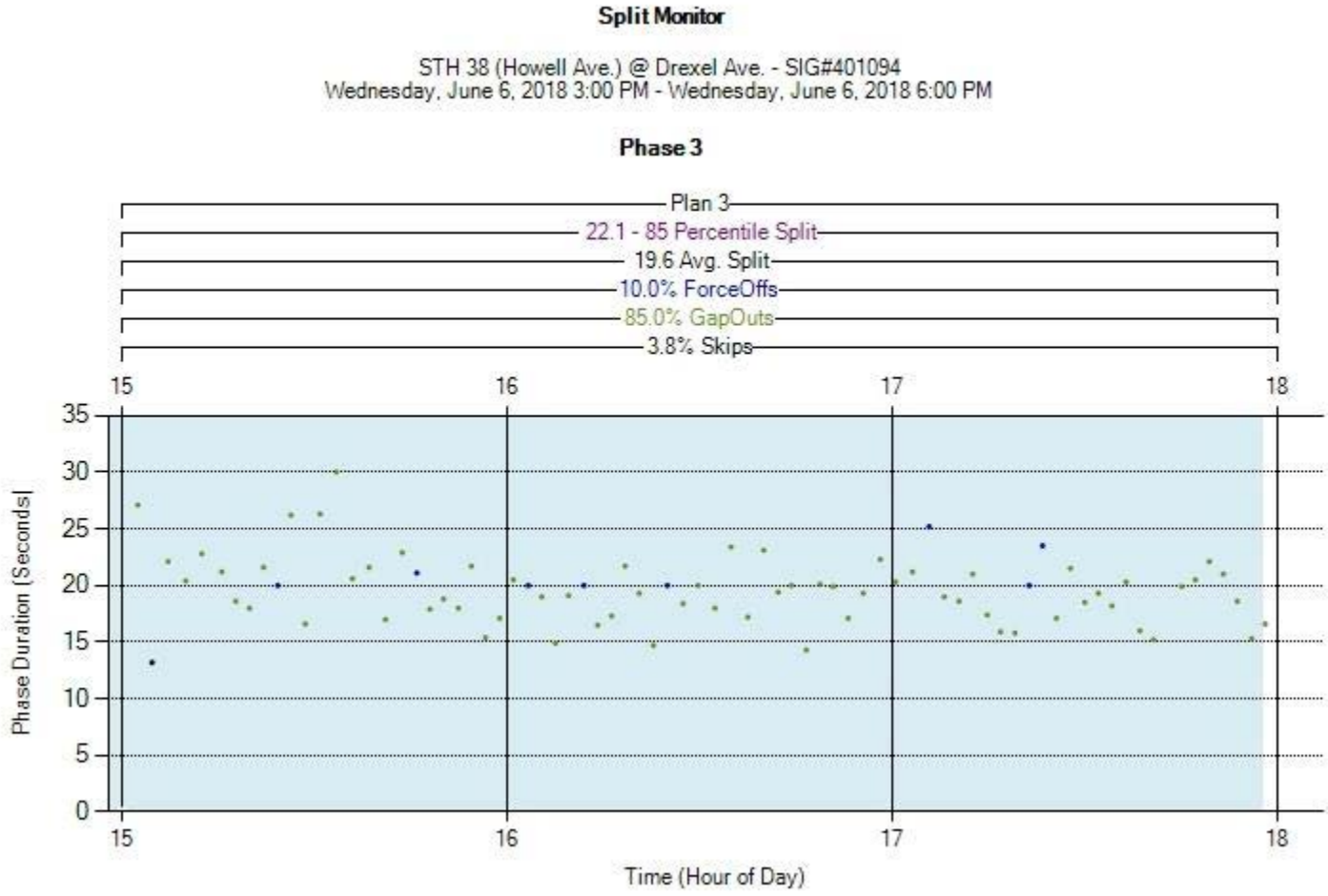

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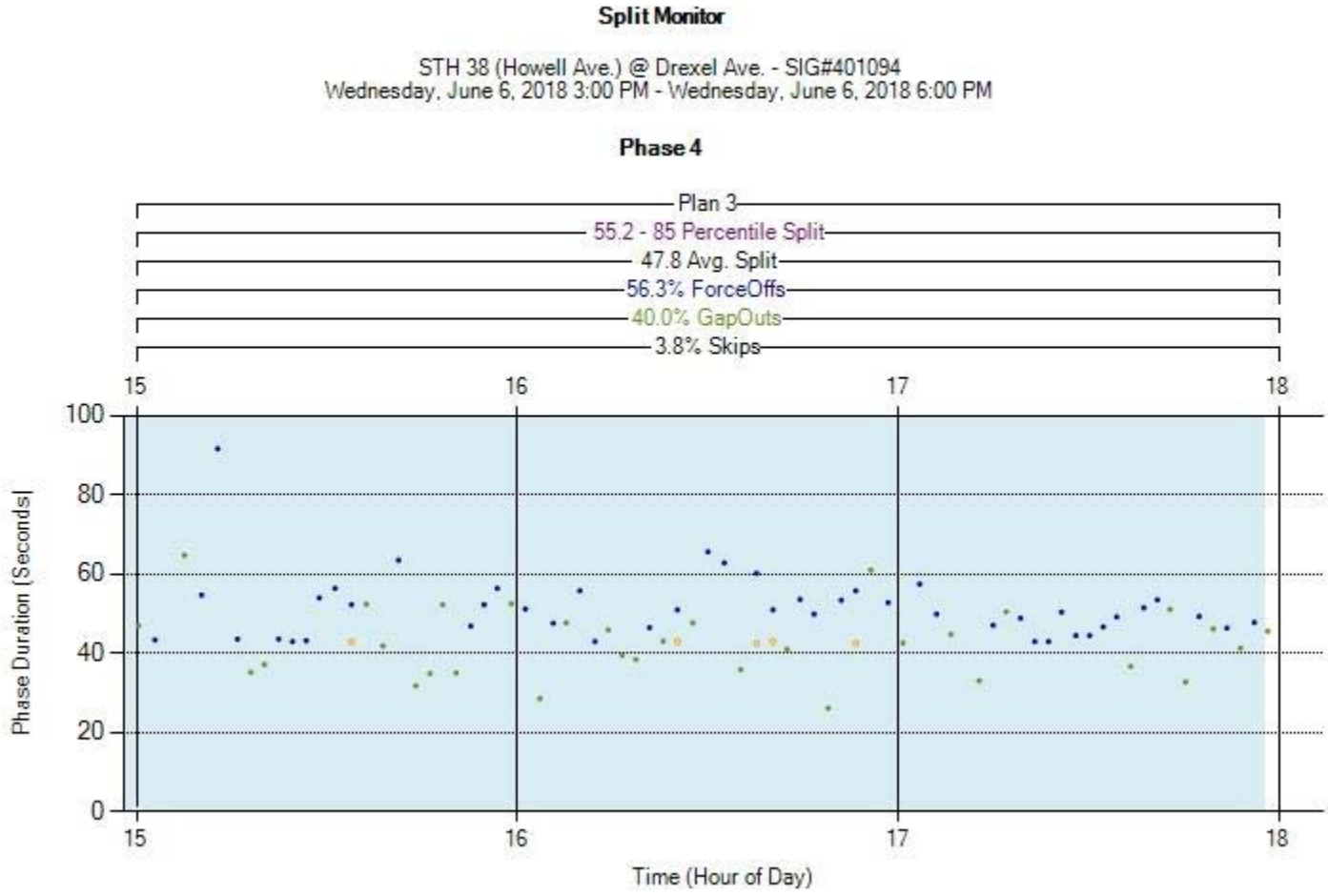

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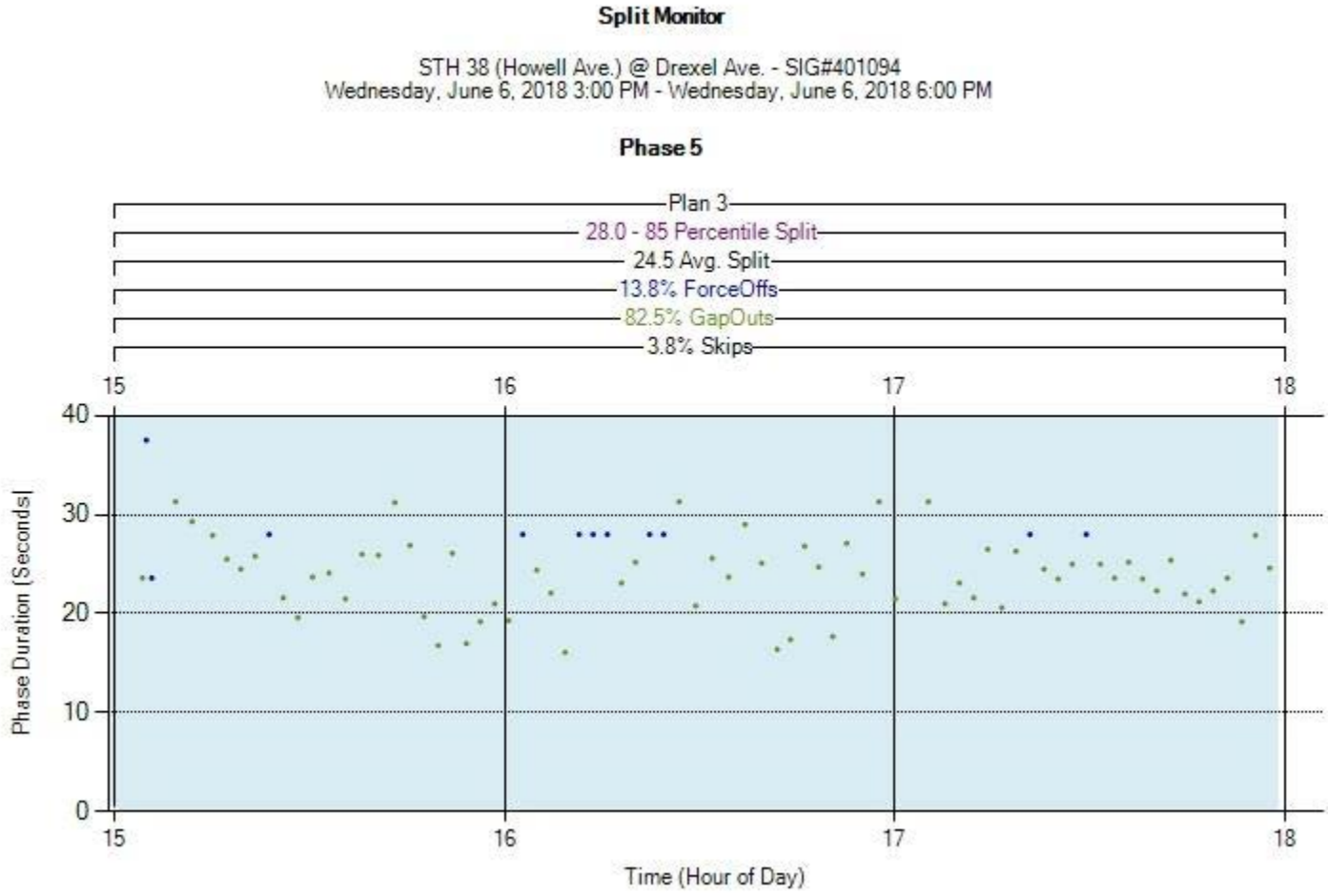

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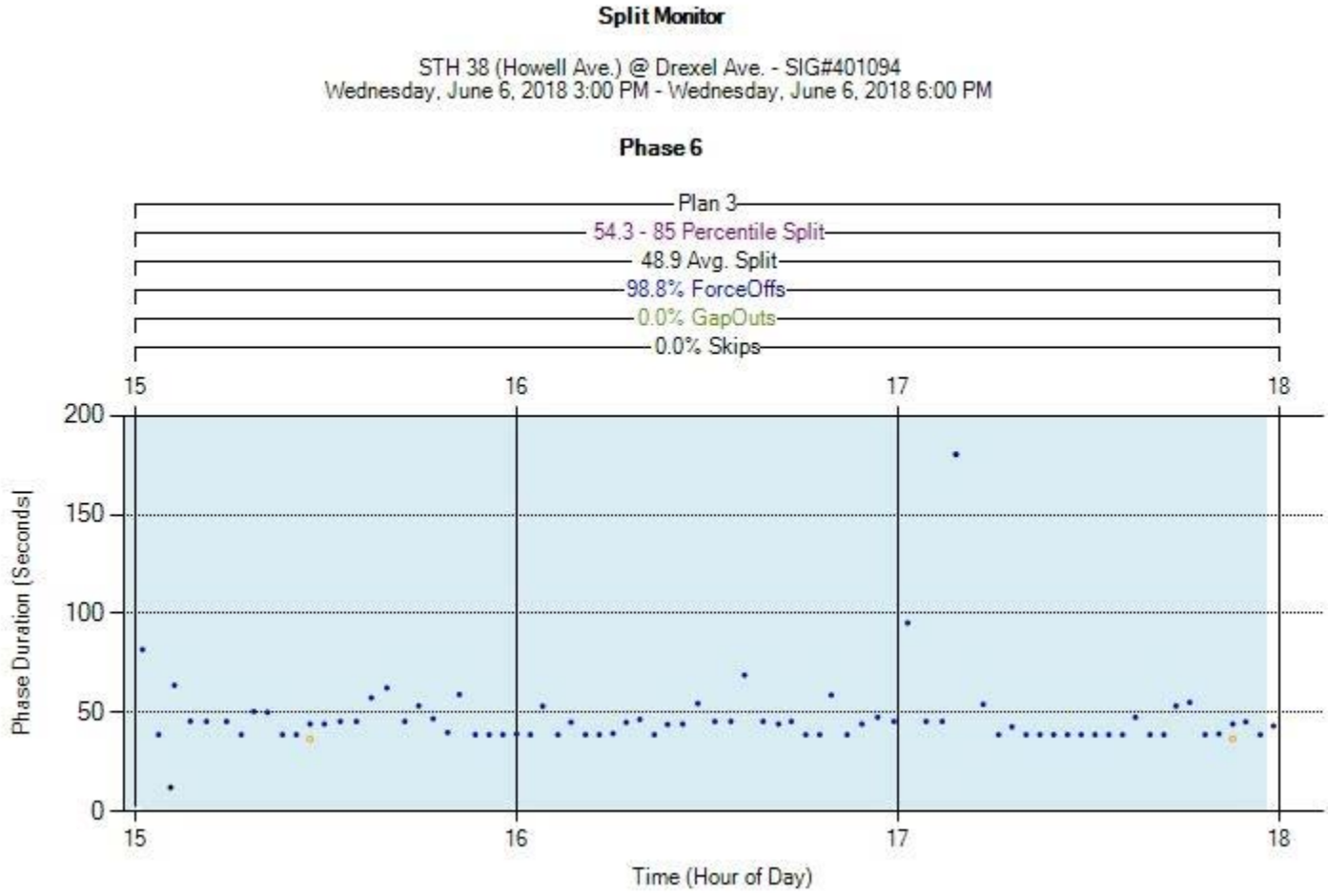

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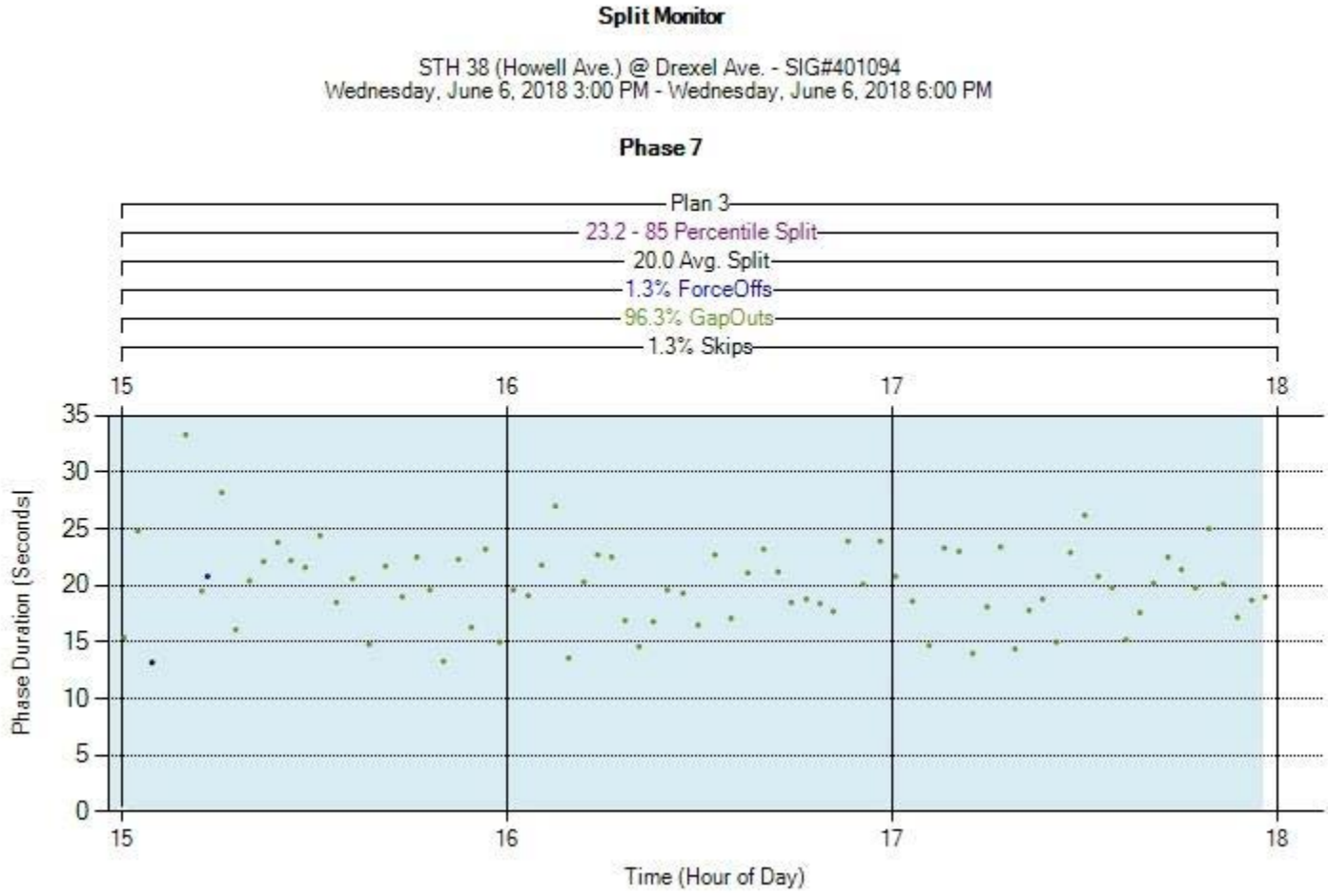

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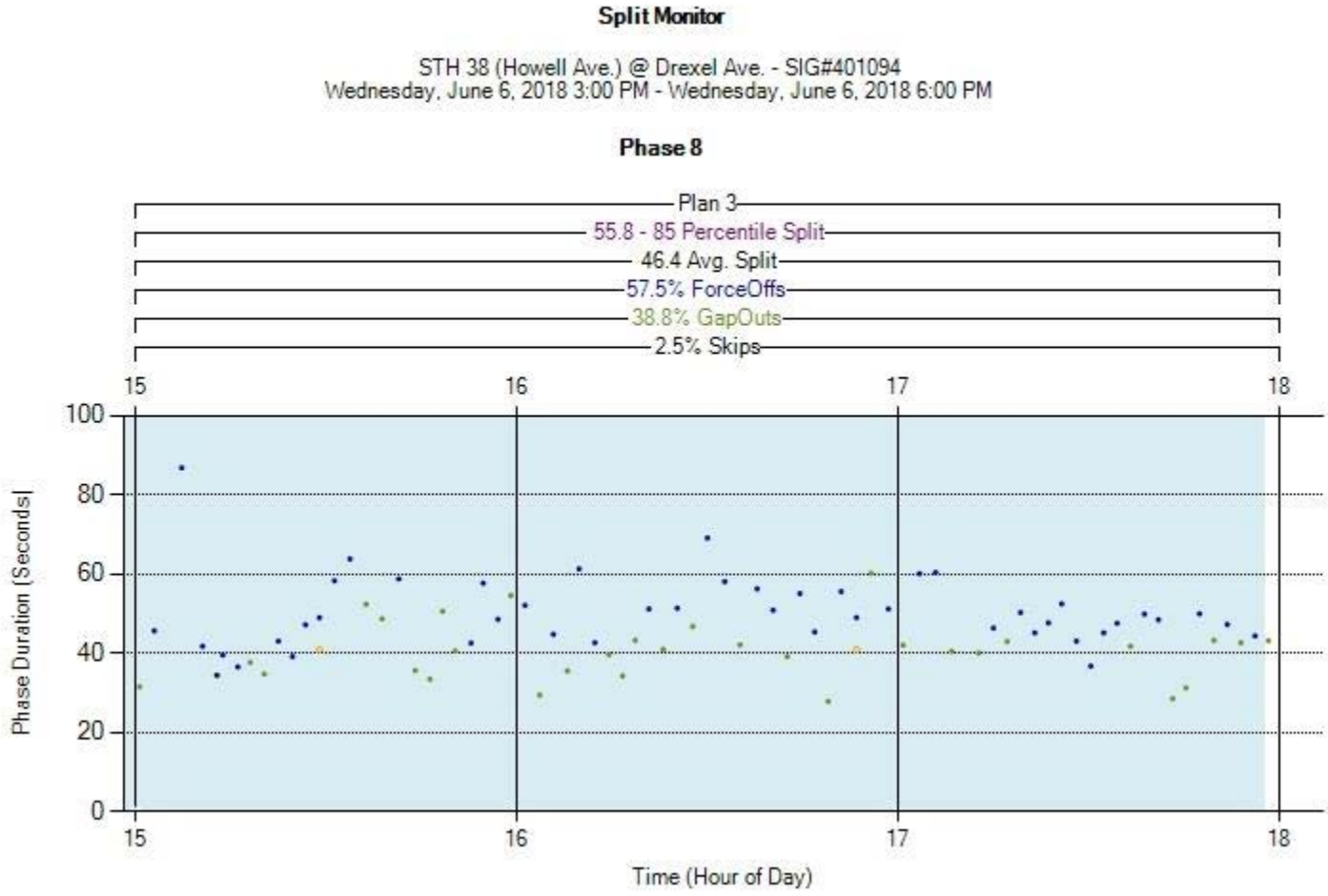
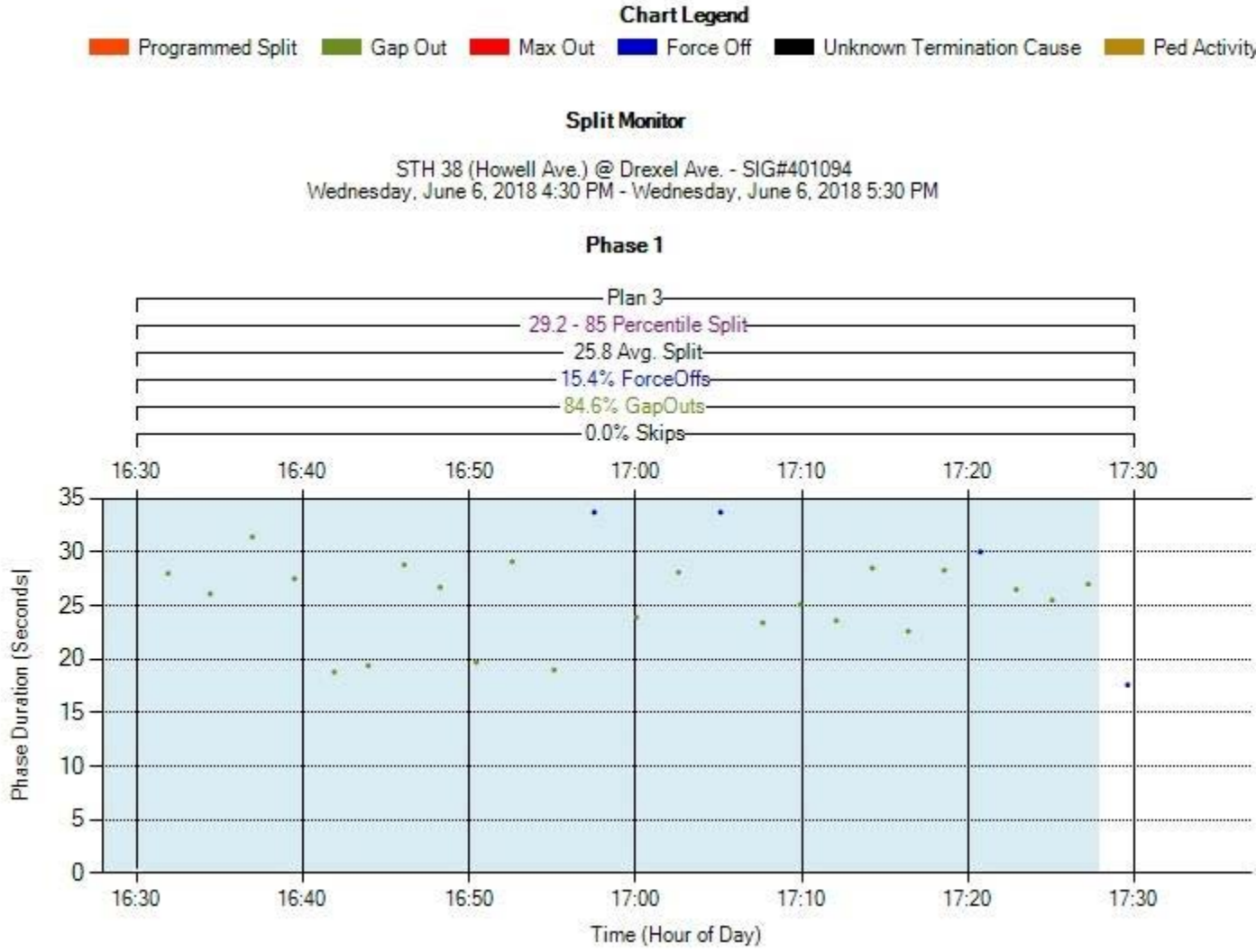


WIS 38 Corridor – STH 38 & Drexel Ave.
Baseline Timings
6/6/2018 – 4:30 PM – 5:30 PM



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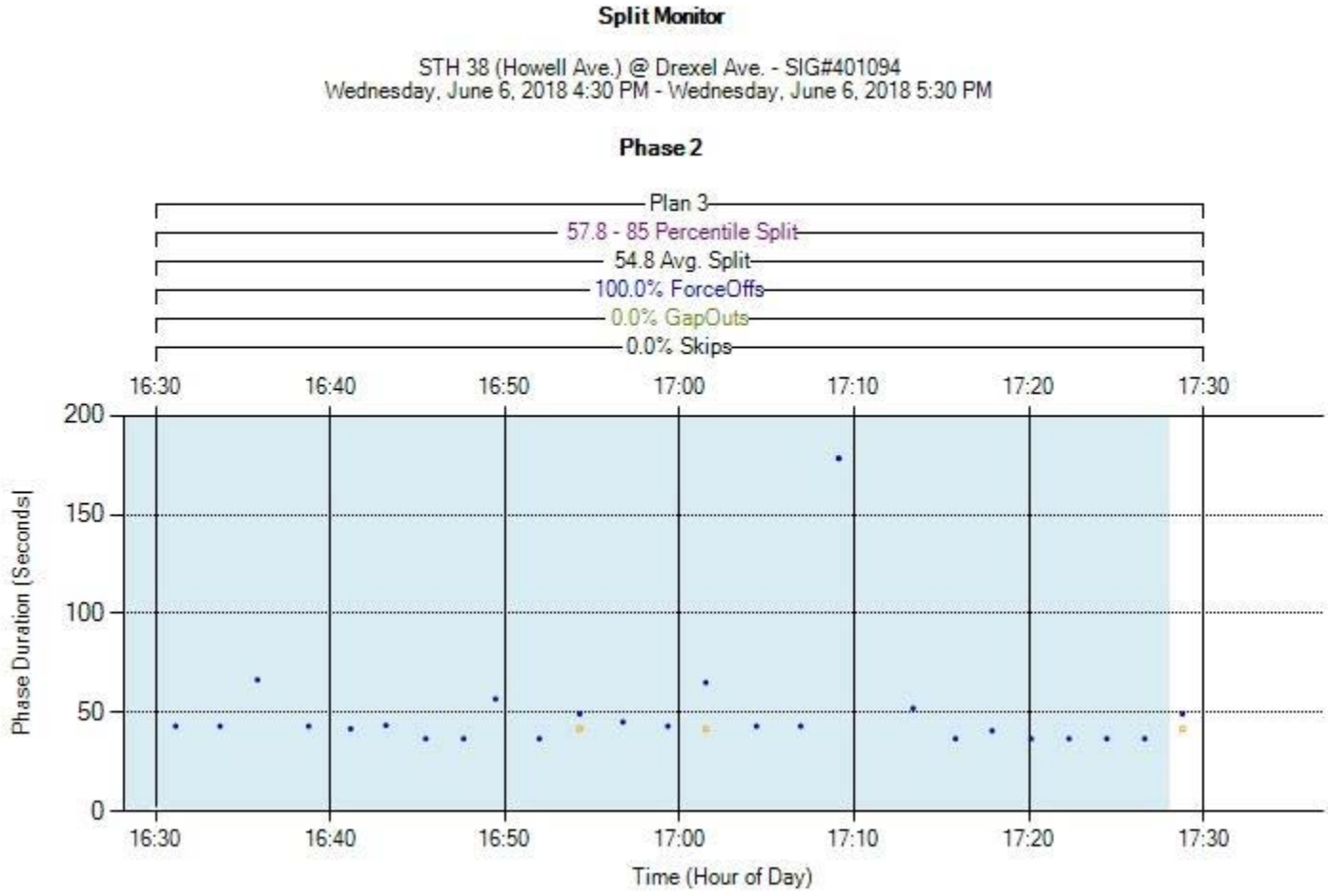

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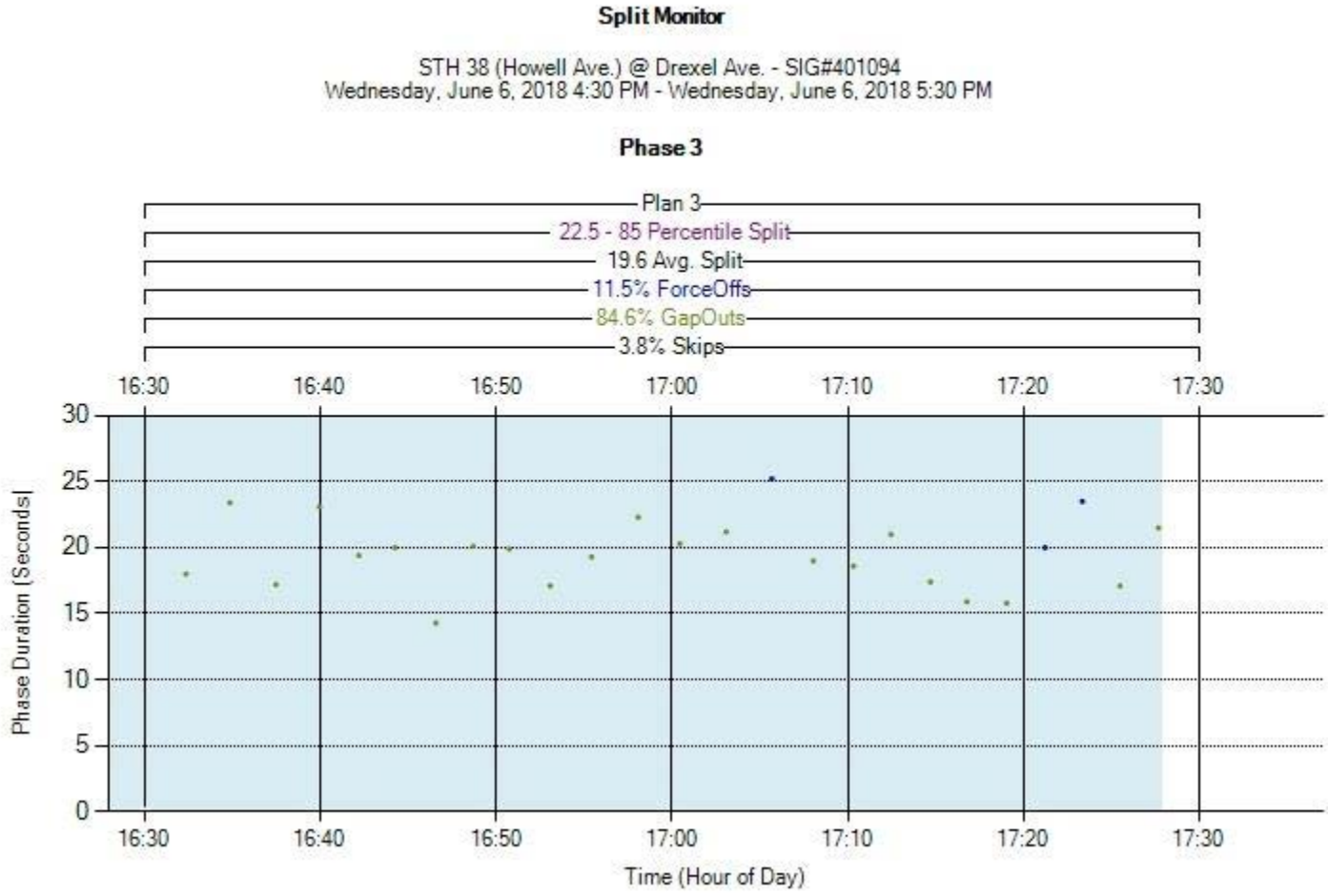

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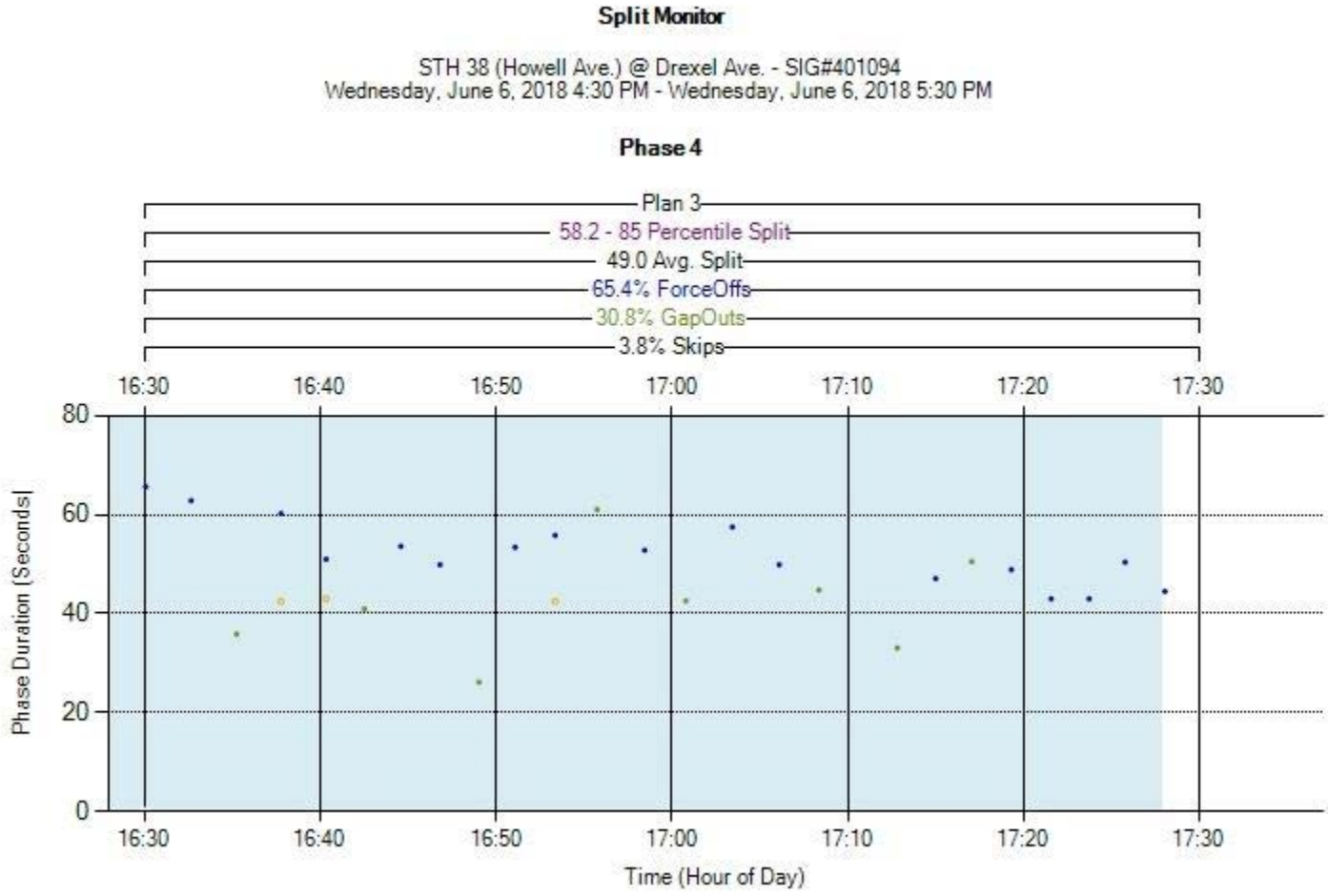

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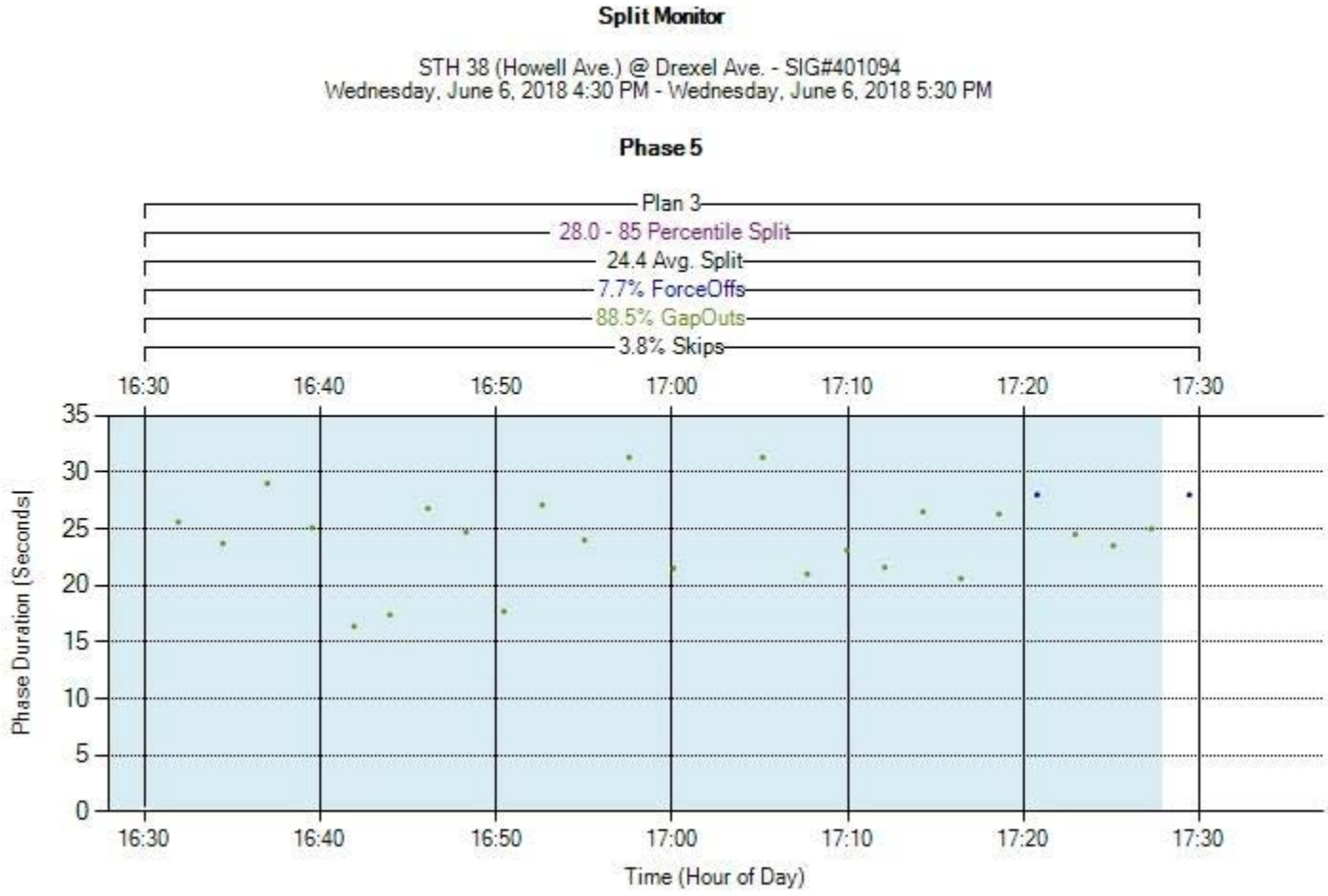

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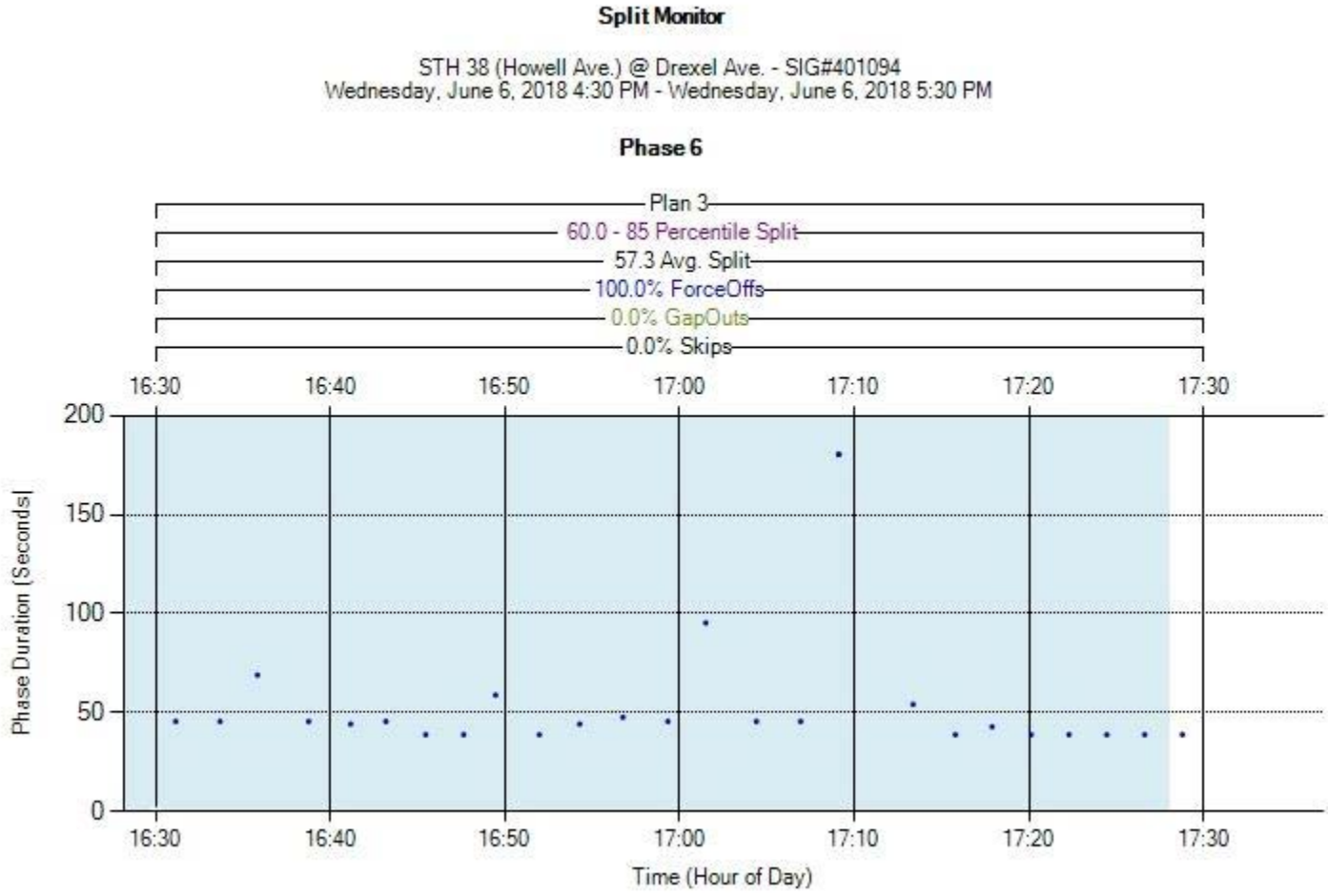

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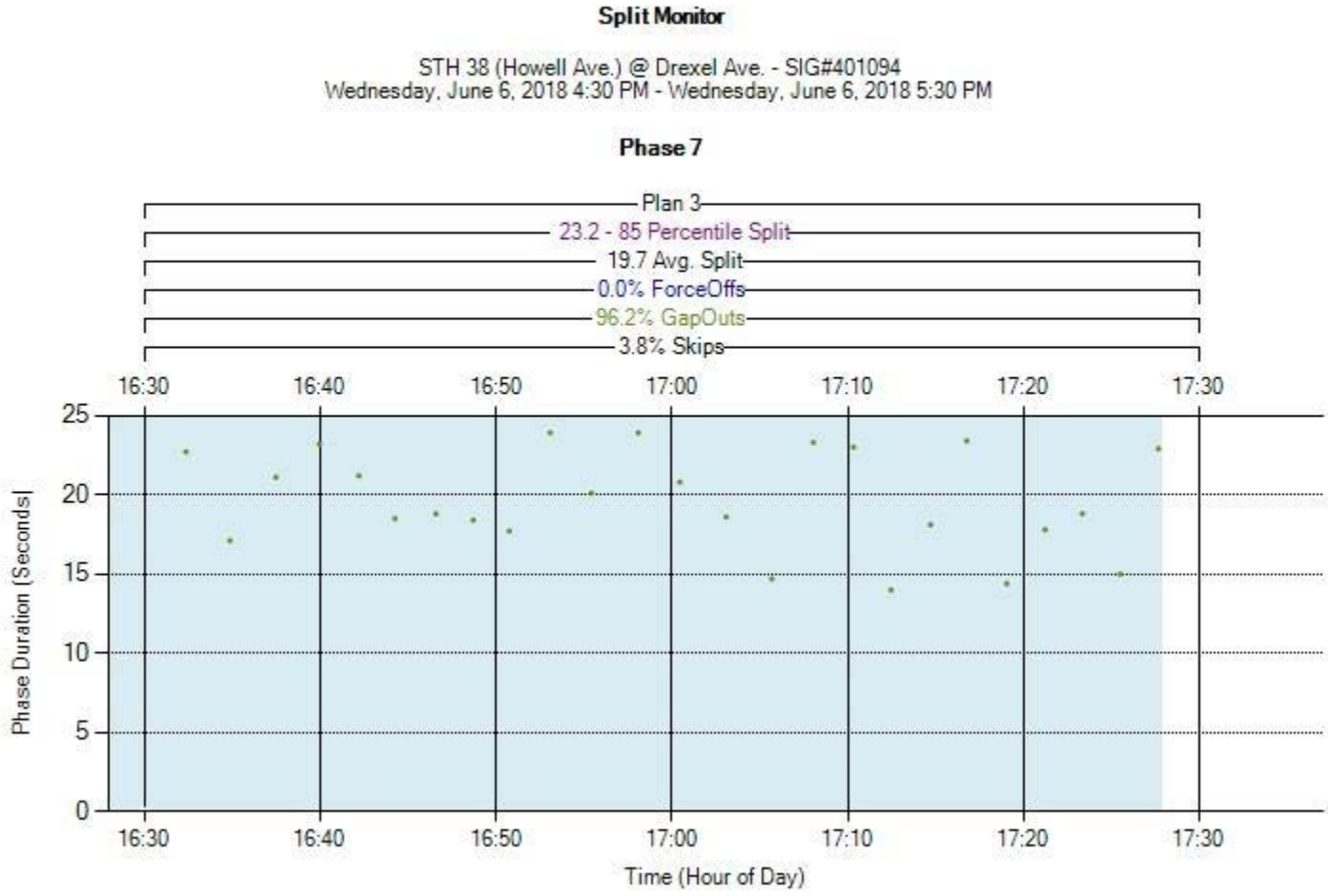

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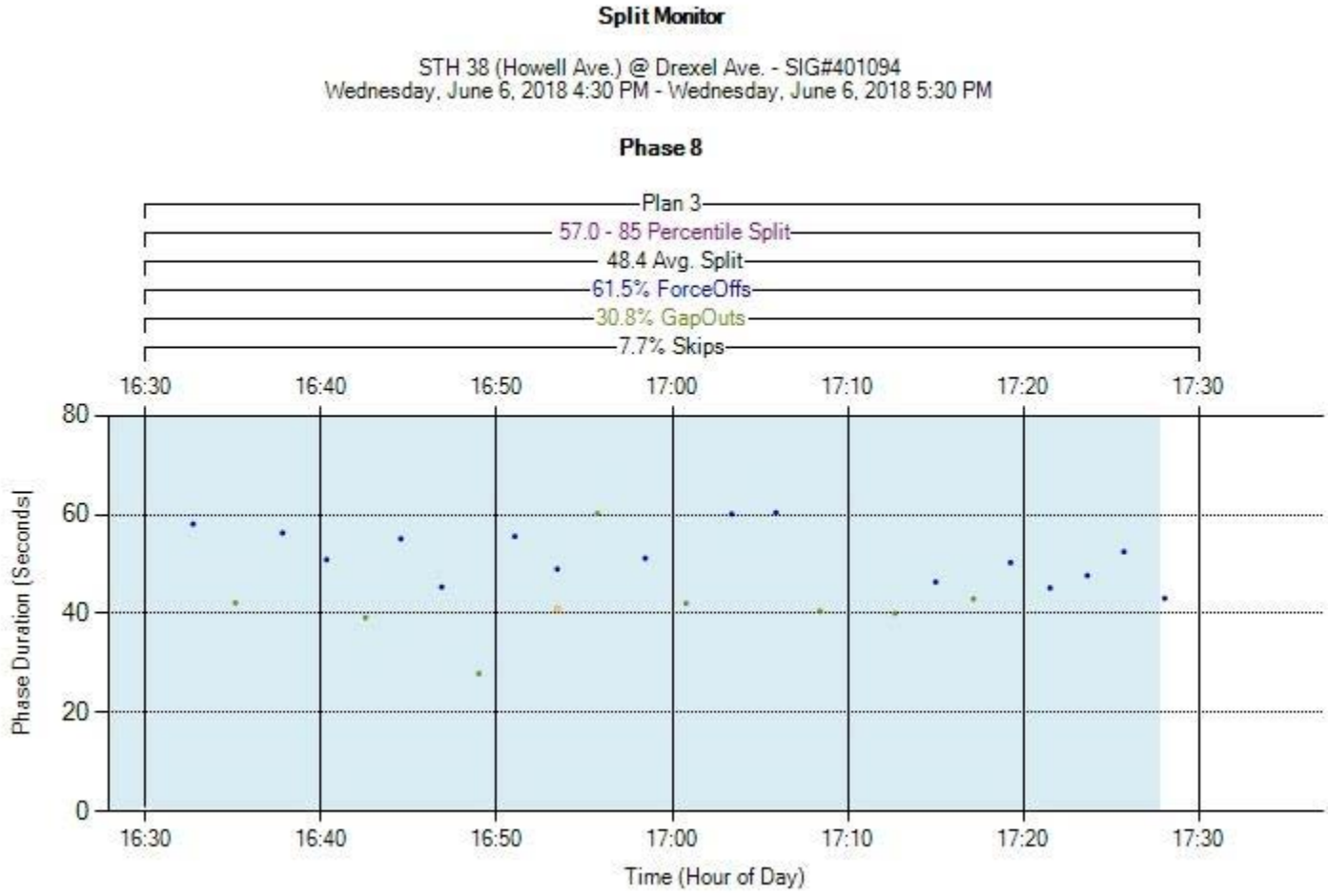
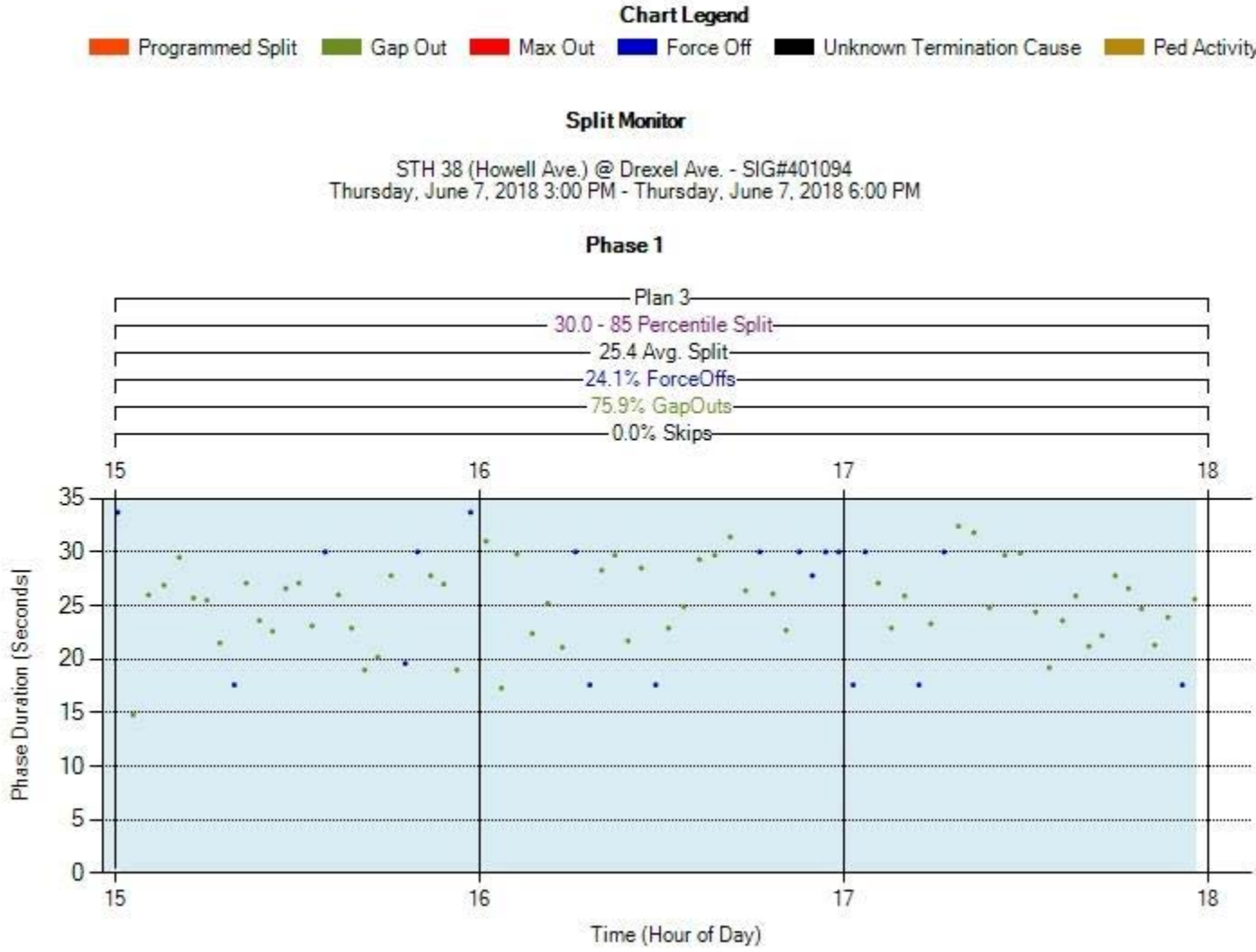


WIS 38 Corridor – STH 38 & Drexel Ave.
Baseline Timings
6/7/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Drexel Ave.
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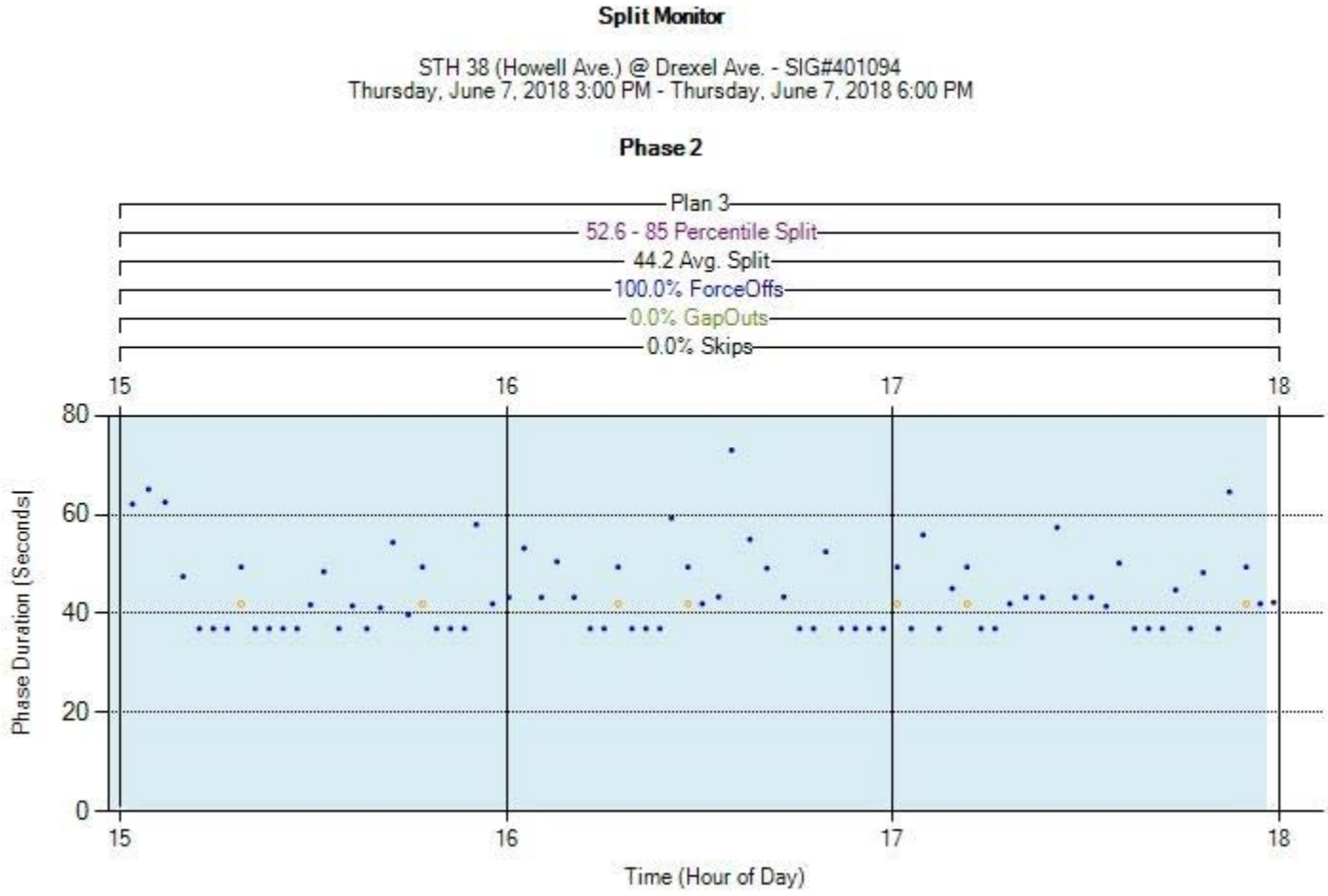

WIS 38 Corridor – STH 38 & Drexel Ave.
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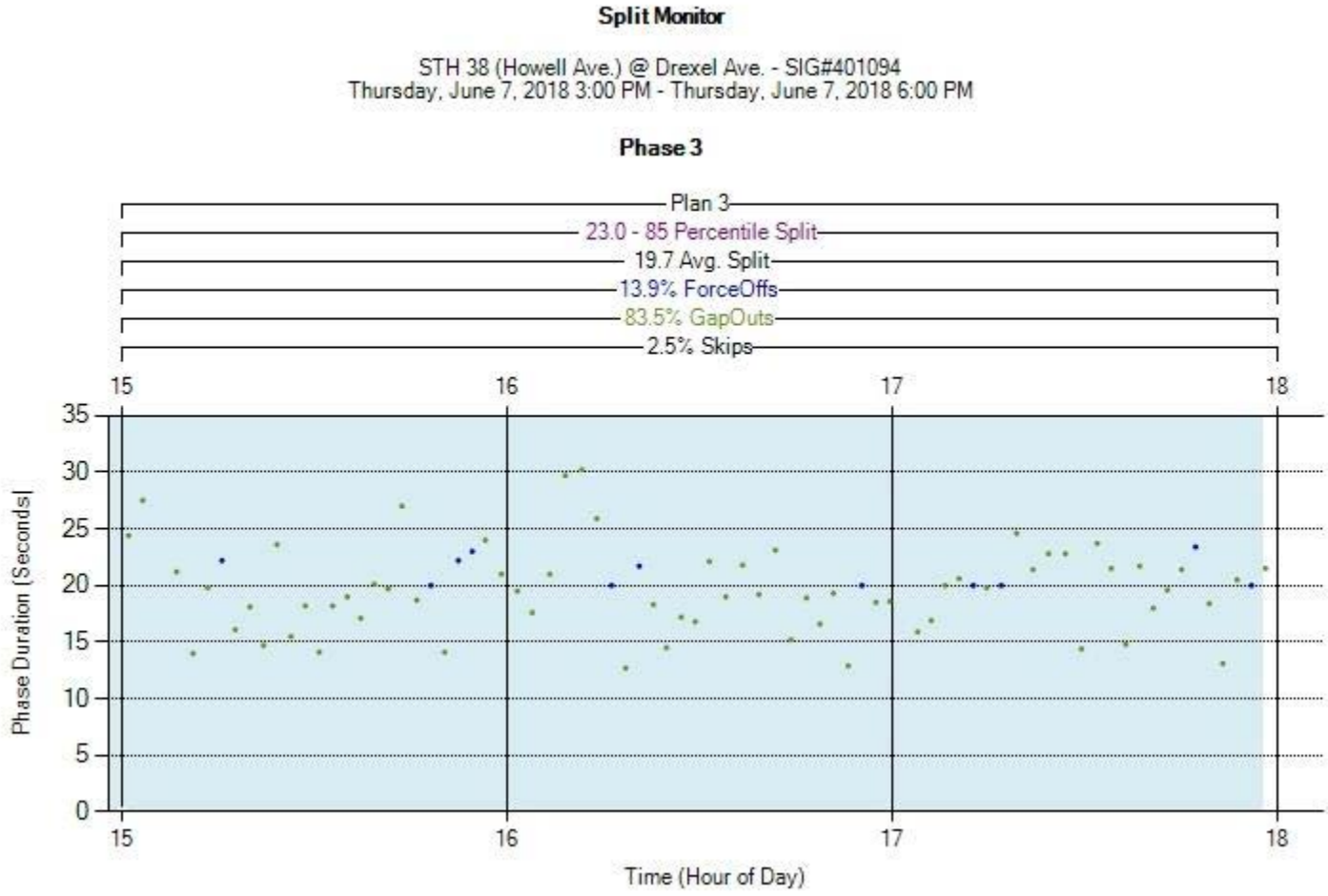

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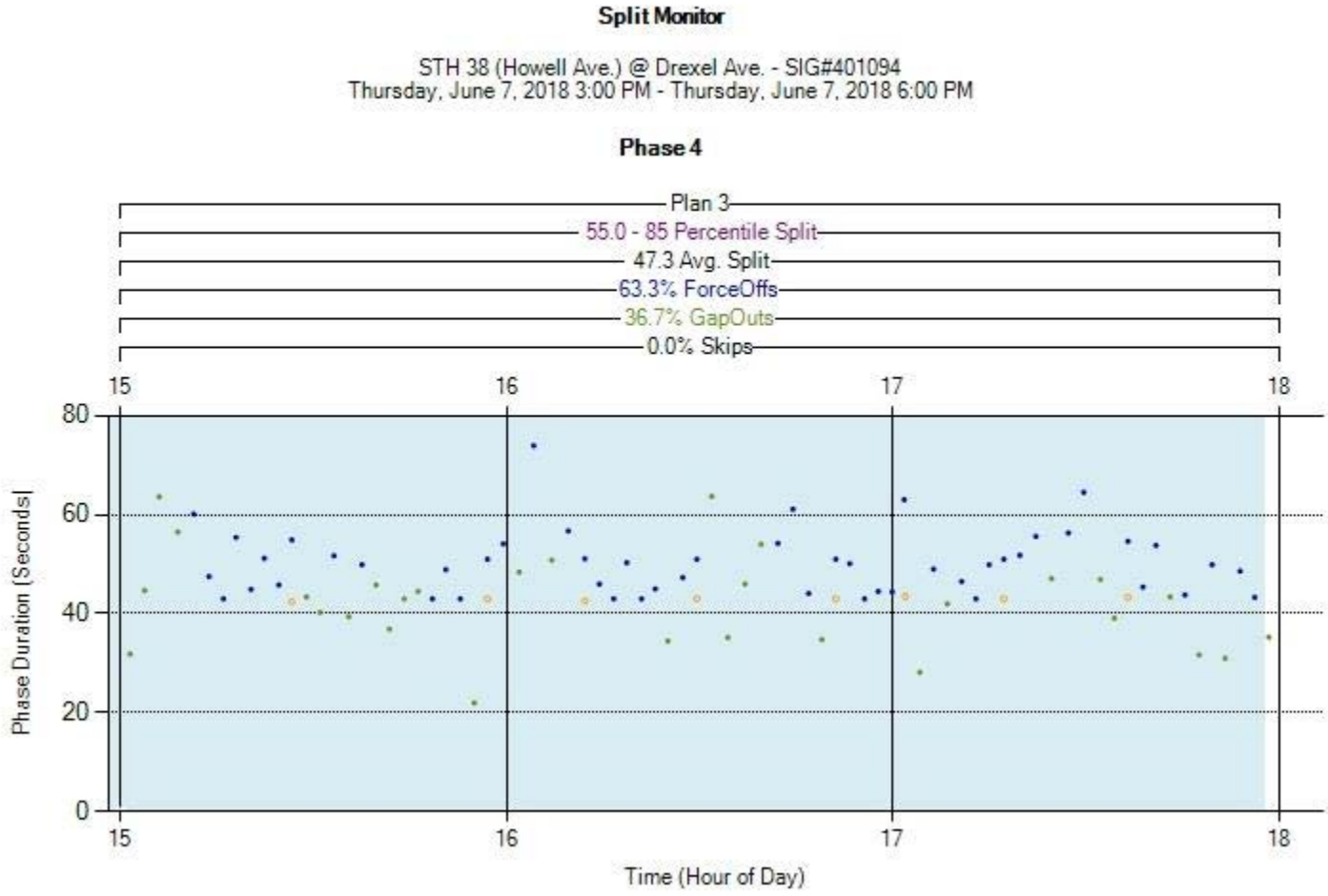

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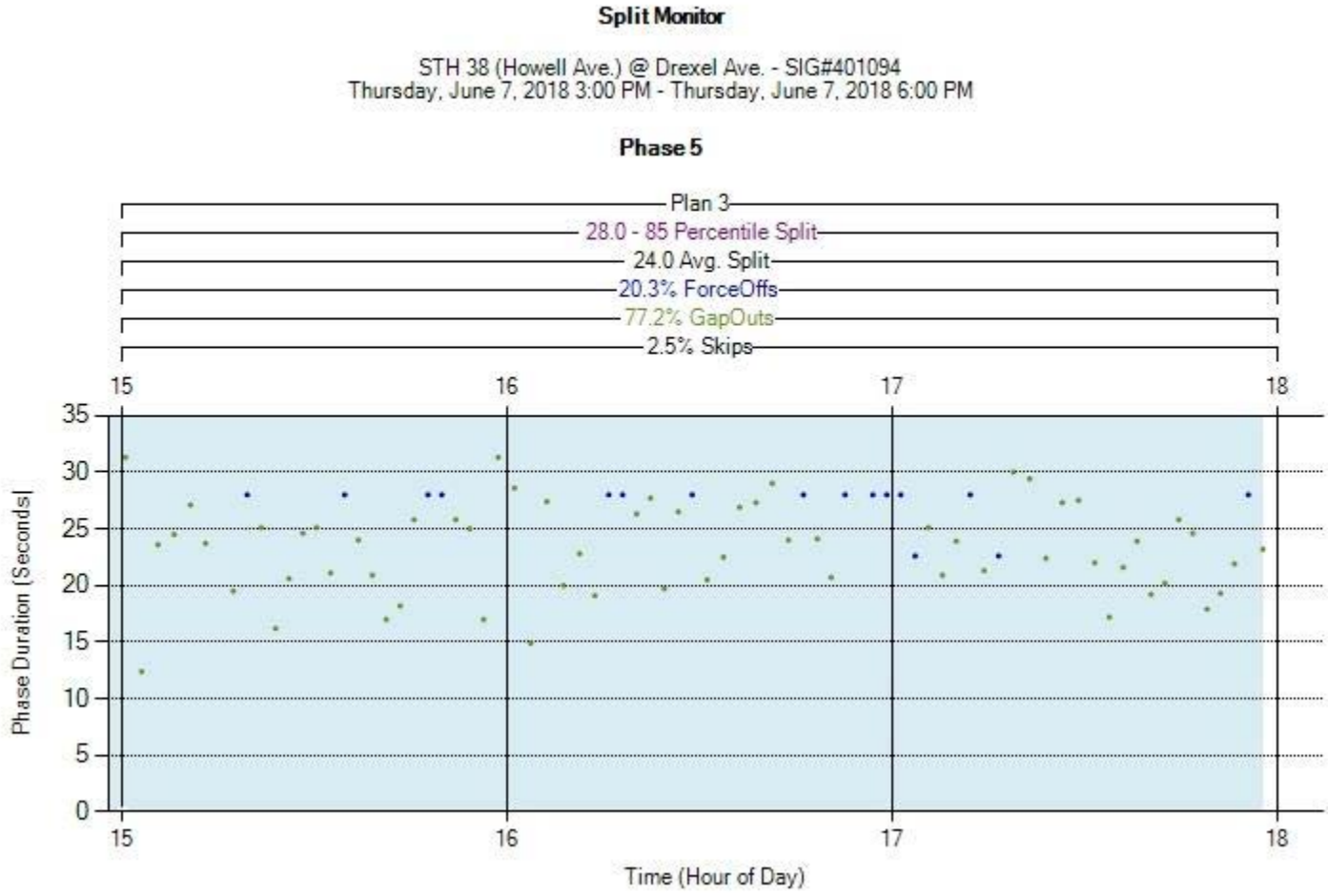
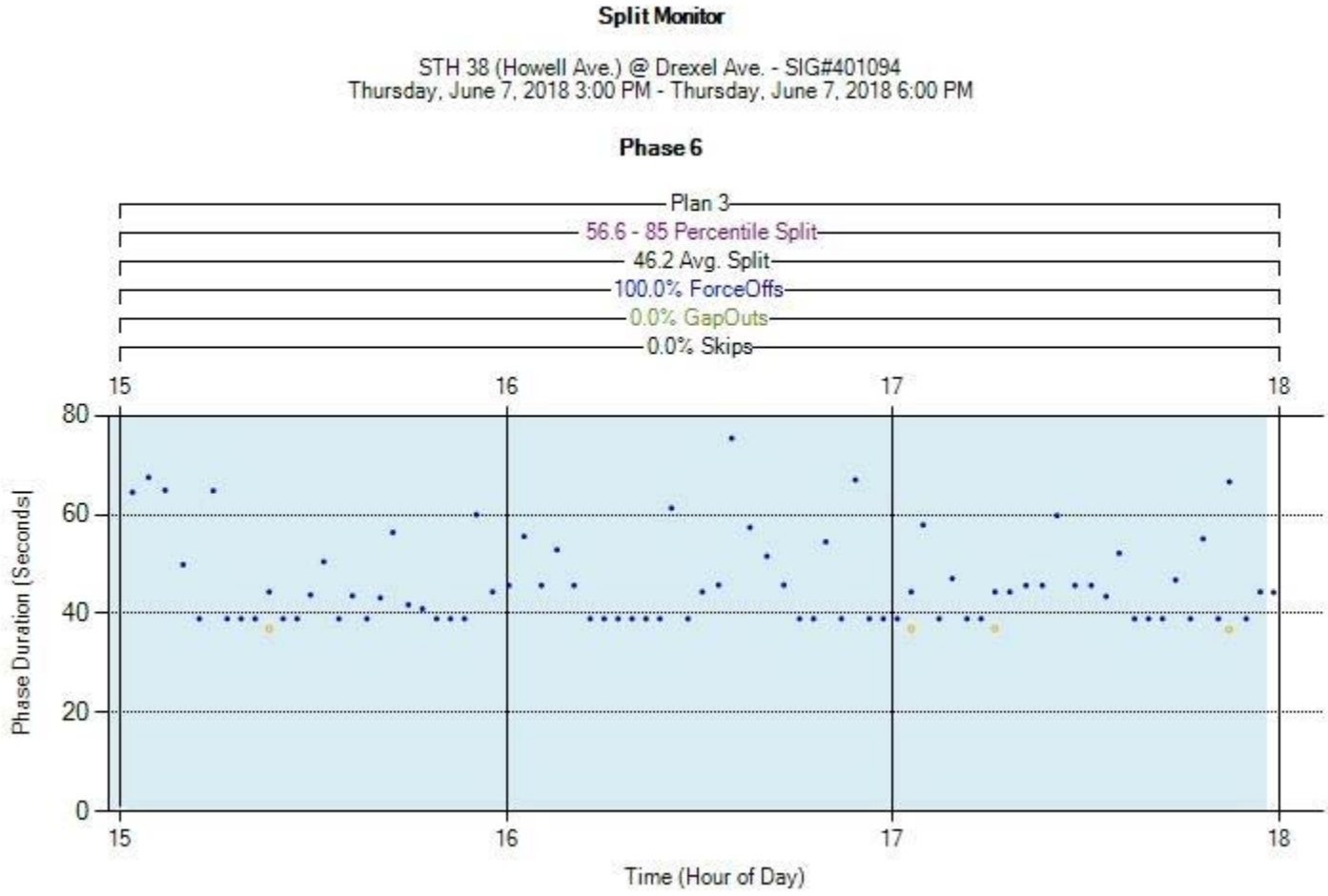
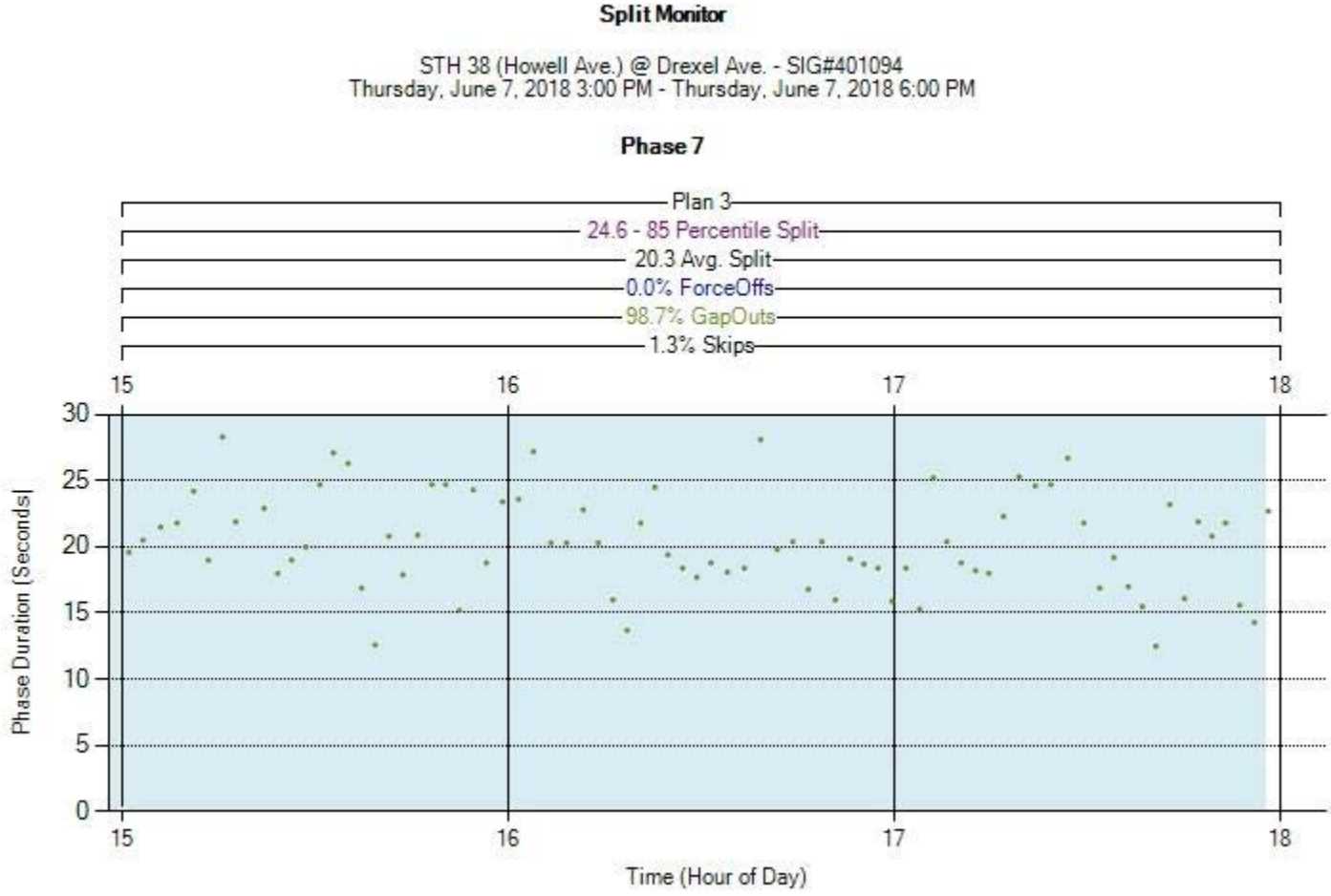



Split Monitor
STH 38 (Howell Ave.) @ Drexel Ave. - SIG#401094
Thursday, June 7, 2018 3:00 PM - Thursday, June 7, 2018 6:00 PM
Phase 6
Plan 3
56.6 - 85 Percentile Split
46.2 Avg. Split
100.0% ForceOffs
0.0% GapOuts
0.0% Skips
15
16
17
18
80
60
40
20
0
Phase Duration (Seconds)
Time (Hour of Day)

WIS 38 Corridor – STH 38 & Drexel Ave.
Baseline Timings
6/7/2018 – 3:00 PM – 6:00 PM



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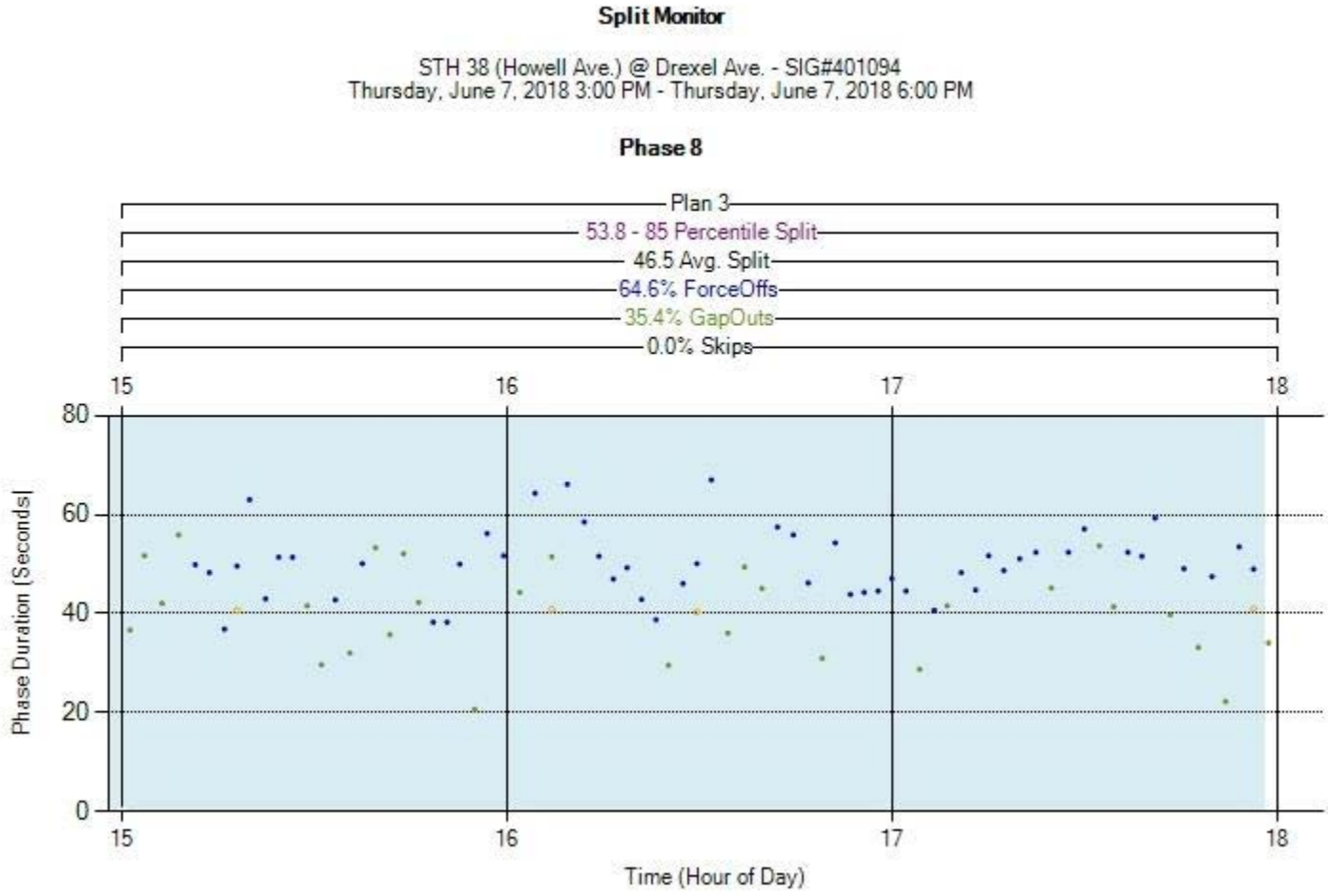

WIS 38 Corridor – STH 38 & Drexel Ave.
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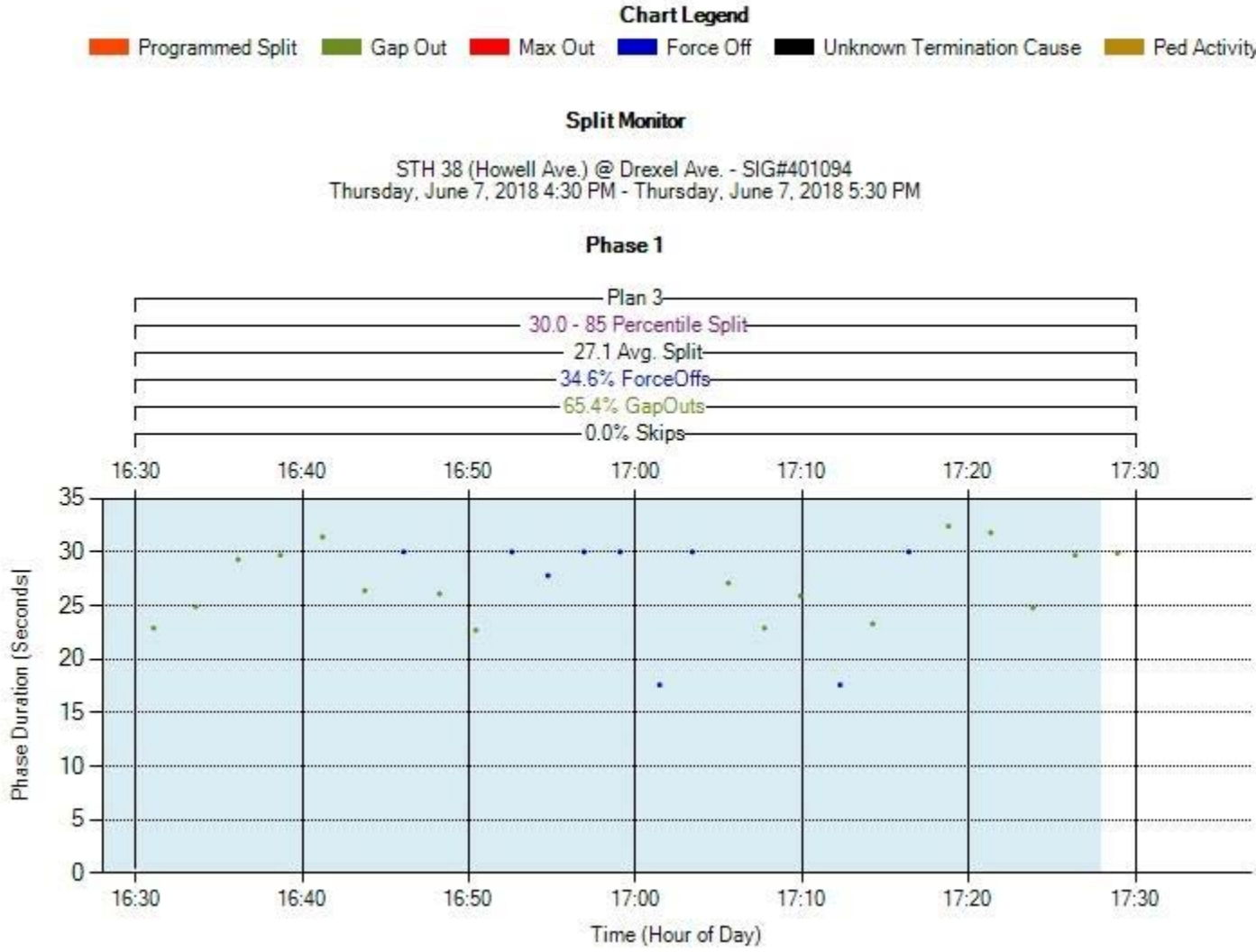

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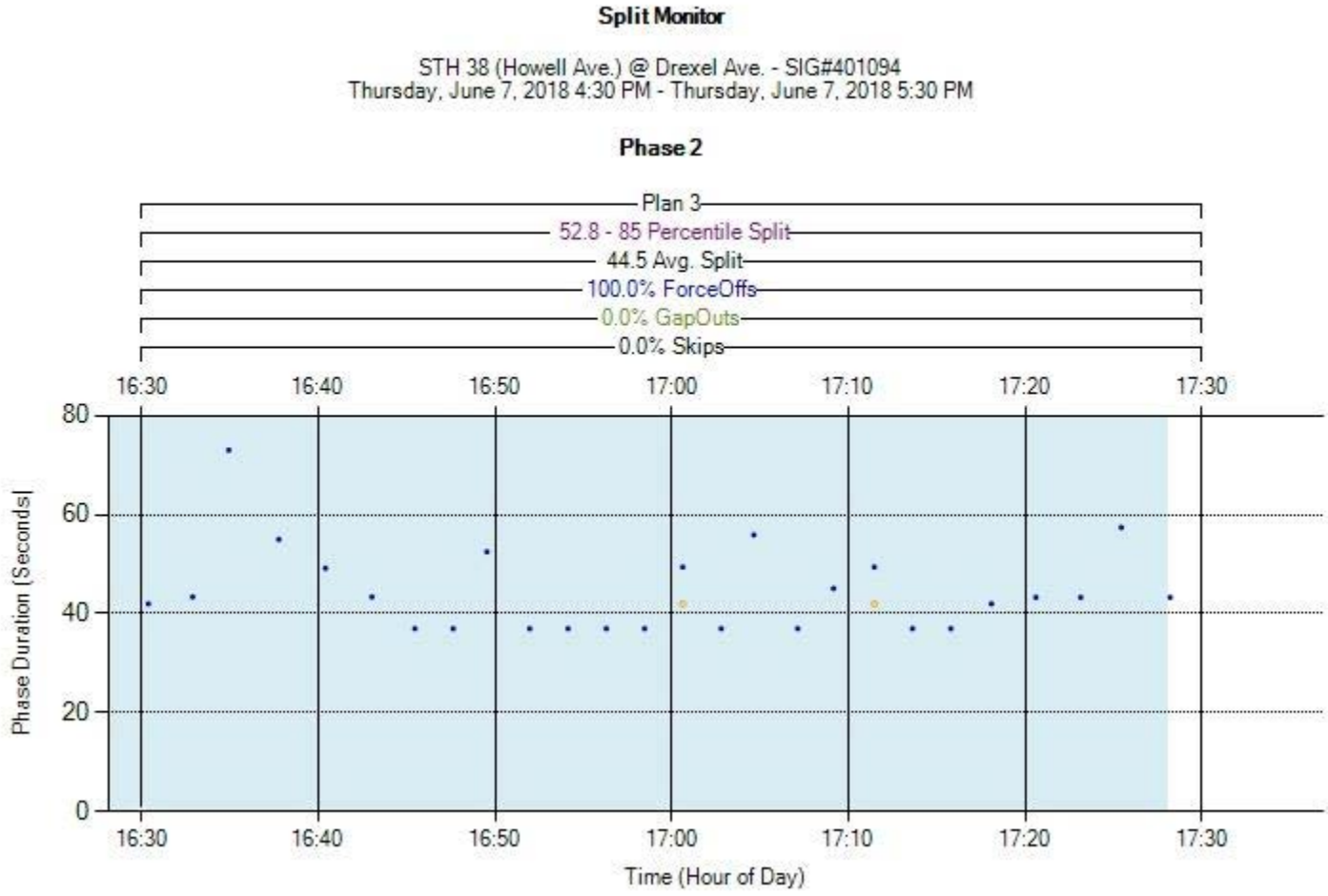

WIS 38 Corridor – STH 38 & Drexel Ave.
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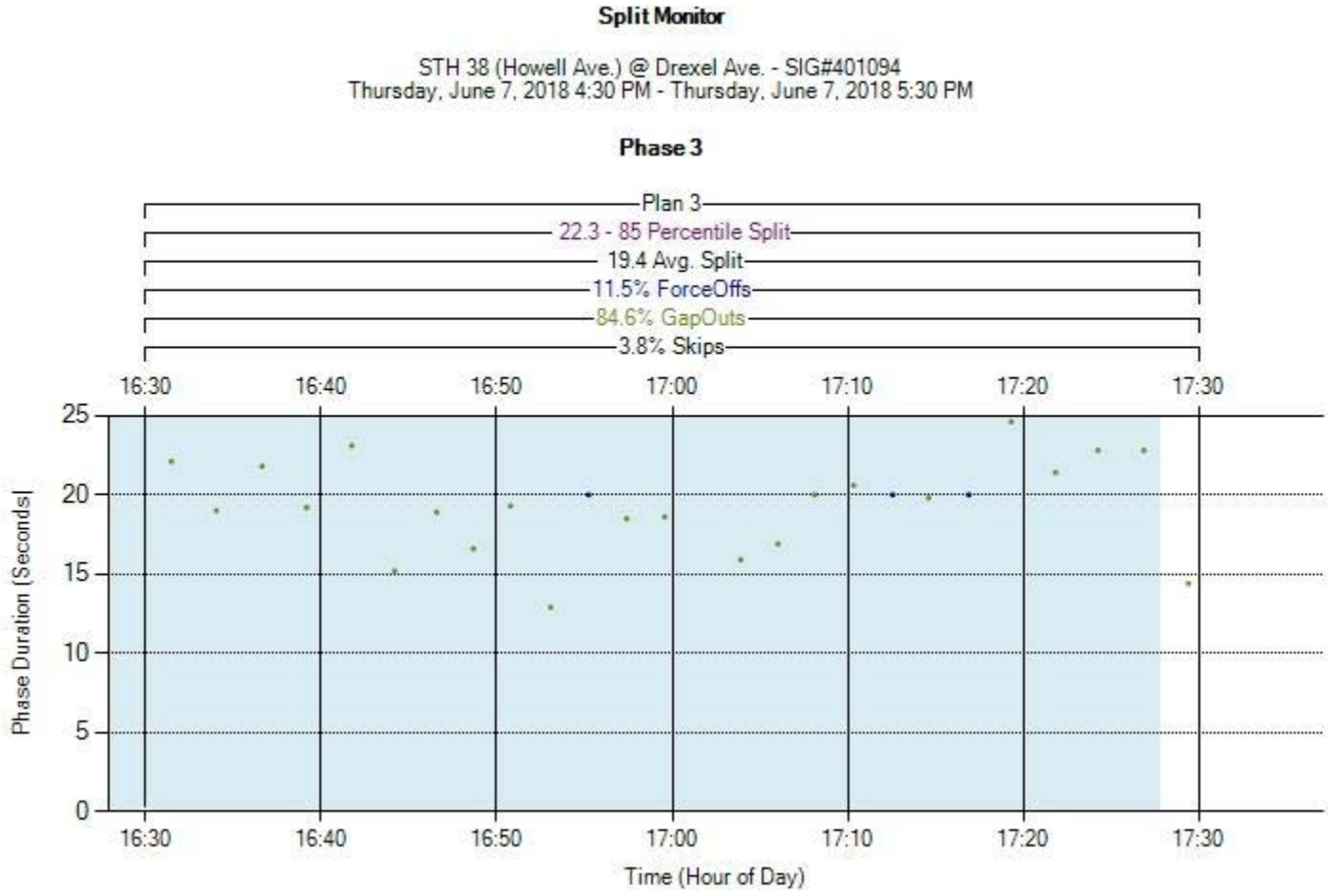

WIS 38 Corridor – STH 38 & Drexel Ave.
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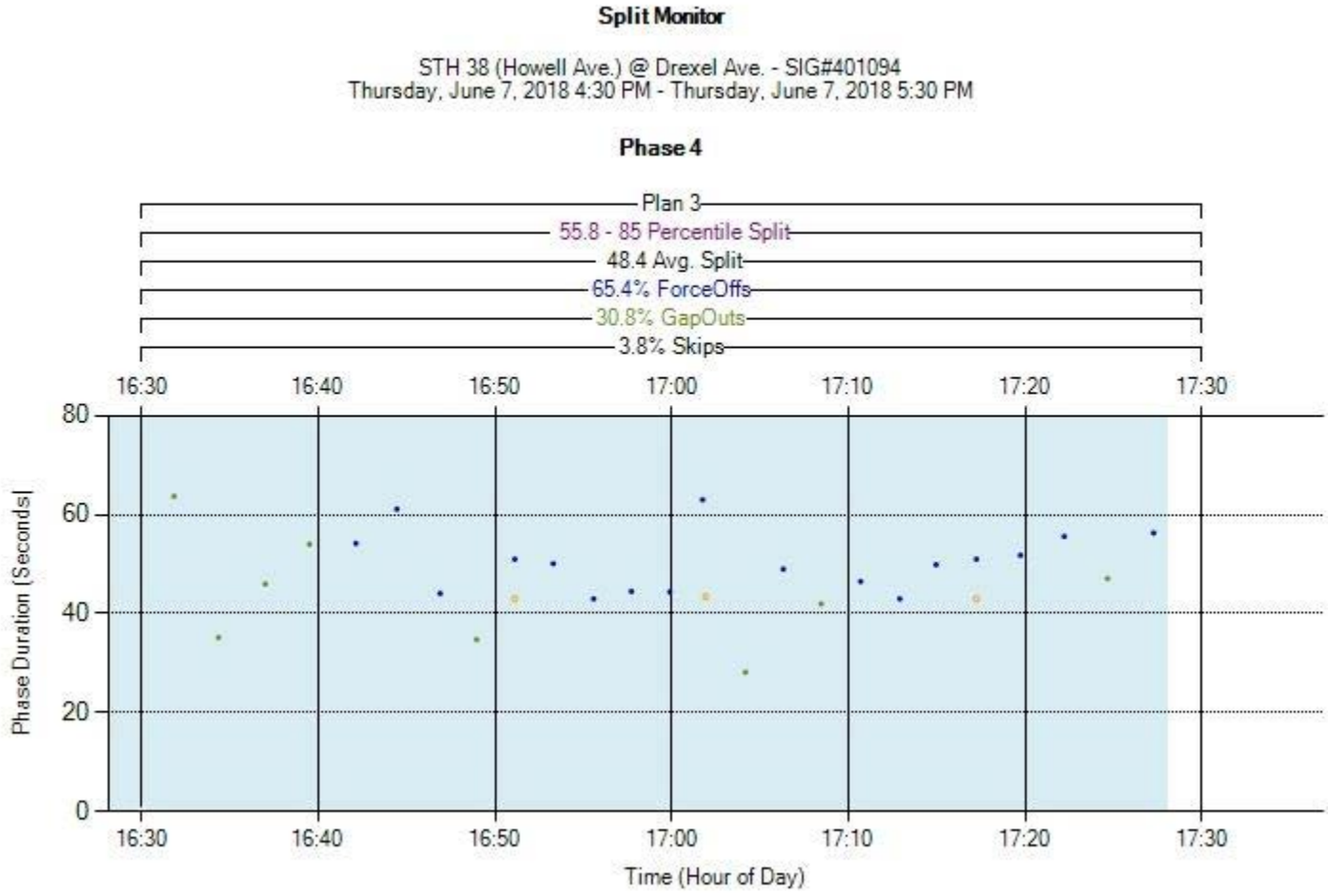

WIS 38 Corridor – STH 38 & Drexel Ave.
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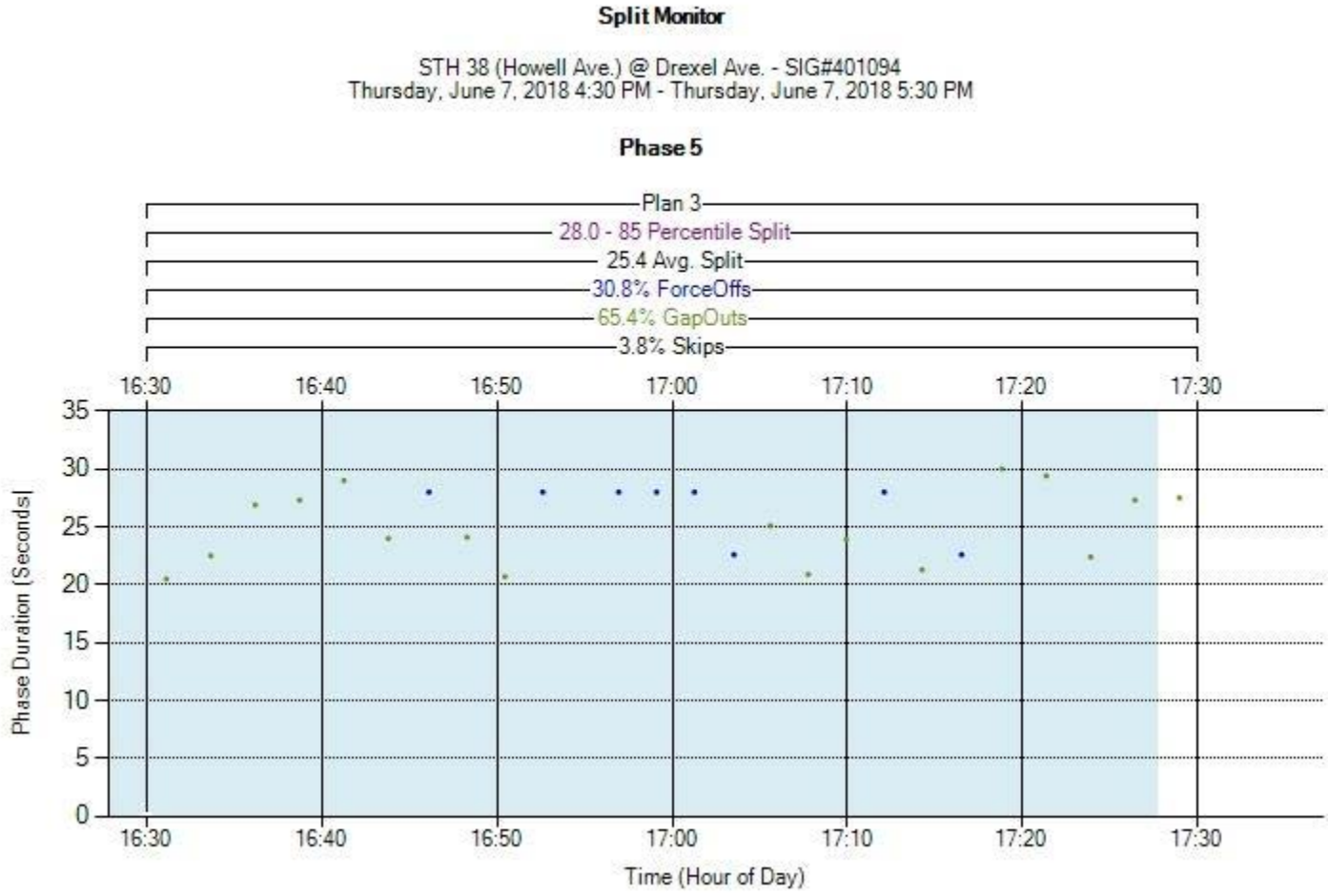

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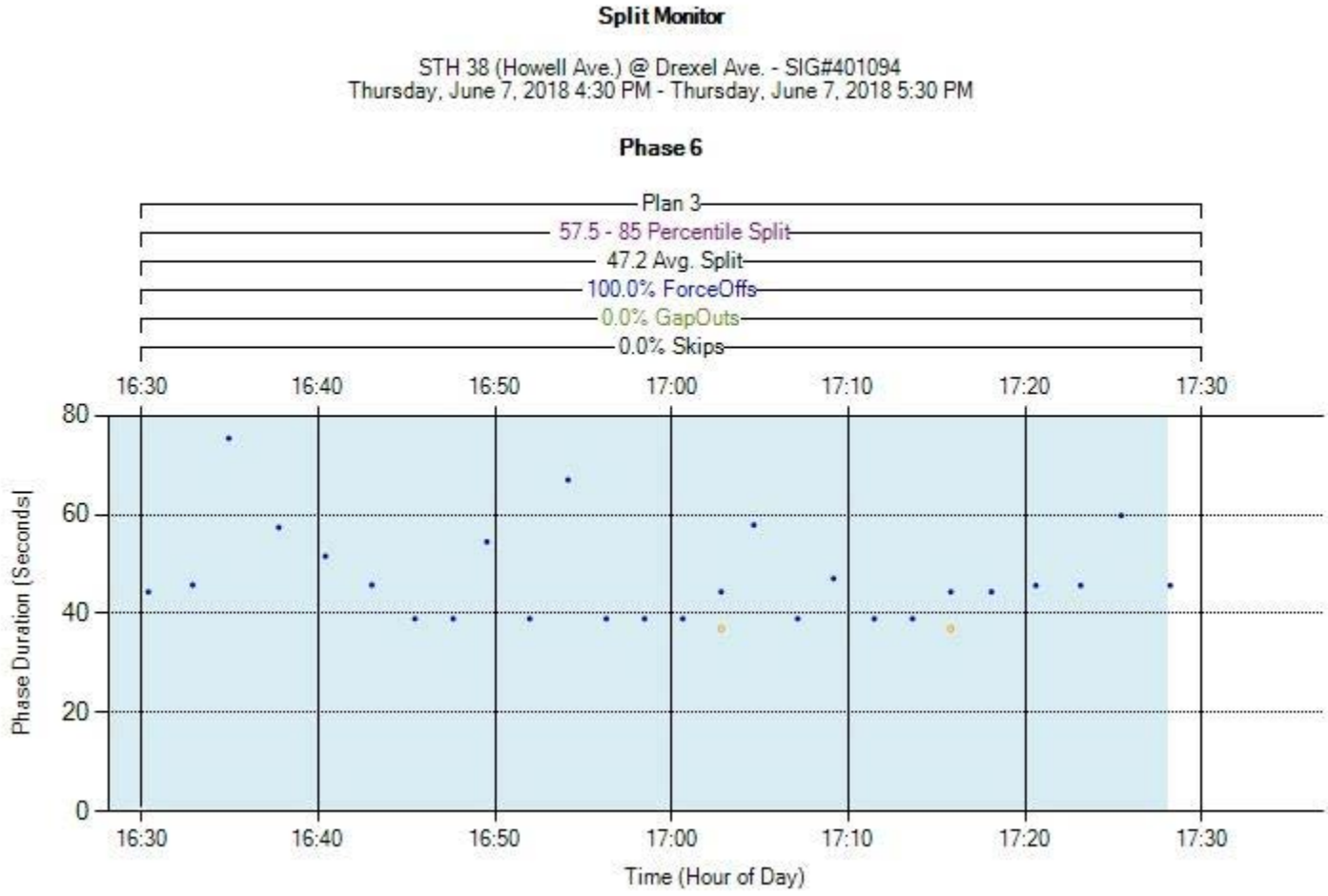

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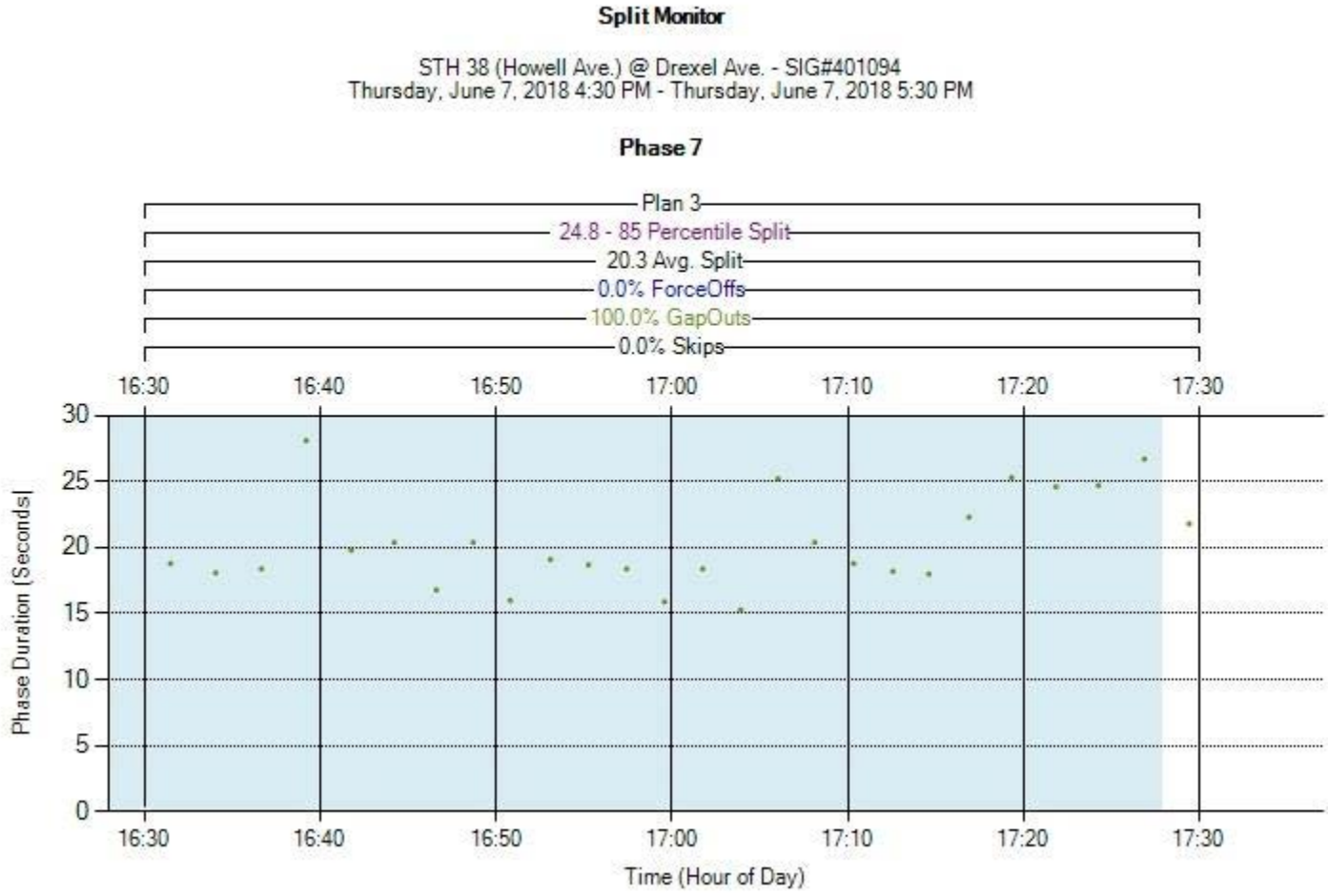
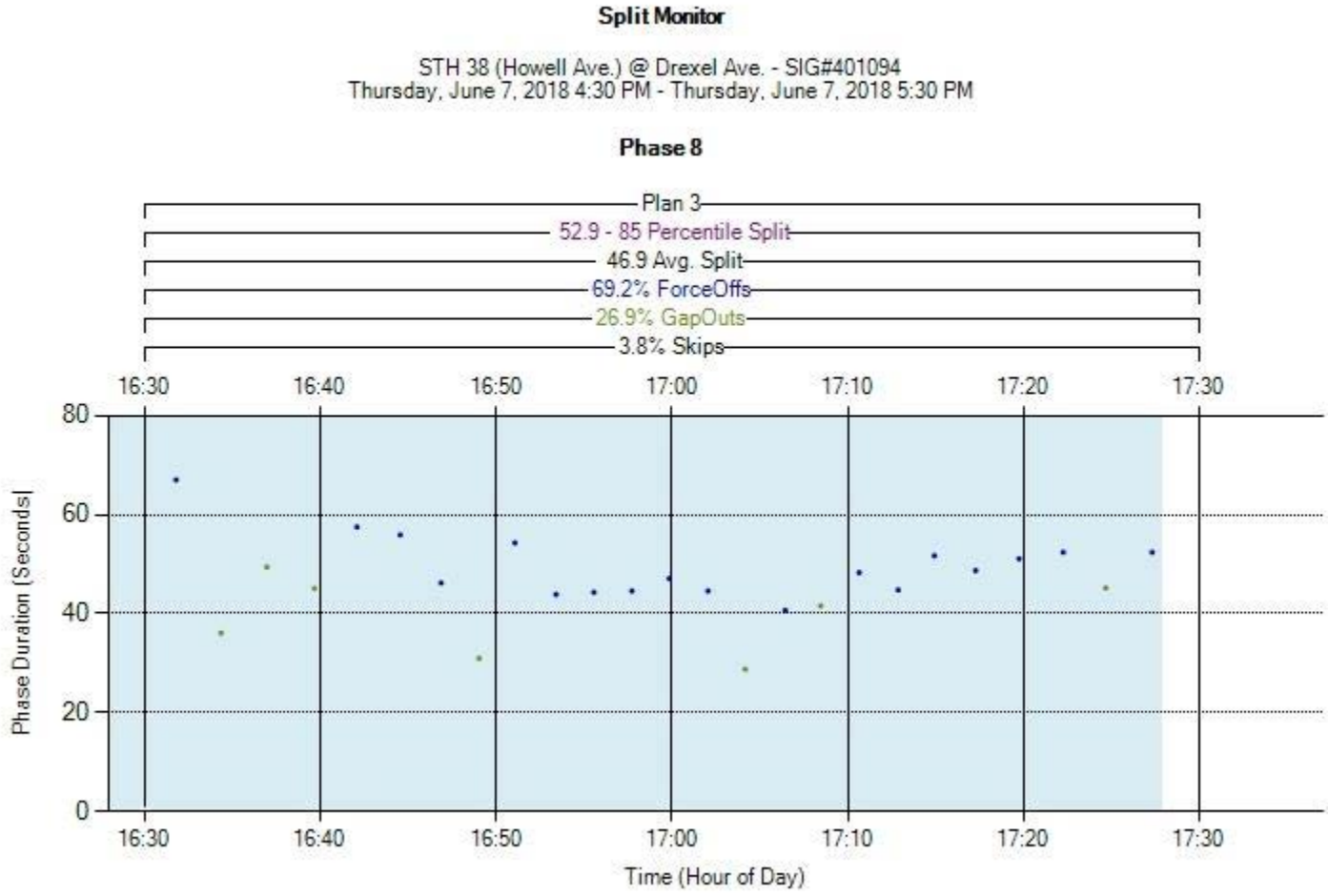
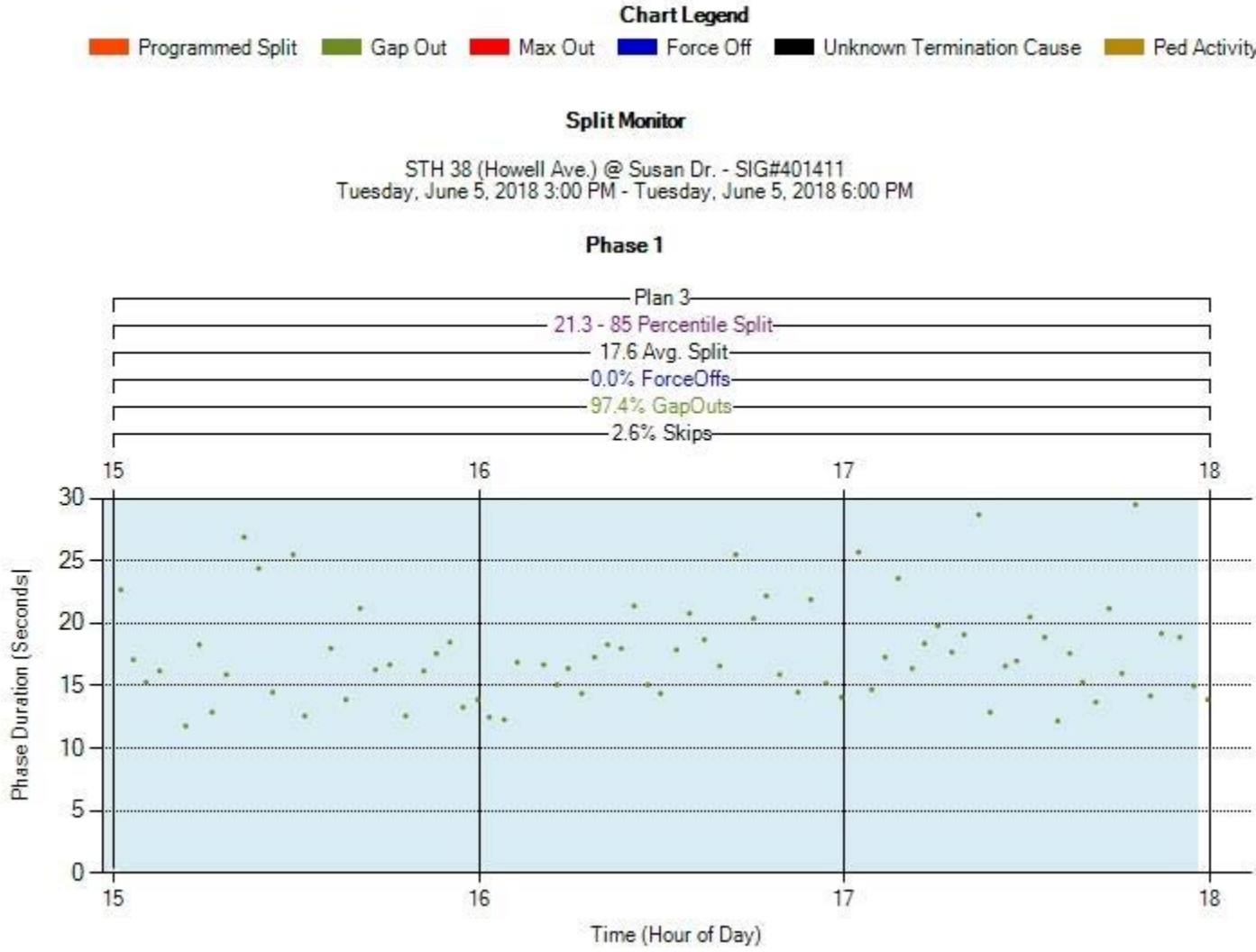


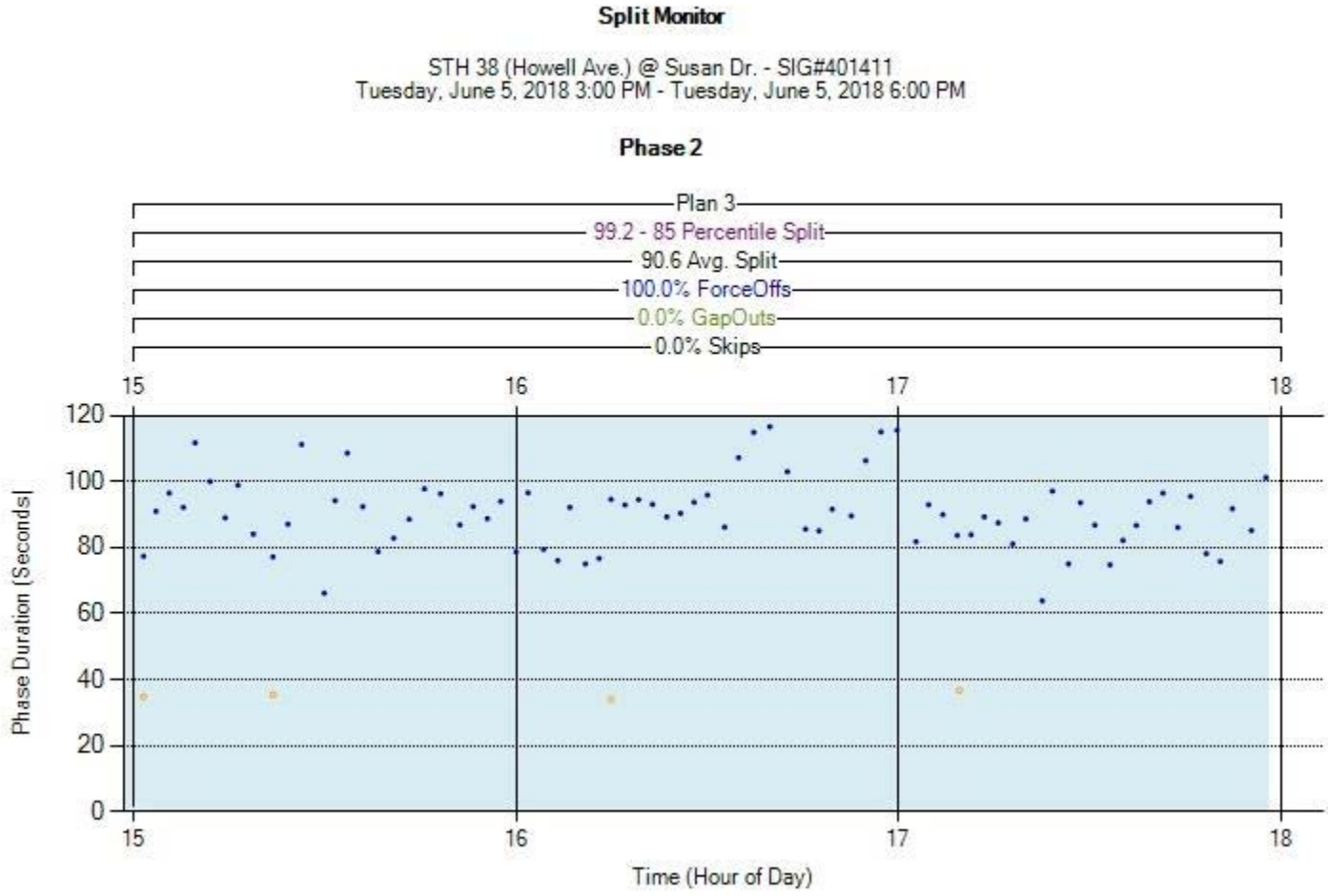
WIS 38 Corridor – STH 38 & Drexel Ave.
Baseline Timings
6/7/2018 – 4:30 PM – 5:30 PM



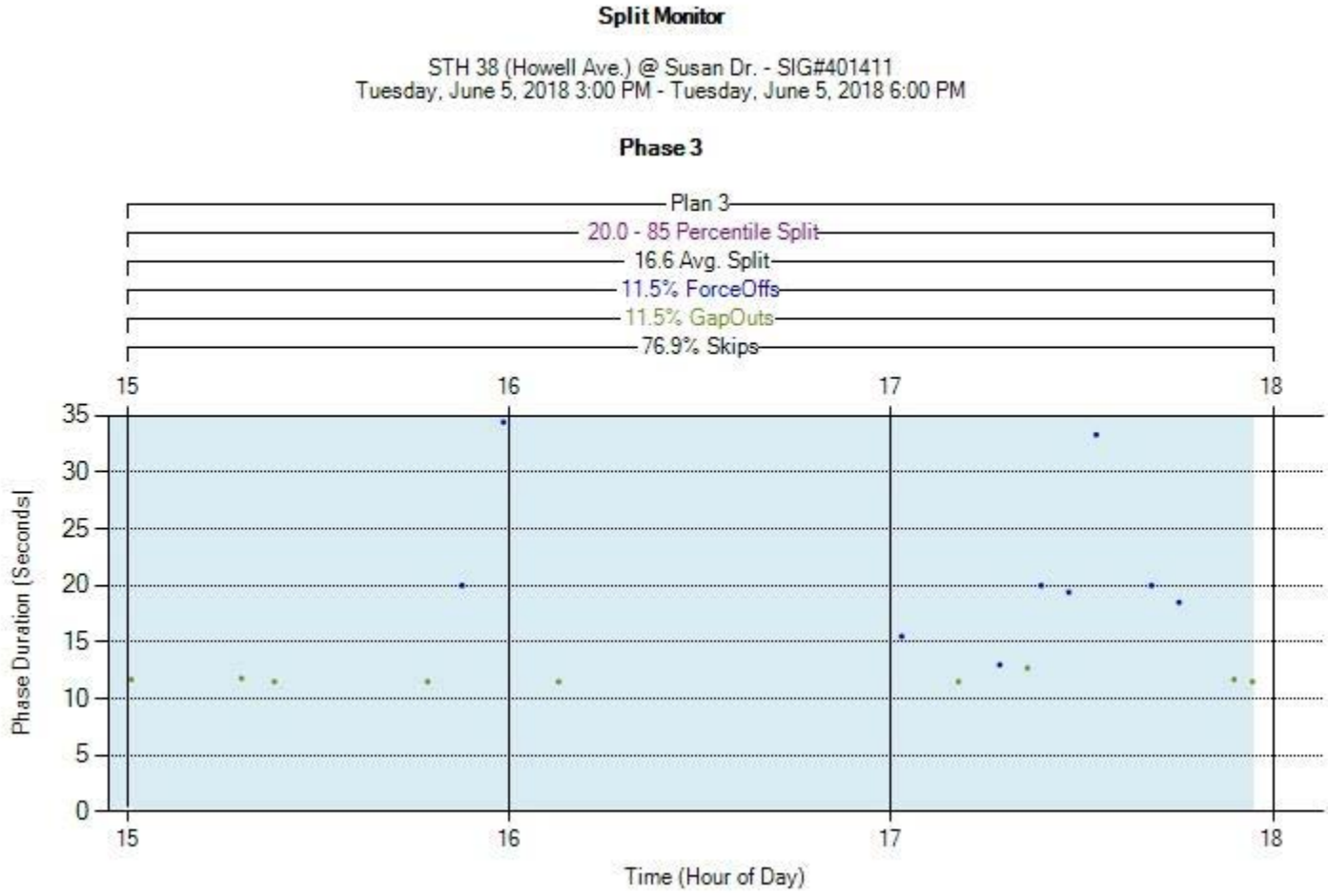
WIS 38 Corridor – STH 38 & Susan Dr.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



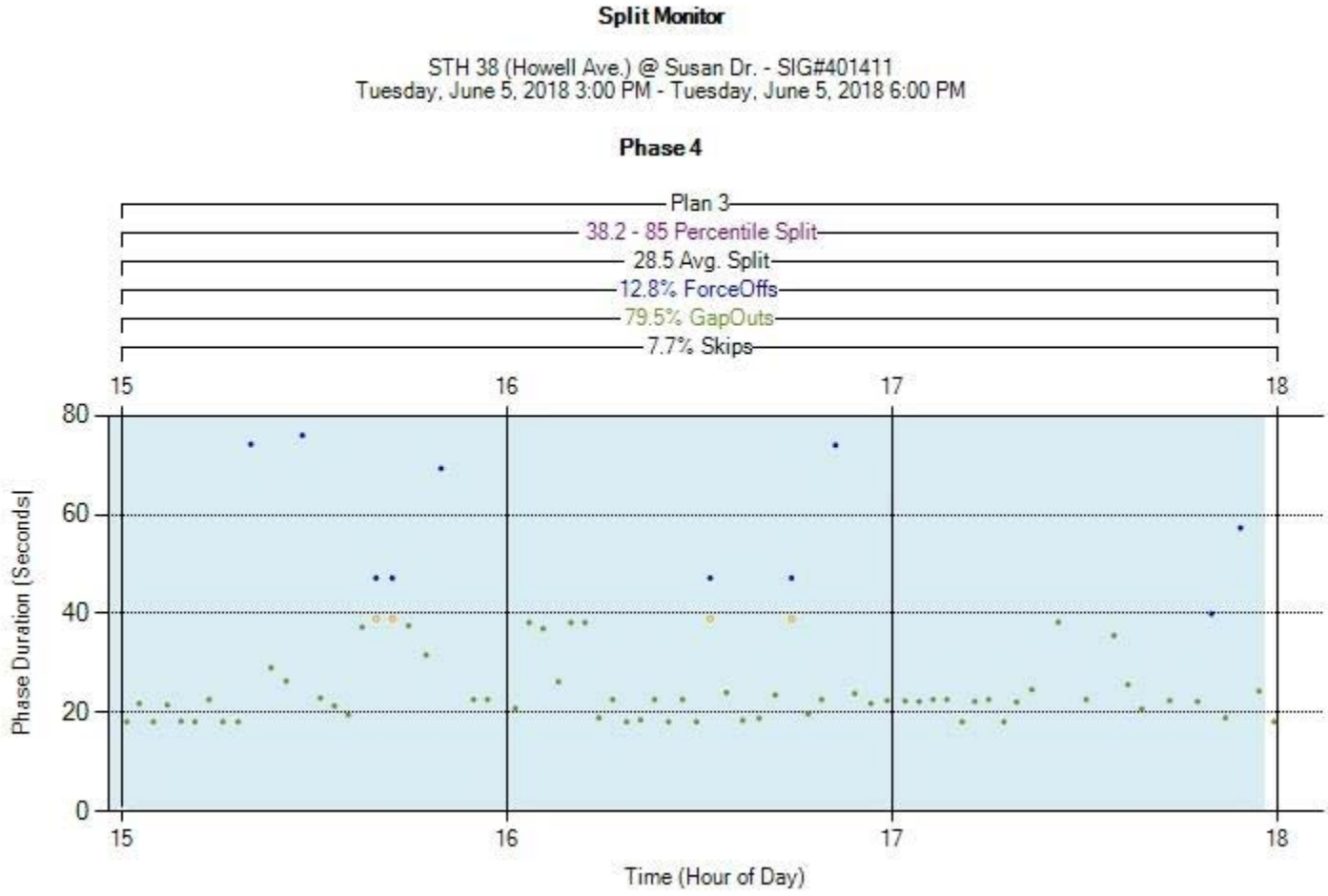
WIS 38 Corridor – STH 38 & Susan Dr.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



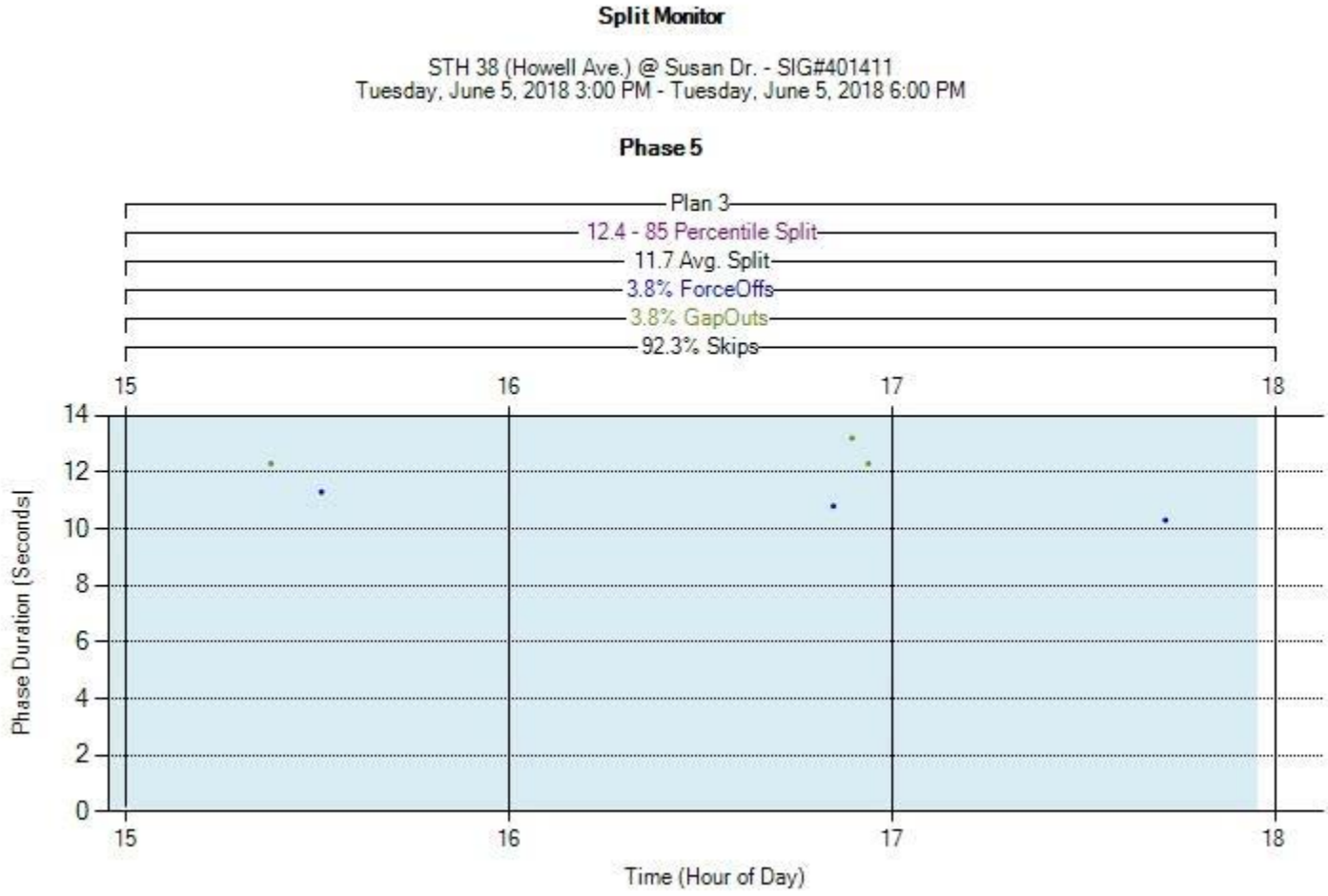
WIS 38 Corridor – STH 38 & Susan Dr.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



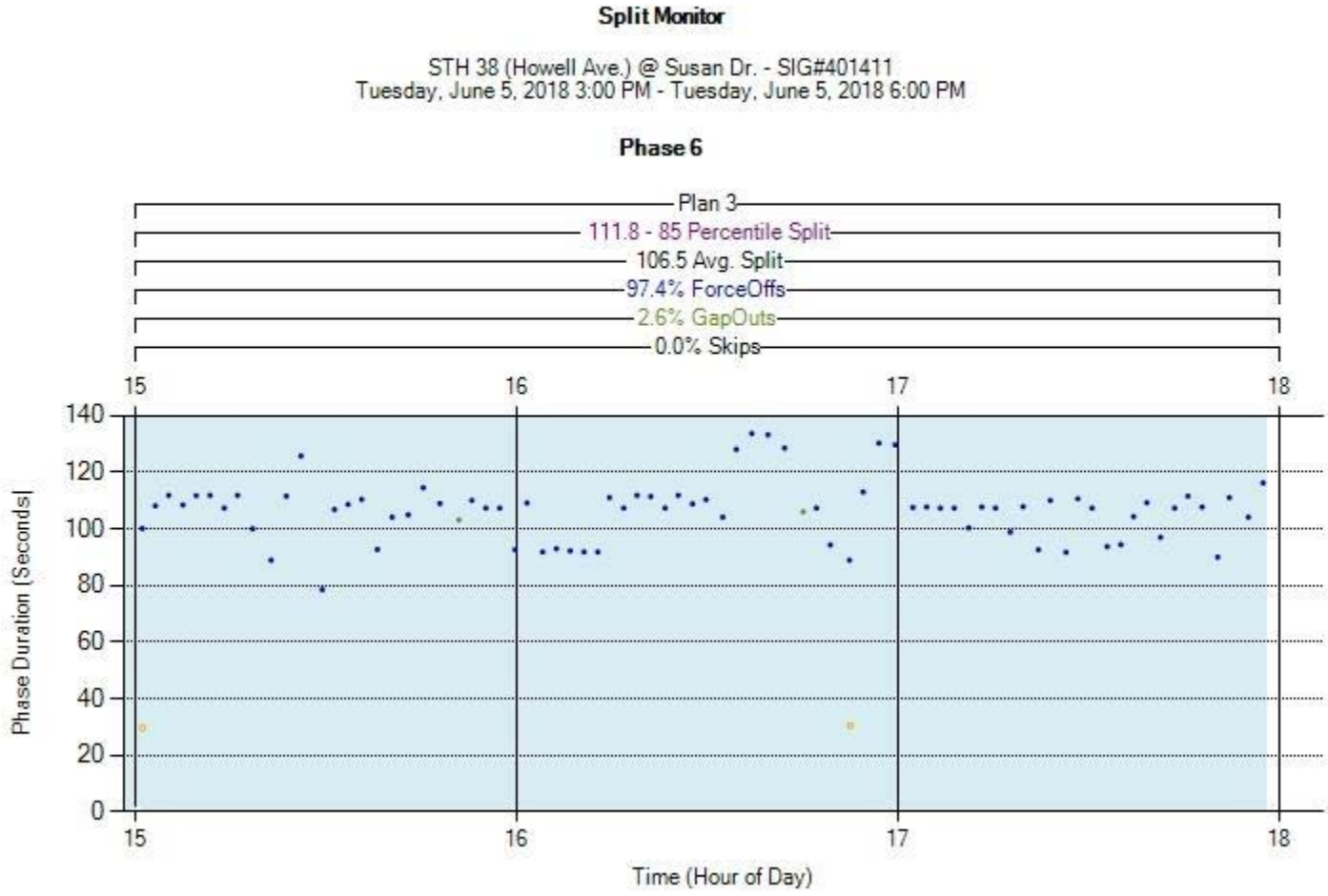
WIS 38 Corridor – STH 38 & Susan Dr.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



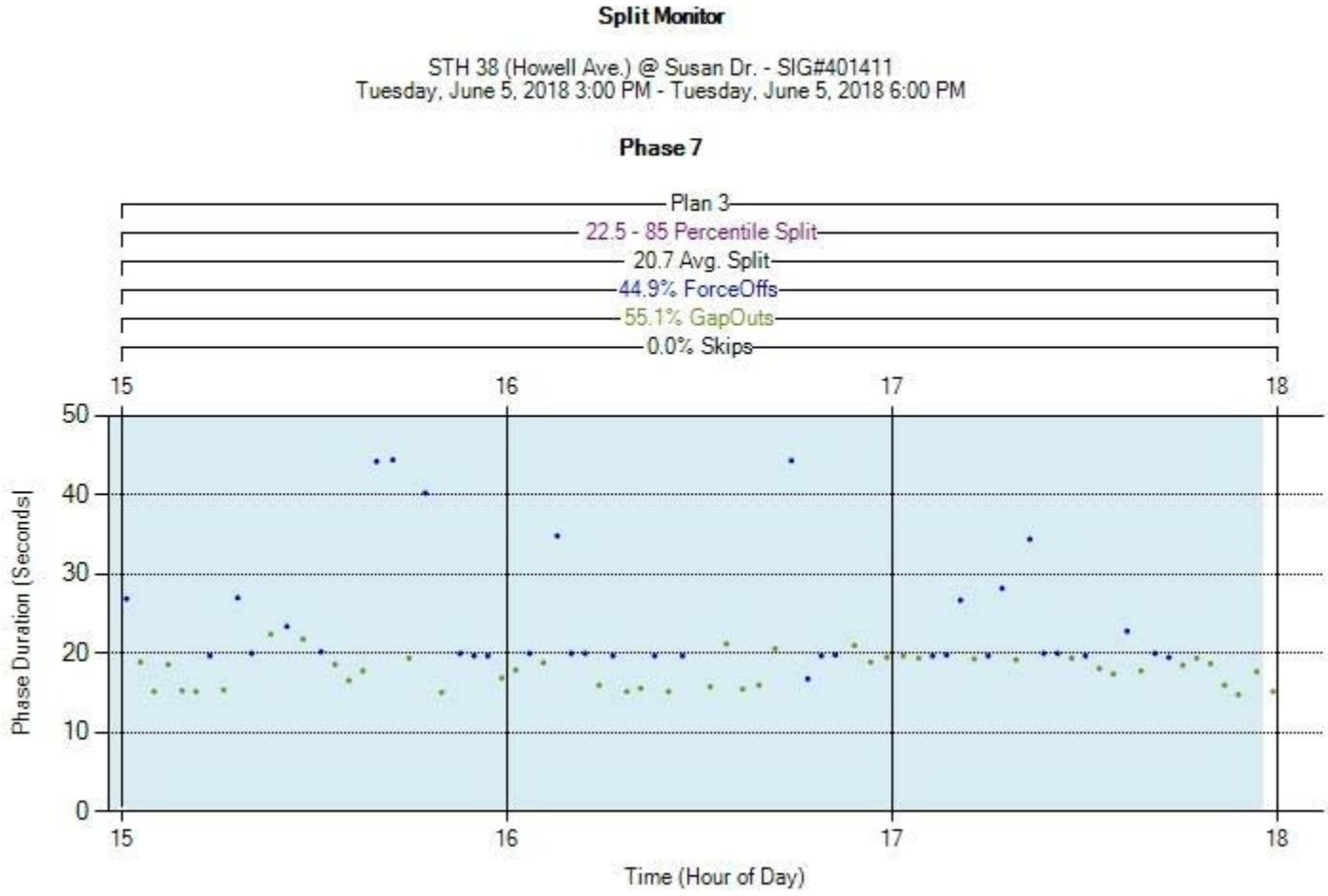
WIS 38 Corridor – STH 38 & Susan Dr.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



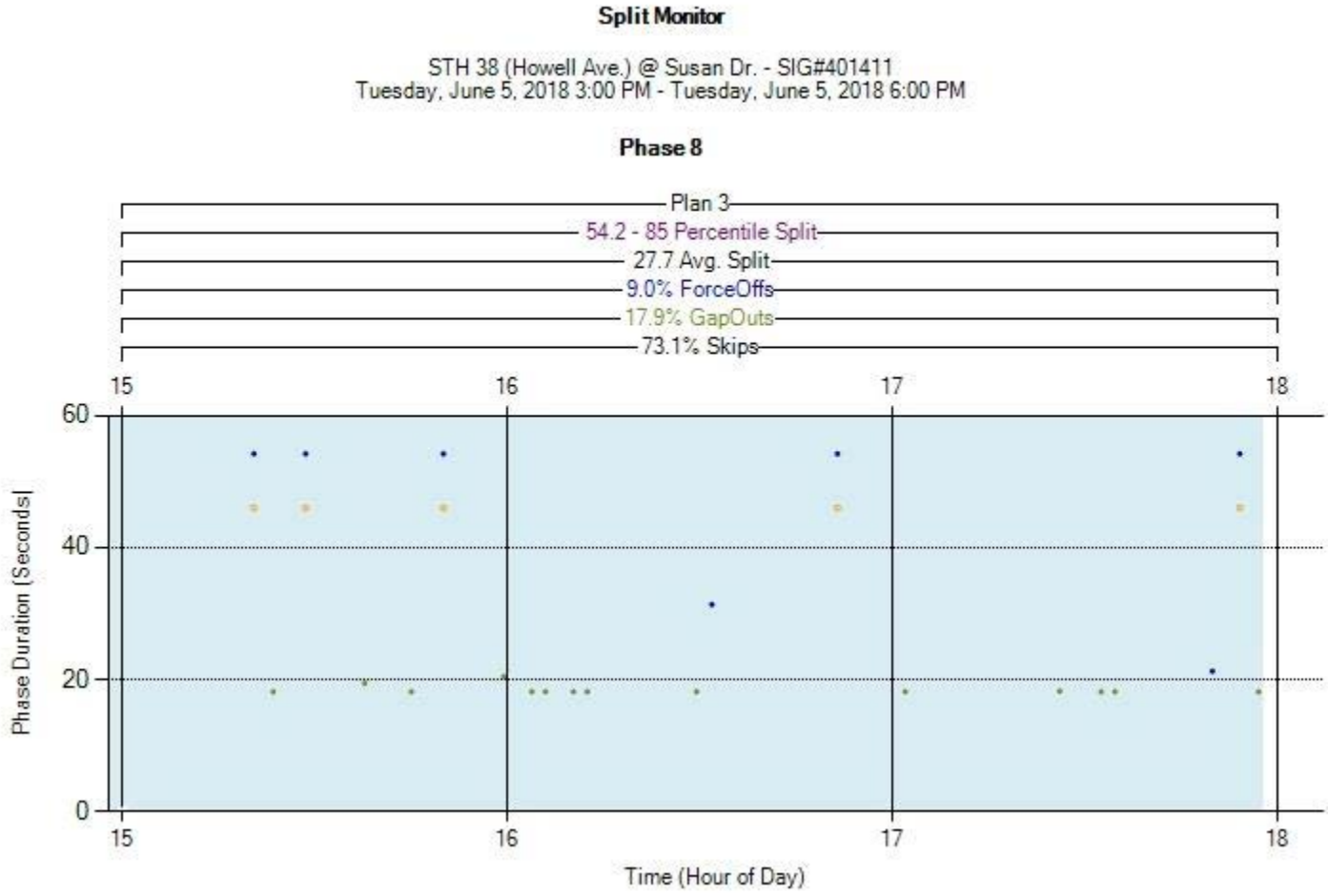
WIS 38 Corridor – STH 38 & Susan Dr.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



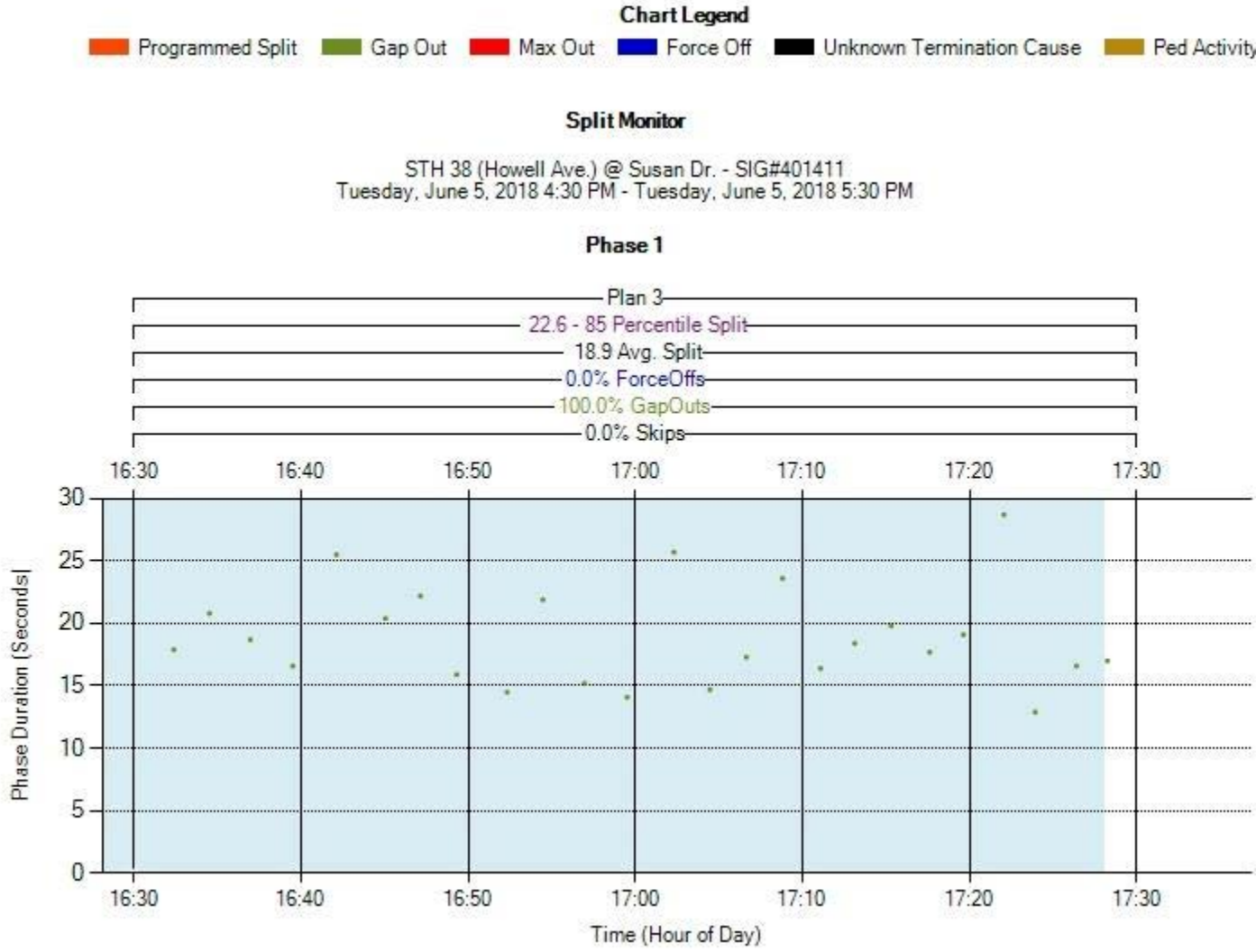
WIS 38 Corridor – STH 38 & Susan Dr.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



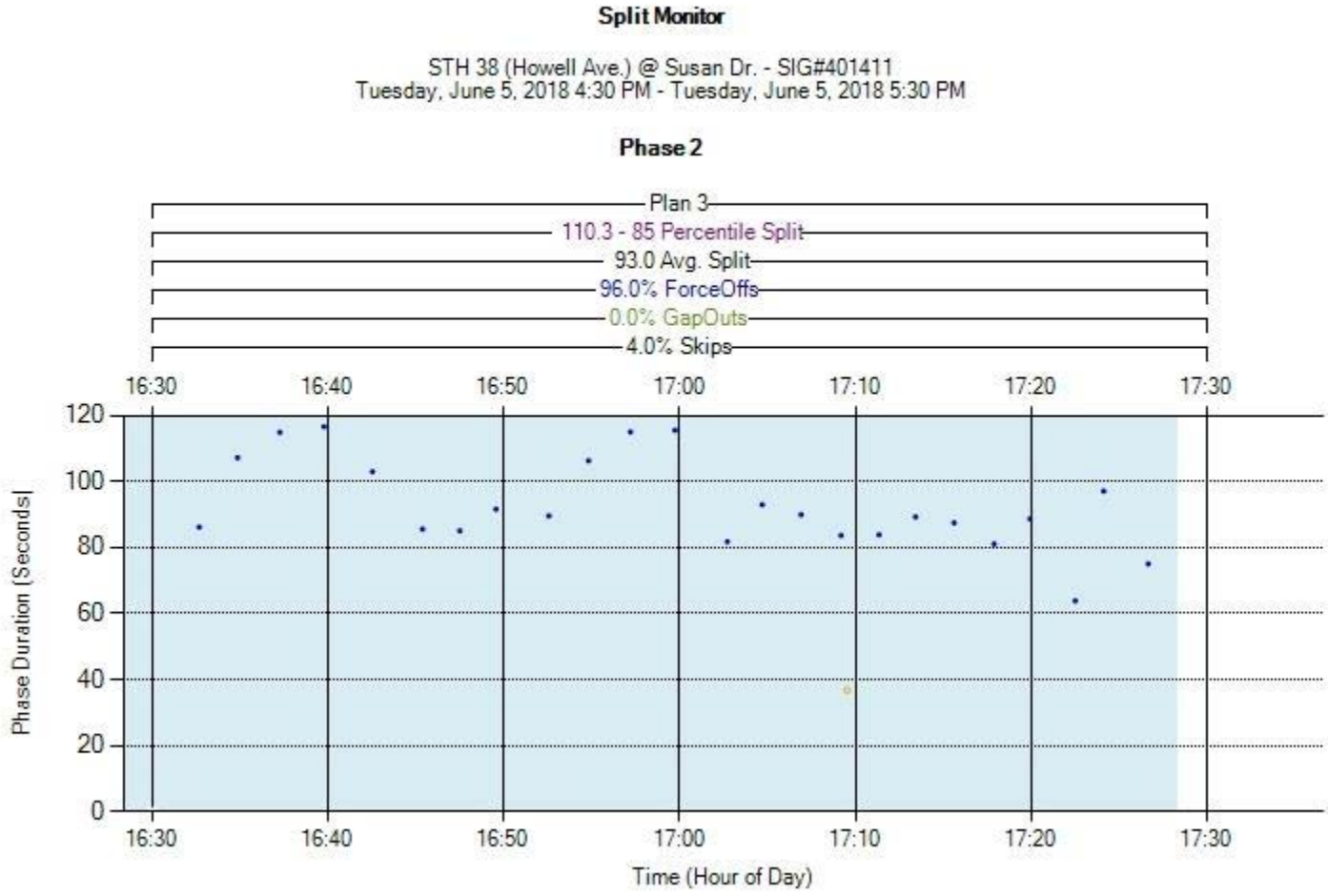
WIS 38 Corridor – STH 38 & Susan Dr.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



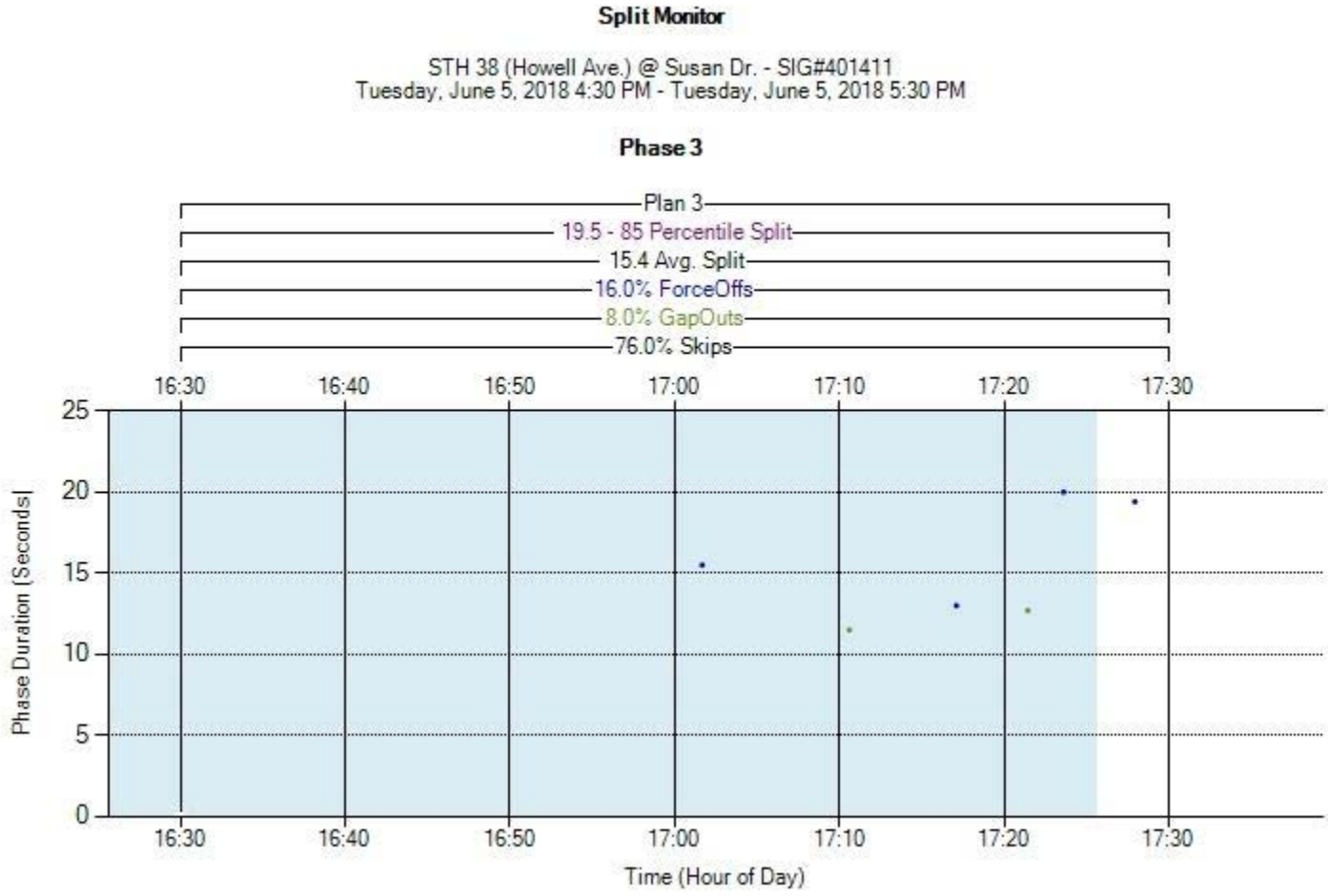
WIS 38 Corridor – STH 38 & Susan Dr.
Baseline Timings
6/5/2018 – 4:30 PM – 5:30 PM



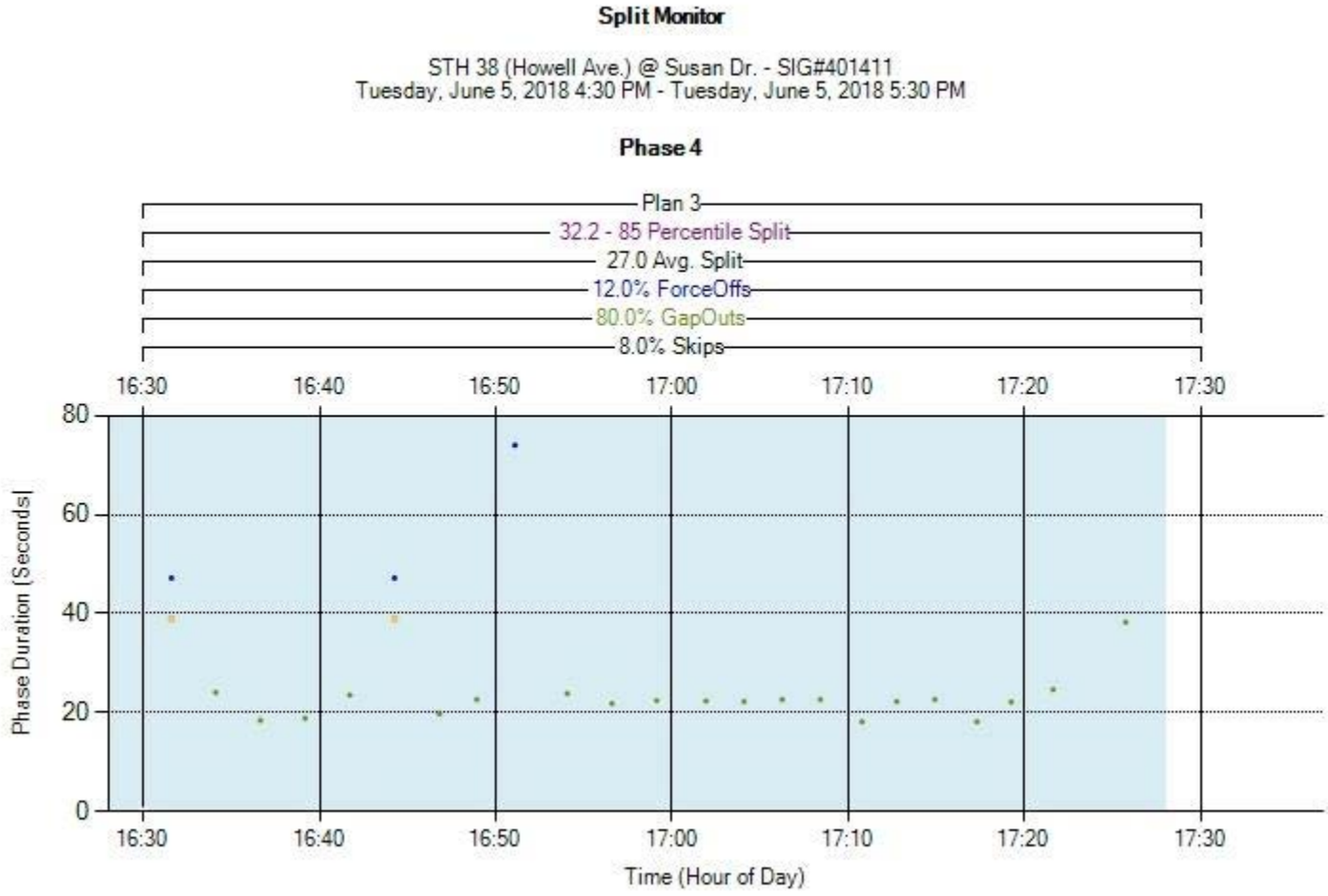
WIS 38 Corridor – STH 38 & Susan Dr.
Baseline Timings
6/5/2018 – 4:30 PM – 5:30 PM



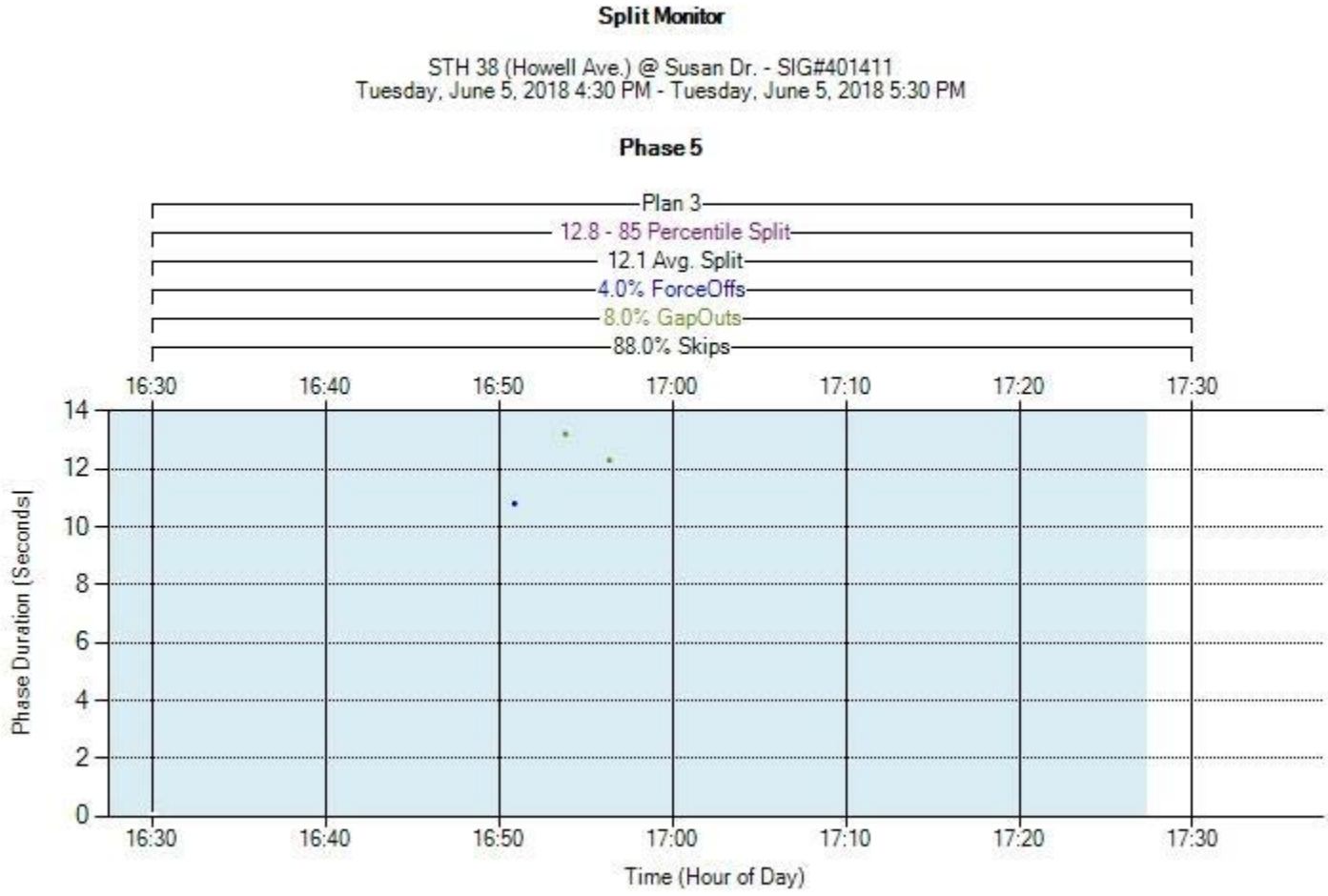
WIS 38 Corridor – STH 38 & Susan Dr.
Baseline Timings
6/5/2018 – 4:30 PM – 5:30 PM



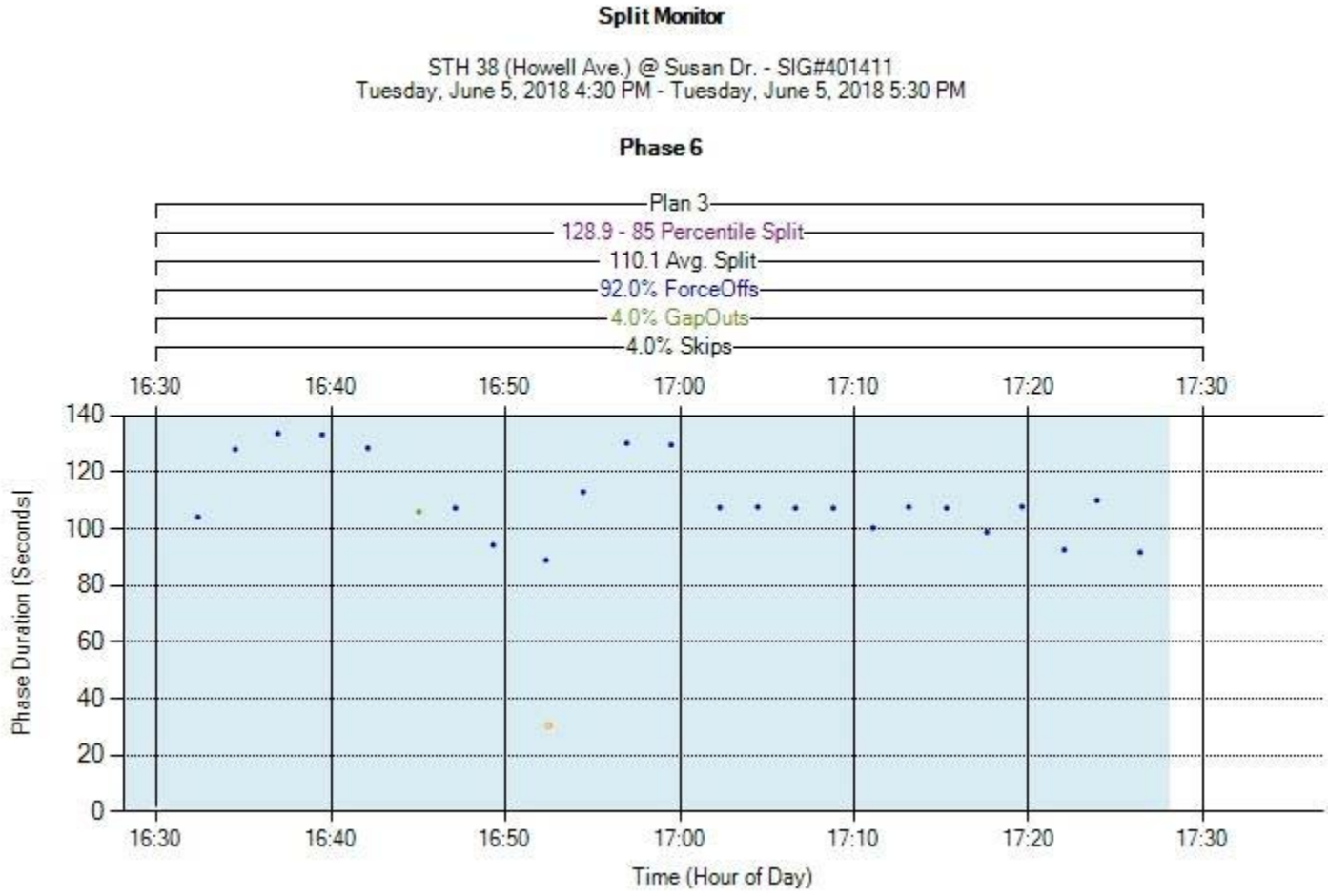
WIS 38 Corridor – STH 38 & Susan Dr.
Baseline Timings
6/5/2018 – 4:30 PM – 5:30 PM



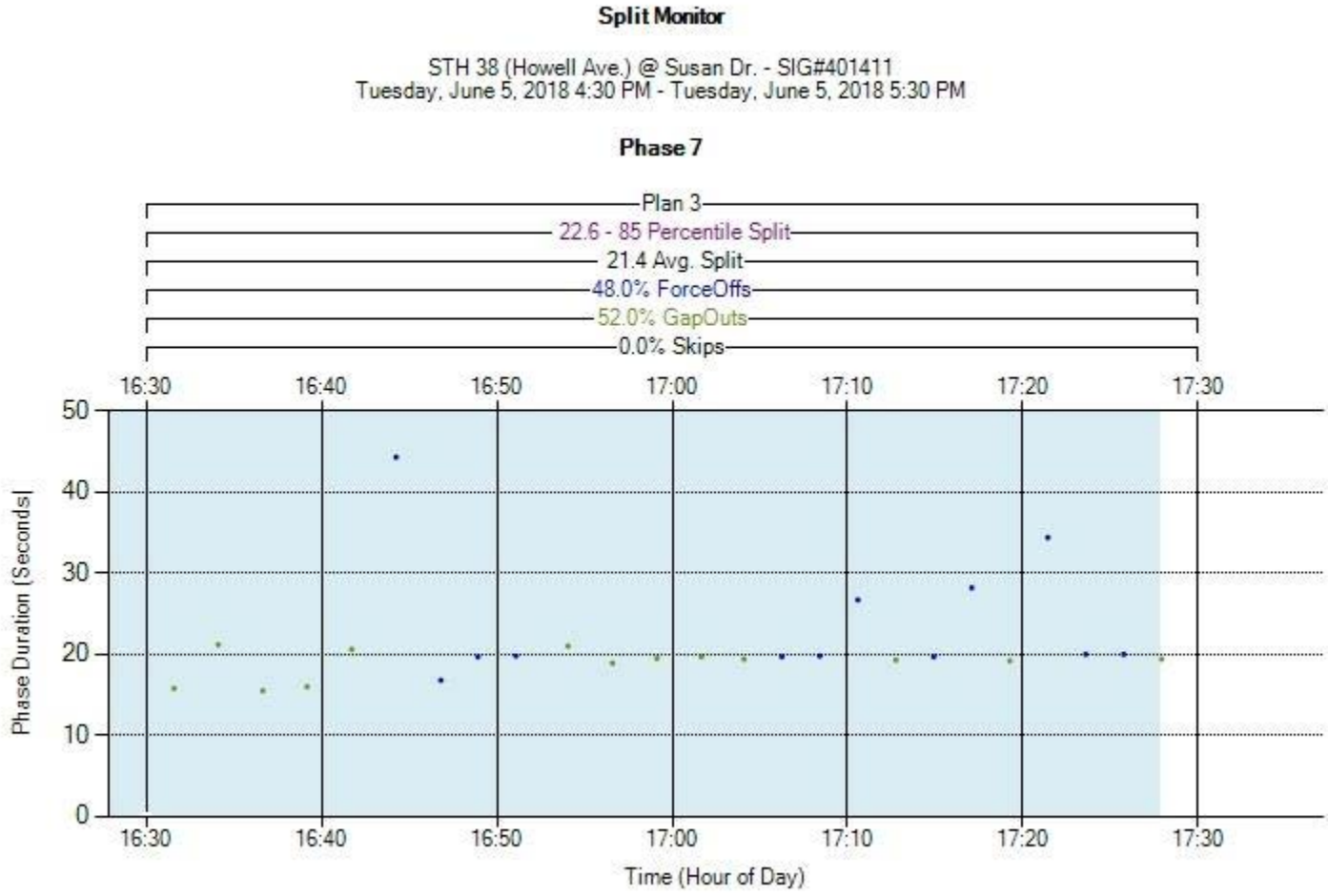
WIS 38 Corridor – STH 38 & Susan Dr.
Baseline Timings
6/5/2018 – 4:30 PM – 5:30 PM



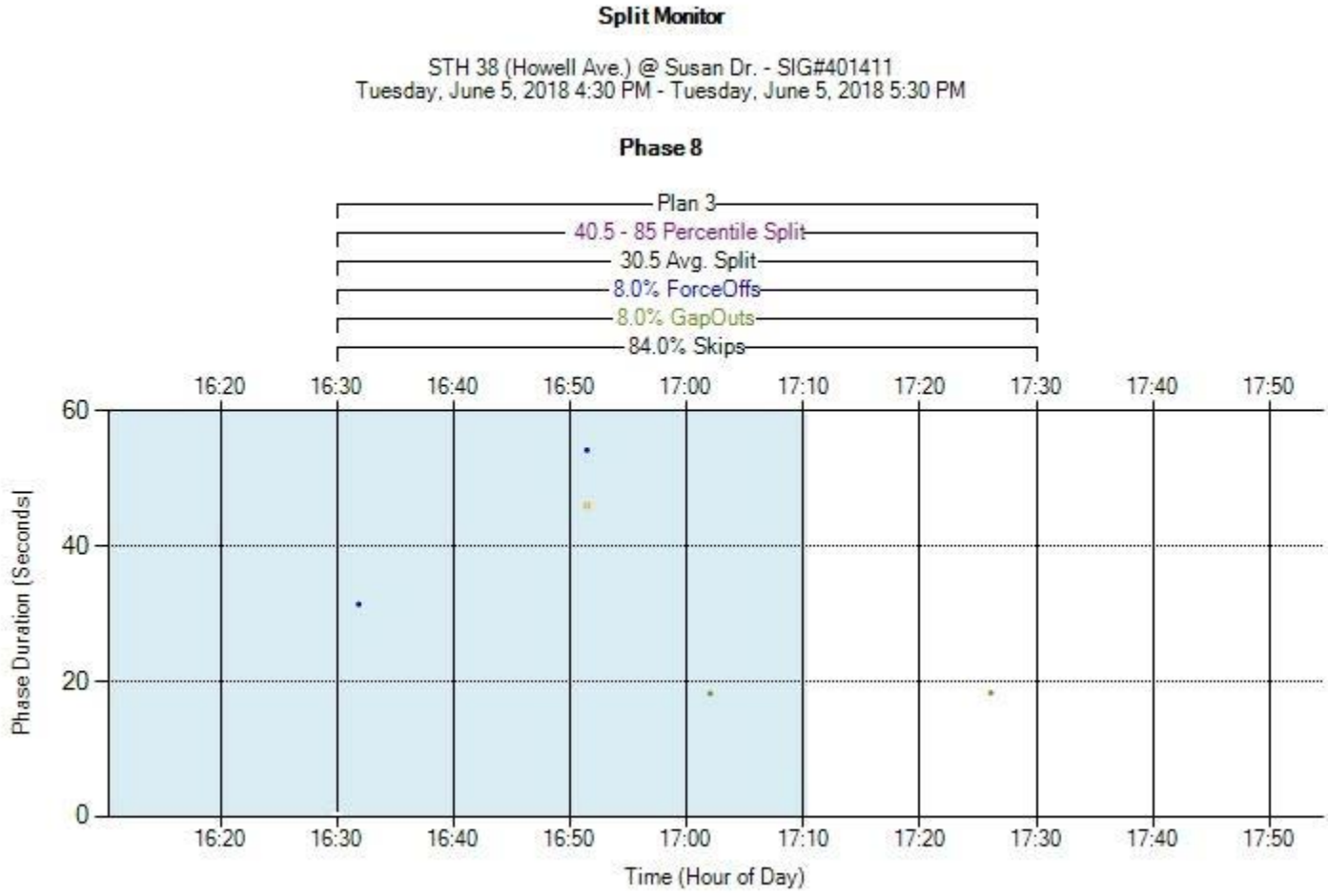
WIS 38 Corridor – STH 38 & Susan Dr.
Baseline Timings
6/5/2018 – 4:30 PM – 5:30 PM



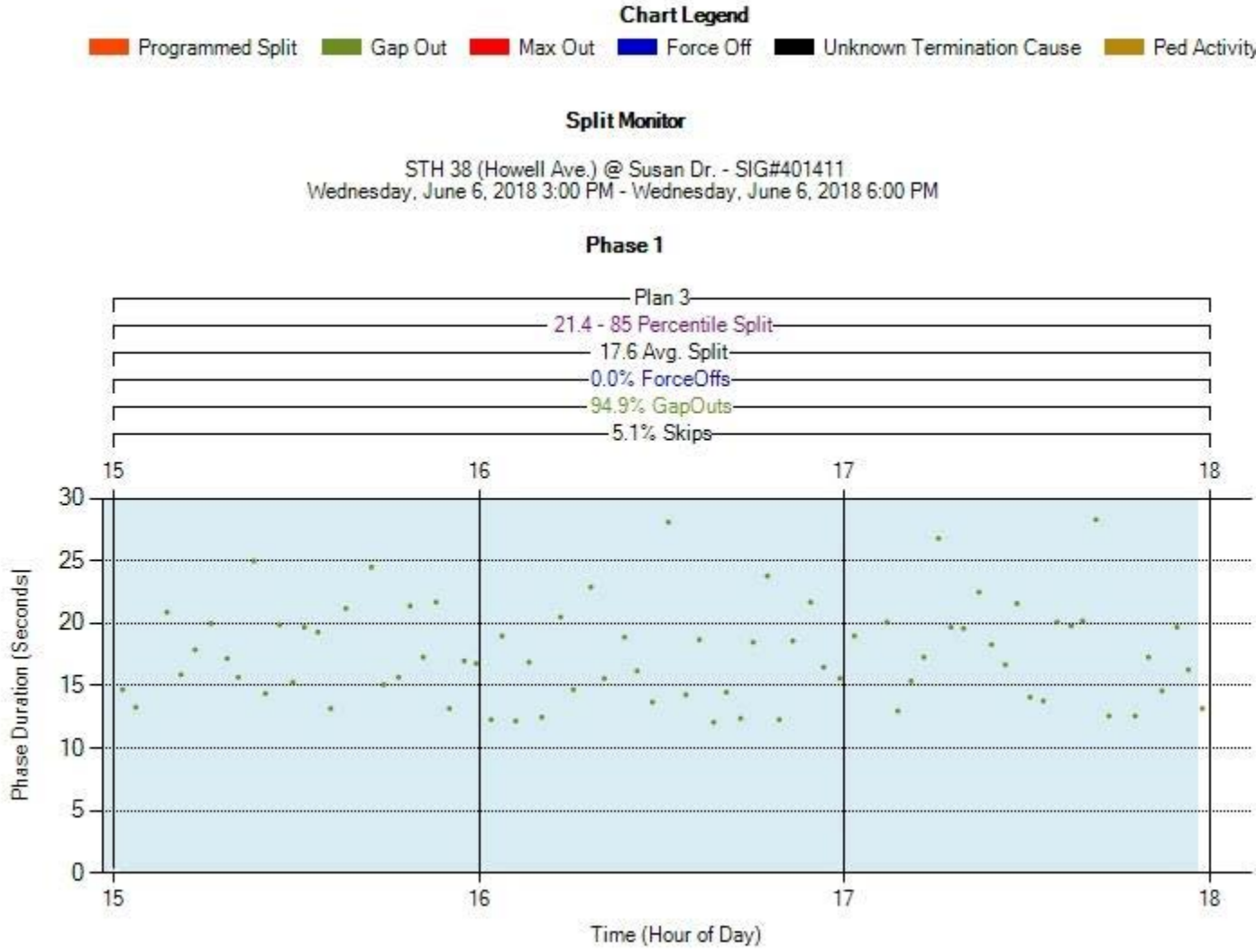
WIS 38 Corridor – STH 38 & Susan Dr.
Baseline Timings
6/5/2018 – 4:30 PM – 5:30 PM



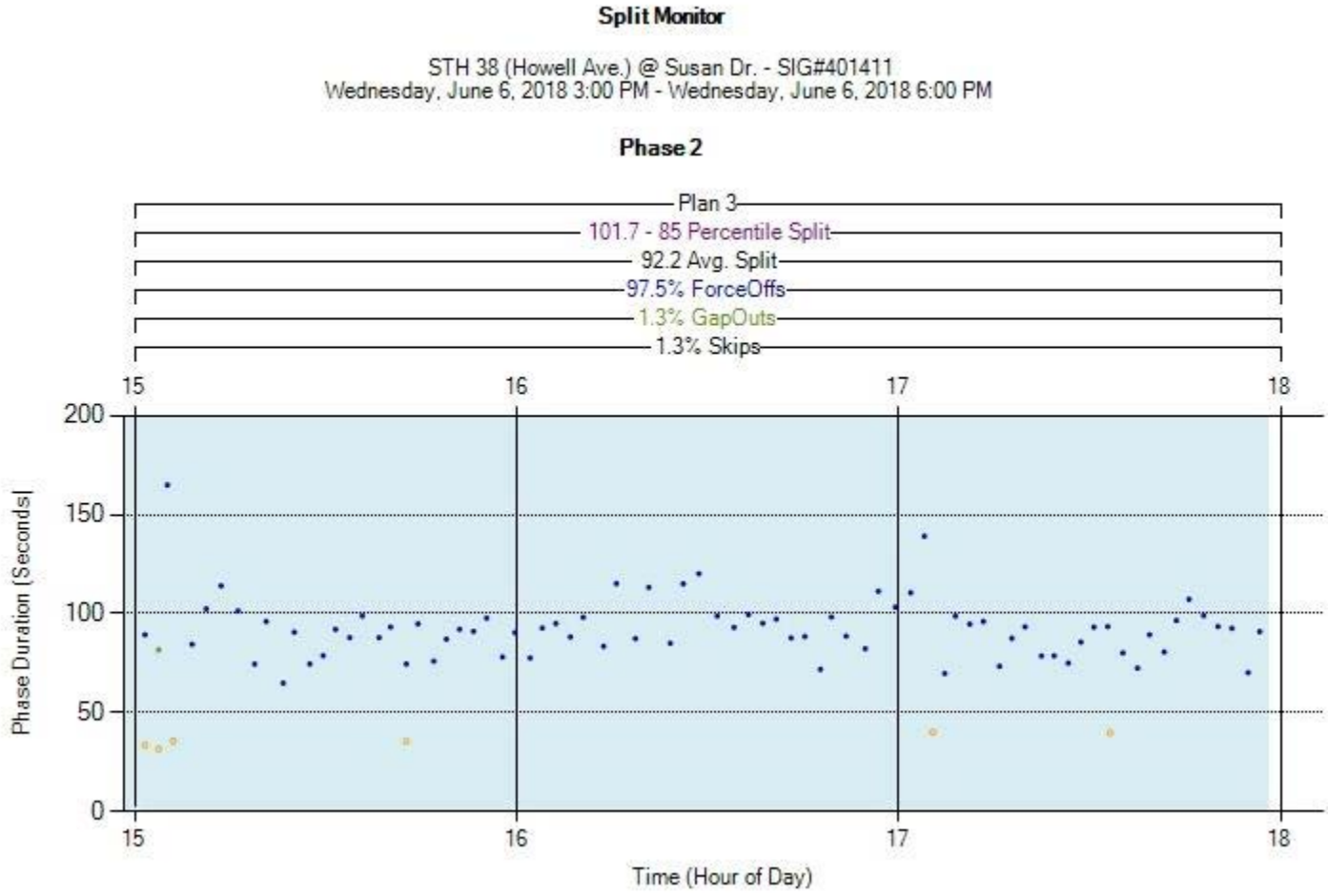
WIS 38 Corridor – STH 38 & Susan Dr.
Baseline Timings
6/5/2018 – 4:30 PM – 5:30 PM



WIS 38 Corridor – STH 38 & Susan Dr.
Baseline Timings
6/6/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Susan Dr.
Baseline Timings
6/6/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Susan Dr.
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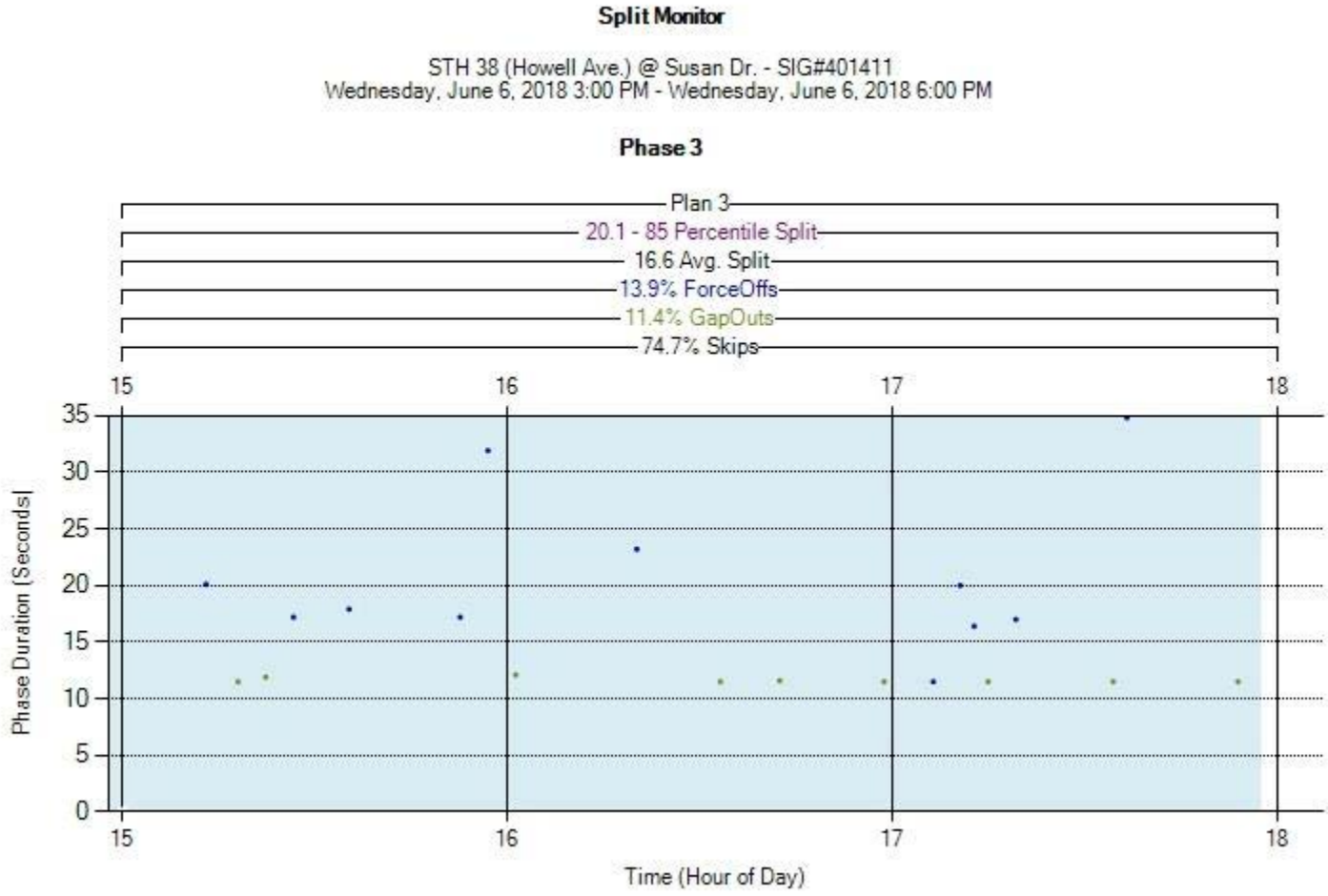
6/6/2018 – 3:00 PM – 6:00 PM



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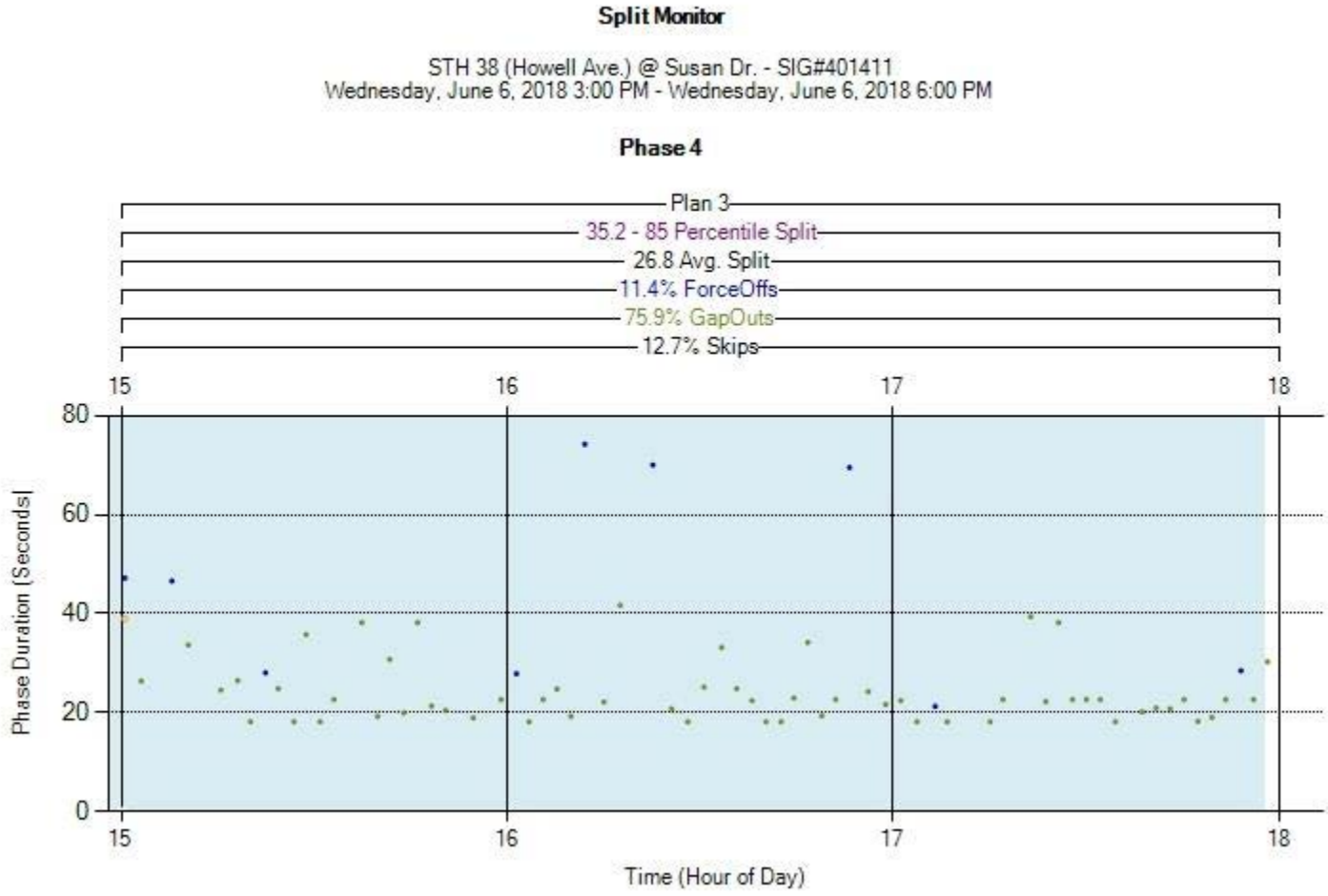

WIS 38 Corridor – STH 38 & Susan Dr.
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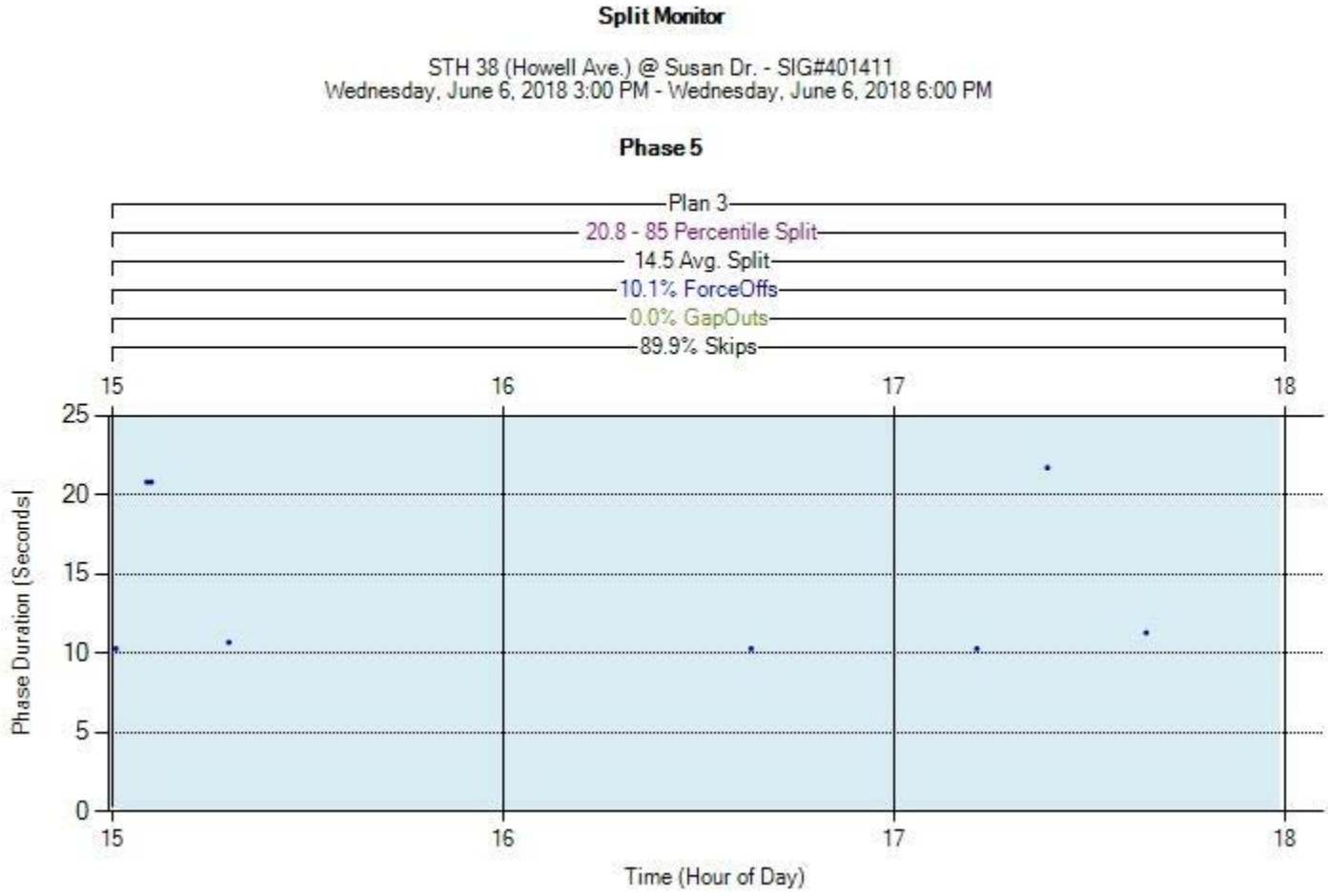
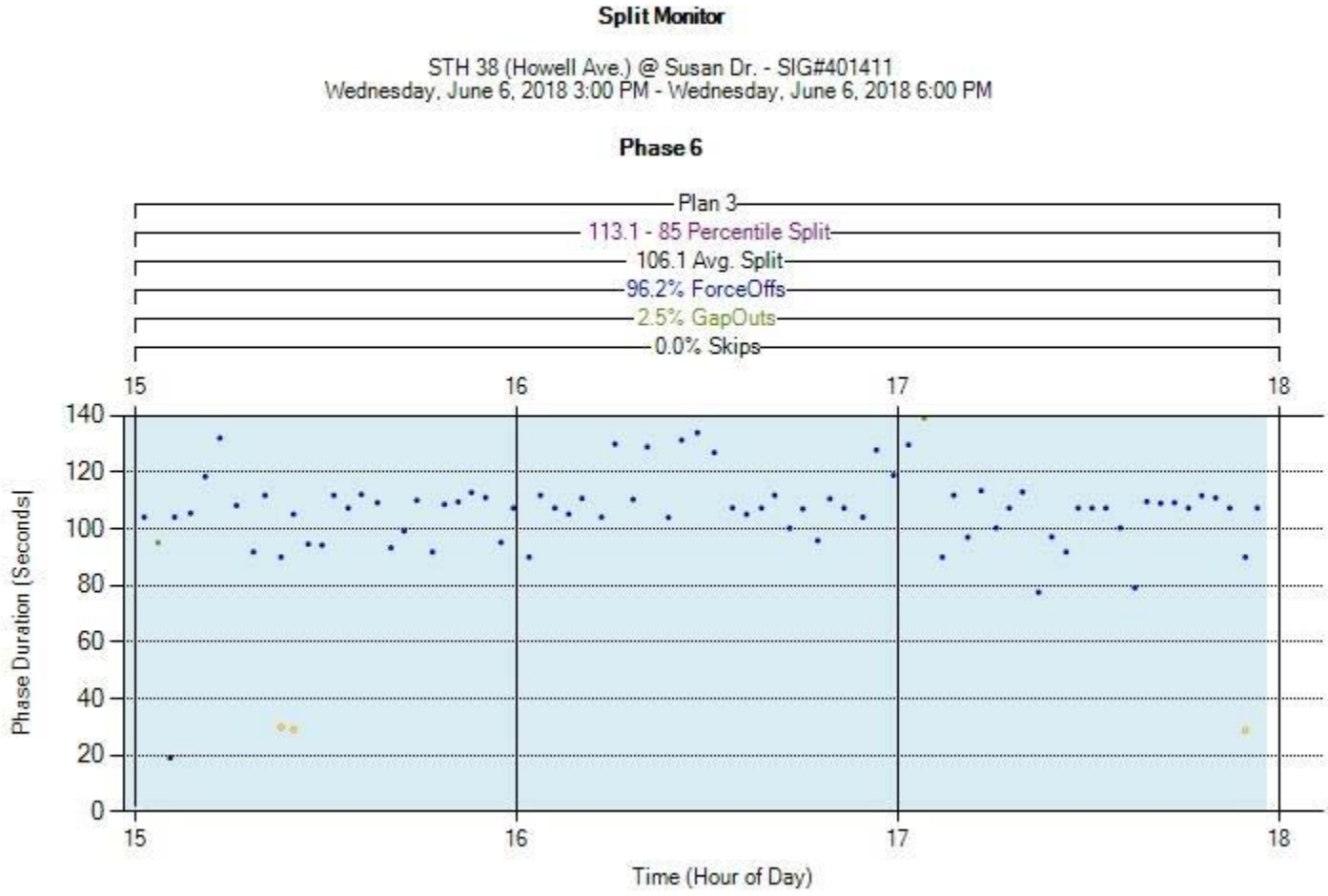


WIS 38 Corridor – STH 38 & Susan Dr.
Baseline Timings
6/6/2018 – 3:00 PM – 6:00 PM



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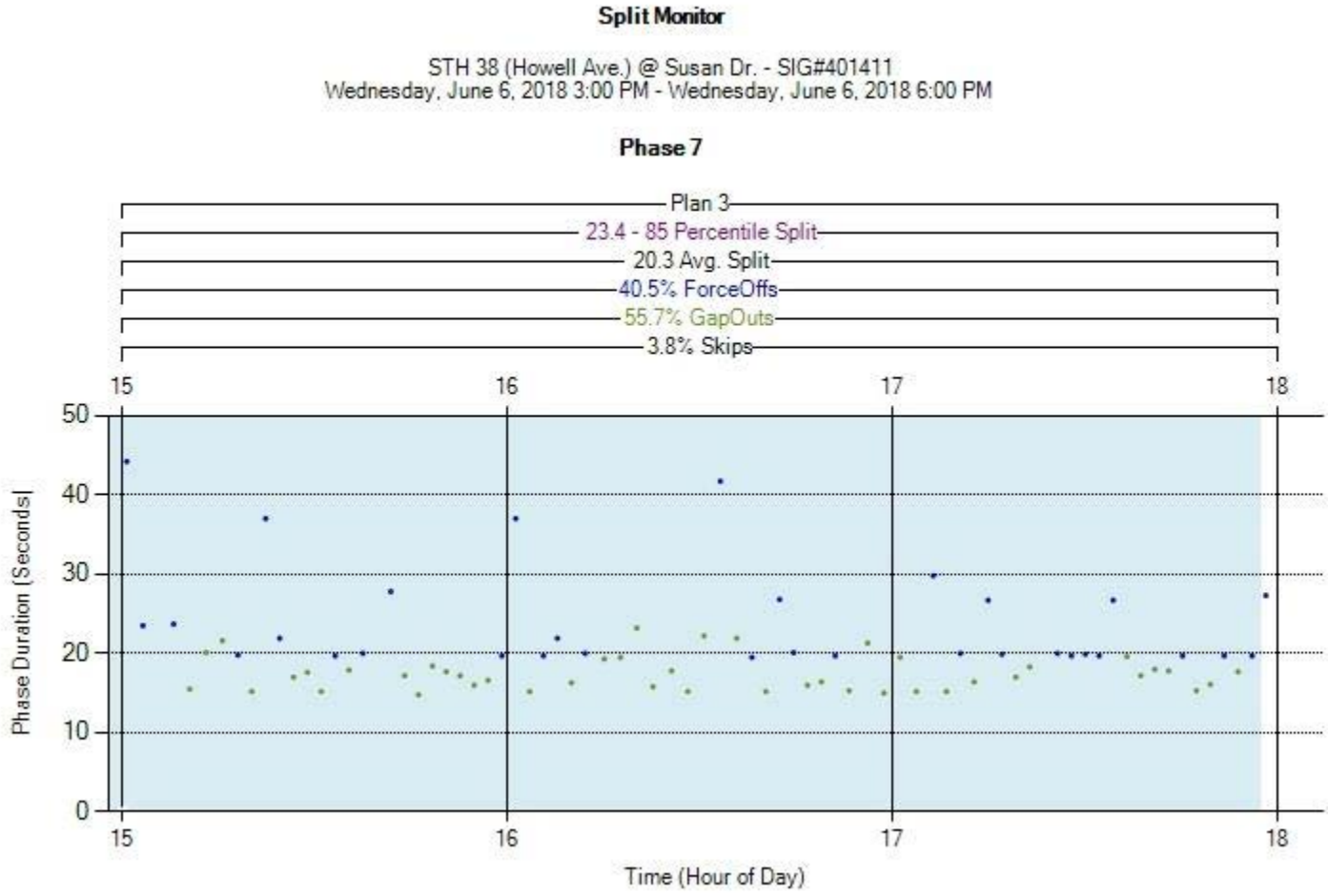

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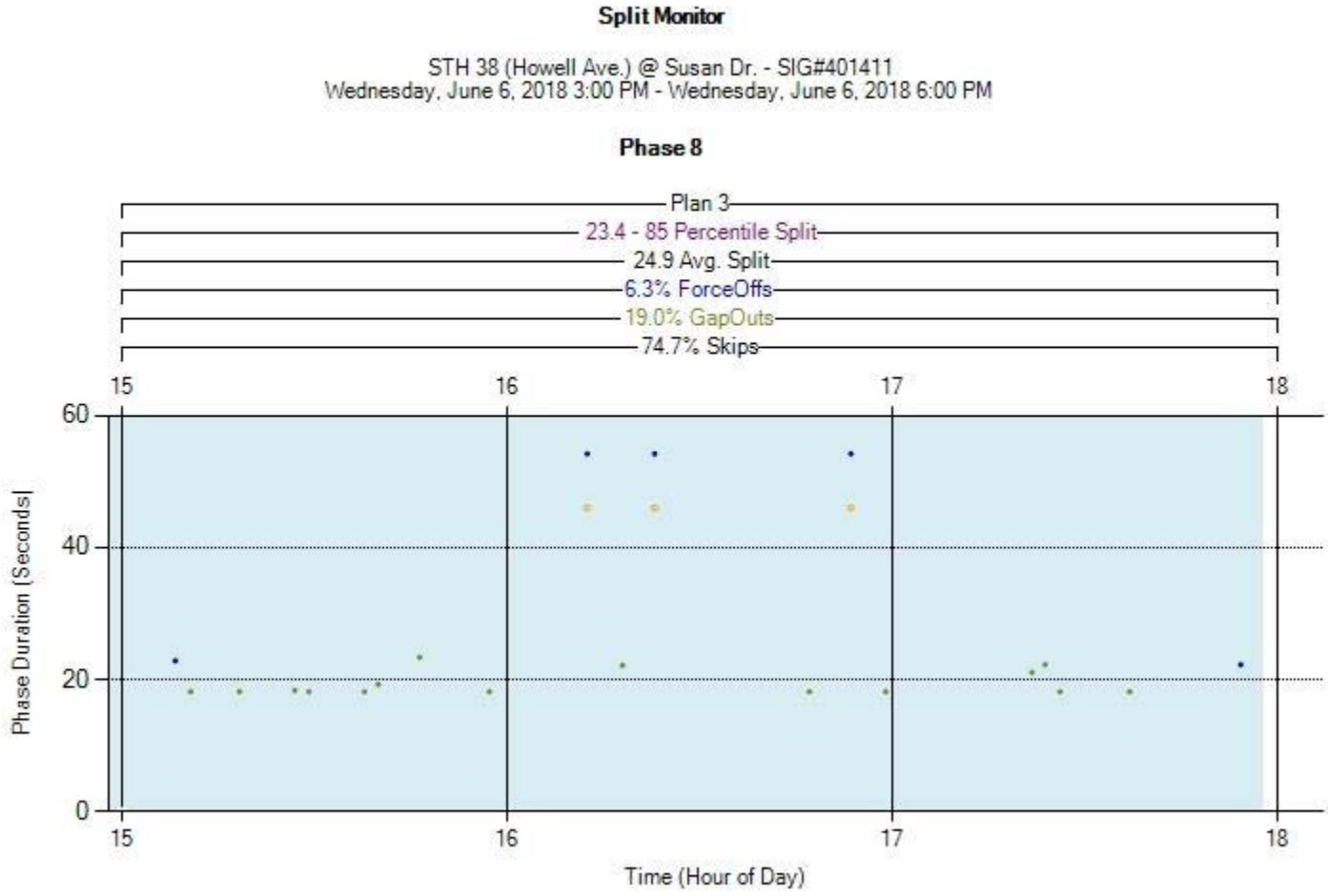
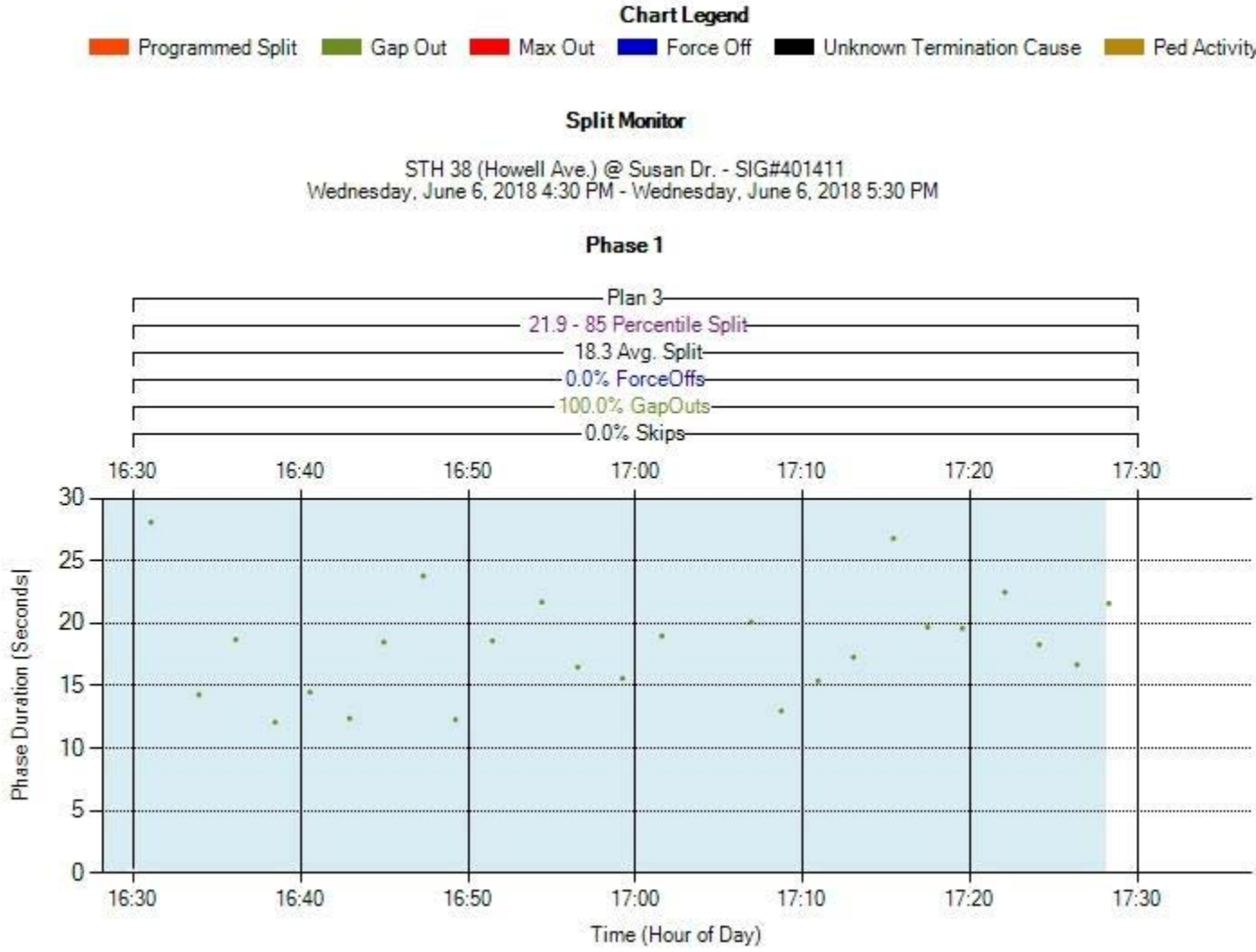
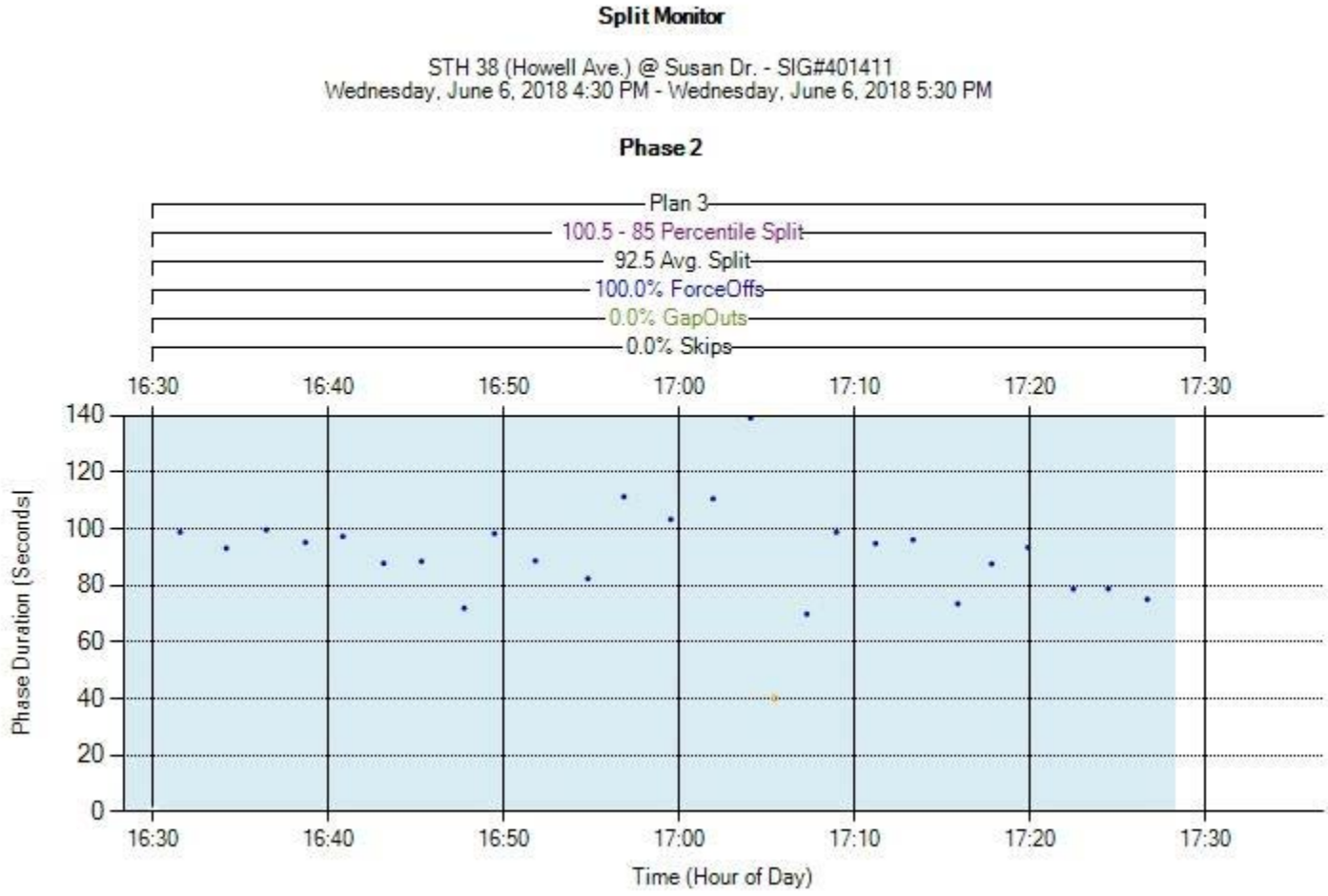
6/6/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Susan Dr.
Baseline Timings
6/6/2018 – 4:30 PM – 5:30 PM



WIS 38 Corridor – STH 38 & Susan Dr.
Baseline Timings
6/6/2018 – 4:30 PM – 5:30 PM



WIS 38 Corridor – STH 38 & Susan Dr.
Baseline Timings
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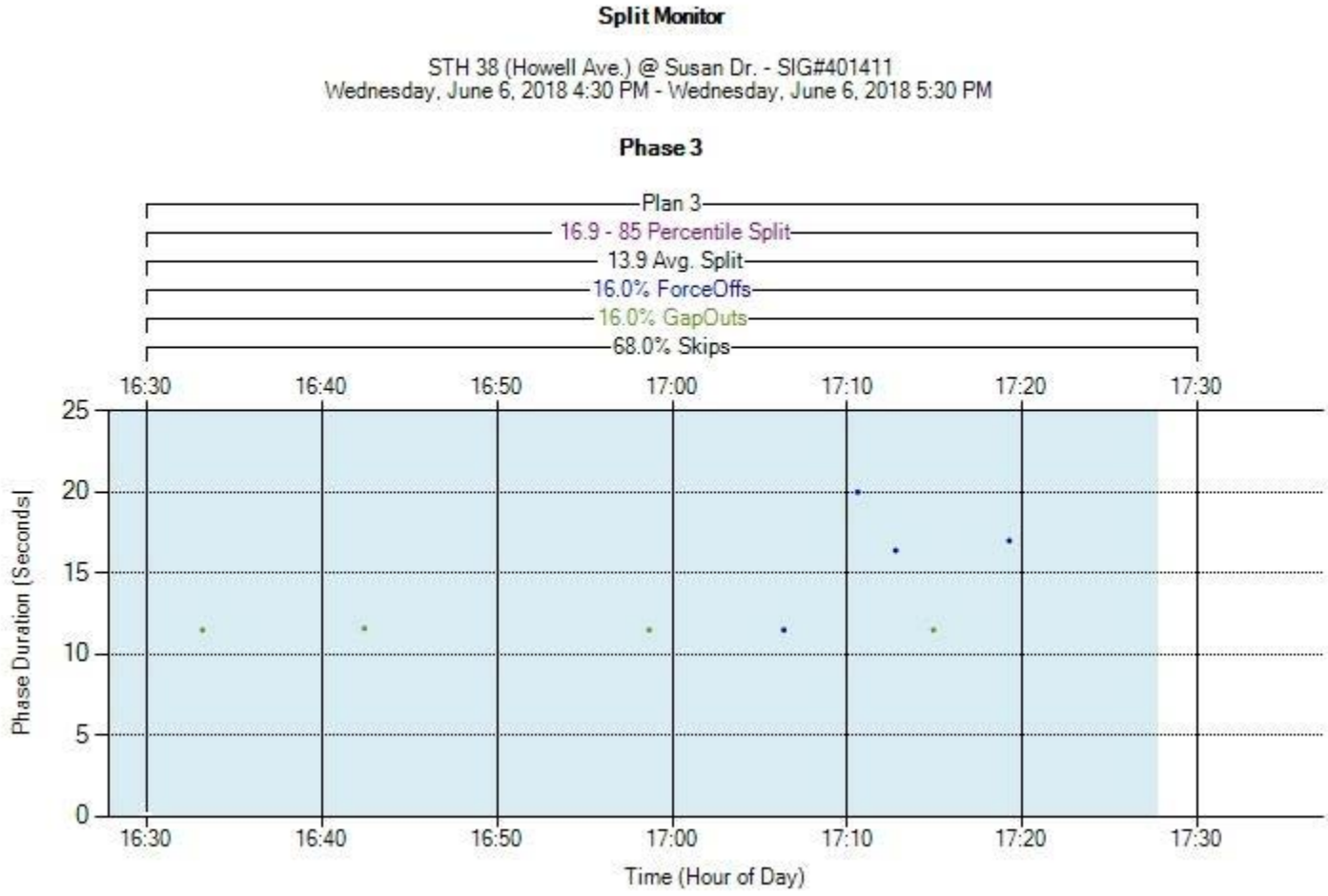

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Baseline Timings
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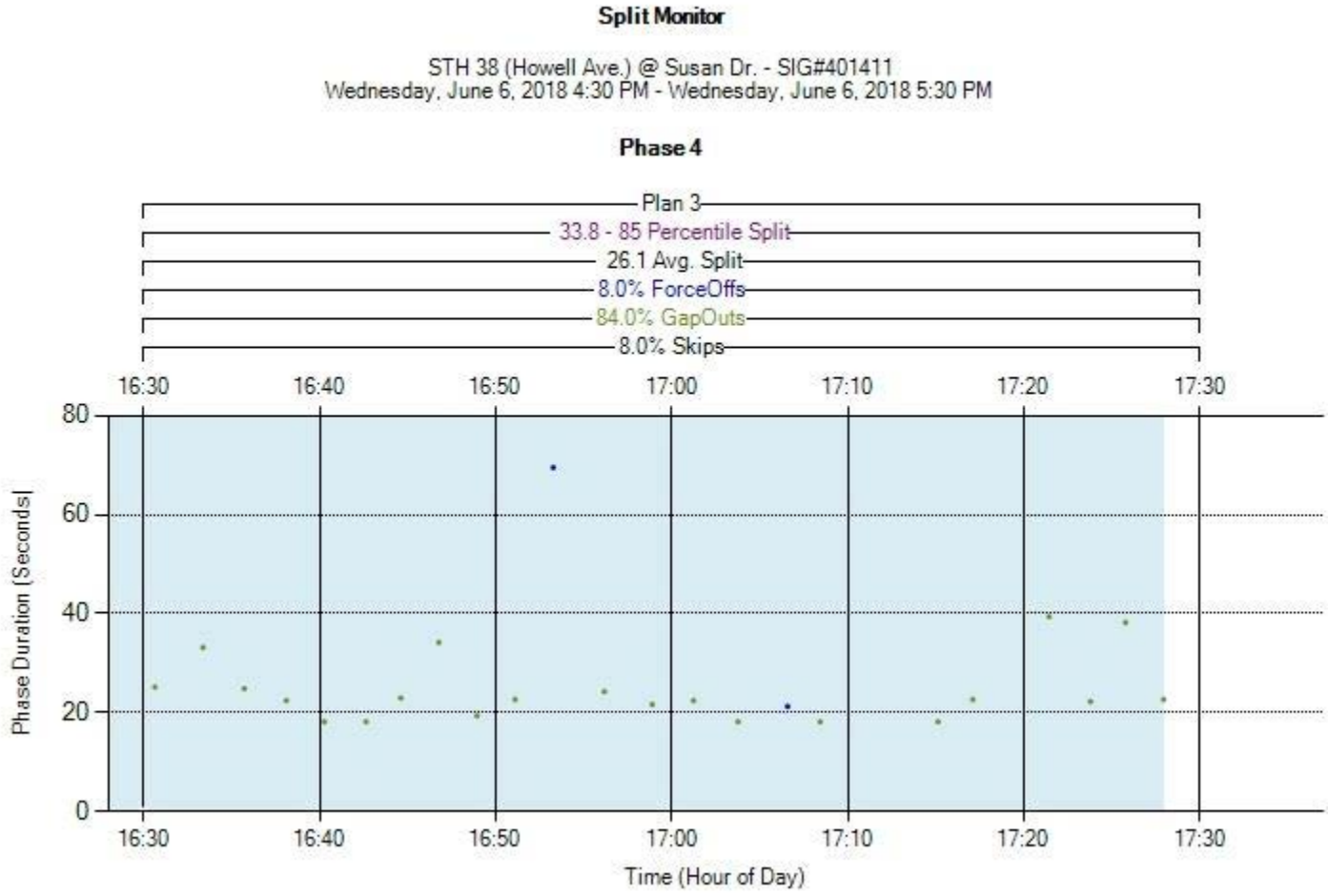

WIS 38 Corridor – STH 38 & Susan Dr.
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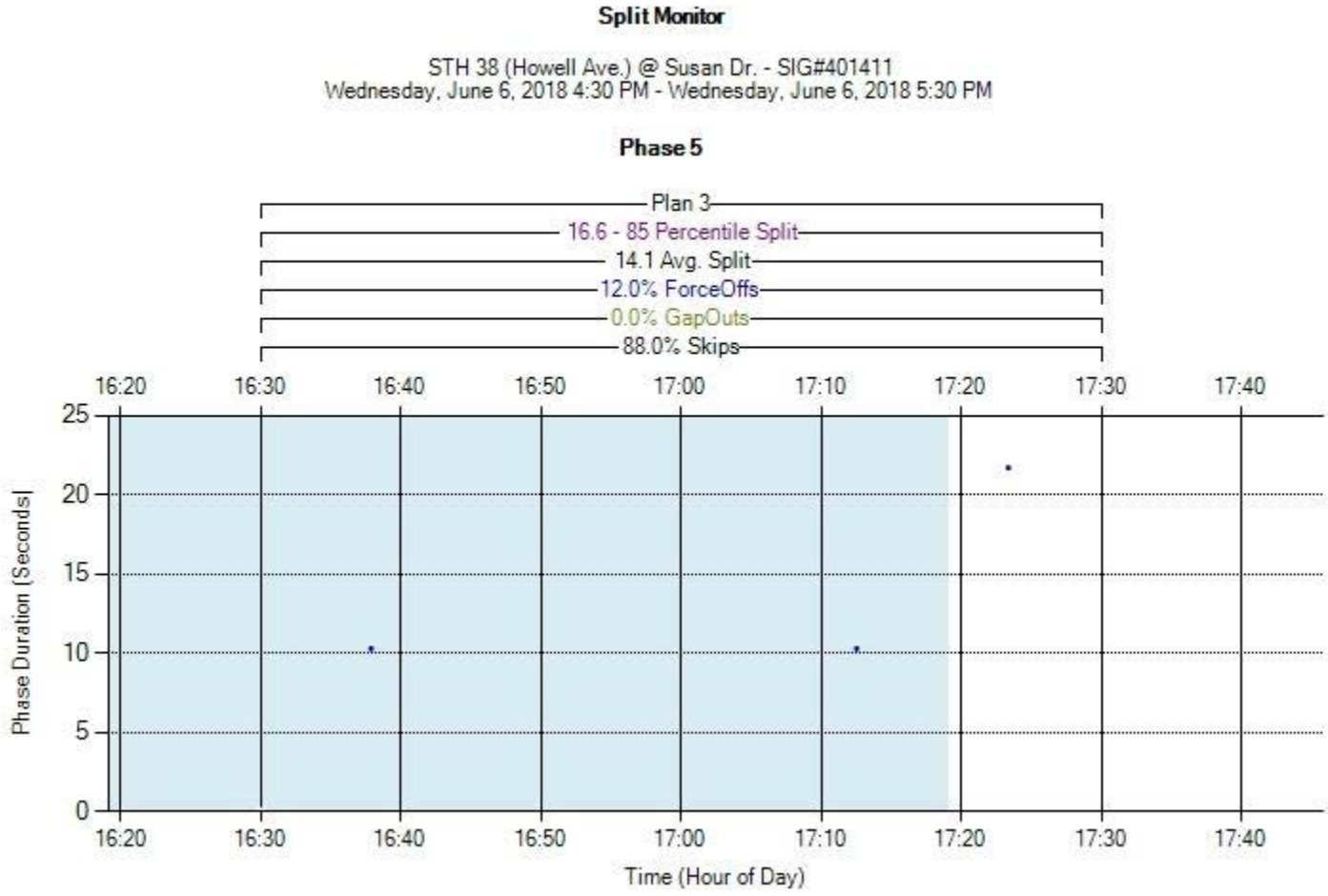

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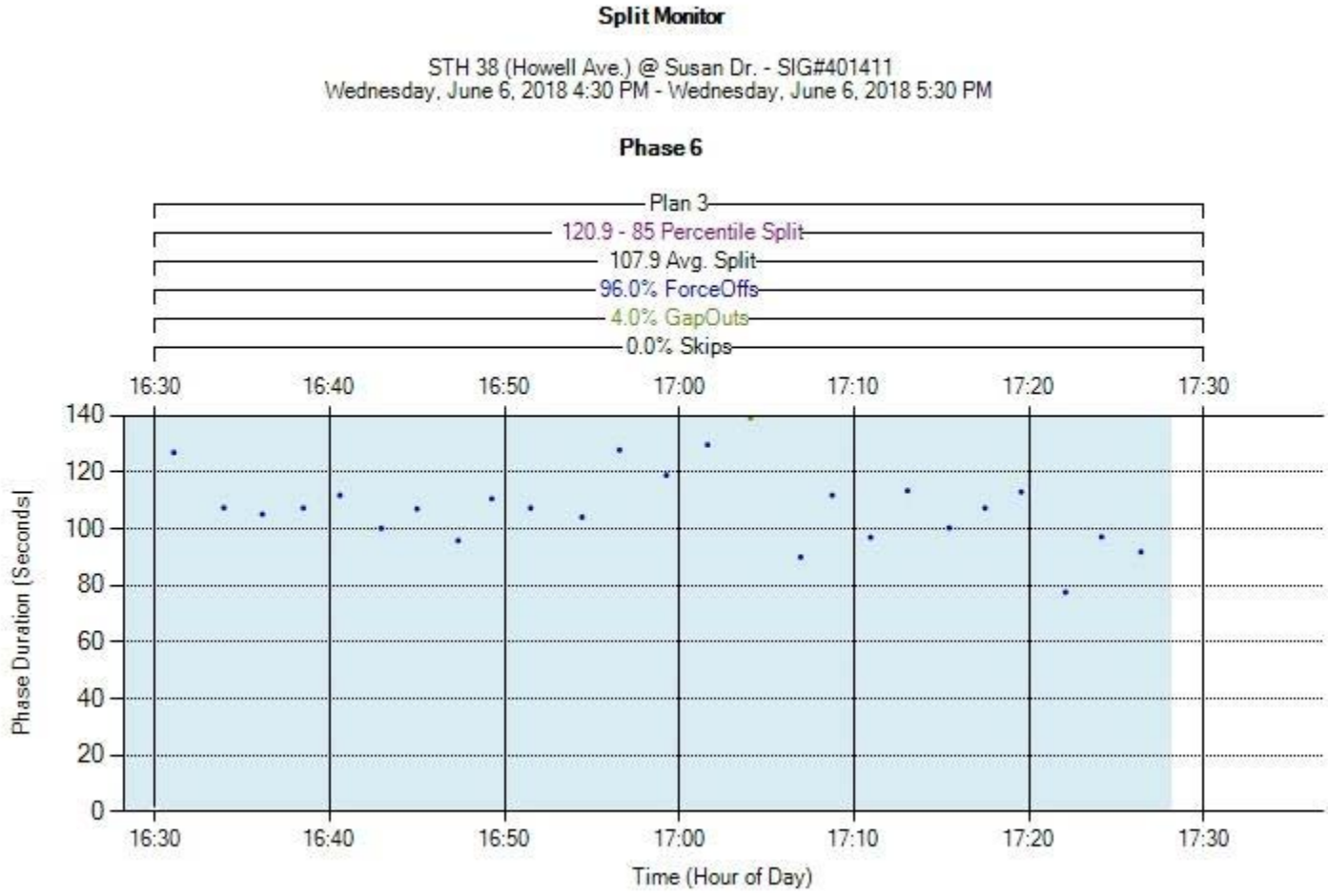

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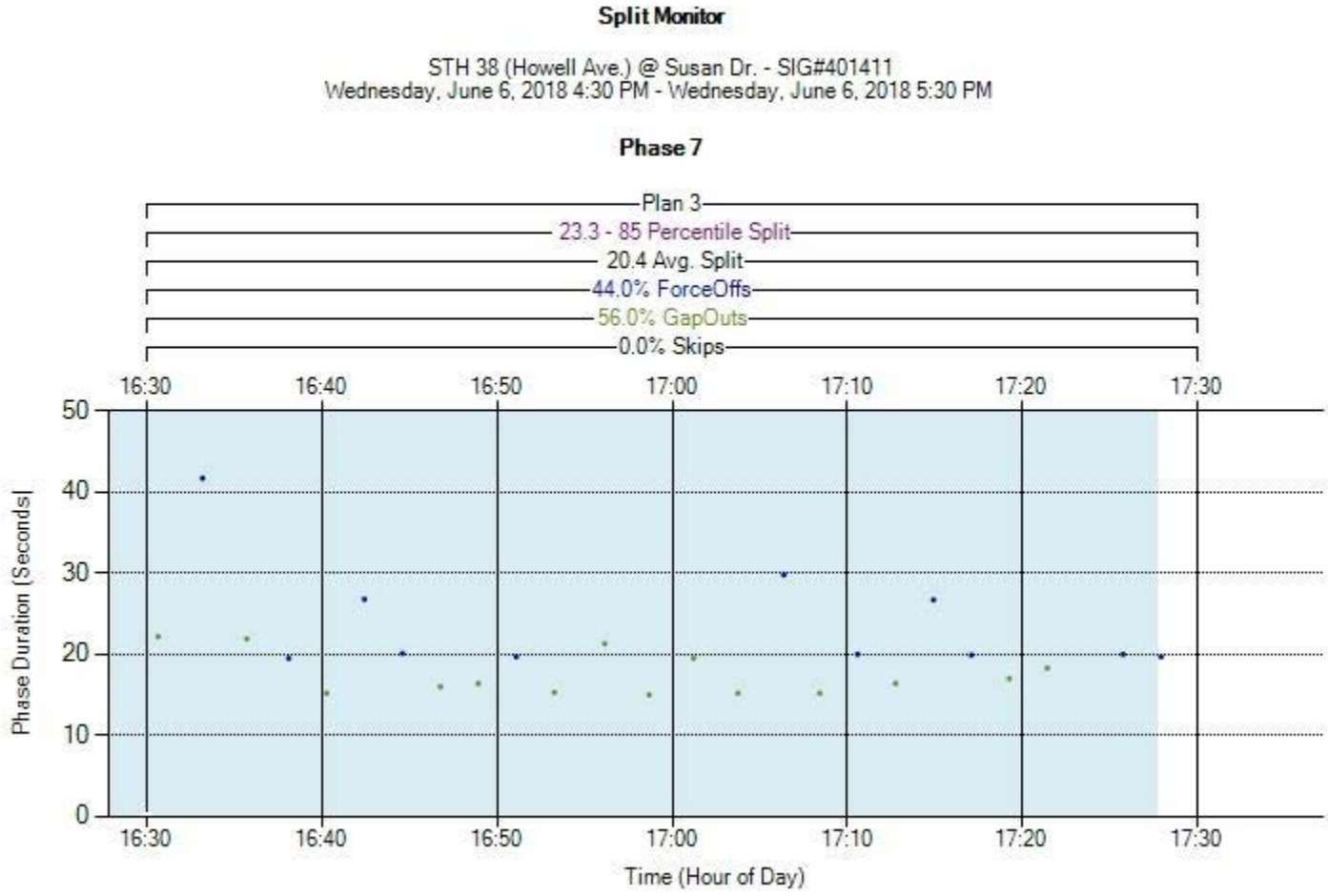

WIS 38 Corridor – STH 38 & Susan Dr.
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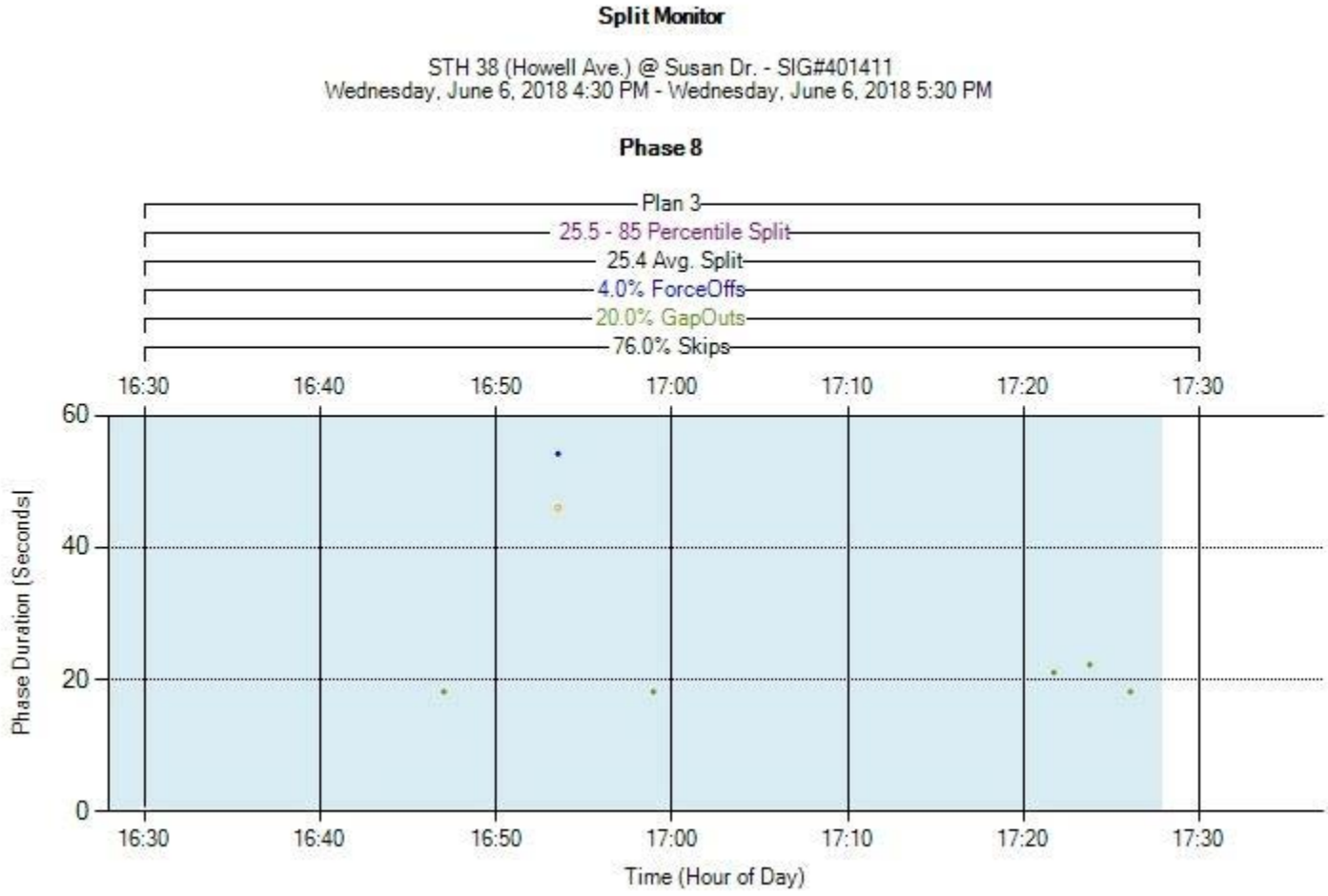
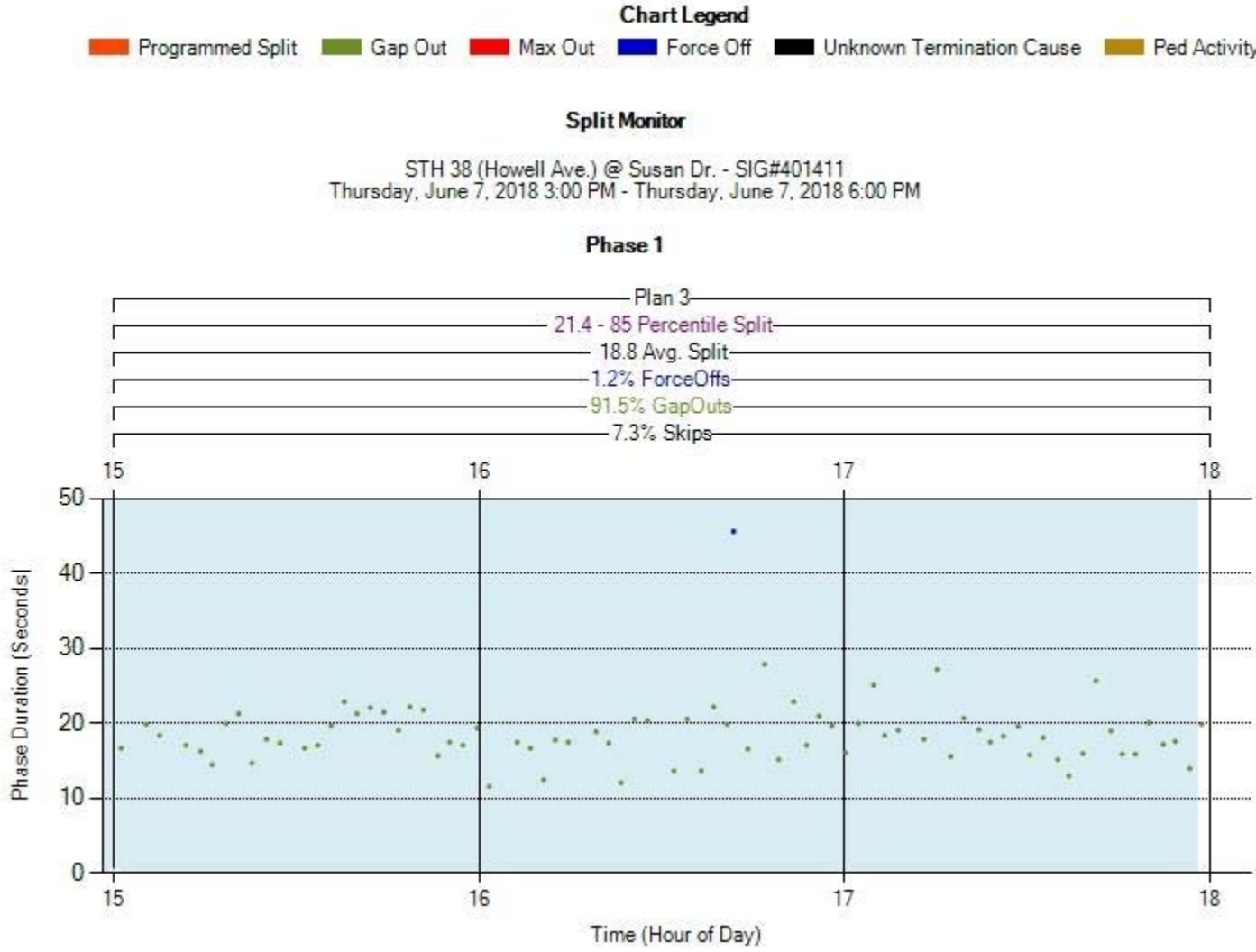
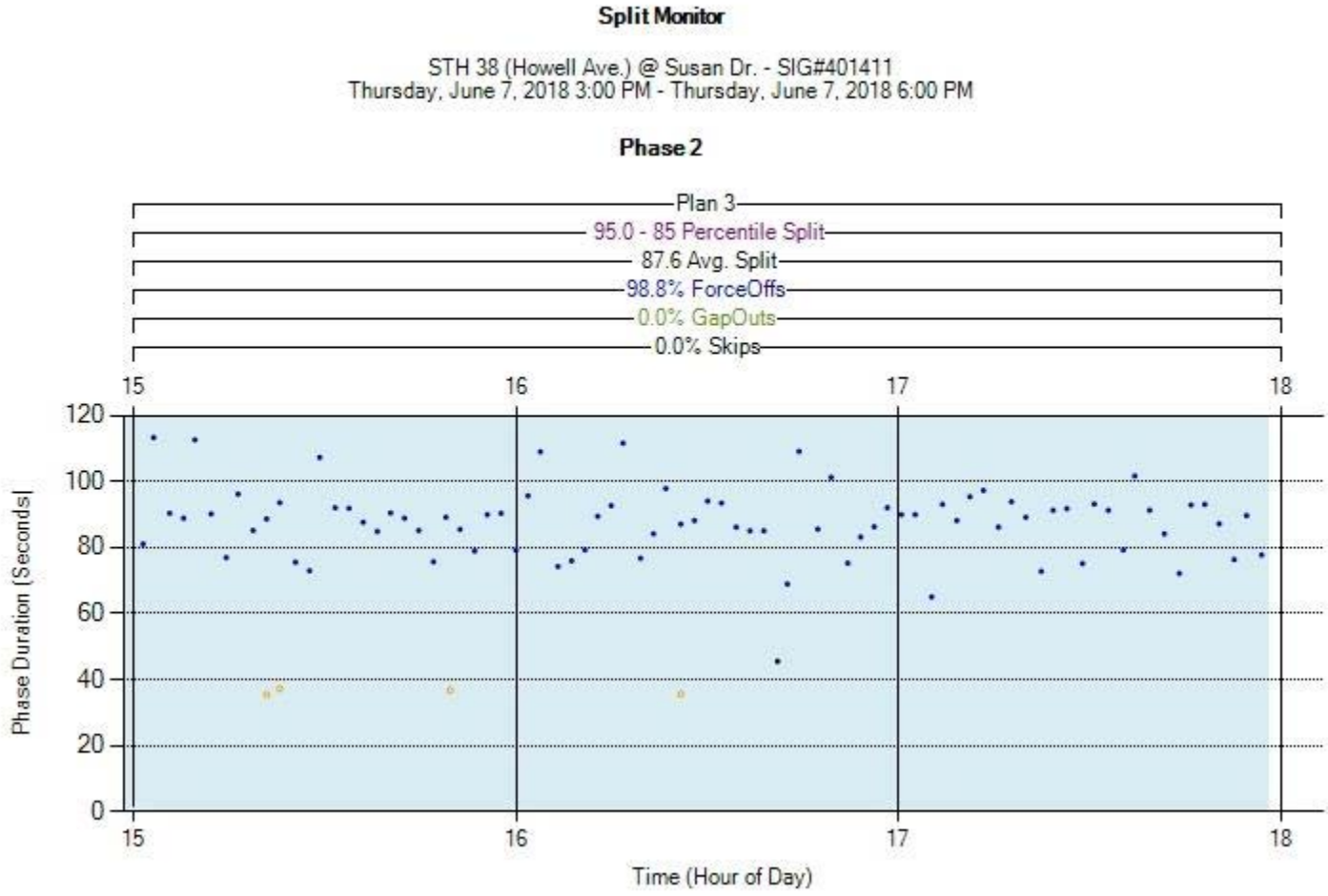


WIS 38 Corridor – STH 38 & Susan Dr.
Baseline Timings
6/7/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Susan Dr.
Baseline Timings
6/7/2018 – 3:00 PM – 6:00 PM



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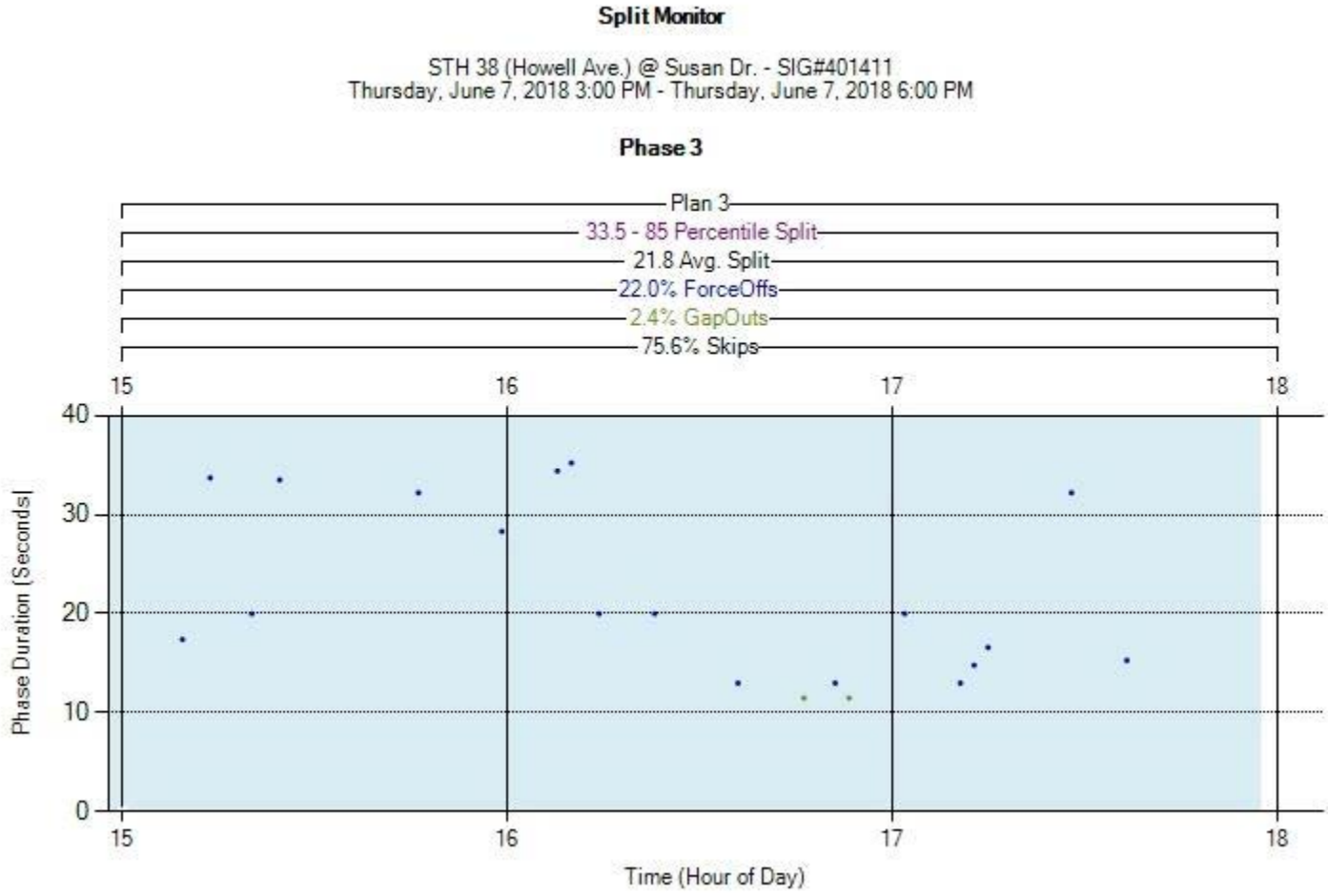

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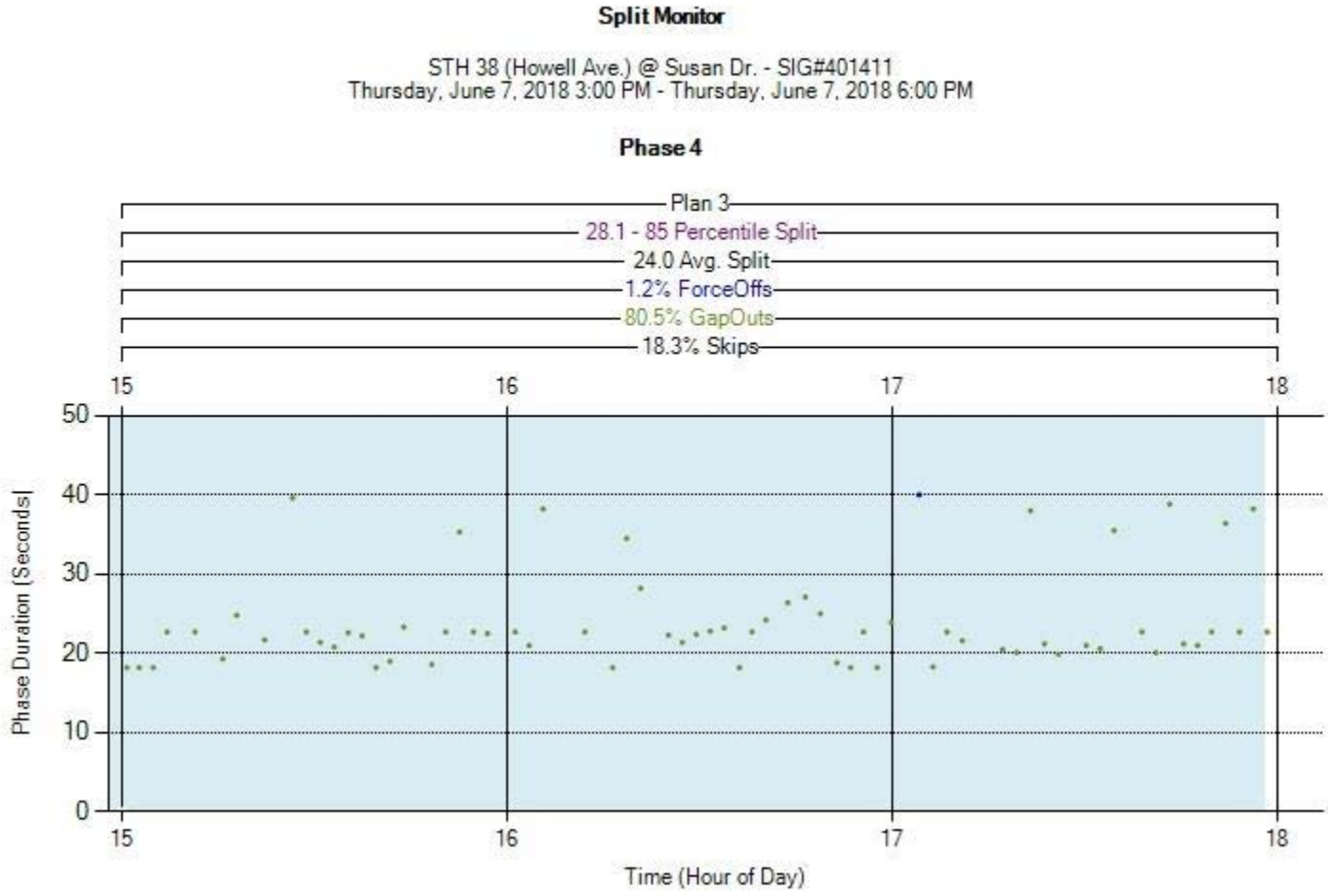

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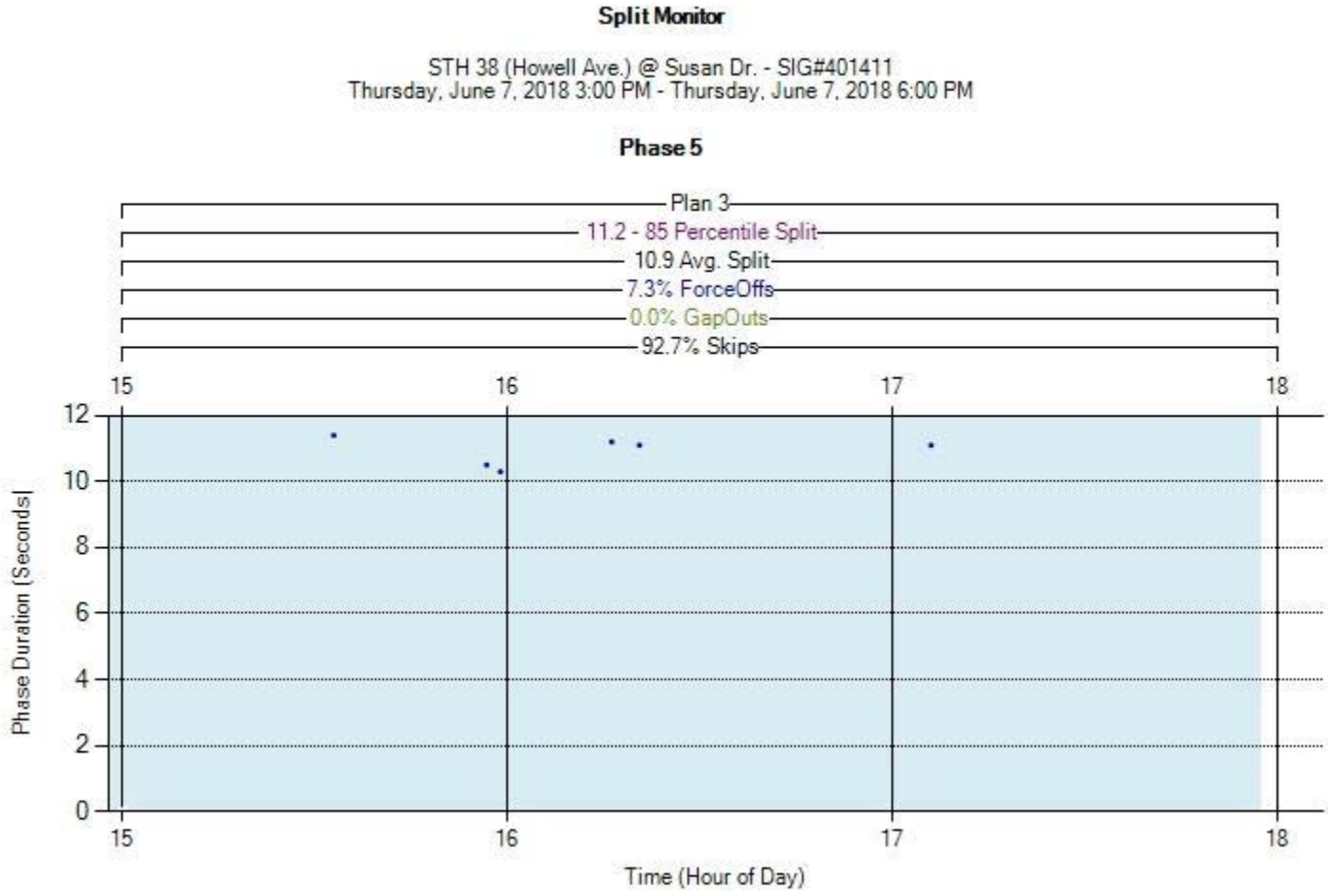

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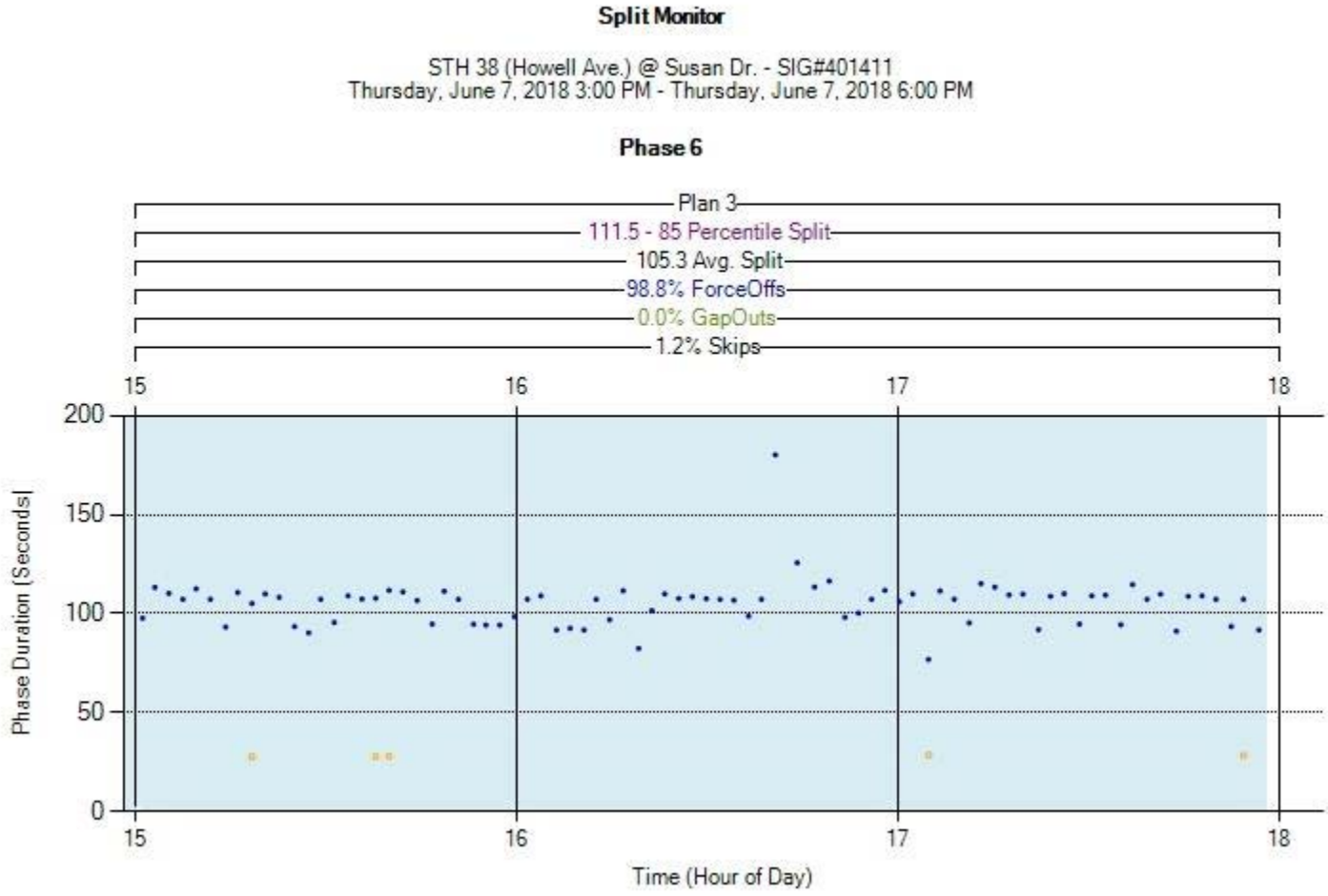

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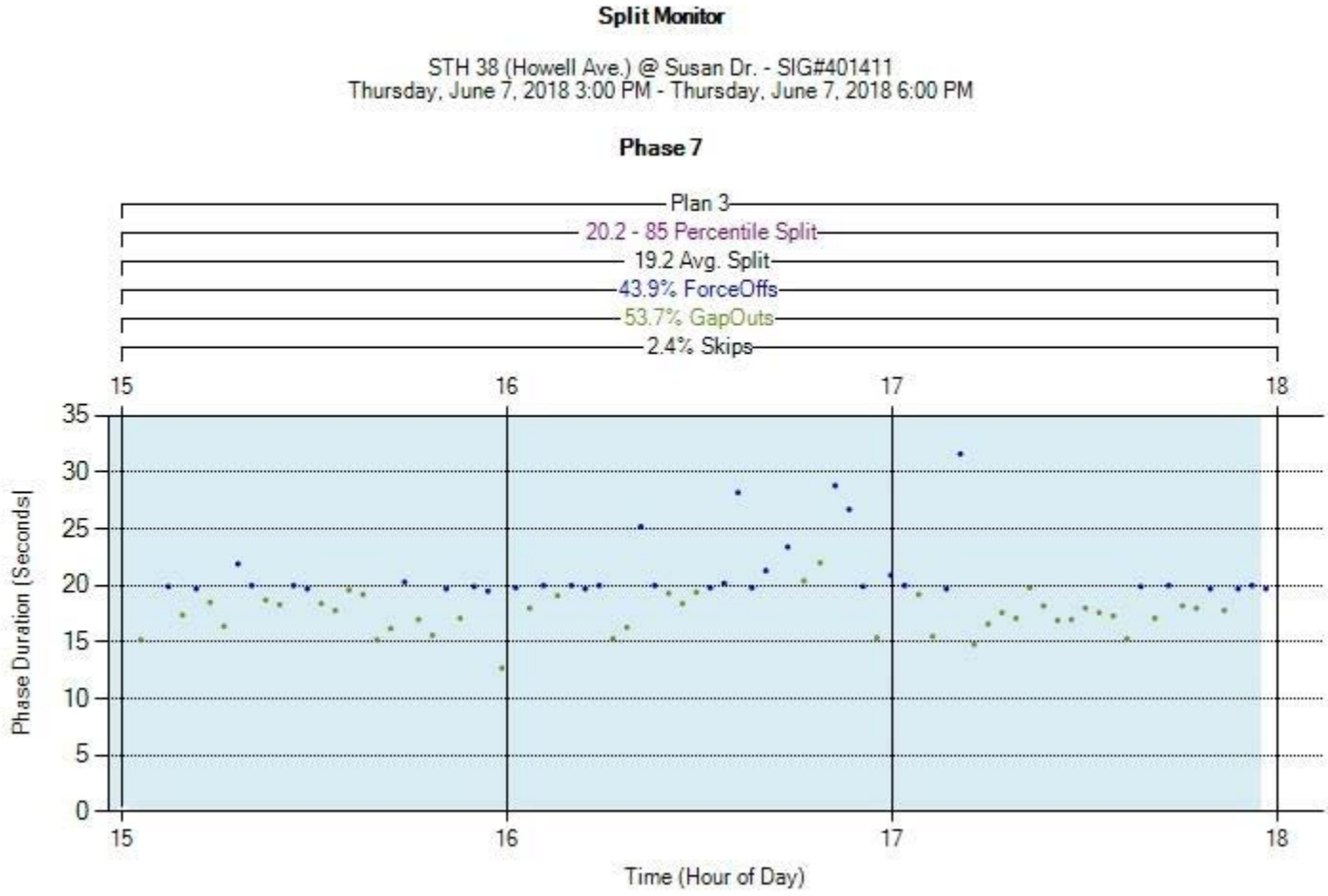

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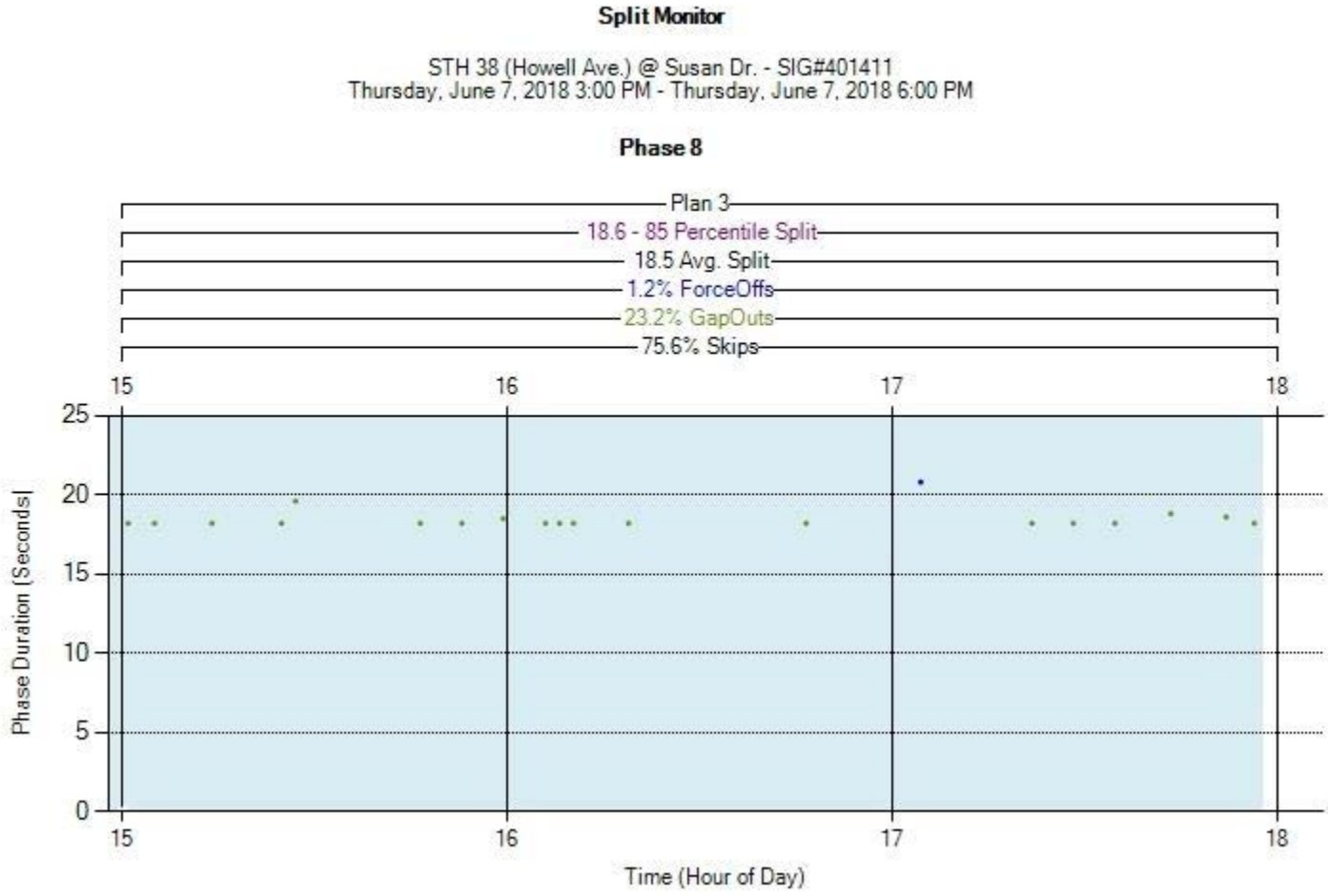
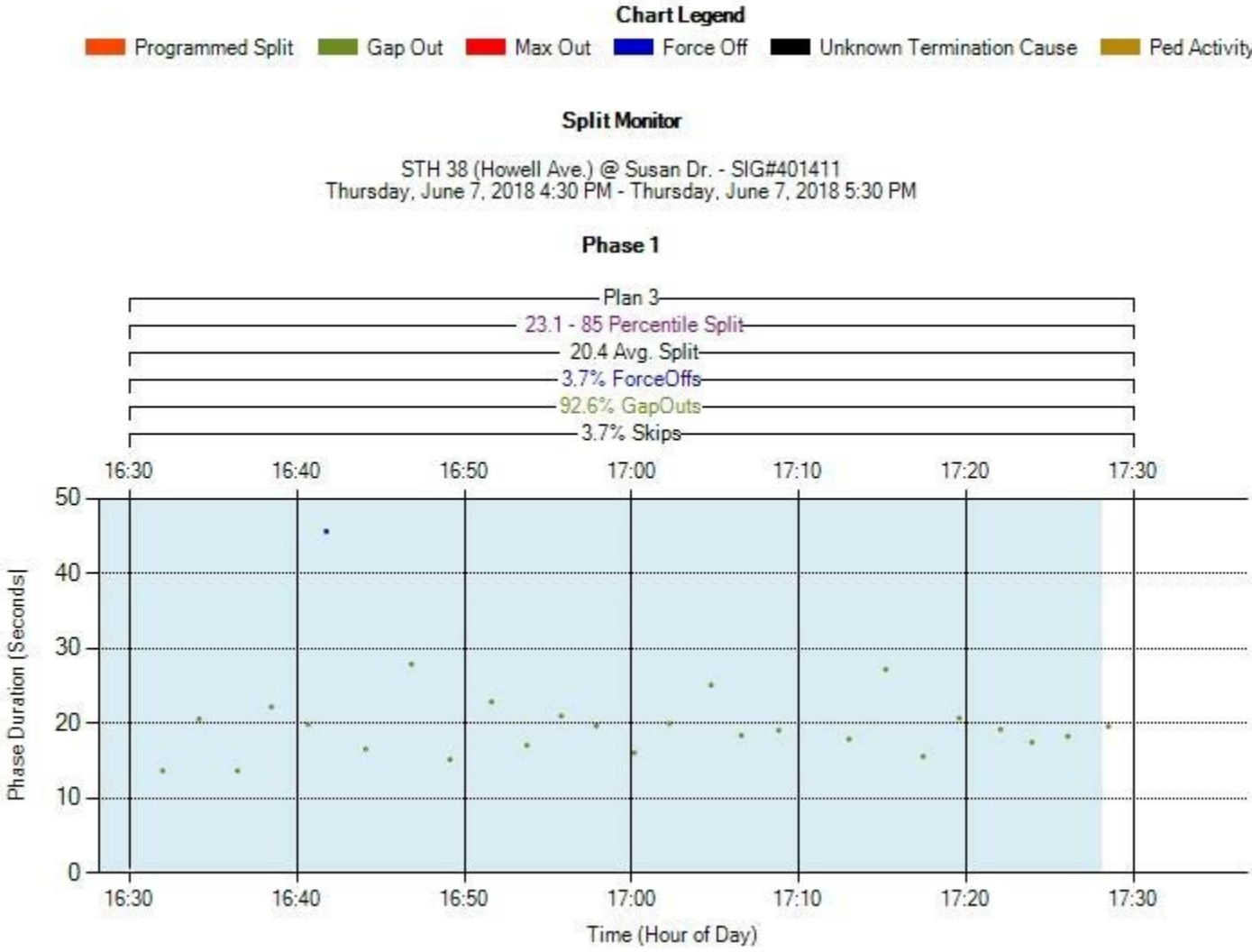
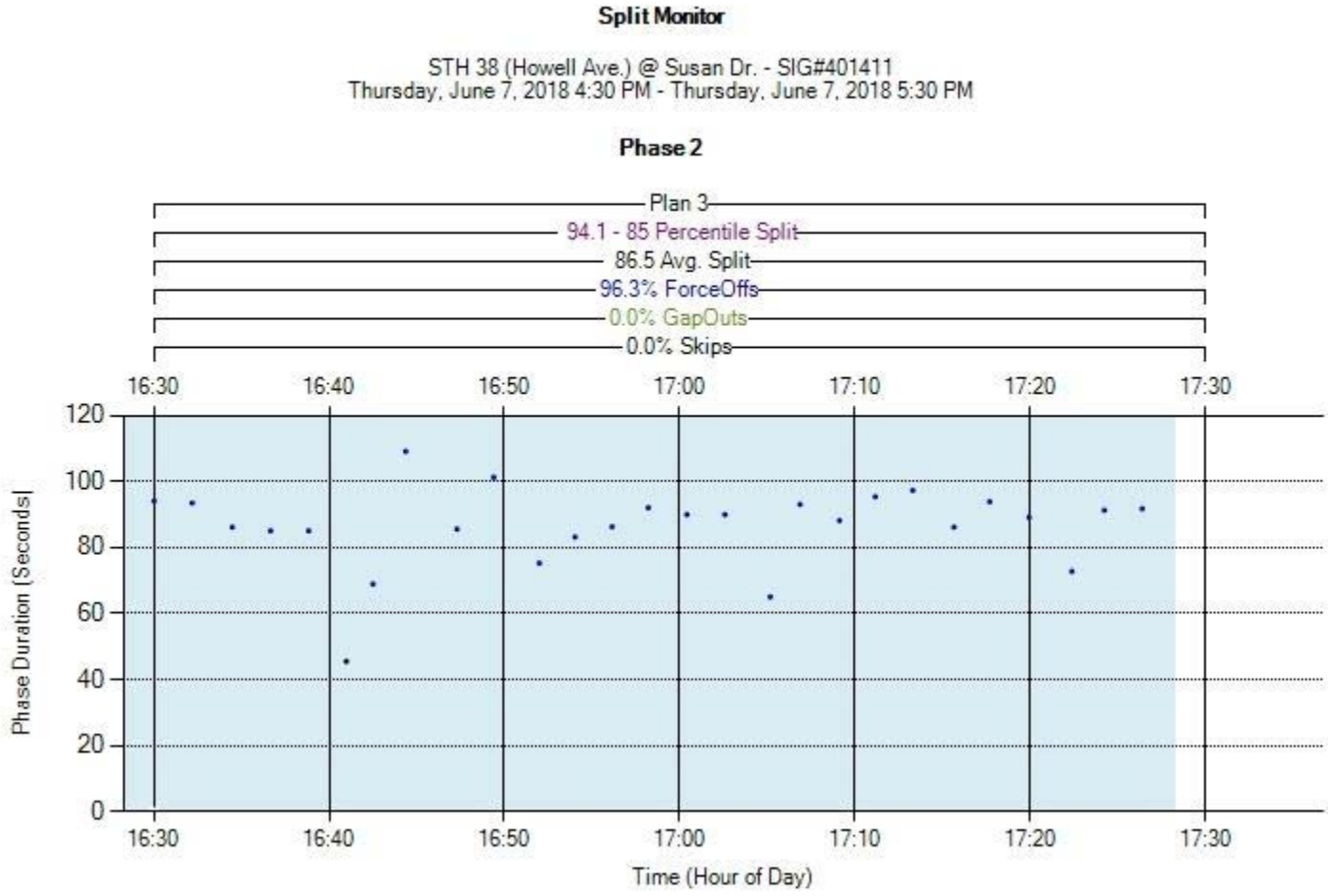


WIS 38 Corridor – STH 38 & Susan Dr.
Baseline Timings
6/7/2018 – 4:30 PM – 5:30 PM



WIS 38 Corridor – STH 38 & Susan Dr.
Baseline Timings
6/7/2018 – 4:30 PM – 5:30 PM



WIS 38 Corridor – STH 38 & Susan Dr.
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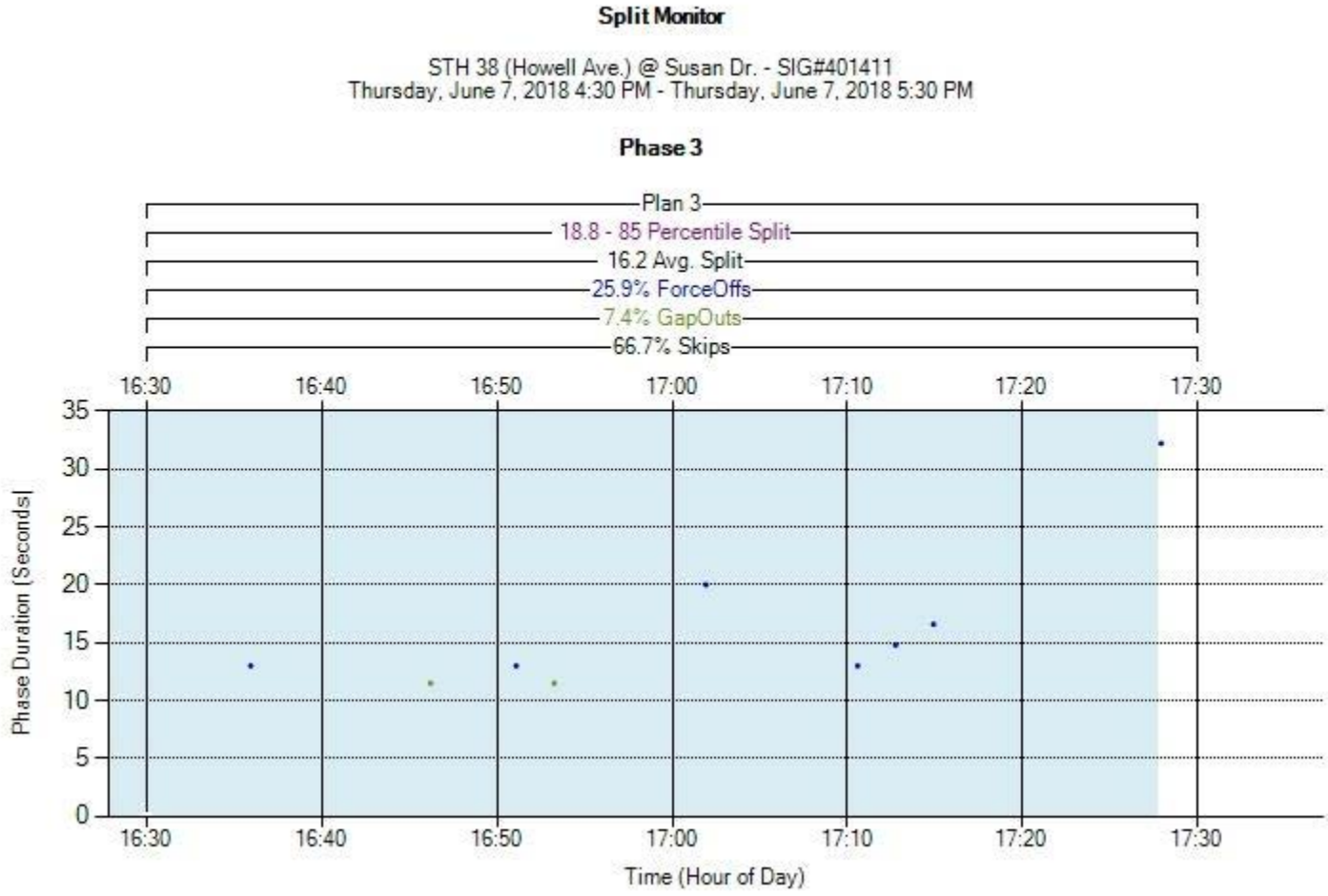
6/7/2018 – 4:30 PM – 5:30 PM



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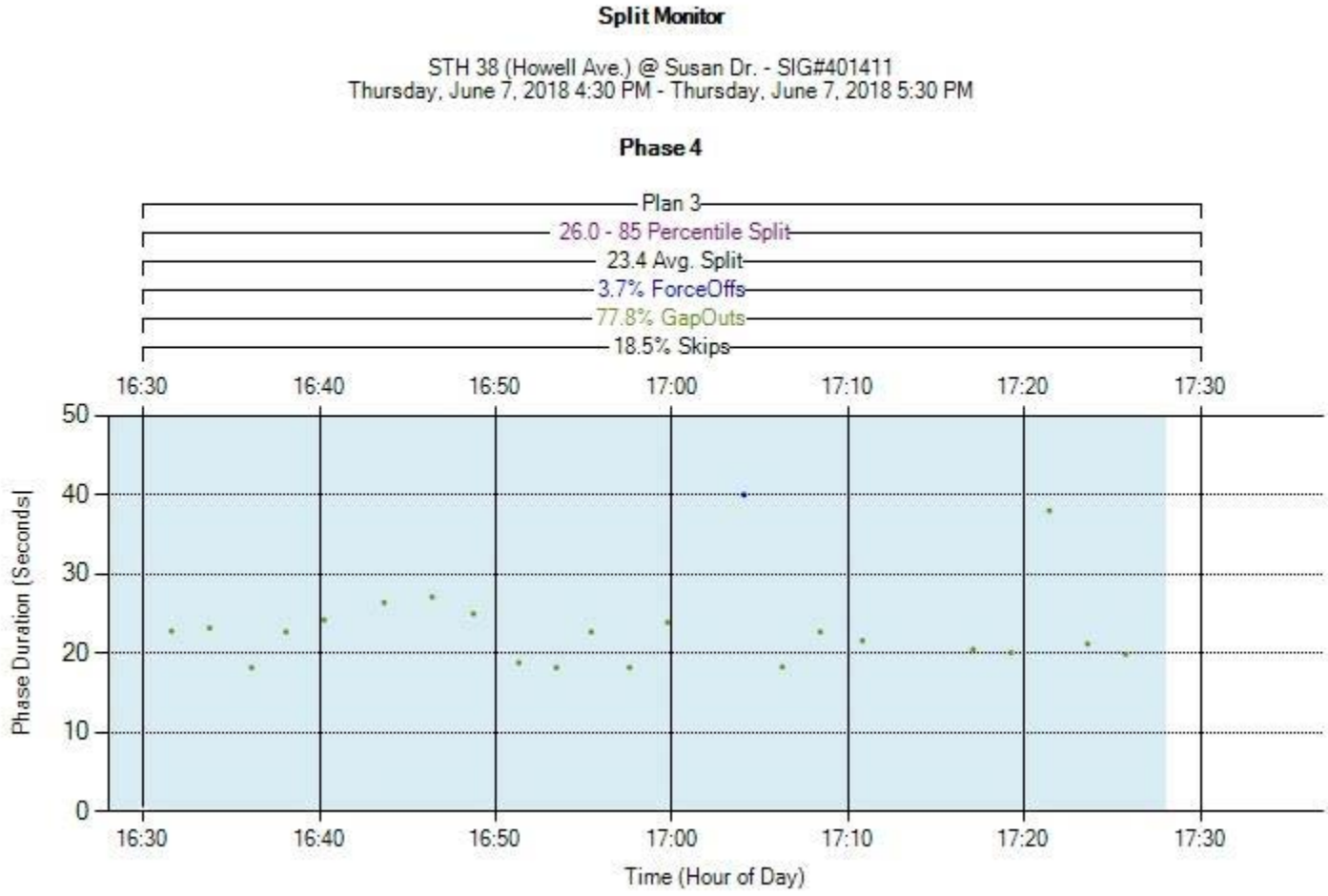

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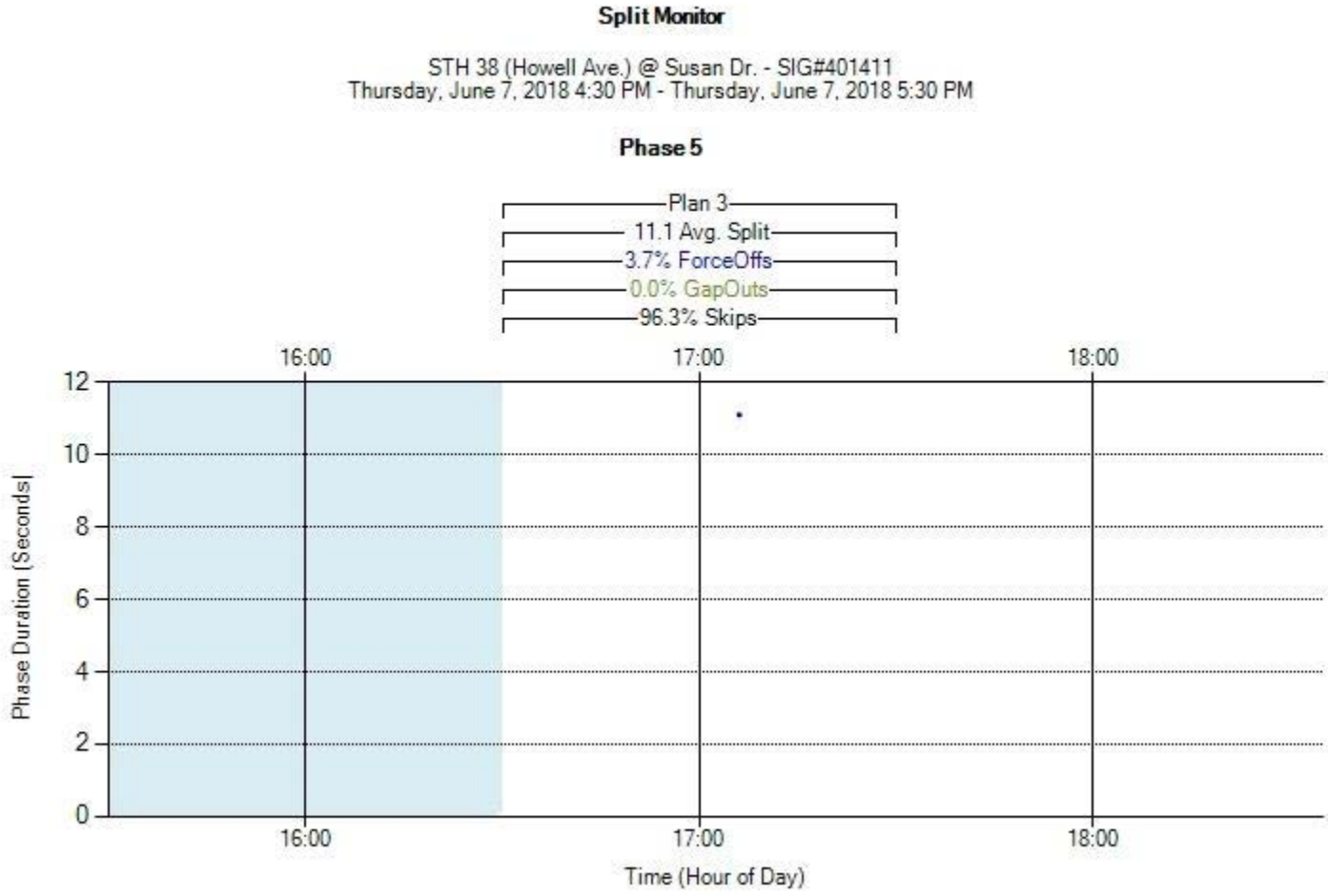

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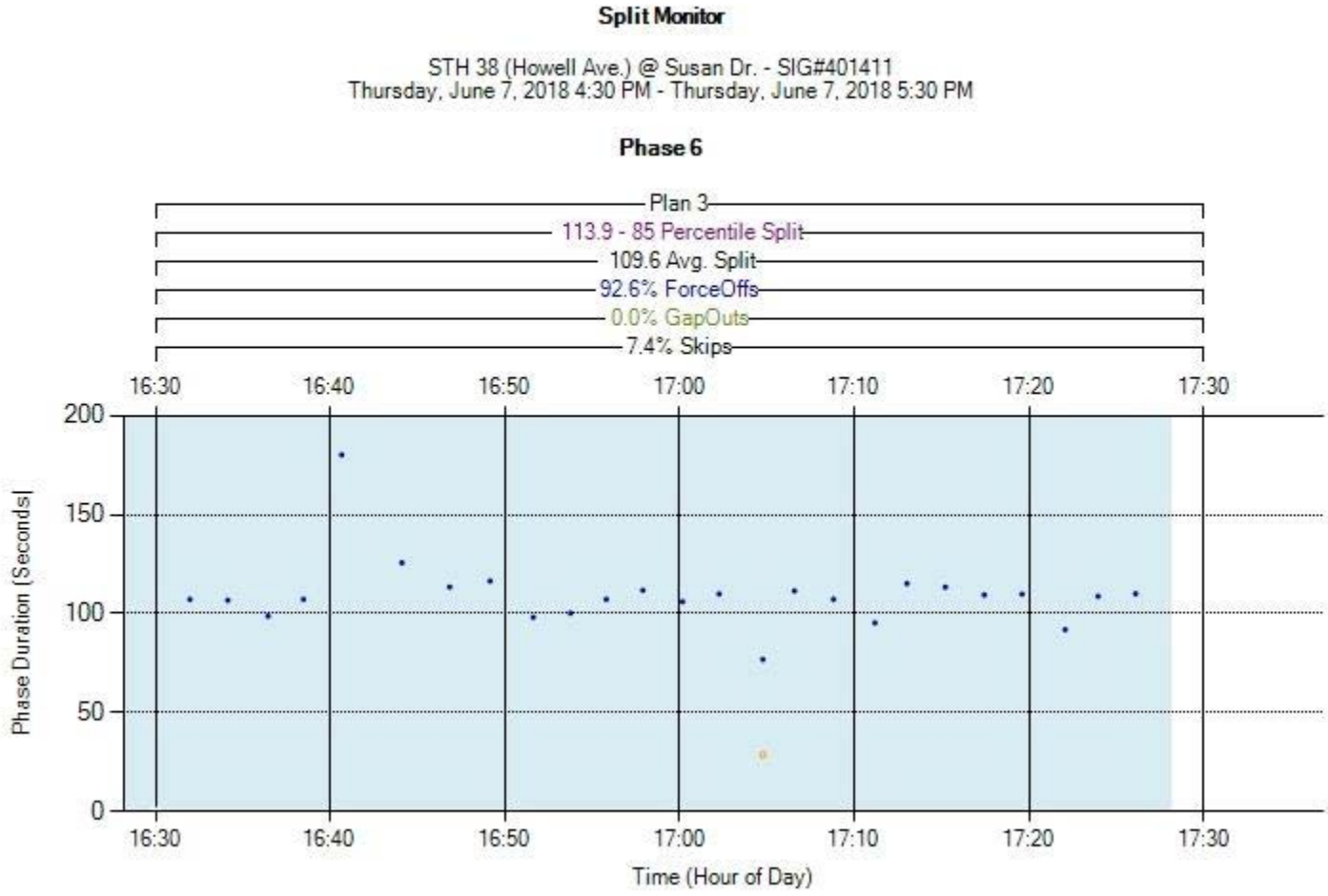
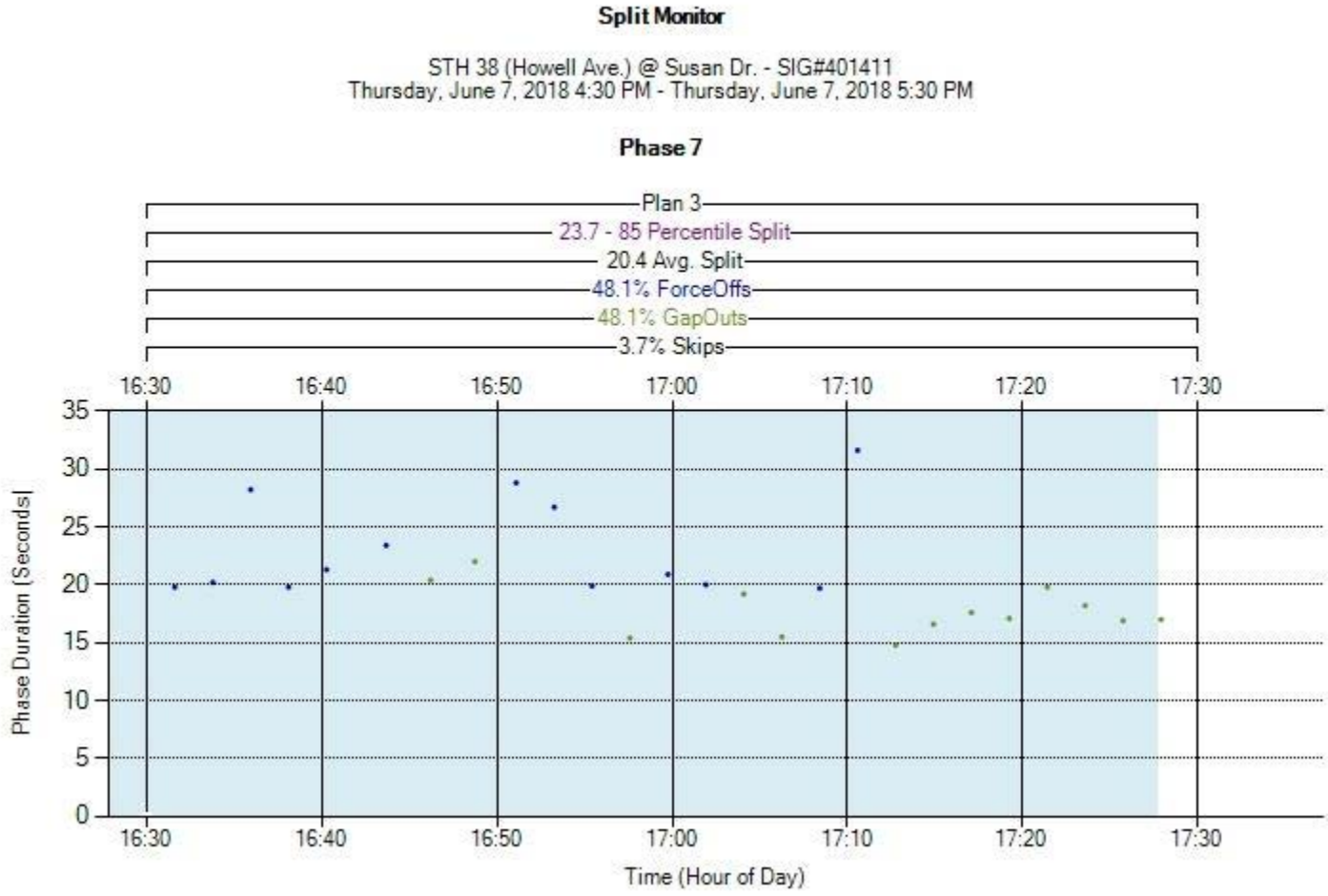
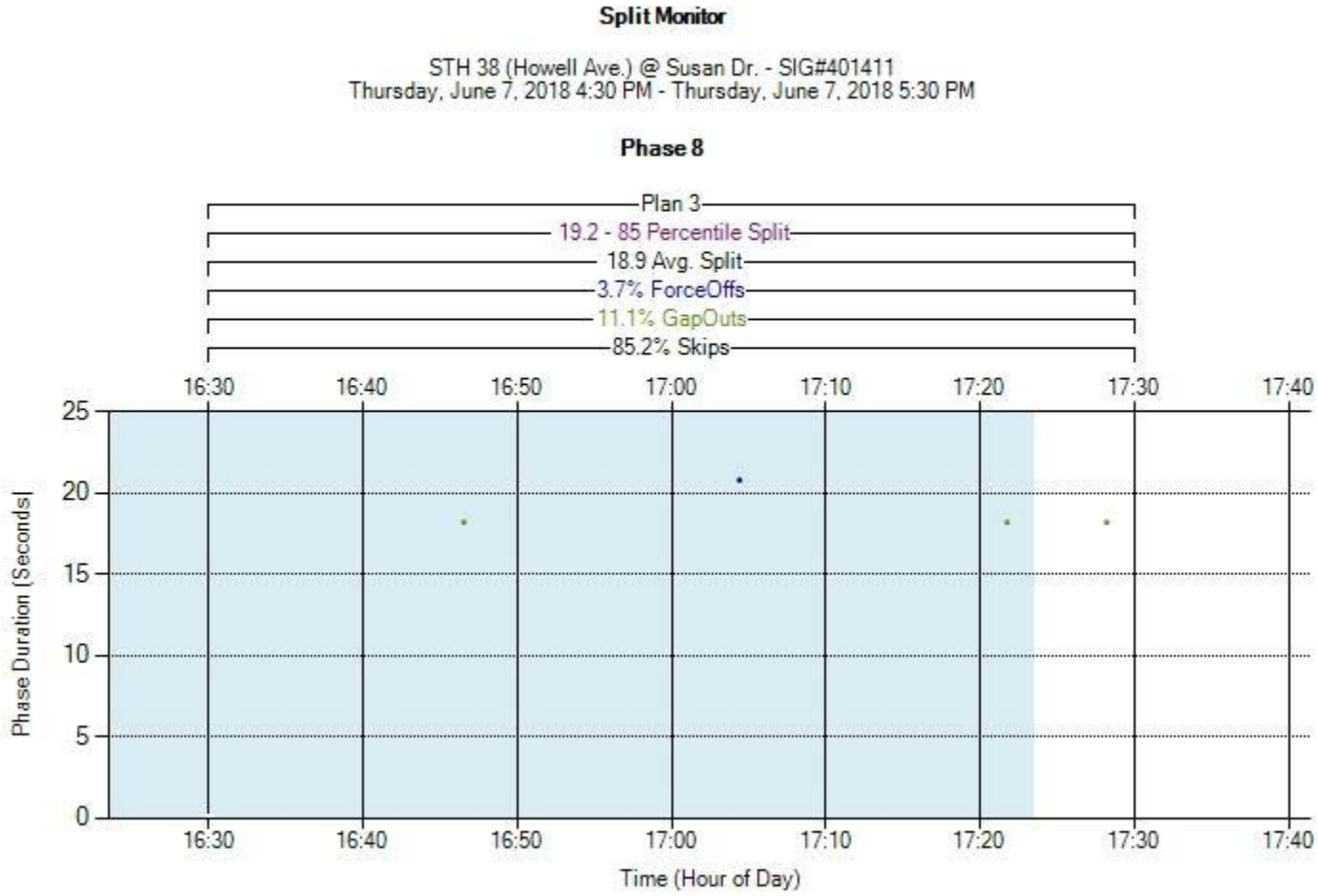
Baseline Timings
6/7/2018 – 4:30 PM – 5:30 PM



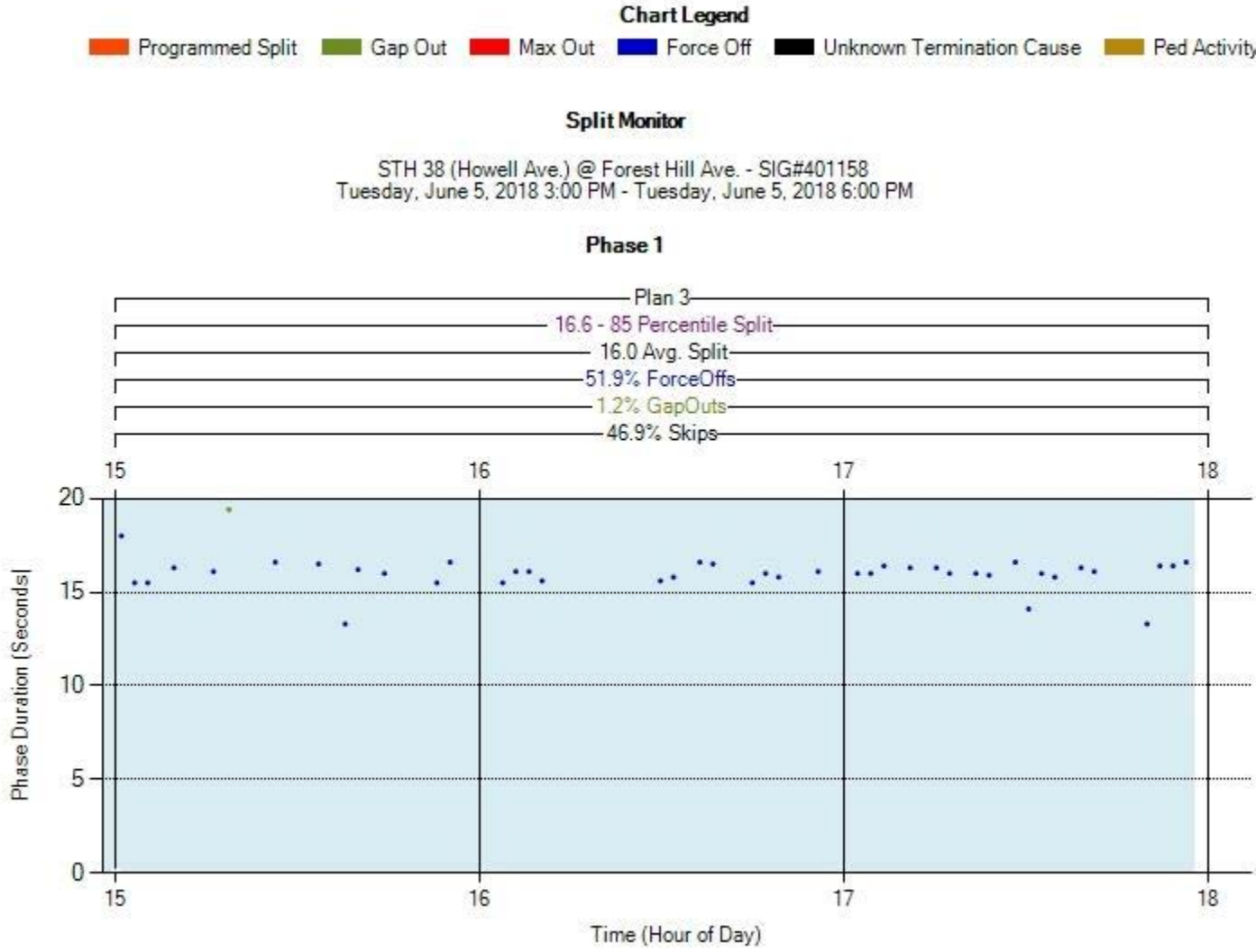
WIS 38 Corridor – STH 38 & Susan Dr.
Baseline Timings
6/7/2018 – 4:30 PM – 5:30 PM



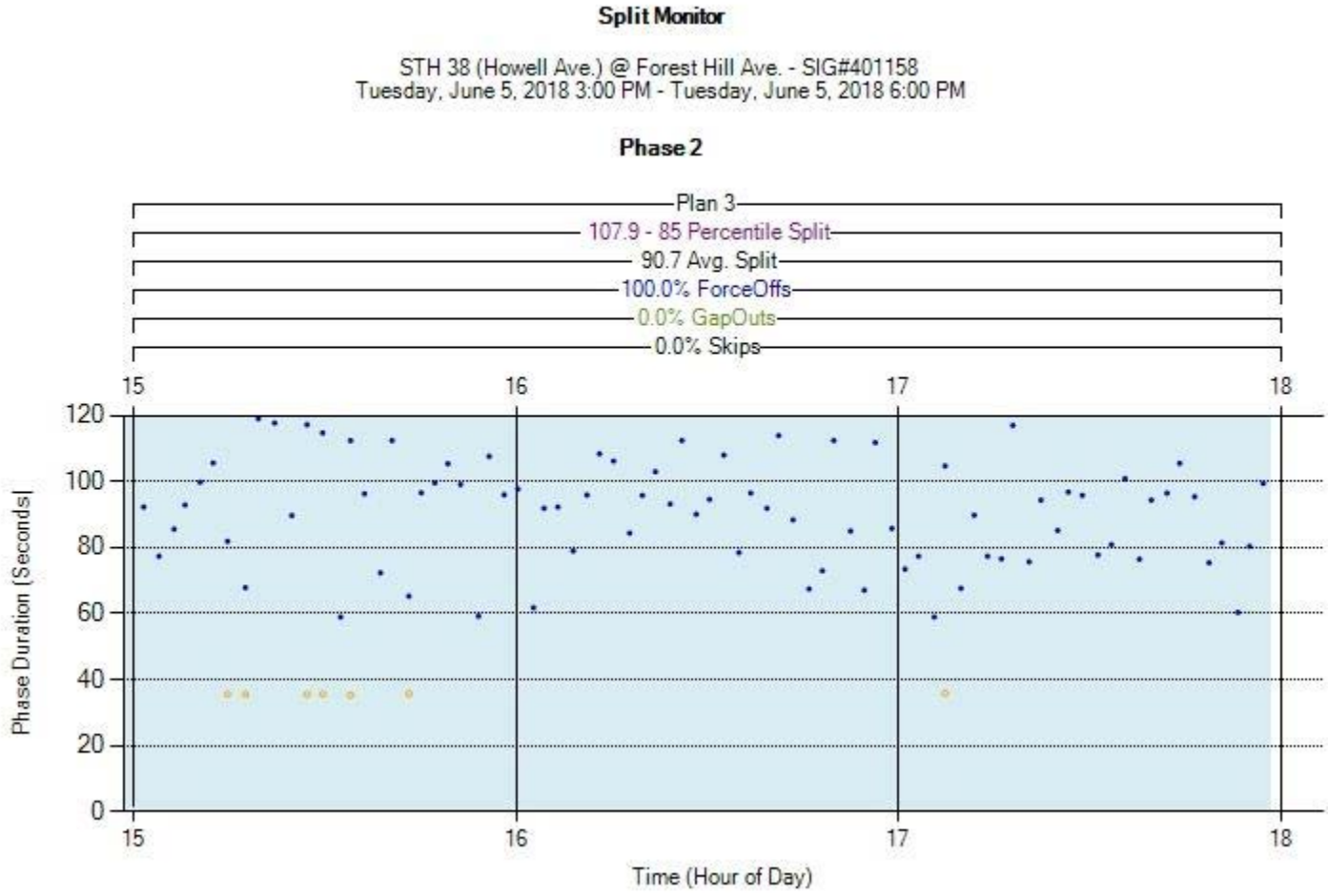
WIS 38 Corridor – STH 38 & Susan Dr.
Baseline Timings
6/7/2018 – 4:30 PM – 5:30 PM



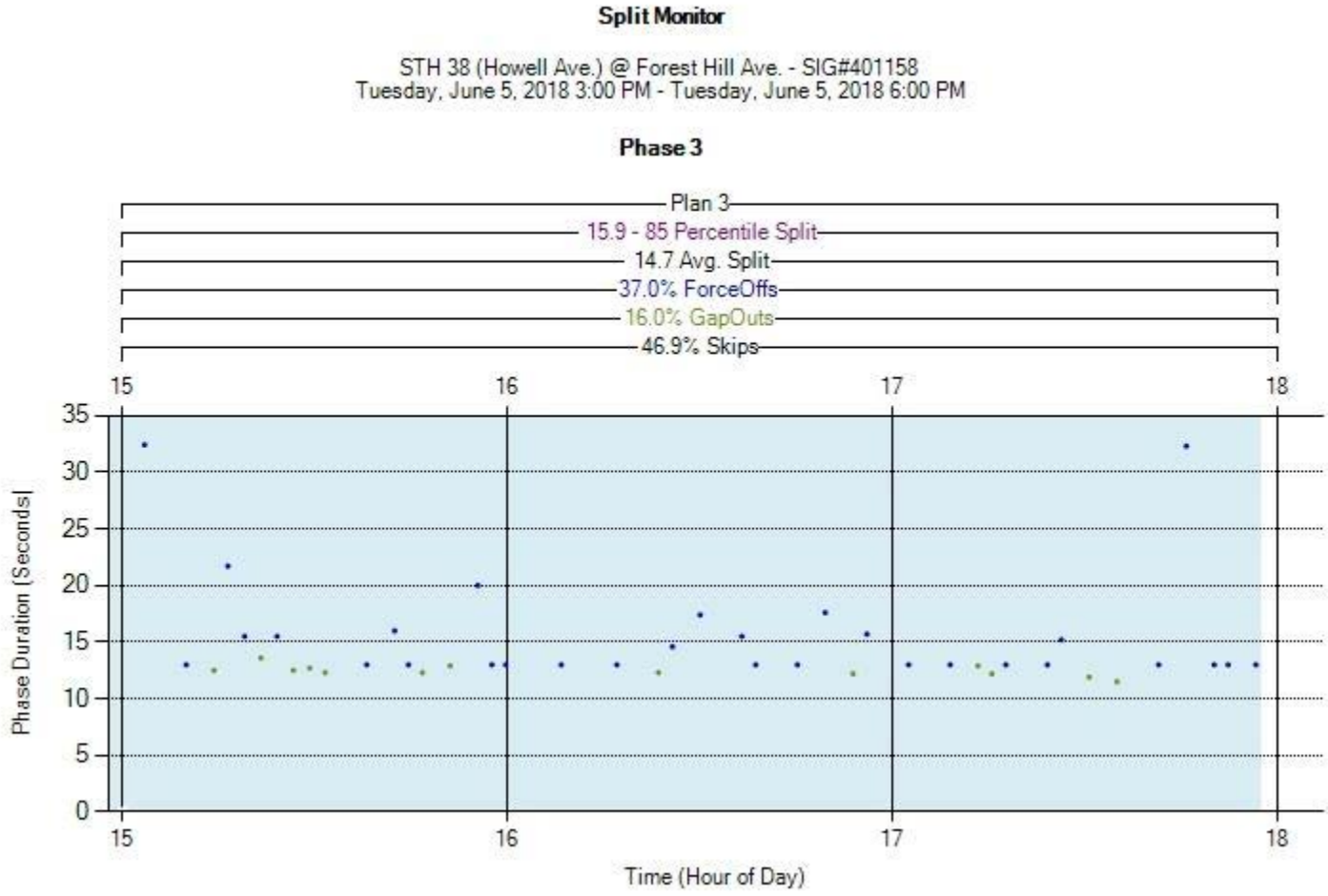
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



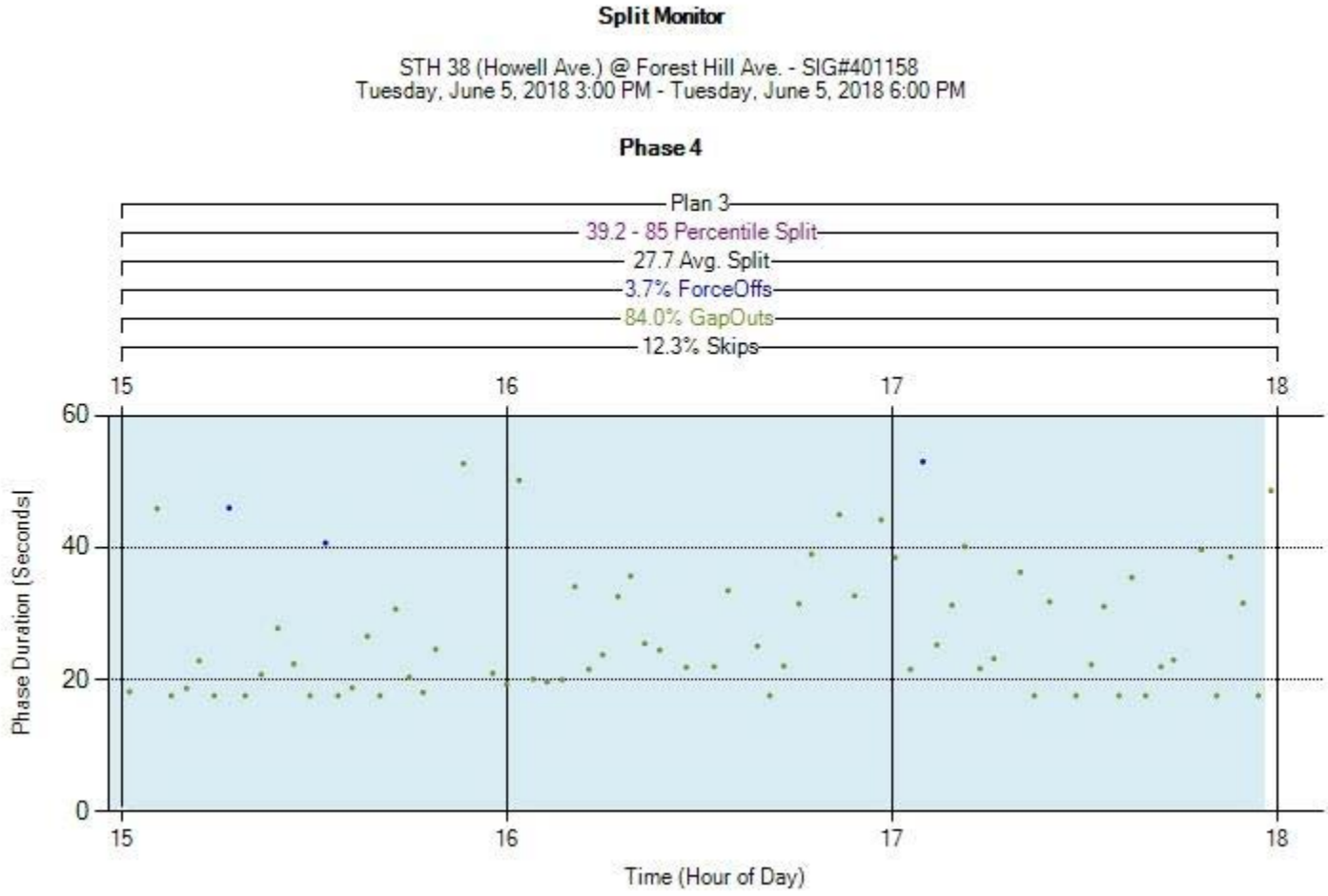
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



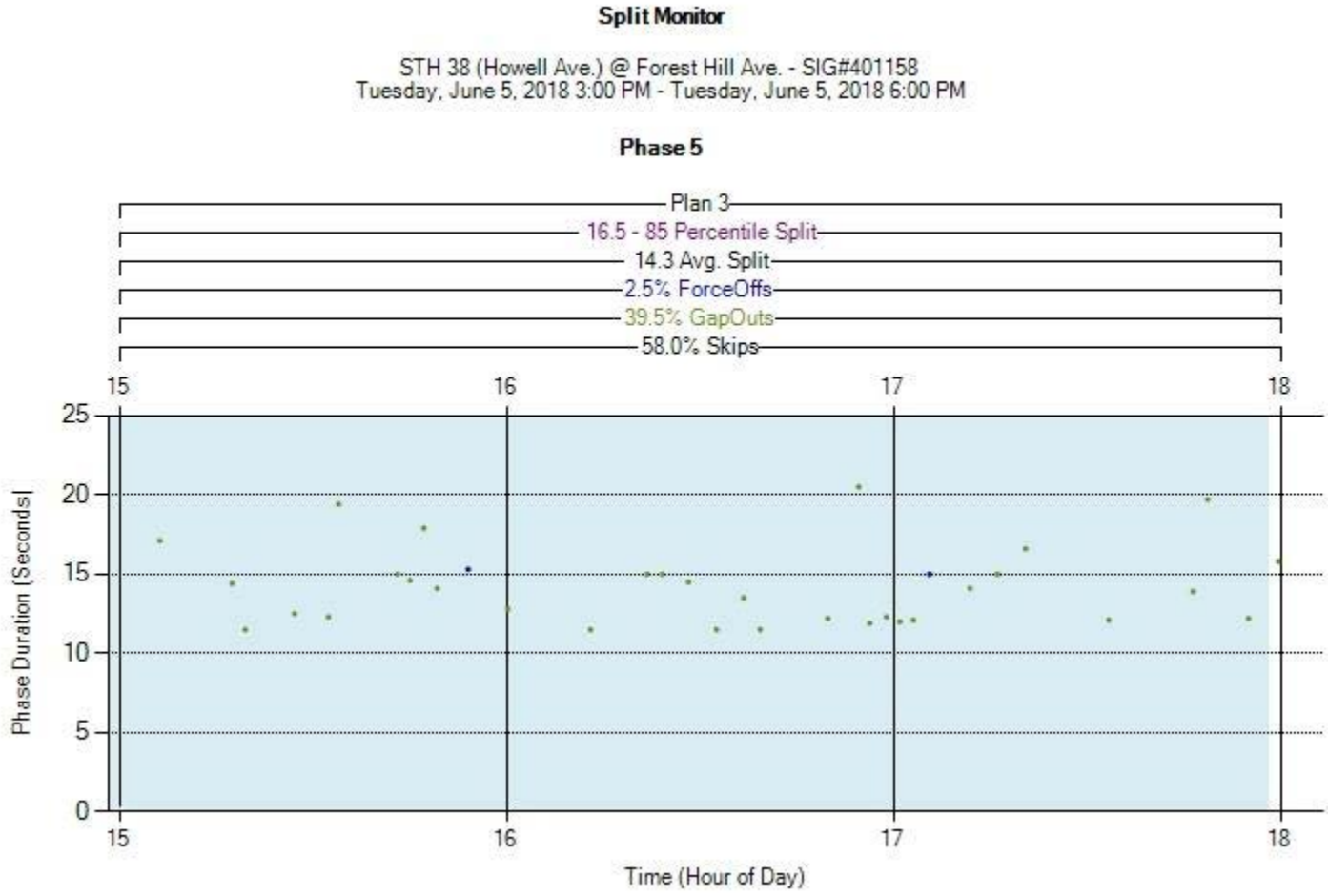
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



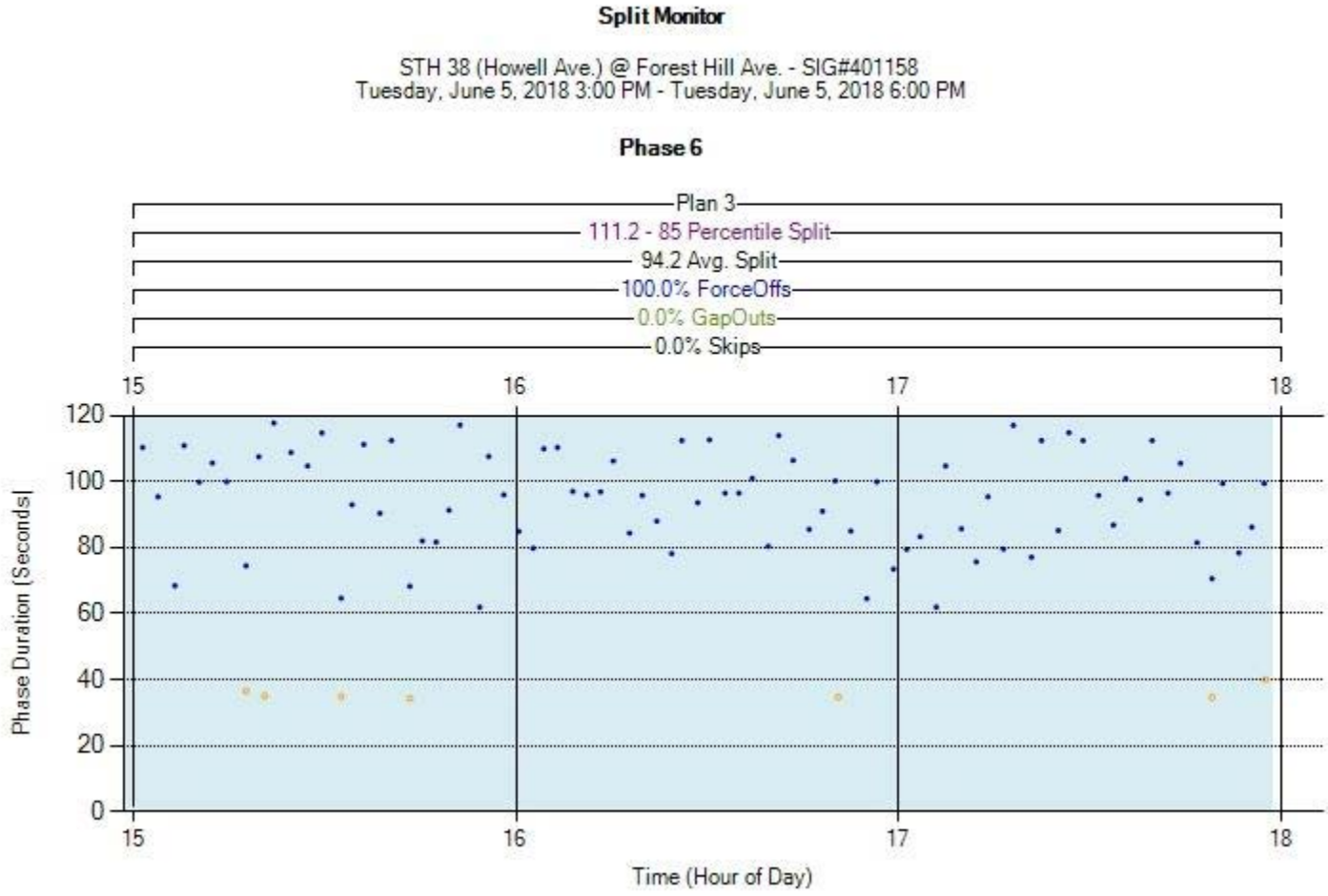
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



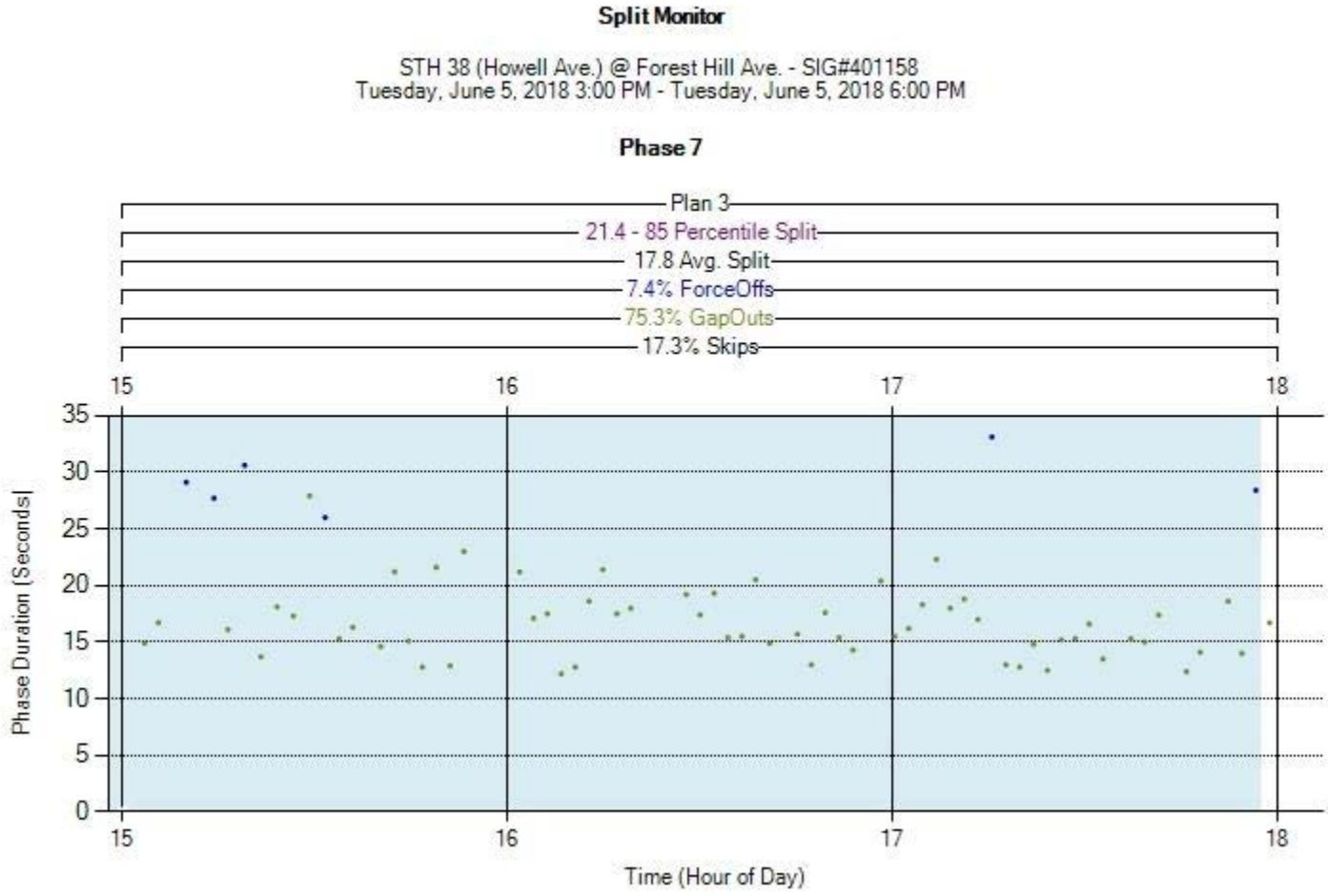
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



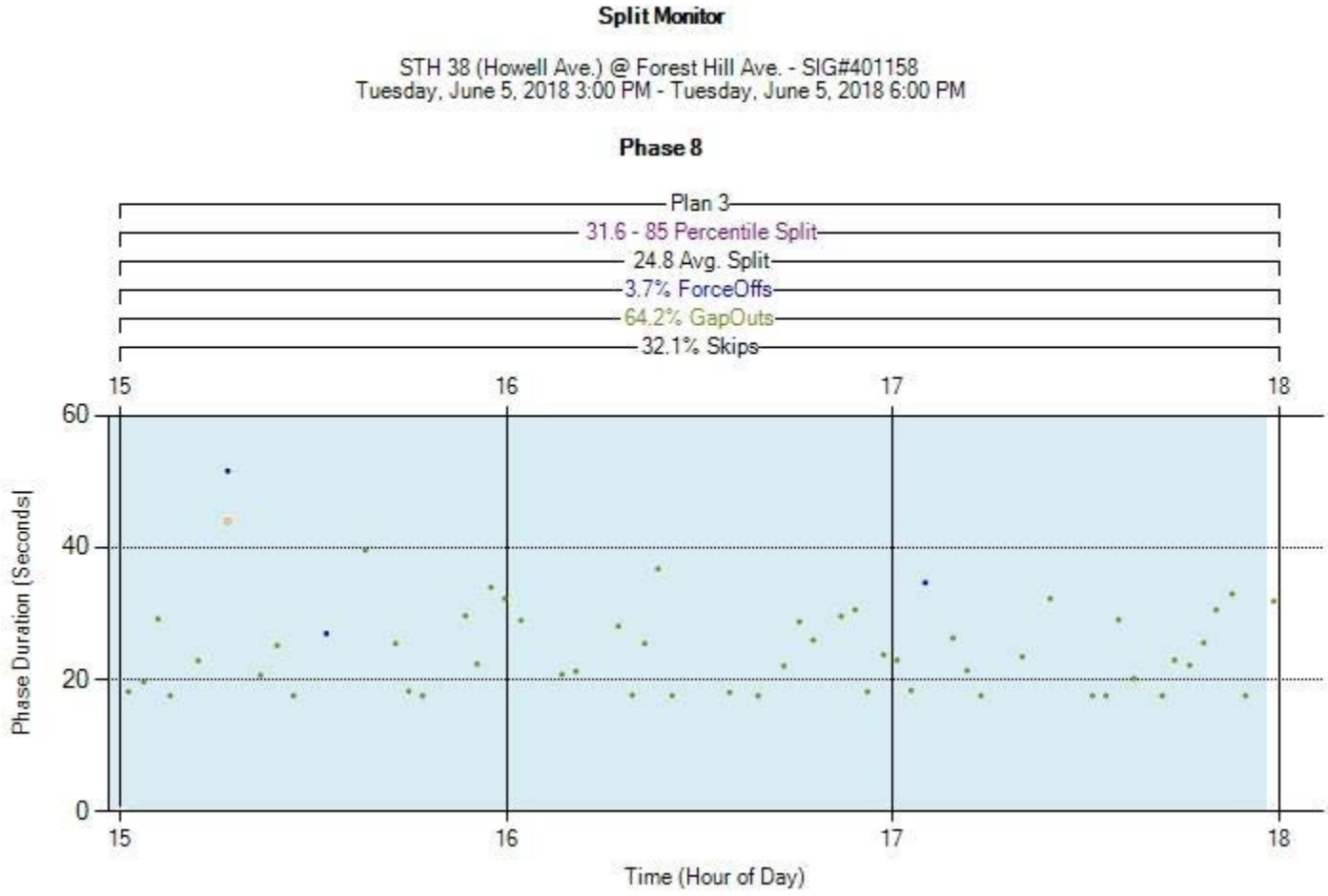
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



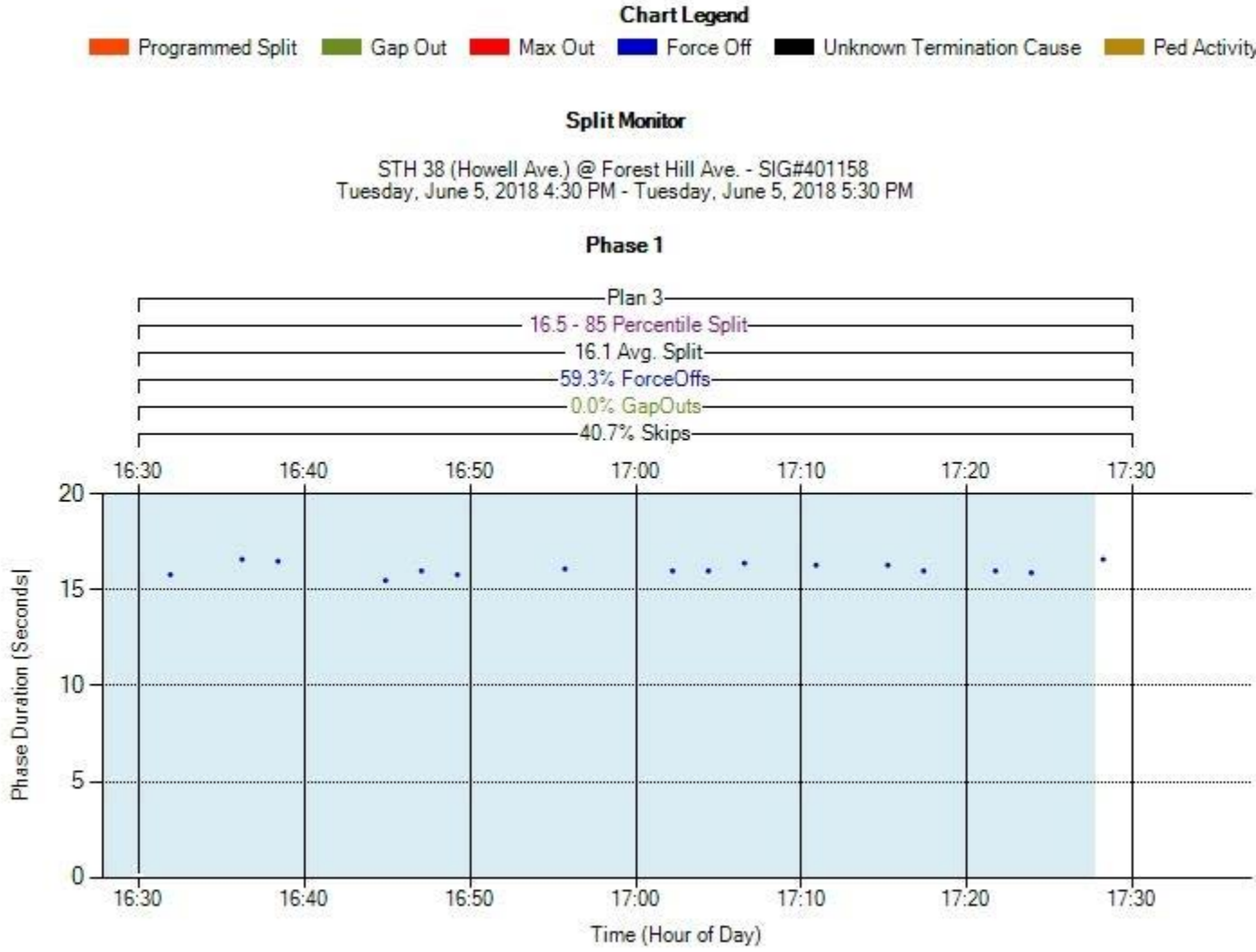
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



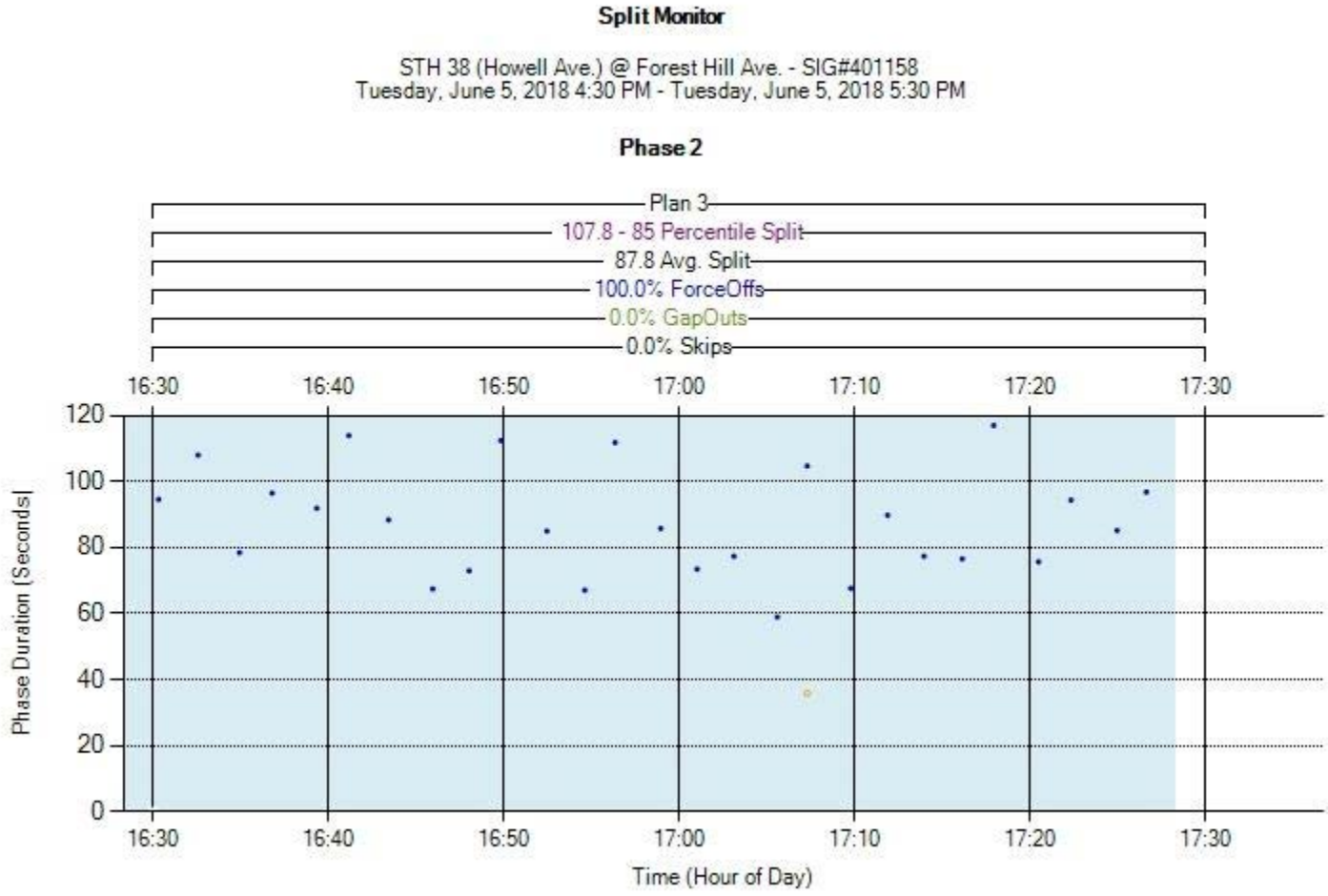
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



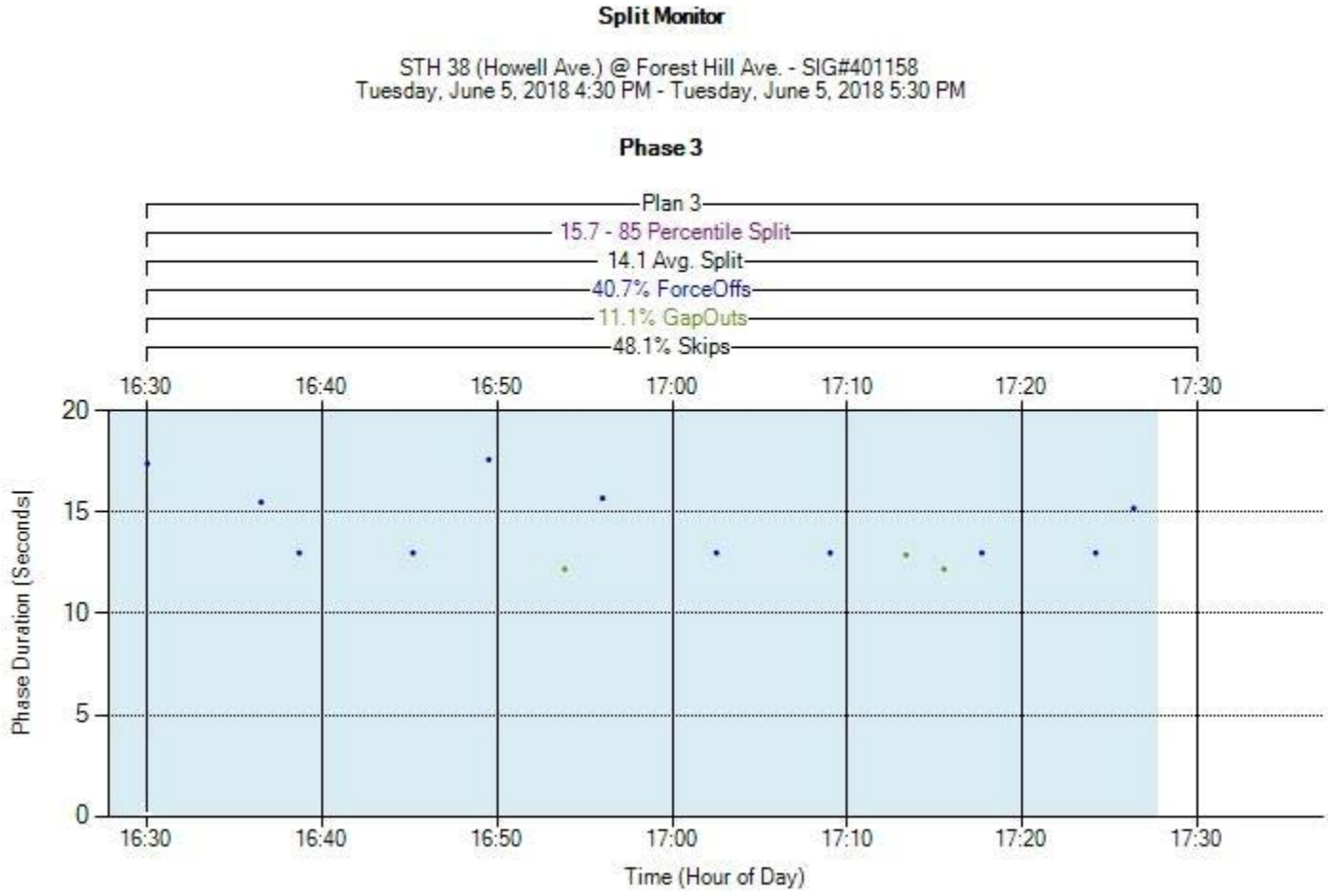
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Baseline Timings
6/5/2018 – 4:30 PM – 5:30 PM



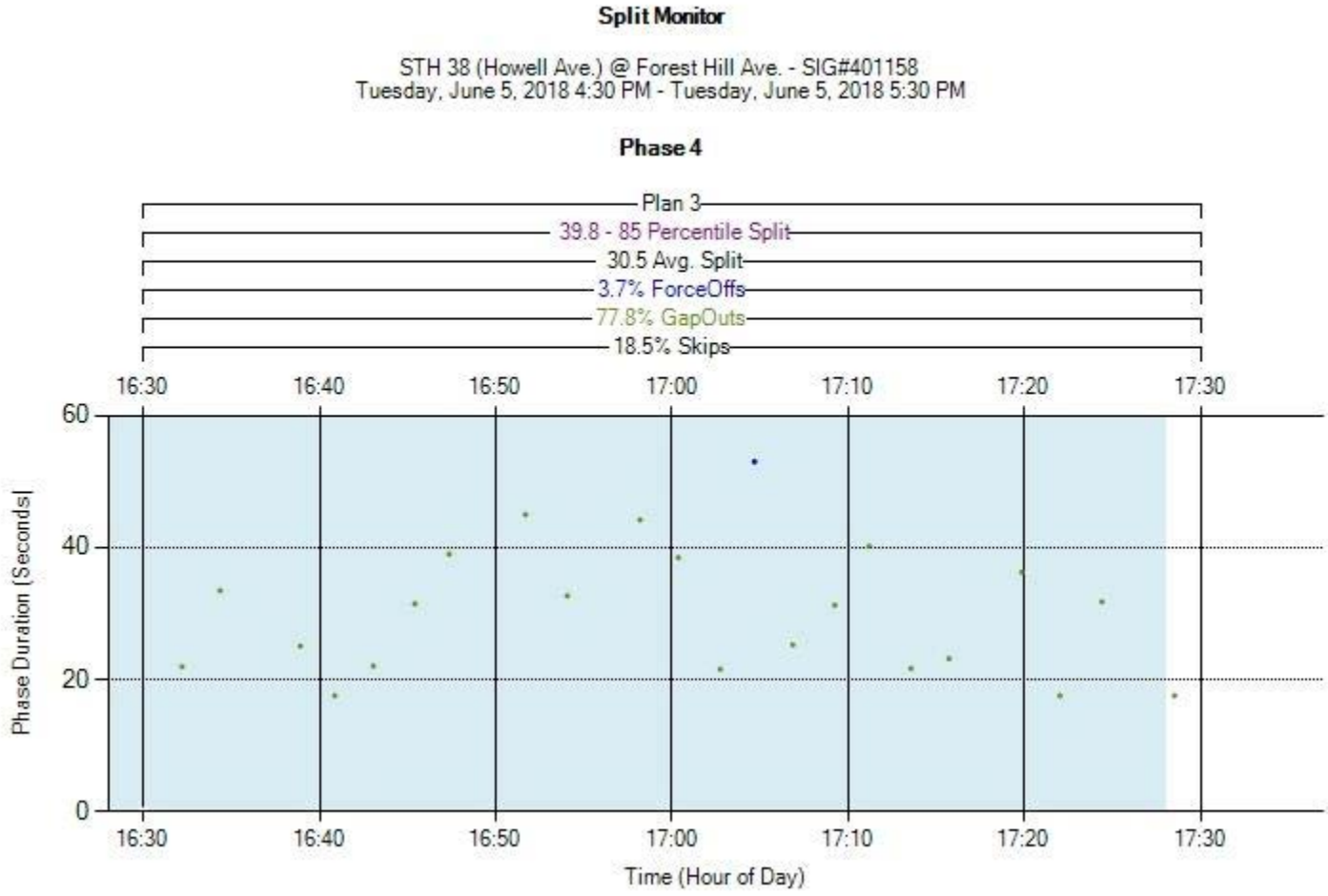
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Baseline Timings
6/5/2018 – 4:30 PM – 5:30 PM



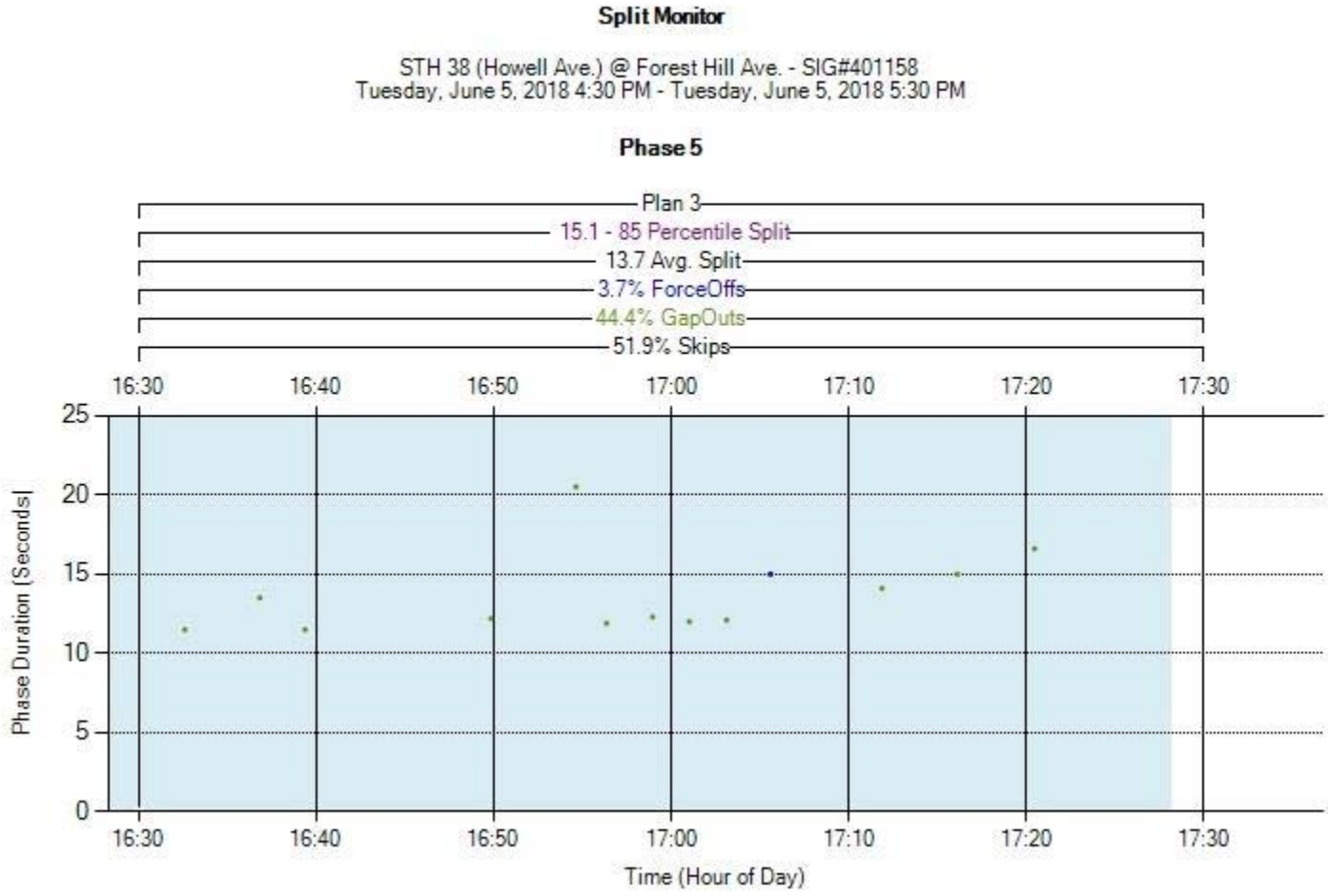
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Baseline Timings
6/5/2018 – 4:30 PM – 5:30 PM



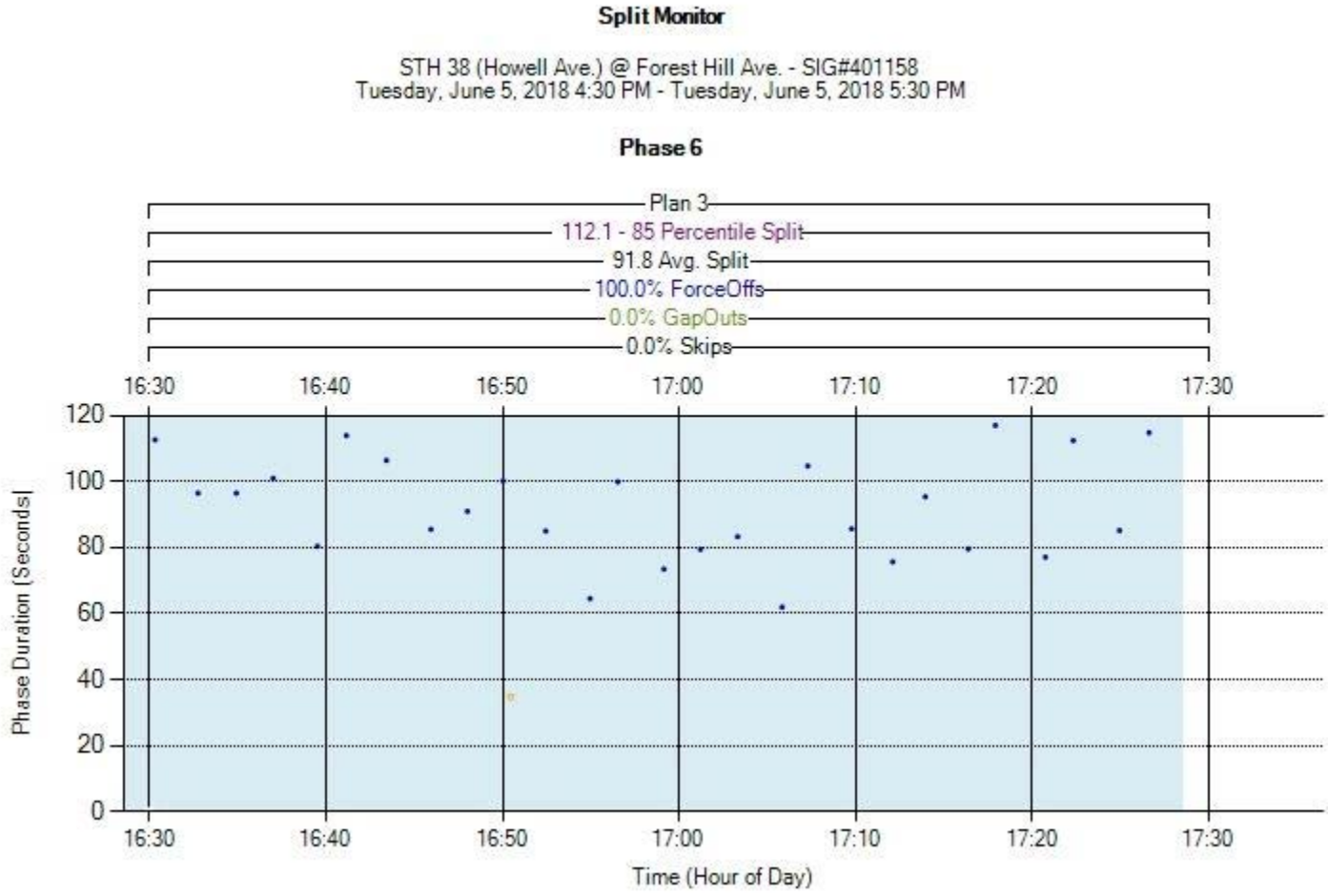
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Baseline Timings
6/5/2018 – 4:30 PM – 5:30 PM



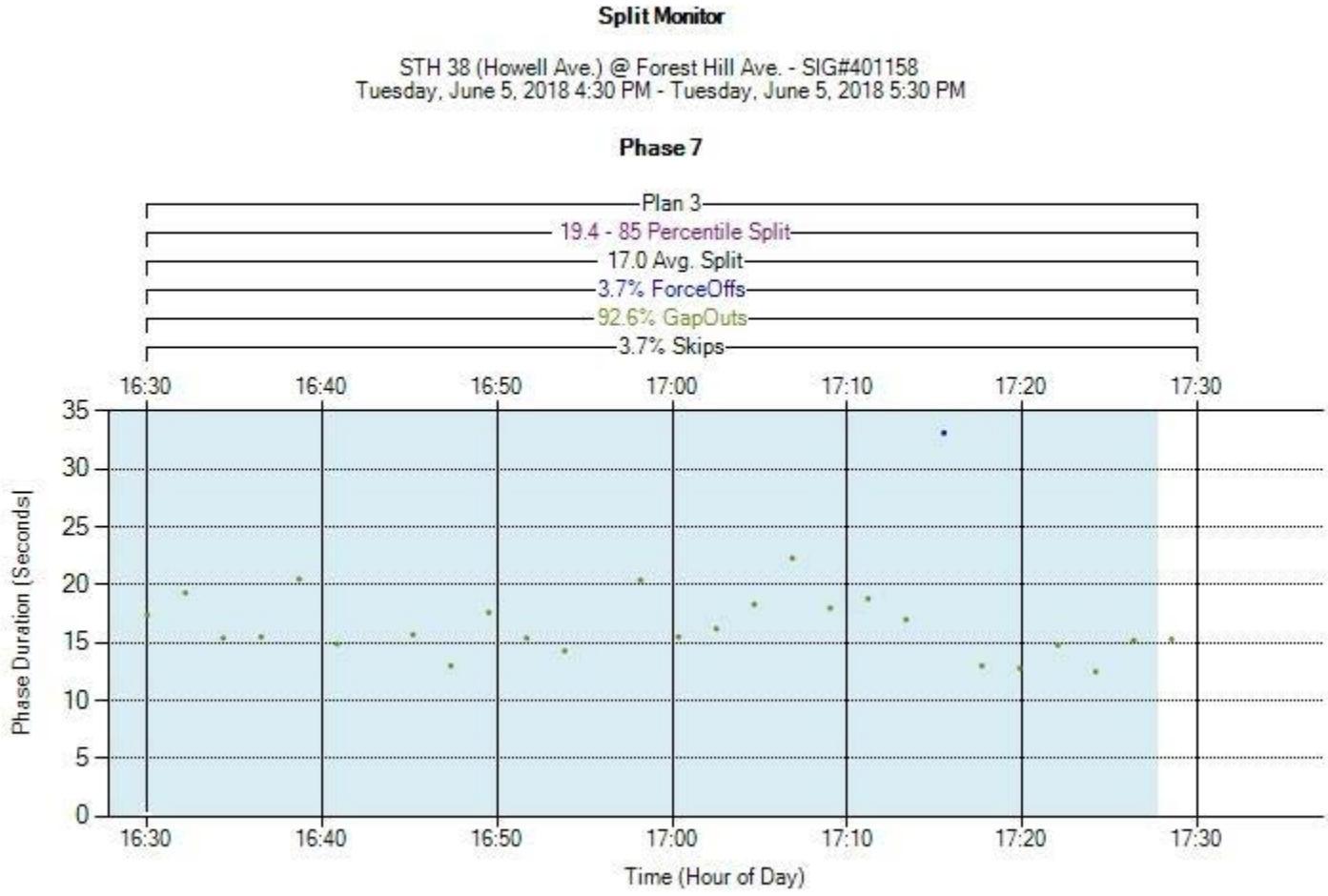
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Baseline Timings
6/5/2018 – 4:30 PM – 5:30 PM



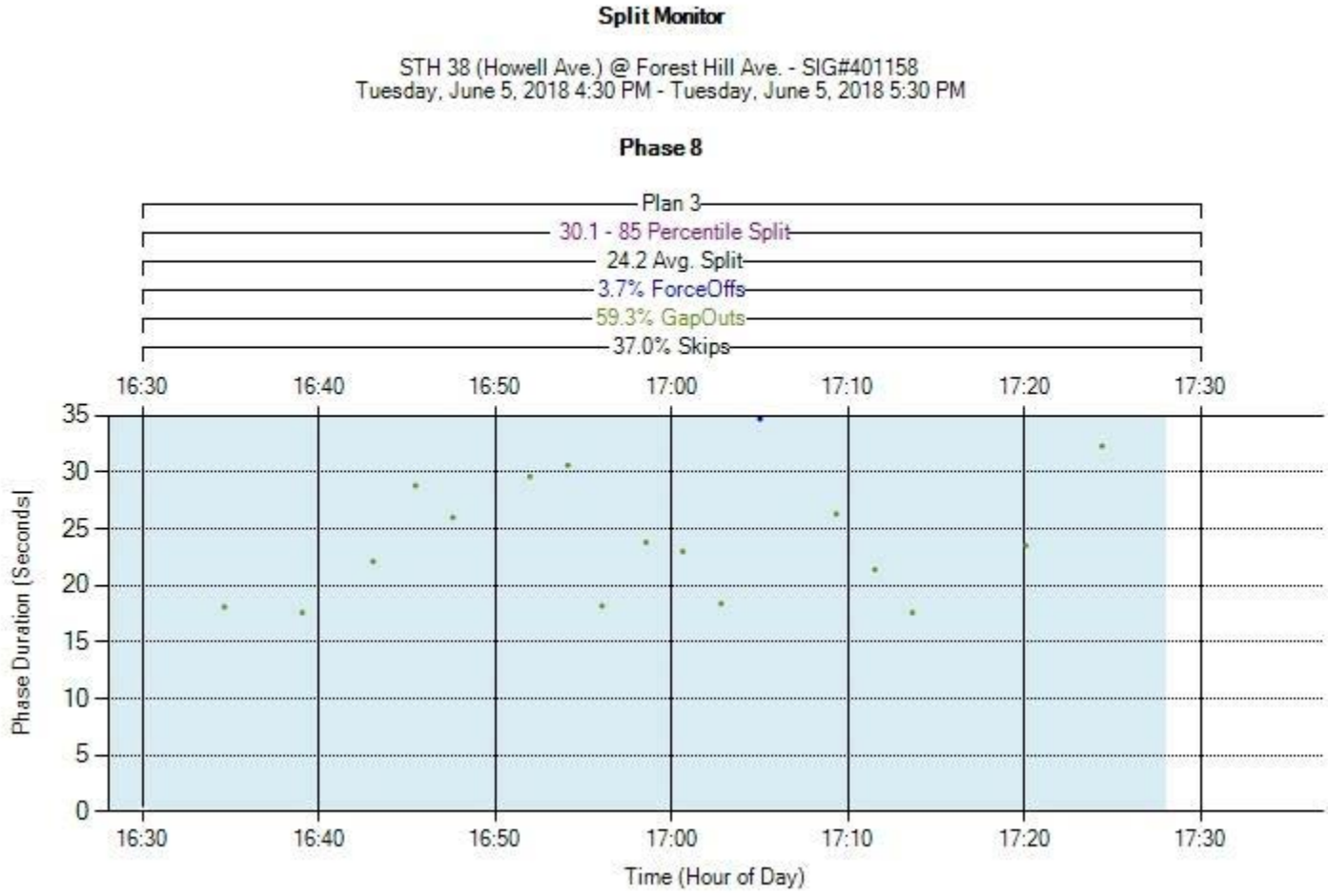
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Baseline Timings
6/5/2018 – 4:30 PM – 5:30 PM



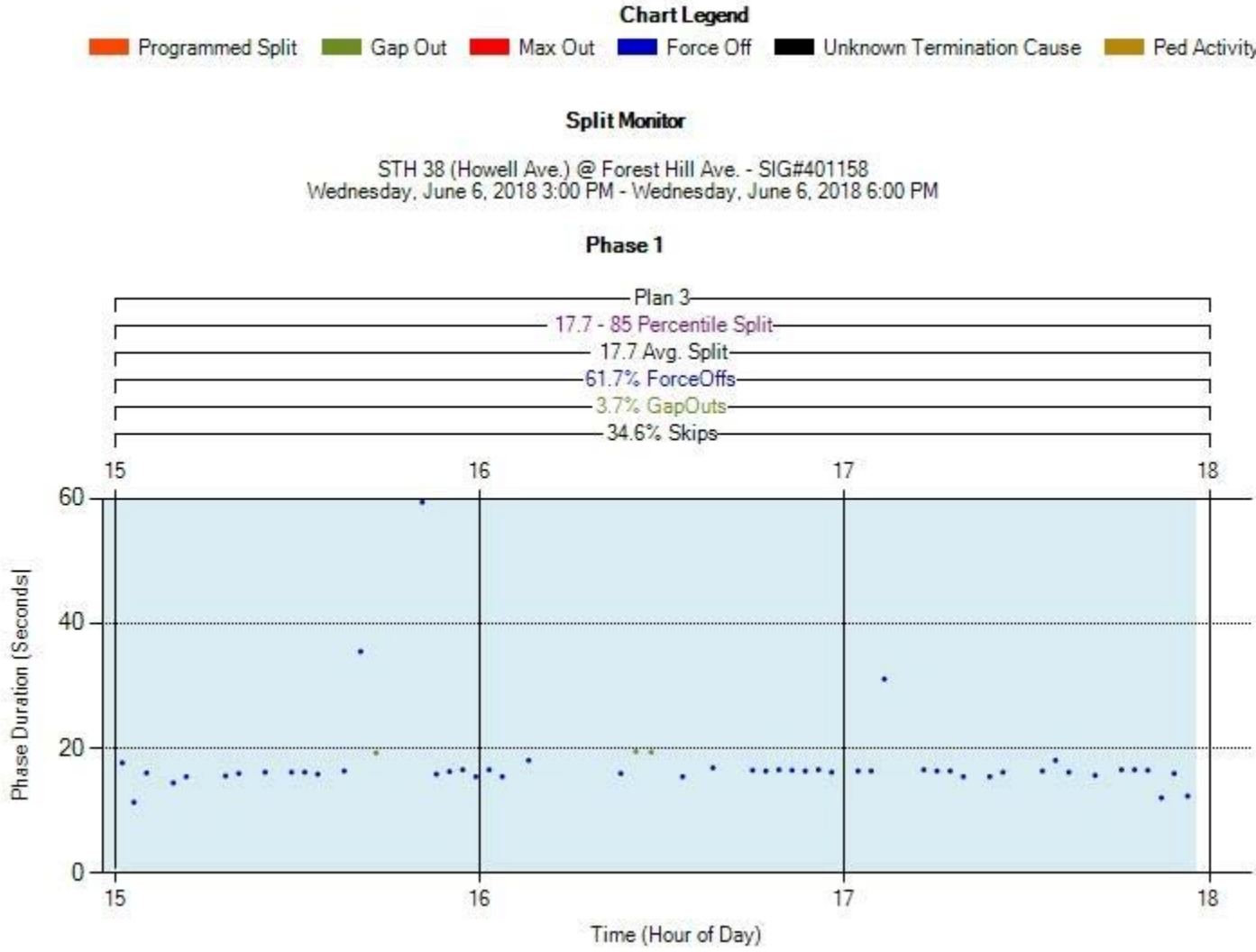
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Baseline Timings
6/5/2018 – 4:30 PM – 5:30 PM



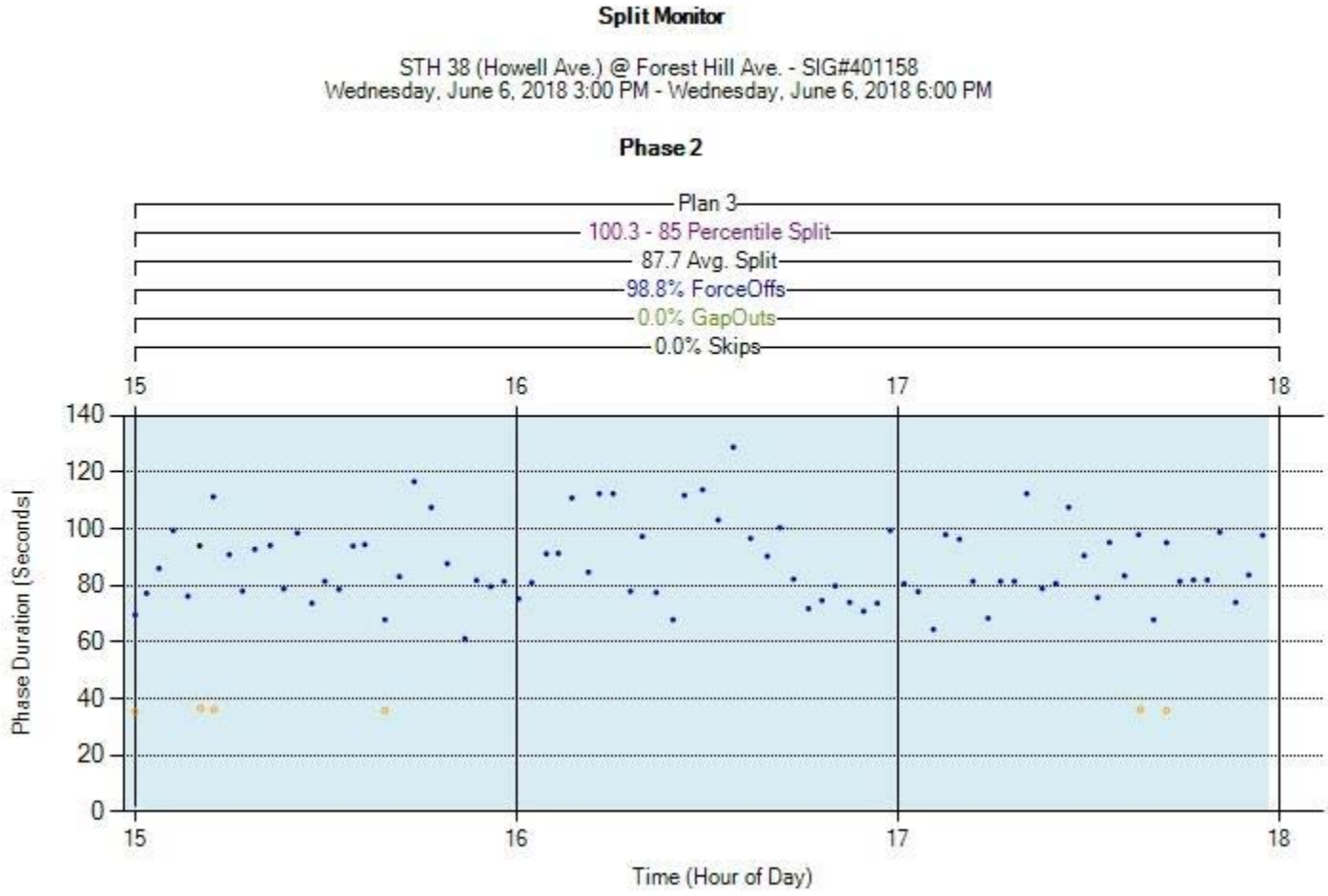
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Baseline Timings
6/5/2018 – 4:30 PM – 5:30 PM



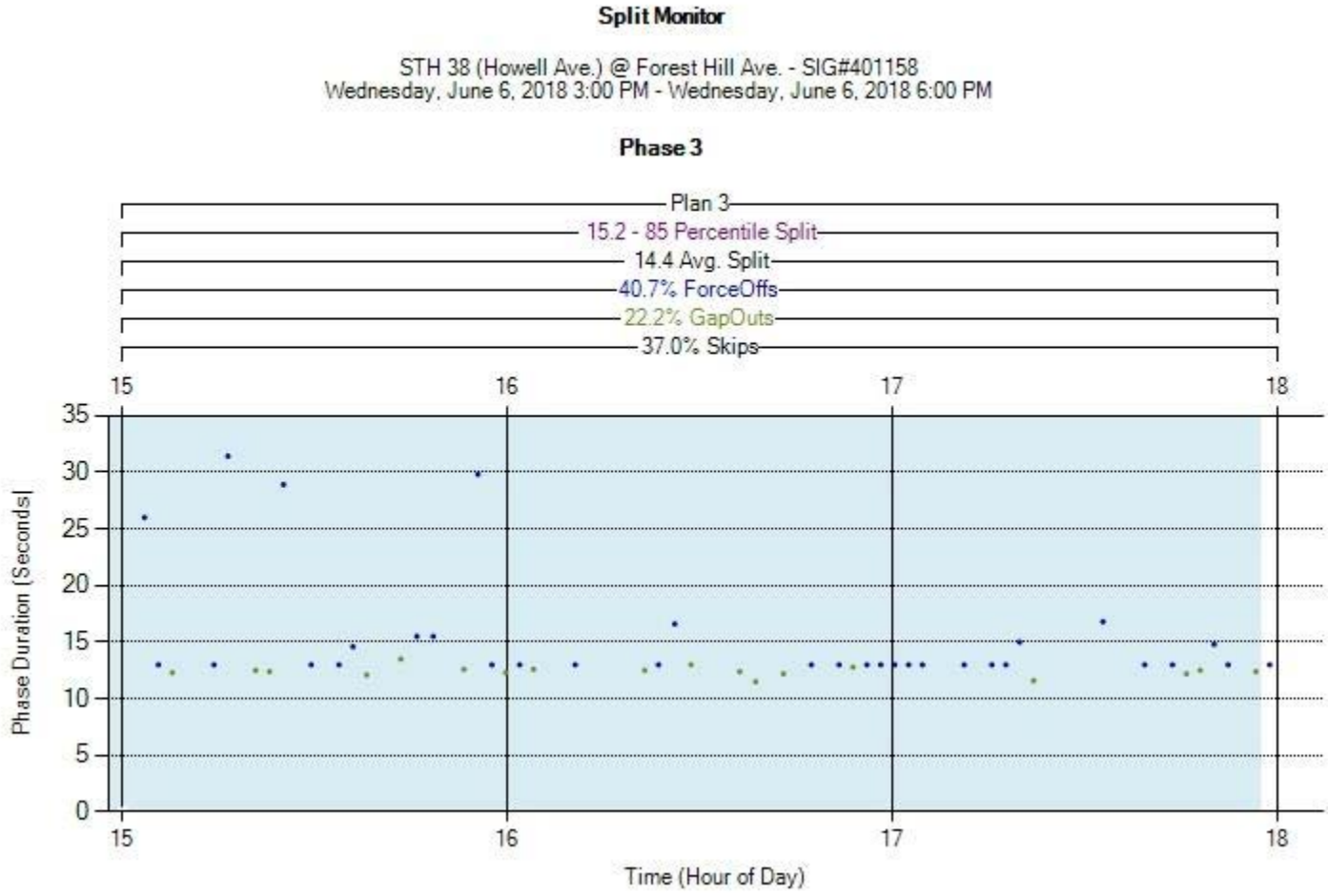
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Baseline Timings
6/6/2018 – 3:00 PM – 6:00 PM



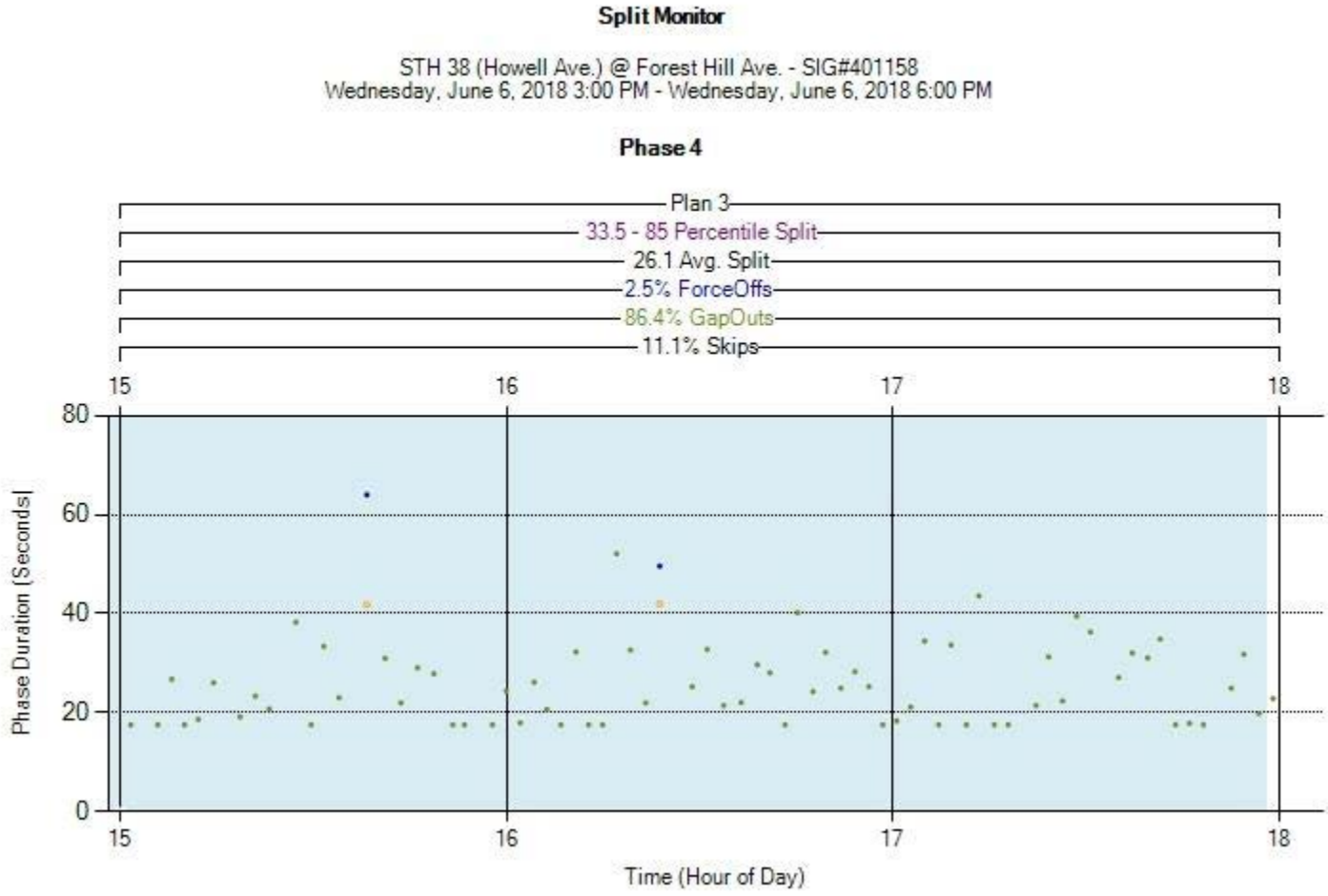
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Baseline Timings
6/6/2018 – 3:00 PM – 6:00 PM



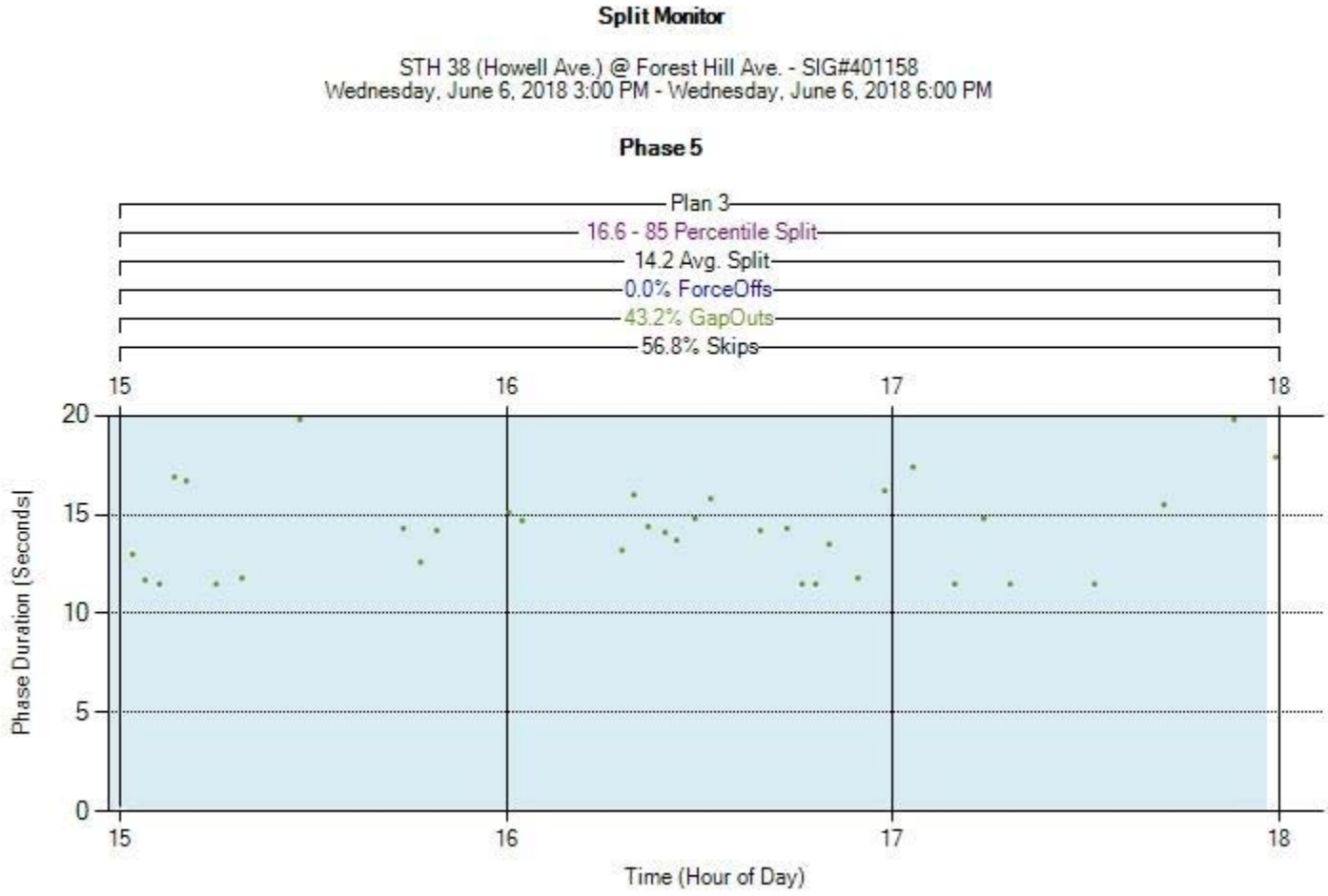
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Baseline Timings
6/6/2018 – 3:00 PM – 6:00 PM



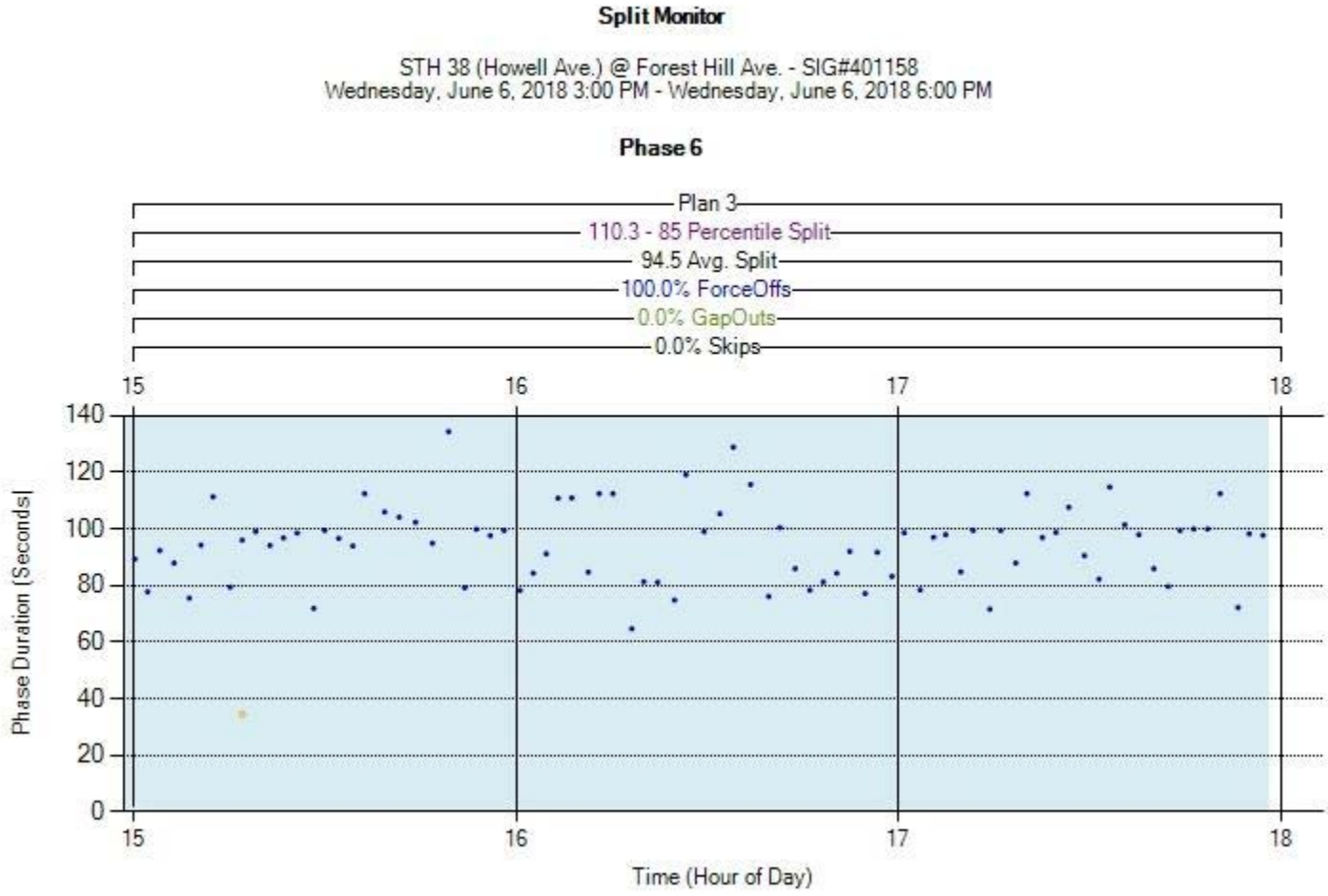
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Baseline Timings
6/6/2018 – 3:00 PM – 6:00 PM



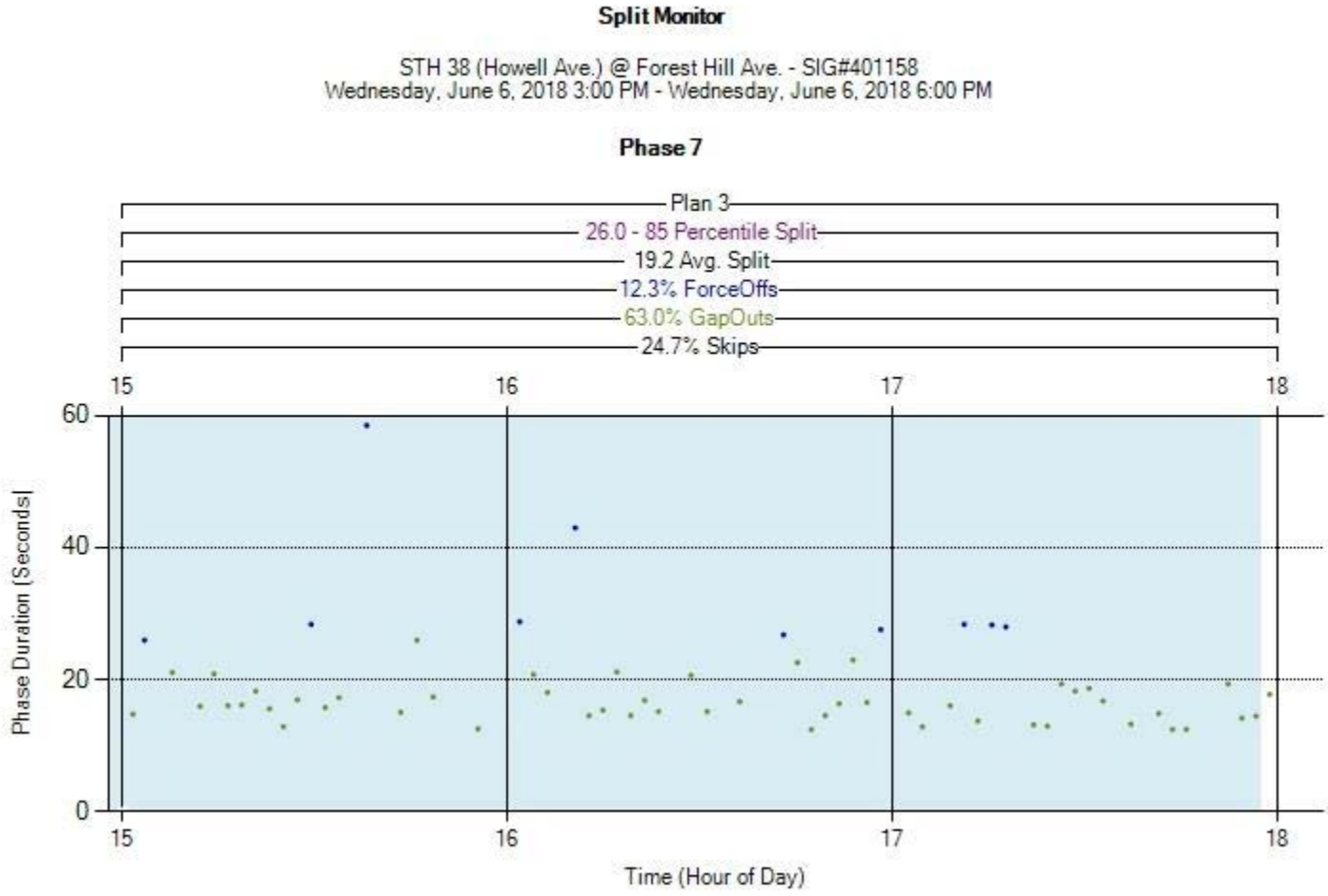
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Baseline Timings
6/6/2018 – 3:00 PM – 6:00 PM



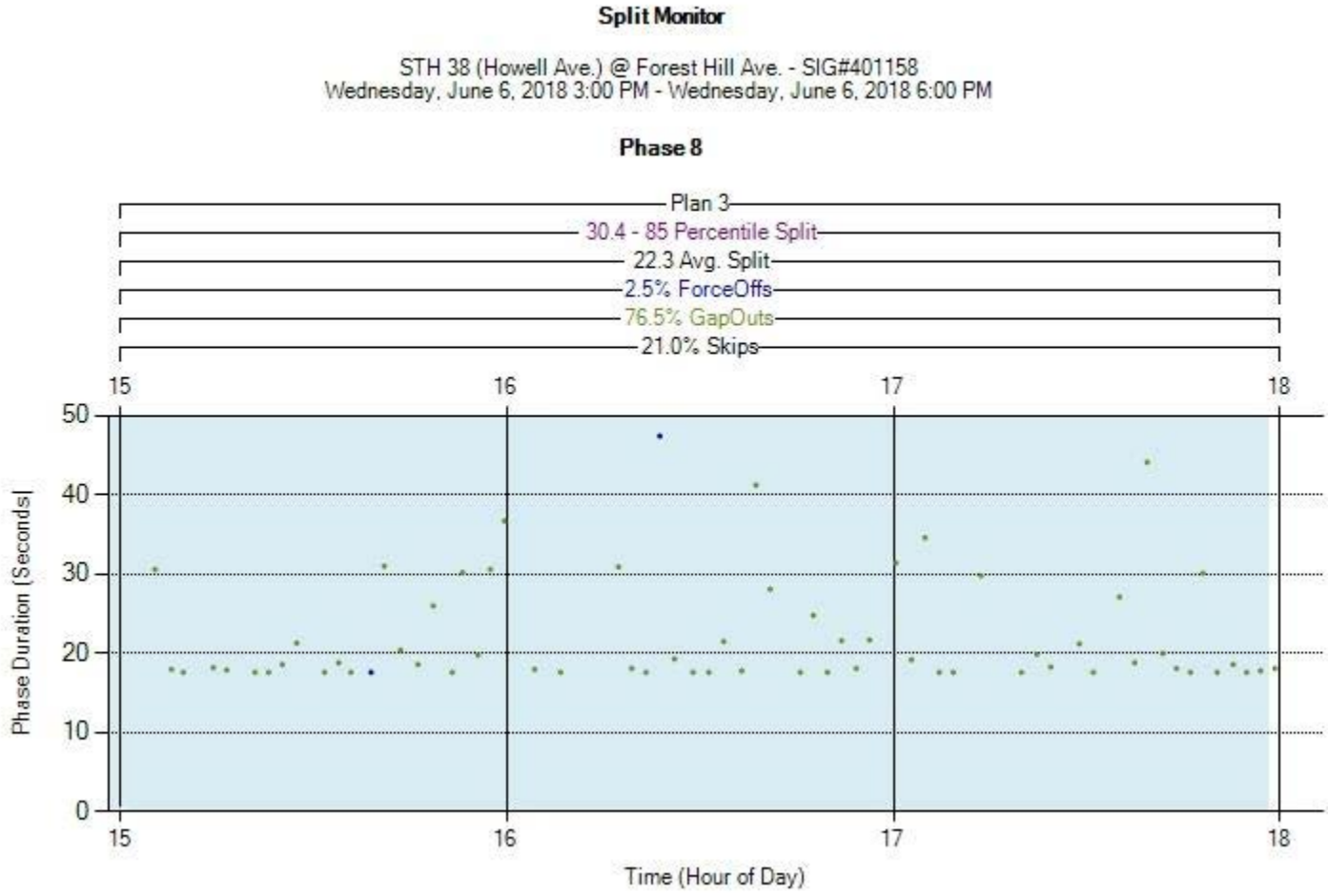
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Baseline Timings
6/6/2018 – 3:00 PM – 6:00 PM



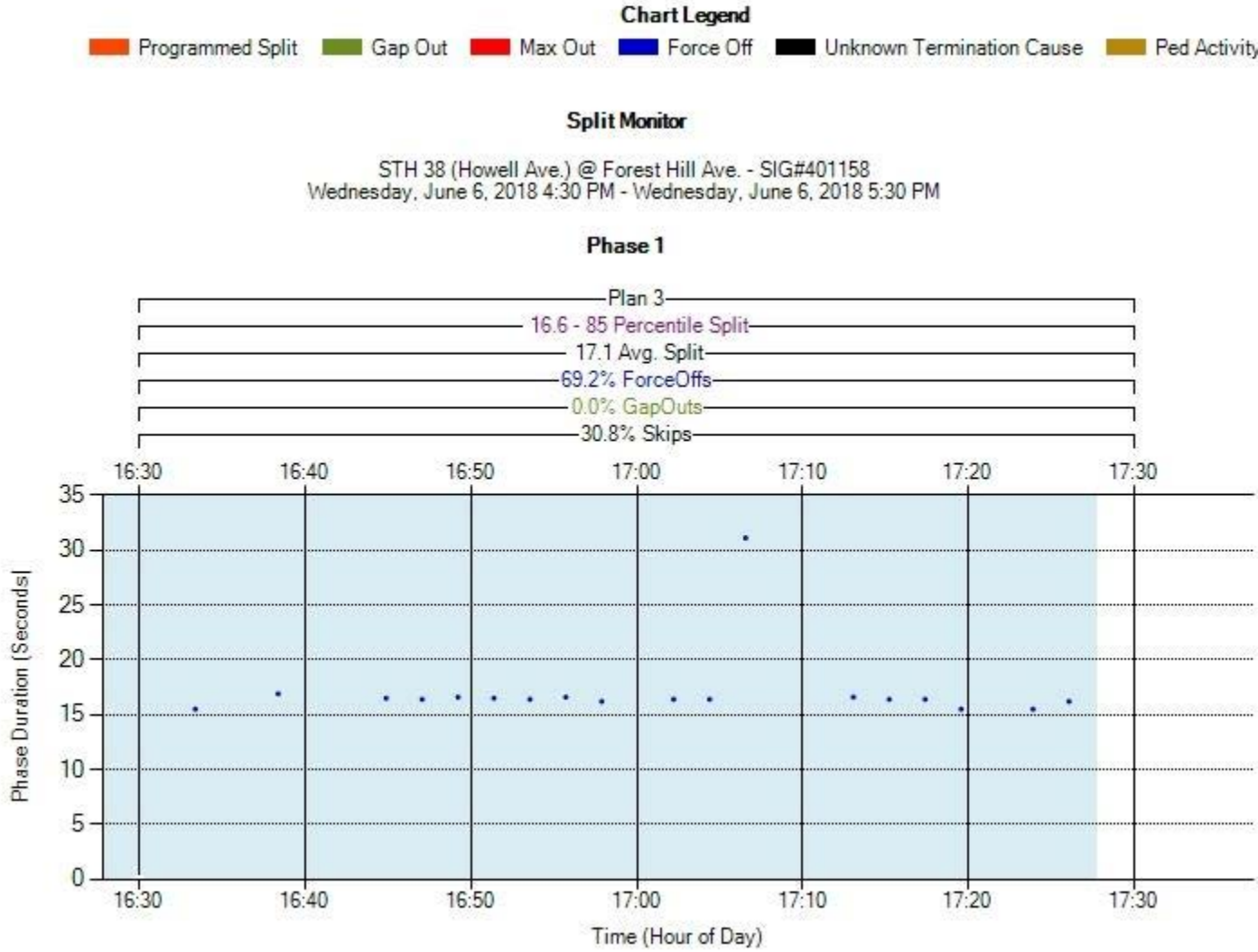
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Baseline Timings
6/6/2018 – 3:00 PM – 6:00 PM



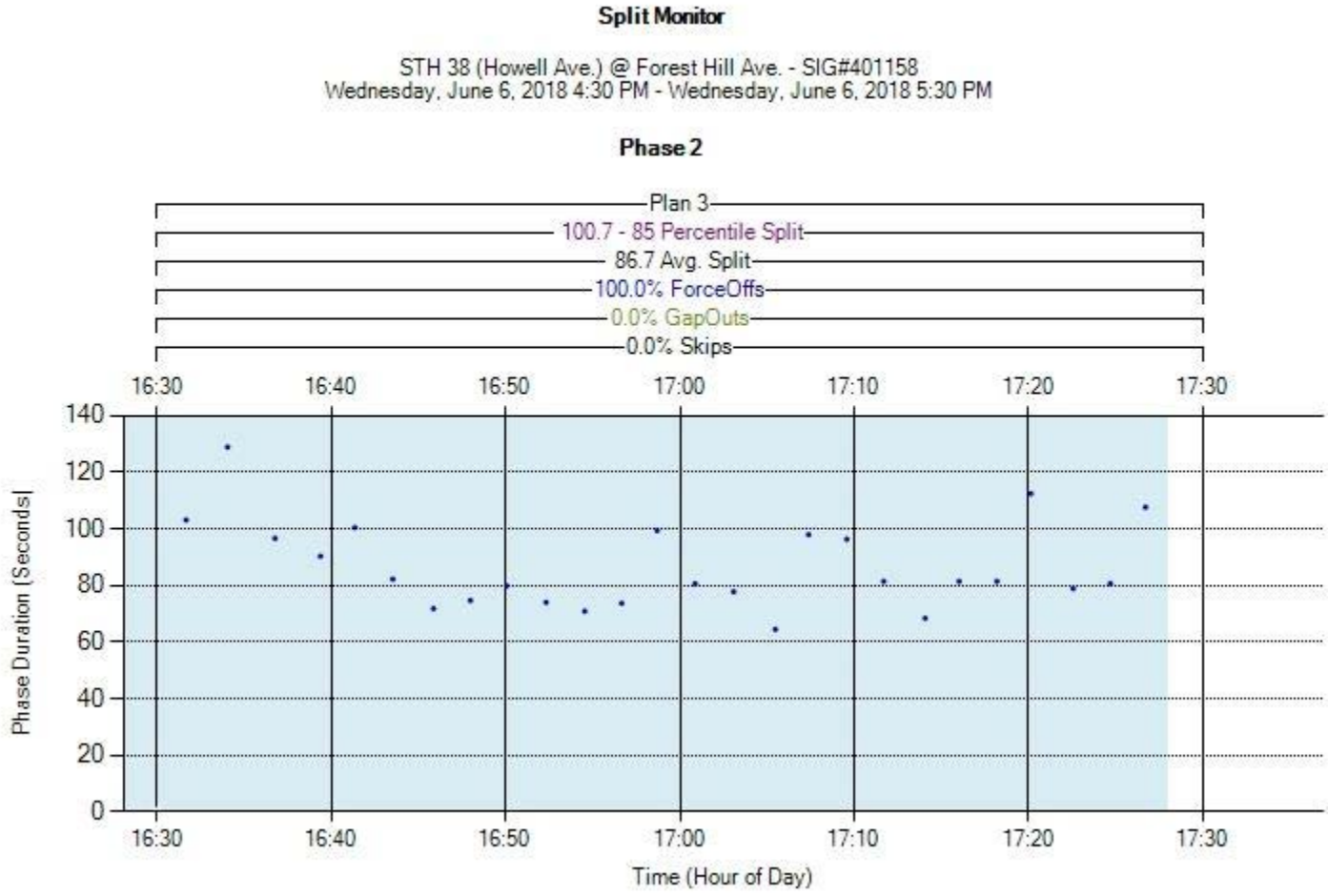
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Baseline Timings
6/6/2018 – 3:00 PM – 6:00 PM



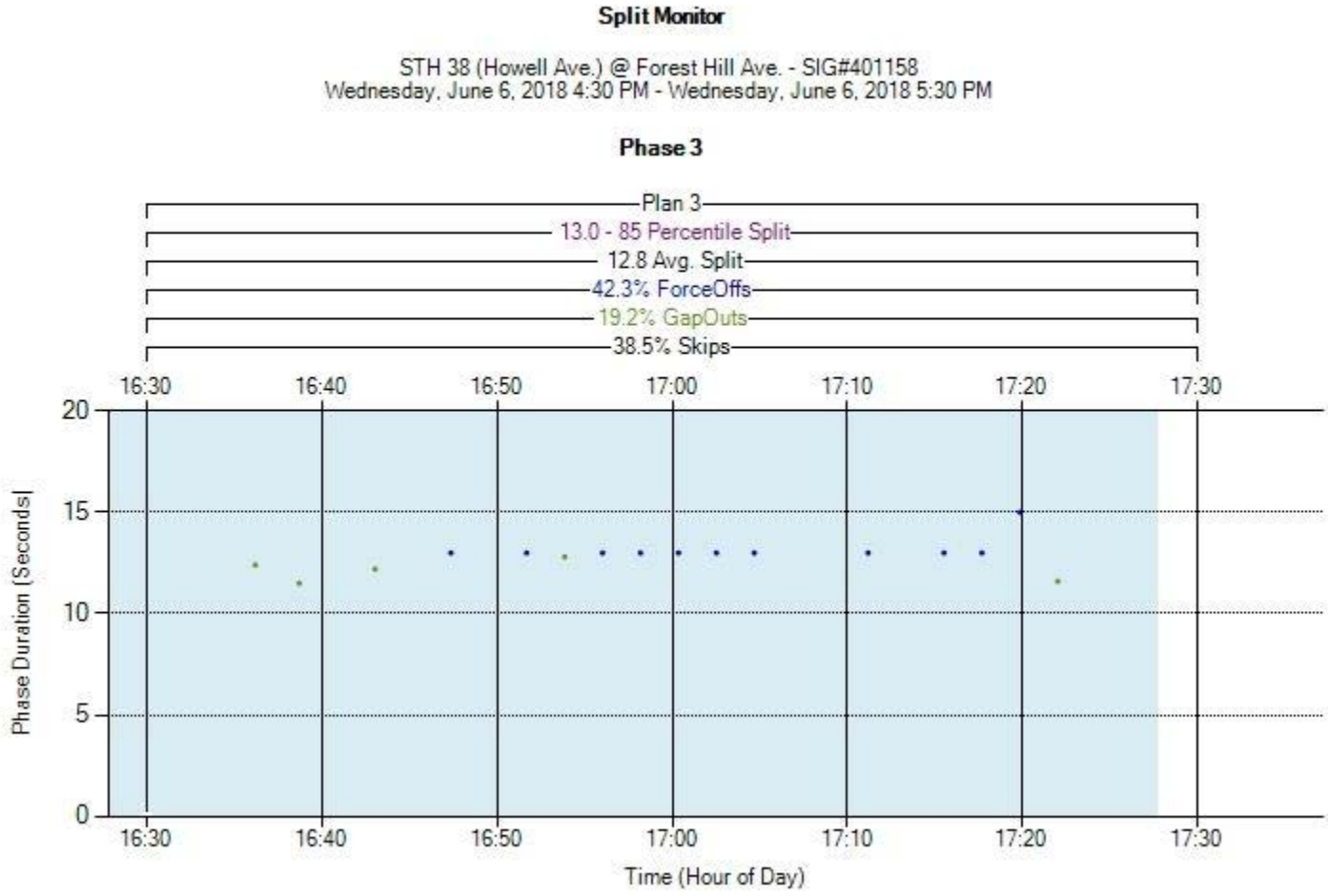
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Baseline Timings
6/6/2018 – 4:30 PM – 5:30 PM



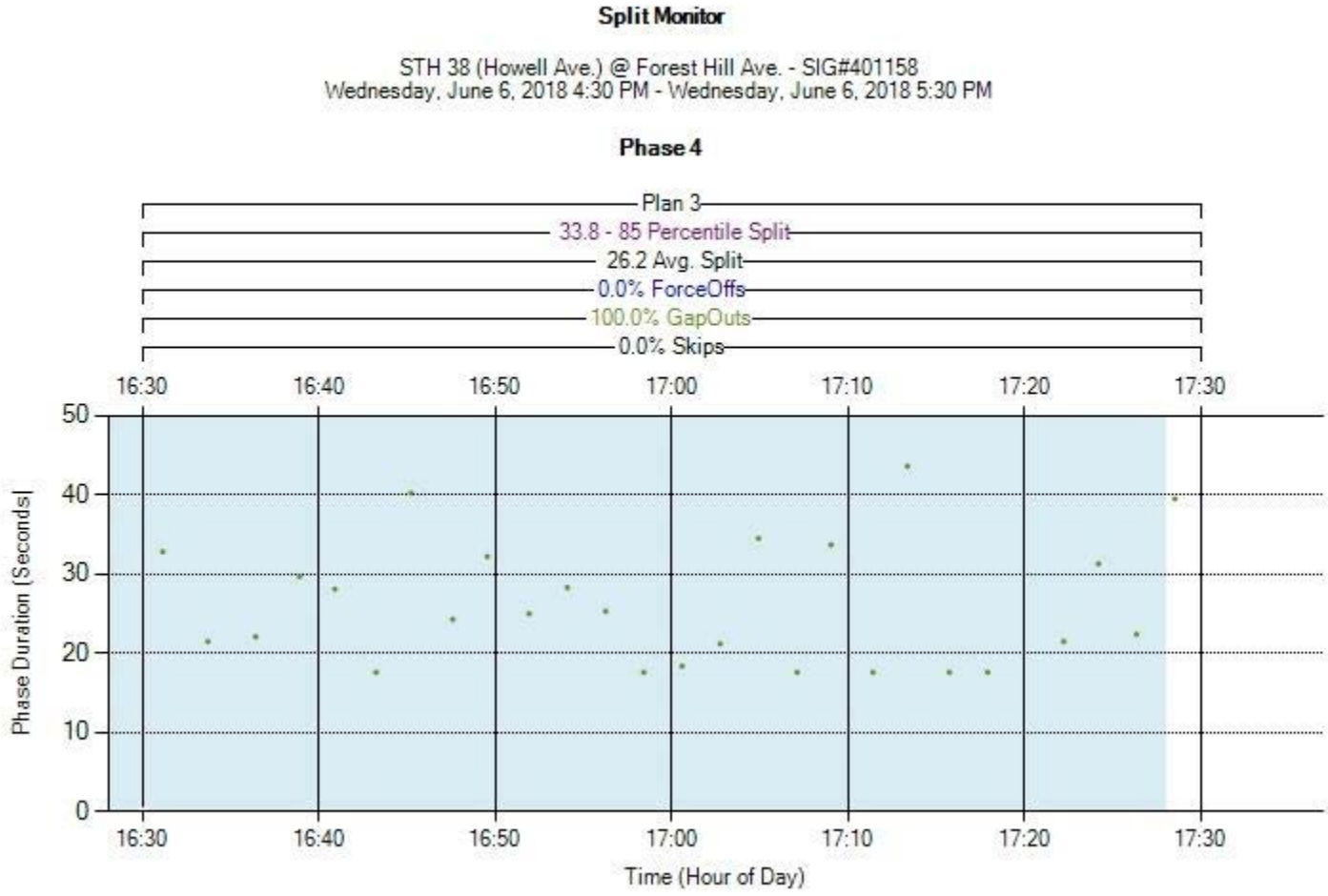
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Baseline Timings
6/6/2018 – 4:30 PM – 5:30 PM



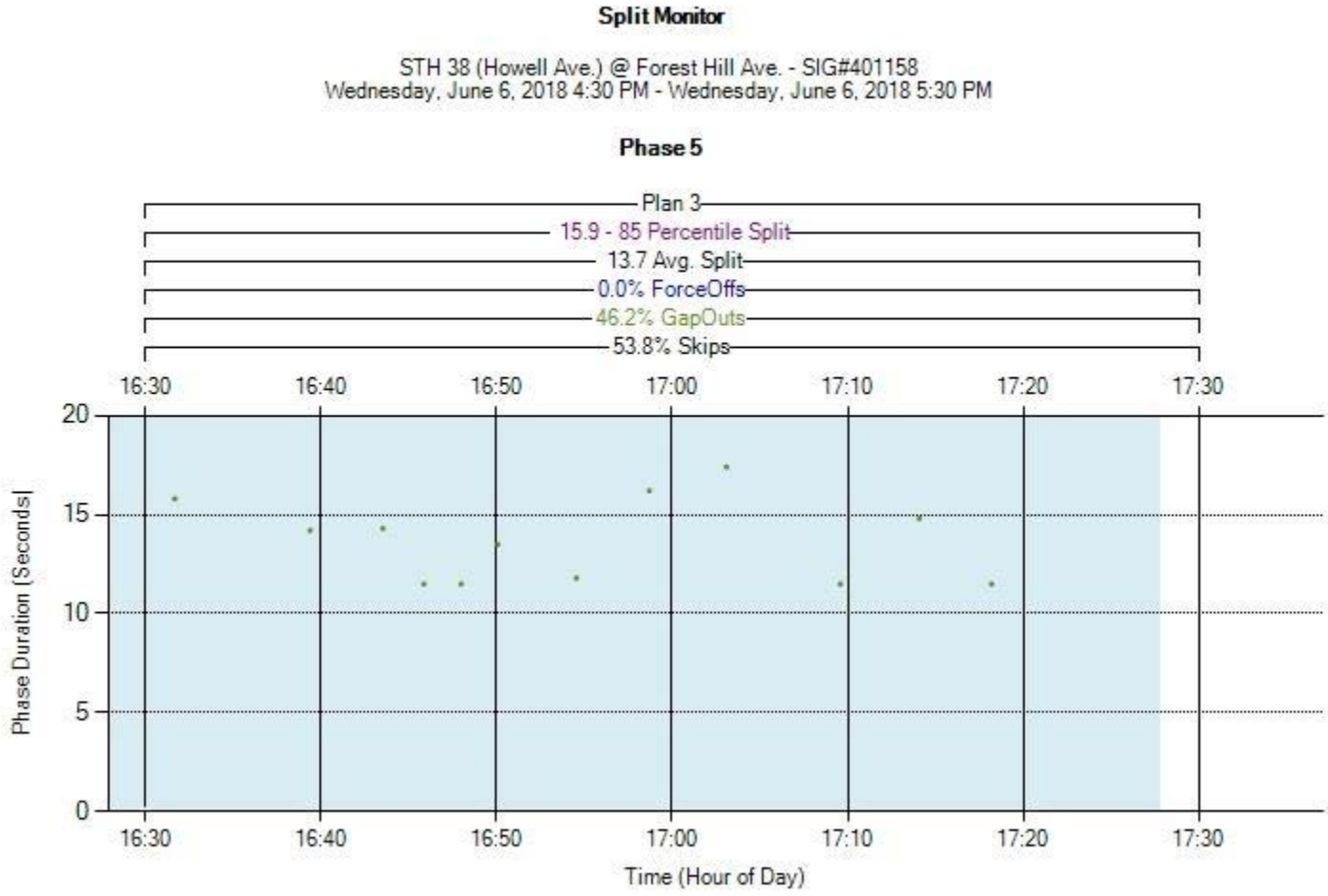
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Baseline Timings
6/6/2018 – 4:30 PM – 5:30 PM



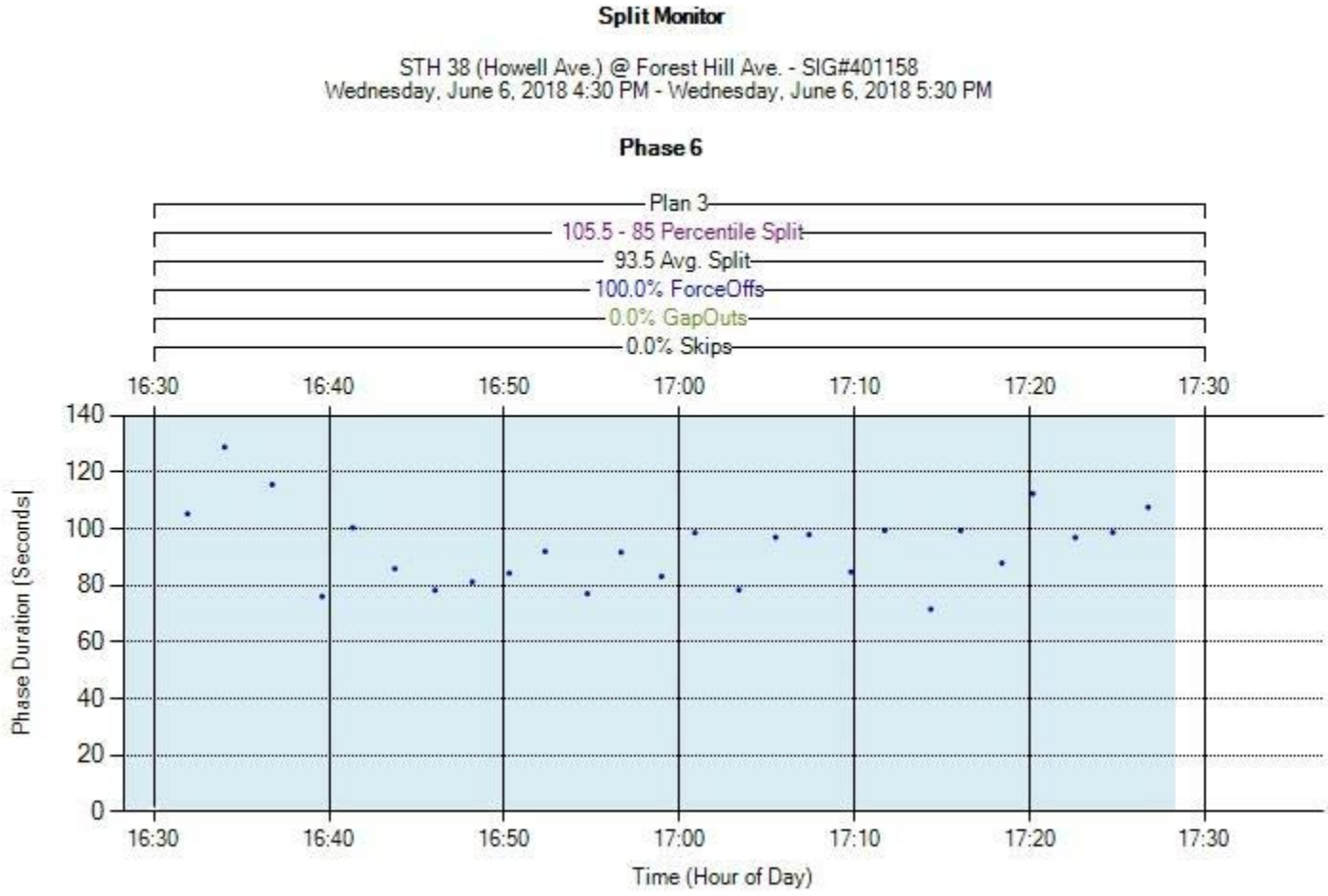
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Baseline Timings
6/6/2018 – 4:30 PM – 5:30 PM



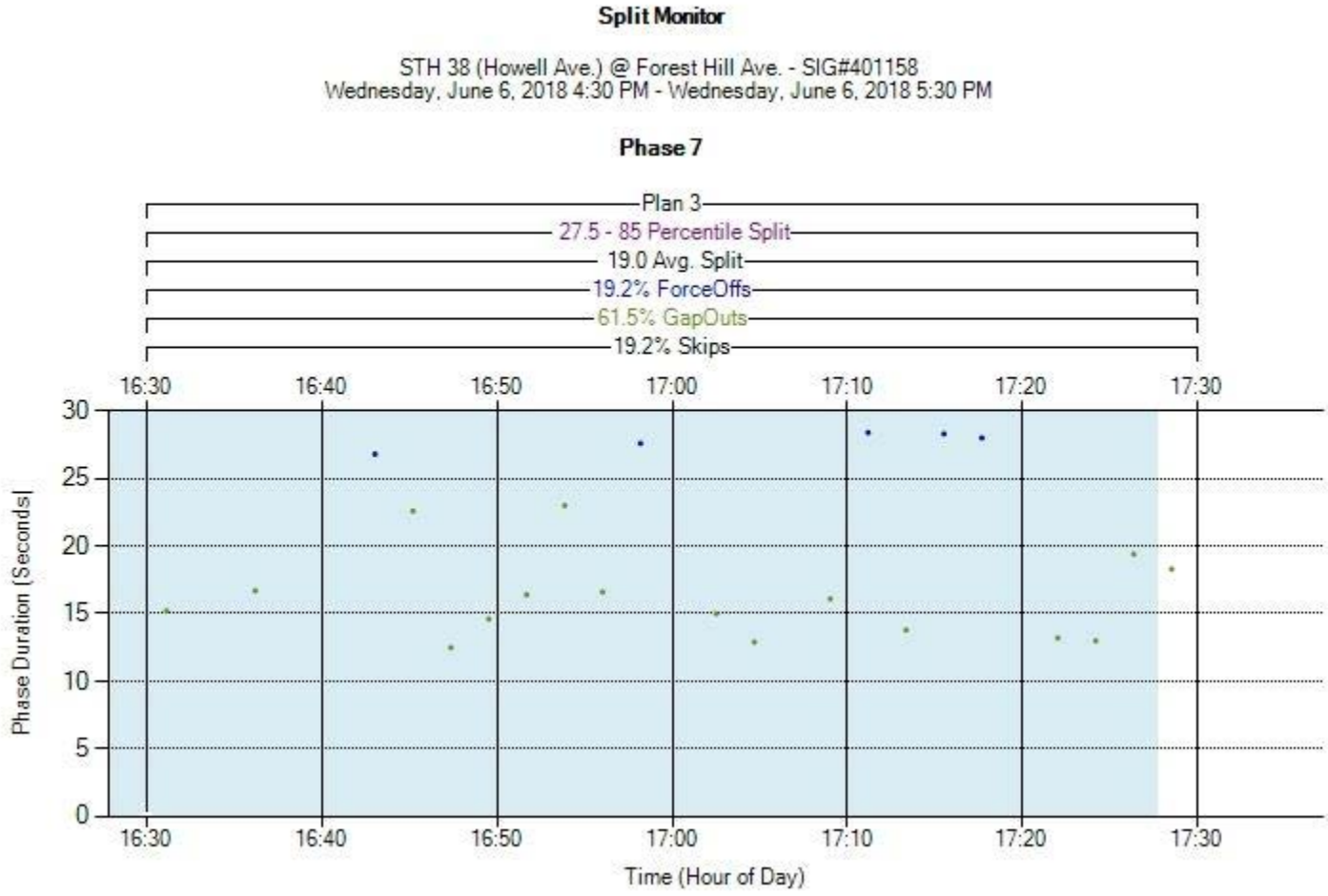
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Baseline Timings
6/6/2018 – 4:30 PM – 5:30 PM



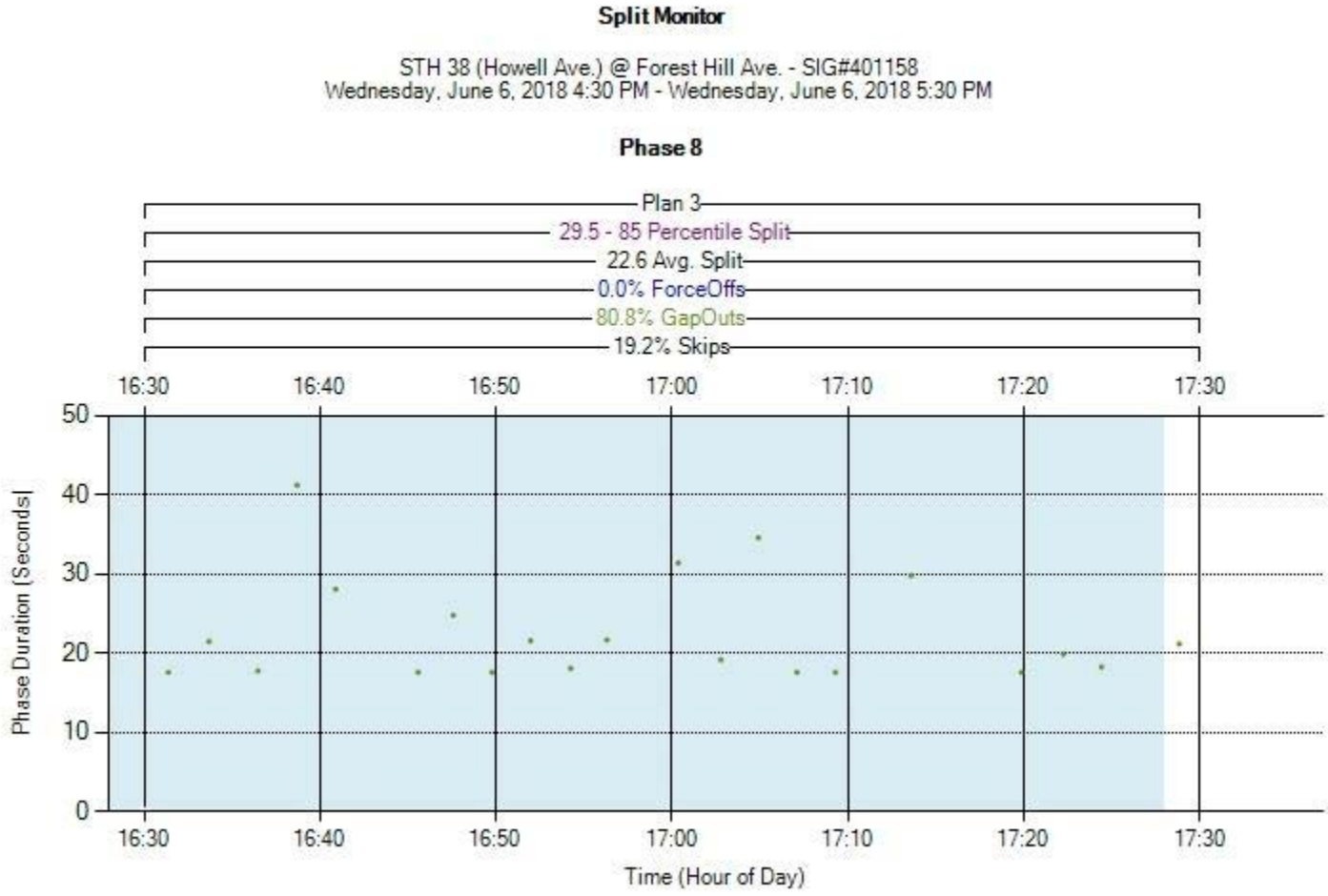
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Baseline Timings
6/6/2018 – 4:30 PM – 5:30 PM



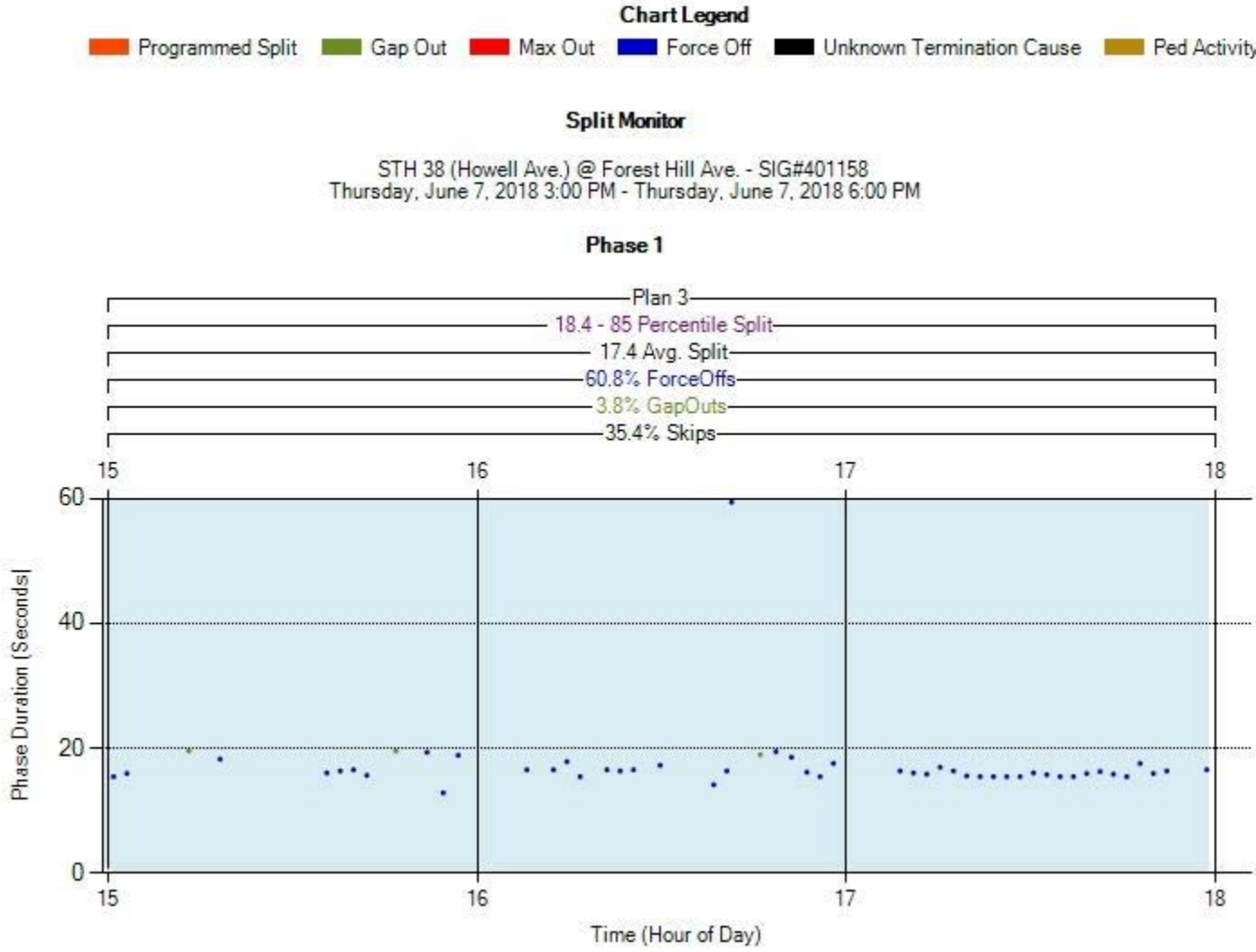
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Baseline Timings
6/6/2018 – 4:30 PM – 5:30 PM



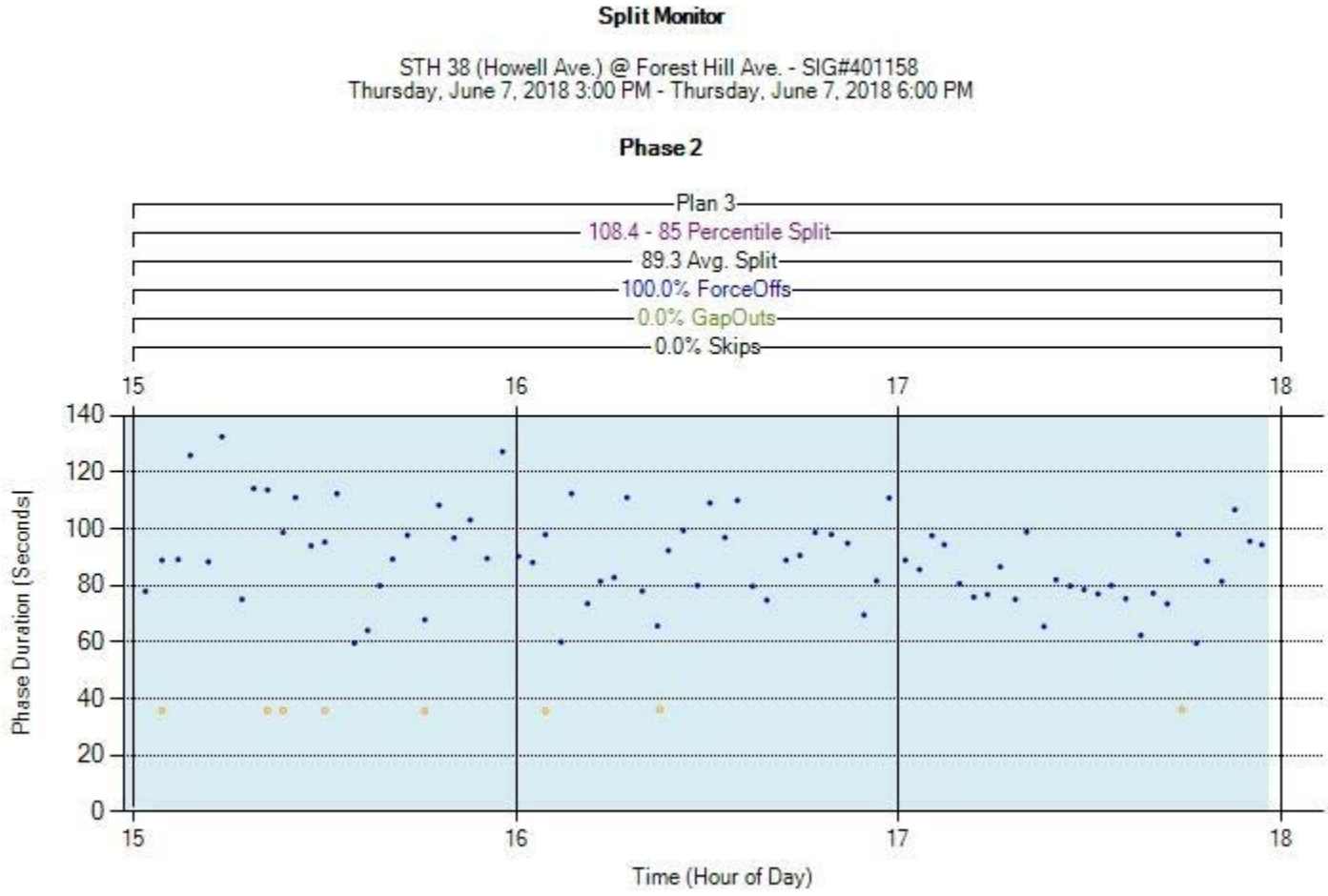
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Baseline Timings
6/6/2018 – 4:30 PM – 5:30 PM



WIS 38 Corridor – STH 38 & Forest Hill Ave.
Baseline Timings
6/7/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Forest Hill Ave.
Baseline Timings
6/7/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Forest Hill Ave.
Baseline Timings
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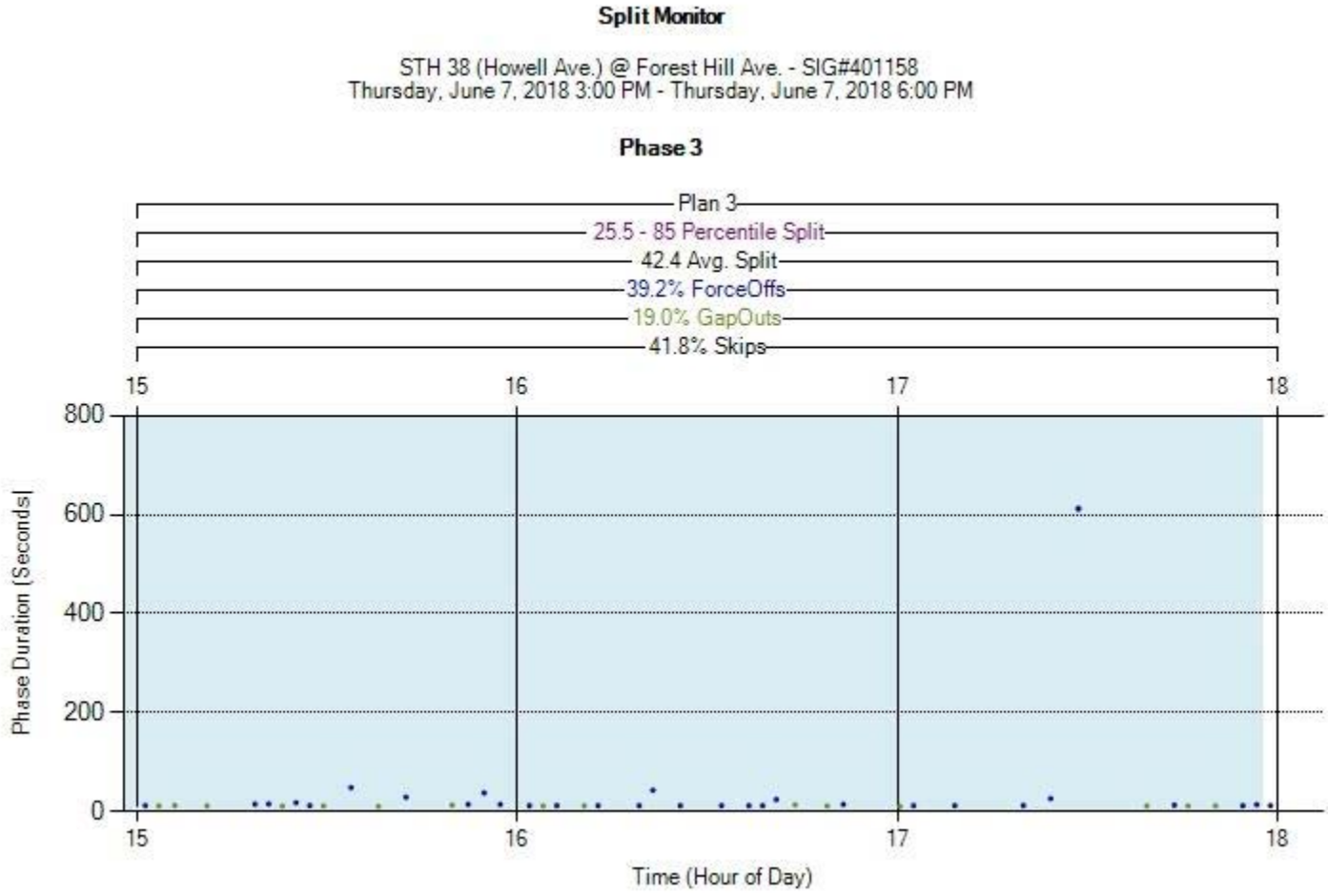

WIS 38 Corridor – STH 38 & Forest Hill Ave.
Baseline Timings
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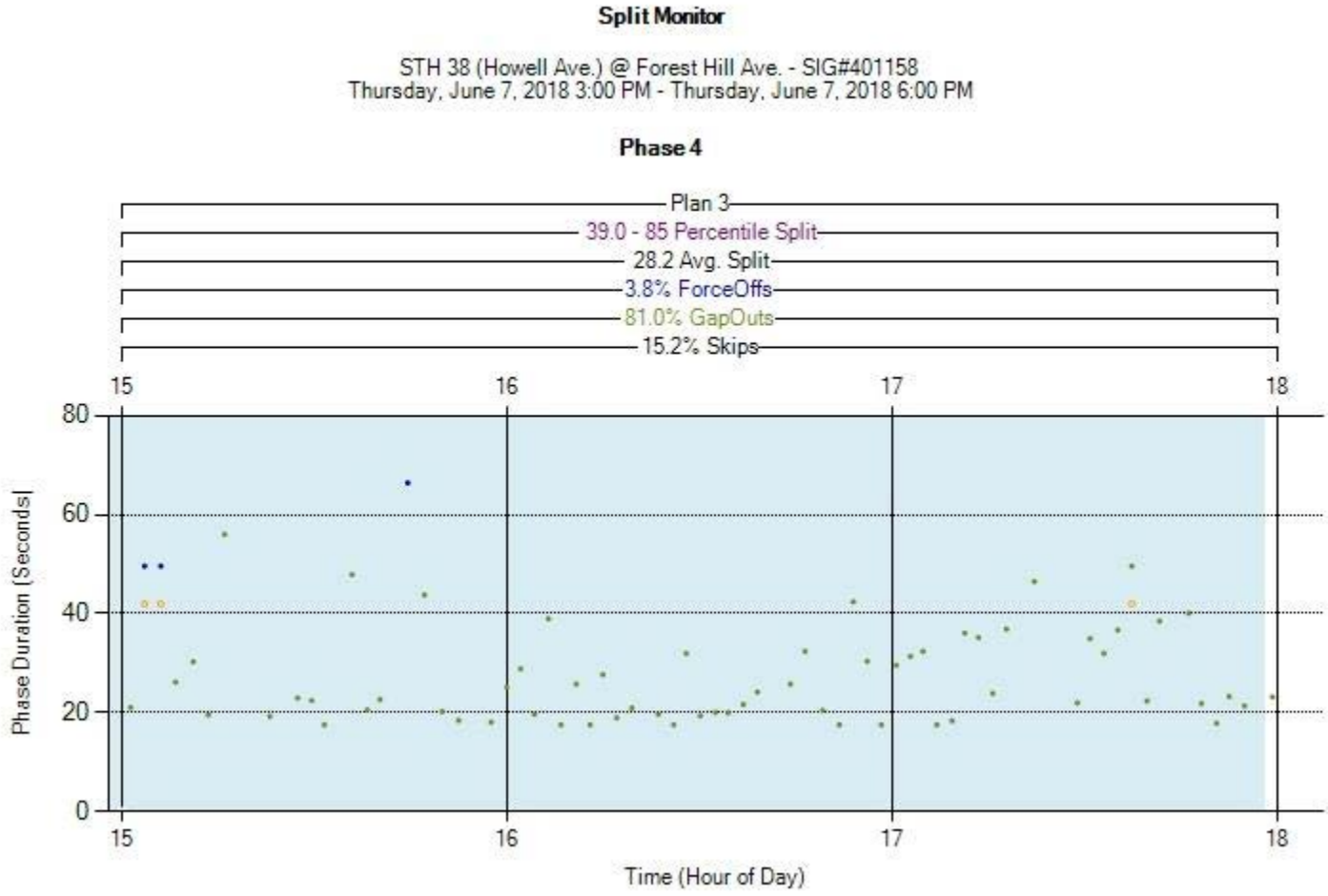
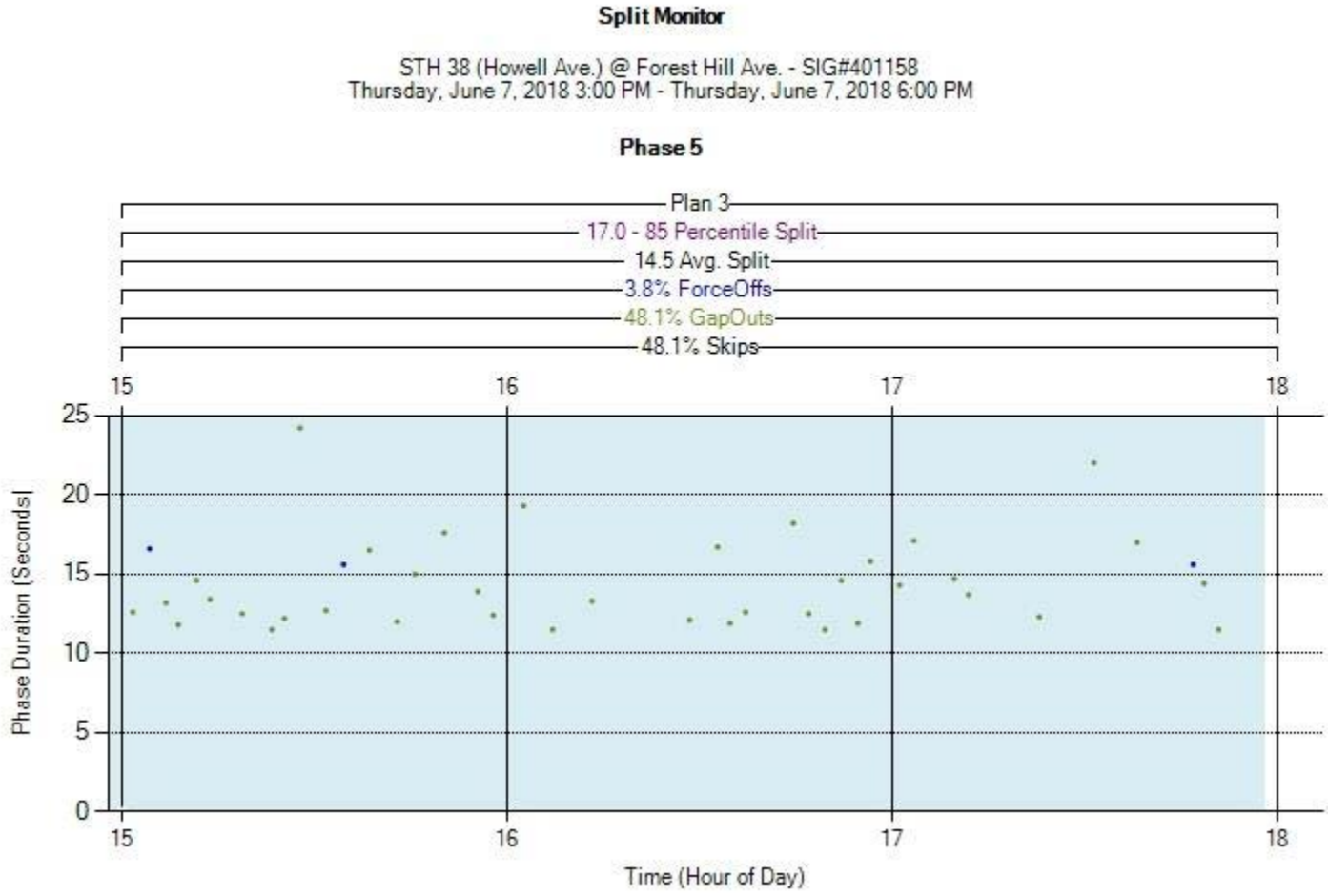
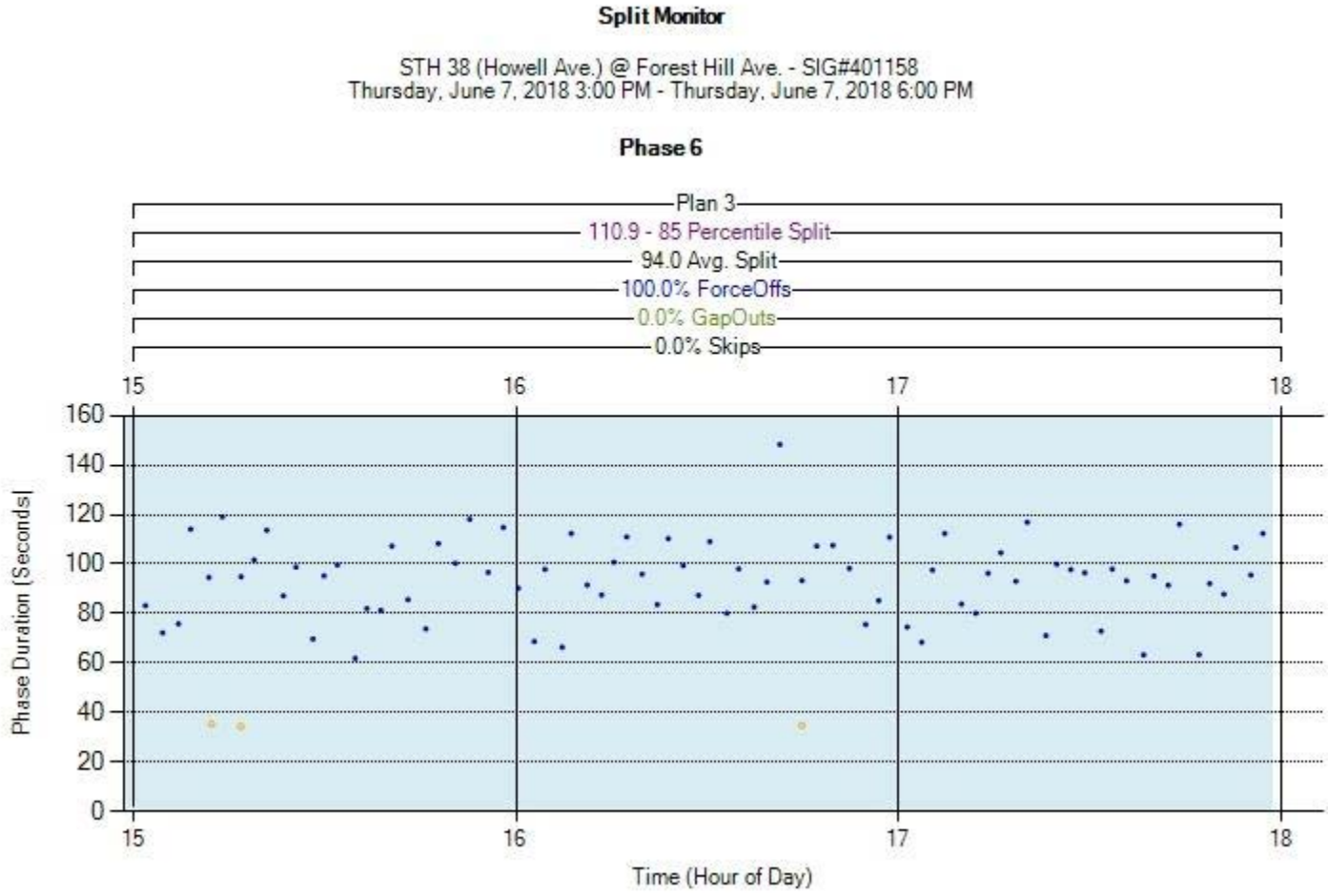


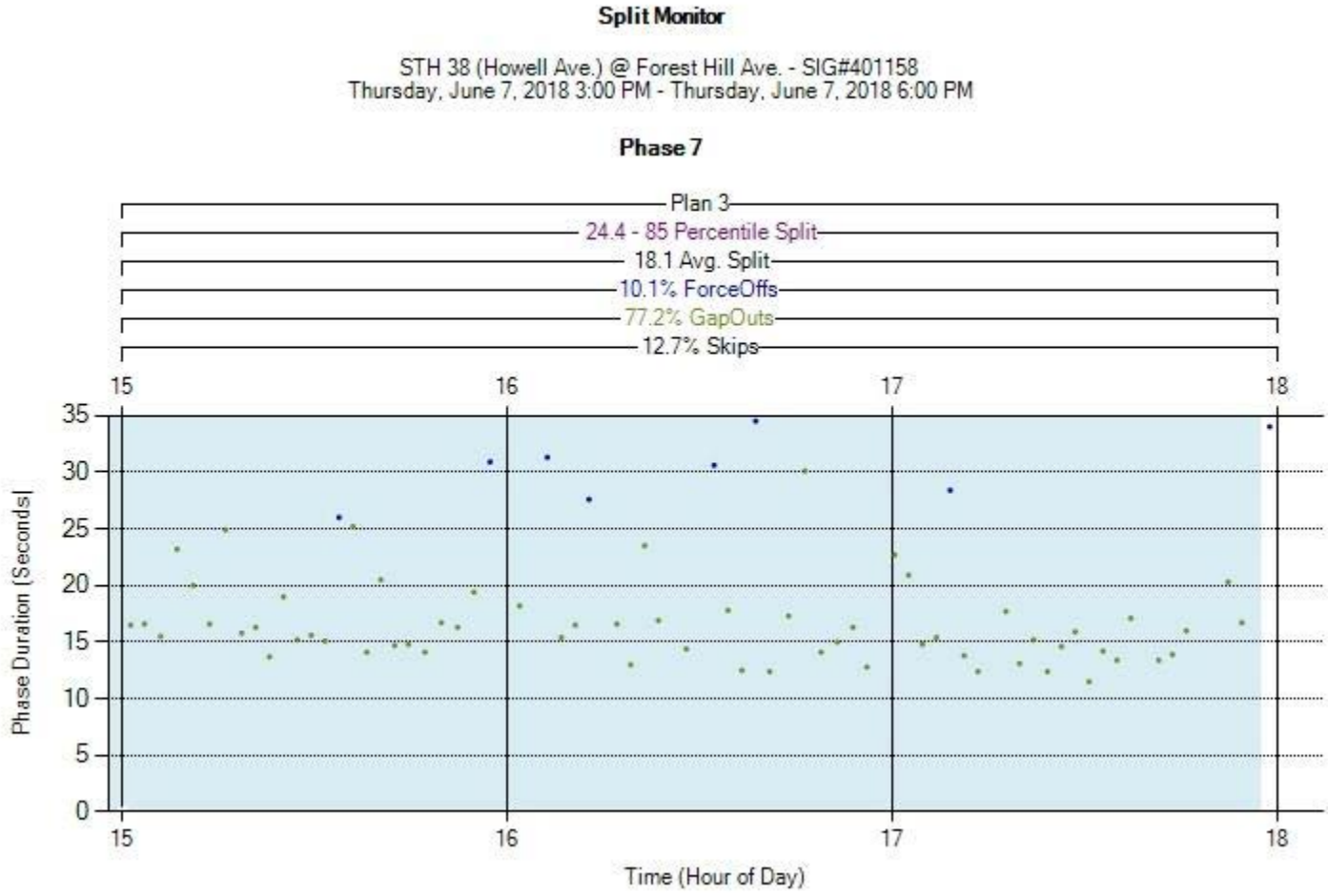
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Baseline Timings
6/7/2018 – 3:00 PM – 6:00 PM



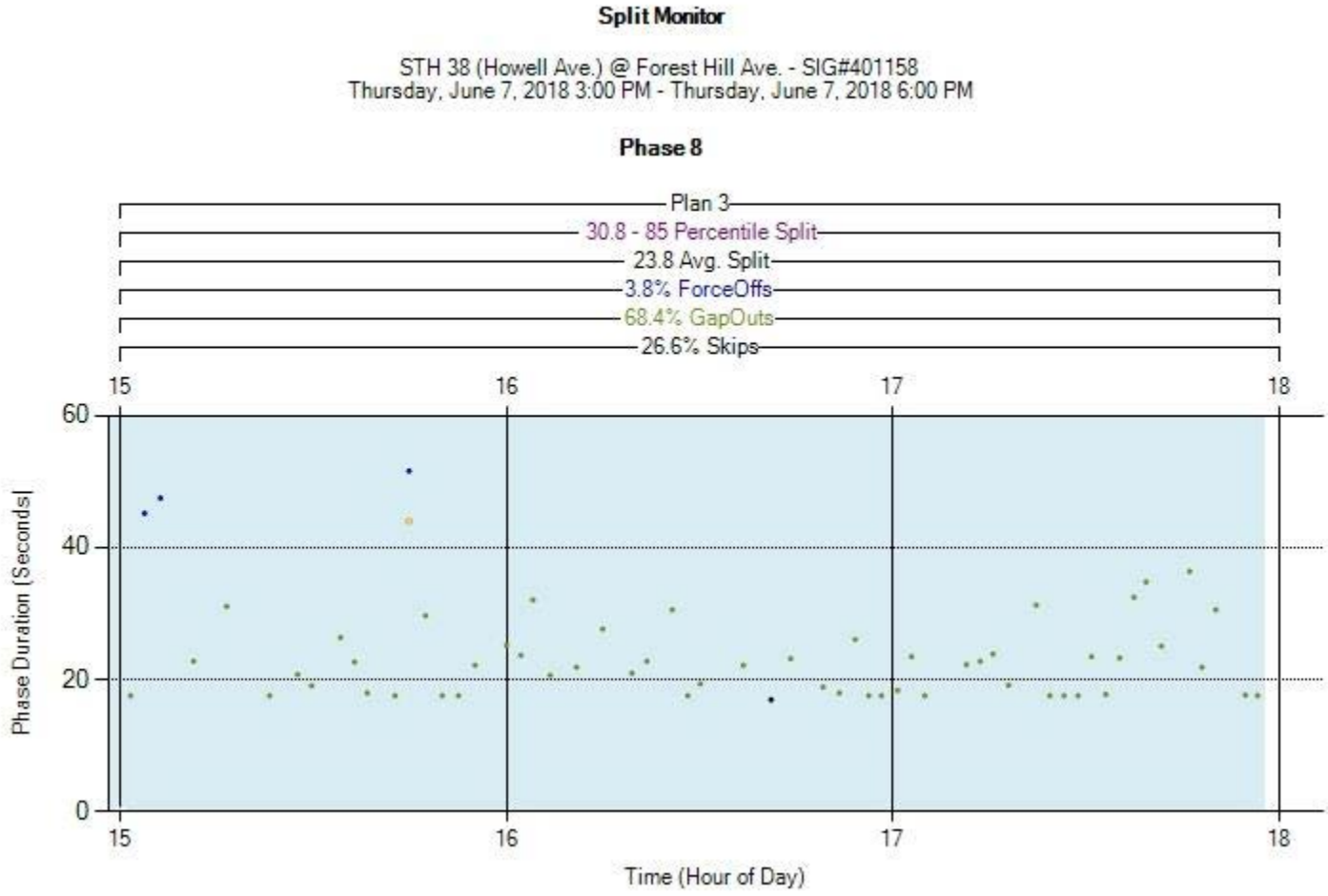
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Baseline Timings
6/7/2018 – 3:00 PM – 6:00 PM



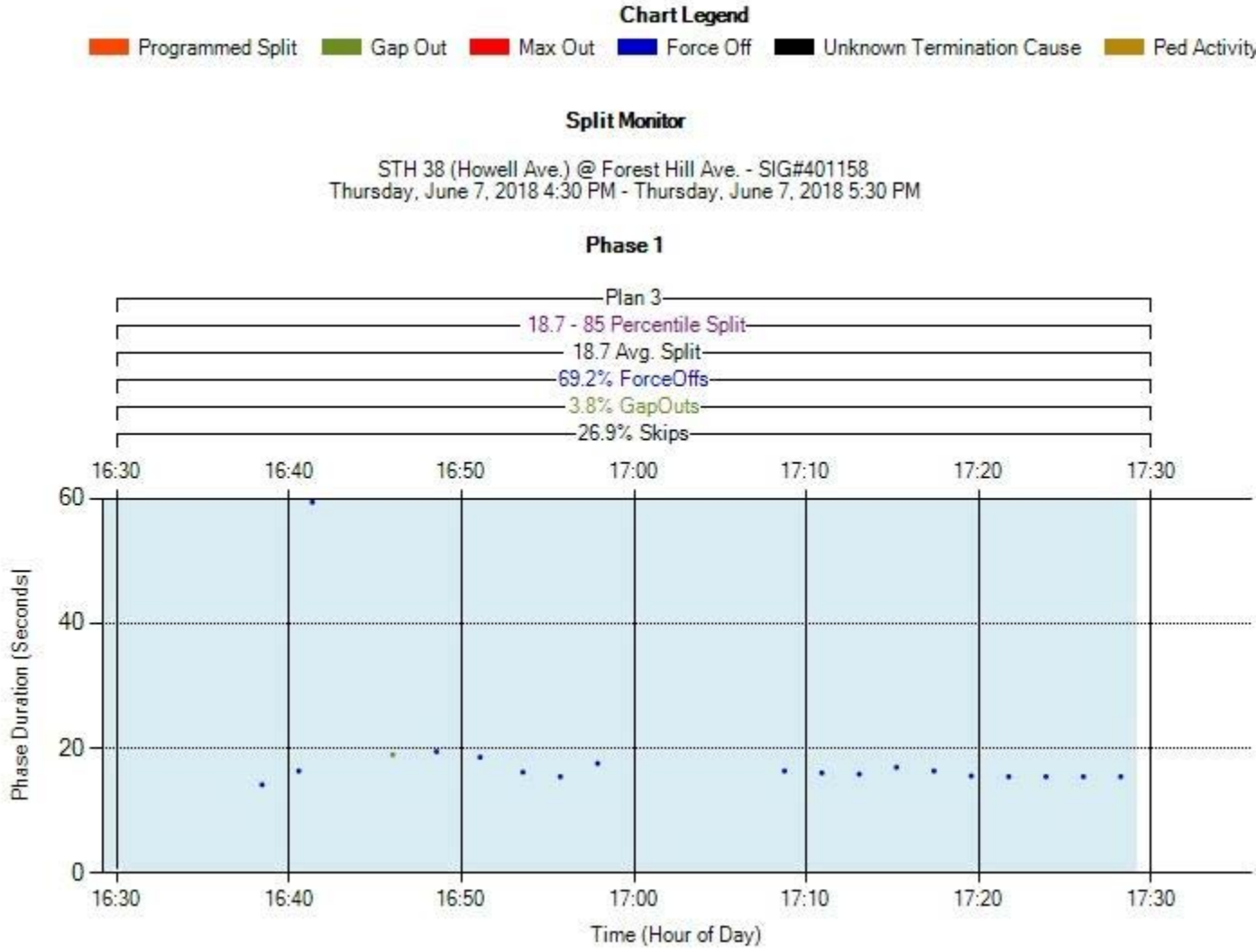
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Baseline Timings
6/7/2018 – 3:00 PM – 6:00 PM



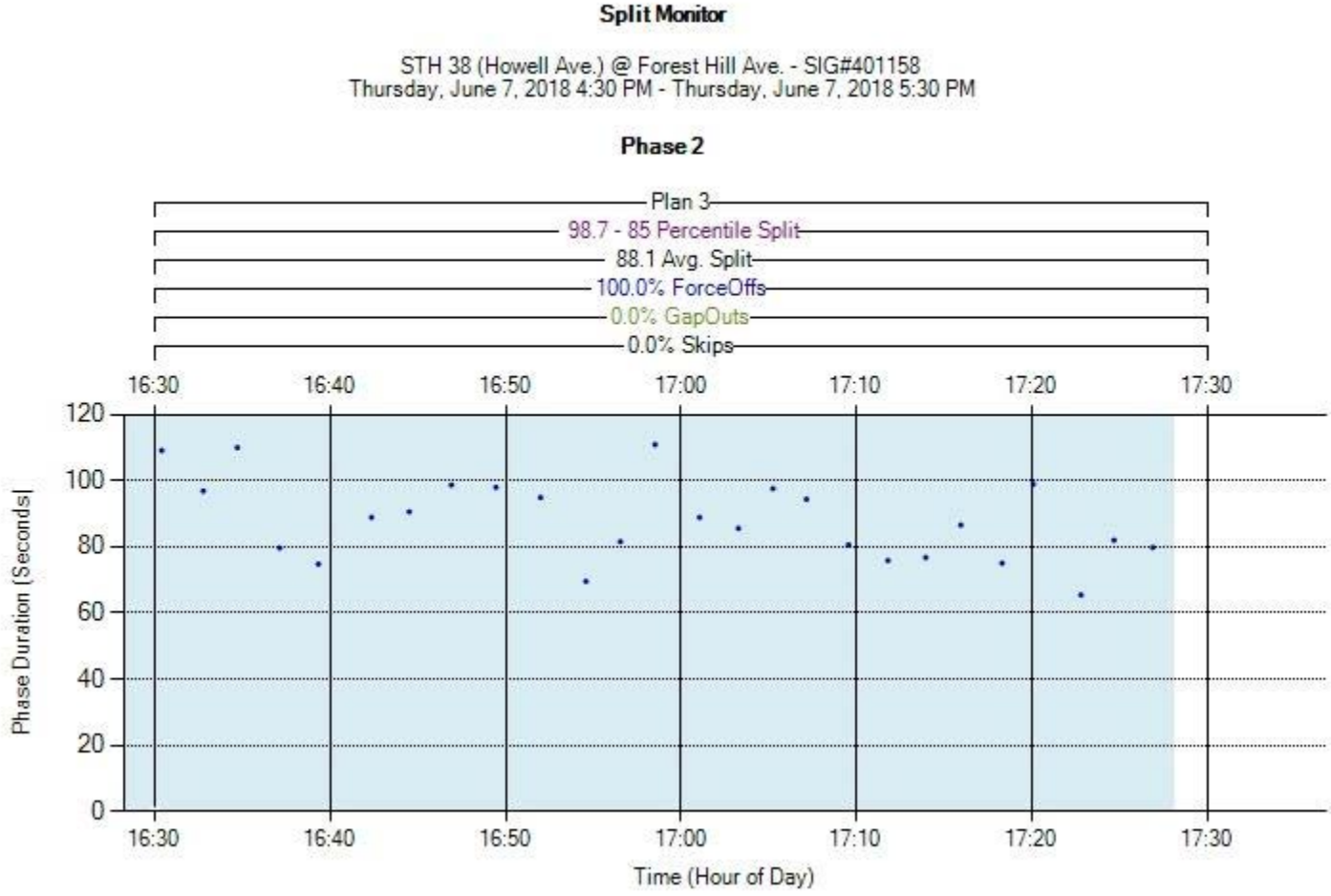
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Baseline Timings
6/7/2018 – 3:00 PM – 6:00 PM



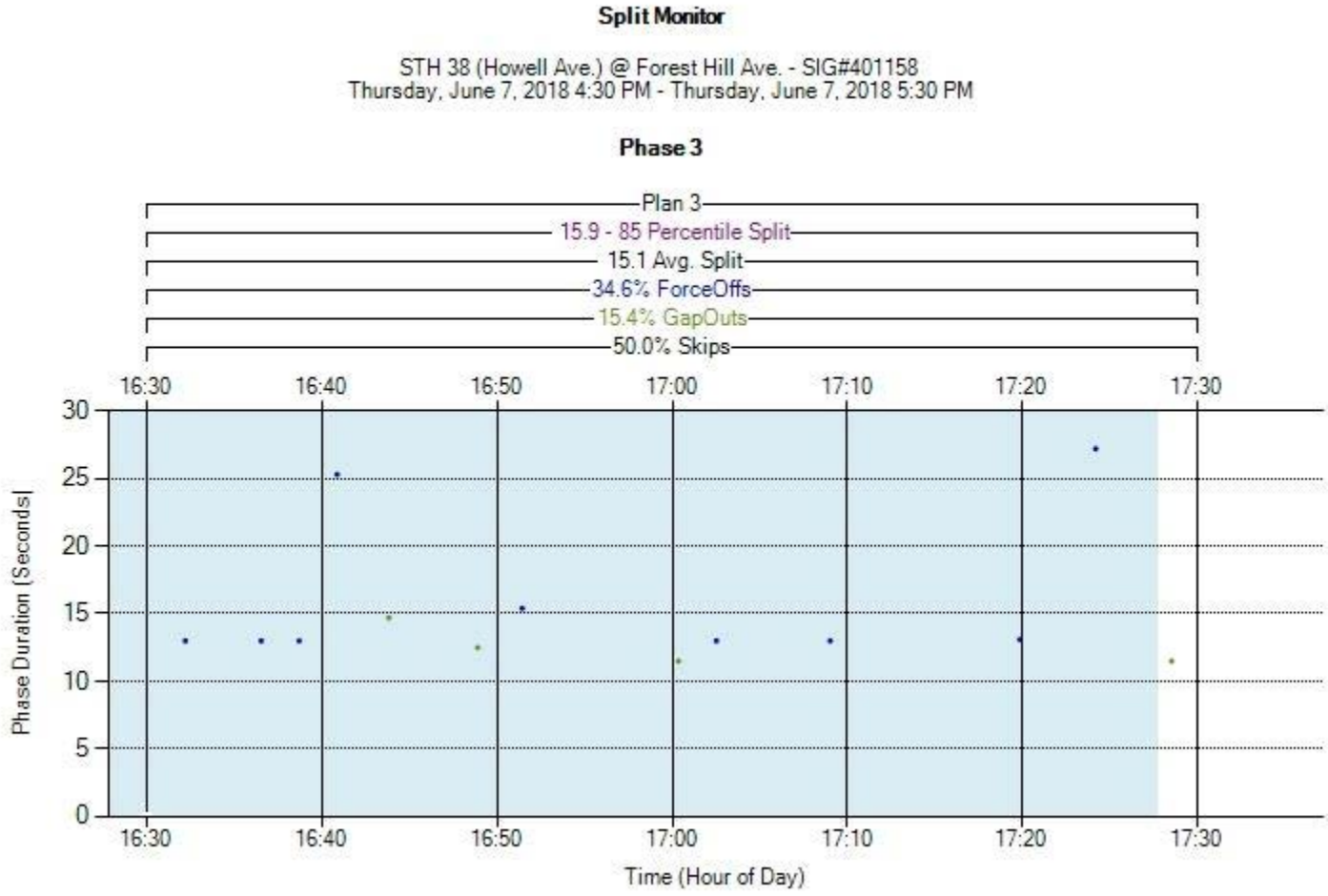
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Baseline Timings
6/7/2018 – 4:30 PM – 5:30 PM



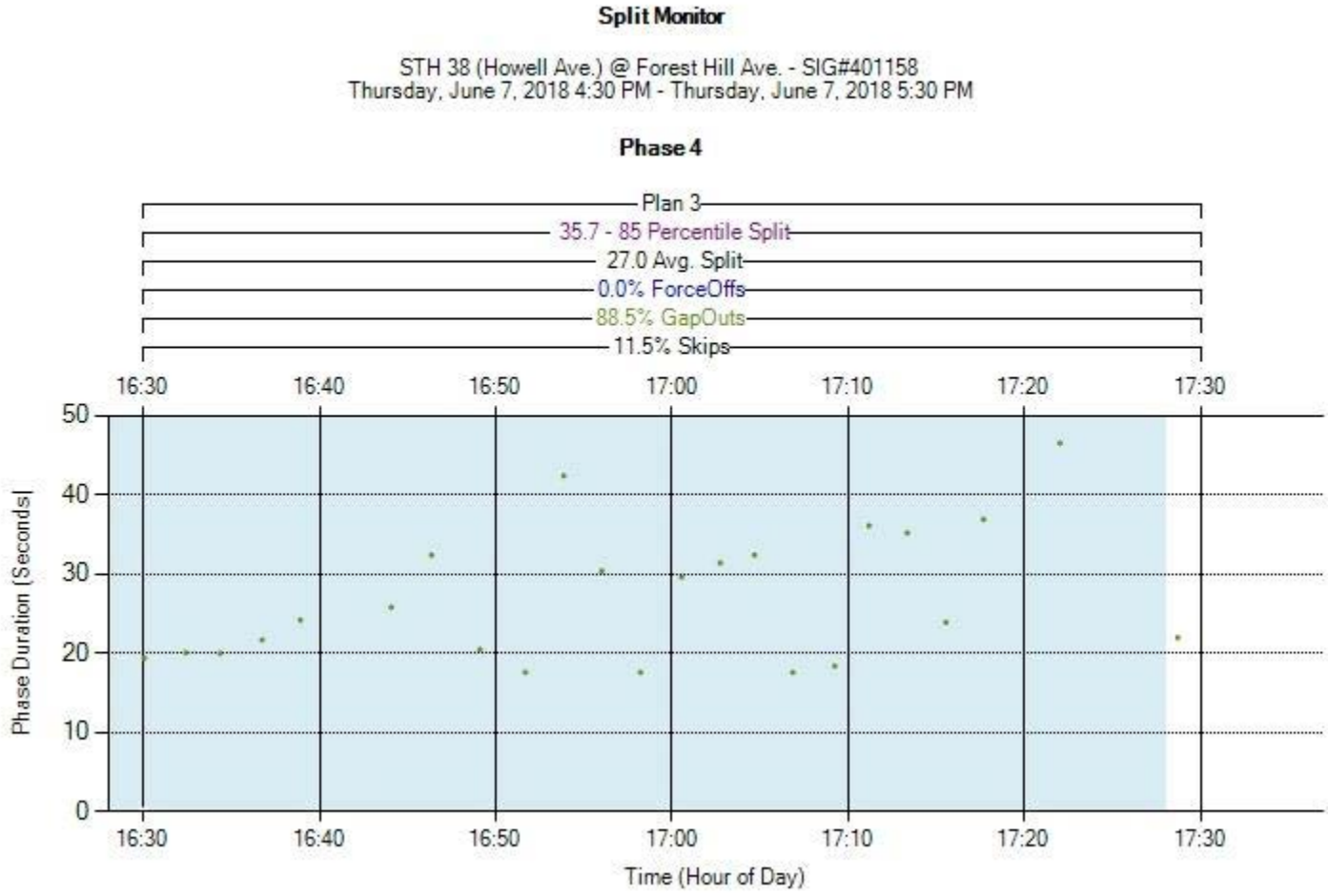
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Baseline Timings
6/7/2018 – 4:30 PM – 5:30 PM



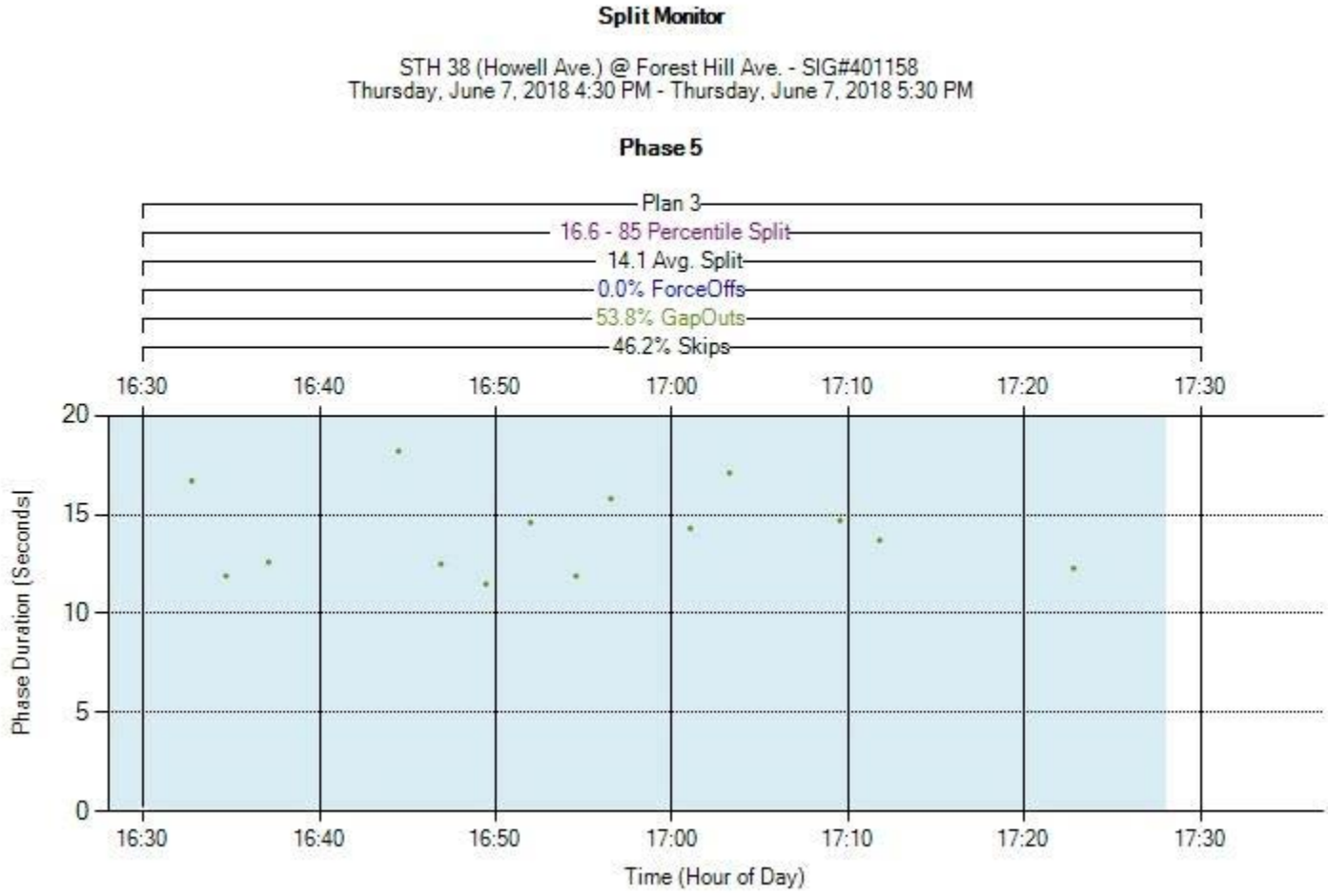
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Baseline Timings
6/7/2018 – 4:30 PM – 5:30 PM



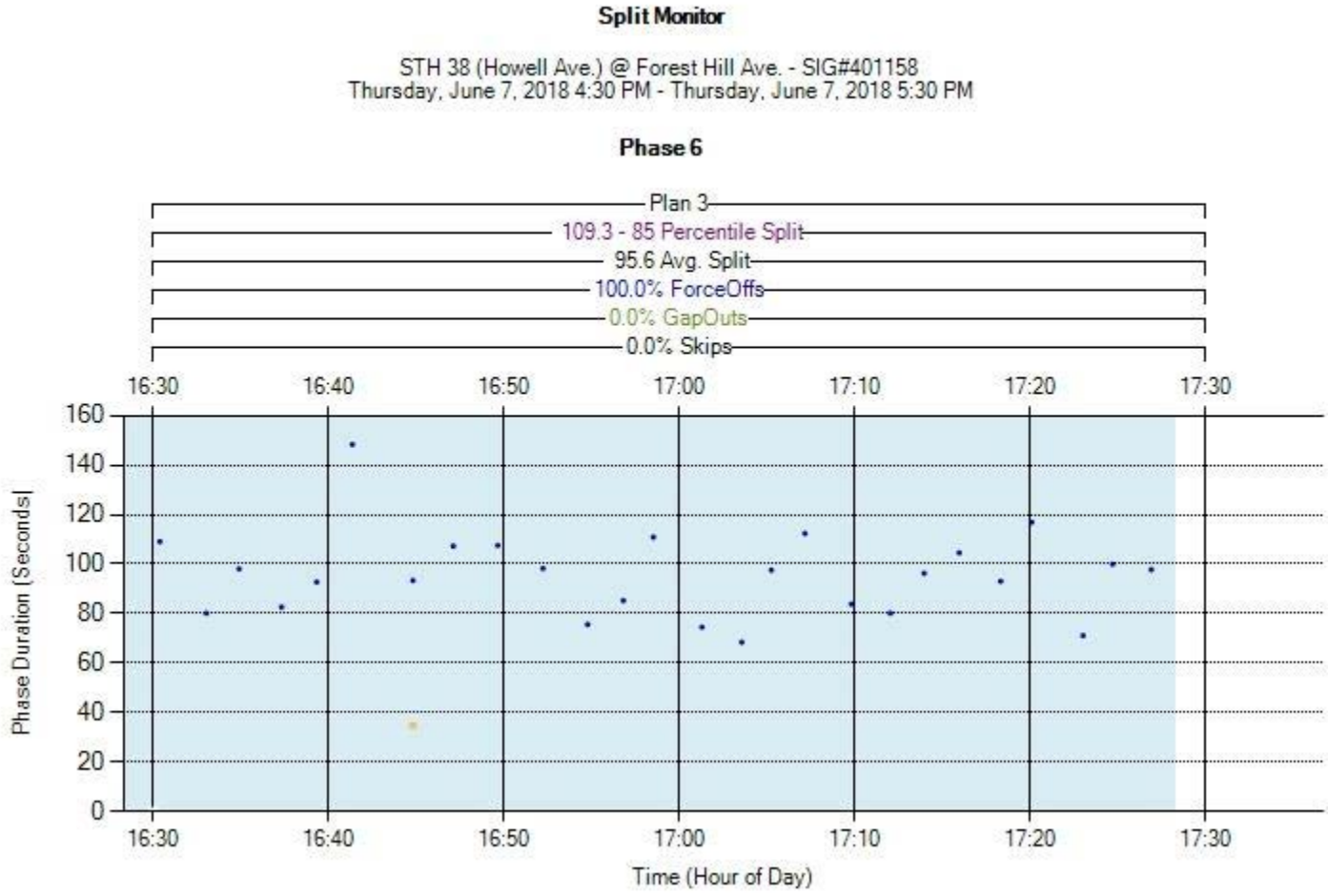
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Baseline Timings
6/7/2018 – 4:30 PM – 5:30 PM



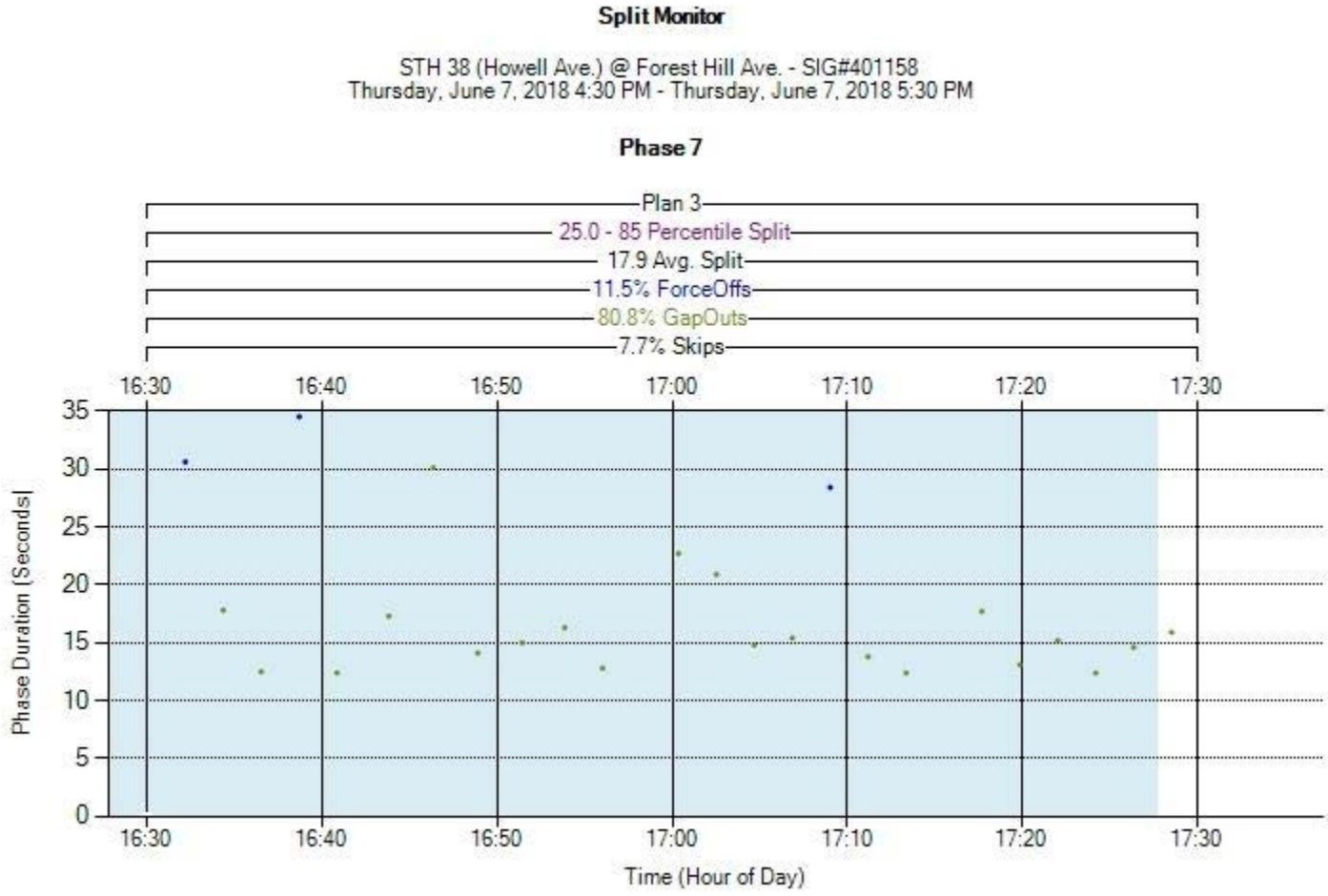
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Baseline Timings
6/7/2018 – 4:30 PM – 5:30 PM



WIS 38 Corridor – STH 38 & Forest Hill Ave.
Baseline Timings
6/7/2018 – 4:30 PM – 5:30 PM



WIS 38 Corridor – STH 38 & Forest Hill Ave.
Baseline Timings
6/7/2018 – 4:30 PM – 5:30 PM



WIS 38 Corridor – STH 38 & Forest Hill Ave.
Baseline Timings
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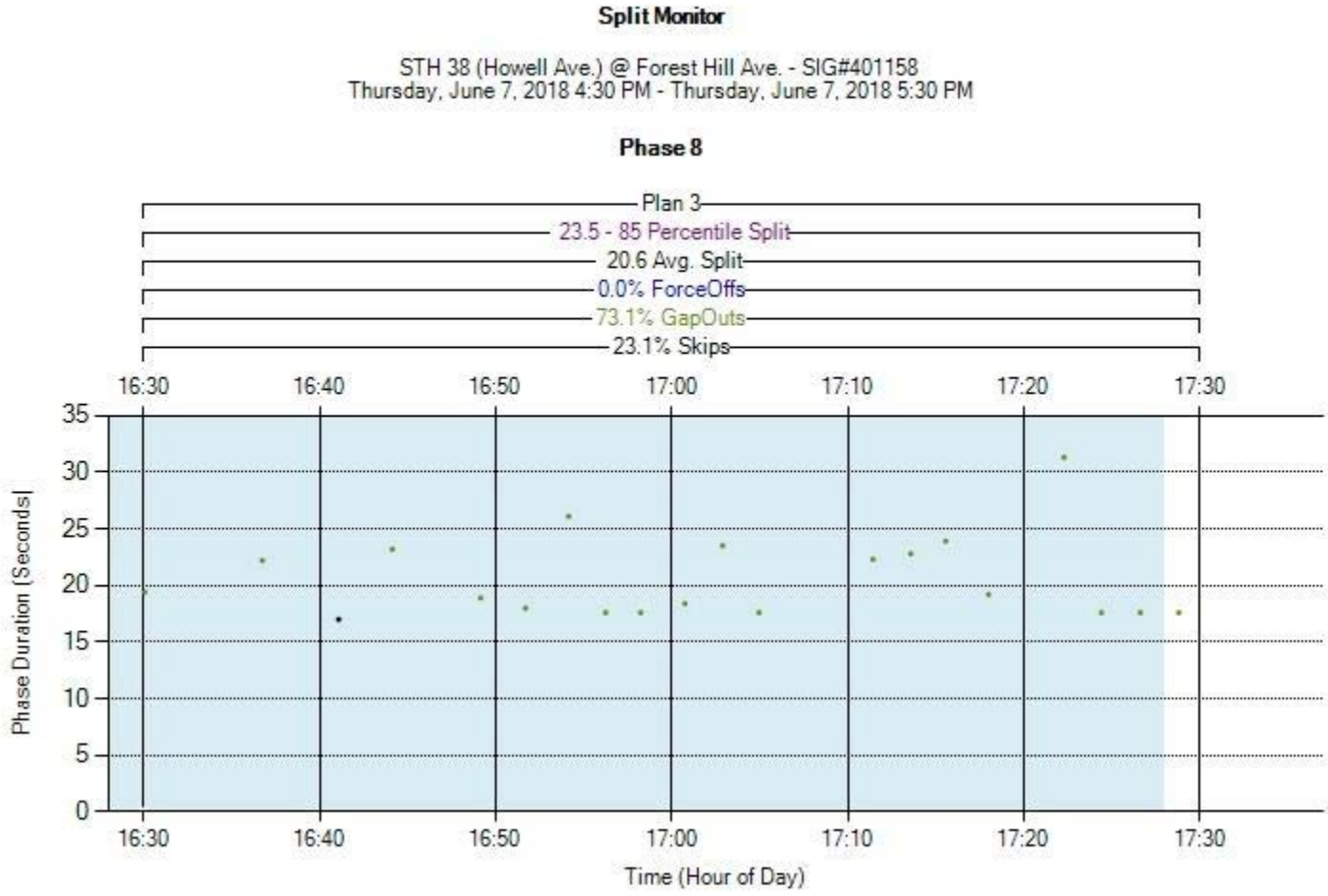
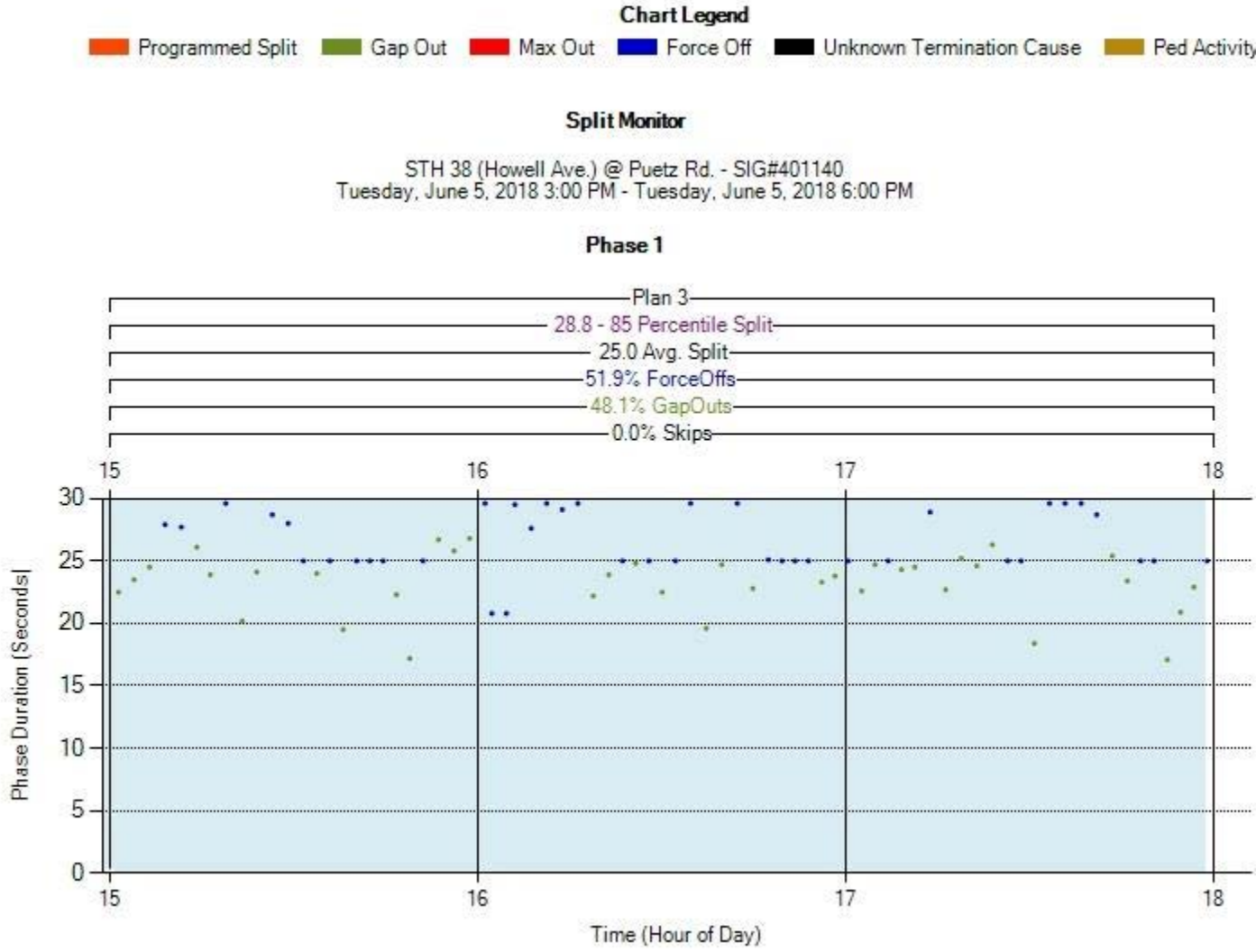
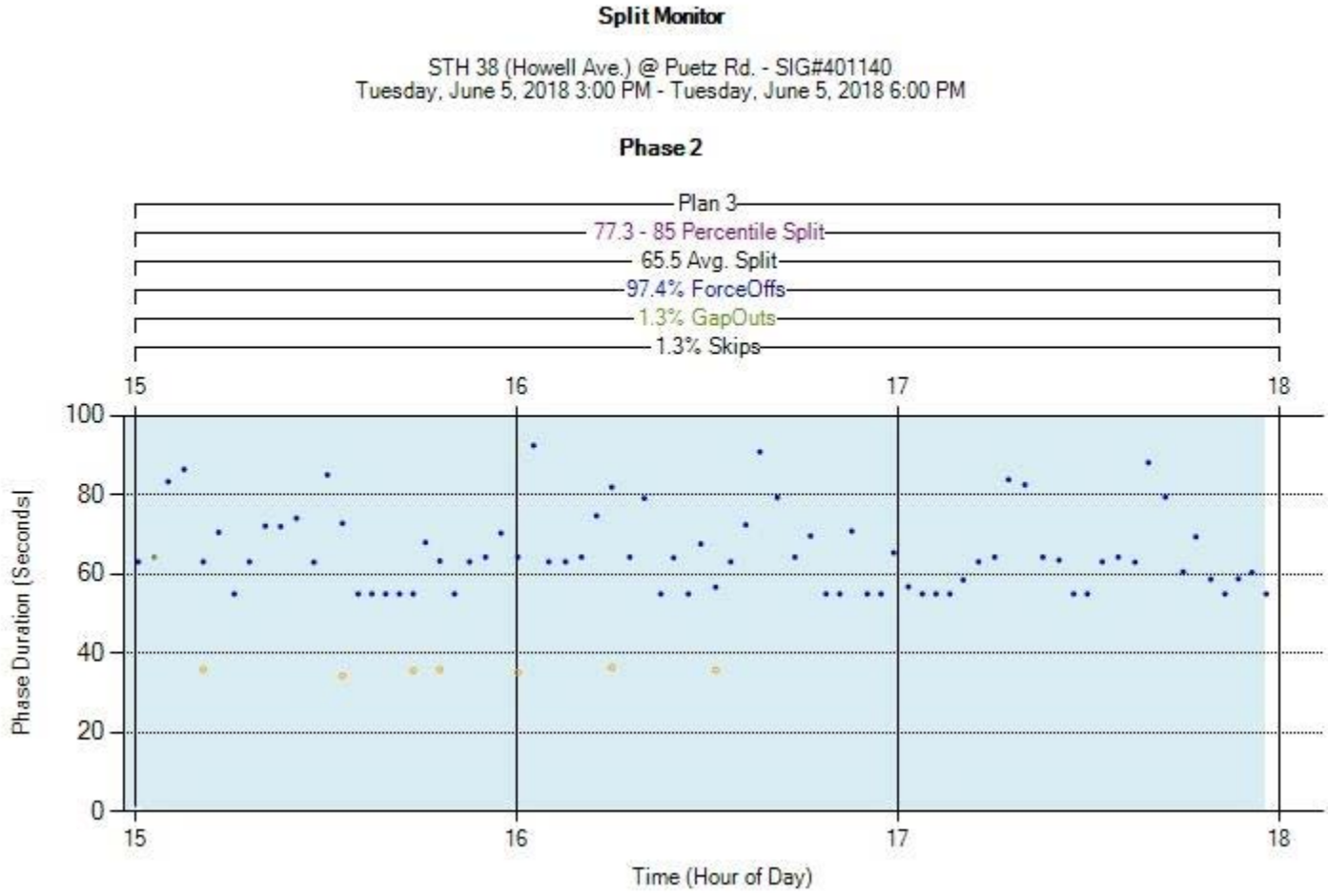


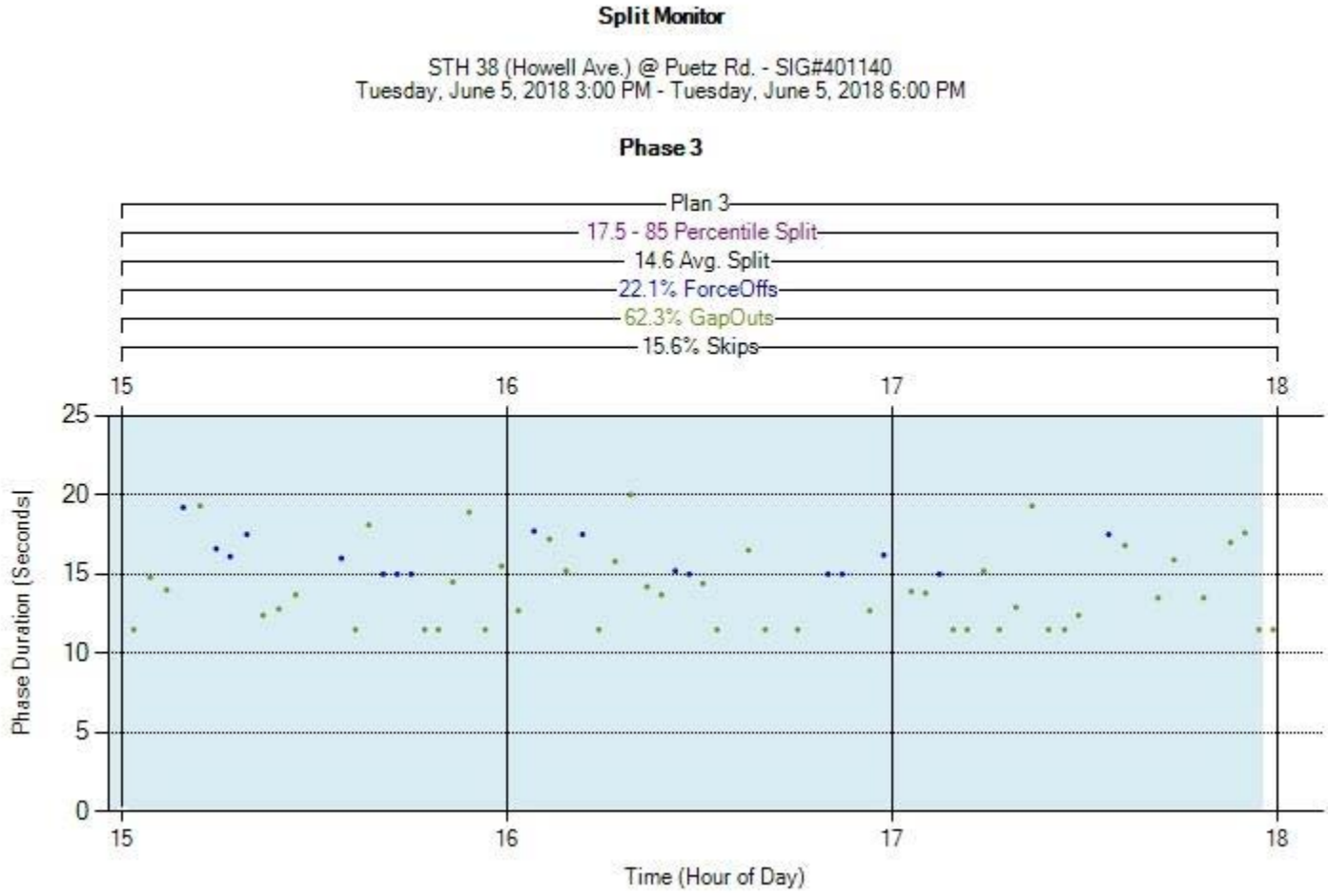
WIS 38 Corridor – STH 38 & Puetz Rd.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



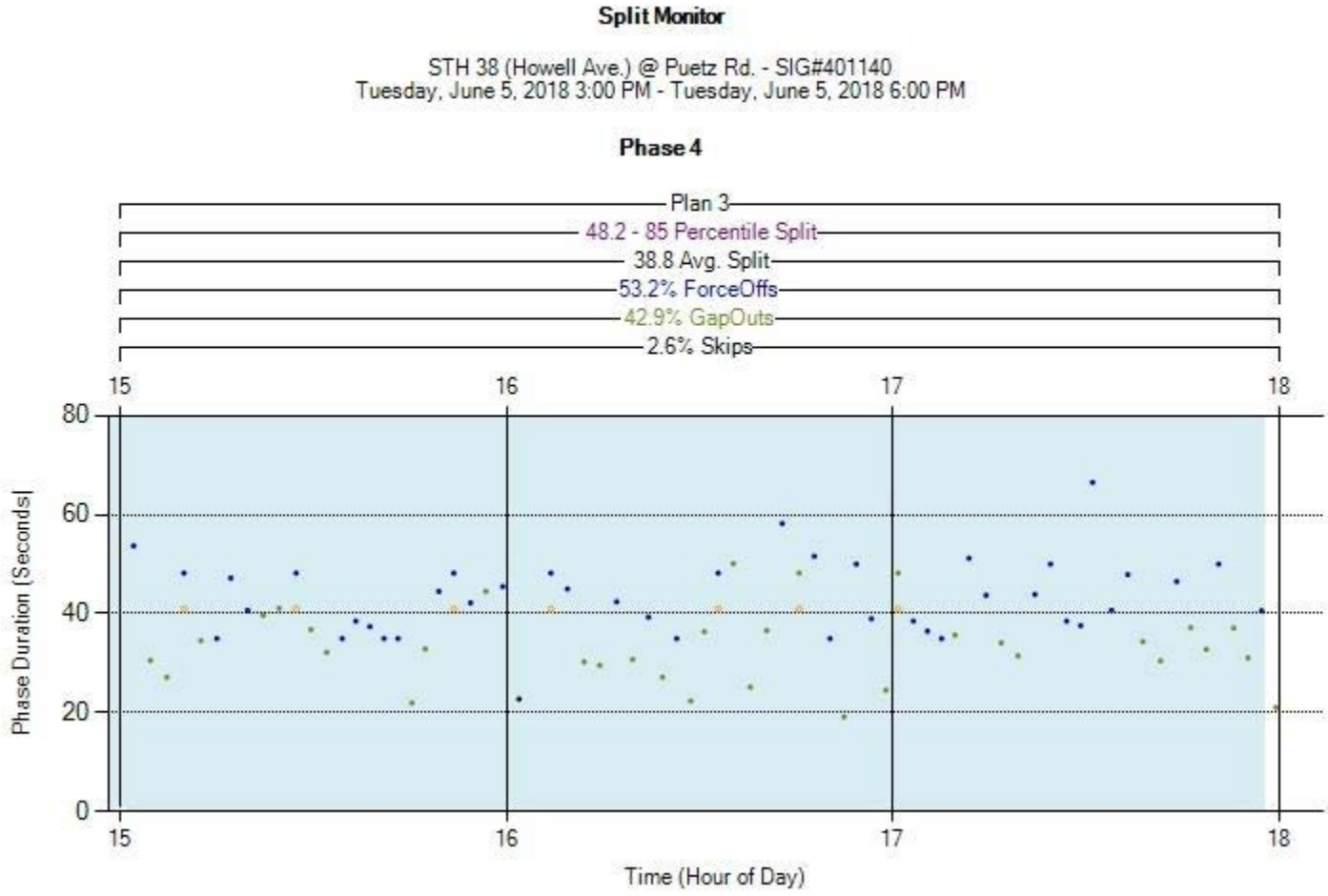
WIS 38 Corridor – STH 38 & Puetz Rd.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



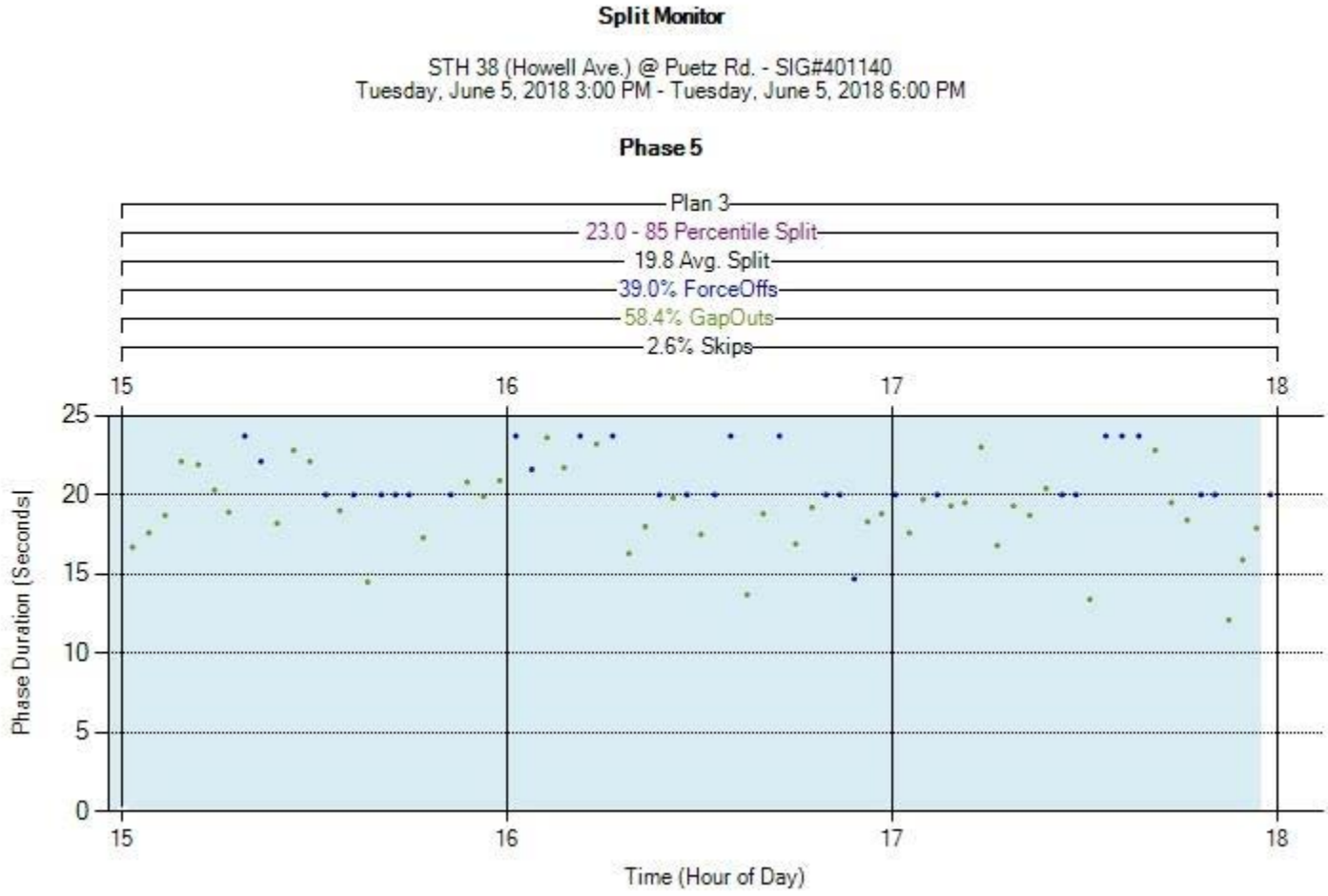
WIS 38 Corridor – STH 38 & Puetz Rd.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



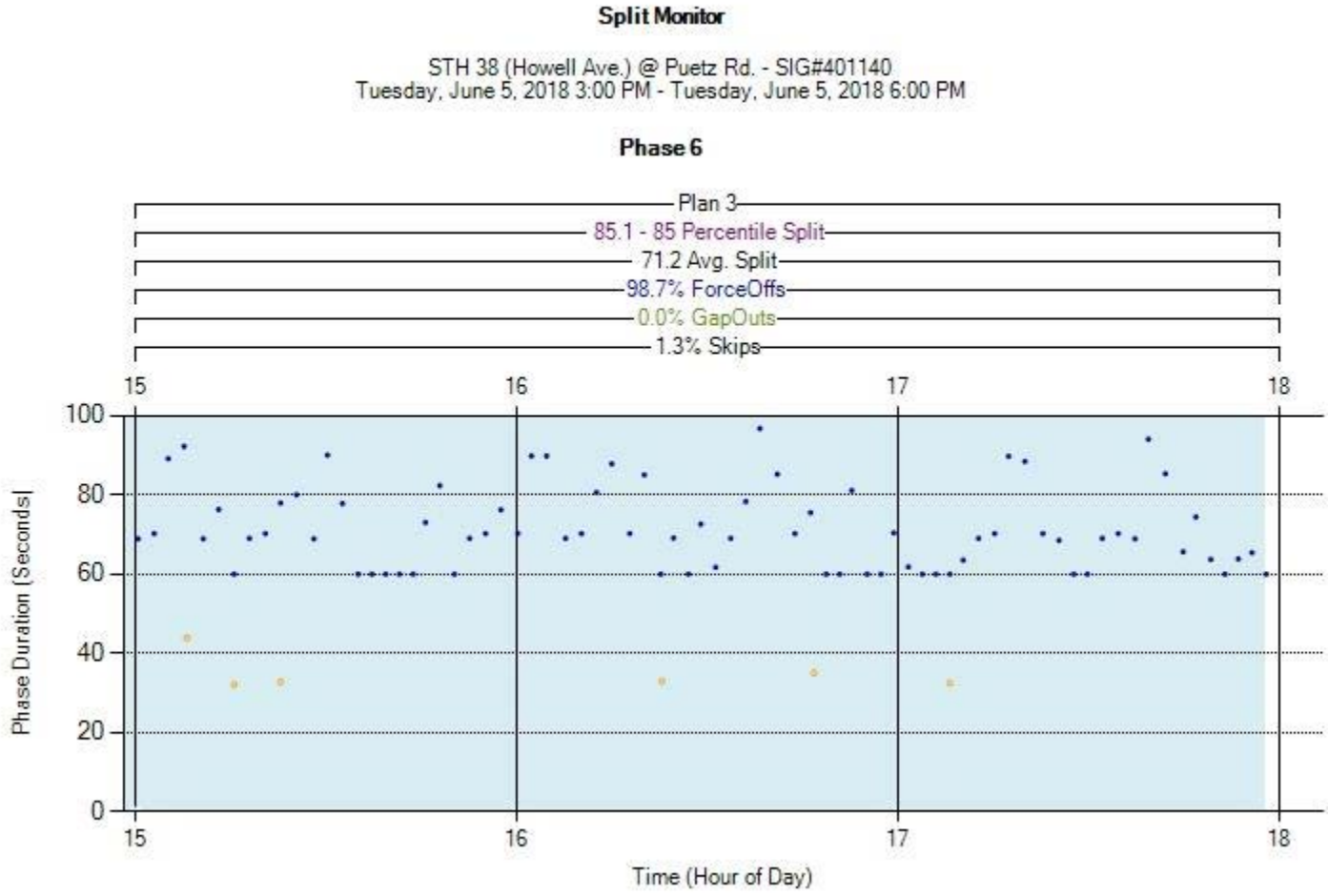
WIS 38 Corridor – STH 38 & Puetz Rd.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



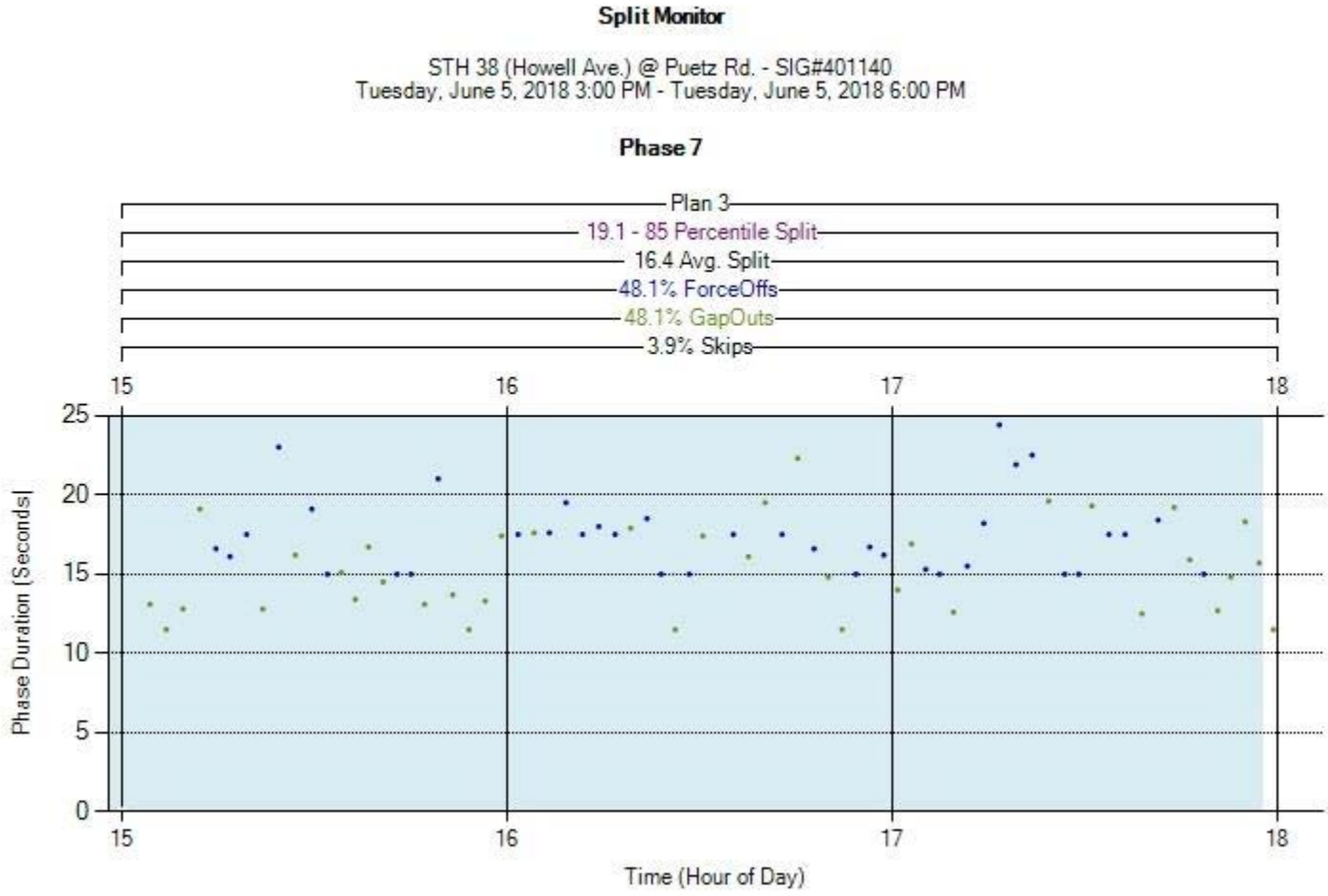
WIS 38 Corridor – STH 38 & Puetz Rd.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



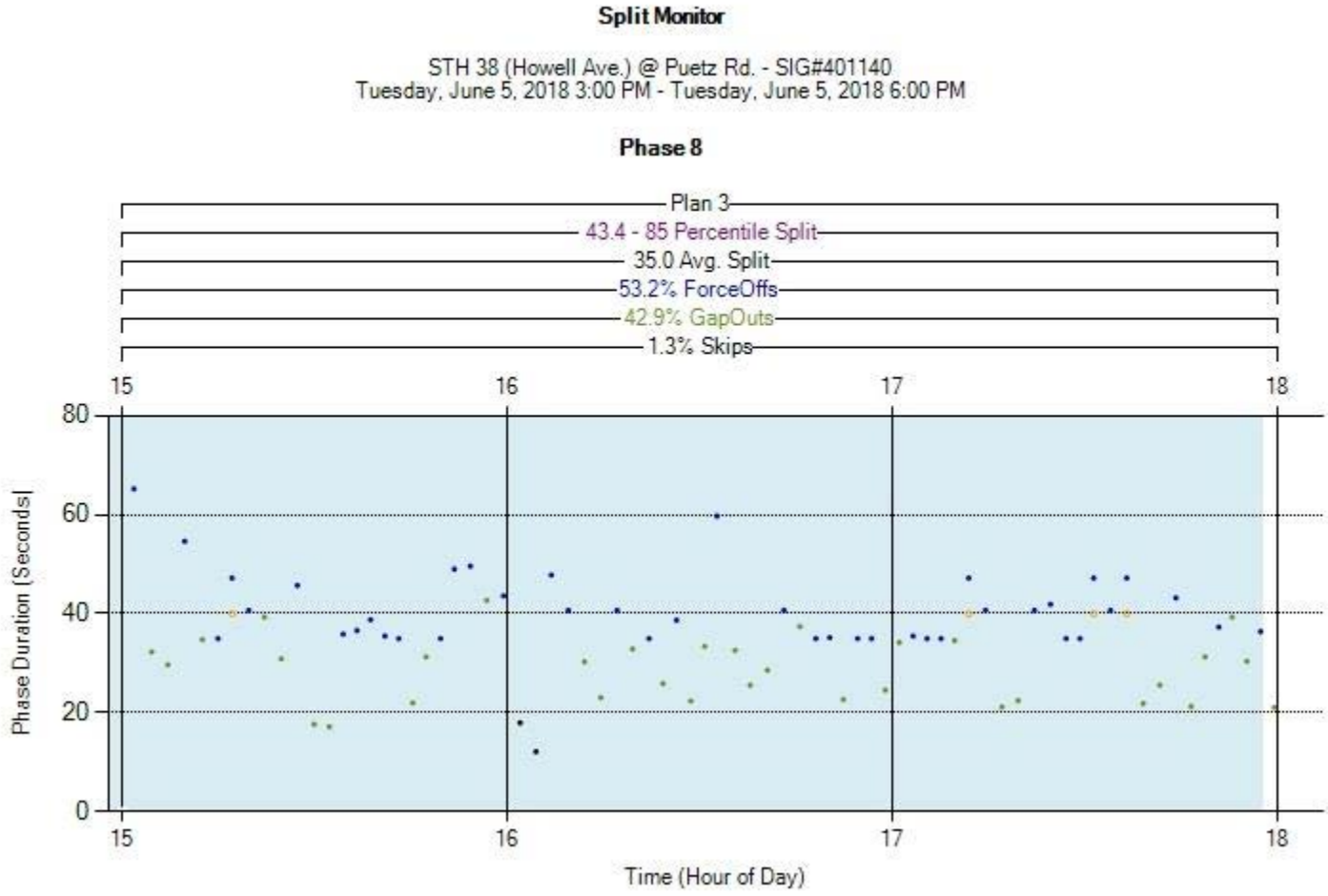
WIS 38 Corridor – STH 38 & Puetz Rd.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



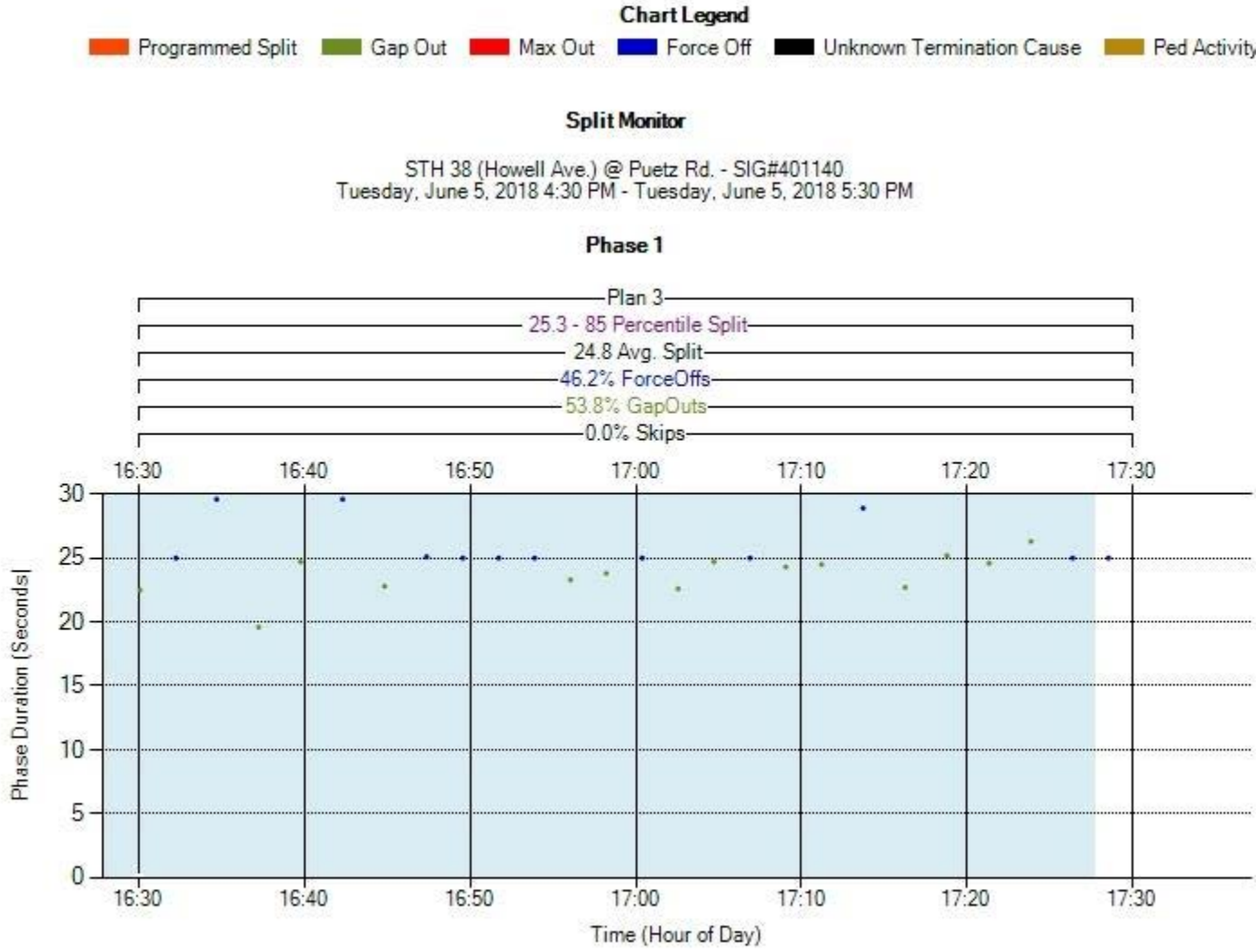
WIS 38 Corridor – STH 38 & Puetz Rd.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



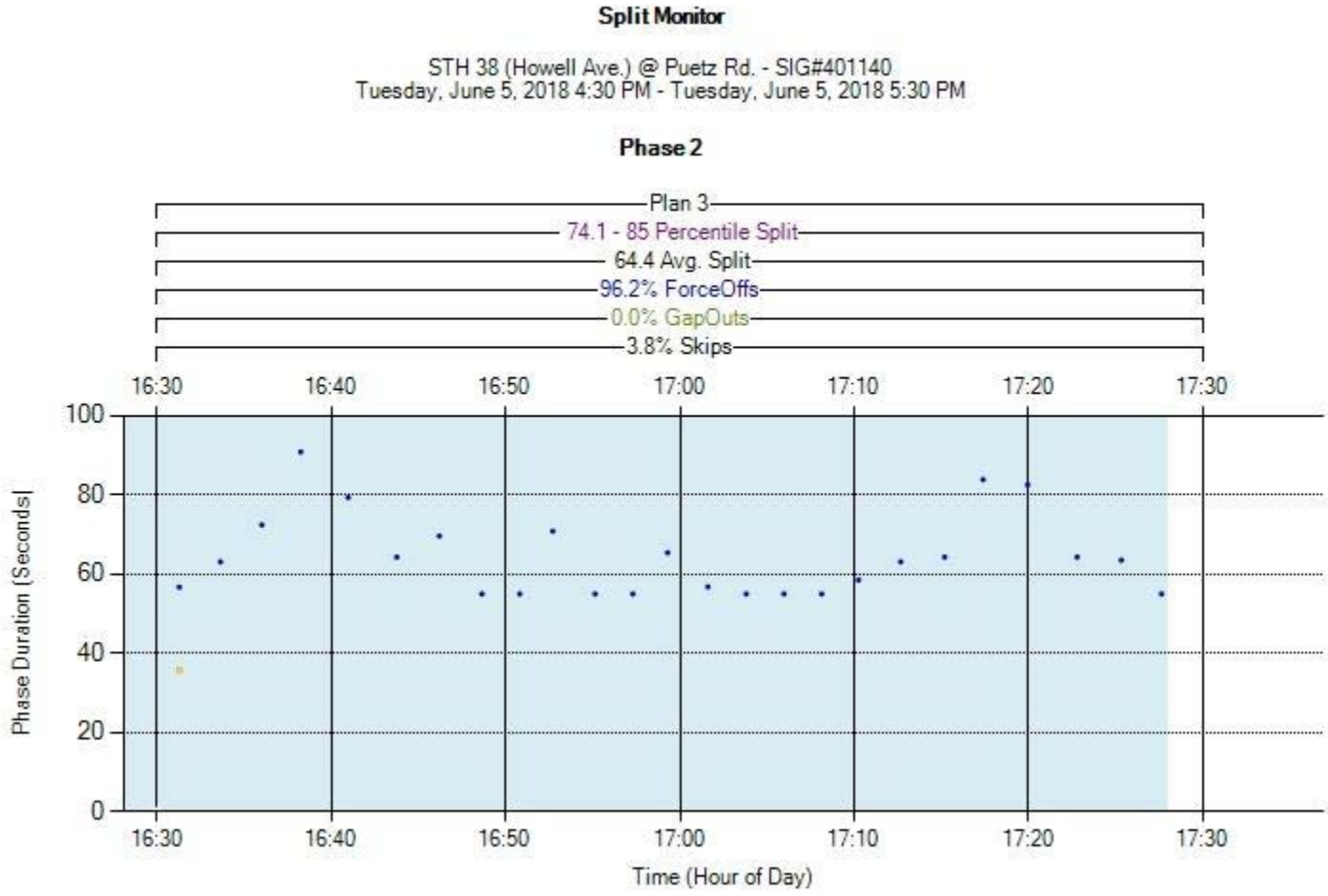
WIS 38 Corridor – STH 38 & Puetz Rd.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Puetz Rd.
Baseline Timings
6/5/2018 – 4:30 PM – 5:30 PM



WIS 38 Corridor – STH 38 & Puetz Rd.
Baseline Timings
6/5/2018 – 4:30 PM – 5:30 PM



WIS 38 Corridor – STH 38 & Puetz Rd.
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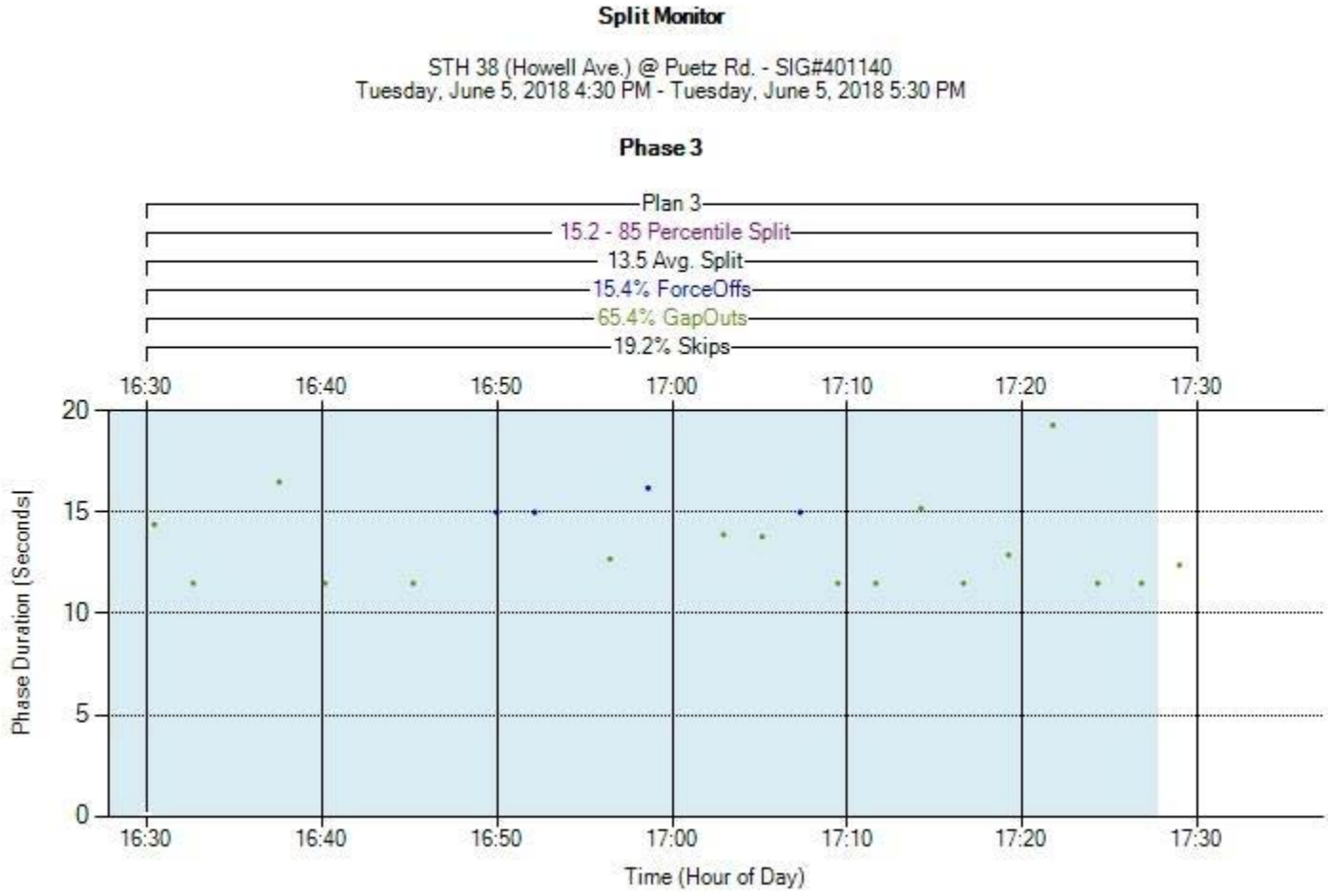

WIS 38 Corridor – STH 38 & Puetz Rd.
Baseline Timings
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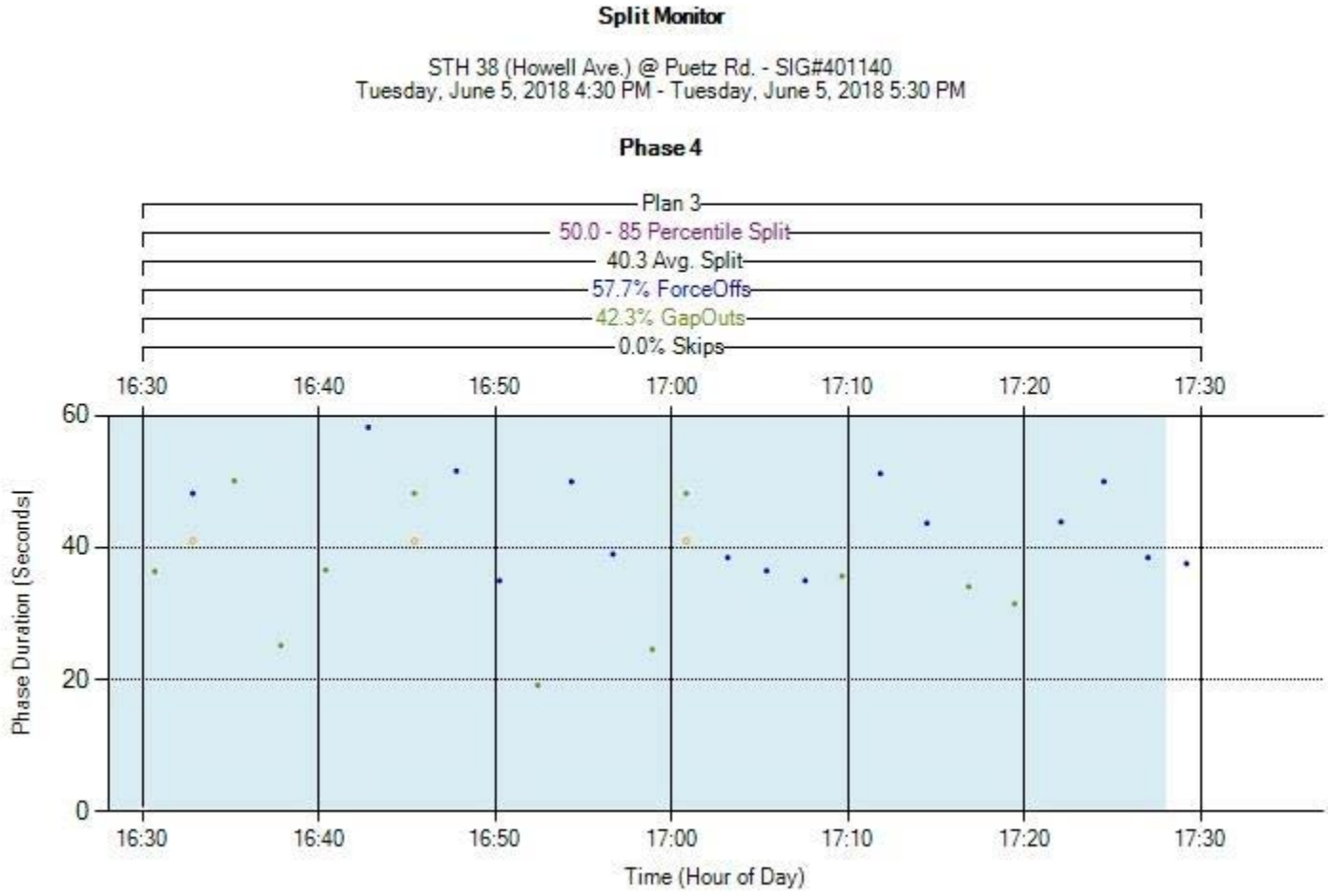

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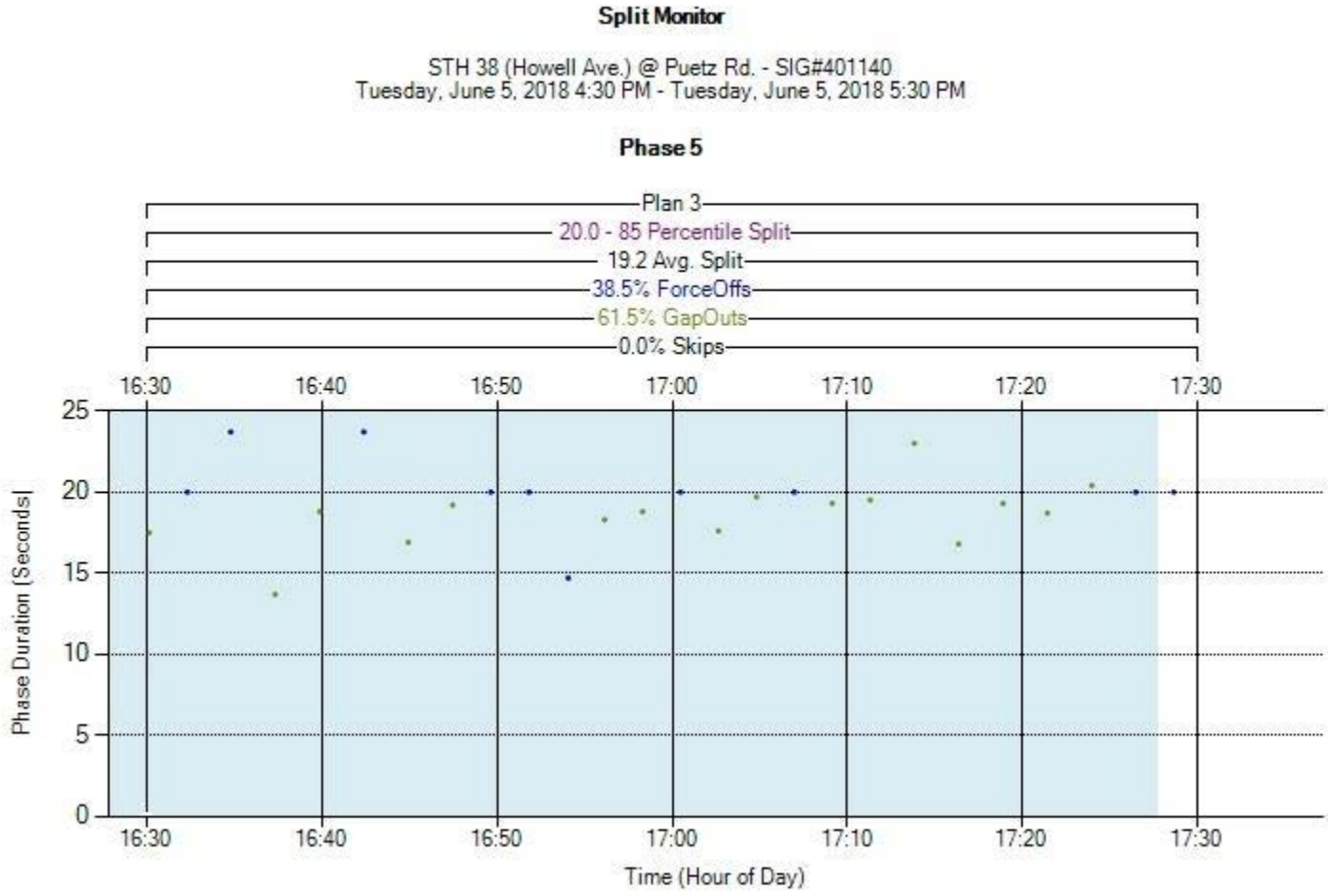

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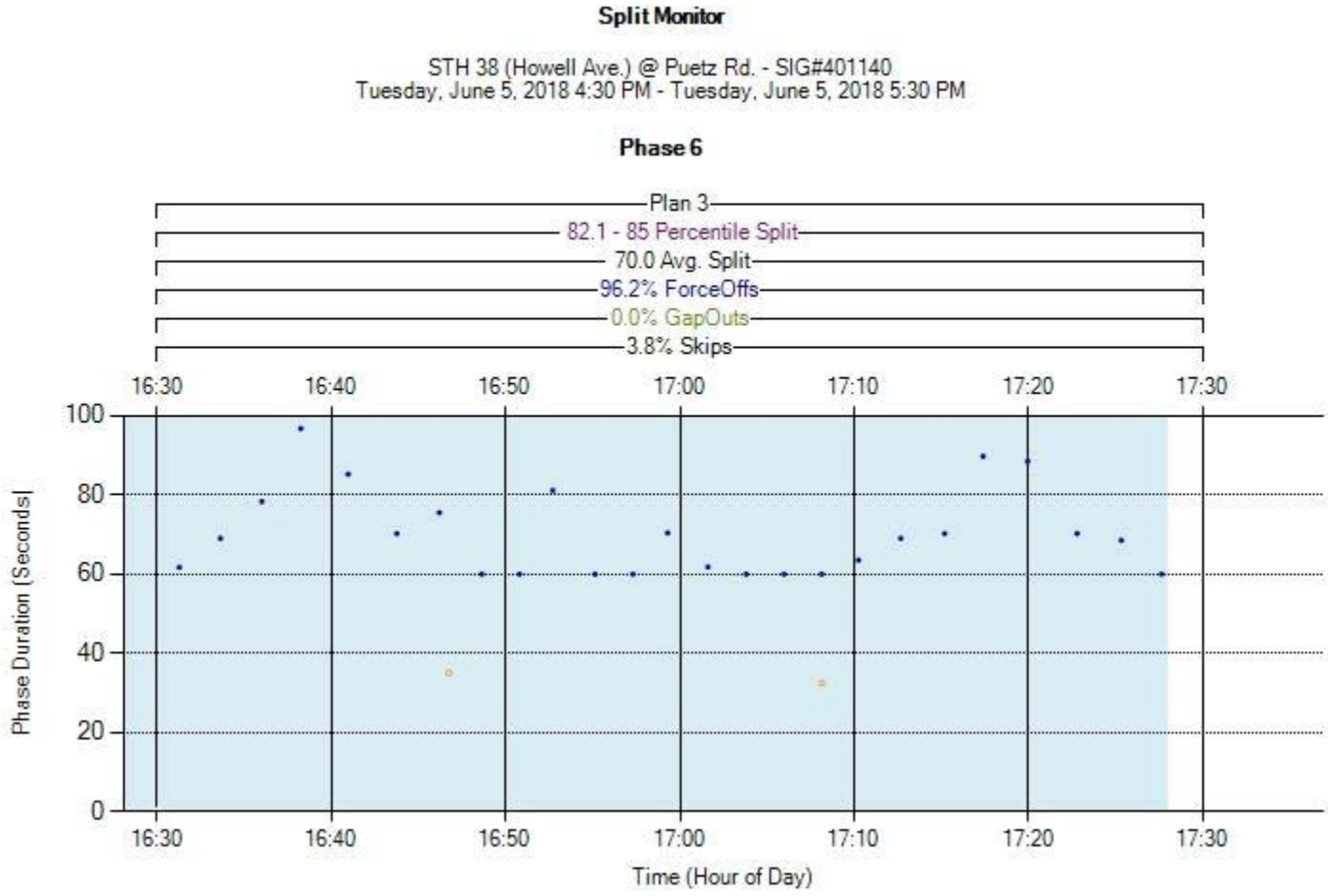
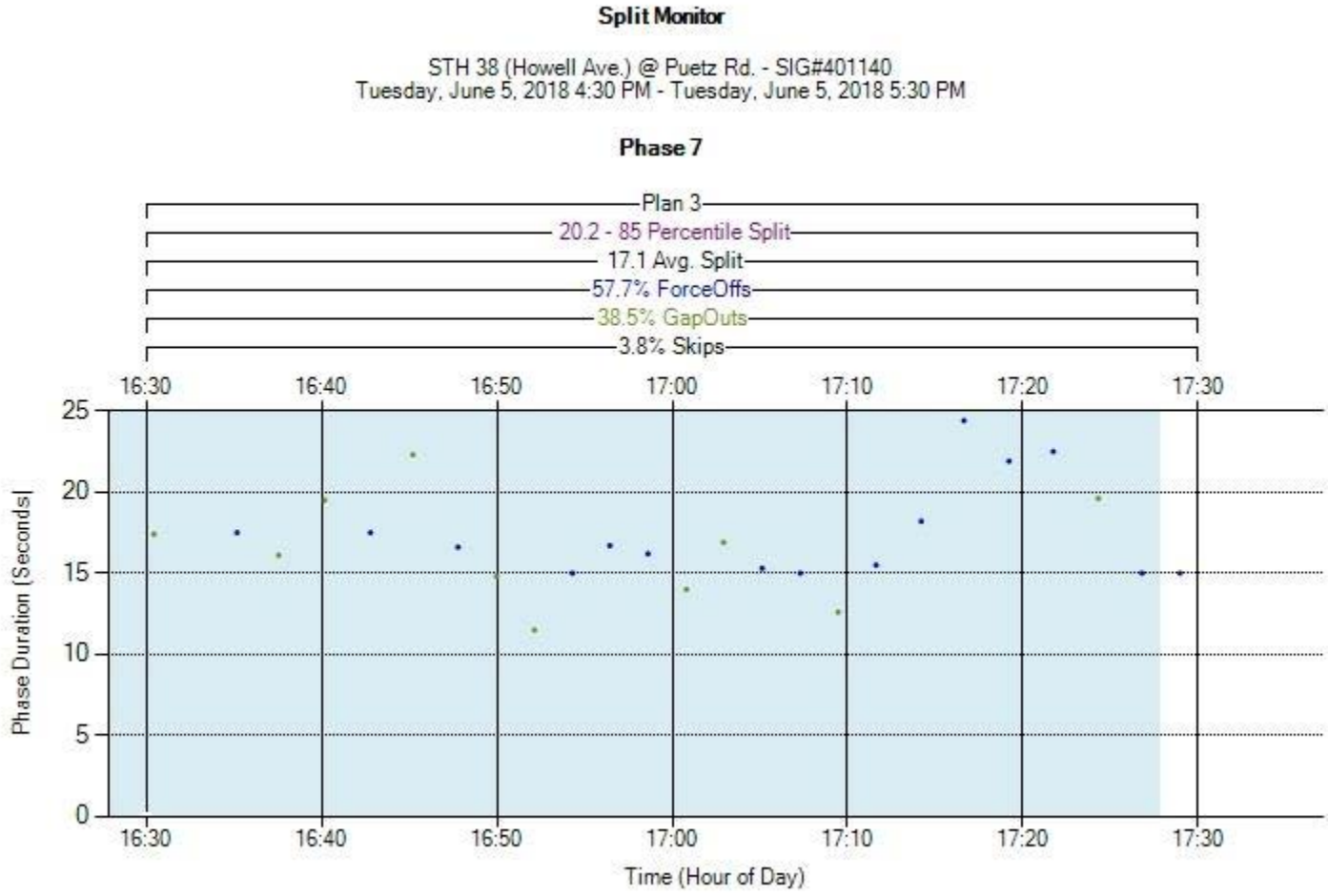
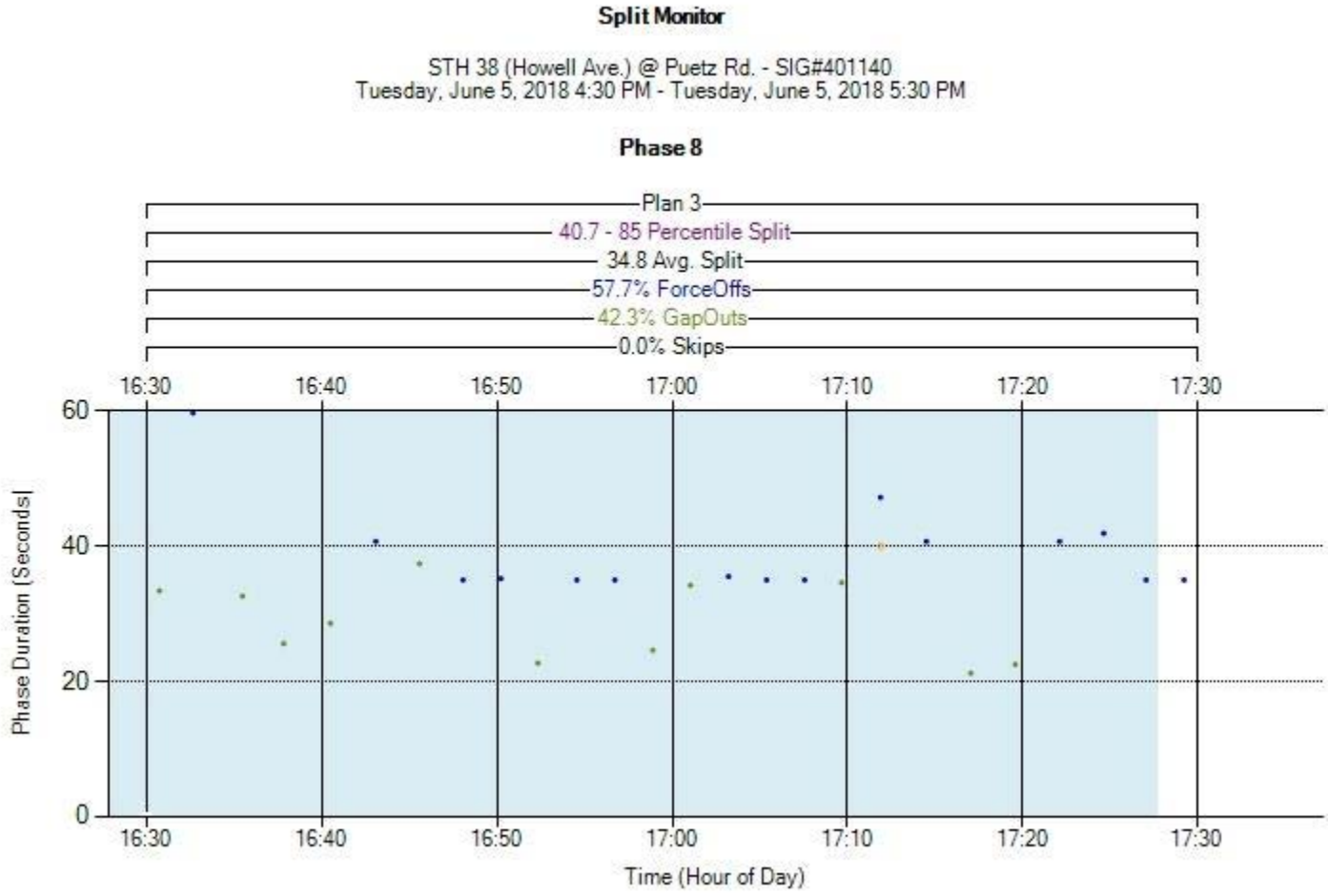


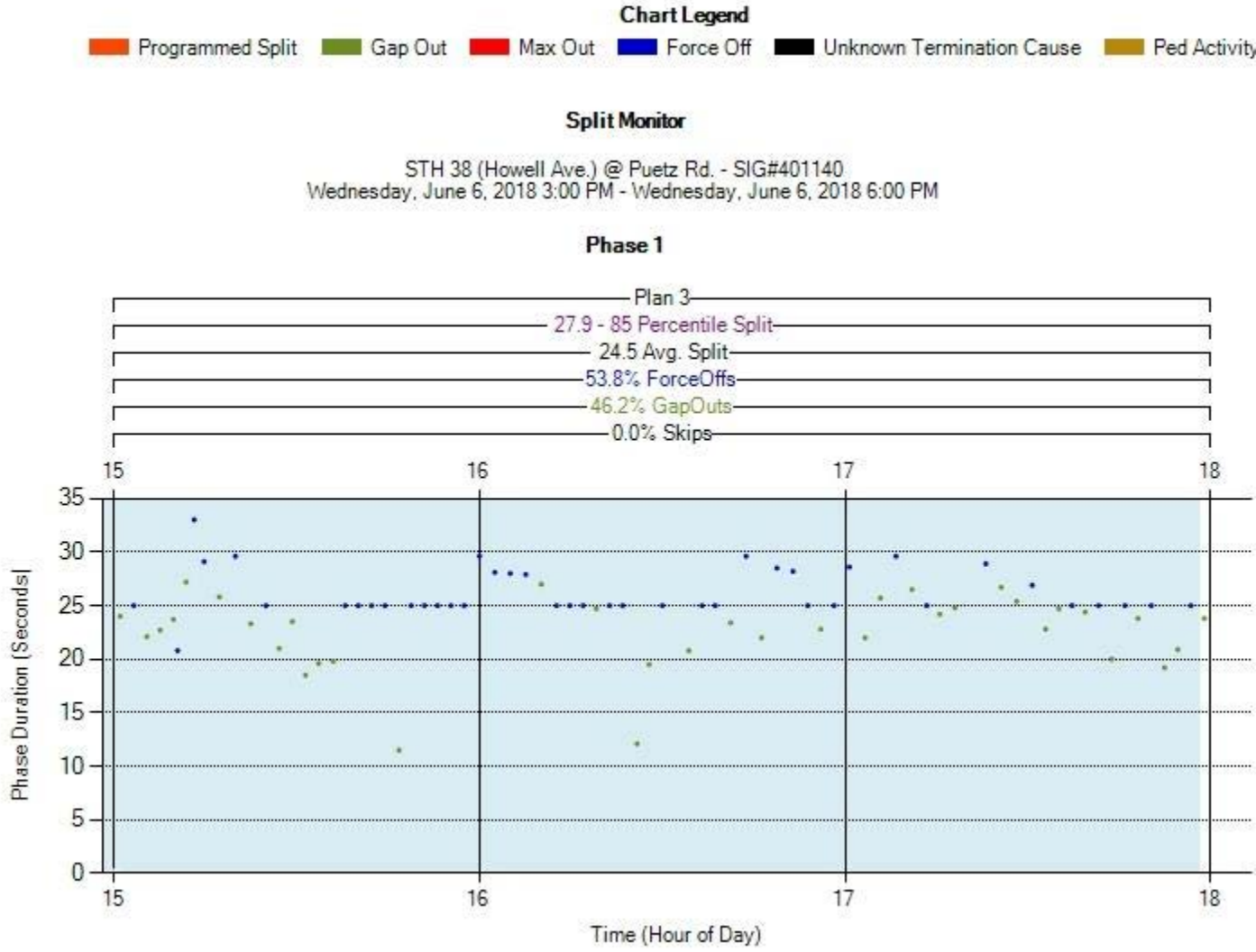
WIS 38 Corridor – STH 38 & Puetz Rd.
Baseline Timings
6/5/2018 – 4:30 PM – 5:30 PM



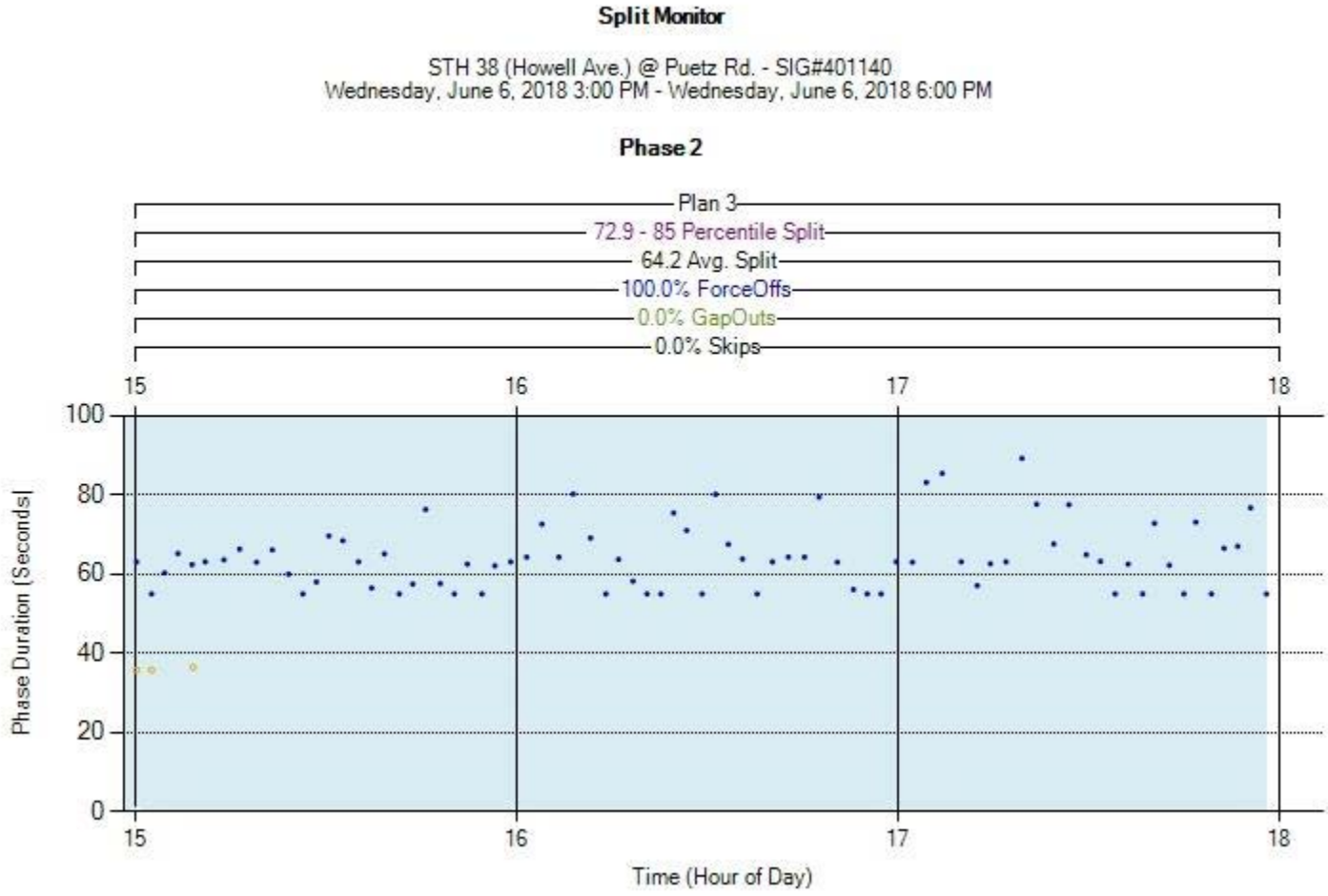
WIS 38 Corridor – STH 38 & Puetz Rd.
Baseline Timings
6/5/2018 – 4:30 PM – 5:30 PM



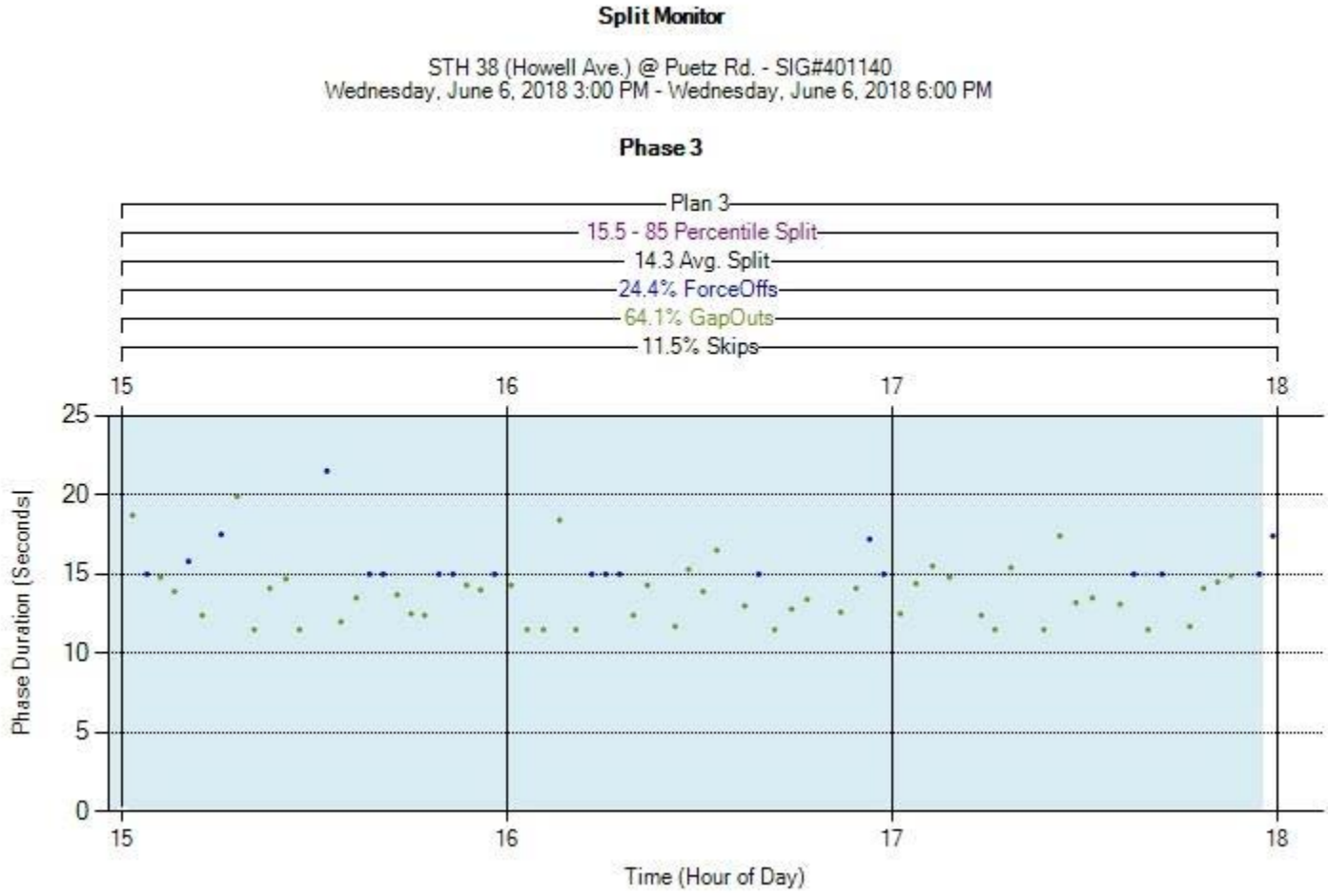
WIS 38 Corridor – STH 38 & Puetz Rd.
Baseline Timings
6/6/2018 – 3:00 PM – 6:00 PM



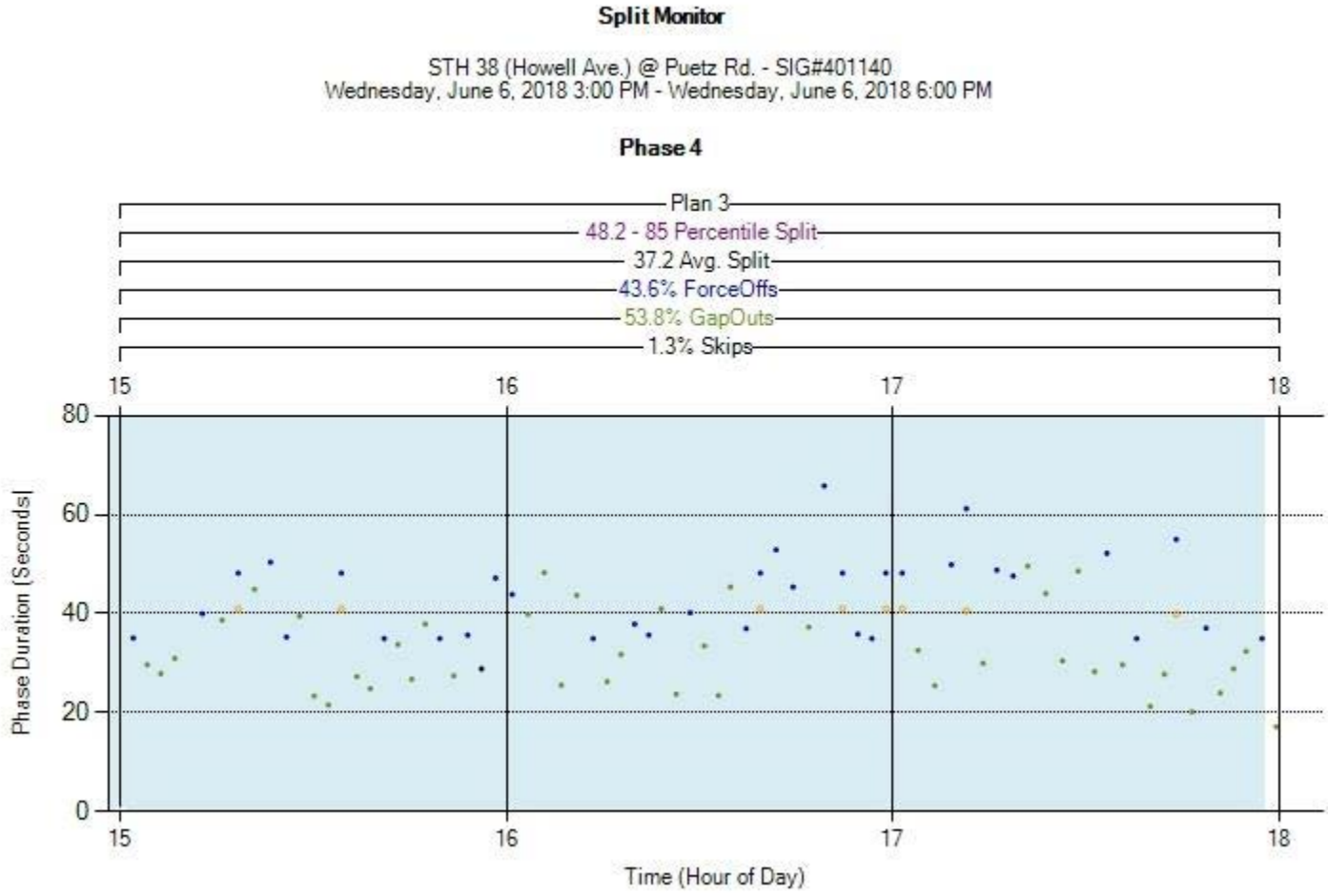
WIS 38 Corridor – STH 38 & Puetz Rd.
Baseline Timings
6/6/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Puetz Rd.
Baseline Timings
6/6/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Puetz Rd.
Baseline Timings
6/6/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Puetz Rd.
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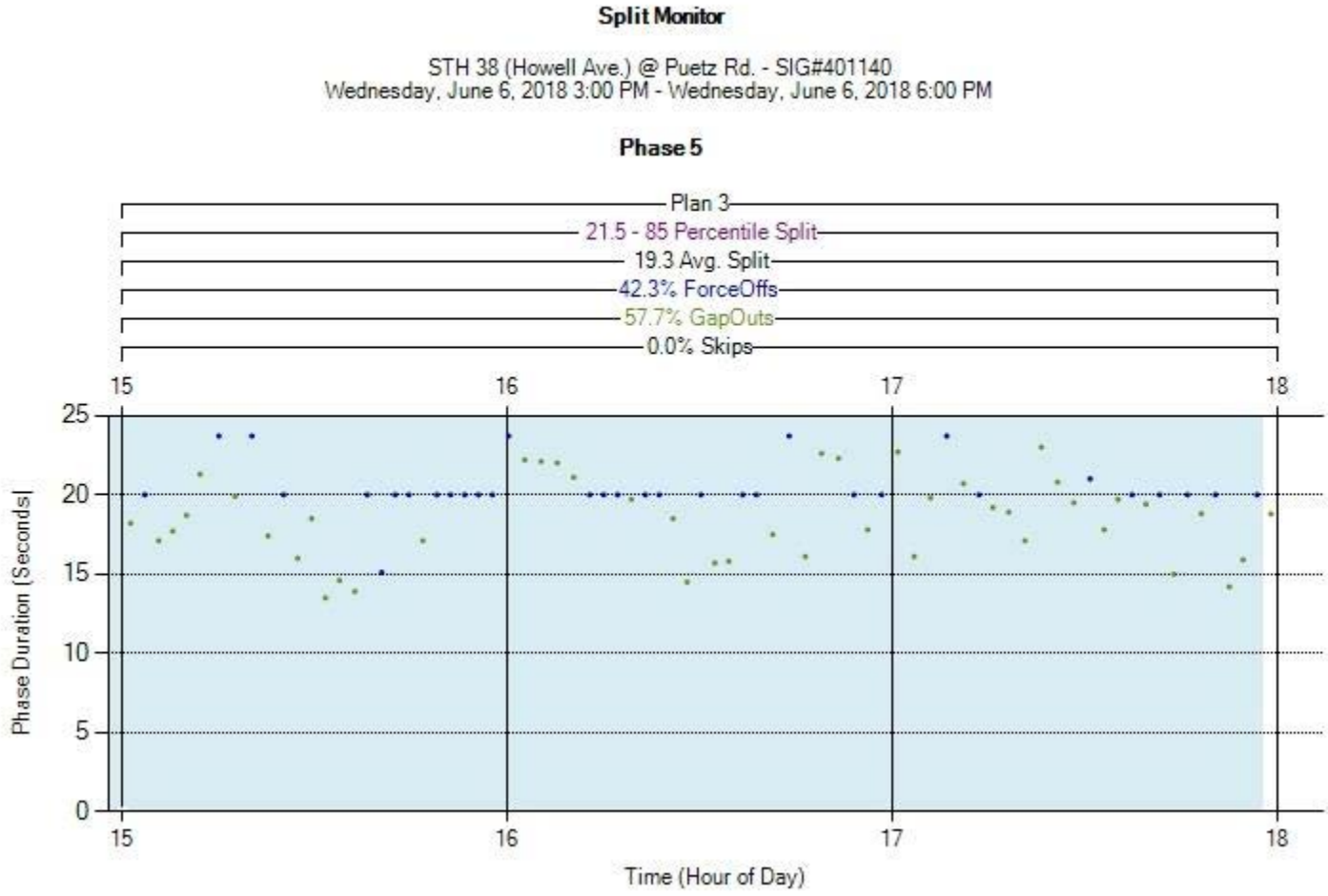
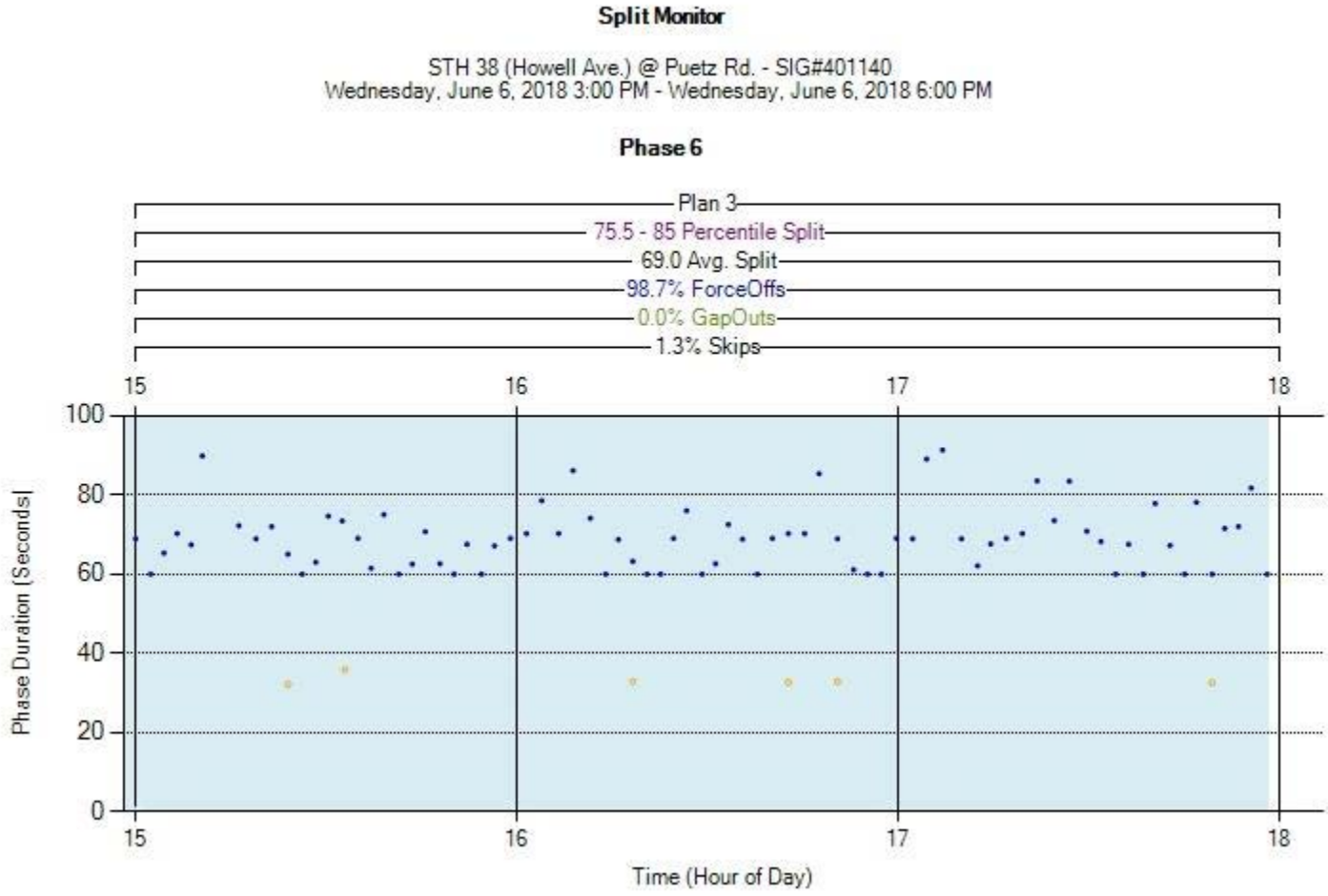
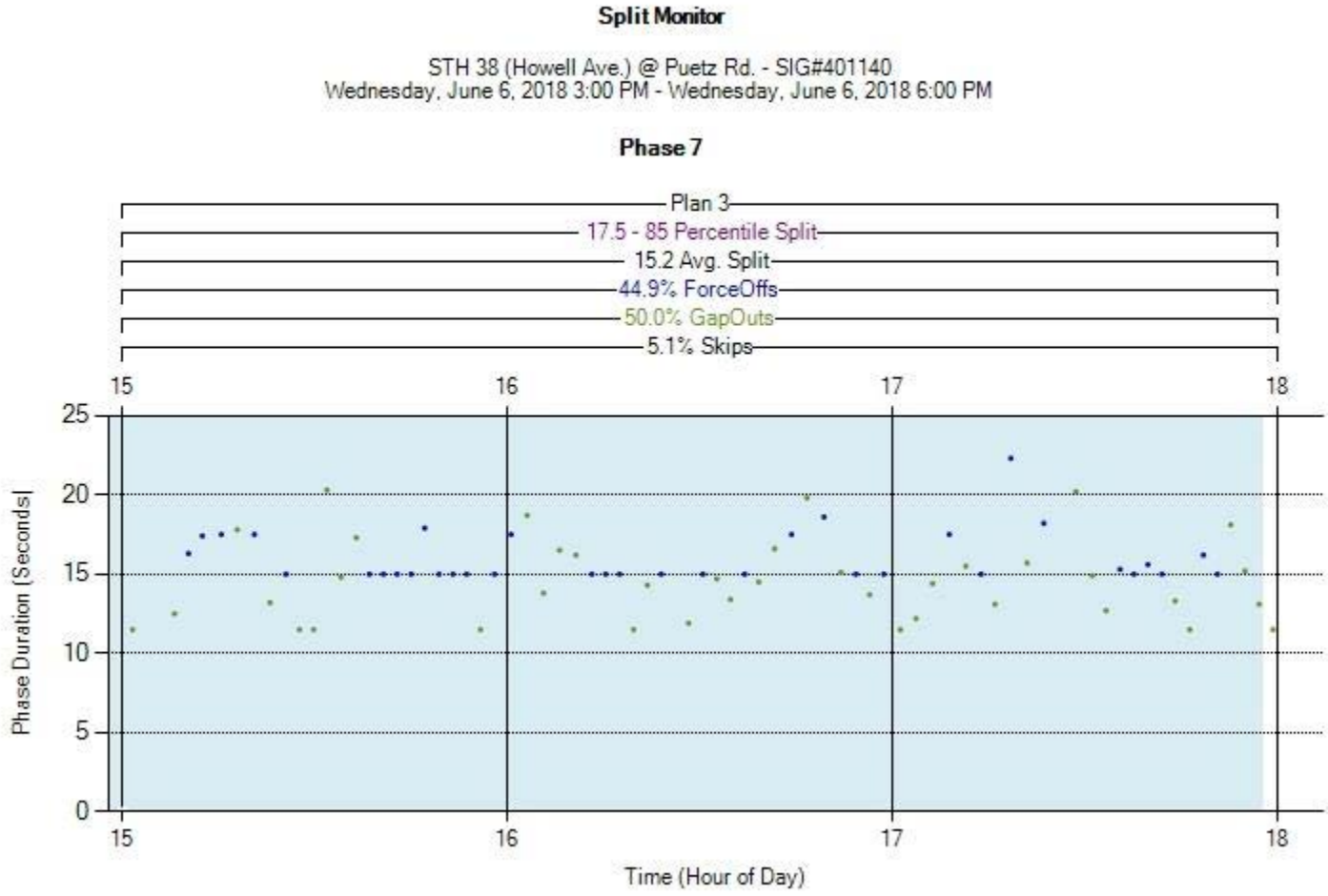


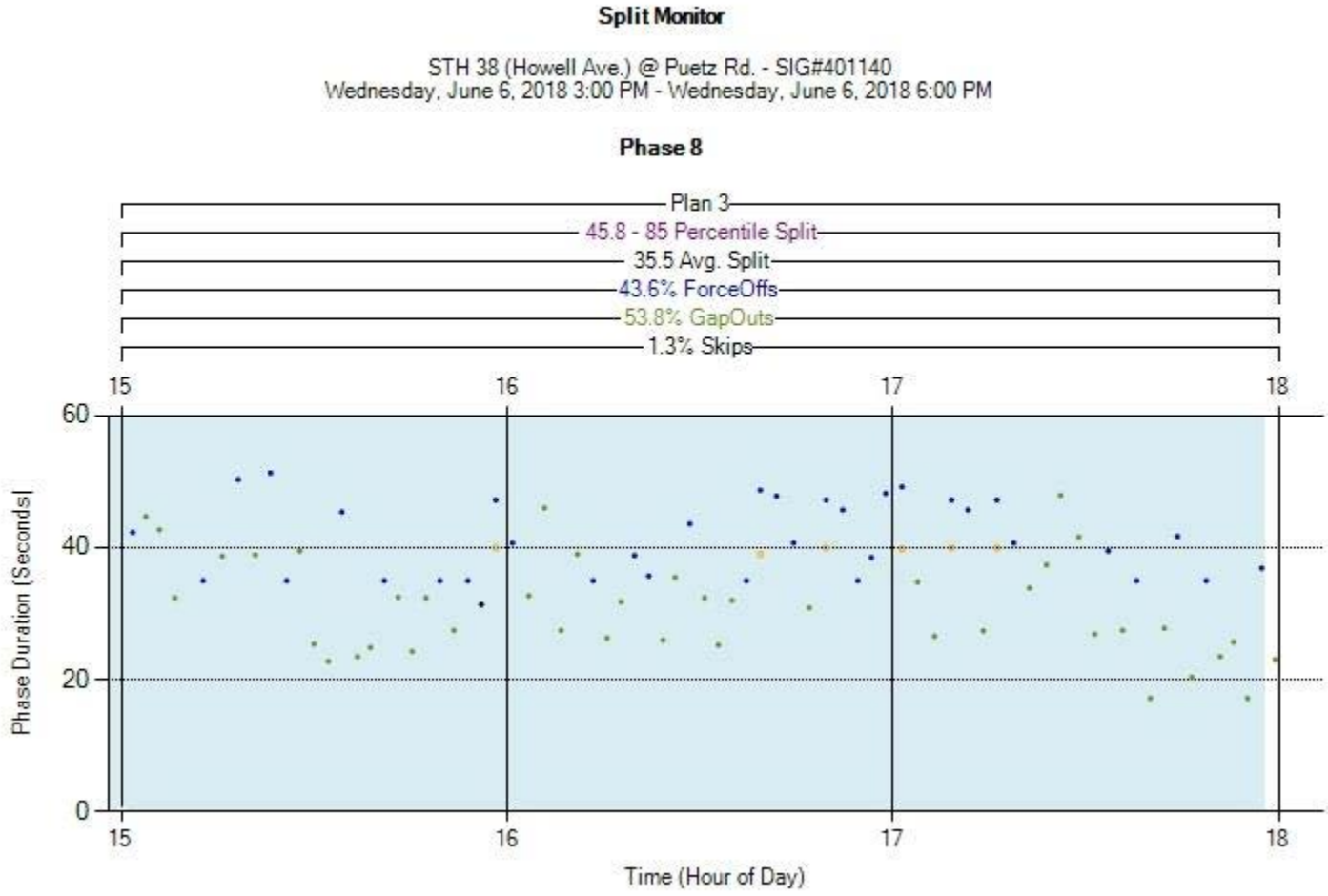
WIS 38 Corridor – STH 38 & Puetz Rd.
Baseline Timings
6/6/2018 – 3:00 PM – 6:00 PM



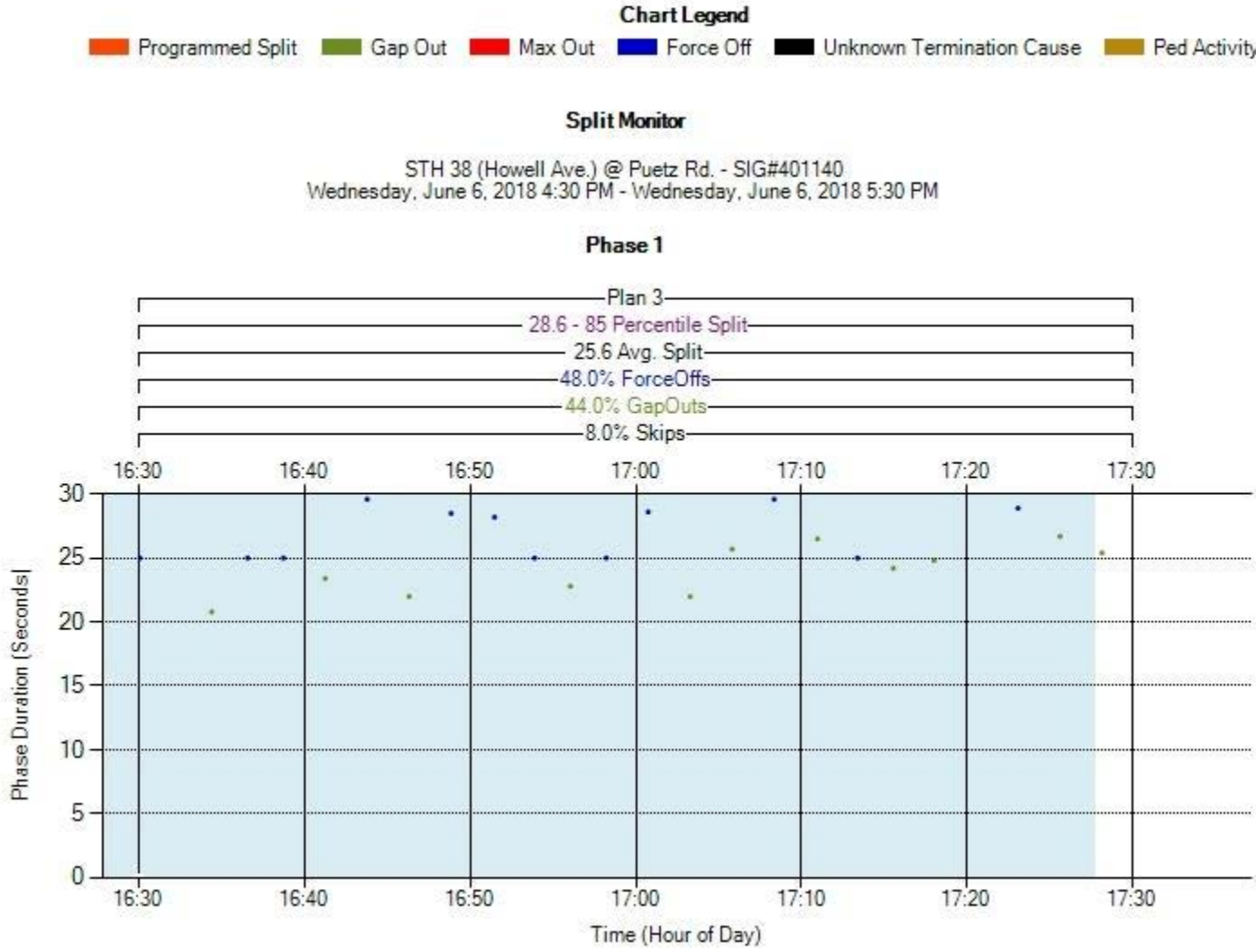
WIS 38 Corridor – STH 38 & Puetz Rd.
Baseline Timings
6/6/2018 – 3:00 PM – 6:00 PM



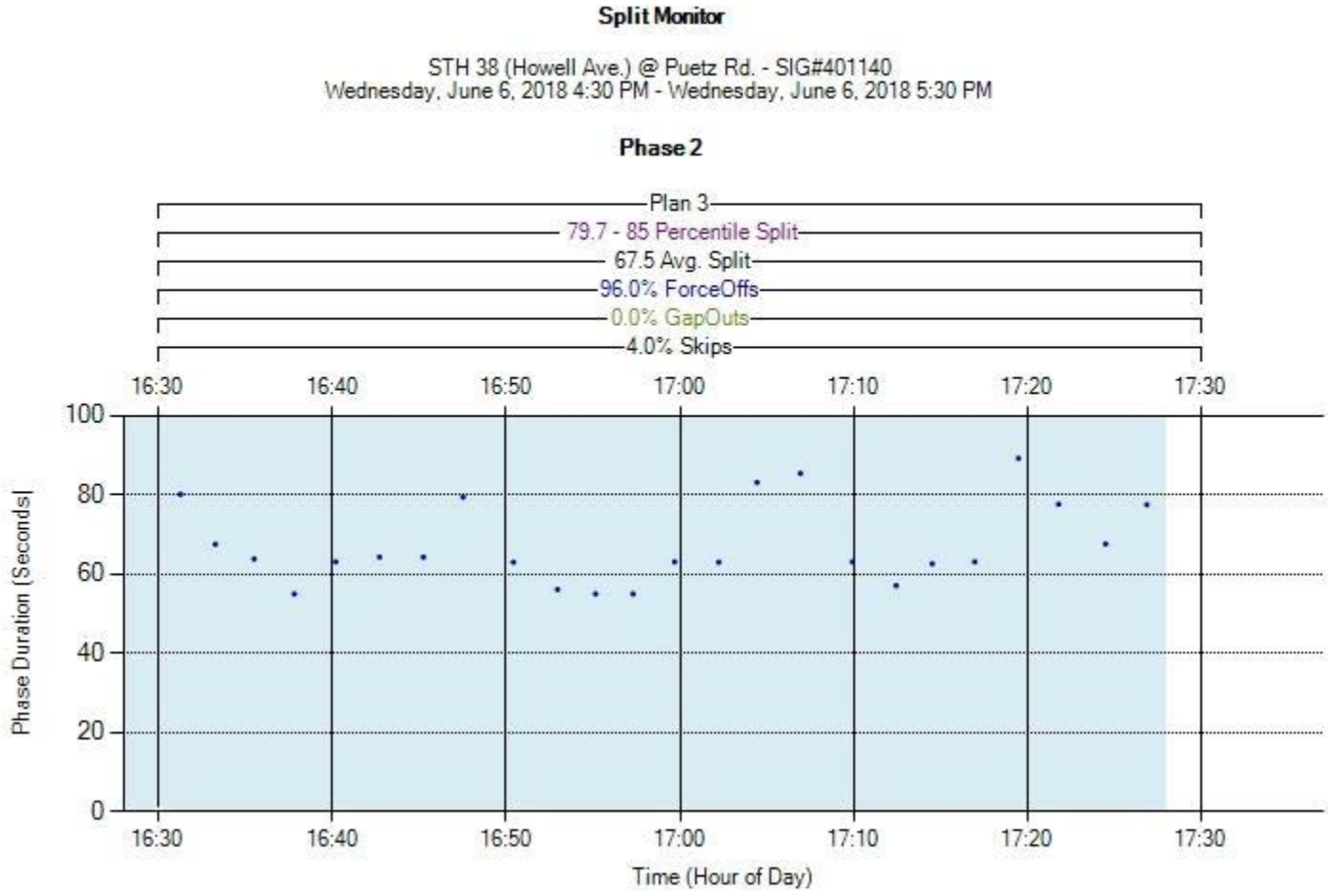
WIS 38 Corridor – STH 38 & Puetz Rd.
Baseline Timings
6/6/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Puetz Rd.
Baseline Timings
6/6/2018 – 4:30 PM – 5:30 PM



WIS 38 Corridor – STH 38 & Puetz Rd.
Baseline Timings
6/6/2018 – 4:30 PM – 5:30 PM



WIS 38 Corridor – STH 38 & Puetz Rd.
Baseline Timings
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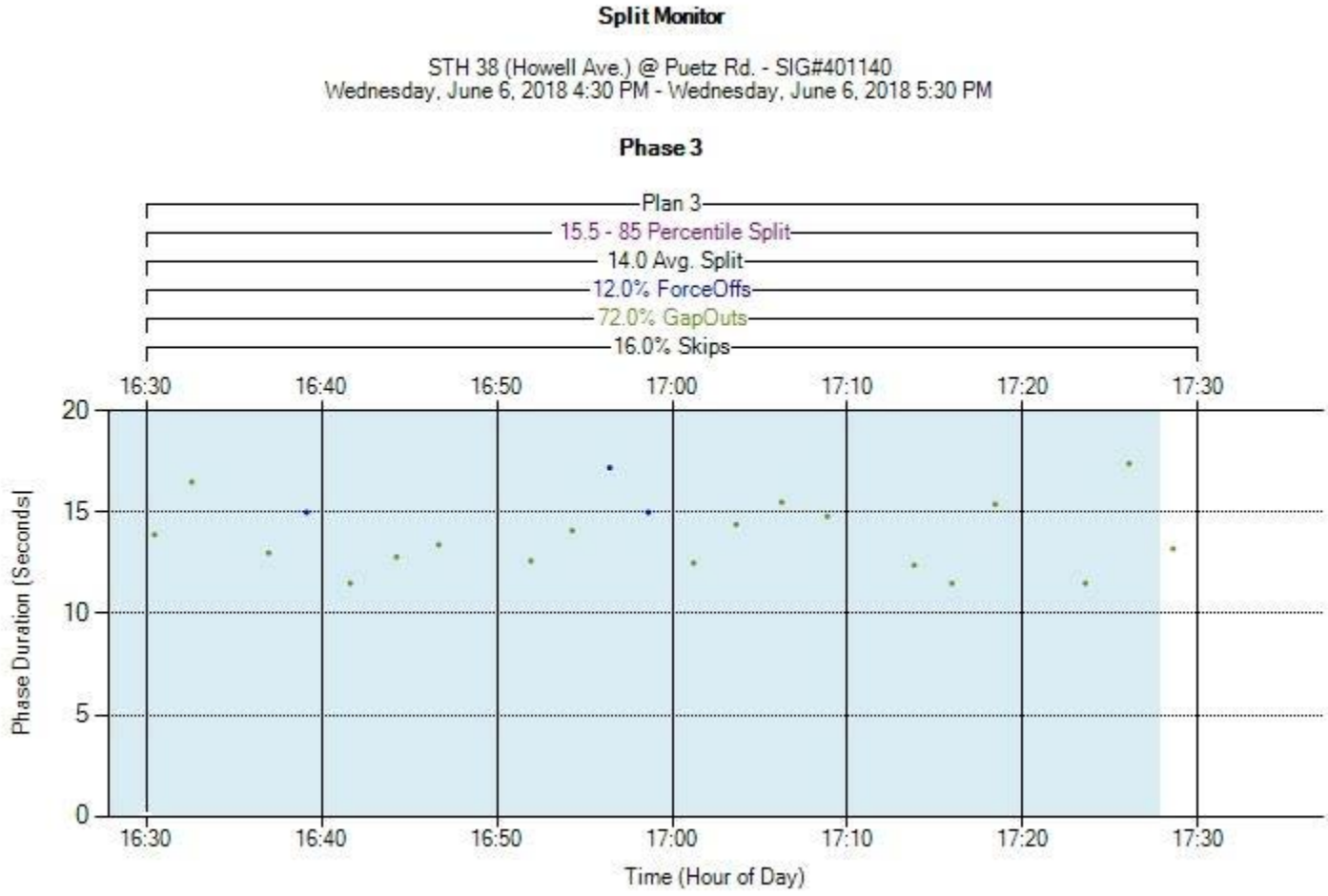
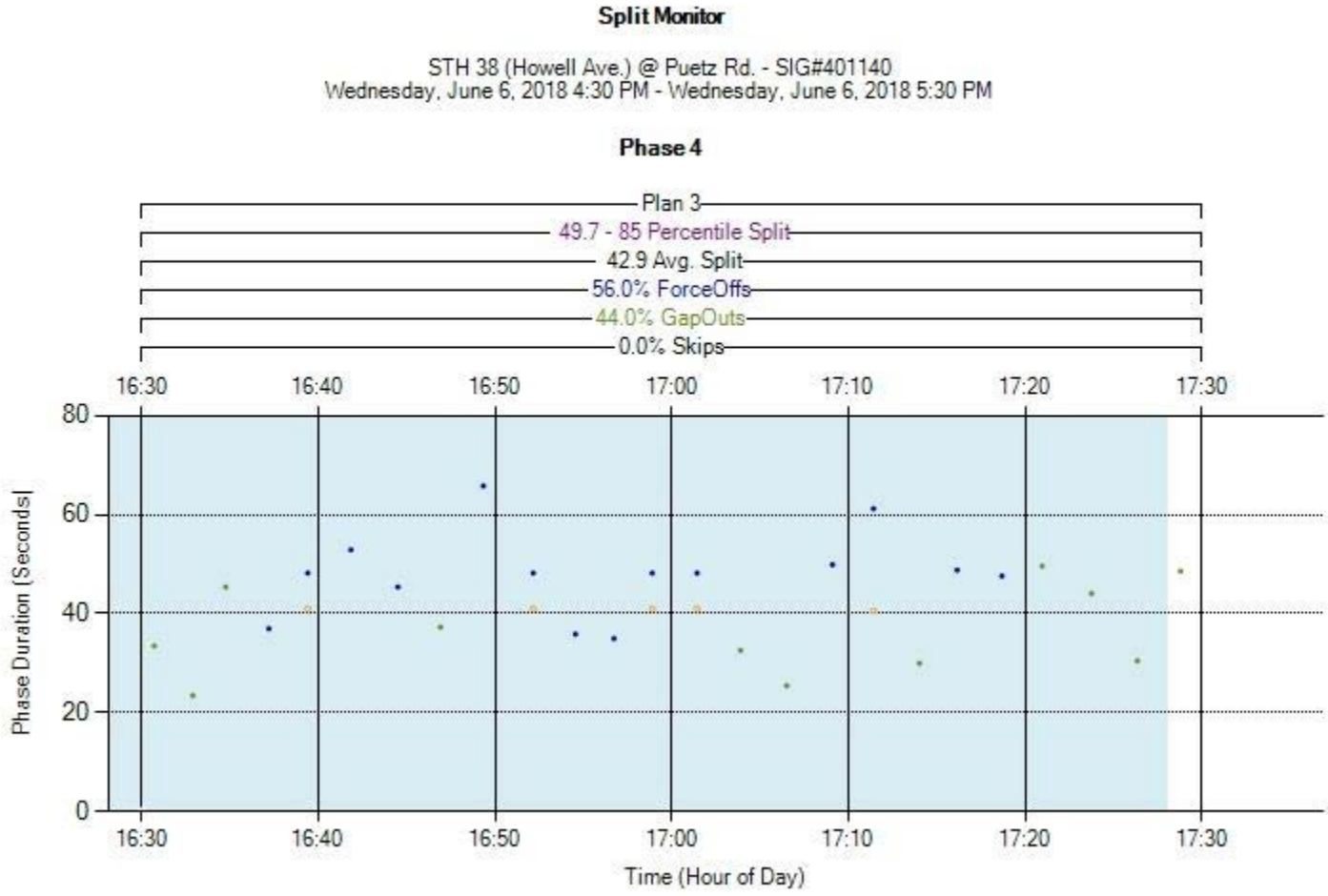
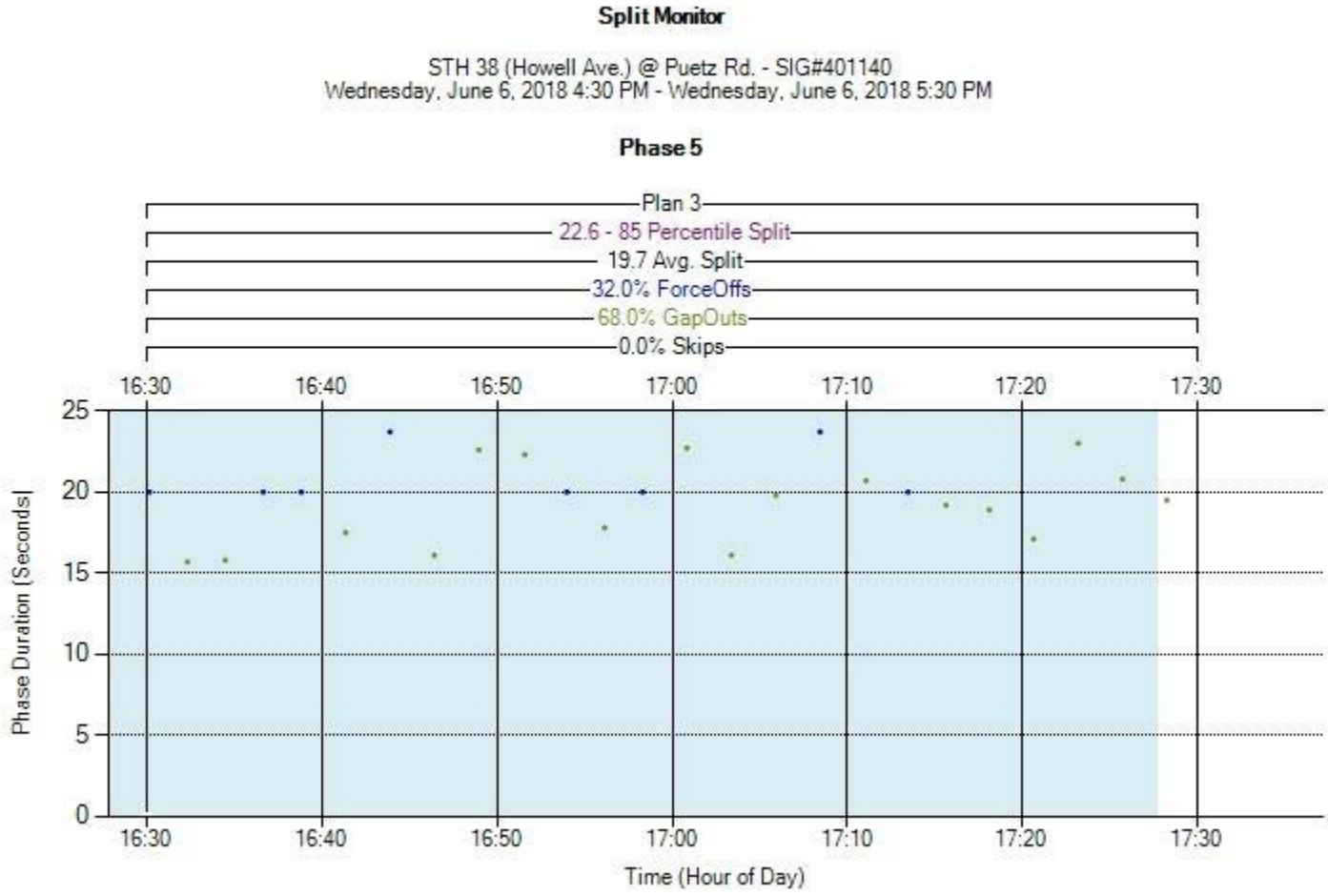



Split Monitor
STH 38 (Howell Ave.) @ Puetz Rd. - SIG#401140
Wednesday, June 6, 2018 4:30 PM - Wednesday, June 6, 2018 5:30 PM
Phase 4
Plan 3
49.7 - 85 Percentile Split
42.9 Avg. Split
56.0% ForceOffs
44.0% GapOuts
0.0% Skips
16:30
16:40
16:50
17:00
17:10
17:20
17:30
80
60
40
20
0
Phase Duration (Seconds)
Time (Hour of Day)

WIS 38 Corridor – STH 38 & Puetz Rd.
Baseline Timings
6/6/2018 – 4:30 PM – 5:30 PM



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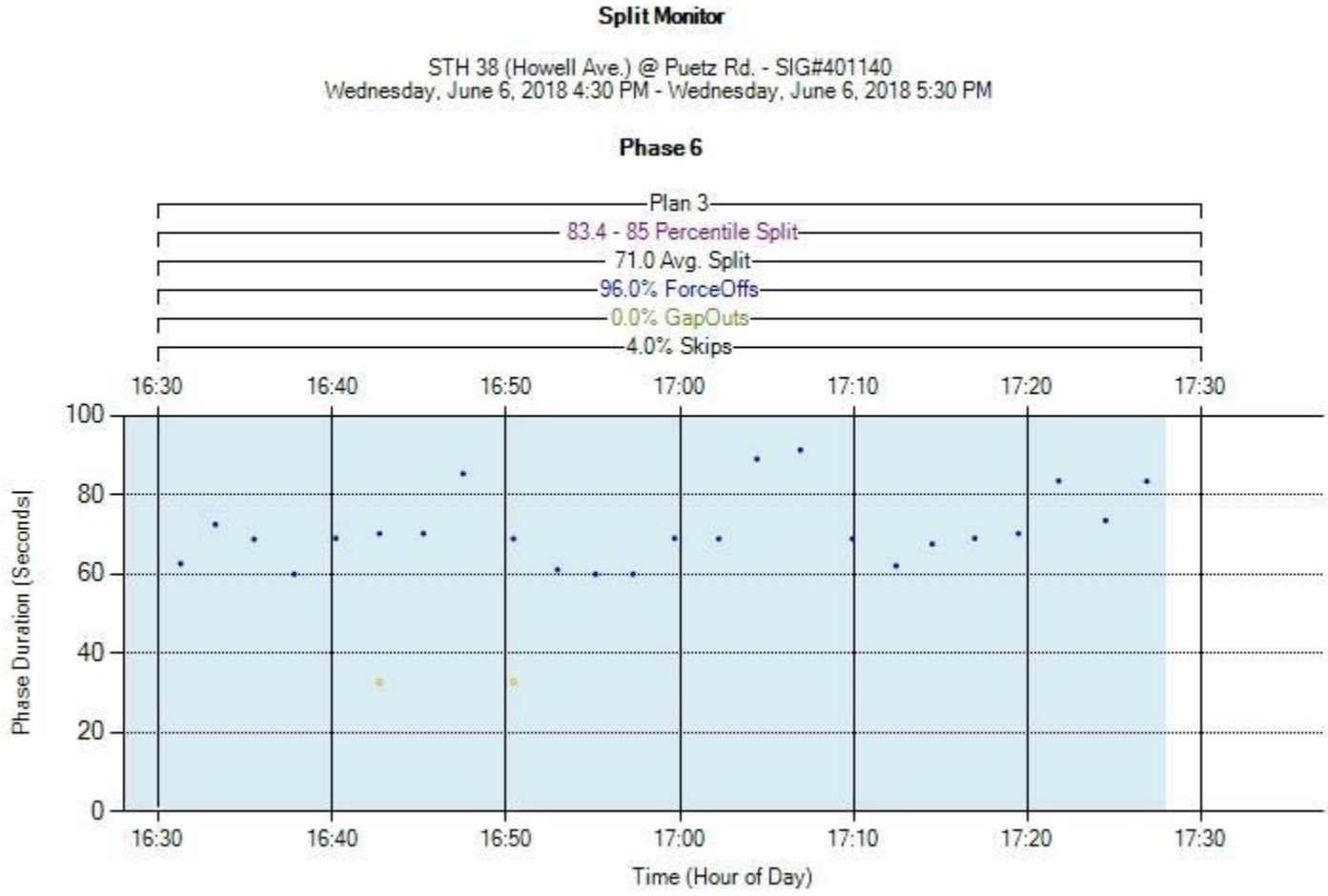

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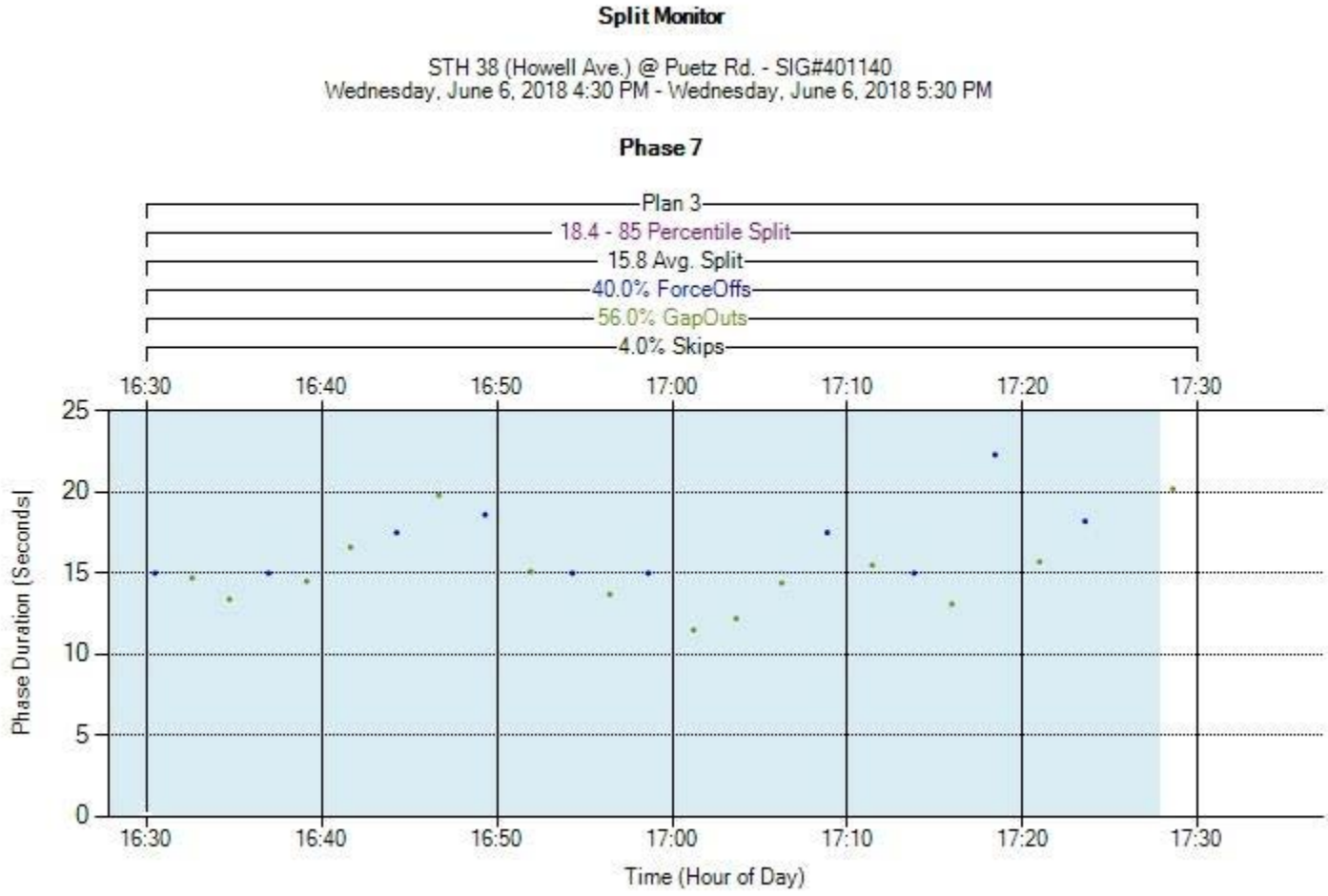

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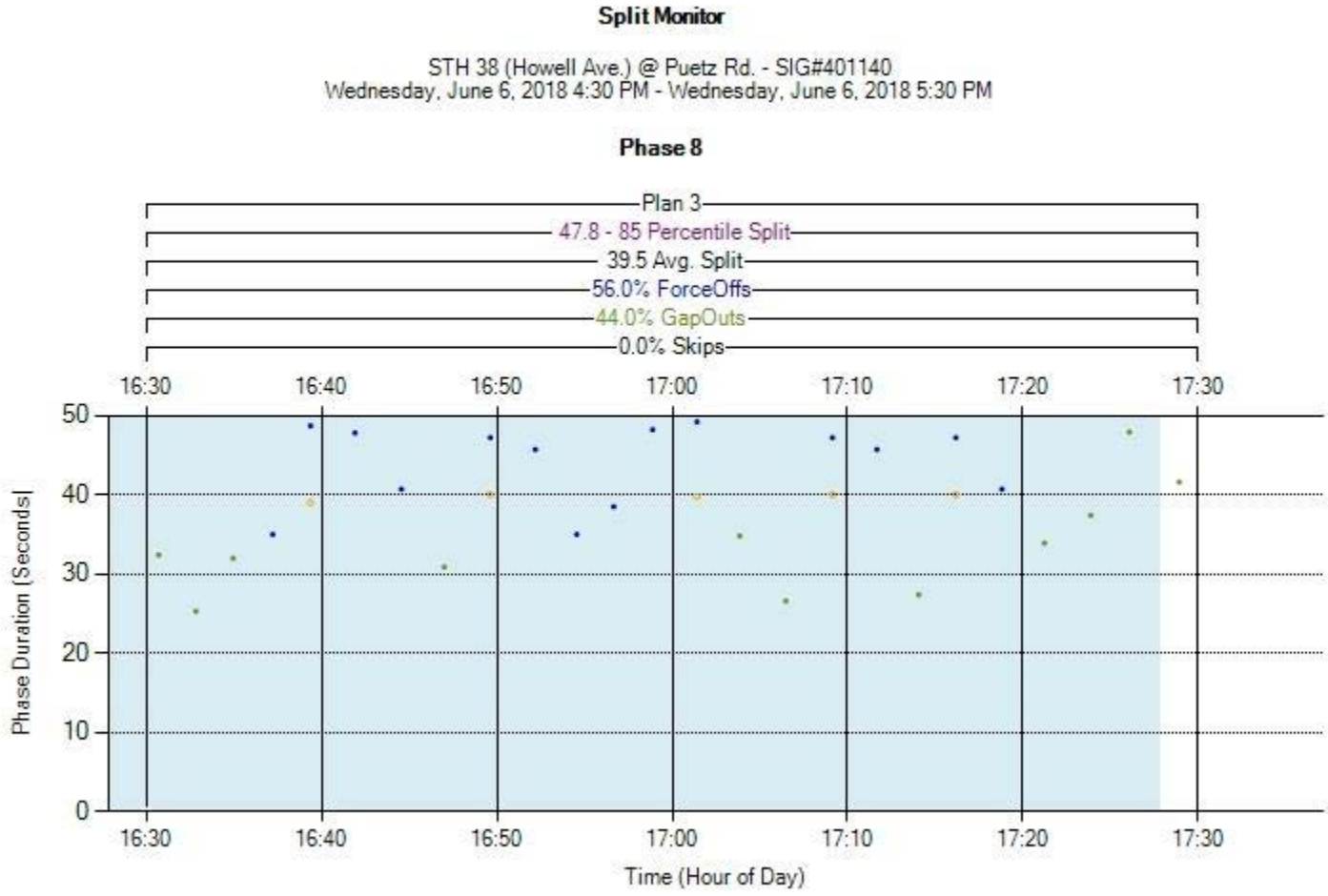
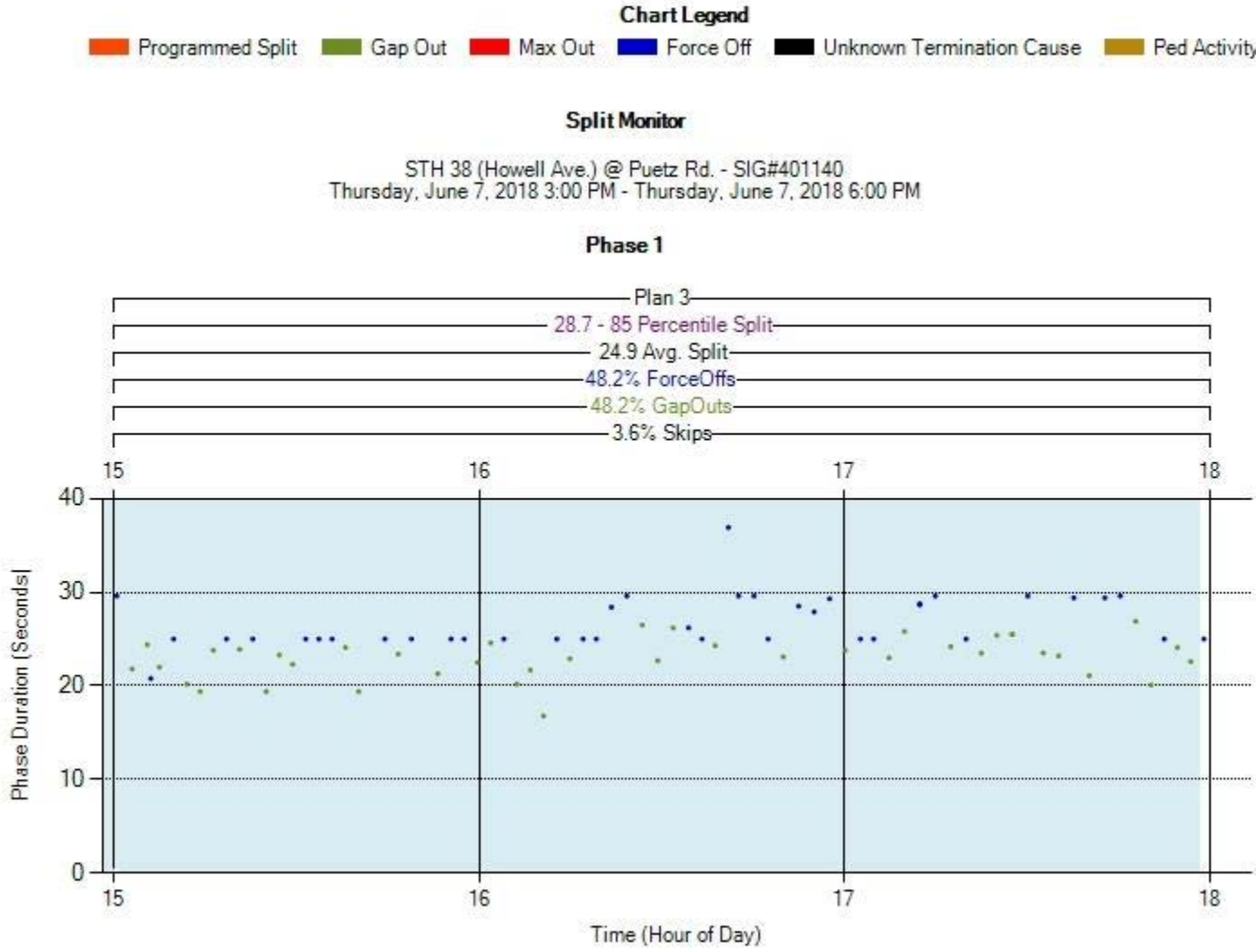
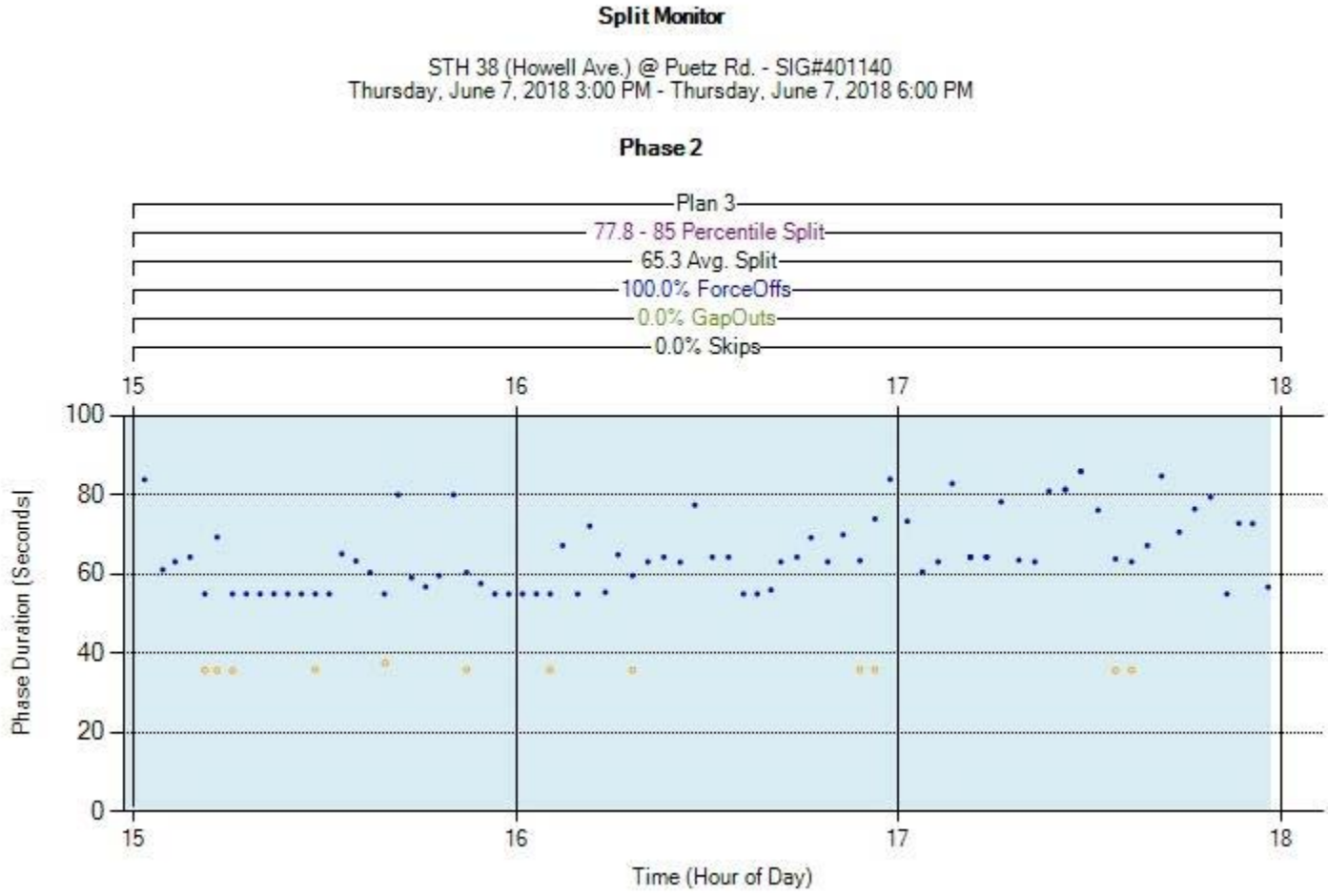


WIS 38 Corridor – STH 38 & Puetz Rd.
Baseline Timings
6/7/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Puetz Rd.
Baseline Timings
6/7/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Puetz Rd.
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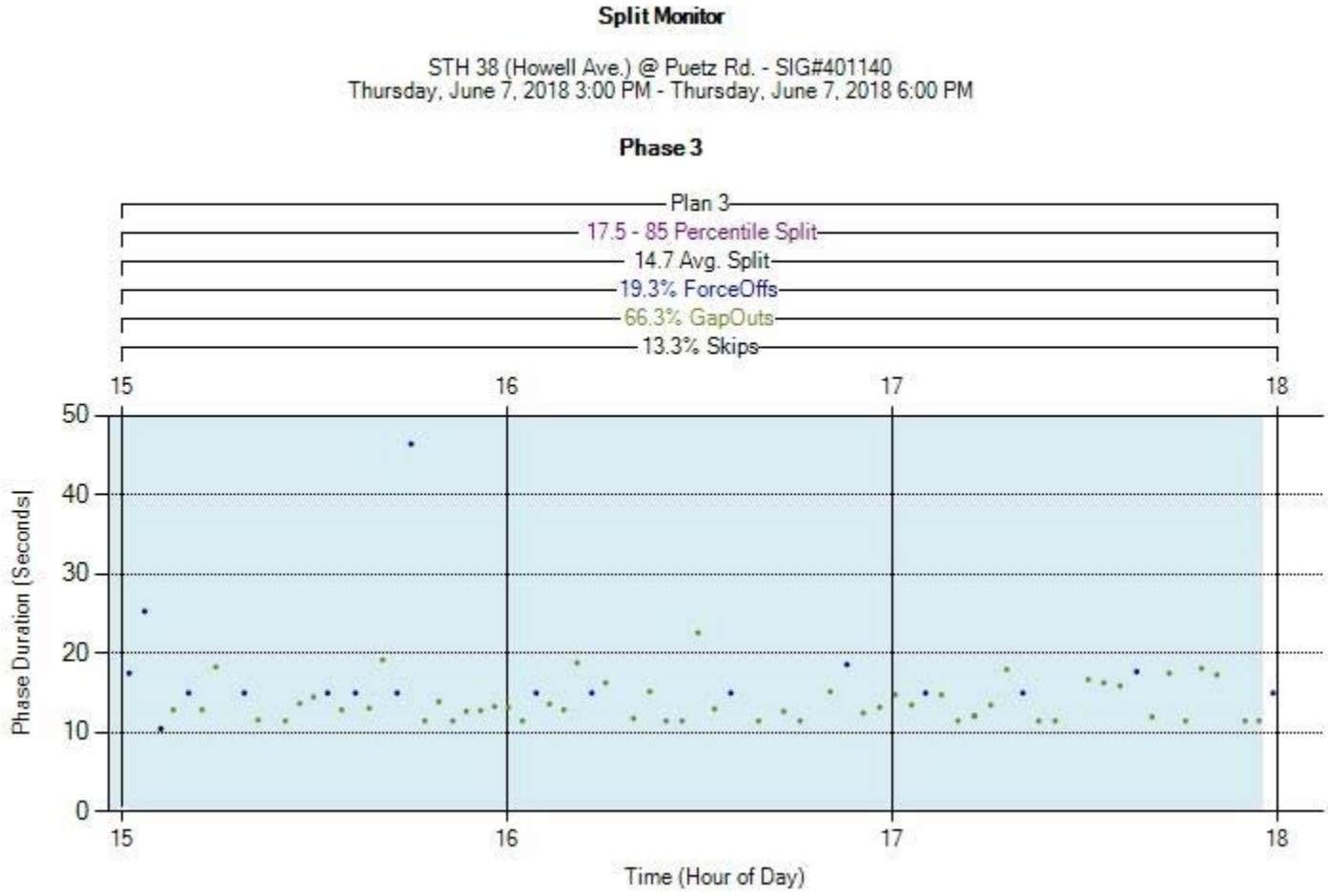

WIS 38 Corridor – STH 38 & Puetz Rd.
Baseline Timings
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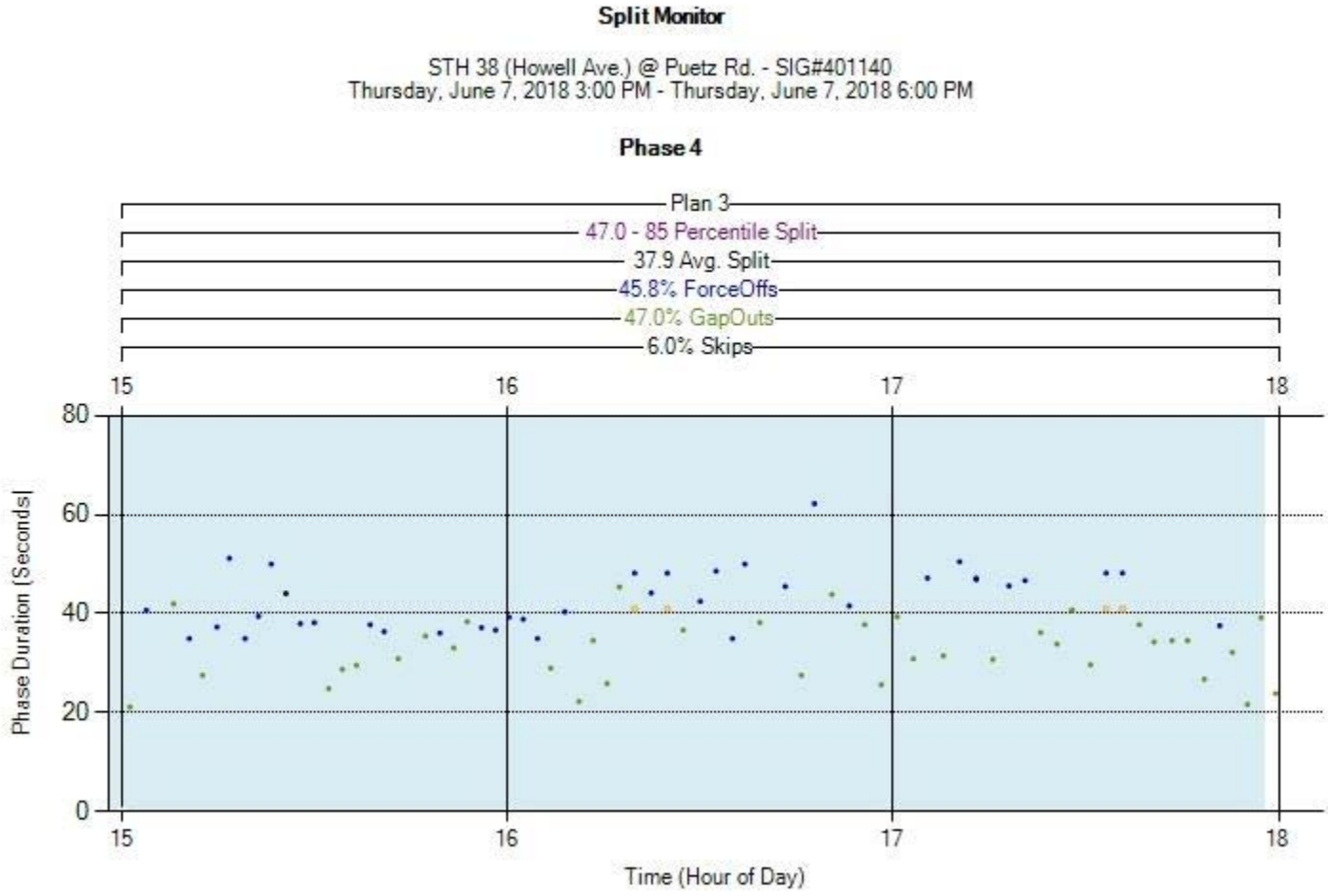

WIS 38 Corridor – STH 38 & Puetz Rd.
Baseline Timings
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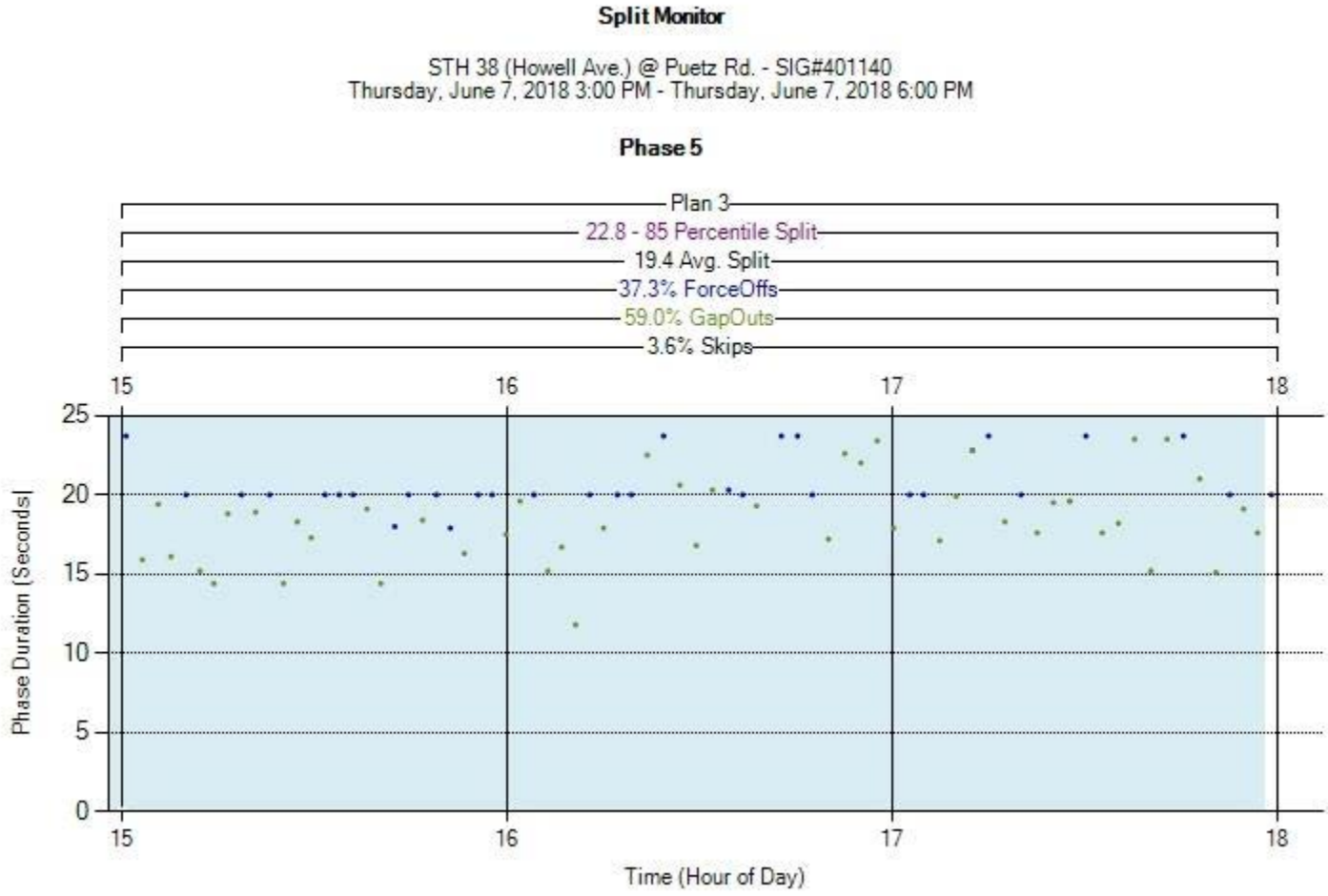

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Baseline Timings
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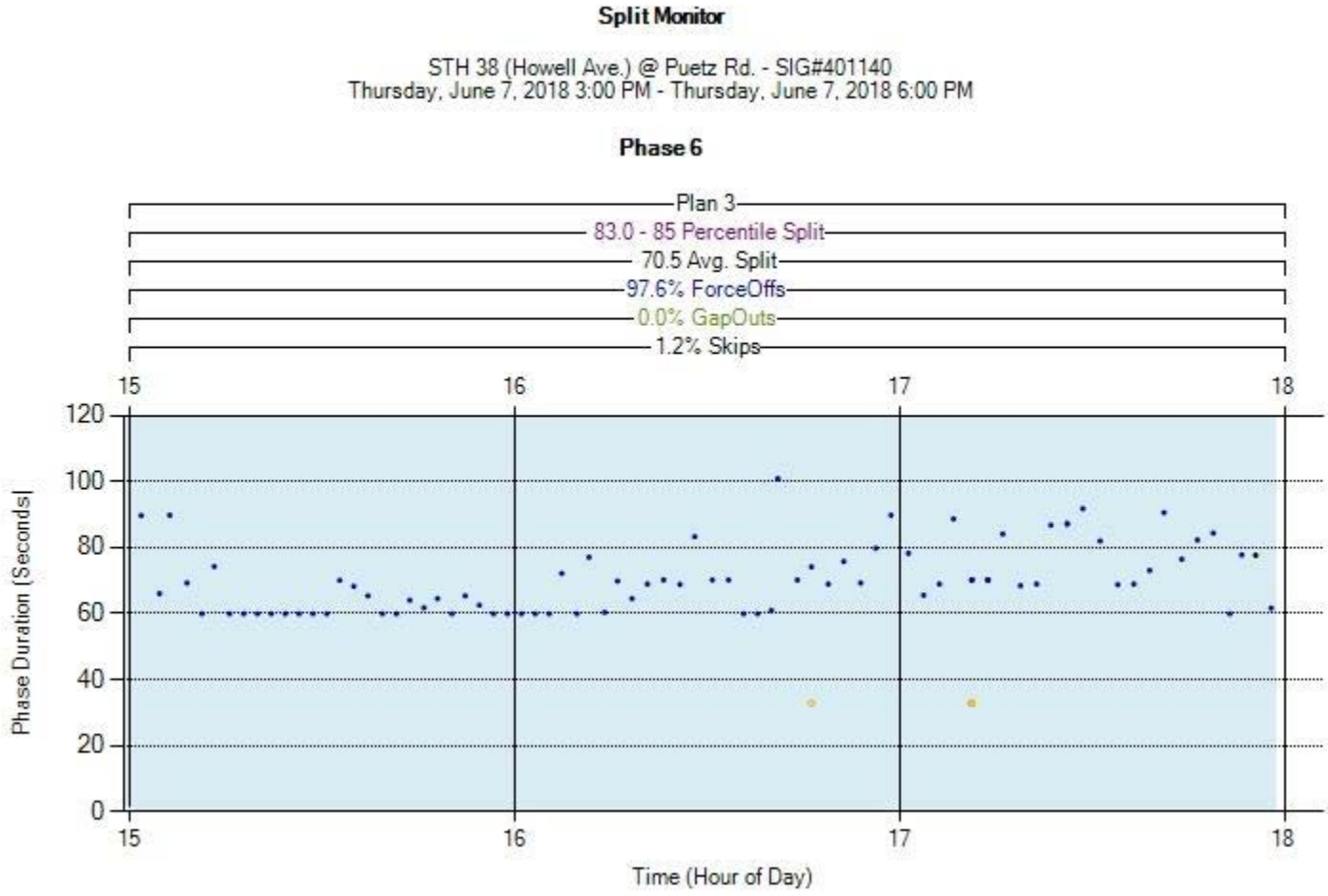

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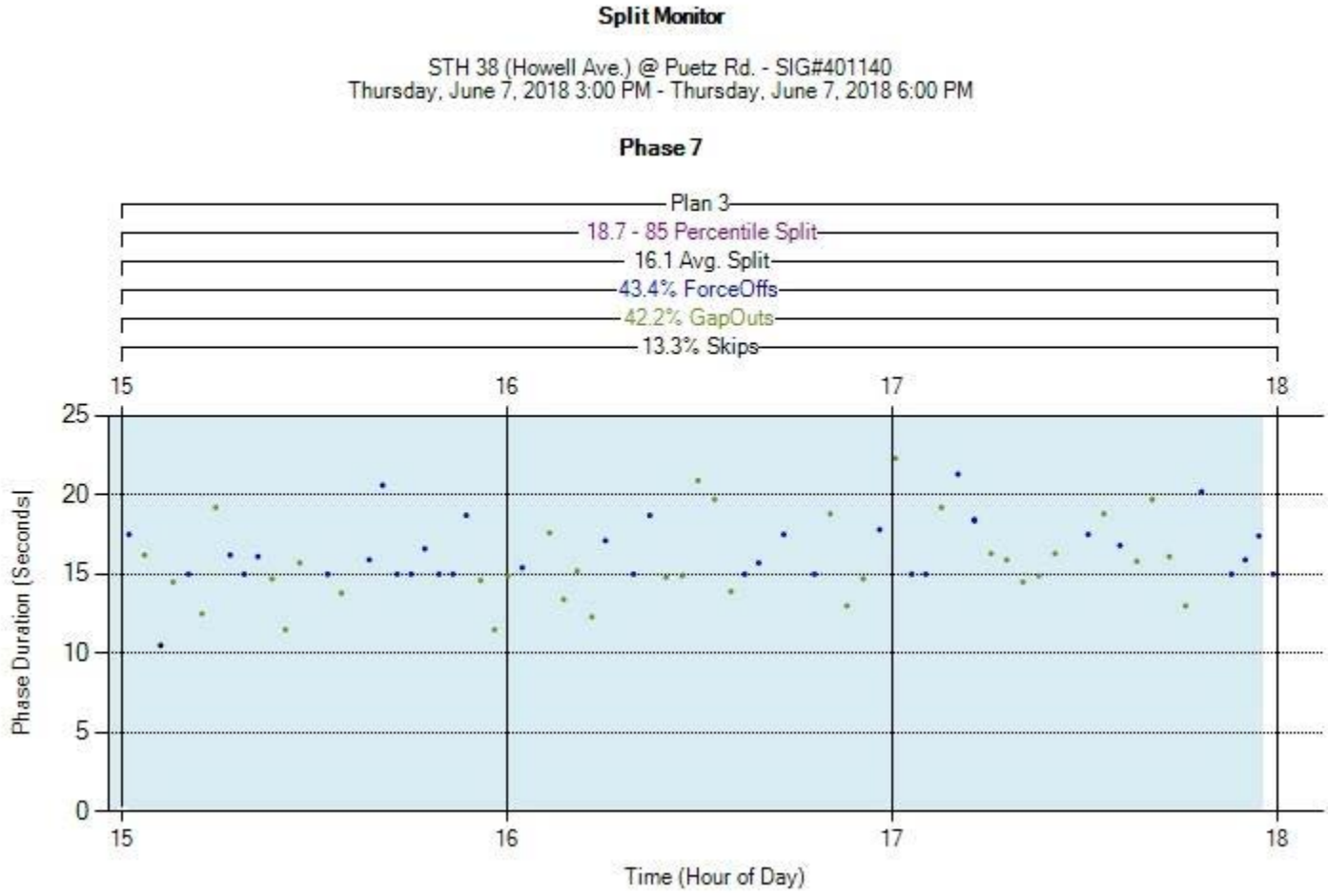

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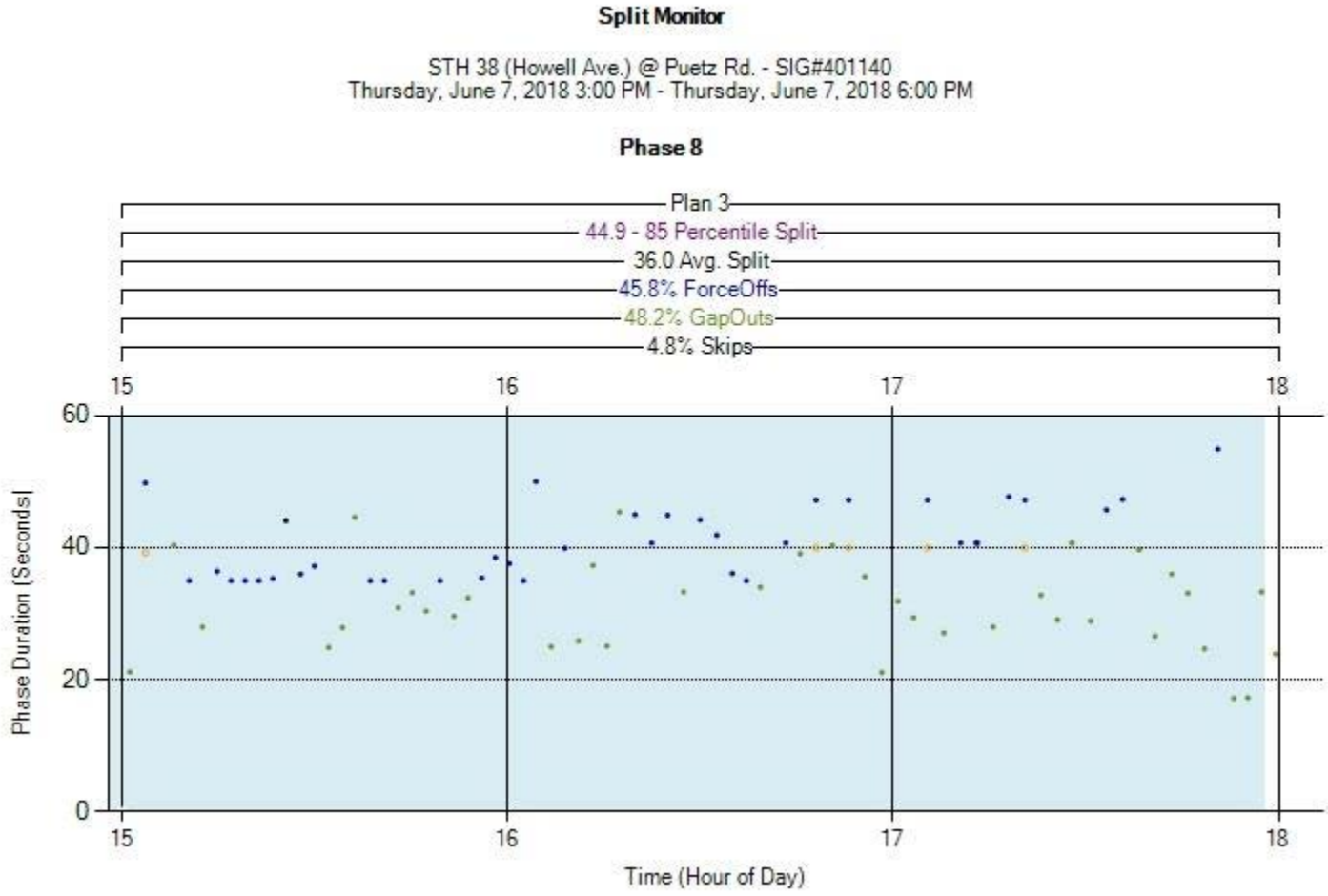
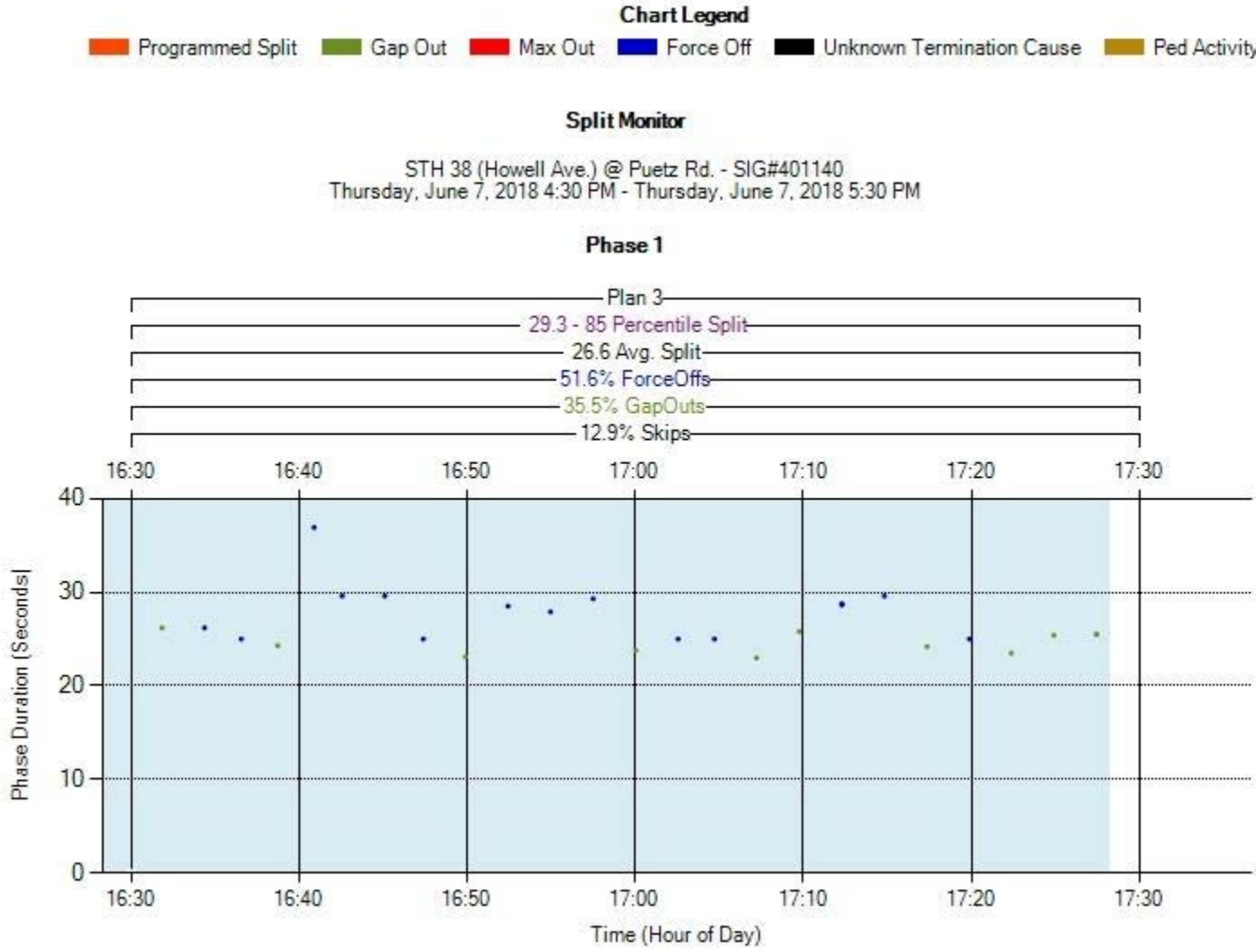
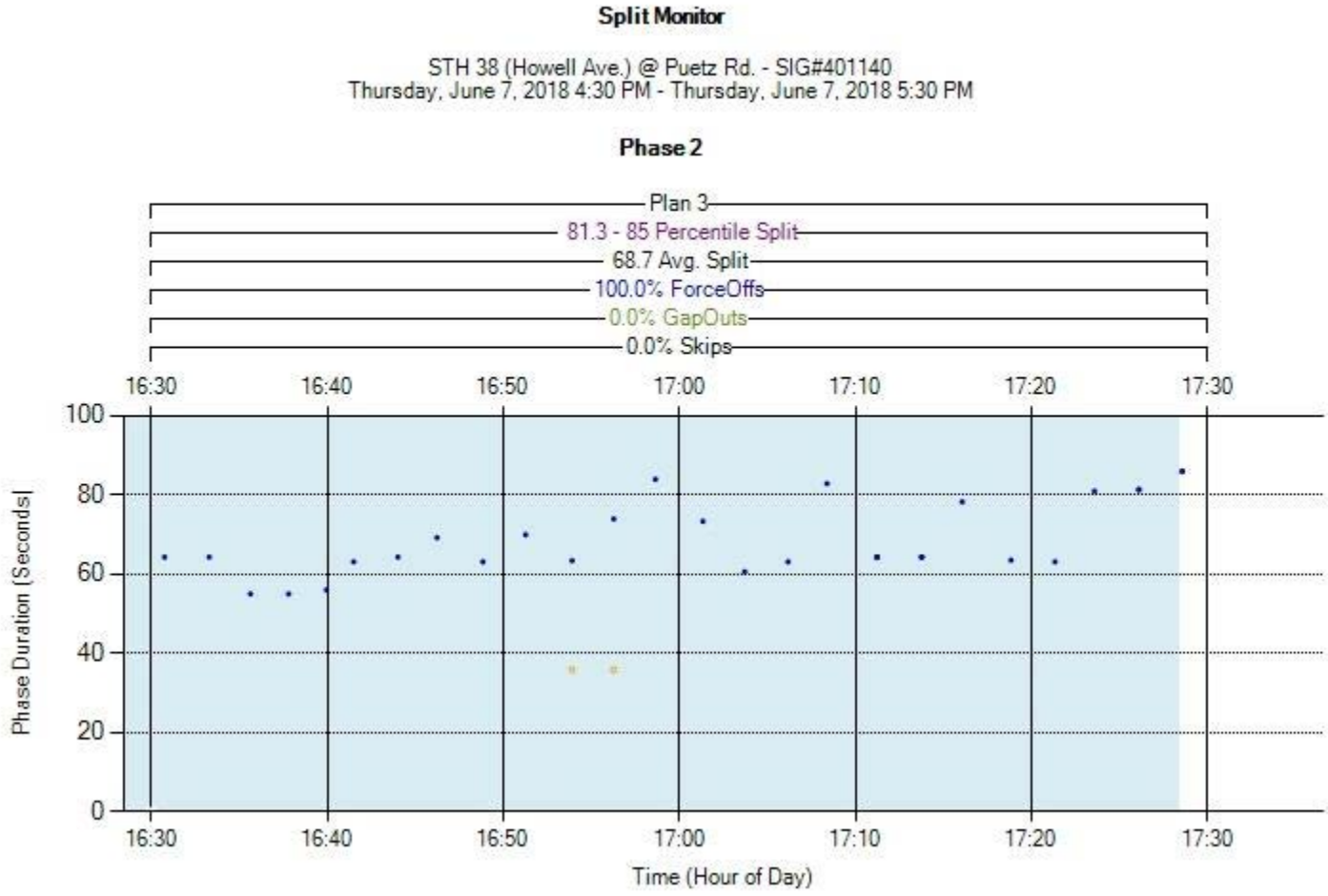
Baseline Timings
6/7/2018 – 3:00 PM – 6:00 PM



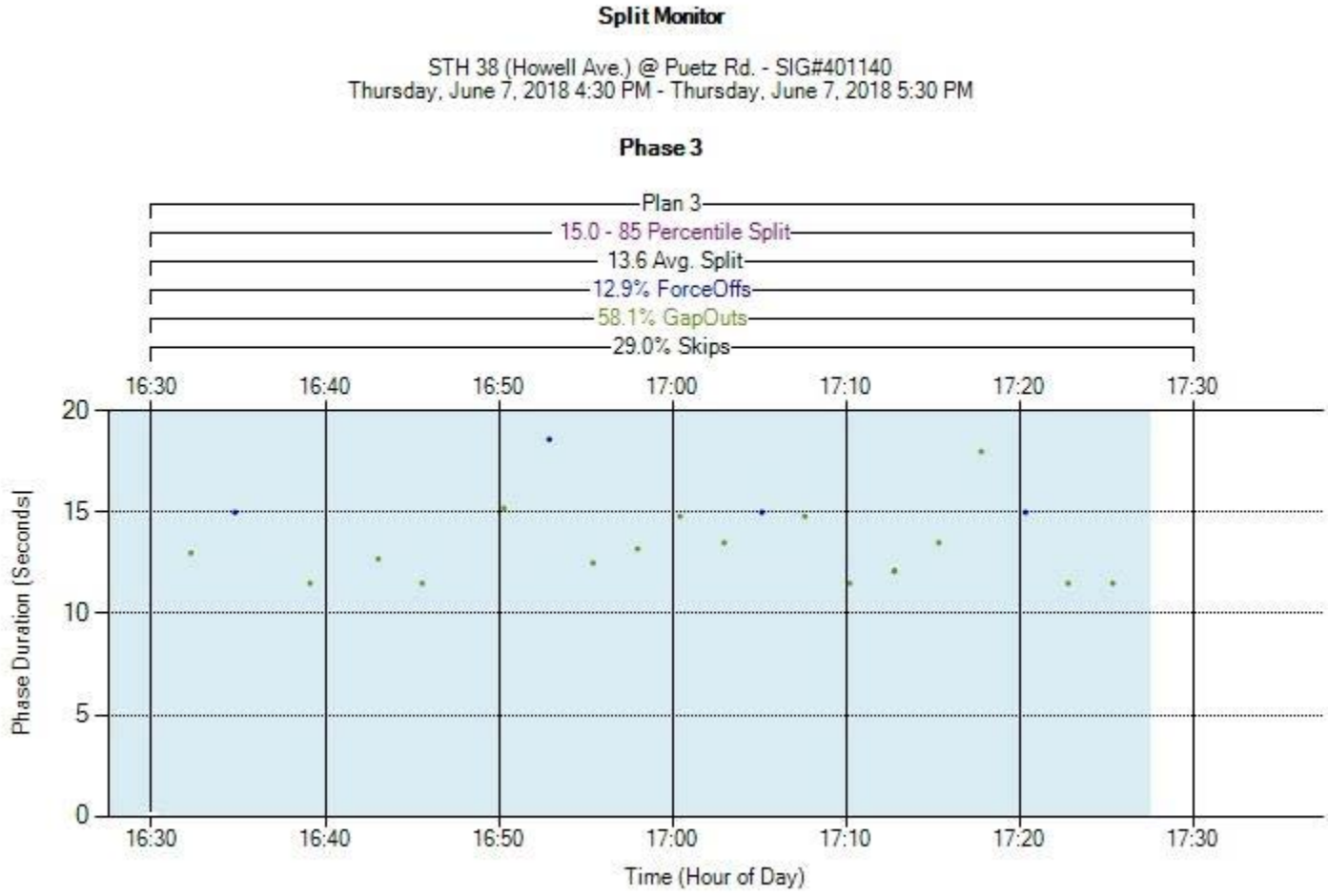
WIS 38 Corridor – STH 38 & Puetz Rd.
Baseline Timings
6/7/2018 – 4:30 PM – 5:30 PM



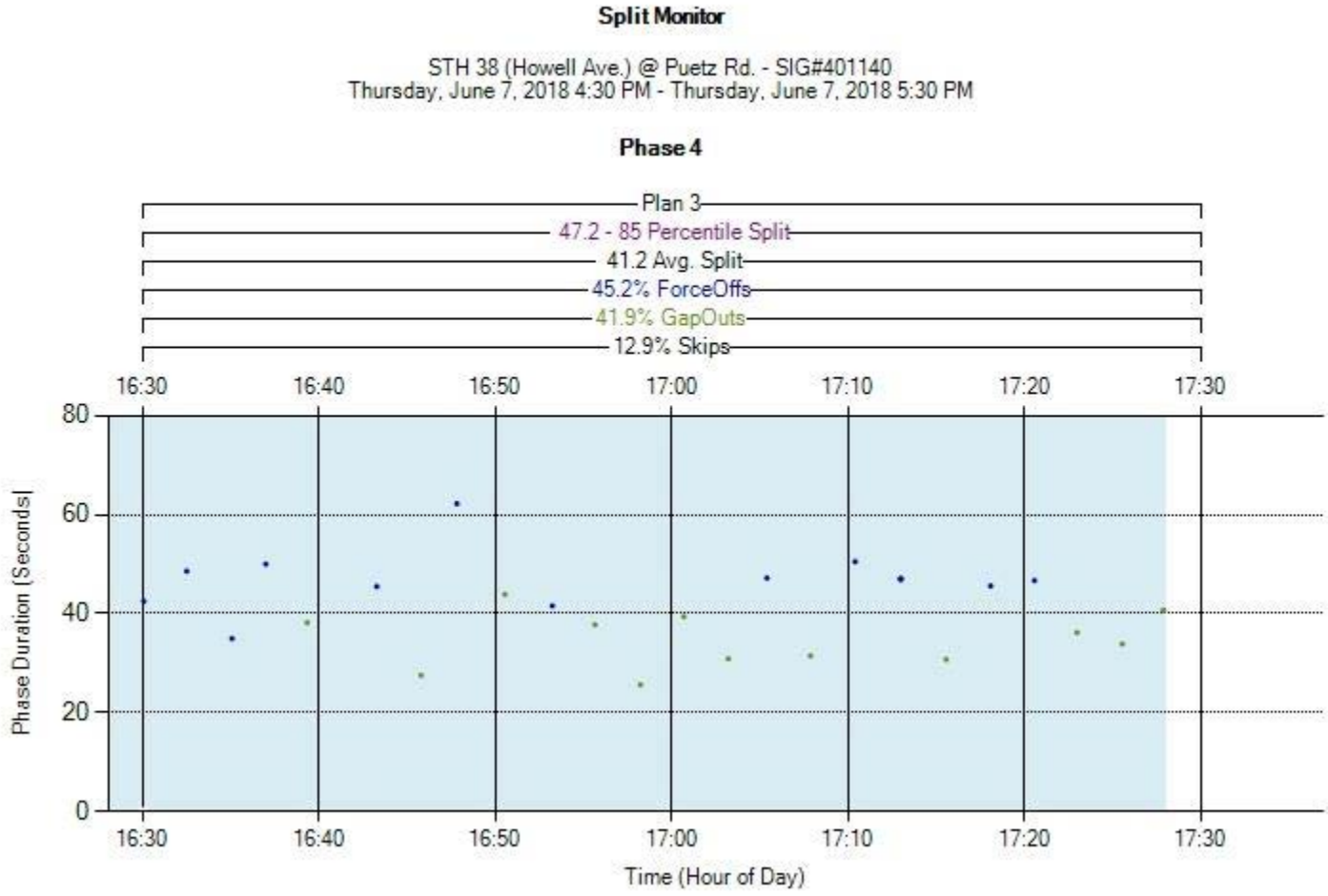
WIS 38 Corridor – STH 38 & Puetz Rd.
Baseline Timings
6/7/2018 – 4:30 PM – 5:30 PM



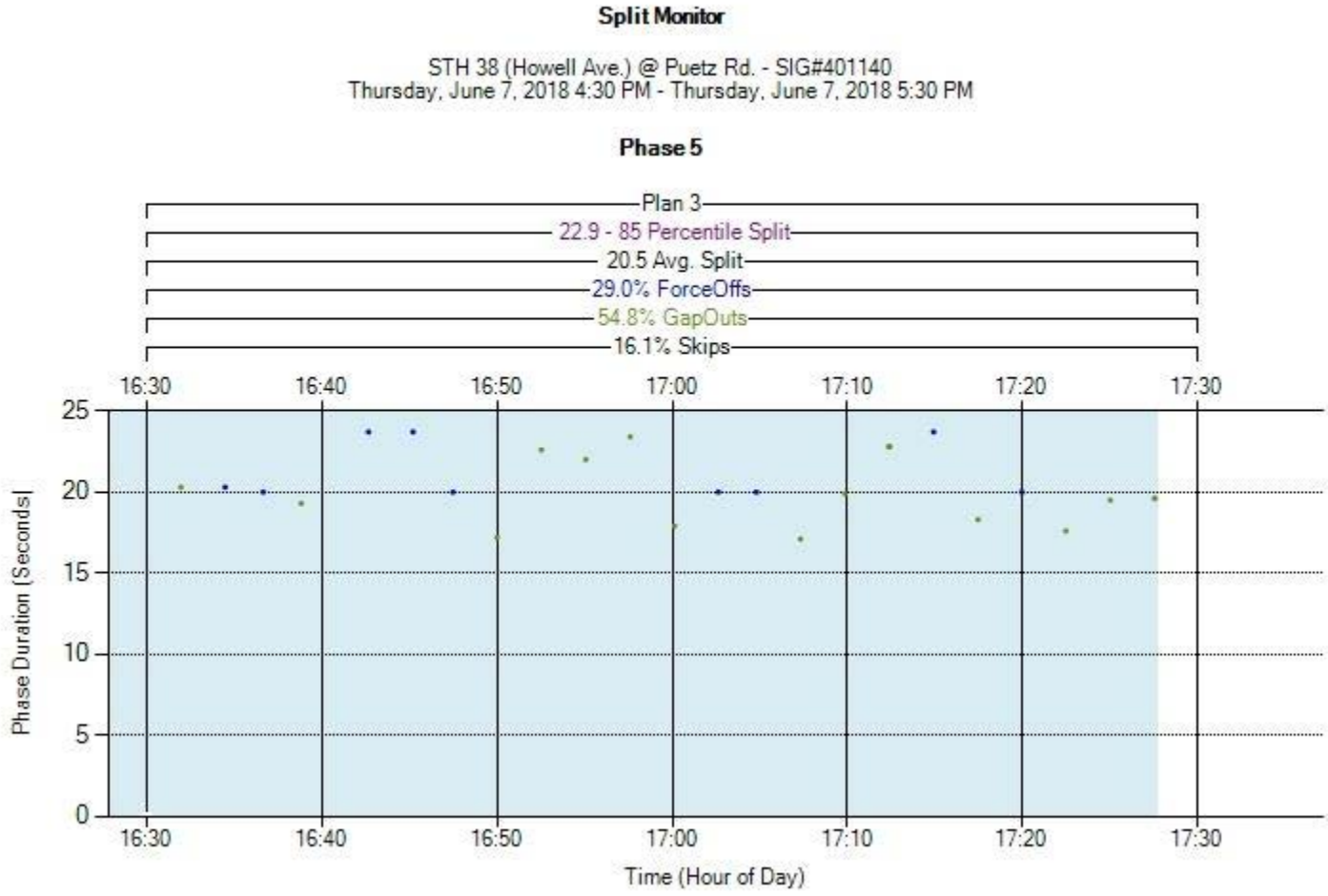
WIS 38 Corridor – STH 38 & Puetz Rd.
Baseline Timings
6/7/2018 – 4:30 PM – 5:30 PM



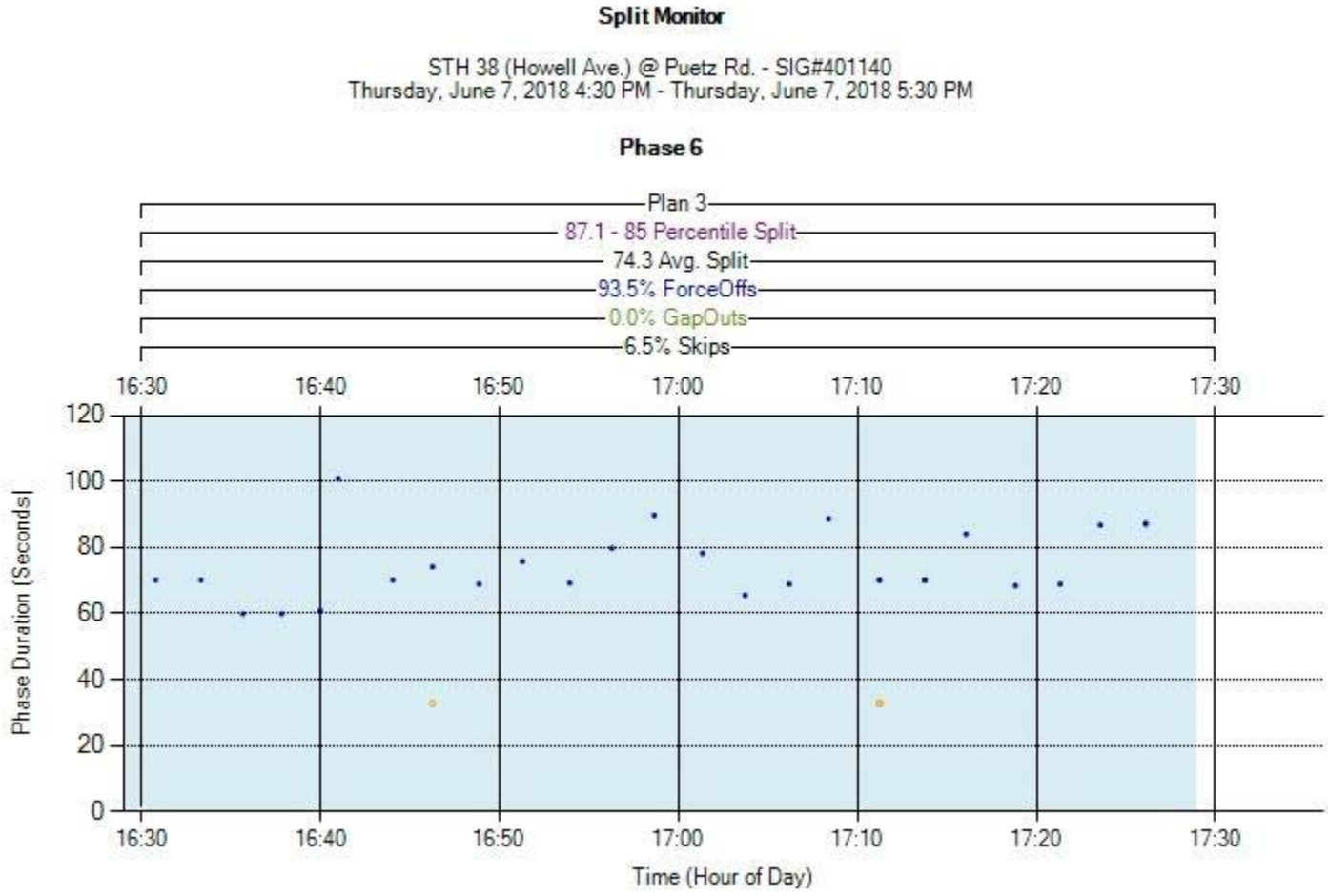
WIS 38 Corridor – STH 38 & Puetz Rd.
Baseline Timings
6/7/2018 – 4:30 PM – 5:30 PM



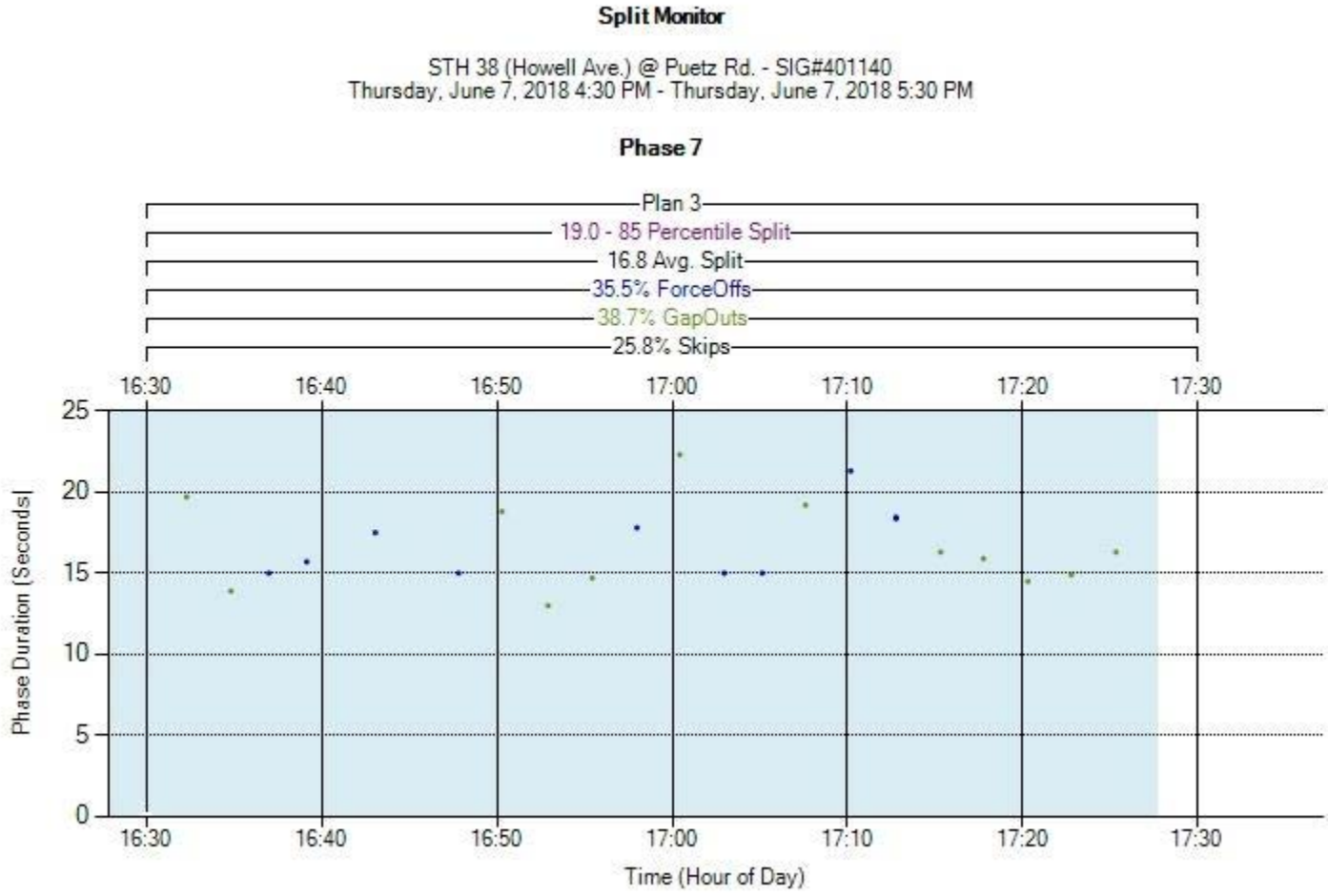
WIS 38 Corridor – STH 38 & Puetz Rd.
Baseline Timings
6/7/2018 – 4:30 PM – 5:30 PM



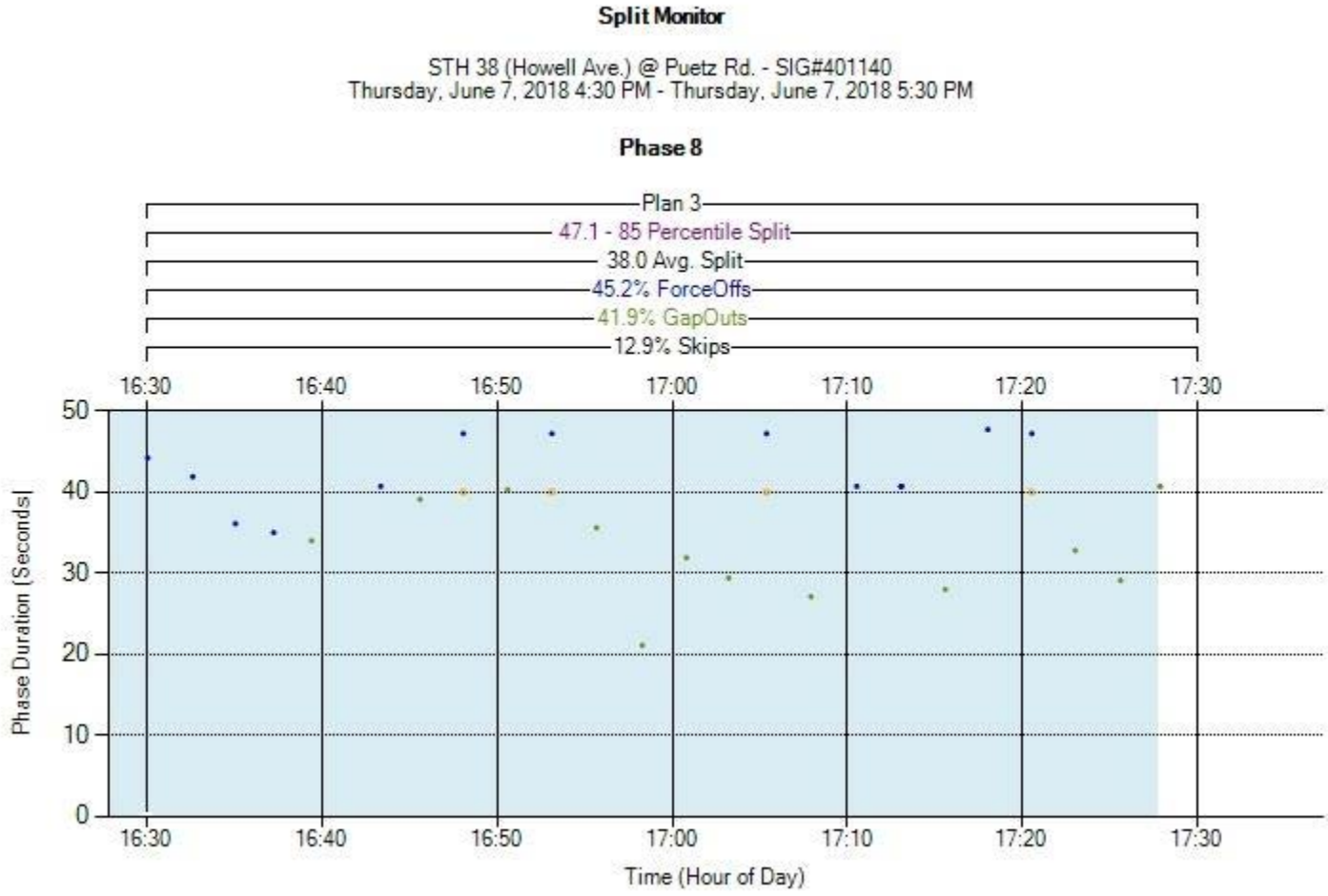
WIS 38 Corridor – STH 38 & Puetz Rd.
Baseline Timings
6/7/2018 – 4:30 PM – 5:30 PM



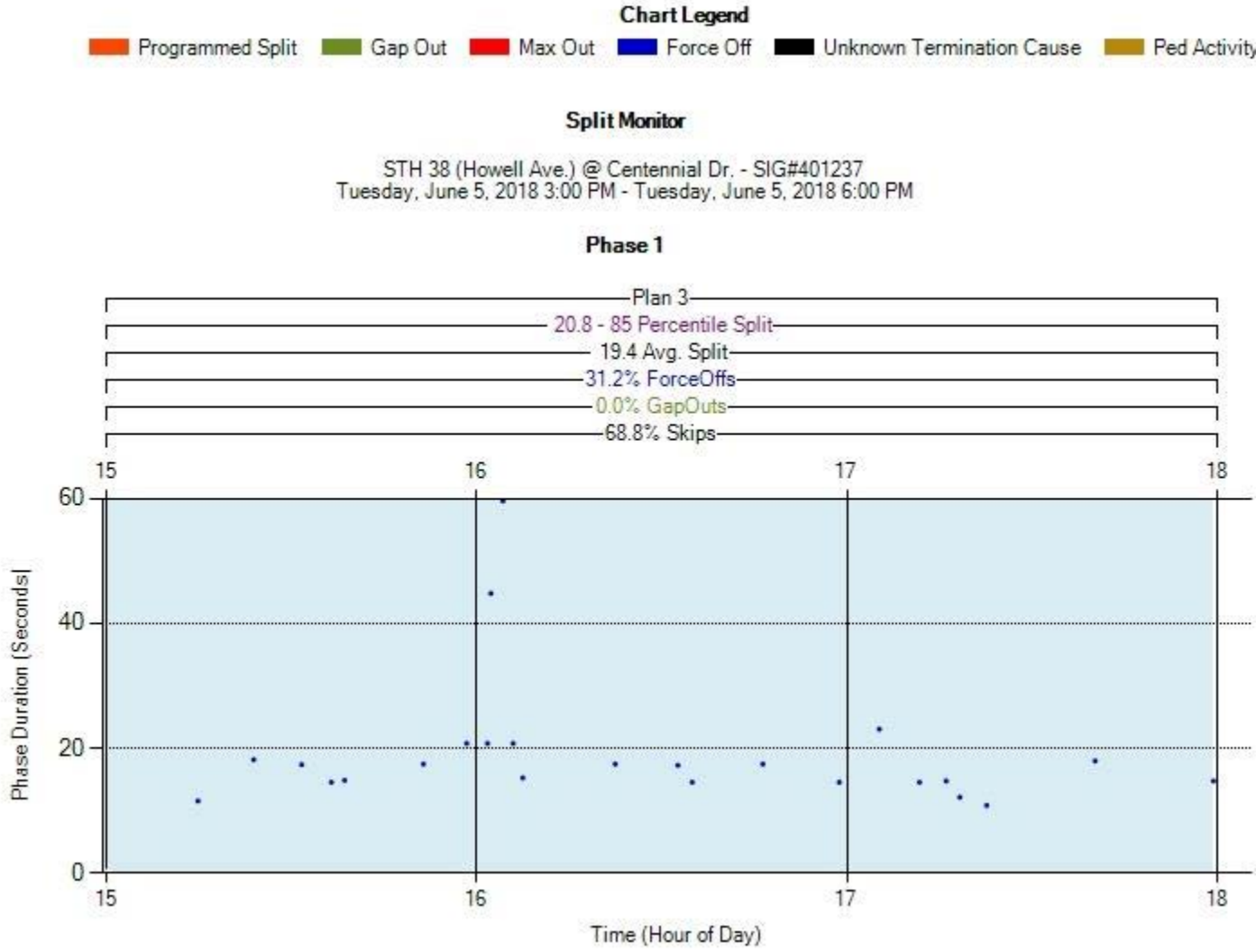
WIS 38 Corridor – STH 38 & Puetz Rd.
Baseline Timings
6/7/2018 – 4:30 PM – 5:30 PM



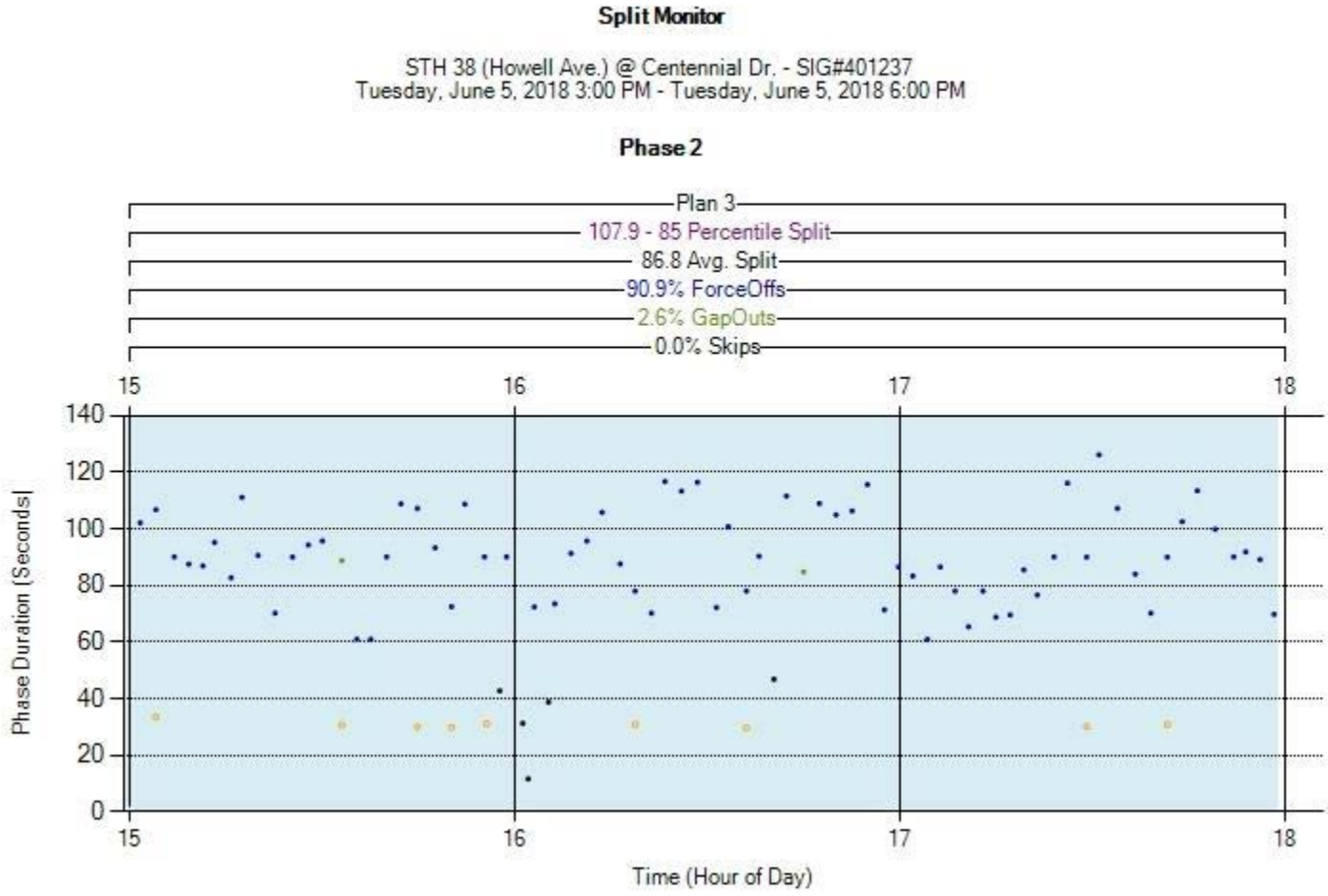
WIS 38 Corridor – STH 38 & Puetz Rd.
Baseline Timings
6/7/2018 – 4:30 PM – 5:30 PM

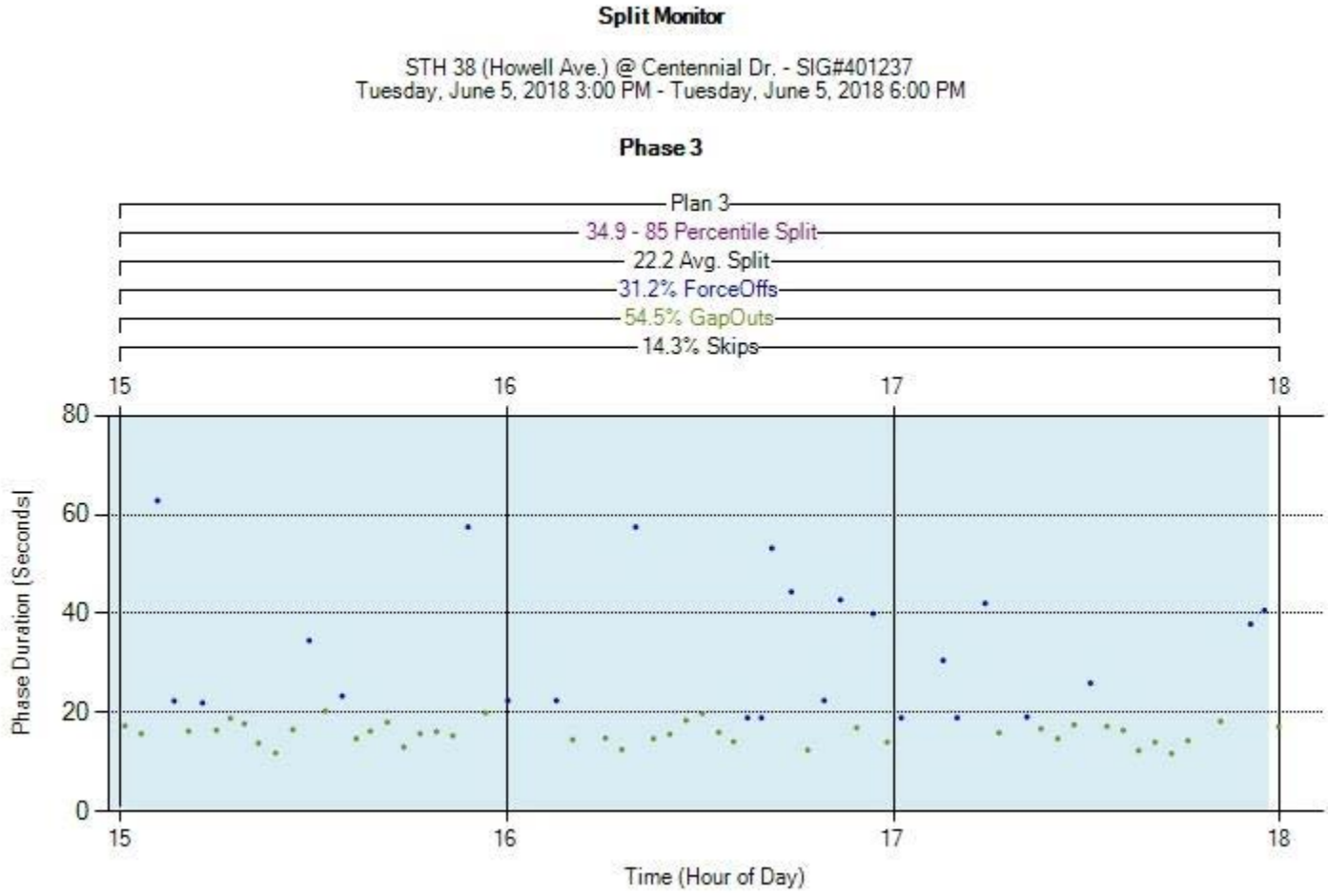


WIS 38 Corridor – STH 38 & Centennial Dr.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM

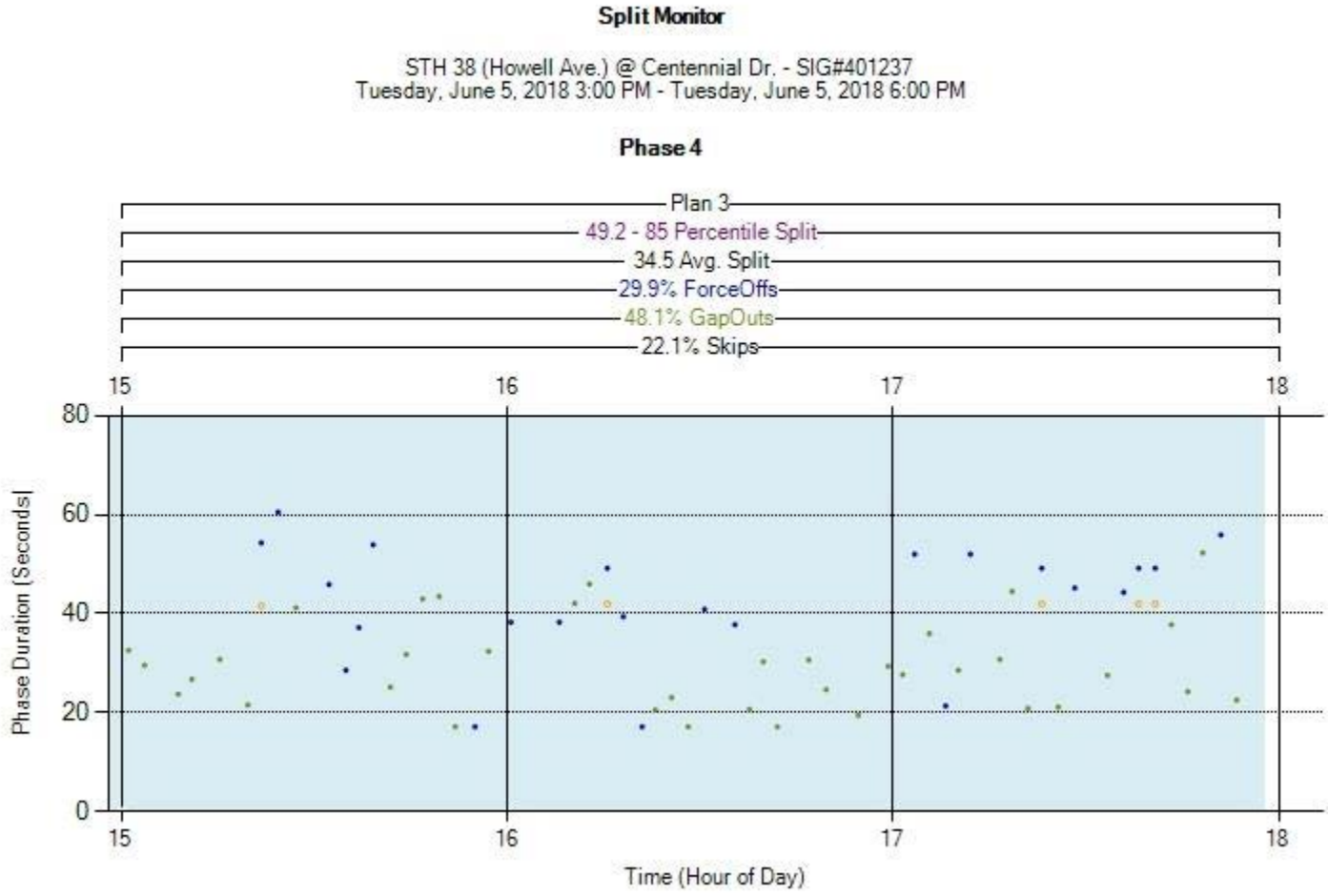


WIS 38 Corridor – STH 38 & Centennial Dr.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM

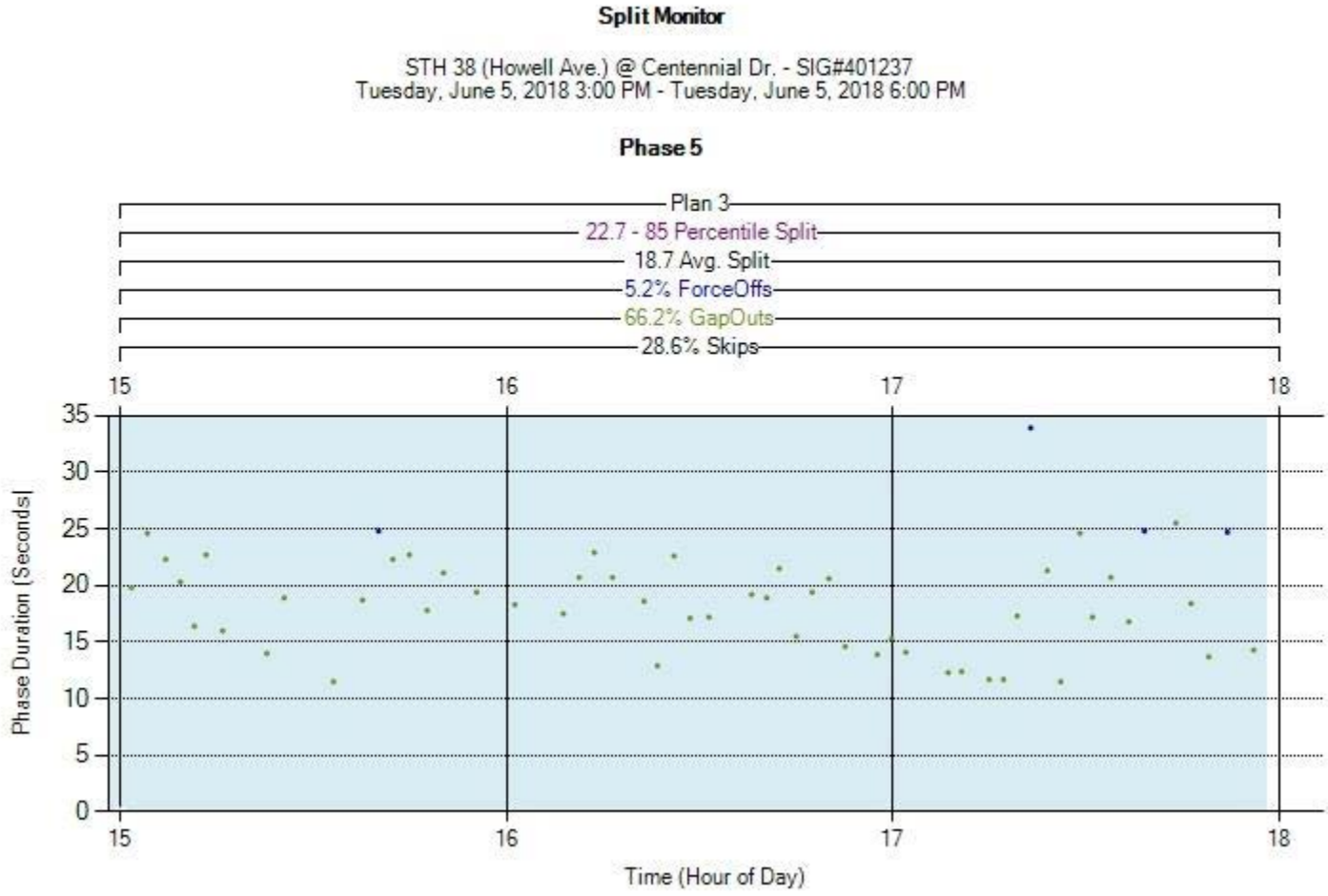



Split Monitor
STH 38 (Howell Ave.) @ Centennial Dr. - SIG#401237
Tuesday, June 5, 2018 3:00 PM - Tuesday, June 5, 2018 6:00 PM
Phase 3
Plan 3
34.9 - 85 Percentile Split
22.2 Avg. Split
31.2% ForceOffs
54.5% GapOuts
14.3% Skips
15
16
17
18
80
60
40
20
0
Phase Duration (Seconds)
Time (Hour of Day)

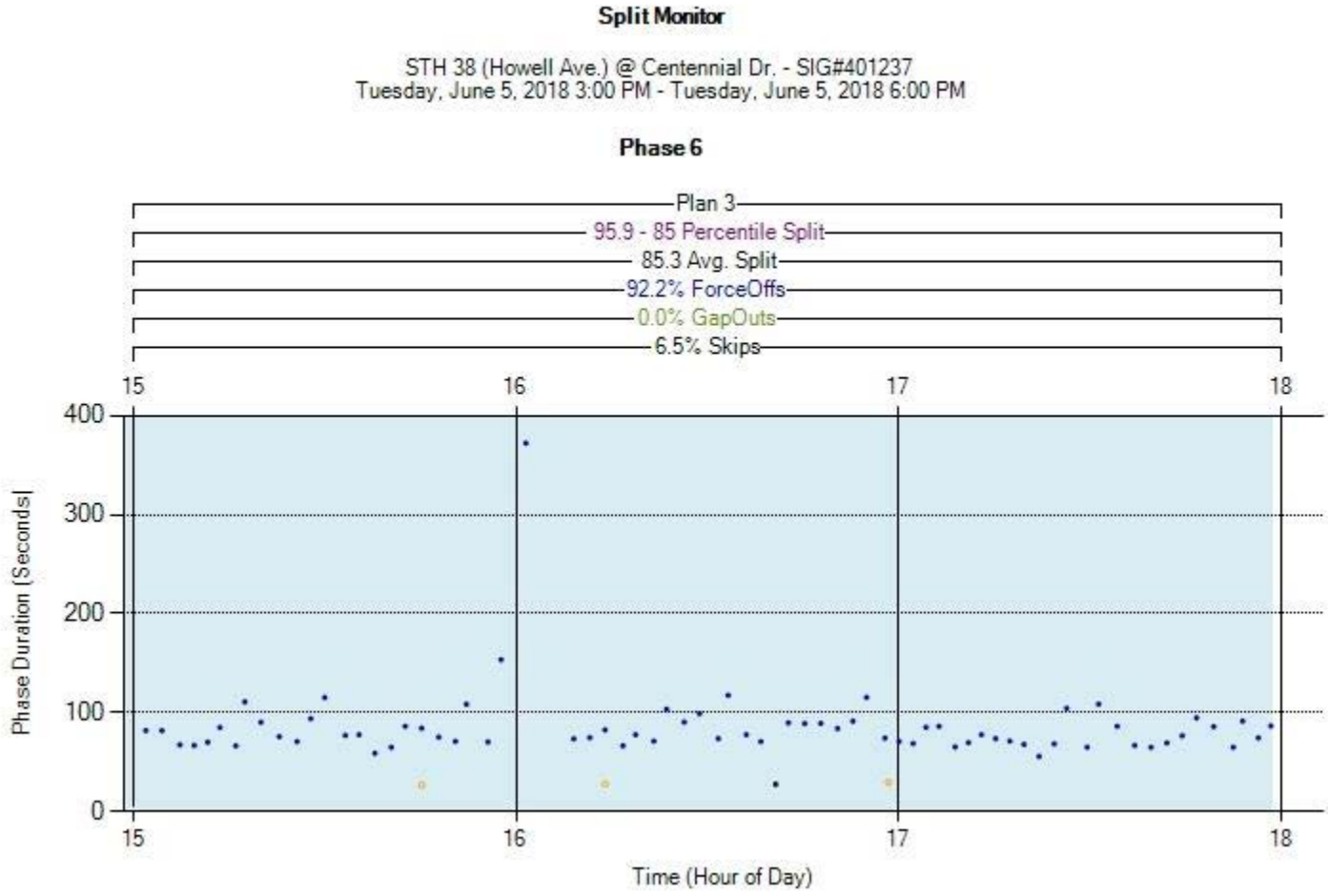
WIS 38 Corridor – STH 38 & Centennial Dr.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



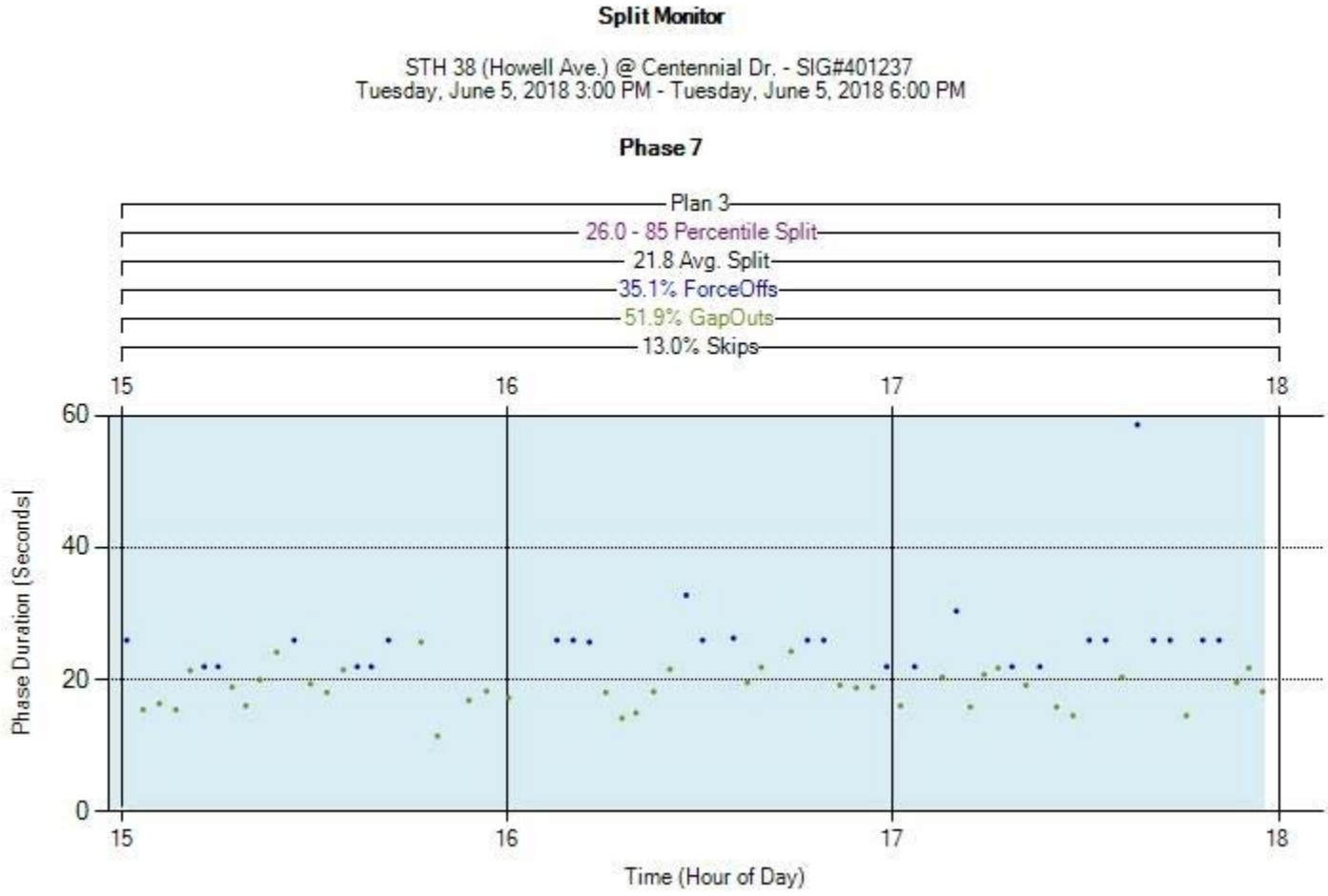
WIS 38 Corridor – STH 38 & Centennial Dr.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



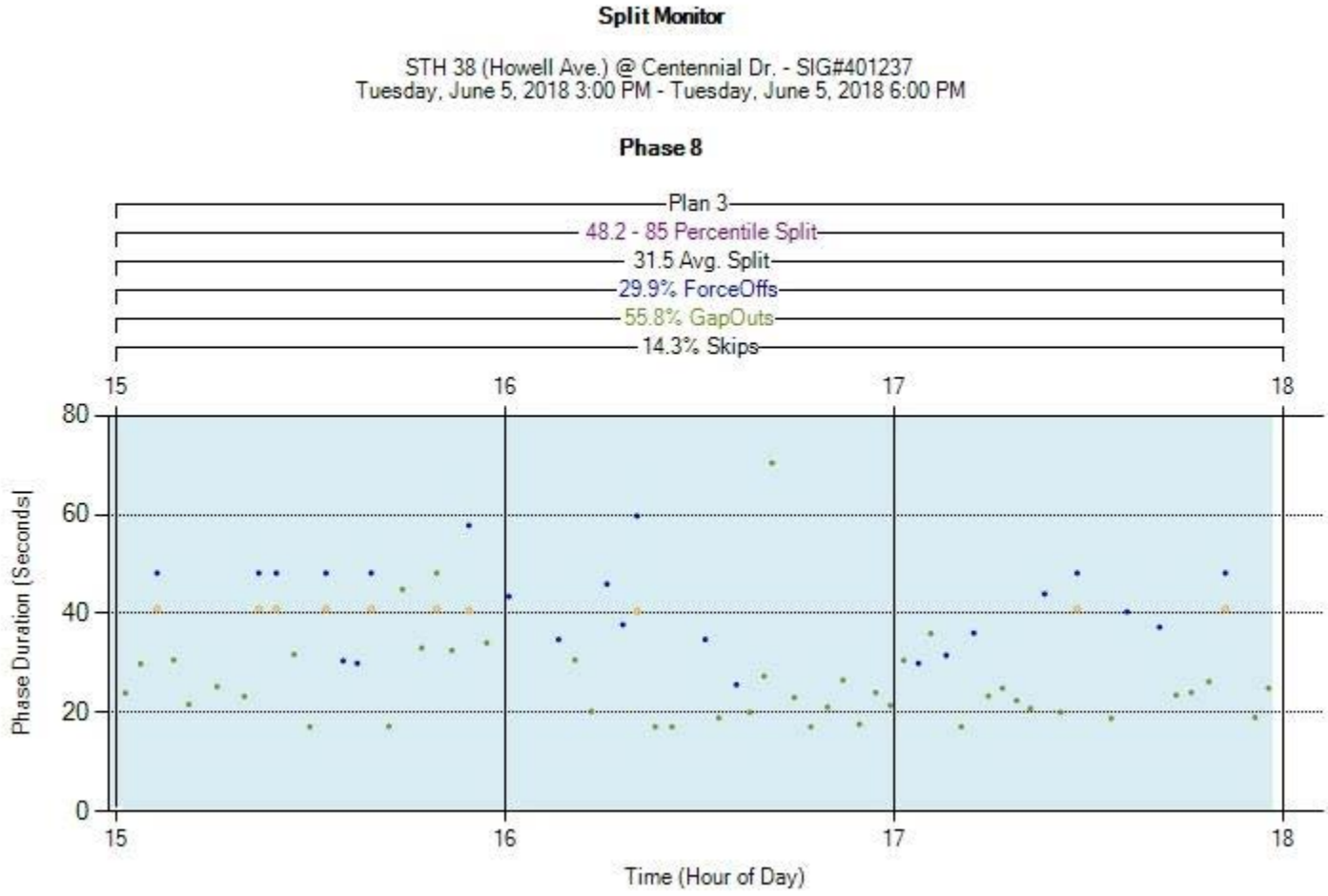
WIS 38 Corridor – STH 38 & Centennial Dr.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



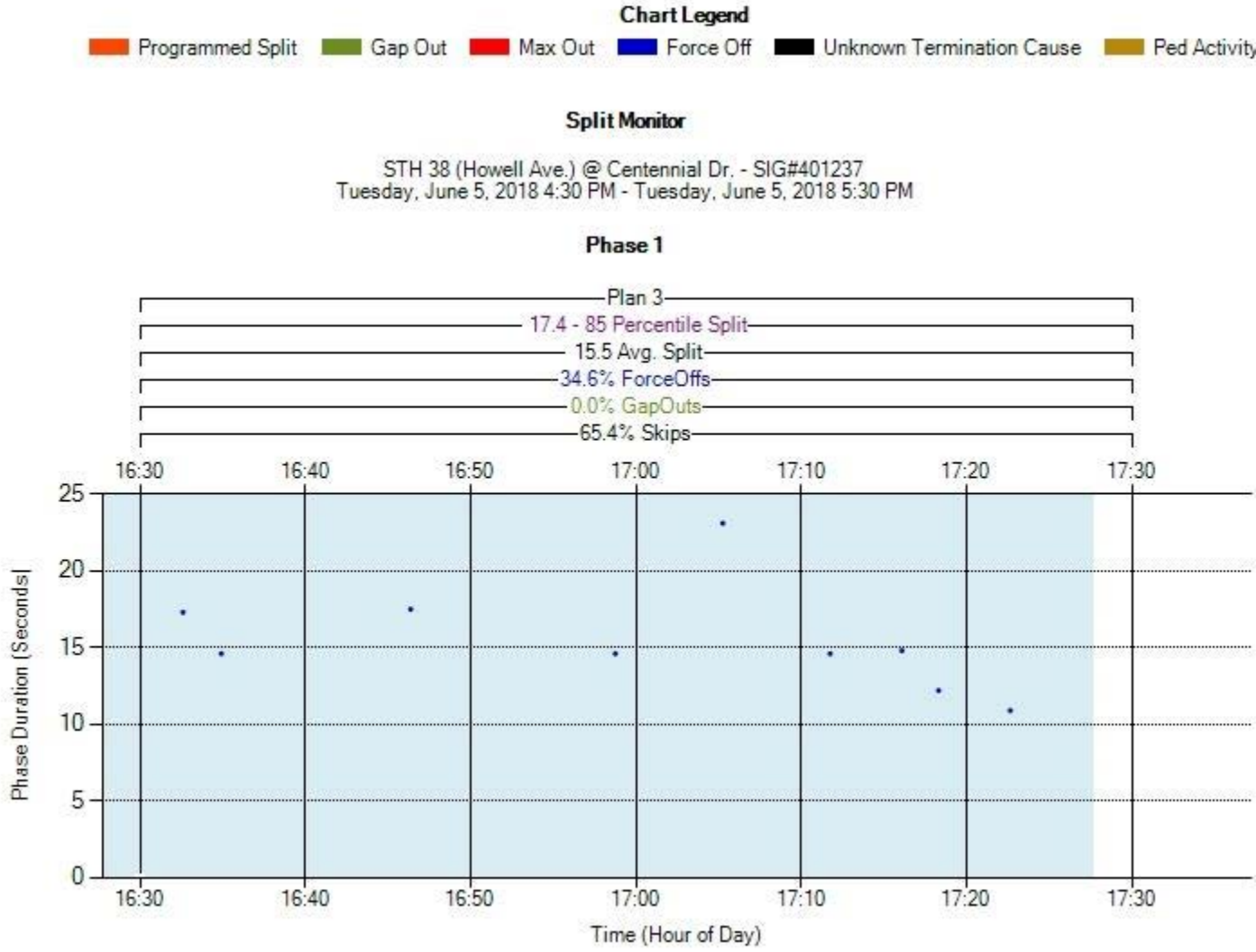
WIS 38 Corridor – STH 38 & Centennial Dr.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



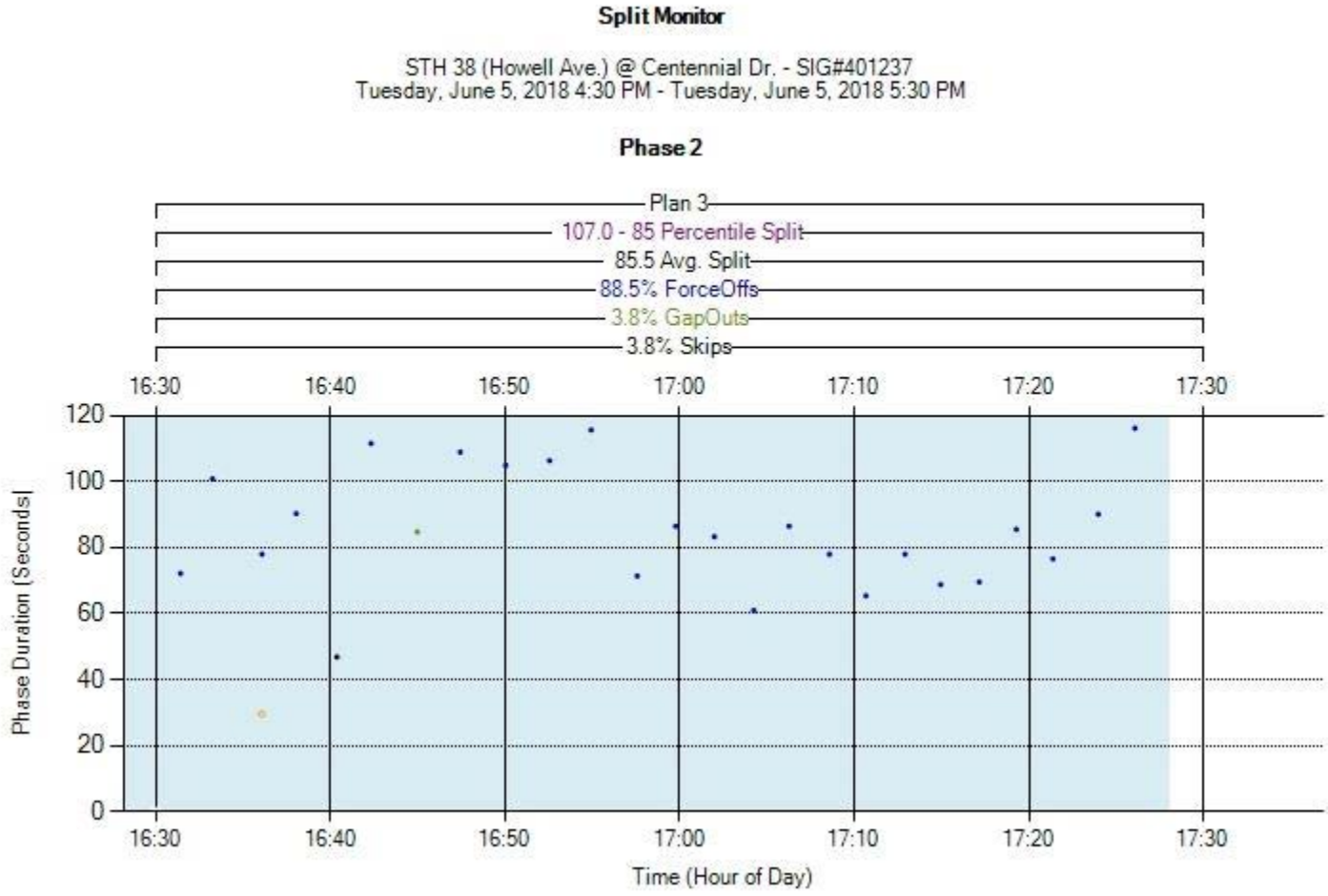
WIS 38 Corridor – STH 38 & Centennial Dr.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



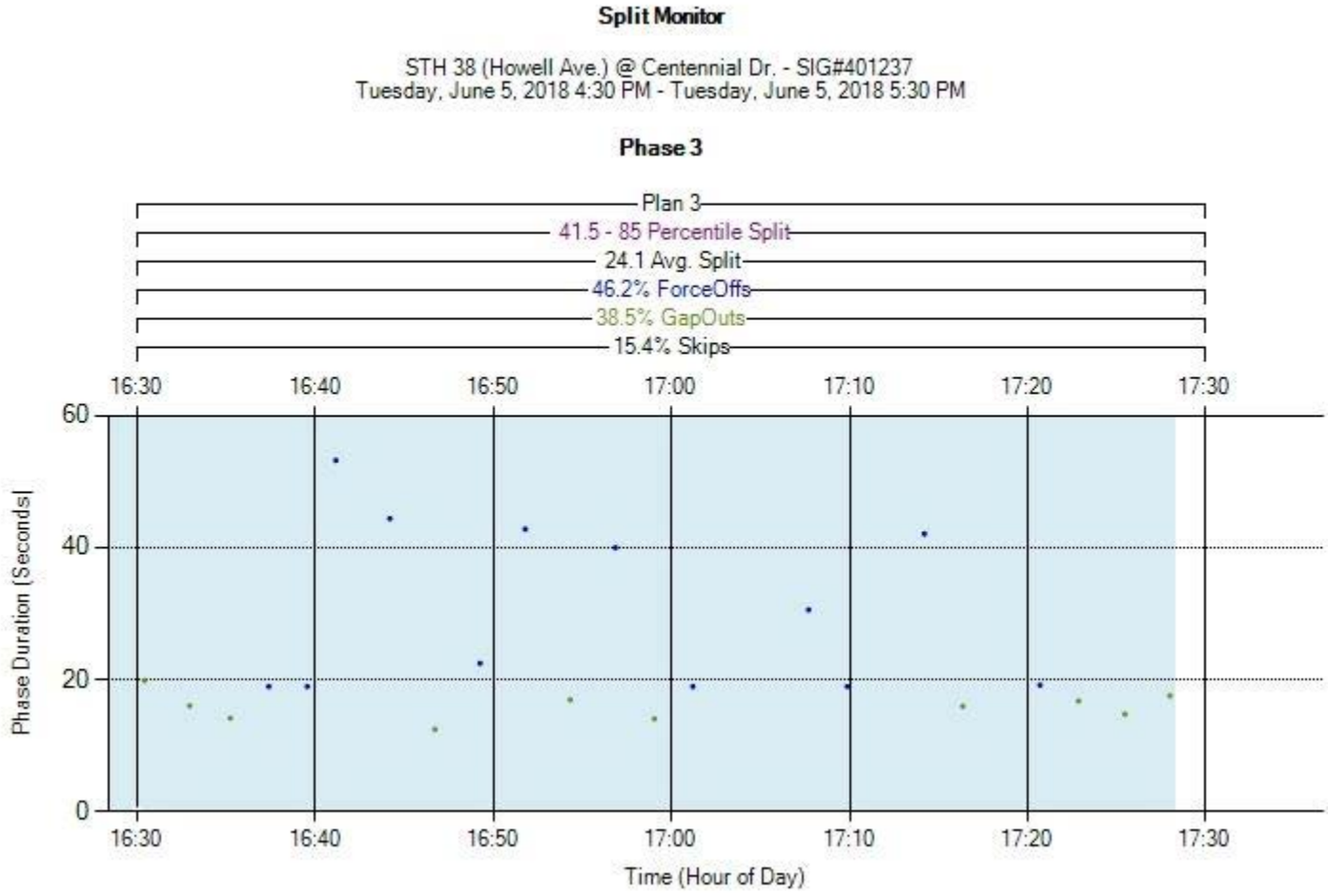
WIS 38 Corridor – STH 38 & Centennial Dr.
Baseline Timings
6/5/2018 – 4:30 PM – 5:30 PM



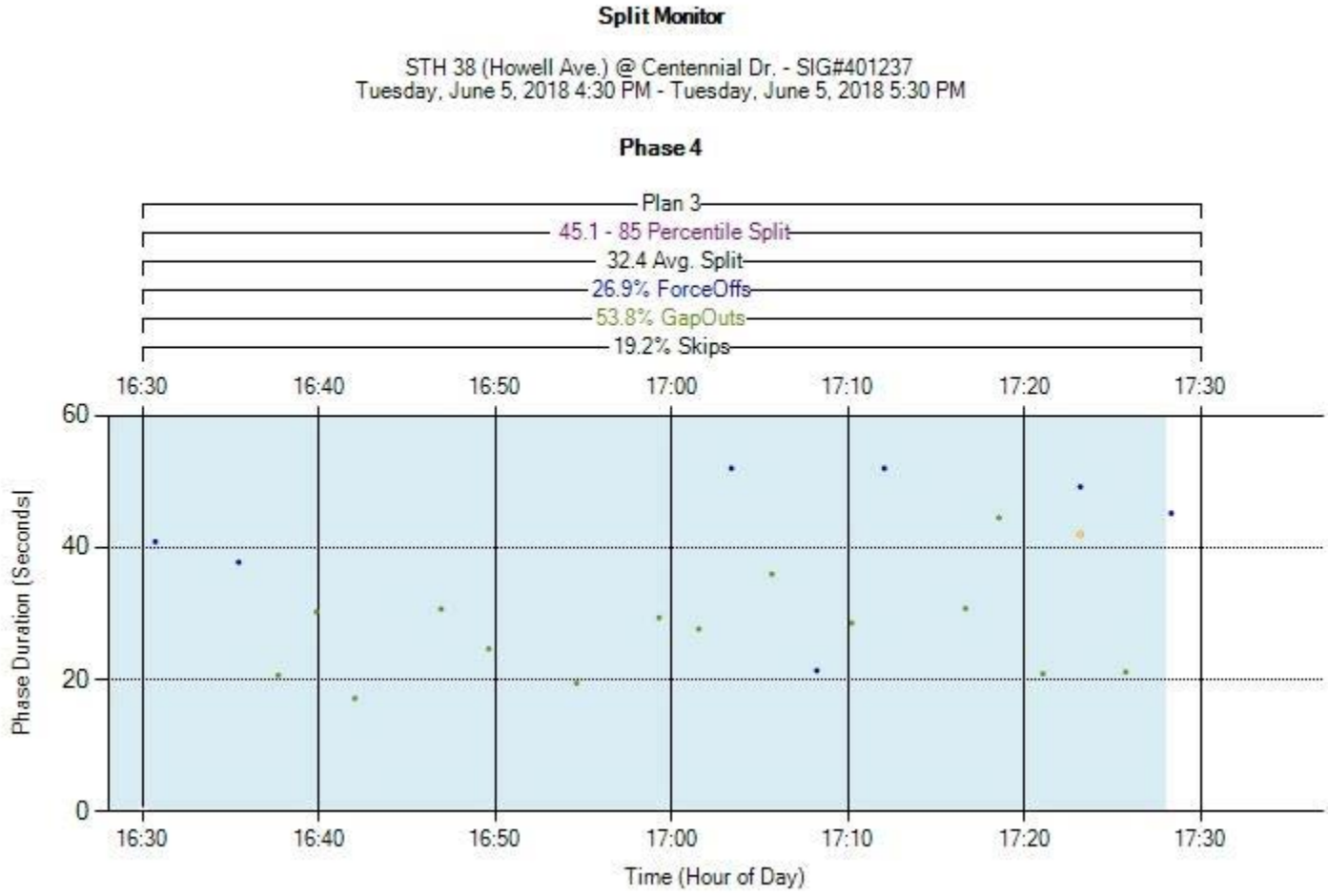
WIS 38 Corridor – STH 38 & Centennial Dr.
Baseline Timings
6/5/2018 – 4:30 PM – 5:30 PM



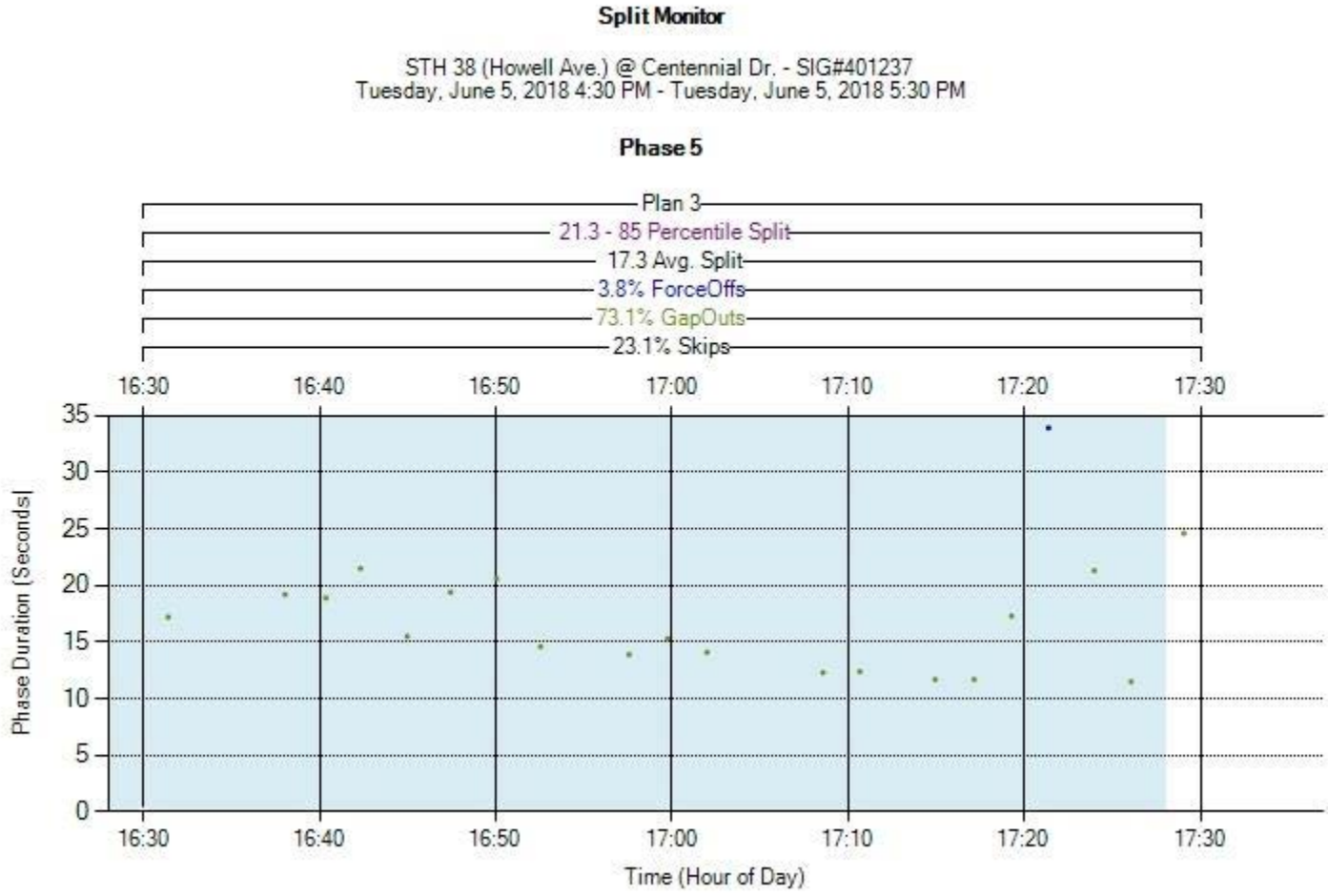
WIS 38 Corridor – STH 38 & Centennial Dr.
Baseline Timings
6/5/2018 – 4:30 PM – 5:30 PM



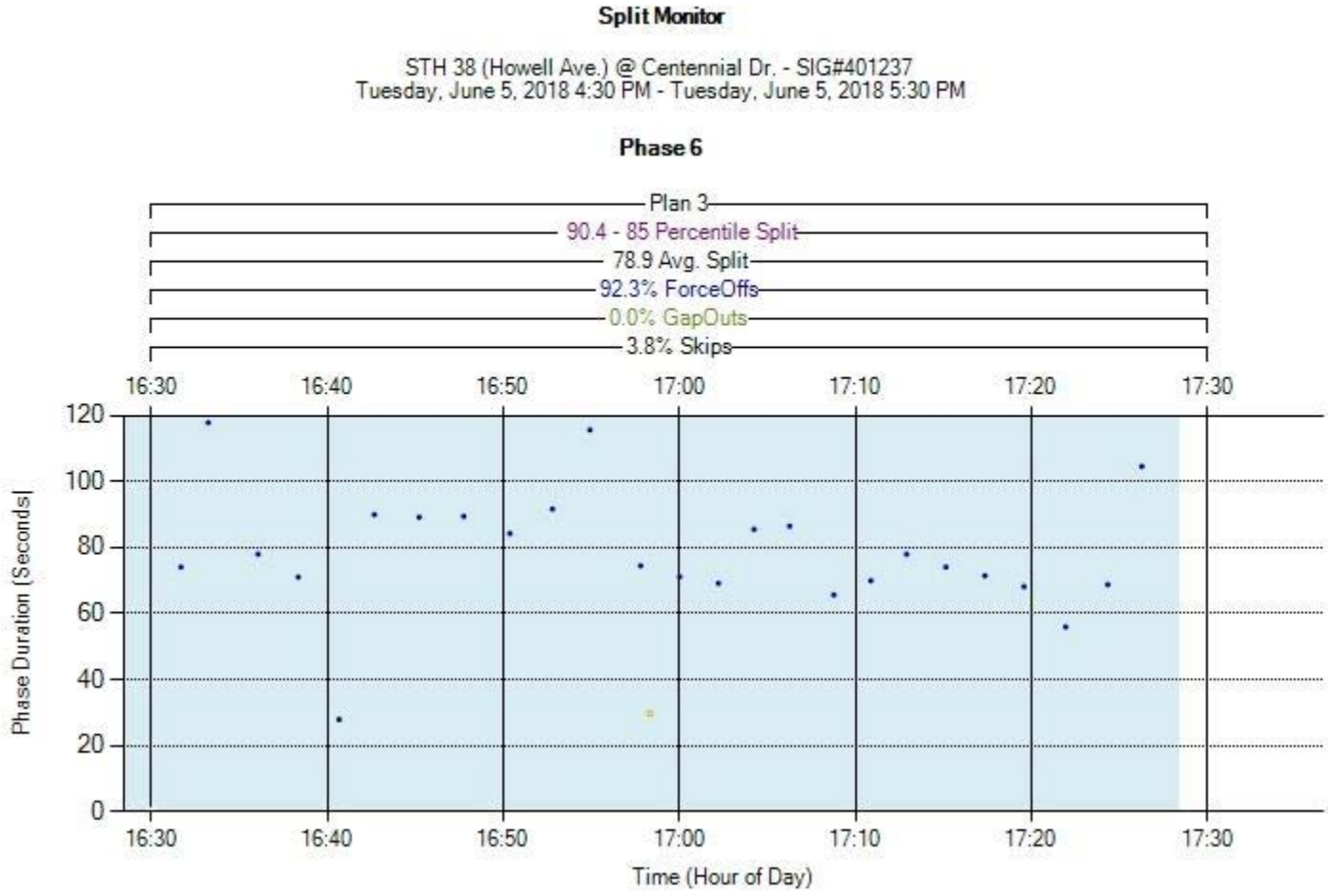
WIS 38 Corridor – STH 38 & Centennial Dr.
Baseline Timings
6/5/2018 – 4:30 PM – 5:30 PM



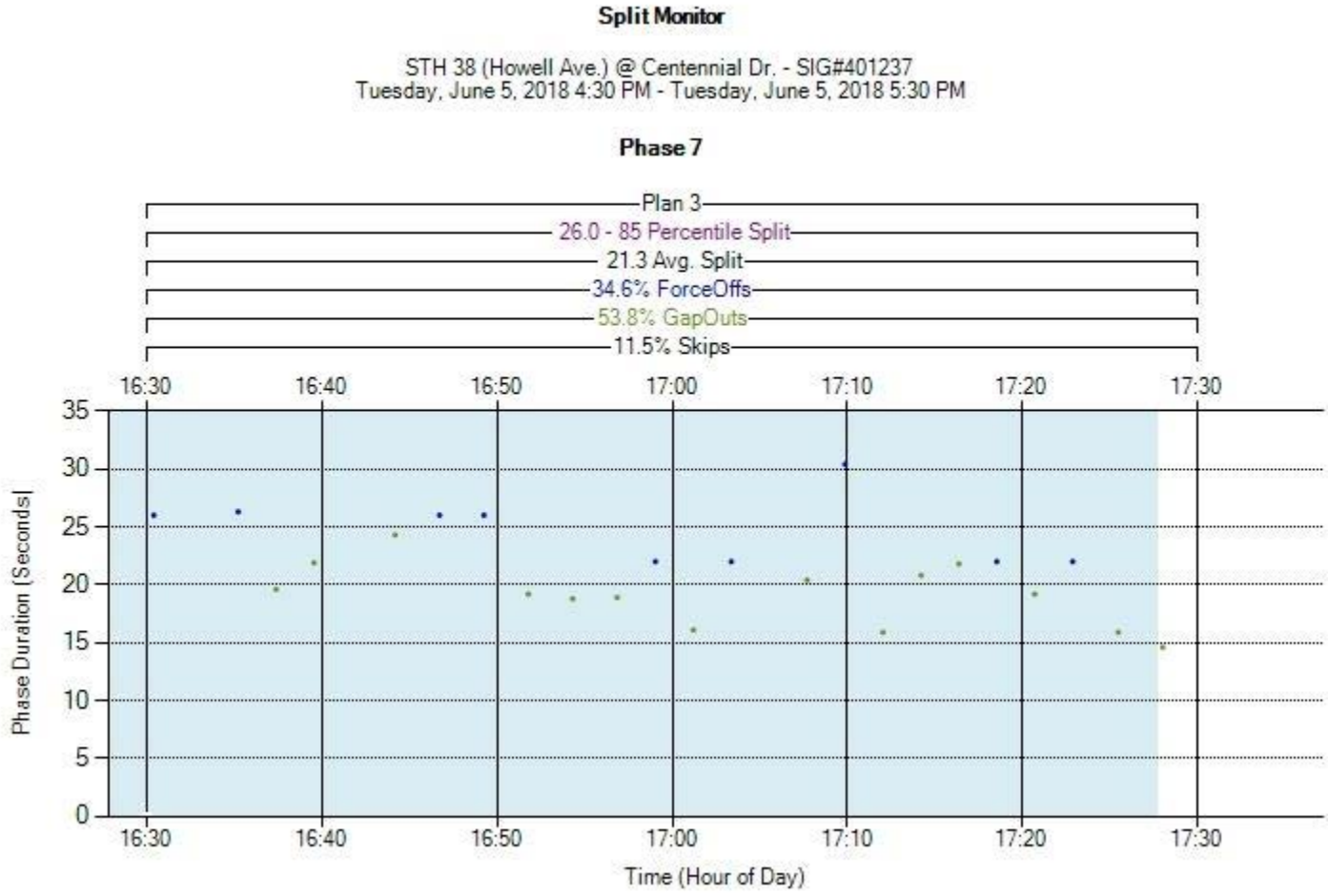
WIS 38 Corridor – STH 38 & Centennial Dr.
Baseline Timings
6/5/2018 – 4:30 PM – 5:30 PM



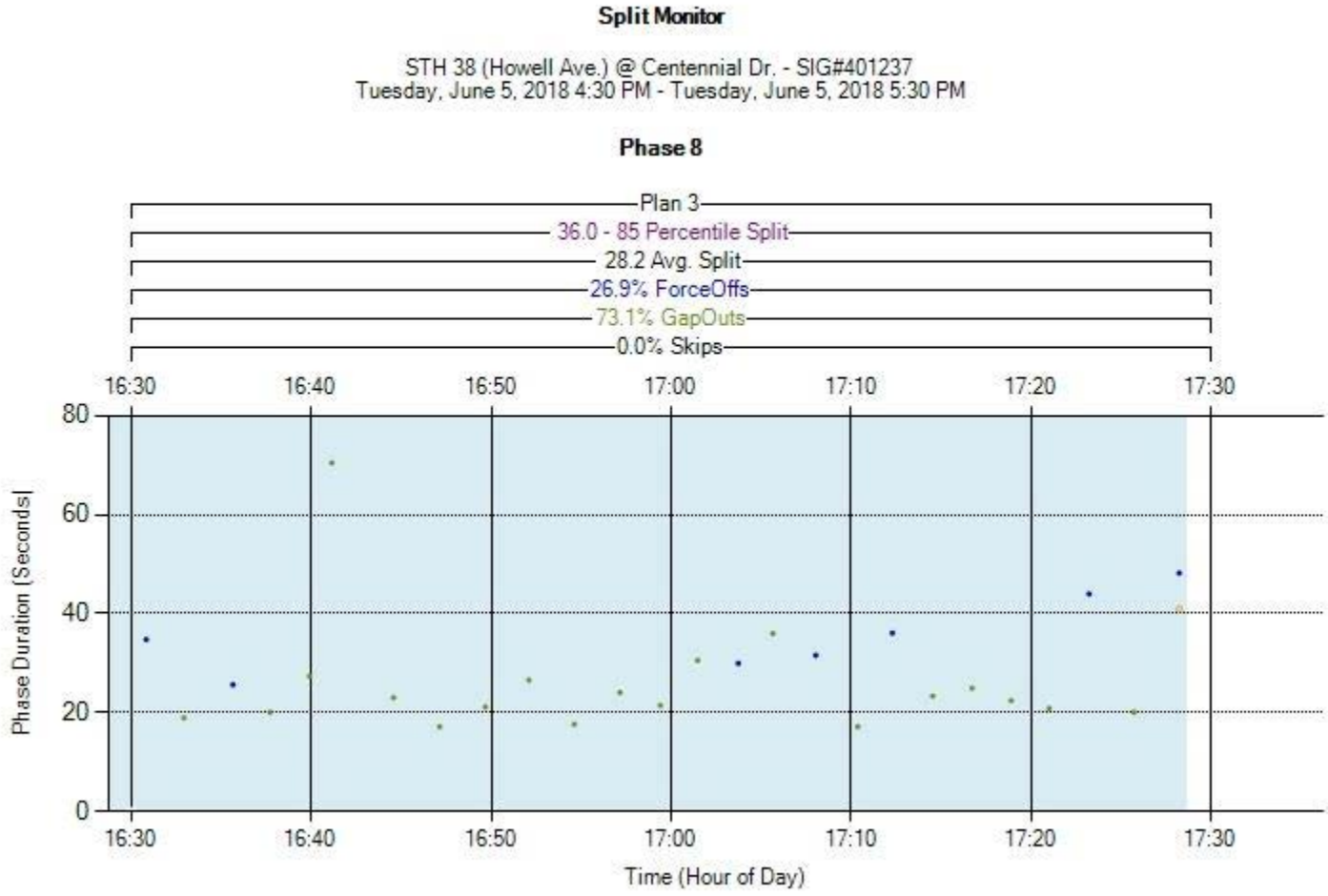
WIS 38 Corridor – STH 38 & Centennial Dr.
Baseline Timings
6/5/2018 – 4:30 PM – 5:30 PM



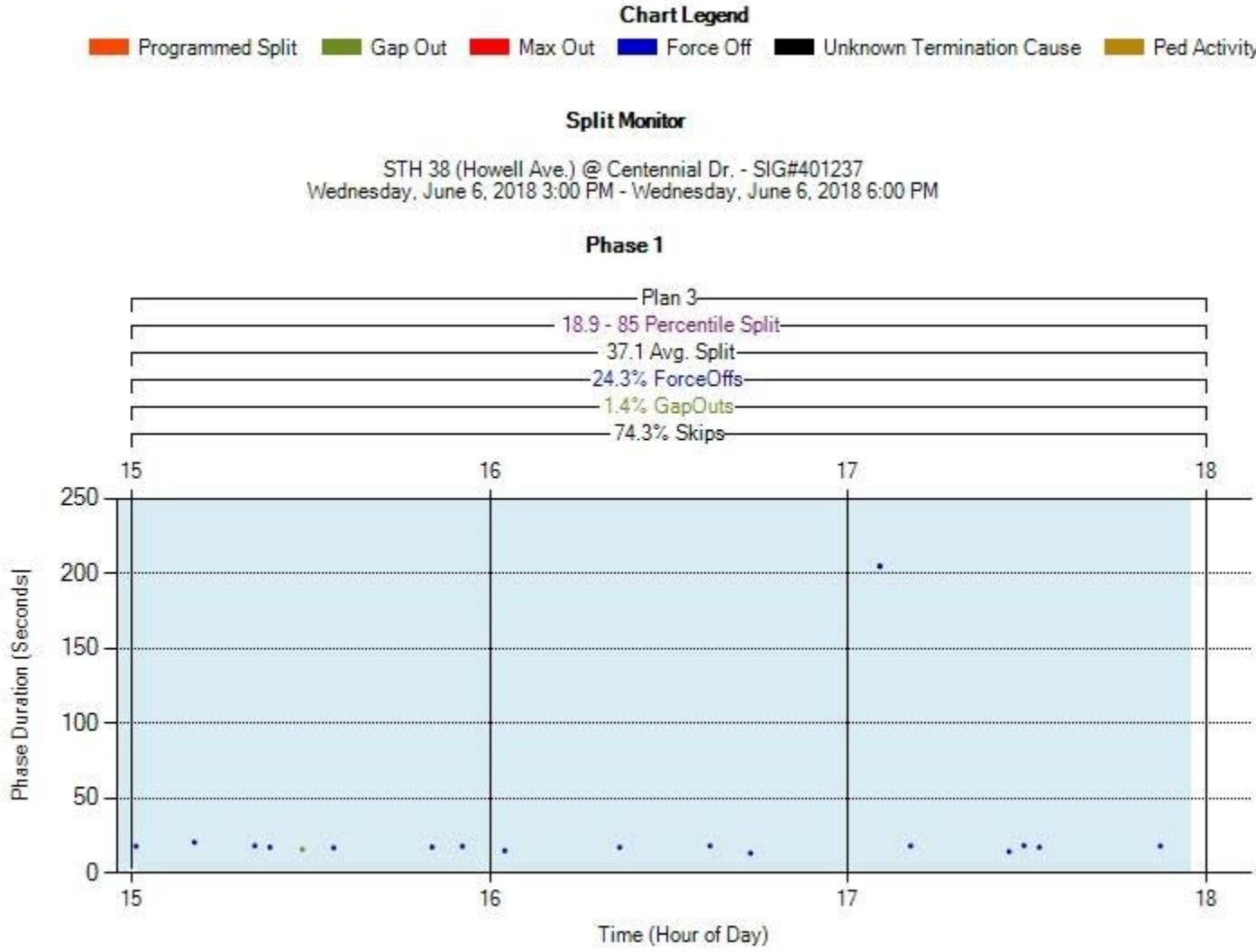
WIS 38 Corridor – STH 38 & Centennial Dr.
Baseline Timings
6/5/2018 – 4:30 PM – 5:30 PM



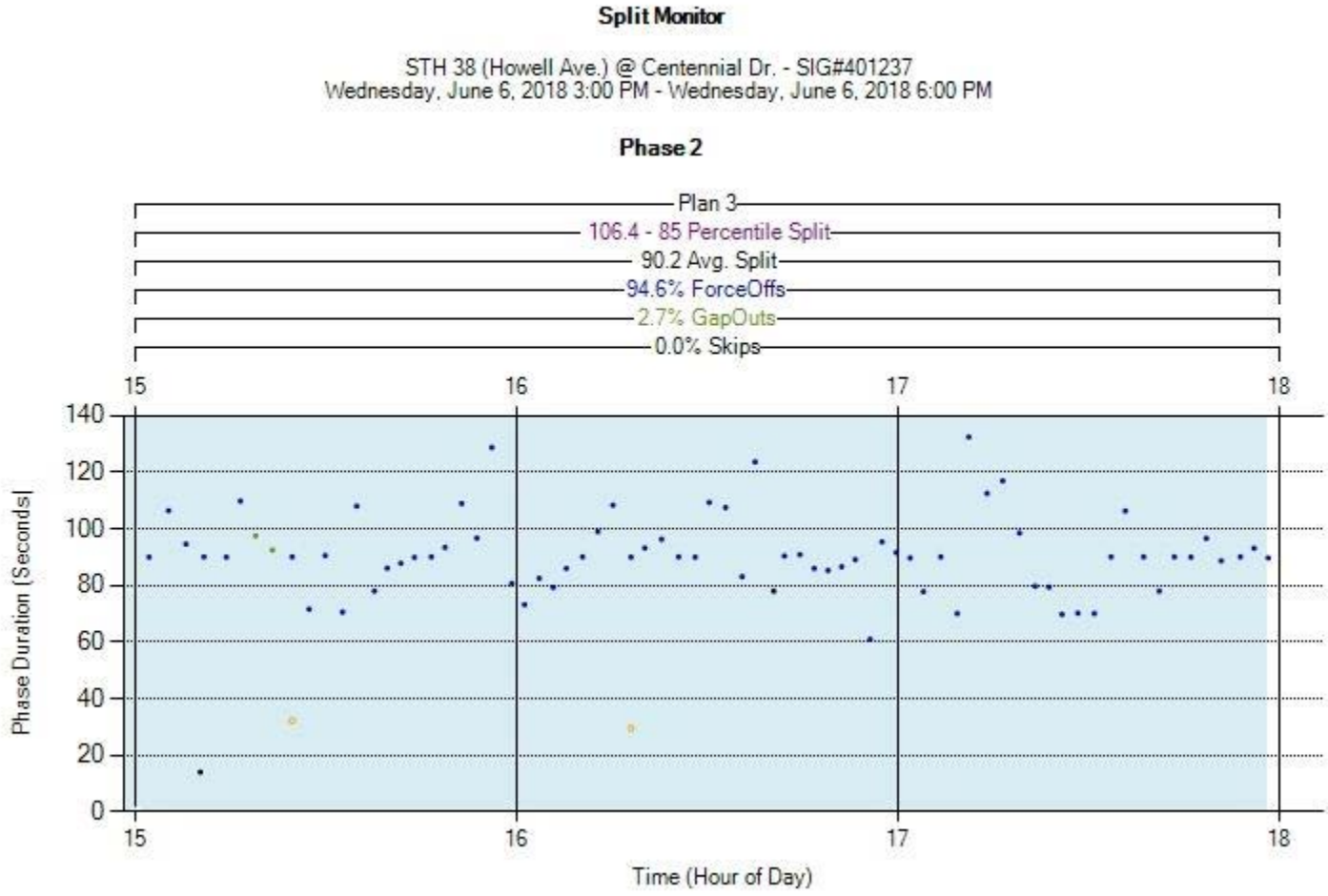
WIS 38 Corridor – STH 38 & Centennial Dr.
Baseline Timings
6/5/2018 – 4:30 PM – 5:30 PM



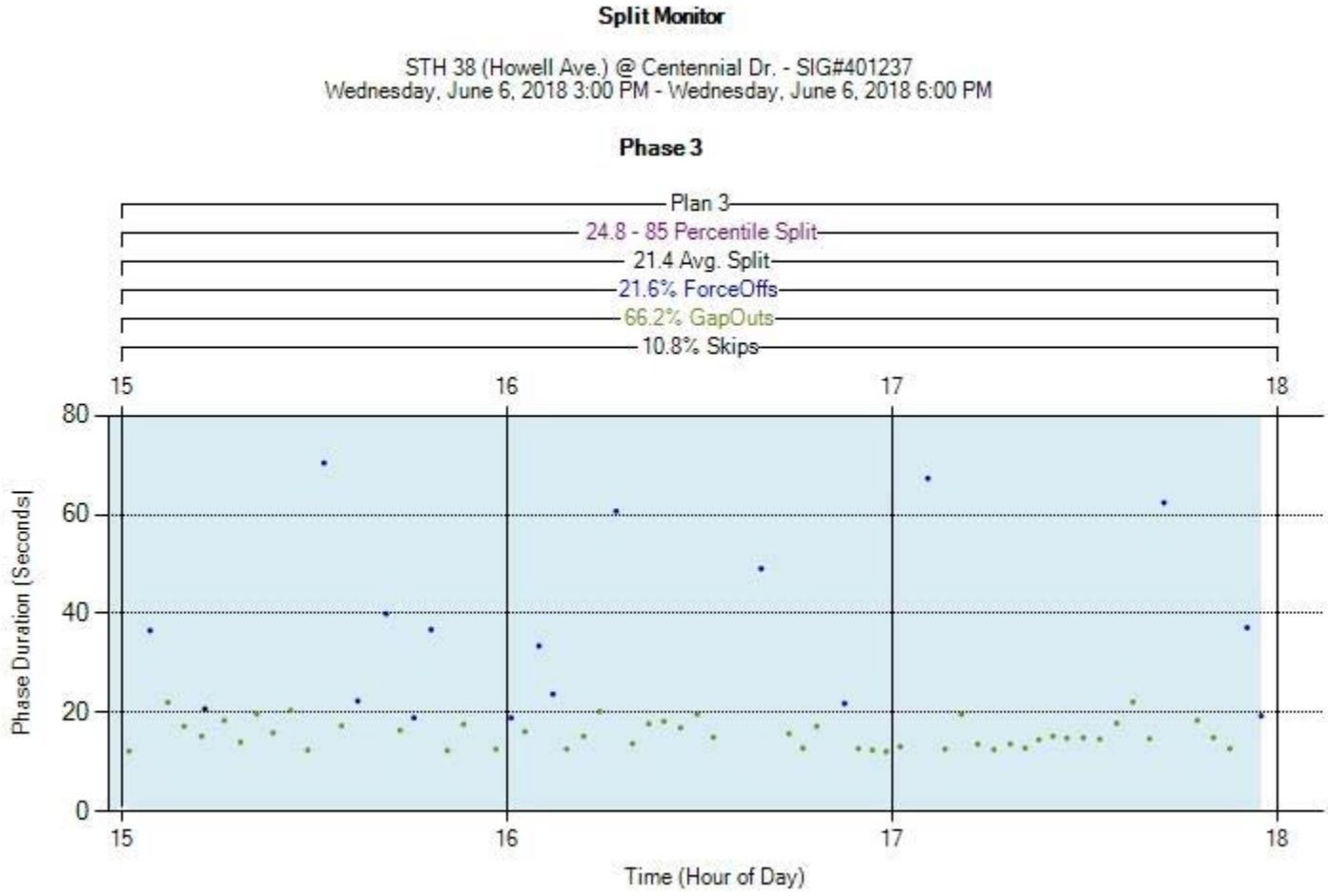
WIS 38 Corridor – STH 38 & Centennial Dr.
Baseline Timings
6/6/2018 – 3:00 PM – 6:00 PM



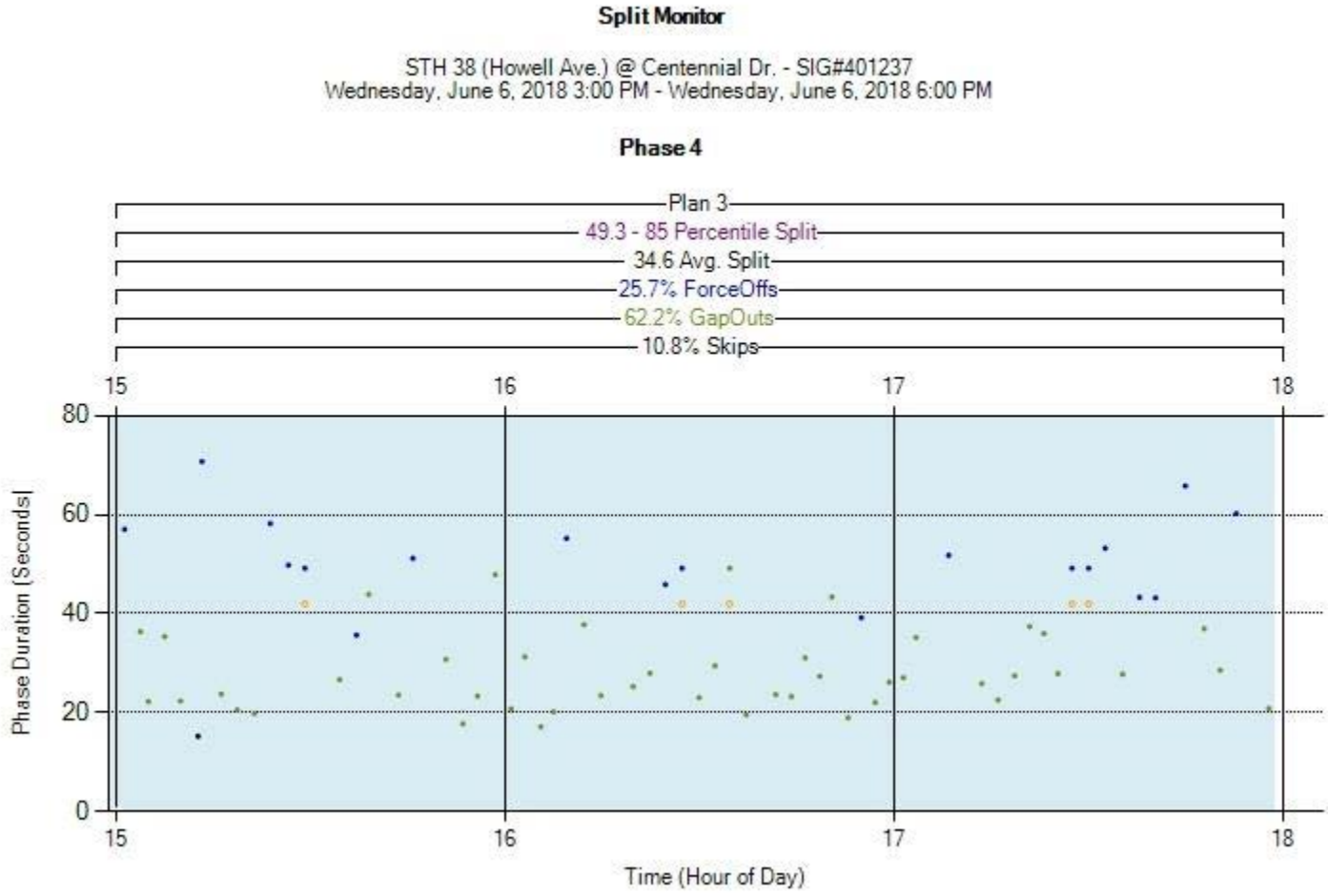
WIS 38 Corridor – STH 38 & Centennial Dr.
Baseline Timings
6/6/2018 – 3:00 PM – 6:00 PM



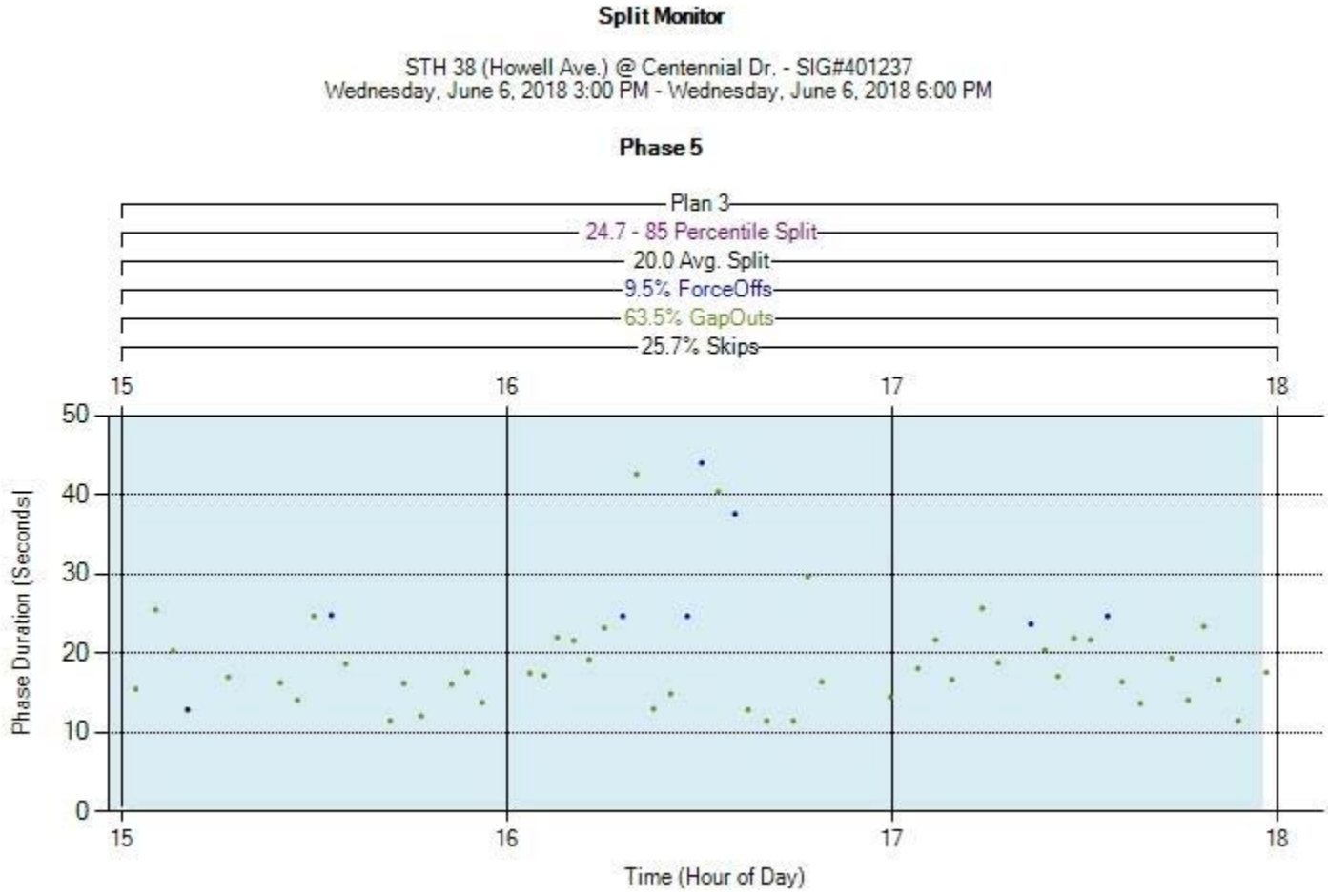
WIS 38 Corridor – STH 38 & Centennial Dr.
Baseline Timings
6/6/2018 – 3:00 PM – 6:00 PM

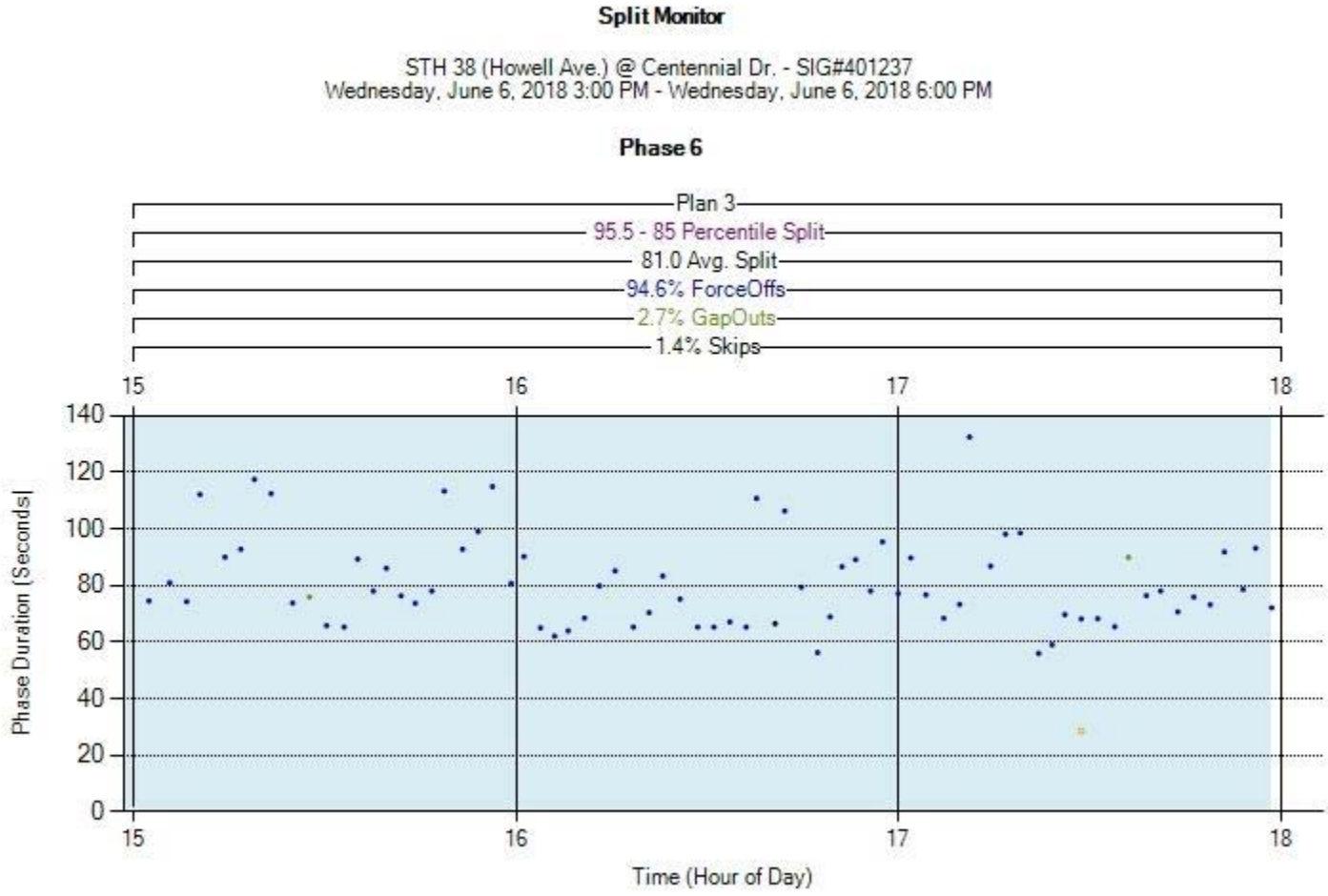


WIS 38 Corridor – STH 38 & Centennial Dr.
Baseline Timings
6/6/2018 – 3:00 PM – 6:00 PM

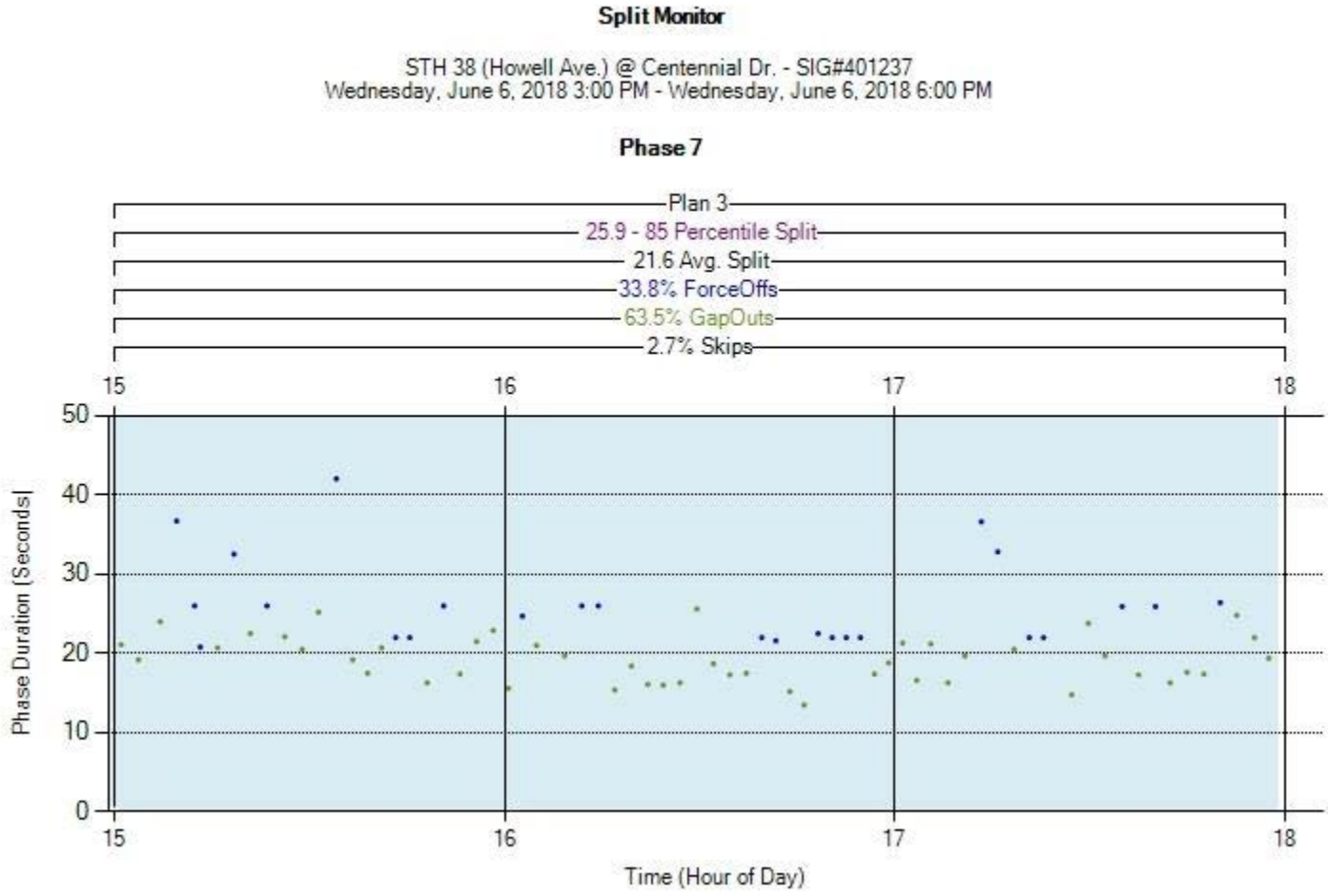


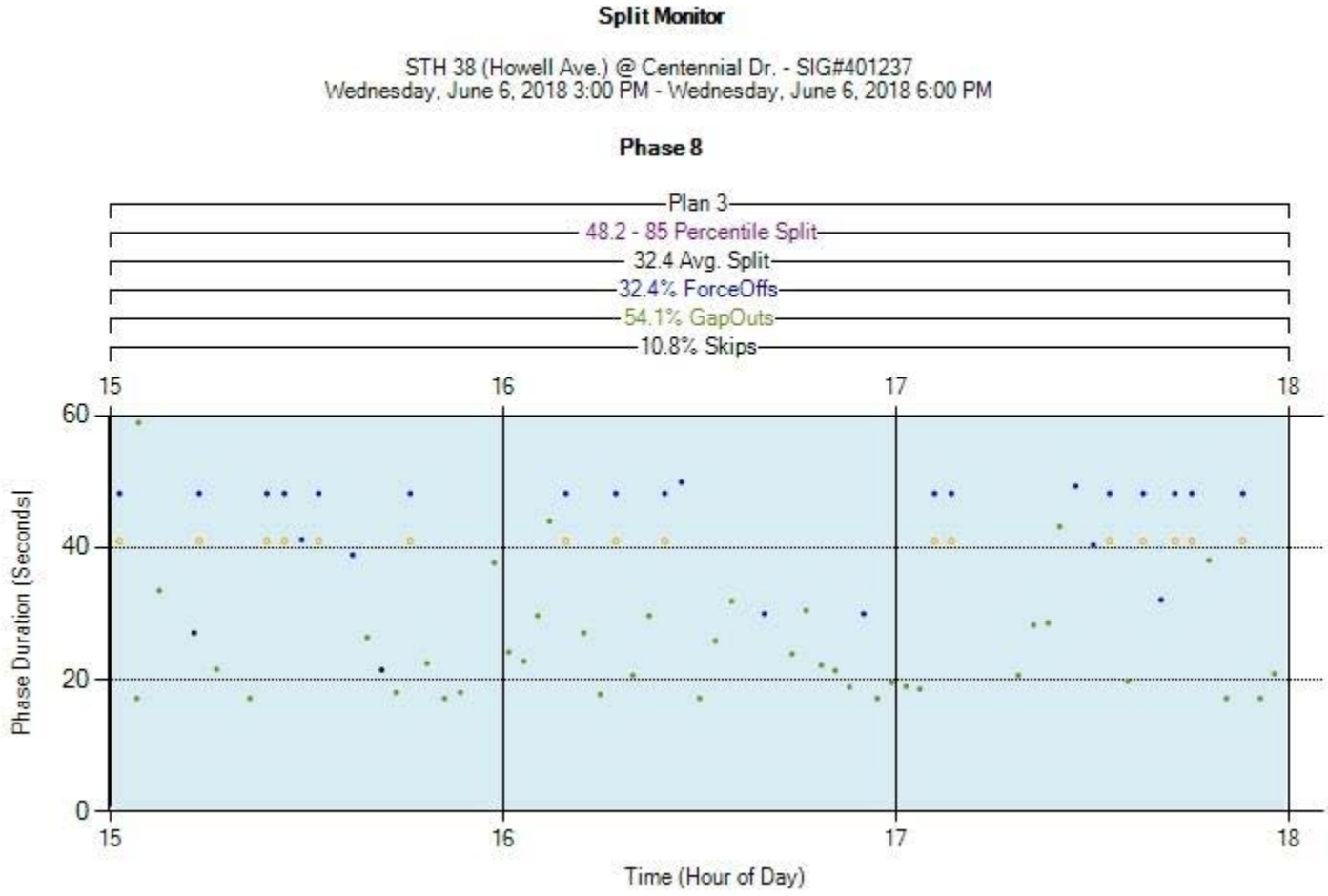
WIS 38 Corridor – STH 38 & Centennial Dr.
Baseline Timings
6/6/2018 – 3:00 PM – 6:00 PM



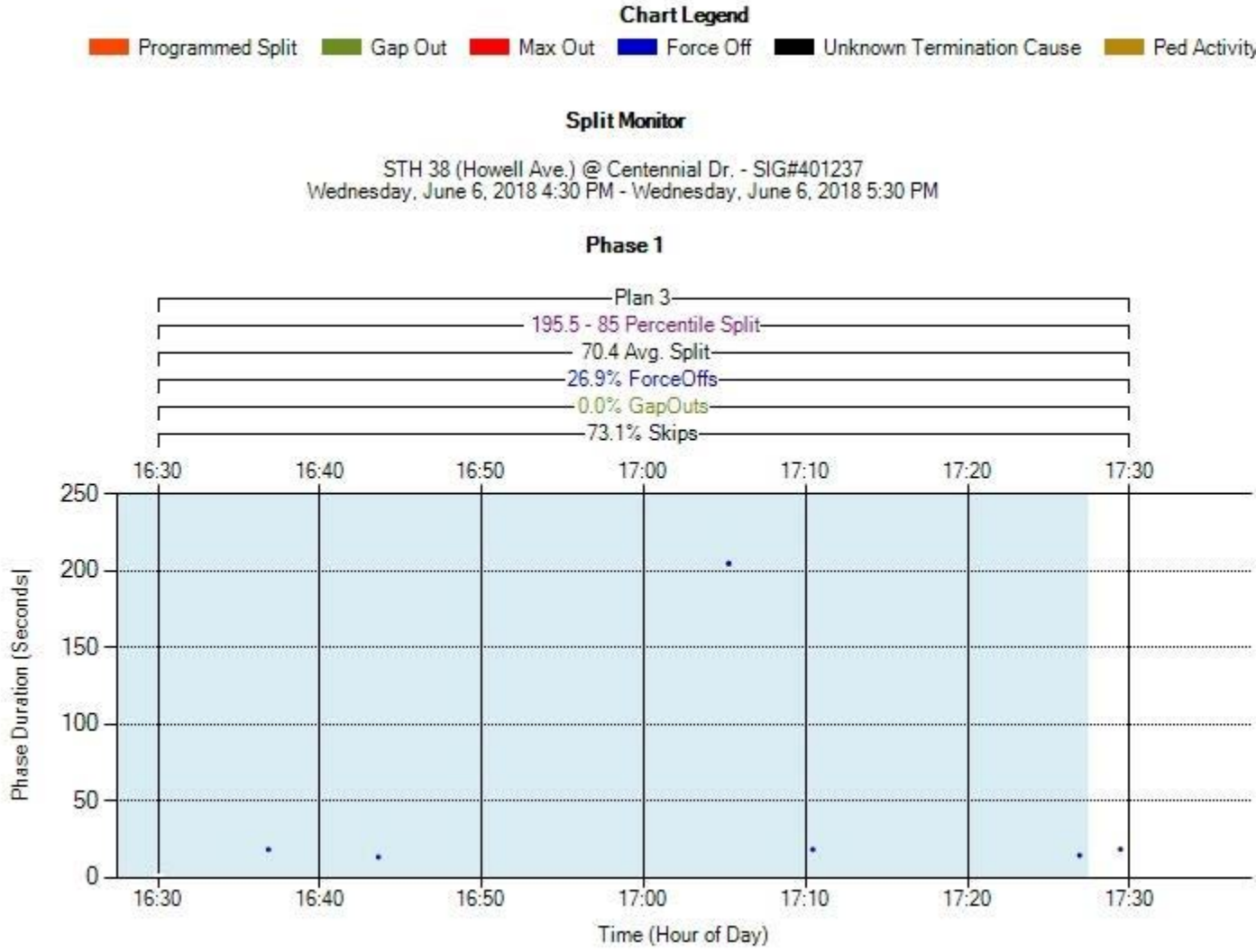

Split Monitor
STH 38 (Howell Ave.) @ Centennial Dr. - SIG#401237
Wednesday, June 6, 2018 3:00 PM - Wednesday, June 6, 2018 6:00 PM
Phase 6
Plan 3
95.5 - 85 Percentile Split
81.0 Avg. Split
94.6% ForceOffs
2.7% GapOuts
1.4% Skips
Phase Duration (Seconds)
Time (Hour of Day)

WIS 38 Corridor – STH 38 & Centennial Dr.
Baseline Timings
6/6/2018 – 3:00 PM – 6:00 PM

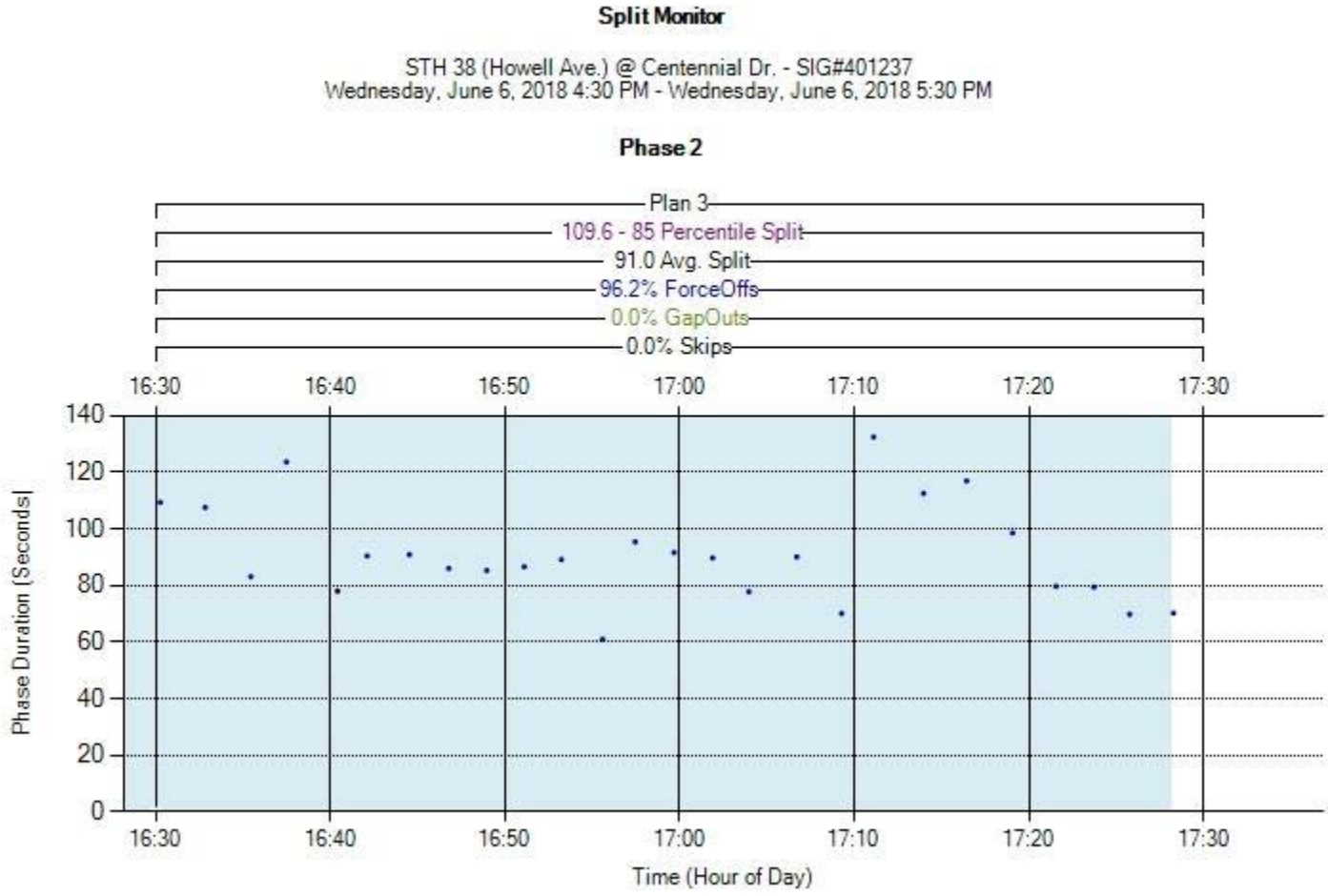



Split Monitor
STH 38 (Howell Ave.) @ Centennial Dr. - SIG#401237
Wednesday, June 6, 2018 3:00 PM - Wednesday, June 6, 2018 6:00 PM
Phase 8
Plan 3
48.2 - 85 Percentile Split
32.4 Avg. Split
32.4% ForceOffs
54.1% GapOuts
10.8% Skips
Phase Duration (Seconds)
Time (Hour of Day)
15
16
17
18
0
20
40
60

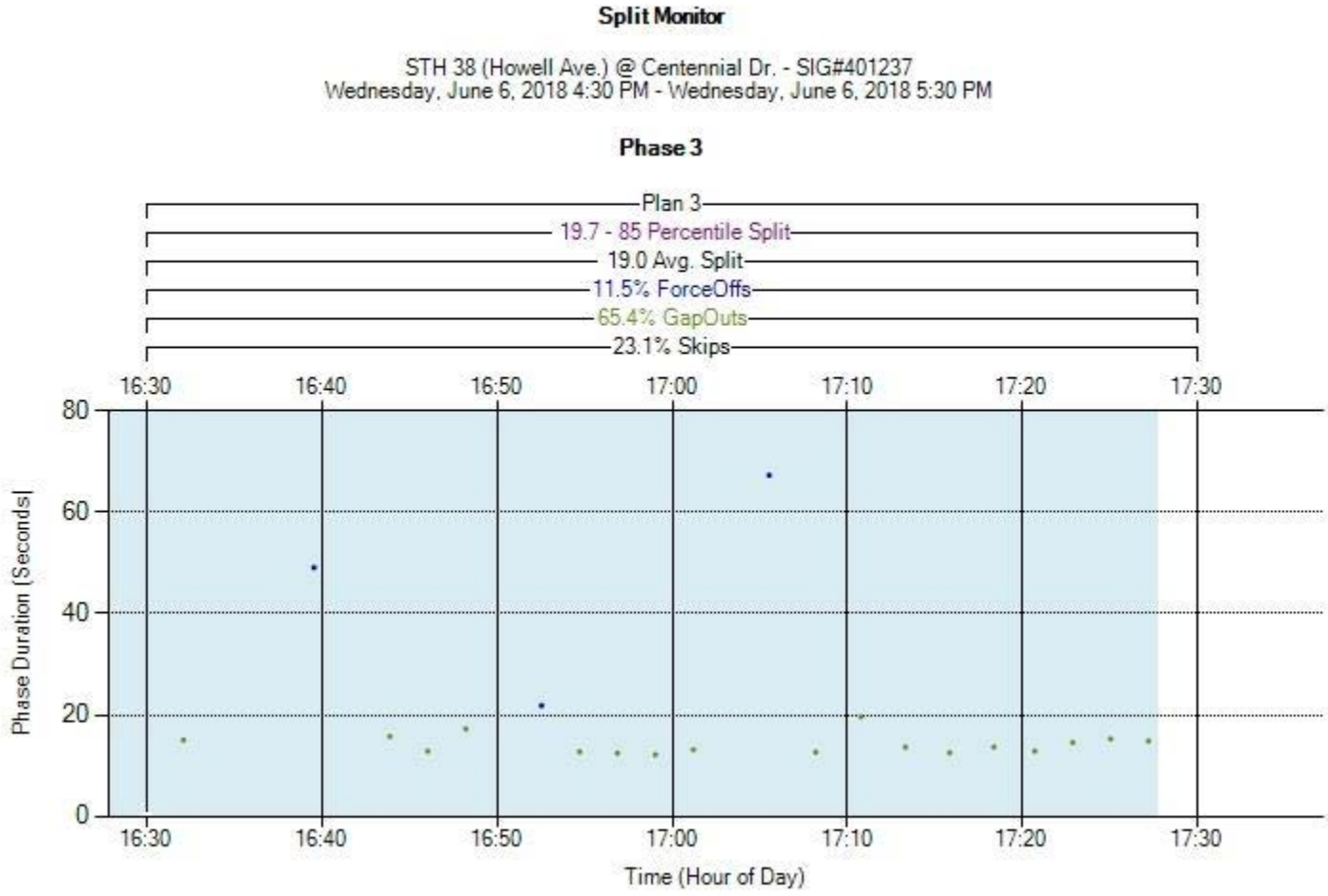
WIS 38 Corridor – STH 38 & Centennial Dr.
Baseline Timings
6/6/2018 – 4:30 PM – 5:30 PM



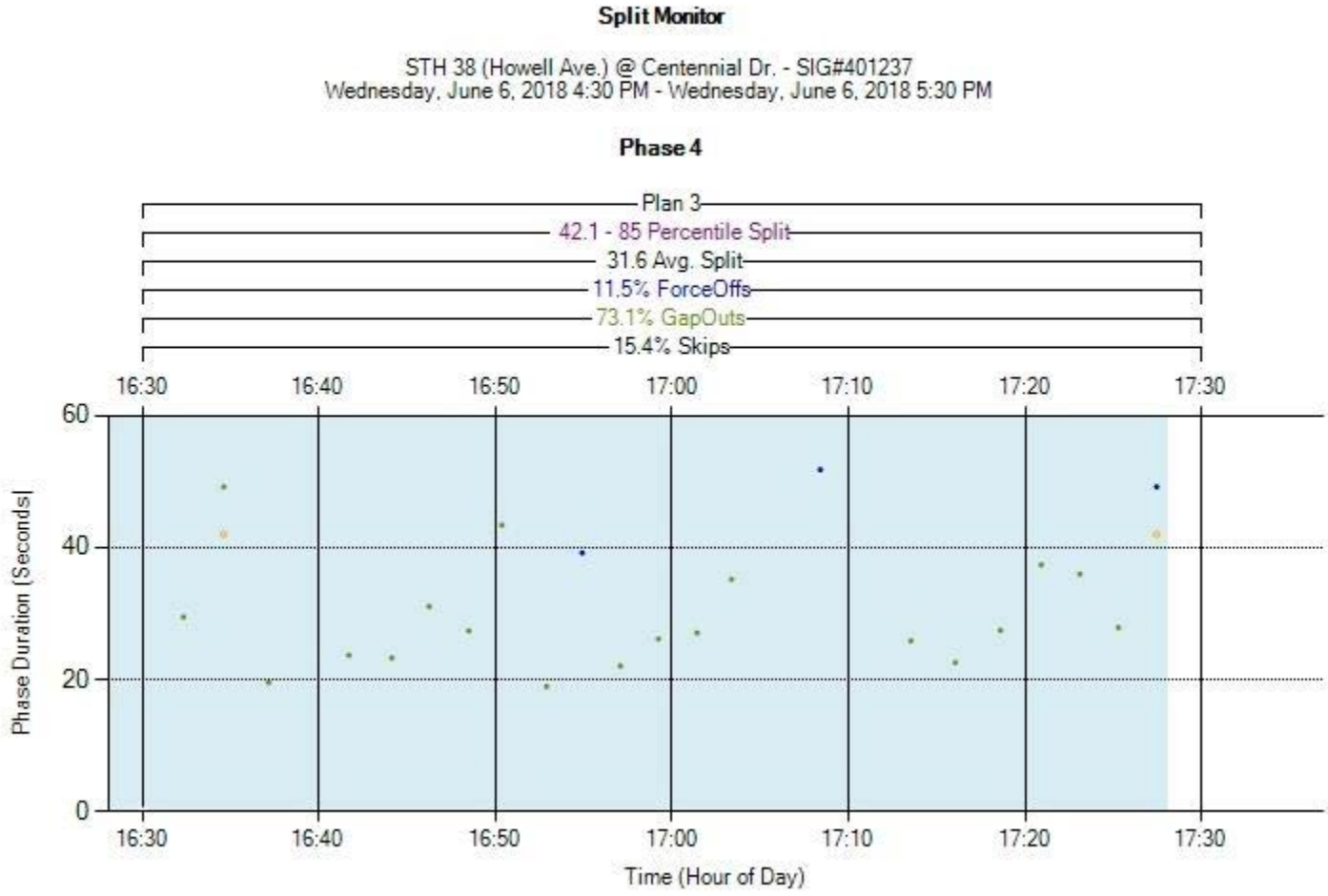
WIS 38 Corridor – STH 38 & Centennial Dr.
Baseline Timings
6/6/2018 – 4:30 PM – 5:30 PM



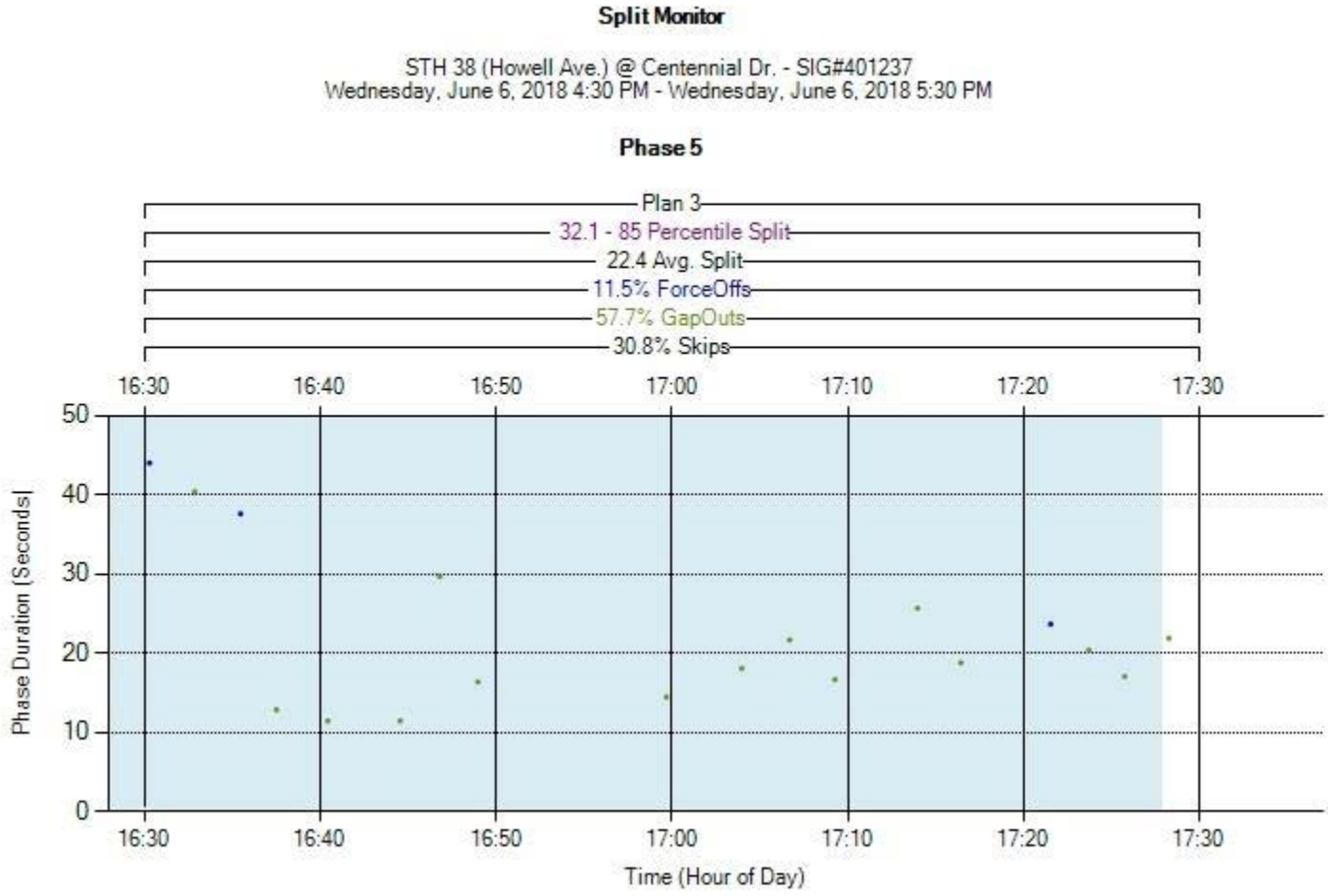
WIS 38 Corridor – STH 38 & Centennial Dr.
Baseline Timings
6/6/2018 – 4:30 PM – 5:30 PM



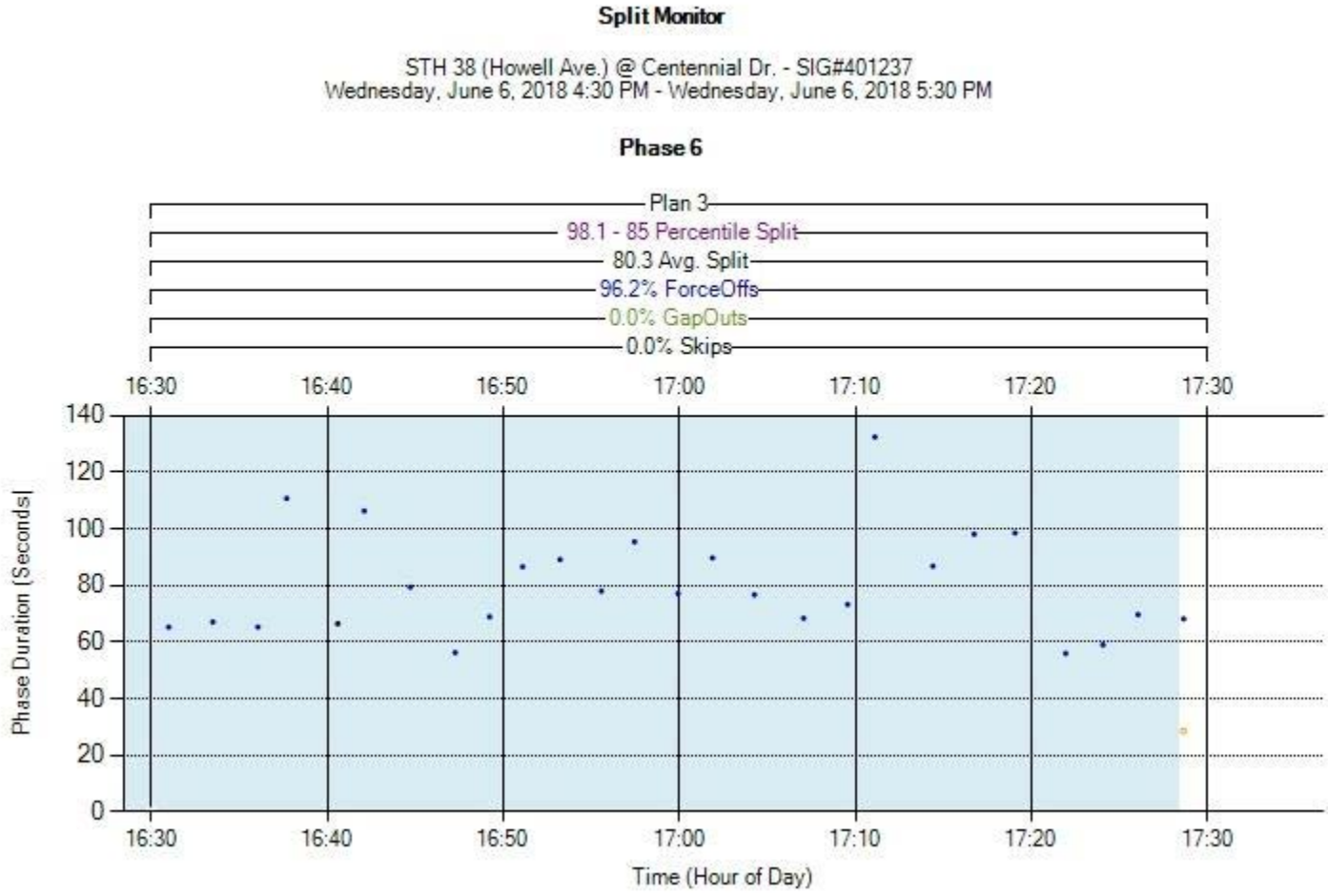
WIS 38 Corridor – STH 38 & Centennial Dr.
Baseline Timings
6/6/2018 – 4:30 PM – 5:30 PM



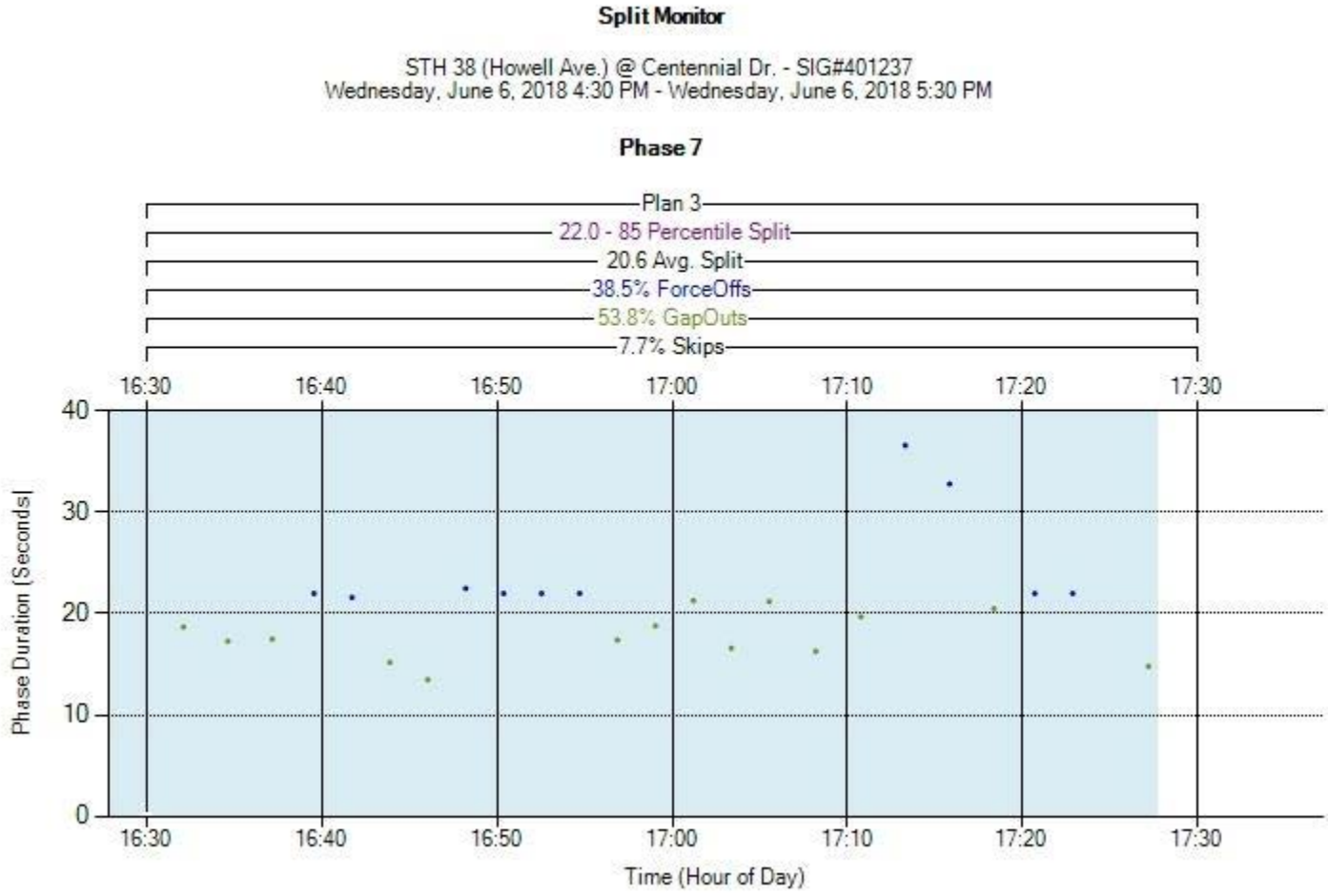
WIS 38 Corridor – STH 38 & Centennial Dr.
Baseline Timings
6/6/2018 – 4:30 PM – 5:30 PM

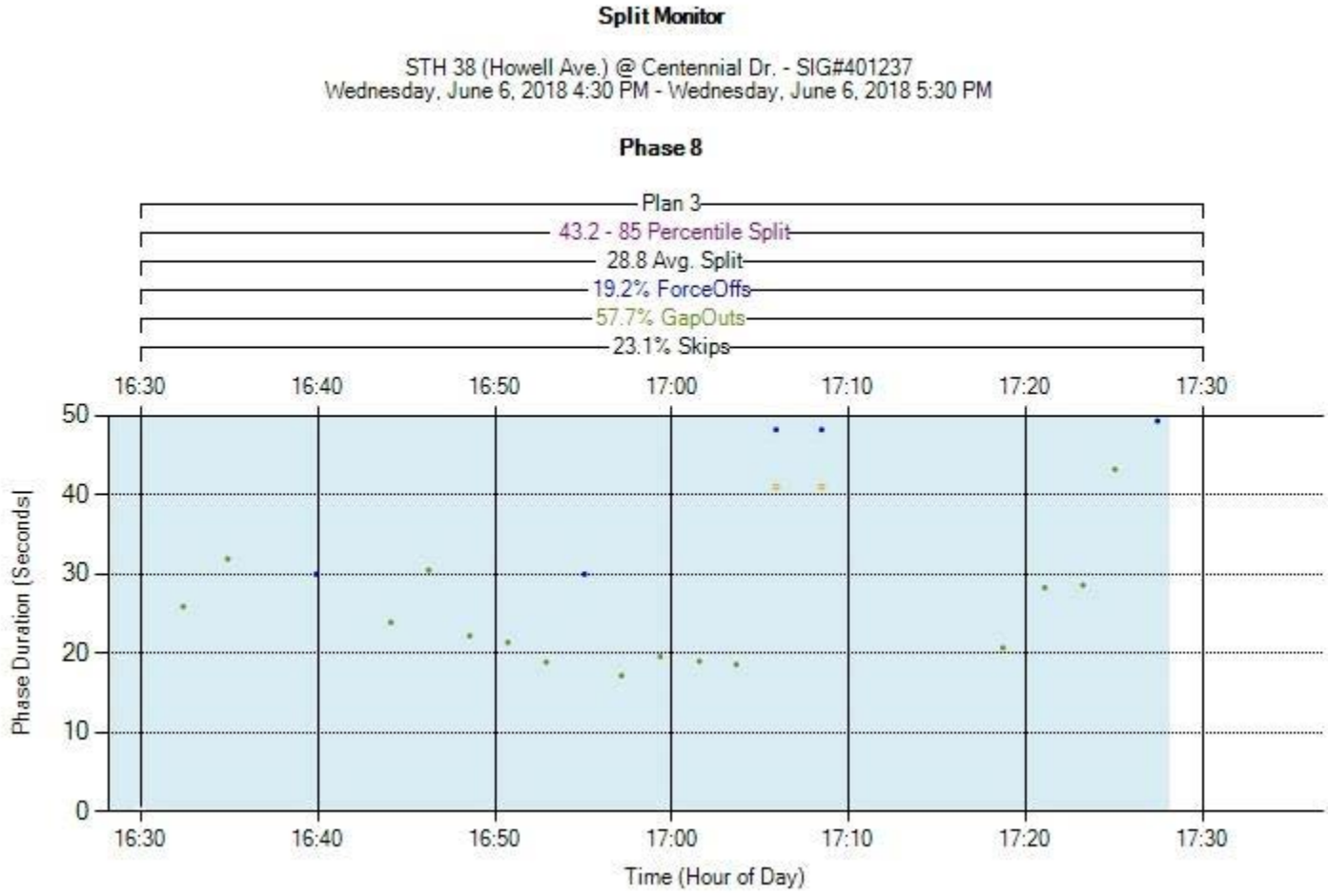


WIS 38 Corridor – STH 38 & Centennial Dr.
Baseline Timings
6/6/2018 – 4:30 PM – 5:30 PM

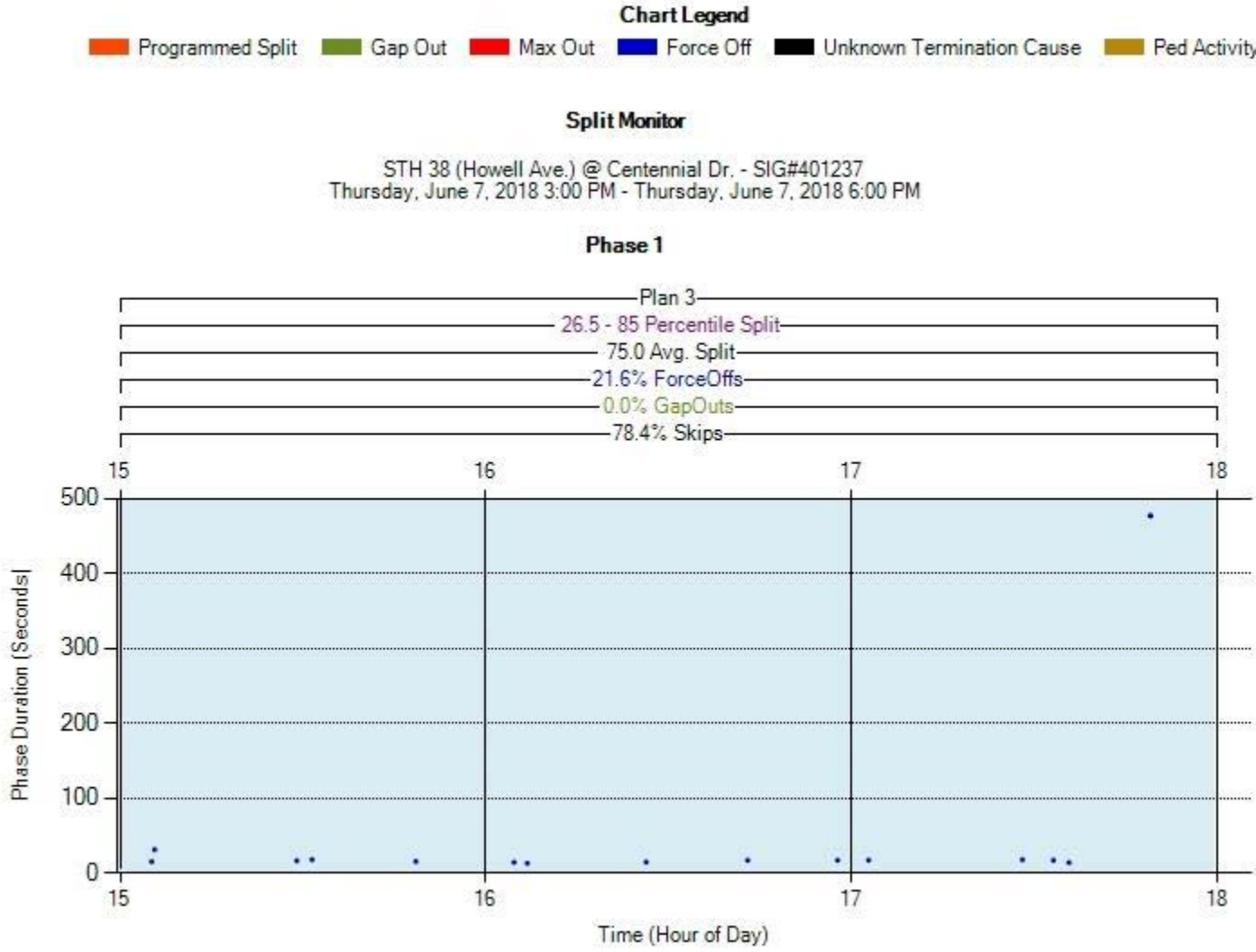


WIS 38 Corridor – STH 38 & Centennial Dr.
Baseline Timings
6/6/2018 – 4:30 PM – 5:30 PM

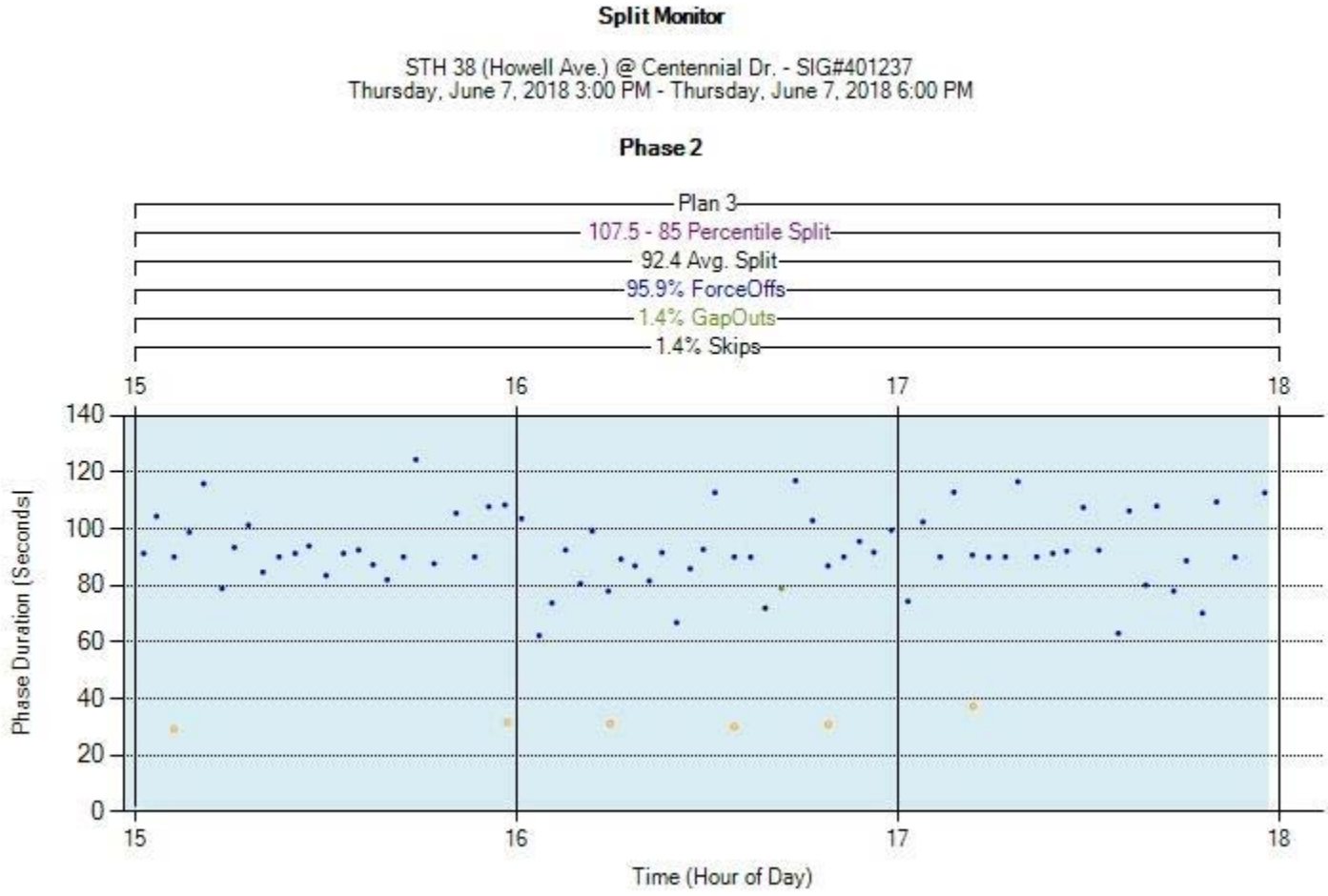



Split Monitor
STH 38 (Howell Ave.) @ Centennial Dr. - SIG#401237
Wednesday, June 6, 2018 4:30 PM - Wednesday, June 6, 2018 5:30 PM
Phase 8
Plan 3
43.2 - 85 Percentile Split
28.8 Avg. Split
19.2% ForceOffs
57.7% GapOuts
23.1% Skips
16:30
16:40
16:50
17:00
17:10
17:20
17:30
50
40
30
20
10
0
Phase Duration (Seconds)
Time (Hour of Day)

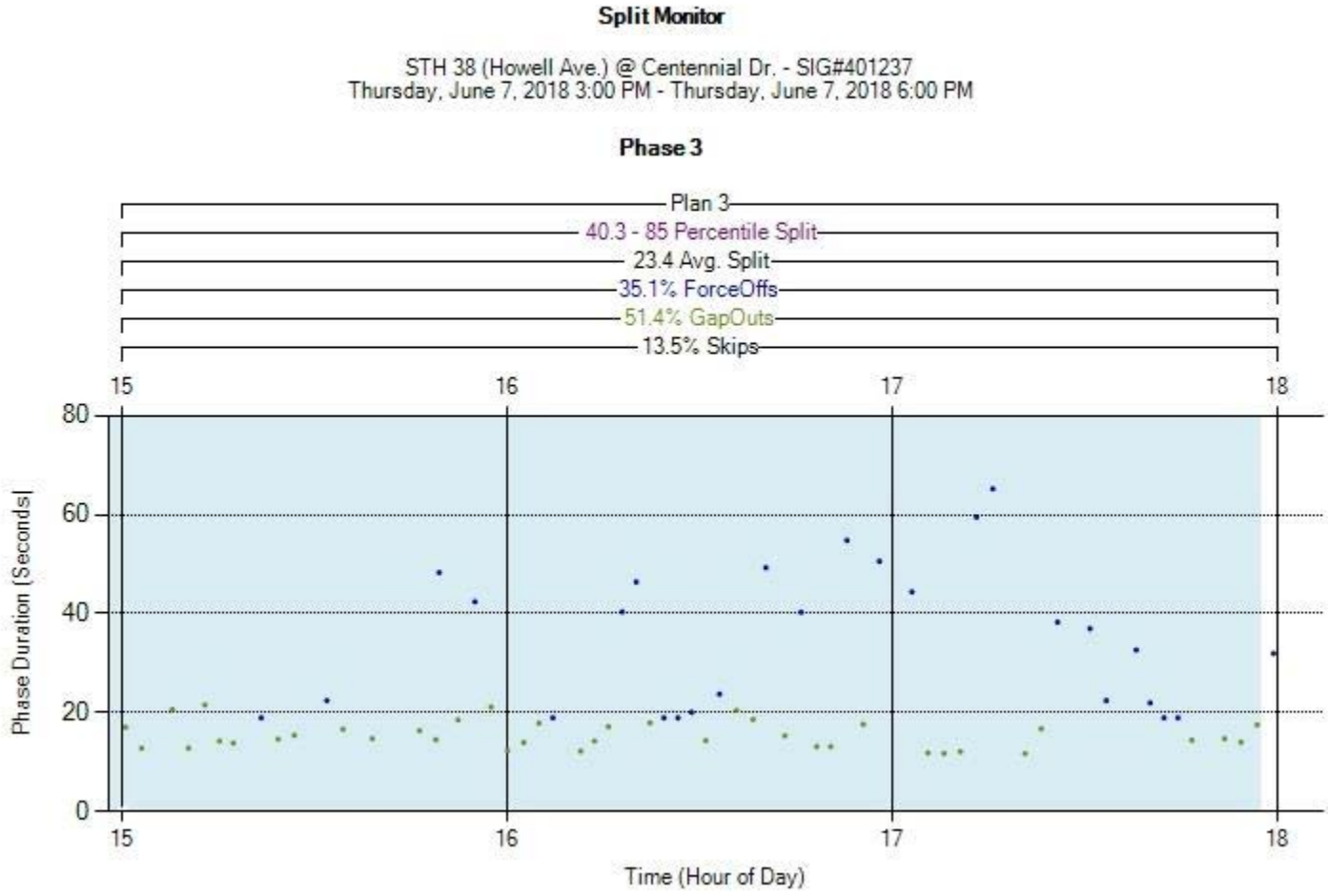
WIS 38 Corridor – STH 38 & Centennial Dr.
Baseline Timings
6/7/2018 – 4:30 PM – 5:30 PM



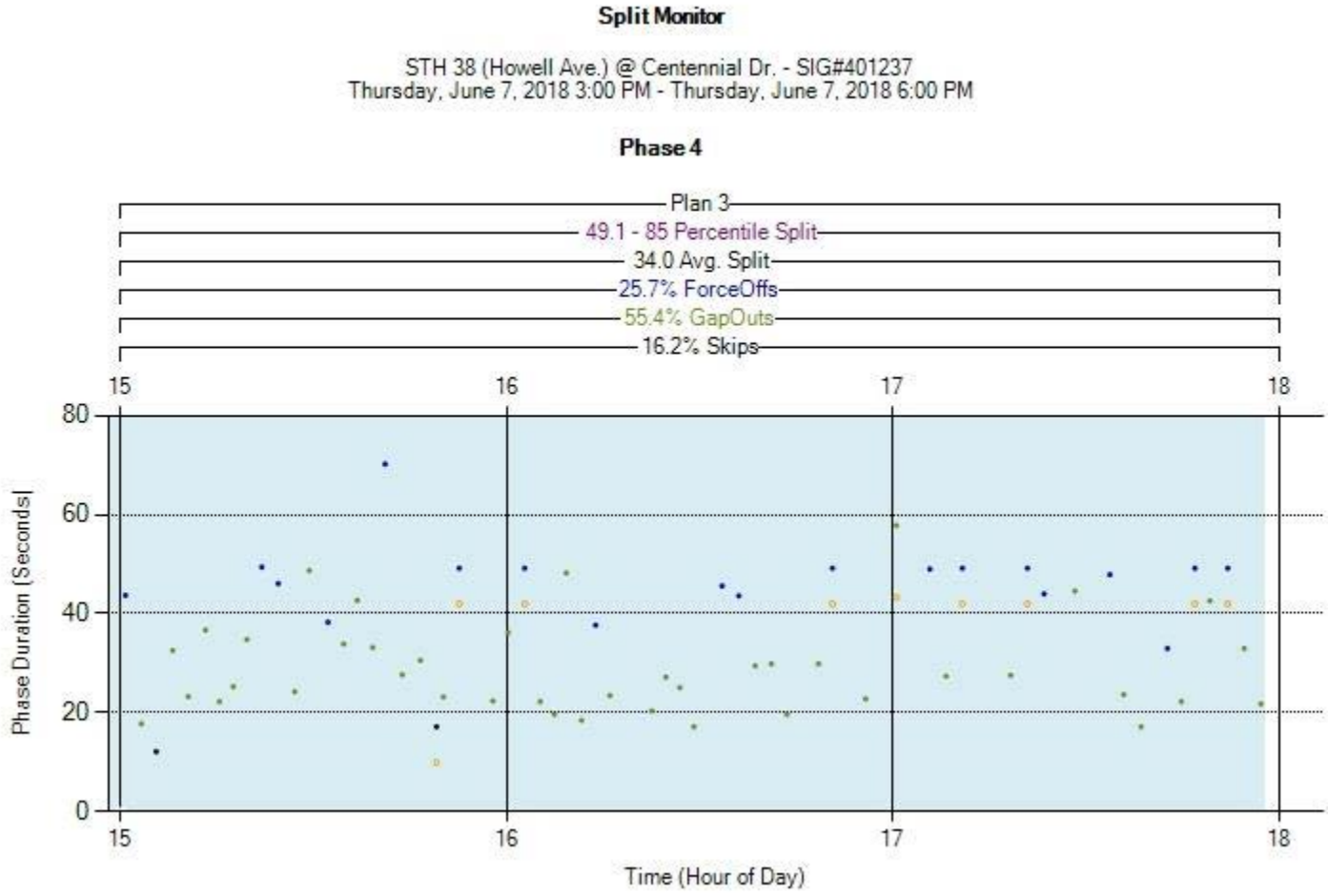
WIS 38 Corridor – STH 38 & Centennial Dr.
Baseline Timings
6/7/2018 – 4:30 PM – 5:30 PM



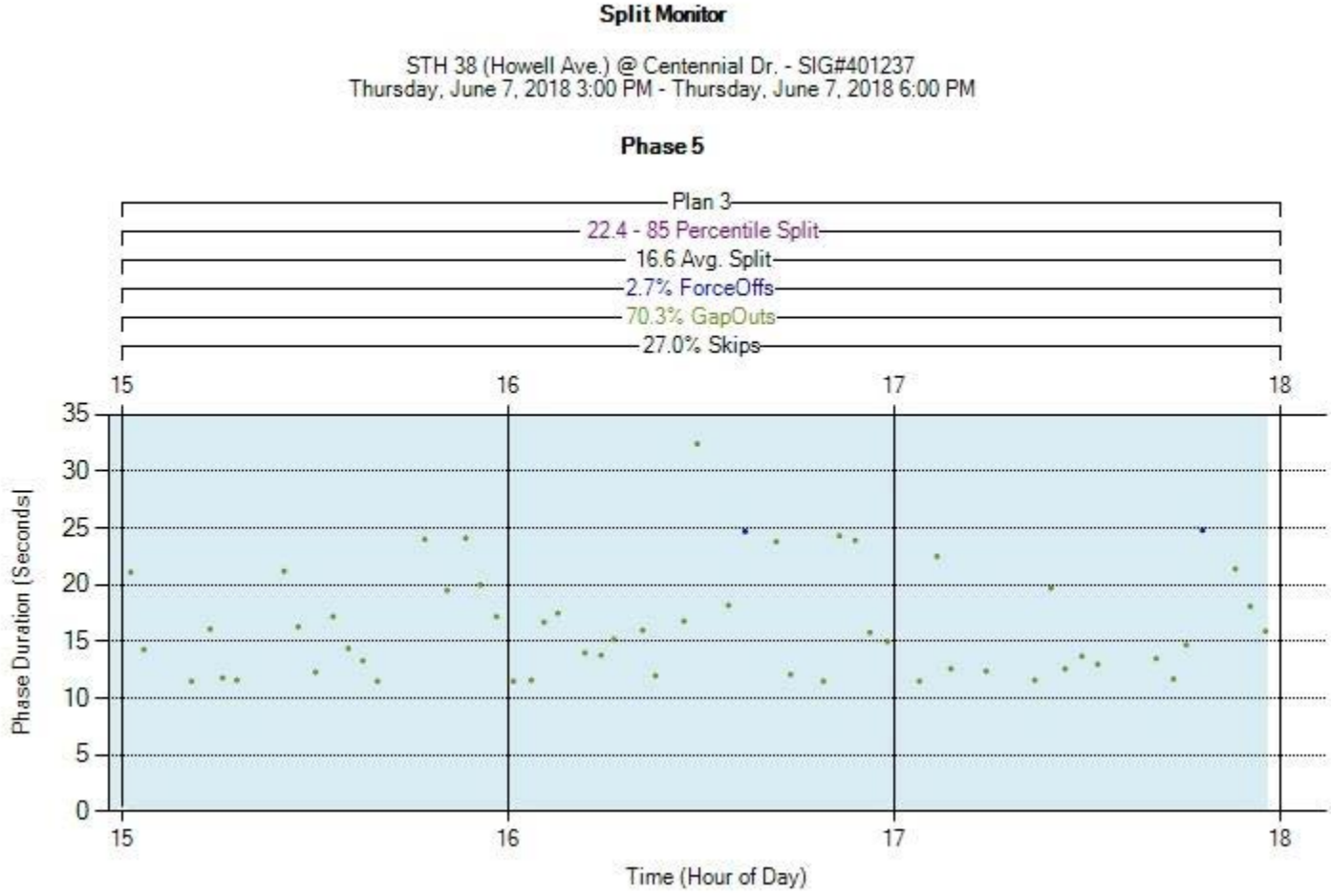
WIS 38 Corridor – STH 38 & Centennial Dr.
Baseline Timings
6/7/2018 – 4:30 PM – 5:30 PM



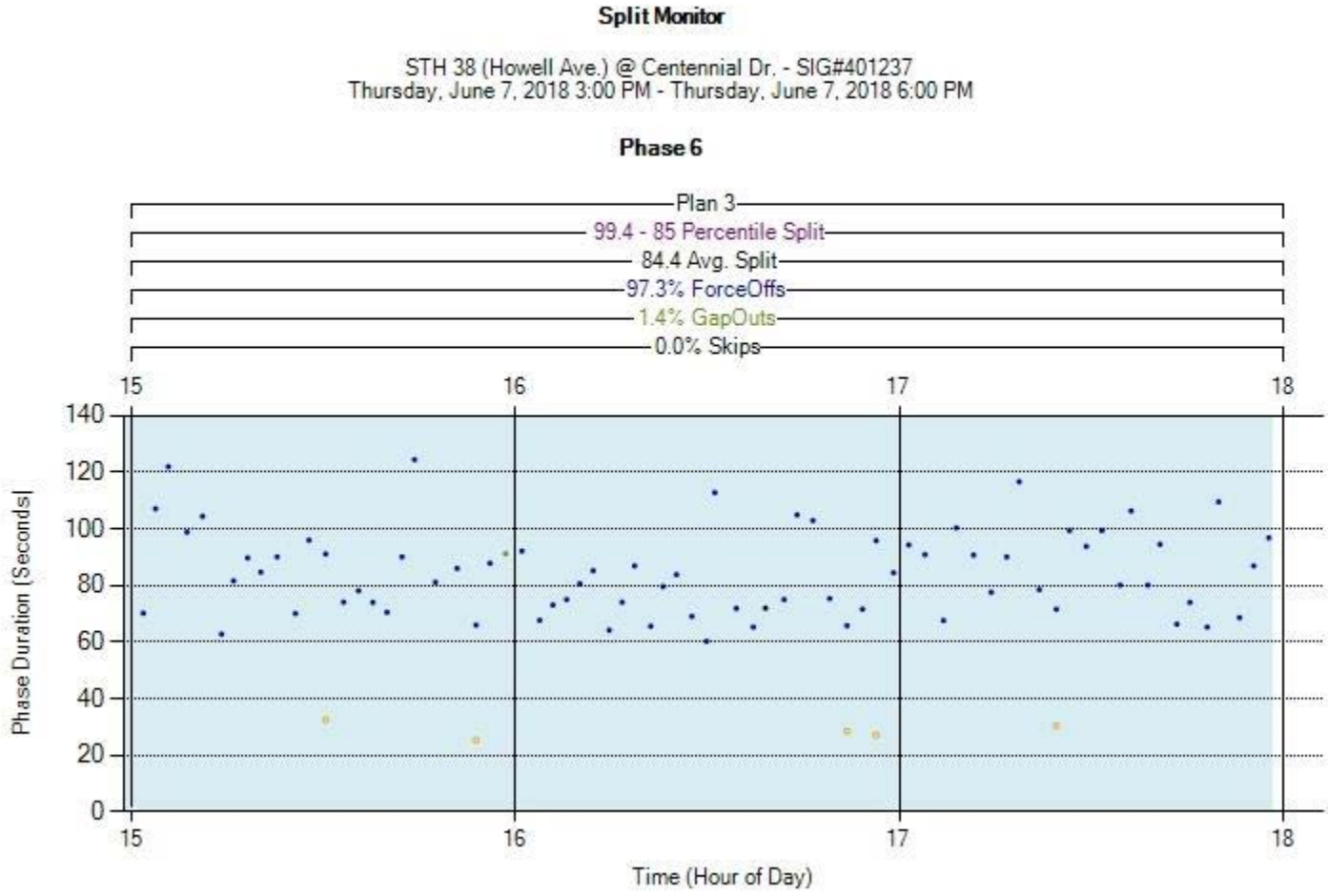
WIS 38 Corridor – STH 38 & Centennial Dr.
Baseline Timings
6/7/2018 – 4:30 PM – 5:30 PM



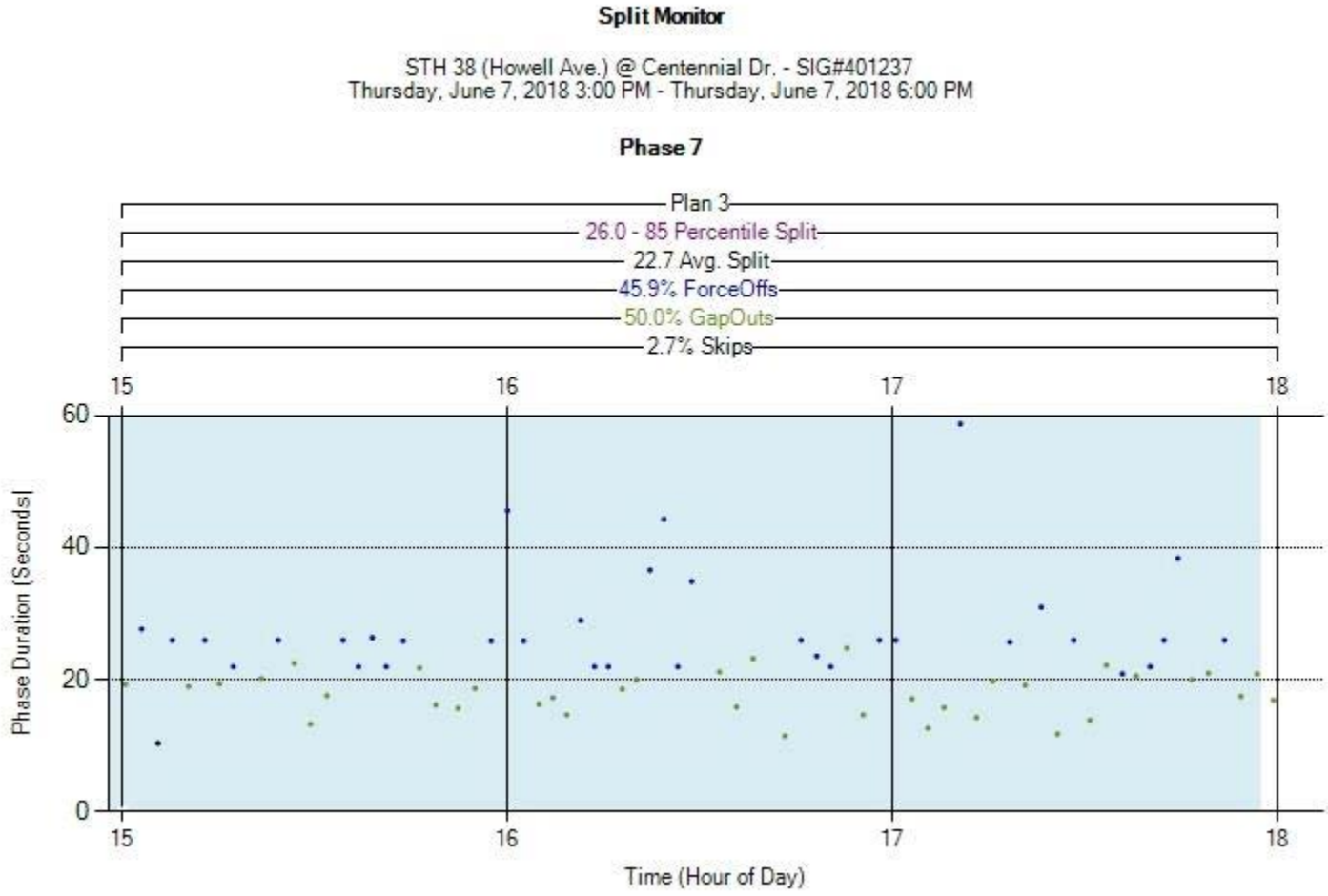
WIS 38 Corridor – STH 38 & Centennial Dr.
Baseline Timings
6/7/2018 – 4:30 PM – 5:30 PM



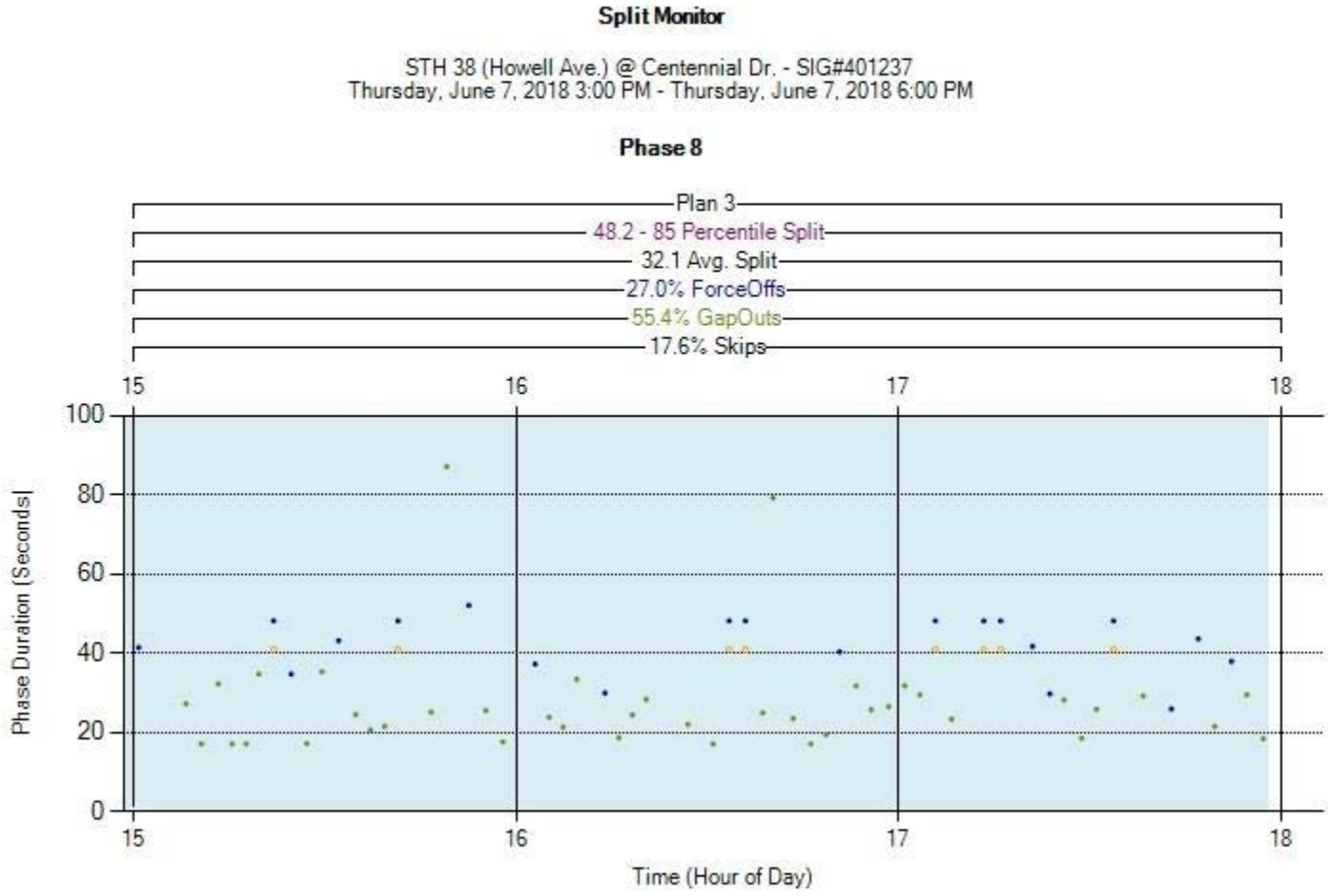
WIS 38 Corridor – STH 38 & Centennial Dr.
Baseline Timings
6/7/2018 – 4:30 PM – 5:30 PM



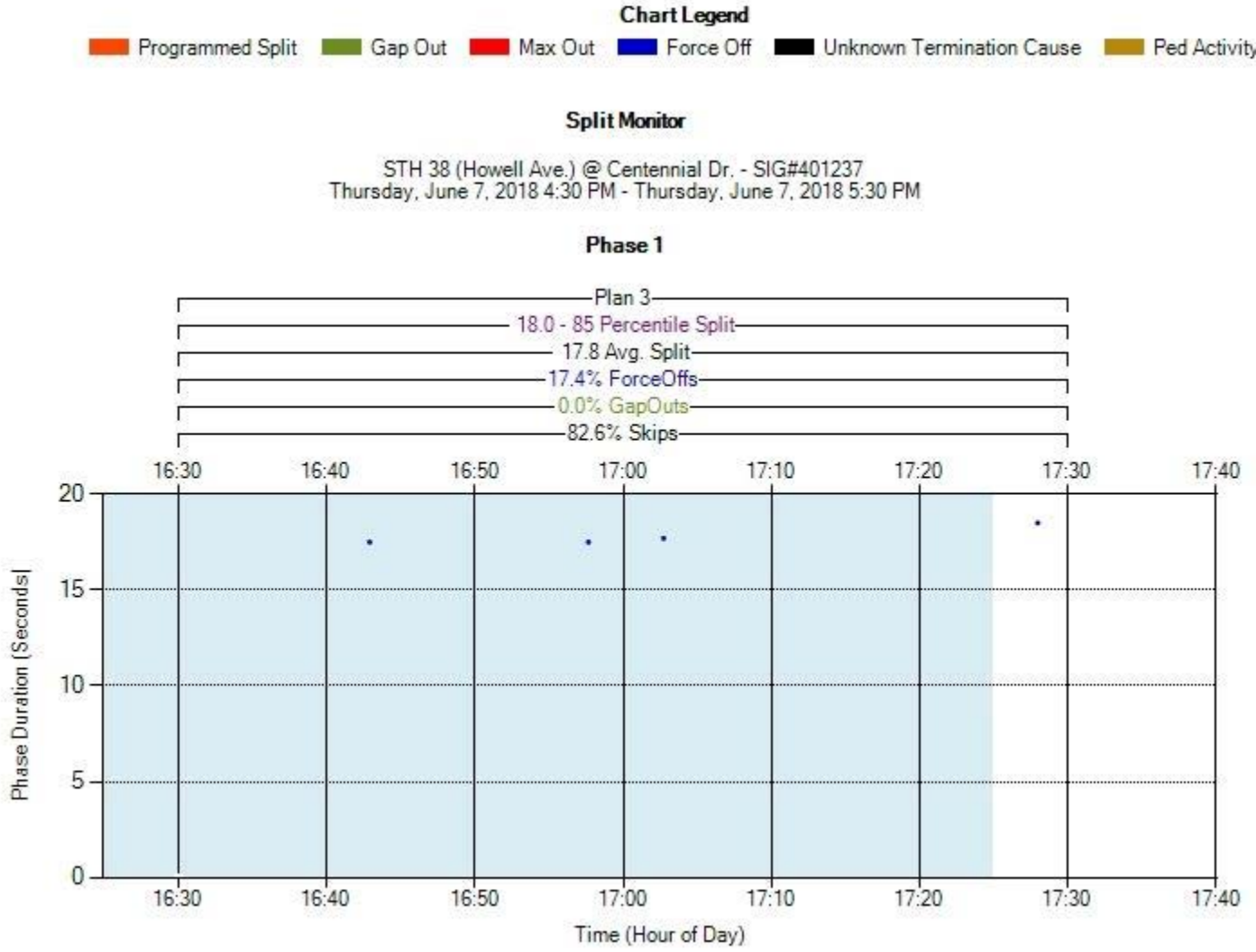
WIS 38 Corridor – STH 38 & Centennial Dr.
Baseline Timings
6/7/2018 – 4:30 PM – 5:30 PM



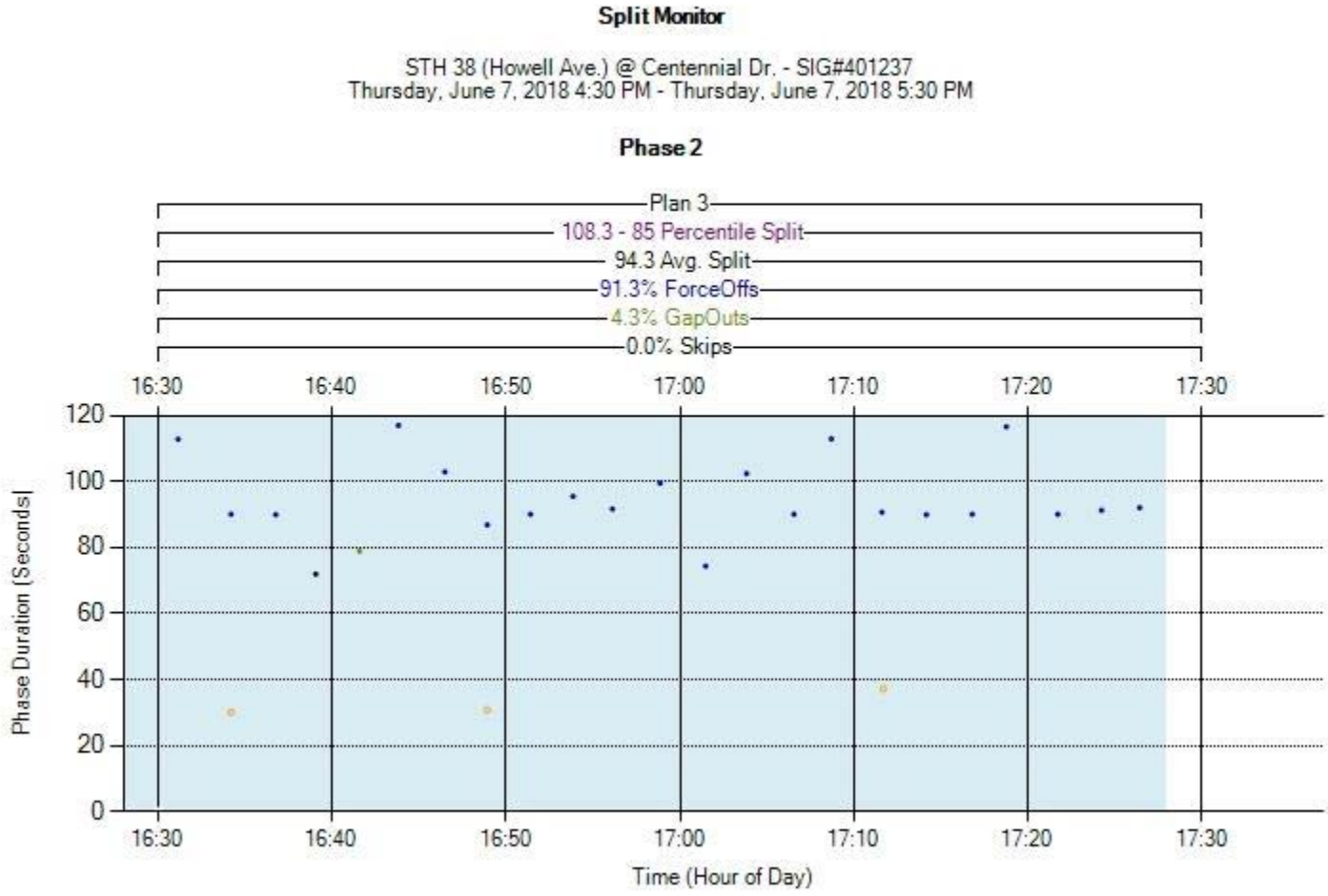
WIS 38 Corridor – STH 38 & Centennial Dr.
Baseline Timings
6/7/2018 – 4:30 PM – 5:30 PM



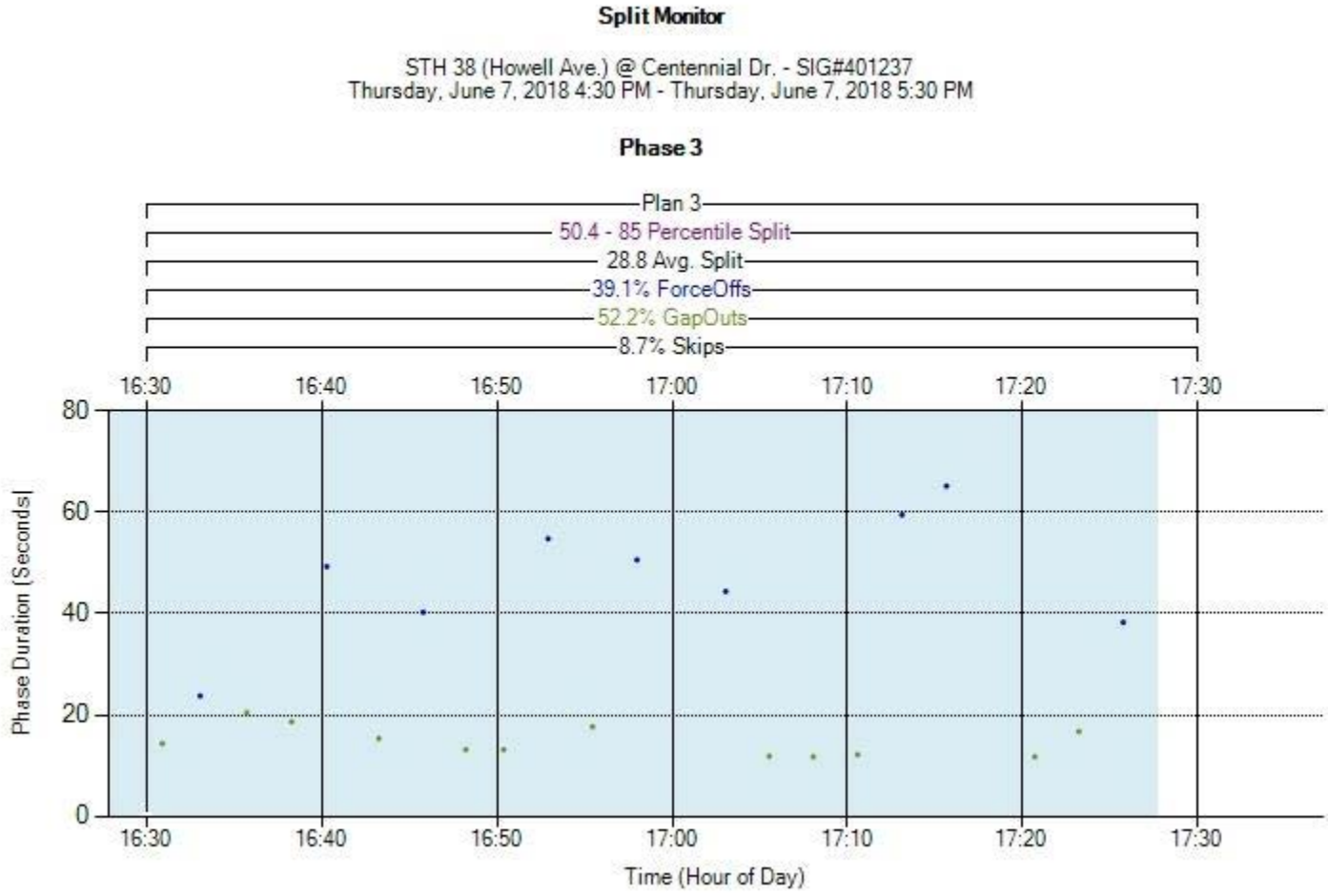
WIS 38 Corridor – STH 38 & Centennial Dr.
Baseline Timings
6/7/2018 – 4:30 PM – 5:30 PM



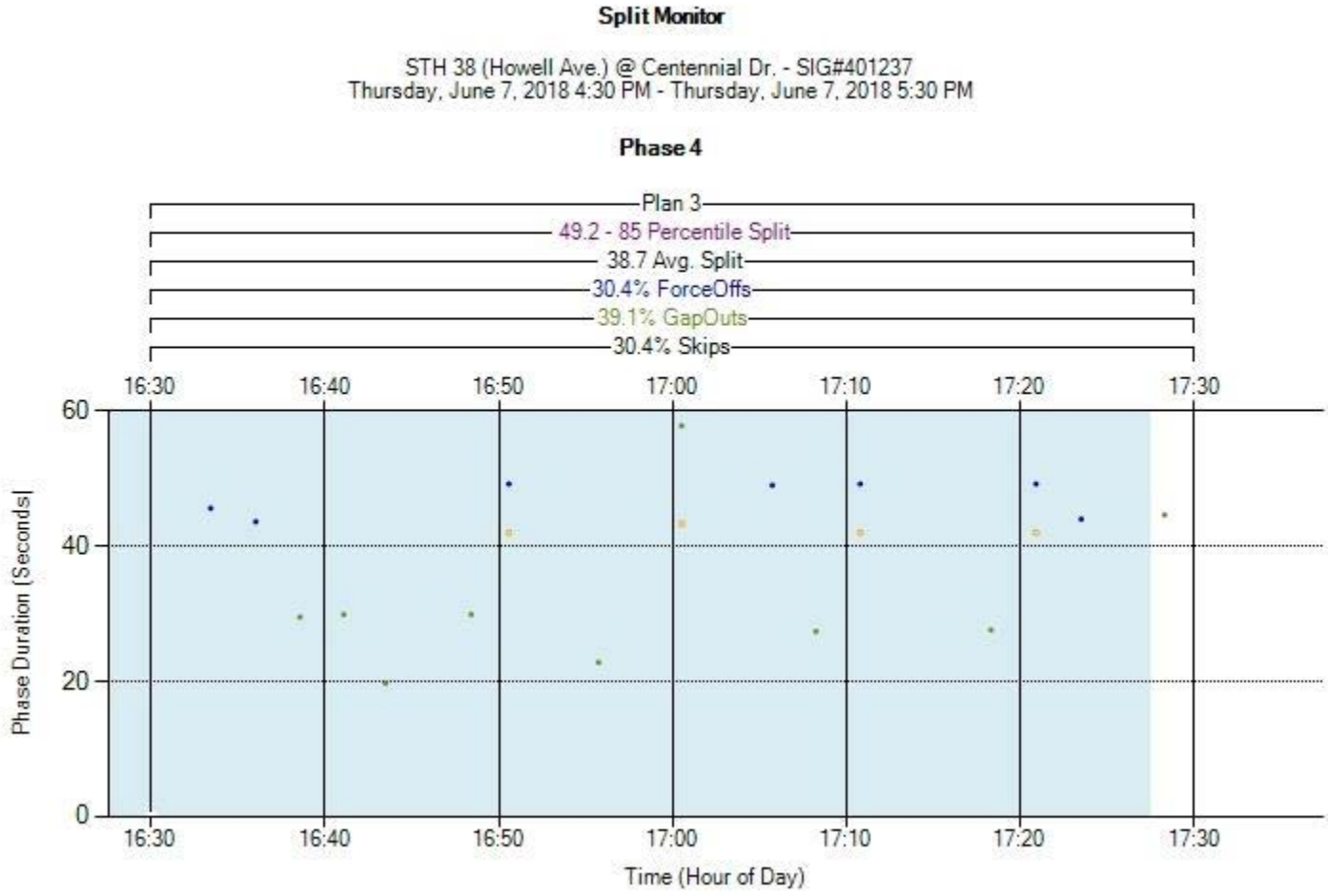
WIS 38 Corridor – STH 38 & Centennial Dr.
Baseline Timings
6/7/2018 – 4:30 PM – 5:30 PM



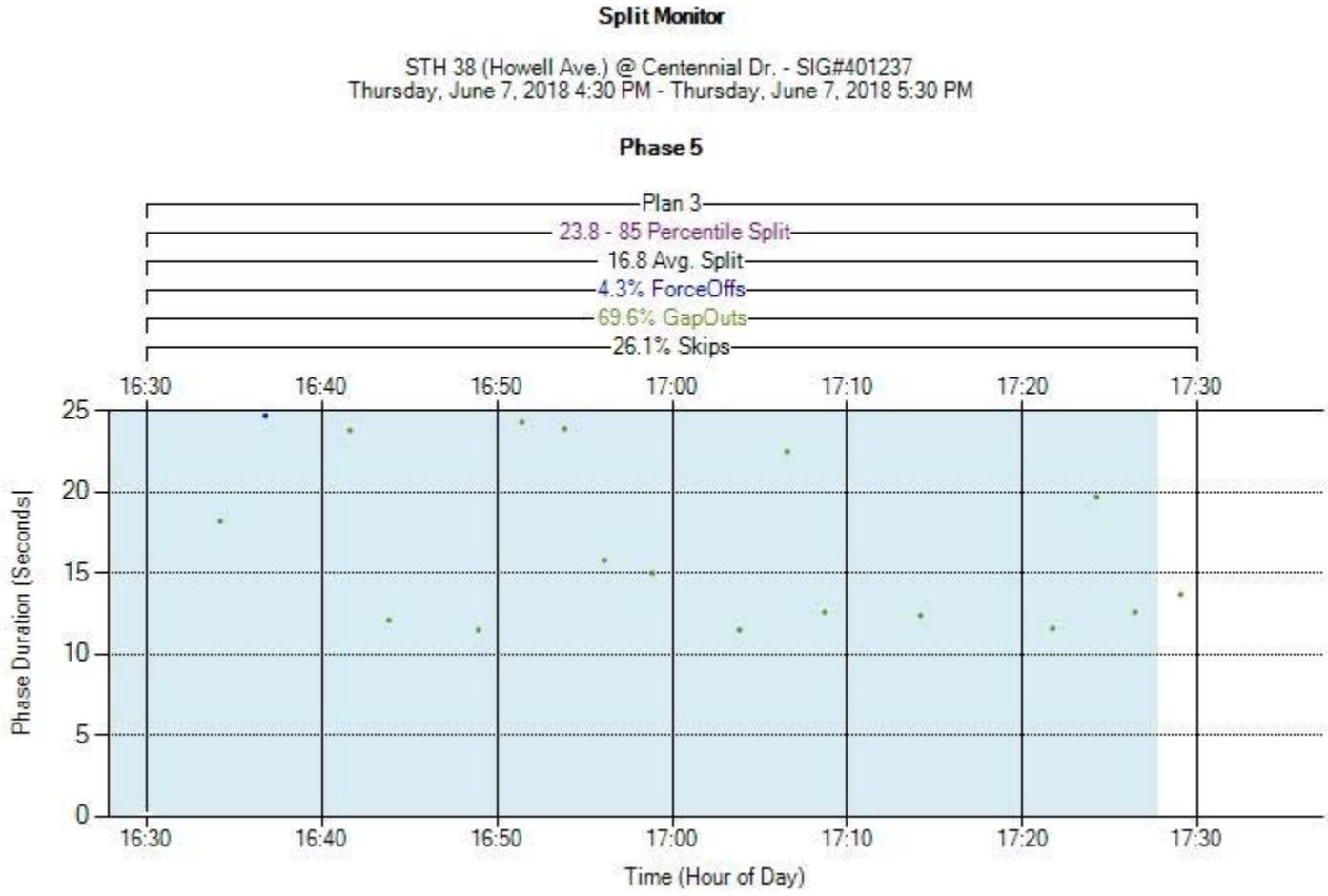
WIS 38 Corridor – STH 38 & Centennial Dr.
Baseline Timings
6/7/2018 – 4:30 PM – 5:30 PM

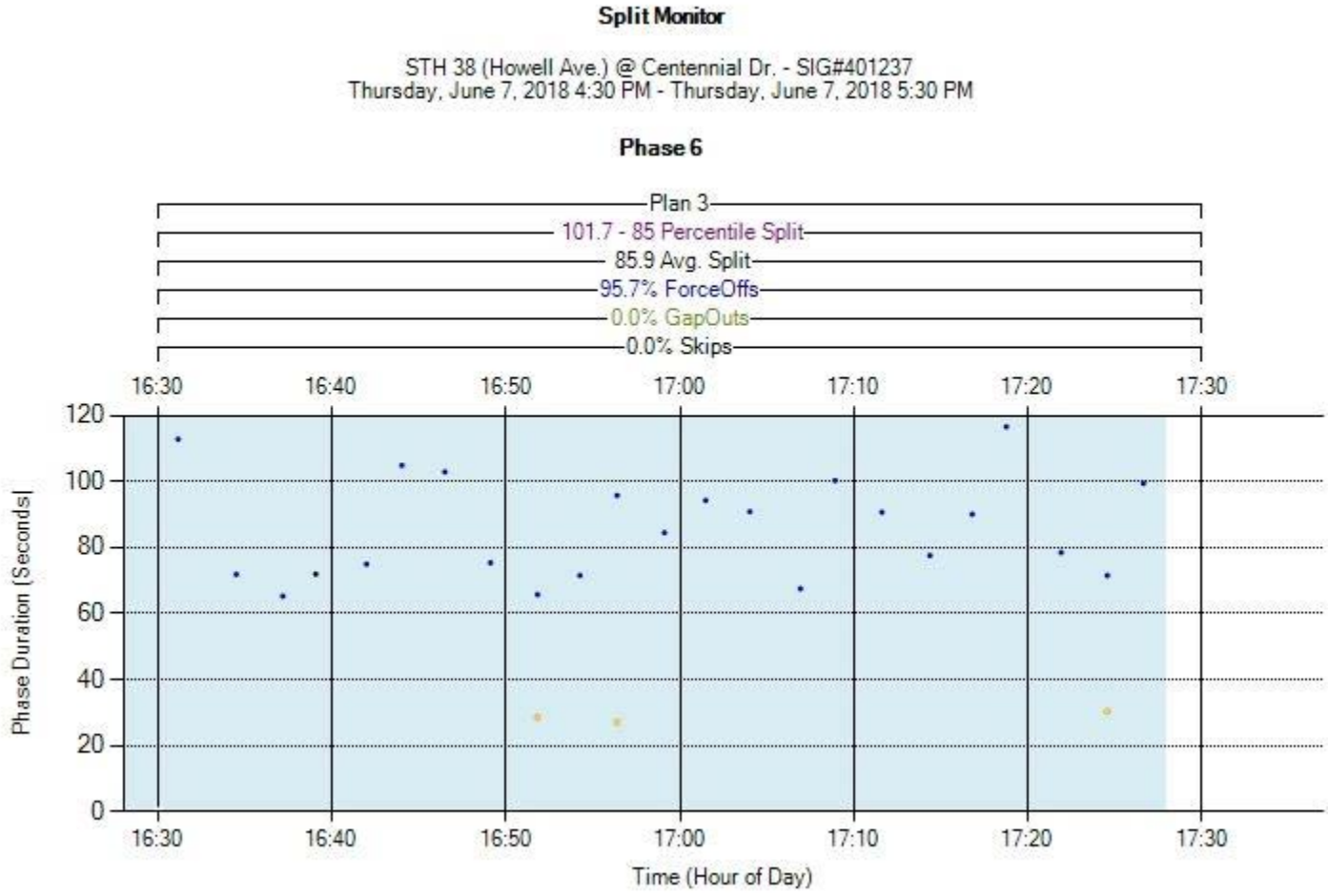


WIS 38 Corridor – STH 38 & Centennial Dr.
Baseline Timings
6/7/2018 – 4:30 PM – 5:30 PM

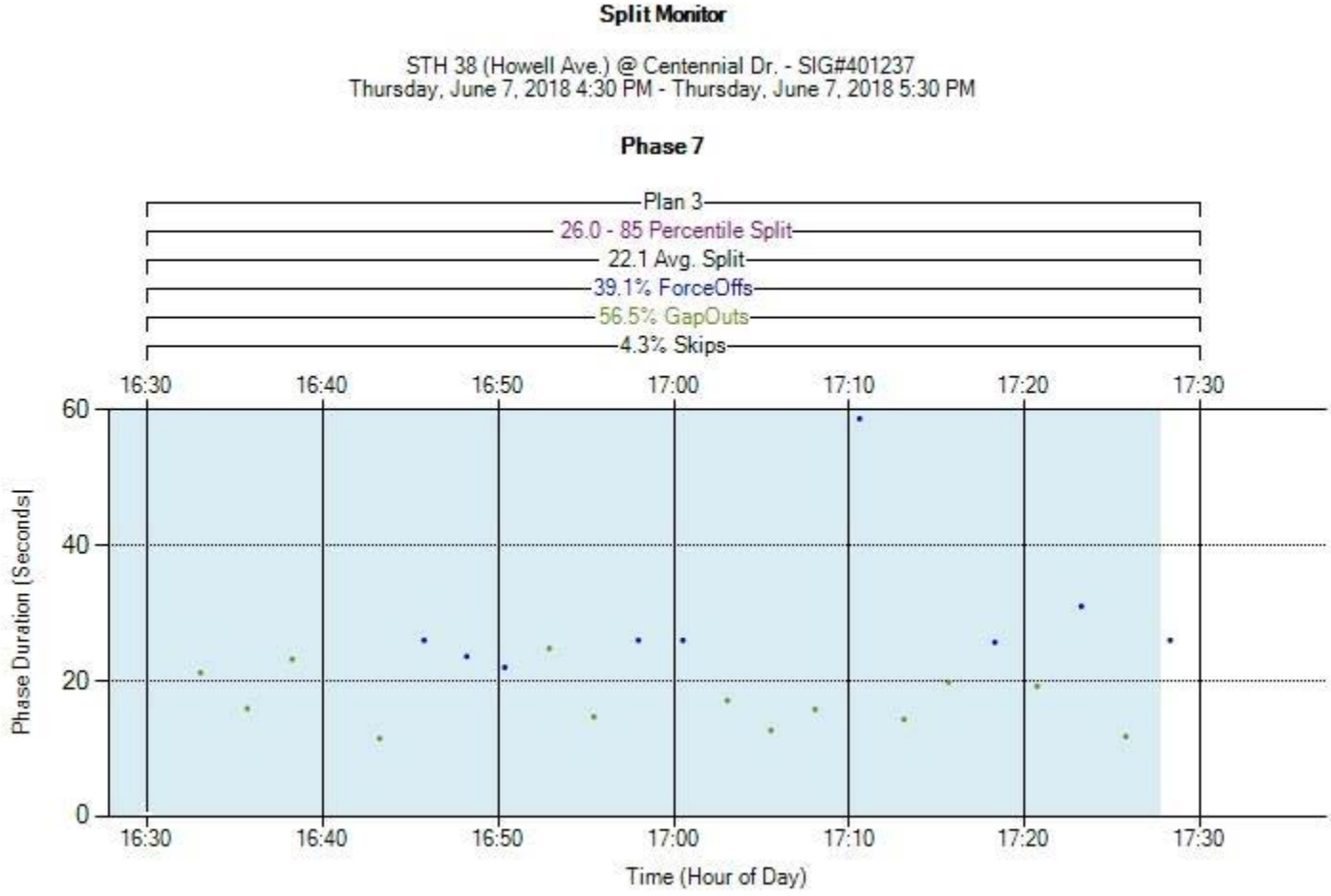


WIS 38 Corridor – STH 38 & Centennial Dr.
Baseline Timings
6/7/2018 – 4:30 PM – 5:30 PM

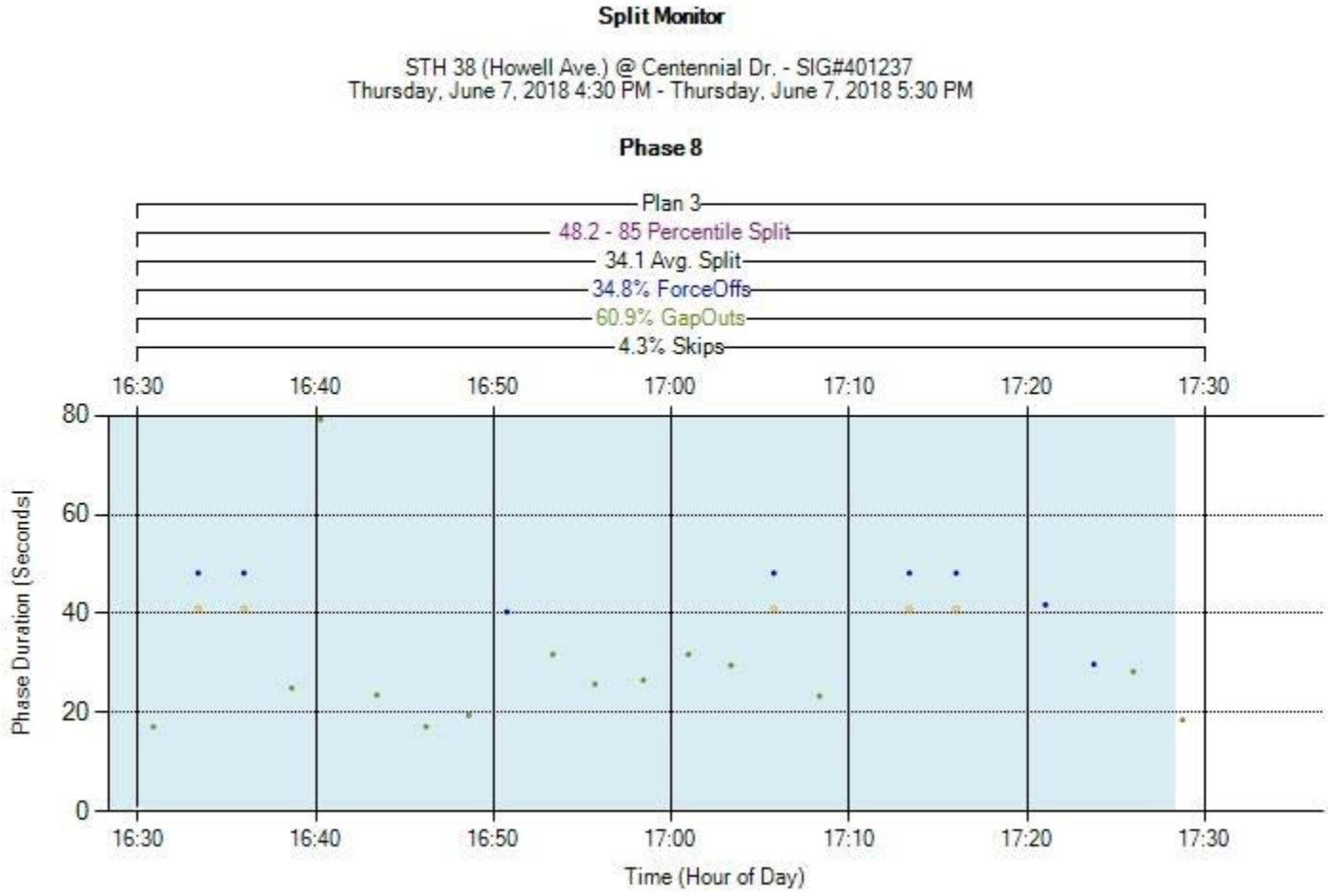



Split Monitor
STH 38 (Howell Ave.) @ Centennial Dr. - SIG#401237
Thursday, June 7, 2018 4:30 PM - Thursday, June 7, 2018 5:30 PM
Phase 6
Plan 3
101.7 - 85 Percentile Split
85.9 Avg. Split
95.7% ForceOffs
0.0% GapOuts
0.0% Skips
16:30
16:40
16:50
17:00
17:10
17:20
17:30
120
100
80
60
40
20
0
Phase Duration (Seconds)
Time (Hour of Day)

WIS 38 Corridor – STH 38 & Centennial Dr.
Baseline Timings
6/7/2018 – 4:30 PM – 5:30 PM



WIS 38 Corridor – STH 38 & Centennial Dr.
Baseline Timings
6/7/2018 – 4:30 PM – 5:30 PM



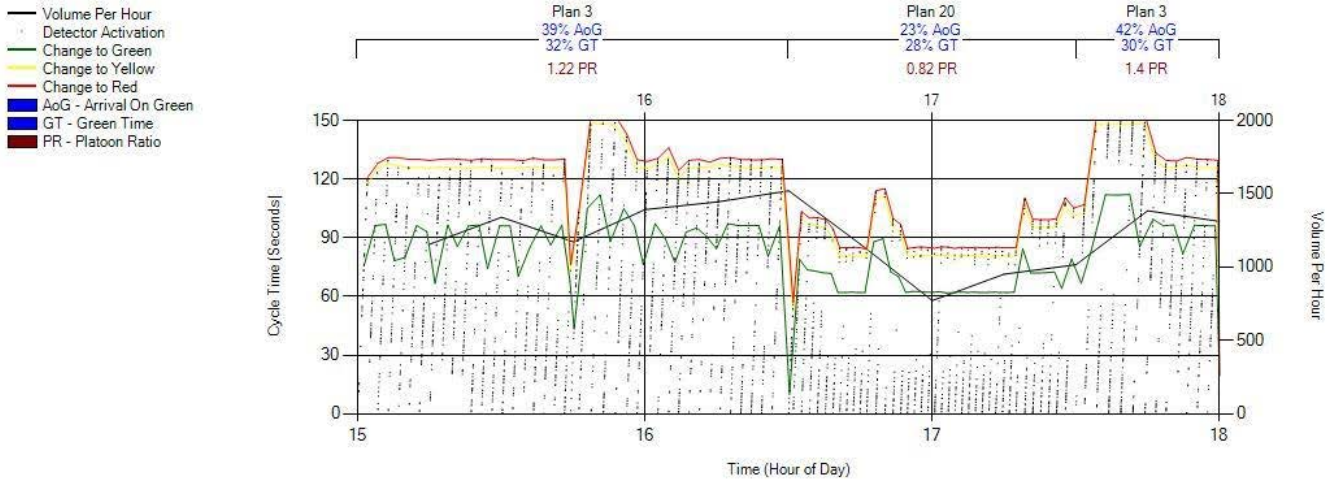
WisBOOM Outputs
WIS 38 Corridor
HCS Optimized Timings

Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Drexel Ave. - SIG#401094
Tuesday, June 19, 2018 3:00 PM - Tuesday, June 19, 2018 6:00 PM
Advanced detector located 351 ft. upstream of stop bar

Phase 2: Southbound

AoG = 35%

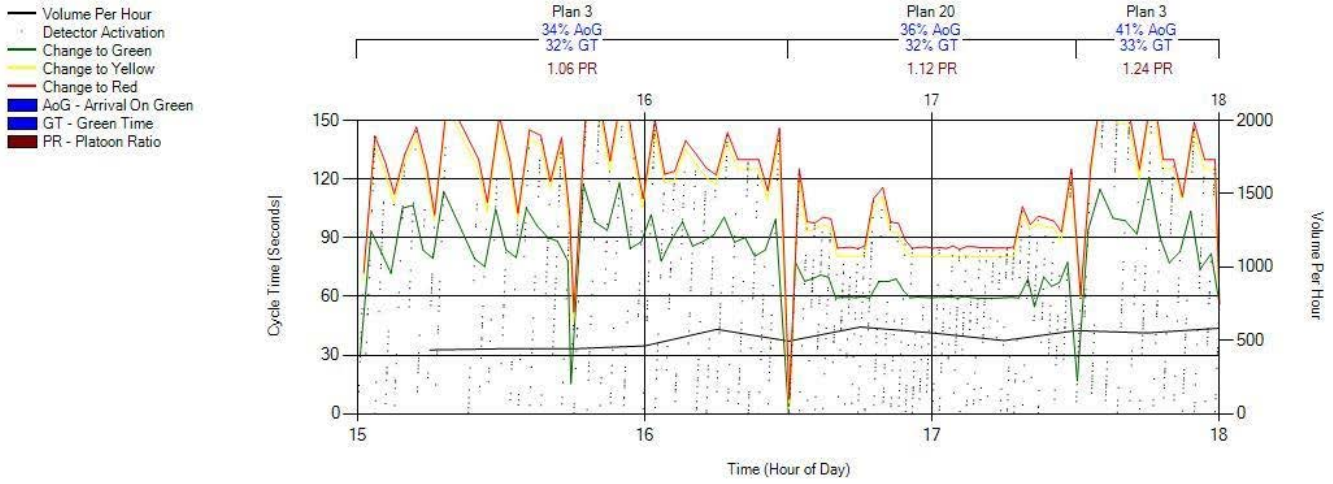


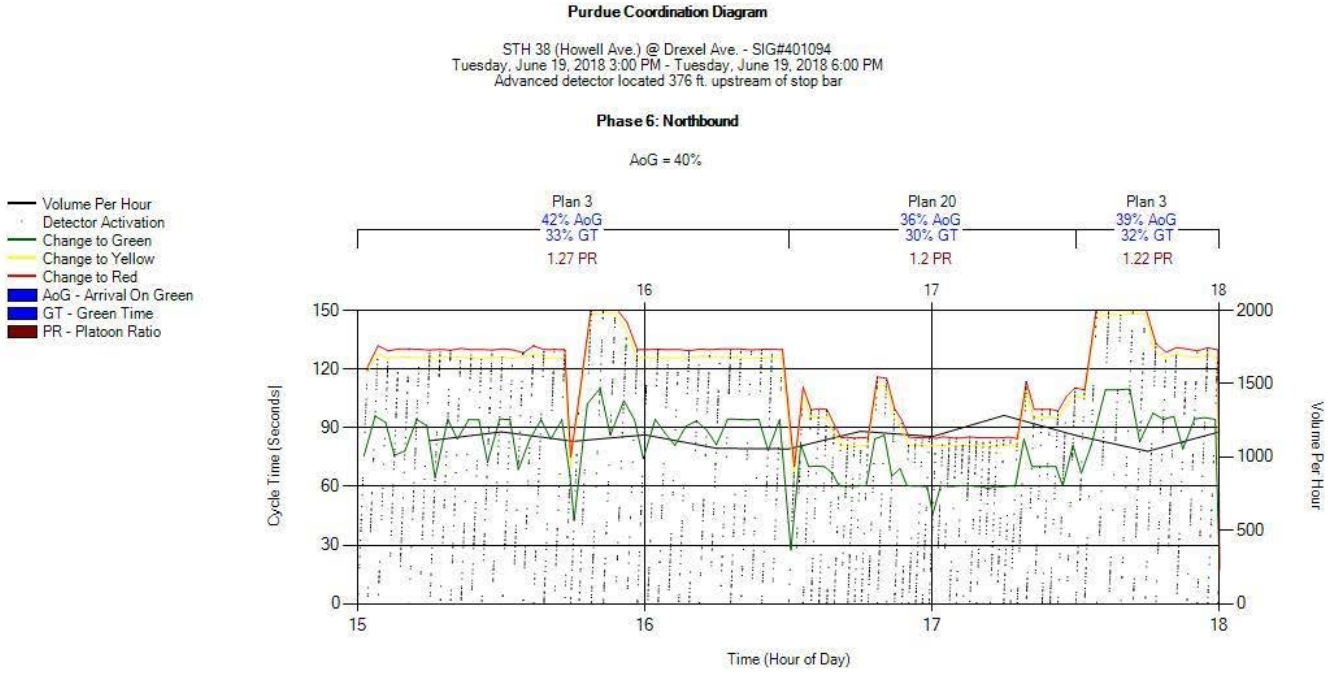
Purdue Coordination Diagram

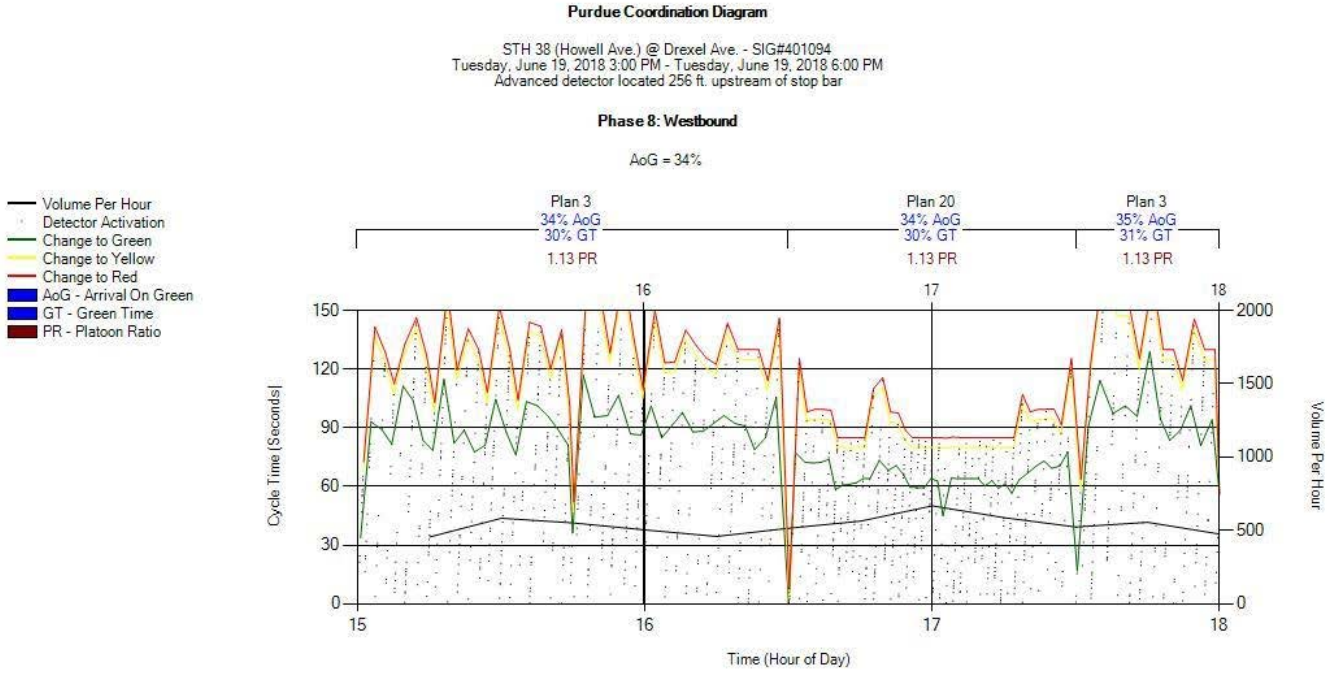
STH 38 (Howell Ave.) @ Drexel Ave. - SIG#401094
Tuesday, June 19, 2018 3:00 PM - Tuesday, June 19, 2018 6:00 PM
Advanced detector located 256 ft. upstream of stop bar

Phase 4: Eastbound

AoG = 36%




Purdue Coordination Diagram
STH 38 (Howell Ave.) @ Drexel Ave. - SIG#401094
Tuesday, June 19, 2018 3:00 PM - Tuesday, June 19, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar
Phase 6: Northbound
AoG = 40%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
42% AoG
33% GT
1.27 PR
Plan 20
36% AoG
30% GT
1.2 PR
Plan 3
39% AoG
32% GT
1.22 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)

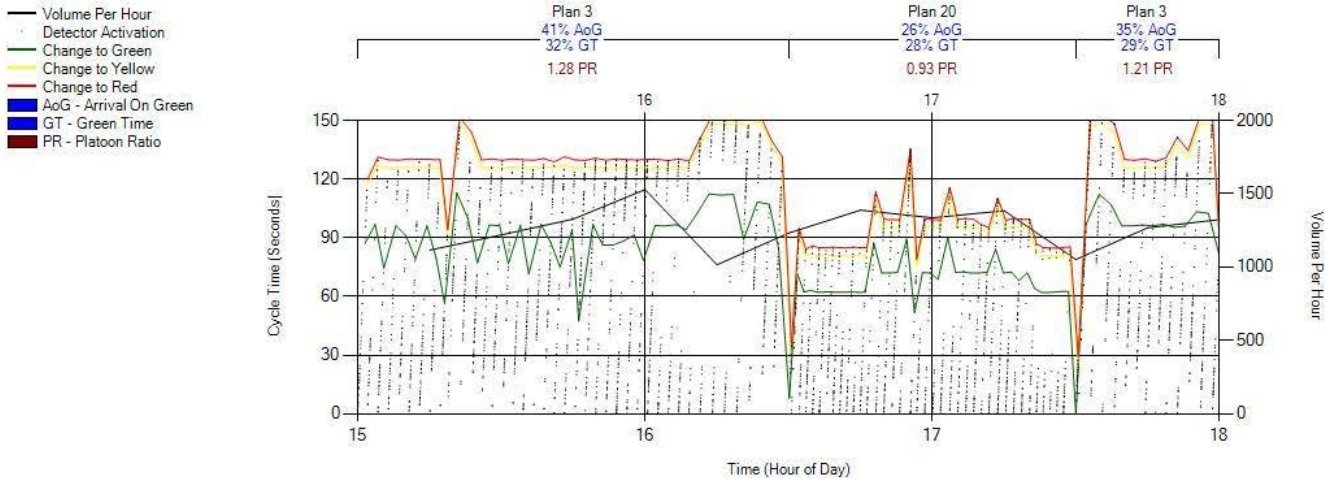

Purdue Coordination Diagram
STH 38 (Howell Ave.) @ Drexel Ave. - SIG#401094
Tuesday, June 19, 2018 3:00 PM - Tuesday, June 19, 2018 6:00 PM
Advanced detector located 256 ft. upstream of stop bar
Phase 8: Westbound
AoG = 34%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
34% AoG
30% GT
1.13 PR
Plan 20
34% AoG
30% GT
1.13 PR
Plan 3
35% AoG
31% GT
1.13 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)

Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Drexel Ave. - SIG#401094
Wednesday, June 20, 2018 3:00 PM - Wednesday, June 20, 2018 6:00 PM
Advanced detector located 351 ft. upstream of stop bar

Phase 2: Southbound

AoG = 35%

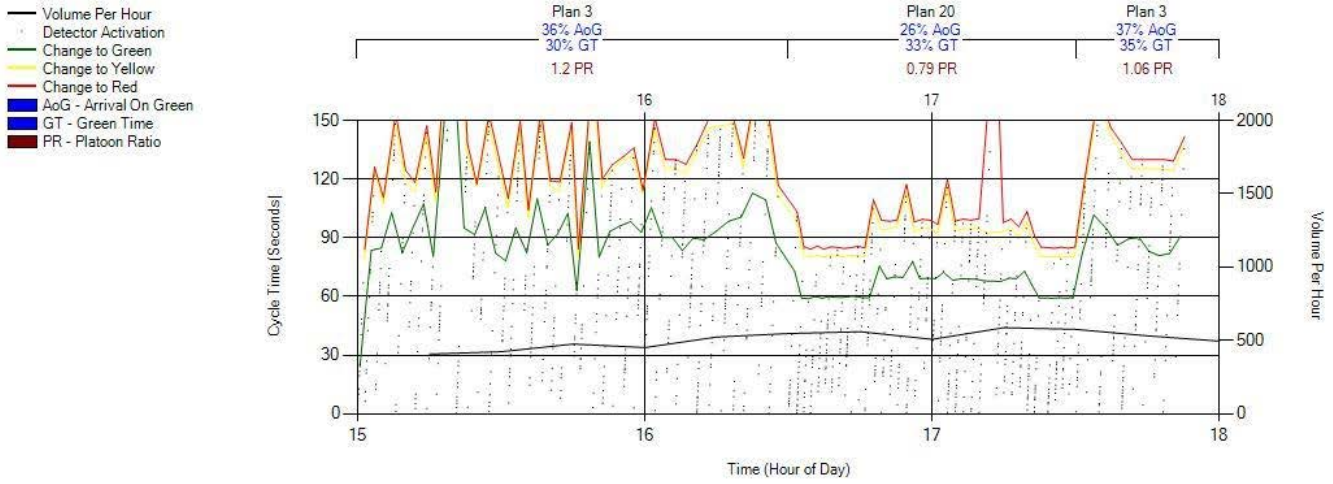


Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Drexel Ave. - SIG#401094
Wednesday, June 20, 2018 3:00 PM - Wednesday, June 20, 2018 6:00 PM
Advanced detector located 256 ft. upstream of stop bar

Phase 4: Eastbound

AoG = 32%

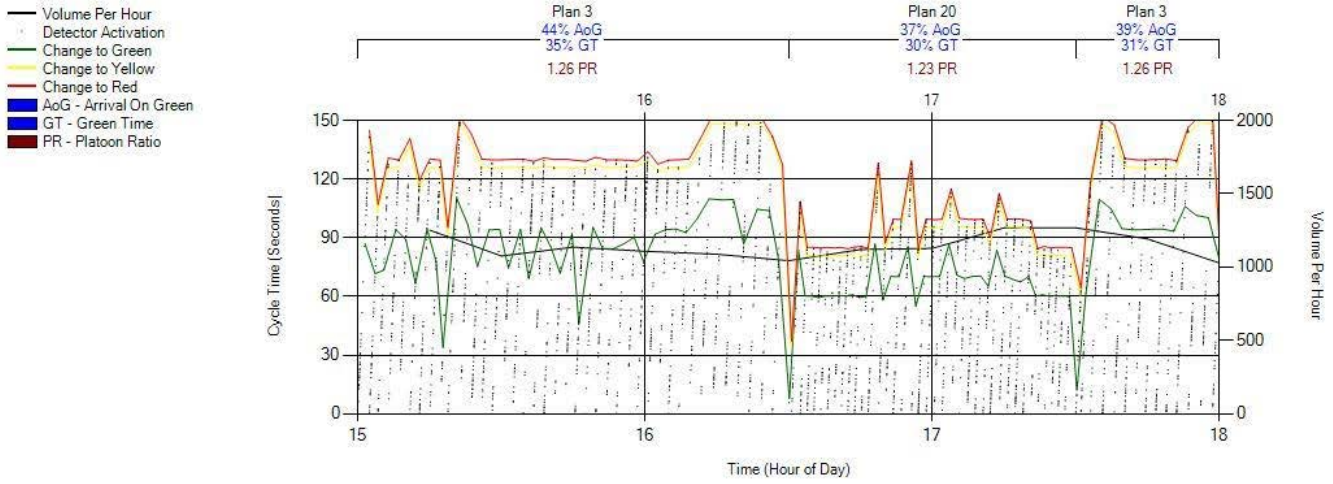


Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Drexel Ave. - SIG#401094
Wednesday, June 20, 2018 3:00 PM - Wednesday, June 20, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar

Phase 6: Northbound

AoG = 41%

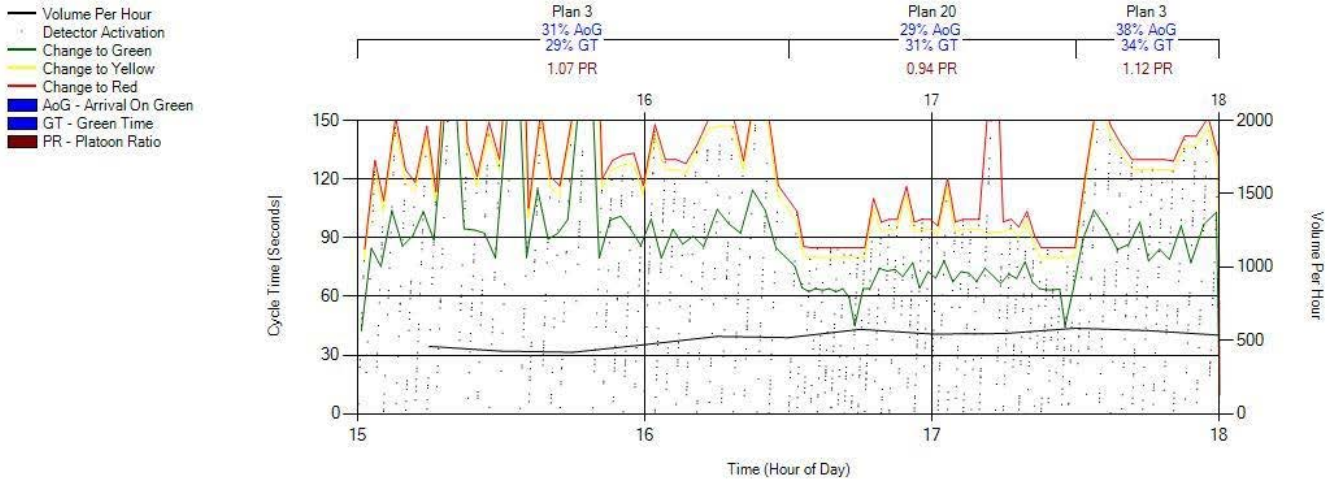


Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Drexel Ave. - SIG#401094
Wednesday, June 20, 2018 3:00 PM - Wednesday, June 20, 2018 6:00 PM
Advanced detector located 256 ft. upstream of stop bar

Phase 8: Westbound

AoG = 32%

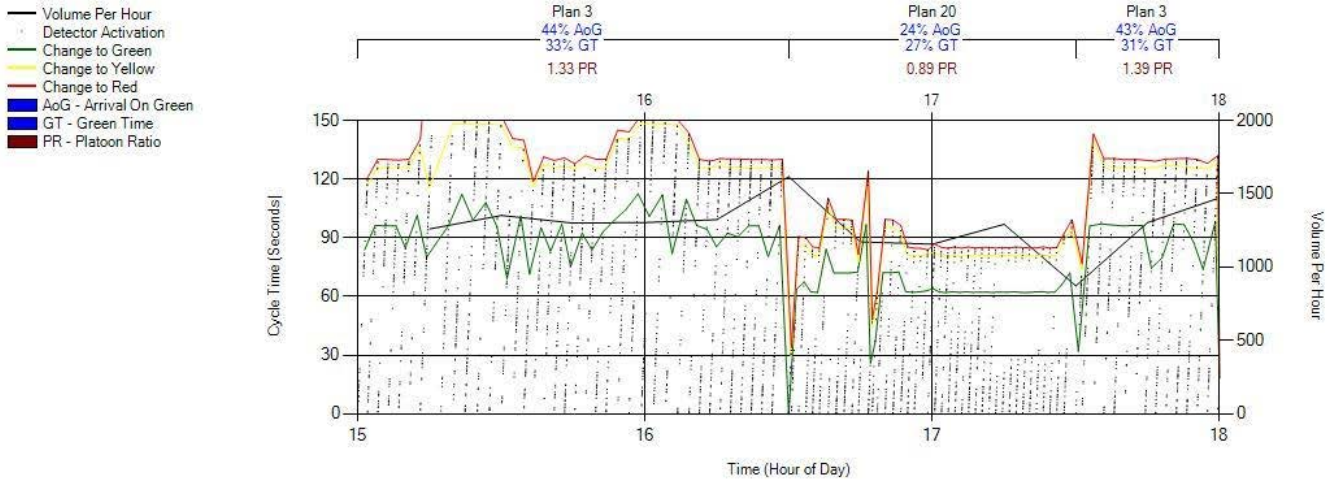


Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Drexel Ave. - SIG#401094
Thursday, June 21, 2018 3:00 PM - Thursday, June 21, 2018 6:00 PM
Advanced detector located 351 ft. upstream of stop bar

Phase 2: Southbound

AoG = 38%

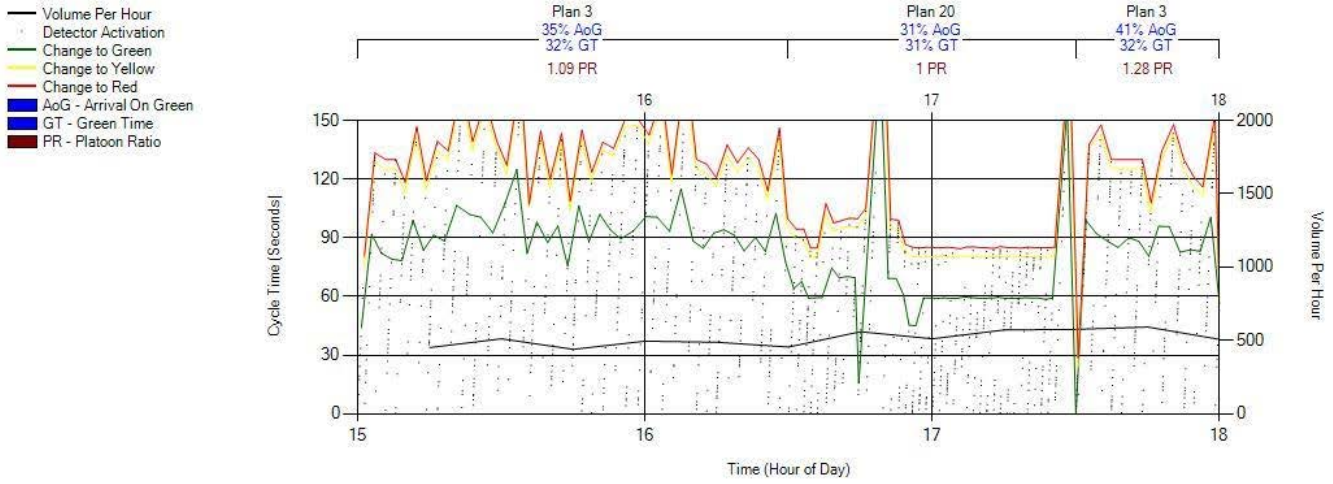


Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Drexel Ave. - SIG#401094
Thursday, June 21, 2018 3:00 PM - Thursday, June 21, 2018 6:00 PM
Advanced detector located 256 ft. upstream of stop bar

Phase 4: Eastbound

AoG = 35%

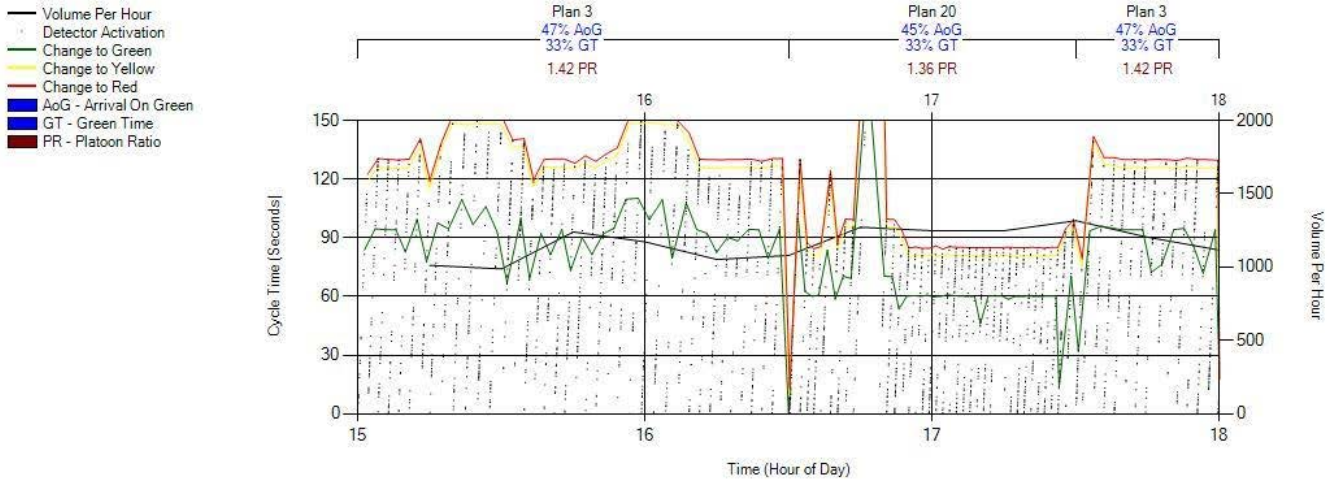


Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Drexel Ave. - SIG#401094
Thursday, June 21, 2018 3:00 PM - Thursday, June 21, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar

Phase 6: Northbound

AoG = 46%

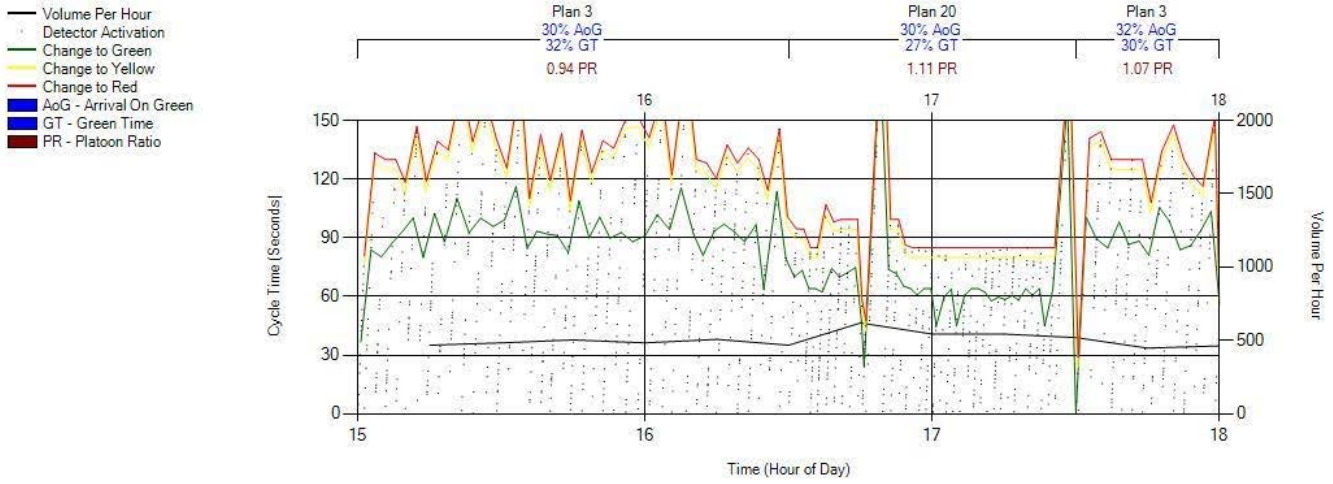


Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Drexel Ave. - SIG#401094
Thursday, June 21, 2018 3:00 PM - Thursday, June 21, 2018 6:00 PM
Advanced detector located 256 ft. upstream of stop bar

Phase 8: Westbound

AoG = 30%

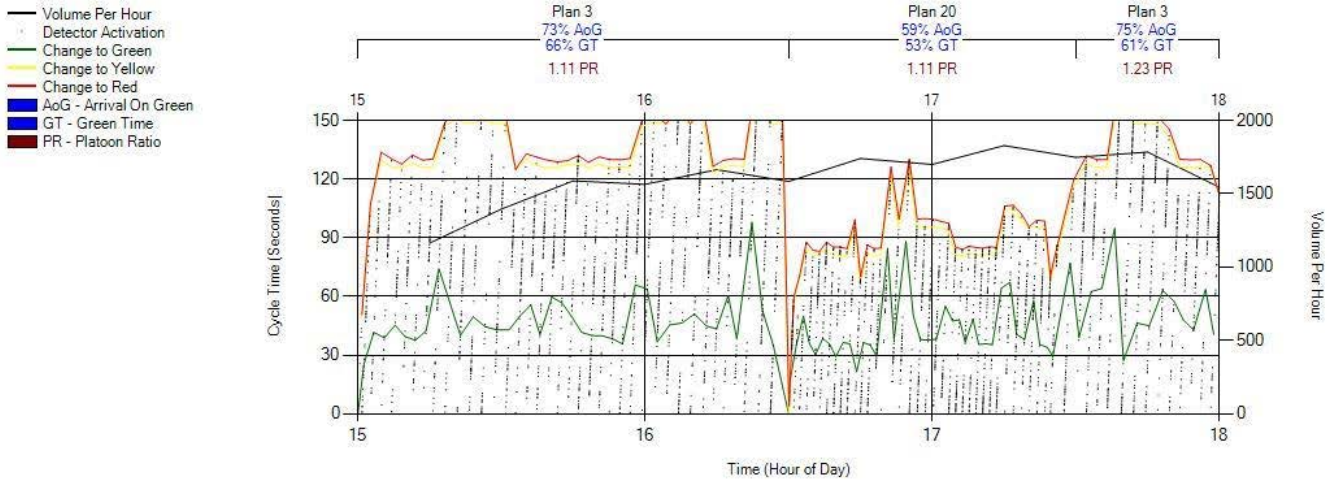


Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Susan Dr. - SIG#401411
Tuesday, June 19, 2018 3:00 PM - Tuesday, June 19, 2018 6:00 PM
Advanced detector located 418 ft. upstream of stop bar

Phase 2: Southbound

AoG = 68%

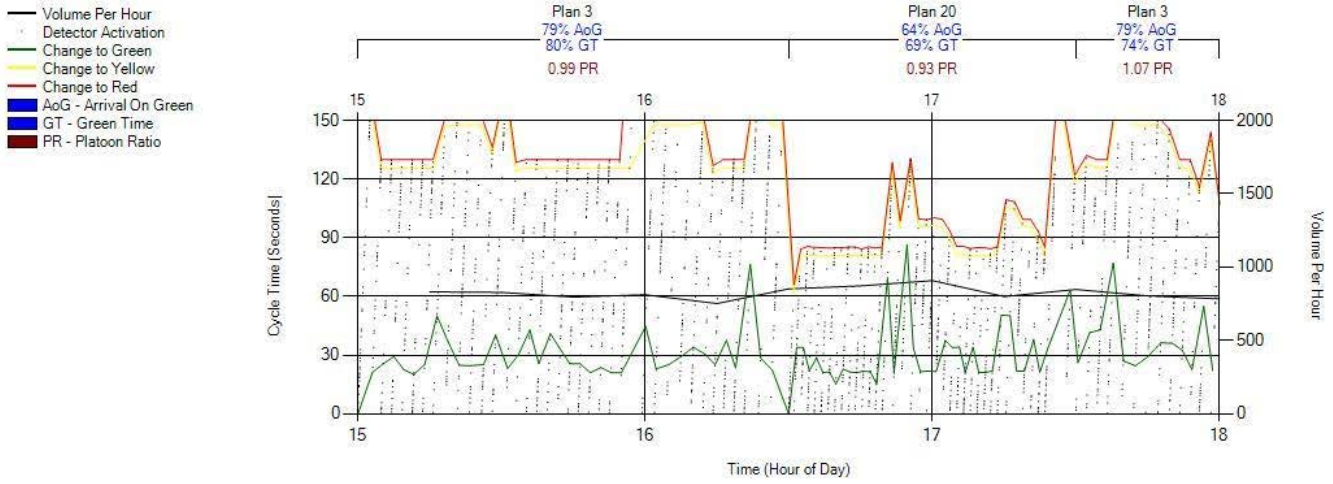


Purdue Coordination Diagram

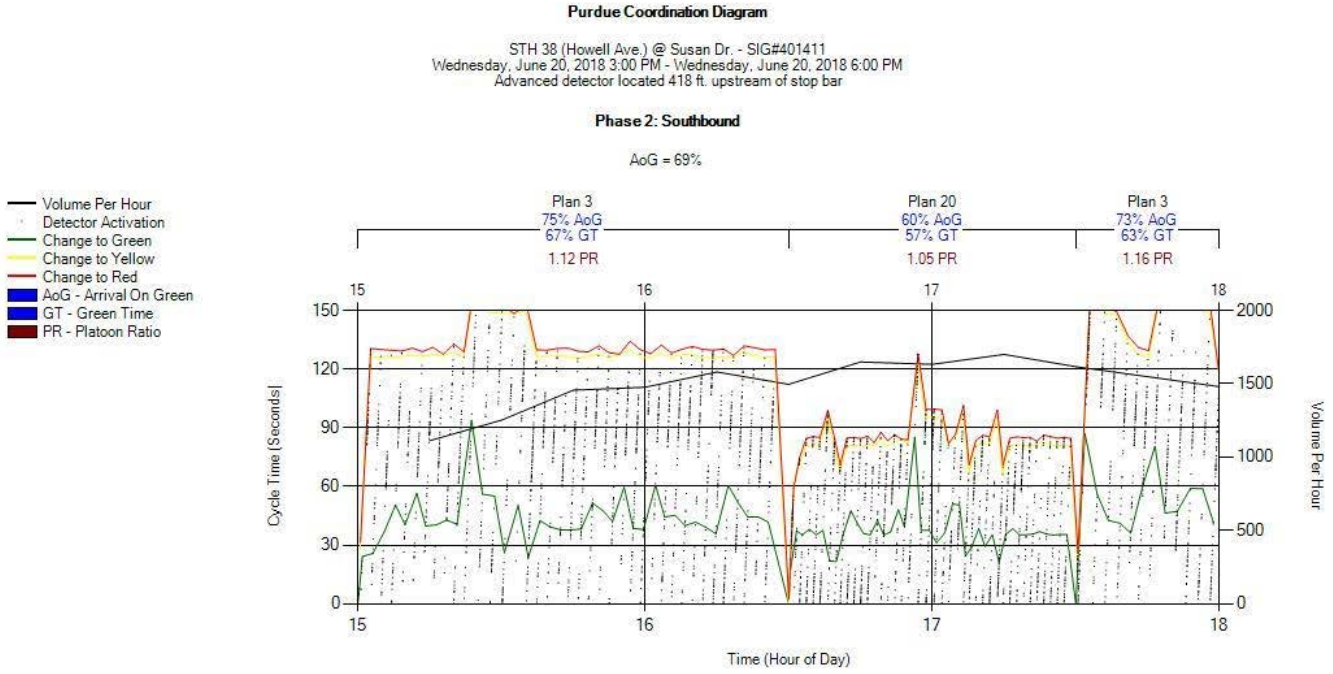
STH 38 (Howell Ave.) @ Susan Dr. - SIG#401411
Tuesday, June 19, 2018 3:00 PM - Tuesday, June 19, 2018 6:00 PM
Advanced detector located 330 ft. upstream of stop bar

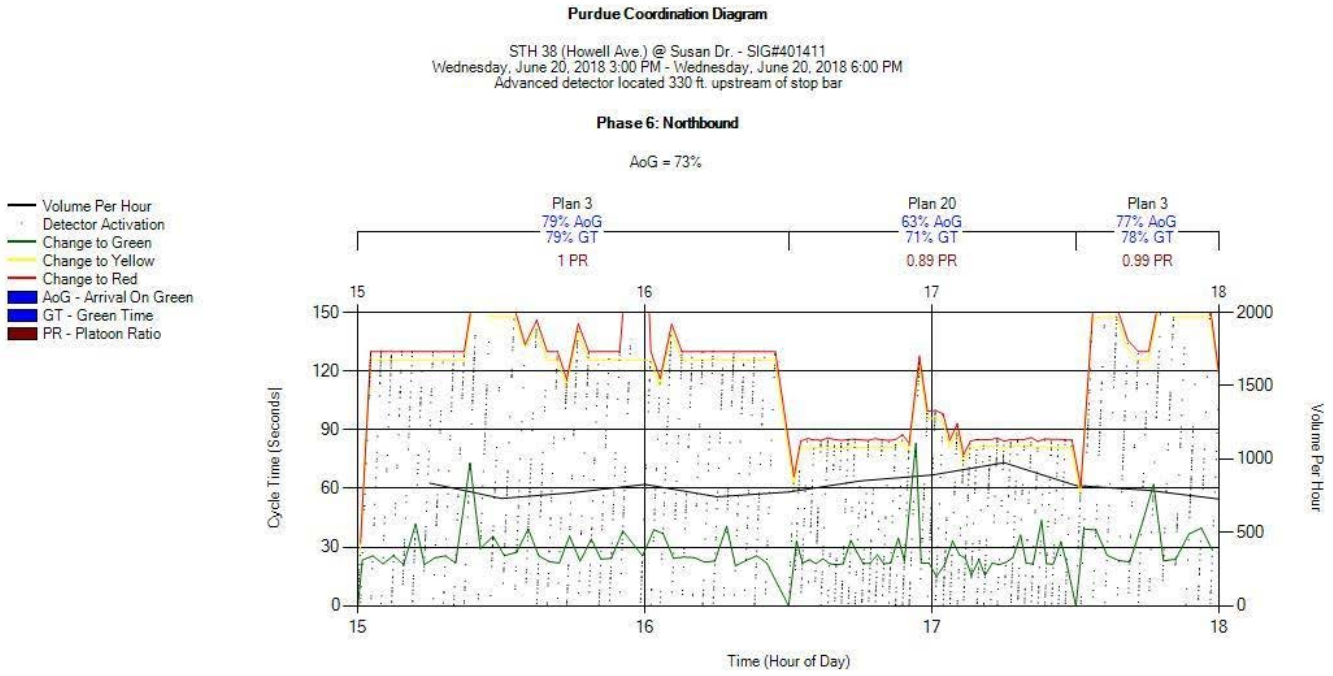
Phase 6: Northbound

AoG = 74%



WIS 38 Corridor – STH 38 & Susan Dr.
HCS Timings
6/20/2018 – 3:00 PM – 6:00 PM





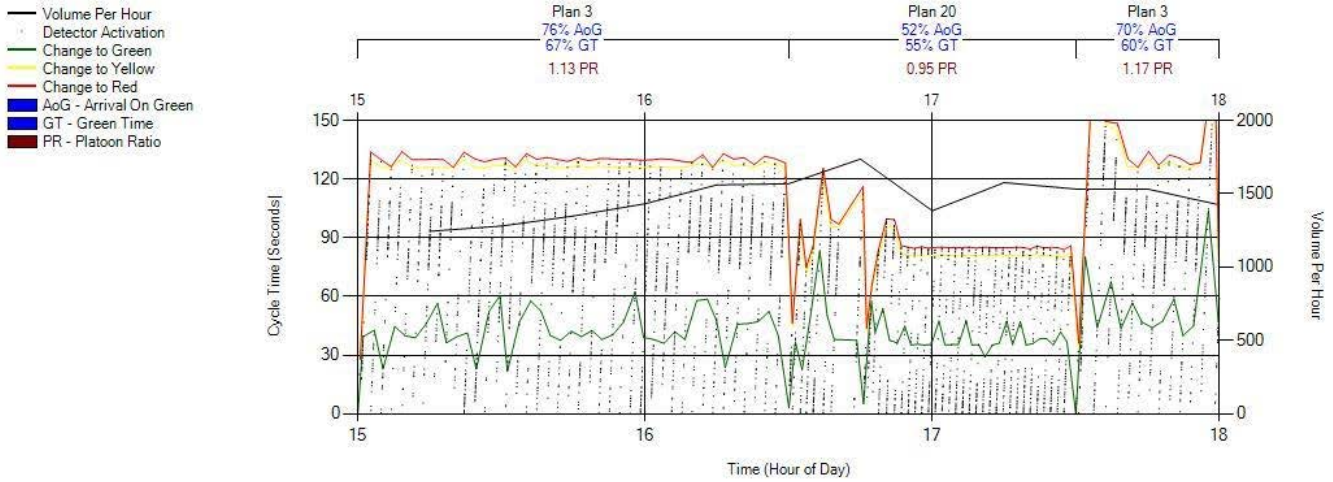
WIS 38 Corridor – STH 38 & Susan Dr.
HCS Timings
6/21/2018 – 3:00 PM – 6:00 PM

Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Susan Dr. - SIG#401411
Thursday, June 21, 2018 3:00 PM - Thursday, June 21, 2018 6:00 PM
Advanced detector located 418 ft. upstream of stop bar

Phase 2: Southbound

AoG = 67%

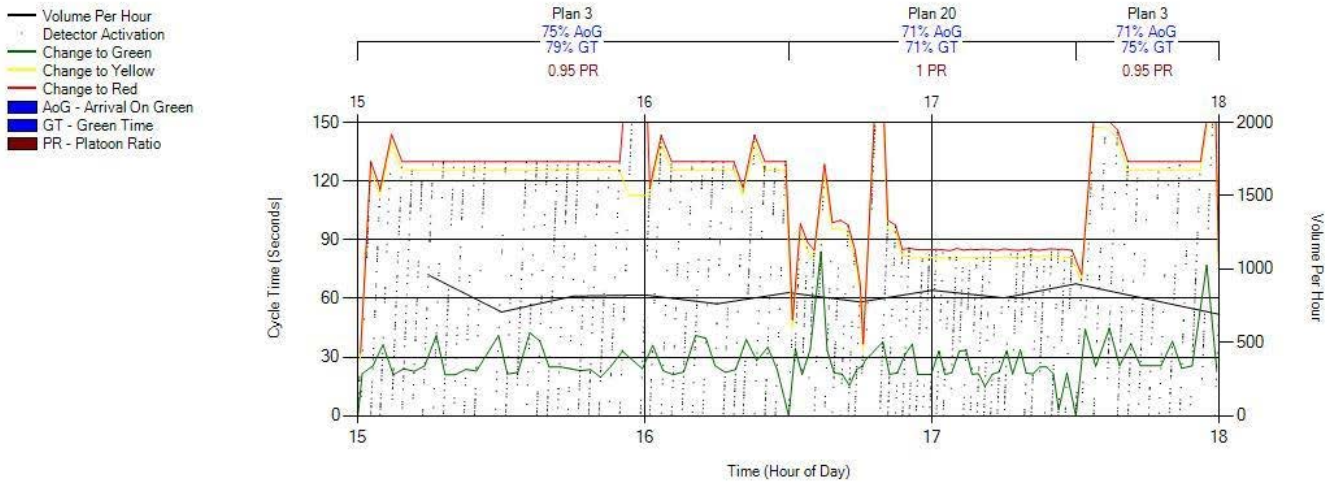


Purdue Coordination Diagram

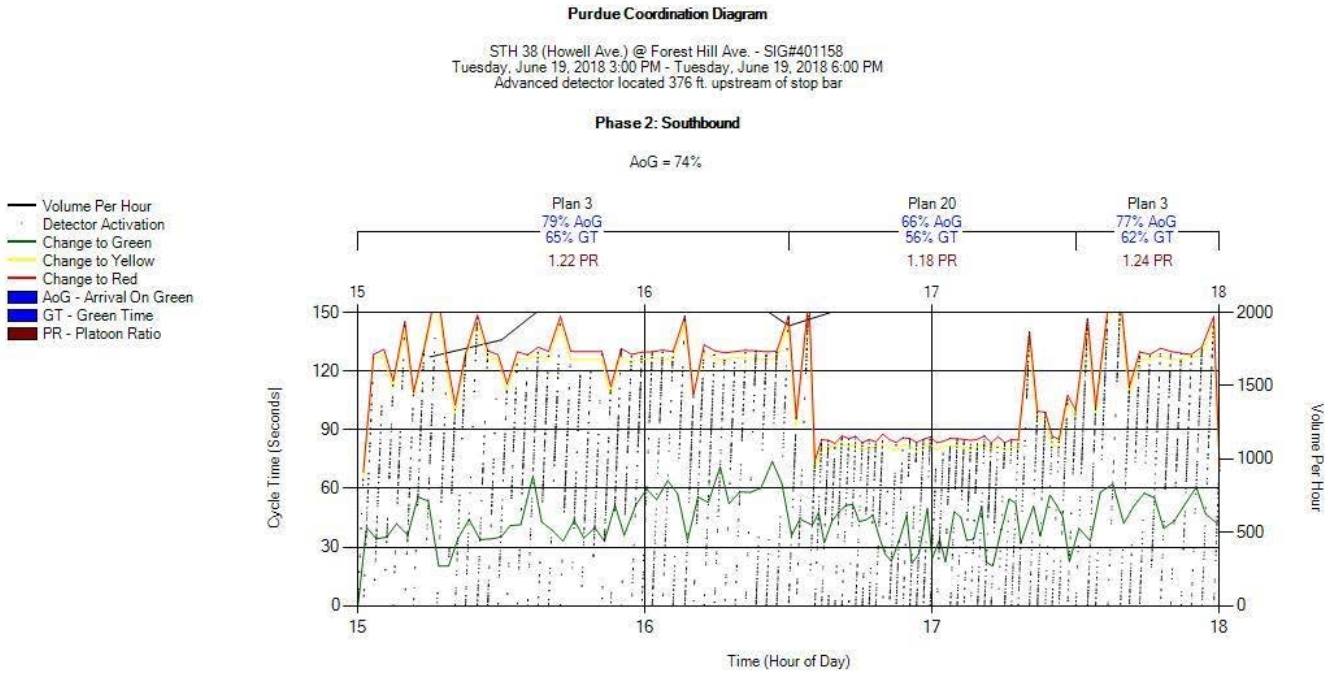
STH 38 (Howell Ave.) @ Susan Dr. - SIG#401411
Thursday, June 21, 2018 3:00 PM - Thursday, June 21, 2018 6:00 PM
Advanced detector located 330 ft. upstream of stop bar

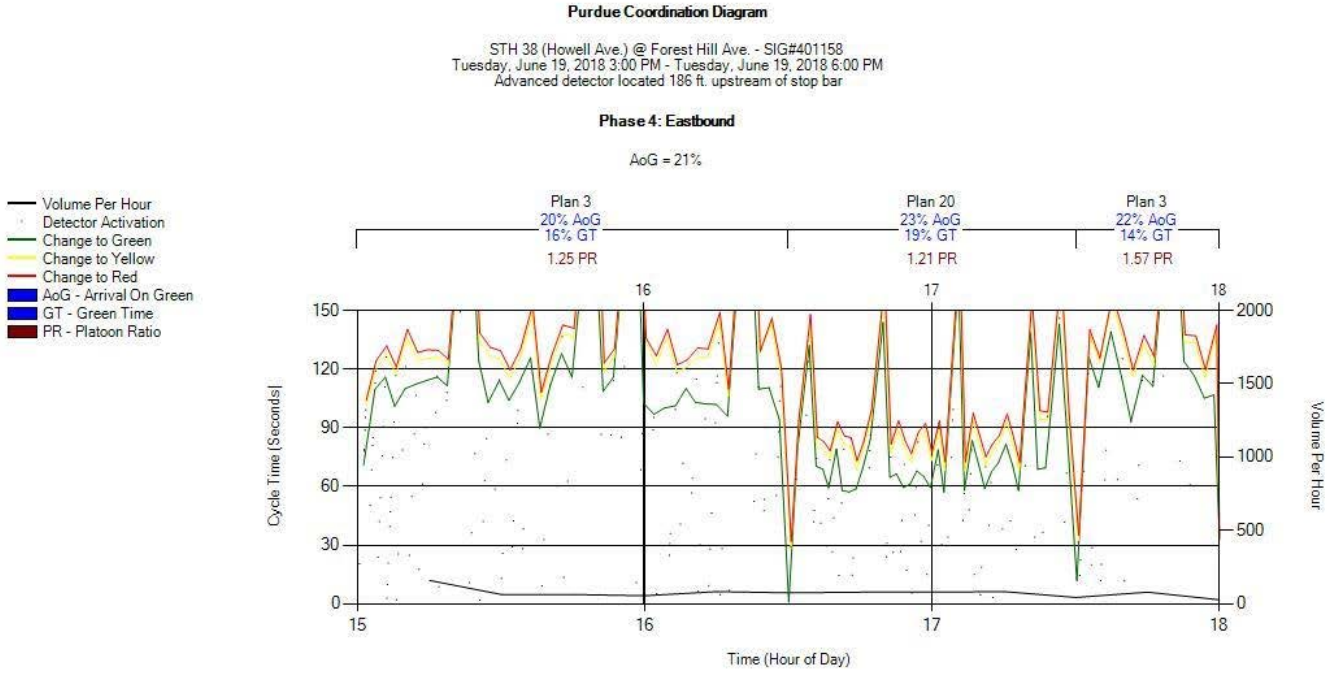
Phase 6: Northbound

AoG = 73%



WIS 38 Corridor – STH 38 & Forest Hill Ave.
HCS Timings
6/19/2018 – 3:00 PM – 6:00 PM



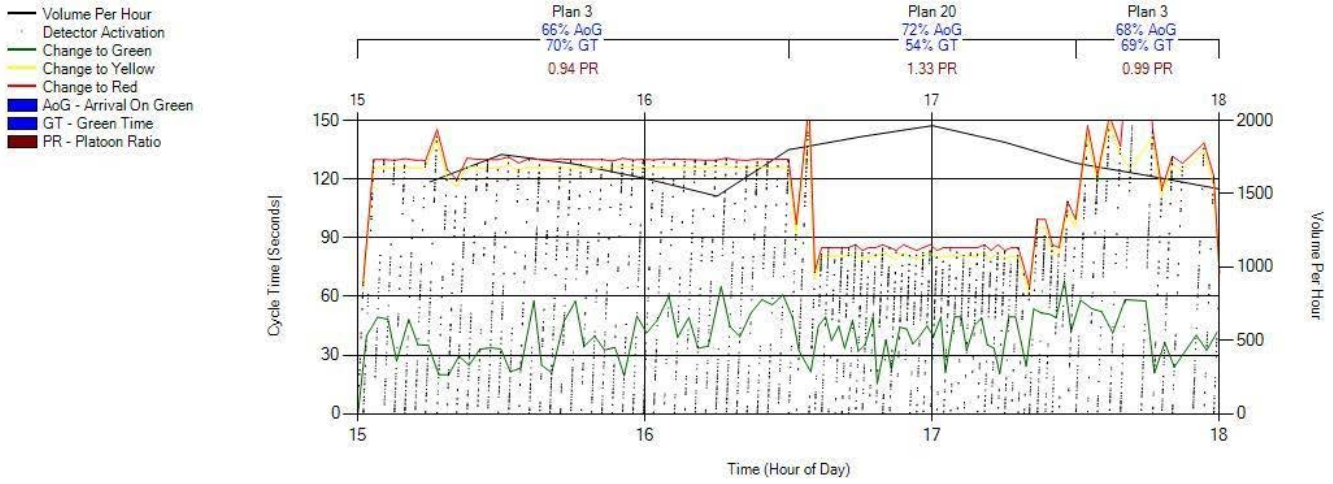


Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Forest Hill Ave. - SIG#401158
Tuesday, June 19, 2018 3:00 PM - Tuesday, June 19, 2018 6:00 PM
Advanced detector located 359 ft. upstream of stop bar

Phase 6: Northbound

AoG = 69%

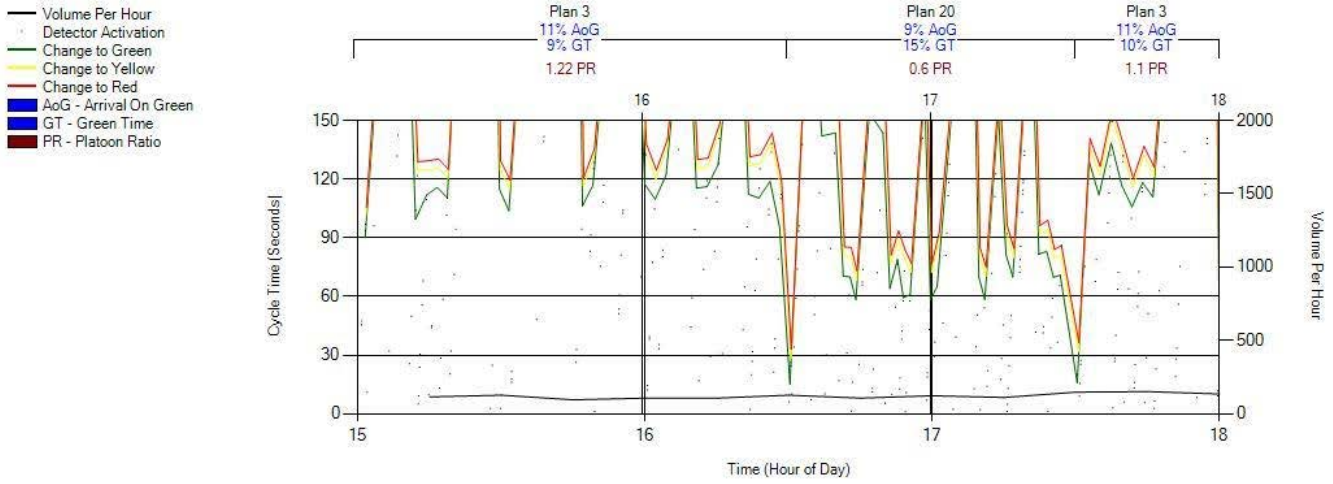


Purdue Coordination Diagram

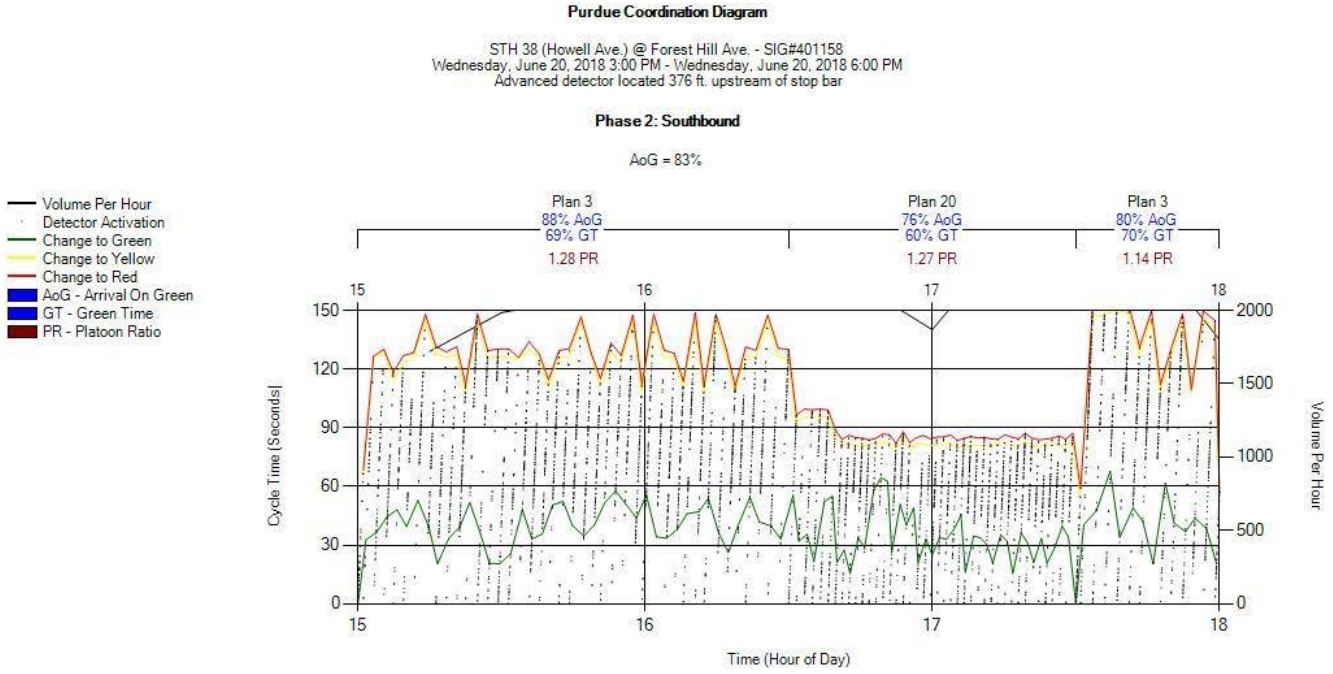
STH 38 (Howell Ave.) @ Forest Hill Ave. - SIG#401158
Tuesday, June 19, 2018 3:00 PM - Tuesday, June 19, 2018 6:00 PM
Advanced detector located 256 ft. upstream of stop bar

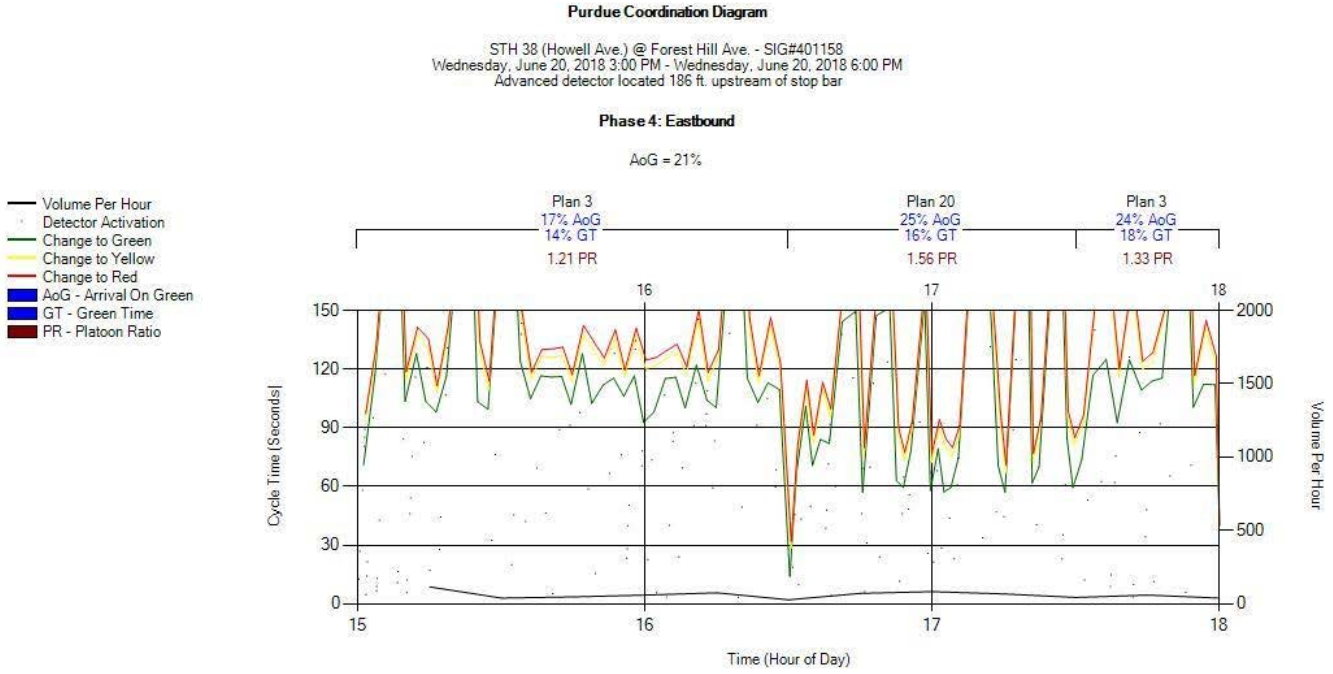
Phase 8: Westbound

AoG = 10%

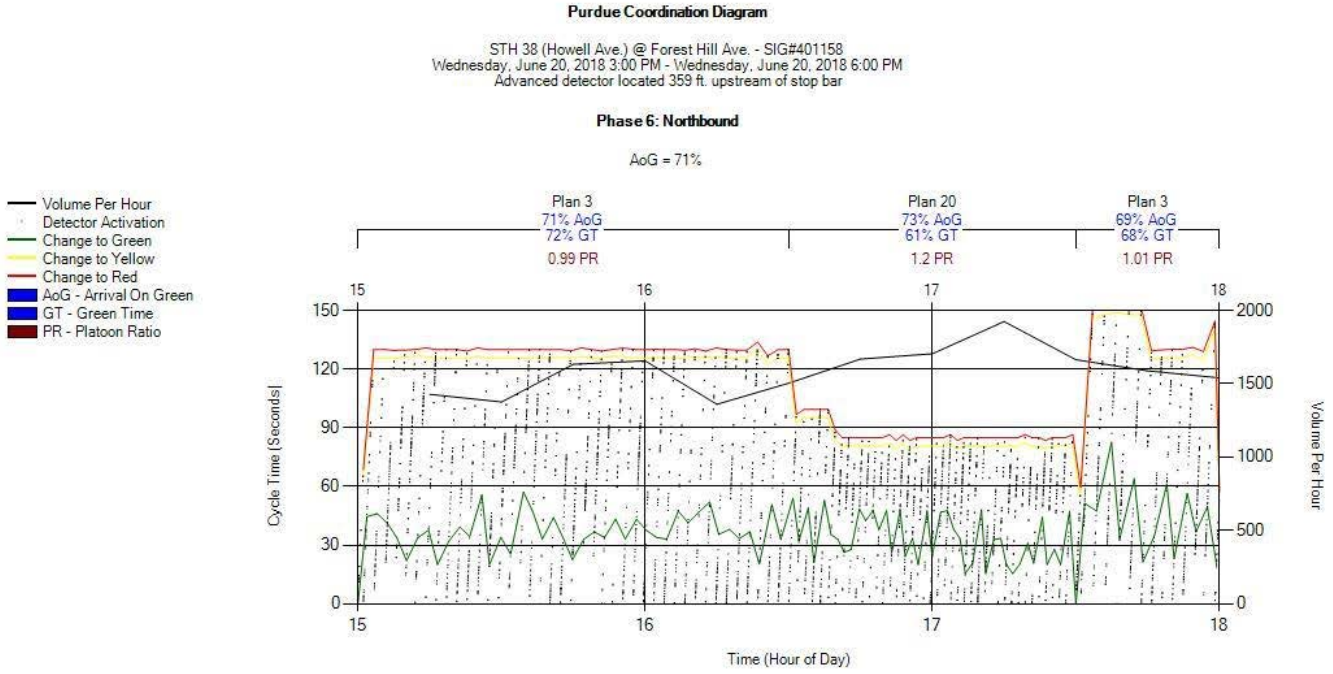


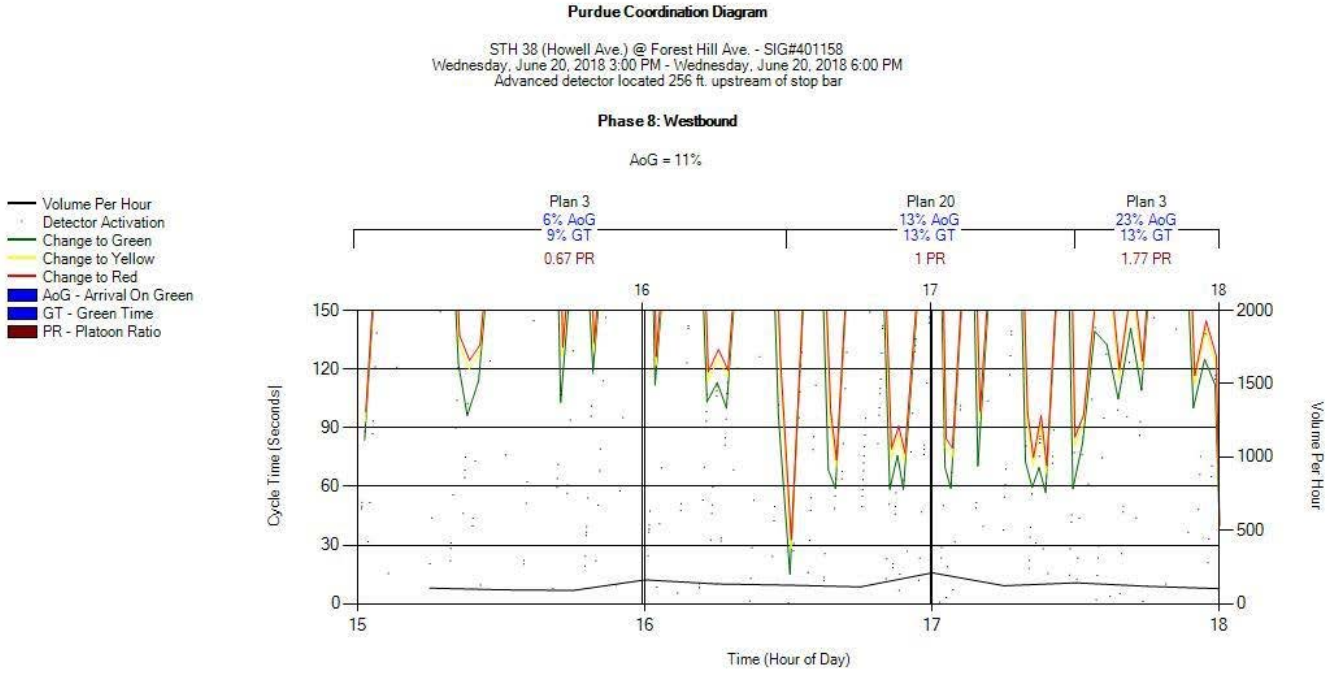
WIS 38 Corridor – STH 38 & Forest Hill Ave.
HCS Timings
6/20/2018 – 3:00 PM – 6:00 PM



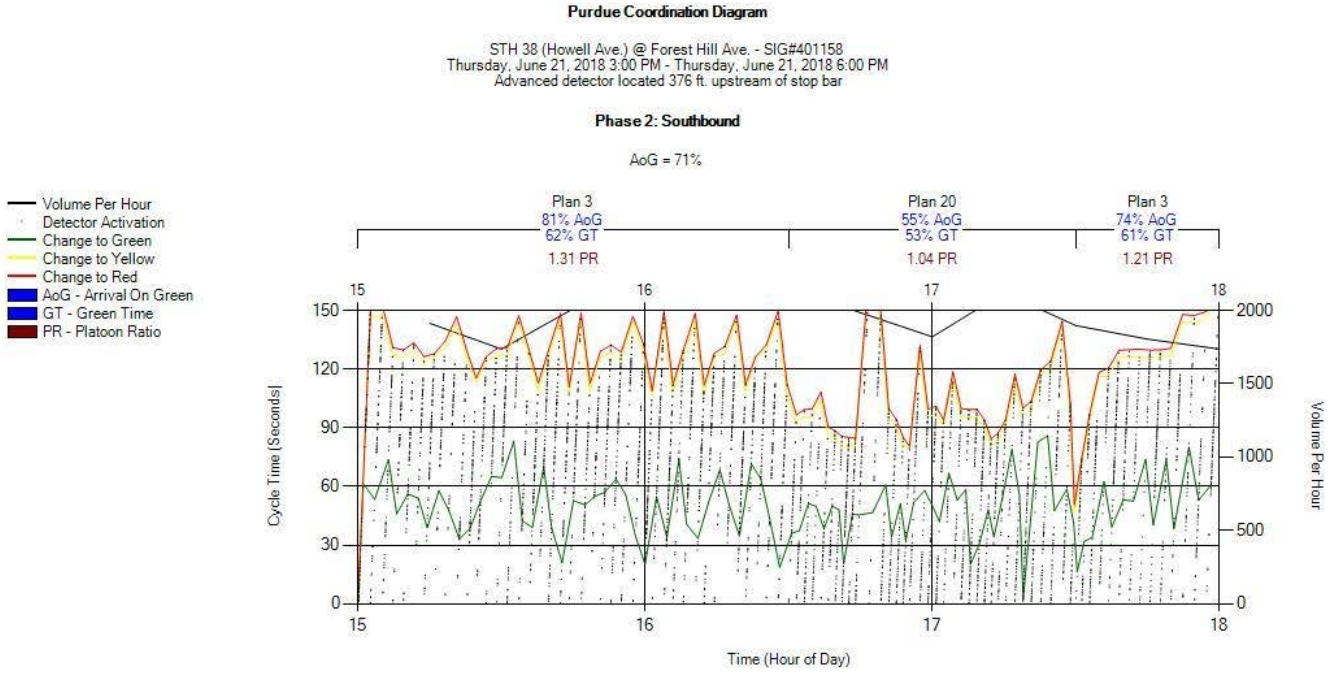


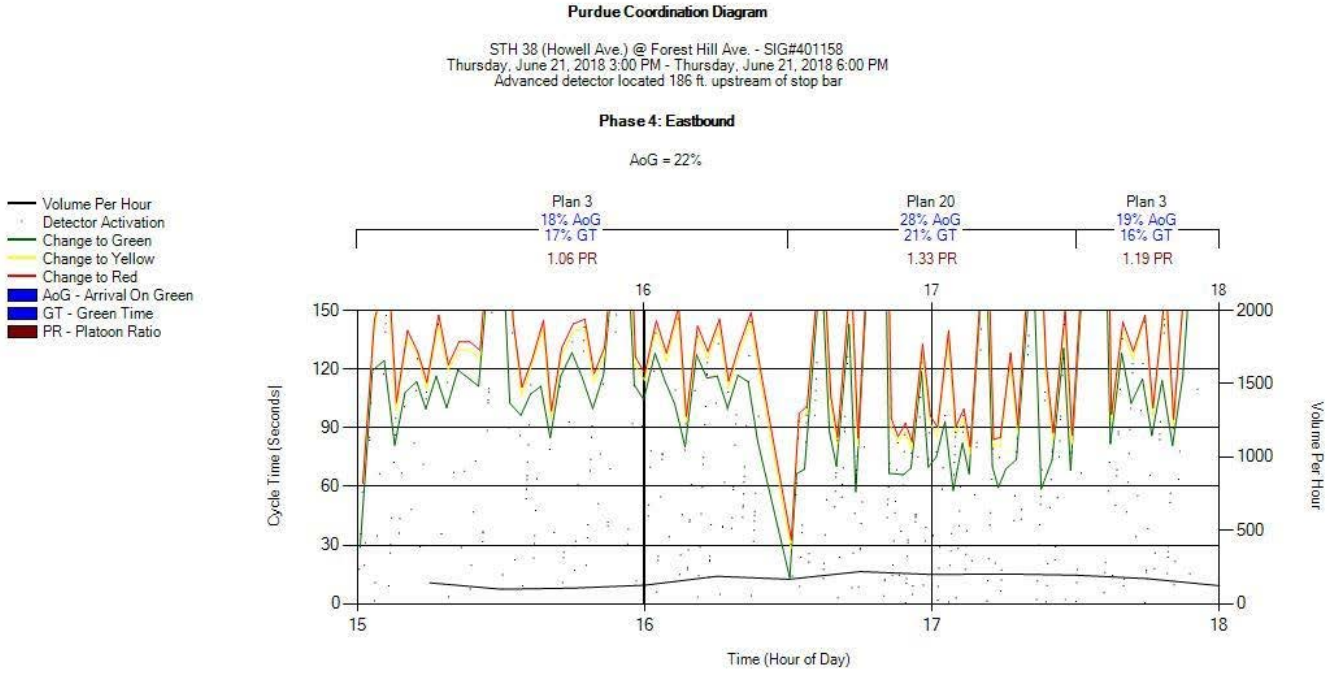
WIS 38 Corridor – STH 38 & Forest Hill Ave.
HCS Timings
6/20/2018 – 3:00 PM – 6:00 PM





WIS 38 Corridor – STH 38 & Forest Hill Ave.
HCS Timings
6/21/2018 – 3:00 PM – 6:00 PM





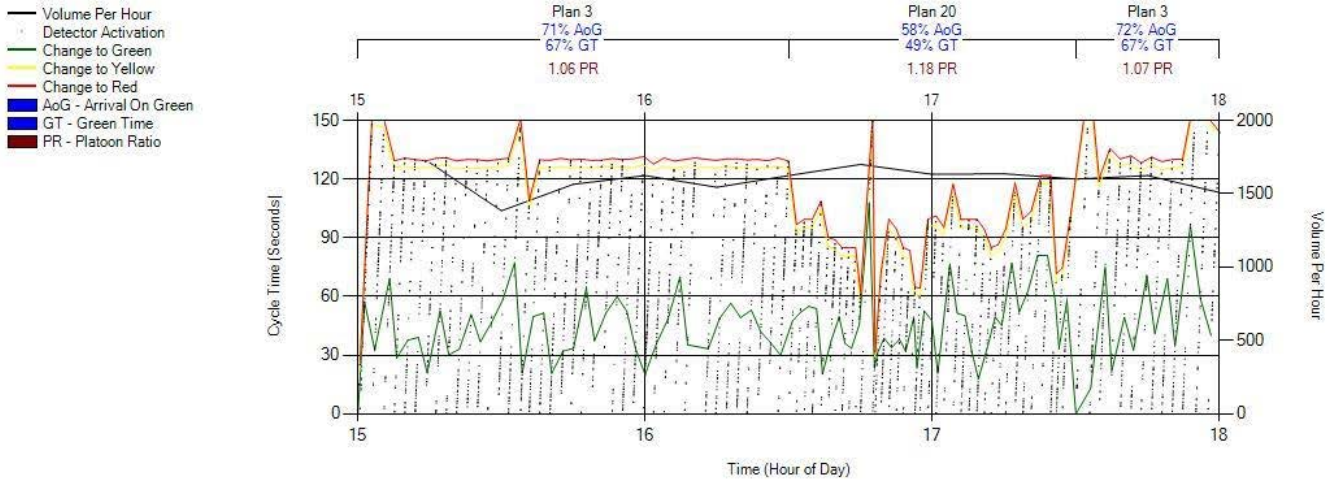
WIS 38 Corridor – STH 38 & Forest Hill Ave.
HCS Timings
6/21/2018 – 3:00 PM – 6:00 PM

Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Forest Hill Ave. - SIG#401158
Thursday, June 21, 2018 3:00 PM - Thursday, June 21, 2018 6:00 PM
Advanced detector located 359 ft. upstream of stop bar

Phase 6: Northbound

AoG = 67%

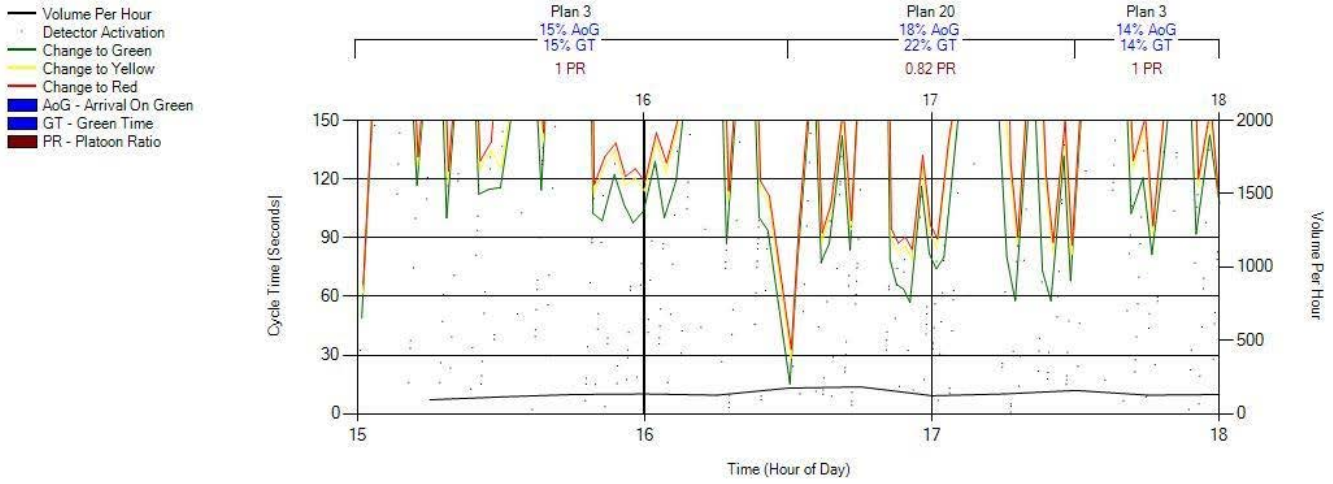


Purdue Coordination Diagram

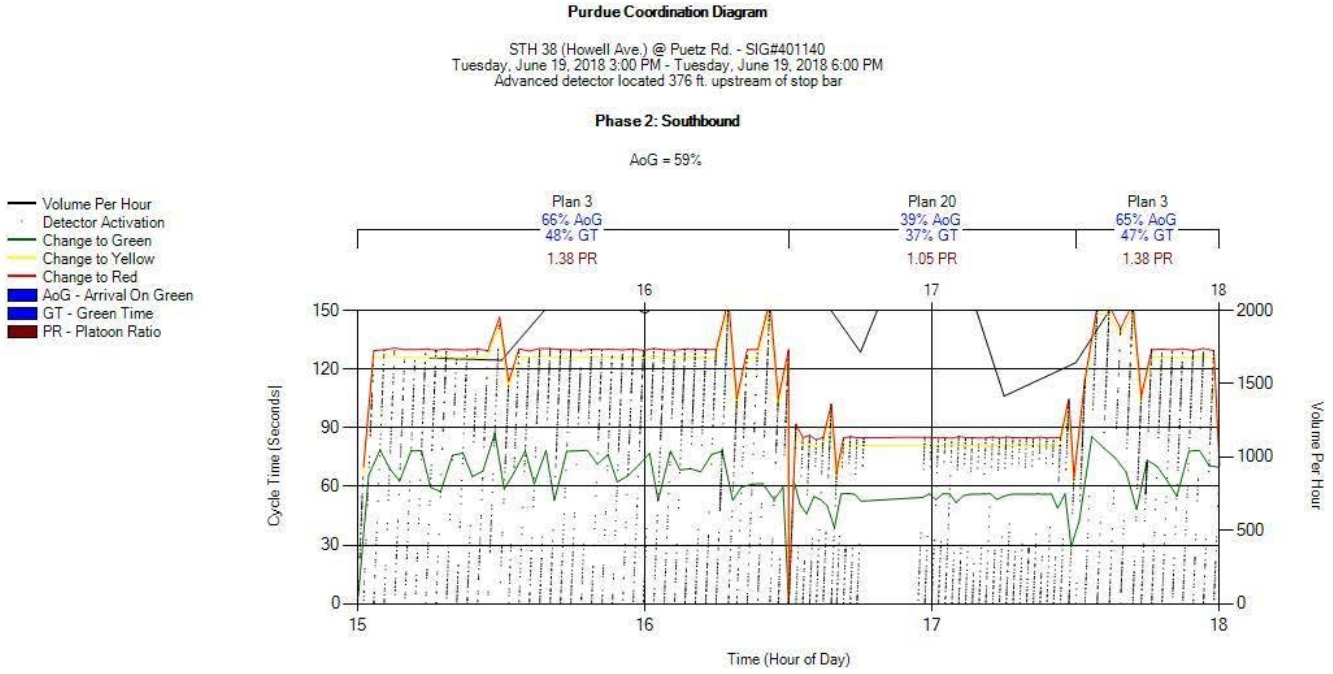
STH 38 (Howell Ave.) @ Forest Hill Ave. - SIG#401158
Thursday, June 21, 2018 3:00 PM - Thursday, June 21, 2018 6:00 PM
Advanced detector located 256 ft. upstream of stop bar

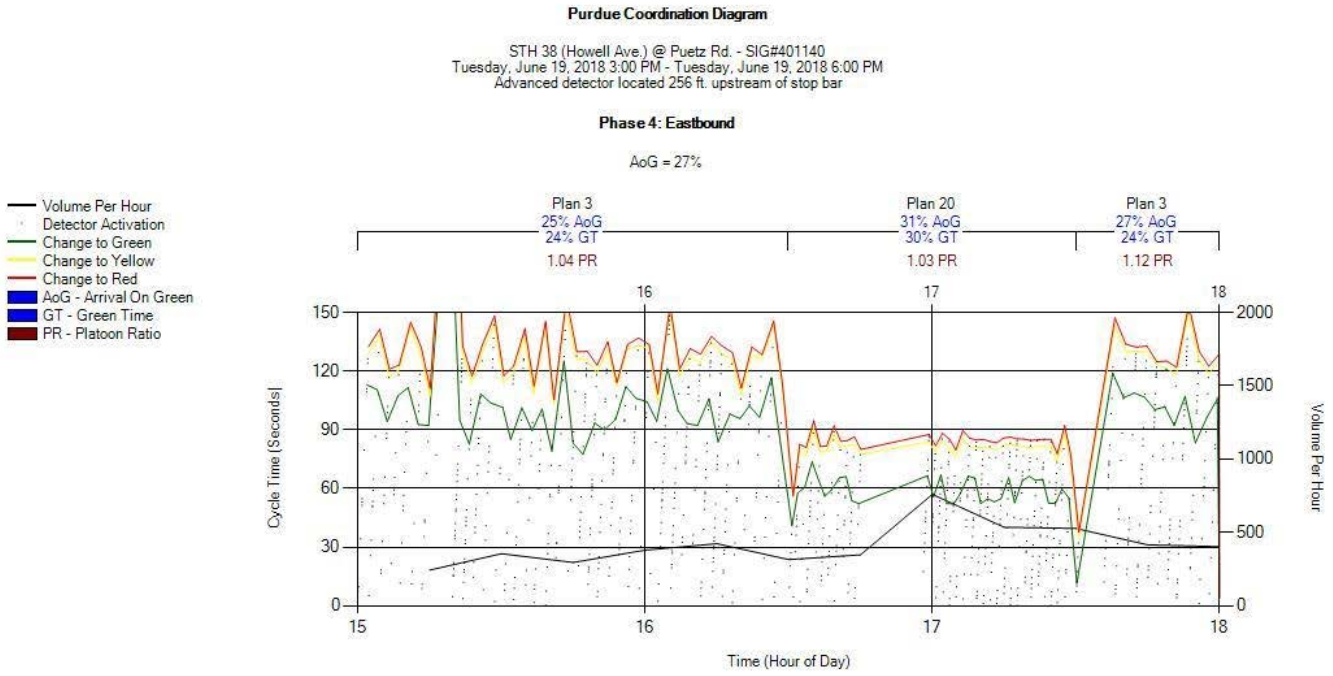
Phase 8: Westbound

AoG = 16%

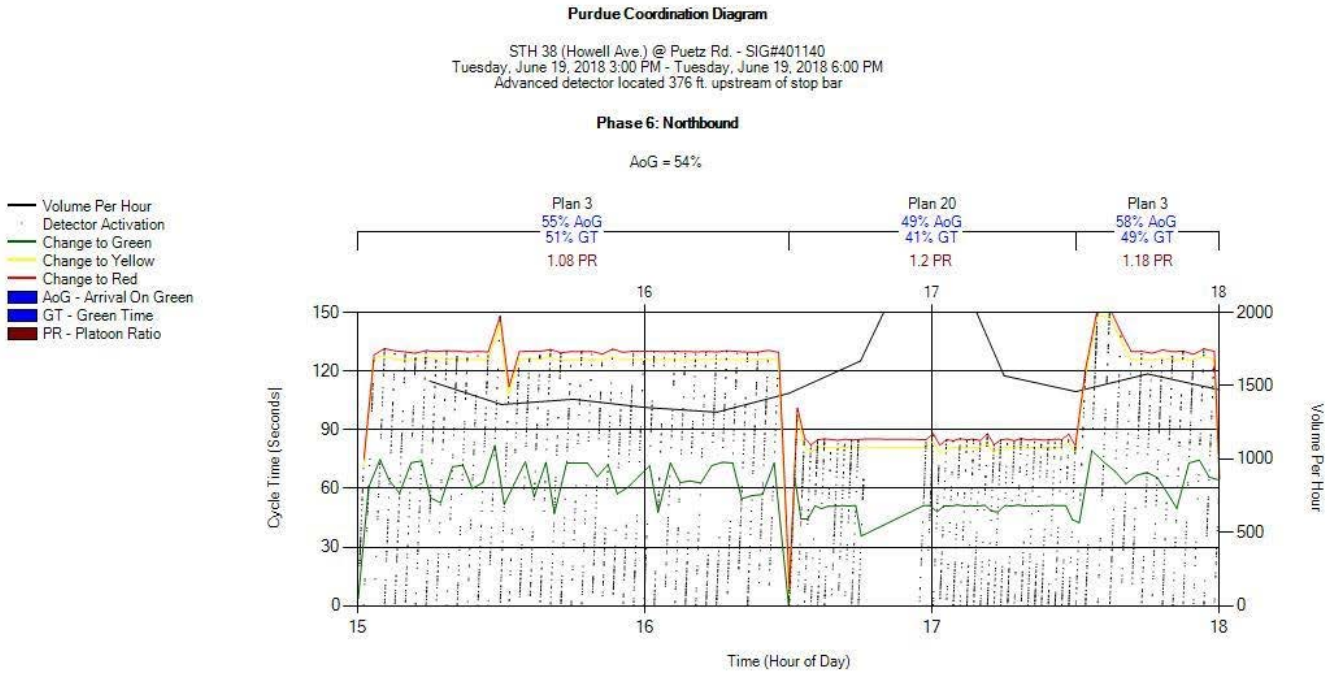


WIS 38 Corridor – STH 38 & Puetz Rd.
HCS Timings
6/19/2018 – 3:00 PM – 6:00 PM





WIS 38 Corridor – STH 38 & Puetz Rd.
HCS Timings
6/19/2018 – 3:00 PM – 6:00 PM

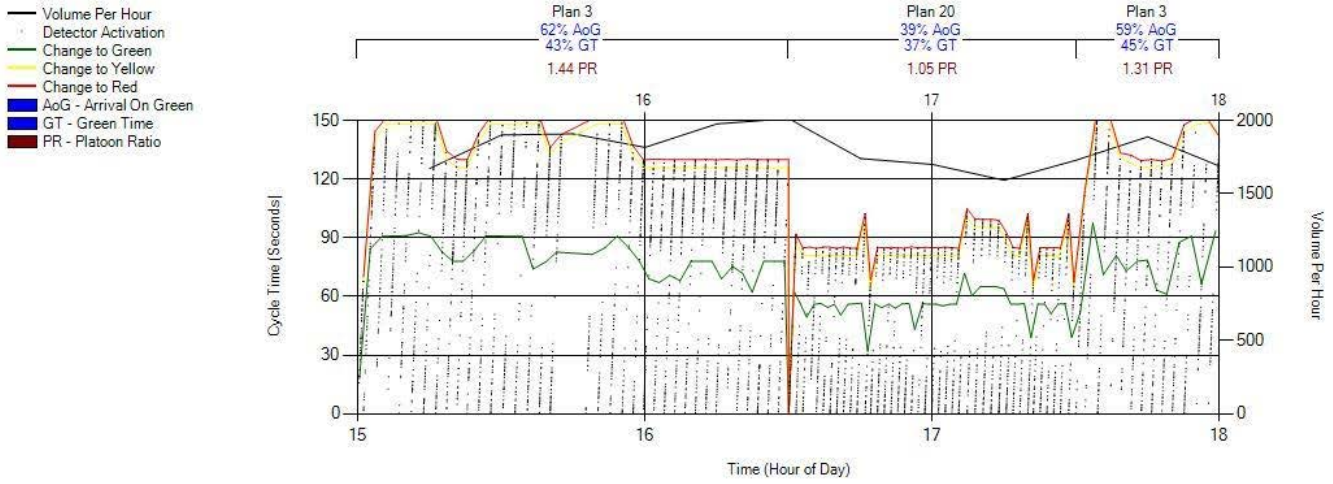


Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Puetz Rd. - SIG#401140
Wednesday, June 20, 2018 3:00 PM - Wednesday, June 20, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar

Phase 2: Southbound

AoG = 54%

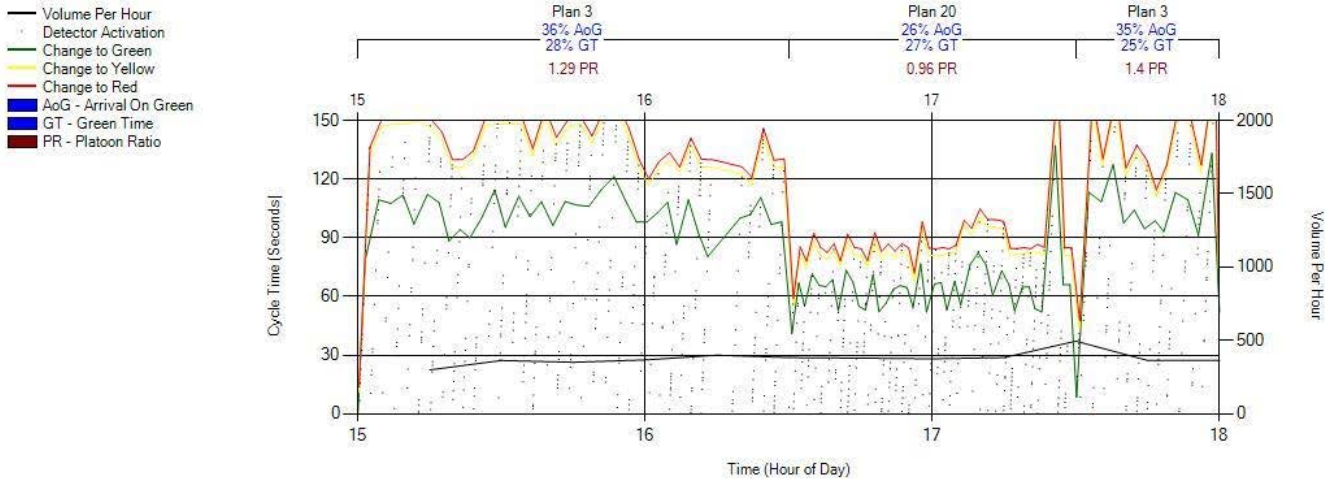


Purdue Coordination Diagram

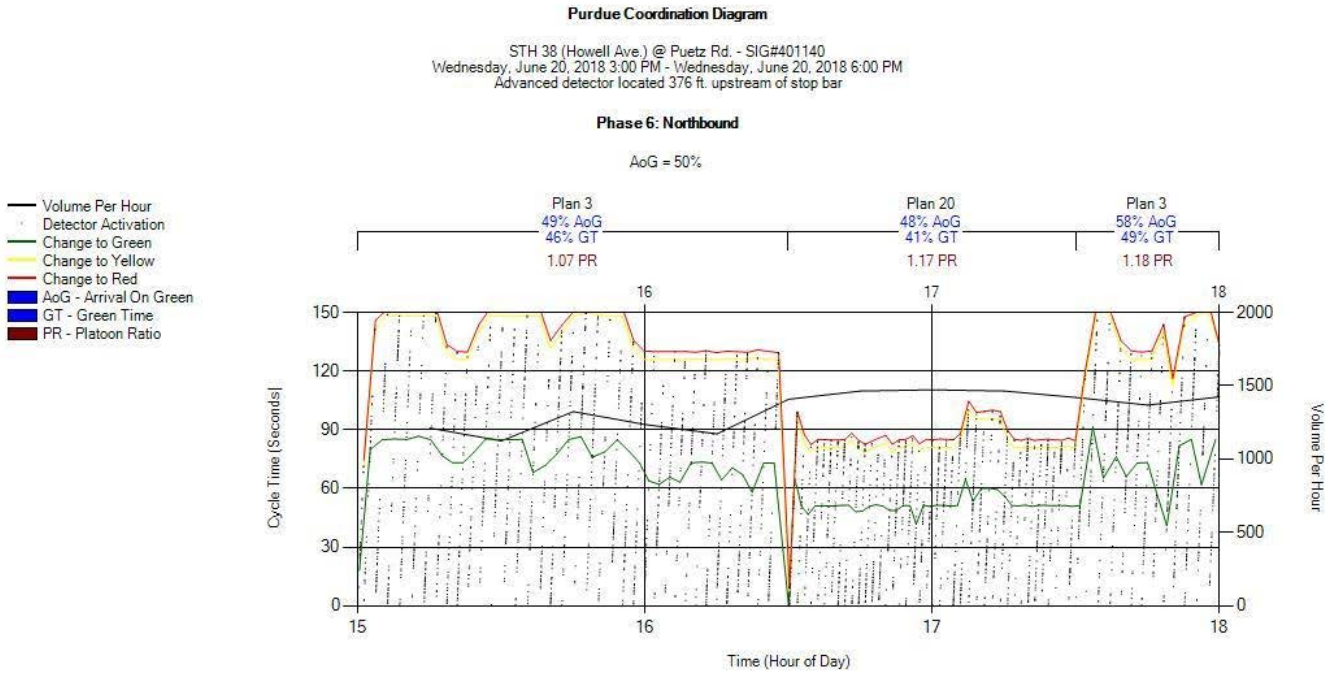
STH 38 (Howell Ave.) @ Puetz Rd. - SIG#401140
Wednesday, June 20, 2018 3:00 PM - Wednesday, June 20, 2018 6:00 PM
Advanced detector located 256 ft. upstream of stop bar

Phase 4: Eastbound

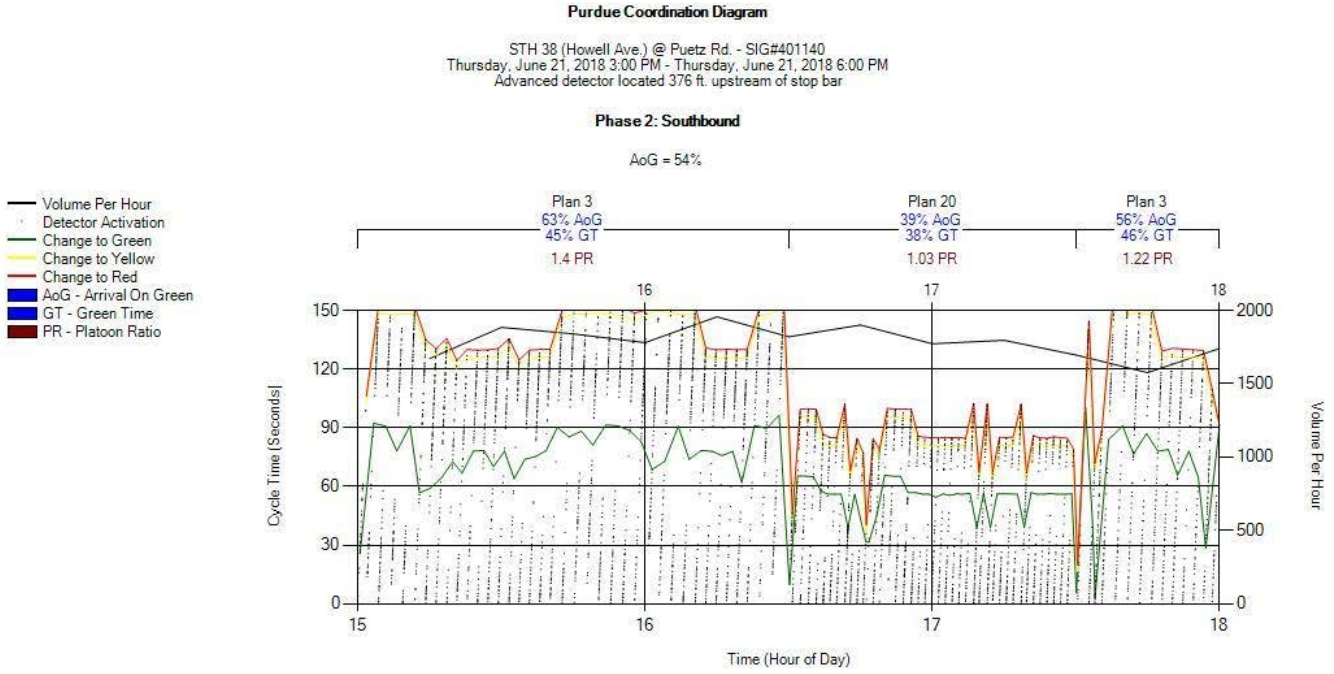
AoG = 32%

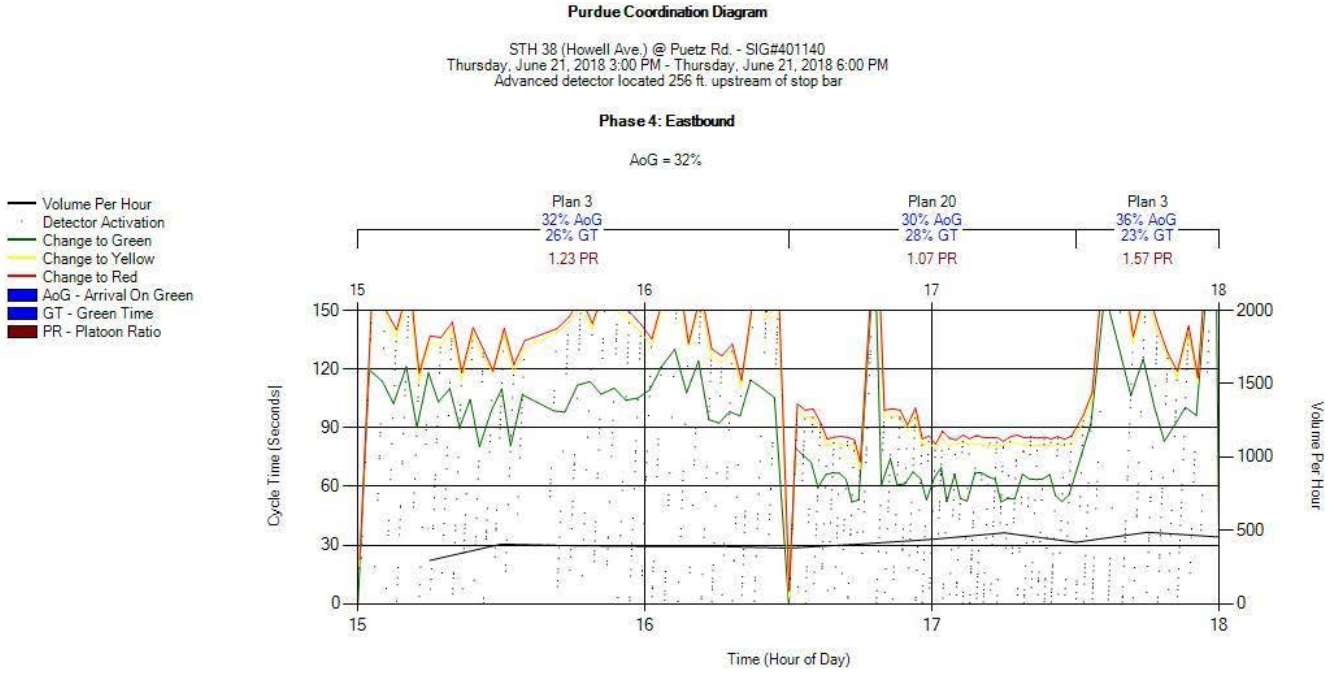


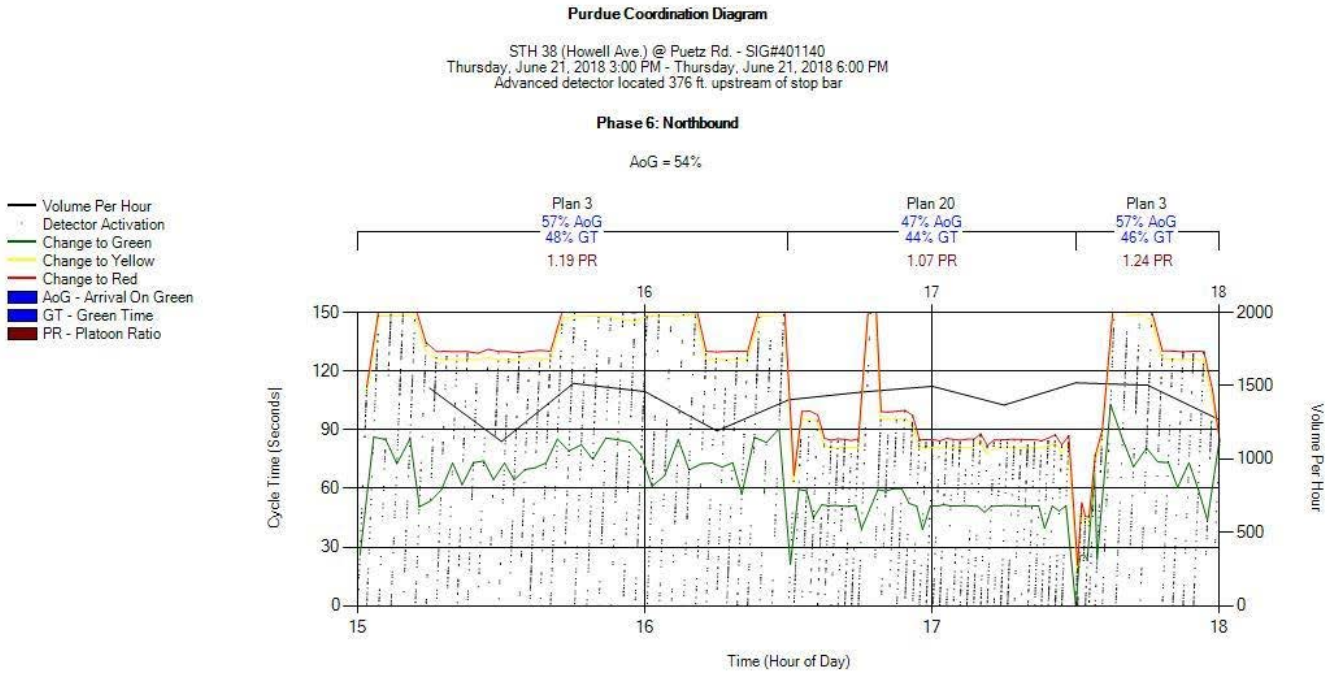
WIS 38 Corridor – STH 38 & Puetz Rd.
HCS Timings
6/20/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Puetz Rd.
HCS Timings
6/21/2018 – 3:00 PM – 6:00 PM





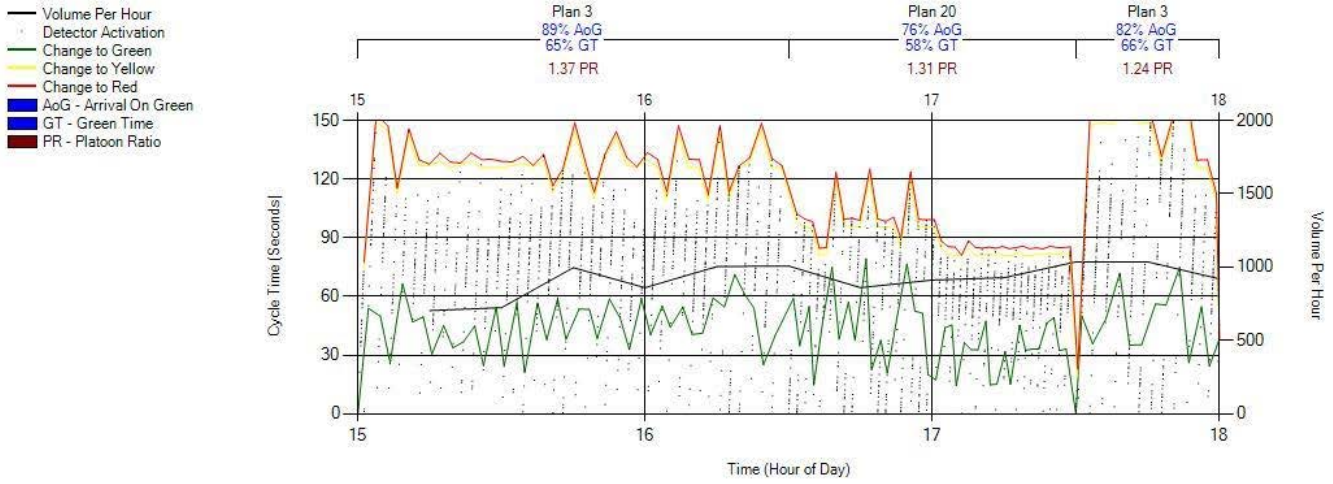

Purdue Coordination Diagram
STH 38 (Howell Ave.) @ Puetz Rd. - SIG#401140
Thursday, June 21, 2018 3:00 PM - Thursday, June 21, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar
Phase 6: Northbound
AoG = 54%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
57% AoG
48% GT
1.19 PR
Plan 20
47% AoG
44% GT
1.07 PR
Plan 3
57% AoG
46% GT
1.24 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)

Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Centennial Dr. - SIG#401237
Tuesday, June 19, 2018 3:00 PM - Tuesday, June 19, 2018 6:00 PM
Advanced detector located 336 ft. upstream of stop bar

Phase 2: Southbound

AoG = 83%

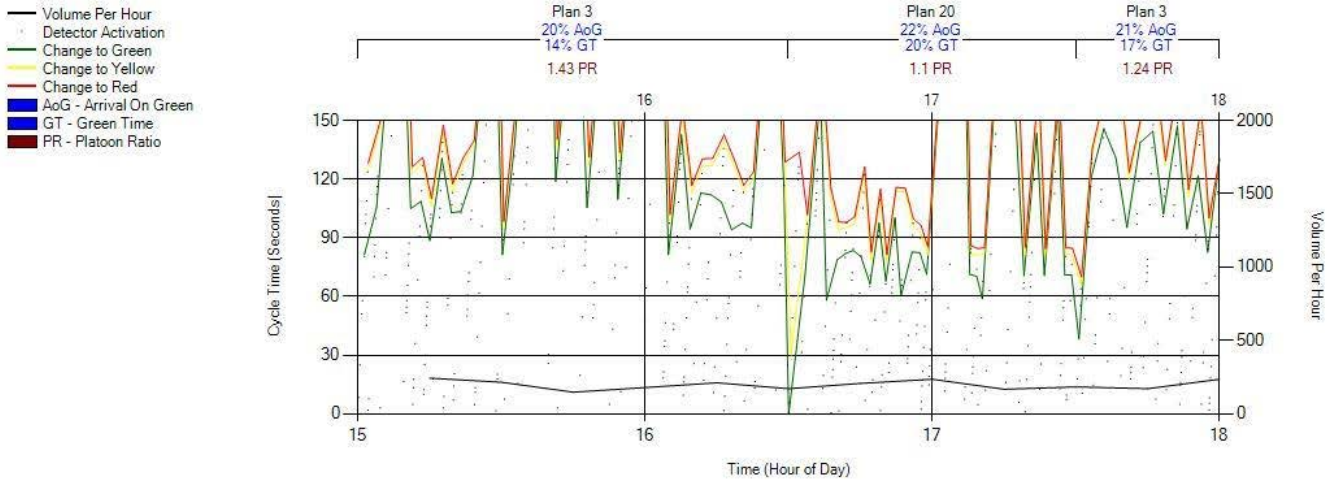


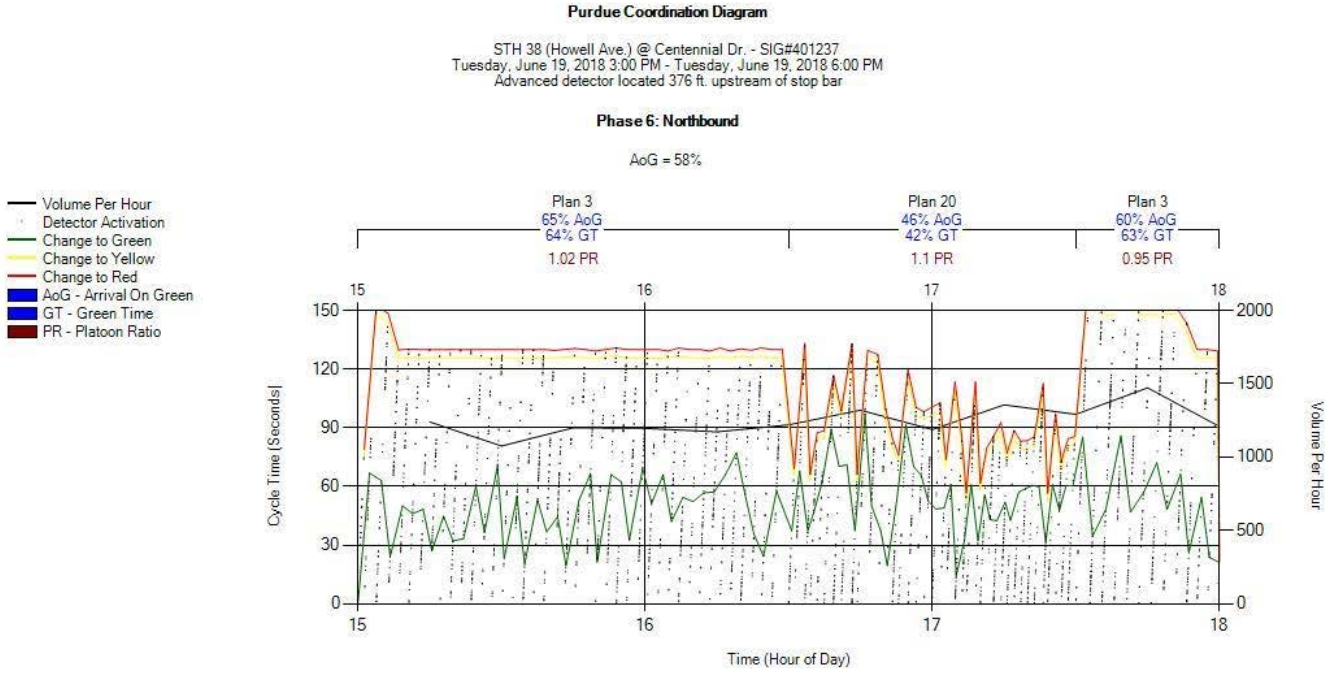
Purdue Coordination Diagram

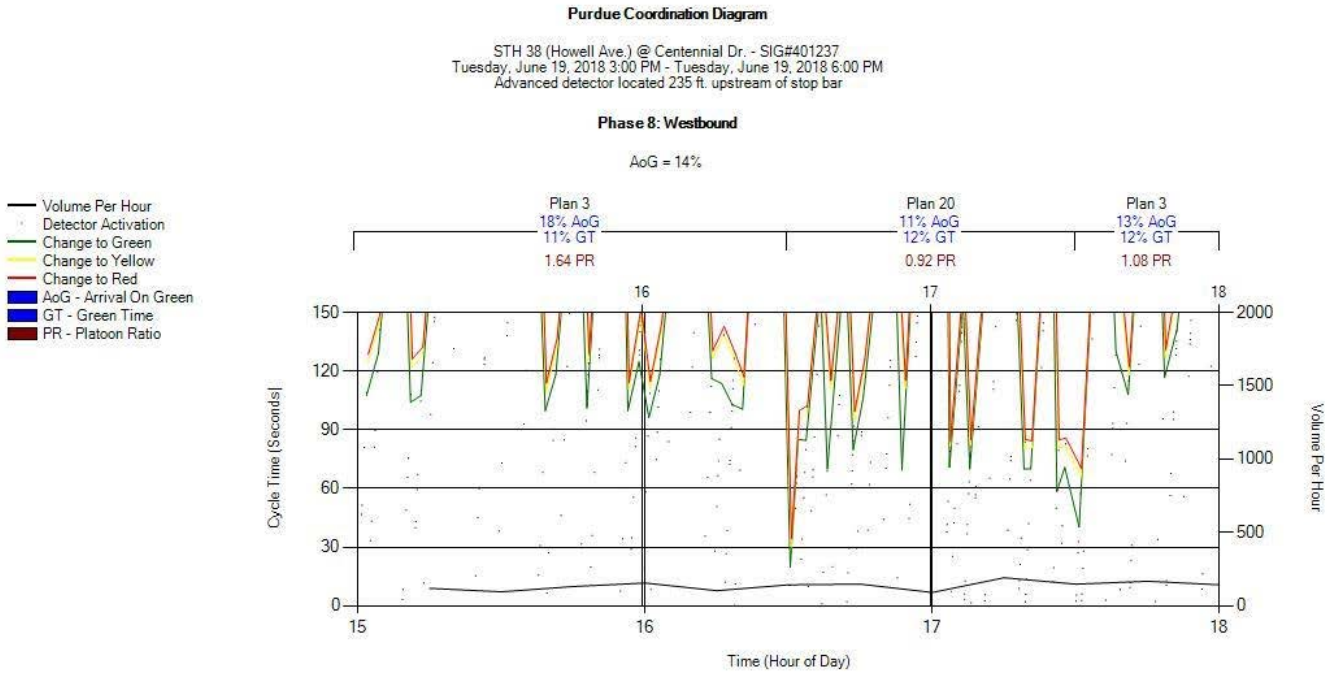
STH 38 (Howell Ave.) @ Centennial Dr. - SIG#401237
Tuesday, June 19, 2018 3:00 PM - Tuesday, June 19, 2018 6:00 PM
Advanced detector located 235 ft. upstream of stop bar

Phase 4: Eastbound

AoG = 21%




Purdue Coordination Diagram
STH 38 (Howell Ave.) @ Centennial Dr. - SIG#401237
Tuesday, June 19, 2018 3:00 PM - Tuesday, June 19, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar
Phase 6: Northbound
AoG = 58%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
65% AoG
64% GT
1.02 PR
Plan 20
46% AoG
42% GT
1.1 PR
Plan 3
60% AoG
63% GT
0.95 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)

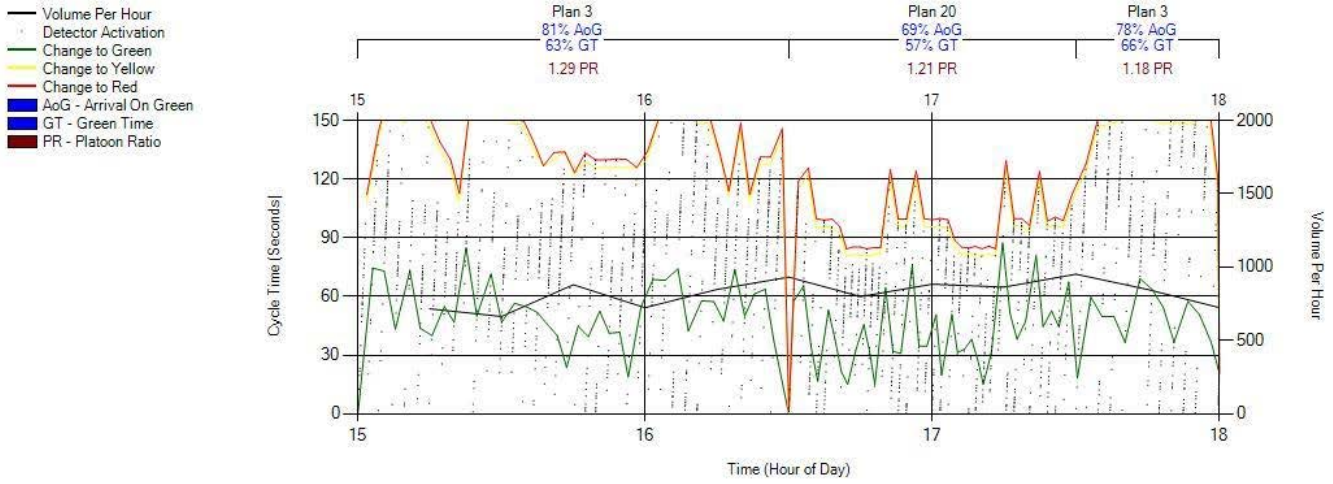

Purdue Coordination Diagram
STH 38 (Howell Ave.) @ Centennial Dr. - SIG#401237
Tuesday, June 19, 2018 3:00 PM - Tuesday, June 19, 2018 6:00 PM
Advanced detector located 235 ft. upstream of stop bar
Phase 8: Westbound
AoG = 14%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
18% AoG
11% GT
1.64 PR
Plan 20
11% AoG
12% GT
0.92 PR
Plan 3
13% AoG
12% GT
1.08 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)

Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Centennial Dr. - SIG#401237
Wednesday, June 20, 2018 3:00 PM - Wednesday, June 20, 2018 6:00 PM
Advanced detector located 336 ft. upstream of stop bar

Phase 2: Southbound

AoG = 76%

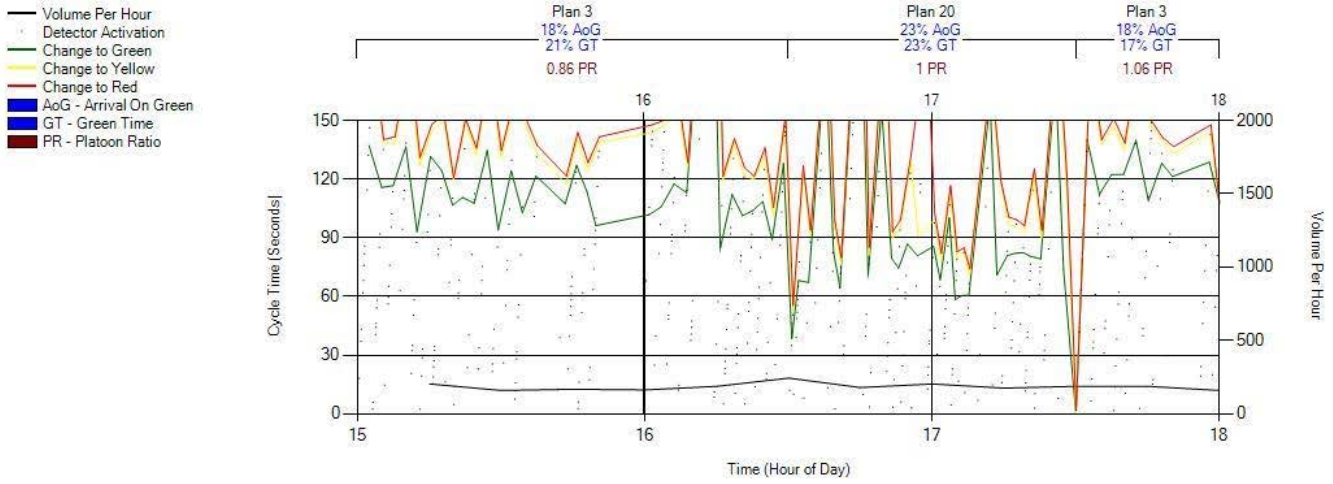


Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Centennial Dr. - SIG#401237
Wednesday, June 20, 2018 3:00 PM - Wednesday, June 20, 2018 6:00 PM
Advanced detector located 235 ft. upstream of stop bar

Phase 4: Eastbound

AoG = 20%

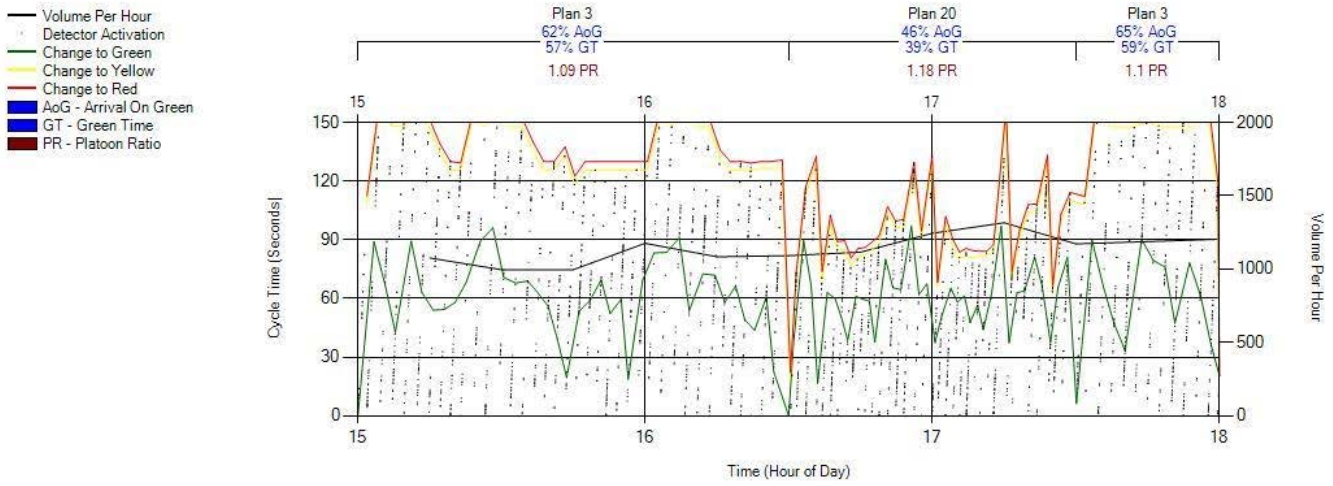


Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Centennial Dr. - SIG#401237
Wednesday, June 20, 2018 3:00 PM - Wednesday, June 20, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar

Phase 6: Northbound

AoG = 57%

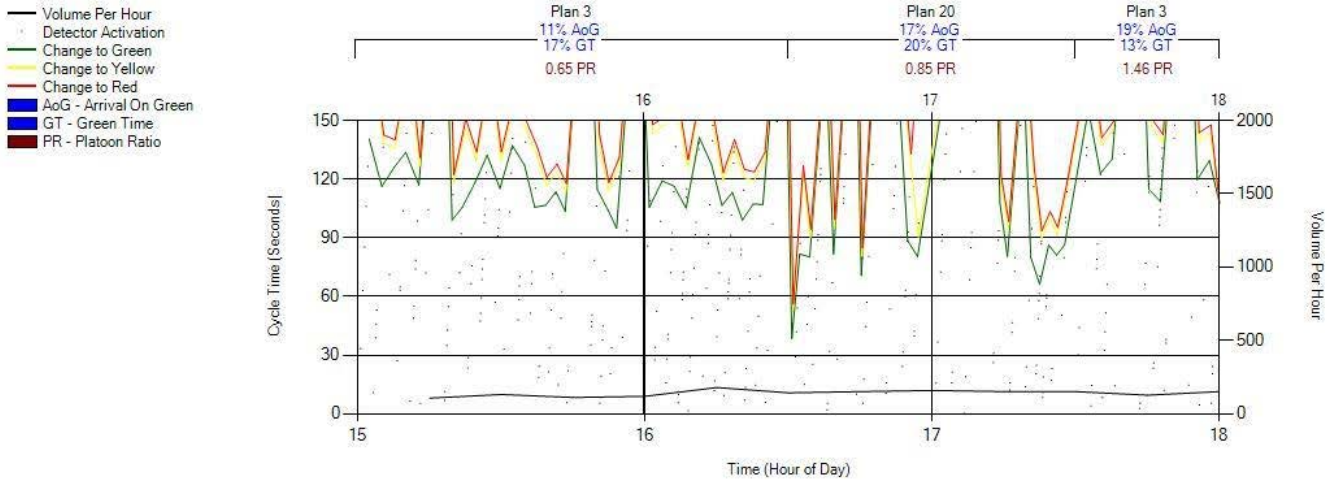


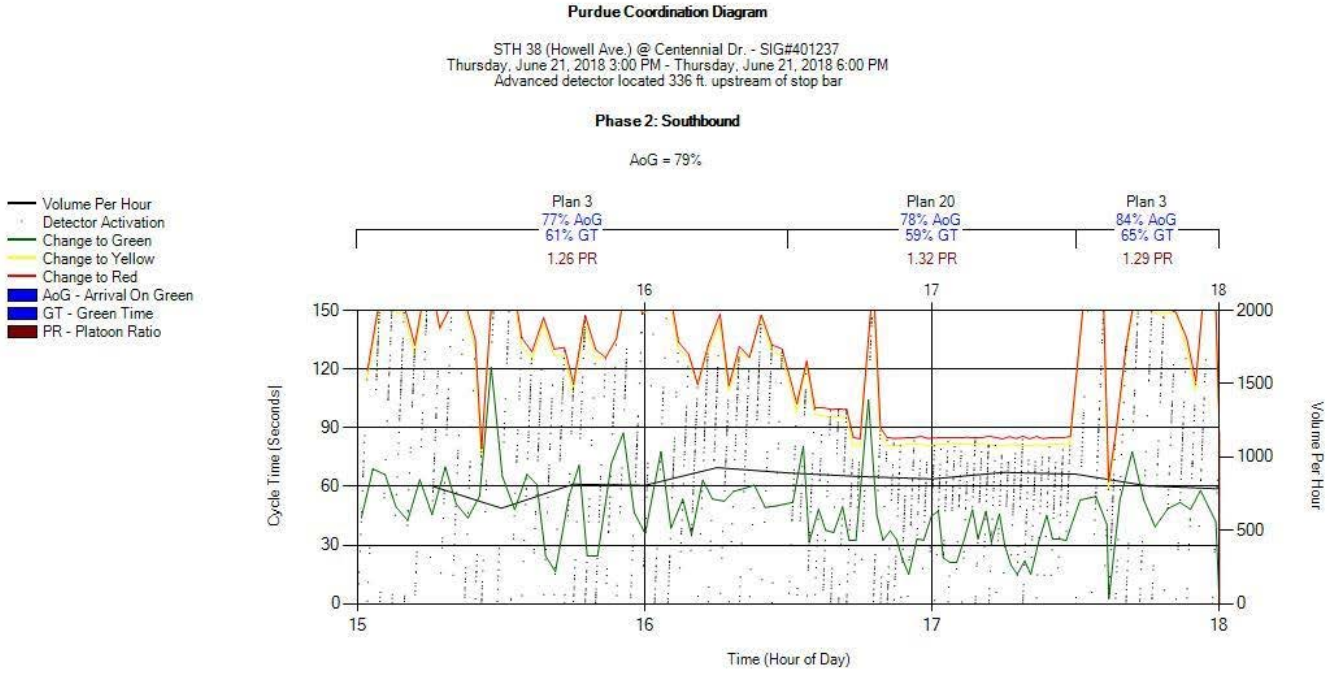
Purdue Coordination Diagram

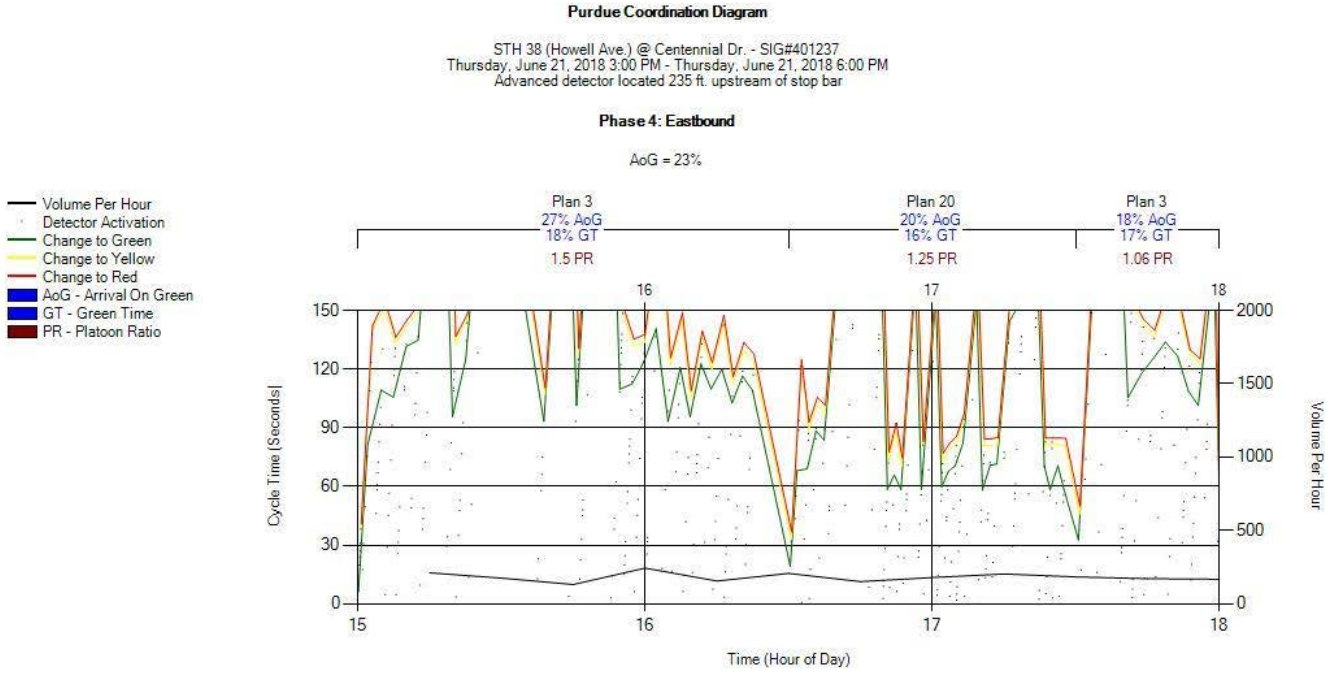
STH 38 (Howell Ave.) @ Centennial Dr. - SIG#401237
Wednesday, June 20, 2018 3:00 PM - Wednesday, June 20, 2018 6:00 PM
Advanced detector located 235 ft. upstream of stop bar

Phase 8: Westbound

AoG = 14%




Purdue Coordination Diagram
STH 38 (Howell Ave.) @ Centennial Dr. - SIG#401237
Thursday, June 21, 2018 3:00 PM - Thursday, June 21, 2018 6:00 PM
Advanced detector located 336 ft. upstream of stop bar
Phase 2: Southbound
AoG = 79%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
77% AoG
61% GT
1.26 PR
Plan 20
78% AoG
59% GT
1.32 PR
Plan 3
84% AoG
65% GT
1.29 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)

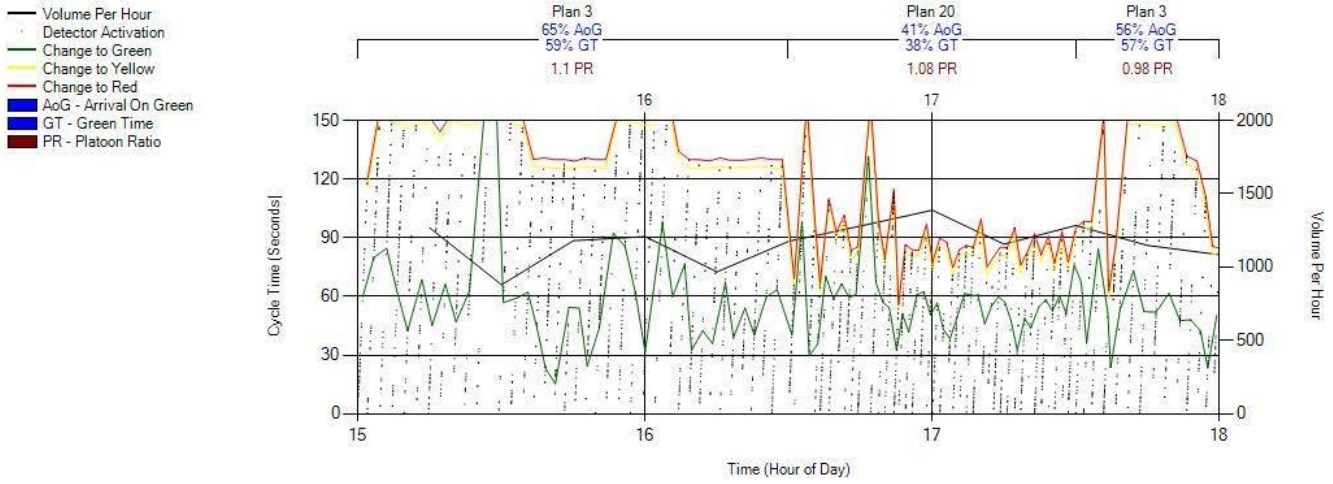

Purdue Coordination Diagram
STH 38 (Howell Ave.) @ Centennial Dr. - SIG#401237
Thursday, June 21, 2018 3:00 PM - Thursday, June 21, 2018 6:00 PM
Advanced detector located 235 ft. upstream of stop bar
Phase 4: Eastbound
AoG = 23%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
27% AoG
18% GT
1.5 PR
Plan 20
20% AoG
16% GT
1.25 PR
Plan 3
18% AoG
17% GT
1.06 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)

Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Centennial Dr. - SIG#401237
Thursday, June 21, 2018 3:00 PM - Thursday, June 21, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar

Phase 6: Northbound

AoG = 55%

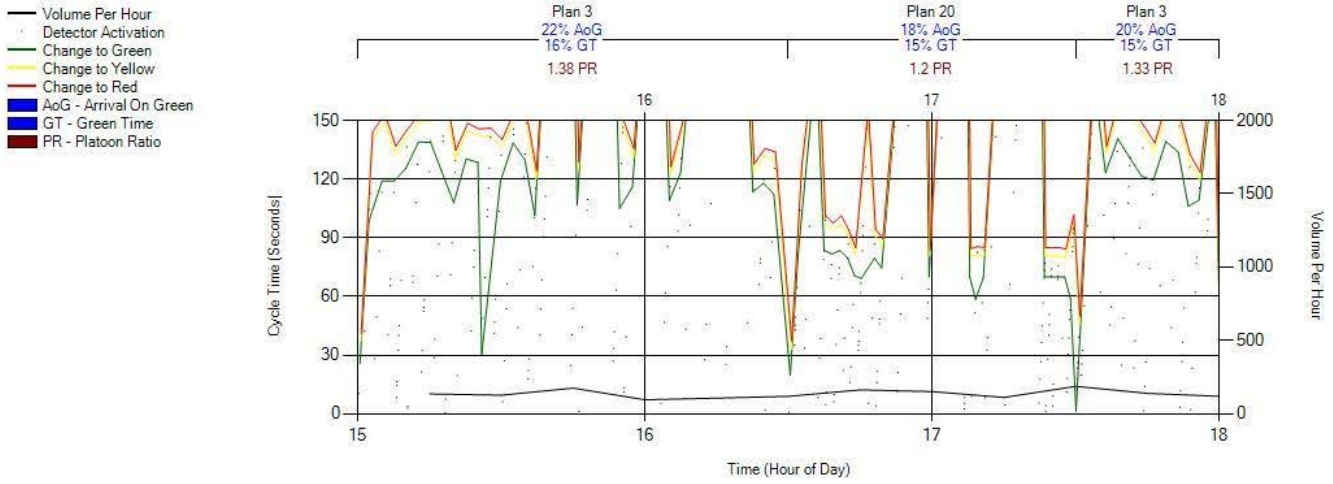


Purdue Coordination Diagram

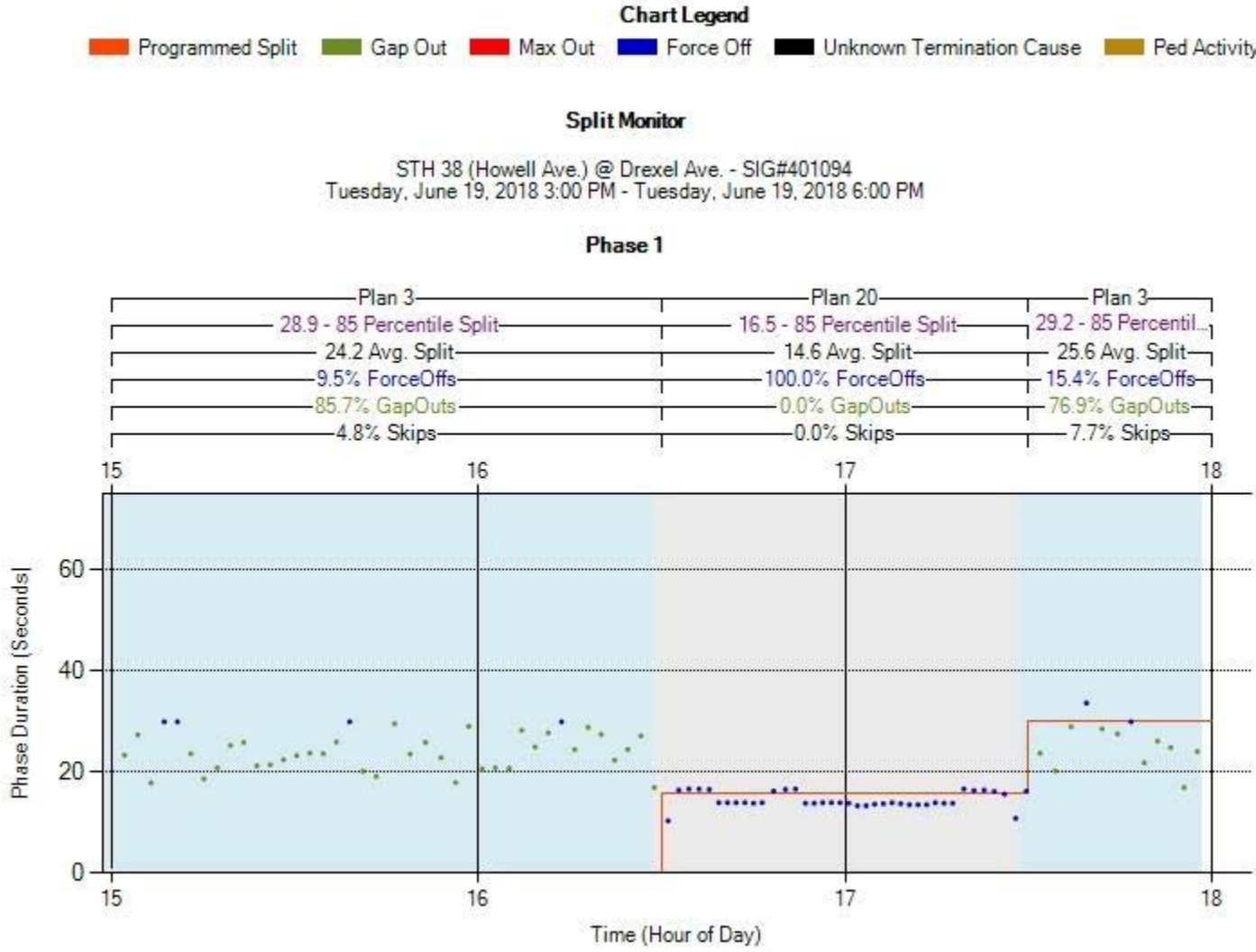
STH 38 (Howell Ave.) @ Centennial Dr. - SIG#401237
Thursday, June 21, 2018 3:00 PM - Thursday, June 21, 2018 6:00 PM
Advanced detector located 235 ft. upstream of stop bar

Phase 8: Westbound

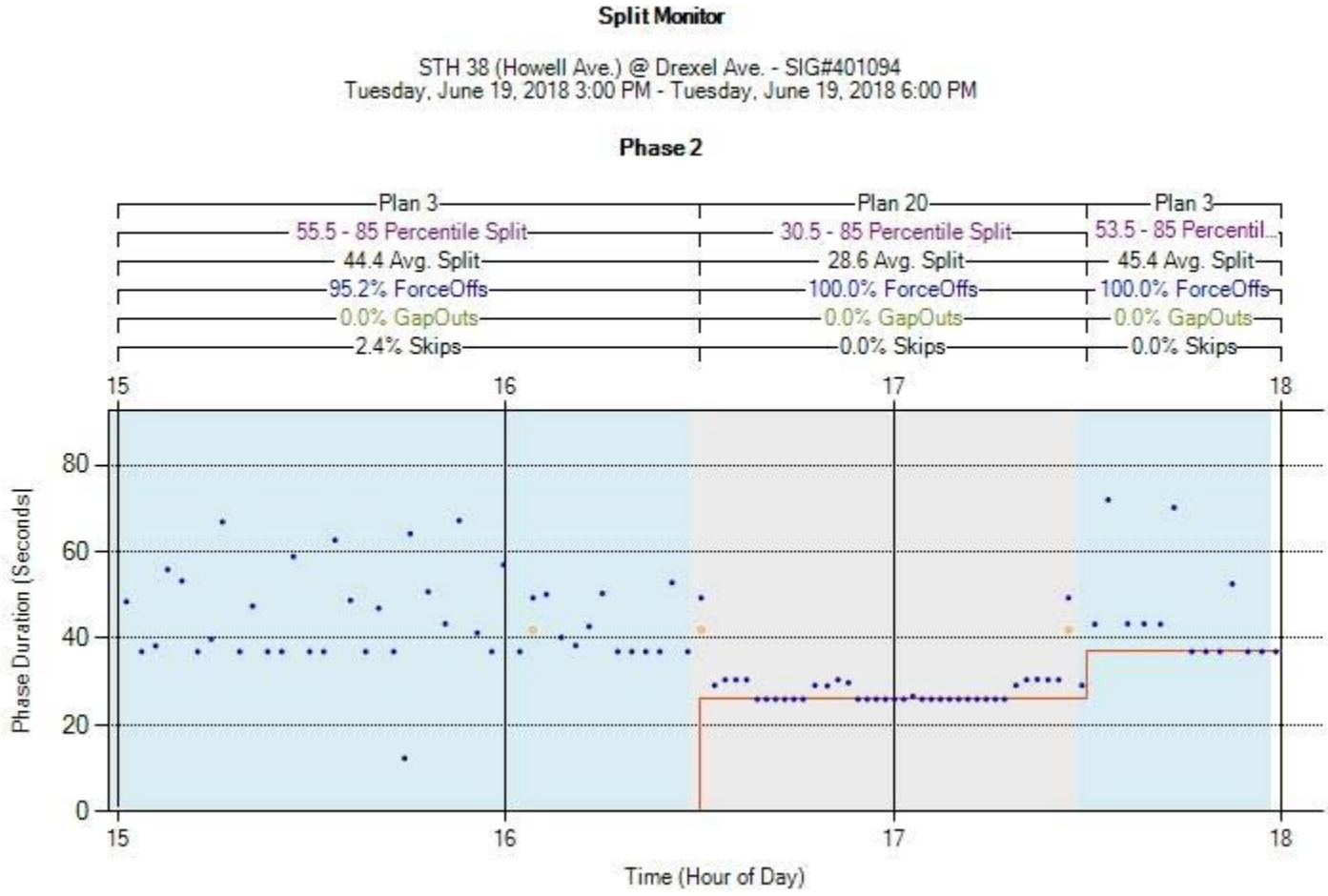
AoG = 20%



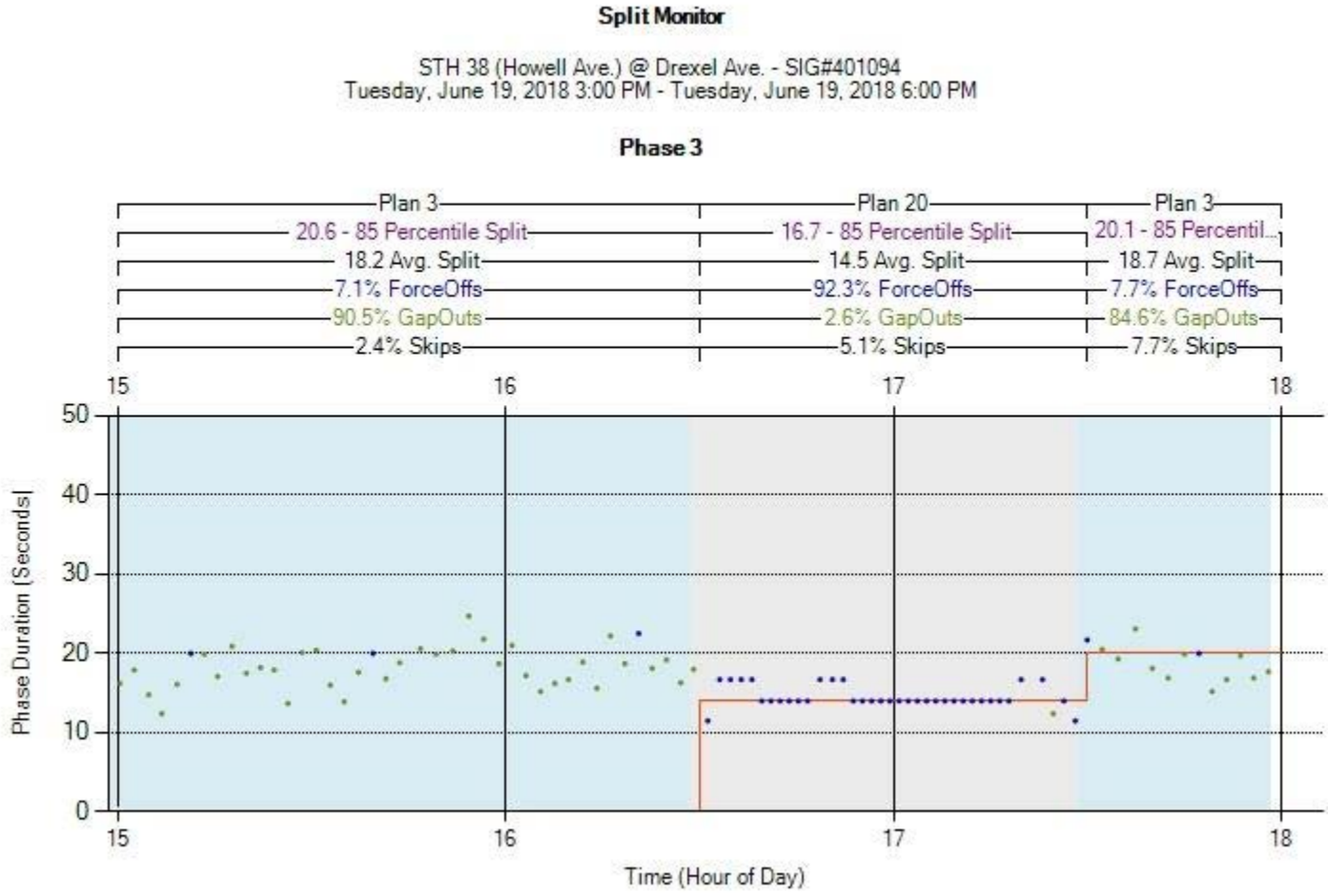
WIS 38 Corridor – STH 38 & Drexel Ave.
HCS Timings
6/19/2018 – 3:00 PM – 6:00 PM



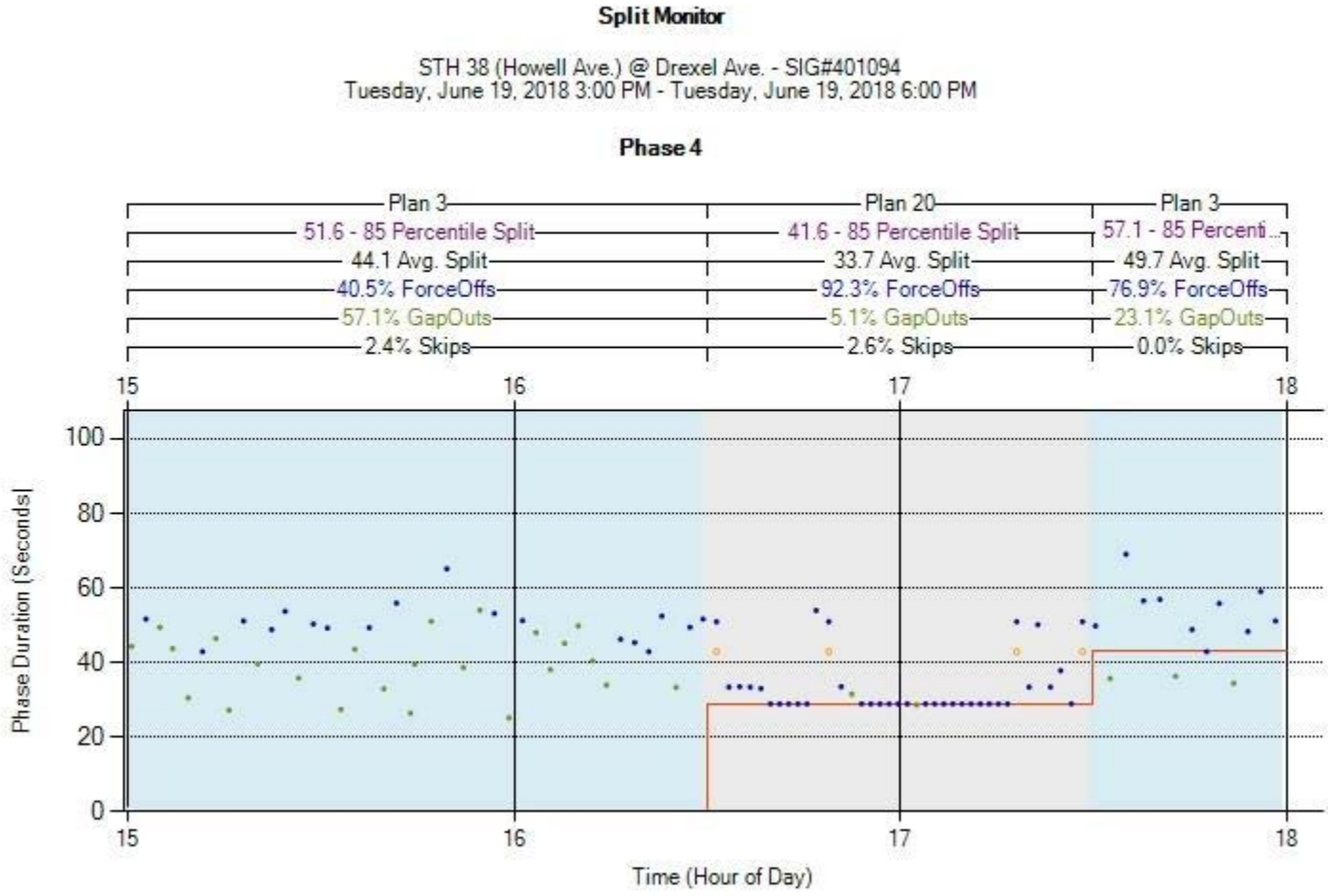
WIS 38 Corridor – STH 38 & Drexel Ave.
HCS Timings
6/19/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Drexel Ave.
HCS Timings
6/19/2018 – 3:00 PM – 6:00 PM

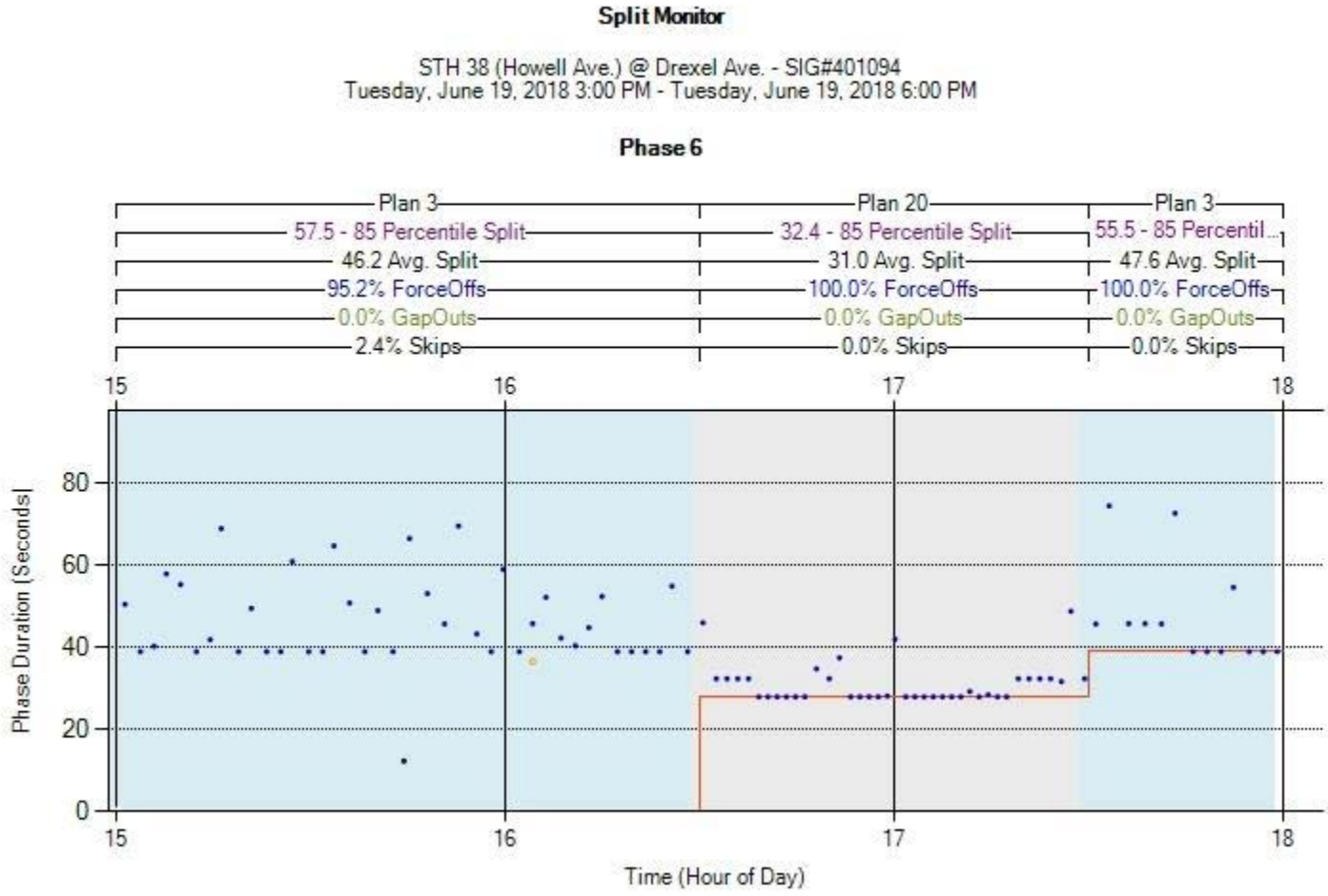


WIS 38 Corridor – STH 38 & Drexel Ave.
HCS Timings
6/19/2018 – 3:00 PM – 6:00 PM



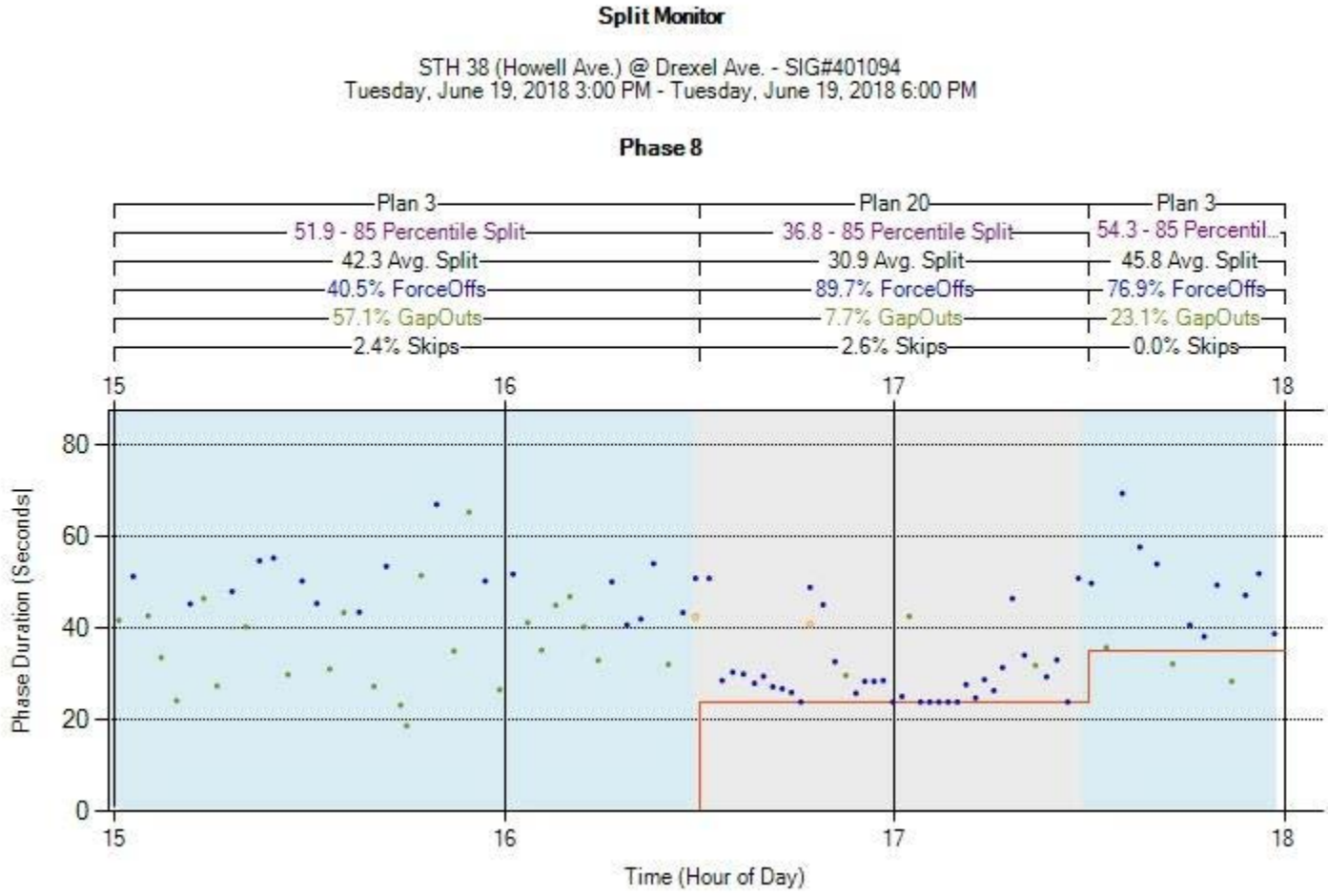
WIS 38 Corridor – STH 38 & Drexel Ave.
HCS Timings
6/19/2018 – 3:00 PM – 6:00 PM

WIS 38 Corridor – STH 38 & Drexel Ave.
HCS Timings
6/19/2018 – 3:00 PM – 6:00 PM

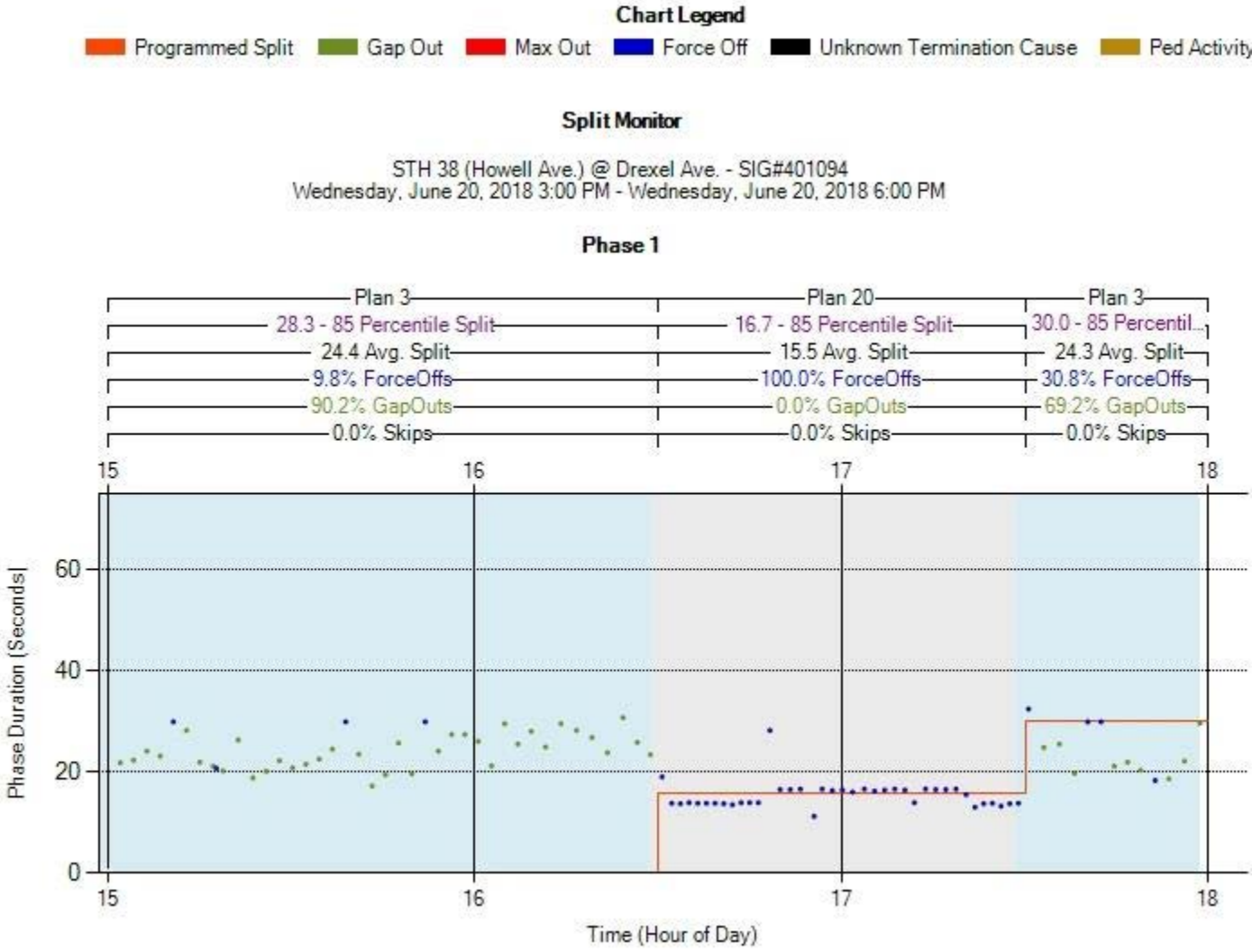


WIS 38 Corridor – STH 38 & Drexel Ave.
HCS Timings
6/19/2018 – 3:00 PM – 6:00 PM

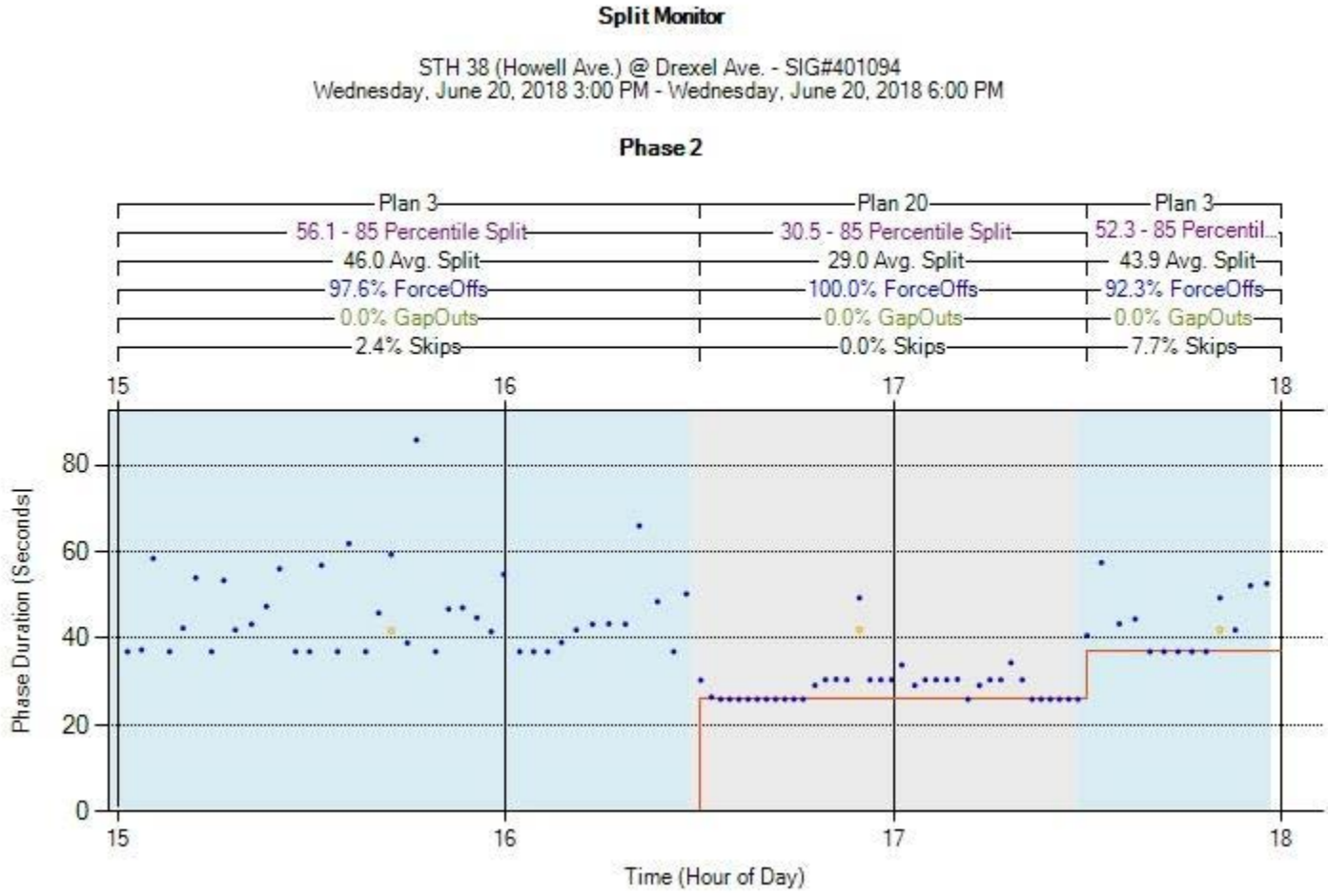
WIS 38 Corridor – STH 38 & Drexel Ave.
HCS Timings
6/19/2018 – 3:00 PM – 6:00 PM



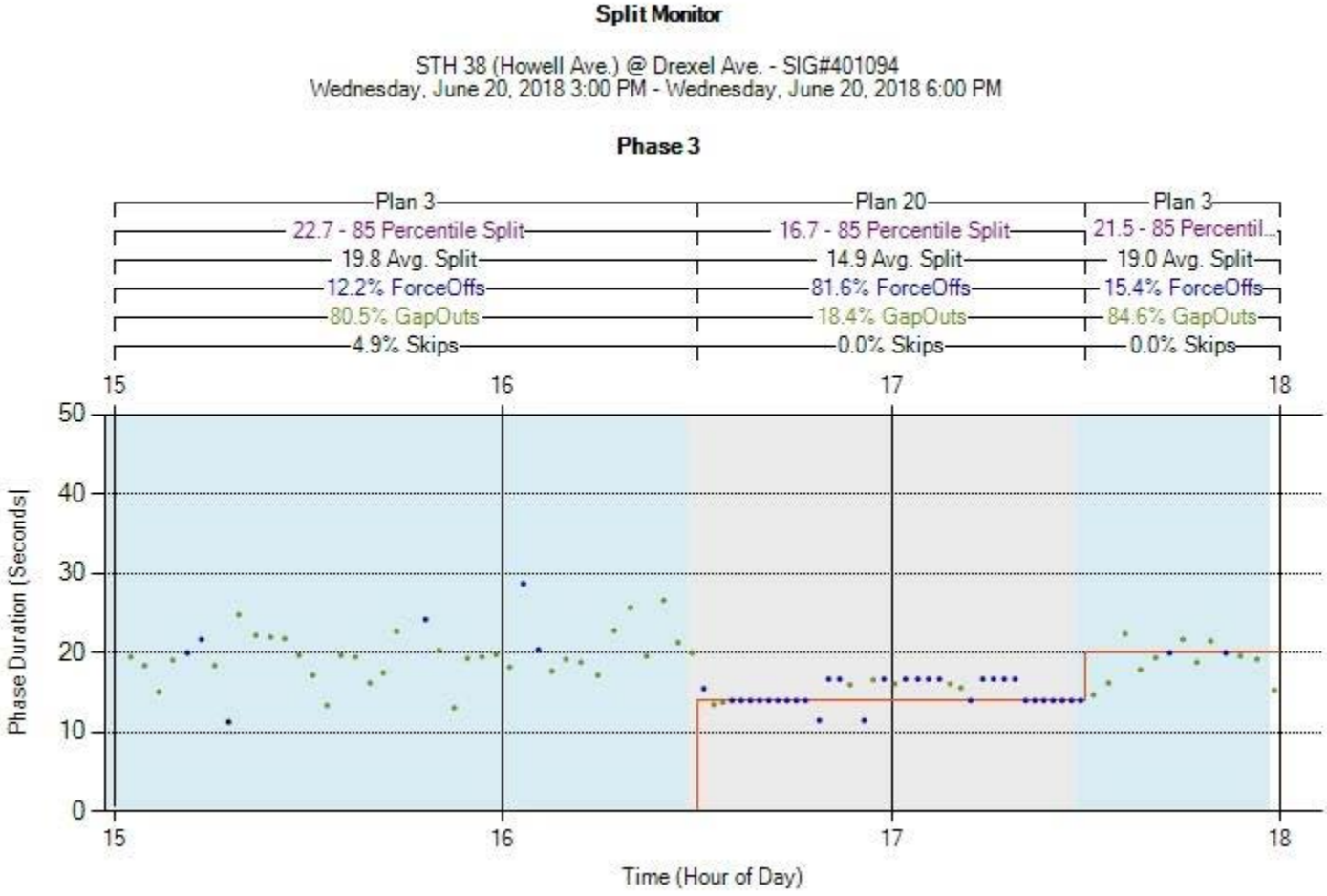
WIS 38 Corridor – STH 38 & Drexel Ave.
HCS Timings
6/20/2018 – 3:00 PM – 6:00 PM



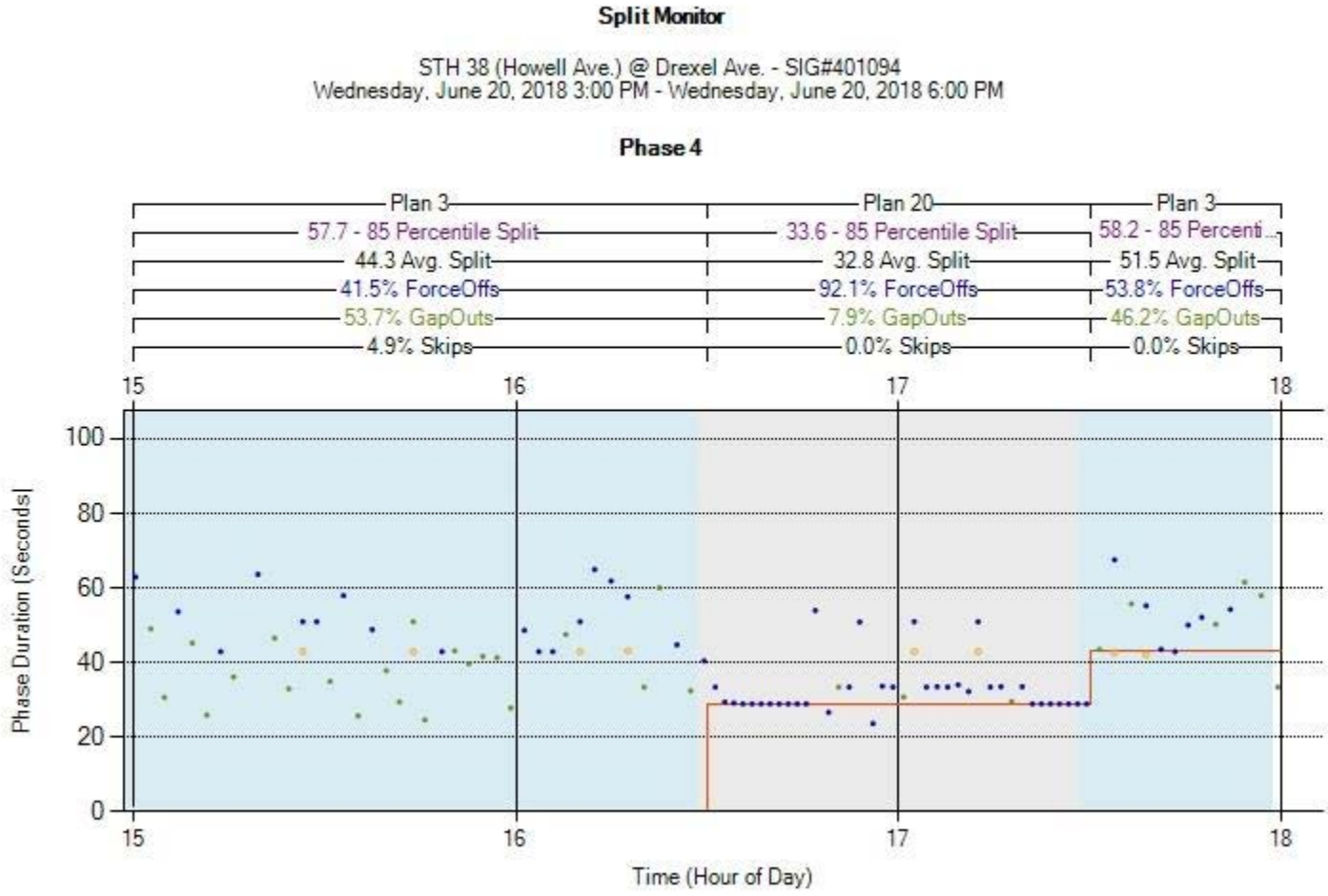
WIS 38 Corridor – STH 38 & Drexel Ave.
HCS Timings
6/20/2018 – 3:00 PM – 6:00 PM



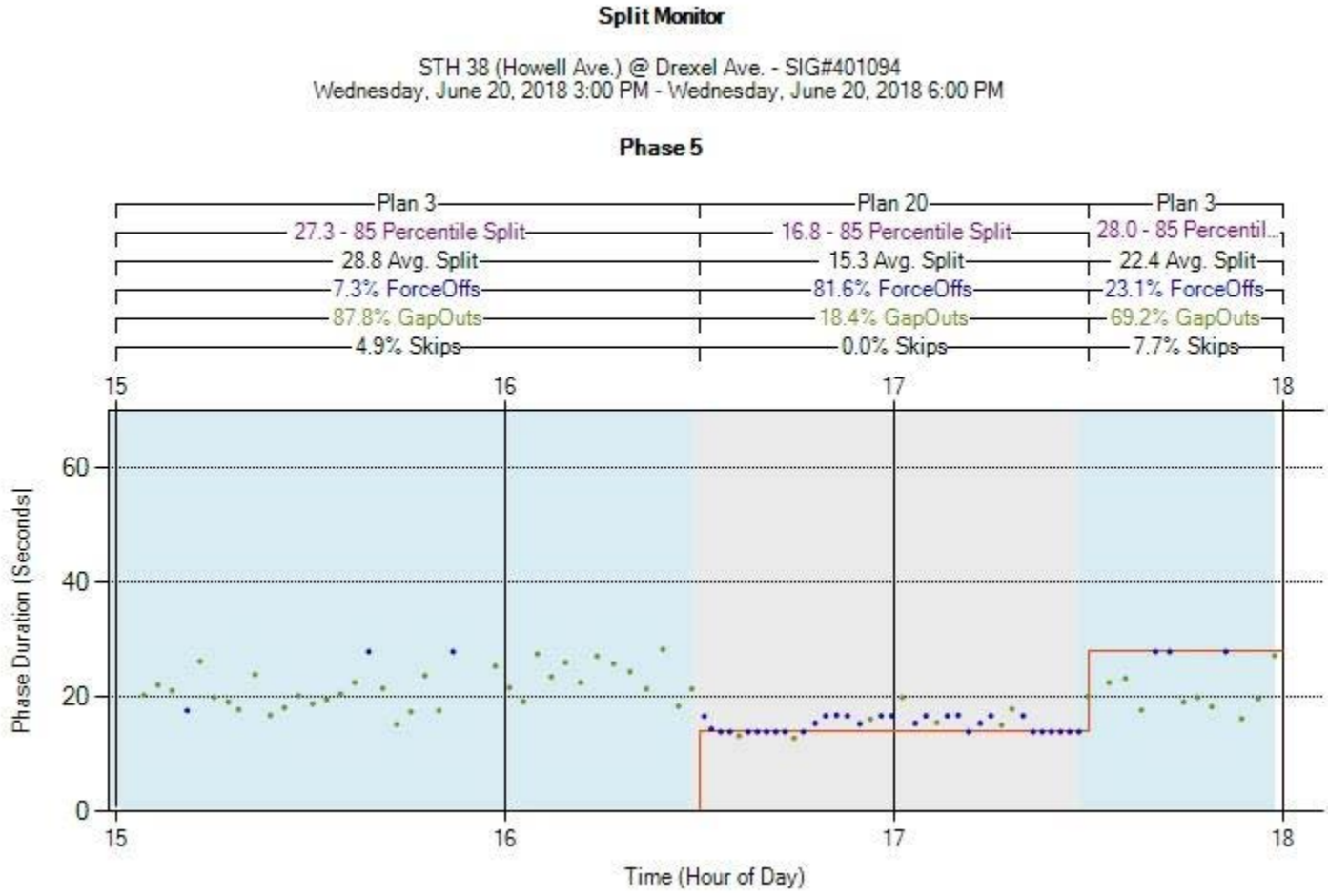
WIS 38 Corridor – STH 38 & Drexel Ave.
HCS Timings
6/20/2018 – 3:00 PM – 6:00 PM



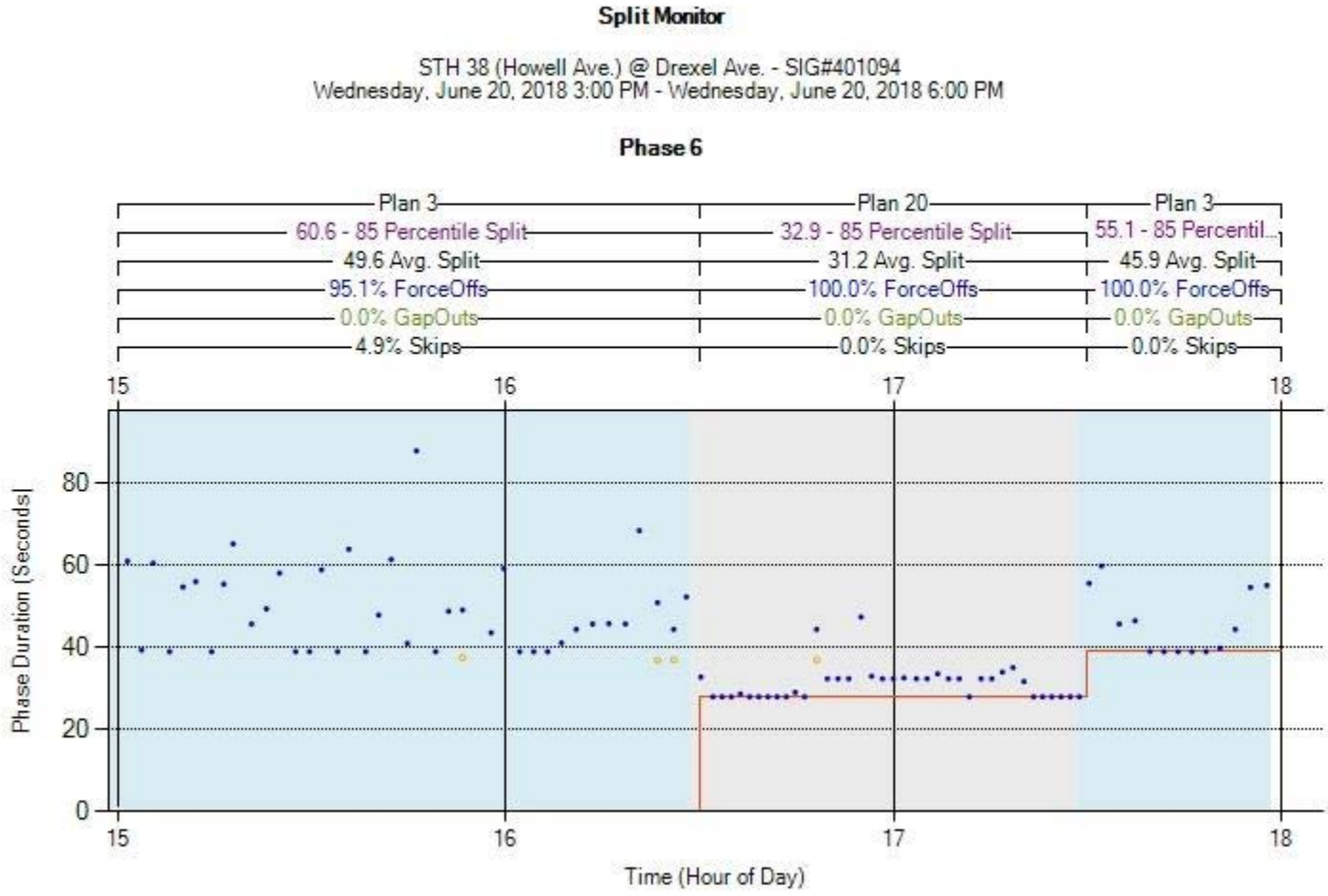
WIS 38 Corridor – STH 38 & Drexel Ave.
HCS Timings
6/20/2018 – 3:00 PM – 6:00 PM



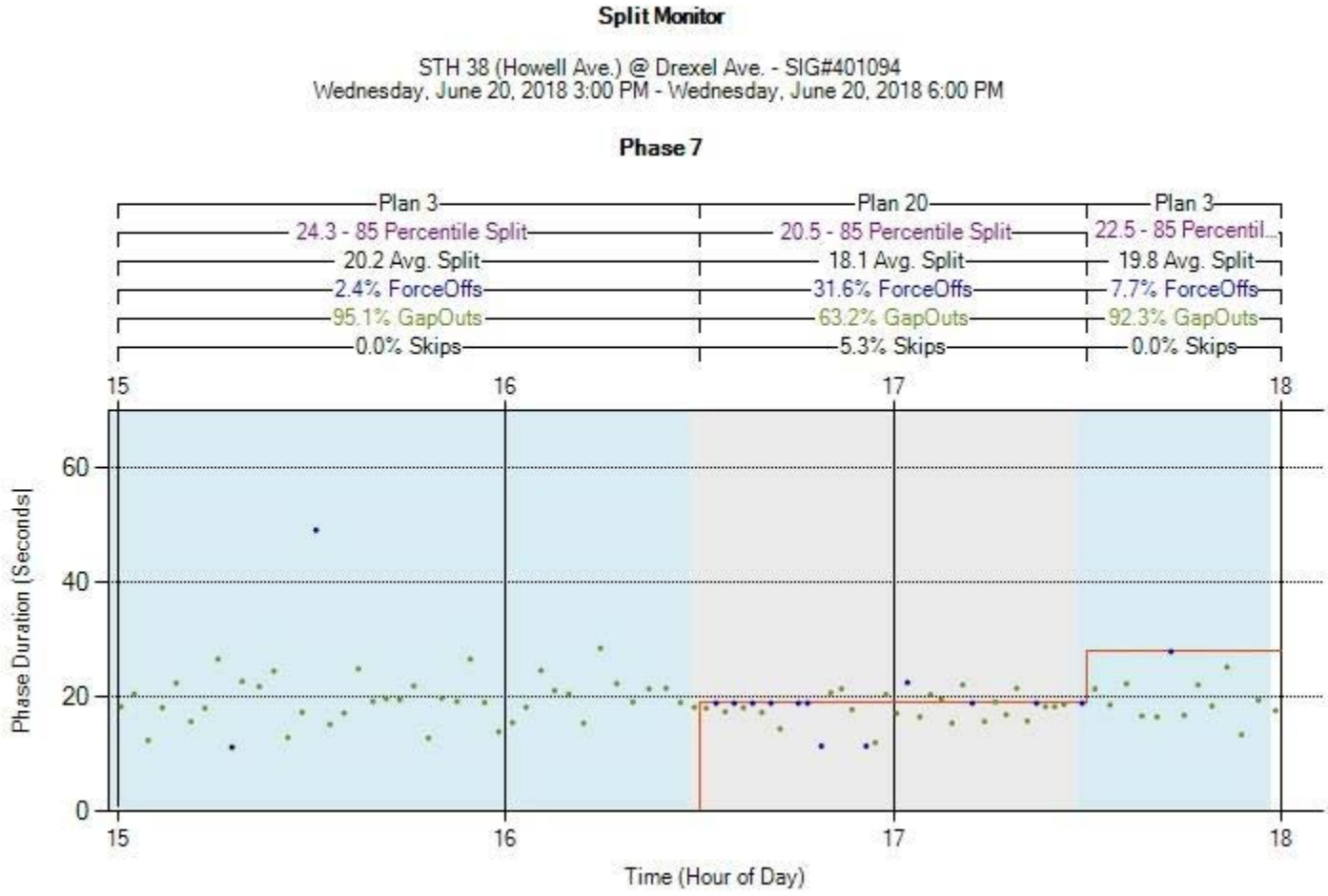
WIS 38 Corridor – STH 38 & Drexel Ave.
HCS Timings
6/20/2018 – 3:00 PM – 6:00 PM



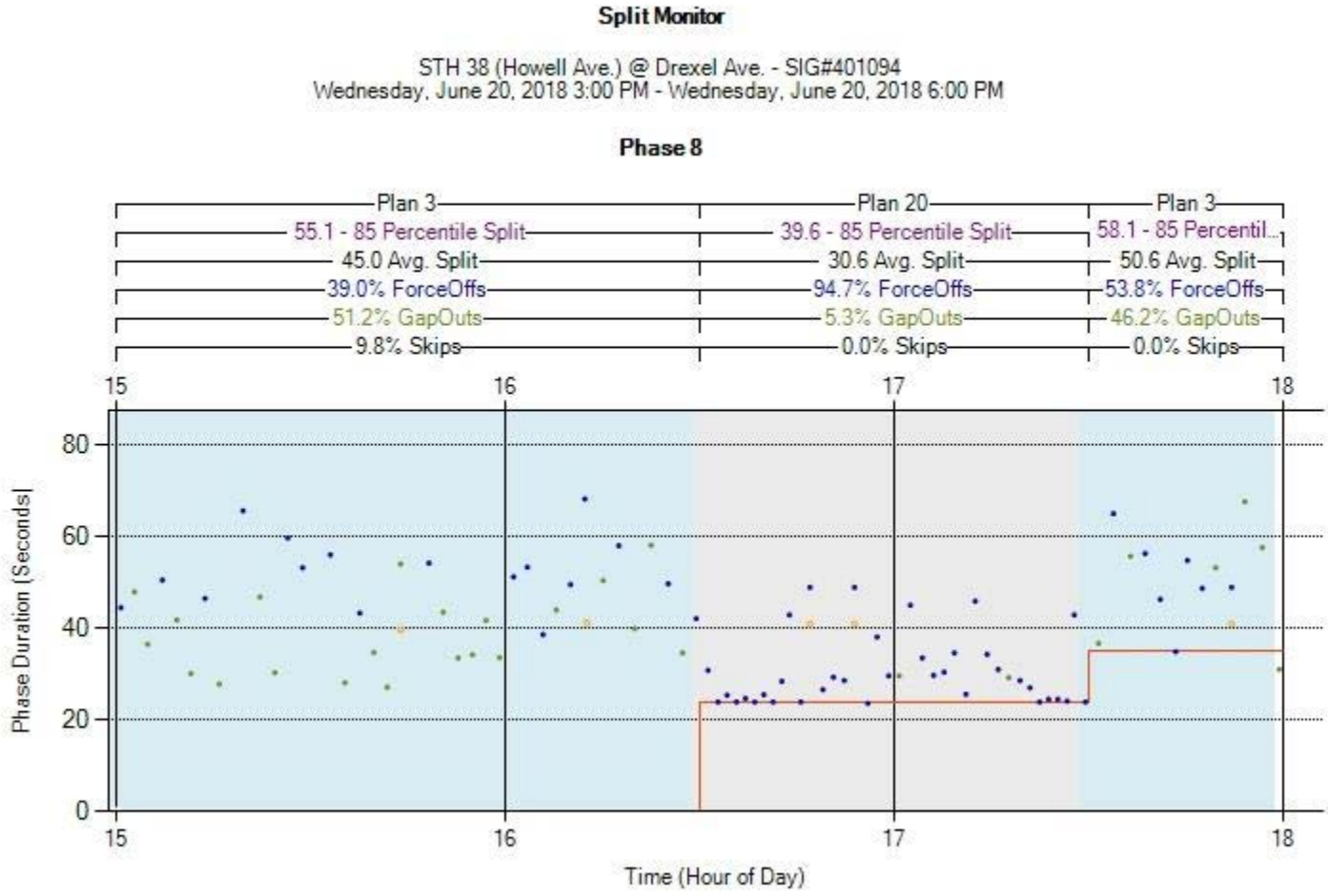
WIS 38 Corridor – STH 38 & Drexel Ave.
HCS Timings
6/20/2018 – 3:00 PM – 6:00 PM



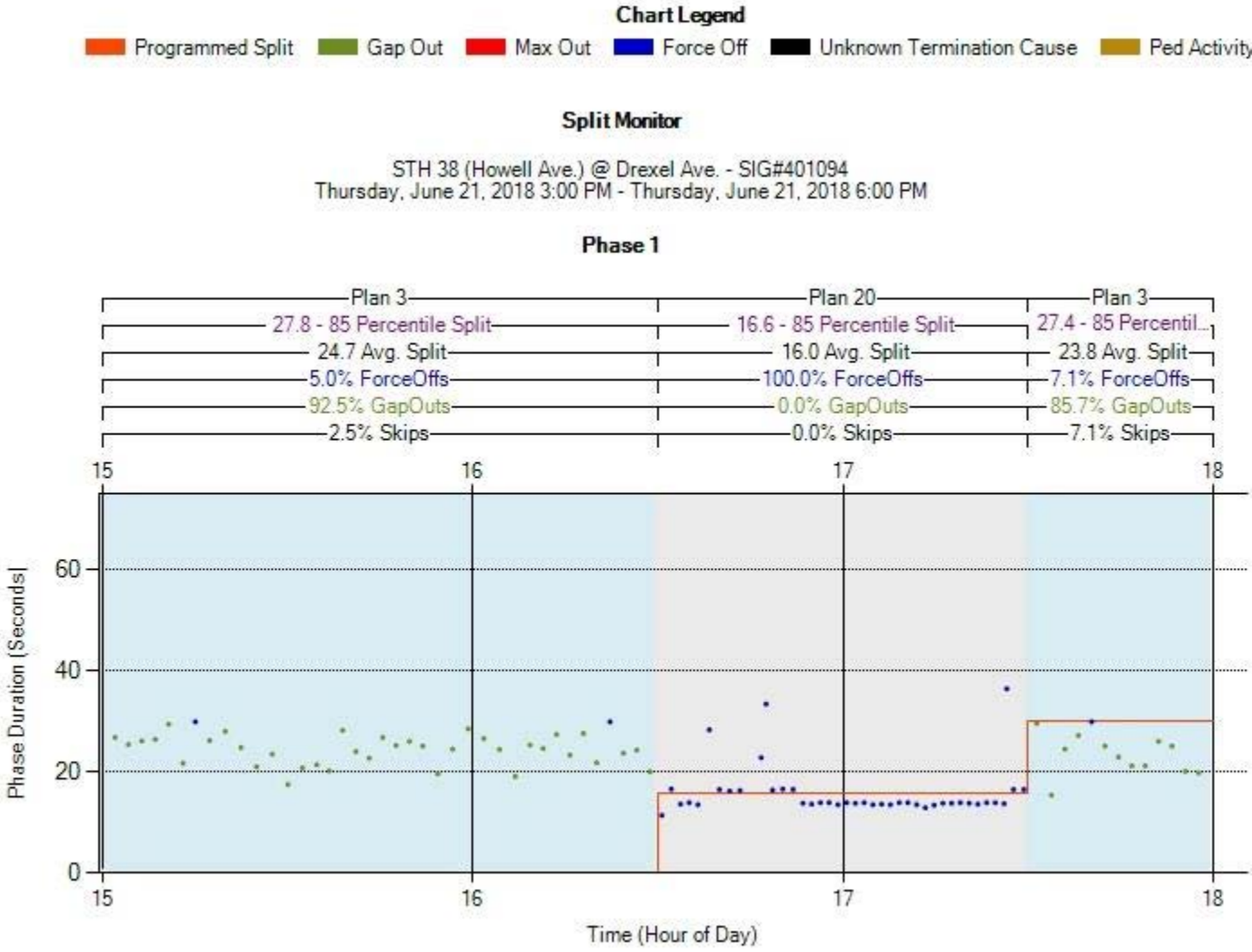
WIS 38 Corridor – STH 38 & Drexel Ave.
HCS Timings
6/20/2018 – 3:00 PM – 6:00 PM



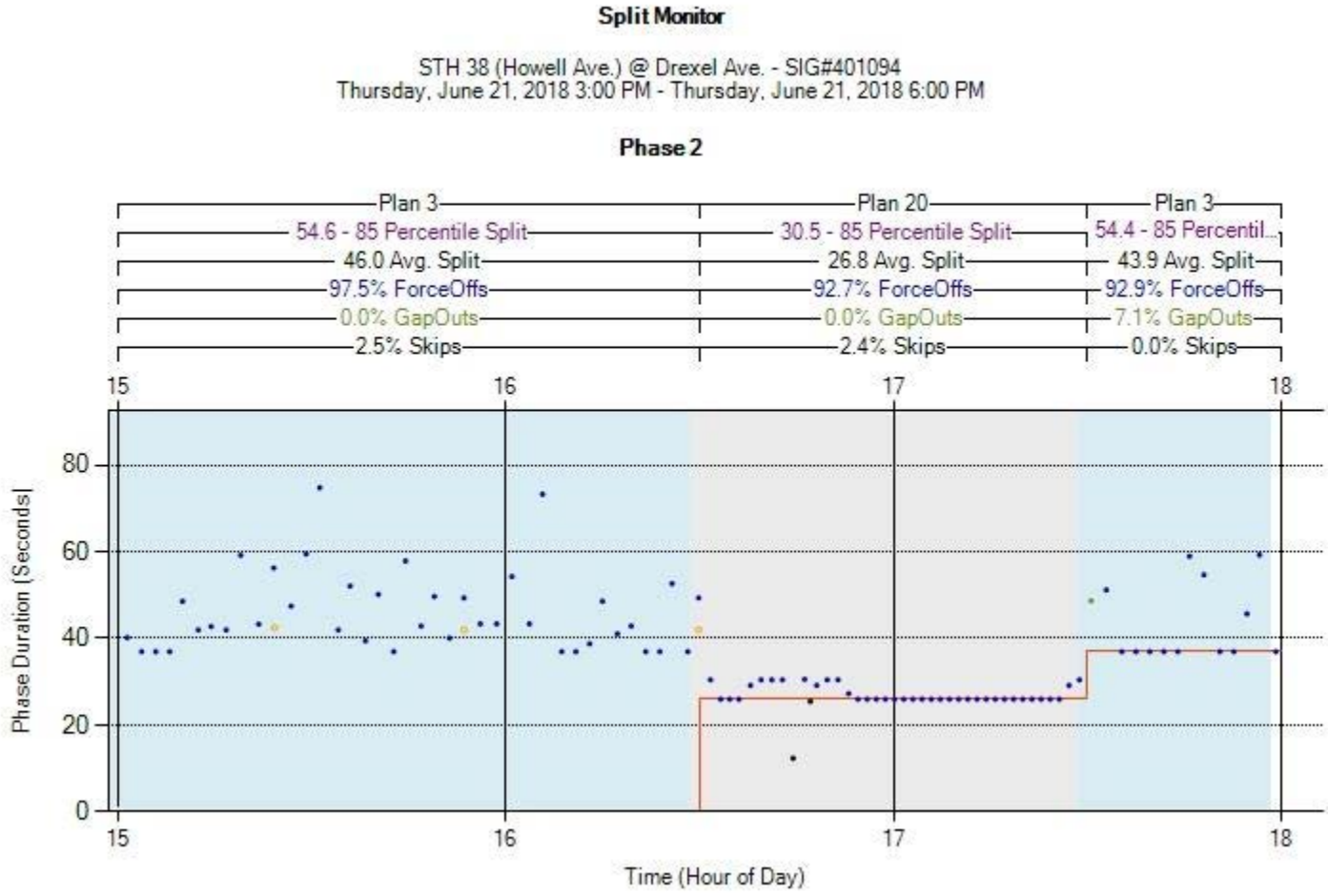
WIS 38 Corridor – STH 38 & Drexel Ave.
HCS Timings
6/20/2018 – 3:00 PM – 6:00 PM



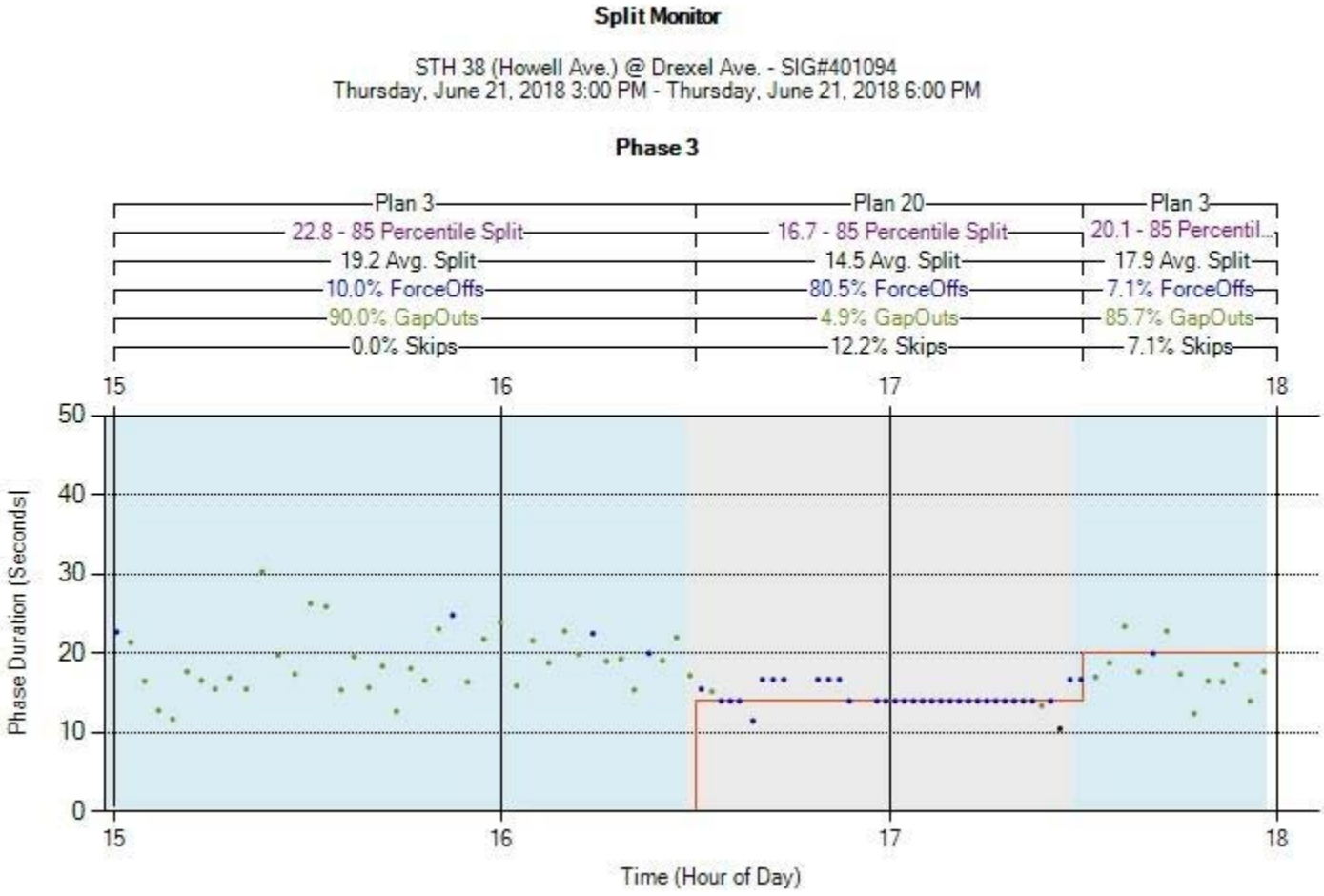
WIS 38 Corridor – STH 38 & Drexel Ave.
HCS Timings
6/21/2018 – 3:00 PM – 6:00 PM



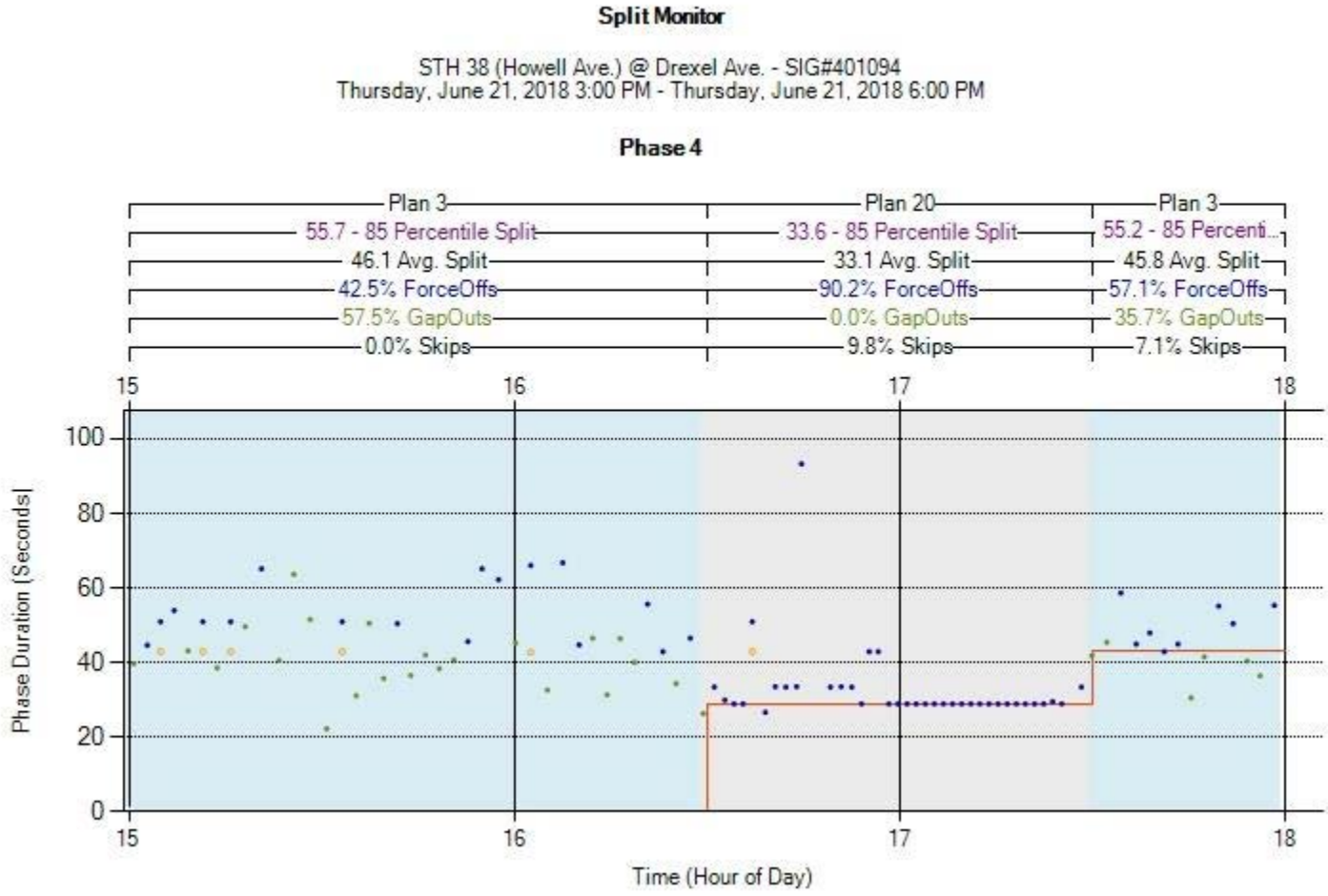
WIS 38 Corridor – STH 38 & Drexel Ave.
HCS Timings
6/21/2018 – 3:00 PM – 6:00 PM



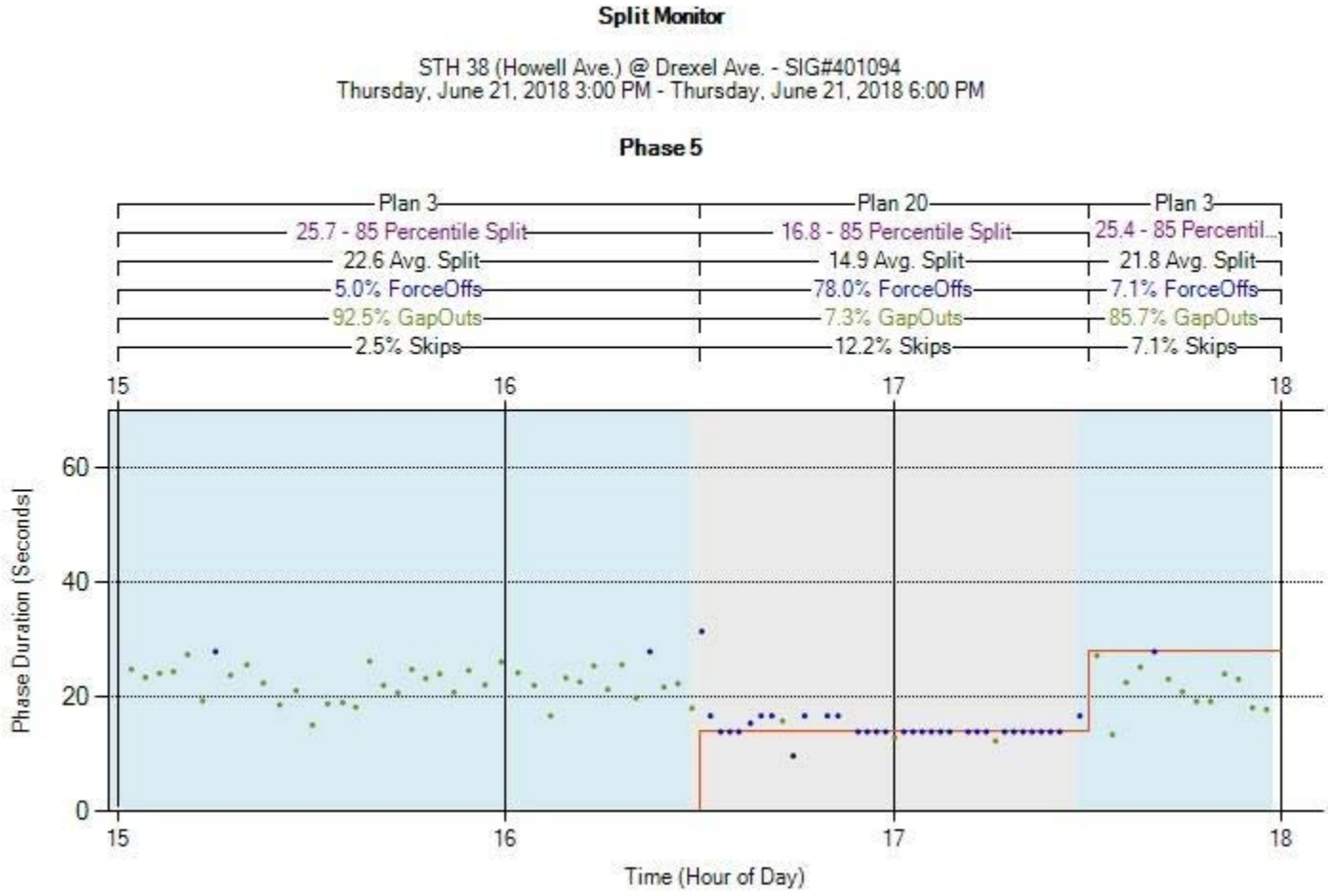
WIS 38 Corridor – STH 38 & Drexel Ave.
HCS Timings
6/21/2018 – 3:00 PM – 6:00 PM



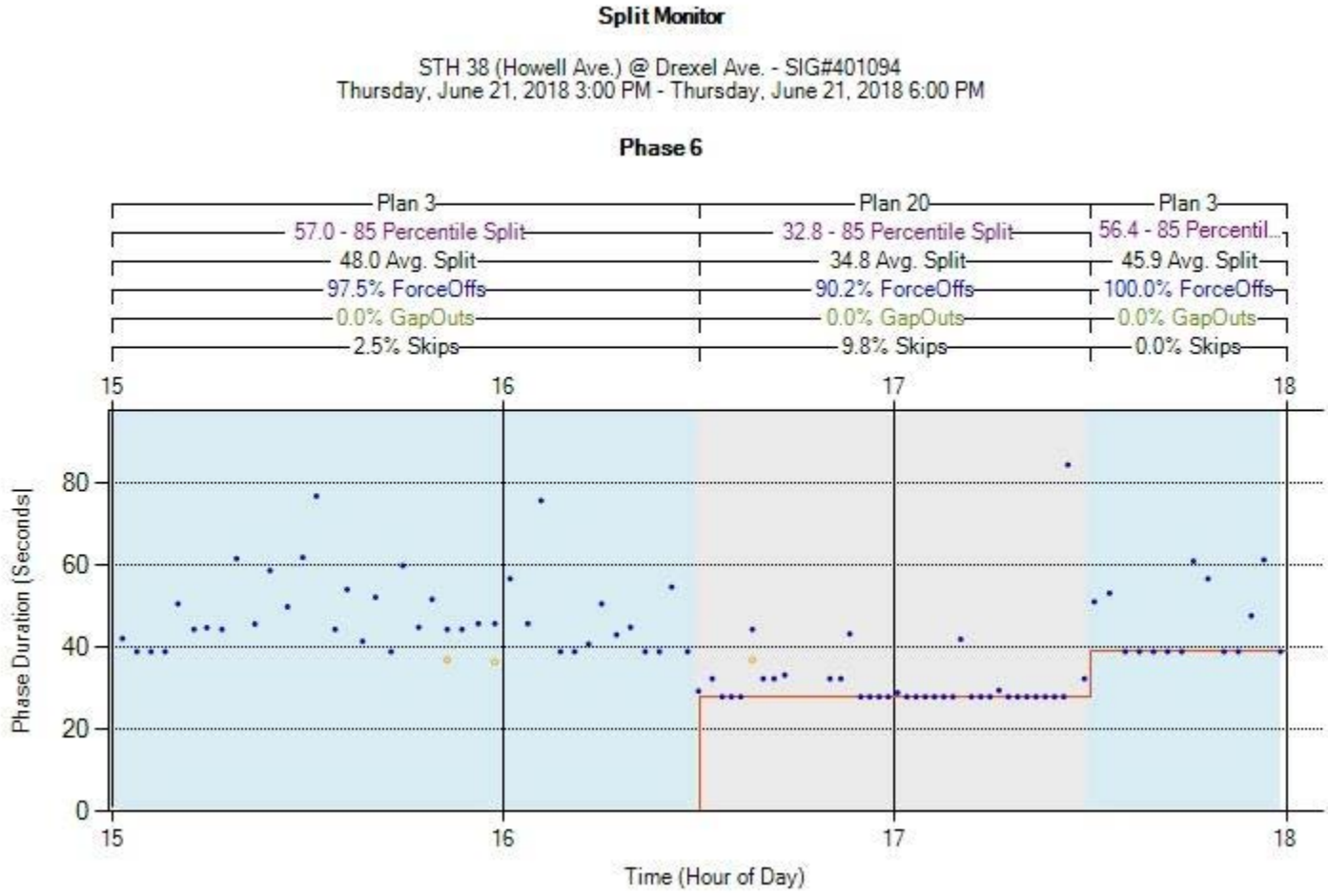
WIS 38 Corridor – STH 38 & Drexel Ave.
HCS Timings
6/21/2018 – 3:00 PM – 6:00 PM



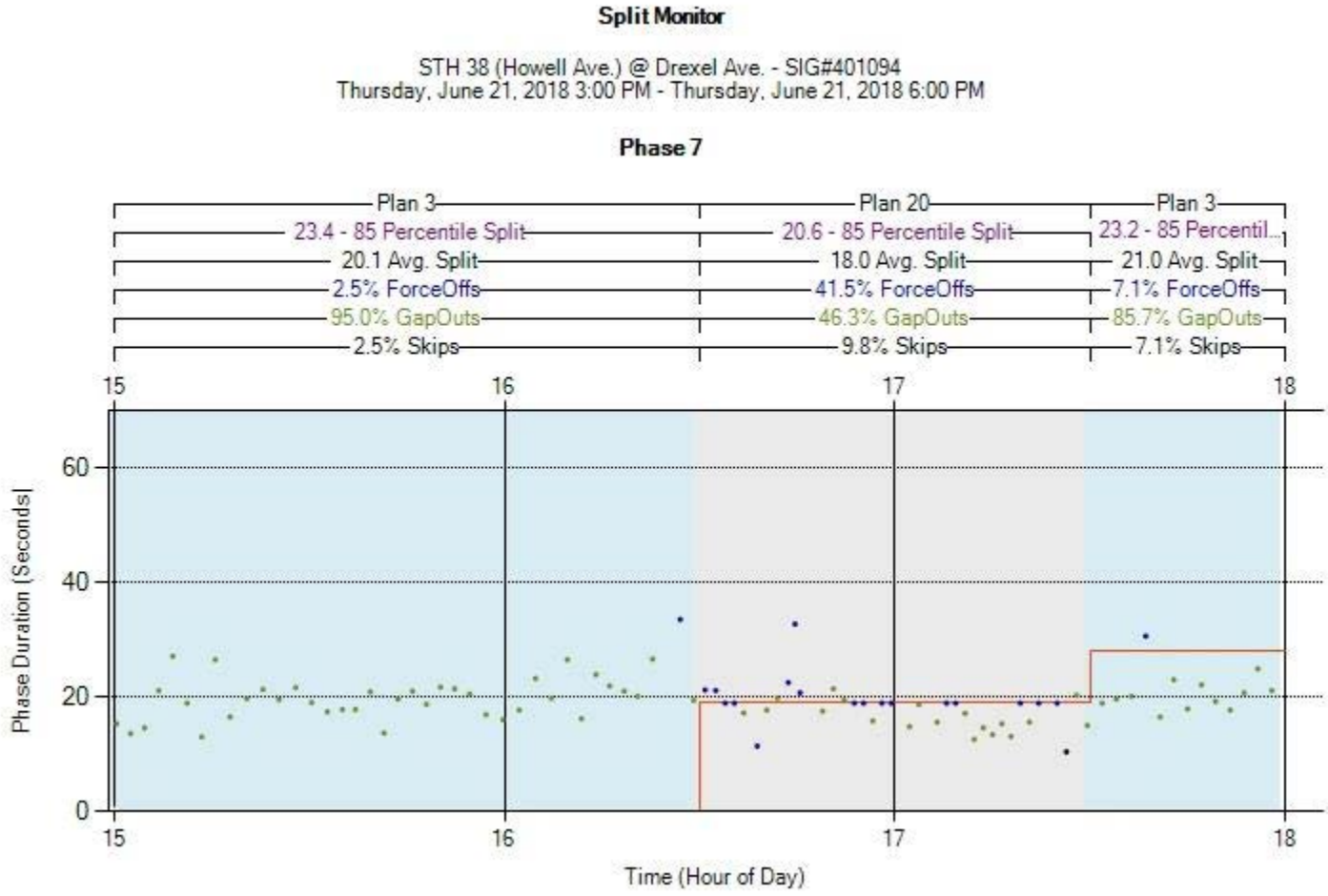
WIS 38 Corridor – STH 38 & Drexel Ave.
HCS Timings
6/21/2018 – 3:00 PM – 6:00 PM



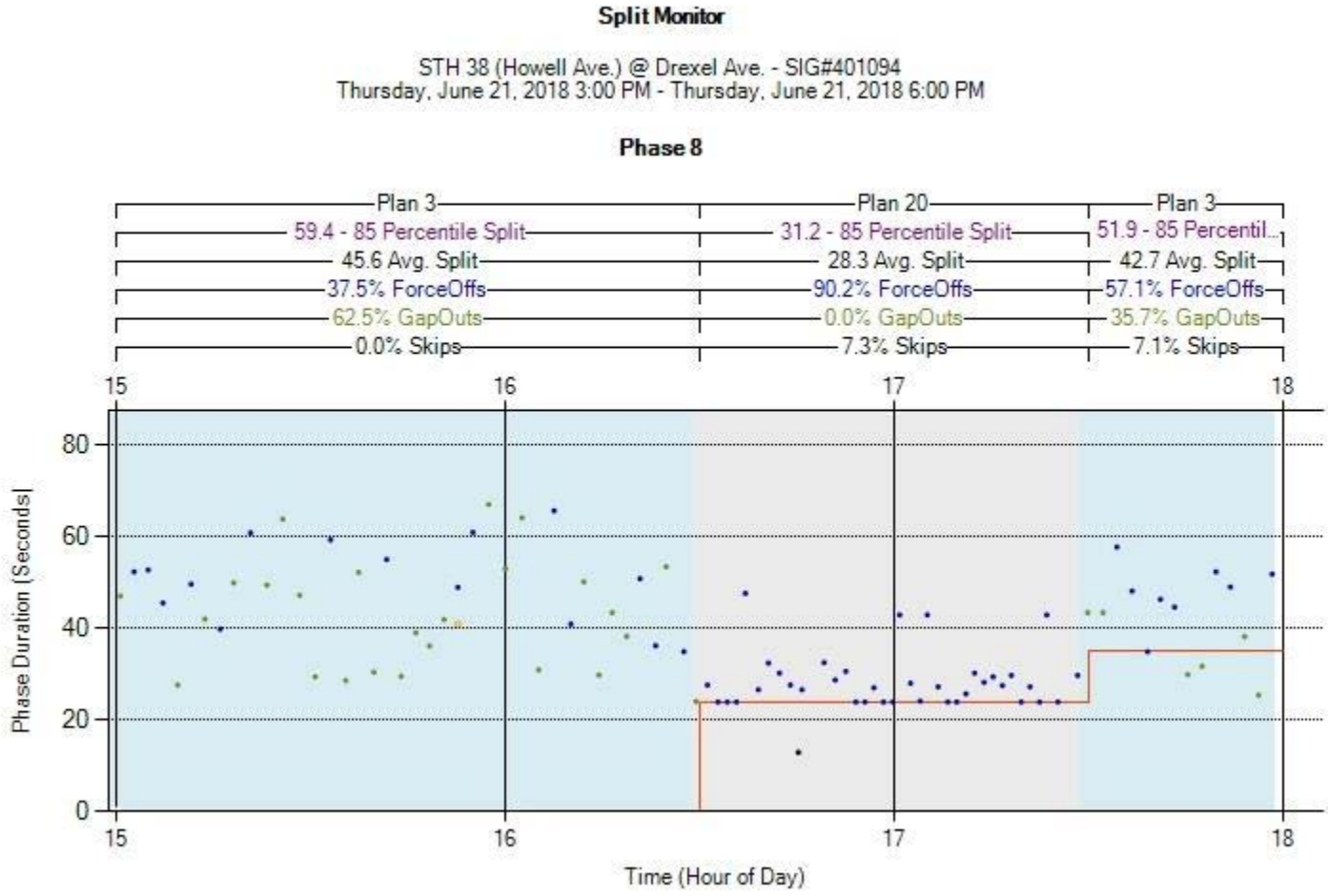
WIS 38 Corridor – STH 38 & Drexel Ave.
HCS Timings
6/21/2018 – 3:00 PM – 6:00 PM



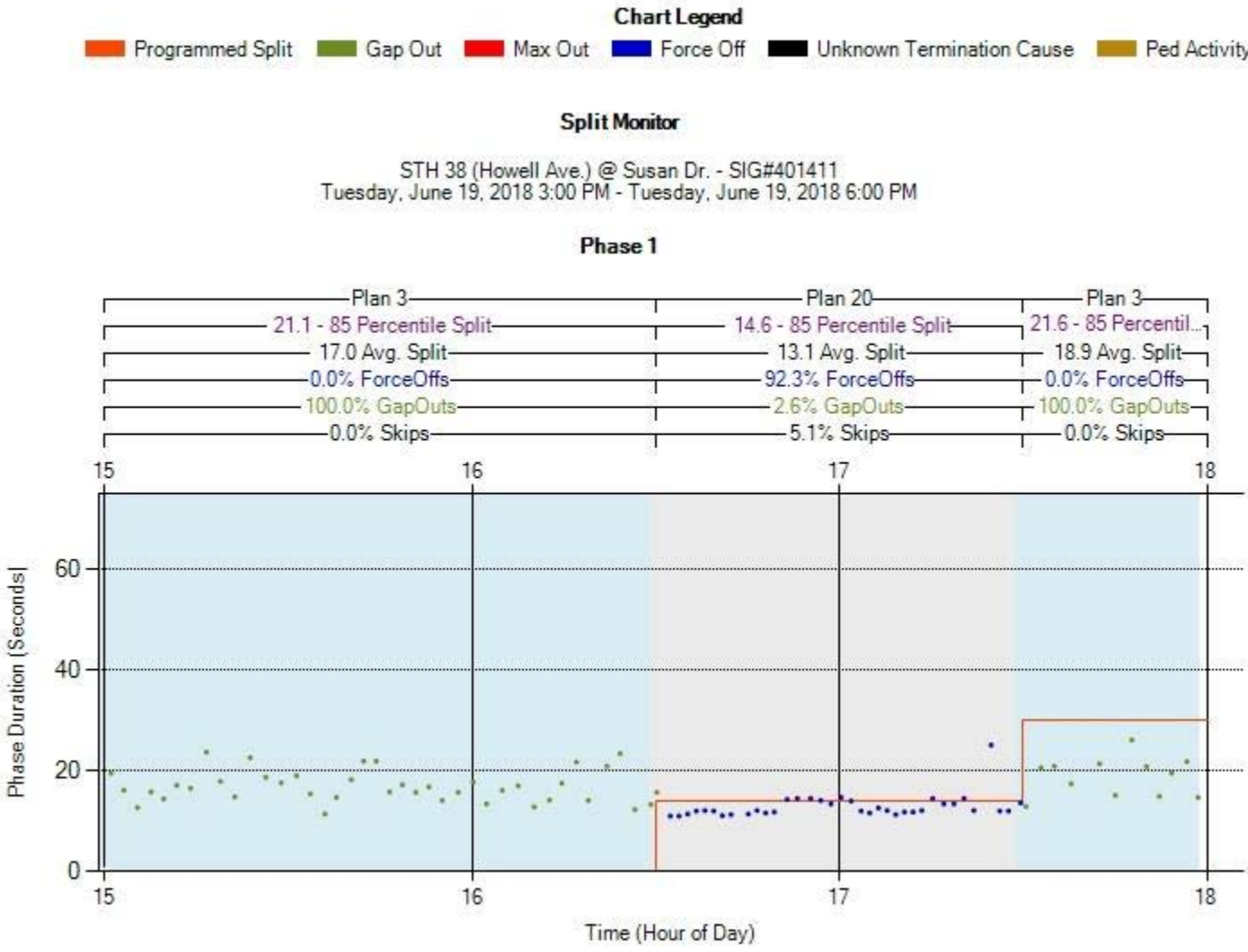
WIS 38 Corridor – STH 38 & Drexel Ave.
HCS Timings
6/21/2018 – 3:00 PM – 6:00 PM



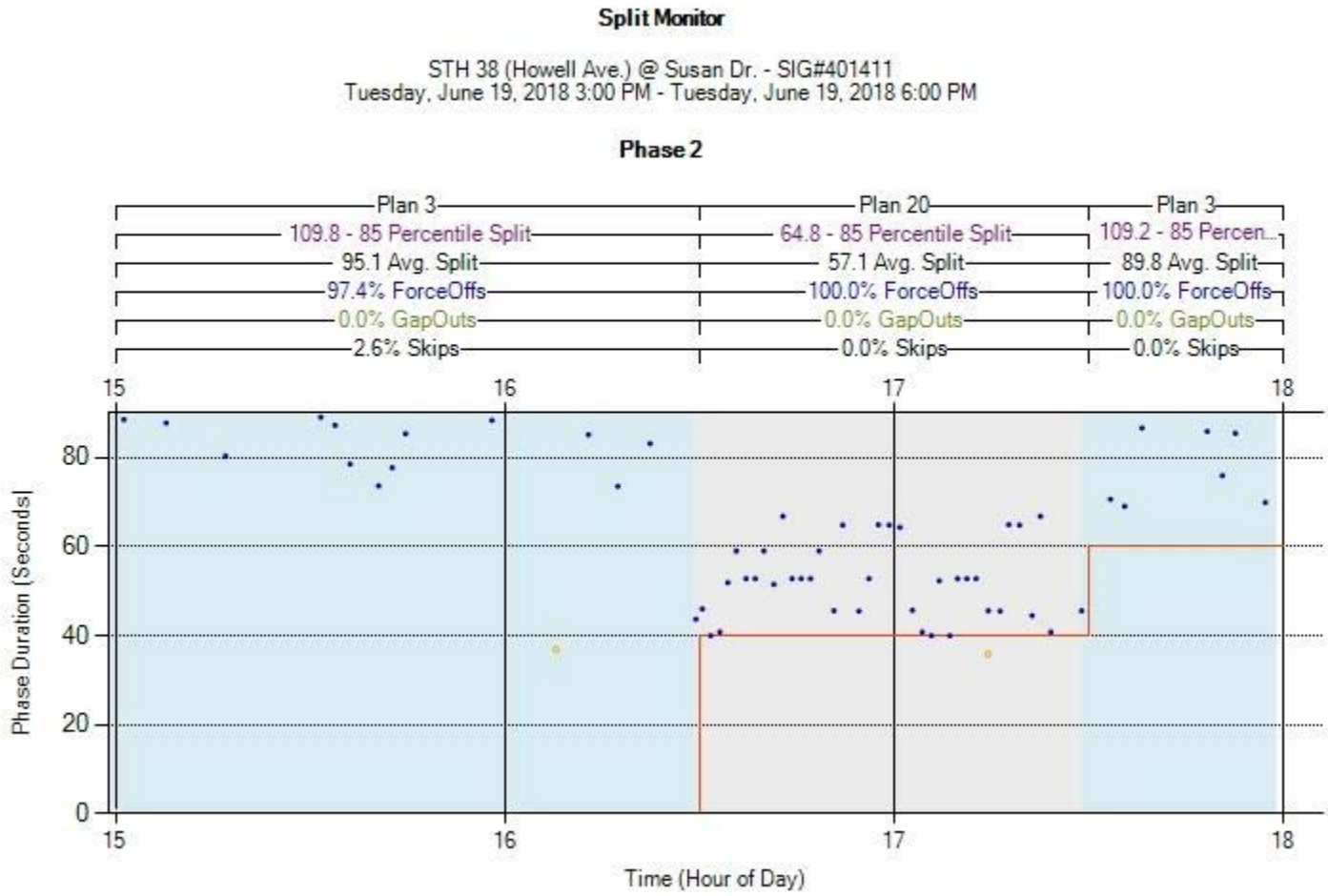
WIS 38 Corridor – STH 38 & Drexel Ave.
HCS Timings
6/21/2018 – 3:00 PM – 6:00 PM



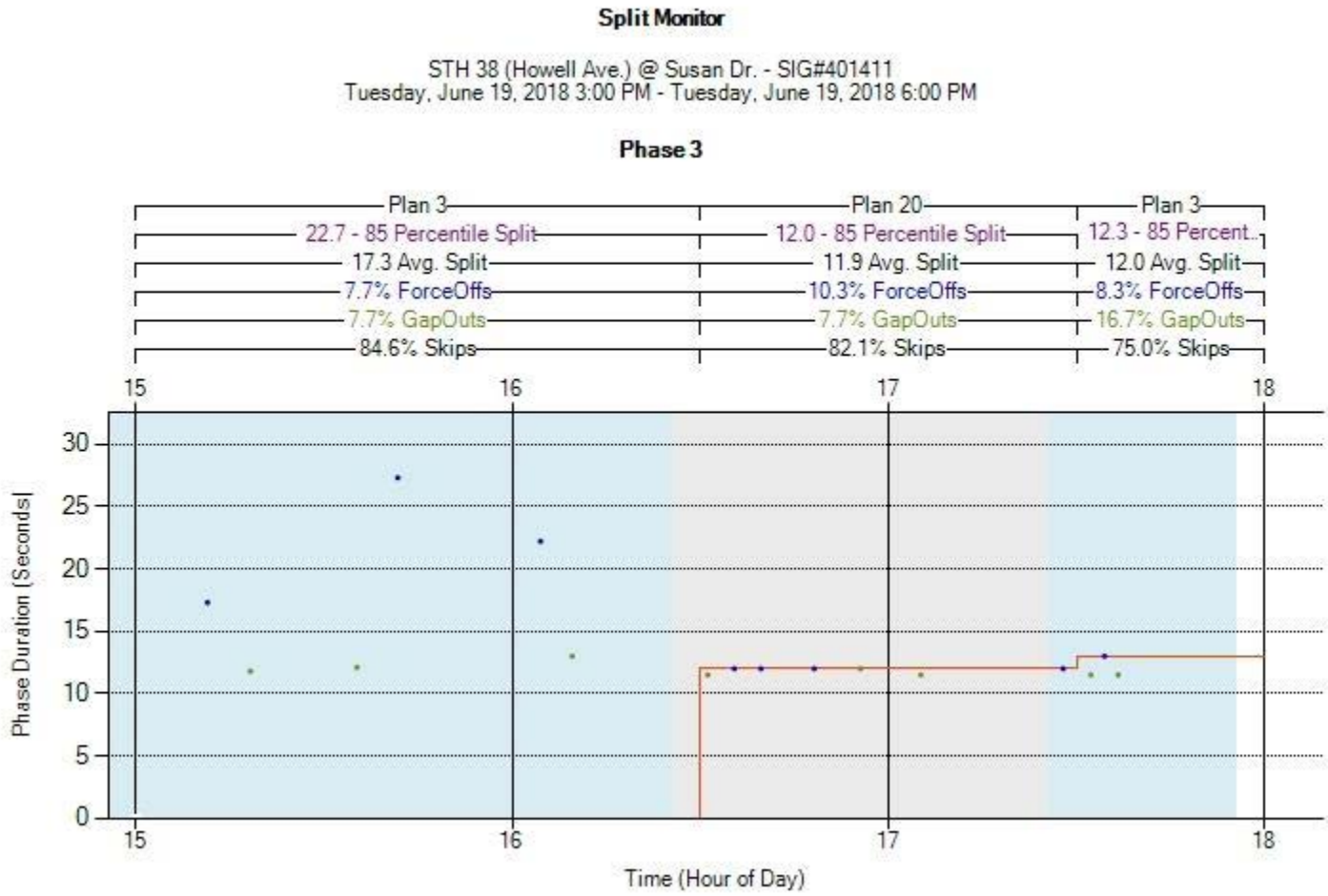
WIS 38 Corridor – STH 38 & Susan Dr.
HCS Timings
6/19/2018 – 3:00 PM – 6:00 PM



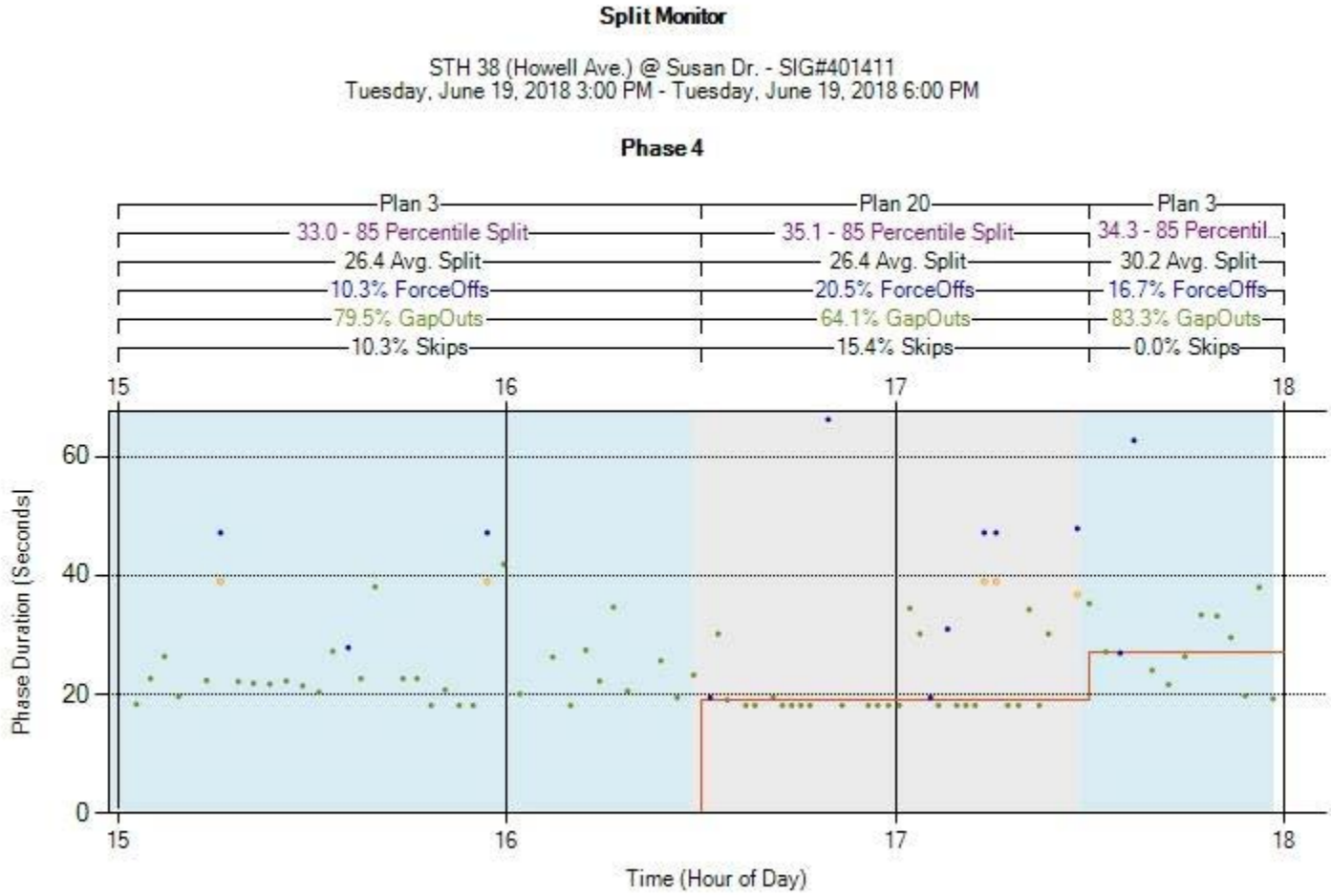
WIS 38 Corridor – STH 38 & Susan Dr.
HCS Timings
6/19/2018 – 3:00 PM – 6:00 PM



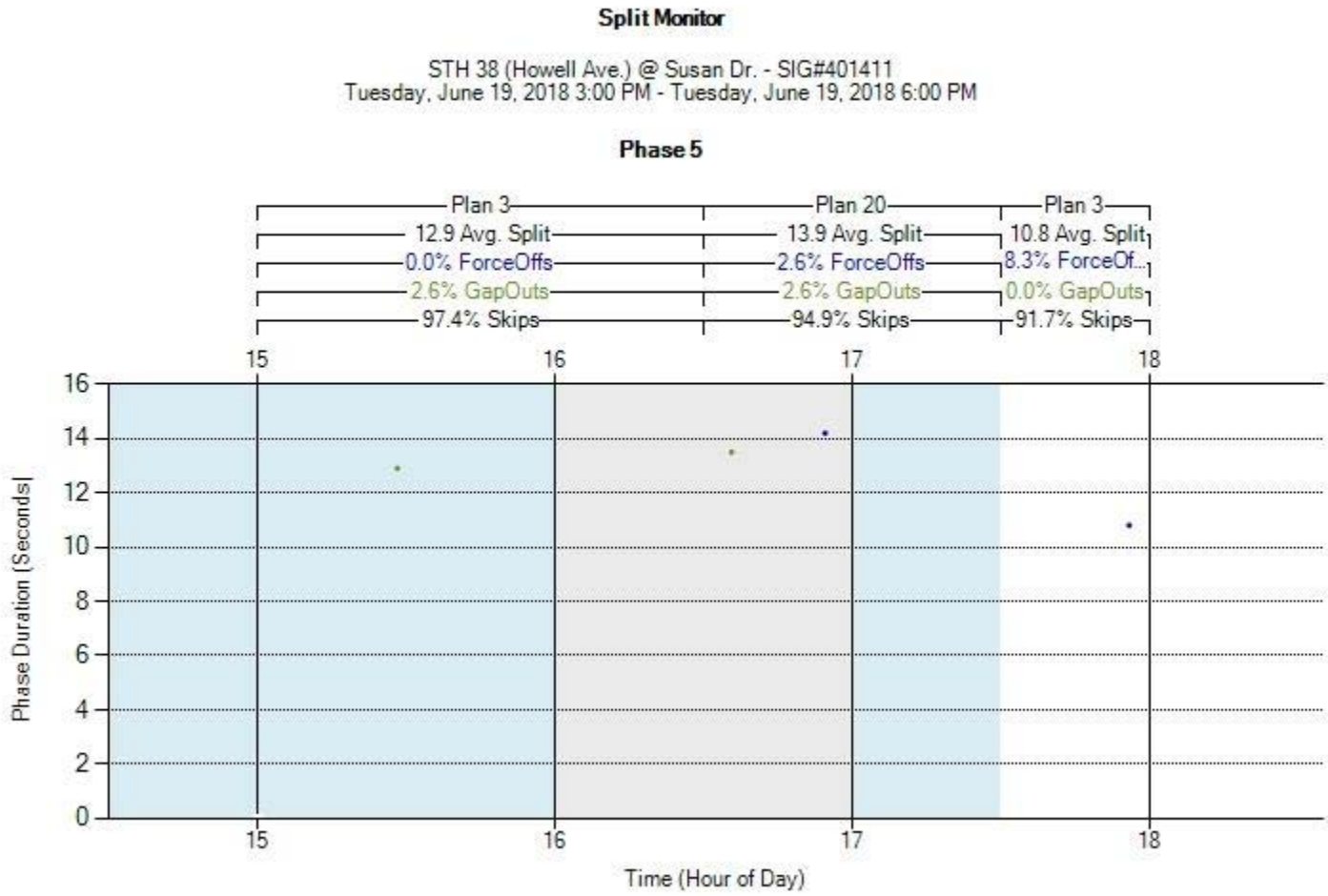
WIS 38 Corridor – STH 38 & Susan Dr.
HCS Timings
6/19/2018 – 3:00 PM – 6:00 PM



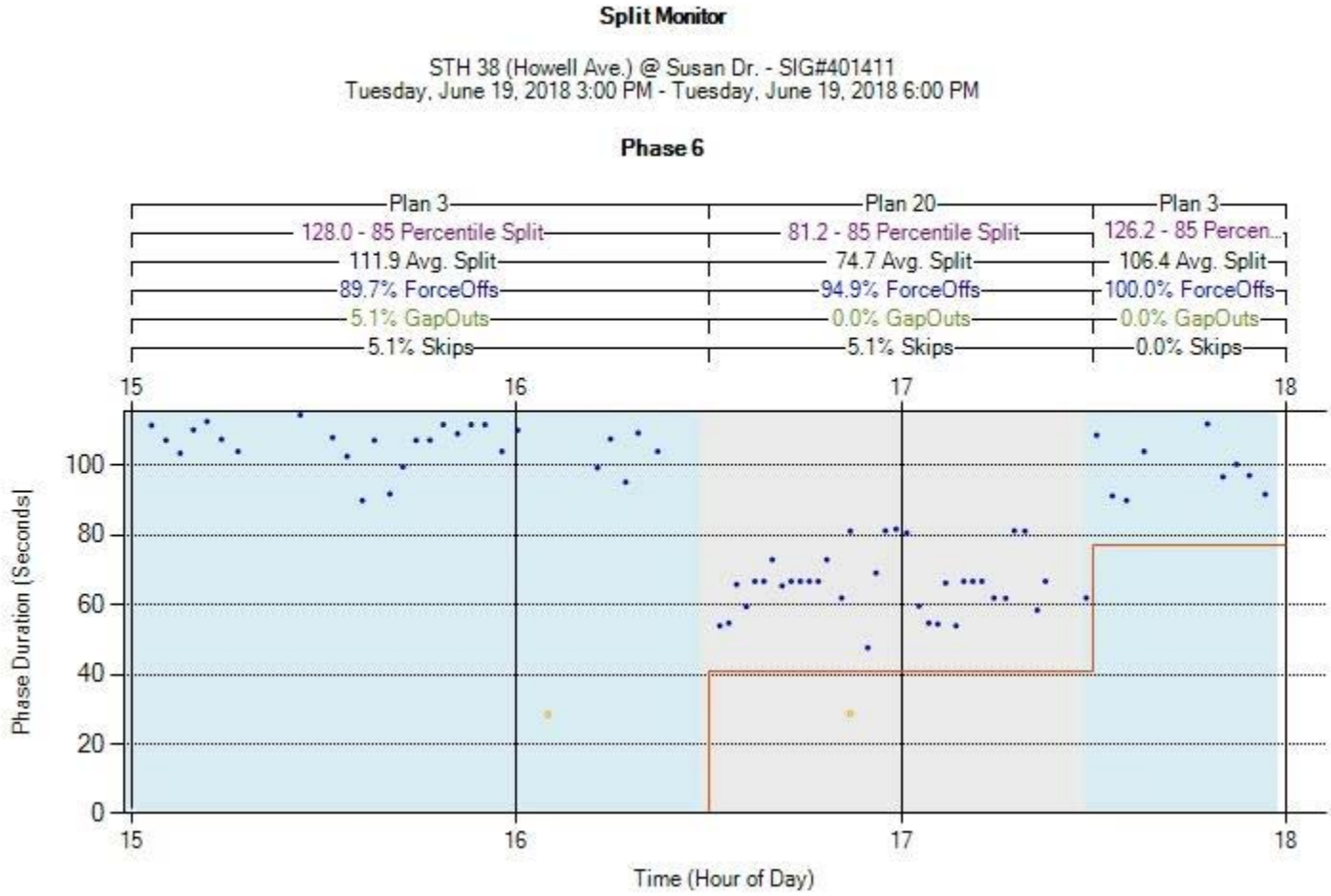
WIS 38 Corridor – STH 38 & Susan Dr.
HCS Timings
6/19/2018 – 3:00 PM – 6:00 PM



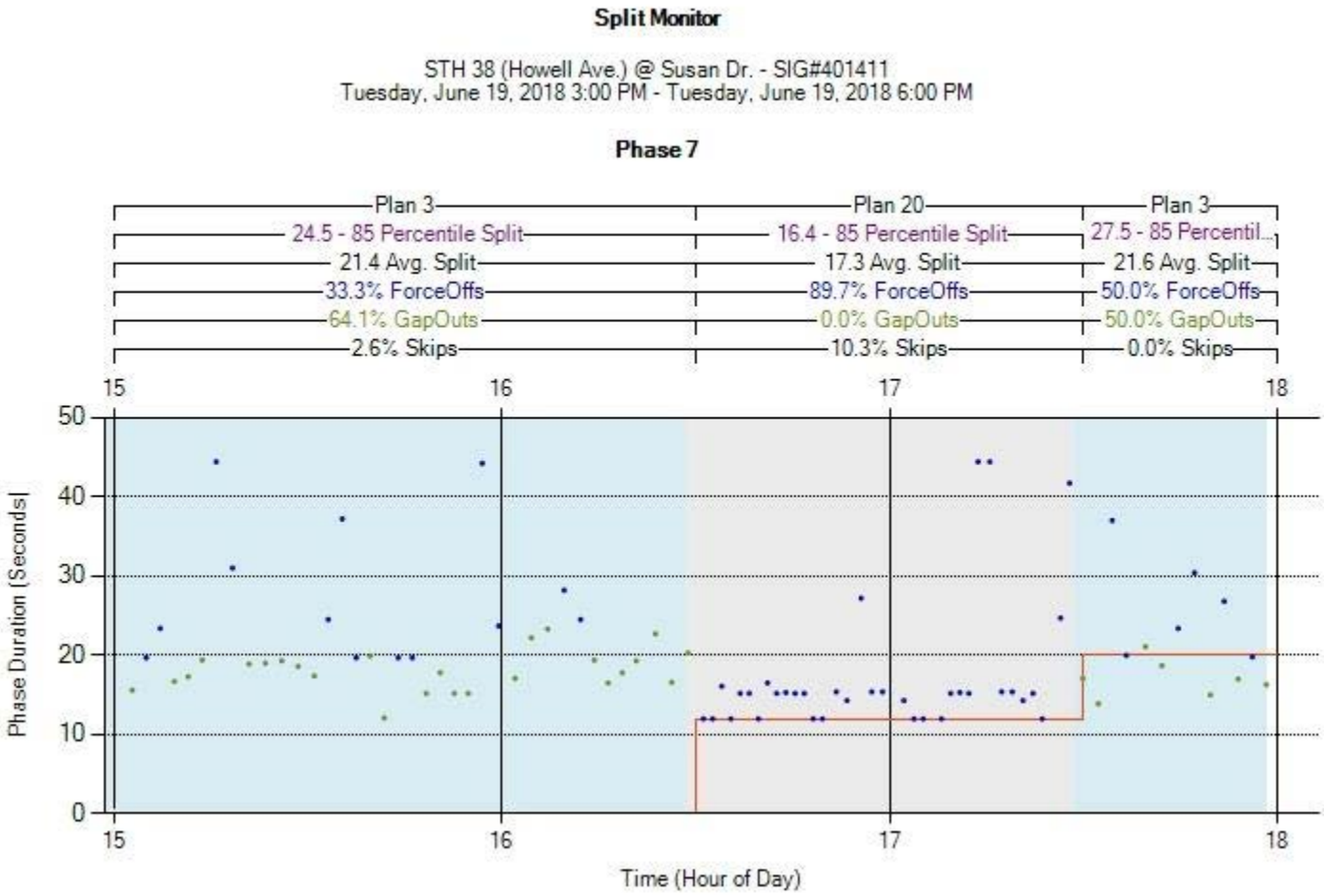
WIS 38 Corridor – STH 38 & Susan Dr.
HCS Timings
6/19/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Susan Dr.
HCS Timings
6/19/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Susan Dr.
HCS Timings
6/19/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Susan Dr.
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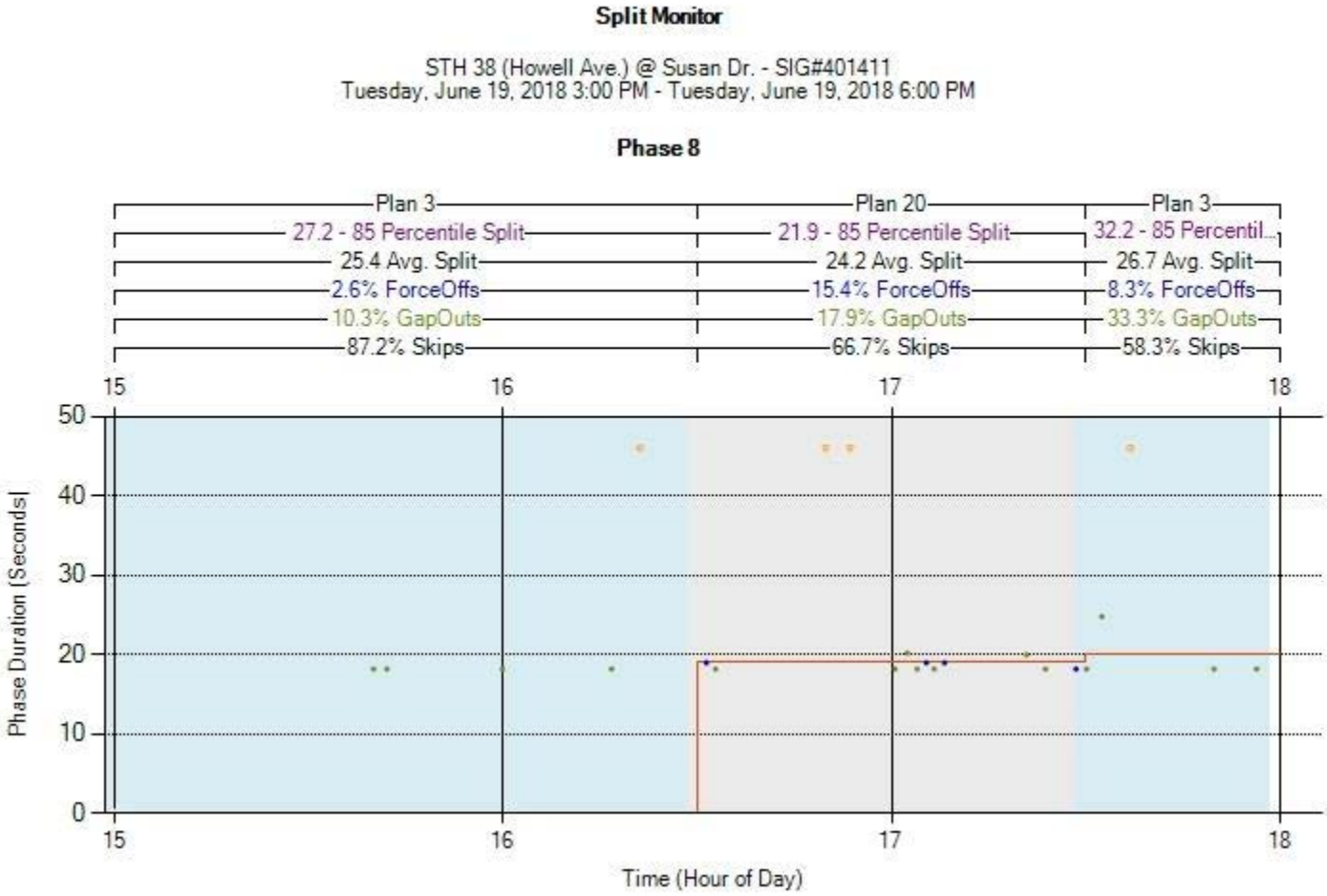
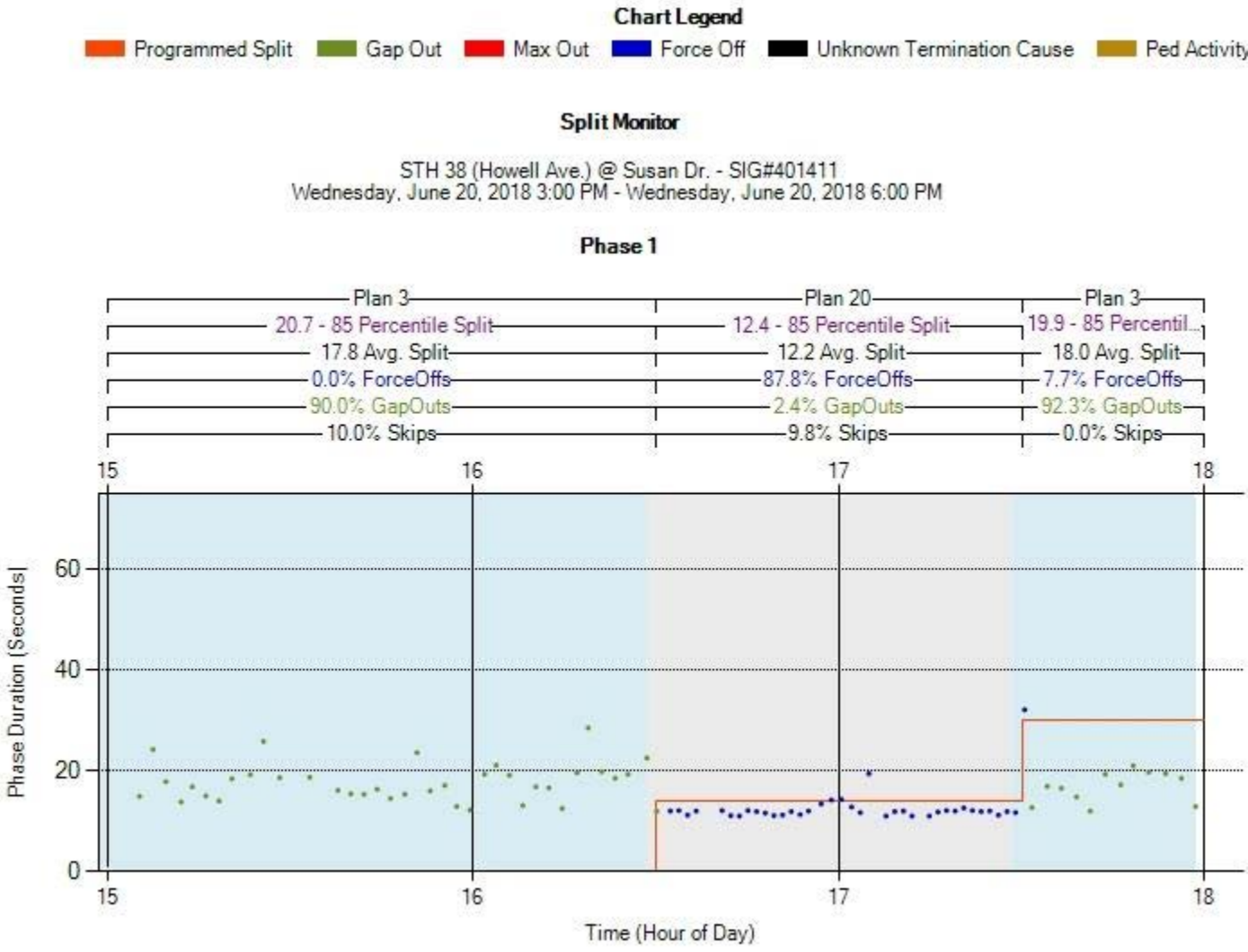
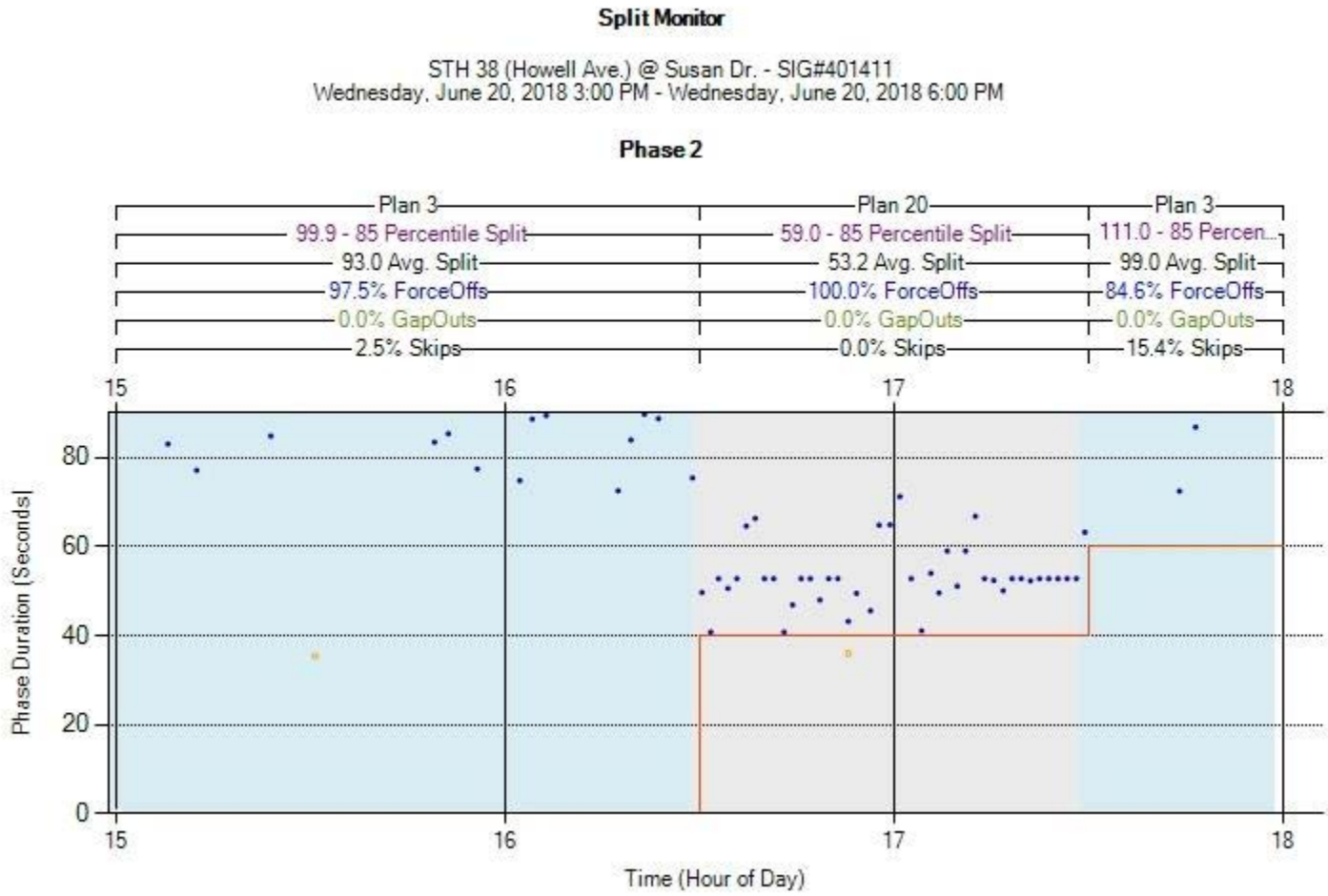
6/19/2018 – 3:00 PM – 6:00 PM



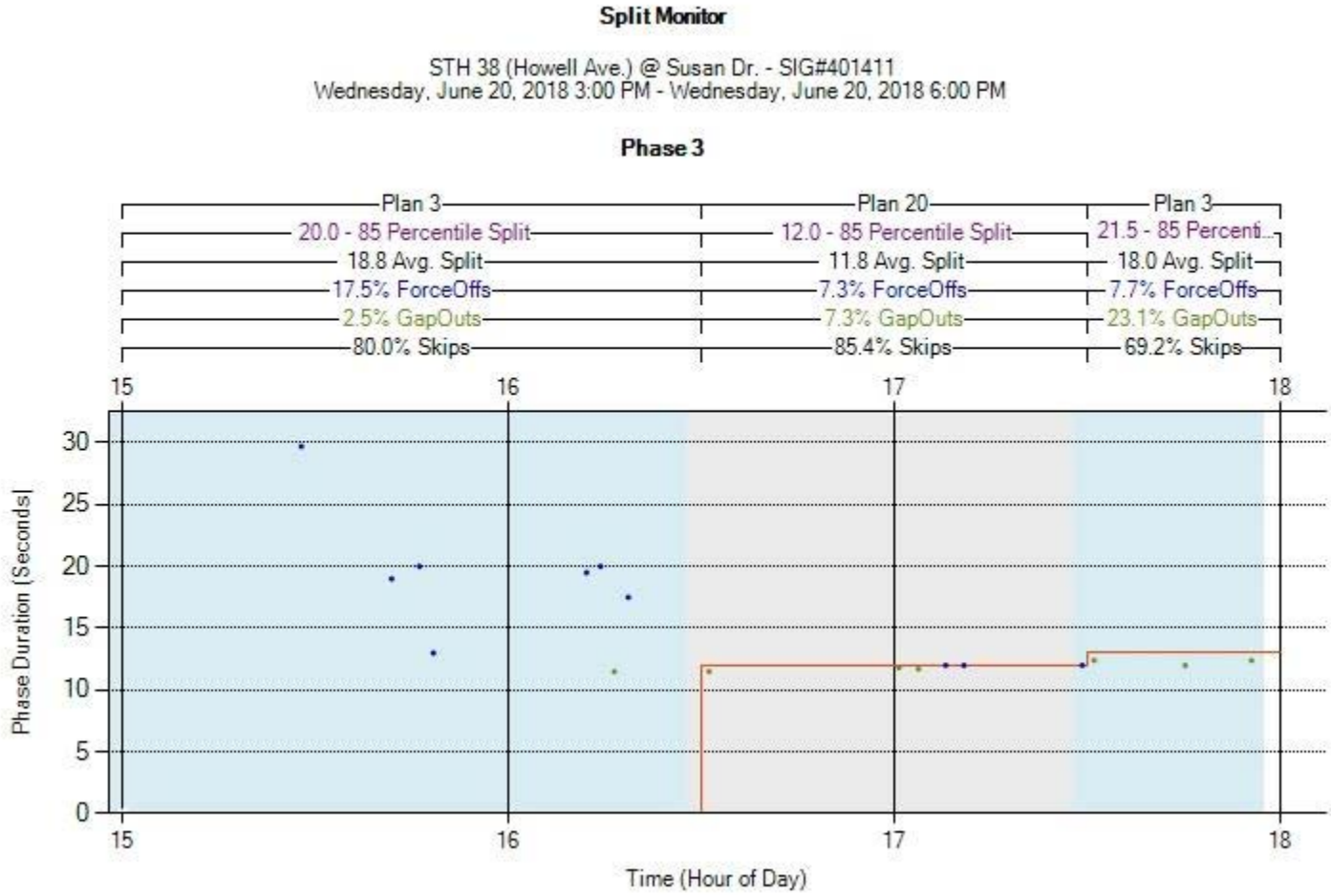
WIS 38 Corridor – STH 38 & Susan Dr.
HCS Timings
6/20/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Susan Dr.
HCS Timings
6/20/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Susan Dr.
HCS Timings
6/20/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Susan Dr.
HCS Timings
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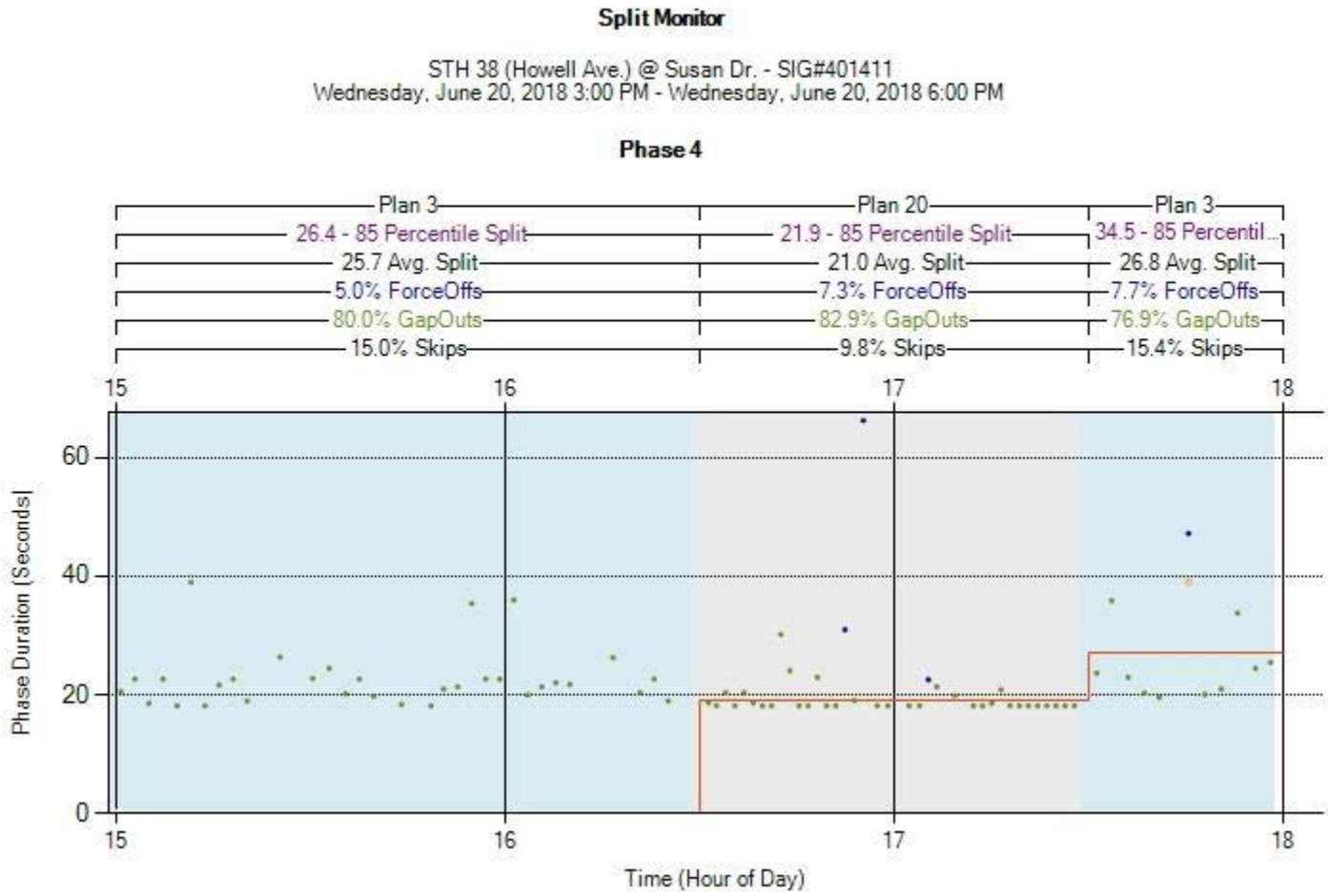

WIS 38 Corridor – STH 38 & Susan Dr.
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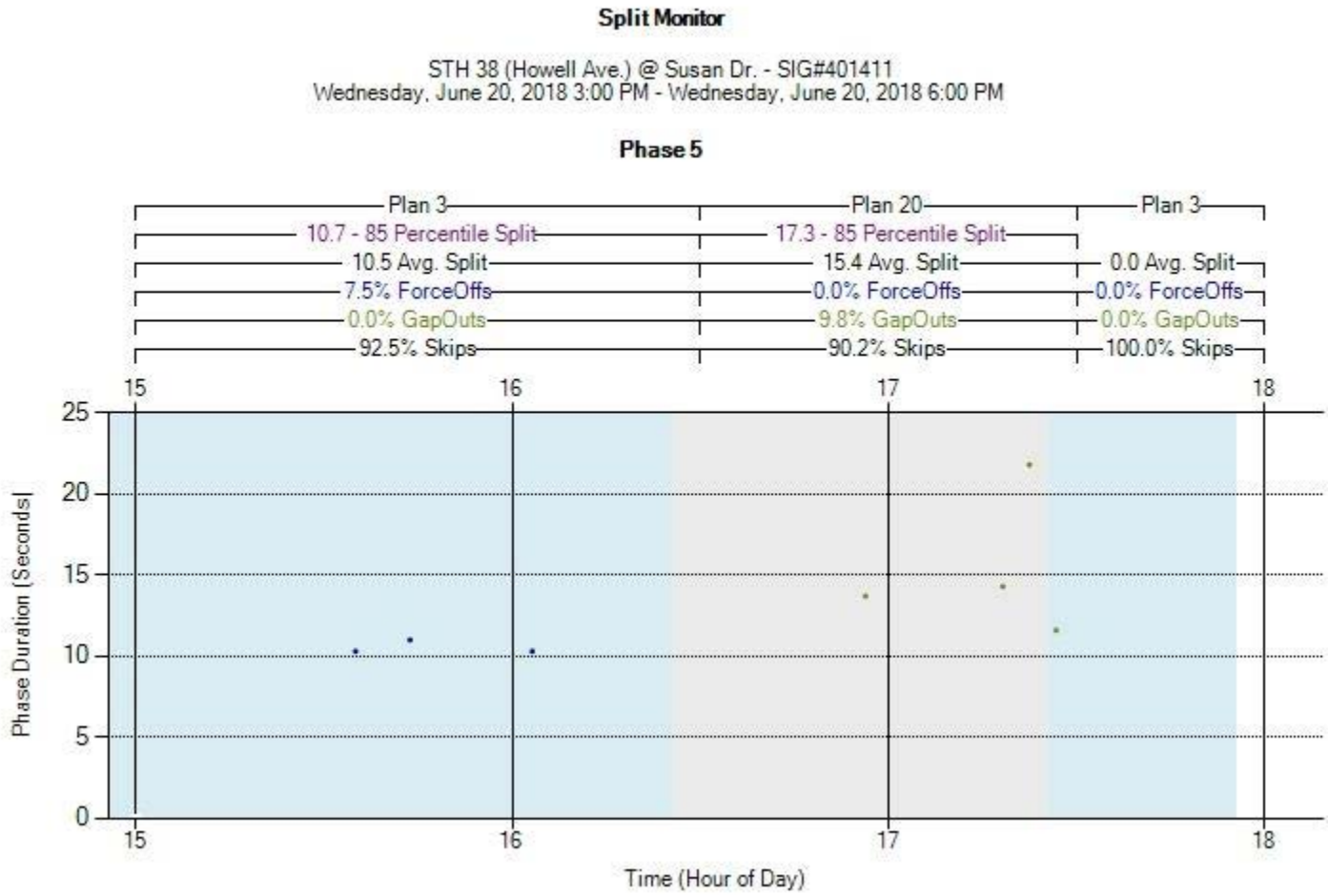

WIS 38 Corridor – STH 38 & Susan Dr.
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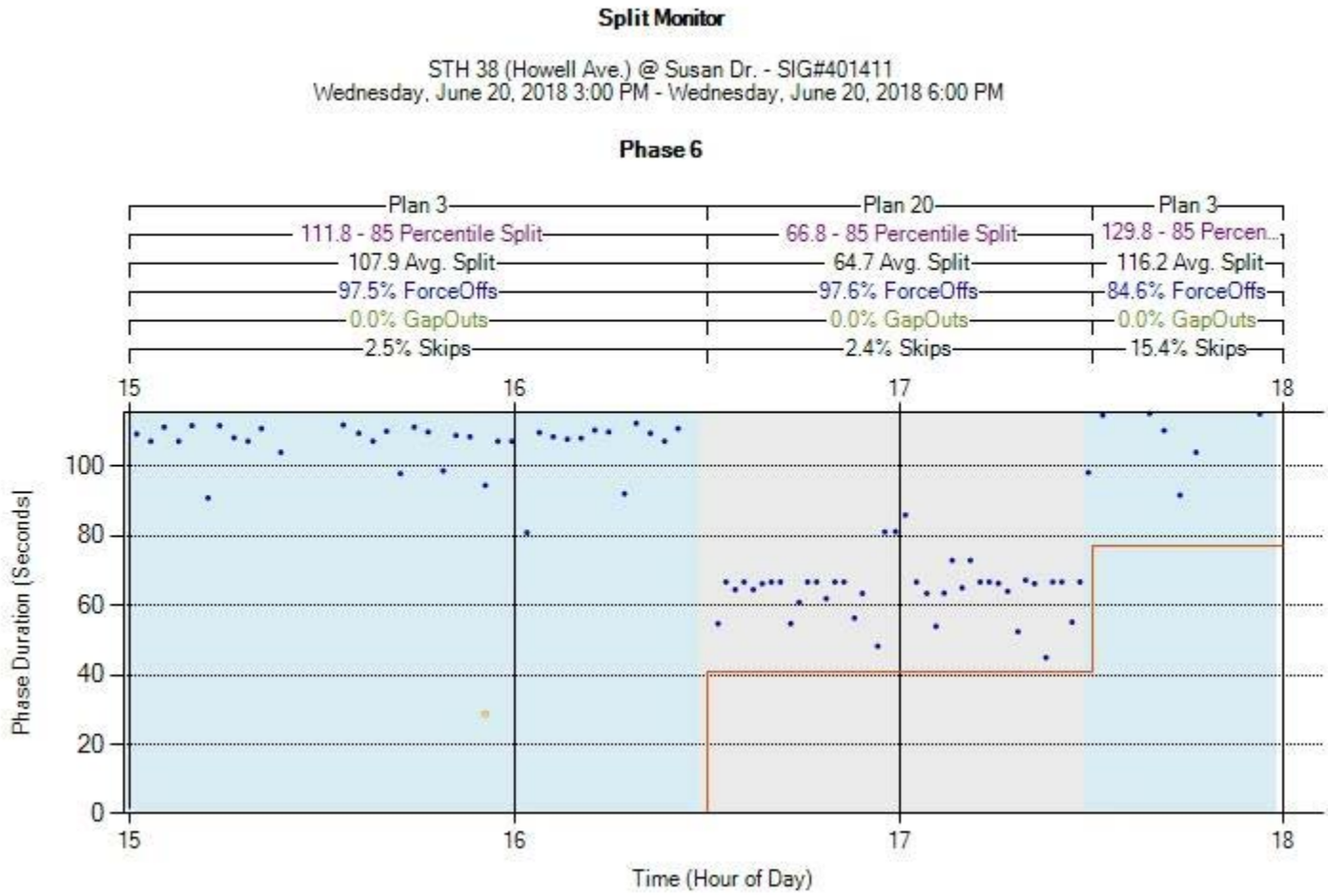

WIS 38 Corridor – STH 38 & Susan Dr.
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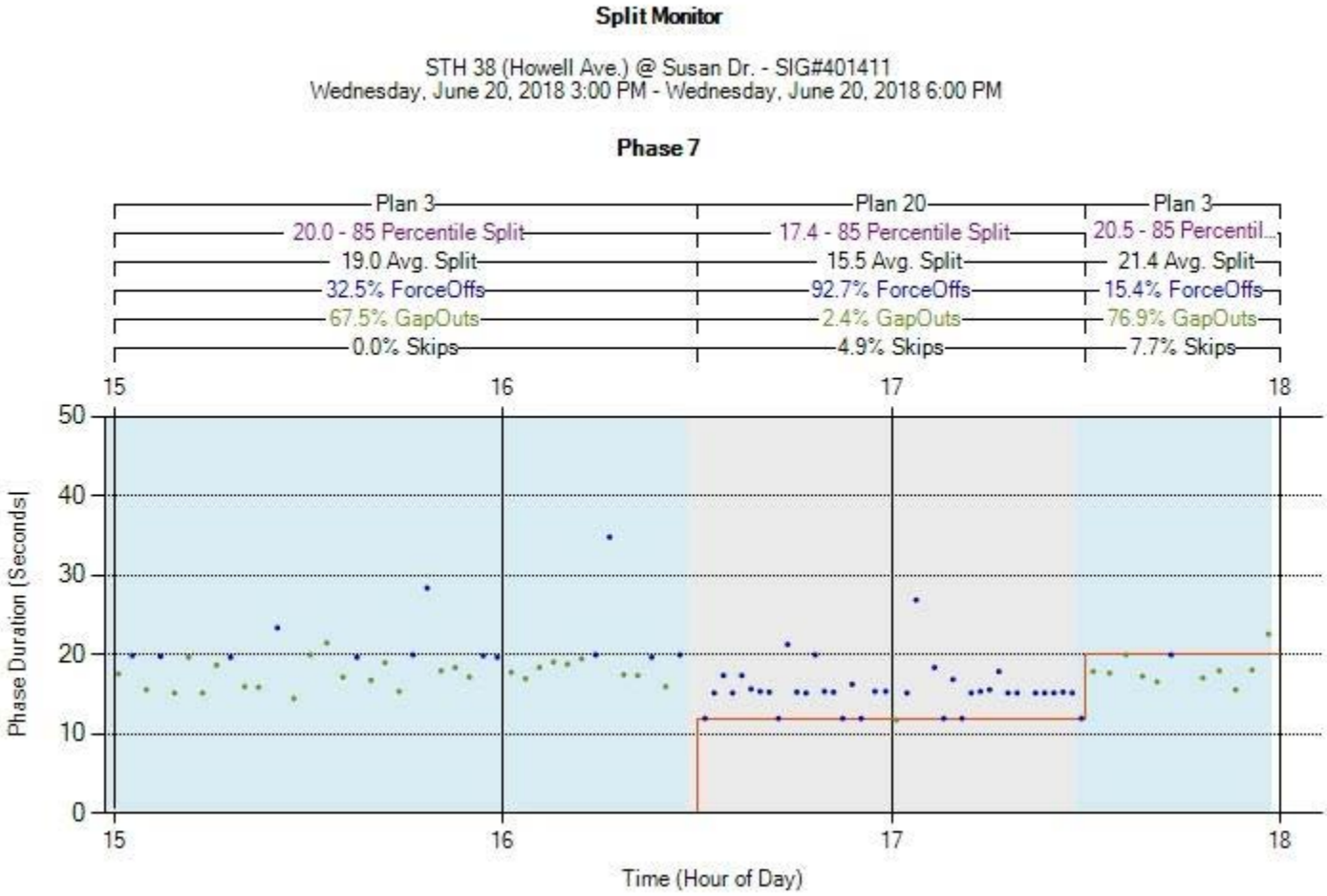

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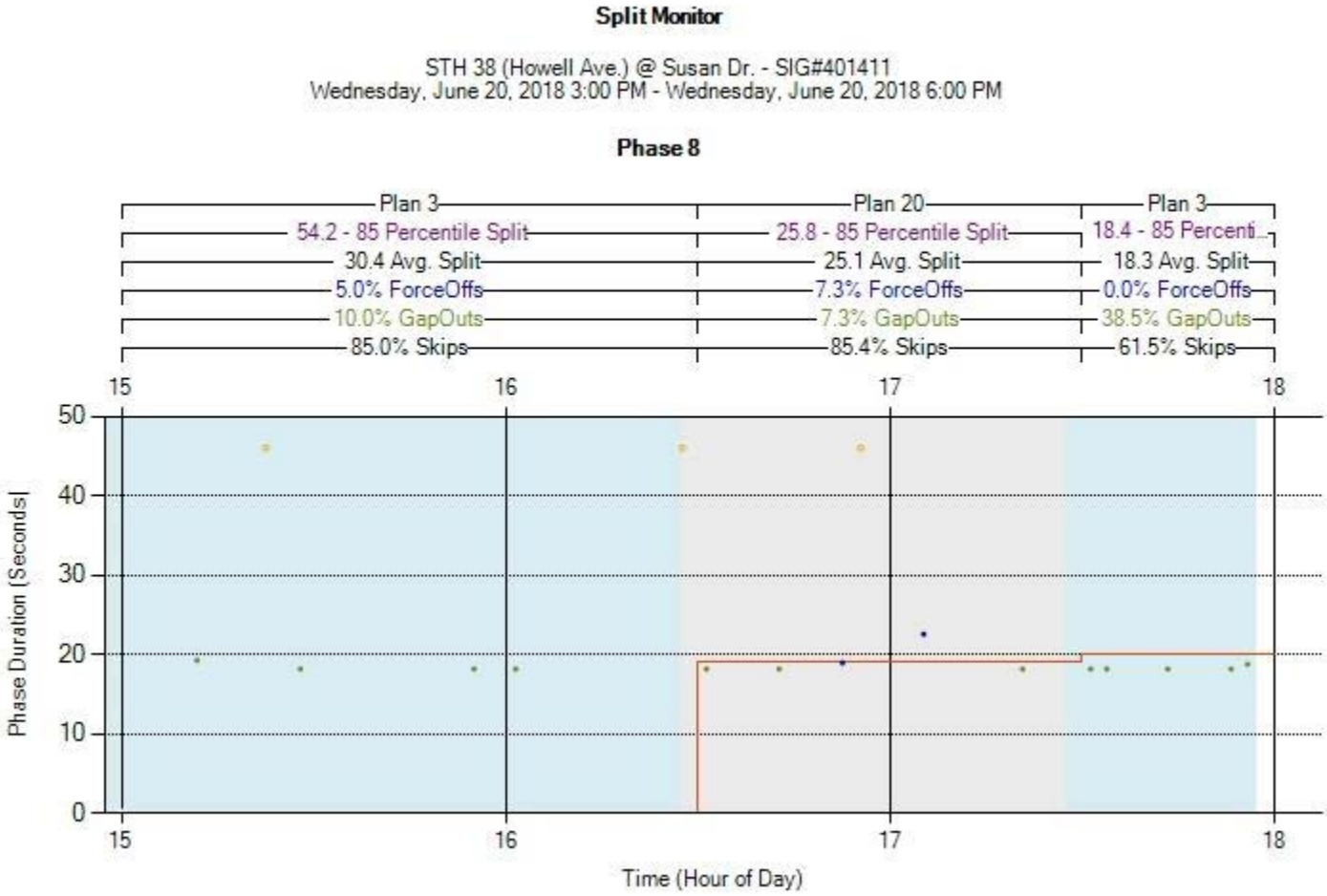

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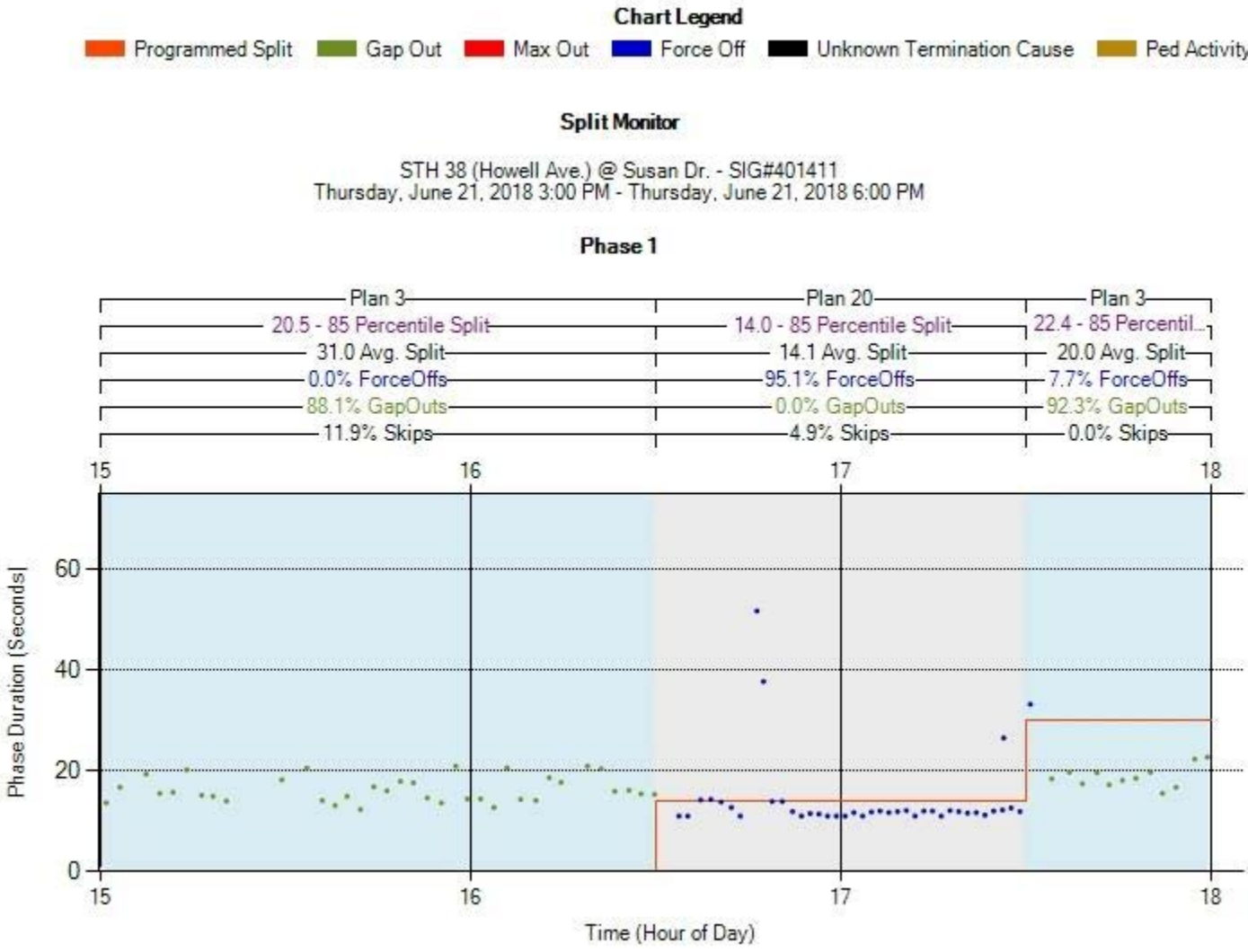

WIS 38 Corridor – STH 38 & Susan Dr.
HCS Timings
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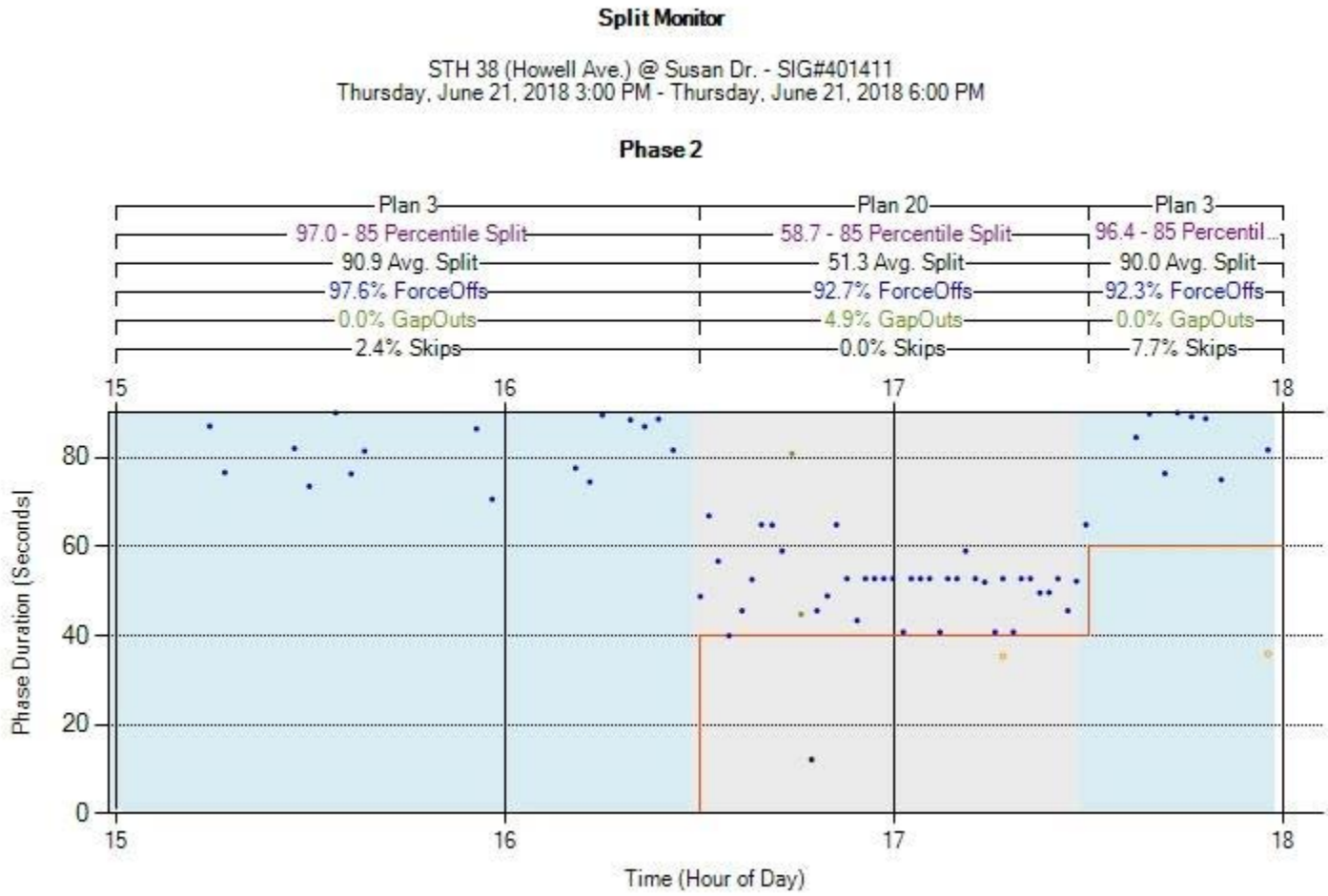

WIS 38 Corridor – STH 38 & Susan Dr.
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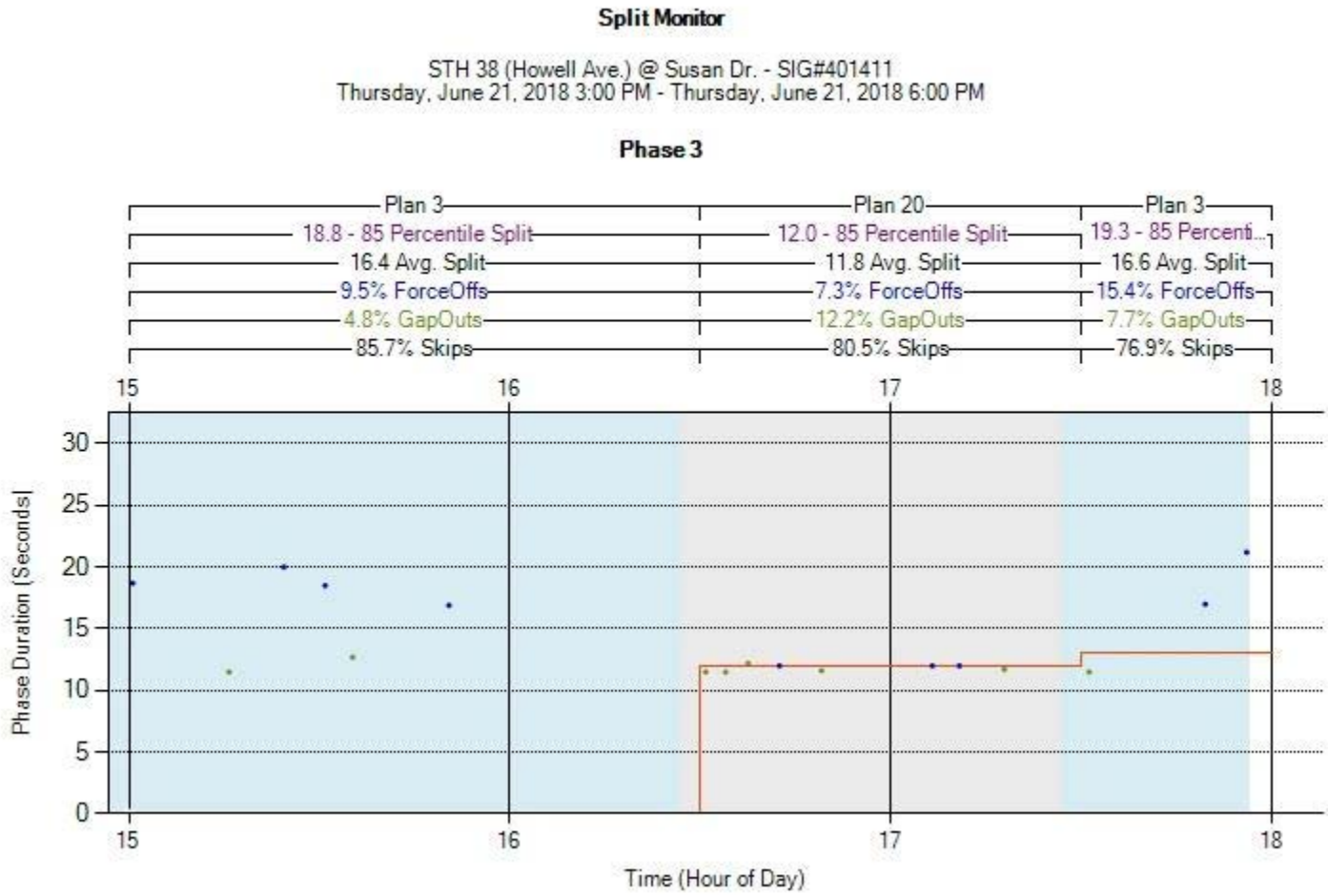

WIS 38 Corridor – STH 38 & Susan Dr.
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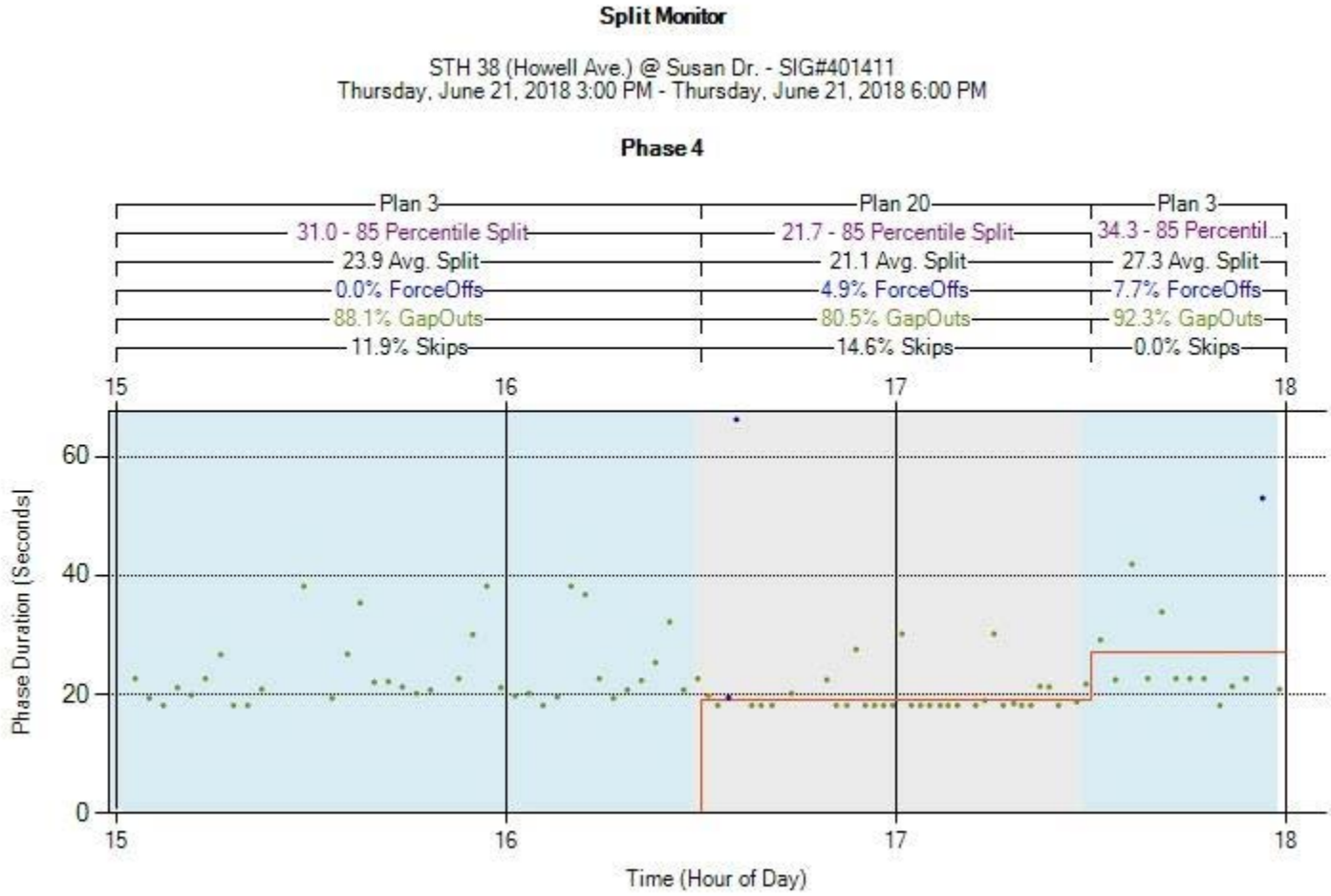

WIS 38 Corridor – STH 38 & Susan Dr.
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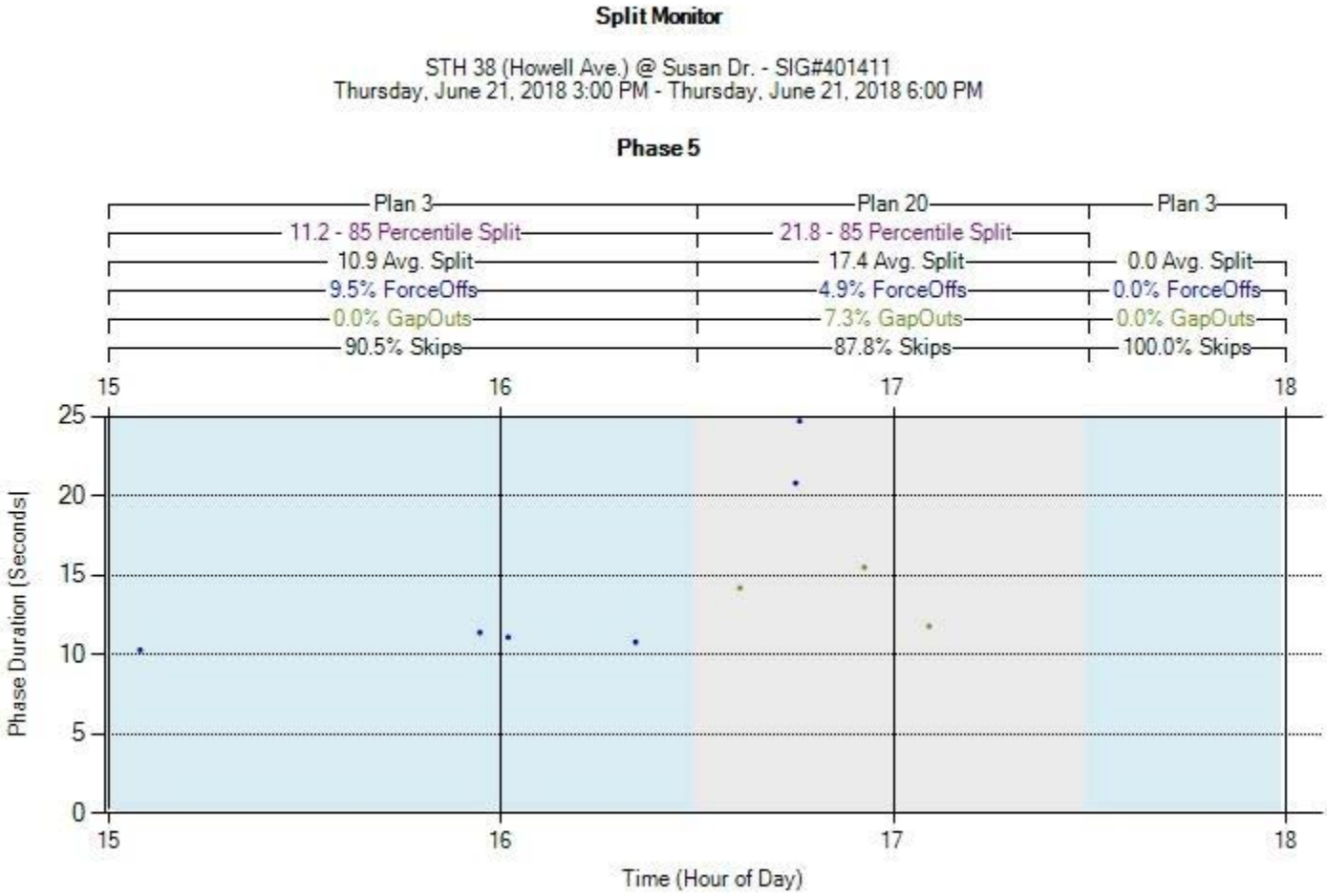

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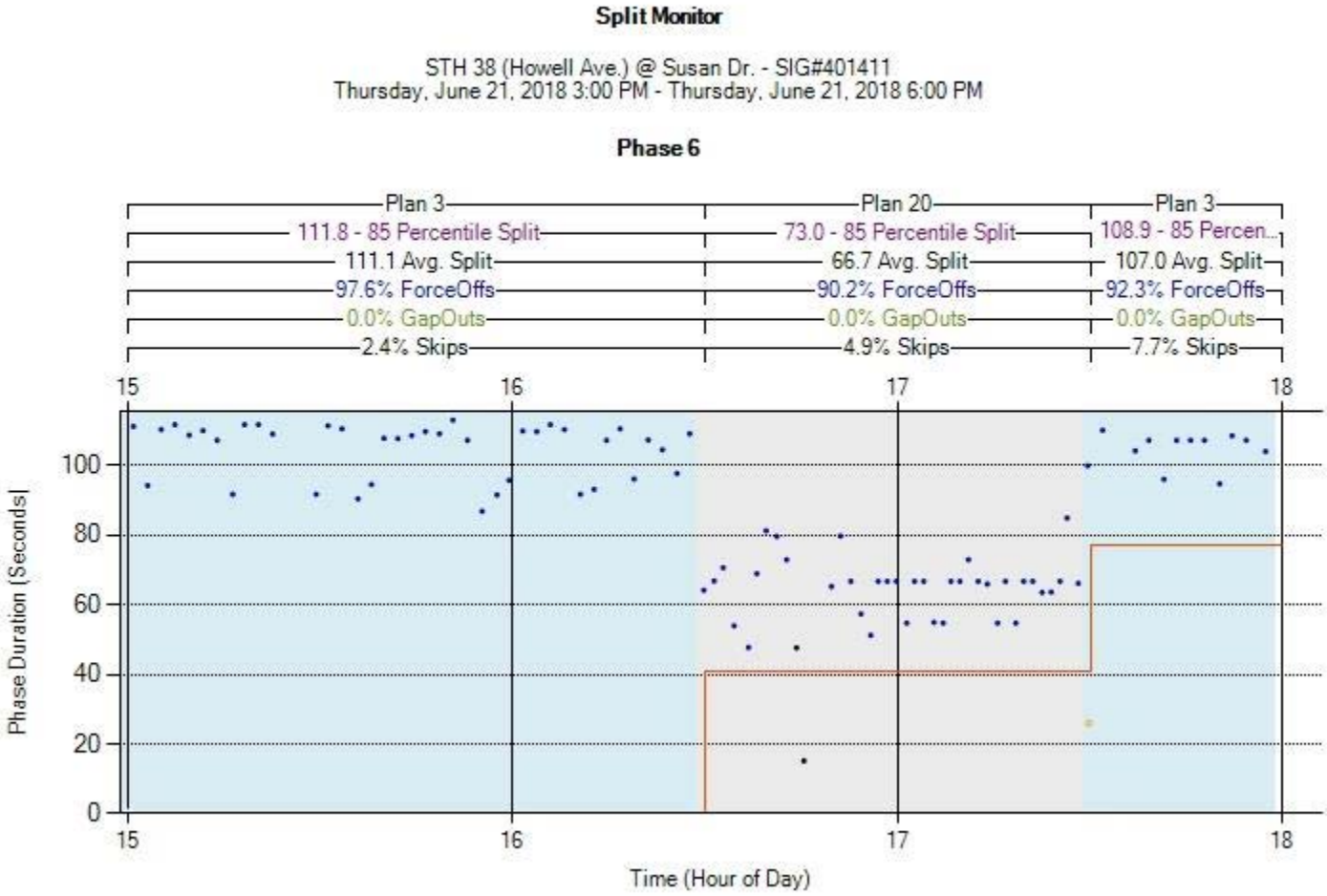

WIS 38 Corridor – STH 38 & Susan Dr.
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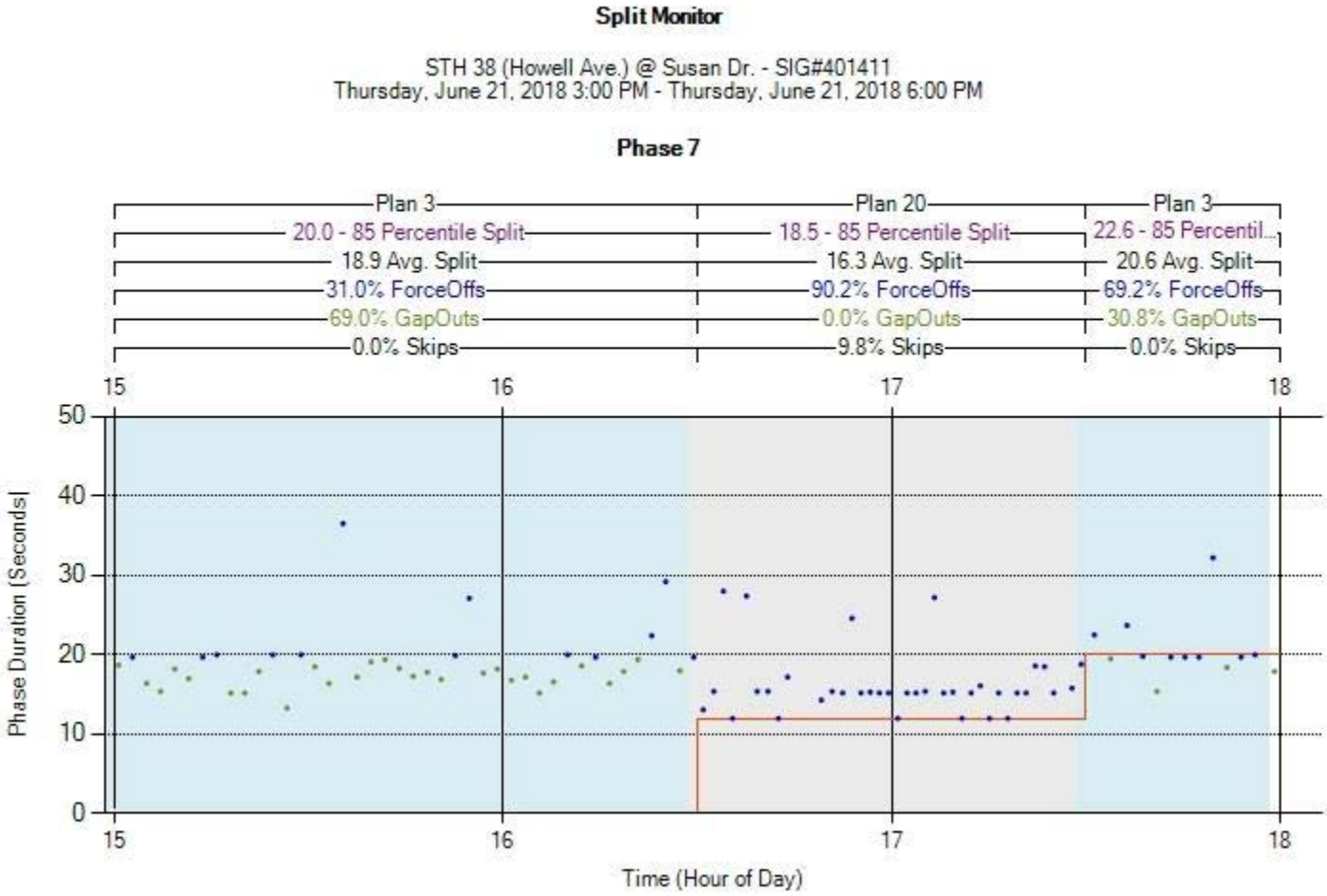
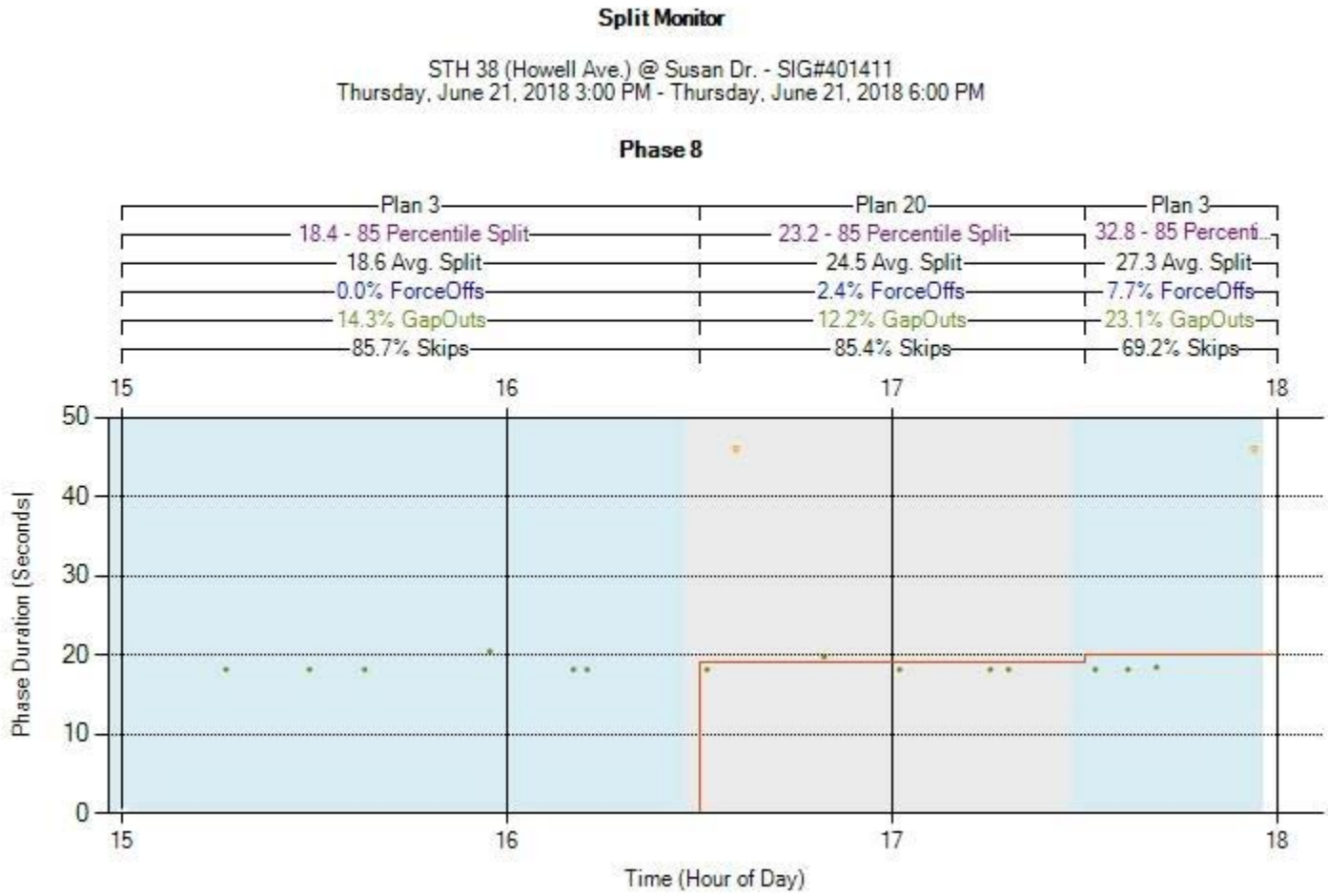
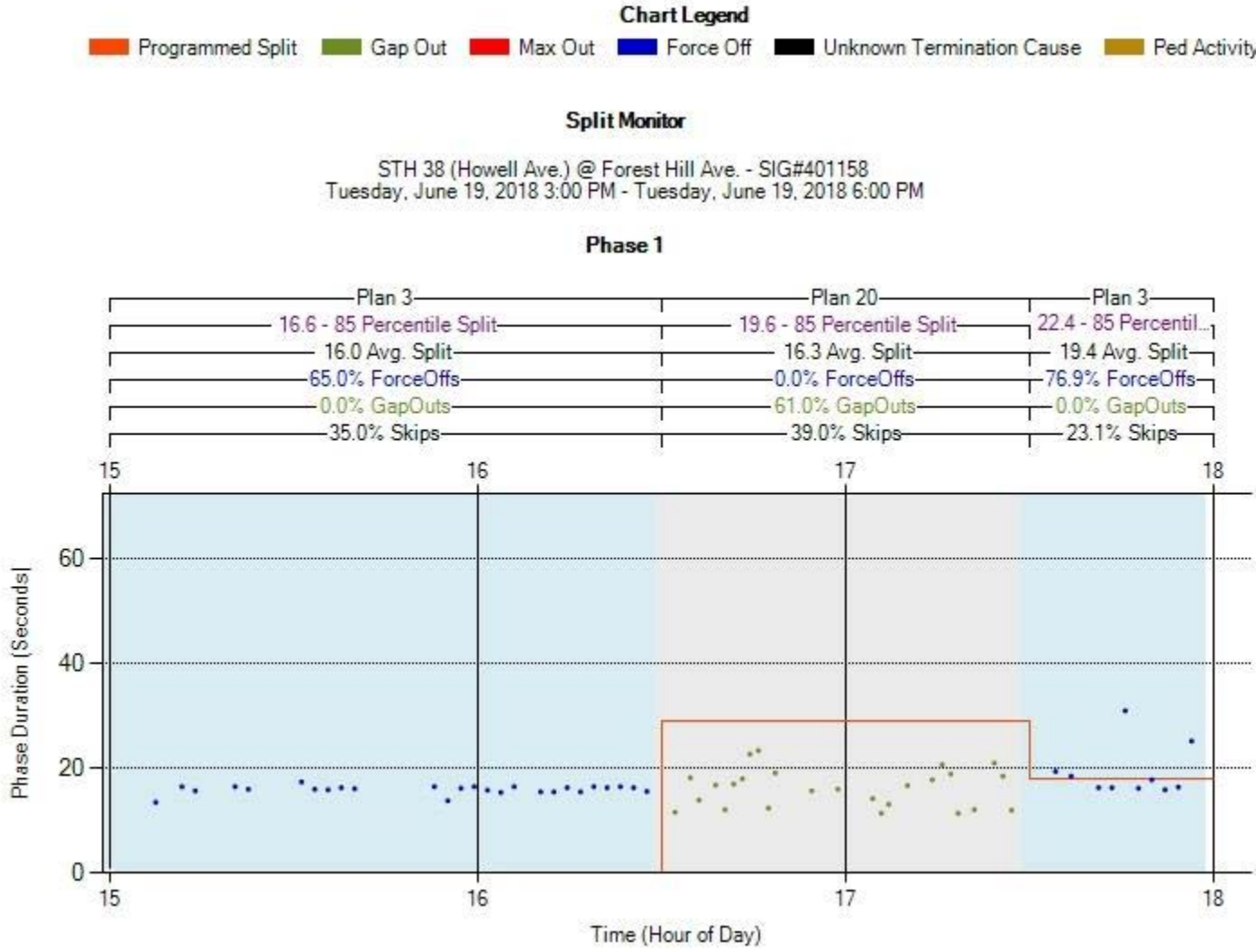


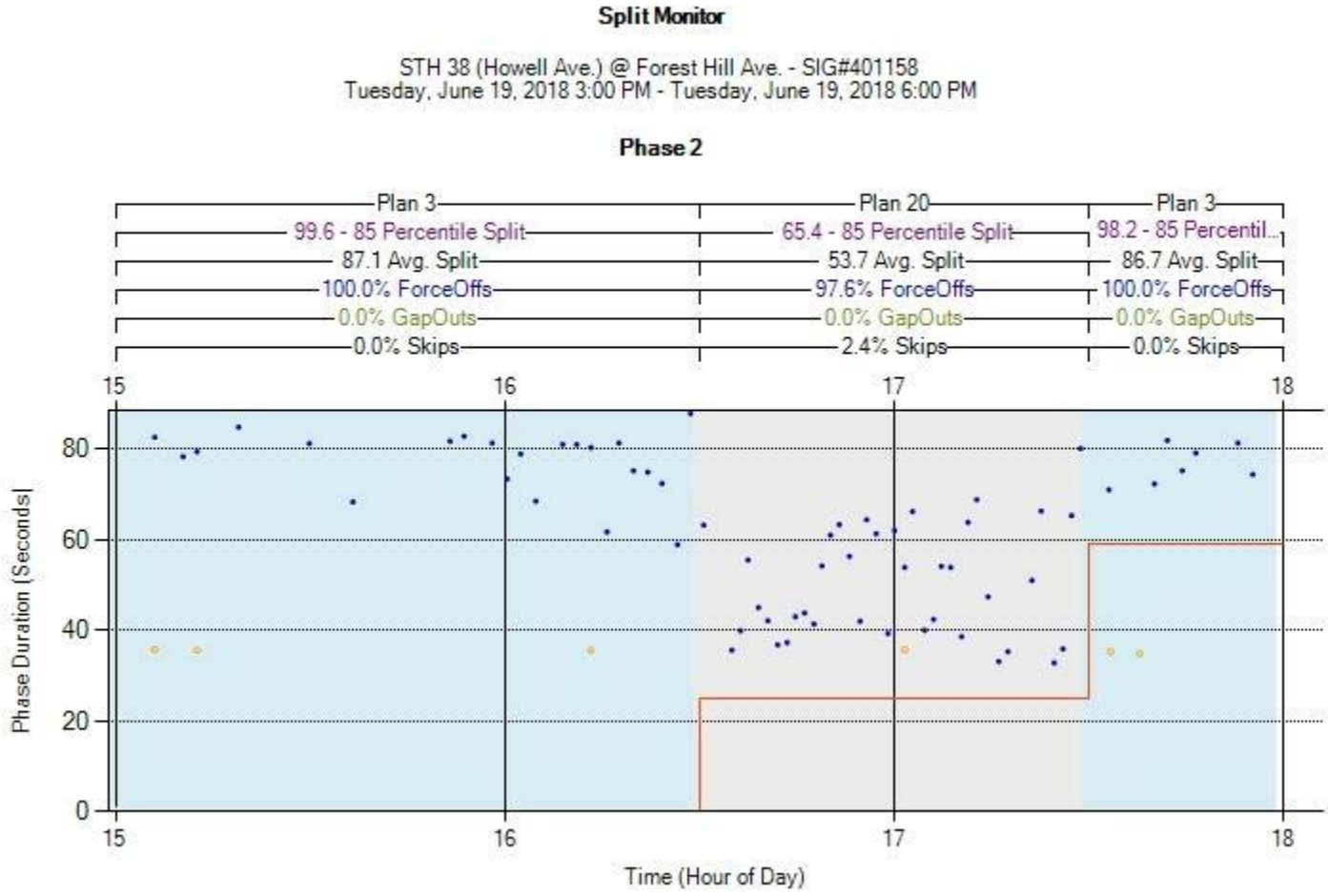
WIS 38 Corridor – STH 38 & Susan Dr.
HCS Timings
6/21/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Forest Hill Ave.
HCS Timings
6/19/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Forest Hill Ave.
HCS Timings
6/19/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Forest Hill Ave.
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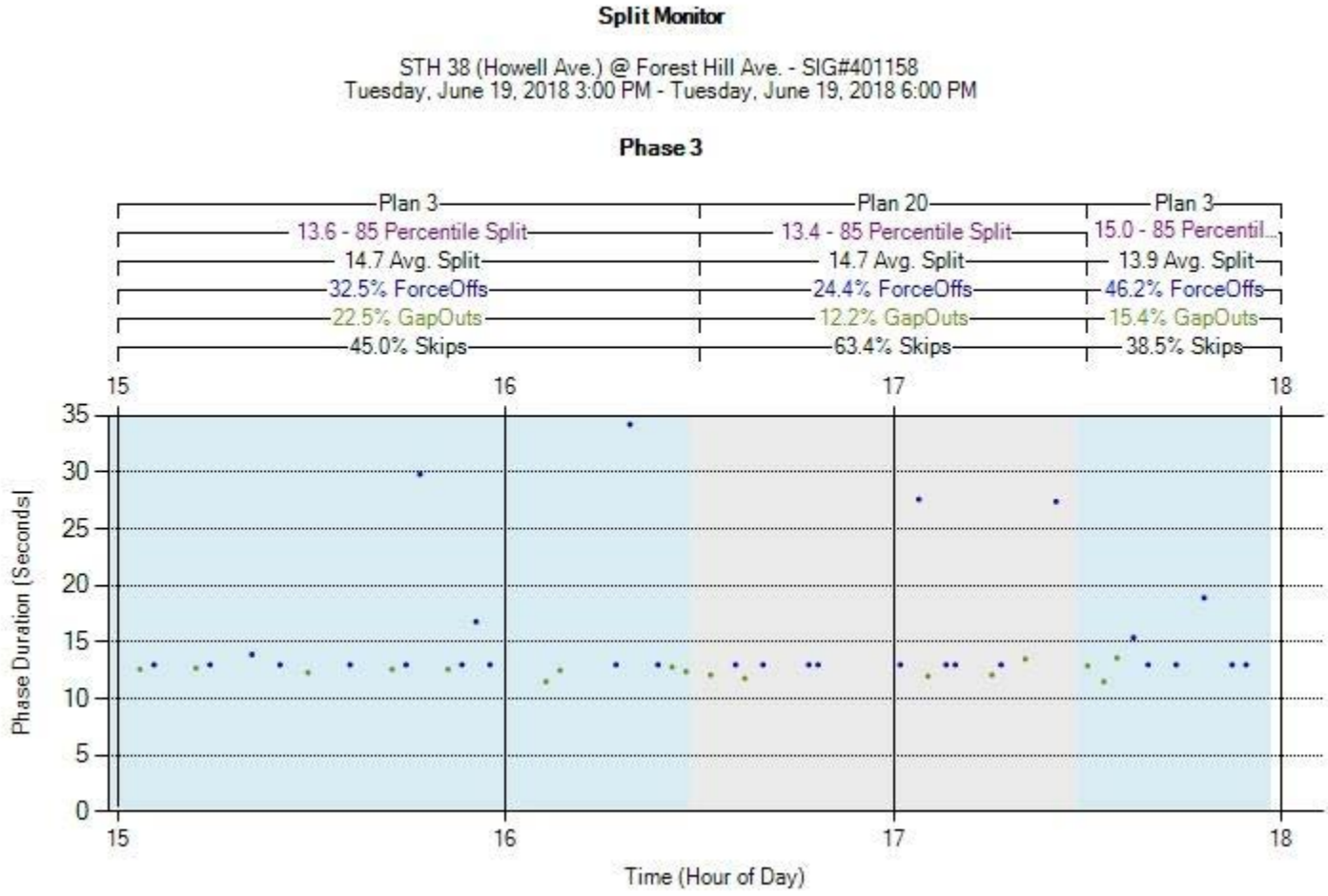

WIS 38 Corridor – STH 38 & Forest Hill Ave.
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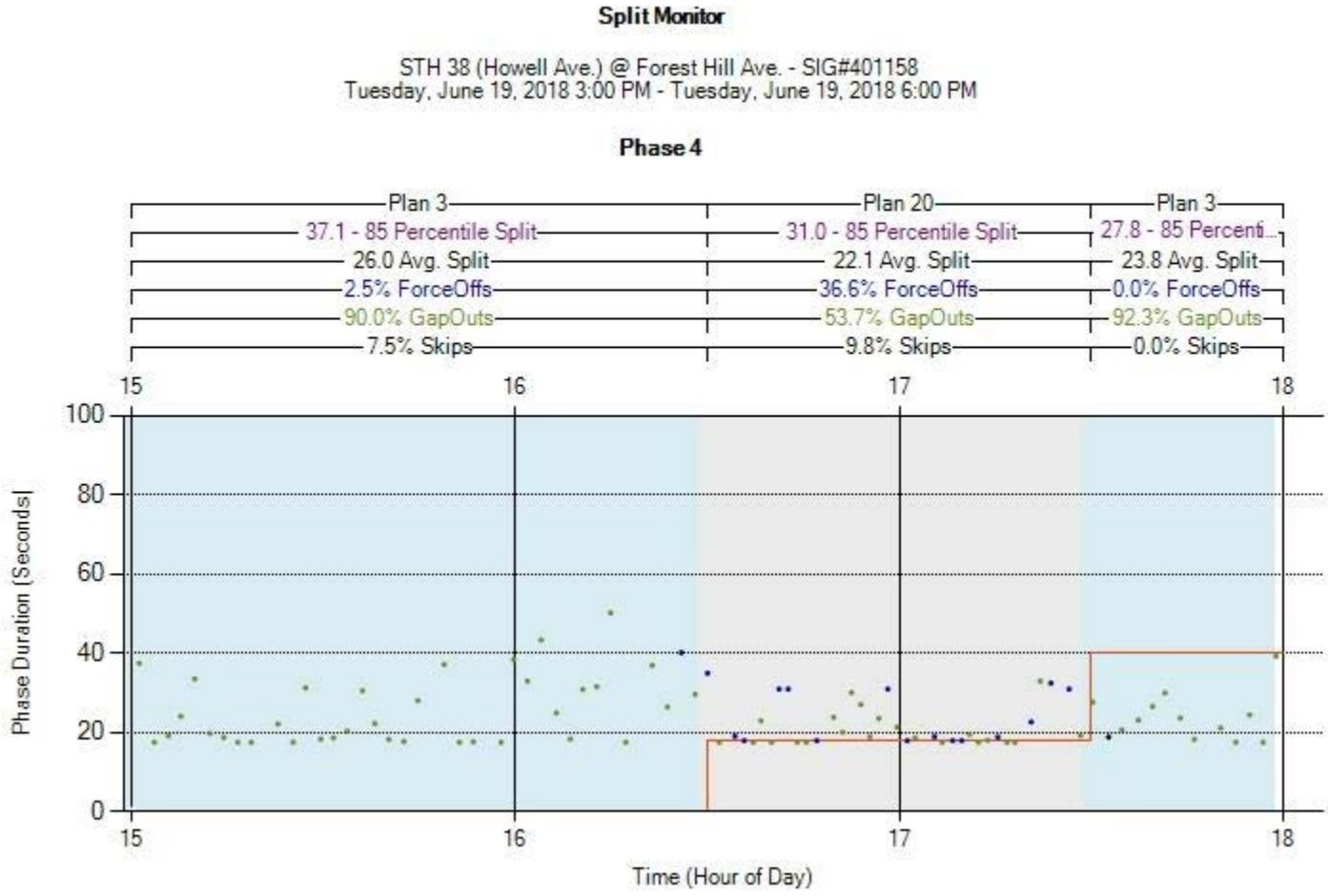

WIS 38 Corridor – STH 38 & Forest Hill Ave.
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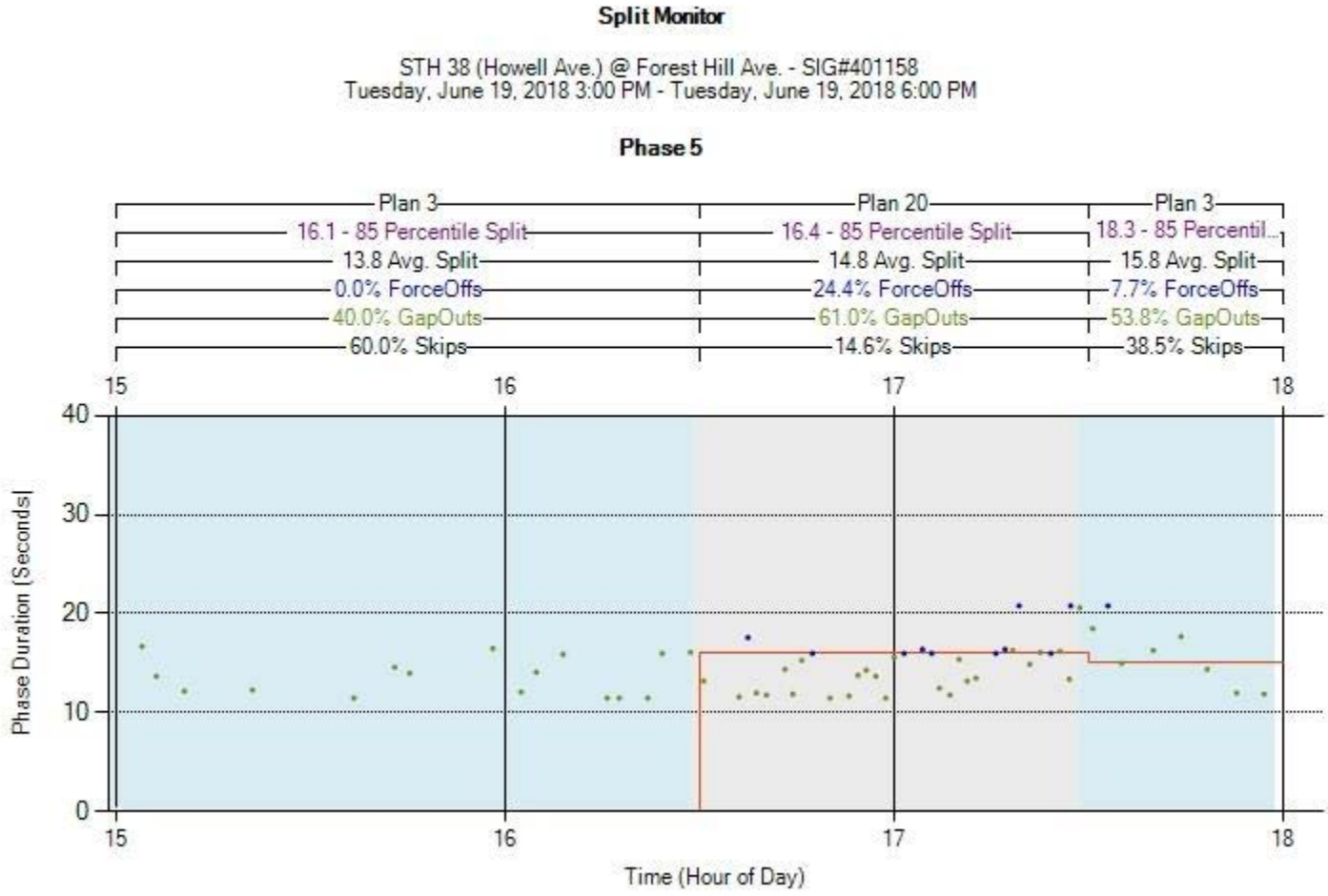

WIS 38 Corridor – STH 38 & Forest Hill Ave.
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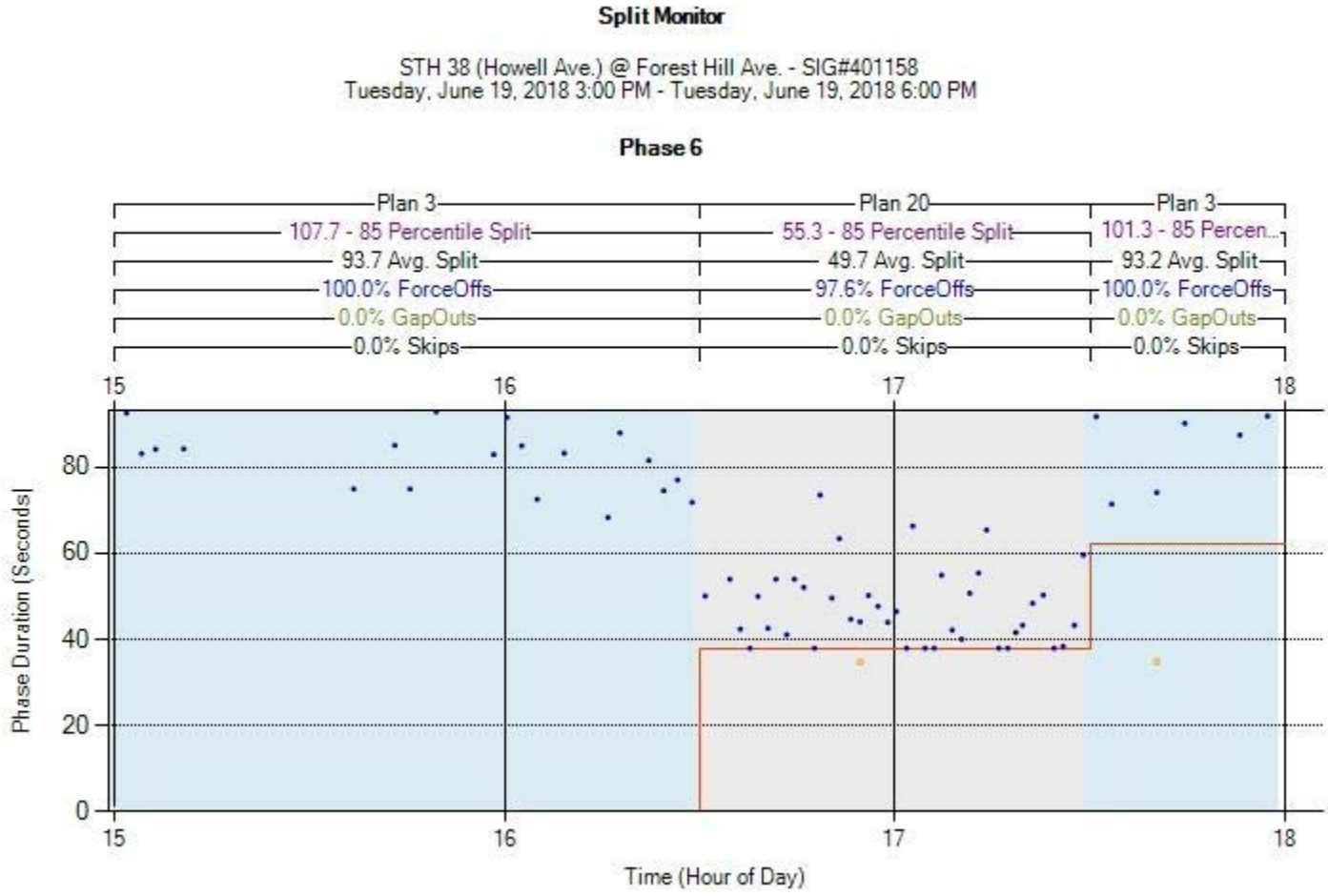

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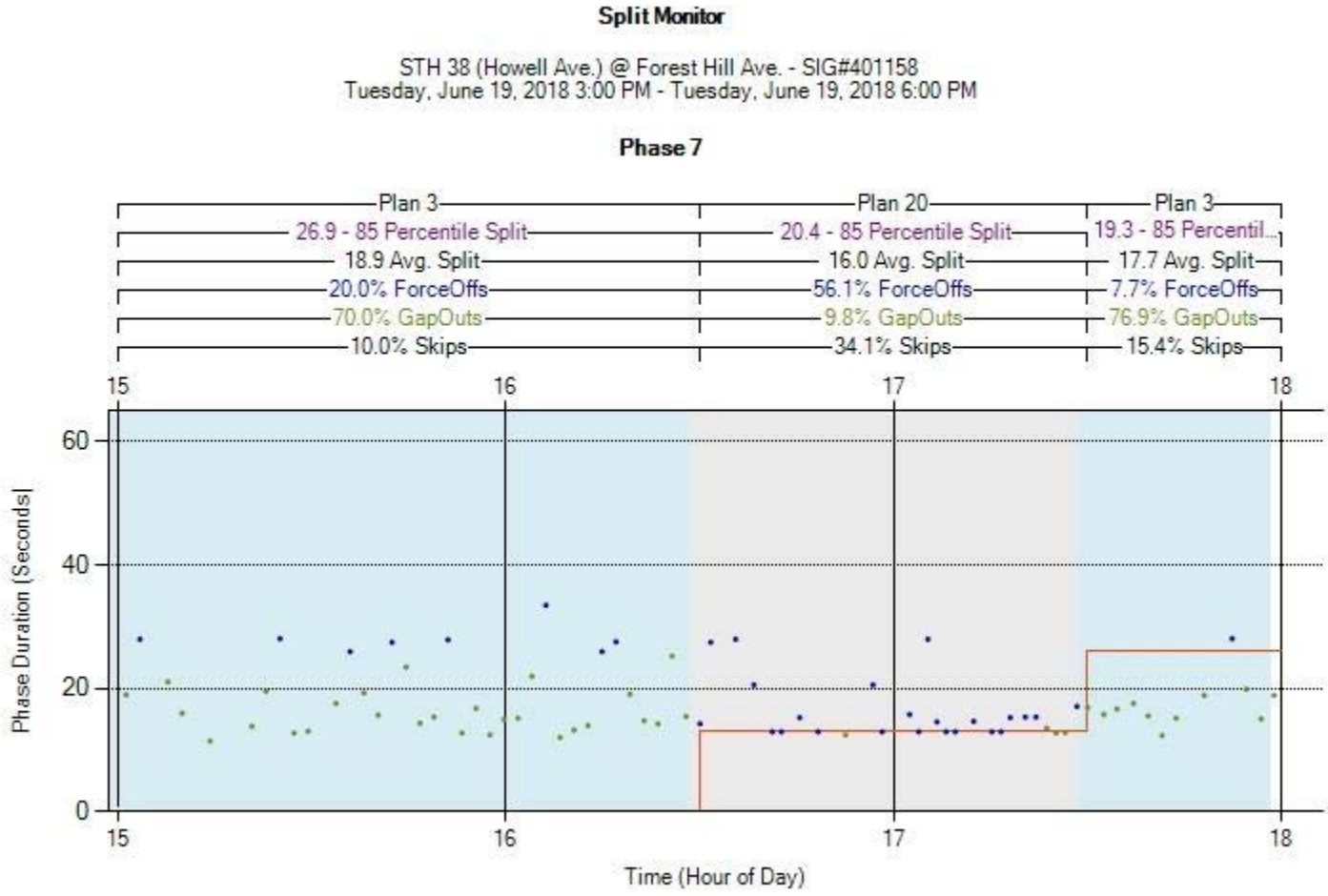

WIS 38 Corridor – STH 38 & Forest Hill Ave.
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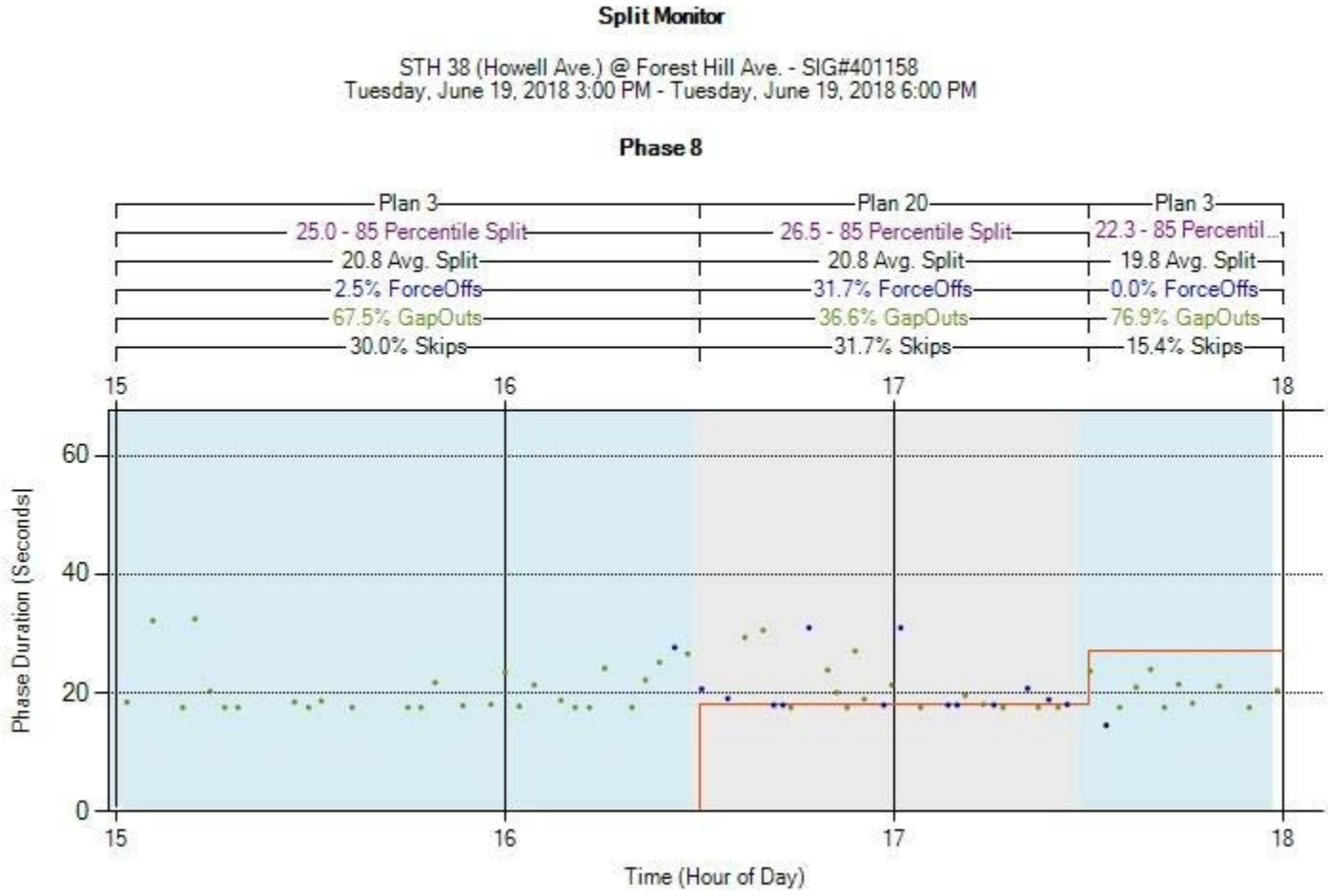

WIS 38 Corridor – STH 38 & Forest Hill Ave.
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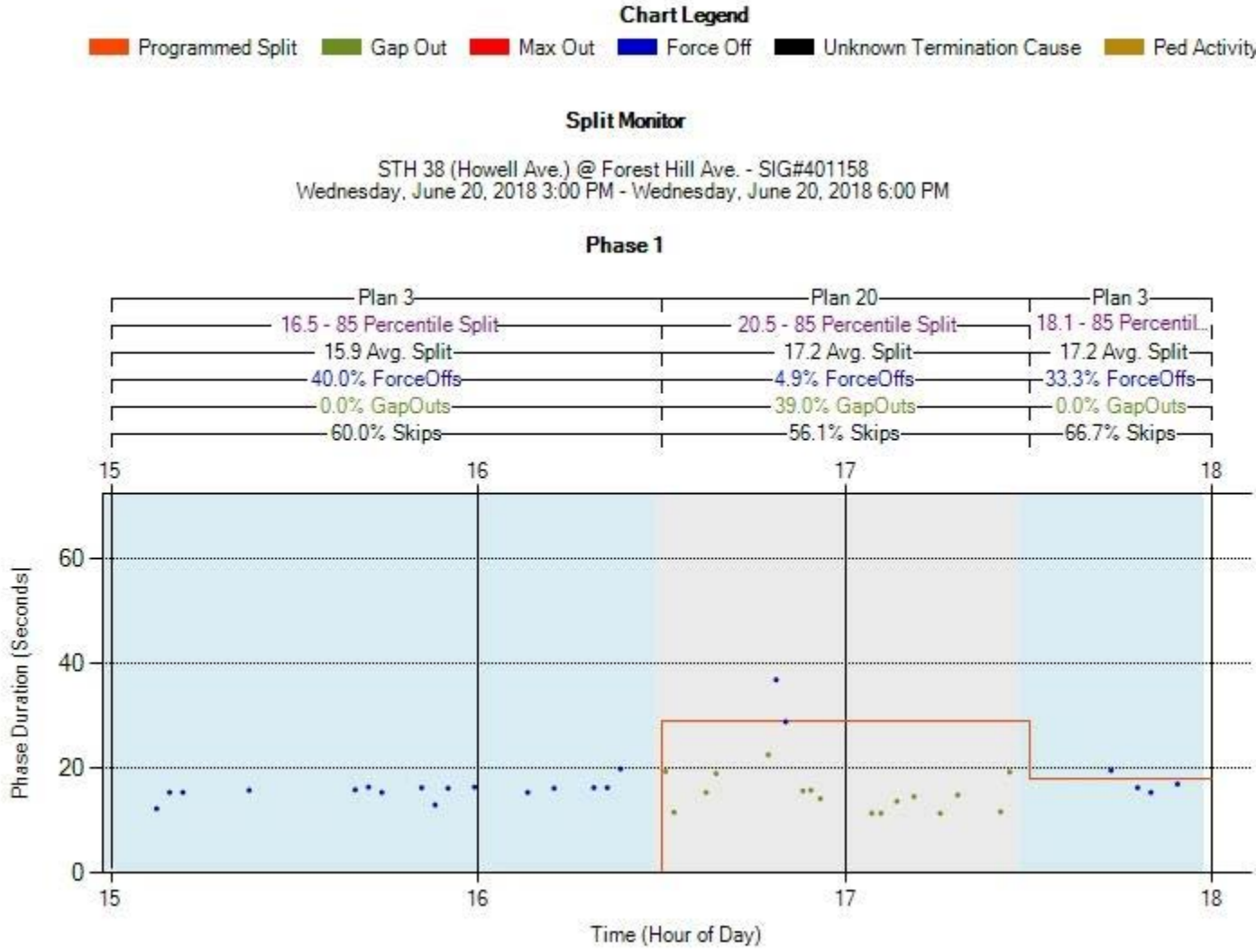
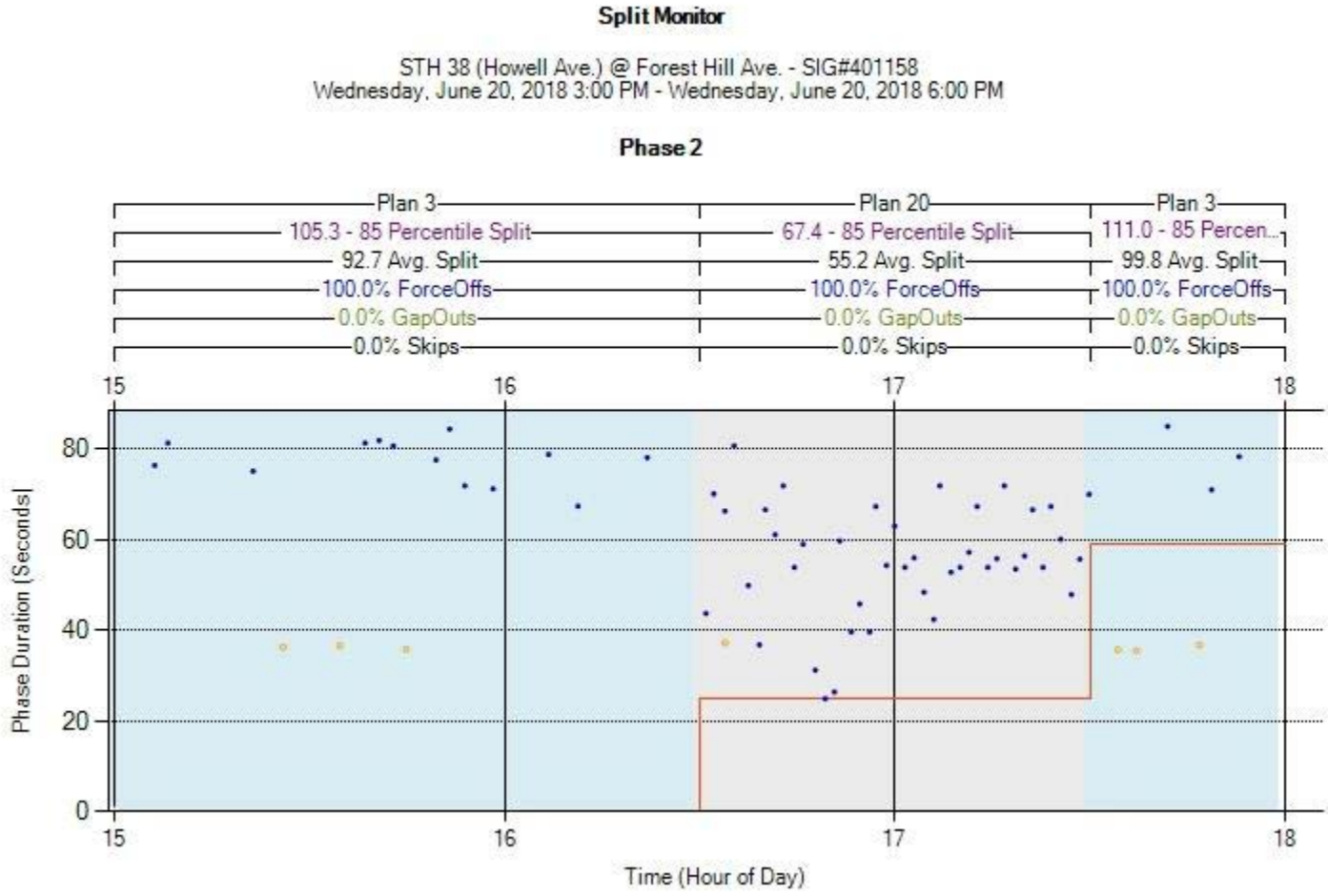
6/20/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Forest Hill Ave.
HCS Timings
6/20/2018 – 3:00 PM – 6:00 PM



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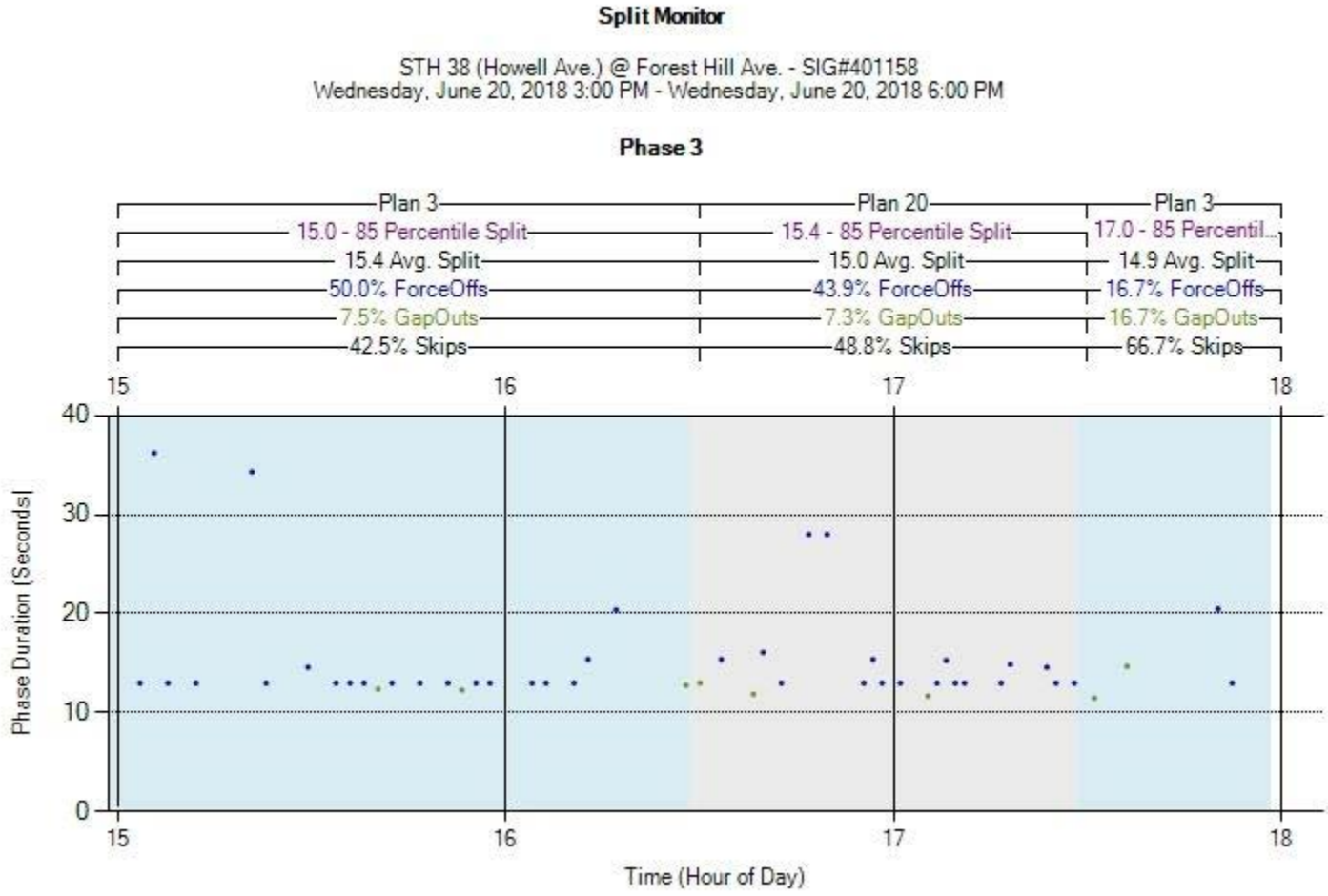

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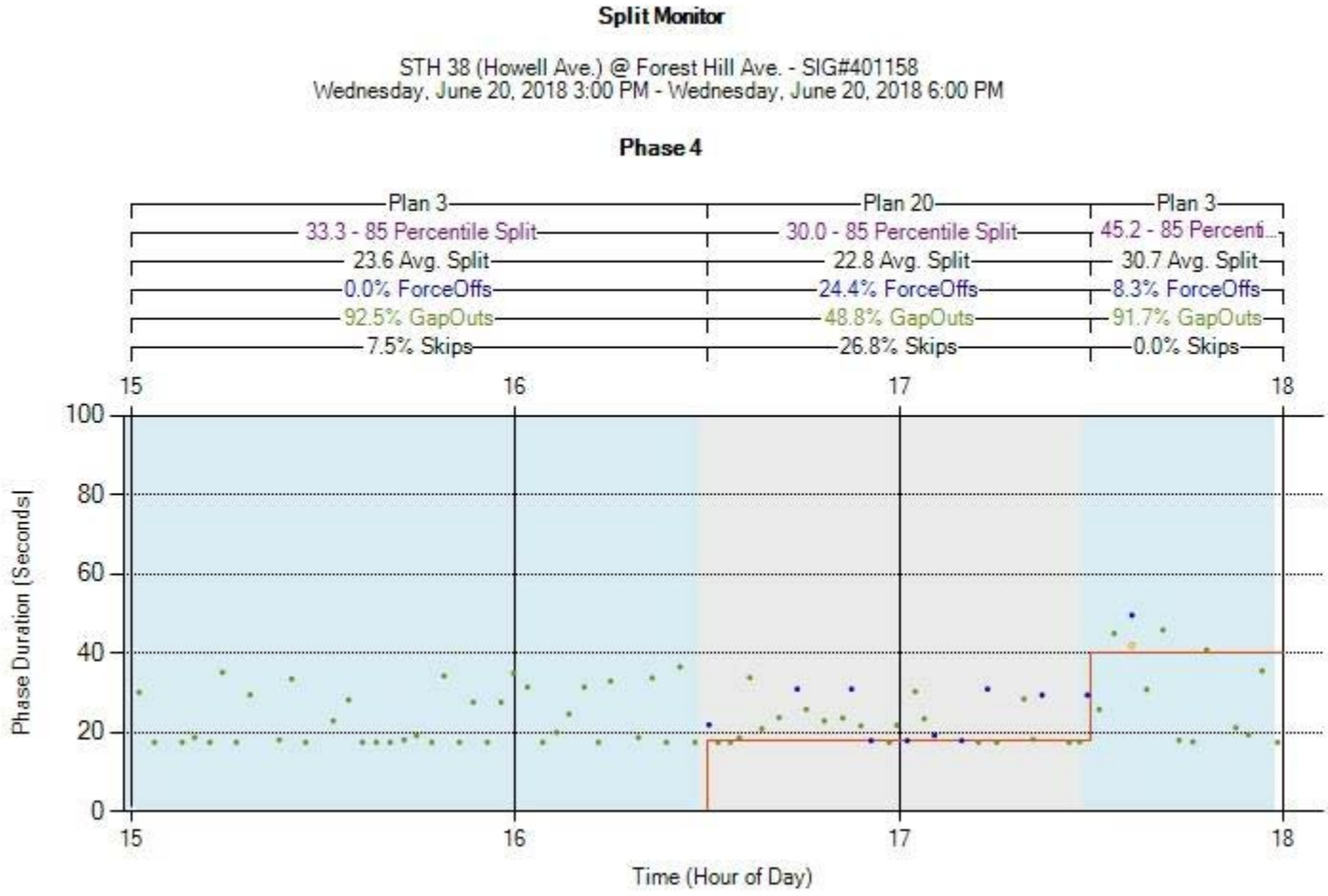
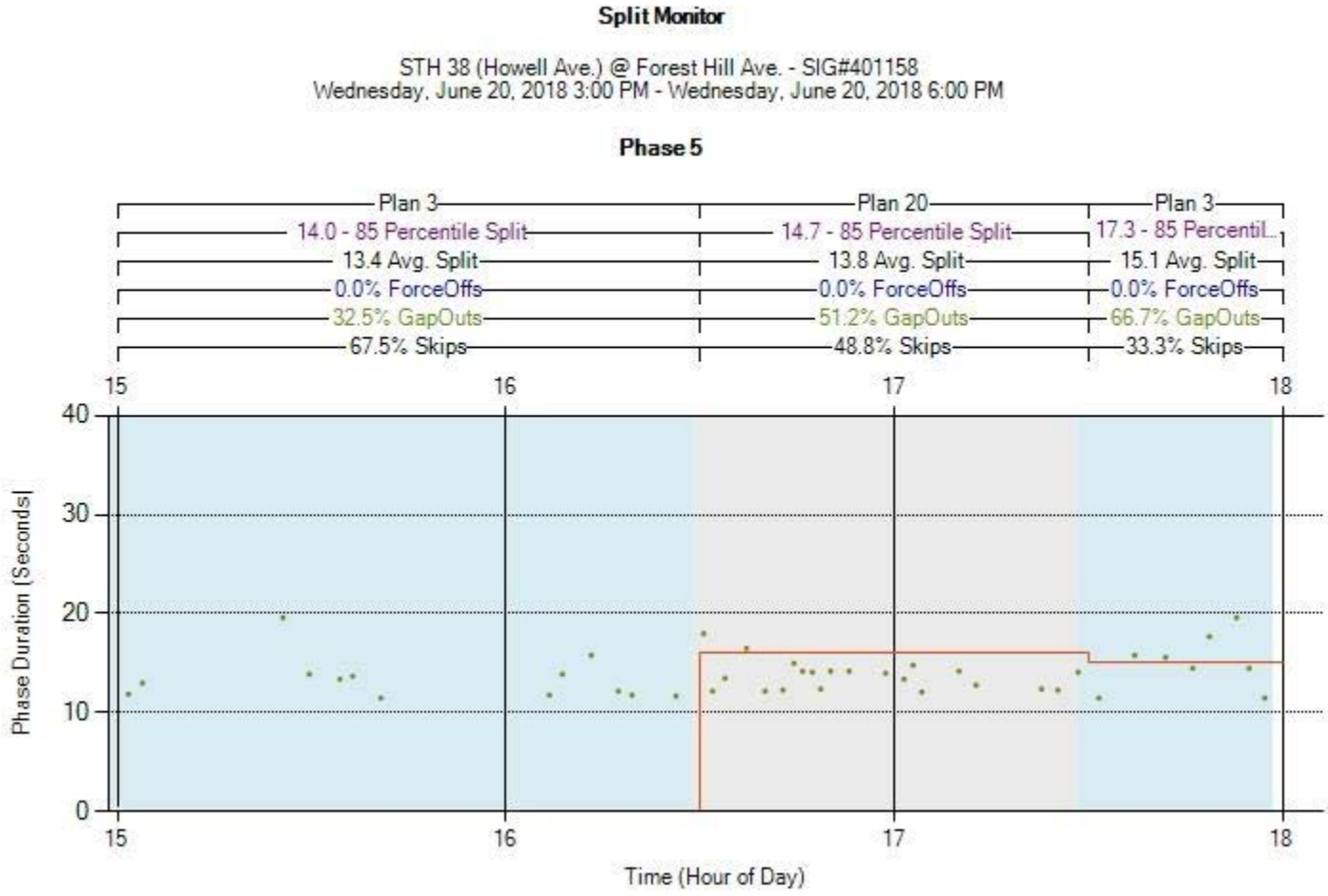
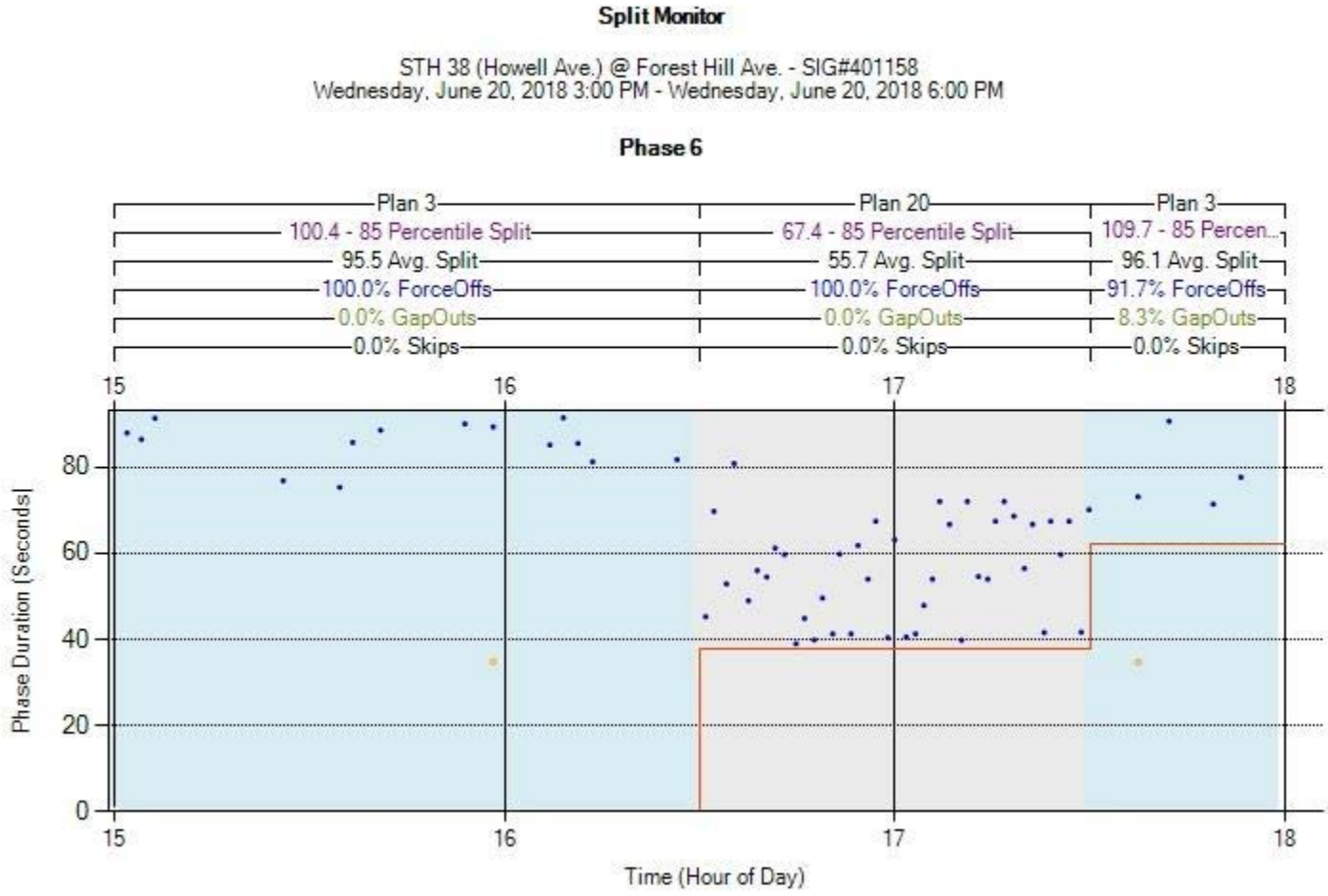


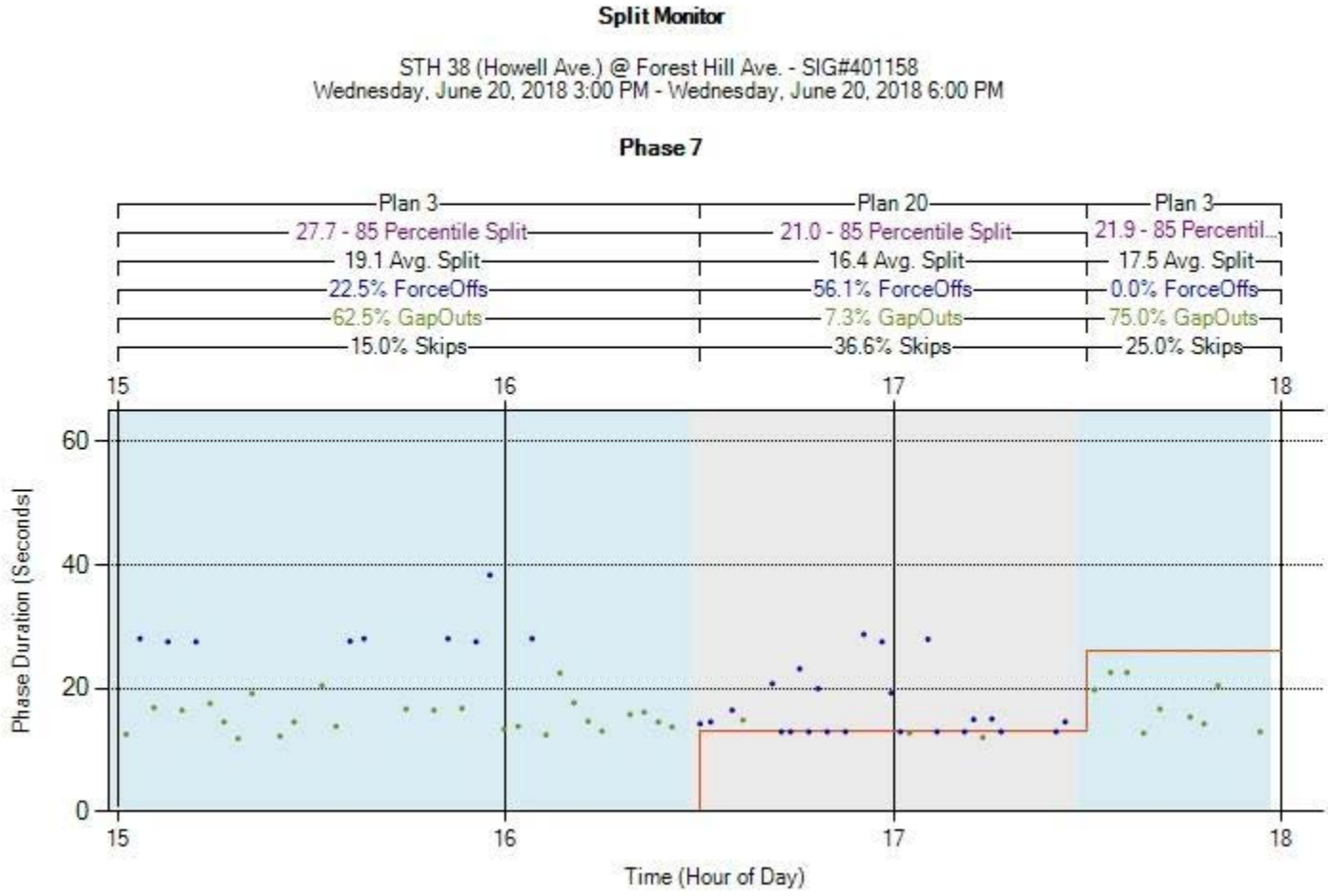
WIS 38 Corridor – STH 38 & Forest Hill Ave.
HCS Timings
6/20/2018 – 3:00 PM – 6:00 PM



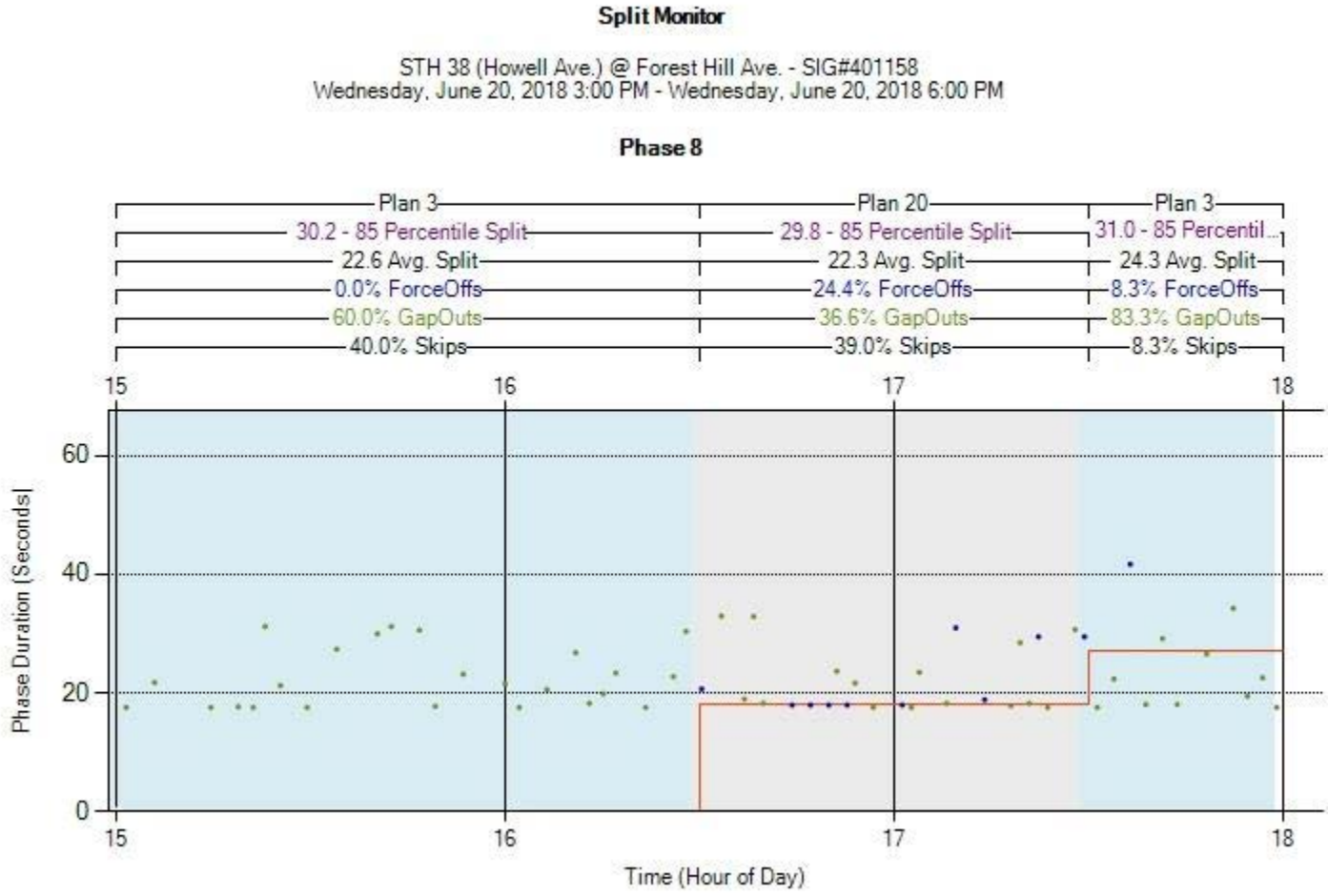
WIS 38 Corridor – STH 38 & Forest Hill Ave.
HCS Timings
6/20/2018 – 3:00 PM – 6:00 PM



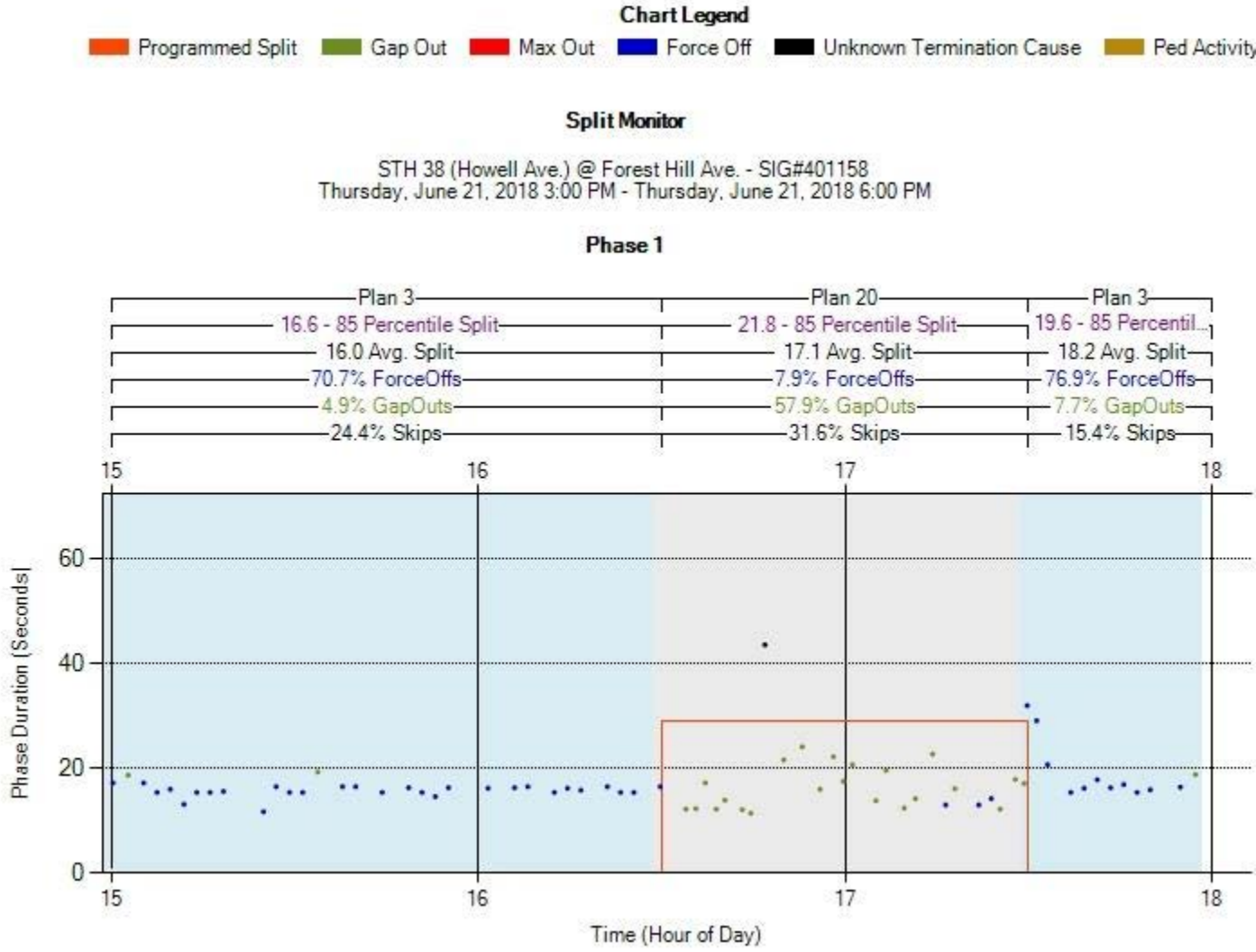
WIS 38 Corridor – STH 38 & Forest Hill Ave.
HCS Timings
6/20/2018 – 3:00 PM – 6:00 PM



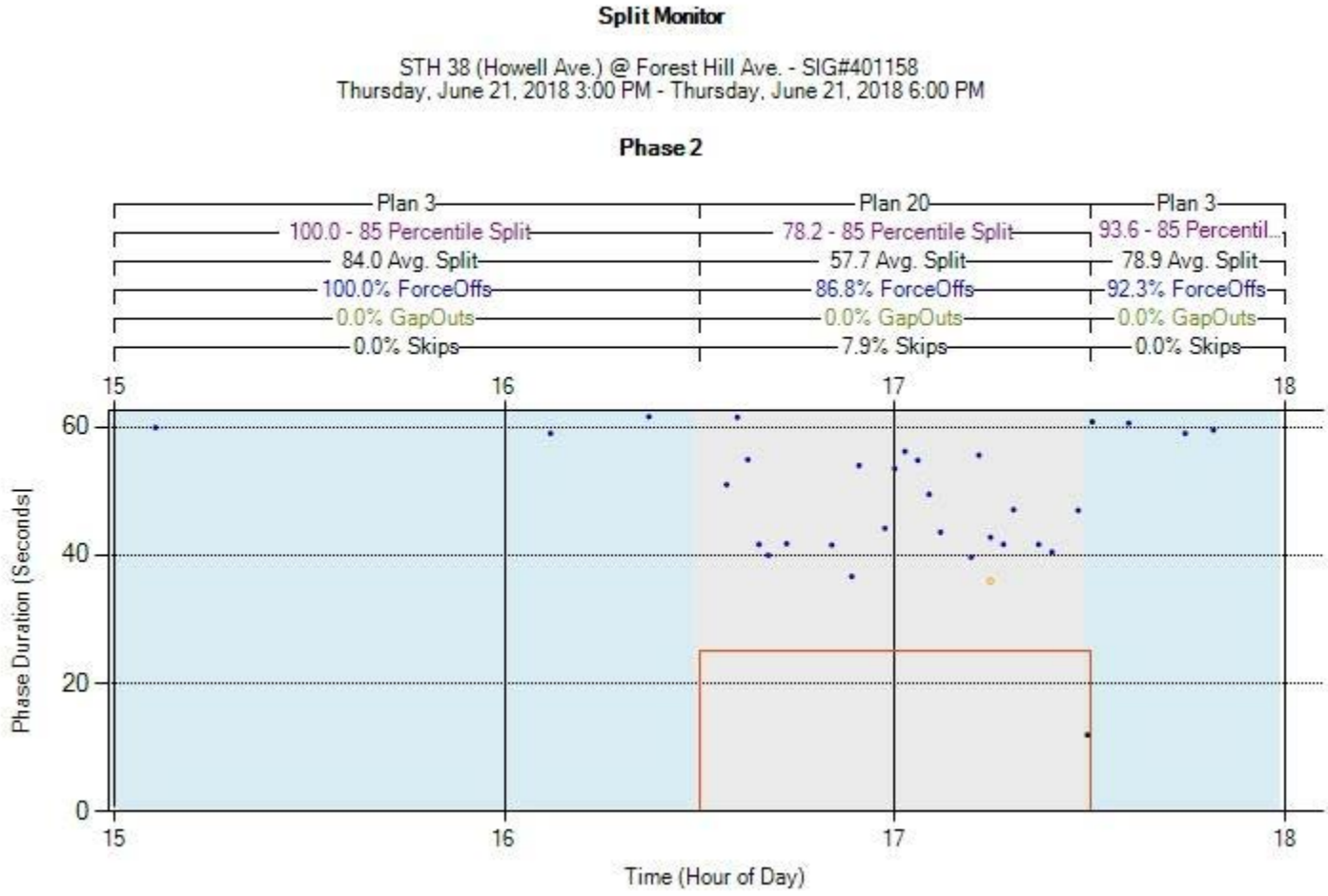
WIS 38 Corridor – STH 38 & Forest Hill Ave.
HCS Timings
6/20/2018 – 3:00 PM – 6:00 PM



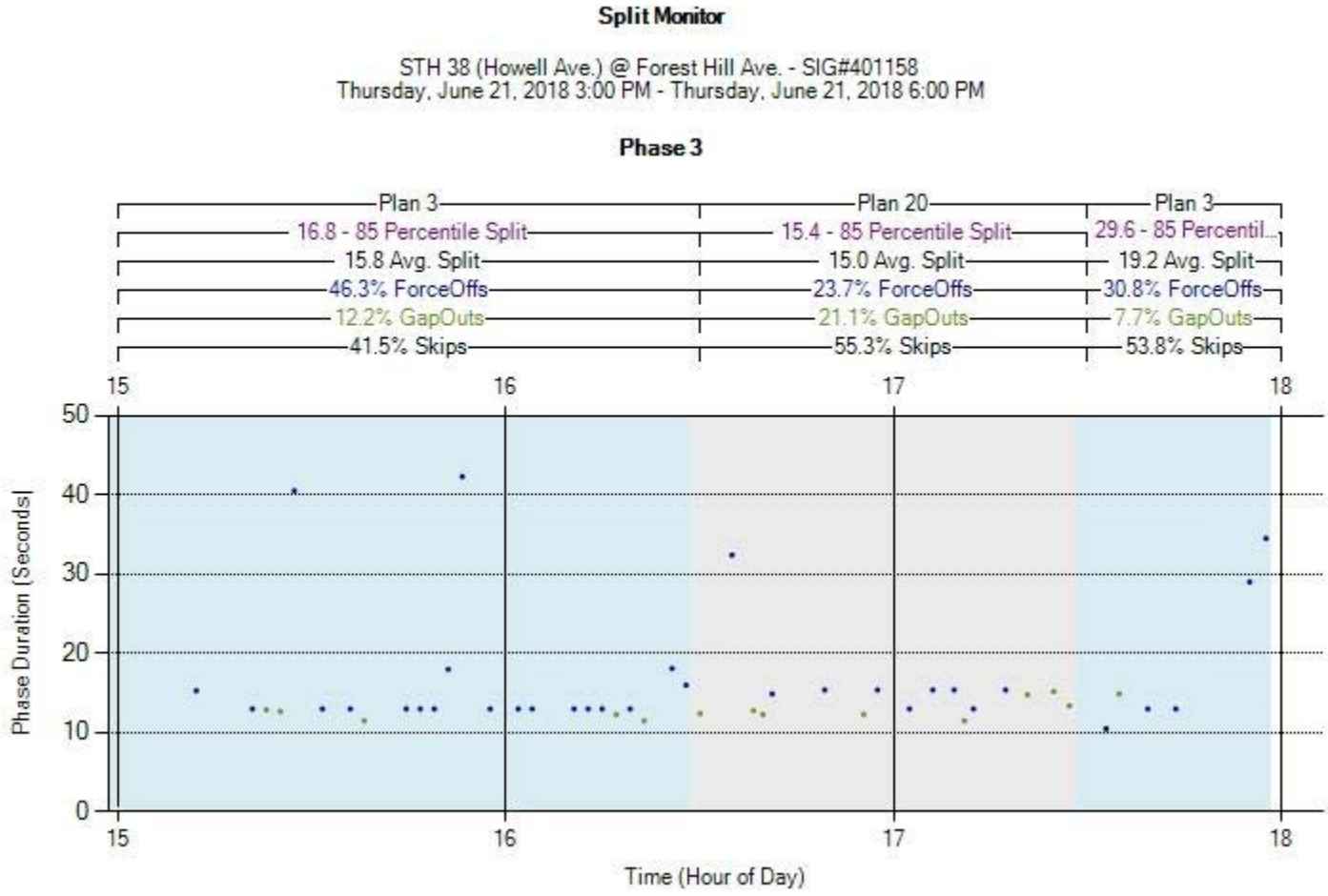
WIS 38 Corridor – STH 38 & Forest Hill Ave.
HCS Timings
6/21/2018 – 3:00 PM – 6:00 PM



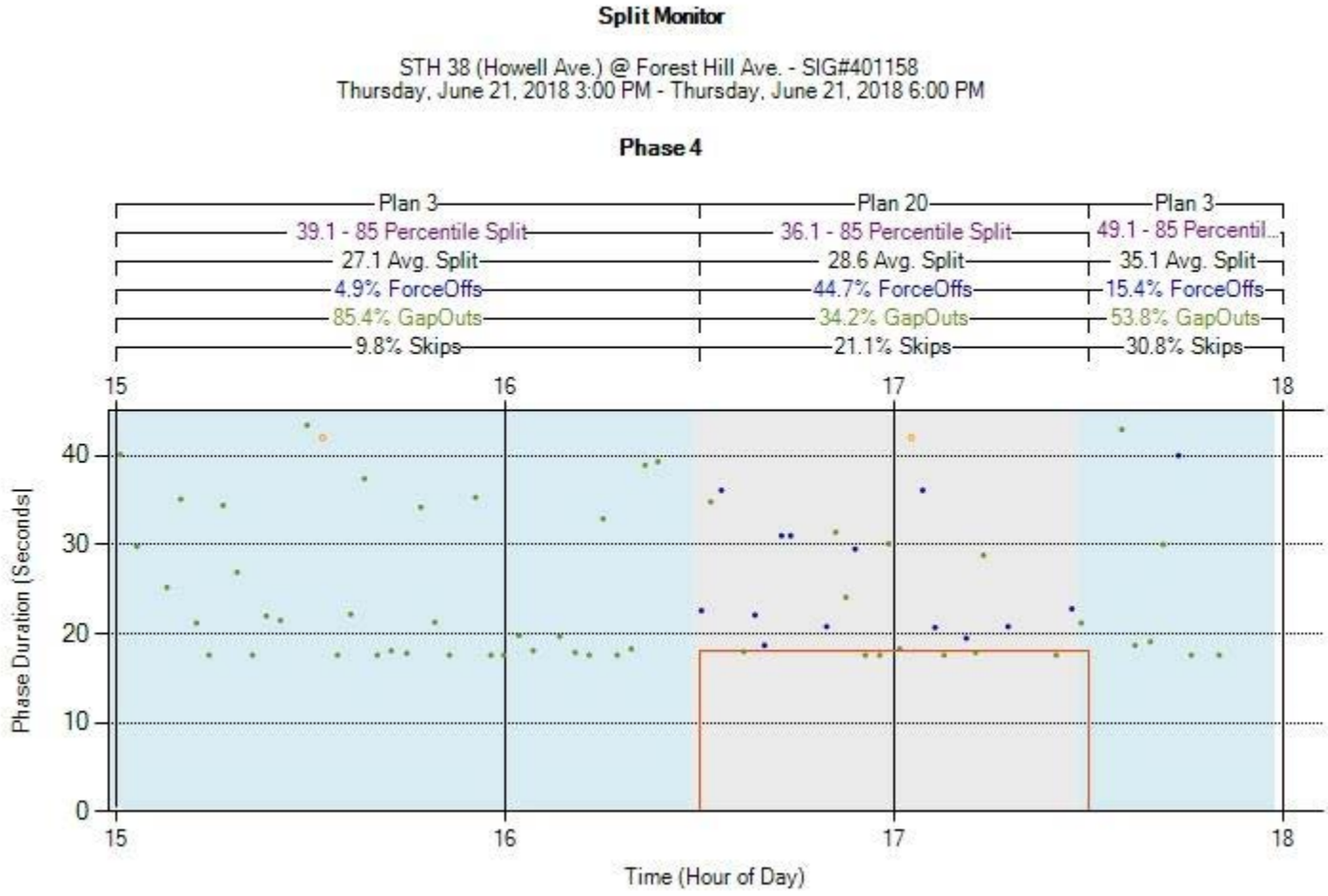
WIS 38 Corridor – STH 38 & Forest Hill Ave.
HCS Timings
6/21/2018 – 3:00 PM – 6:00 PM



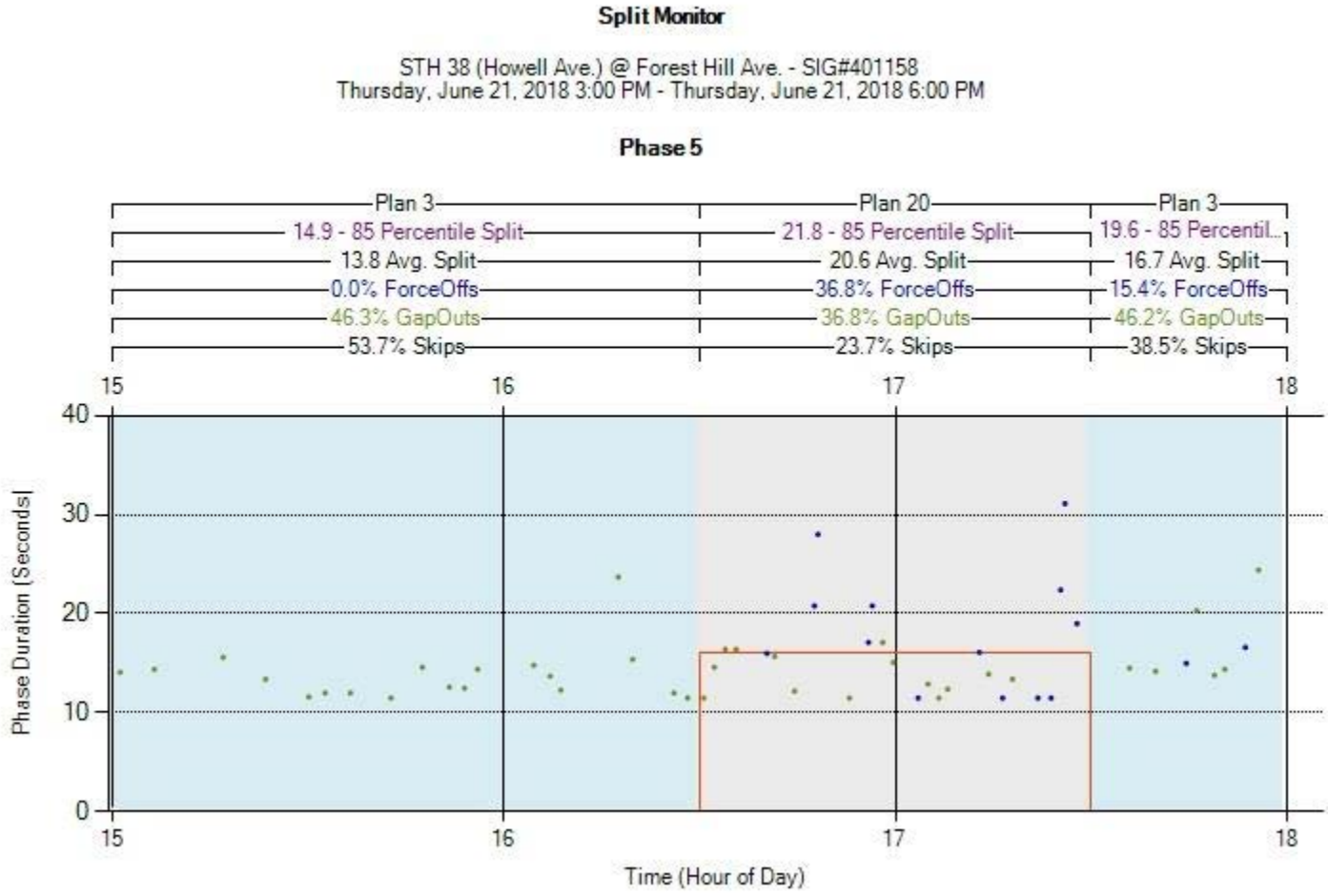
WIS 38 Corridor – STH 38 & Forest Hill Ave.
HCS Timings
6/21/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Forest Hill Ave.
HCS Timings
6/21/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Forest Hill Ave.
HCS Timings
6/21/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Forest Hill Ave.
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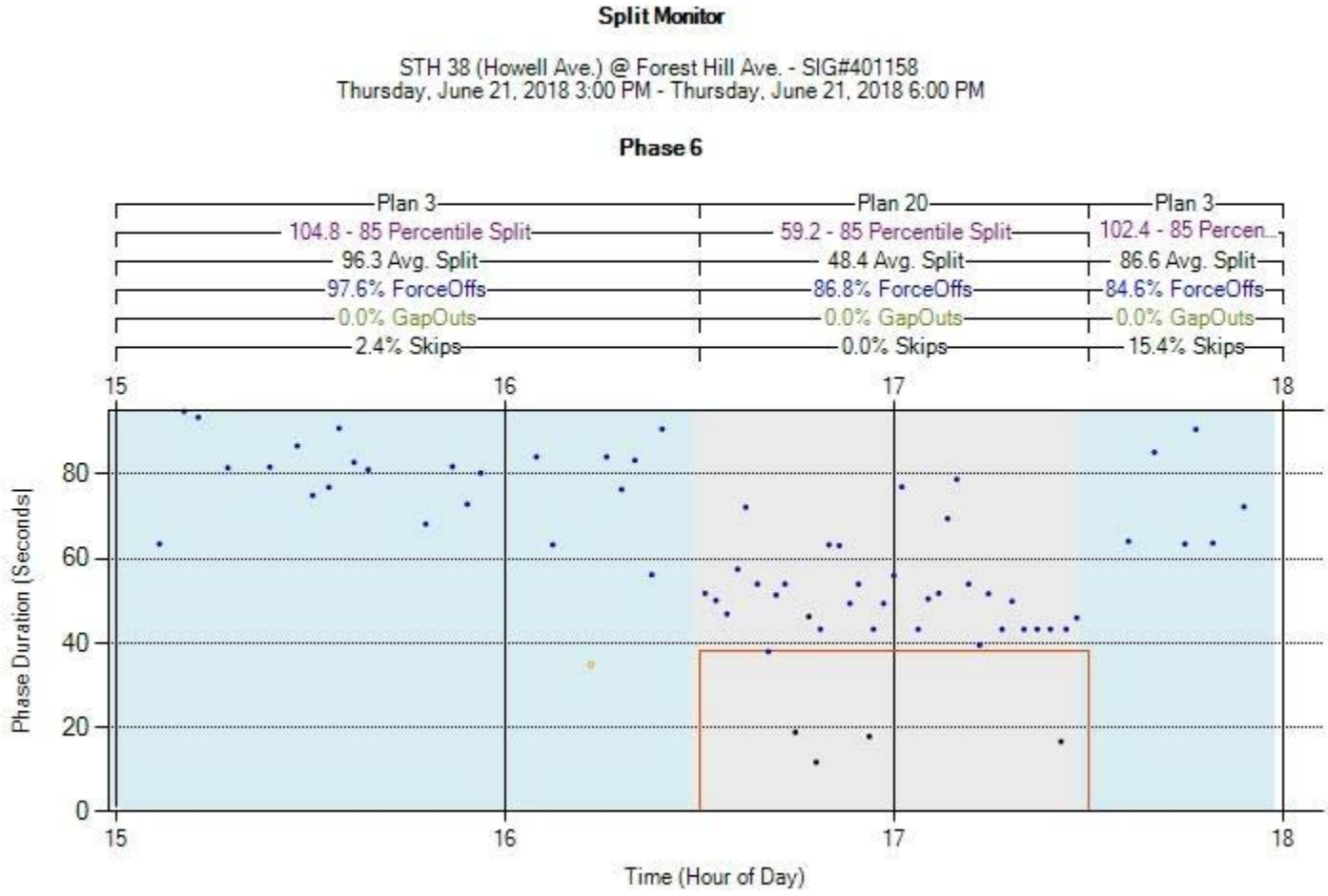
6/21/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Forest Hill Ave.
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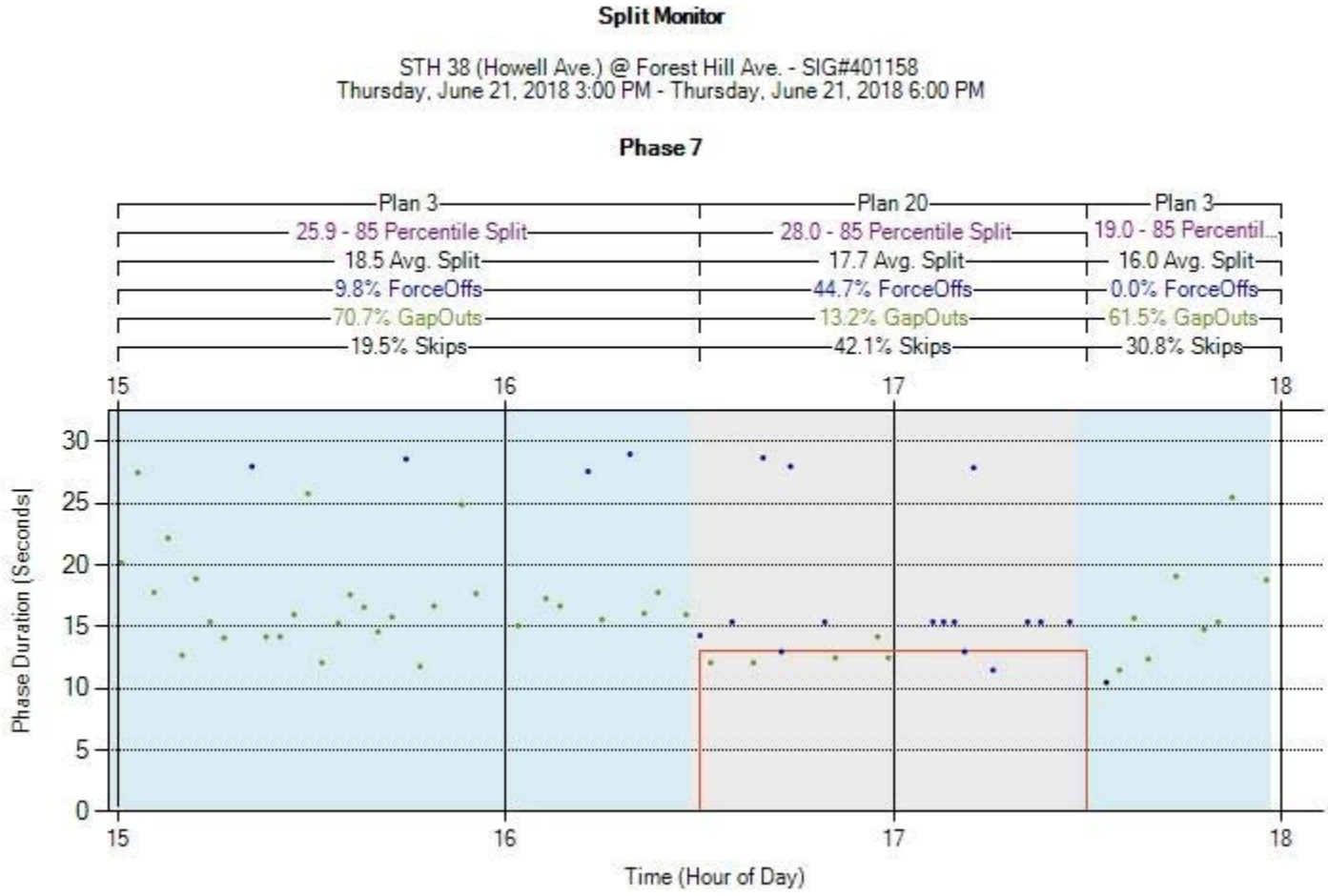
6/21/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Forest Hill Ave.
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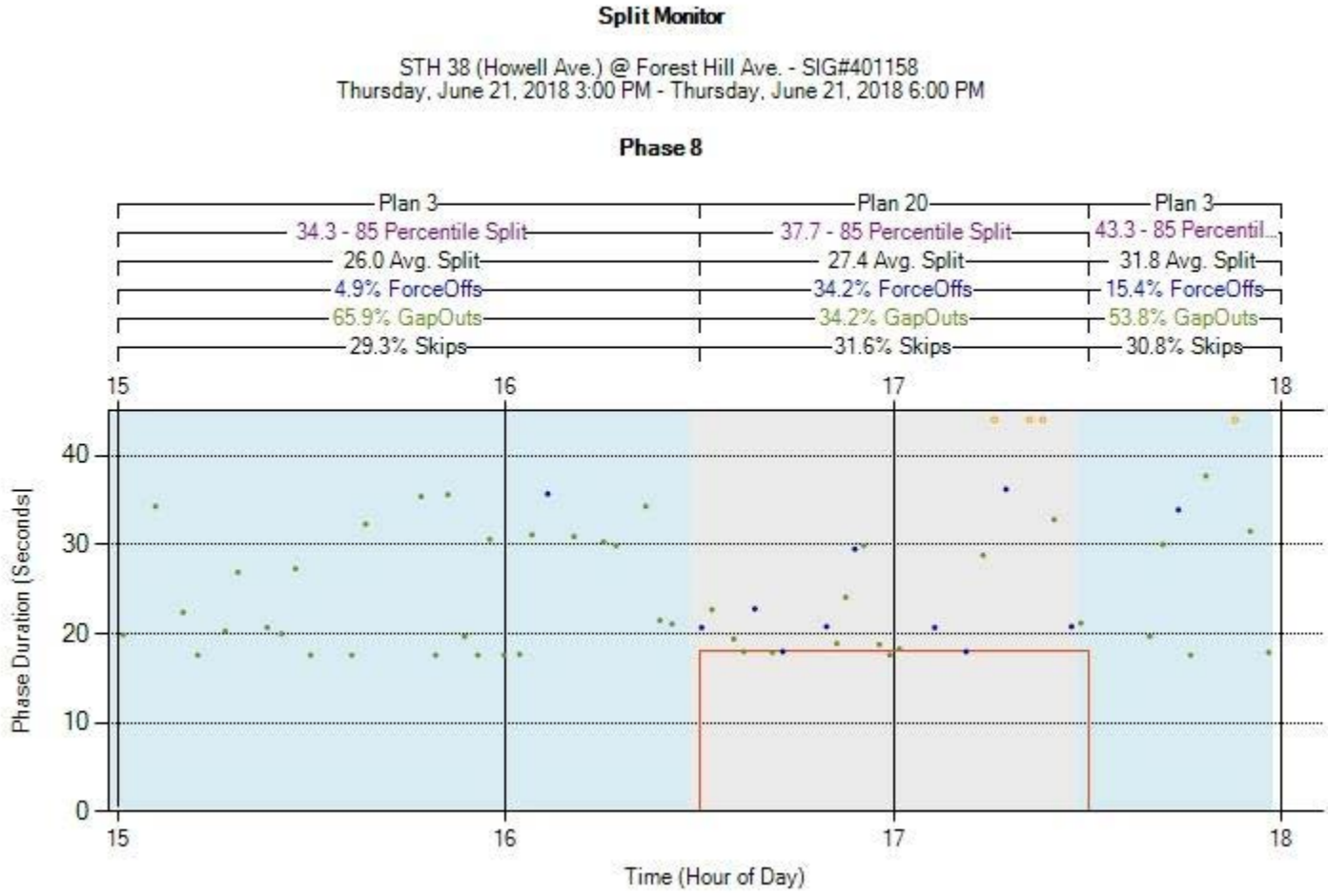
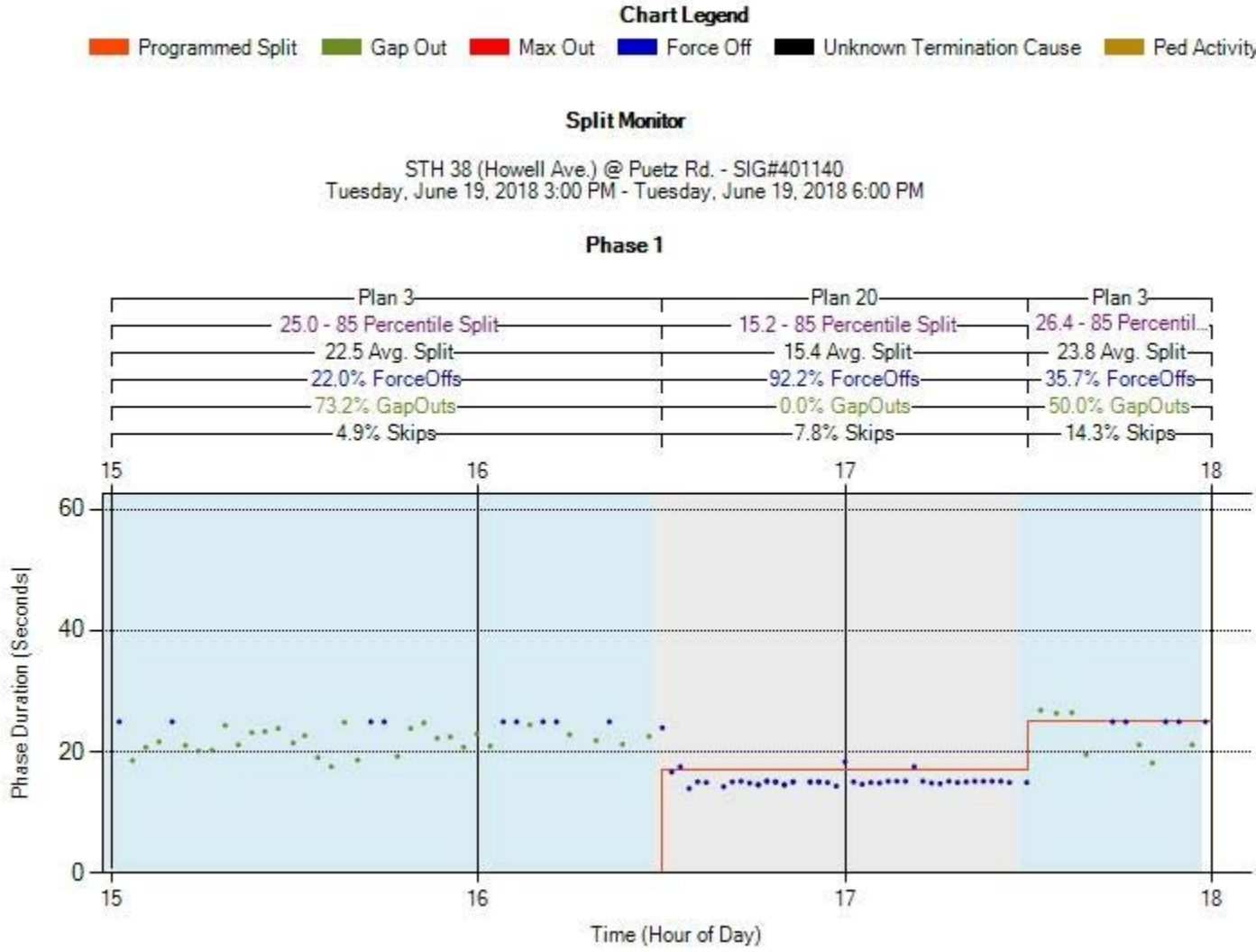
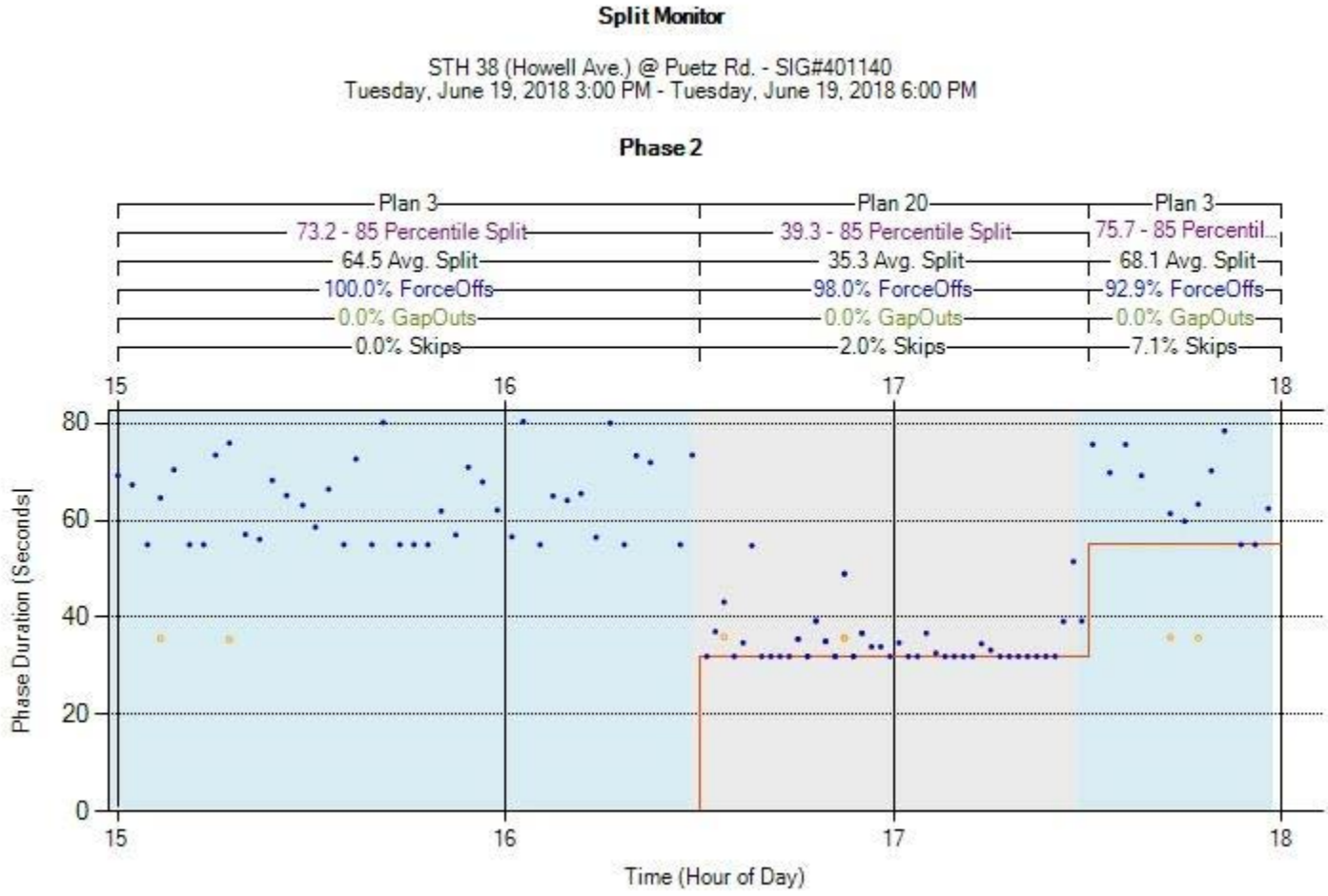
6/21/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Puetz Rd.
HCS Timings
6/19/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Puetz Rd.
HCS Timings
6/19/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Puetz Rd.
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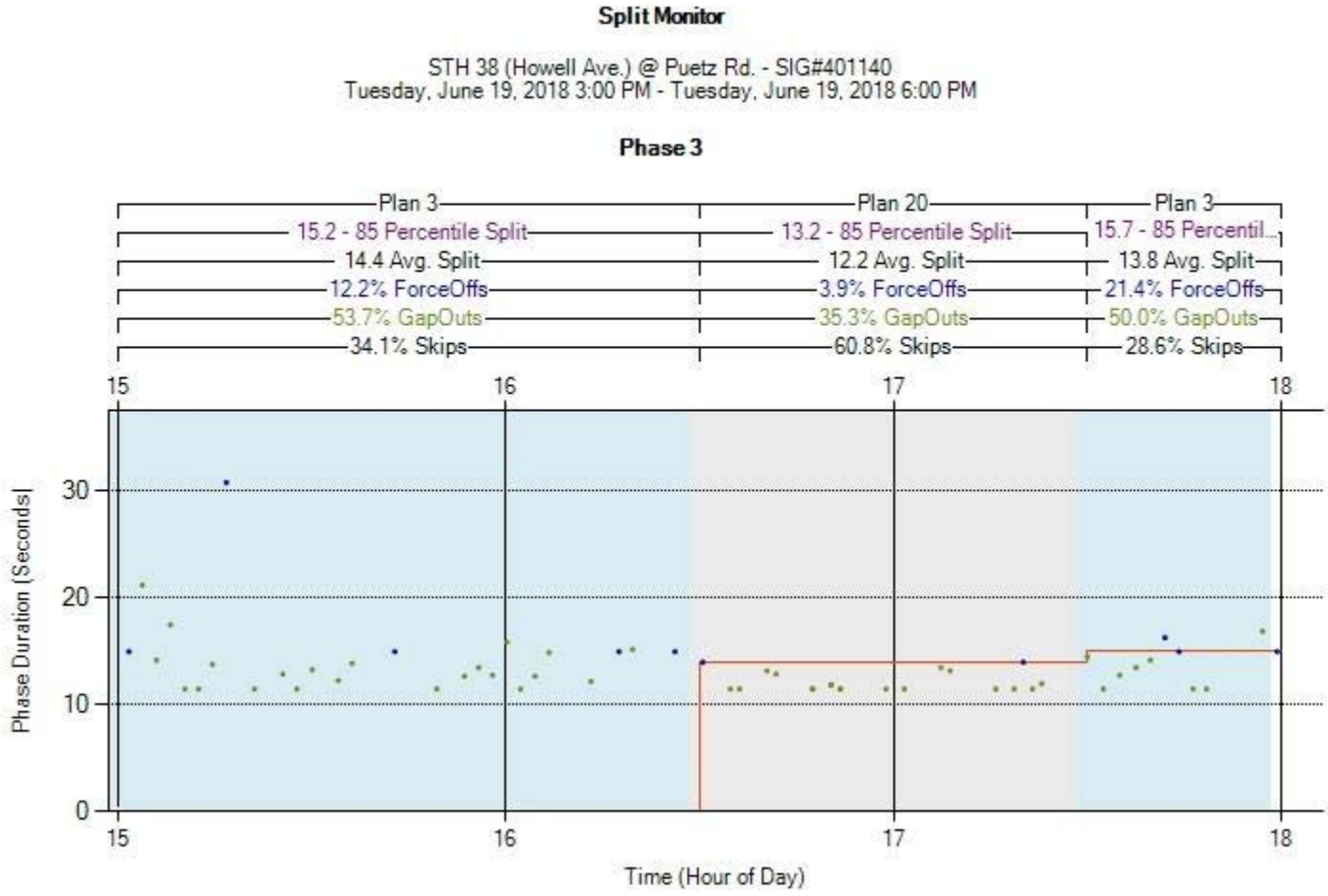

WIS 38 Corridor – STH 38 & Puetz Rd.
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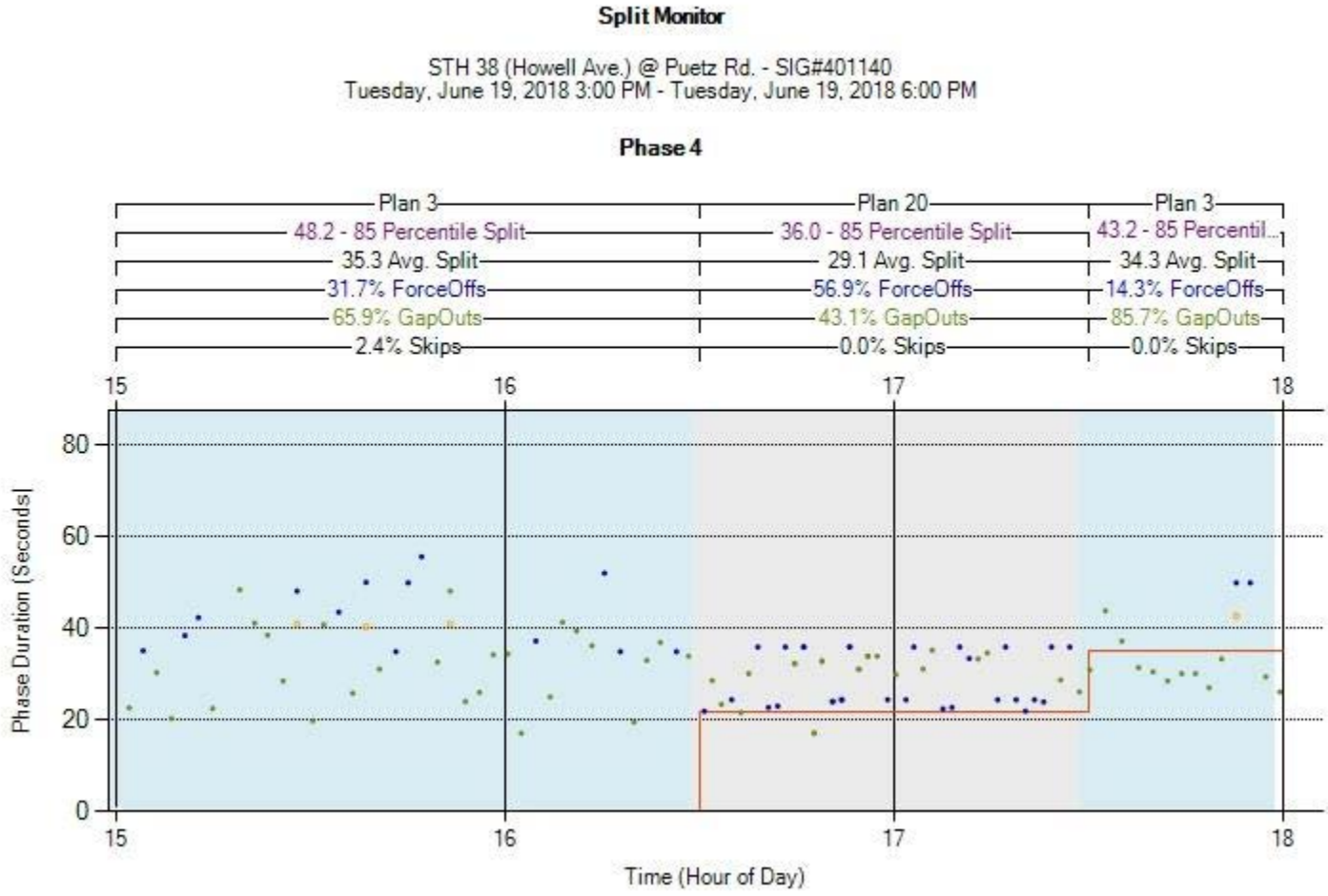
6/19/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Puetz Rd.
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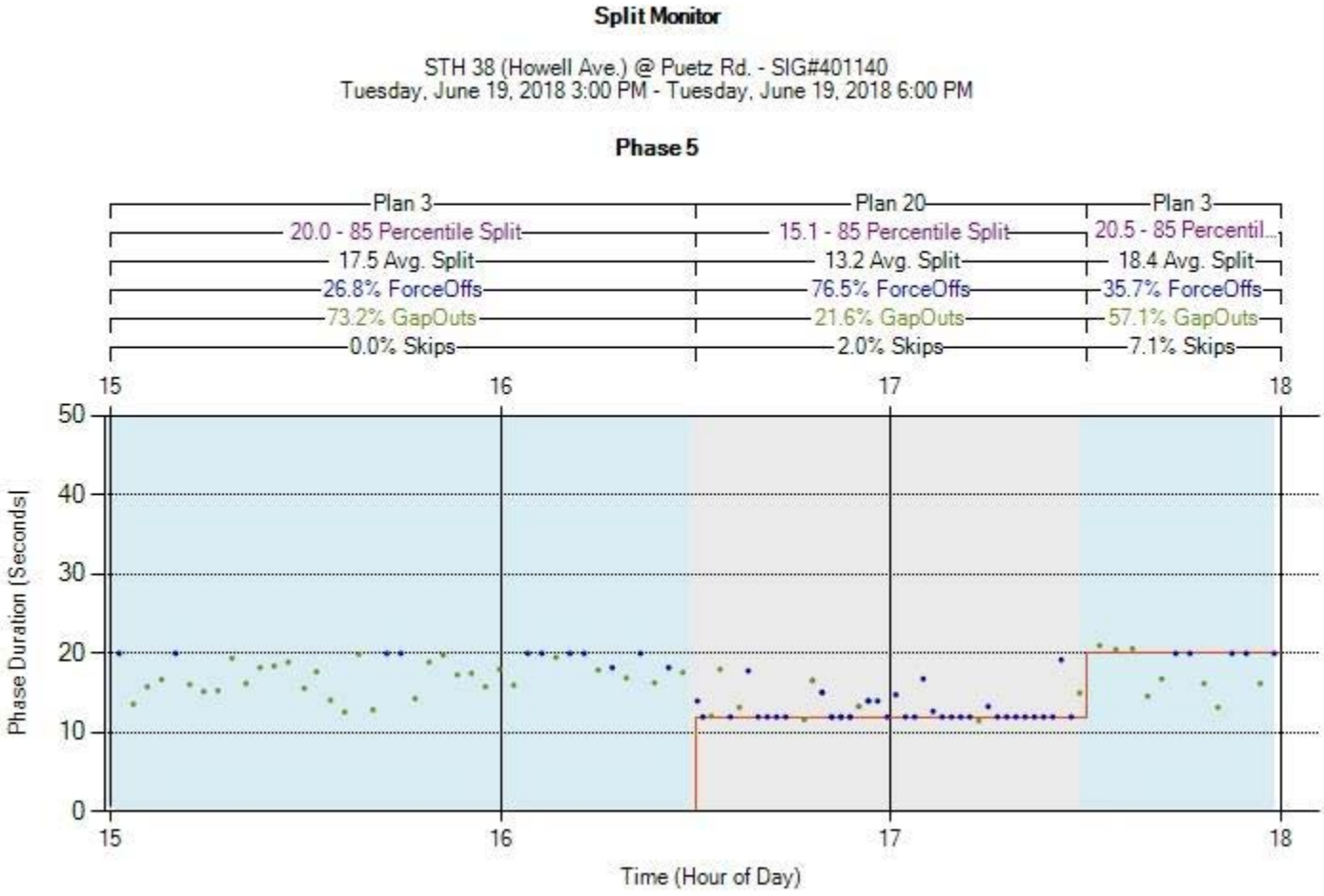
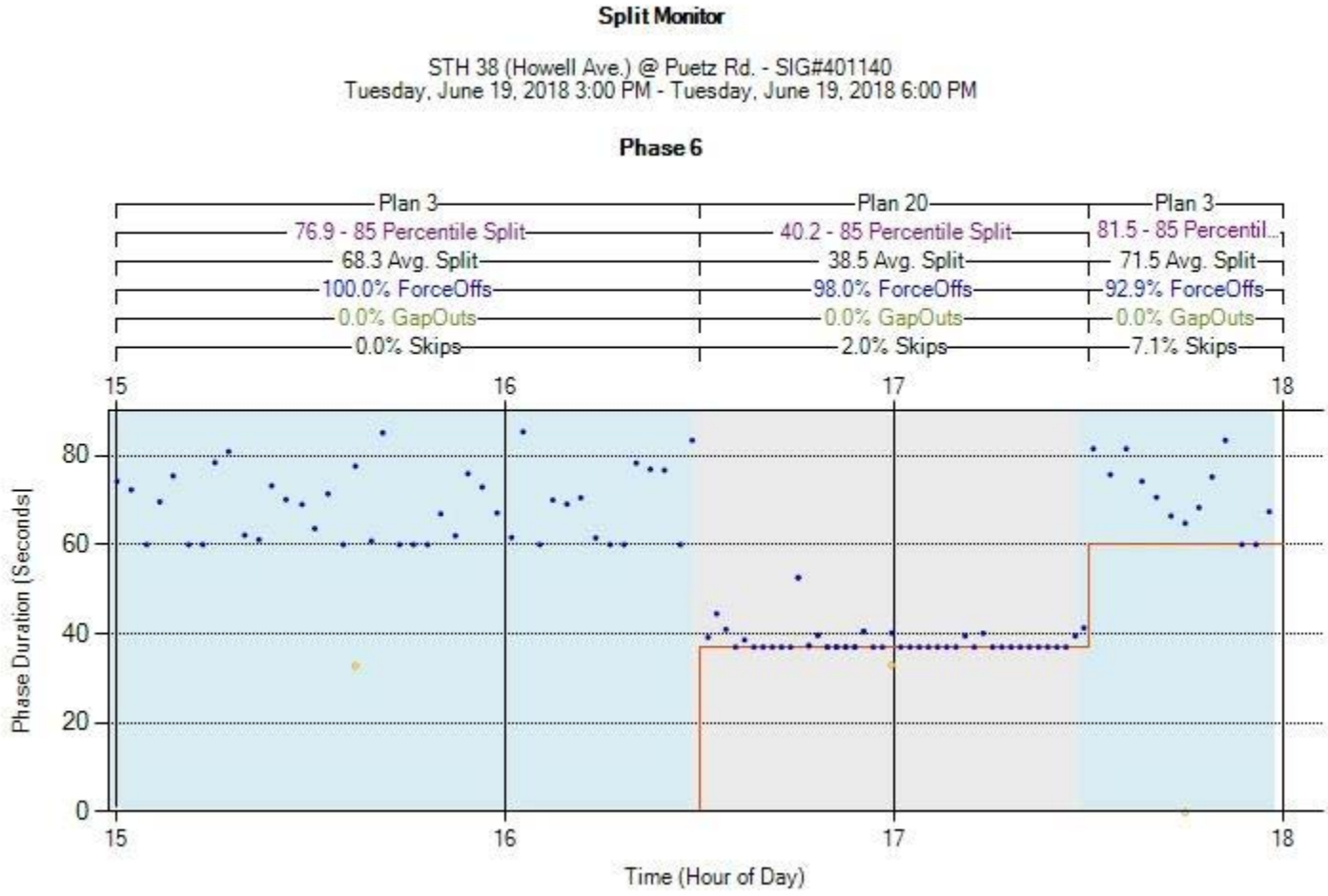
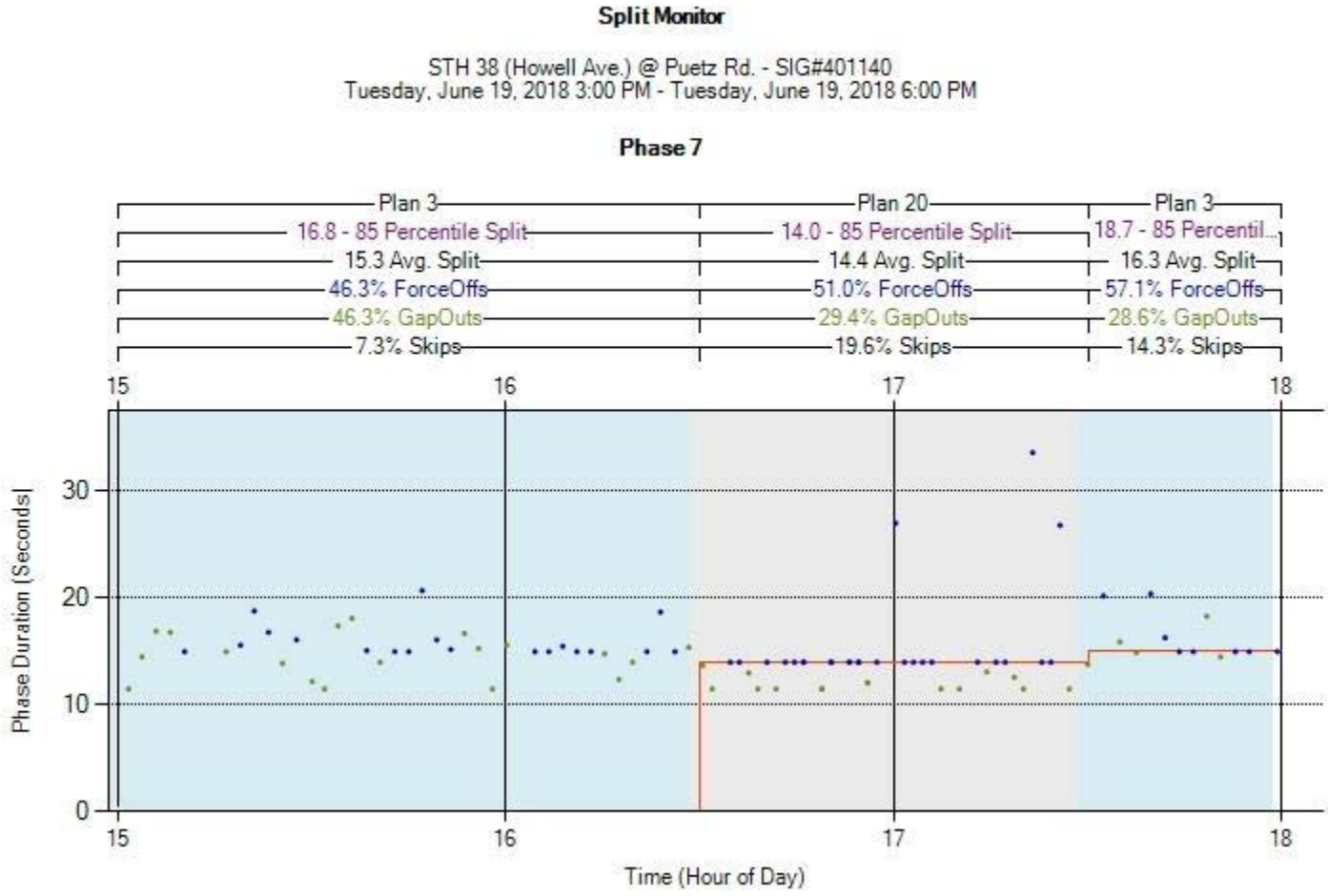


WIS 38 Corridor – STH 38 & Puetz Rd.
HCS Timings
6/19/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Puetz Rd.
HCS Timings
6/19/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Puetz Rd.
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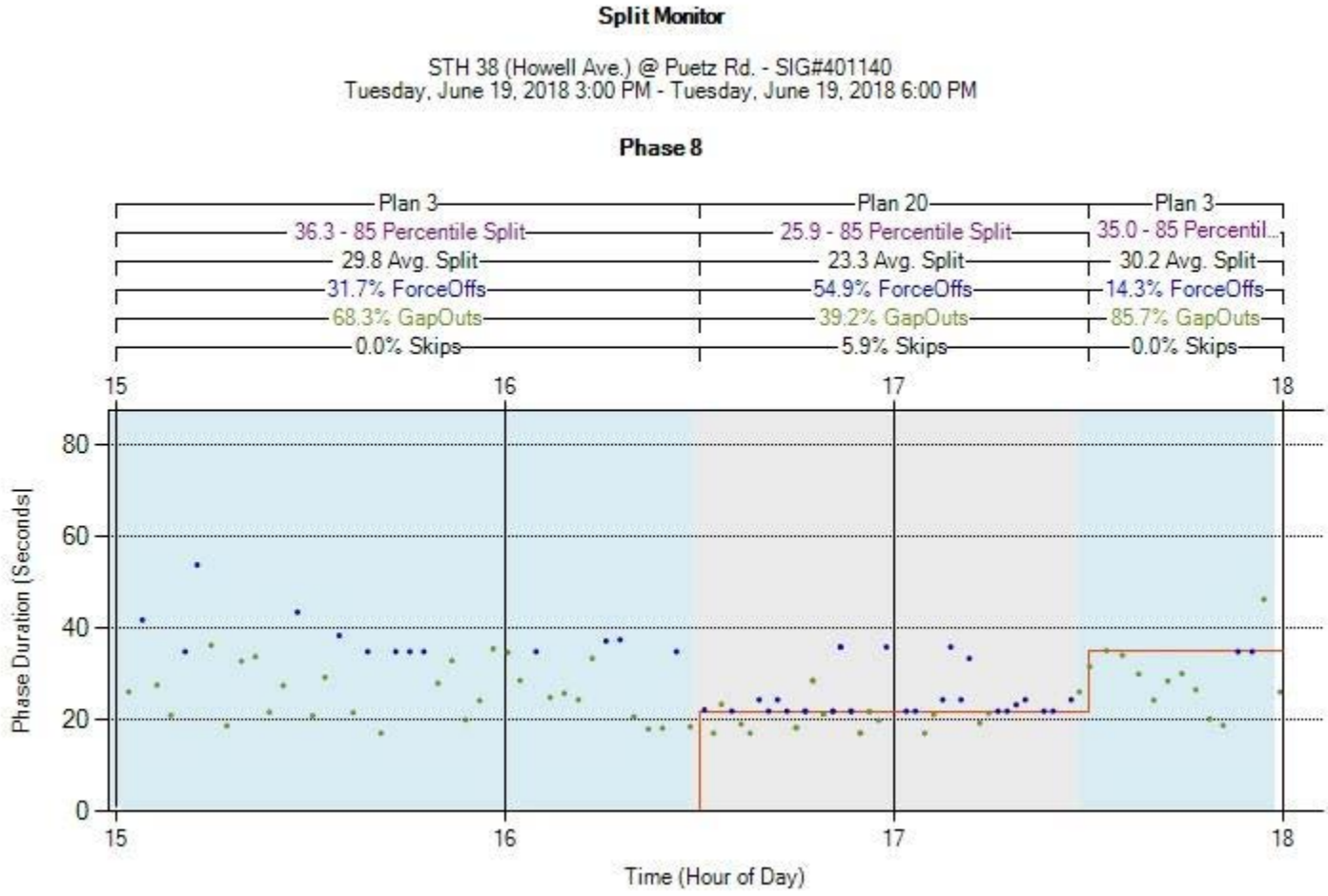
6/19/2018 – 3:00 PM – 6:00 PM



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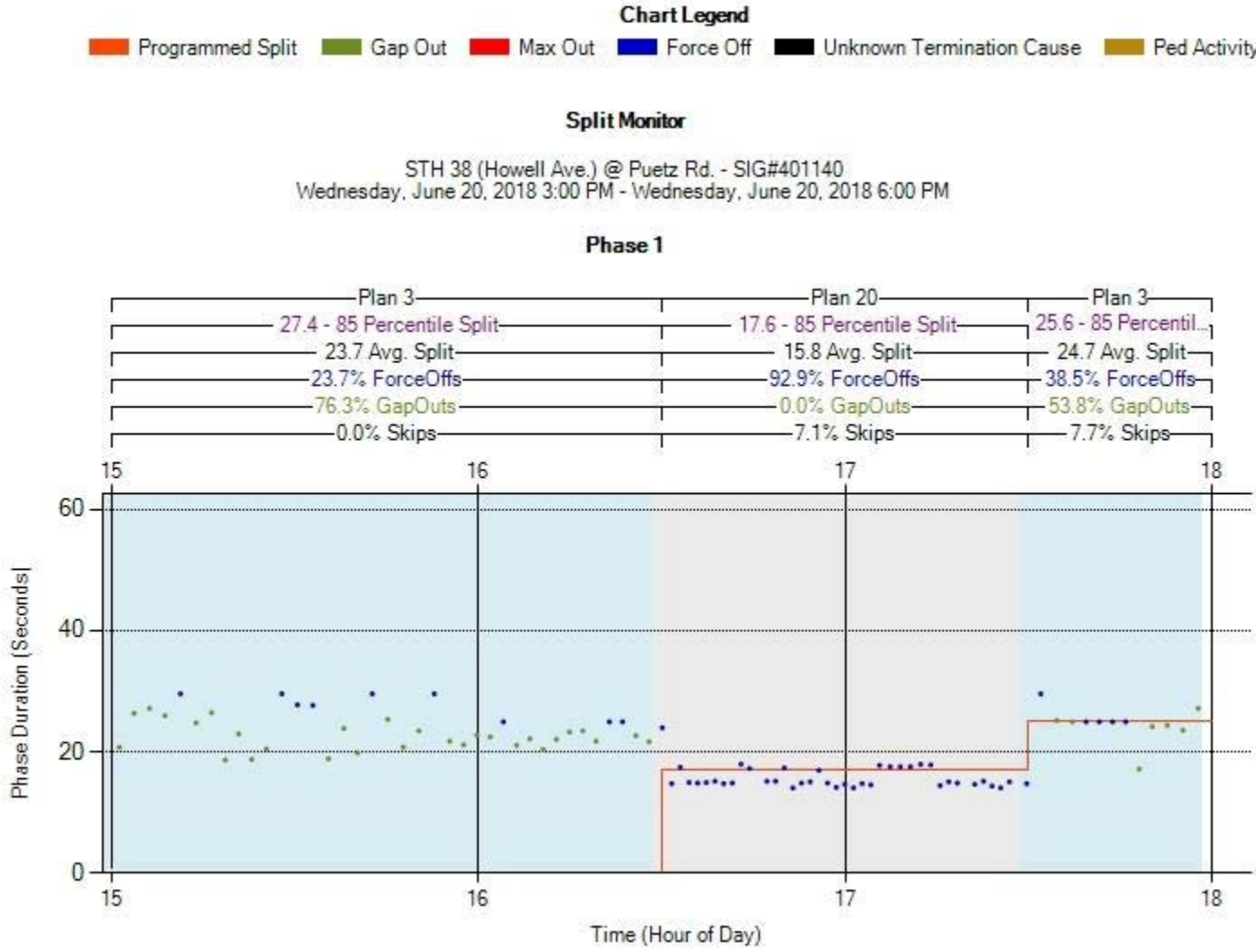
HCS Timings
6/20/2018 – 3:00 PM – 6:00 PM



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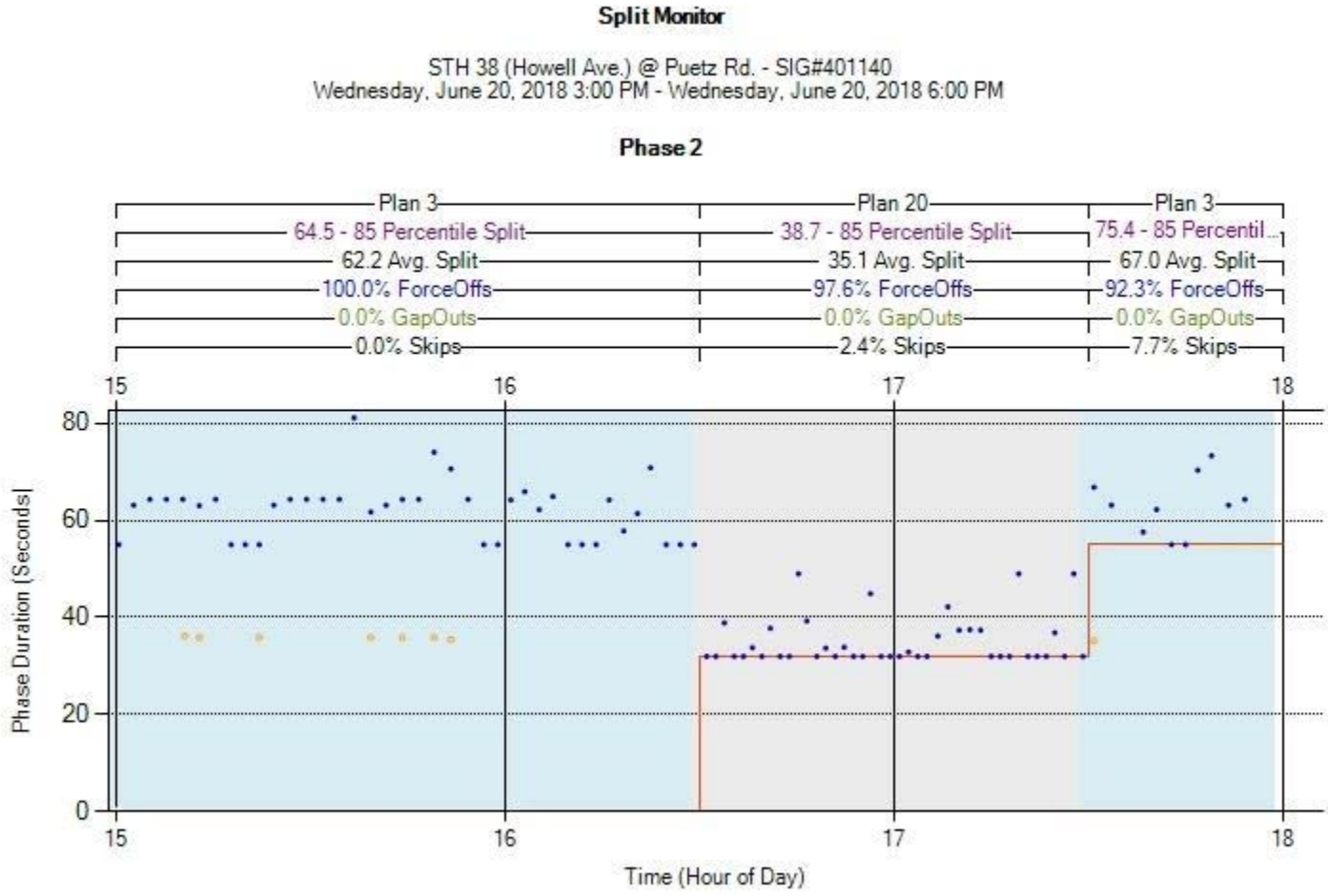

WIS 38 Corridor – STH 38 & Puetz Rd.
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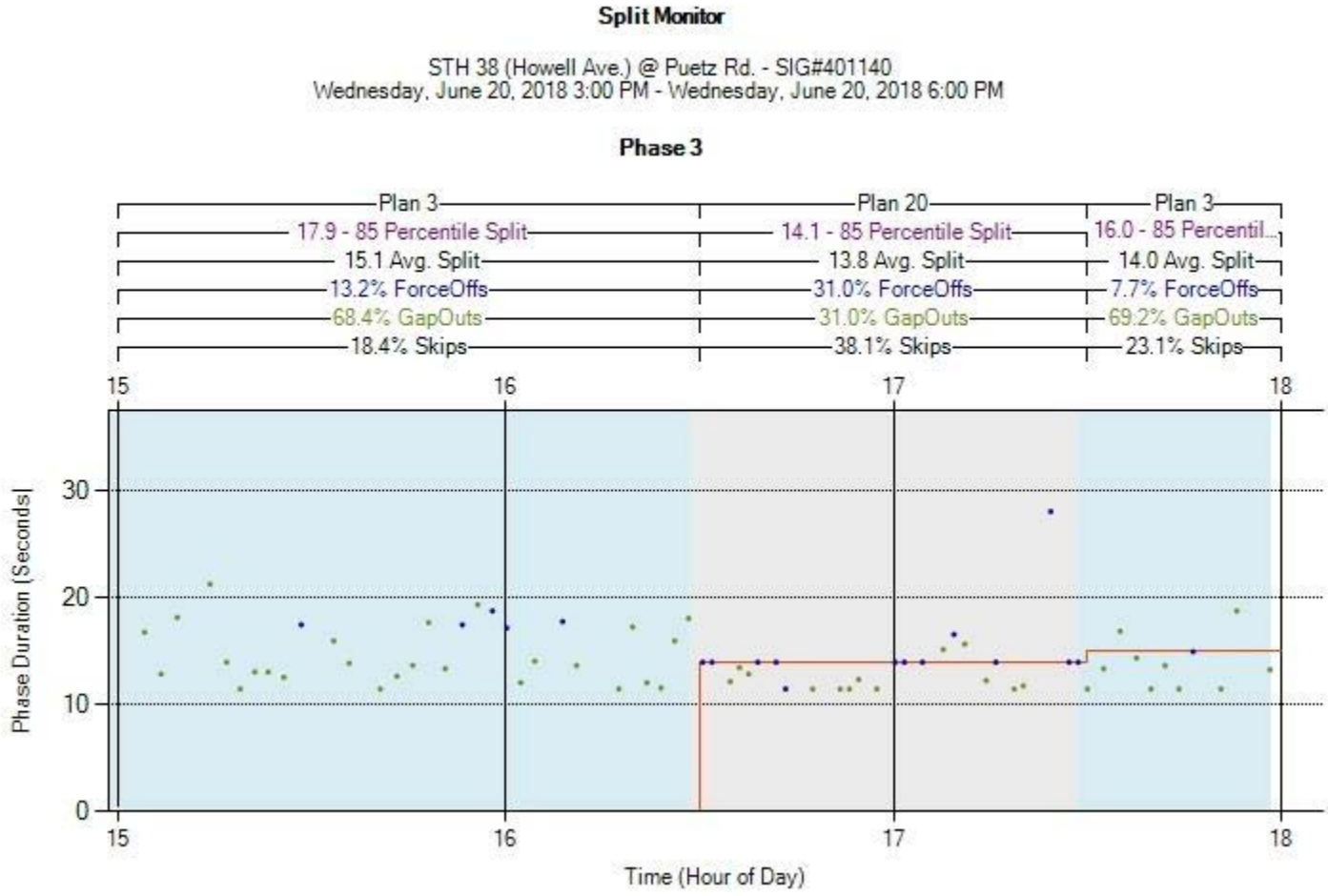

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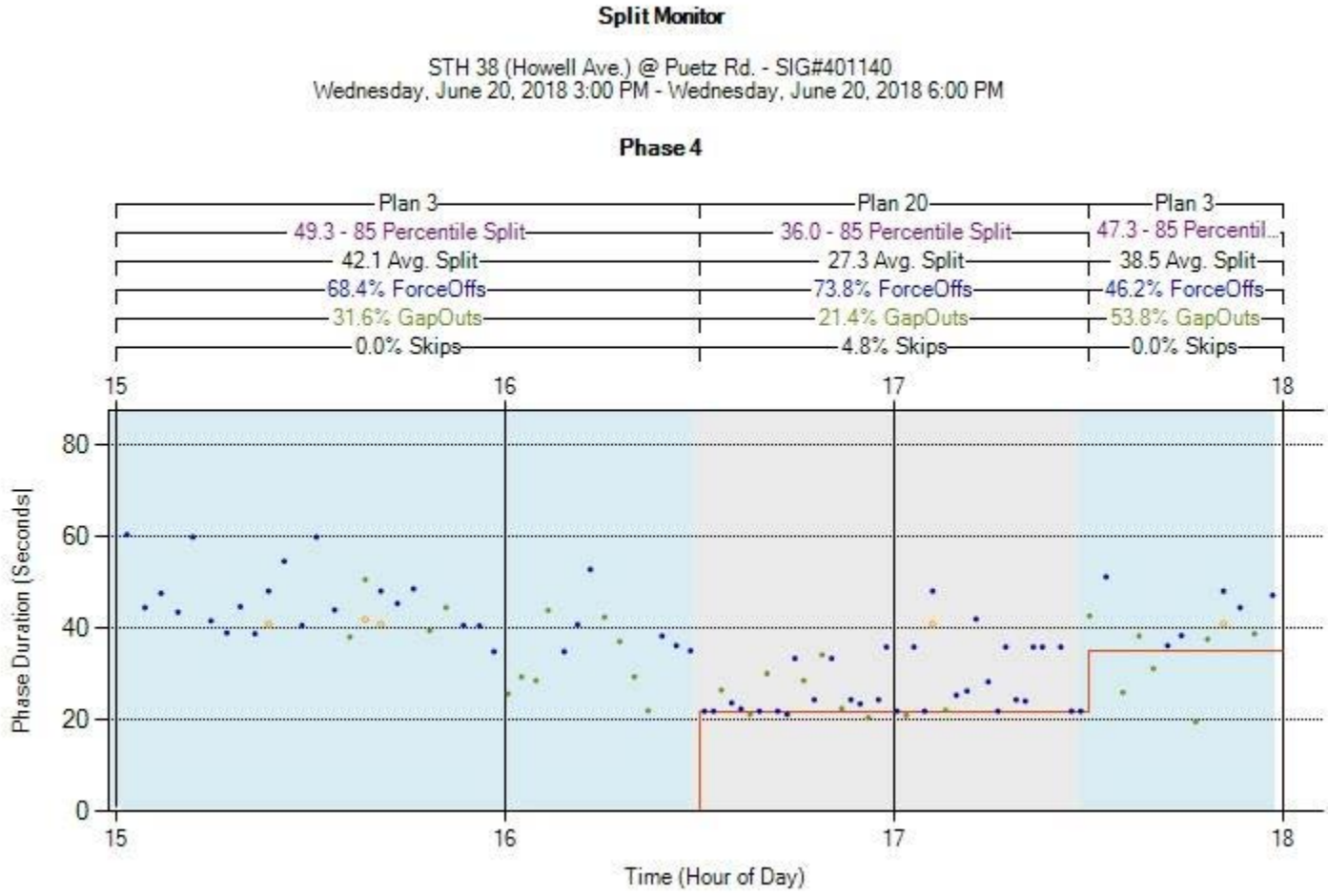

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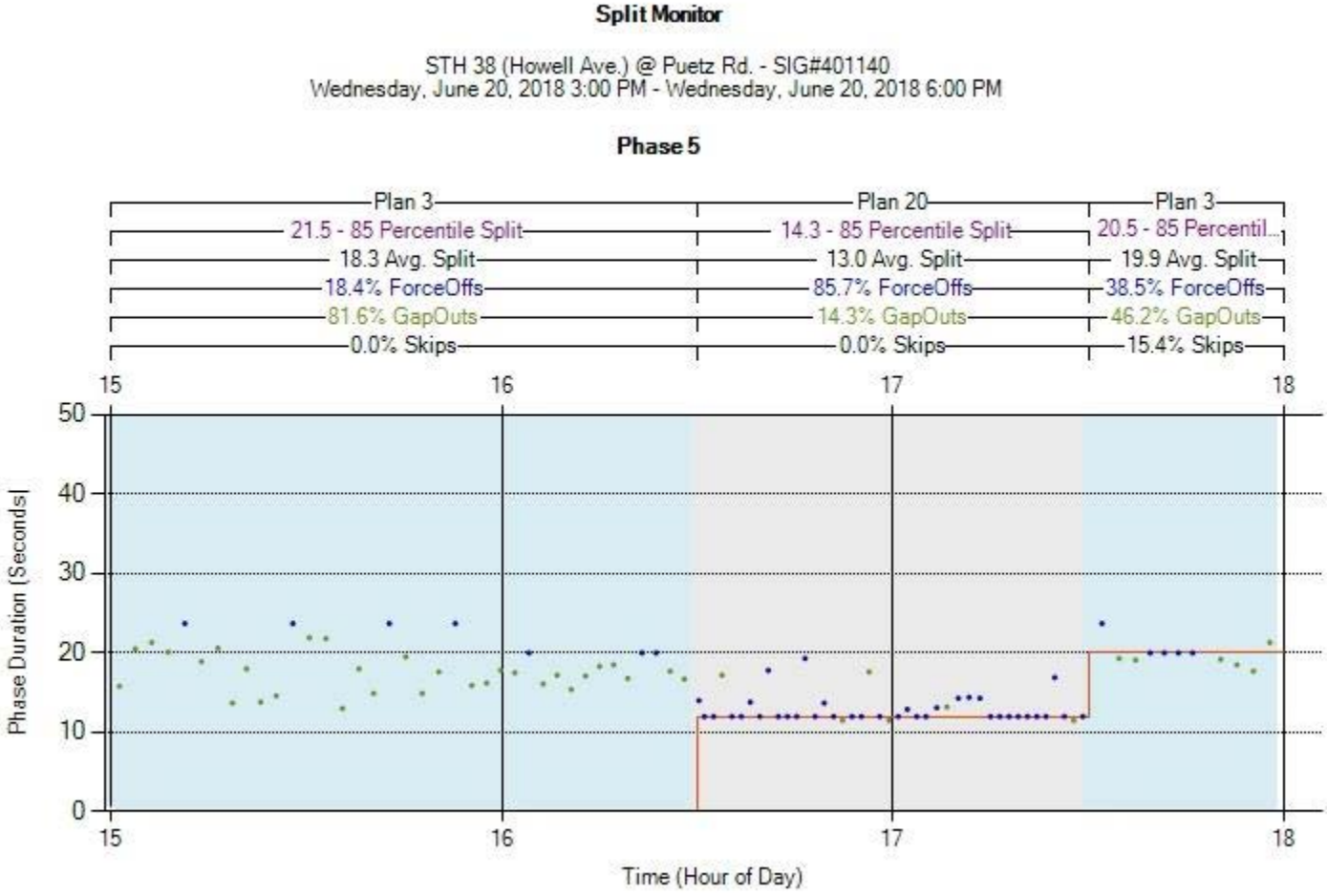

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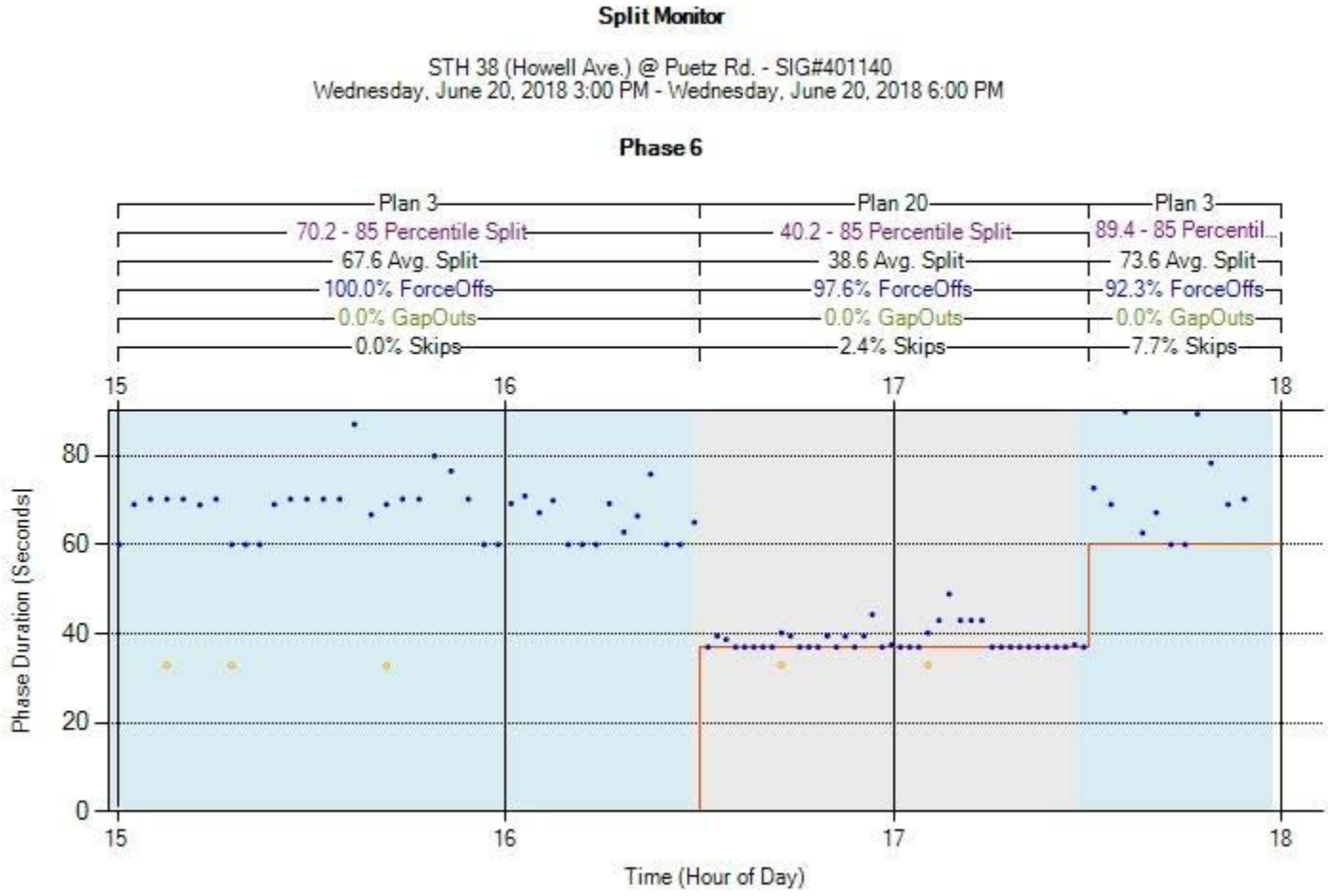

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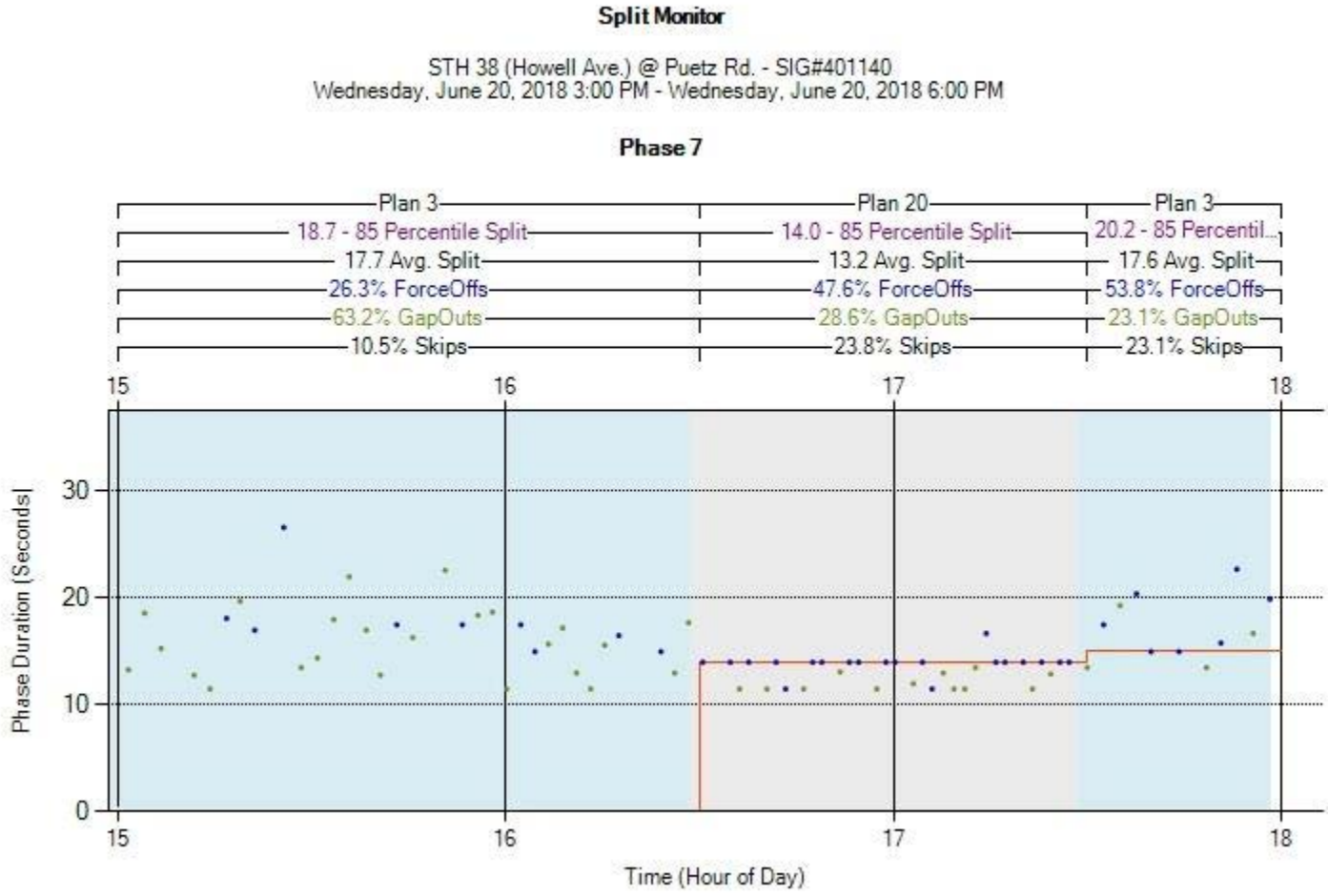

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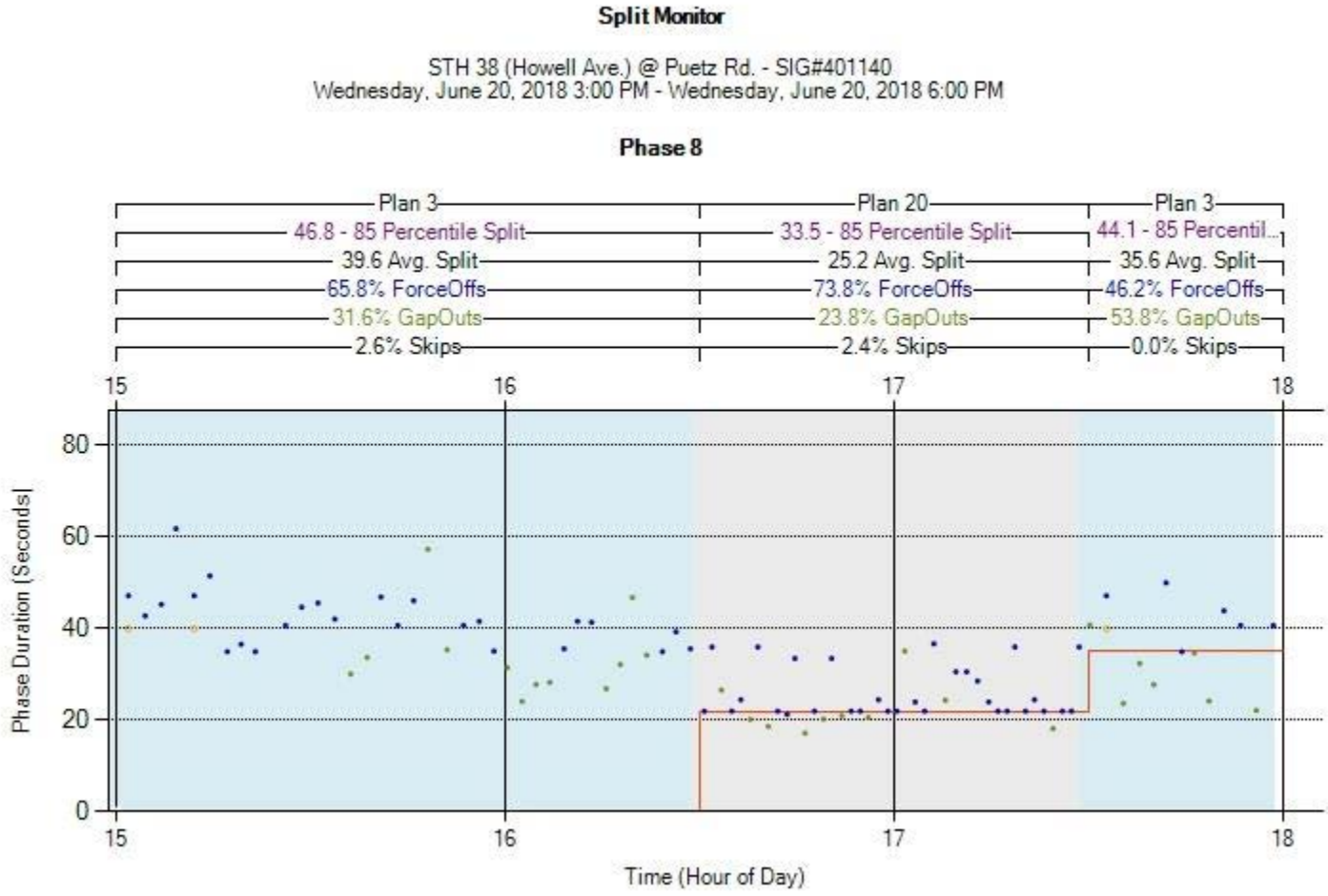

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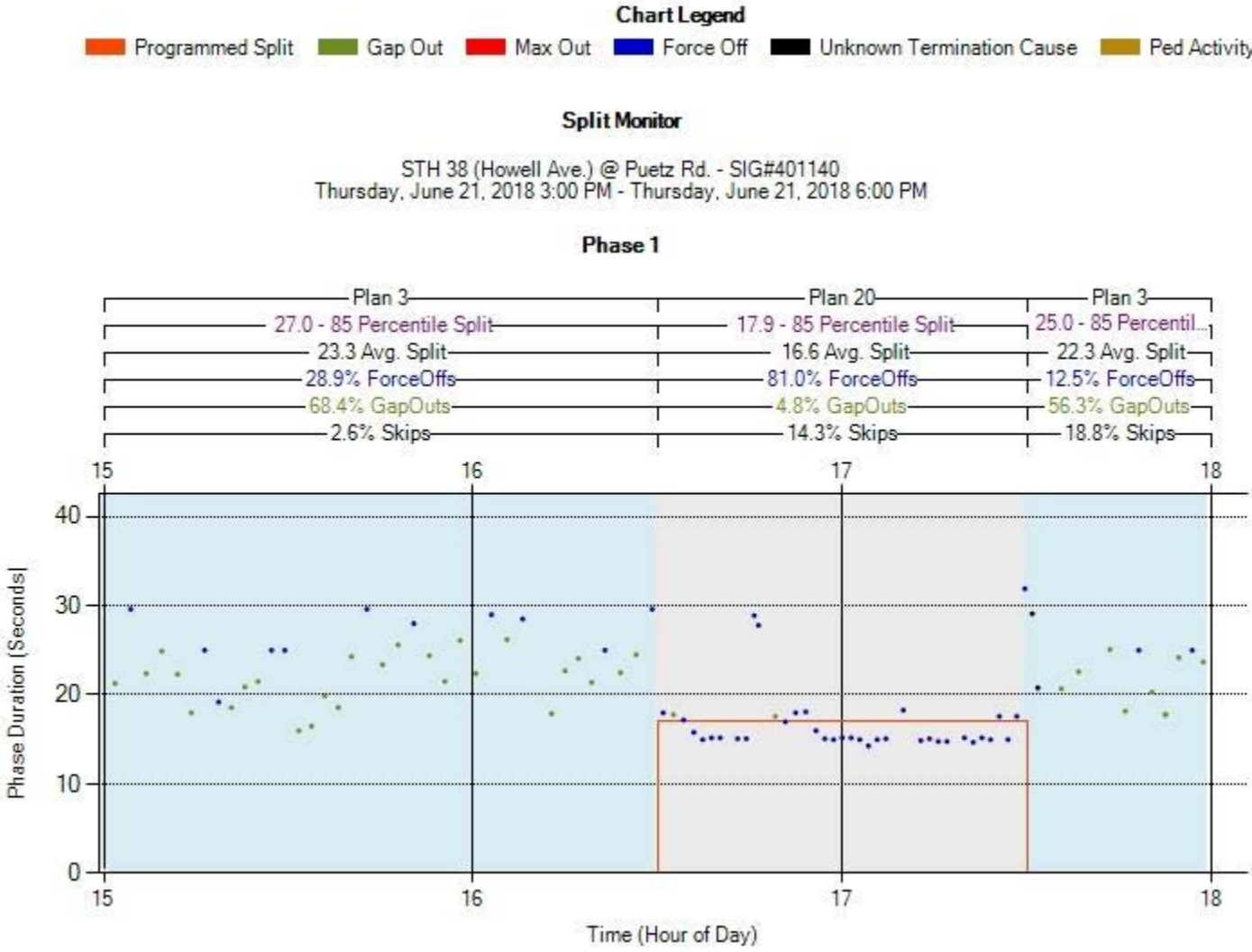

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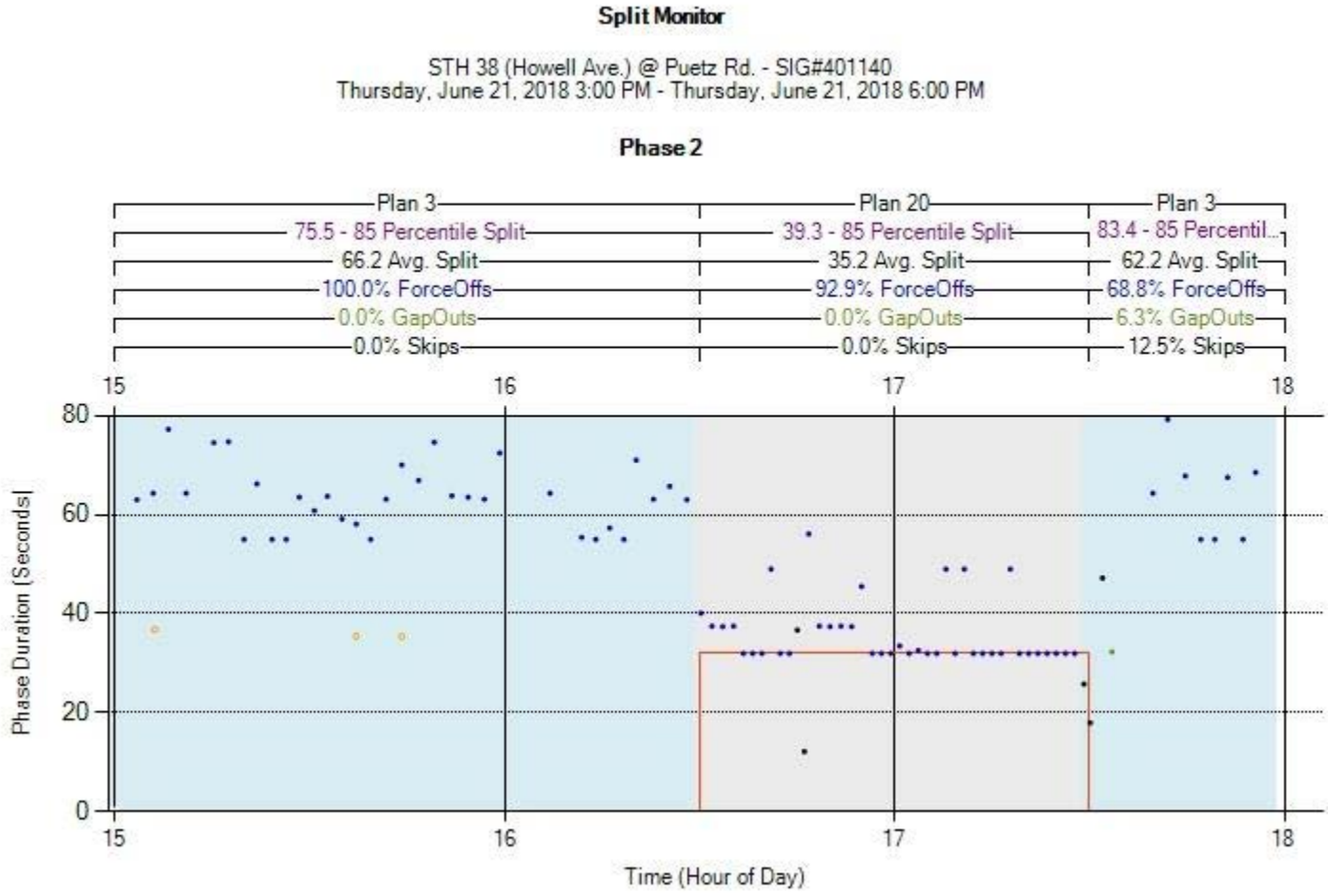

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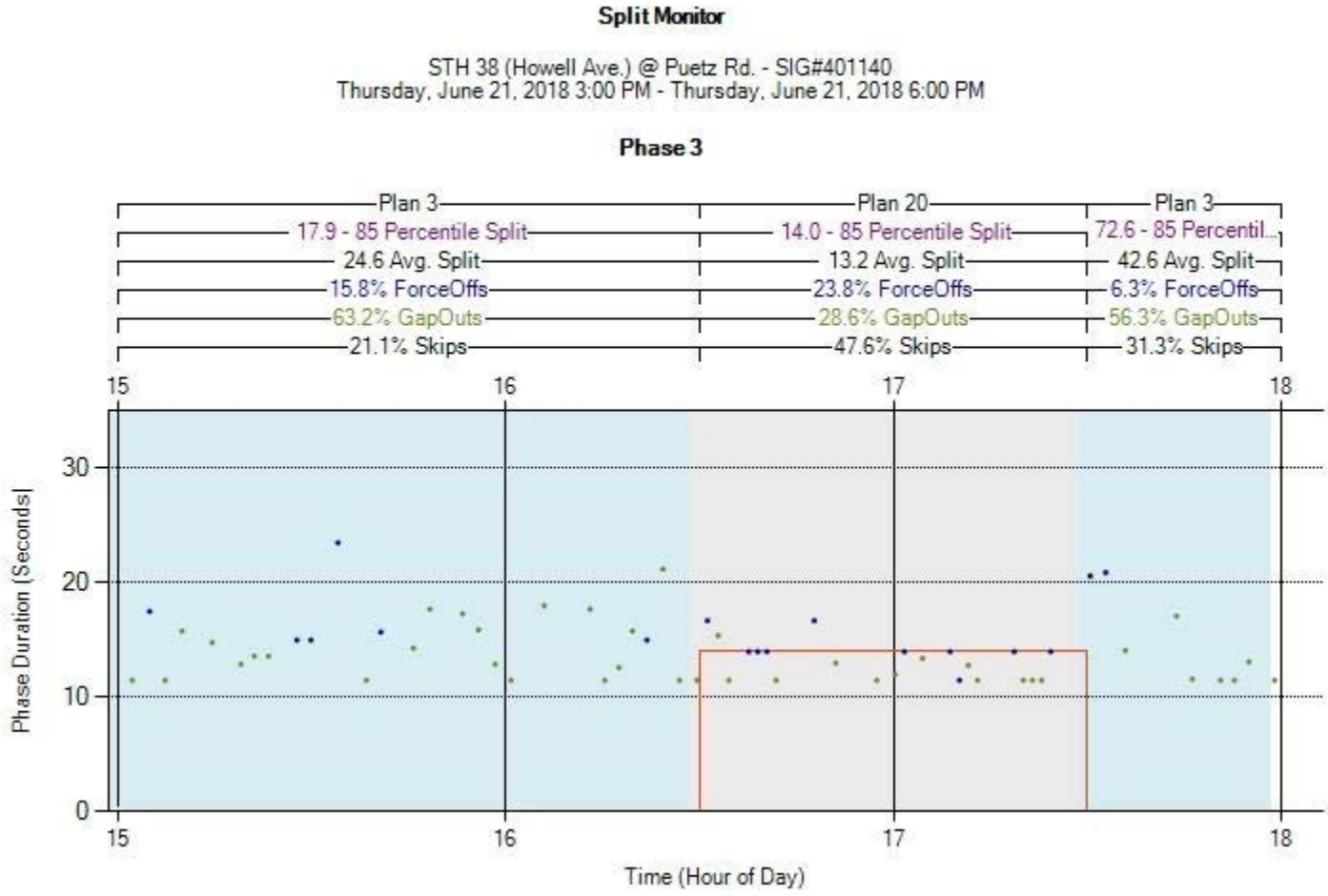

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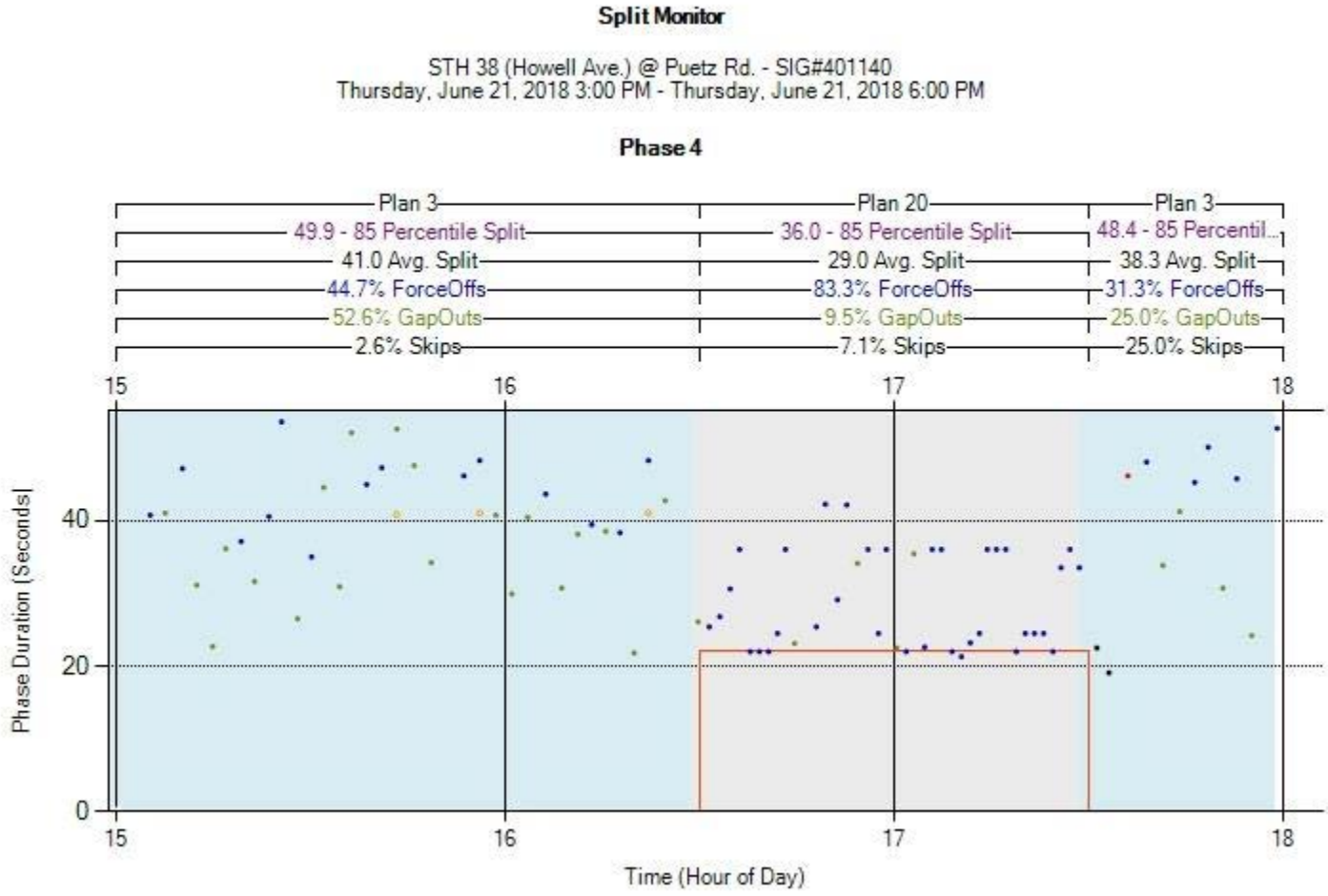

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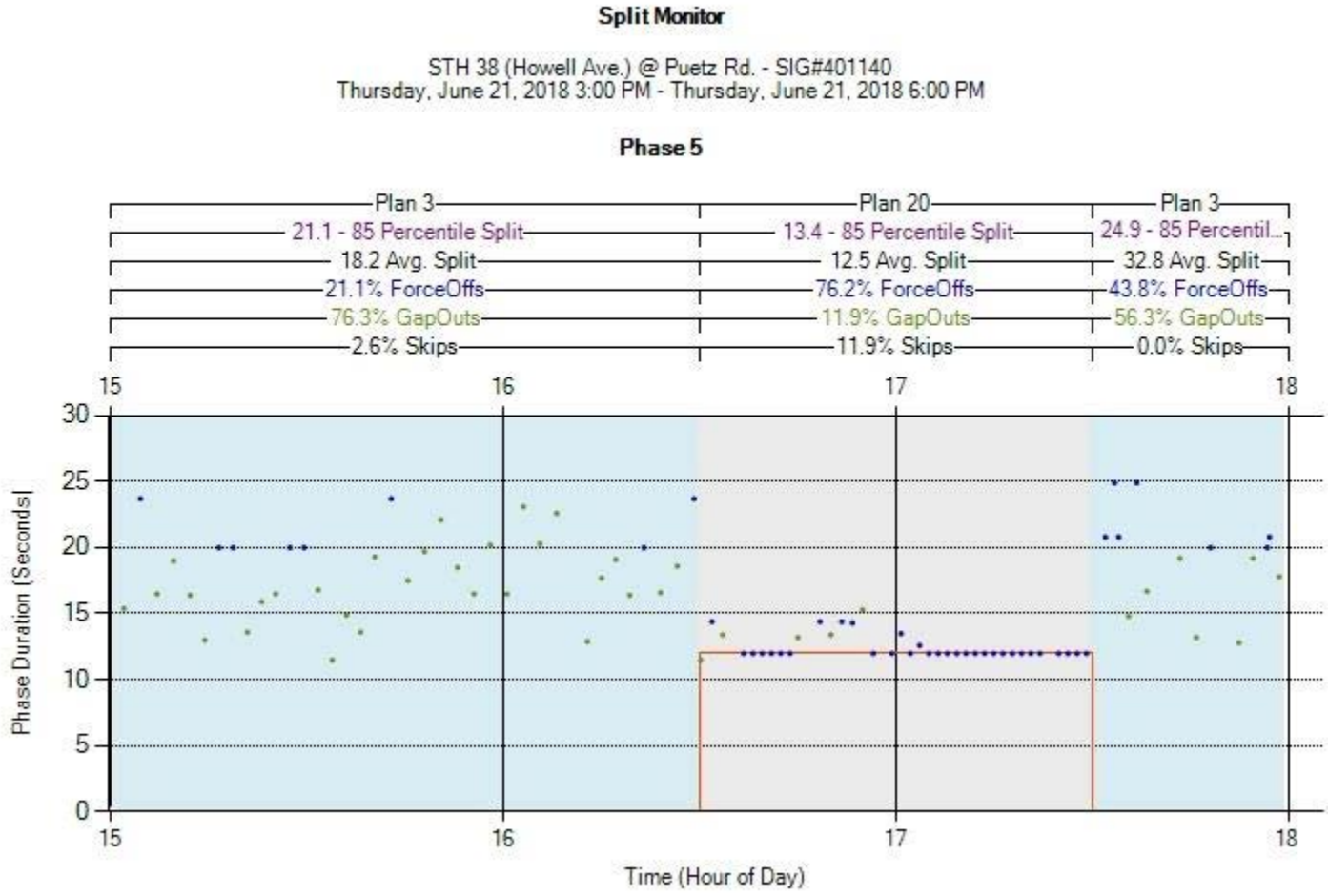

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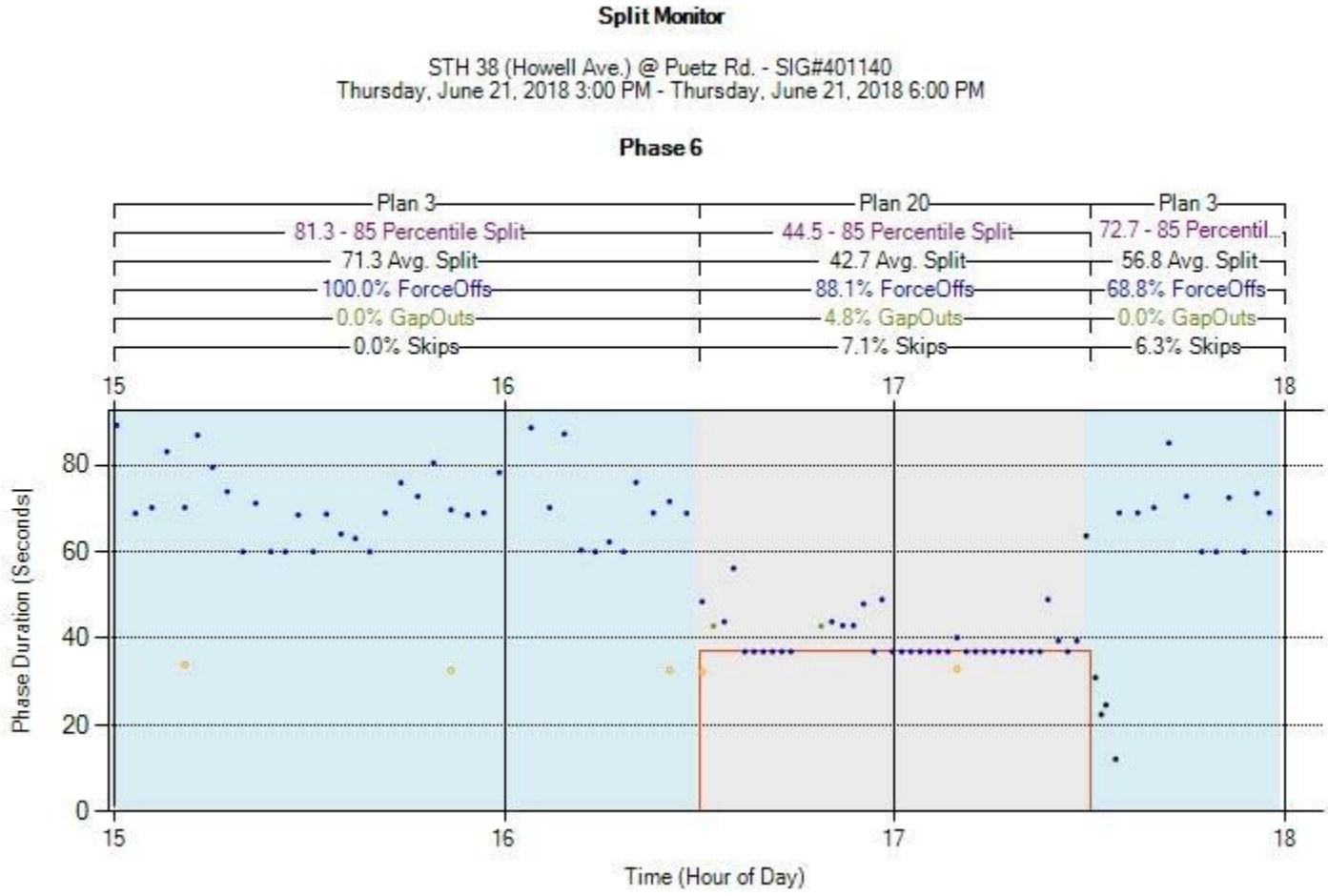

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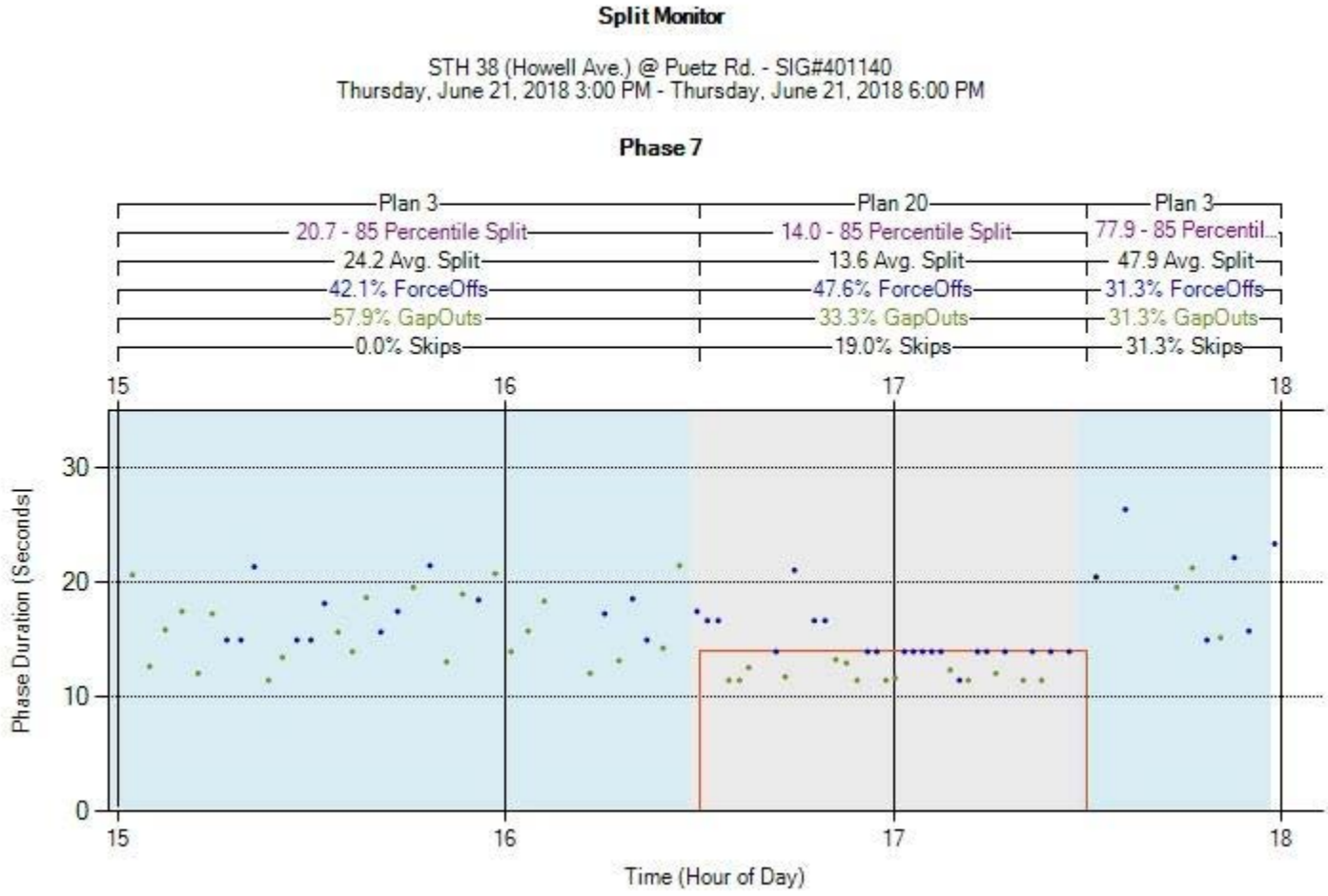

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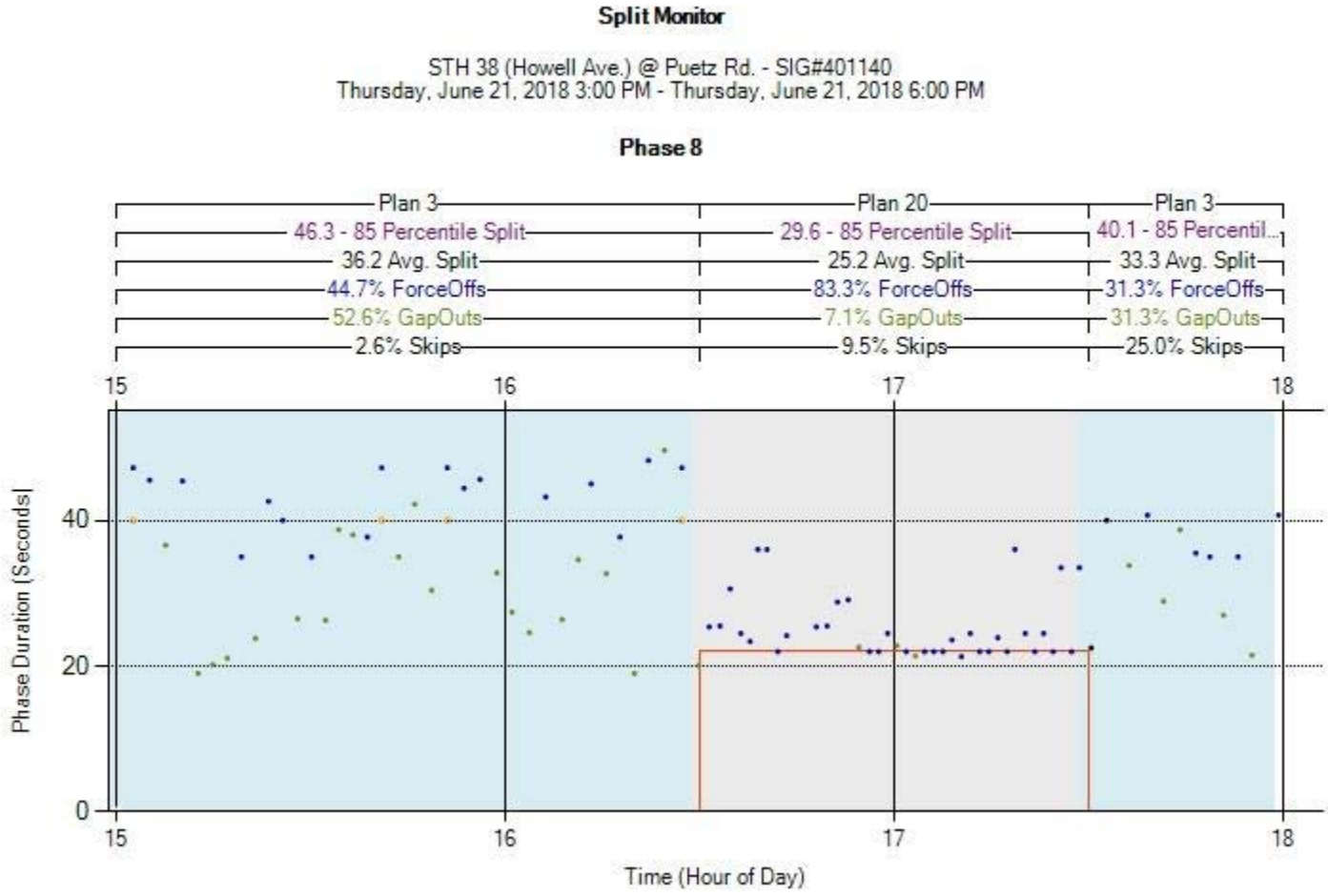
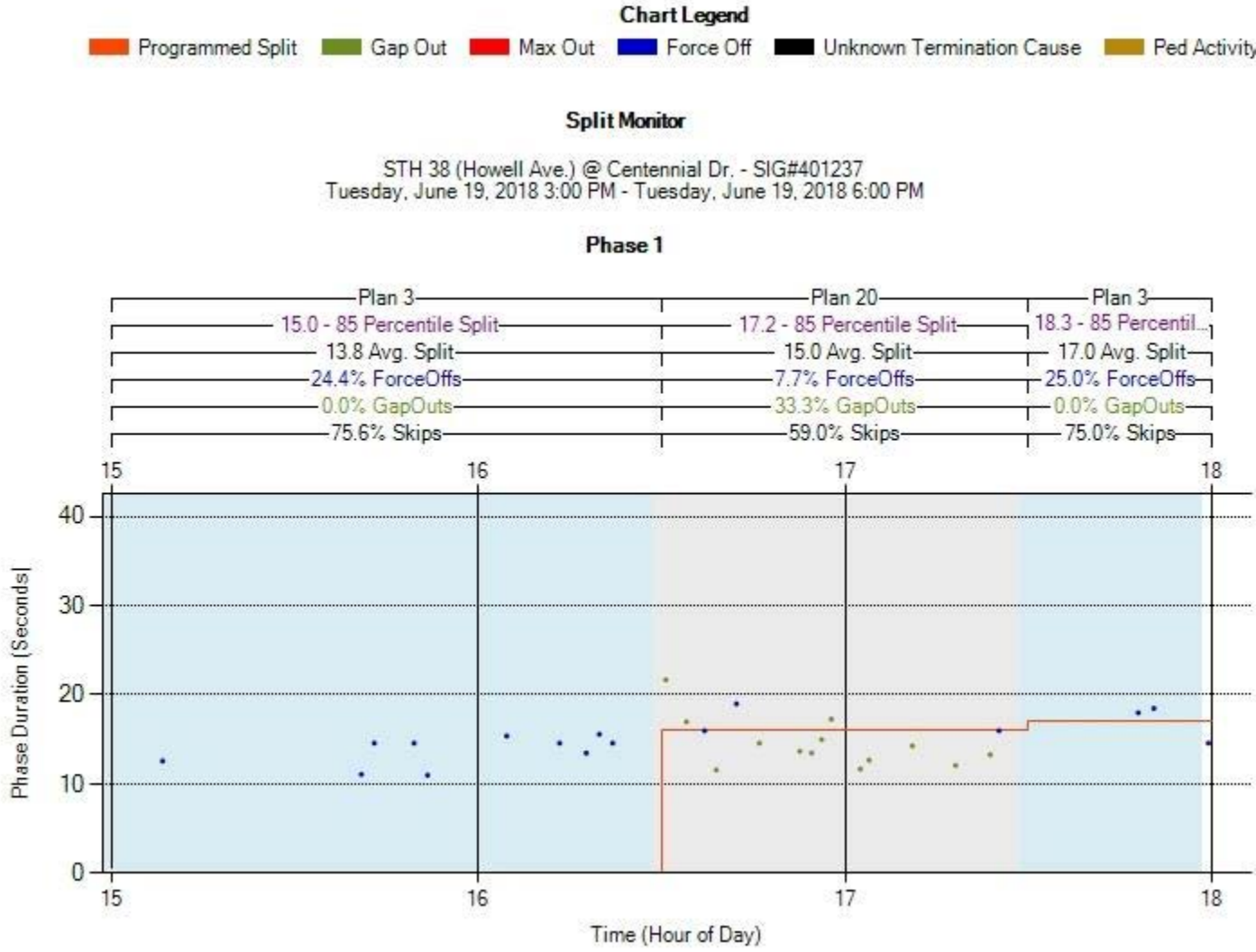
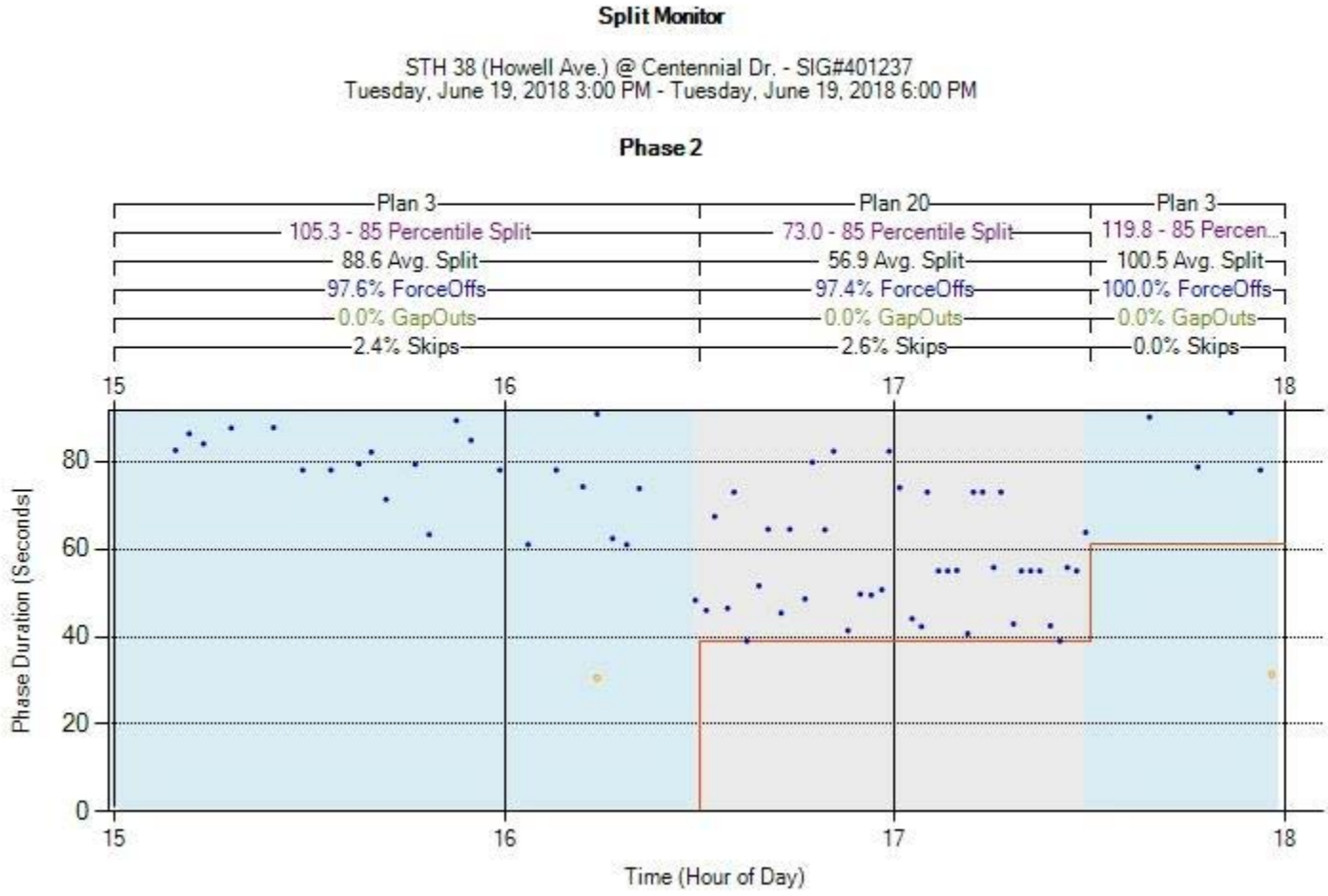


WIS 38 Corridor – STH 38 & Centennial Dr.
HCS Timings
6/19/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Centennial Dr.
HCS Timings
6/19/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Centennial Dr.
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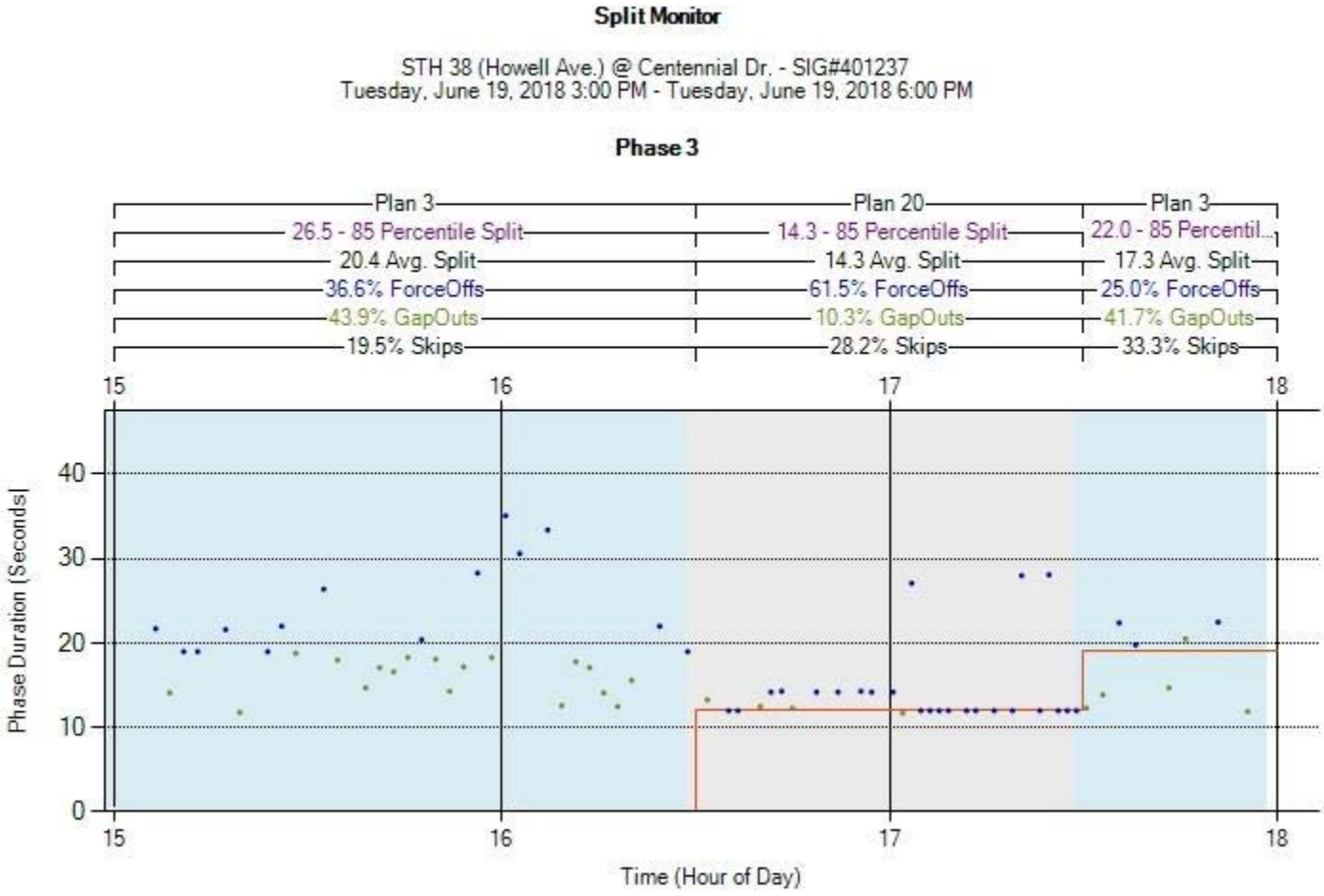

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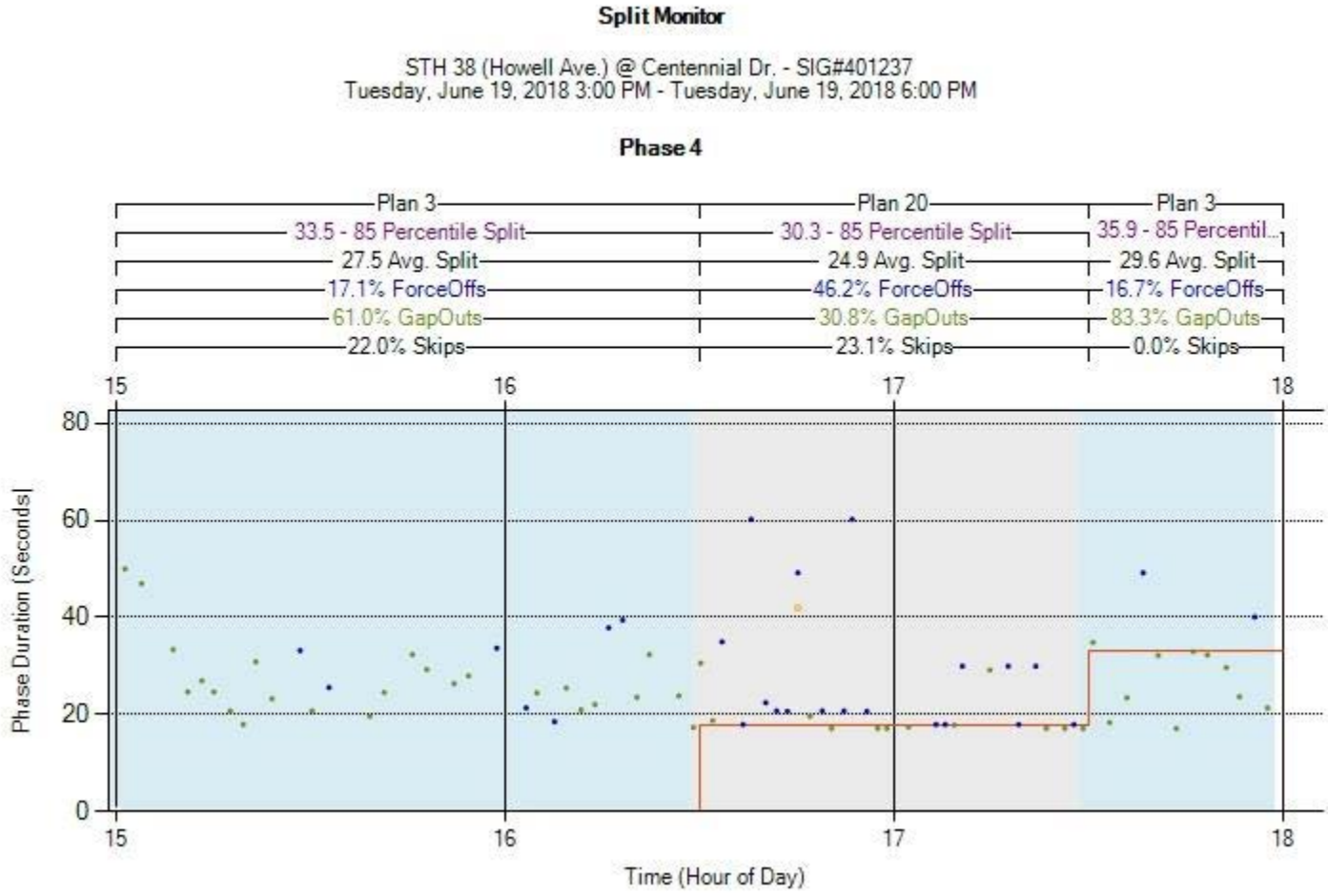

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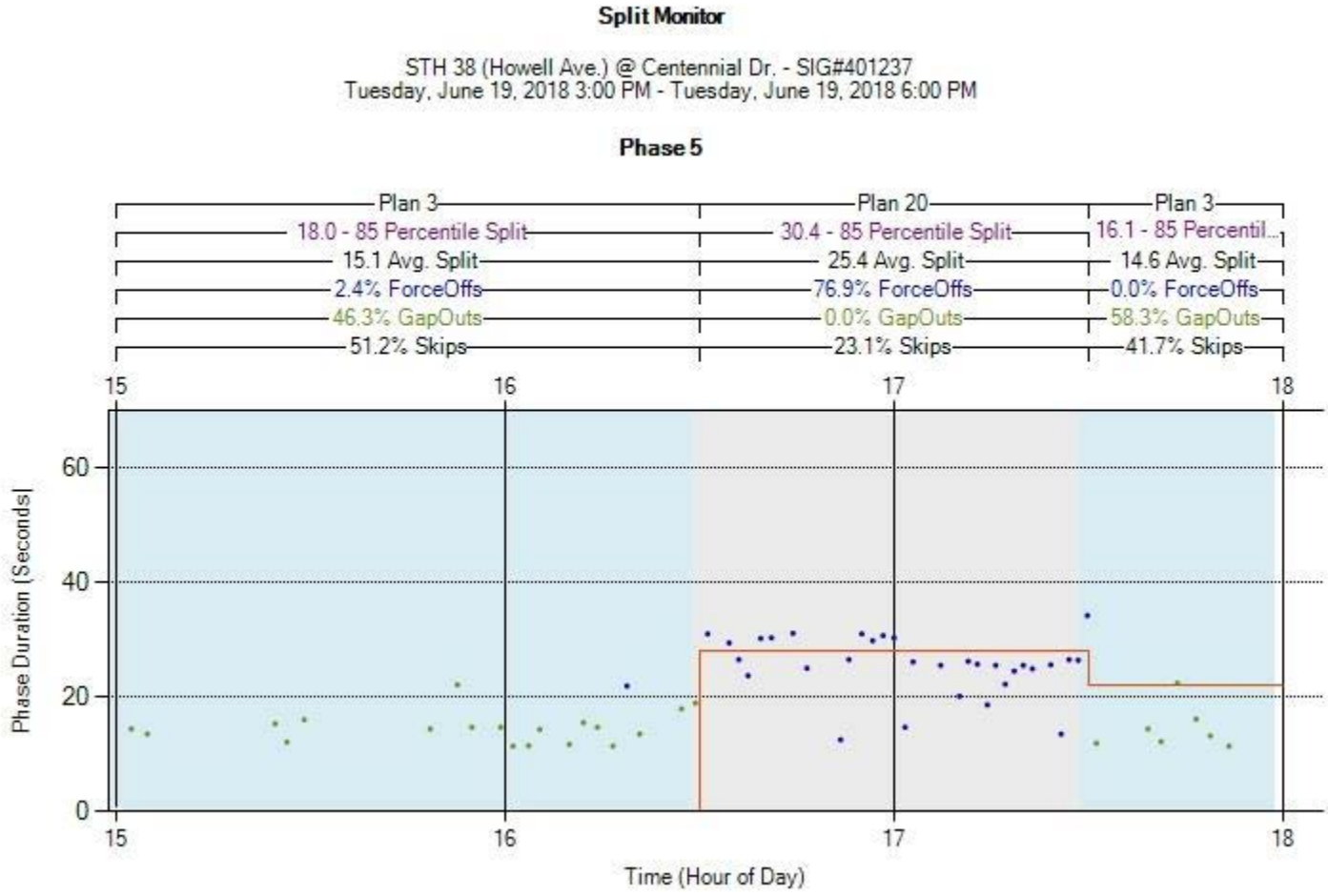

WIS 38 Corridor – STH 38 & Centennial Dr.
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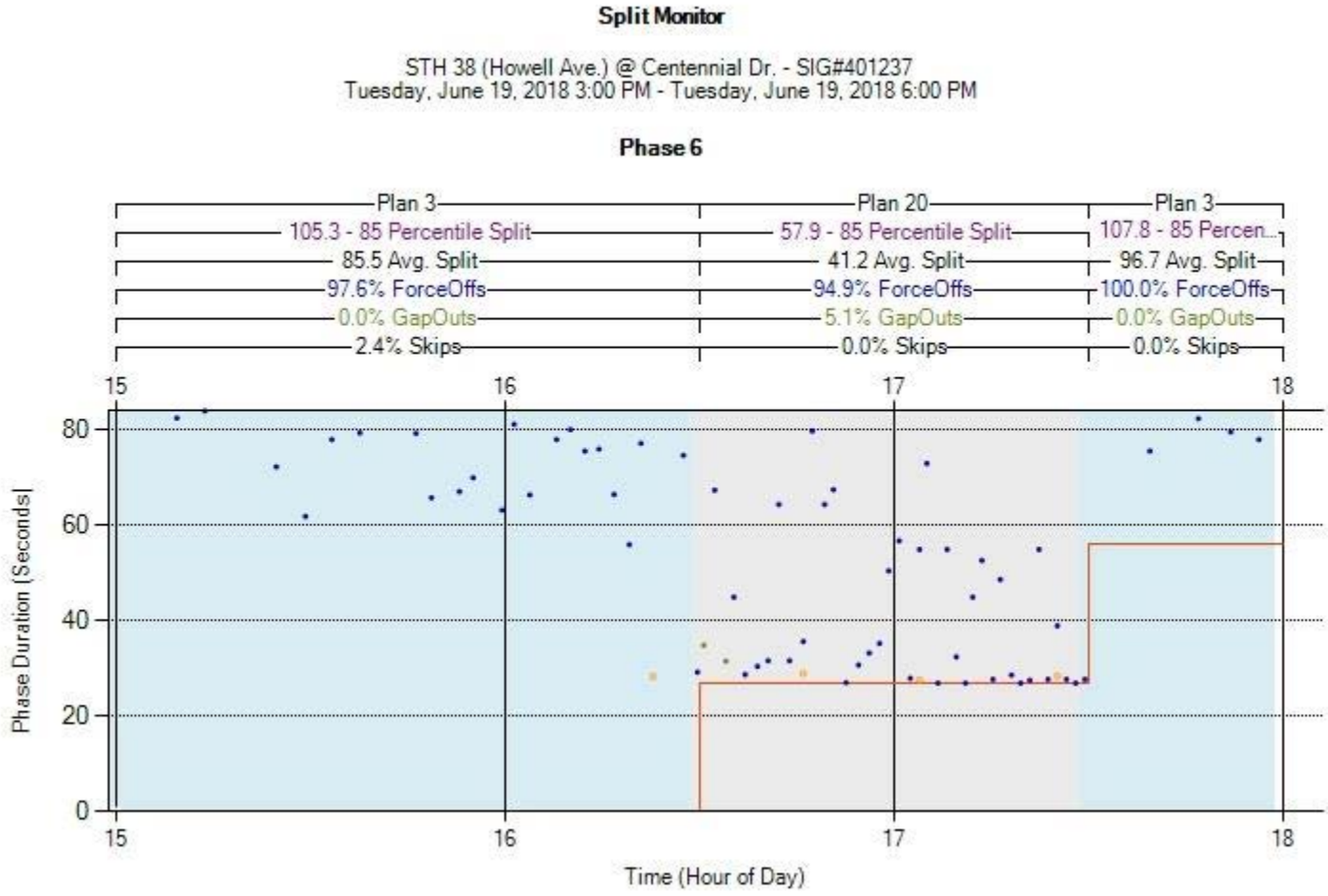

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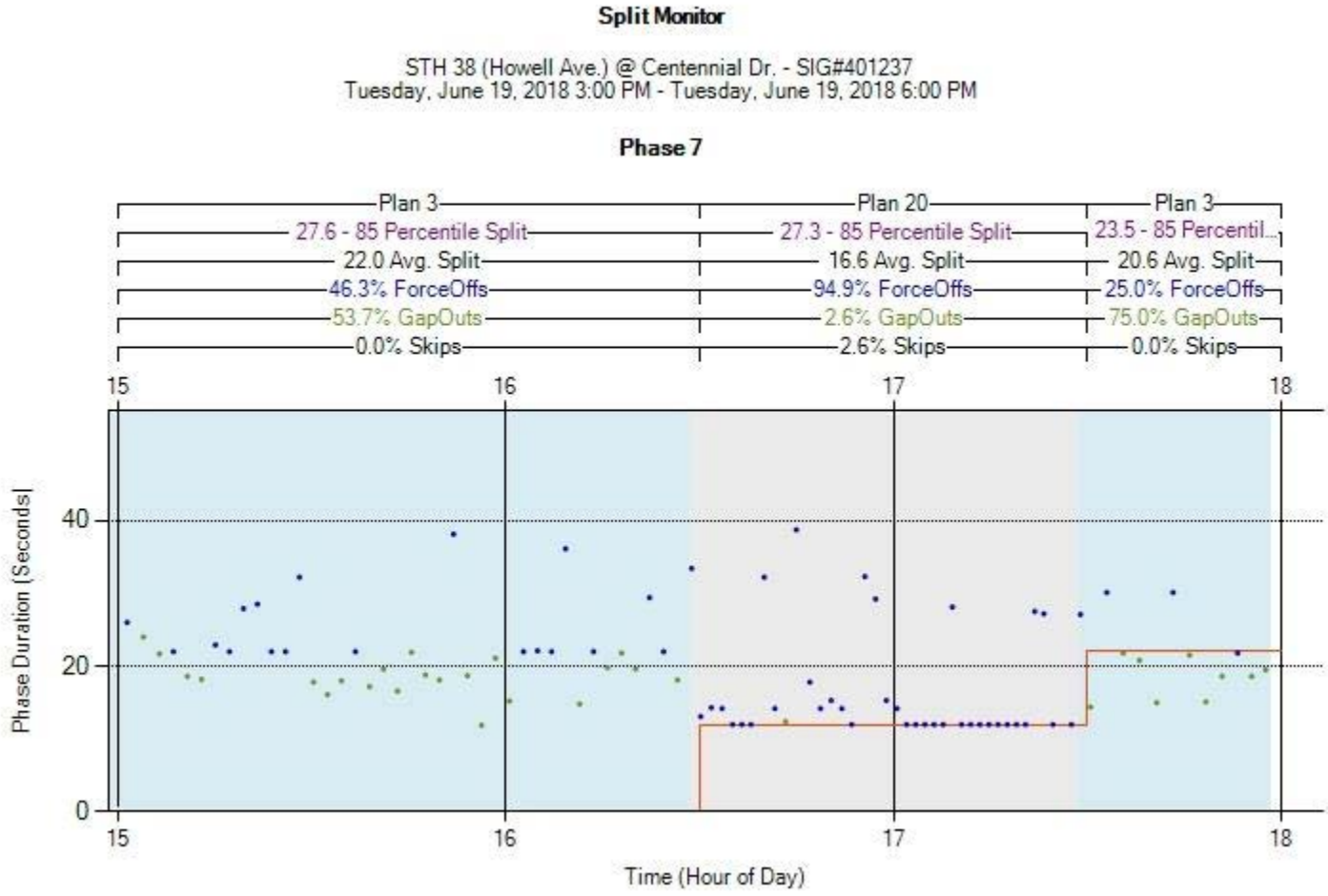

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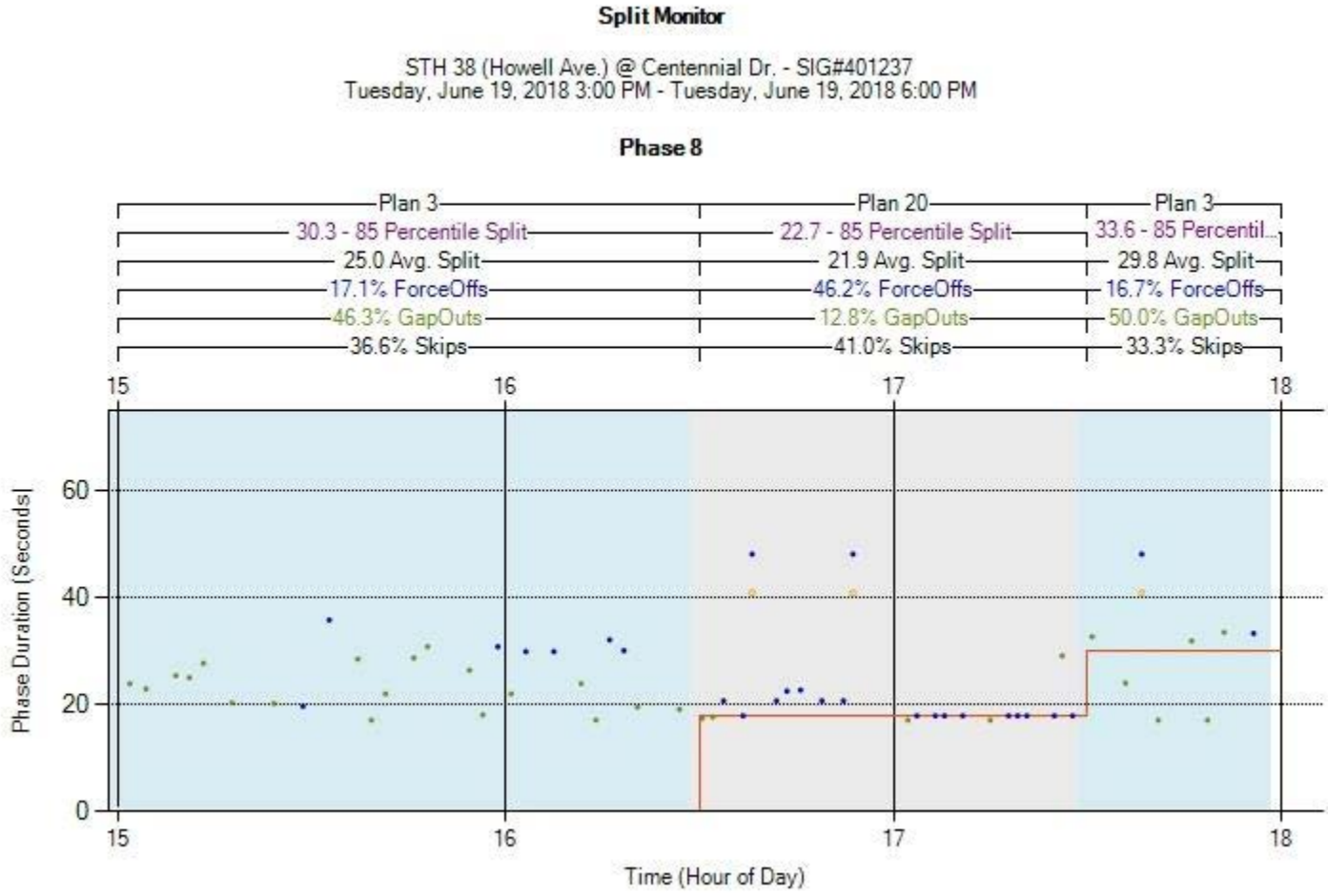

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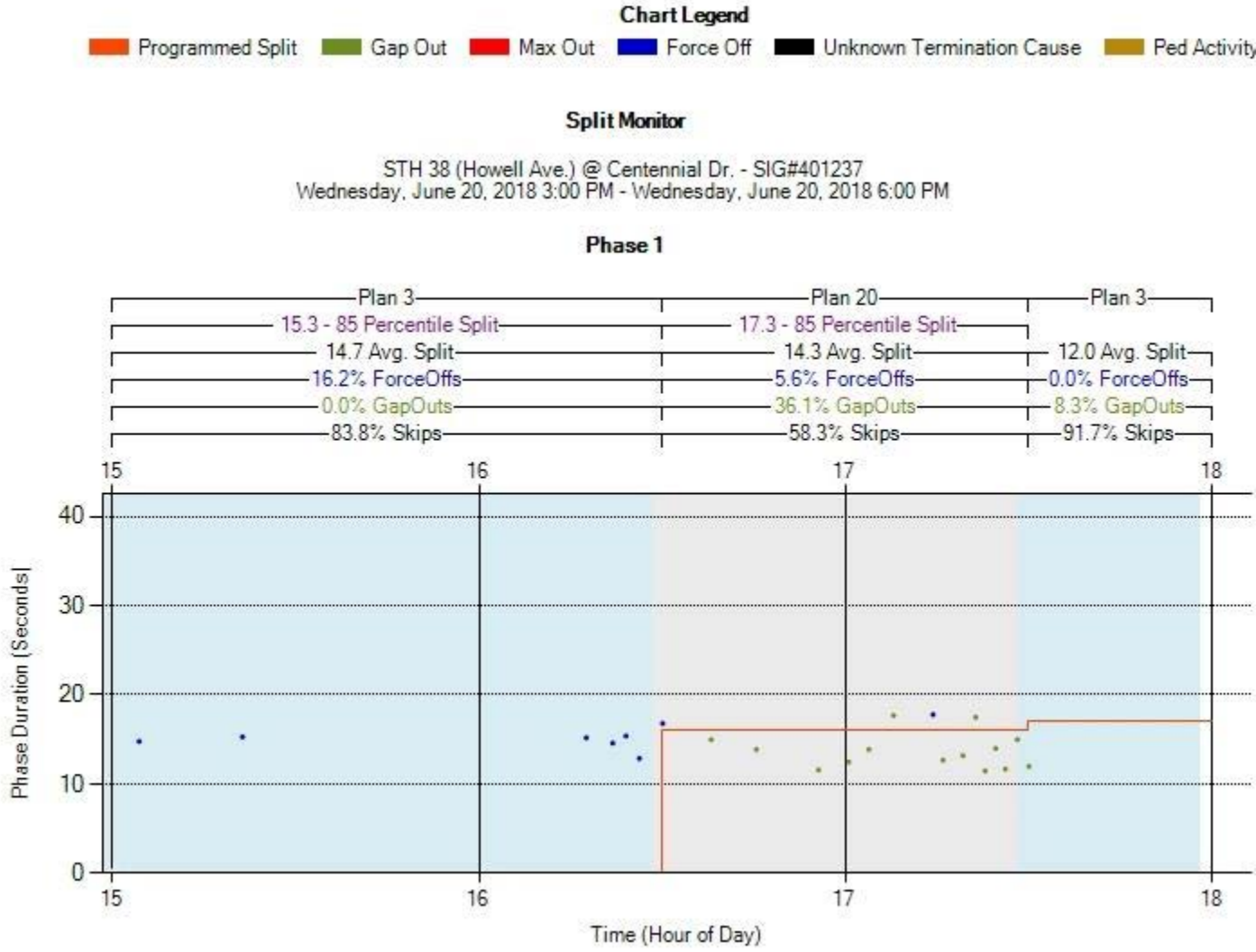

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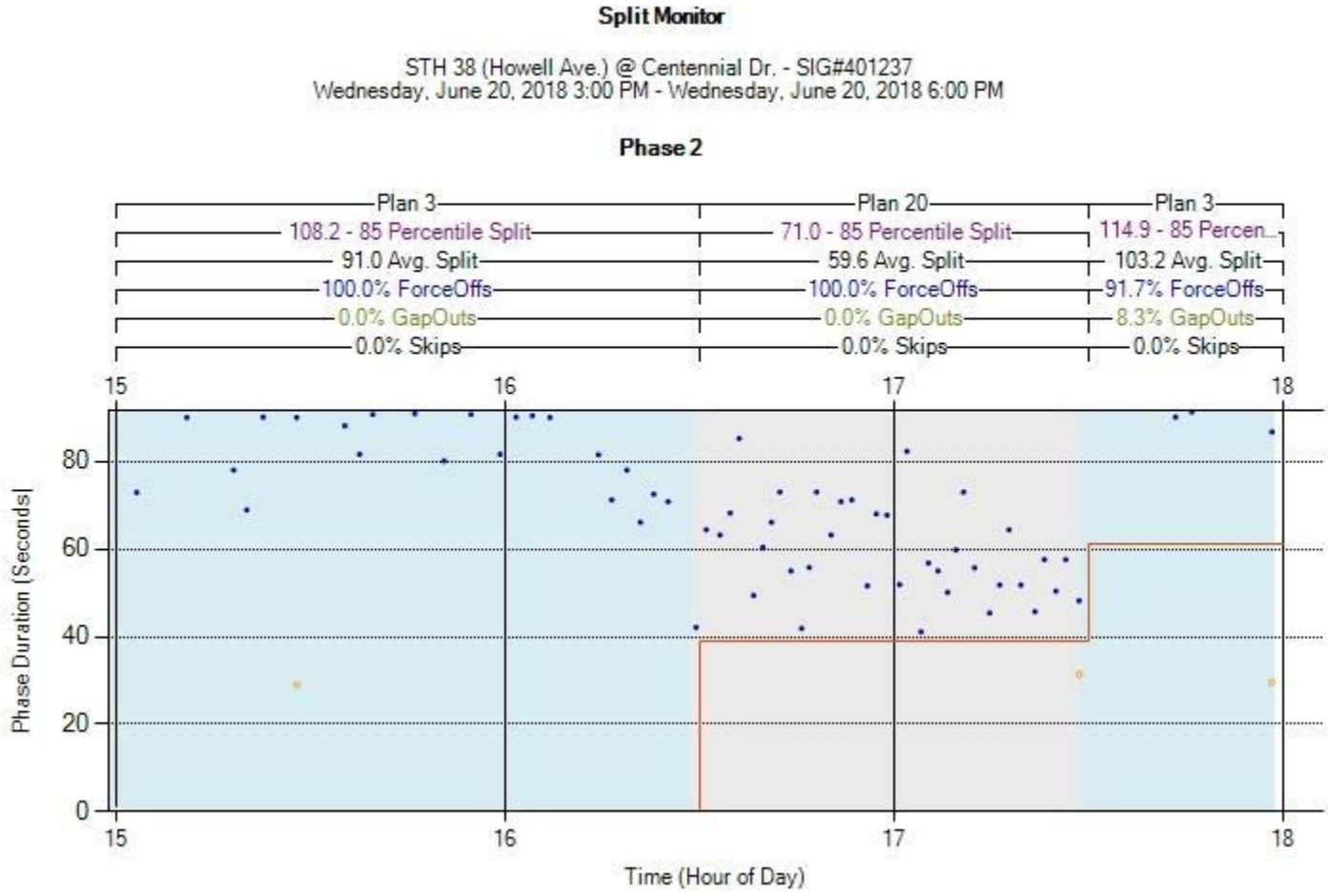
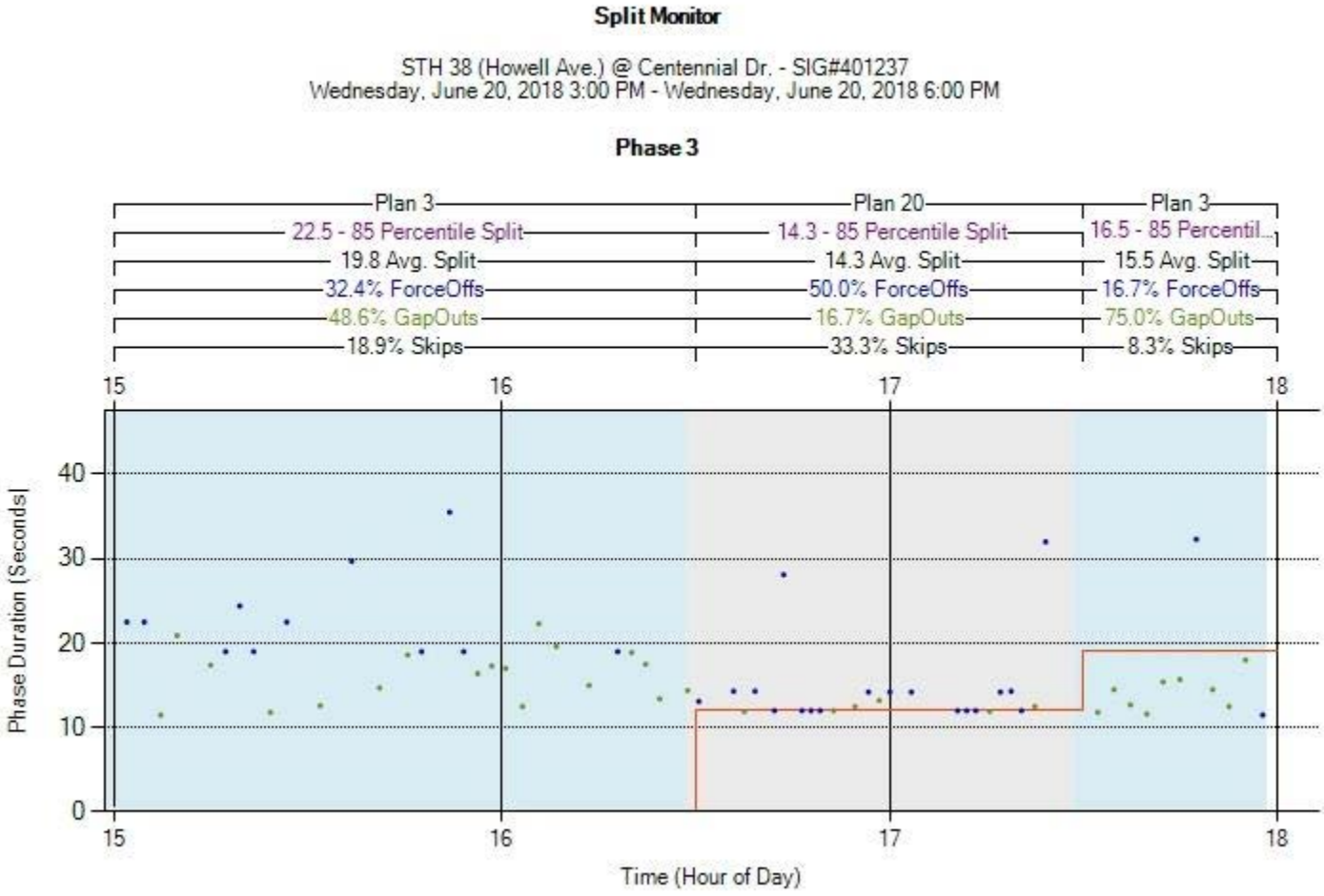
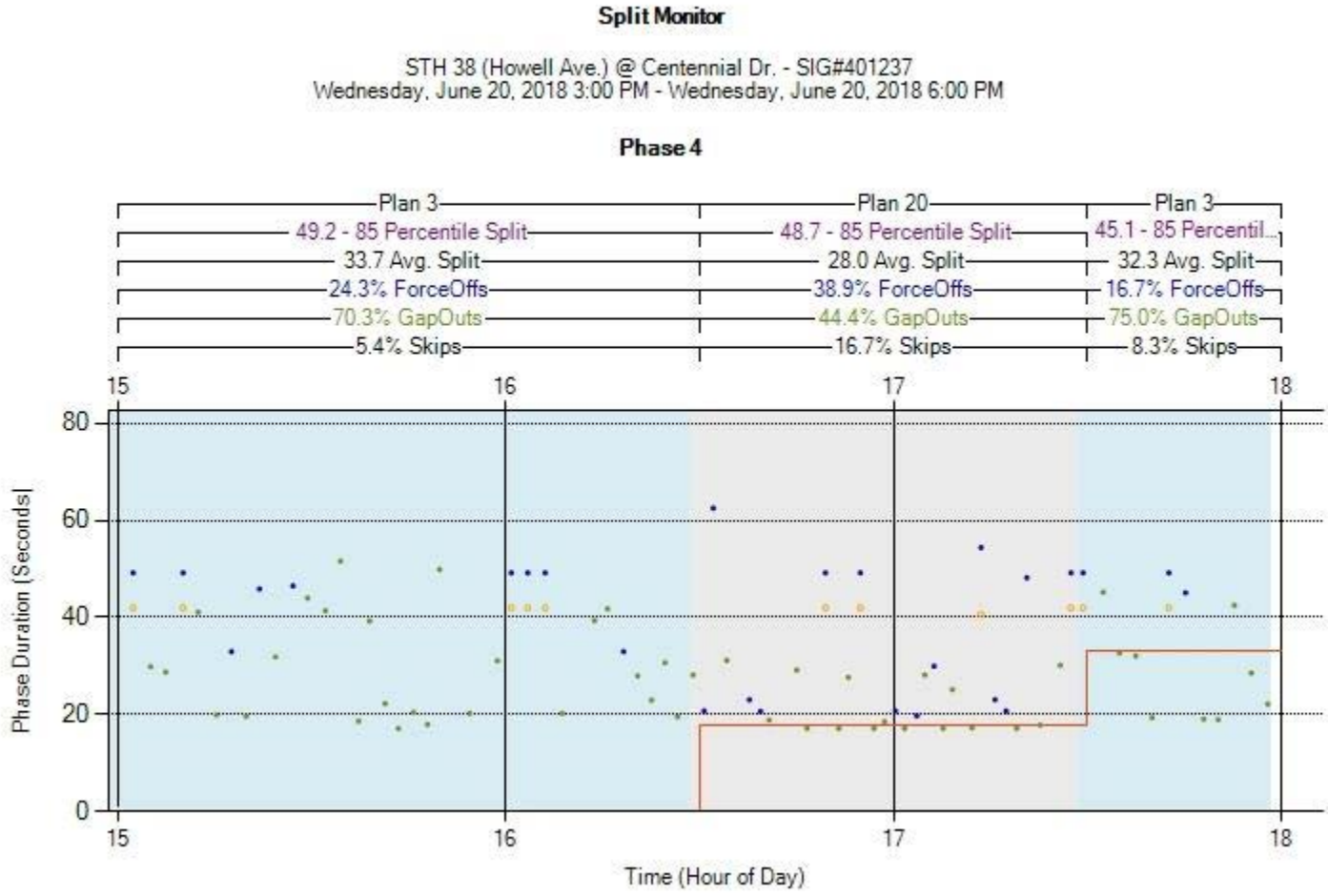
HCS Timings
6/20/2018 – 3:00 PM – 6:00 PM



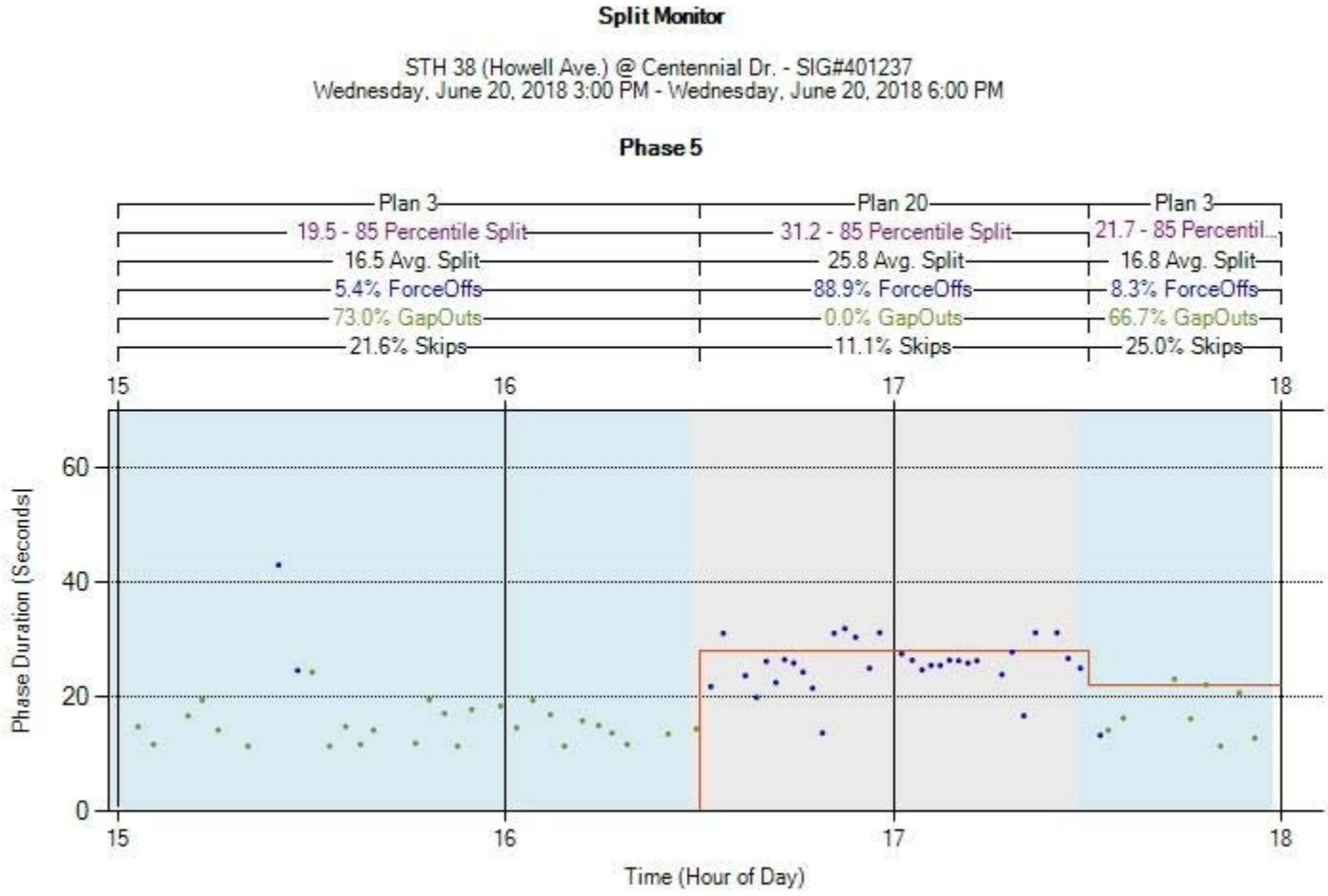
WIS 38 Corridor – STH 38 & Centennial Dr.
HCS Timings
6/20/2018 – 3:00 PM – 6:00 PM



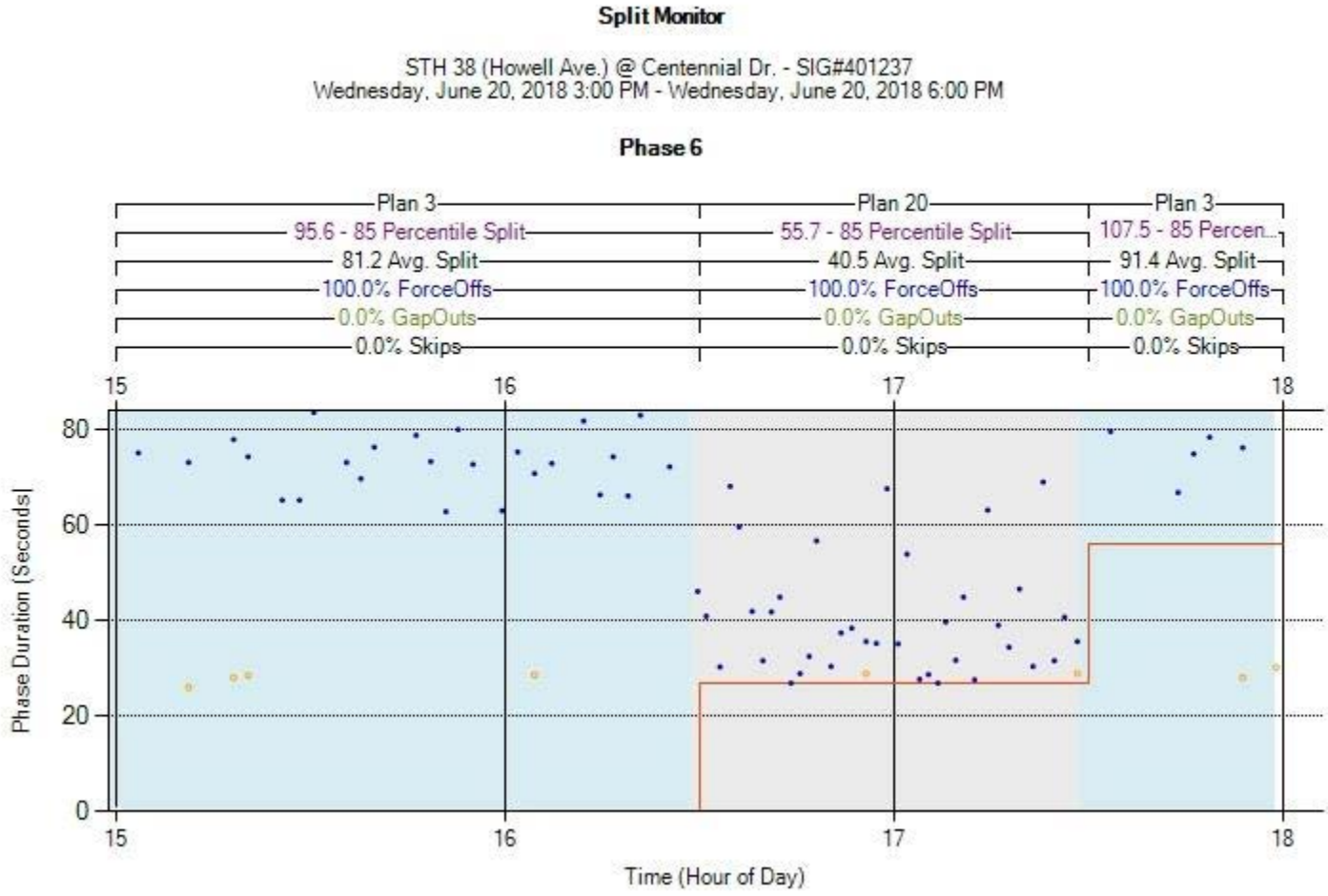
WIS 38 Corridor – STH 38 & Centennial Dr.
HCS Timings
6/20/2018 – 3:00 PM – 6:00 PM



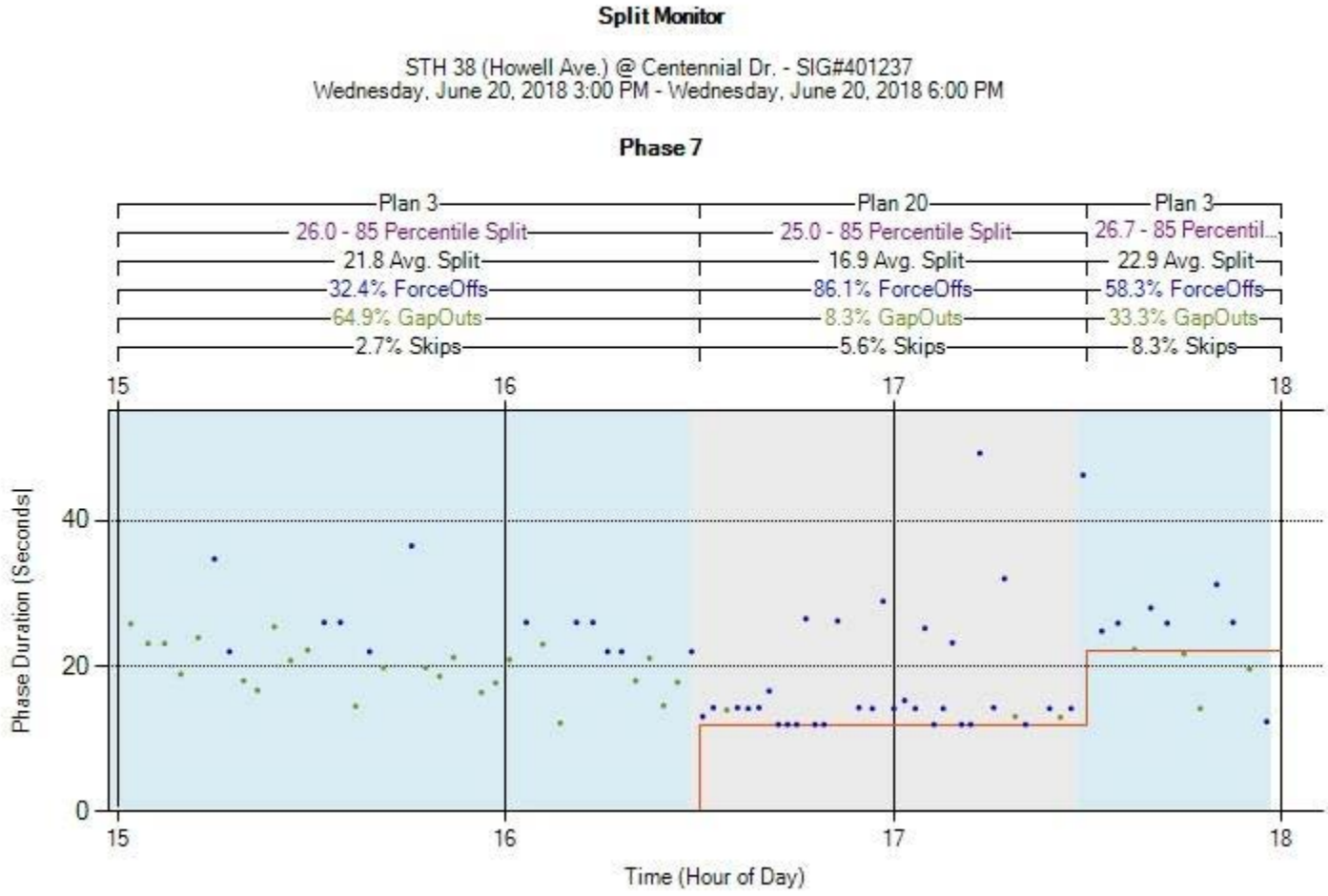
WIS 38 Corridor – STH 38 & Centennial Dr.
HCS Timings
6/20/2018 – 3:00 PM – 6:00 PM



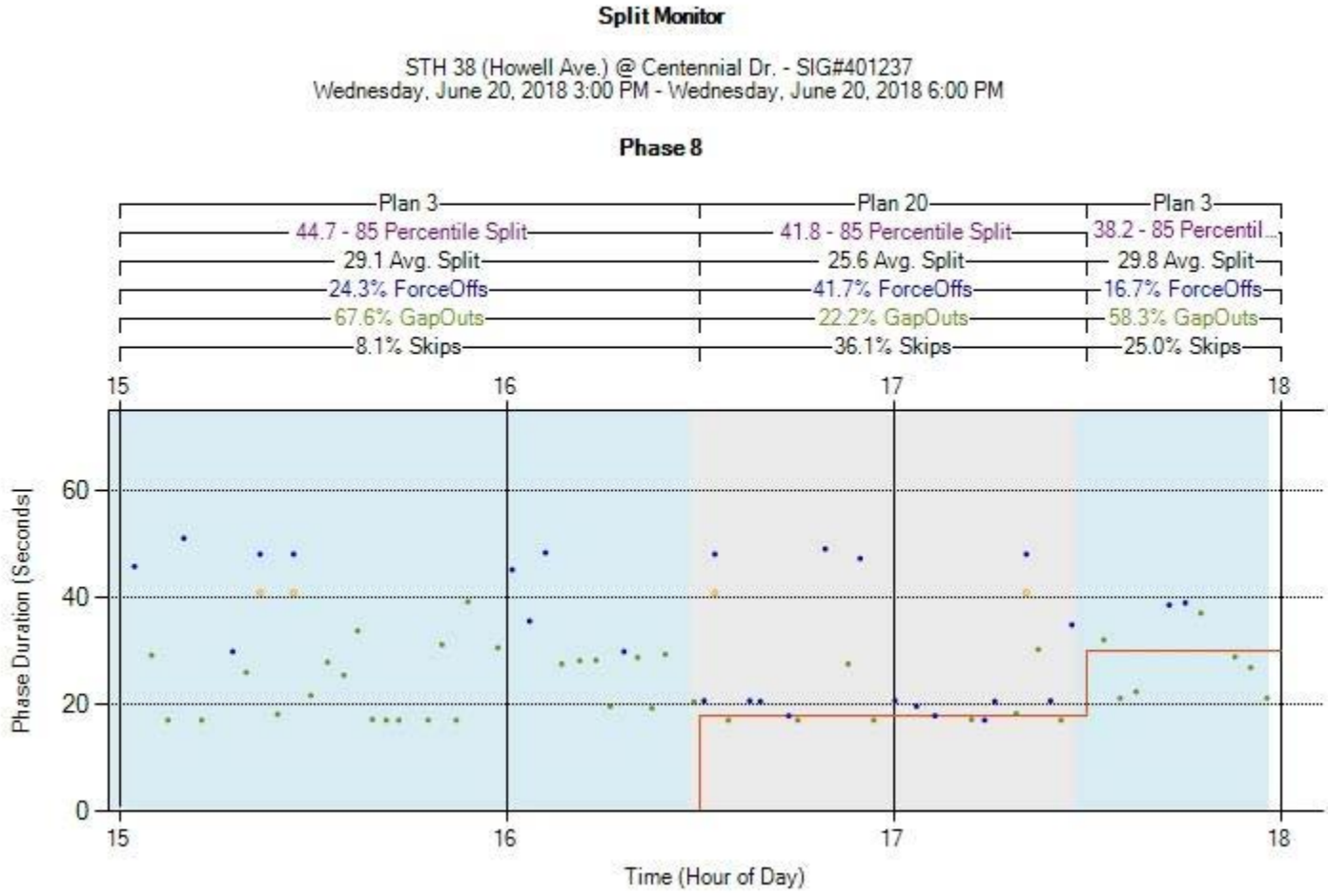
WIS 38 Corridor – STH 38 & Centennial Dr.
HCS Timings
6/20/2018 – 3:00 PM – 6:00 PM



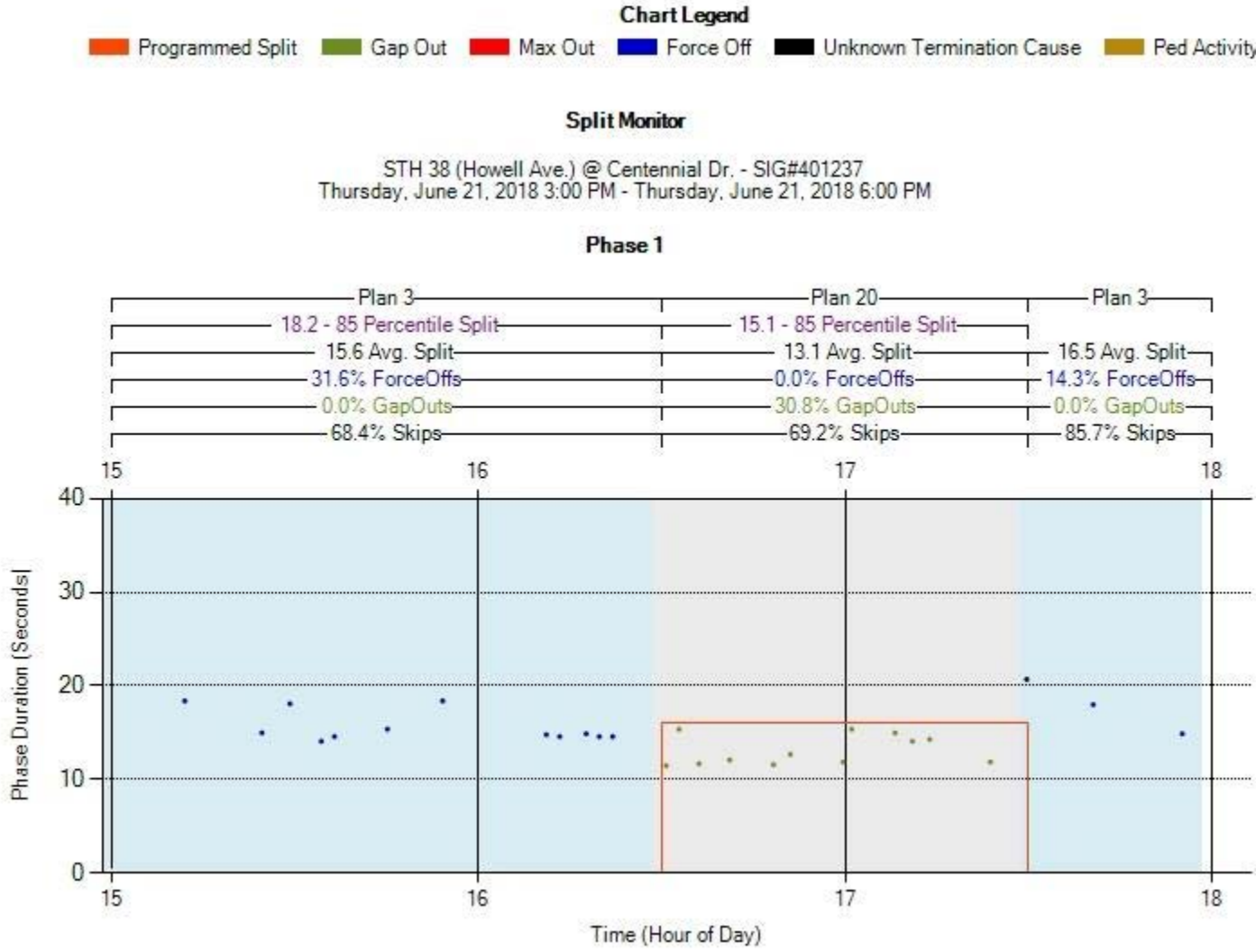
WIS 38 Corridor – STH 38 & Centennial Dr.
HCS Timings
6/20/2018 – 3:00 PM – 6:00 PM



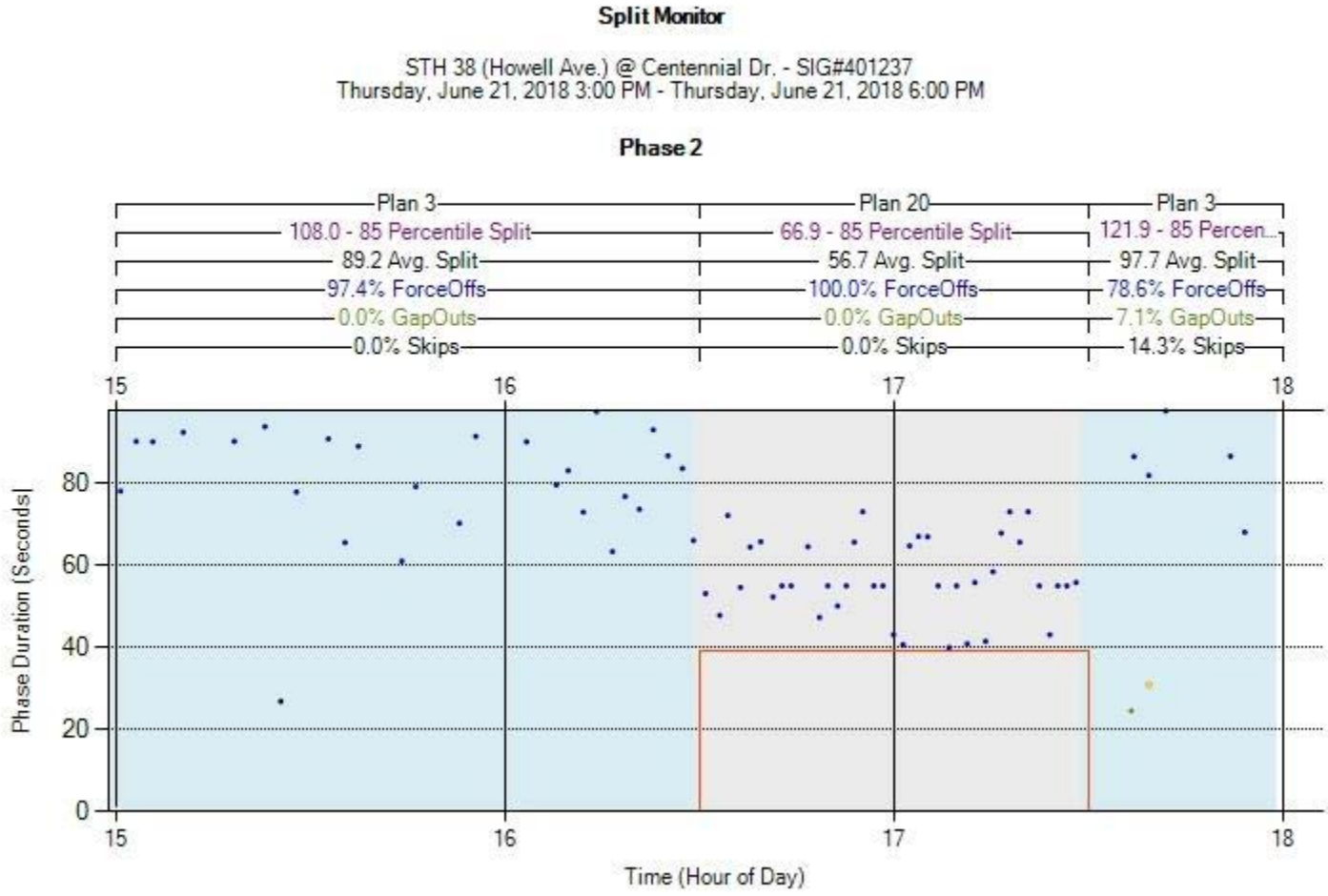
WIS 38 Corridor – STH 38 & Centennial Dr.
HCS Timings
6/20/2018 – 3:00 PM – 6:00 PM



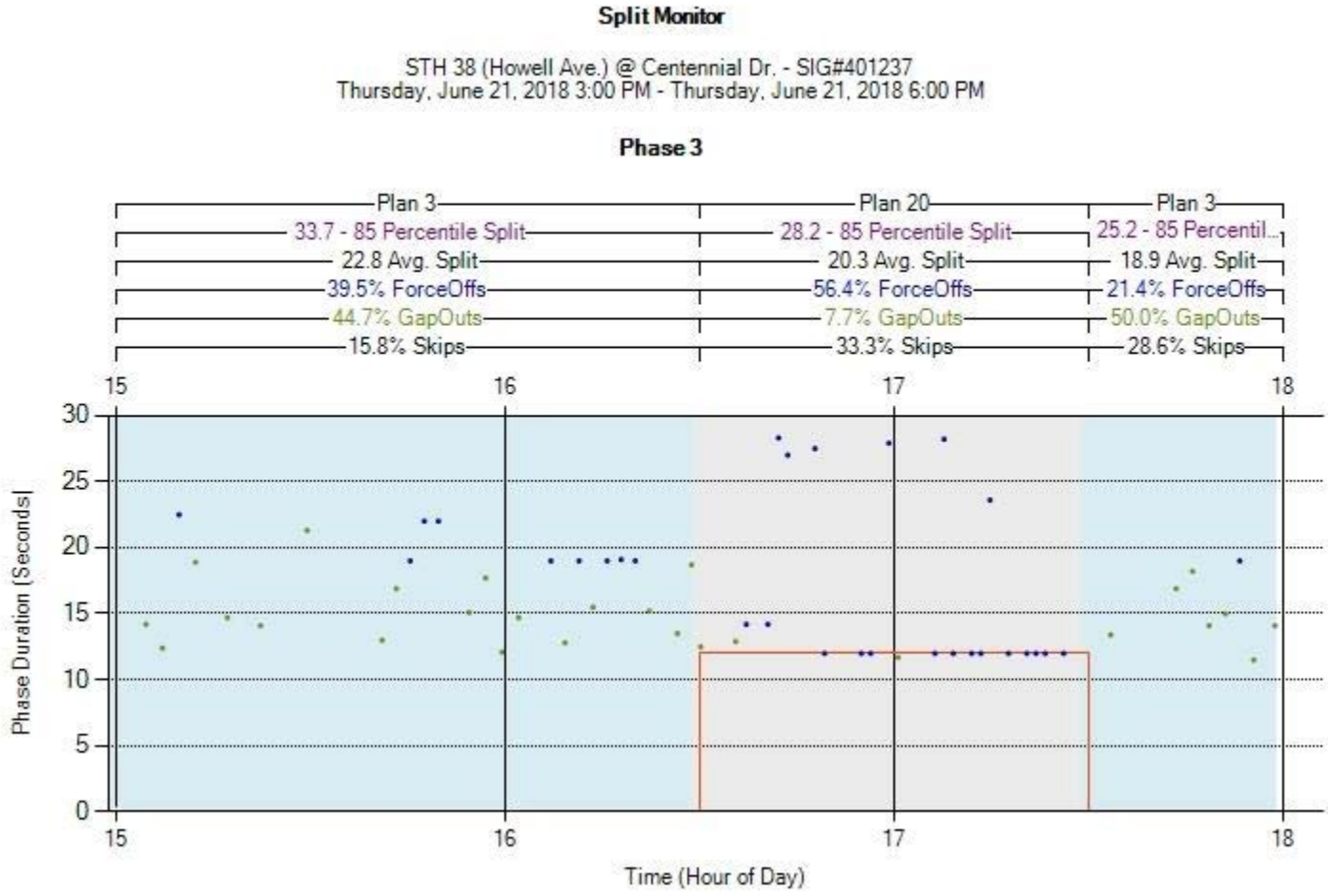
WIS 38 Corridor – STH 38 & Centennial Dr.
HCS Timings
6/21/2018 – 3:00 PM – 6:00 PM



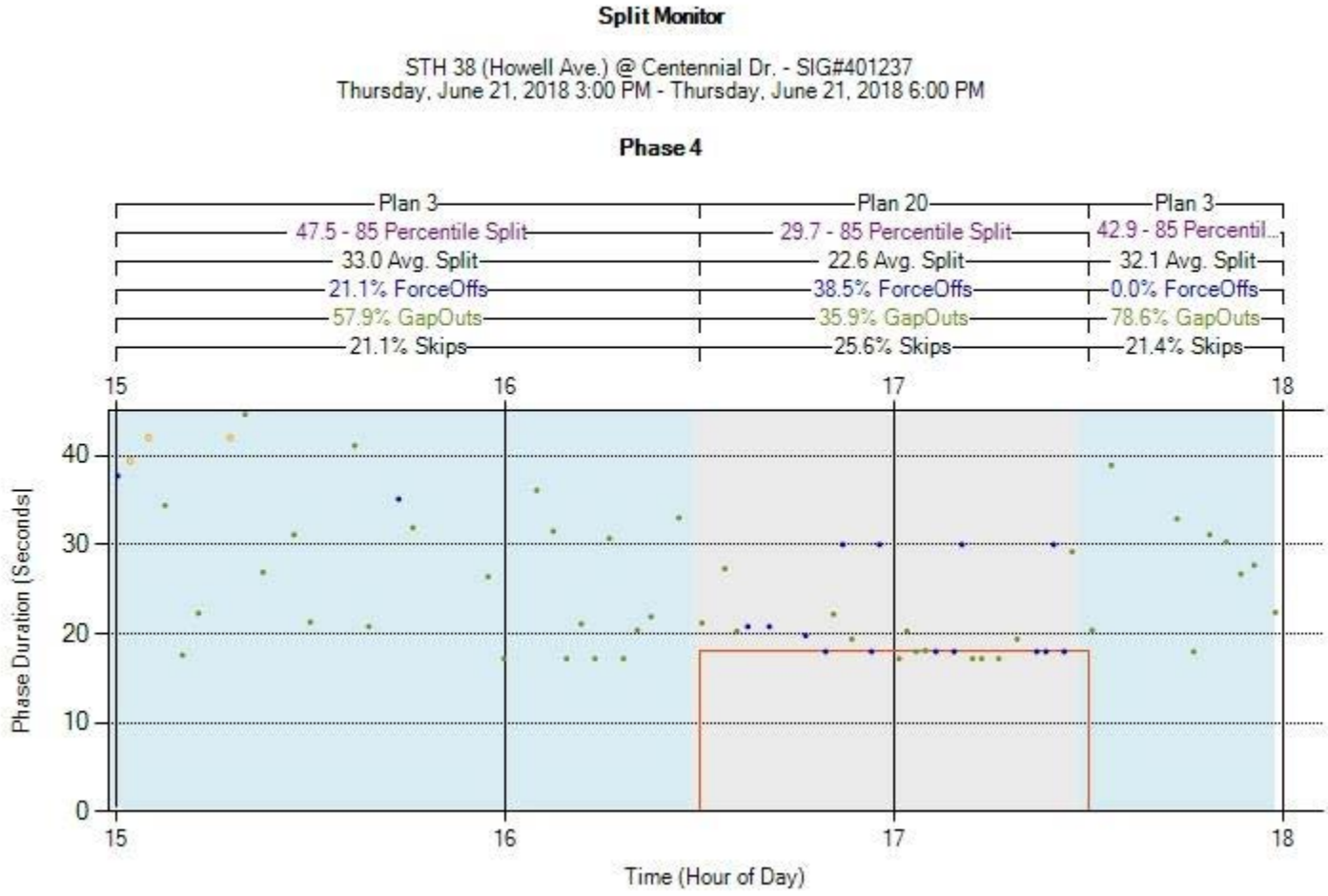
WIS 38 Corridor – STH 38 & Centennial Dr.
HCS Timings
6/21/2018 – 3:00 PM – 6:00 PM



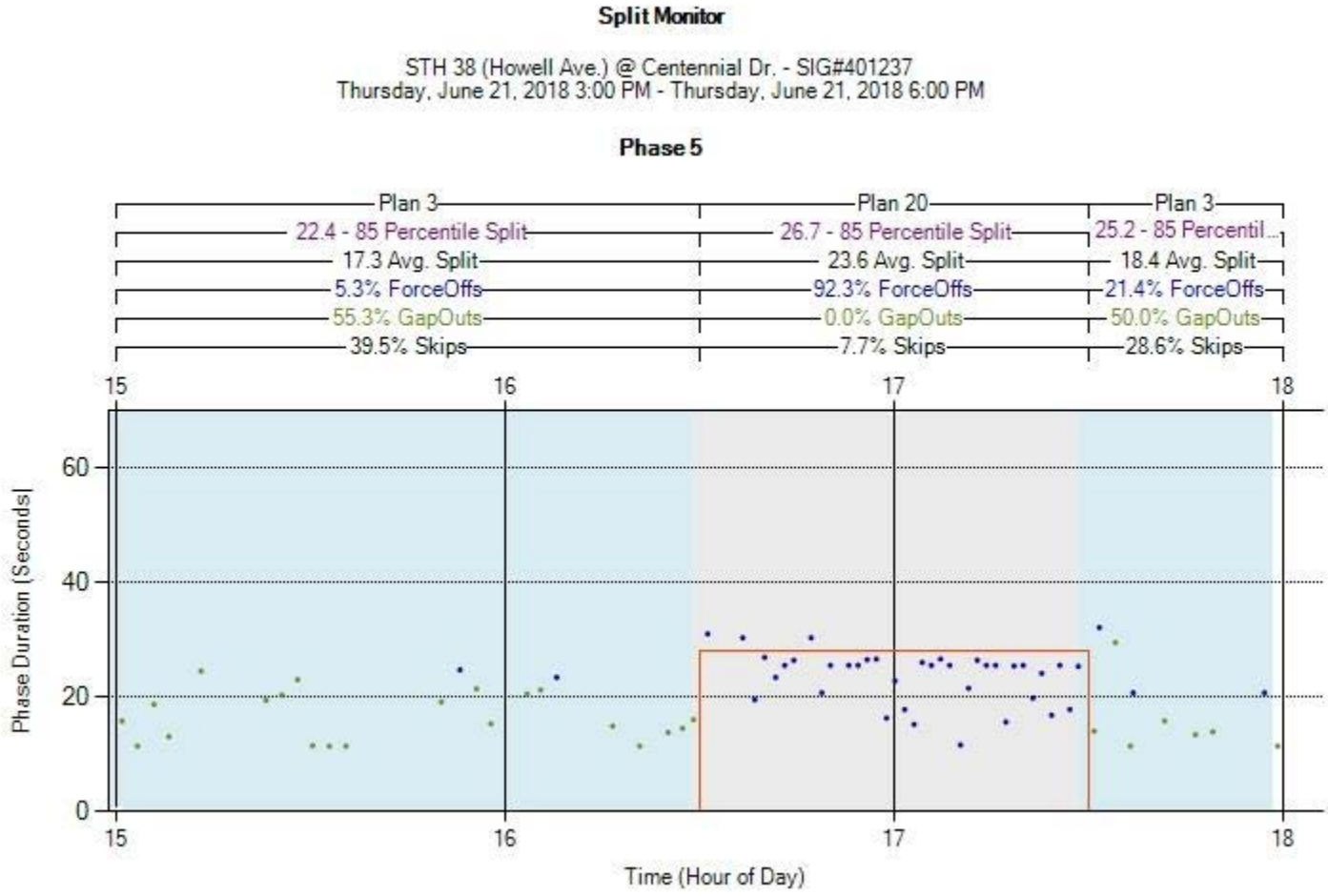
WIS 38 Corridor – STH 38 & Centennial Dr.
HCS Timings
6/21/2018 – 3:00 PM – 6:00 PM



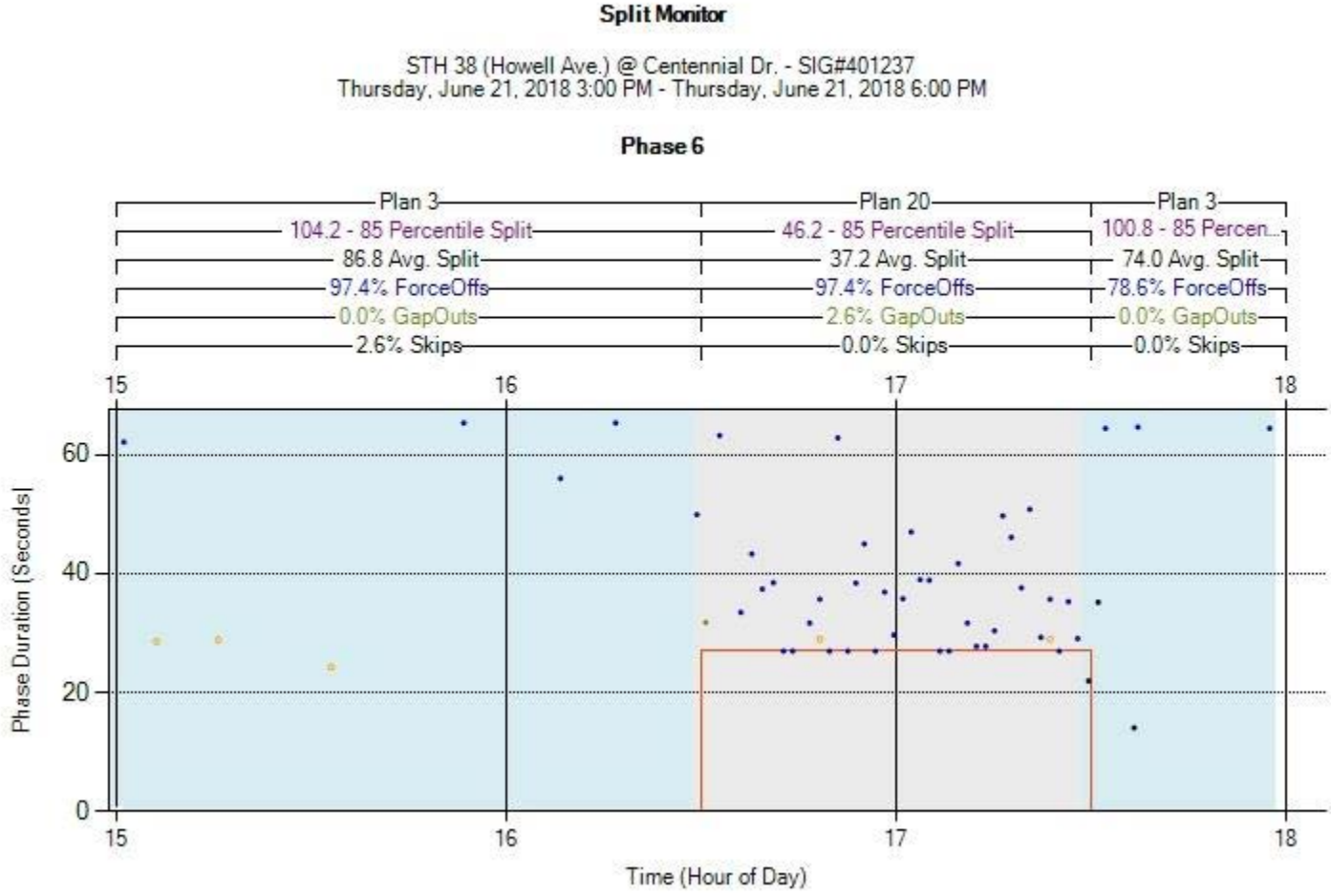
WIS 38 Corridor – STH 38 & Centennial Dr.
HCS Timings
6/21/2018 – 3:00 PM – 6:00 PM



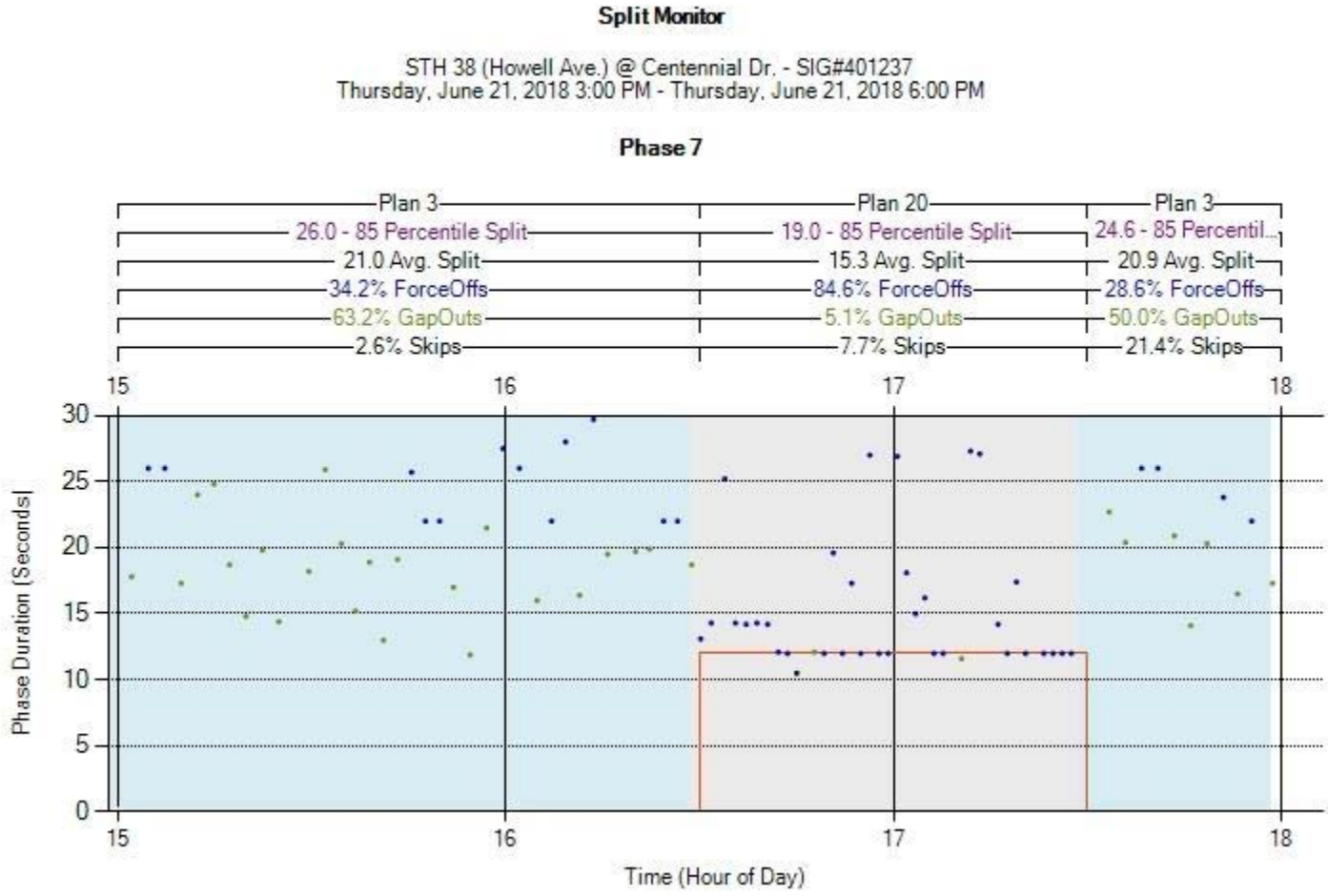
WIS 38 Corridor – STH 38 & Centennial Dr.
HCS Timings
6/21/2018 – 3:00 PM – 6:00 PM



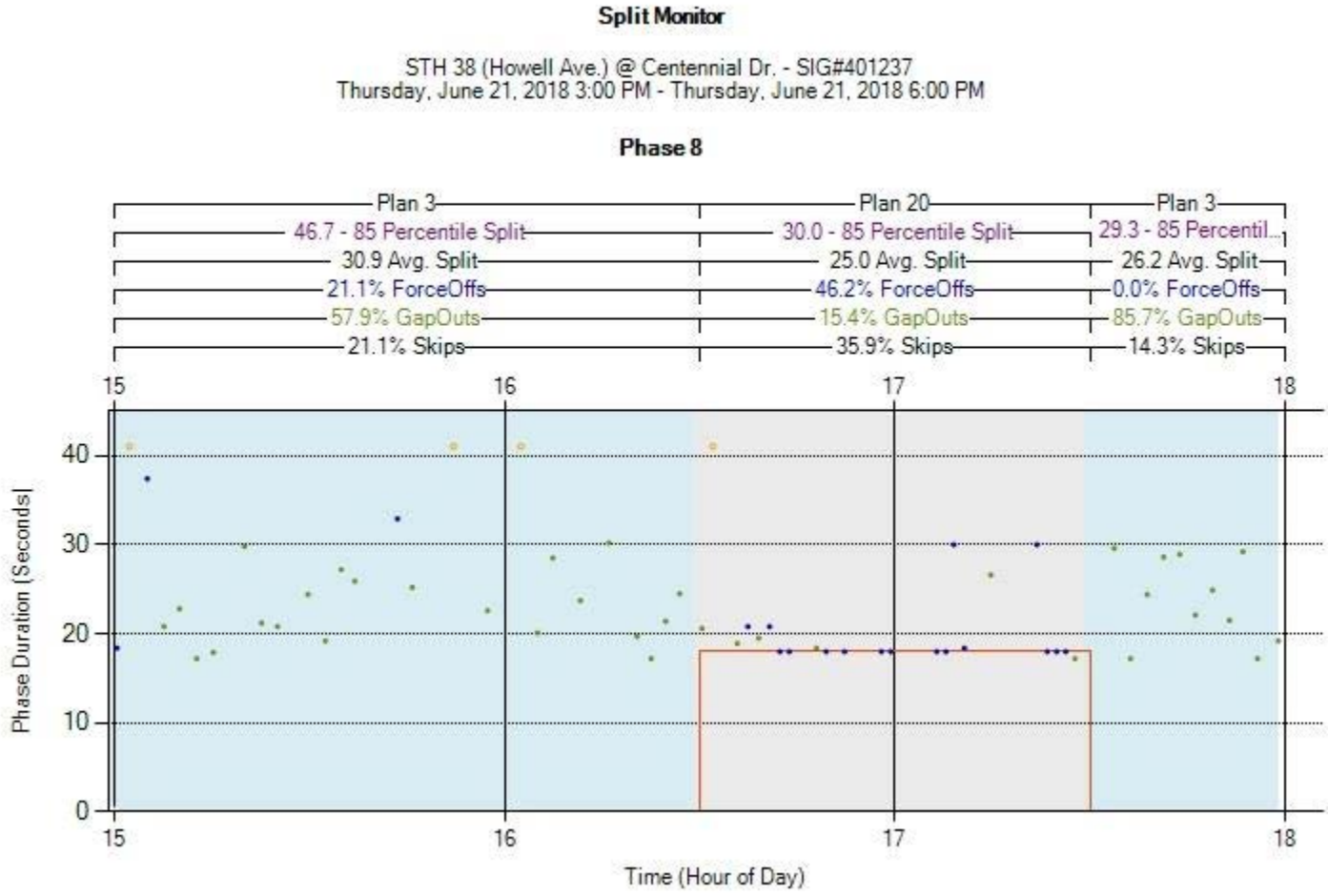
WIS 38 Corridor – STH 38 & Centennial Dr.
HCS Timings
6/21/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Centennial Dr.
HCS Timings
6/21/2018 – 3:00 PM – 6:00 PM

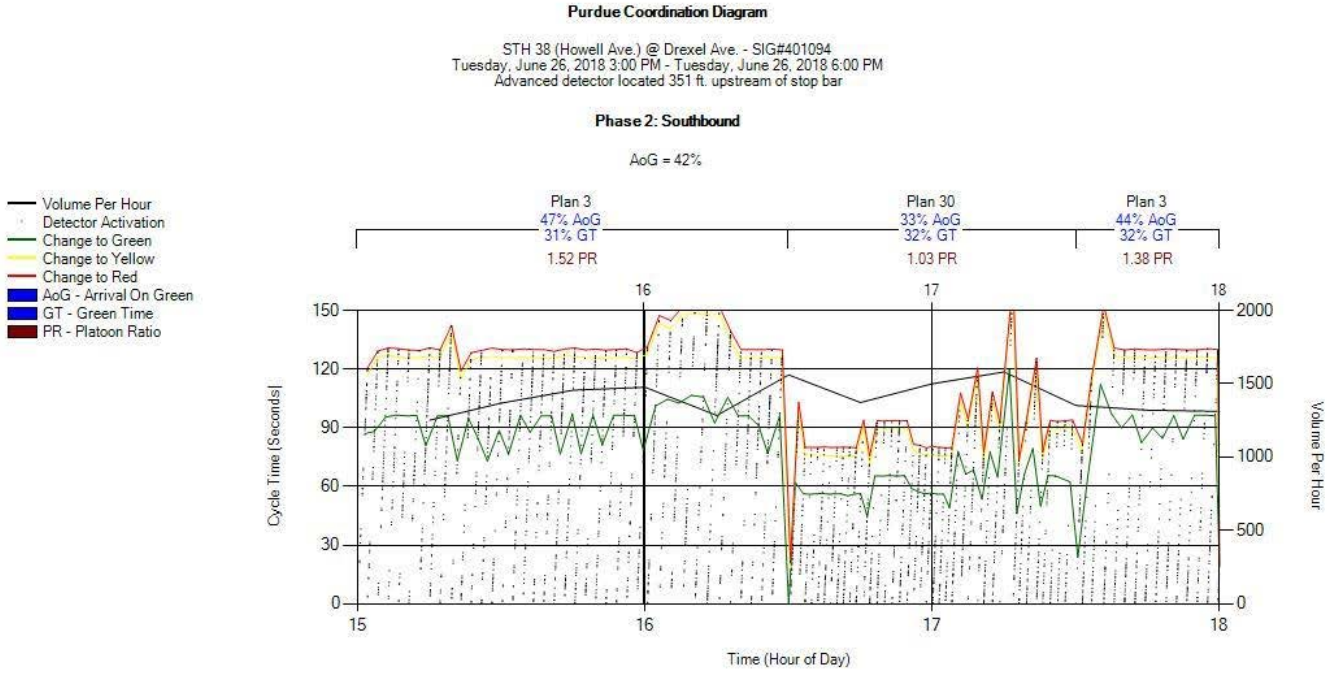


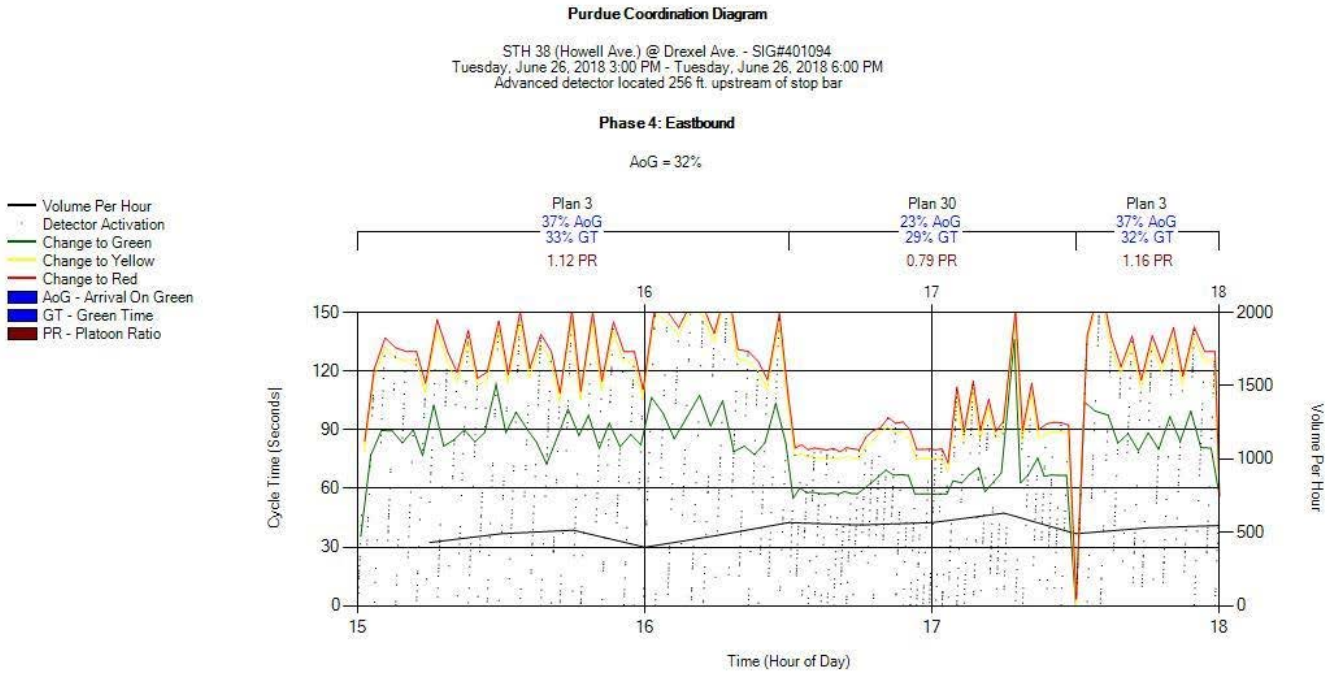
WIS 38 Corridor – STH 38 & Centennial Dr.
HCS Timings
6/21/2018 – 3:00 PM – 6:00 PM



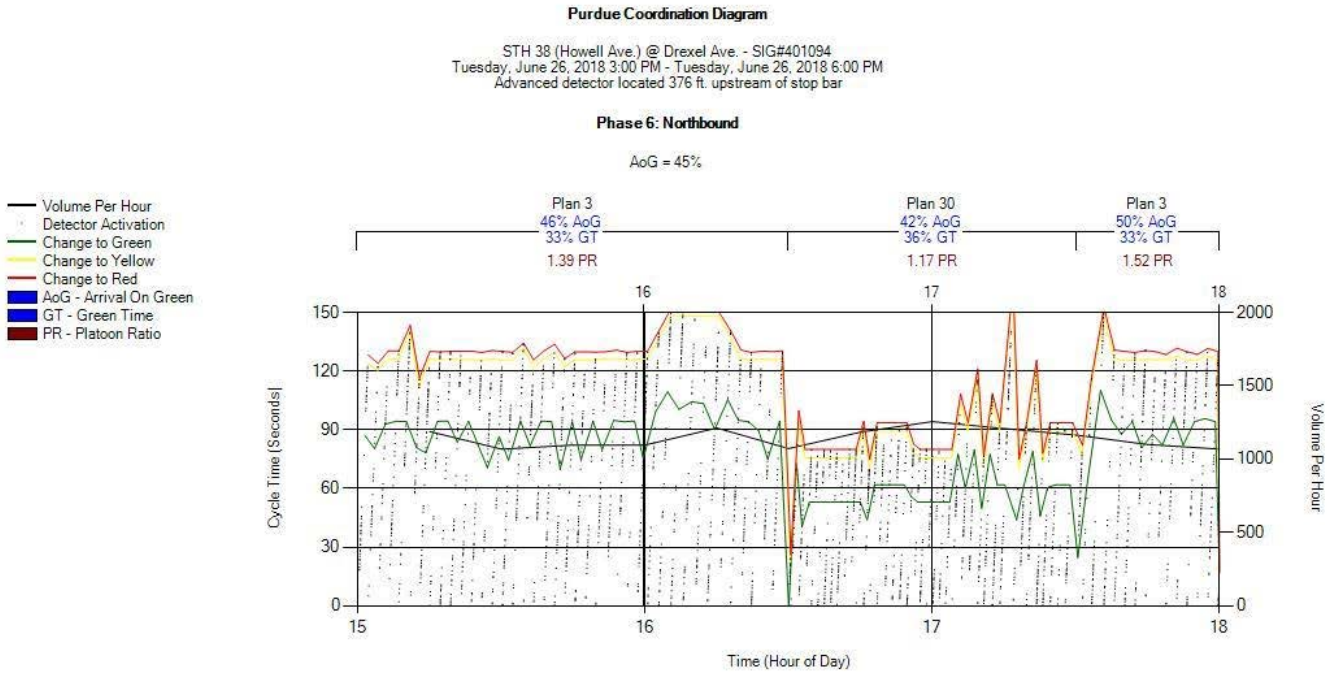
WisBOOM Outputs
WIS 38 Corridor
Synchro Optimized Timings

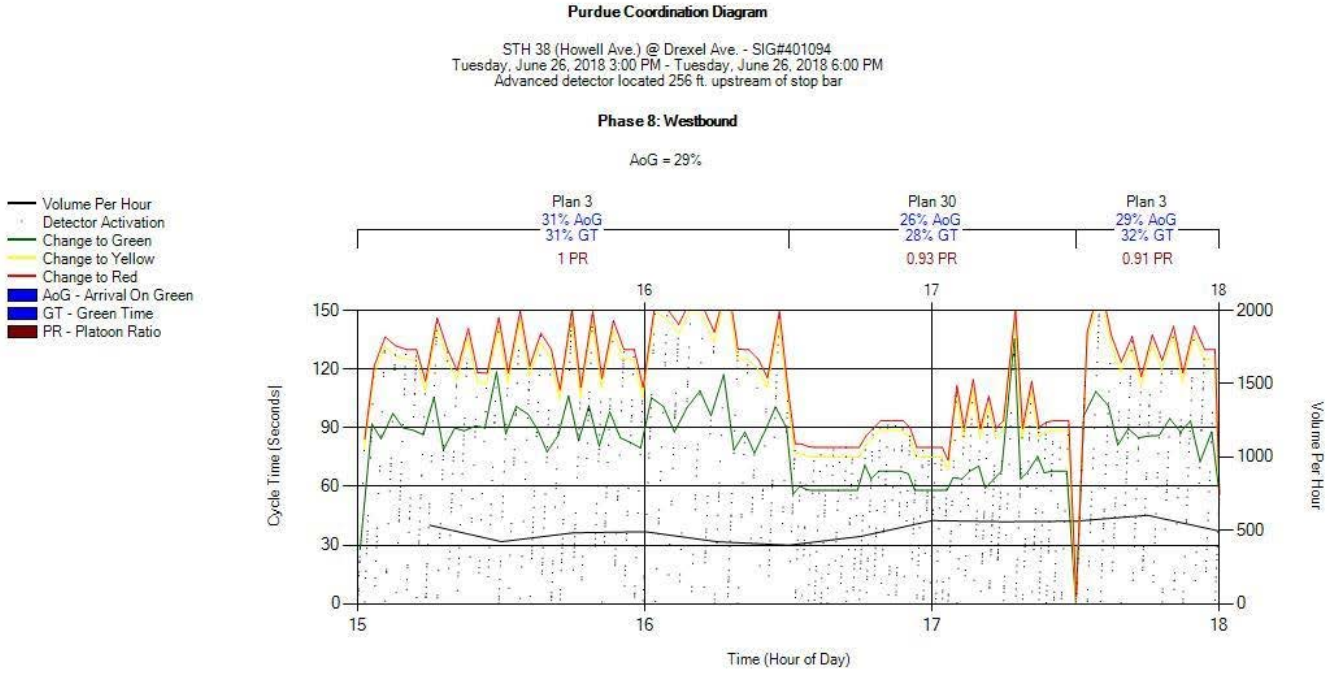
WIS 38 Corridor – STH 38 & Drexel Ave.
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM





WIS 38 Corridor – STH 38 & Drexel Ave.
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM





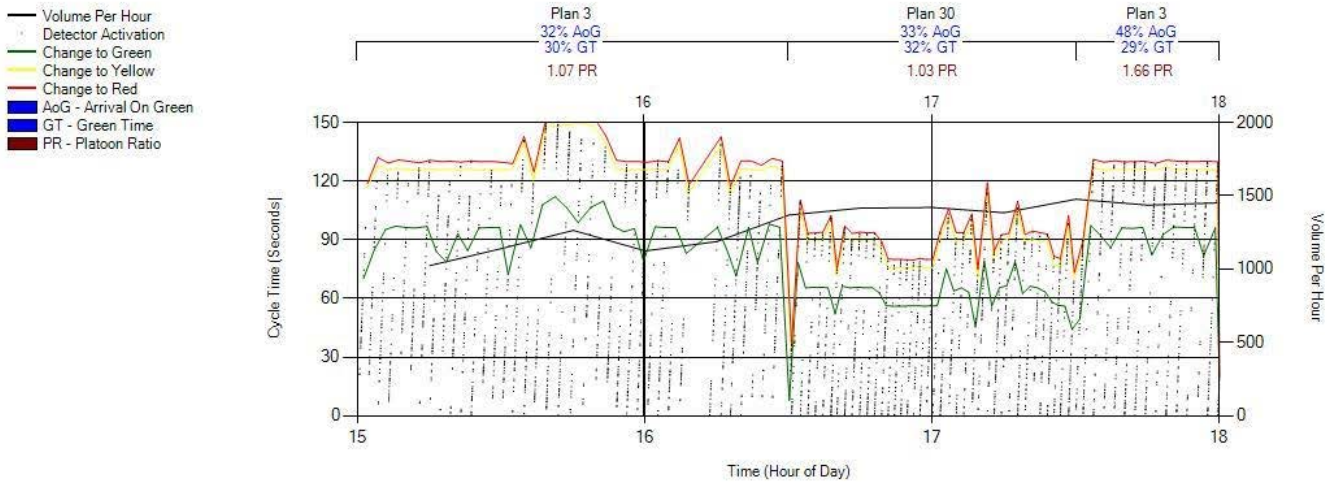
WIS 38 Corridor – STH 38 & Drexel Ave.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM

Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Drexel Ave. - SIG#401094
Wednesday, June 27, 2018 3:00 PM - Wednesday, June 27, 2018 6:00 PM
Advanced detector located 351 ft. upstream of stop bar

Phase 2: Southbound

AoG = 35%

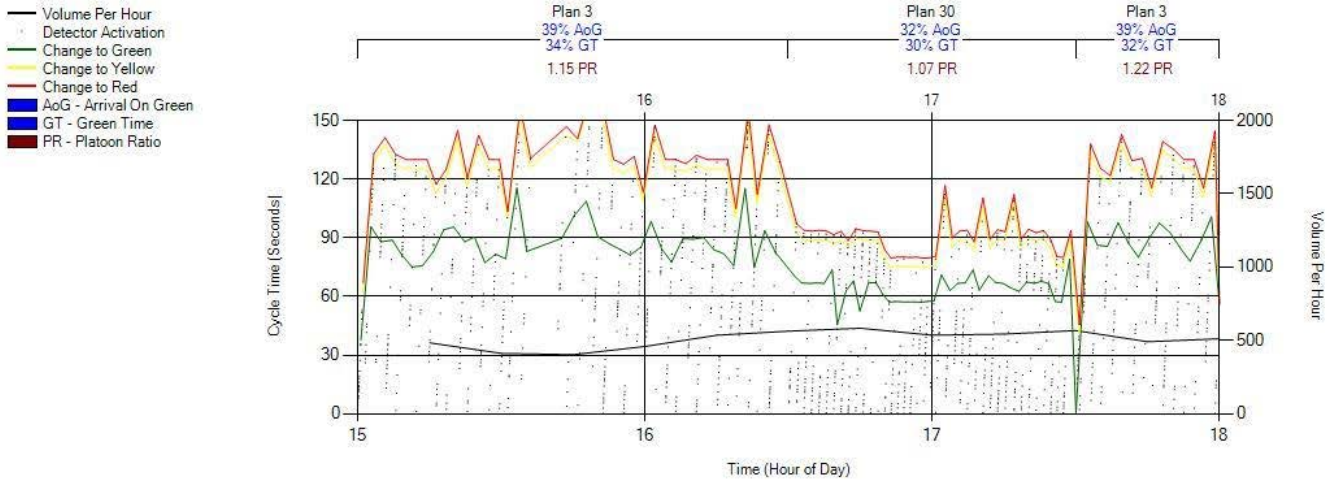


Purdue Coordination Diagram

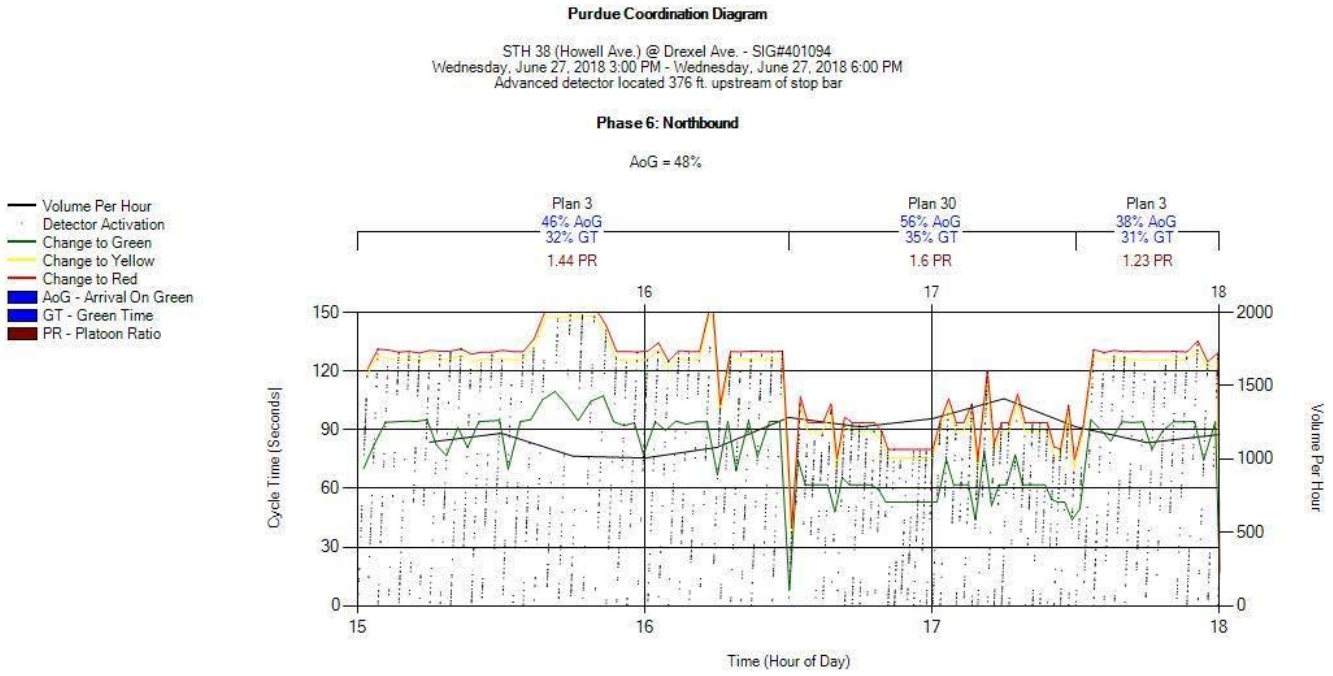
STH 38 (Howell Ave.) @ Drexel Ave. - SIG#401094
Wednesday, June 27, 2018 3:00 PM - Wednesday, June 27, 2018 6:00 PM
Advanced detector located 256 ft. upstream of stop bar

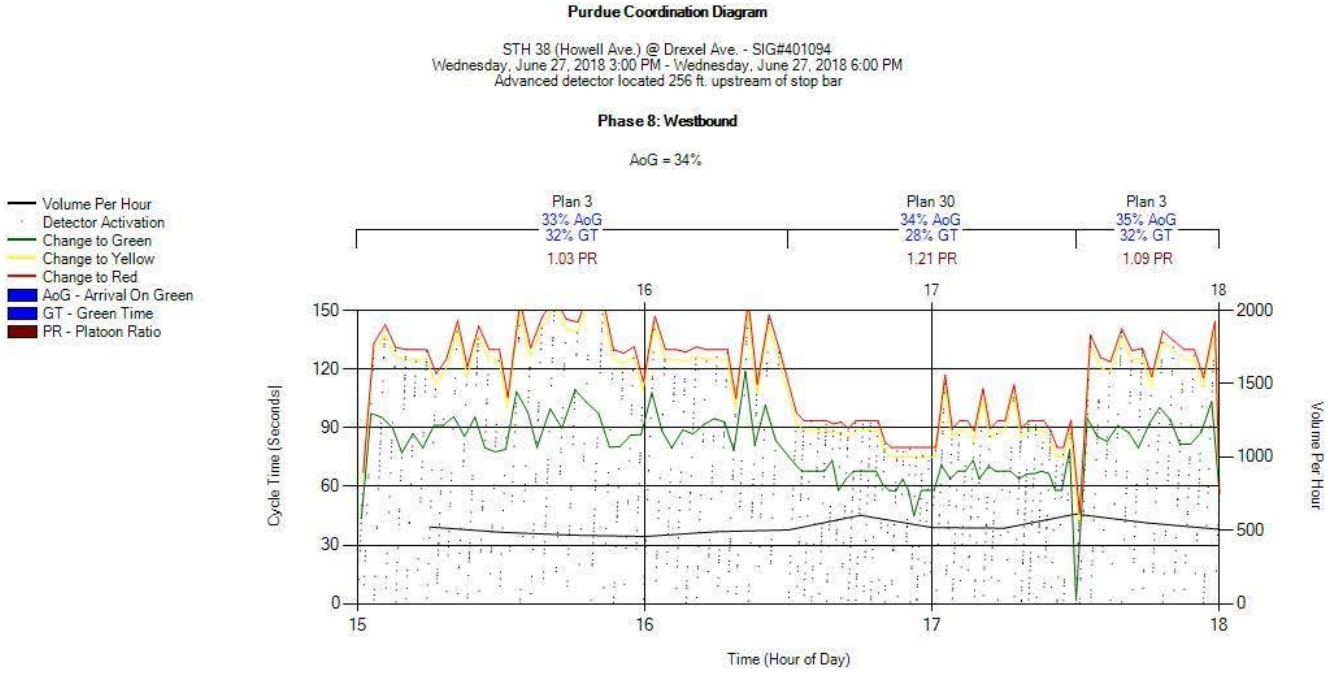
Phase 4: Eastbound

AoG = 36%

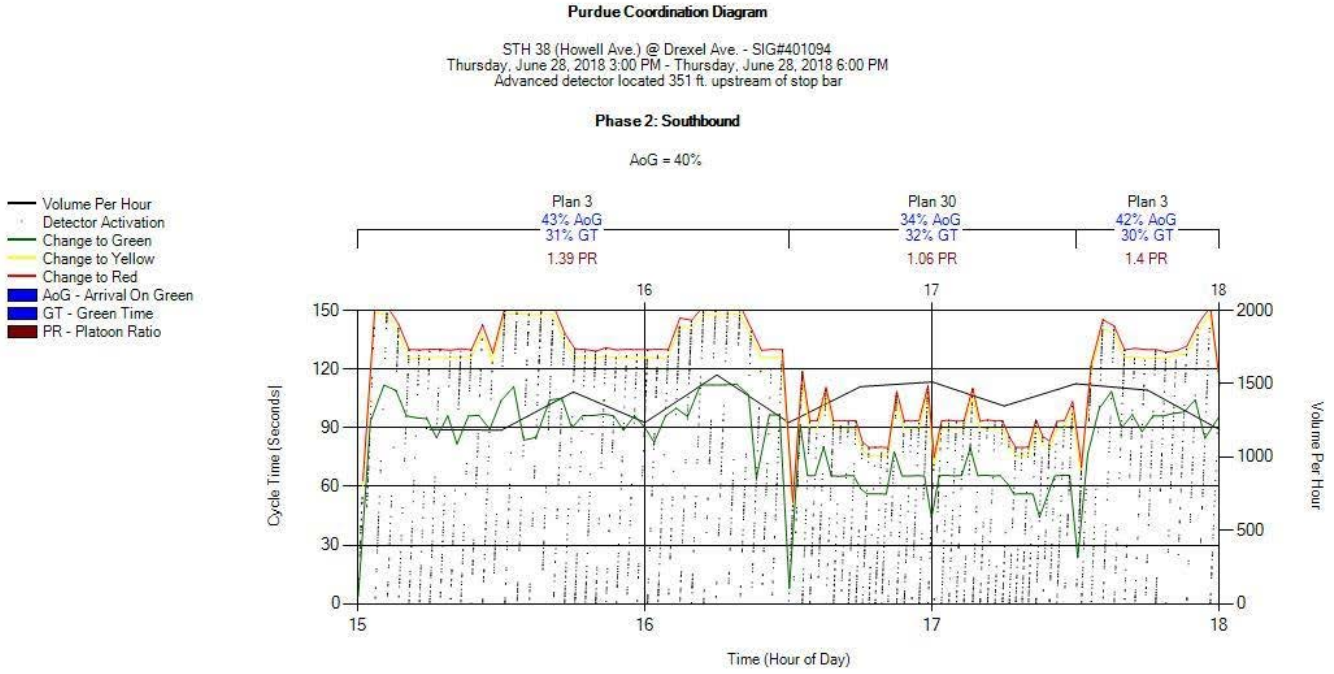


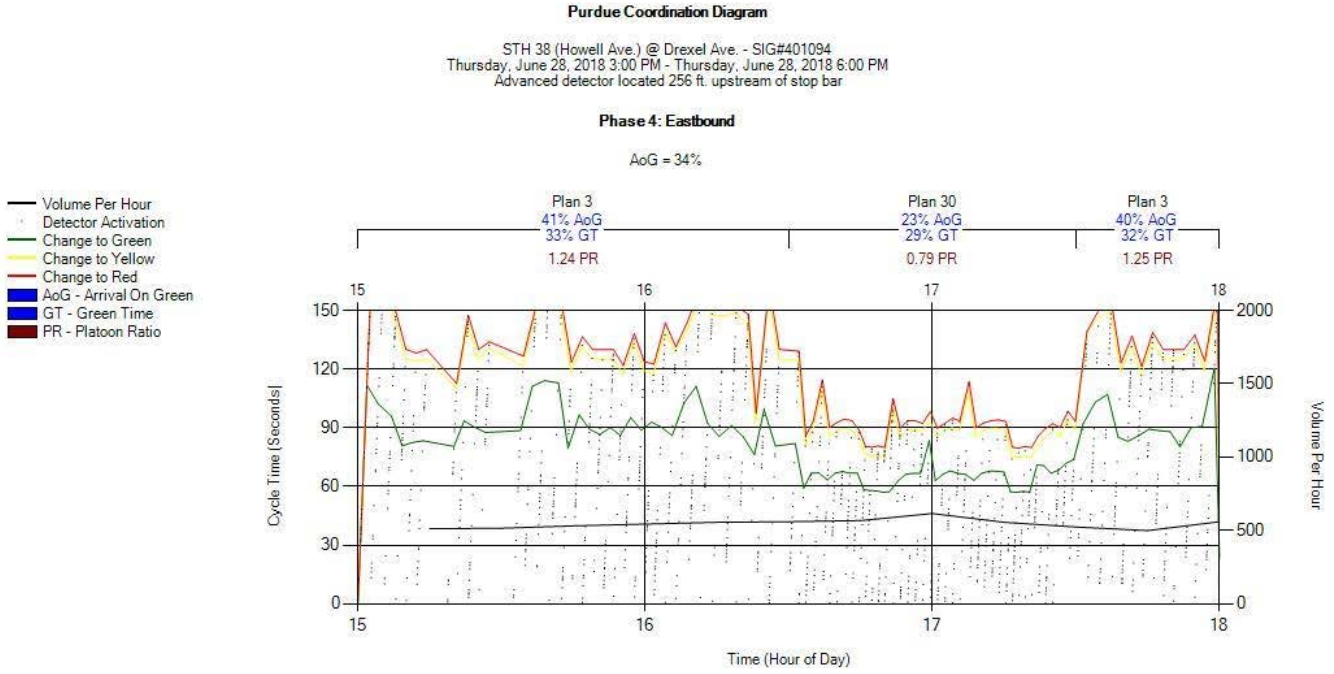
WIS 38 Corridor – STH 38 & Drexel Ave.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM



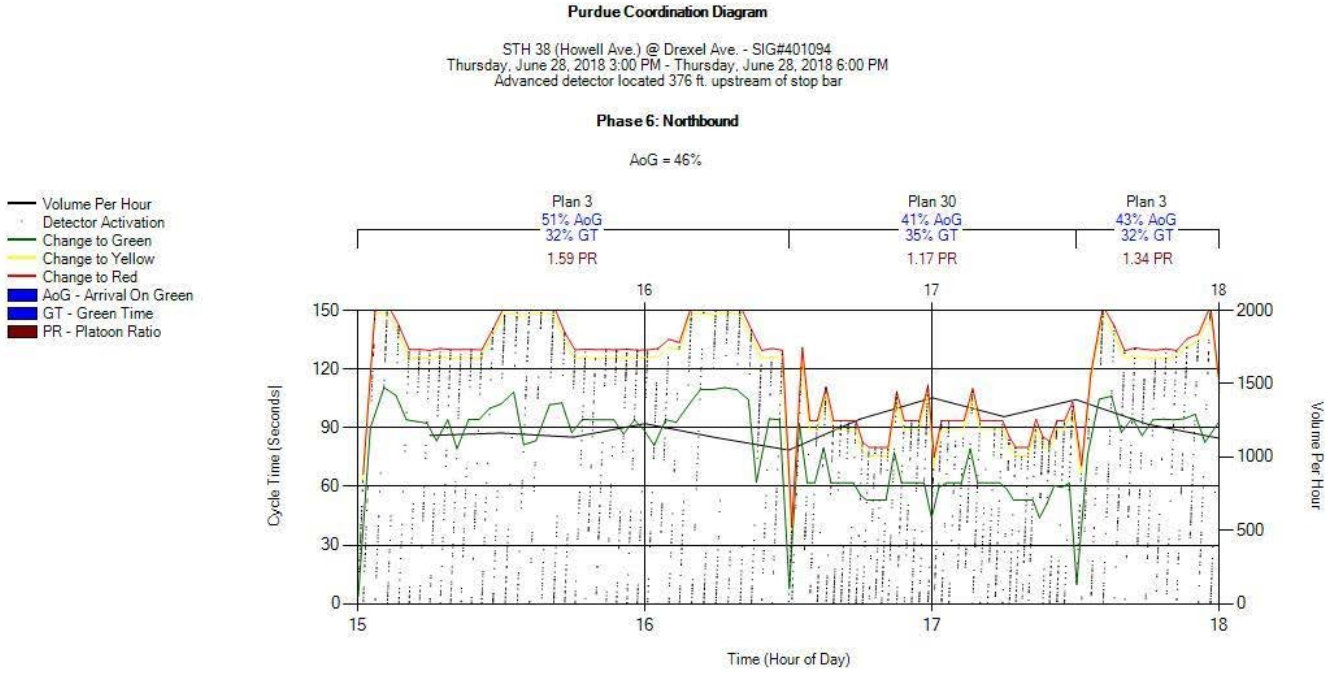


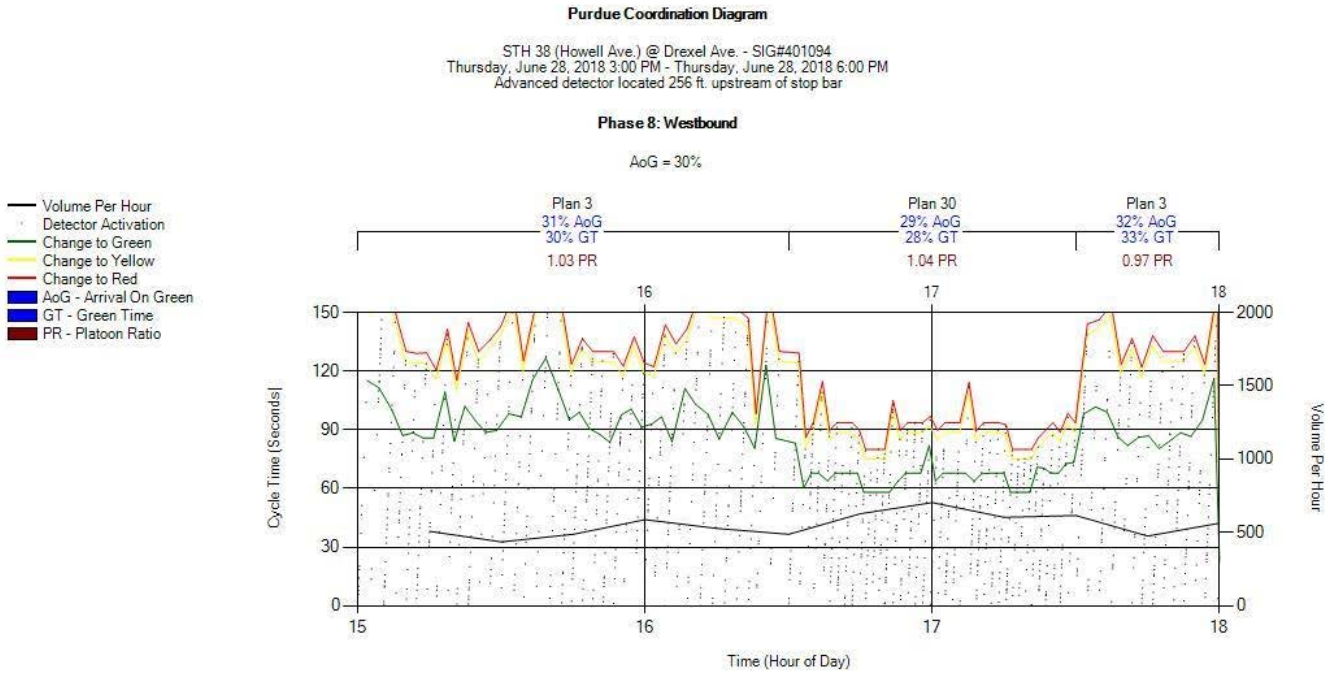
WIS 38 Corridor – STH 38 & Drexel Ave.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM



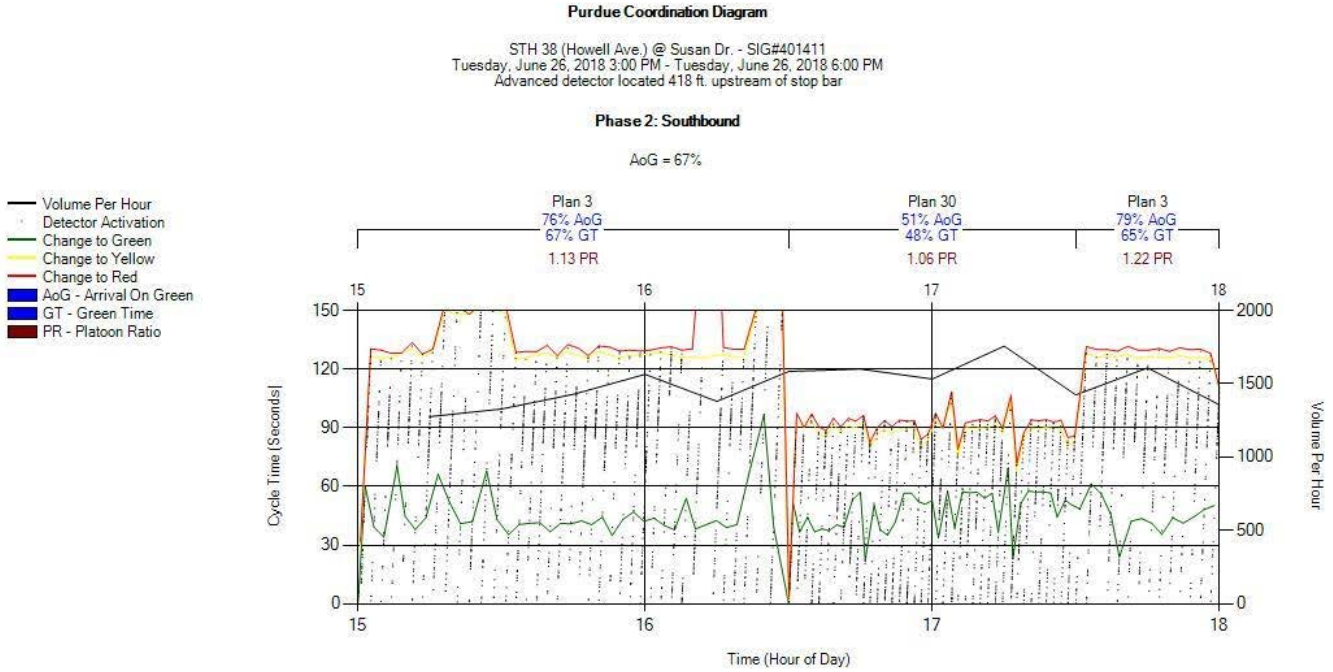


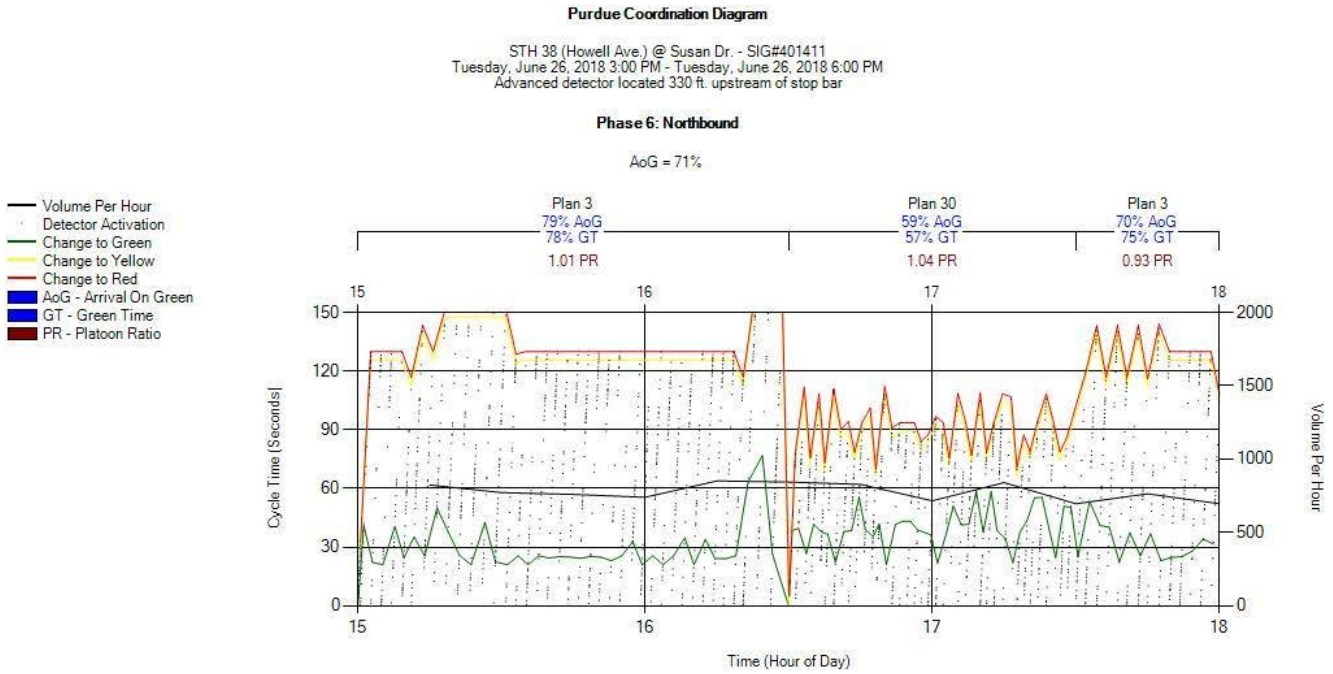
WIS 38 Corridor – STH 38 & Drexel Ave.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM



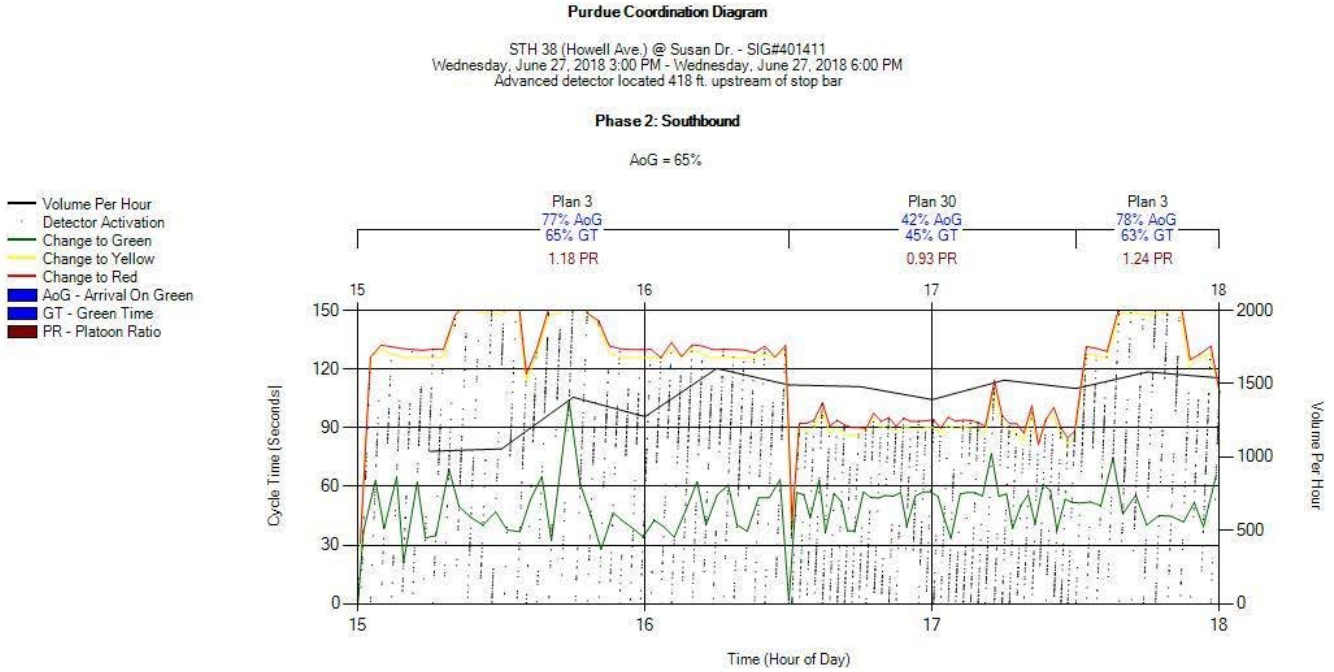


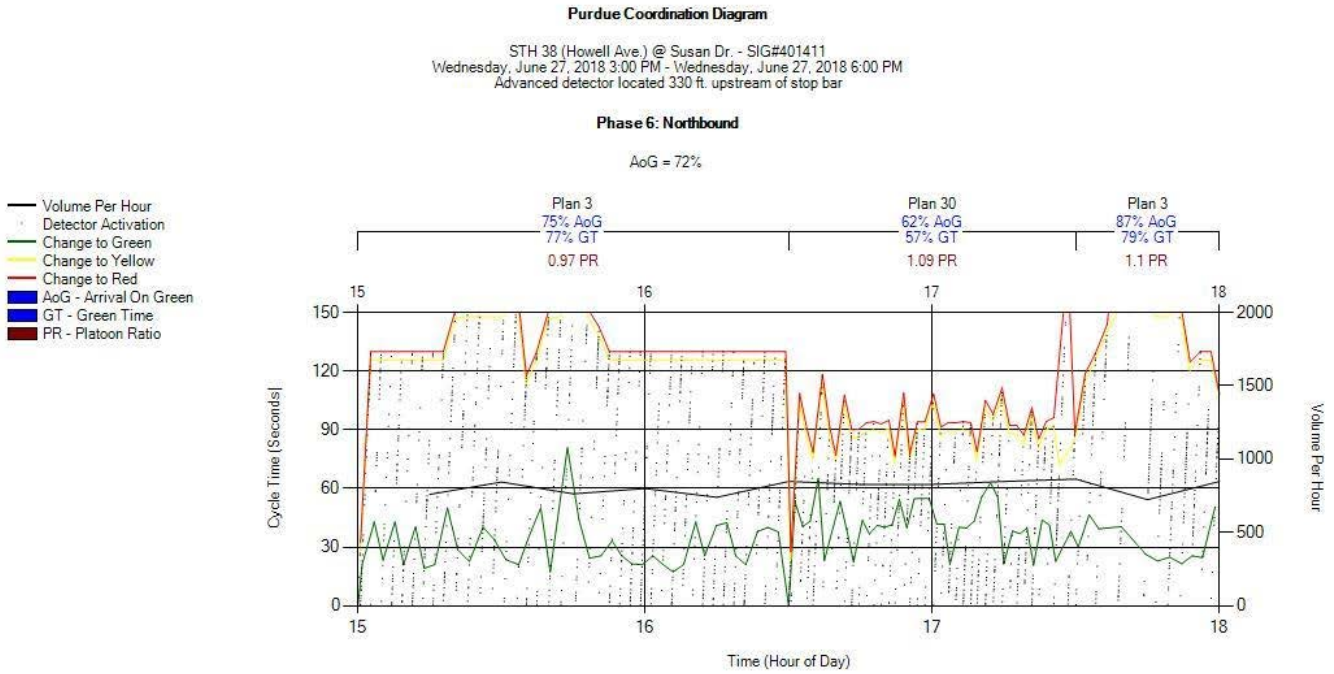
WIS 38 Corridor – STH 38 & Susan Dr.
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM





WIS 38 Corridor – STH 38 & Susan Dr.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM



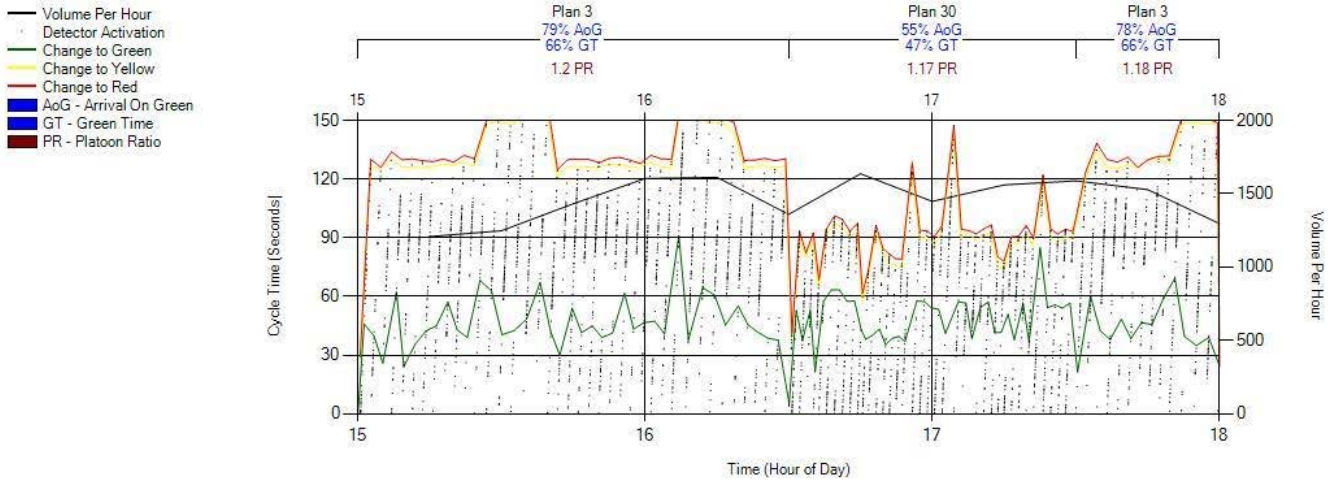


Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Susan Dr. - SIG#401411
Thursday, June 28, 2018 3:00 PM - Thursday, June 28, 2018 6:00 PM
Advanced detector located 418 ft. upstream of stop bar

Phase 2: Southbound

AoG = 70%

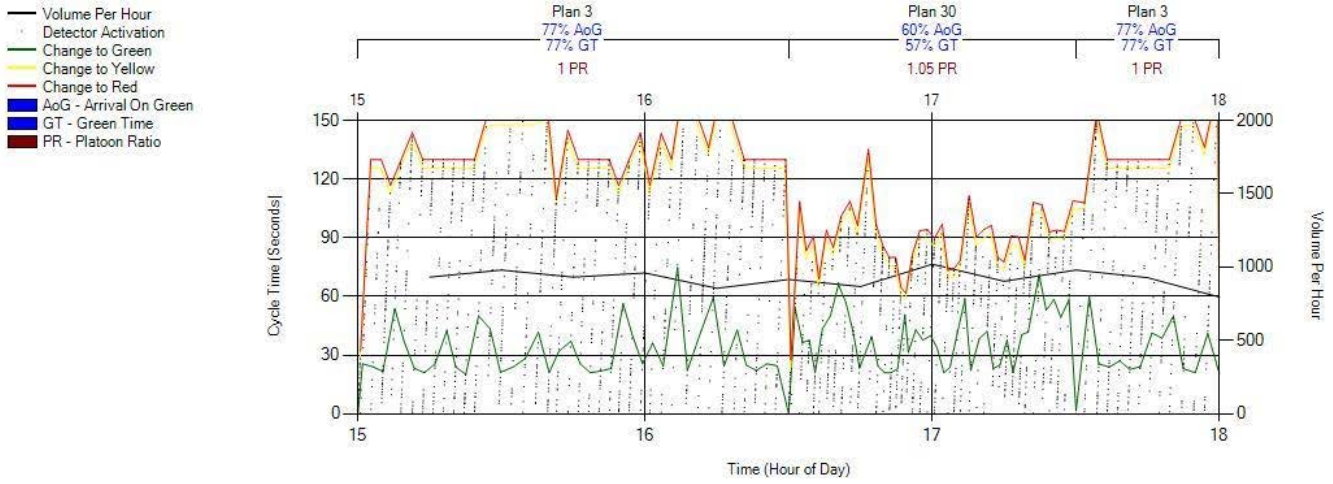


Purdue Coordination Diagram

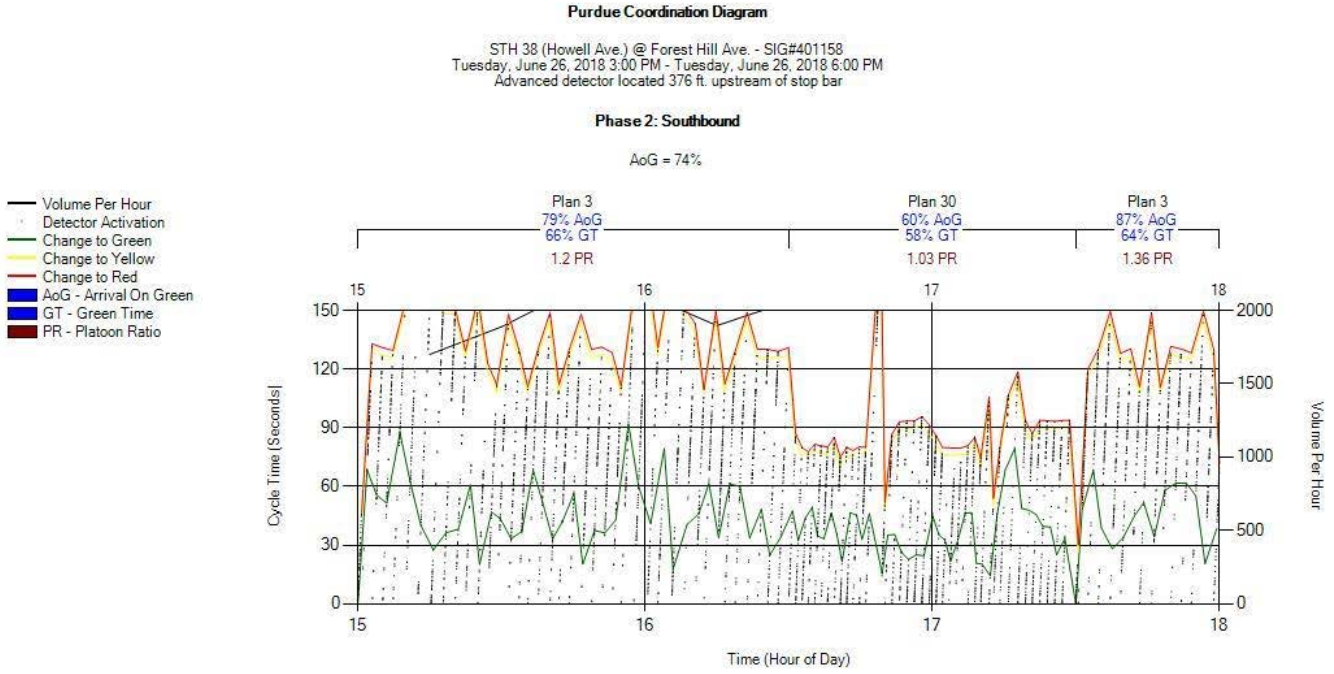
STH 38 (Howell Ave.) @ Susan Dr. - SIG#401411
Thursday, June 28, 2018 3:00 PM - Thursday, June 28, 2018 6:00 PM
Advanced detector located 330 ft. upstream of stop bar

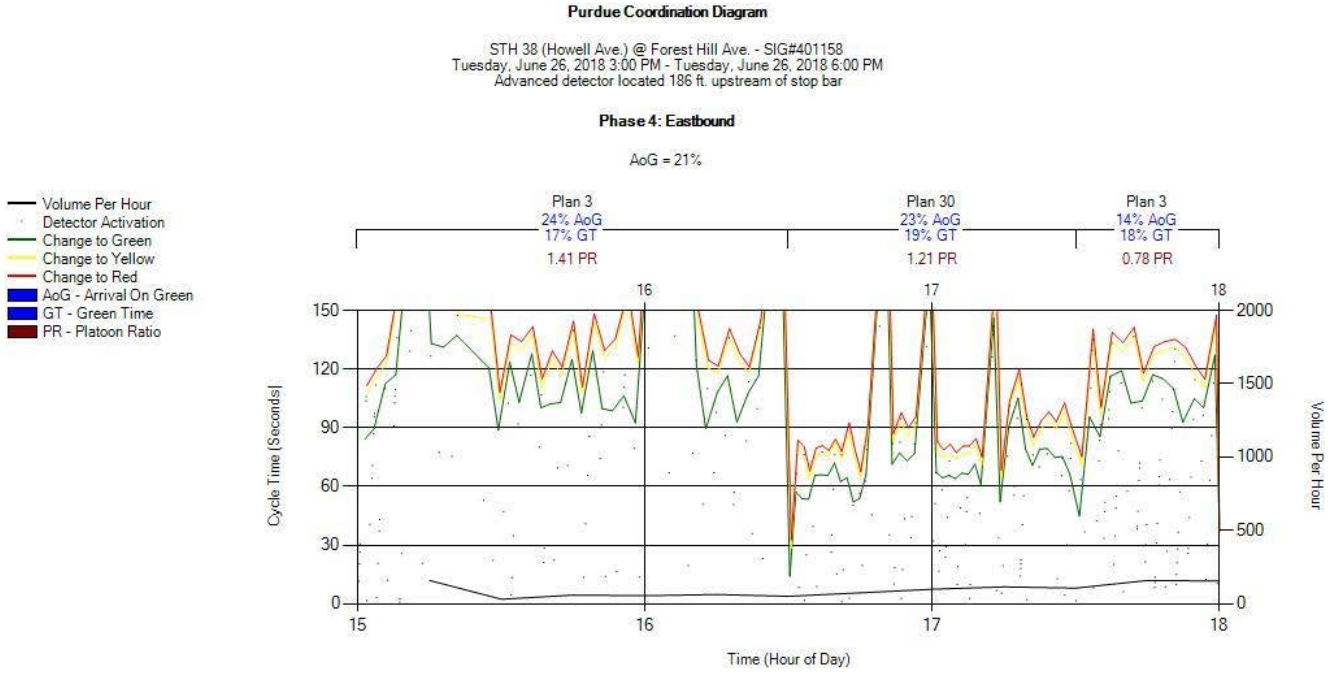
Phase 6: Northbound

AoG = 71%

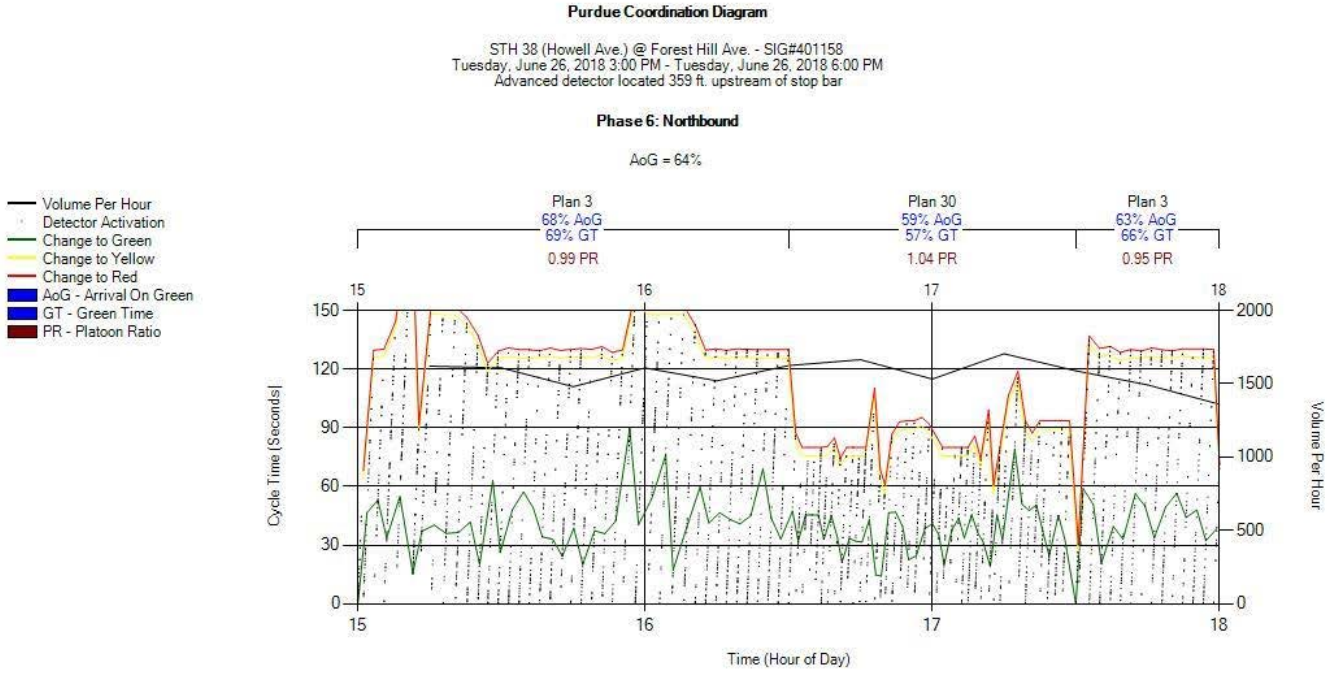


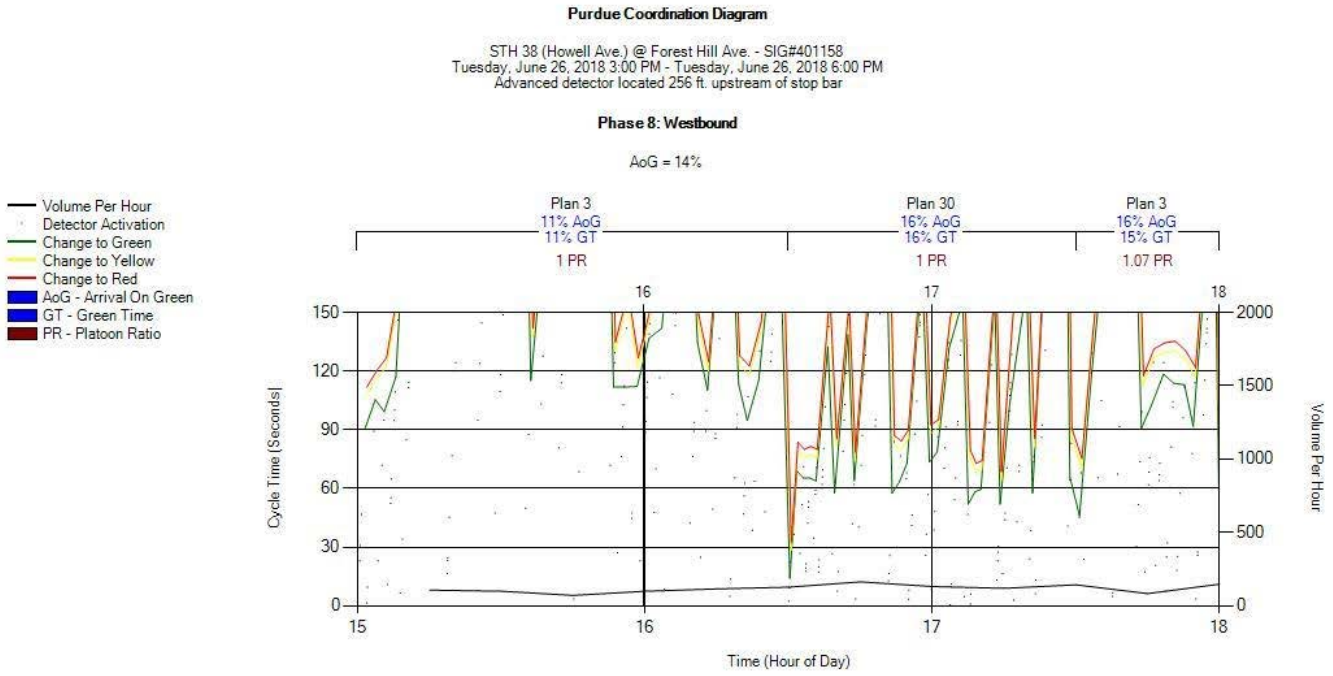
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM



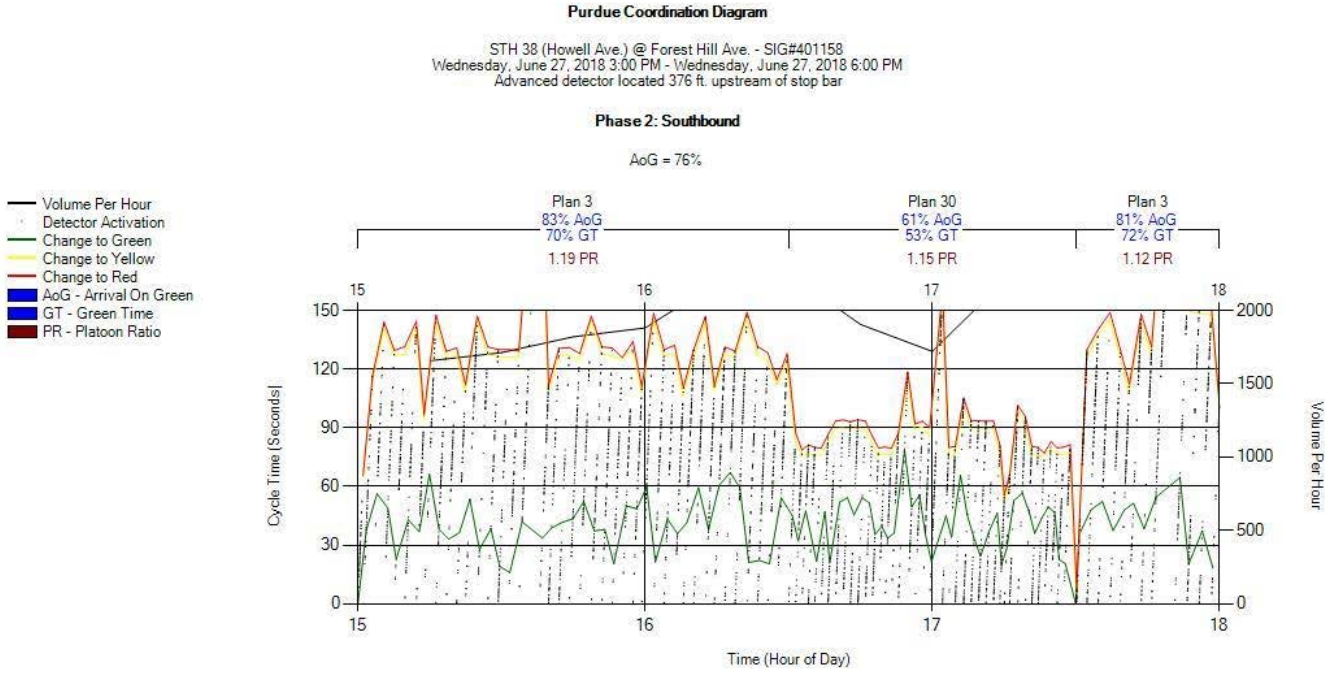


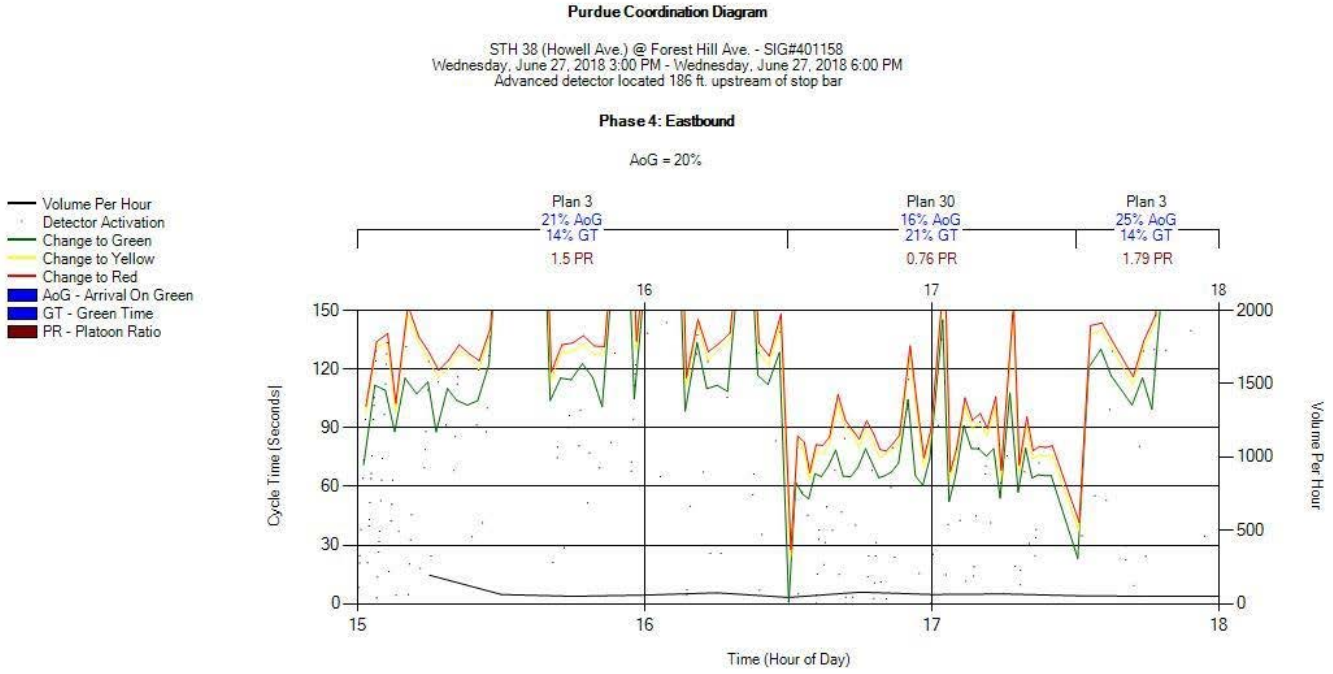
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM



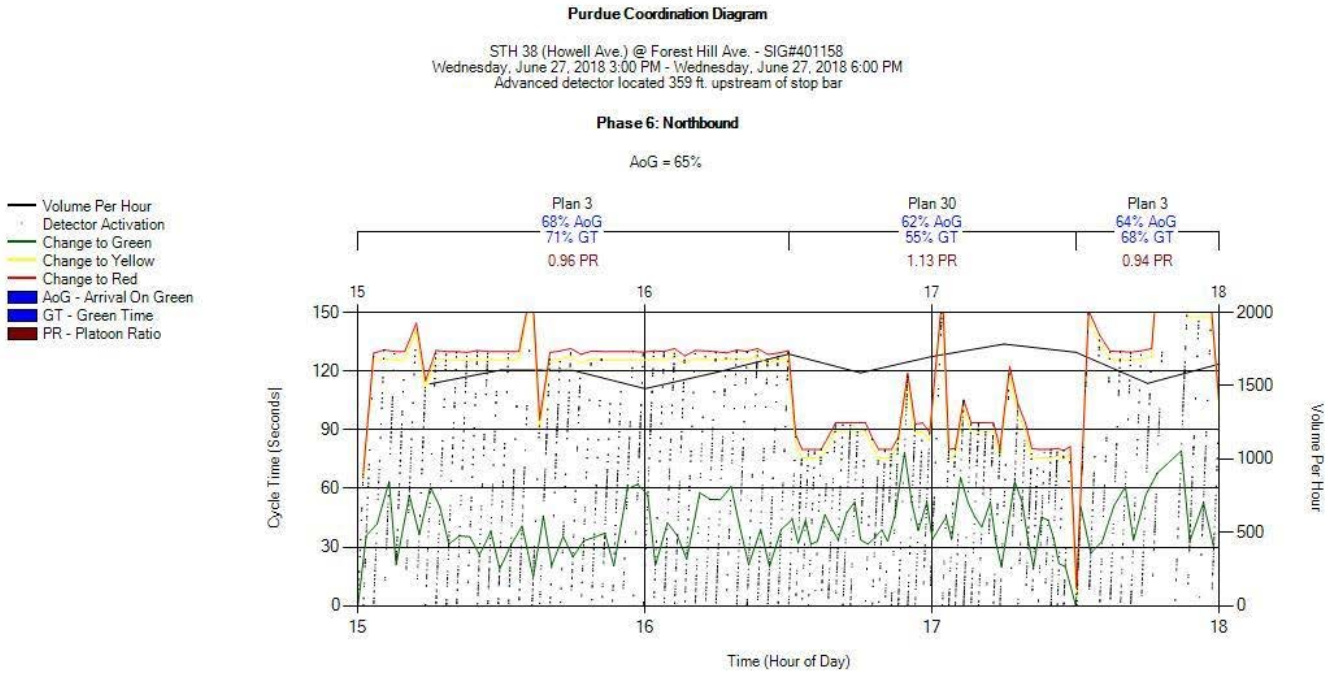


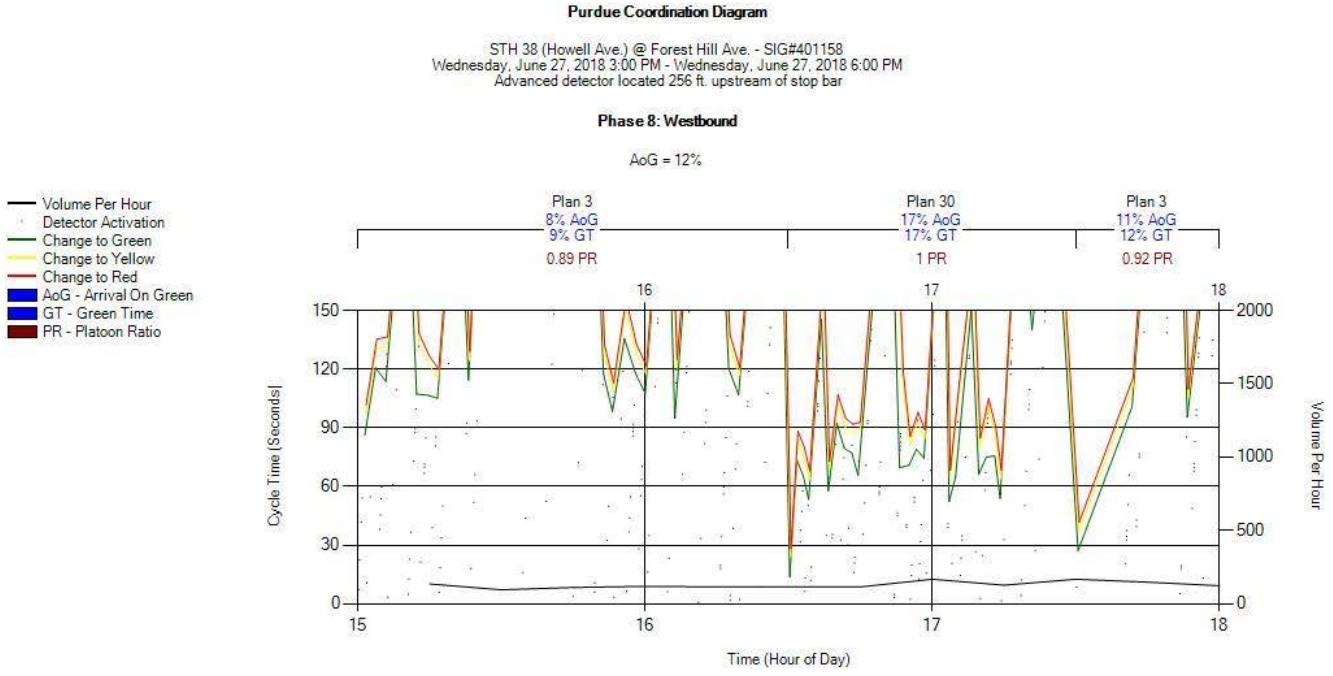
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM



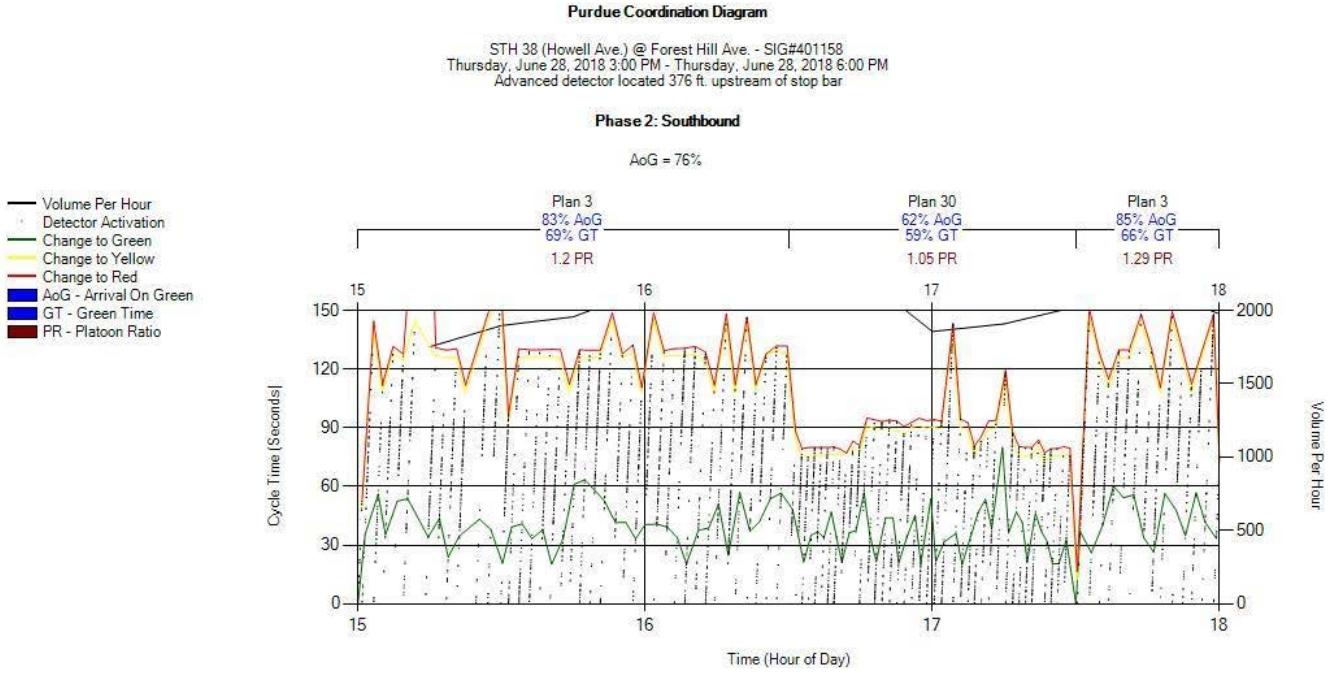


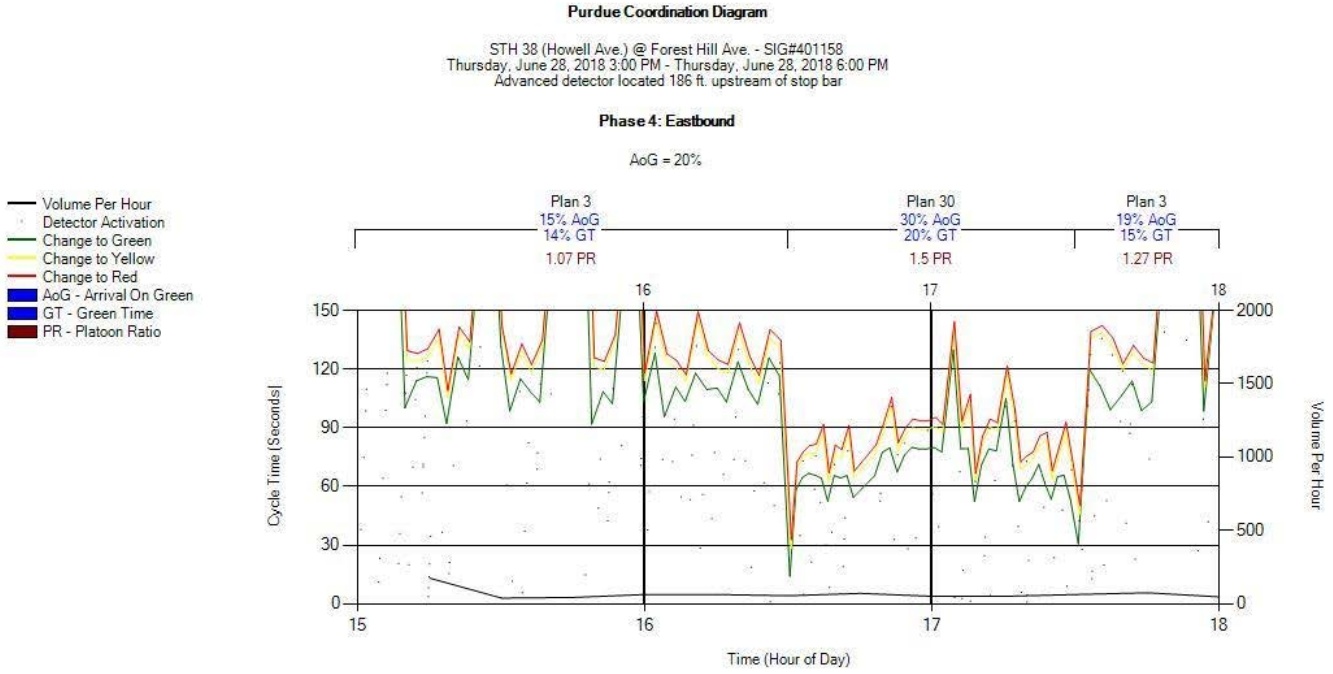
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM



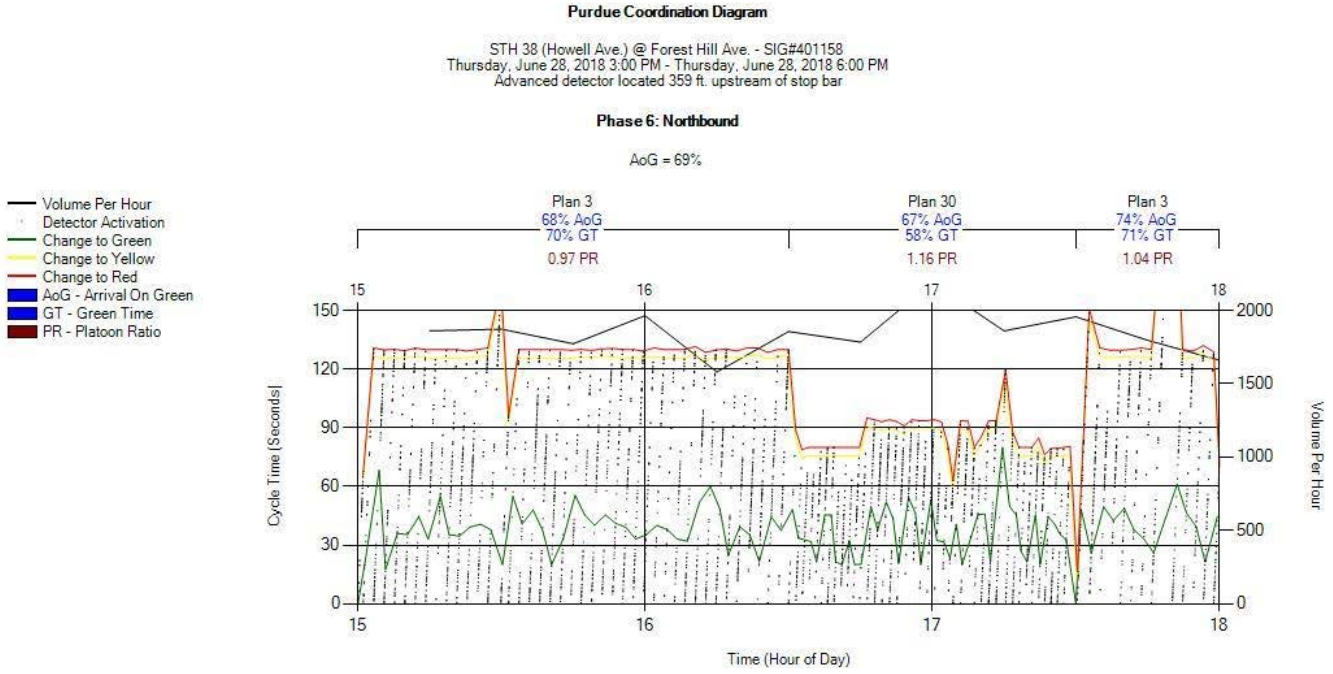


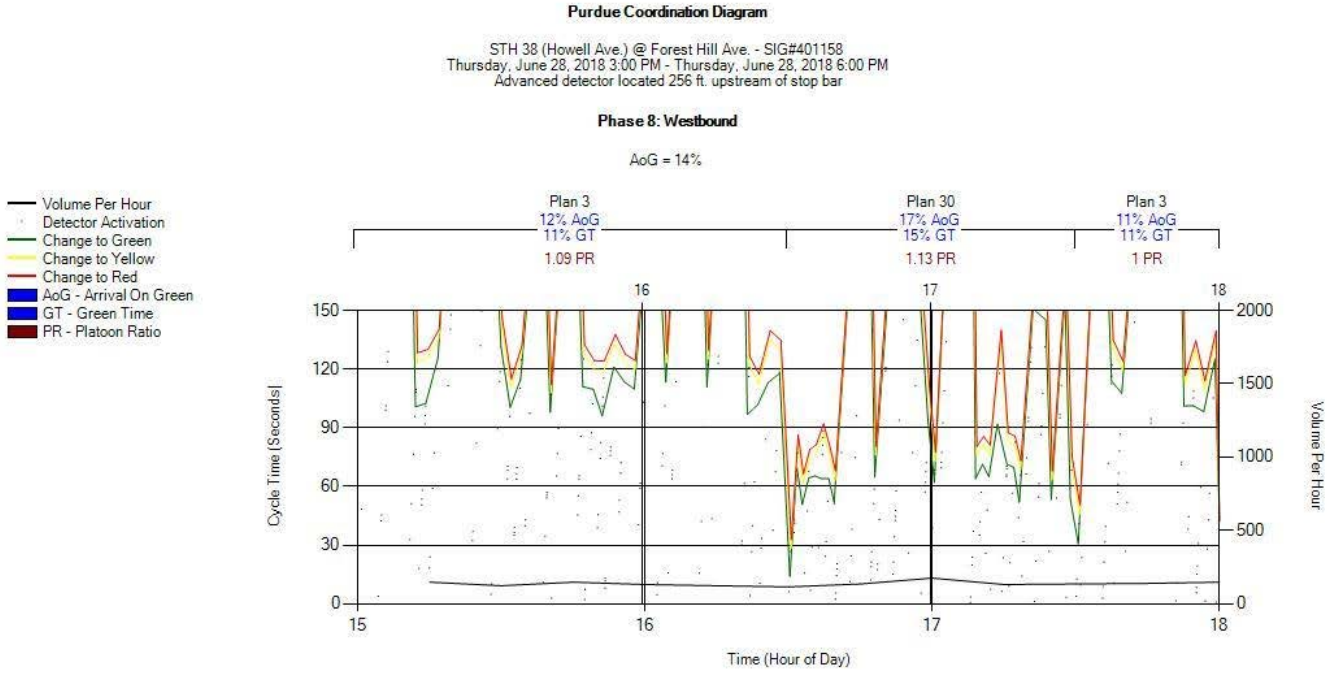
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM

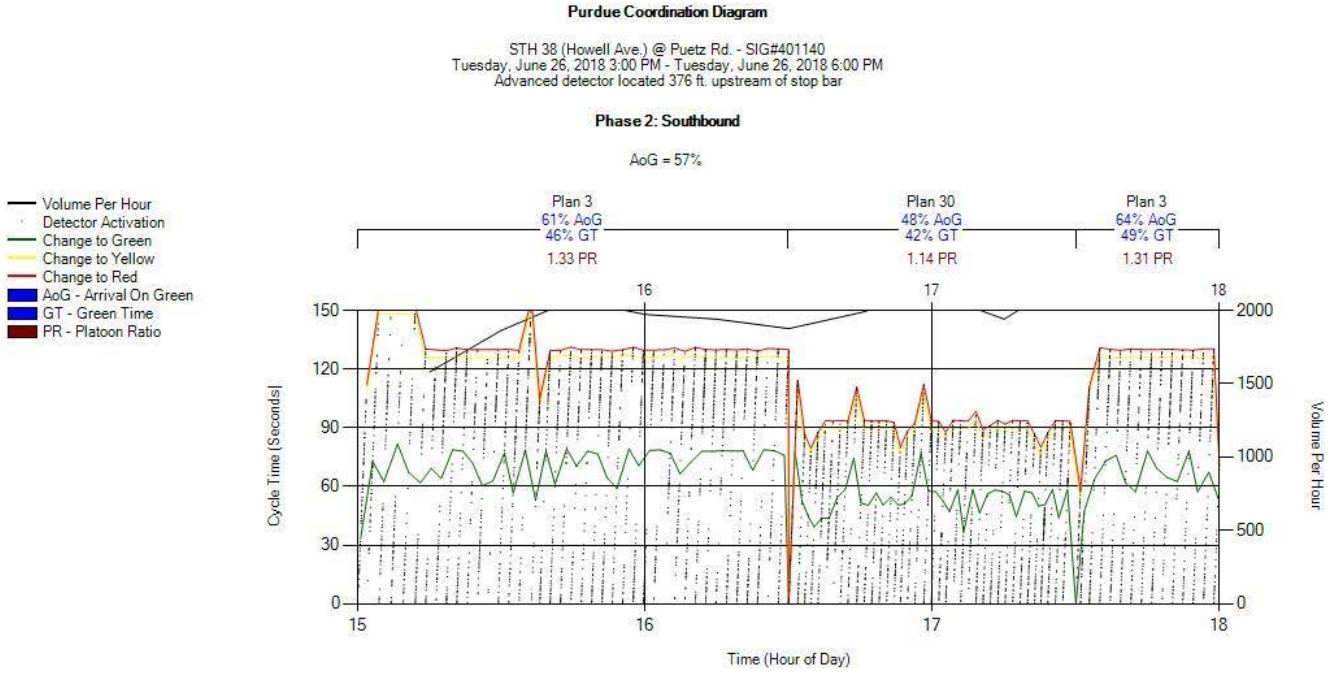


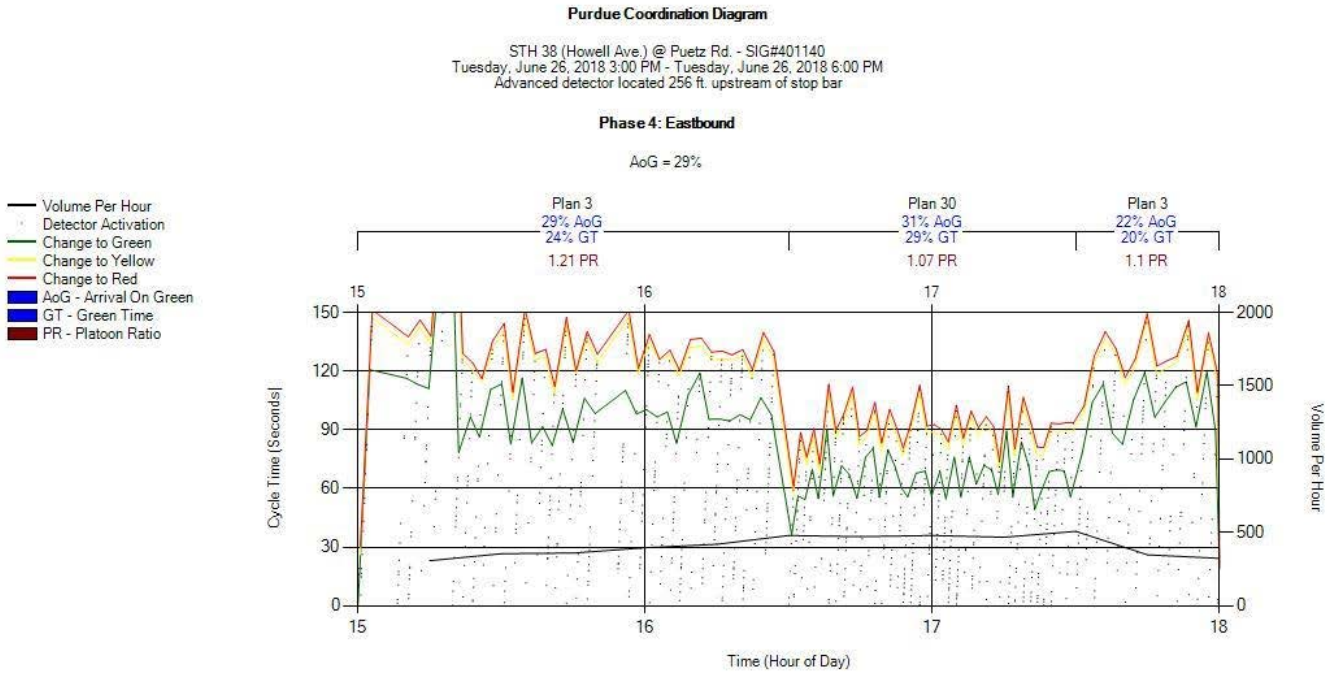


WIS 38 Corridor – STH 38 & Forest Hill Ave.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM

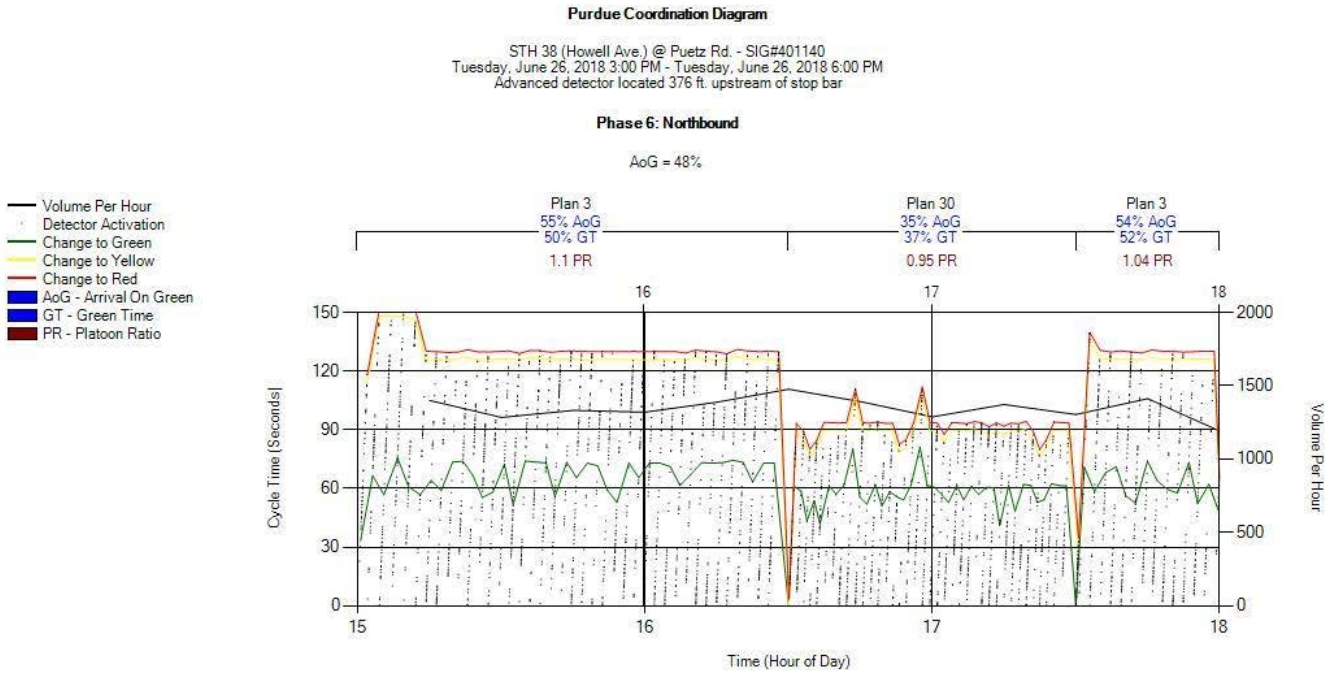




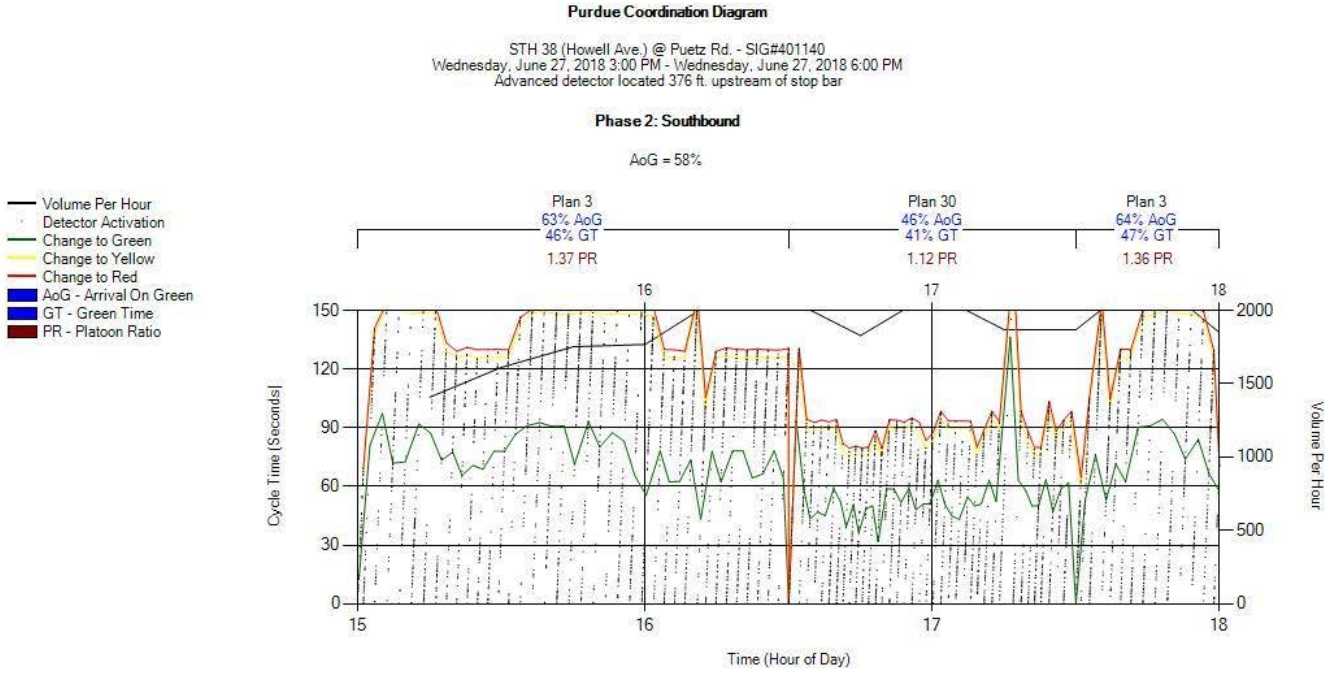

Purdue Coordination Diagram
STH 38 (Howell Ave.) @ Puetz Rd. - SIG#401140
Tuesday, June 26, 2018 3:00 PM - Tuesday, June 26, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar
Phase 2: Southbound
AoG = 57%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
61% AoG
46% GT
1.33 PR
Plan 30
48% AoG
42% GT
1.14 PR
Plan 3
64% AoG
49% GT
1.31 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)

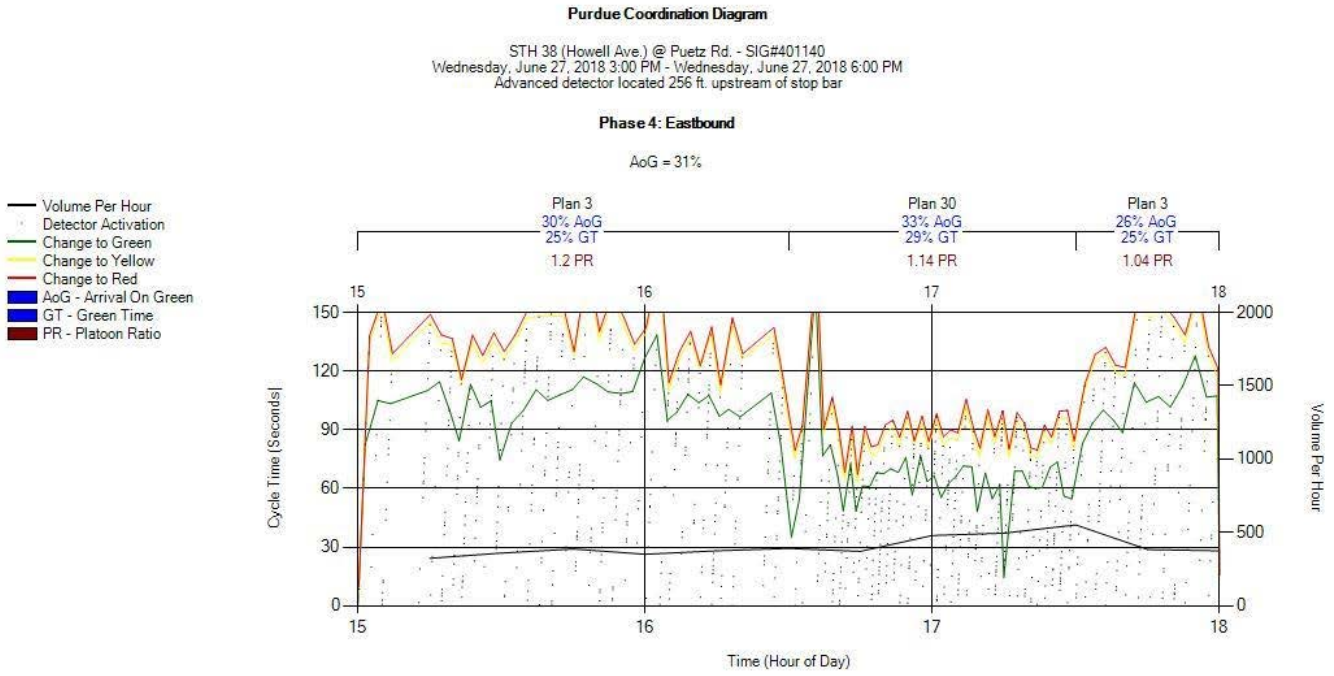

Purdue Coordination Diagram
STH 38 (Howell Ave.) @ Puetz Rd. - SIG#401140
Tuesday, June 26, 2018 3:00 PM - Tuesday, June 26, 2018 6:00 PM
Advanced detector located 256 ft. upstream of stop bar
Phase 4: Eastbound
AoG = 29%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
29% AoG
24% GT
1.21 PR
Plan 30
31% AoG
29% GT
1.07 PR
Plan 3
22% AoG
20% GT
1.1 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)

WIS 38 Corridor – STH 38 & Puetz Rd.
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM

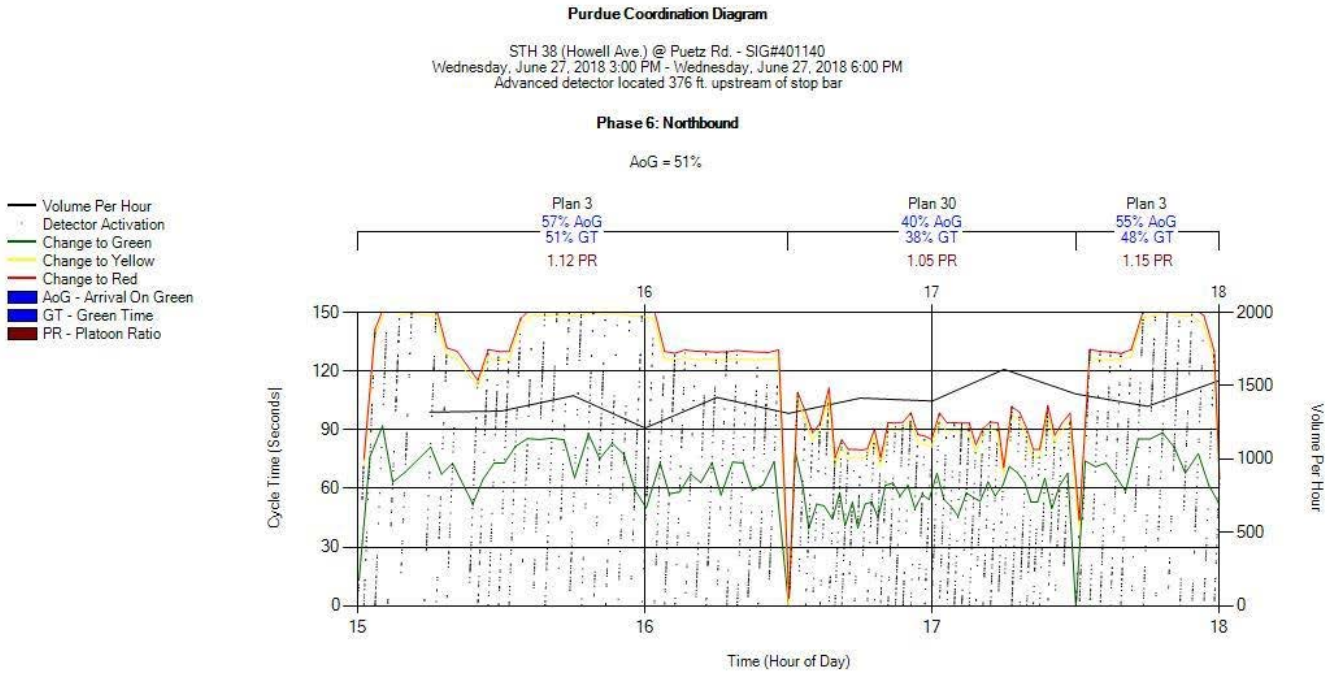


WIS 38 Corridor – STH 38 & Puetz Rd.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM

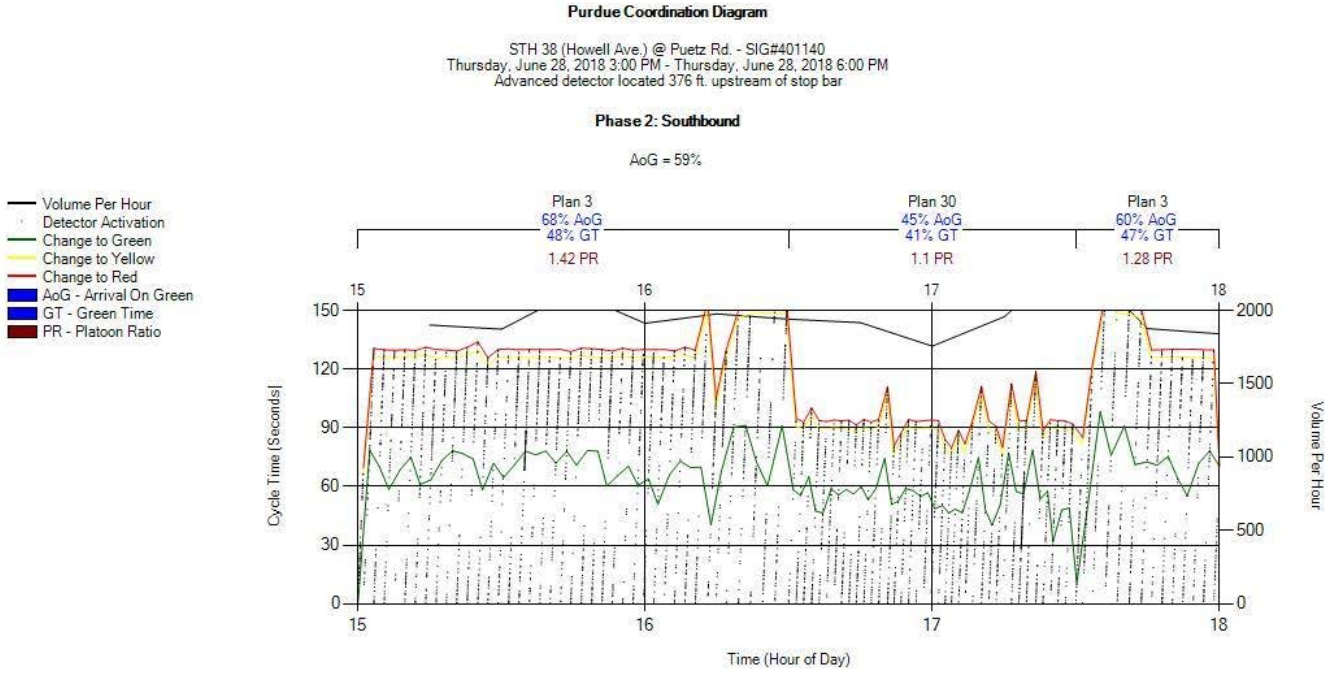


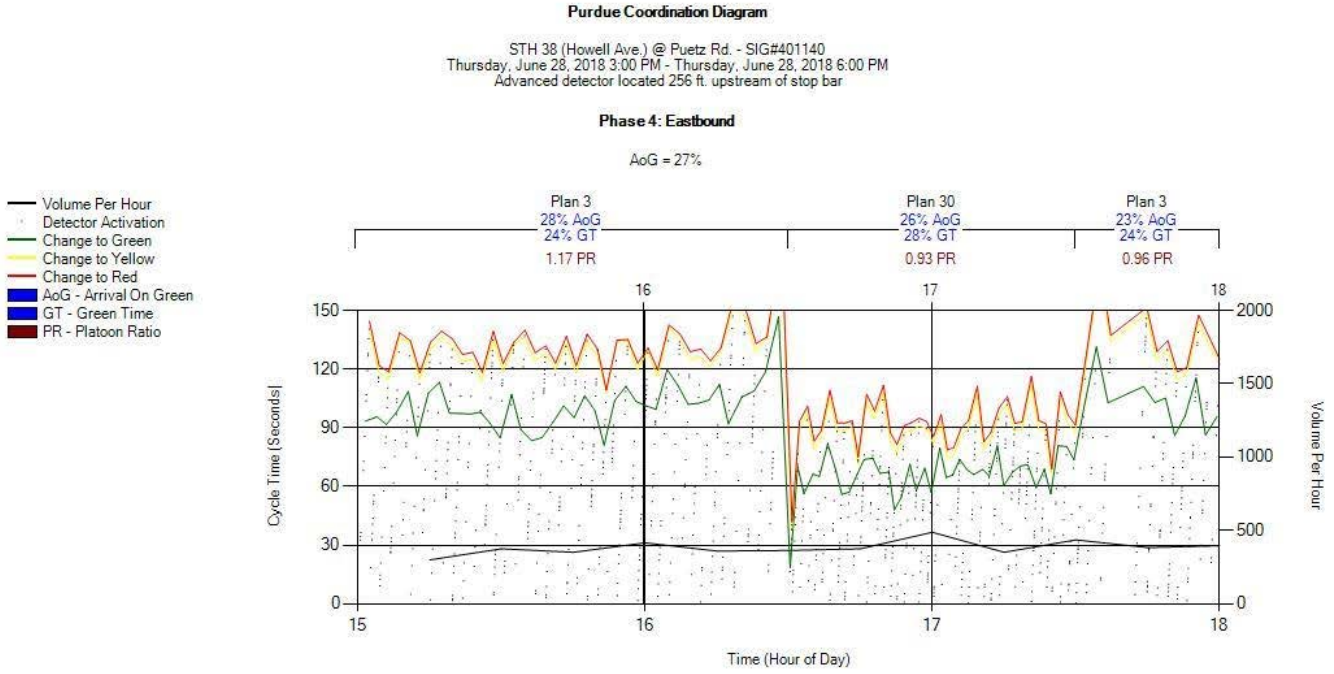


WIS 38 Corridor – STH 38 & Puetz Rd.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM

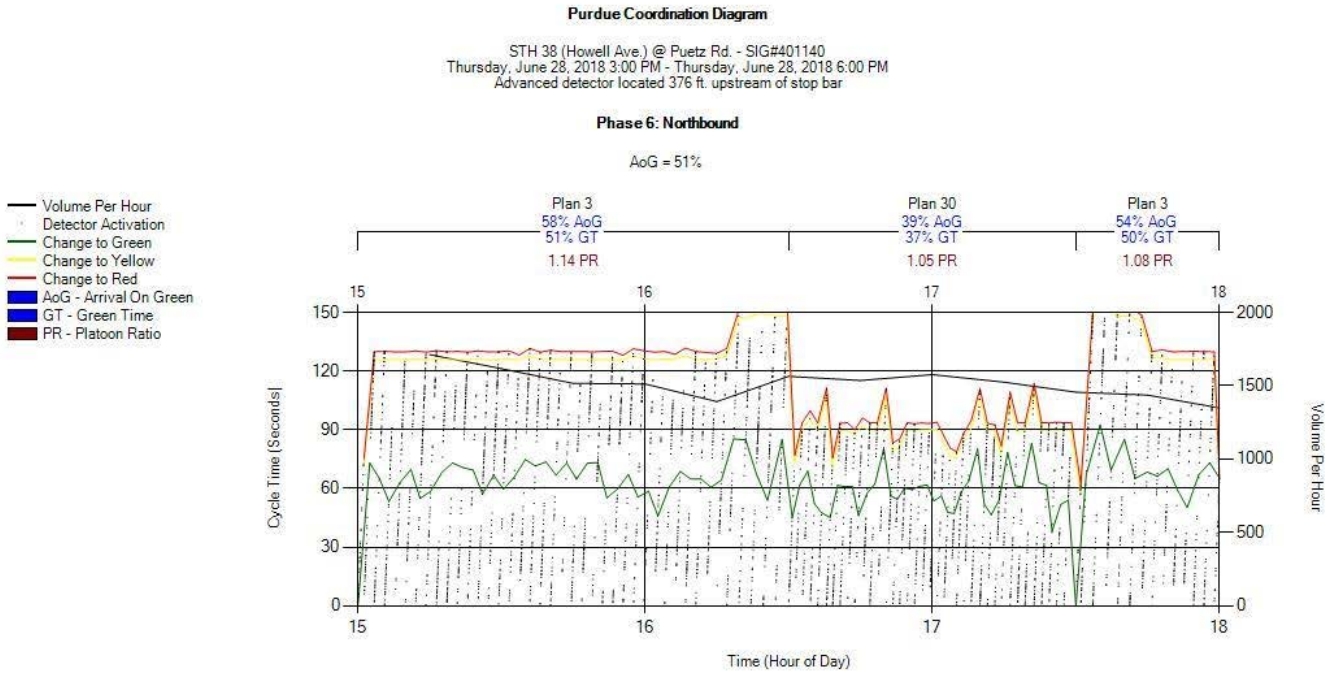


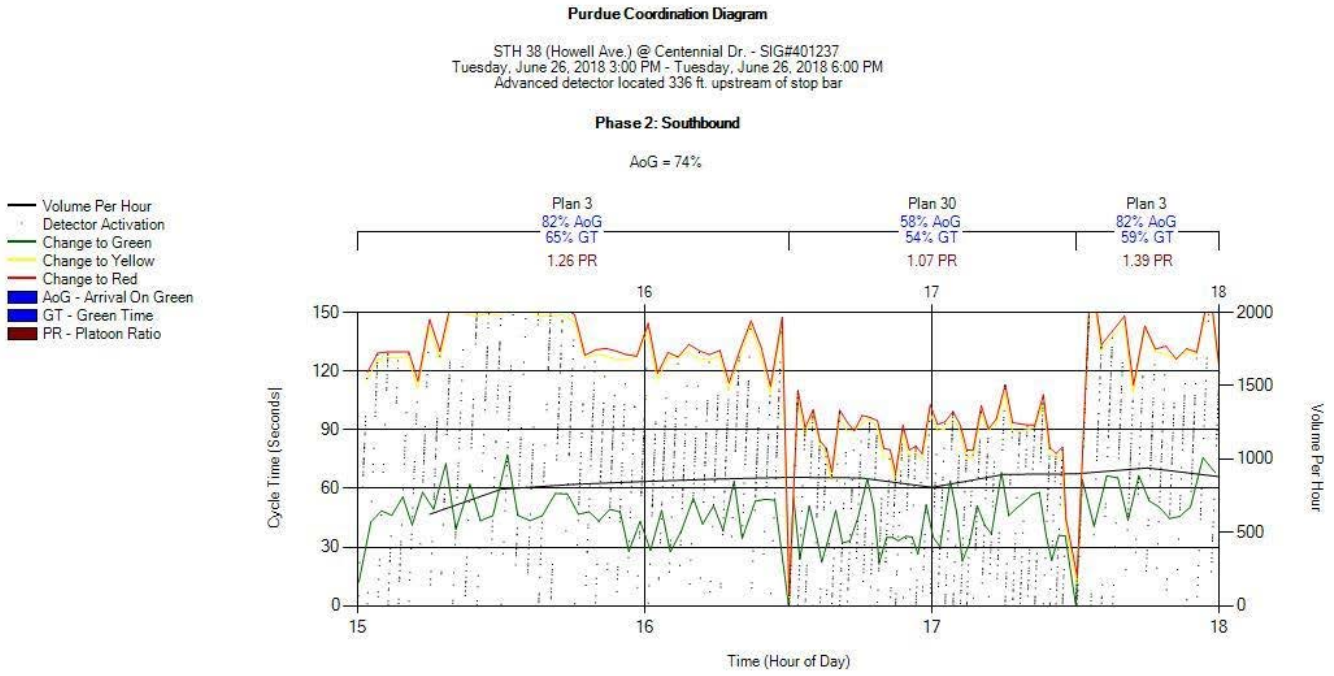
WIS 38 Corridor – STH 38 & Puetz Rd.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM

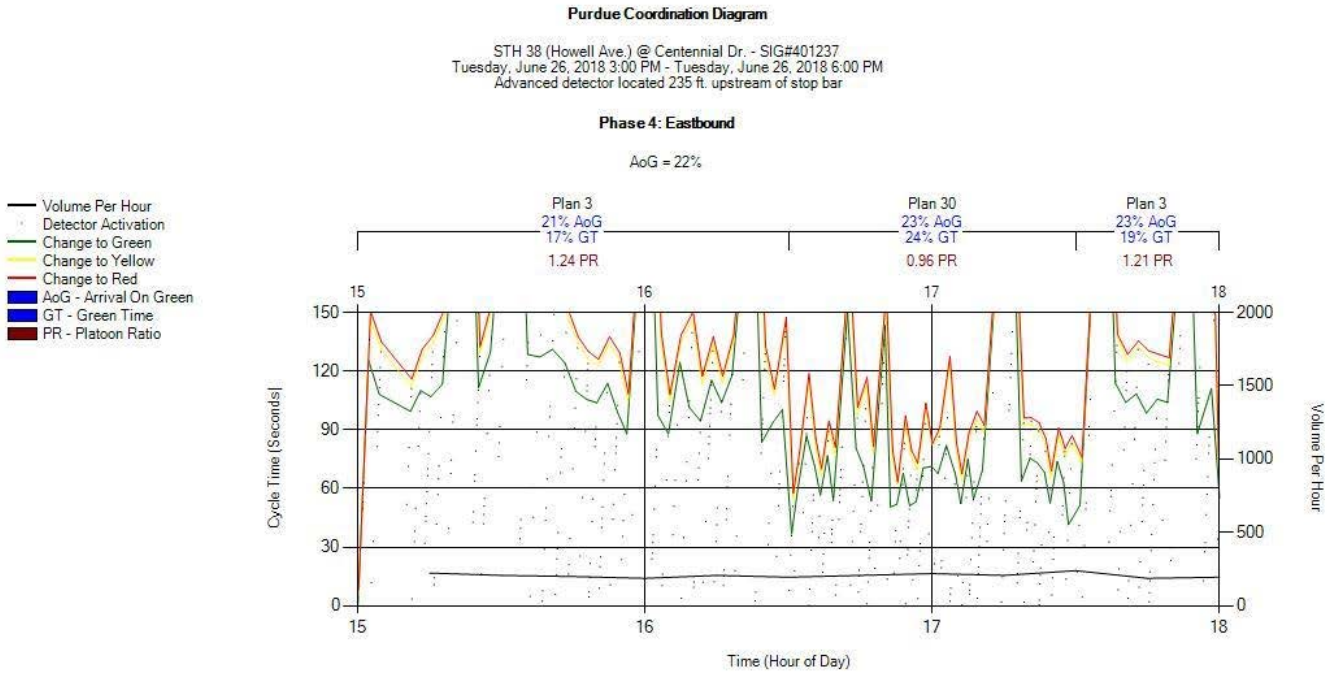


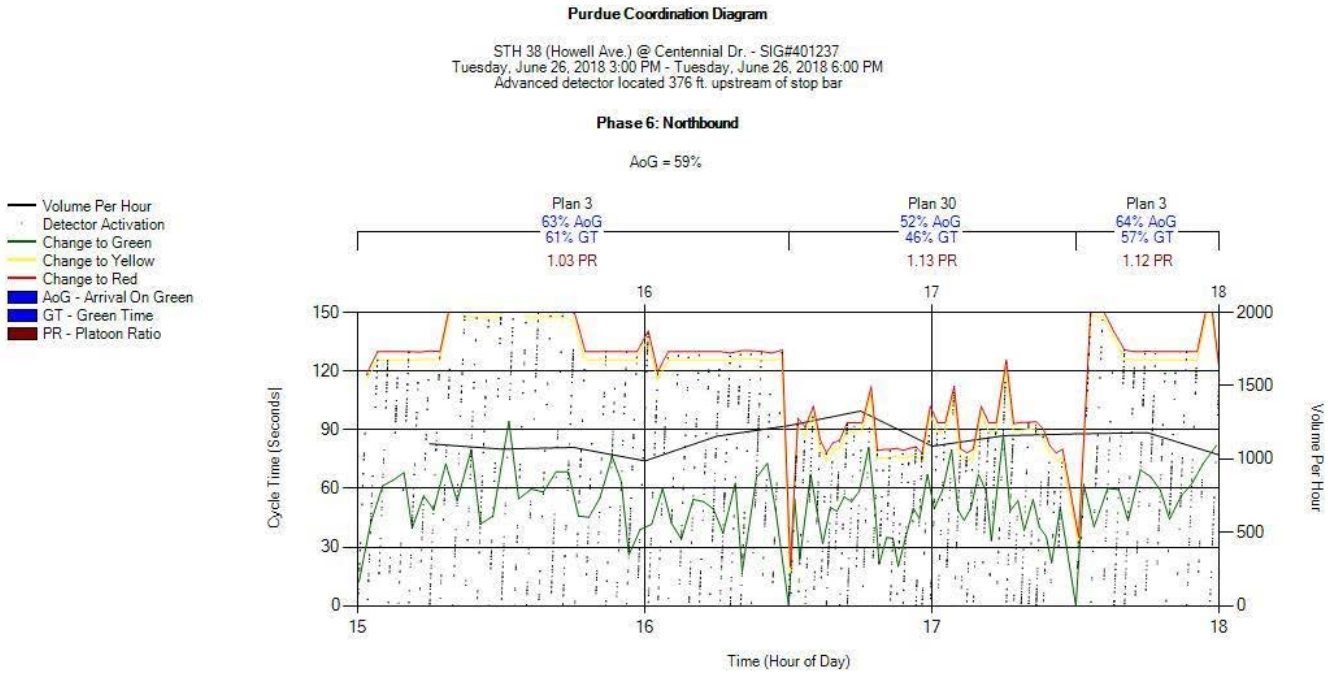


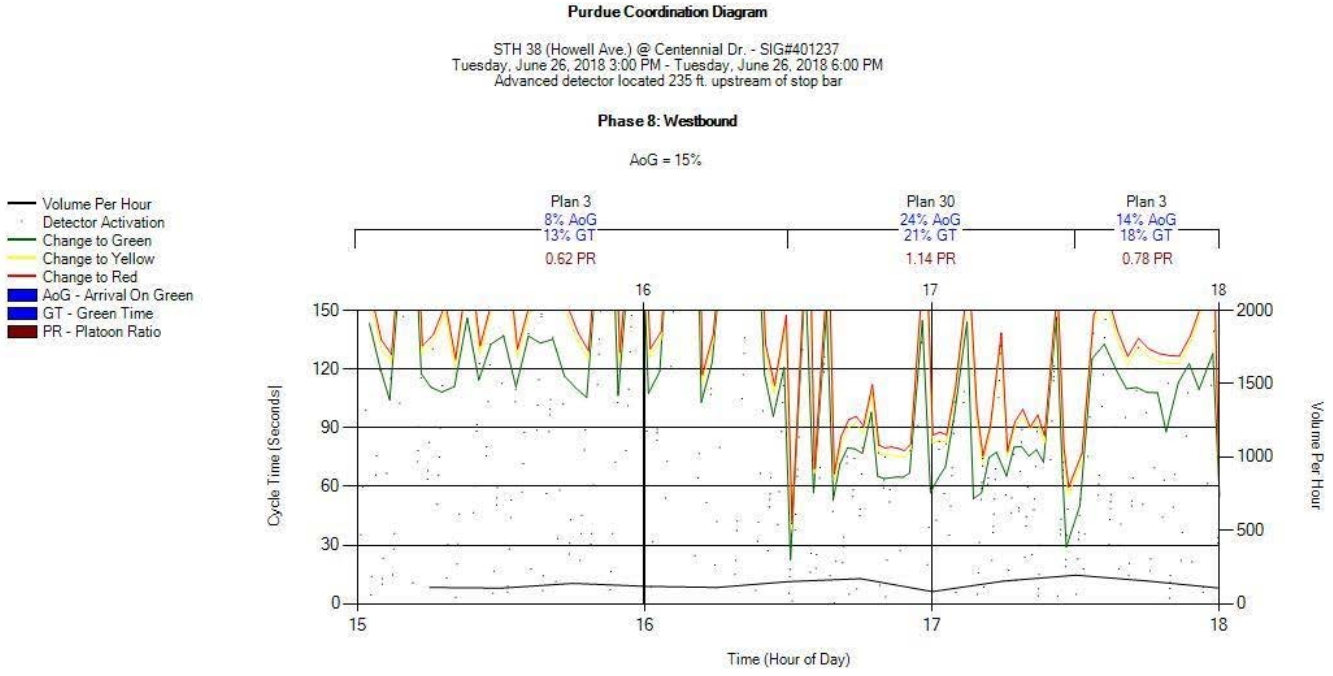
WIS 38 Corridor – STH 38 & Puetz Rd.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM



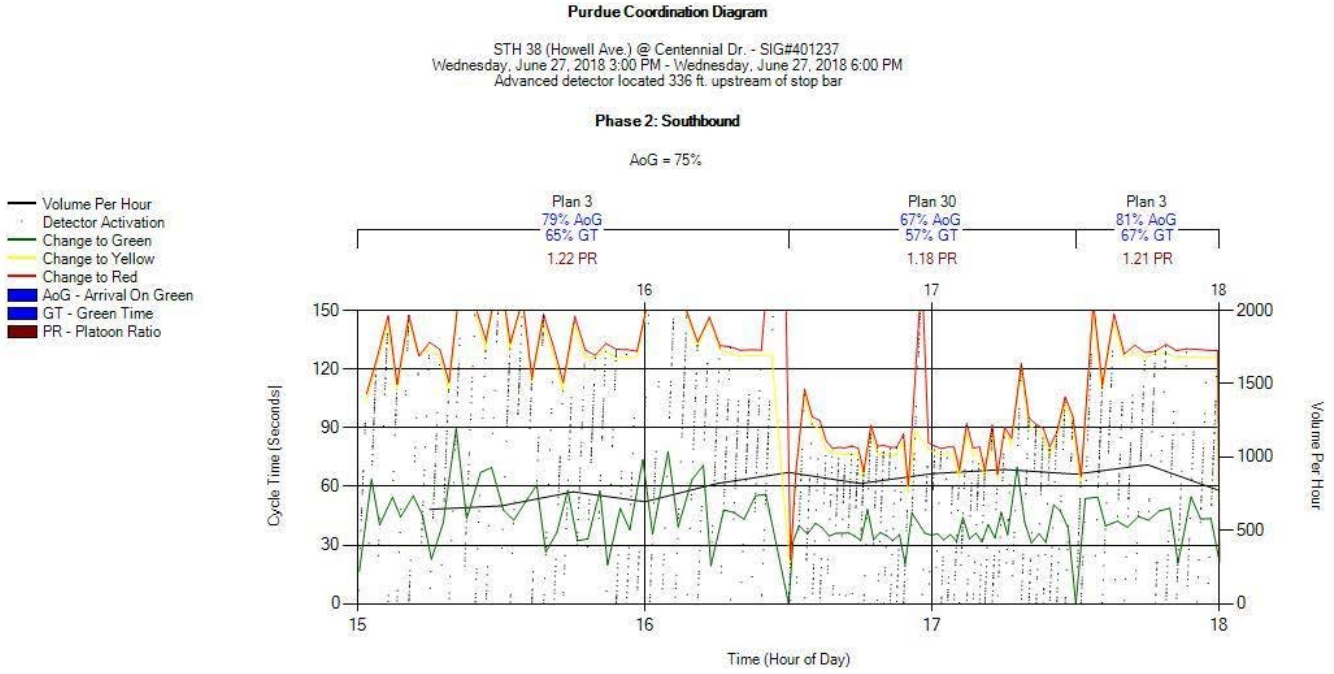

Purdue Coordination Diagram
STH 38 (Howell Ave.) @ Centennial Dr. - SIG#401237
Tuesday, June 26, 2018 3:00 PM - Tuesday, June 26, 2018 6:00 PM
Advanced detector located 336 ft. upstream of stop bar
Phase 2: Southbound
AoG = 74%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
82% AoG
65% GT
1.26 PR
Plan 30
58% AoG
54% GT
1.07 PR
Plan 3
82% AoG
59% GT
1.39 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)

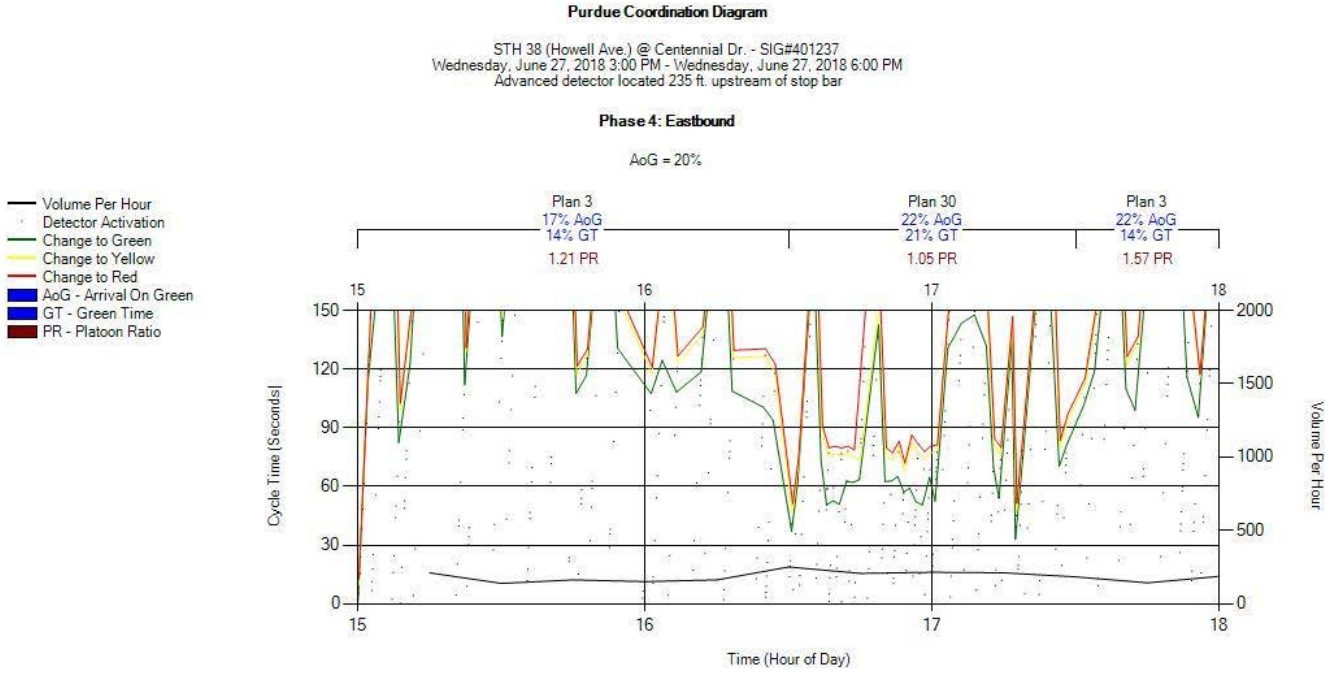

Purdue Coordination Diagram
STH 38 (Howell Ave.) @ Centennial Dr. - SIG#401237
Tuesday, June 26, 2018 3:00 PM - Tuesday, June 26, 2018 6:00 PM
Advanced detector located 235 ft. upstream of stop bar
Phase 4: Eastbound
AoG = 22%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
21% AoG
17% GT
1.24 PR
Plan 30
23% AoG
24% GT
0.96 PR
Plan 3
23% AoG
19% GT
1.21 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)

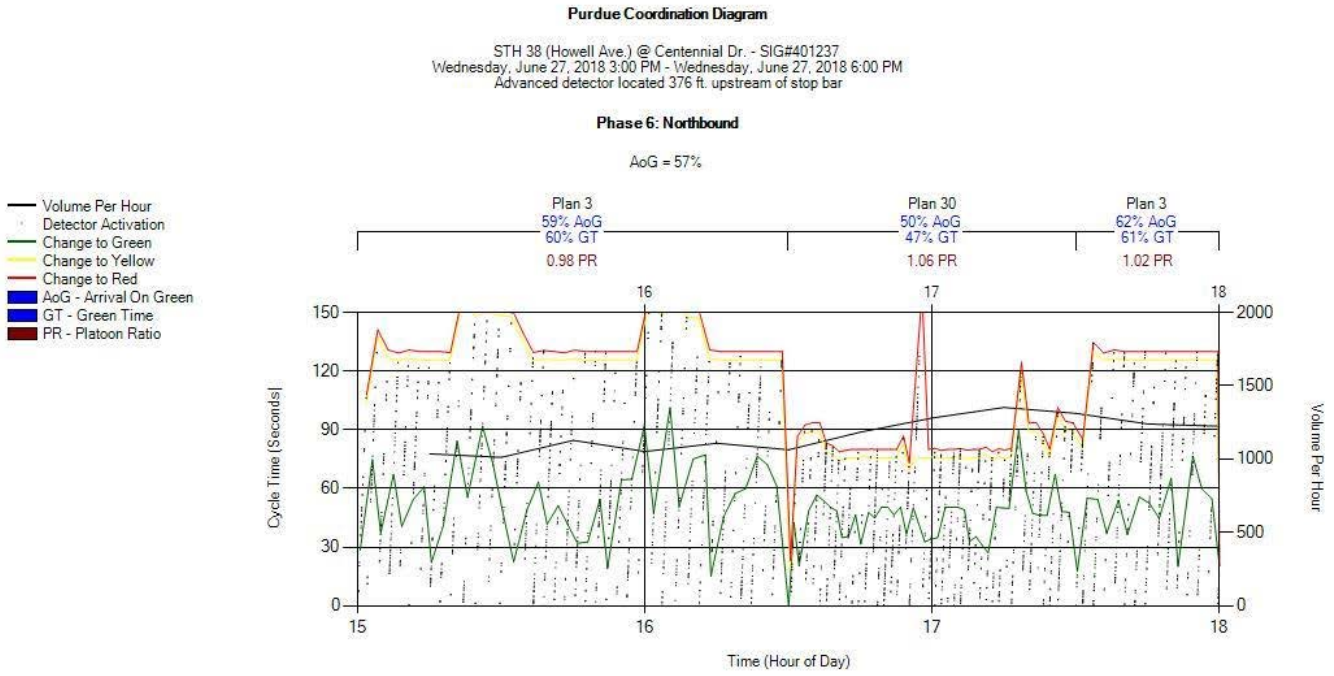

Purdue Coordination Diagram
STH 38 (Howell Ave.) @ Centennial Dr. - SIG#401237
Tuesday, June 26, 2018 3:00 PM - Tuesday, June 26, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar
Phase 6: Northbound
AoG = 59%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
63% AoG
61% GT
1.03 PR
Plan 30
52% AoG
46% GT
1.13 PR
Plan 3
64% AoG
57% GT
1.12 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)

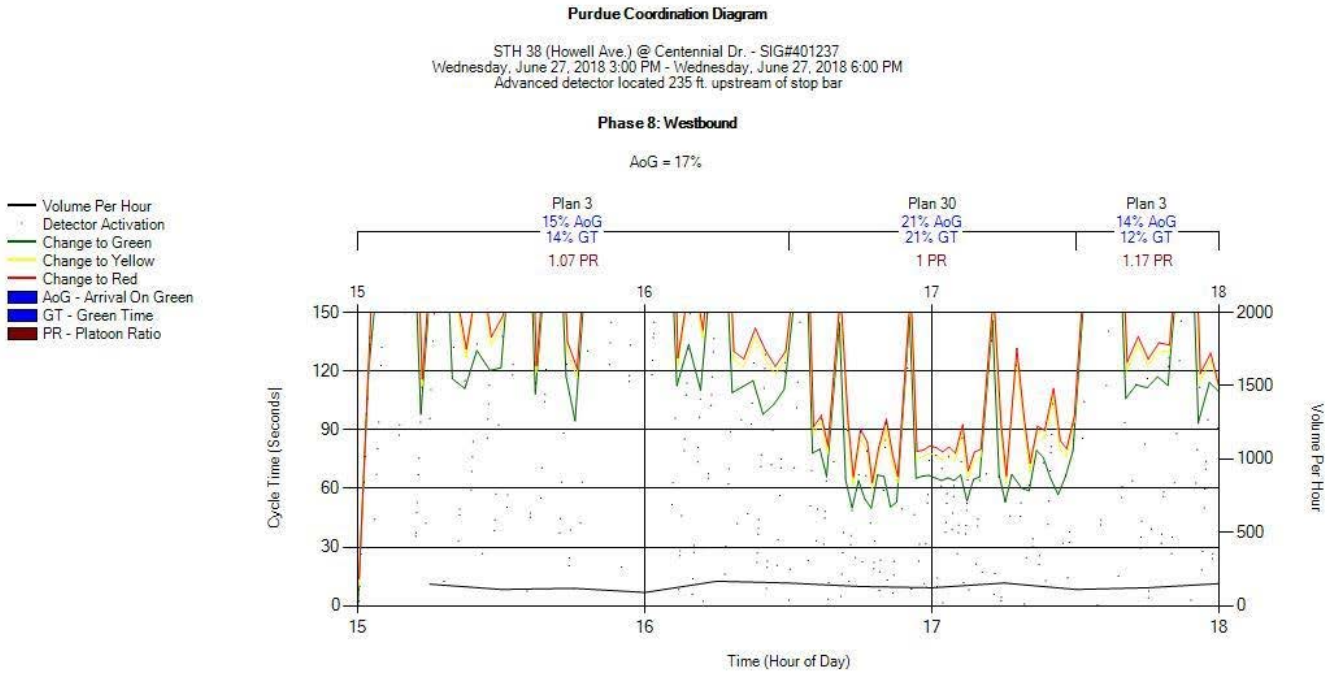

Purdue Coordination Diagram
STH 38 (Howell Ave.) @ Centennial Dr. - SIG#401237
Tuesday, June 26, 2018 3:00 PM - Tuesday, June 26, 2018 6:00 PM
Advanced detector located 235 ft. upstream of stop bar
Phase 8: Westbound
AoG = 15%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
8% AoG
13% GT
0.62 PR
Plan 30
24% AoG
21% GT
1.14 PR
Plan 3
14% AoG
18% GT
0.78 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)

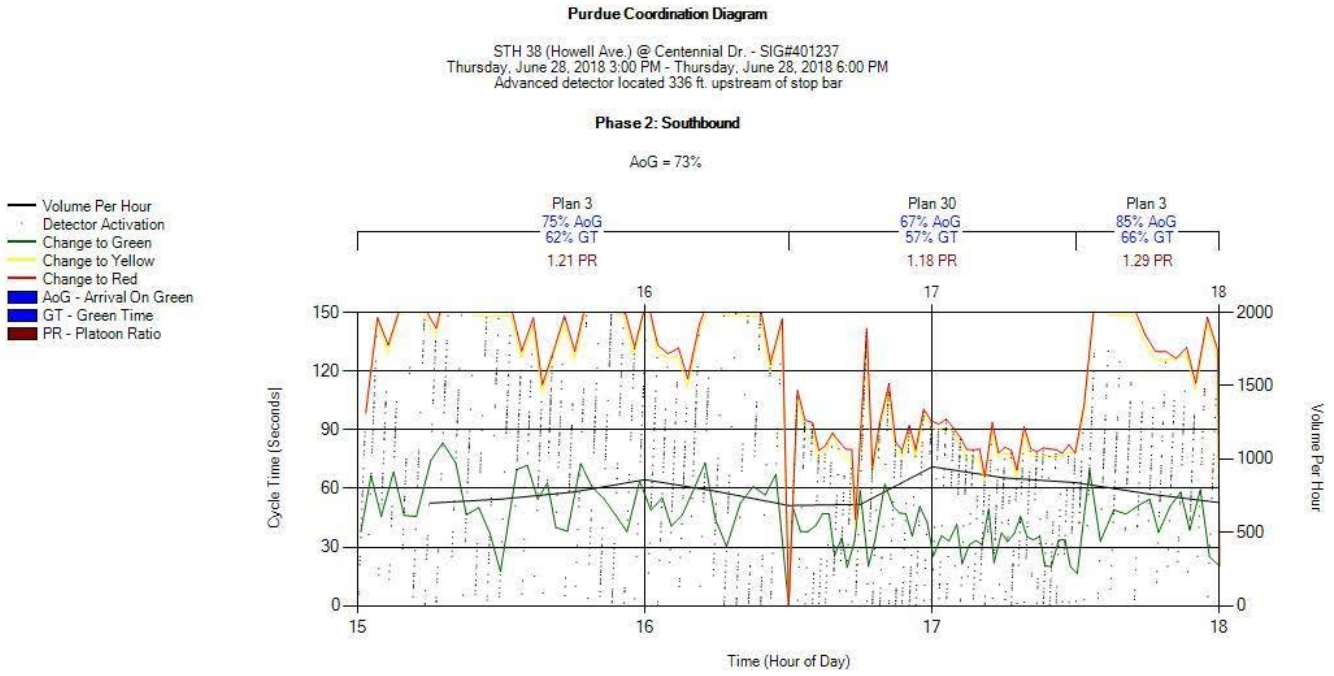
WIS 38 Corridor – STH 38 & Centennial Dr.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM

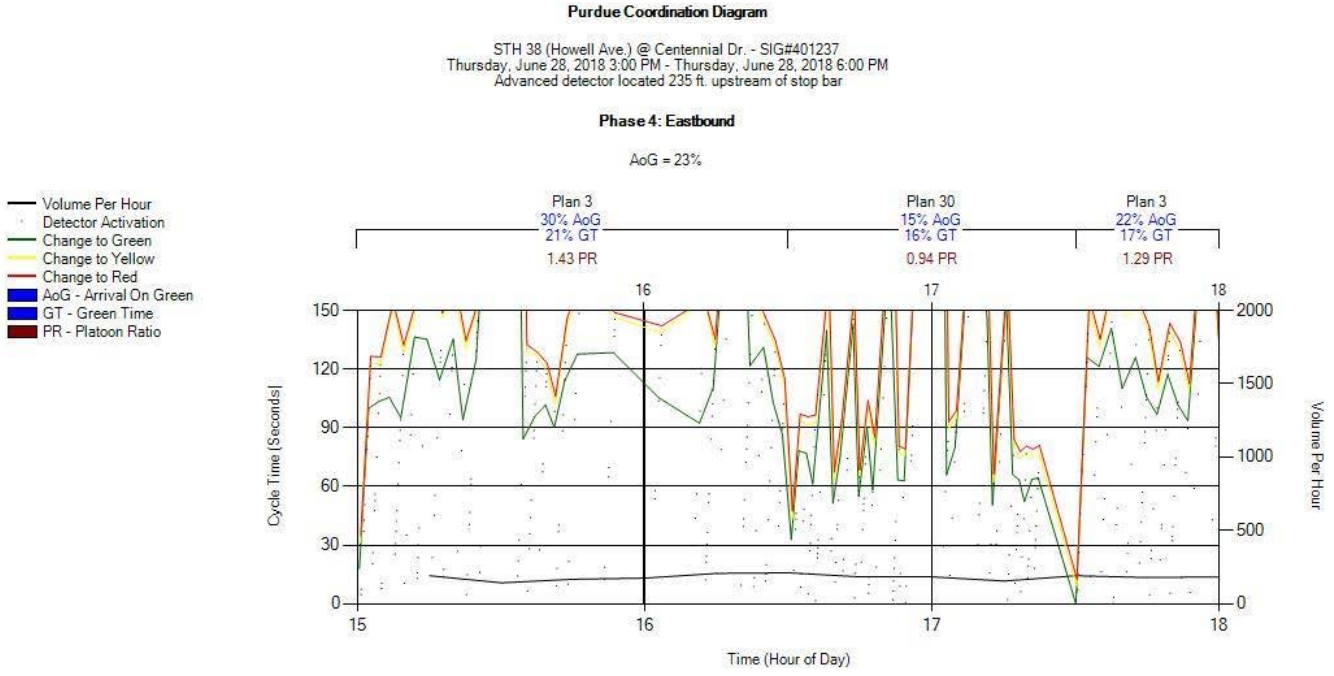


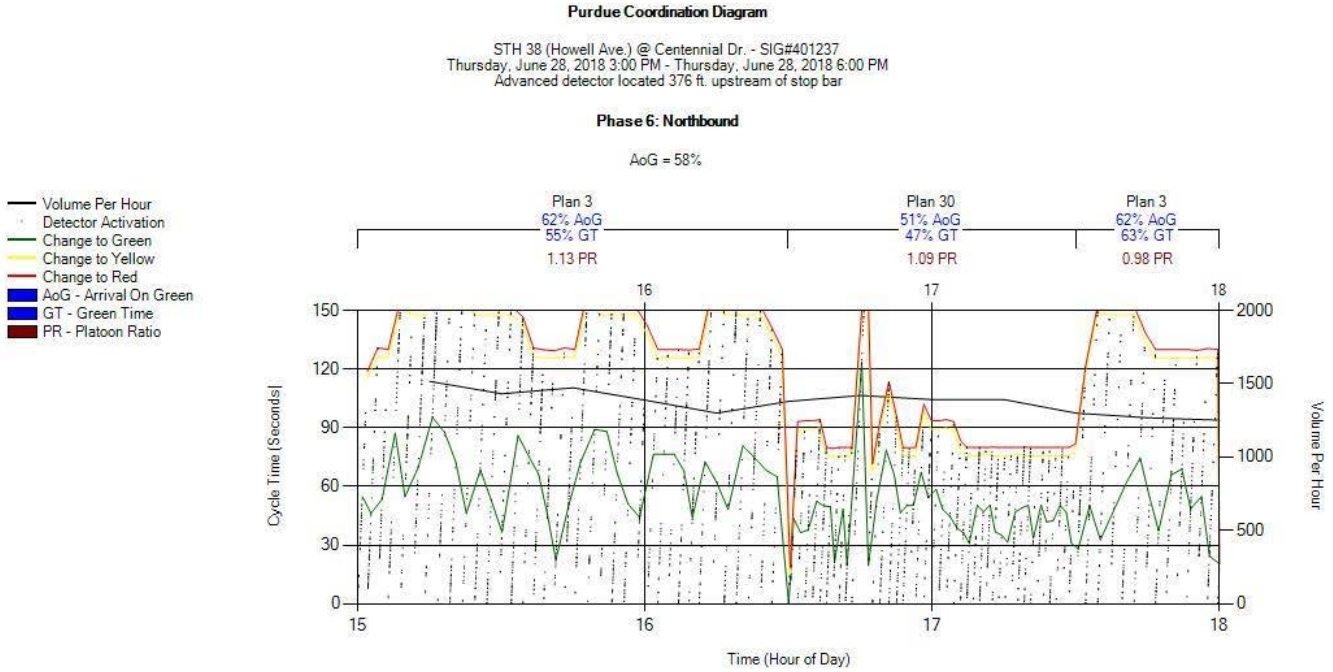


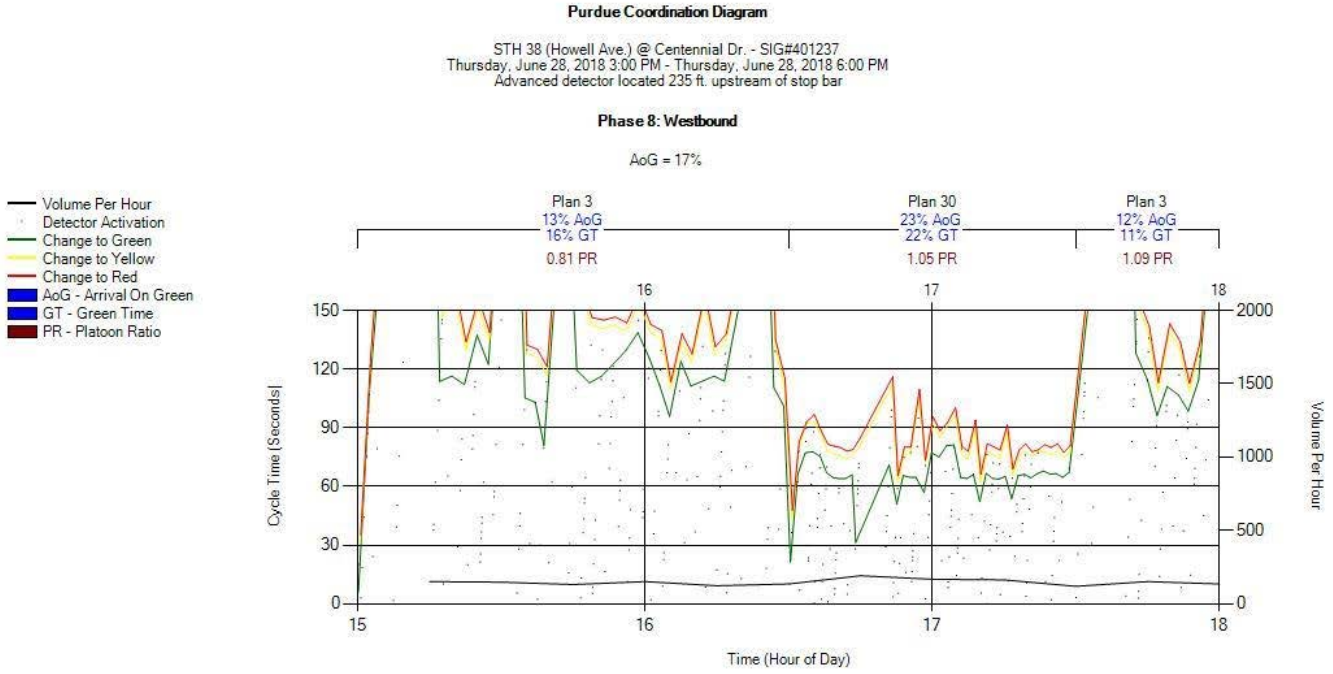

Purdue Coordination Diagram
STH 38 (Howell Ave.) @ Centennial Dr. - SIG#401237
Wednesday, June 27, 2018 3:00 PM - Wednesday, June 27, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar
Phase 6: Northbound
AoG = 57%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
59% AoG
60% GT
0.98 PR
Plan 30
50% AoG
47% GT
1.06 PR
Plan 3
62% AoG
61% GT
1.02 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)


Purdue Coordination Diagram
STH 38 (Howell Ave.) @ Centennial Dr. - SIG#401237
Wednesday, June 27, 2018 3:00 PM - Wednesday, June 27, 2018 6:00 PM
Advanced detector located 235 ft. upstream of stop bar
Phase 8: Westbound
AoG = 17%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
15% AoG
14% GT
1.07 PR
Plan 30
21% AoG
21% GT
1 PR
Plan 3
14% AoG
12% GT
1.17 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)

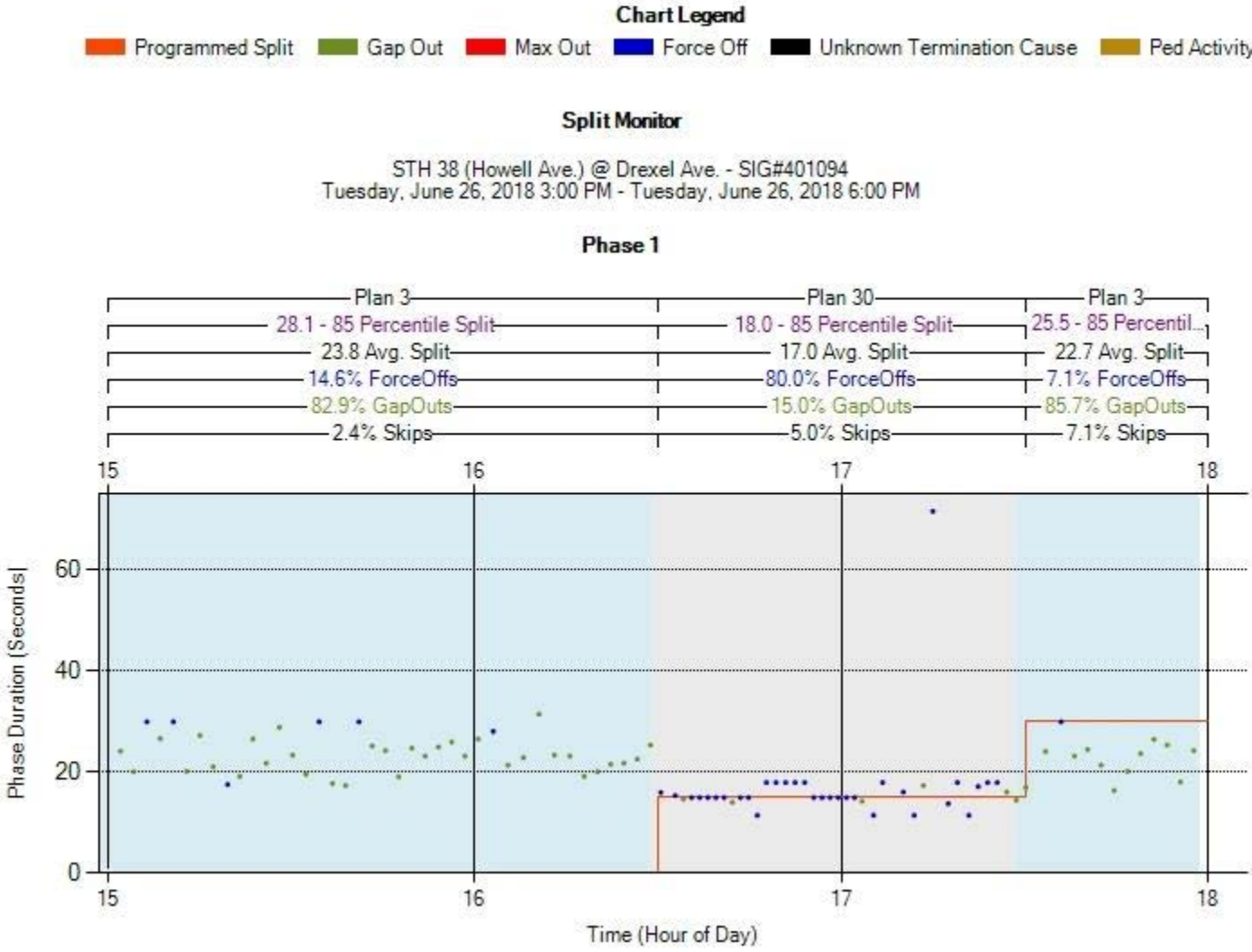

Purdue Coordination Diagram
STH 38 (Howell Ave.) @ Centennial Dr. - SIG#401237
Thursday, June 28, 2018 3:00 PM - Thursday, June 28, 2018 6:00 PM
Advanced detector located 336 ft. upstream of stop bar
Phase 2: Southbound
AoG = 73%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
75% AoG
62% GT
1.21 PR
Plan 30
67% AoG
57% GT
1.18 PR
Plan 3
85% AoG
66% GT
1.29 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)


Purdue Coordination Diagram
STH 38 (Howell Ave.) @ Centennial Dr. - SIG#401237
Thursday, June 28, 2018 3:00 PM - Thursday, June 28, 2018 6:00 PM
Advanced detector located 235 ft. upstream of stop bar
Phase 4: Eastbound
AoG = 23%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
30% AoG
21% GT
1.43 PR
Plan 30
15% AoG
16% GT
0.94 PR
Plan 3
22% AoG
17% GT
1.29 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)

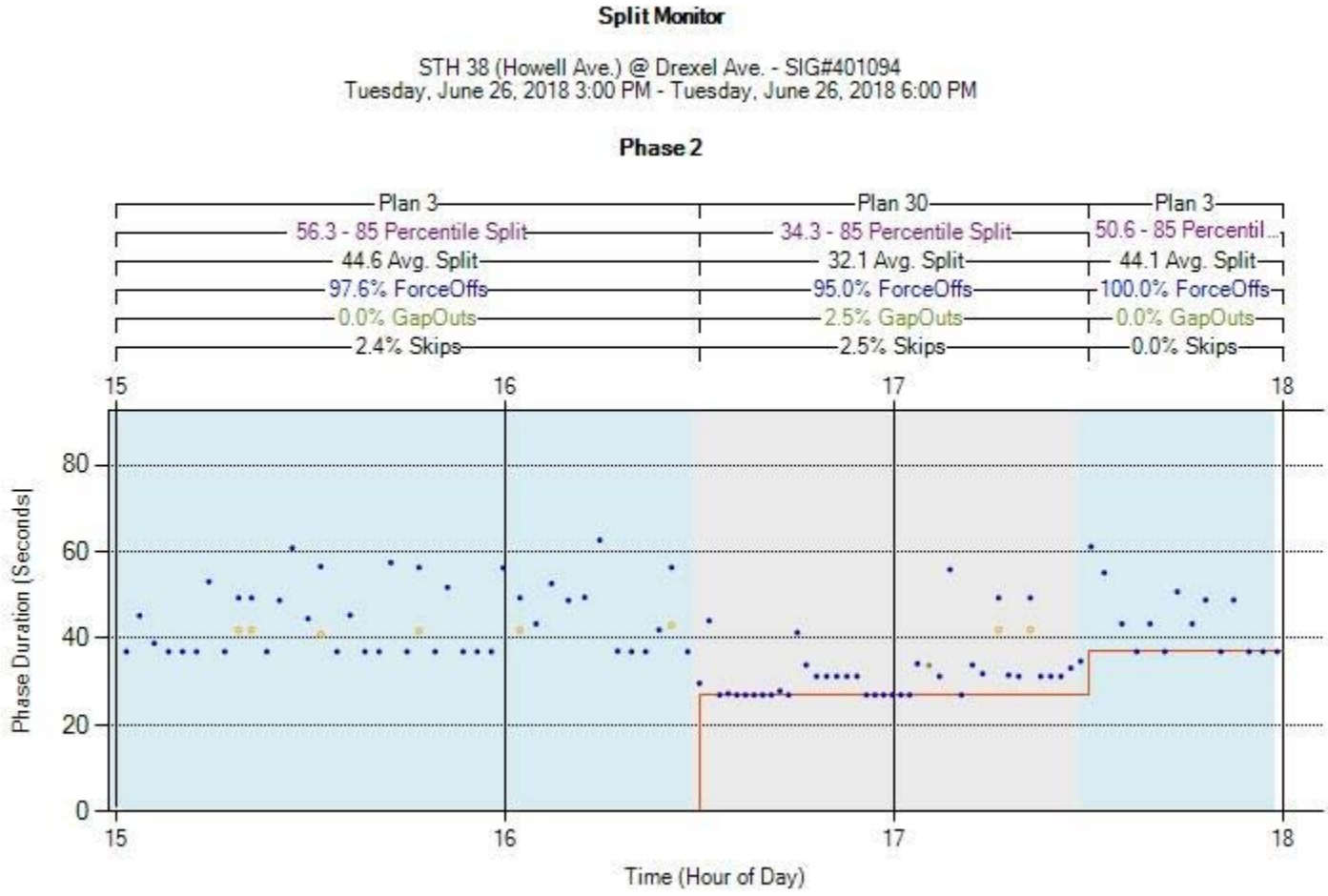

Purdue Coordination Diagram
STH 38 (Howell Ave.) @ Centennial Dr. - SIG#401237
Thursday, June 28, 2018 3:00 PM - Thursday, June 28, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar
Phase 6: Northbound
AoG = 58%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
62% AoG
55% GT
1.13 PR
Plan 30
51% AoG
47% GT
1.09 PR
Plan 3
62% AoG
63% GT
0.98 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)


Purdue Coordination Diagram
STH 38 (Howell Ave.) @ Centennial Dr. - SIG#401237
Thursday, June 28, 2018 3:00 PM - Thursday, June 28, 2018 6:00 PM
Advanced detector located 235 ft. upstream of stop bar
Phase 8: Westbound
AoG = 17%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
13% AoG
16% GT
0.81 PR
Plan 30
23% AoG
22% GT
1.05 PR
Plan 3
12% AoG
11% GT
1.09 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)

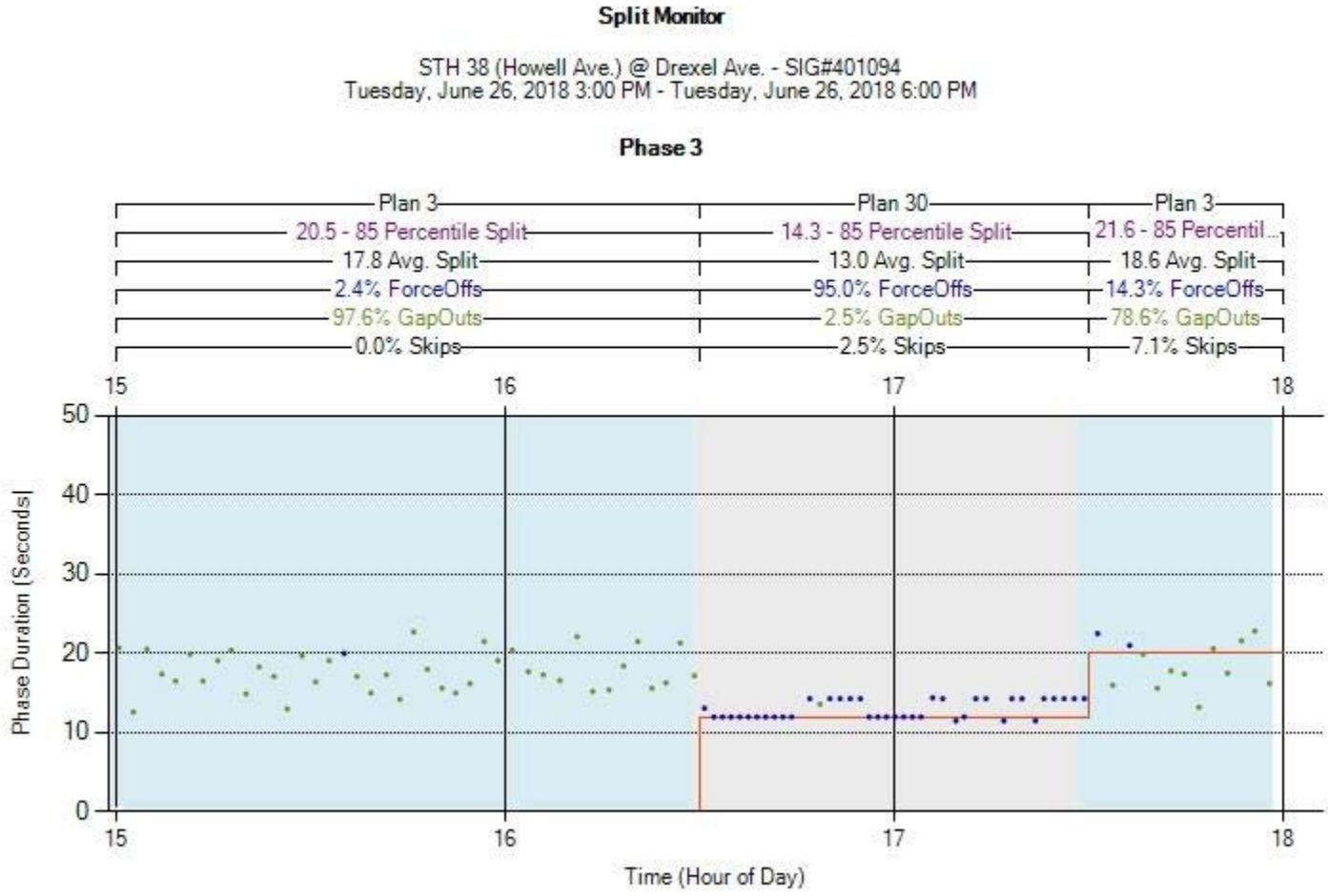
WIS 38 Corridor – WIS 38 & Drexel Avenue
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM



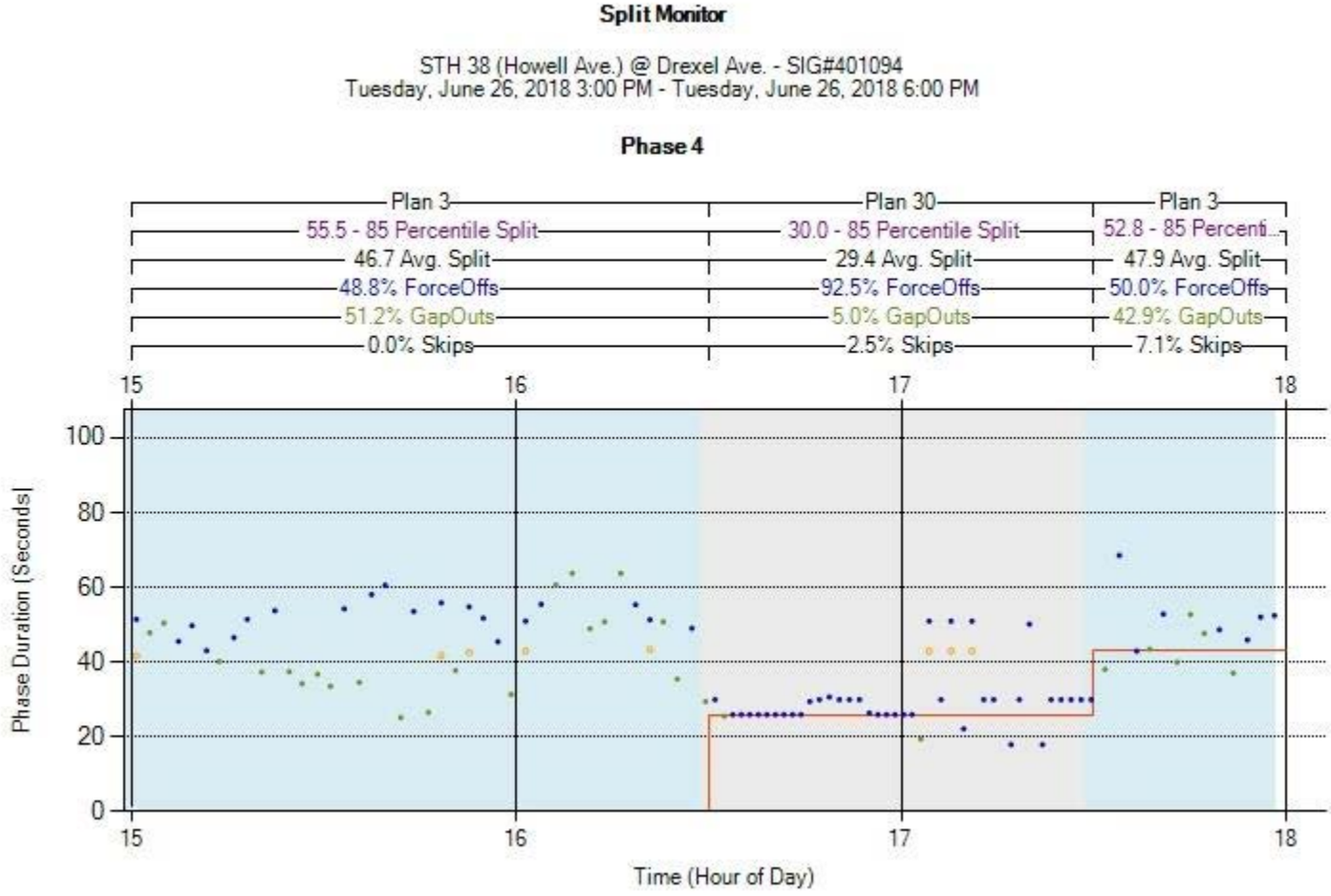
WIS 38 Corridor – WIS 38 & Drexel Avenue
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM

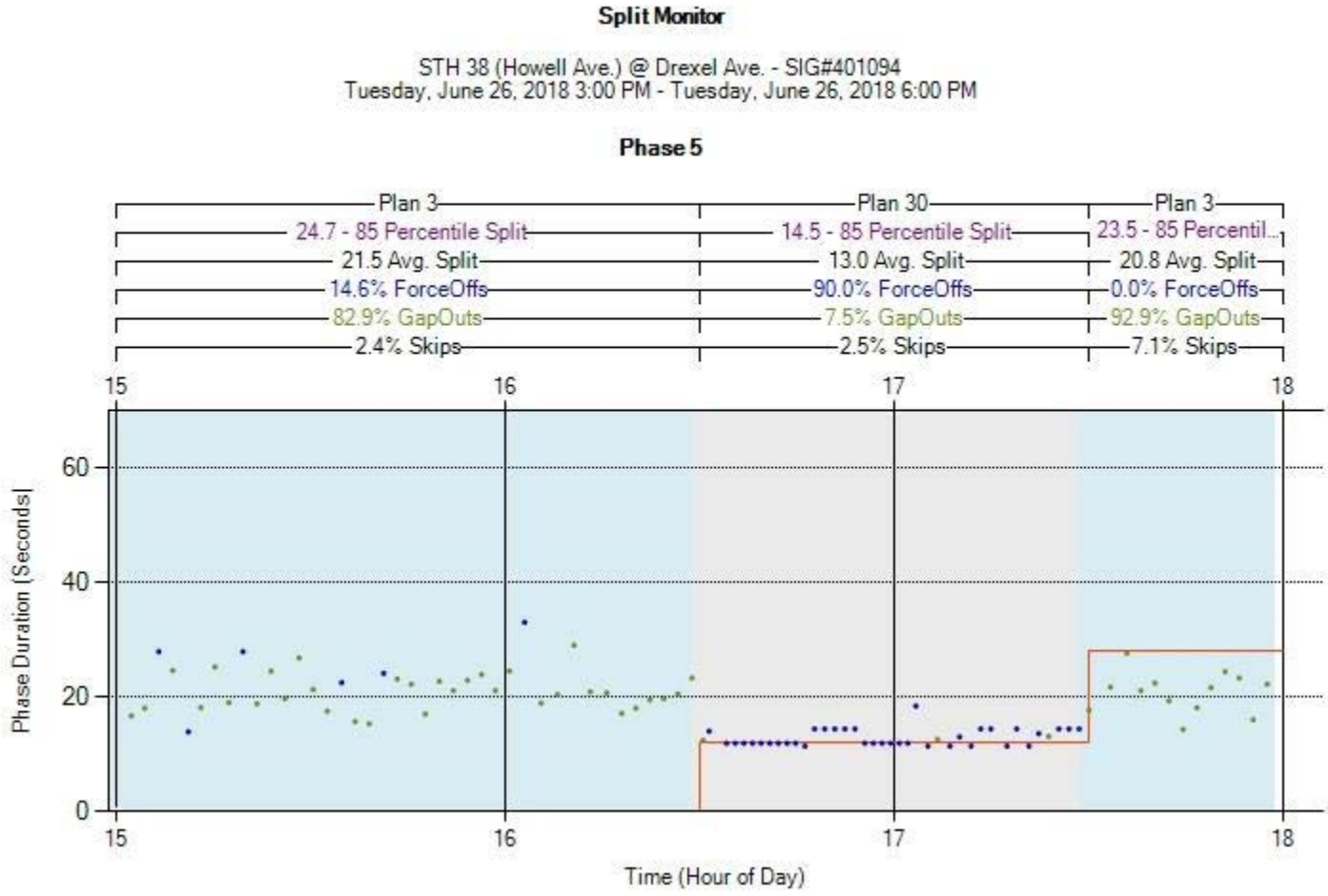


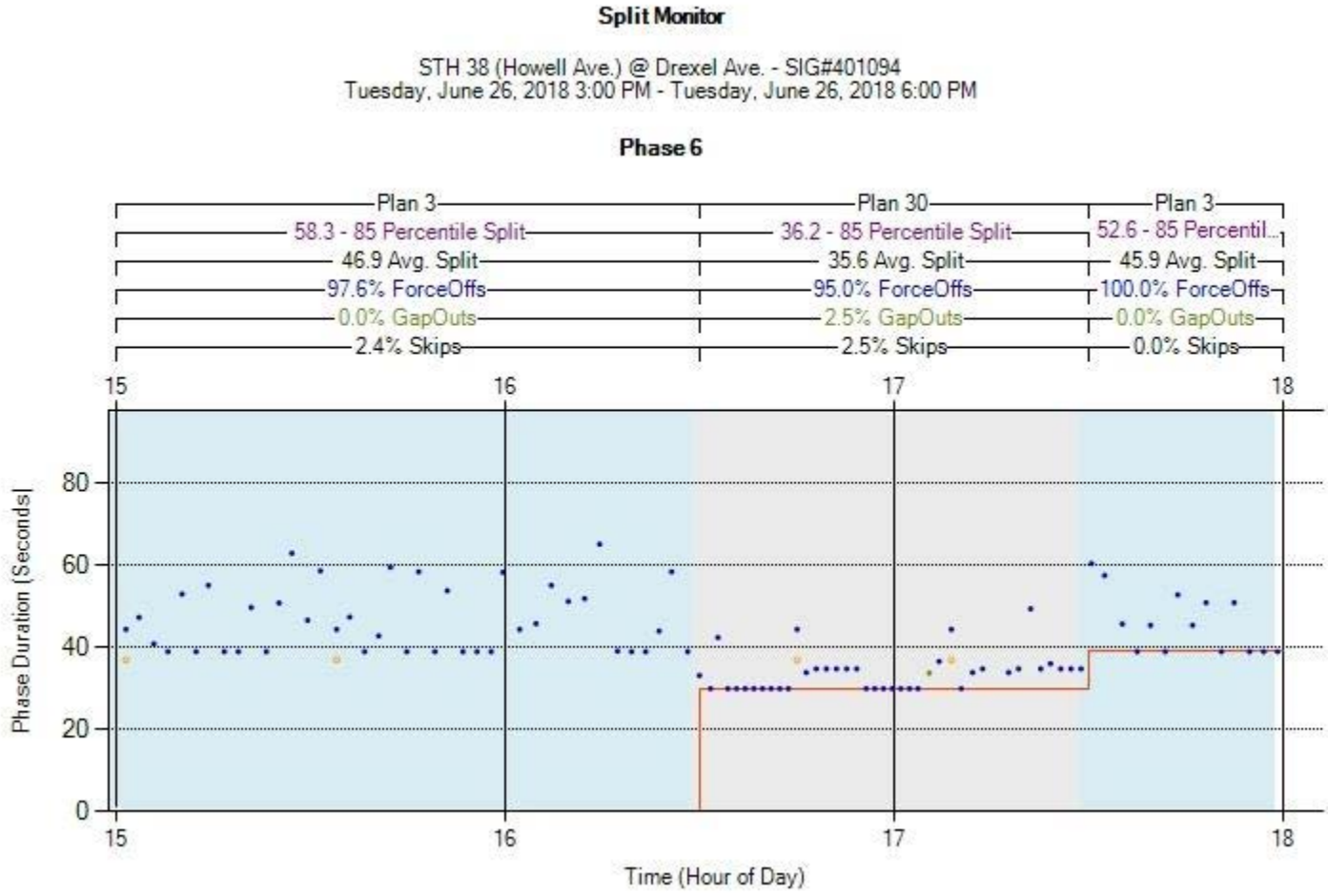
WIS 38 Corridor – WIS 38 & Drexel Avenue
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM



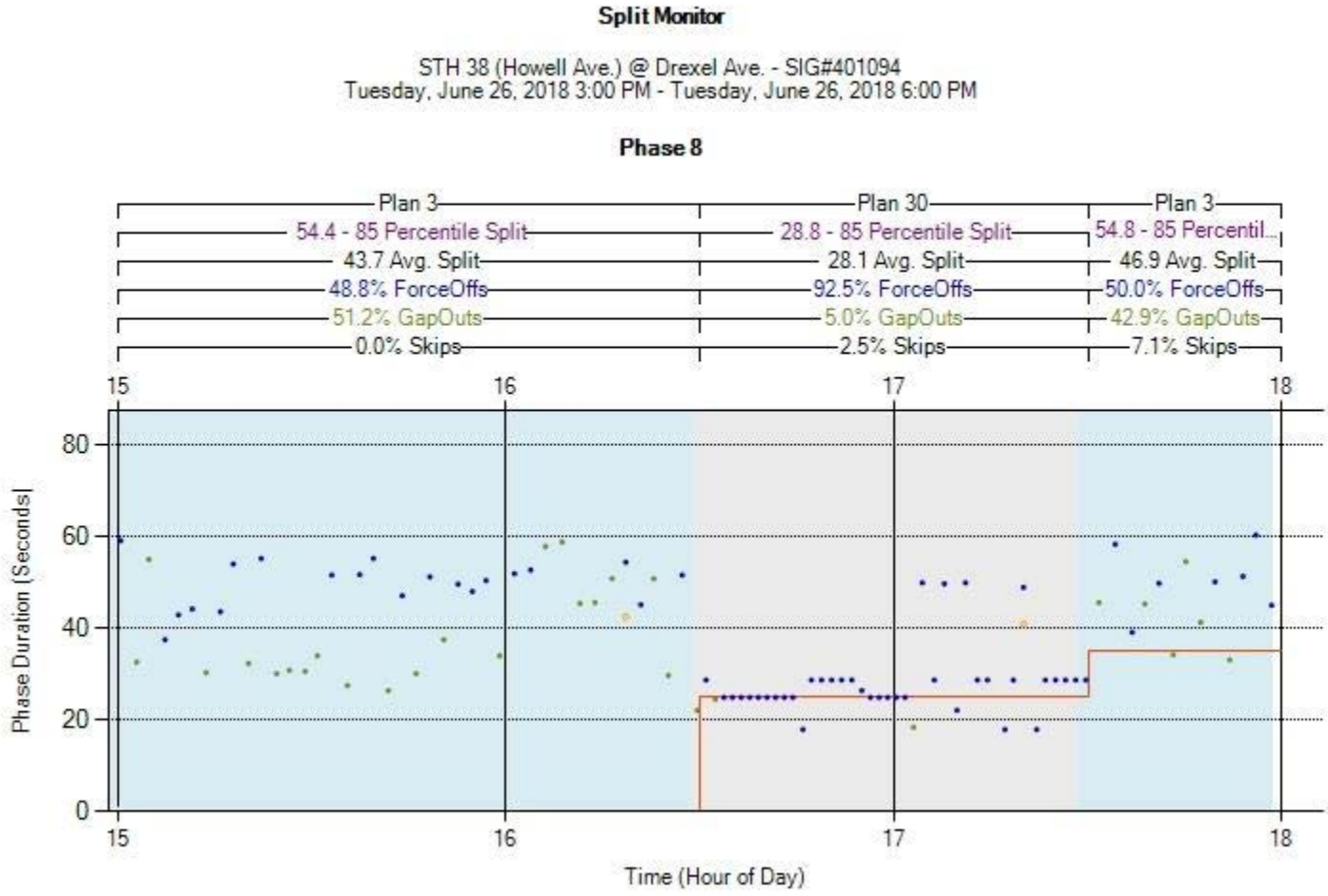
WIS 38 Corridor – WIS 38 & Drexel Avenue
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM



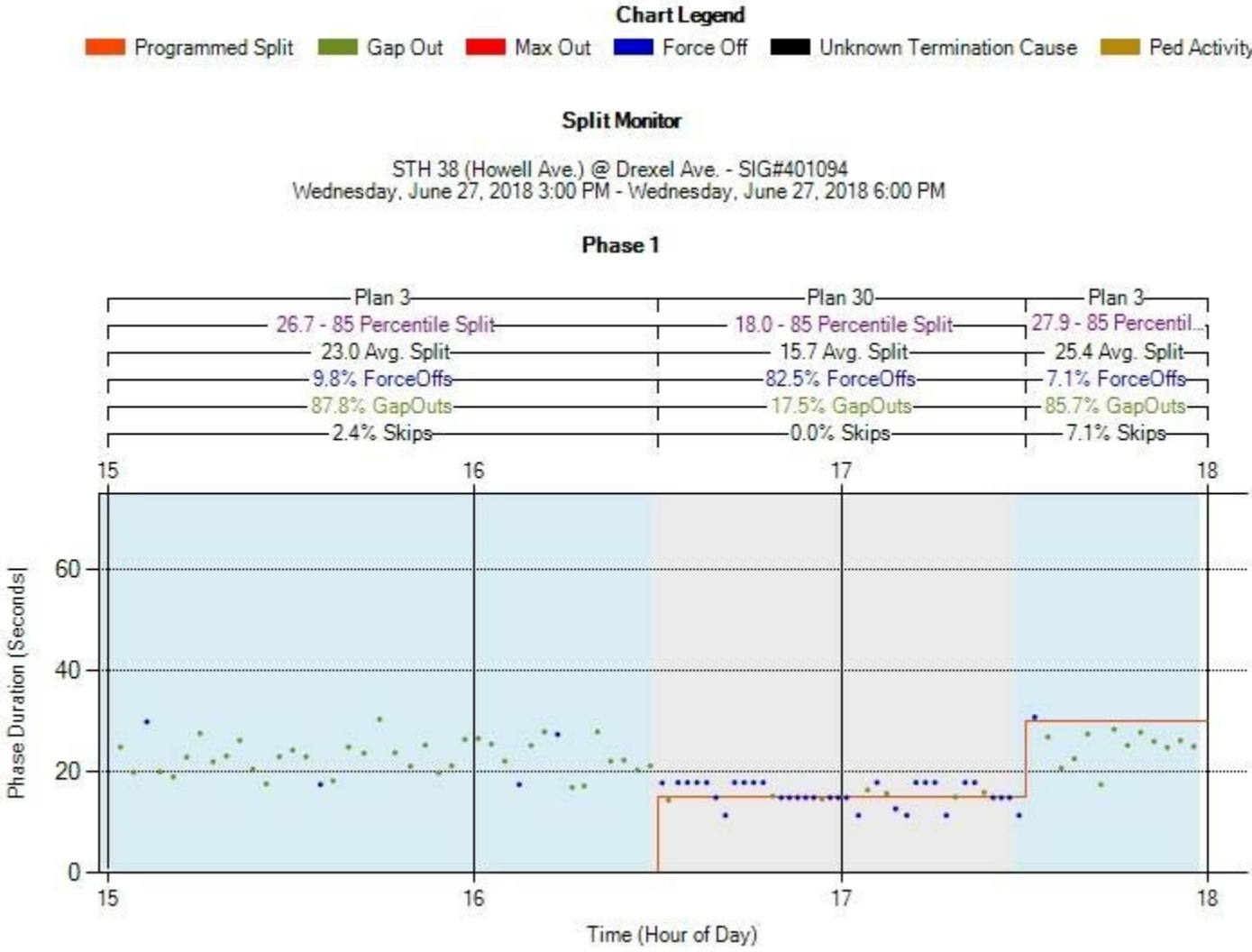

Split Monitor
STH 38 (Howell Ave.) @ Drexel Ave. - SIG#401094
Tuesday, June 26, 2018 3:00 PM - Tuesday, June 26, 2018 6:00 PM
Phase 5
Plan 3
24.7 - 85 Percentile Split
21.5 Avg. Split
14.6% ForceOffs
82.9% GapOuts
2.4% Skips
Plan 30
14.5 - 85 Percentile Split
13.0 Avg. Split
90.0% ForceOffs
7.5% GapOuts
2.5% Skips
Plan 3
23.5 - 85 Percentil...
20.8 Avg. Split
0.0% ForceOffs
92.9% GapOuts
7.1% Skips
15
16
17
18
60
40
20
0
Phase Duration (Seconds)
Time (Hour of Day)


Split Monitor
STH 38 (Howell Ave.) @ Drexel Ave. - SIG#401094
Tuesday, June 26, 2018 3:00 PM - Tuesday, June 26, 2018 6:00 PM
Phase 6
Plan 3
58.3 - 85 Percentile Split
46.9 Avg. Split
97.6% ForceOffs
0.0% GapOuts
2.4% Skips
Plan 30
36.2 - 85 Percentile Split
35.6 Avg. Split
95.0% ForceOffs
2.5% GapOuts
2.5% Skips
Plan 3
52.6 - 85 Percentil...
45.9 Avg. Split
100.0% ForceOffs
0.0% GapOuts
0.0% Skips
15
16
17
18
80
60
40
20
0
Phase Duration (Seconds)
Time (Hour of Day)

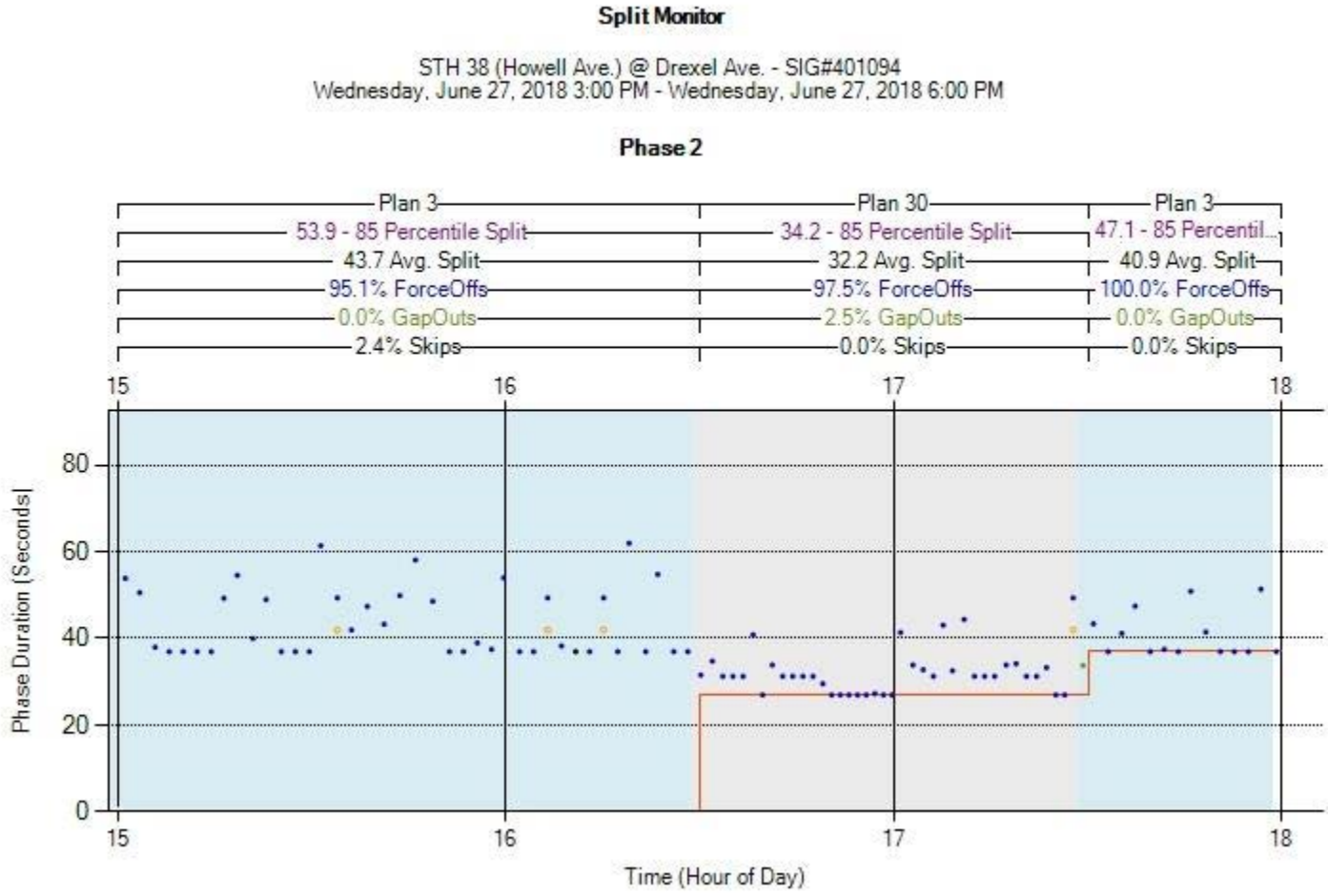
WIS 38 Corridor – WIS 38 & Drexel Avenue
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM


Split Monitor
STH 38 (Howell Ave.) @ Drexel Ave. - SIG#401094
Tuesday, June 26, 2018 3:00 PM - Tuesday, June 26, 2018 6:00 PM
Phase 8
Plan 3
54.4 - 85 Percentile Split
43.7 Avg. Split
48.8% ForceOffs
51.2% GapOuts
0.0% Skips
Plan 30
28.8 - 85 Percentile Split
28.1 Avg. Split
92.5% ForceOffs
5.0% GapOuts
2.5% Skips
Plan 3
54.8 - 85 Percentil...
46.9 Avg. Split
50.0% ForceOffs
42.9% GapOuts
7.1% Skips
15
16
17
18
80
60
40
20
0
Phase Duration (Seconds)
Time (Hour of Day)

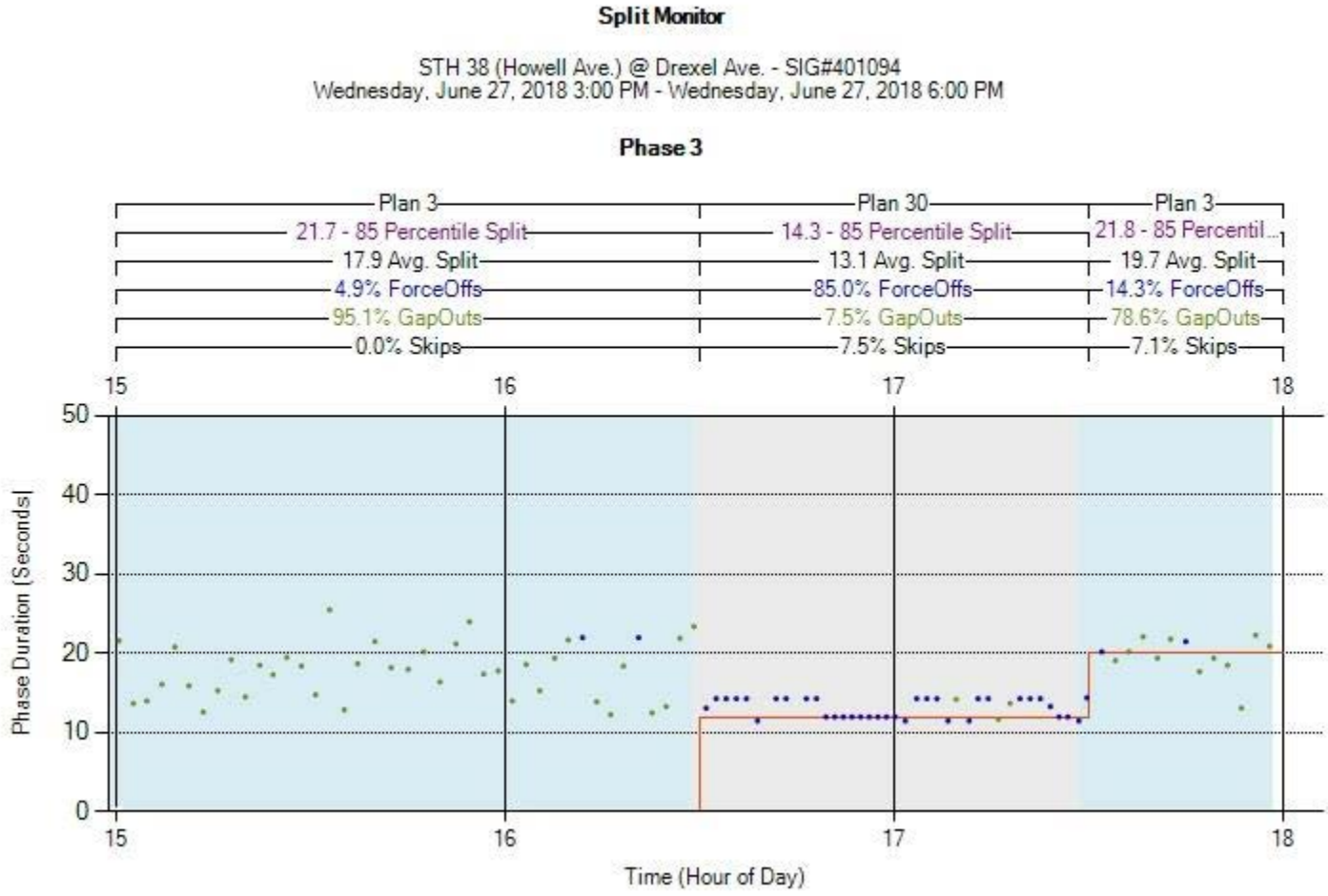
WIS 38 Corridor – STH 38 & Drexel Ave.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM



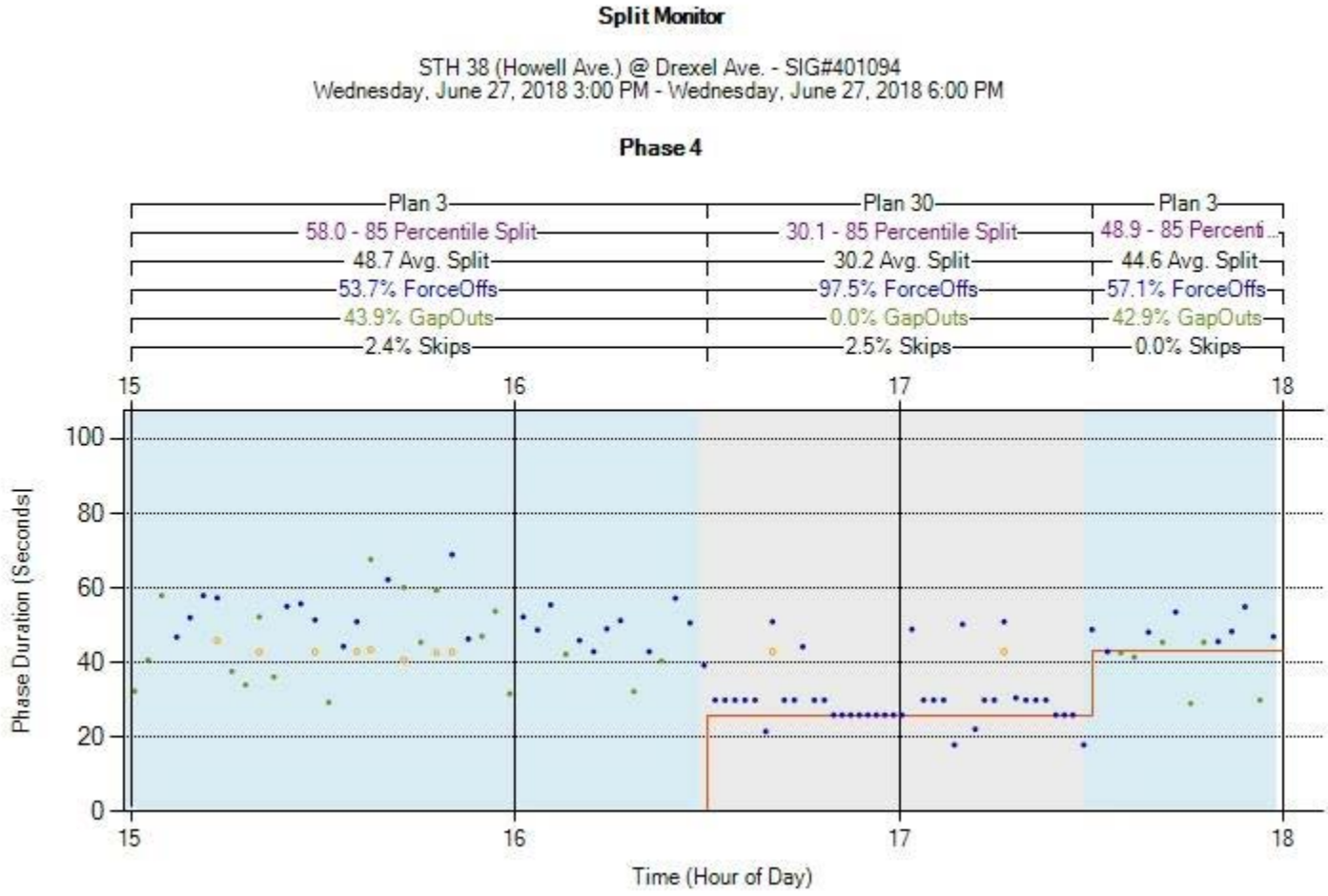
WIS 38 Corridor – STH 38 & Drexel Ave.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Drexel Ave.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM

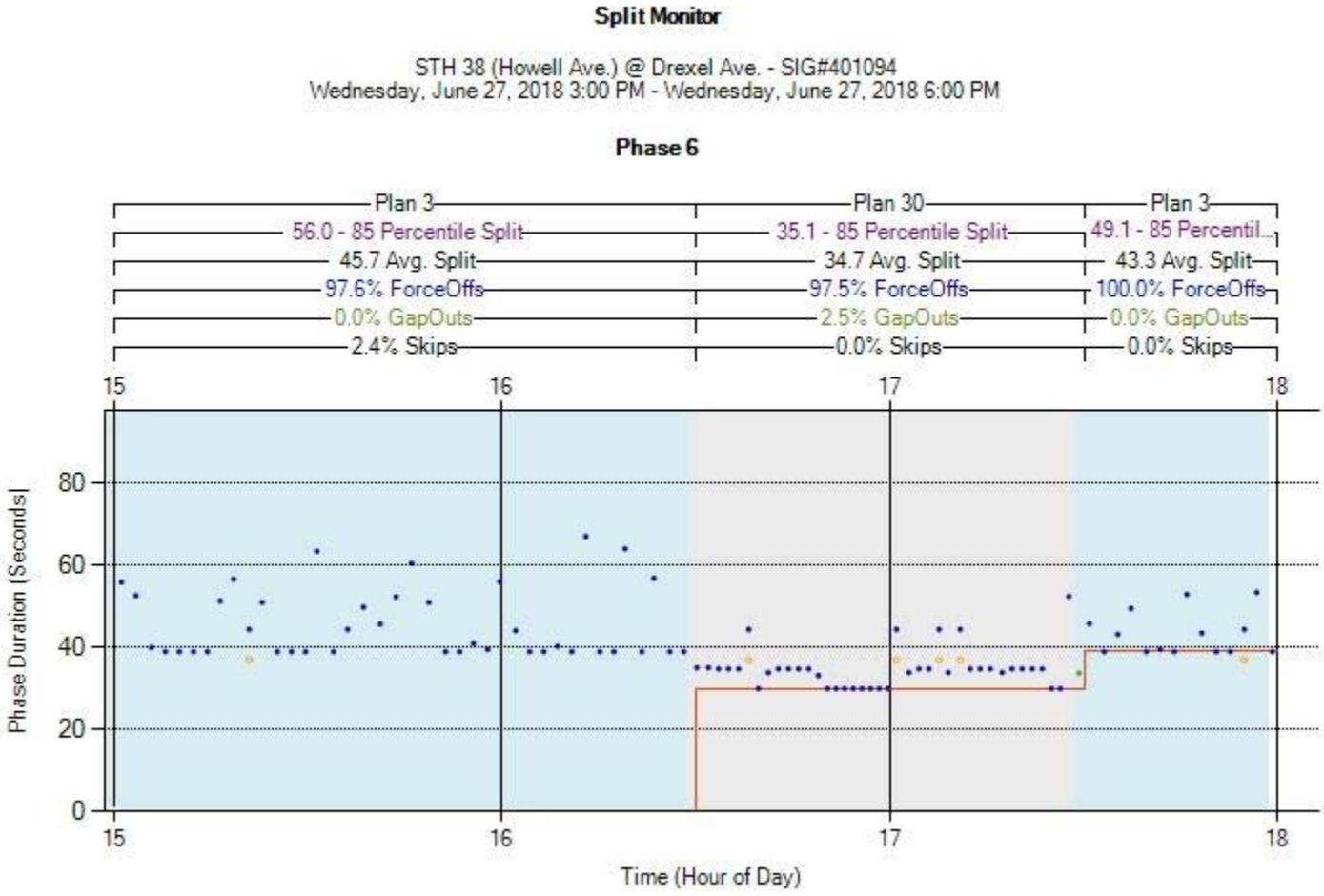


WIS 38 Corridor – STH 38 & Drexel Ave.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM

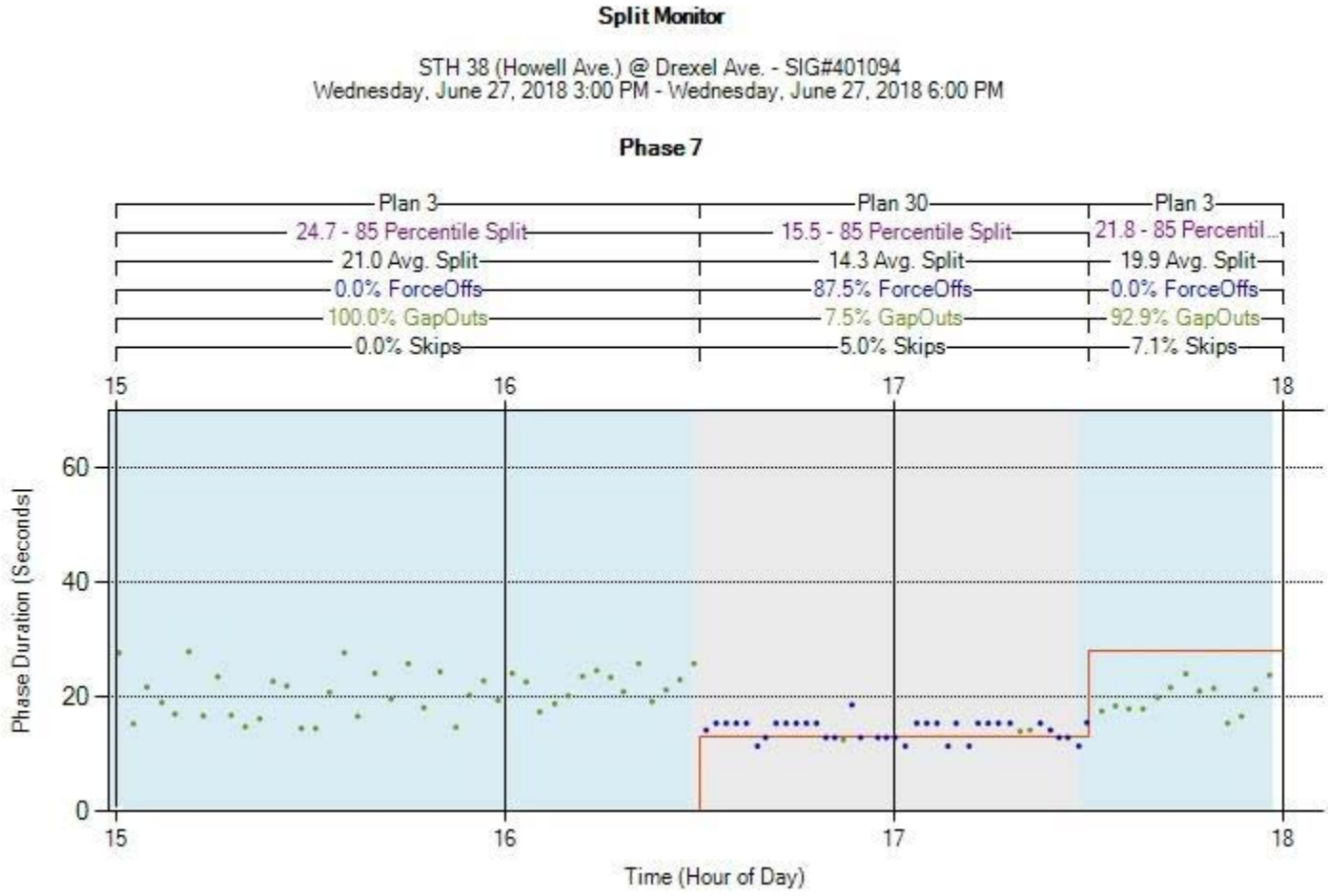


WIS 38 Corridor – STH 38 & Drexel Ave.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM

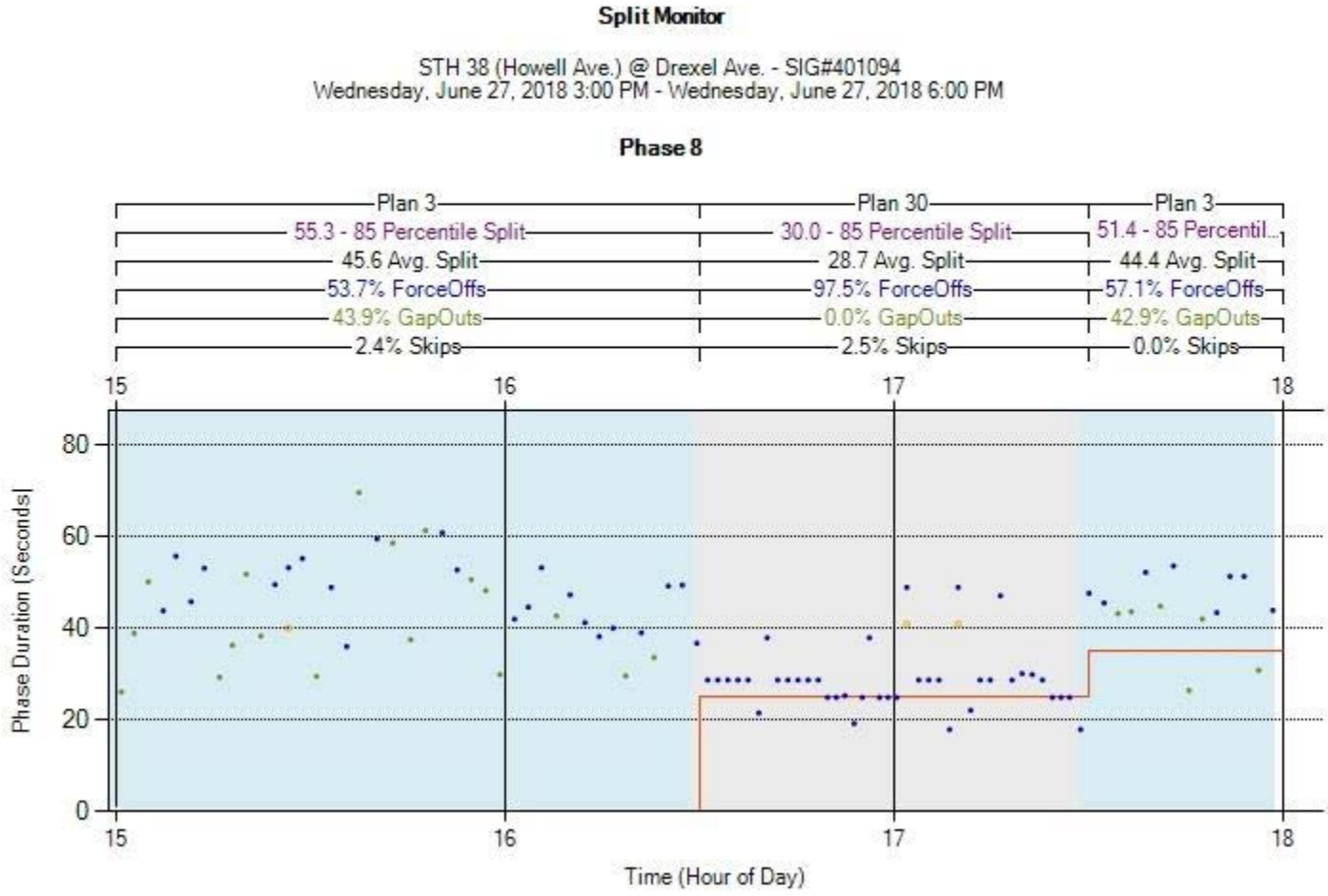
WIS 38 Corridor – STH 38 & Drexel Ave.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM



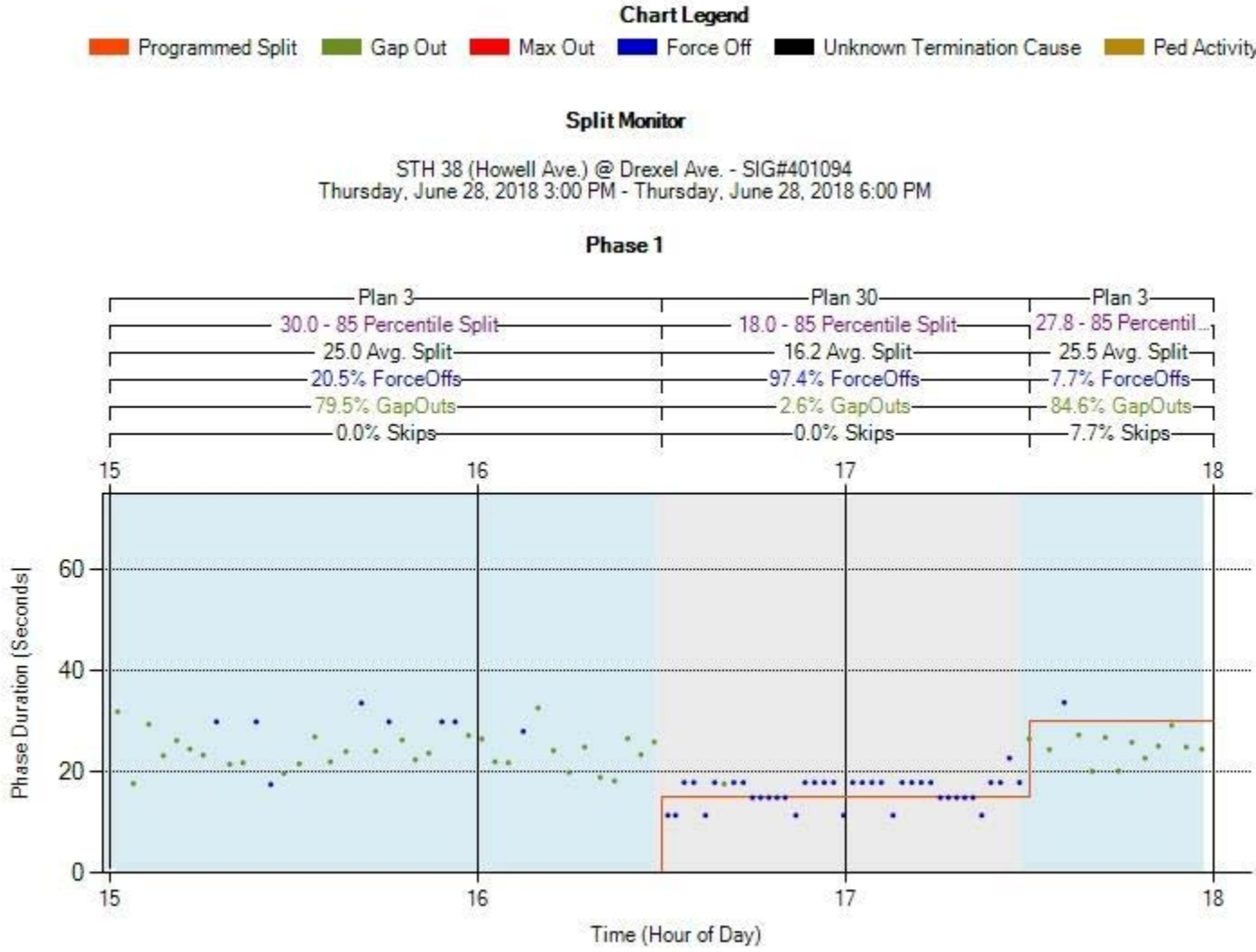
WIS 38 Corridor – STH 38 & Drexel Ave.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM



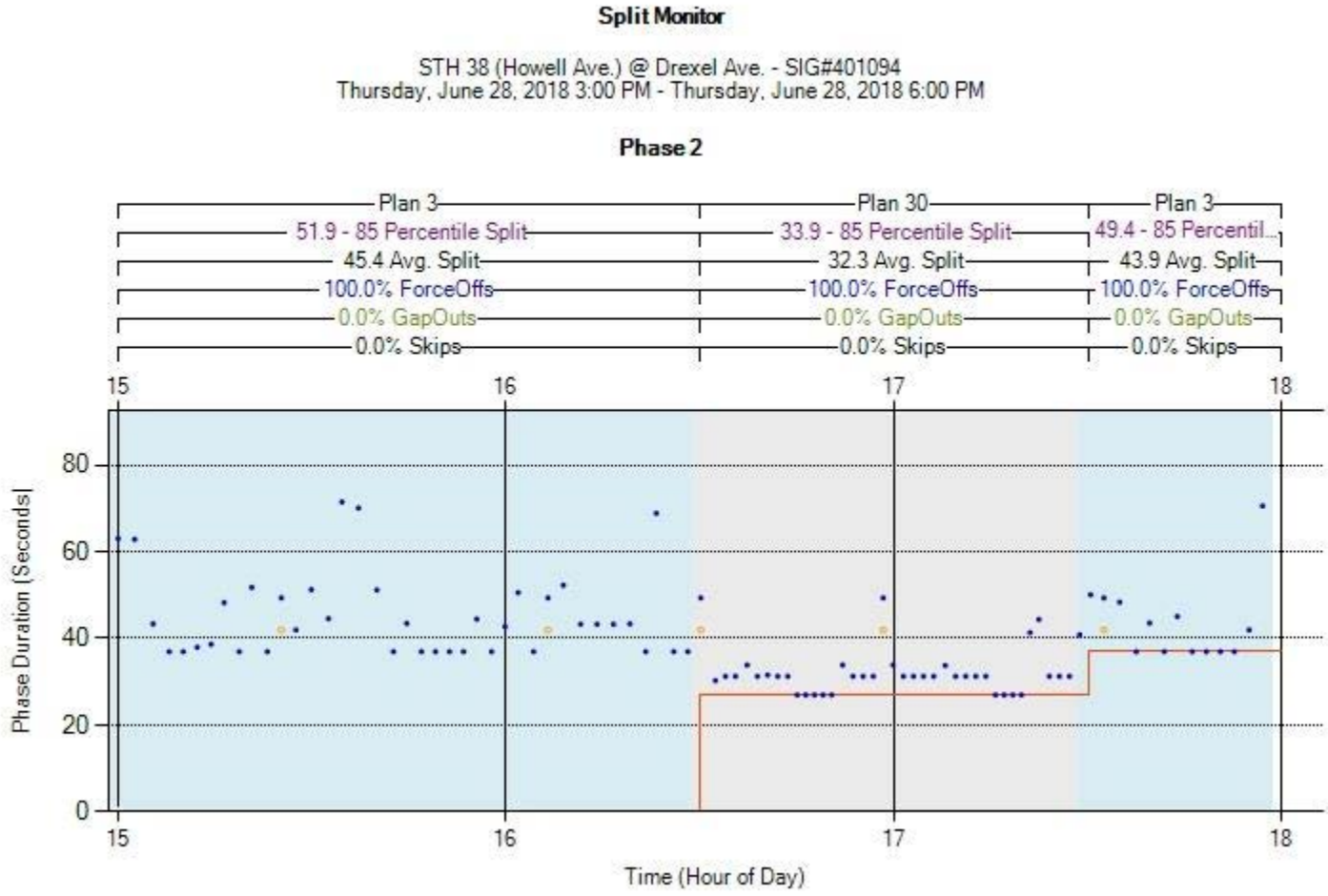
WIS 38 Corridor – STH 38 & Drexel Ave.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM



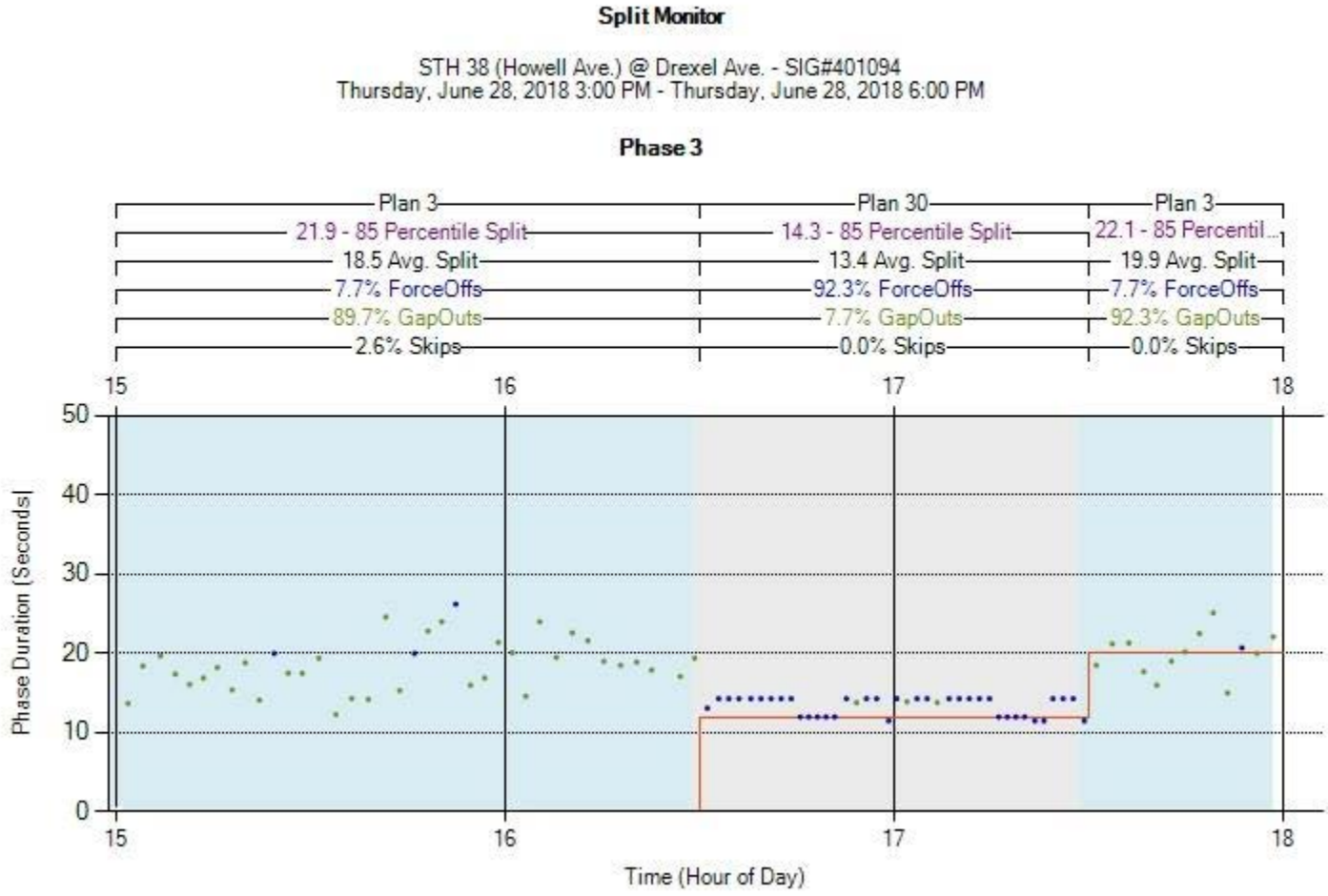
WIS 38 Corridor – STH 38 & Drexel Ave.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM



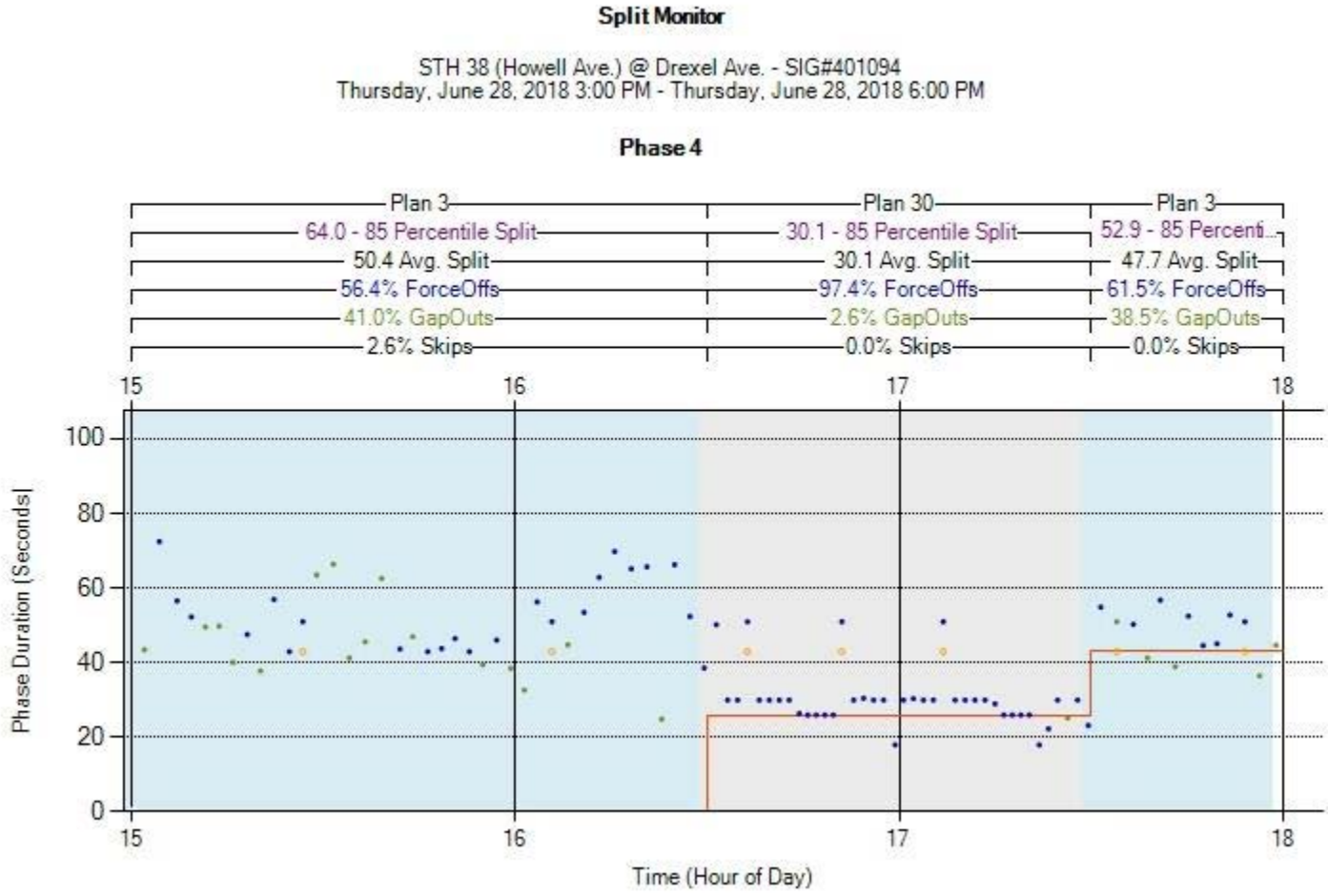
WIS 38 Corridor – STH 38 & Drexel Ave.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM



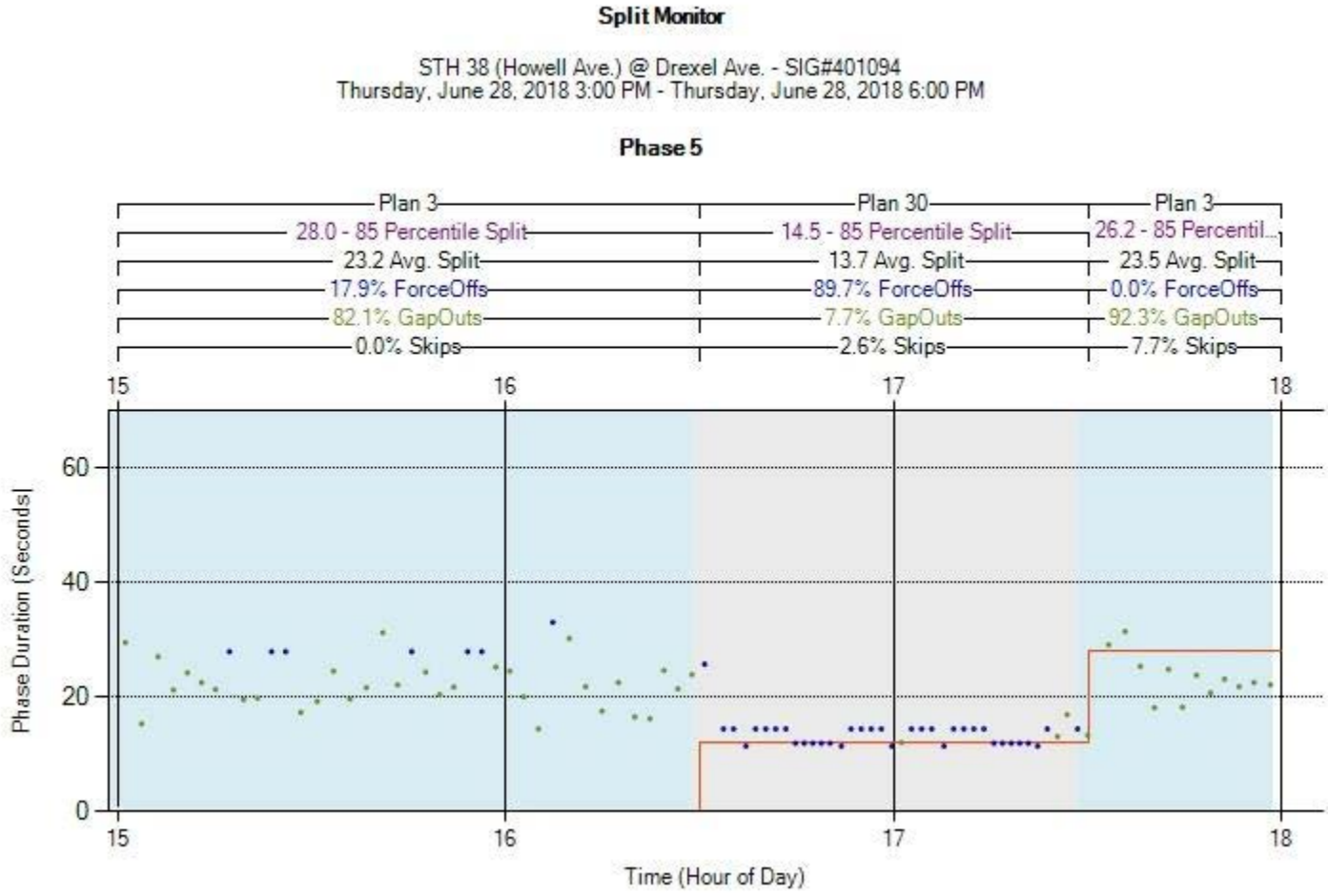
WIS 38 Corridor – STH 38 & Drexel Ave.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM



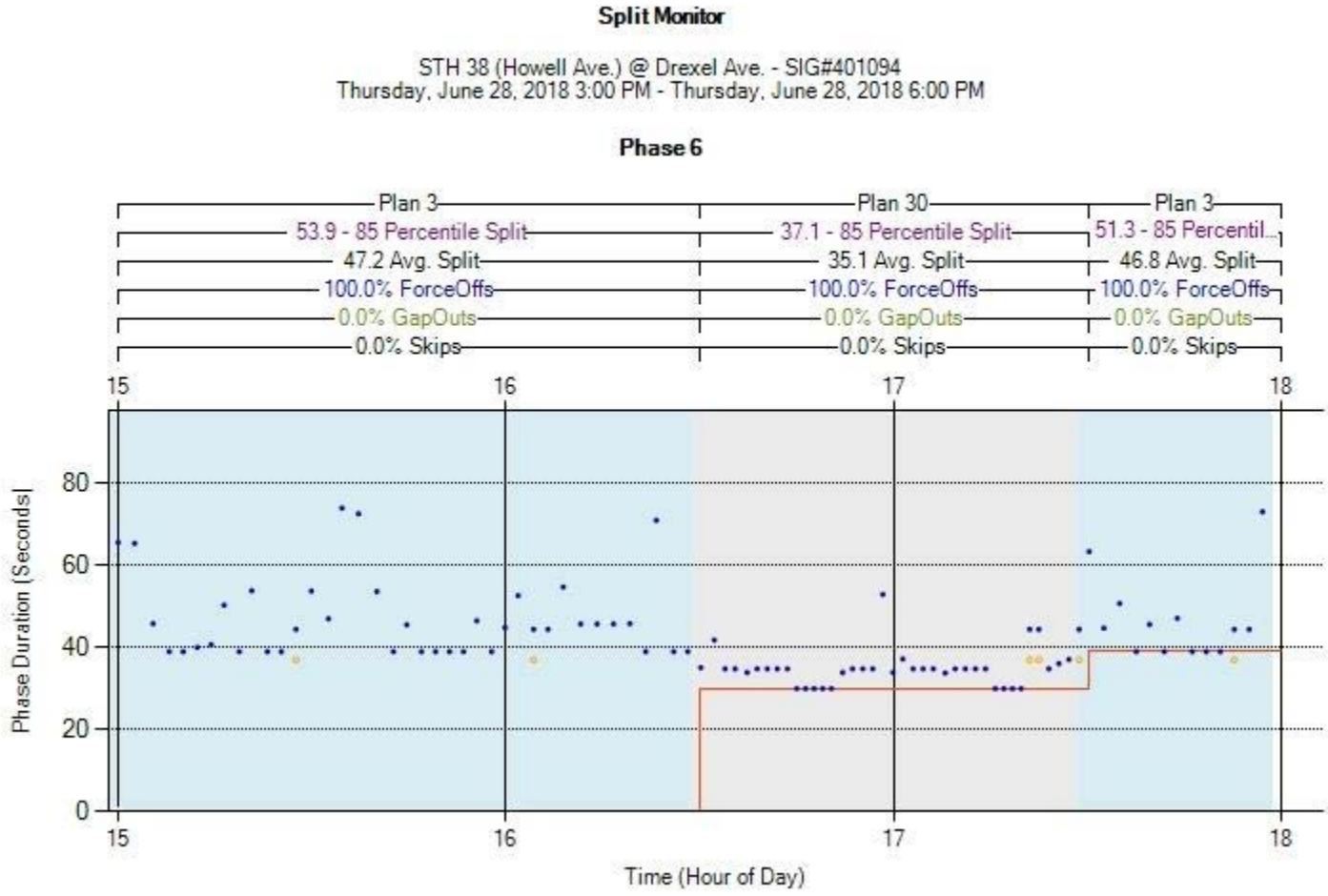
WIS 38 Corridor – STH 38 & Drexel Ave.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM



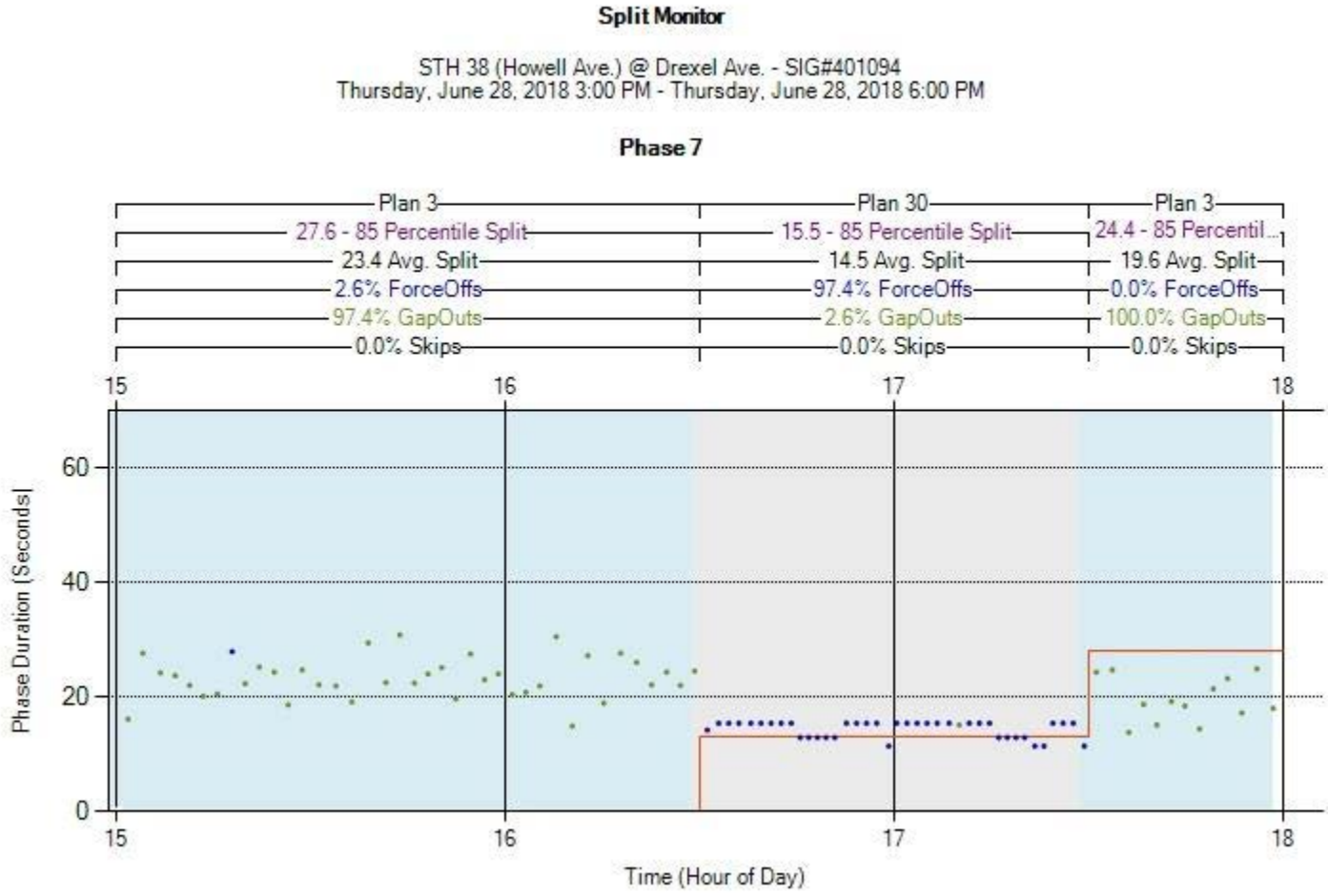
WIS 38 Corridor – STH 38 & Drexel Ave.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM



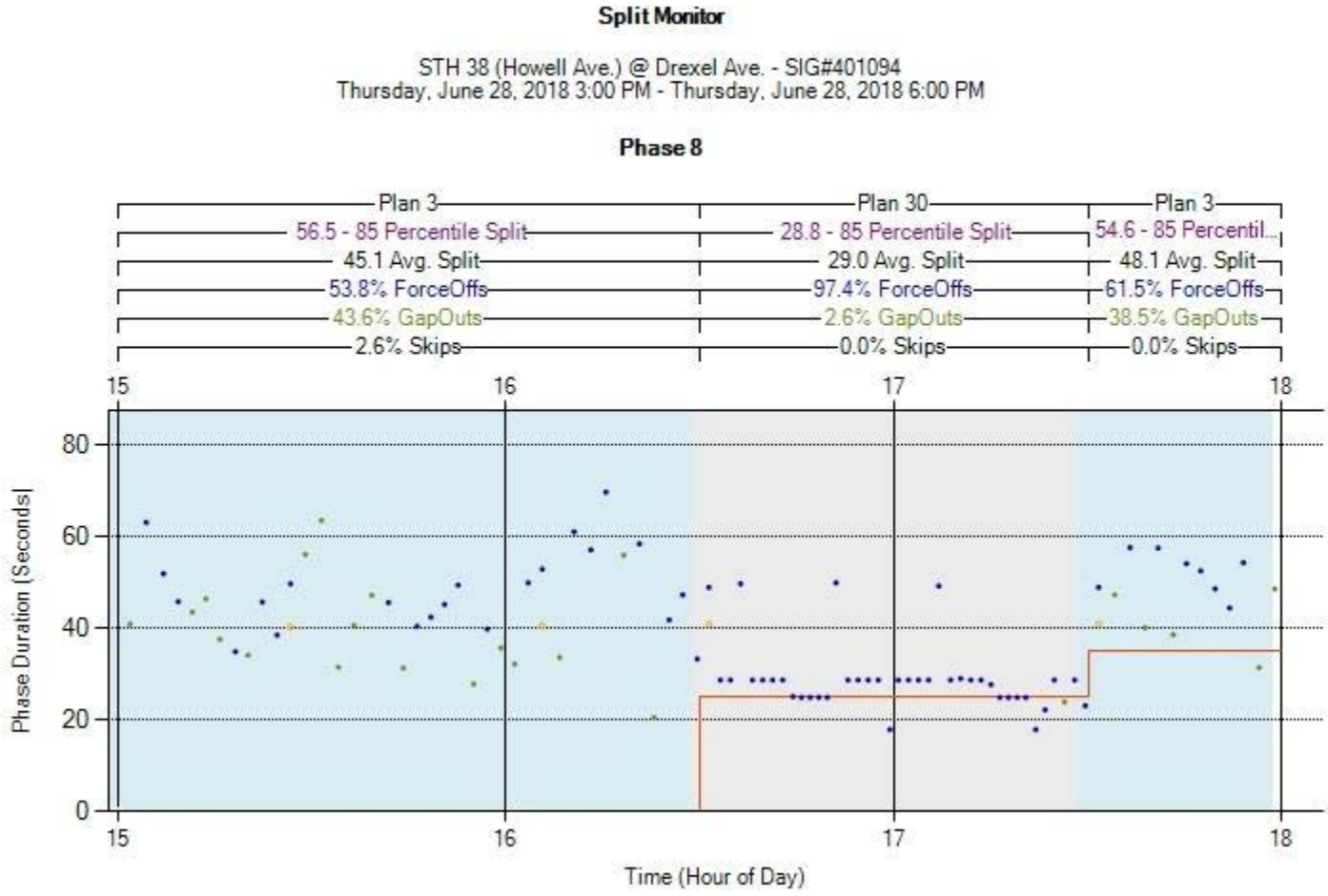
WIS 38 Corridor – STH 38 & Drexel Ave.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM



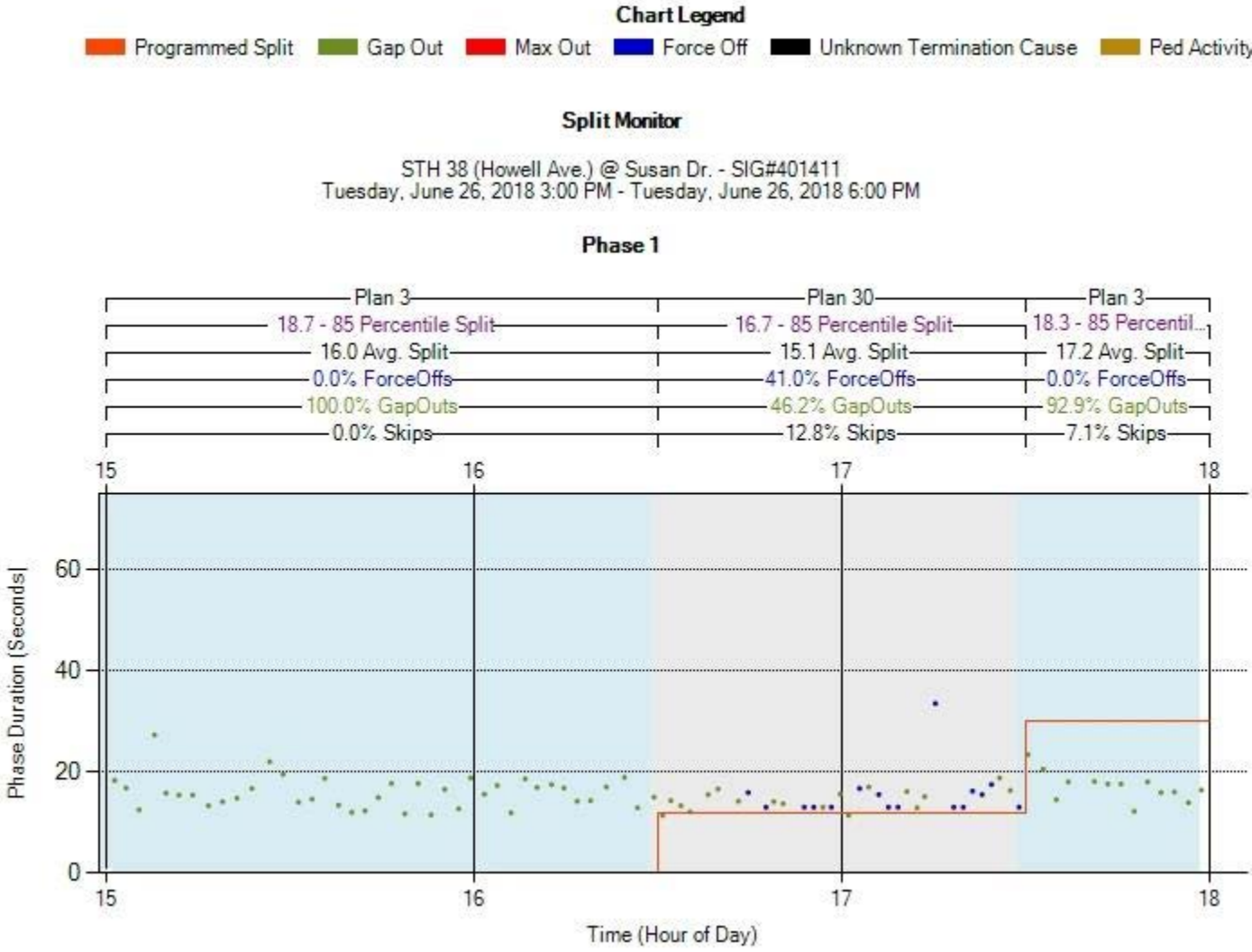
WIS 38 Corridor – STH 38 & Drexel Ave.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM



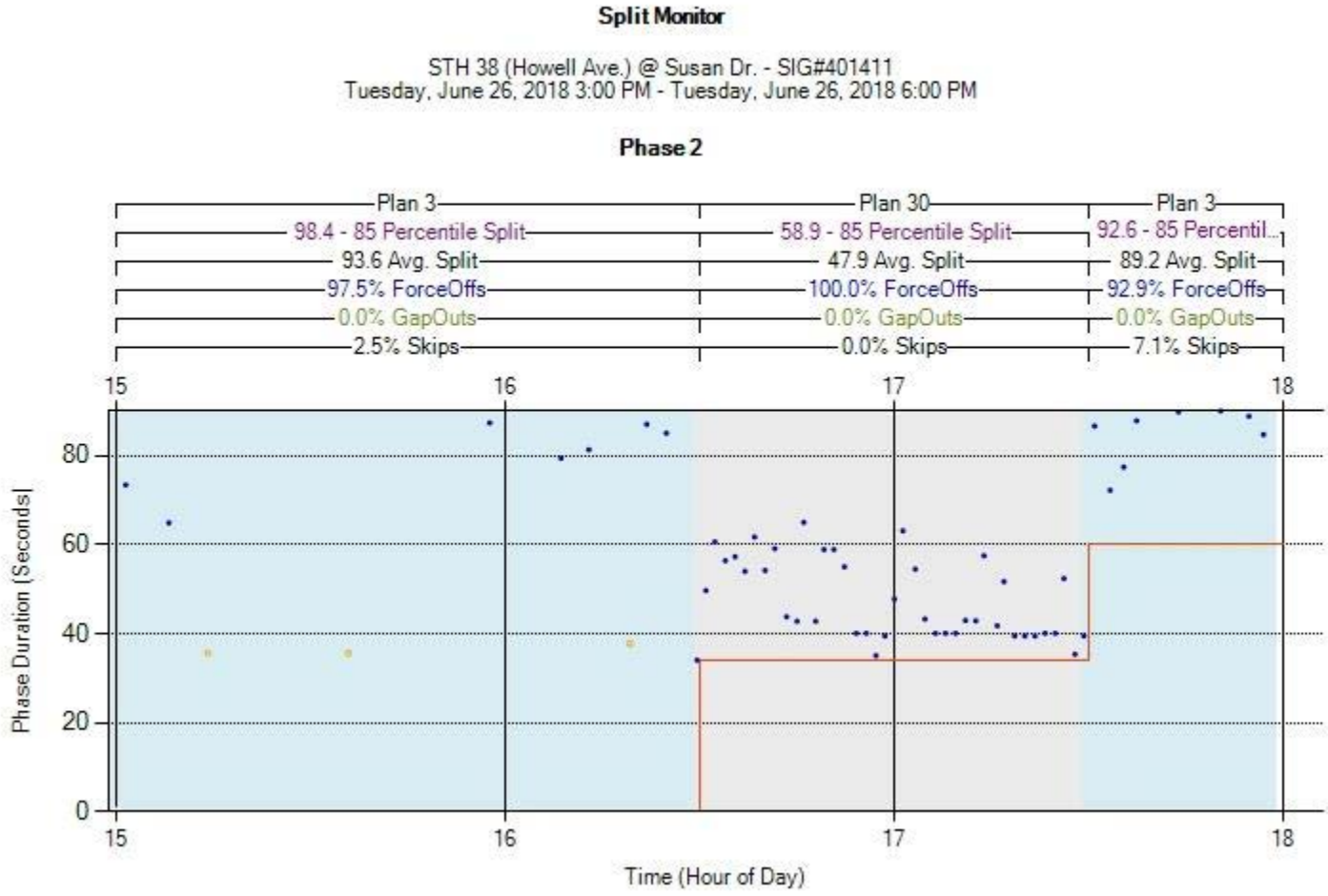
WIS 38 Corridor – STH 38 & Drexel Ave.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM



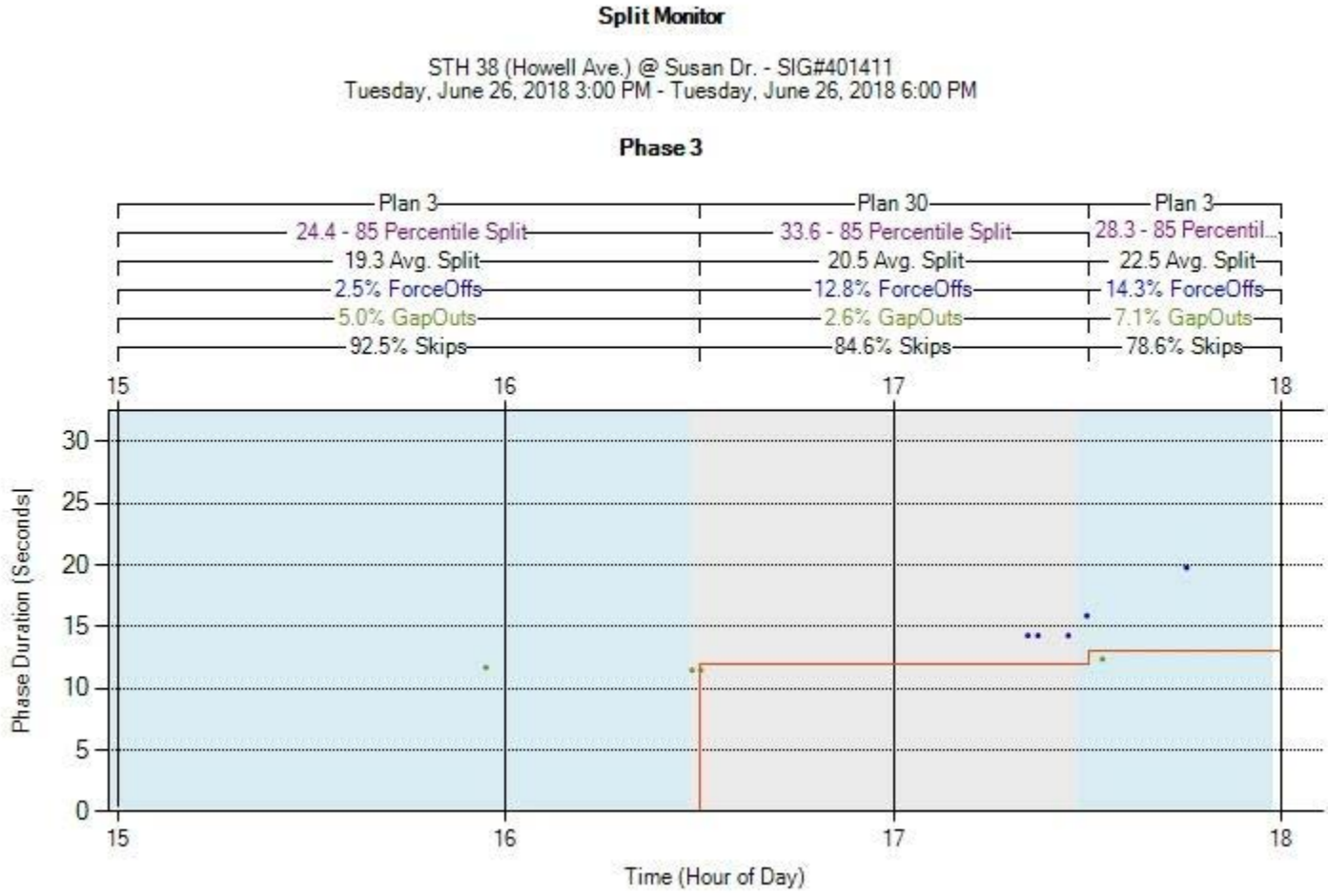
WIS 38 Corridor – STH 38 & Susan Dr.
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM

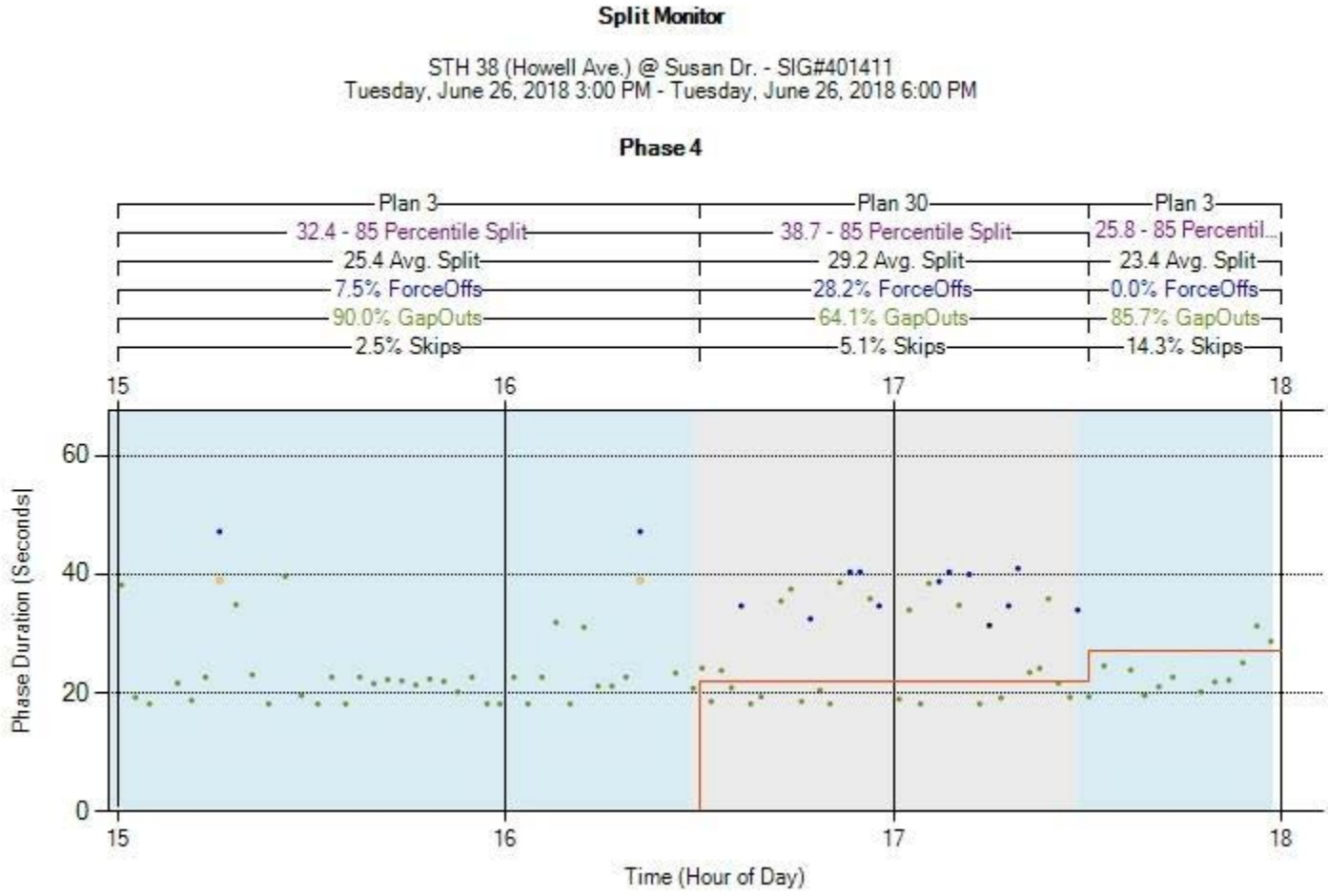


WIS 38 Corridor – STH 38 & Susan Dr.
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM

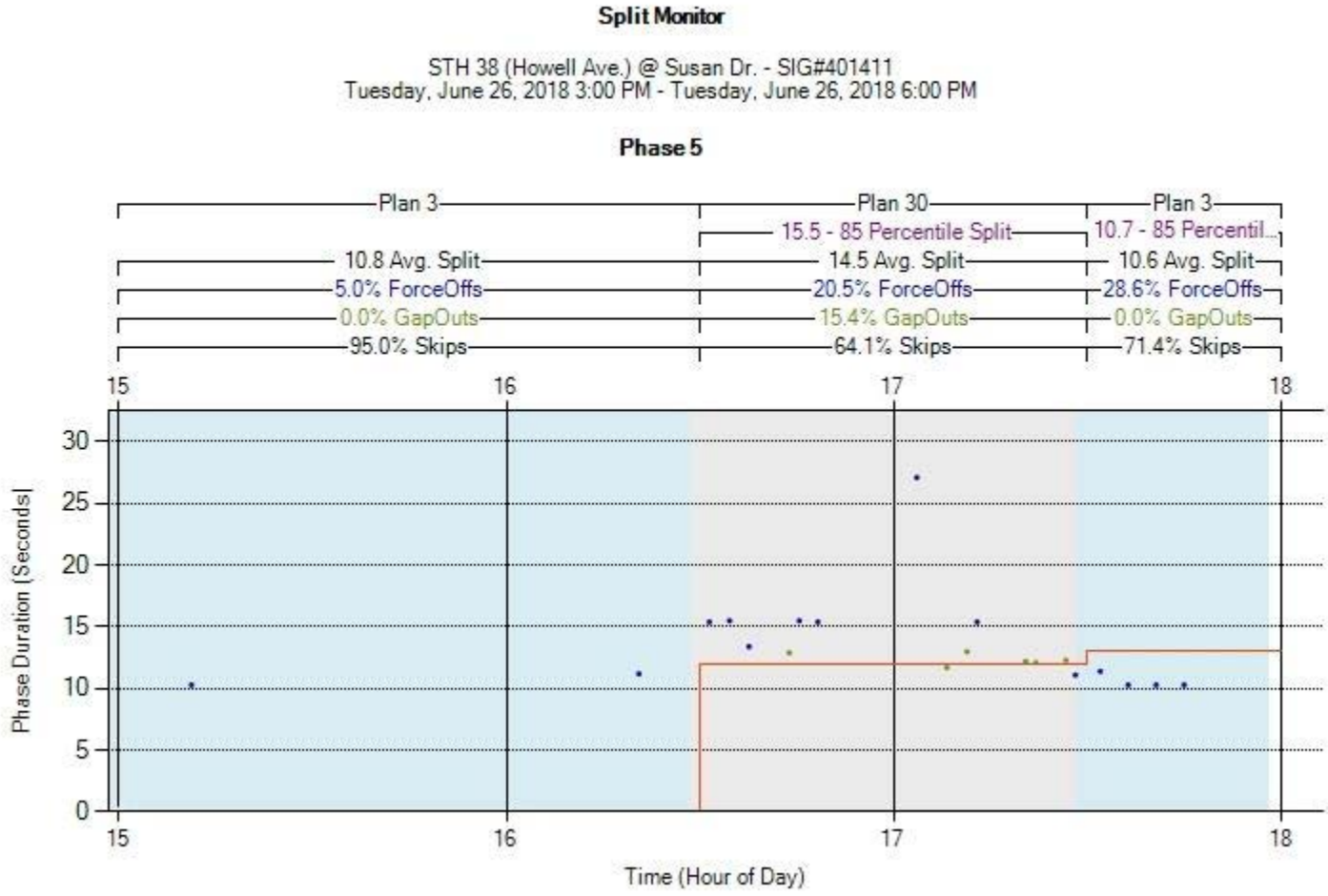


WIS 38 Corridor – STH 38 & Susan Dr.
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM

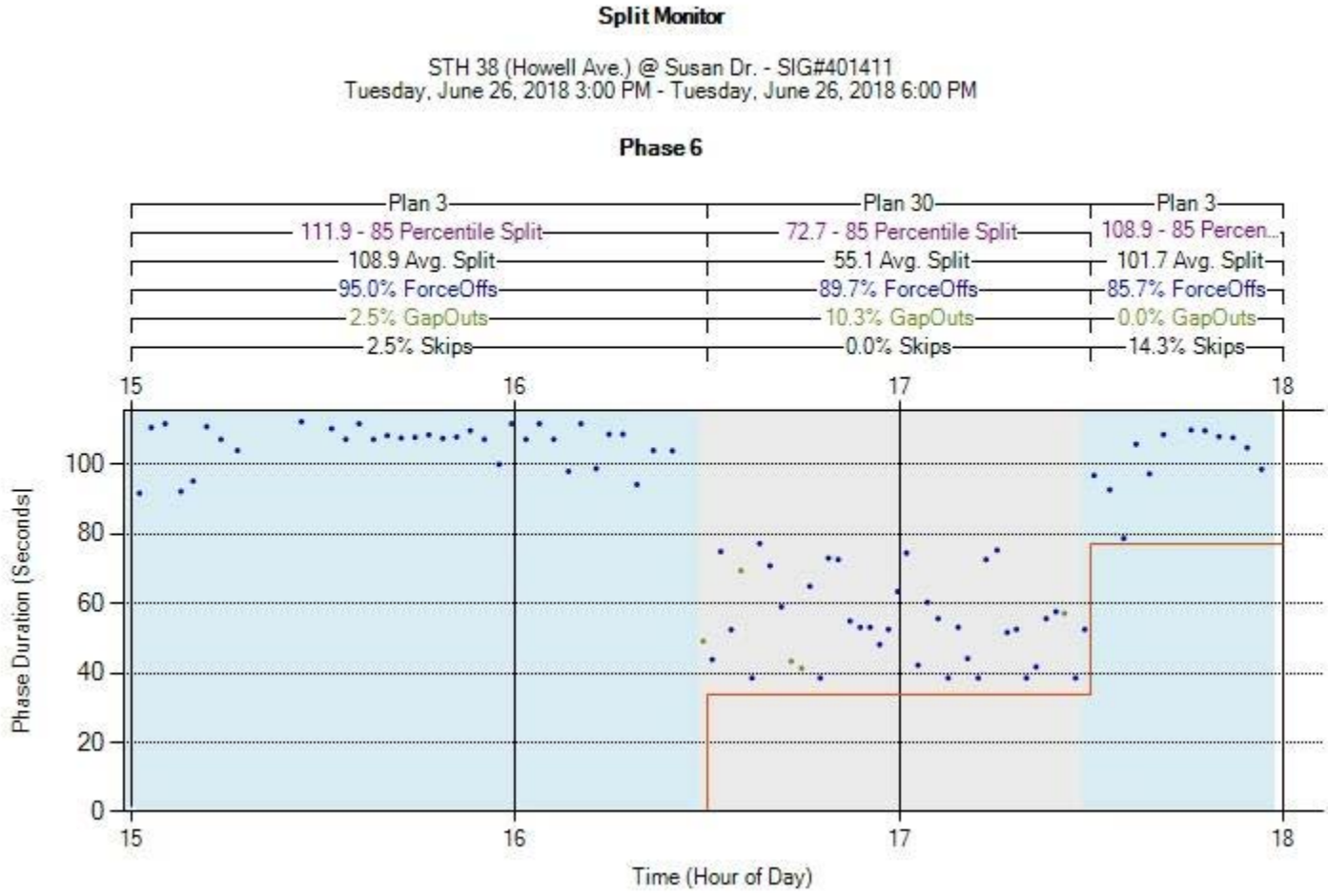



Split Monitor
STH 38 (Howell Ave.) @ Susan Dr. - SIG#401411
Tuesday, June 26, 2018 3:00 PM - Tuesday, June 26, 2018 6:00 PM
Phase 4
Plan 3
32.4 - 85 Percentile Split
25.4 Avg. Split
7.5% ForceOffs
90.0% GapOuts
2.5% Skips
Plan 30
38.7 - 85 Percentile Split
29.2 Avg. Split
28.2% ForceOffs
64.1% GapOuts
5.1% Skips
Plan 3
25.8 - 85 Percentil...
23.4 Avg. Split
0.0% ForceOffs
85.7% GapOuts
14.3% Skips
15
16
17
18
60
40
20
0
Phase Duration (Seconds)
Time (Hour of Day)

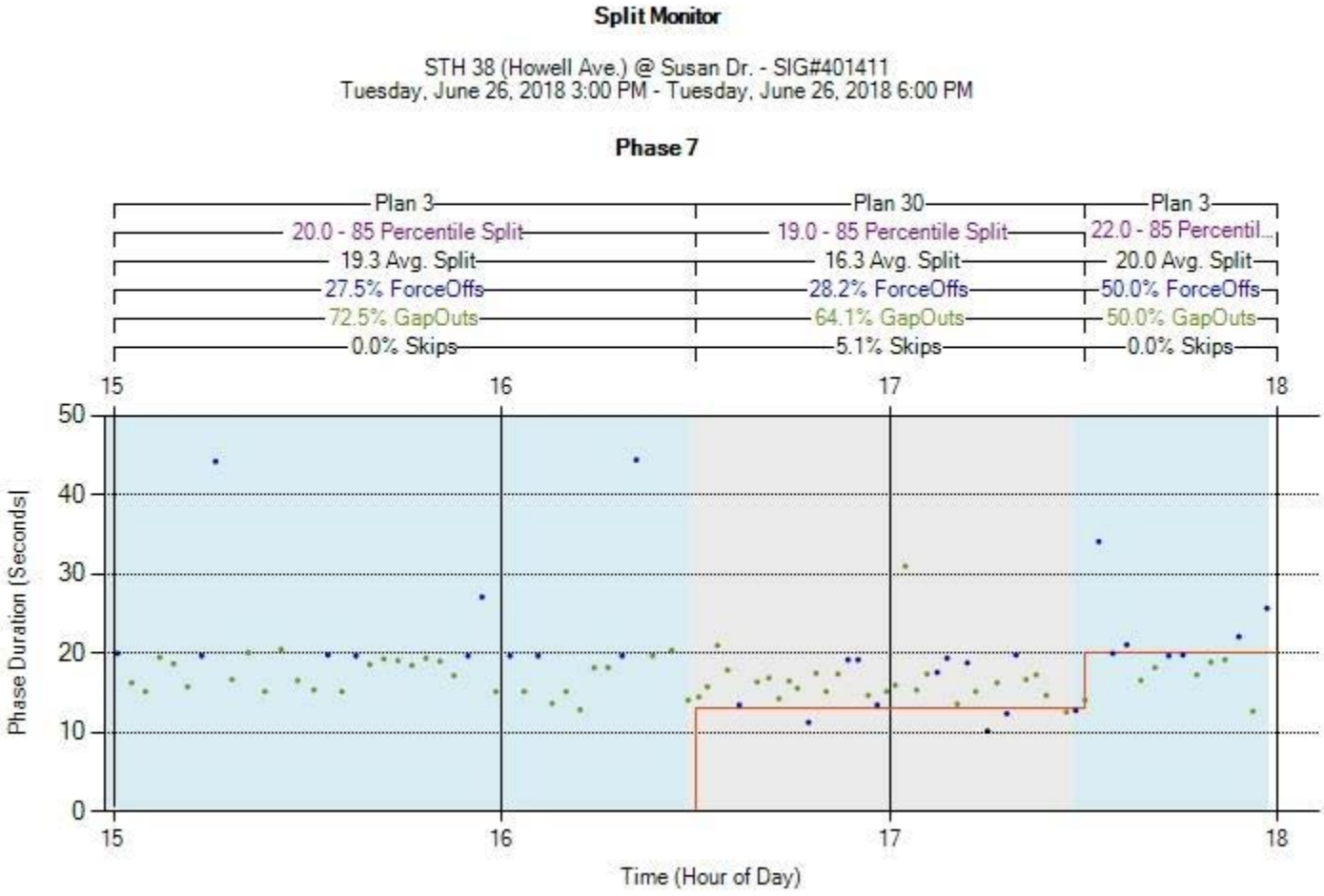
WIS 38 Corridor – STH 38 & Susan Dr.
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM



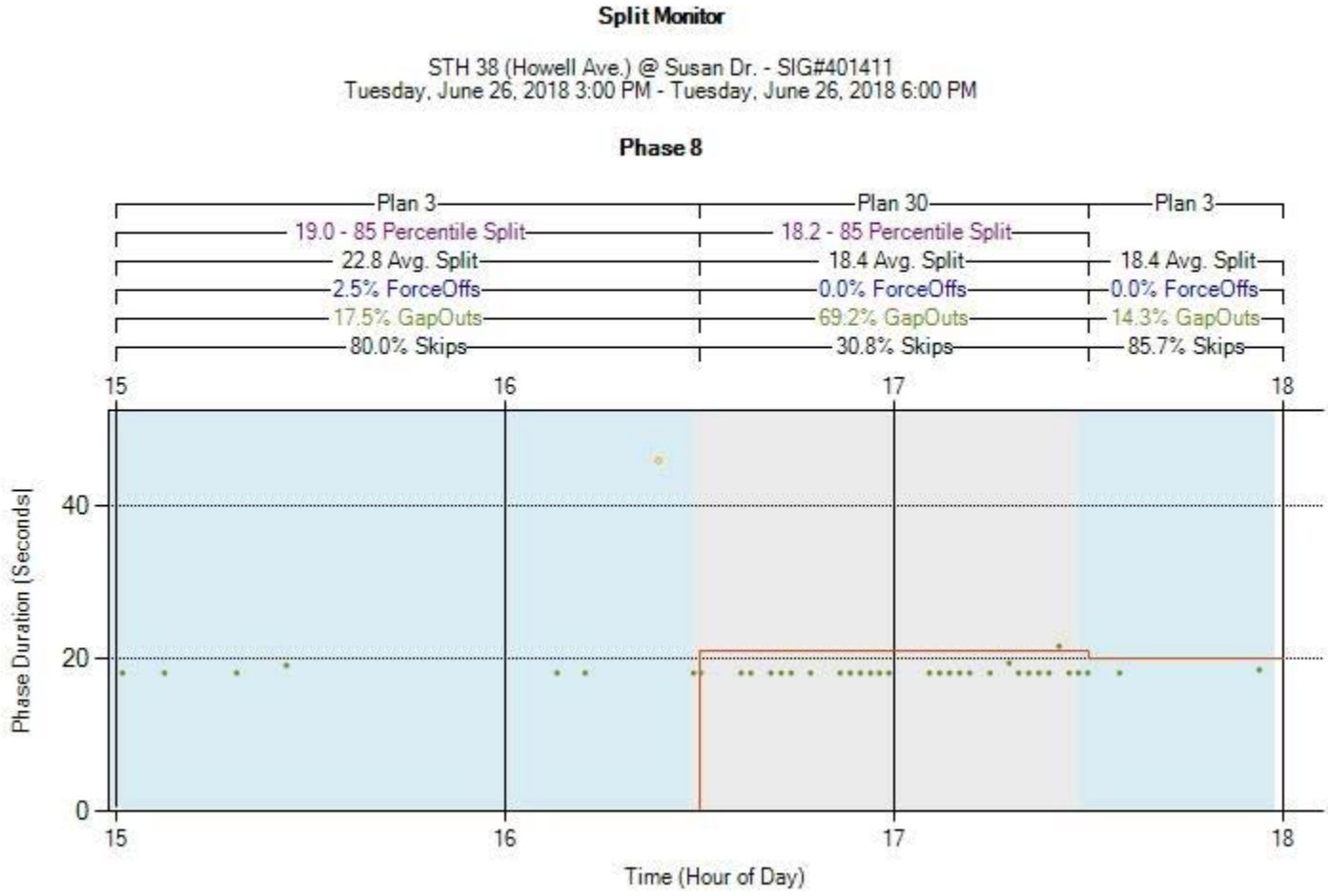
WIS 38 Corridor – STH 38 & Susan Dr.
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM



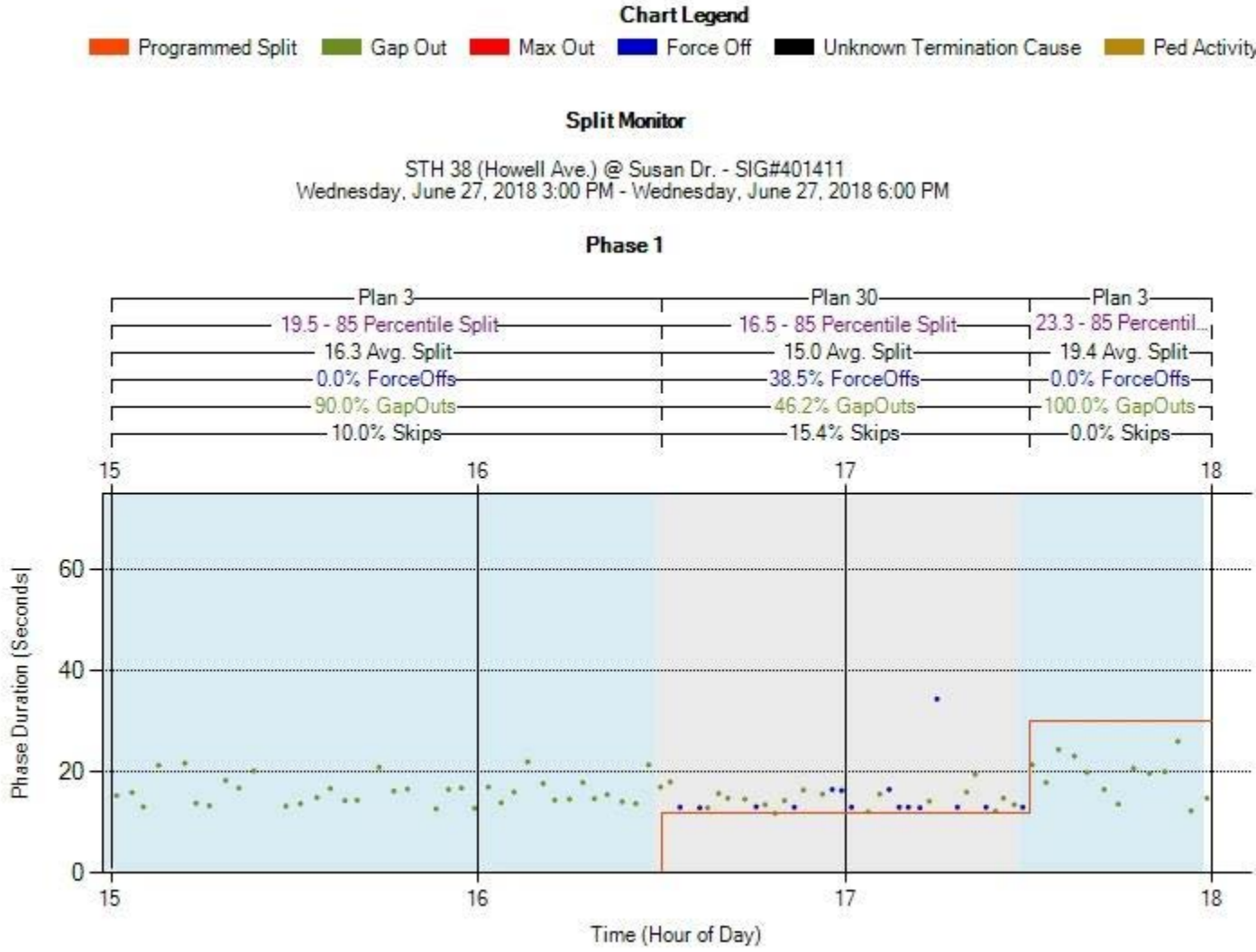
WIS 38 Corridor – STH 38 & Susan Dr.
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM



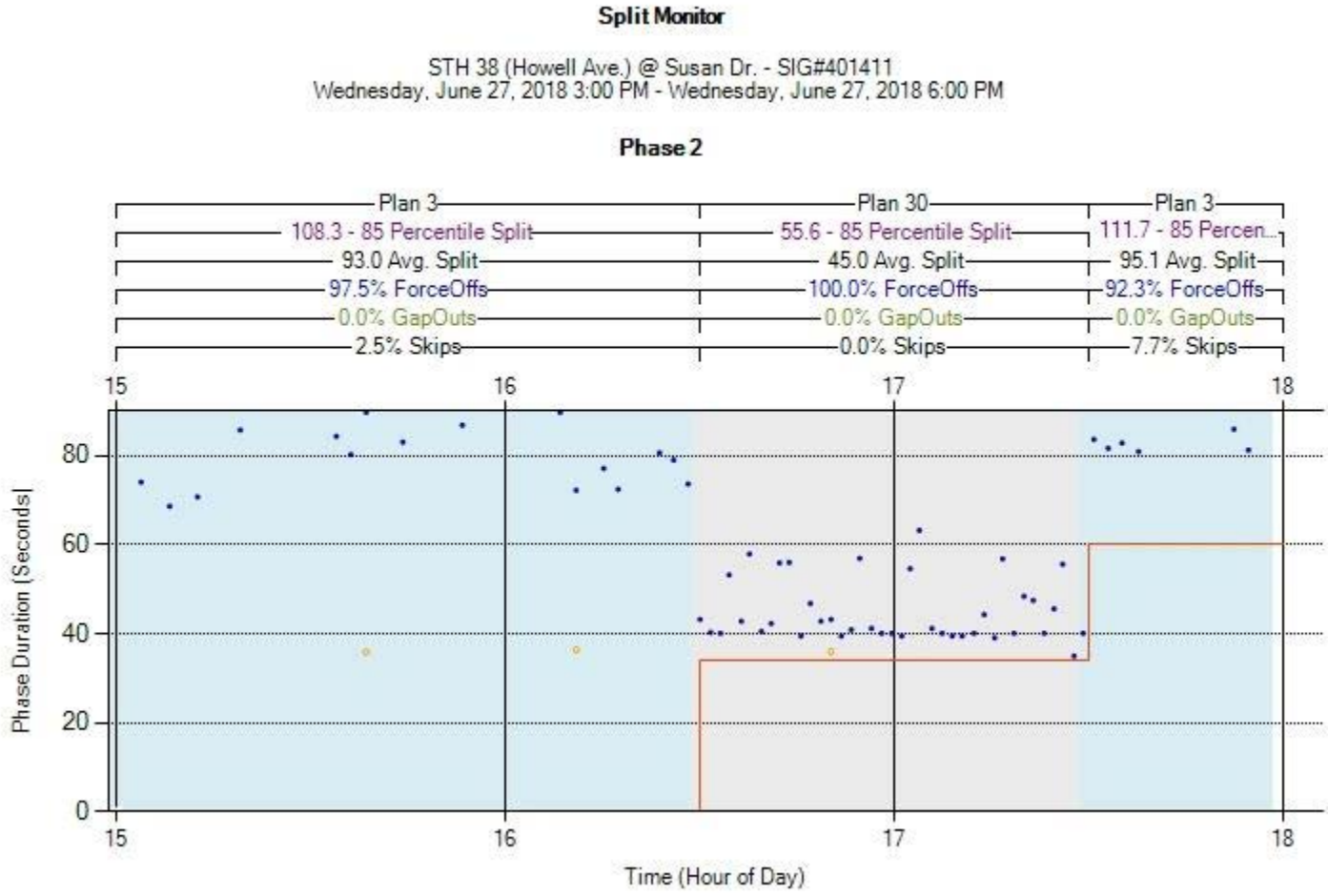
WIS 38 Corridor – STH 38 & Susan Dr.
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM



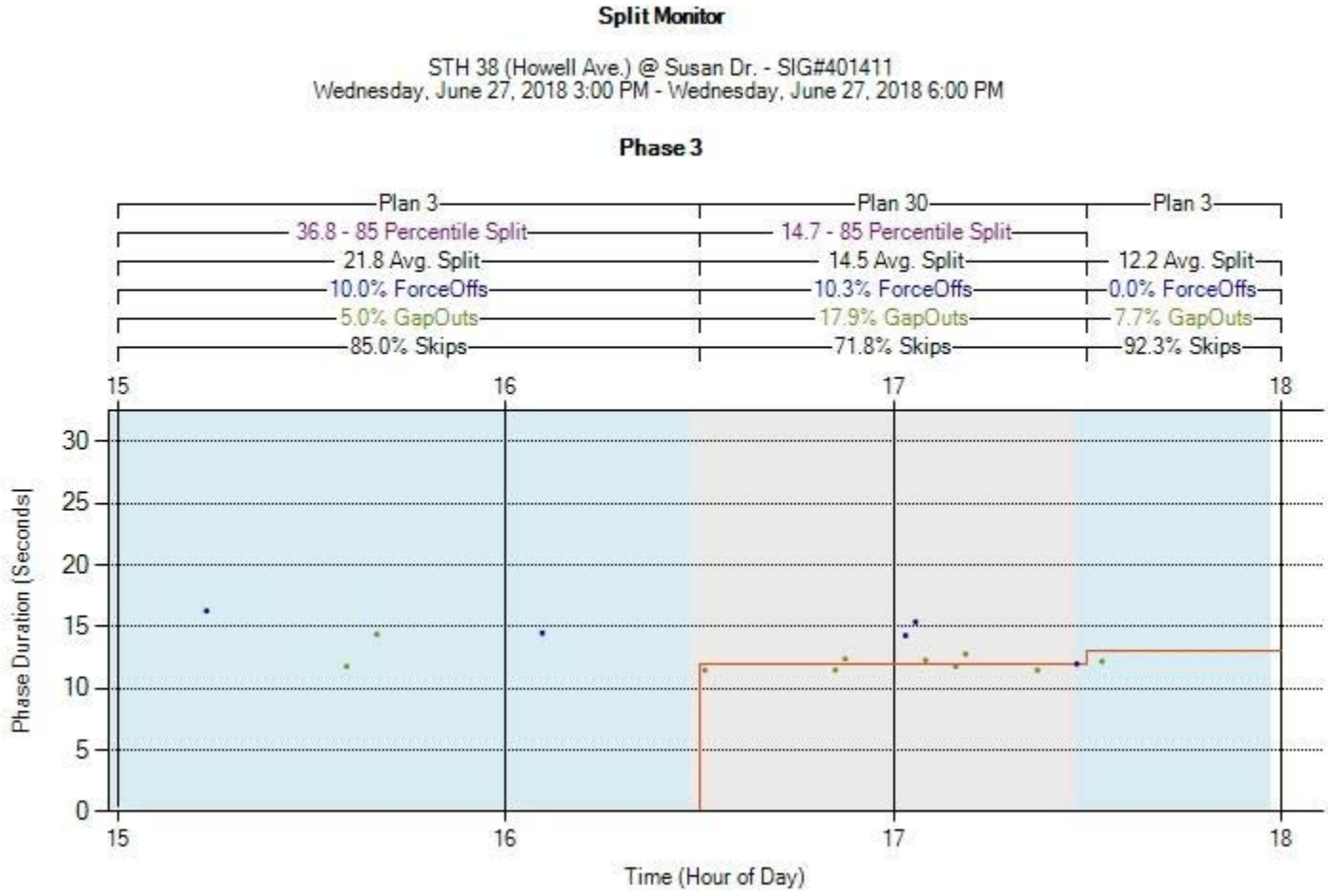
WIS 38 Corridor – STH 38 & Susan Dr.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM



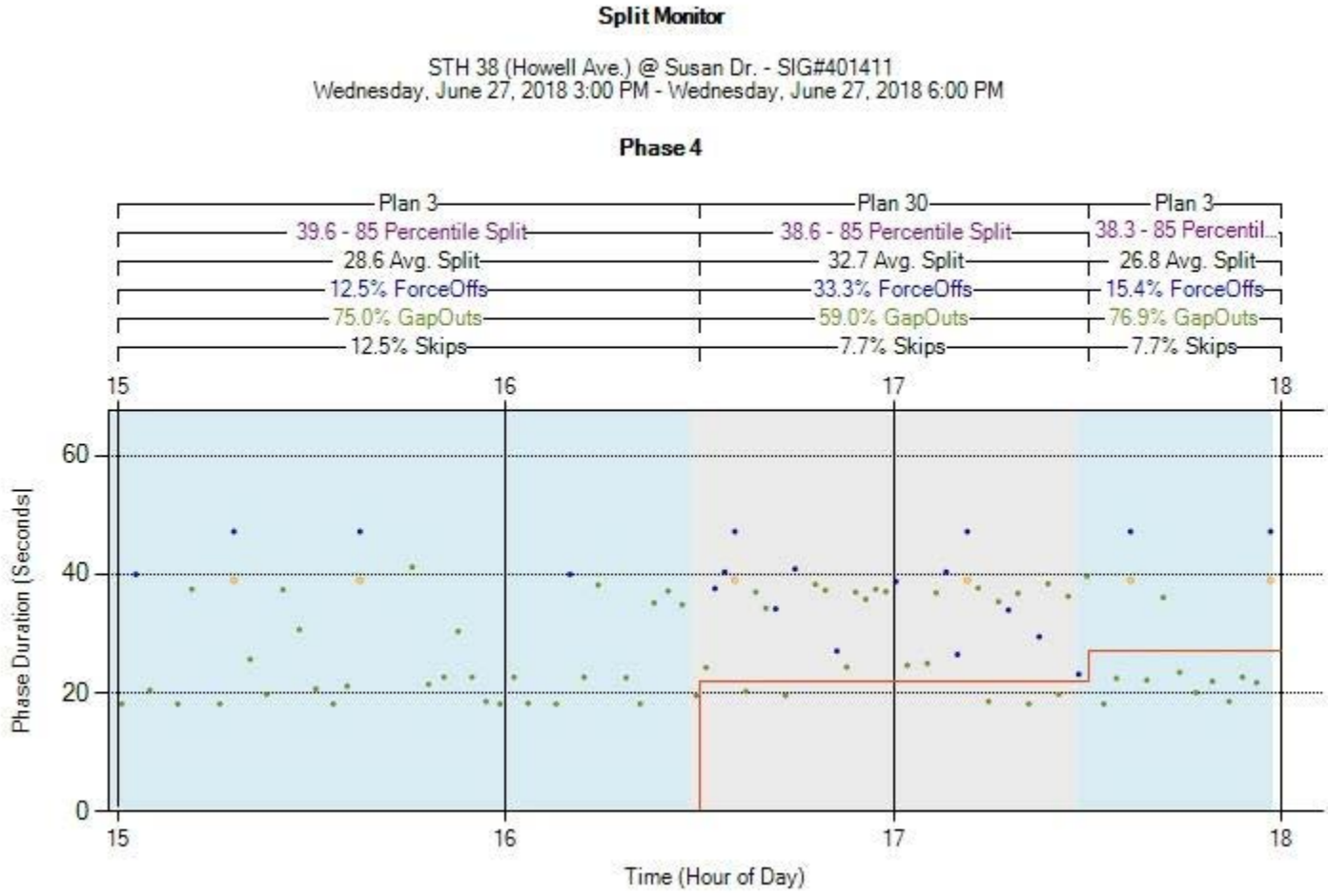
WIS 38 Corridor – STH 38 & Susan Dr.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM



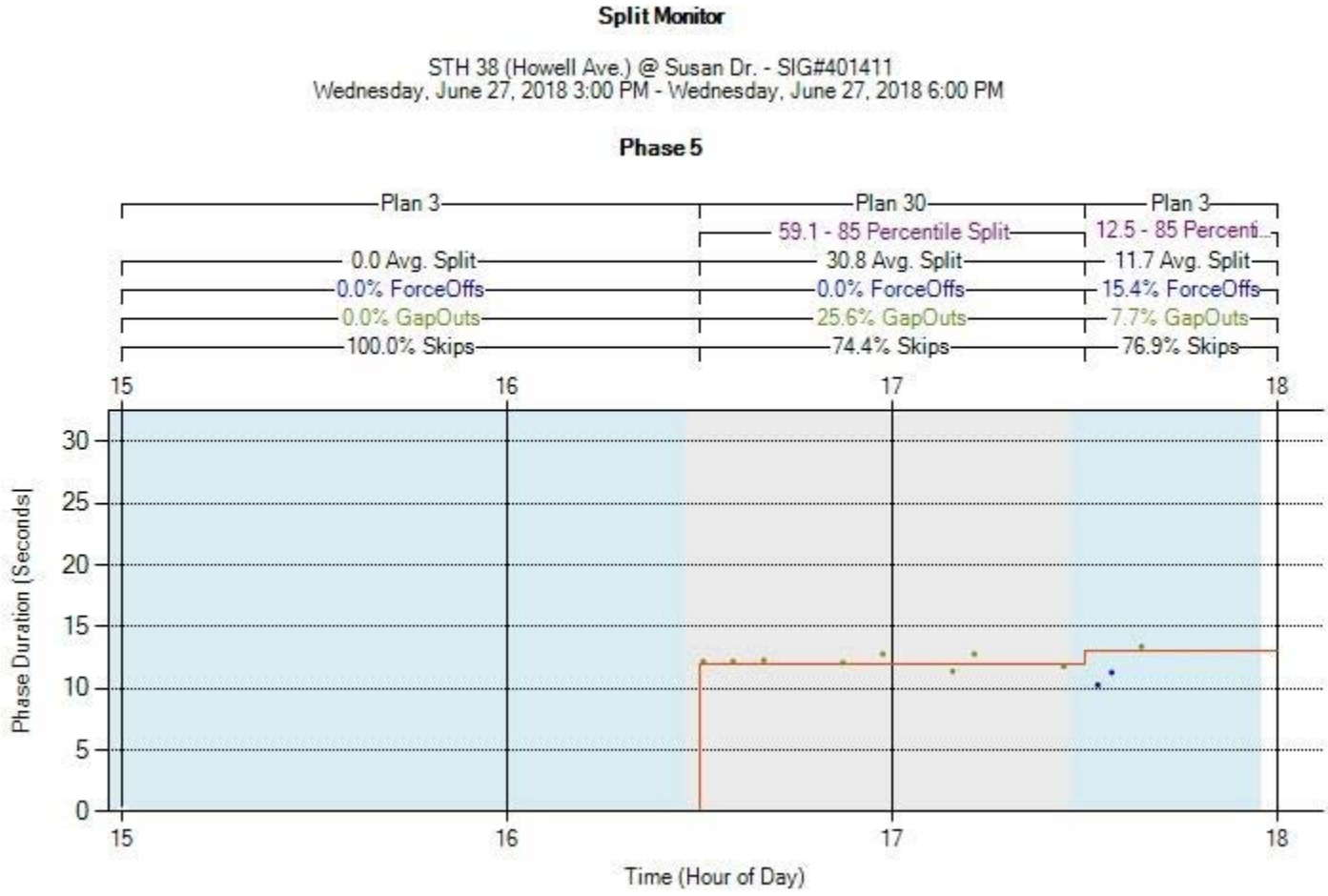
WIS 38 Corridor – STH 38 & Susan Dr.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM



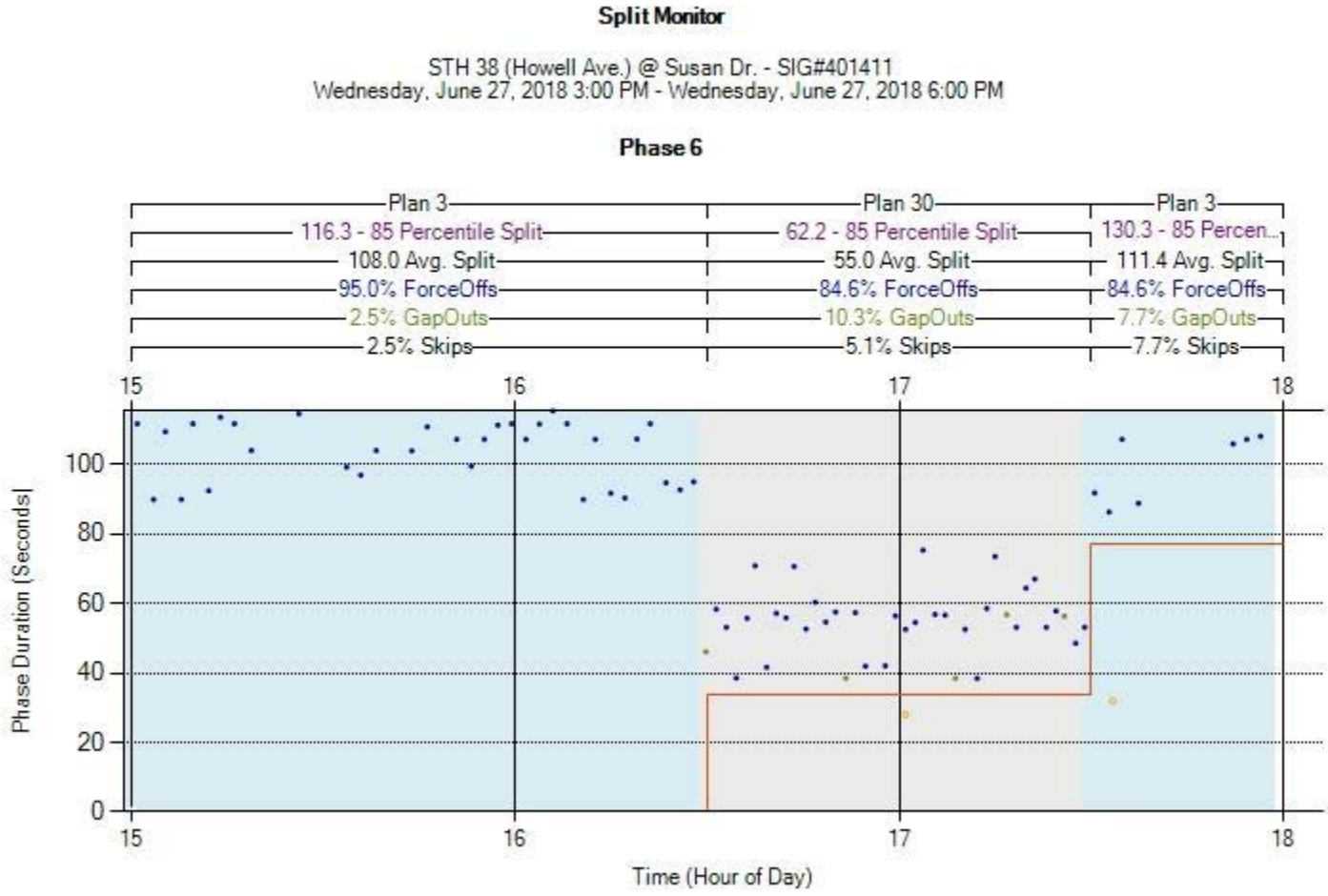
WIS 38 Corridor – STH 38 & Susan Dr.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM



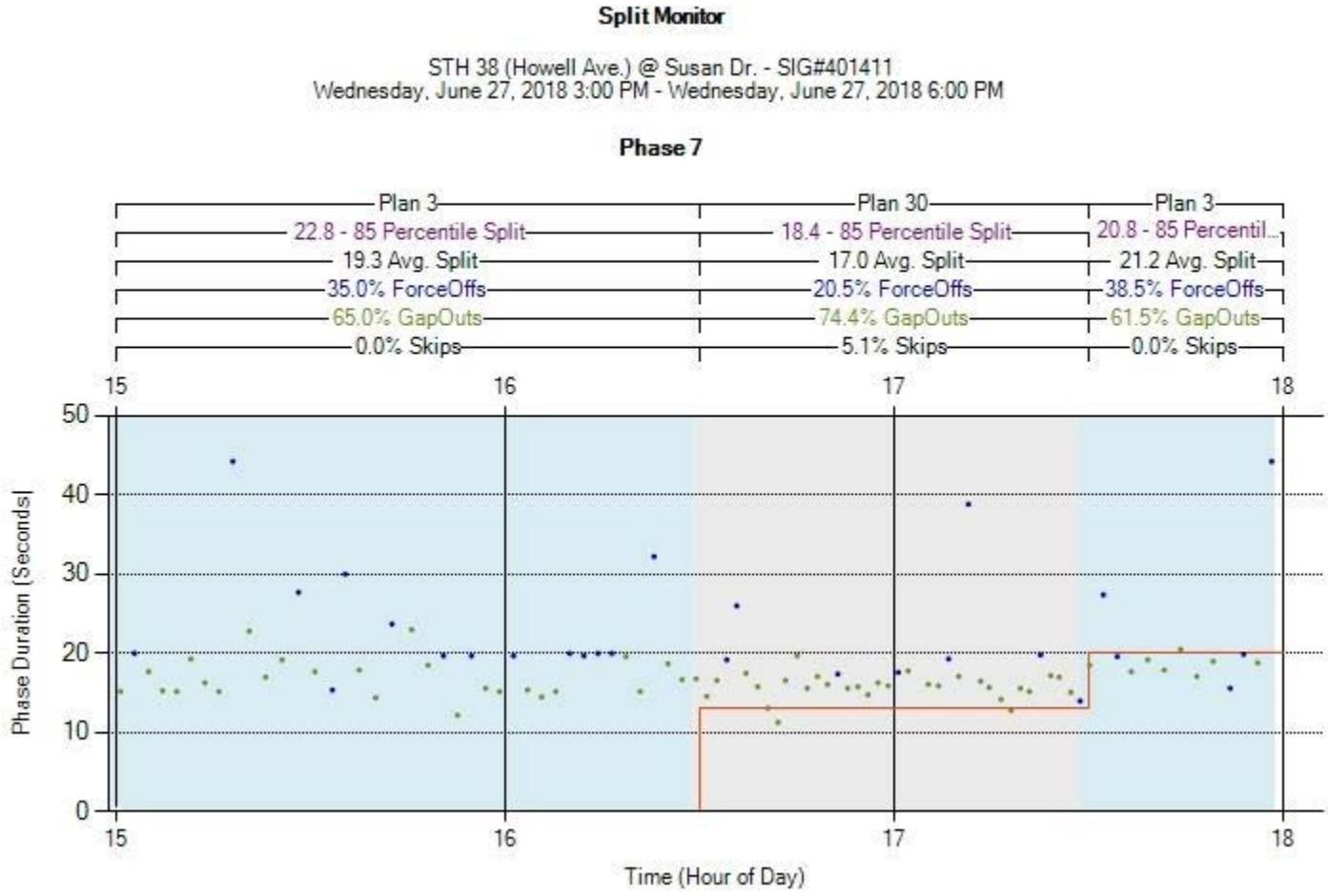
WIS 38 Corridor – STH 38 & Susan Dr.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM



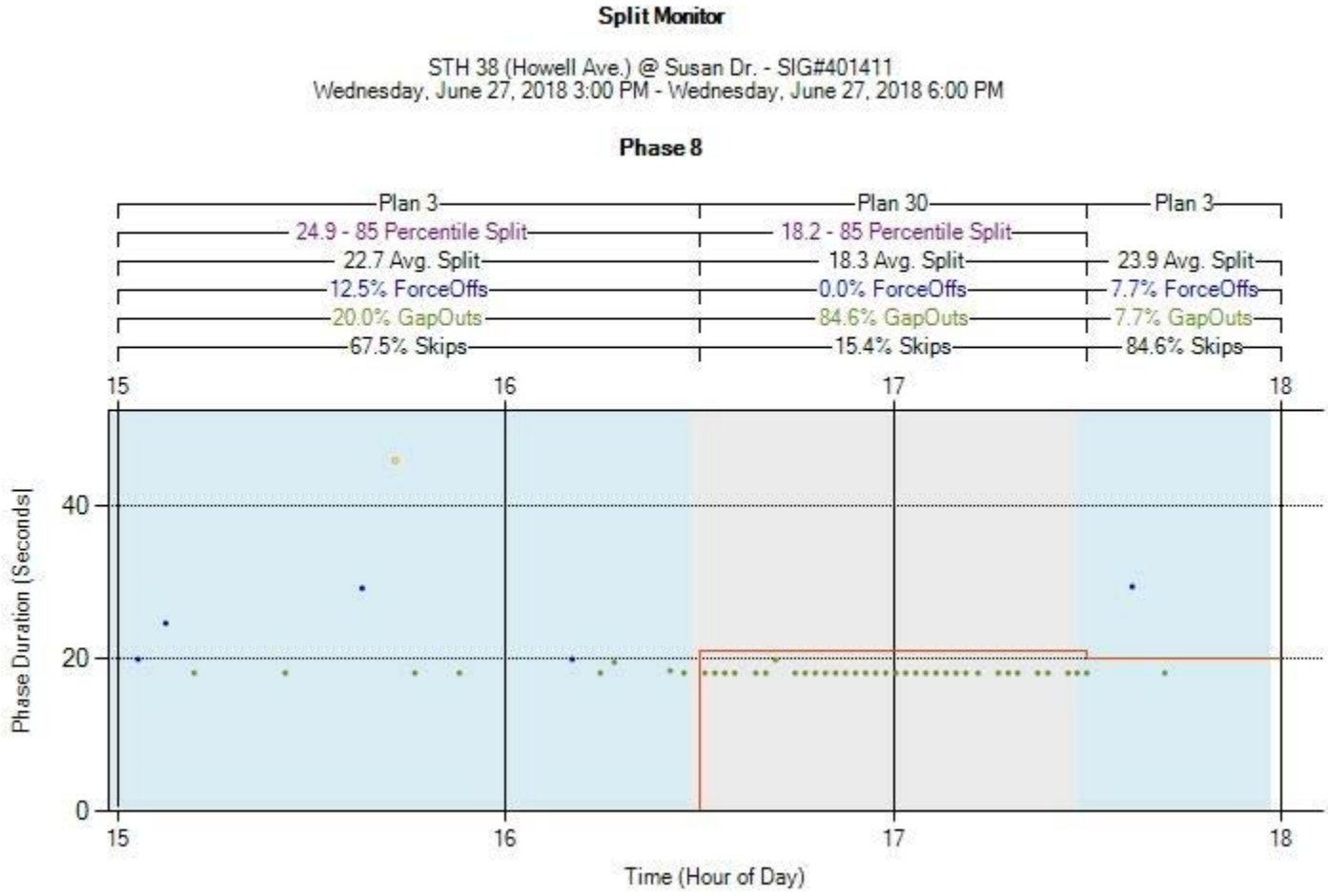
WIS 38 Corridor – STH 38 & Susan Dr.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM



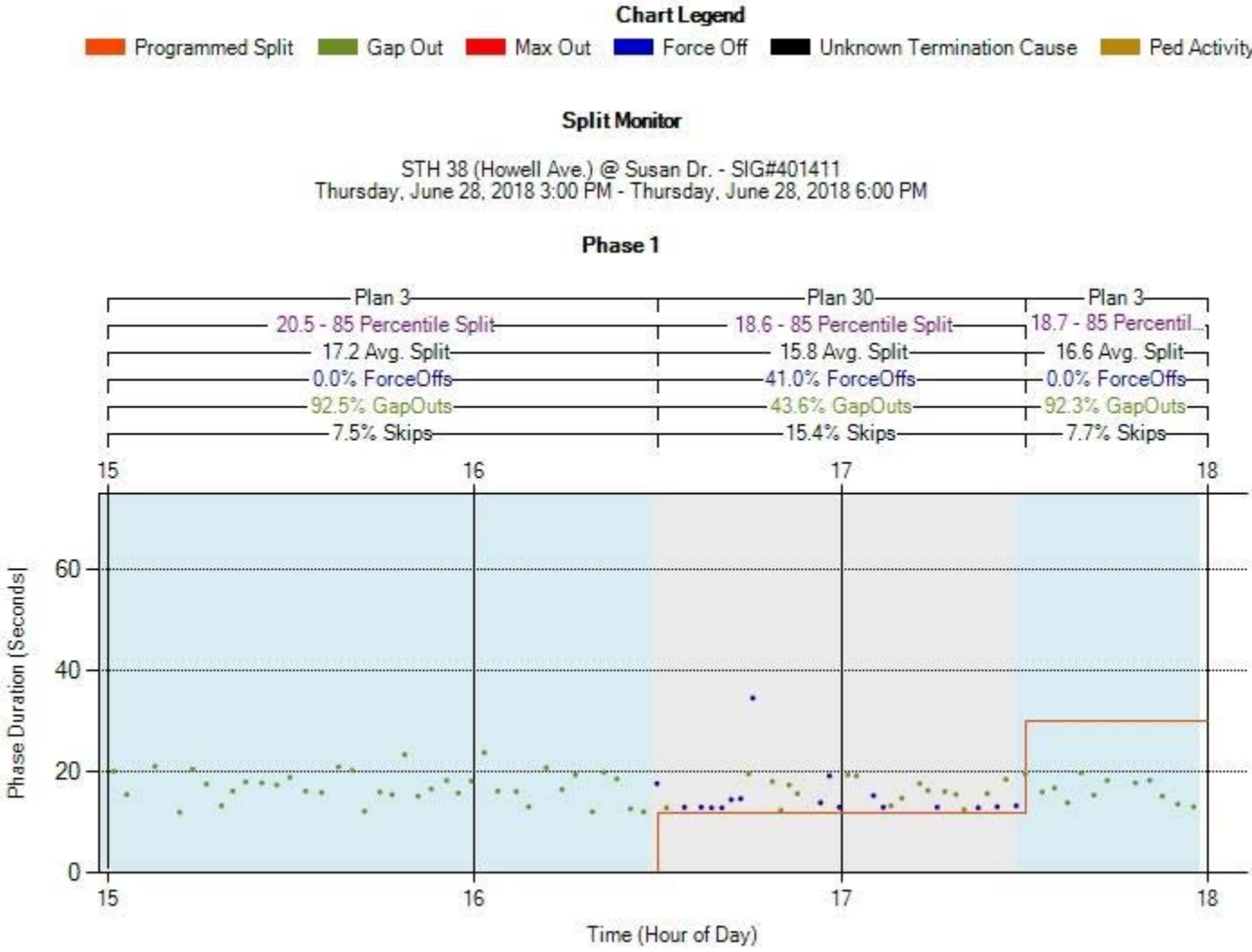
WIS 38 Corridor – STH 38 & Susan Dr.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM



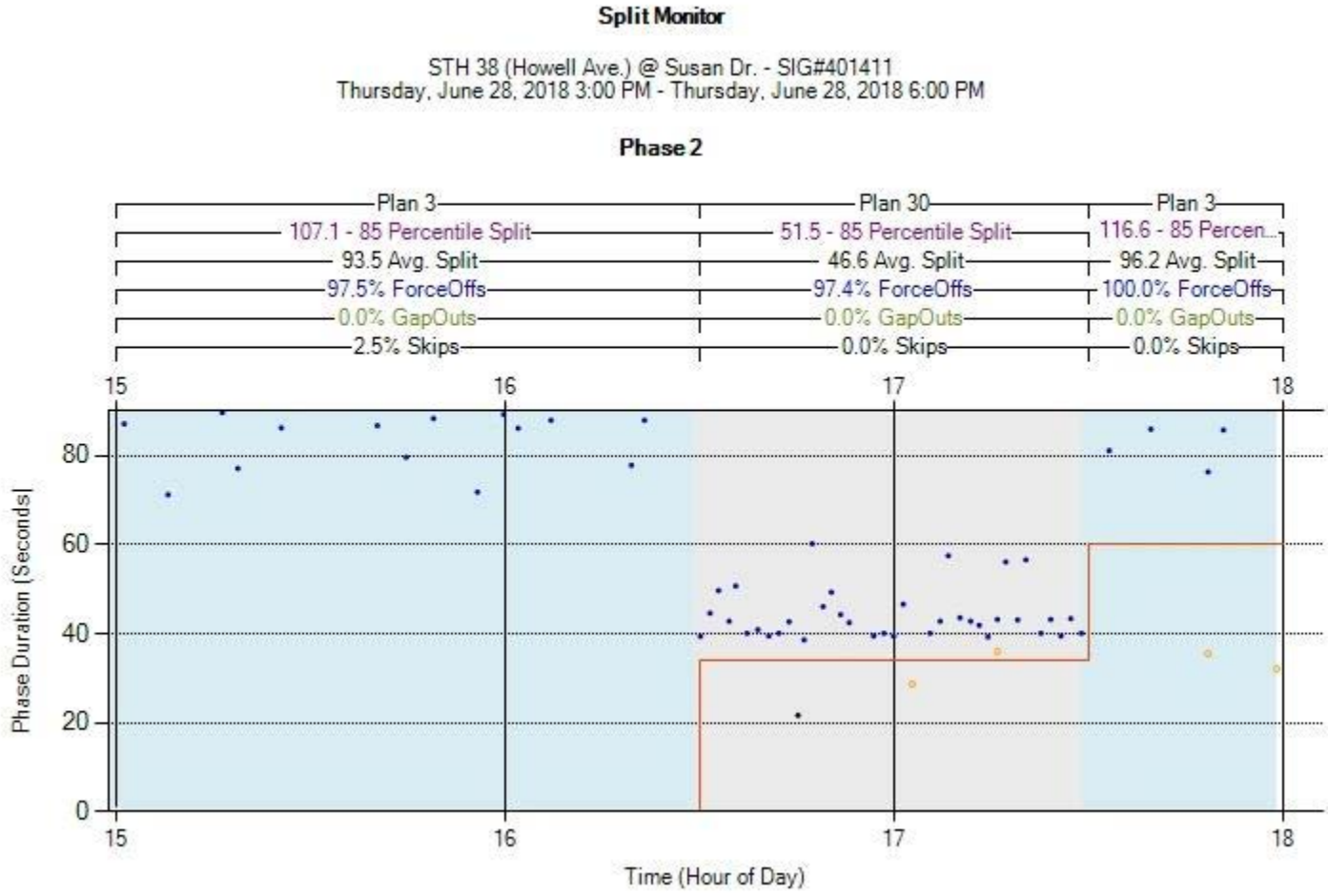
WIS 38 Corridor – STH 38 & Susan Dr.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM



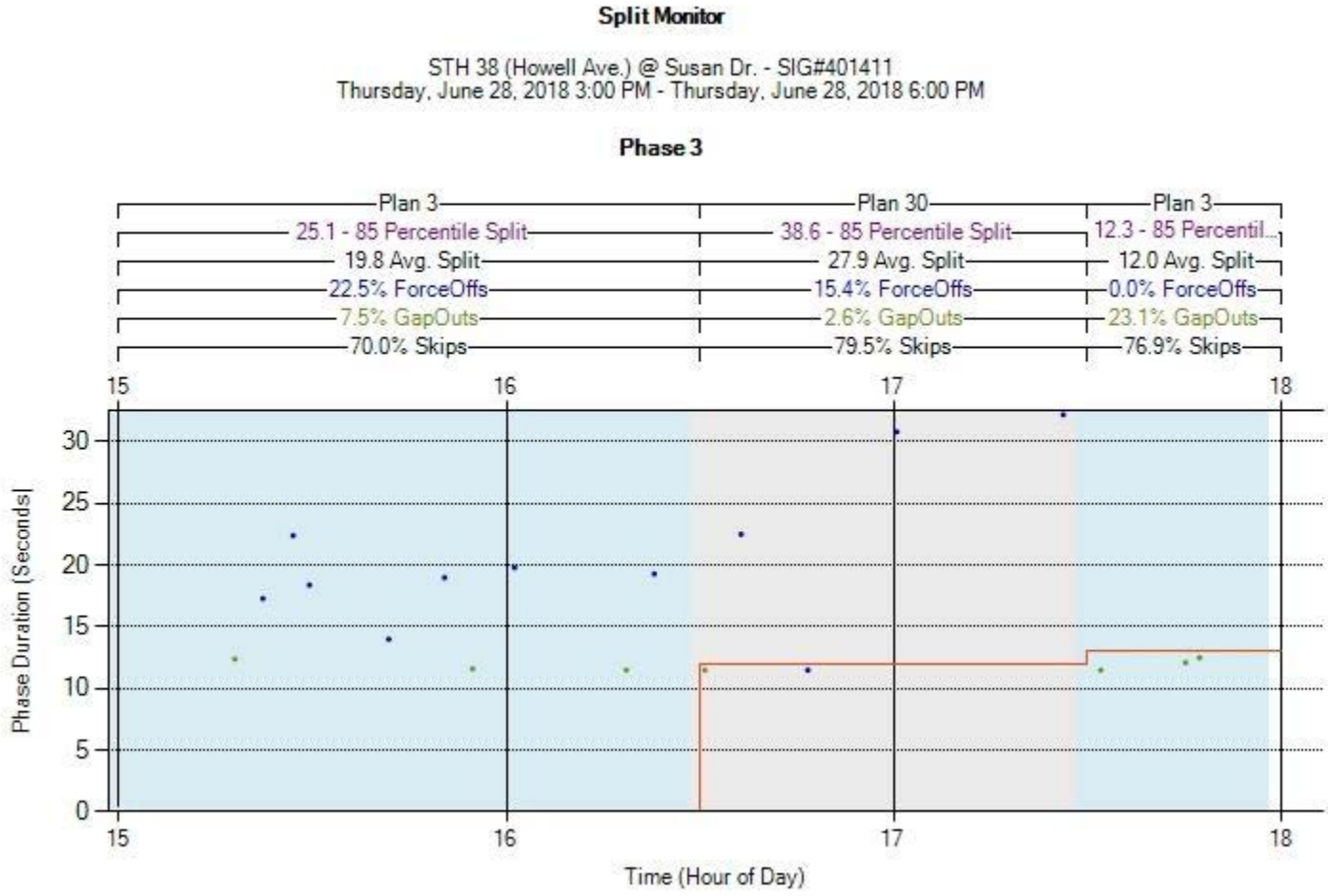
WIS 38 Corridor – STH 38 & Susan Dr.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM



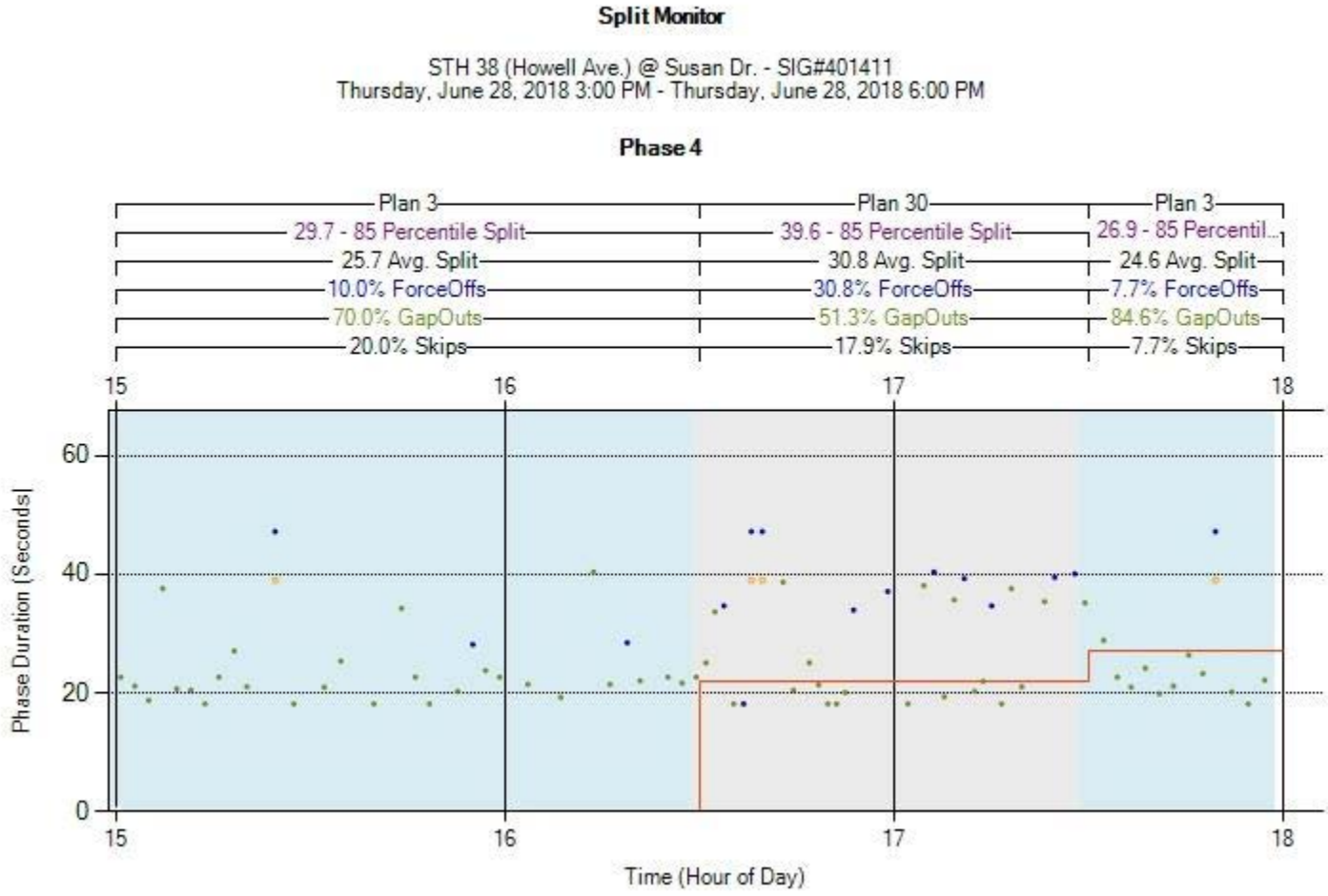
WIS 38 Corridor – STH 38 & Susan Dr.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM



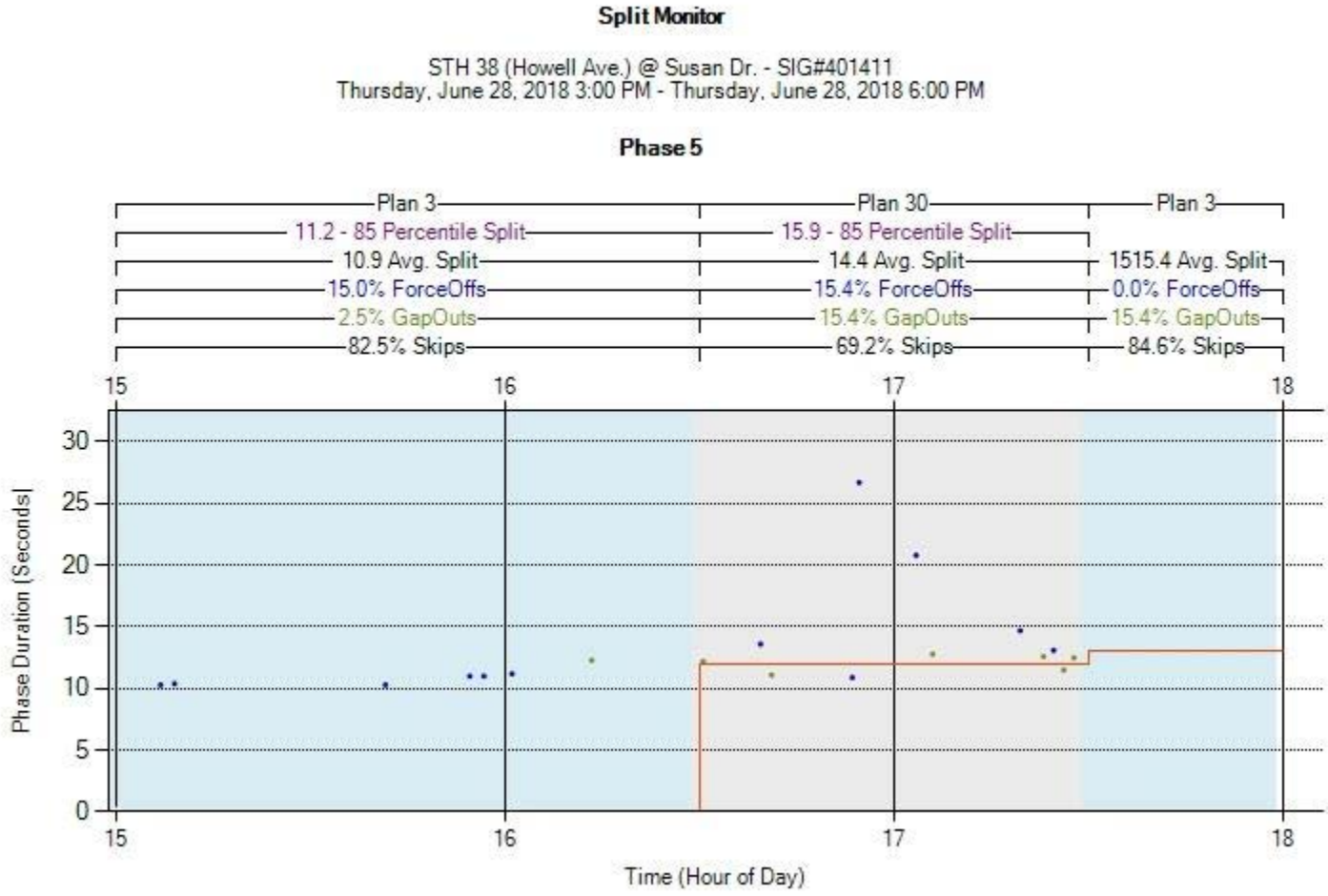
WIS 38 Corridor – STH 38 & Susan Dr.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM



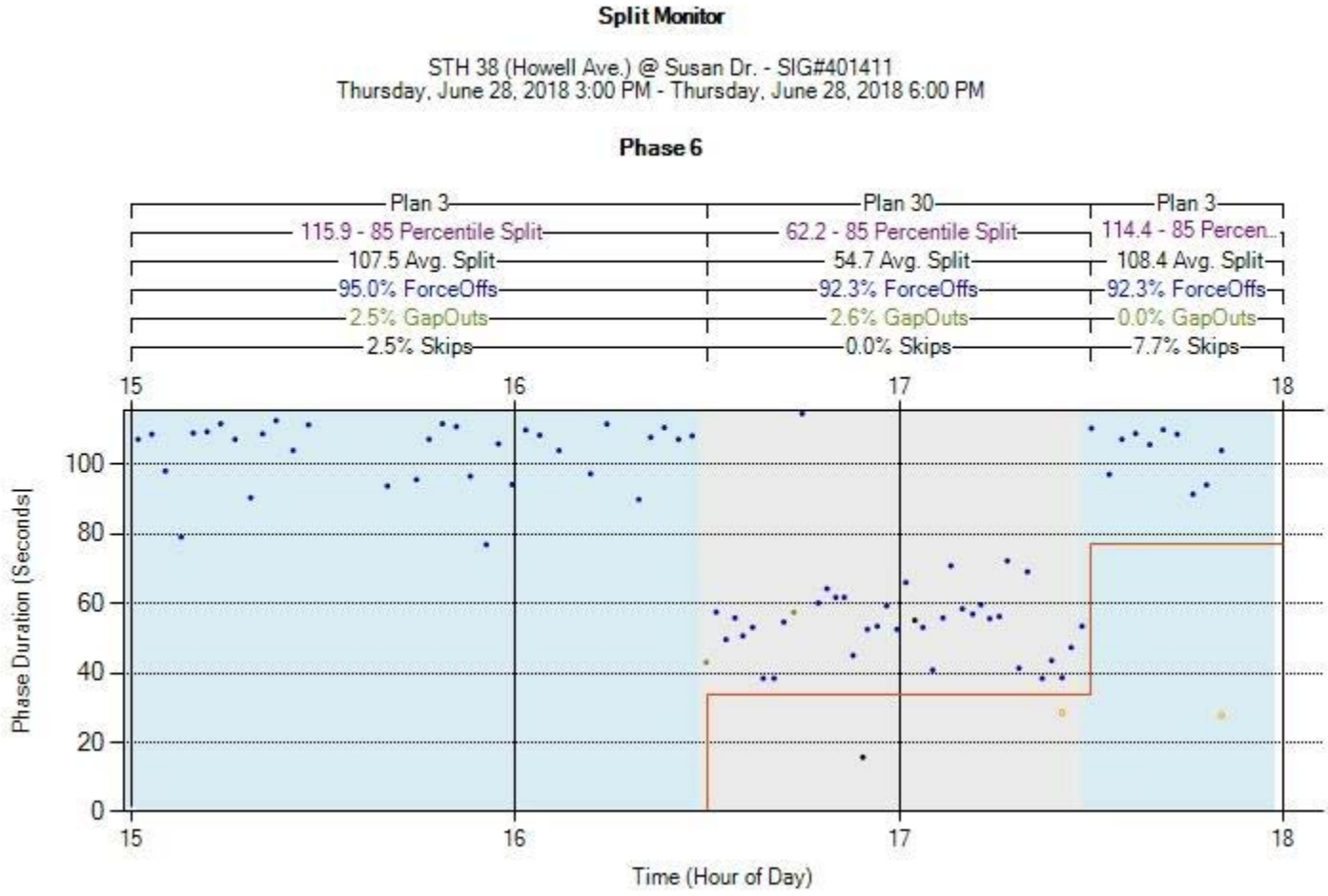
WIS 38 Corridor – STH 38 & Susan Dr.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM



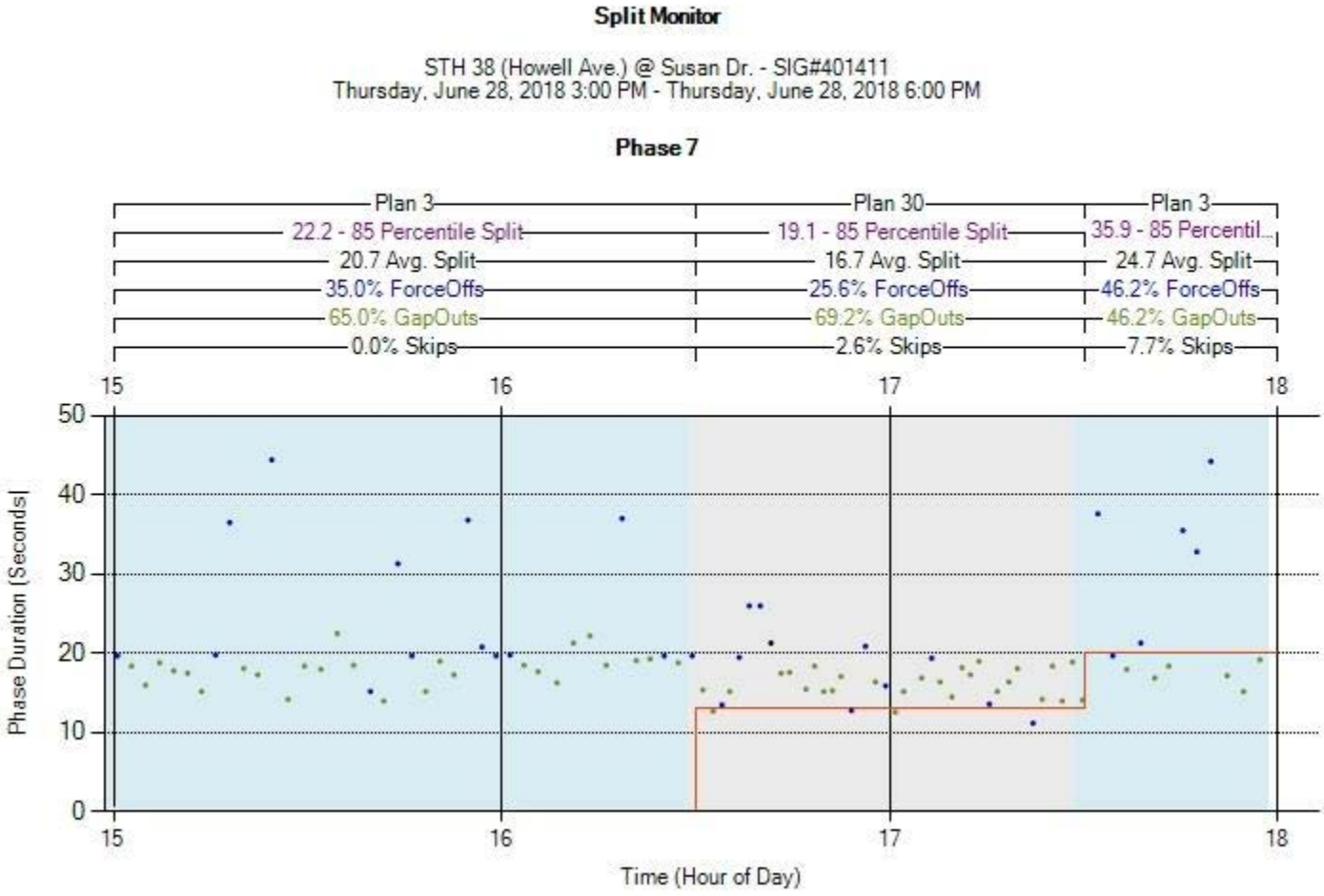
WIS 38 Corridor – STH 38 & Susan Dr.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM



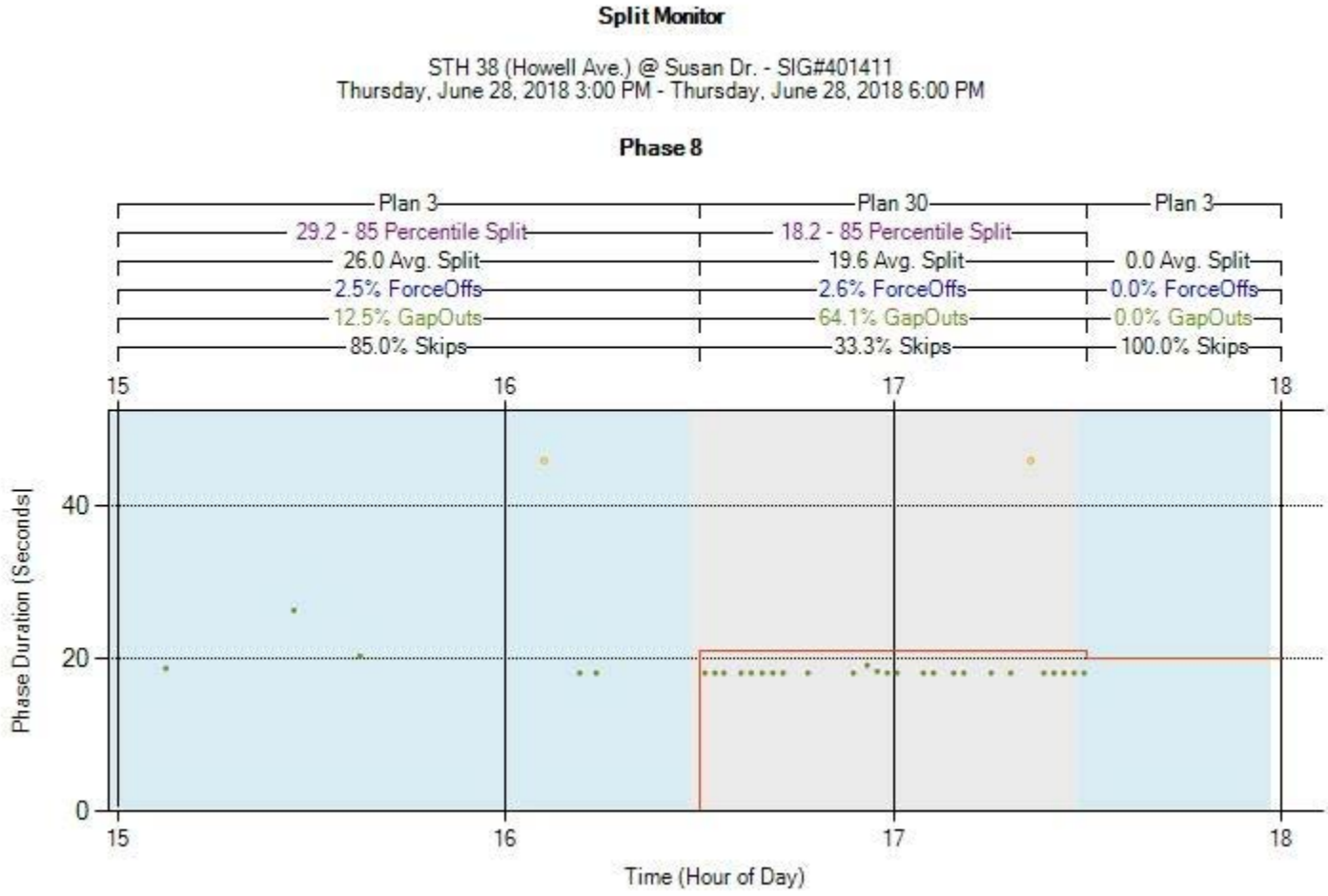
WIS 38 Corridor – STH 38 & Susan Dr.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM



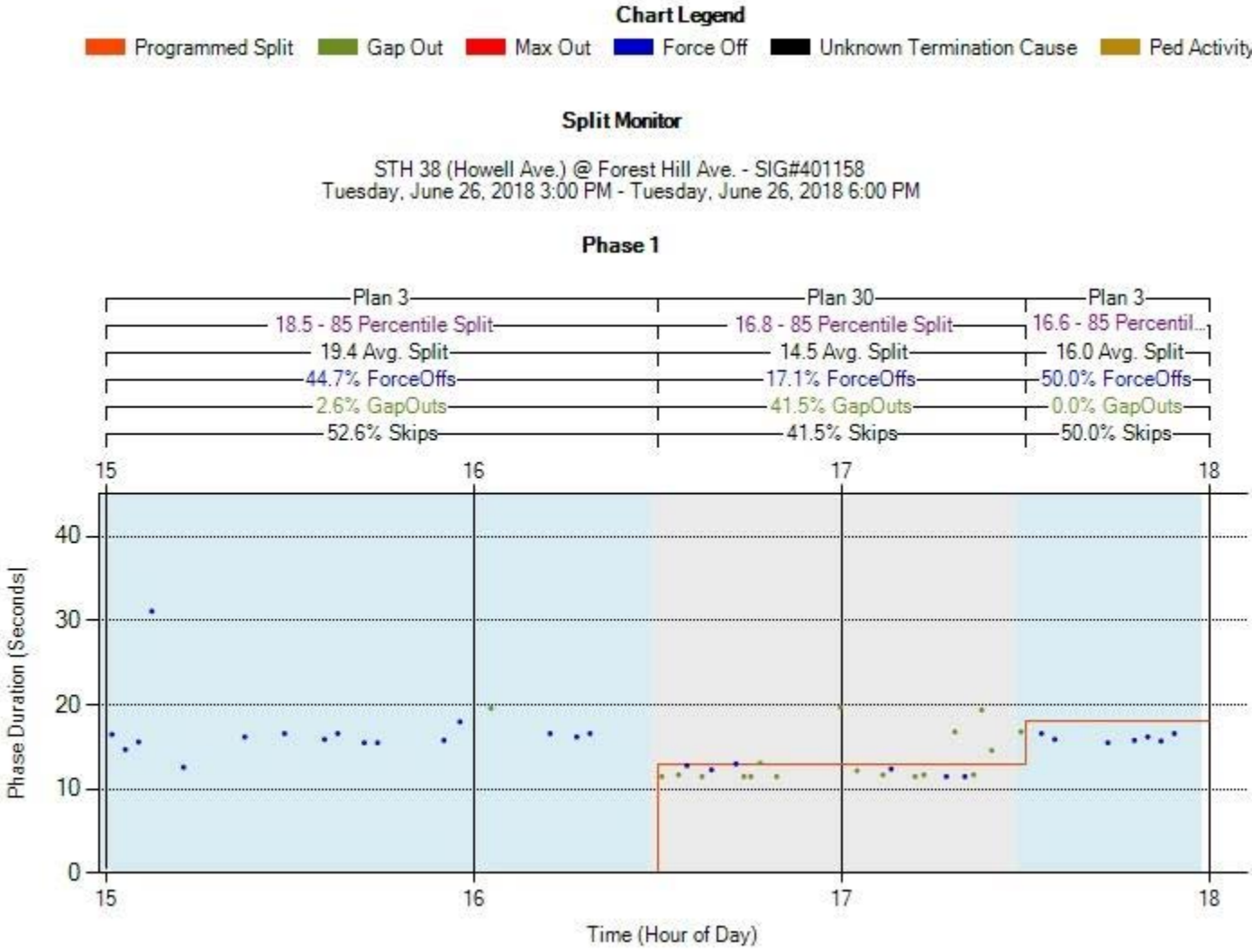
WIS 38 Corridor – STH 38 & Susan Dr.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM



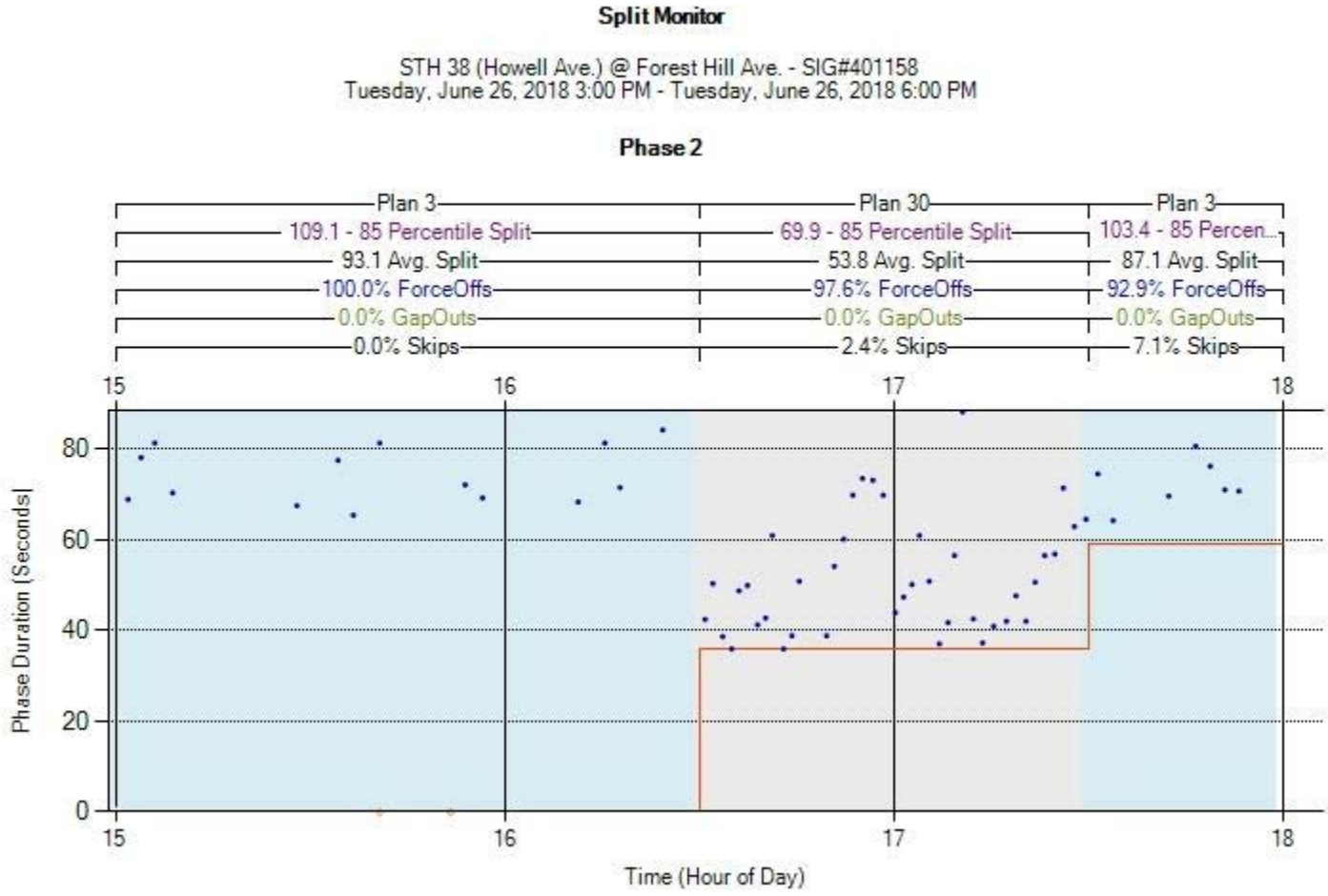
WIS 38 Corridor – STH 38 & Susan Dr.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM



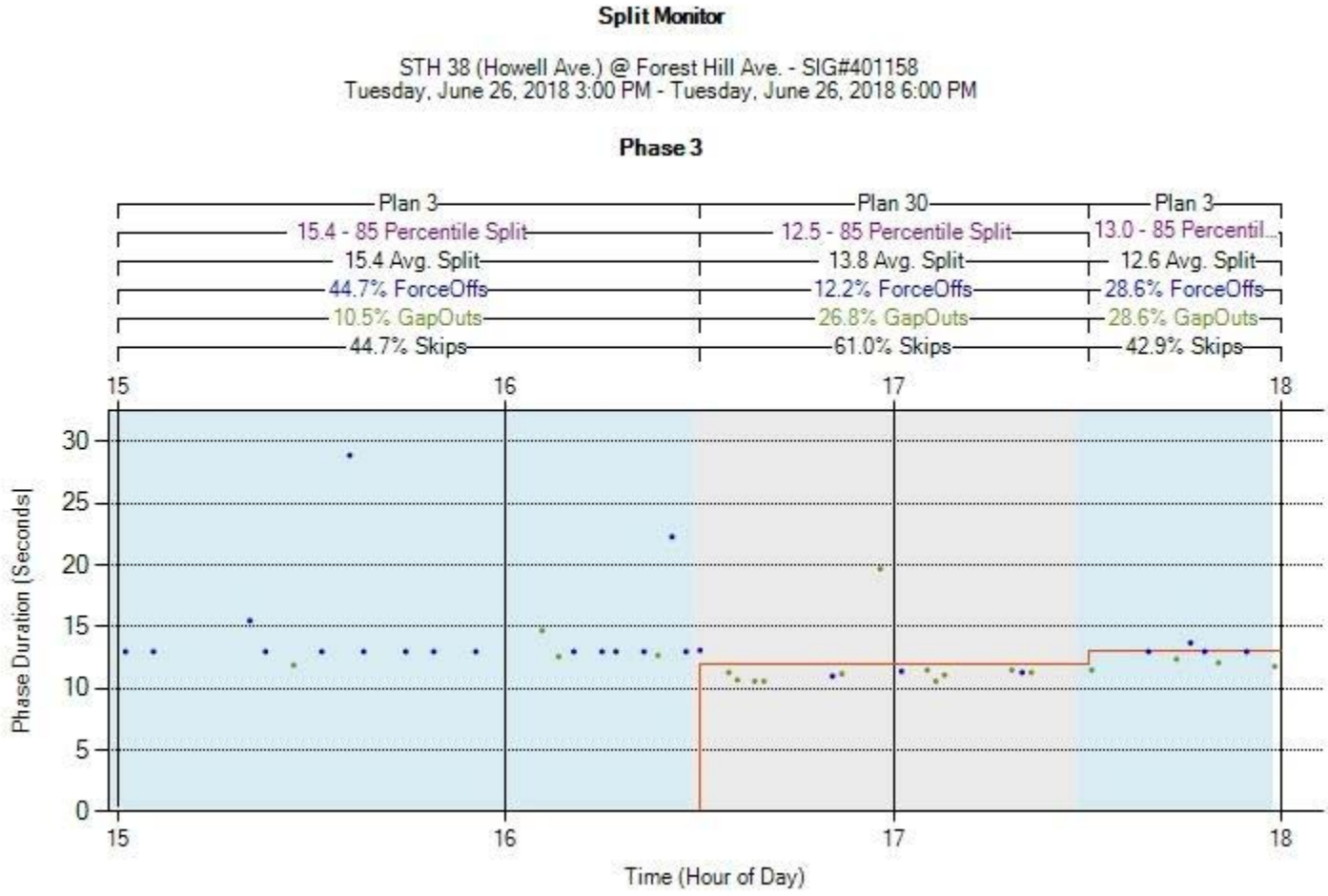
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM



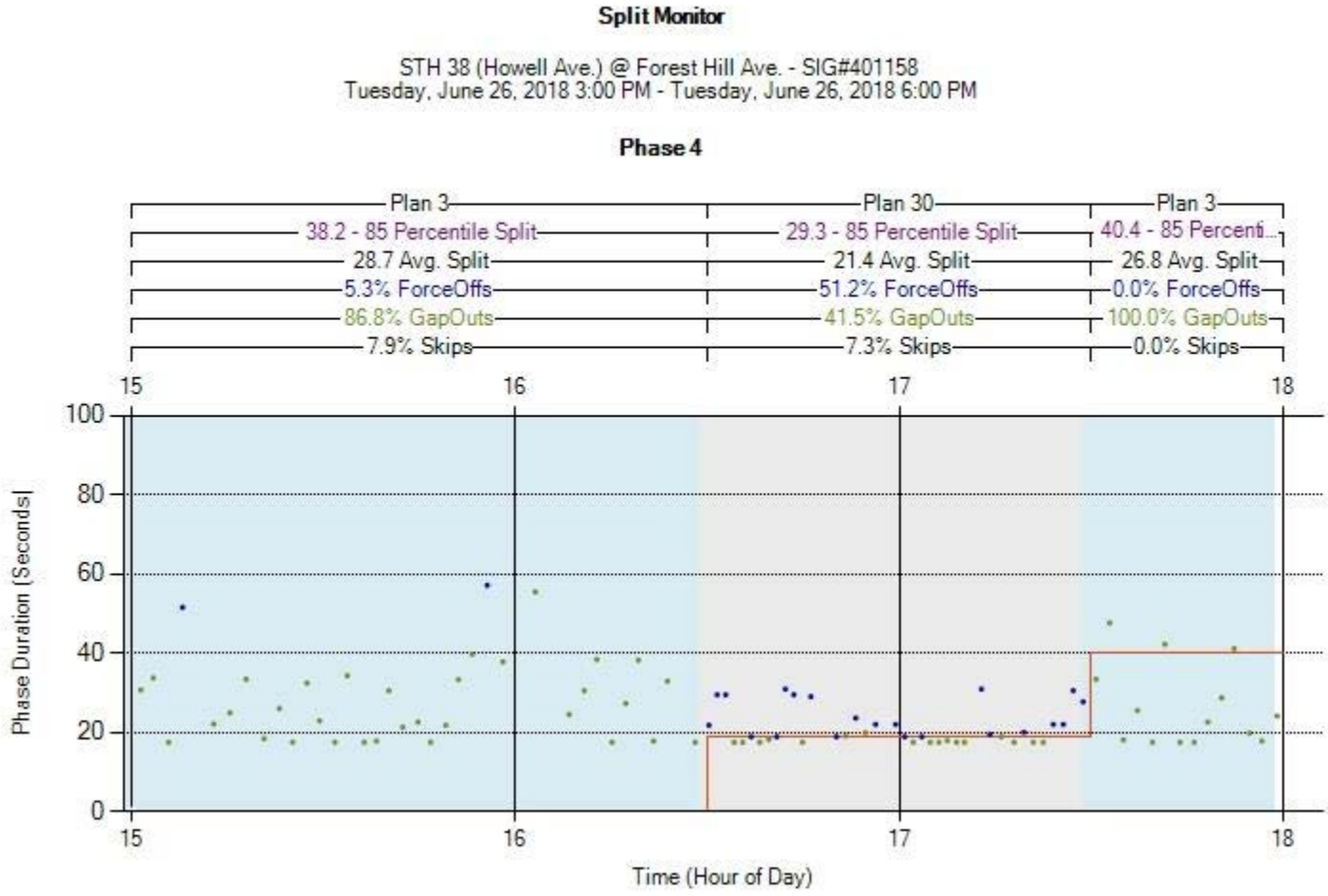
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Forest Hill Ave.
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Forest Hill Ave.
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Forest Hill Ave.
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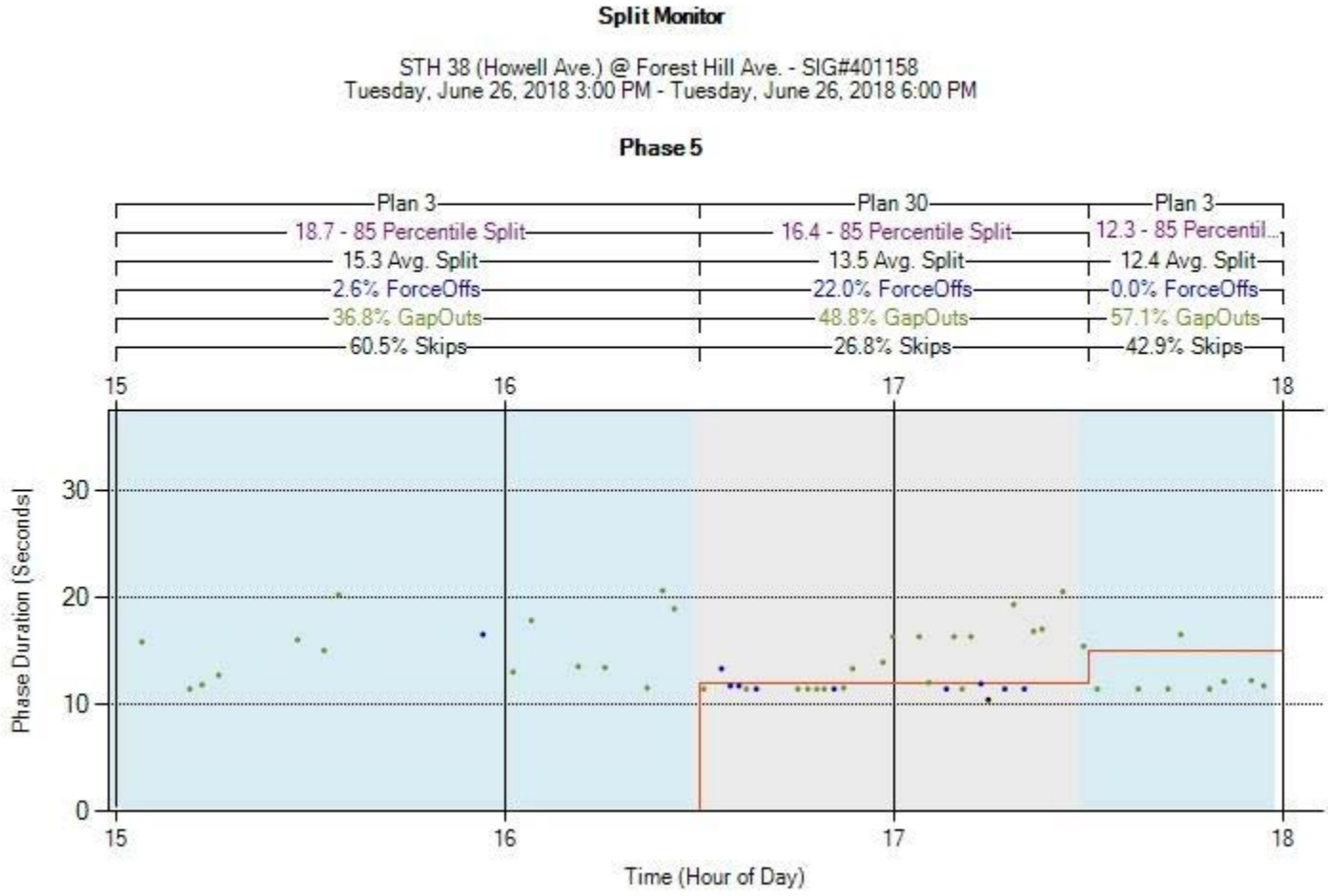
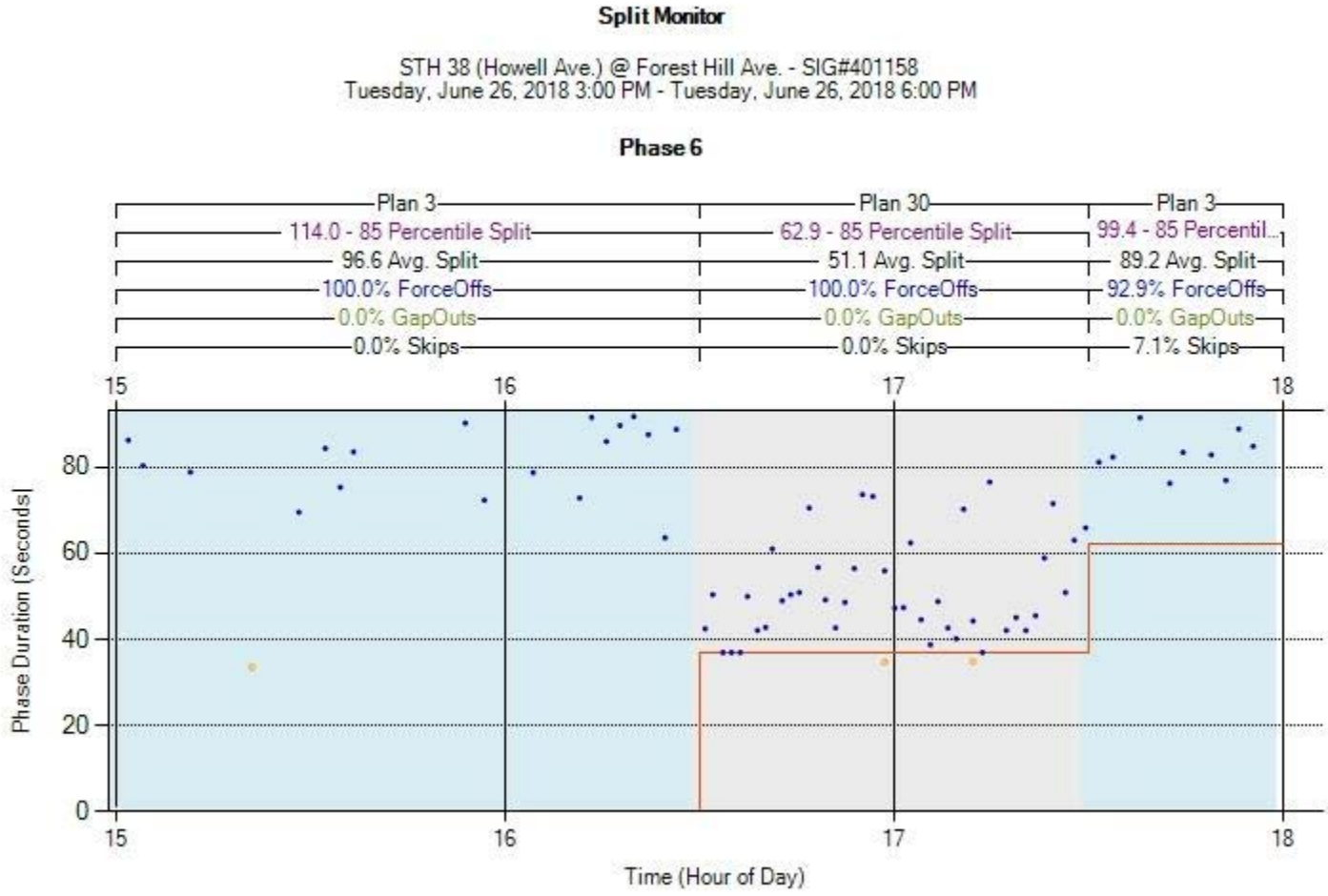
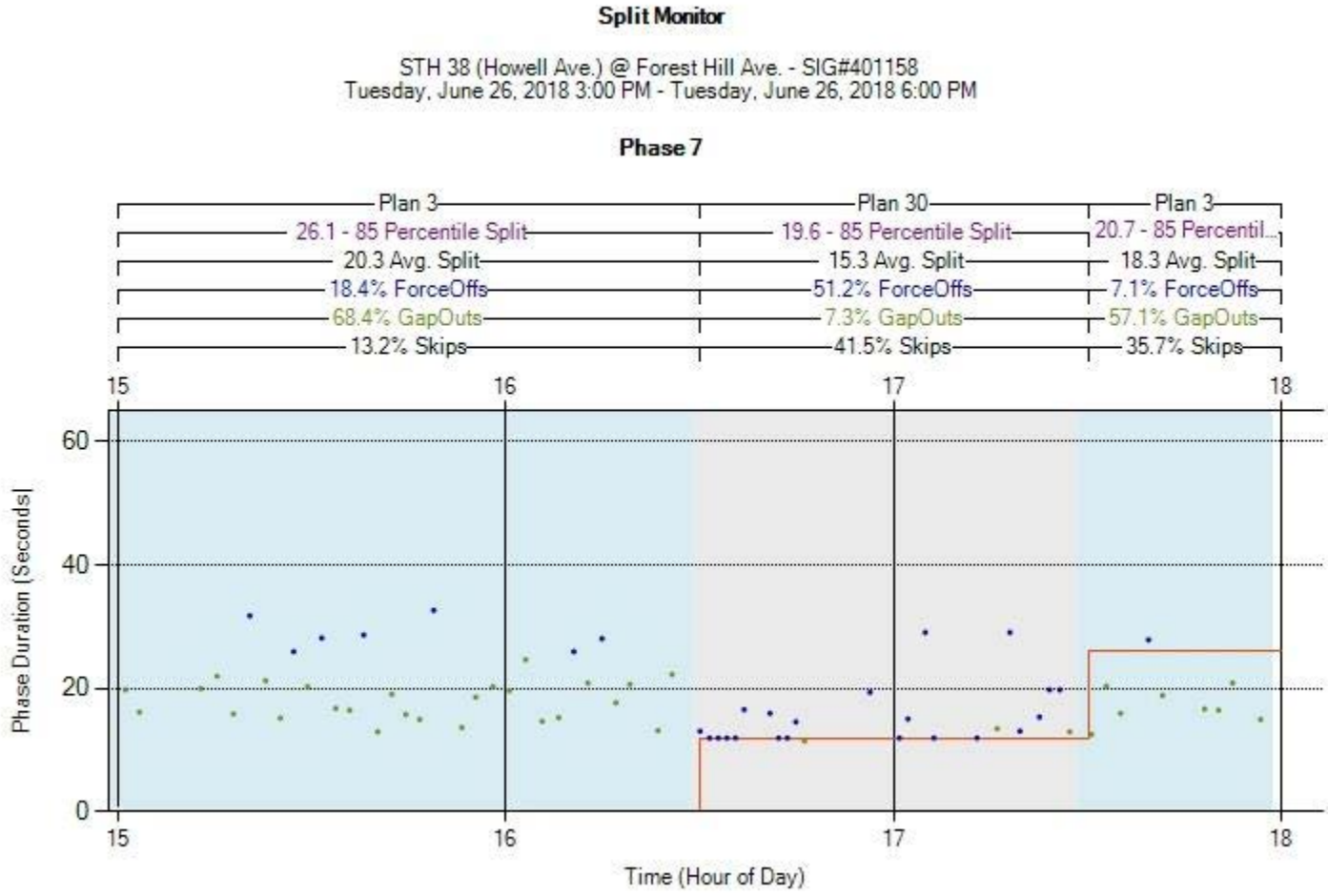


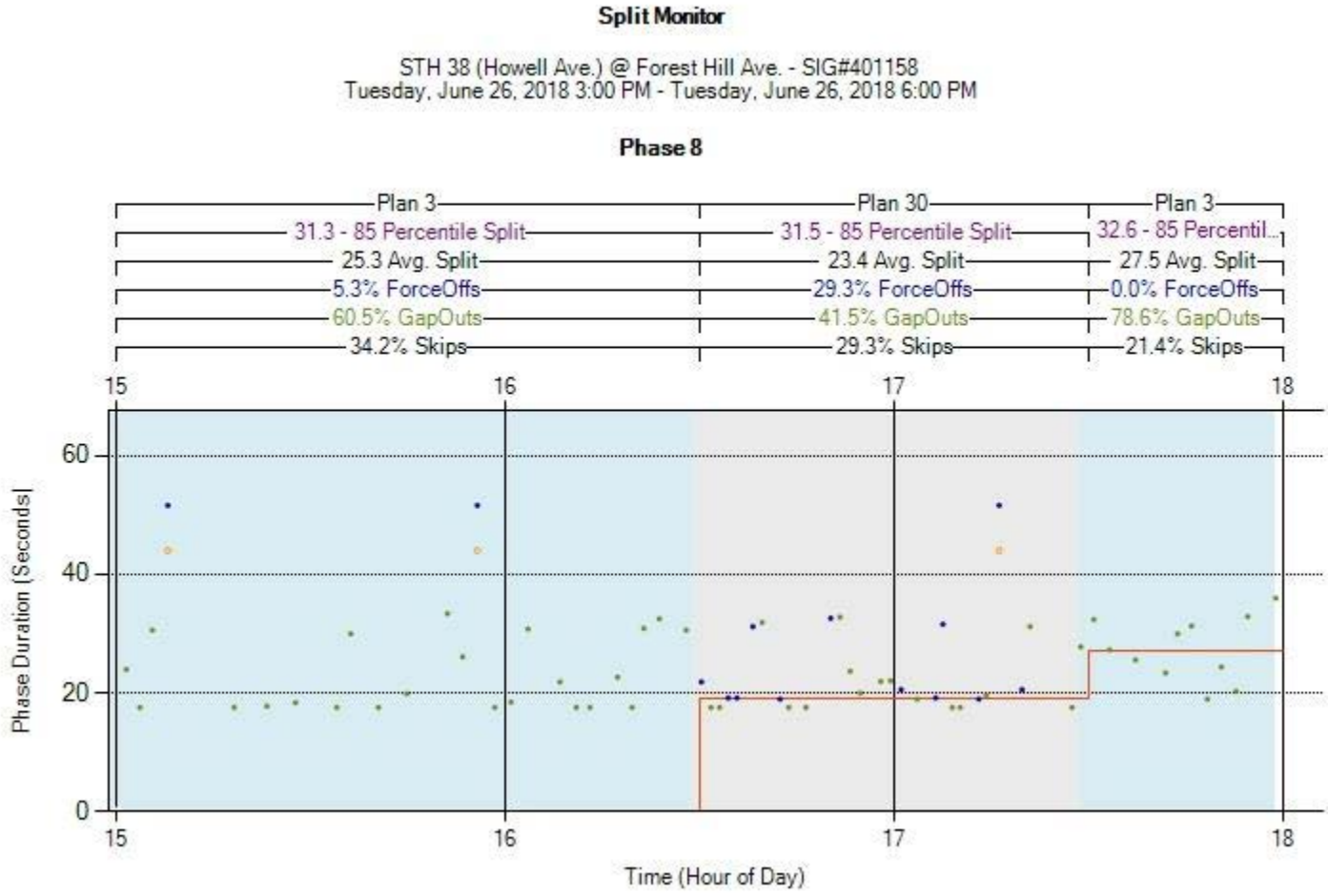
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM



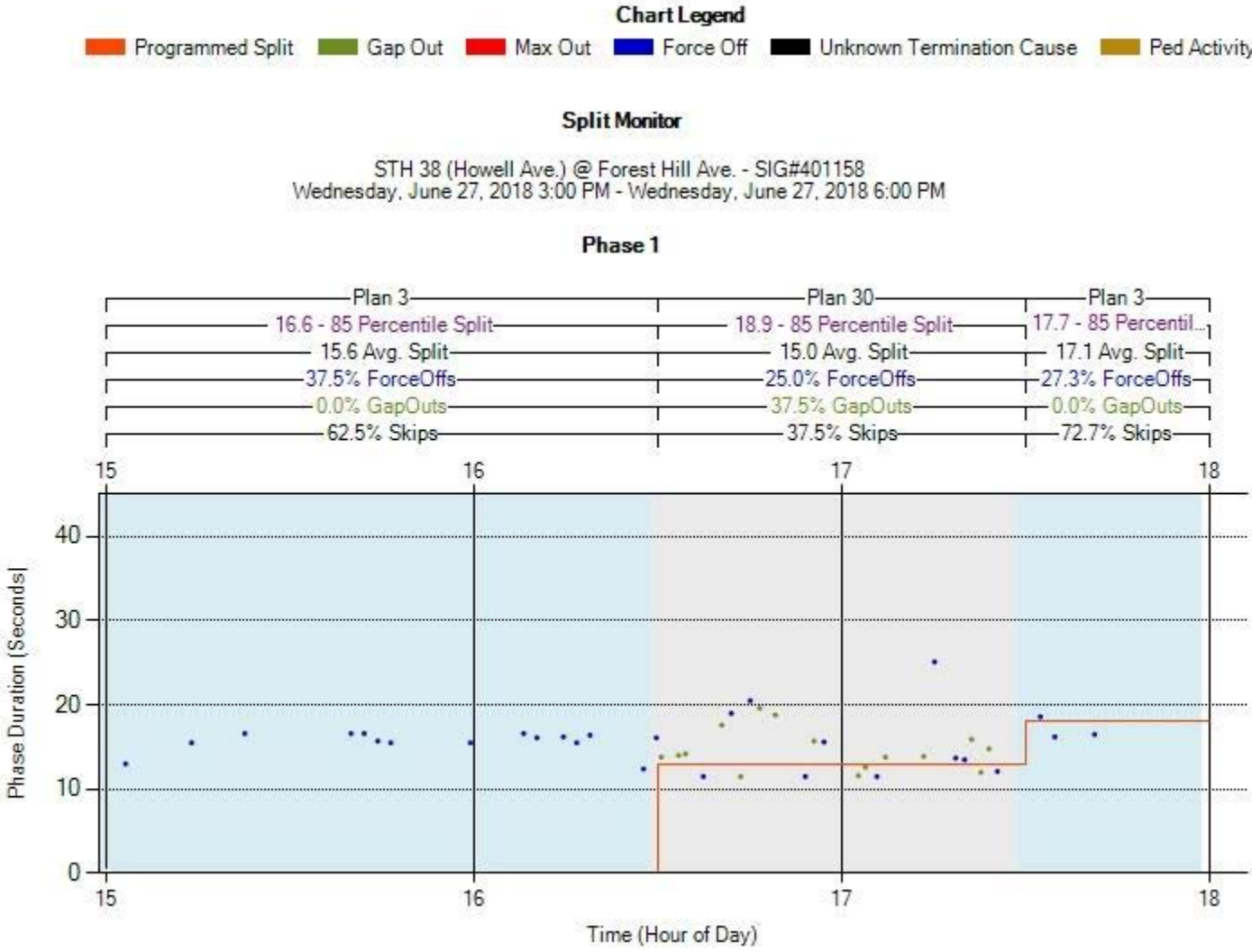
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM



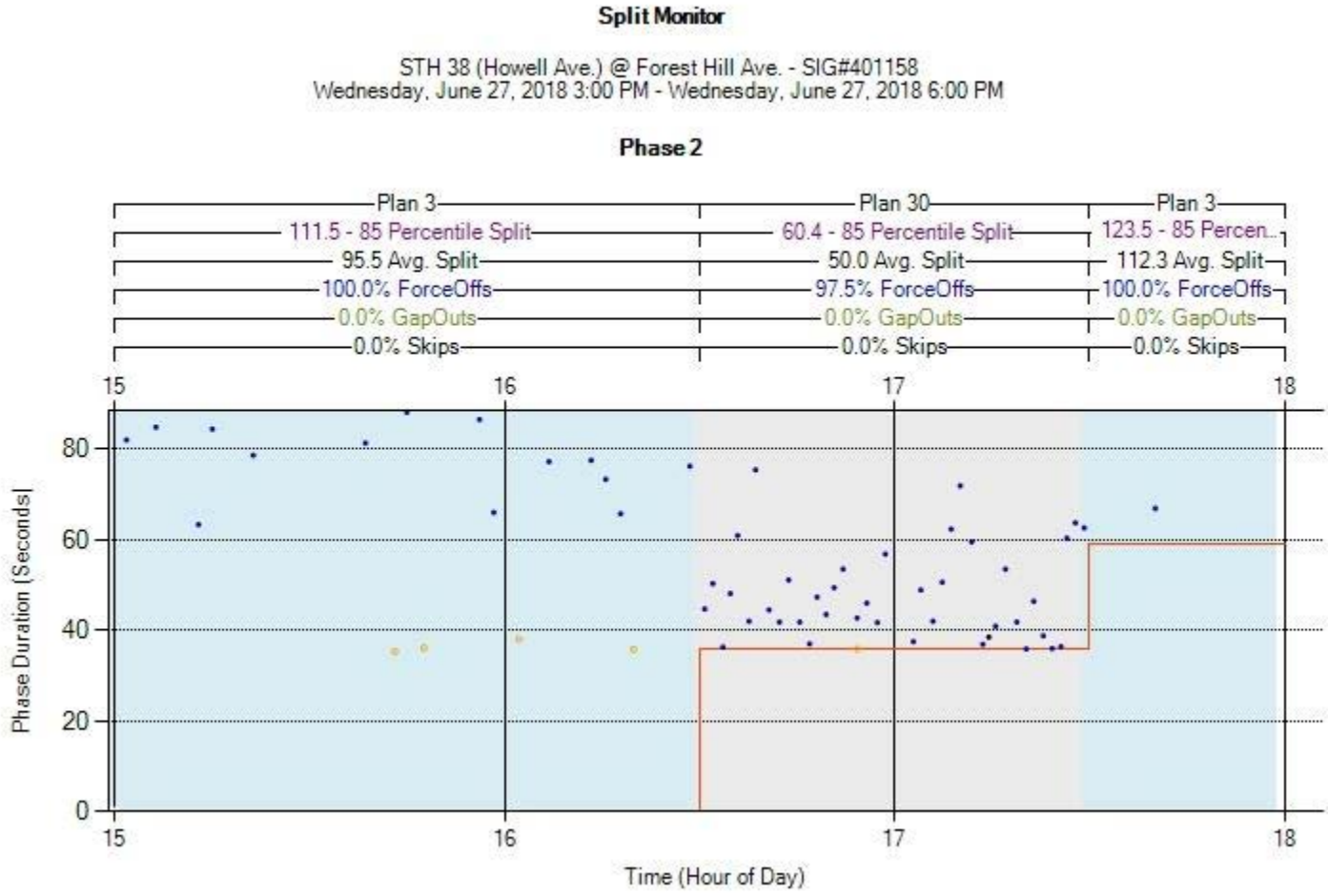
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM



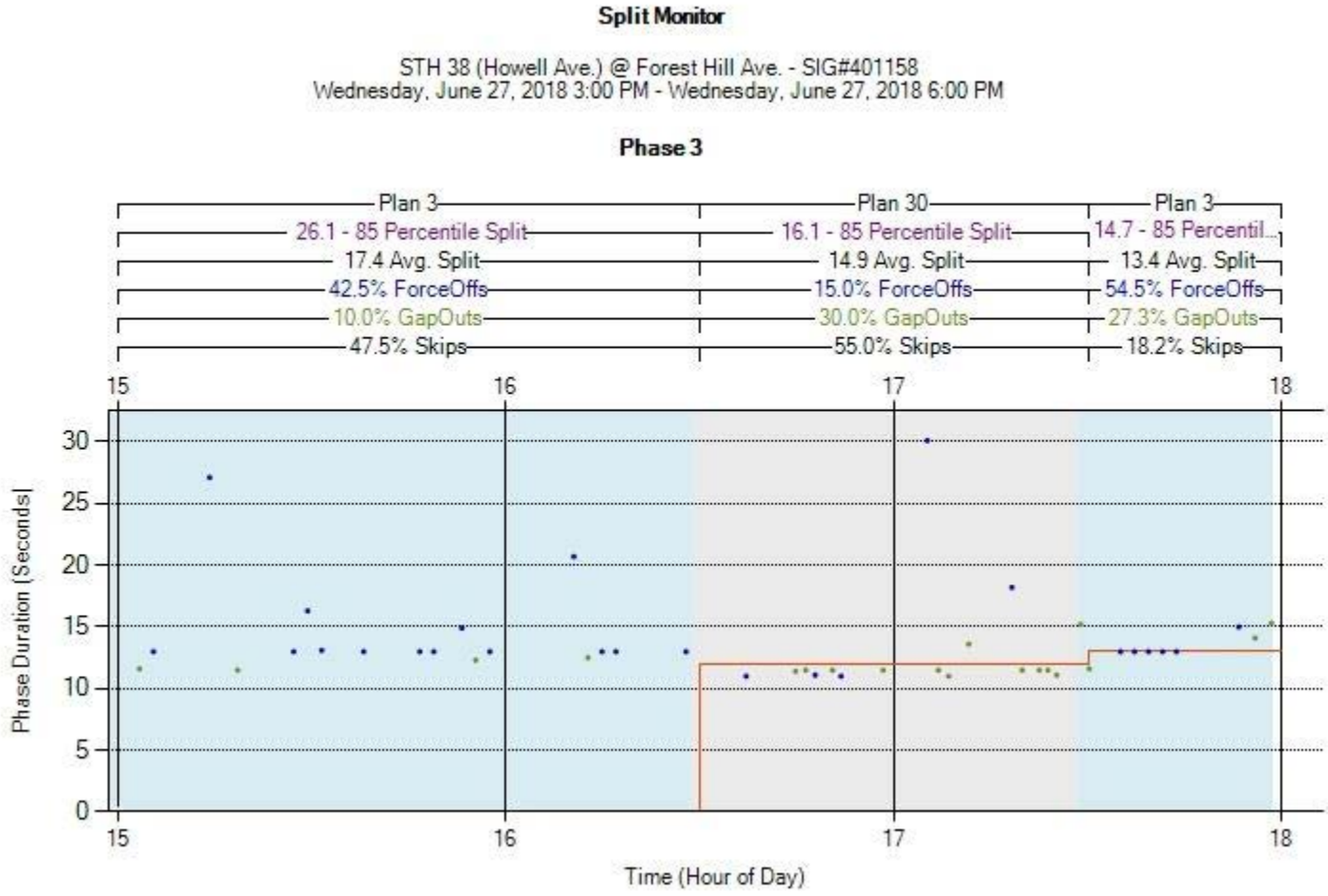
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM



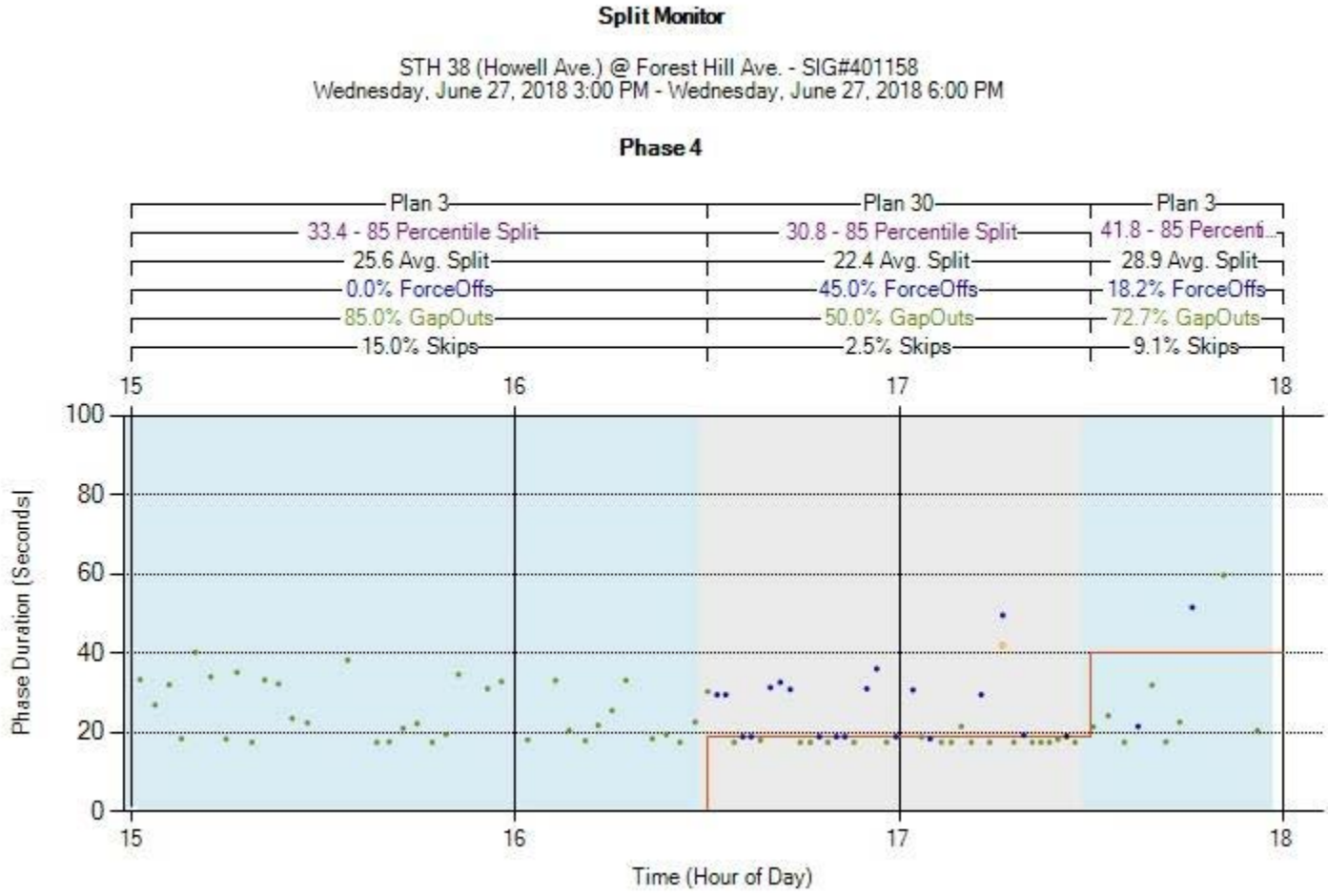
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM



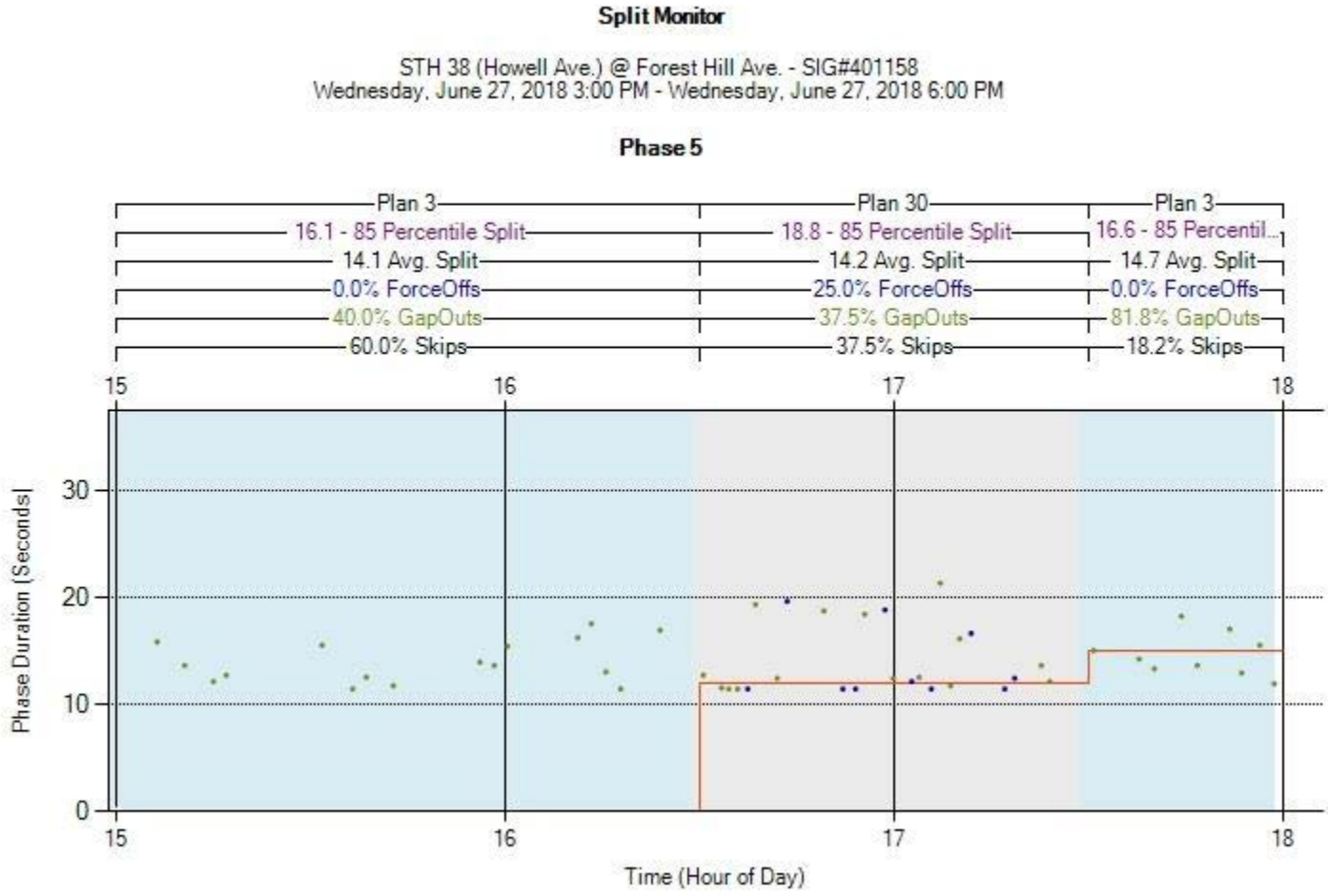
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM



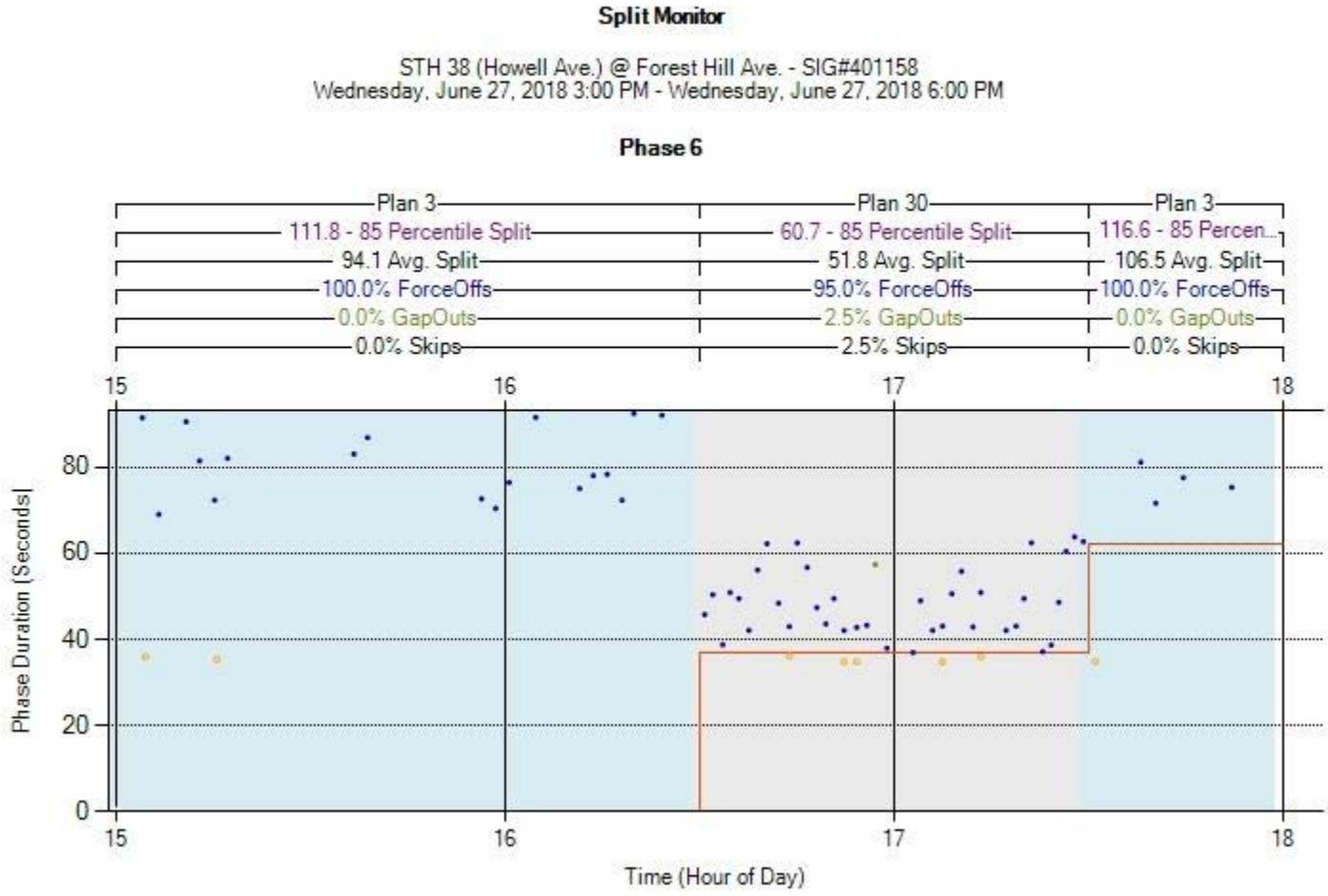
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM



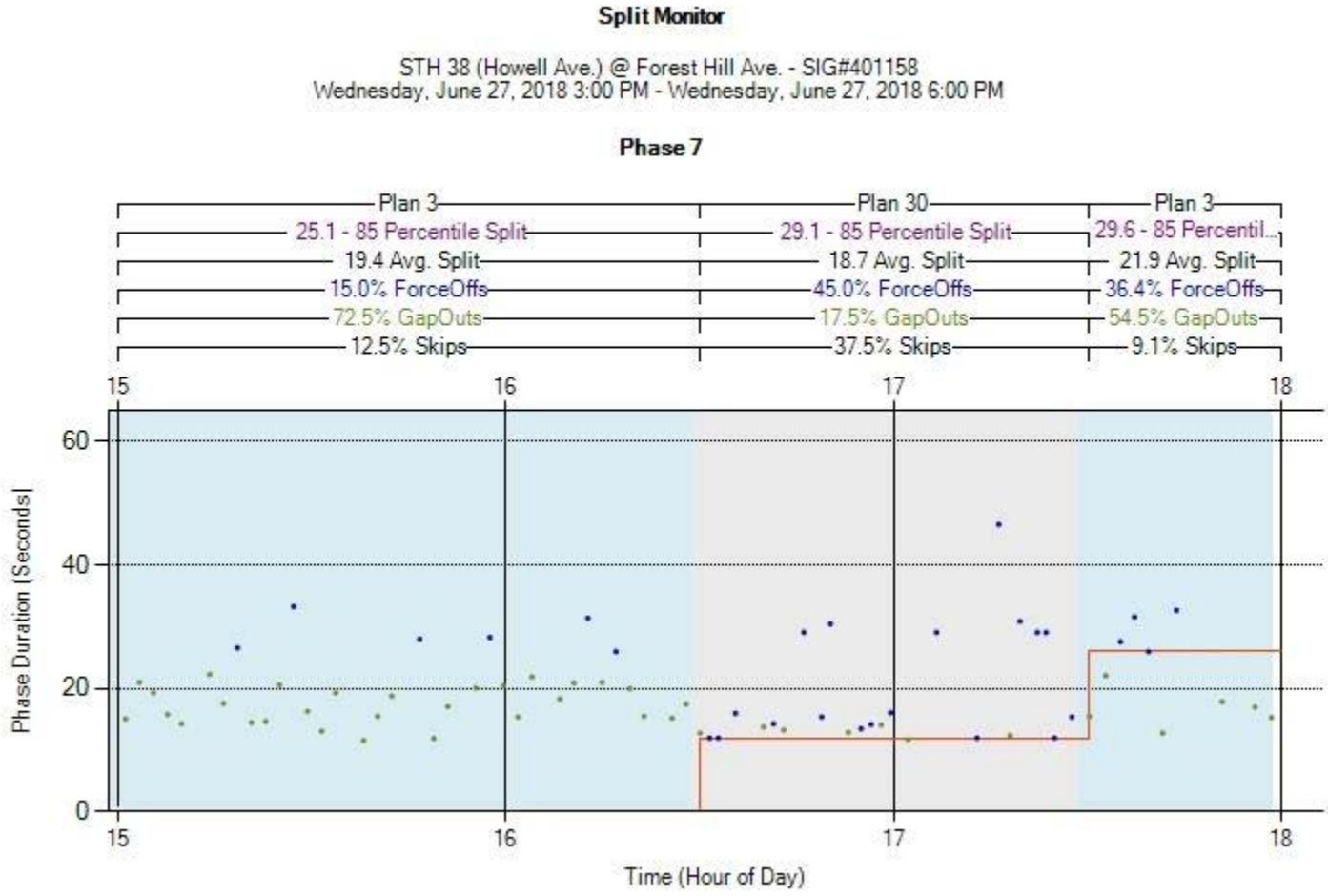
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM



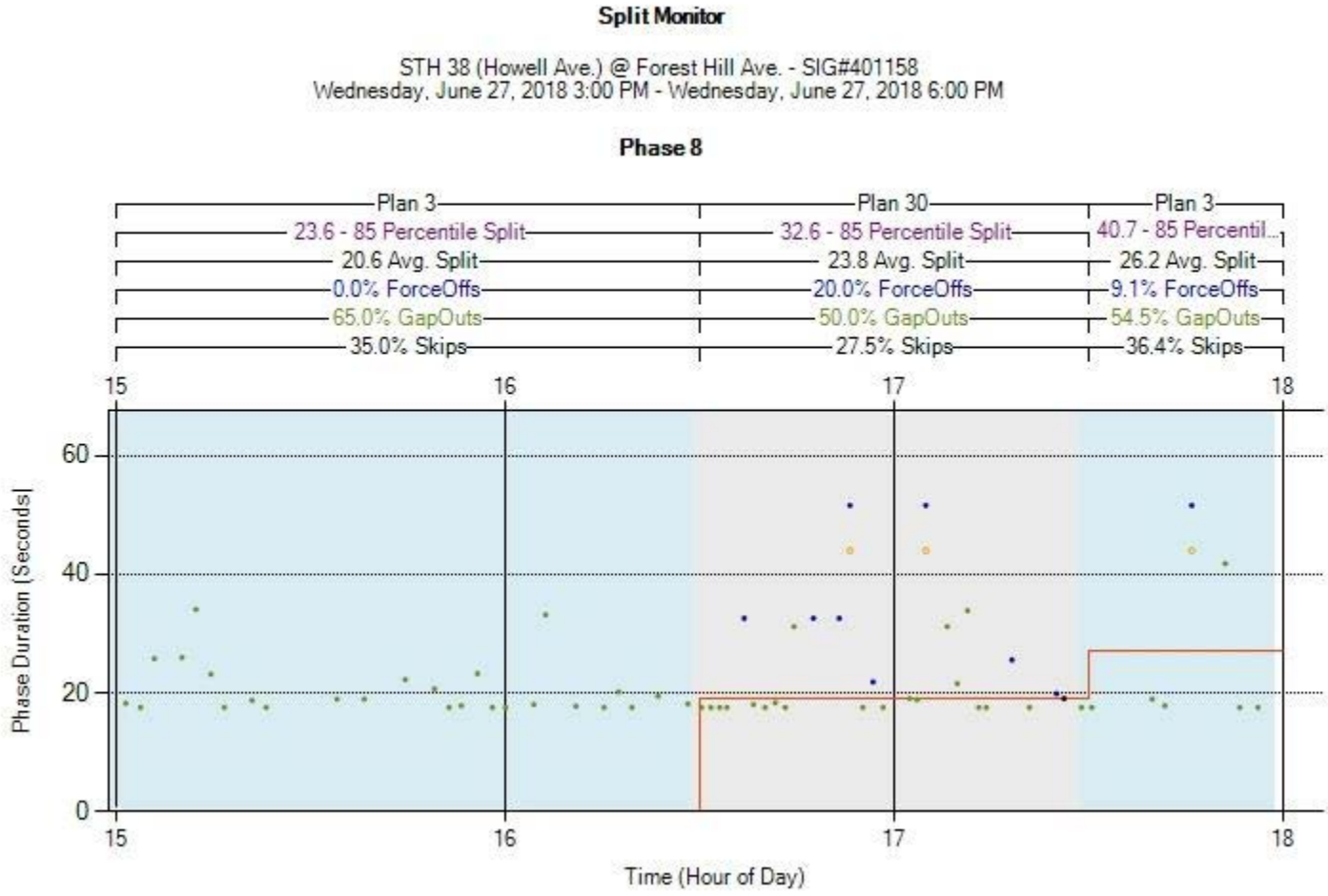
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM



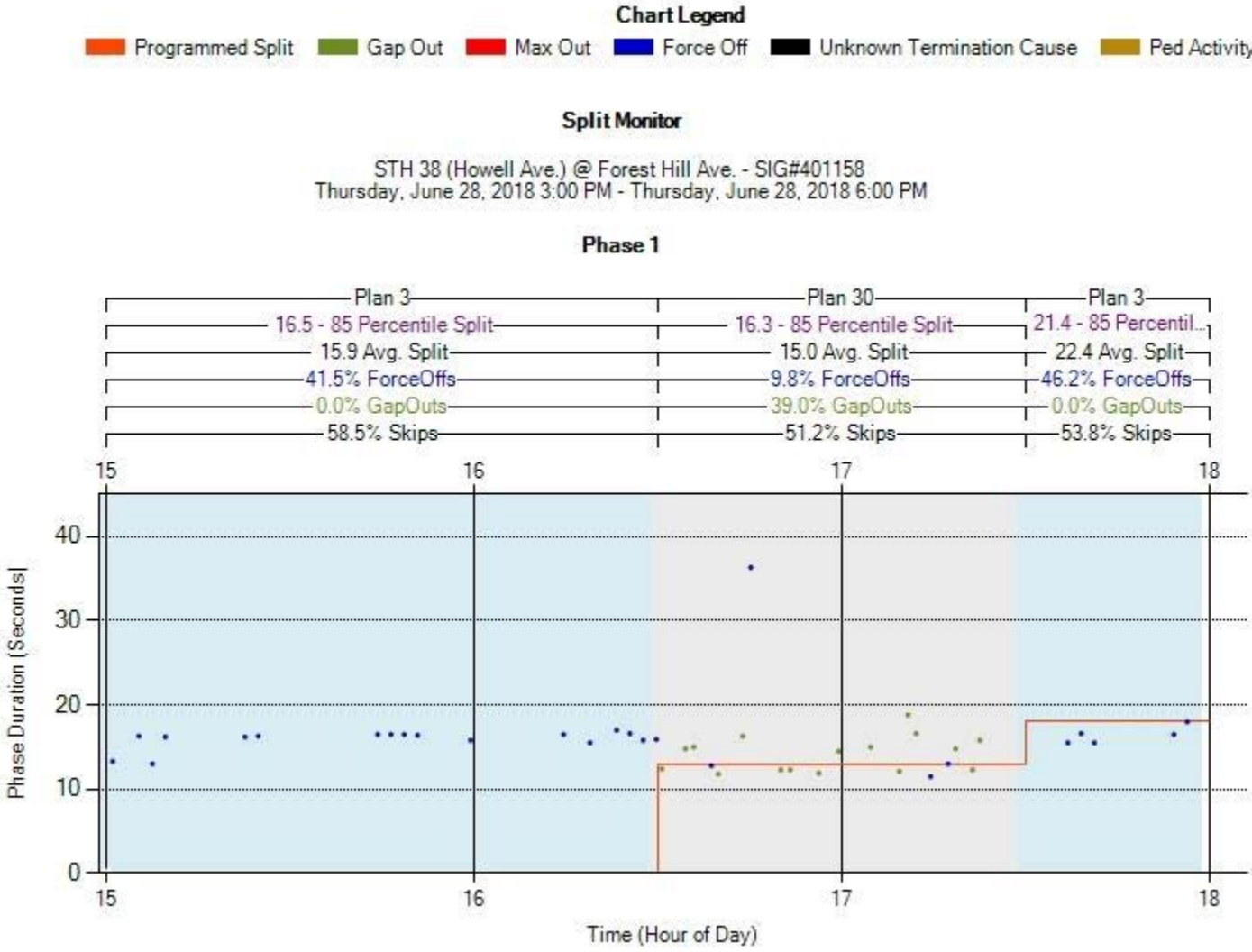
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM



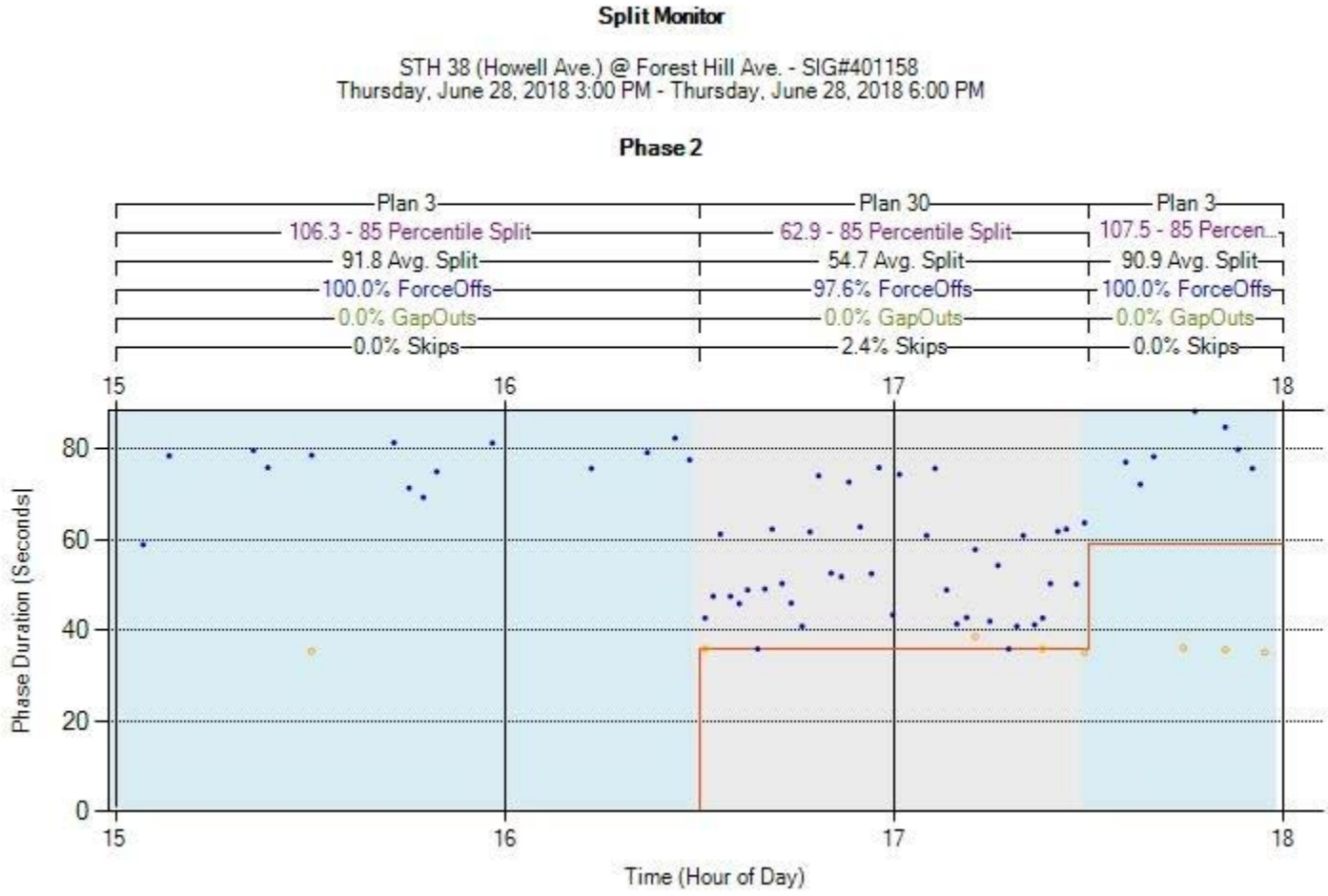
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM



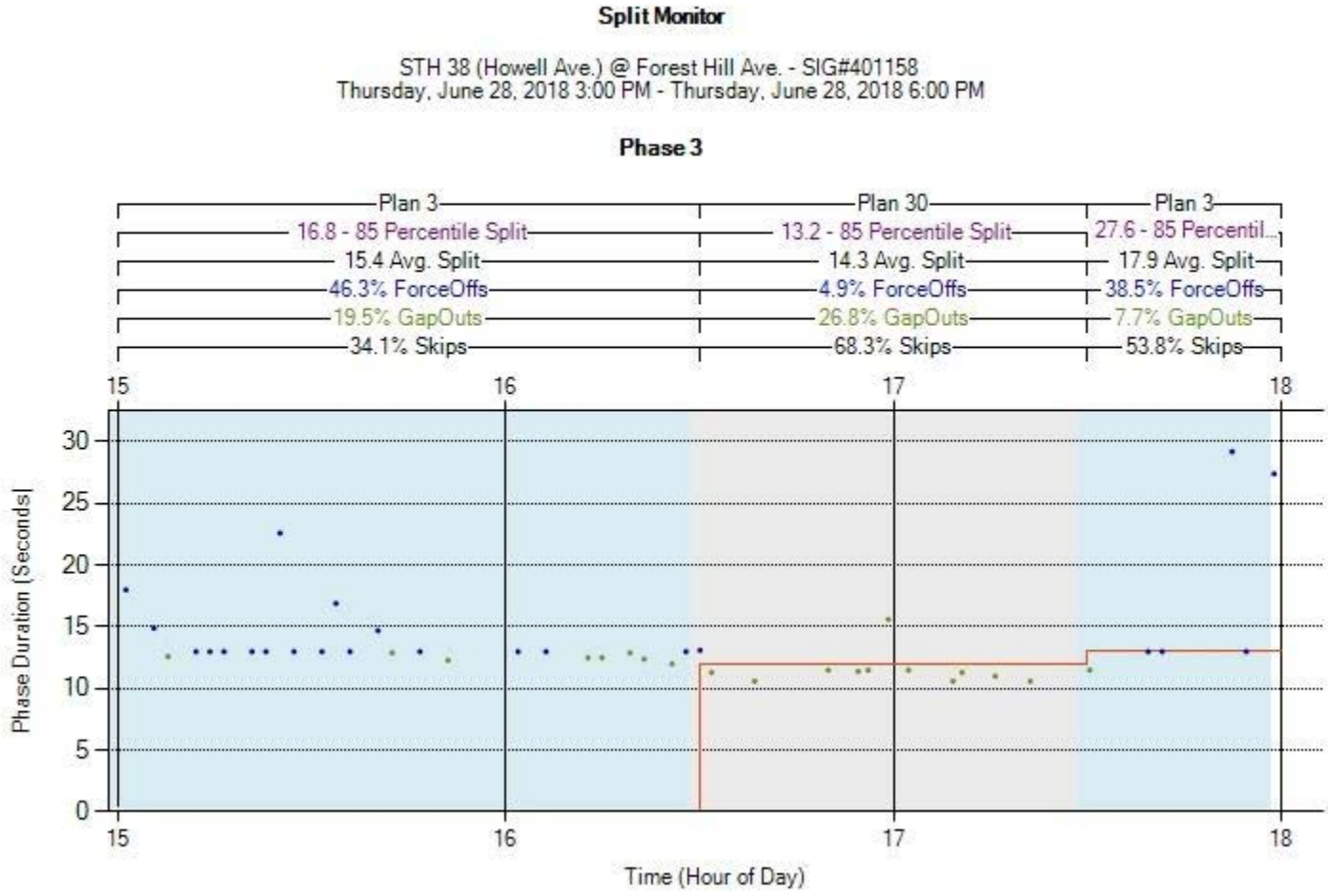
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM



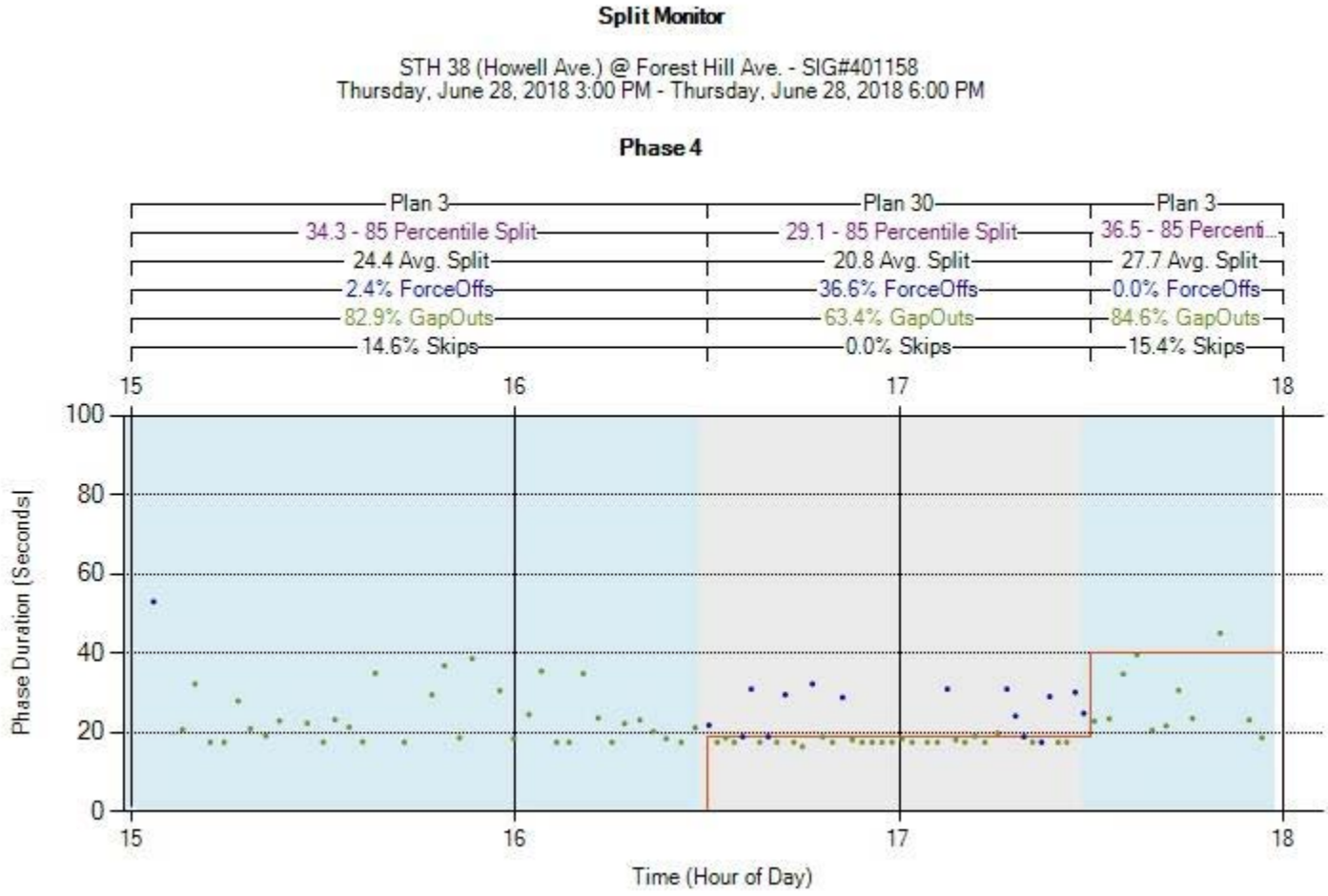
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM



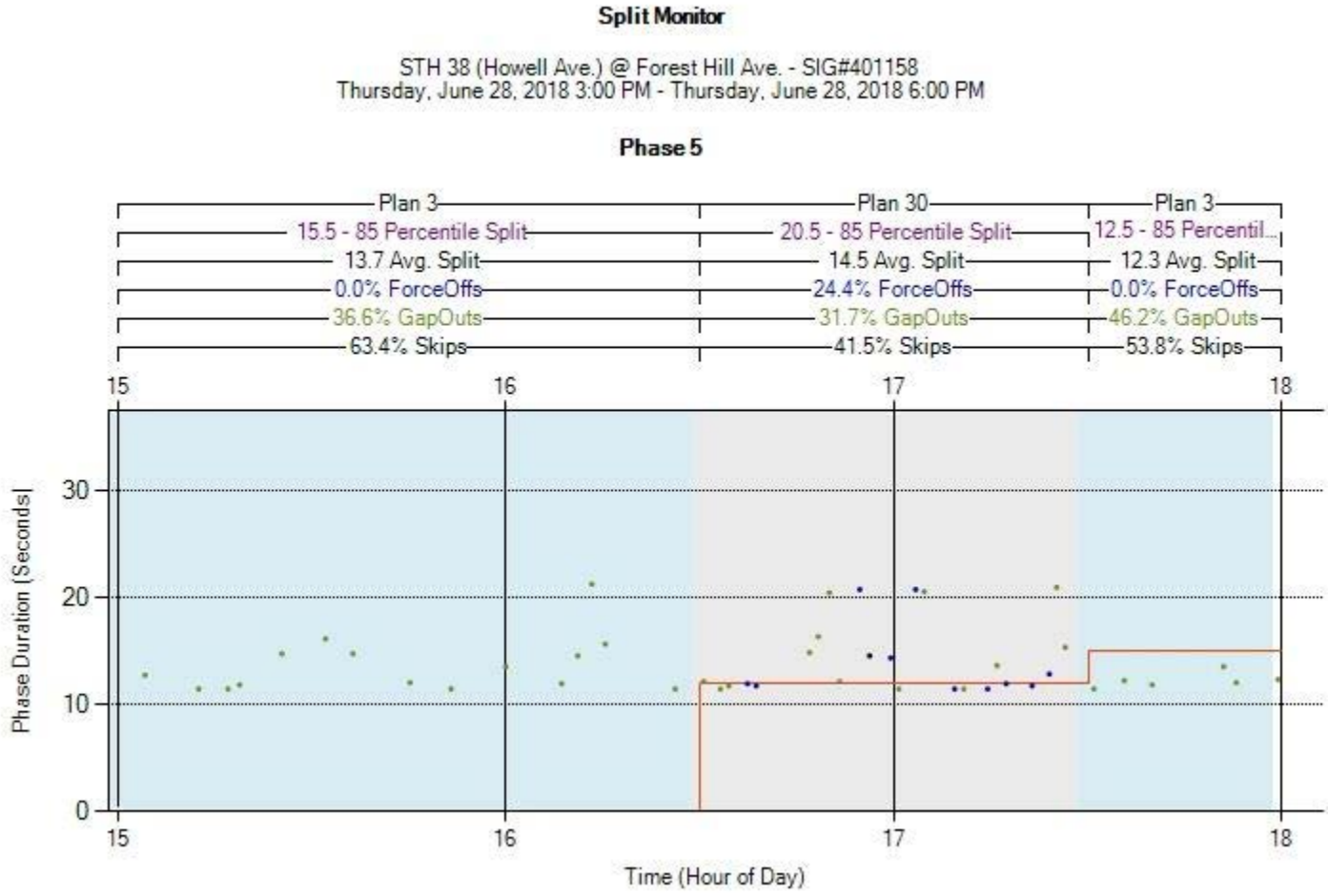
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM



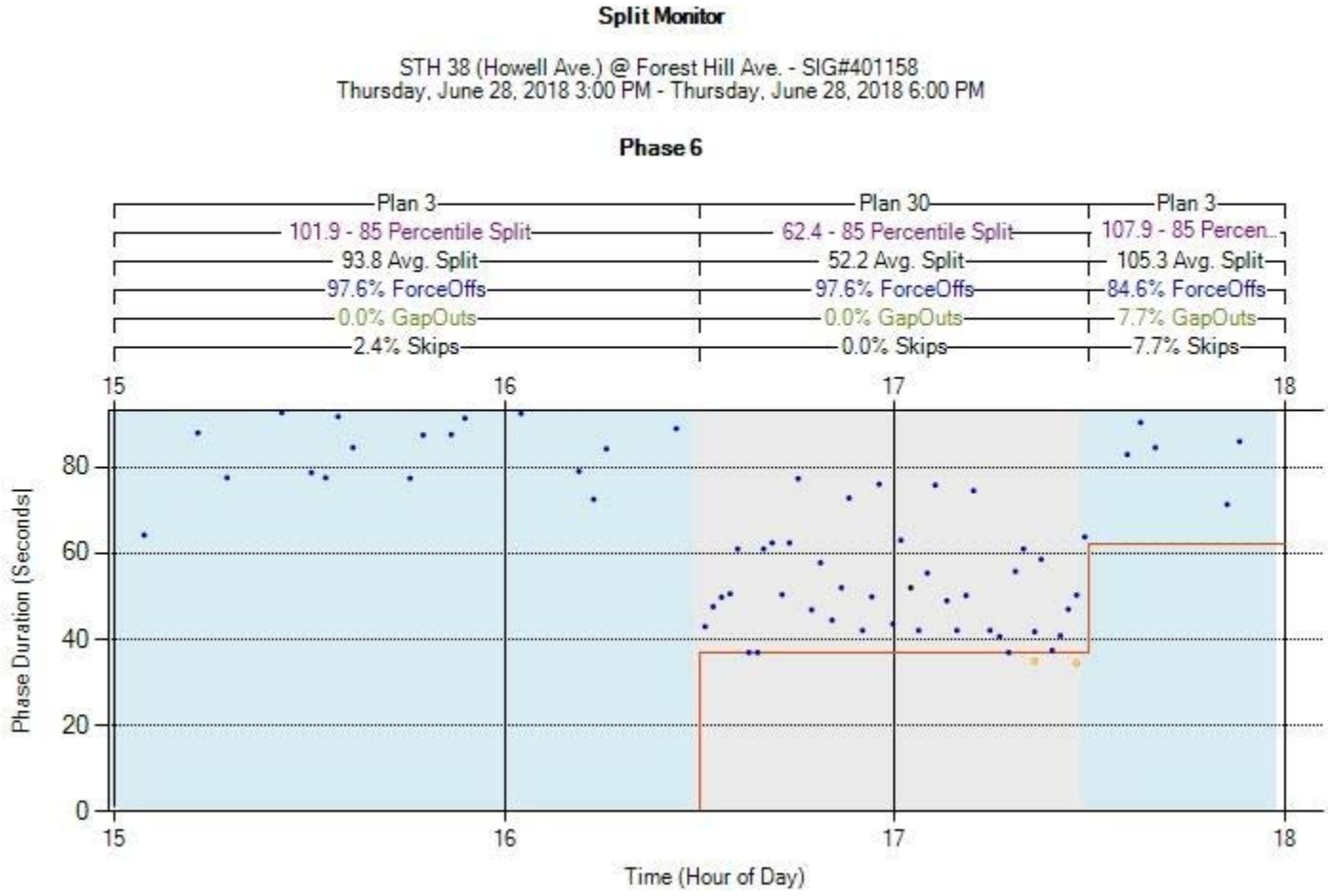
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM



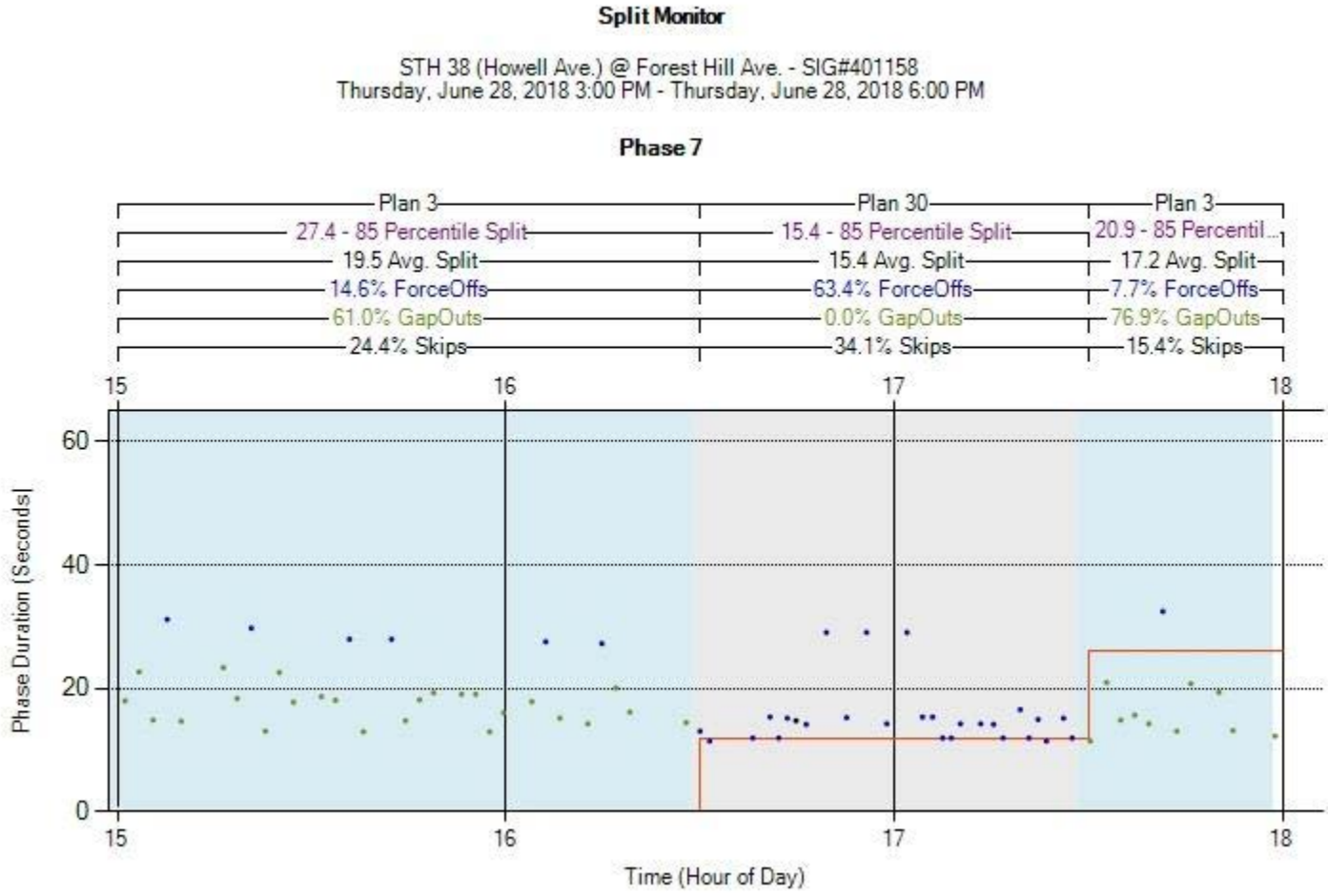
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Forest Hill Ave.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Forest Hill Ave.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Forest Hill Ave.
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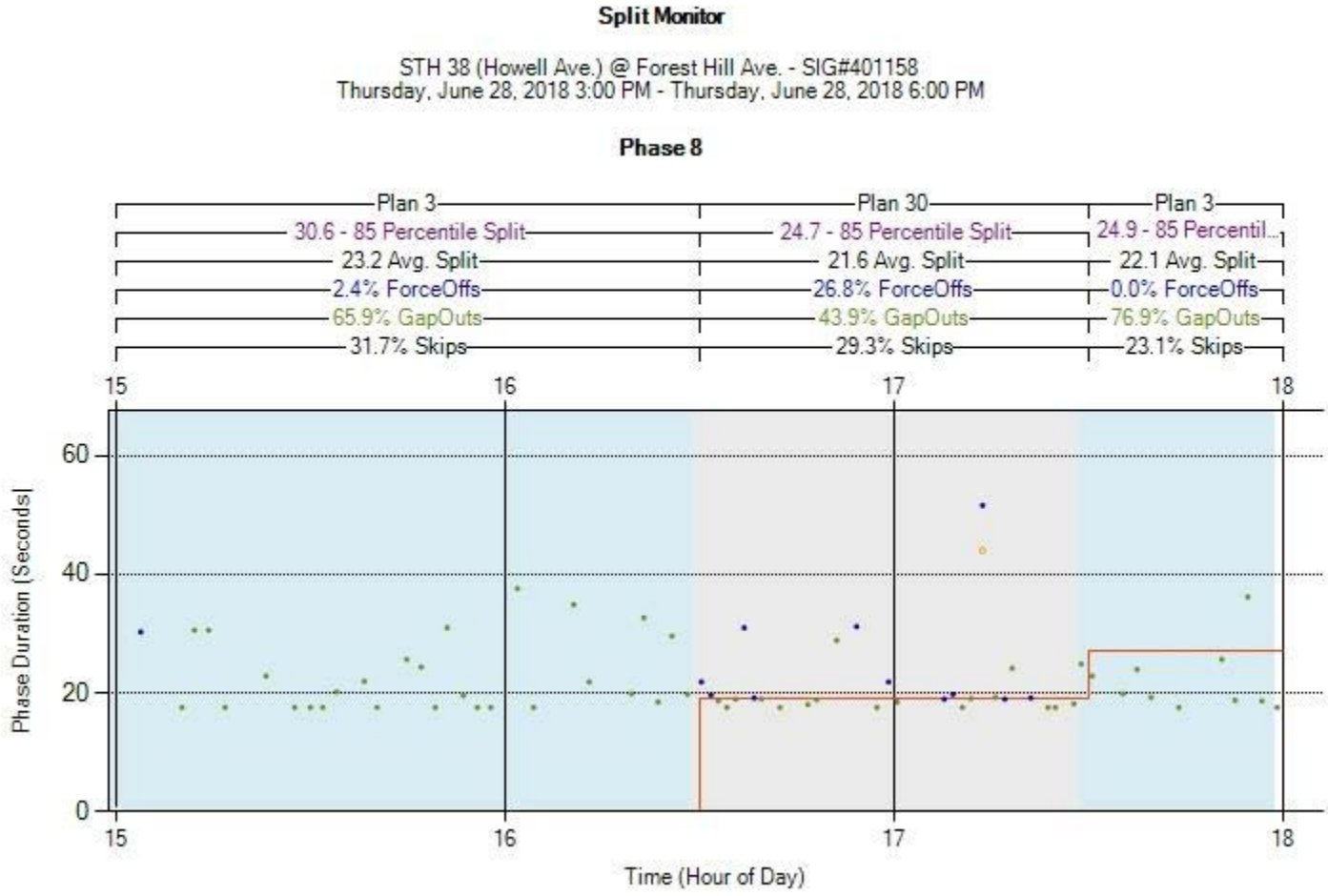
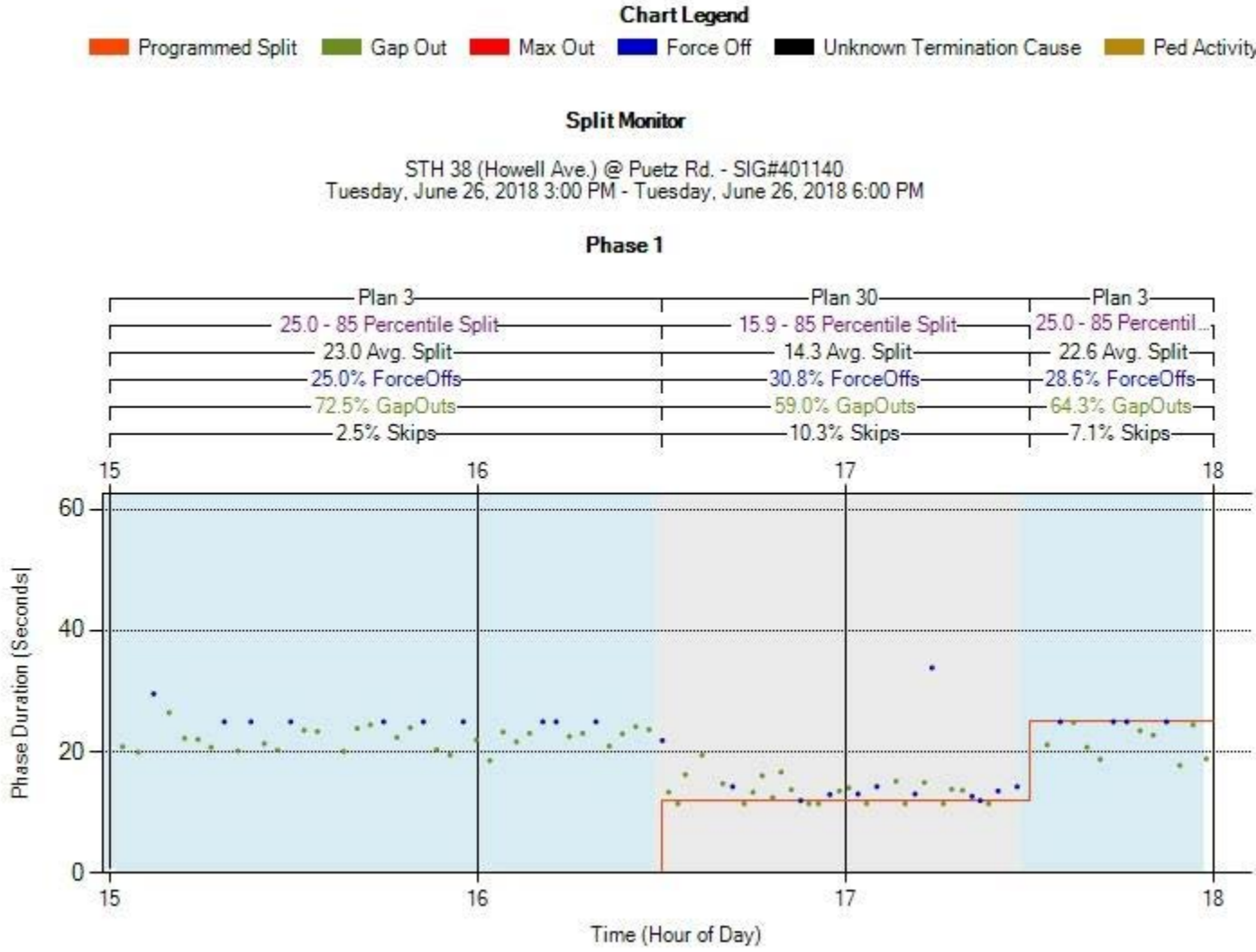
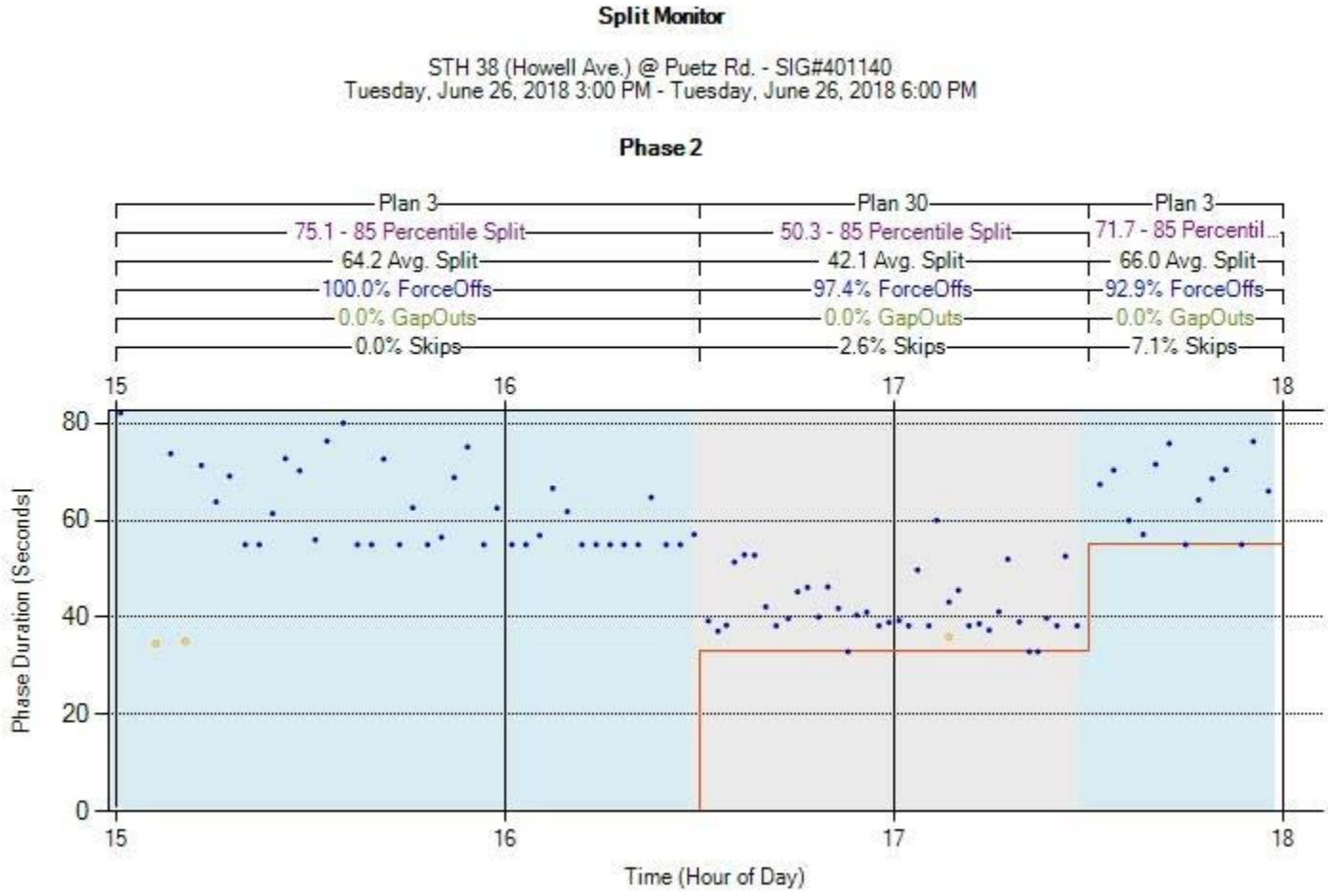
6/28/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Puetz Rd.
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Puetz Rd.
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Puetz Rd.
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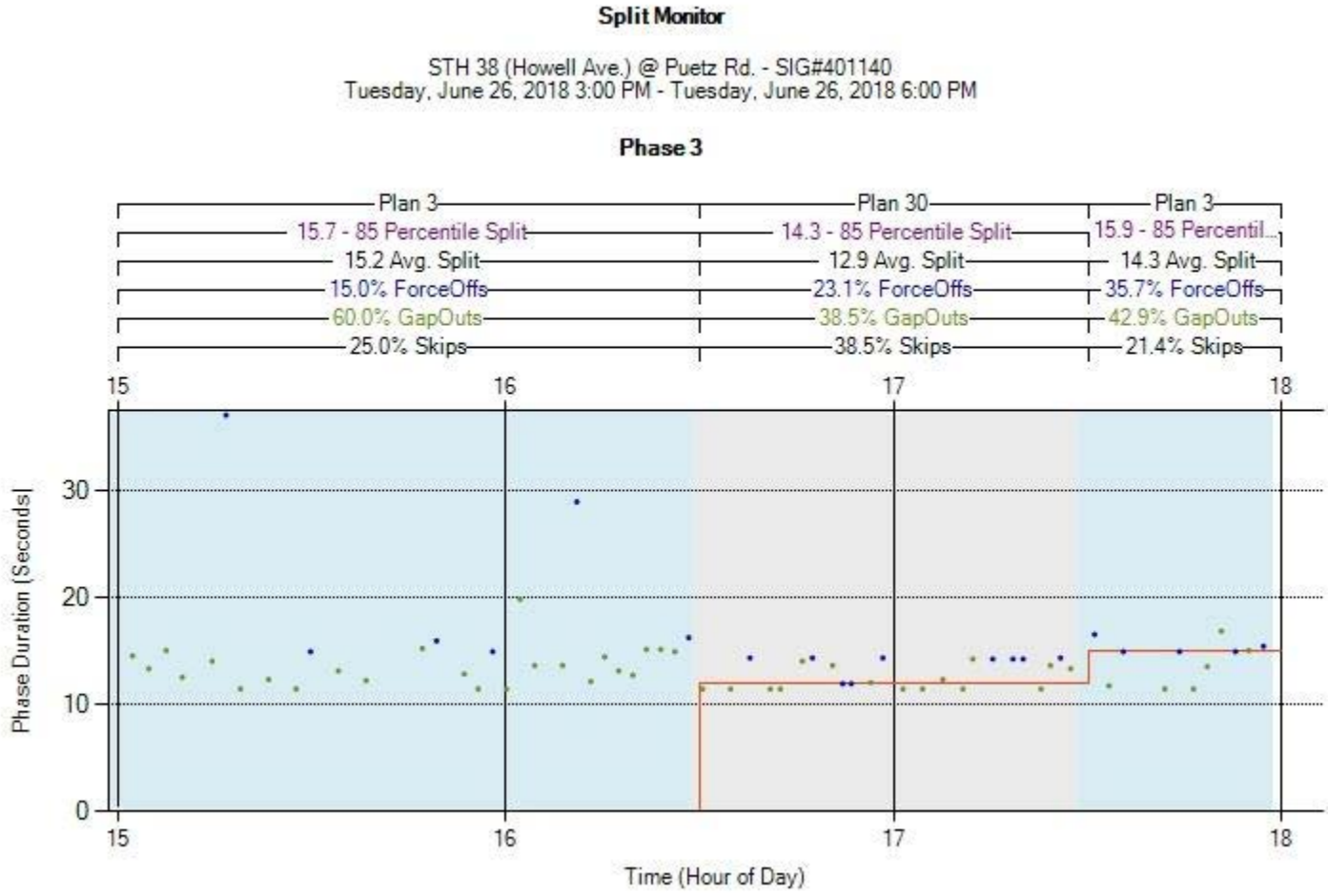
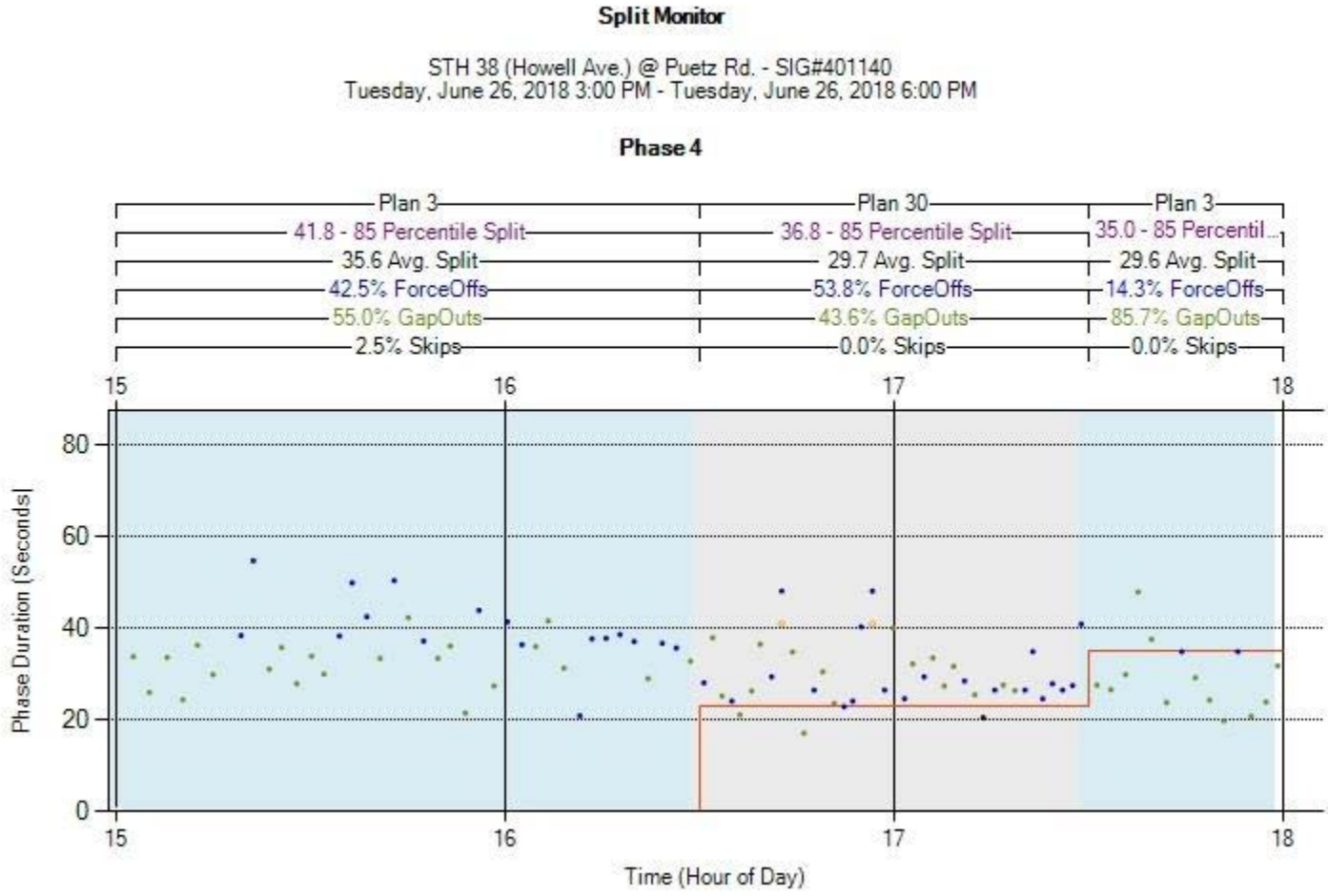
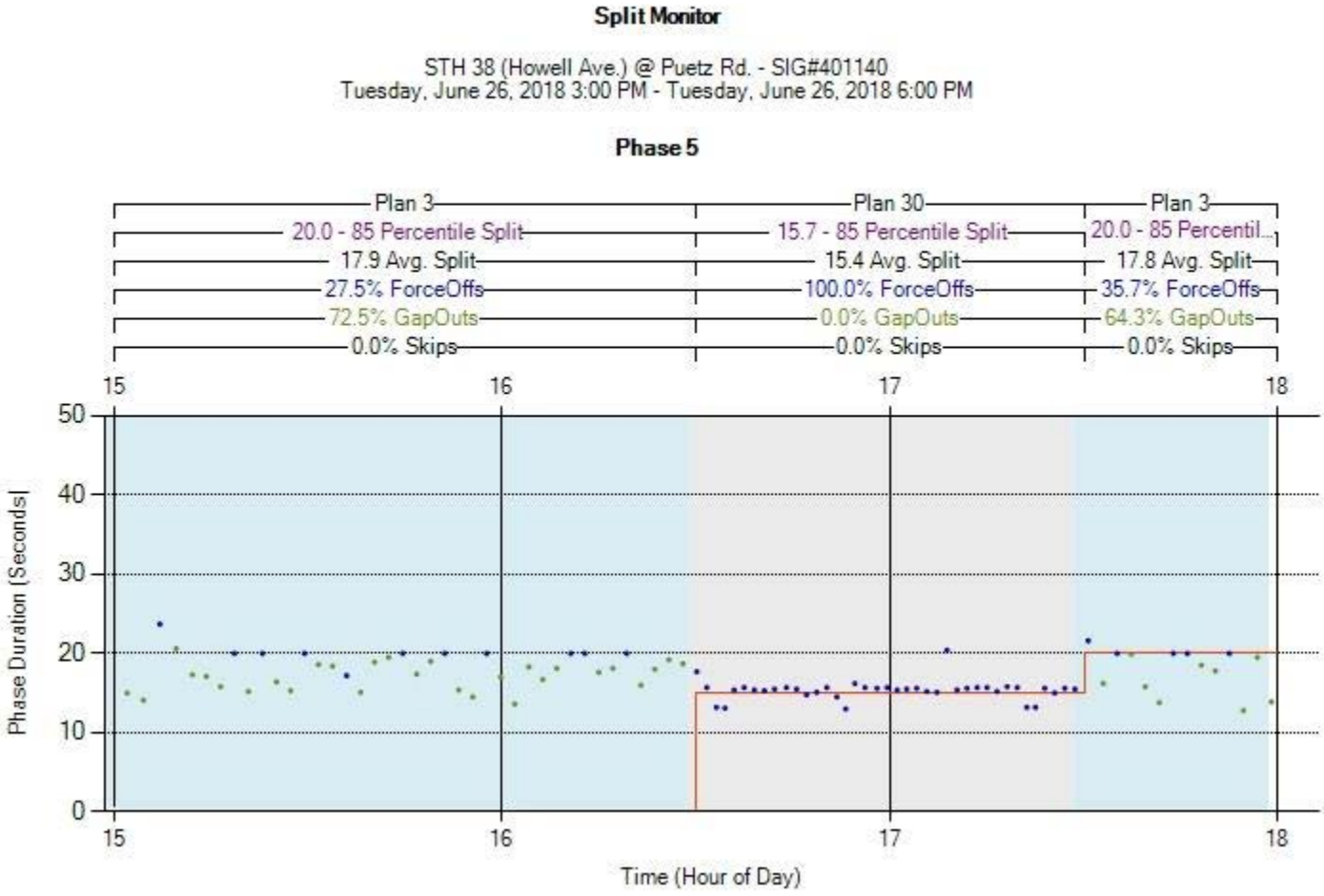
6/26/2018 – 3:00 PM – 6:00 PM



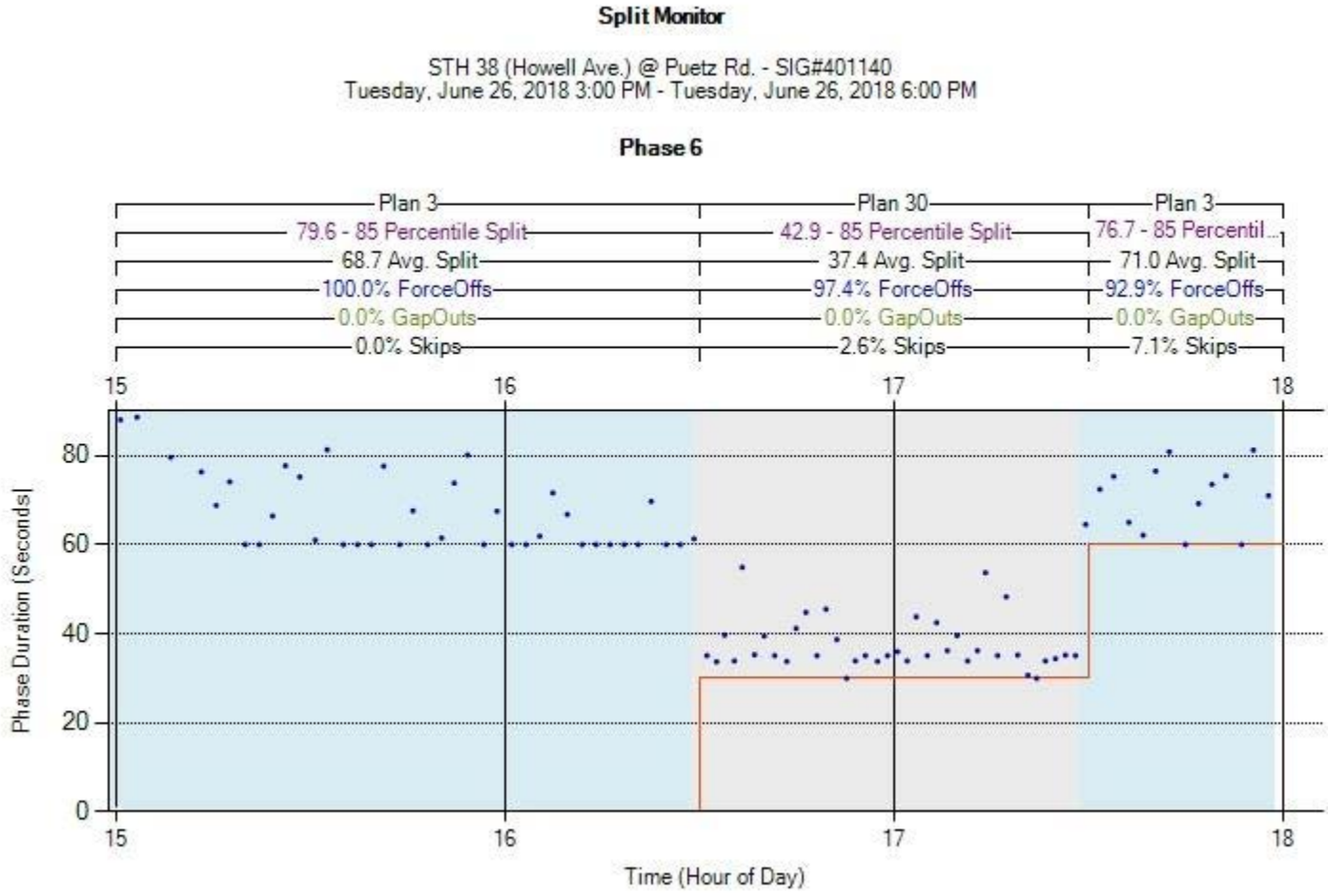
WIS 38 Corridor – STH 38 & Puetz Rd.
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM



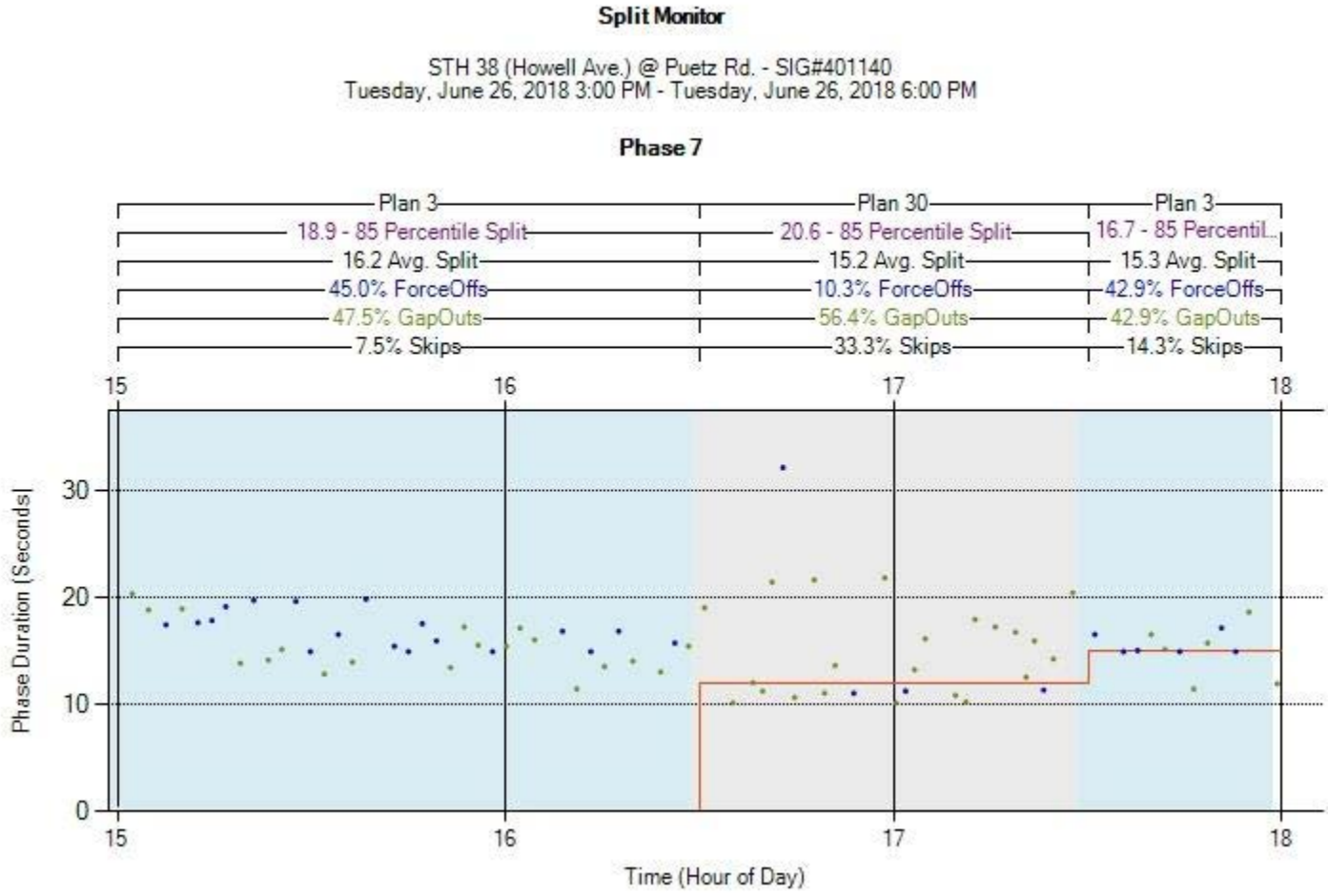
WIS 38 Corridor – STH 38 & Puetz Rd.
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM



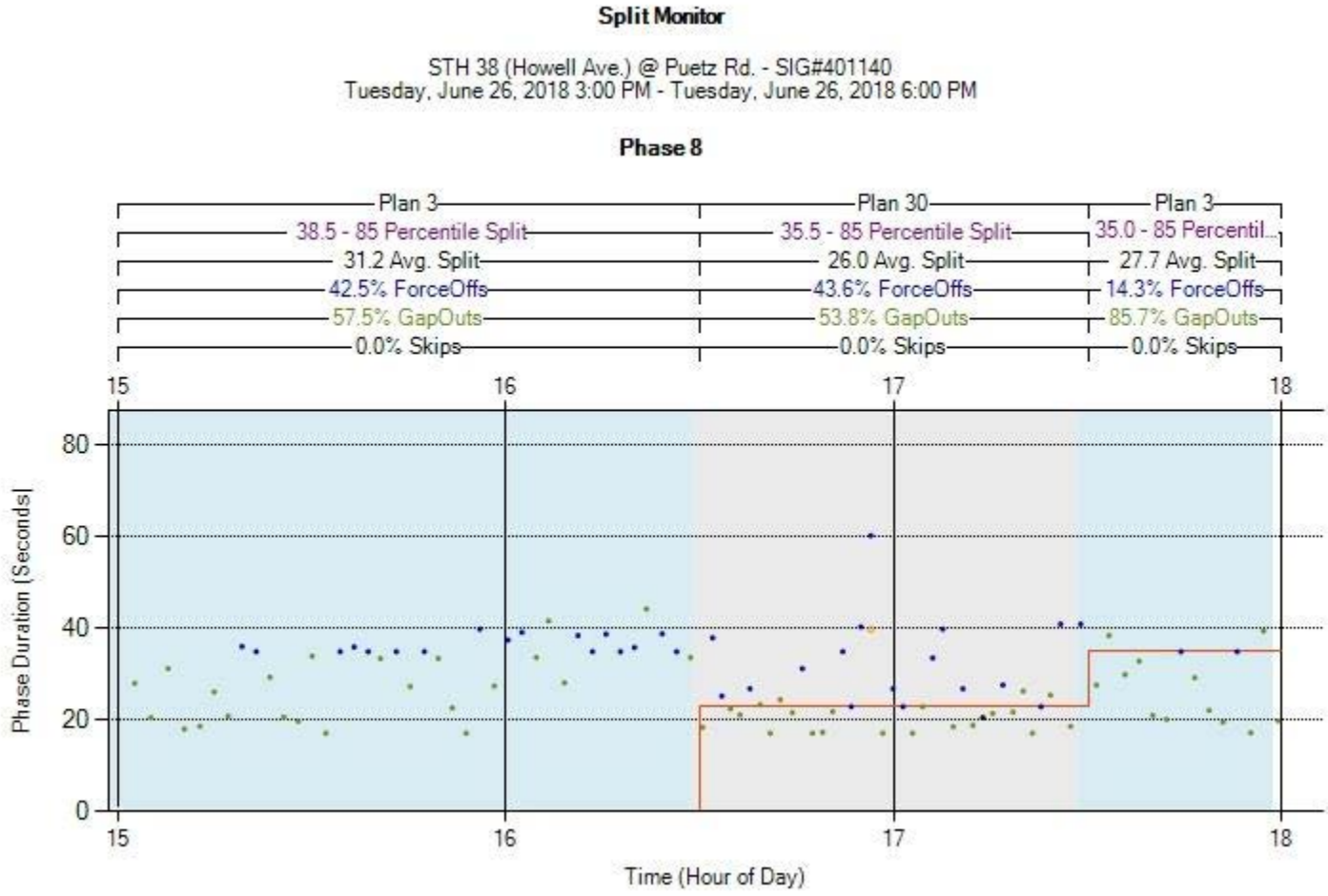
WIS 38 Corridor – STH 38 & Puetz Rd.
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Puetz Rd.
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Puetz Rd.
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Puetz Rd.
Synchro Timings
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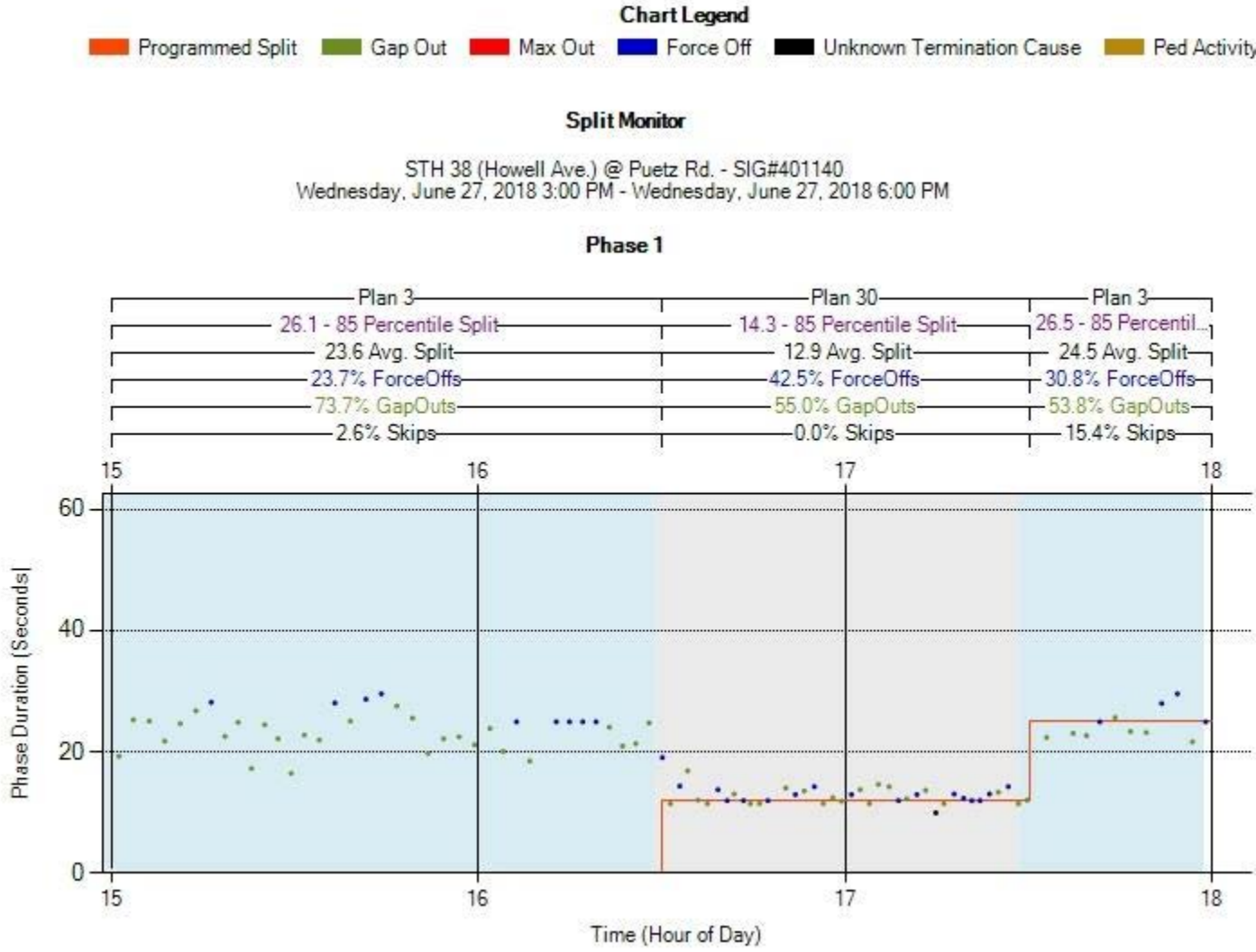

WIS 38 Corridor – STH 38 & Puetz Rd.
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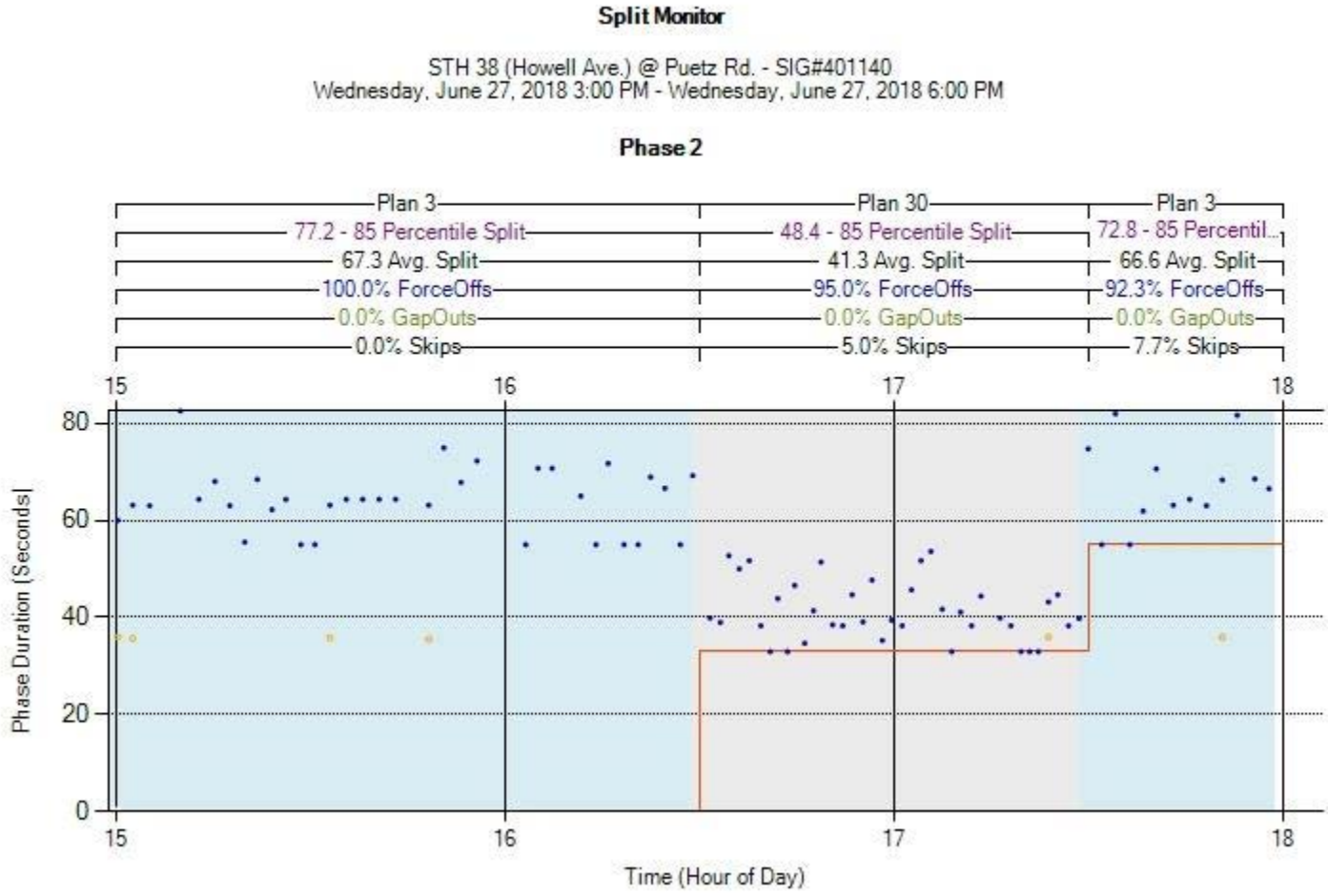
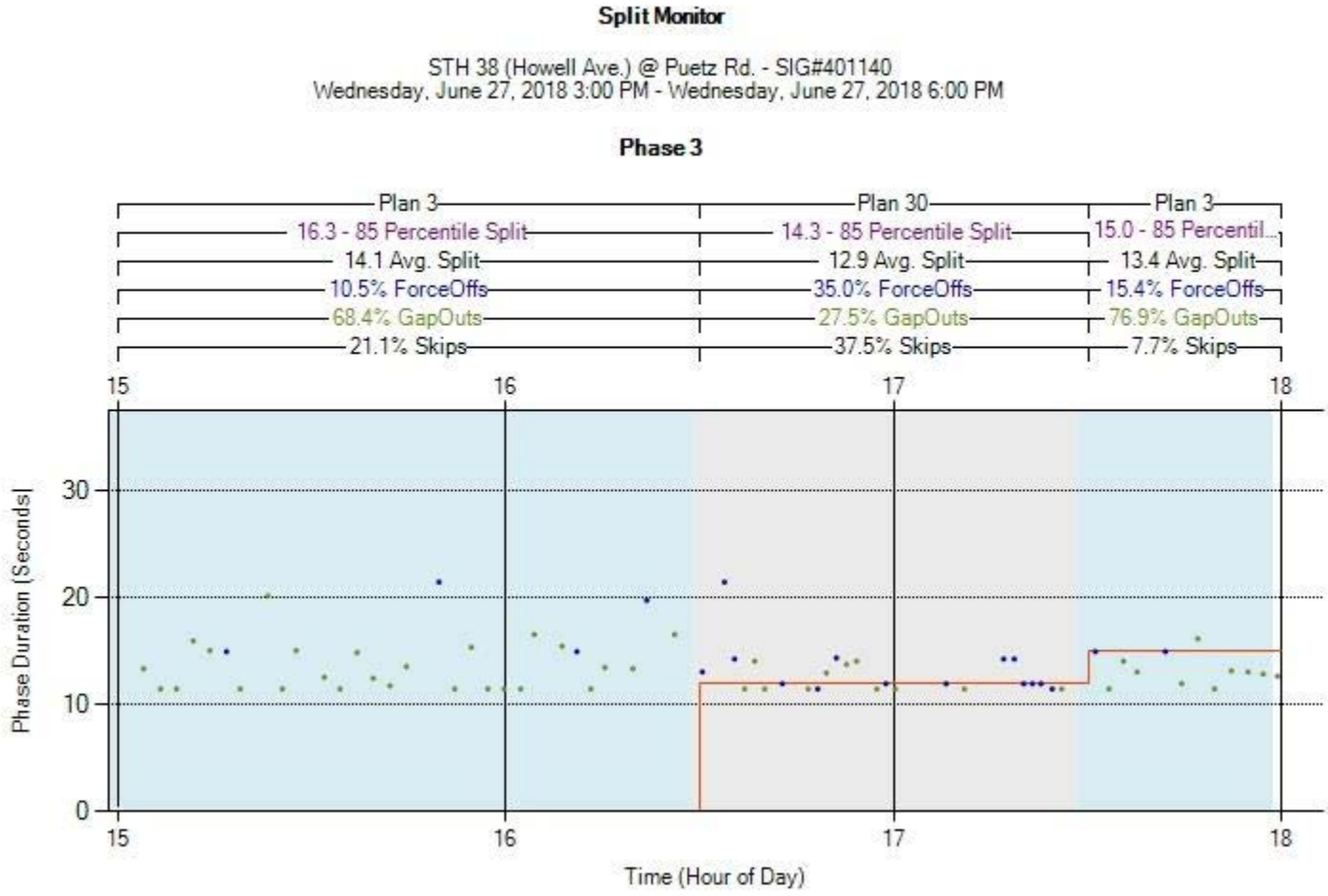


WIS 38 Corridor – STH 38 & Puetz Rd.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Puetz Rd.
Synchro Timings
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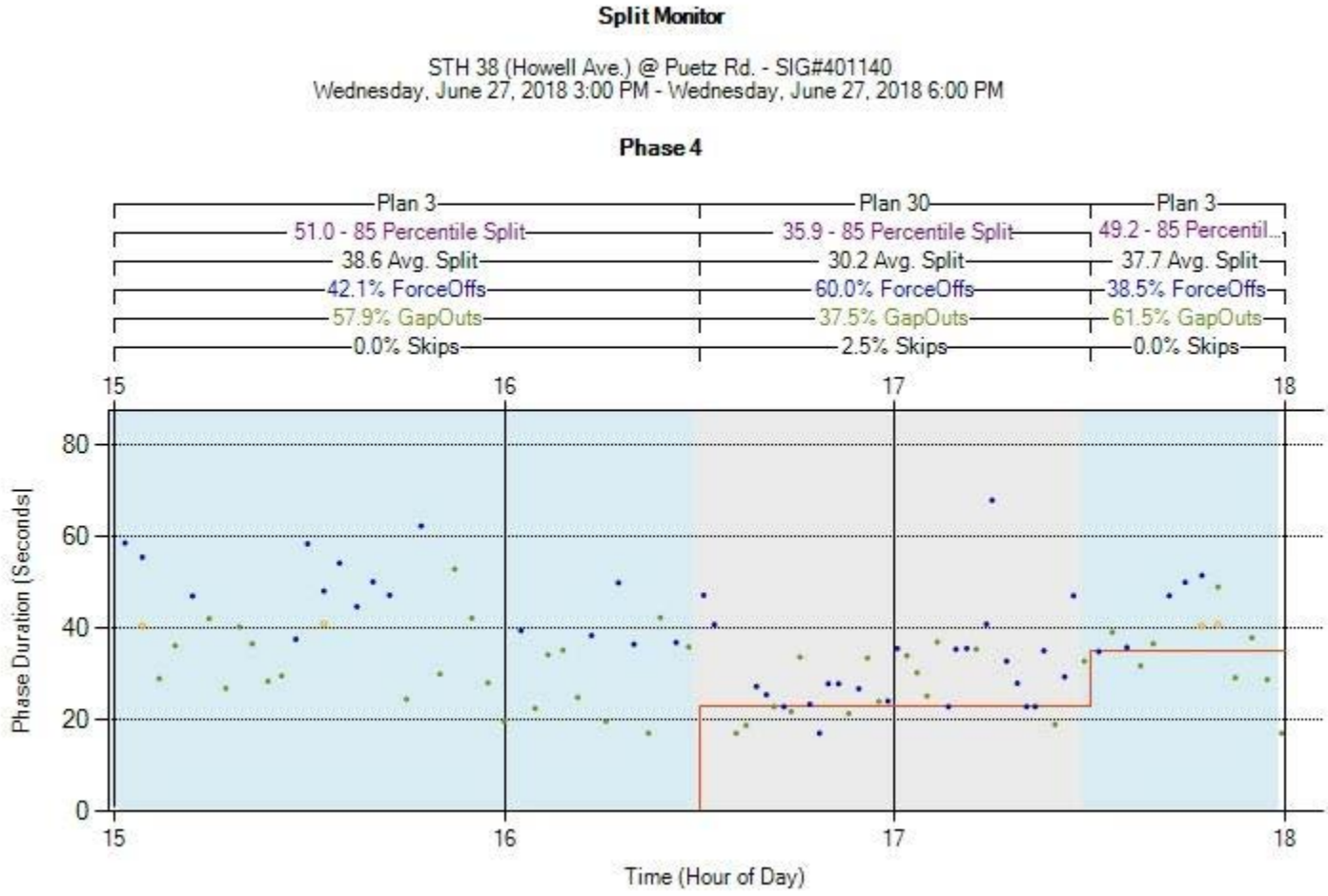
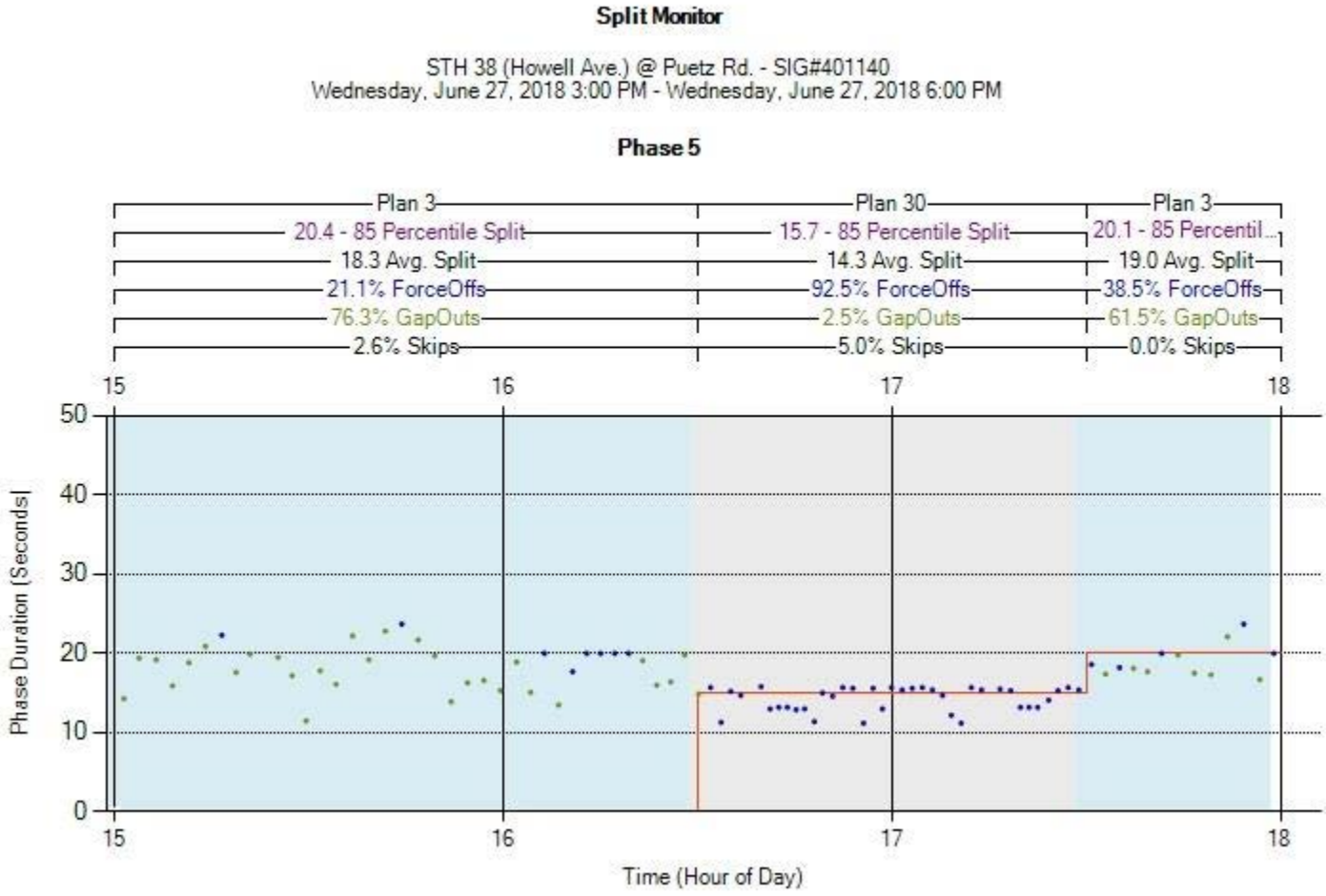


WIS 38 Corridor – STH 38 & Puetz Rd.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Puetz Rd.
Synchro Timings
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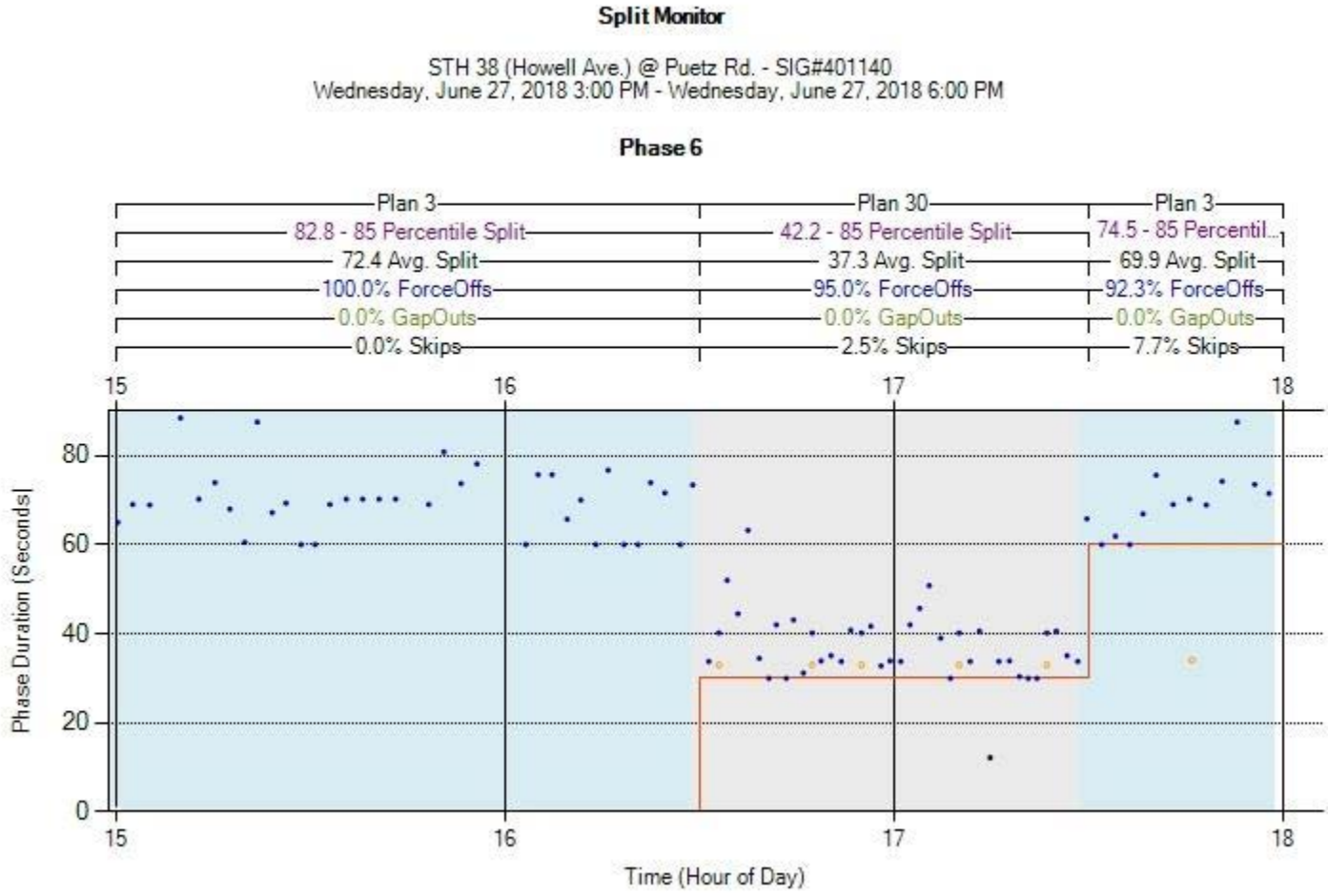

WIS 38 Corridor – STH 38 & Puetz Rd.
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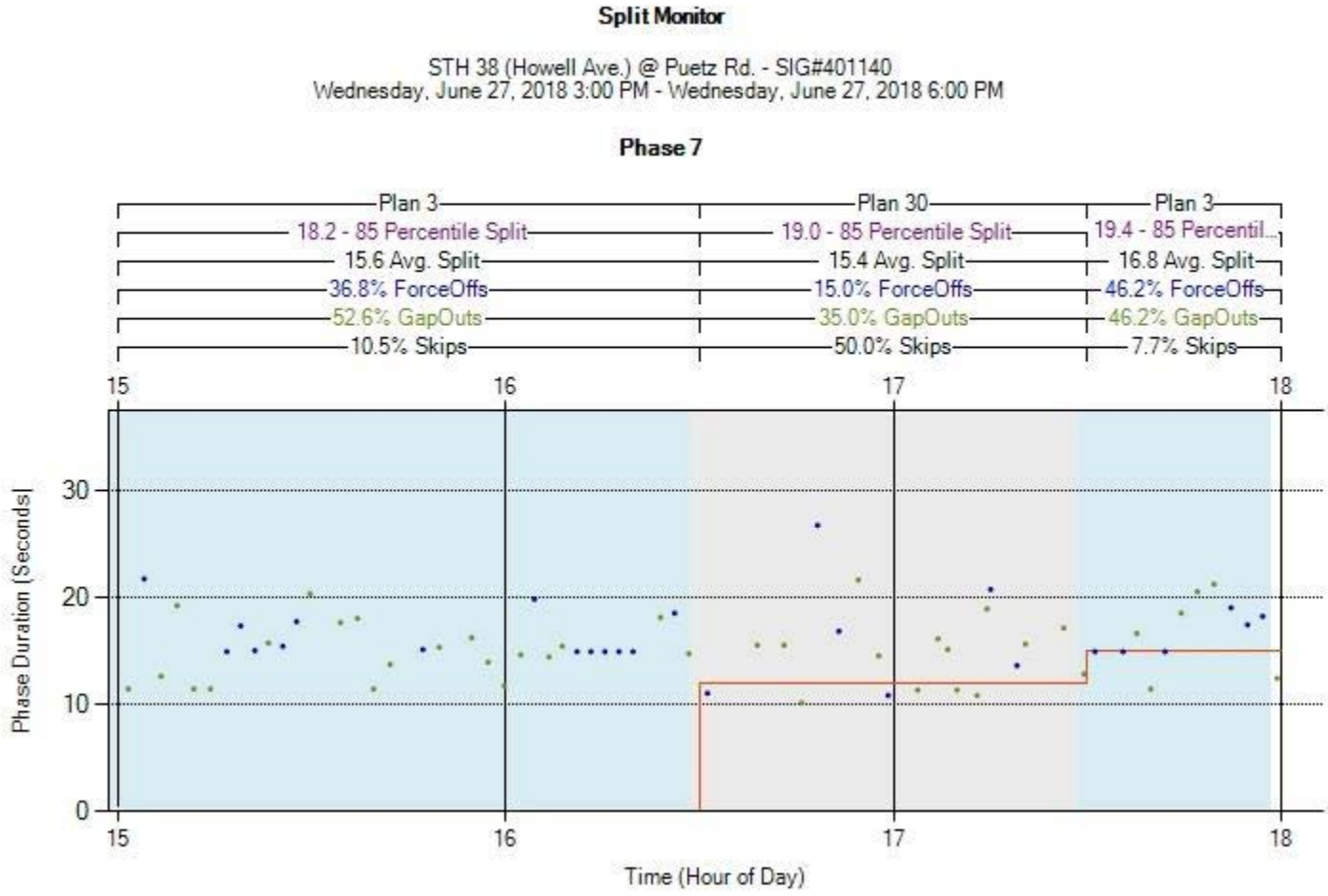

WIS 38 Corridor – STH 38 & Puetz Rd.
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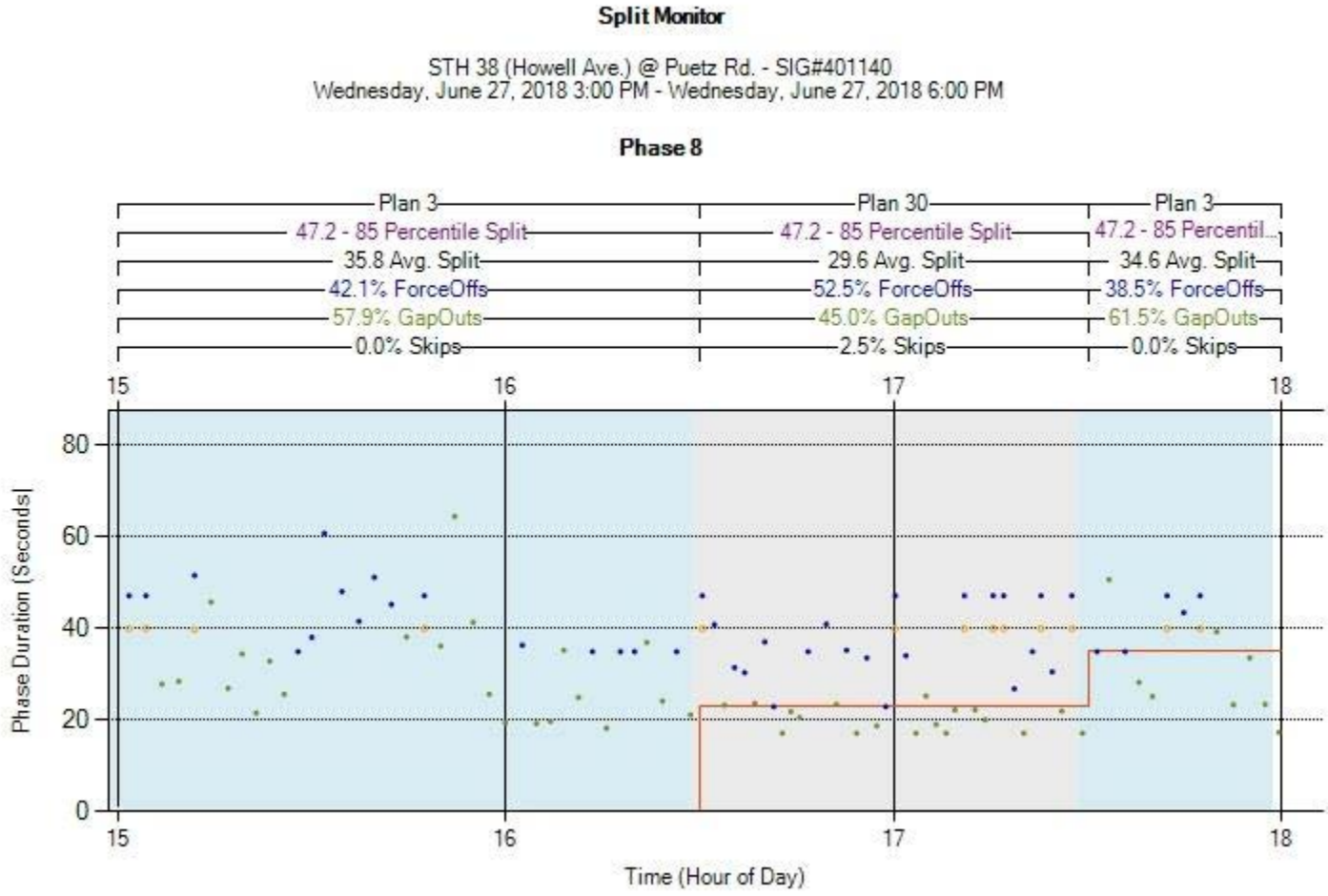

WIS 38 Corridor – STH 38 & Puetz Rd.
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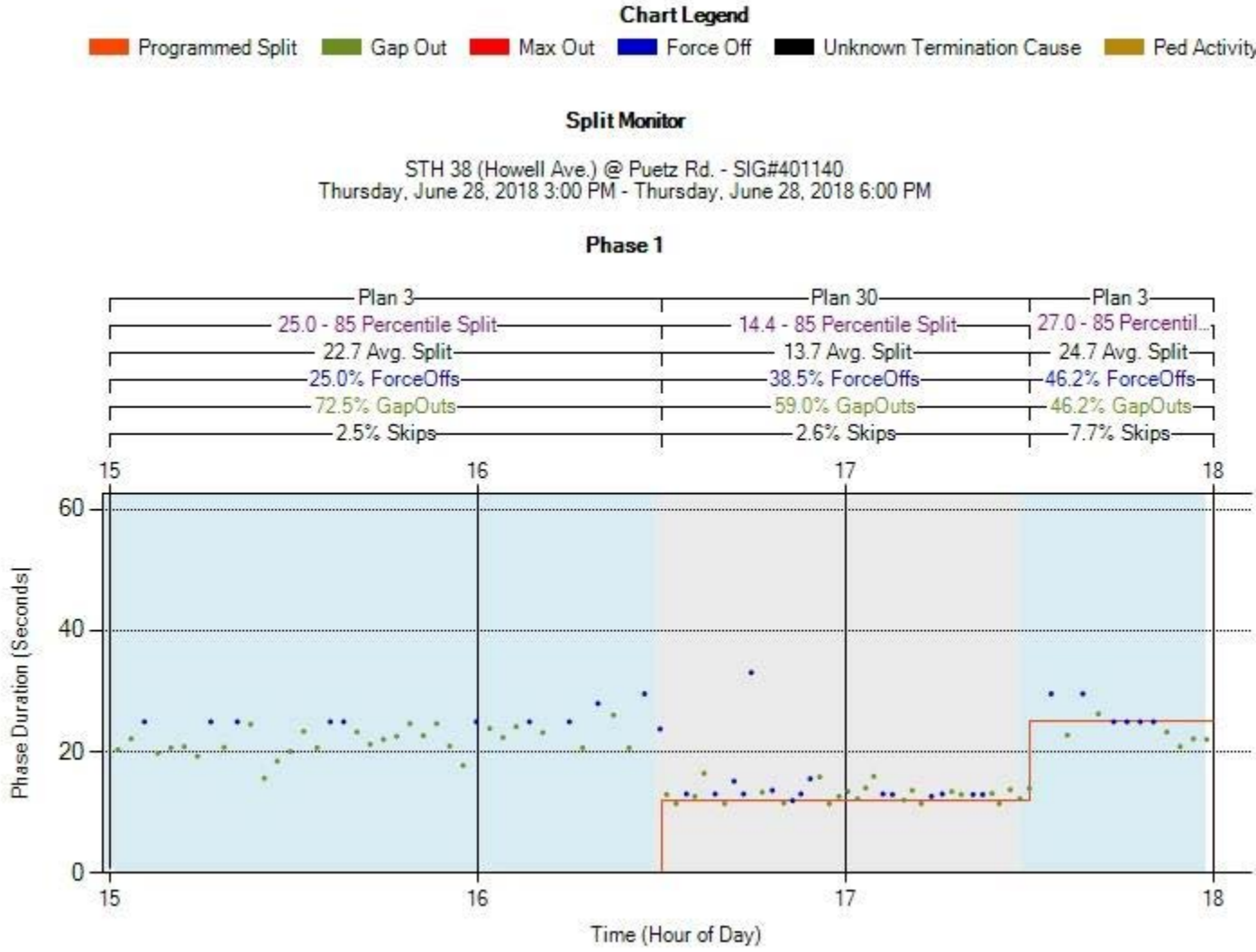

WIS 38 Corridor – STH 38 & Puetz Rd.
Synchro Timings
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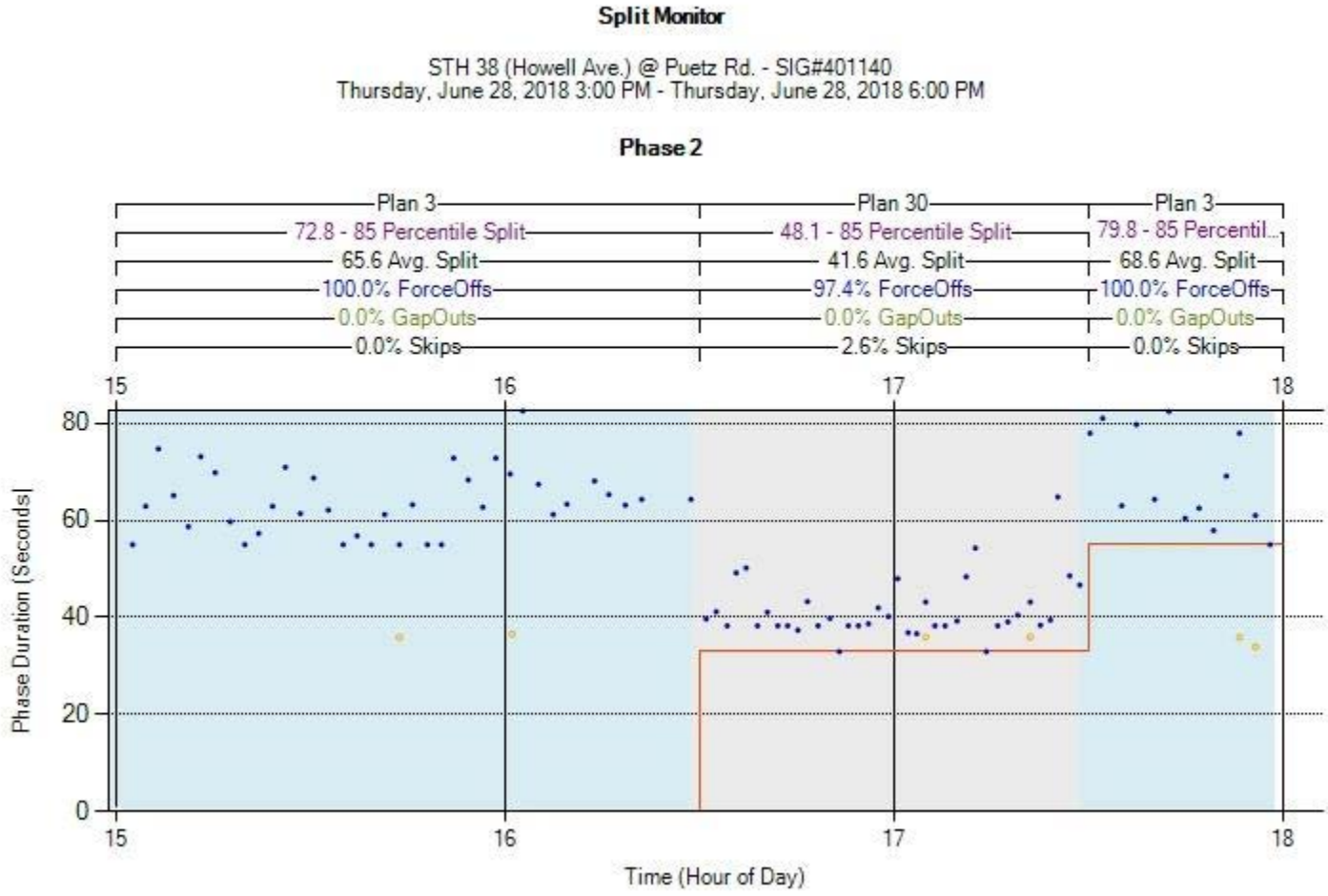
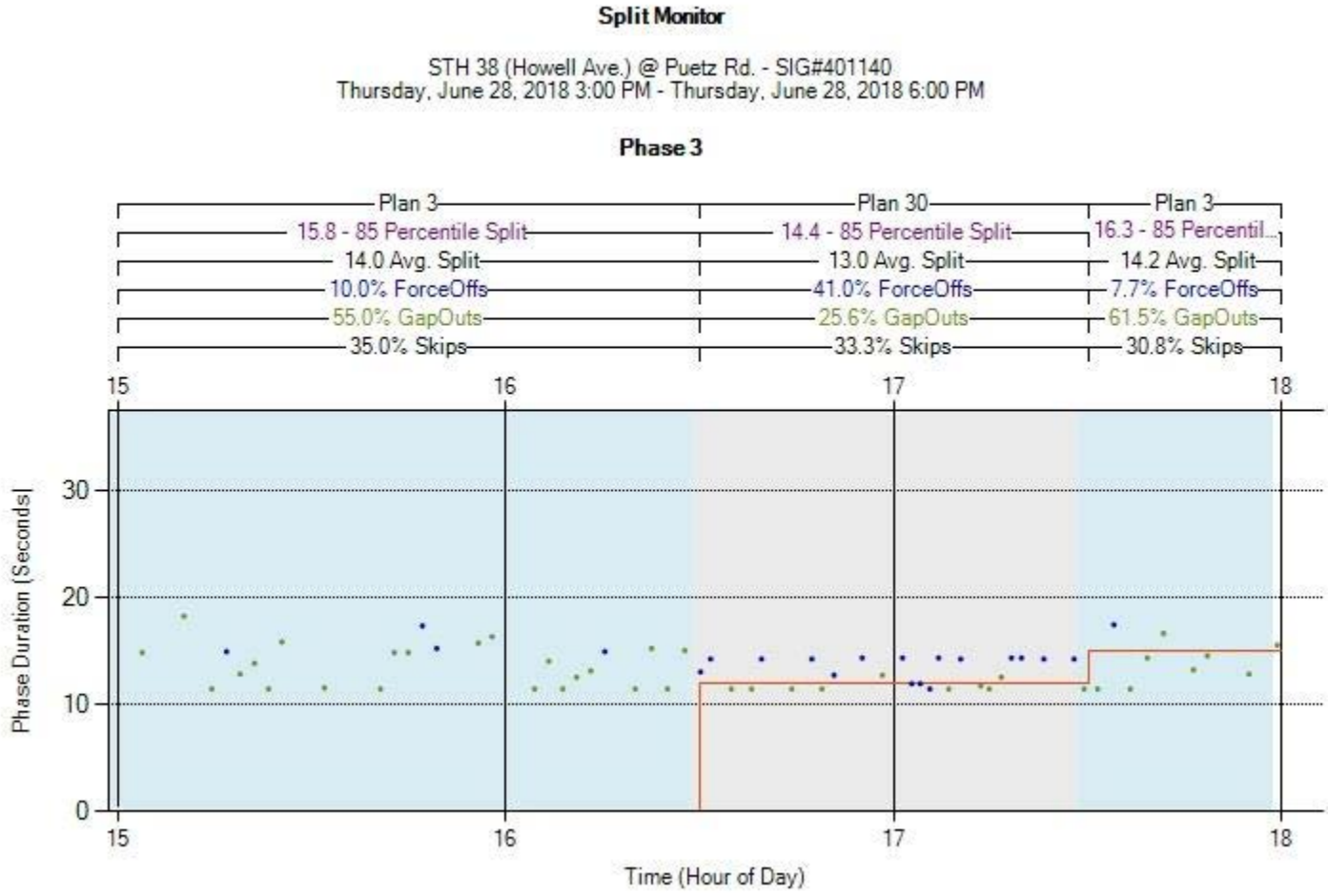


WIS 38 Corridor – STH 38 & Puetz Rd.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Puetz Rd.
Synchro Timings
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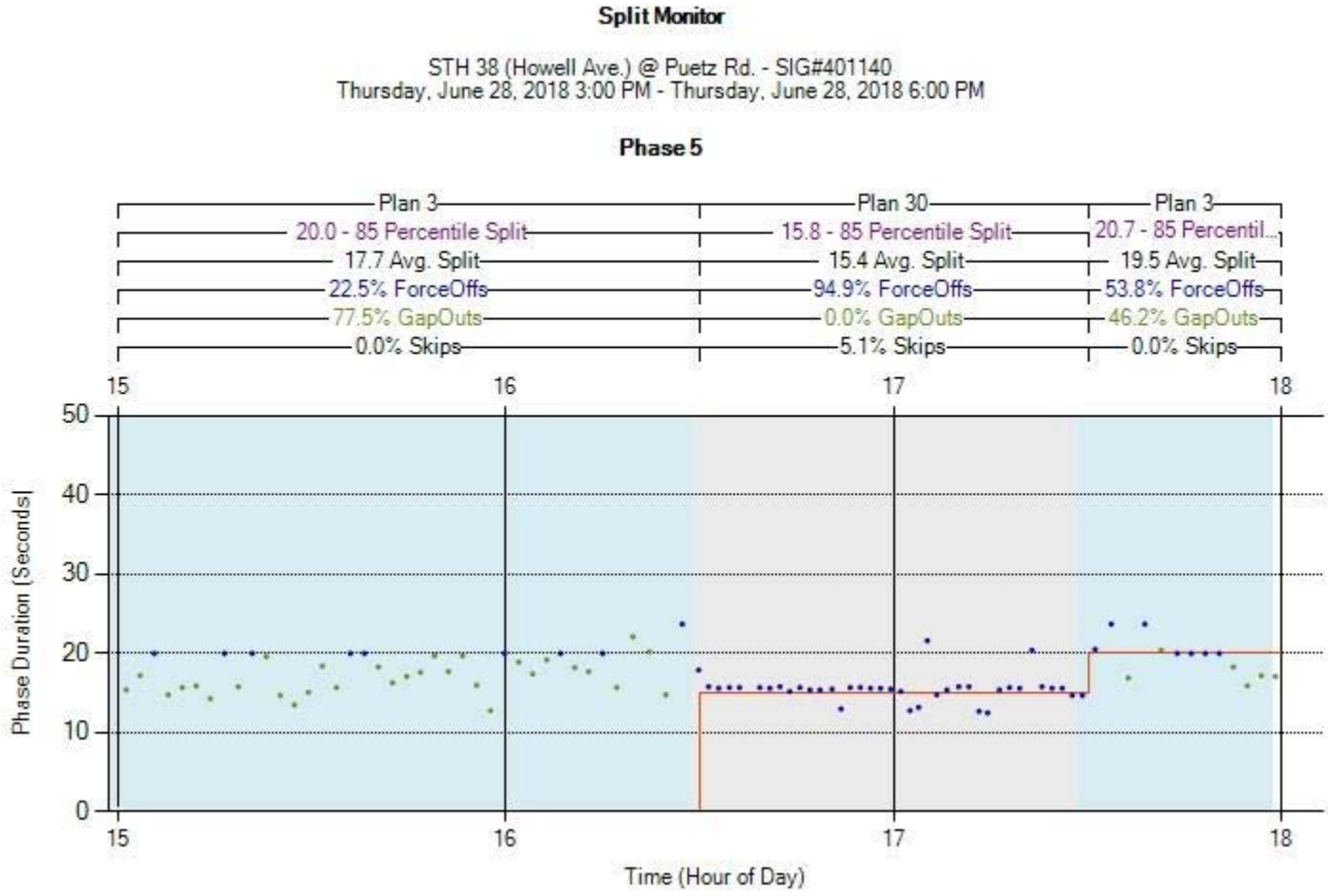

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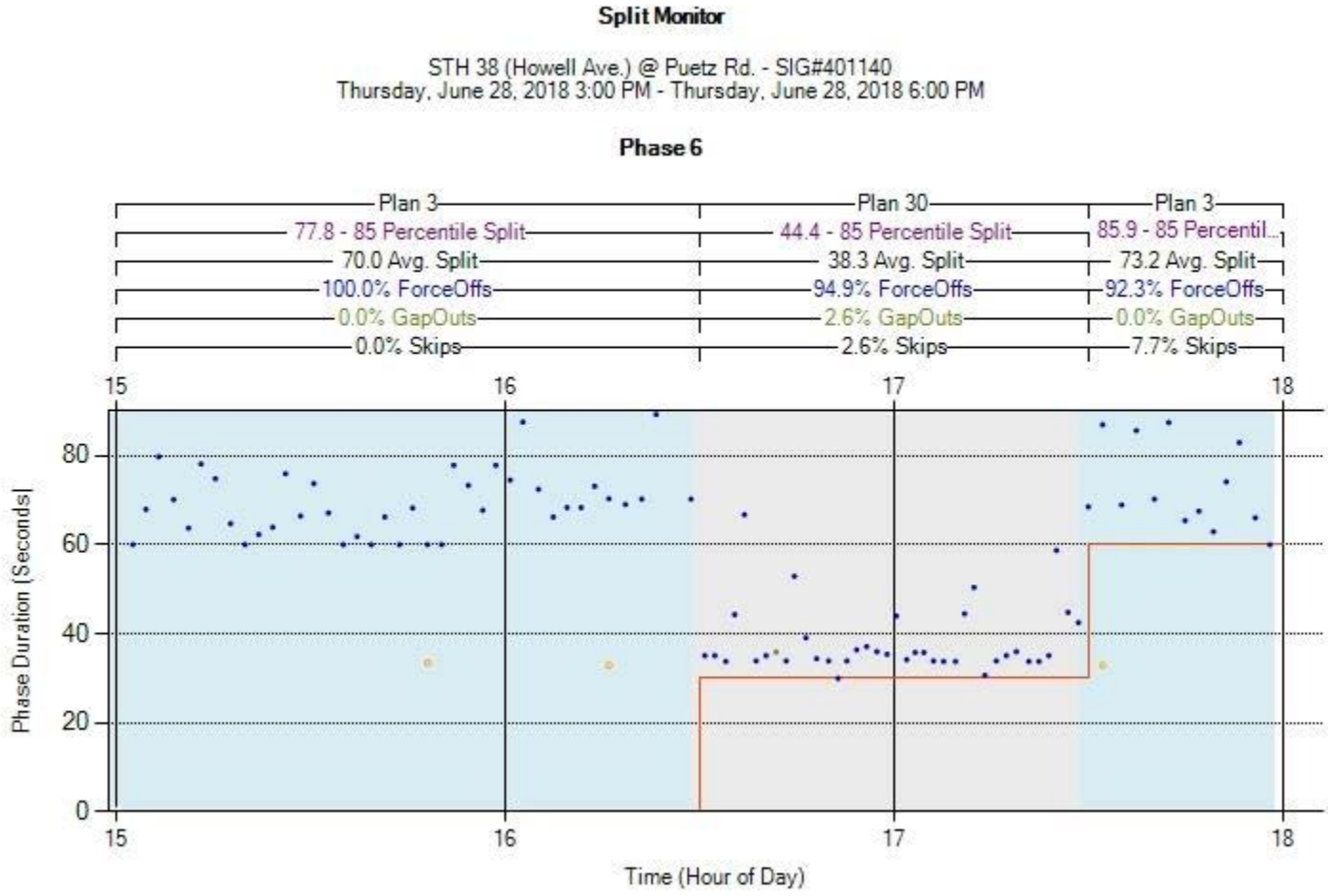

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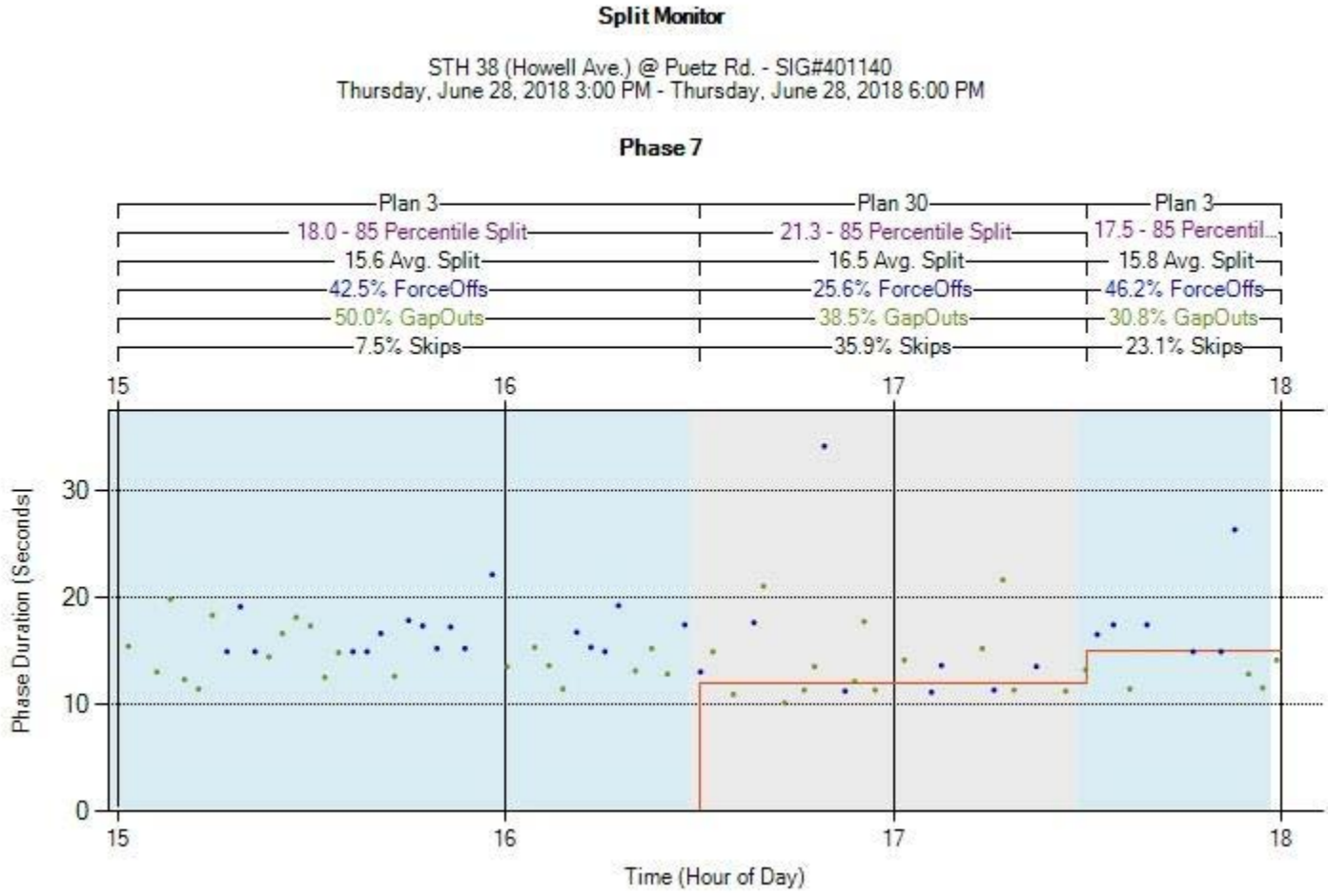

WIS 38 Corridor – STH 38 & Puetz Rd.
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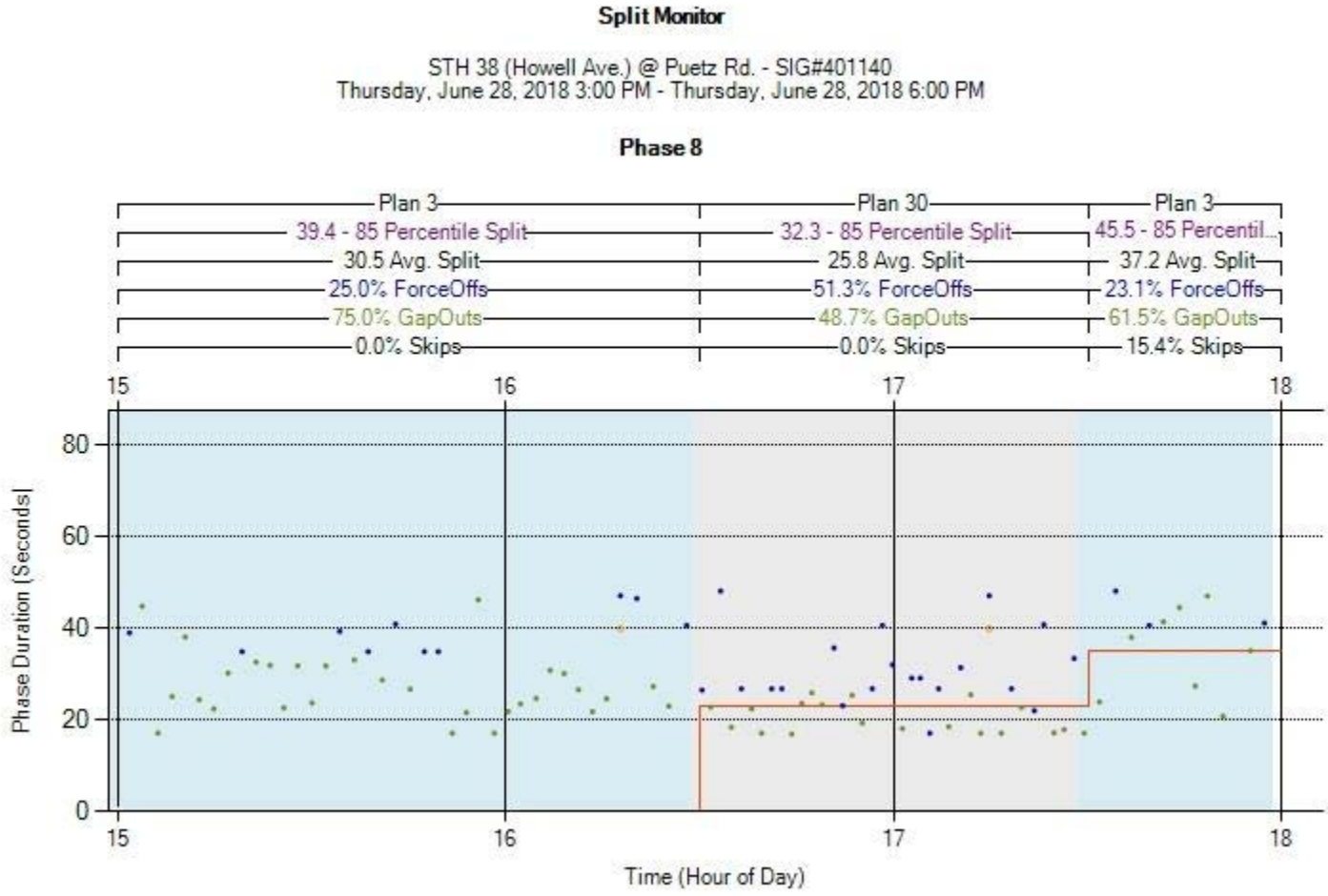
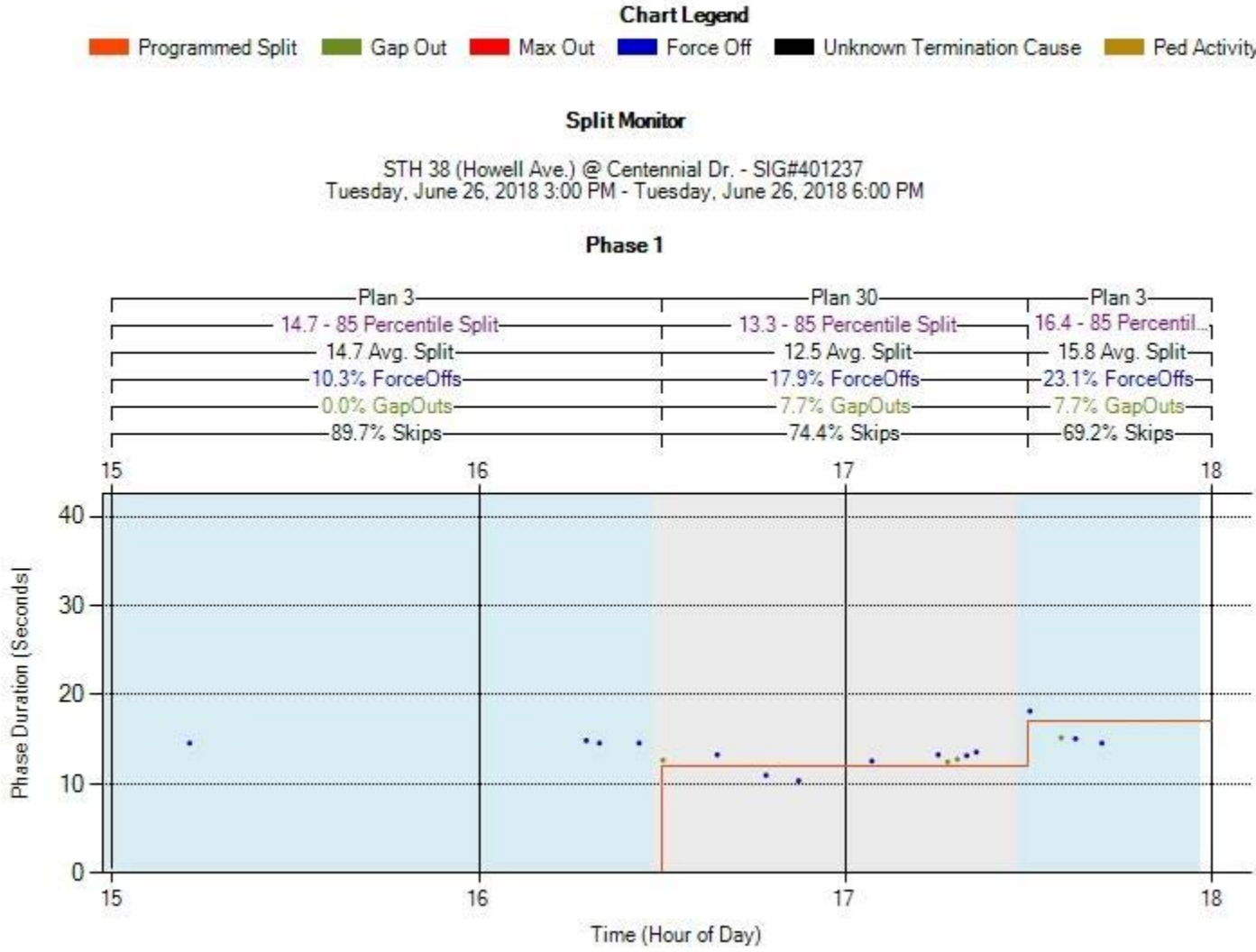
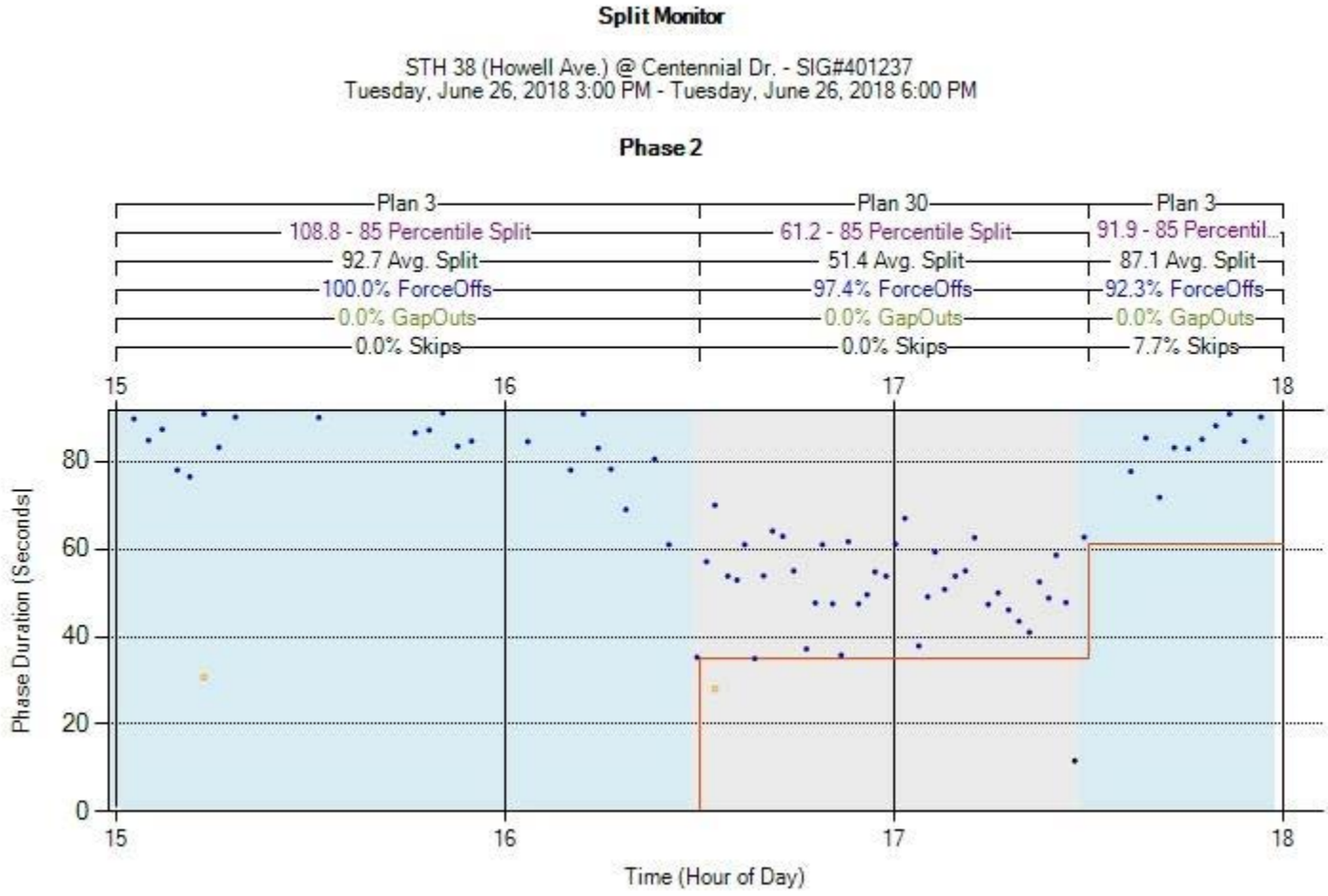


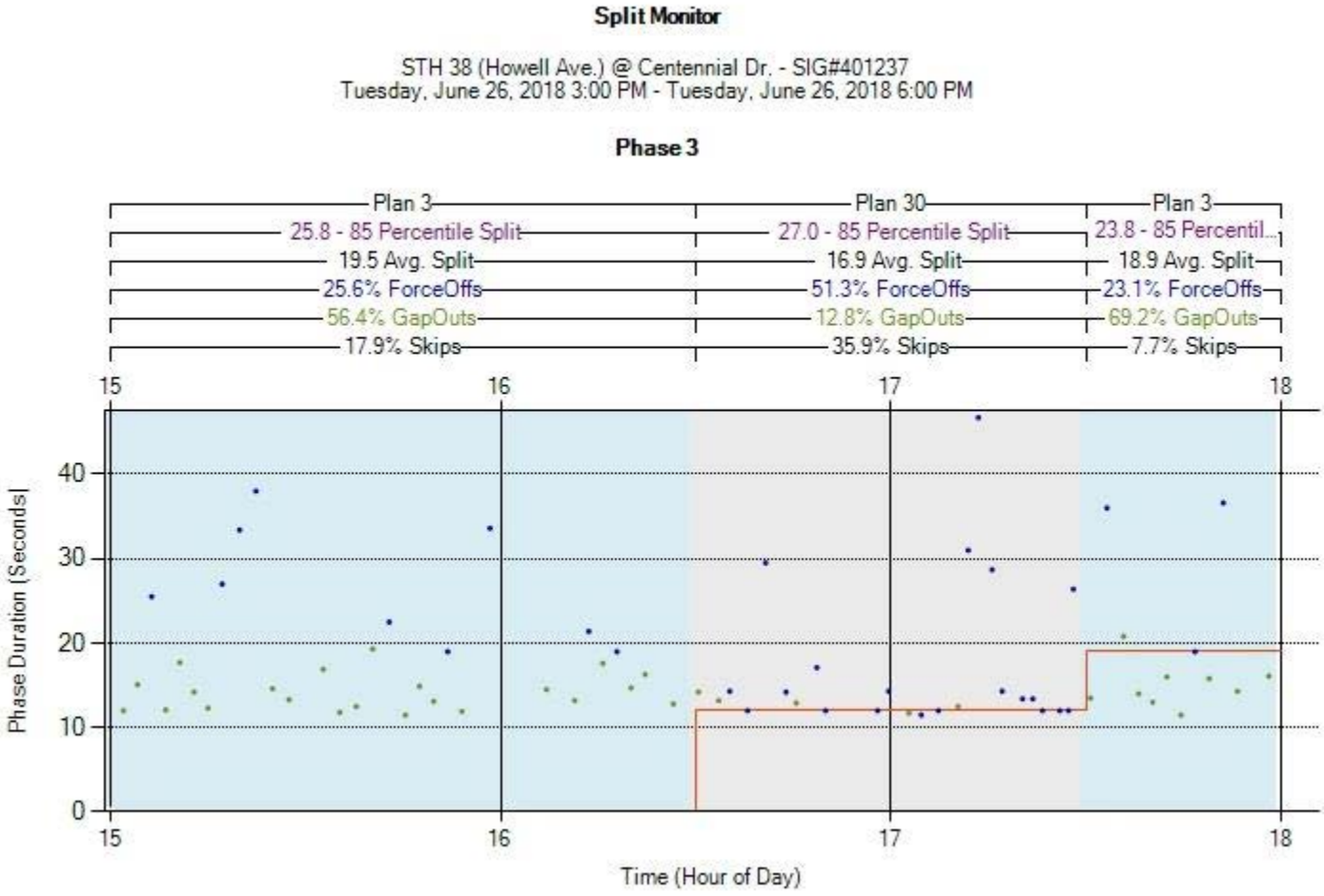
WIS 38 Corridor – STH 38 & Centennial Dr.
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM



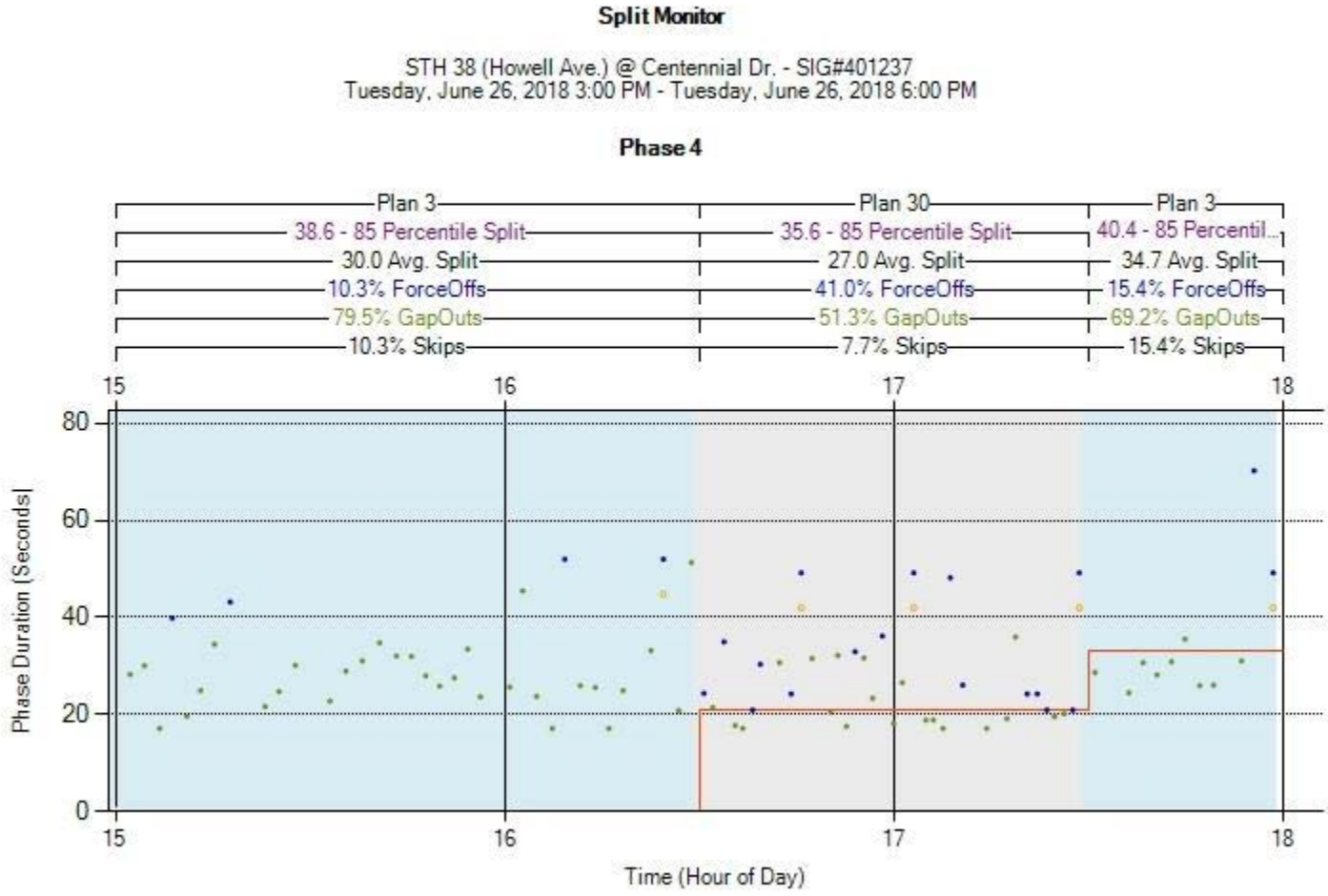
WIS 38 Corridor – STH 38 & Centennial Dr.
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM



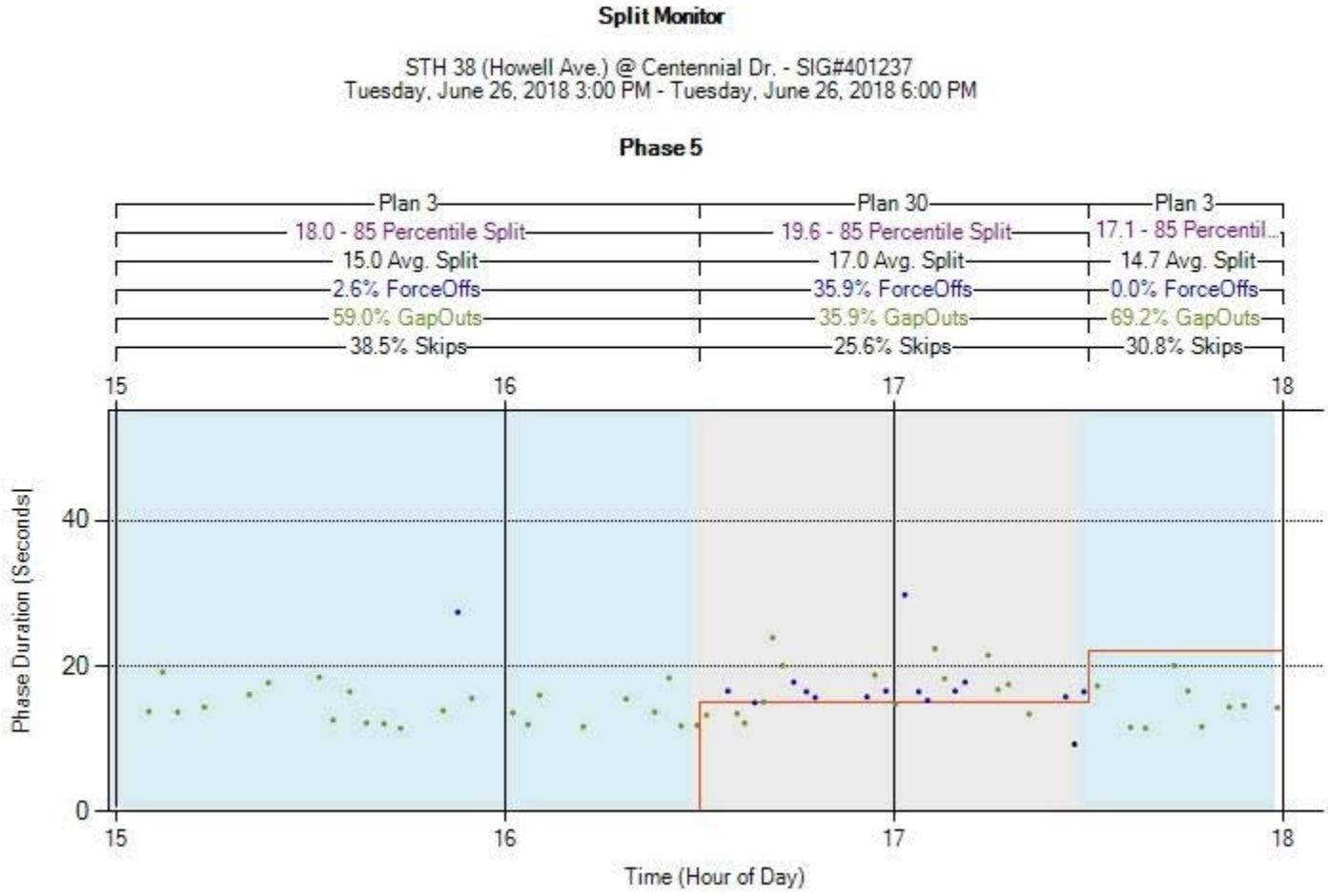
WIS 38 Corridor – STH 38 & Centennial Dr.
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Centennial Dr.
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Centennial Dr.
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Centennial Dr.
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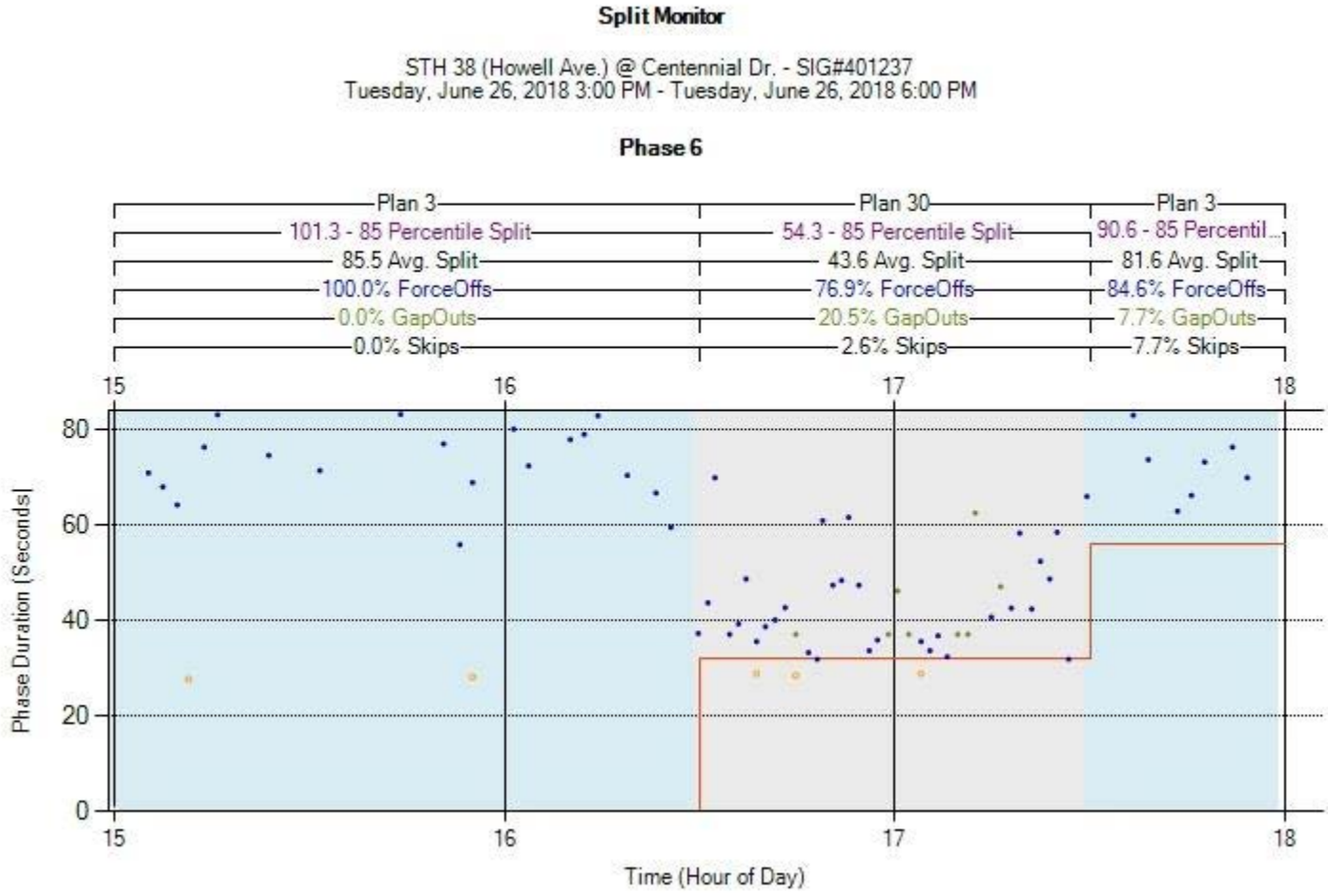
6/26/2018 – 3:00 PM – 6:00 PM



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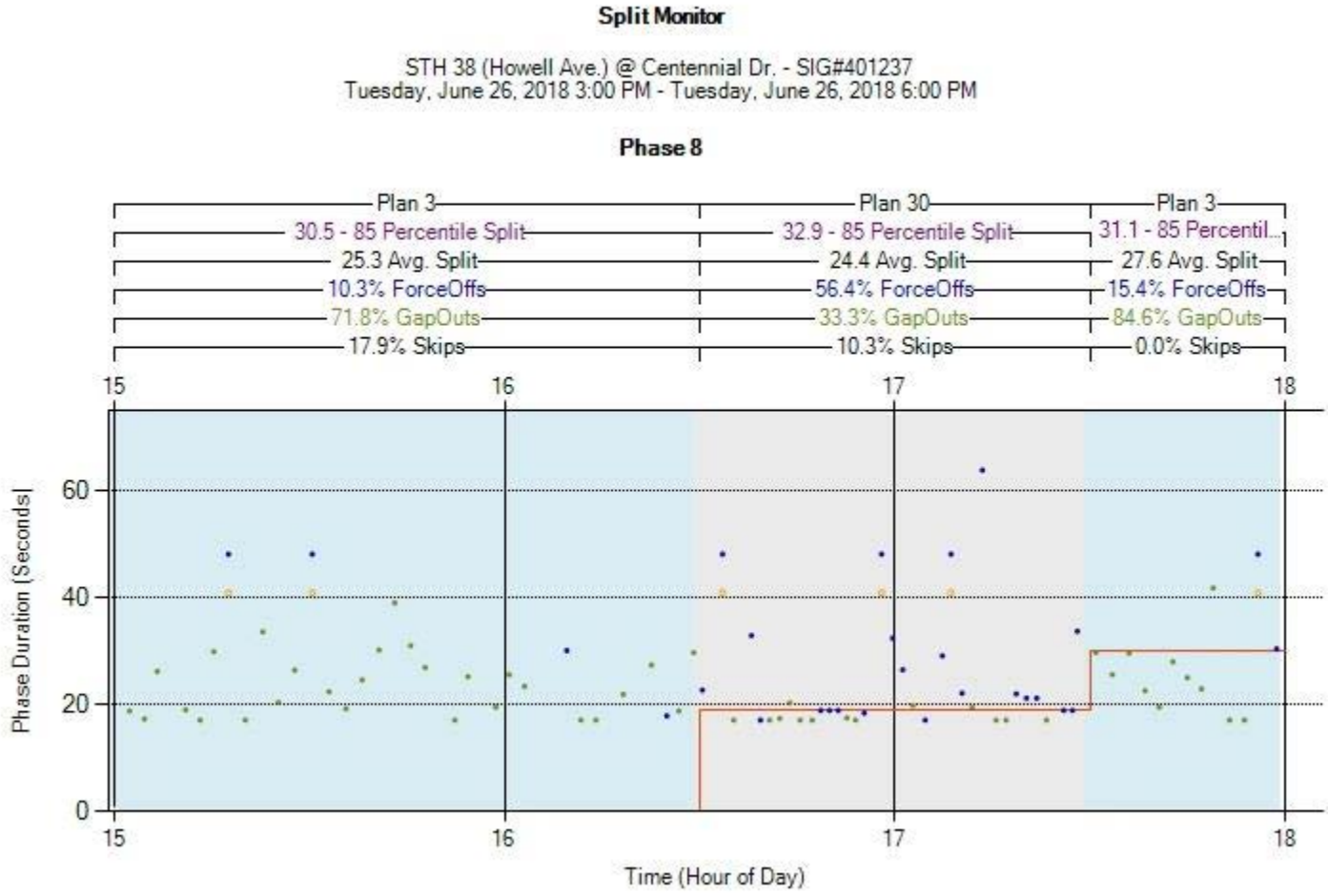
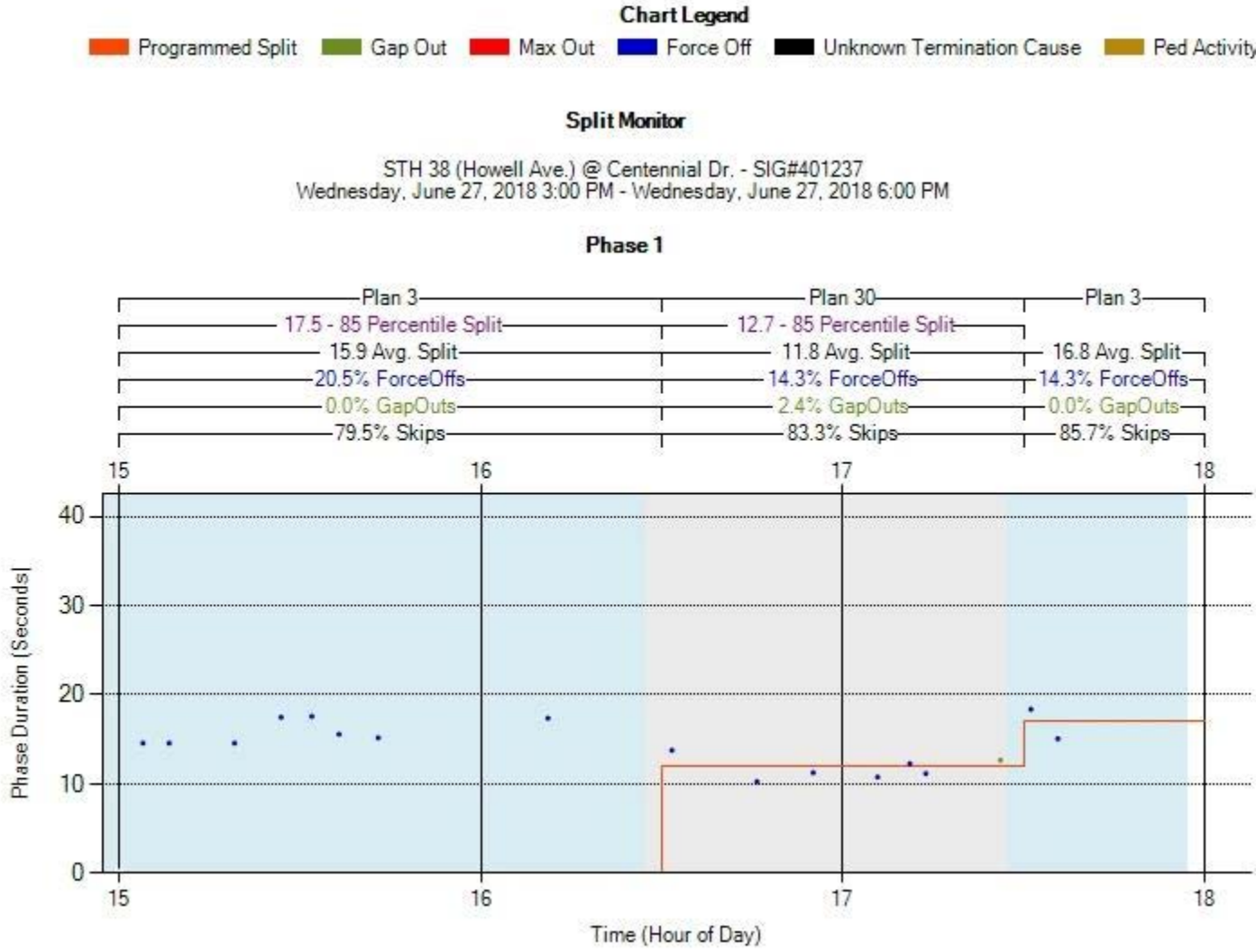
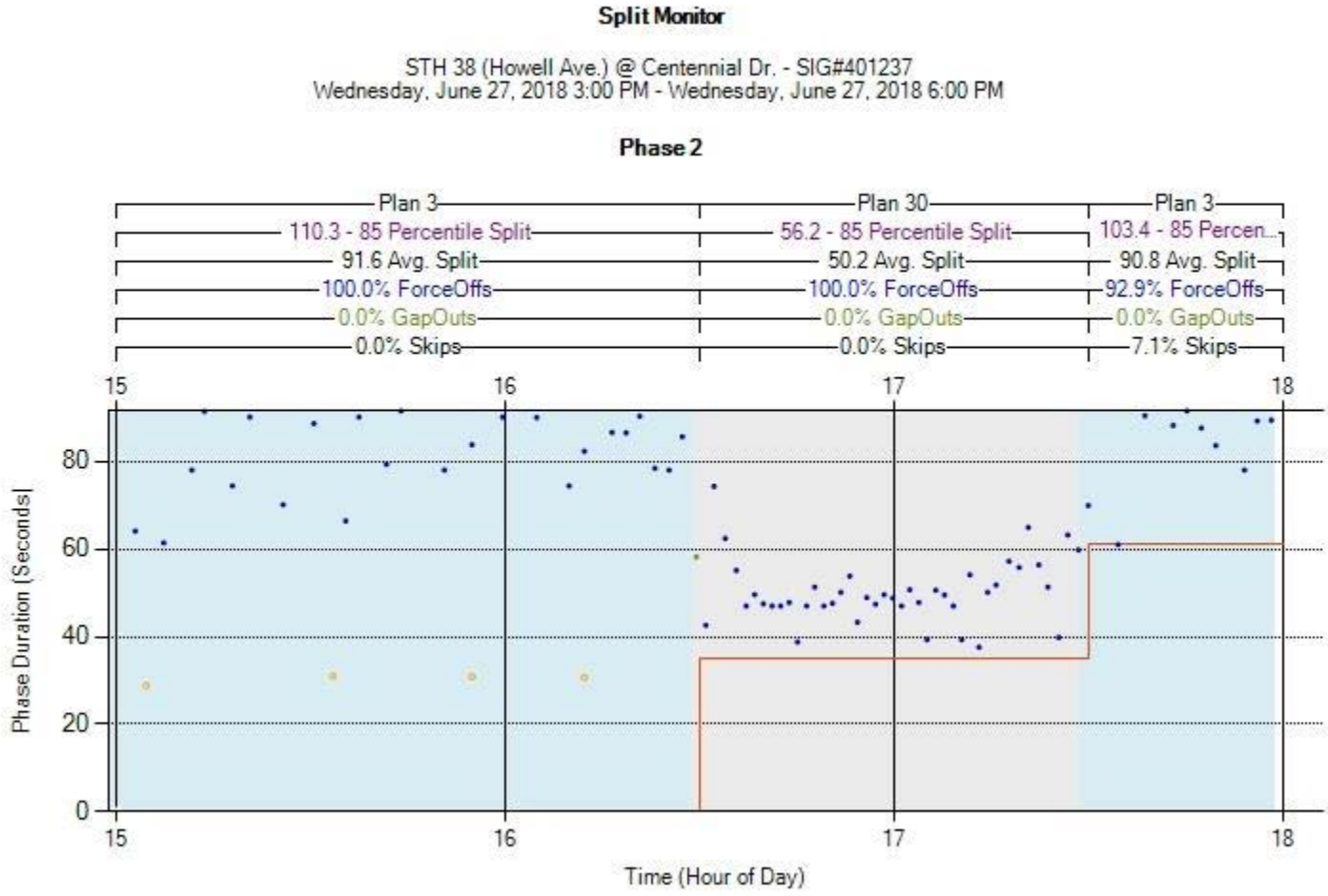


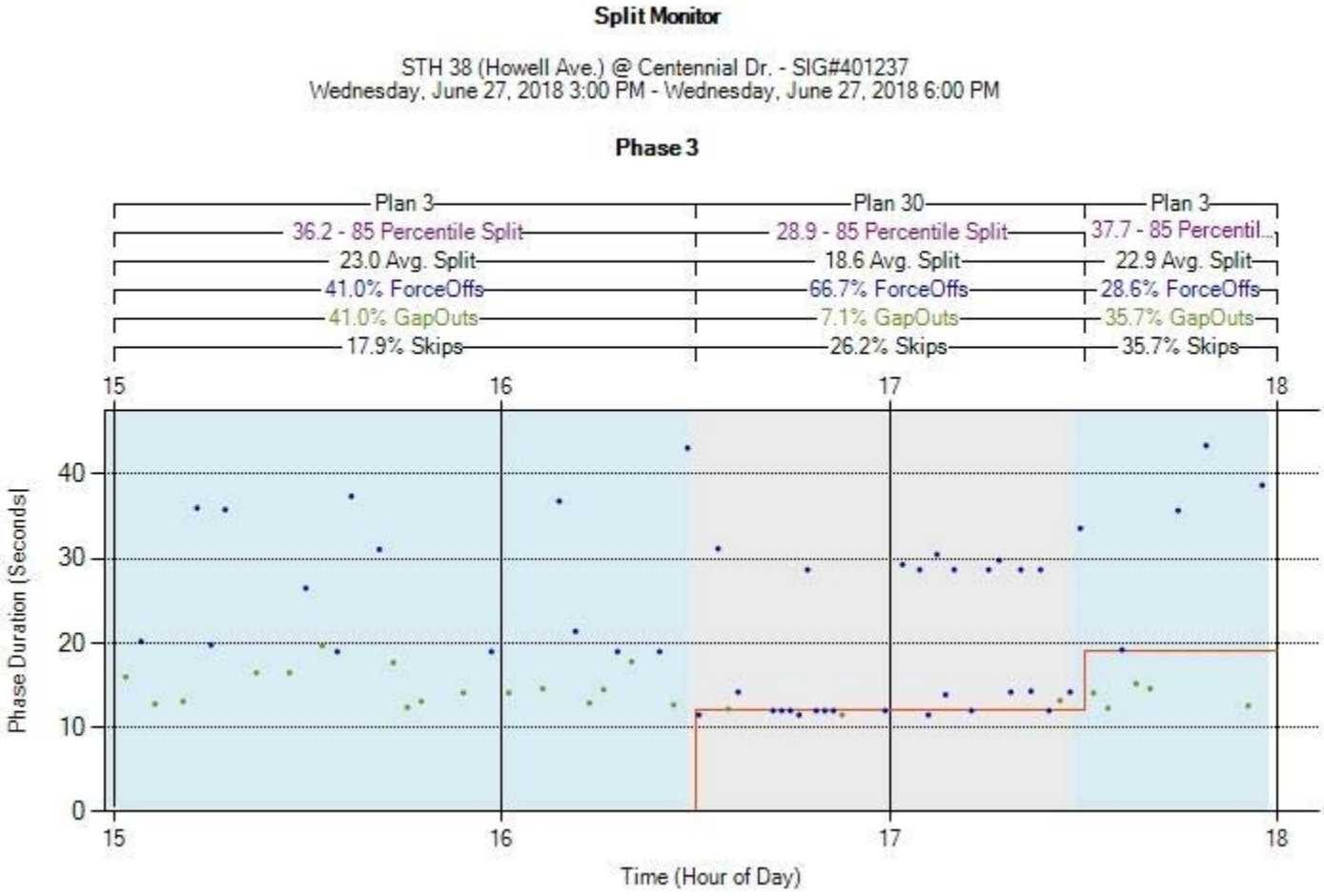
WIS 38 Corridor – STH 38 & Centennial Dr.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM



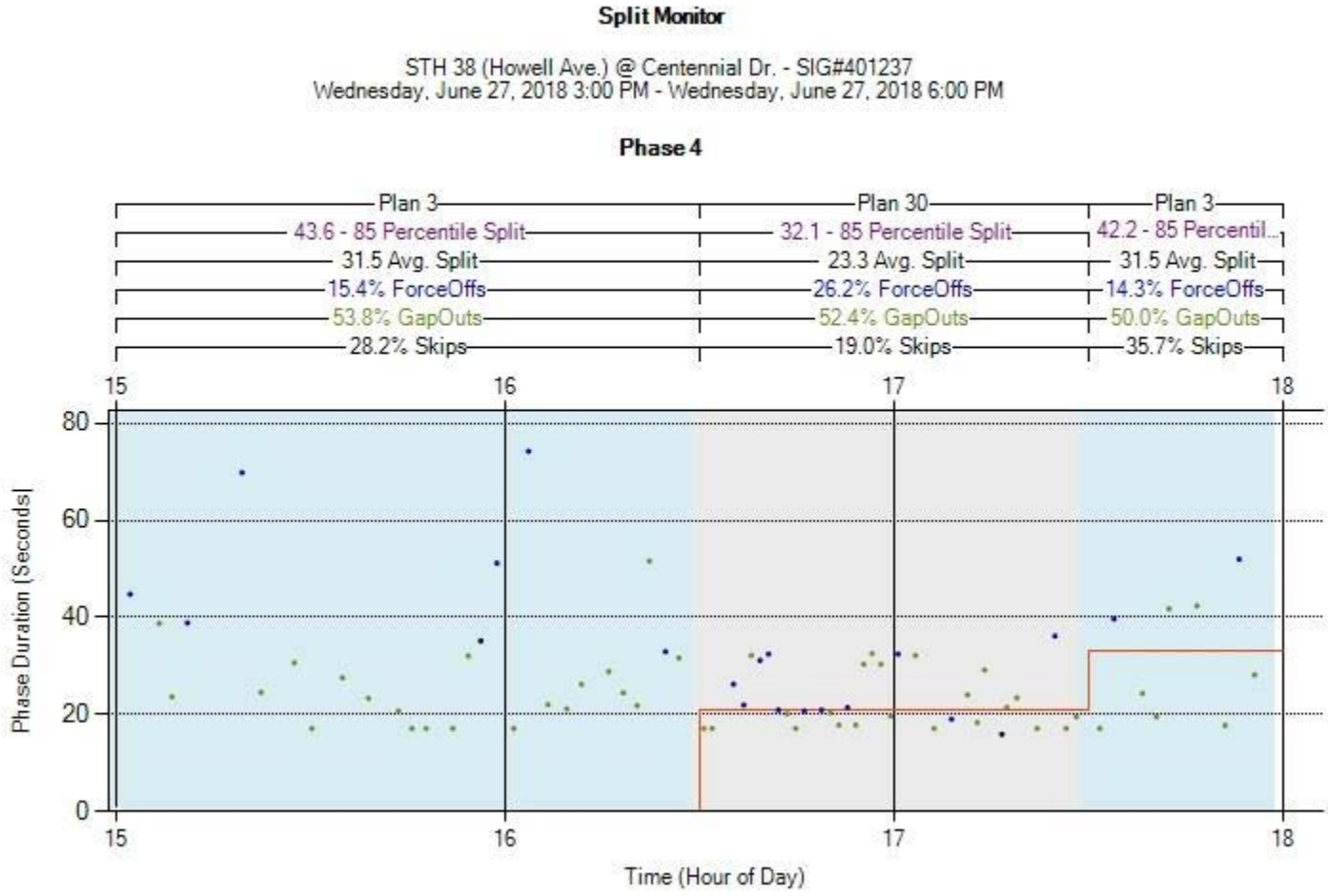
WIS 38 Corridor – STH 38 & Centennial Dr.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM



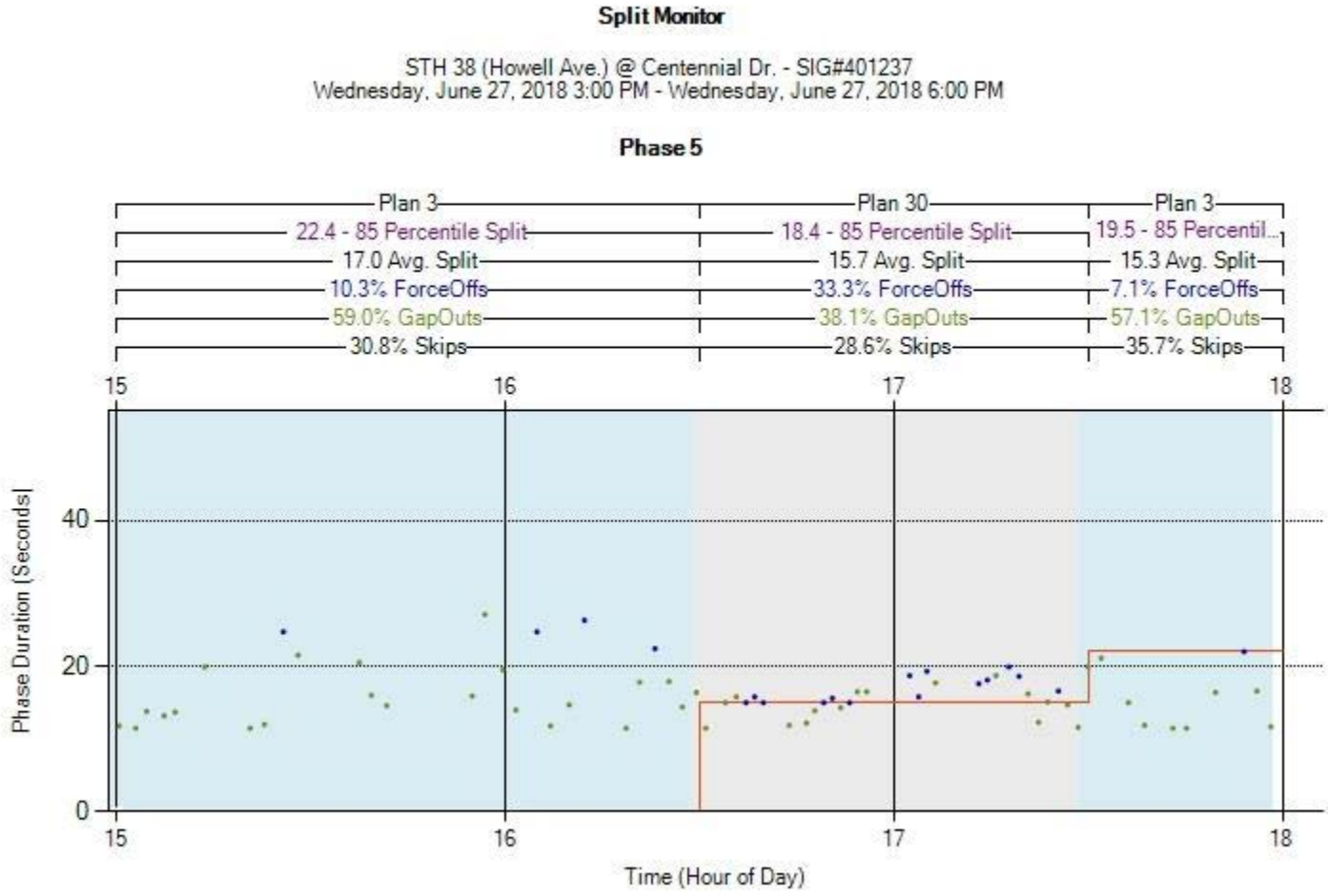
WIS 38 Corridor – STH 38 & Centennial Dr.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM



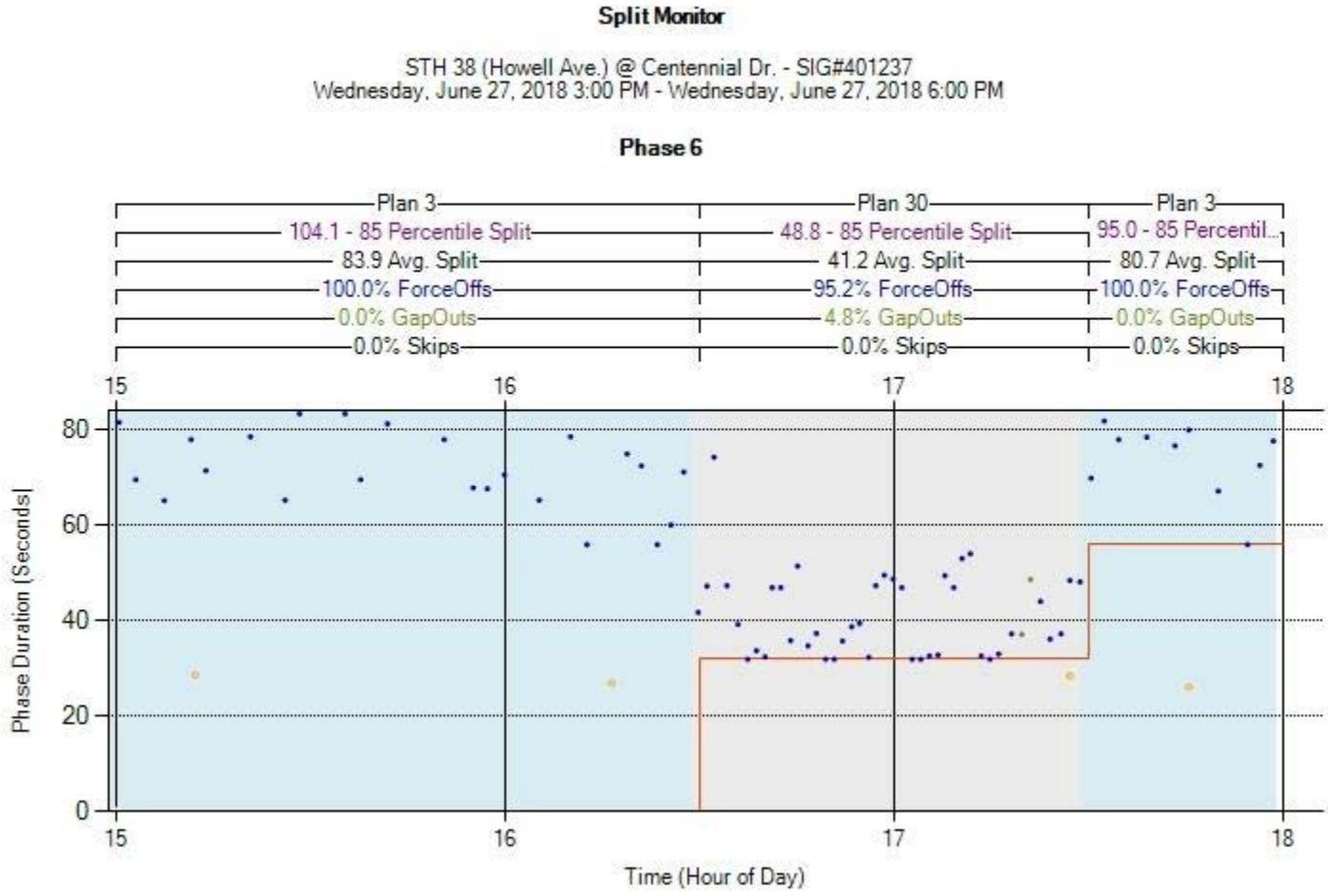
WIS 38 Corridor – STH 38 & Centennial Dr.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Centennial Dr.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM

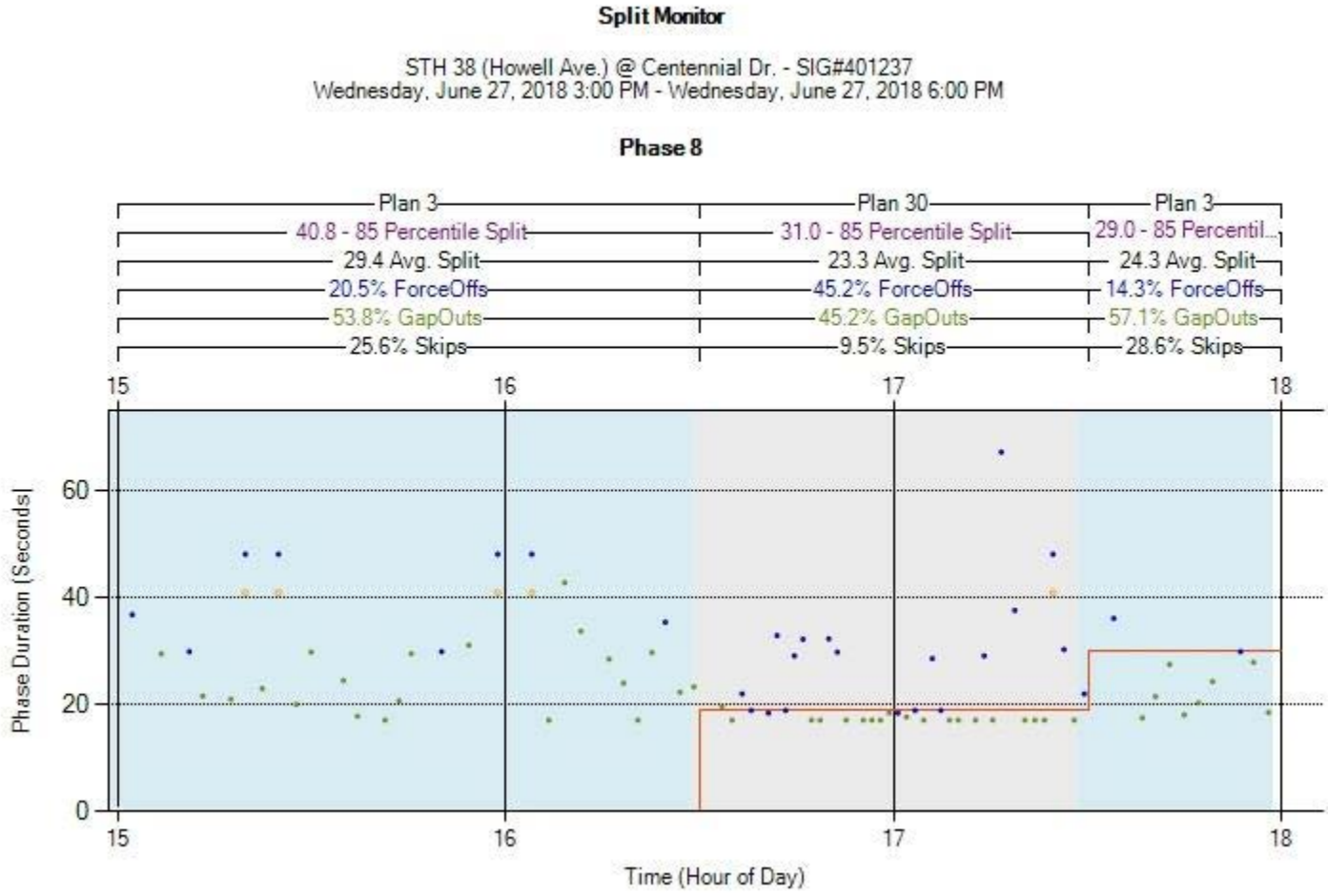


WIS 38 Corridor – STH 38 & Centennial Dr.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM

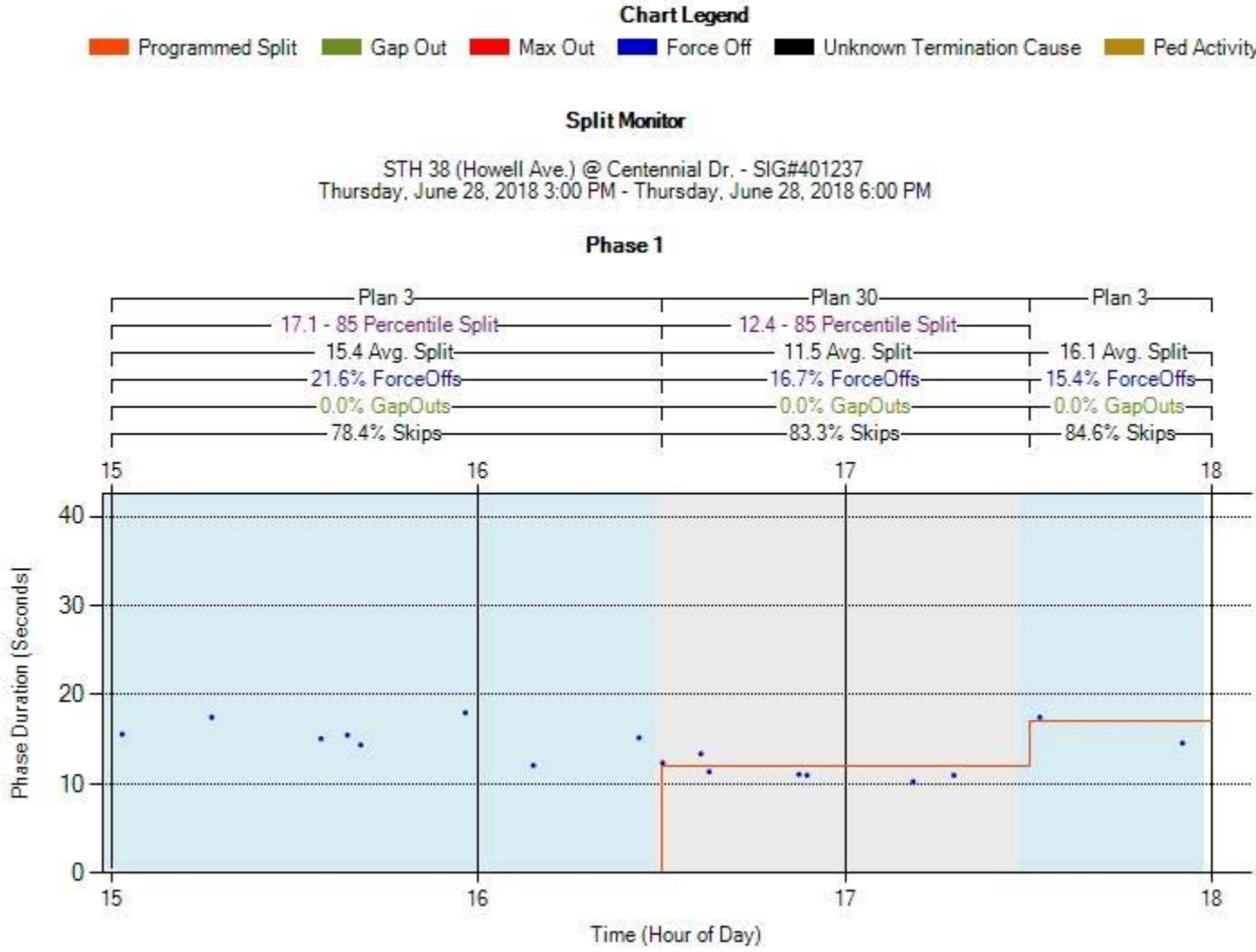


WIS 38 Corridor – STH 38 & Centennial Dr.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM

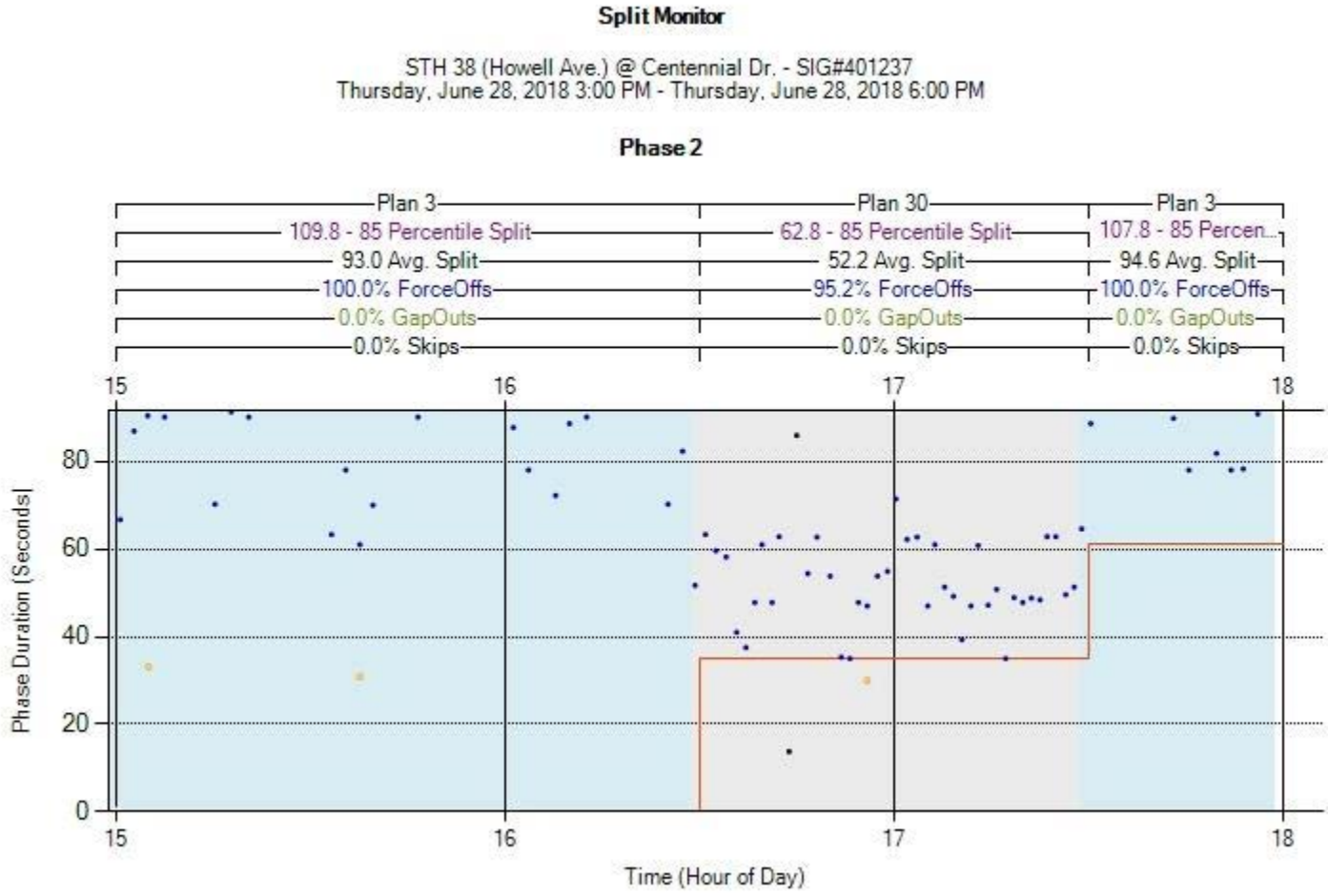
WIS 38 Corridor – STH 38 & Centennial Dr.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM



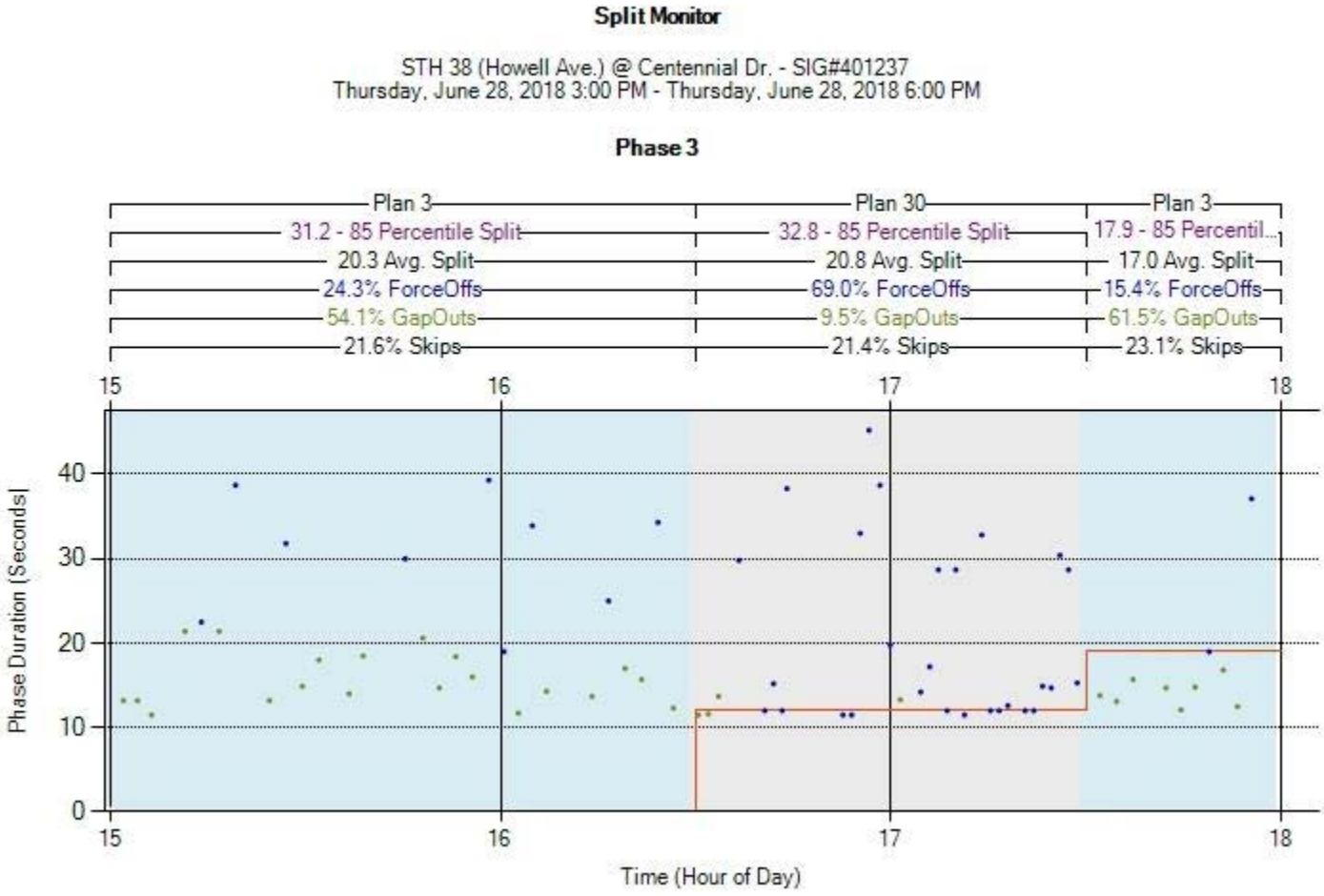
WIS 38 Corridor – STH 38 & Centennial Dr.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM



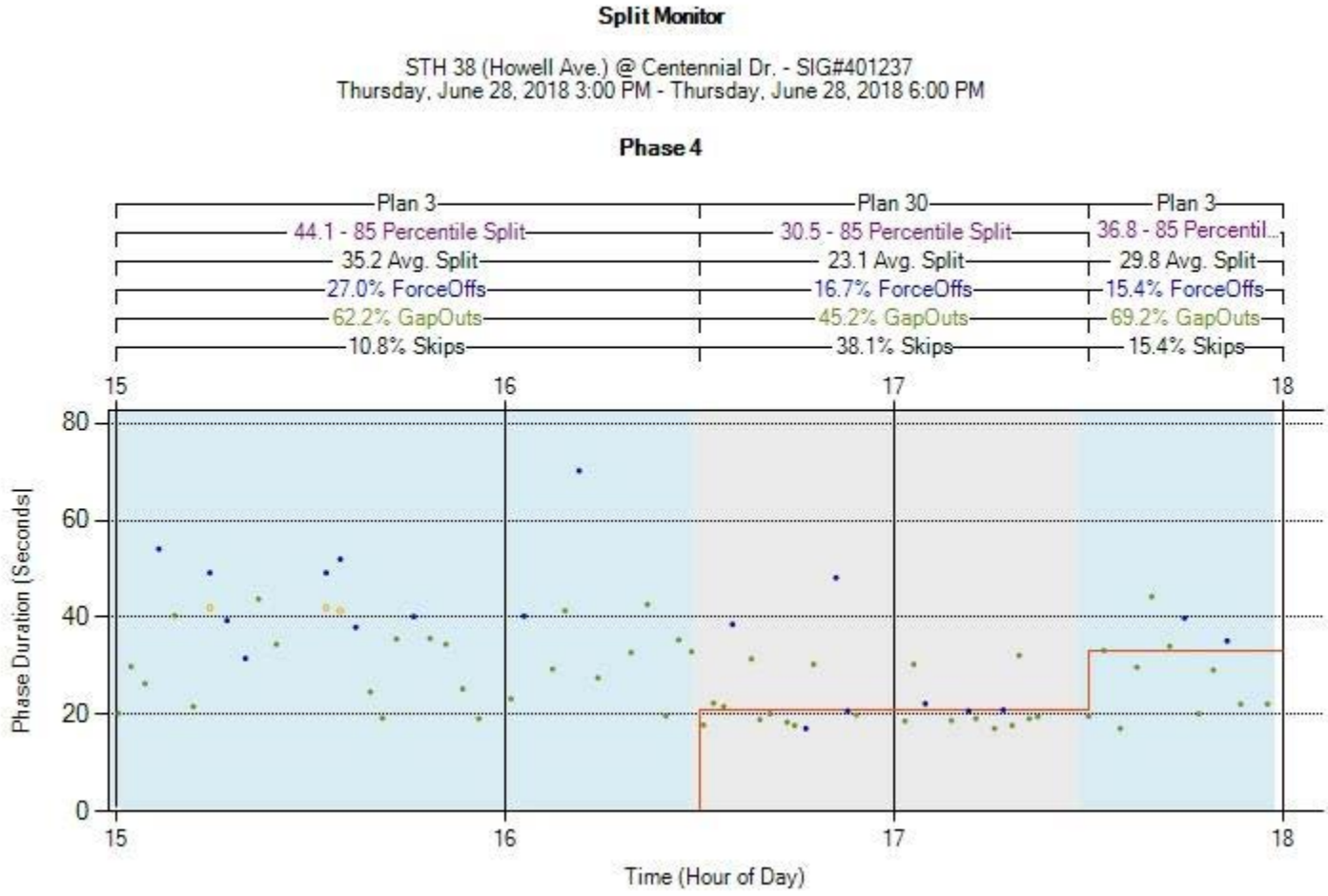
WIS 38 Corridor – STH 38 & Centennial Dr.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM



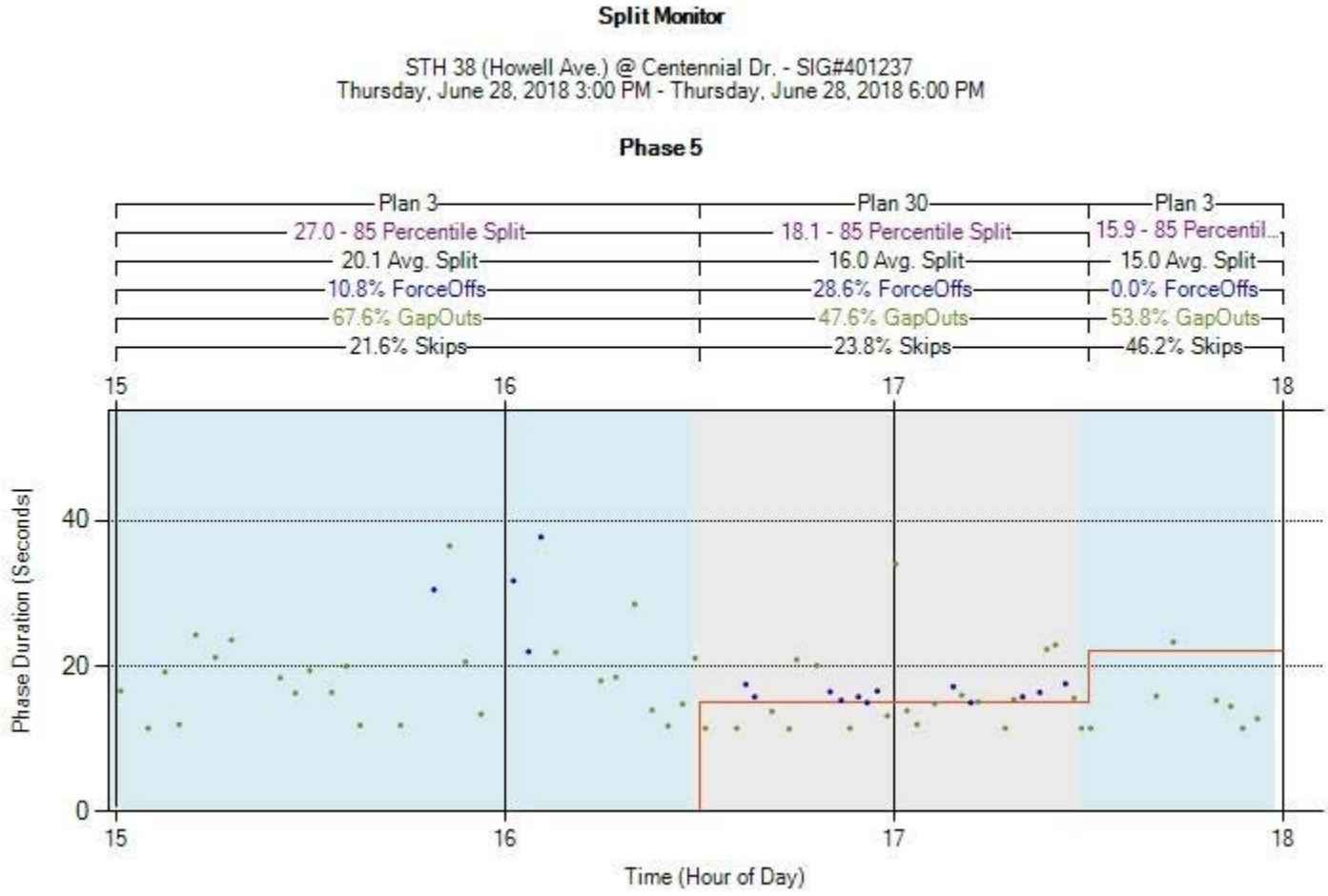
WIS 38 Corridor – STH 38 & Centennial Dr.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM

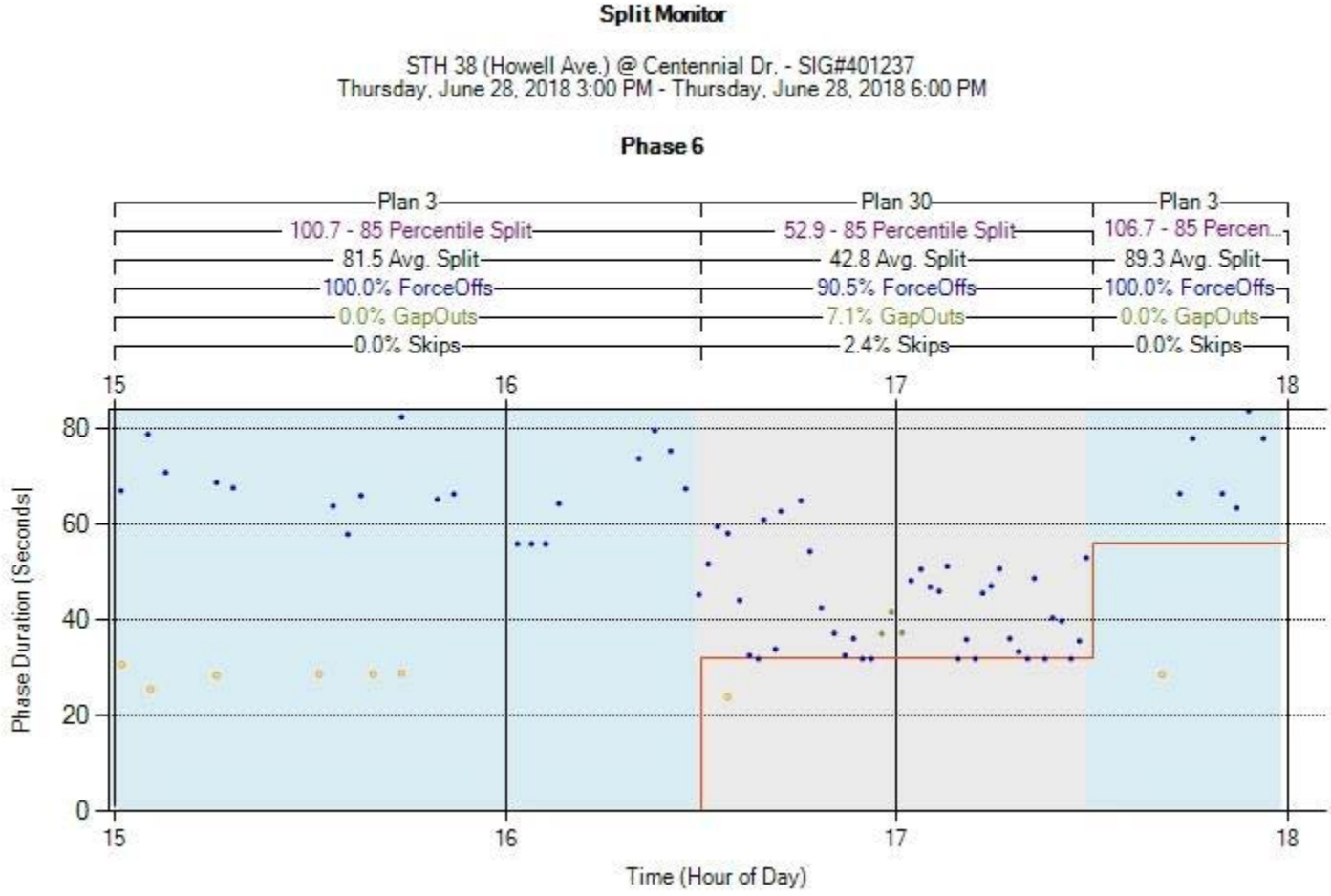


WIS 38 Corridor – STH 38 & Centennial Dr.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM

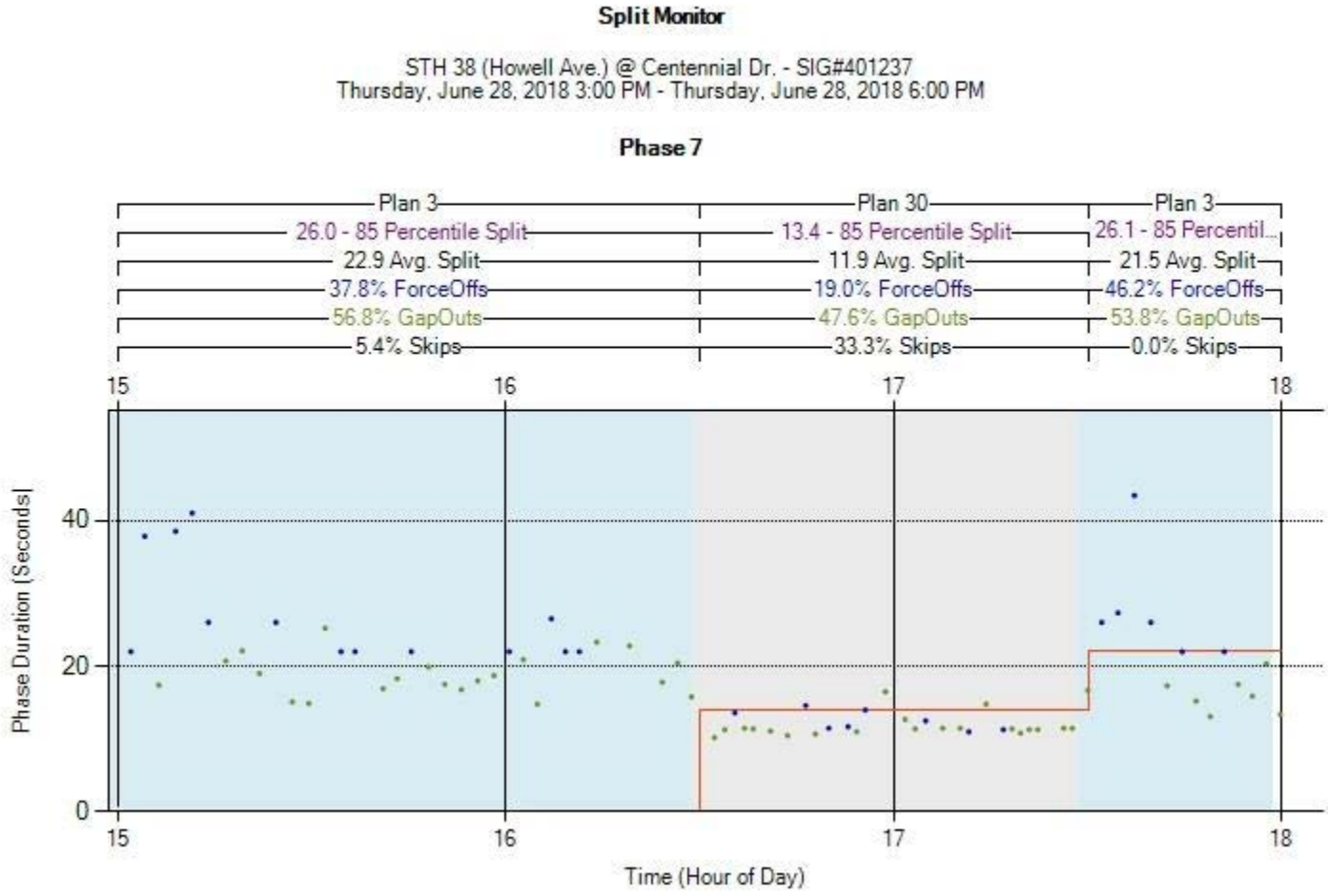


WIS 38 Corridor – STH 38 & Centennial Dr.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM

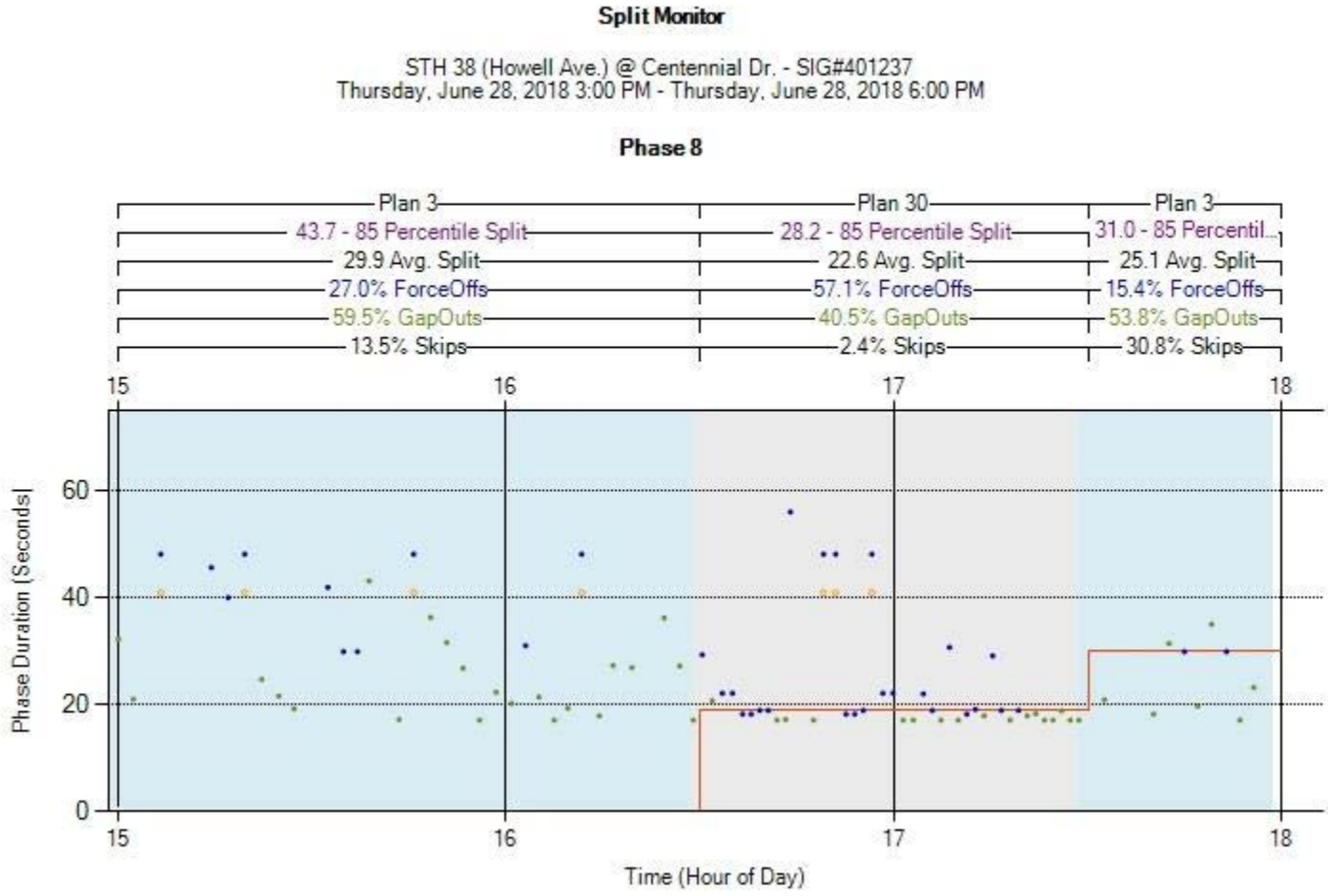



Split Monitor
STH 38 (Howell Ave.) @ Centennial Dr. - SIG#401237
Thursday, June 28, 2018 3:00 PM - Thursday, June 28, 2018 6:00 PM
Phase 6
Plan 3
100.7 - 85 Percentile Split
81.5 Avg. Split
100.0% ForceOffs
0.0% GapOuts
0.0% Skips
Plan 30
52.9 - 85 Percentile Split
42.8 Avg. Split
90.5% ForceOffs
7.1% GapOuts
2.4% Skips
Plan 3
106.7 - 85 Percen...
89.3 Avg. Split
100.0% ForceOffs
0.0% GapOuts
0.0% Skips
15
16
17
18
80
60
40
20
0
Phase Duration (Seconds)
Time (Hour of Day)

WIS 38 Corridor – STH 38 & Centennial Dr.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Centennial Dr.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM



WisBOOM Outputs
WIS 38 Corridor
Vistro Optimized Timings

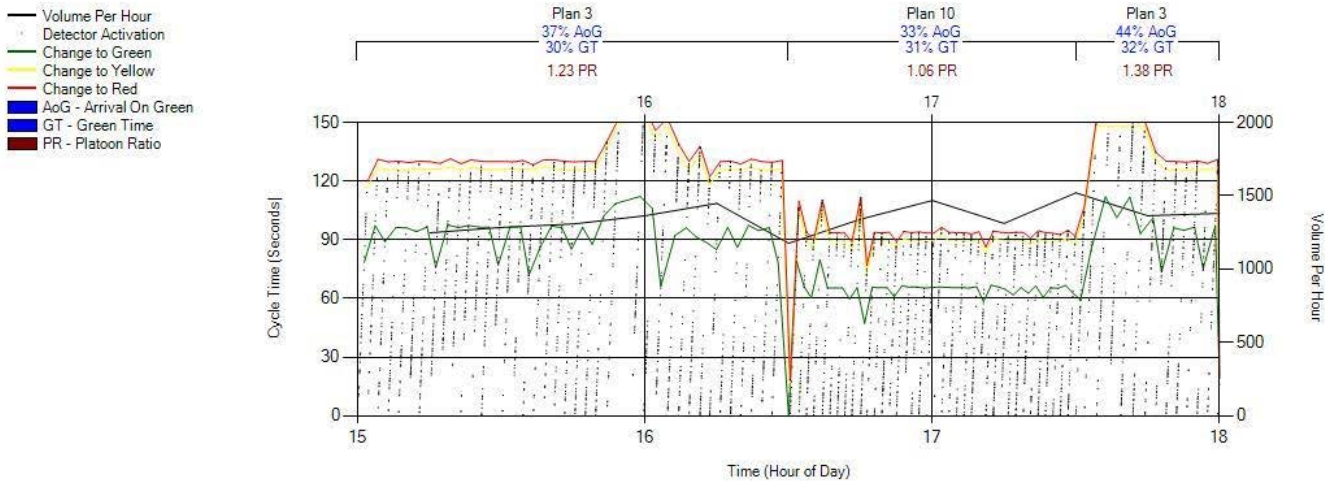
WIS 38 Corridor – STH 38 & Drexel Ave.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM

Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Drexel Ave. - SIG#401094
Tuesday, June 12, 2018 3:00 PM - Tuesday, June 12, 2018 6:00 PM
Advanced detector located 351 ft. upstream of stop bar

Phase 2: Southbound

AoG = 37%

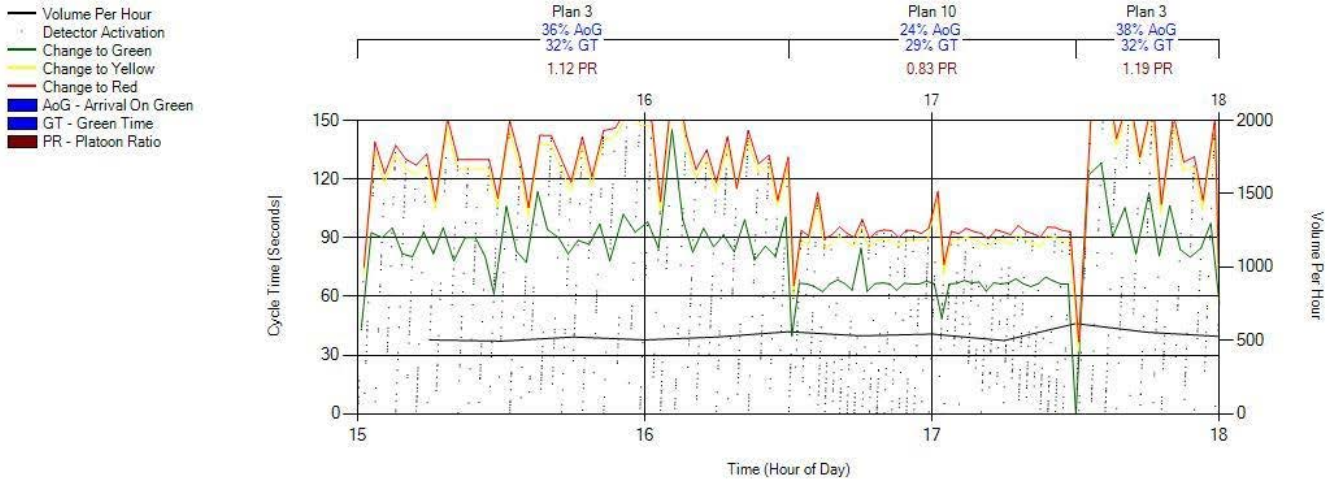


Purdue Coordination Diagram

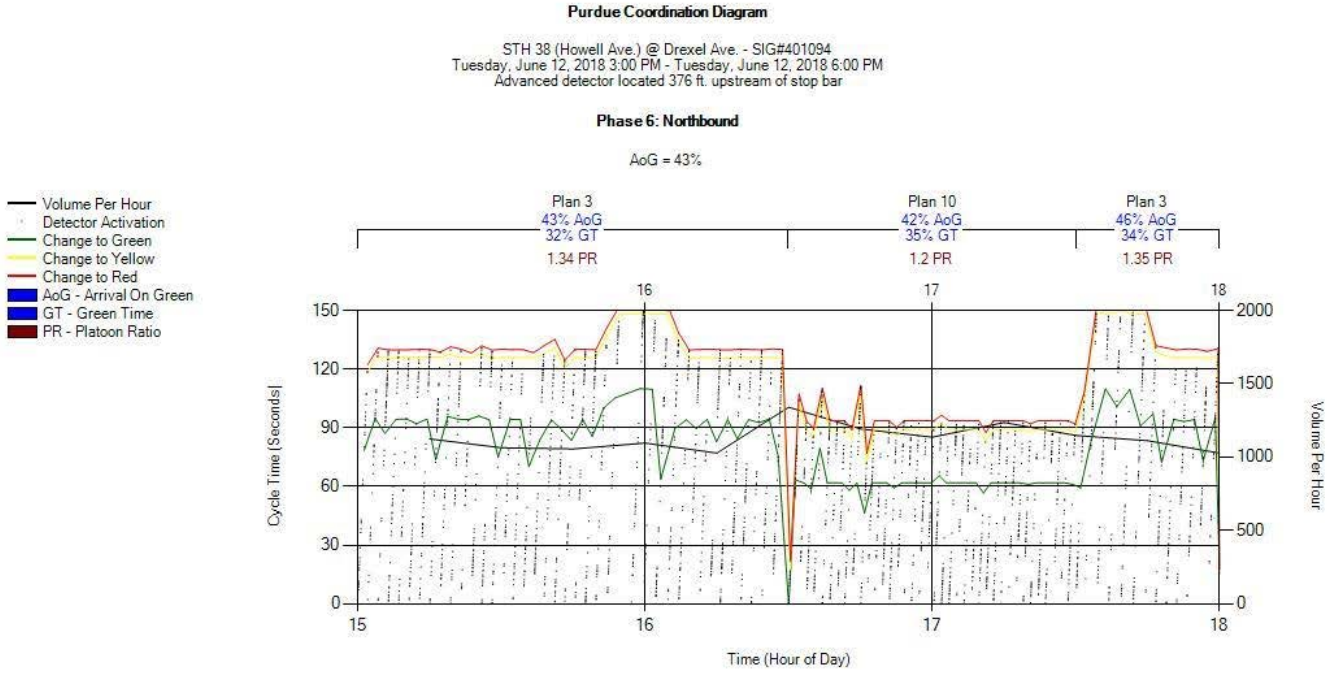
STH 38 (Howell Ave.) @ Drexel Ave. - SIG#401094
Tuesday, June 12, 2018 3:00 PM - Tuesday, June 12, 2018 6:00 PM
Advanced detector located 256 ft. upstream of stop bar

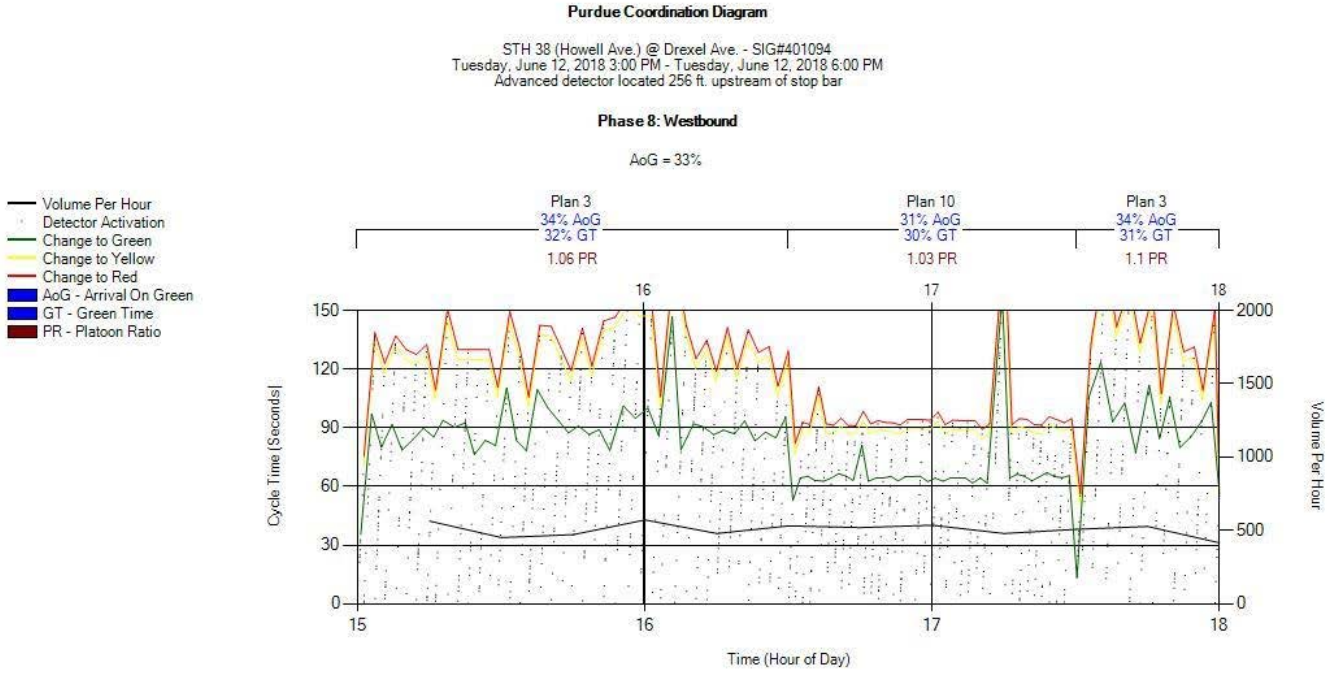
Phase 4: Eastbound

AoG = 33%

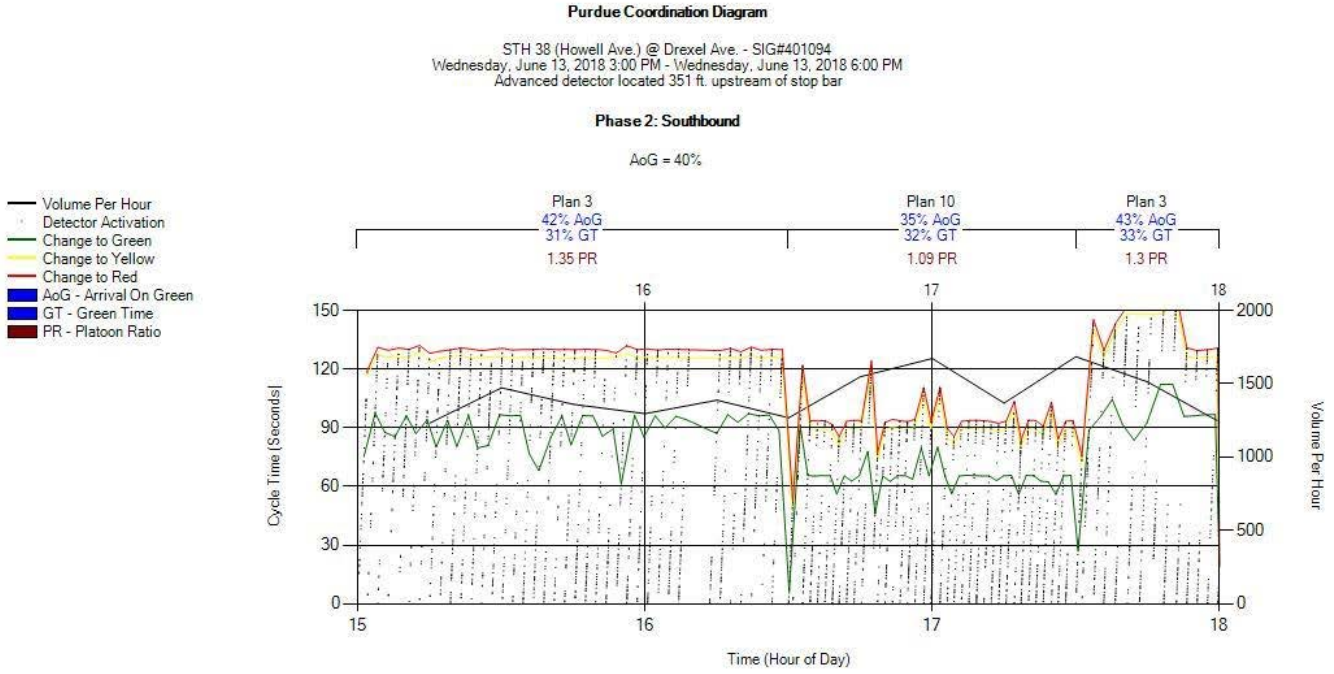


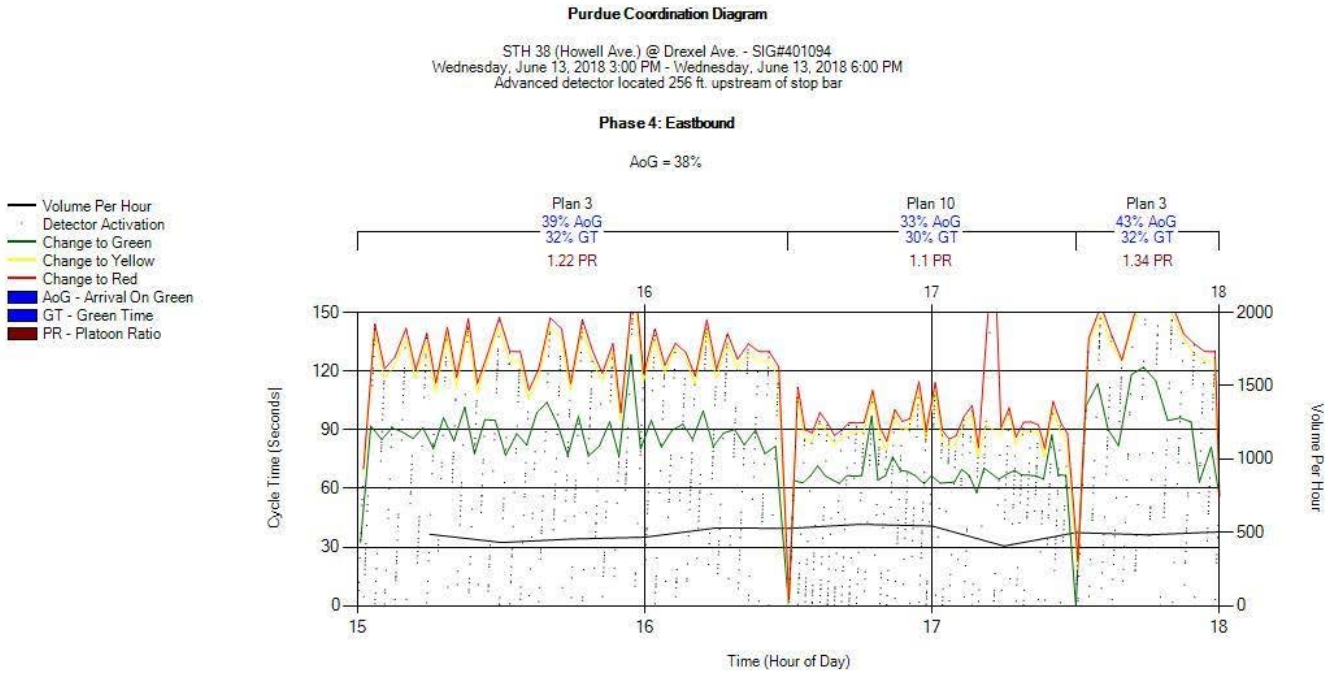
WIS 38 Corridor – STH 38 & Drexel Ave.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM



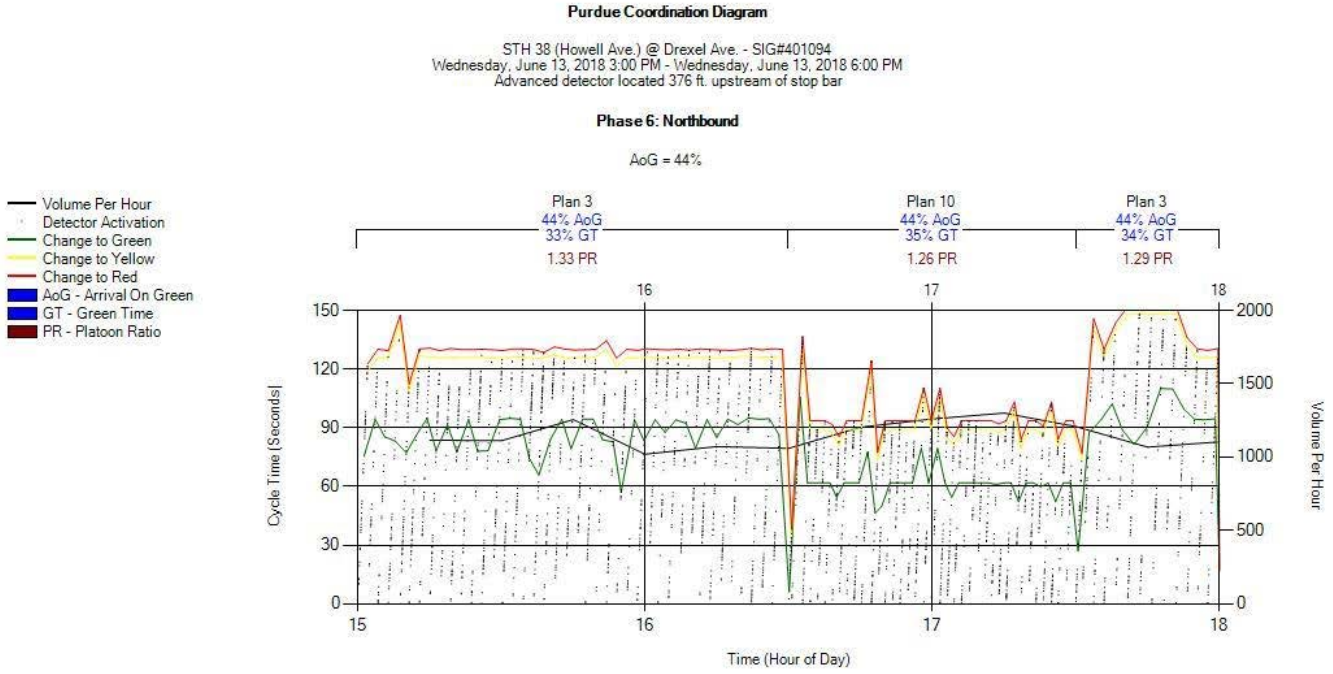


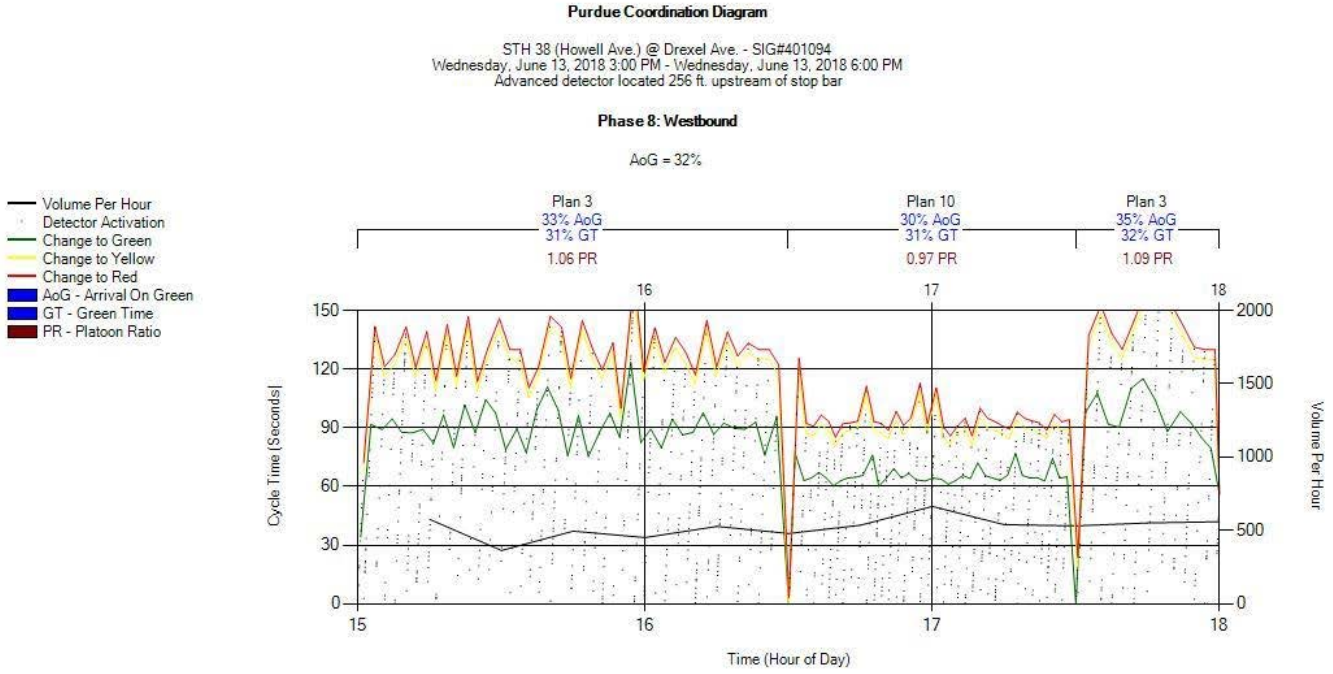
WIS 38 Corridor – STH 38 & Drexel Ave.
Vistro Timings
6/13/2018 – 3:00 PM – 6:00 PM



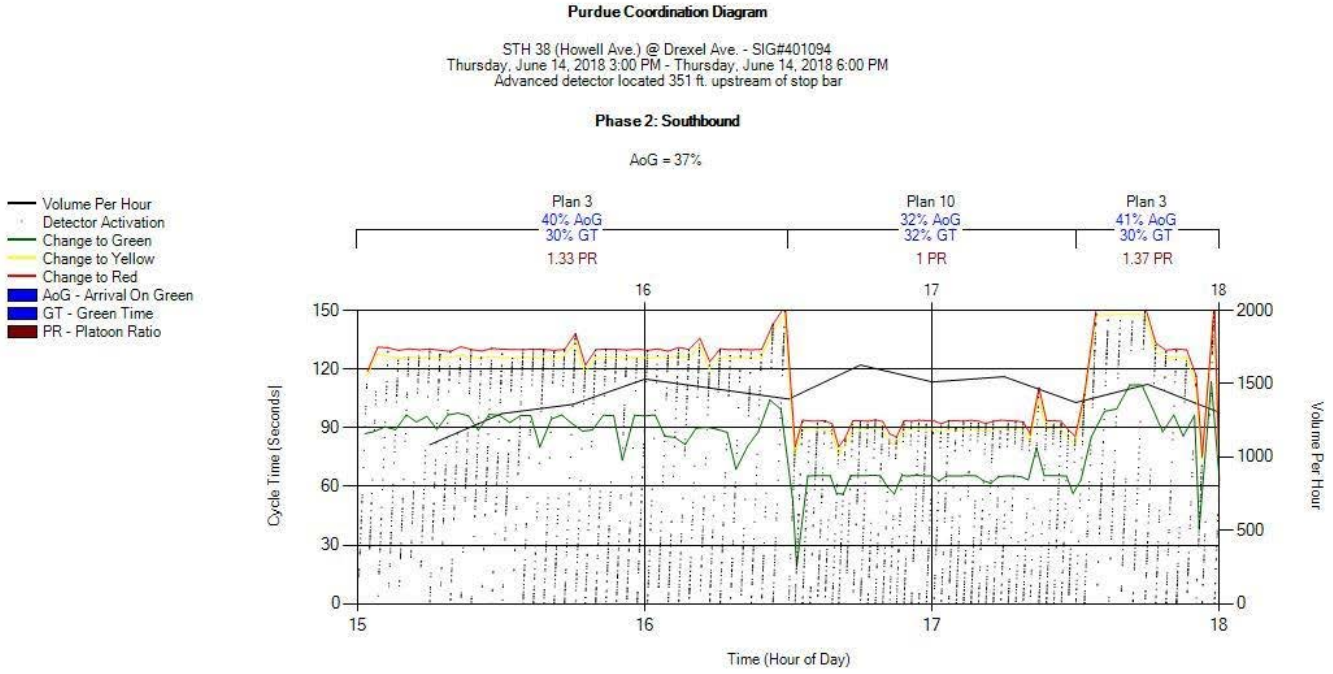


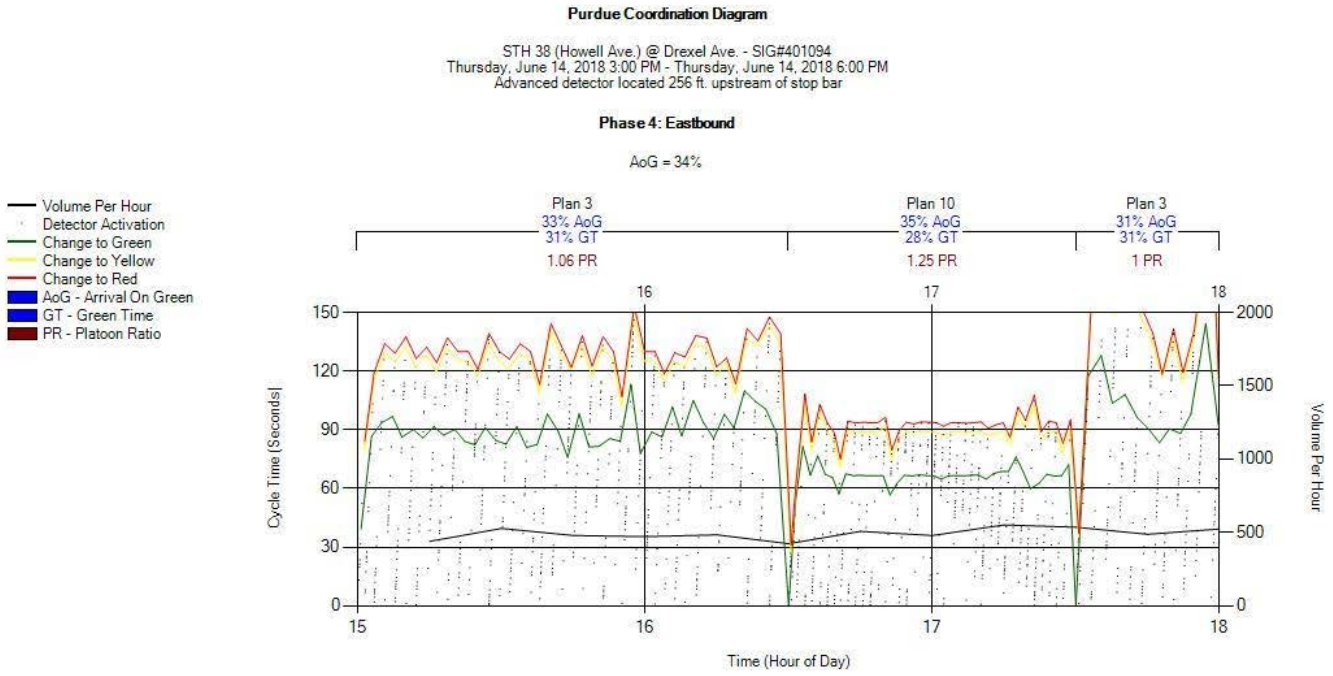
WIS 38 Corridor – STH 38 & Drexel Ave.
Vistro Timings
6/13/2018 – 3:00 PM – 6:00 PM



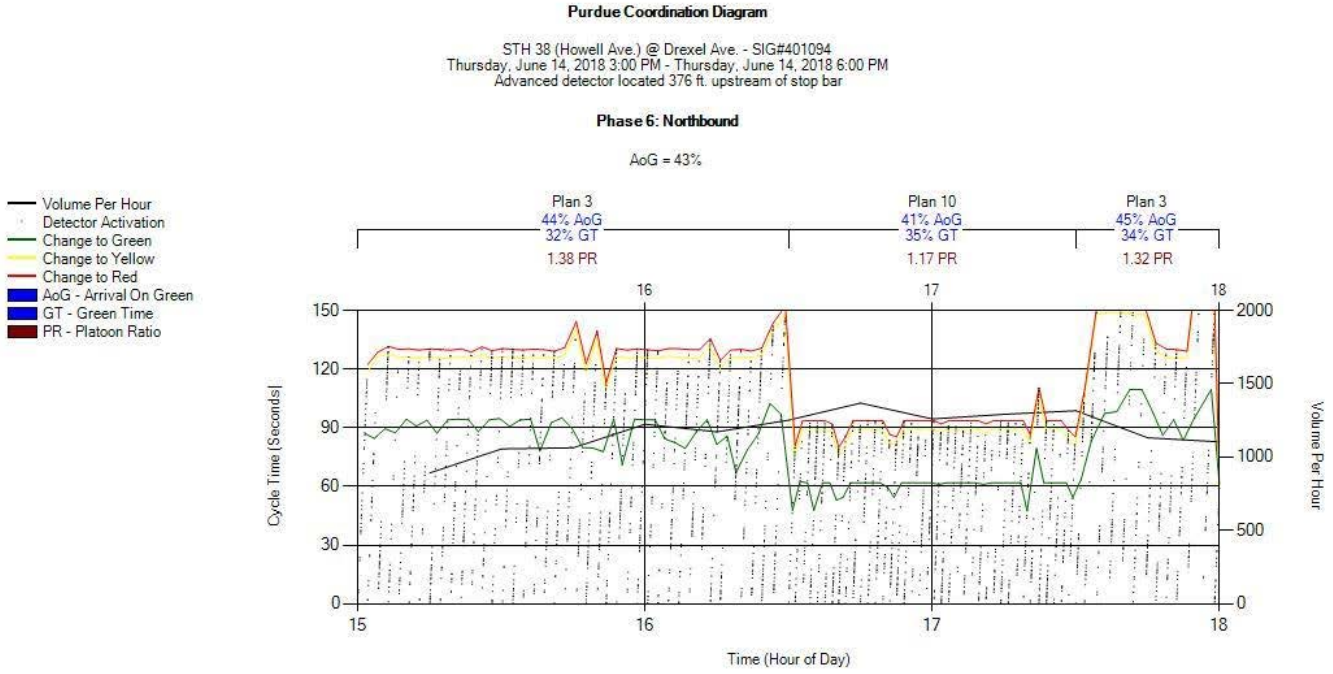


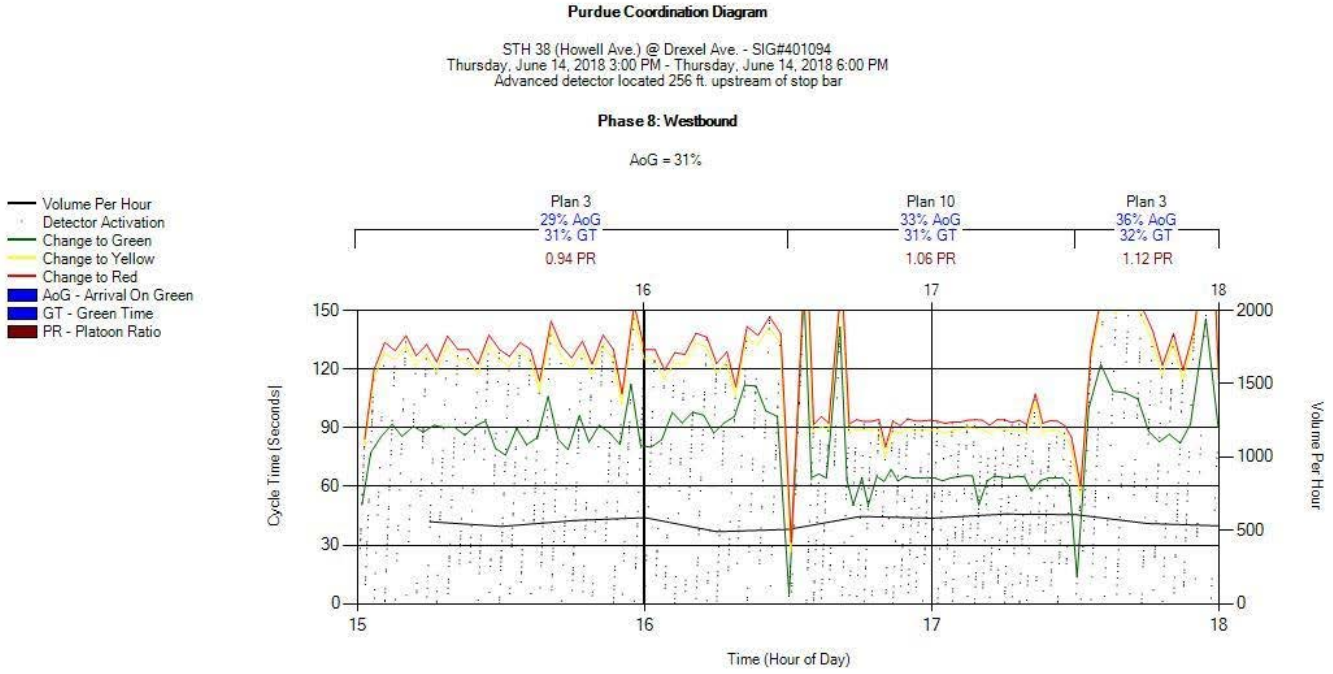
WIS 38 Corridor – STH 38 & Drexel Ave.
Vistro Timings
6/14/2018 – 3:00 PM – 6:00 PM



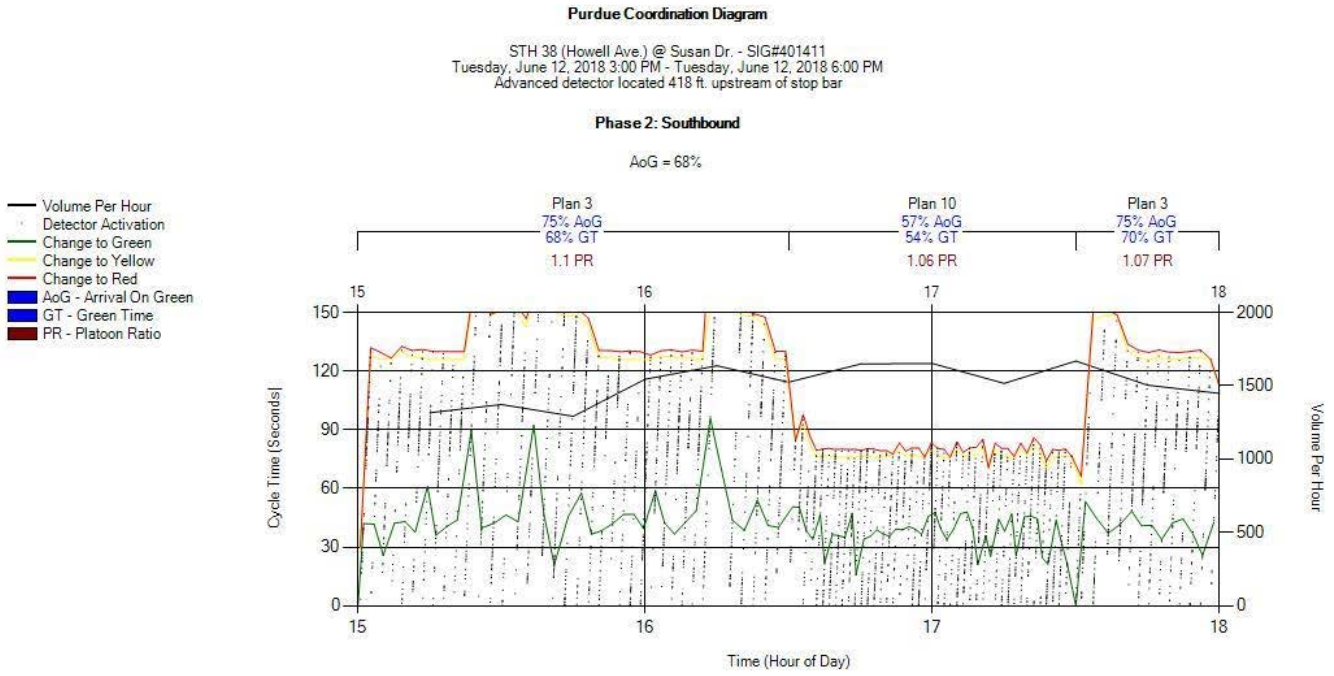


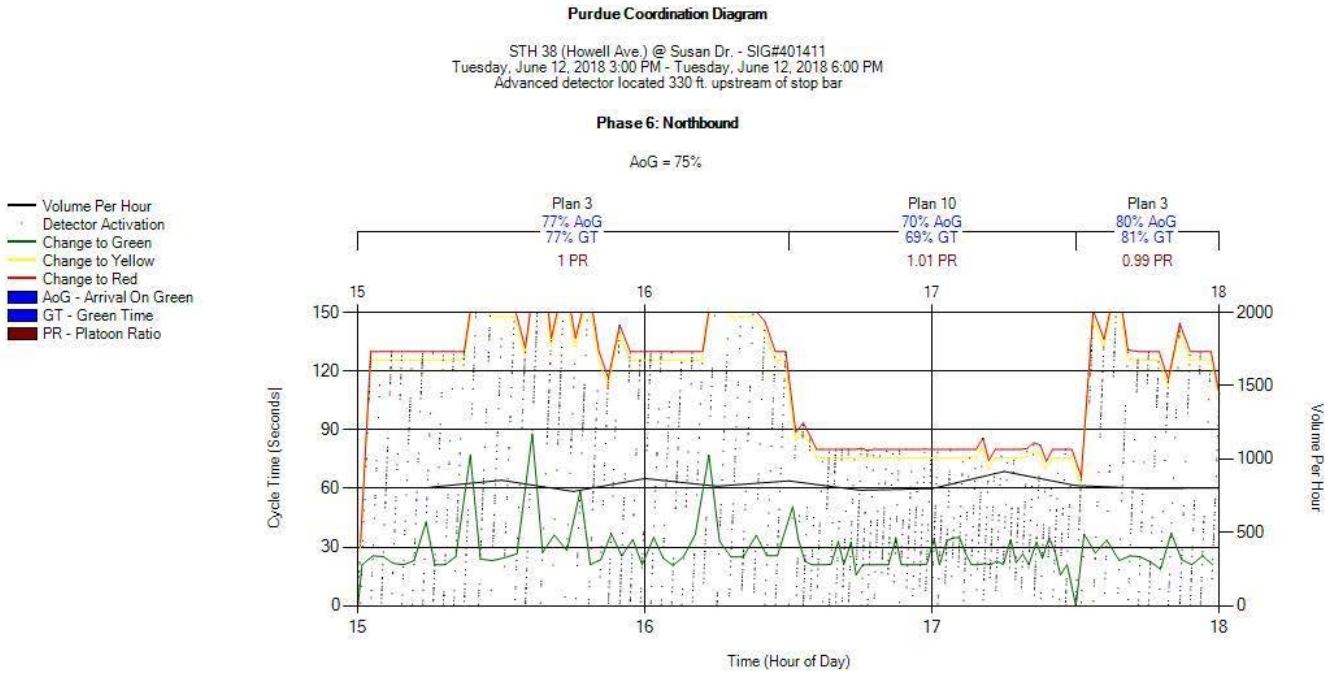
WIS 38 Corridor – STH 38 & Drexel Ave.
Vistro Timings
6/14/2018 – 3:00 PM – 6:00 PM



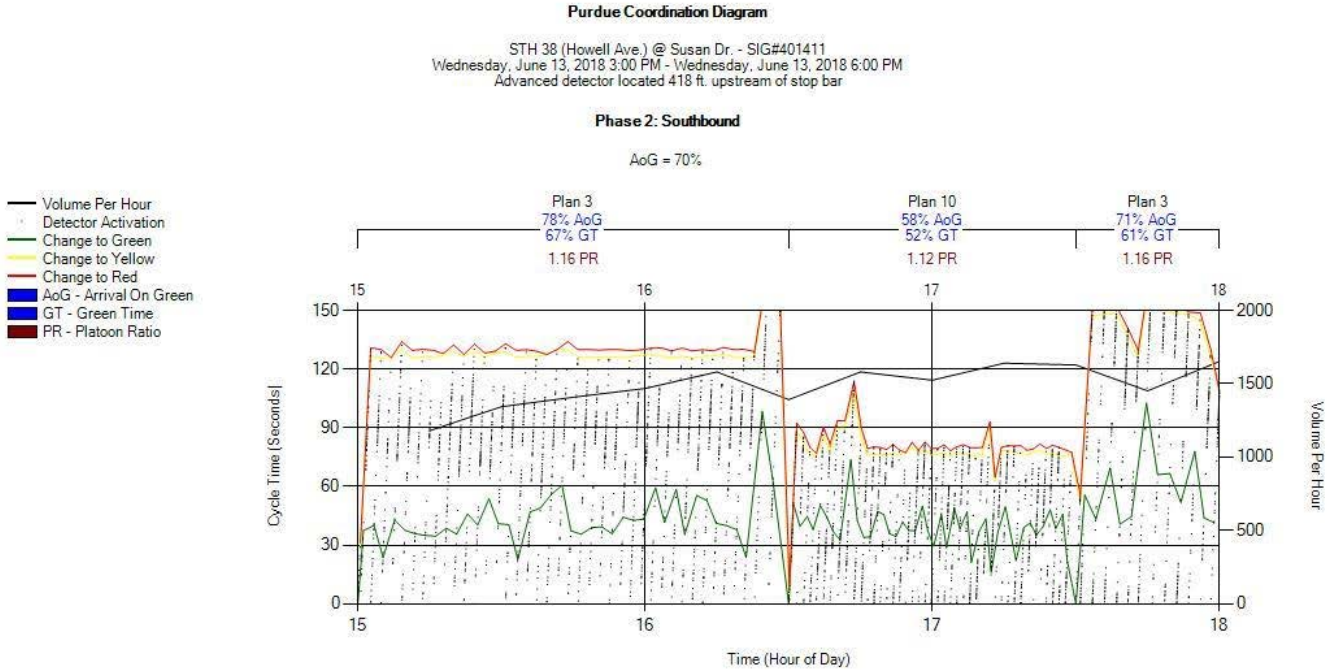


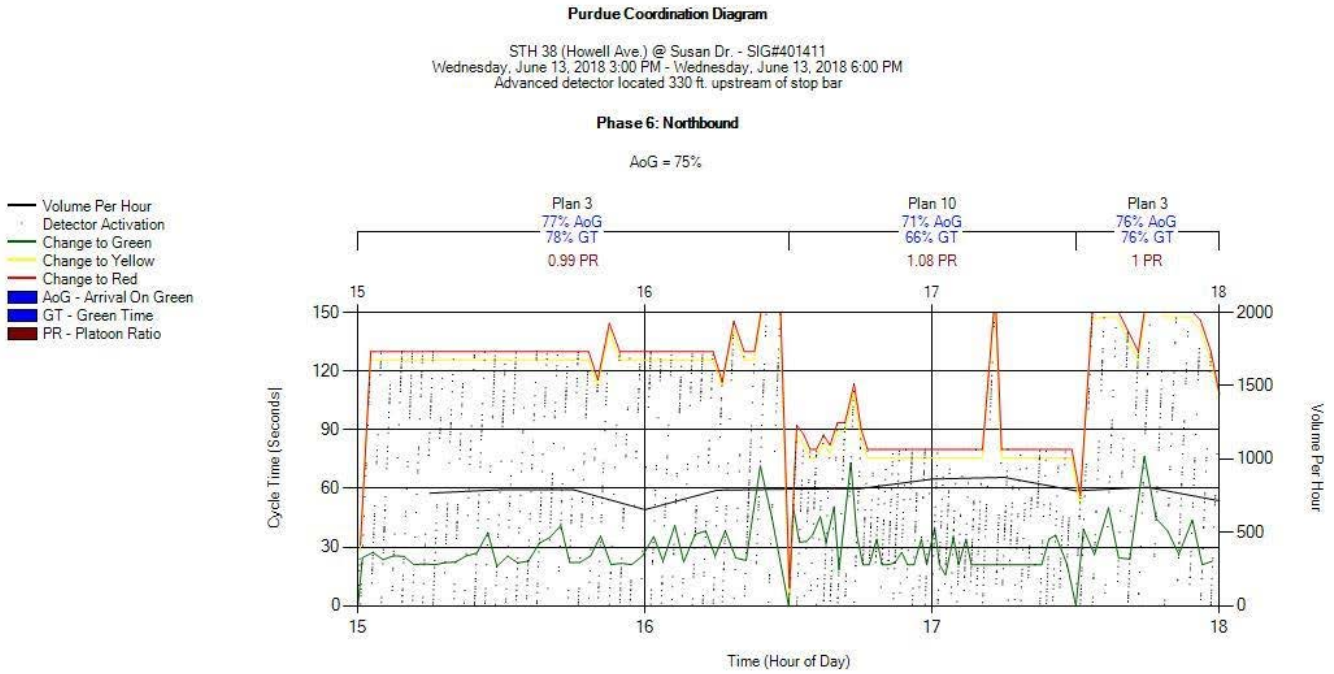
WIS 38 Corridor – STH 38 & Susan Dr.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM





WIS 38 Corridor – STH 38 & Susan Dr.
Vistro Timings
6/13/2018 – 3:00 PM – 6:00 PM





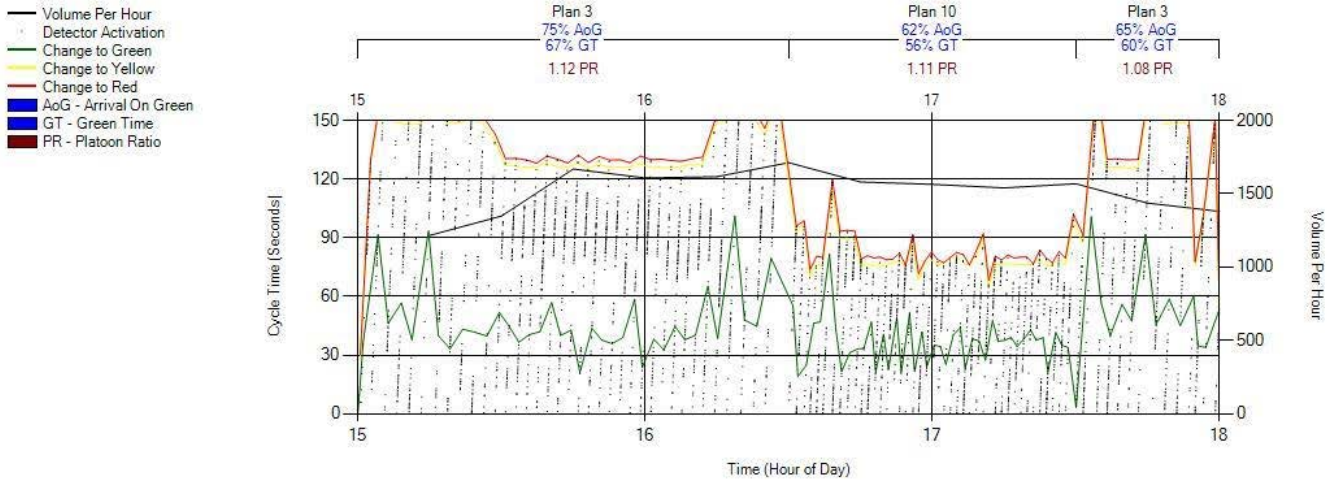
WIS 38 Corridor – STH 38 & Susan Dr.
Vistro Timings
6/14/2018 – 3:00 PM – 6:00 PM

Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Susan Dr. - SIG#401411
Thursday, June 14, 2018 3:00 PM - Thursday, June 14, 2018 6:00 PM
Advanced detector located 418 ft. upstream of stop bar

Phase 2: Southbound

AoG = 69%

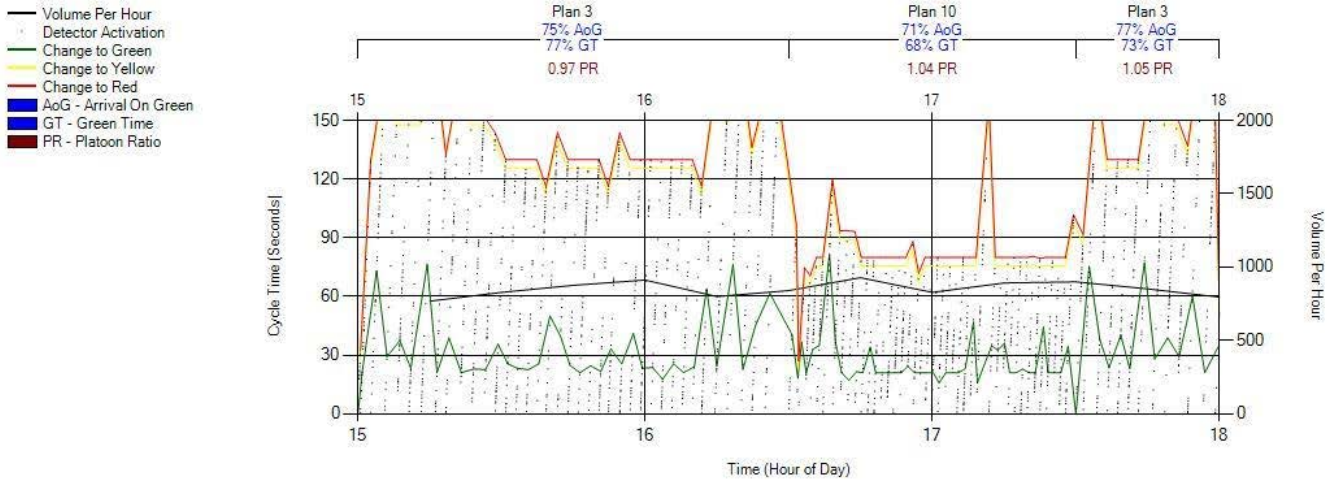


Purdue Coordination Diagram

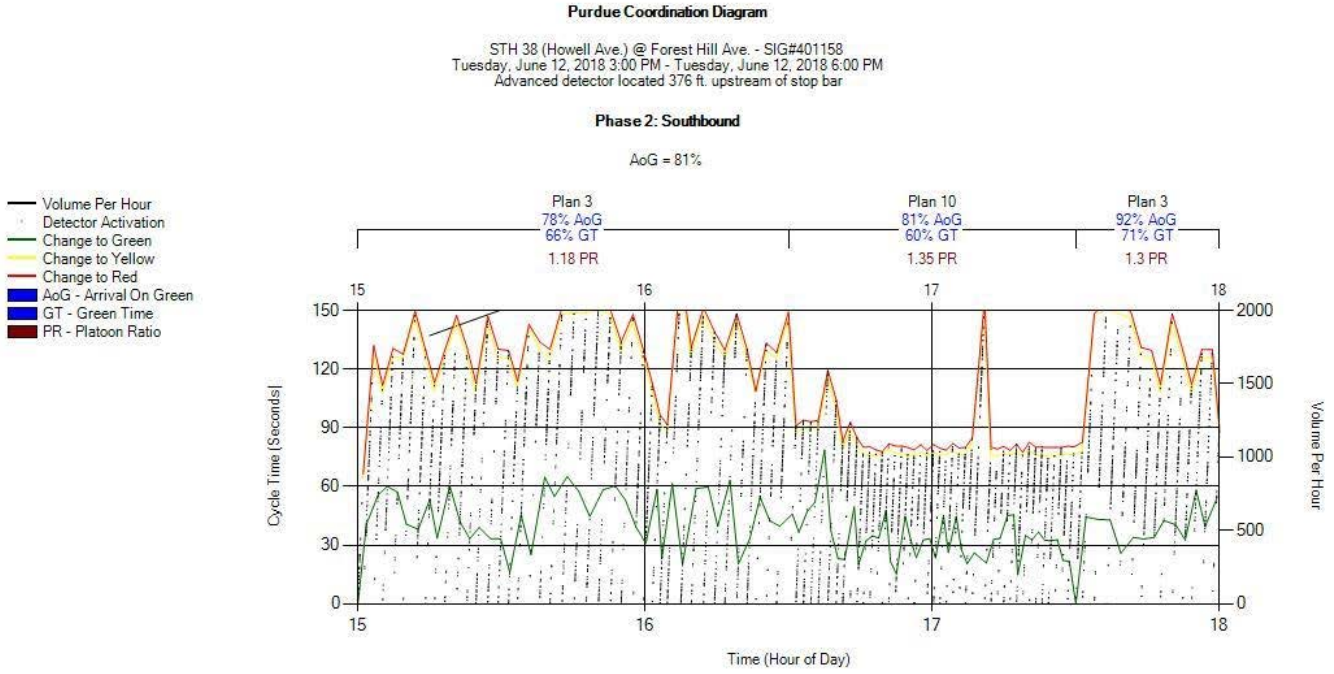
STH 38 (Howell Ave.) @ Susan Dr. - SIG#401411
Thursday, June 14, 2018 3:00 PM - Thursday, June 14, 2018 6:00 PM
Advanced detector located 330 ft. upstream of stop bar

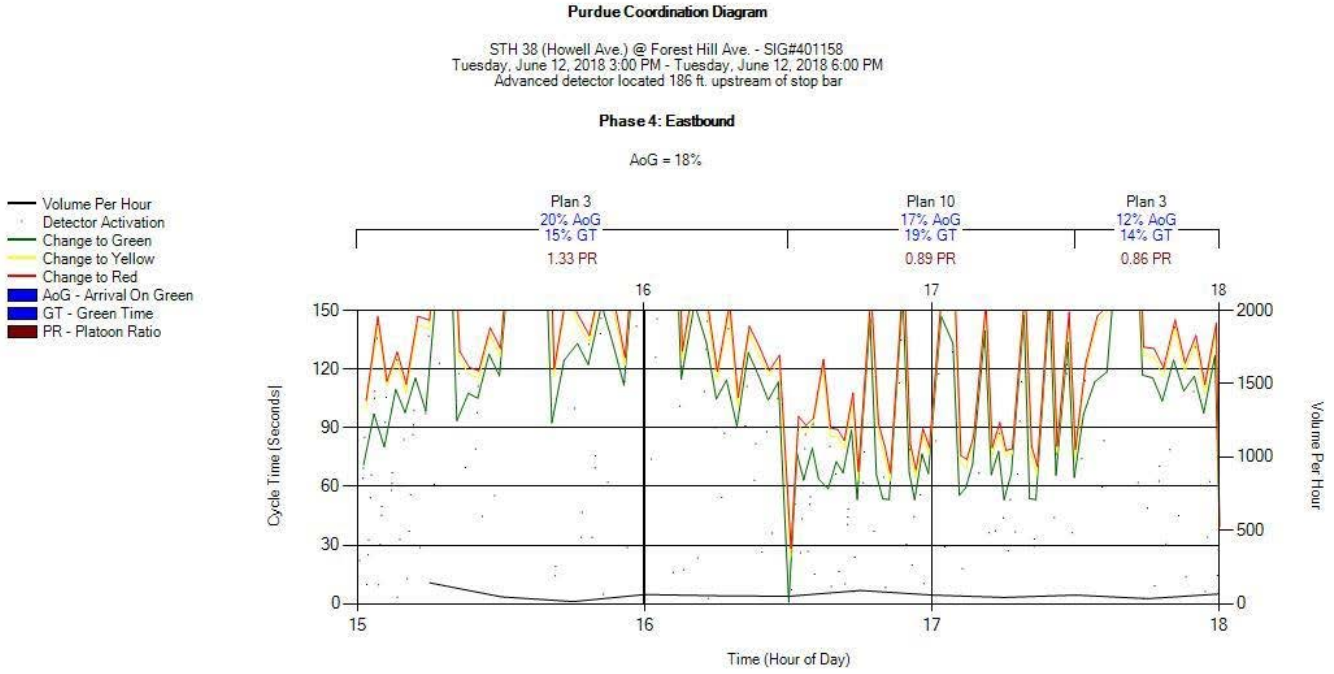
Phase 6: Northbound

AoG = 74%

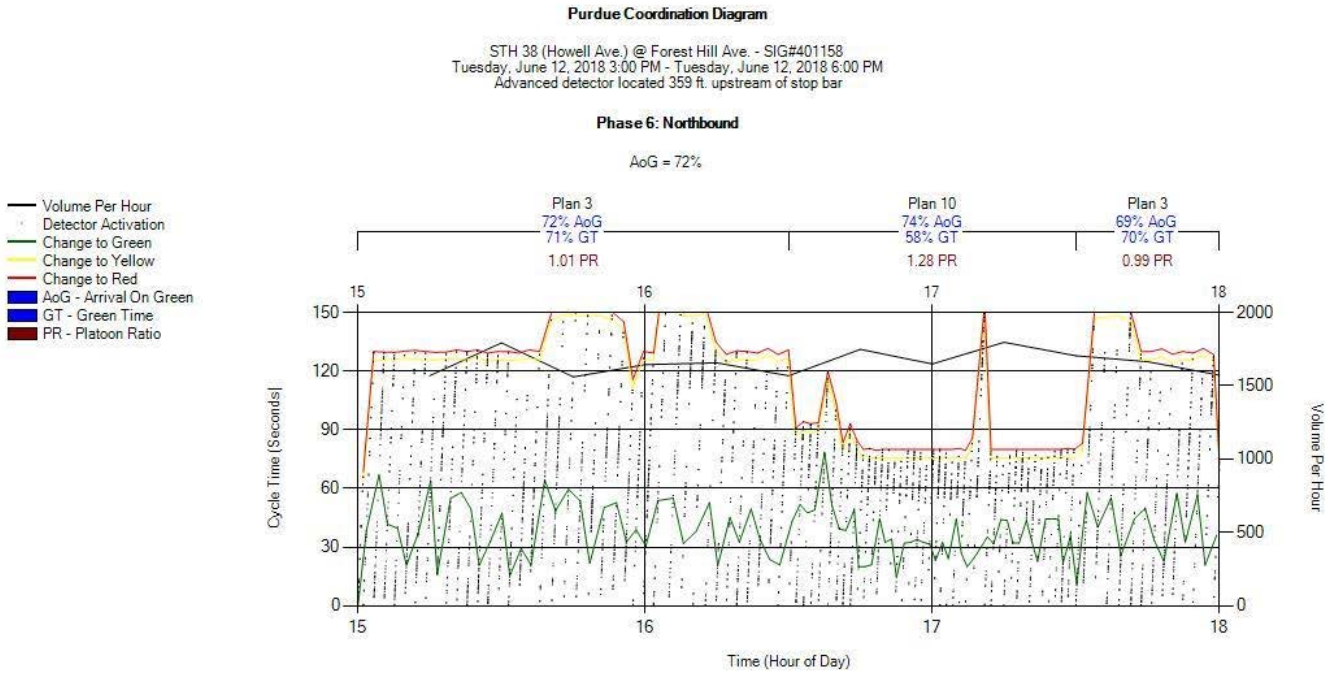


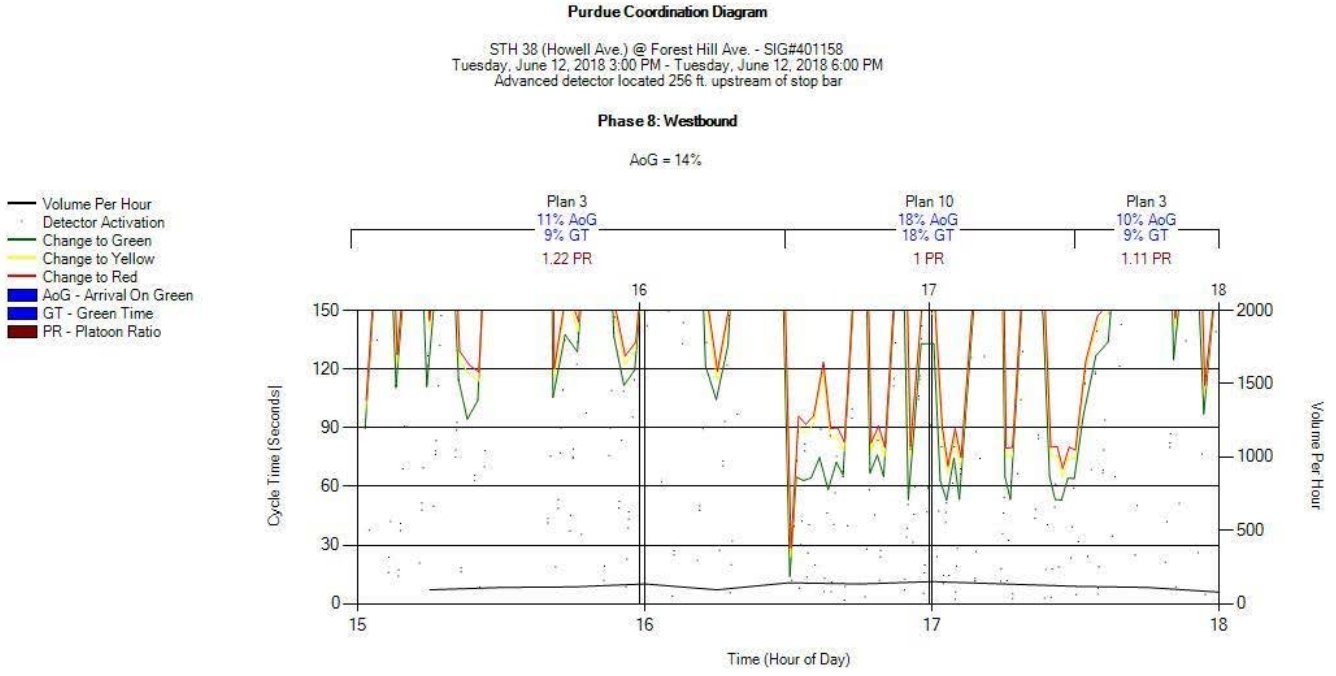
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM





WIS 38 Corridor – STH 38 & Forest Hill Ave.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM





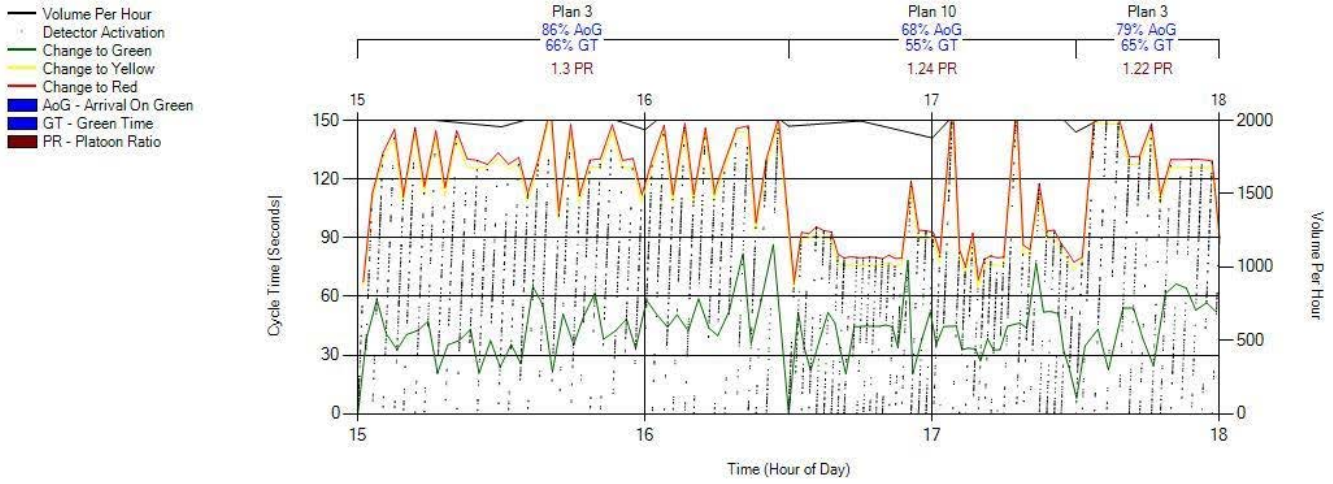
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Vistro Timings
6/13/2018 – 3:00 PM – 6:00 PM

Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Forest Hill Ave. - SIG#401158
Wednesday, June 13, 2018 3:00 PM - Wednesday, June 13, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar

Phase 2: Southbound

AoG = 79%

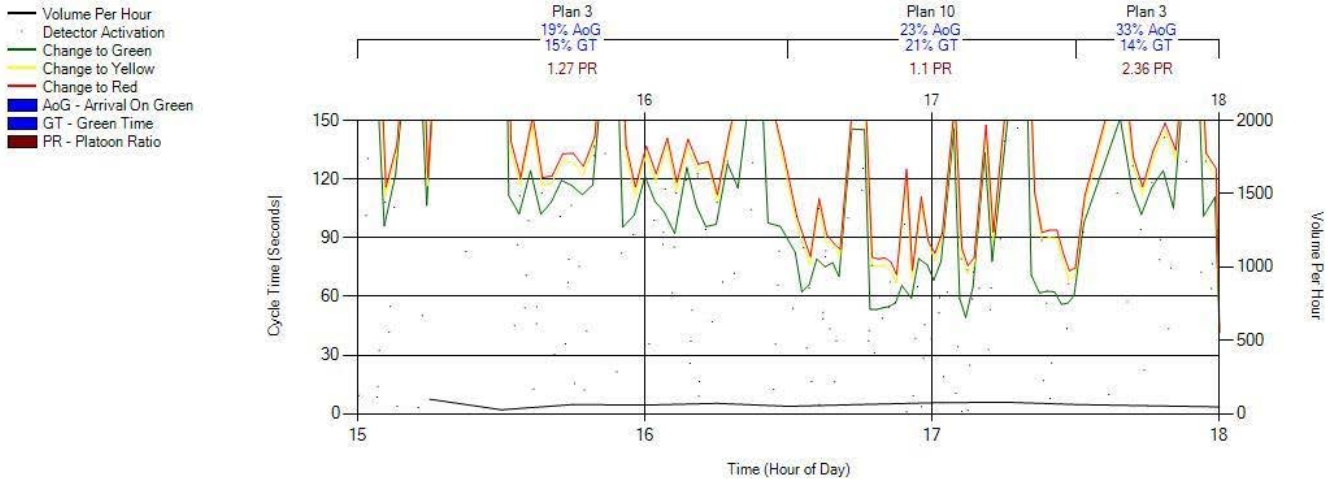


Purdue Coordination Diagram

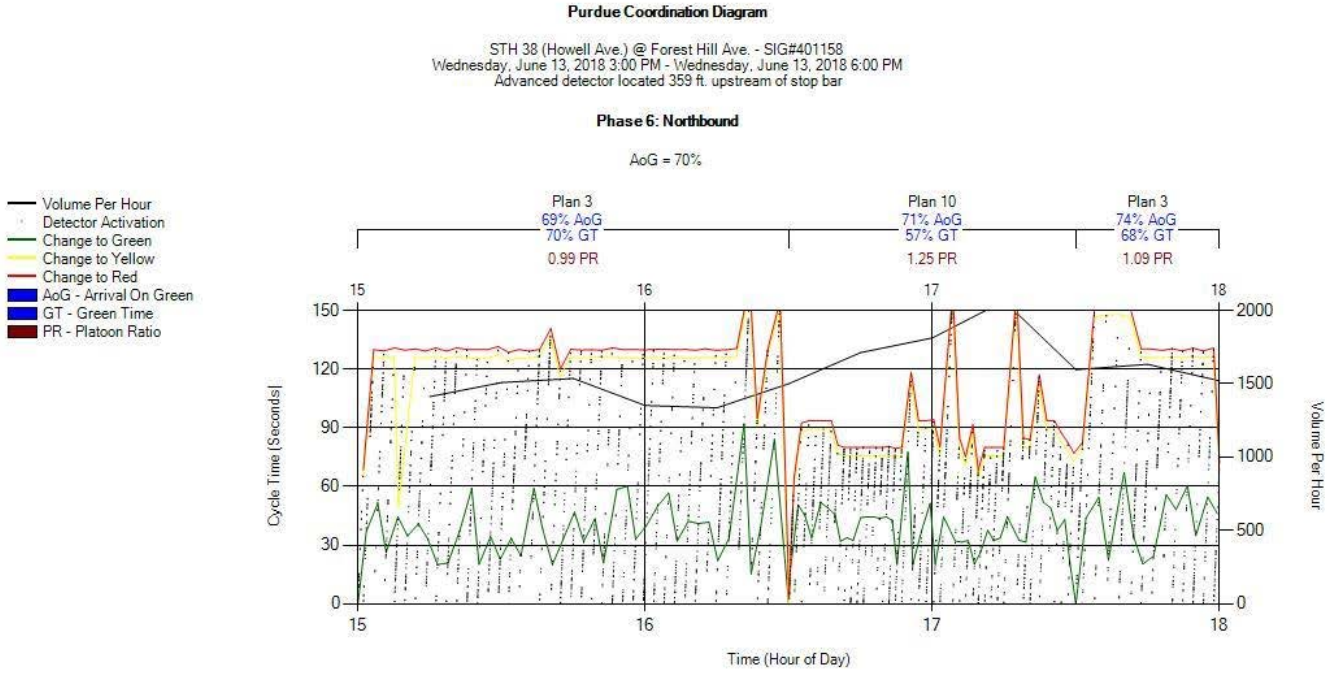
STH 38 (Howell Ave.) @ Forest Hill Ave. - SIG#401158
Wednesday, June 13, 2018 3:00 PM - Wednesday, June 13, 2018 6:00 PM
Advanced detector located 186 ft. upstream of stop bar

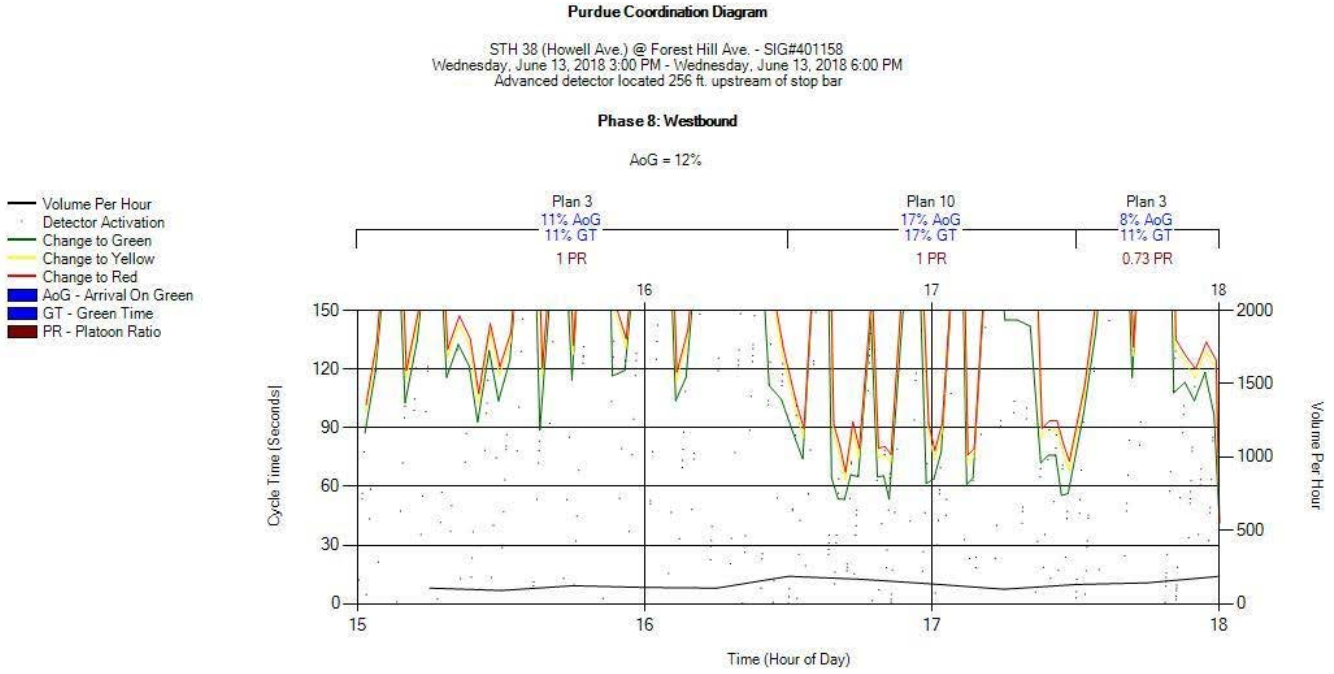
Phase 4: Eastbound

AoG = 22%

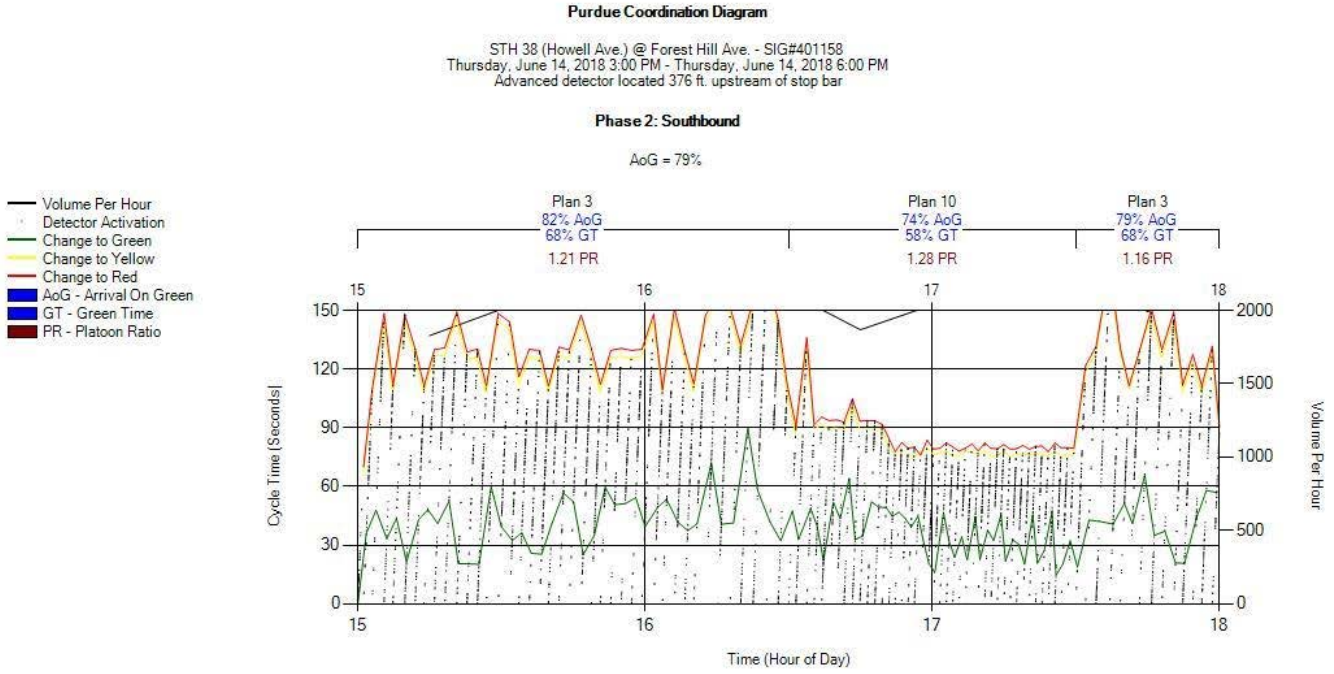


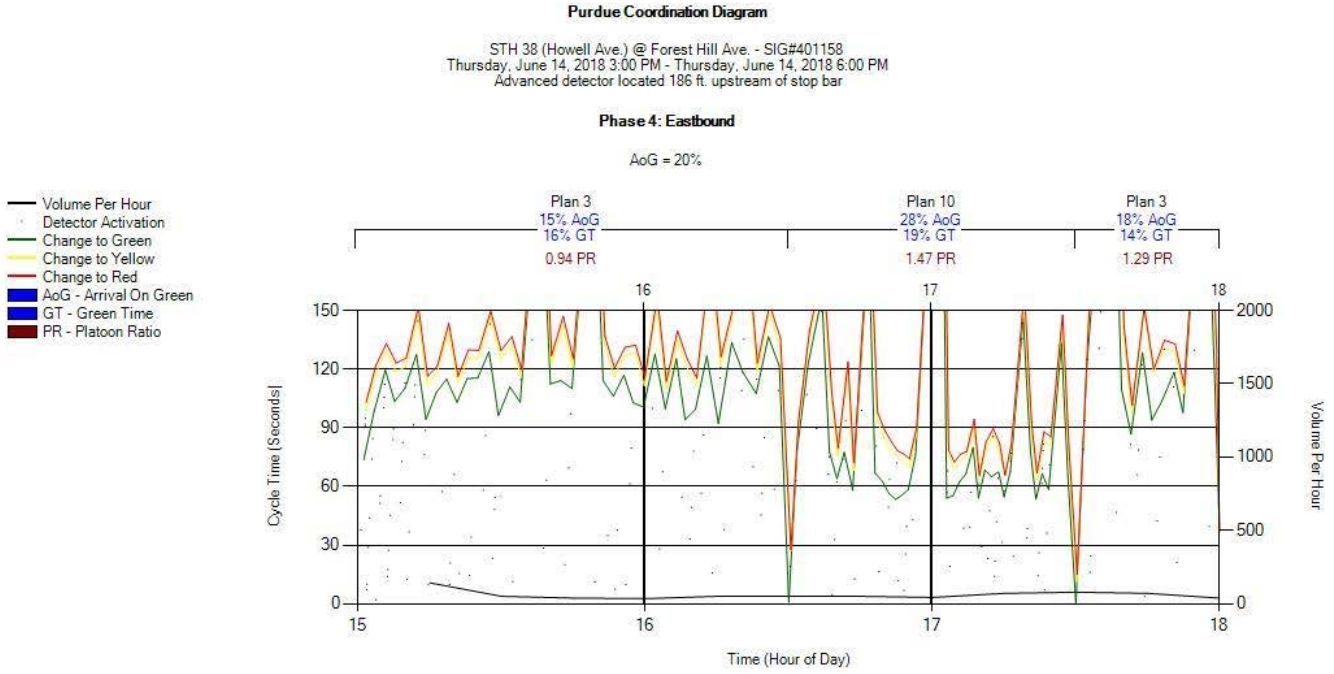
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Vistro Timings
6/13/2018 – 3:00 PM – 6:00 PM





WIS 38 Corridor – STH 38 & Forest Hill Ave.
Vistro Timings
6/14/2018 – 3:00 PM – 6:00 PM





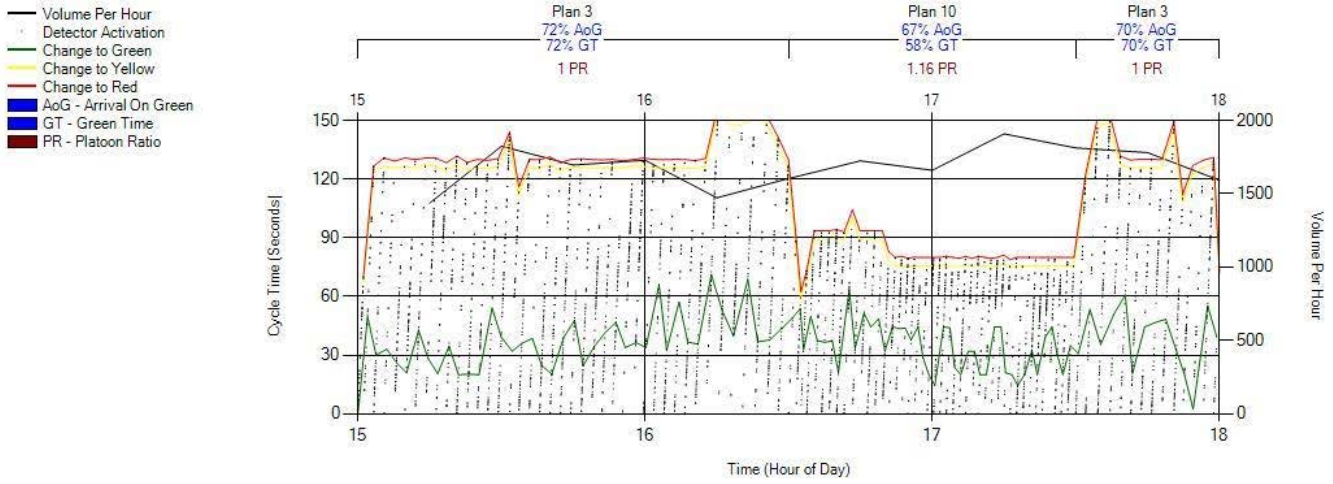
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Vistro Timings
6/14/2018 – 3:00 PM – 6:00 PM

Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Forest Hill Ave. - SIG#401158
Thursday, June 14, 2018 3:00 PM - Thursday, June 14, 2018 6:00 PM
Advanced detector located 359 ft. upstream of stop bar

Phase 6: Northbound

AoG = 70%

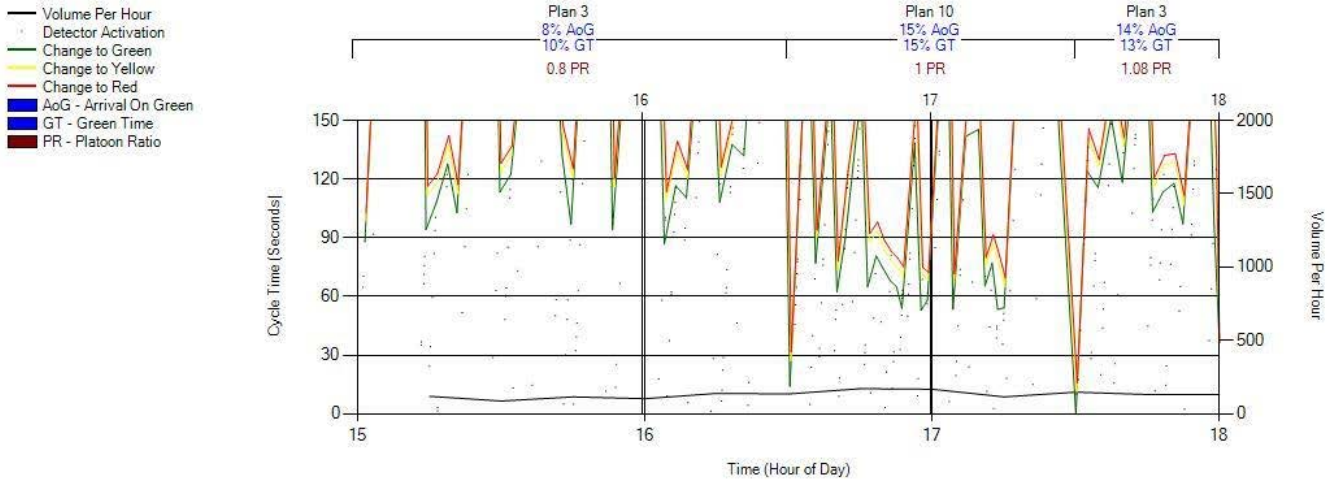


Purdue Coordination Diagram

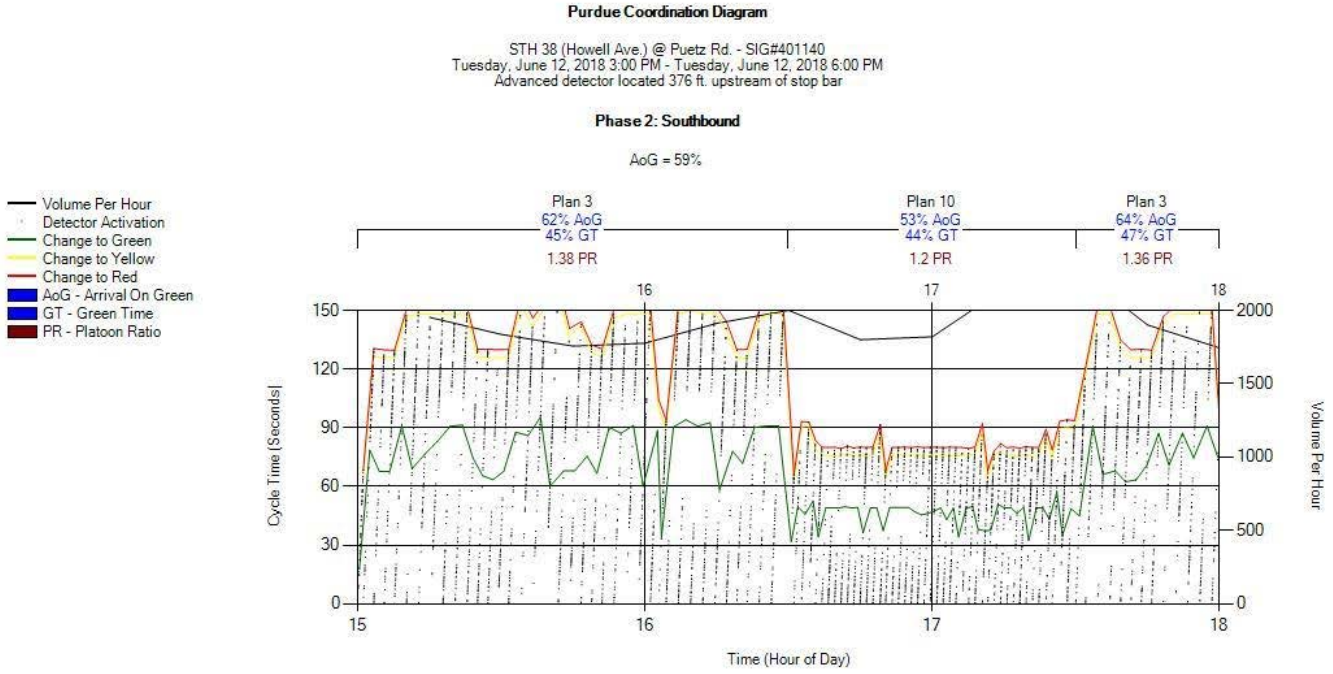
STH 38 (Howell Ave.) @ Forest Hill Ave. - SIG#401158
Thursday, June 14, 2018 3:00 PM - Thursday, June 14, 2018 6:00 PM
Advanced detector located 256 ft. upstream of stop bar

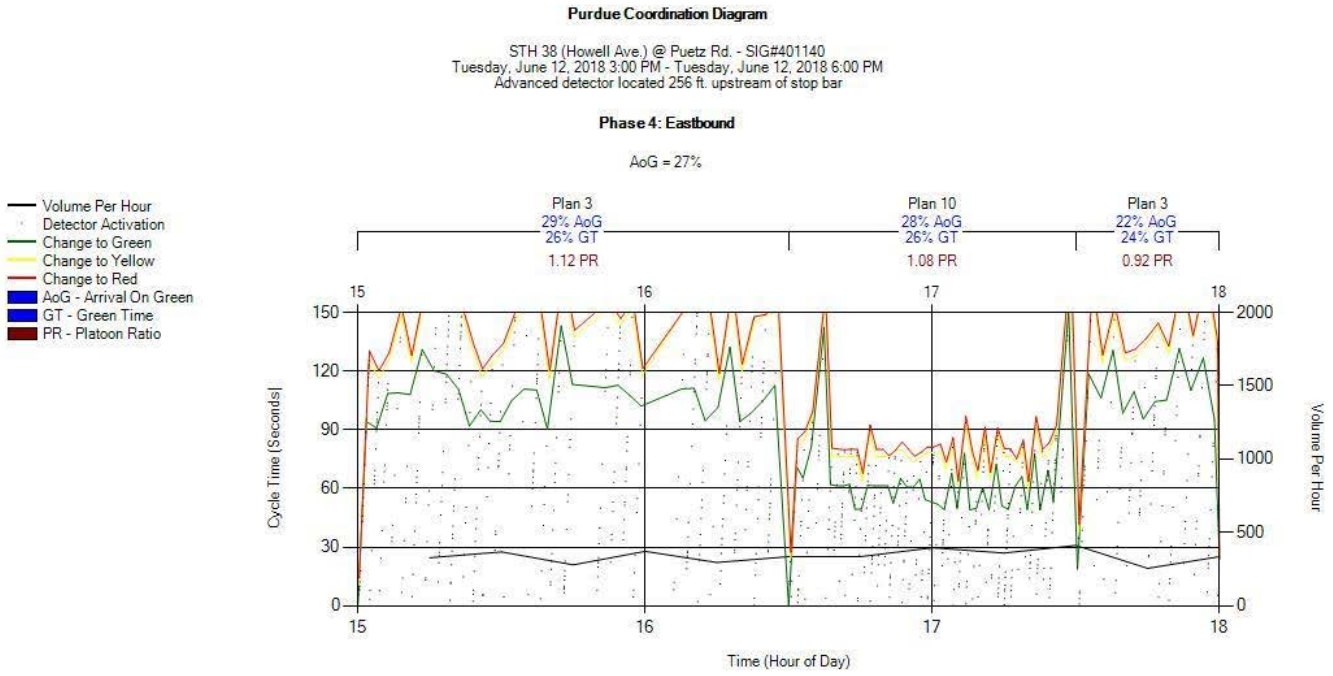
Phase 8: Westbound

AoG = 11%

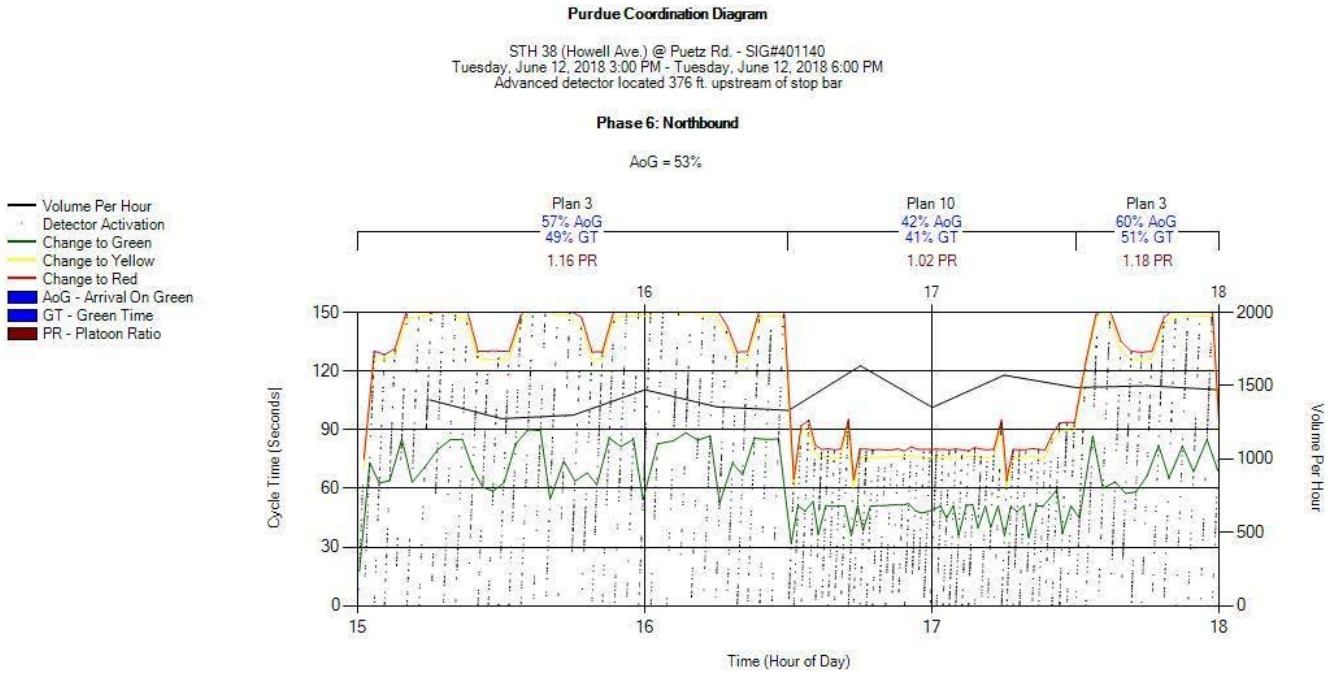


WIS 38 Corridor – STH 38 & Puetz Rd.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM

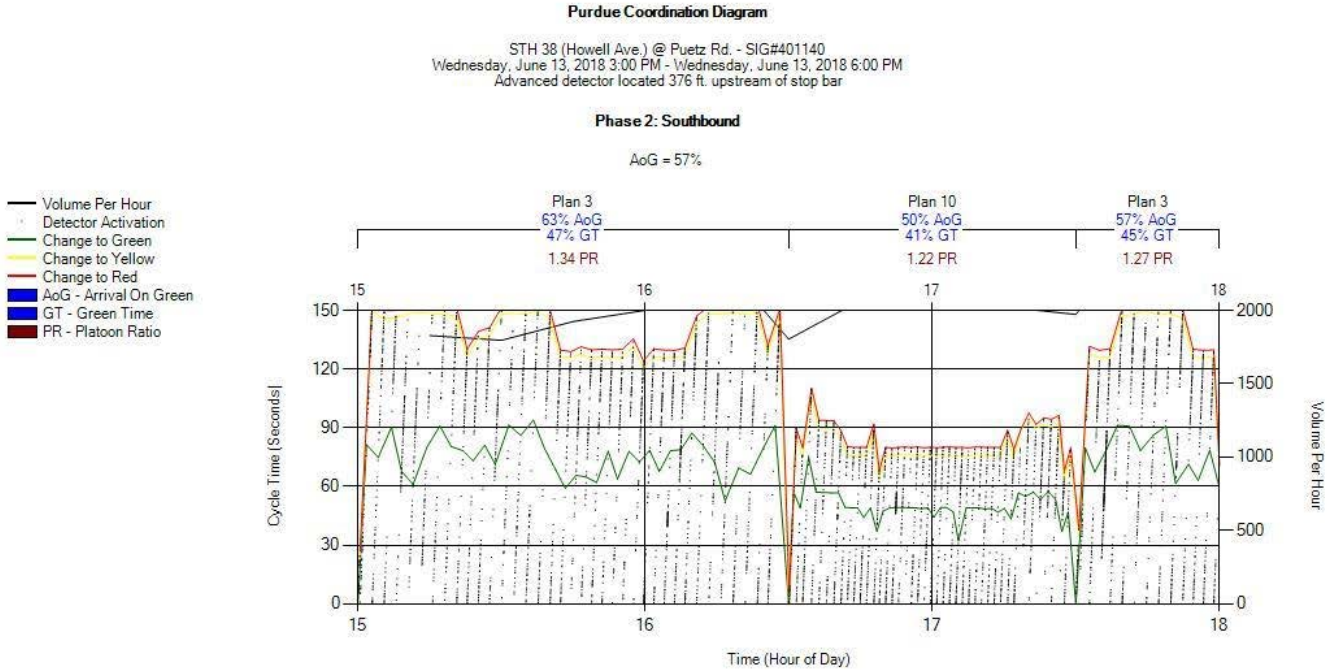


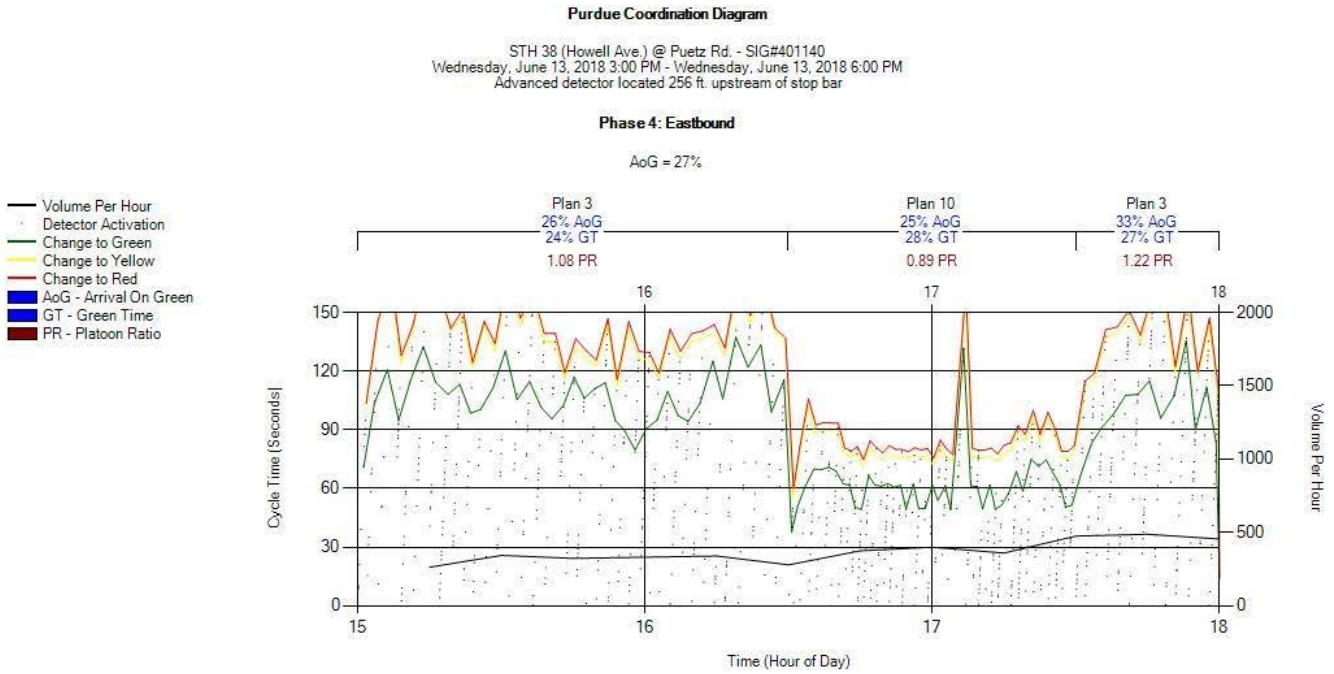


WIS 38 Corridor – STH 38 & Puetz Rd.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM

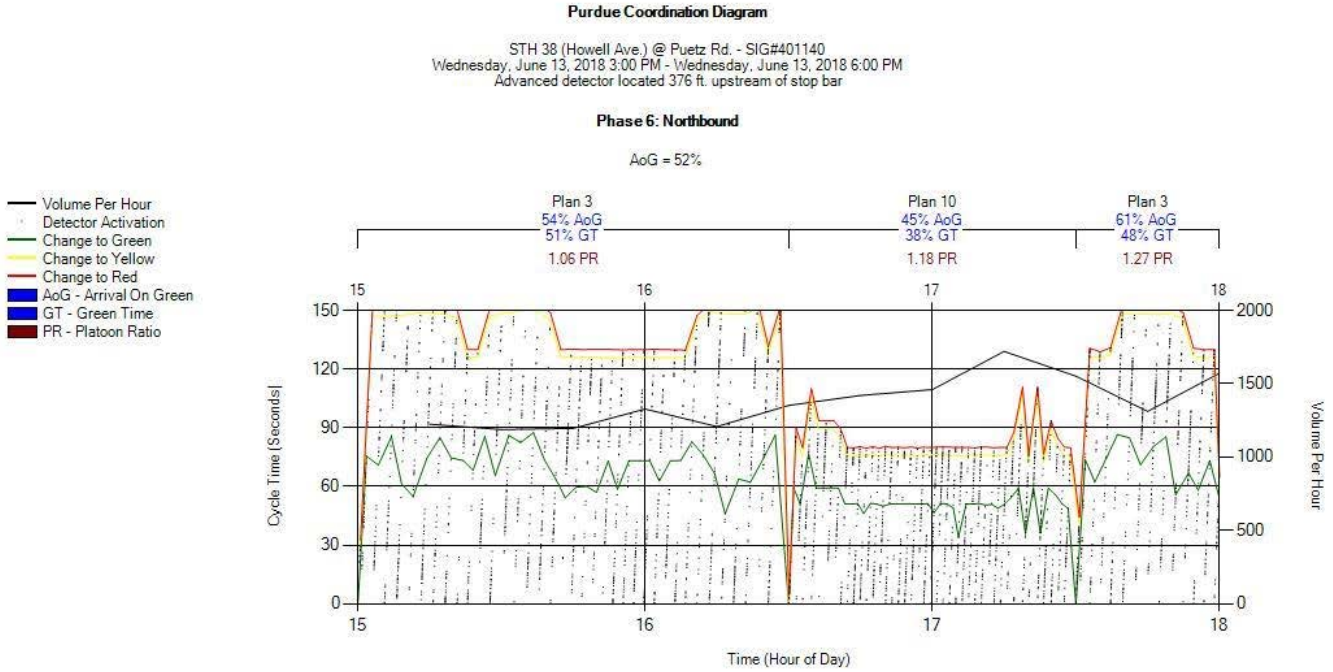


WIS 38 Corridor – STH 38 & Puetz Rd.
Vistro Timings
6/13/2018 – 3:00 PM – 6:00 PM

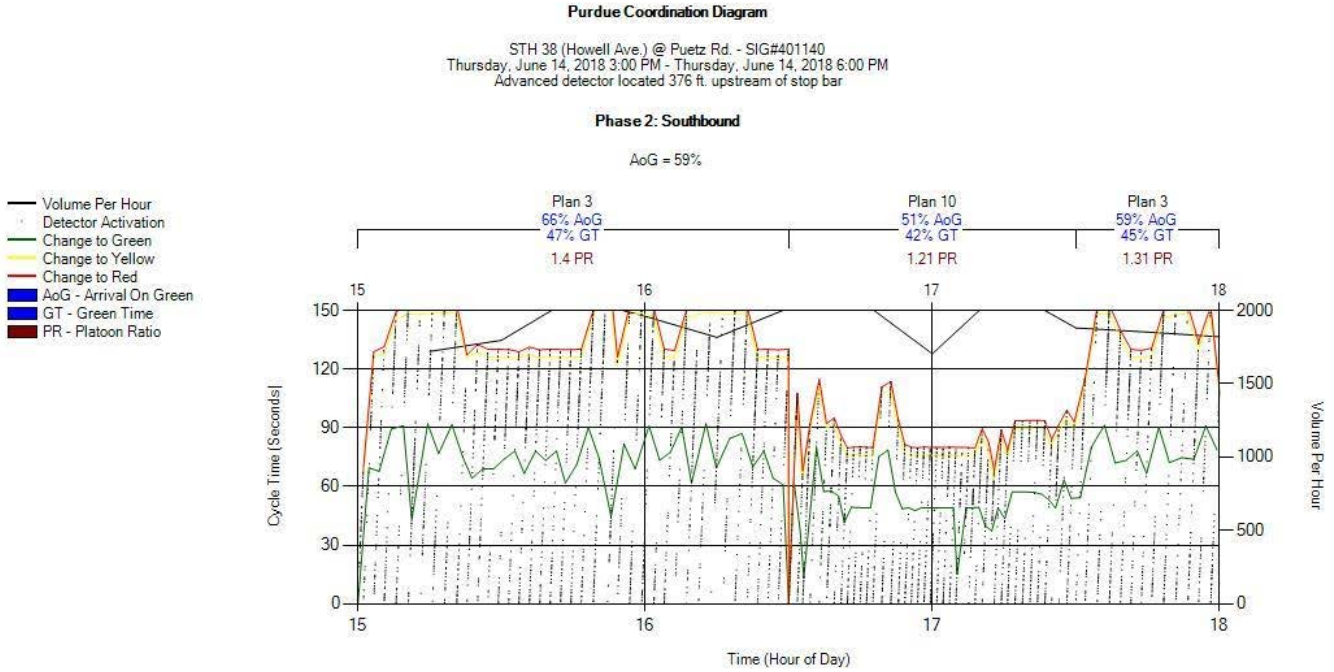


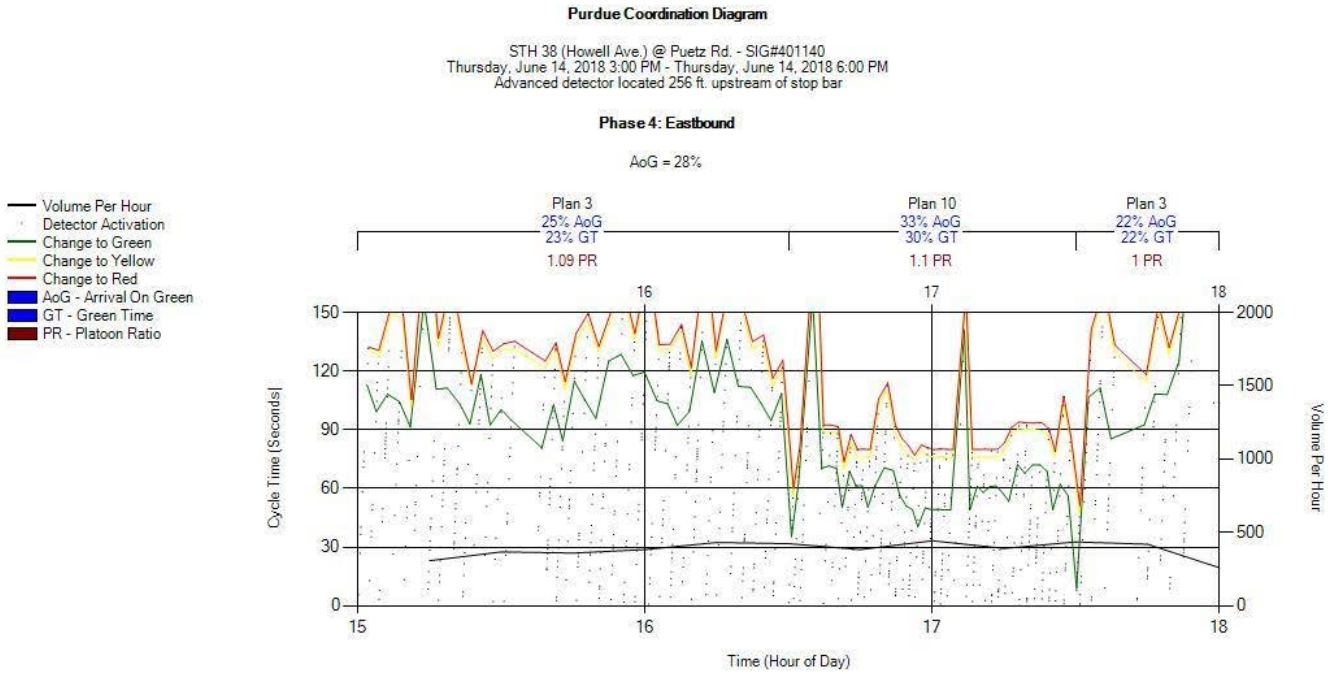


WIS 38 Corridor – STH 38 & Puetz Rd.
Vistro Timings
6/13/2018 – 3:00 PM – 6:00 PM

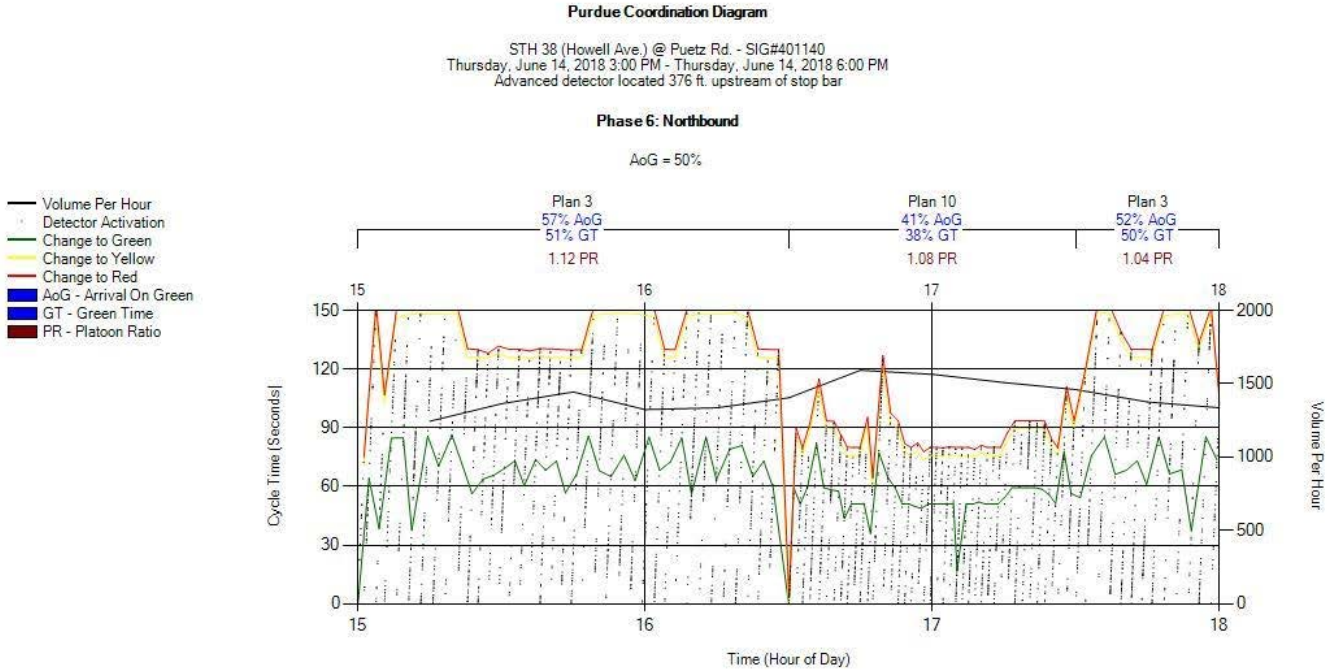


WIS 38 Corridor – STH 38 & Puetz Rd.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM





WIS 38 Corridor – STH 38 & Puetz Rd.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM



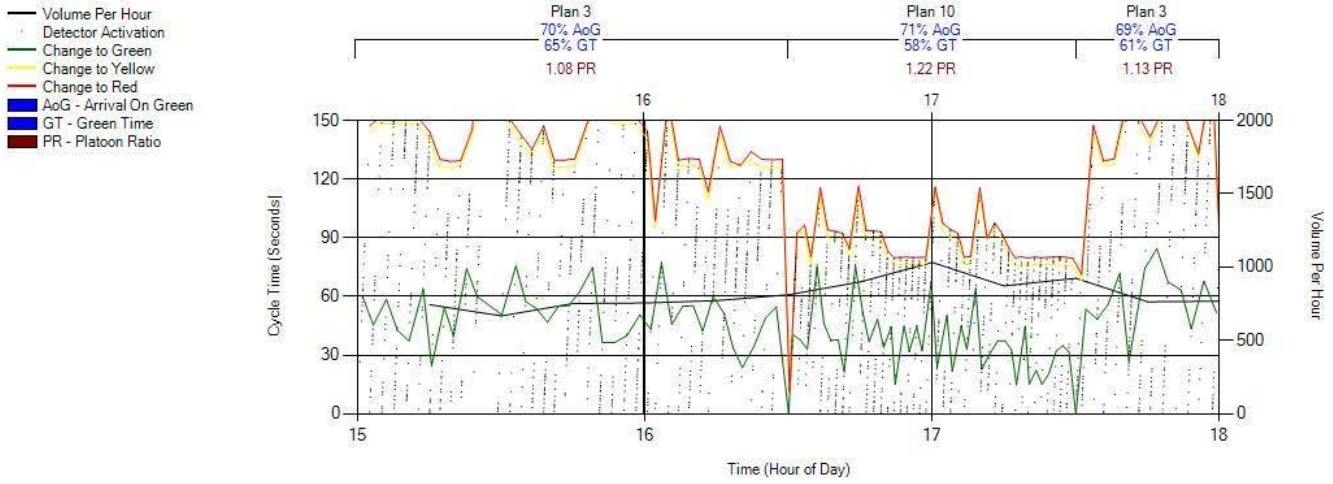
WIS 38 Corridor – STH 38 & Centennial Dr.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM

Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Centennial Dr. - SIG#401237
Tuesday, June 12, 2018 3:00 PM - Tuesday, June 12, 2018 6:00 PM
Advanced detector located 336 ft. upstream of stop bar

Phase 2: Southbound

AoG = 70%

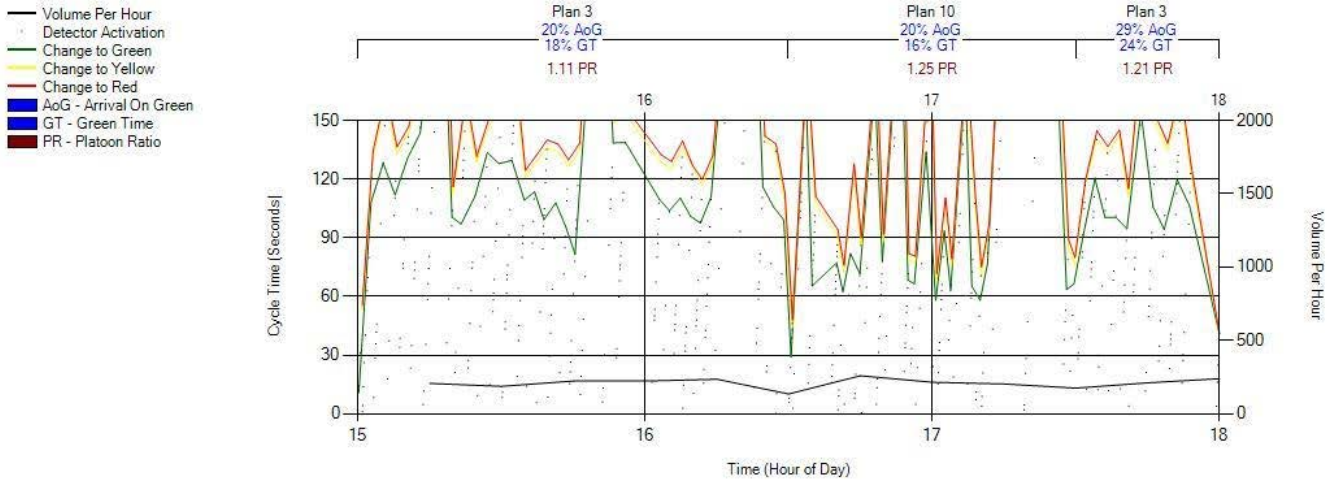


Purdue Coordination Diagram

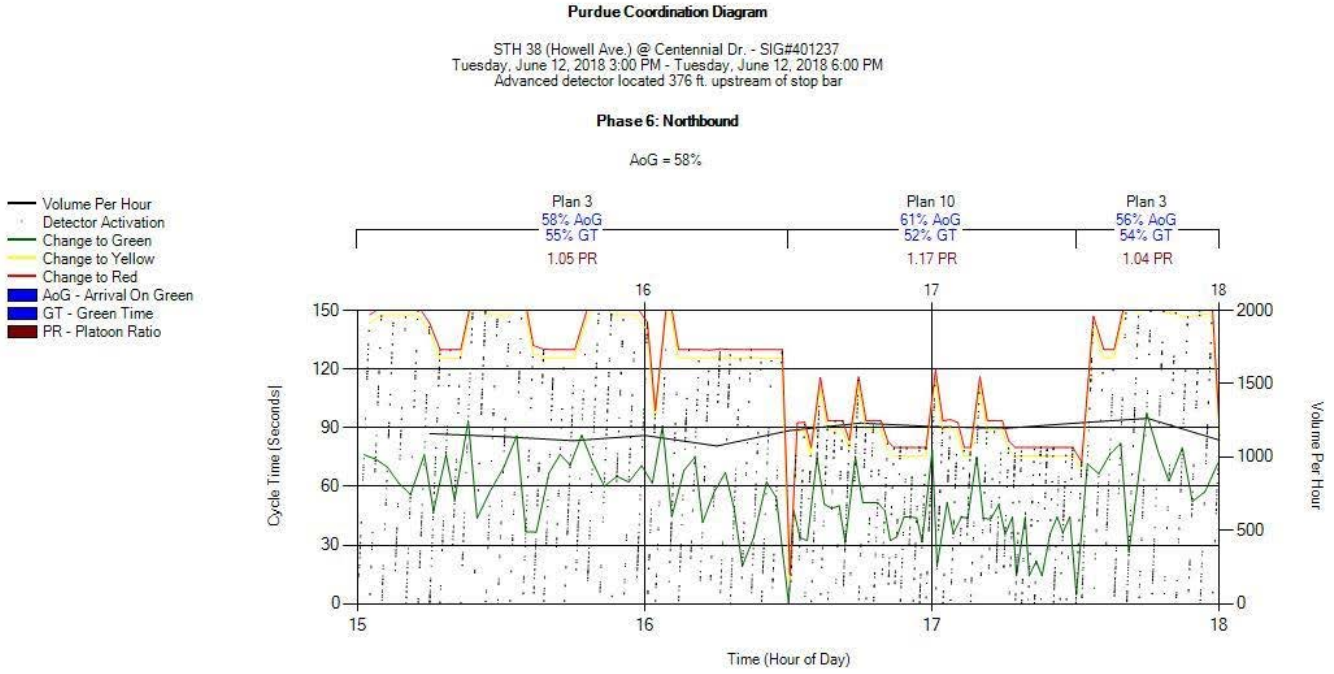
STH 38 (Howell Ave.) @ Centennial Dr. - SIG#401237
Tuesday, June 12, 2018 3:00 PM - Tuesday, June 12, 2018 6:00 PM
Advanced detector located 235 ft. upstream of stop bar

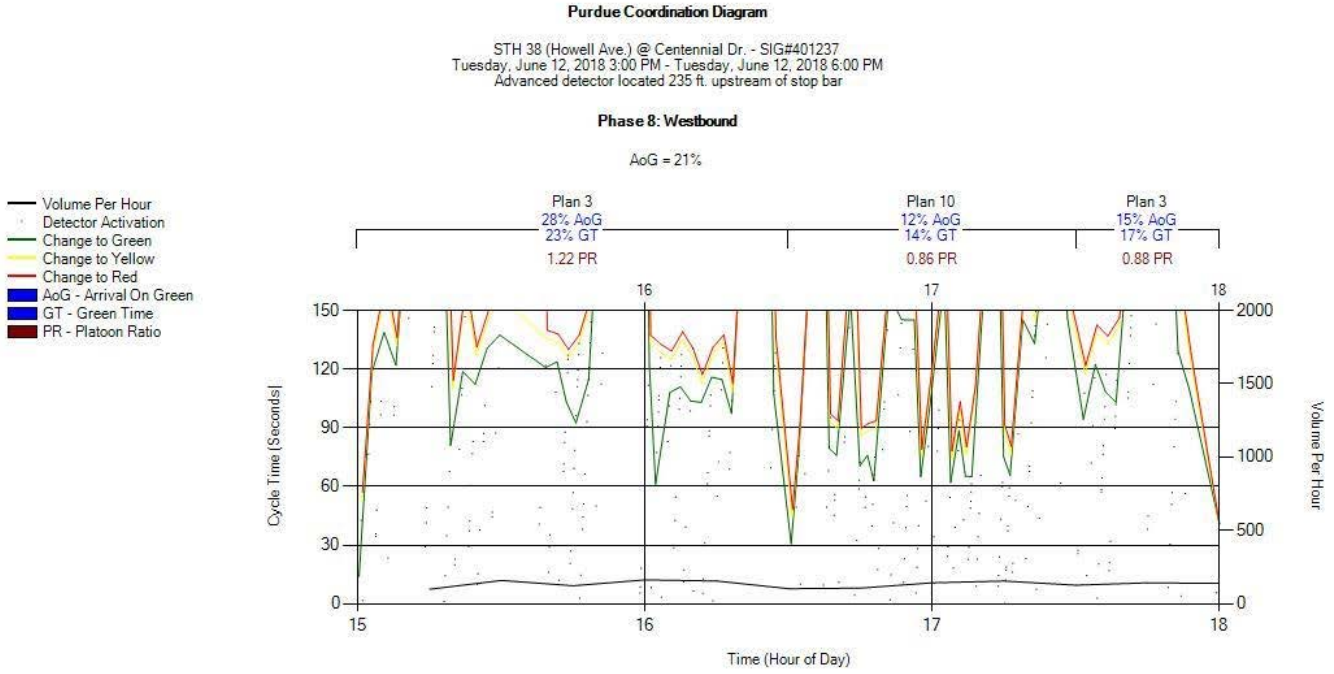
Phase 4: Eastbound

AoG = 21%

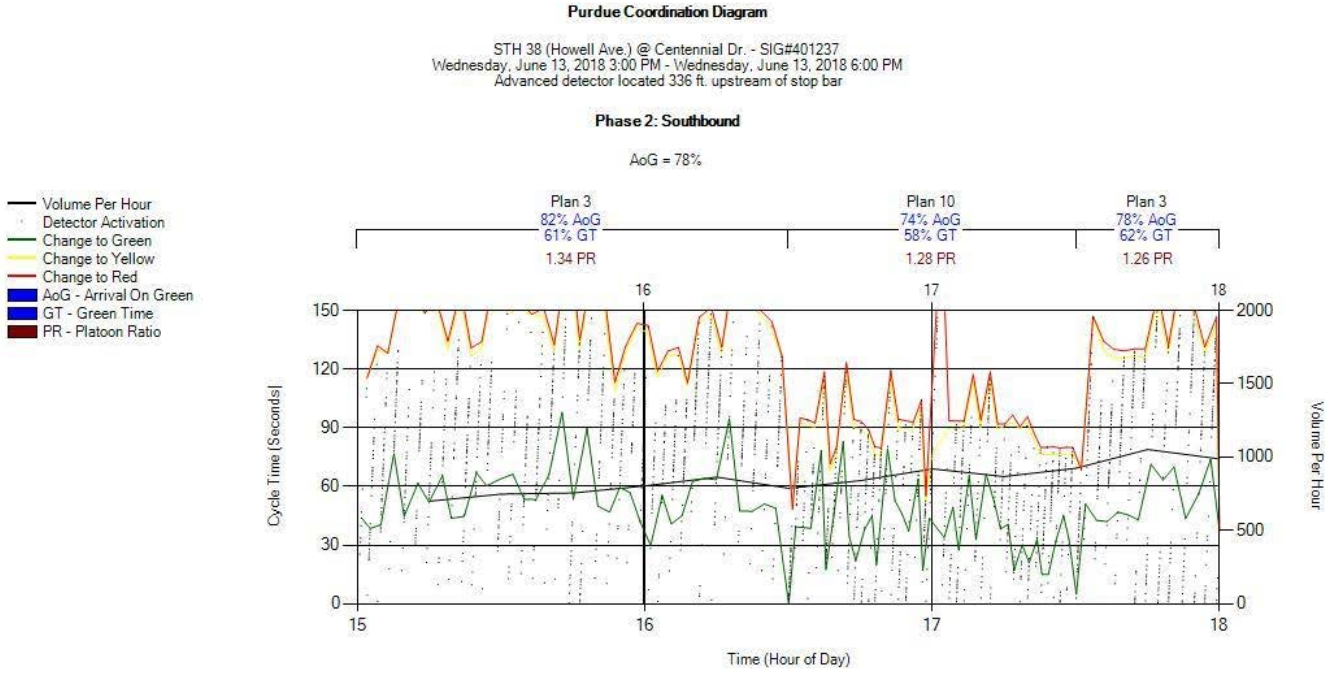


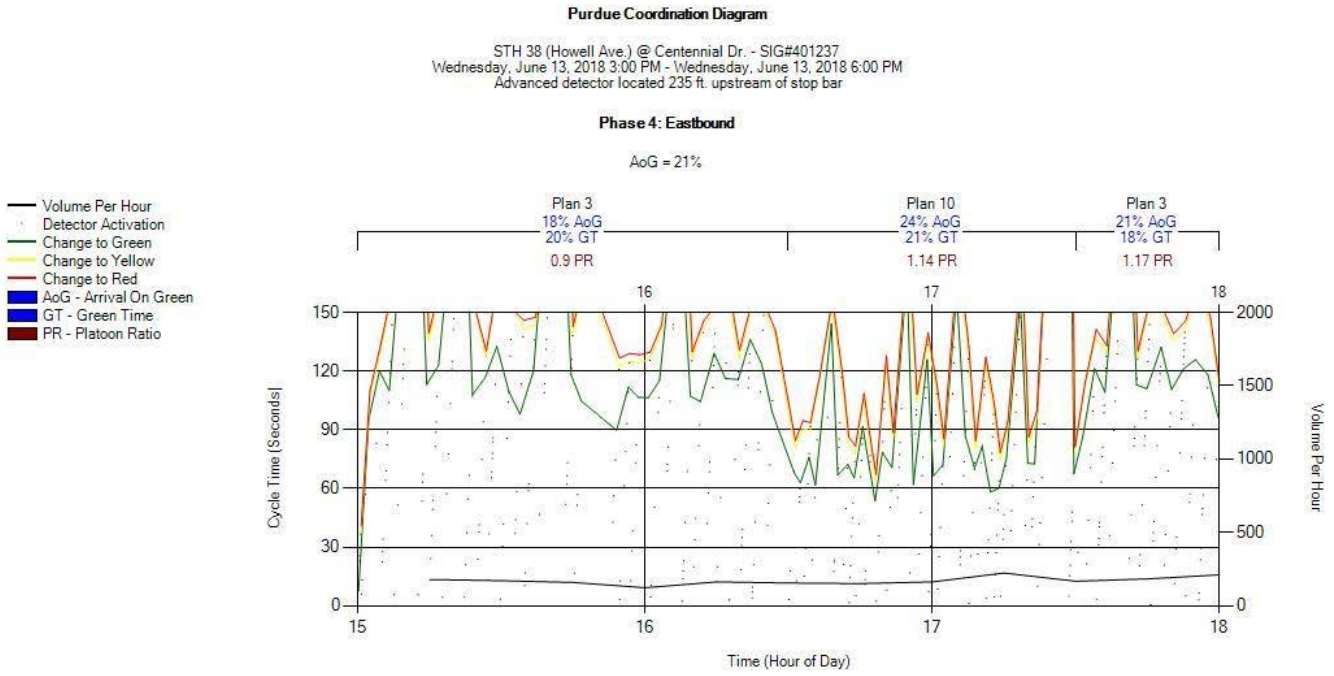
WIS 38 Corridor – STH 38 & Centennial Dr.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM





WIS 38 Corridor – STH 38 & Centennial Dr.
Vistro Timings
6/13/2018 – 3:00 PM – 6:00 PM



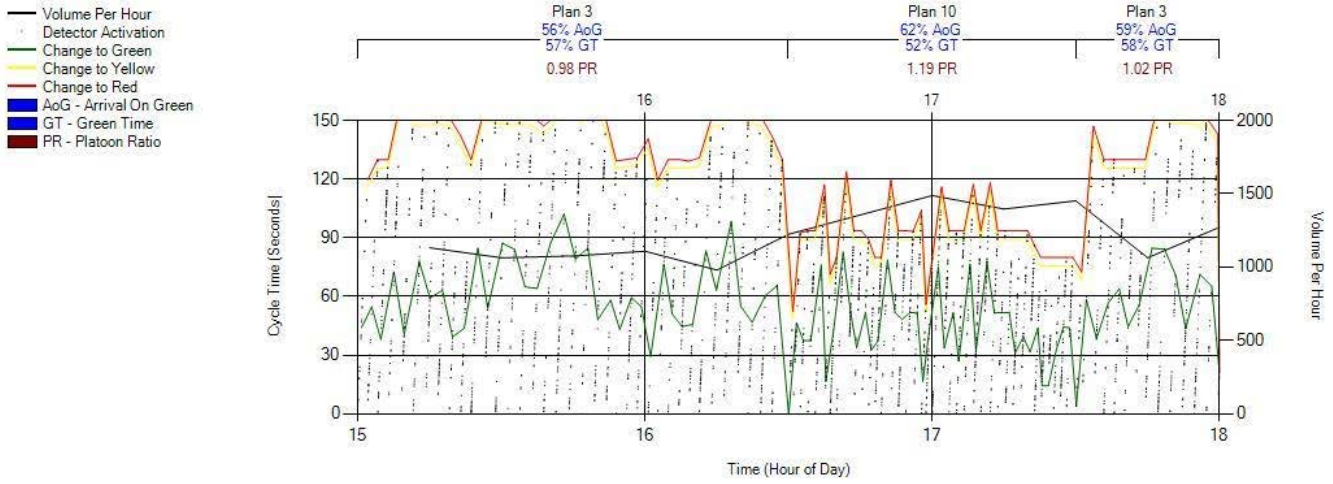


Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Centennial Dr. - SIG#401237
Wednesday, June 13, 2018 3:00 PM - Wednesday, June 13, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar

Phase 6: Northbound

AoG = 59%

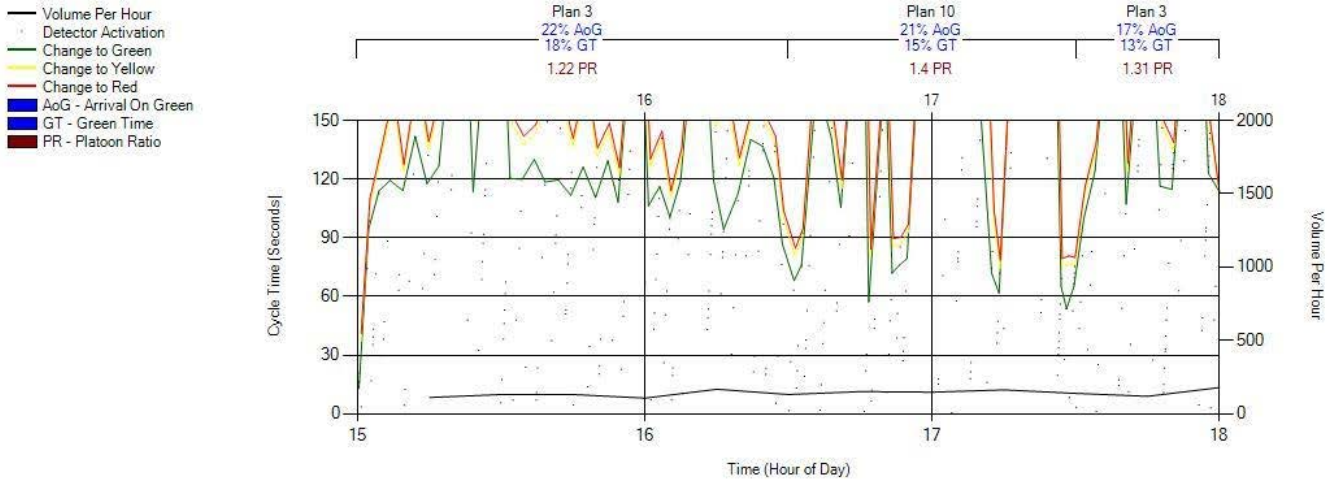


Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Centennial Dr. - SIG#401237
Wednesday, June 13, 2018 3:00 PM - Wednesday, June 13, 2018 6:00 PM
Advanced detector located 235 ft. upstream of stop bar

Phase 8: Westbound

AoG = 21%

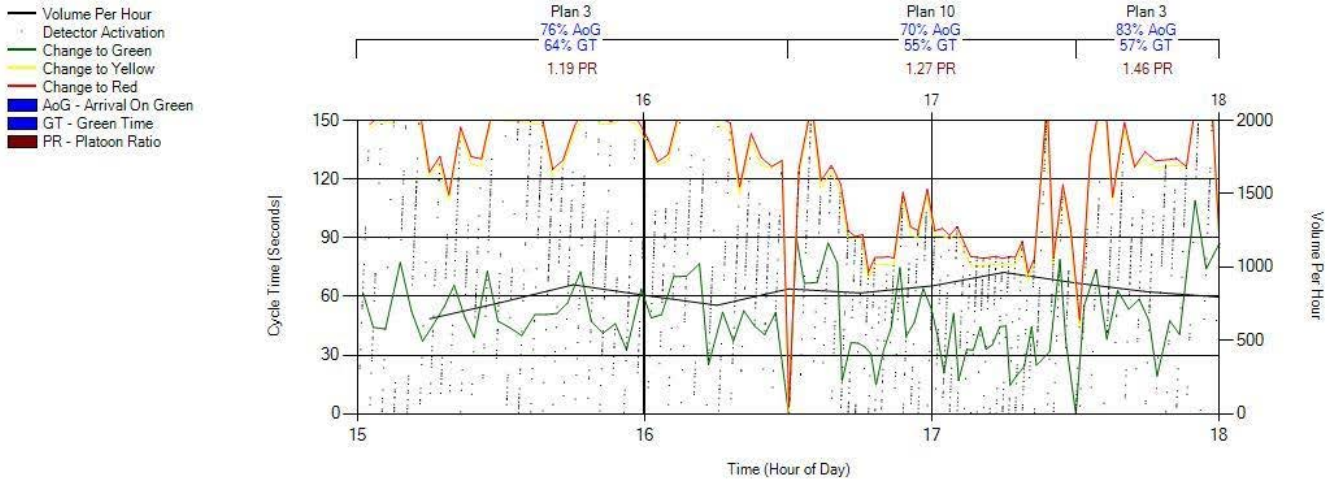


Purdue Coordination Diagram

STH 38 (Howell Ave.) @ Centennial Dr. - SIG#401237
Thursday, June 14, 2018 3:00 PM - Thursday, June 14, 2018 6:00 PM
Advanced detector located 336 ft. upstream of stop bar

Phase 2: Southbound

AoG = 75%

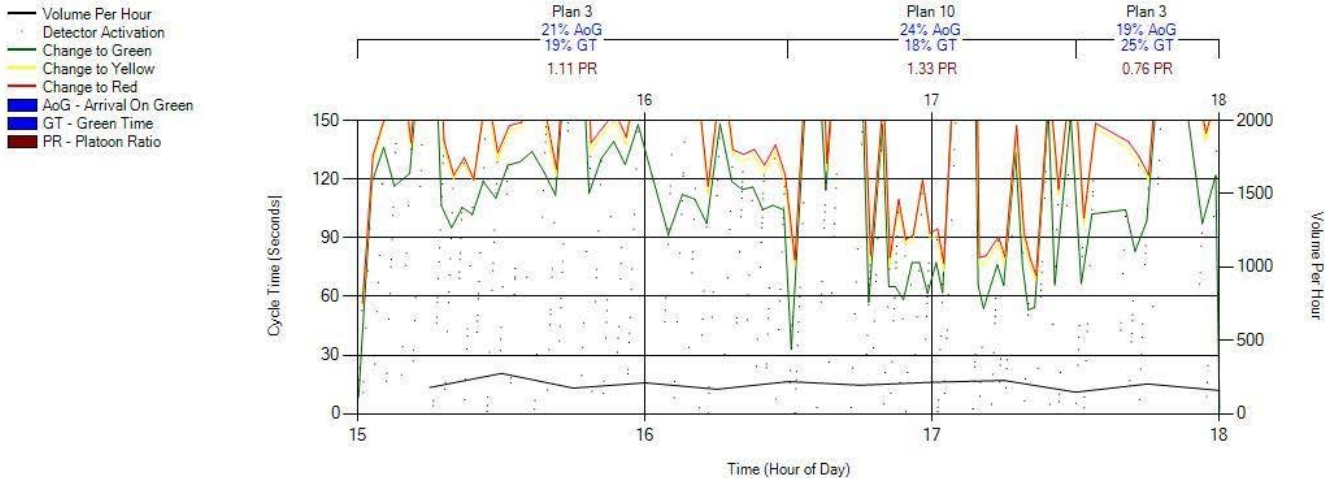


Purdue Coordination Diagram

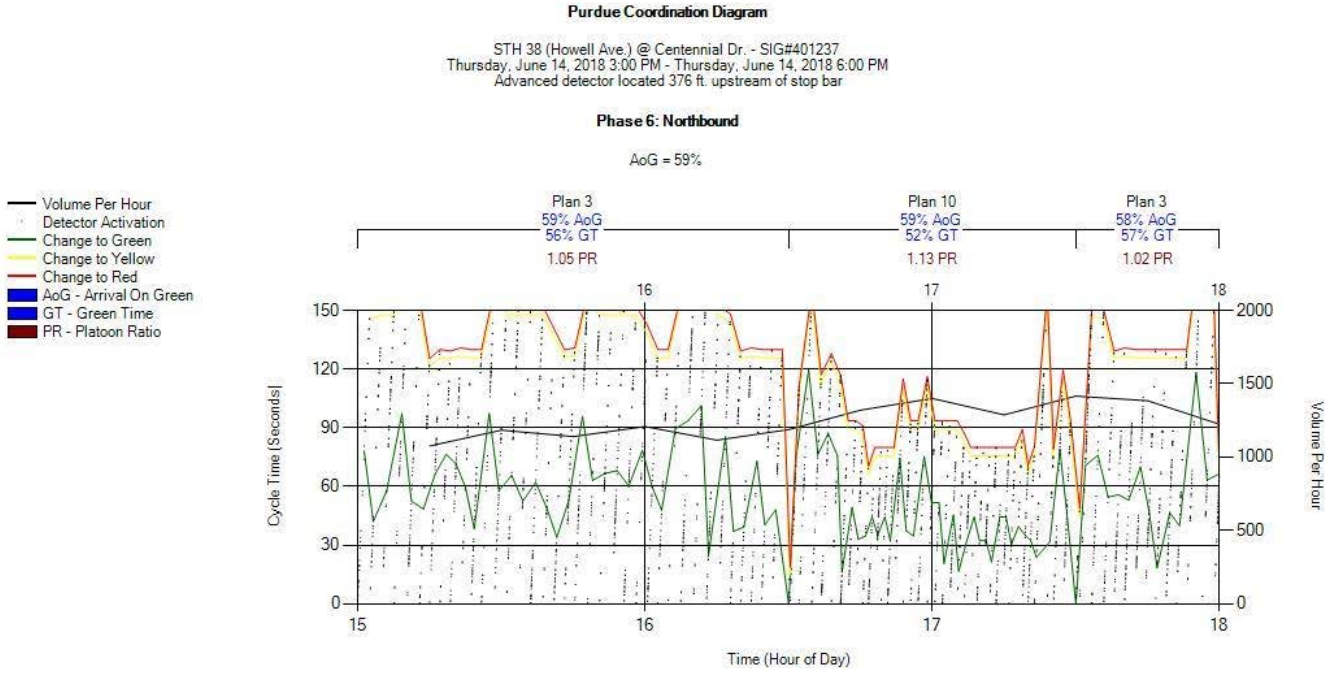
STH 38 (Howell Ave.) @ Centennial Dr. - SIG#401237
Thursday, June 14, 2018 3:00 PM - Thursday, June 14, 2018 6:00 PM
Advanced detector located 235 ft. upstream of stop bar

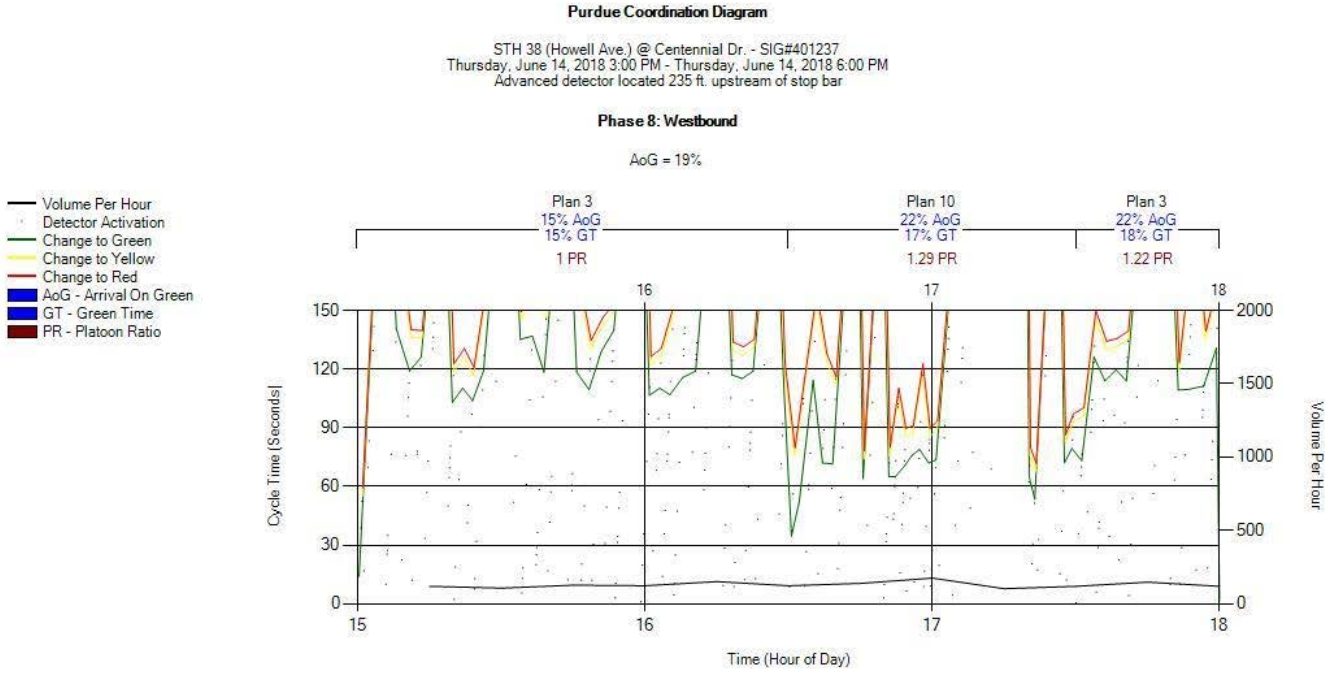
Phase 4: Eastbound

AoG = 22%

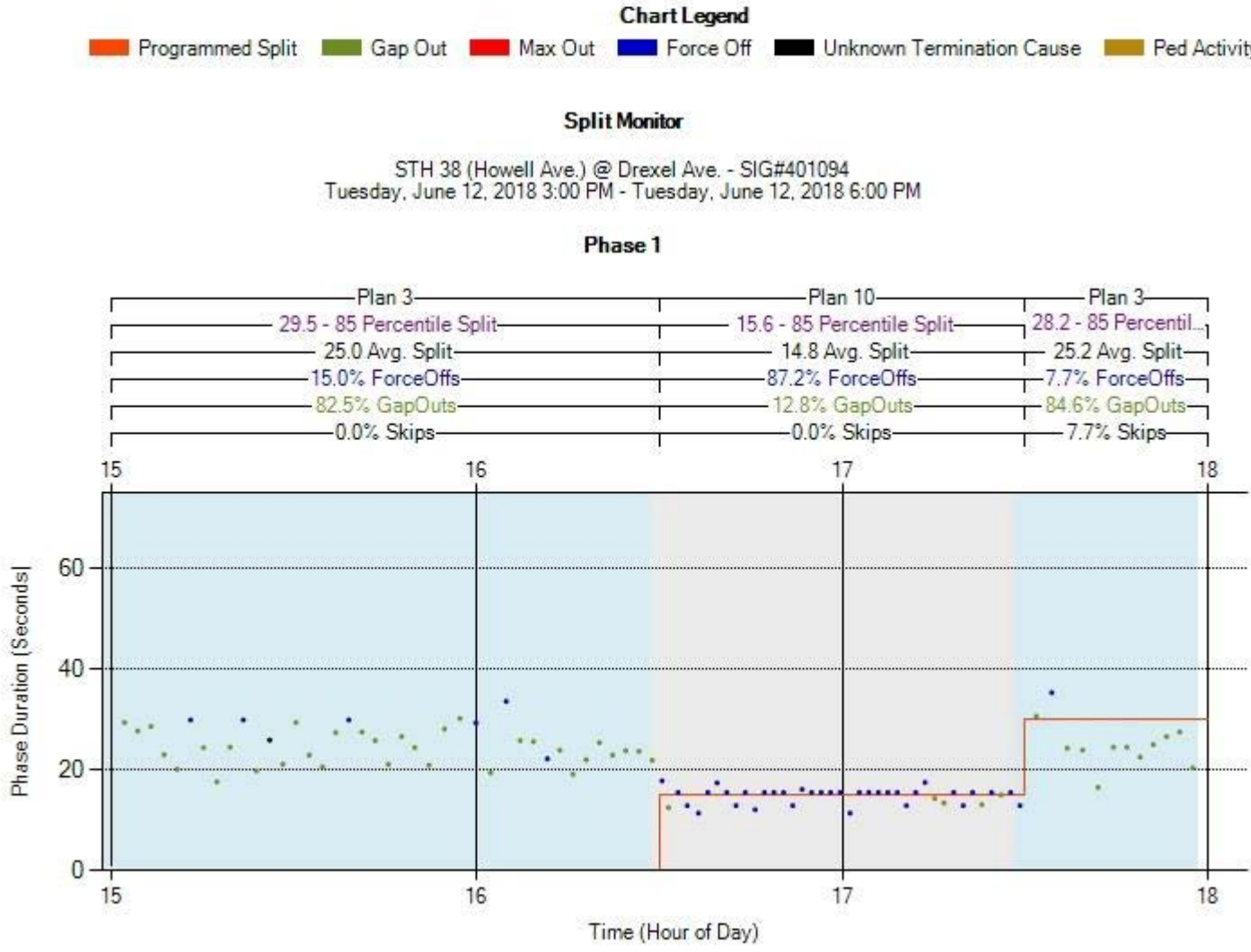


WIS 38 Corridor – STH 38 & Centennial Dr.
Vistro Timings
6/14/2018 – 3:00 PM – 6:00 PM

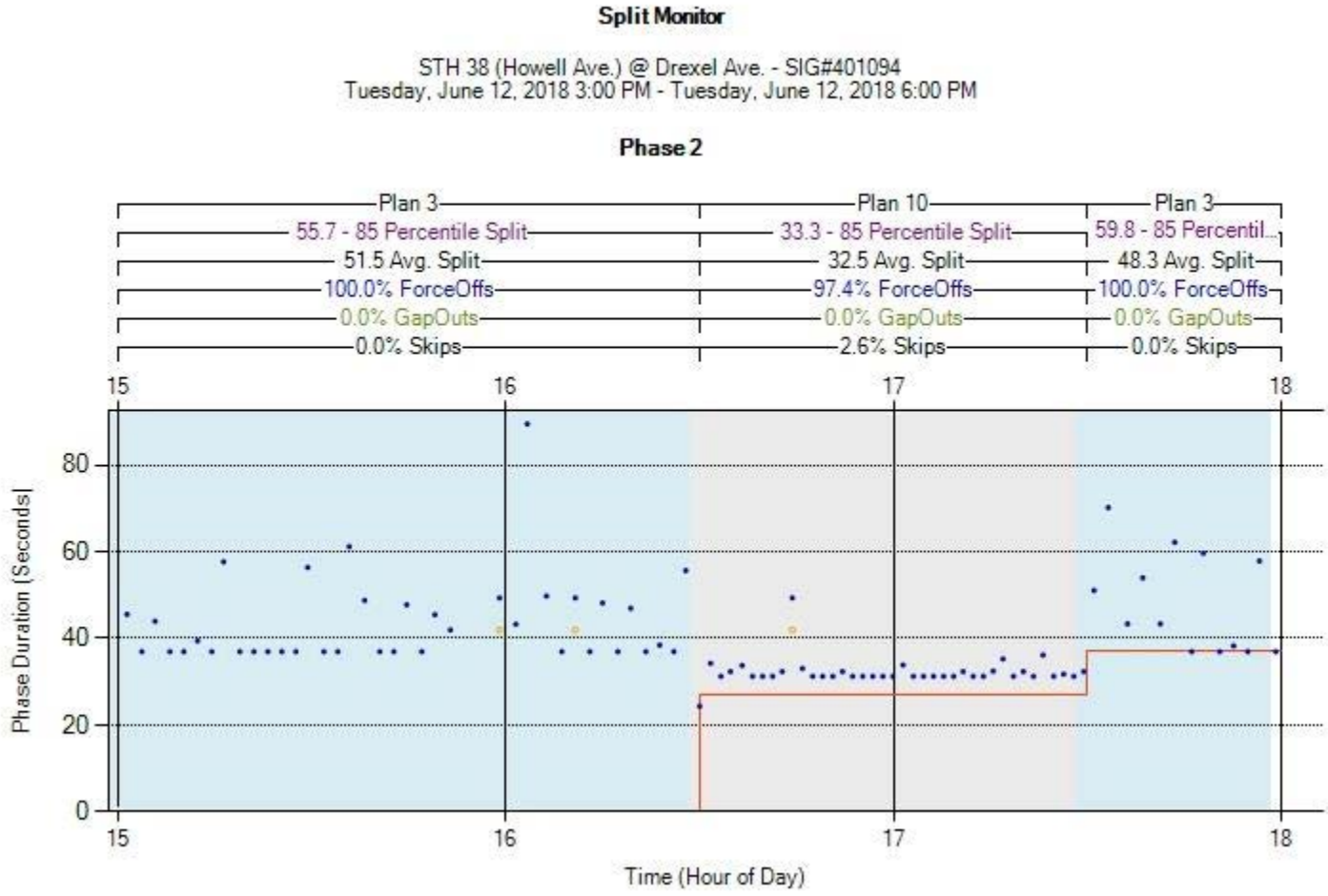




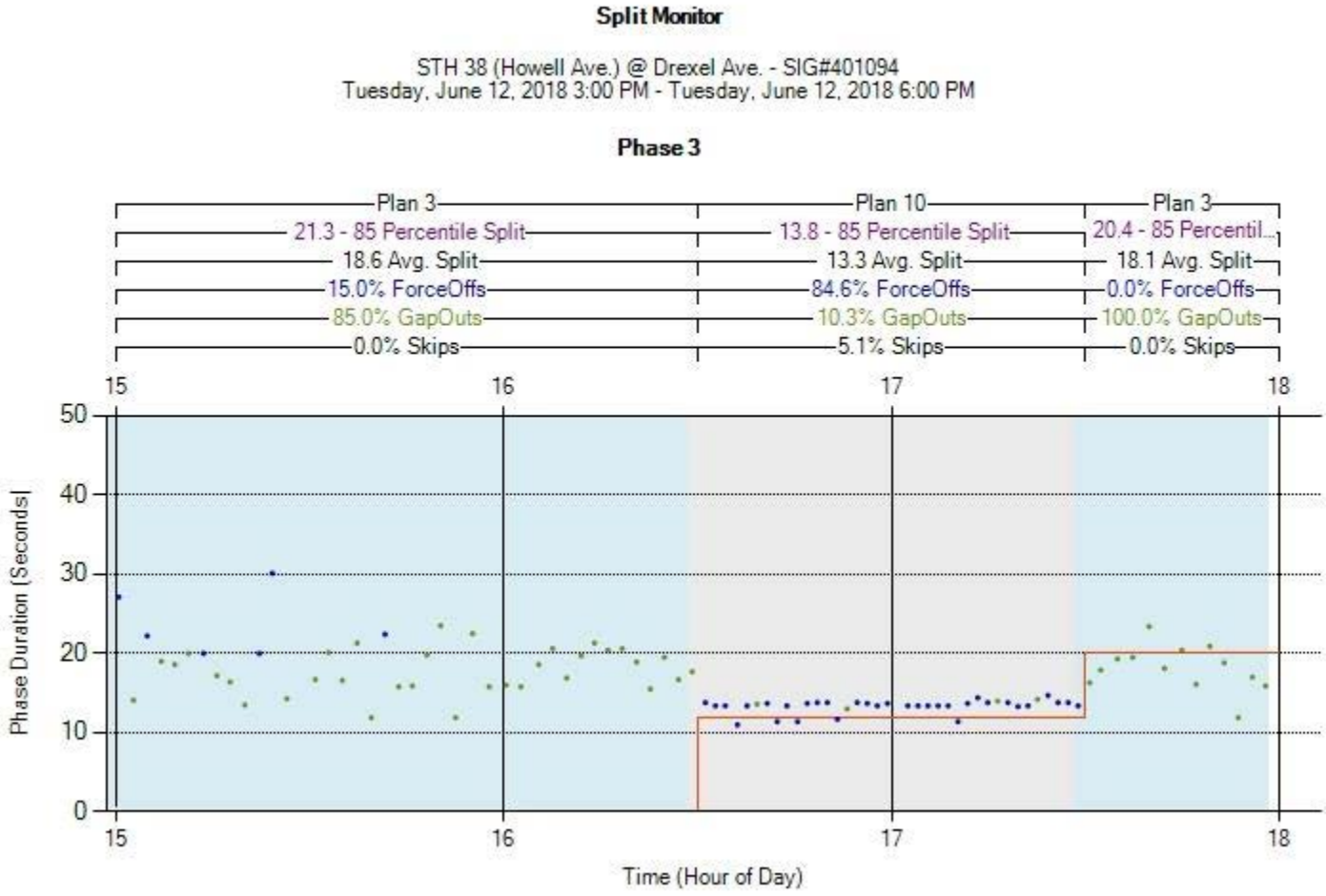
WIS 38 Corridor – STH 38 & Drexel Ave.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM



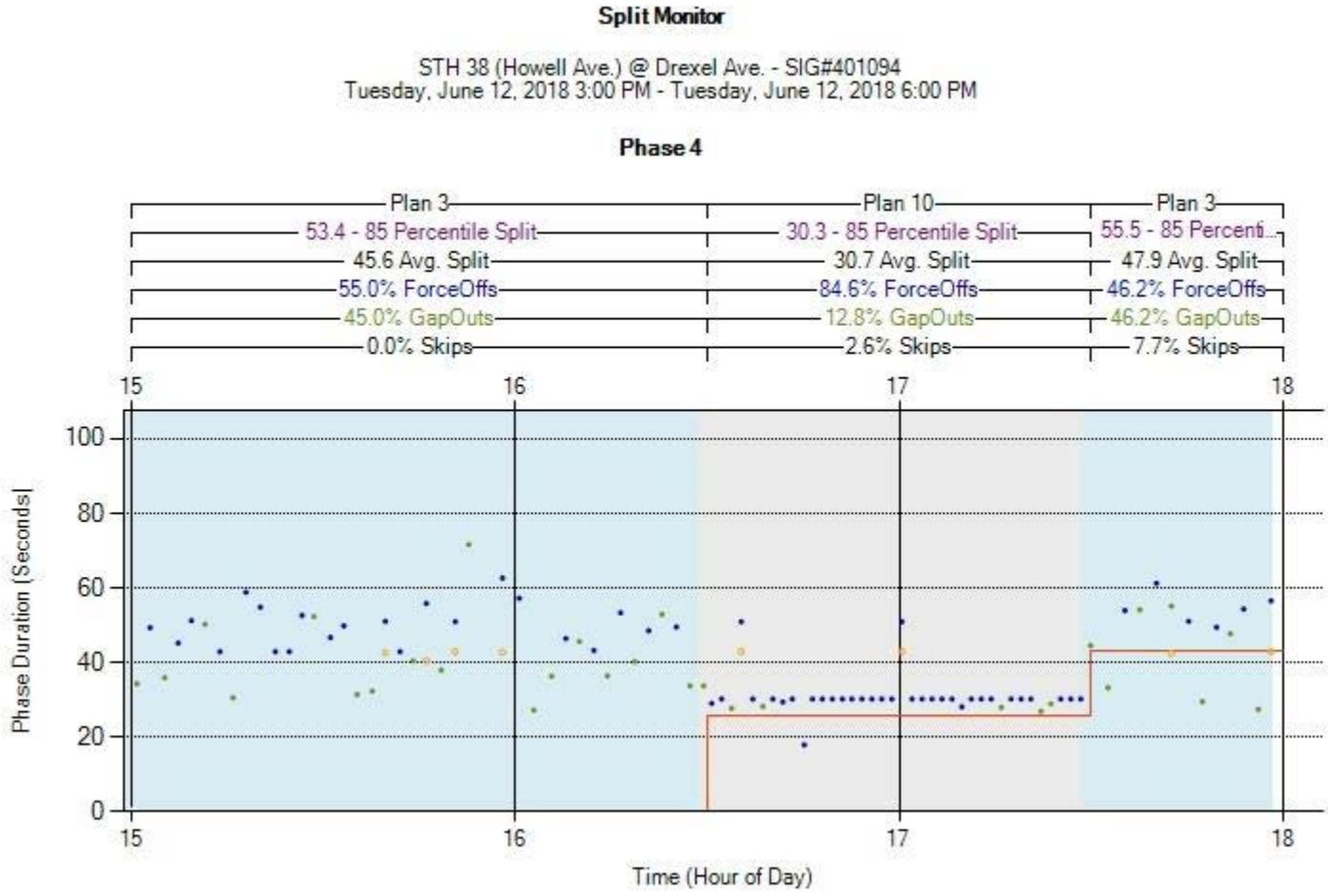
WIS 38 Corridor – STH 38 & Drexel Ave.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM



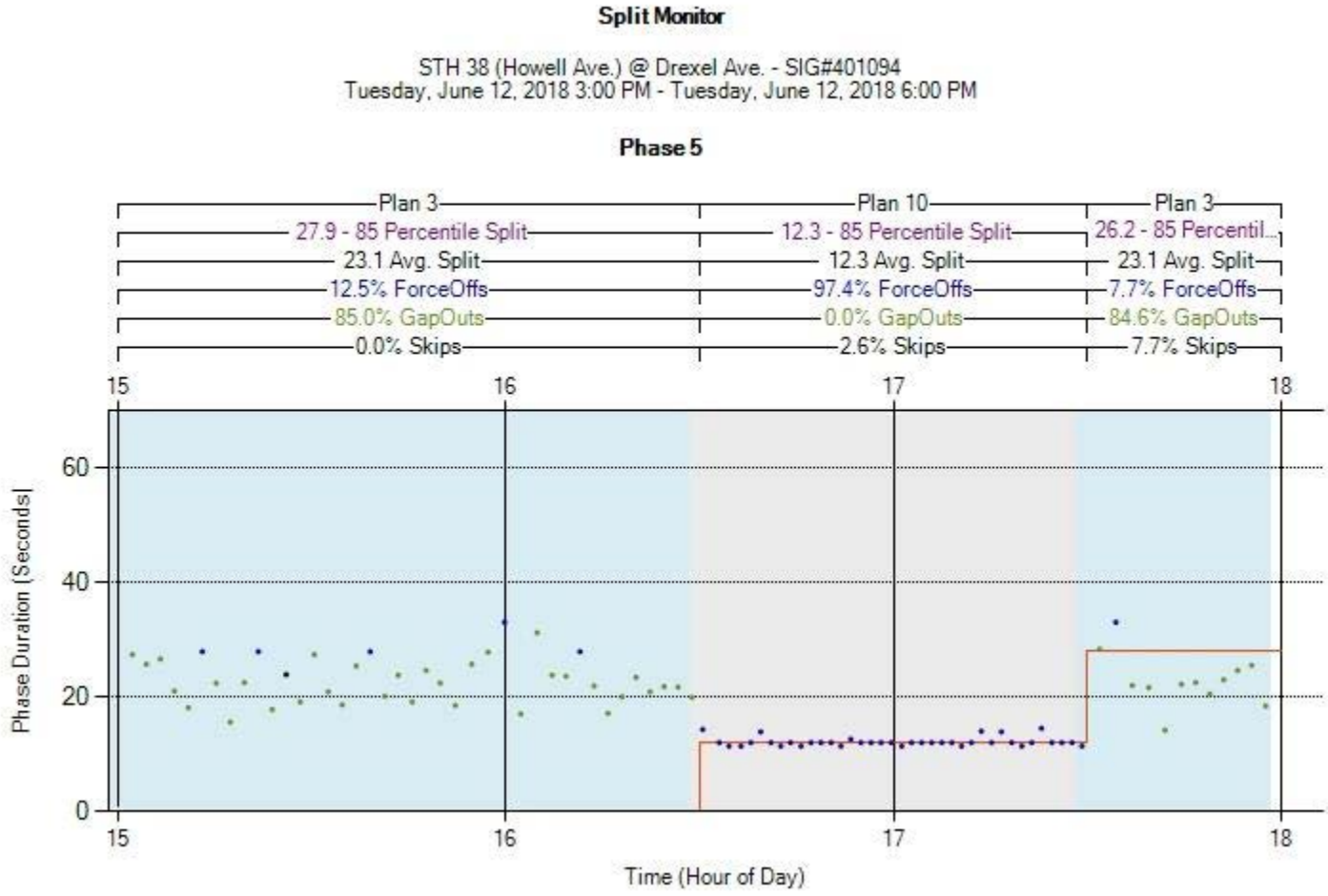
WIS 38 Corridor – STH 38 & Drexel Ave.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM



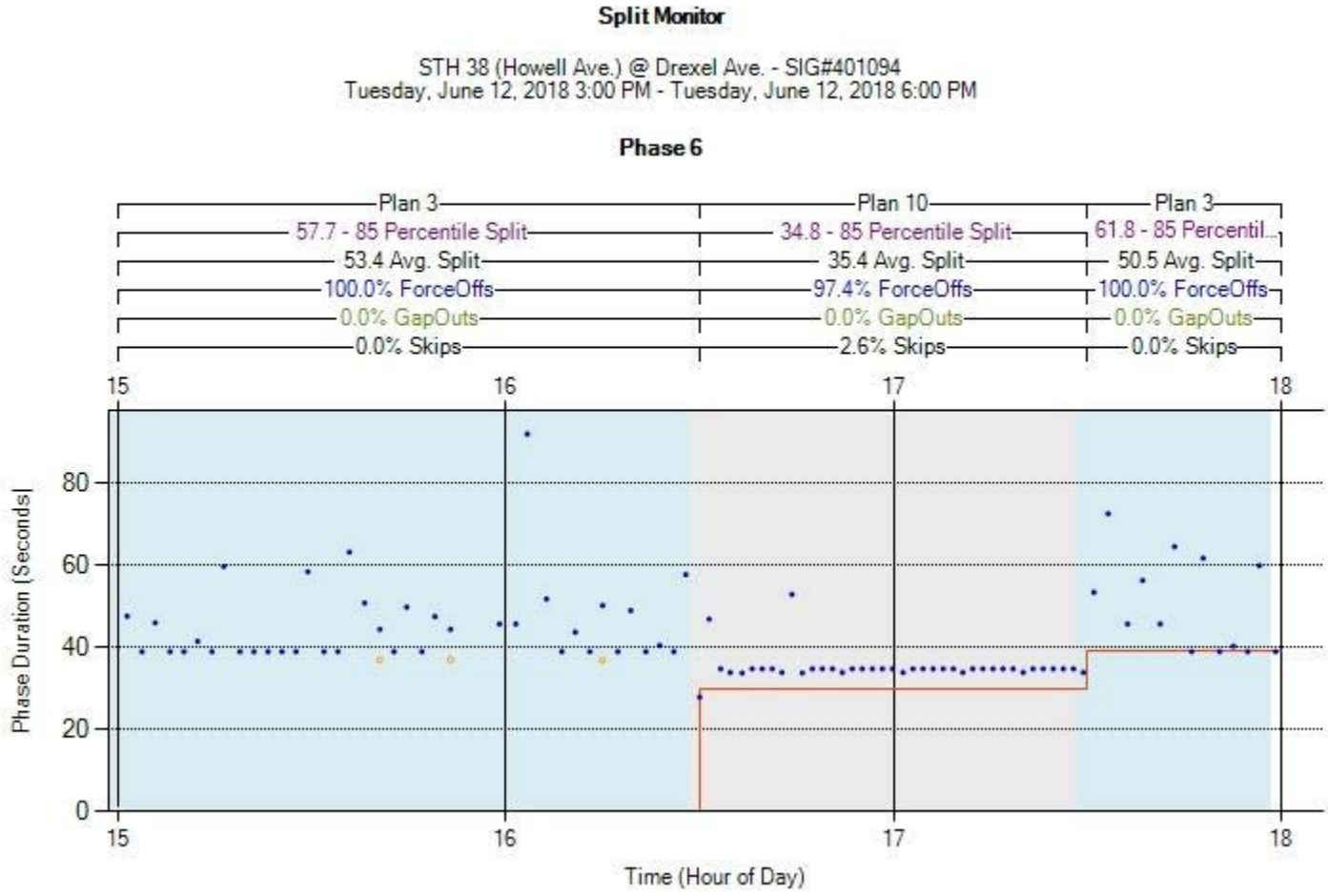
WIS 38 Corridor – STH 38 & Drexel Ave.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM



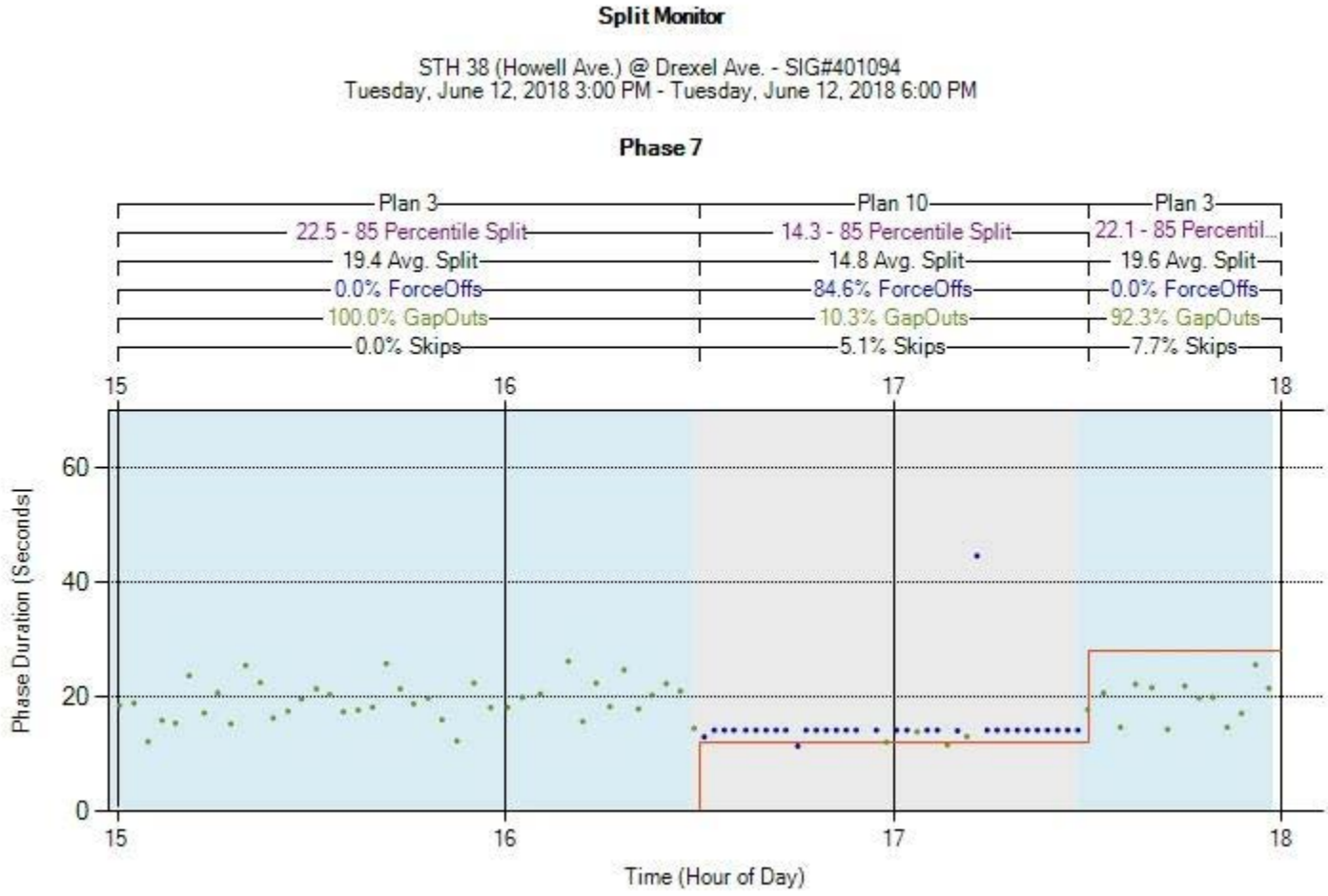
WIS 38 Corridor – STH 38 & Drexel Ave.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM



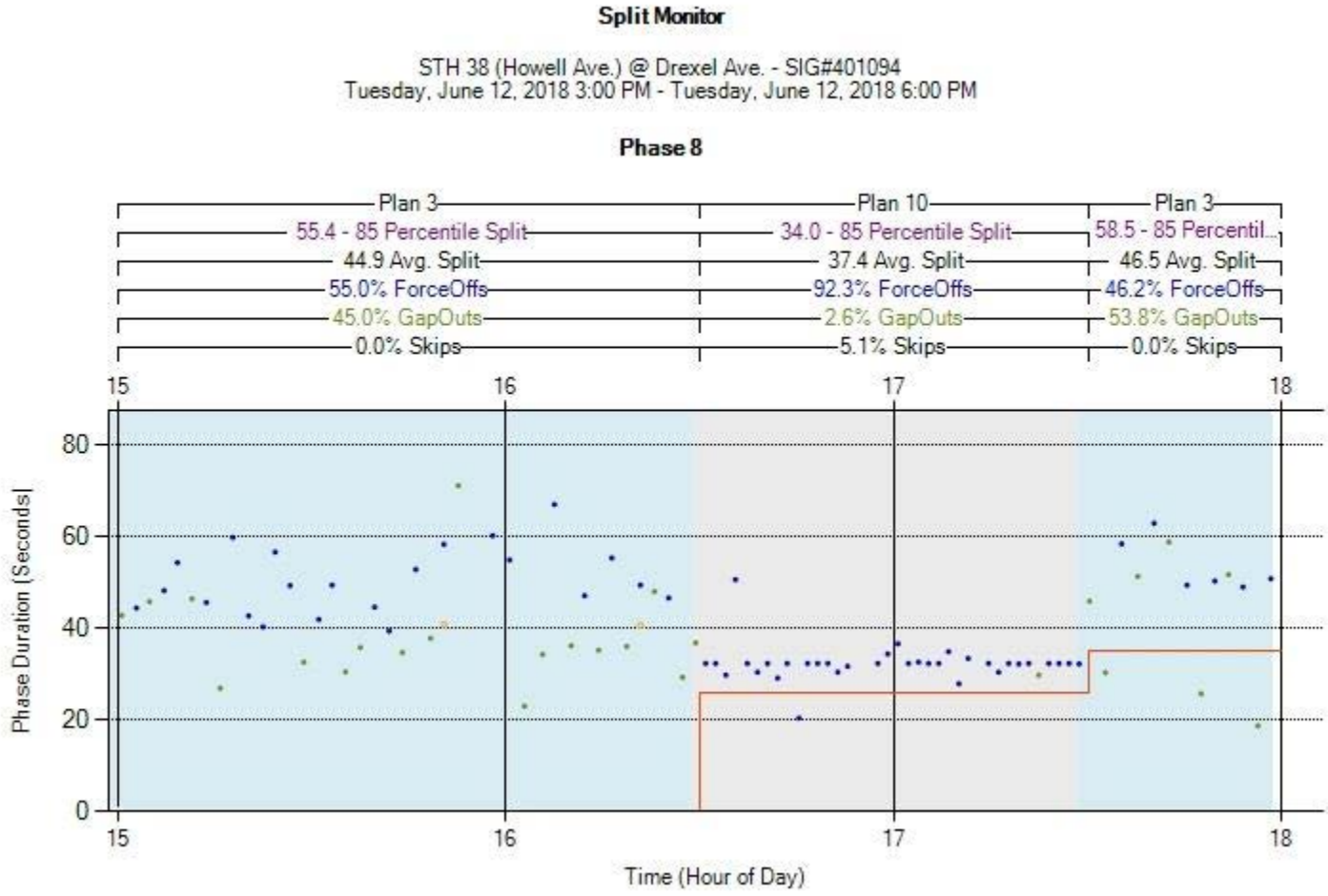
WIS 38 Corridor – STH 38 & Drexel Ave.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM



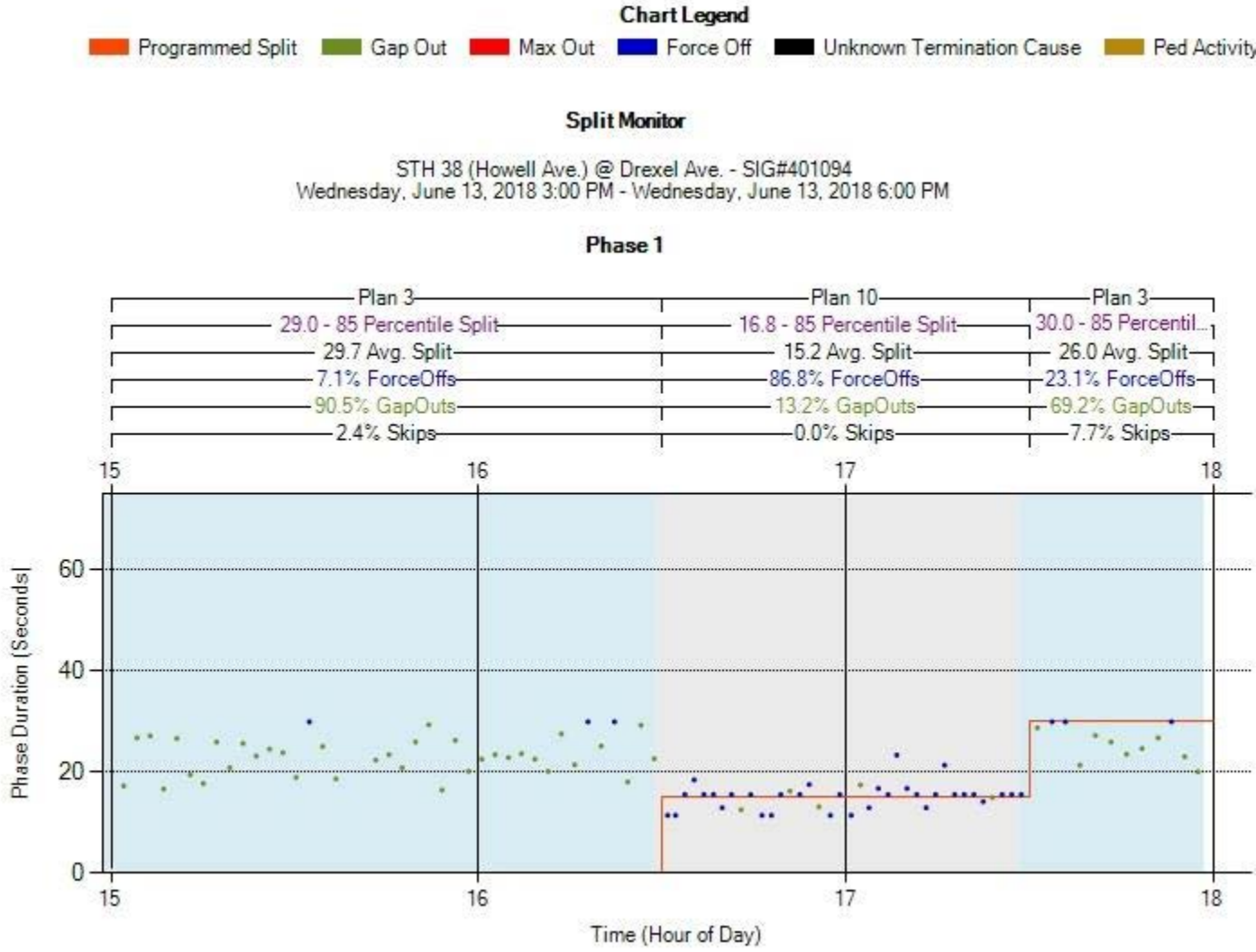
WIS 38 Corridor – STH 38 & Drexel Ave.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM



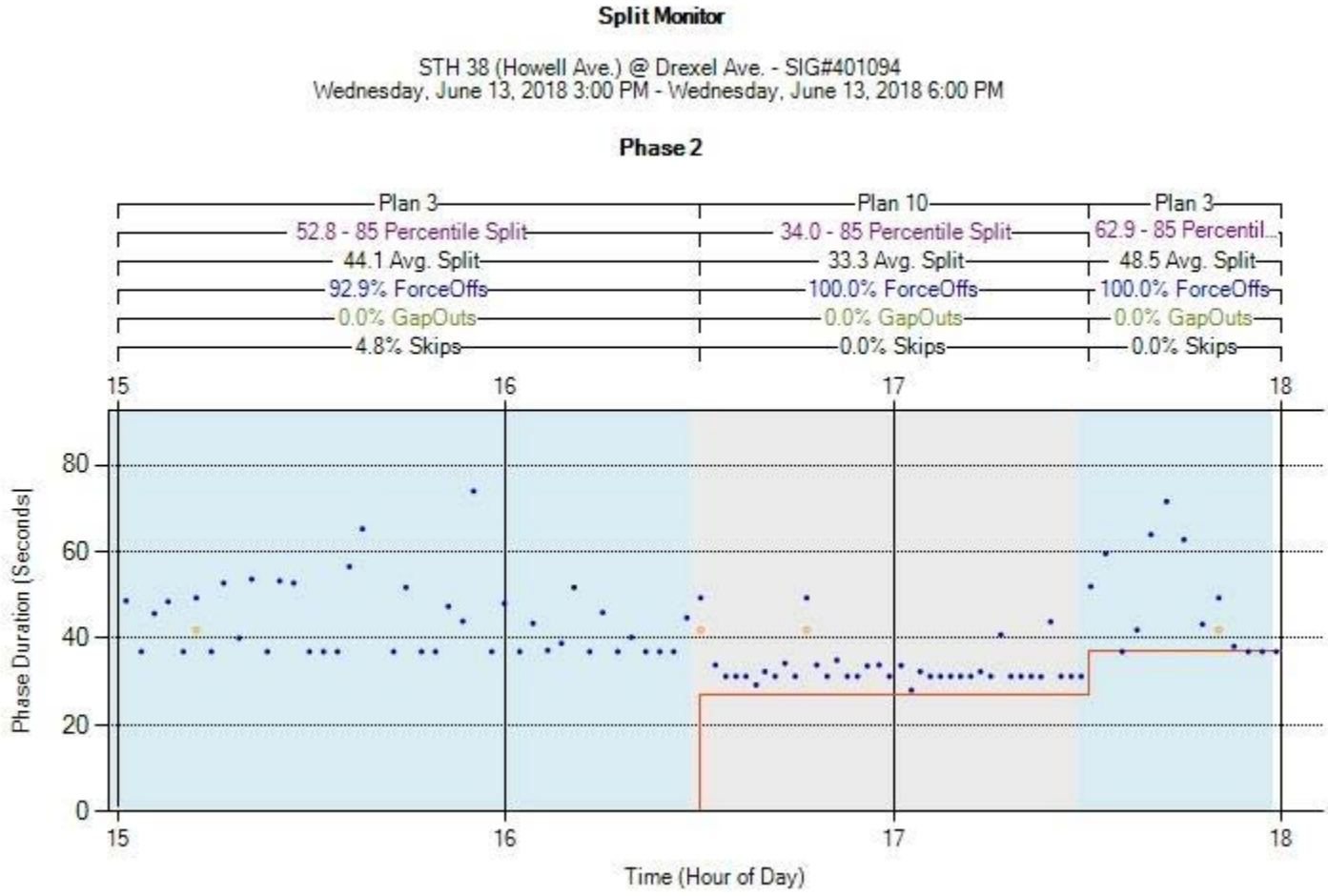
WIS 38 Corridor – STH 38 & Drexel Ave.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM



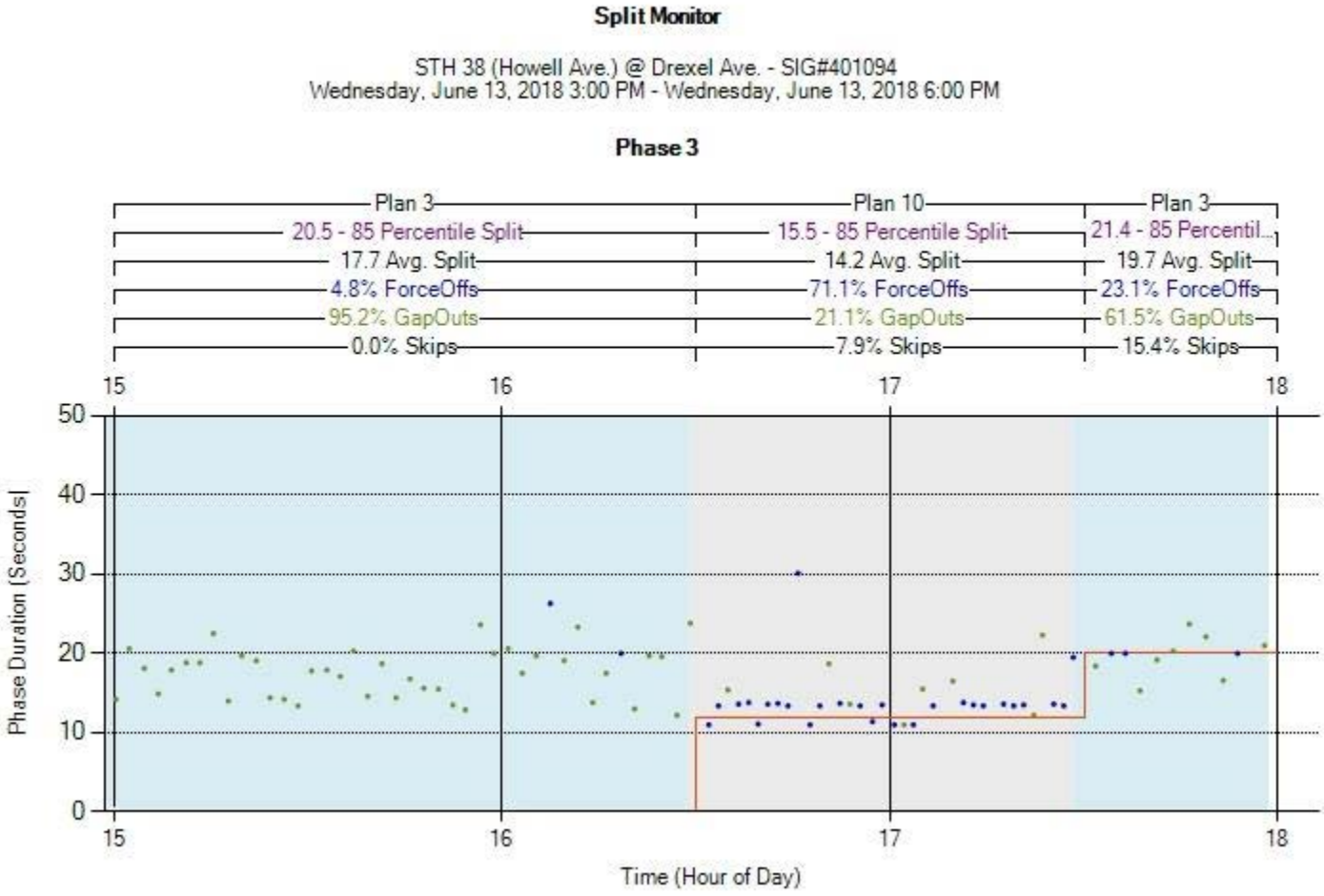
WIS 38 Corridor – STH 38 & Drexel Ave.
Vistro Timings
6/13/2018 – 3:00 PM – 6:00 PM



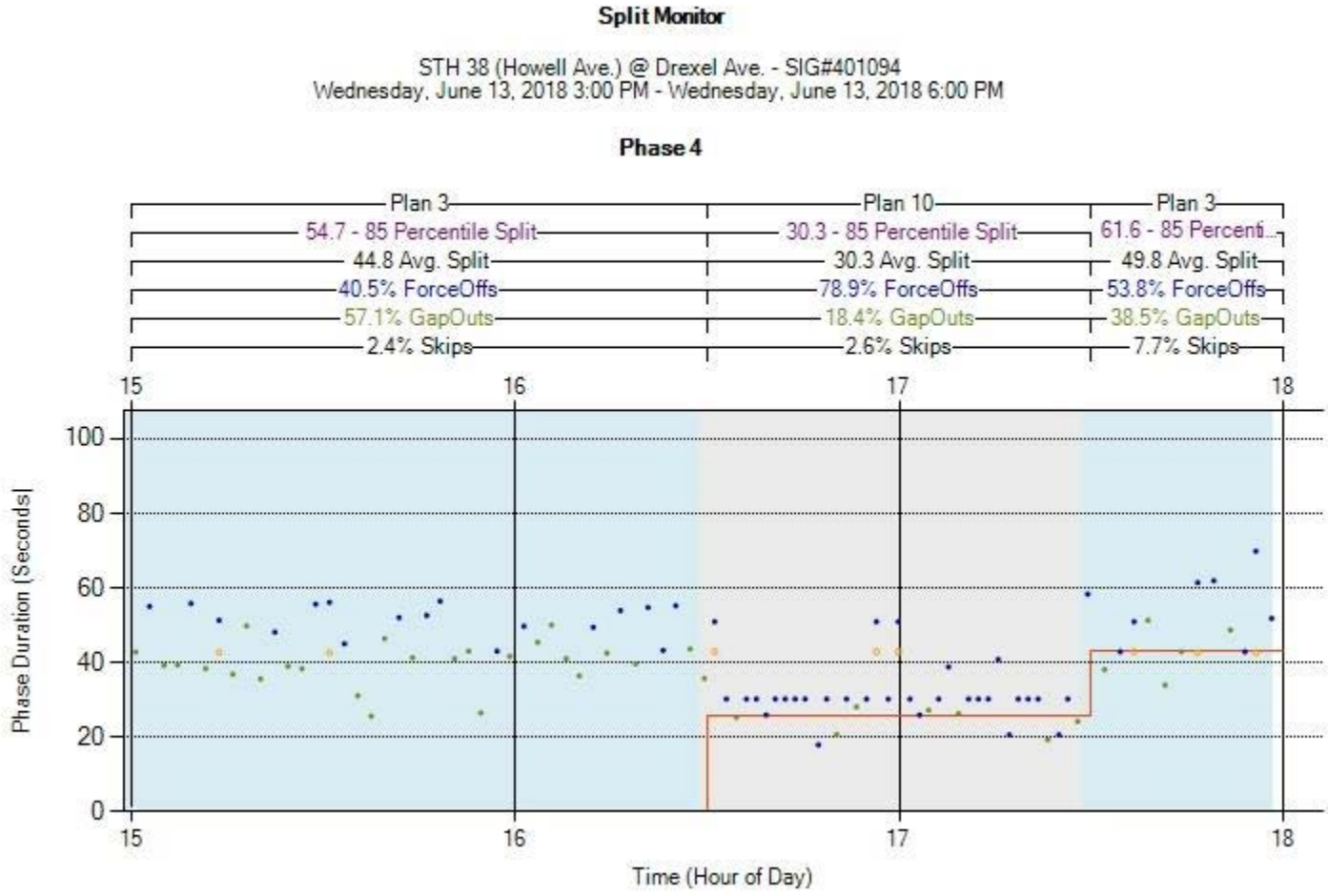
WIS 38 Corridor – STH 38 & Drexel Ave.
Vistro Timings
6/13/2018 – 3:00 PM – 6:00 PM



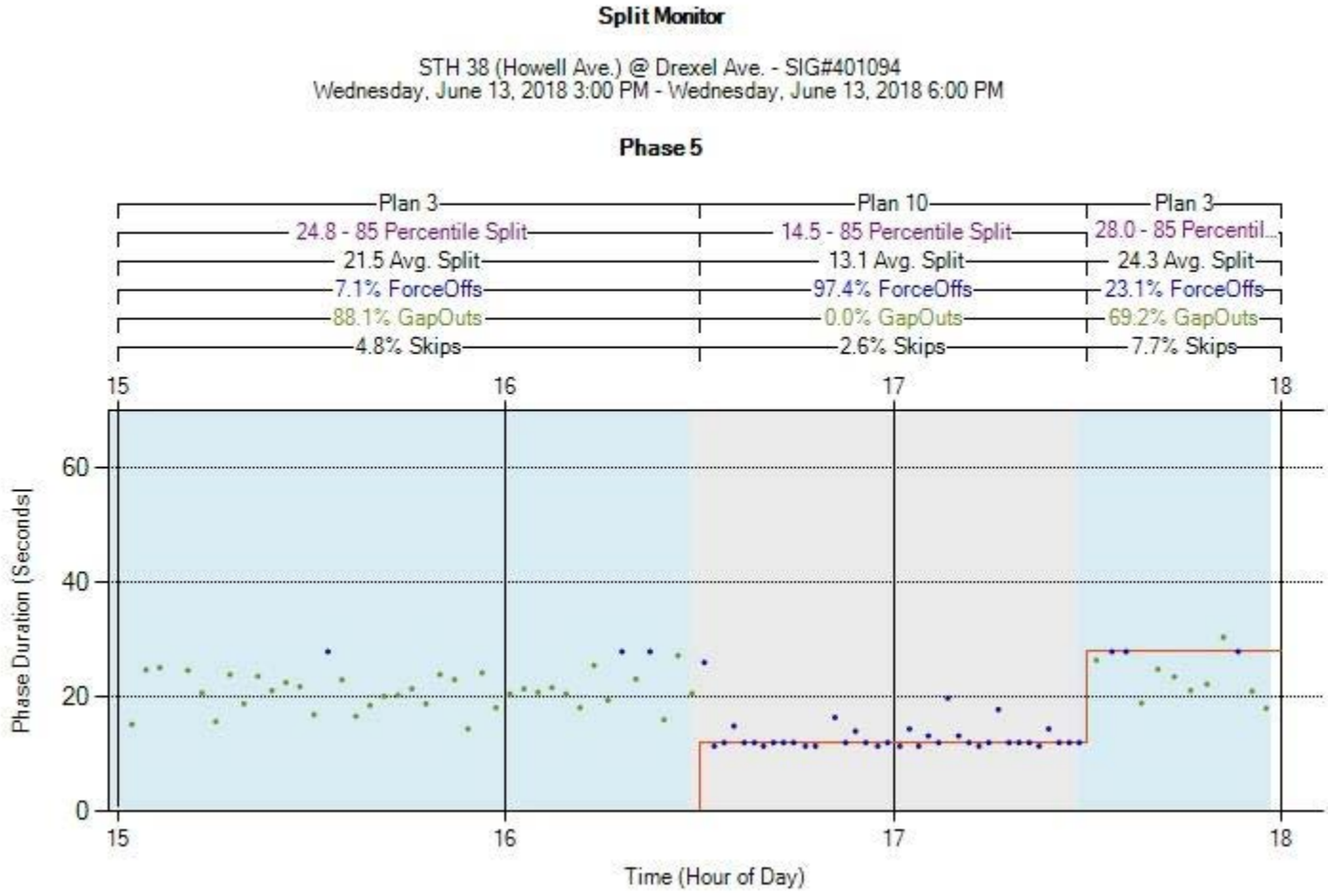
WIS 38 Corridor – STH 38 & Drexel Ave.
Vistro Timings
6/13/2018 – 3:00 PM – 6:00 PM



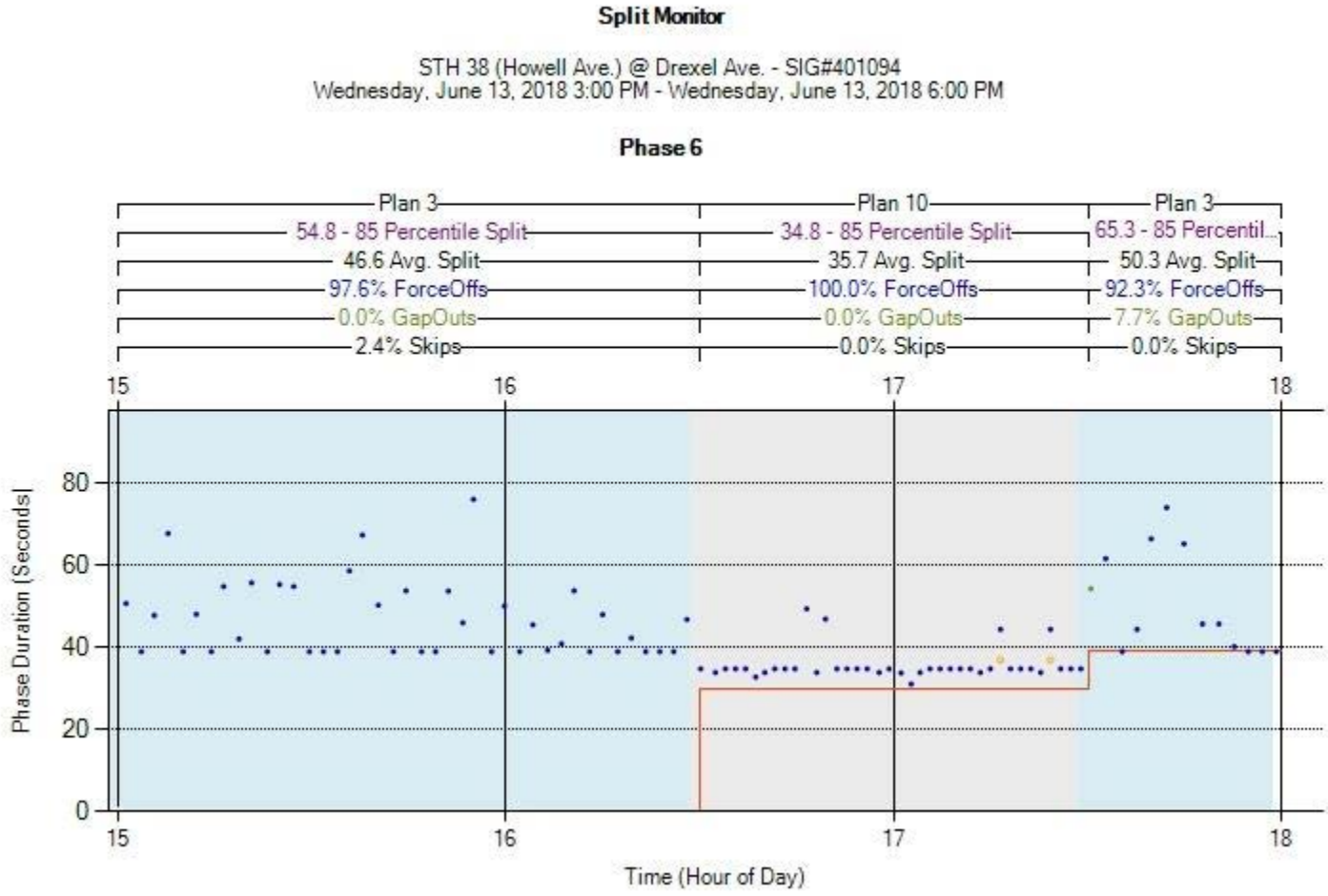
WIS 38 Corridor – STH 38 & Drexel Ave.
Vistro Timings
6/13/2018 – 3:00 PM – 6:00 PM



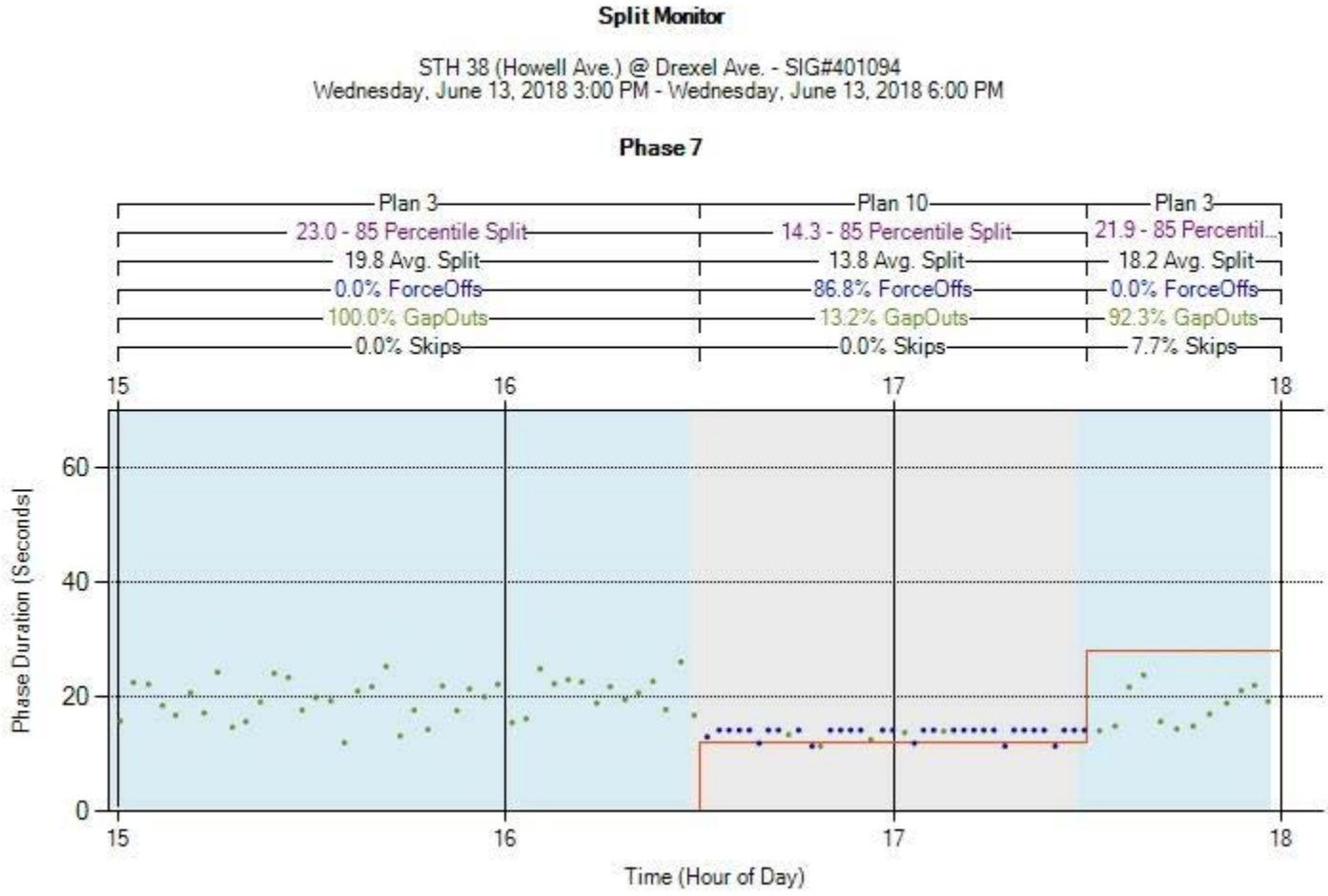
WIS 38 Corridor – STH 38 & Drexel Ave.
Vistro Timings
6/13/2018 – 3:00 PM – 6:00 PM



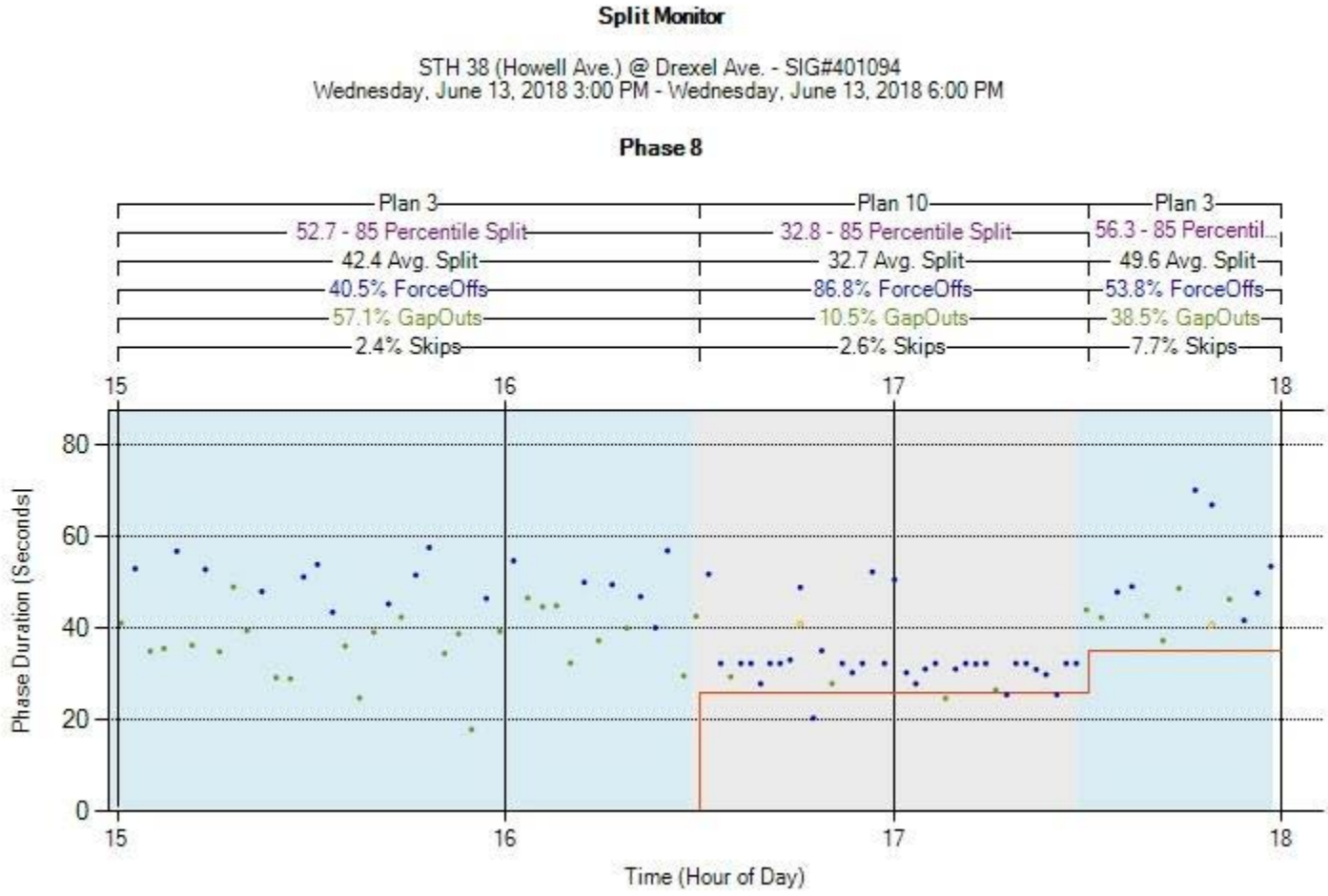
WIS 38 Corridor – STH 38 & Drexel Ave.
Vistro Timings
6/13/2018 – 3:00 PM – 6:00 PM



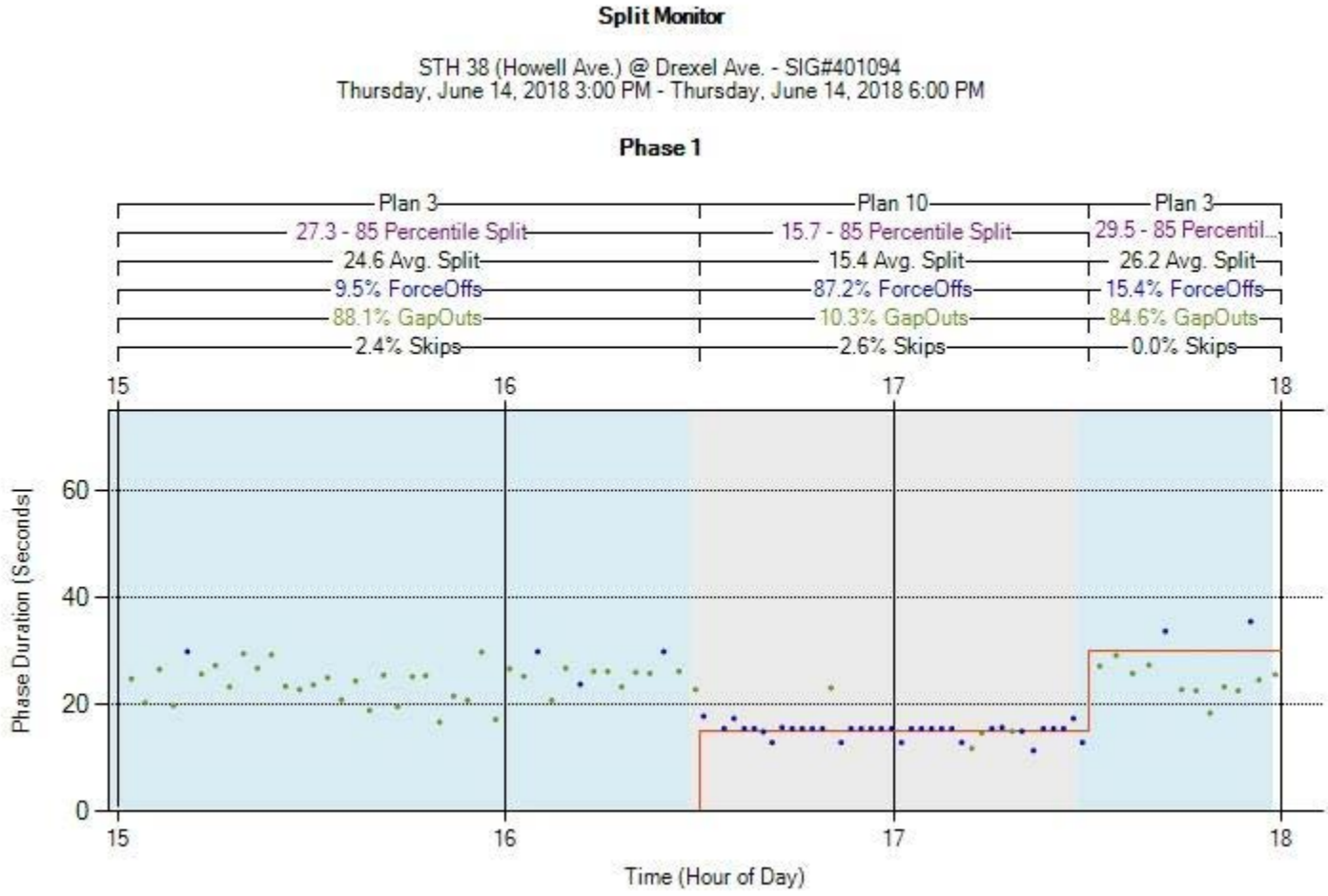
WIS 38 Corridor – STH 38 & Drexel Ave.
Vistro Timings
6/13/2018 – 3:00 PM – 6:00 PM



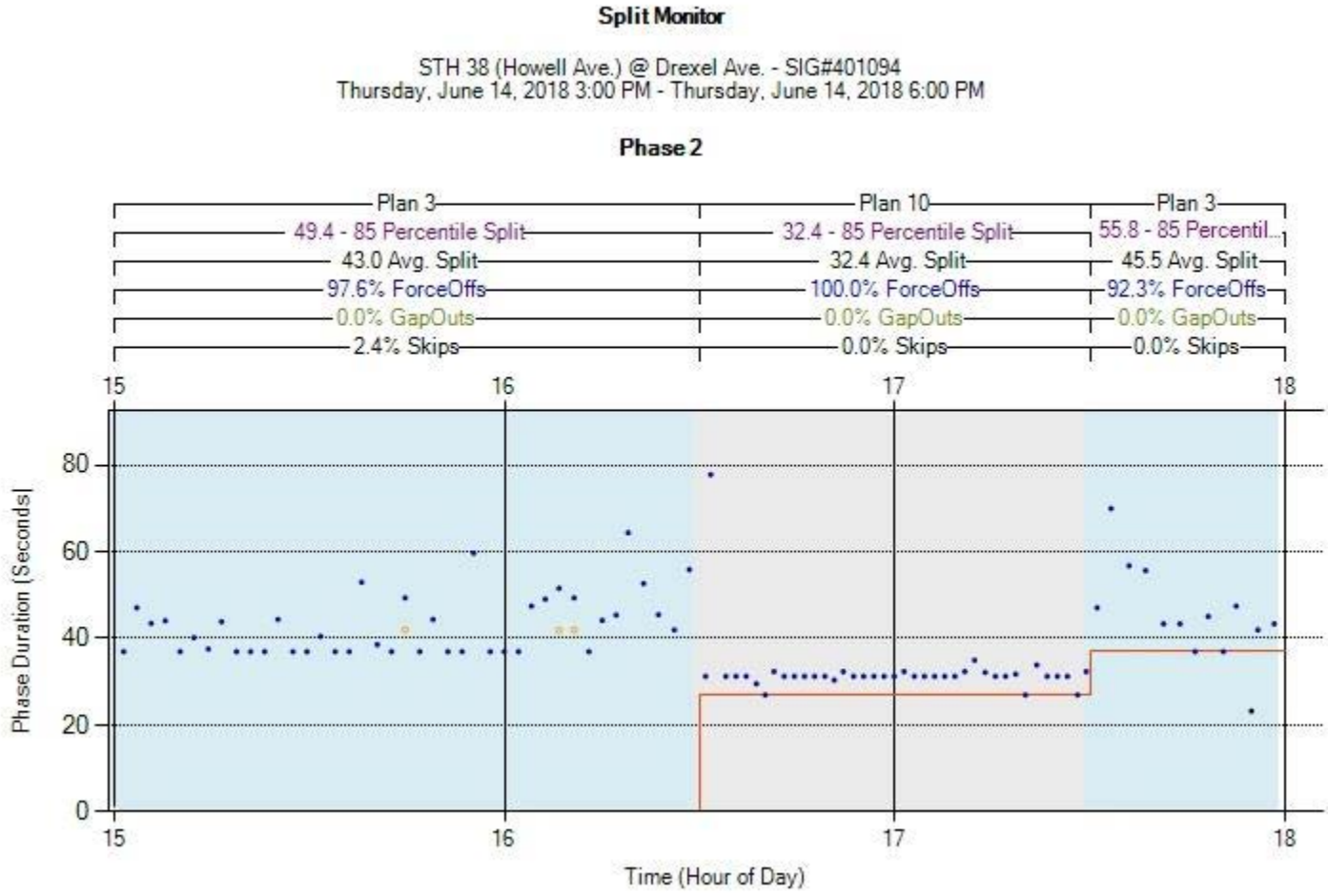
WIS 38 Corridor – STH 38 & Drexel Ave.
Vistro Timings
6/13/2018 – 3:00 PM – 6:00 PM



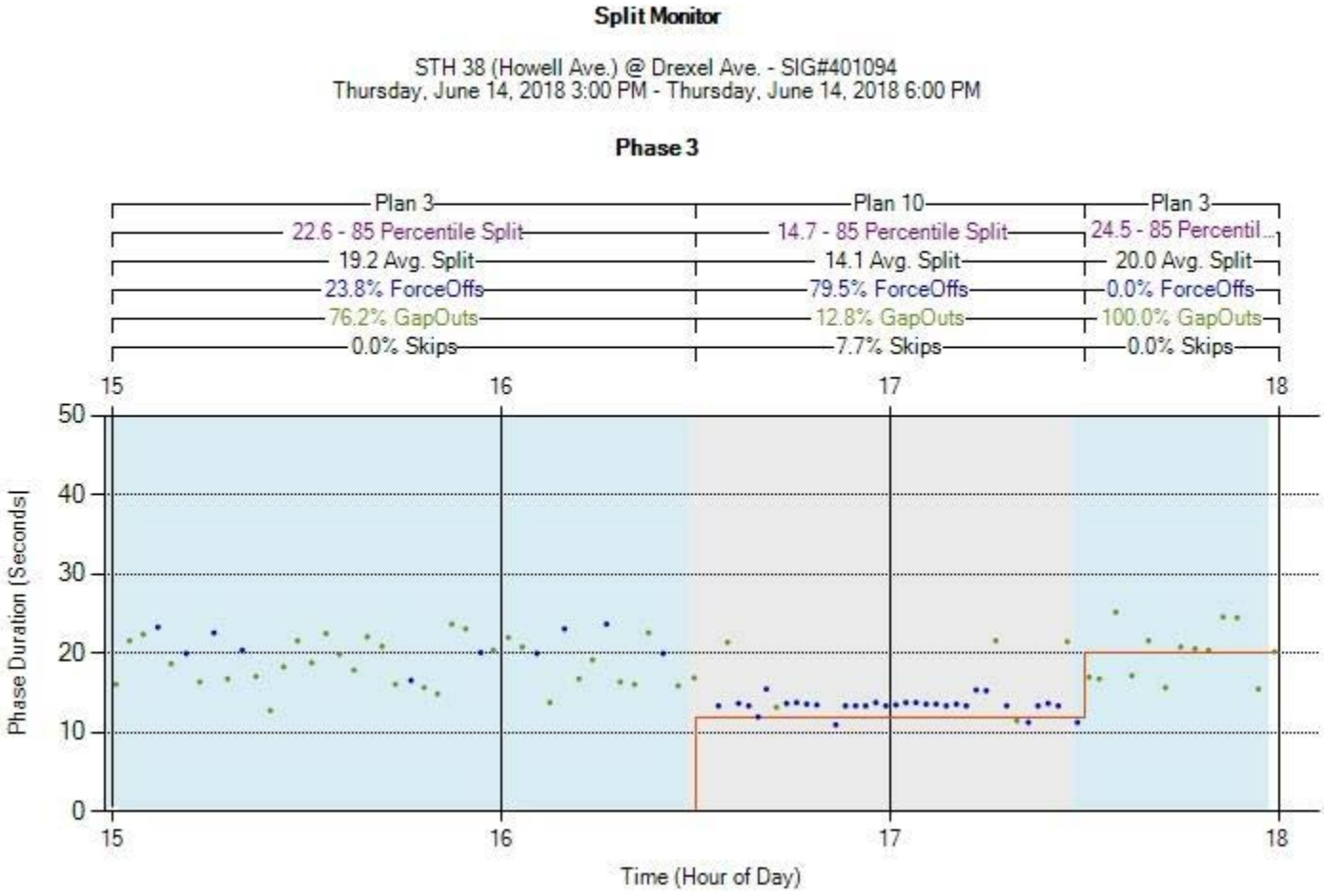
WIS 38 Corridor – STH 38 & Drexel Ave.
Vistro Timings
6/14/2018 – 3:00 PM – 6:00 PM



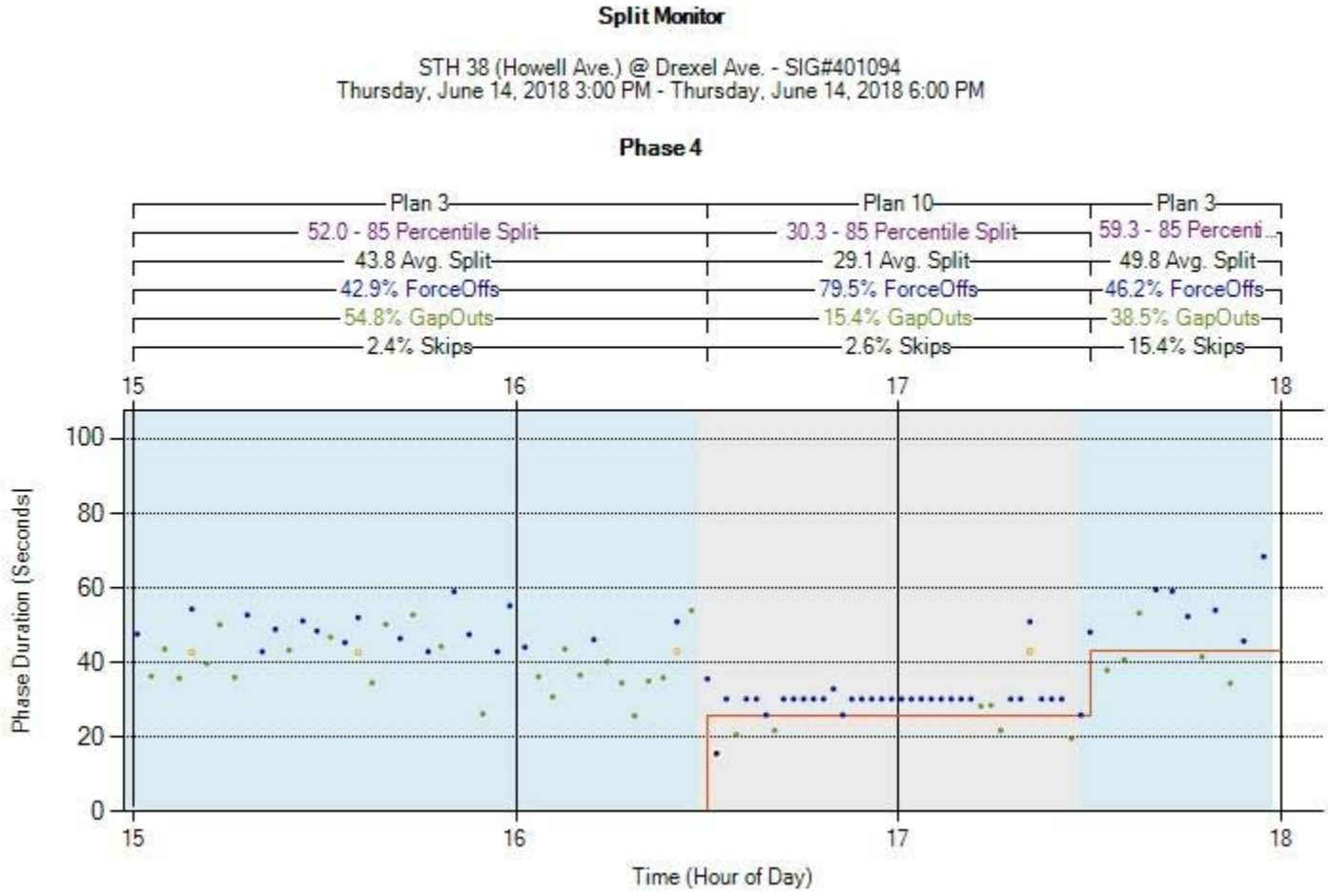
WIS 38 Corridor – STH 38 & Drexel Ave.
Vistro Timings
6/14/2018 – 3:00 PM – 6:00 PM



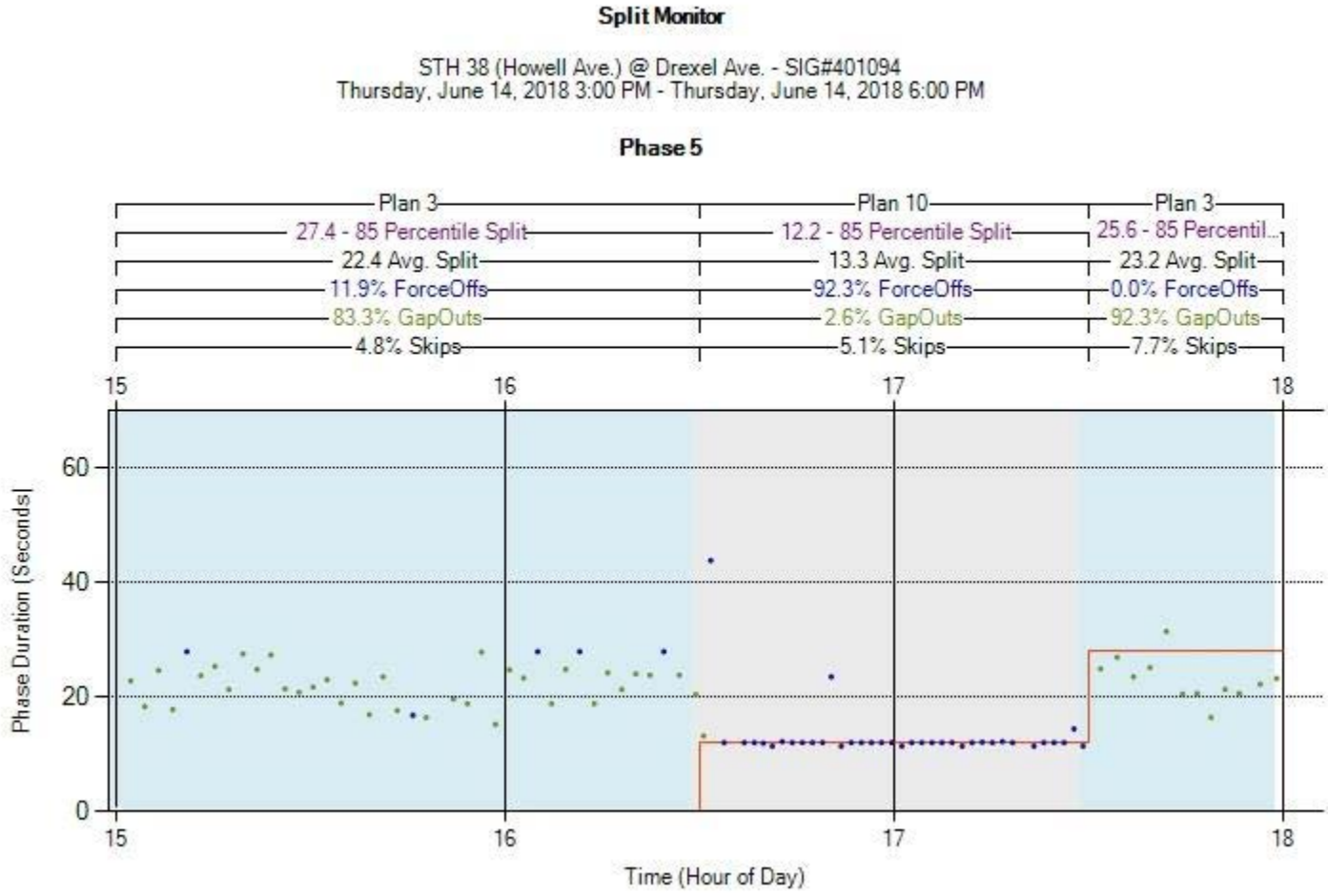
WIS 38 Corridor – STH 38 & Drexel Ave.
Vistro Timings
6/14/2018 – 3:00 PM – 6:00 PM



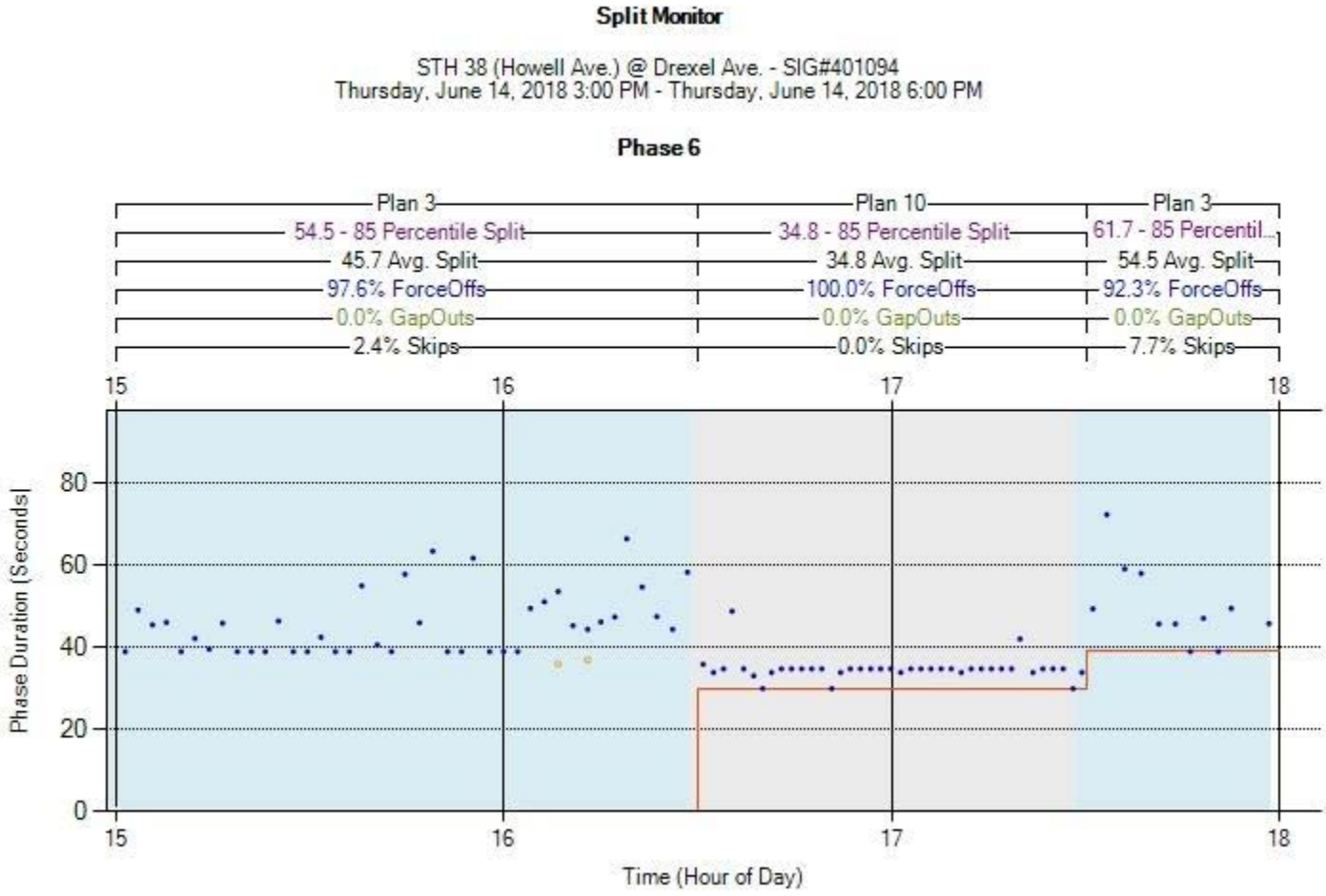
WIS 38 Corridor – STH 38 & Drexel Ave.
Vistro Timings
6/14/2018 – 3:00 PM – 6:00 PM



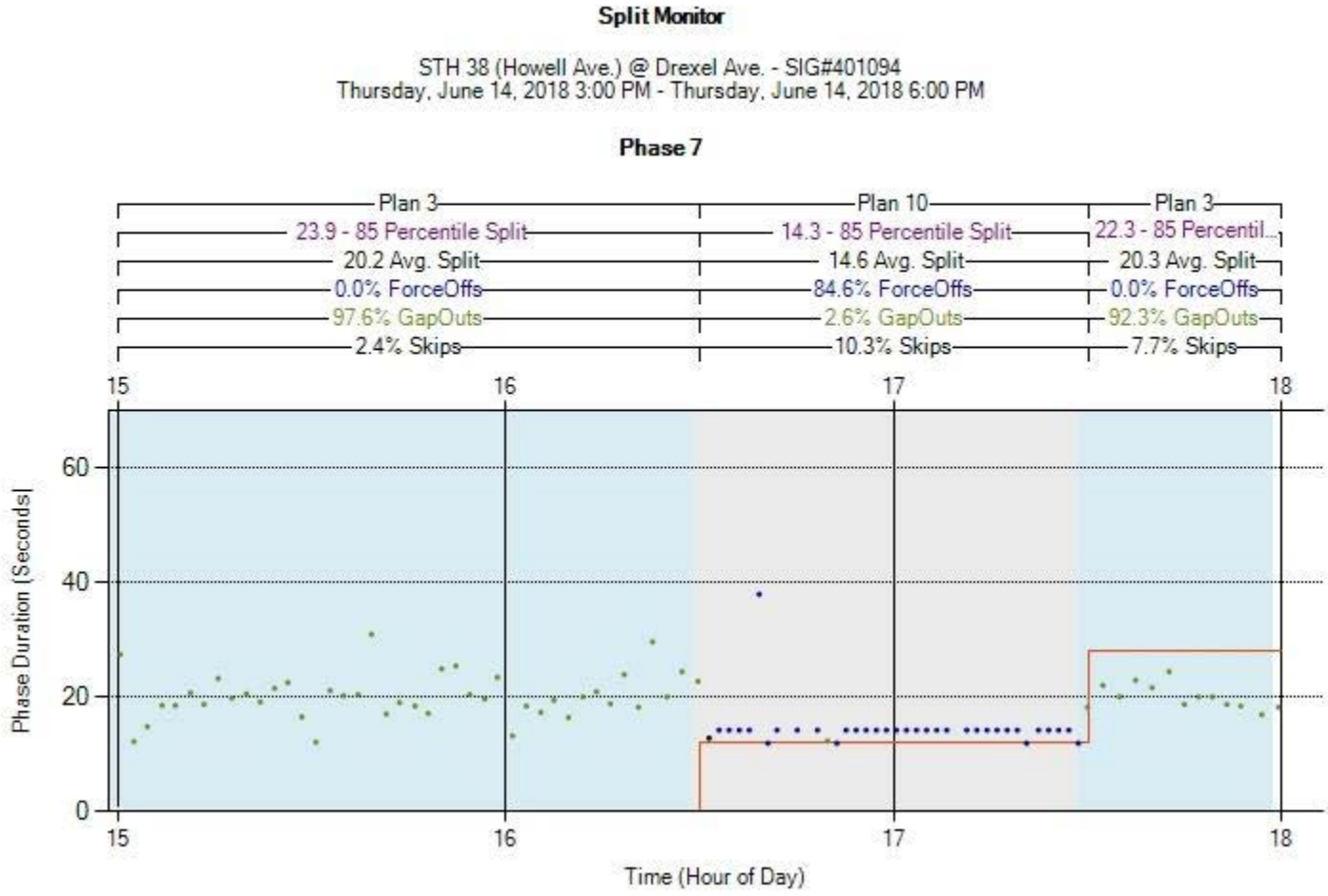
WIS 38 Corridor – STH 38 & Drexel Ave.
Vistro Timings
6/14/2018 – 3:00 PM – 6:00 PM



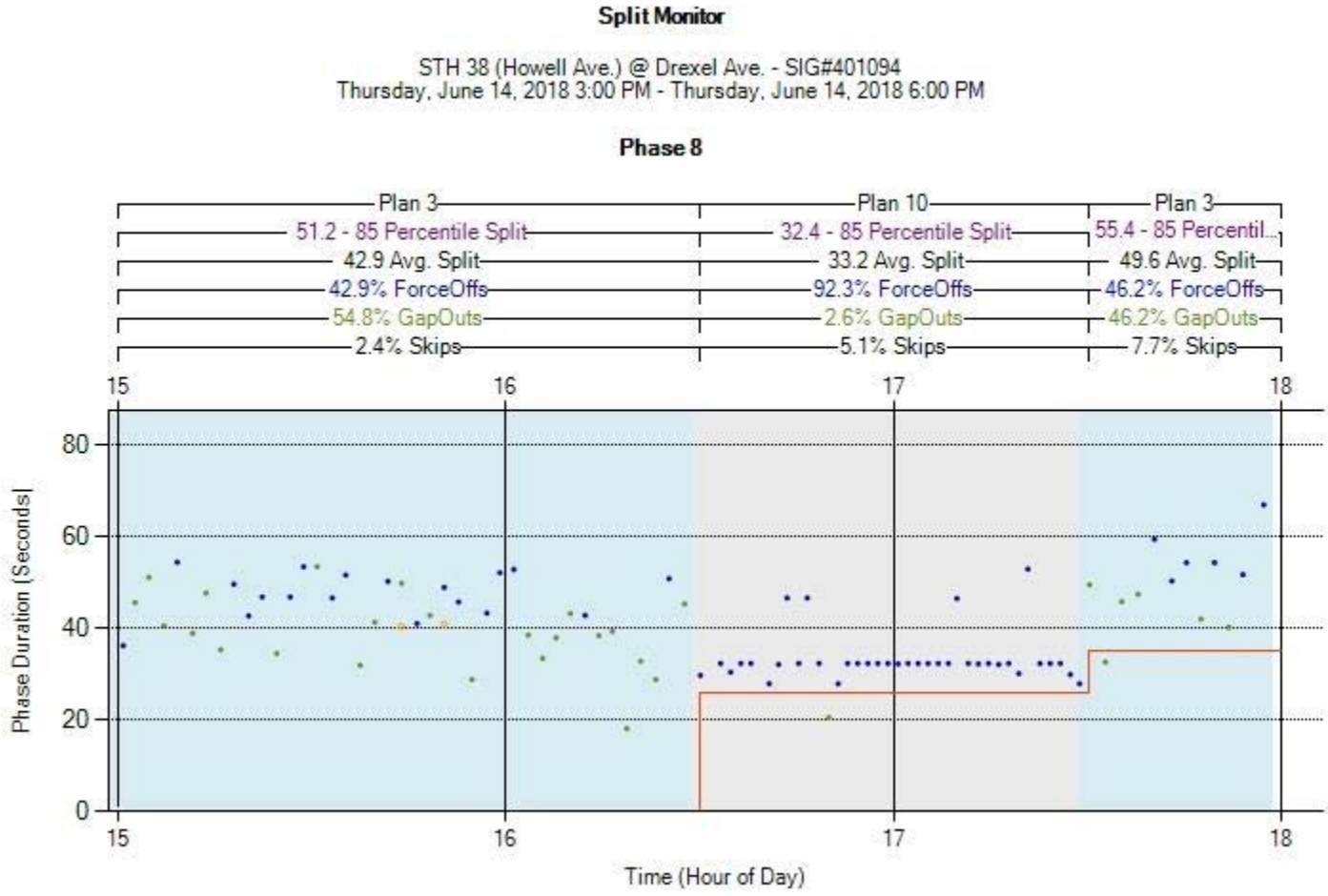
WIS 38 Corridor – STH 38 & Drexel Ave.
Vistro Timings
6/14/2018 – 3:00 PM – 6:00 PM



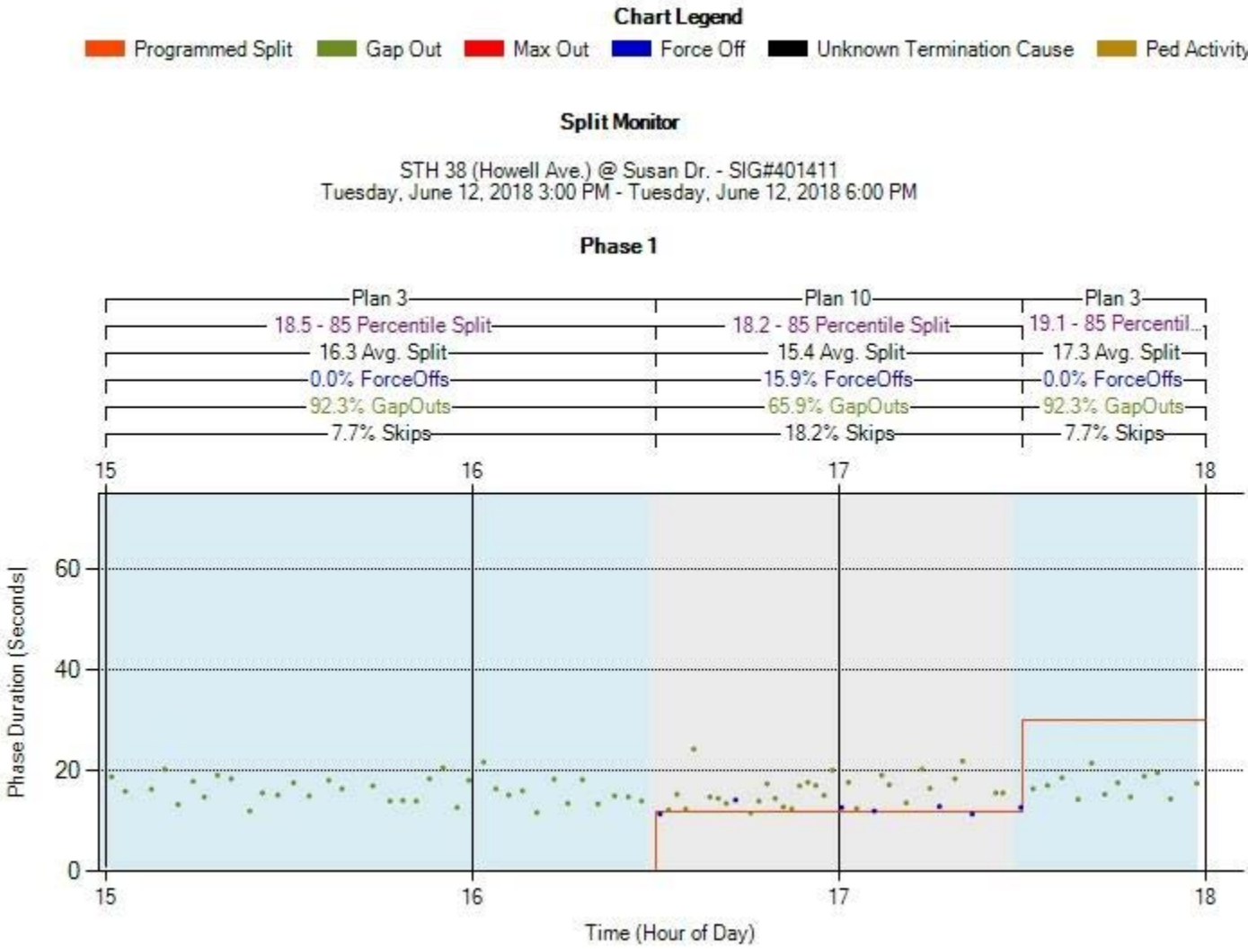
WIS 38 Corridor – STH 38 & Drexel Ave.
Vistro Timings
6/14/2018 – 3:00 PM – 6:00 PM



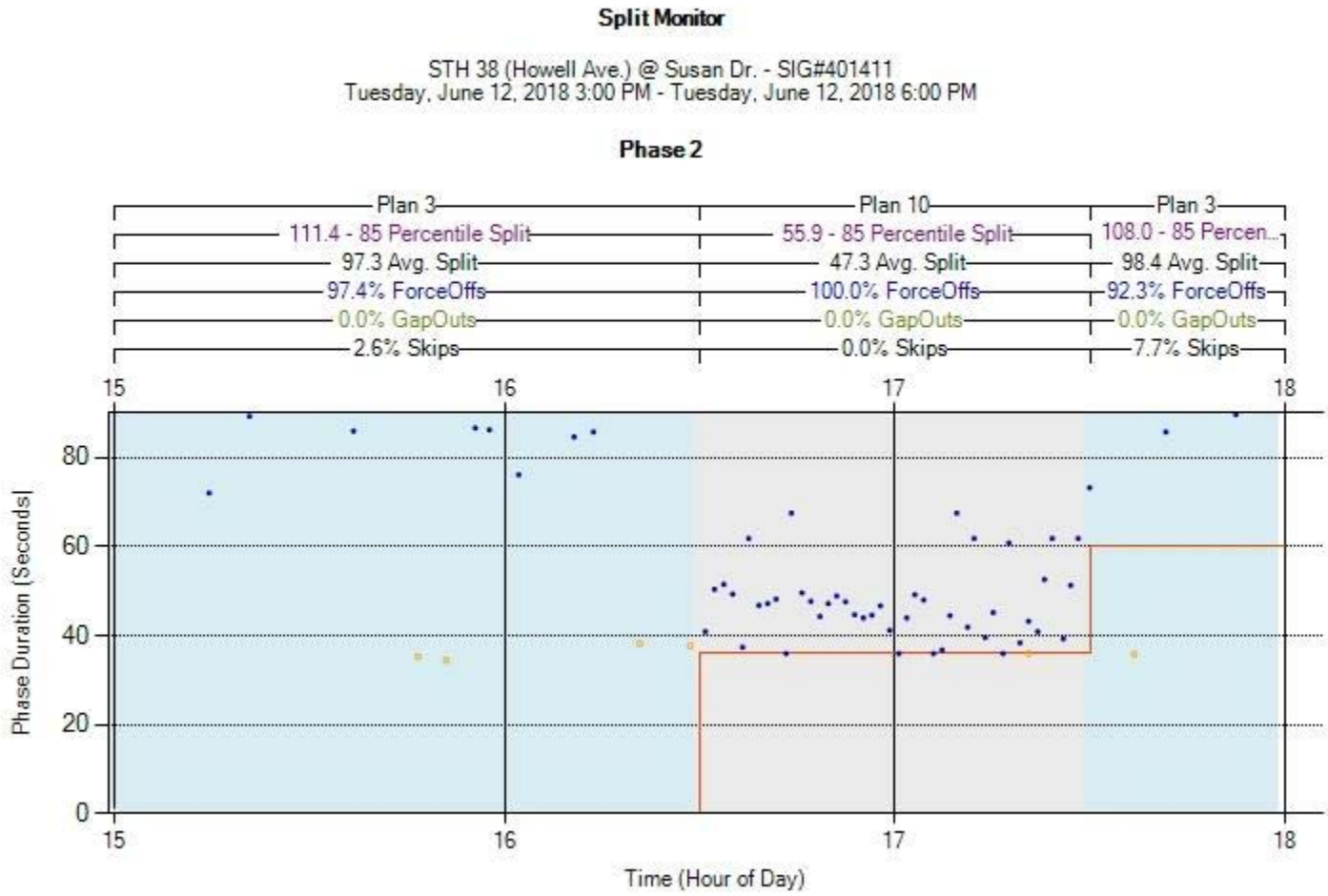
WIS 38 Corridor – STH 38 & Drexel Ave.
Vistro Timings
6/14/2018 – 3:00 PM – 6:00 PM



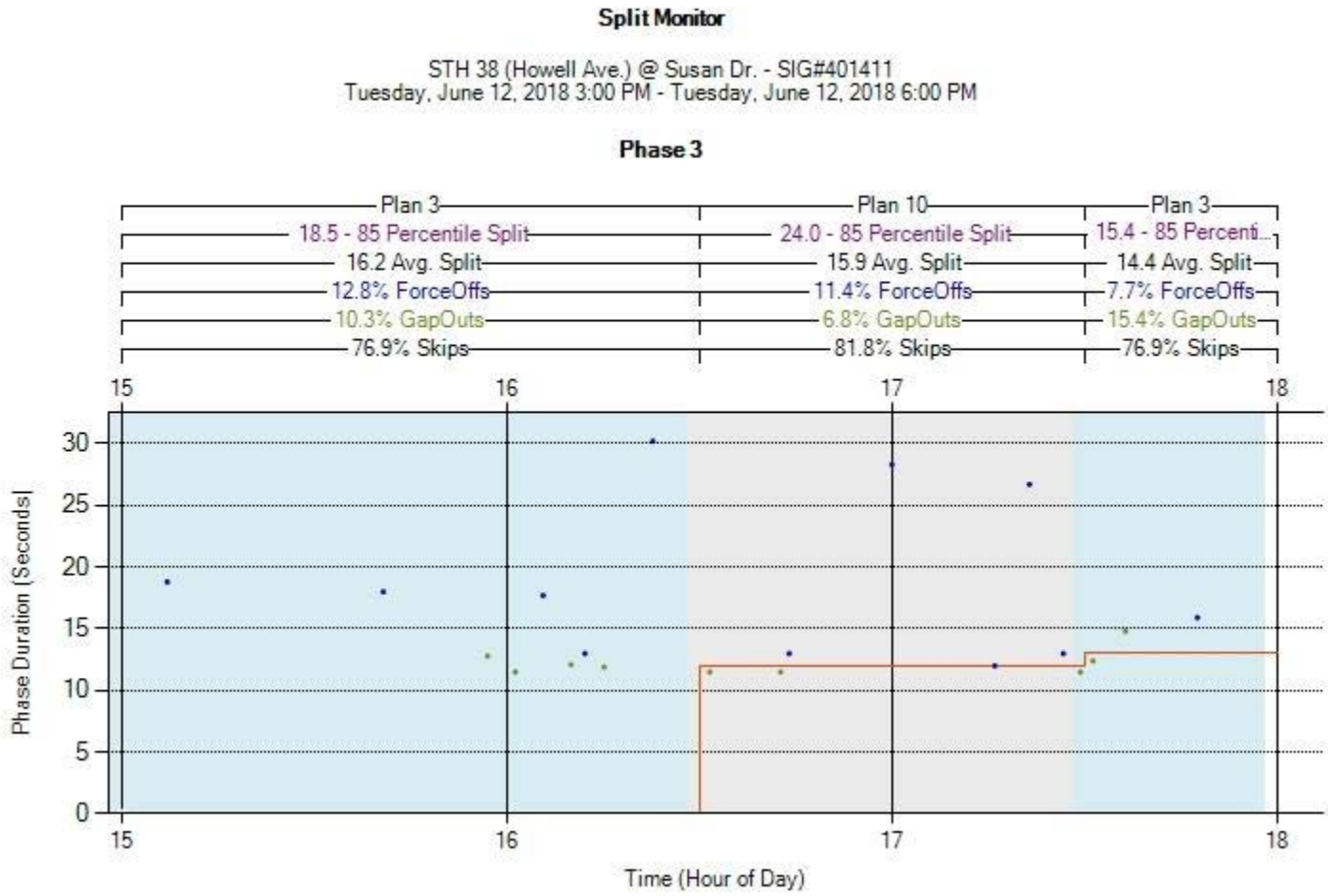
WIS 38 Corridor – STH 38 & Susan Dr.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM



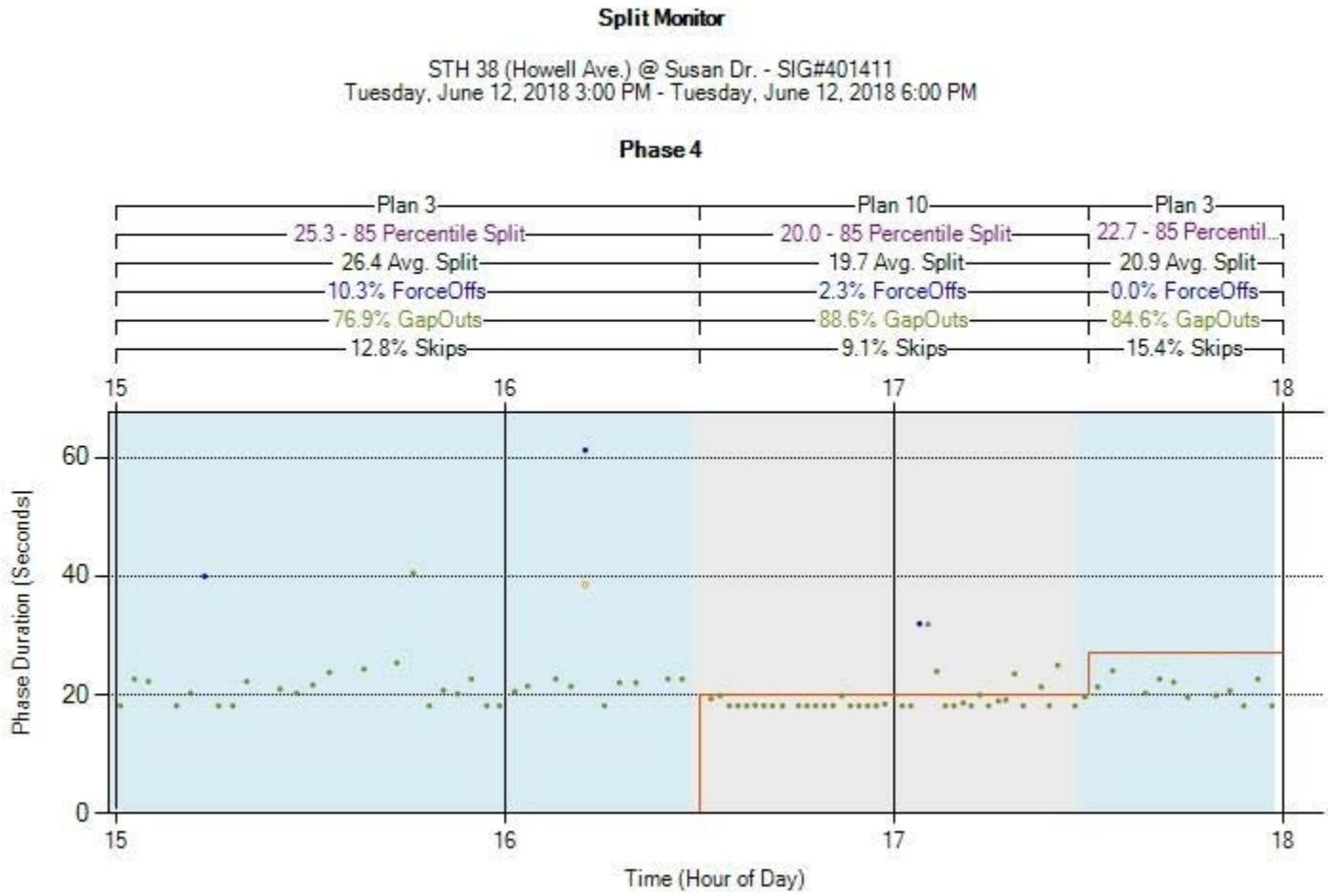
WIS 38 Corridor – STH 38 & Susan Dr.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM



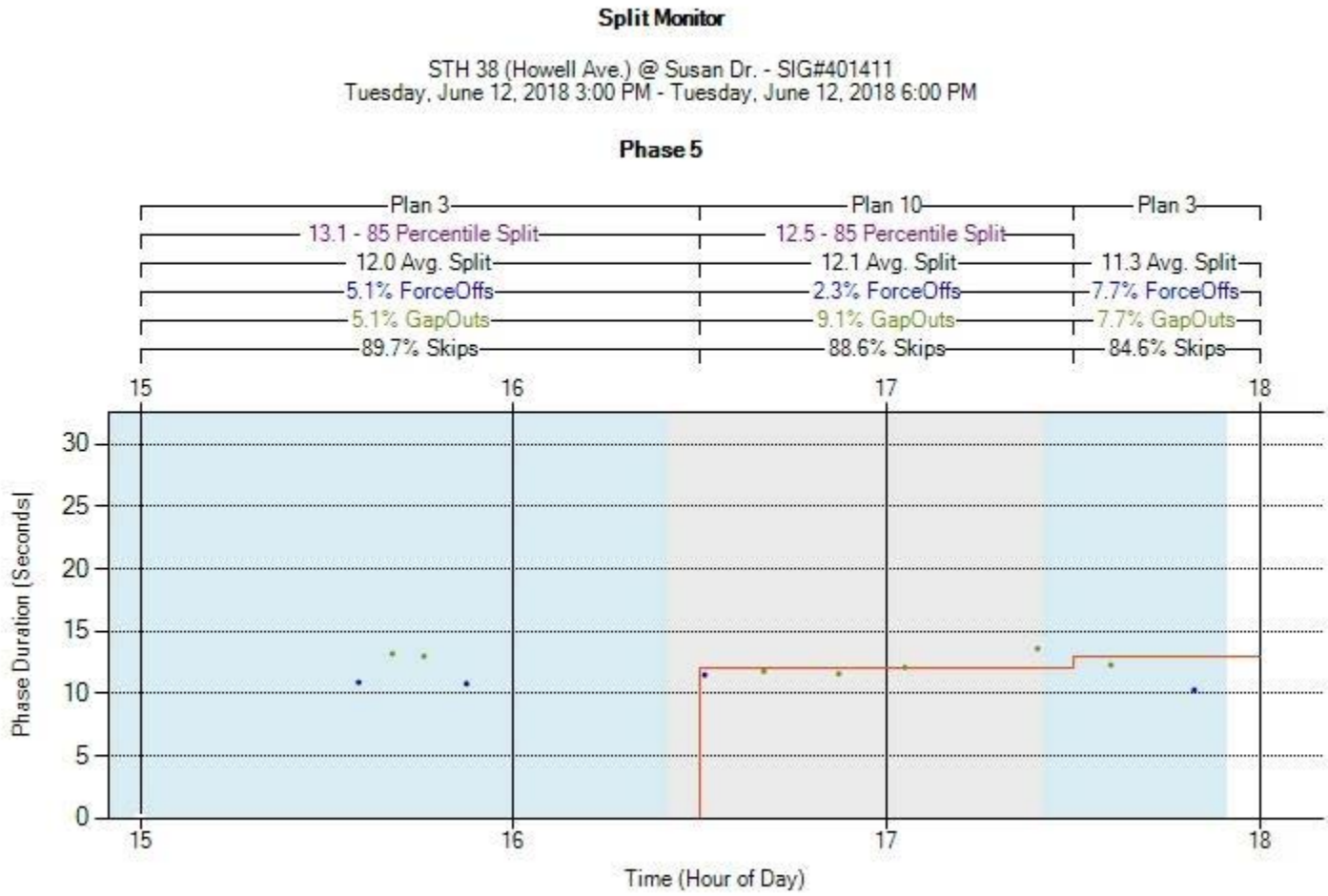
WIS 38 Corridor – STH 38 & Susan Dr.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM



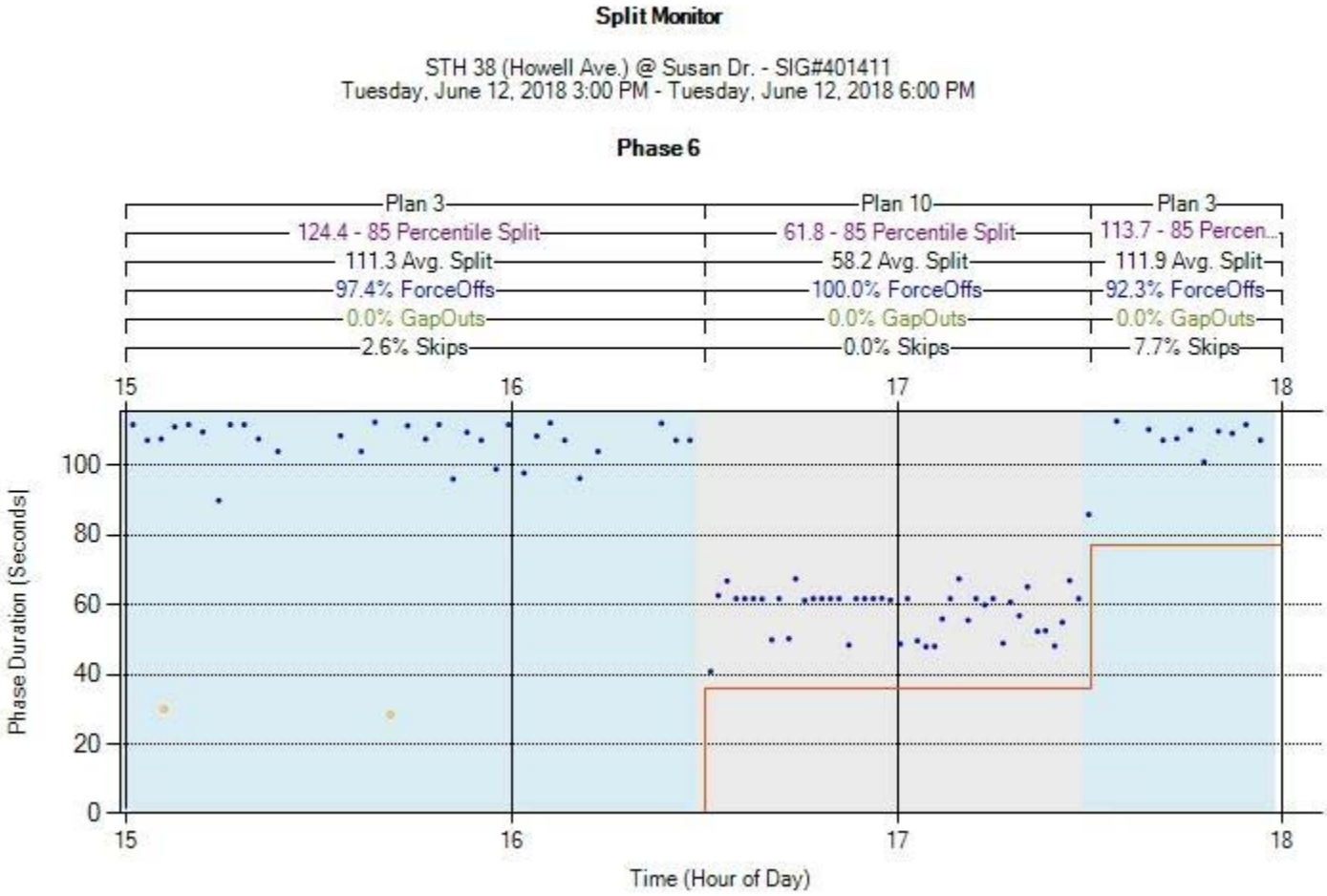
WIS 38 Corridor – STH 38 & Susan Dr.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM



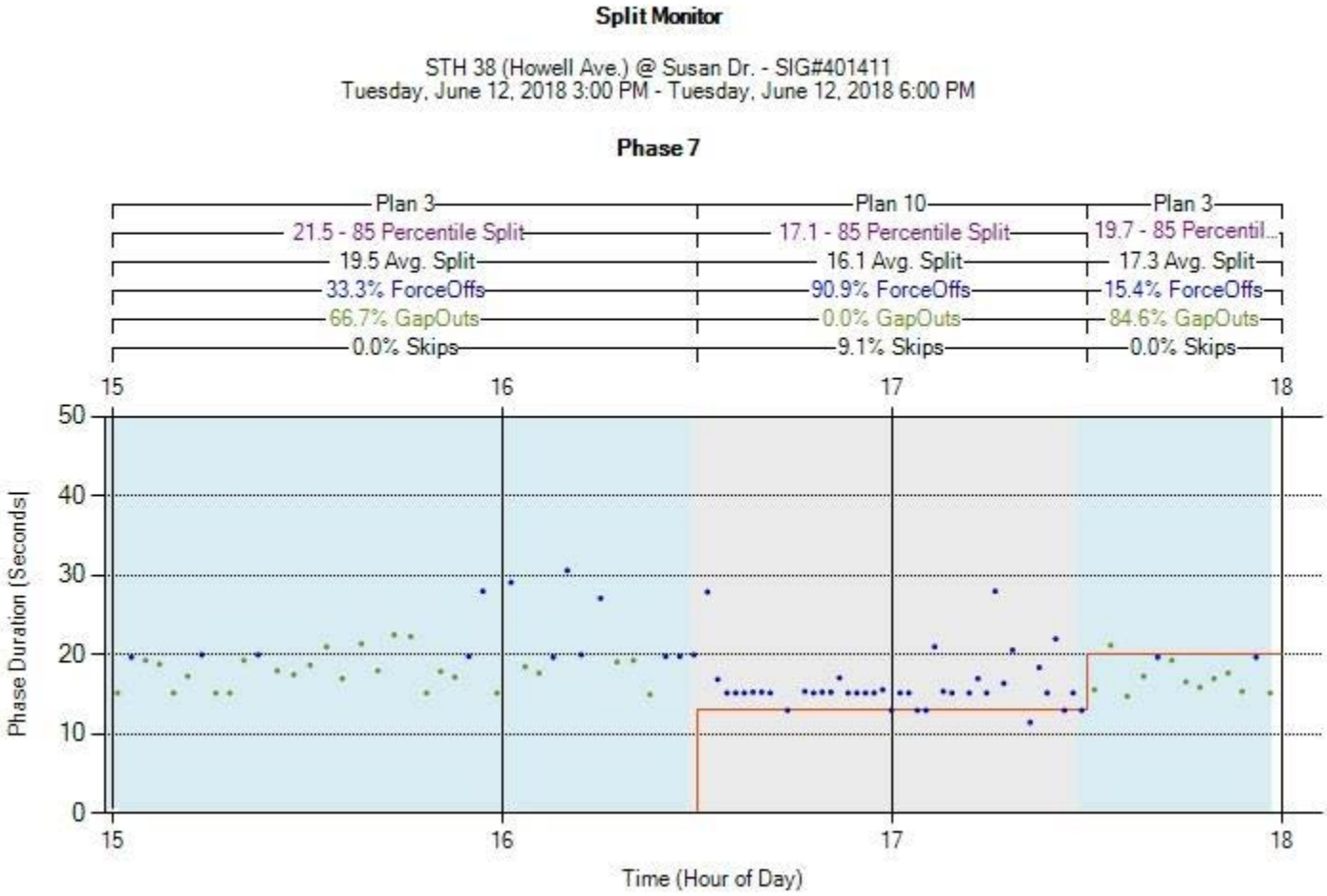
WIS 38 Corridor – STH 38 & Susan Dr.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM



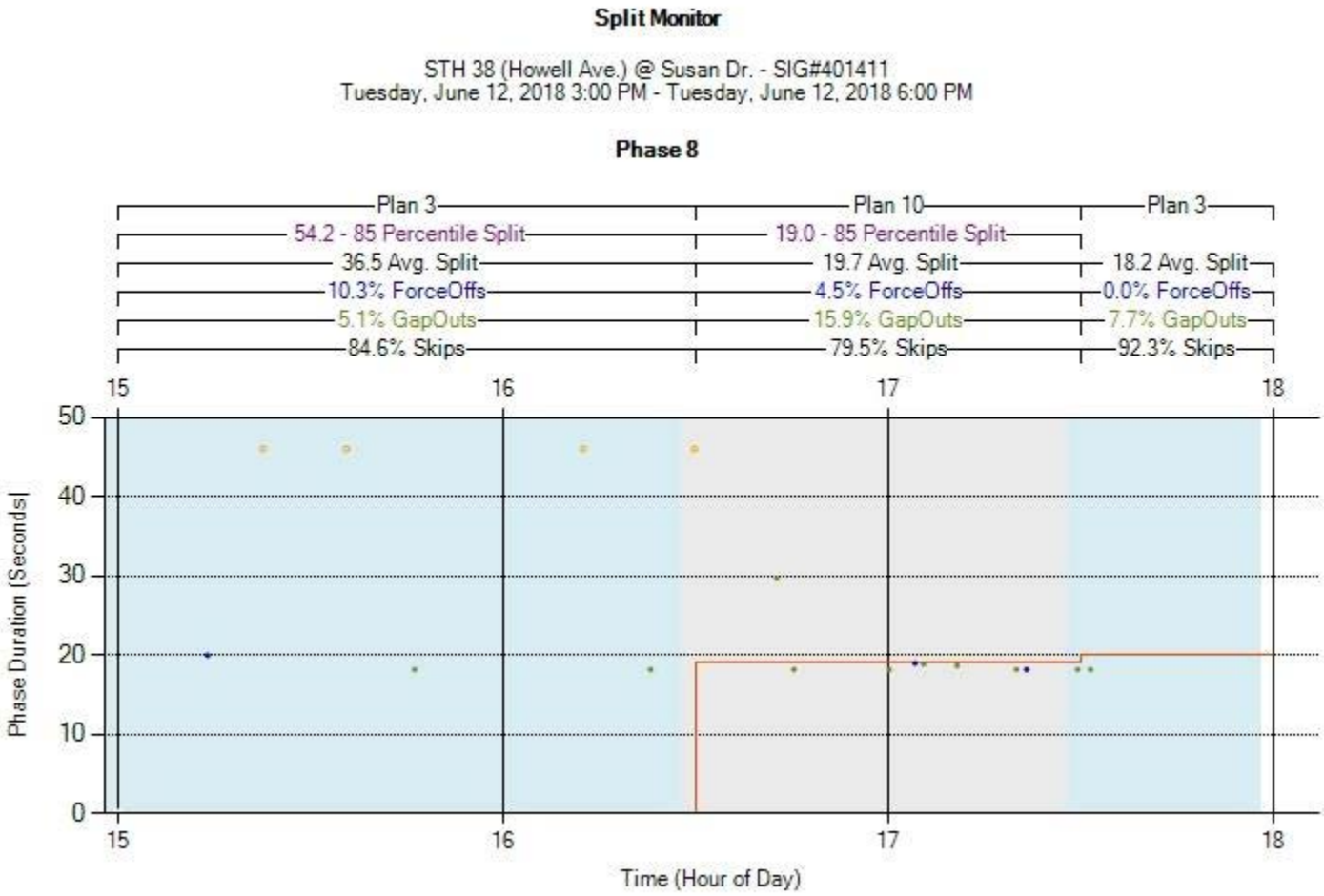
WIS 38 Corridor – STH 38 & Susan Dr.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM



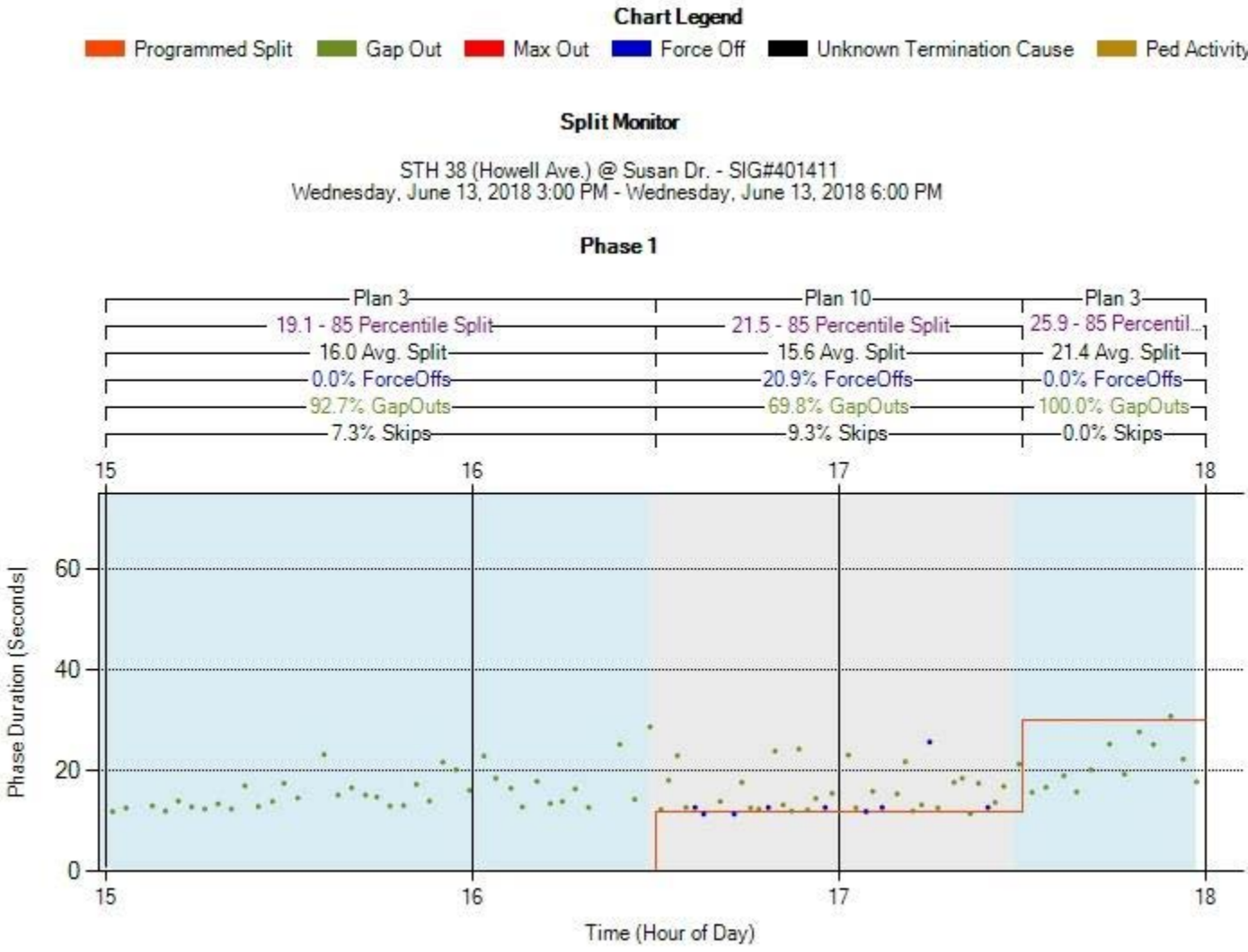
WIS 38 Corridor – STH 38 & Susan Dr.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM



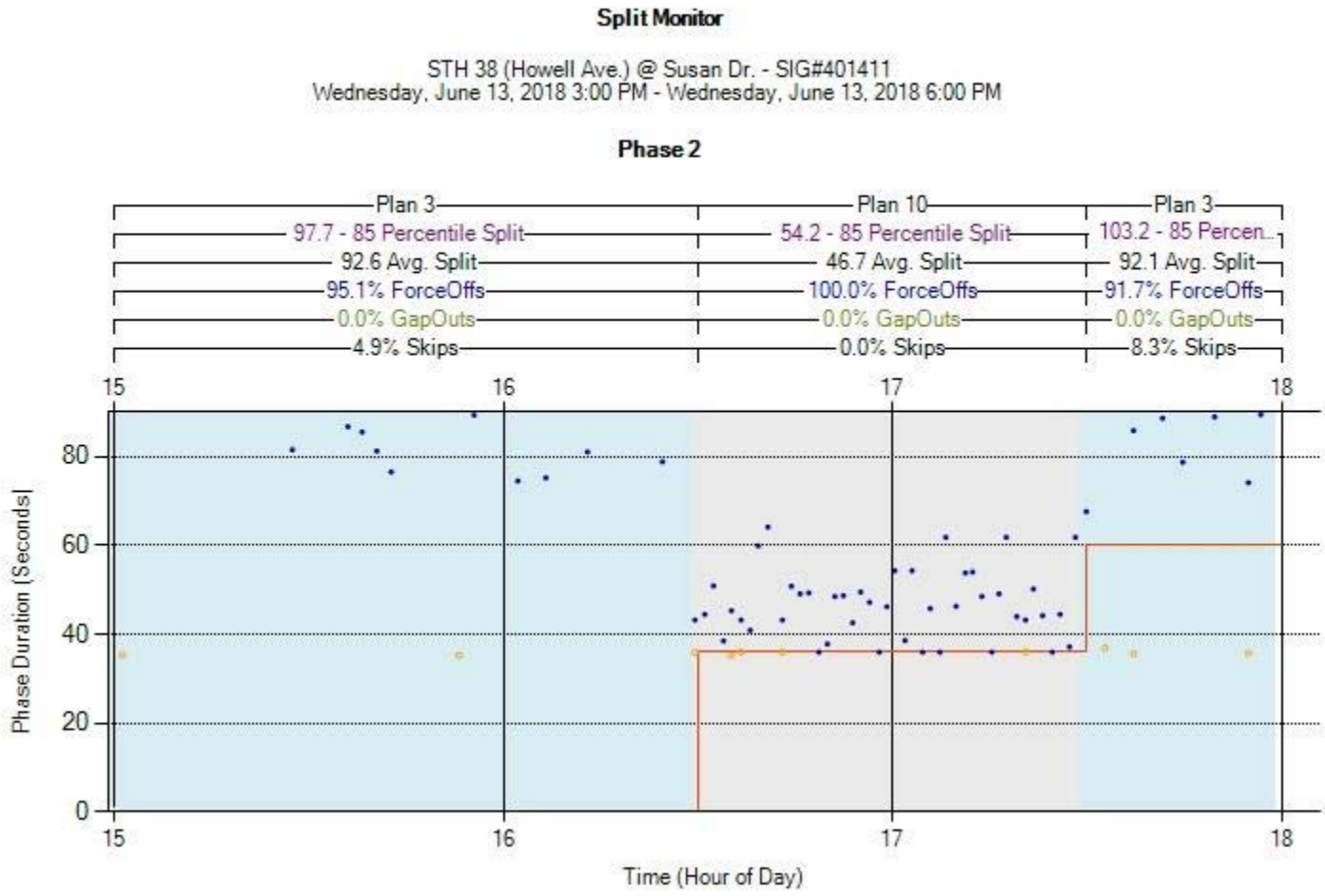
WIS 38 Corridor – STH 38 & Susan Dr.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM



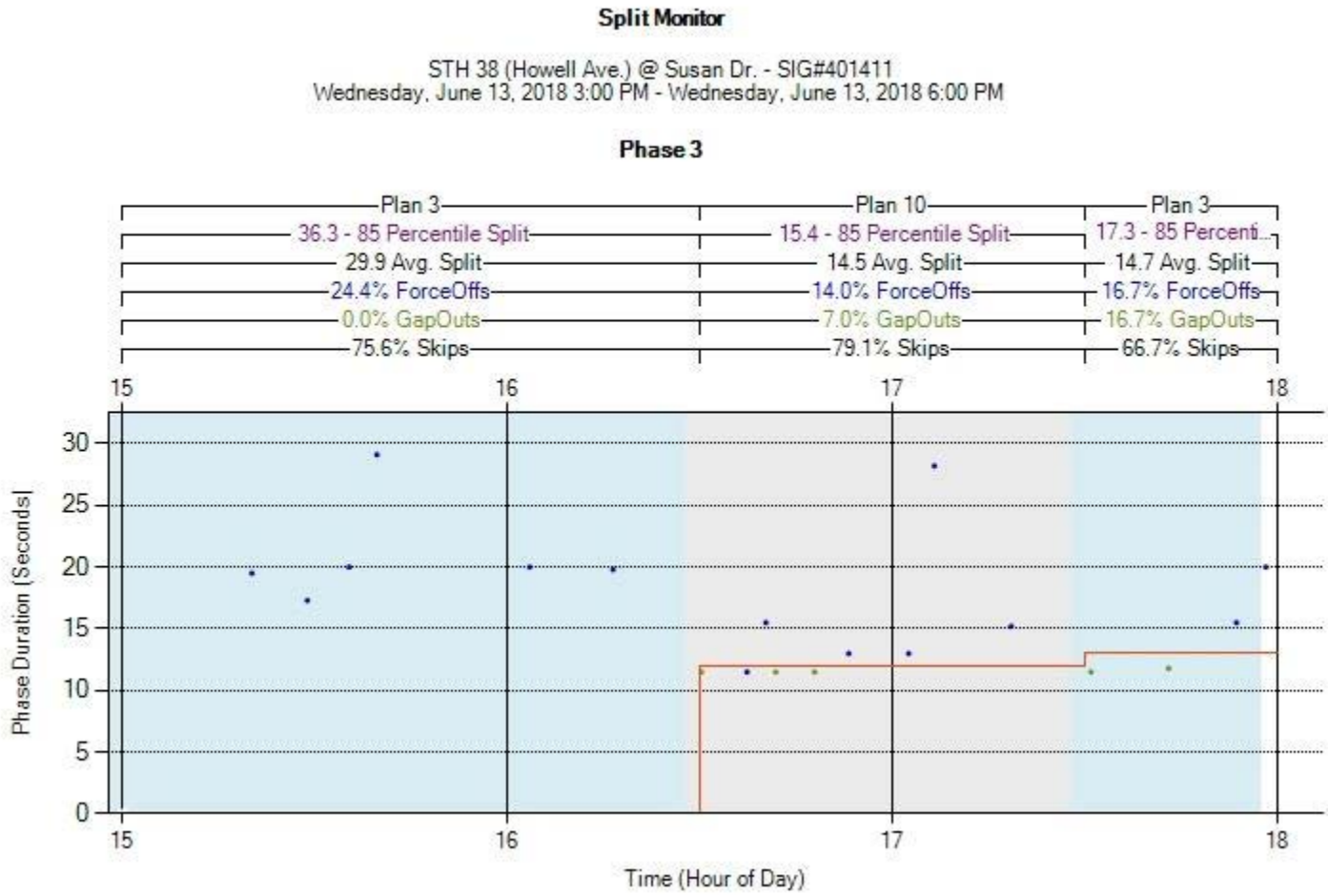
WIS 38 Corridor – STH 38 & Susan Dr.
Vistro Timings
6/13/2018 – 3:00 PM – 6:00 PM



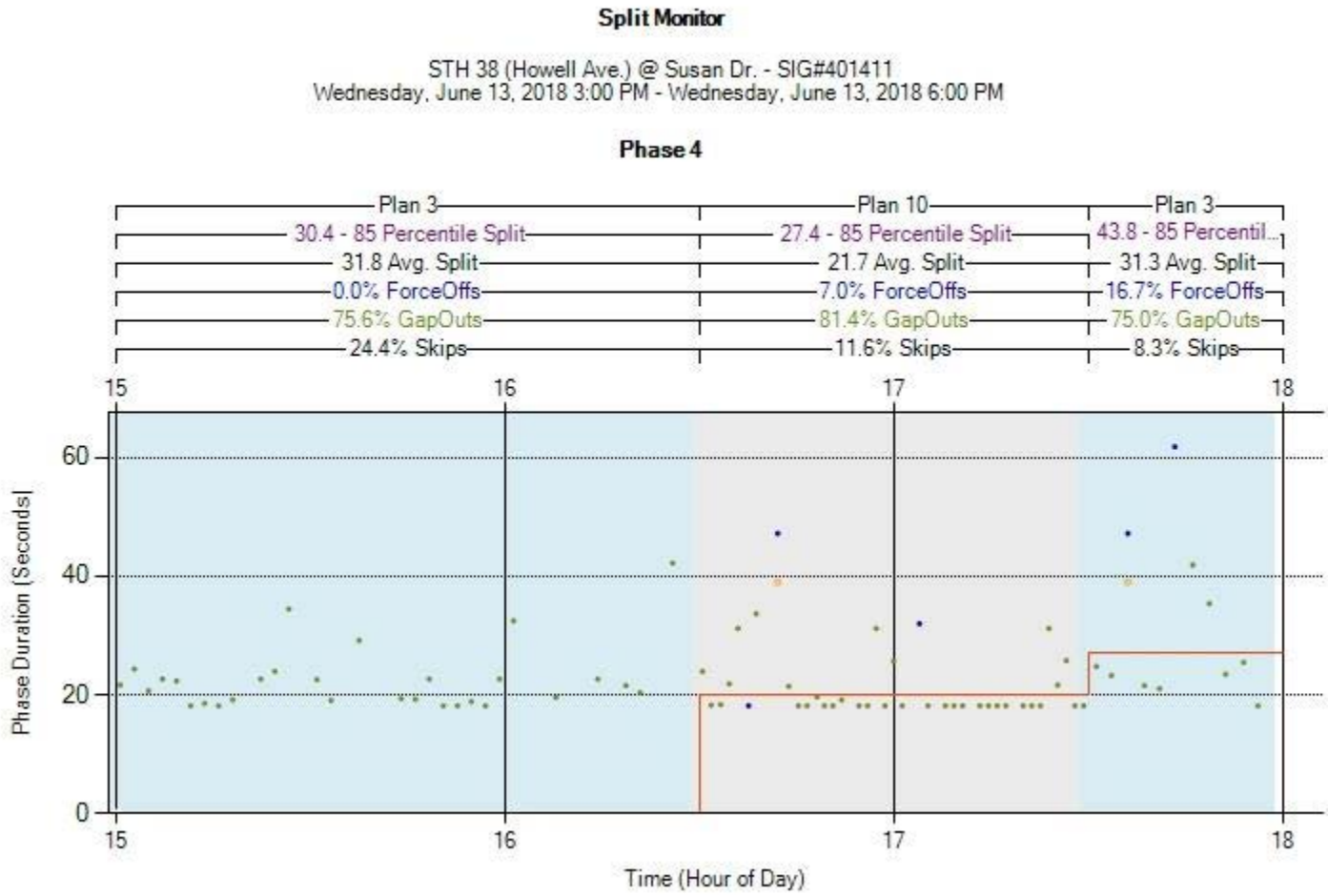
WIS 38 Corridor – STH 38 & Susan Dr.
Vistro Timings
6/13/2018 – 3:00 PM – 6:00 PM



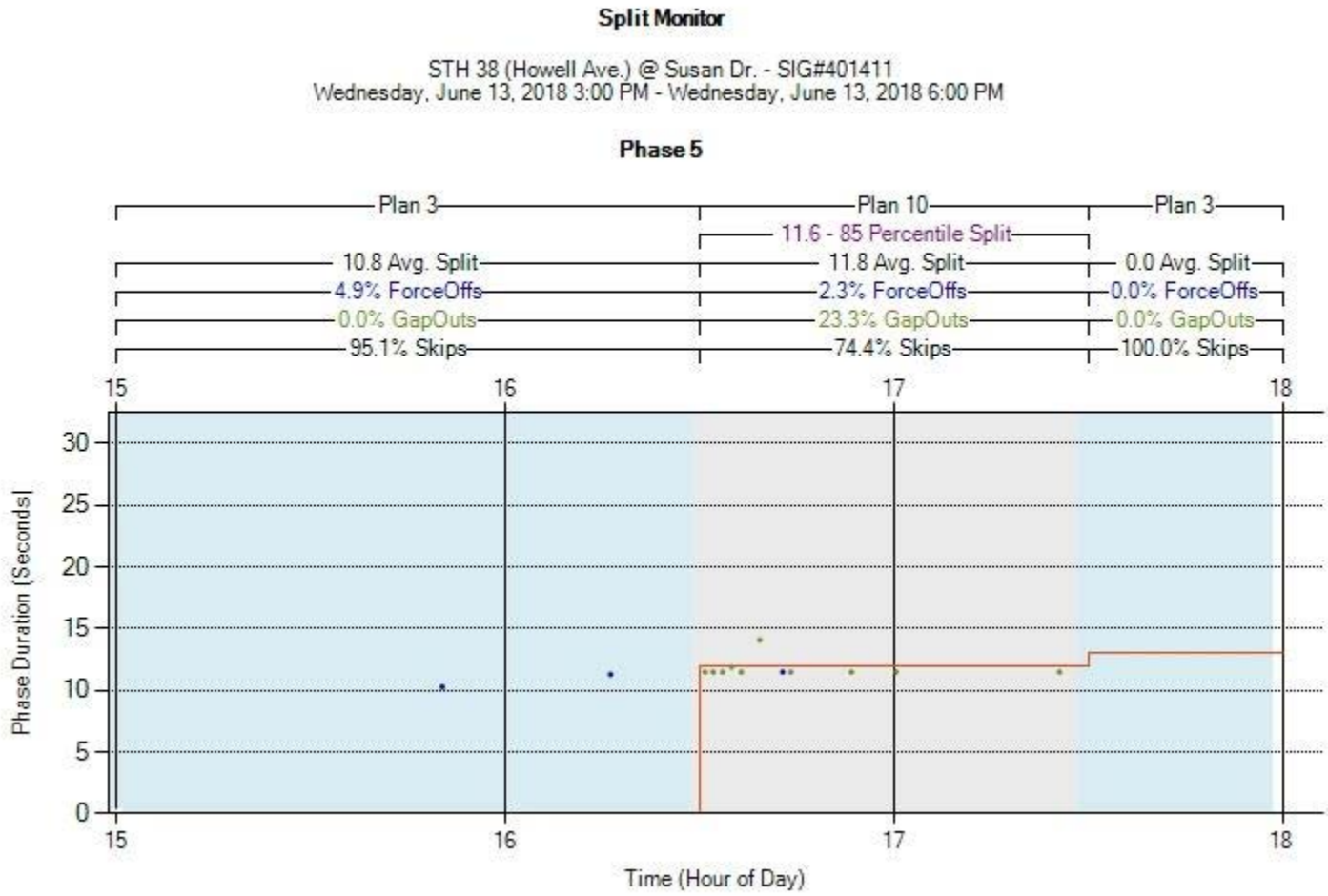
WIS 38 Corridor – STH 38 & Susan Dr.
Vistro Timings
6/13/2018 – 3:00 PM – 6:00 PM



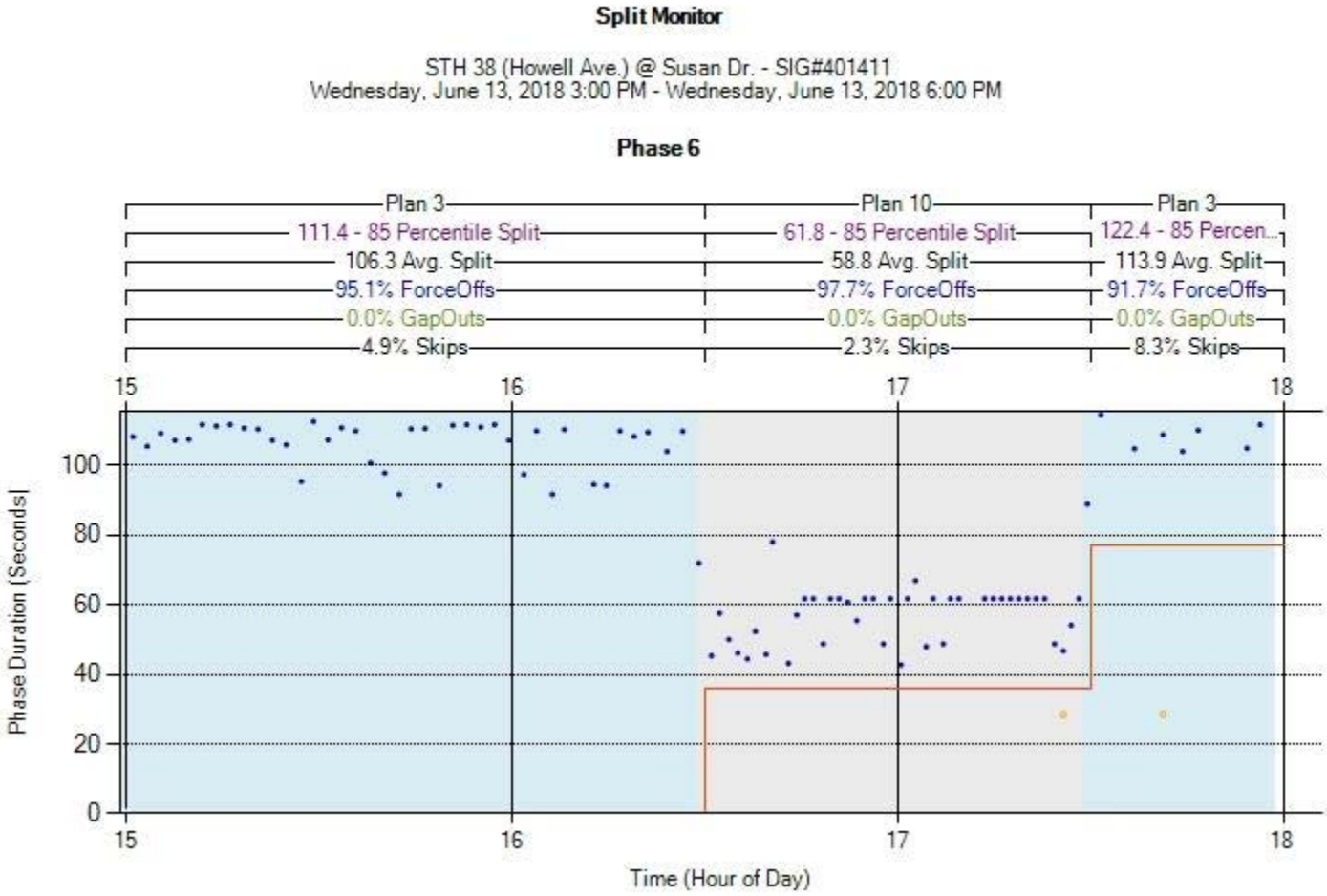
WIS 38 Corridor – STH 38 & Susan Dr.
Vistro Timings
6/13/2018 – 3:00 PM – 6:00 PM



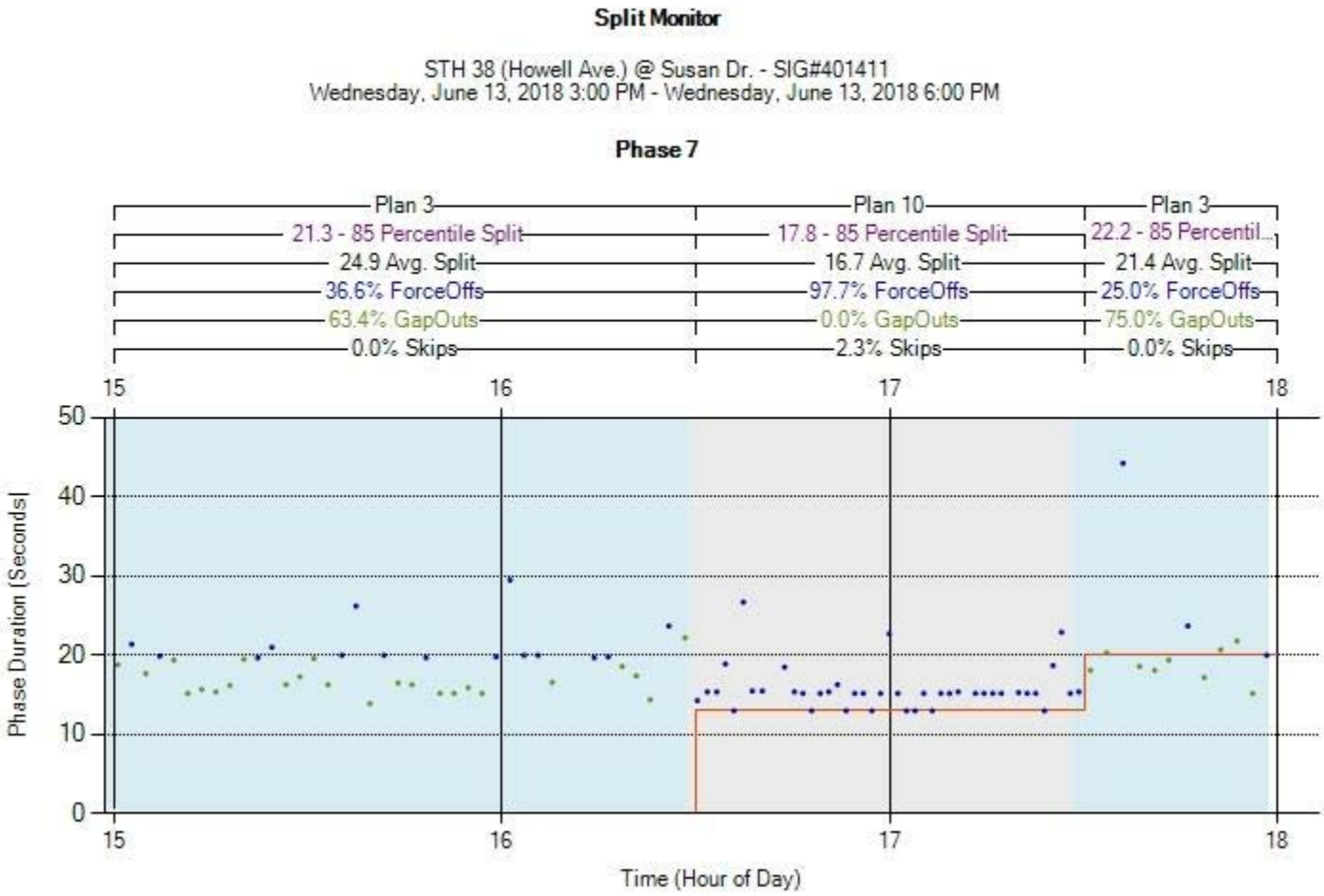
WIS 38 Corridor – STH 38 & Susan Dr.
Vistro Timings
6/13/2018 – 3:00 PM – 6:00 PM



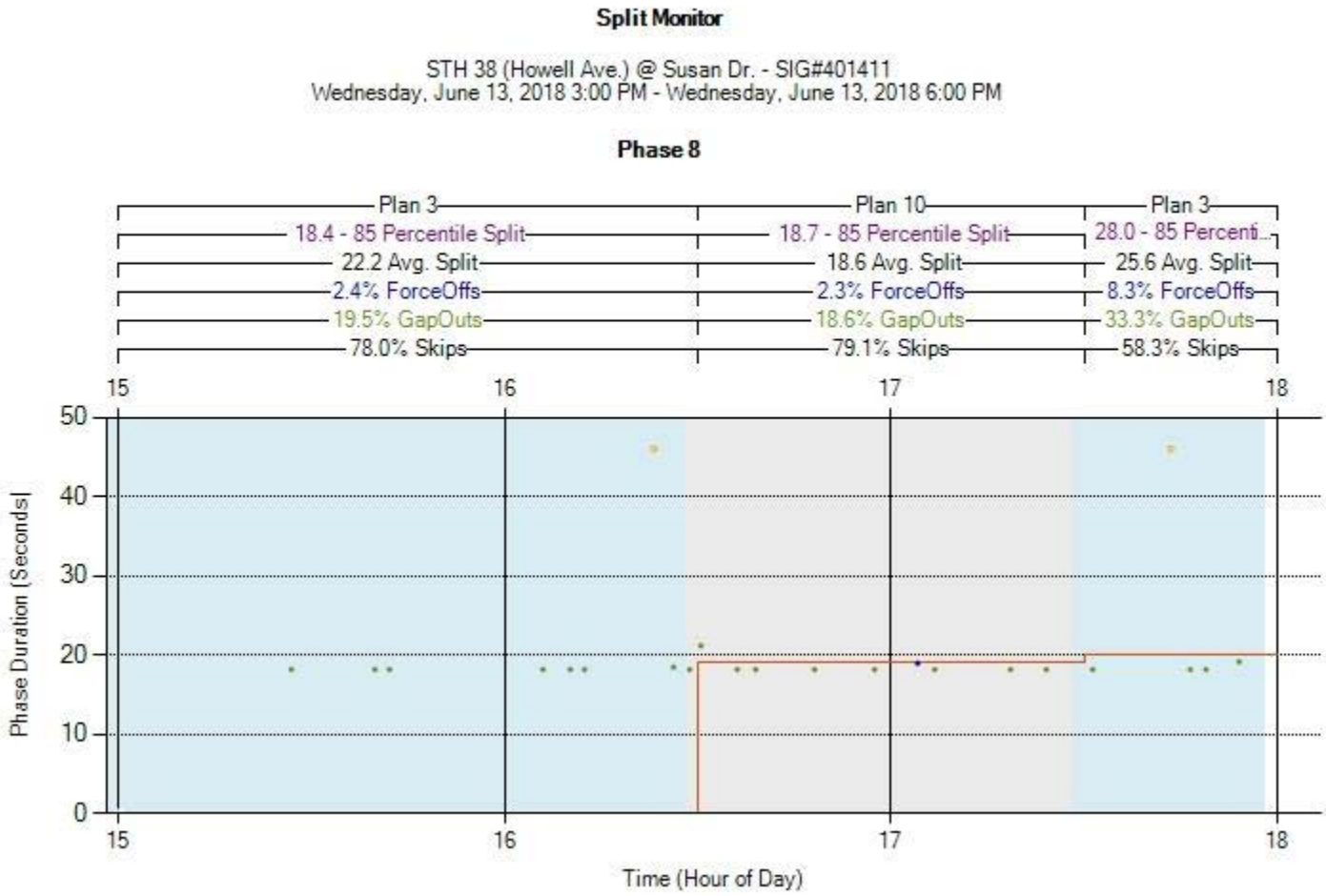
WIS 38 Corridor – STH 38 & Susan Dr.
Vistro Timings
6/13/2018 – 3:00 PM – 6:00 PM



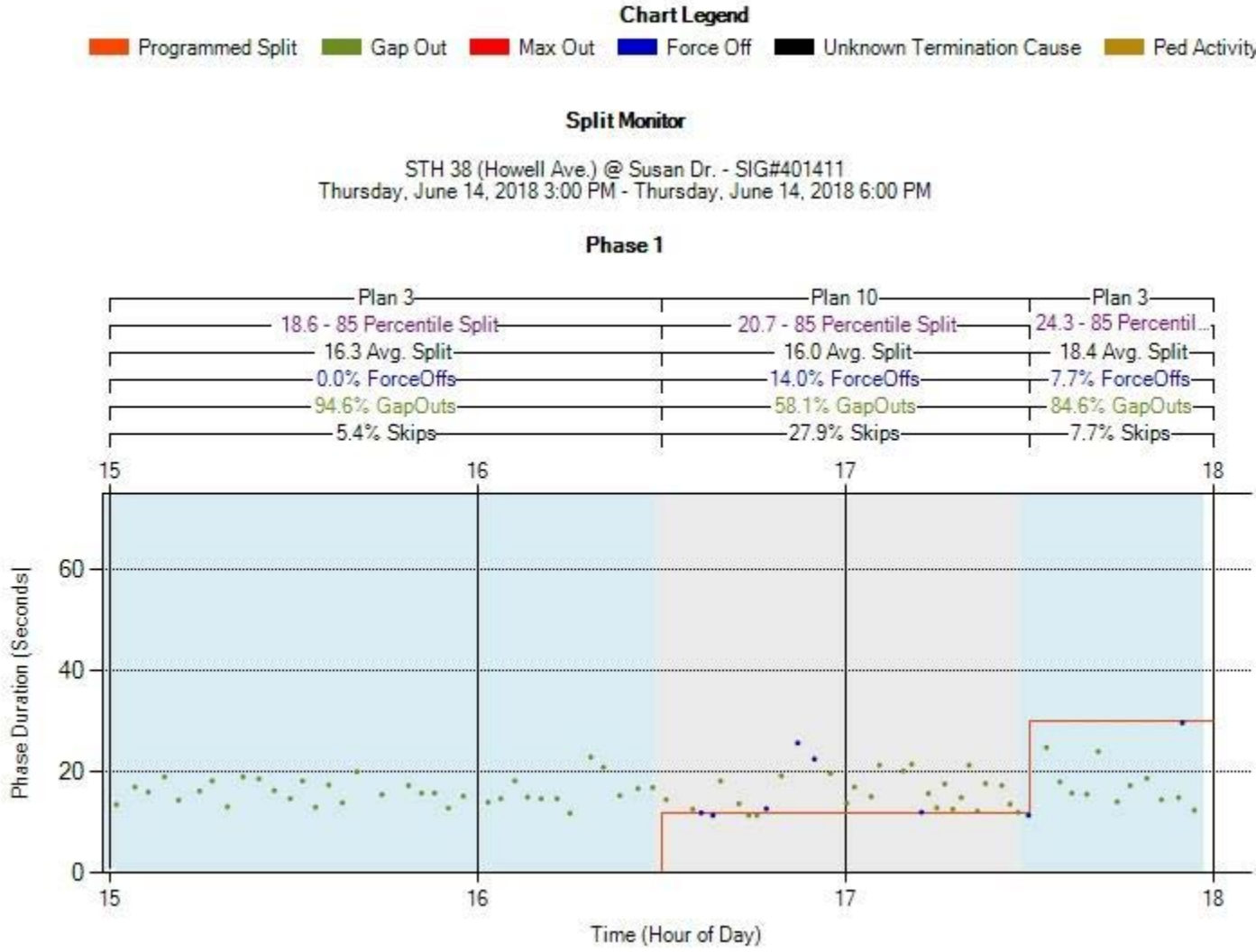
WIS 38 Corridor – STH 38 & Susan Dr.
Vistro Timings
6/13/2018 – 3:00 PM – 6:00 PM



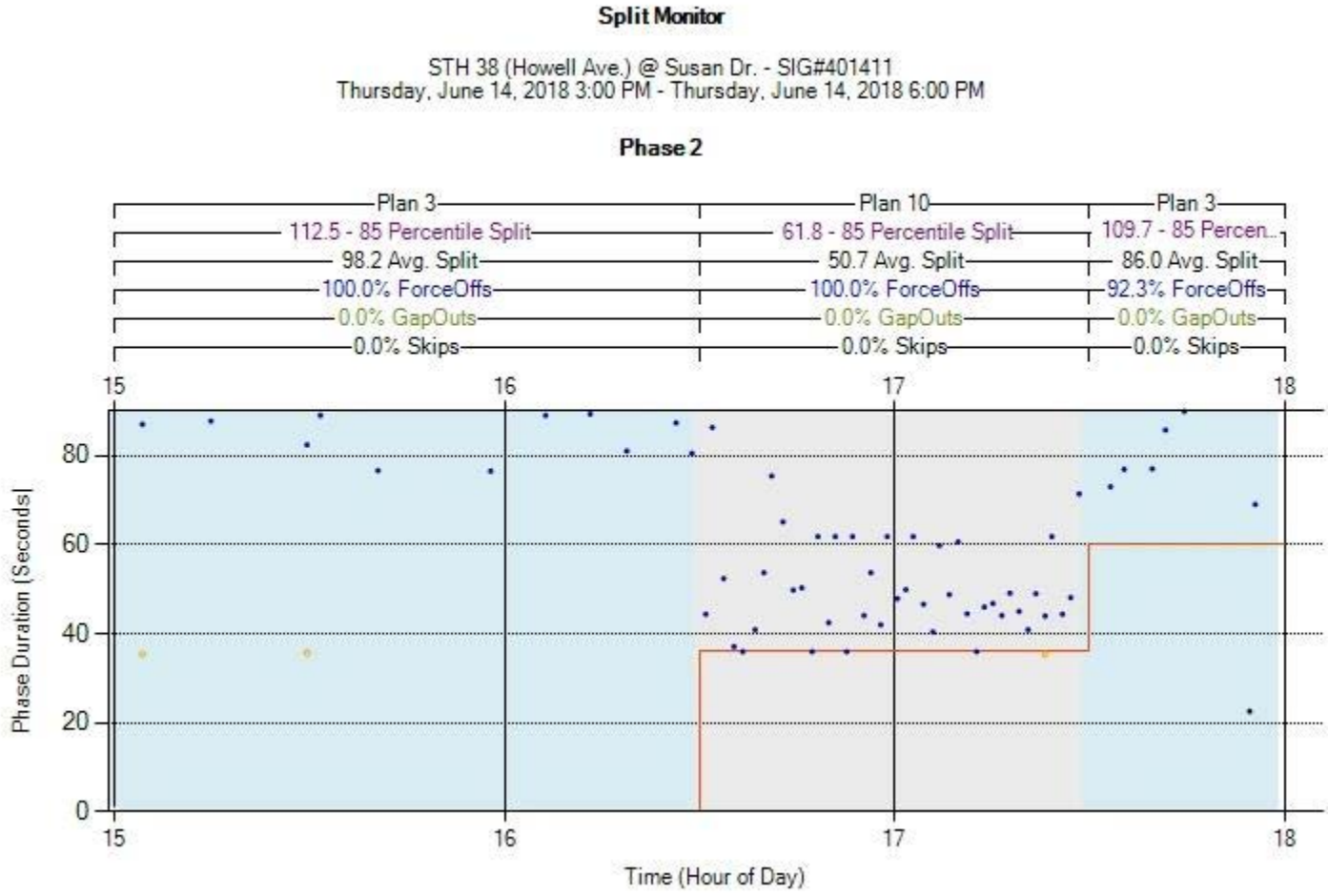
WIS 38 Corridor – STH 38 & Susan Dr.
Vistro Timings
6/13/2018 – 3:00 PM – 6:00 PM



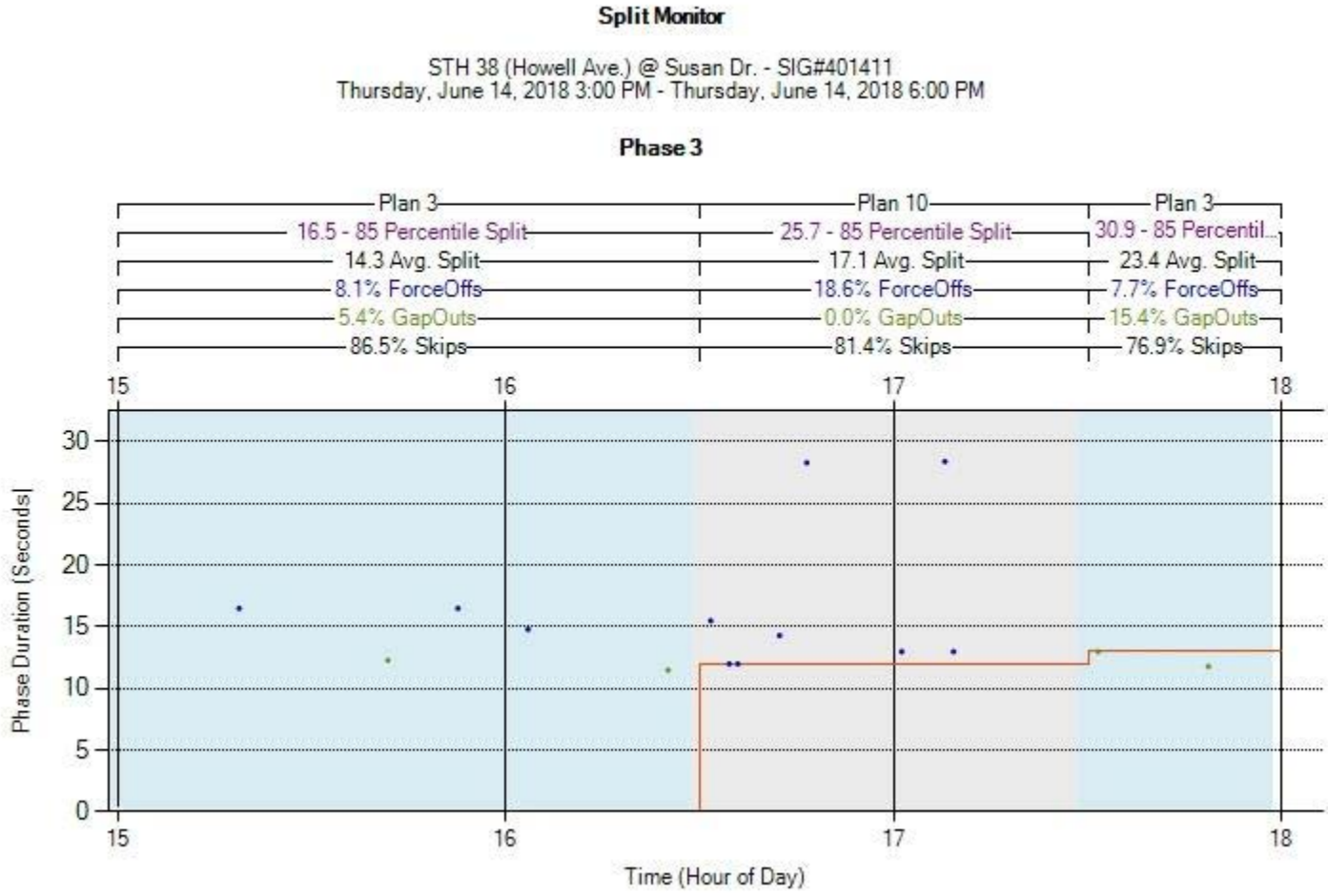
WIS 38 Corridor – STH 38 & Susan Dr.
Vistro Timings
6/14/2018 – 3:00 PM – 6:00 PM



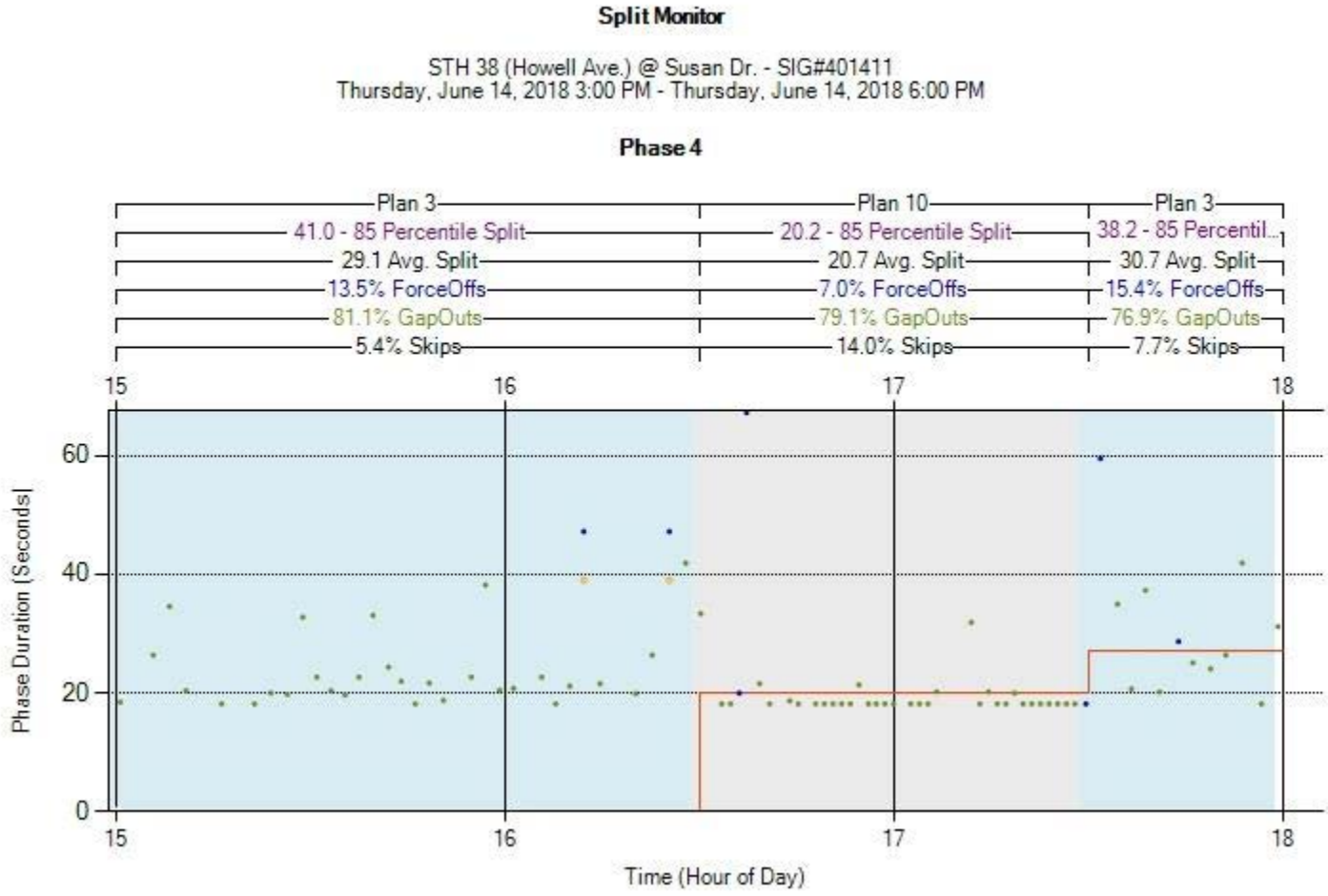
WIS 38 Corridor – STH 38 & Susan Dr.
Vistro Timings
6/14/2018 – 3:00 PM – 6:00 PM



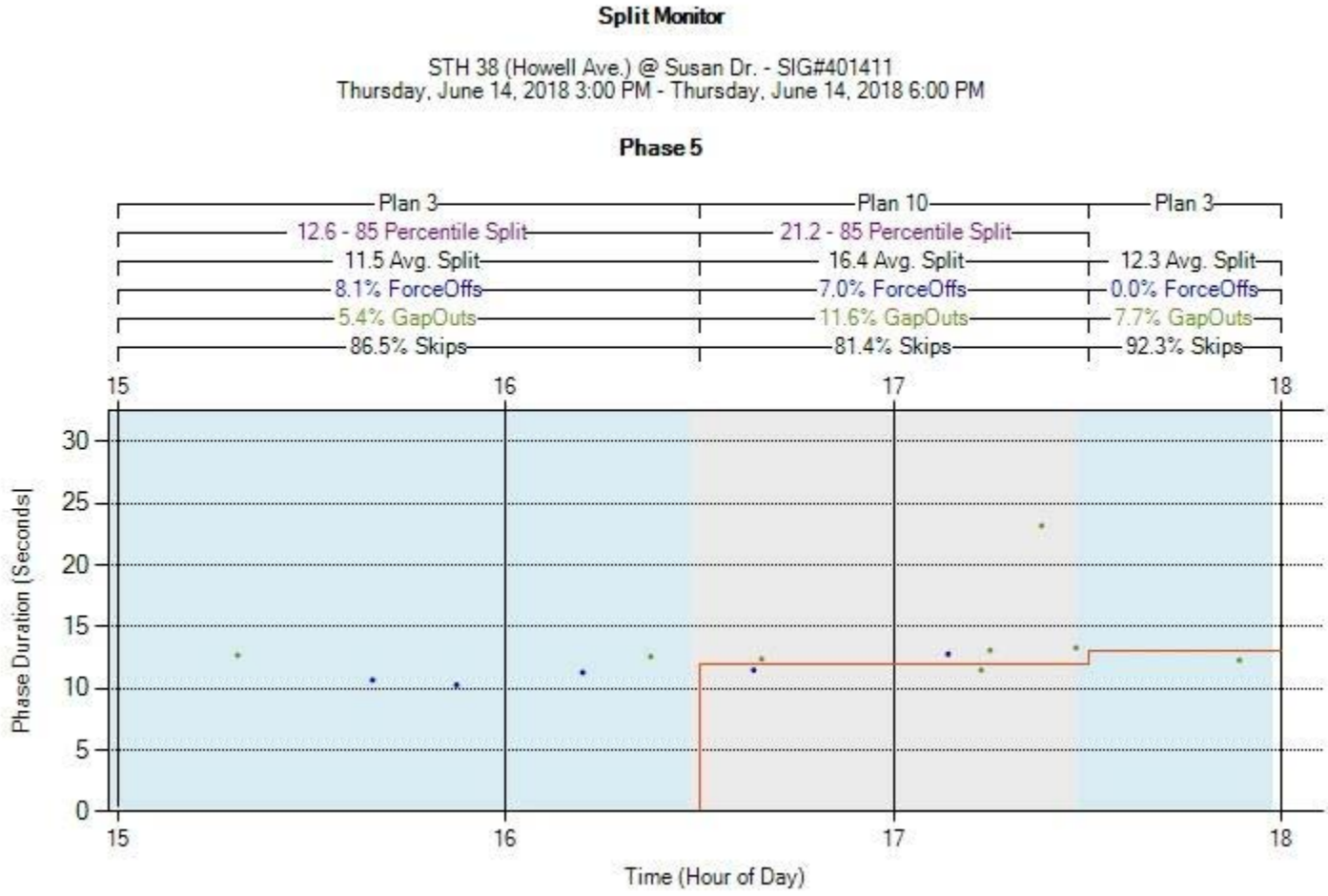
WIS 38 Corridor – STH 38 & Susan Dr.
Vistro Timings
6/14/2018 – 3:00 PM – 6:00 PM



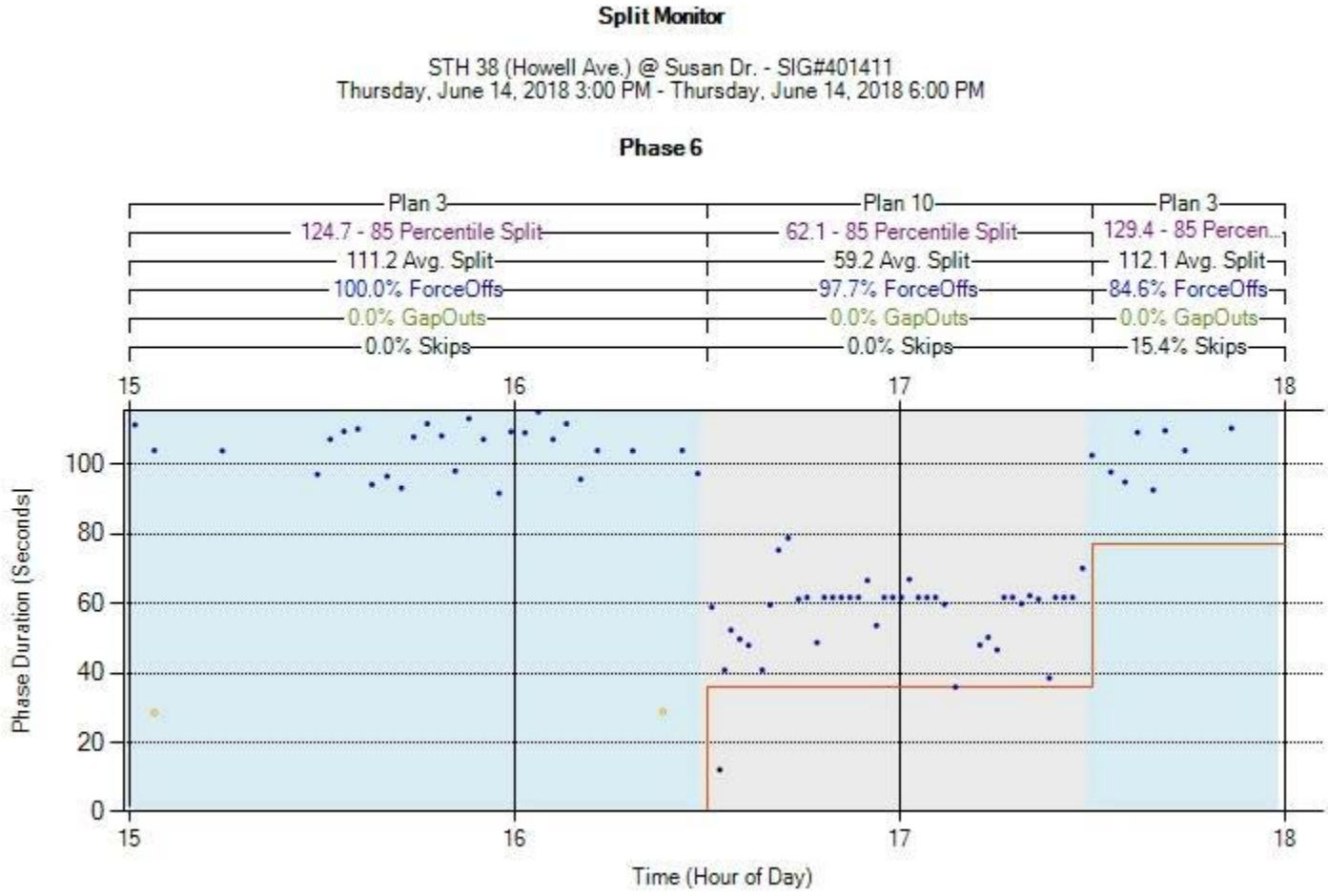
WIS 38 Corridor – STH 38 & Susan Dr.
Vistro Timings
6/14/2018 – 3:00 PM – 6:00 PM



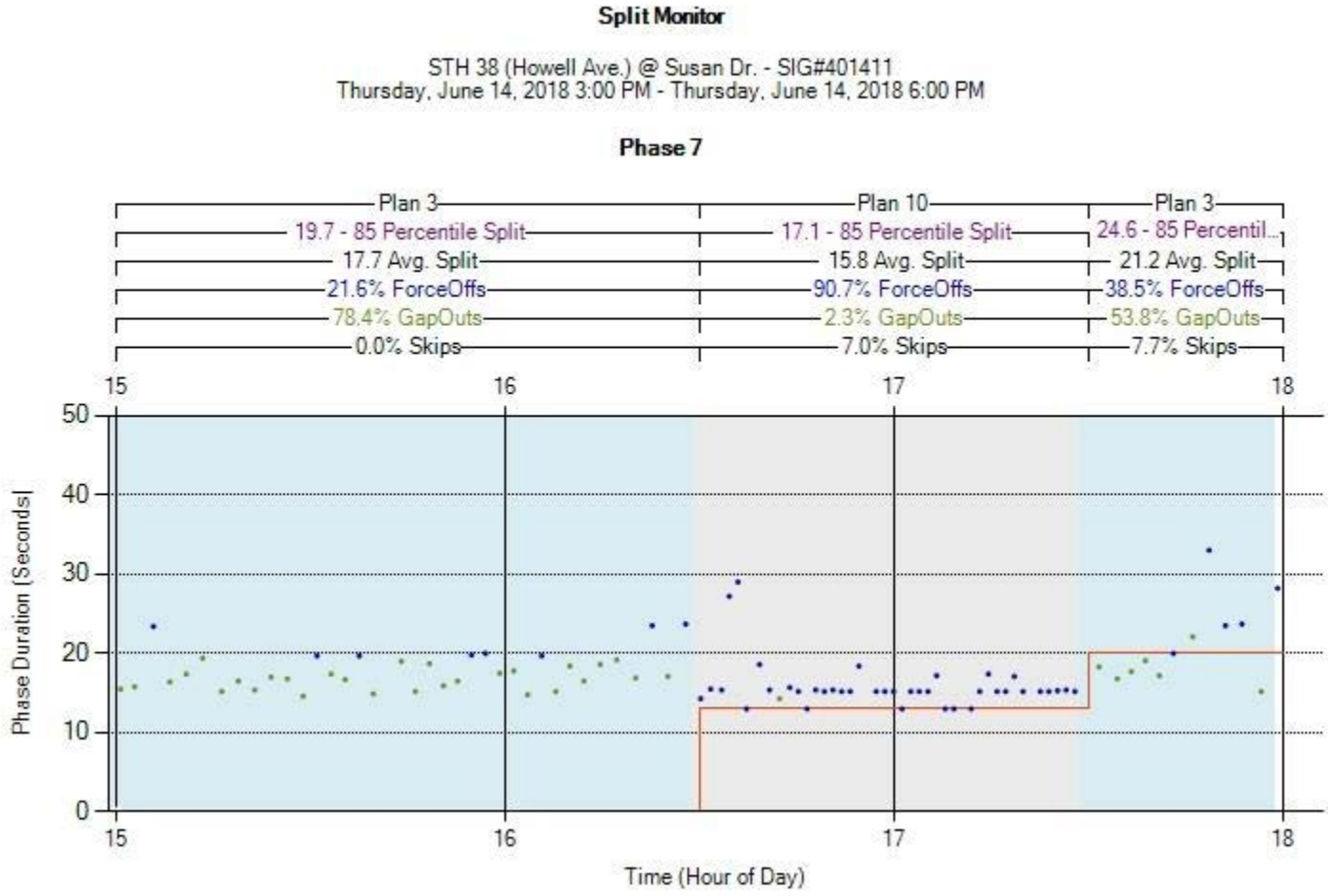
WIS 38 Corridor – STH 38 & Susan Dr.
Vistro Timings
6/14/2018 – 3:00 PM – 6:00 PM



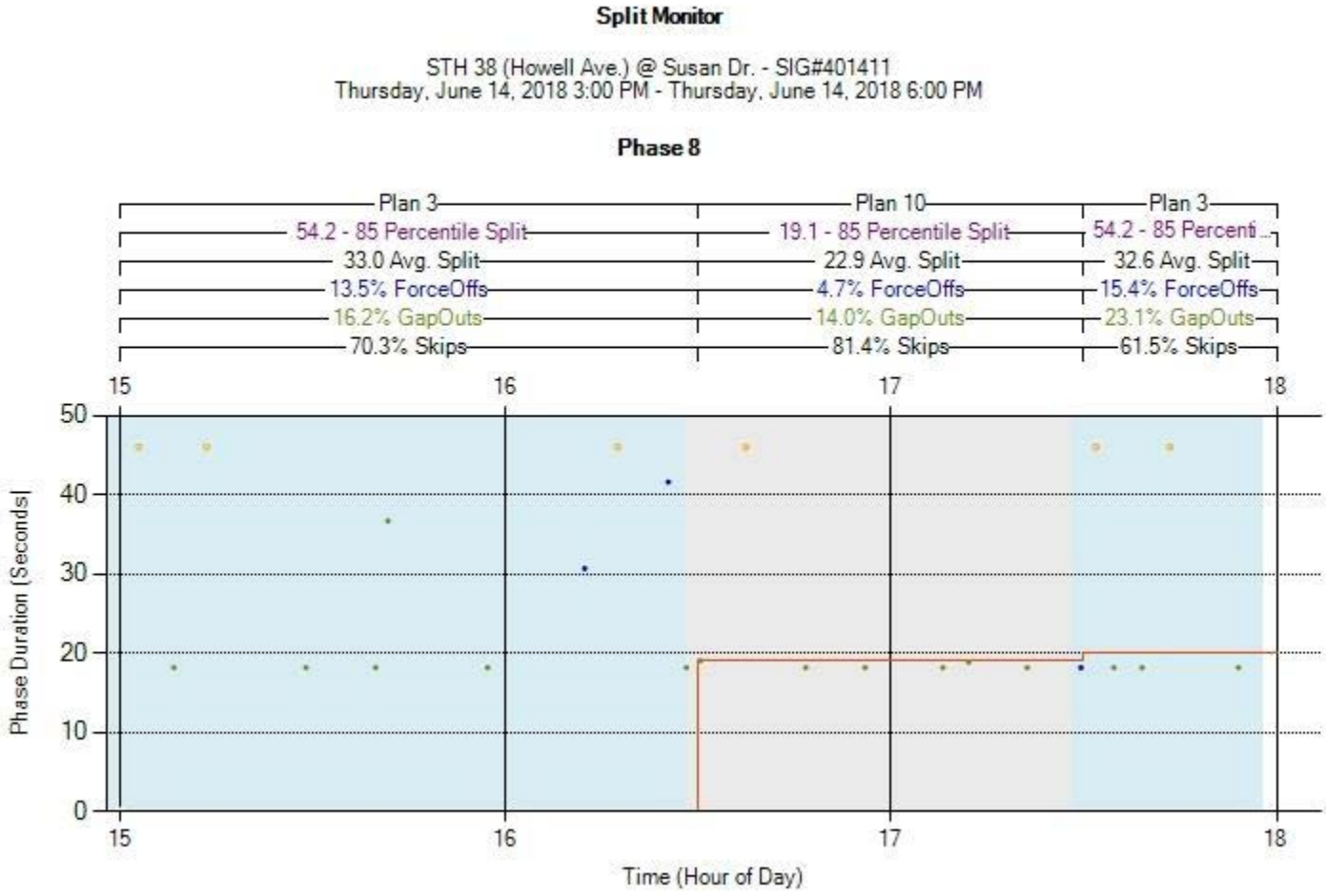
WIS 38 Corridor – STH 38 & Susan Dr.
Vistro Timings
6/14/2018 – 3:00 PM – 6:00 PM



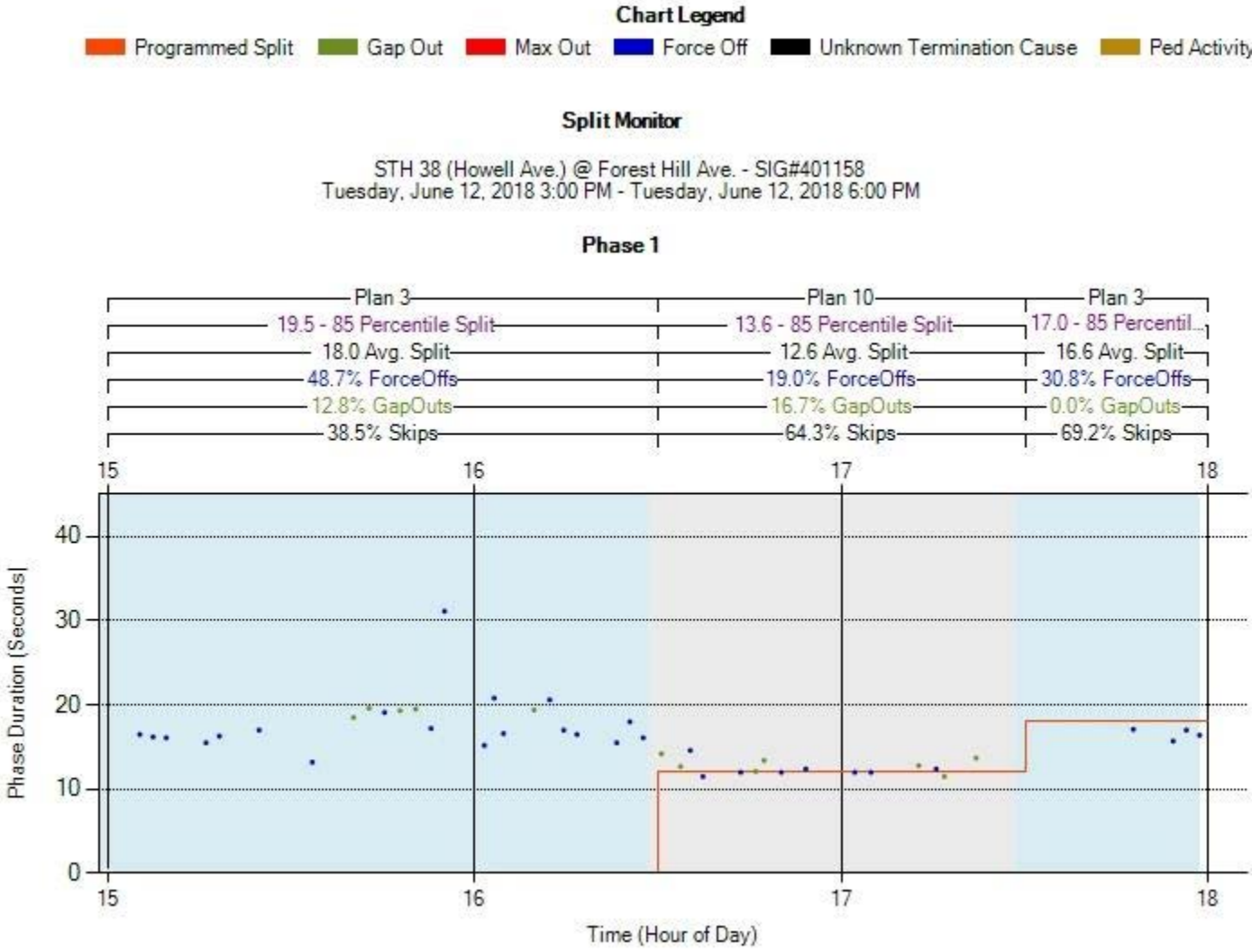
WIS 38 Corridor – STH 38 & Susan Dr.
Vistro Timings
6/14/2018 – 3:00 PM – 6:00 PM



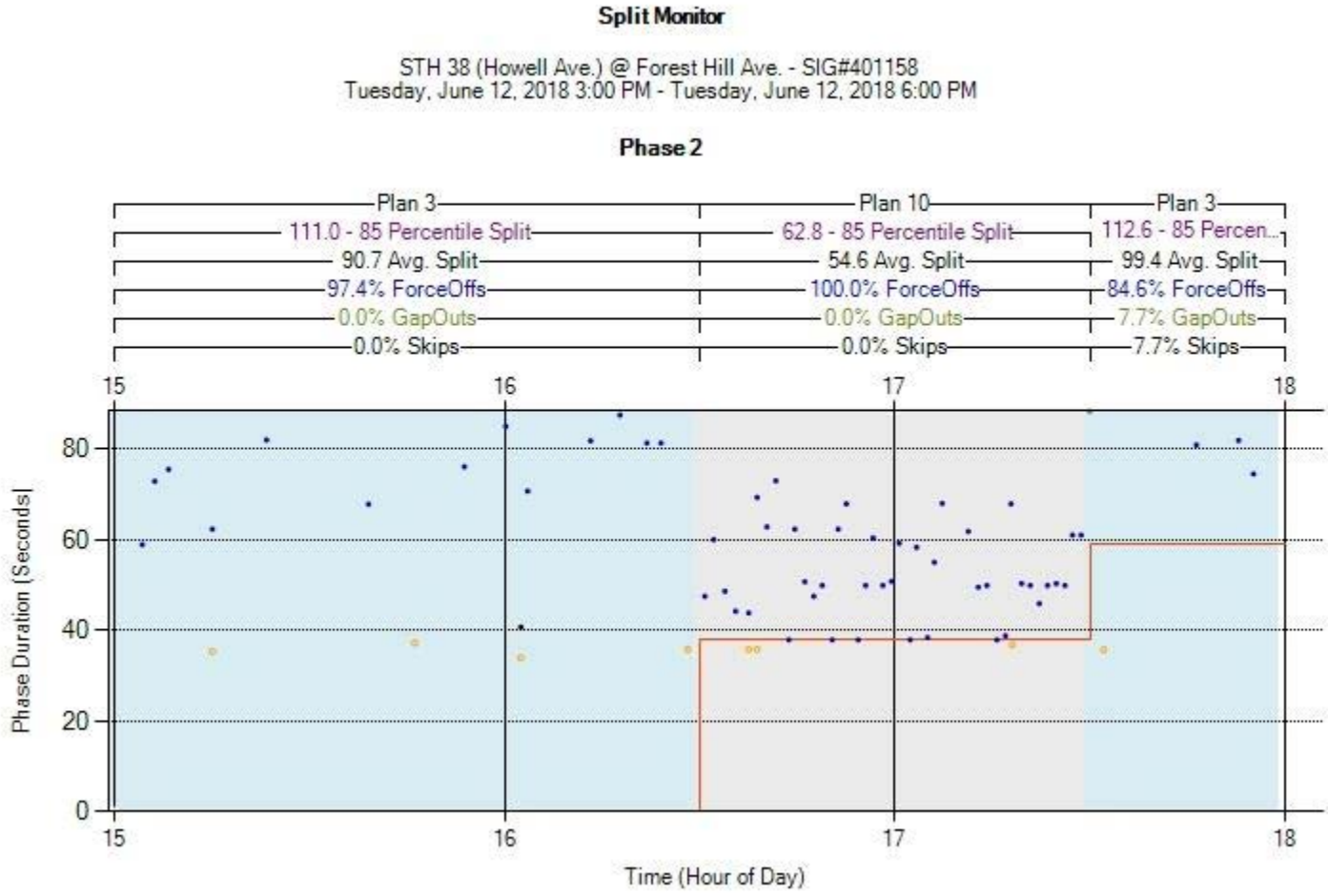
WIS 38 Corridor – STH 38 & Susan Dr.
Vistro Timings
6/14/2018 – 3:00 PM – 6:00 PM



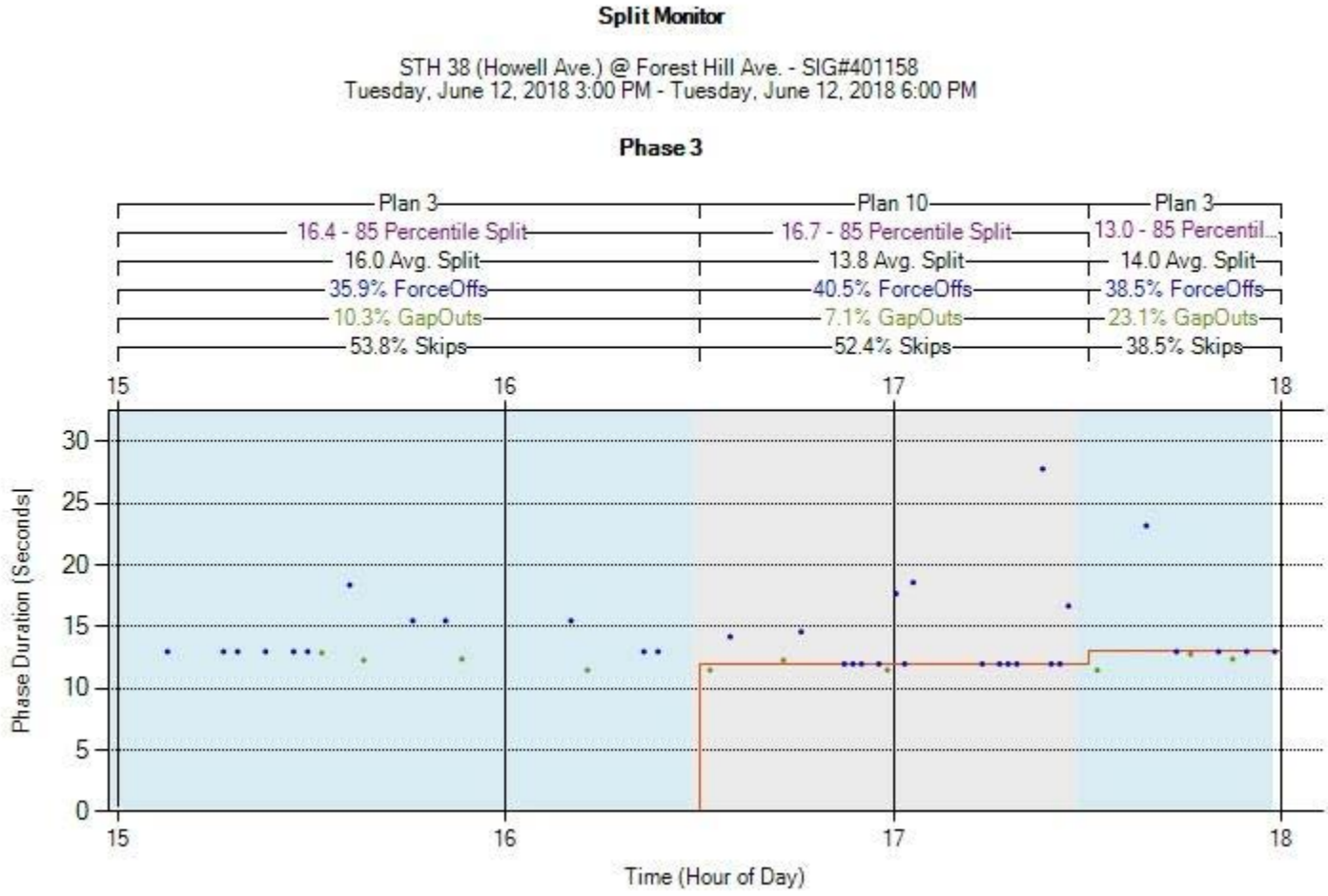
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM



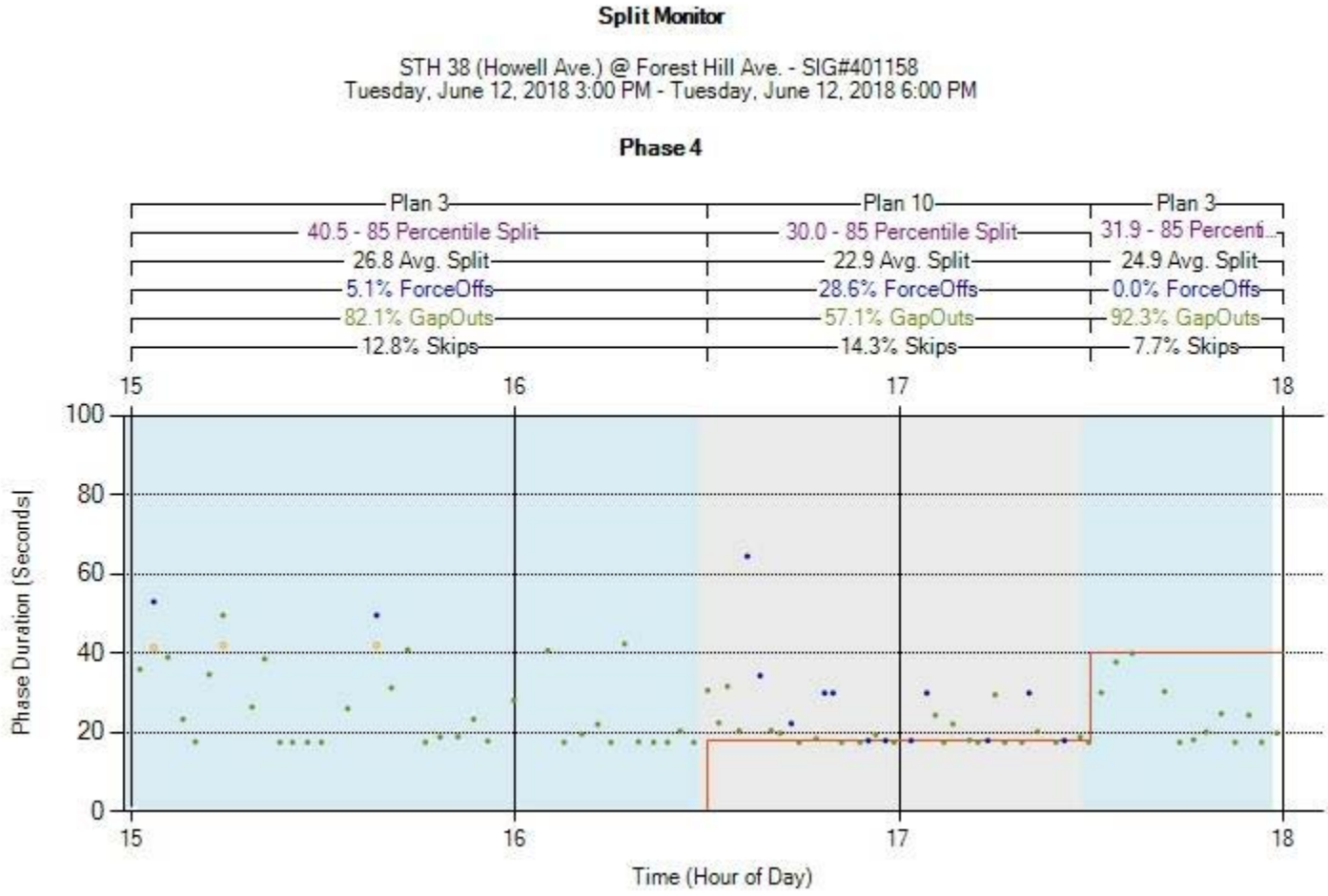
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM



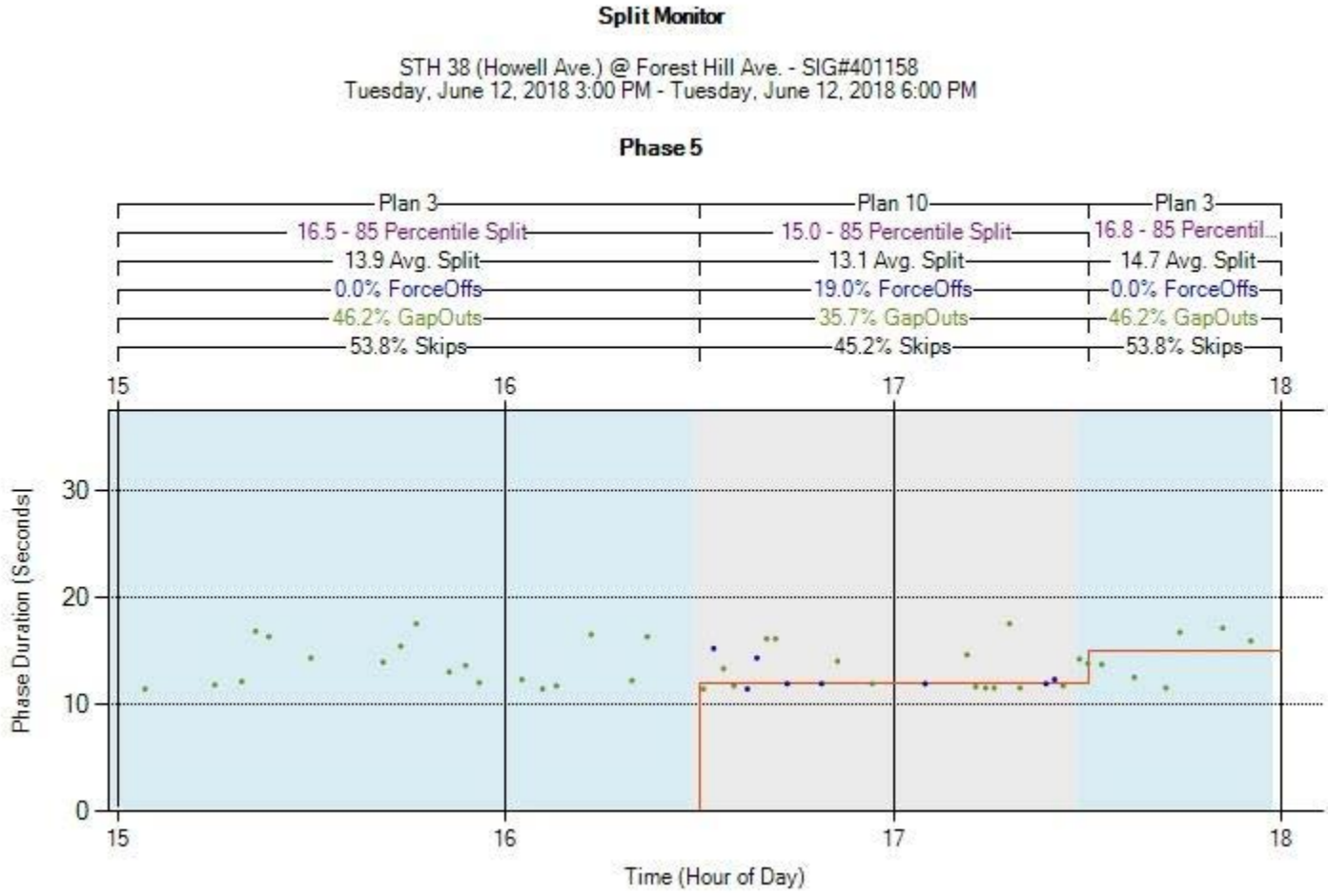
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM



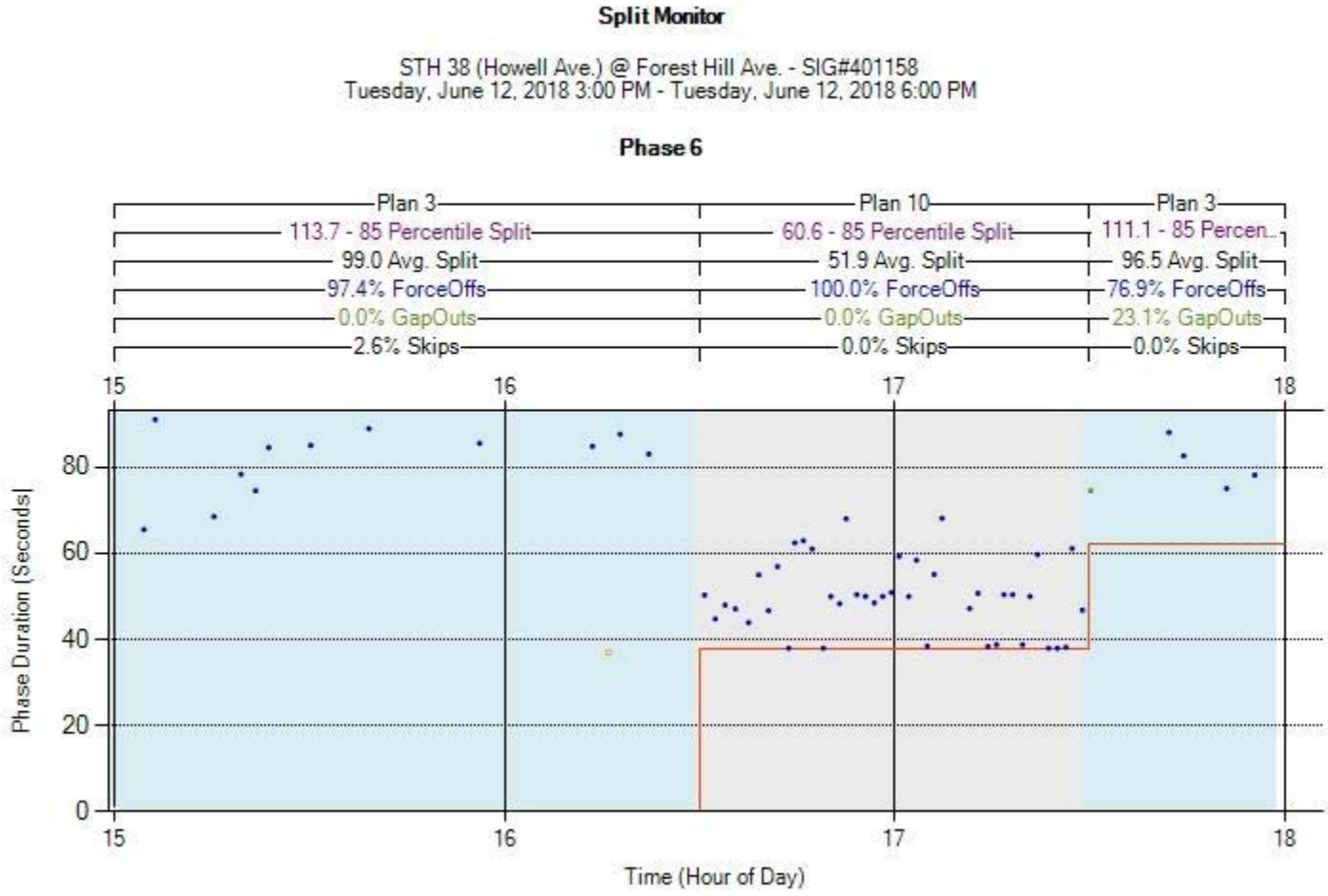
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM



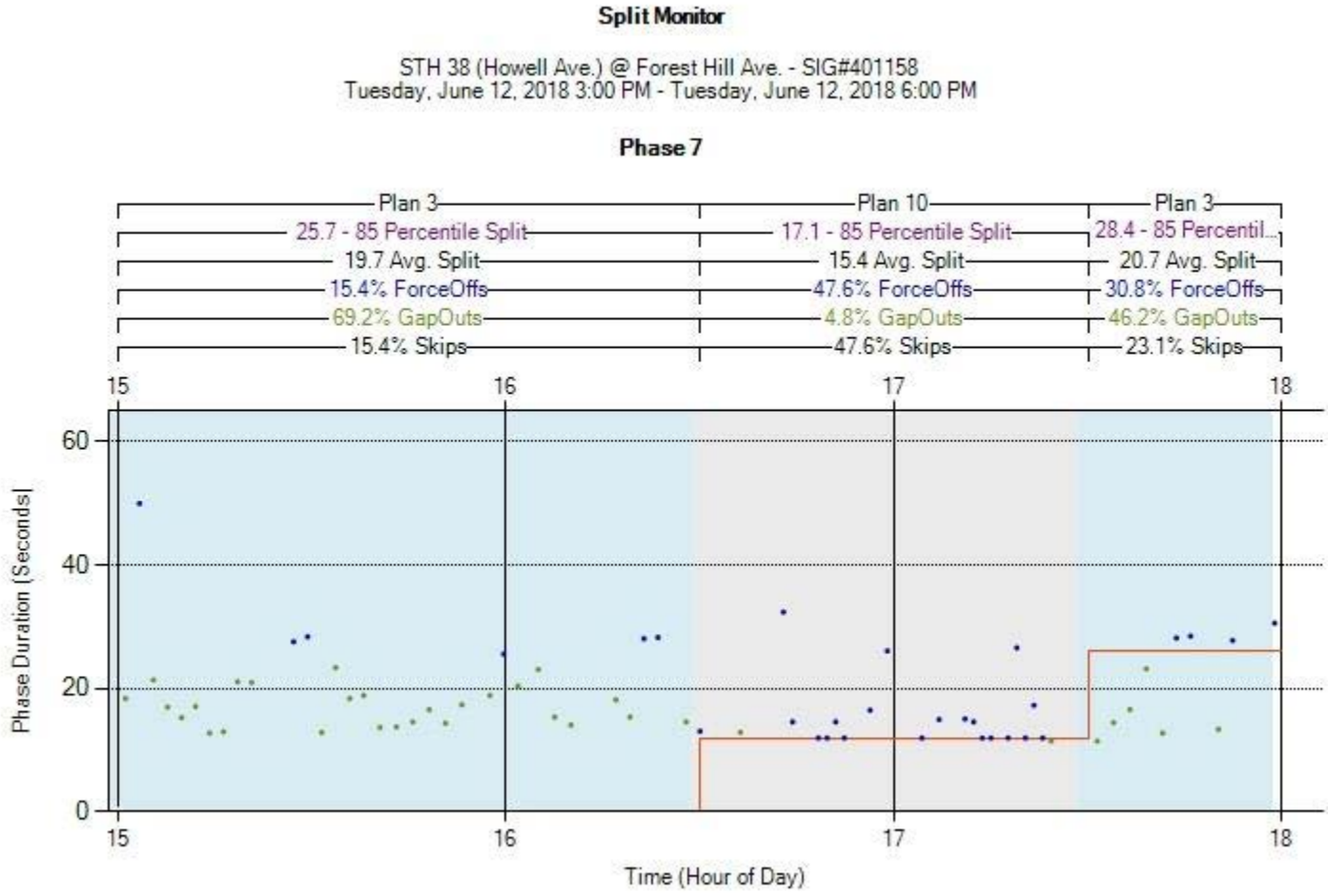
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM



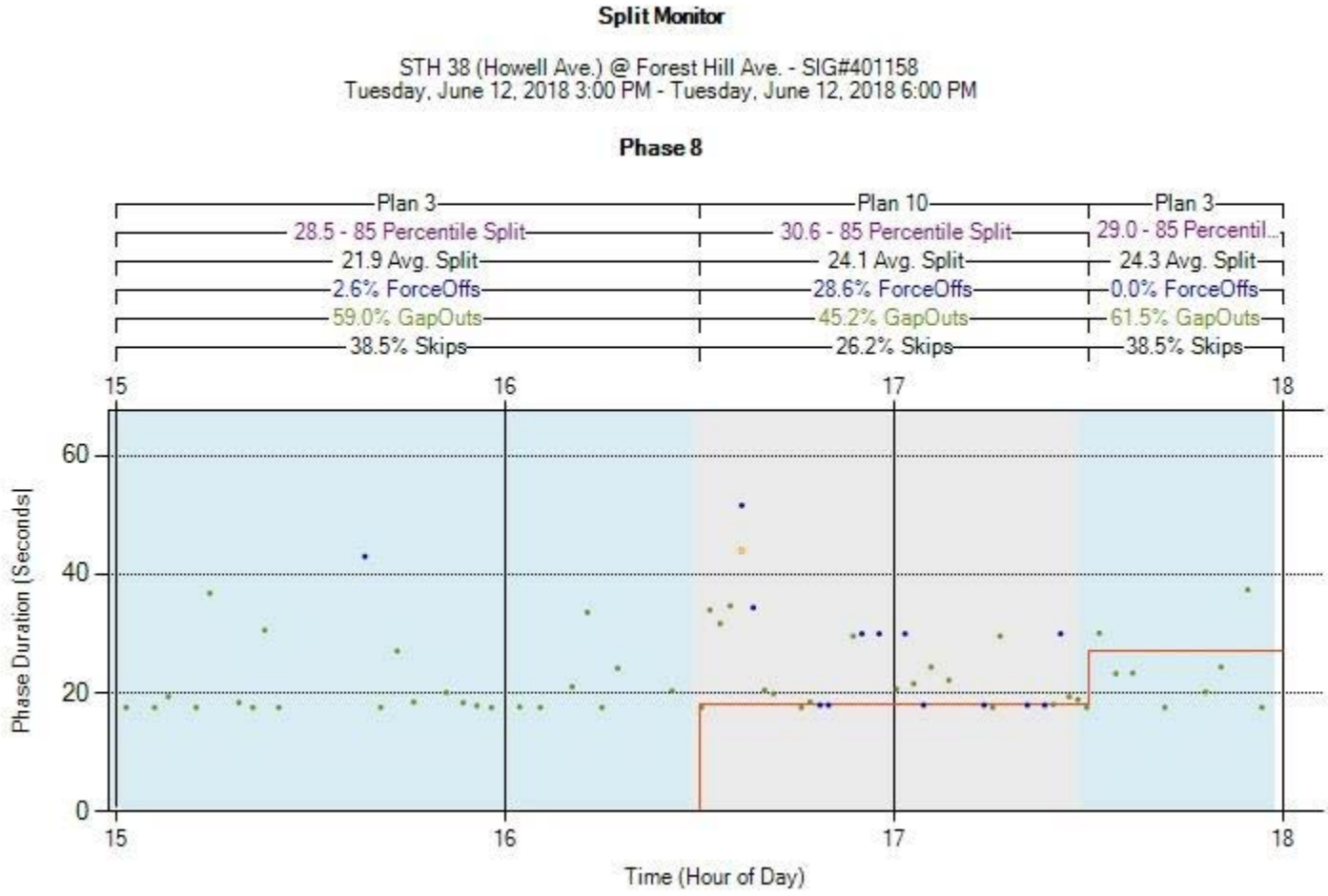
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM



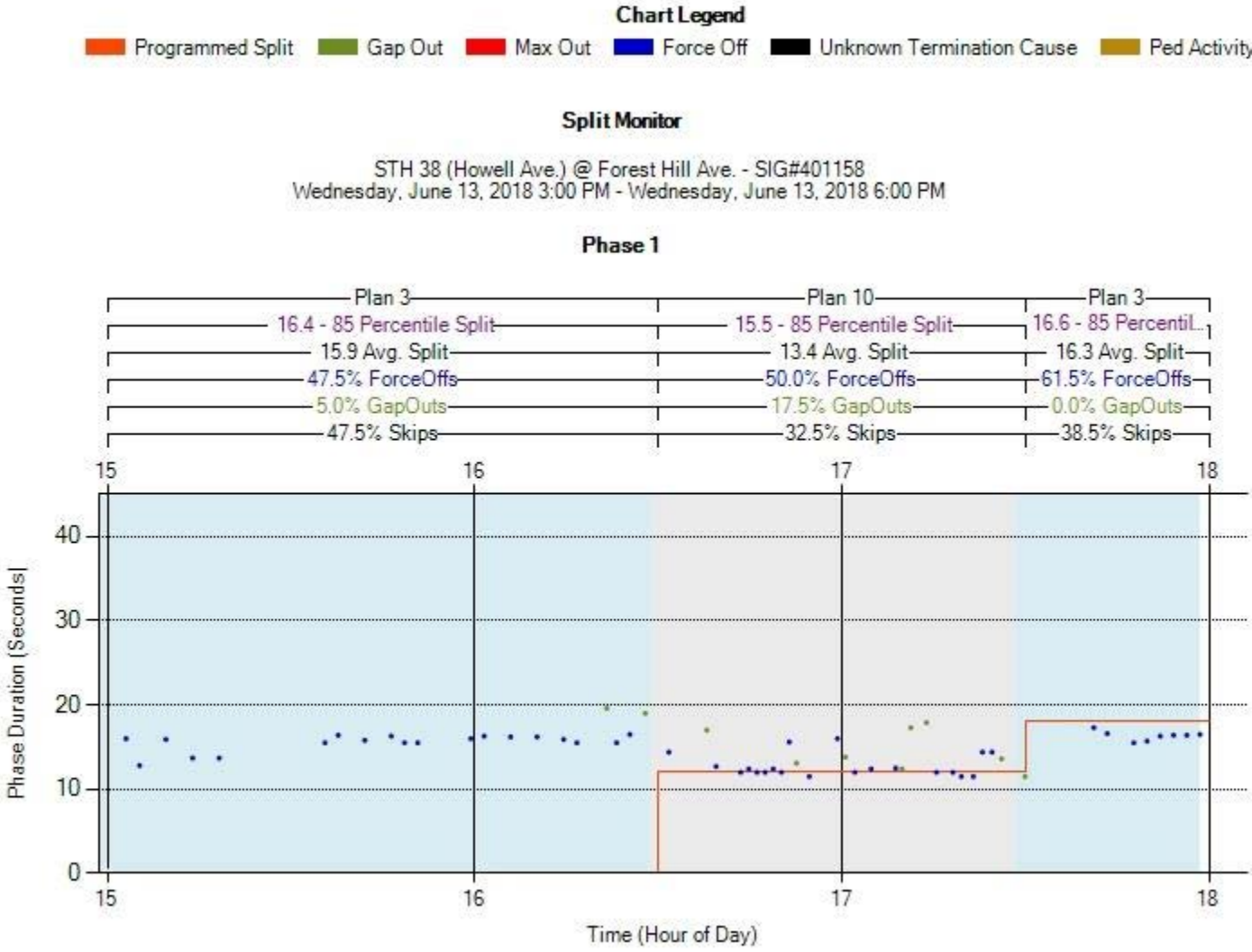
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM



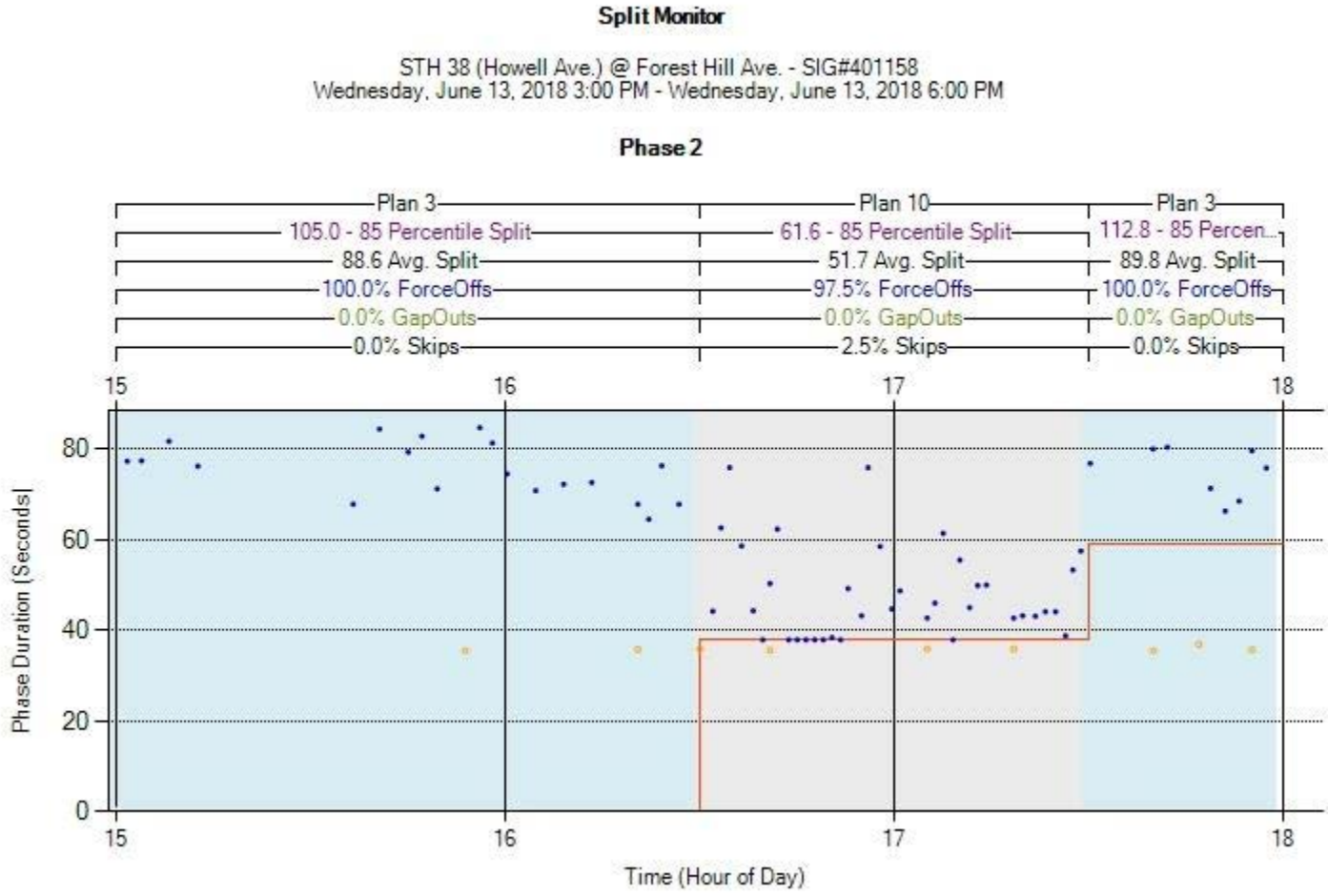
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM



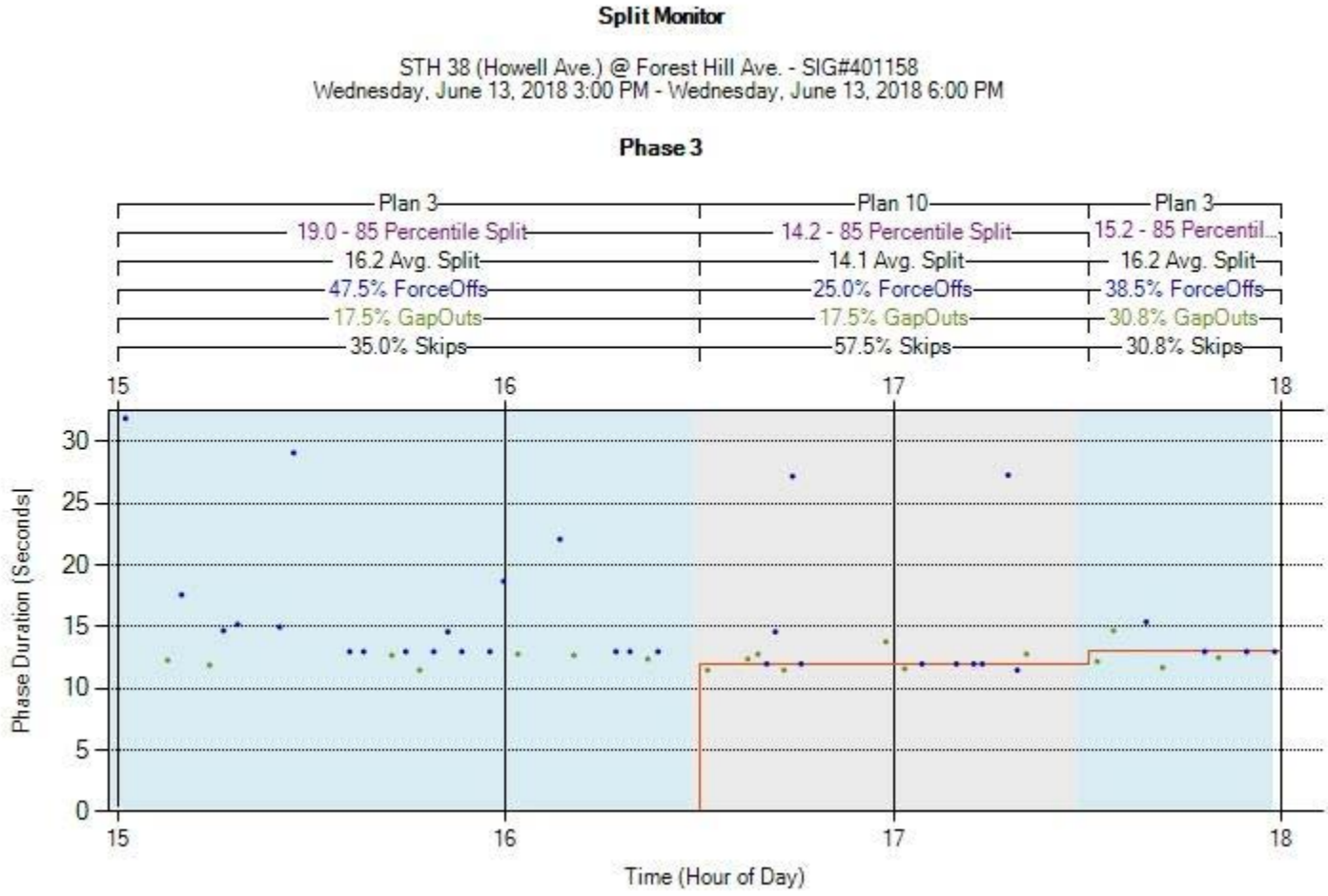
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Vistro Timings
6/13/2018 – 3:00 PM – 6:00 PM



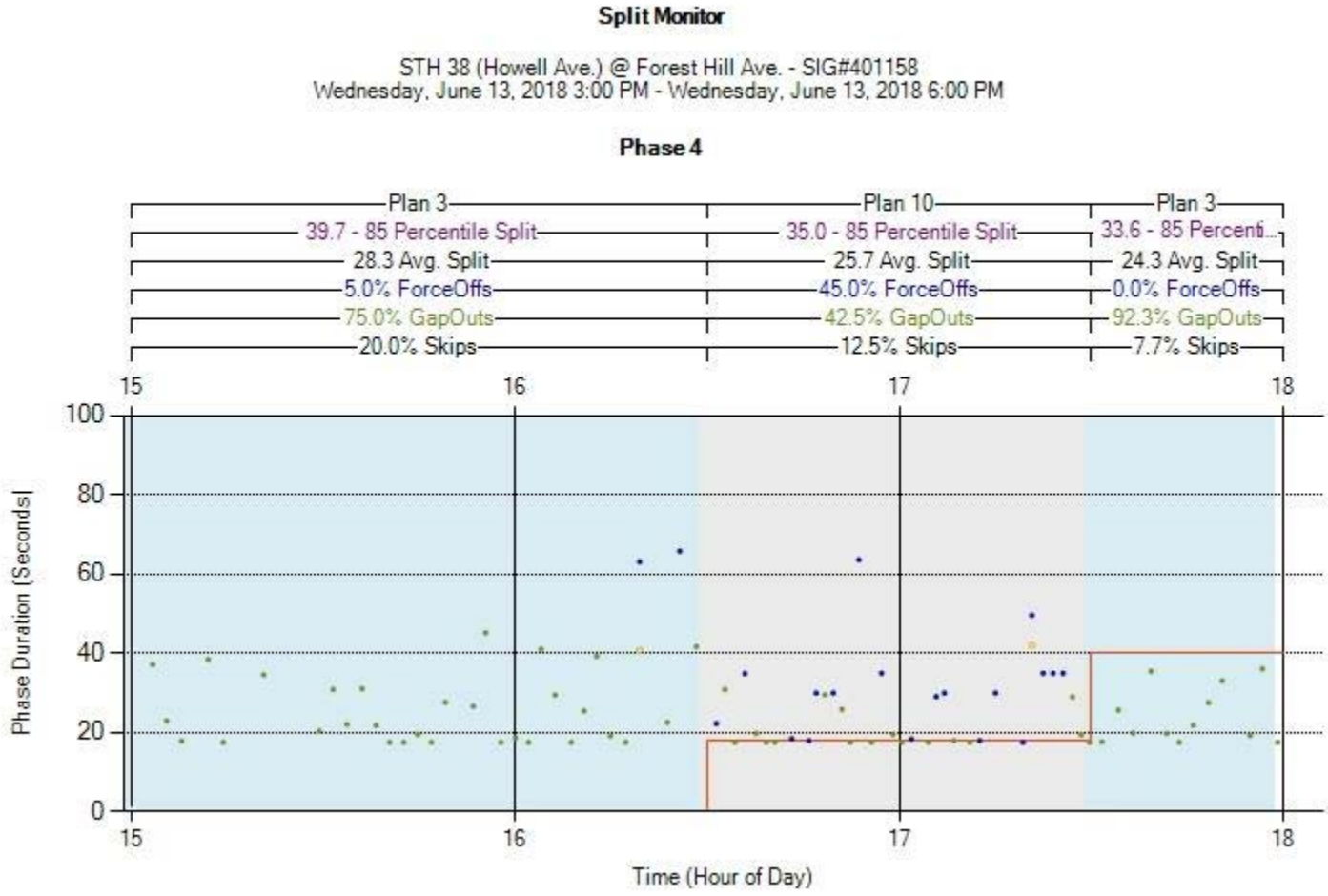
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Vistro Timings
6/13/2018 – 3:00 PM – 6:00 PM



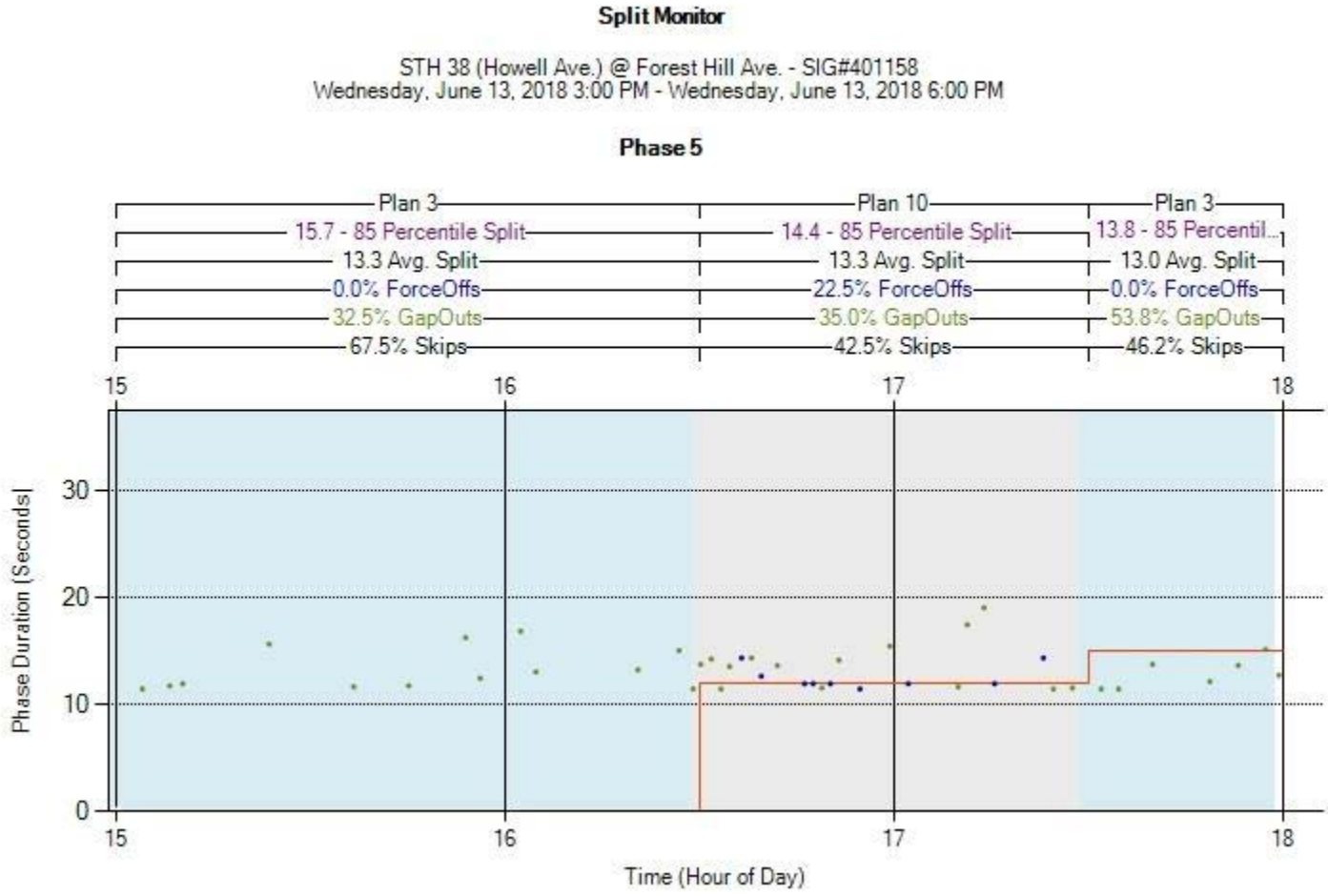
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Vistro Timings
6/13/2018 – 3:00 PM – 6:00 PM



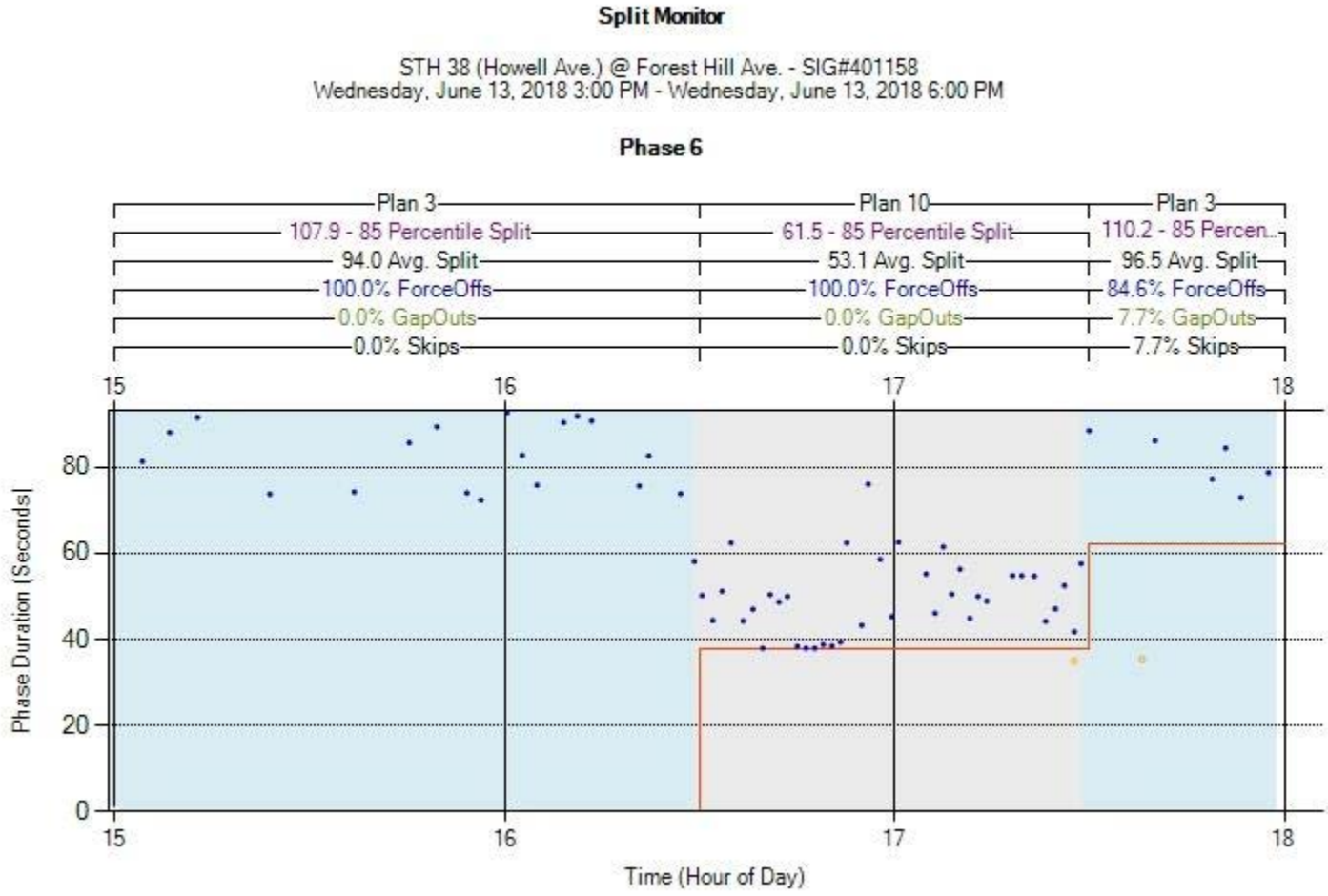
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Vistro Timings
6/13/2018 – 3:00 PM – 6:00 PM



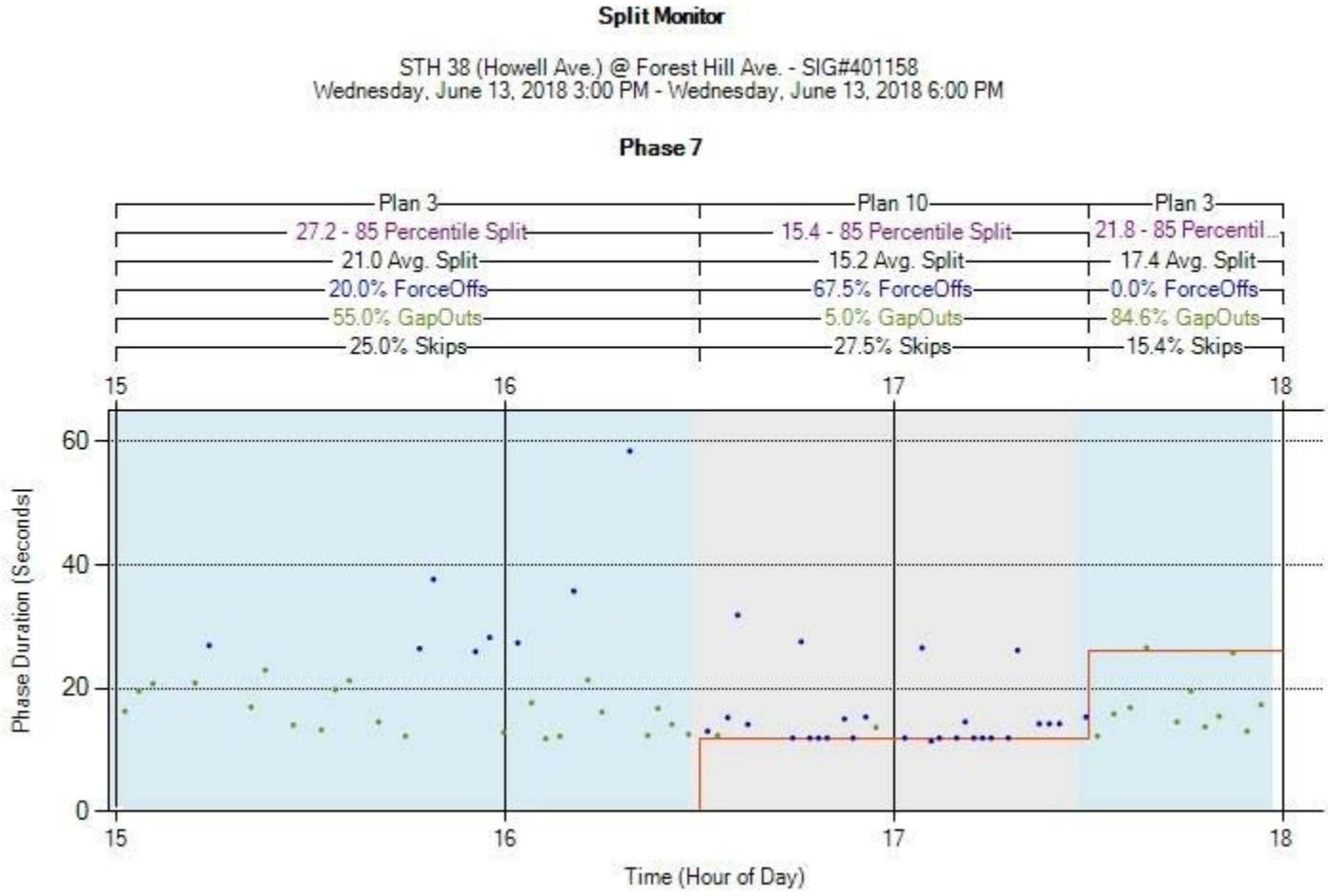
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Vistro Timings
6/13/2018 – 3:00 PM – 6:00 PM



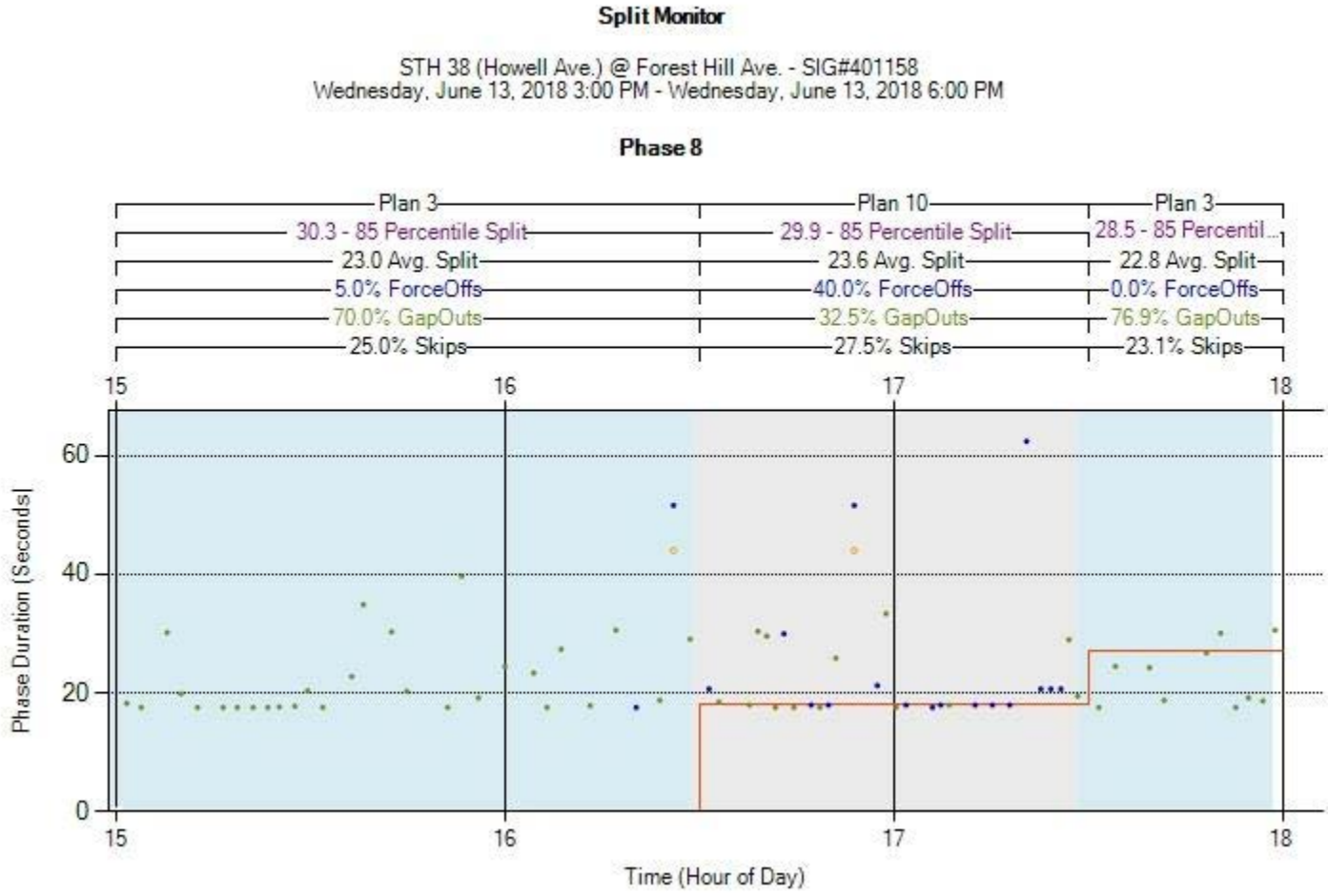
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Vistro Timings
6/13/2018 – 3:00 PM – 6:00 PM



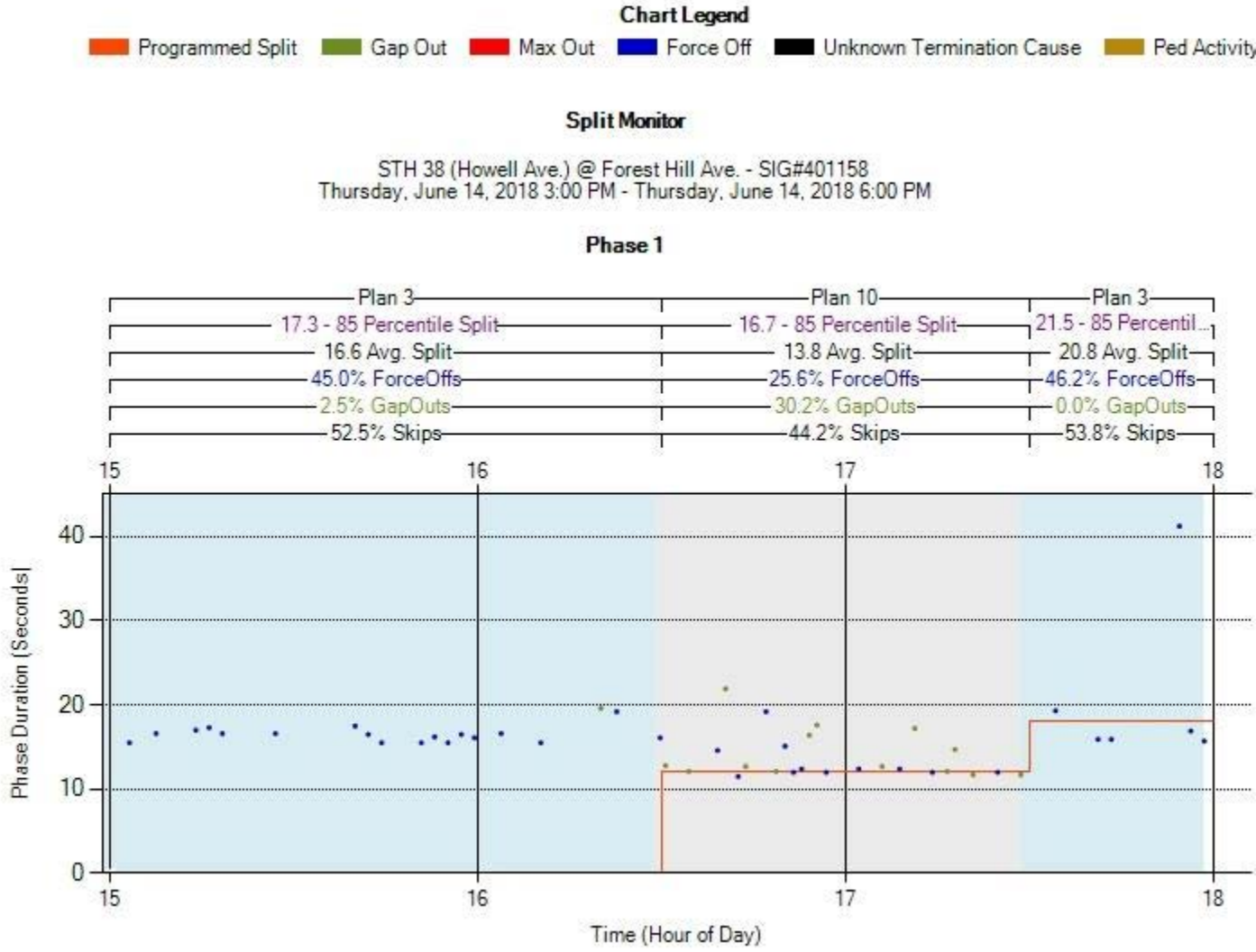
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Vistro Timings
6/13/2018 – 3:00 PM – 6:00 PM



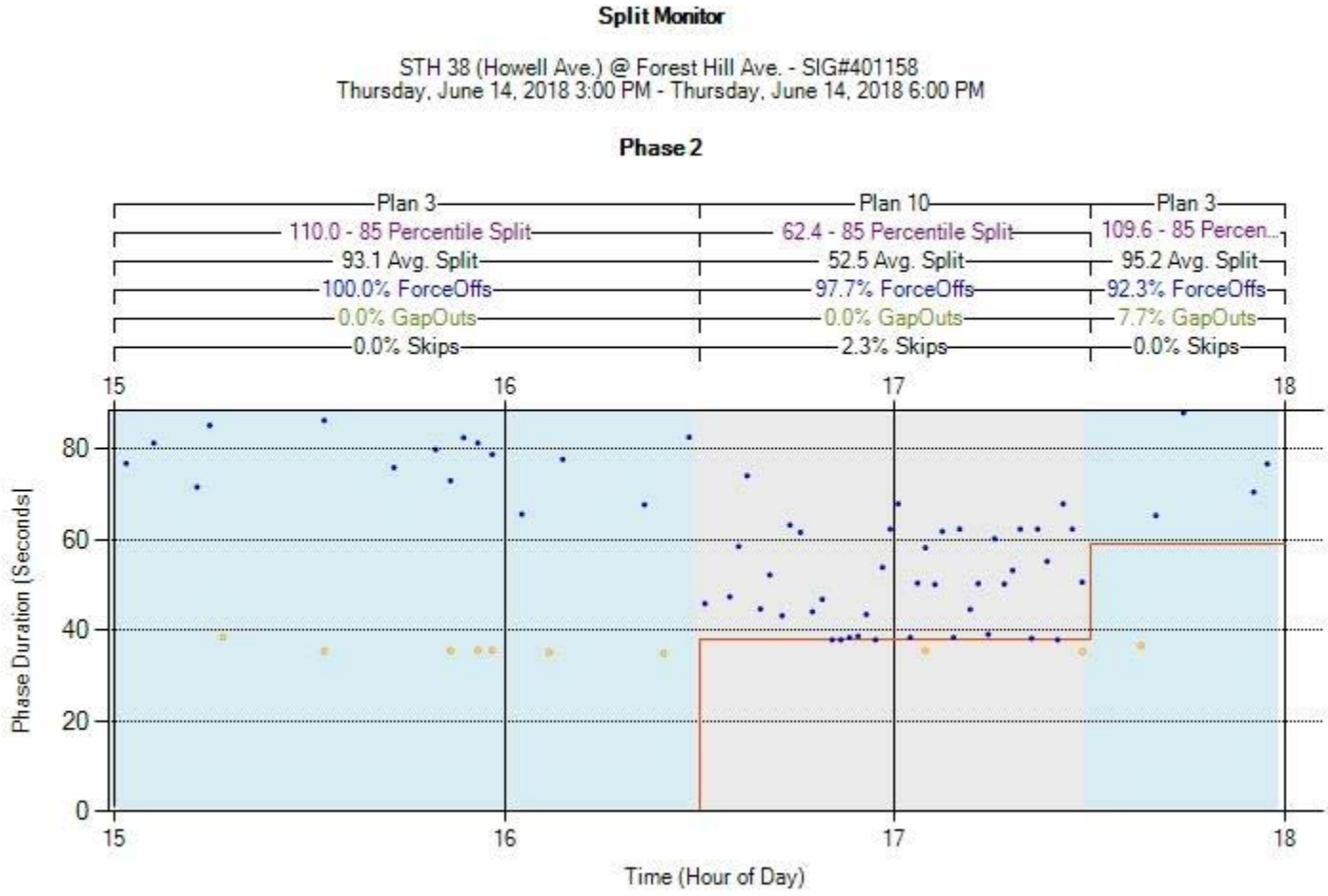
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Vistro Timings
6/13/2018 – 3:00 PM – 6:00 PM



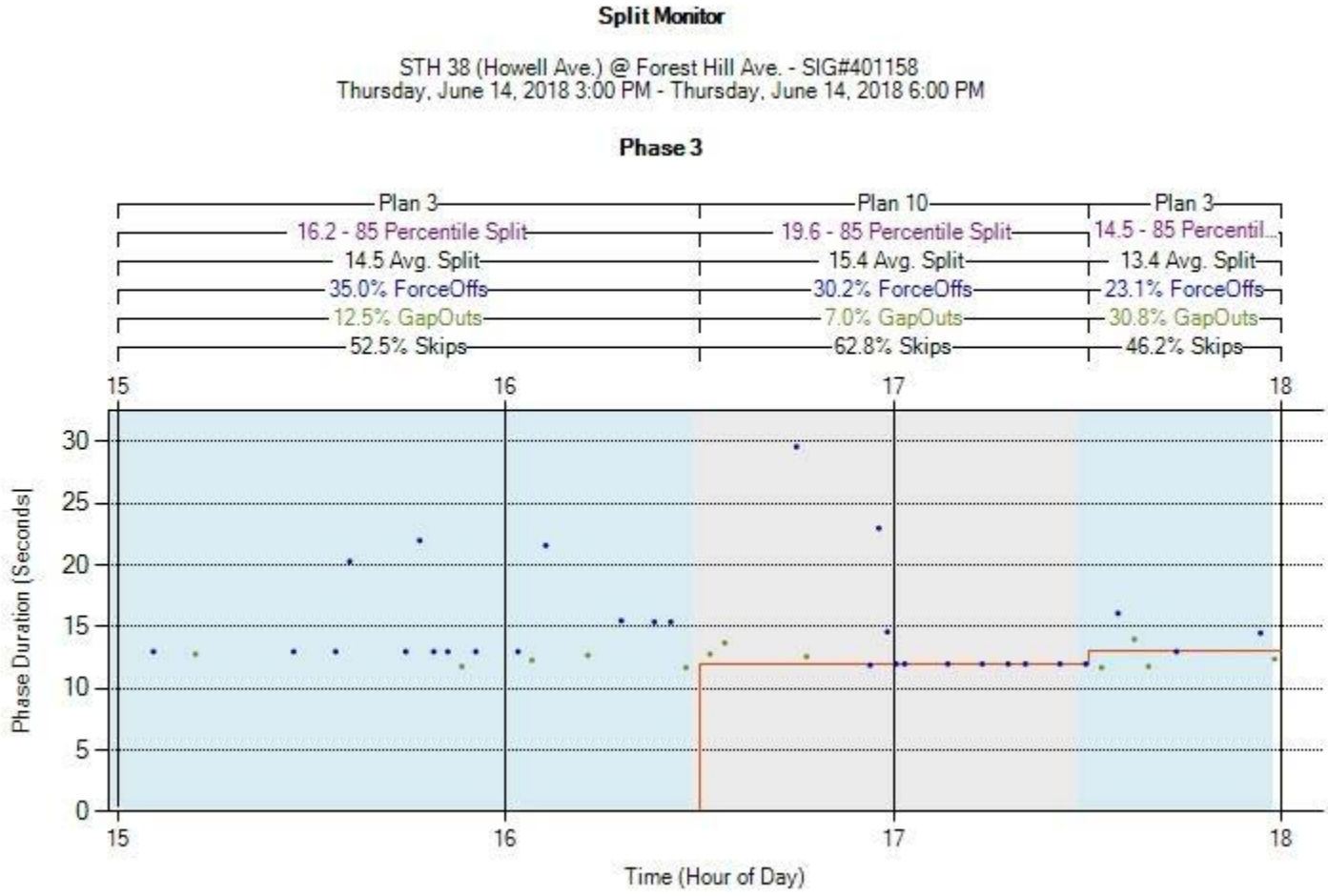
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Vistro Timings
6/14/2018 – 3:00 PM – 6:00 PM



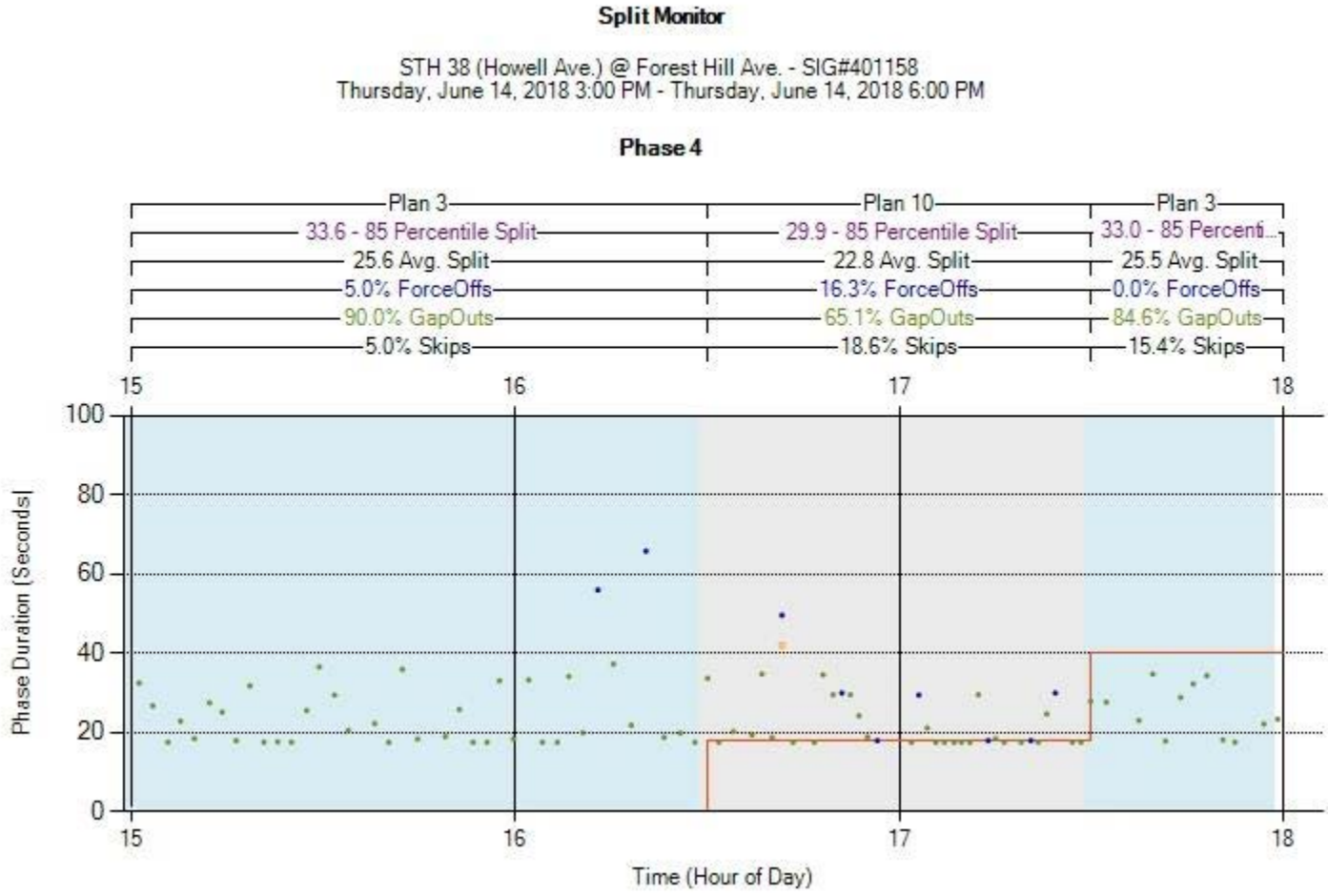
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Vistro Timings
6/14/2018 – 3:00 PM – 6:00 PM



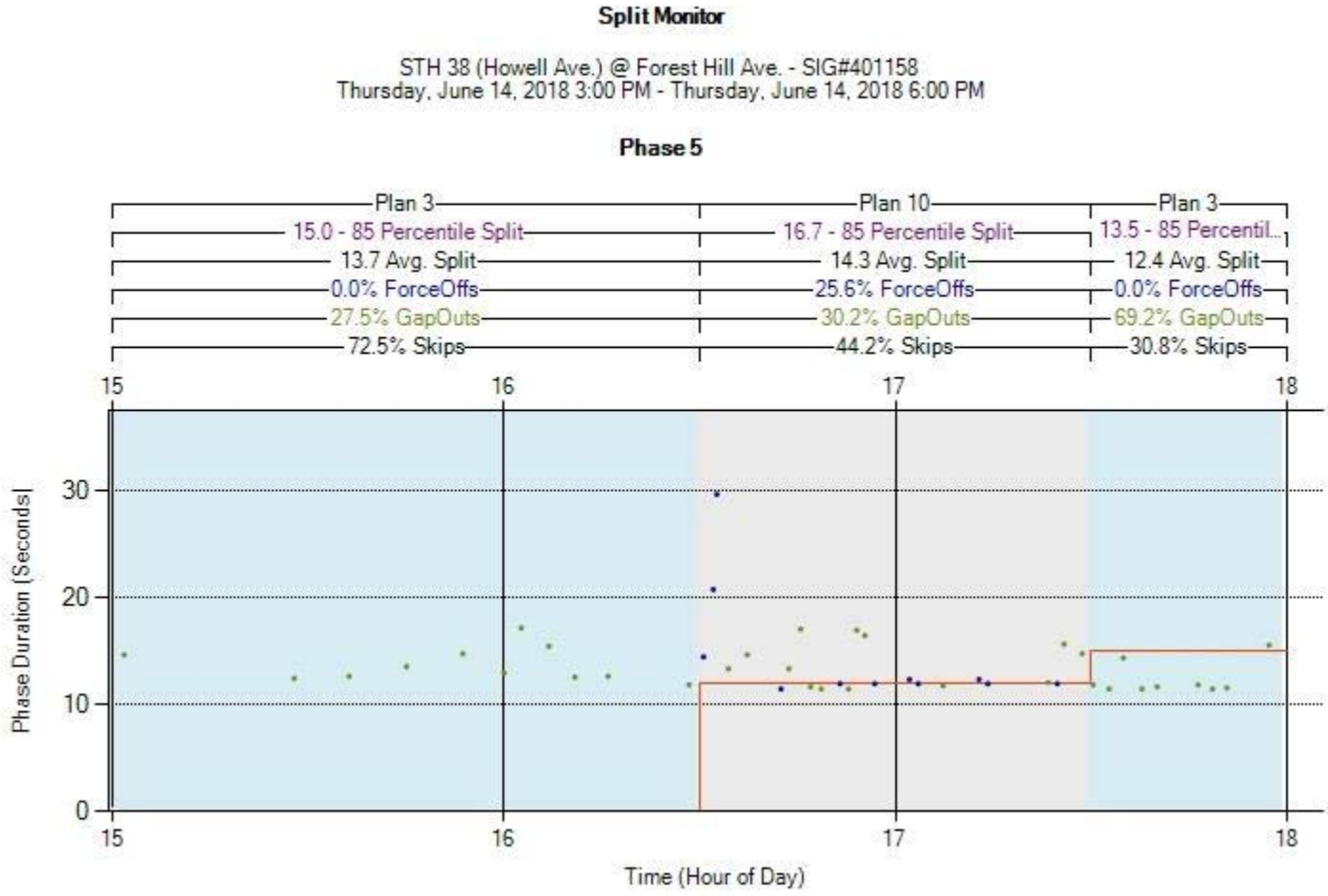
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Vistro Timings
6/14/2018 – 3:00 PM – 6:00 PM



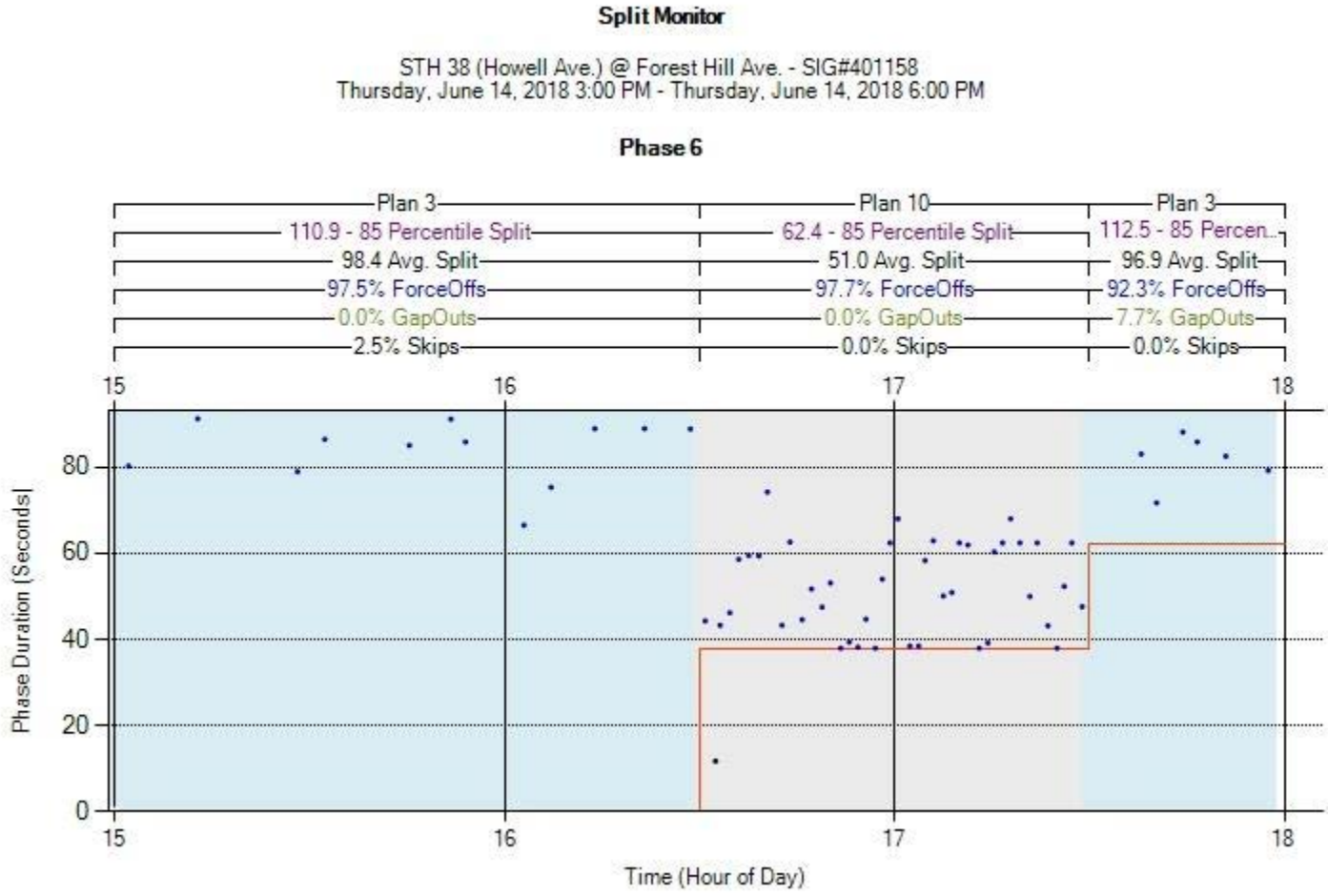
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Vistro Timings
6/14/2018 – 3:00 PM – 6:00 PM



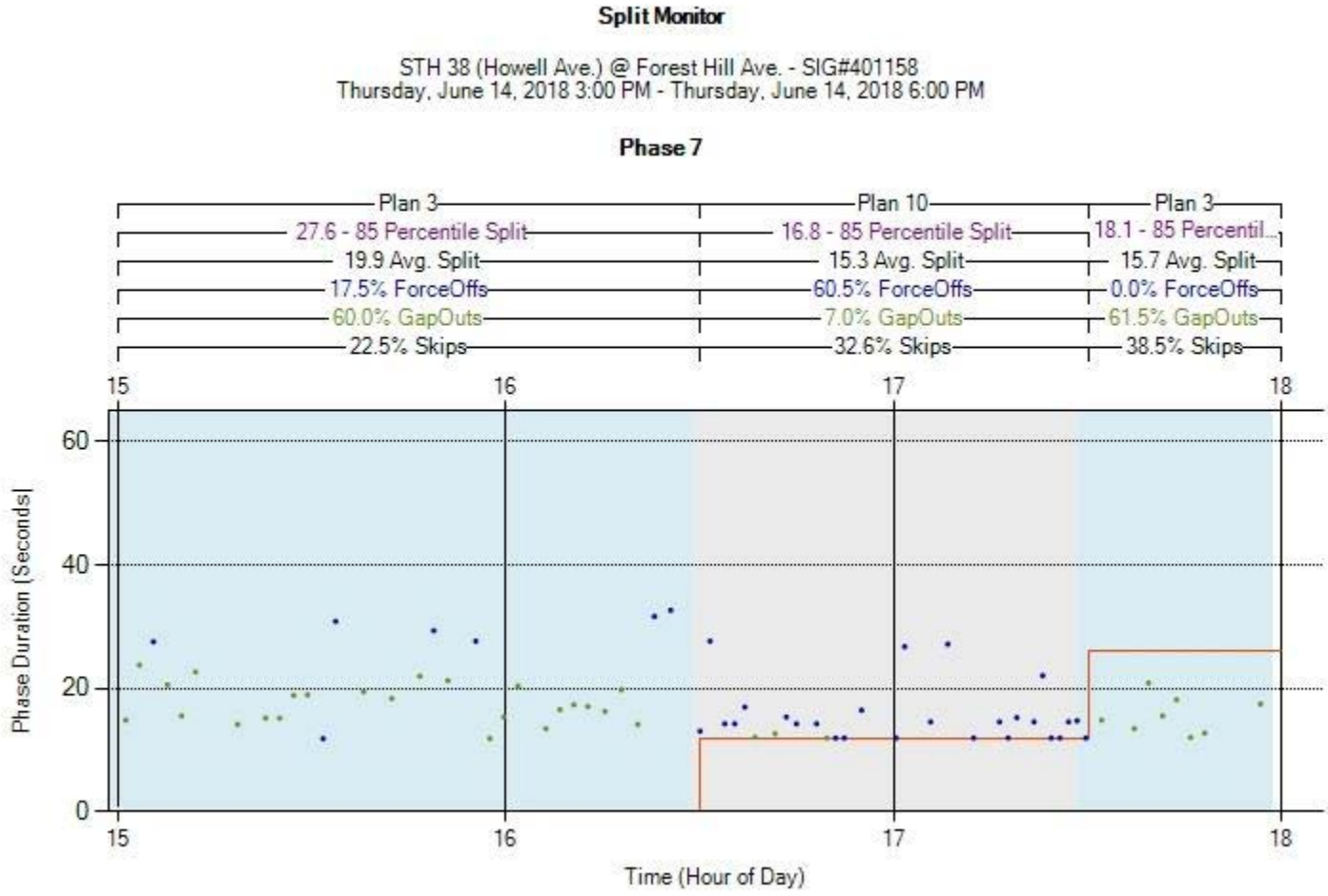
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Vistro Timings
6/14/2018 – 3:00 PM – 6:00 PM



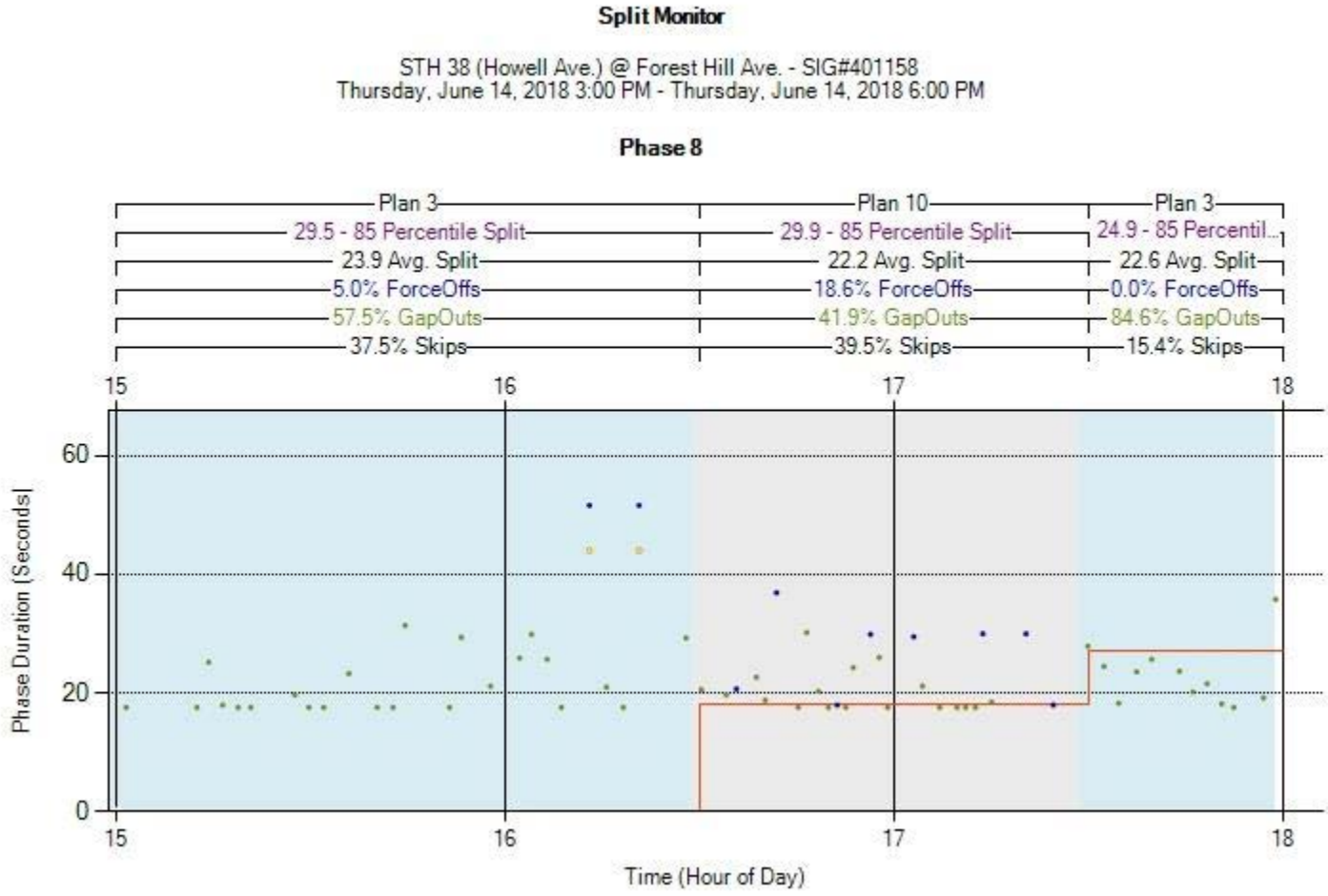
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Vistro Timings
6/14/2018 – 3:00 PM – 6:00 PM



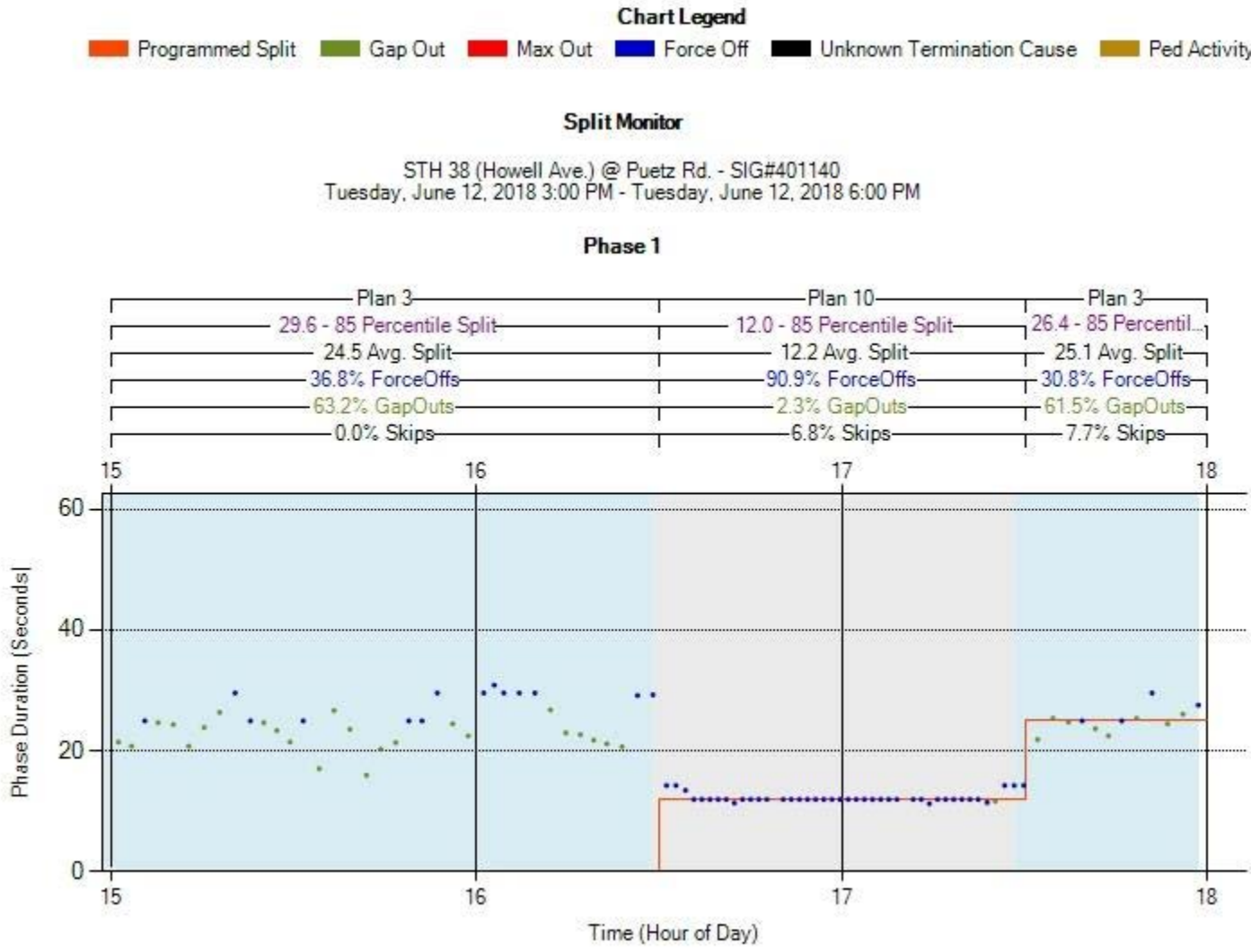
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Vistro Timings
6/14/2018 – 3:00 PM – 6:00 PM



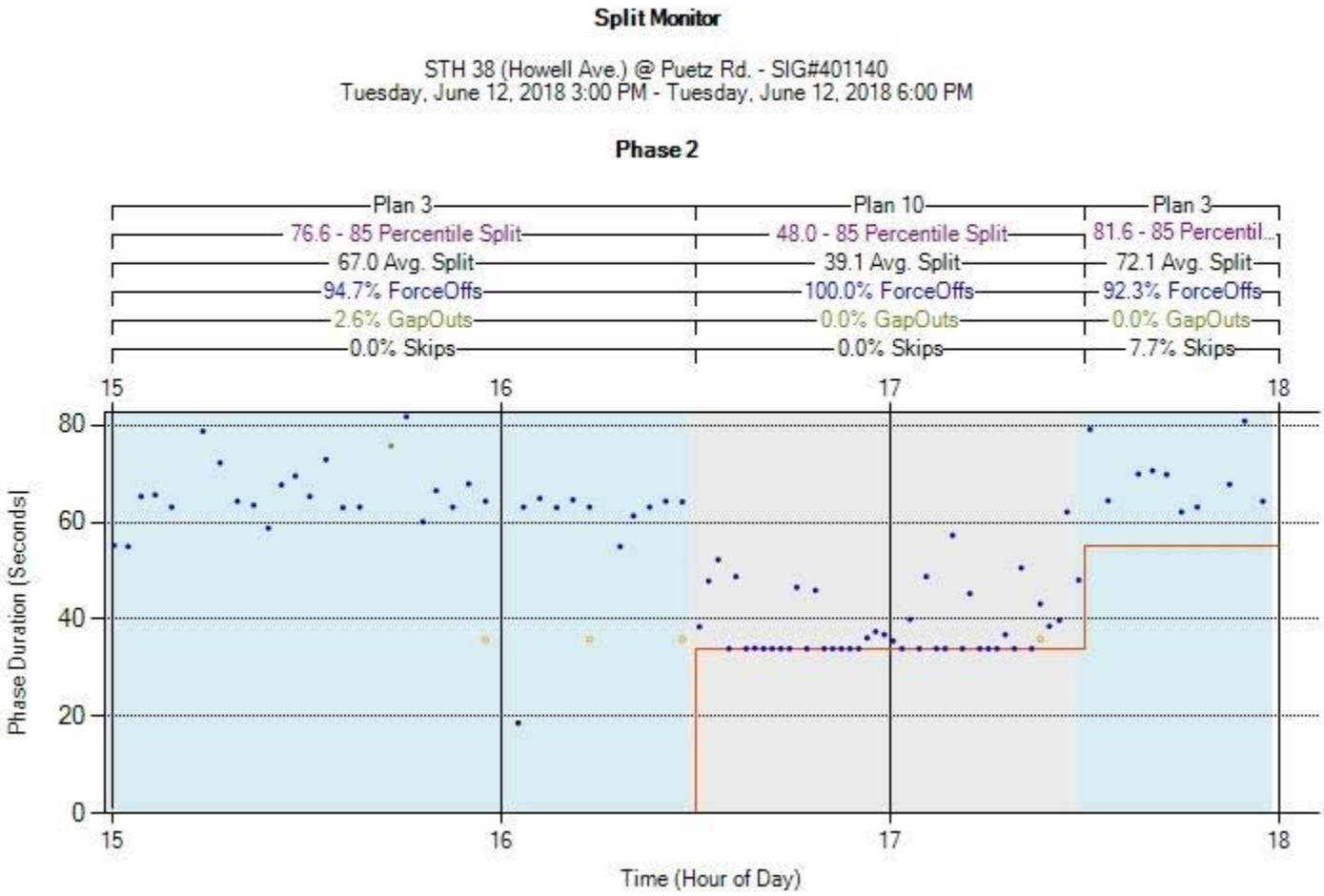
WIS 38 Corridor – STH 38 & Forest Hill Ave.
Vistro Timings
6/14/2018 – 3:00 PM – 6:00 PM



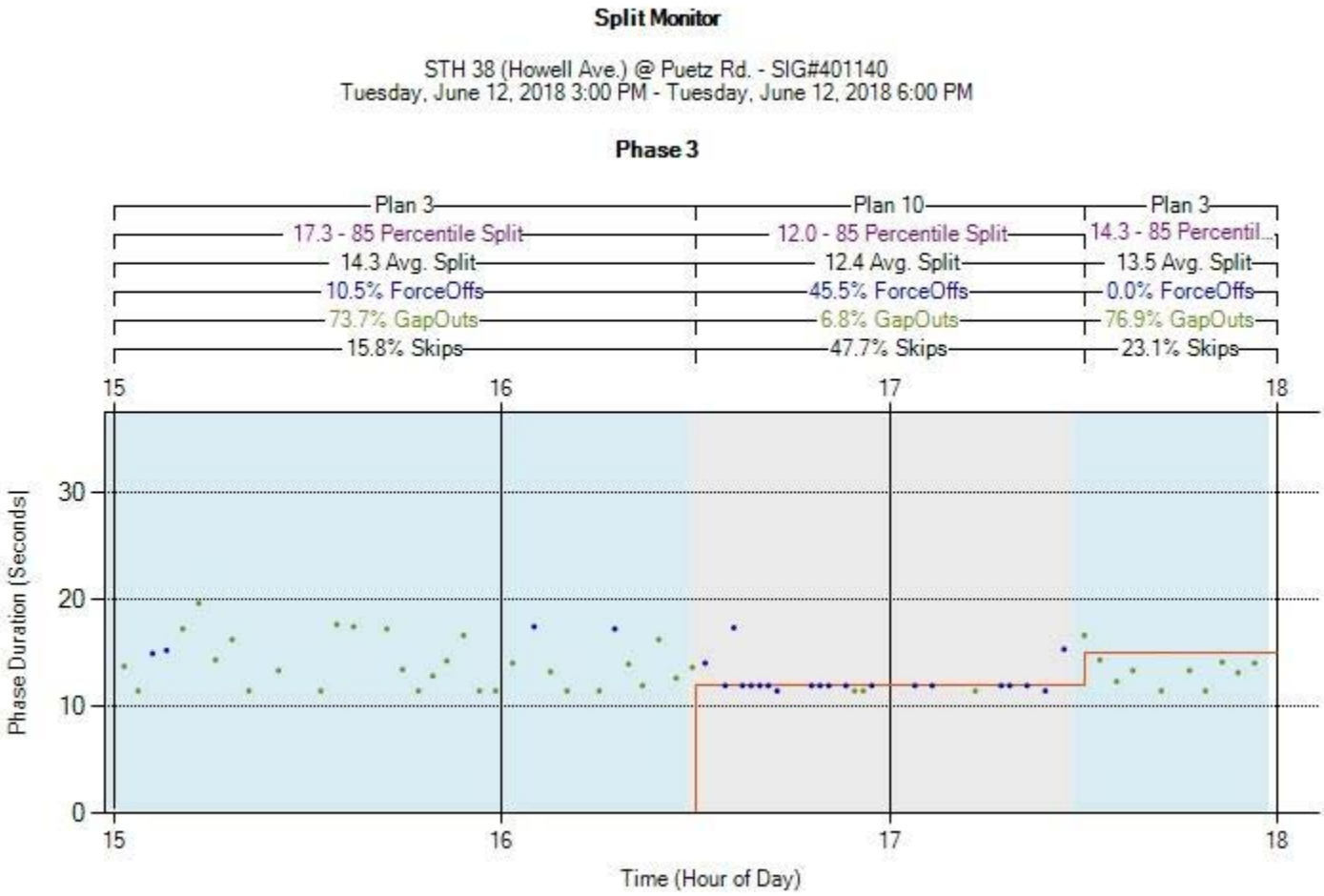
WIS 38 Corridor – STH 38 & Puetz Rd.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM



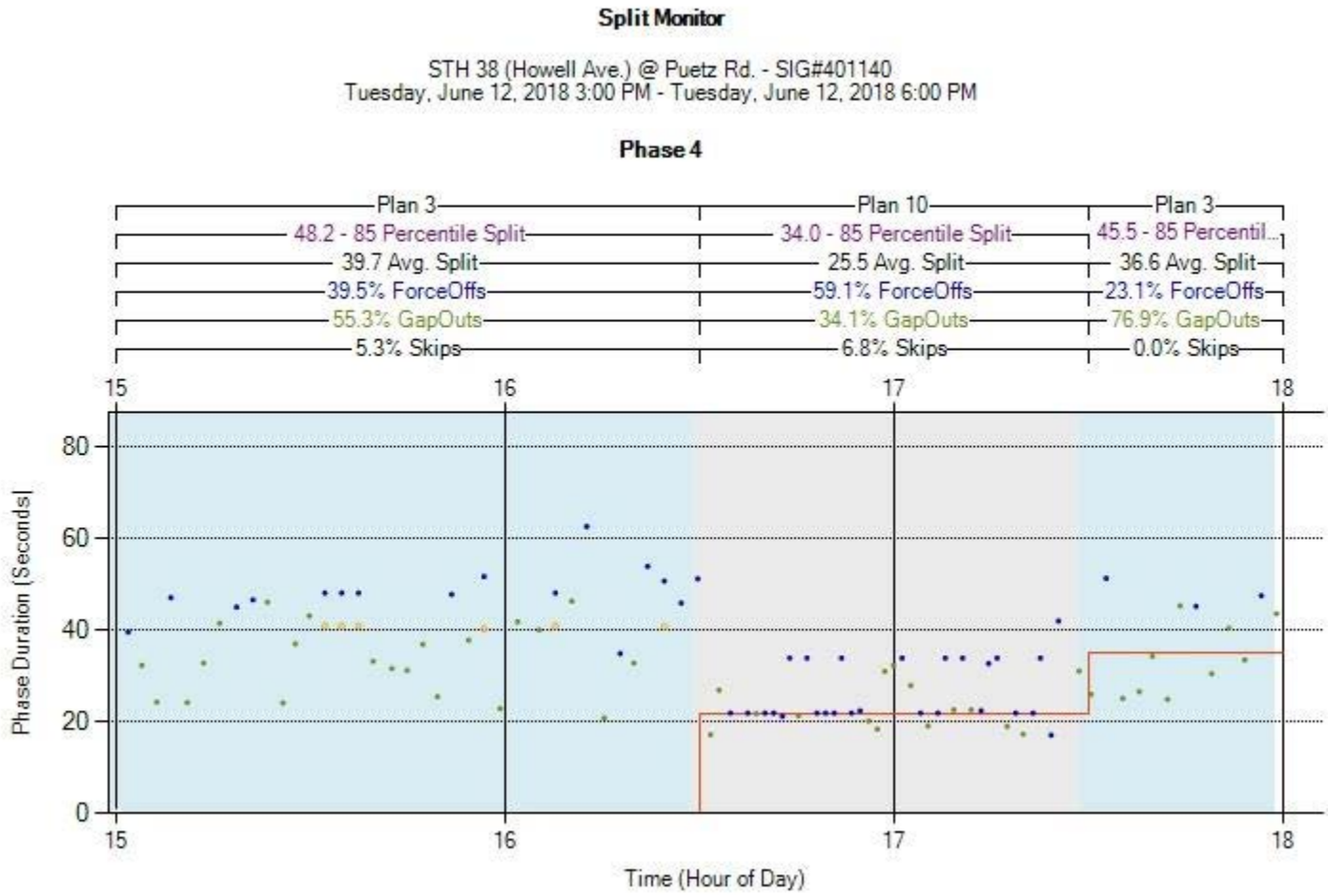
WIS 38 Corridor – STH 38 & Puetz Rd.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM



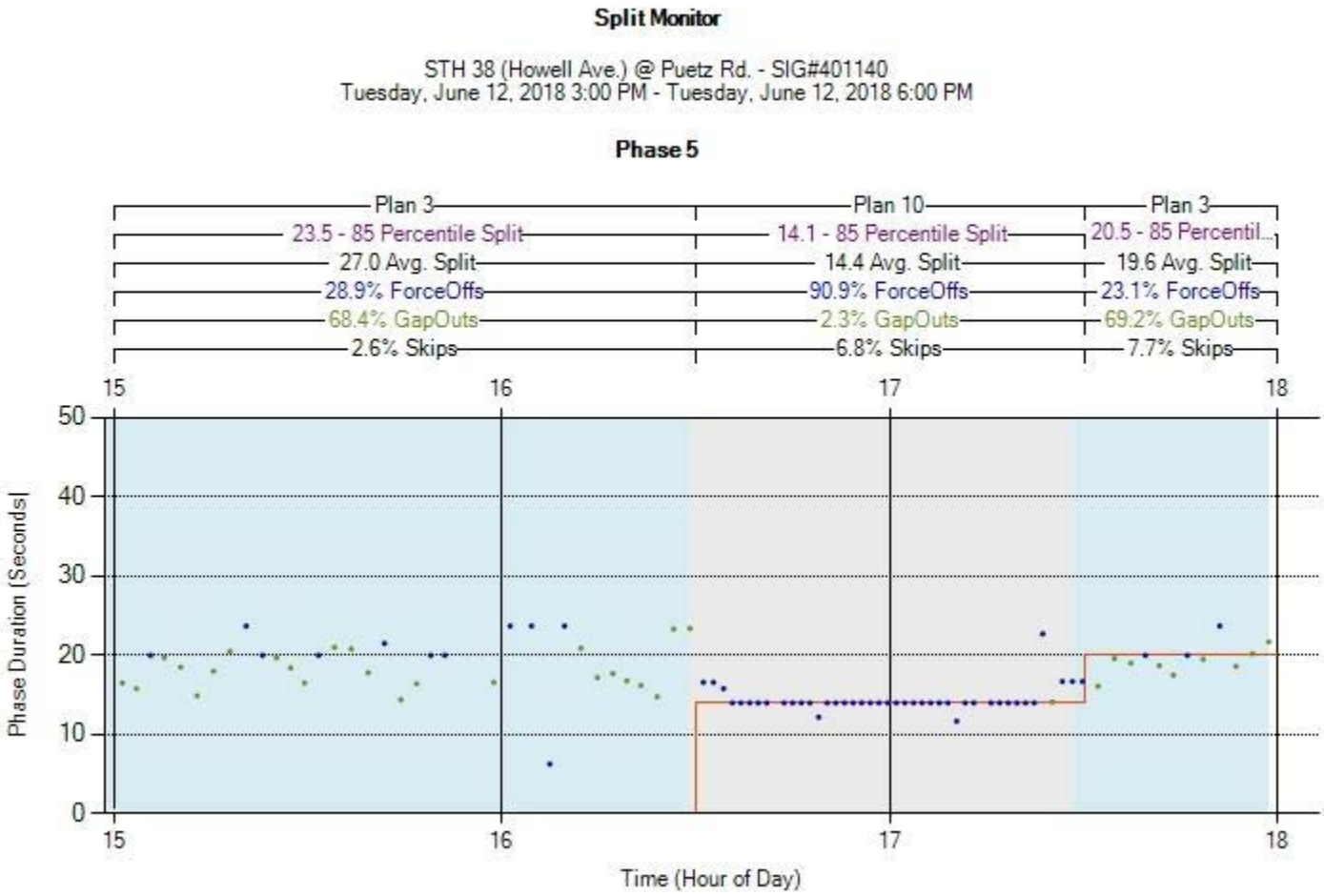
WIS 38 Corridor – STH 38 & Puetz Rd.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM



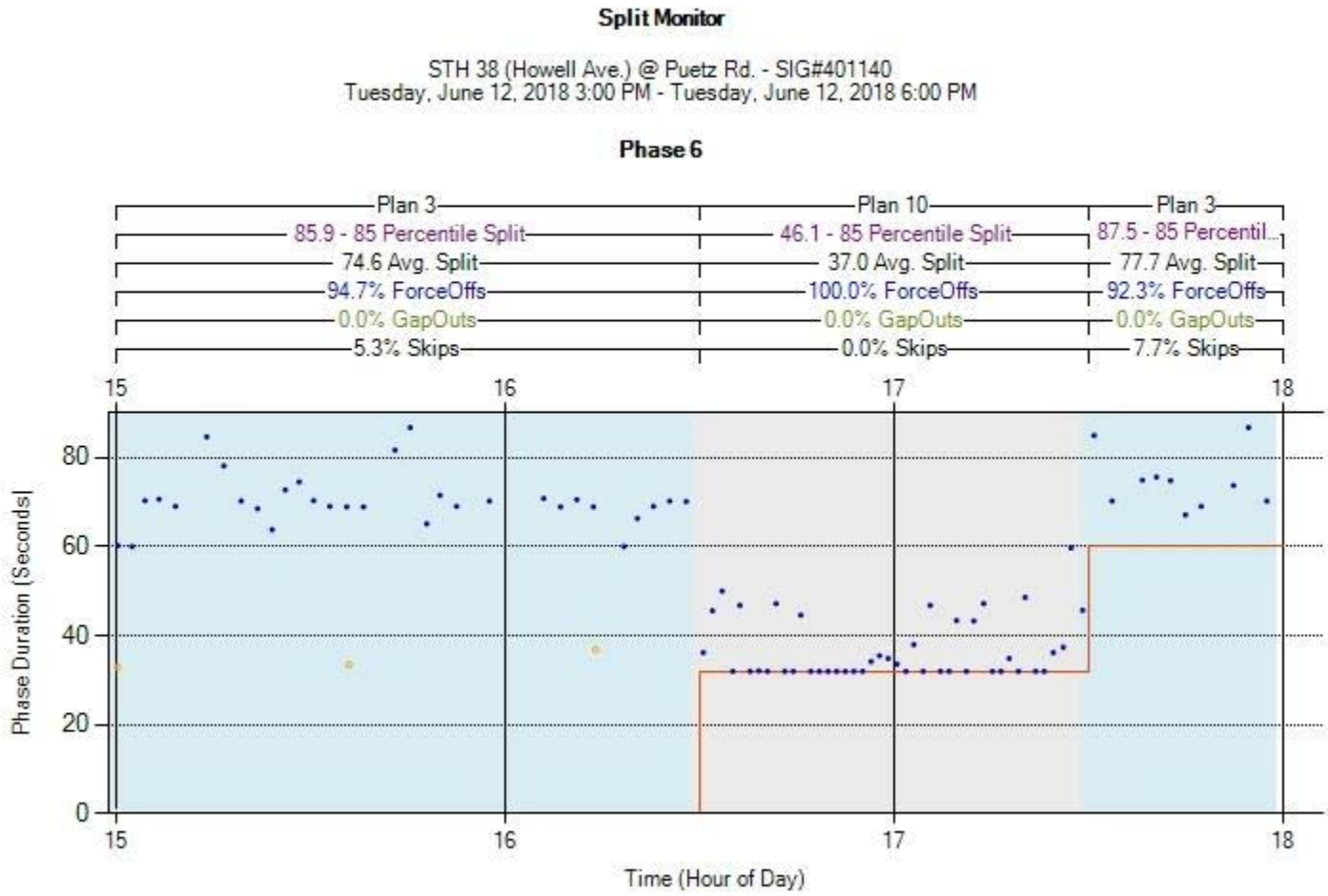
WIS 38 Corridor – STH 38 & Puetz Rd.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM



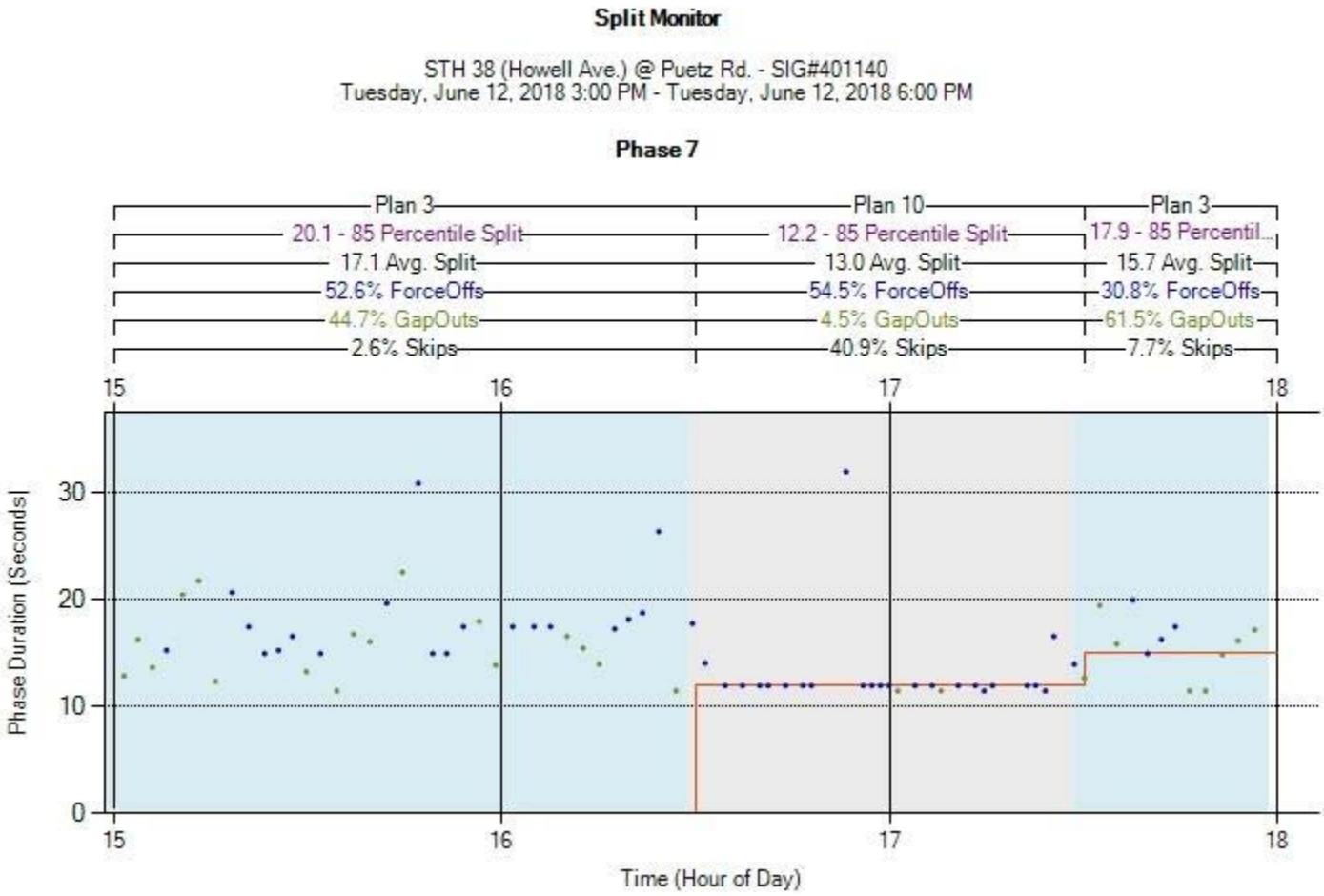
WIS 38 Corridor – STH 38 & Puetz Rd.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM



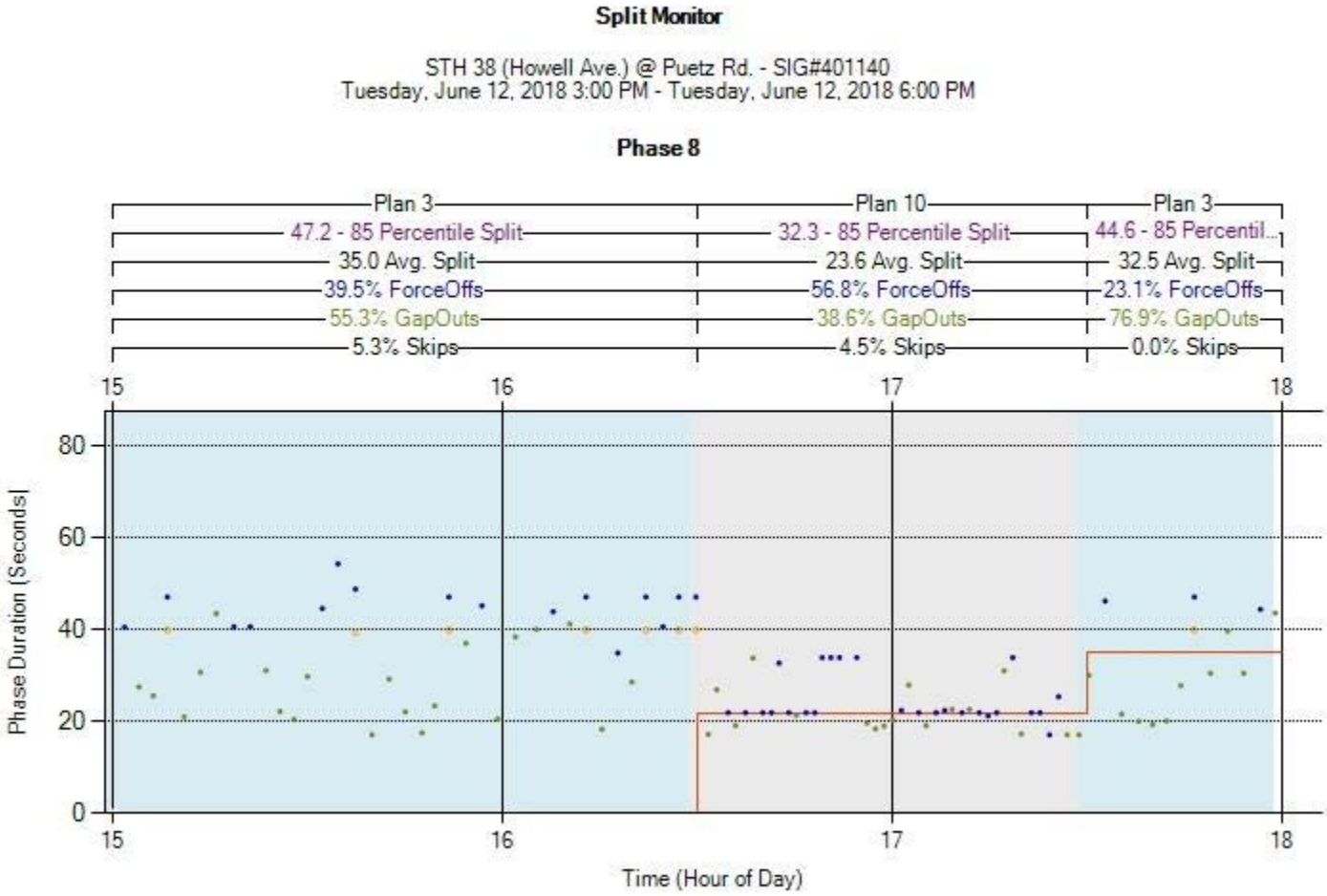
WIS 38 Corridor – STH 38 & Puetz Rd.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM



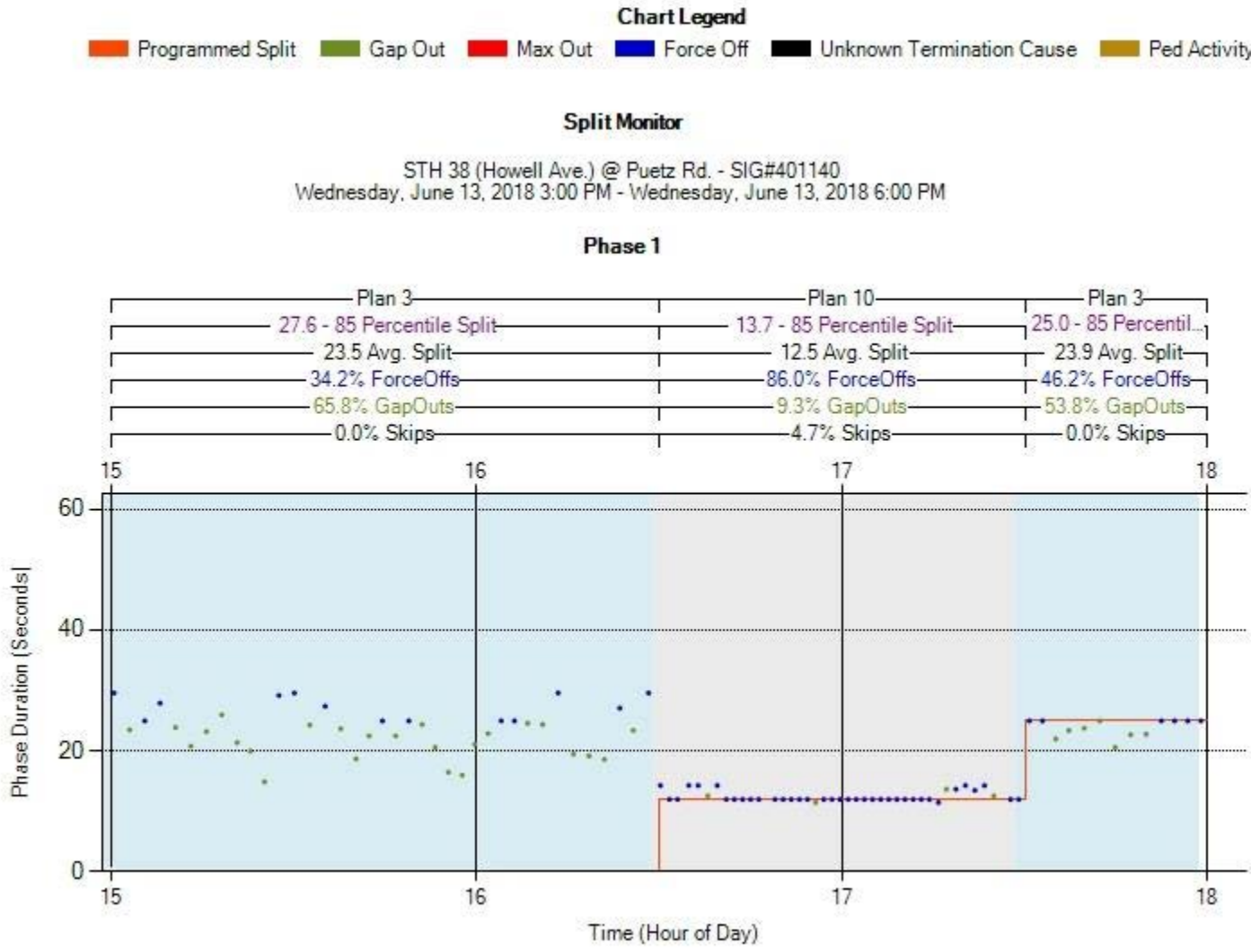
WIS 38 Corridor – STH 38 & Puetz Rd.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM



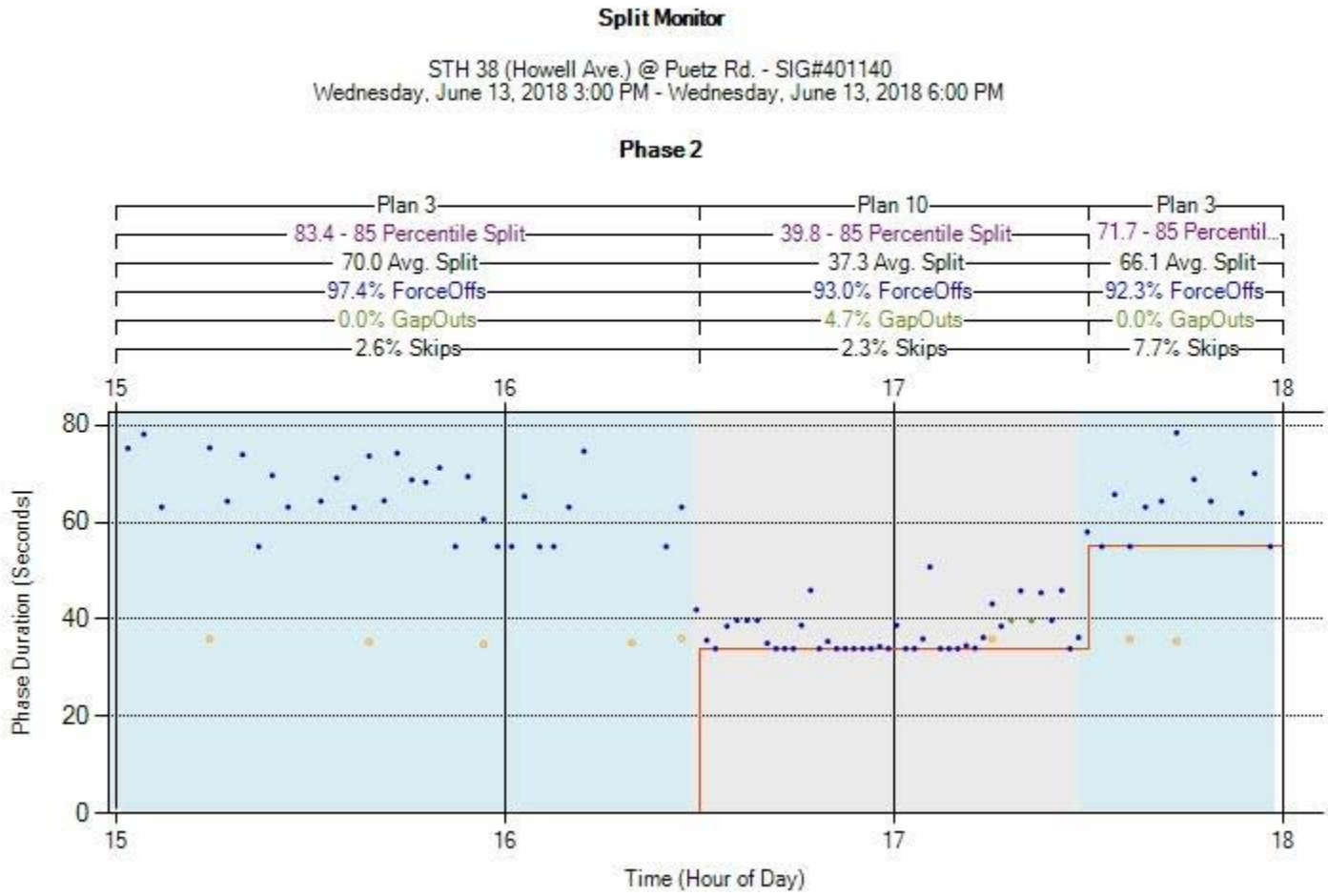
WIS 38 Corridor – STH 38 & Puetz Rd.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM



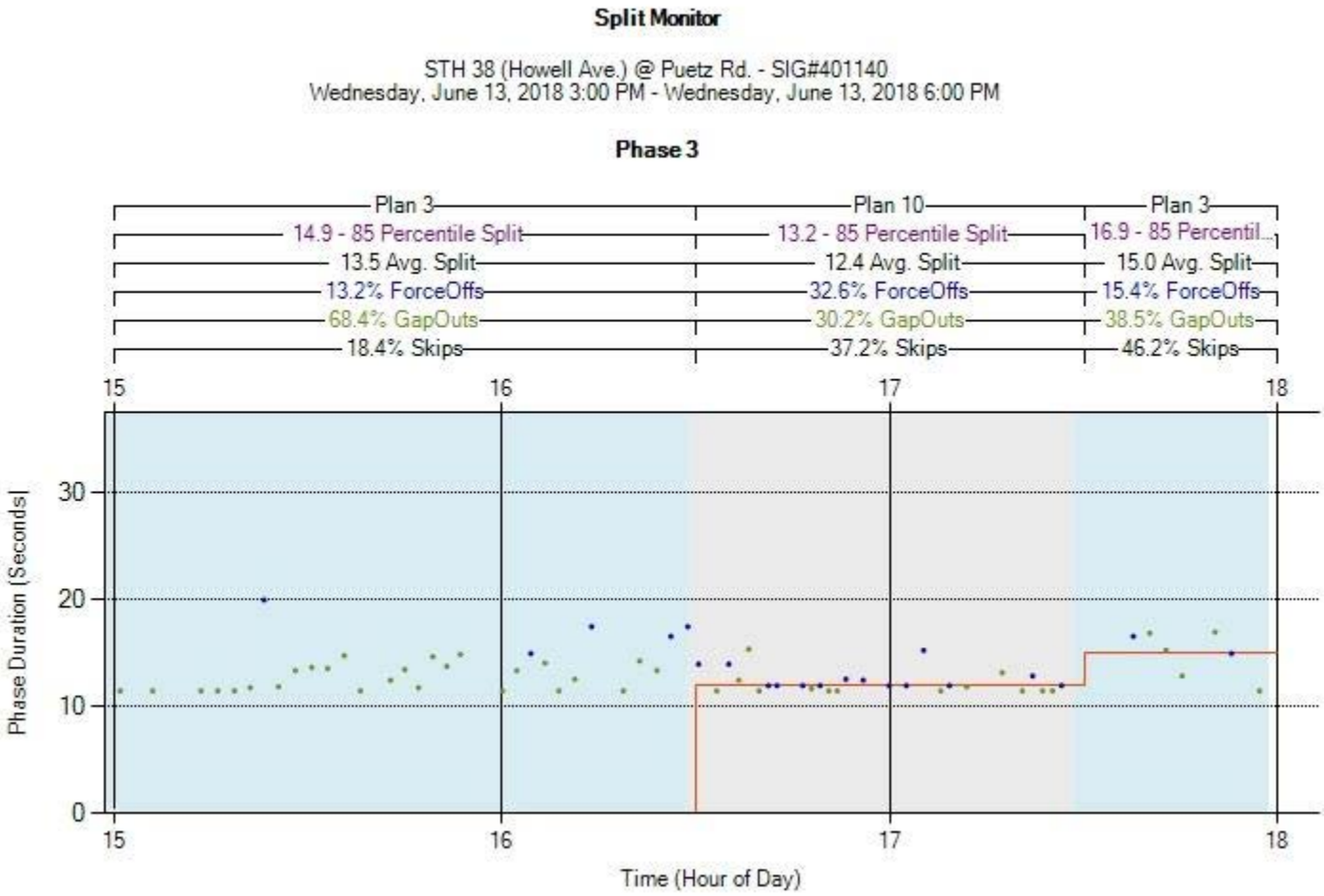
WIS 38 Corridor – STH 38 & Puetz Rd.
Vistro Timings
6/13/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Puetz Rd.
Vistro Timings
6/13/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Puetz Rd.
Vistro Timings
6/13/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Puetz Rd.
Vistro Timings
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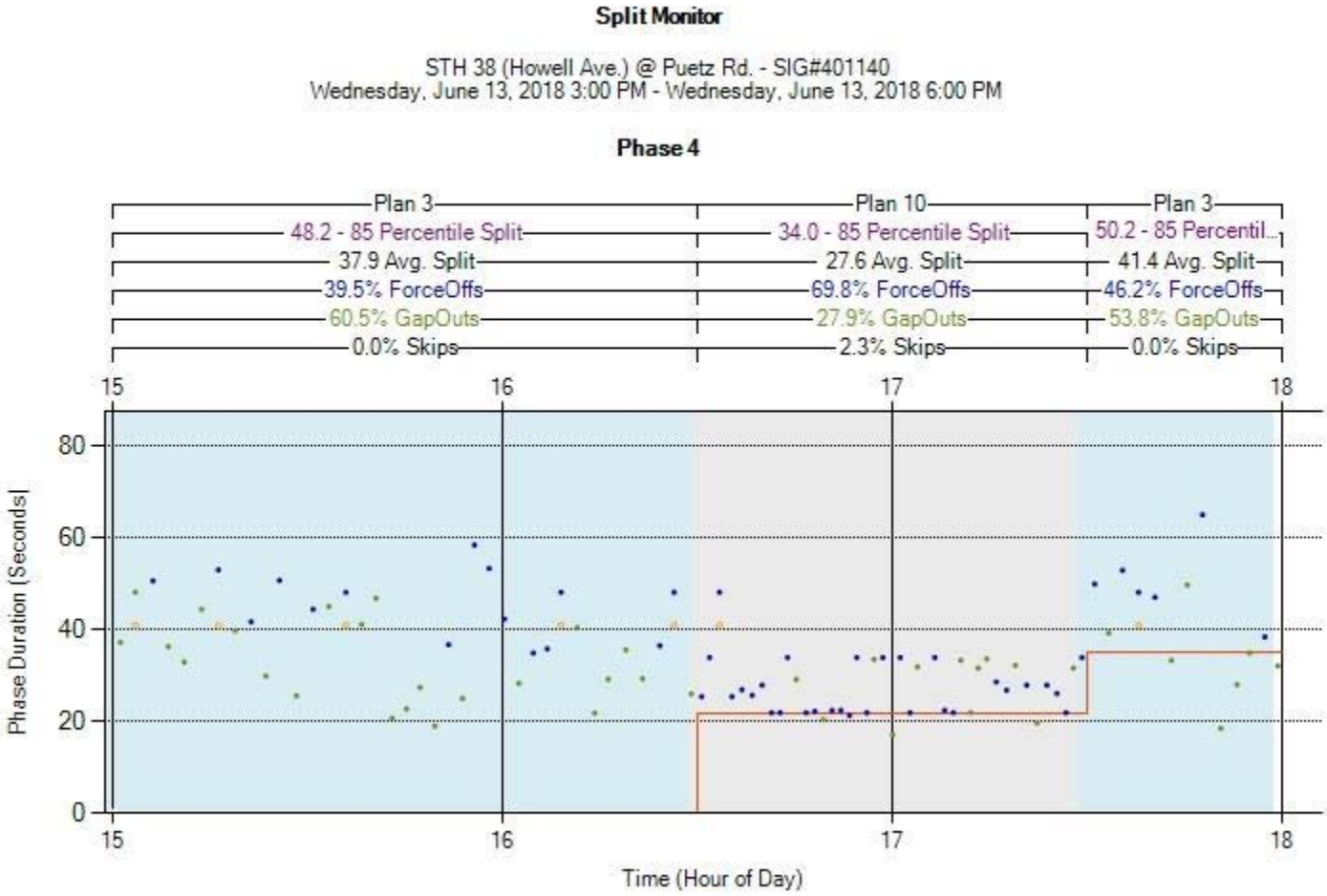

WIS 38 Corridor – STH 38 & Puetz Rd.
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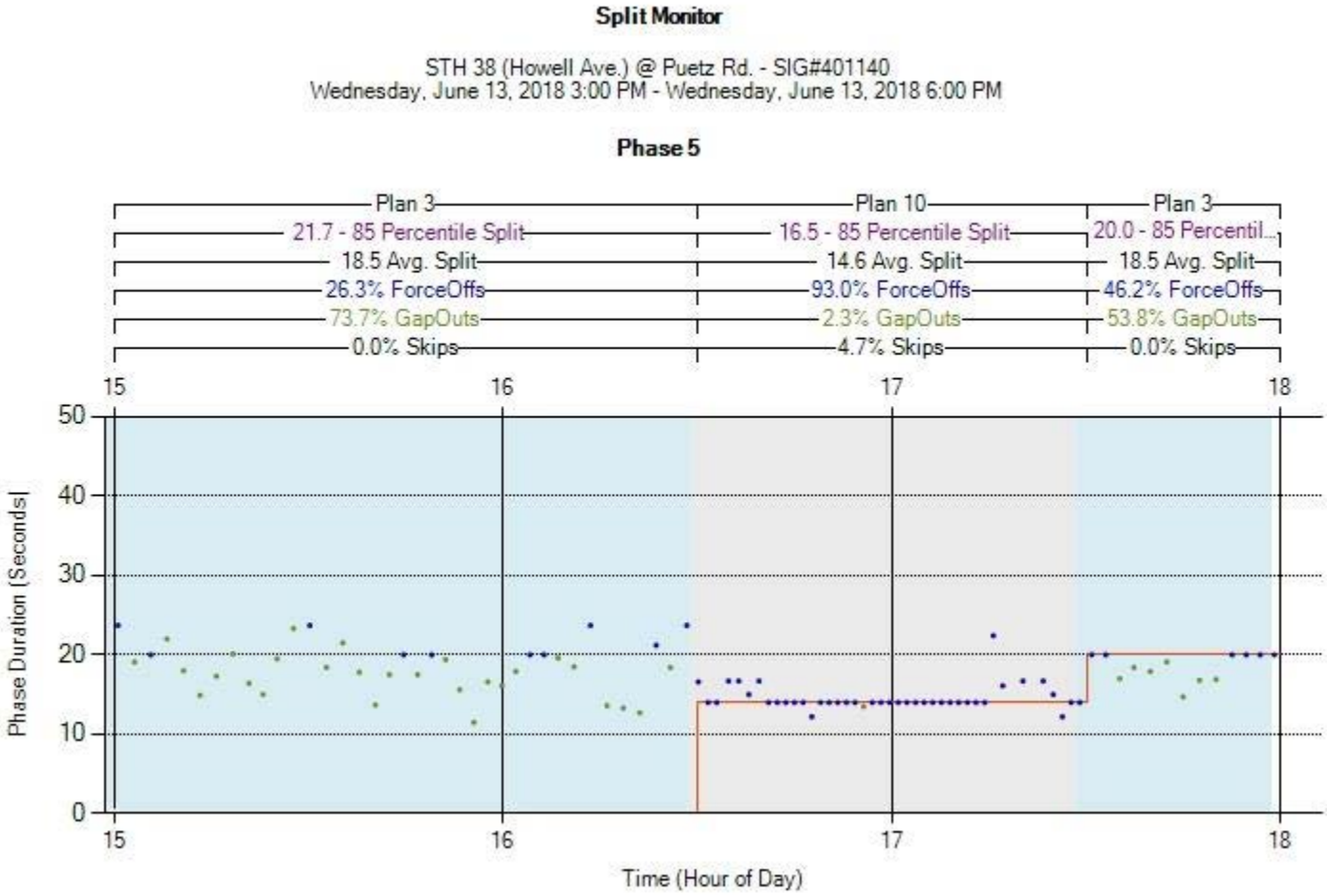
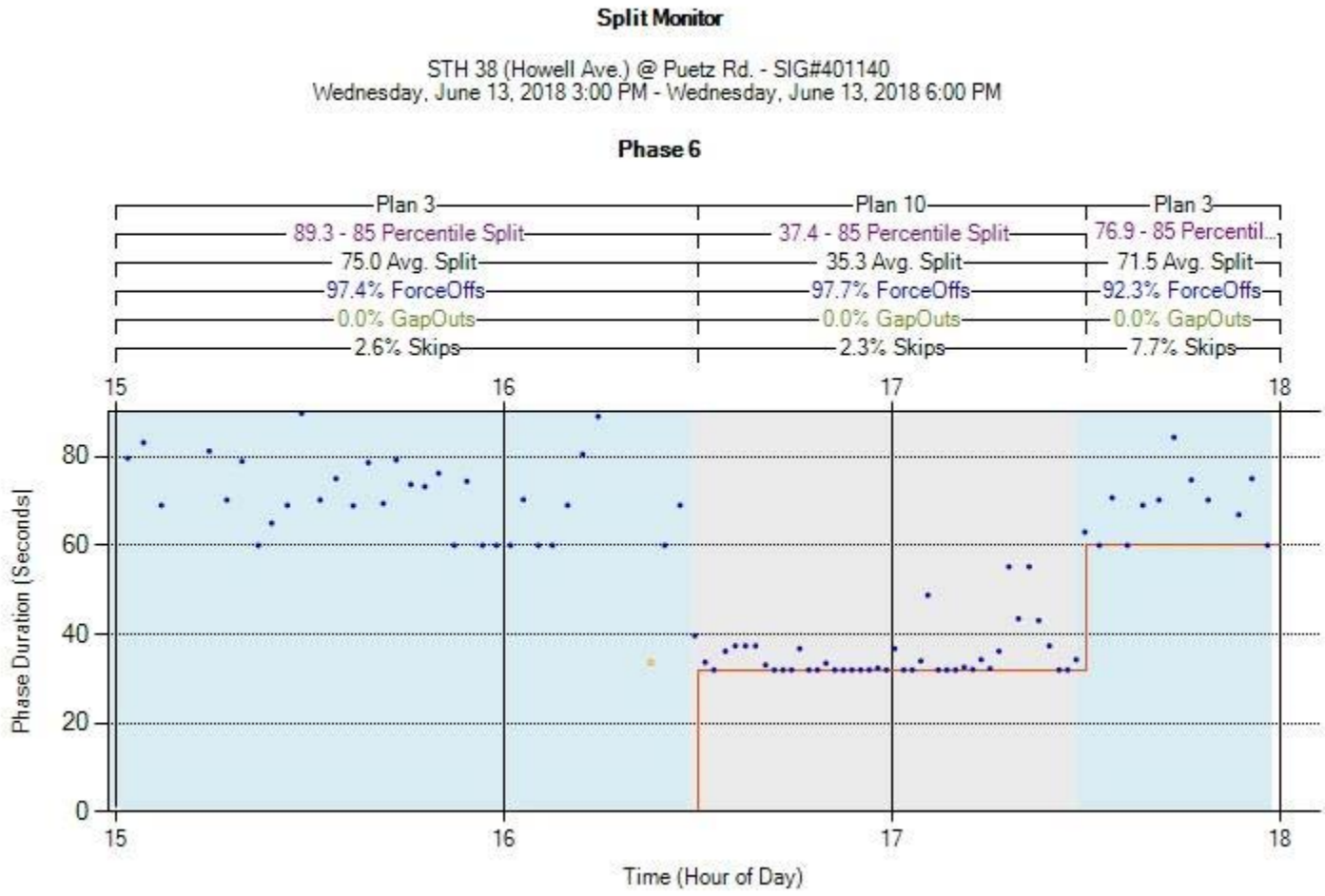
6/13/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Puetz Rd.
Vistro Timings
6/13/2018 – 3:00 PM – 6:00 PM



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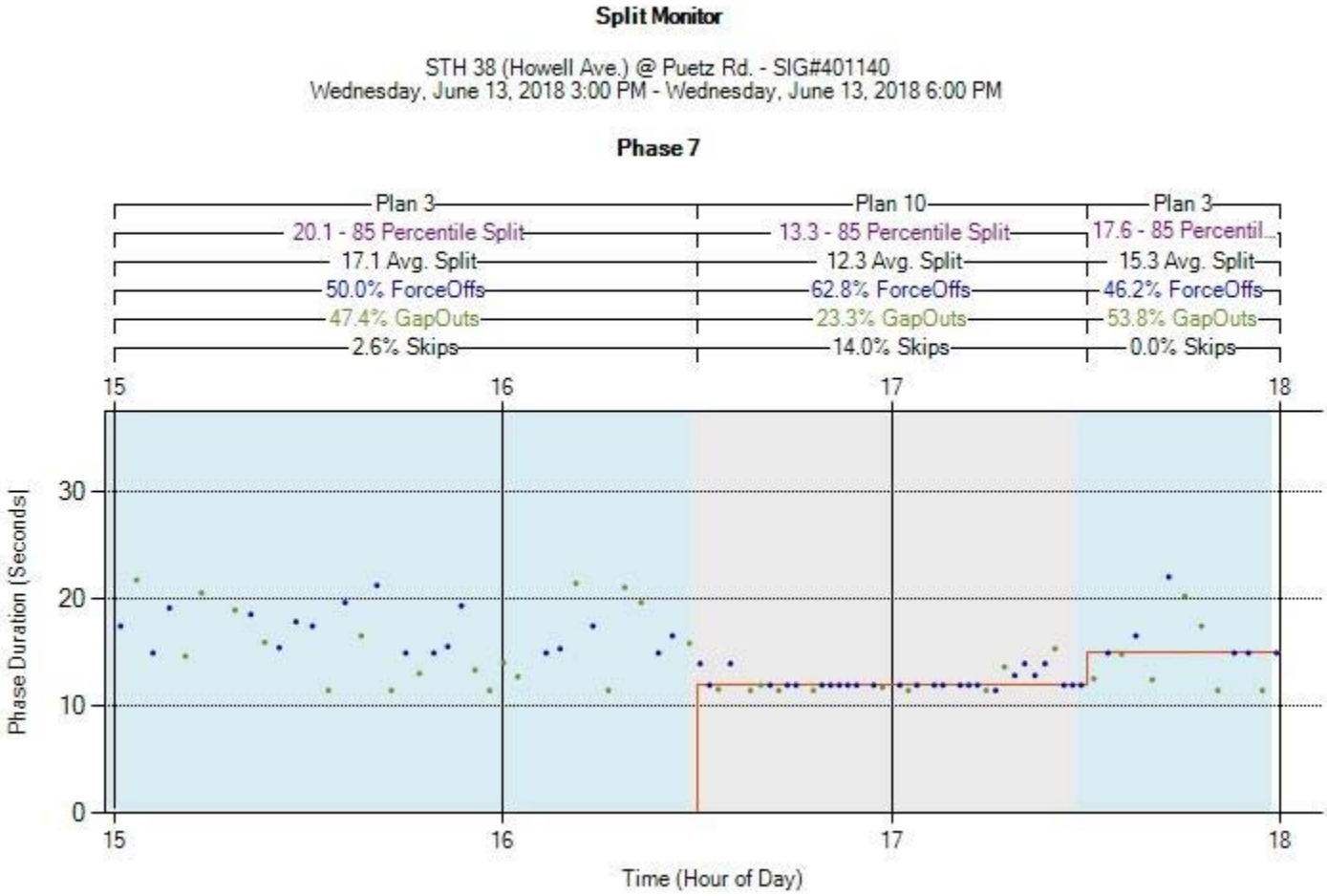
Vistro Timings
6/13/2018 – 3:00 PM – 6:00 PM



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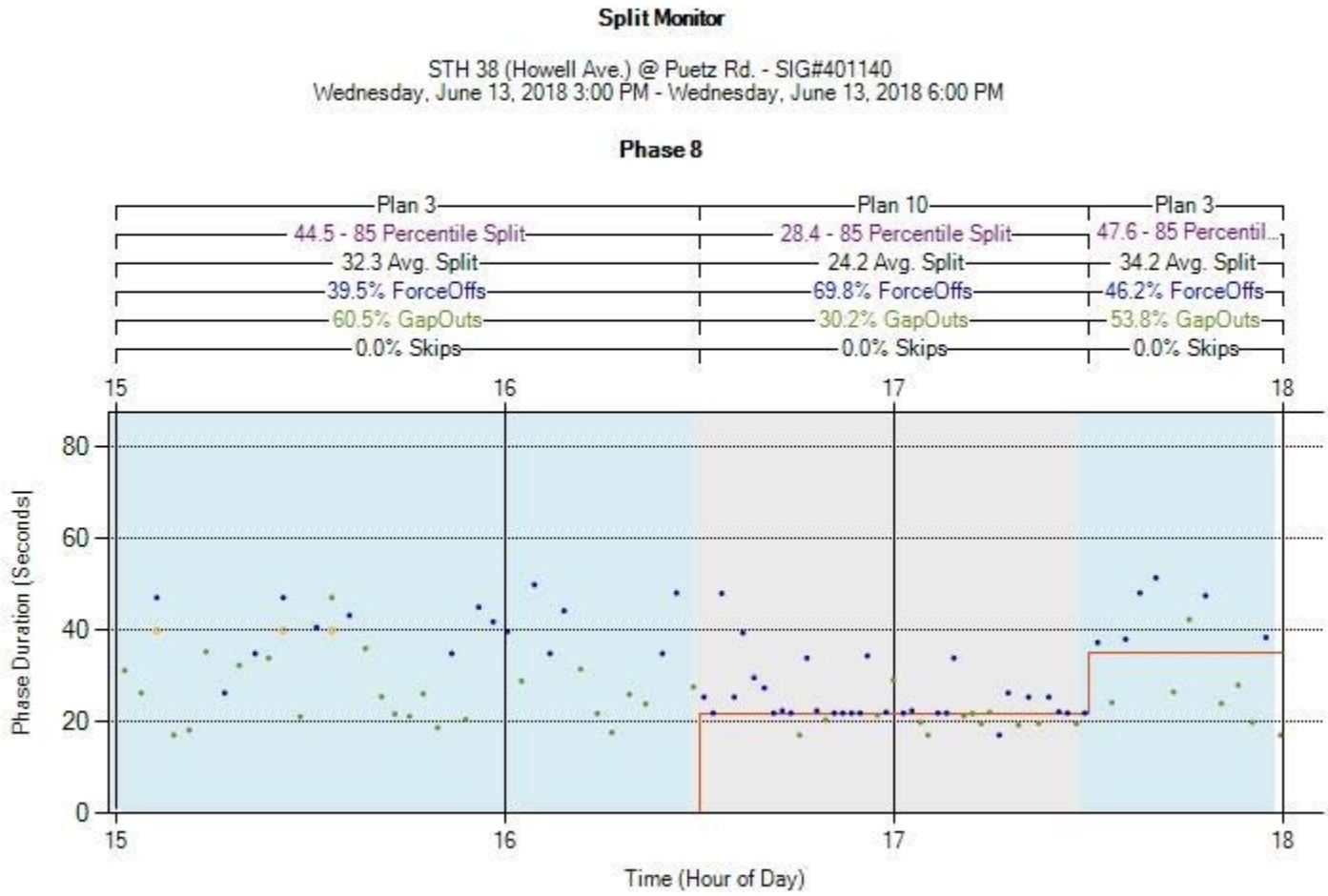

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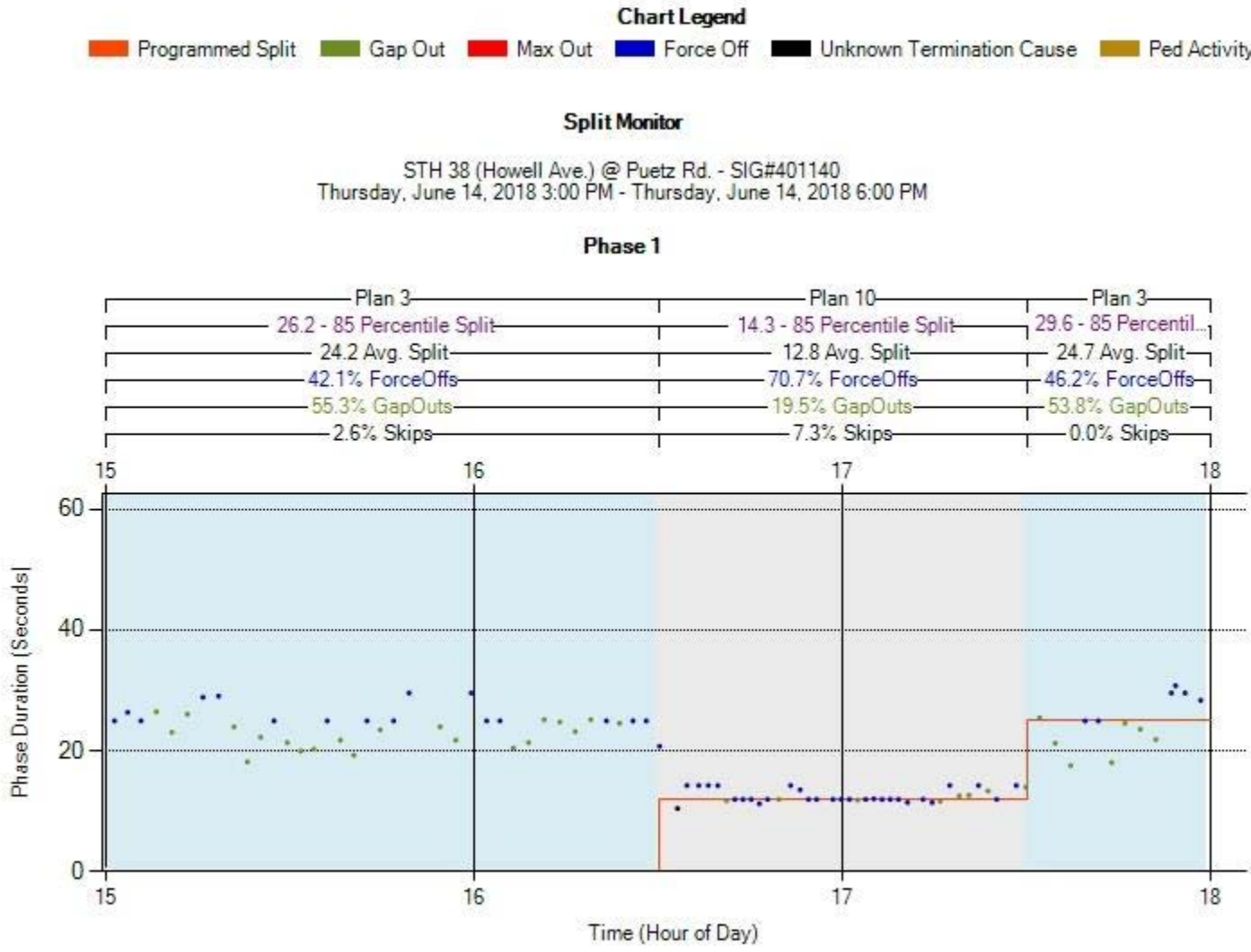
Vistro Timings
6/14/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Puetz Rd.
Vistro Timings
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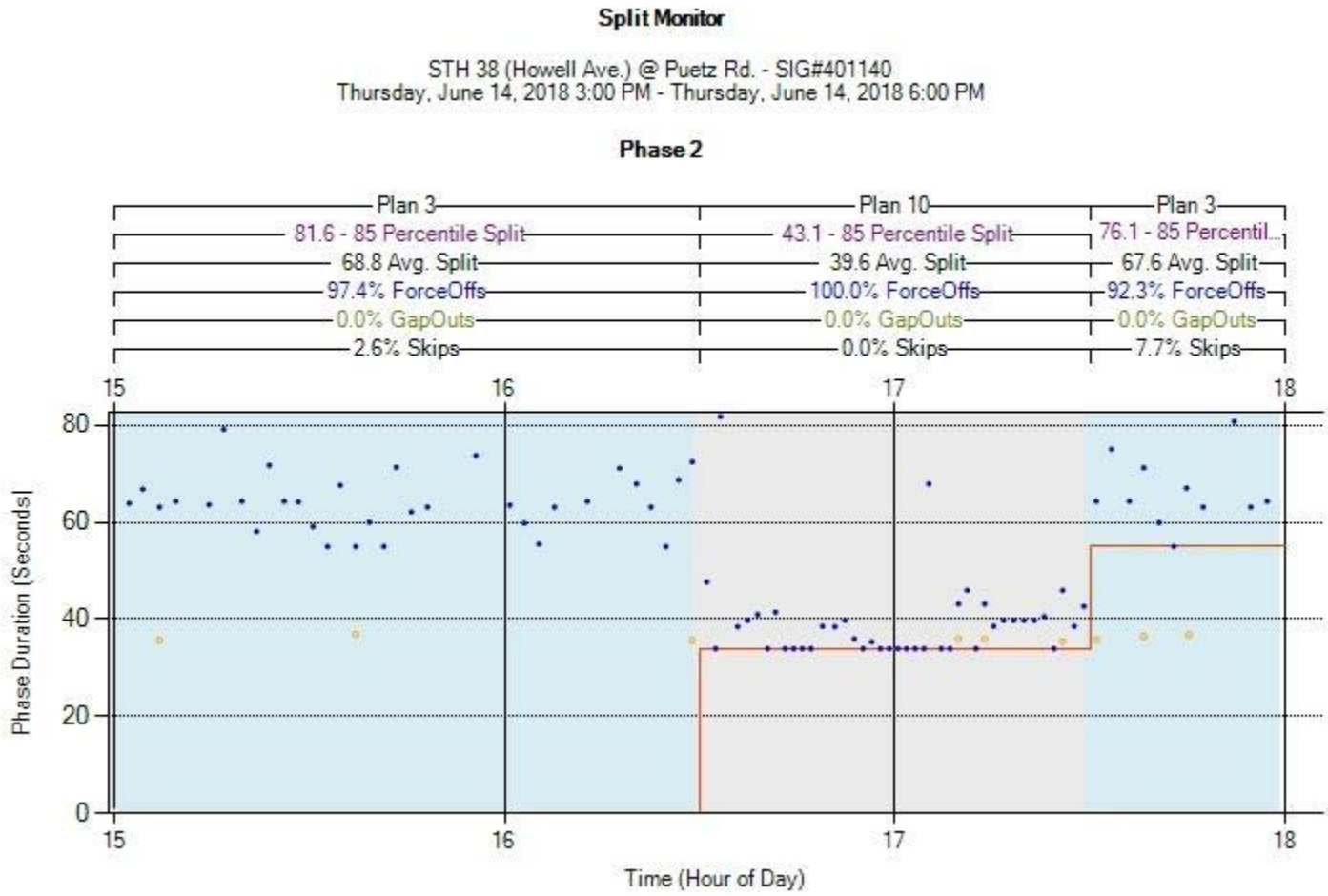

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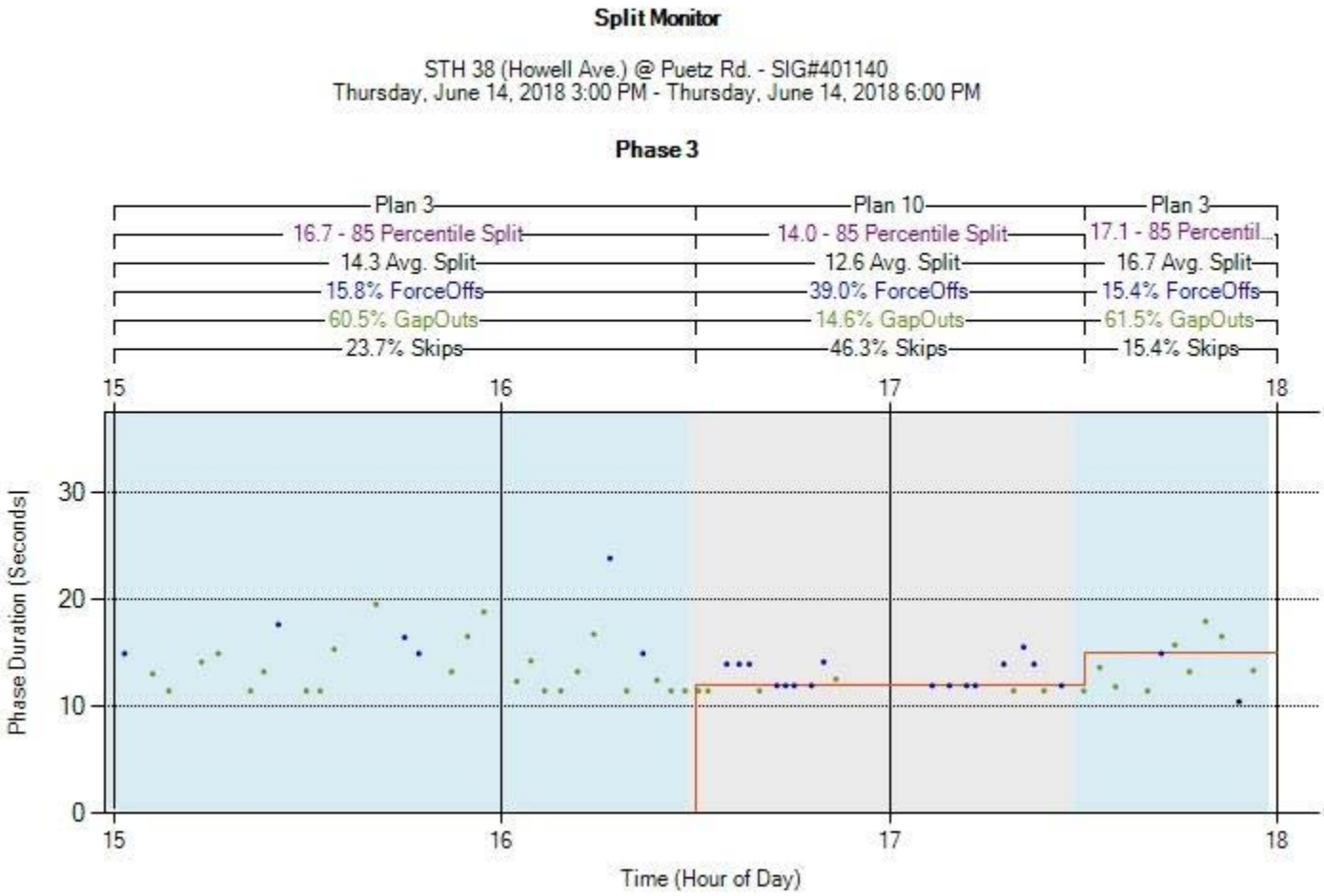

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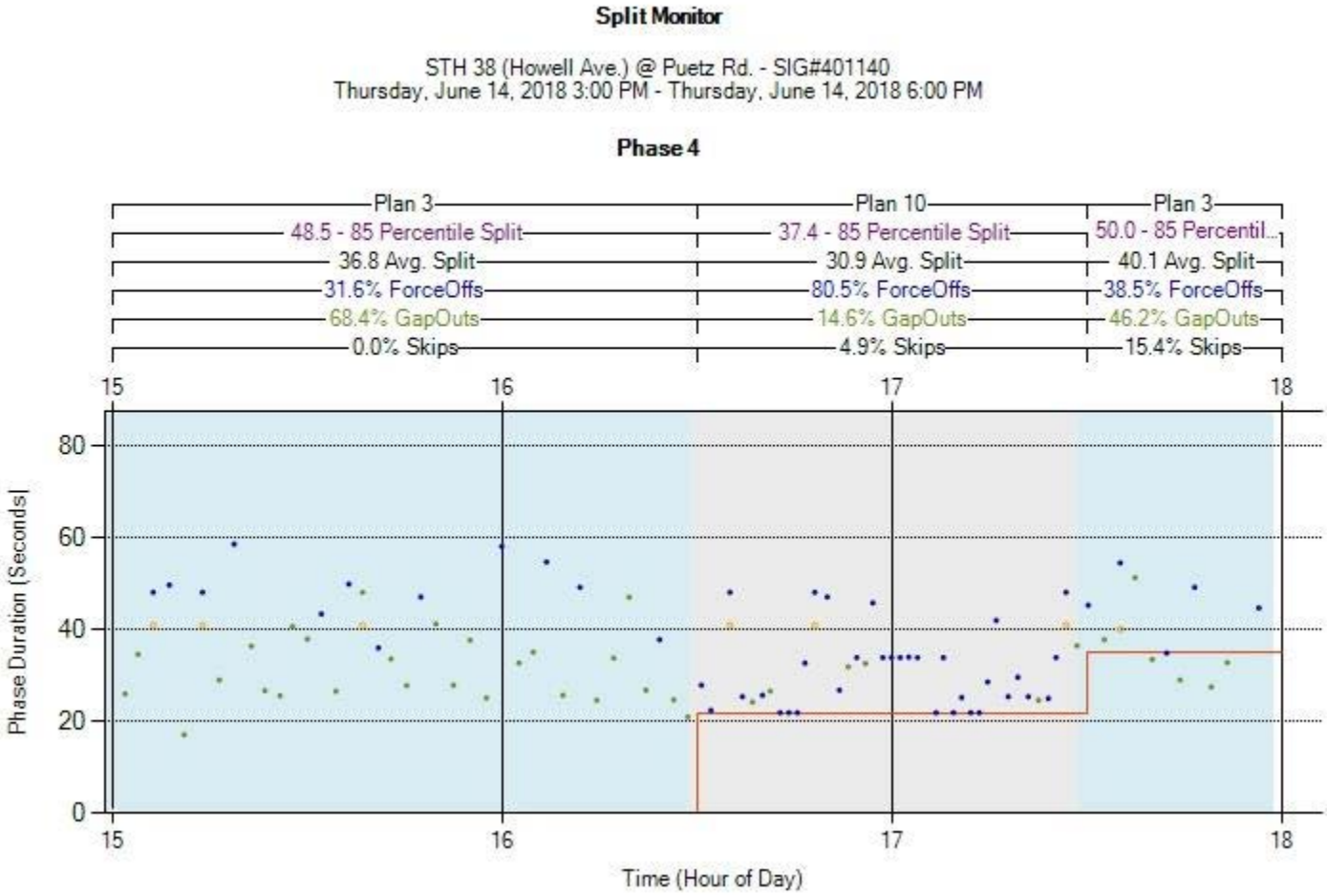

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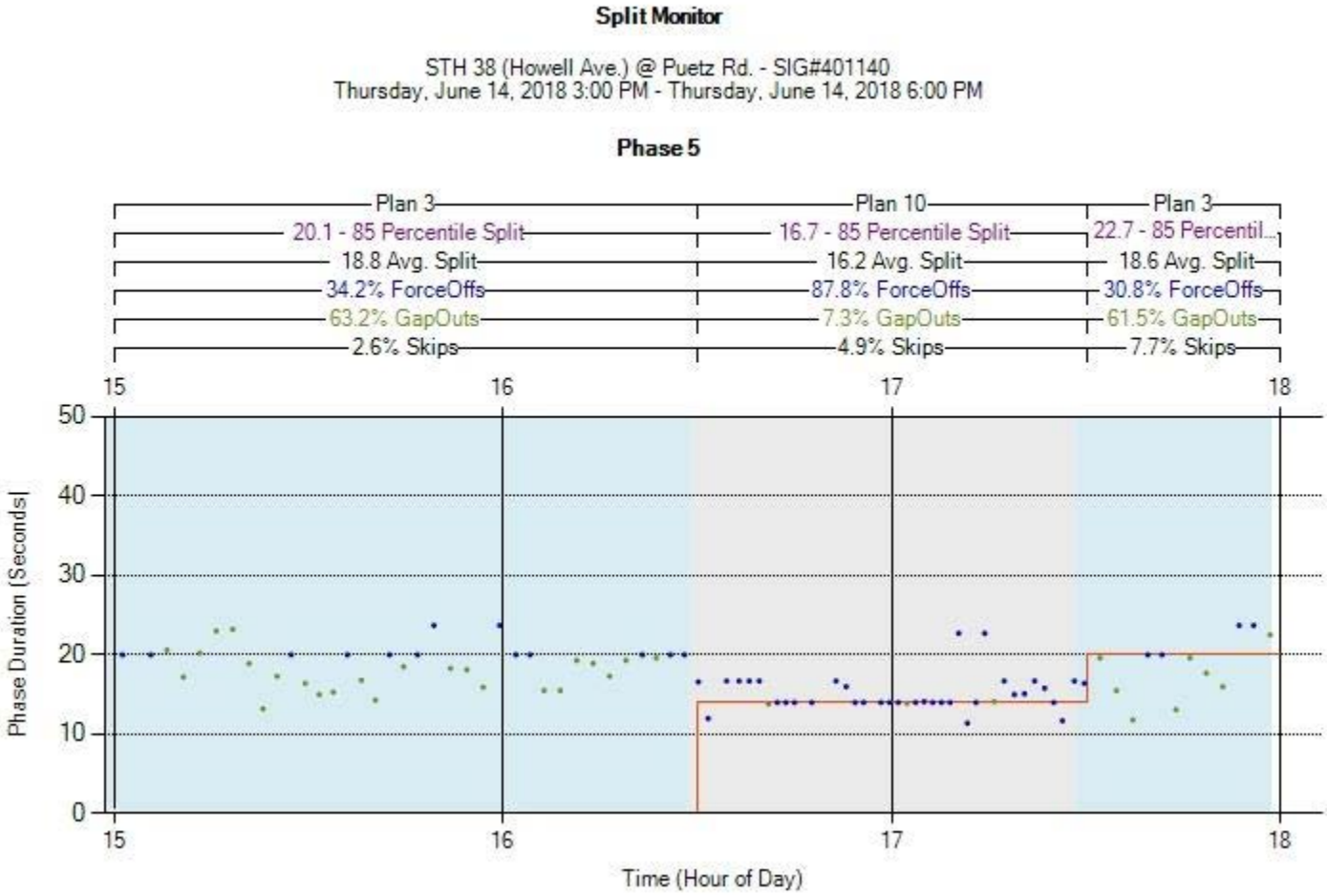

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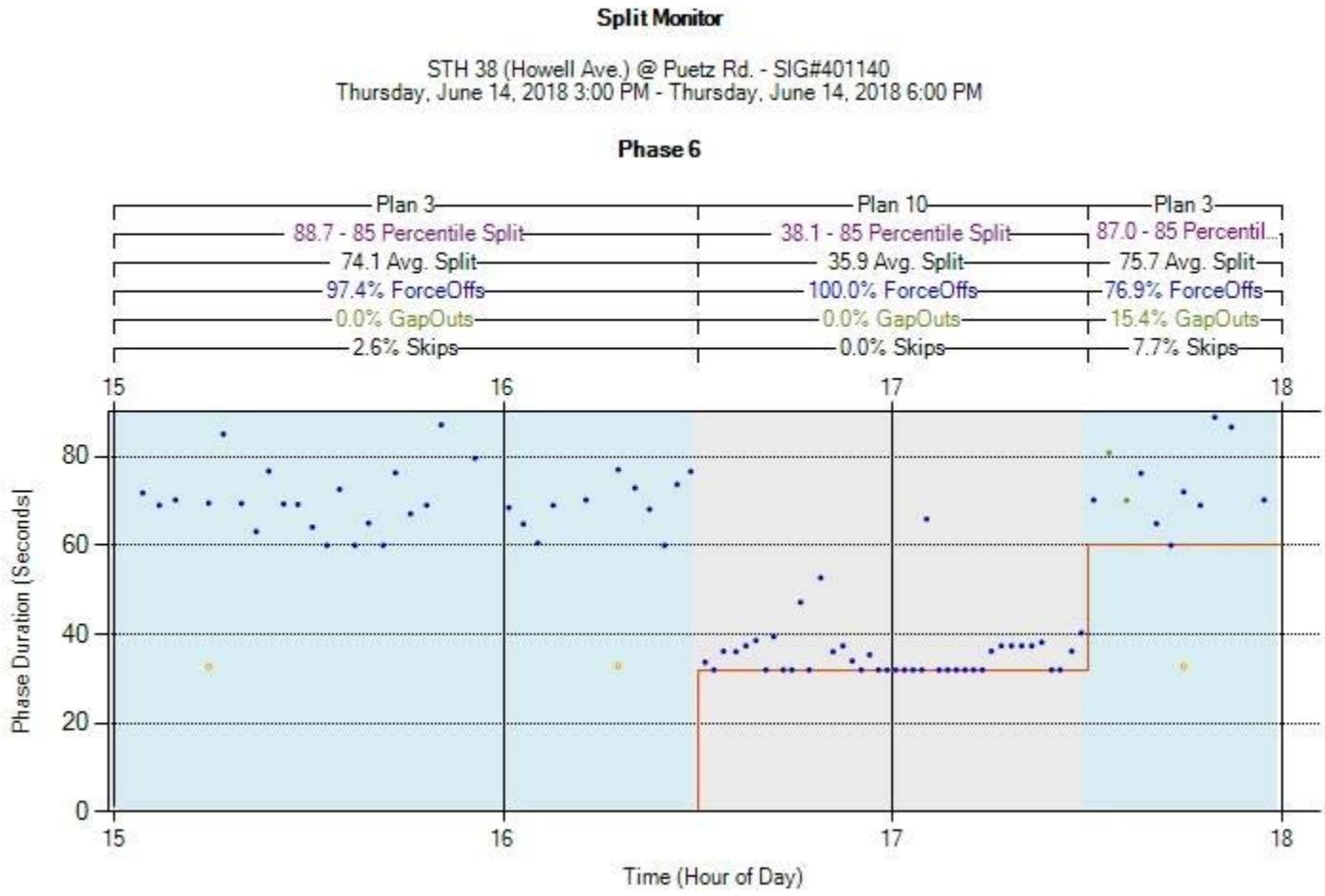

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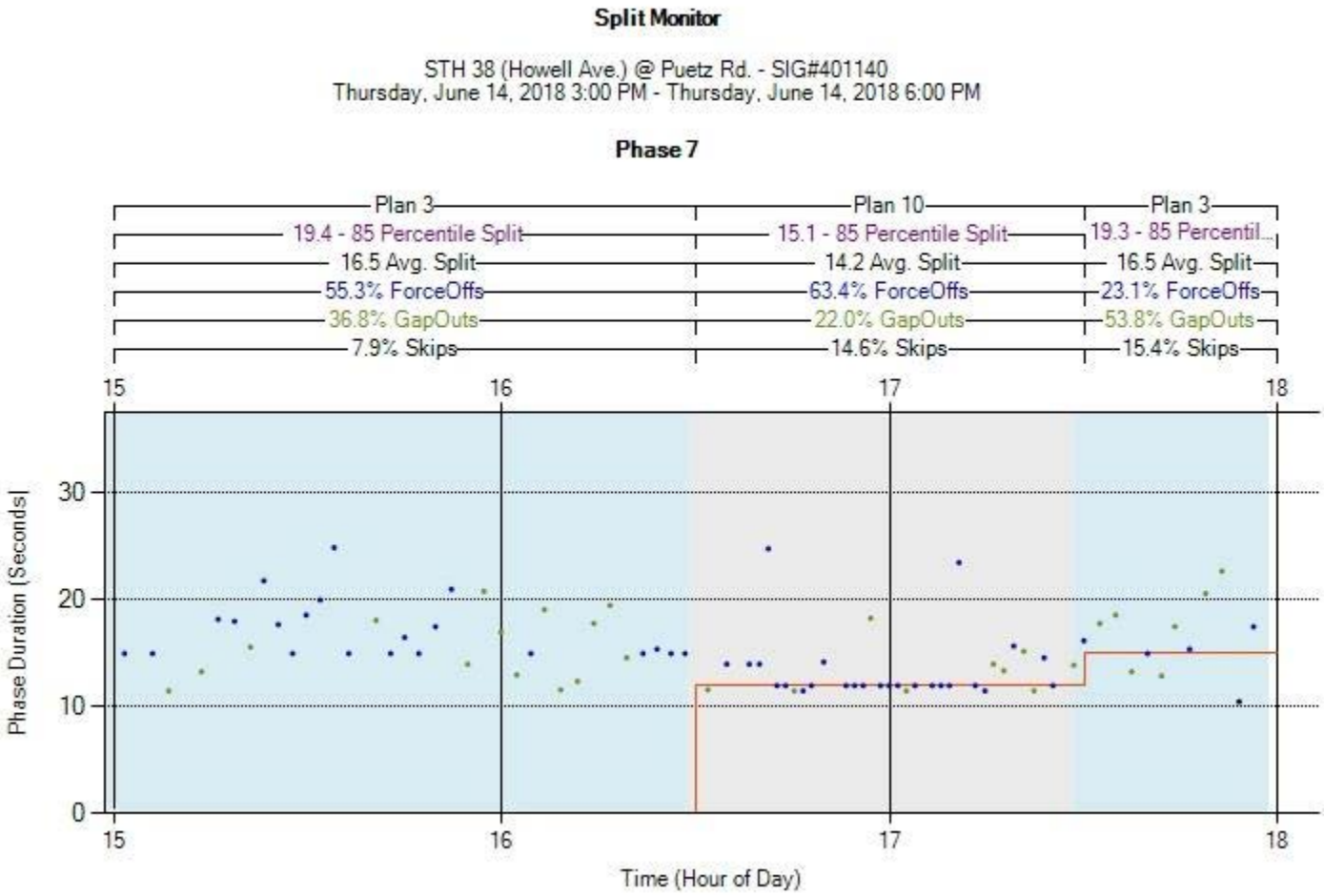
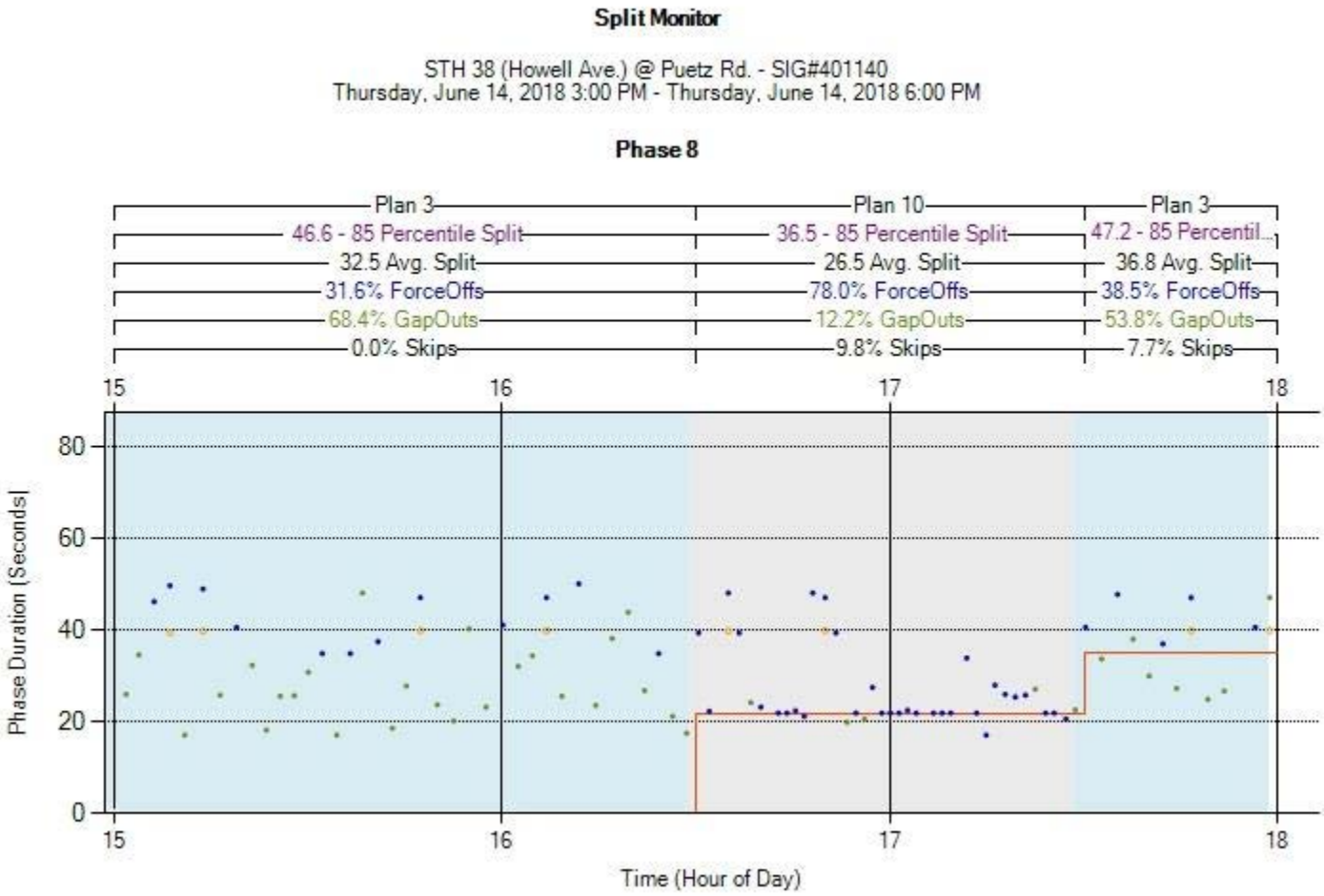
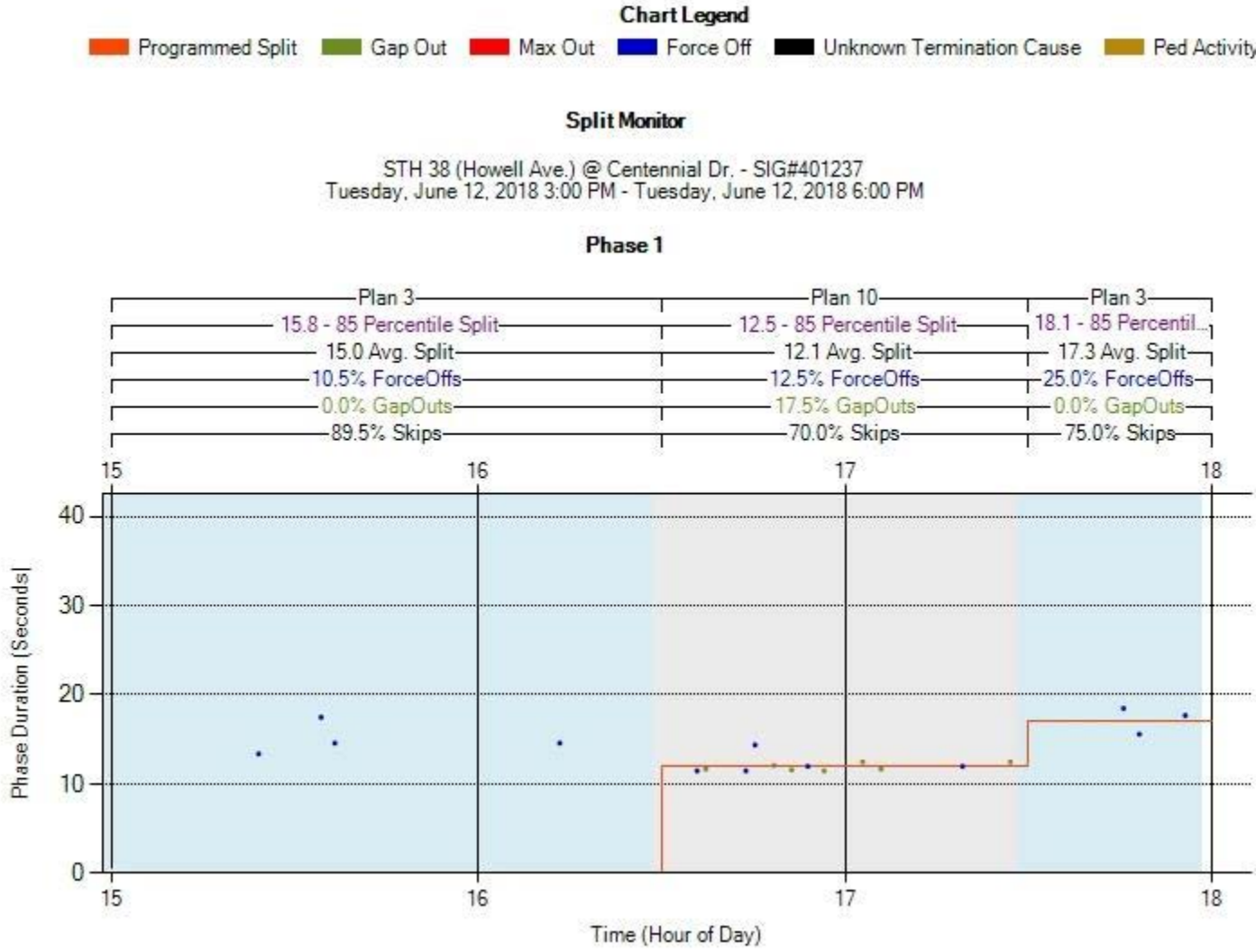


WIS 38 Corridor – STH 38 & Puetz Rd.
Vistro Timings
6/14/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Centennial Dr.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM



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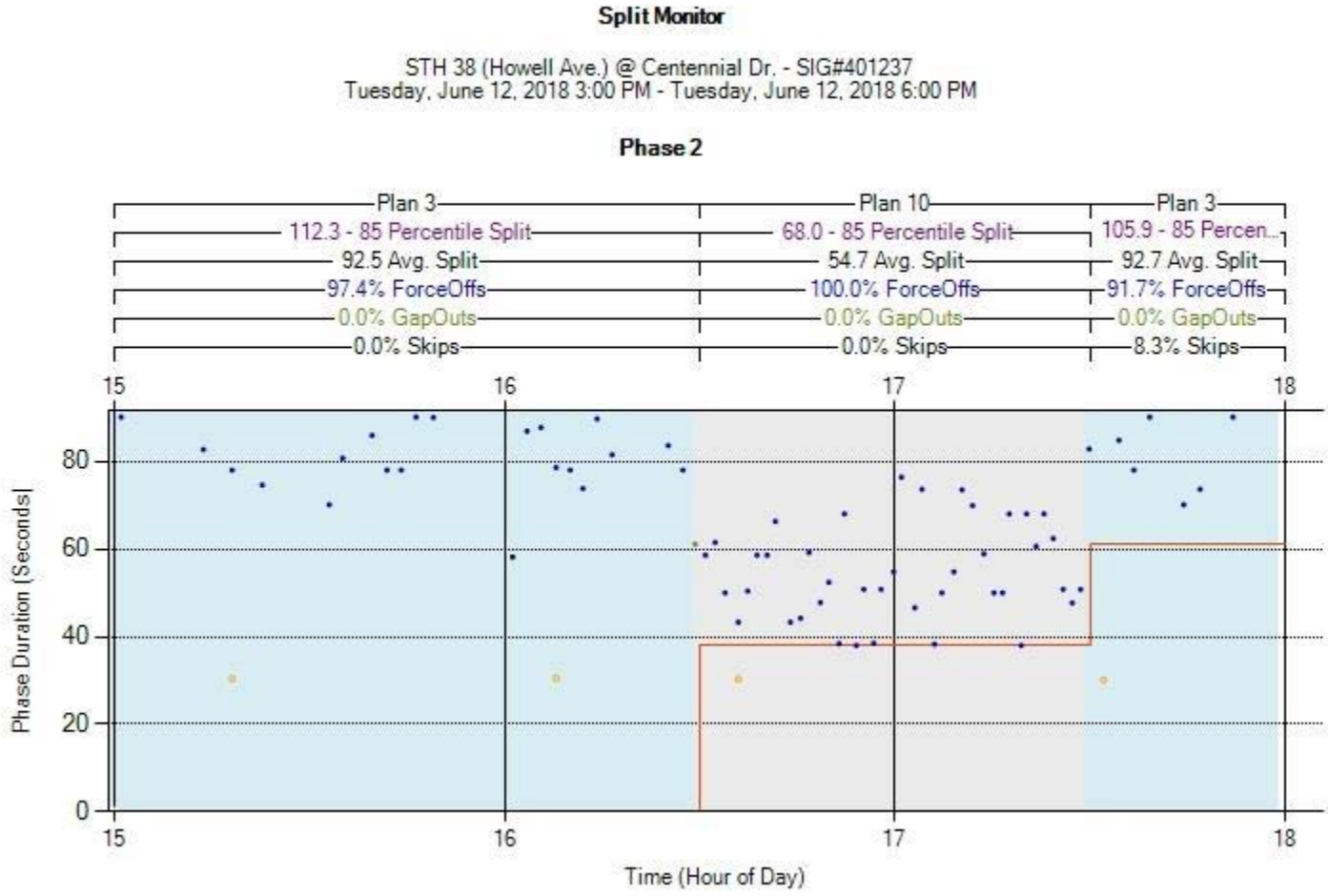
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM



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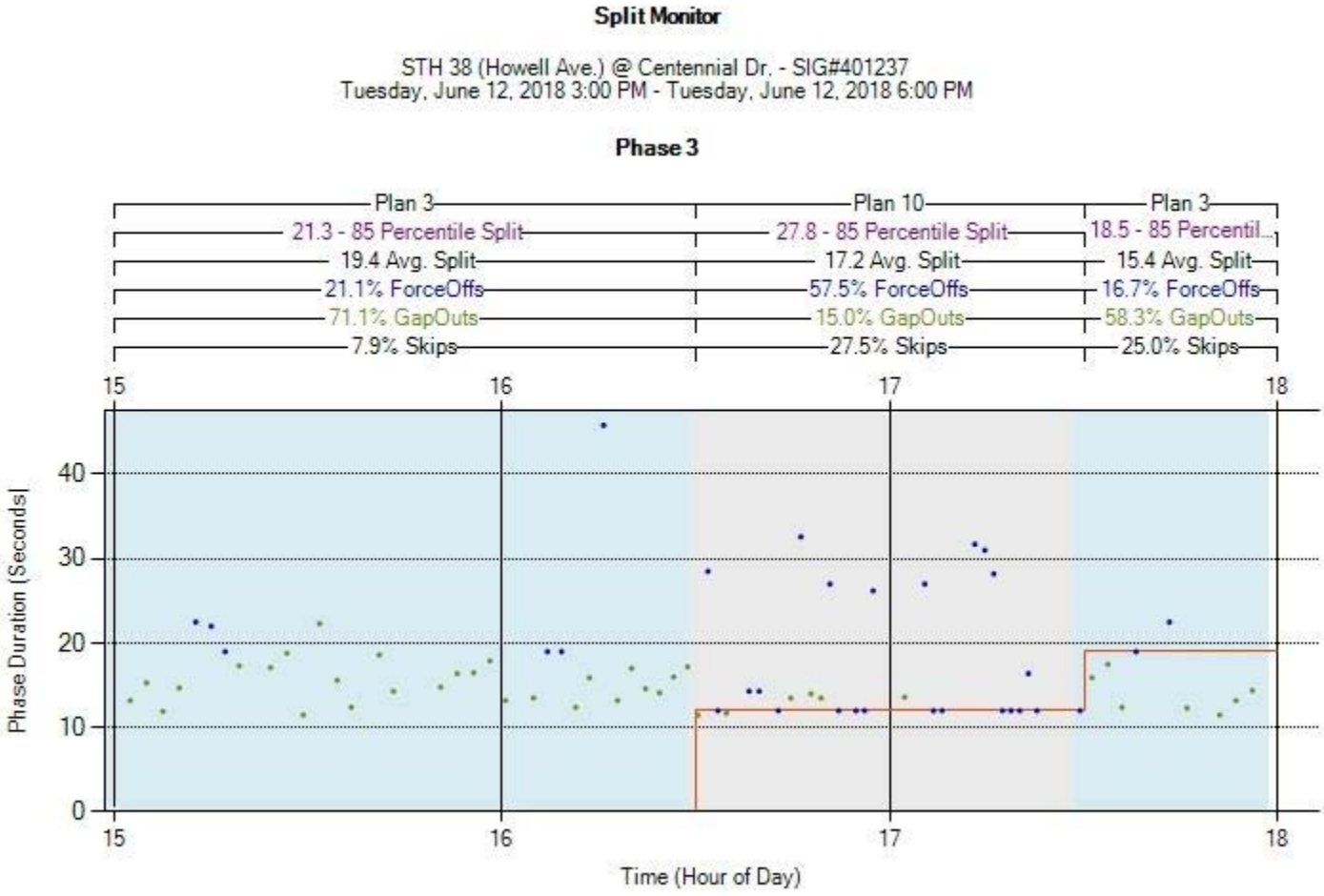

WIS 38 Corridor – STH 38 & Centennial Dr.
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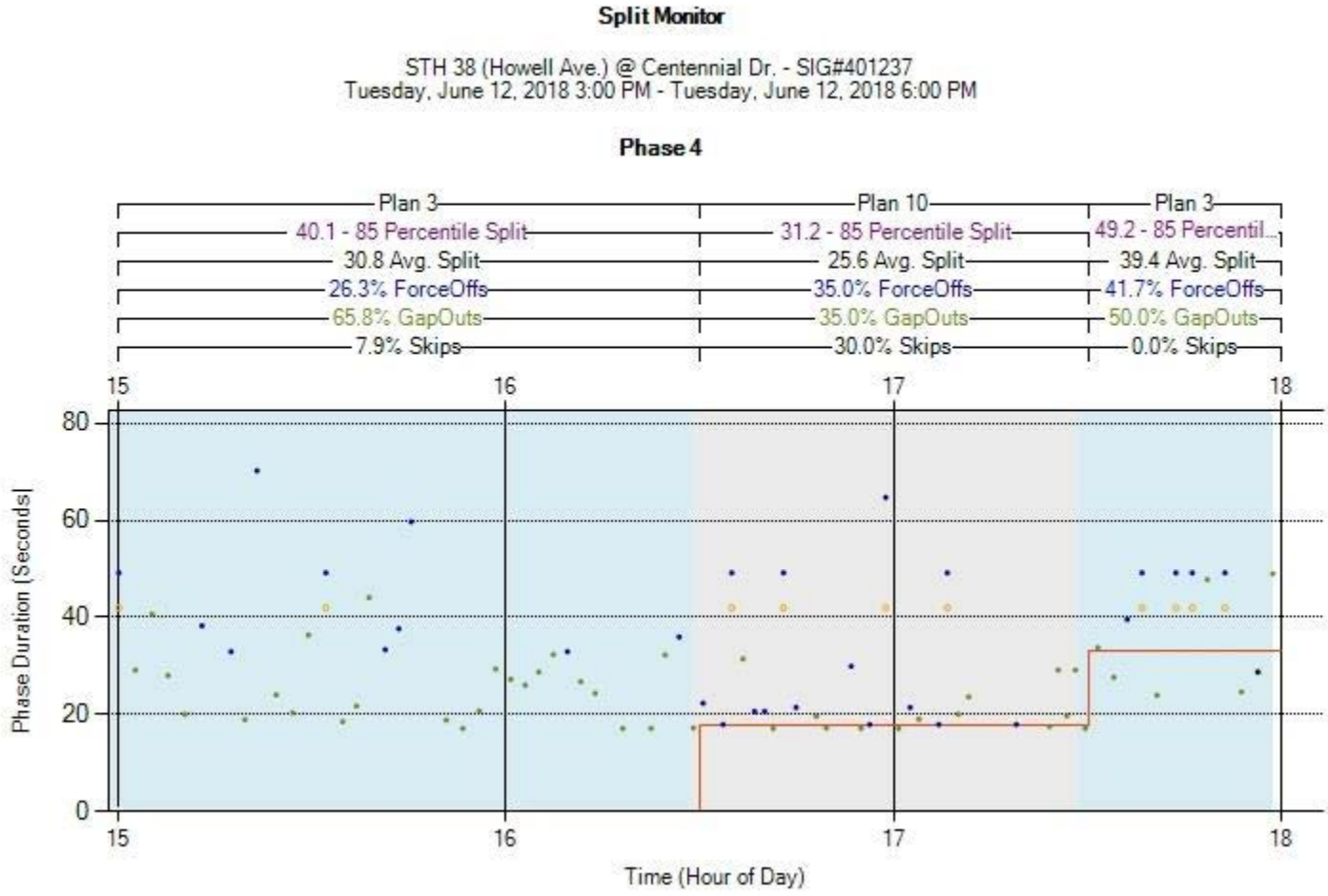
6/12/2018 – 3:00 PM – 6:00 PM



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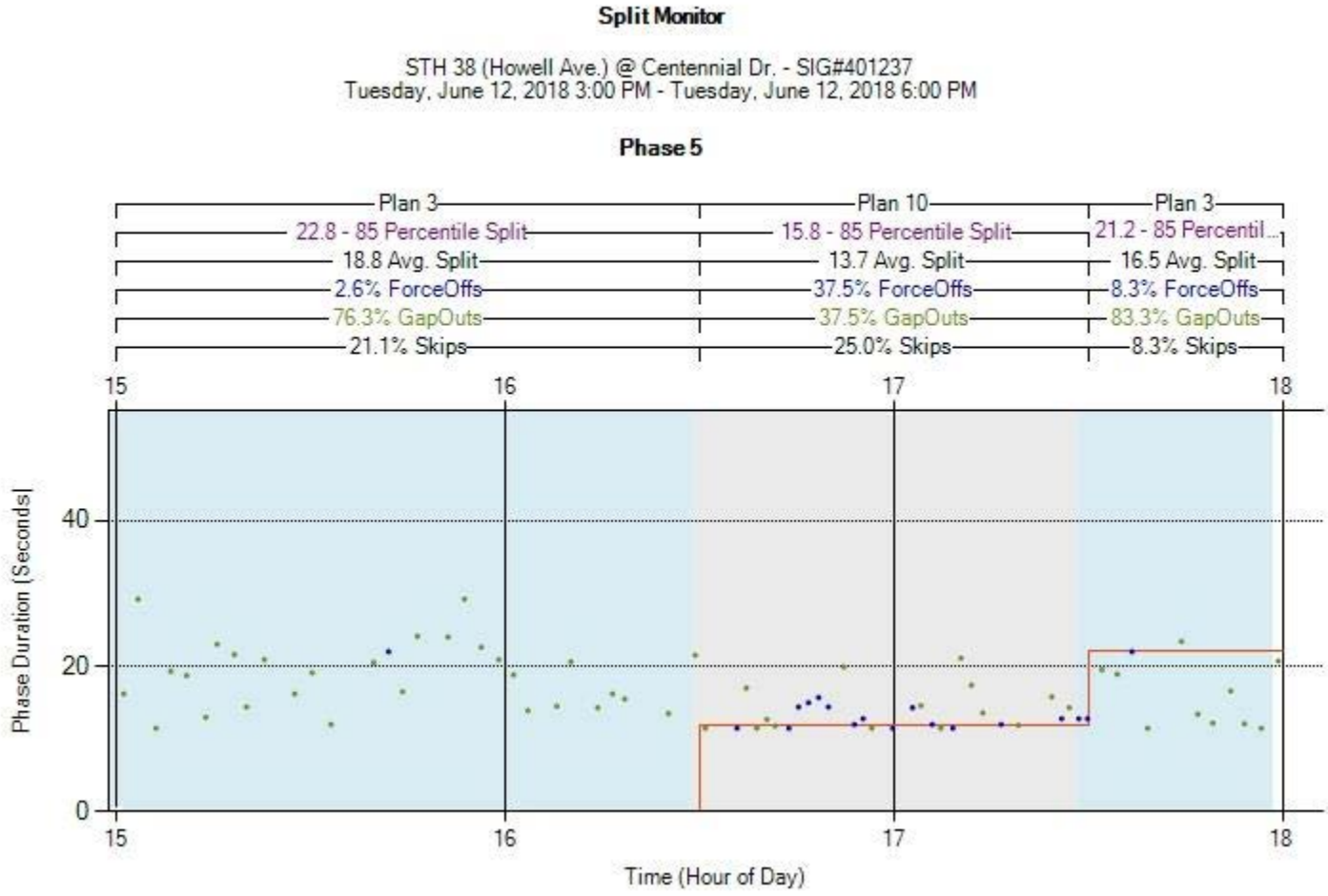

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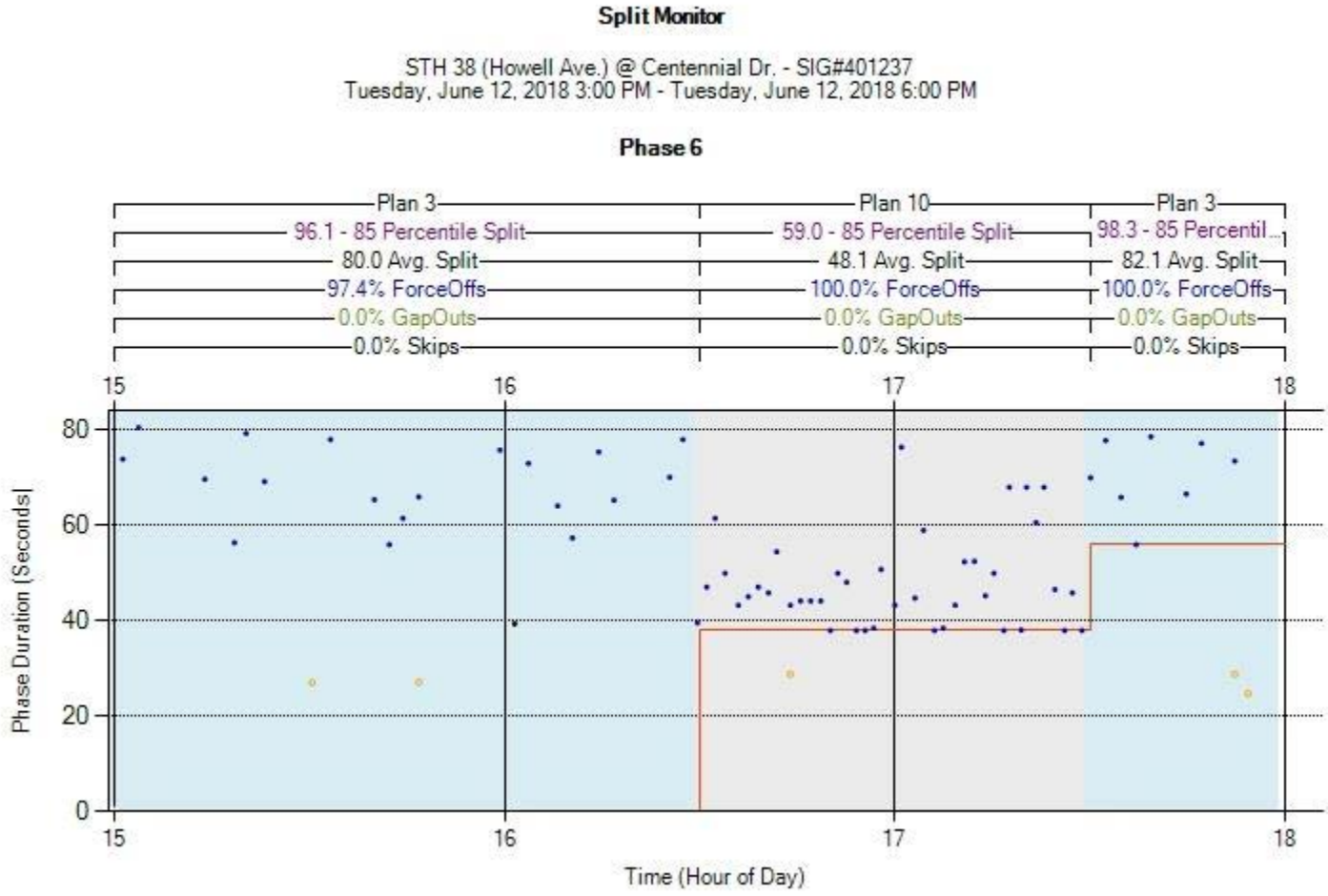

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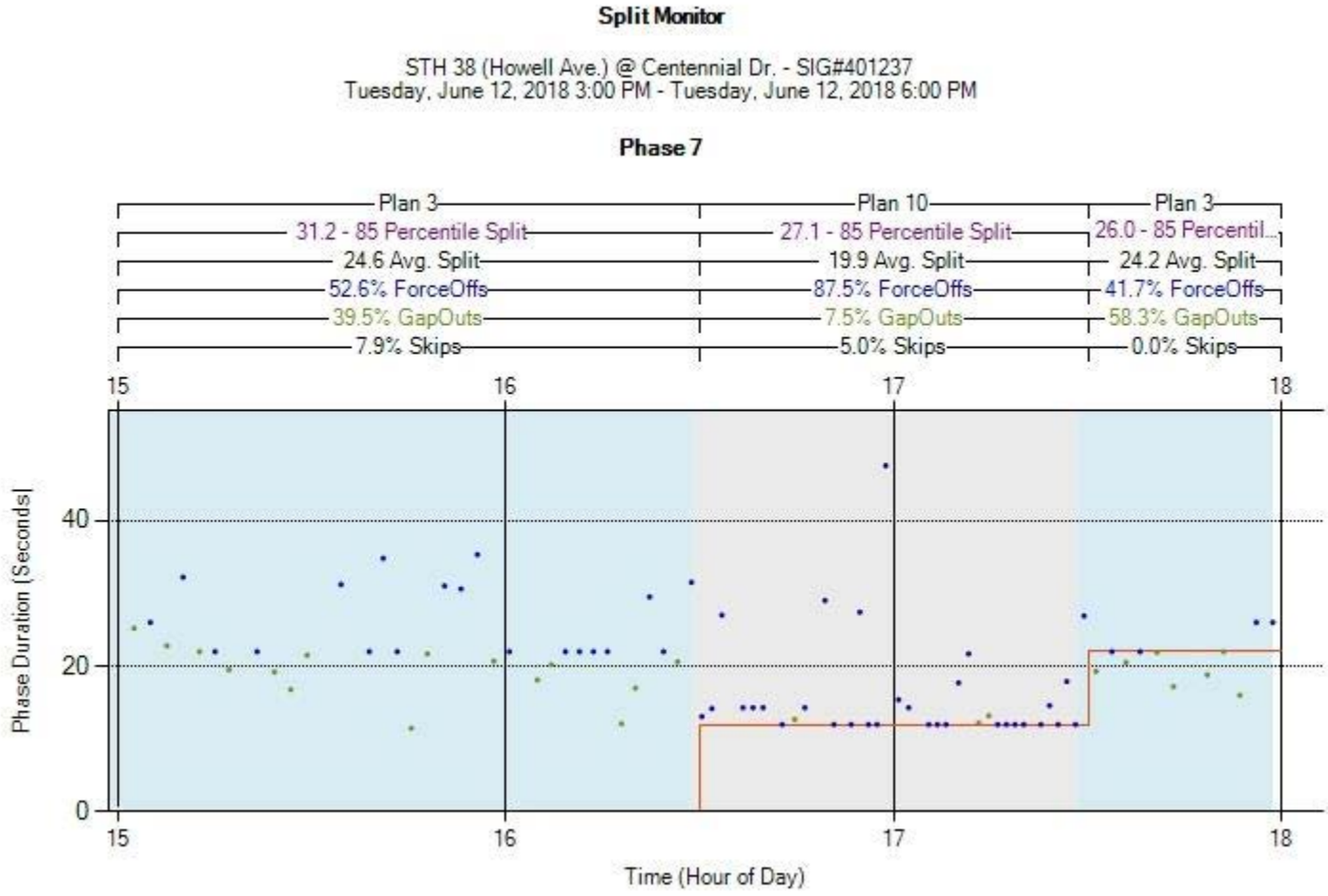

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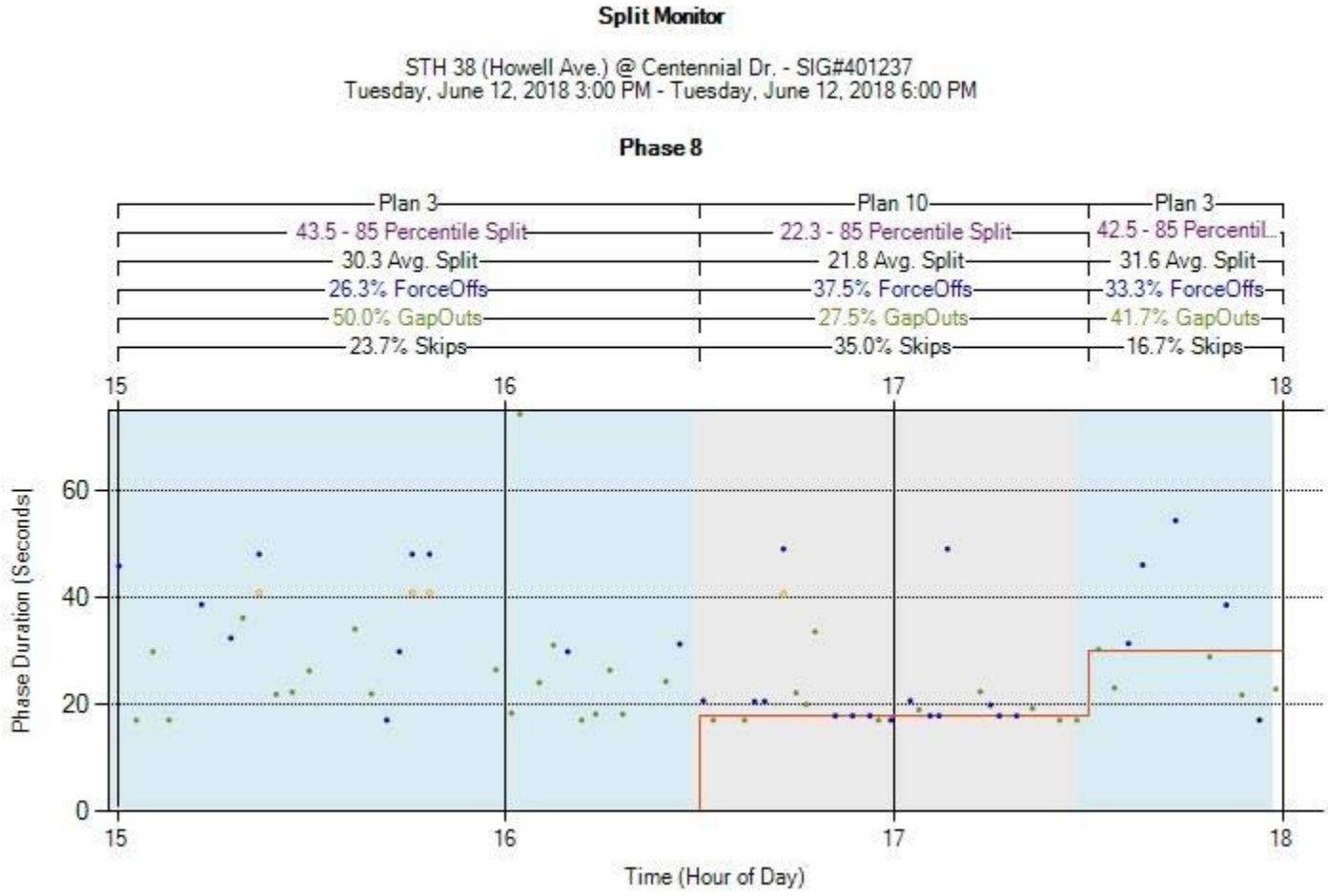

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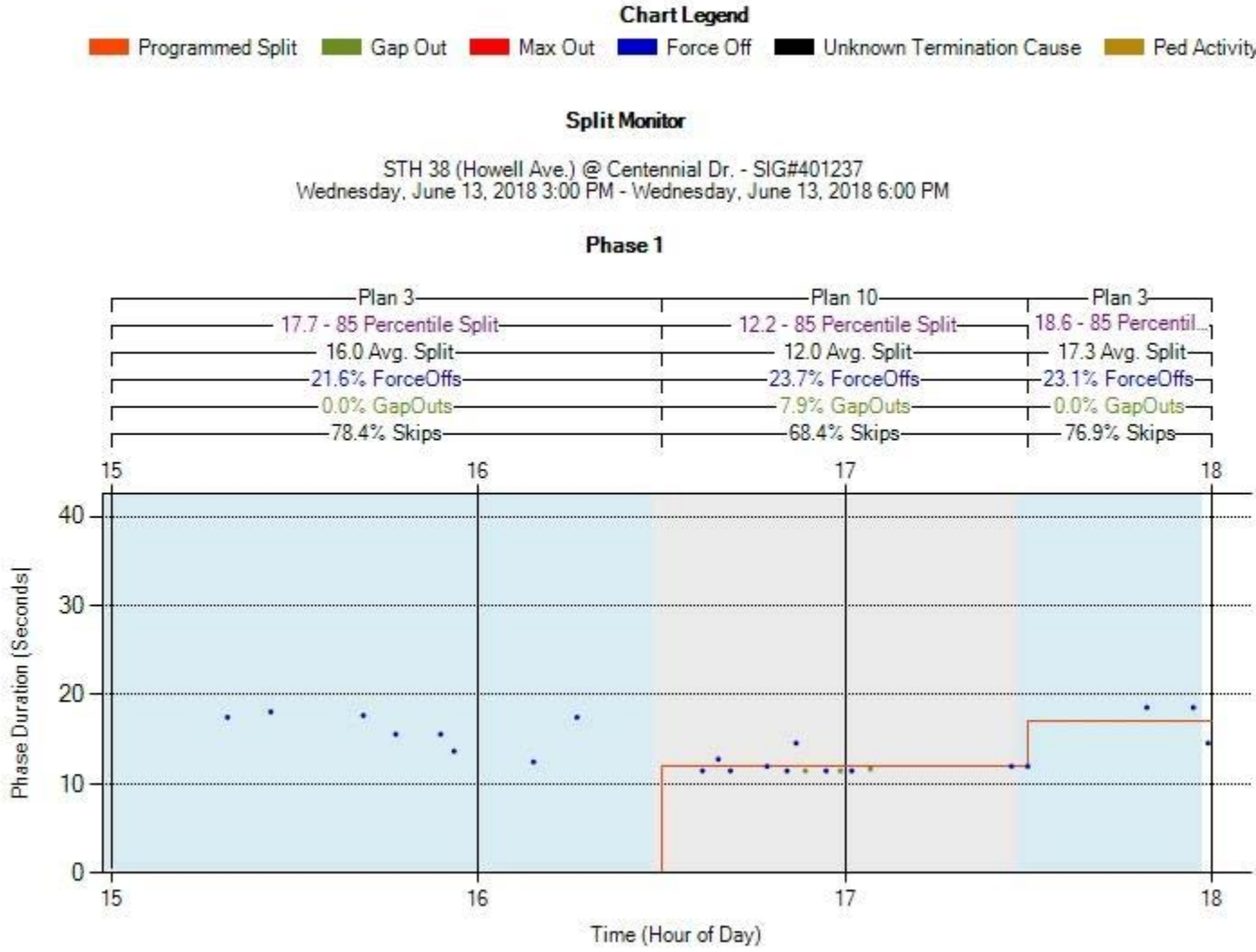

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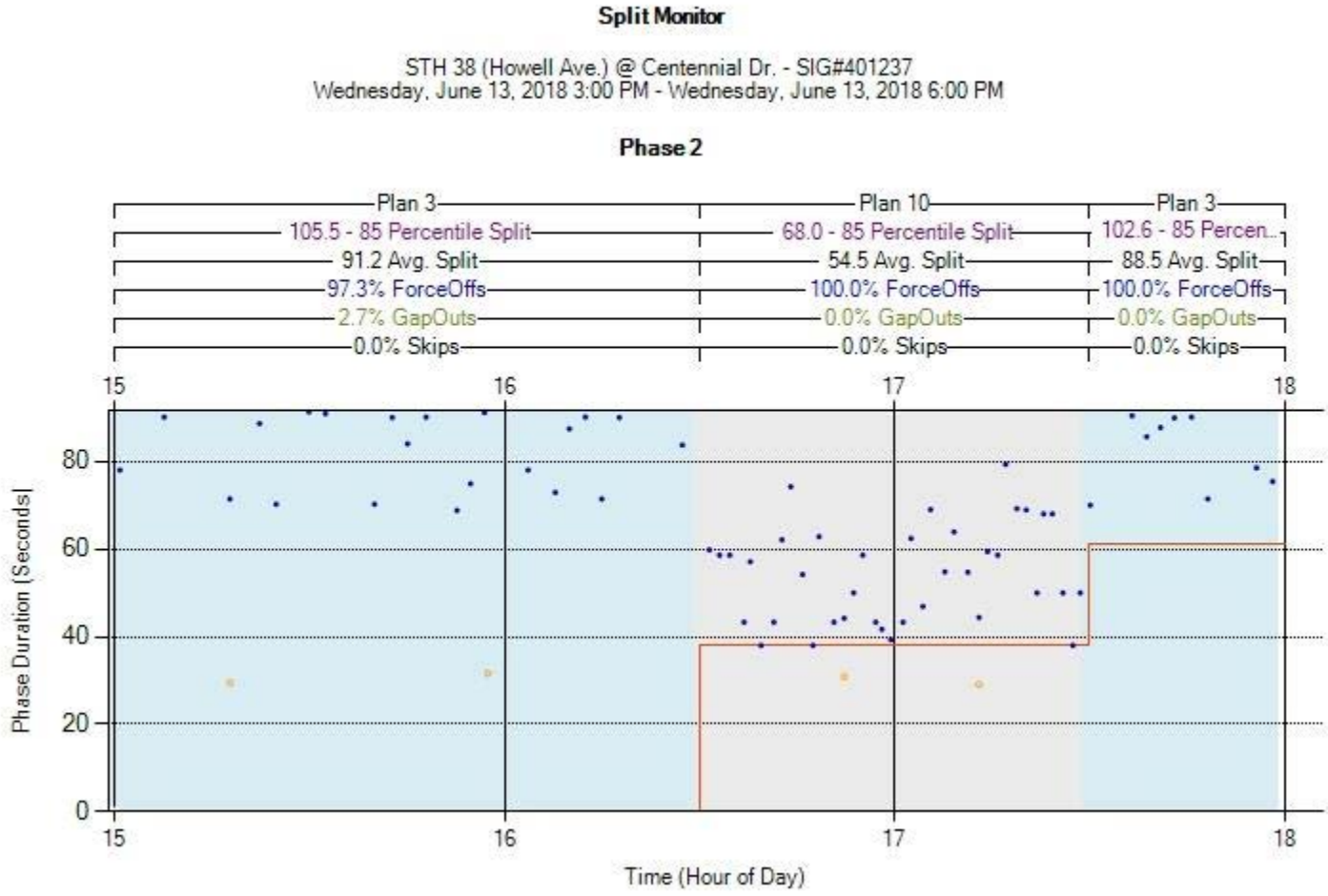

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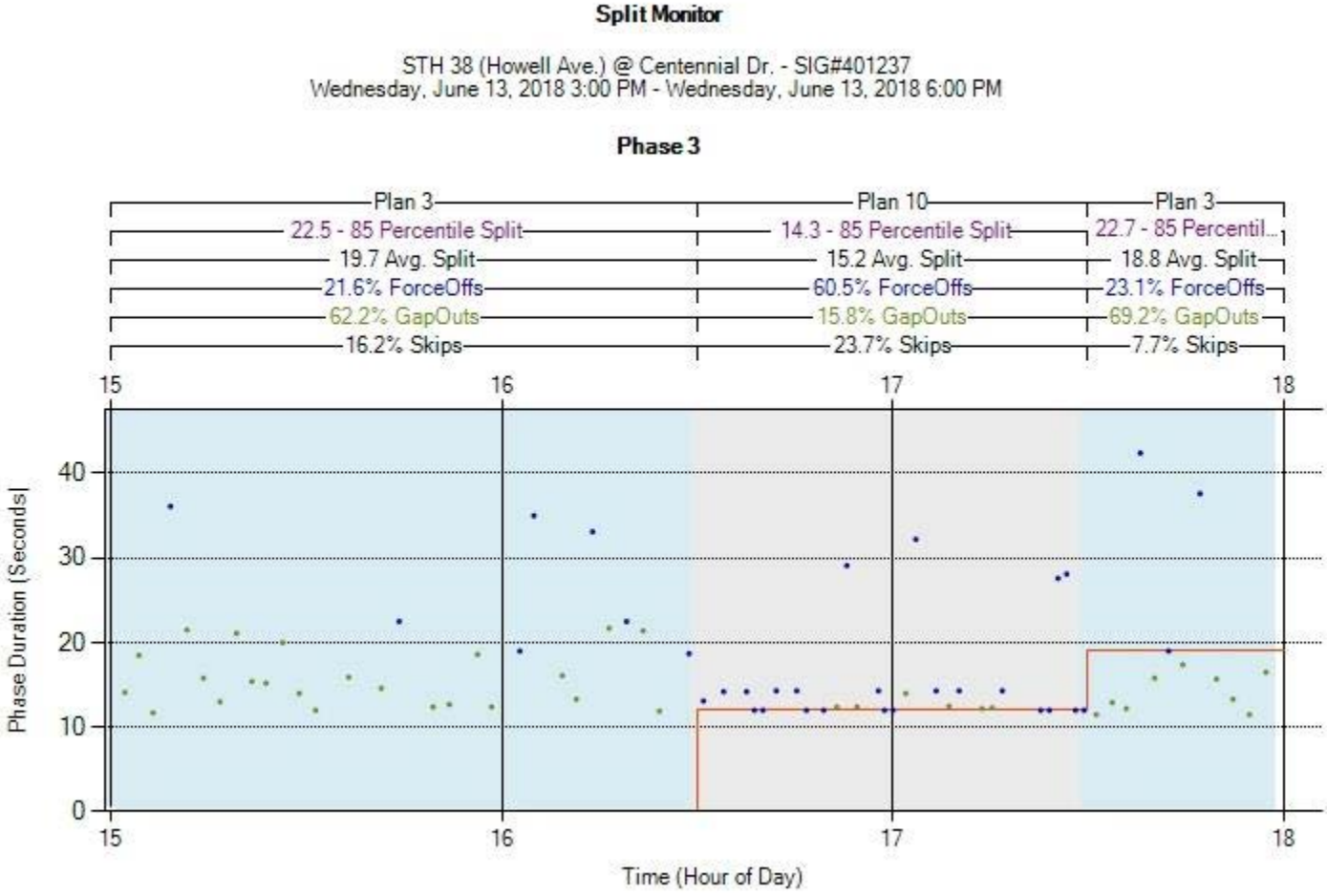

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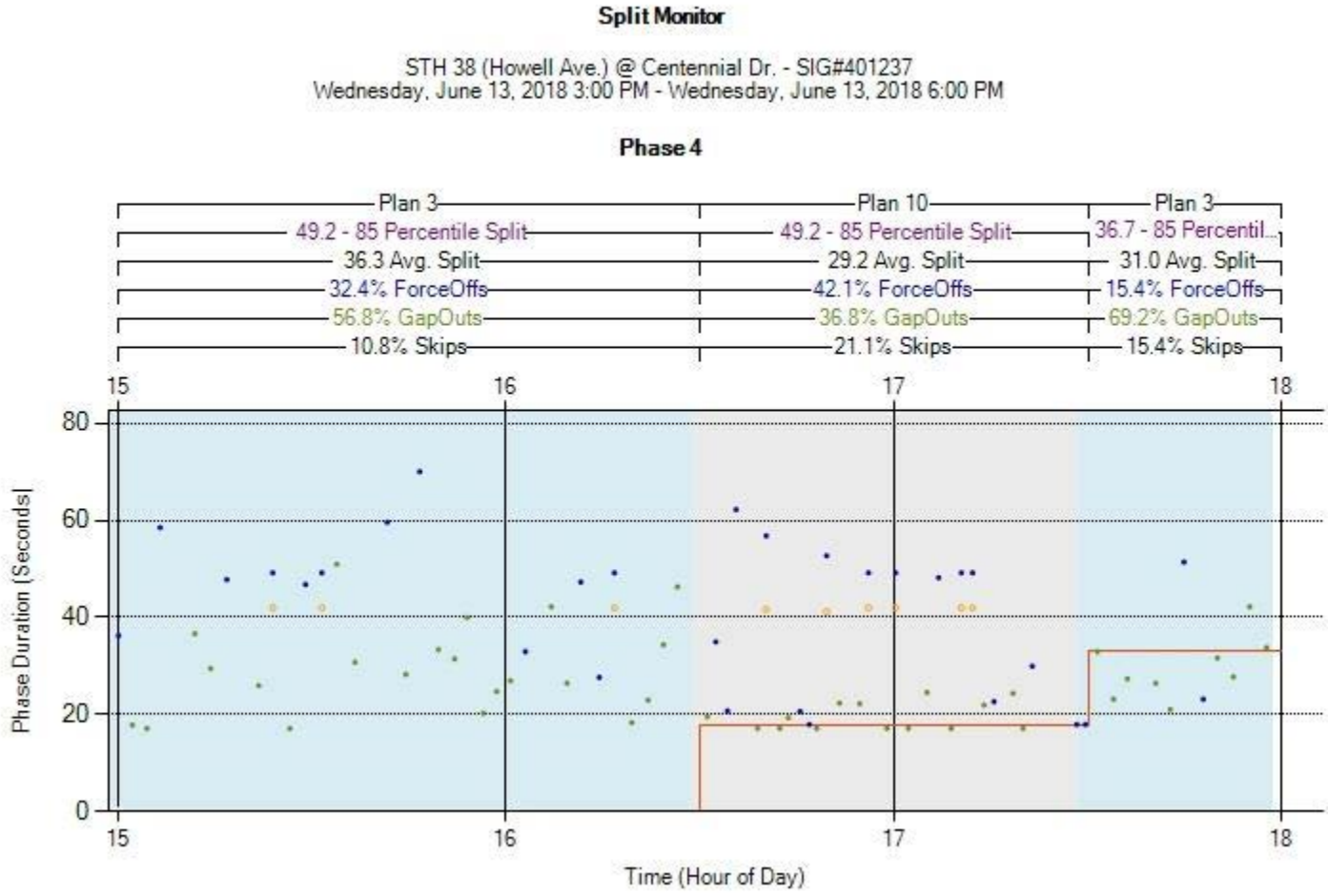

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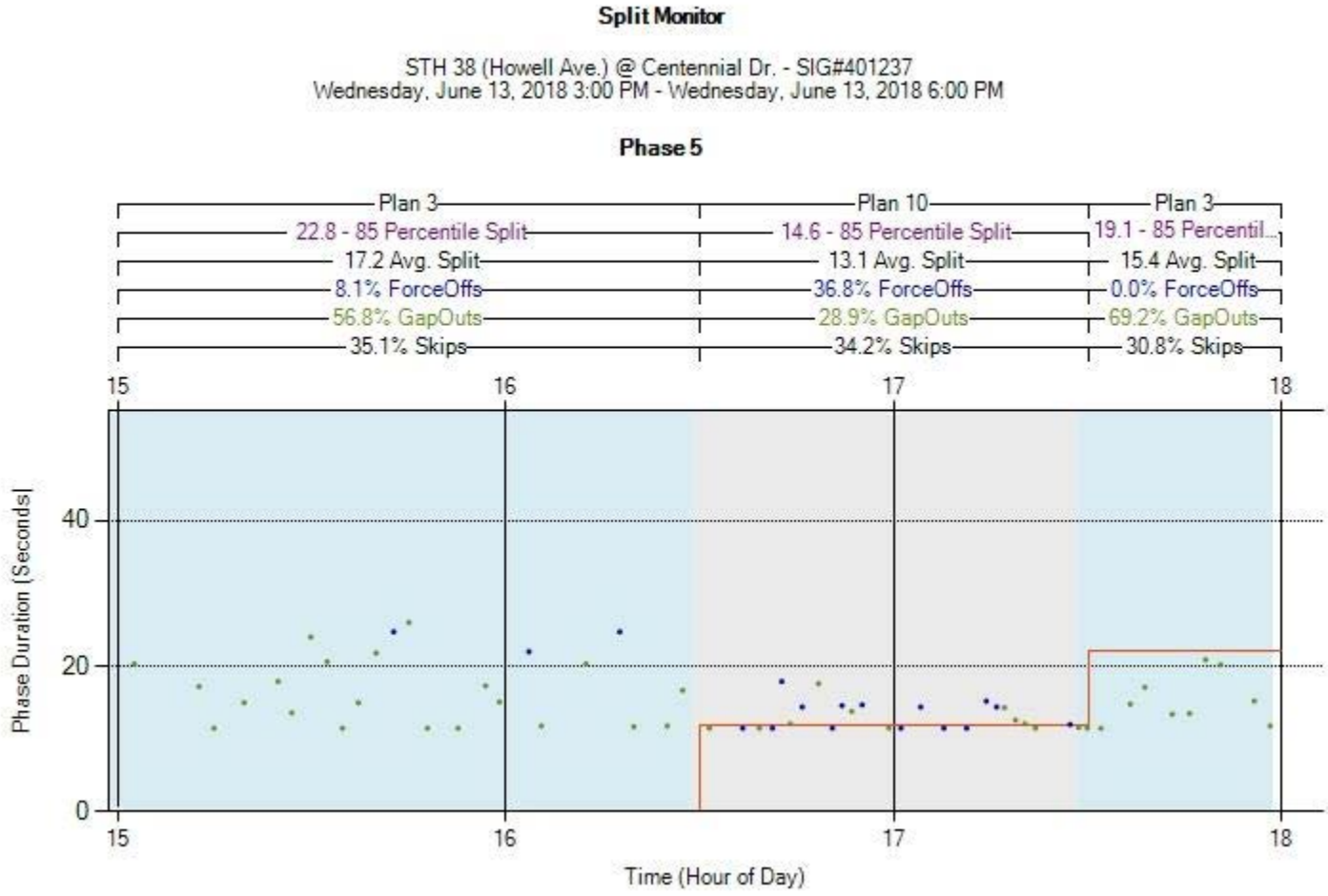
Vistro Timings
6/13/2018 – 3:00 PM – 6:00 PM



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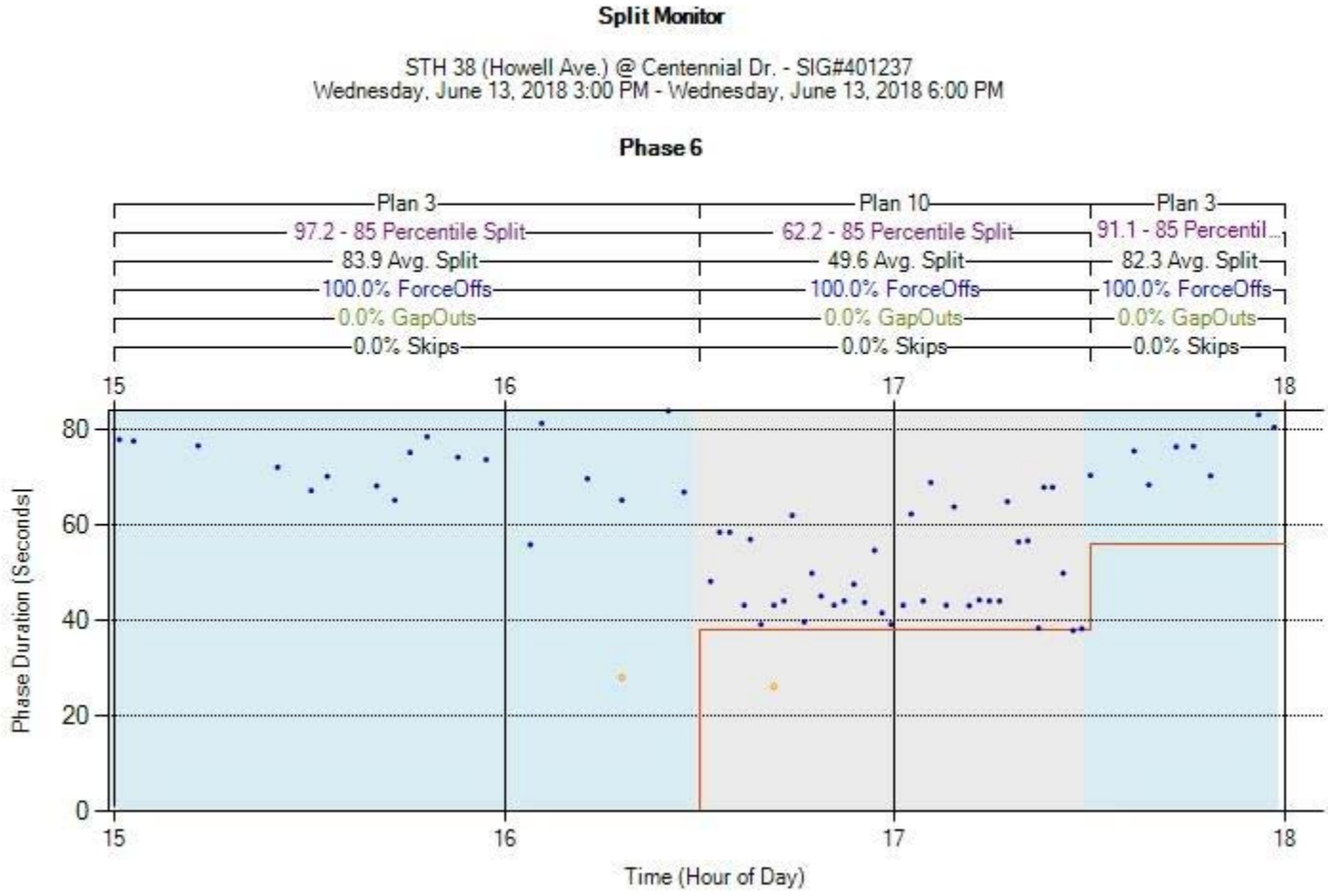

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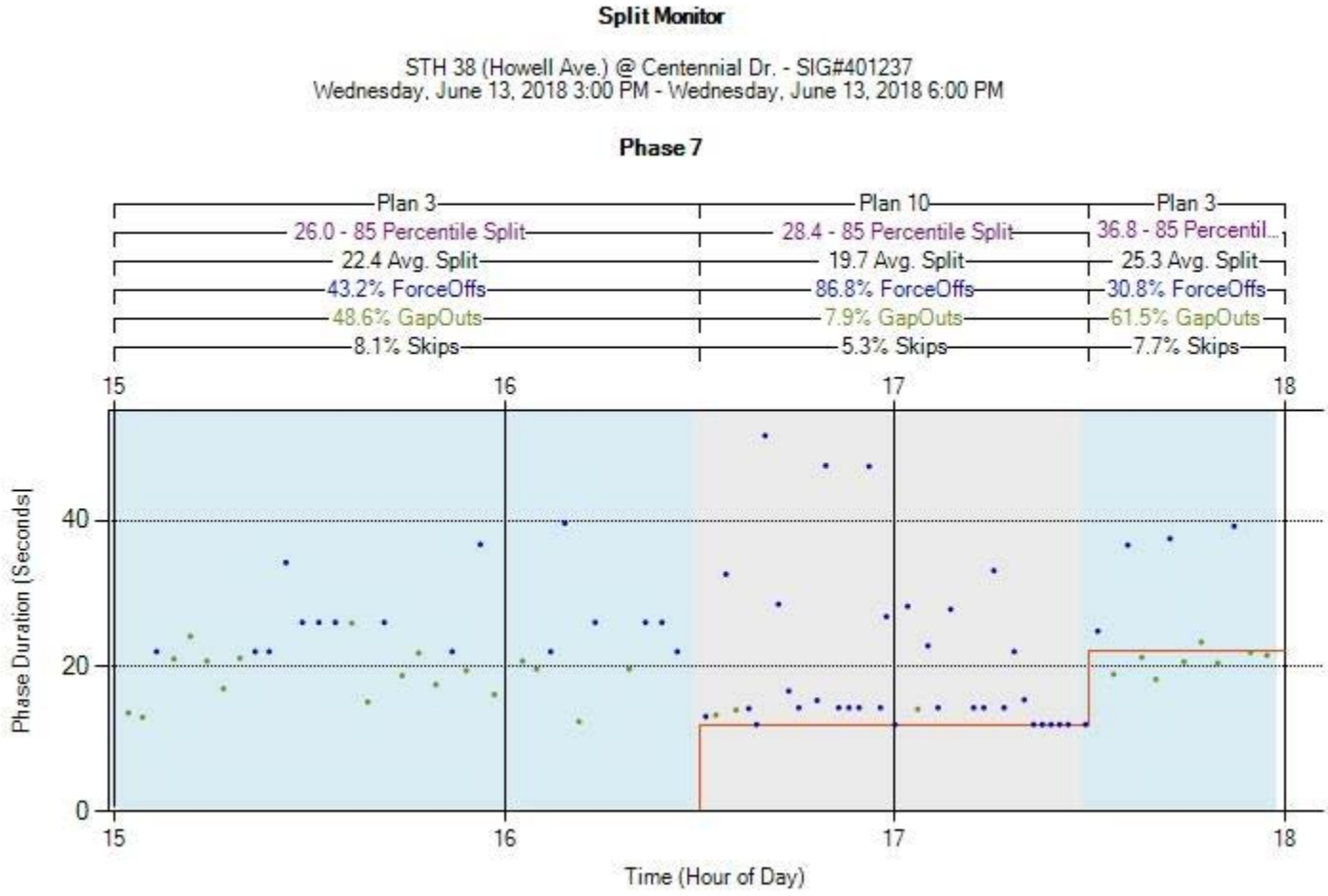

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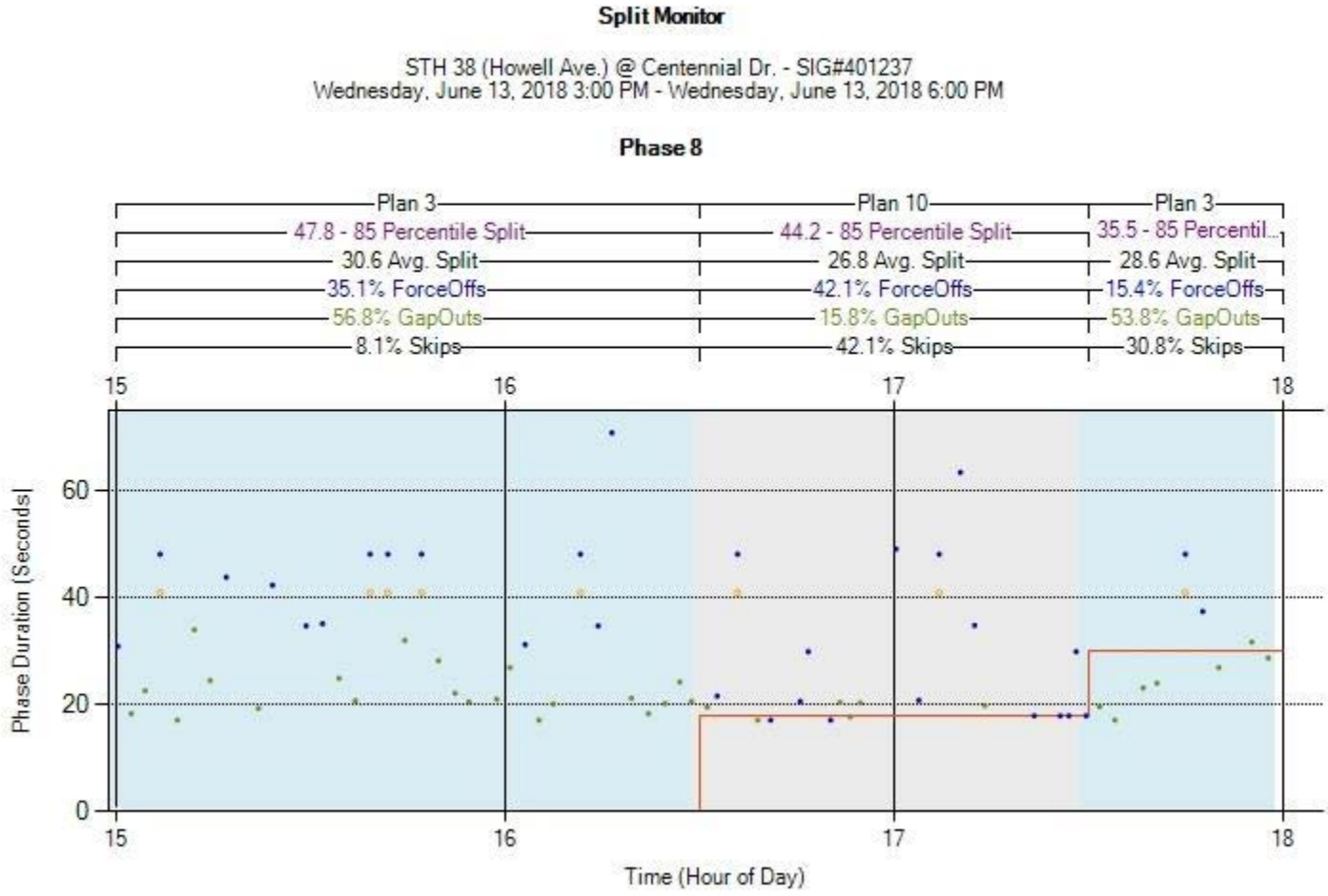

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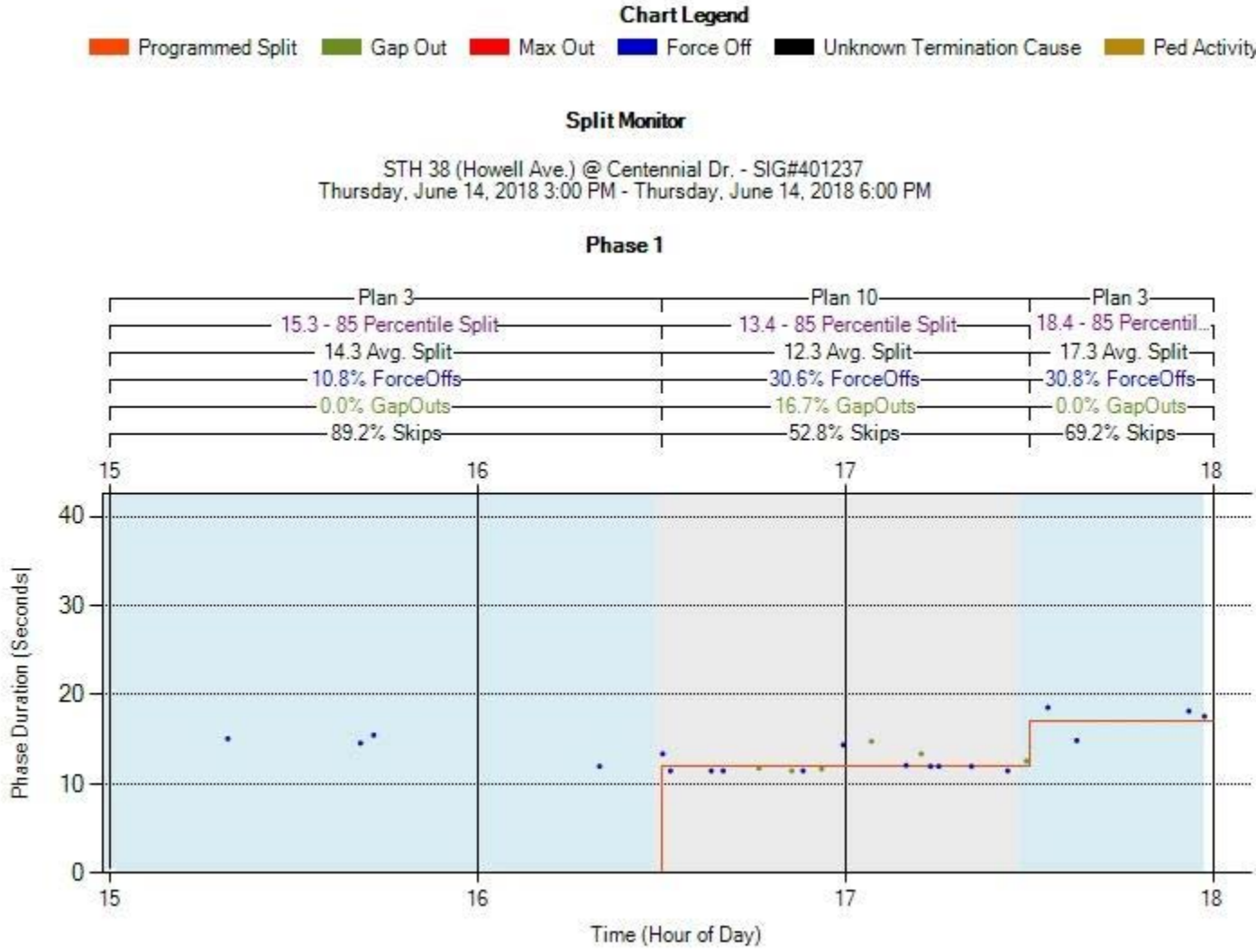
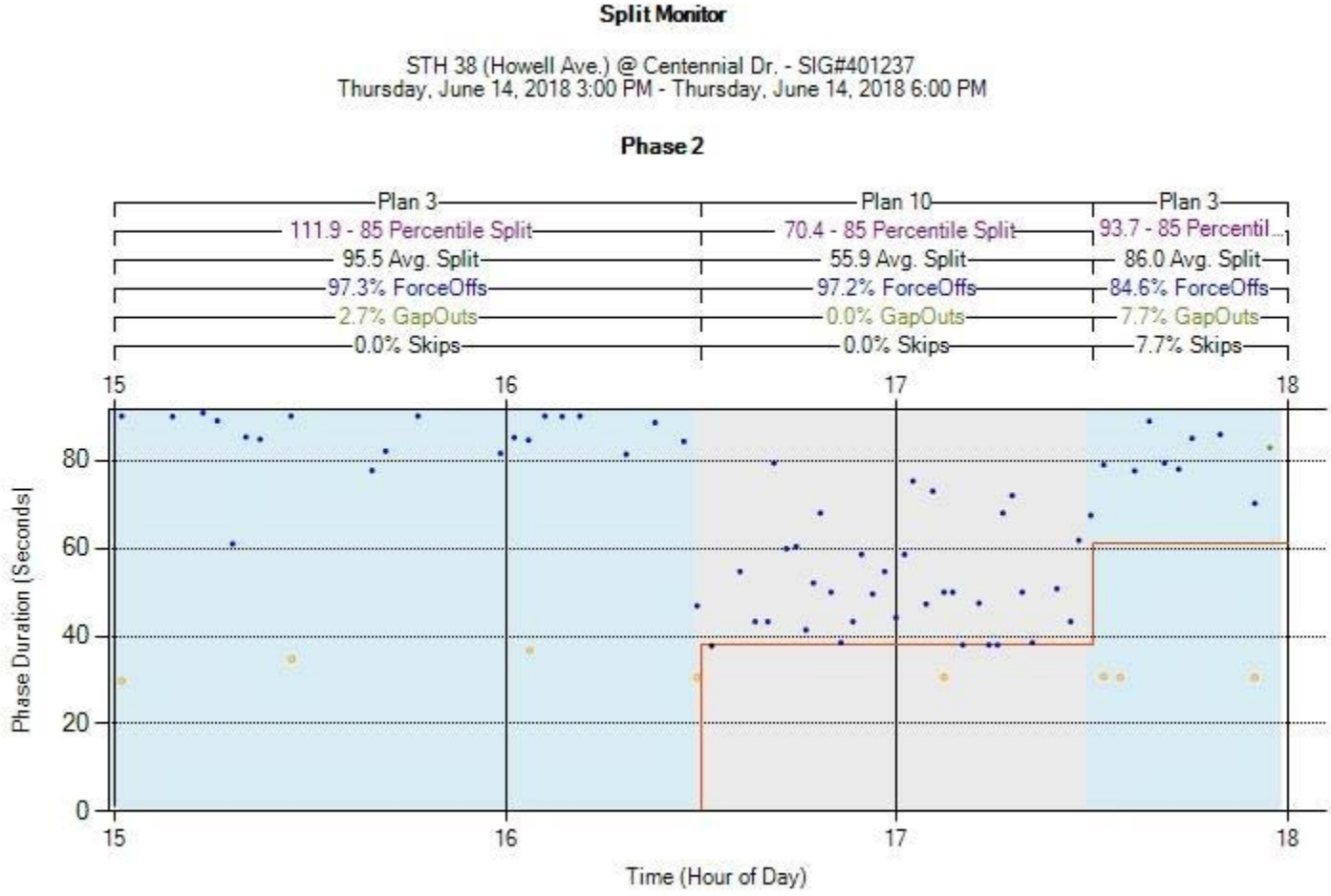
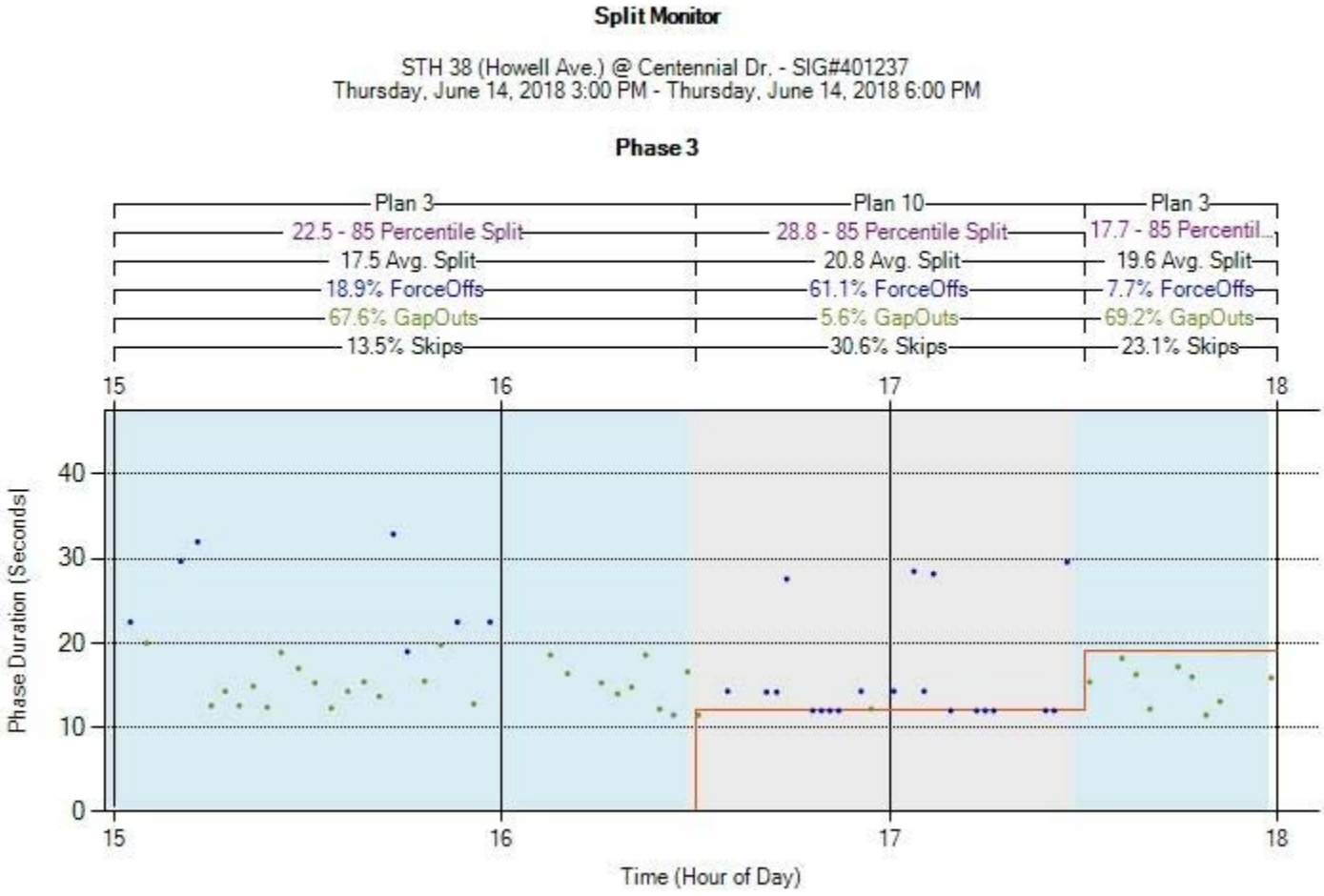
Vistro Timings
6/14/2018 – 3:00 PM – 6:00 PM



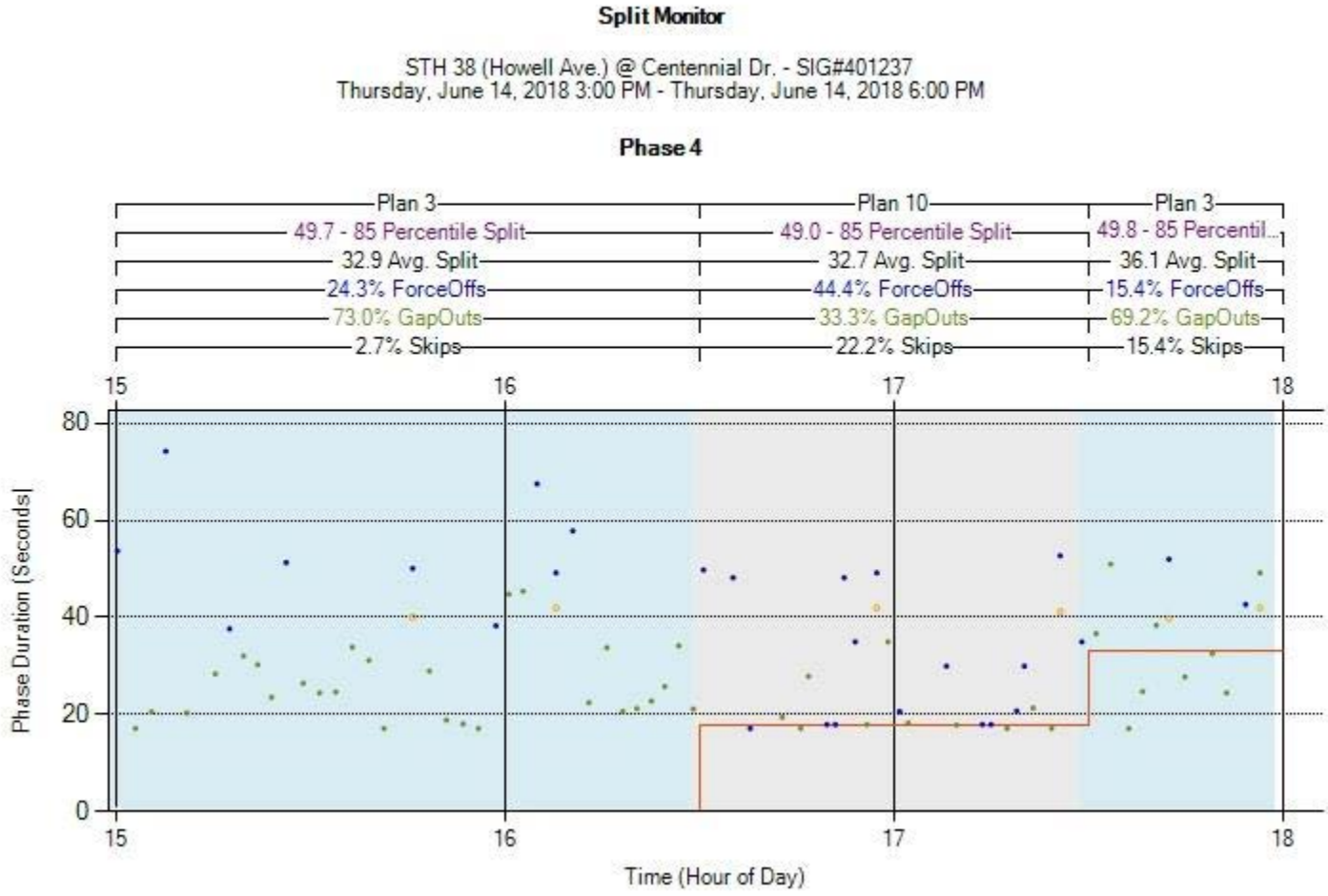
WIS 38 Corridor – STH 38 & Centennial Dr.
Vistro Timings
6/14/2018 – 3:00 PM – 6:00 PM



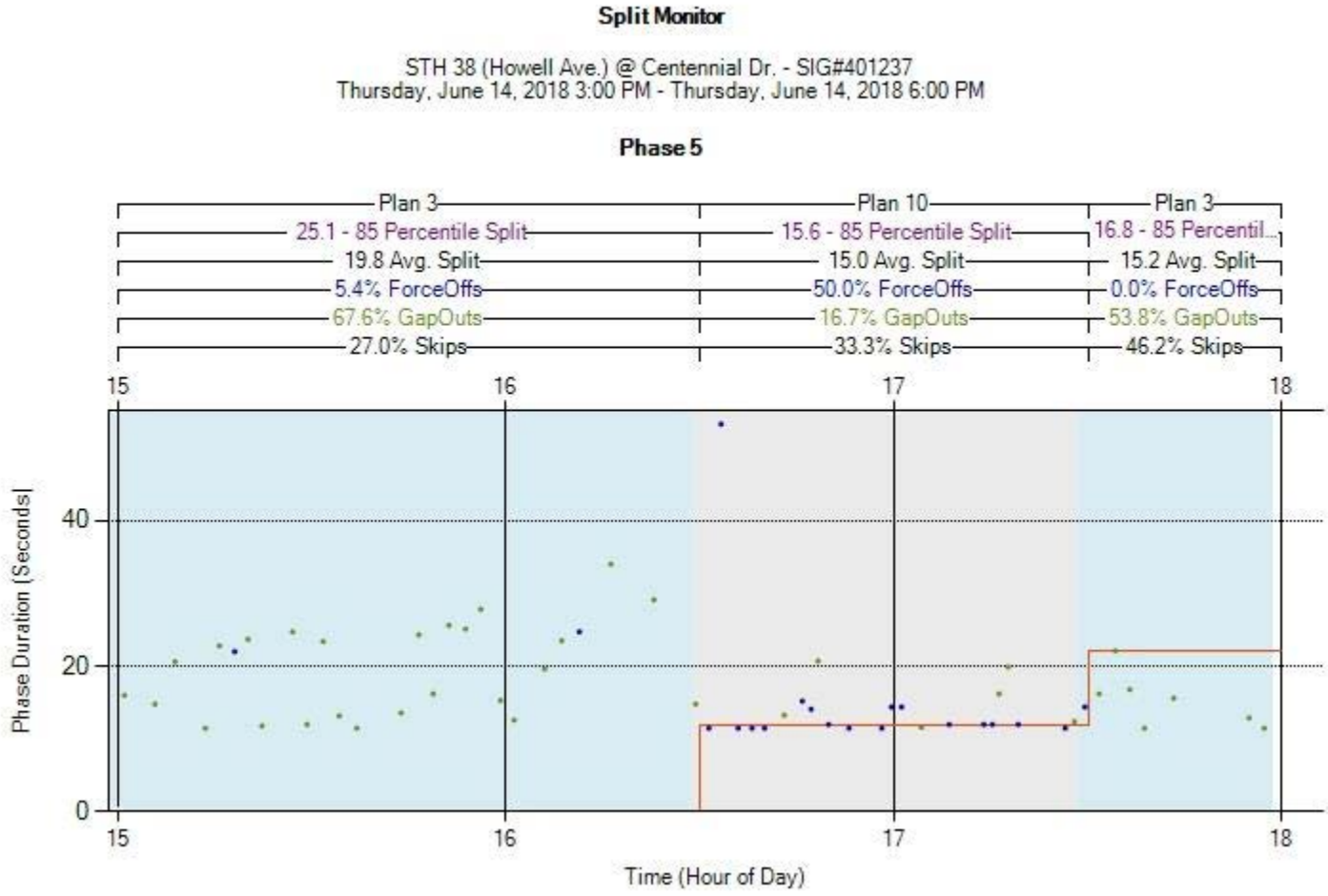
WIS 38 Corridor – STH 38 & Centennial Dr.
Vistro Timings
6/14/2018 – 3:00 PM – 6:00 PM



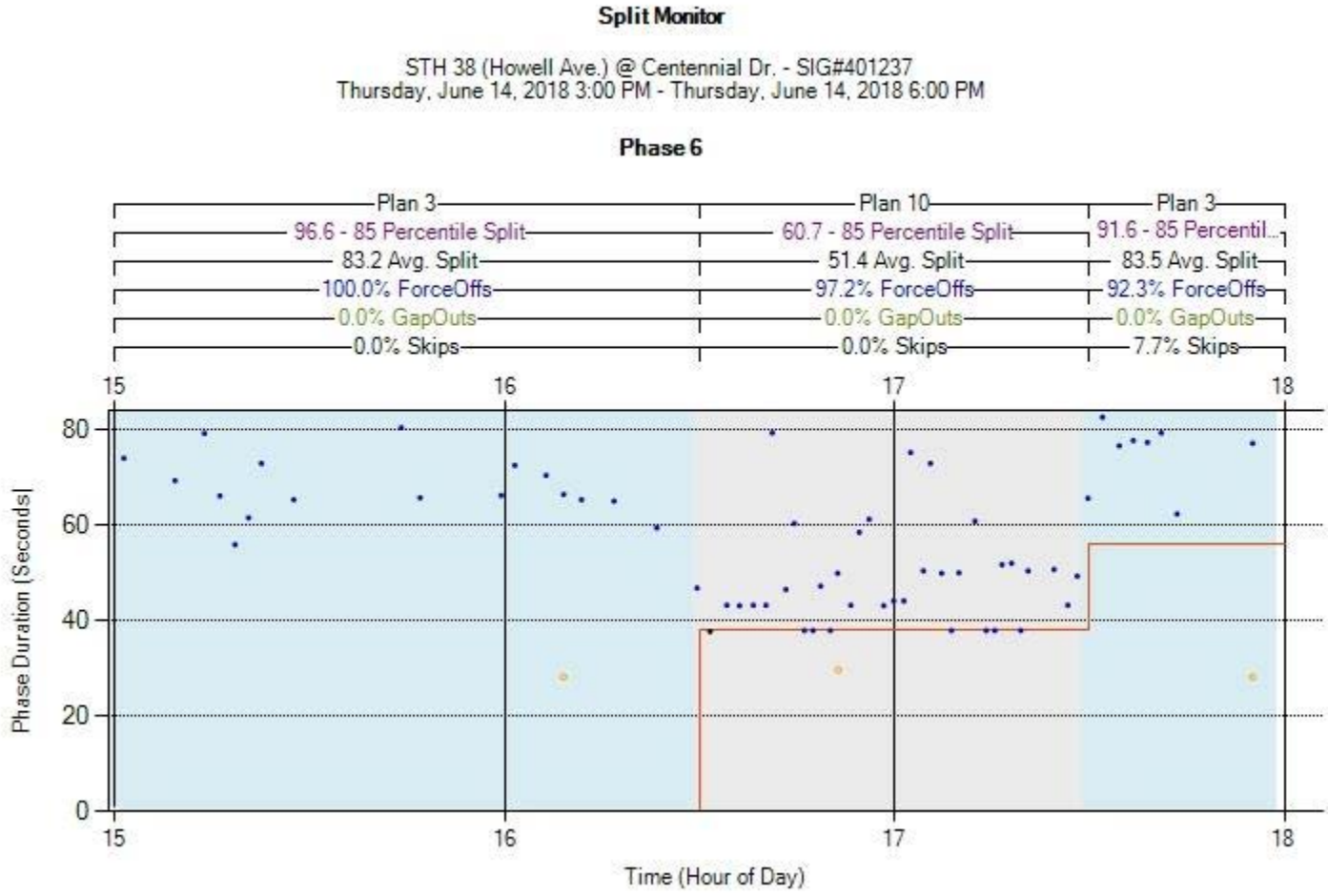
WIS 38 Corridor – STH 38 & Centennial Dr.
Vistro Timings
6/14/2018 – 3:00 PM – 6:00 PM



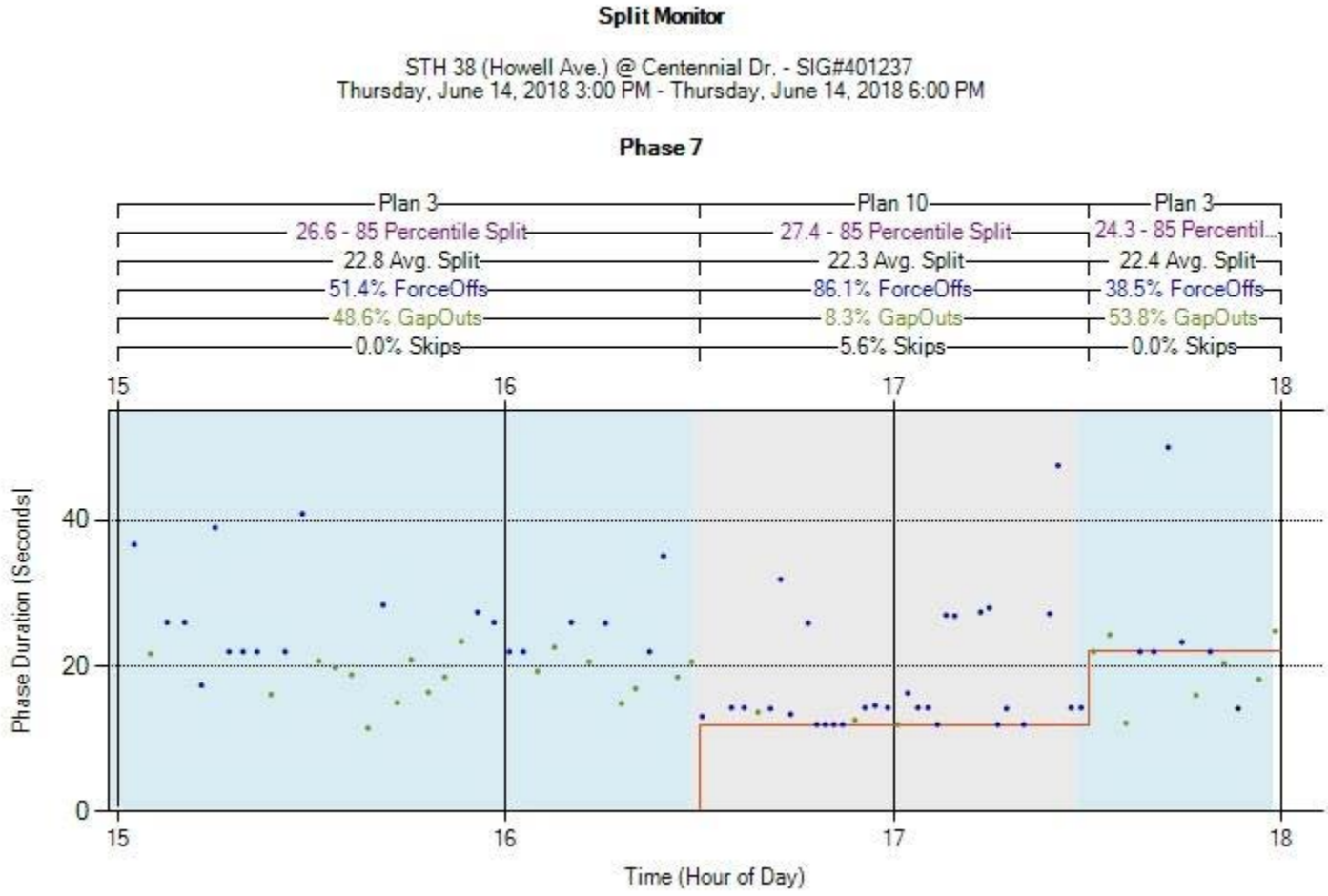
WIS 38 Corridor – STH 38 & Centennial Dr.
Vistro Timings
6/14/2018 – 3:00 PM – 6:00 PM



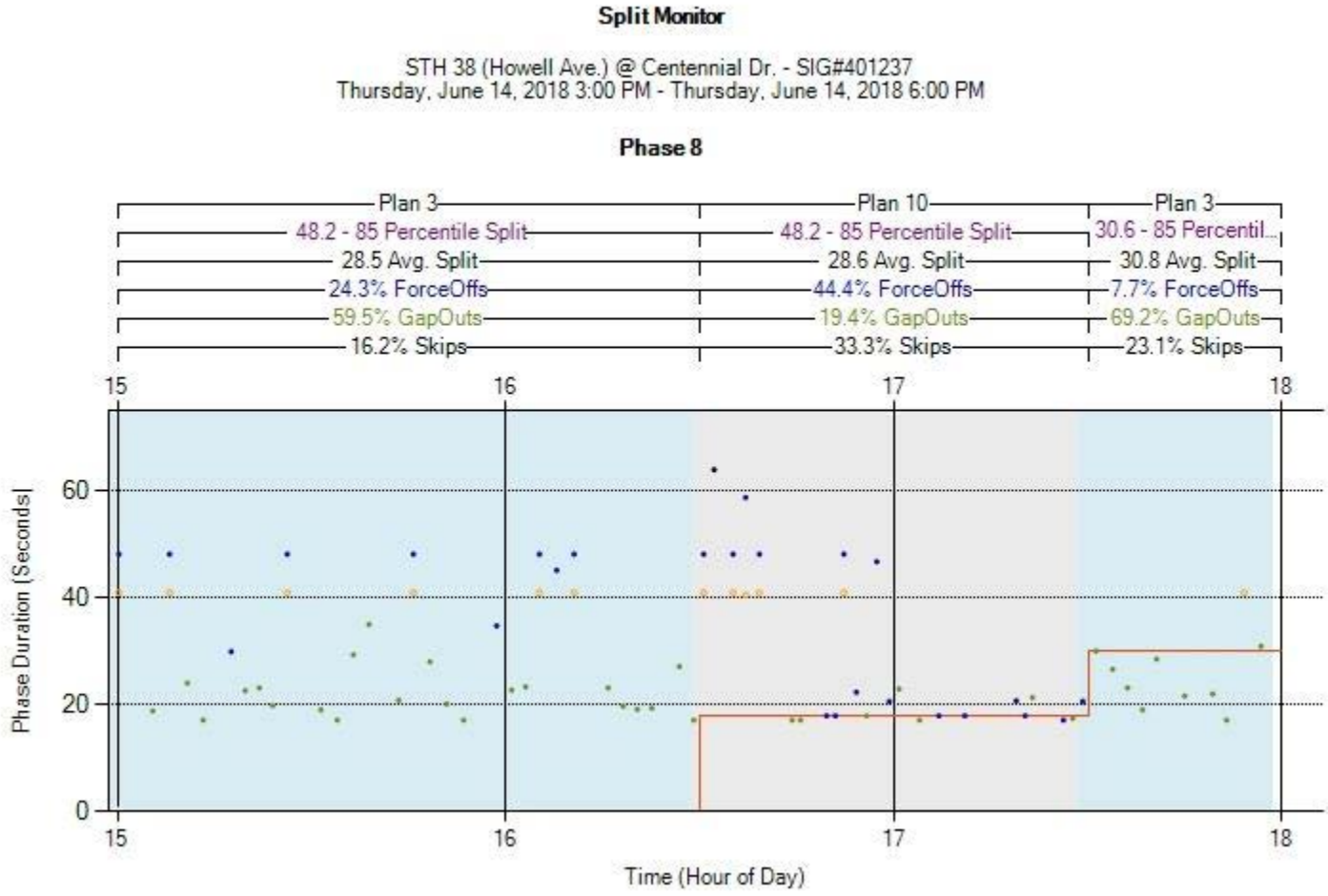
WIS 38 Corridor – STH 38 & Centennial Dr.
Vistro Timings
6/14/2018 – 3:00 PM – 6:00 PM



WIS 38 Corridor – STH 38 & Centennial Dr.
Vistro Timings
6/14/2018 – 3:00 PM – 6:00 PM

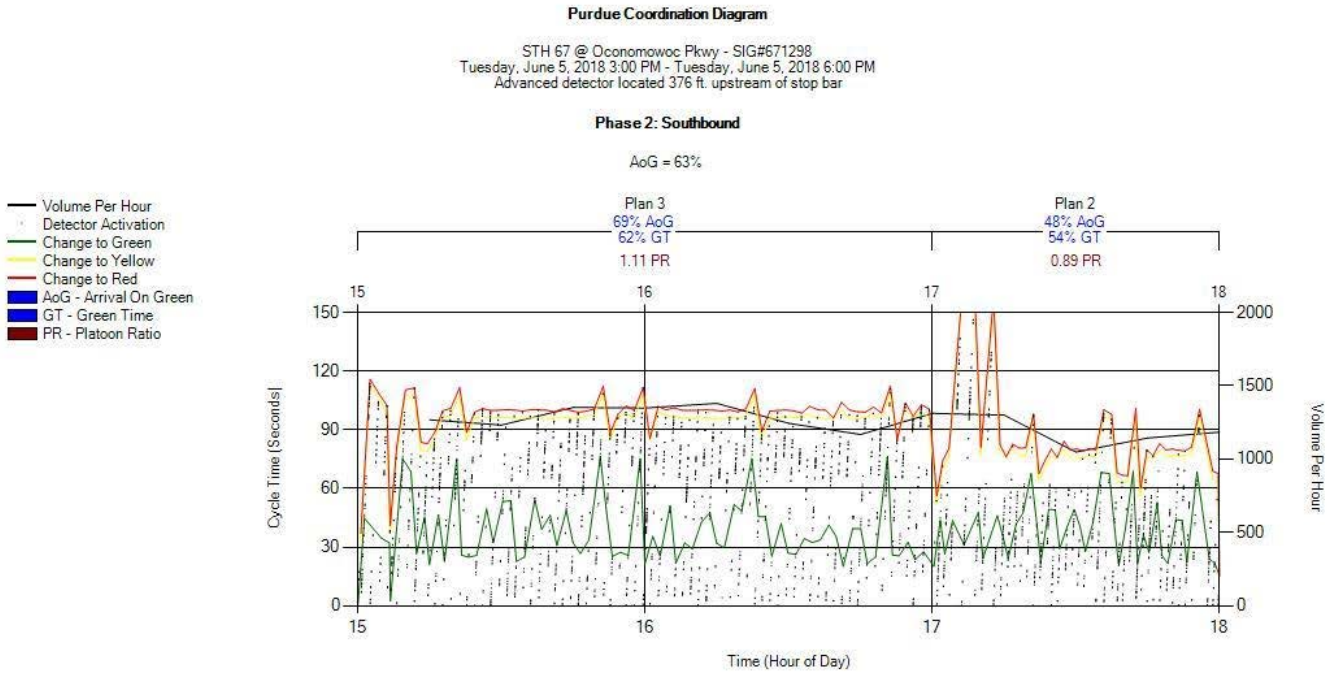


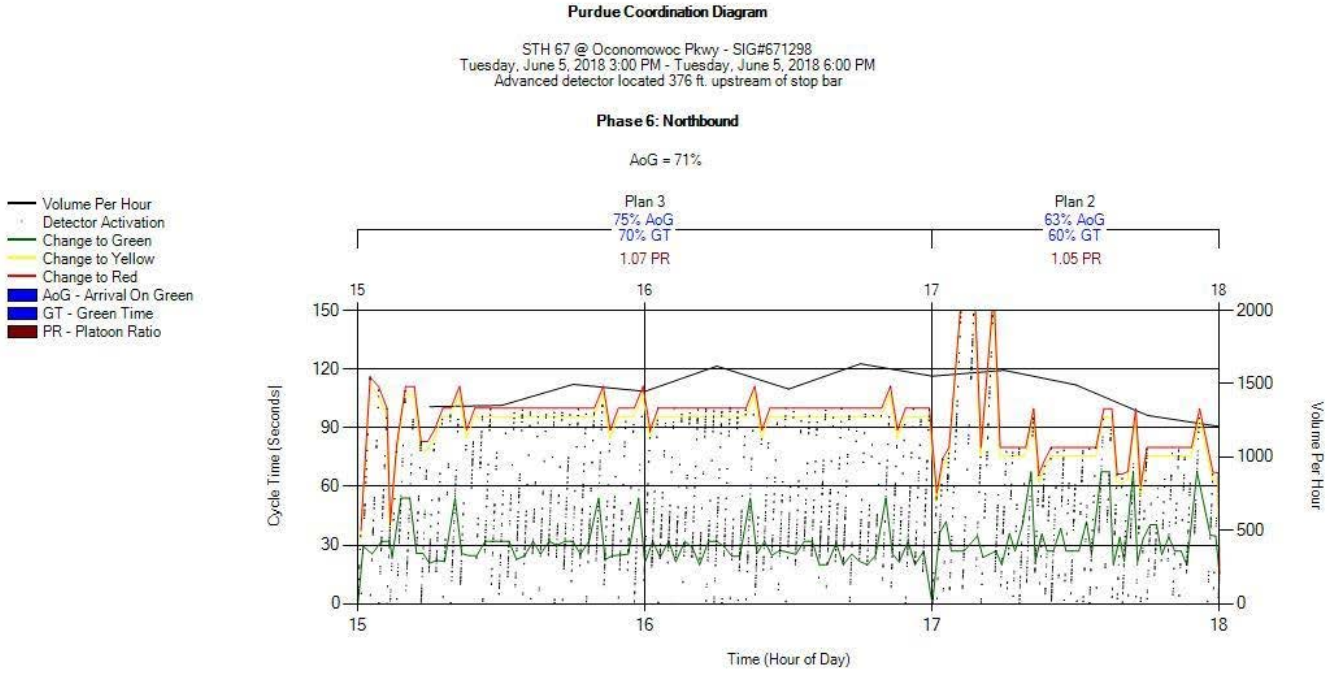
WIS 38 Corridor – STH 38 & Centennial Dr.
Vistro Timings
6/14/2018 – 3:00 PM – 6:00 PM



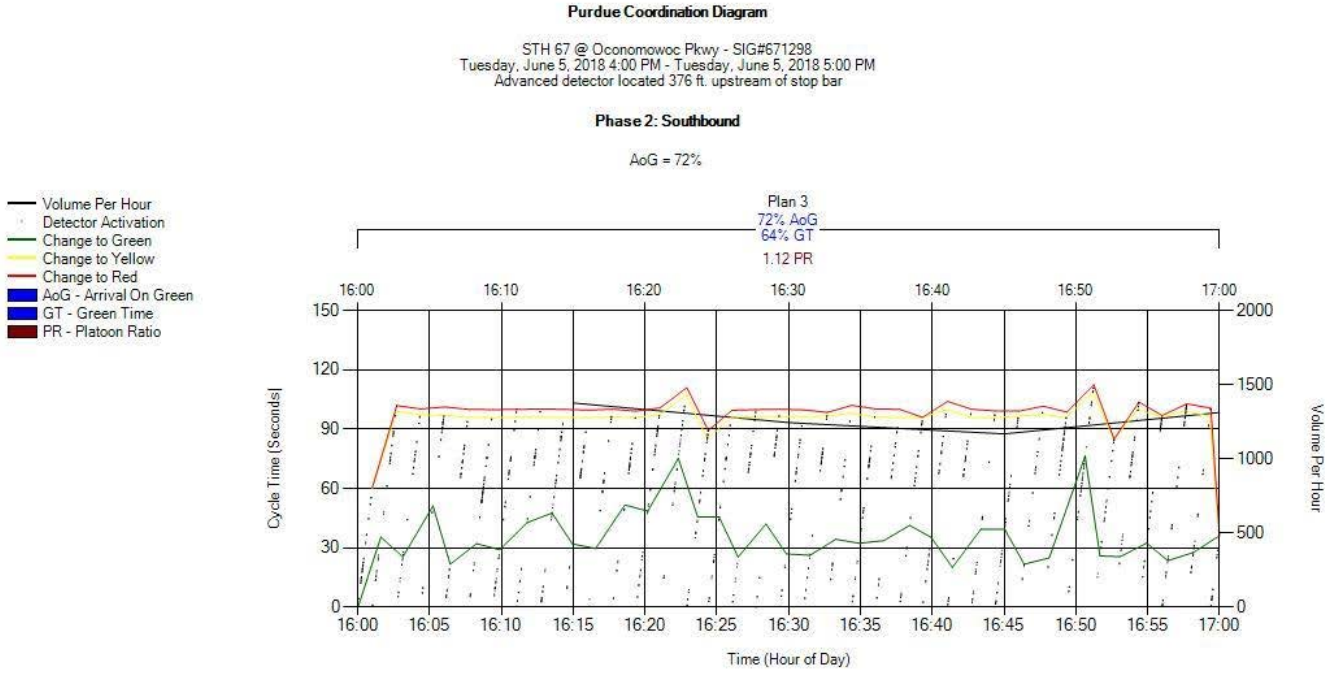
WisBOOM Outputs
WIS 67 Corridor
Existing Timings

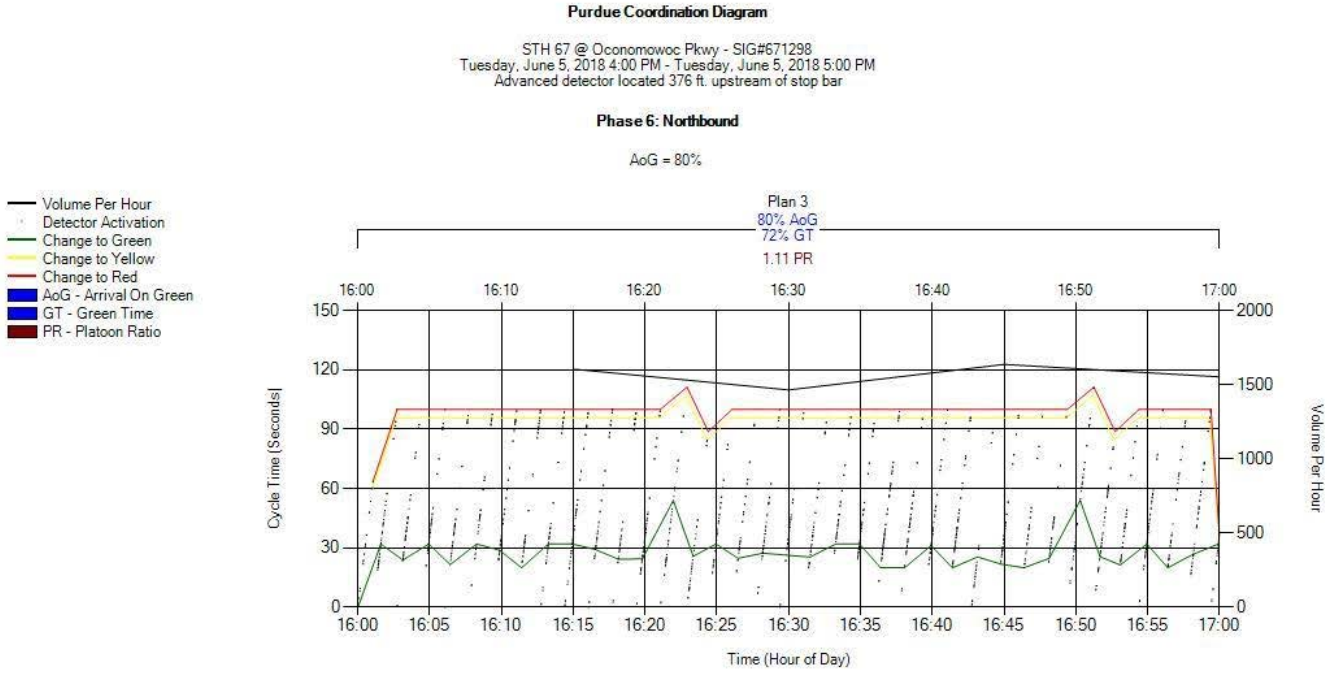
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM

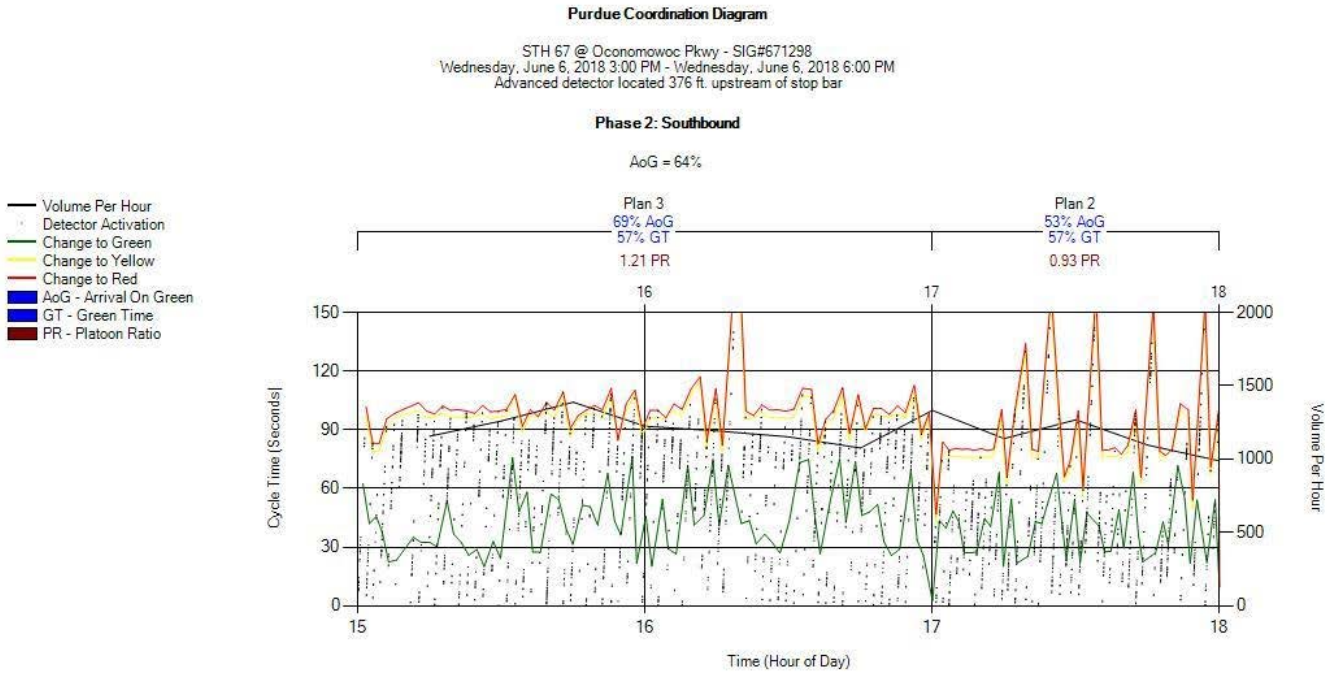


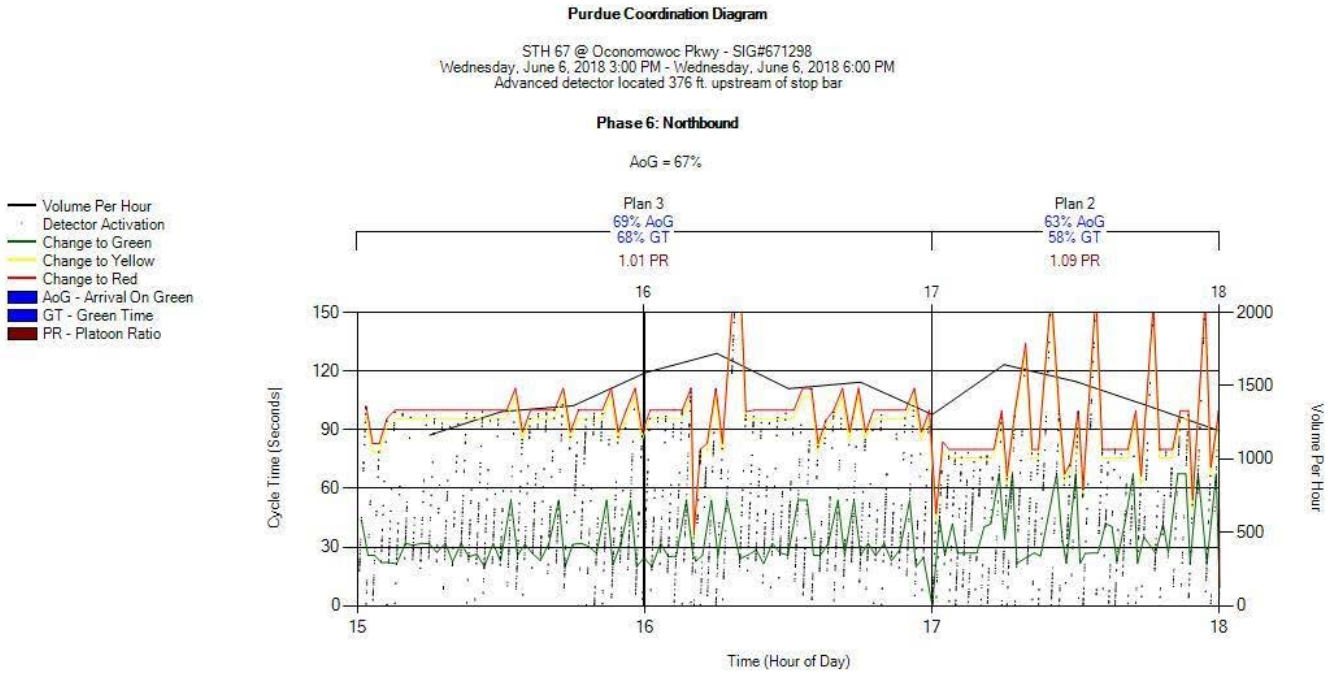


WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Baseline Timings
6/5/2018 – 4:00 PM – 5:00 PM

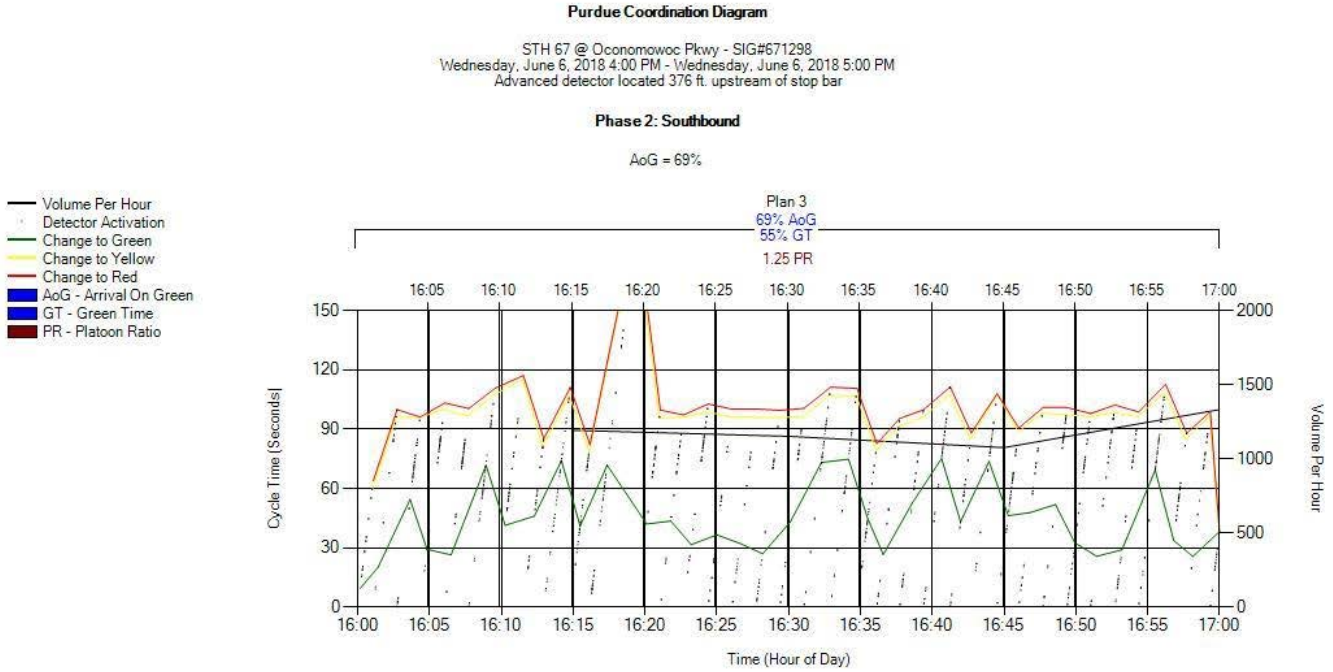


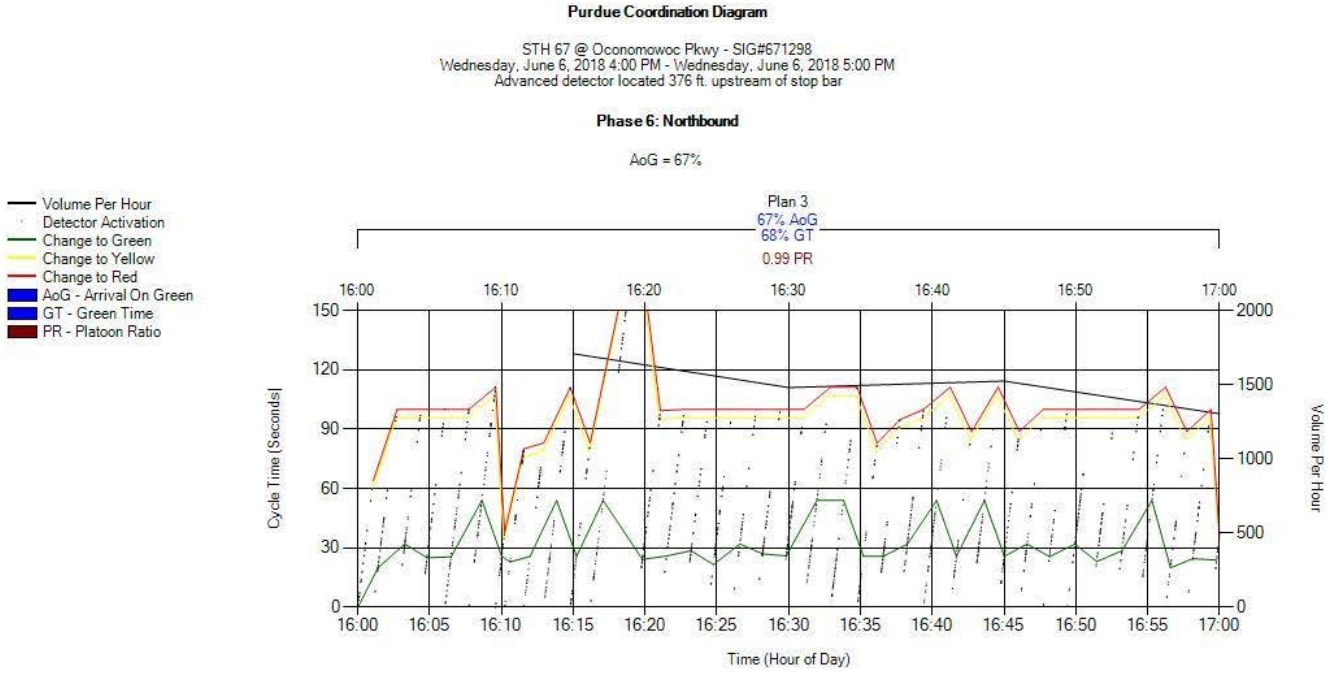



Purdue Coordination Diagram
STH 67 @ Oconomowoc Pkwy - SIG#671298
Wednesday, June 6, 2018 3:00 PM - Wednesday, June 6, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar
Phase 2: Southbound
AoG = 64%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
69% AoG
57% GT
1.21 PR
Plan 2
53% AoG
57% GT
0.93 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)

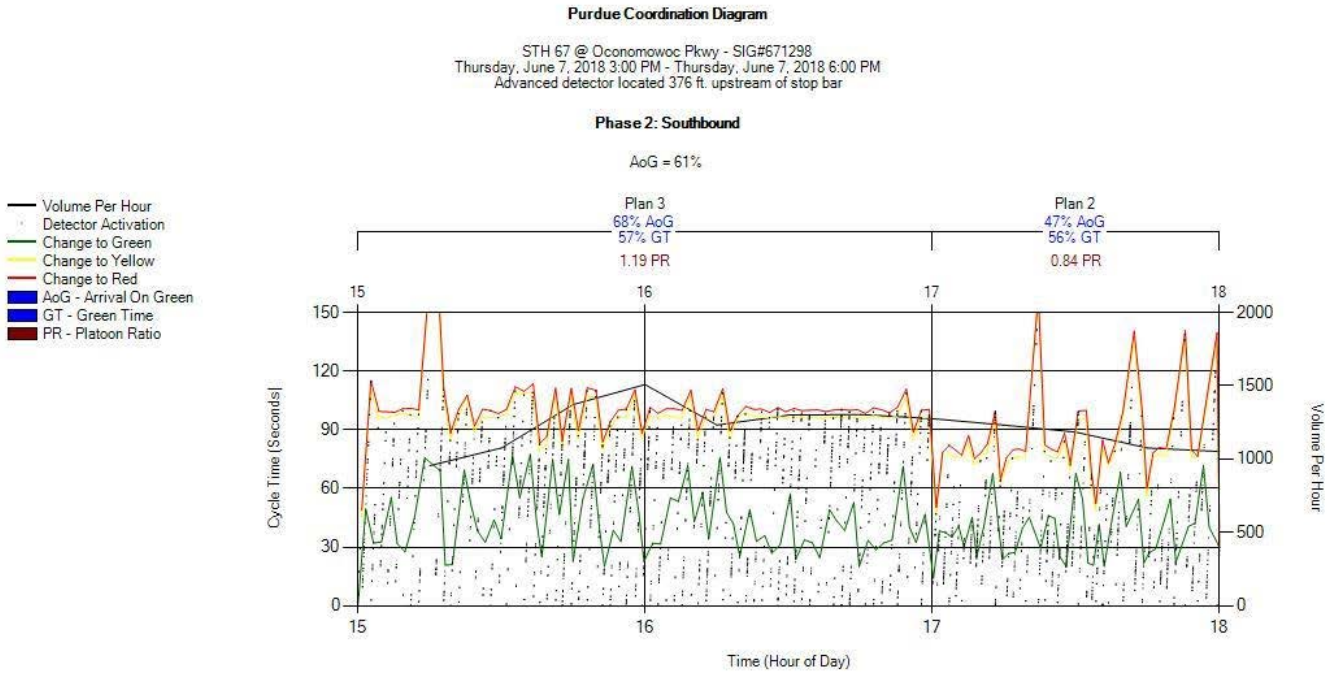

Purdue Coordination Diagram
STH 67 @ Oconomowoc Pkwy - SIG#671298
Wednesday, June 6, 2018 3:00 PM - Wednesday, June 6, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar
Phase 6: Northbound
AoG = 67%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
69% AoG
68% GT
1.01 PR
Plan 2
63% AoG
58% GT
1.09 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)

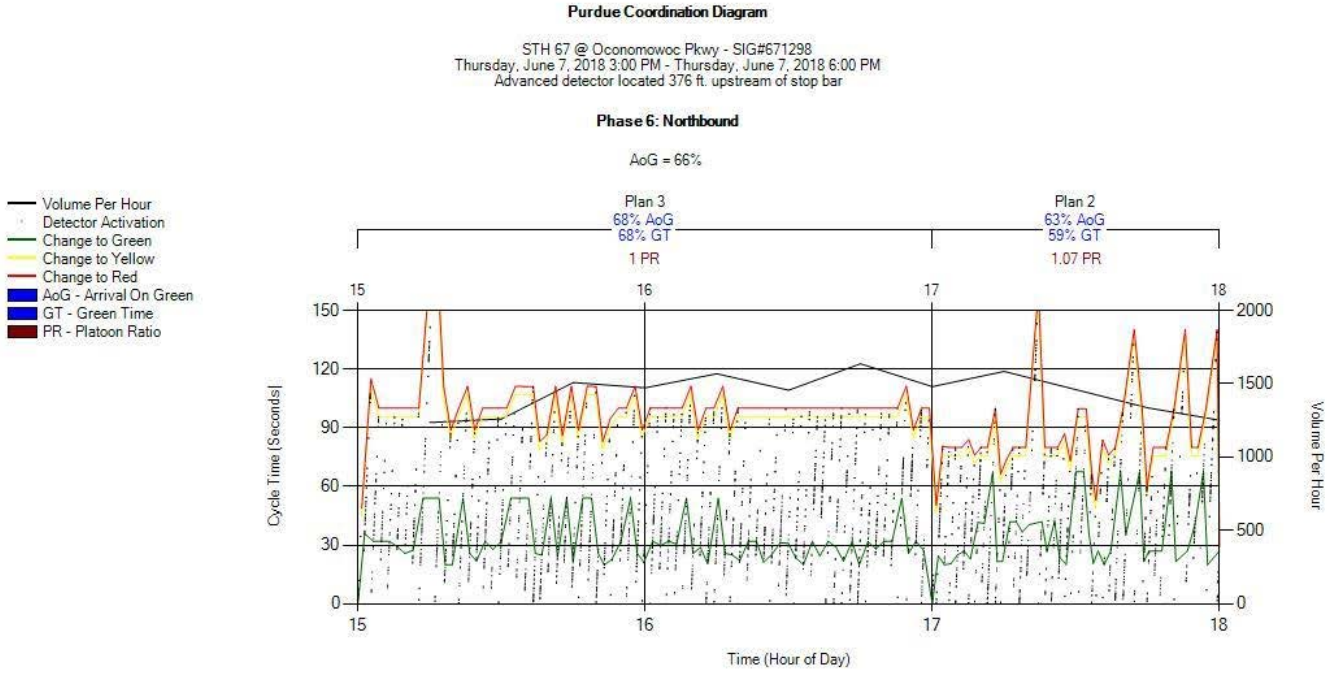
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Baseline Timings
6/6/2018 – 4:00 PM – 5:00 PM





WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Baseline Timings
6/7/2018 – 3:00 PM – 6:00 PM





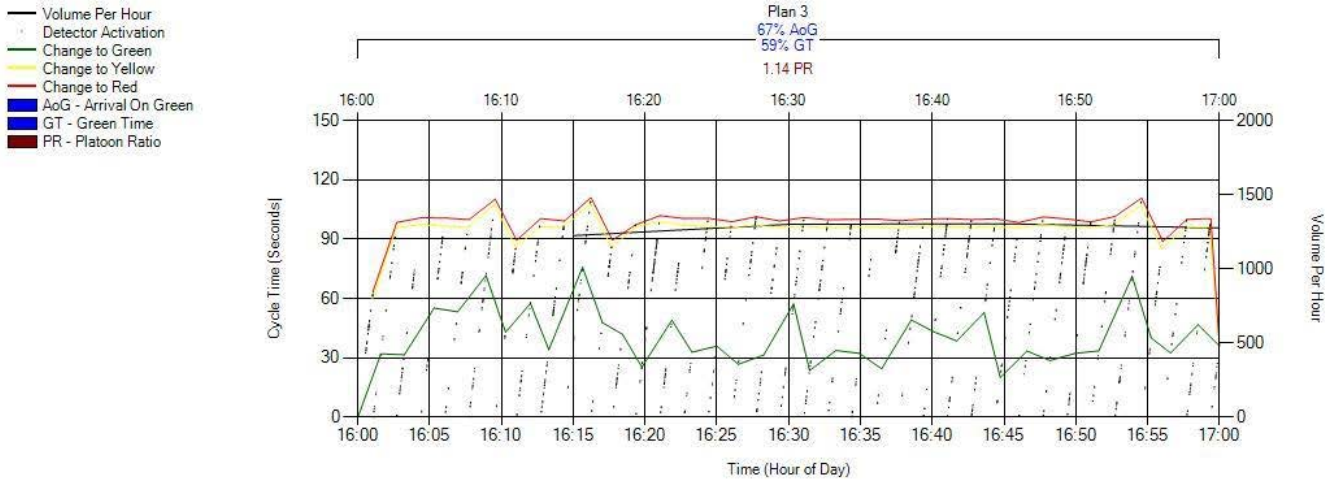
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Baseline Timings
6/7/2018 – 4:00 PM – 5:00 PM

Purdue Coordination Diagram

STH 67 @ Oconomowoc Pkwy - SIG#671298
Thursday, June 7, 2018 4:00 PM - Thursday, June 7, 2018 5:00 PM
Advanced detector located 376 ft. upstream of stop bar

Phase 2: Southbound

AoG = 67%

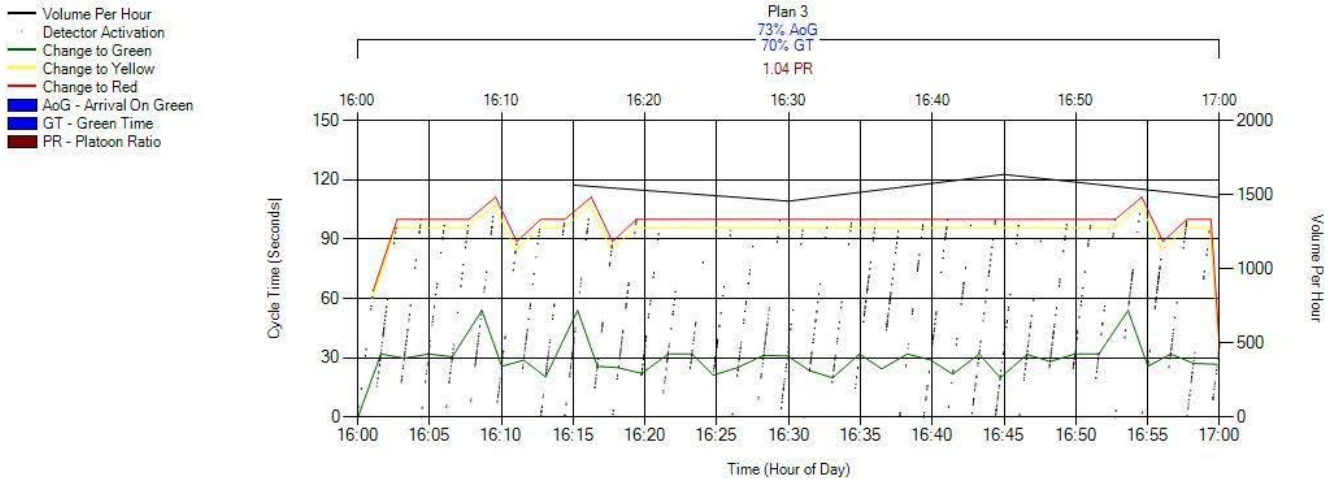


Purdue Coordination Diagram

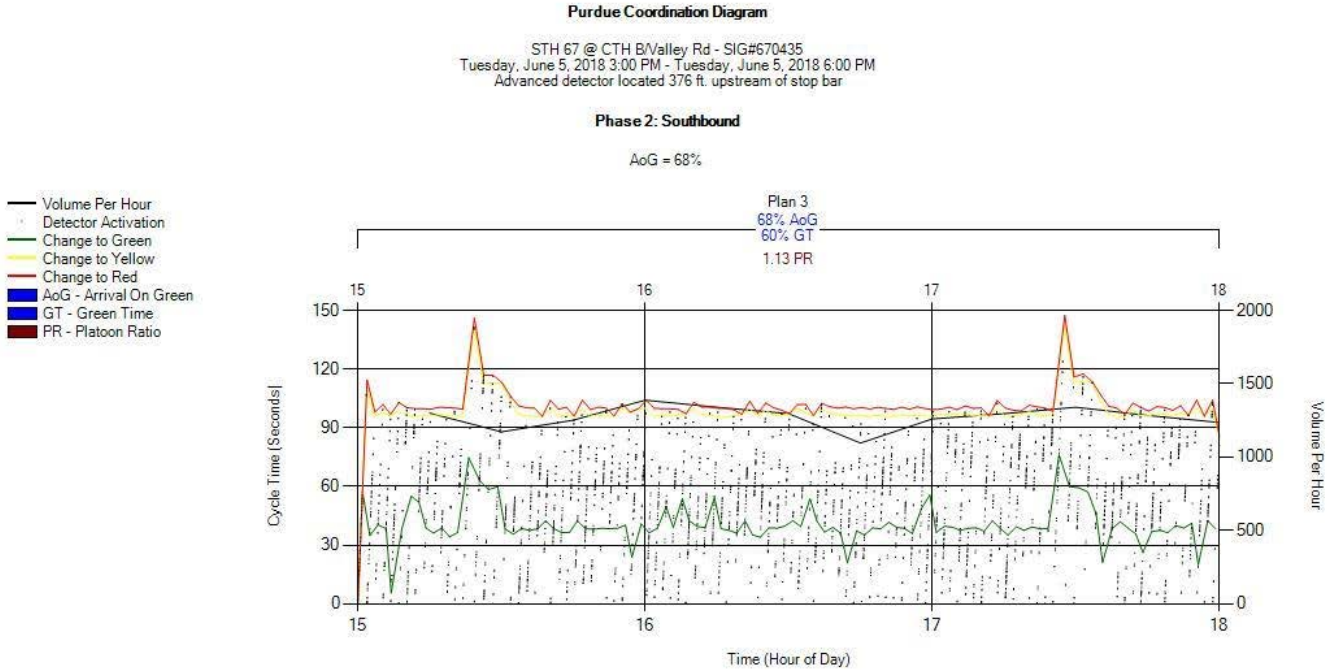
STH 67 @ Oconomowoc Pkwy - SIG#671298
Thursday, June 7, 2018 4:00 PM - Thursday, June 7, 2018 5:00 PM
Advanced detector located 376 ft. upstream of stop bar

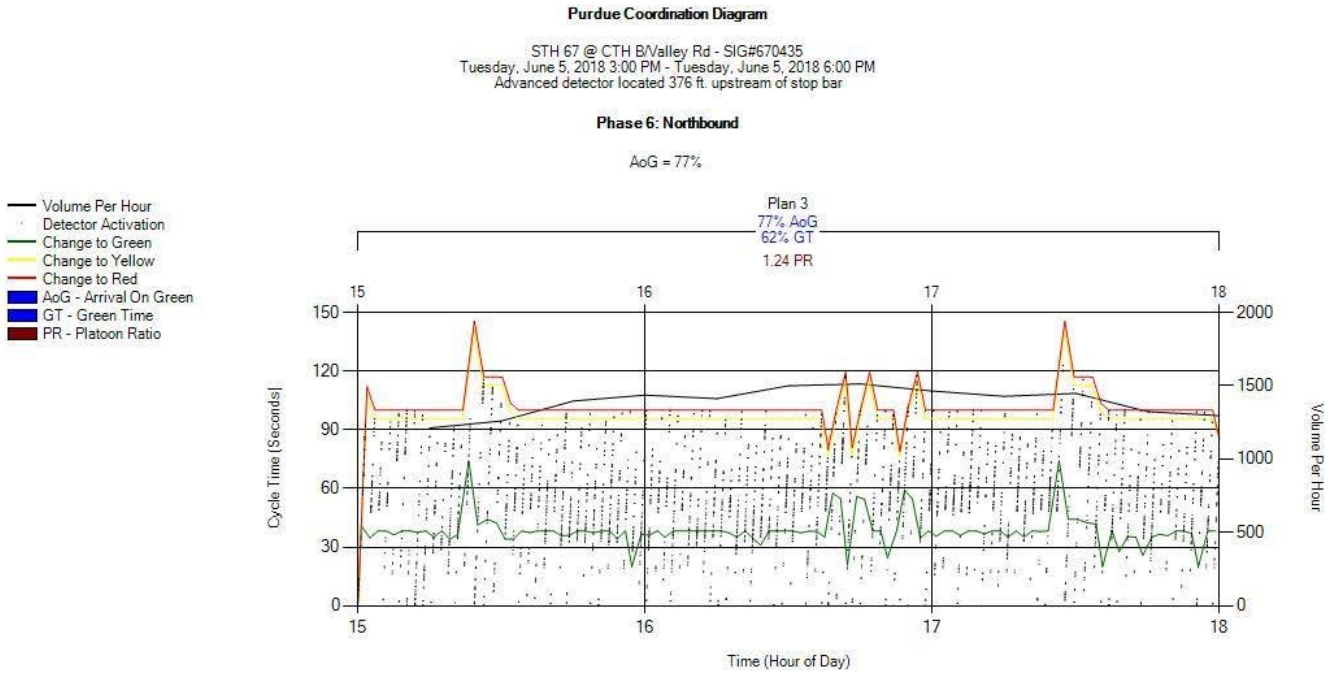
Phase 6: Northbound

AoG = 73%

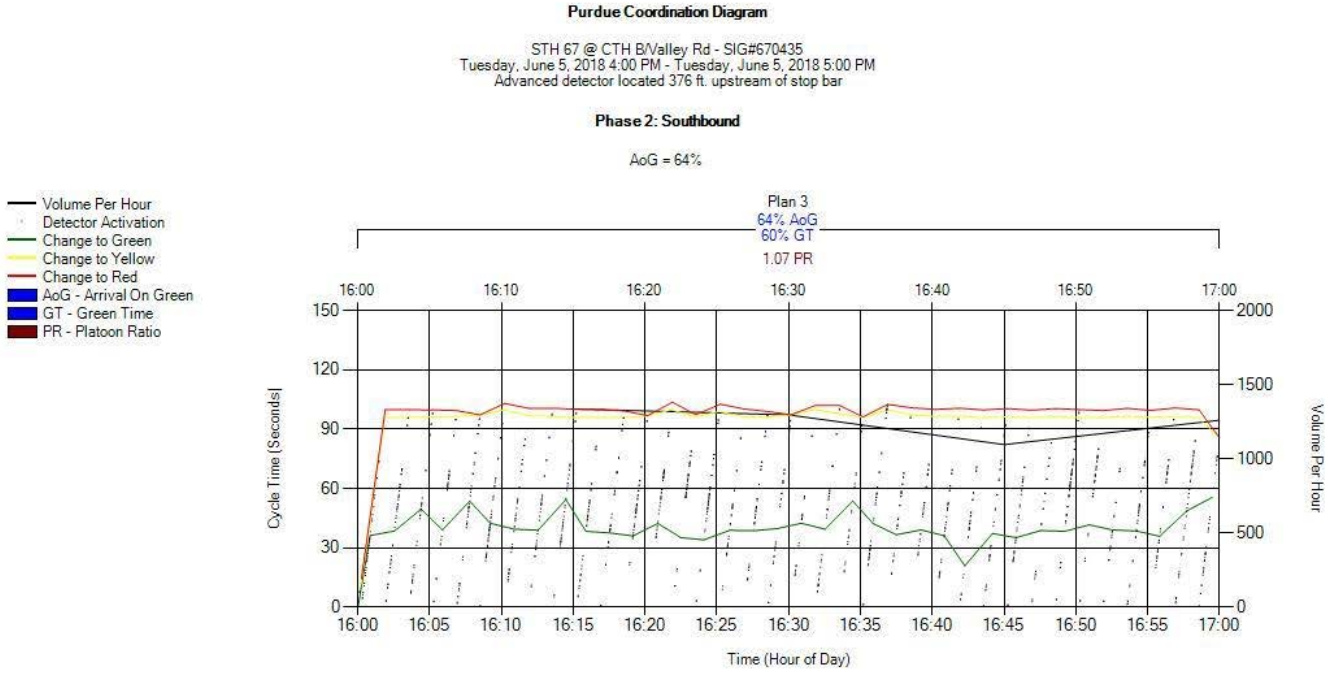


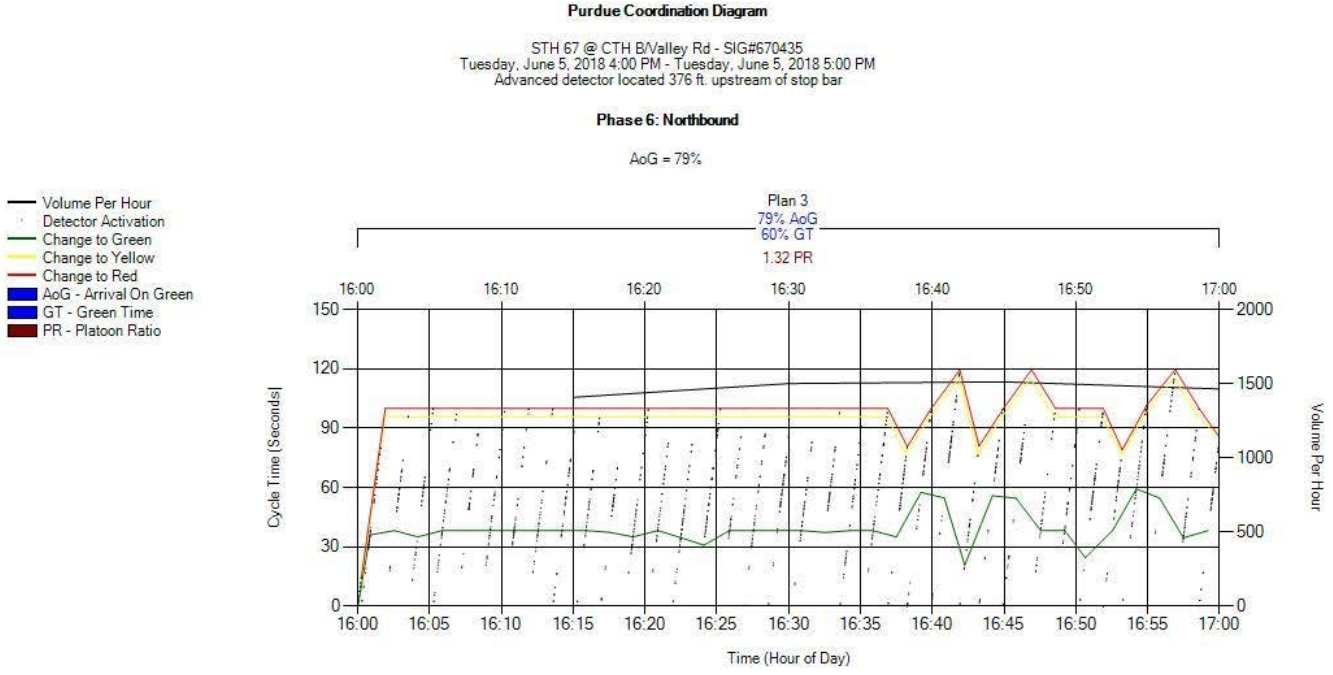
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



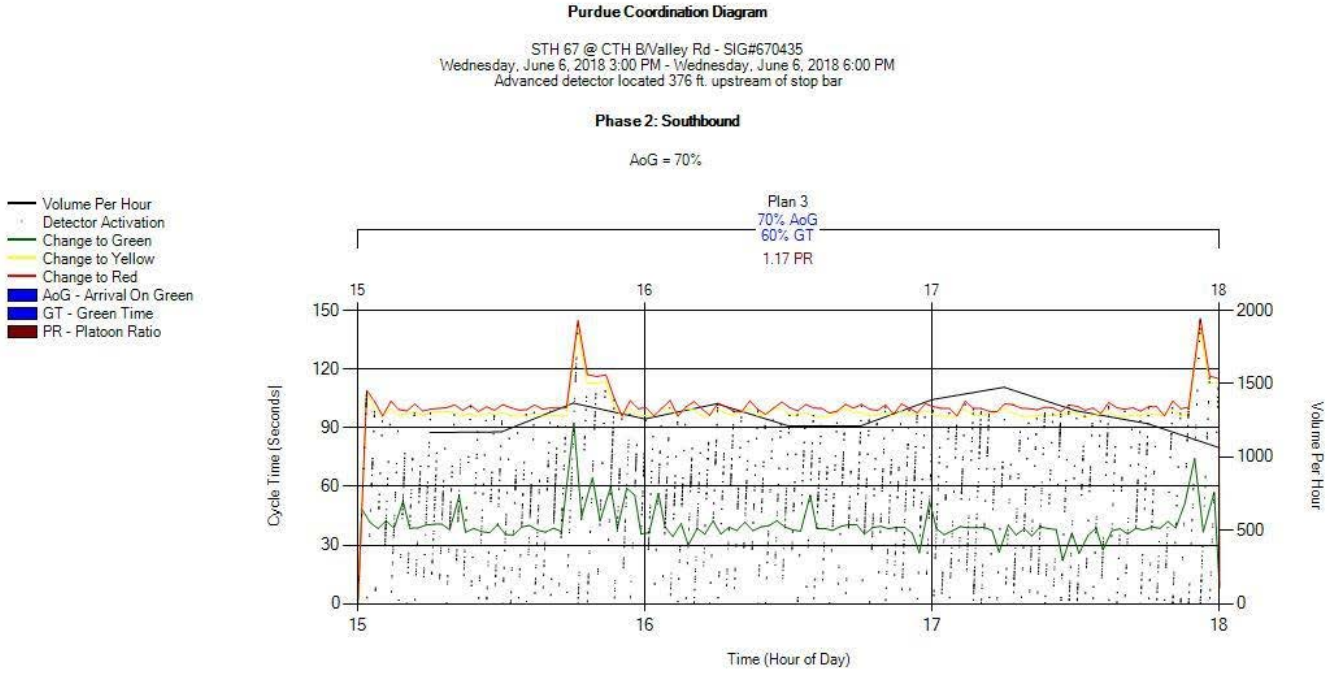


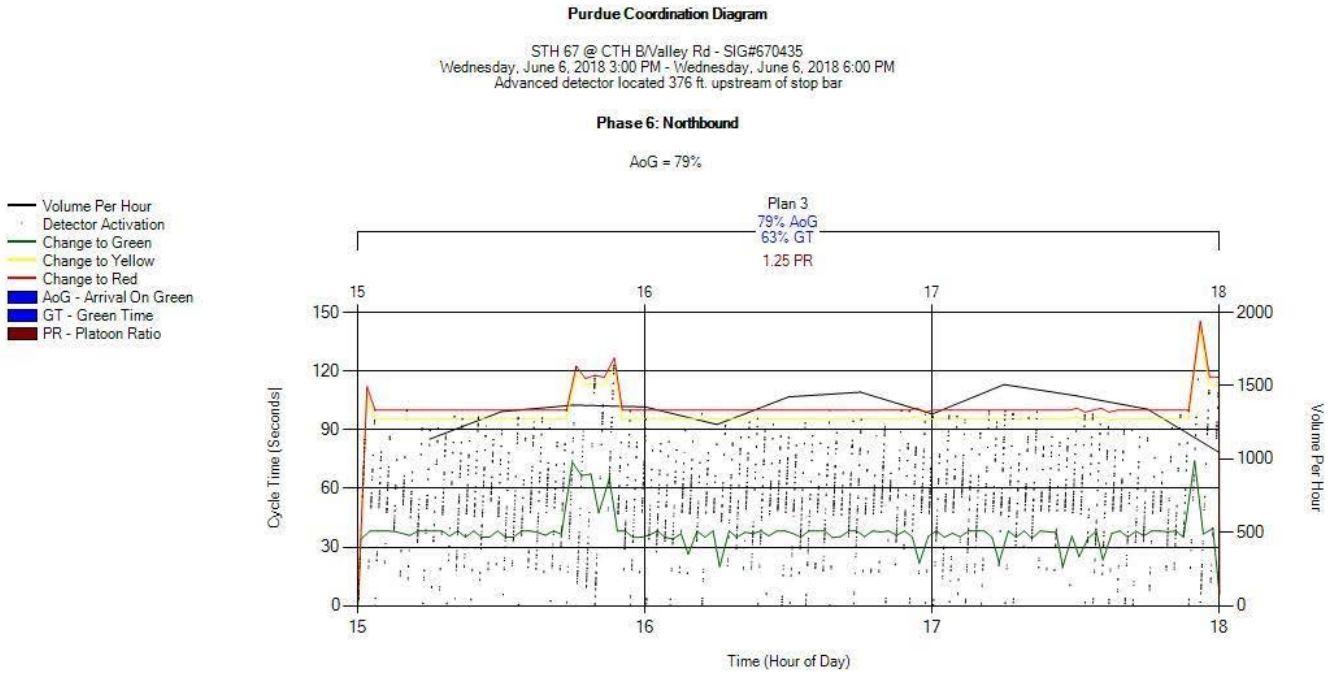
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Baseline Timings
6/5/2018 – 4:00 PM – 5:00 PM



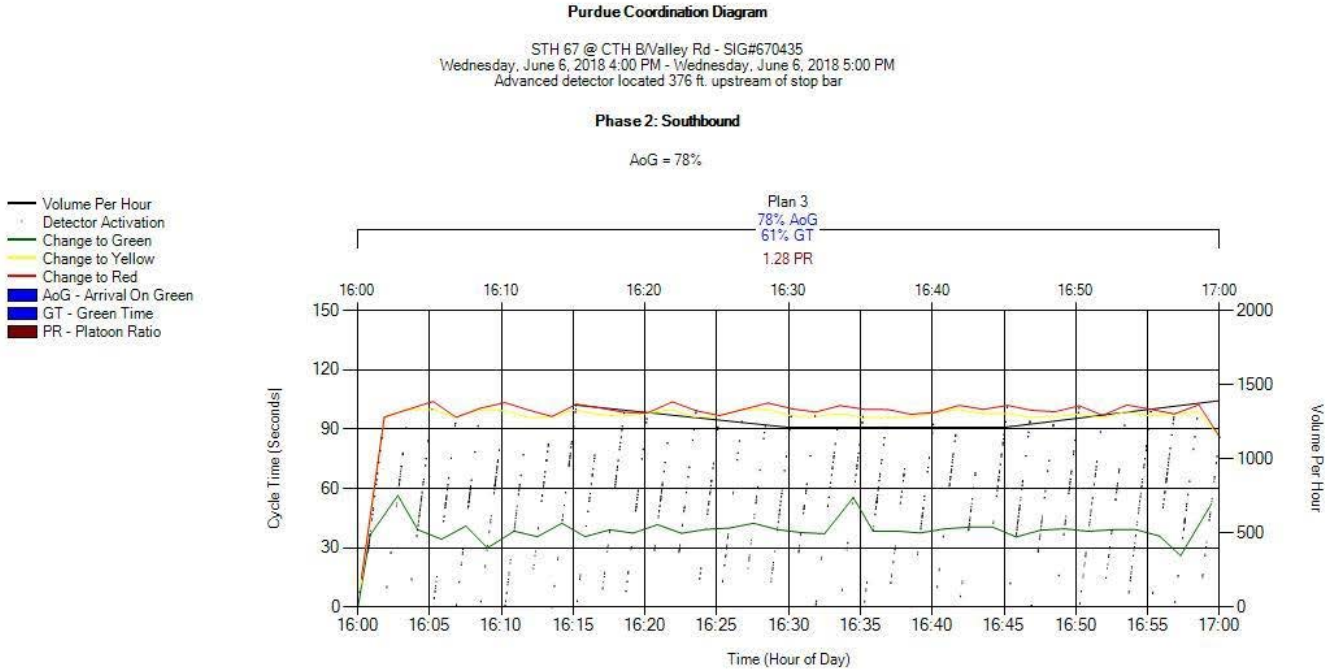


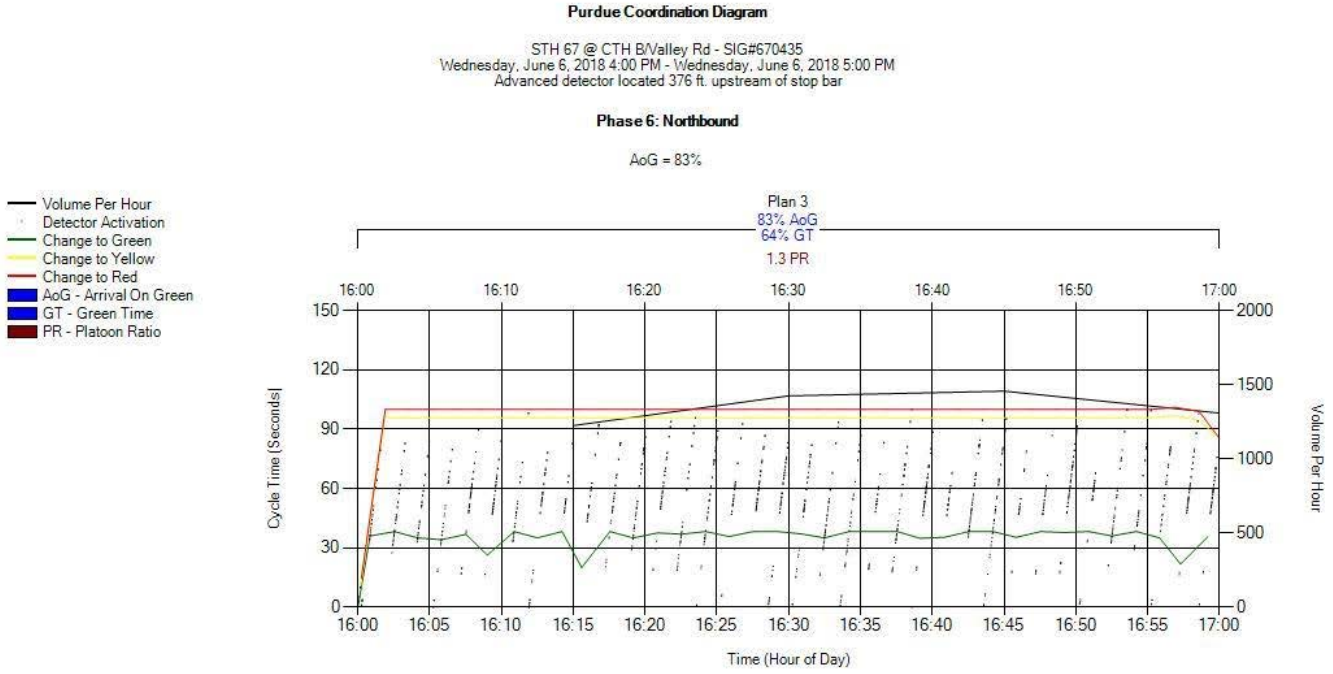
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Baseline Timings
6/6/2018 – 3:00 PM – 6:00 PM



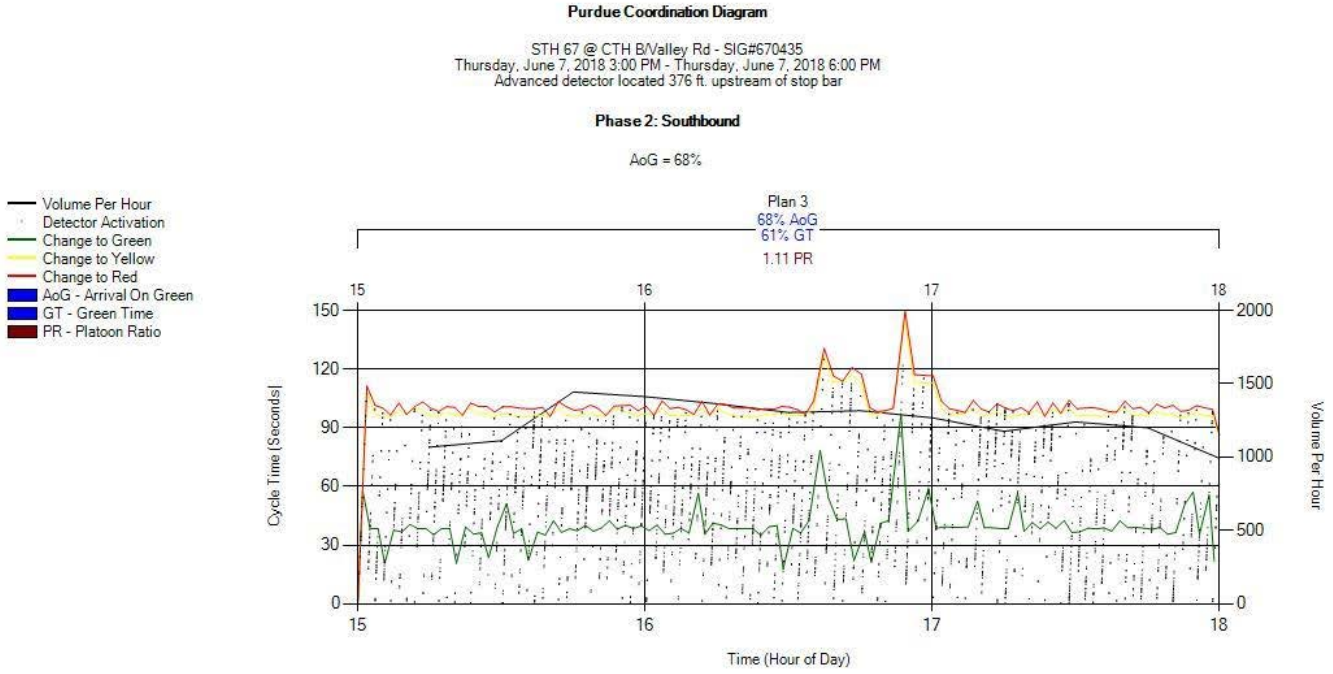


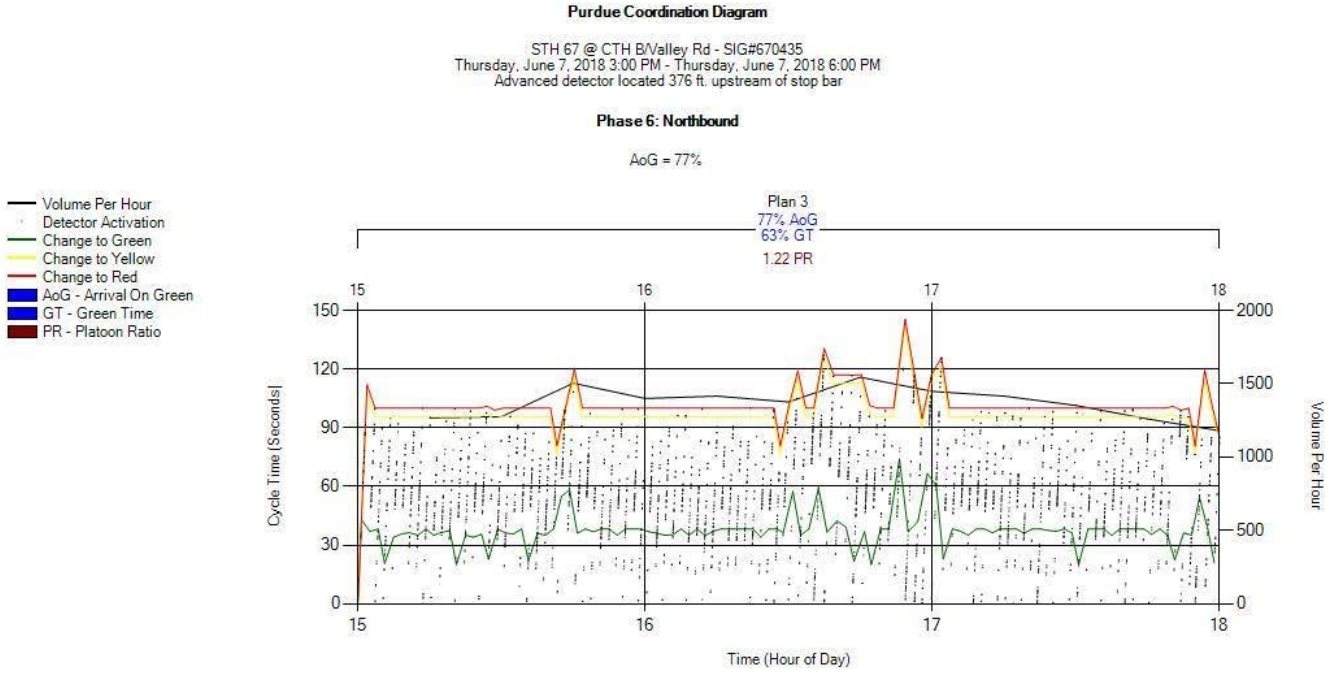
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Baseline Timings
6/6/2018 – 4:00 PM – 5:00 PM



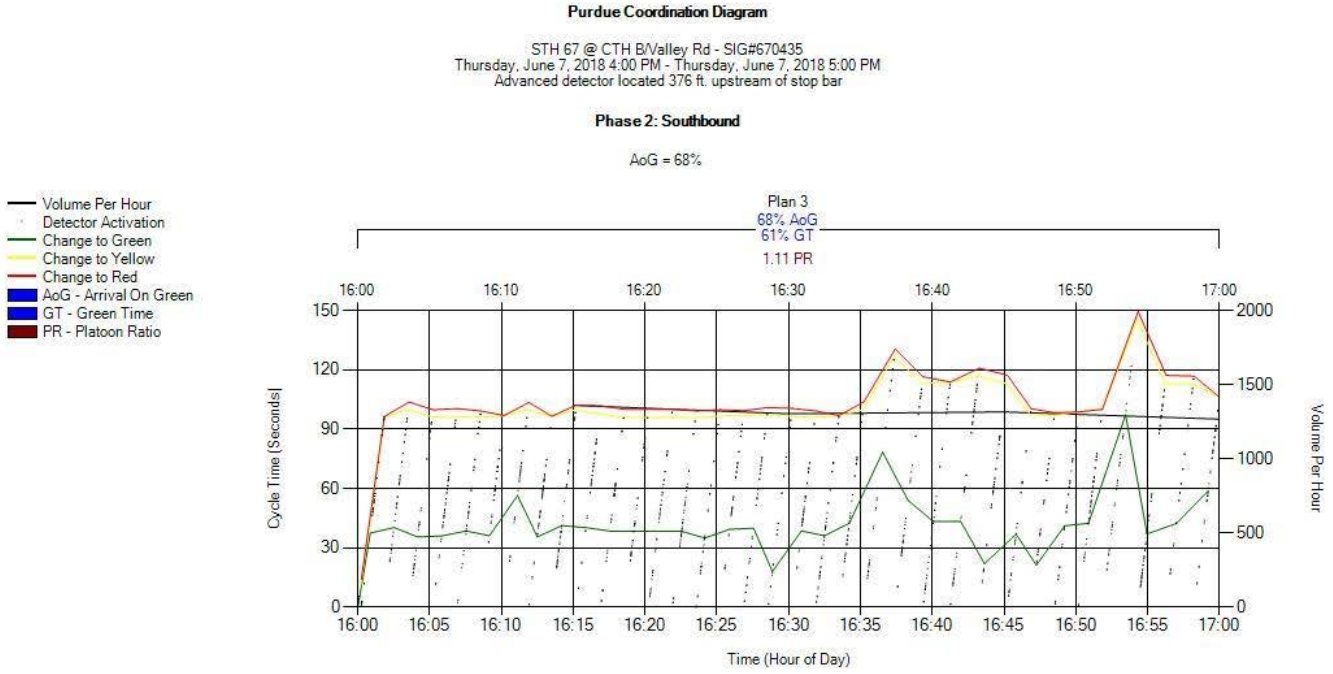


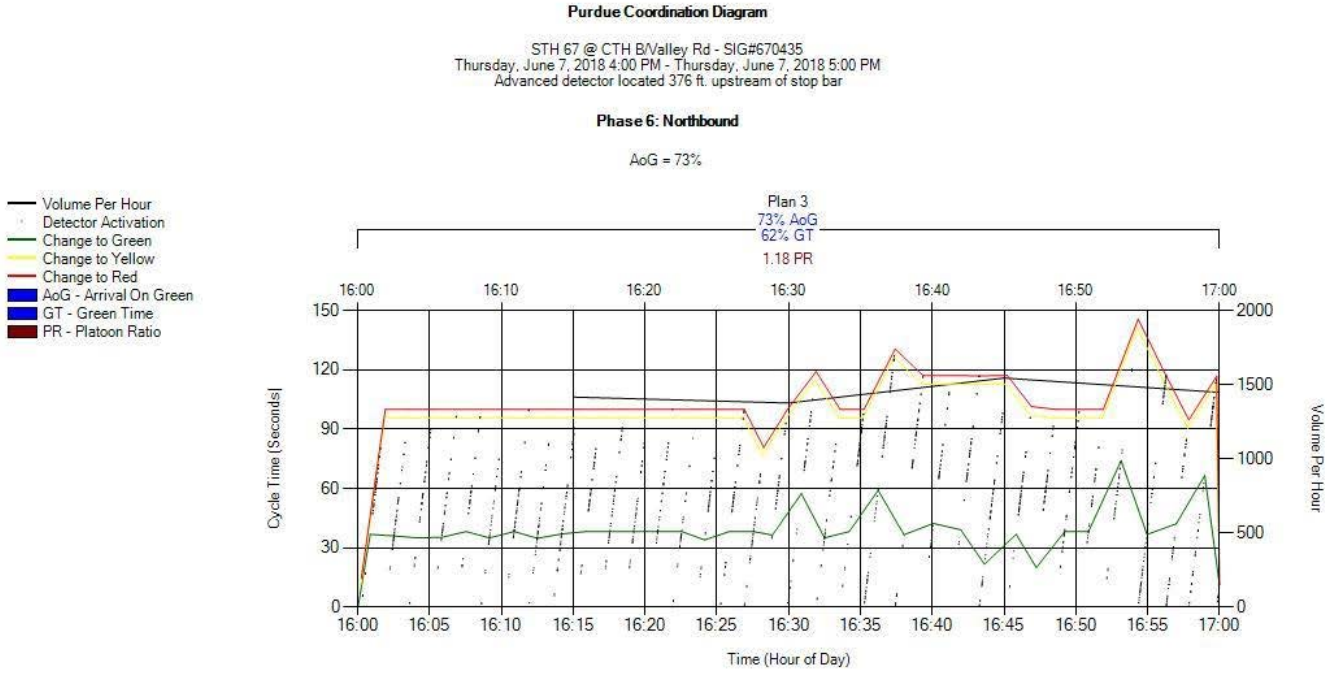
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Baseline Timings
6/7/2018 – 3:00 PM – 6:00 PM





WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Baseline Timings
6/5/2018 – 4:00 PM – 5:00 PM





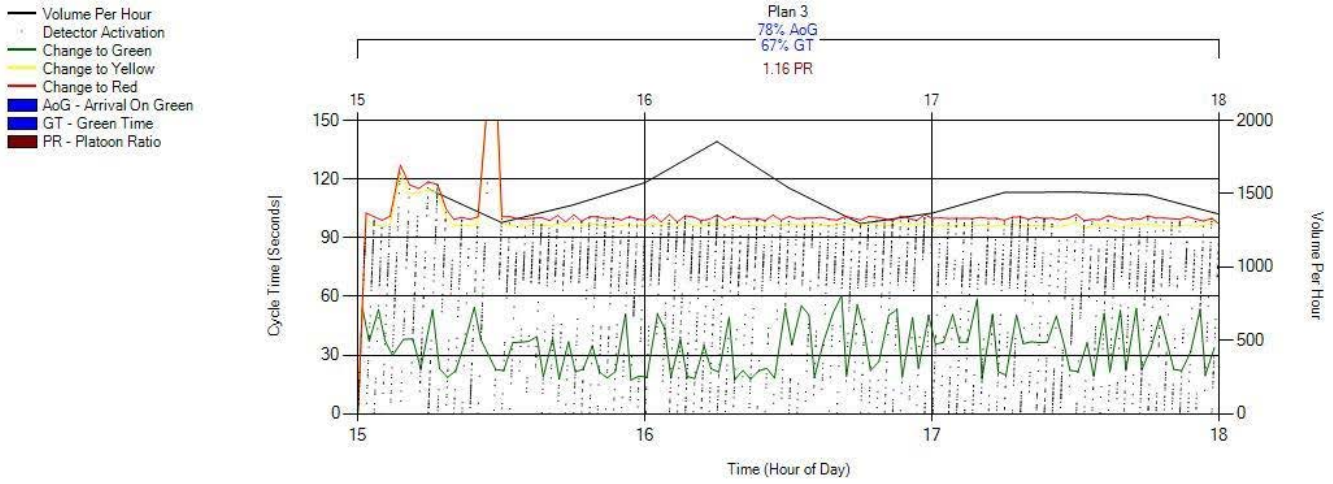
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM

Purdue Coordination Diagram

STH 67 @ Oconomowoc Dr/Pabst Farm Blvd - SIG#670890
Tuesday, June 5, 2018 3:00 PM - Tuesday, June 5, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar

Phase 2: Southbound

AoG = 78%

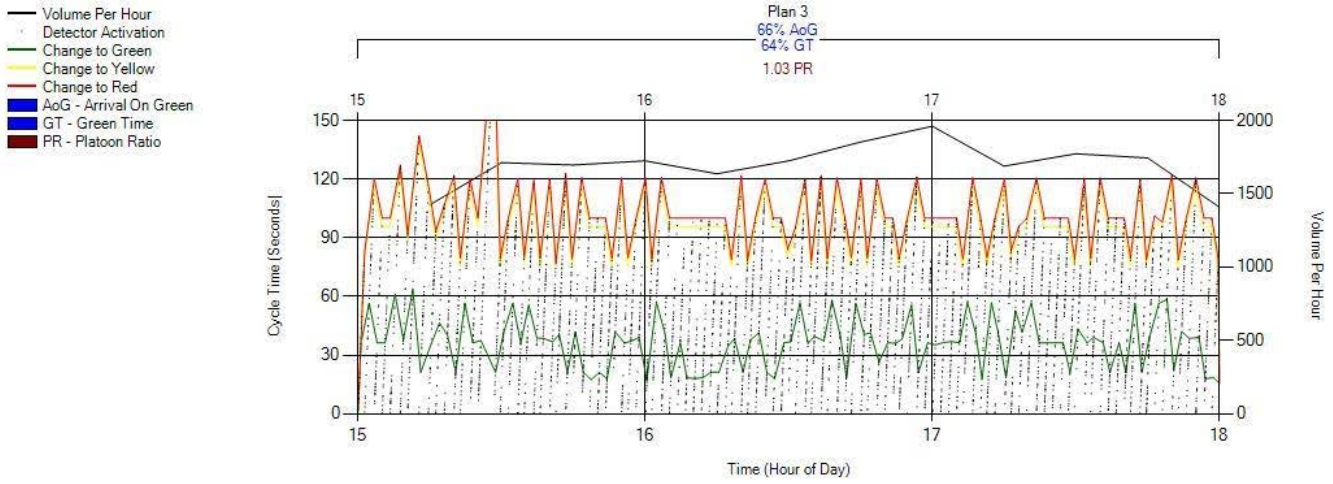


Purdue Coordination Diagram

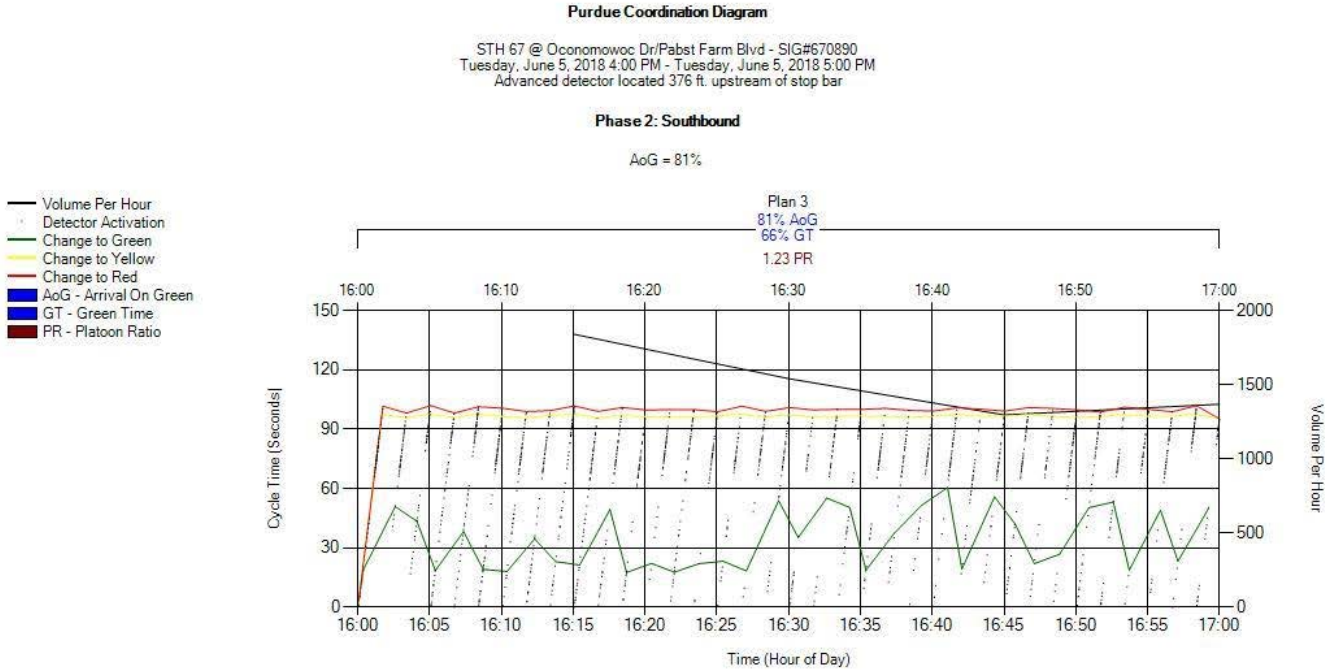
STH 67 @ Oconomowoc Dr/Pabst Farm Blvd - SIG#670890
Tuesday, June 5, 2018 3:00 PM - Tuesday, June 5, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar

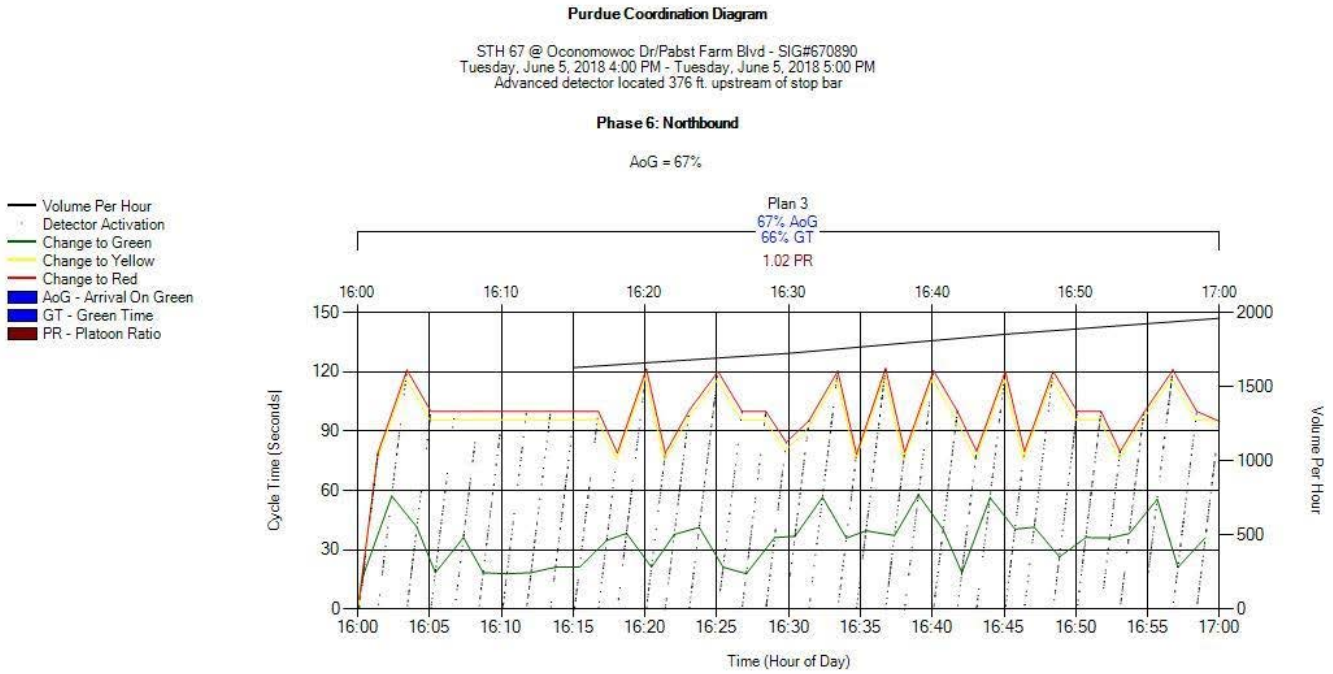
Phase 6: Northbound

AoG = 66%



WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Baseline Timings
6/5/2018 – 4:00 PM – 5:00 PM





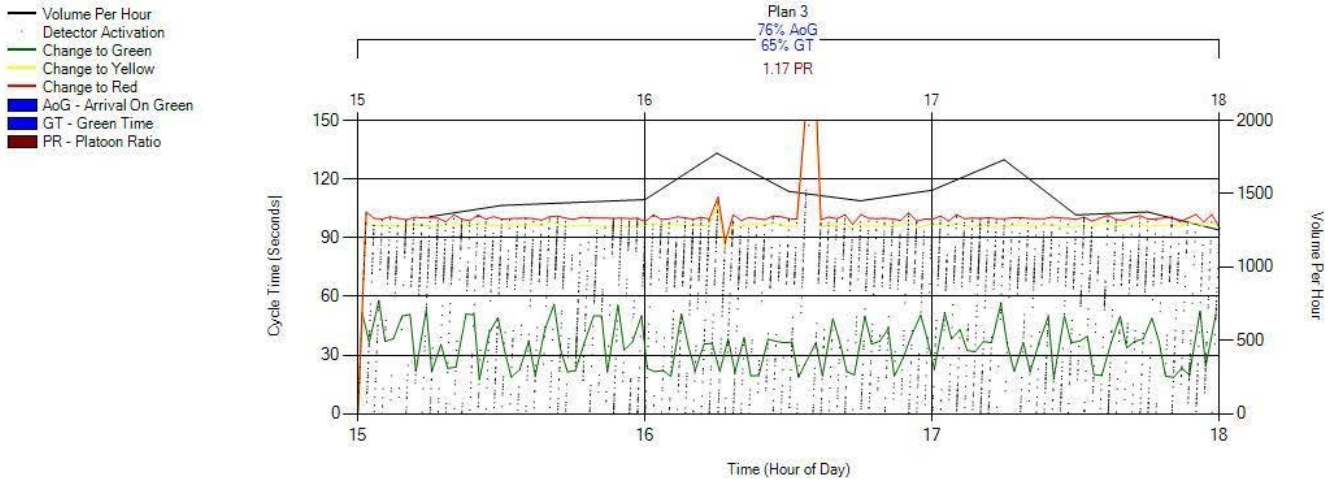
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Baseline Timings
6/6/2018 – 3:00 PM – 6:00 PM

Purdue Coordination Diagram

STH 67 @ Oconomowoc Dr/Pabst Farm Blvd - SIG#670890
Wednesday, June 6, 2018 3:00 PM - Wednesday, June 6, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar

Phase 2: Southbound

AoG = 76%

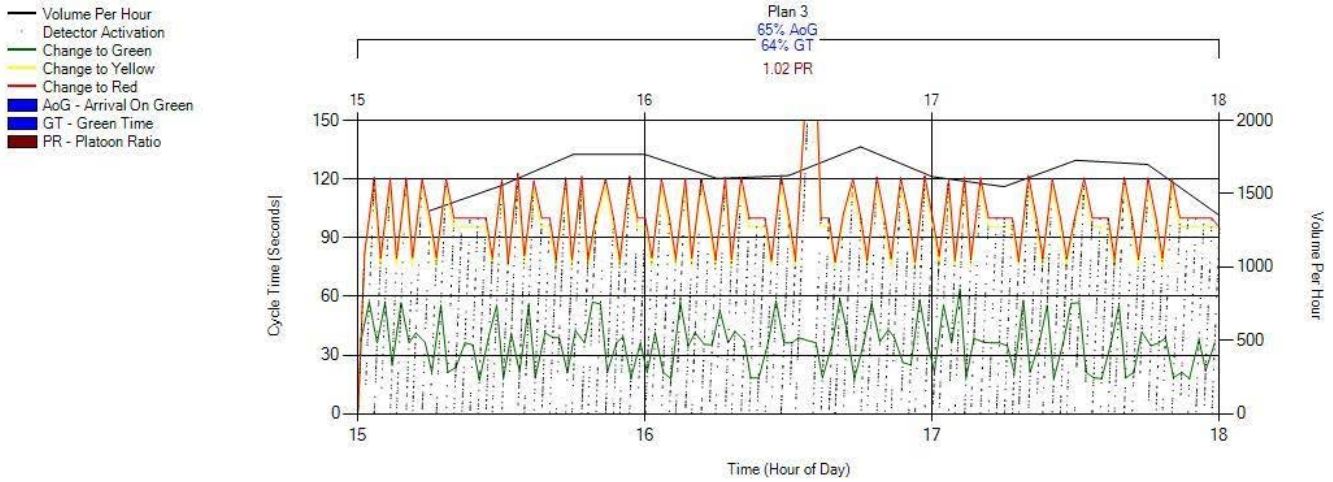


Purdue Coordination Diagram

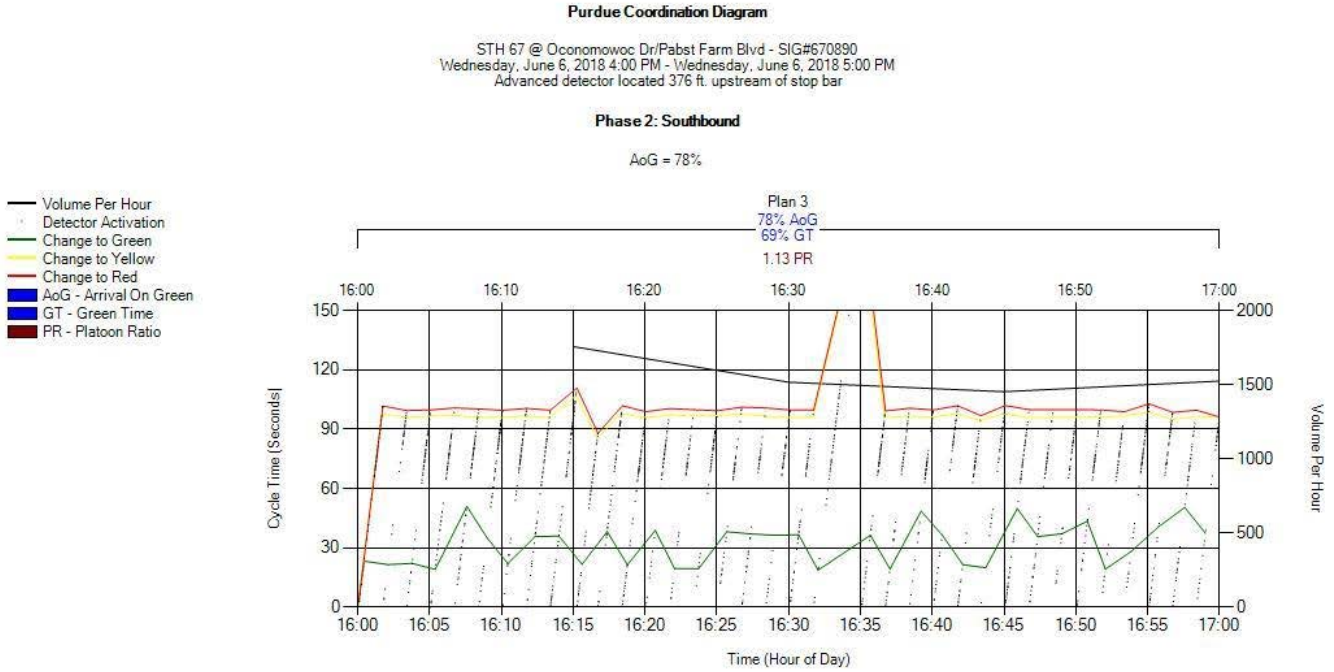
STH 67 @ Oconomowoc Dr/Pabst Farm Blvd - SIG#670890
Wednesday, June 6, 2018 3:00 PM - Wednesday, June 6, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar

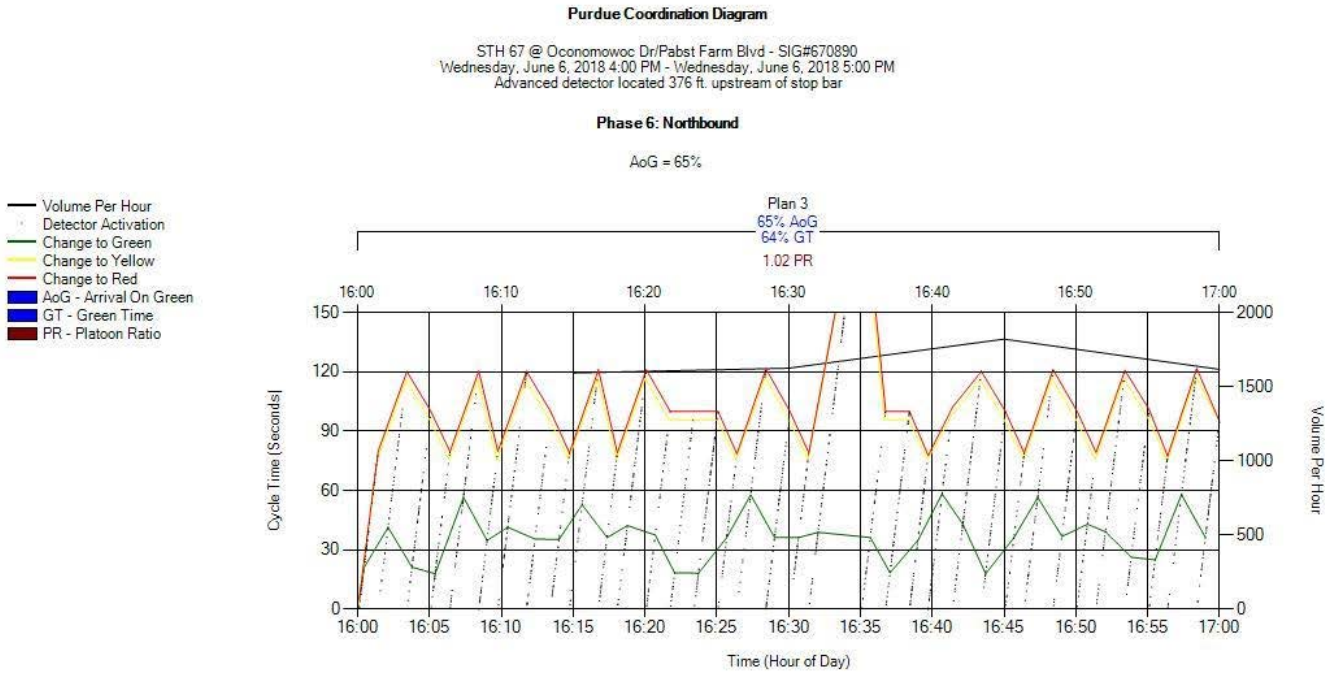
Phase 6: Northbound

AoG = 65%



WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Baseline Timings
6/6/2018 – 4:00 PM – 5:00 PM





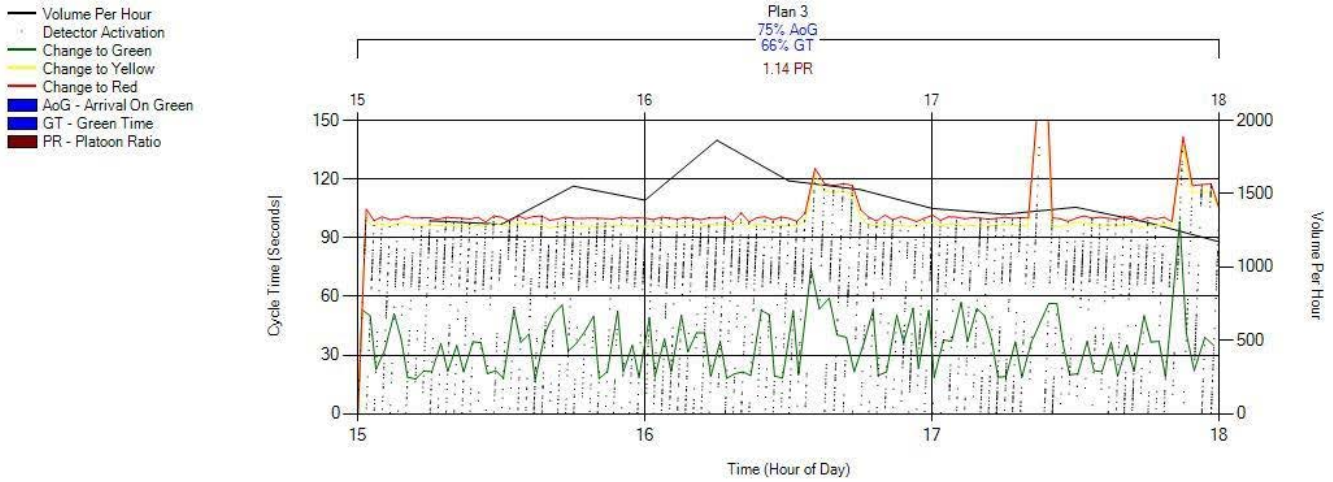
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Baseline Timings
6/7/2018 – 3:00 PM – 6:00 PM

Purdue Coordination Diagram

STH 67 @ Oconomowoc Dr/Pabst Farm Blvd - SIG#670890
Thursday, June 7, 2018 3:00 PM - Thursday, June 7, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar

Phase 2: Southbound

AoG = 75%

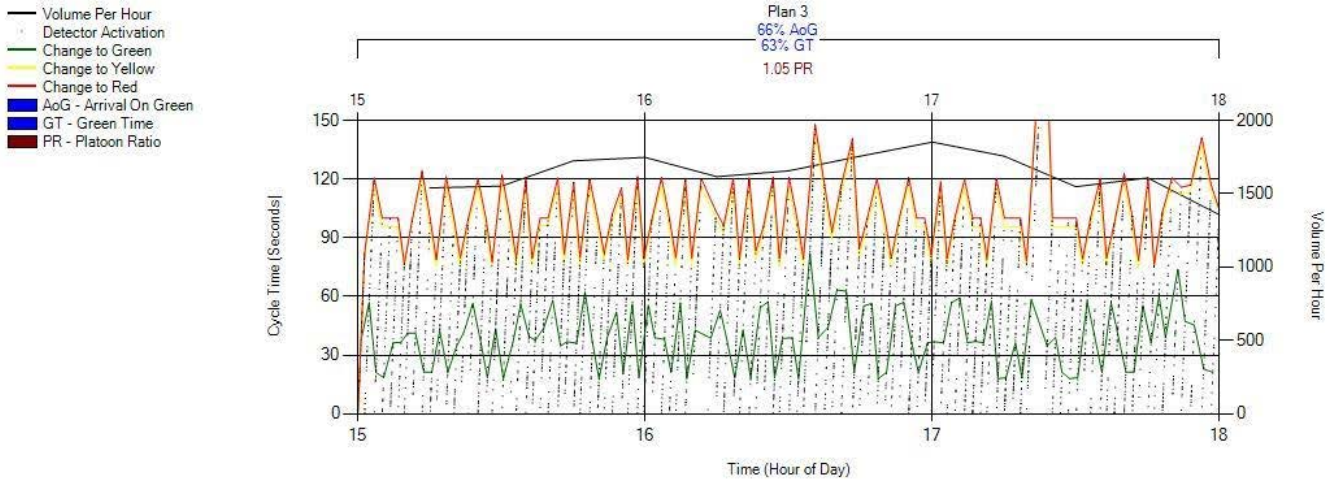


Purdue Coordination Diagram

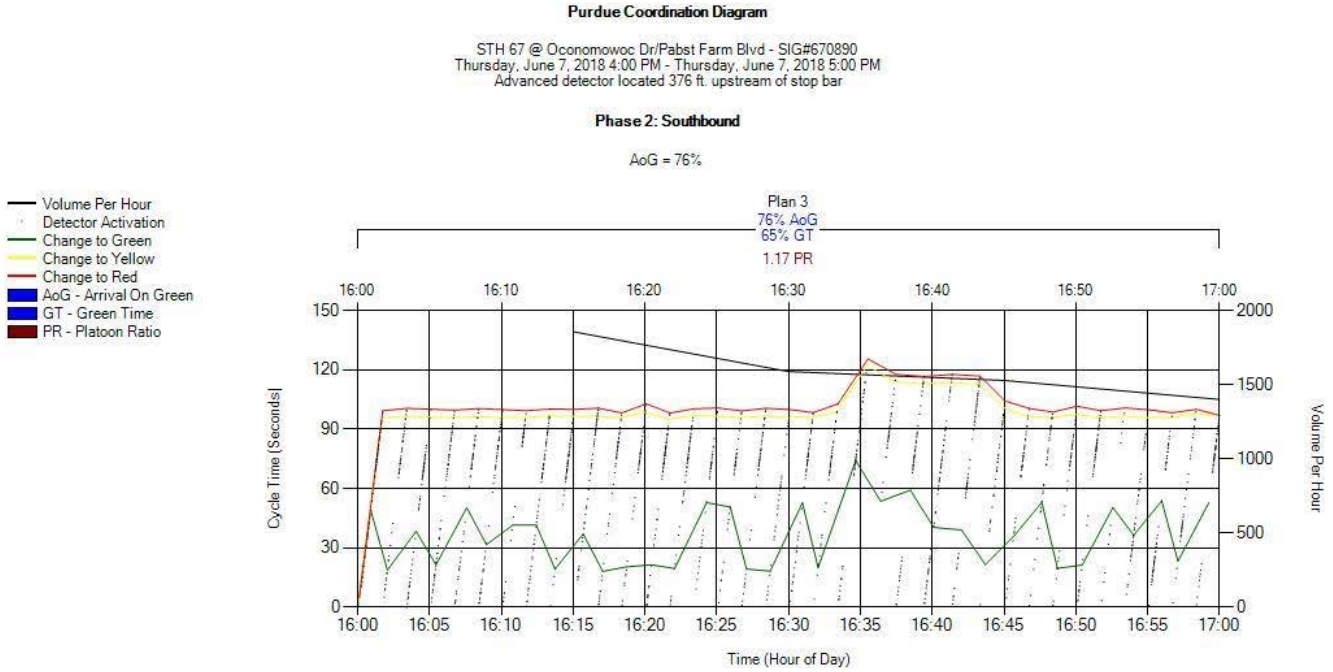
STH 67 @ Oconomowoc Dr/Pabst Farm Blvd - SIG#670890
Thursday, June 7, 2018 3:00 PM - Thursday, June 7, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar

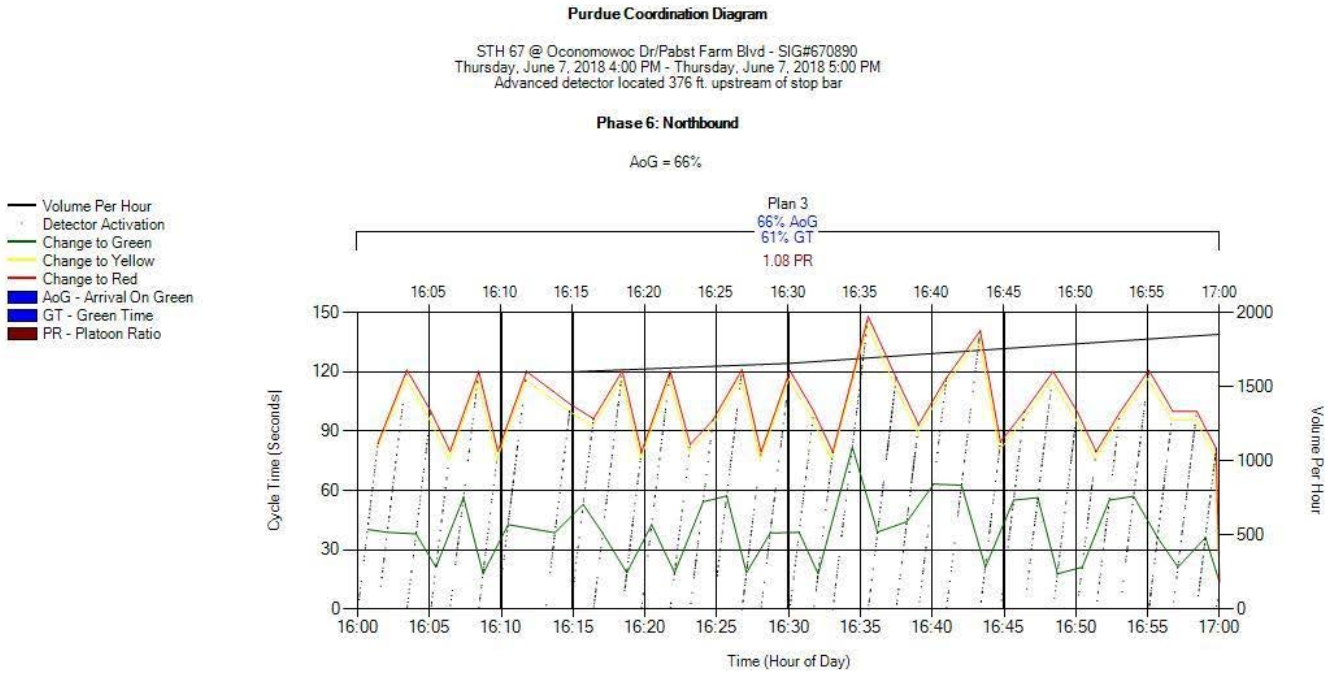
Phase 6: Northbound

AoG = 66%



WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Baseline Timings
6/7/2018 – 4:00 PM – 5:00 PM



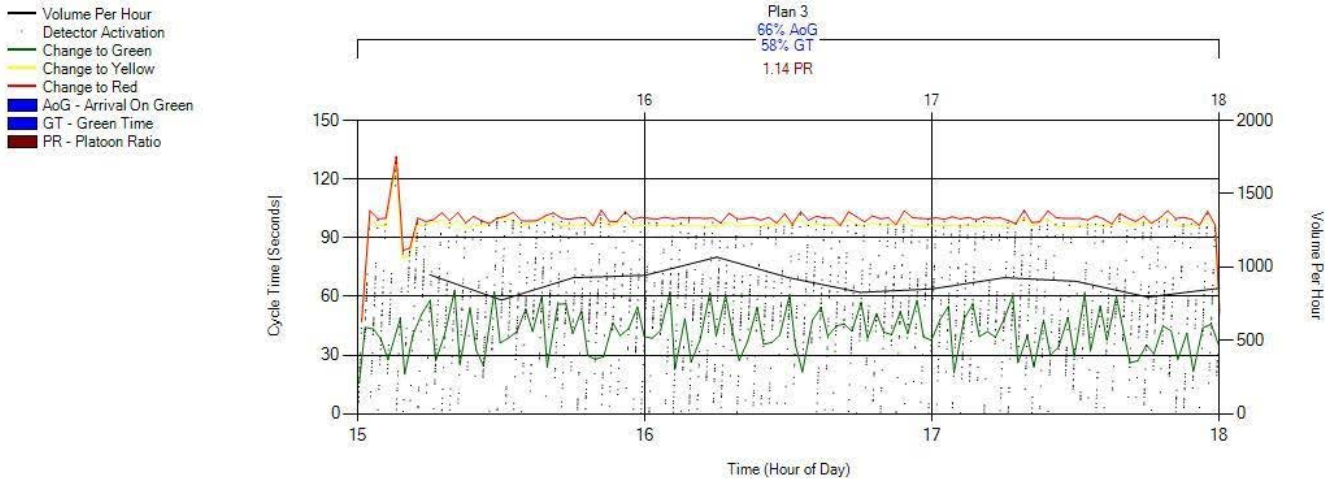


Purdue Coordination Diagram

IH-94 WB Ramps @ STH 67 - SIG#670888
Tuesday, June 5, 2018 3:00 PM - Tuesday, June 5, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar

Phase 2: Southbound

AoG = 66%

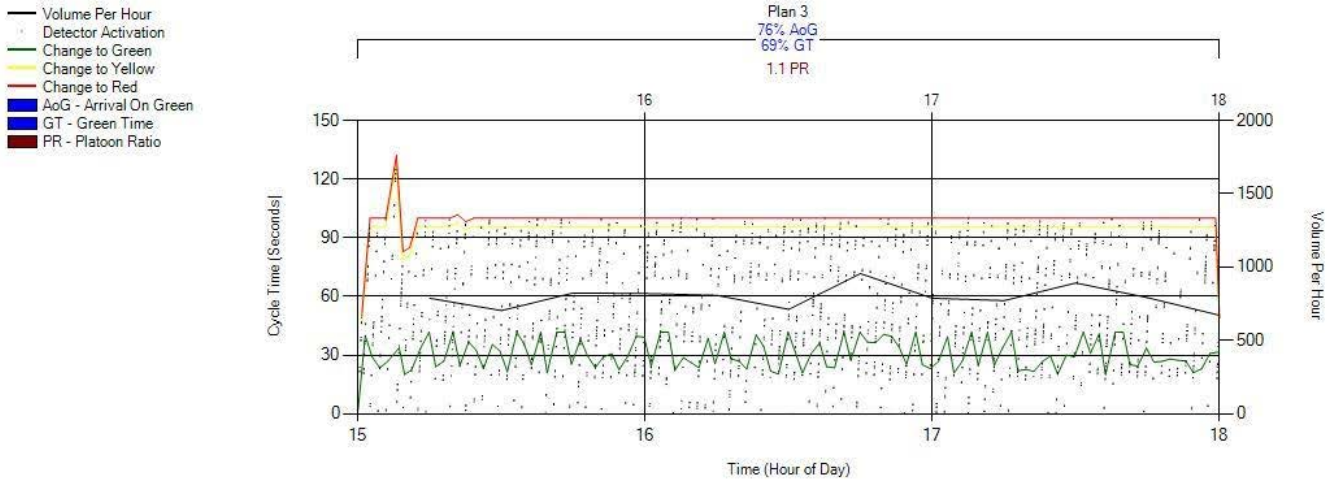


Purdue Coordination Diagram

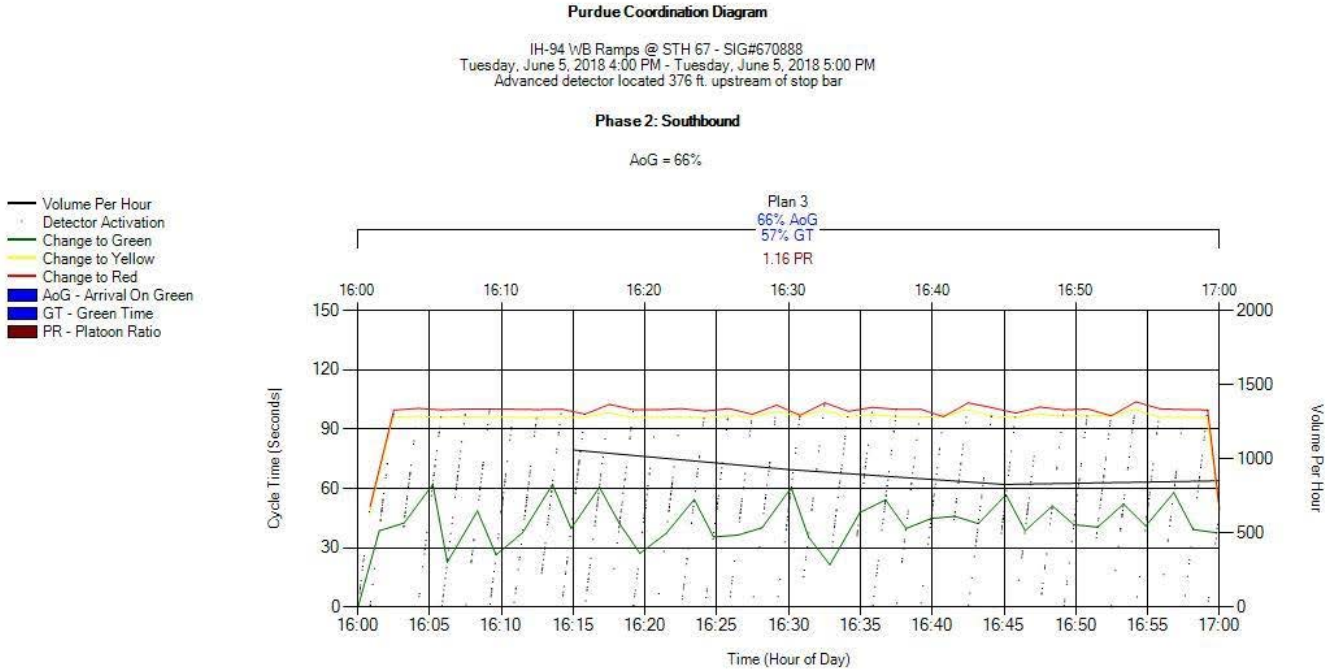
IH-94 WB Ramps @ STH 67 - SIG#670888
Tuesday, June 5, 2018 3:00 PM - Tuesday, June 5, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar

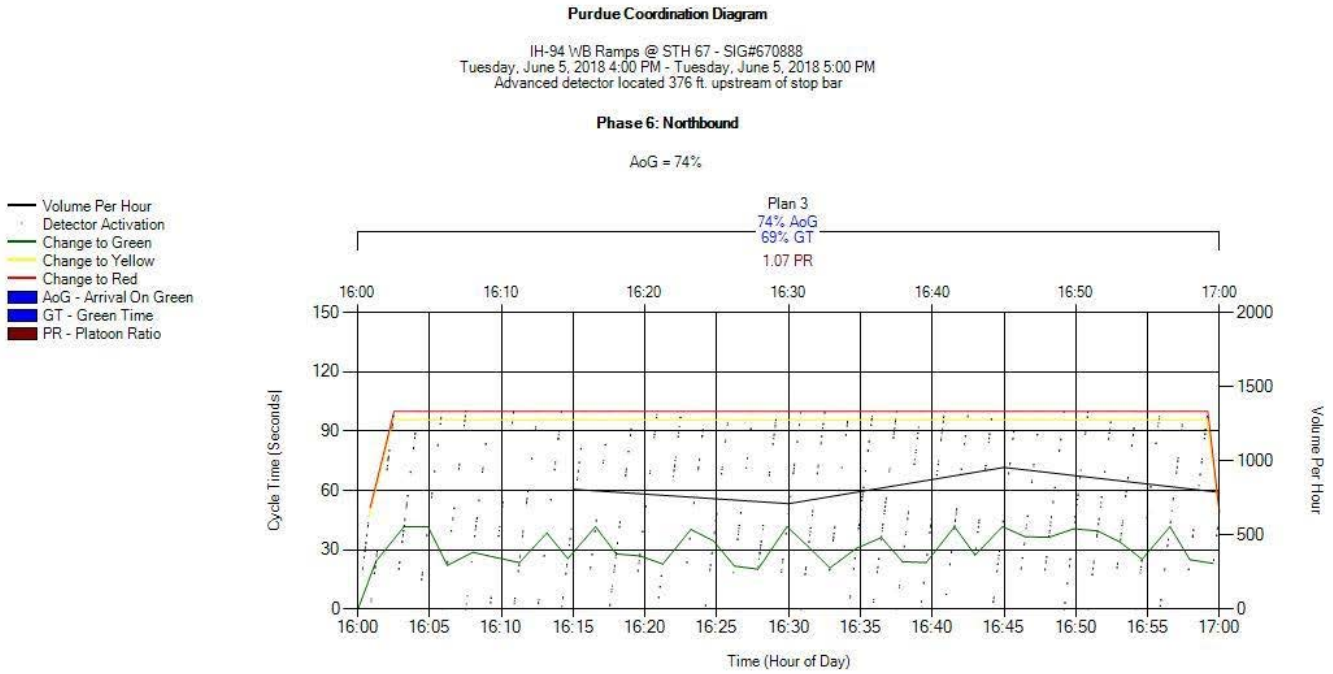
Phase 6: Northbound

AoG = 76%



WIS 67 Corridor – STH 67 & I-94 WB Ramps
Baseline Timings
6/5/2018 – 4:00 PM – 5:00 PM





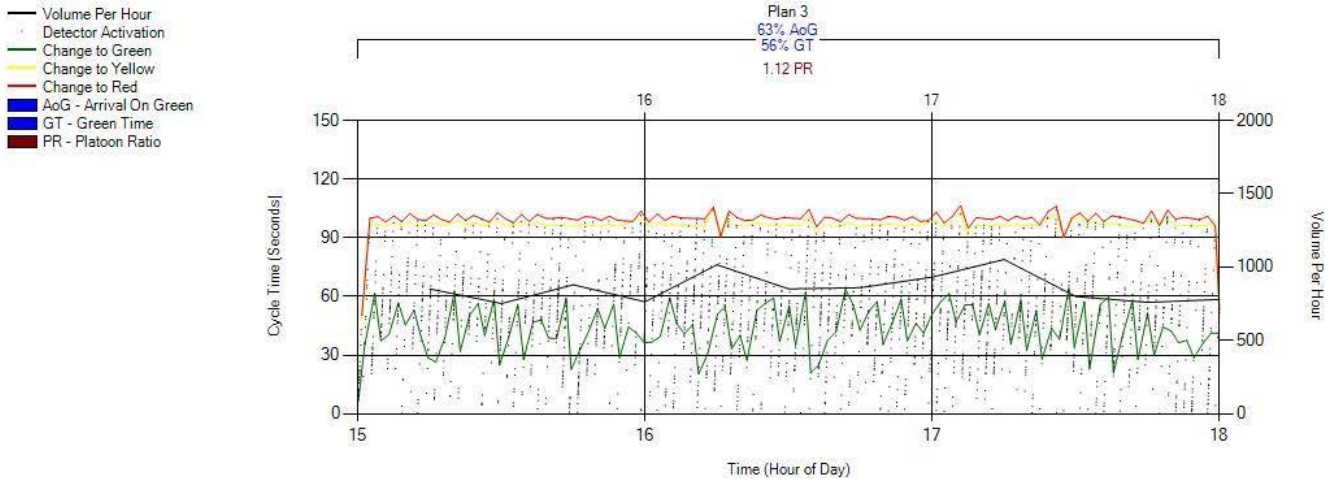
WIS 67 Corridor – STH 67 & I-94 WB Ramps
Baseline Timings
6/6/2018 – 3:00 PM – 6:00 PM

Purdue Coordination Diagram

IH-94 WB Ramps @ STH 67 - SIG#670888
Wednesday, June 6, 2018 3:00 PM - Wednesday, June 6, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar

Phase 2: Southbound

AoG = 63%

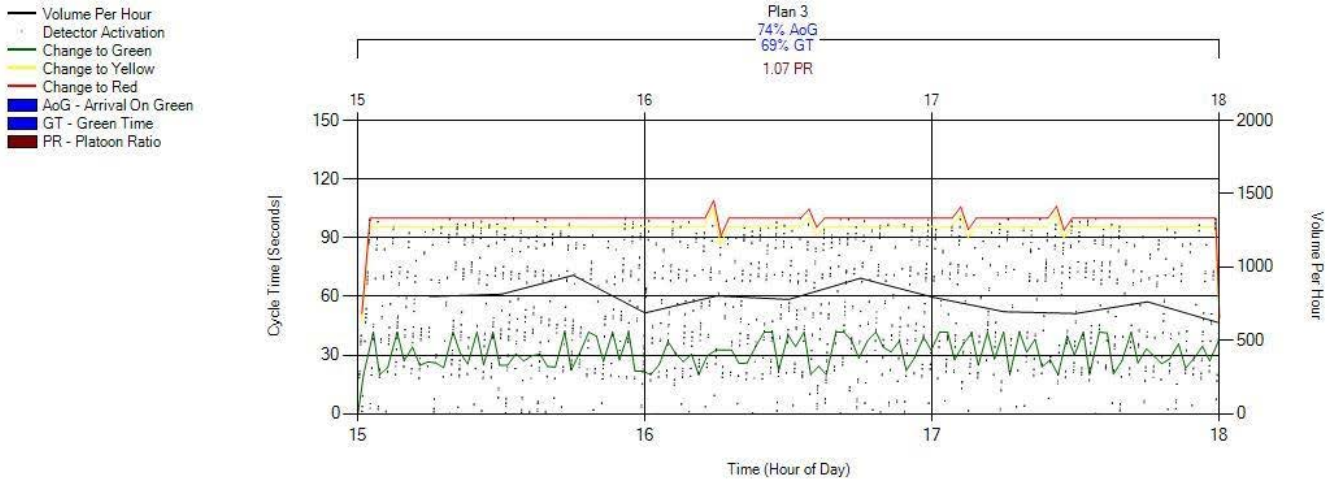


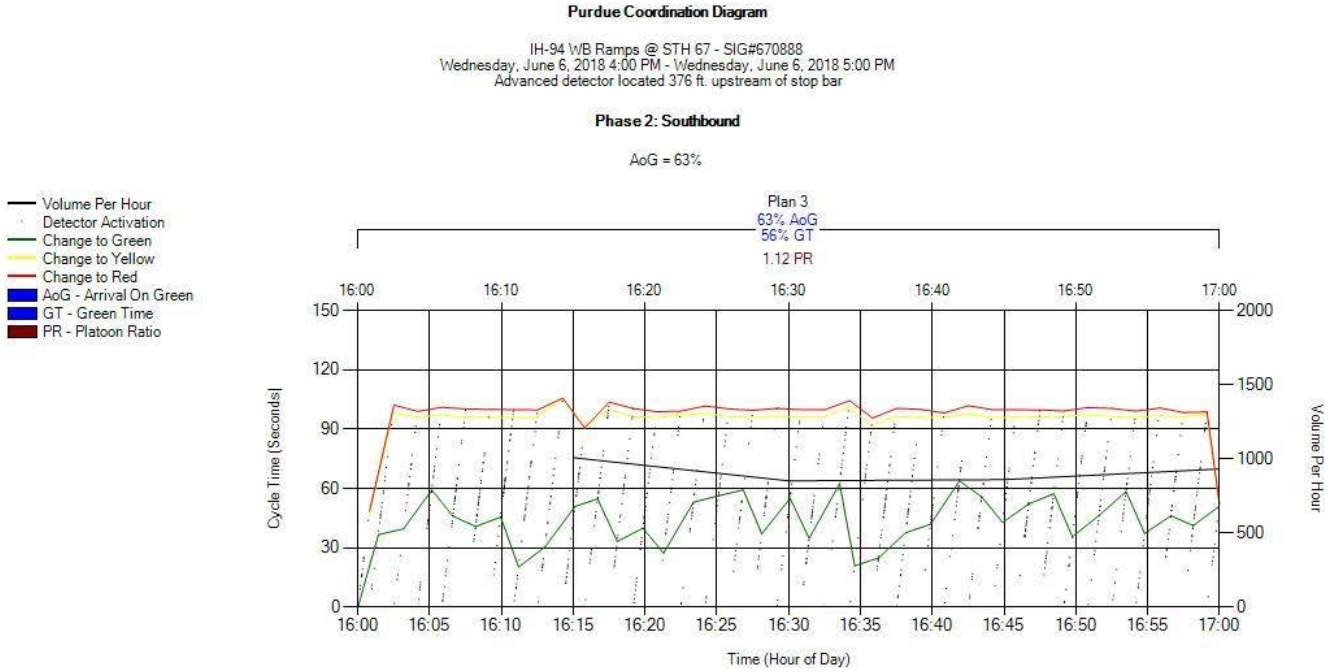
Purdue Coordination Diagram

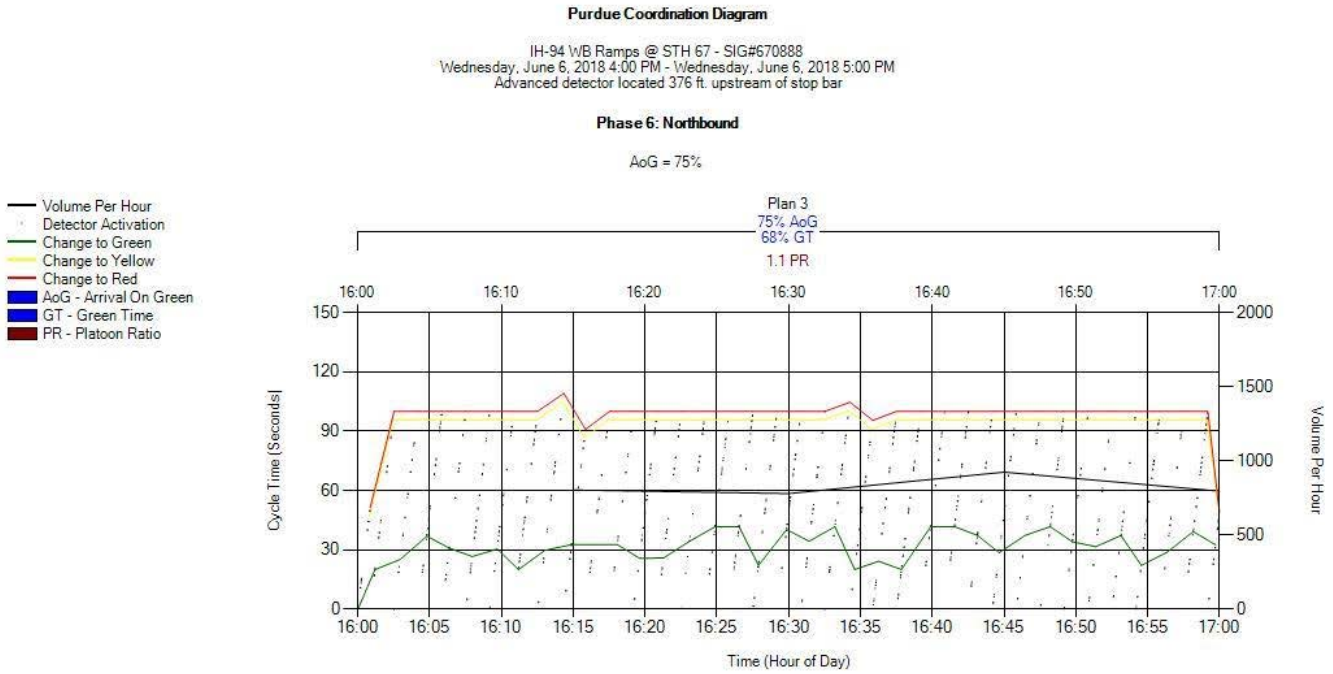
IH-94 WB Ramps @ STH 67 - SIG#670888
Wednesday, June 6, 2018 3:00 PM - Wednesday, June 6, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar

Phase 6: Northbound

AoG = 74%




Purdue Coordination Diagram
IH-94 WB Ramps @ STH 67 - SIG#670888
Wednesday, June 6, 2018 4:00 PM - Wednesday, June 6, 2018 5:00 PM
Advanced detector located 376 ft. upstream of stop bar
Phase 2: Southbound
AoG = 63%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
63% AoG
56% GT
1.12 PR
Cycle Time [Seconds]
Volume Per Hour
Time (Hour of Day)


Purdue Coordination Diagram
IH-94 WB Ramps @ STH 67 - SIG#670888
Wednesday, June 6, 2018 4:00 PM - Wednesday, June 6, 2018 5:00 PM
Advanced detector located 376 ft. upstream of stop bar
Phase 6: Northbound
AoG = 75%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
75% AoG
68% GT
1.1 PR
Cycle Time [Seconds]
Volume Per Hour
Time (Hour of Day)

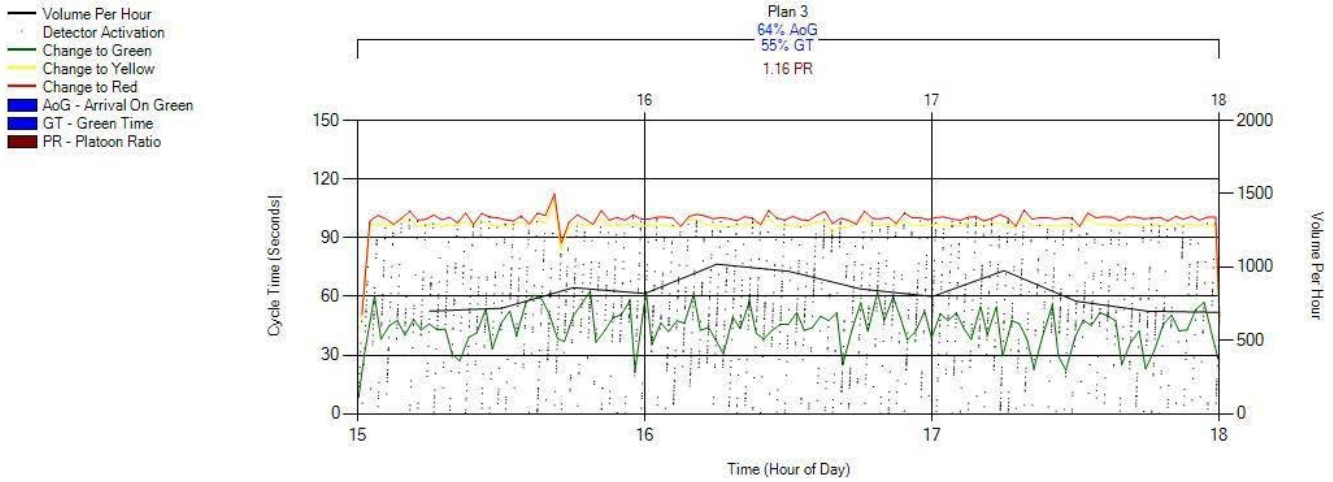
WIS 67 Corridor – STH 67 & I-94 WB Ramps
Baseline Timings
6/7/2018 – 3:00 PM – 6:00 PM

Purdue Coordination Diagram

IH-94 WB Ramps @ STH 67 - SIG#670888
Thursday, June 7, 2018 3:00 PM - Thursday, June 7, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar

Phase 2: Southbound

AoG = 64%

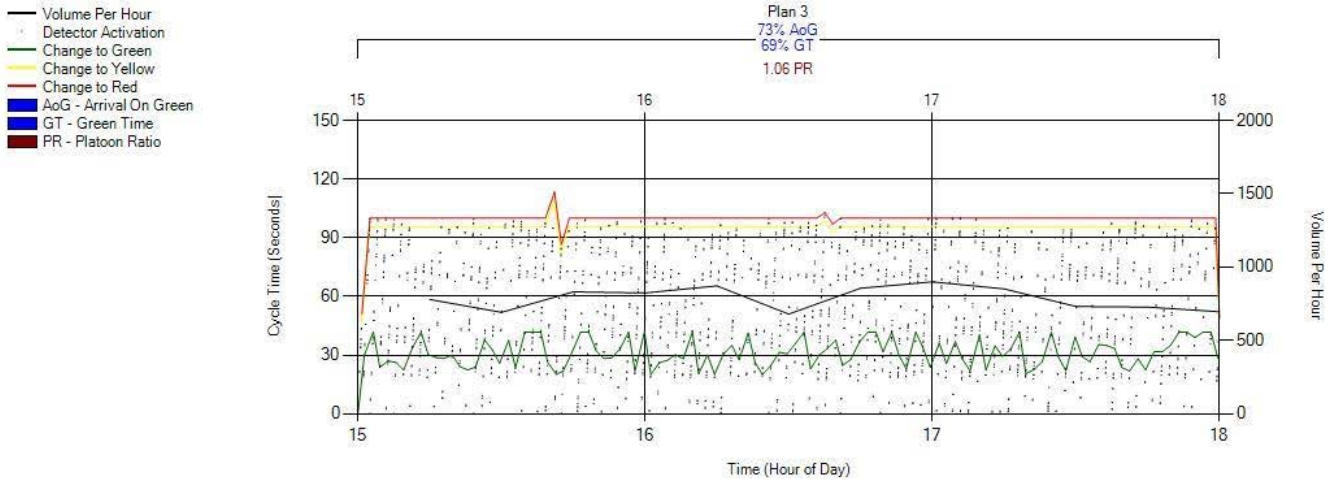


Purdue Coordination Diagram

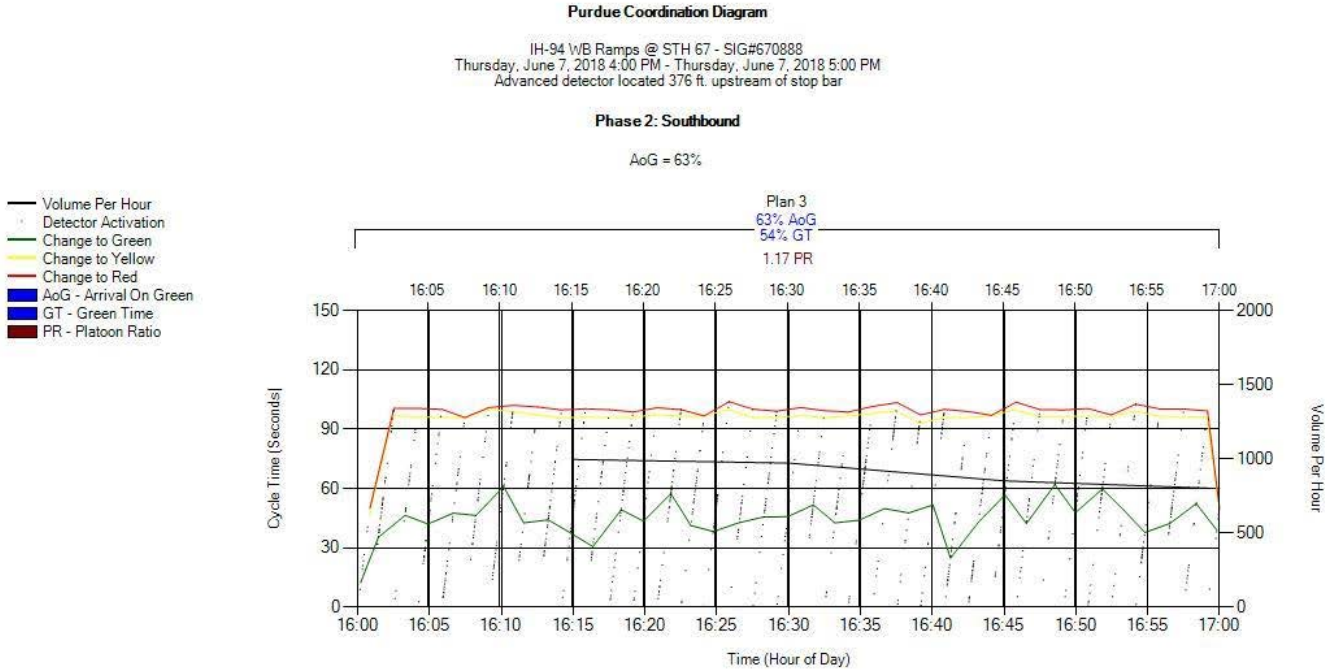
IH-94 WB Ramps @ STH 67 - SIG#670888
Thursday, June 7, 2018 3:00 PM - Thursday, June 7, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar

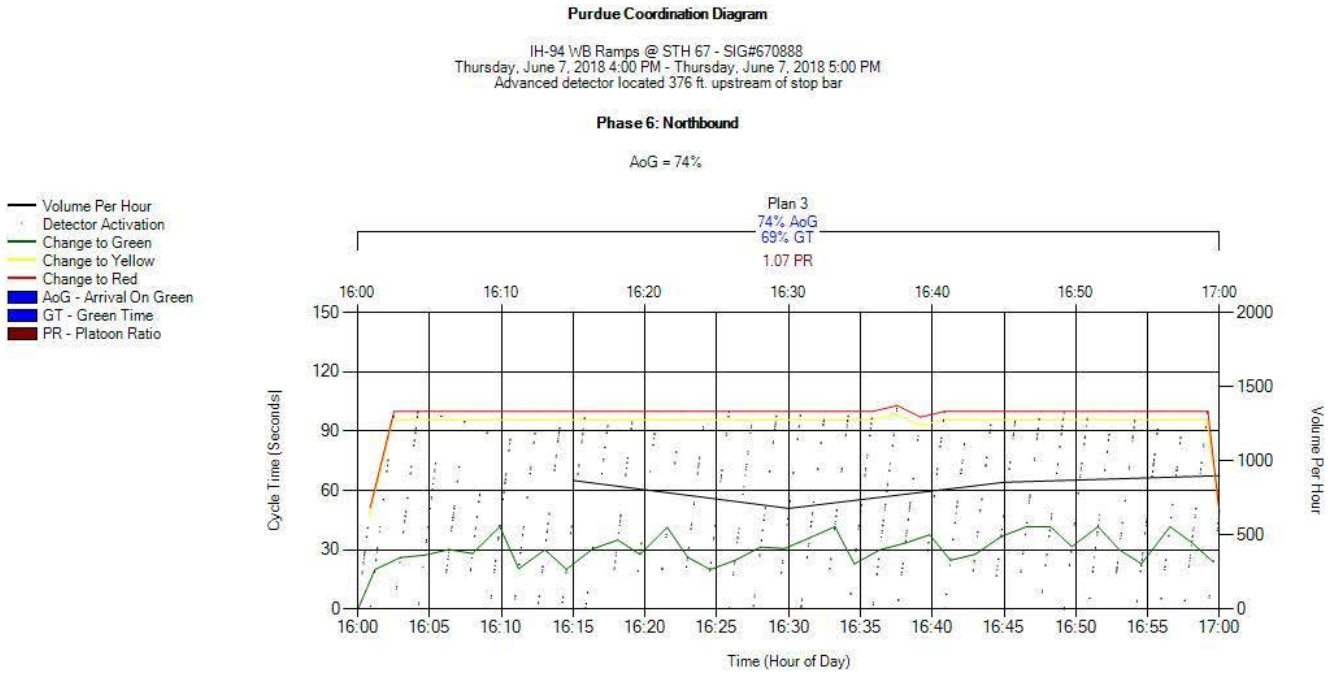
Phase 6: Northbound

AoG = 73%



WIS 67 Corridor – STH 67 & I-94 WB Ramps
Baseline Timings
6/7/2018 – 4:00 PM – 5:00 PM



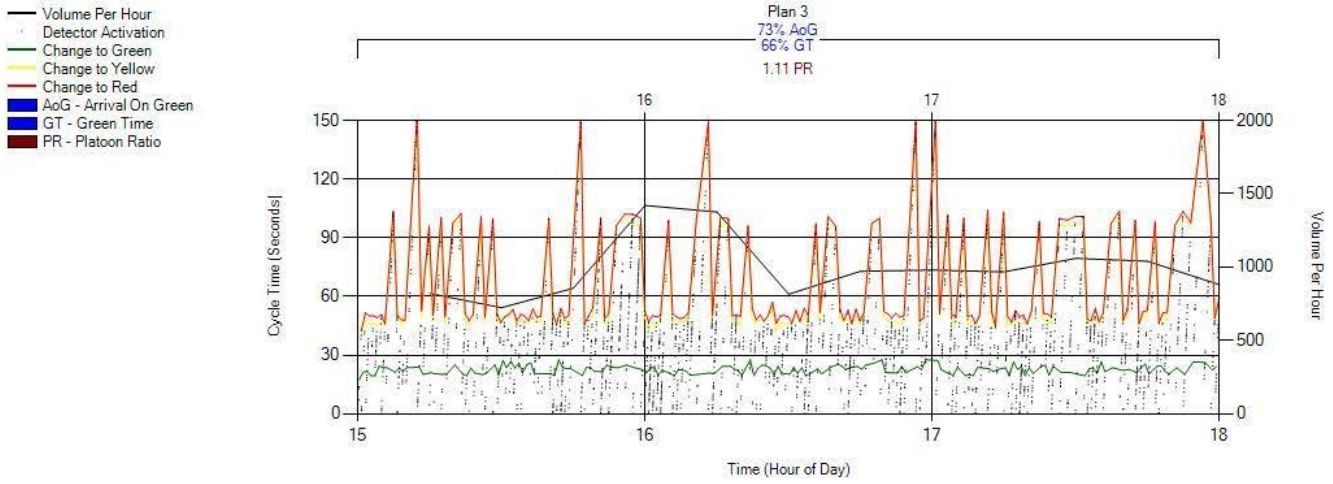


Purdue Coordination Diagram

IH-94 EB Ramps @ STH 67 - SIG#670889
Tuesday, June 5, 2018 3:00 PM - Tuesday, June 5, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar

Phase 2: Southbound

AoG = 73%

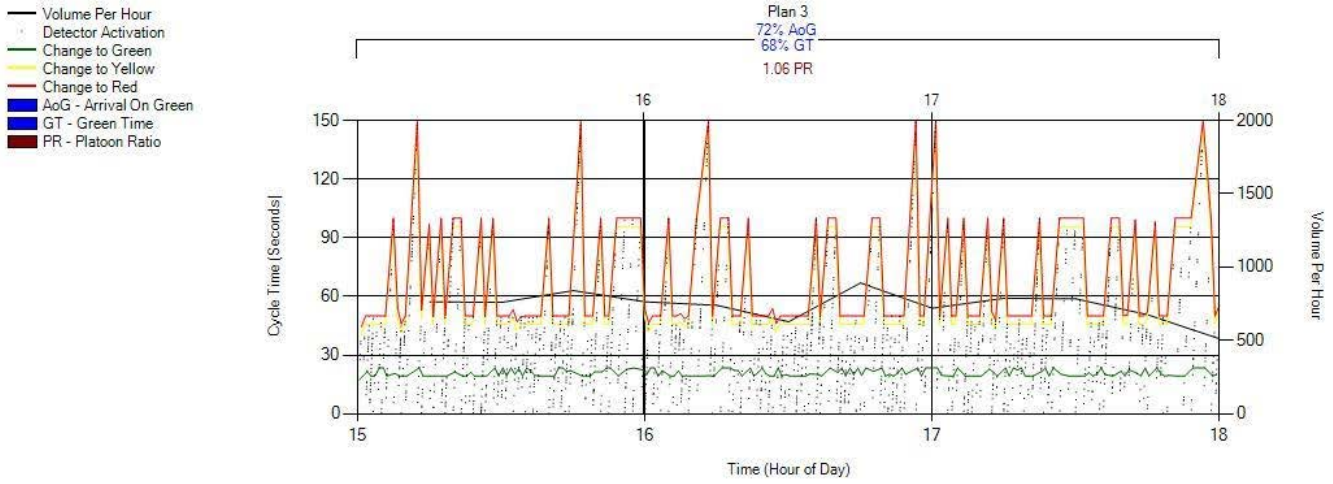


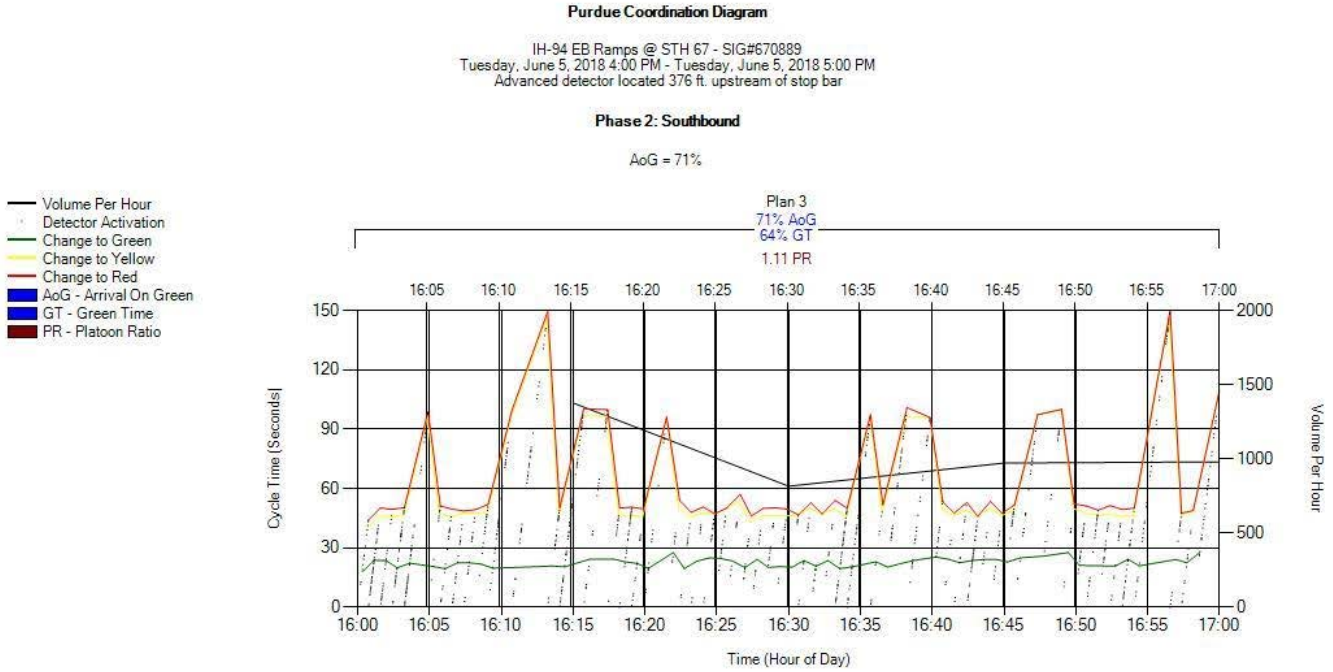
Purdue Coordination Diagram

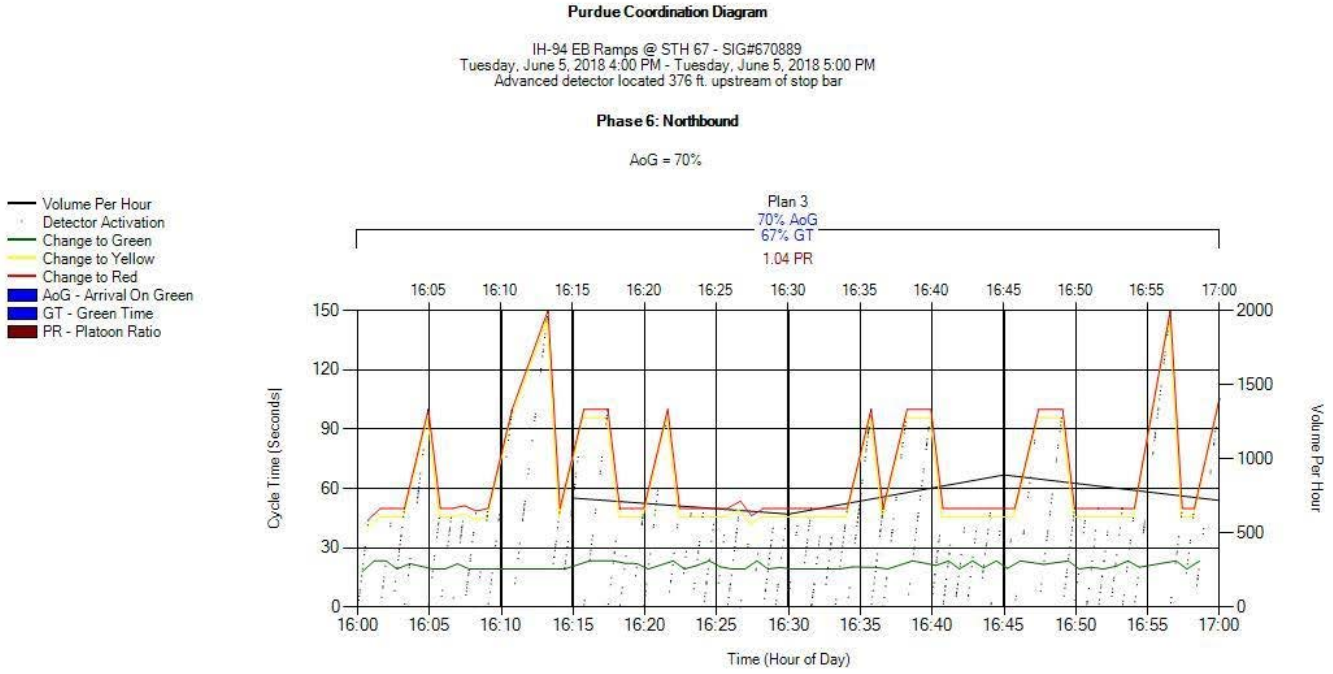
IH-94 EB Ramps @ STH 67 - SIG#670889
Tuesday, June 5, 2018 3:00 PM - Tuesday, June 5, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar

Phase 6: Northbound

AoG = 72%




Purdue Coordination Diagram
IH-94 EB Ramps @ STH 67 - SIG#670889
Tuesday, June 5, 2018 4:00 PM - Tuesday, June 5, 2018 5:00 PM
Advanced detector located 376 ft. upstream of stop bar
Phase 2: Southbound
AoG = 71%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
71% AoG
64% GT
1.11 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)

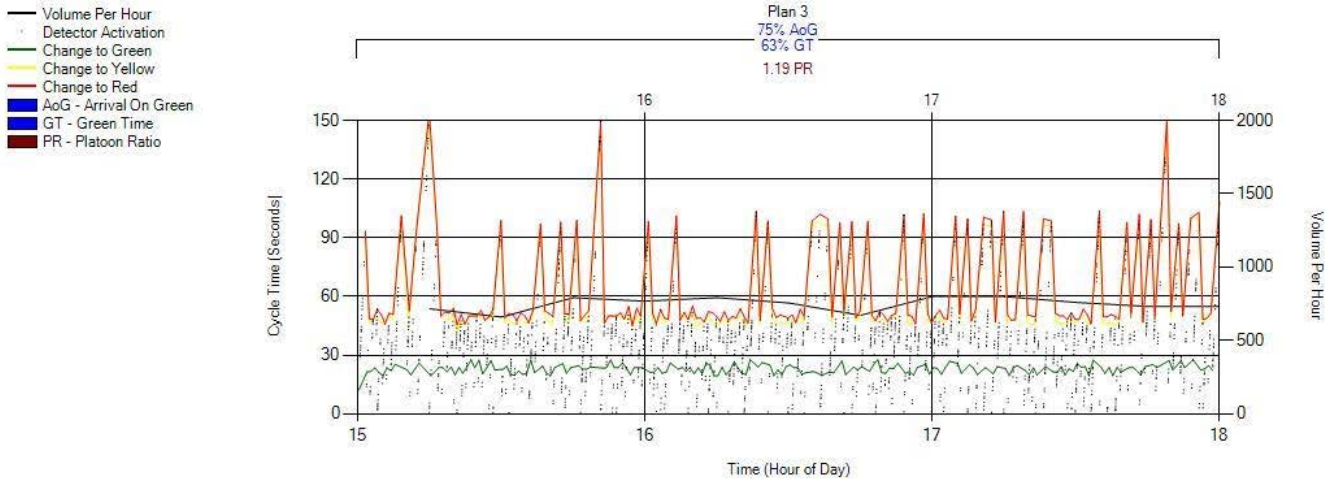

Purdue Coordination Diagram
IH-94 EB Ramps @ STH 67 - SIG#670889
Tuesday, June 5, 2018 4:00 PM - Tuesday, June 5, 2018 5:00 PM
Advanced detector located 376 ft. upstream of stop bar
Phase 6: Northbound
AoG = 70%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
70% AoG
67% GT
1.04 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)

Purdue Coordination Diagram

IH-94 EB Ramps @ STH 67 - SIG#670889
Wednesday, June 6, 2018 3:00 PM - Wednesday, June 6, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar

Phase 2: Southbound

AoG = 75%

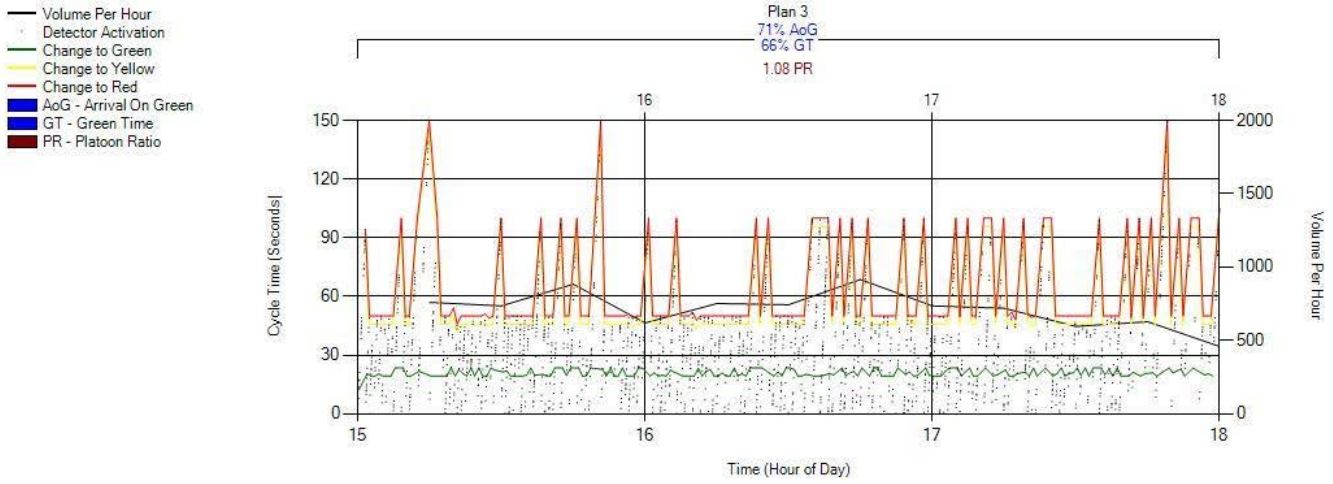


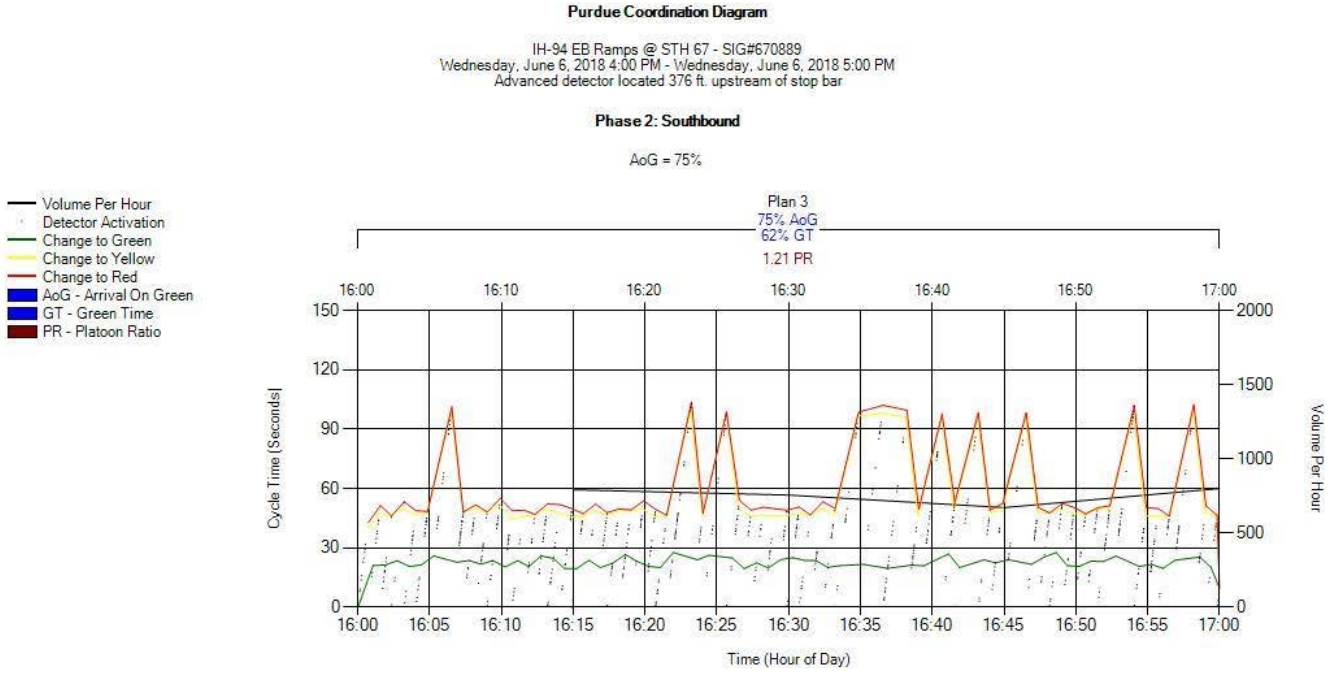
Purdue Coordination Diagram

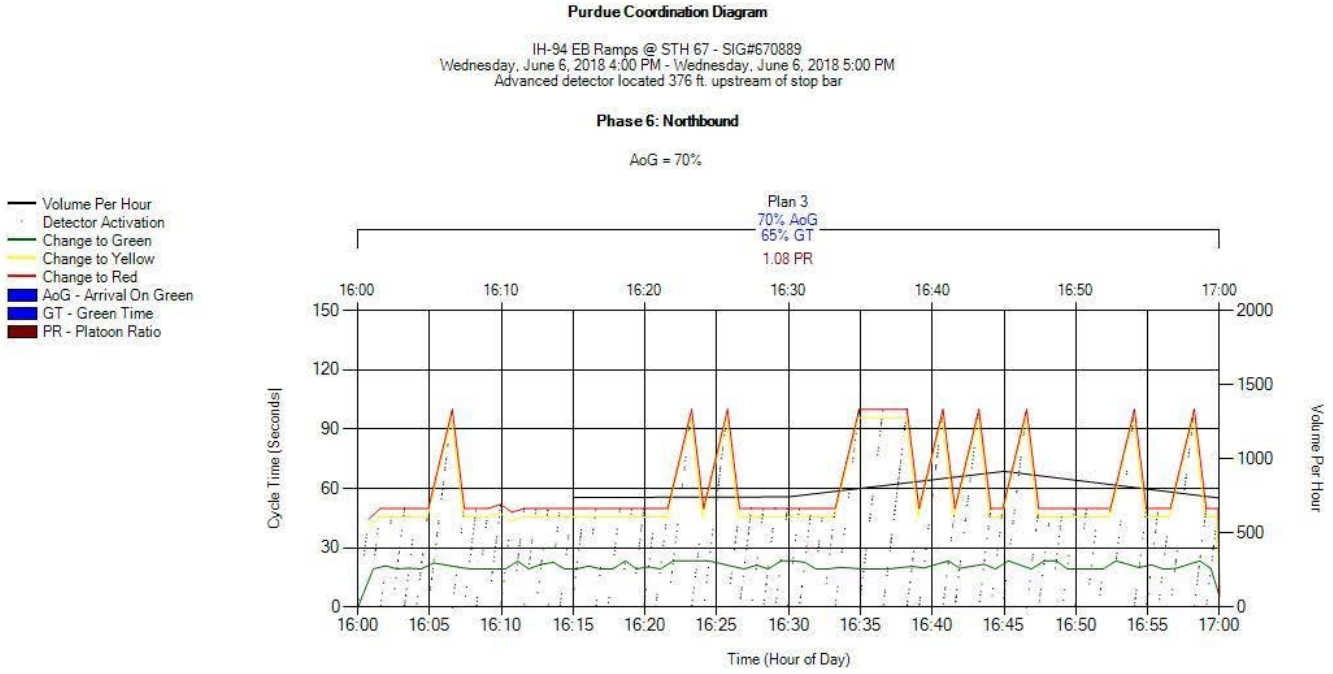
IH-94 EB Ramps @ STH 67 - SIG#670889
Wednesday, June 6, 2018 3:00 PM - Wednesday, June 6, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar

Phase 6: Northbound

AoG = 71%




Purdue Coordination Diagram
IH-94 EB Ramps @ STH 67 - SIG#670889
Wednesday, June 6, 2018 4:00 PM - Wednesday, June 6, 2018 5:00 PM
Advanced detector located 376 ft. upstream of stop bar
Phase 2: Southbound
AoG = 75%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
75% AoG
62% GT
1.21 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)

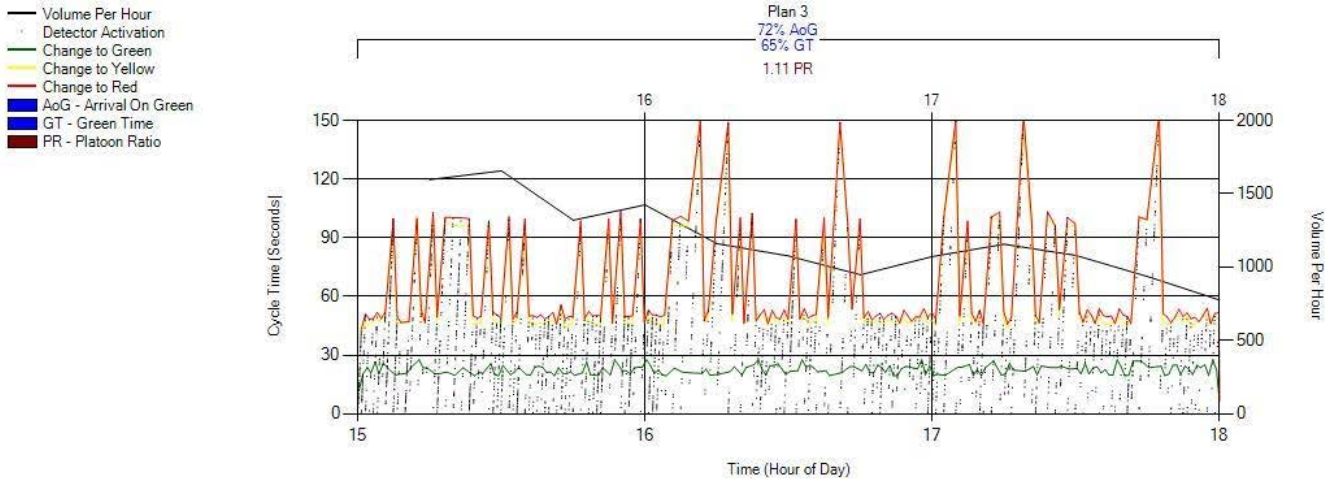

Purdue Coordination Diagram
IH-94 EB Ramps @ STH 67 - SIG#670889
Wednesday, June 6, 2018 4:00 PM - Wednesday, June 6, 2018 5:00 PM
Advanced detector located 376 ft. upstream of stop bar
Phase 6: Northbound
AoG = 70%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
70% AoG
65% GT
1.08 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)

Purdue Coordination Diagram

IH-94 EB Ramps @ STH 67 - SIG#670889
Thursday, June 7, 2018 3:00 PM - Thursday, June 7, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar

Phase 2: Southbound

AoG = 72%

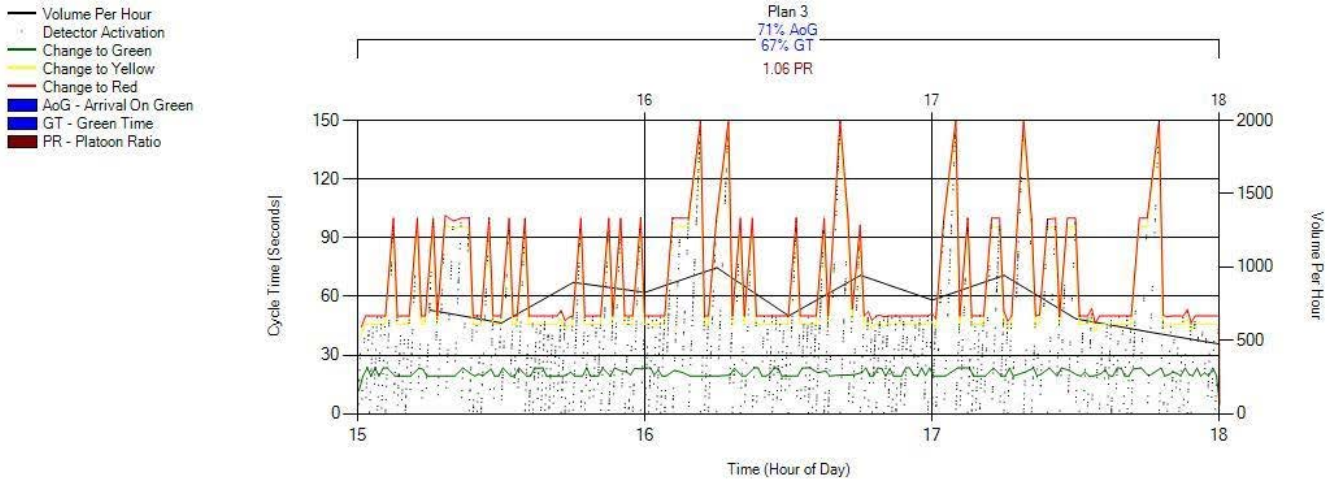


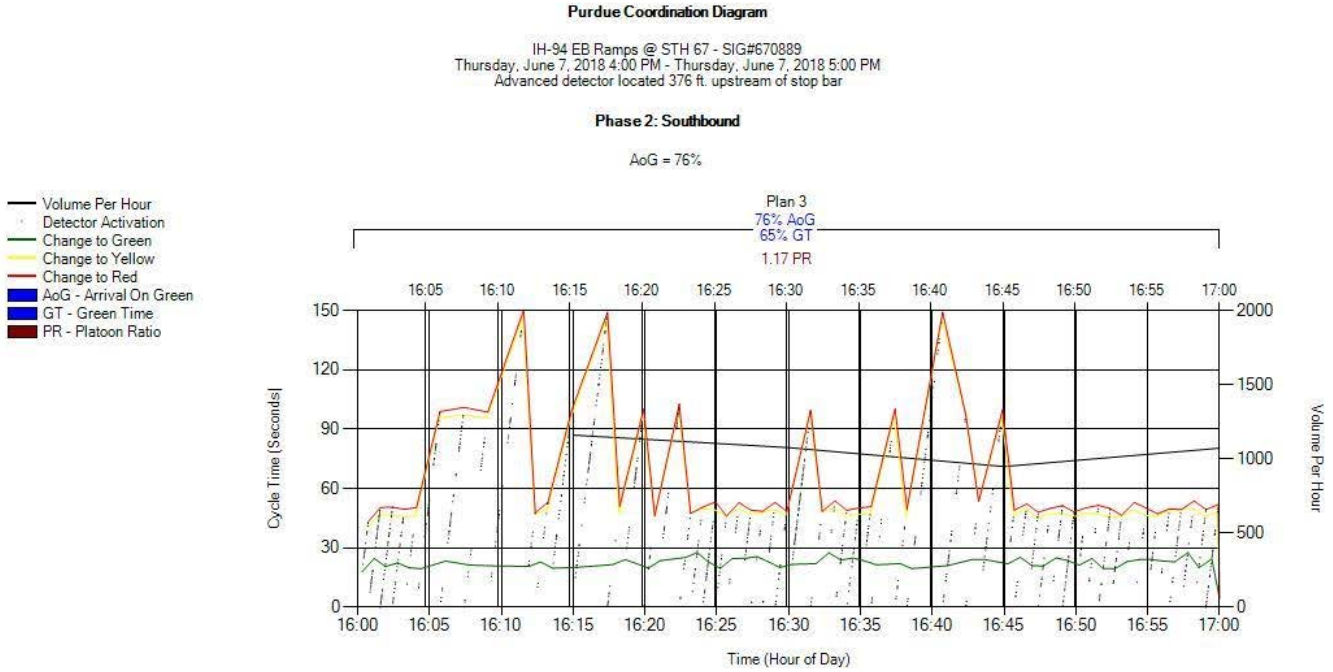
Purdue Coordination Diagram

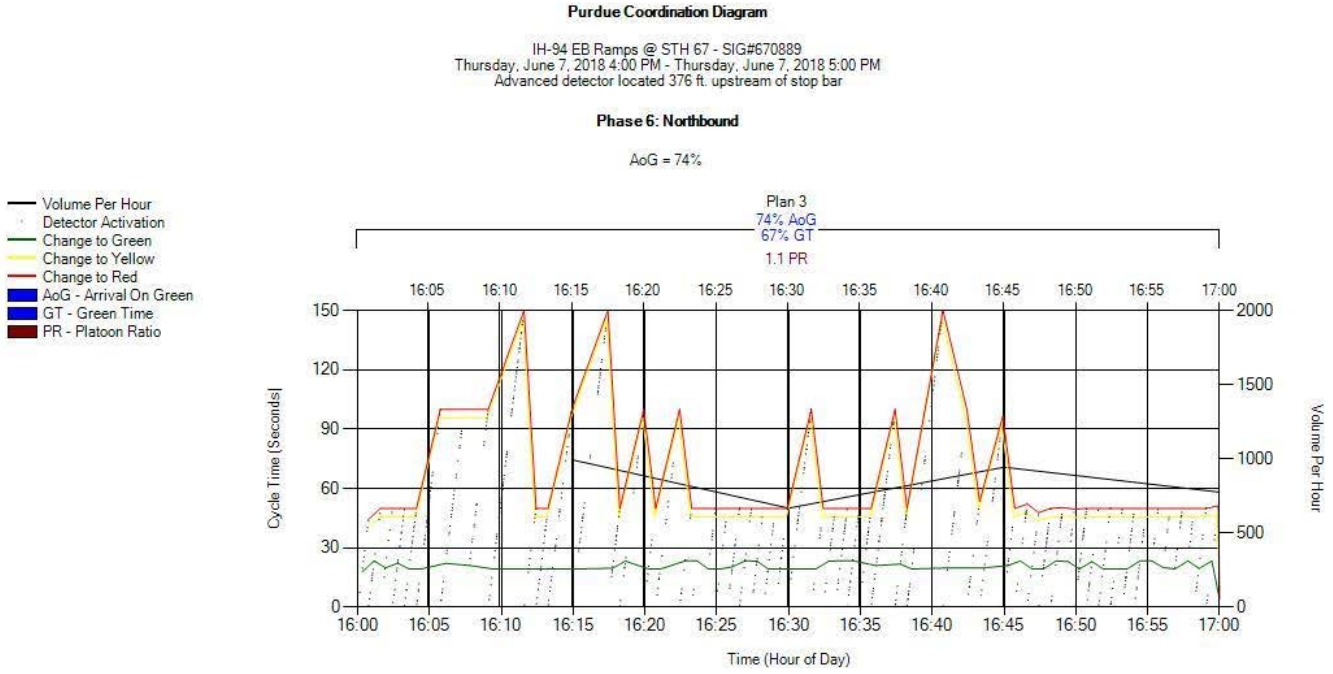
IH-94 EB Ramps @ STH 67 - SIG#670889
Thursday, June 7, 2018 3:00 PM - Thursday, June 7, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar

Phase 6: Northbound

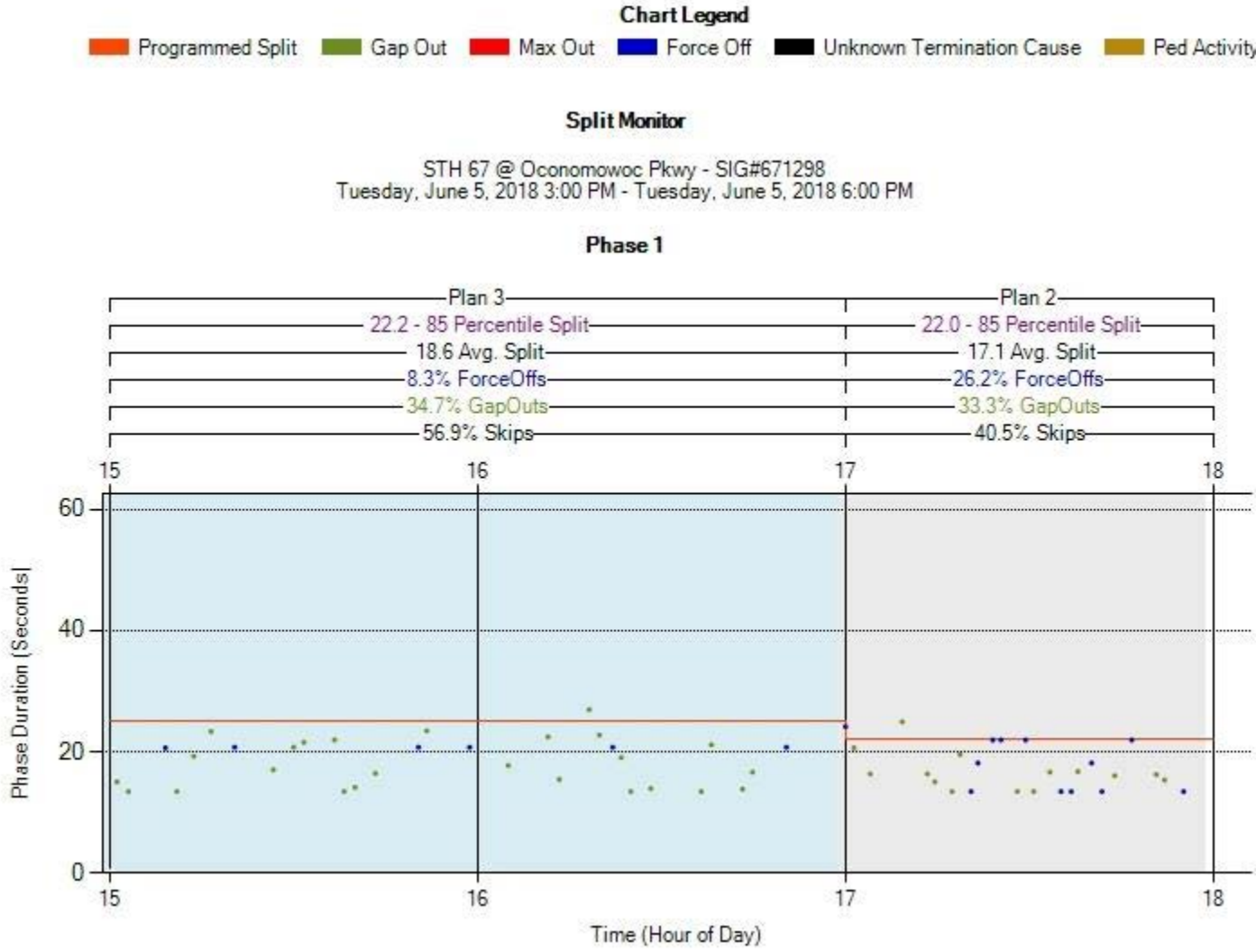
AoG = 71%



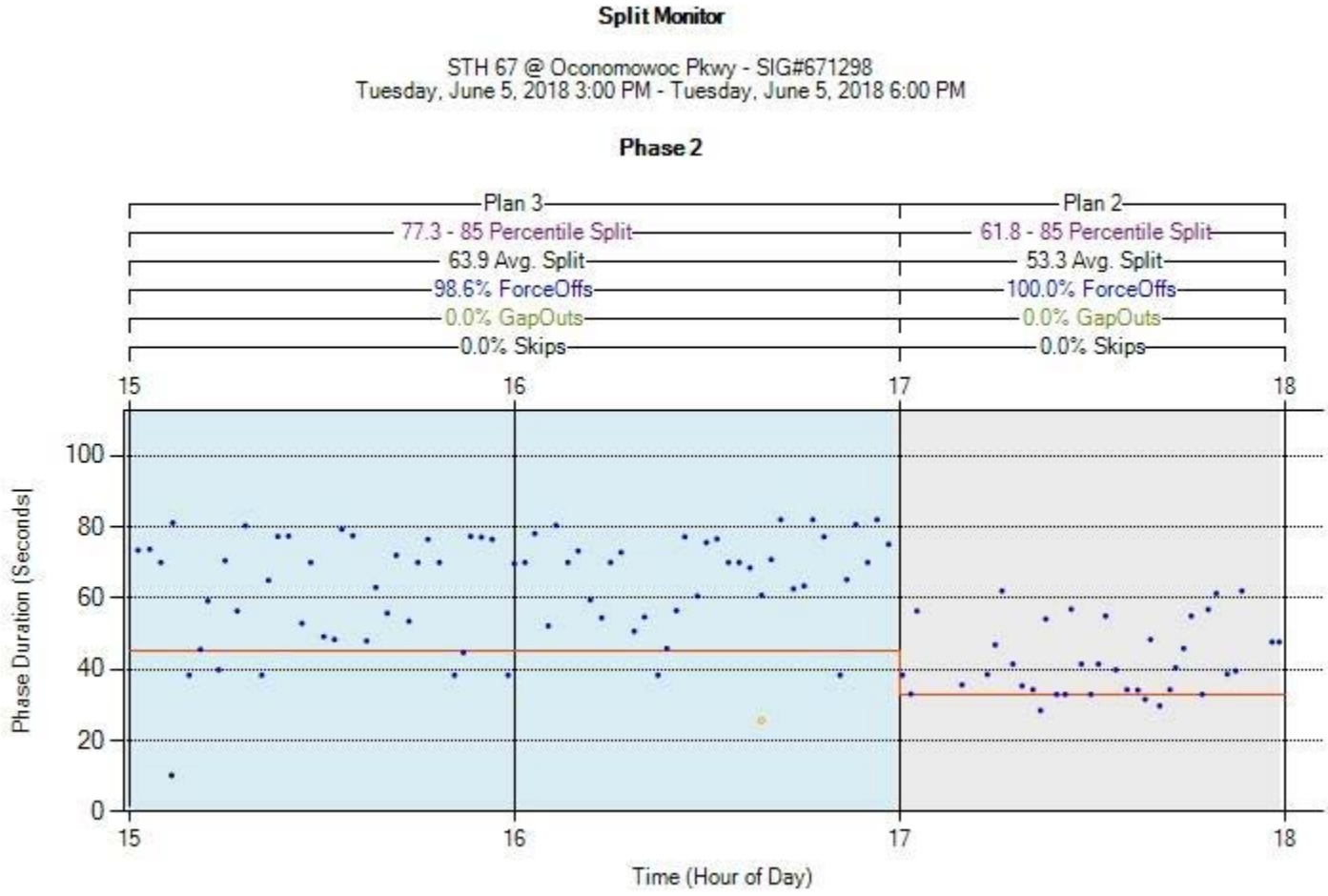

Purdue Coordination Diagram
IH-94 EB Ramps @ STH 67 - SIG#670889
Thursday, June 7, 2018 4:00 PM - Thursday, June 7, 2018 5:00 PM
Advanced detector located 376 ft. upstream of stop bar
Phase 2: Southbound
AoG = 76%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
76% AoG
65% GT
1.17 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)


Purdue Coordination Diagram
IH-94 EB Ramps @ STH 67 - SIG#670889
Thursday, June 7, 2018 4:00 PM - Thursday, June 7, 2018 5:00 PM
Advanced detector located 376 ft. upstream of stop bar
Phase 6: Northbound
AoG = 74%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
74% AoG
67% GT
1.1 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)

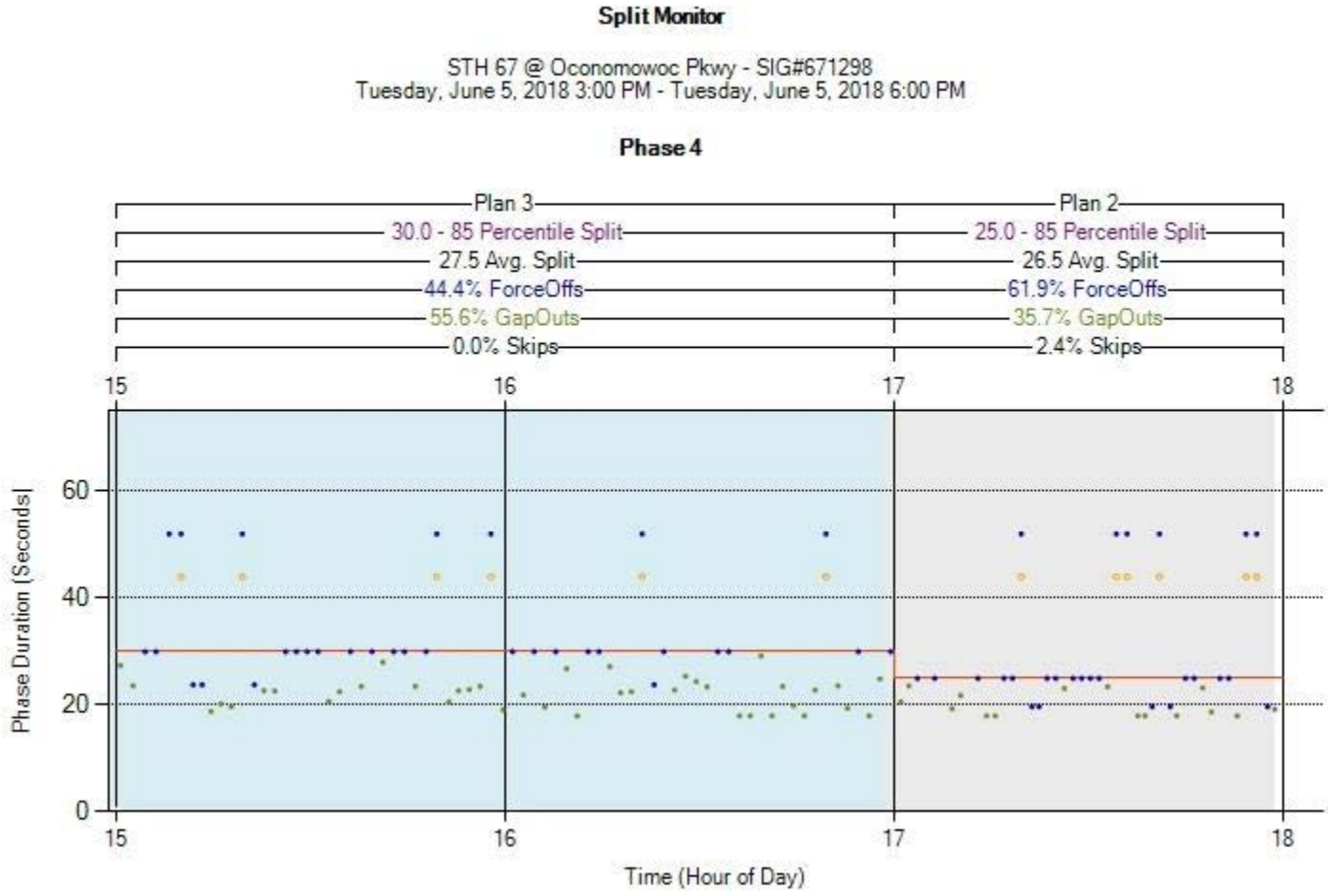
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



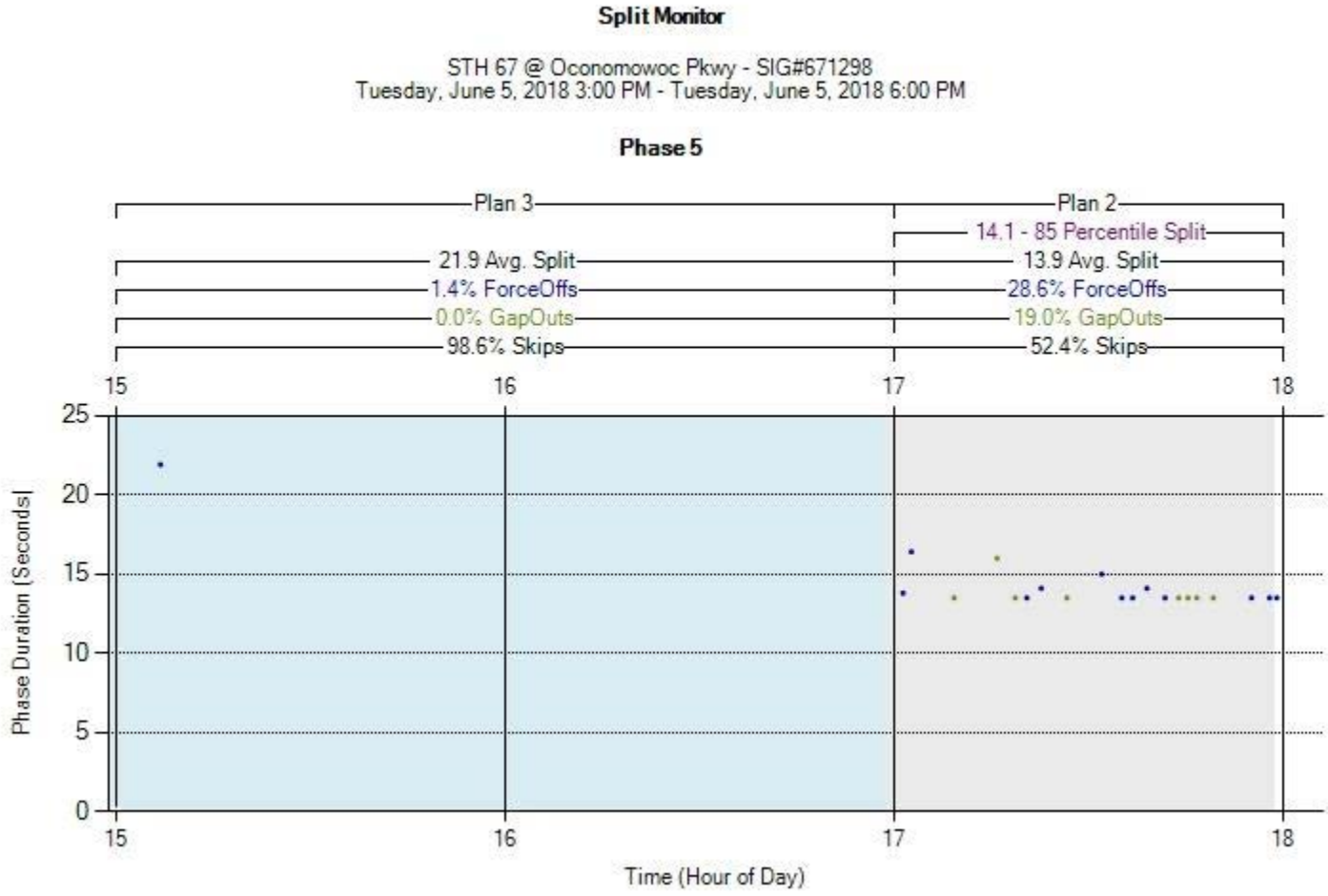
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



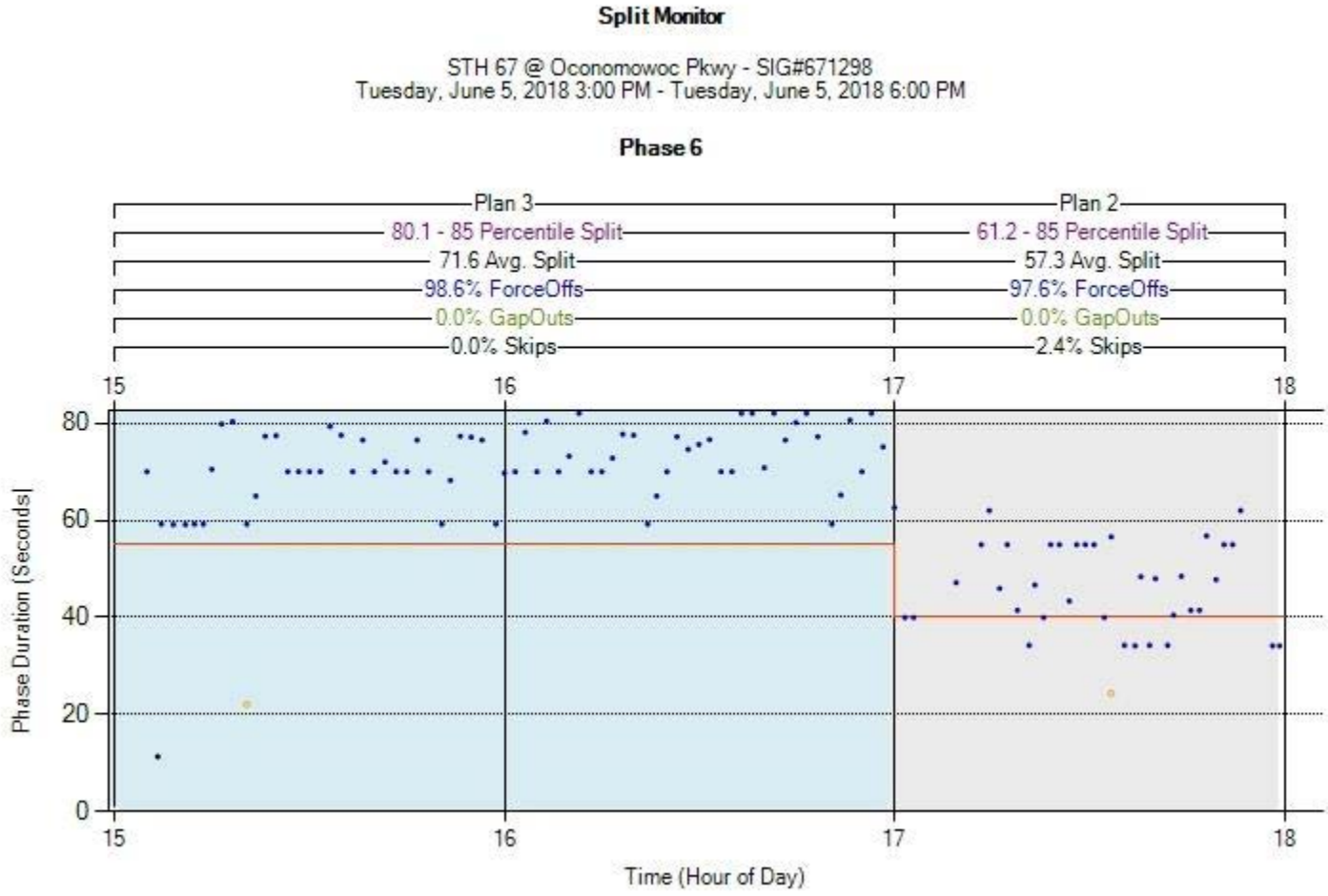
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



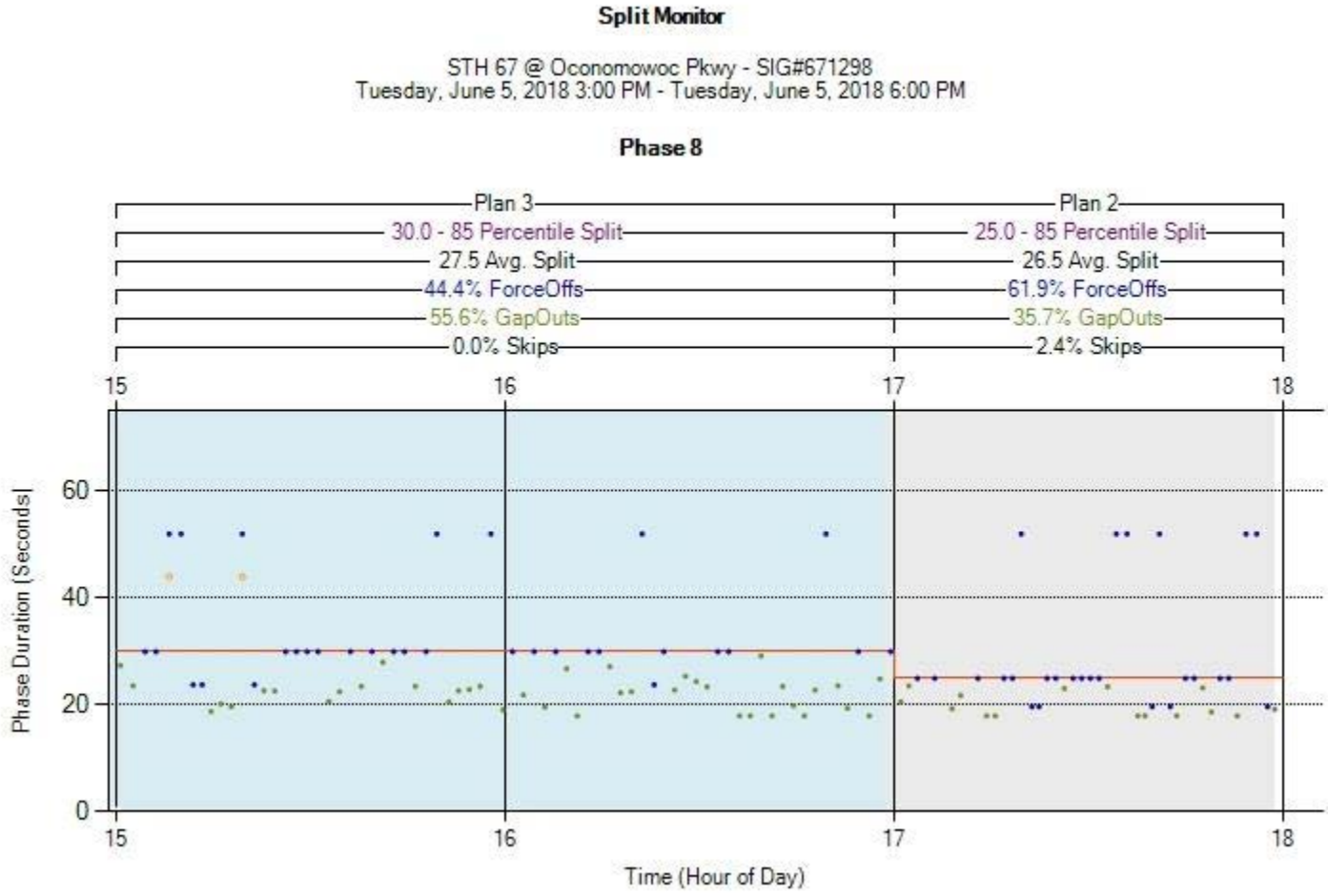
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



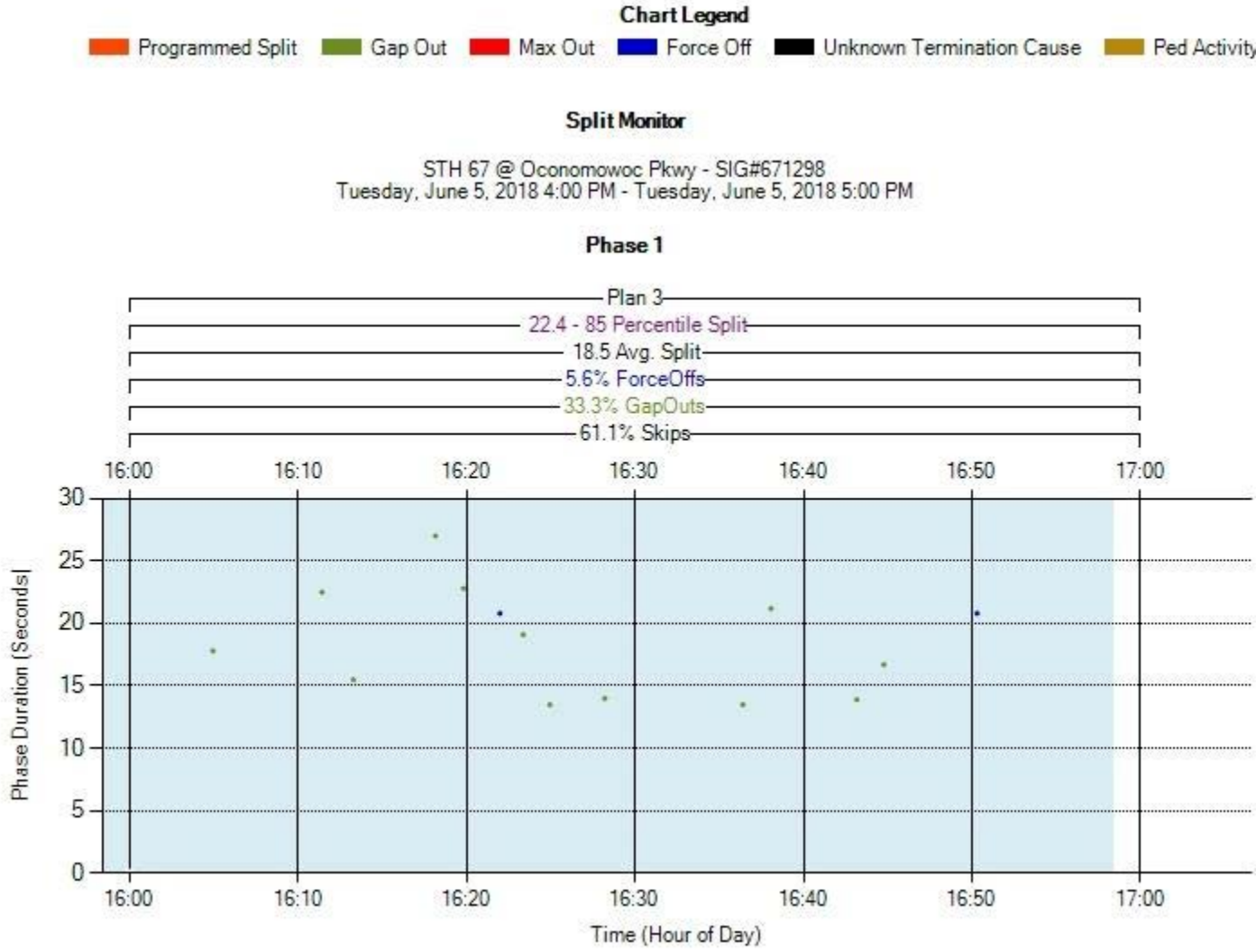
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



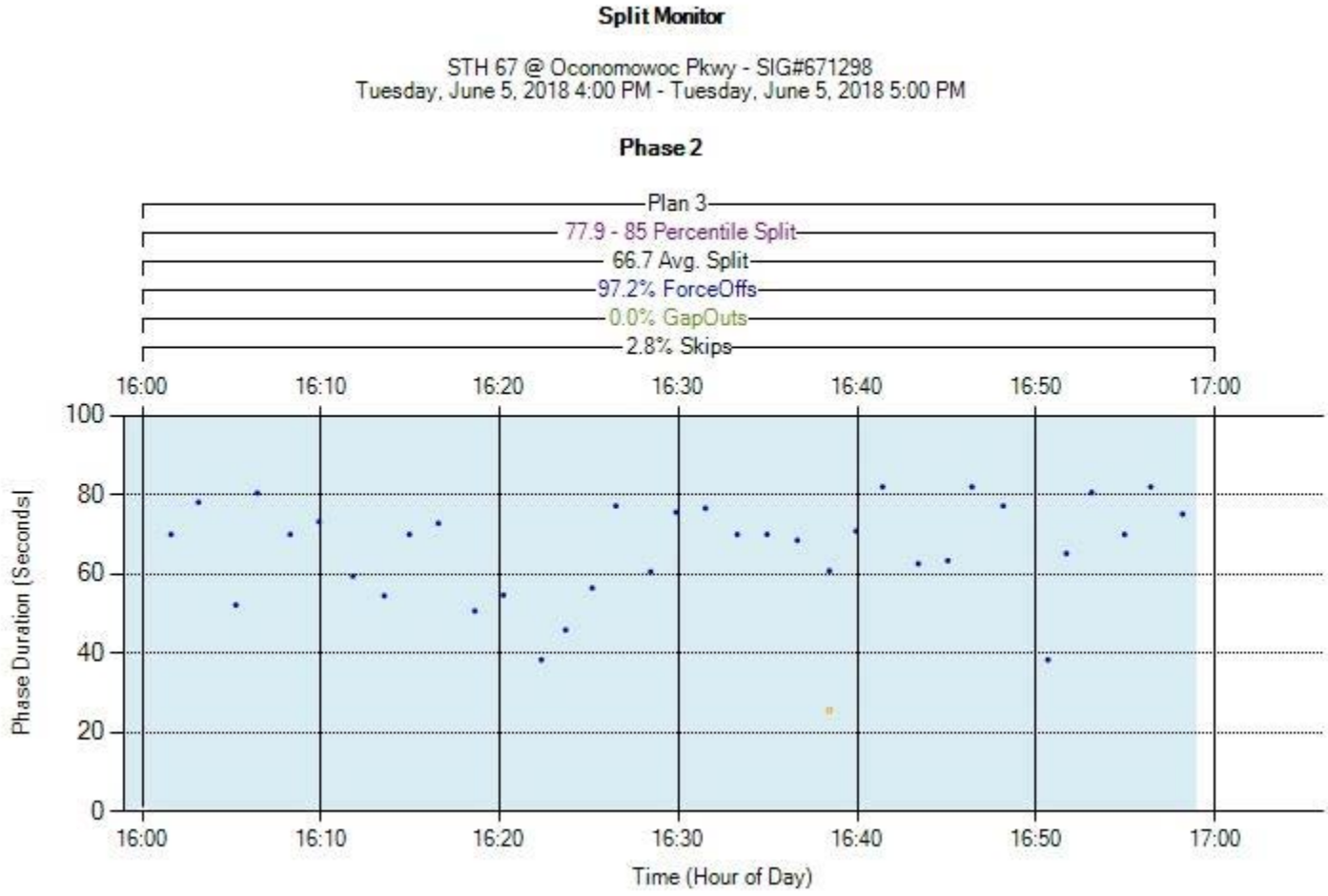
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



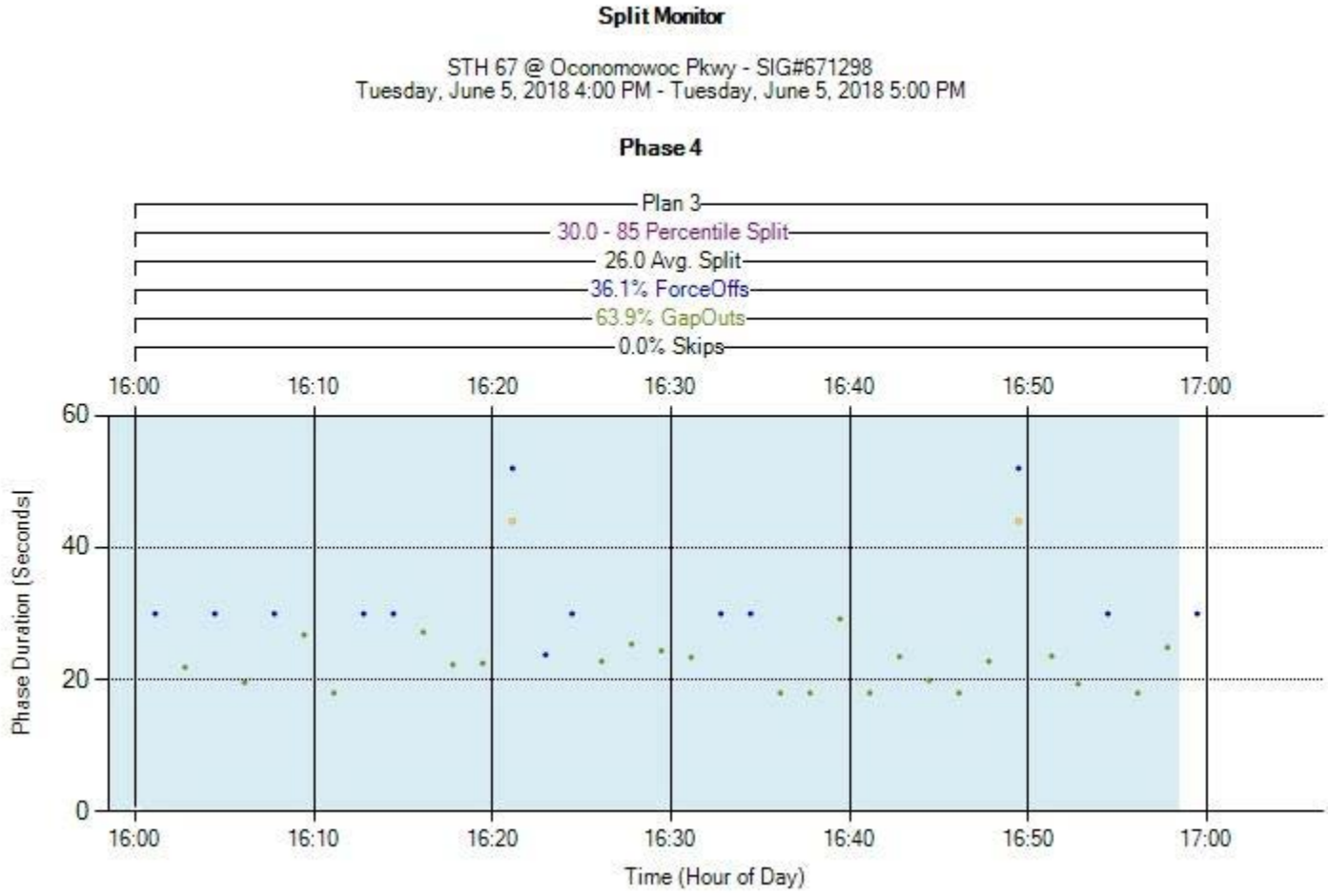
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Baseline Timings
6/5/2018 – 4:00 PM – 5:00 PM



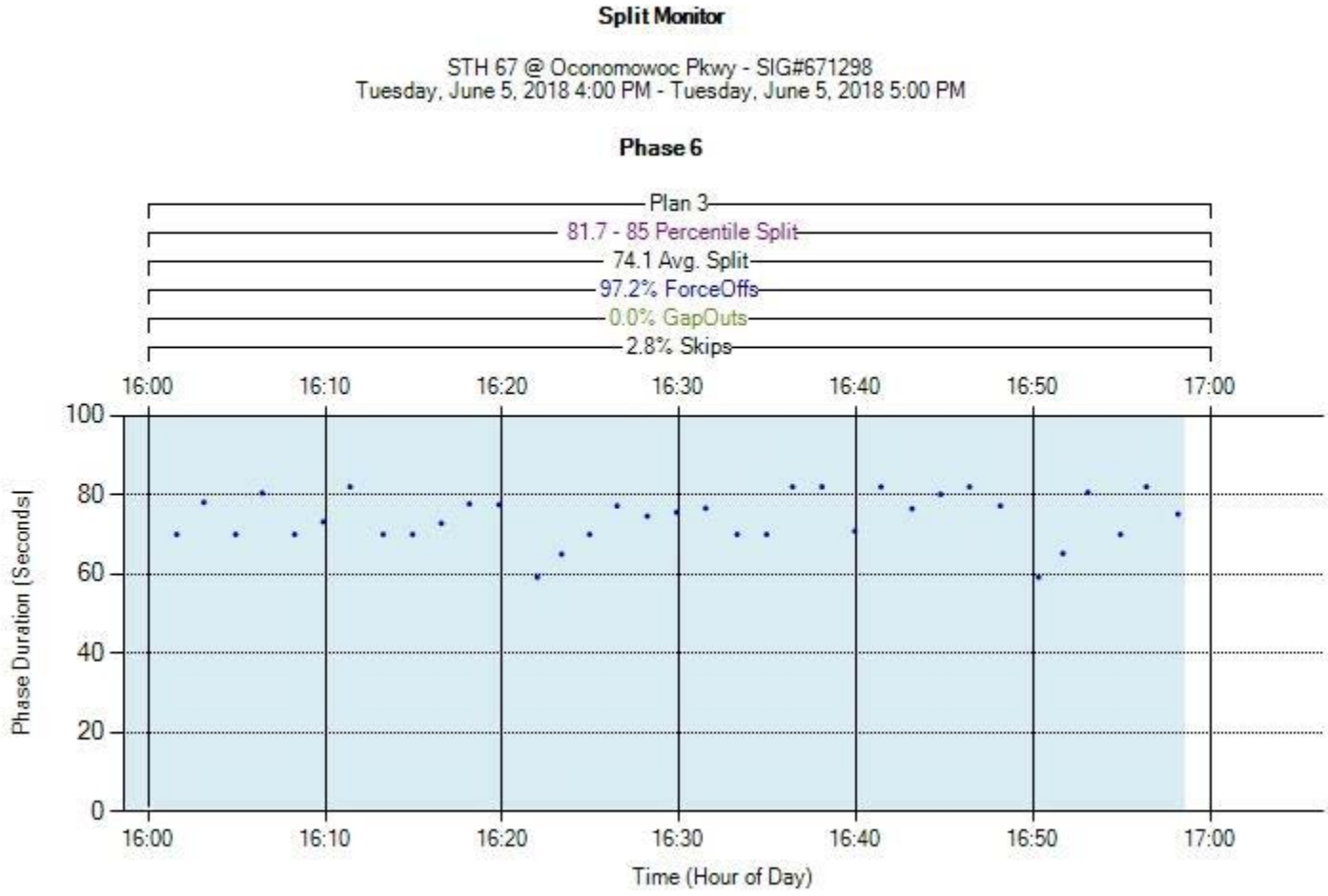
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Baseline Timings
6/5/2018 – 4:00 PM – 5:00 PM



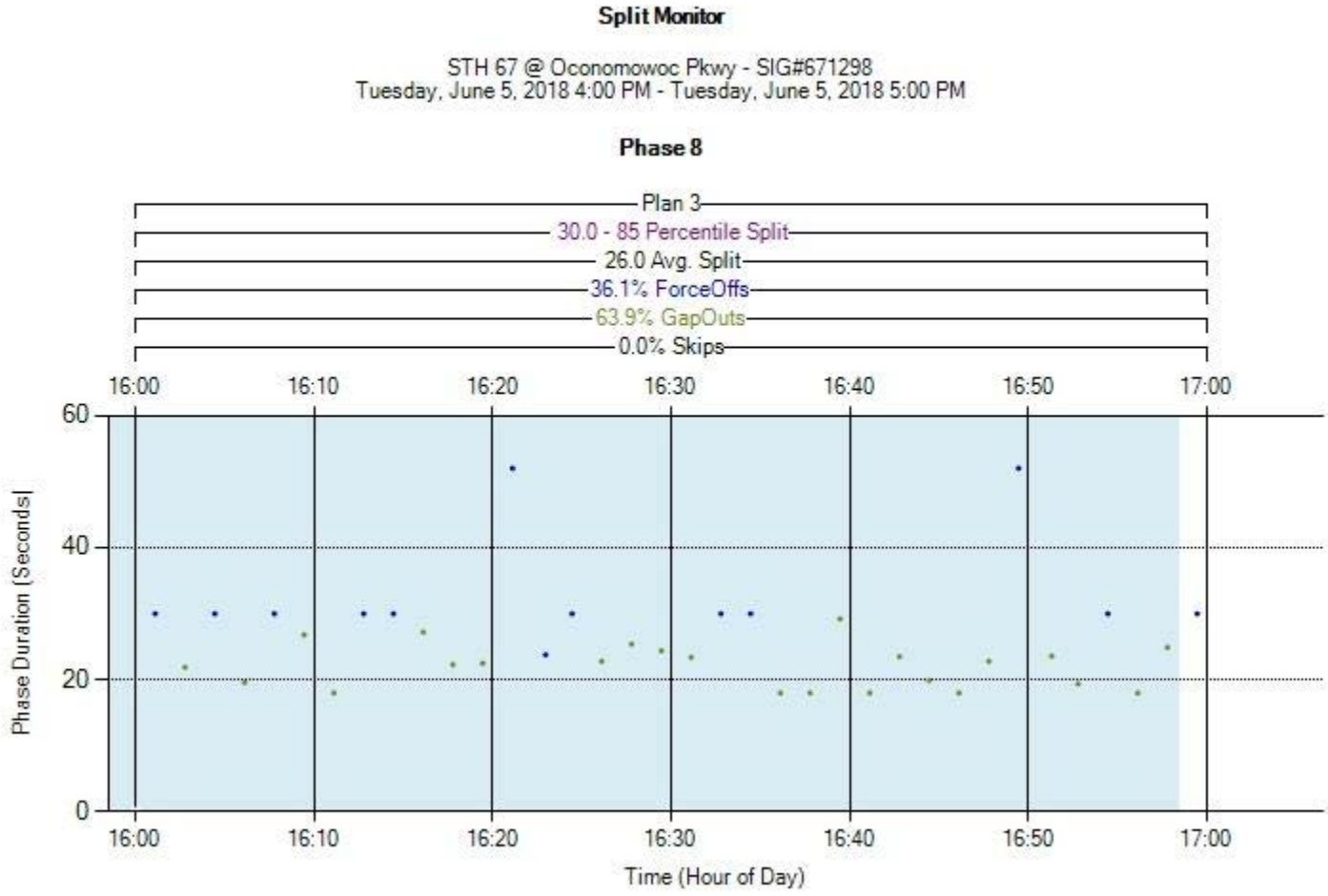
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Baseline Timings
6/5/2018 – 4:00 PM – 5:00 PM



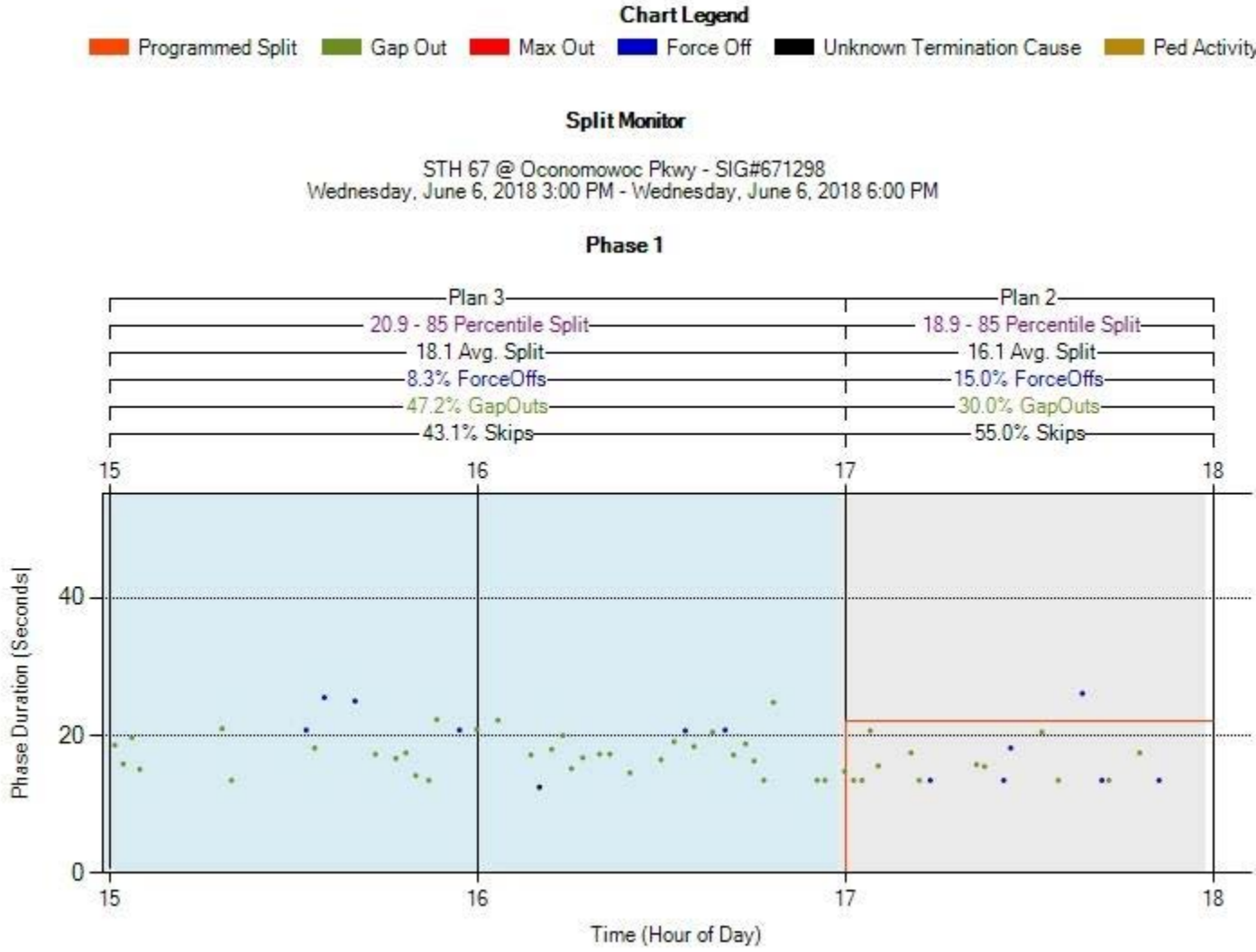
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Baseline Timings
6/5/2018 – 4:00 PM – 5:00 PM



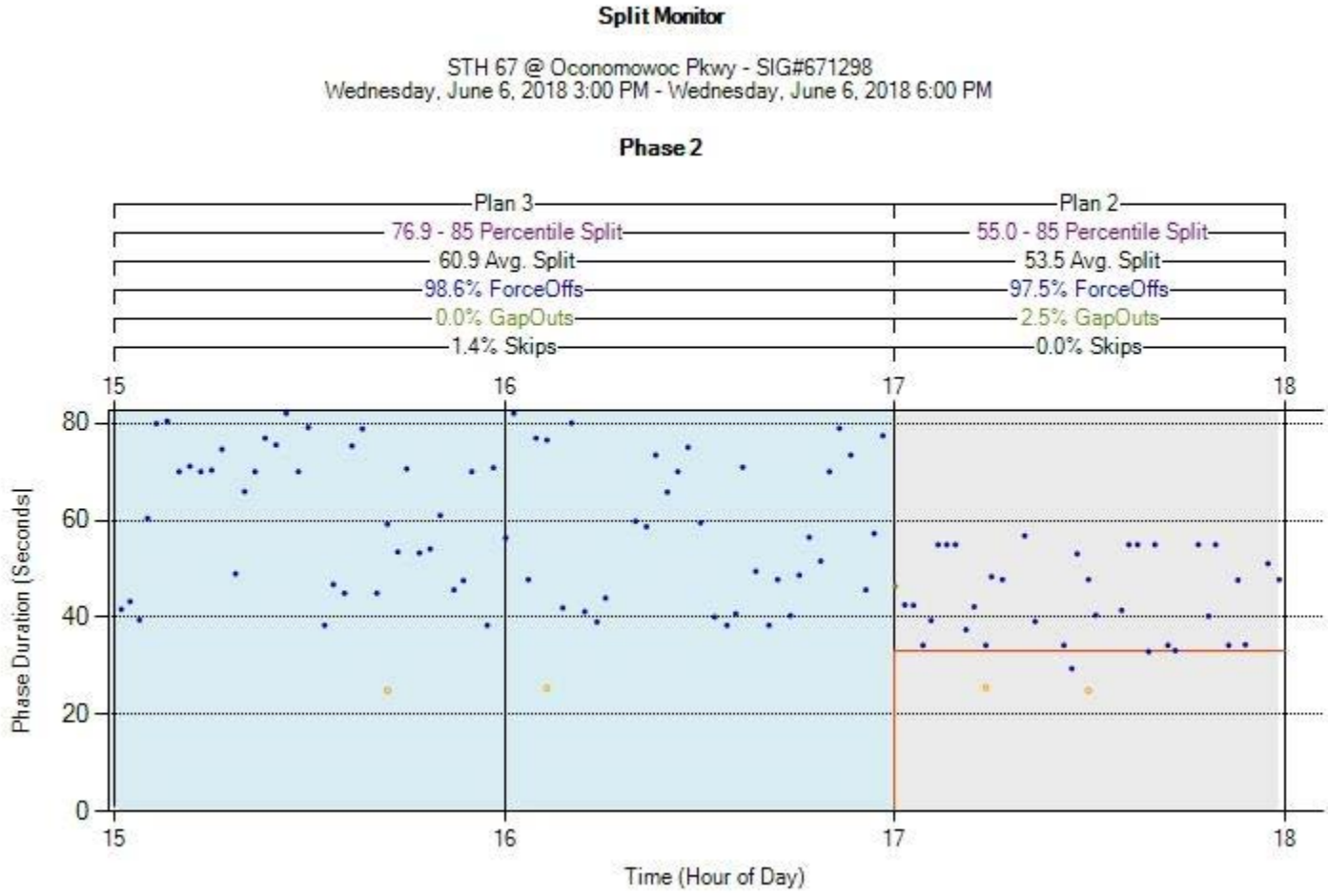
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Baseline Timings
6/5/2018 – 4:00 PM – 5:00 PM



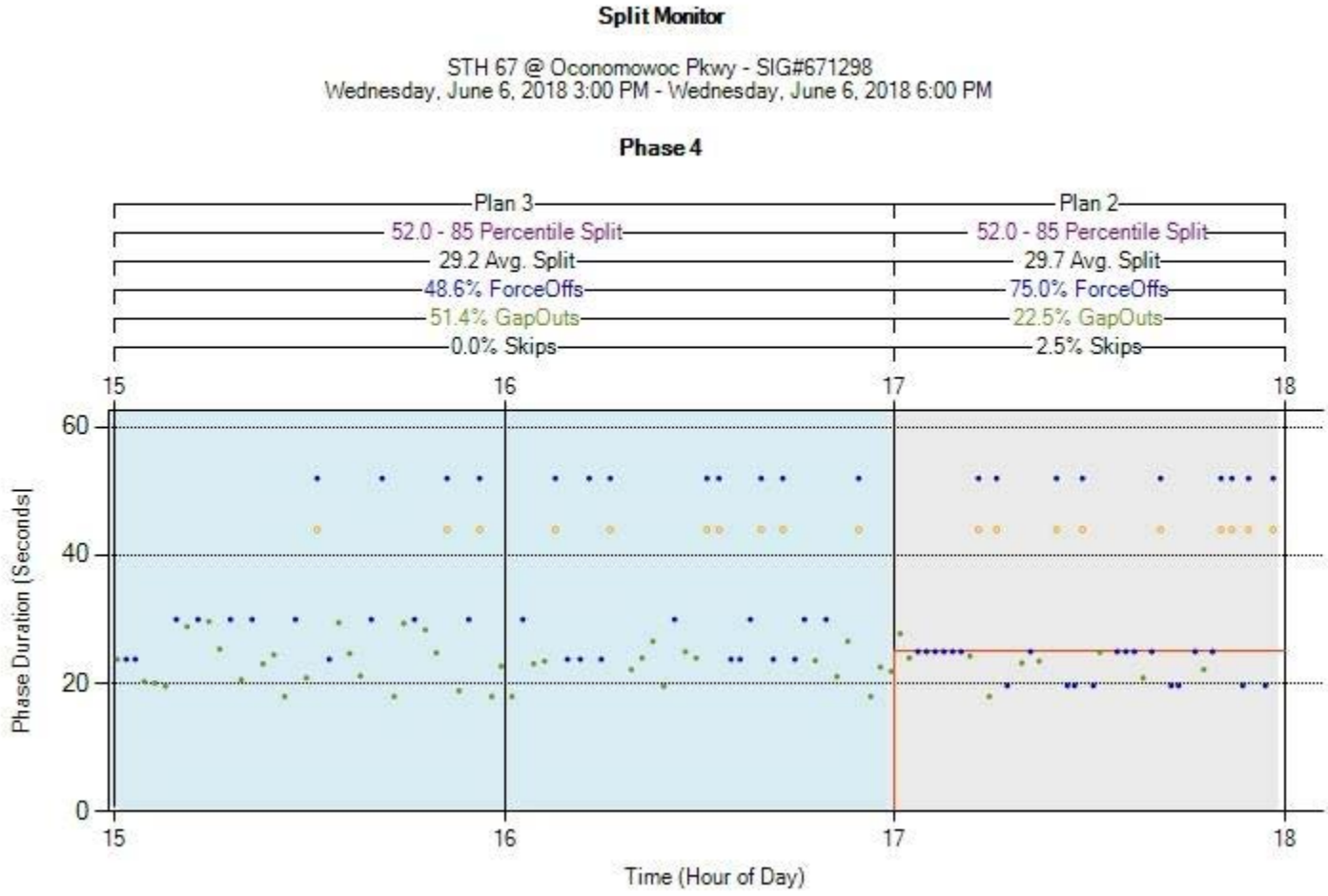
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Baseline Timings
6/6/2018 – 3:00 PM – 6:00 PM



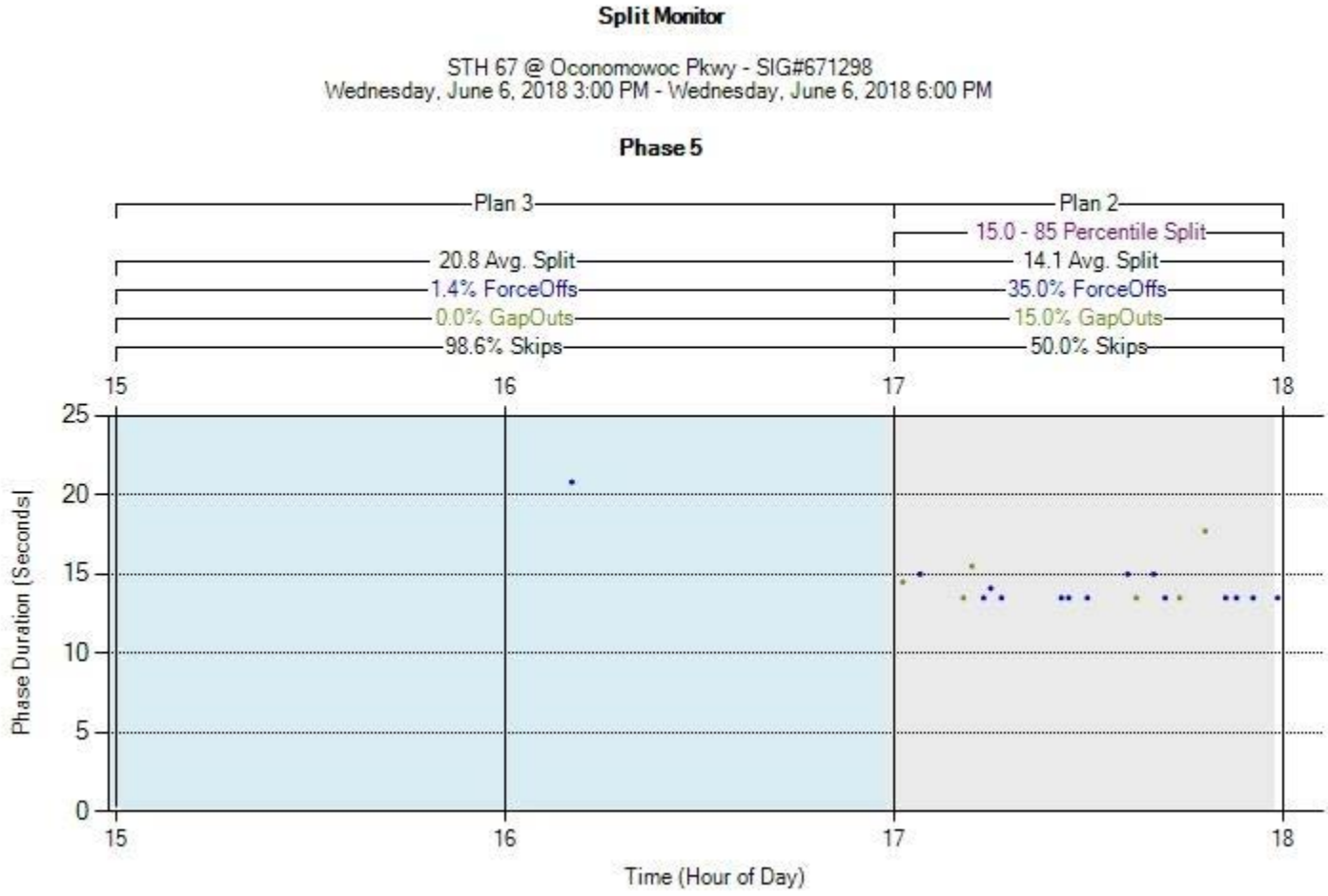
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Baseline Timings
6/6/2018 – 3:00 PM – 6:00 PM



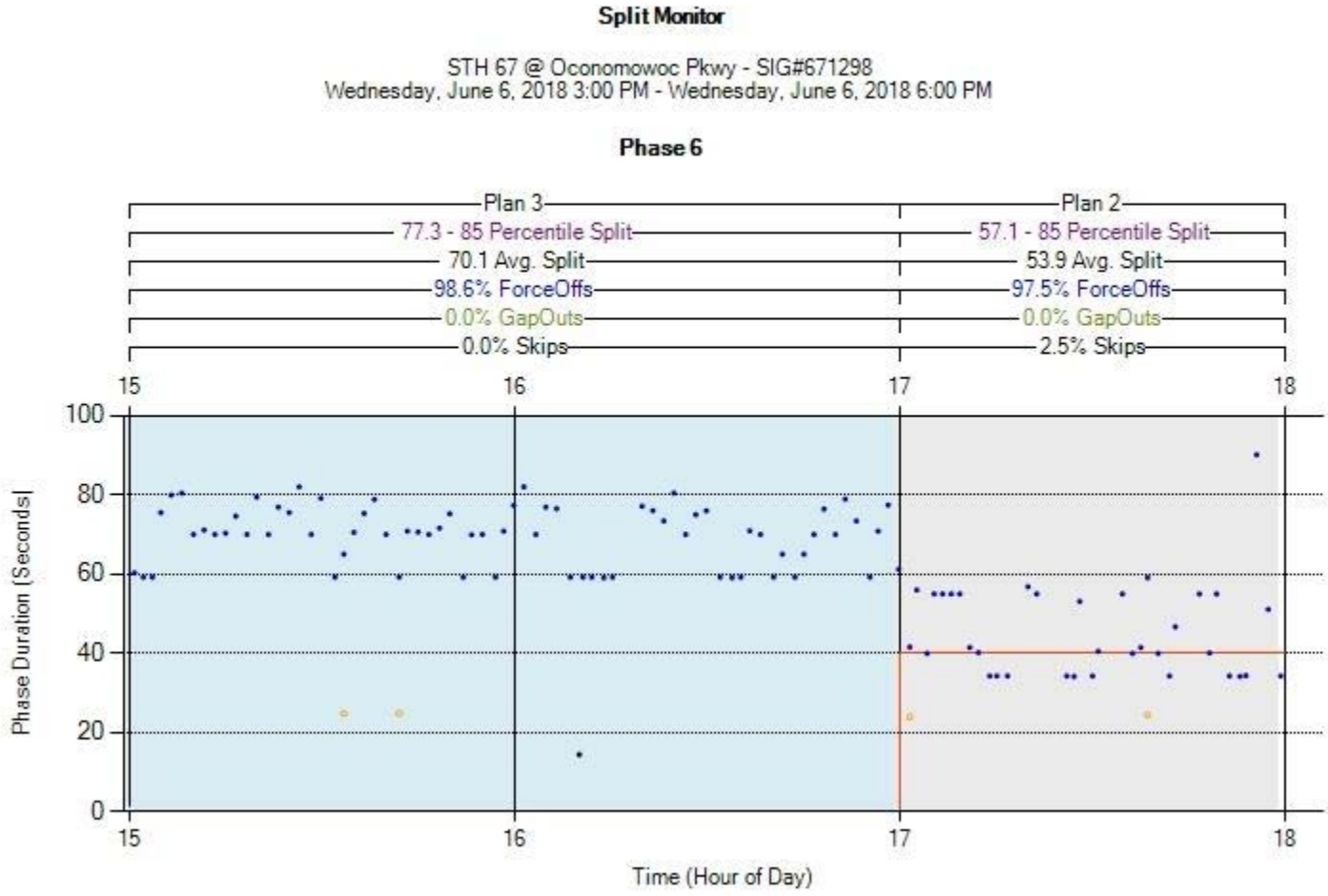
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Baseline Timings
6/6/2018 – 3:00 PM – 6:00 PM



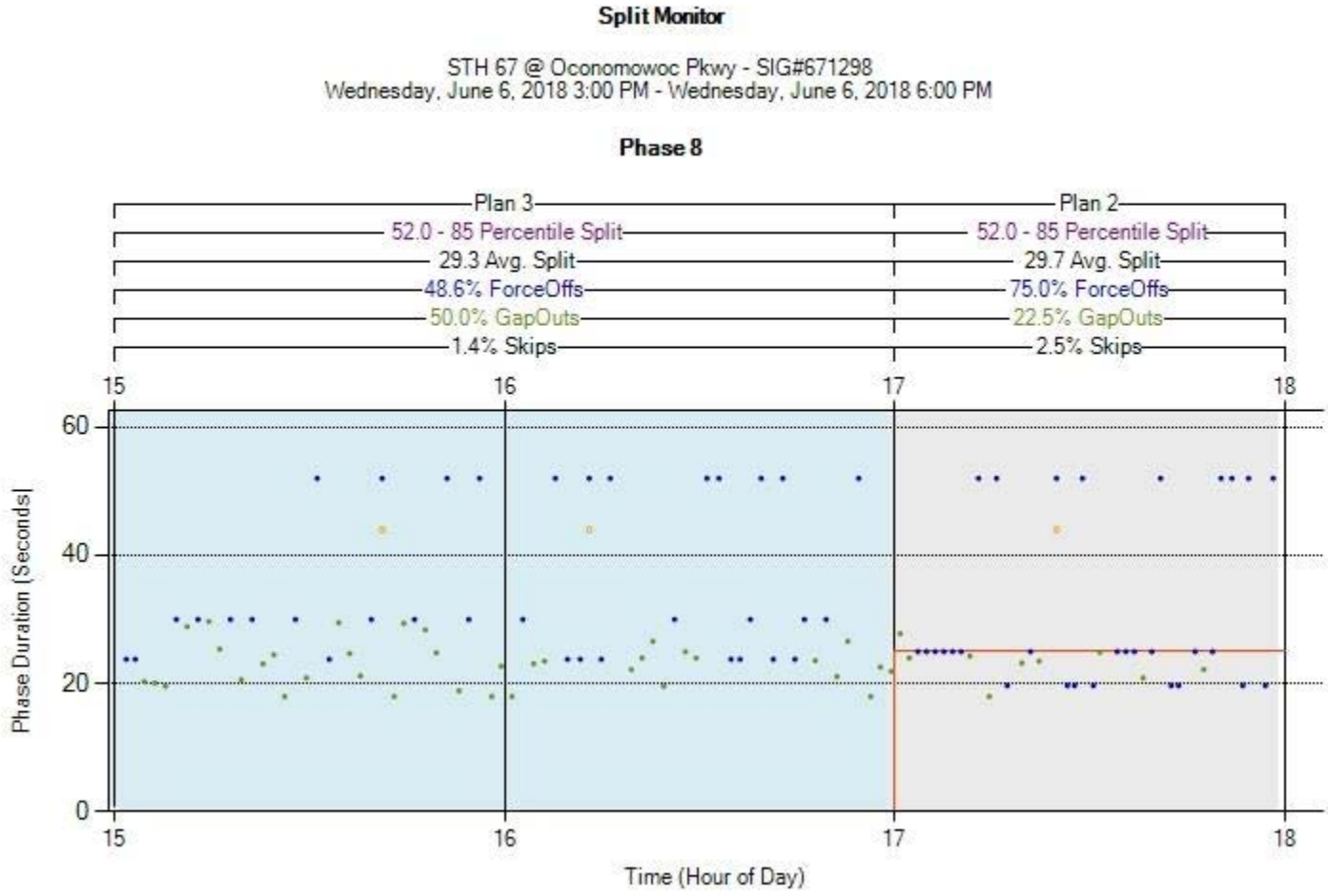
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Baseline Timings
6/6/2018 – 3:00 PM – 6:00 PM



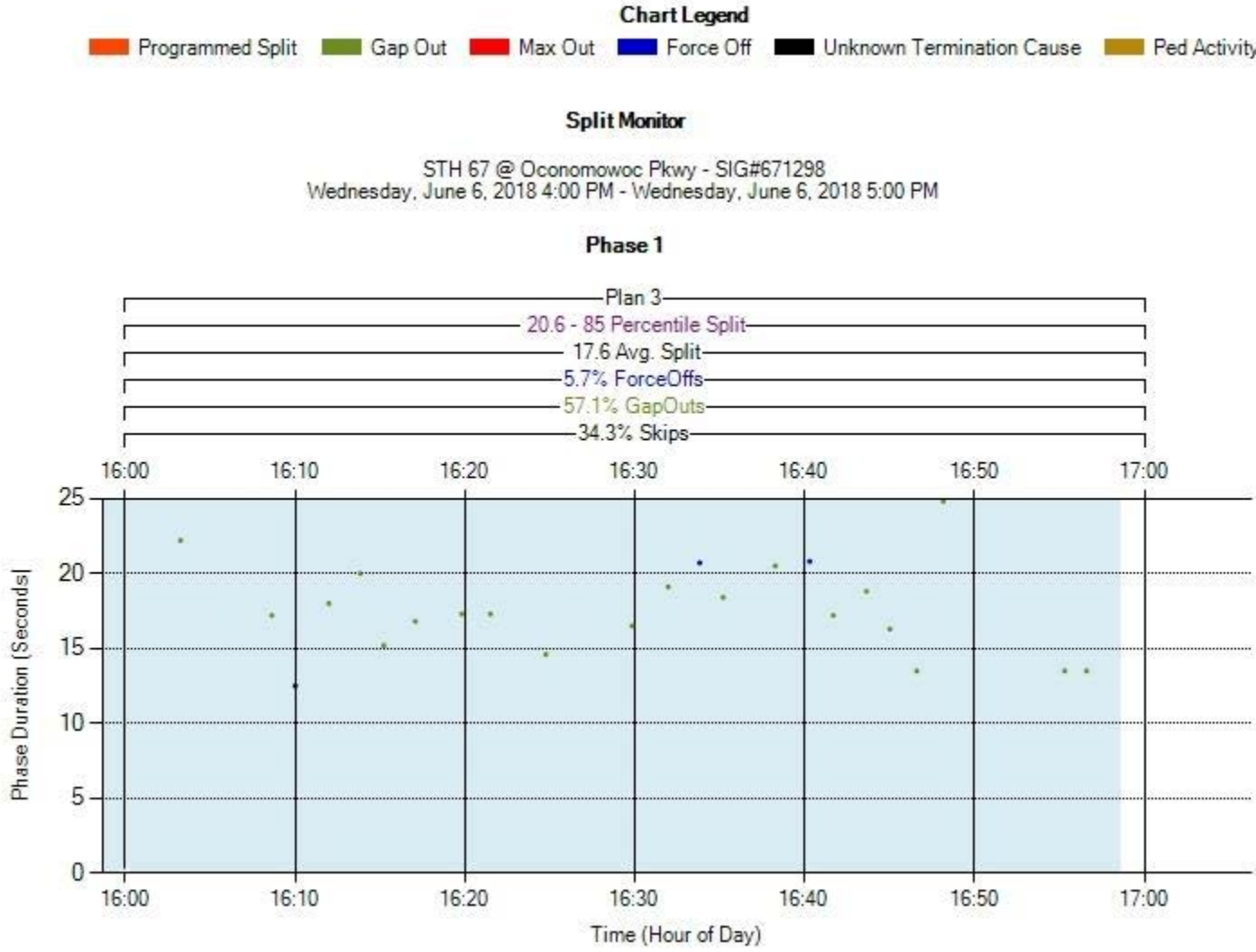
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Baseline Timings
6/6/2018 – 3:00 PM – 6:00 PM



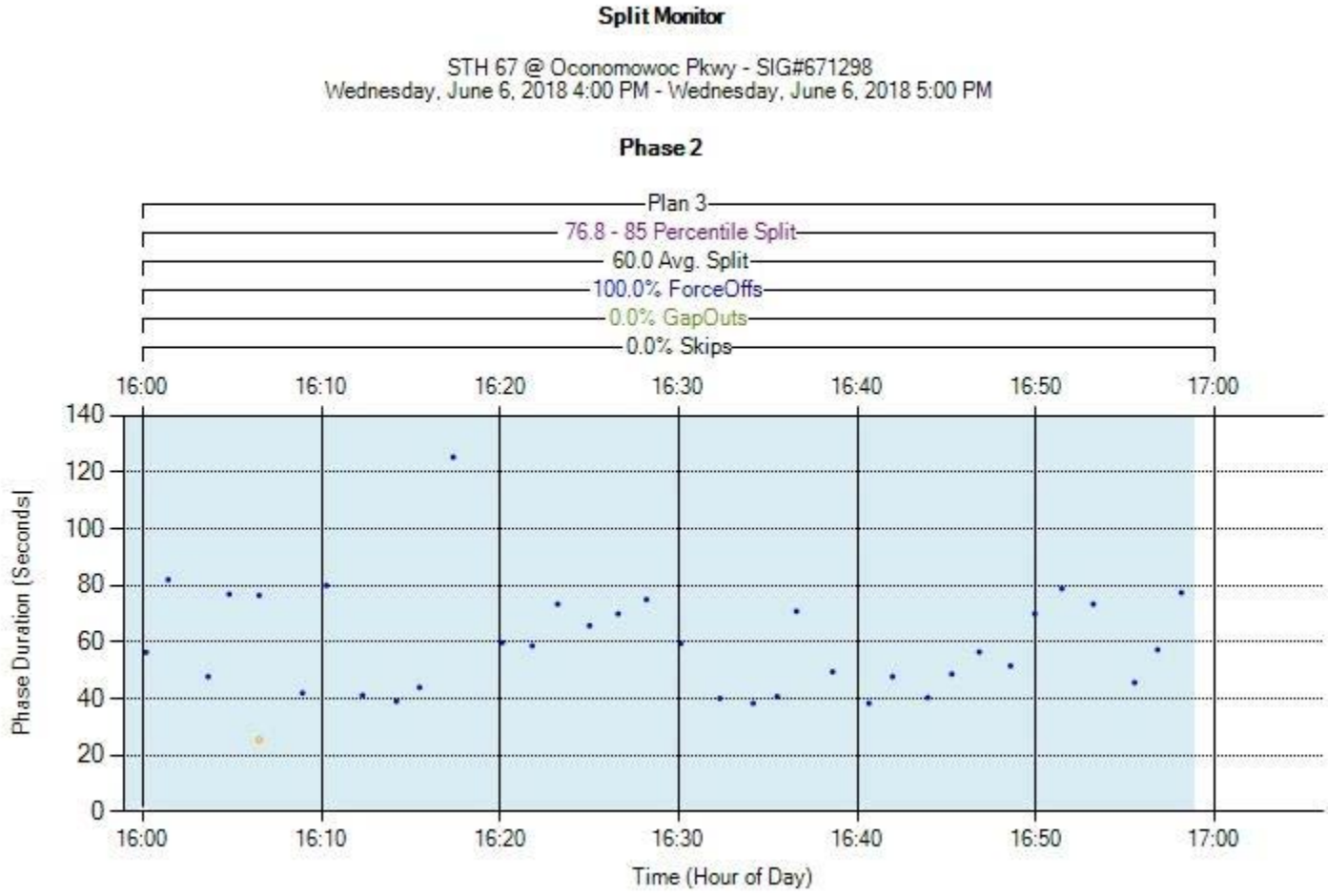
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Baseline Timings
6/6/2018 – 3:00 PM – 6:00 PM



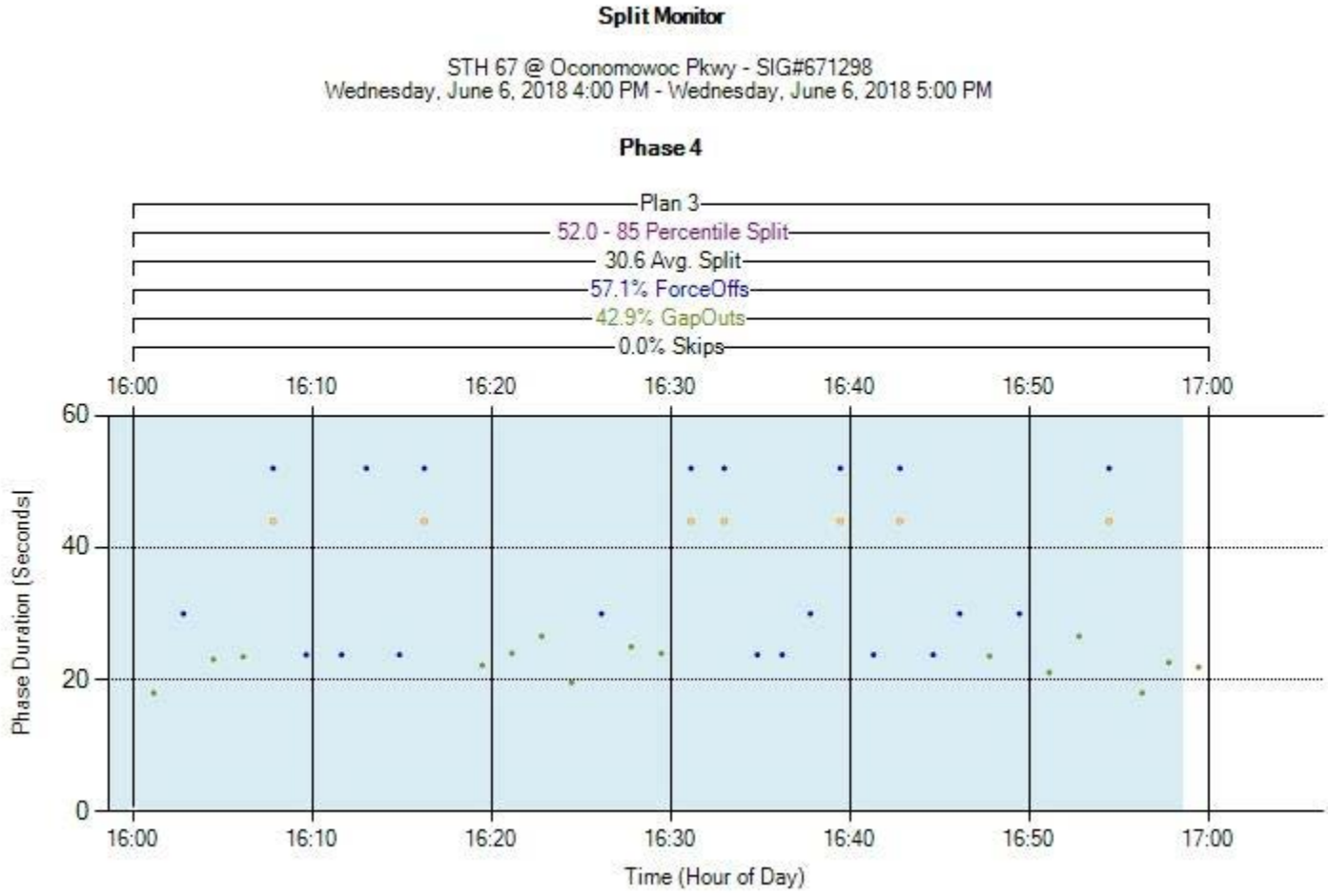
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Baseline Timings
6/6/2018 – 4:00 PM – 5:00 PM



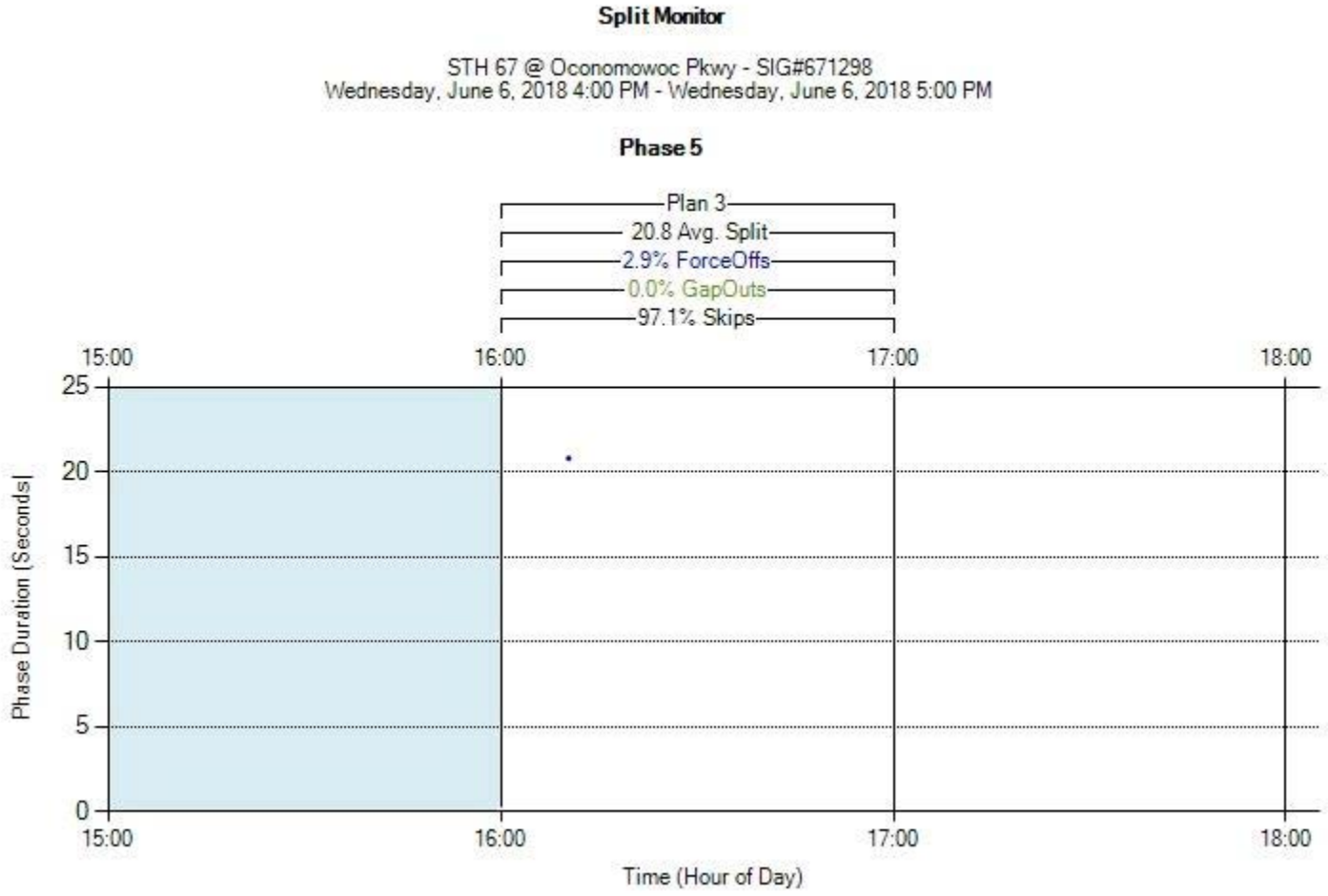
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Baseline Timings
6/6/2018 – 4:00 PM – 5:00 PM



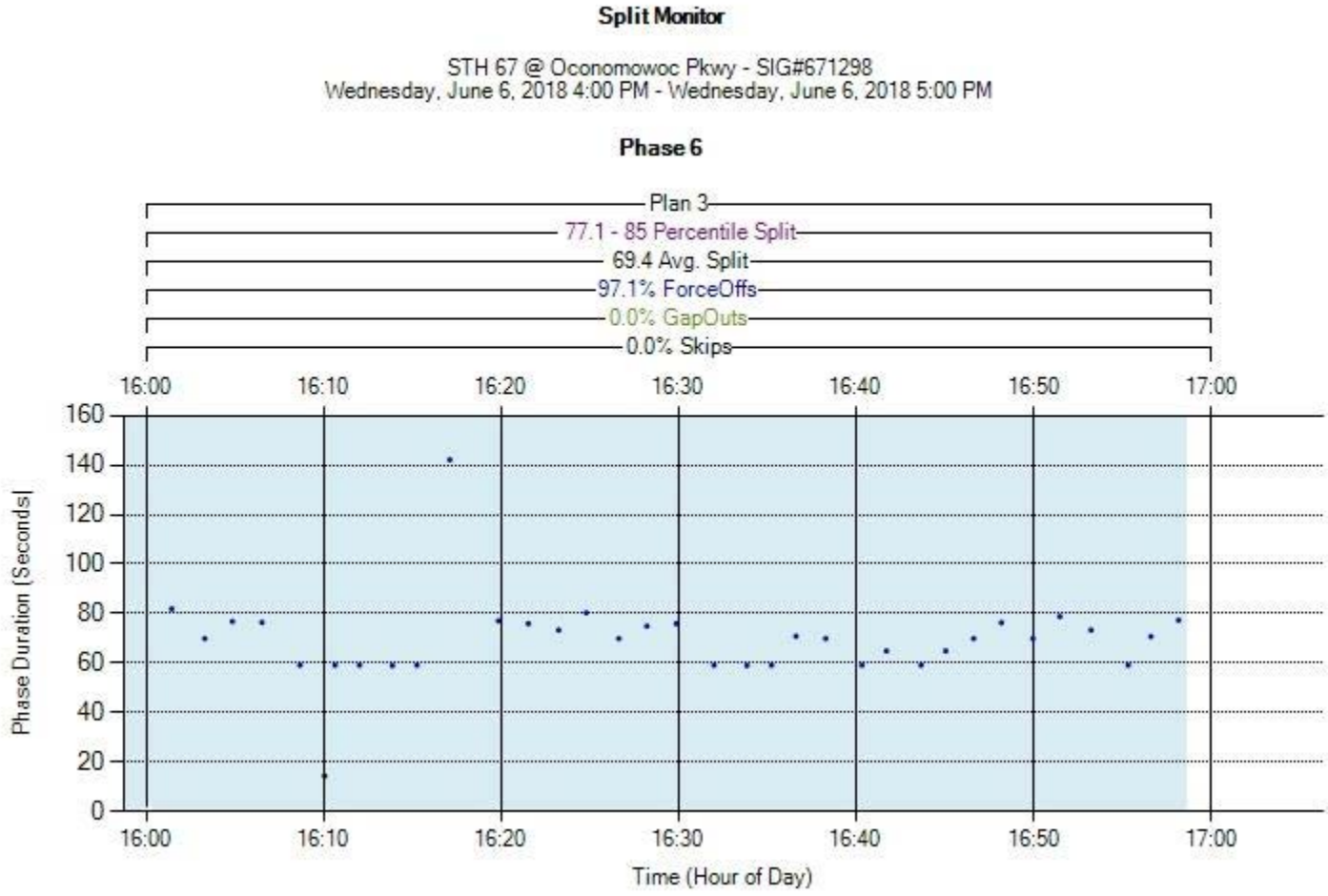
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Baseline Timings
6/6/2018 – 4:00 PM – 5:00 PM



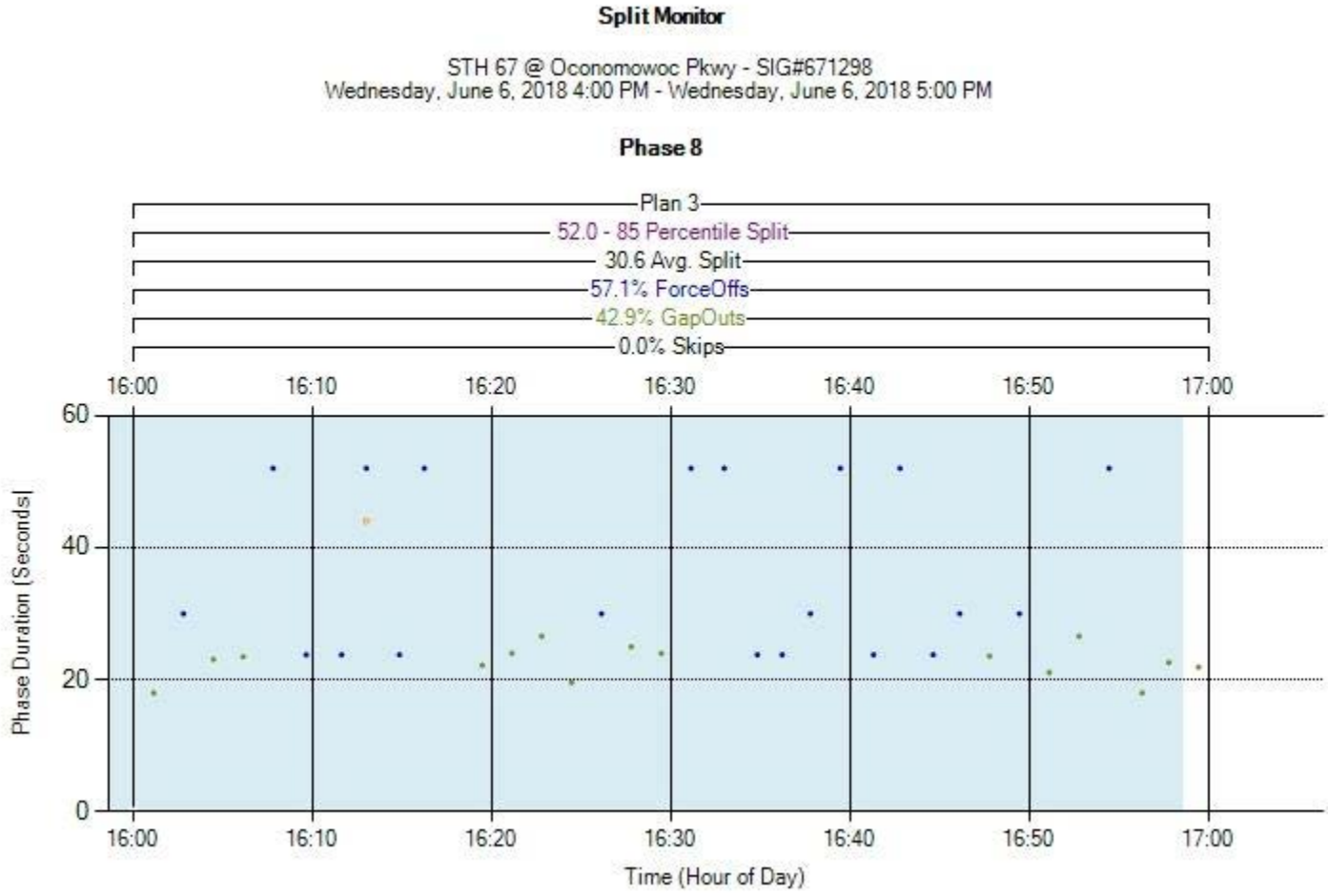
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Baseline Timings
6/6/2018 – 4:00 PM – 5:00 PM



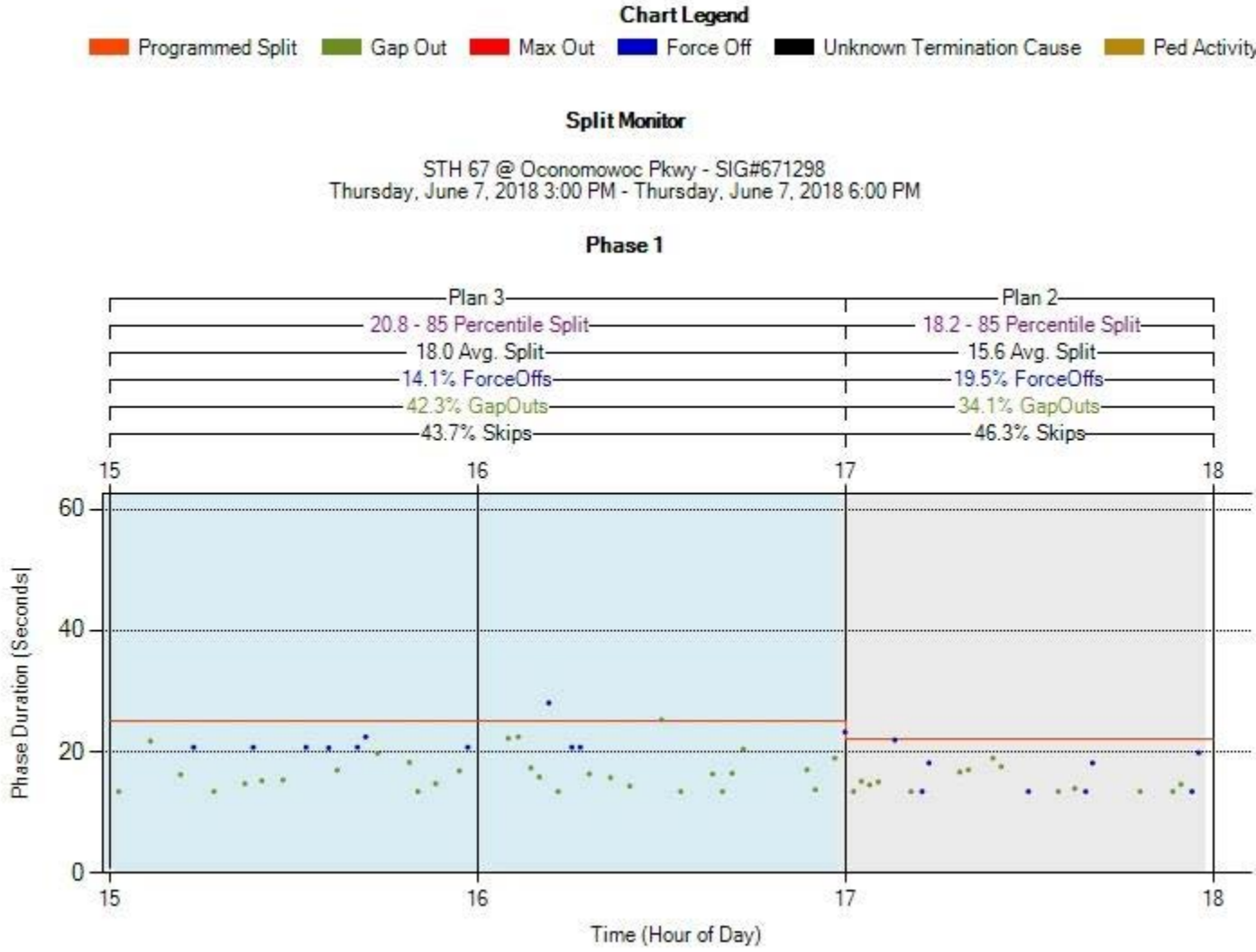
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Baseline Timings
6/6/2018 – 4:00 PM – 5:00 PM



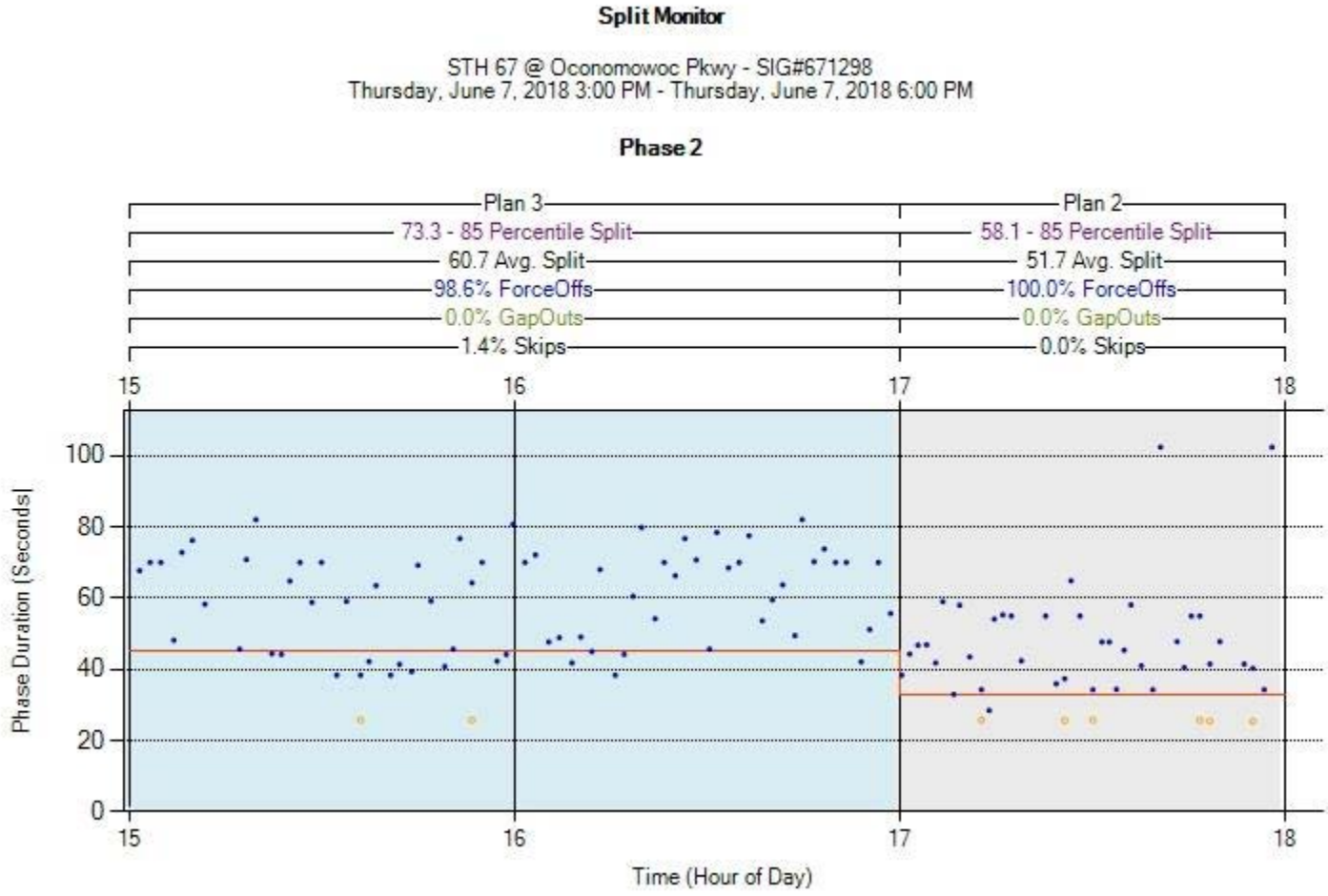
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Baseline Timings
6/6/2018 – 4:00 PM – 5:00 PM



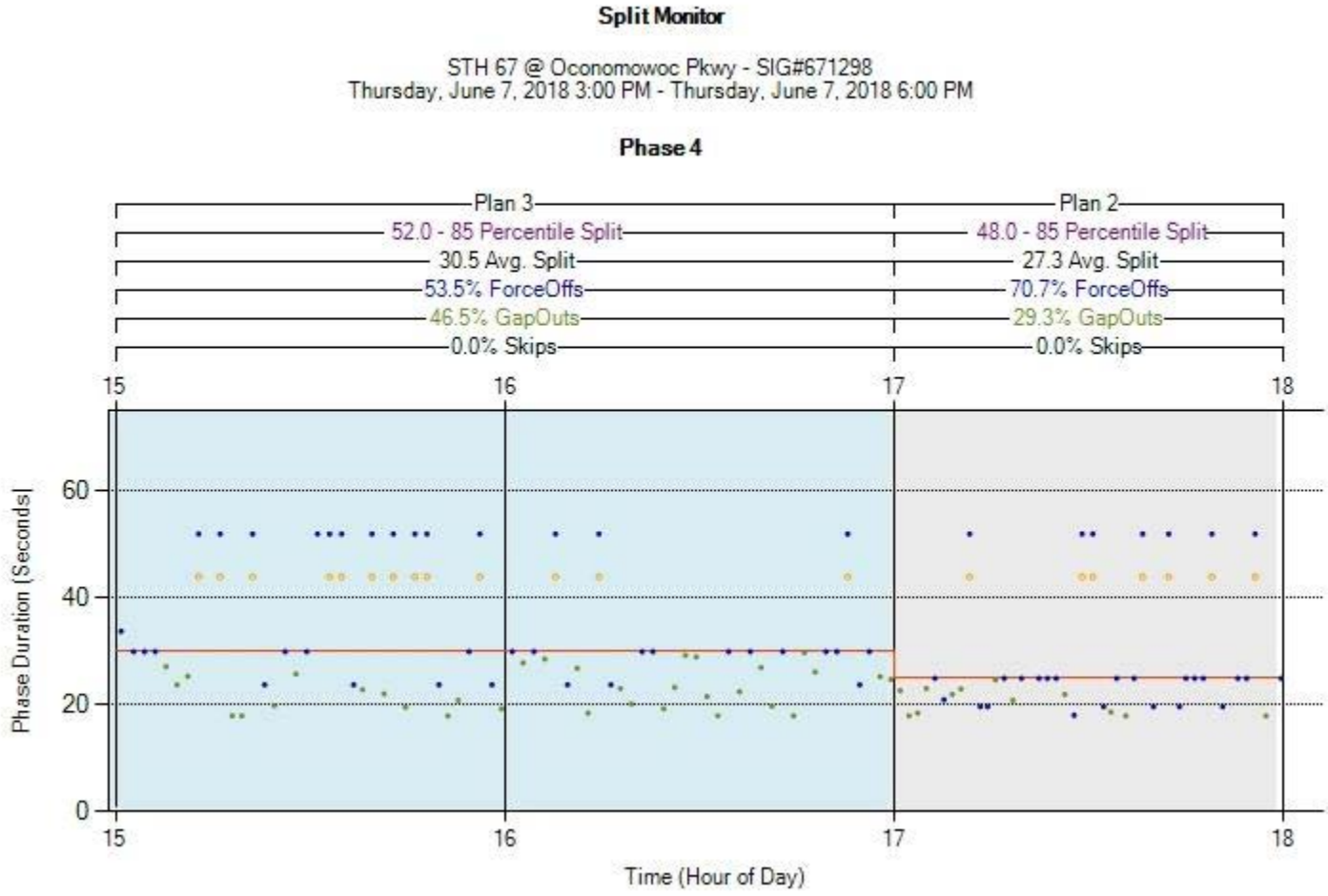
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Baseline Timings
6/7/2018 – 3:00 PM – 6:00 PM



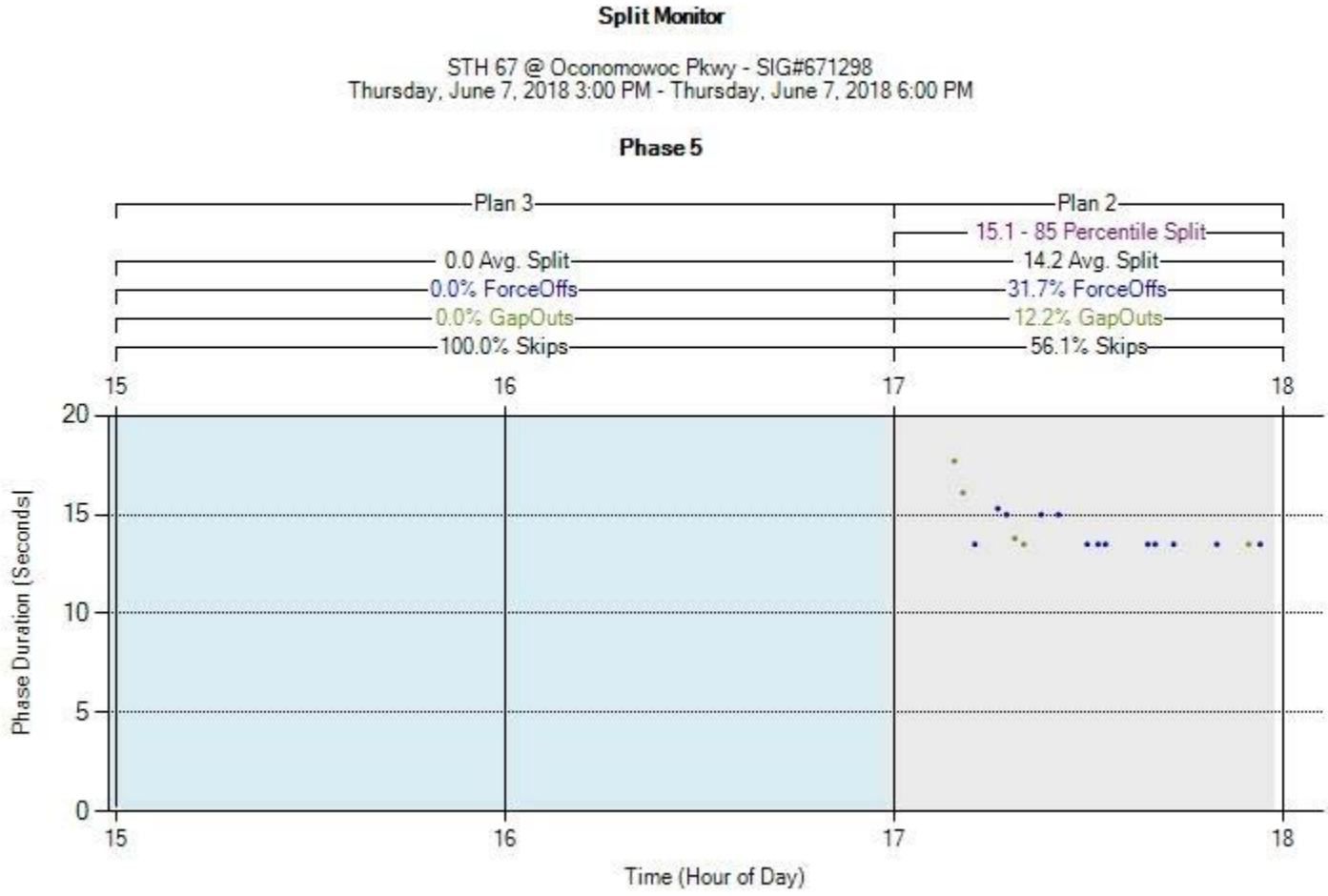
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Baseline Timings
6/7/2018 – 3:00 PM – 6:00 PM



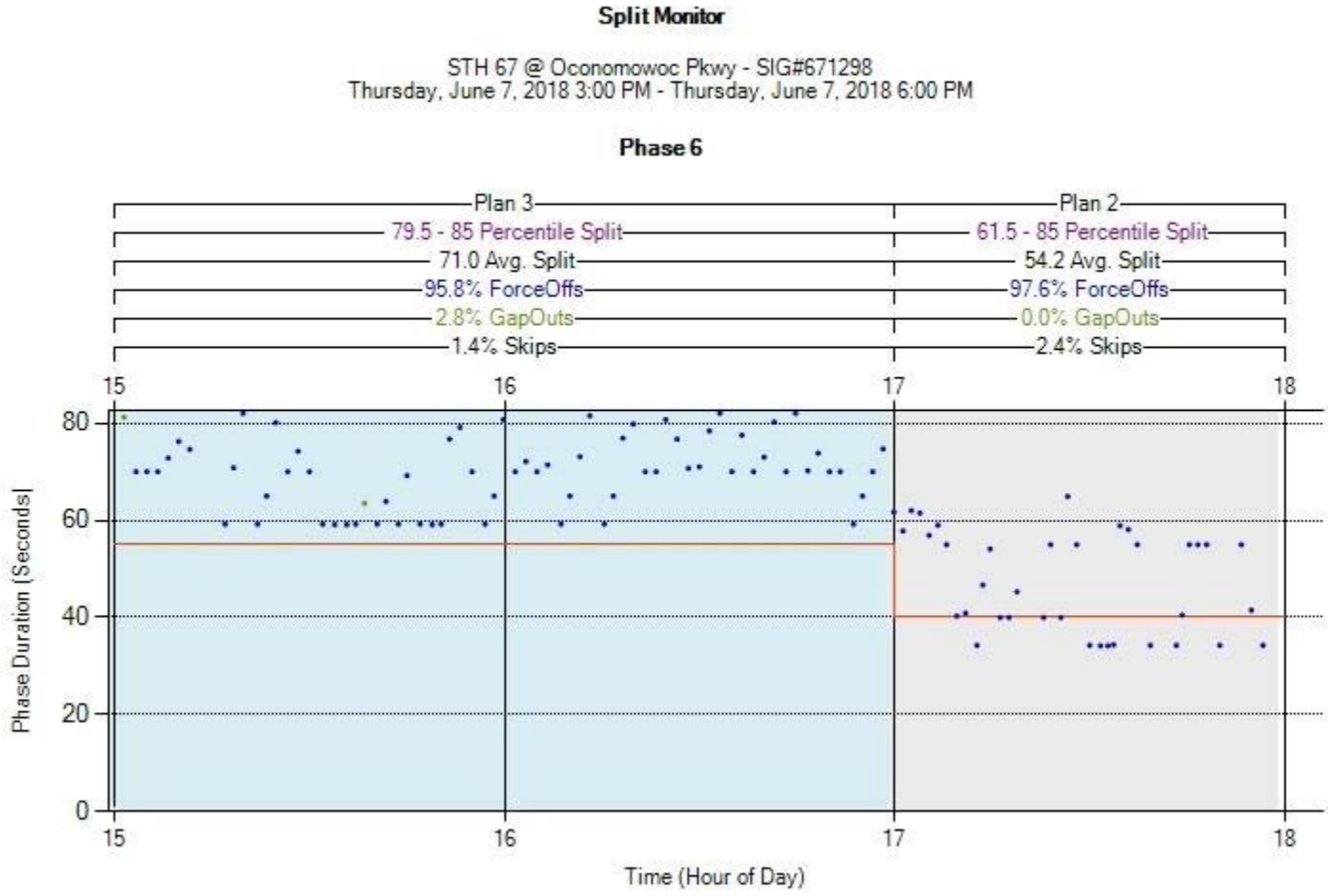
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Baseline Timings
6/7/2018 – 3:00 PM – 6:00 PM



WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Baseline Timings
6/7/2018 – 3:00 PM – 6:00 PM



WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Baseline Timings
6/7/2018 – 3:00 PM – 6:00 PM



WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
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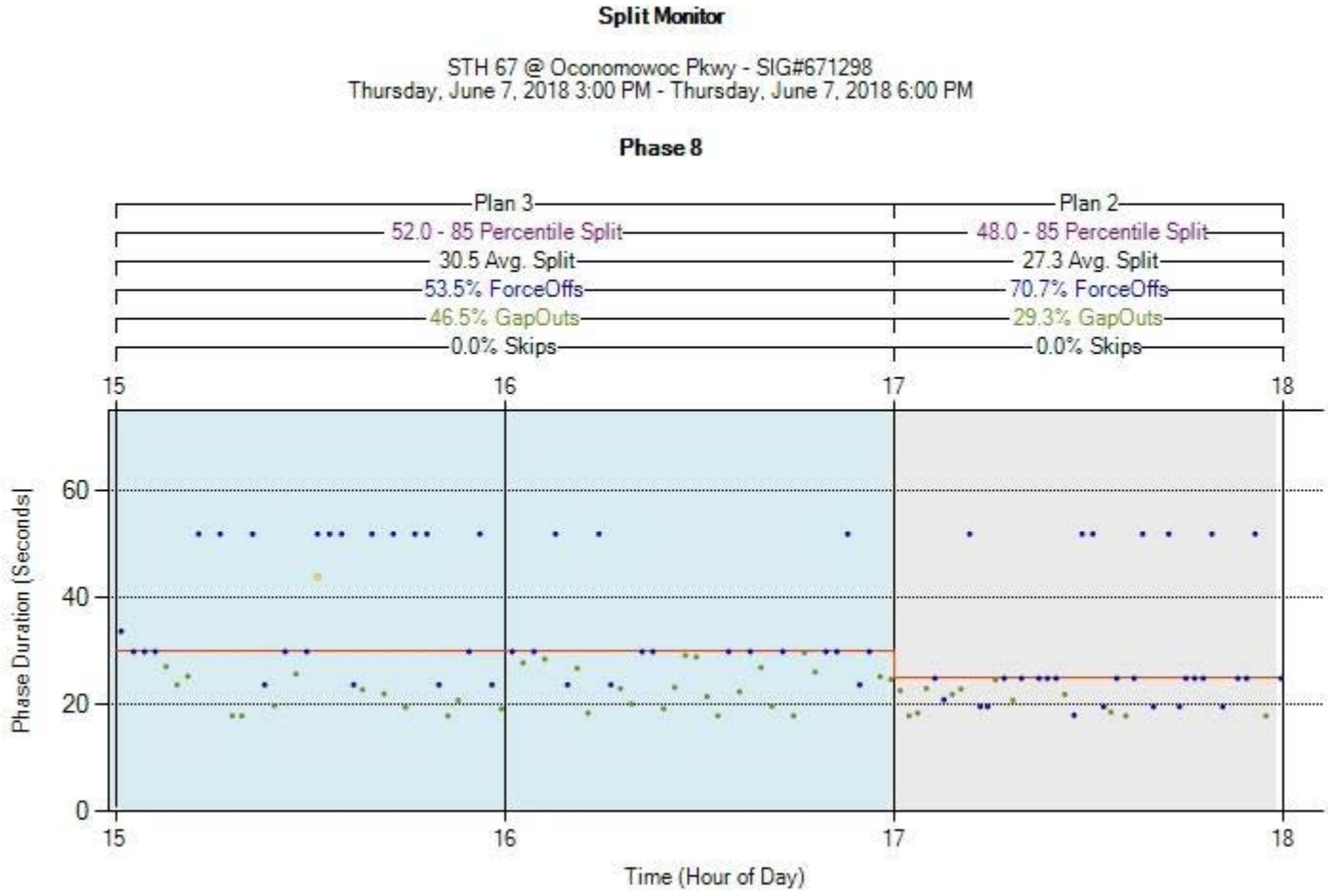
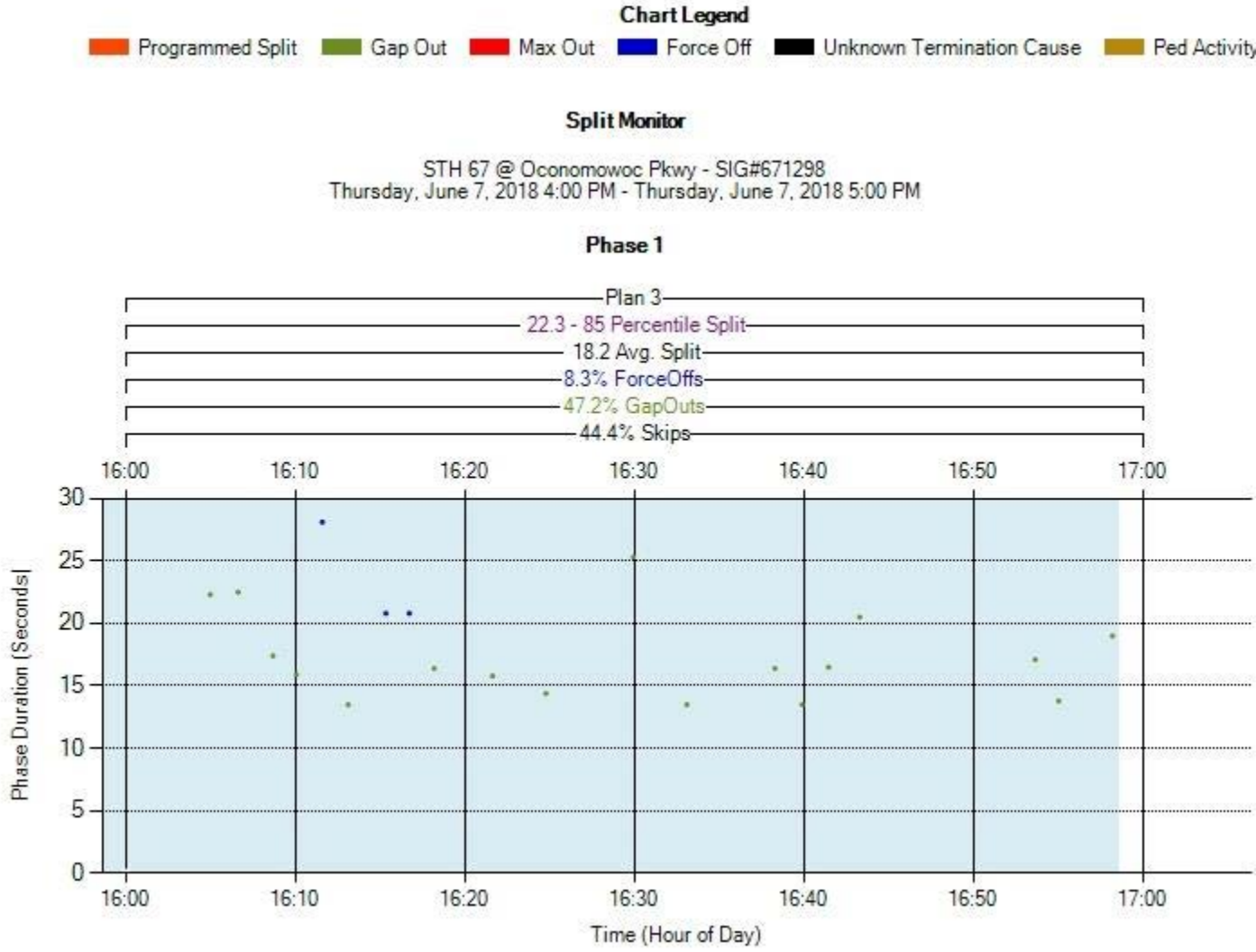
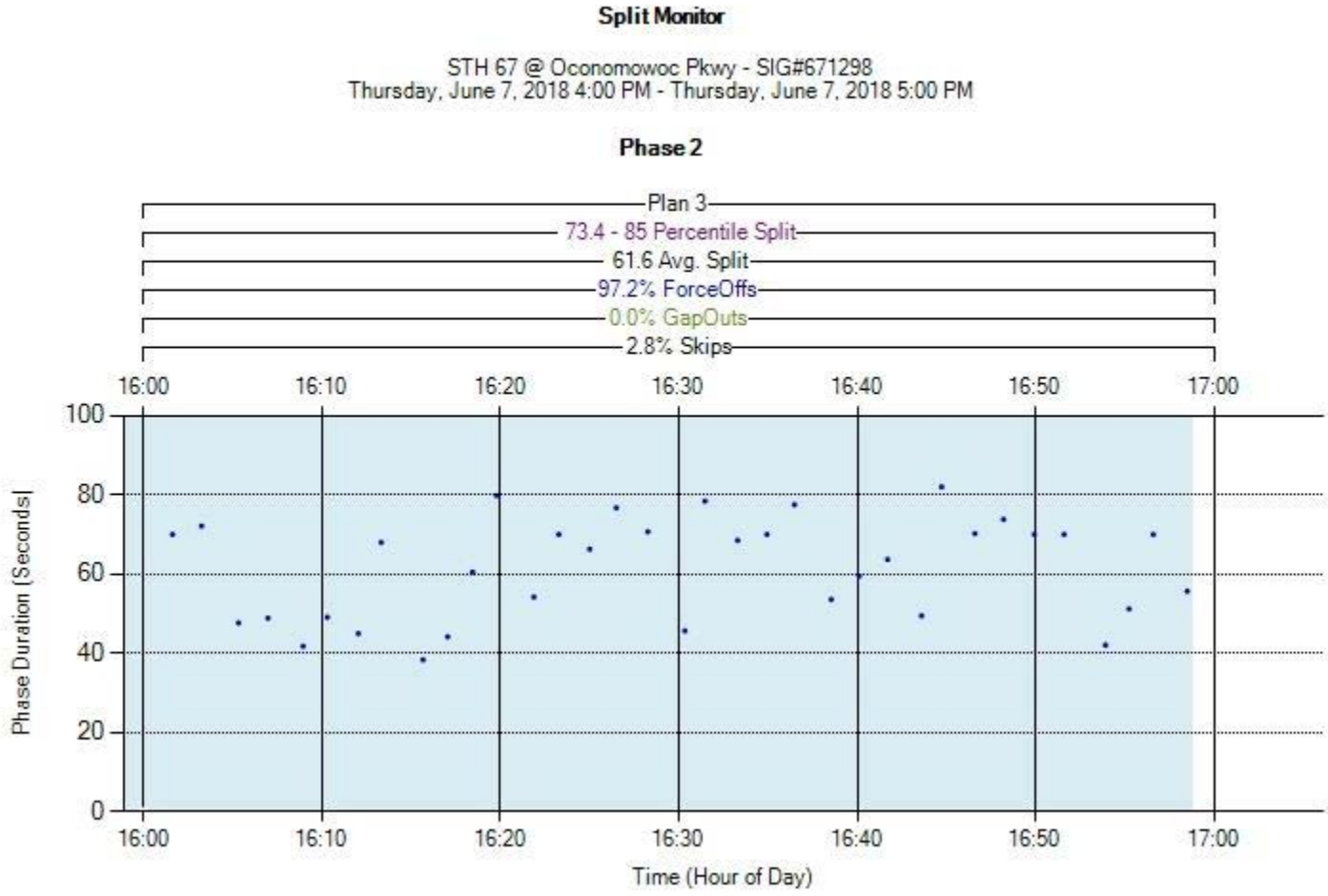


WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Baseline Timings
6/7/2018 – 4:00 PM – 5:00 PM



WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Baseline Timings
6/7/2018 – 4:00 PM – 5:00 PM



WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
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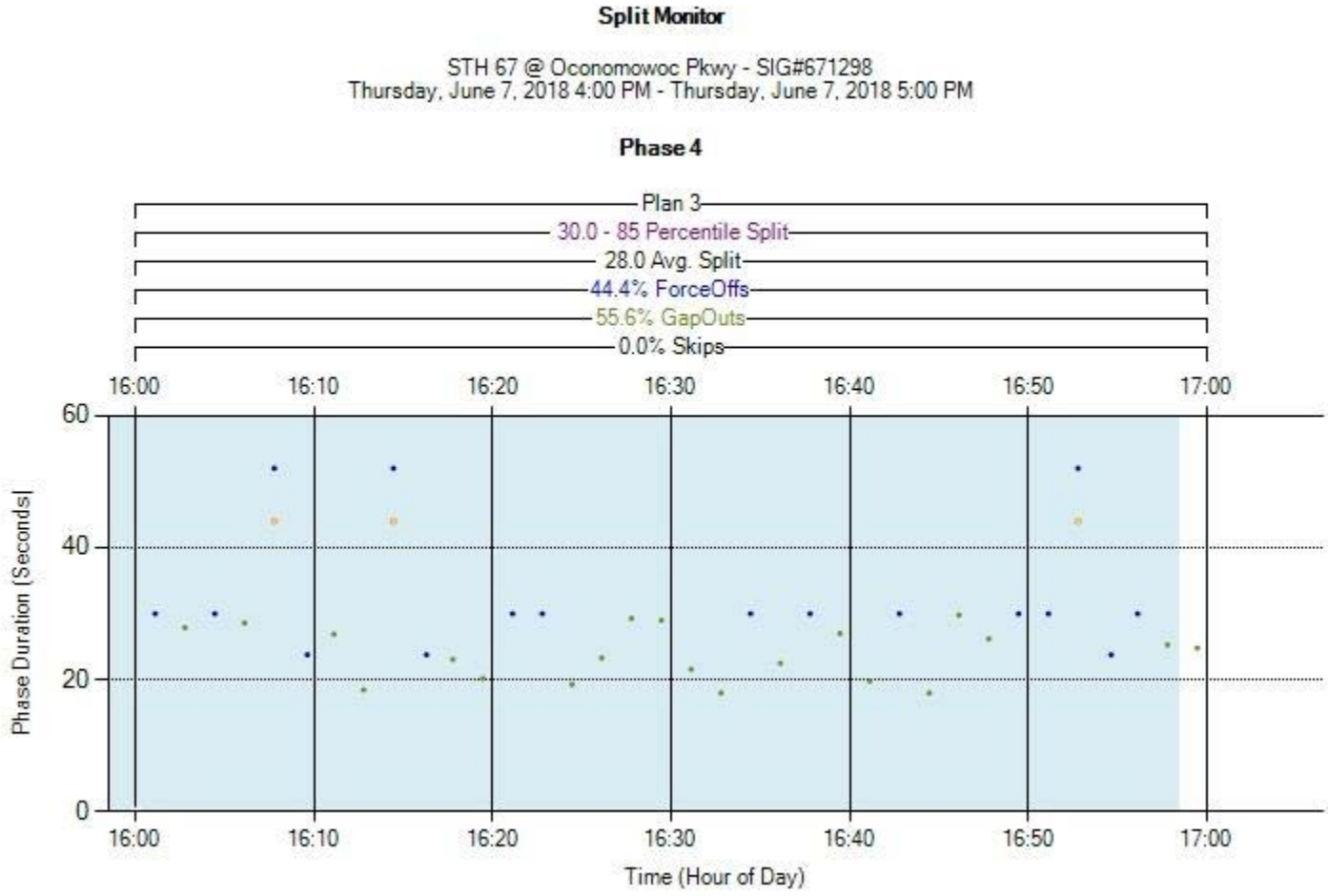
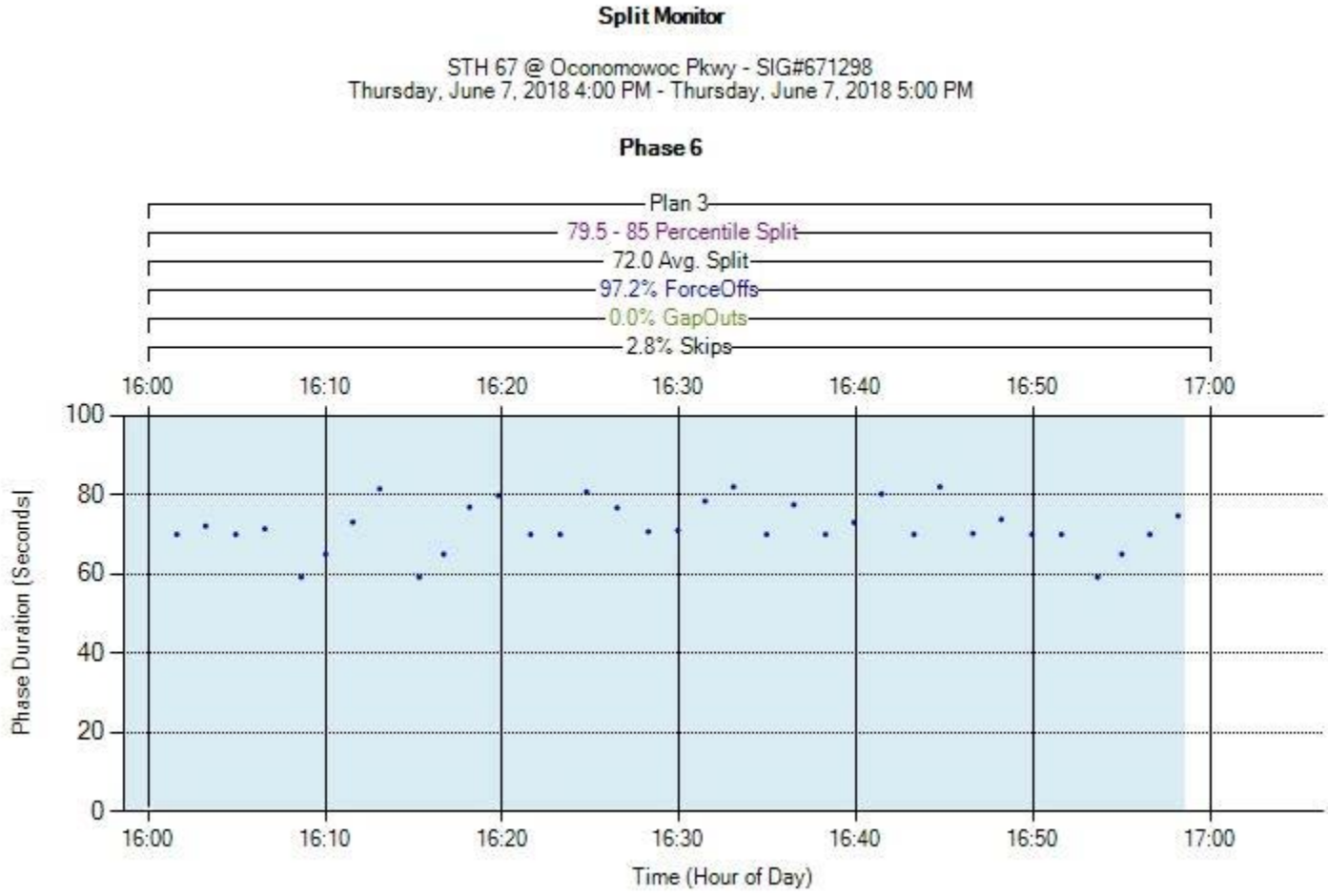
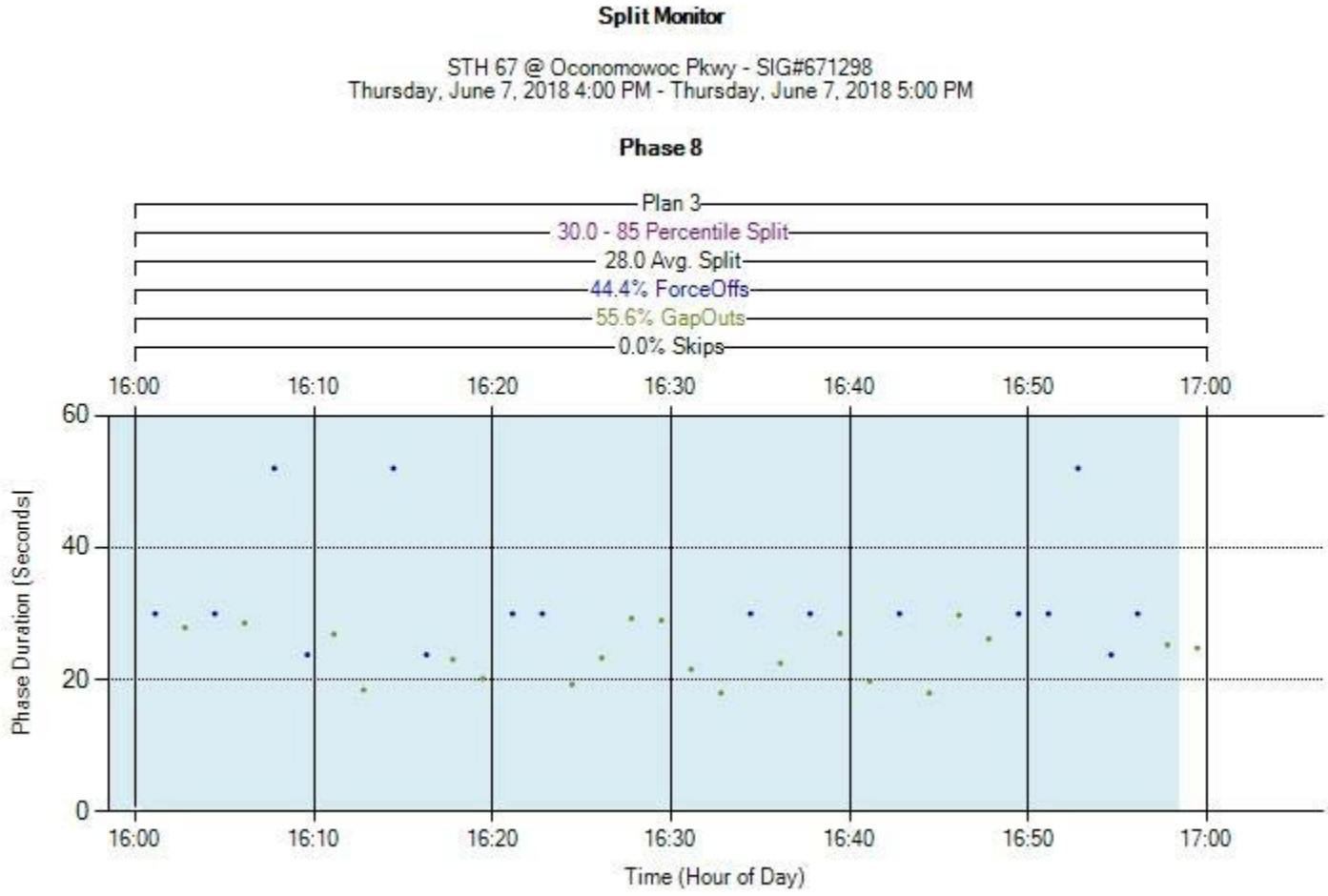
6/7/2018 – 4:00 PM – 5:00 PM



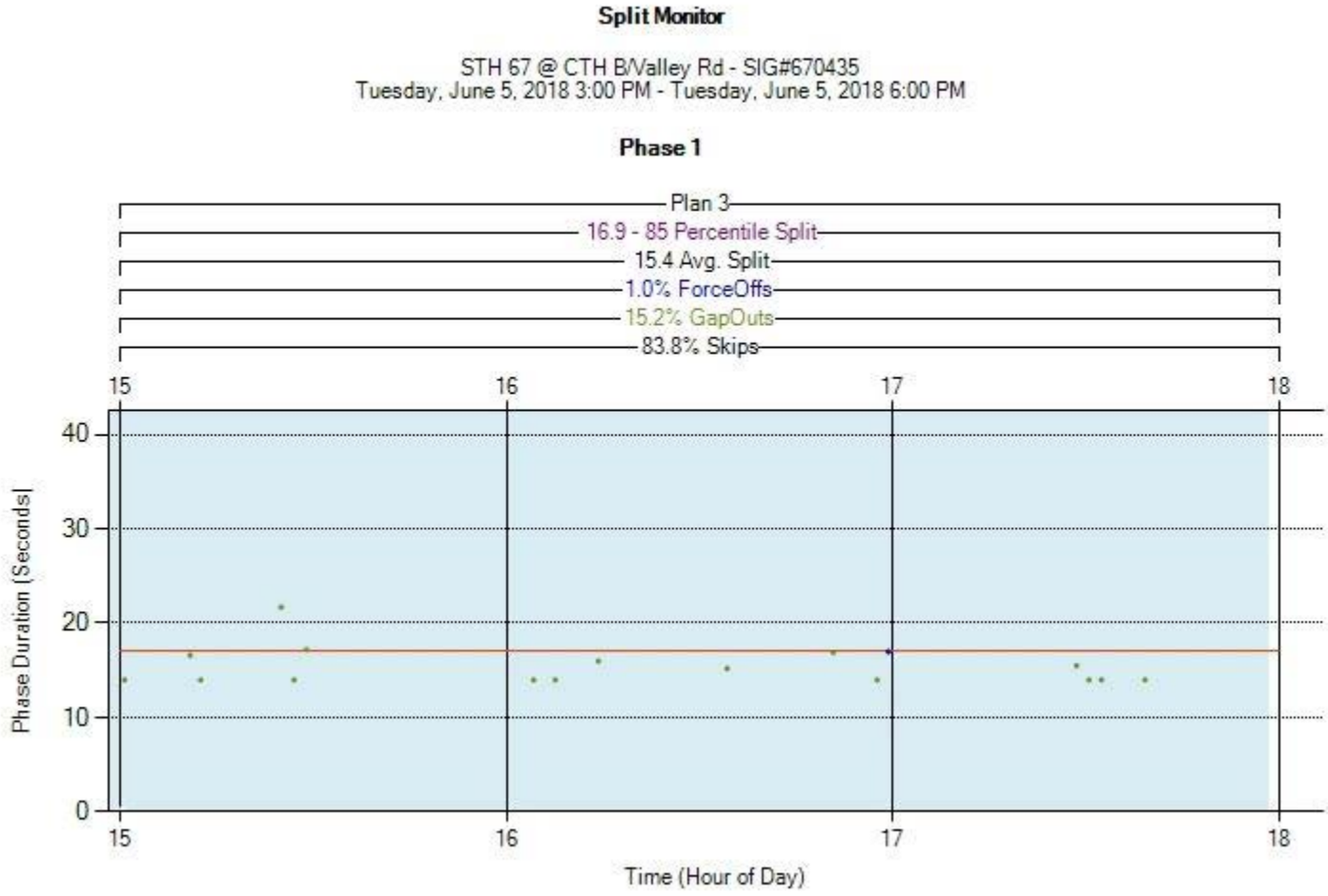
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Baseline Timings
6/7/2018 – 4:00 PM – 5:00 PM



WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Baseline Timings
6/7/2018 – 4:00 PM – 5:00 PM



WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Baseline Timings
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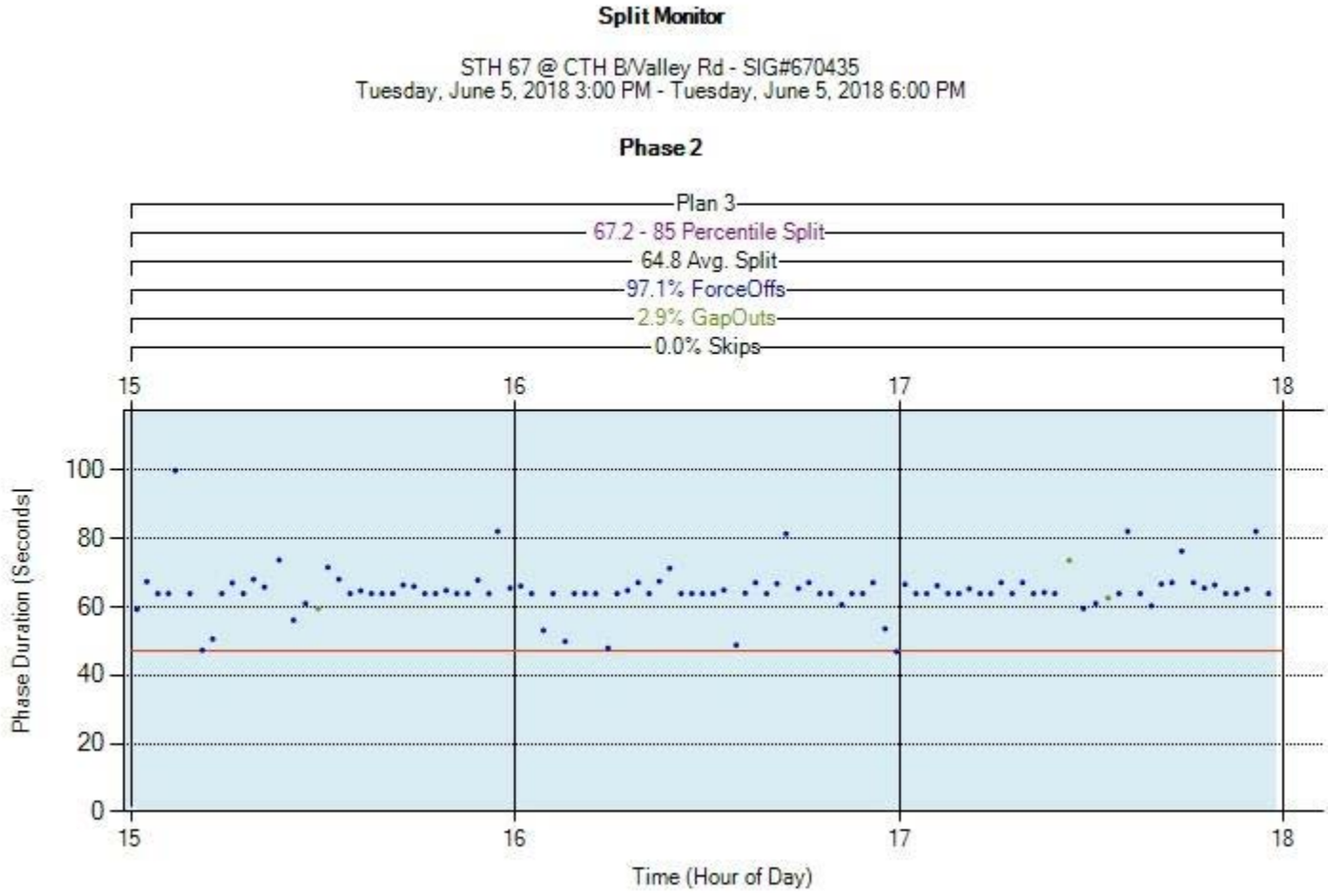
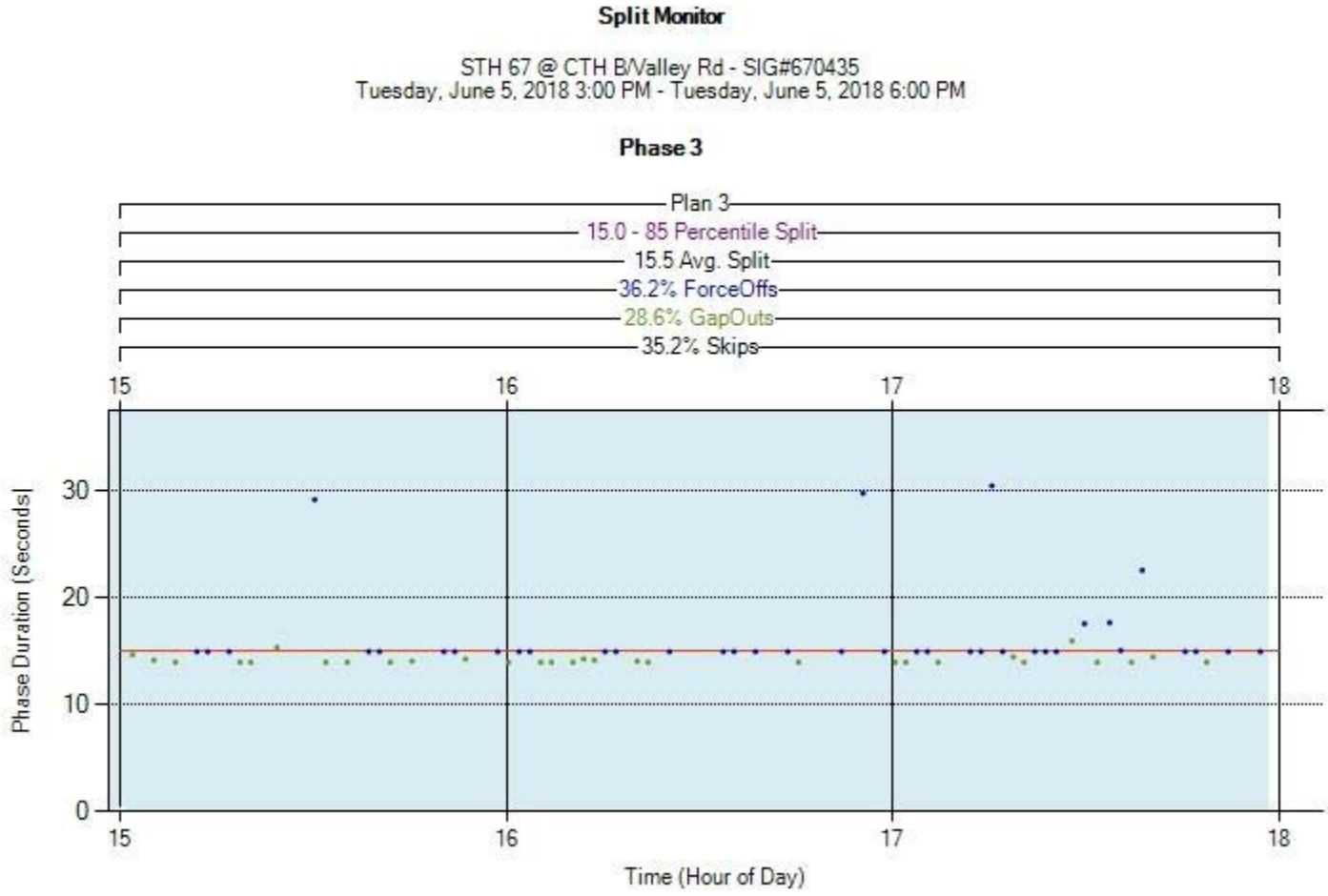


WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Baseline Timings
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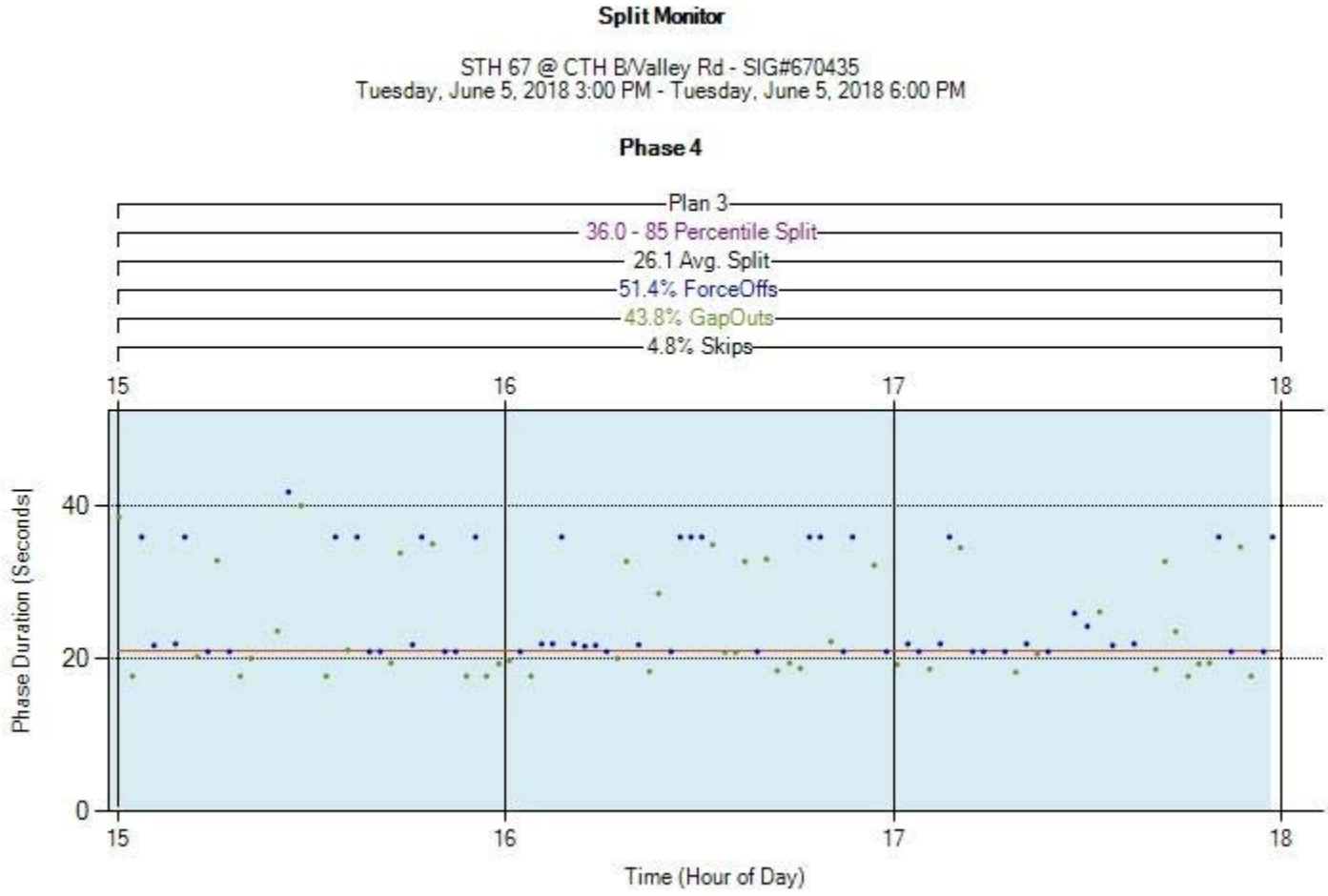
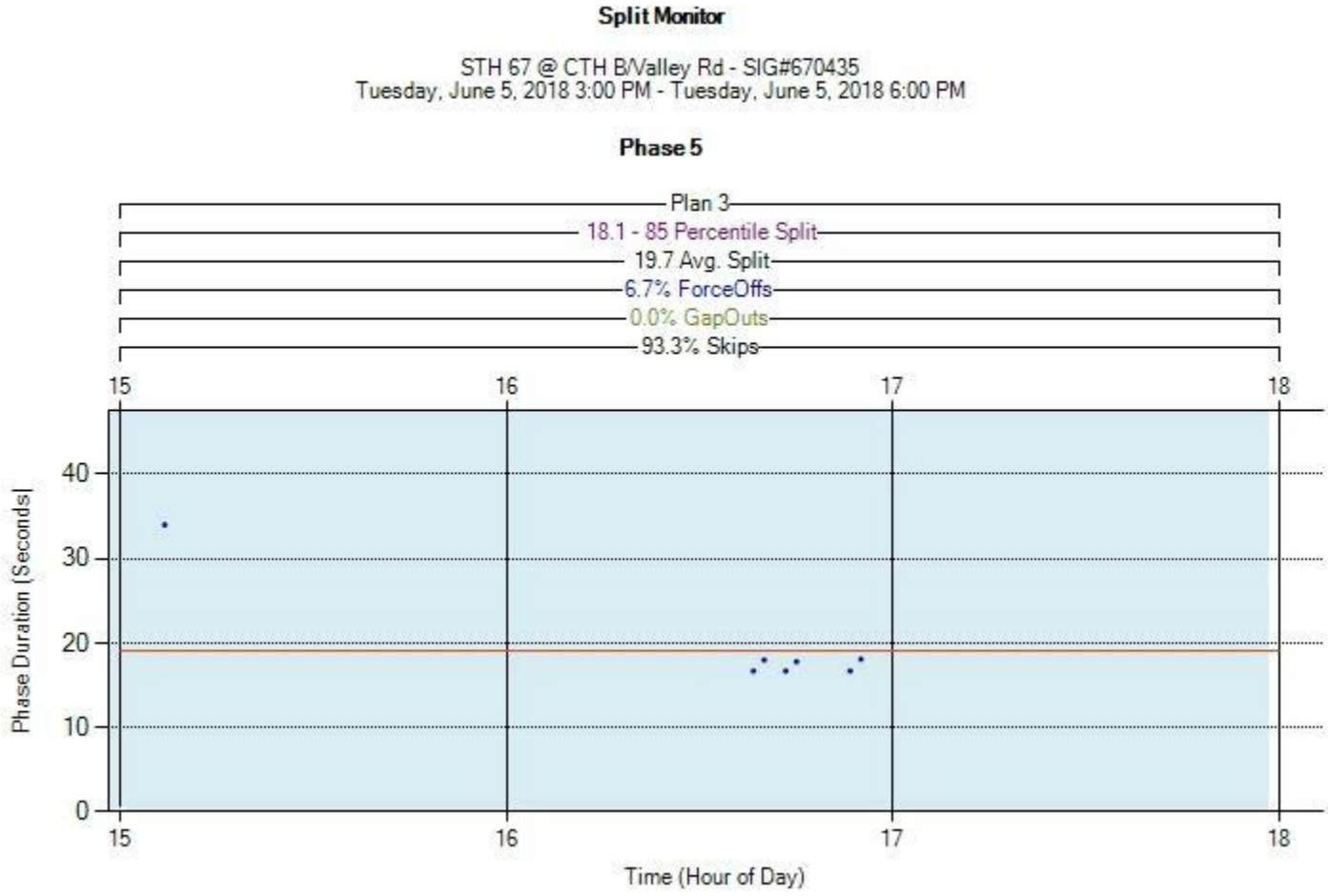
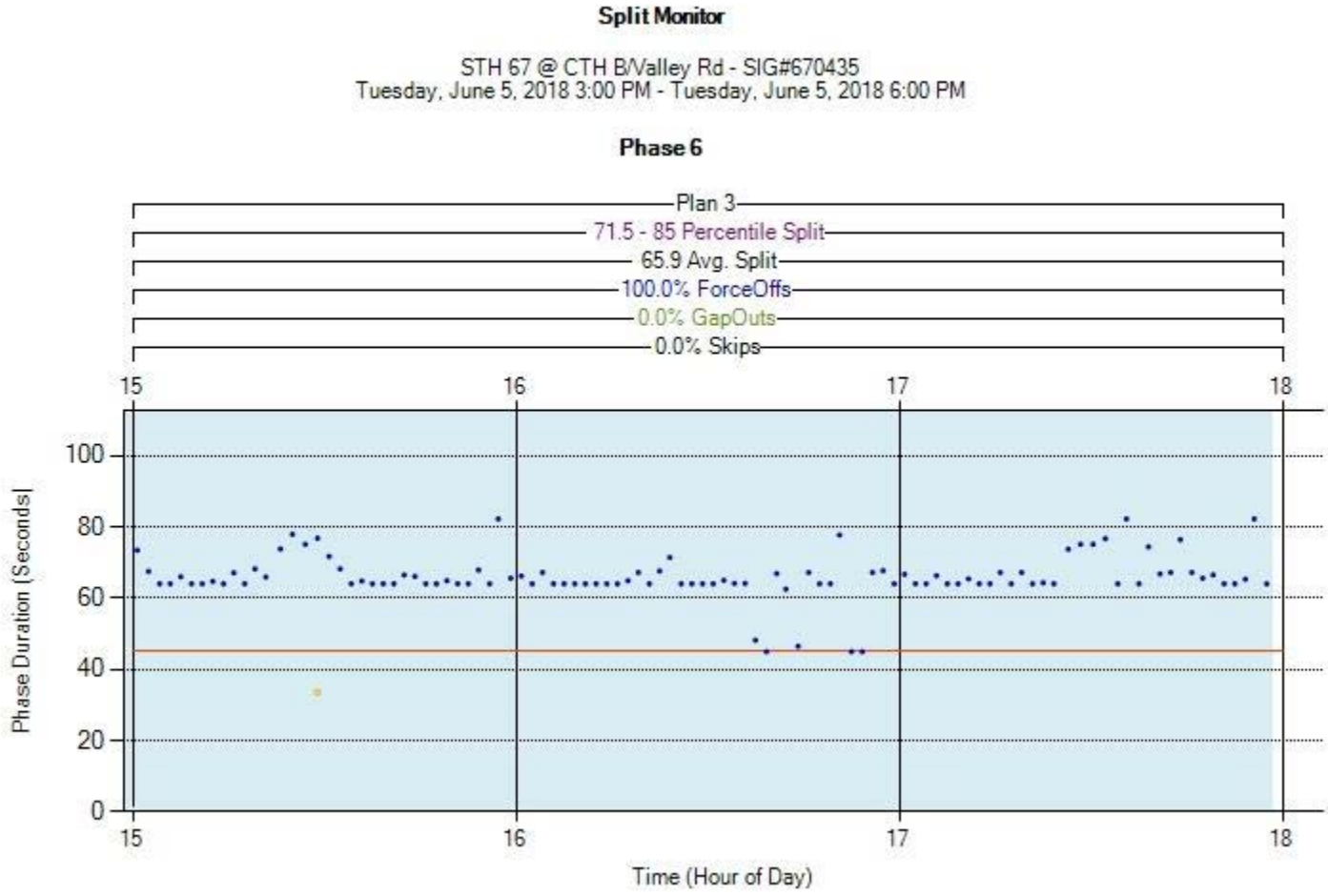


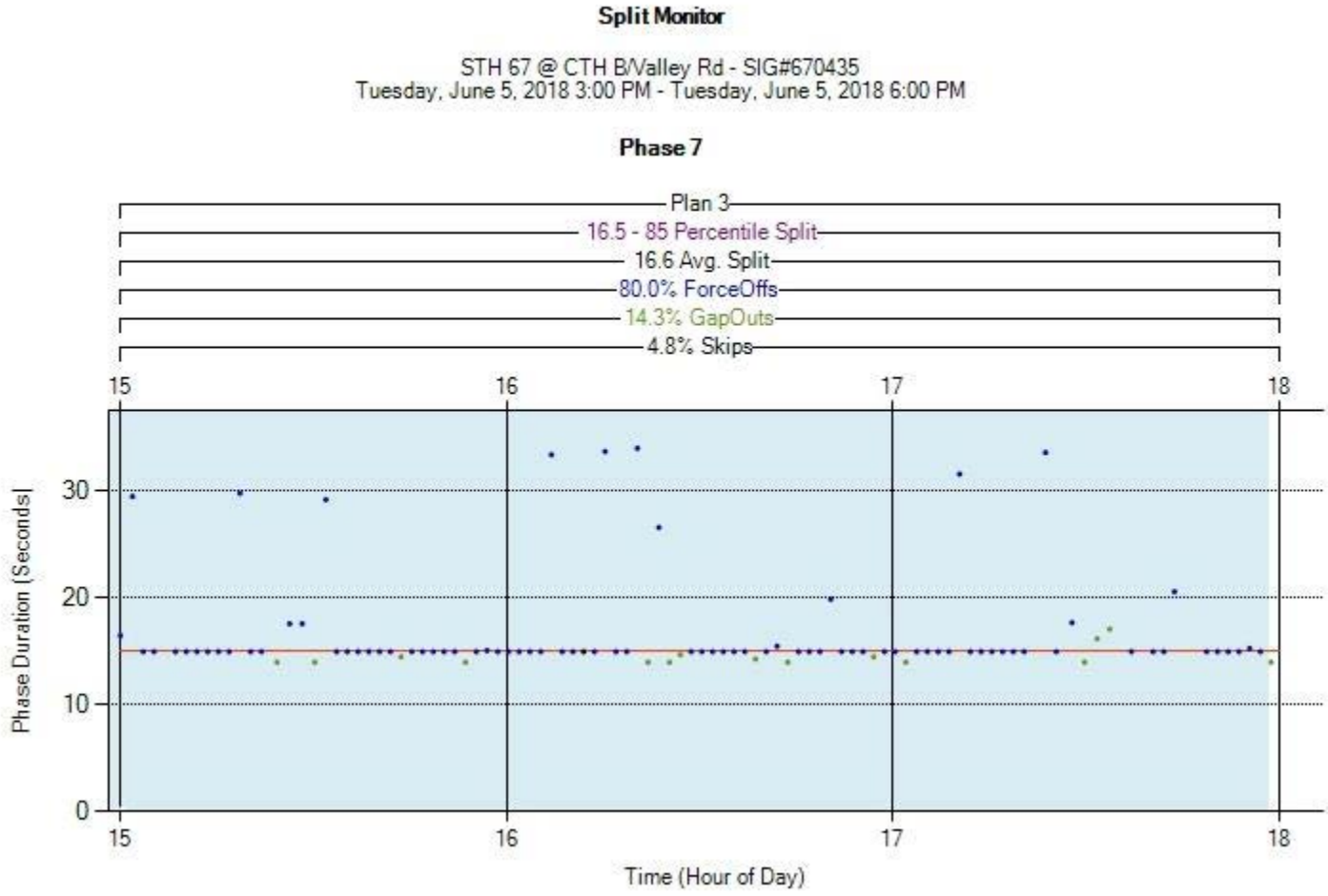
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



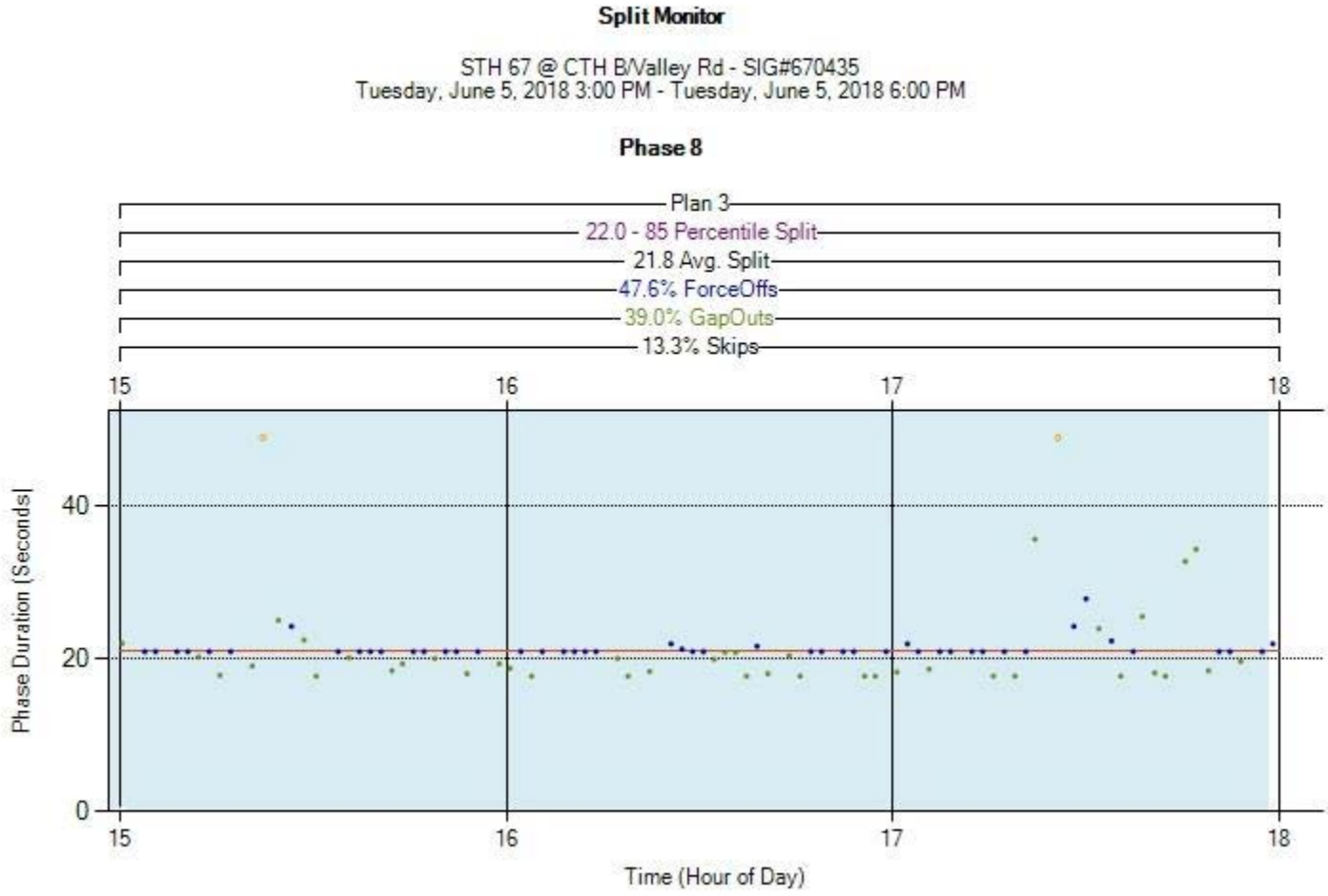
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



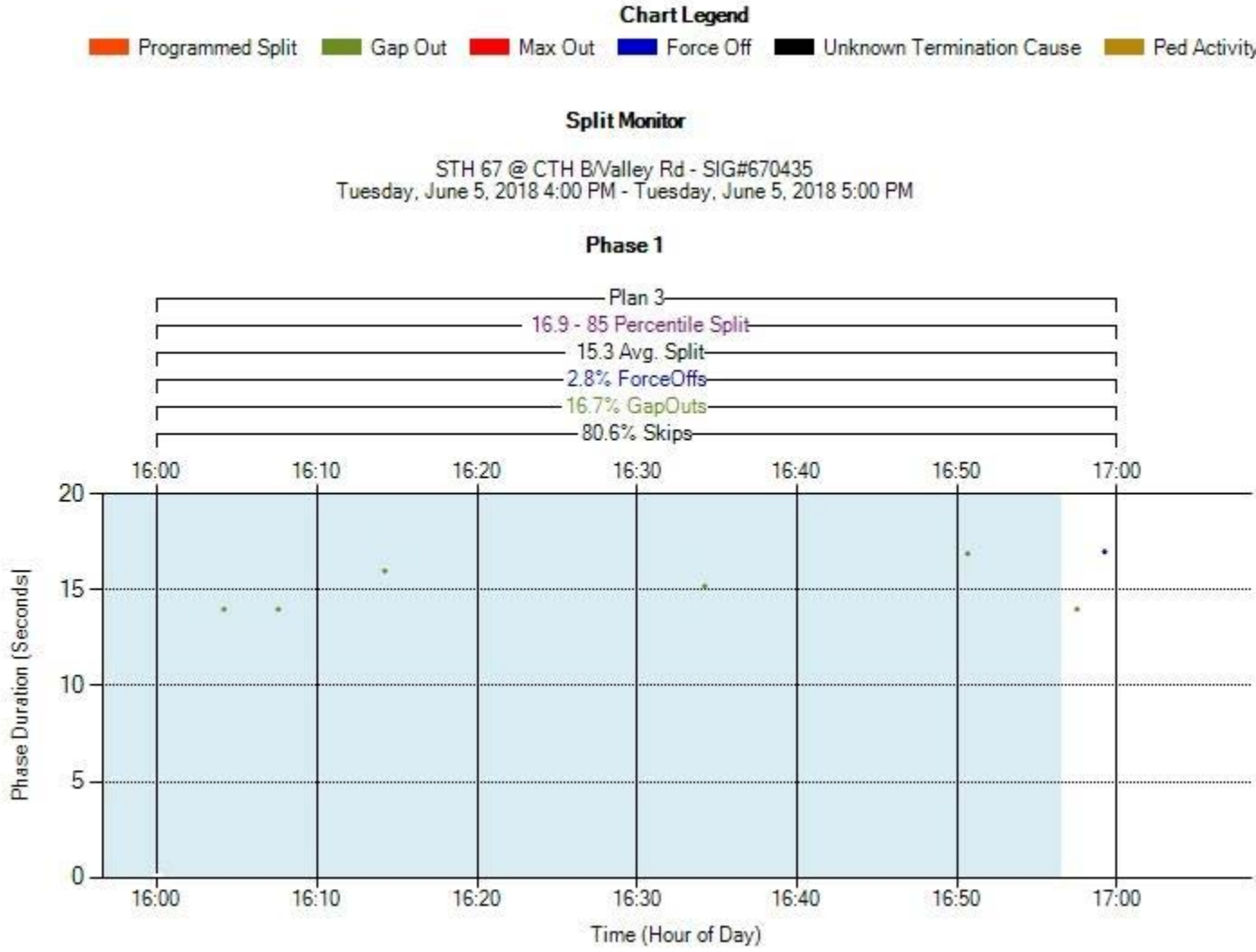
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



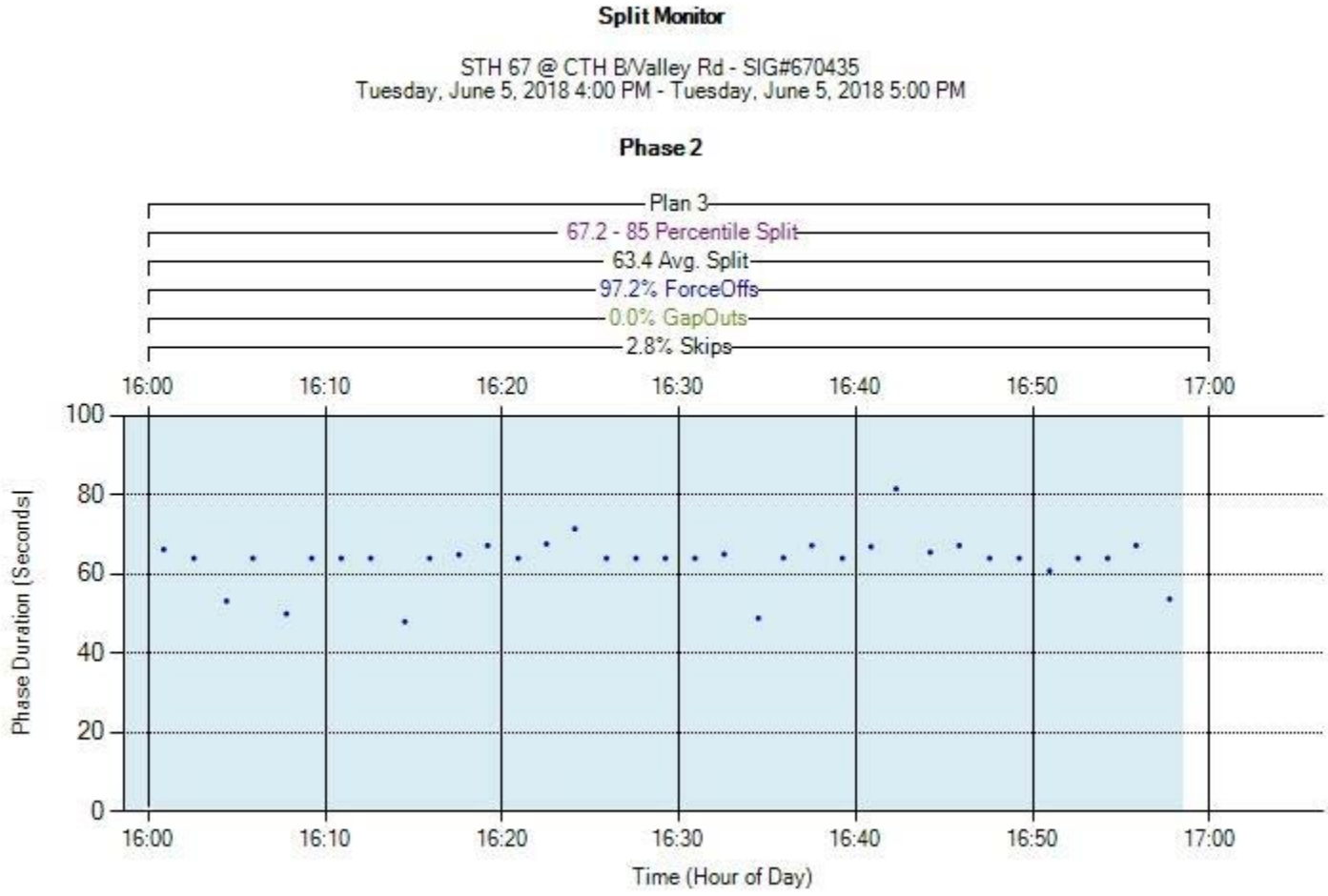
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



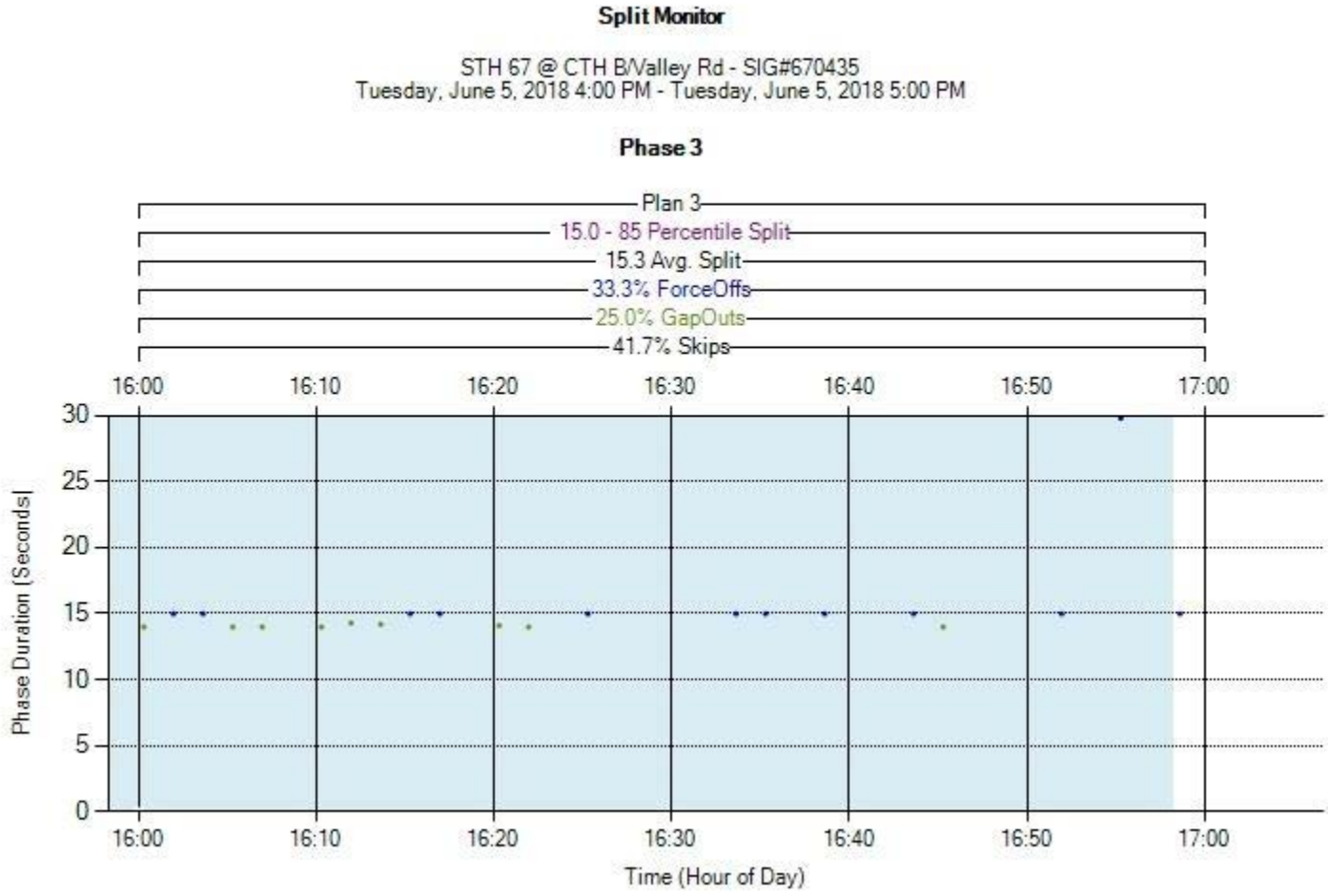
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Baseline Timings
6/5/2018 – 4:00 PM – 5:00 PM



WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Baseline Timings
6/5/2018 – 4:00 PM – 5:00 PM



WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Baseline Timings
6/5/2018 – 4:00 PM – 5:00 PM



WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
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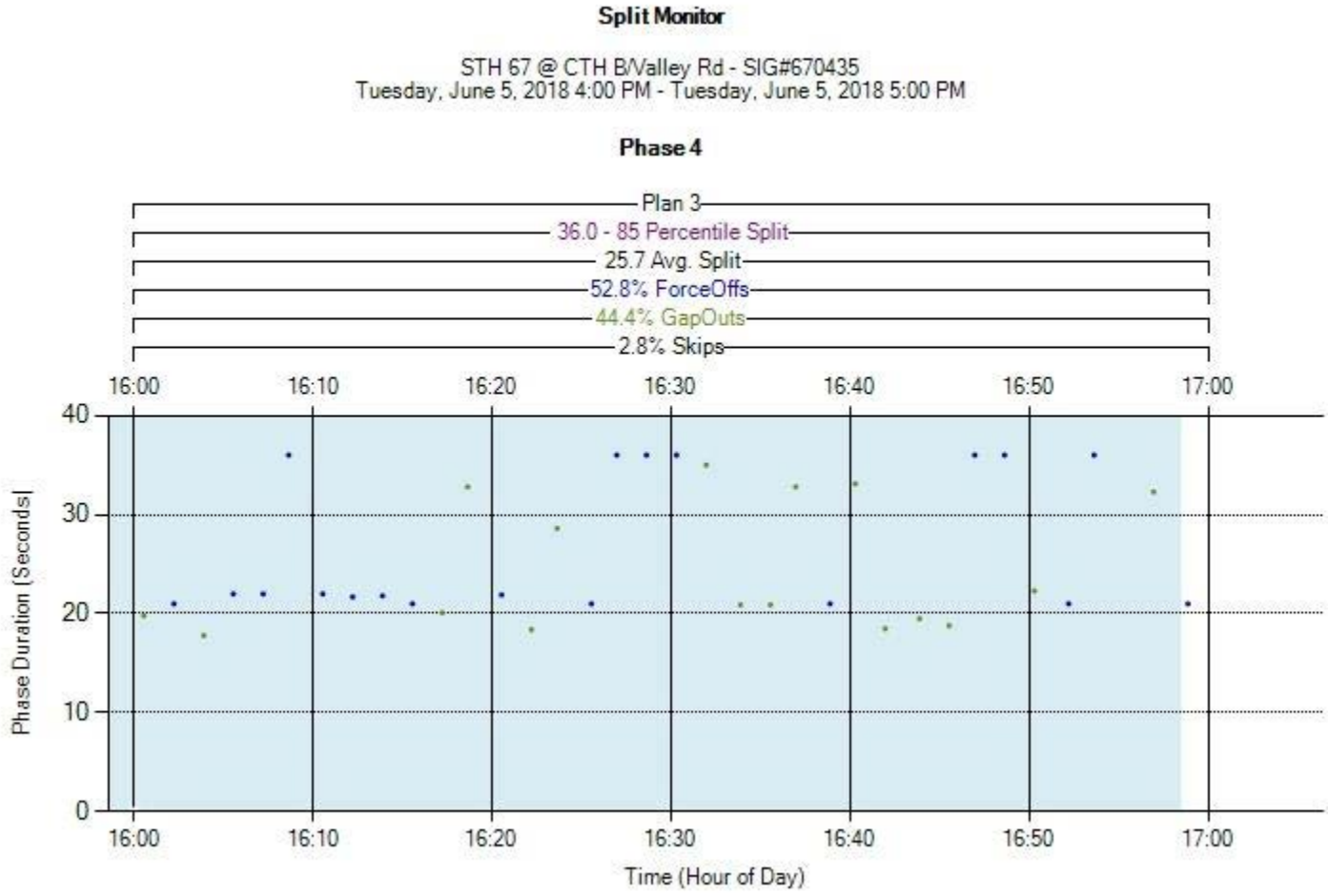

WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
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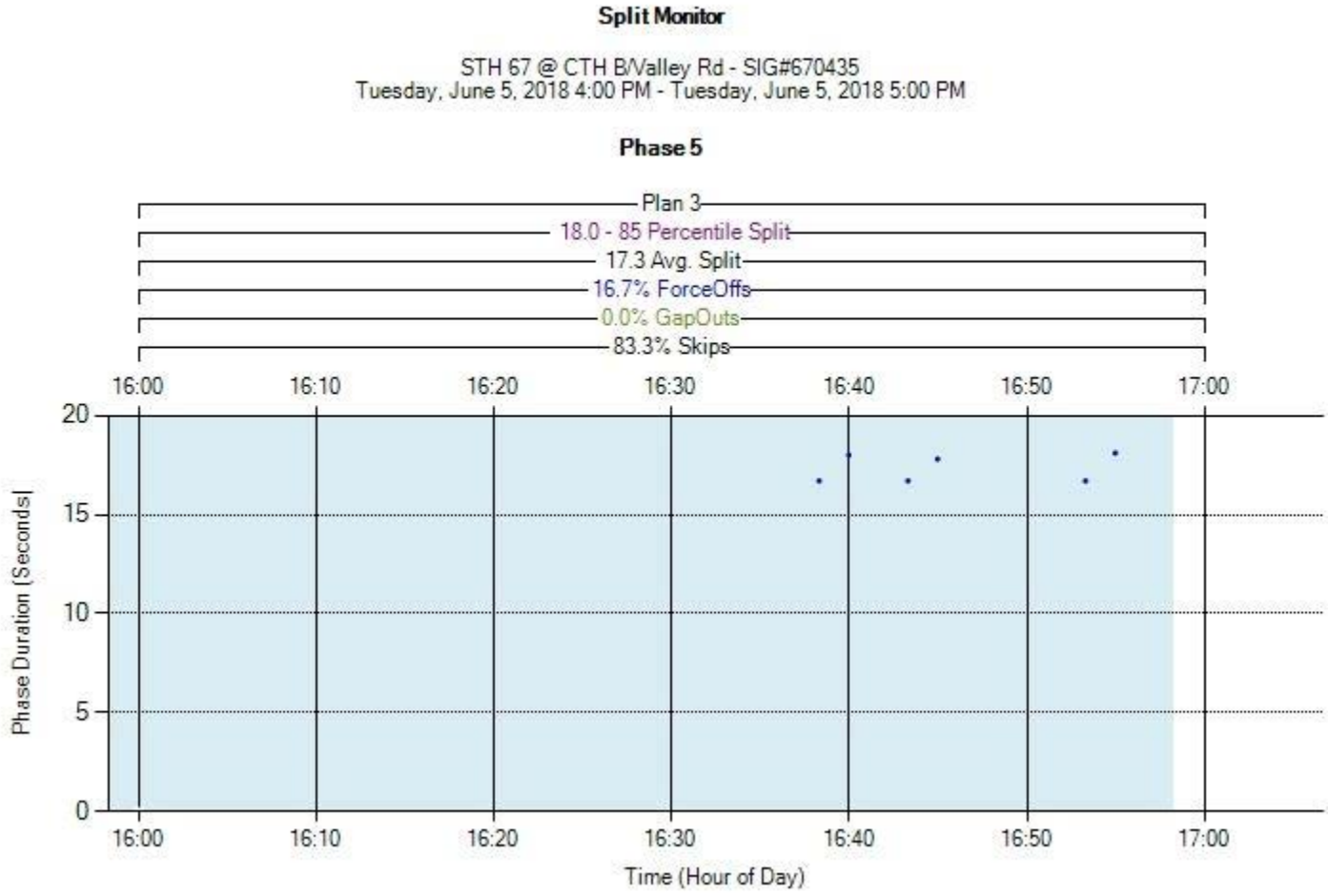
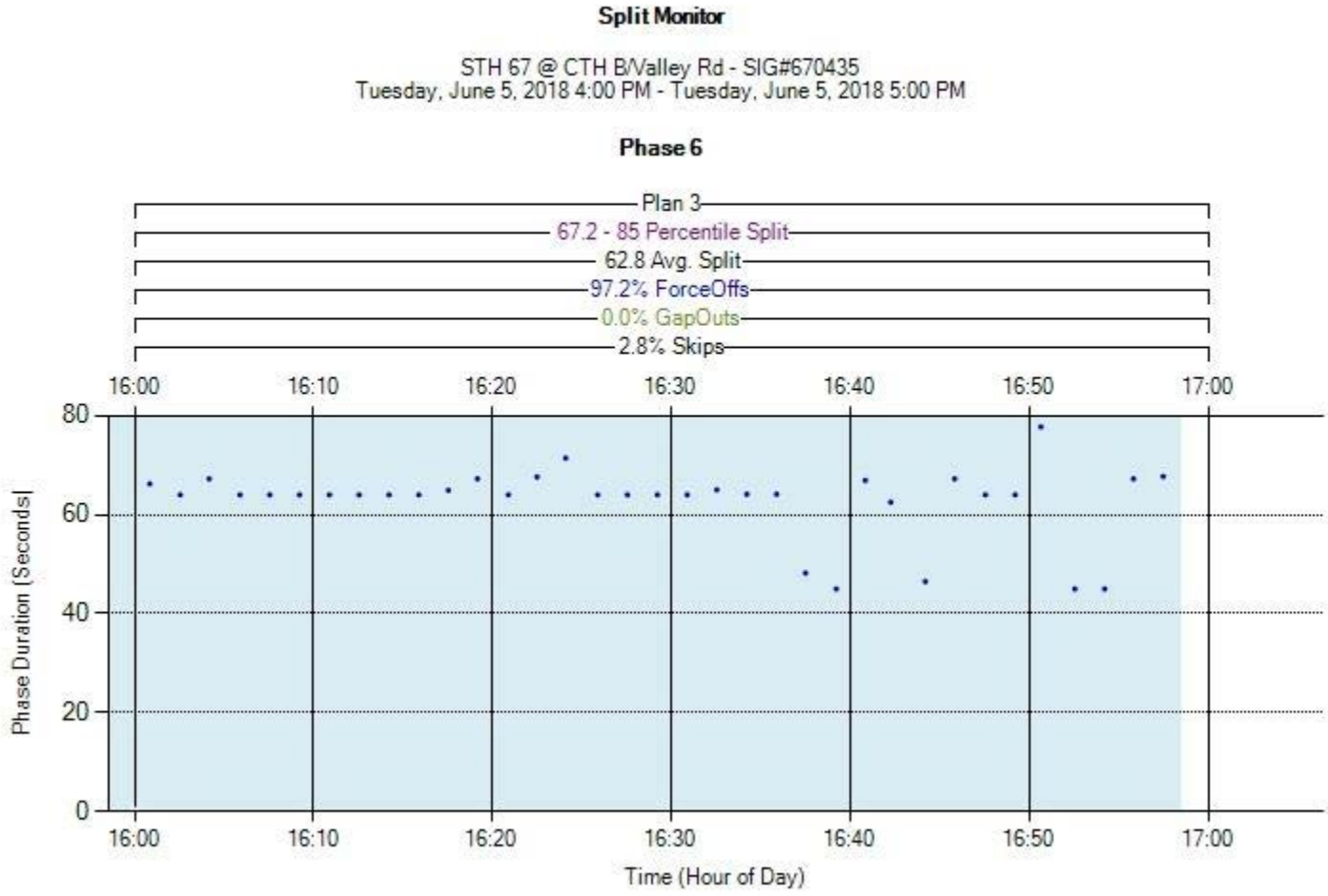


WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Baseline Timings
6/5/2018 – 4:00 PM – 5:00 PM



WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
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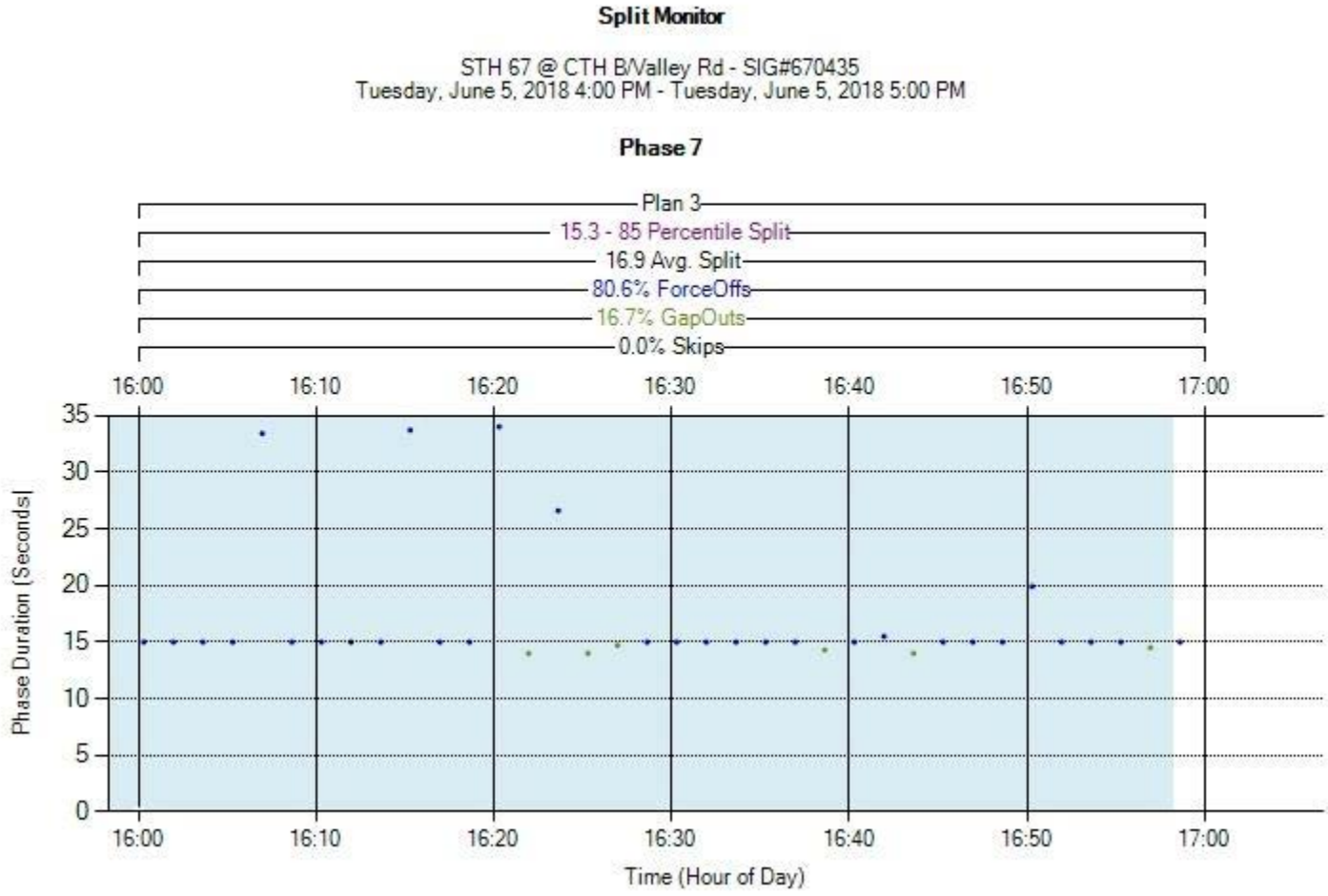
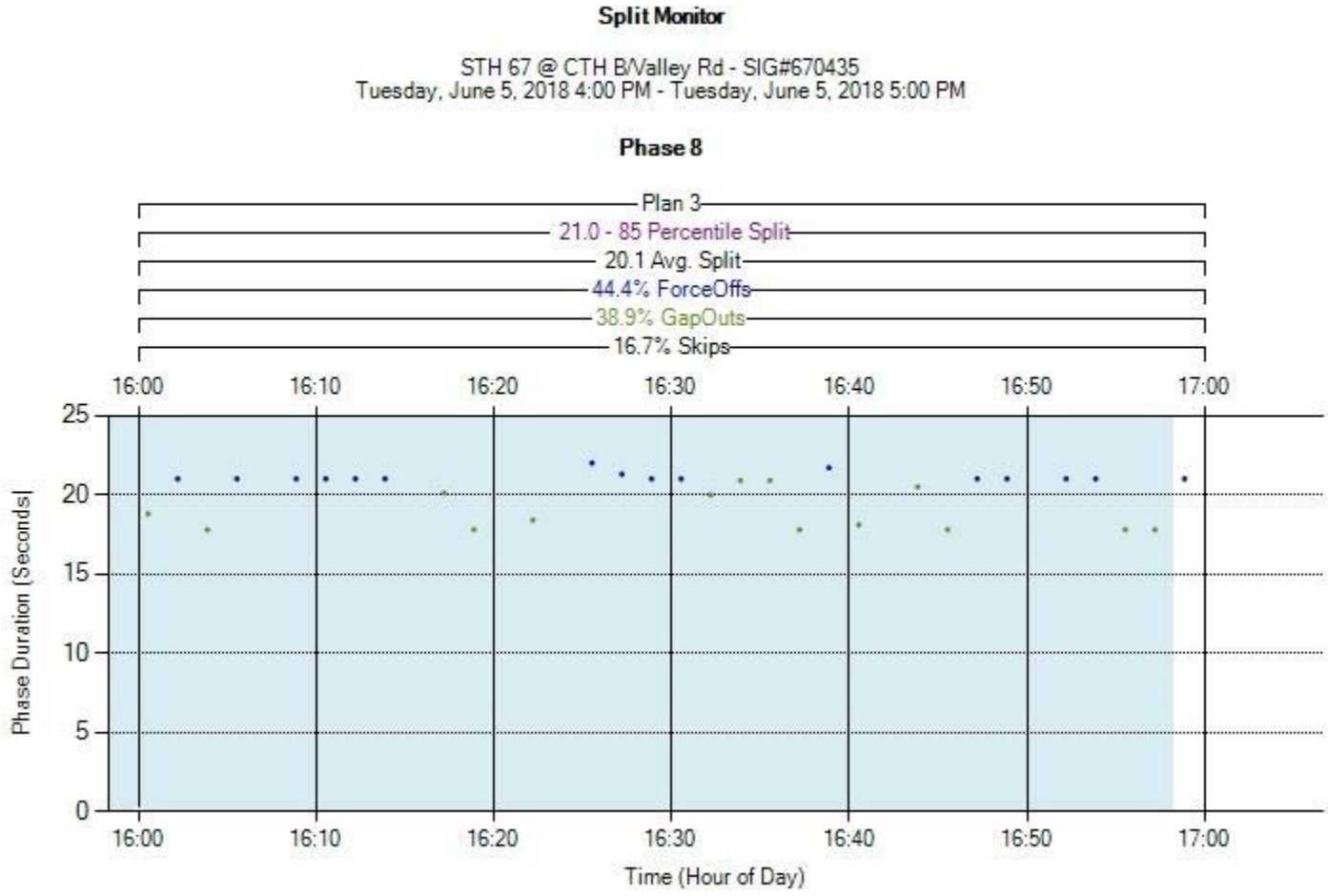
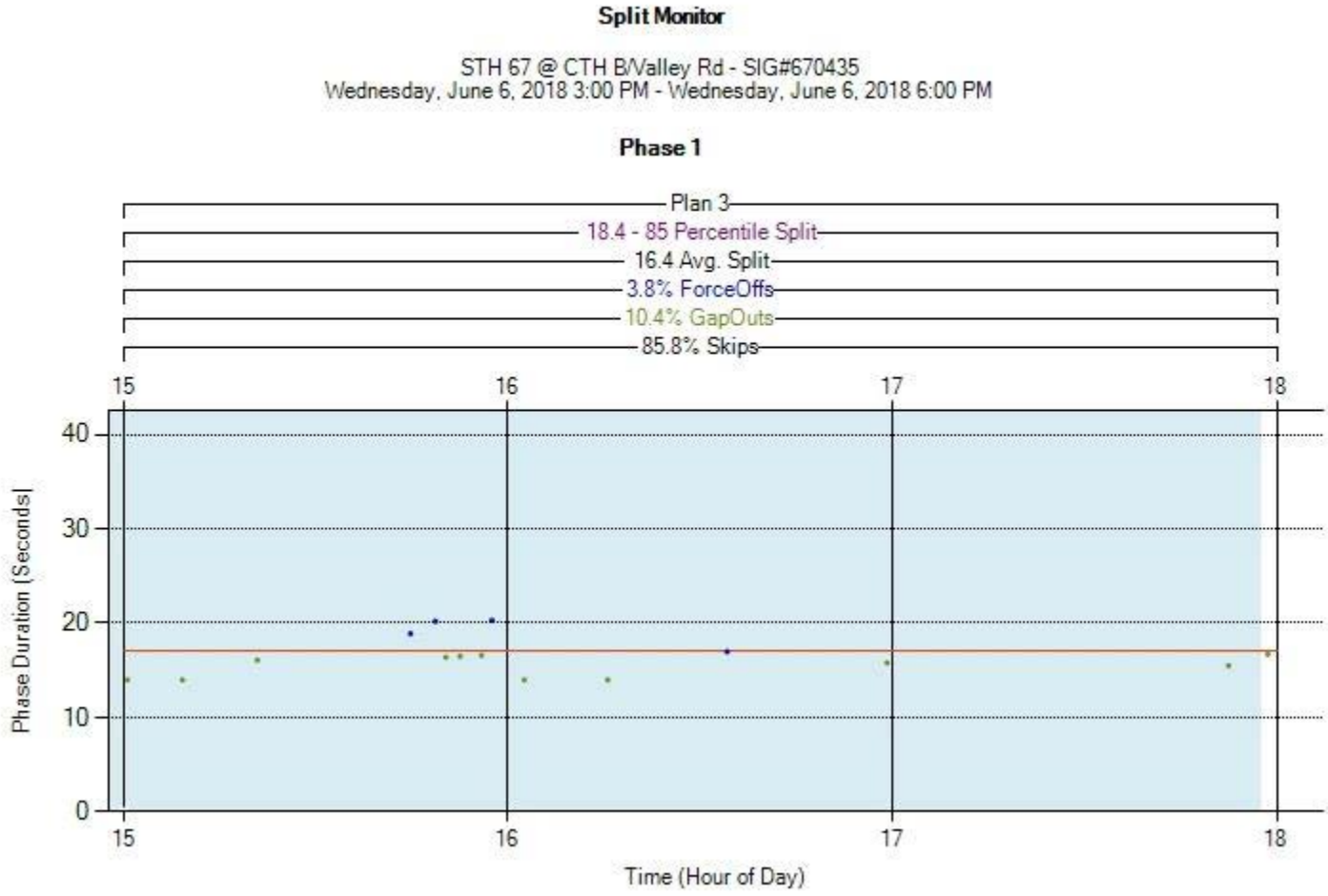


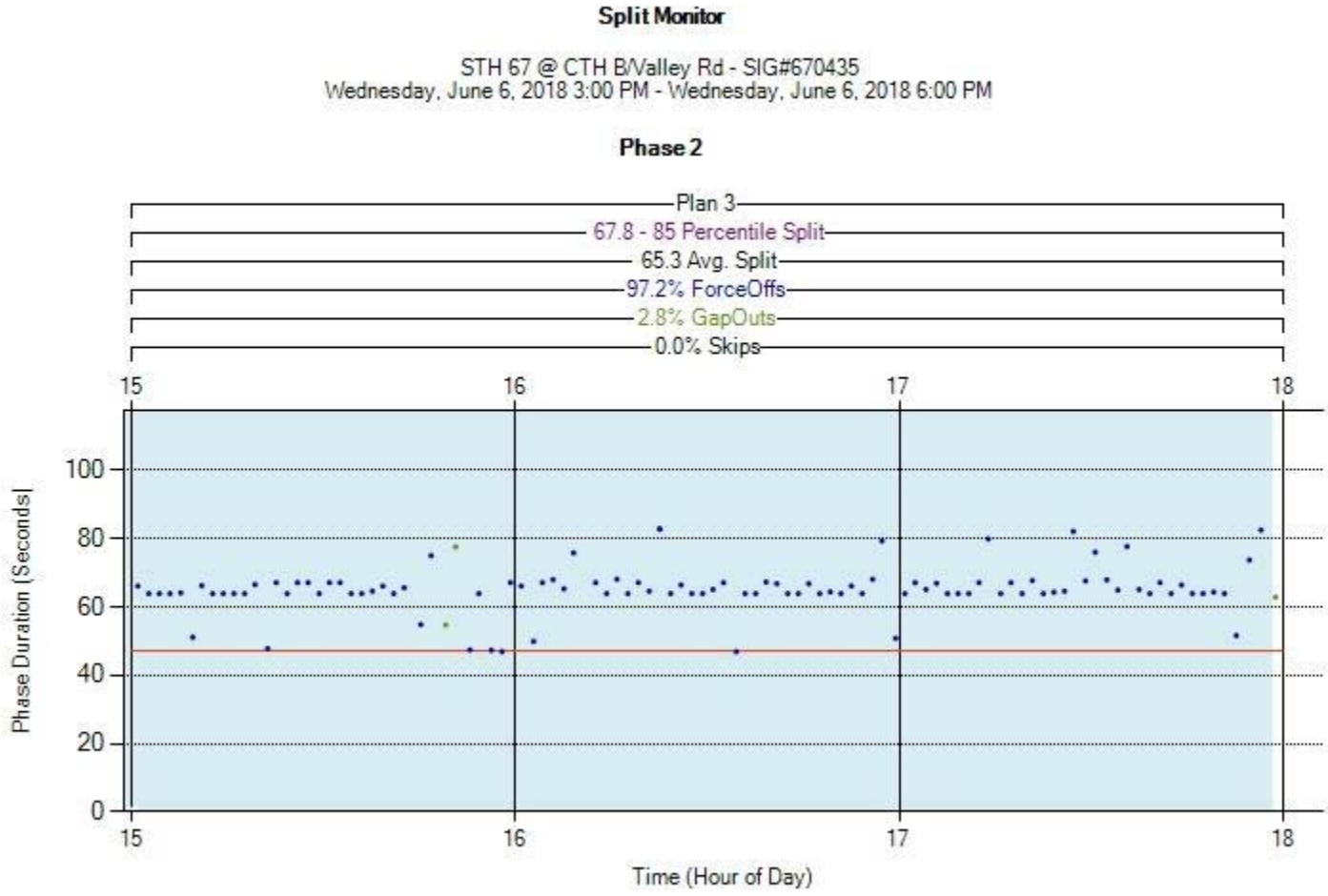
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Baseline Timings
6/5/2018 – 4:00 PM – 5:00 PM



WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Baseline Timings
6/6/2018 – 3:00 PM – 6:00 PM



WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Baseline Timings
6/6/2018 – 3:00 PM – 6:00 PM



WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
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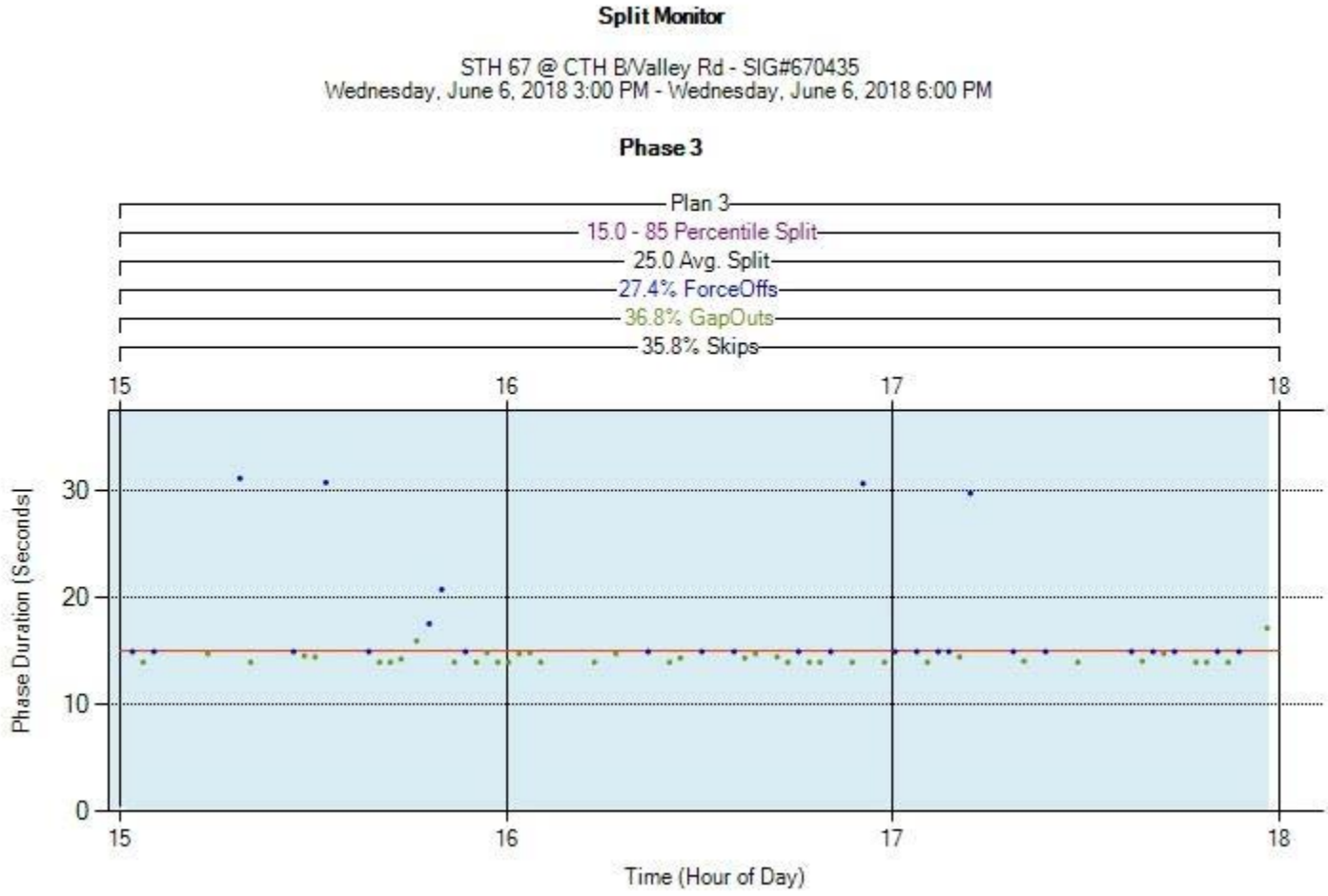
6/6/2018 – 3:00 PM – 6:00 PM



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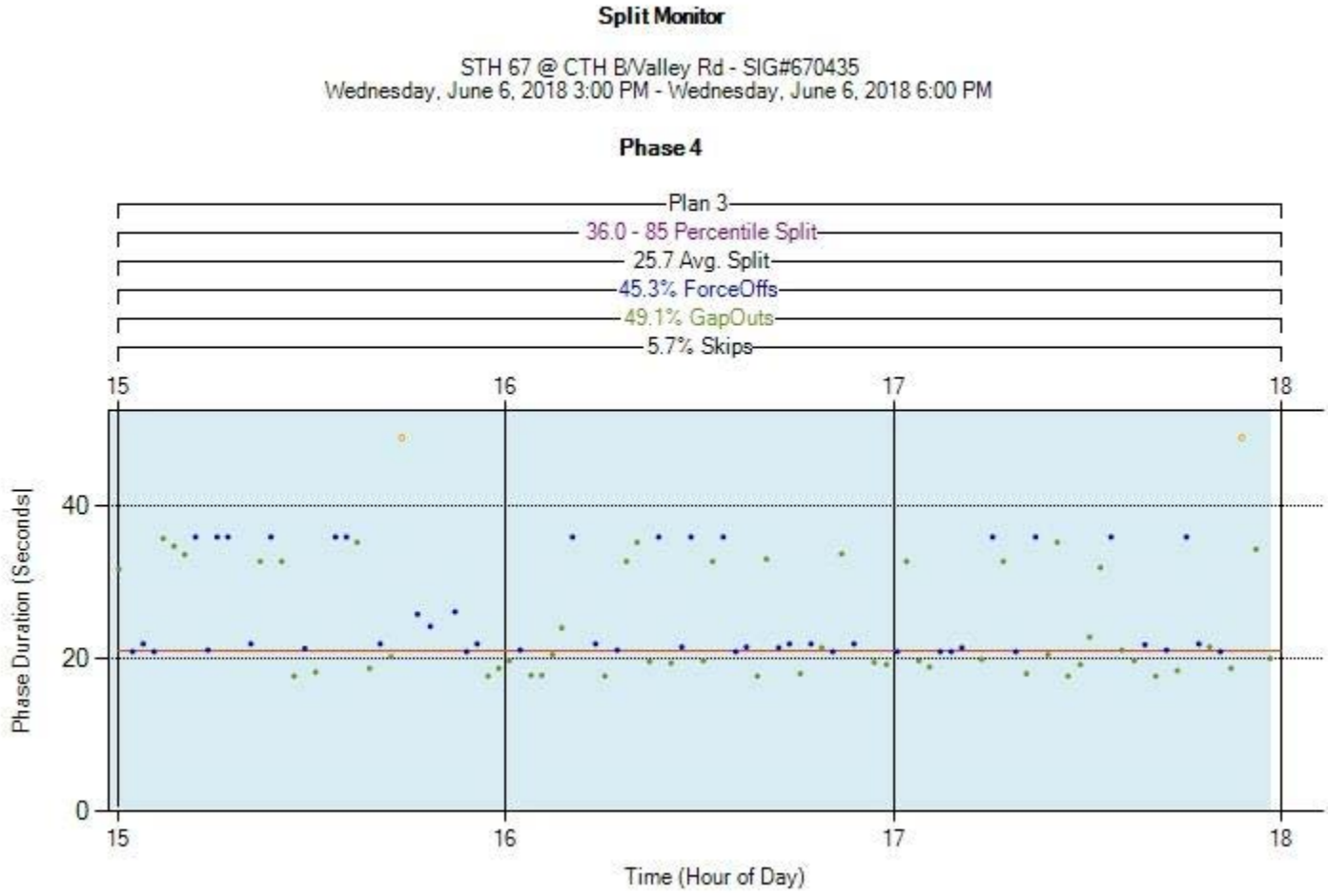

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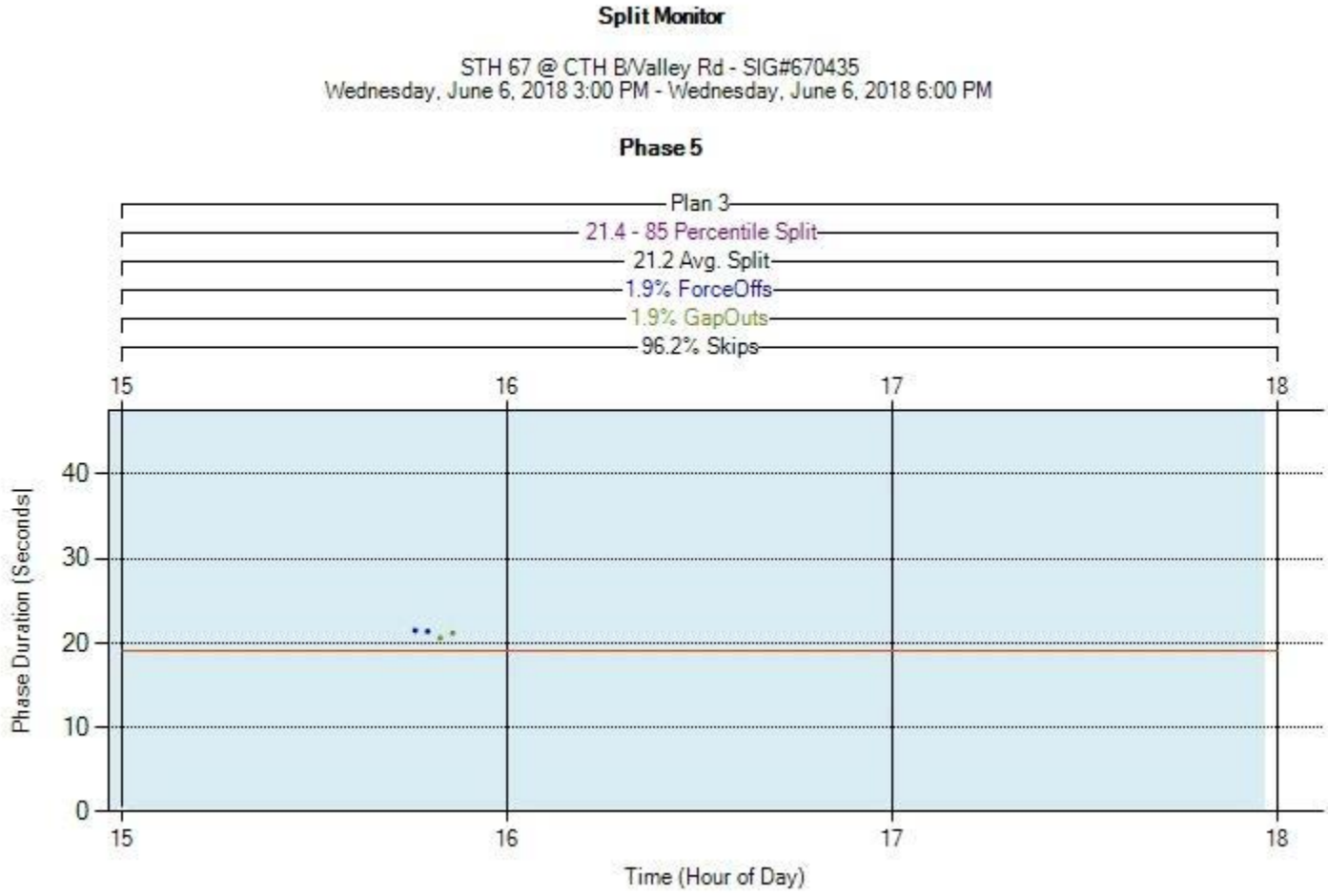

WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
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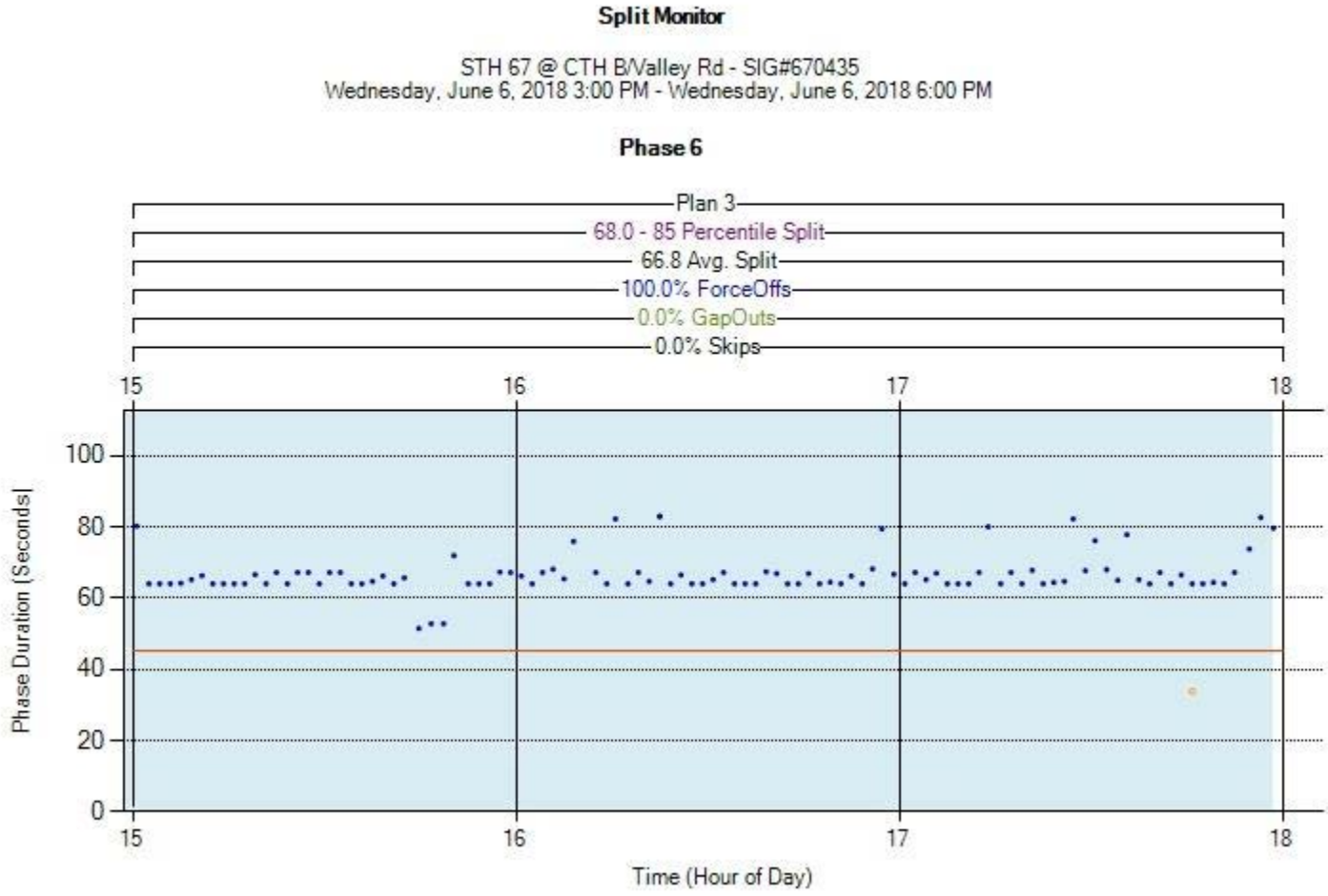
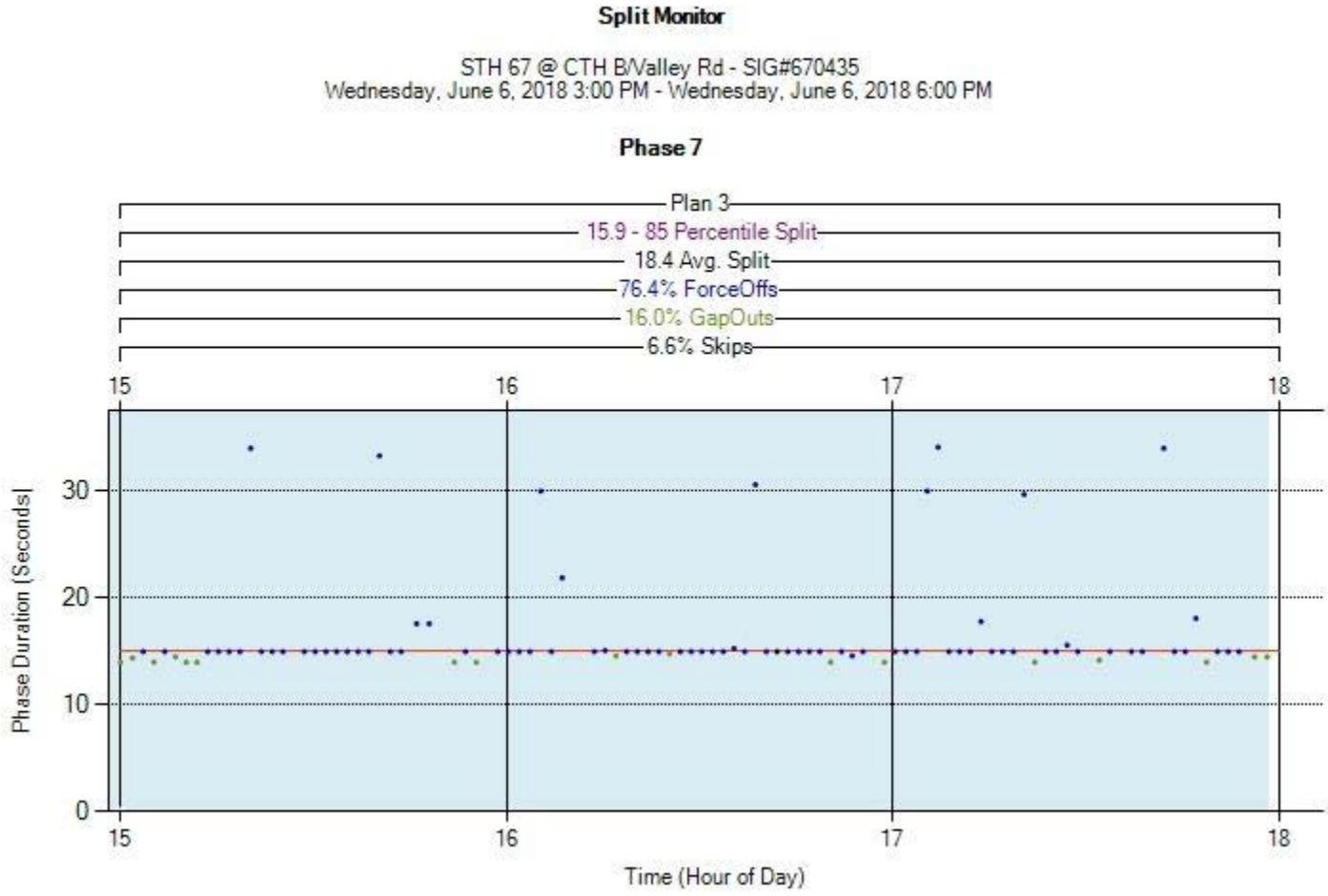
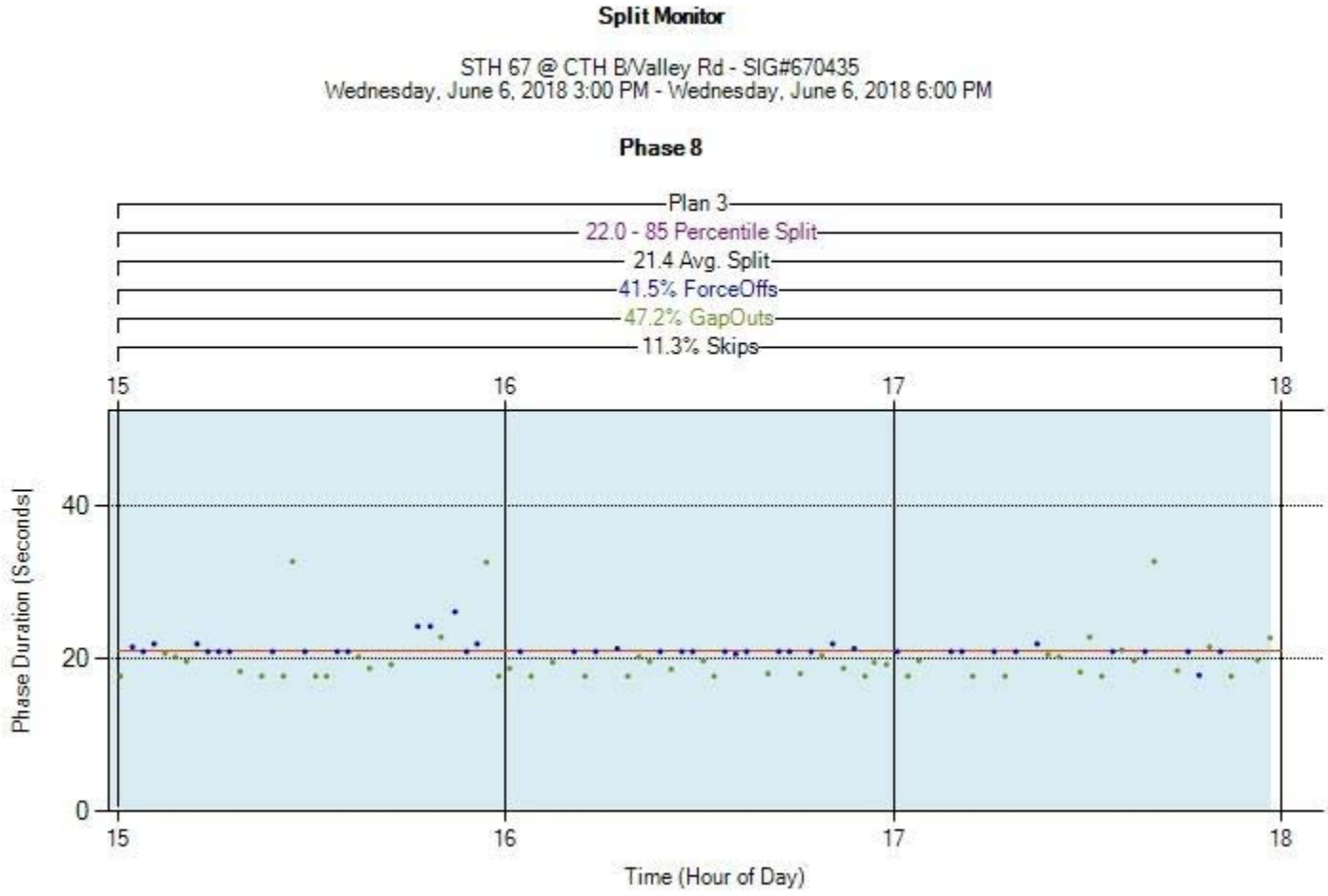


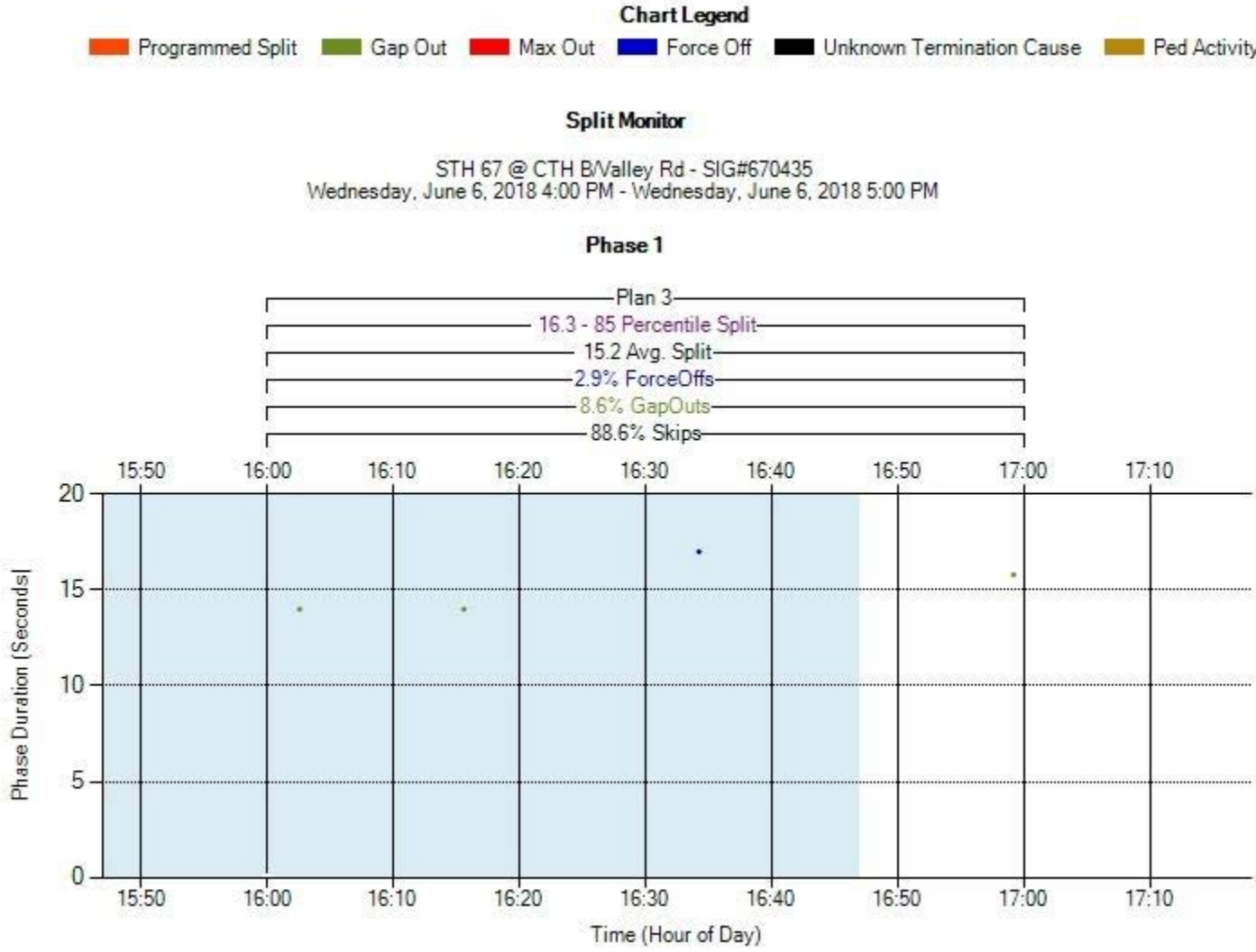
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Baseline Timings
6/6/2018 – 3:00 PM – 6:00 PM



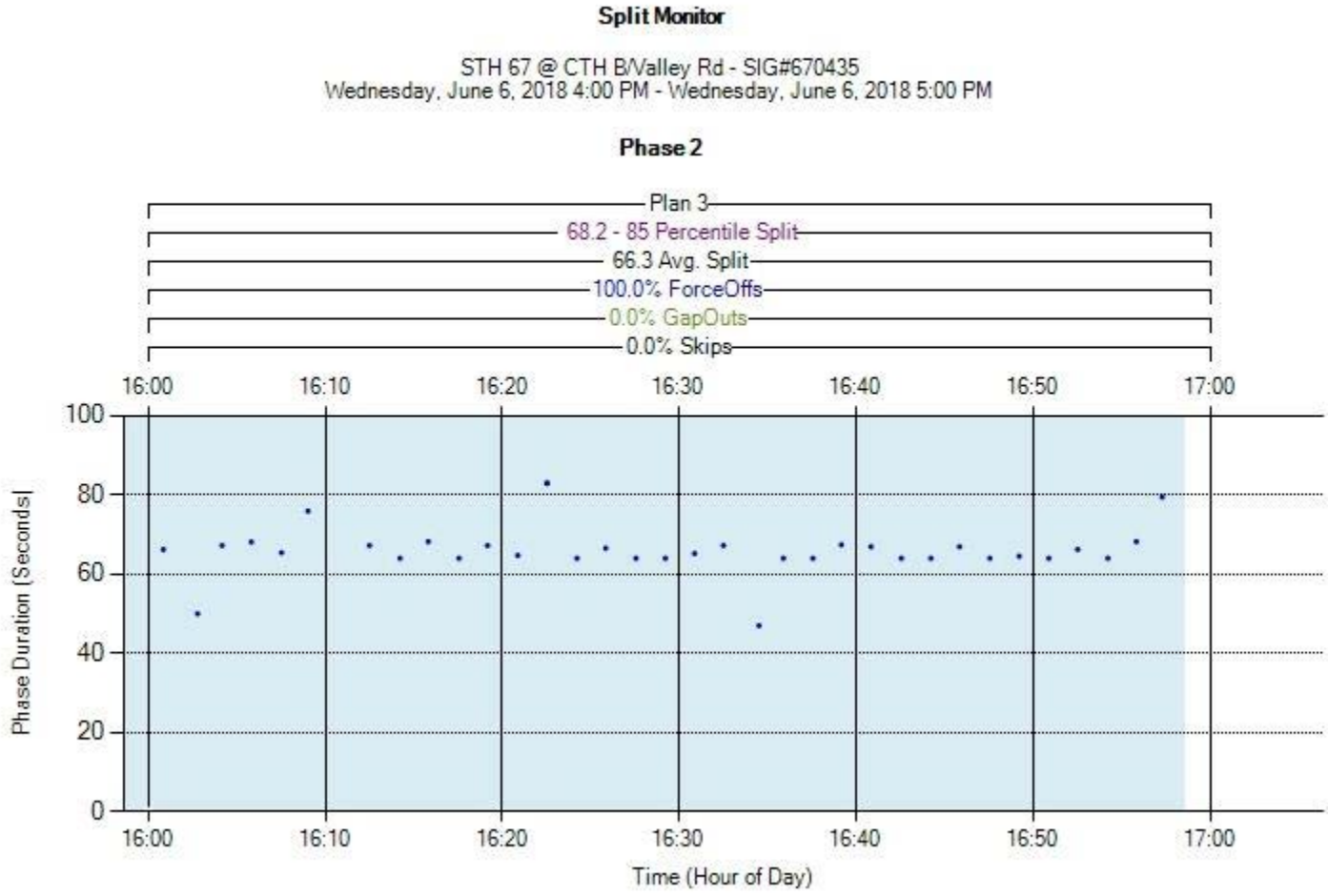
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Baseline Timings
6/6/2018 – 3:00 PM – 6:00 PM



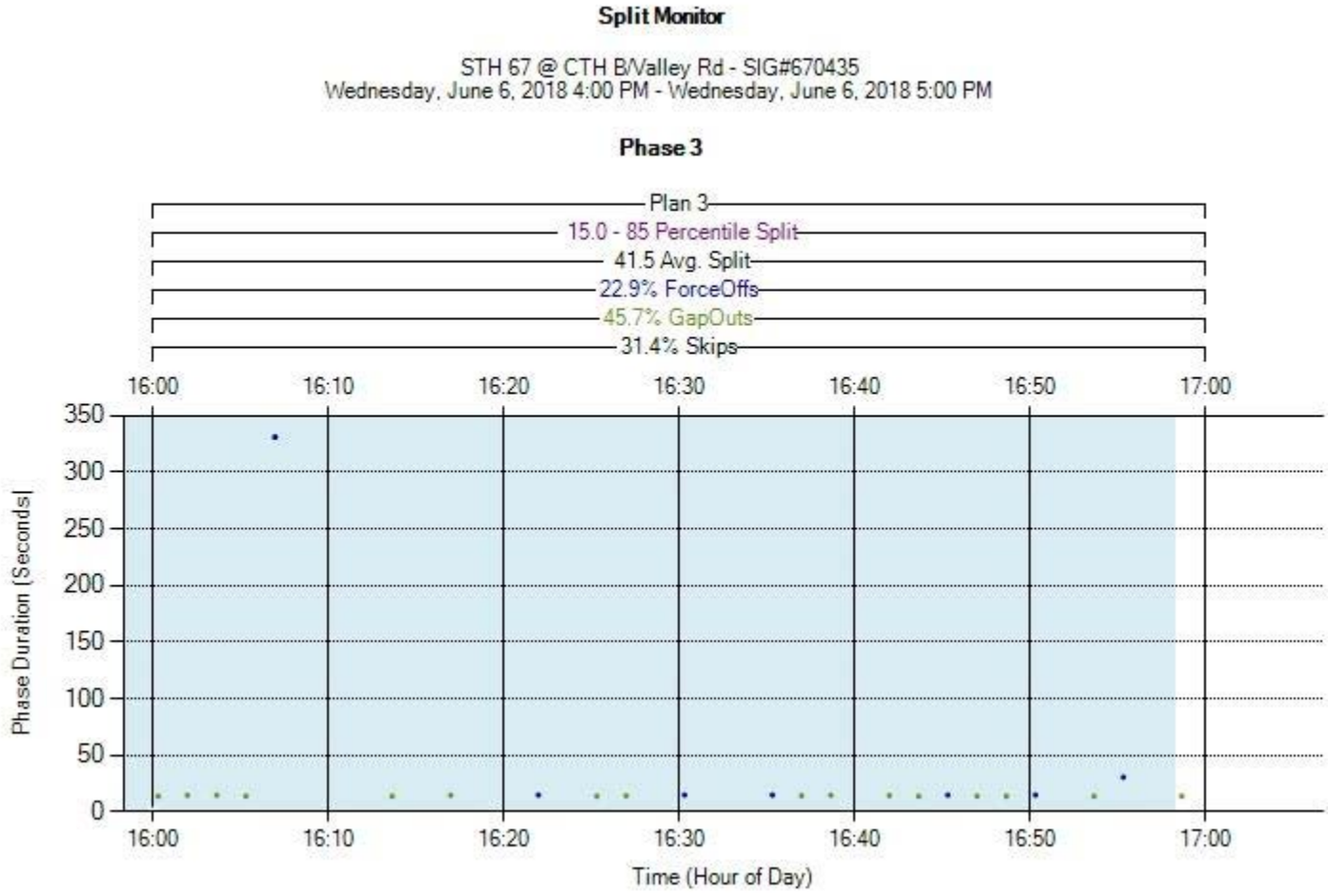
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Baseline Timings
6/6/2018 – 4:00 PM – 5:00 PM



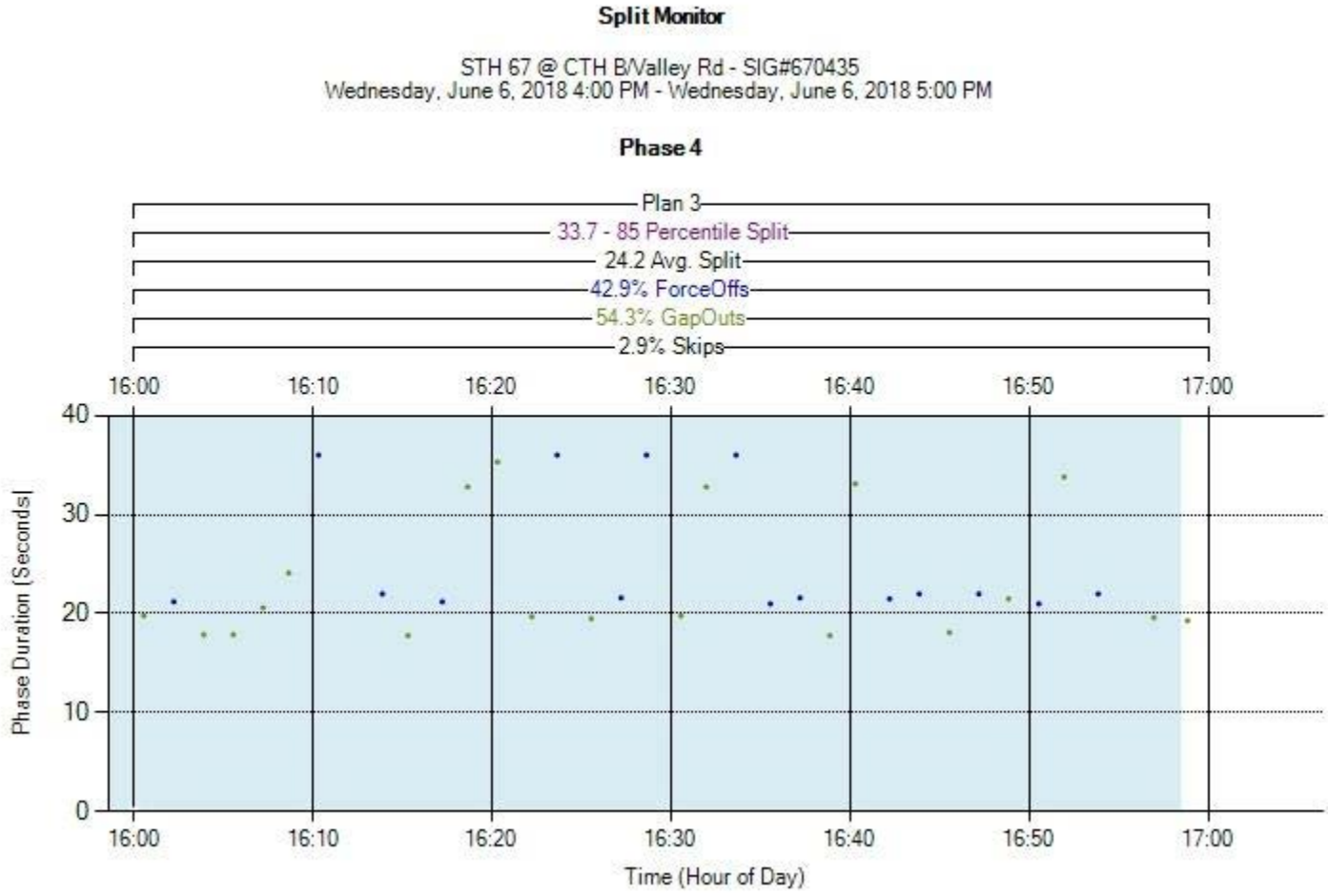
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Baseline Timings
6/6/2018 – 4:00 PM – 5:00 PM



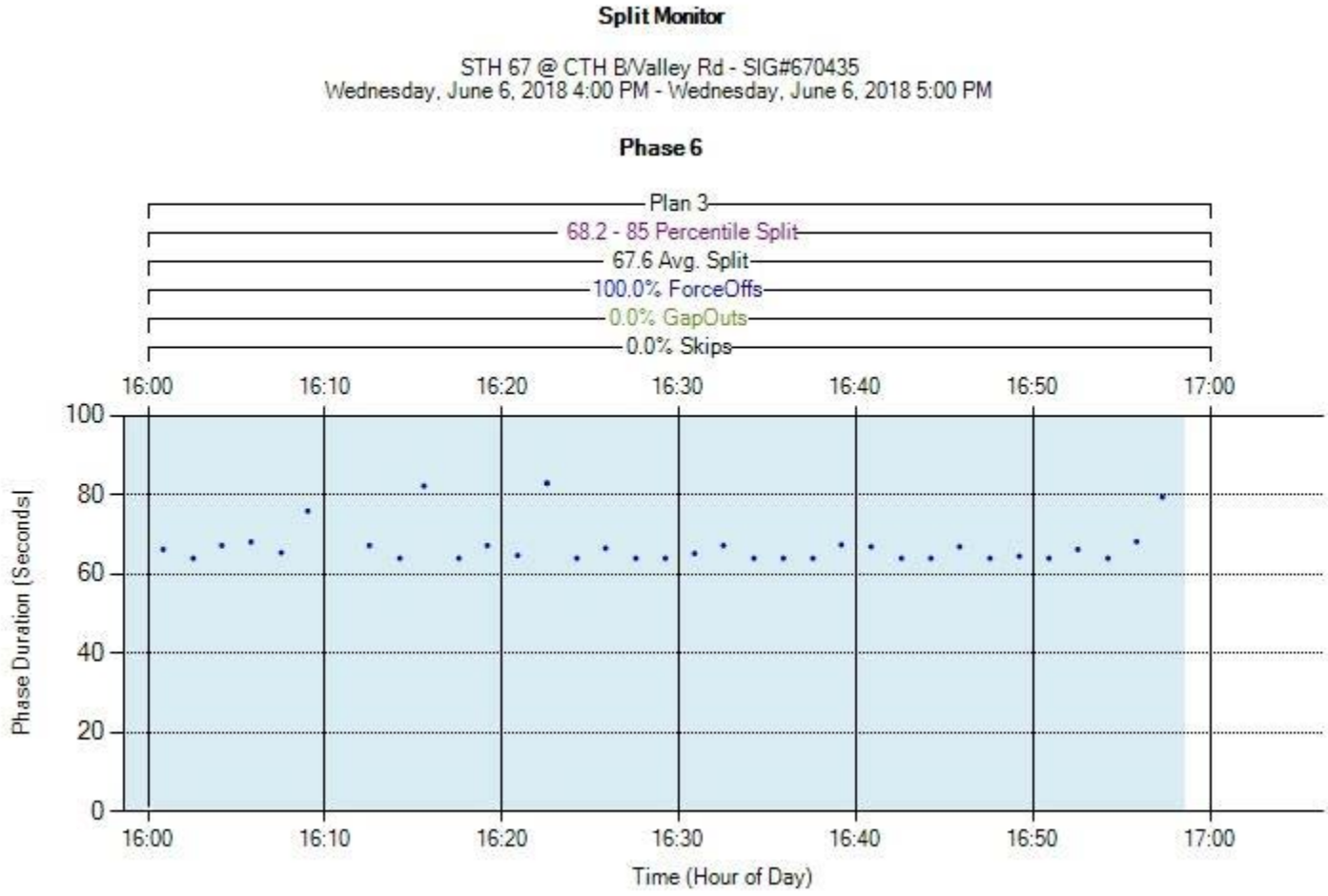
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Baseline Timings
6/6/2018 – 4:00 PM – 5:00 PM



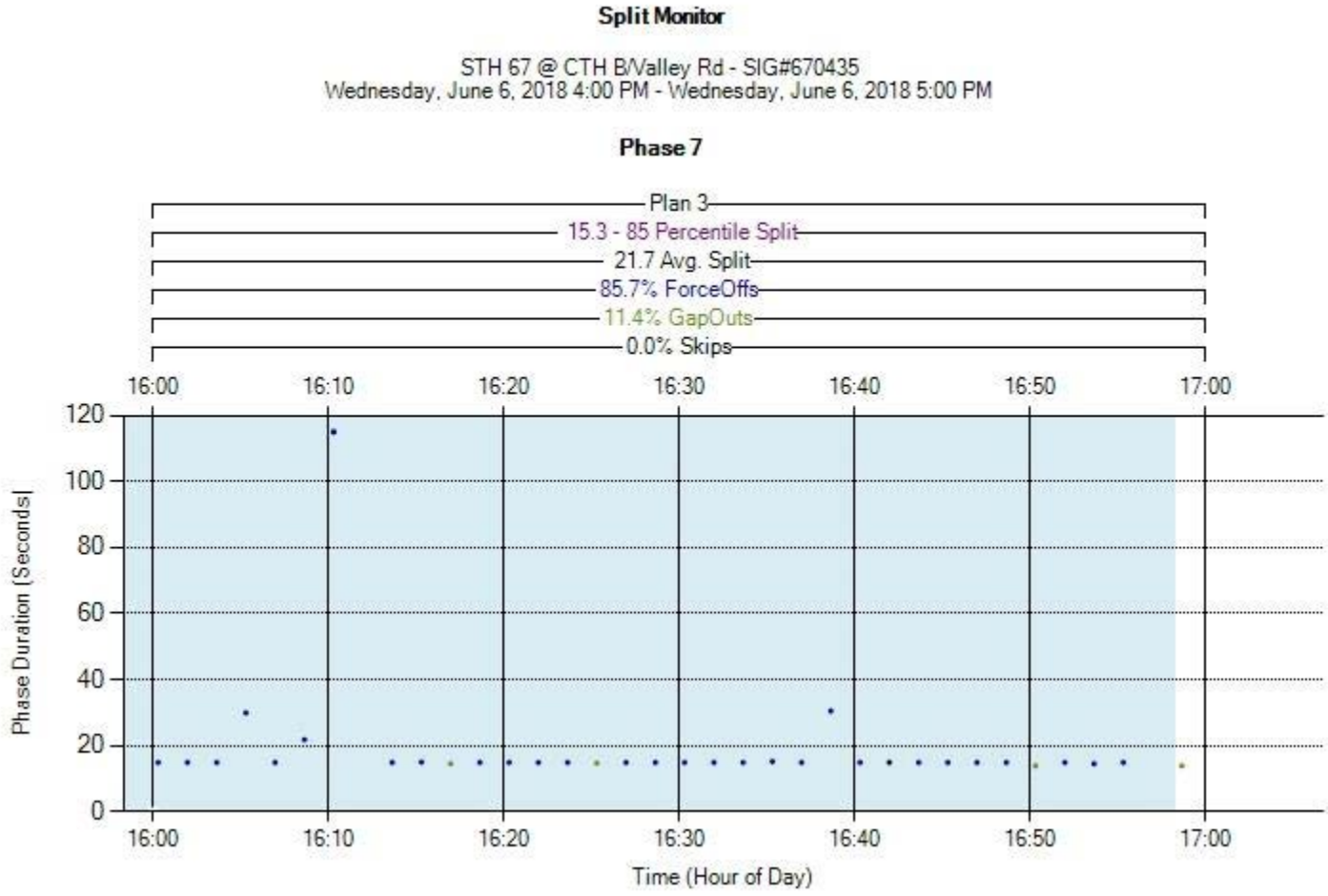
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Baseline Timings
6/6/2018 – 4:00 PM – 5:00 PM



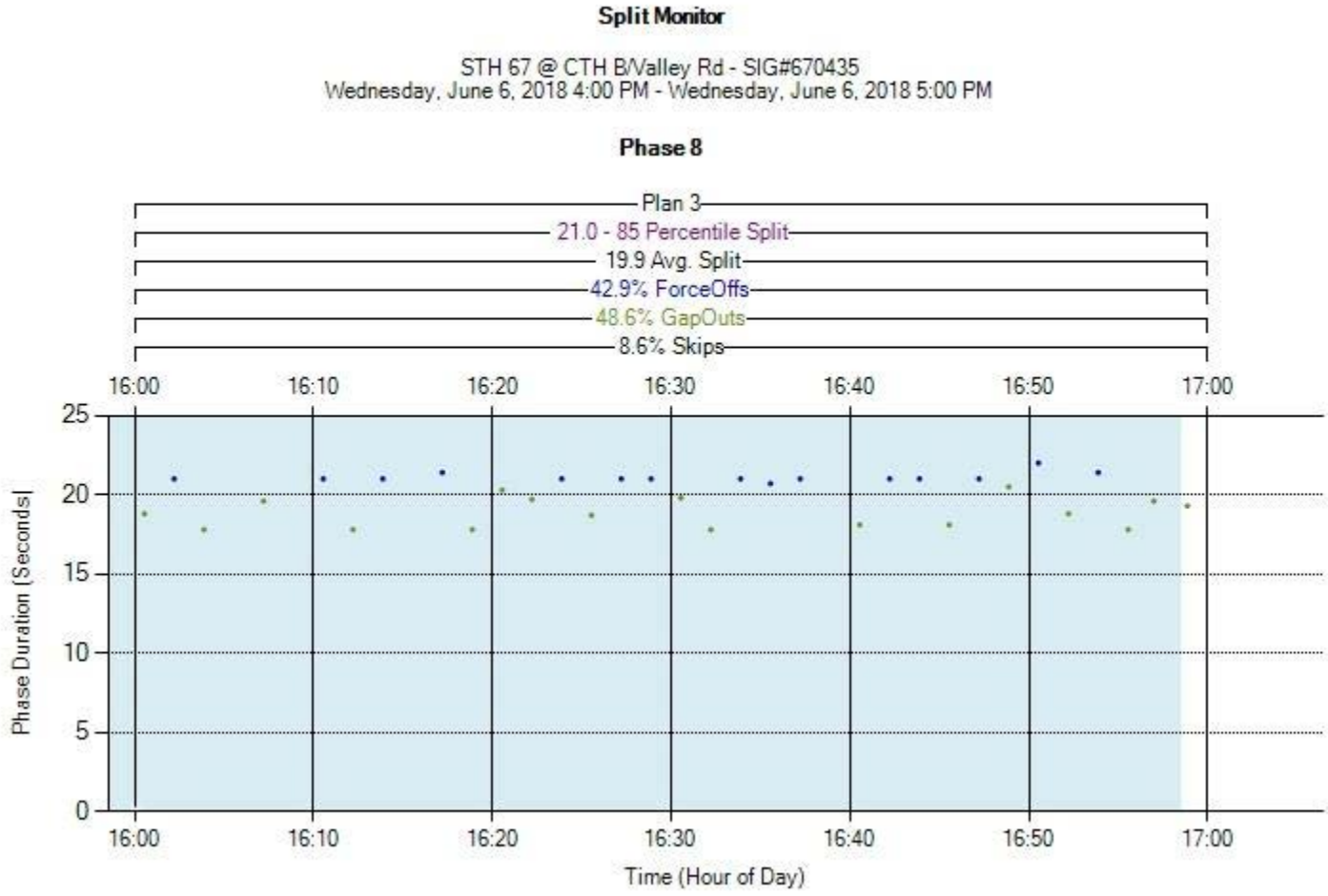
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Baseline Timings
6/6/2018 – 4:00 PM – 5:00 PM



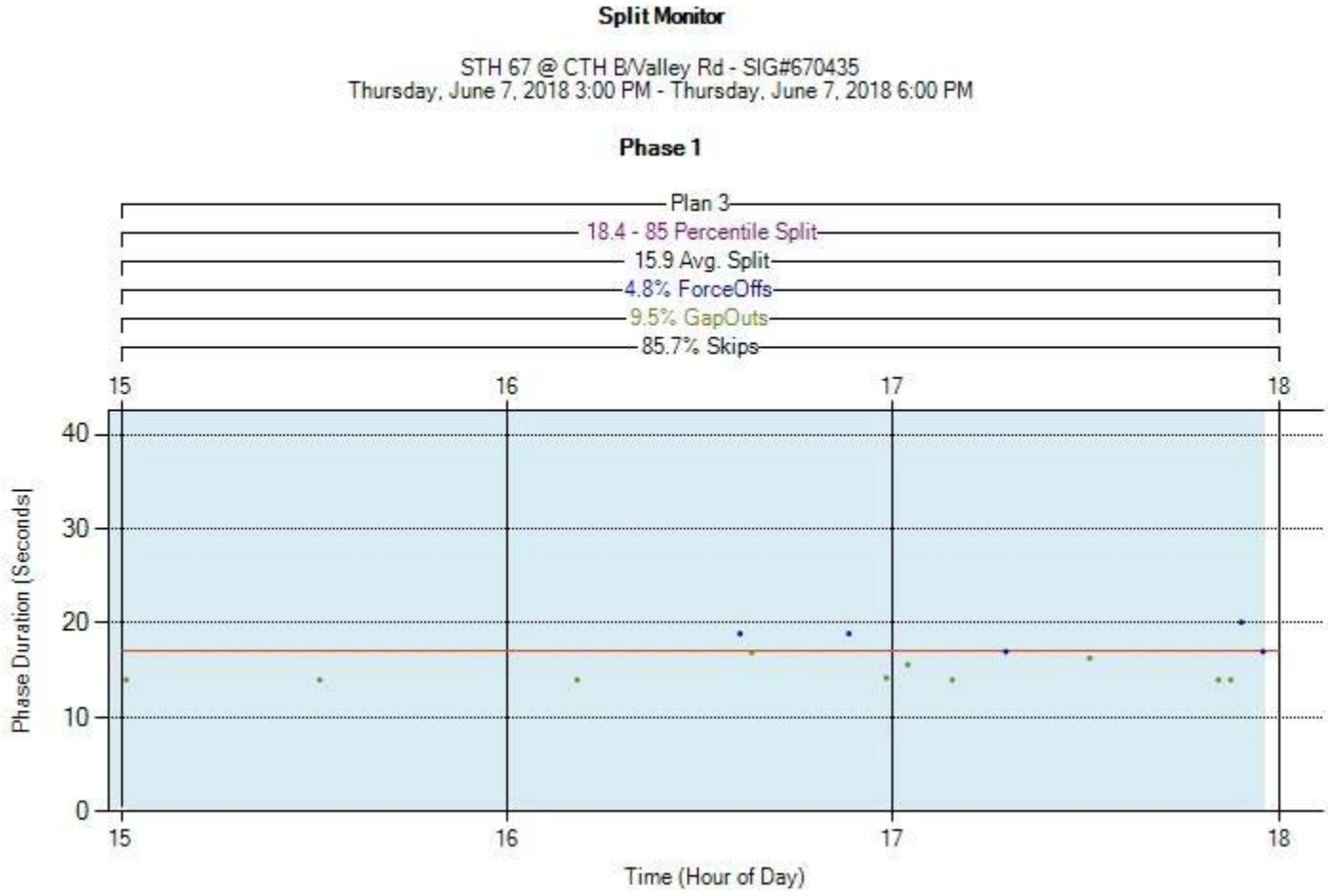
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Baseline Timings
6/6/2018 – 4:00 PM – 5:00 PM



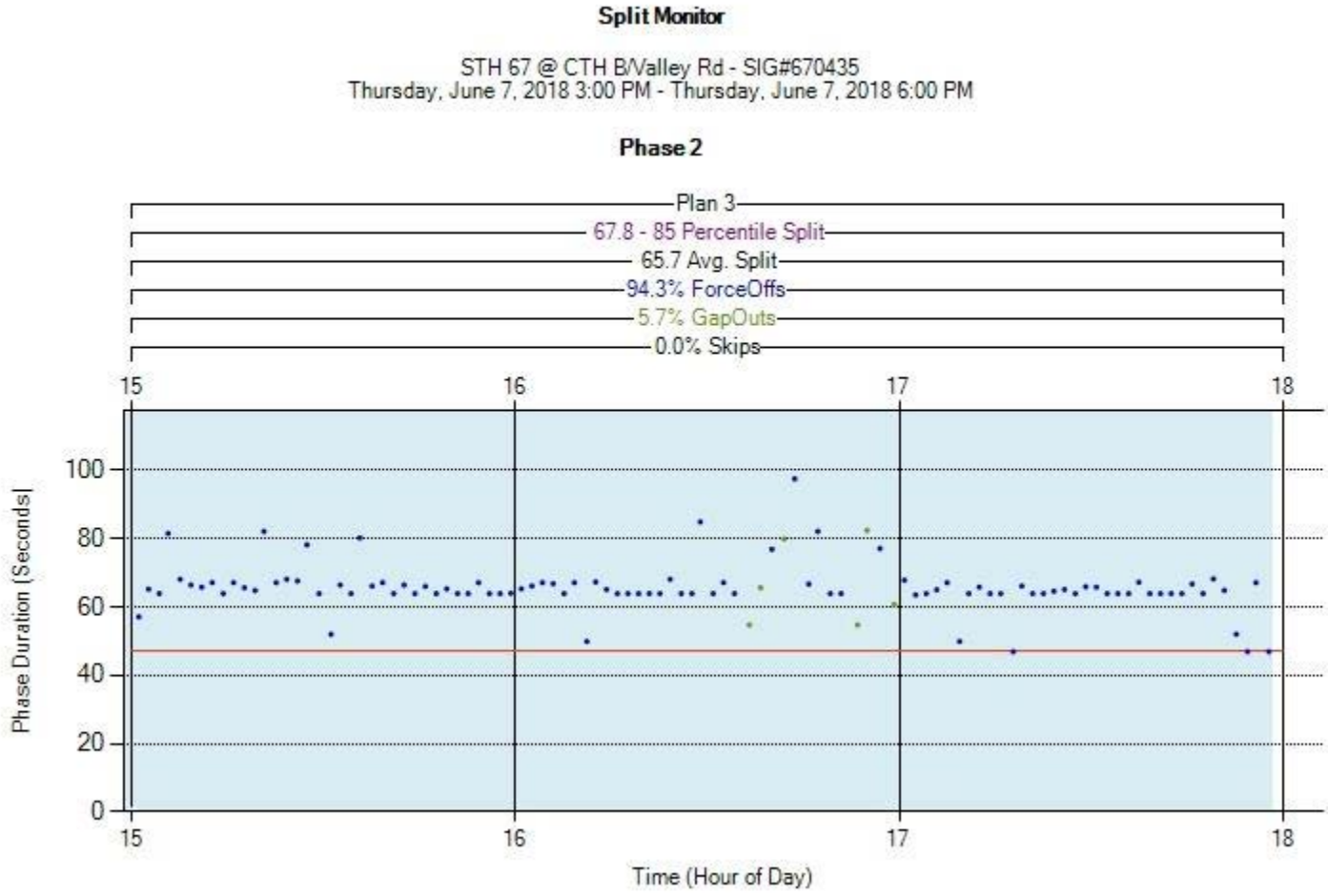
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Baseline Timings
6/6/2018 – 4:00 PM – 5:00 PM



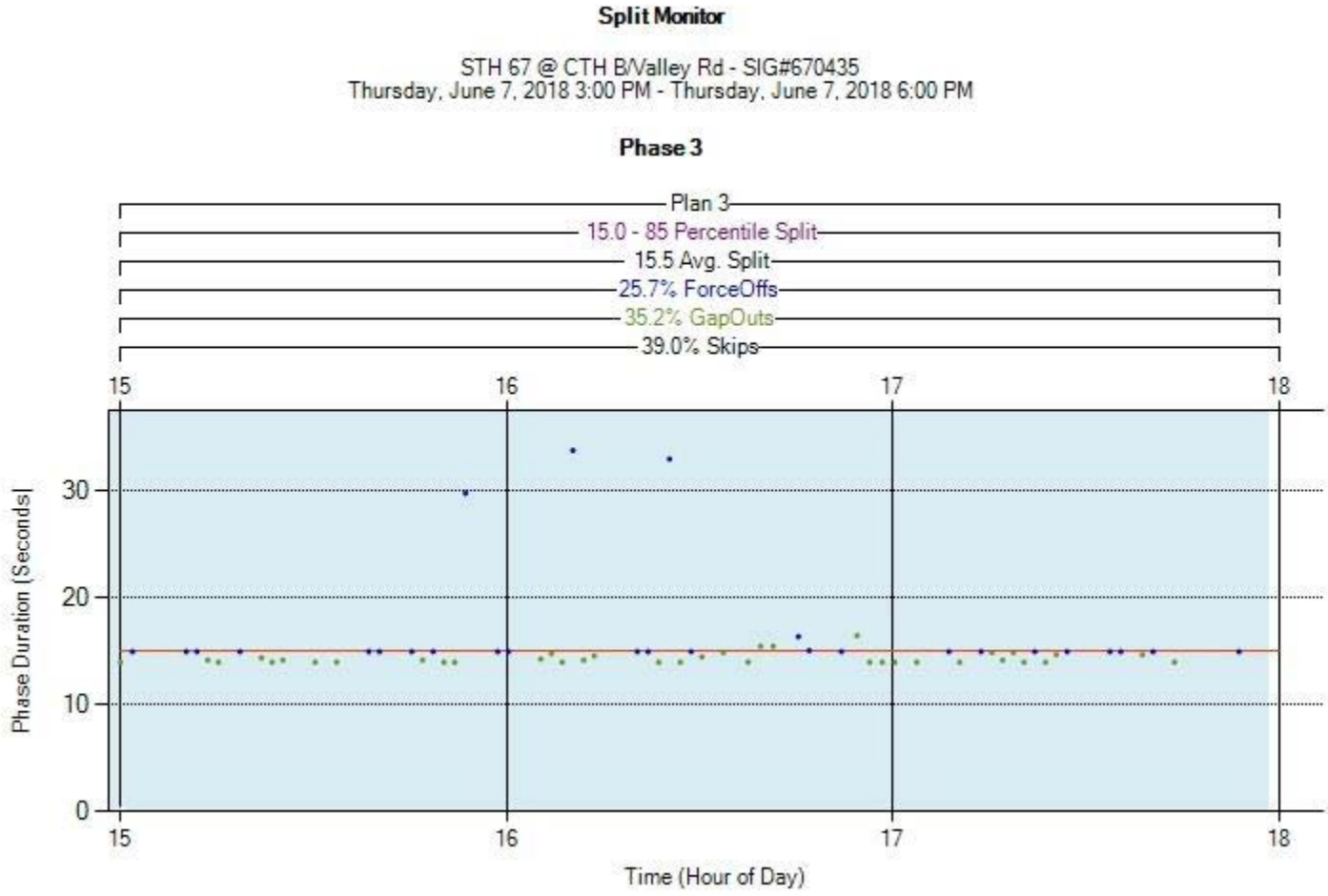
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Baseline Timings
6/7/2018 – 3:00 PM – 6:00 PM



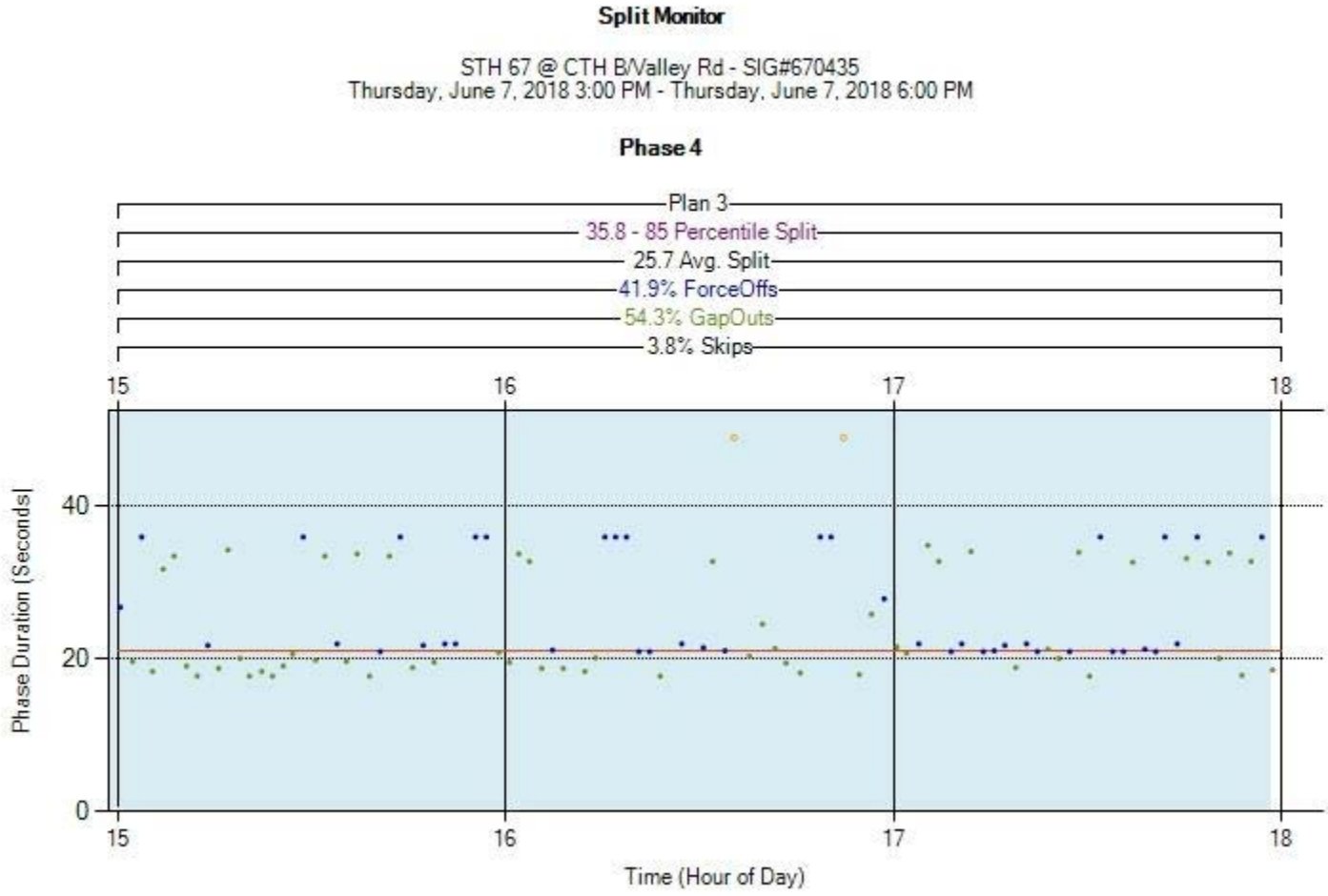
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Baseline Timings
6/7/2018 – 3:00 PM – 6:00 PM



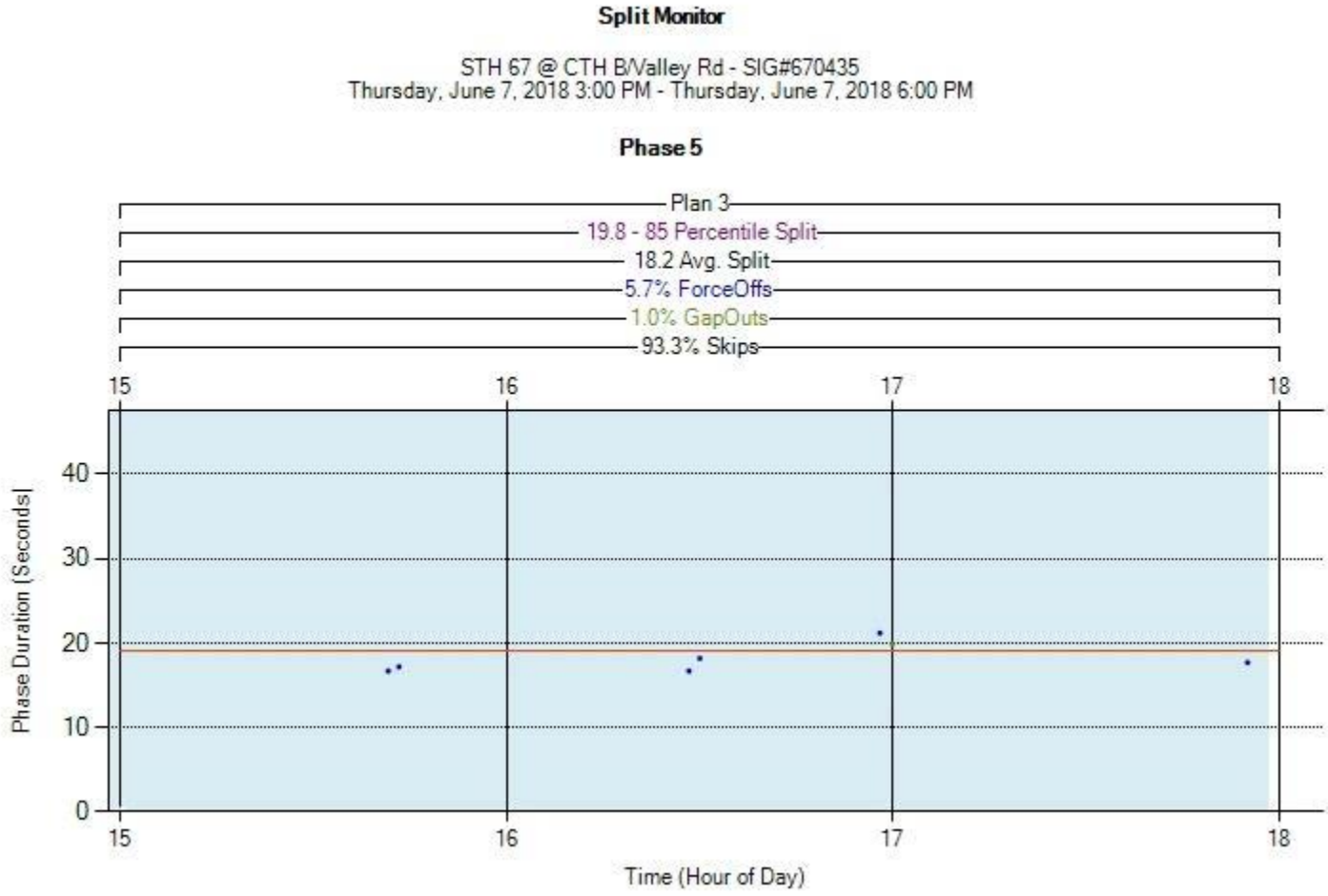
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Baseline Timings
6/7/2018 – 3:00 PM – 6:00 PM



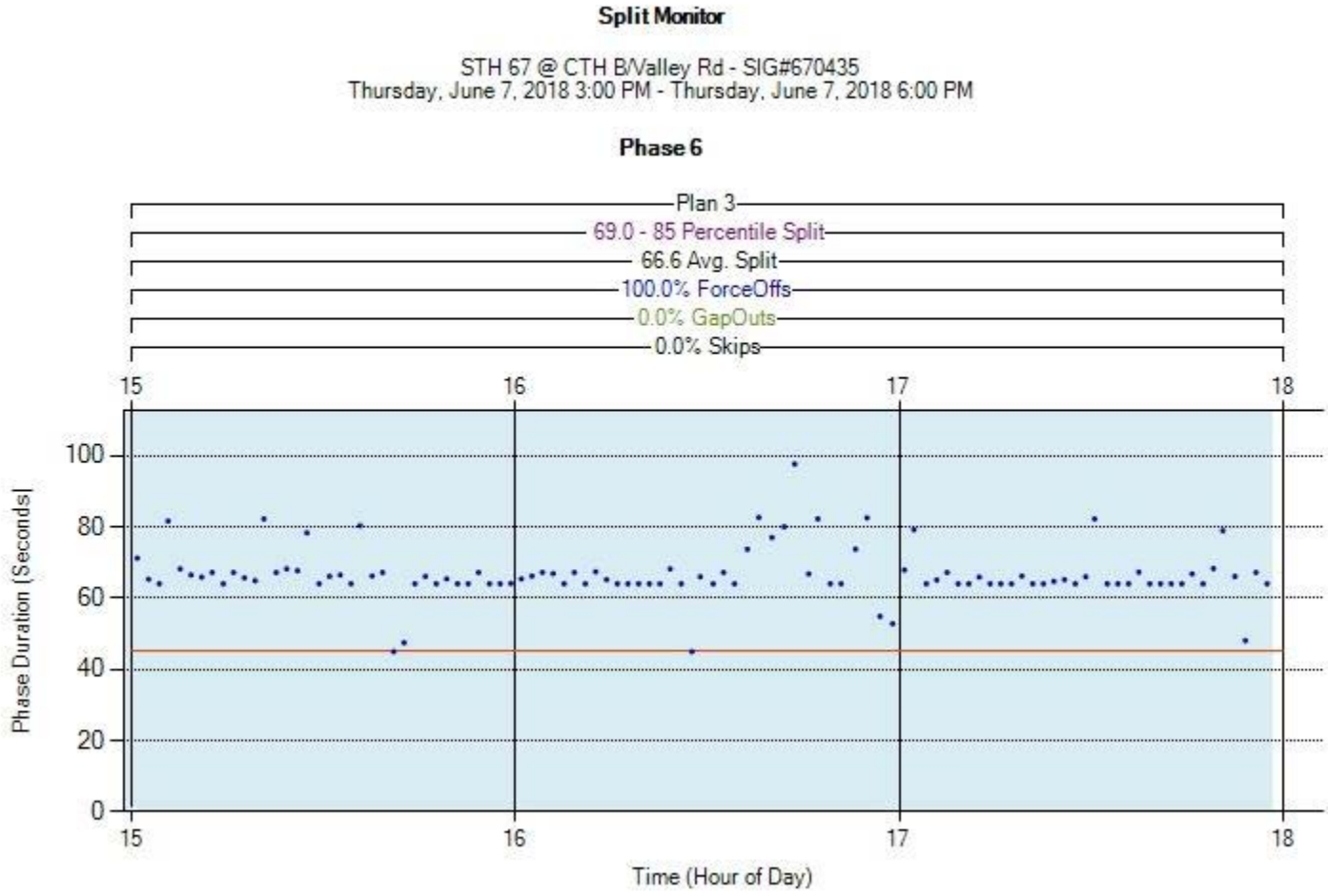
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Baseline Timings
6/7/2018 – 3:00 PM – 6:00 PM



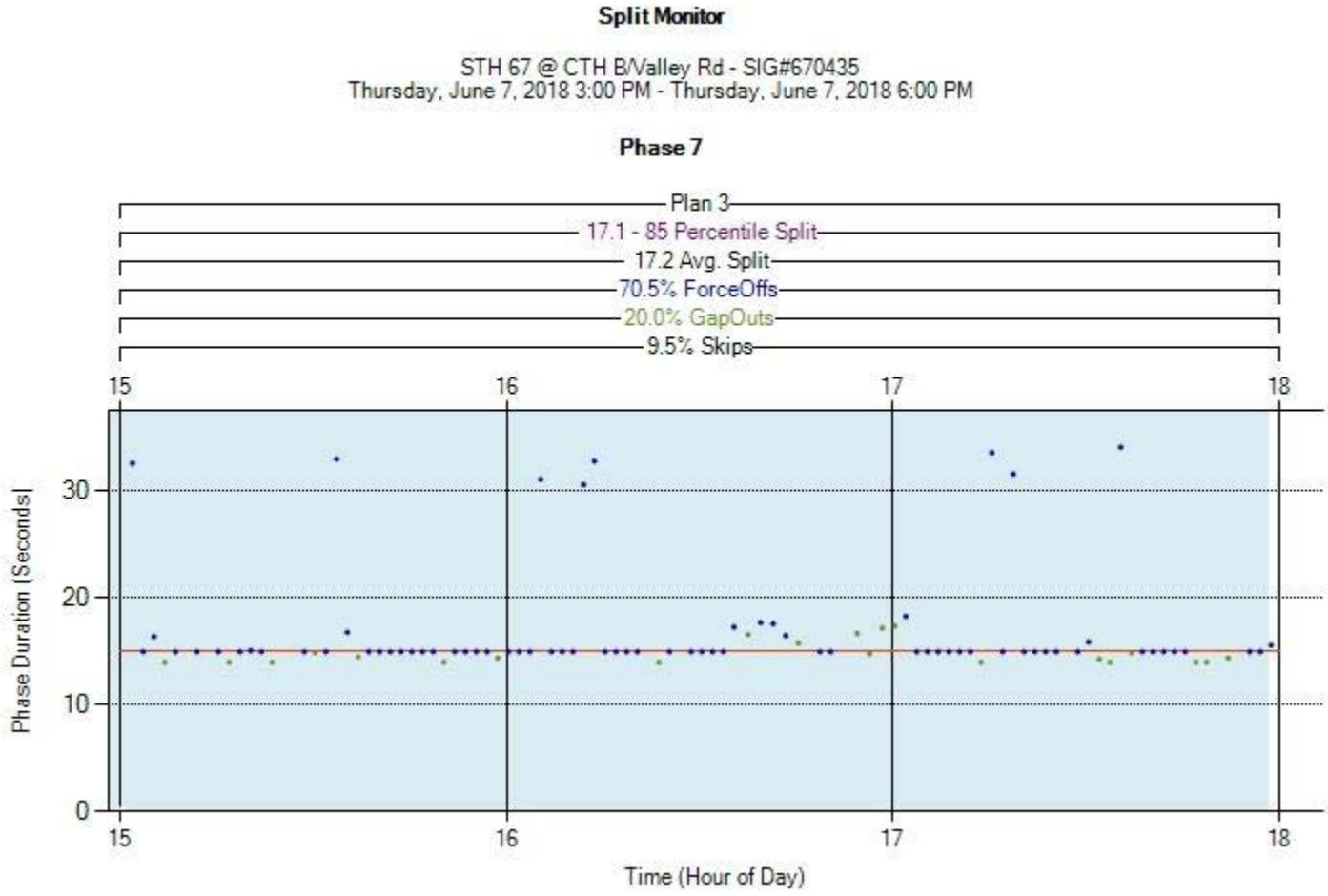
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Baseline Timings
6/7/2018 – 3:00 PM – 6:00 PM



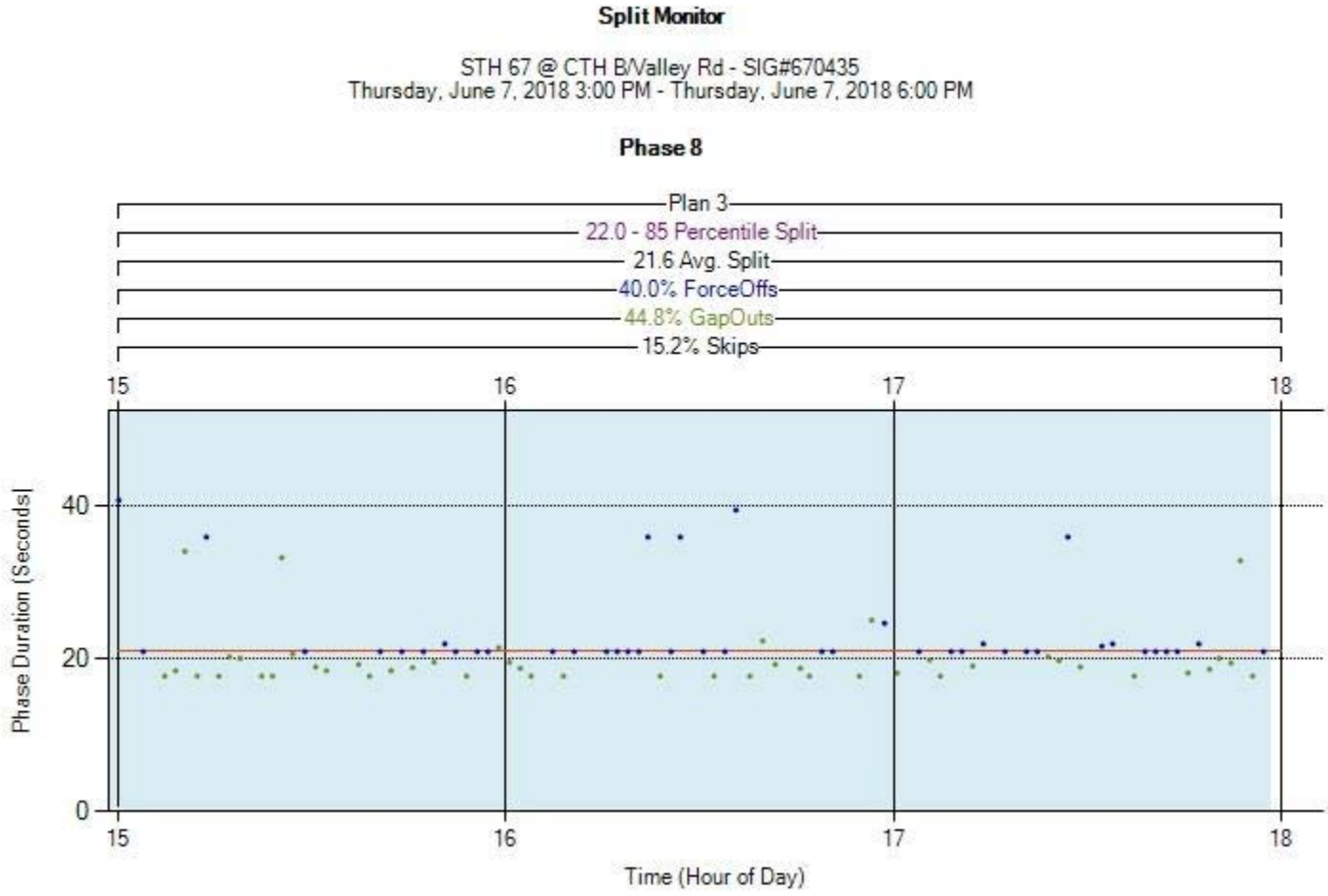
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Baseline Timings
6/7/2018 – 3:00 PM – 6:00 PM



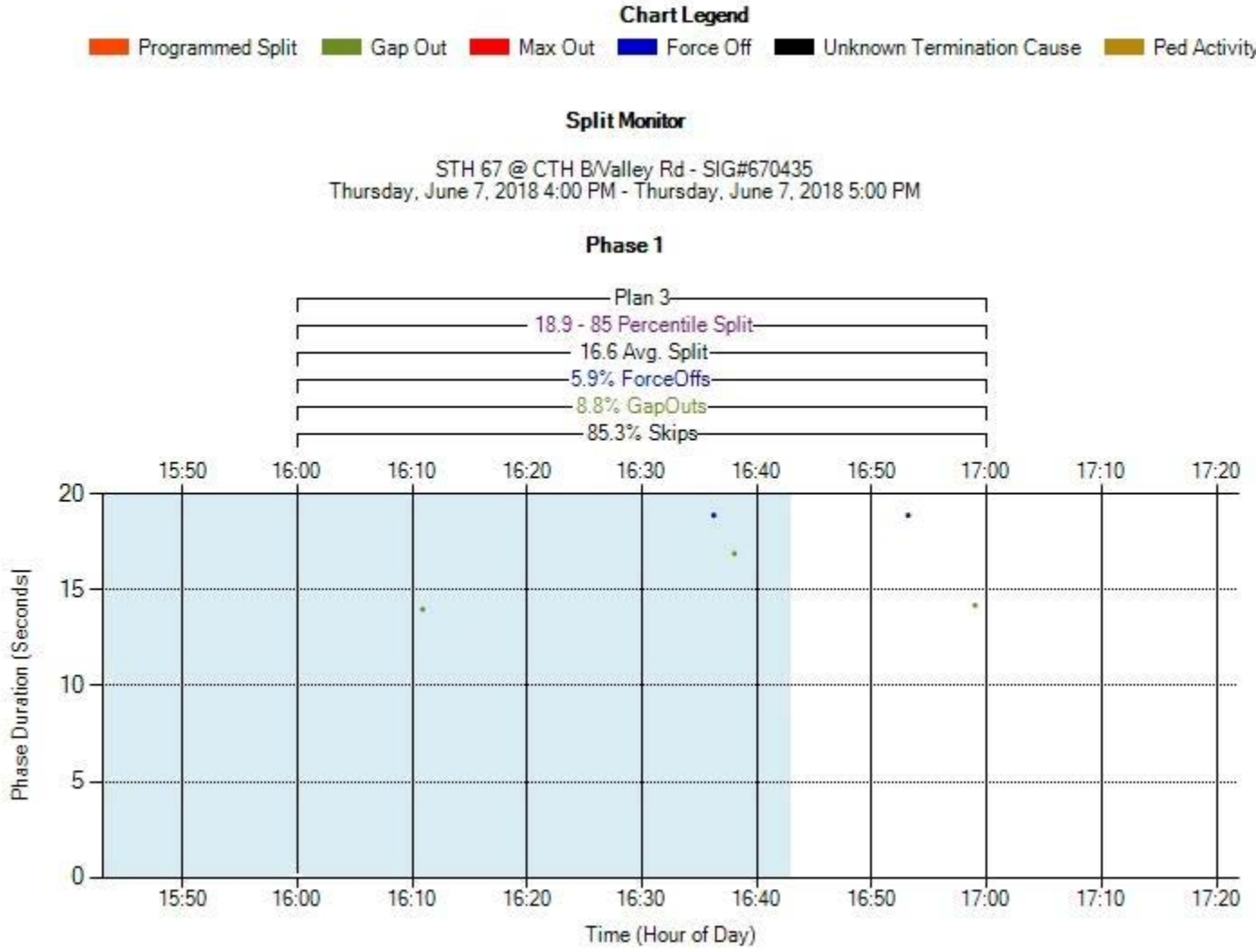
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Baseline Timings
6/7/2018 – 3:00 PM – 6:00 PM



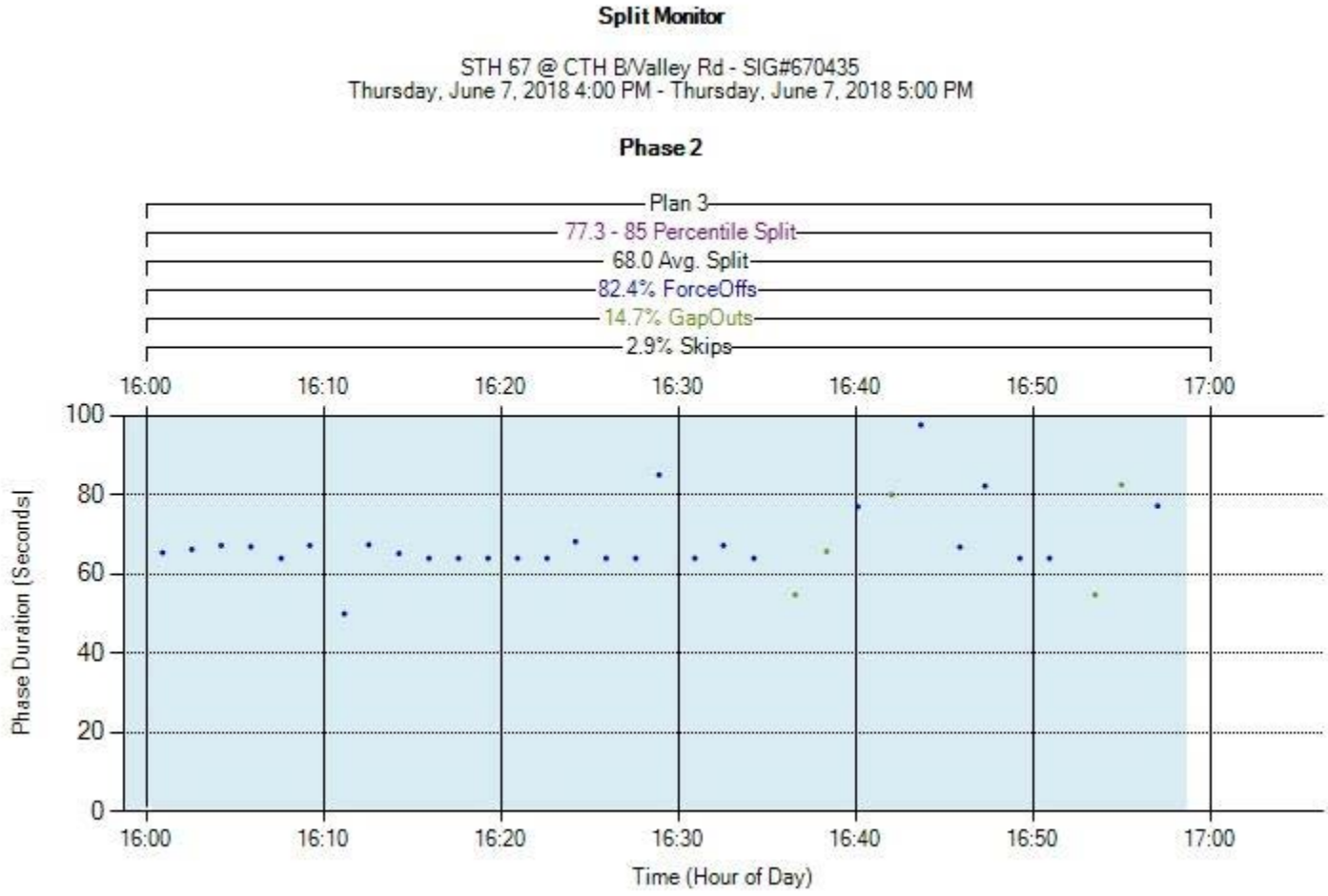
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Baseline Timings
6/7/2018 – 3:00 PM – 6:00 PM



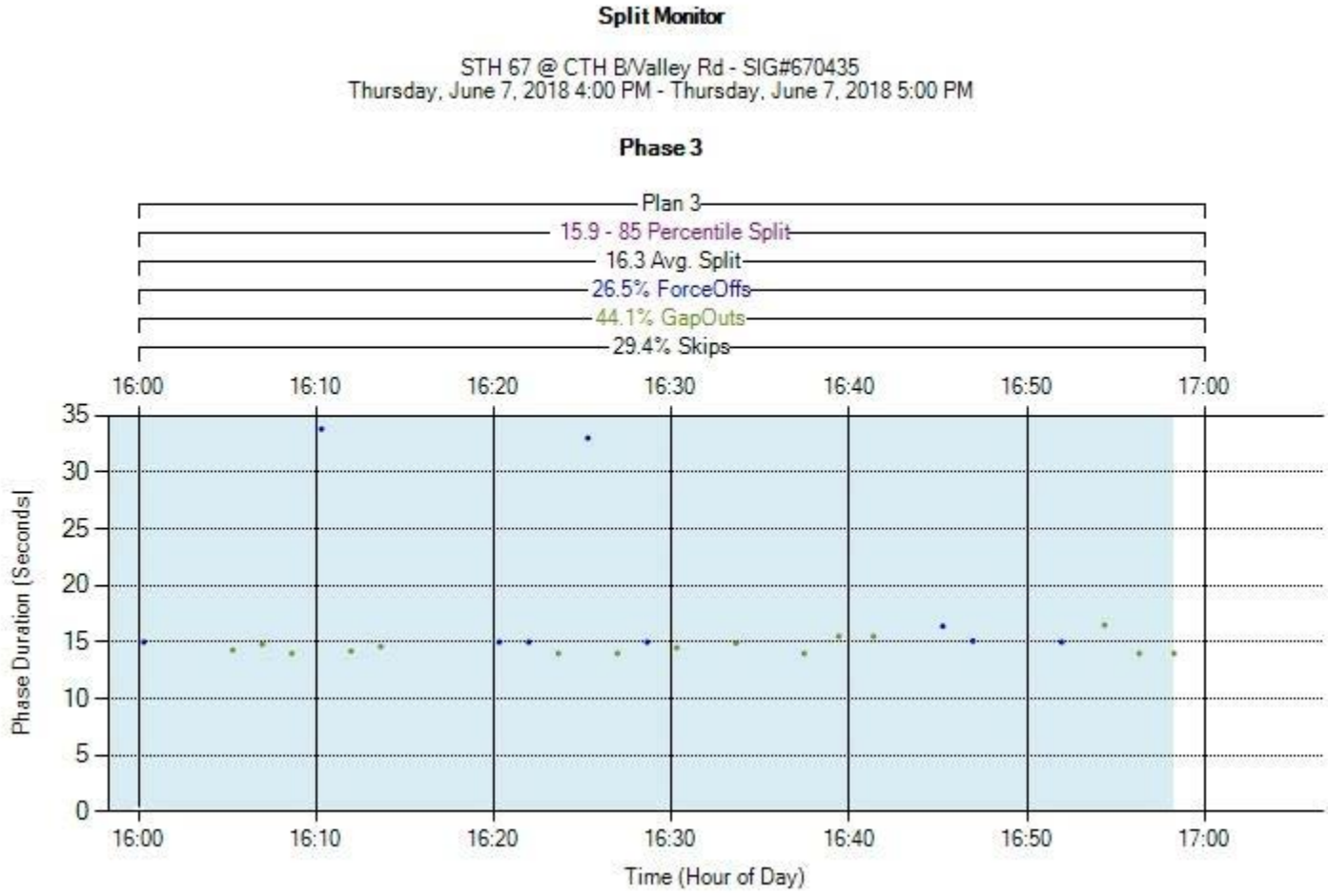
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Baseline Timings
6/7/2018 – 4:00 PM – 5:00 PM



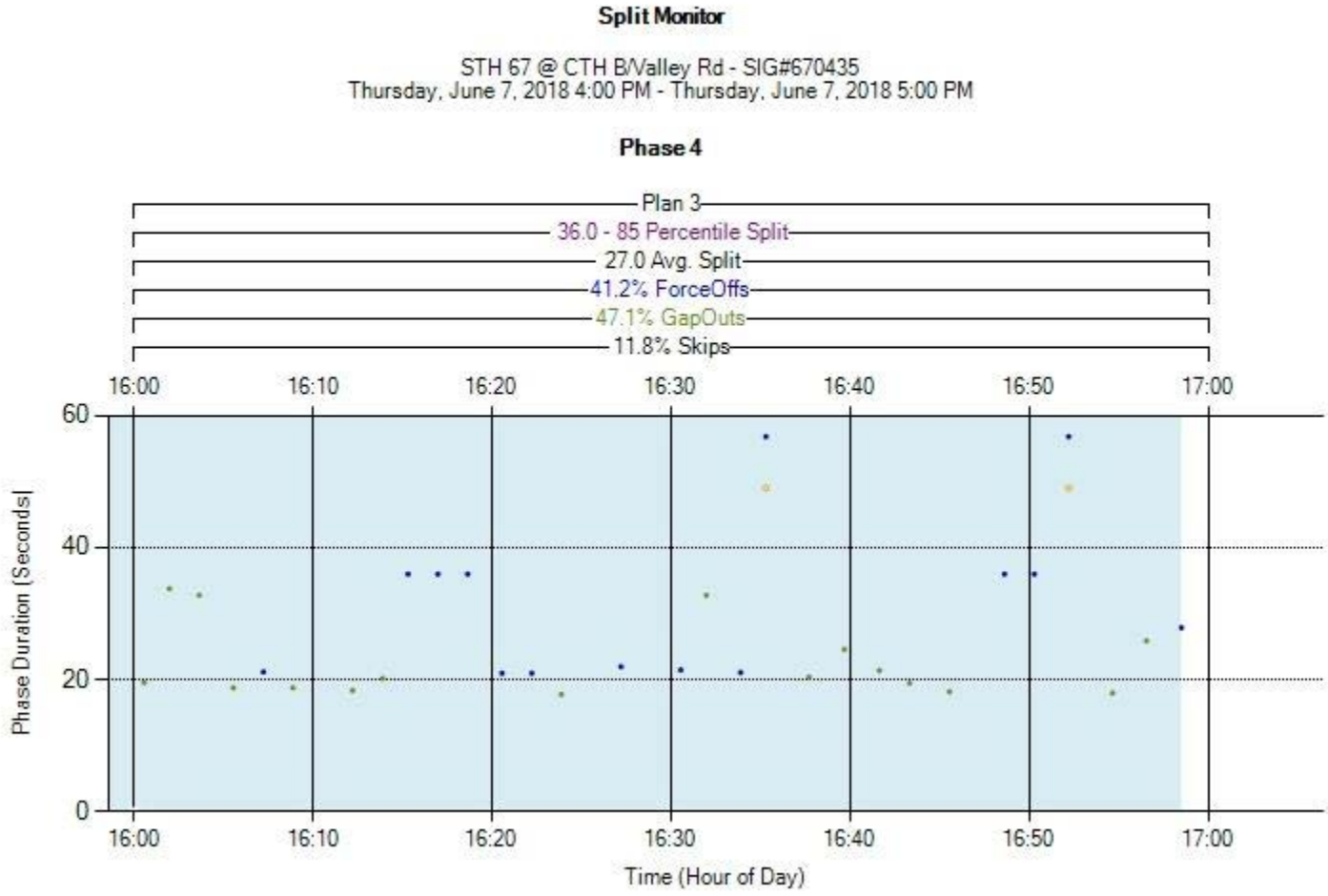
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Baseline Timings
6/7/2018 – 4:00 PM – 5:00 PM



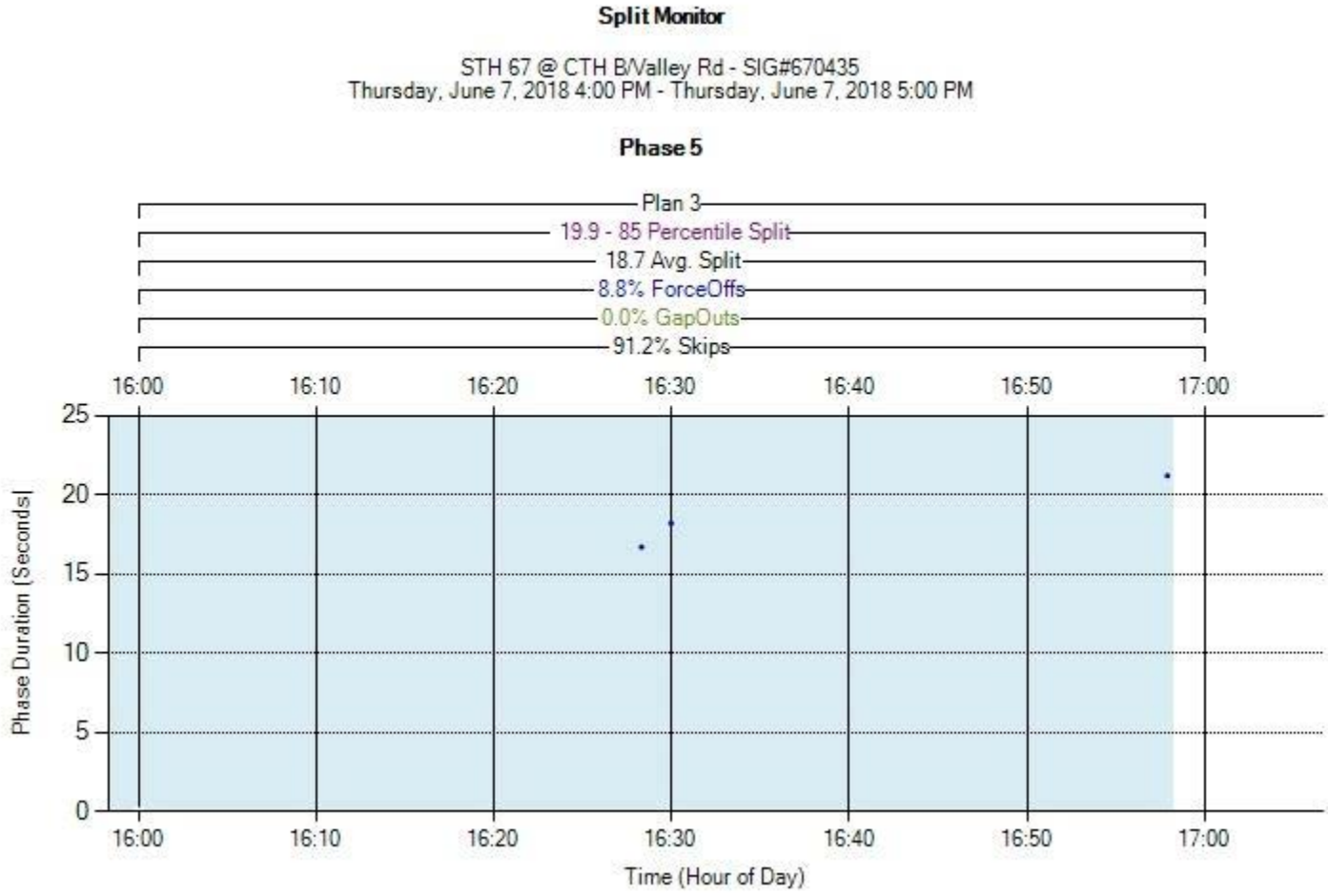
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Baseline Timings
6/7/2018 – 4:00 PM – 5:00 PM



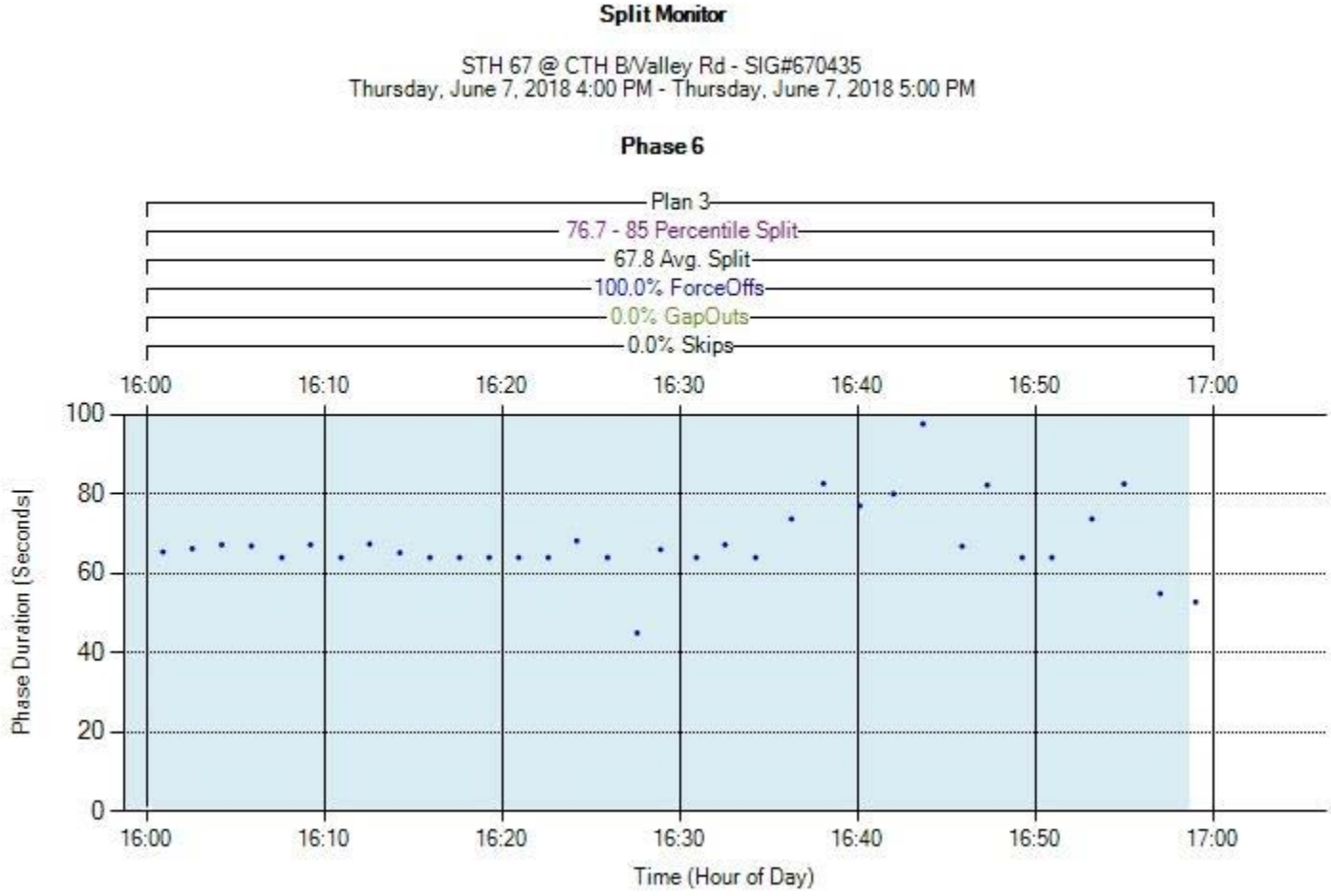
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Baseline Timings
6/7/2018 – 4:00 PM – 5:00 PM



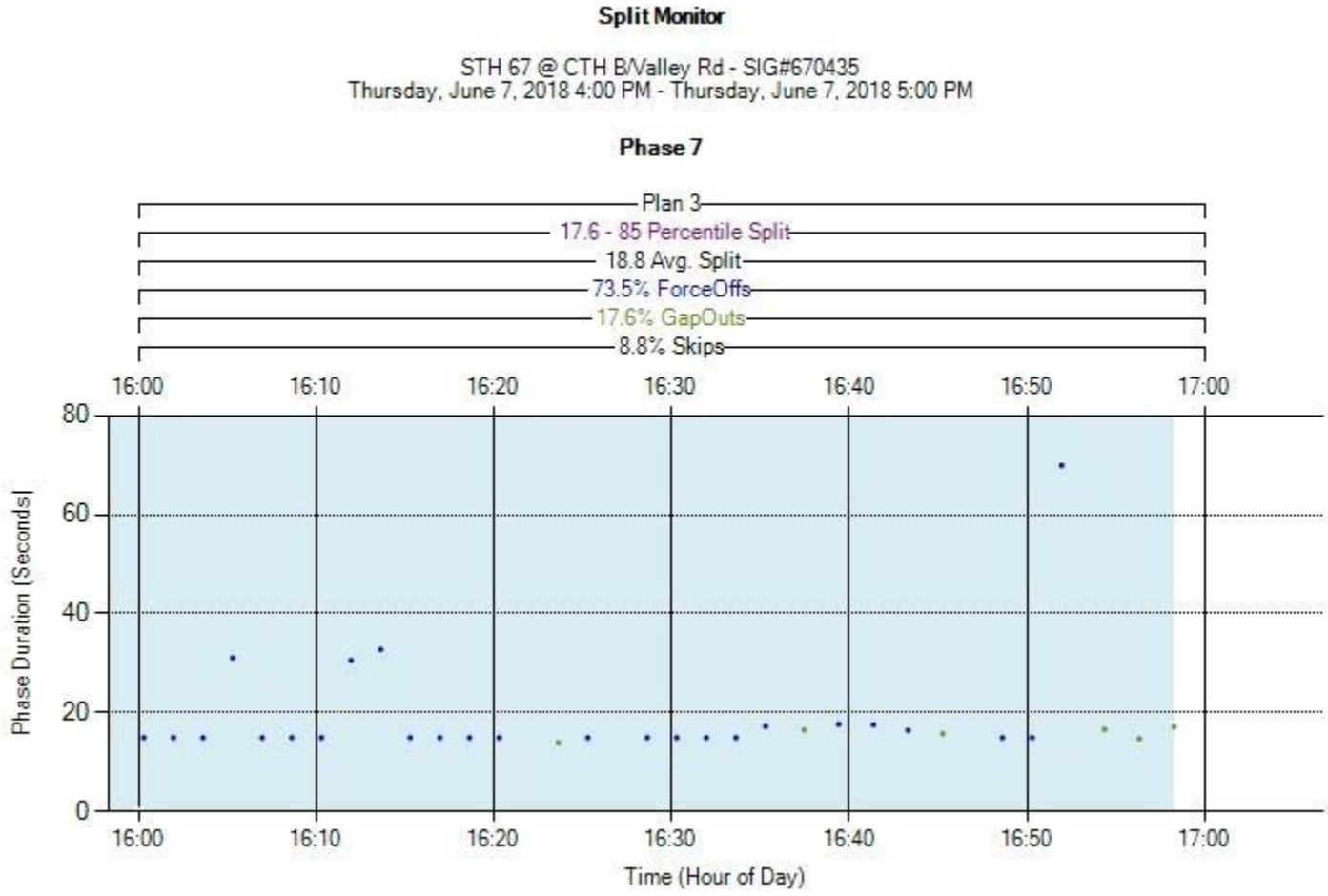
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Baseline Timings
6/7/2018 – 4:00 PM – 5:00 PM



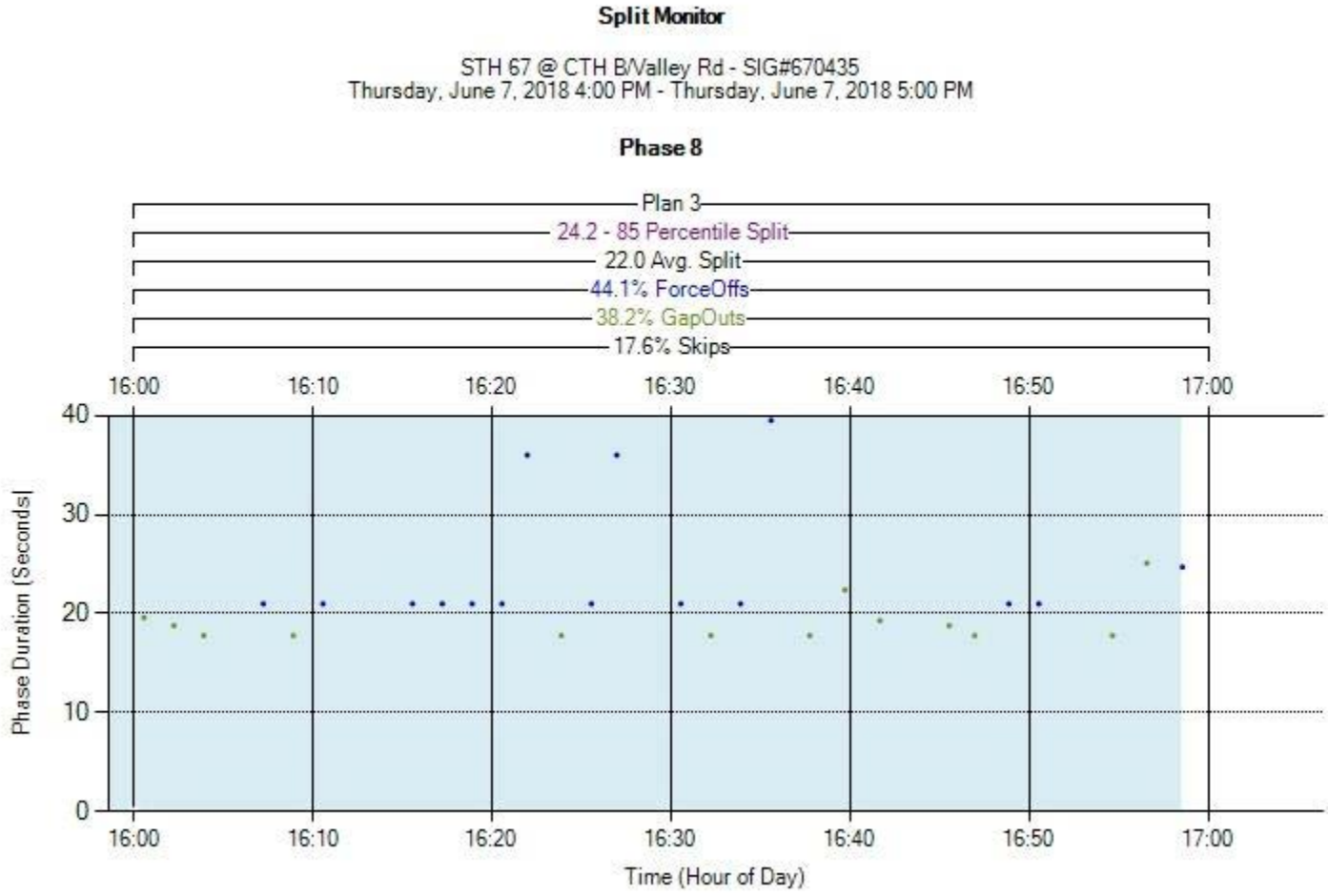
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Baseline Timings
6/7/2018 – 4:00 PM – 5:00 PM



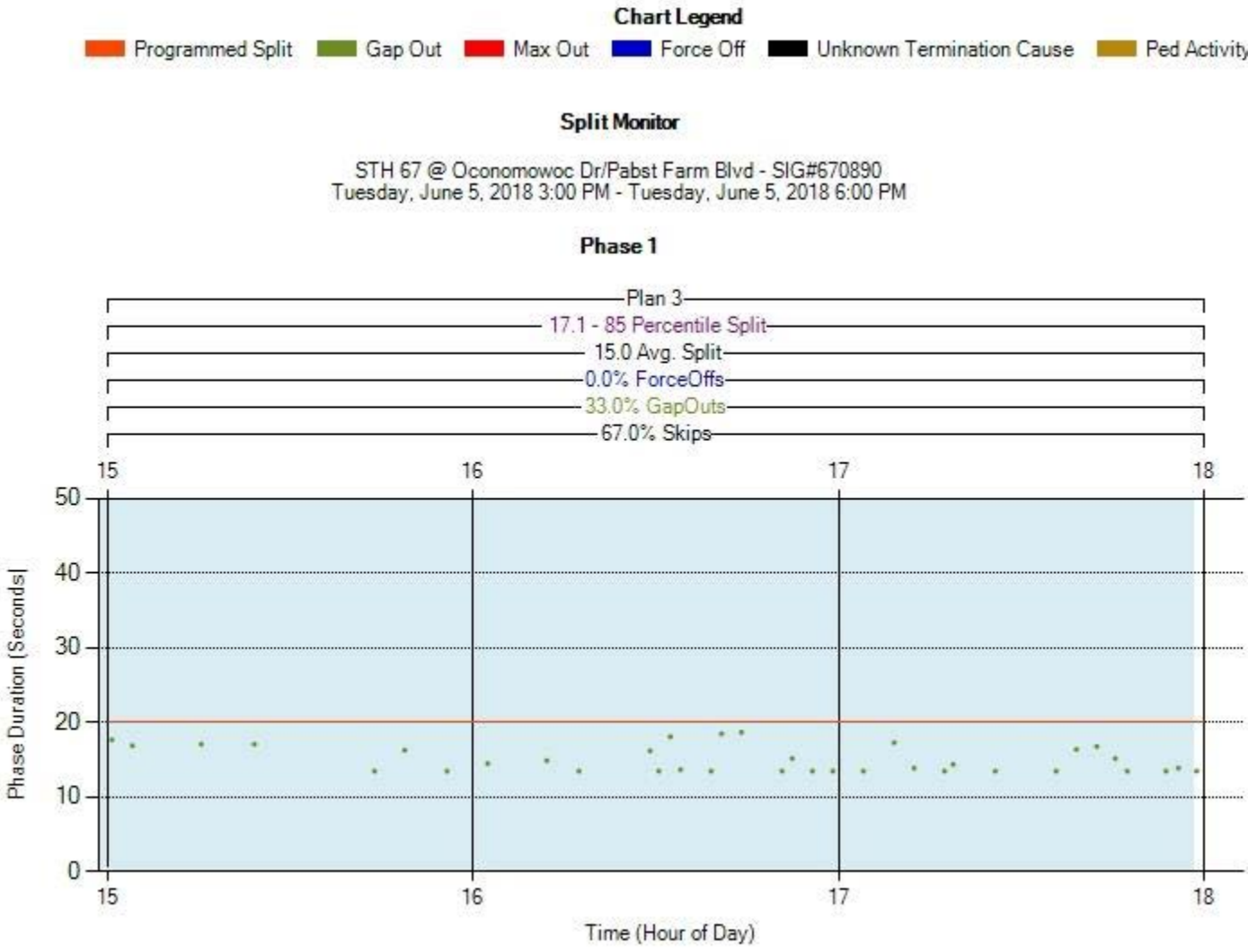
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Baseline Timings
6/7/2018 – 4:00 PM – 5:00 PM



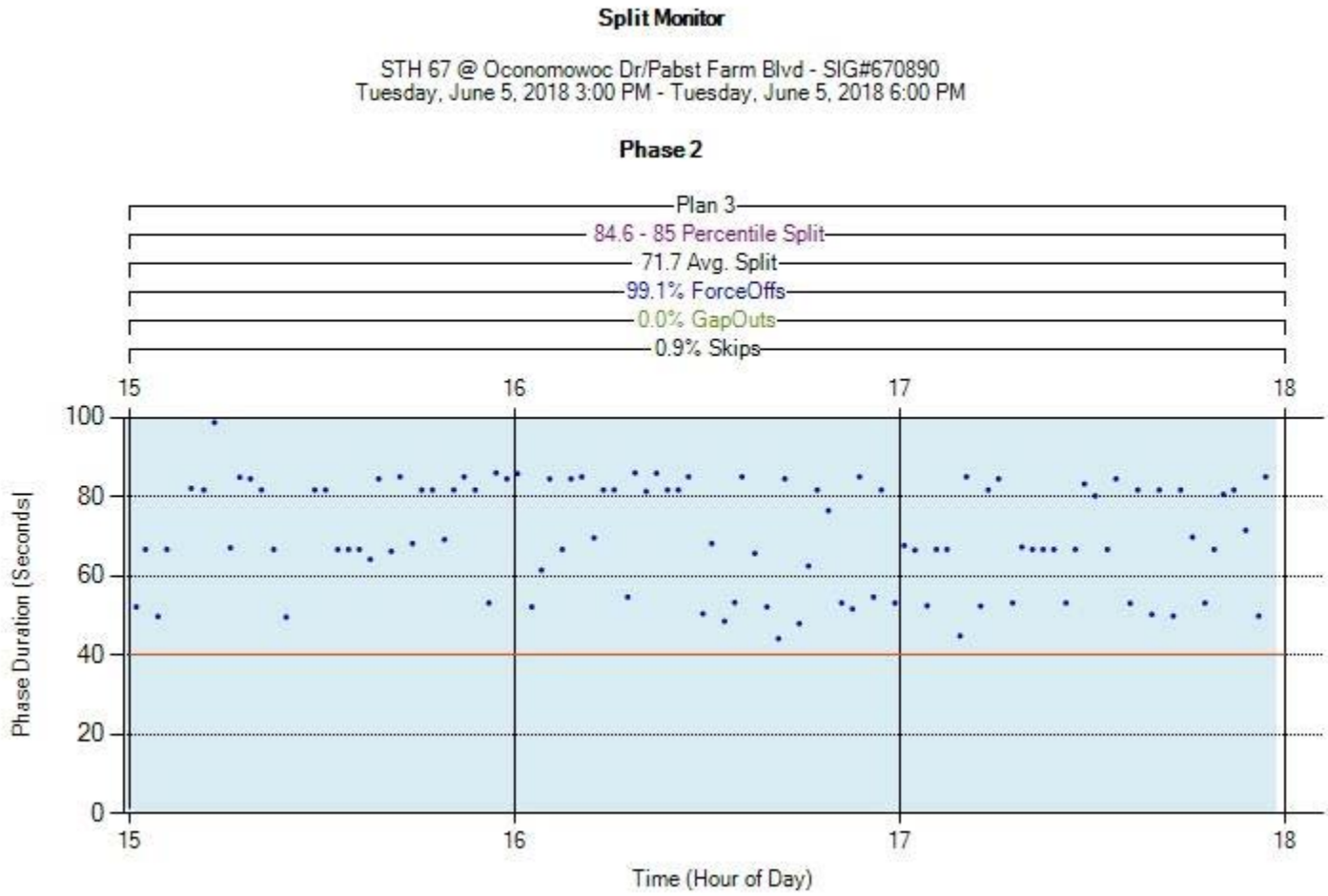
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Baseline Timings
6/7/2018 – 4:00 PM – 5:00 PM



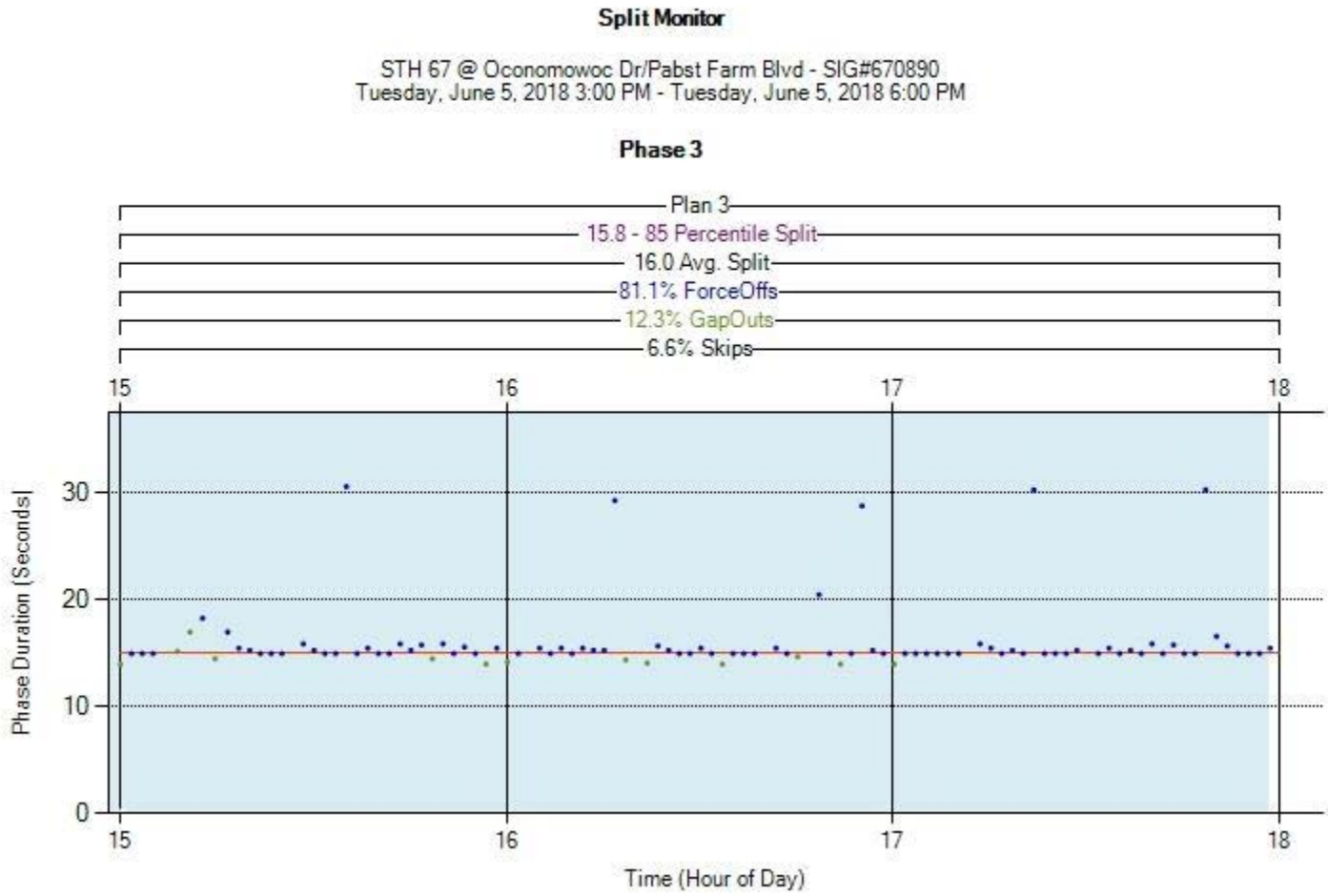
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



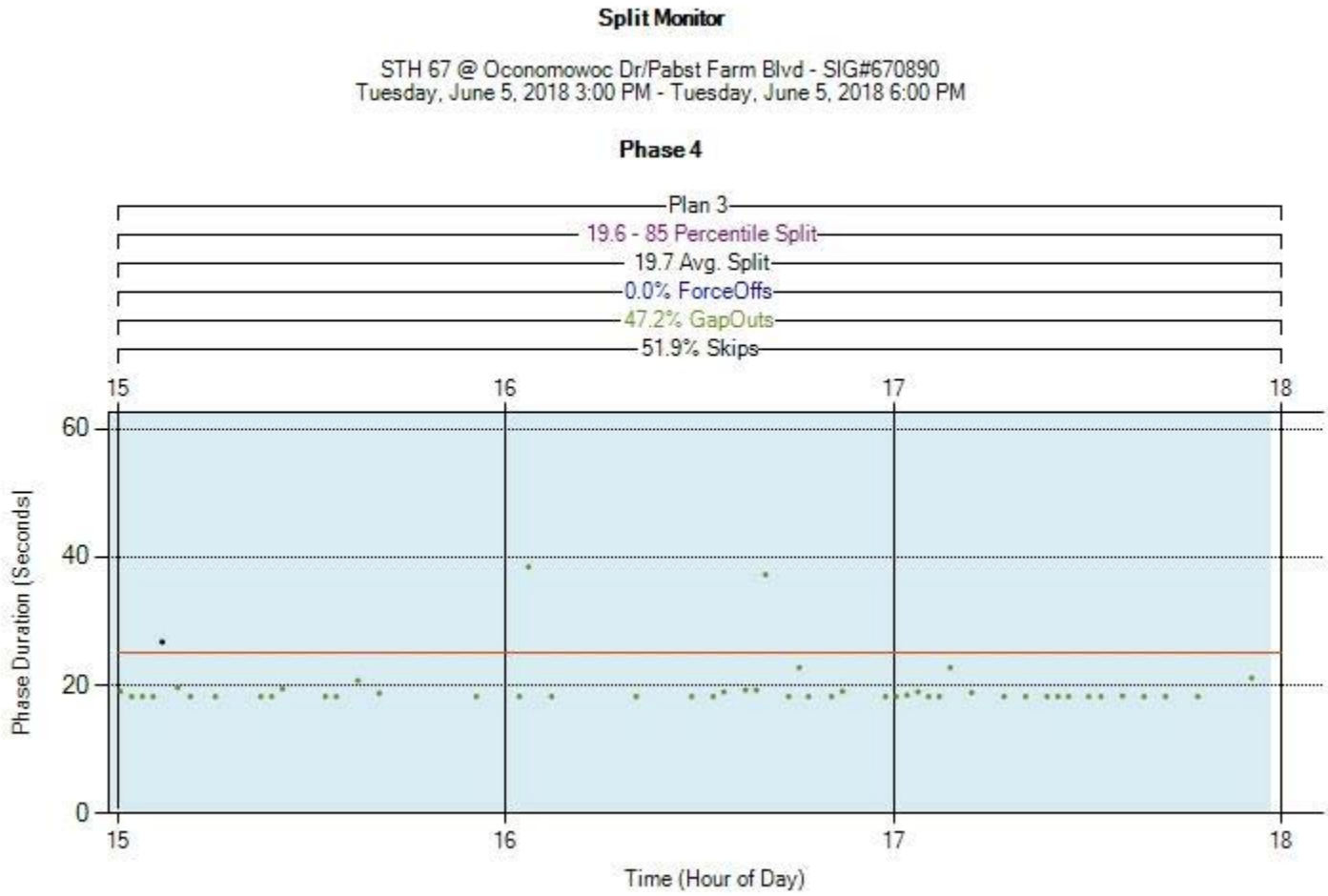
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



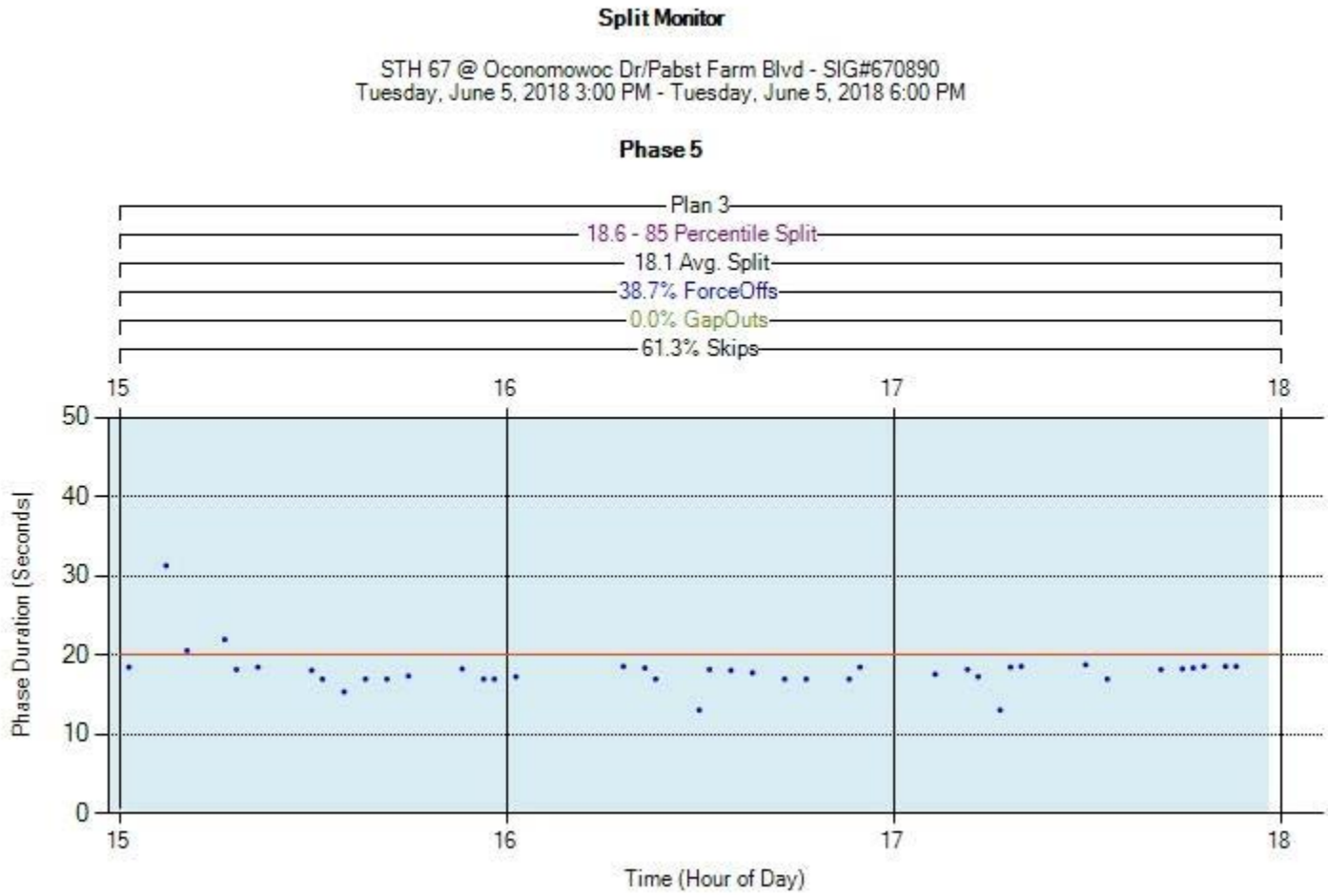
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



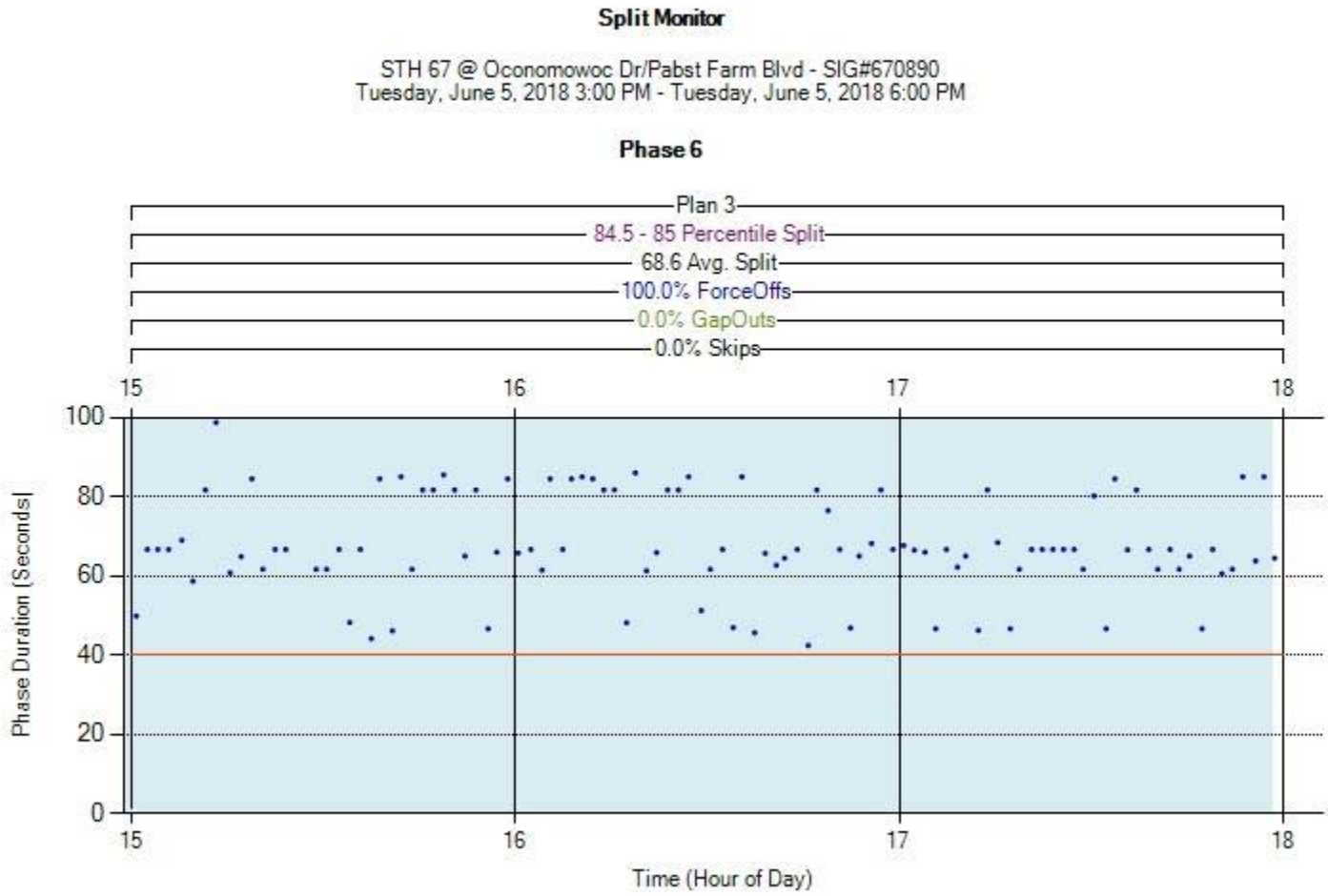
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



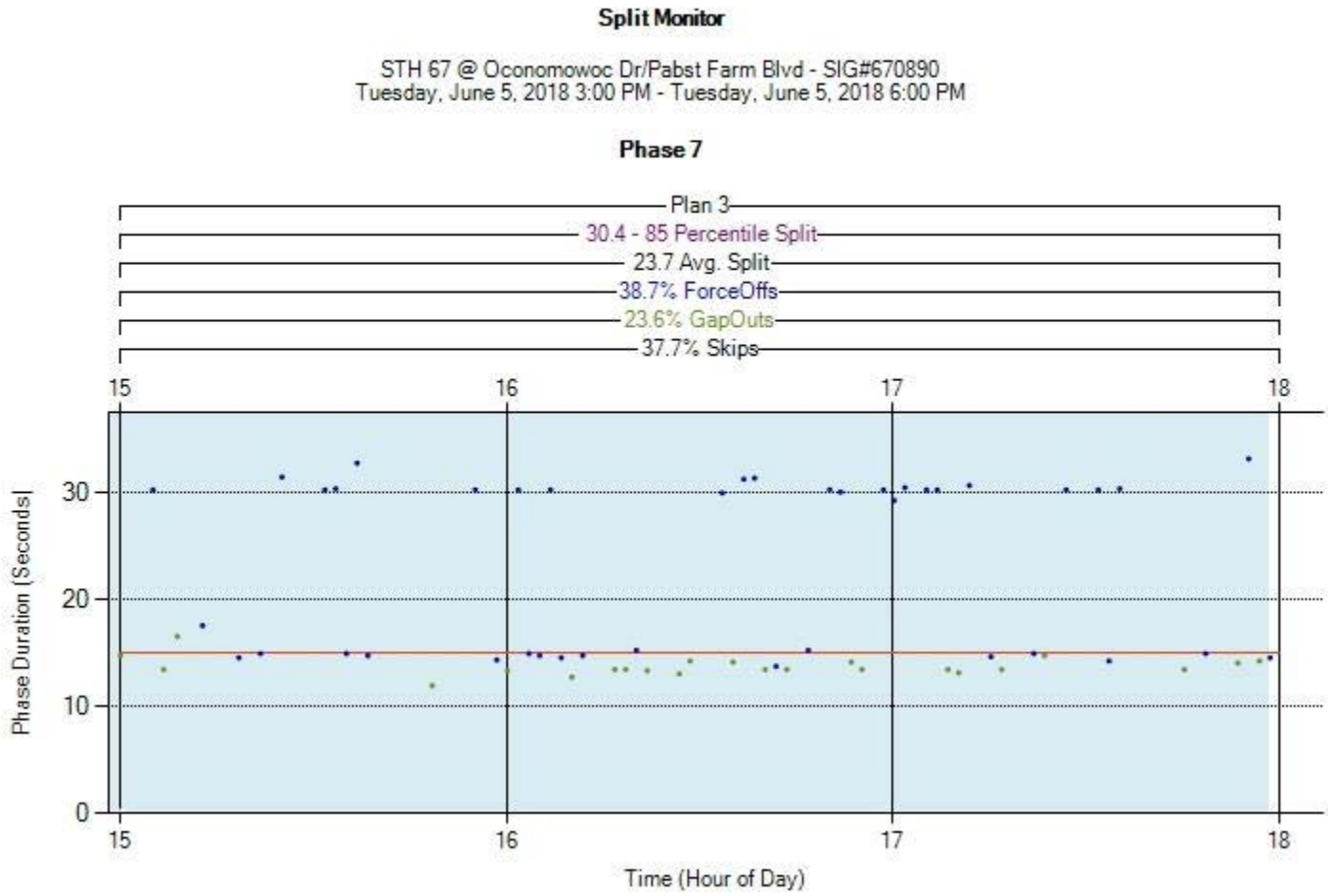
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



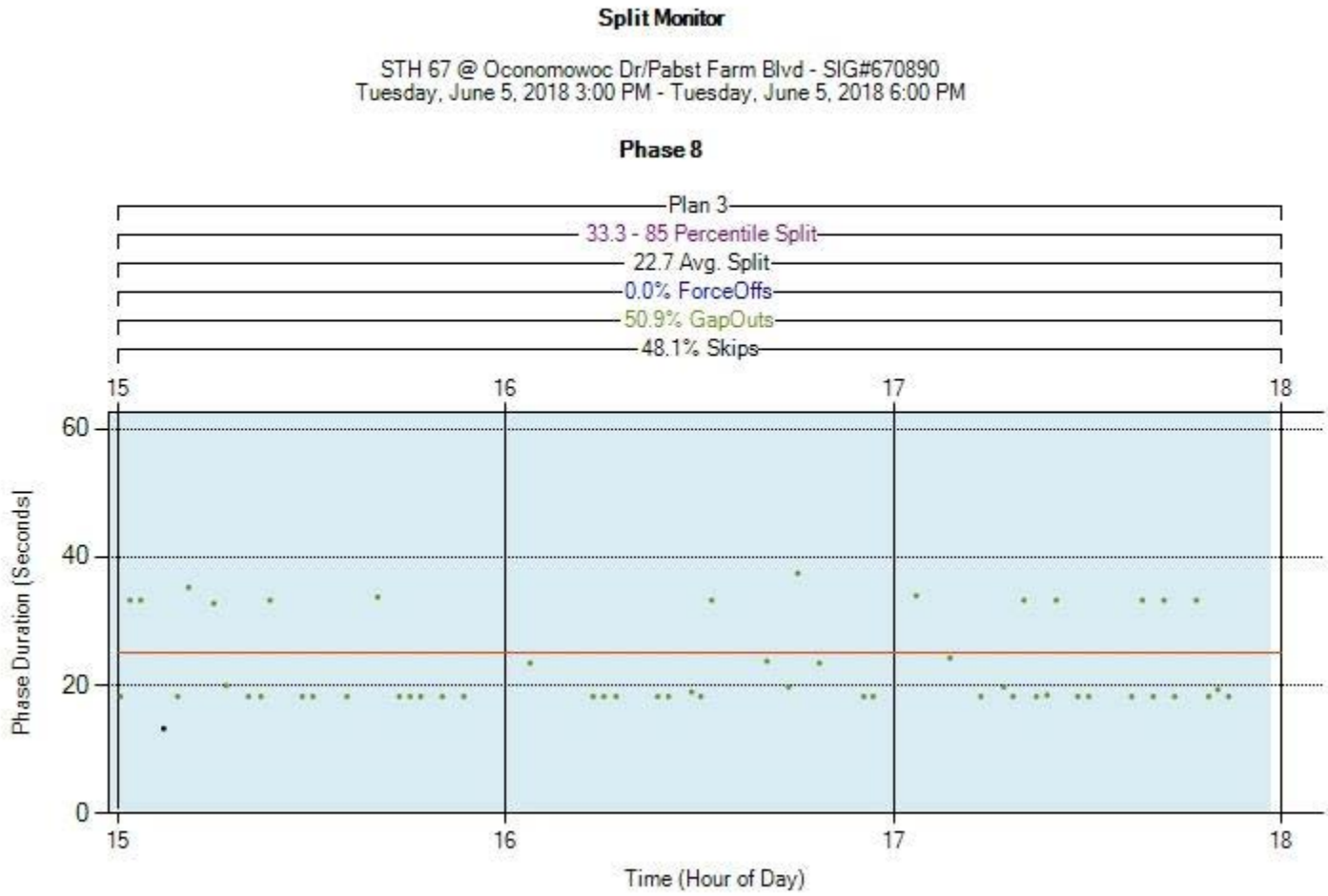
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



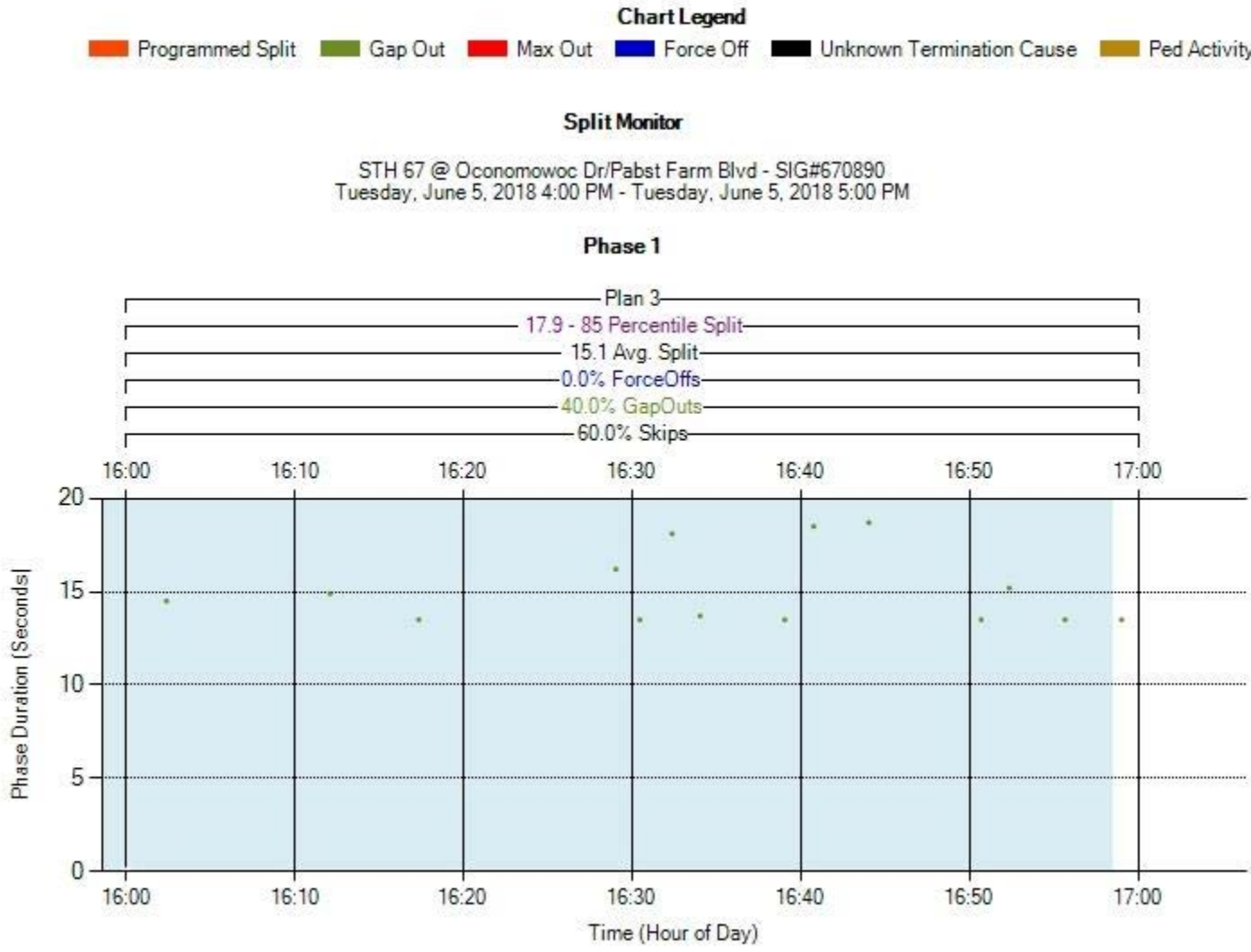
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



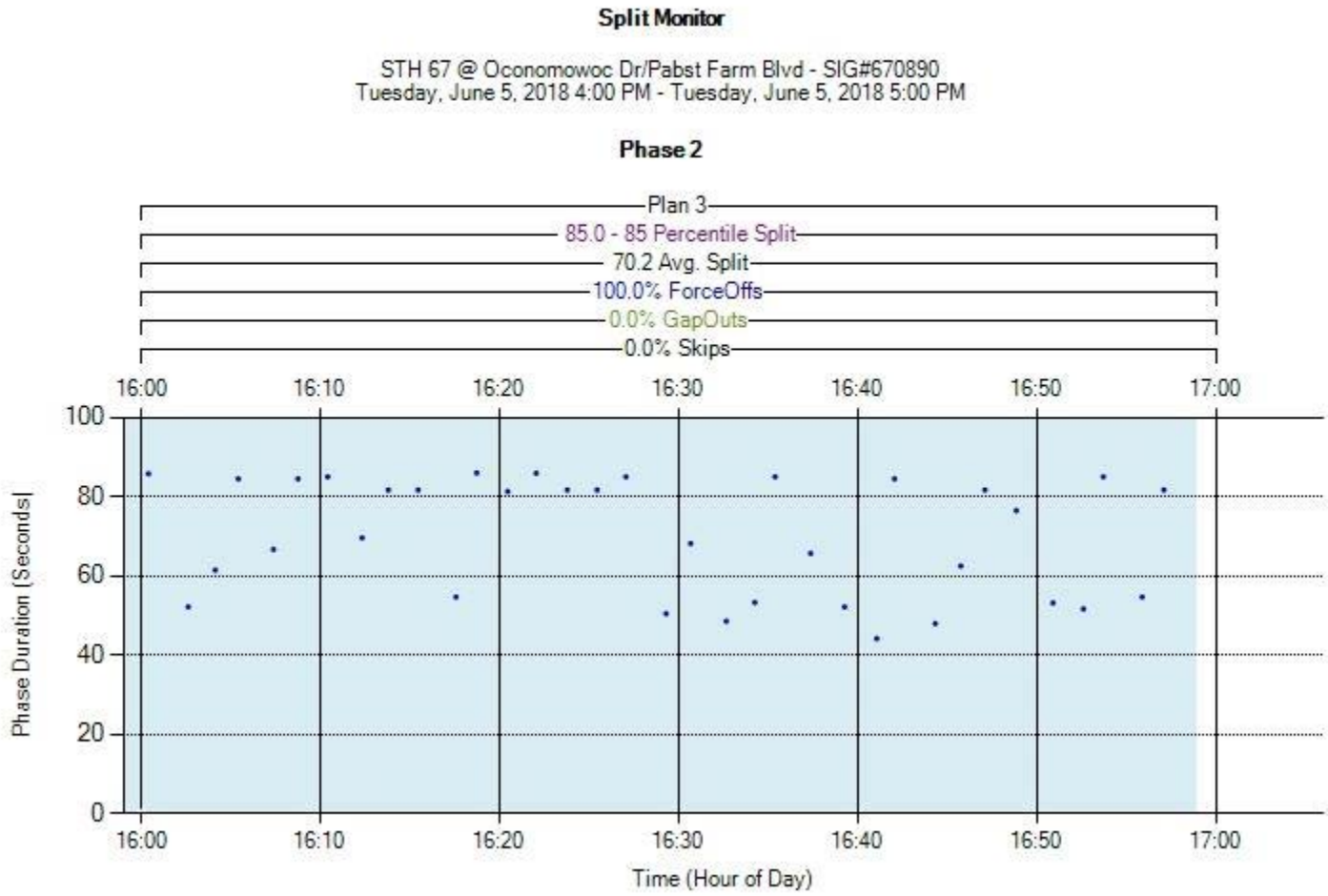
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



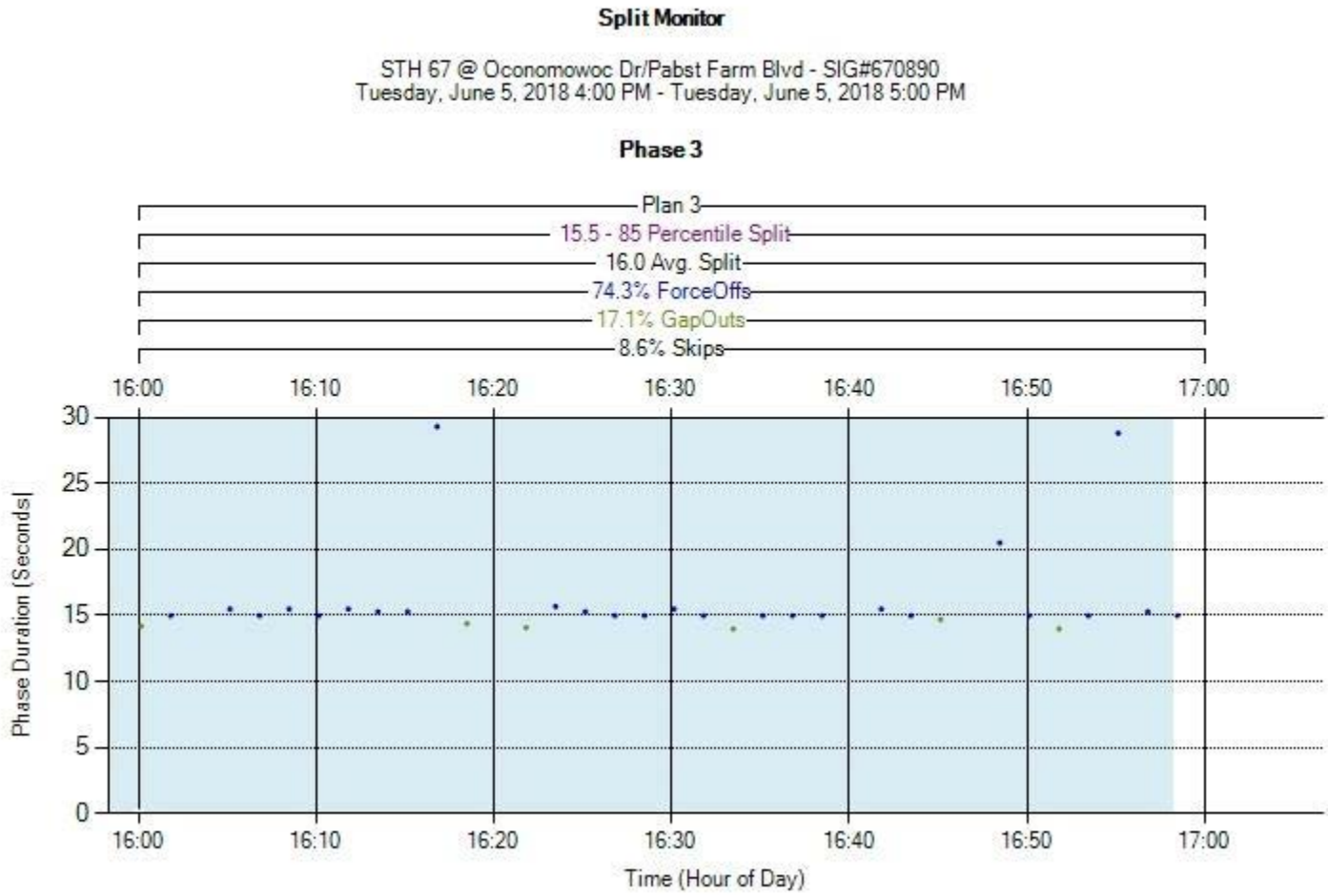
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Baseline Timings
6/5/2018 – 4:00 PM – 5:00 PM



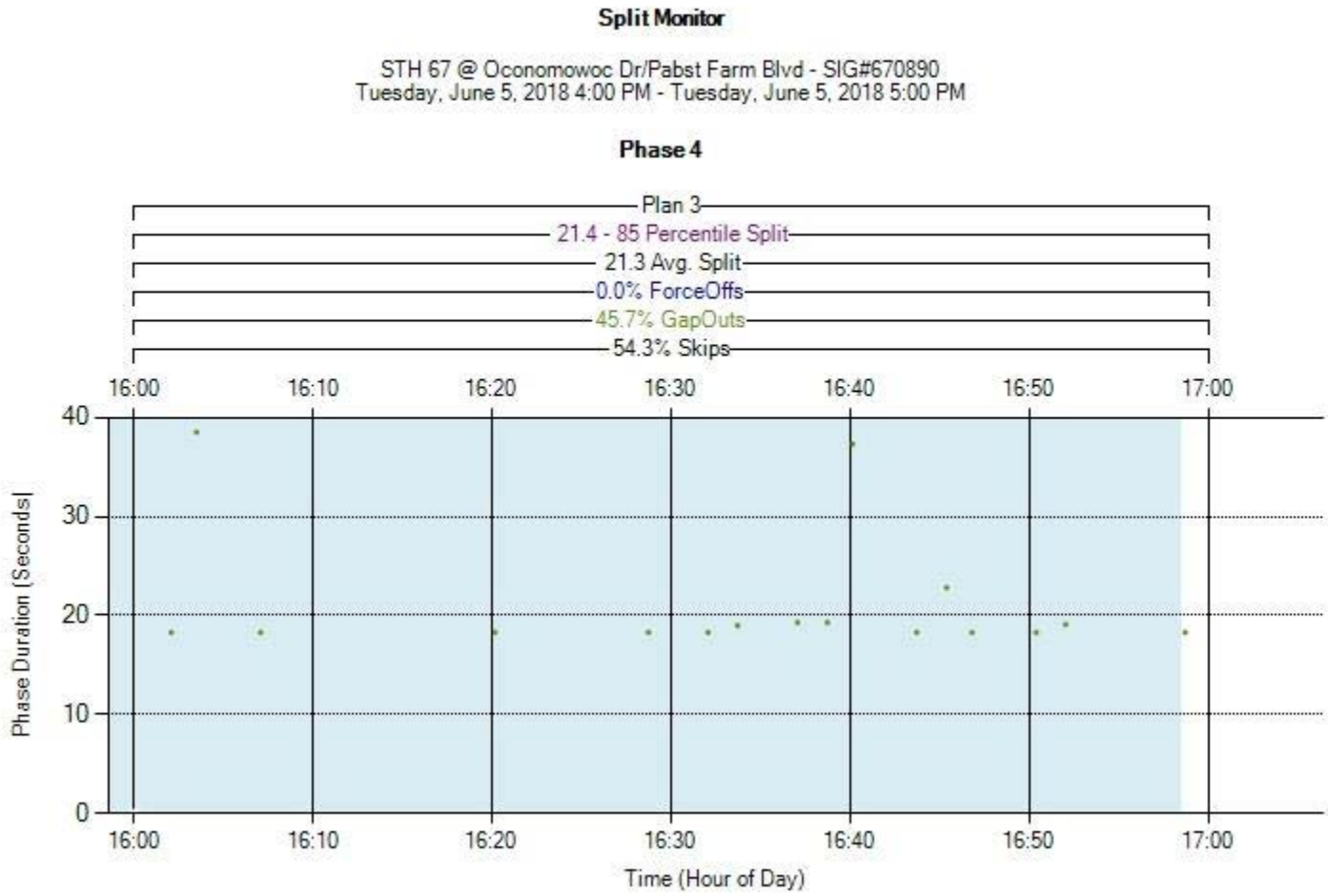
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Baseline Timings
6/5/2018 – 4:00 PM – 5:00 PM



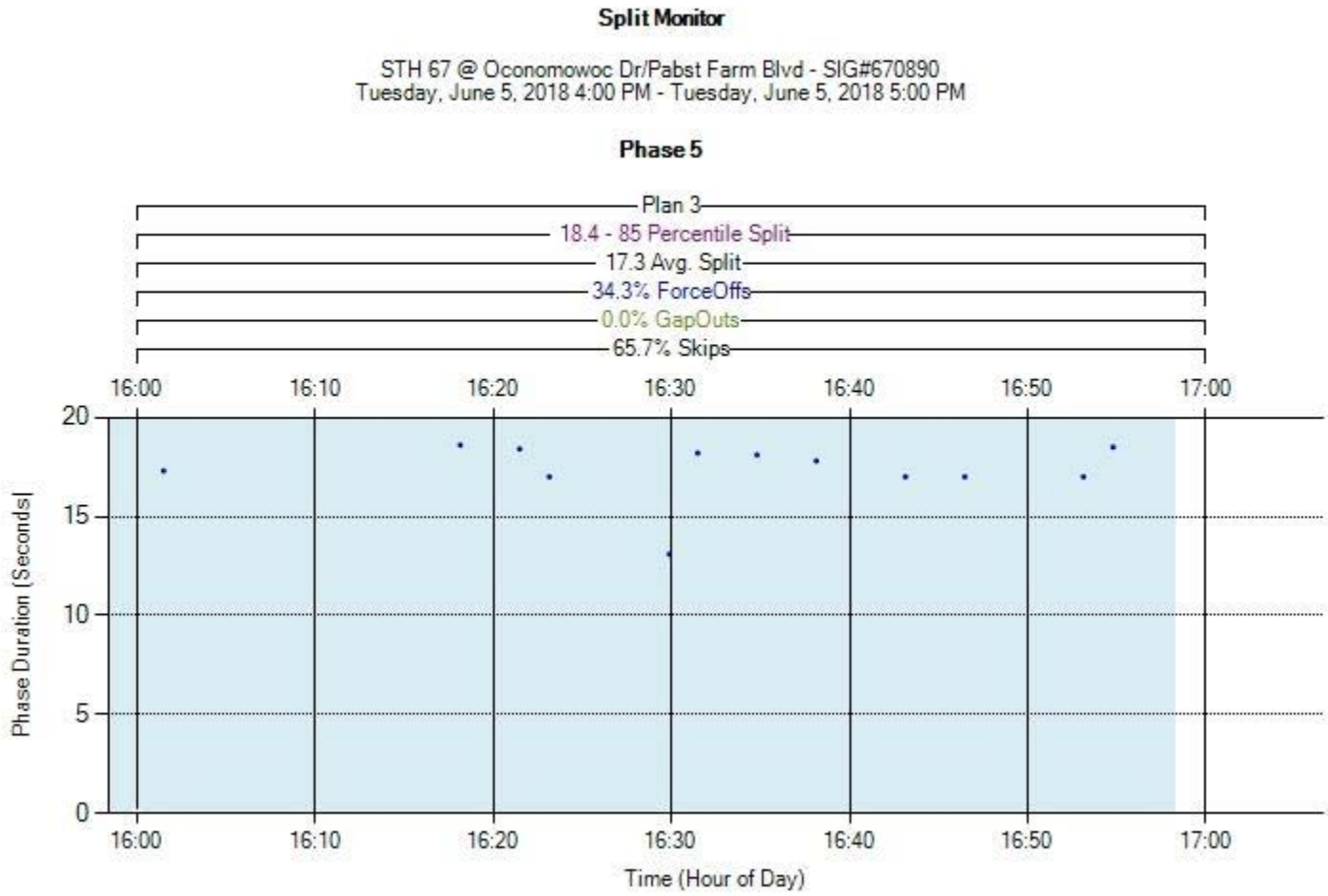
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Baseline Timings
6/5/2018 – 4:00 PM – 5:00 PM



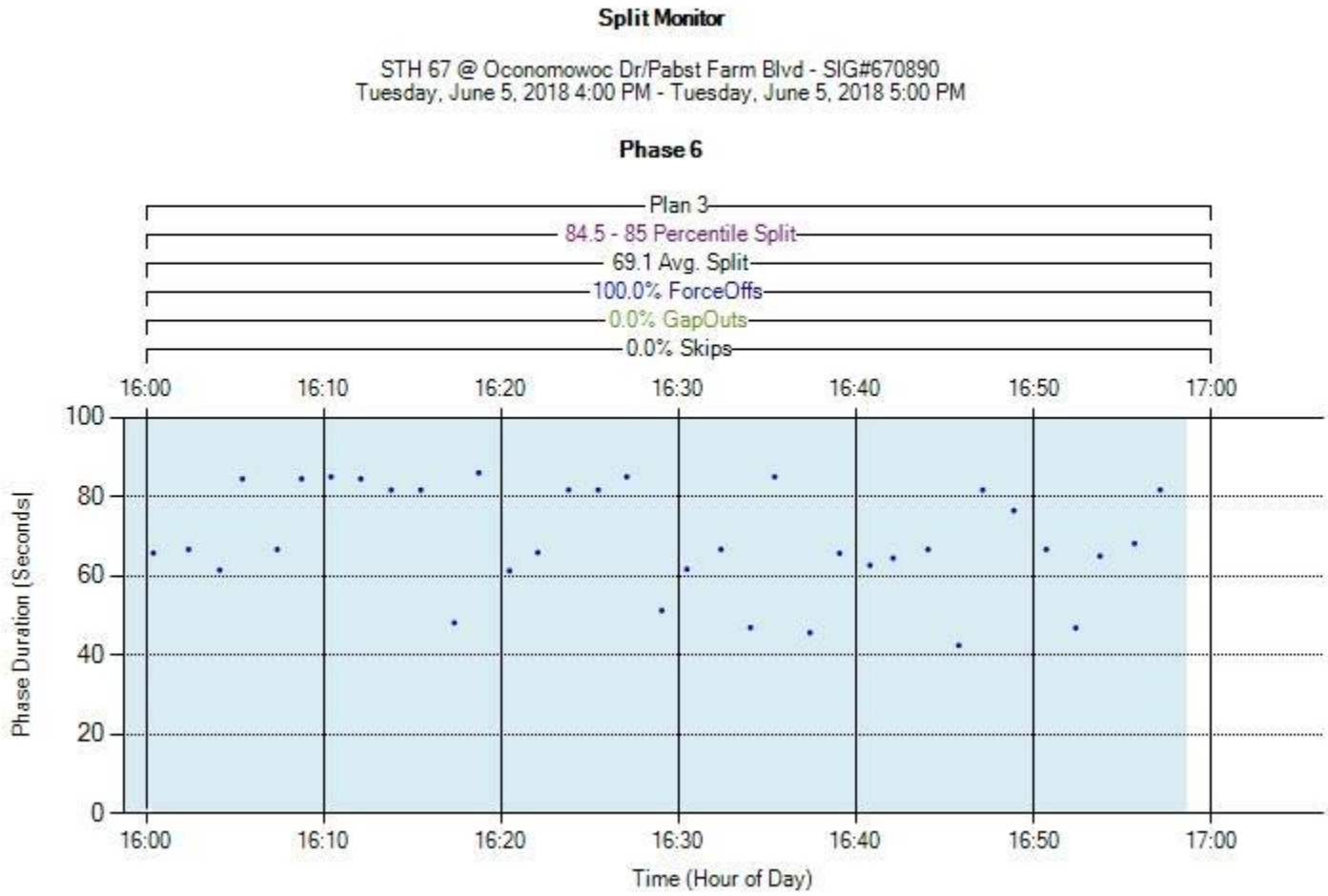
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Baseline Timings
6/5/2018 – 4:00 PM – 5:00 PM



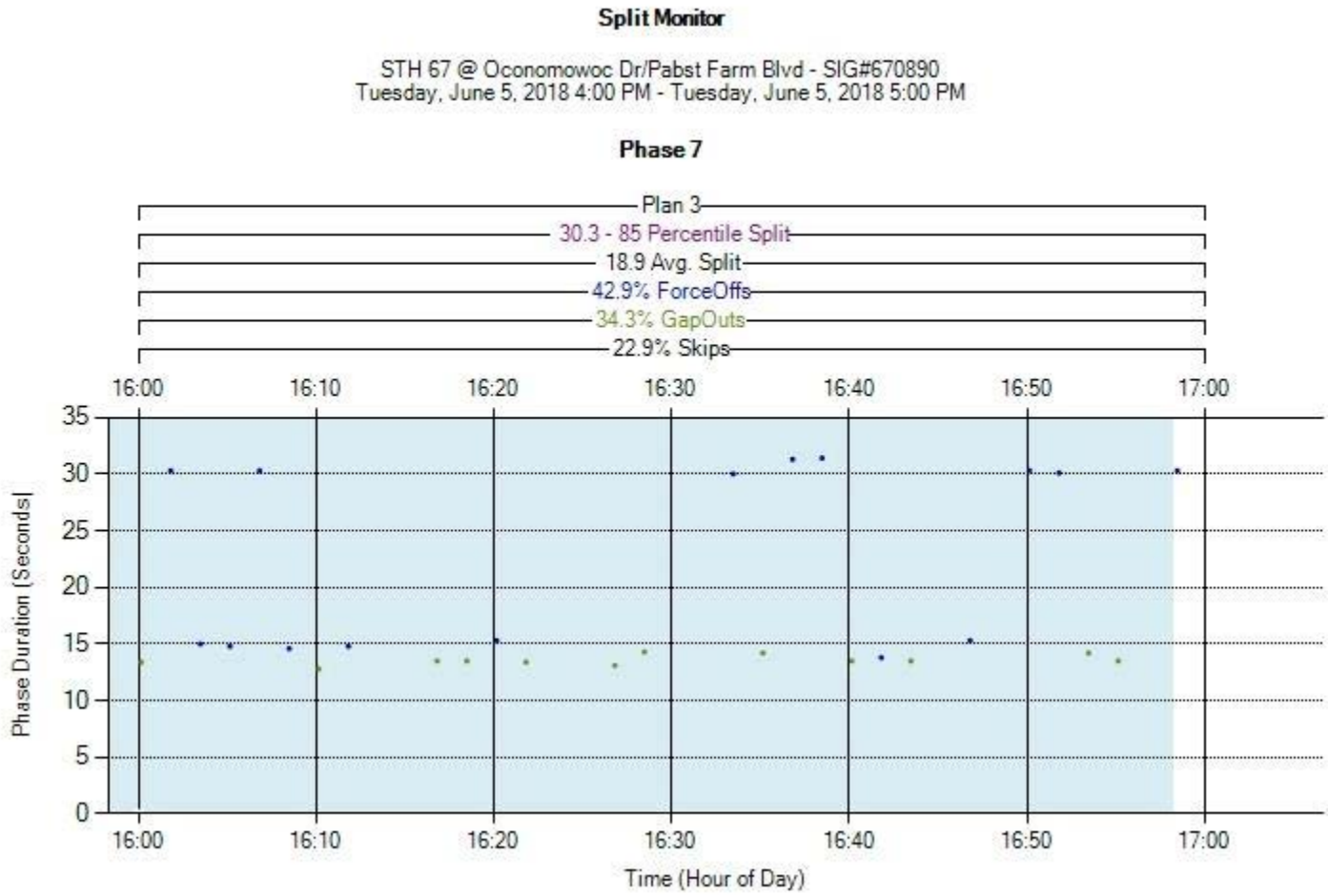
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Baseline Timings
6/5/2018 – 4:00 PM – 5:00 PM



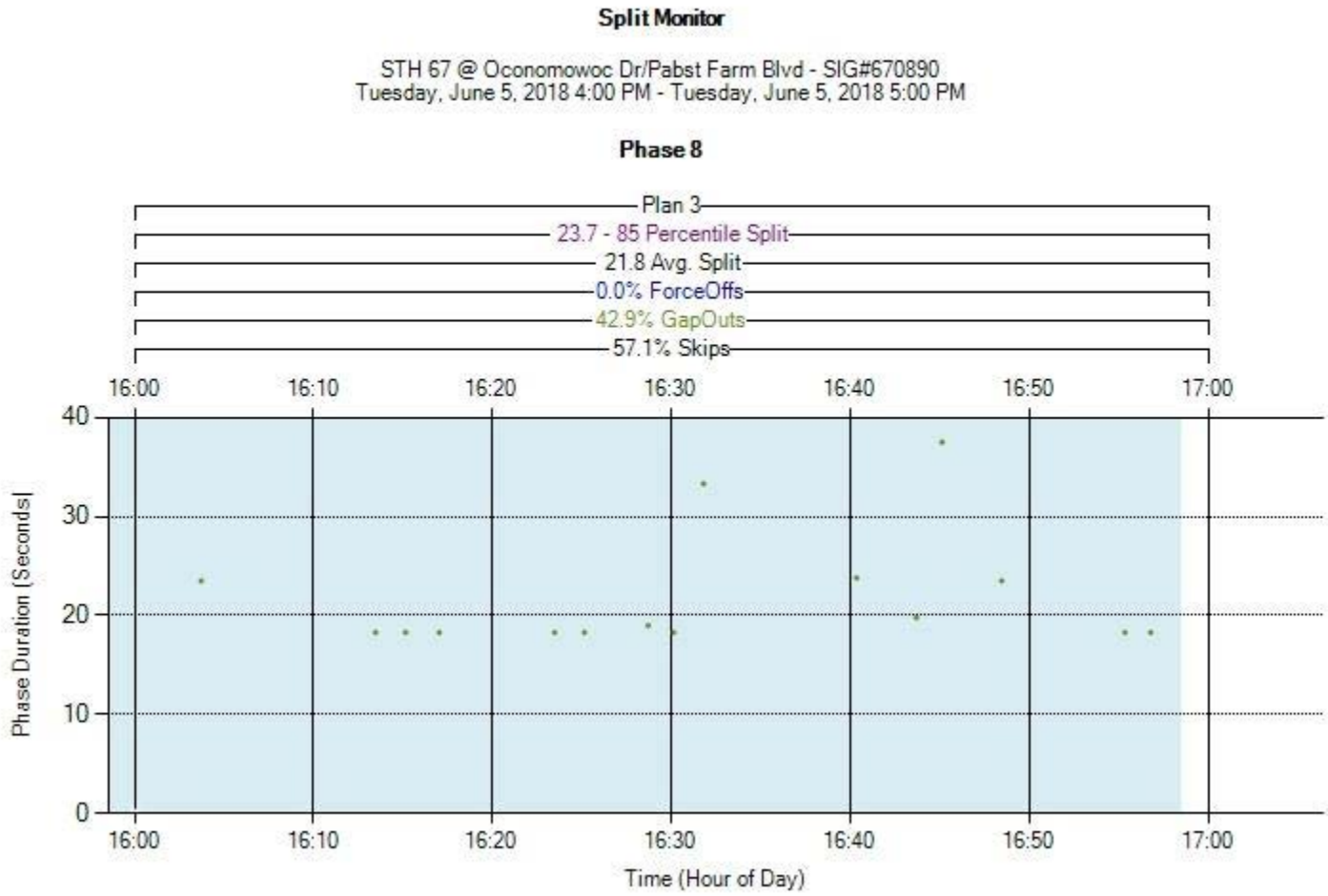
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Baseline Timings
6/5/2018 – 4:00 PM – 5:00 PM



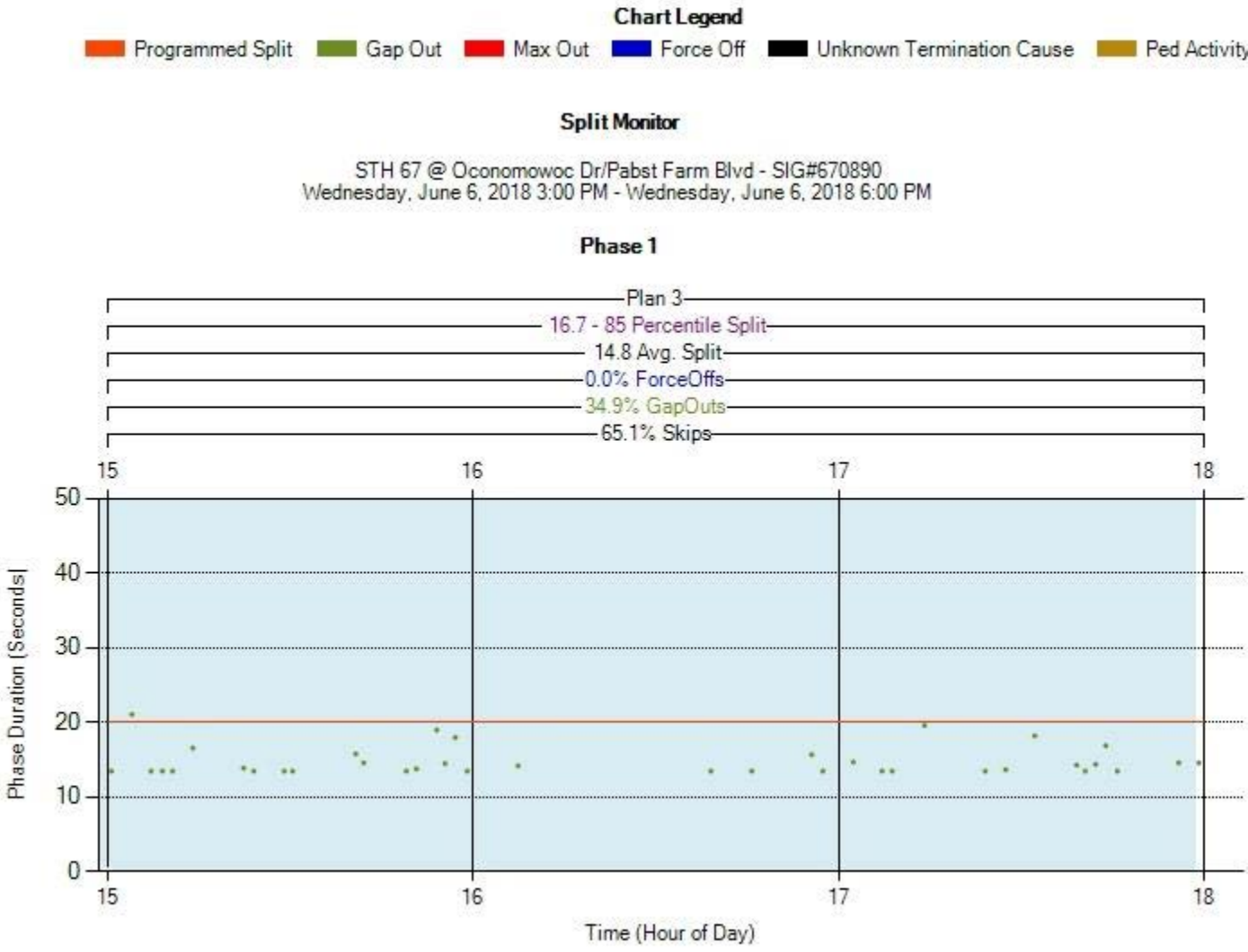
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Baseline Timings
6/5/2018 – 4:00 PM – 5:00 PM



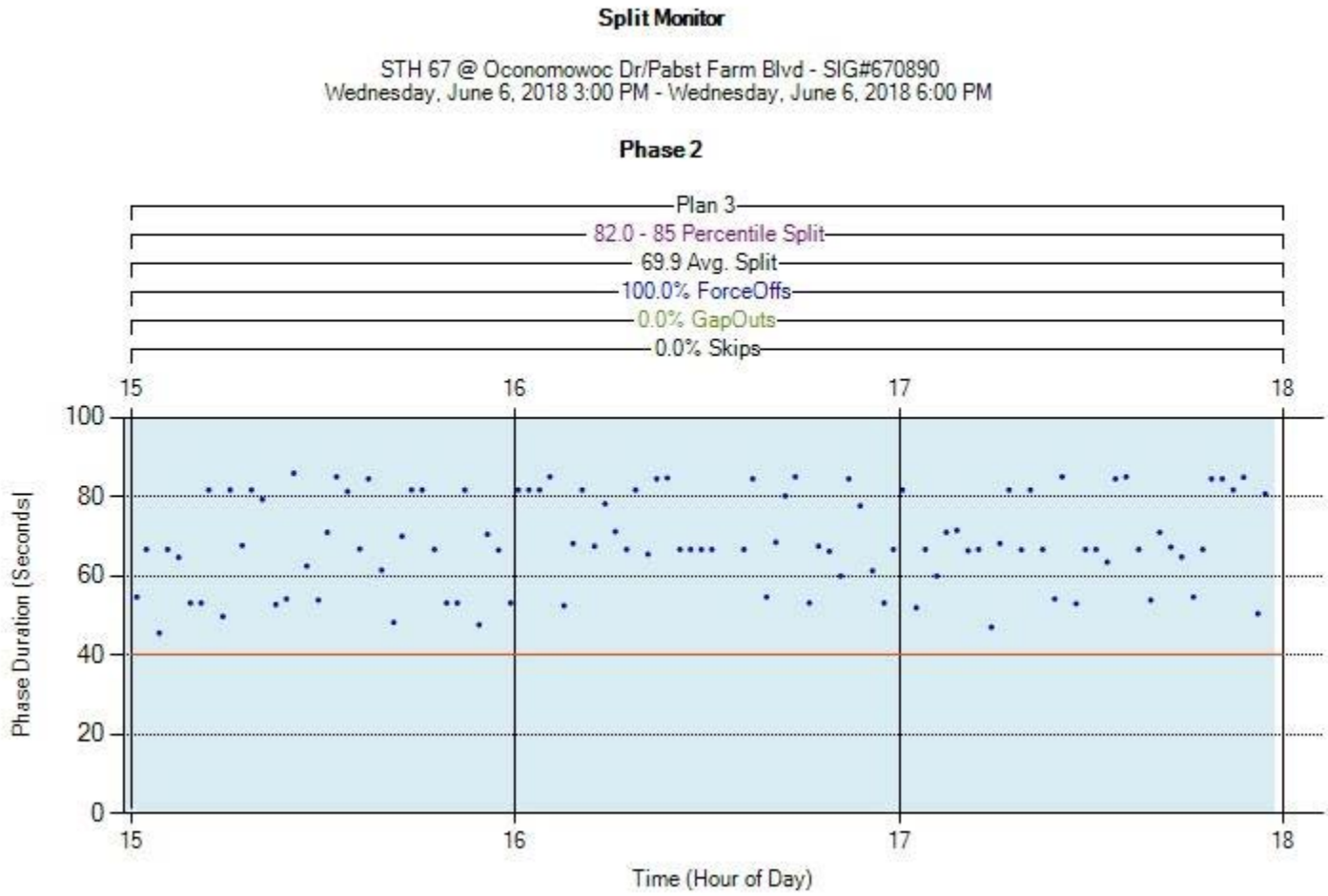
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Baseline Timings
6/5/2018 – 4:00 PM – 5:00 PM



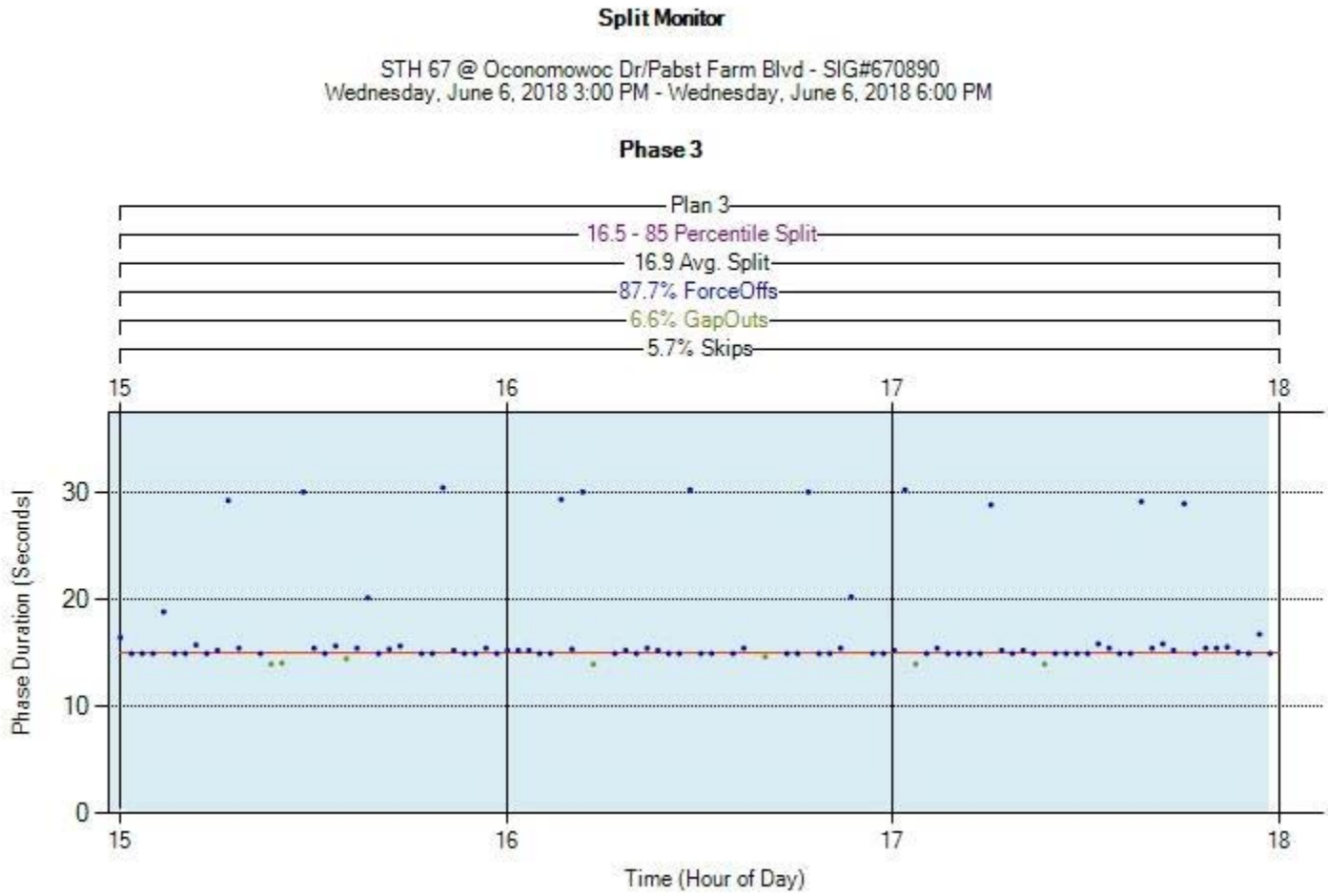
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Baseline Timings
6/6/2018 – 3:00 PM – 6:00 PM



WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Baseline Timings
6/6/2018 – 3:00 PM – 6:00 PM



WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Baseline Timings
6/6/2018 – 3:00 PM – 6:00 PM



WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Baseline Timings
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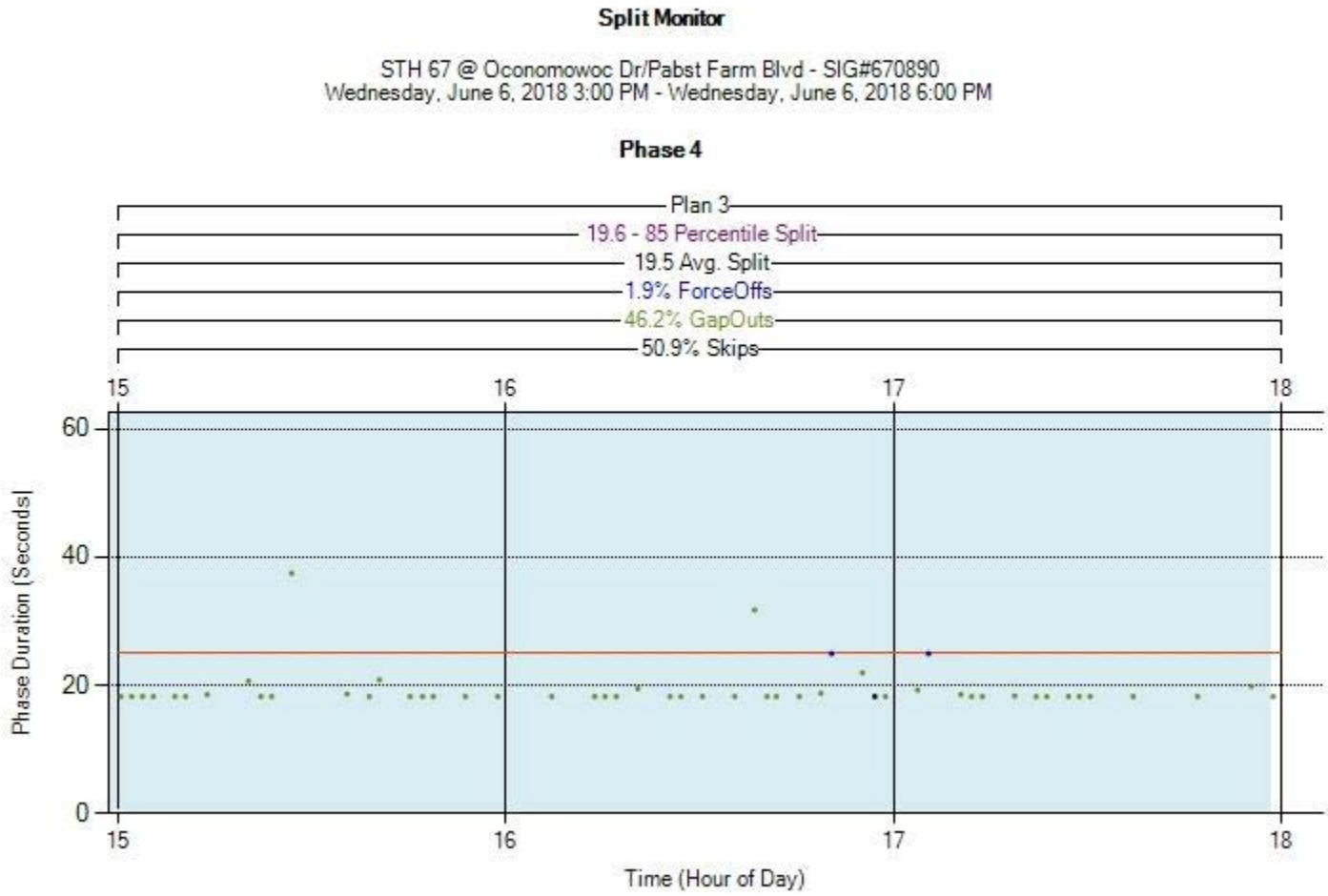
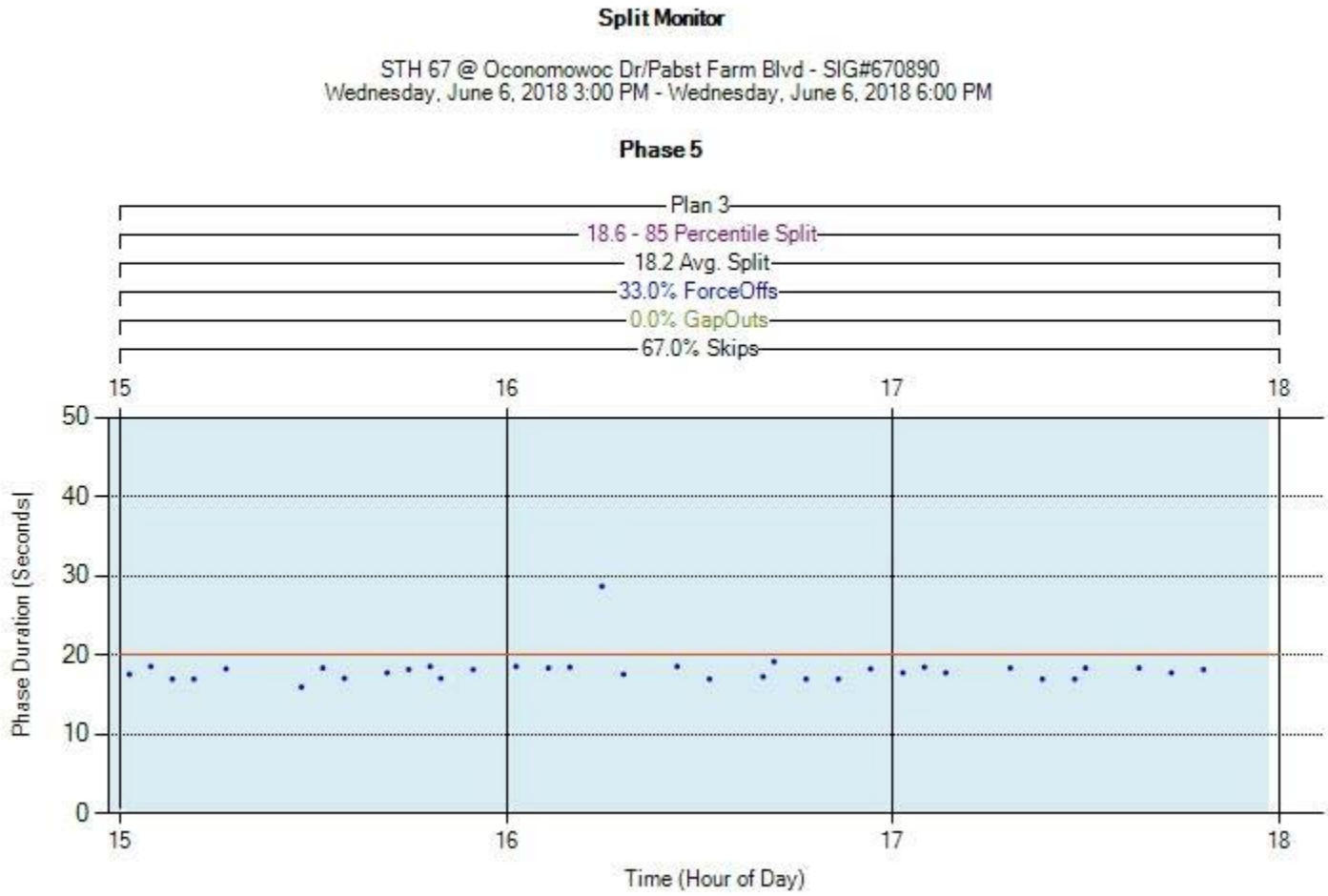
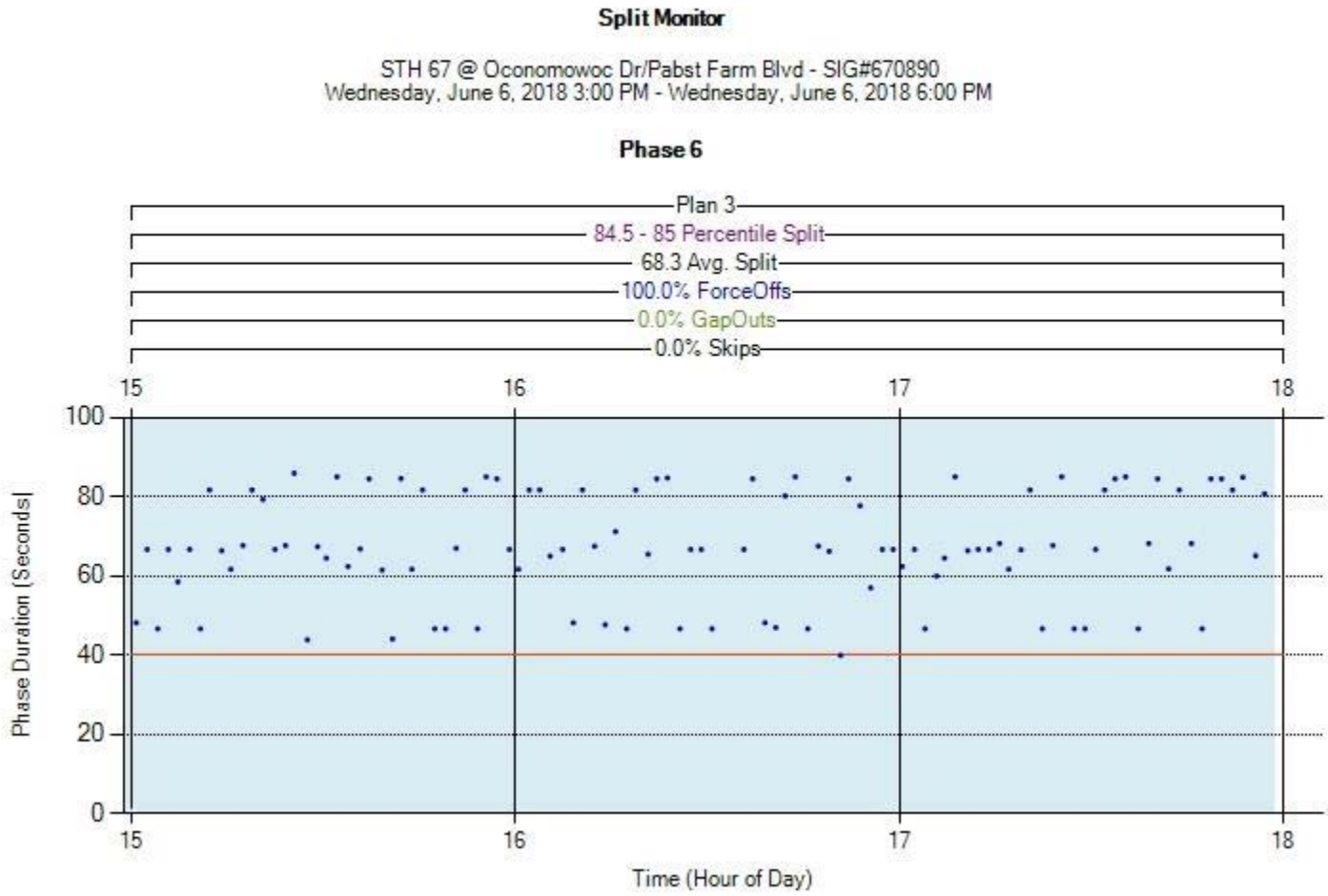


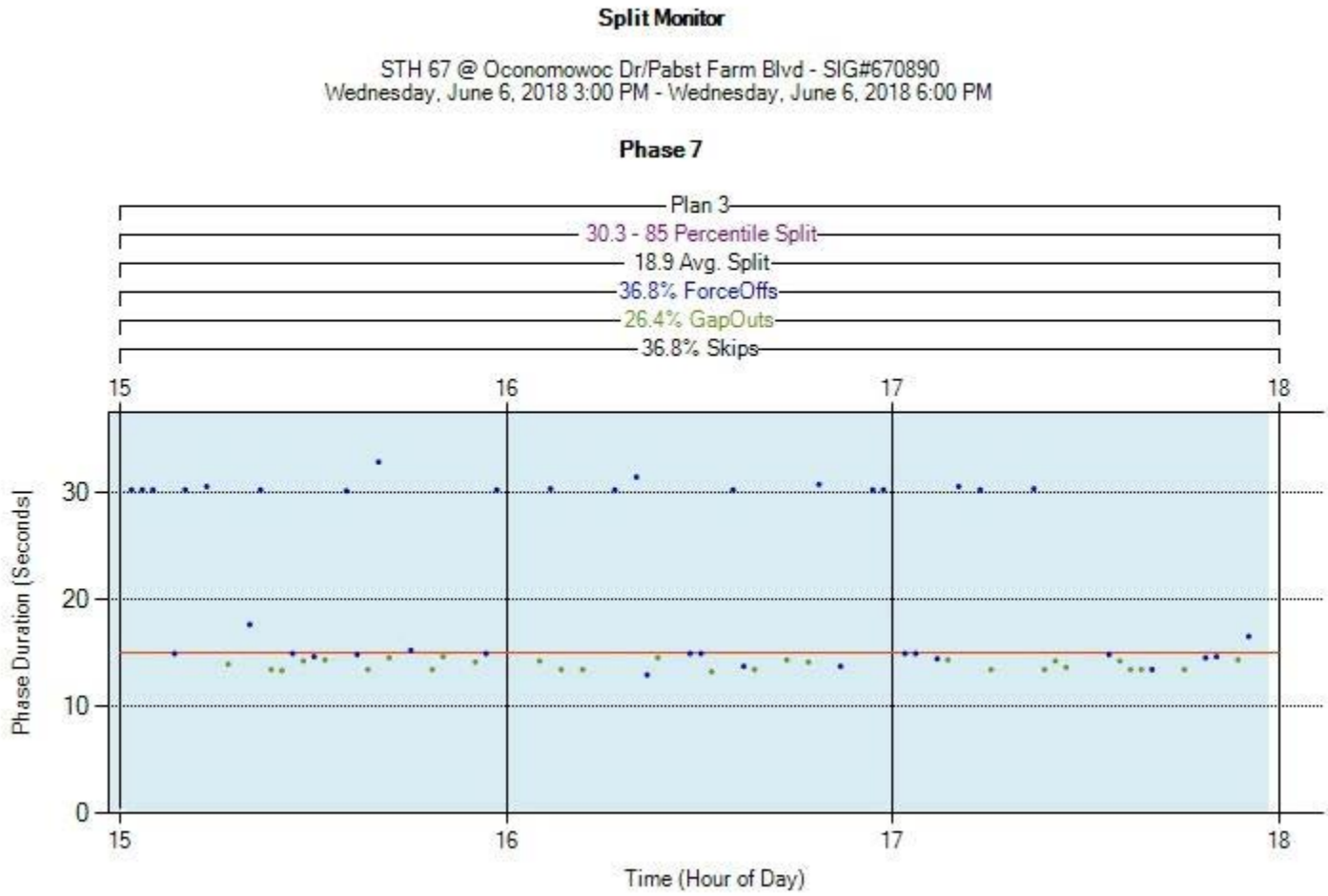
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Baseline Timings
6/6/2018 – 3:00 PM – 6:00 PM



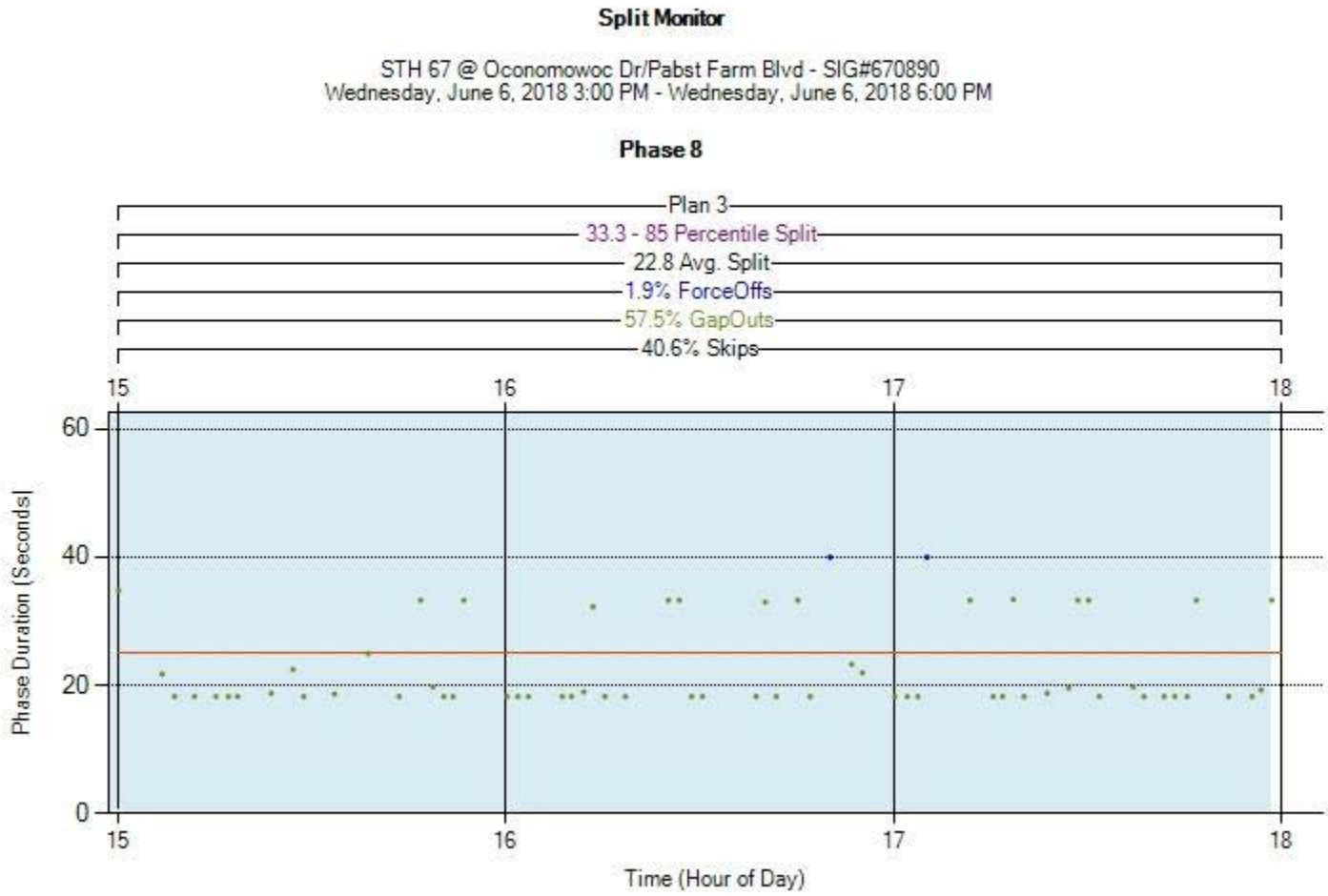
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Baseline Timings
6/6/2018 – 3:00 PM – 6:00 PM



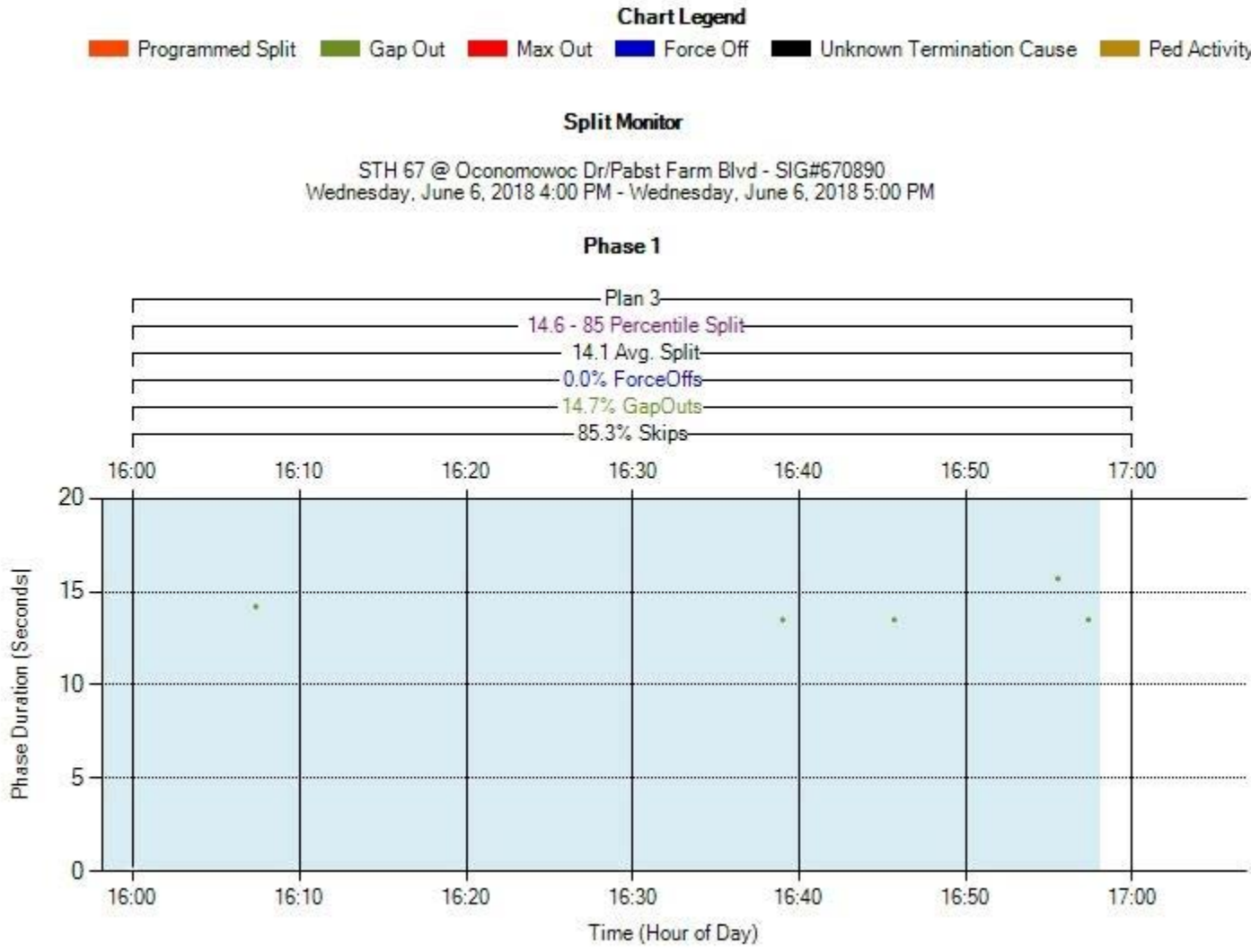
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Baseline Timings
6/6/2018 – 3:00 PM – 6:00 PM



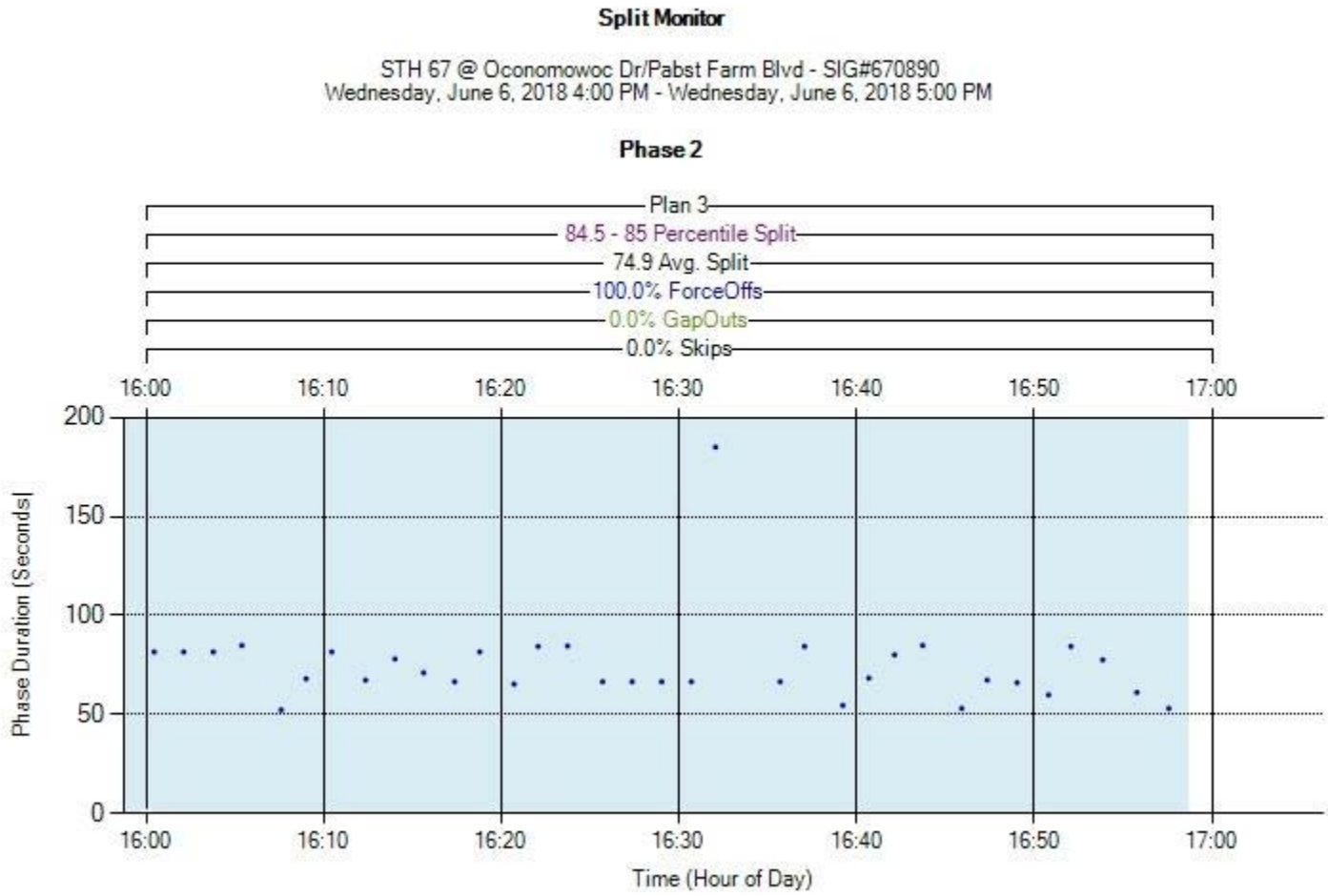
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Baseline Timings
6/6/2018 – 3:00 PM – 6:00 PM



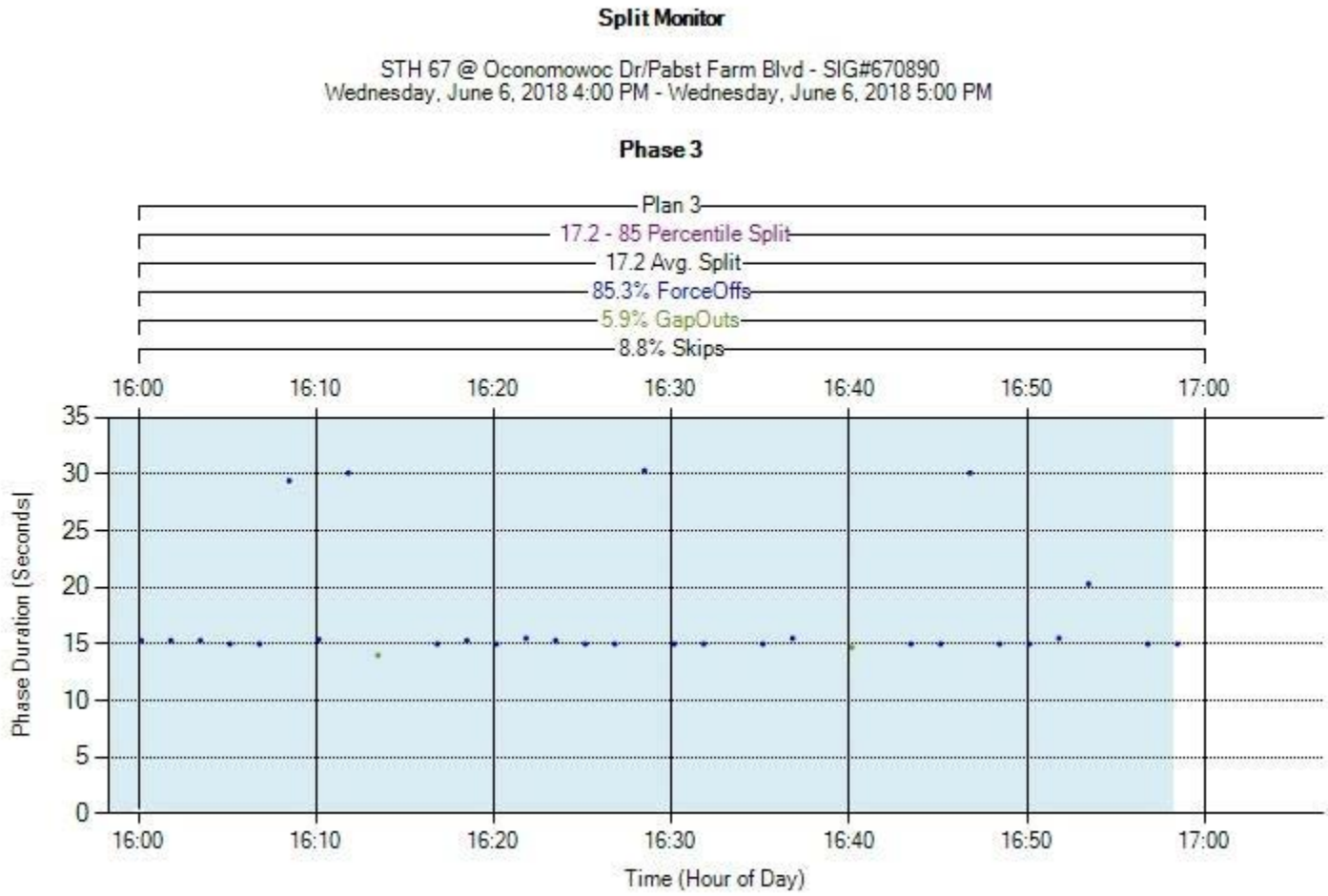
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Baseline Timings
6/6/2018 – 4:00 PM – 5:00 PM



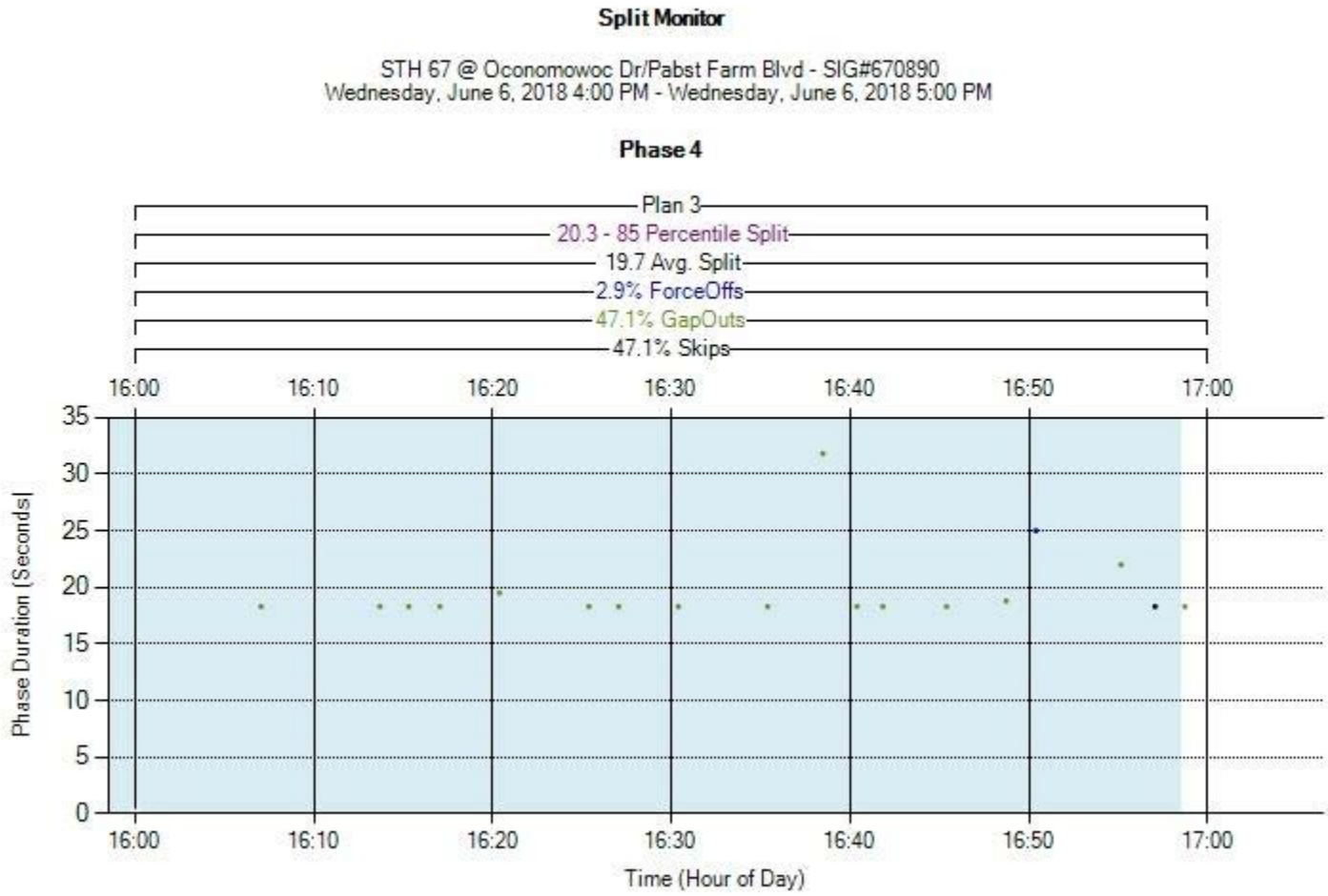
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Baseline Timings
6/6/2018 – 4:00 PM – 5:00 PM



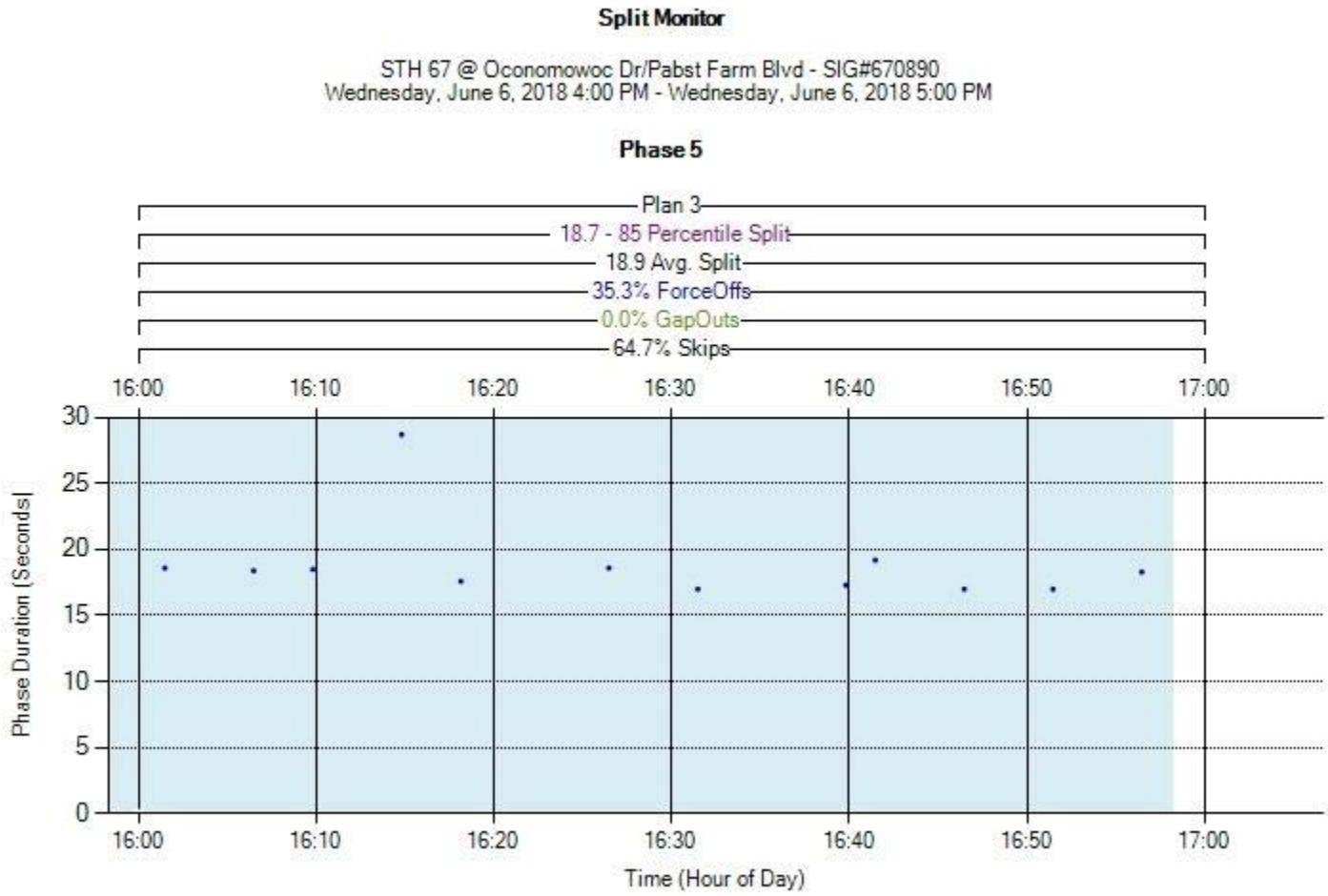
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Baseline Timings
6/6/2018 – 4:00 PM – 5:00 PM



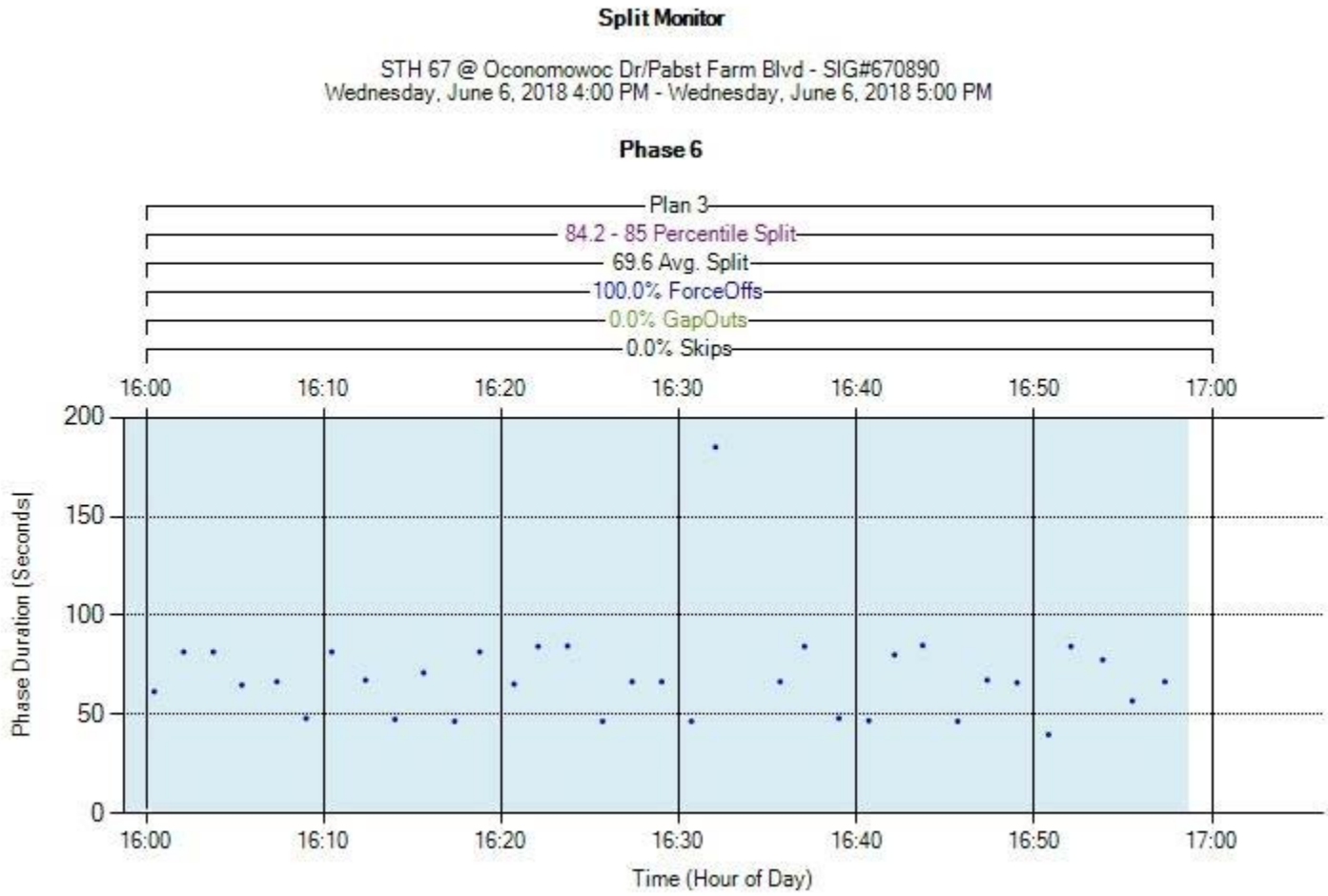
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Baseline Timings
6/6/2018 – 4:00 PM – 5:00 PM



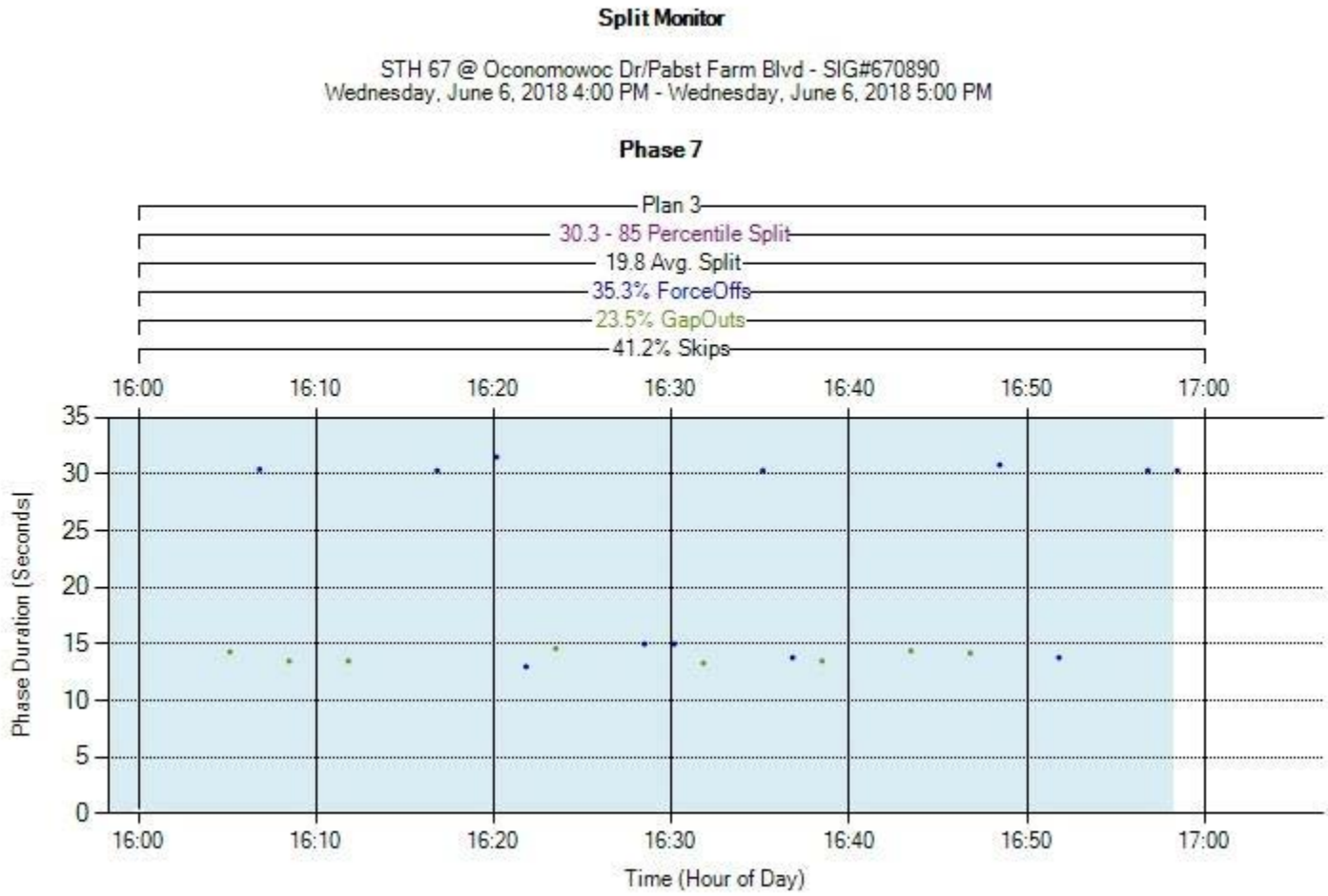
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Baseline Timings
6/6/2018 – 4:00 PM – 5:00 PM



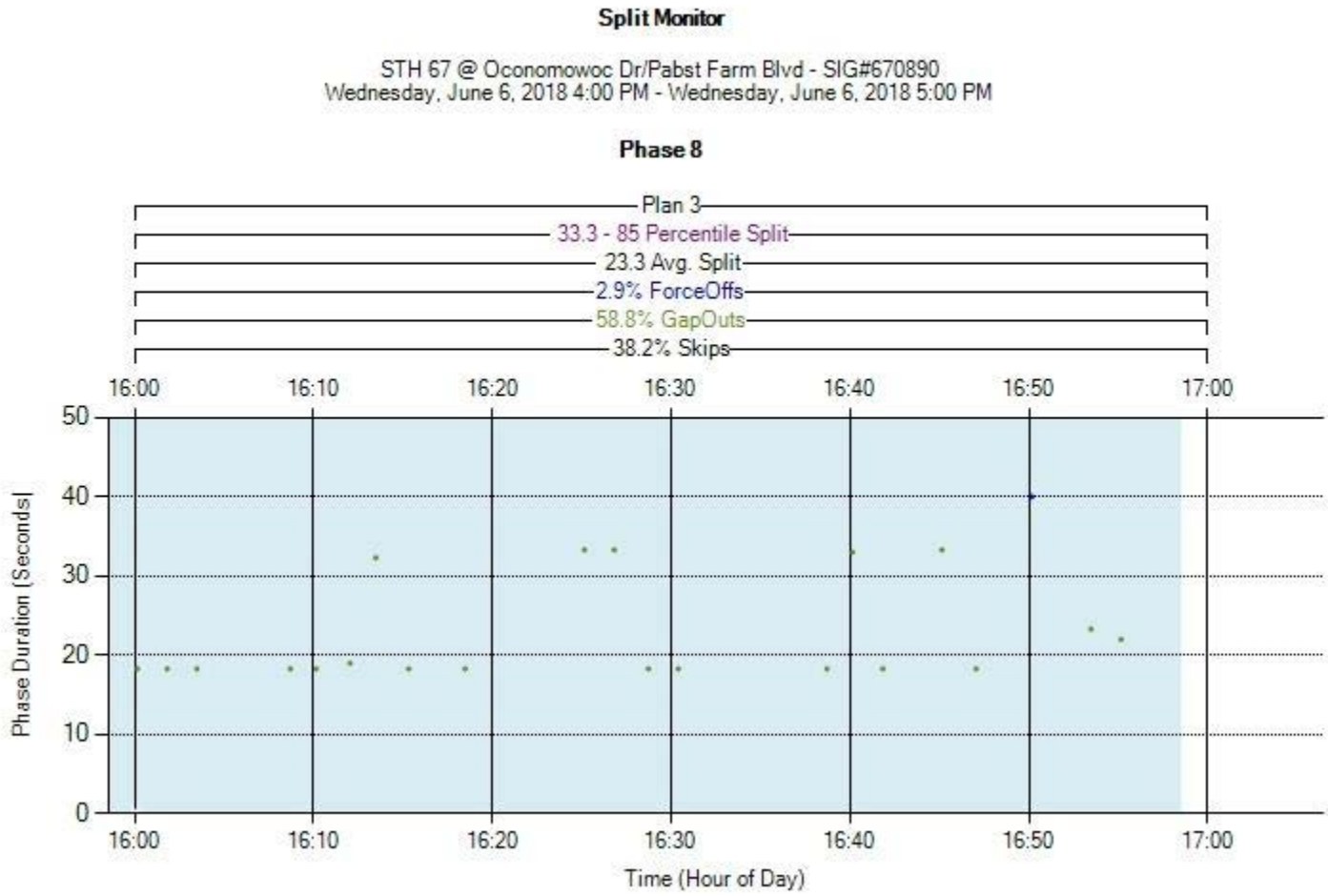
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Baseline Timings
6/6/2018 – 4:00 PM – 5:00 PM



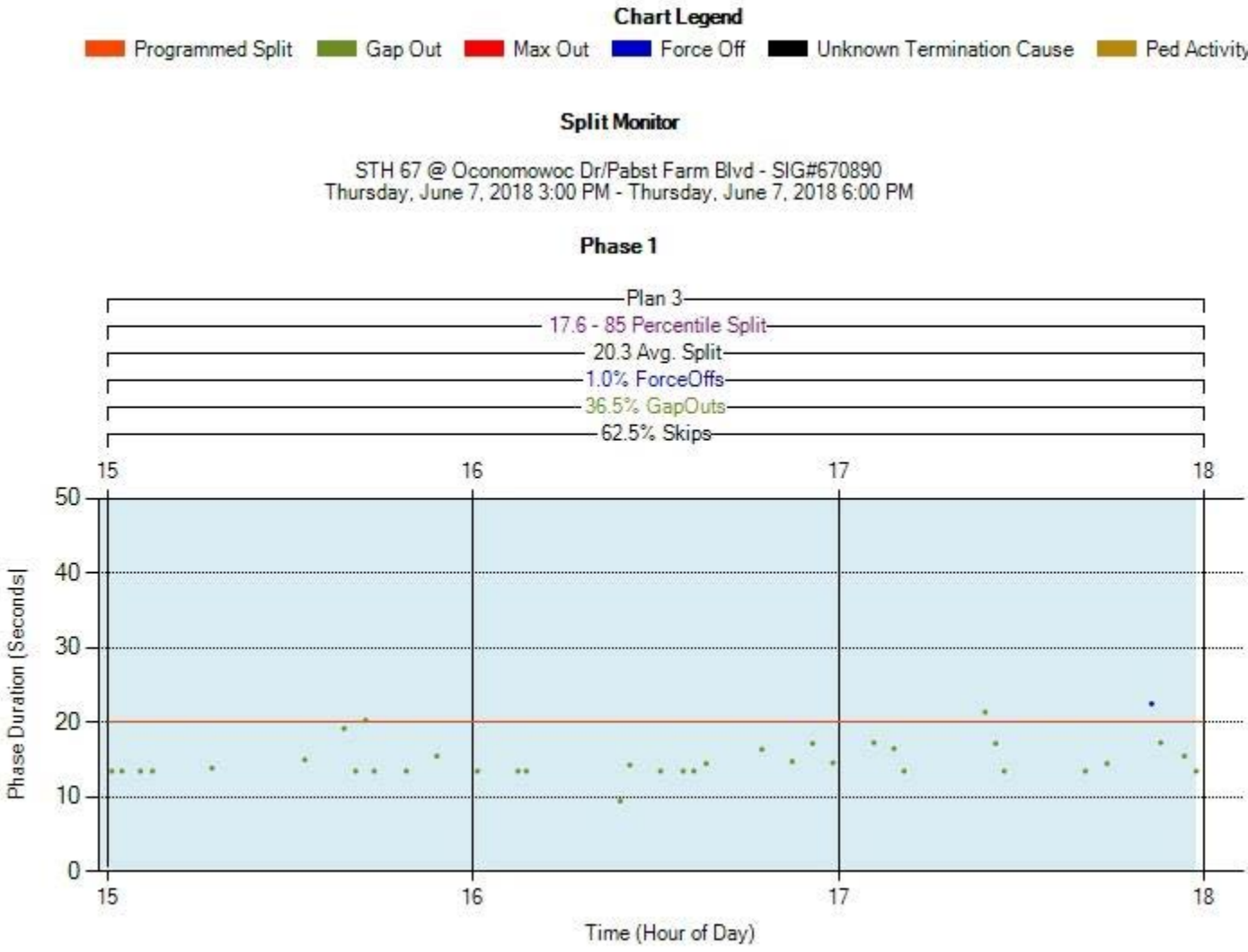
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Baseline Timings
6/6/2018 – 4:00 PM – 5:00 PM



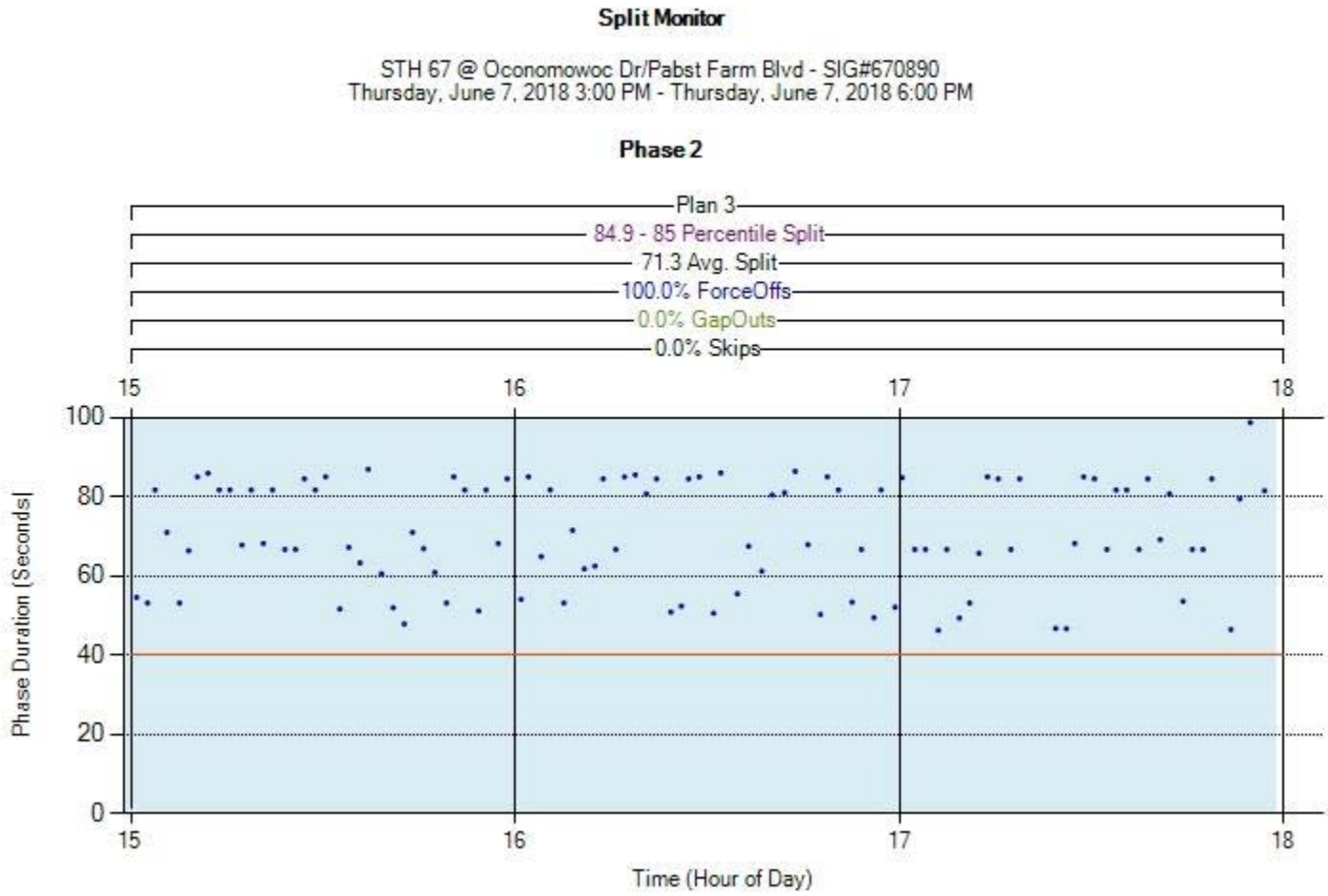
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Baseline Timings
6/6/2018 – 4:00 PM – 5:00 PM



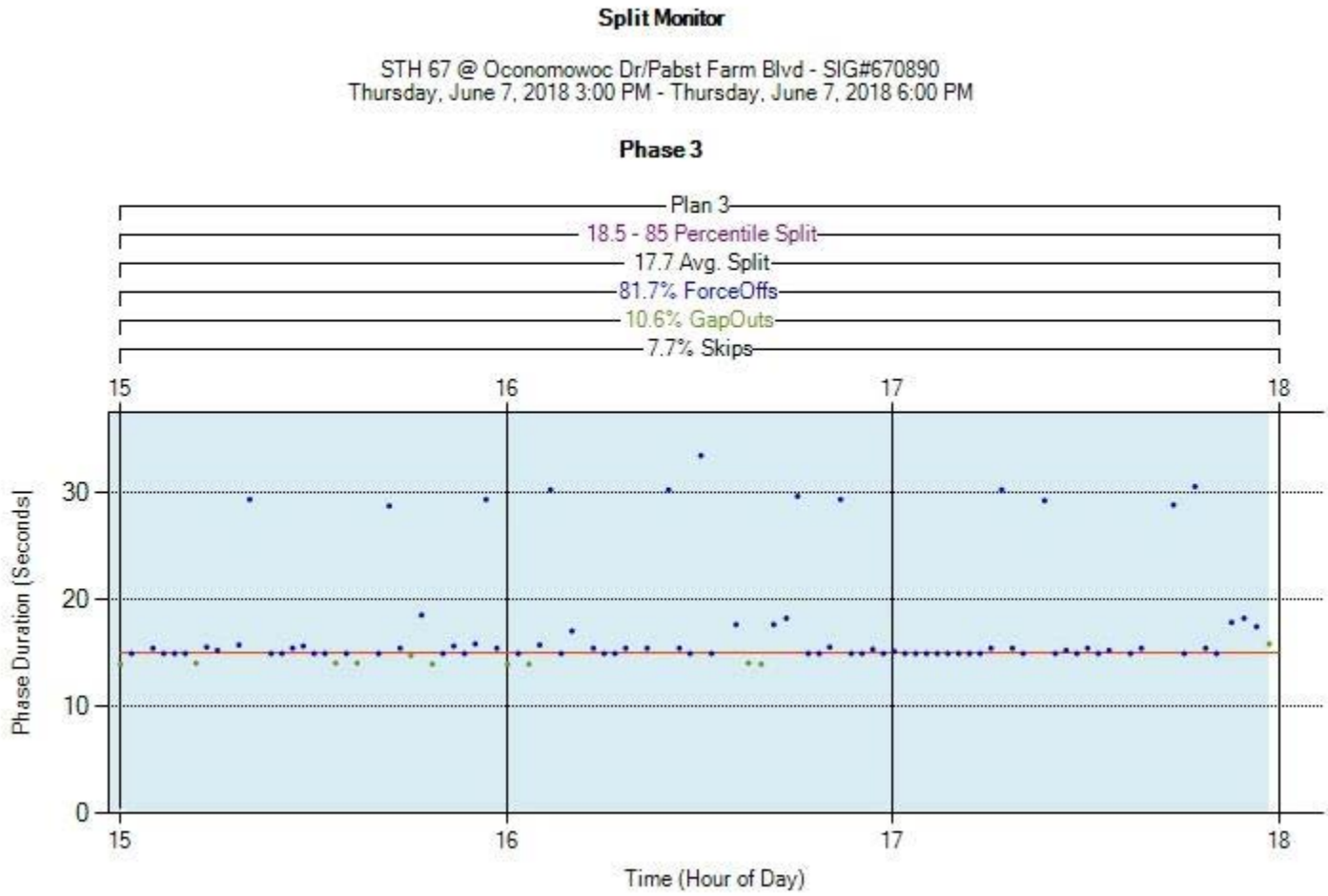
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Baseline Timings
6/7/2018 – 3:00 PM – 6:00 PM



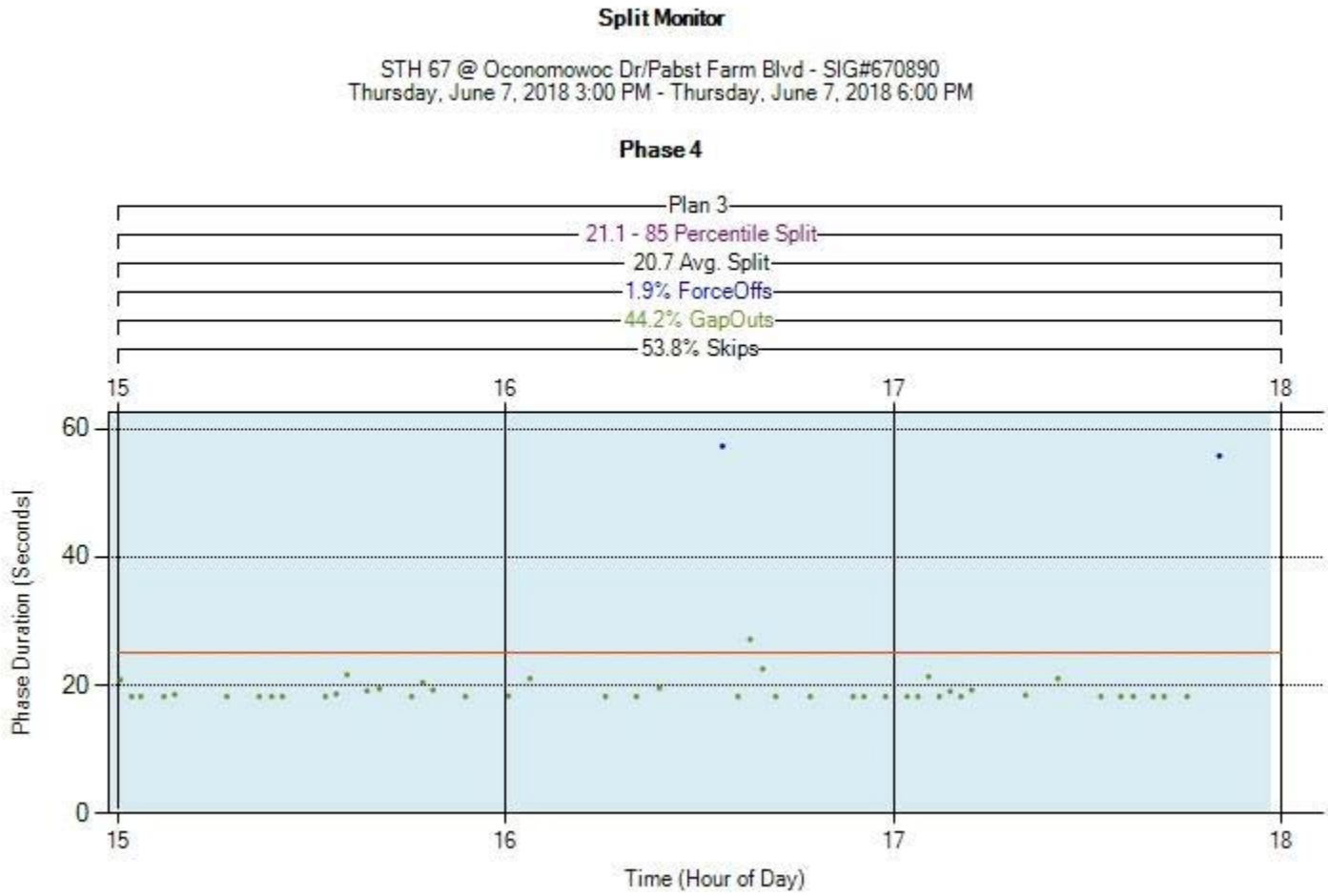
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Baseline Timings
6/7/2018 – 3:00 PM – 6:00 PM



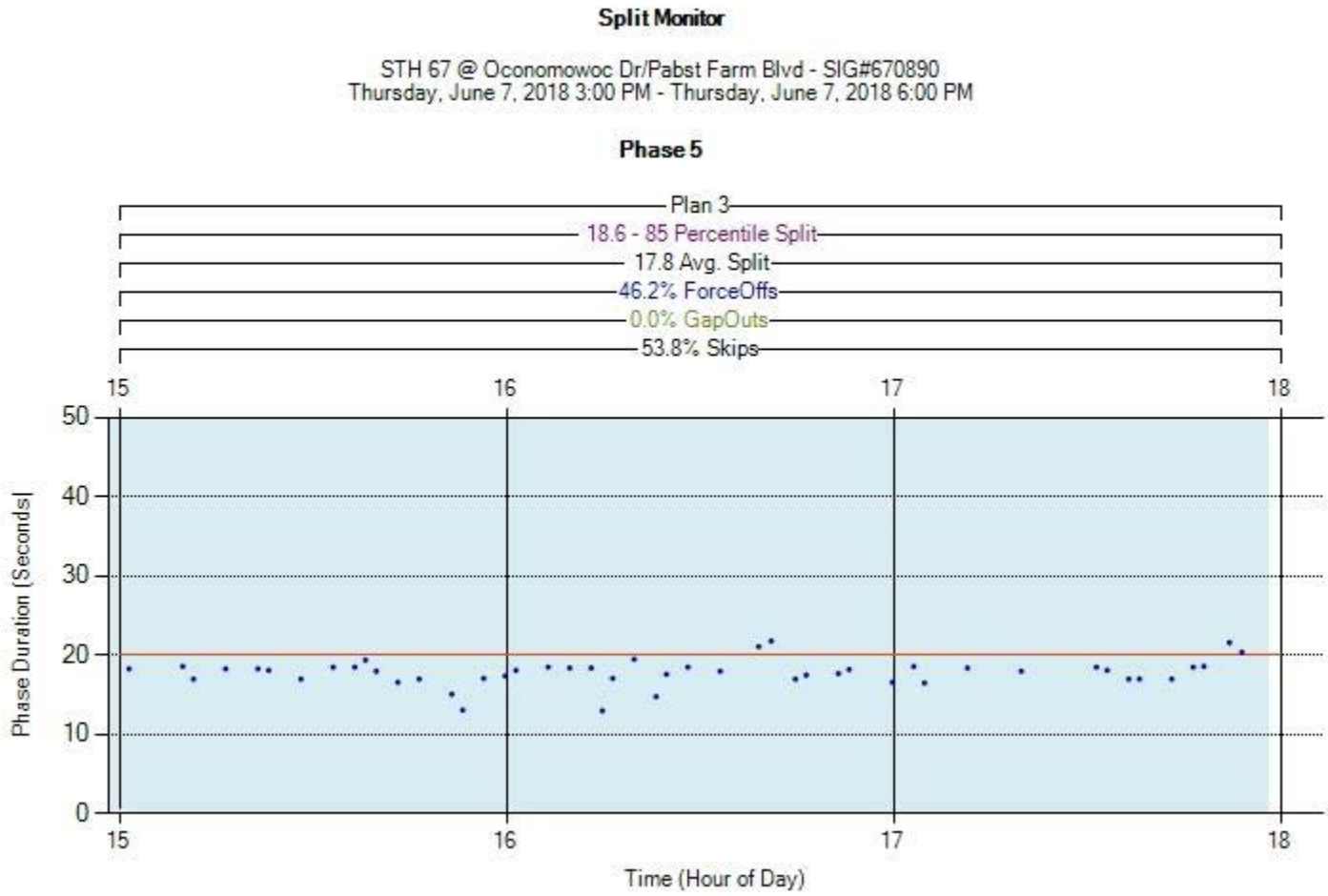
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Baseline Timings
6/7/2018 – 3:00 PM – 6:00 PM



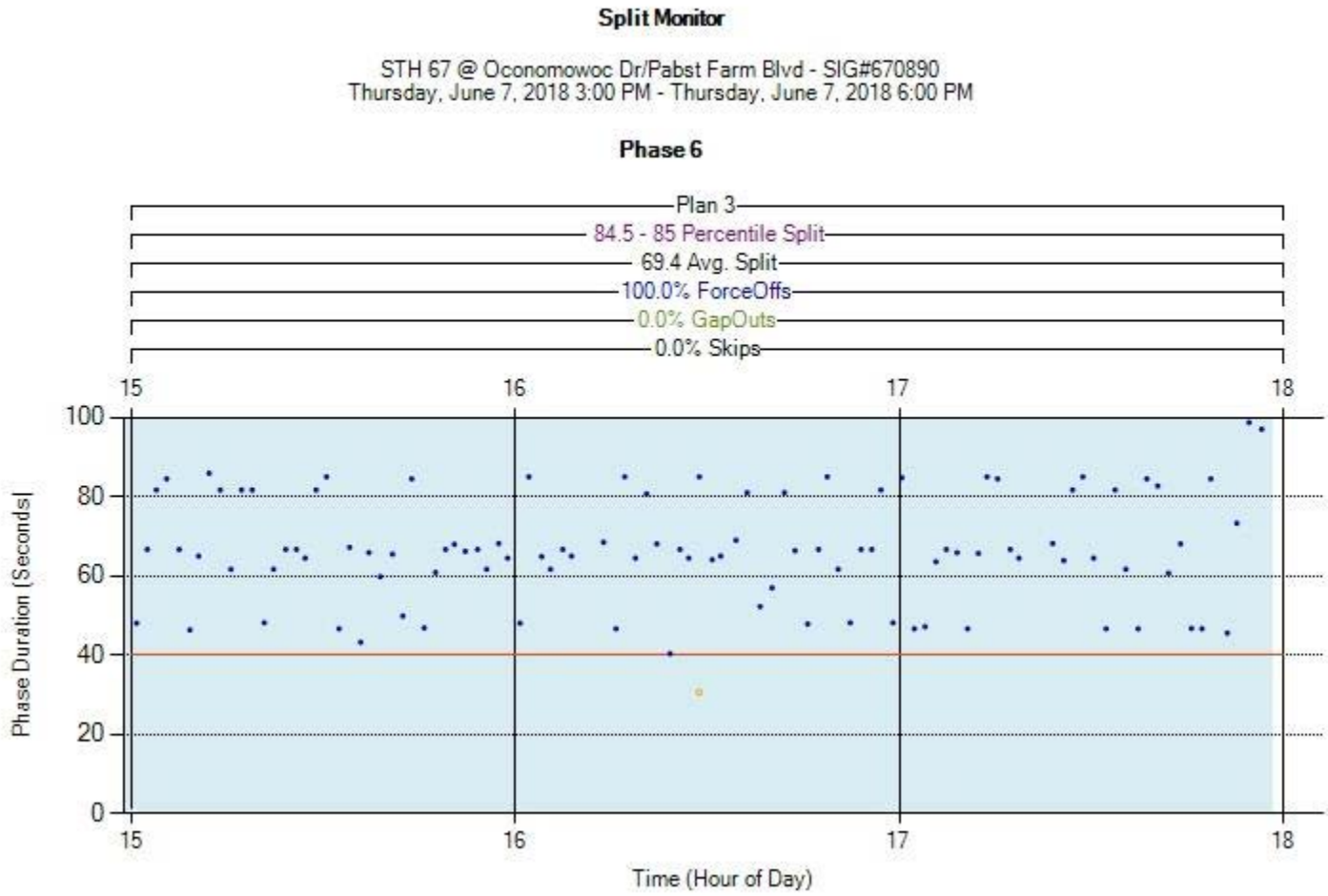
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Baseline Timings
6/7/2018 – 3:00 PM – 6:00 PM



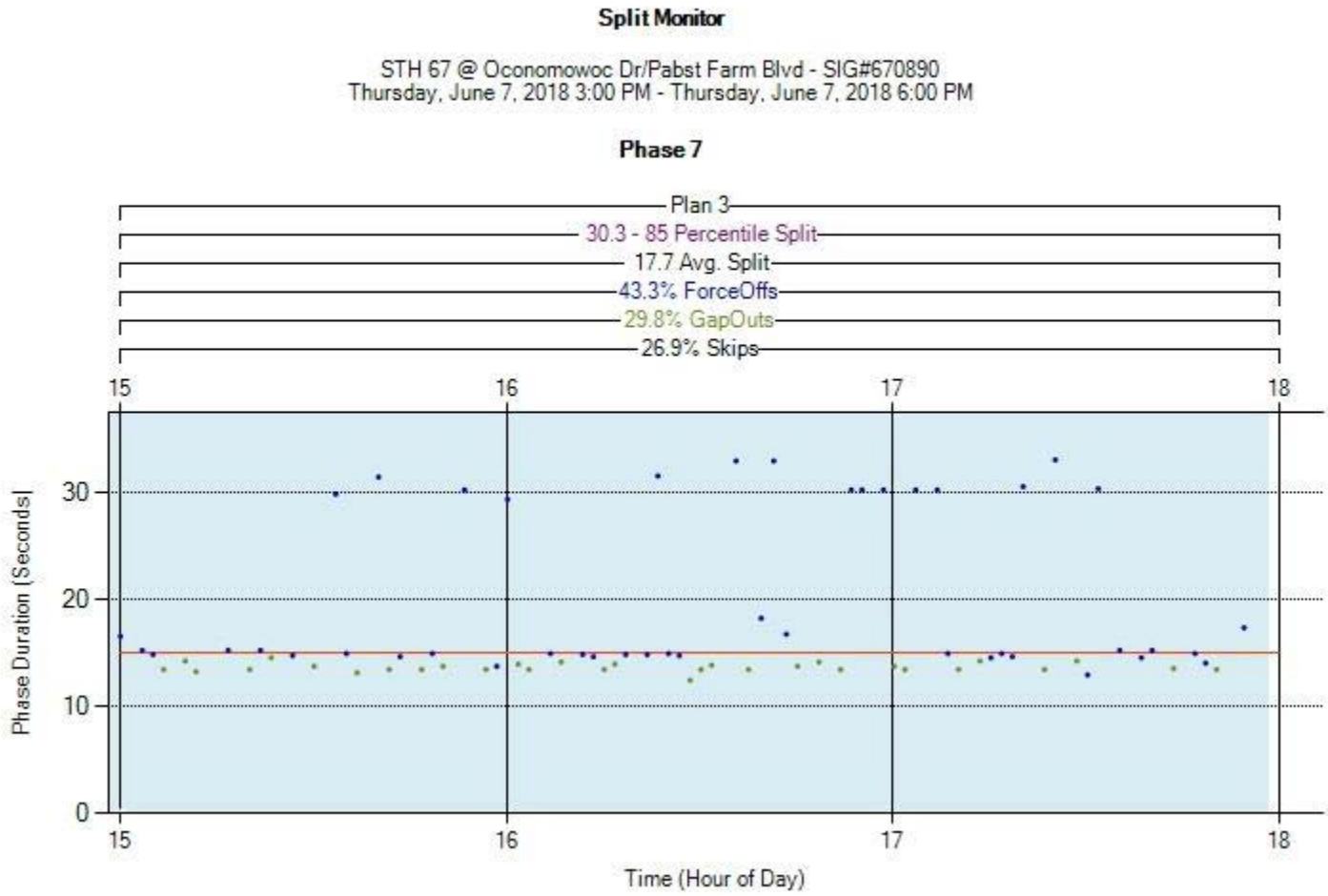
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Baseline Timings
6/7/2018 – 3:00 PM – 6:00 PM



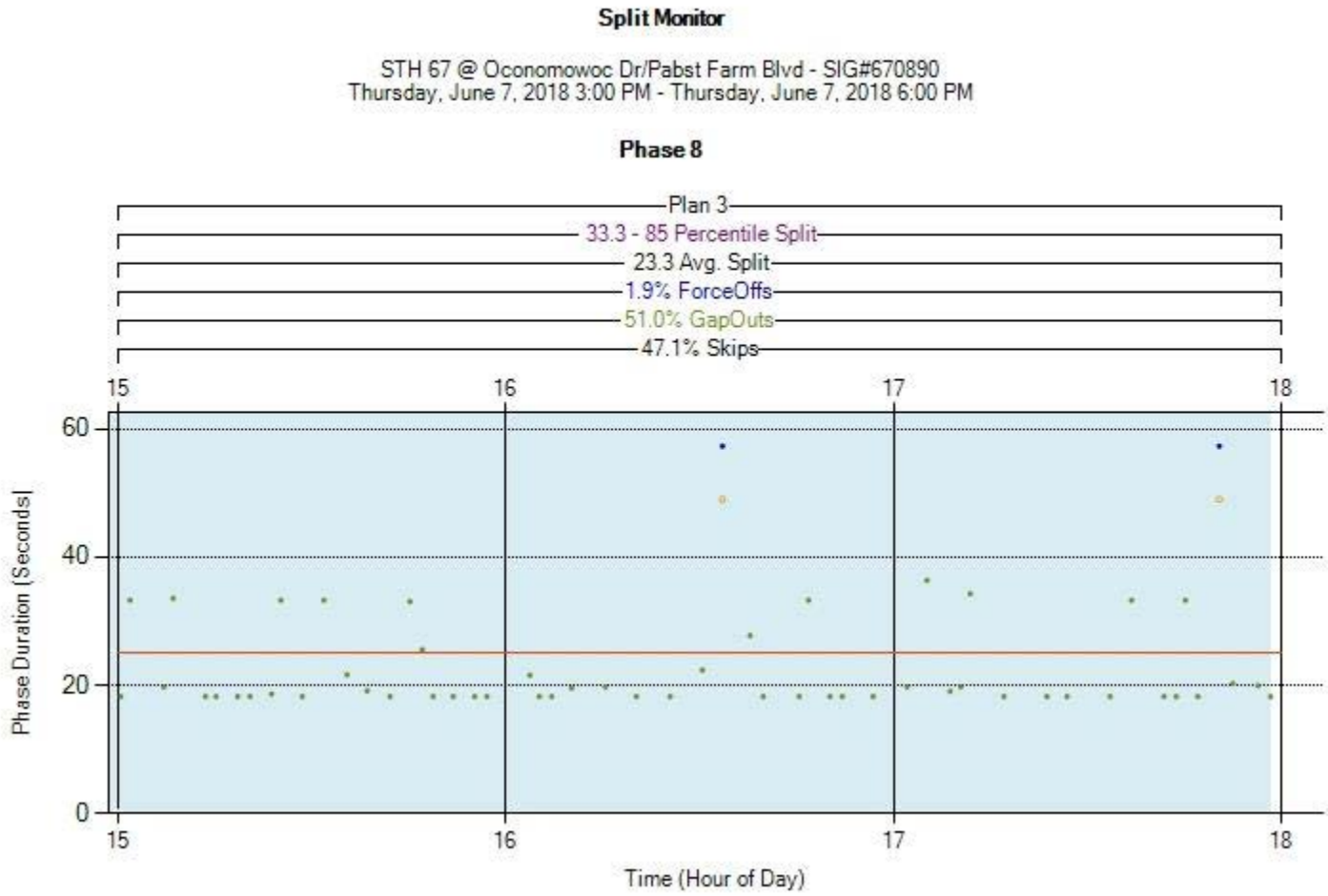
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Baseline Timings
6/7/2018 – 3:00 PM – 6:00 PM



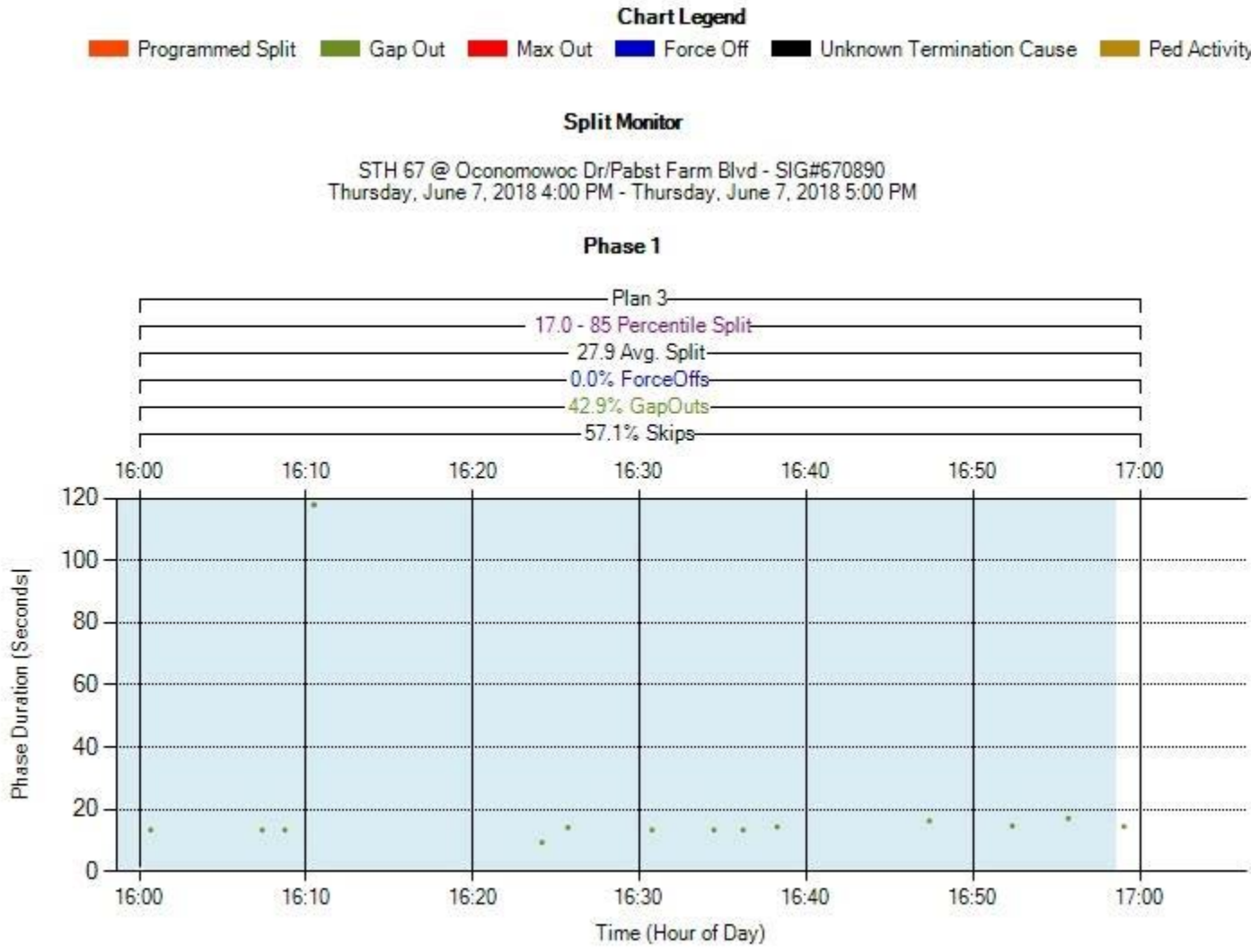
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Baseline Timings
6/7/2018 – 3:00 PM – 6:00 PM



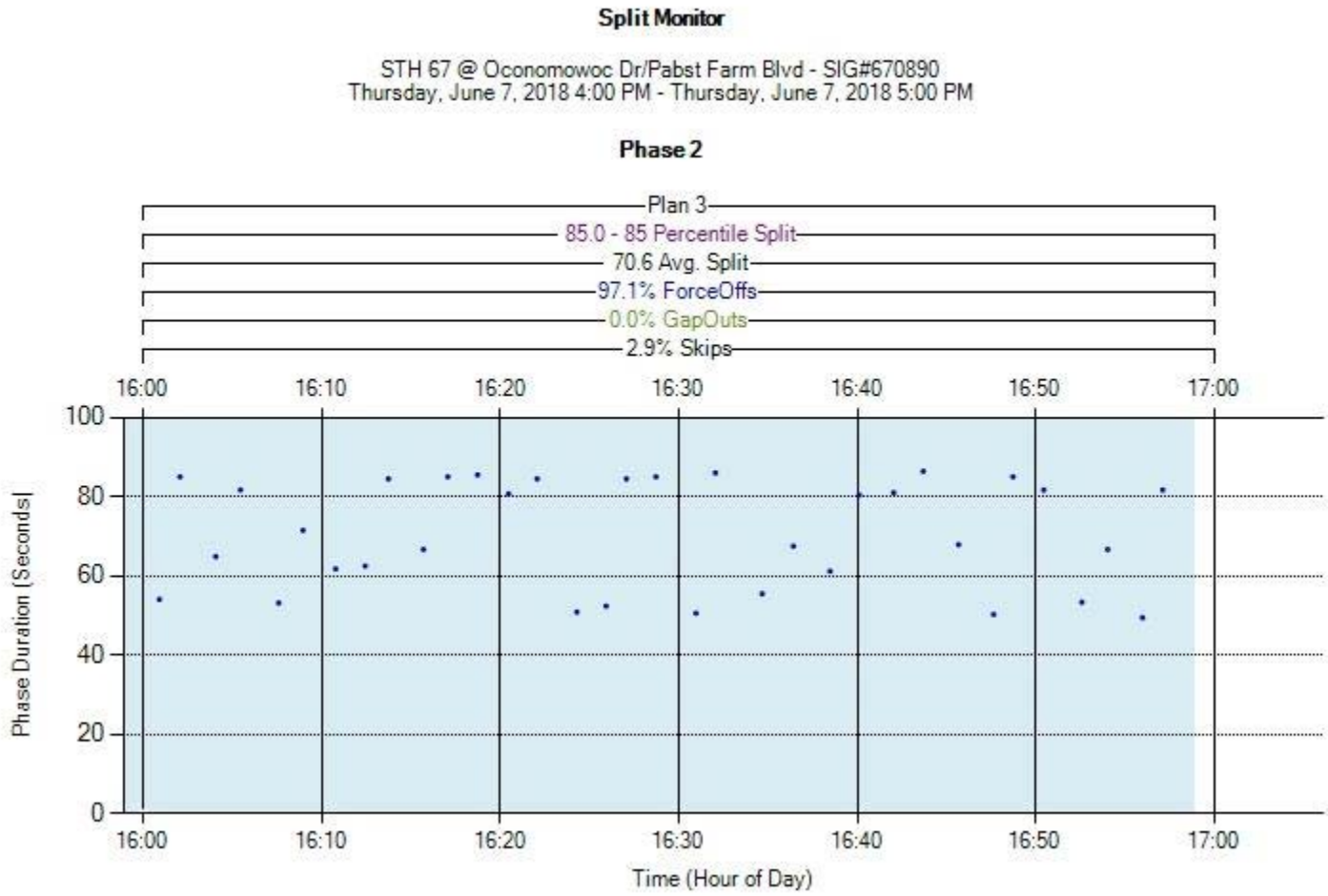
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Baseline Timings
6/7/2018 – 3:00 PM – 6:00 PM



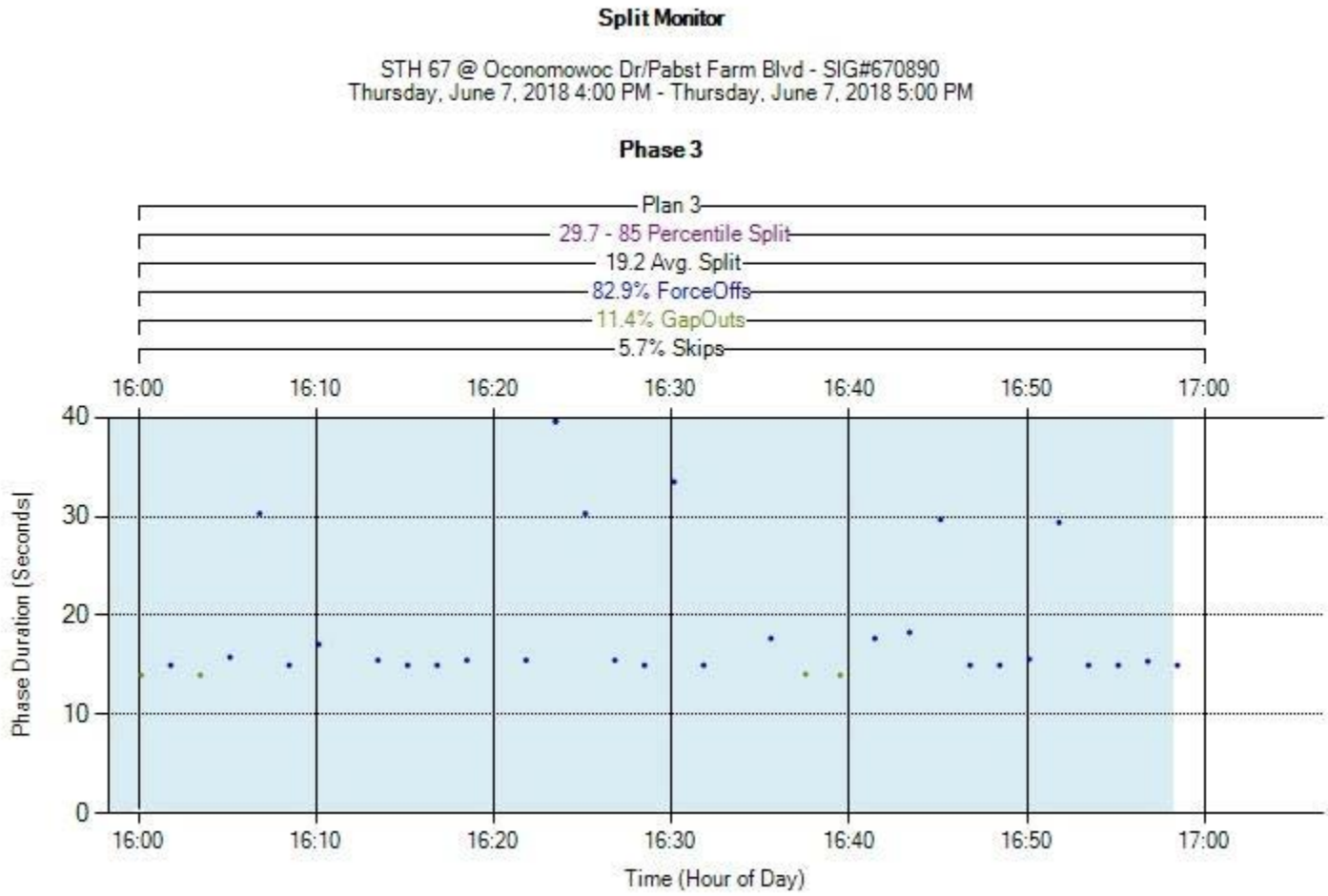
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Baseline Timings
6/7/2018 – 4:00 PM – 5:00 PM



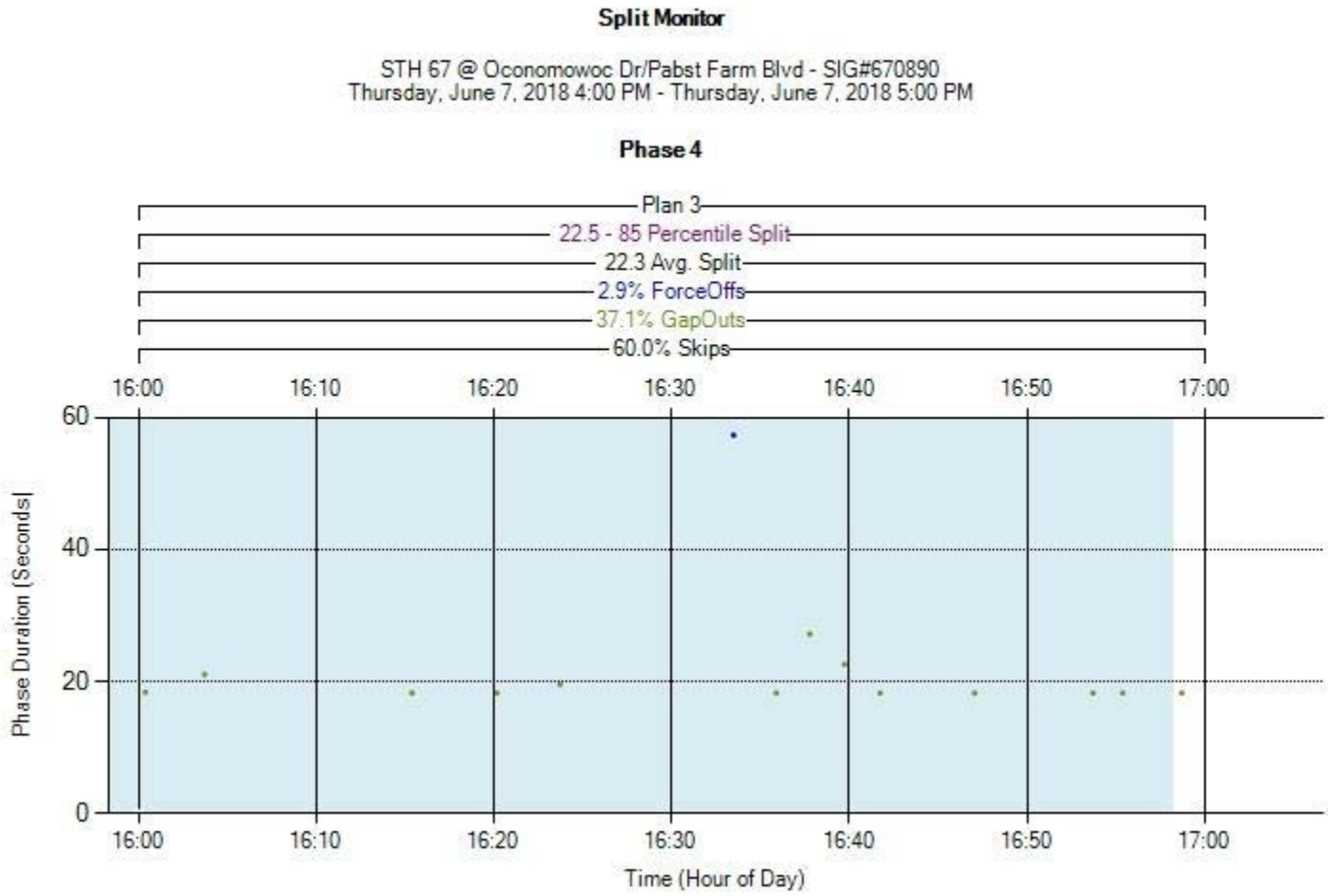
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Baseline Timings
6/7/2018 – 4:00 PM – 5:00 PM



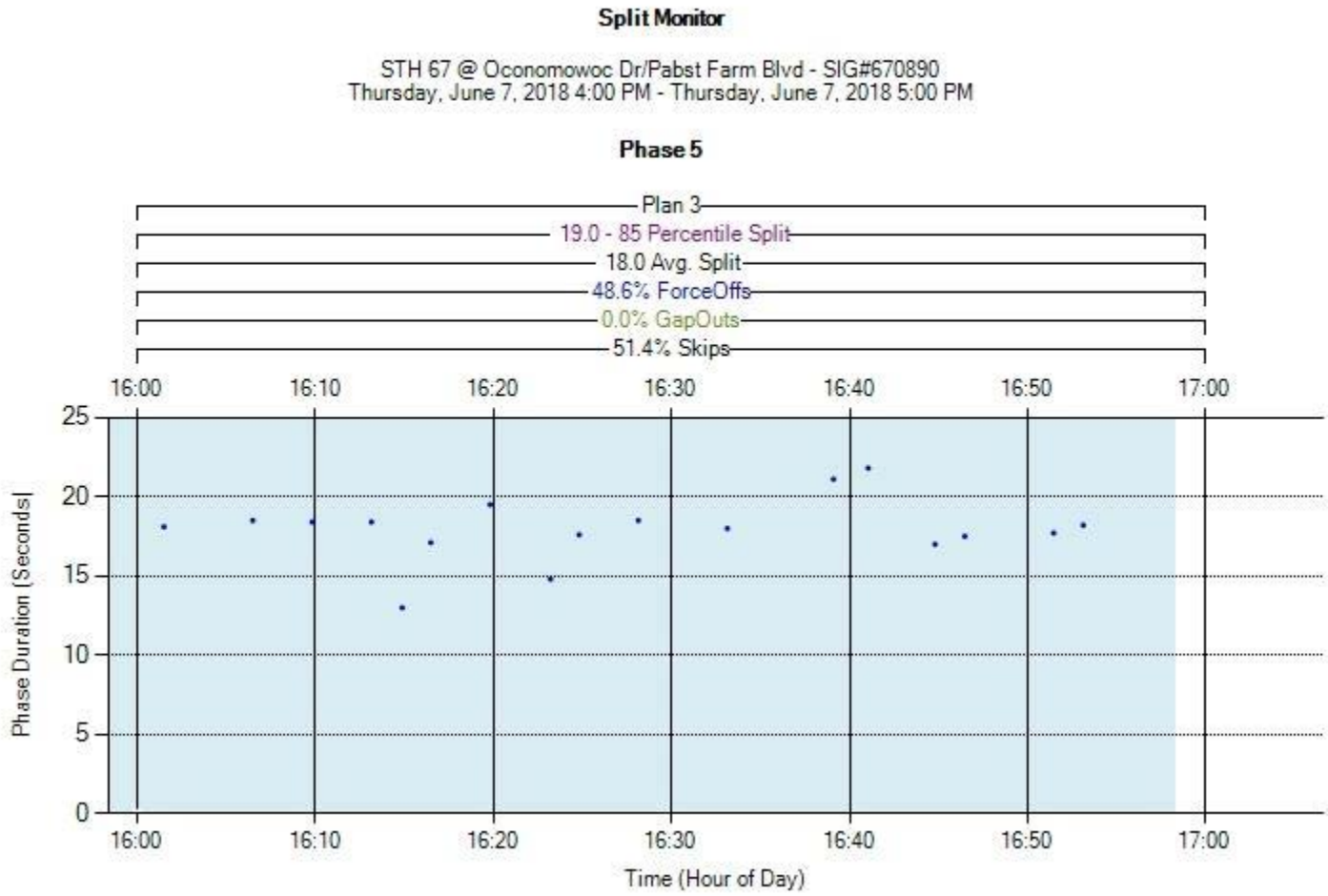
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Baseline Timings
6/7/2018 – 4:00 PM – 5:00 PM



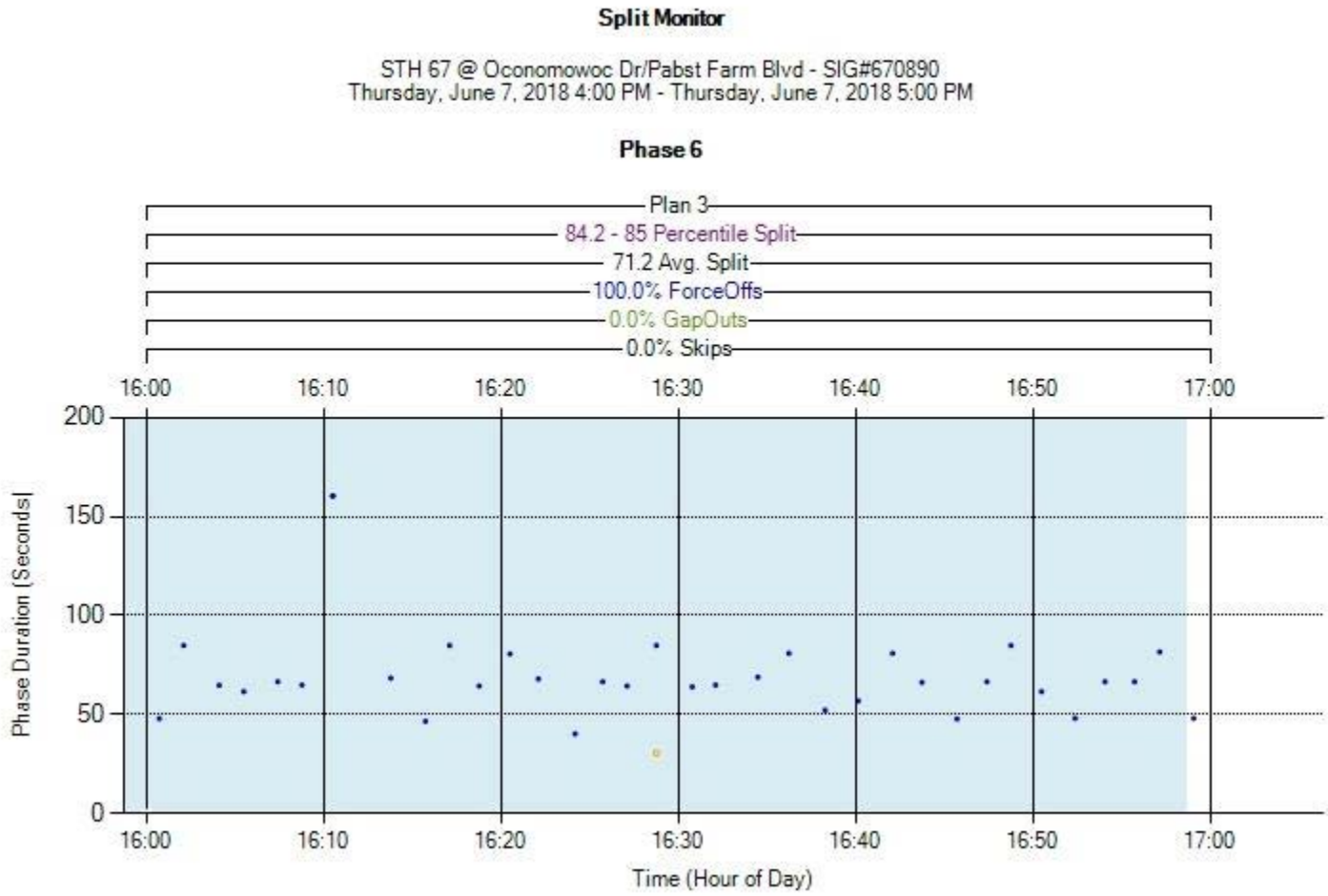
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Baseline Timings
6/7/2018 – 4:00 PM – 5:00 PM



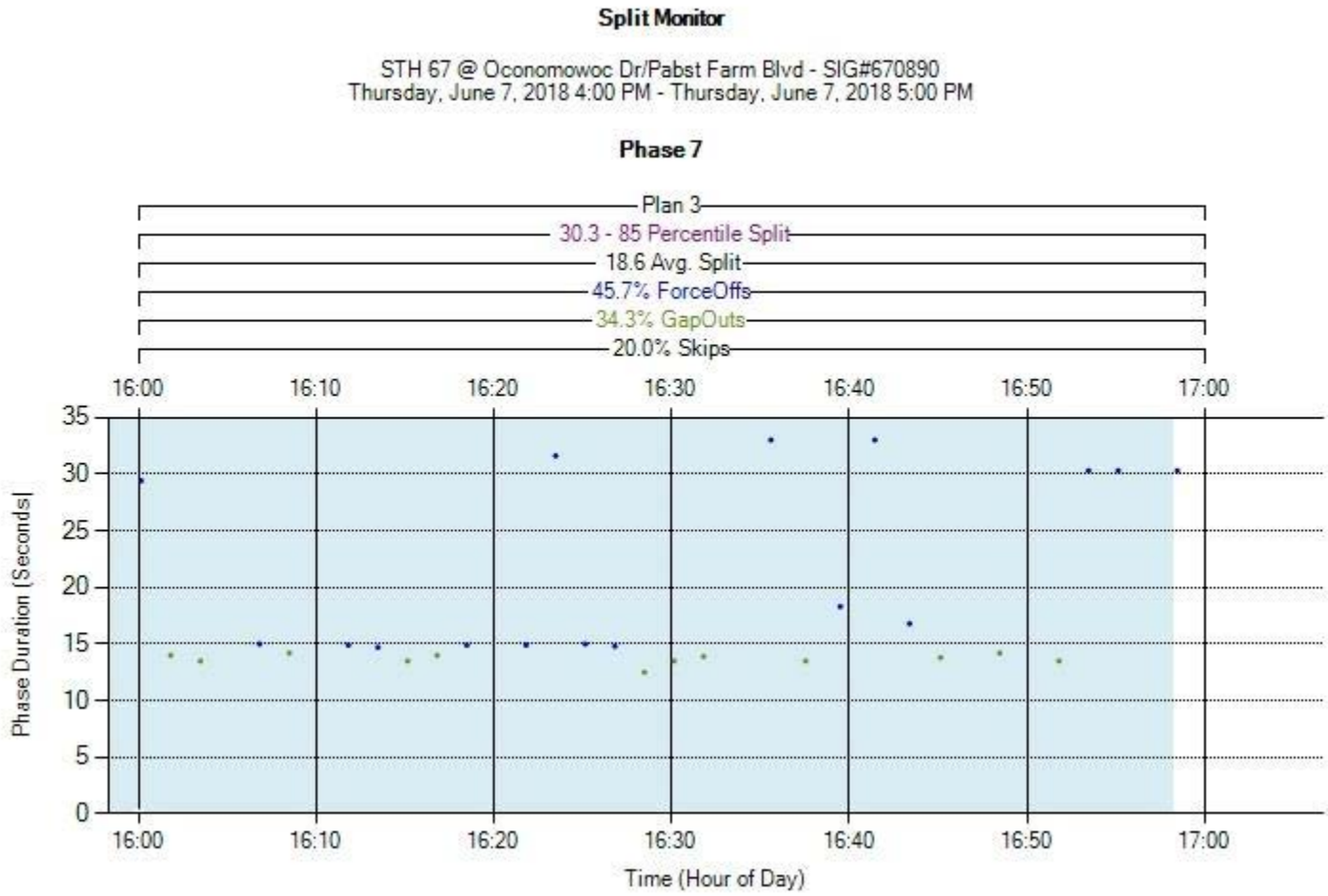
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Baseline Timings
6/7/2018 – 4:00 PM – 5:00 PM



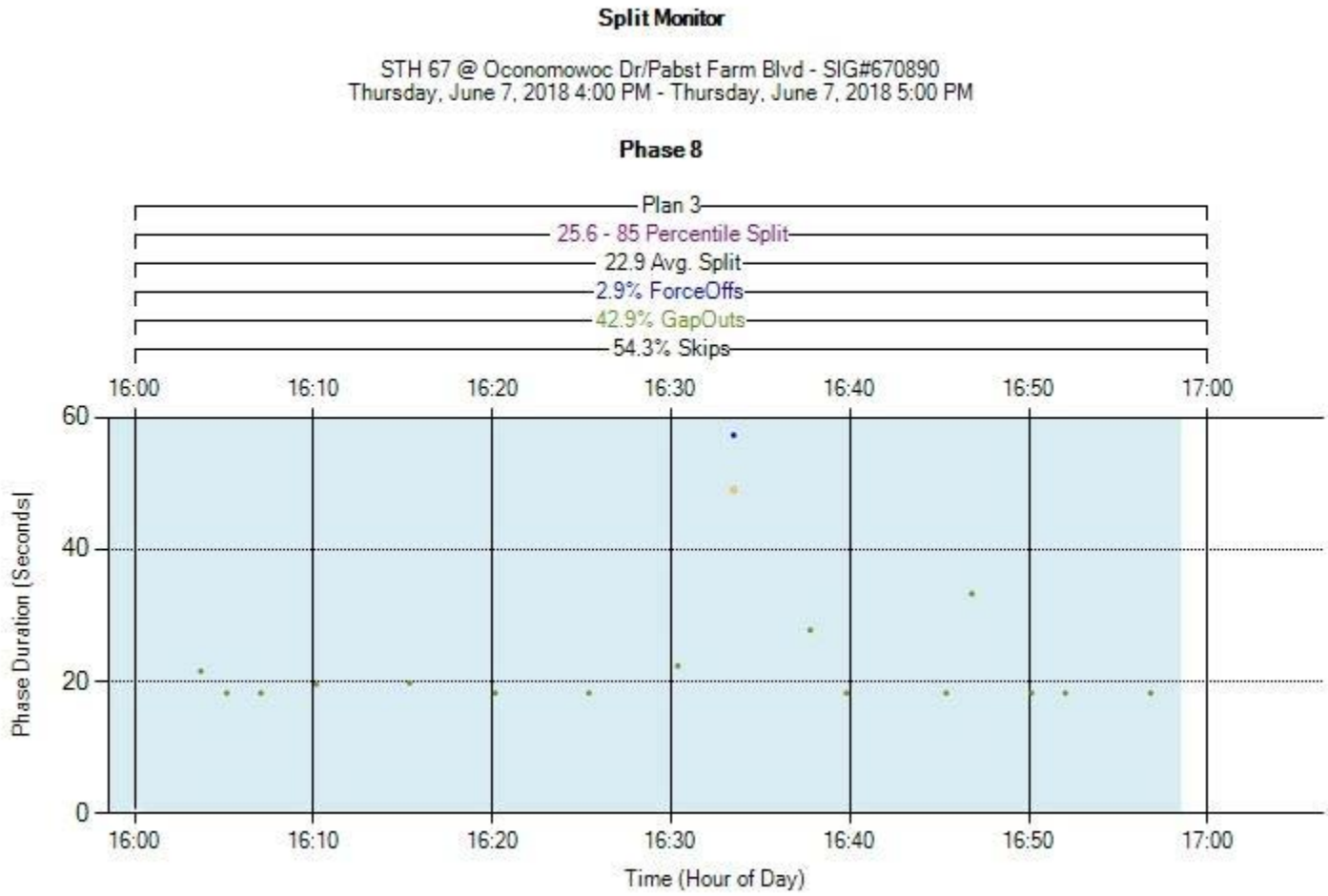
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Baseline Timings
6/7/2018 – 4:00 PM – 5:00 PM



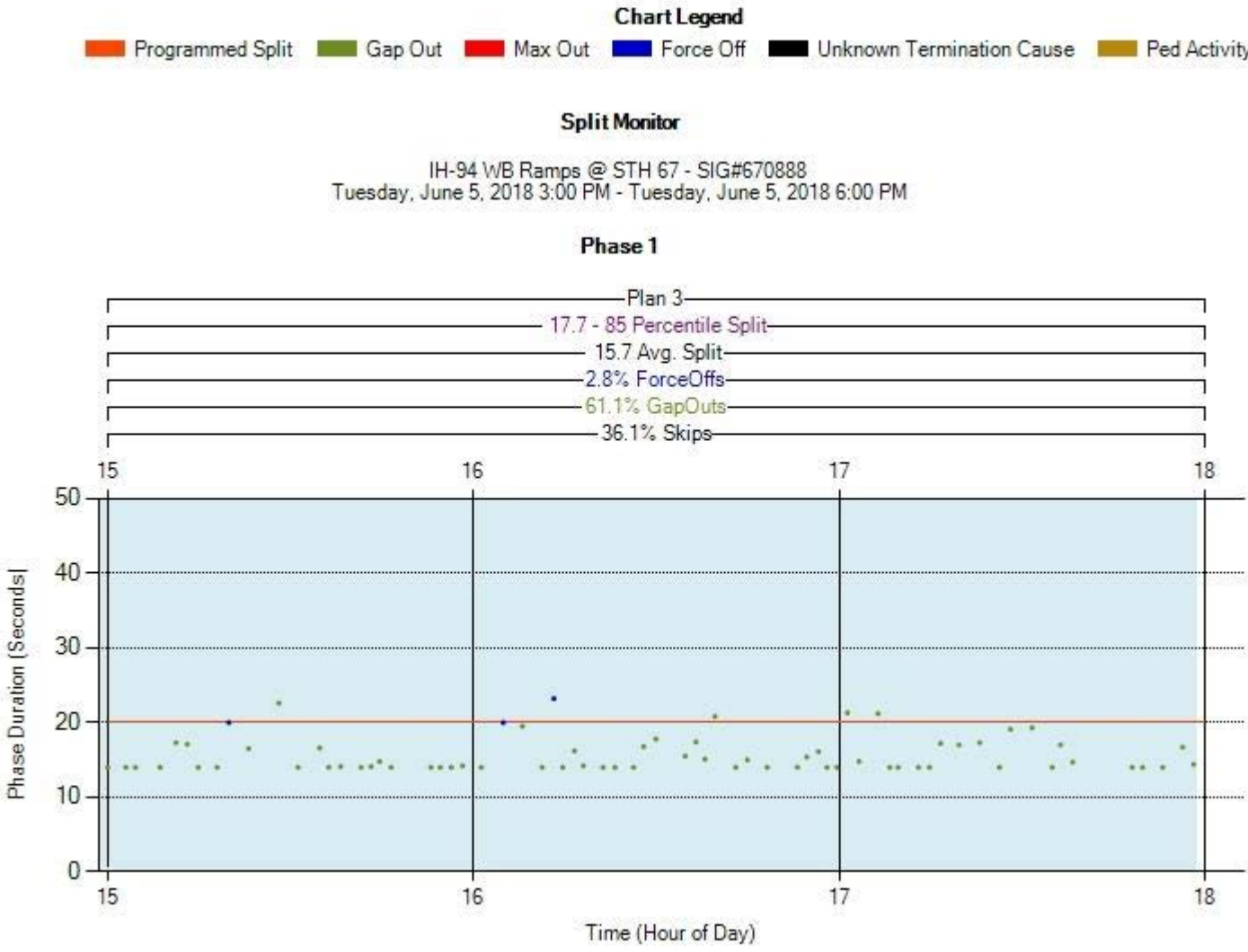
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Baseline Timings
6/7/2018 – 4:00 PM – 5:00 PM



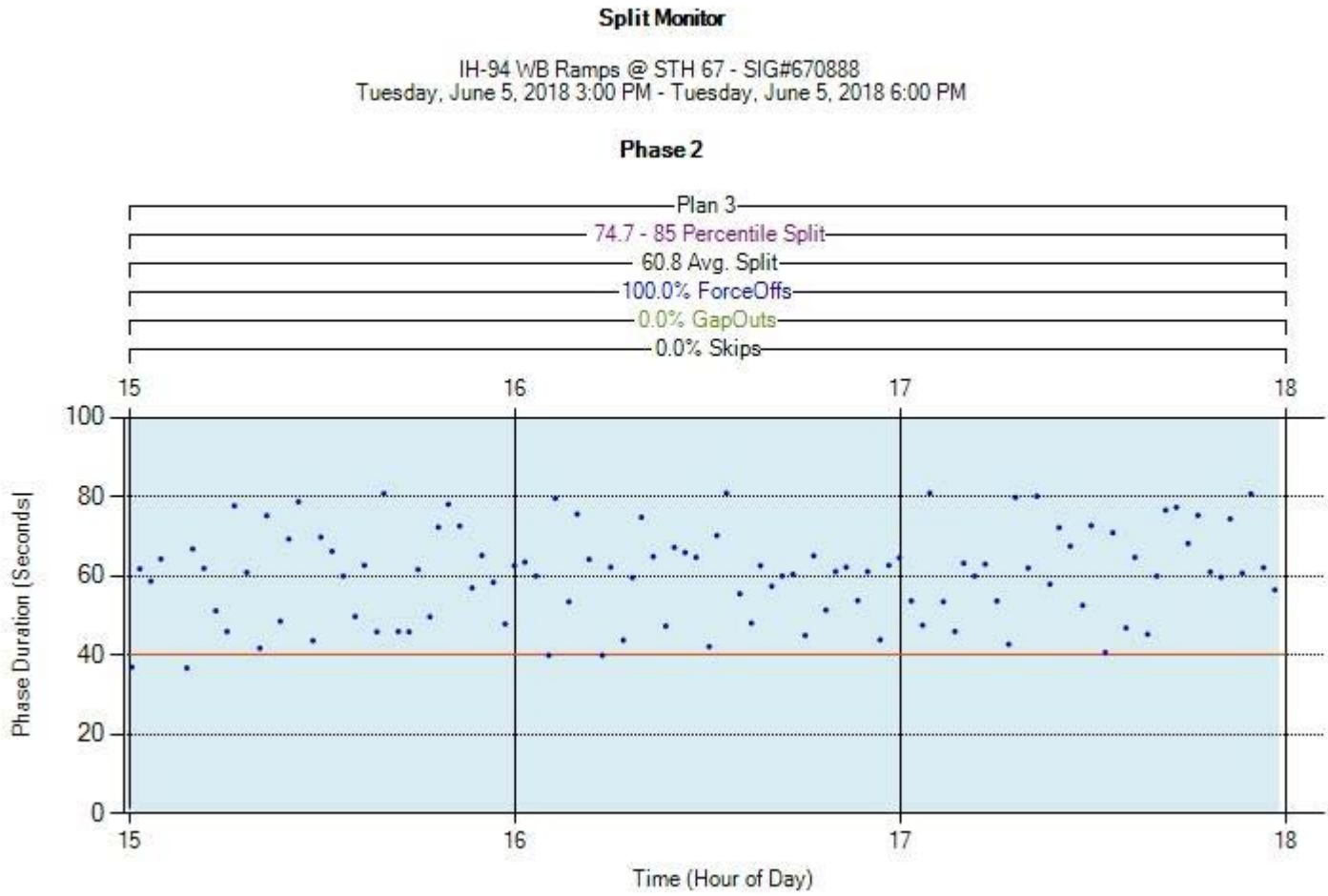
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Baseline Timings
6/7/2018 – 4:00 PM – 5:00 PM



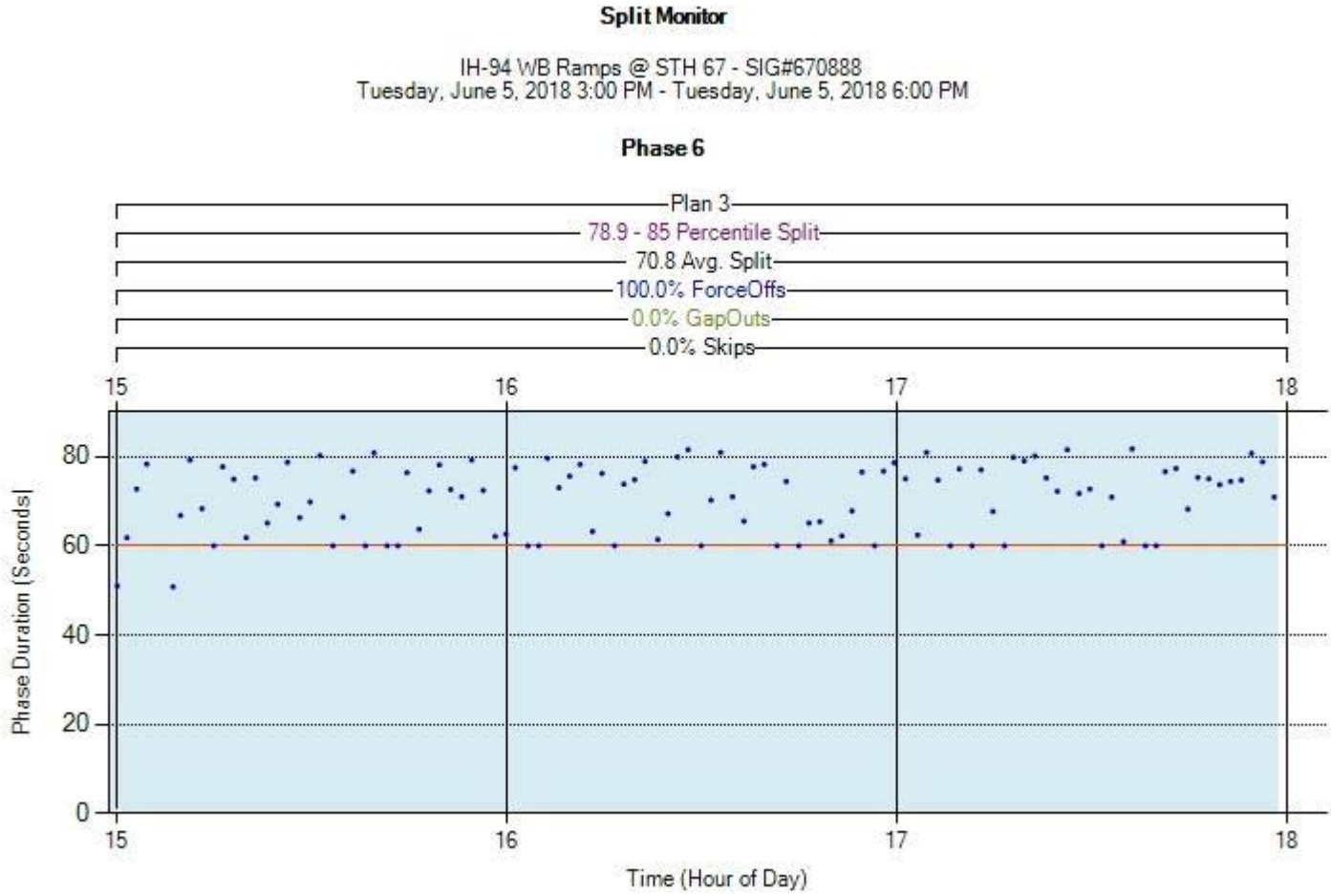
WIS 67 Corridor – STH 67 & I-94 WB Ramps
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



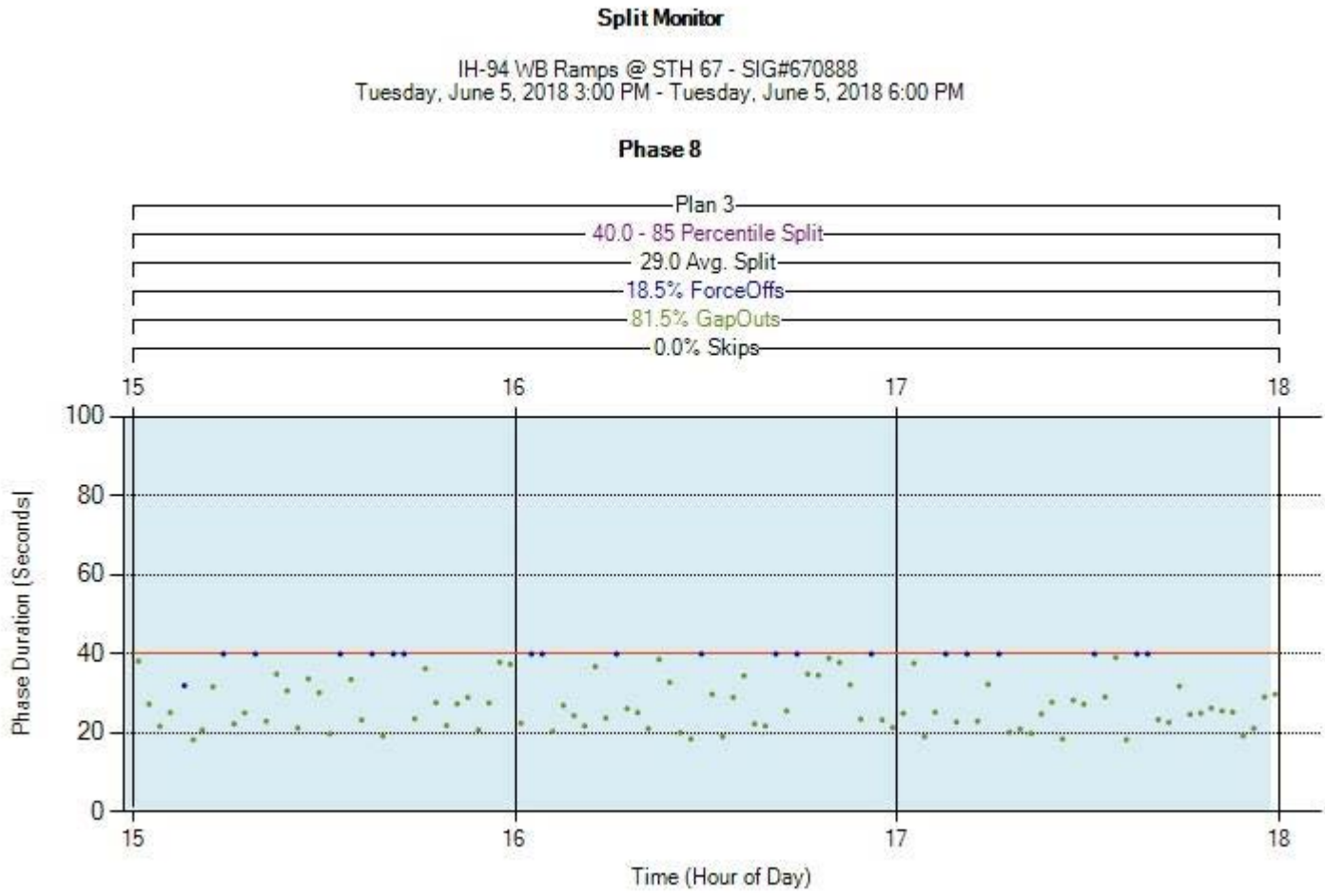
WIS 67 Corridor – STH 67 & I-94 WB Ramps
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



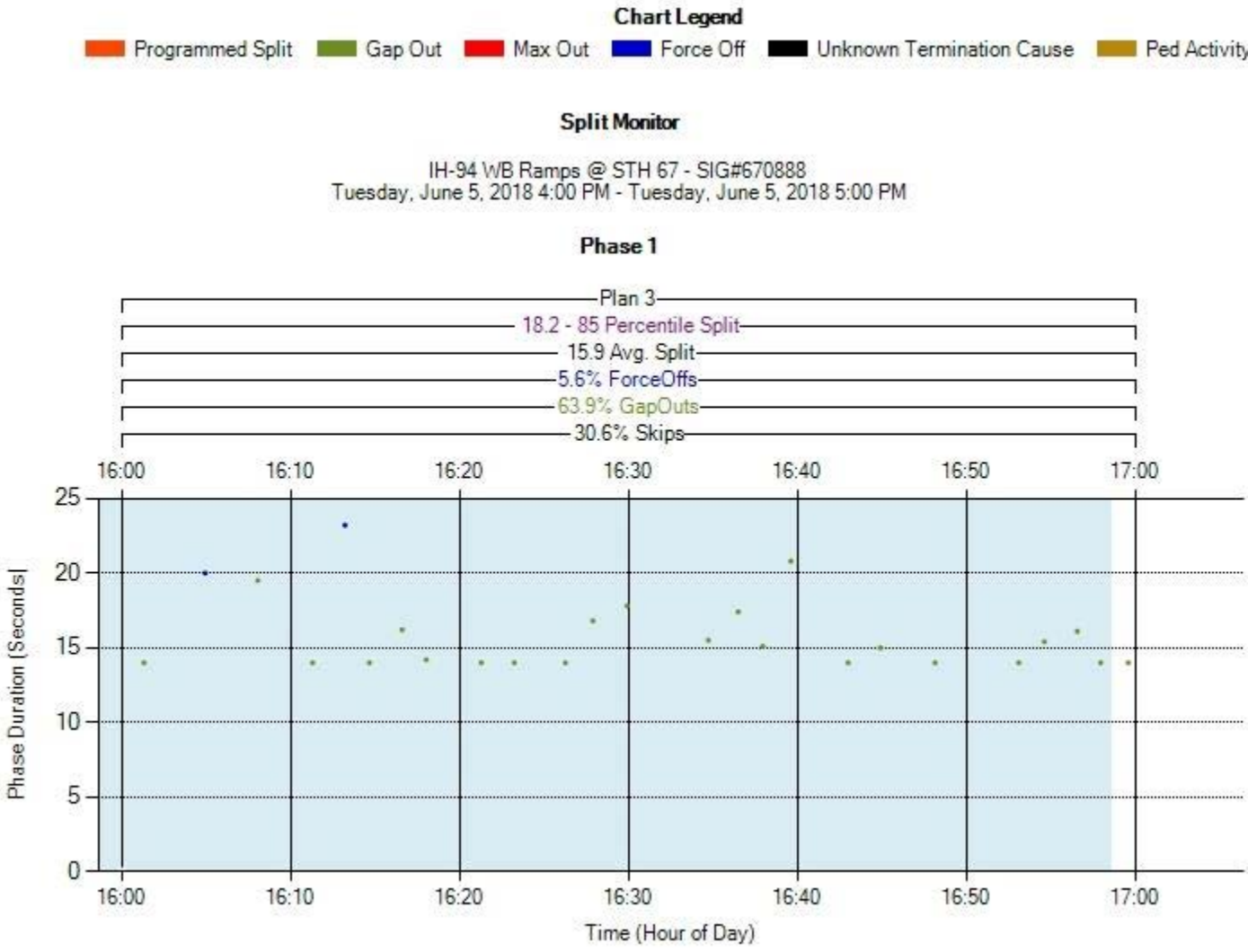
WIS 67 Corridor – STH 67 & I-94 WB Ramps
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



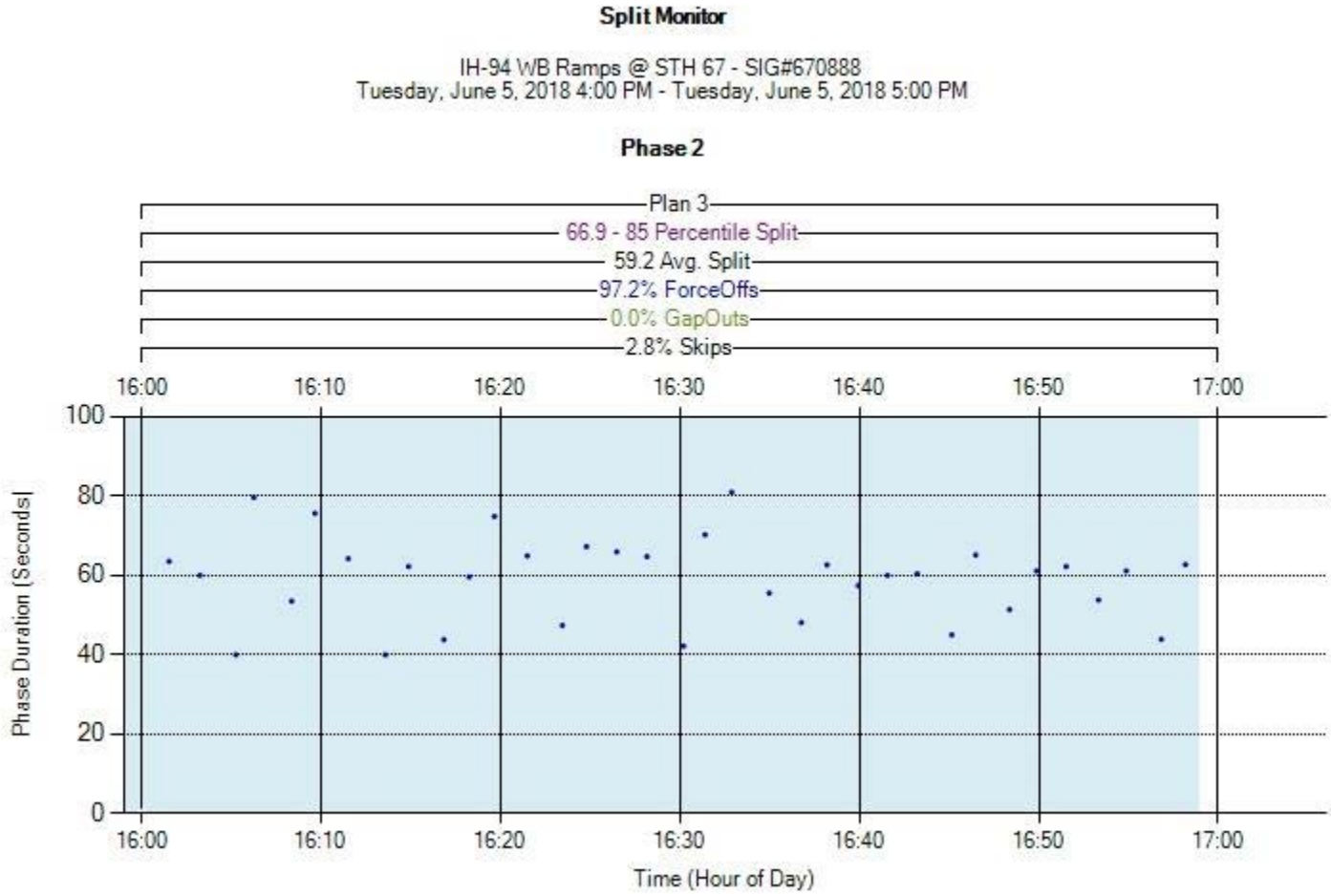
WIS 67 Corridor – STH 67 & I-94 WB Ramps
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



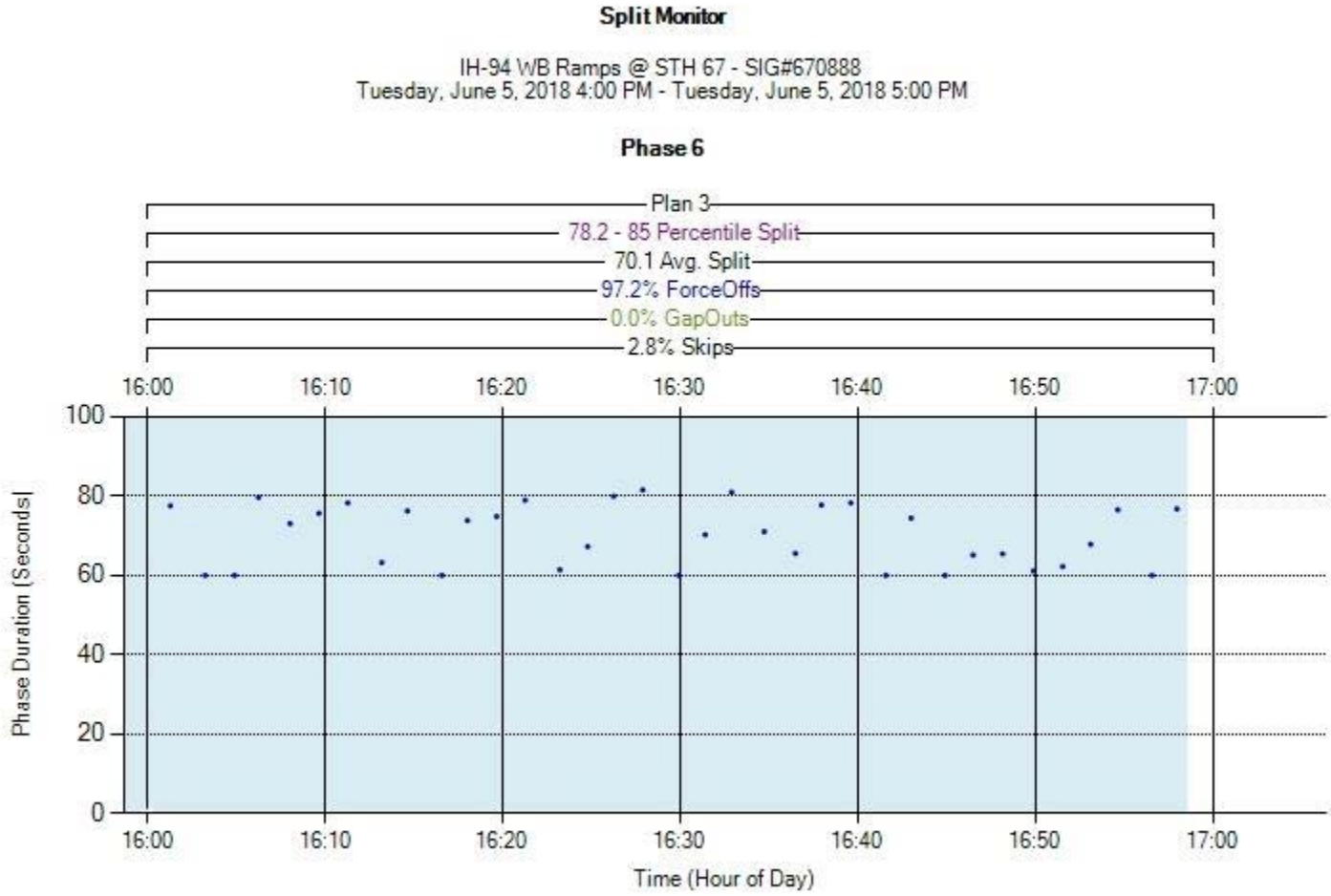
WIS 67 Corridor – STH 67 & I-94 WB Ramps
Baseline Timings
6/5/2018 – 4:00 PM – 5:00 PM



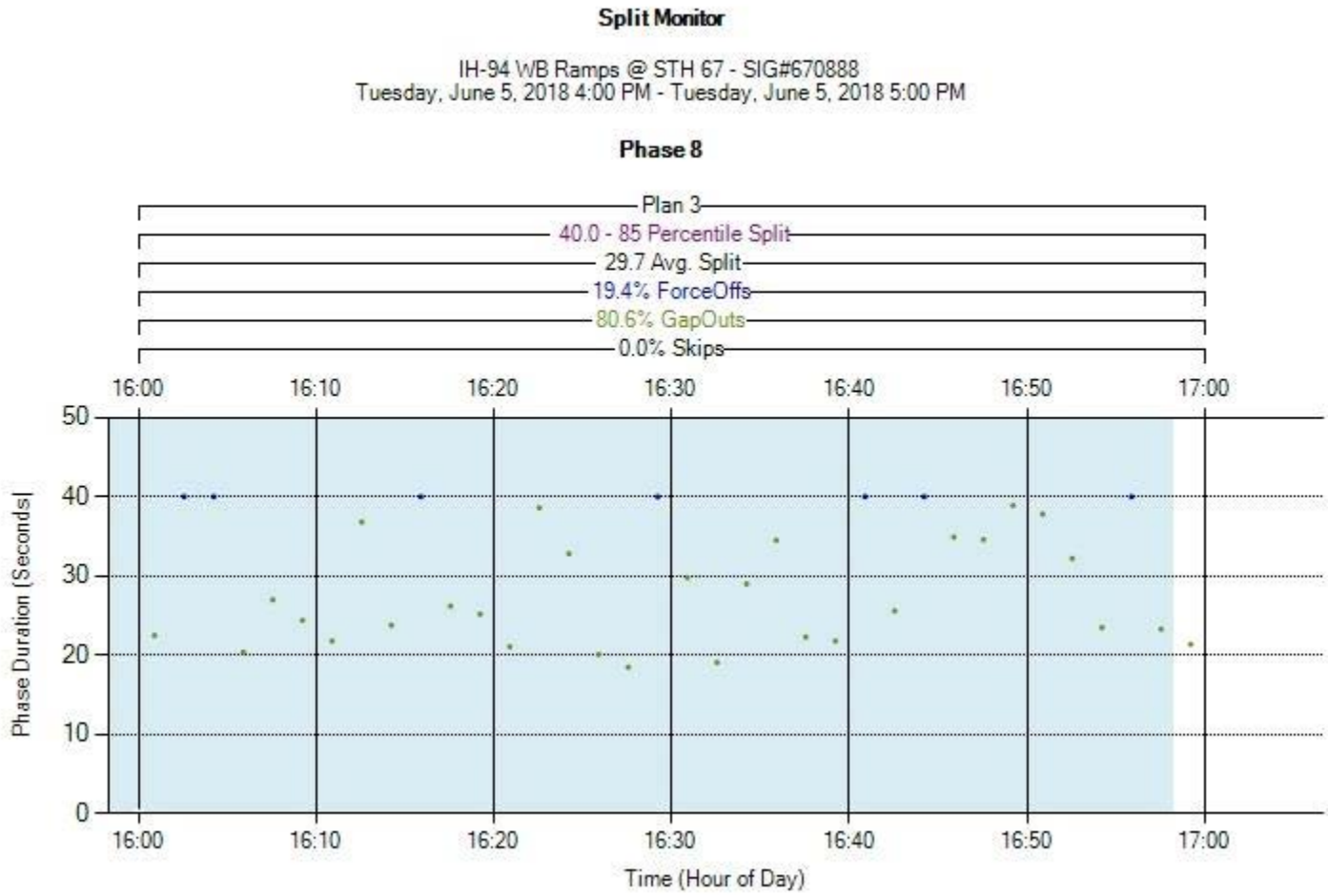
WIS 67 Corridor – STH 67 & I-94 WB Ramps
Baseline Timings
6/5/2018 – 4:00 PM – 5:00 PM



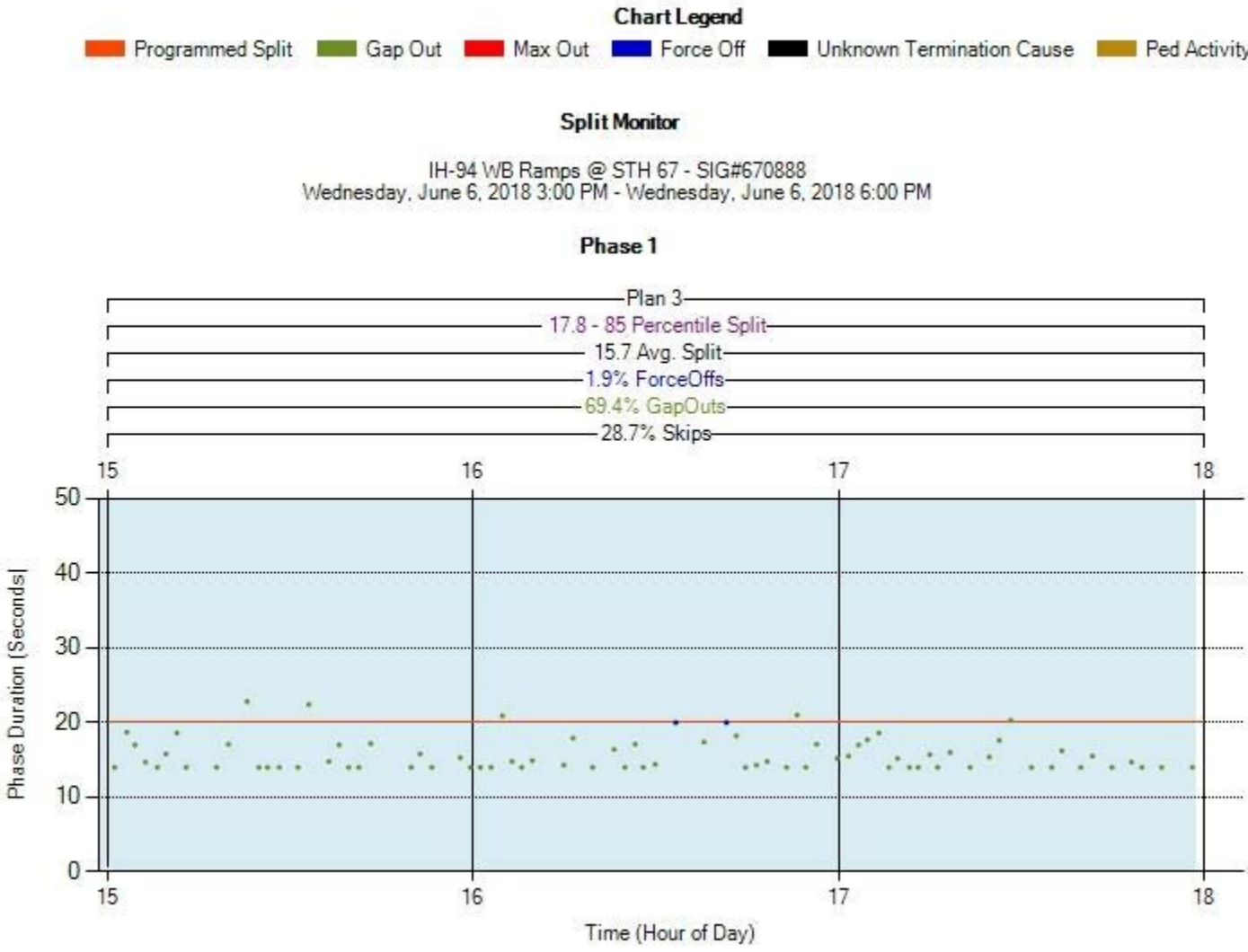
WIS 67 Corridor – STH 67 & I-94 WB Ramps
Baseline Timings
6/5/2018 – 4:00 PM – 5:00 PM



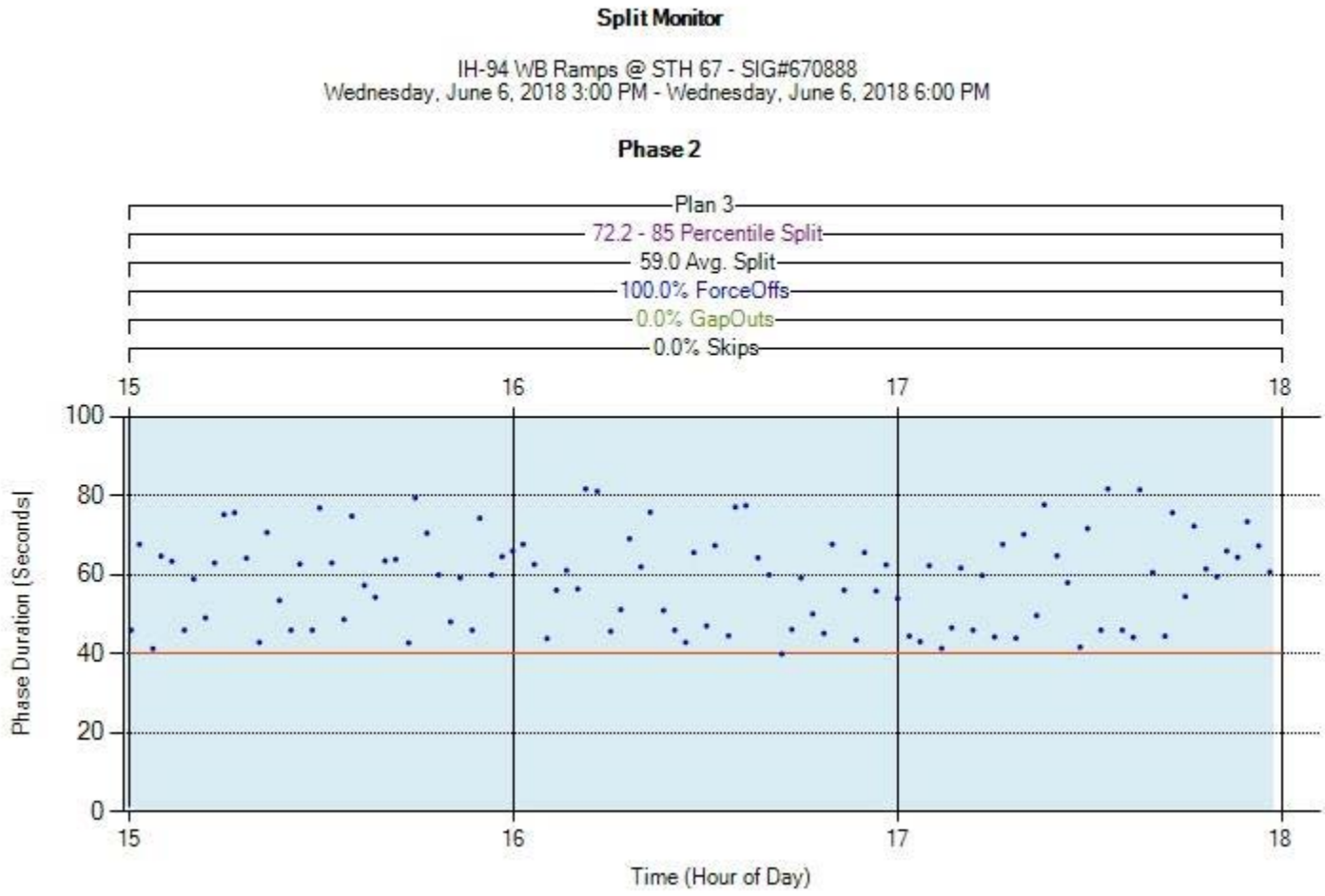
WIS 67 Corridor – STH 67 & I-94 WB Ramps
Baseline Timings
6/5/2018 – 4:00 PM – 5:00 PM



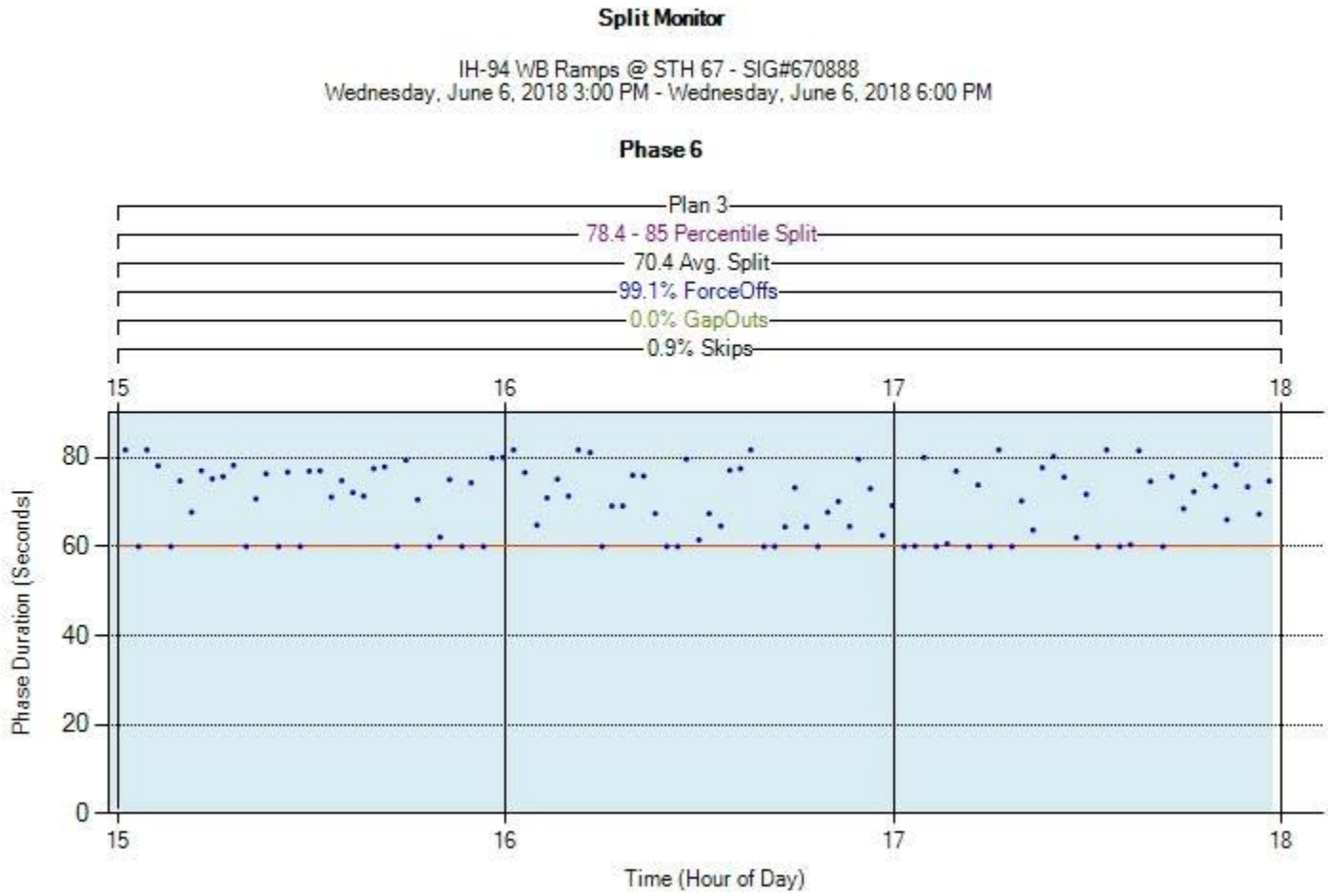
WIS 67 Corridor – STH 67 & I-94 WB Ramps
Baseline Timings
6/6/2018 – 3:00 PM – 6:00 PM



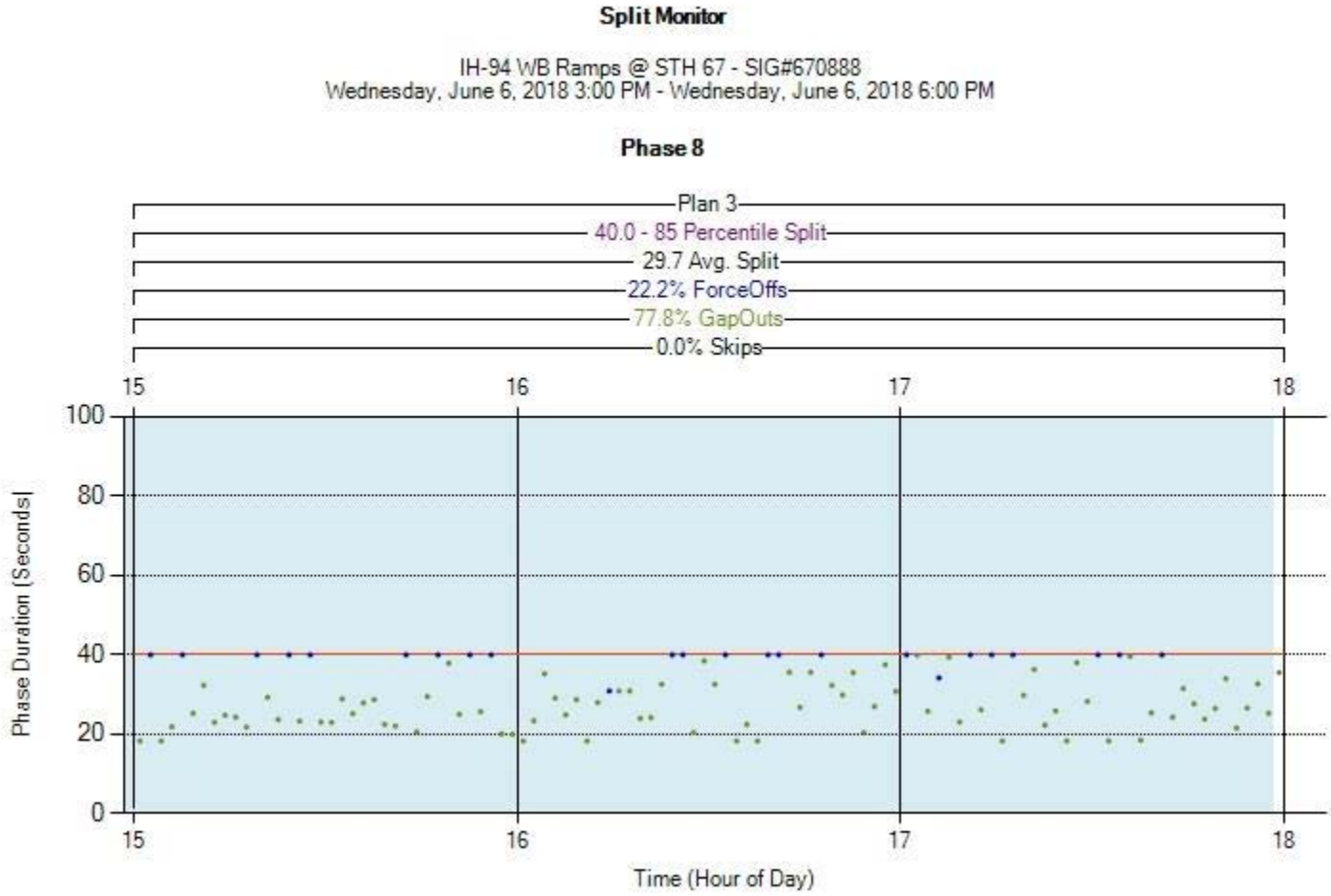
WIS 67 Corridor – STH 67 & I-94 WB Ramps
Baseline Timings
6/6/2018 – 3:00 PM – 6:00 PM



WIS 67 Corridor – STH 67 & I-94 WB Ramps
Baseline Timings
6/6/2018 – 3:00 PM – 6:00 PM



WIS 67 Corridor – STH 67 & I-94 WB Ramps
Baseline Timings
6/6/2018 – 3:00 PM – 6:00 PM



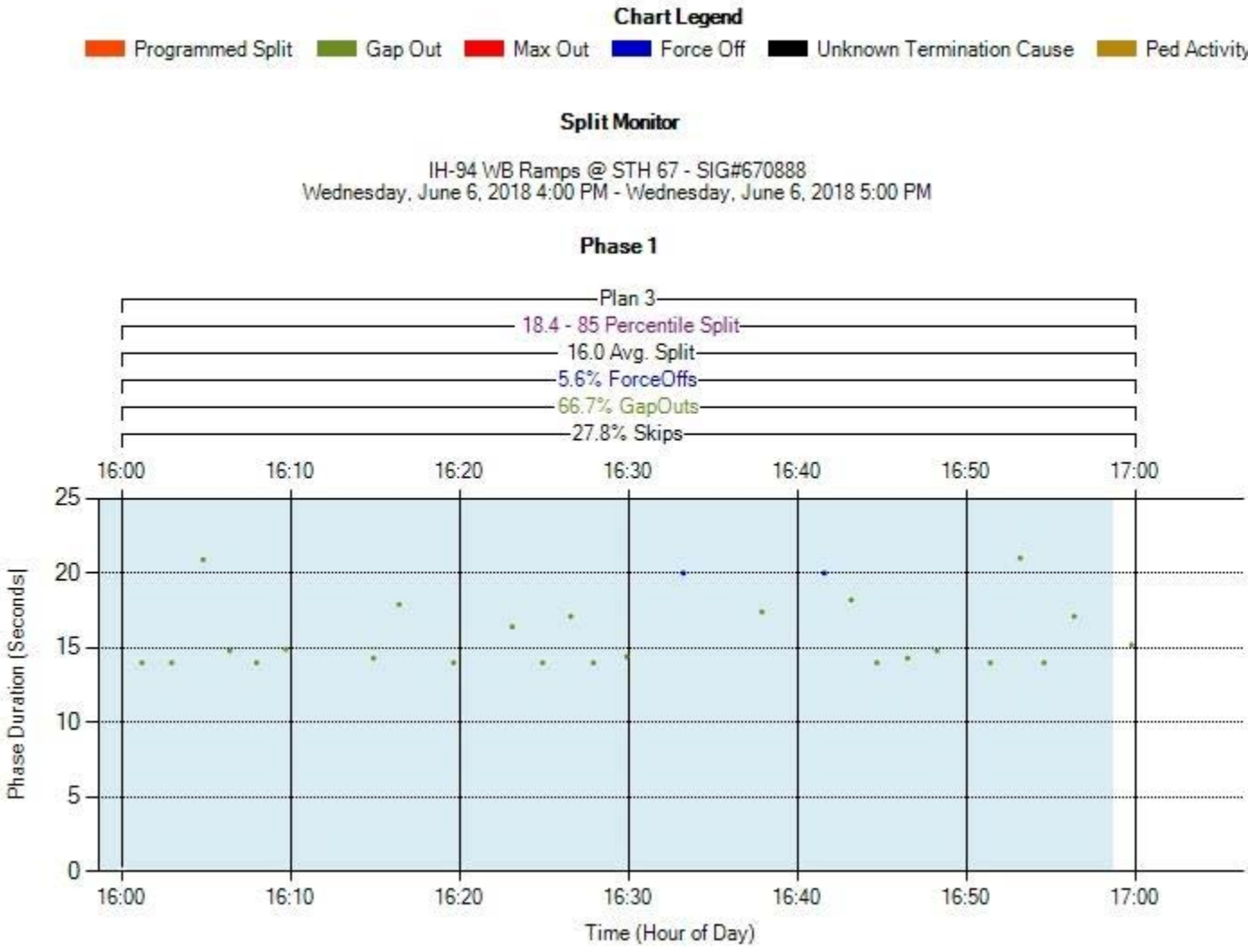
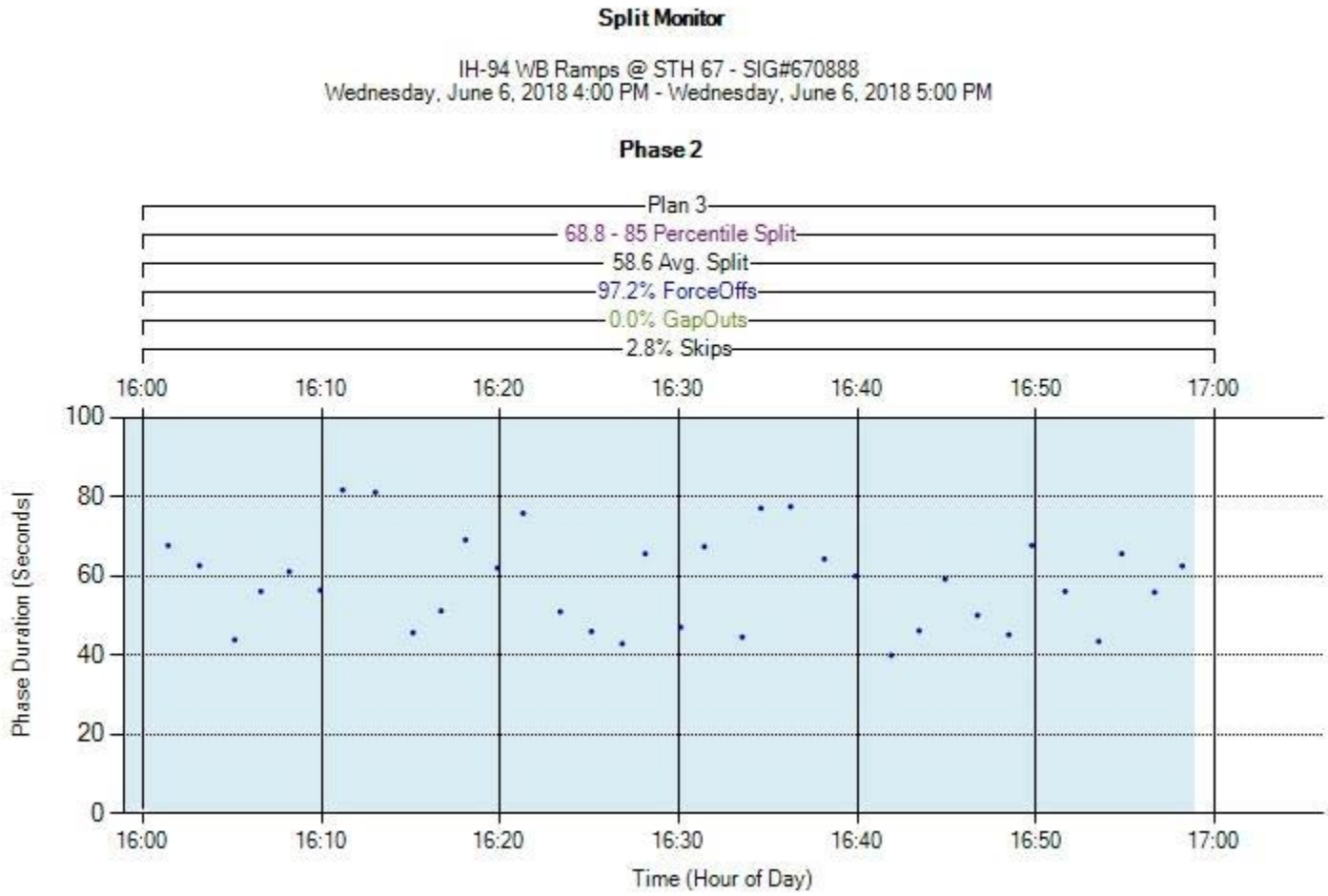
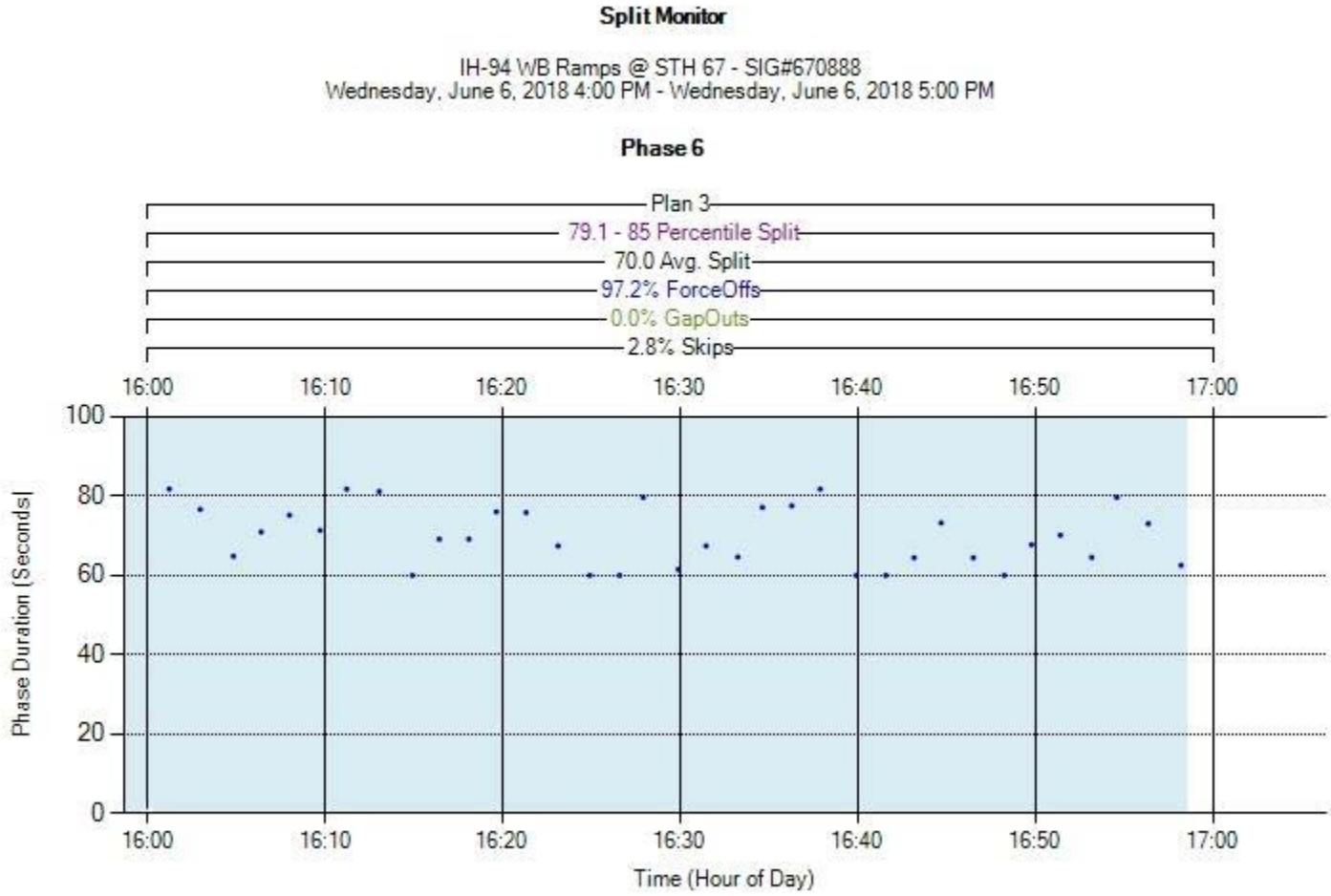


Chart Legend
Programmed Split
Gap Out
Max Out
Force Off
Unknown Termination Cause
Ped Activity
Split Monitor
IH-94 WB Ramps @ STH 67 - SIG#670888
Wednesday, June 6, 2018 4:00 PM - Wednesday, June 6, 2018 5:00 PM
Phase 1
Plan 3
18.4 - 85 Percentile Split
16.0 Avg. Split
5.6% ForceOffs
66.7% GapOuts
27.8% Skips
16:00
16:10
16:20
16:30
16:40
16:50
17:00
25
20
15
10
5
0
Phase Duration (Seconds)
Time (Hour of Day)

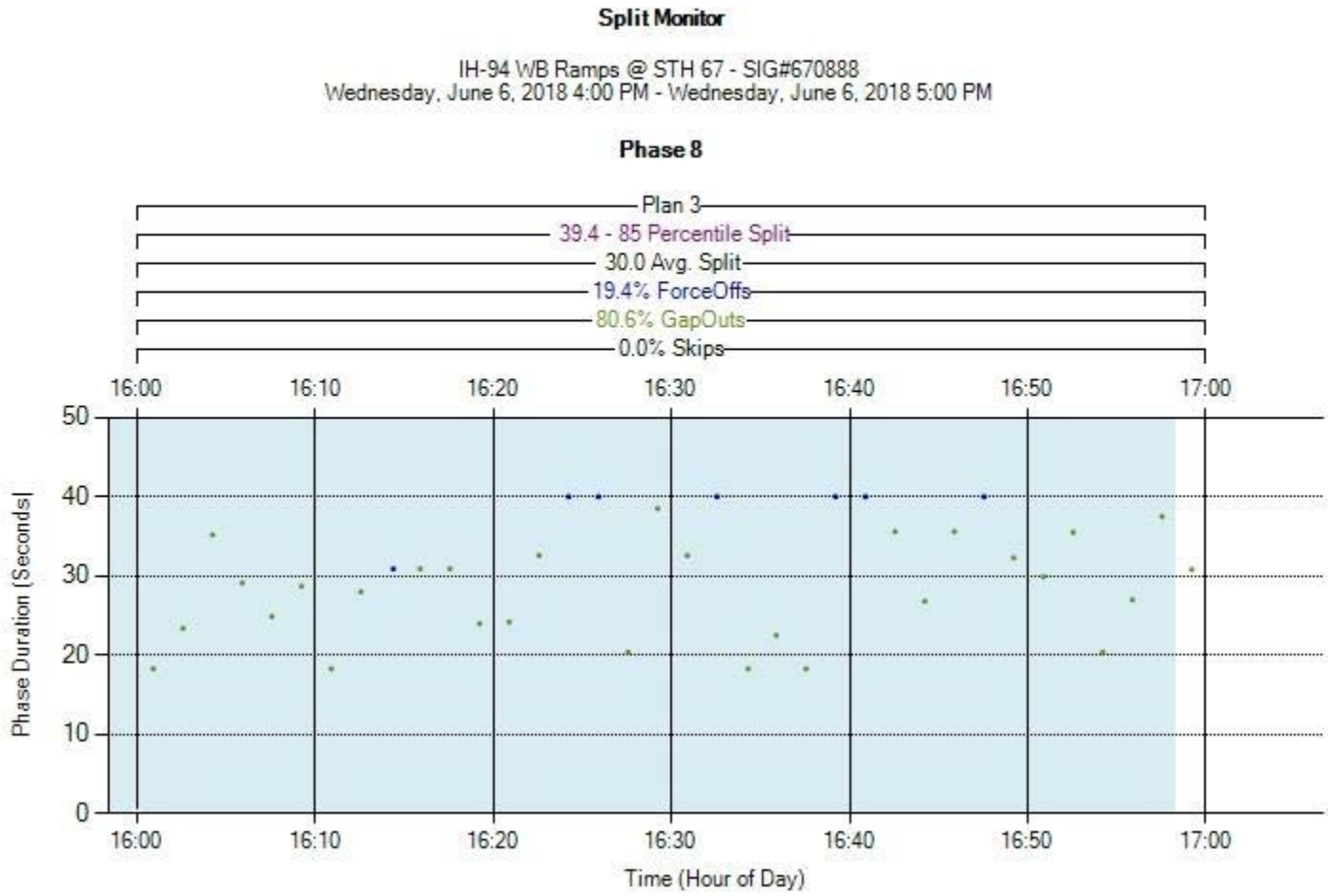
WIS 67 Corridor – STH 67 & I-94 WB Ramps
Baseline Timings
6/6/2018 – 4:00 PM – 5:00 PM



WIS 67 Corridor – STH 67 & I-94 WB Ramps
Baseline Timings
6/6/2018 – 4:00 PM – 5:00 PM



WIS 67 Corridor – STH 67 & I-94 WB Ramps
Baseline Timings
6/6/2018 – 4:00 PM – 5:00 PM



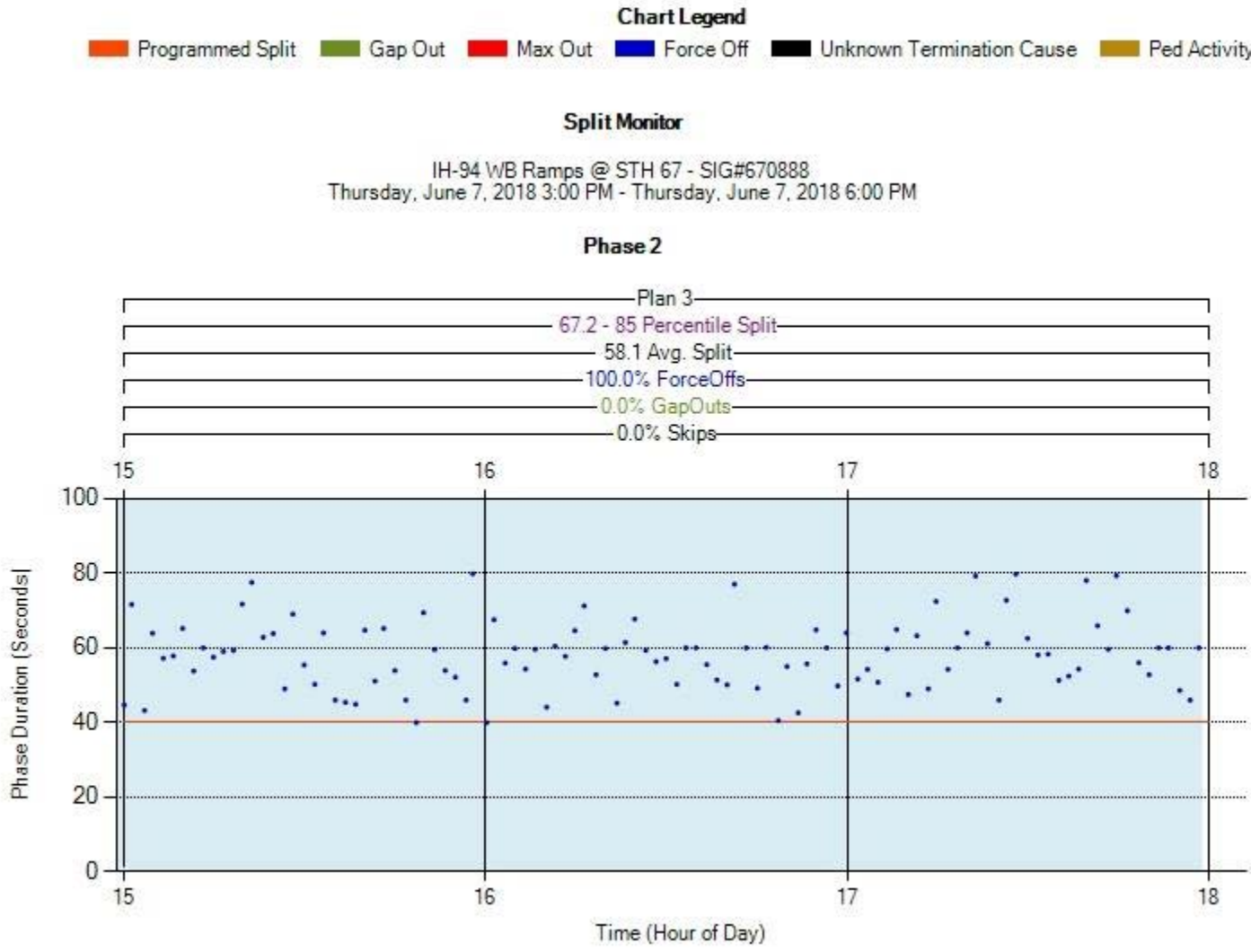
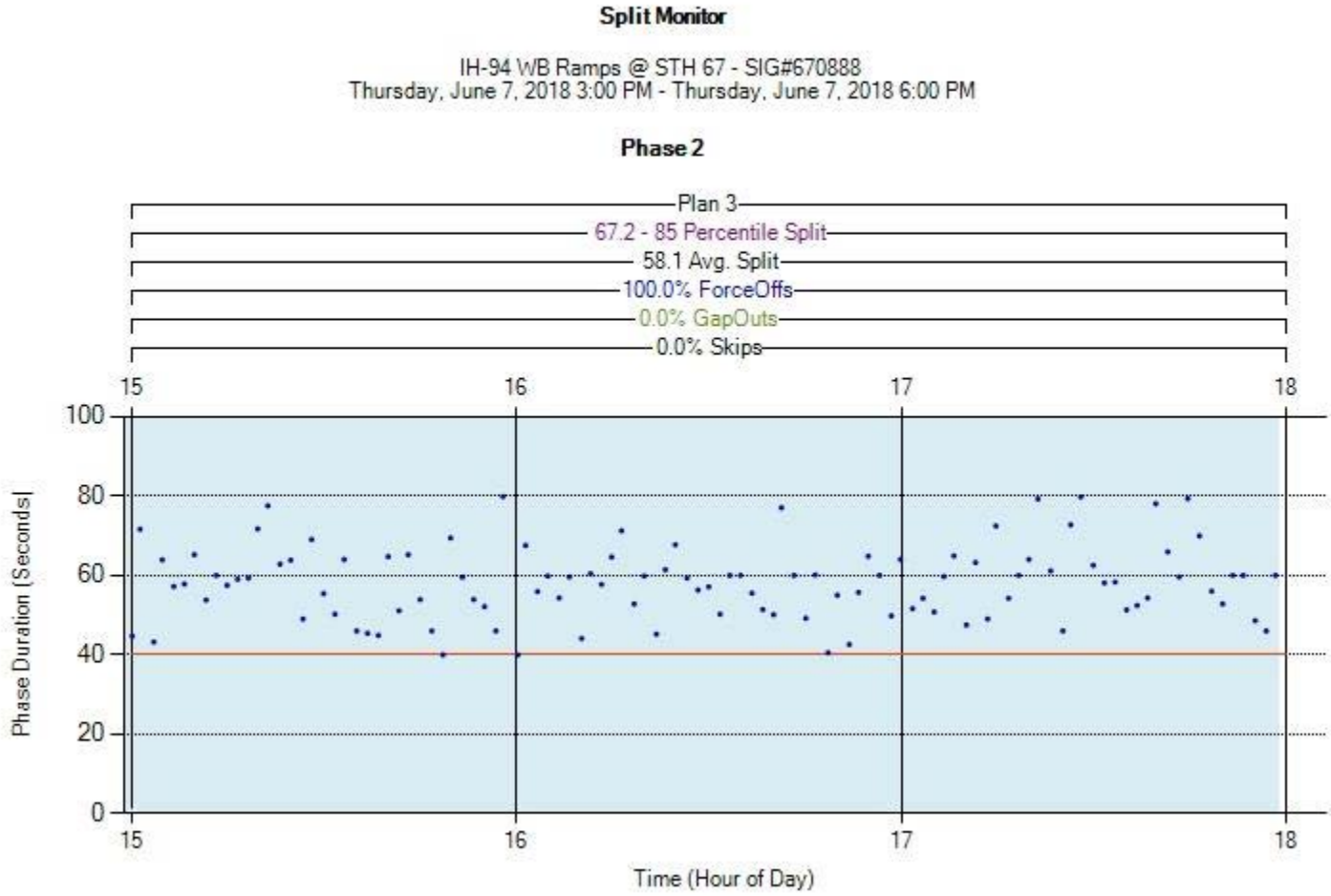
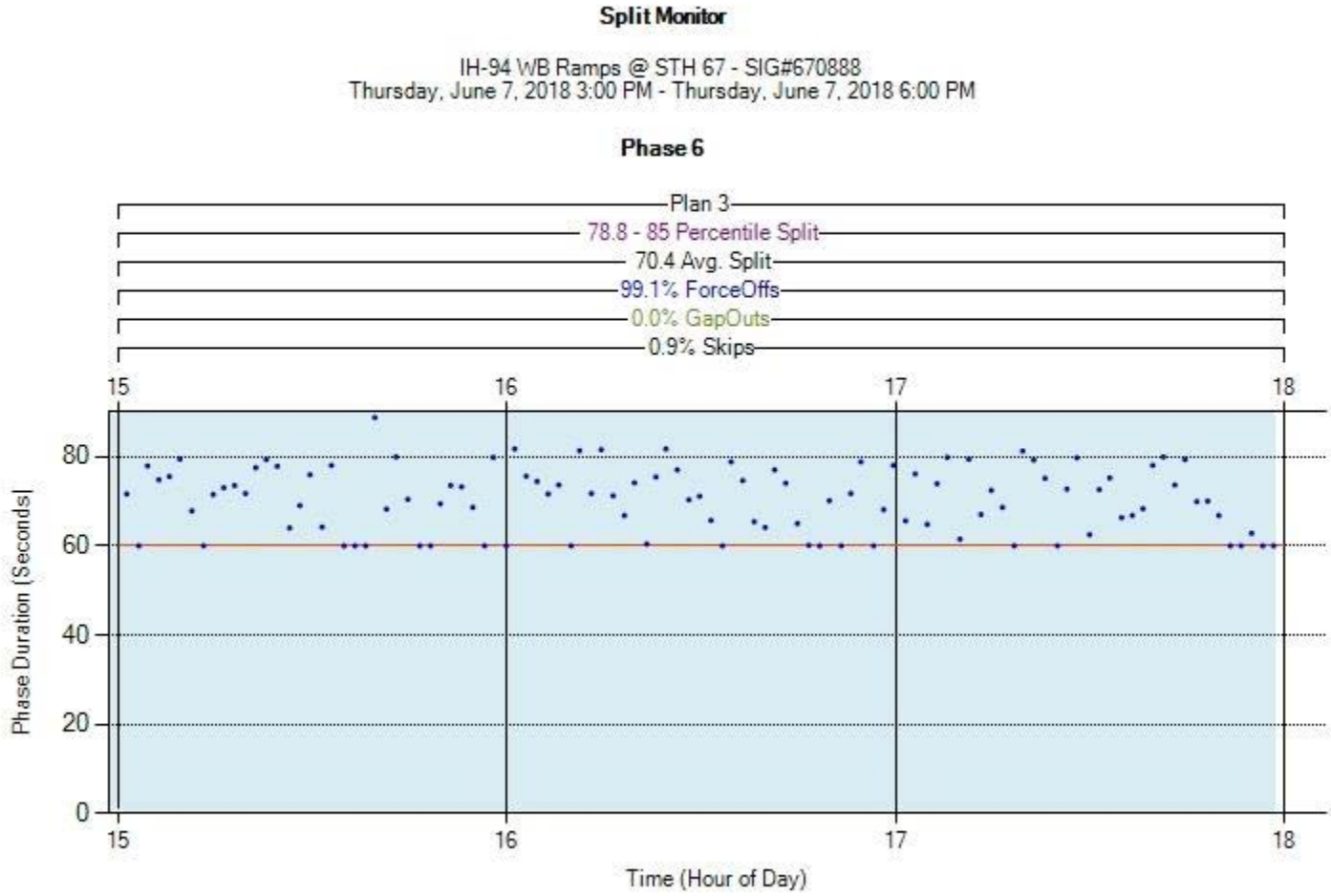


Chart Legend
Programmed Split
Gap Out
Max Out
Force Off
Unknown Termination Cause
Ped Activity
Split Monitor
IH-94 WB Ramps @ STH 67 - SIG#670888
Thursday, June 7, 2018 3:00 PM - Thursday, June 7, 2018 6:00 PM
Phase 2
Plan 3
67.2 - 85 Percentile Split
58.1 Avg. Split
100.0% ForceOffs
0.0% GapOuts
0.0% Skips
15
16
17
18
100
80
60
40
20
0
Phase Duration (Seconds)
Time (Hour of Day)

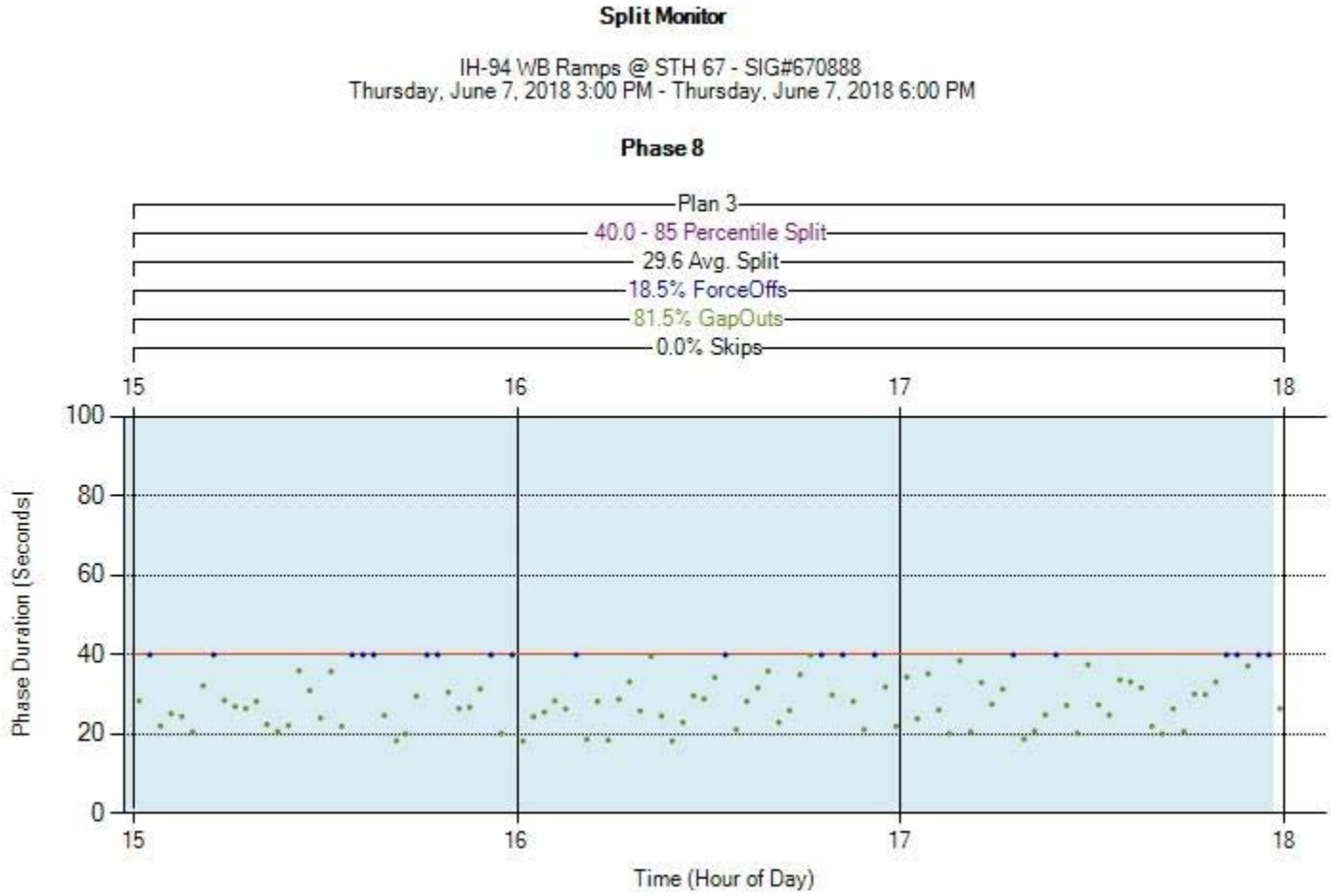
WIS 67 Corridor – STH 67 & I-94 WB Ramps
Baseline Timings
6/7/2018 – 3:00 PM – 6:00 PM



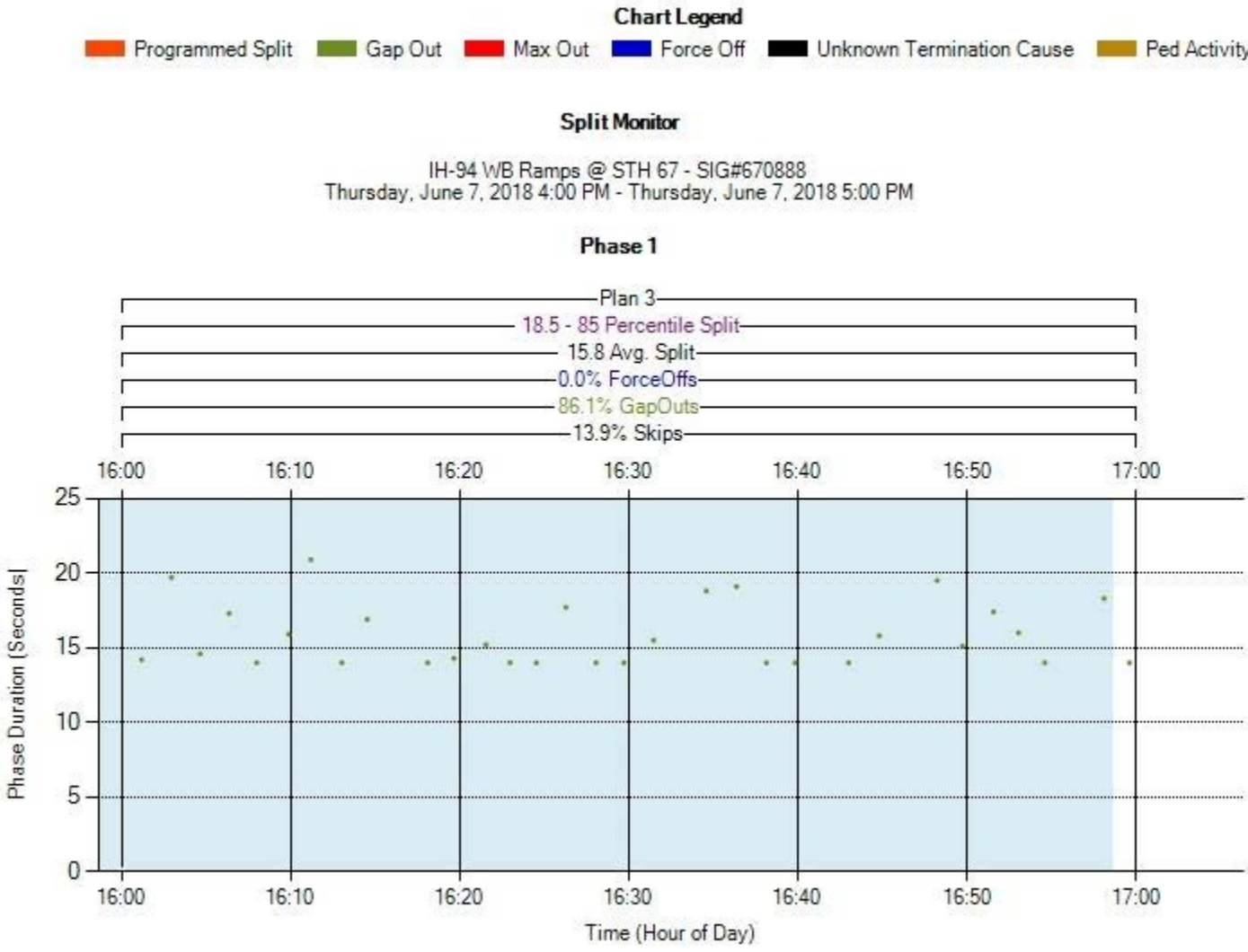
WIS 67 Corridor – STH 67 & I-94 WB Ramps
Baseline Timings
6/7/2018 – 3:00 PM – 6:00 PM



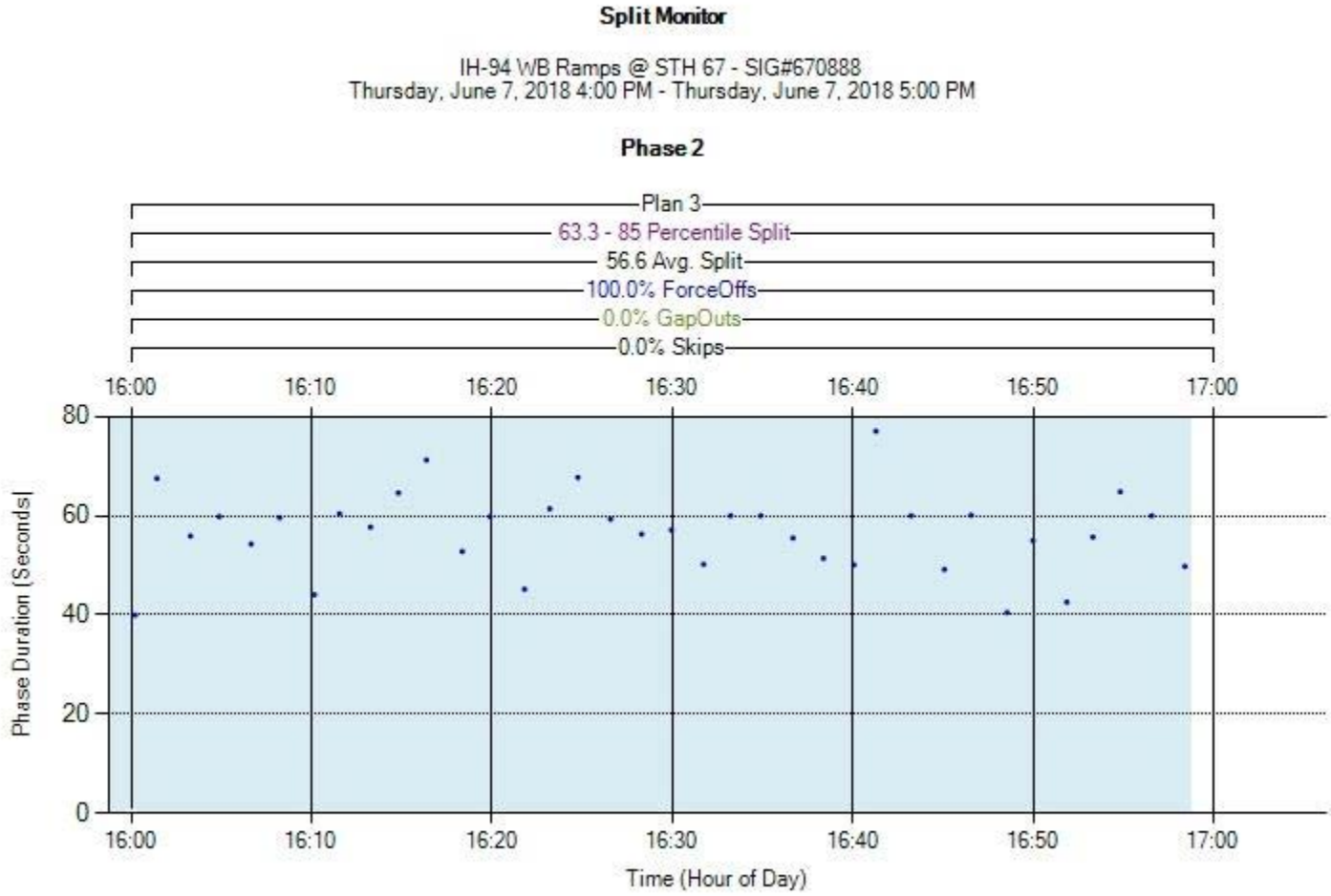
WIS 67 Corridor – STH 67 & I-94 WB Ramps
Baseline Timings
6/7/2018 – 3:00 PM – 6:00 PM



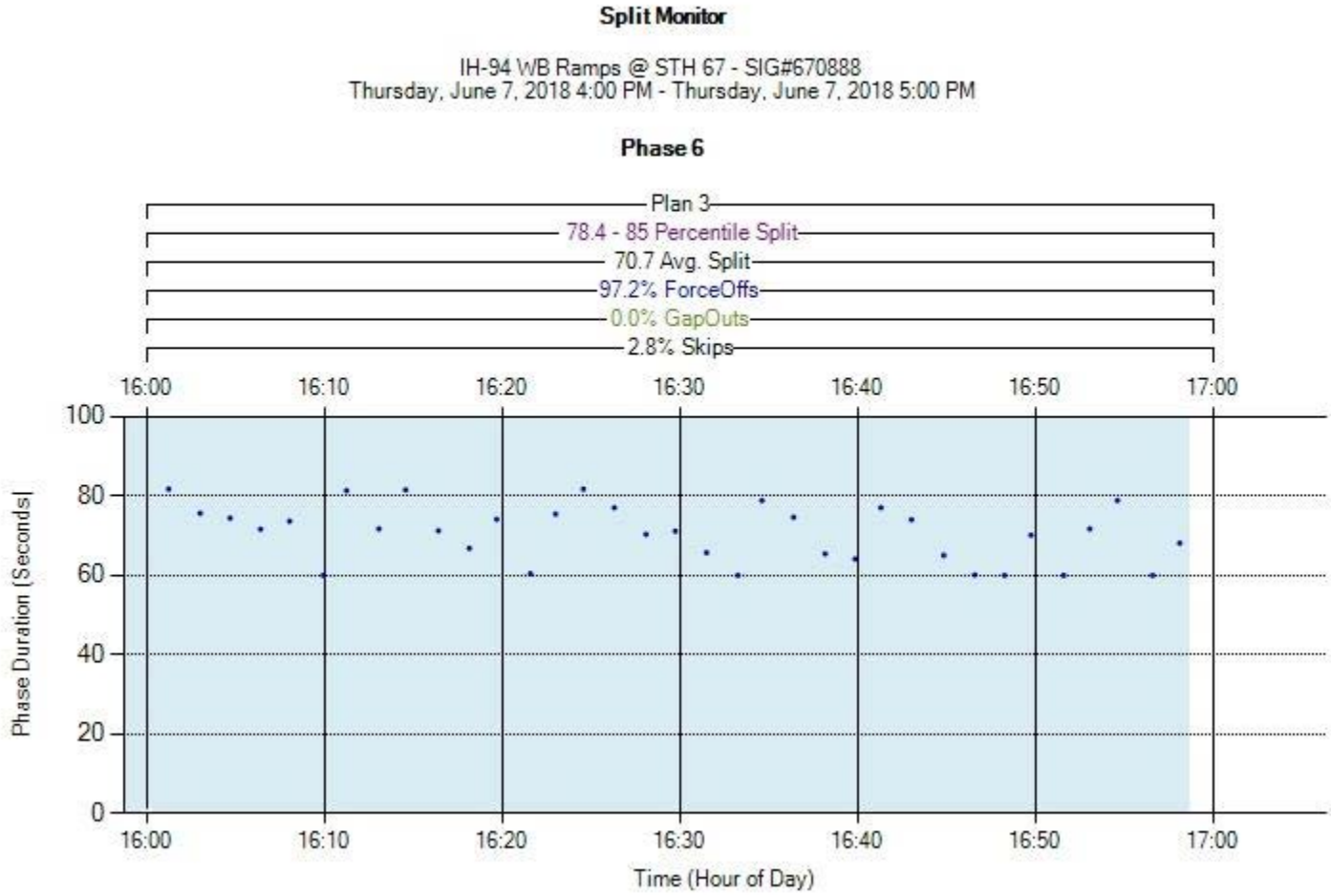
WIS 67 Corridor – STH 67 & I-94 WB Ramps
Baseline Timings
6/7/2018 – 4:00 PM – 5:00 PM



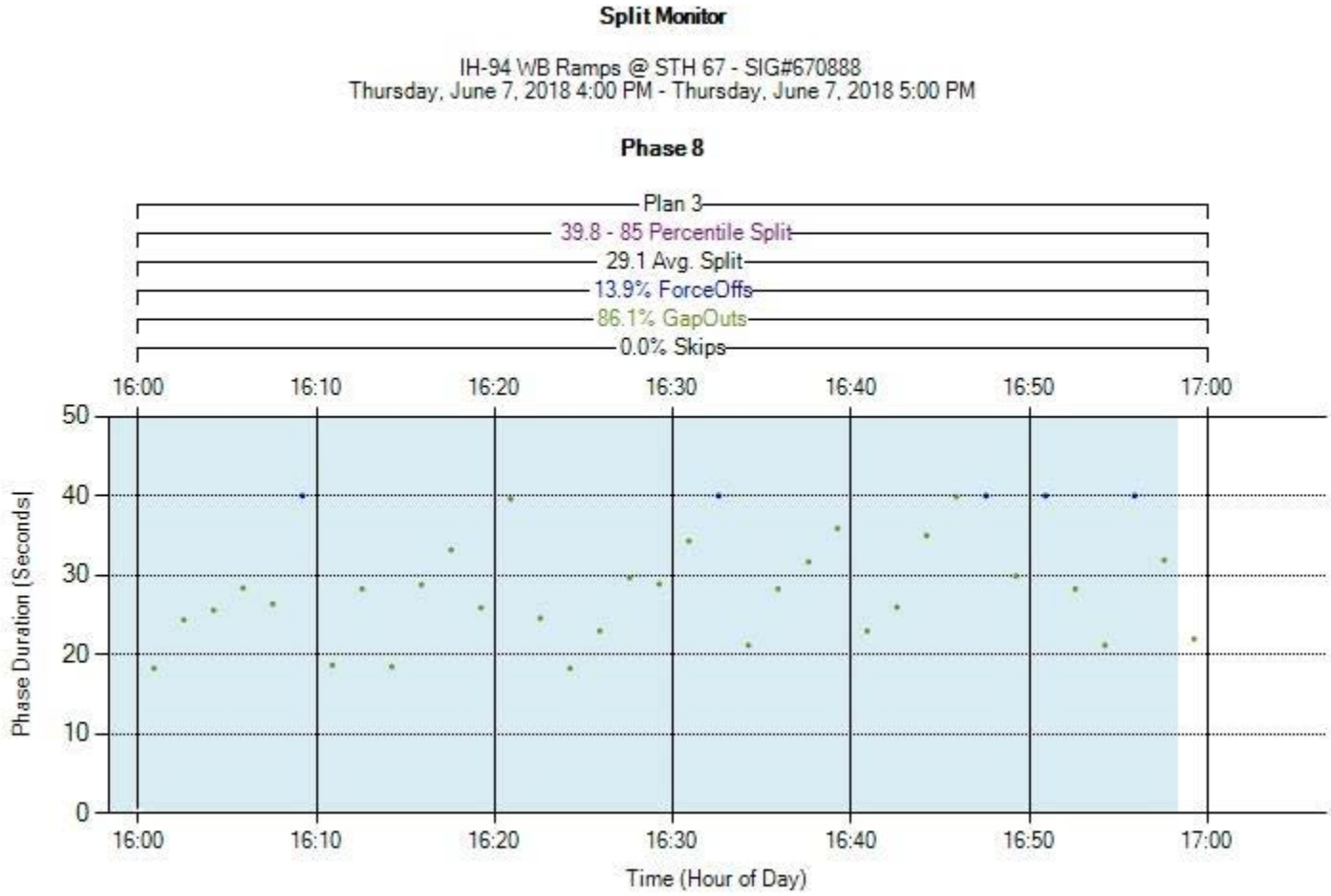
WIS 67 Corridor – STH 67 & I-94 WB Ramps
Baseline Timings
6/7/2018 – 4:00 PM – 5:00 PM



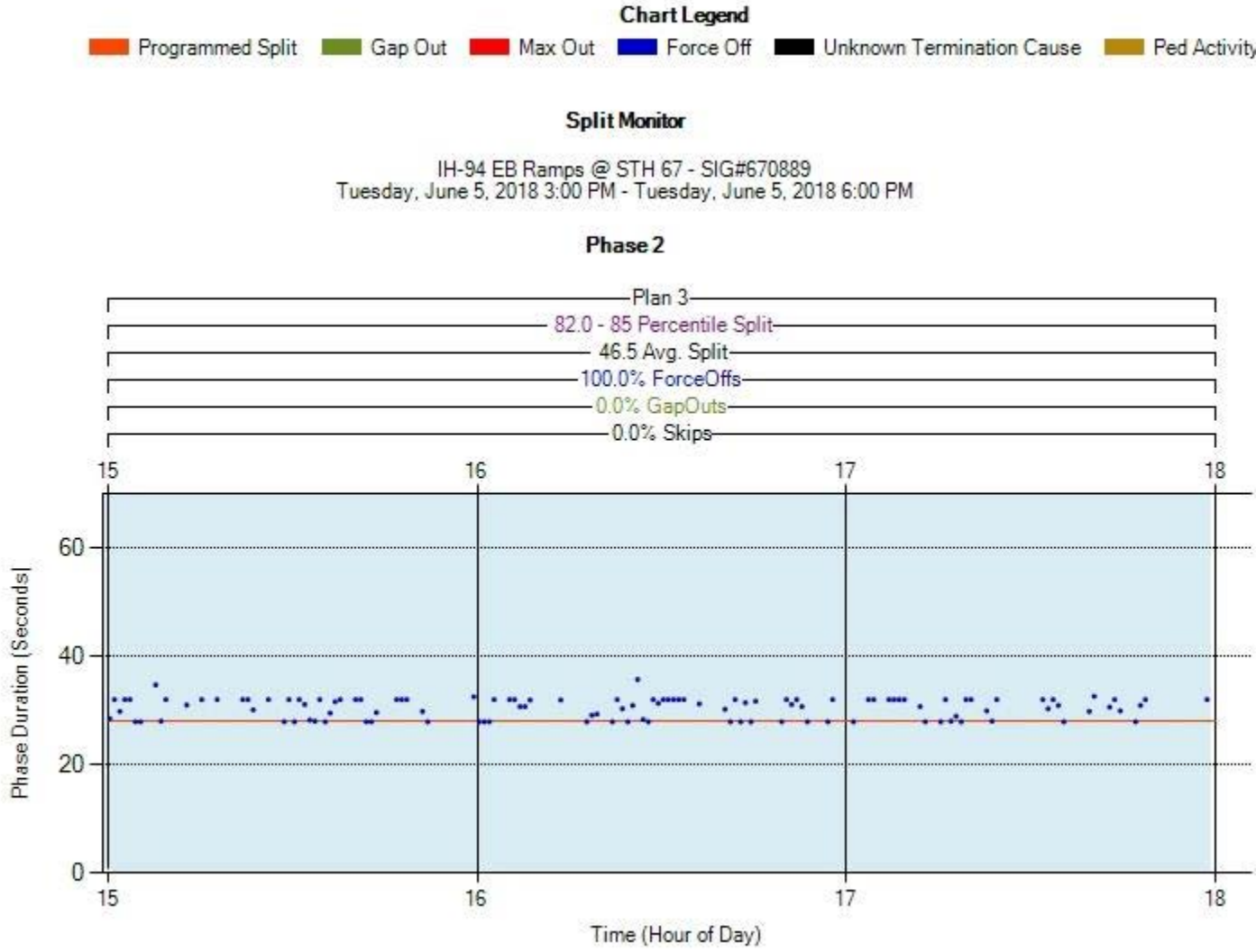
WIS 67 Corridor – STH 67 & I-94 WB Ramps
Baseline Timings
6/7/2018 – 4:00 PM – 5:00 PM



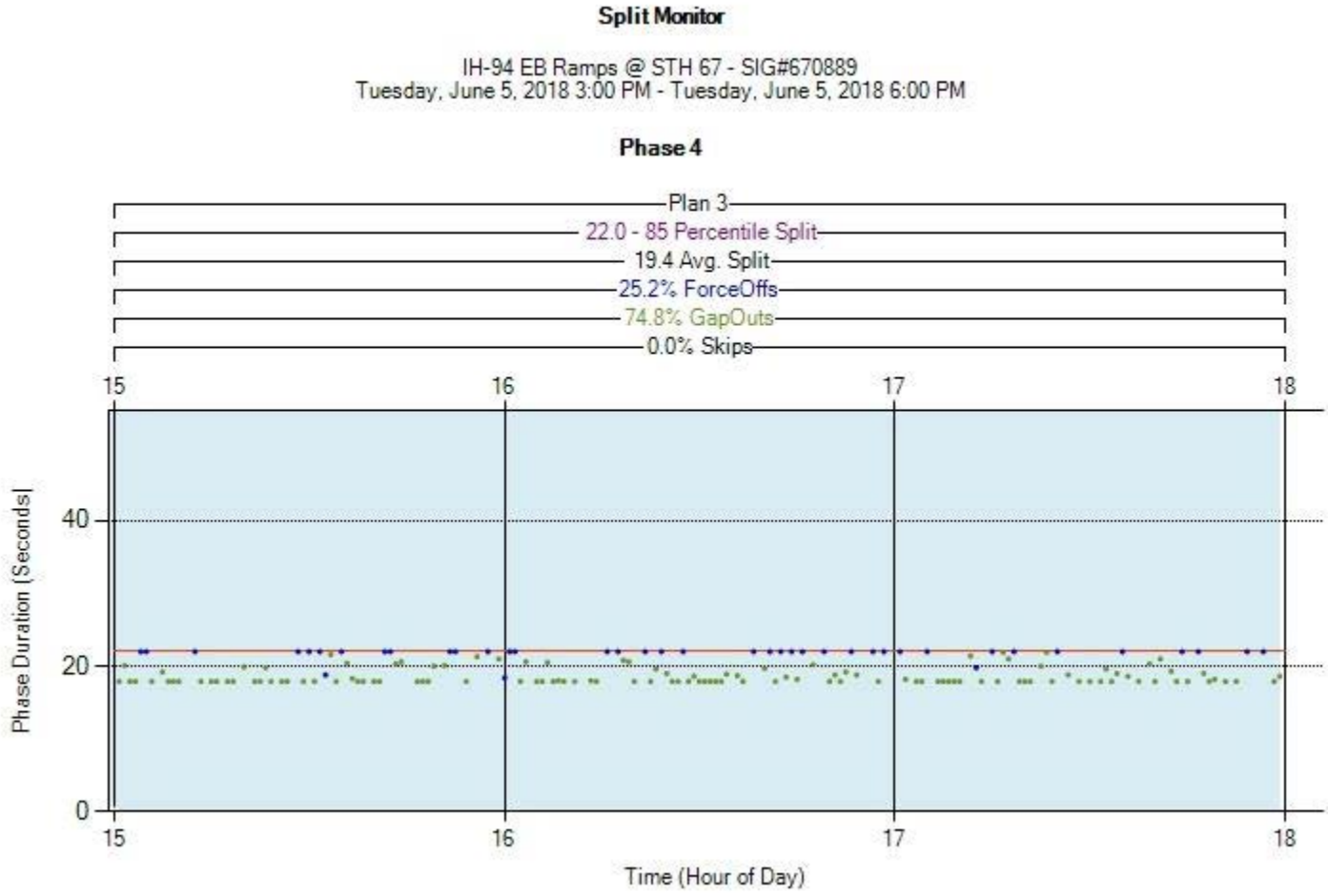
WIS 67 Corridor – STH 67 & I-94 WB Ramps
Baseline Timings
6/7/2018 – 4:00 PM – 5:00 PM



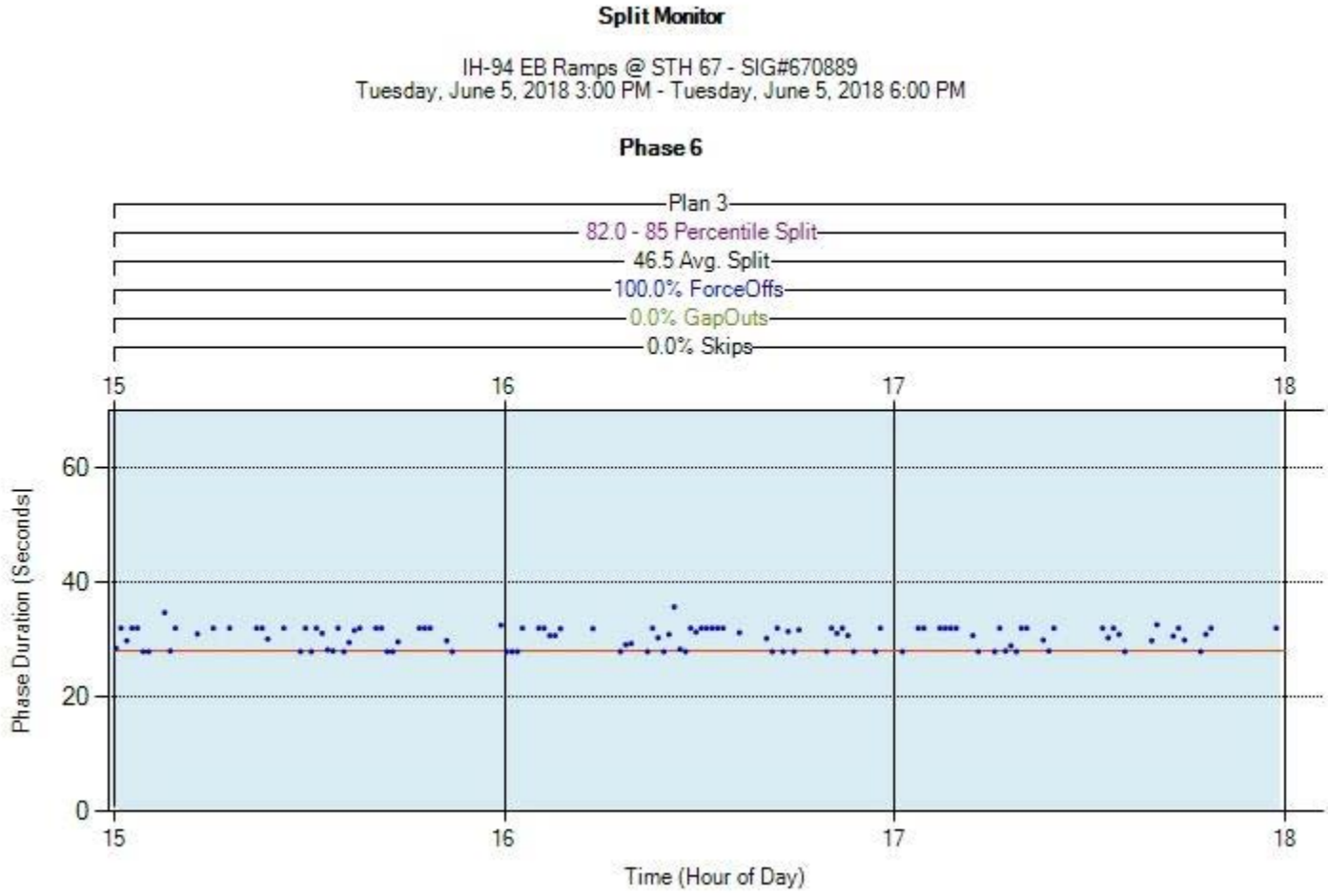
WIS 67 Corridor – STH 67 & I-94 EB Ramps
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



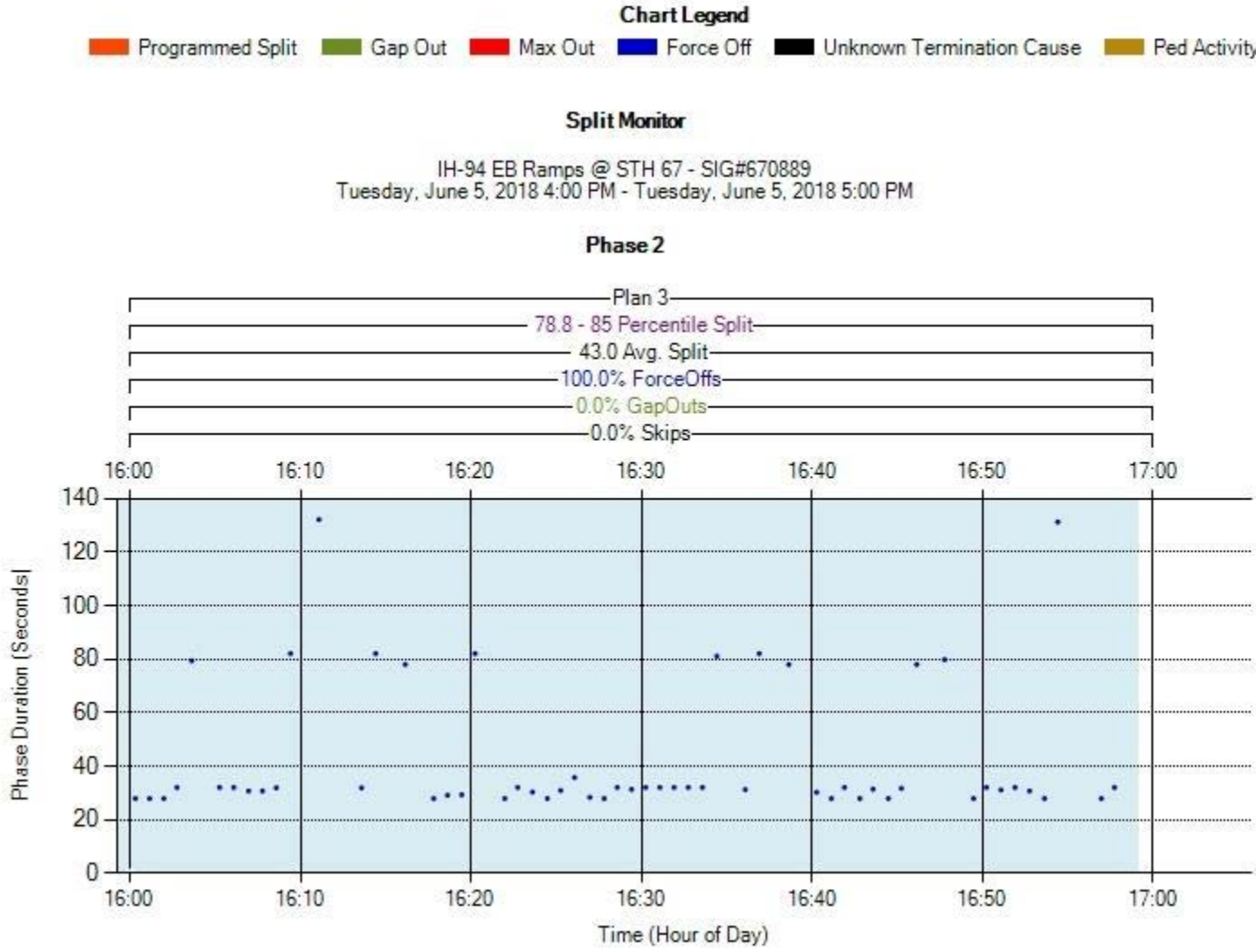
WIS 67 Corridor – STH 67 & I-94 EB Ramps
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



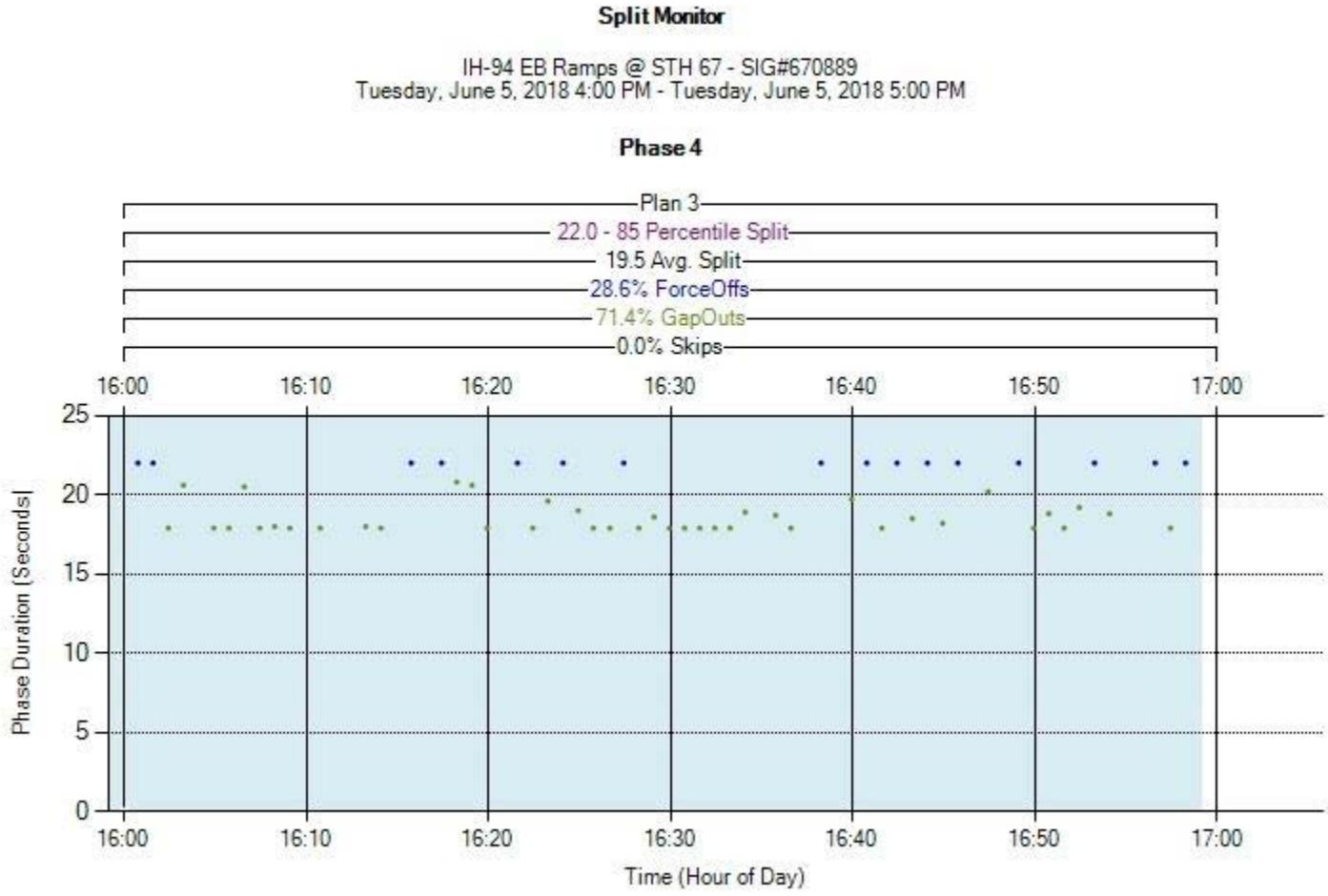
WIS 67 Corridor – STH 67 & I-94 EB Ramps
Baseline Timings
6/5/2018 – 3:00 PM – 6:00 PM



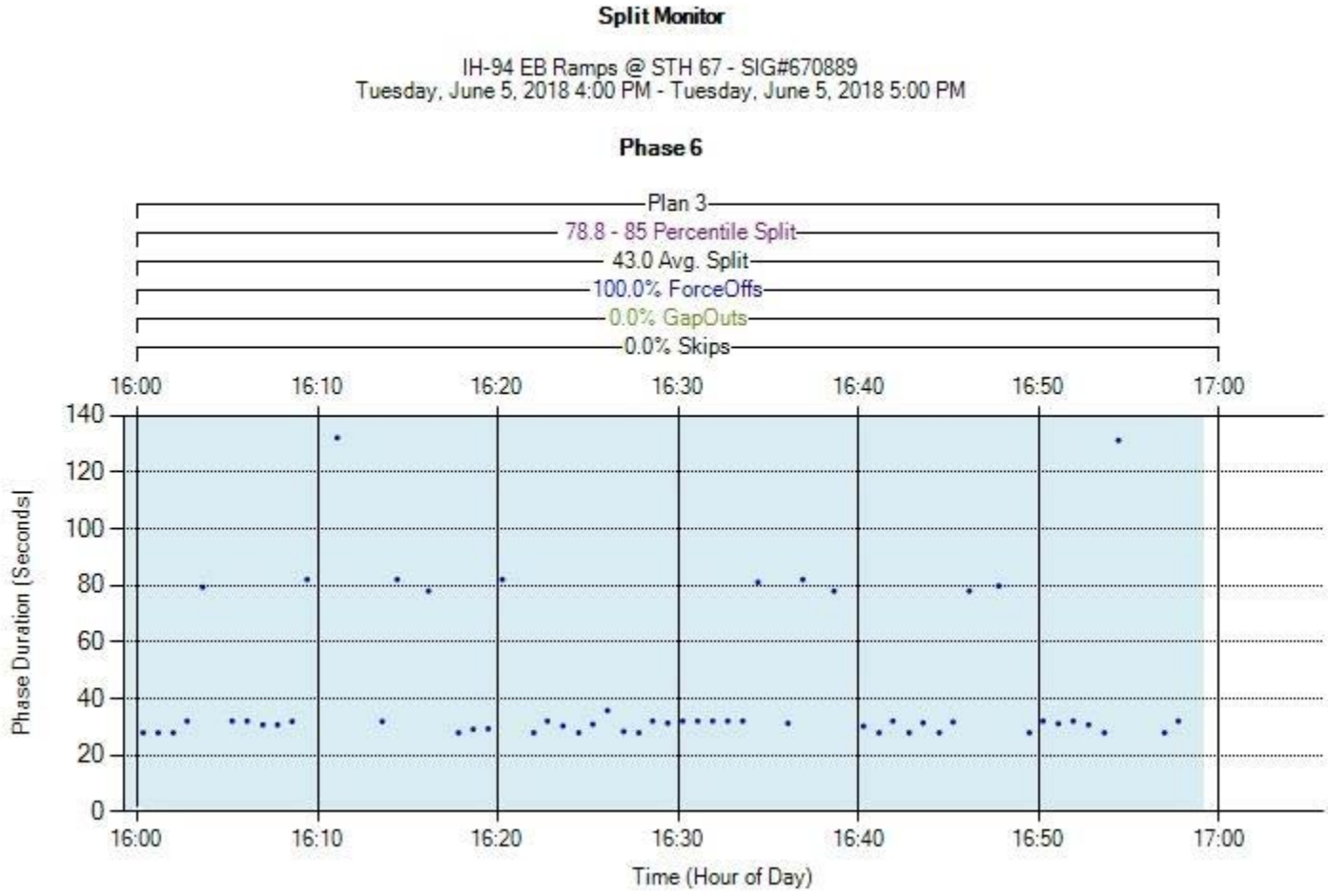
WIS 67 Corridor – STH 67 & I-94 EB Ramps
Baseline Timings
6/5/2018 – 4:00 PM – 5:00 PM



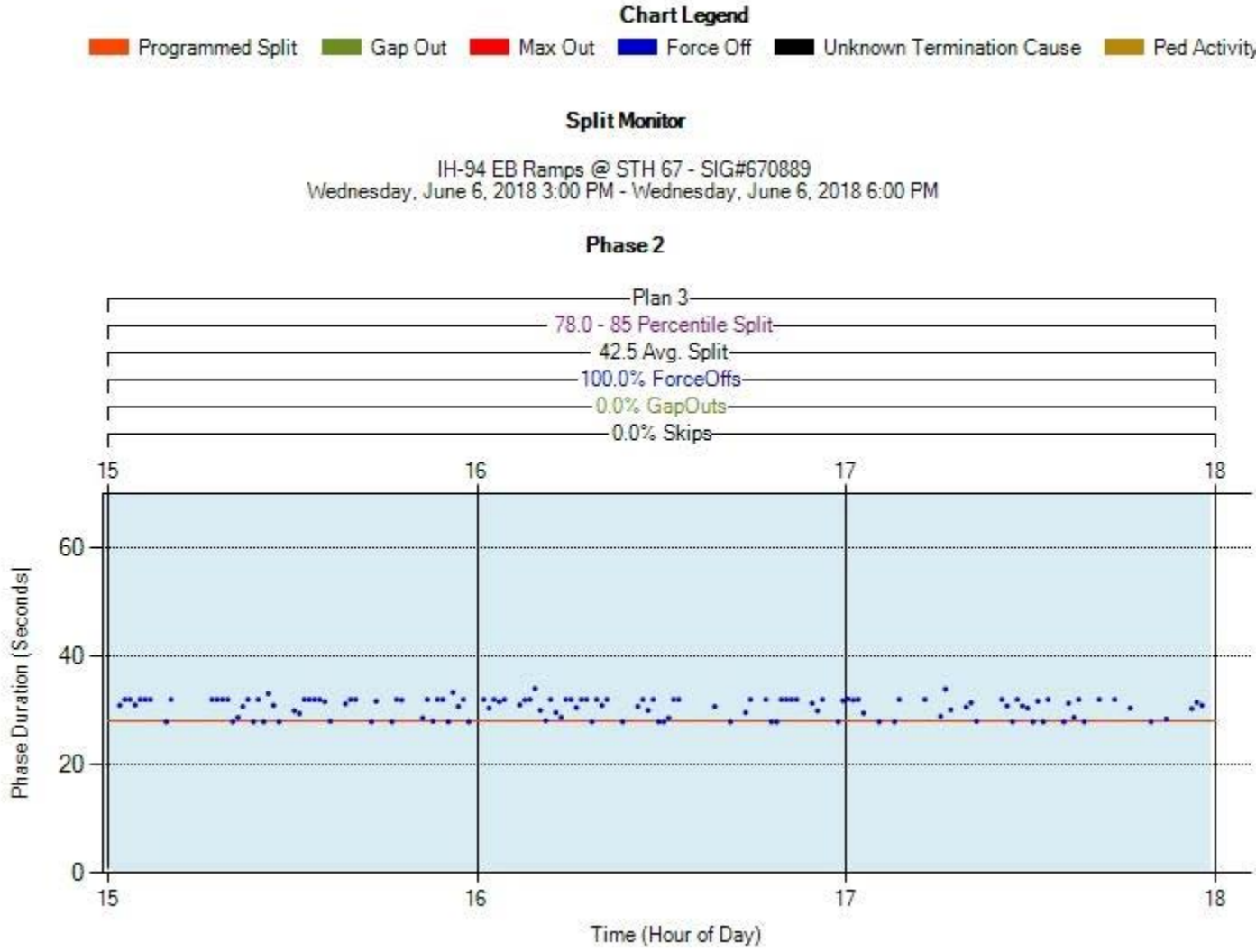
WIS 67 Corridor – STH 67 & I-94 EB Ramps
Baseline Timings
6/5/2018 – 4:00 PM – 5:00 PM



WIS 67 Corridor – STH 67 & I-94 EB Ramps
Baseline Timings
6/5/2018 – 4:00 PM – 5:00 PM

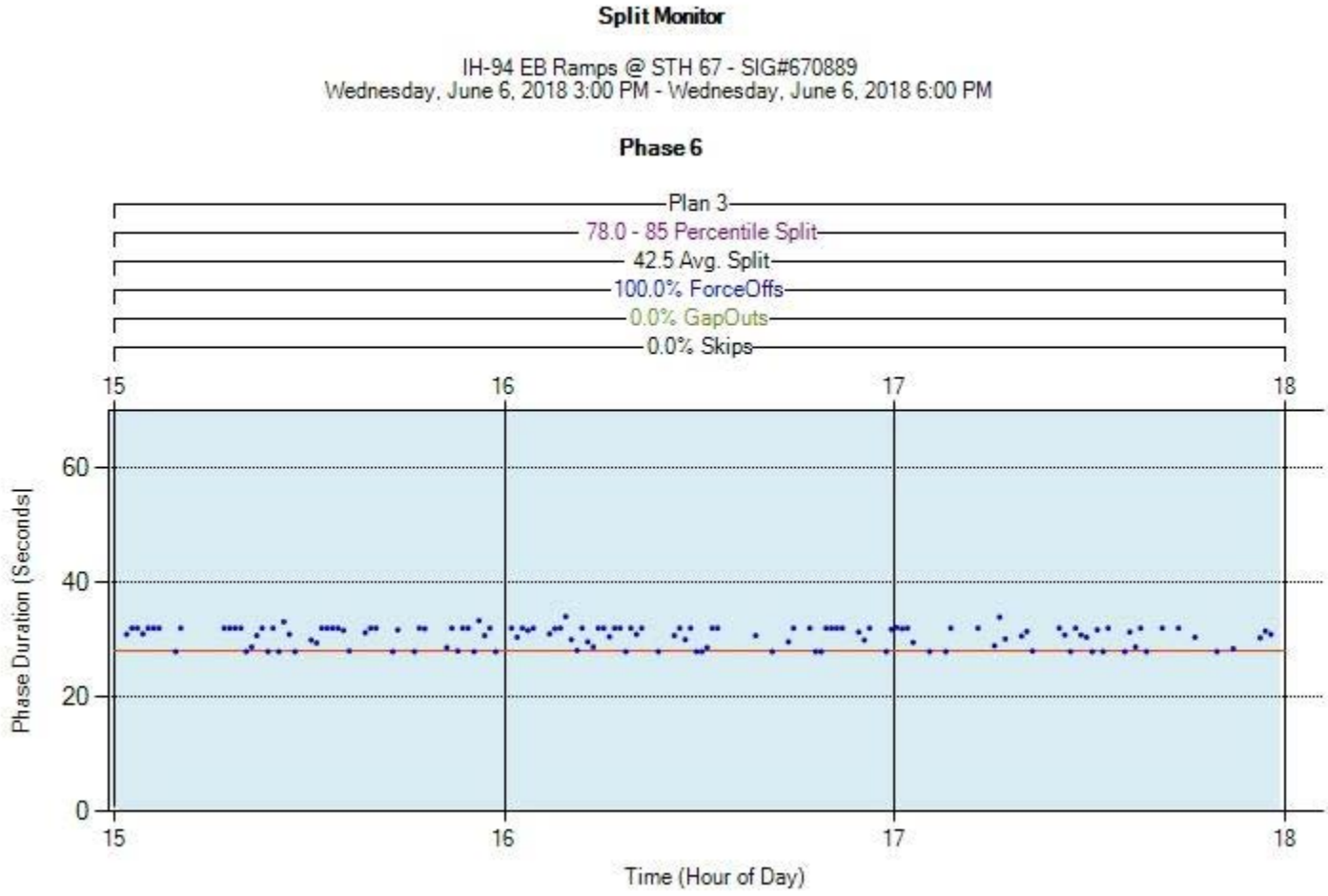


WIS 67 Corridor – STH 67 & I-94 EB Ramps
Baseline Timings
6/6/2018 – 3:00 PM – 6:00 PM

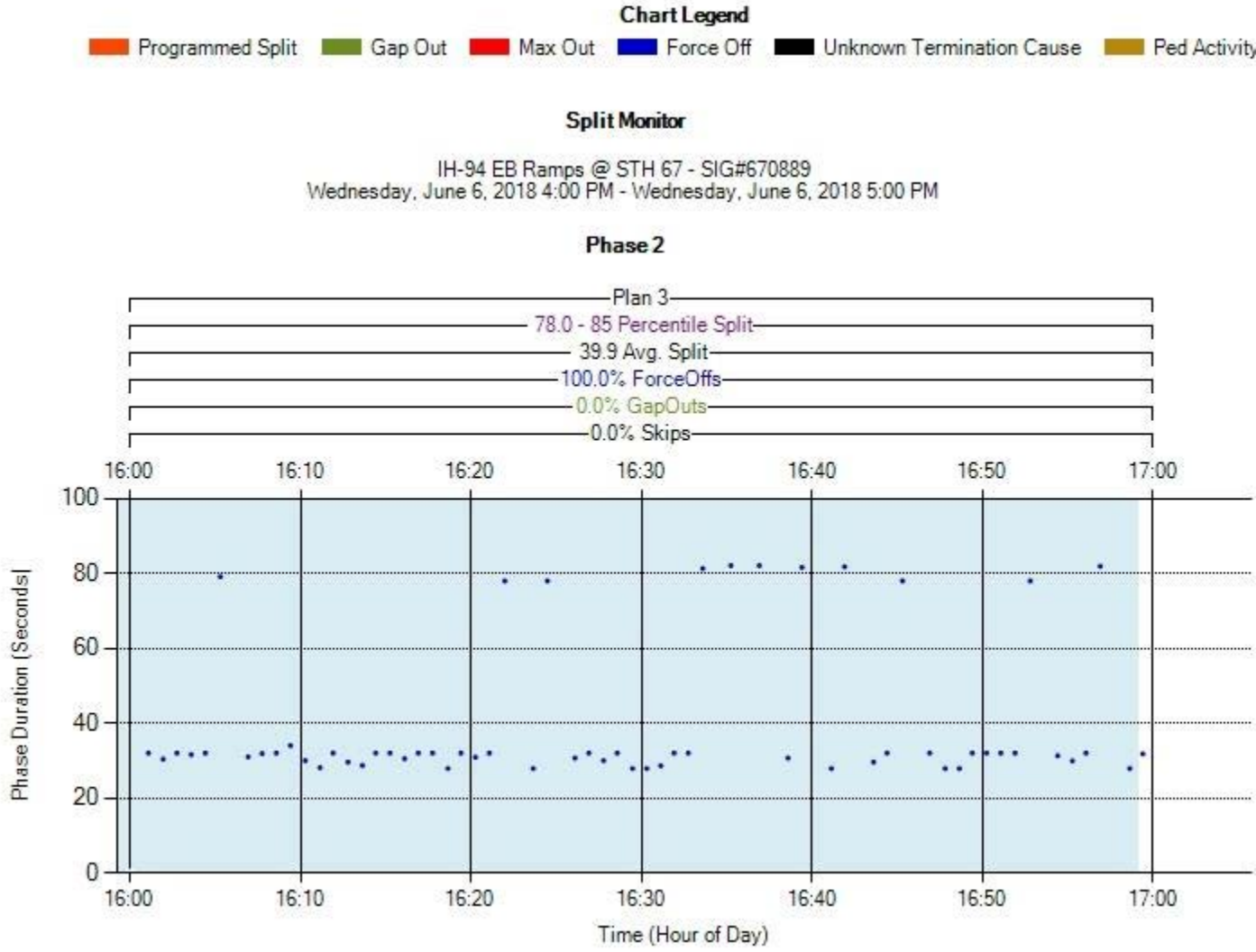


WIS 67 Corridor – STH 67 & I-94 EB Ramps
Baseline Timings
6/6/2018 – 3:00 PM – 6:00 PM

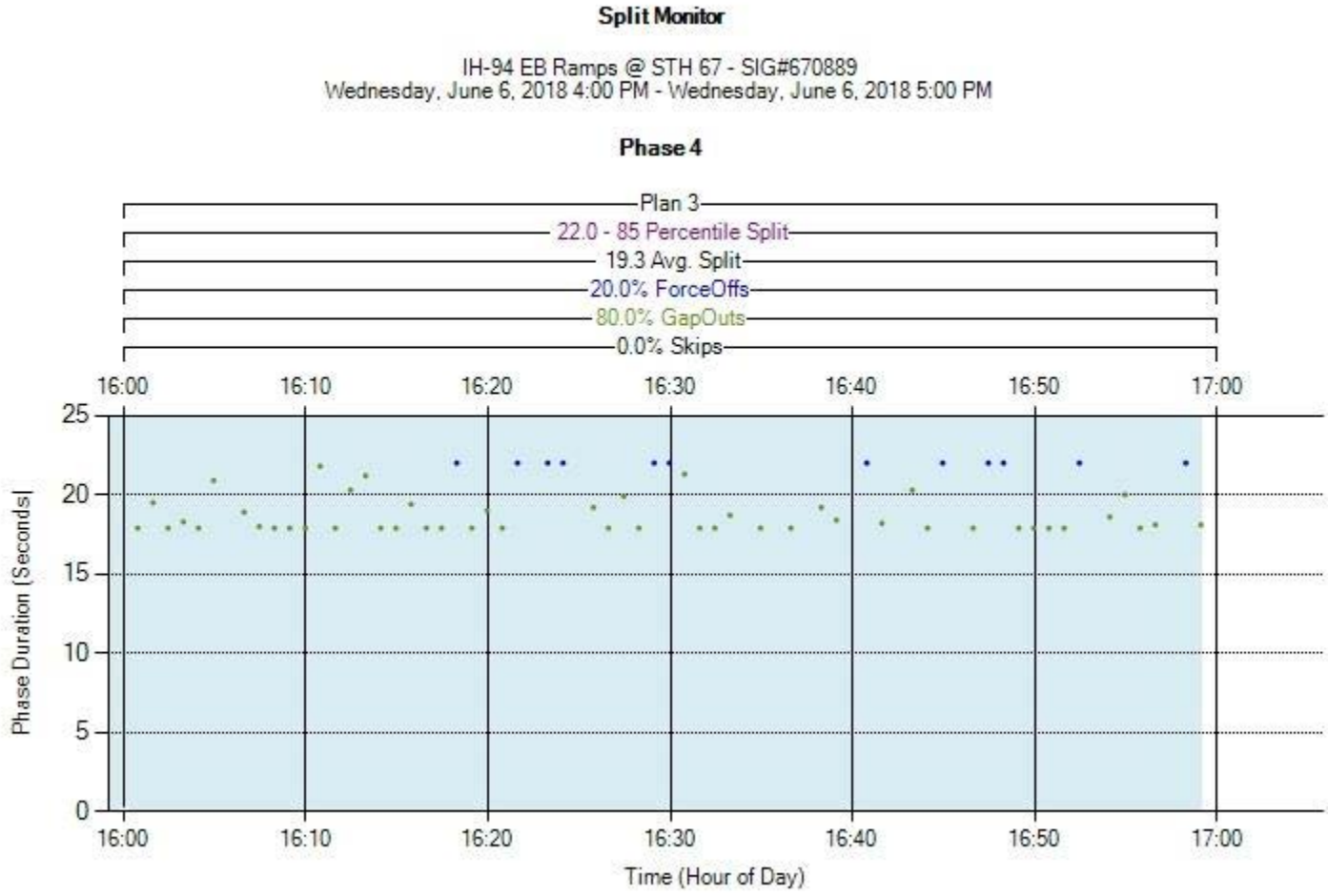
WIS 67 Corridor – STH 67 & I-94 EB Ramps
Baseline Timings
6/6/2018 – 3:00 PM – 6:00 PM



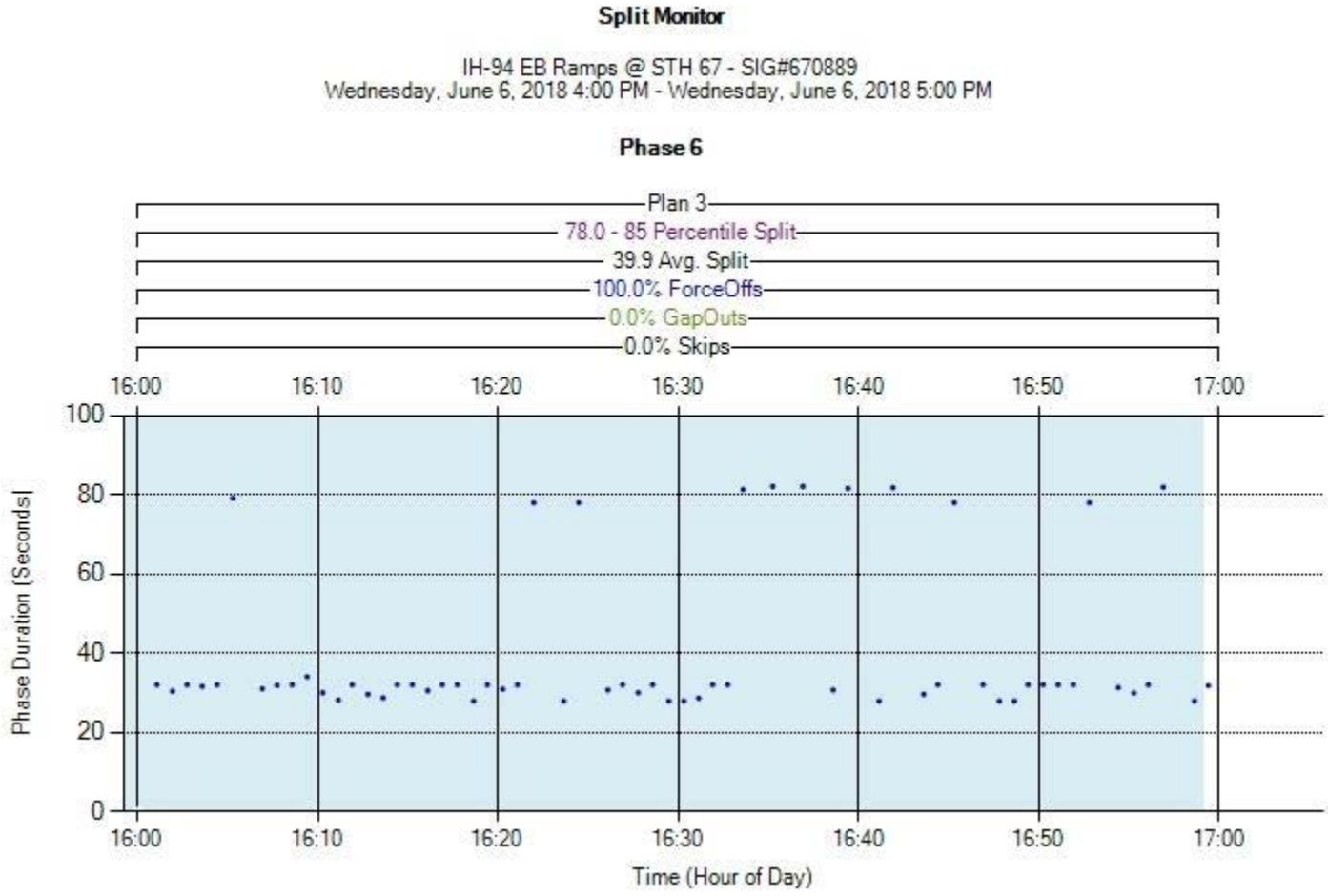
WIS 67 Corridor – STH 67 & I-94 EB Ramps
Baseline Timings
6/6/2018 – 4:00 PM – 5:00 PM



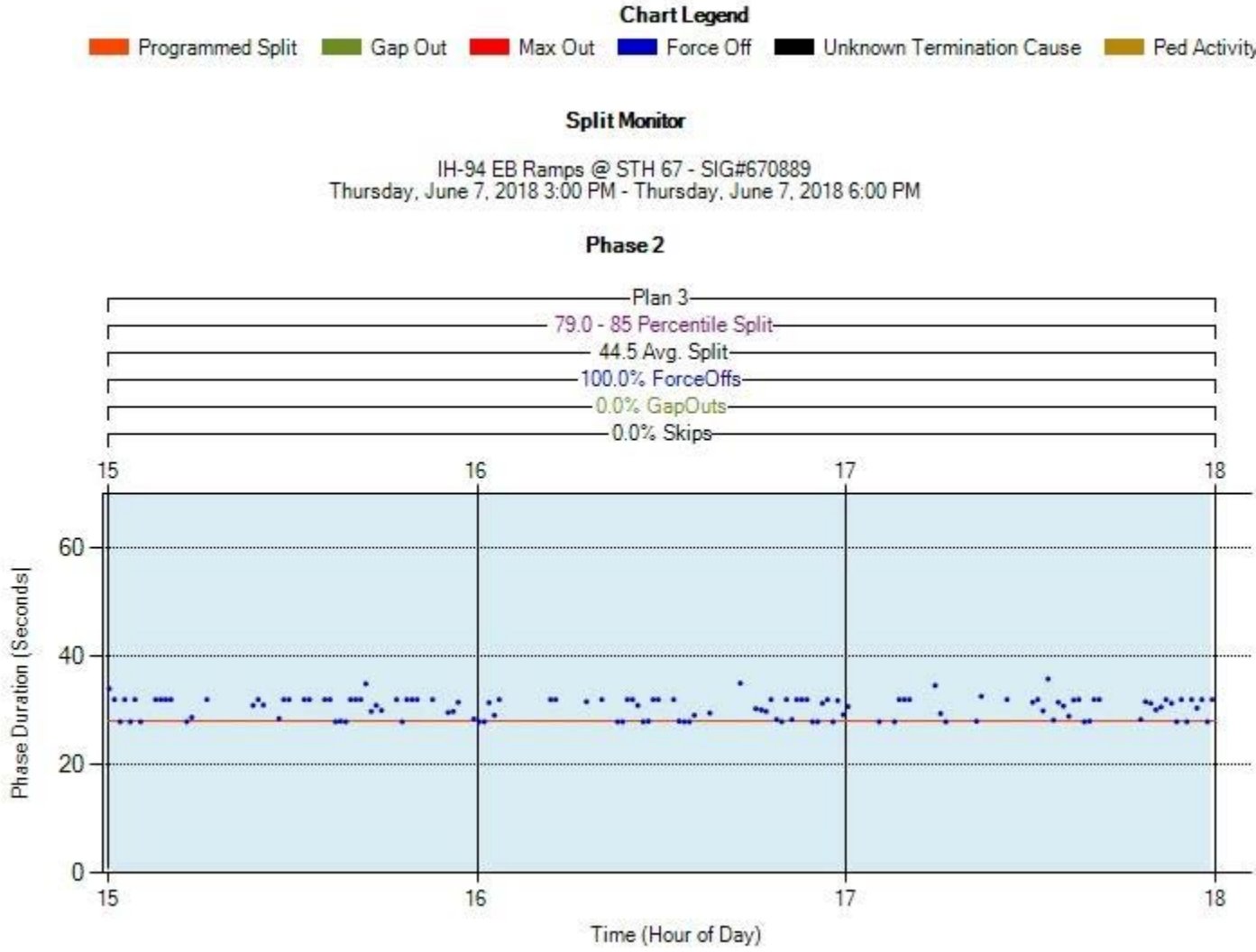
WIS 67 Corridor – STH 67 & I-94 EB Ramps
Baseline Timings
6/6/2018 – 4:00 PM – 5:00 PM



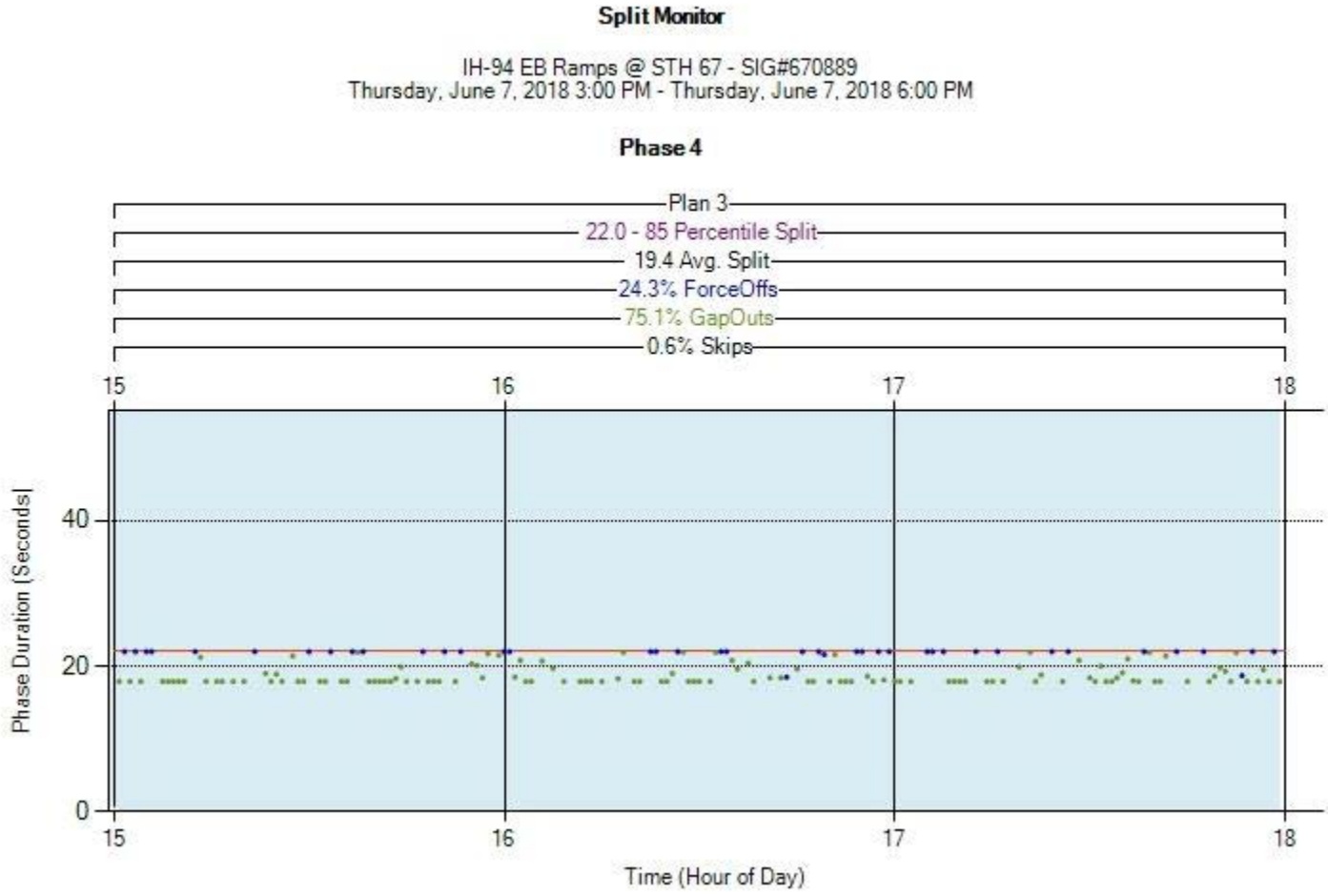
WIS 67 Corridor – STH 67 & I-94 EB Ramps
Baseline Timings
6/6/2018 – 4:00 PM – 5:00 PM



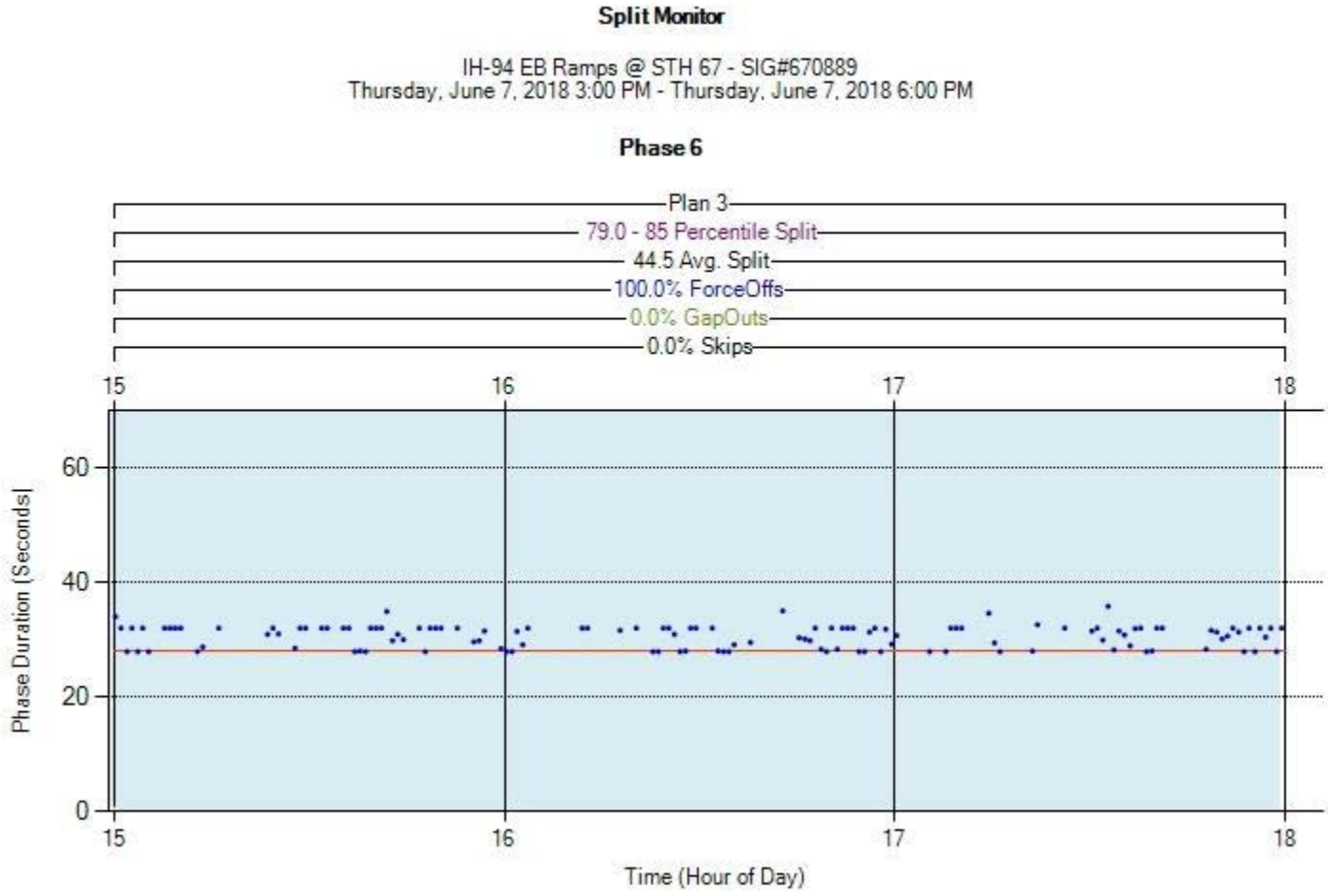
WIS 67 Corridor – STH 67 & I-94 EB Ramps
Baseline Timings
6/7/2018 – 3:00 PM – 6:00 PM



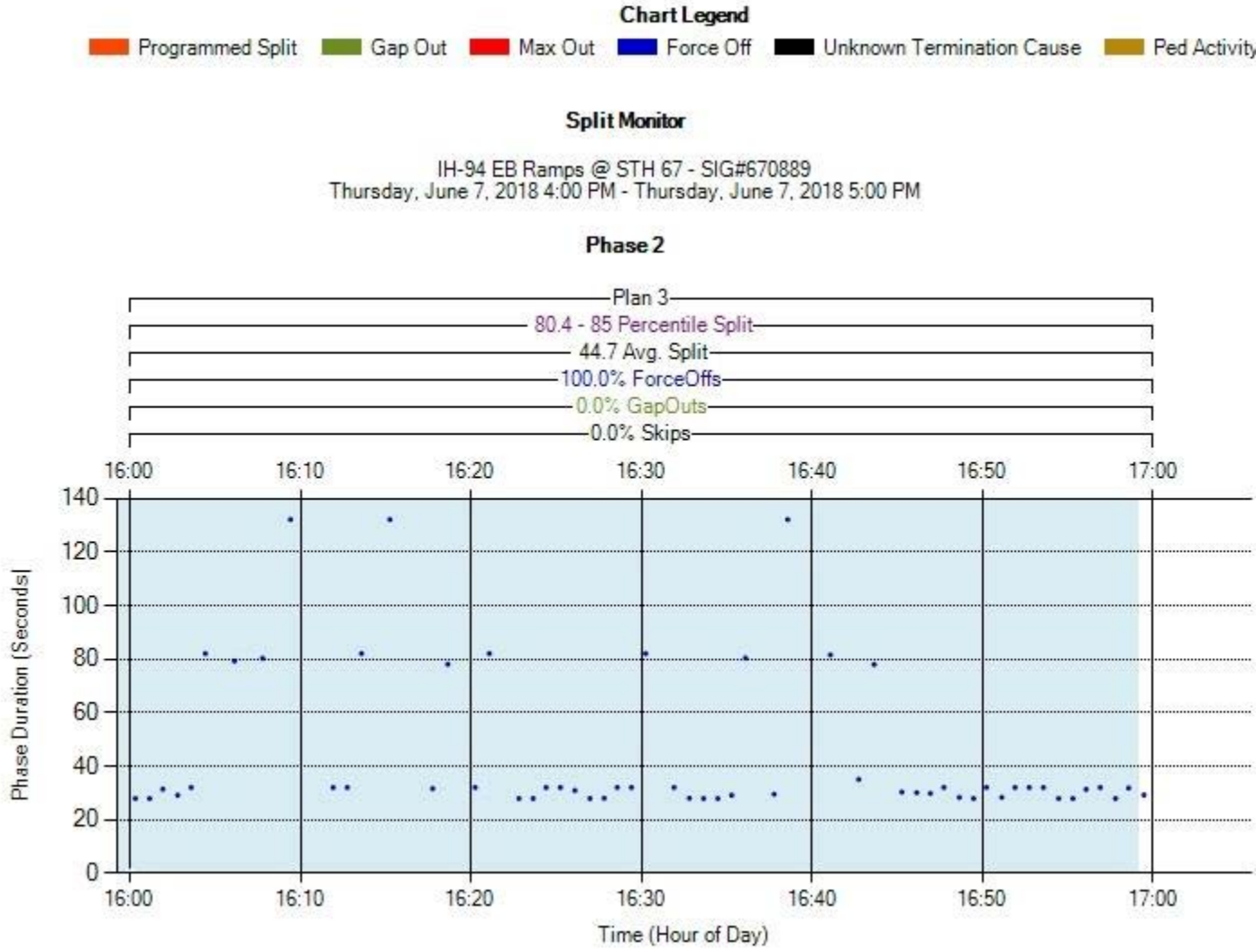
WIS 67 Corridor – STH 67 & I-94 EB Ramps
Baseline Timings
6/7/2018 – 3:00 PM – 6:00 PM



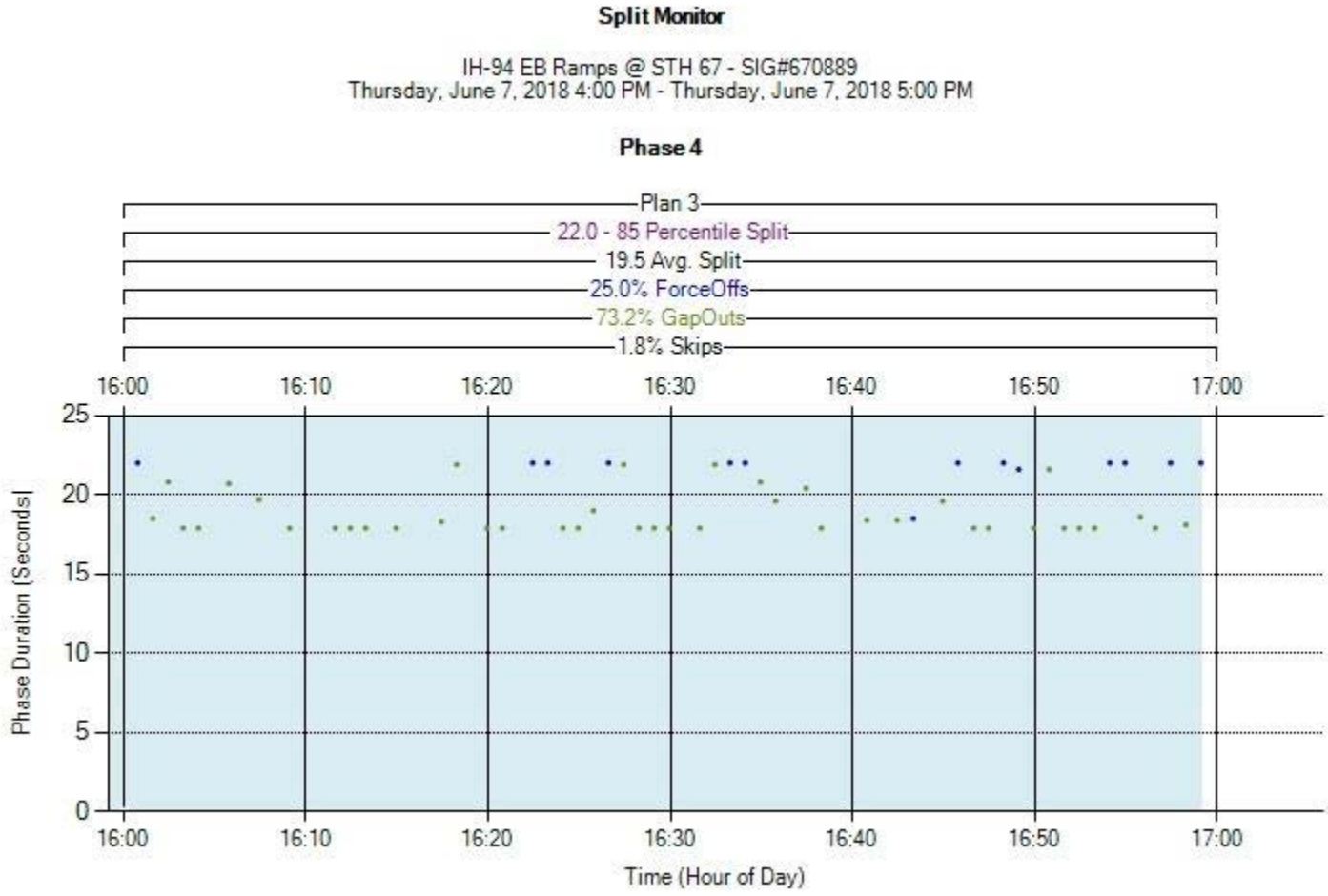
WIS 67 Corridor – STH 67 & I-94 EB Ramps
Baseline Timings
6/7/2018 – 3:00 PM – 6:00 PM



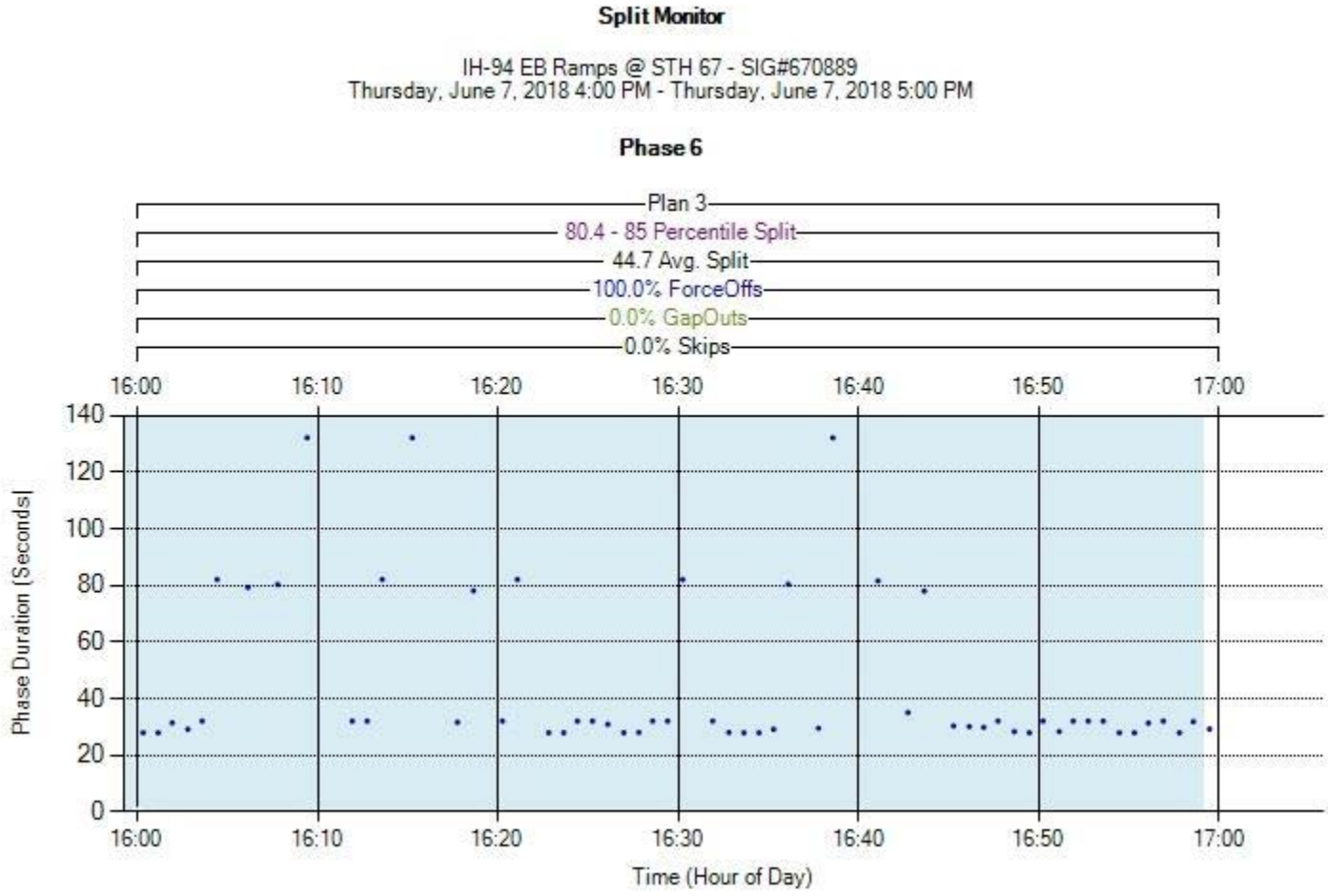
WIS 67 Corridor – STH 67 & I-94 EB Ramps
Baseline Timings
6/7/2018 – 4:00 PM – 5:00 PM



WIS 67 Corridor – STH 67 & I-94 EB Ramps
Baseline Timings
6/7/2018 – 4:00 PM – 5:00 PM



WIS 67 Corridor – STH 67 & I-94 EB Ramps
Baseline Timings
6/7/2018 – 4:00 PM – 5:00 PM



WisBOOM Outputs
WIS 67 Corridor
HCS Optimized Timings

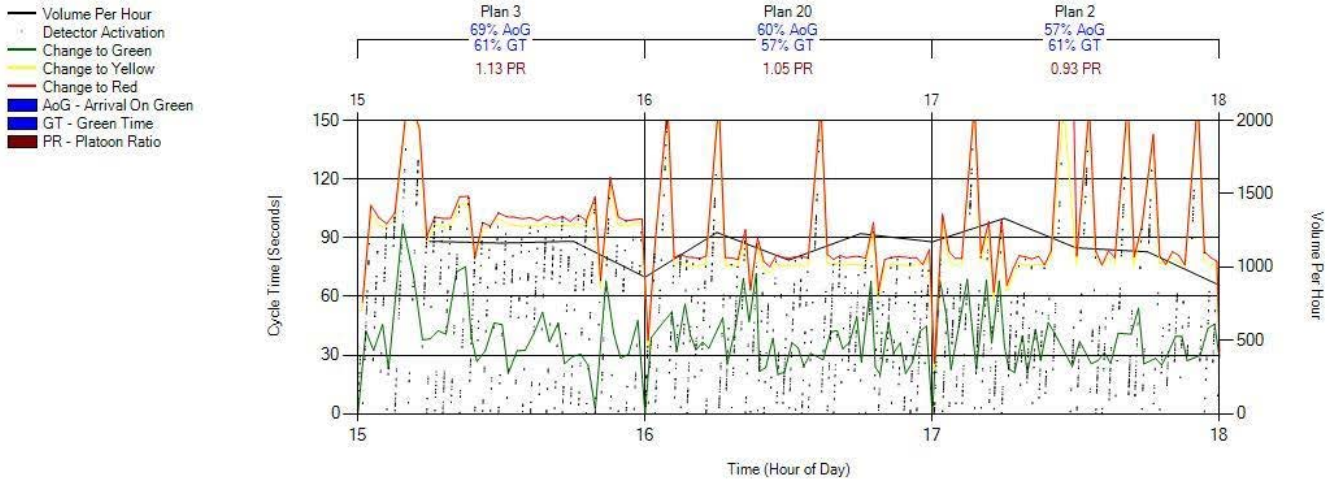
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
HCS Timings
6/19/2018 – 3:00 PM – 6:00 PM

Purdue Coordination Diagram

STH 67 @ Oconomowoc Pkwy - SIG#671298
Tuesday, June 19, 2018 3:00 PM - Tuesday, June 19, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar

Phase 2: Southbound

AoG = 62%

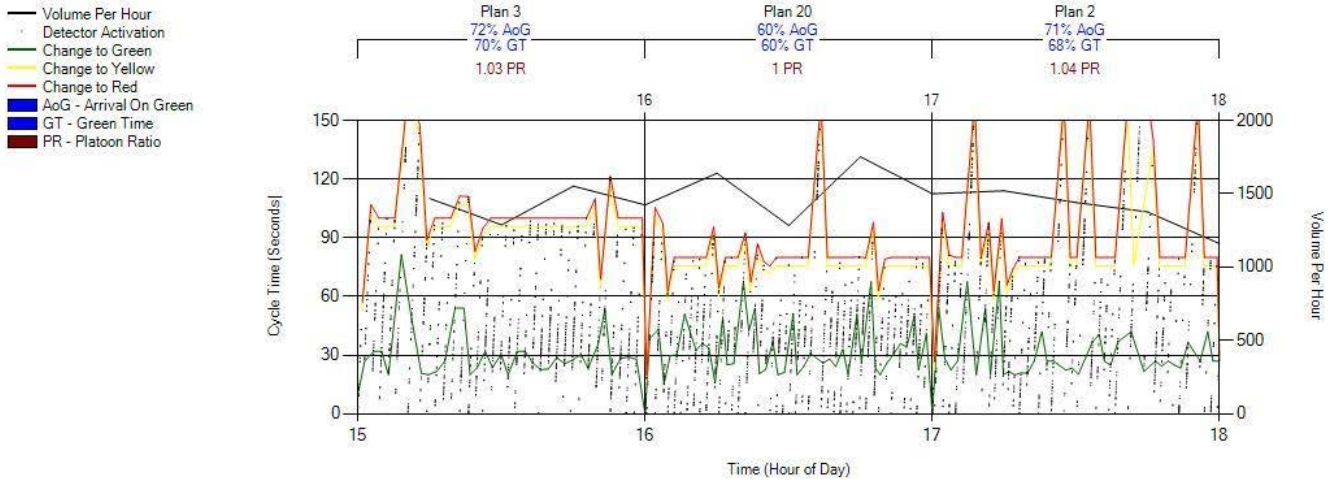


Purdue Coordination Diagram

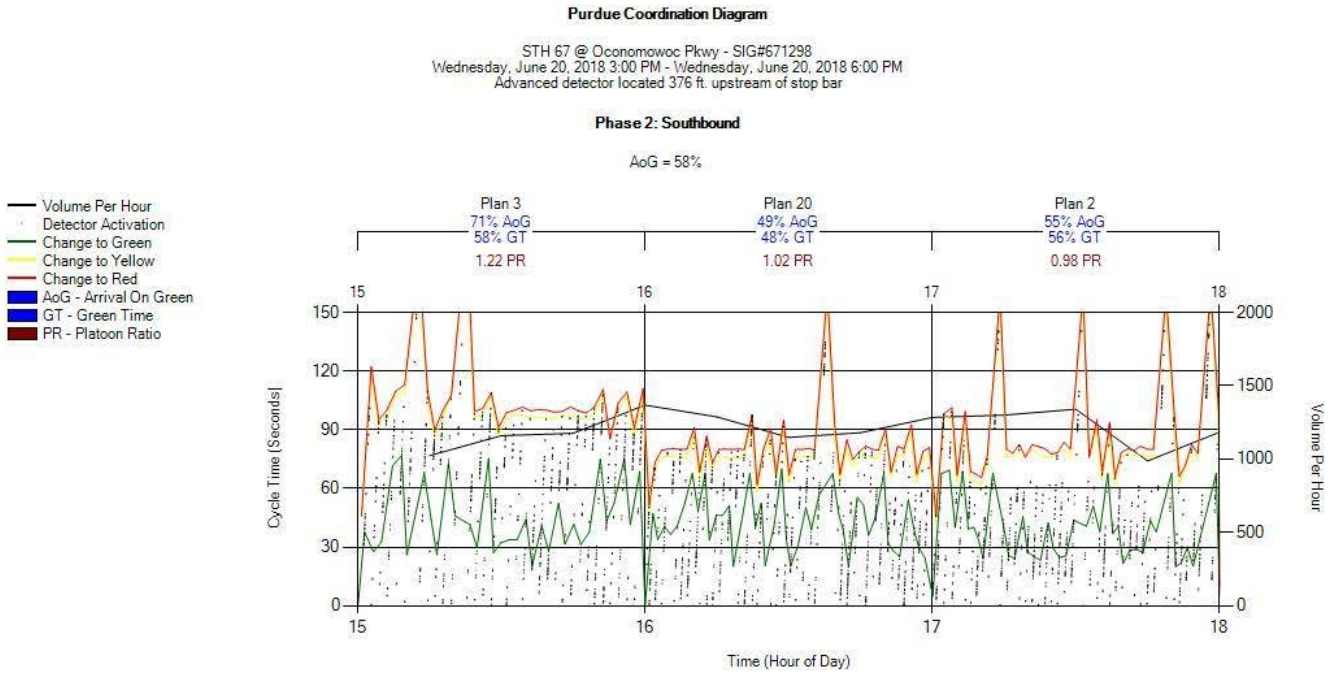
STH 67 @ Oconomowoc Pkwy - SIG#671298
Tuesday, June 19, 2018 3:00 PM - Tuesday, June 19, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar

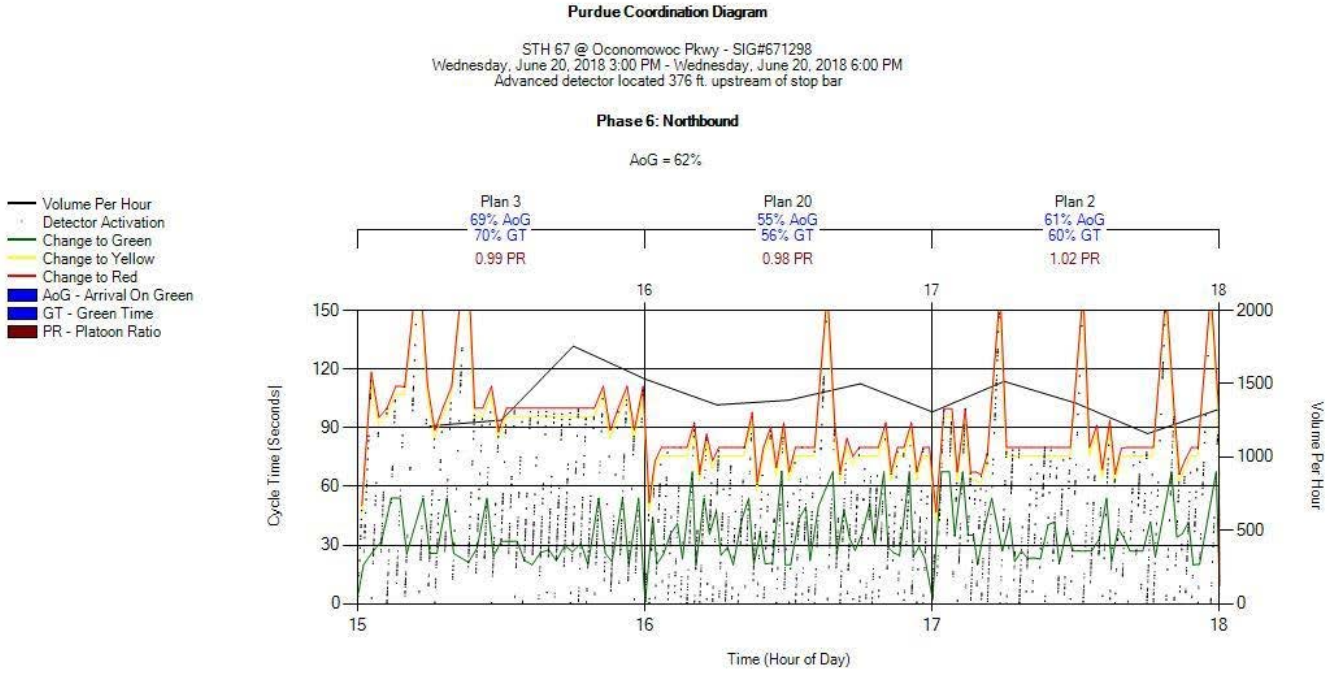
Phase 6: Northbound

AoG = 67%



WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
HCS Timings
6/20/2018 – 3:00 PM – 6:00 PM



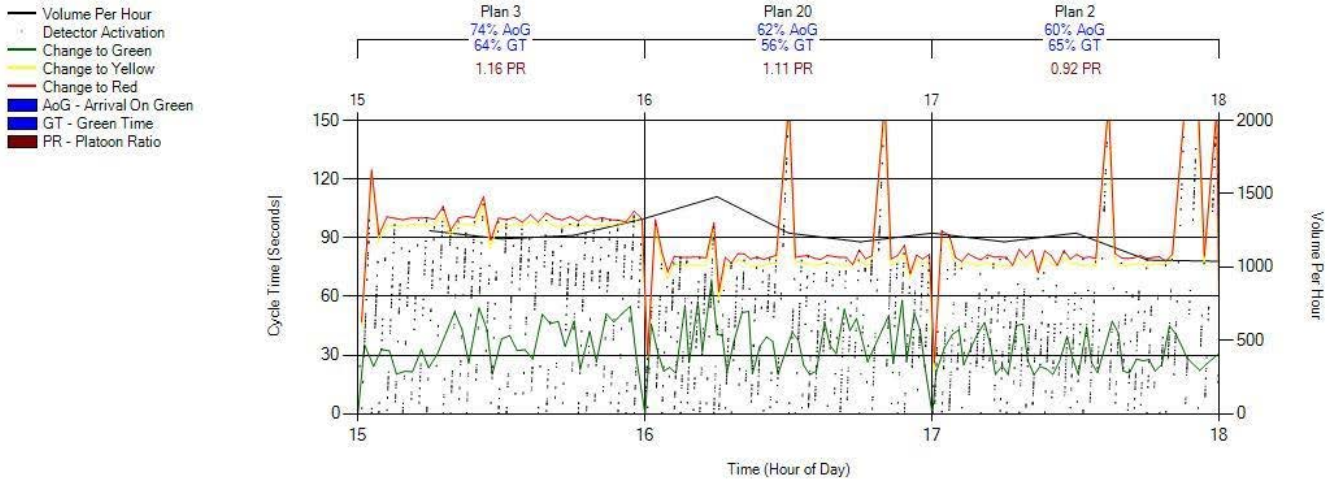


Purdue Coordination Diagram

STH 67 @ Oconomowoc Pkwy - SIG#671298
Thursday, June 21, 2018 3:00 PM - Thursday, June 21, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar

Phase 2: Southbound

AoG = 65%

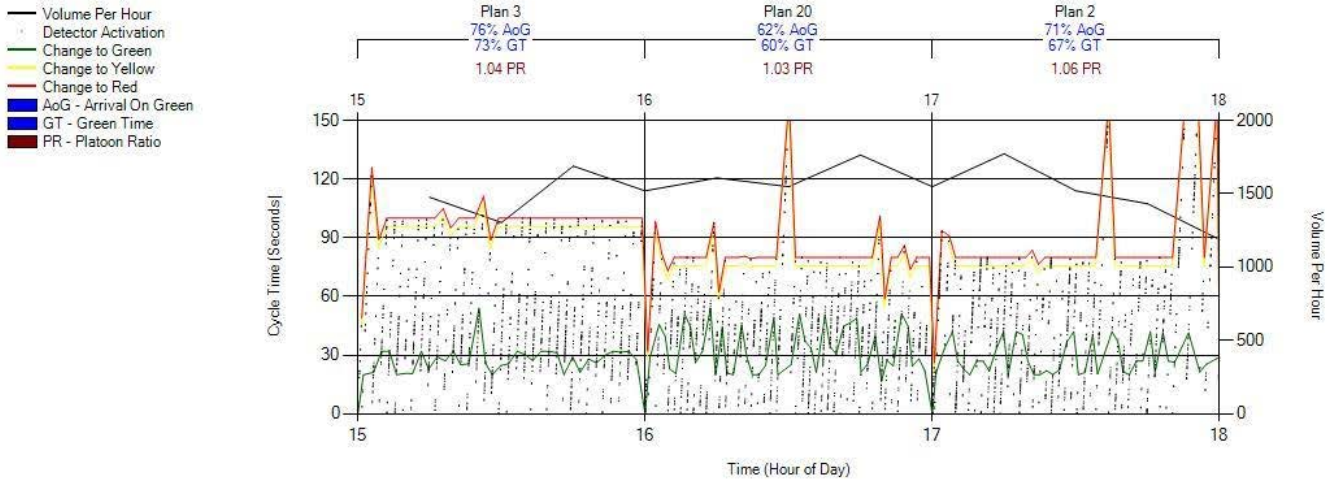


Purdue Coordination Diagram

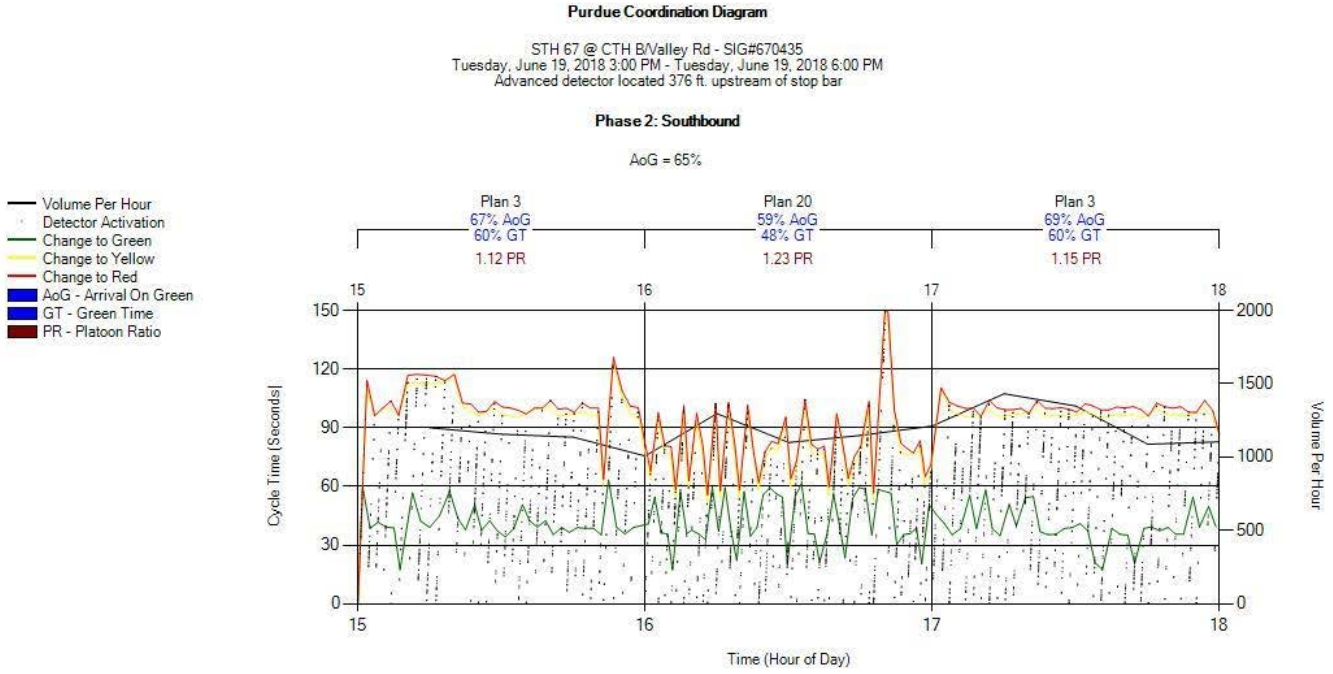
STH 67 @ Oconomowoc Pkwy - SIG#671298
Thursday, June 21, 2018 3:00 PM - Thursday, June 21, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar

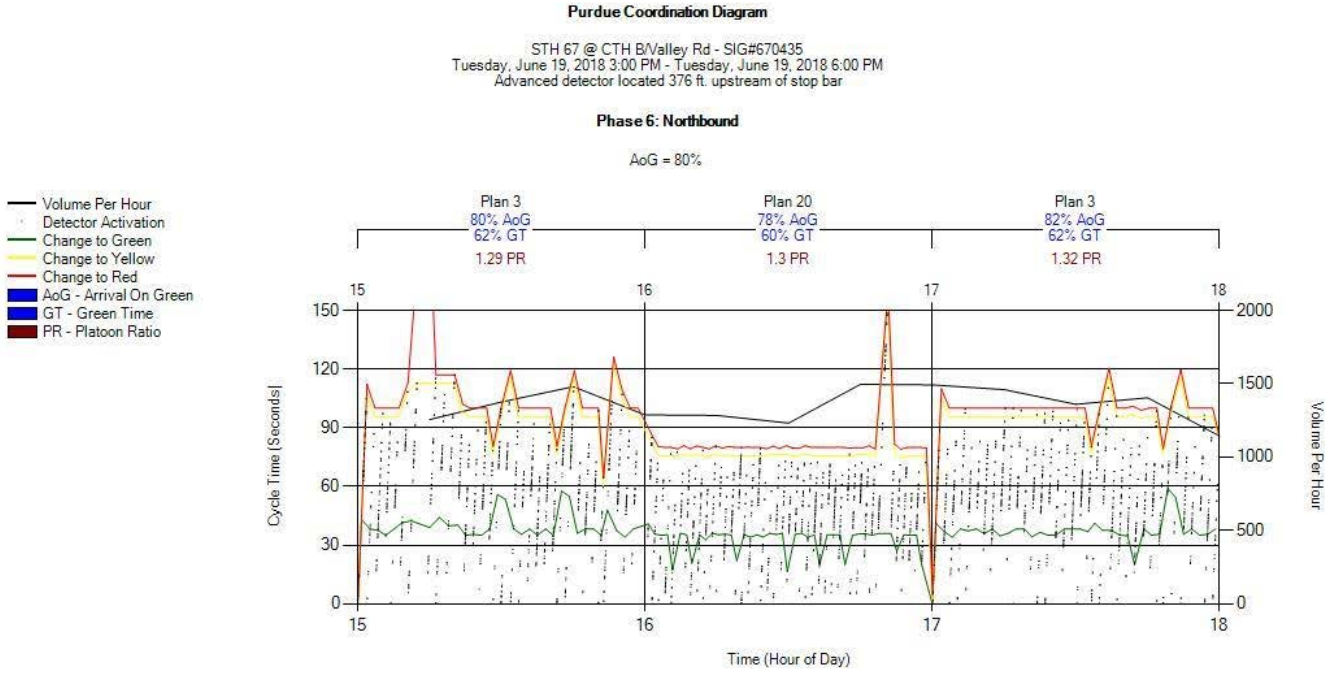
Phase 6: Northbound

AoG = 70%

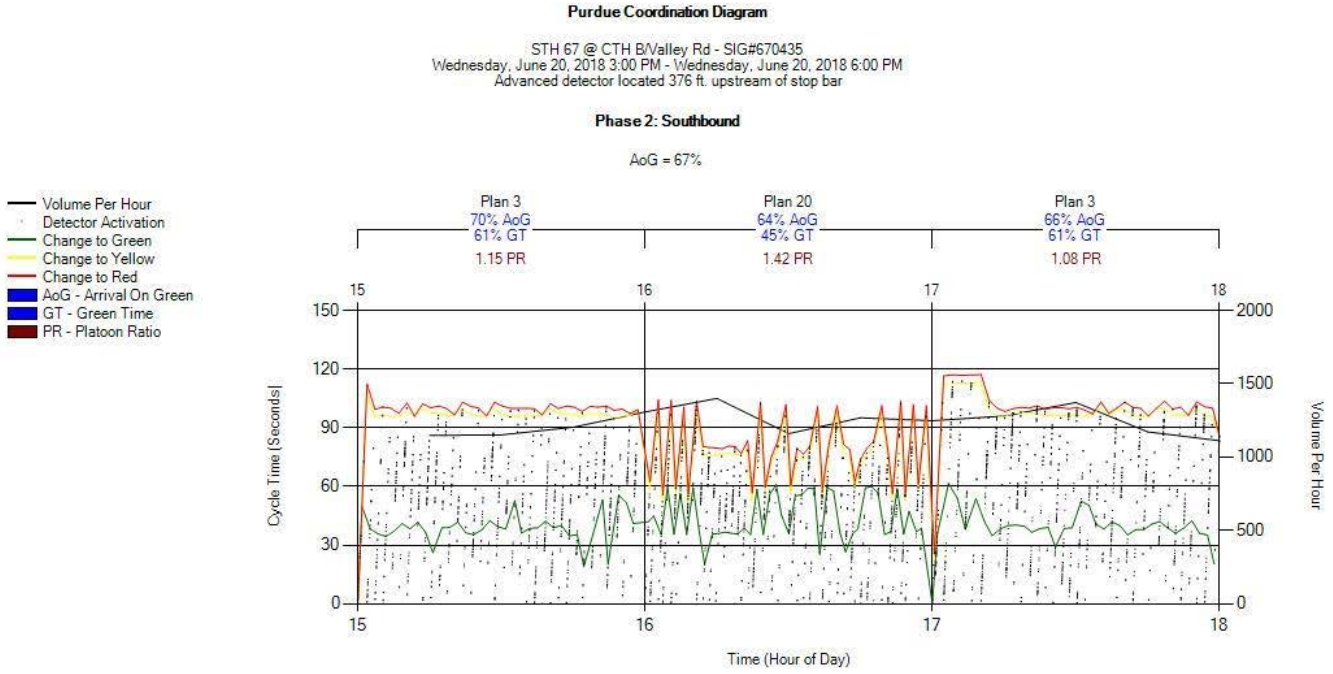


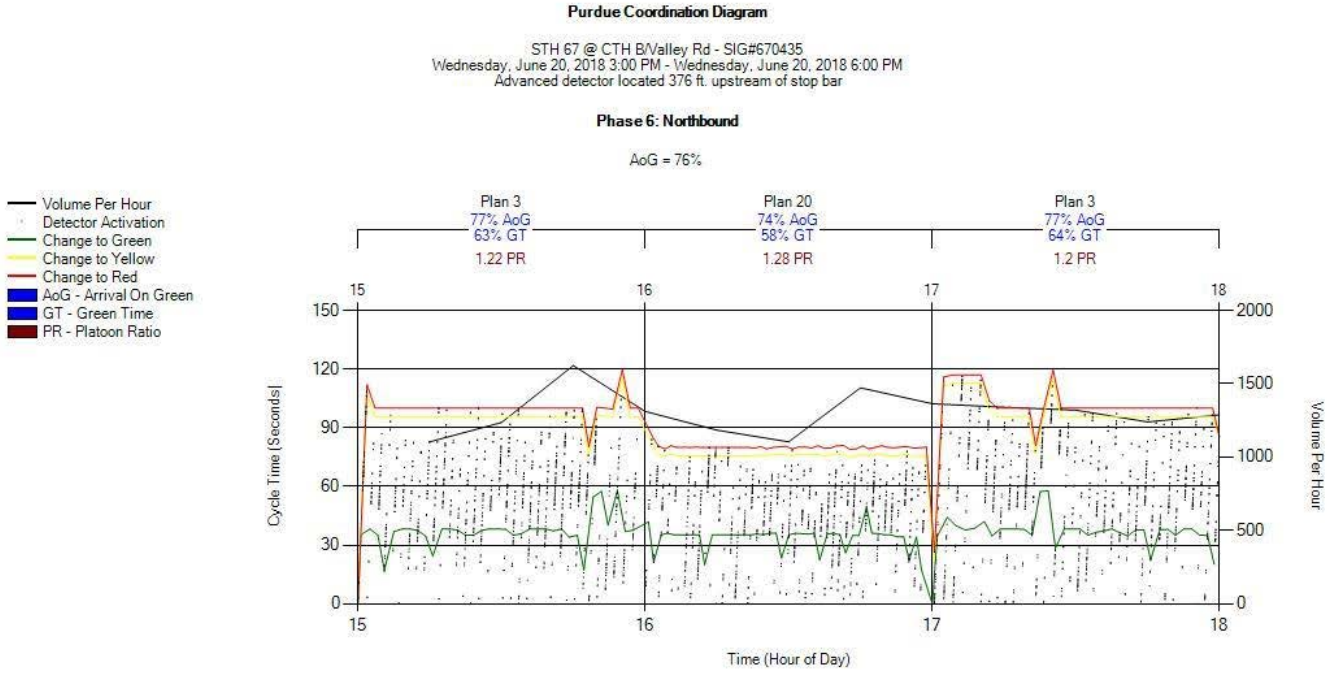
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
HCS Timings
6/19/2018 – 3:00 PM – 6:00 PM



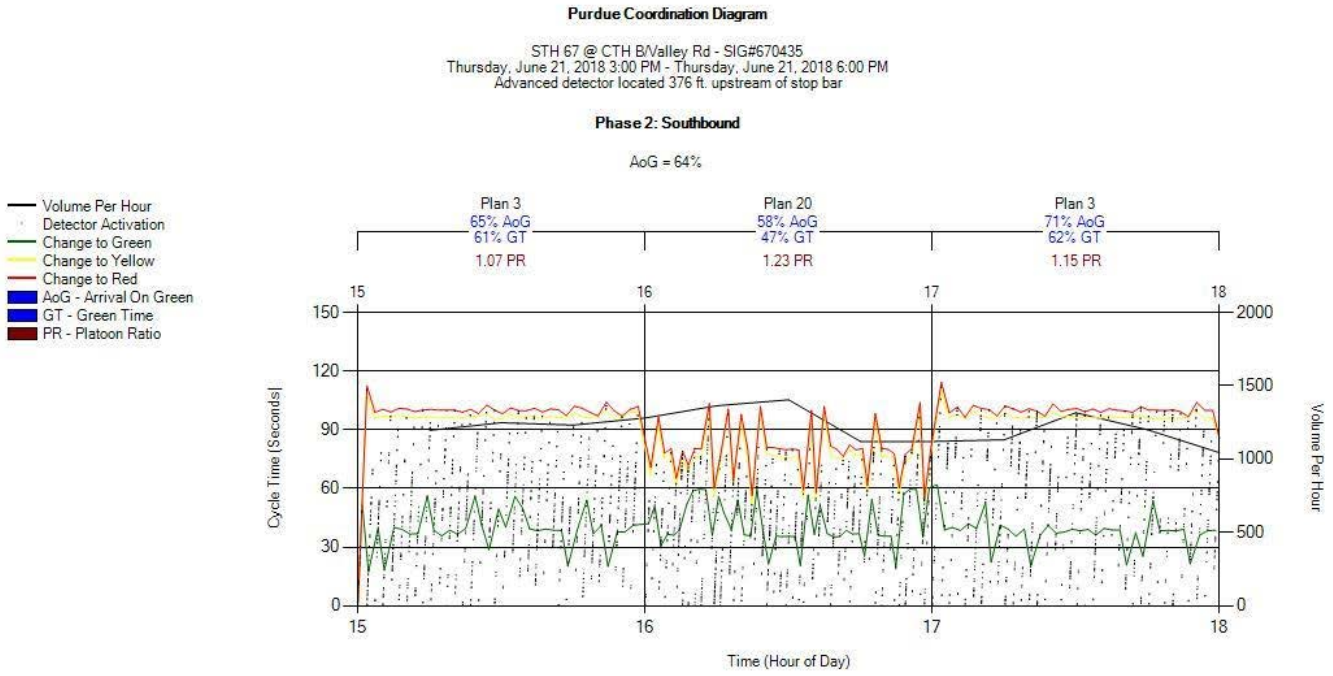


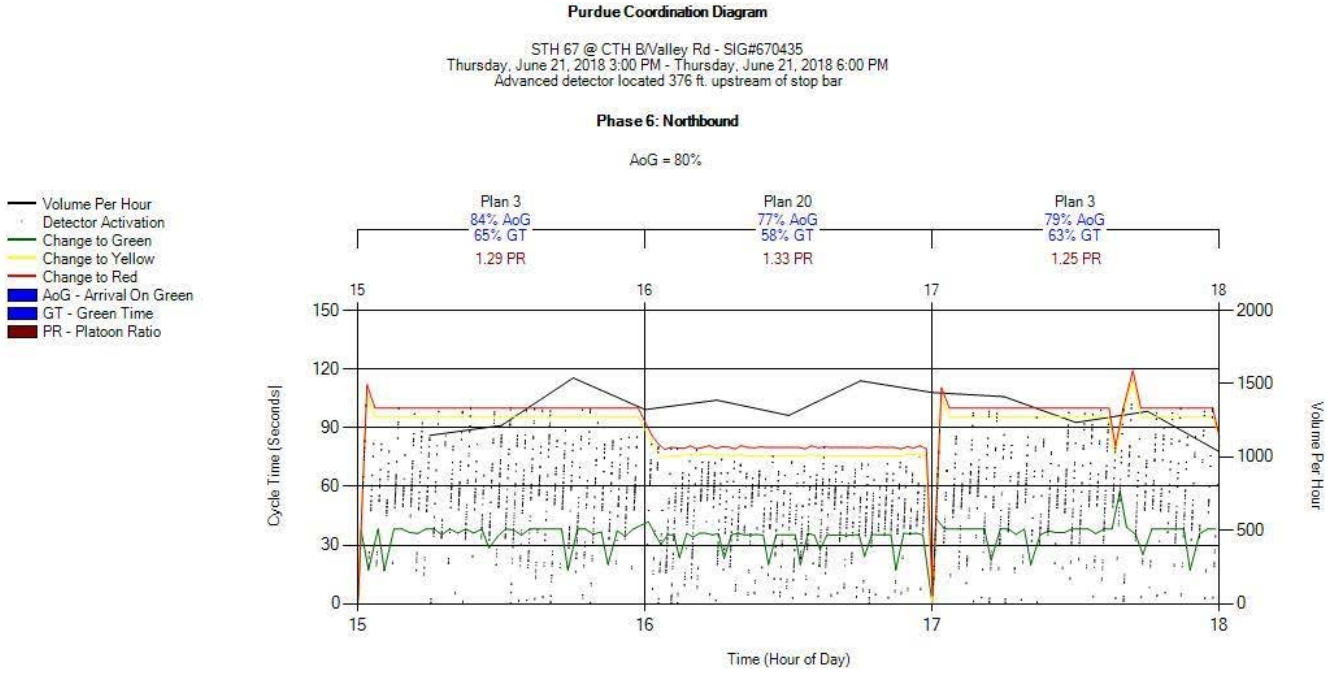
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
HCS Timings
6/20/2018 – 3:00 PM – 6:00 PM





WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
HCS Timings
6/21/2018 – 3:00 PM – 6:00 PM





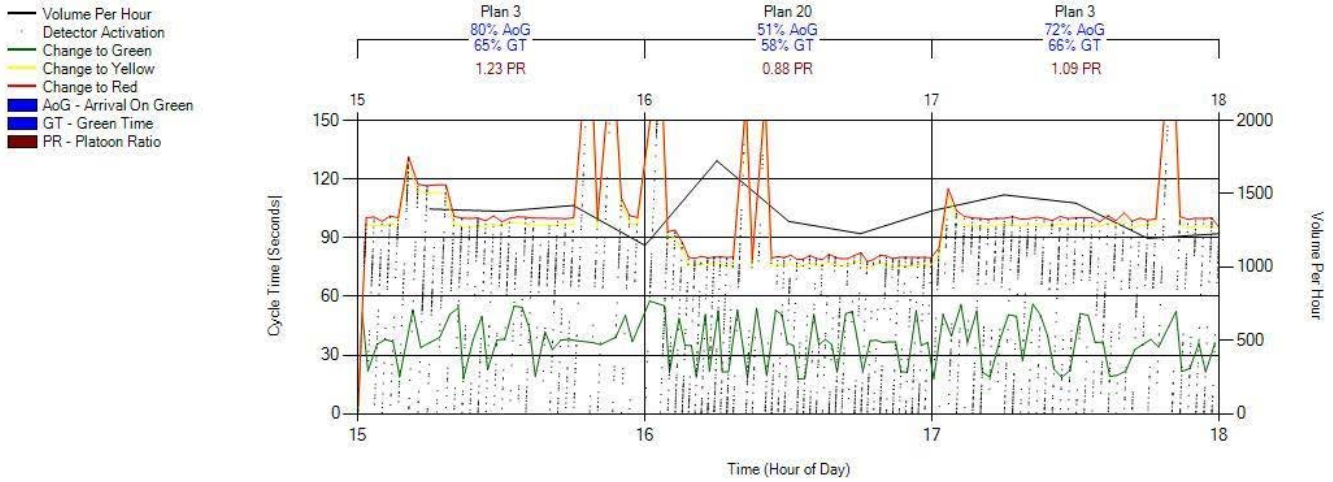
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
HCS Timings
6/19/2018 – 3:00 PM – 6:00 PM

Purdue Coordination Diagram

STH 67 @ Oconomowoc Dr/Pabst Farm Blvd - SIG#670890
Tuesday, June 19, 2018 3:00 PM - Tuesday, June 19, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar

Phase 2: Southbound

AoG = 67%

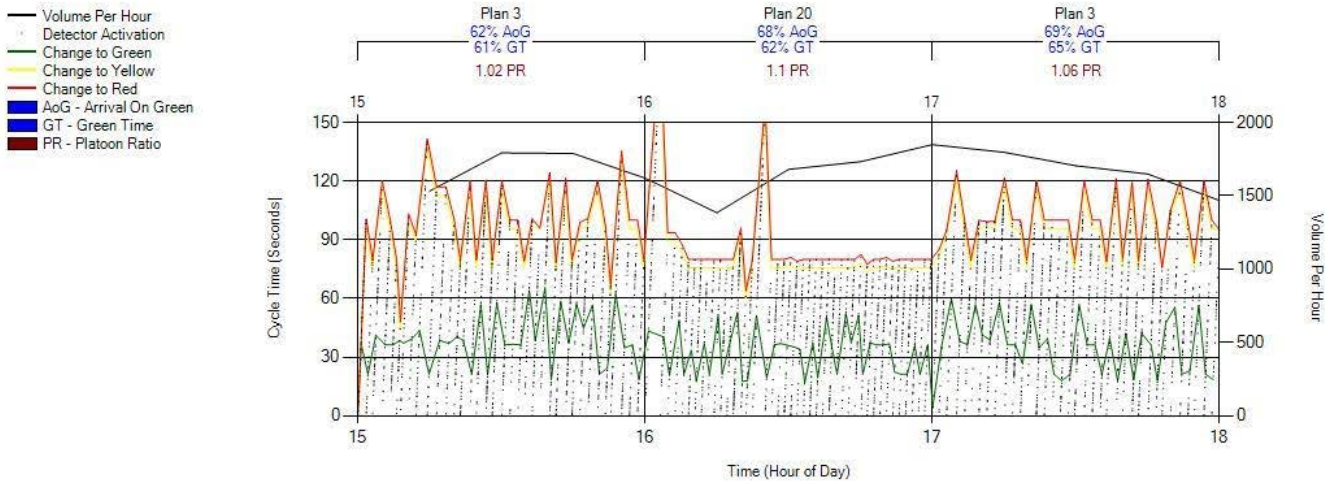


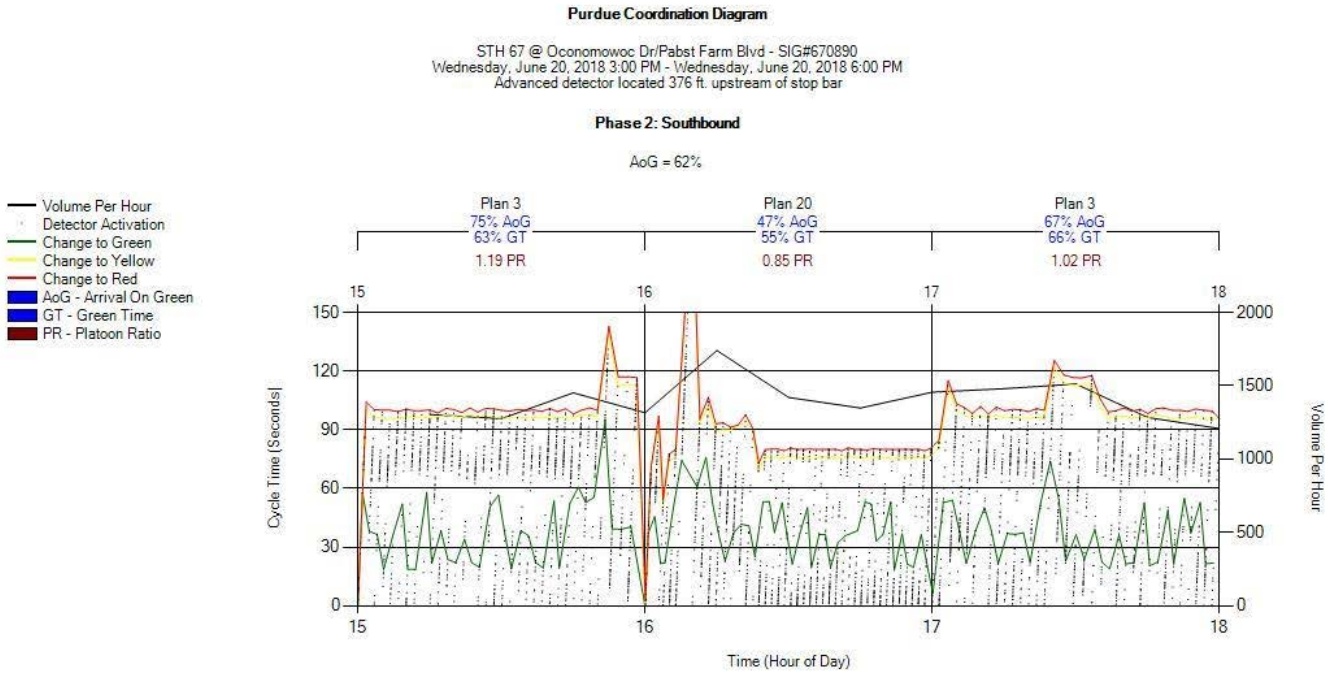
Purdue Coordination Diagram

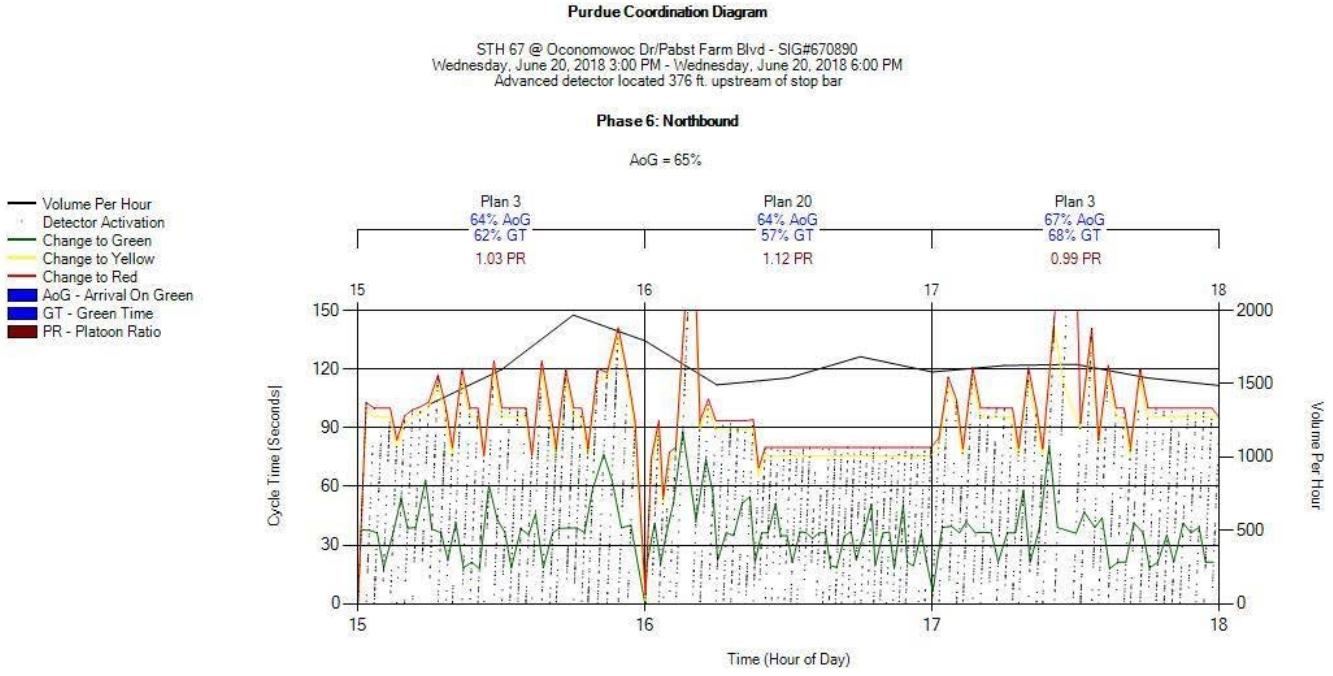
STH 67 @ Oconomowoc Dr/Pabst Farm Blvd - SIG#670890
Tuesday, June 19, 2018 3:00 PM - Tuesday, June 19, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar

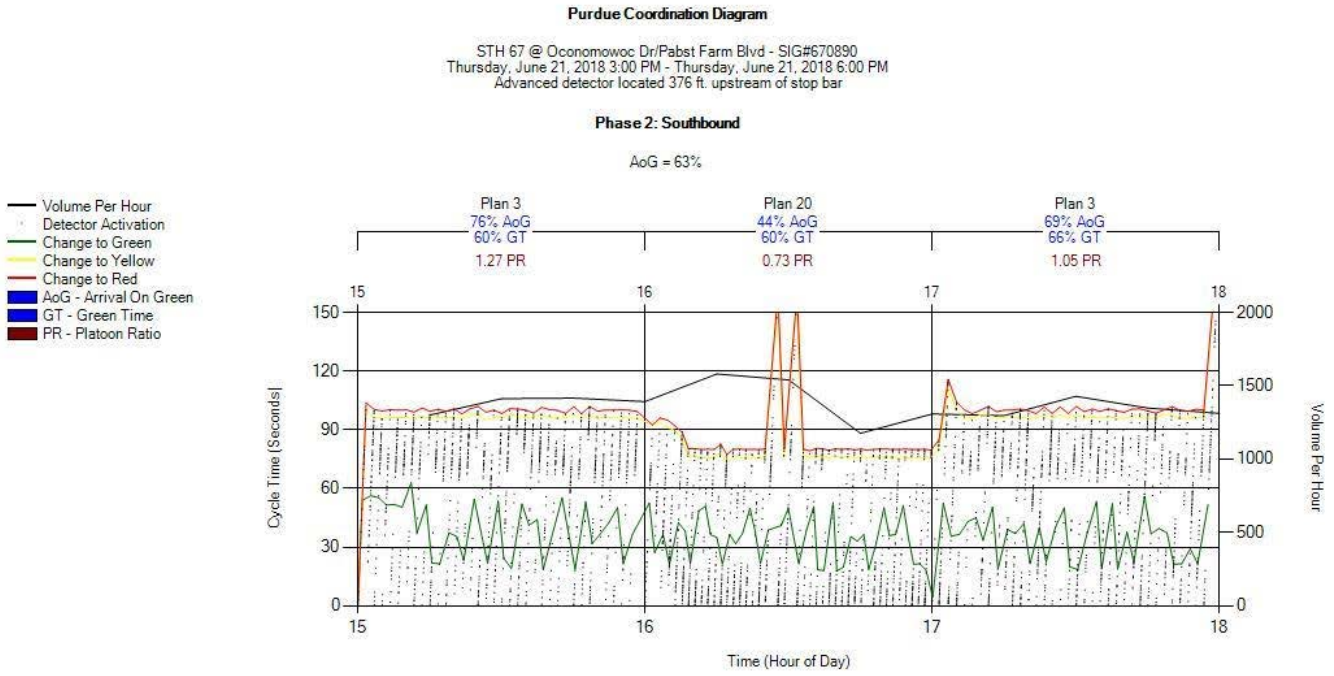
Phase 6: Northbound

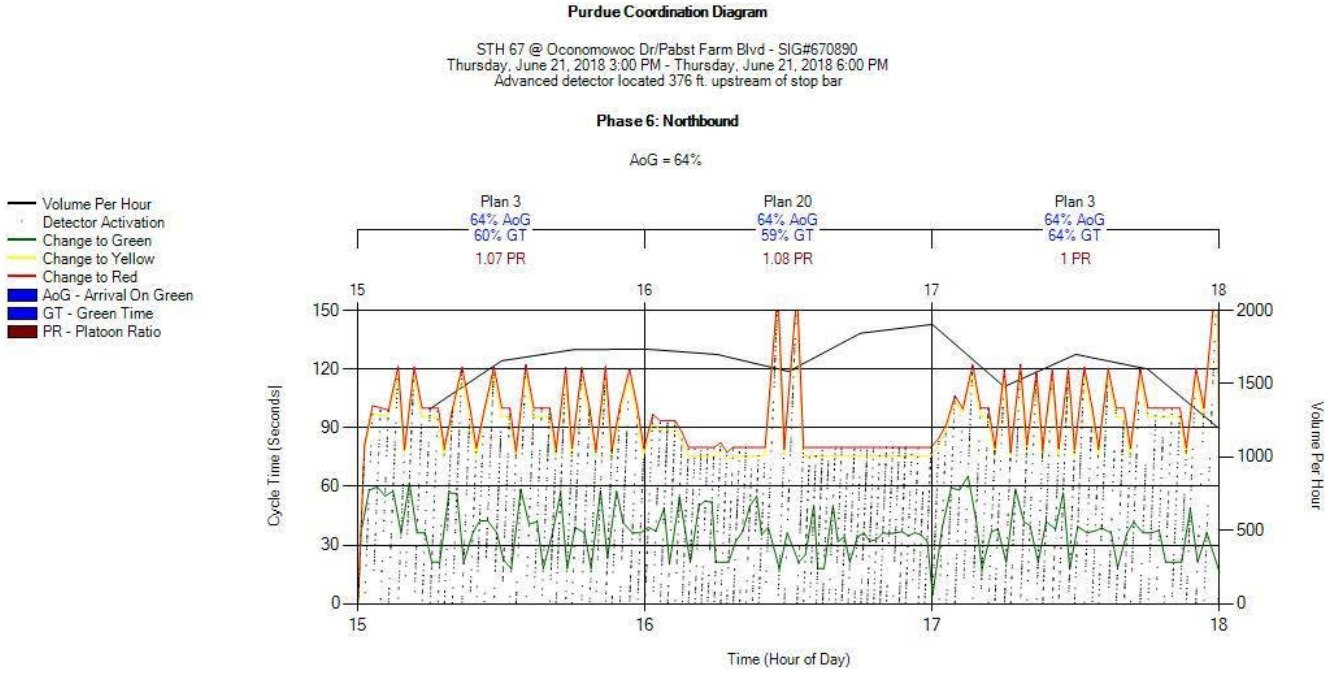
AoG = 66%



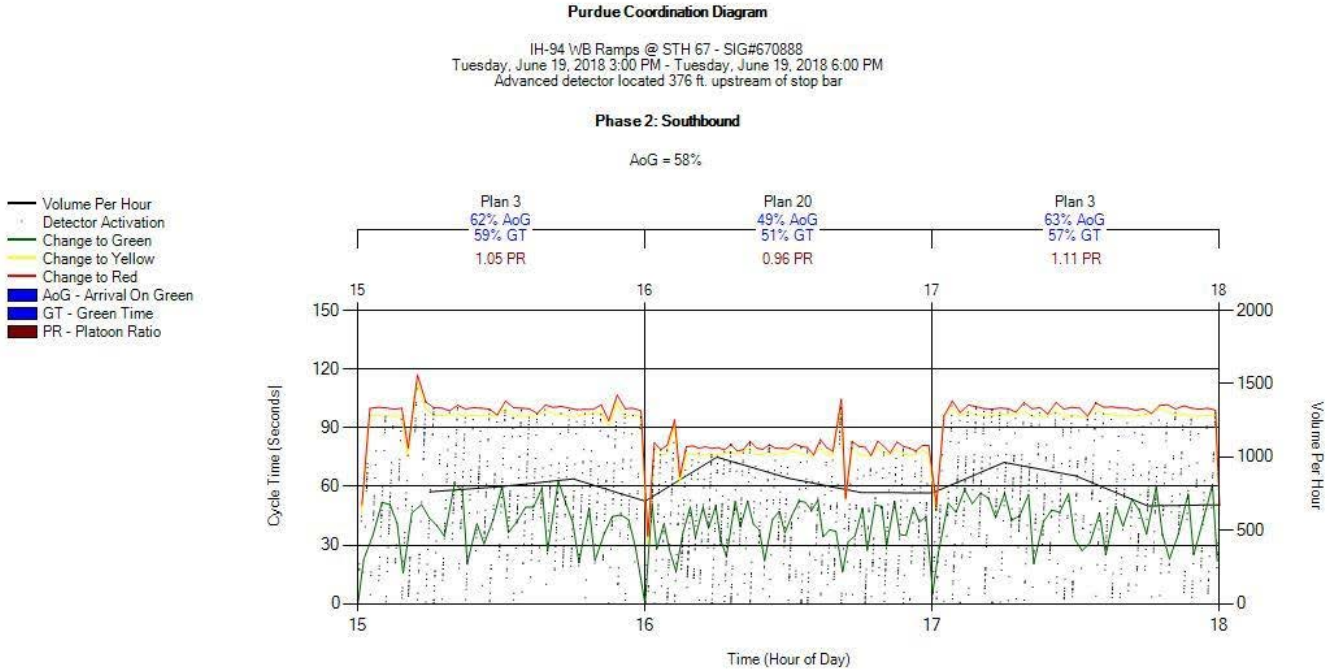

Purdue Coordination Diagram
STH 67 @ Oconomowoc Dr/Pabst Farm Blvd - SIG#670890
Wednesday, June 20, 2018 3:00 PM - Wednesday, June 20, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar
Phase 2: Southbound
AoG = 62%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
75% AoG
63% GT
1.19 PR
Plan 20
47% AoG
55% GT
0.85 PR
Plan 3
67% AoG
66% GT
1.02 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)

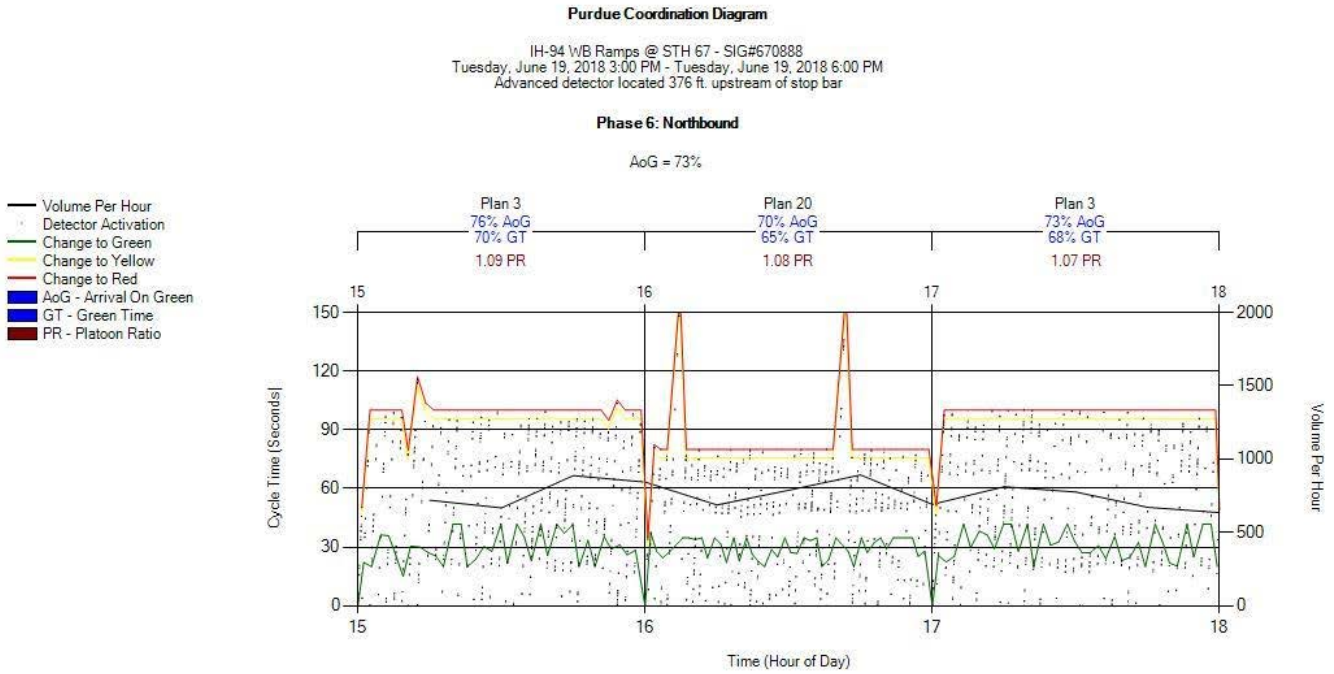

Purdue Coordination Diagram
STH 67 @ Oconomowoc Dr/Pabst Farm Blvd - SIG#670890
Wednesday, June 20, 2018 3:00 PM - Wednesday, June 20, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar
Phase 6: Northbound
AoG = 65%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
64% AoG
62% GT
1.03 PR
Plan 20
64% AoG
57% GT
1.12 PR
Plan 3
67% AoG
68% GT
0.99 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)


Purdue Coordination Diagram
STH 67 @ Oconomowoc Dr/Pabst Farm Blvd - SIG#670890
Thursday, June 21, 2018 3:00 PM - Thursday, June 21, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar
Phase 2: Southbound
AoG = 63%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
76% AoG
60% GT
1.27 PR
Plan 20
44% AoG
60% GT
0.73 PR
Plan 3
69% AoG
66% GT
1.05 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)


Purdue Coordination Diagram
STH 67 @ Oconomowoc Dr/Pabst Farm Blvd - SIG#670890
Thursday, June 21, 2018 3:00 PM - Thursday, June 21, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar
Phase 6: Northbound
AoG = 64%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
64% AoG
60% GT
1.07 PR
Plan 20
64% AoG
59% GT
1.08 PR
Plan 3
64% AoG
64% GT
1 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)

WIS 67 Corridor – STH 67 & I-94 WB Ramps
HCS Timings
6/19/2018 – 3:00 PM – 6:00 PM



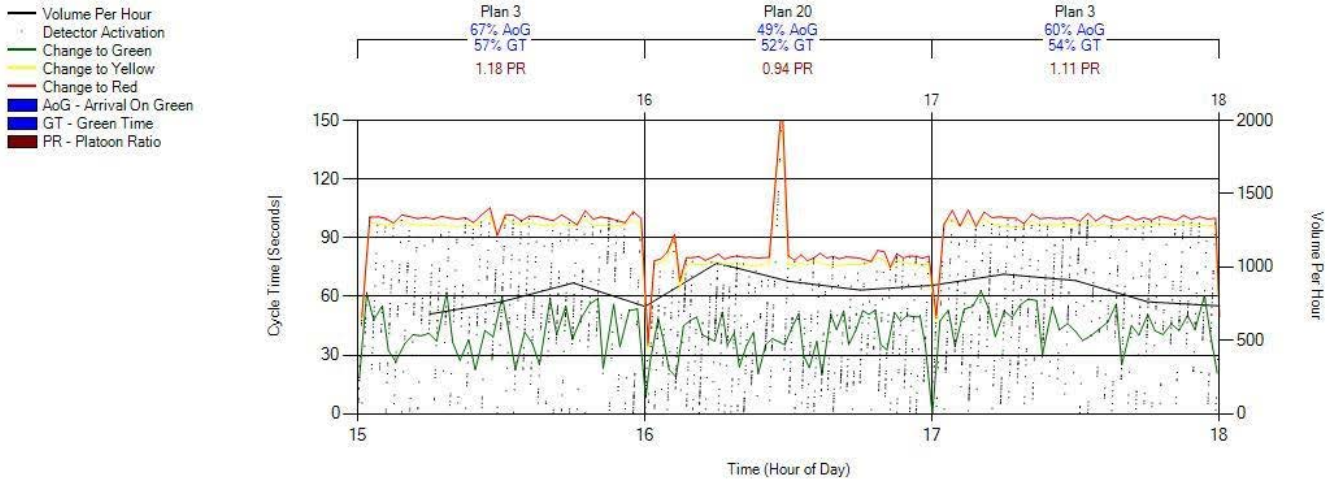


Purdue Coordination Diagram

IH-94 WB Ramps @ STH 67 - SIG#670888
Wednesday, June 20, 2018 3:00 PM - Wednesday, June 20, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar

Phase 2: Southbound

AoG = 58%

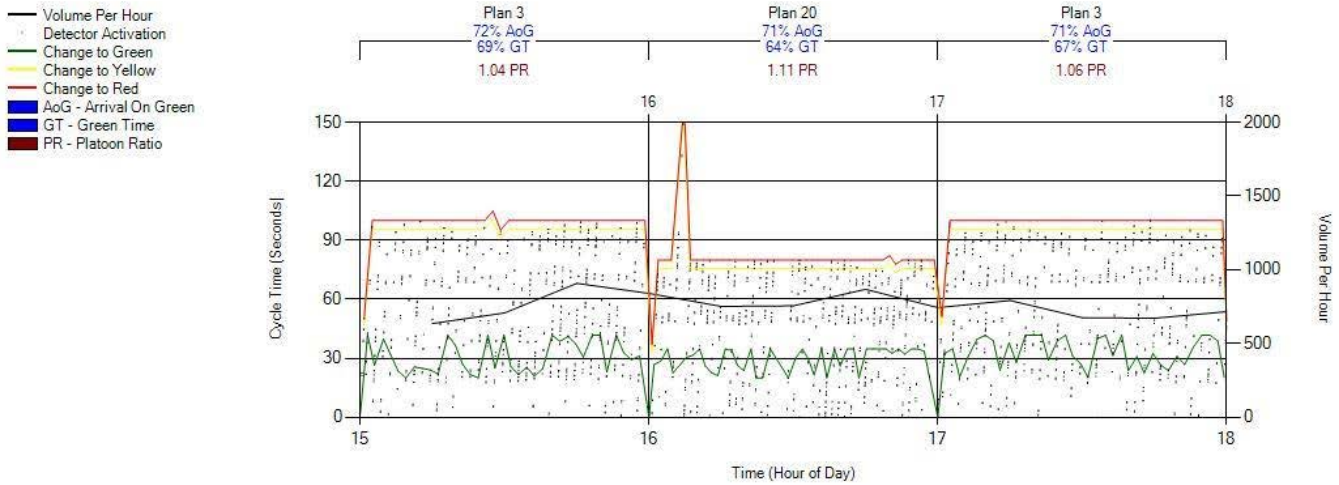


Purdue Coordination Diagram

IH-94 WB Ramps @ STH 67 - SIG#670888
Wednesday, June 20, 2018 3:00 PM - Wednesday, June 20, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar

Phase 6: Northbound

AoG = 71%

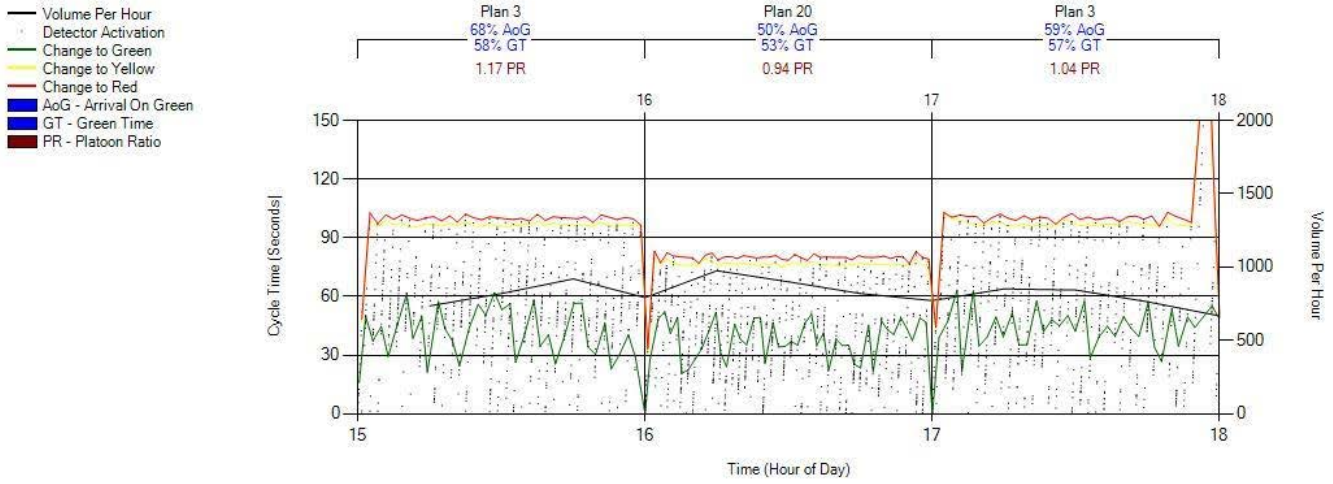


Purdue Coordination Diagram

IH-94 WB Ramps @ STH 67 - SIG#670888
Thursday, June 21, 2018 3:00 PM - Thursday, June 21, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar

Phase 2: Southbound

AoG = 59%

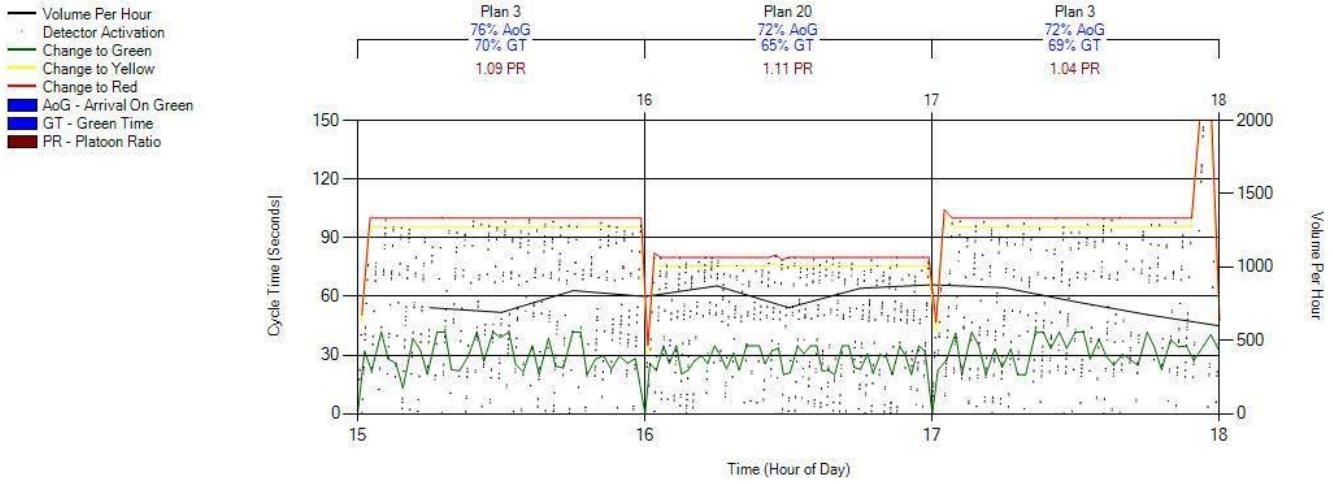


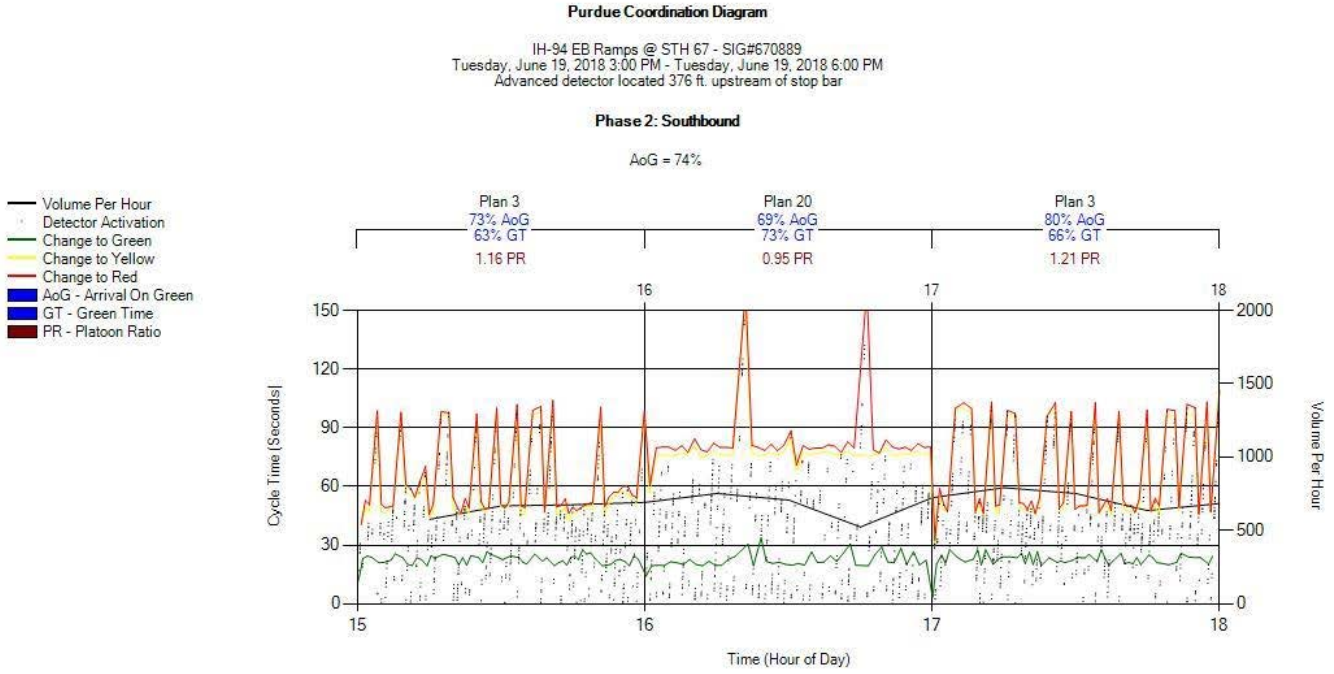
Purdue Coordination Diagram

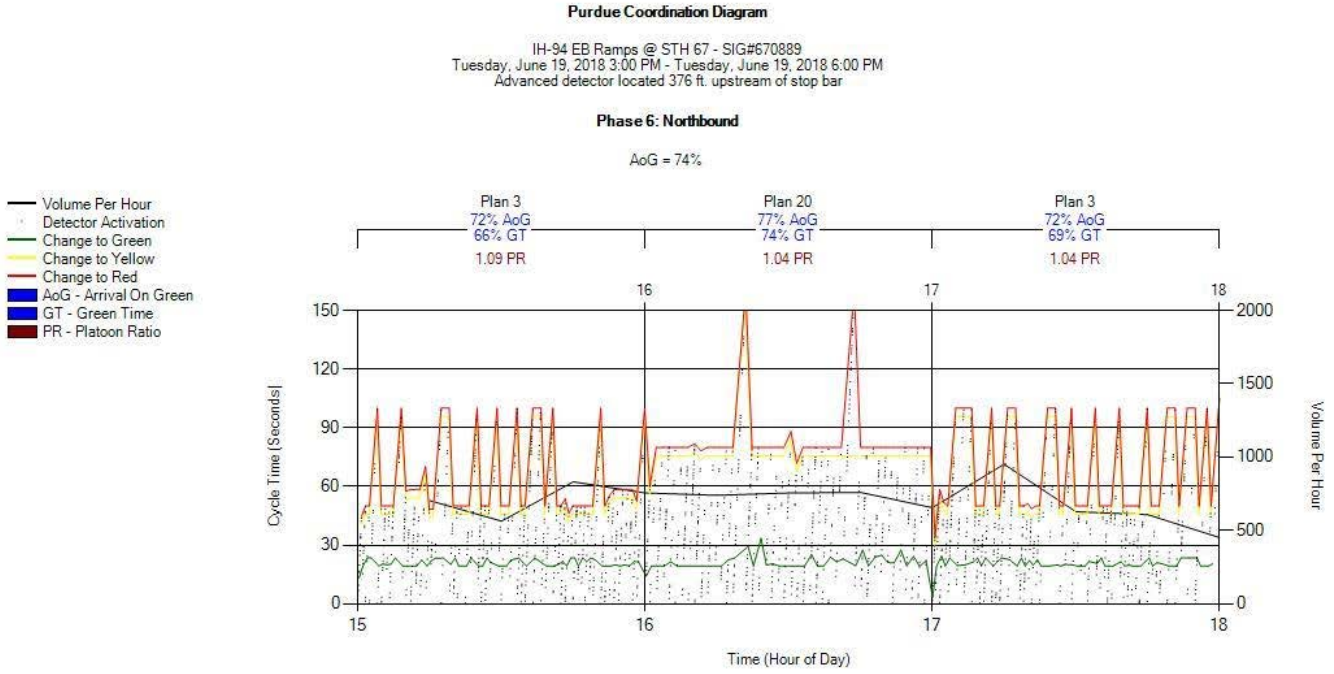
IH-94 WB Ramps @ STH 67 - SIG#670888
Thursday, June 21, 2018 3:00 PM - Thursday, June 21, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar

Phase 6: Northbound

AoG = 73%




Purdue Coordination Diagram
IH-94 EB Ramps @ STH 67 - SIG#670889
Tuesday, June 19, 2018 3:00 PM - Tuesday, June 19, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar
Phase 2: Southbound
AoG = 74%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
73% AoG
63% GT
1.16 PR
Plan 20
69% AoG
73% GT
0.95 PR
Plan 3
80% AoG
66% GT
1.21 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)

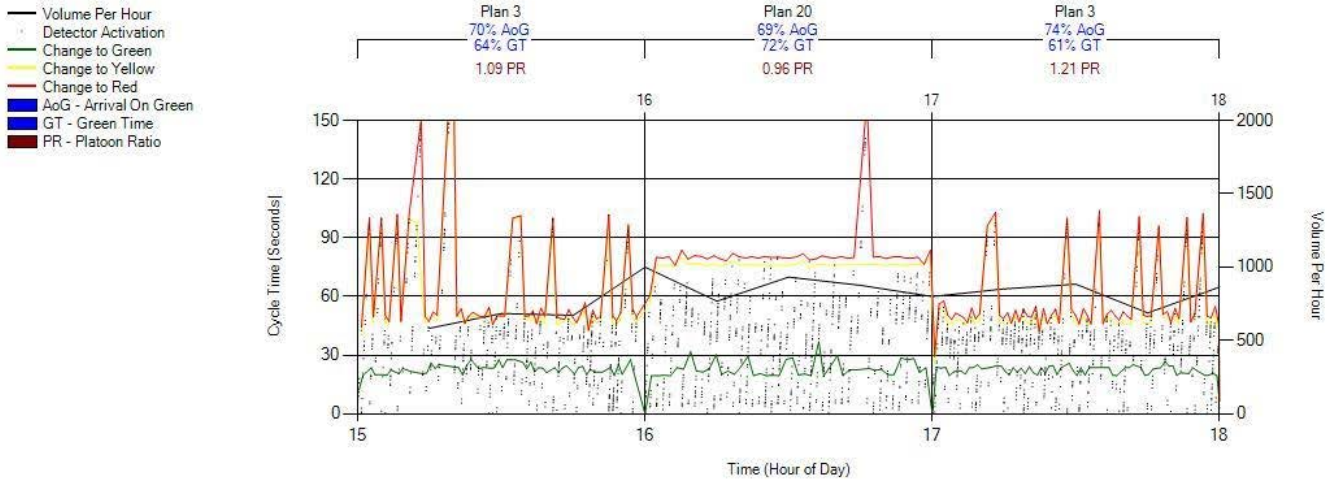

Purdue Coordination Diagram
IH-94 EB Ramps @ STH 67 - SIG#670889
Tuesday, June 19, 2018 3:00 PM - Tuesday, June 19, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar
Phase 6: Northbound
AoG = 74%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
72% AoG
66% GT
1.09 PR
Plan 20
77% AoG
74% GT
1.04 PR
Plan 3
72% AoG
69% GT
1.04 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)

Purdue Coordination Diagram

IH-94 EB Ramps @ STH 67 - SIG#670889
Wednesday, June 20, 2018 3:00 PM - Wednesday, June 20, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar

Phase 2: Southbound

AoG = 71%

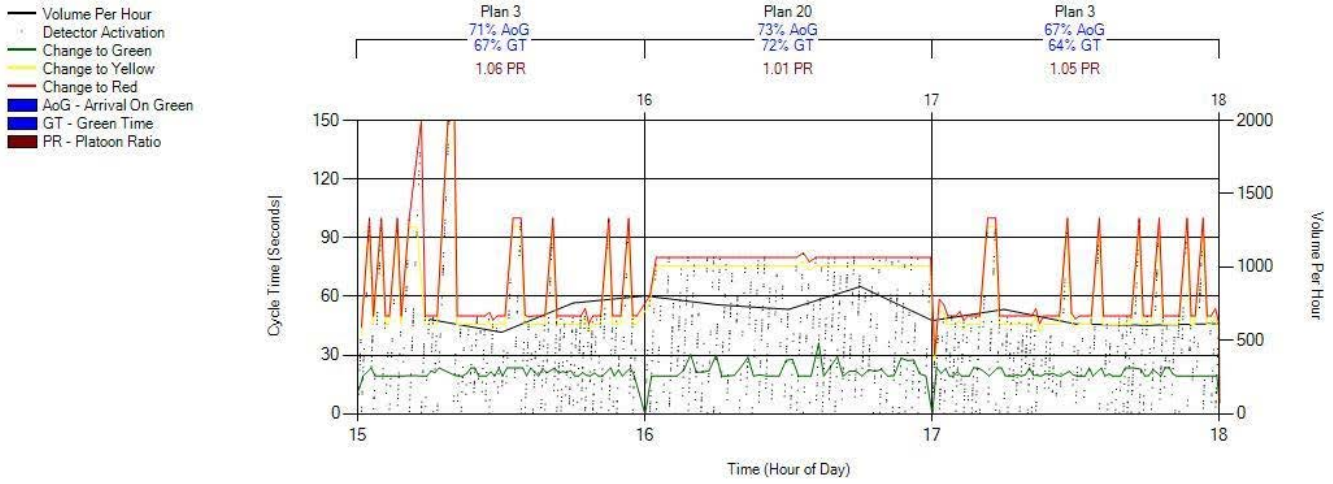


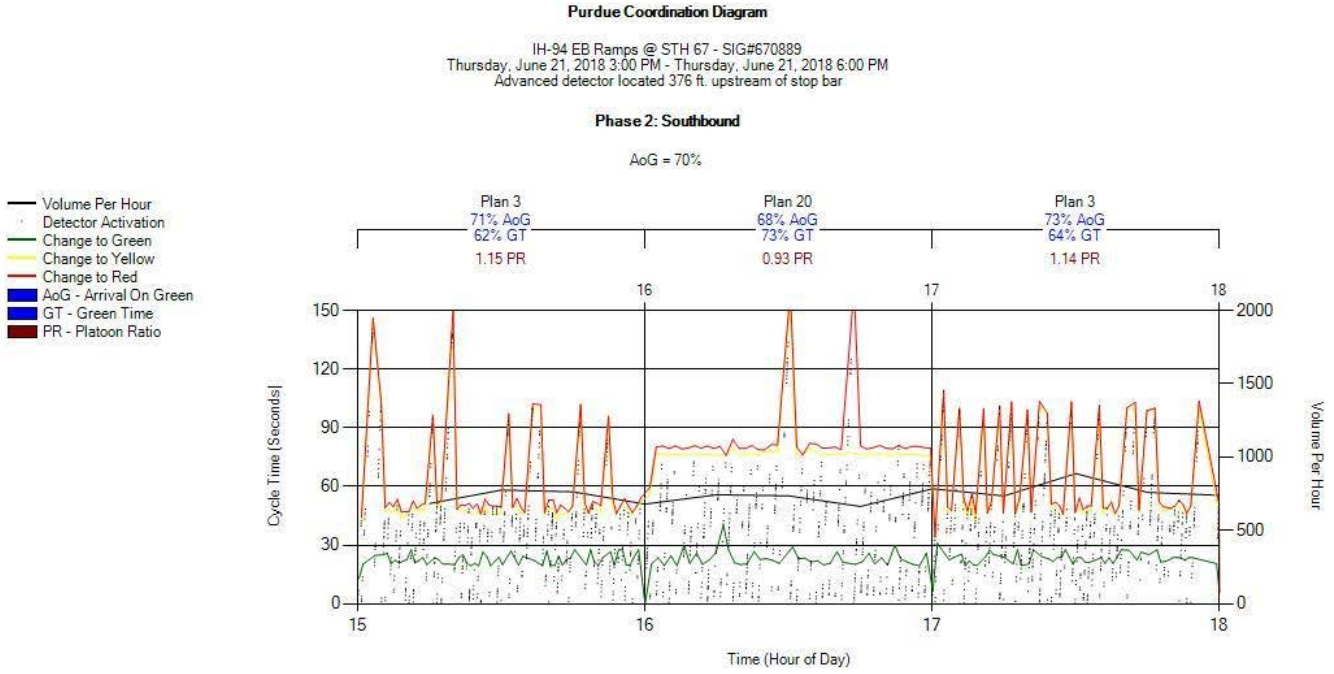
Purdue Coordination Diagram

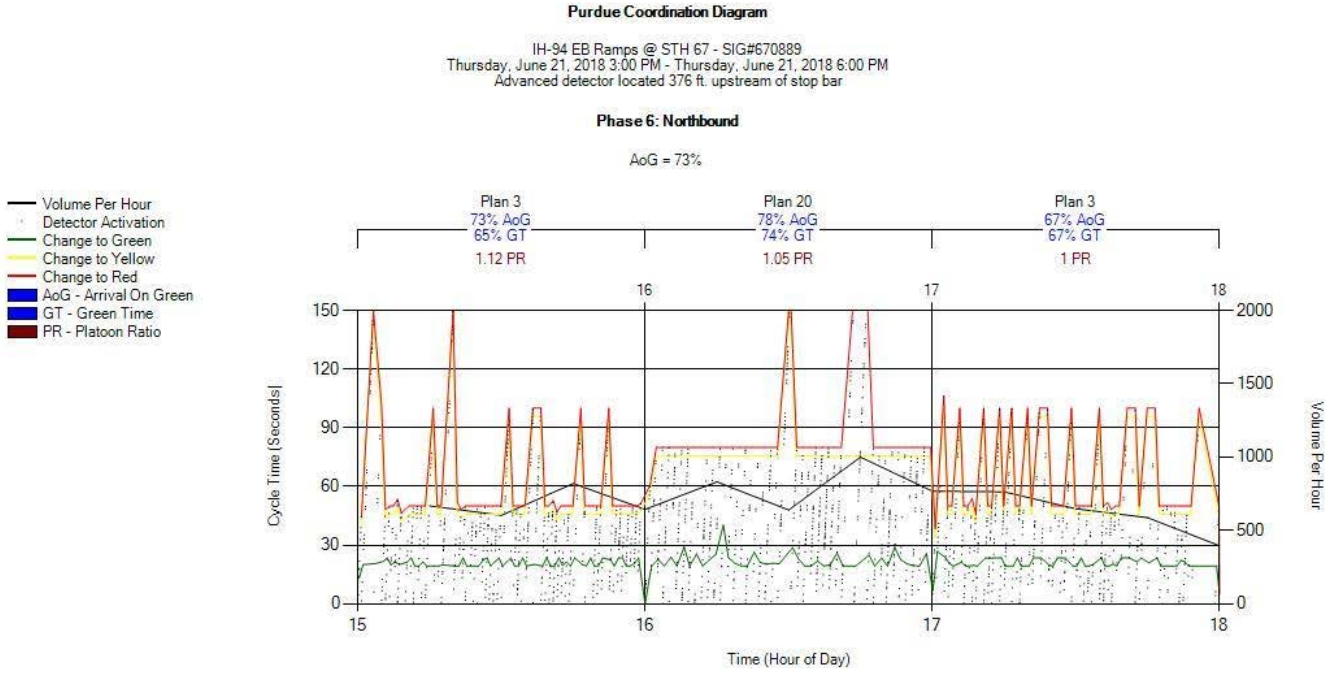
IH-94 EB Ramps @ STH 67 - SIG#670889
Wednesday, June 20, 2018 3:00 PM - Wednesday, June 20, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar

Phase 6: Northbound

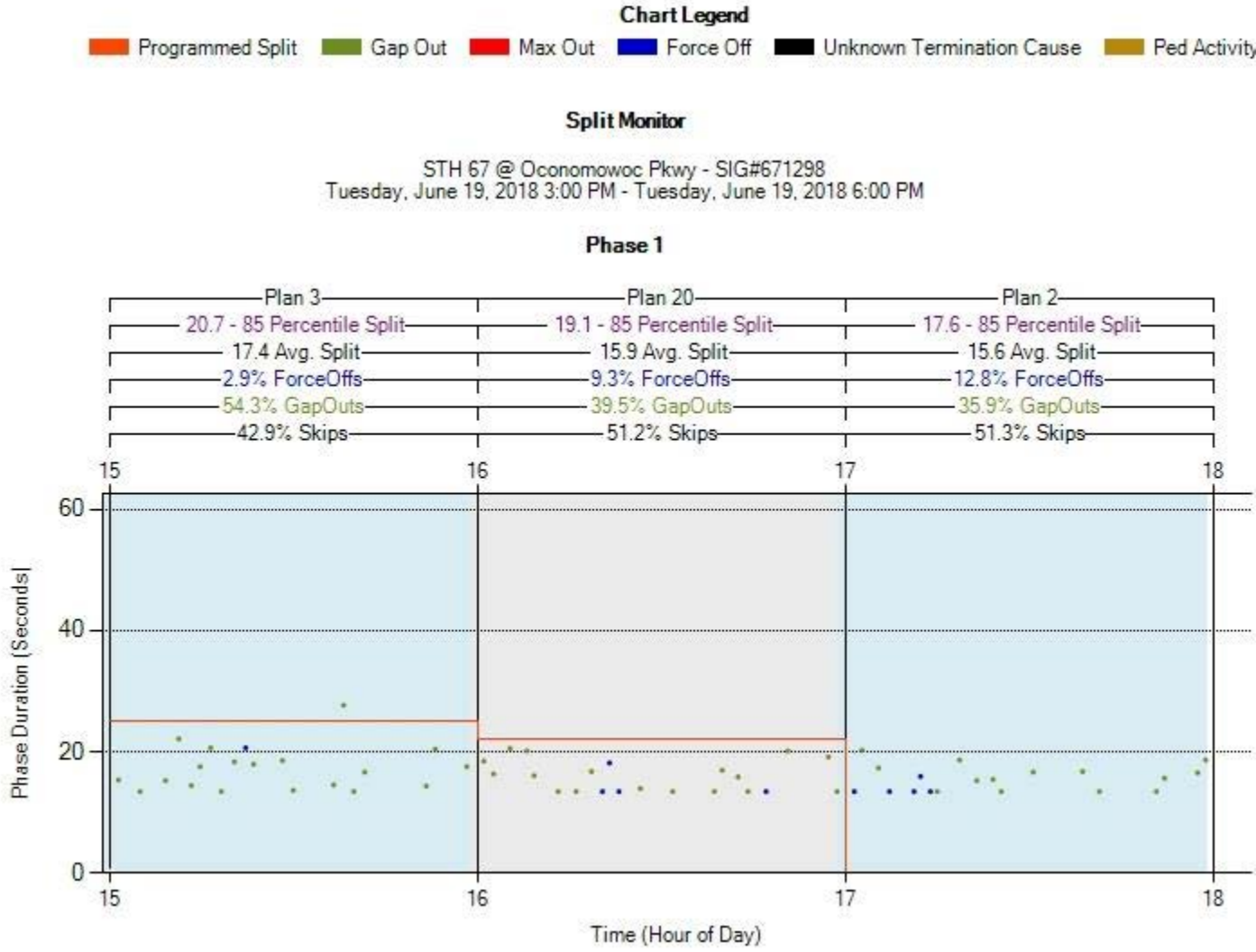
AoG = 70%



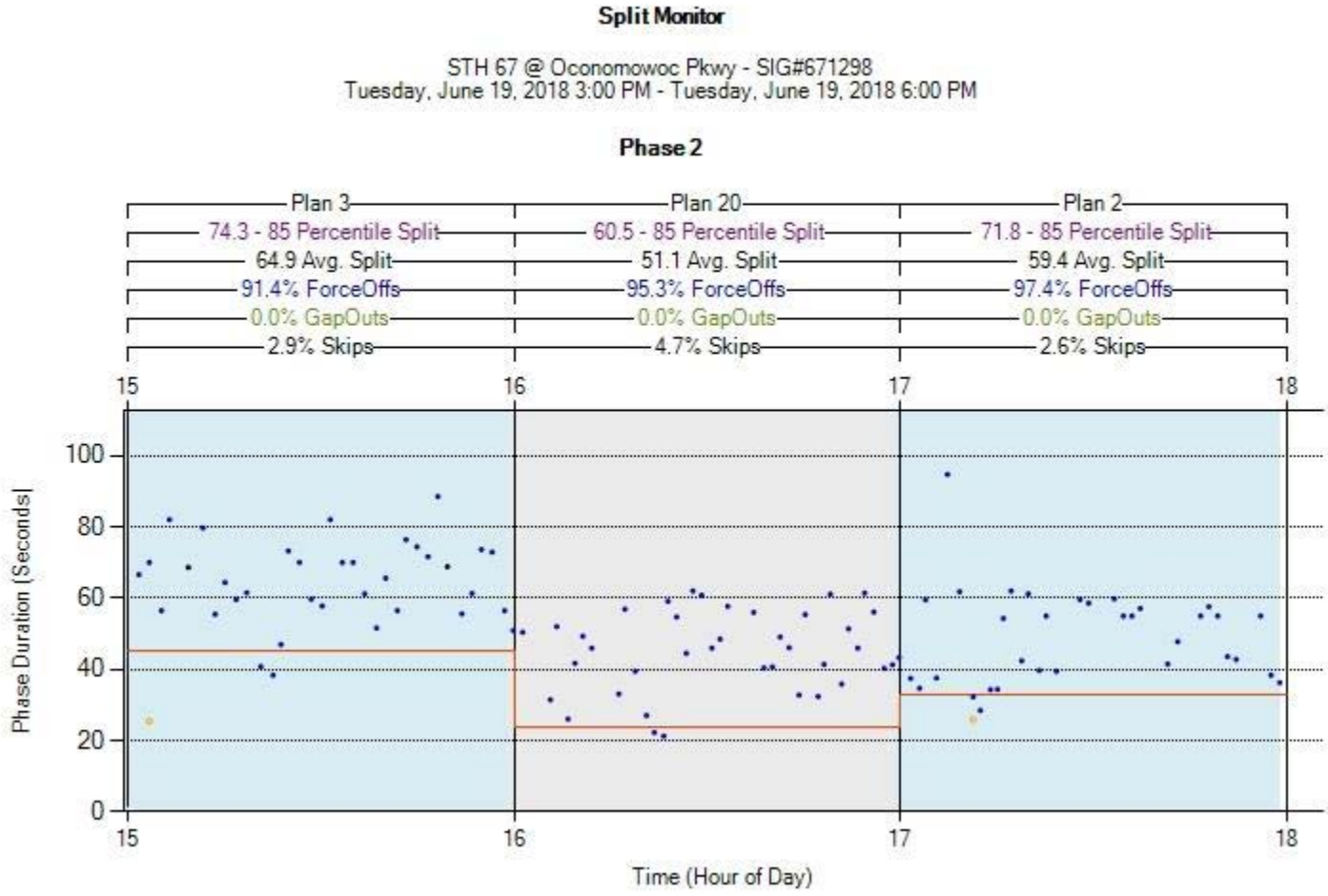

Purdue Coordination Diagram
IH-94 EB Ramps @ STH 67 - SIG#670889
Thursday, June 21, 2018 3:00 PM - Thursday, June 21, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar
Phase 2: Southbound
AoG = 70%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
71% AoG
62% GT
1.15 PR
Plan 20
68% AoG
73% GT
0.93 PR
Plan 3
73% AoG
64% GT
1.14 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)


Purdue Coordination Diagram
IH-94 EB Ramps @ STH 67 - SIG#670889
Thursday, June 21, 2018 3:00 PM - Thursday, June 21, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar
Phase 6: Northbound
AoG = 73%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
73% AoG
65% GT
1.12 PR
Plan 20
78% AoG
74% GT
1.05 PR
Plan 3
67% AoG
67% GT
1 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)

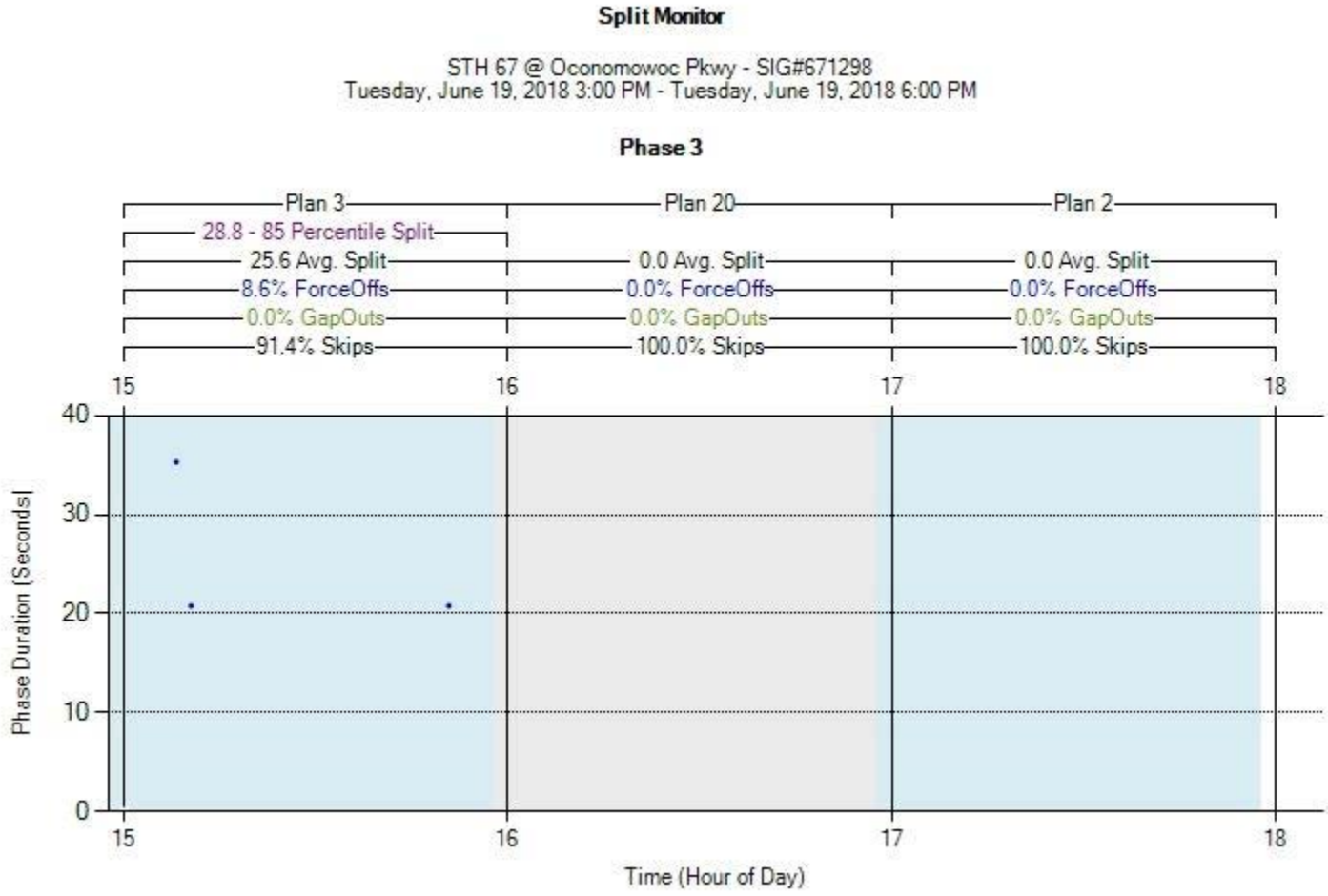
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
HCS Timings
6/19/2018 – 3:00 PM – 6:00 PM



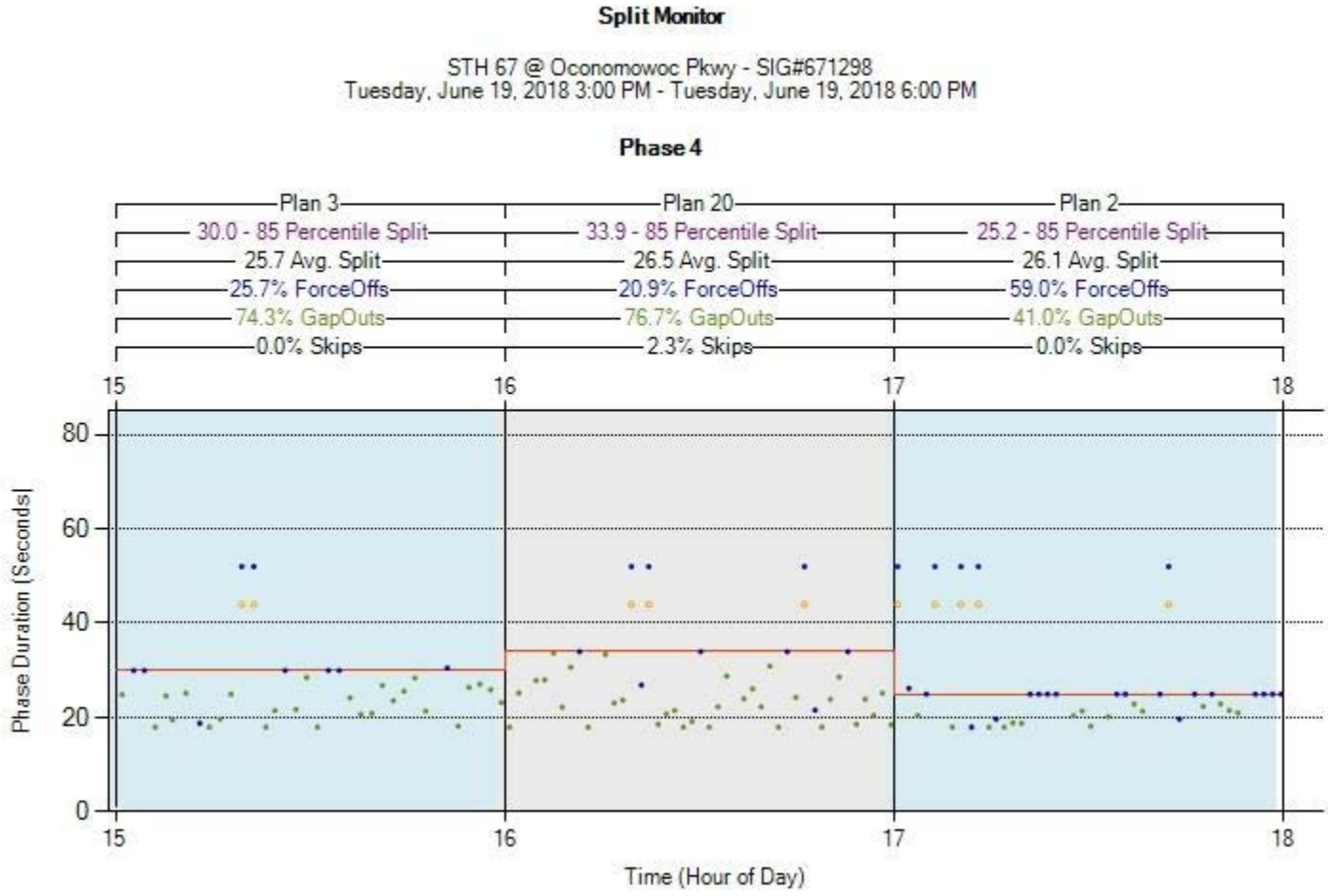
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
HCS Timings
6/19/2018 – 3:00 PM – 6:00 PM



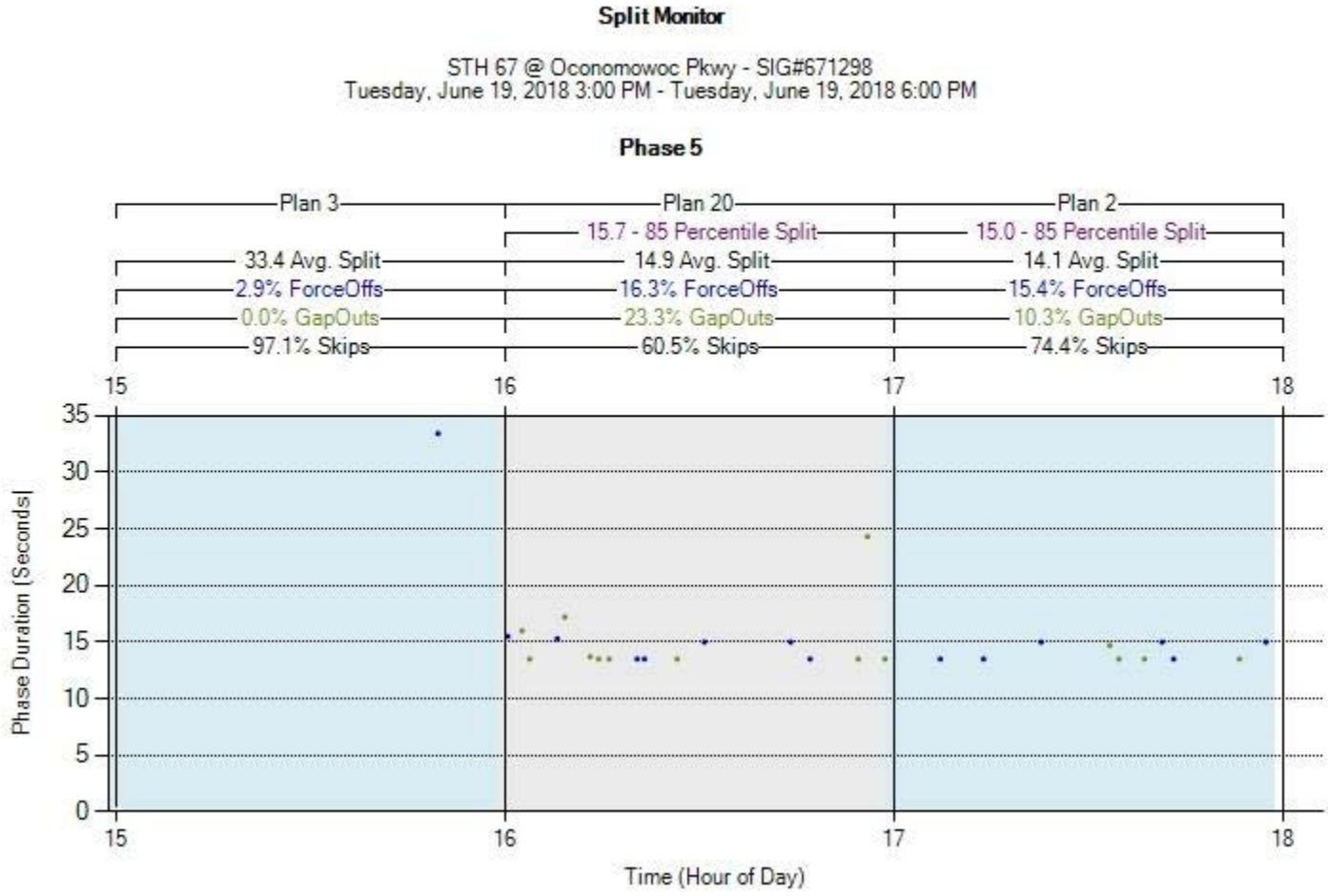
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
HCS Timings
6/19/2018 – 3:00 PM – 6:00 PM



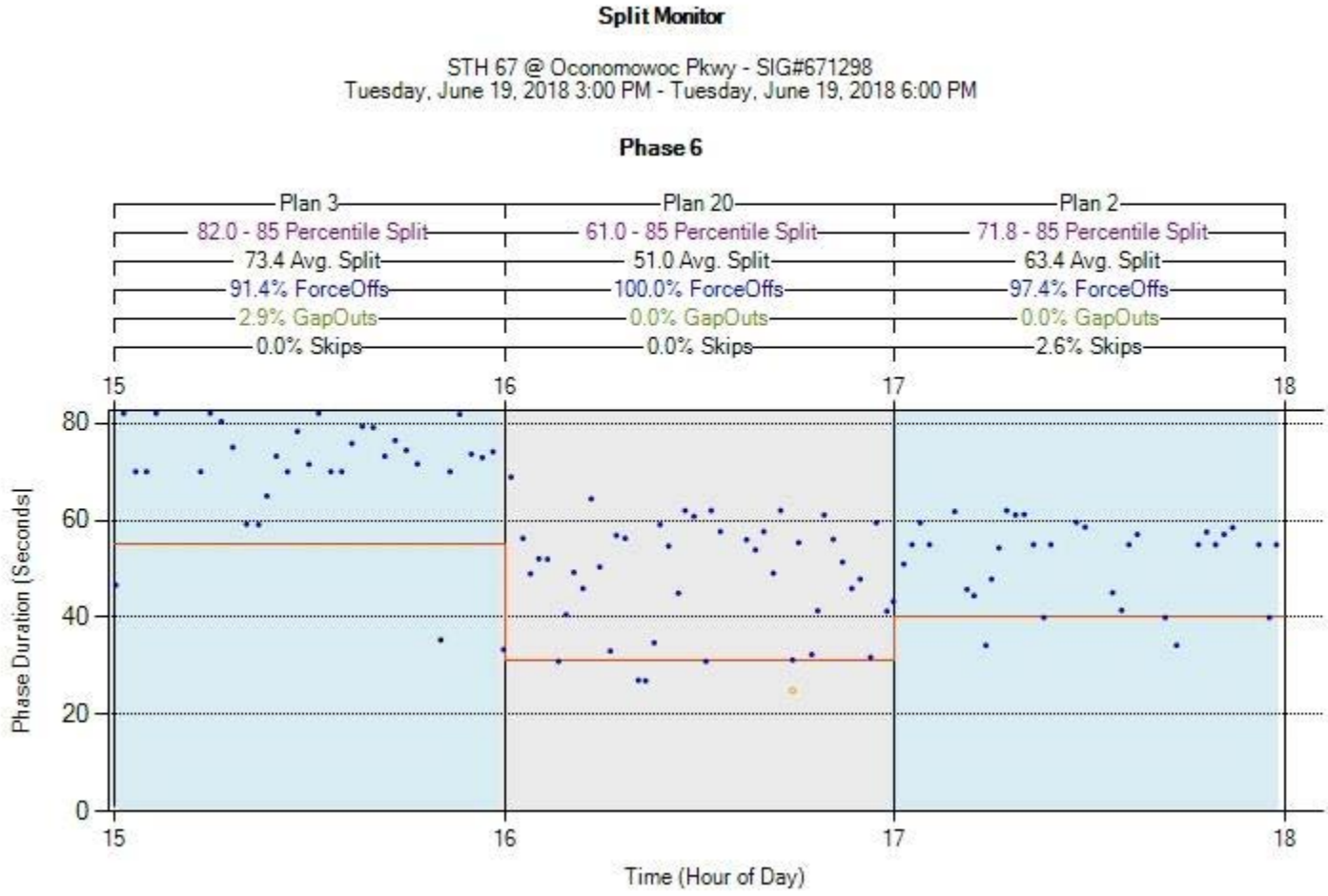
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
HCS Timings
6/19/2018 – 3:00 PM – 6:00 PM



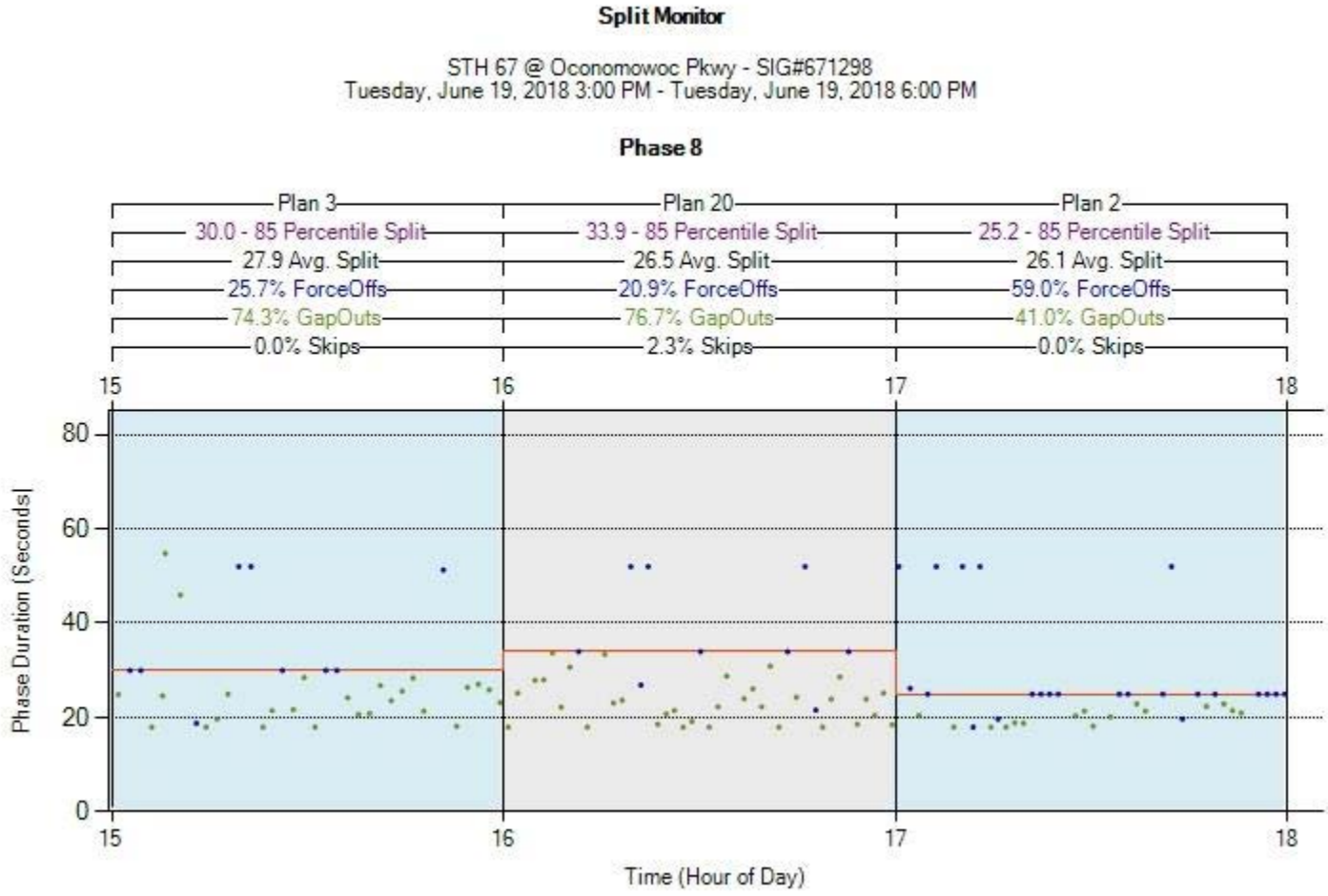
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
HCS Timings
6/19/2018 – 3:00 PM – 6:00 PM



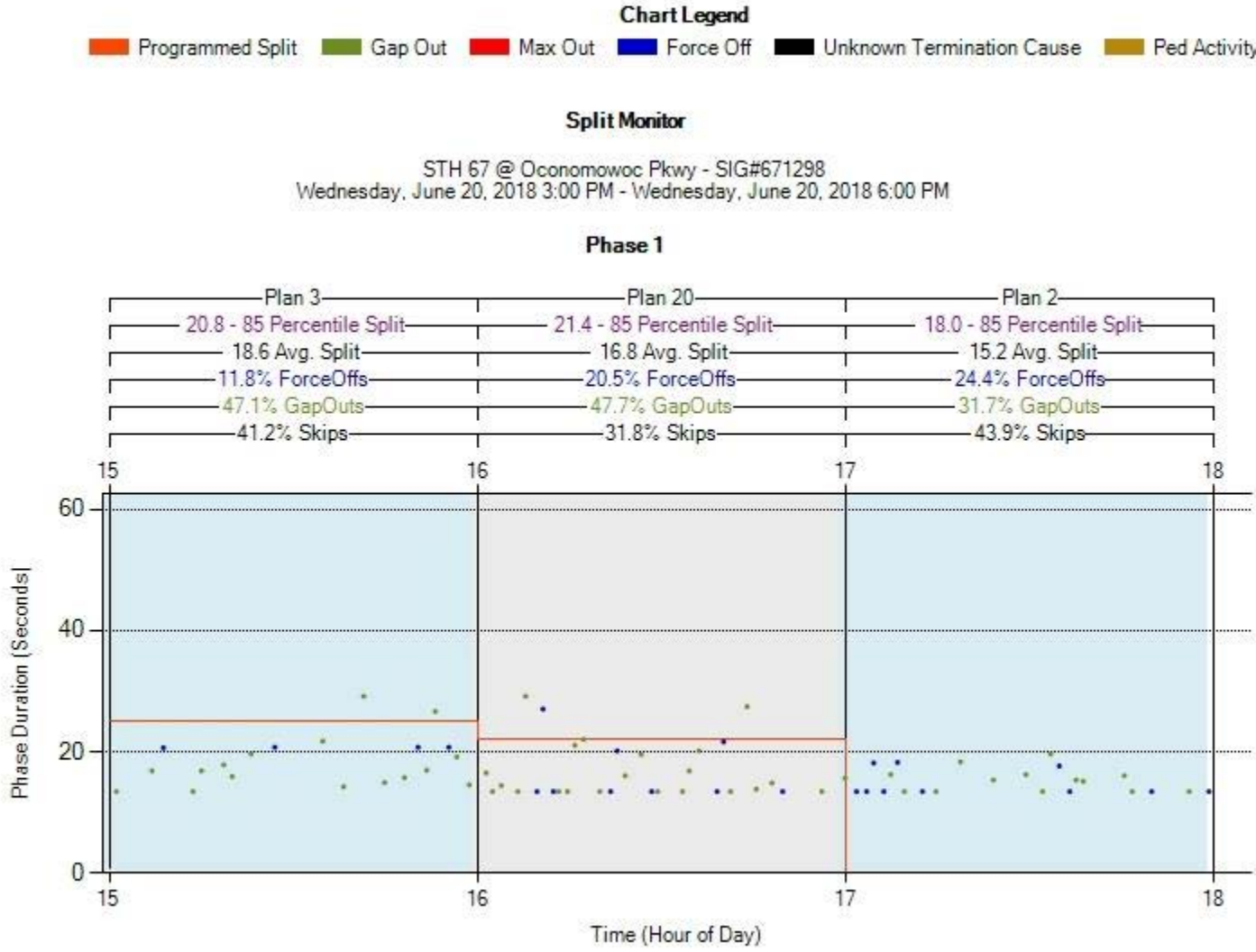
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
HCS Timings
6/19/2018 – 3:00 PM – 6:00 PM



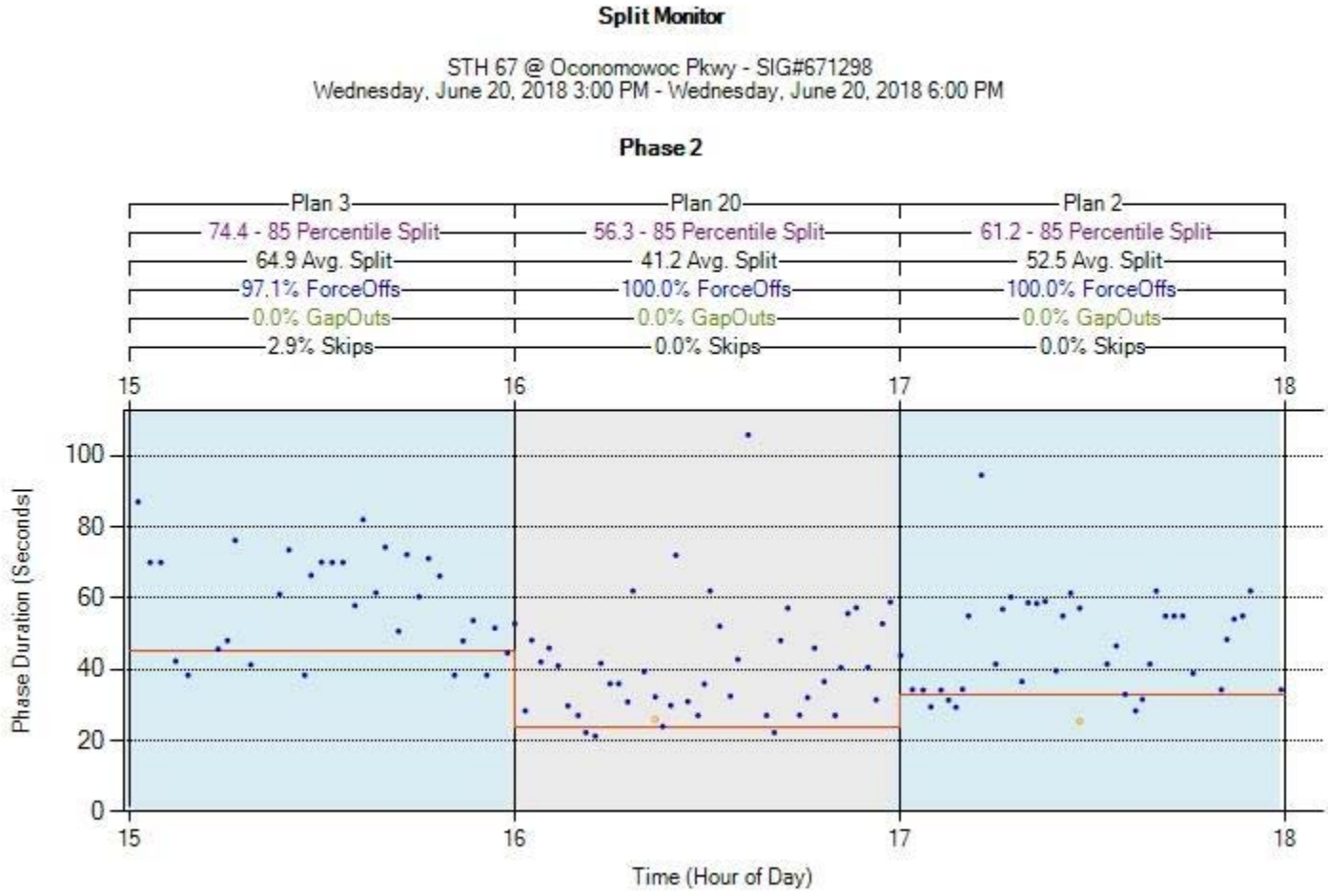
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
HCS Timings
6/19/2018 – 3:00 PM – 6:00 PM



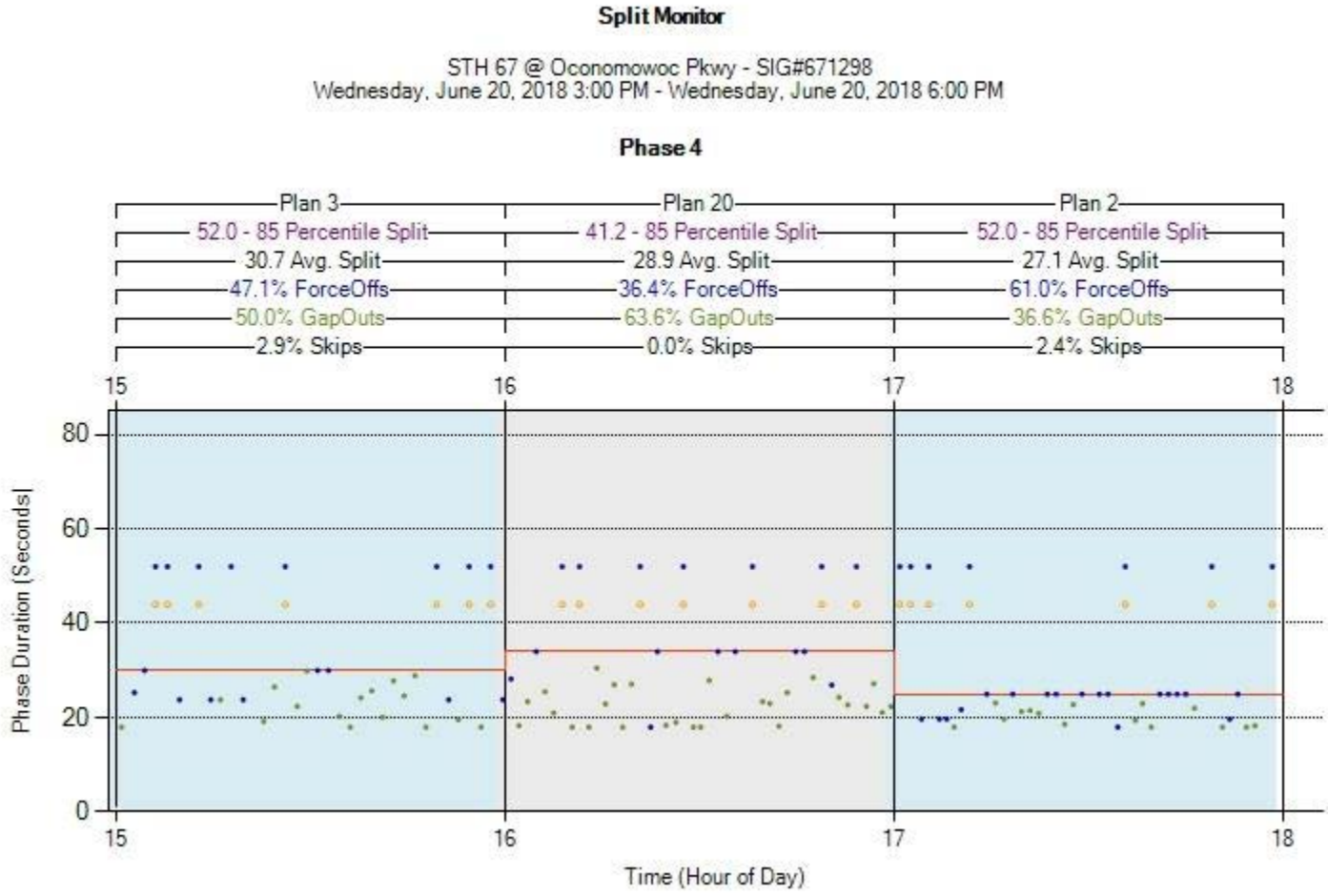
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
HCS Timings
6/20/2018 – 3:00 PM – 6:00 PM



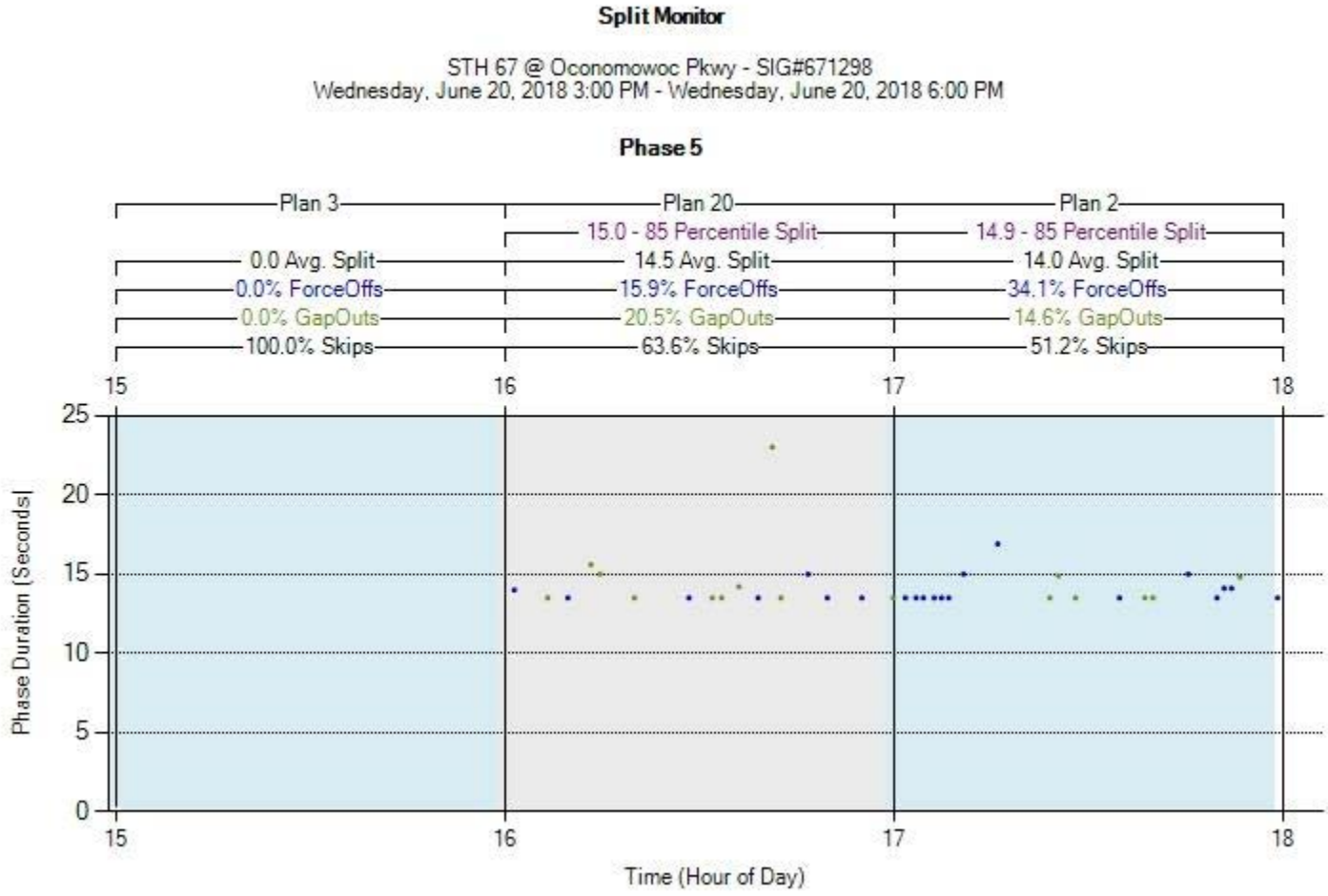
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
HCS Timings
6/20/2018 – 3:00 PM – 6:00 PM



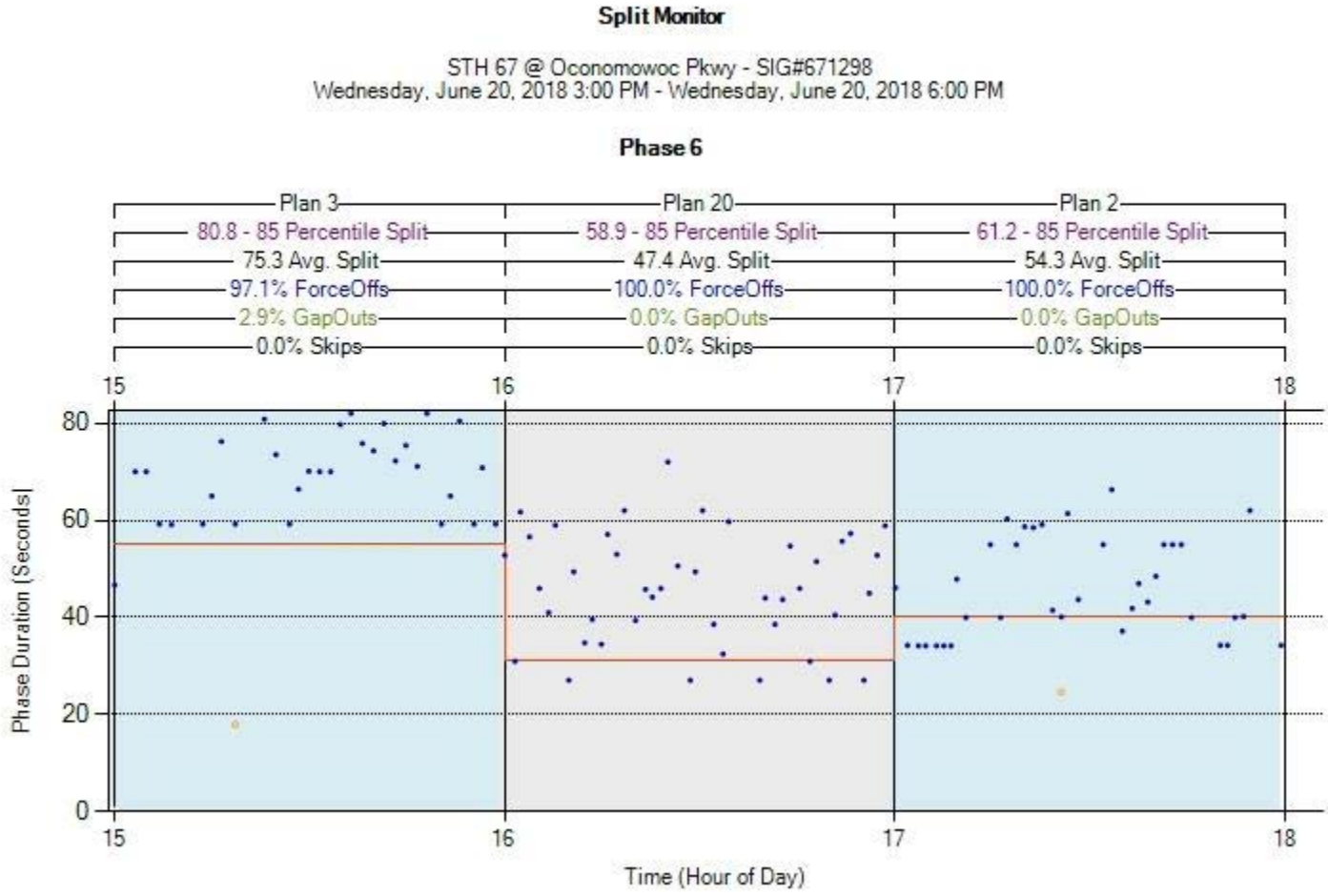
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
HCS Timings
6/20/2018 – 3:00 PM – 6:00 PM



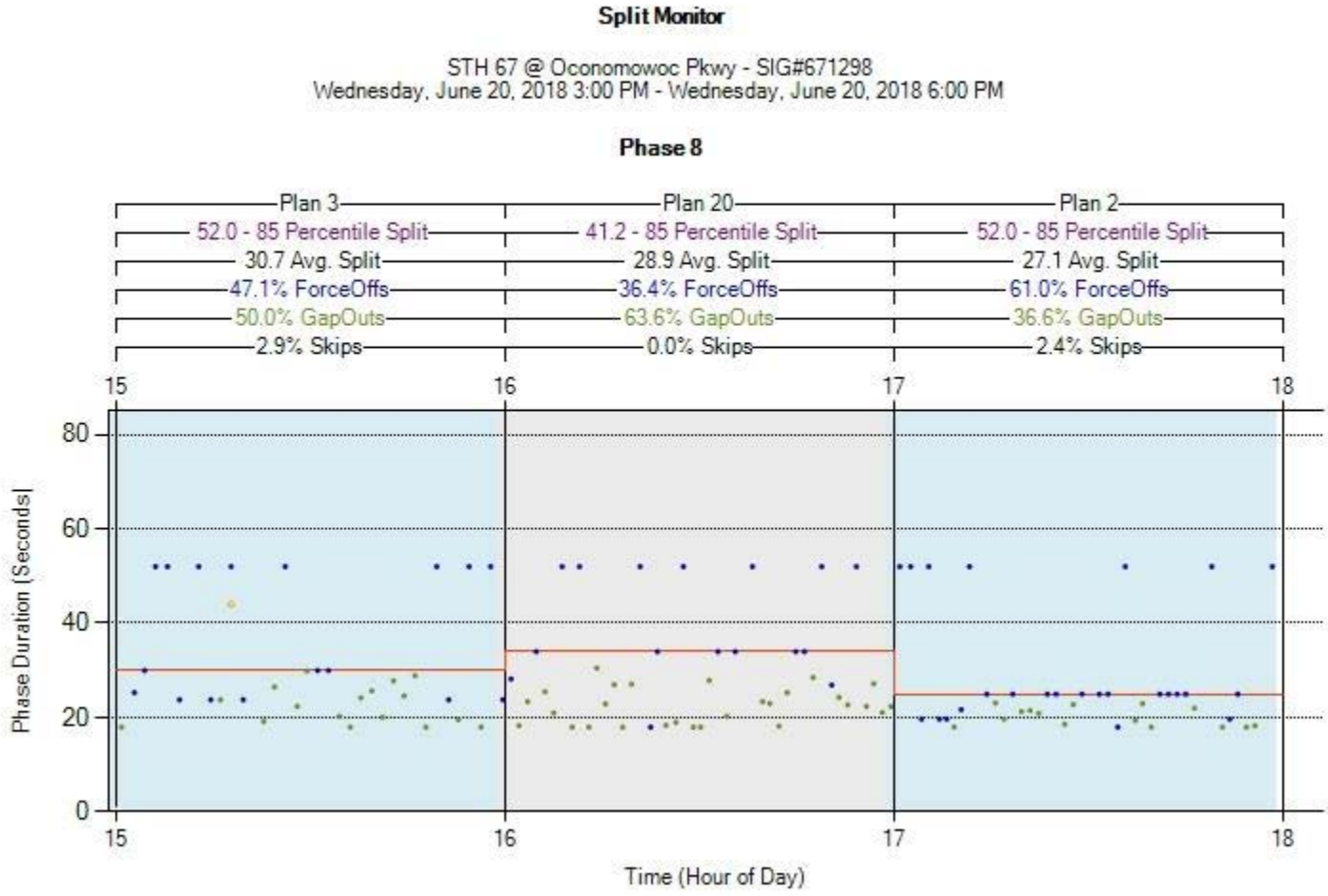
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
HCS Timings
6/20/2018 – 3:00 PM – 6:00 PM



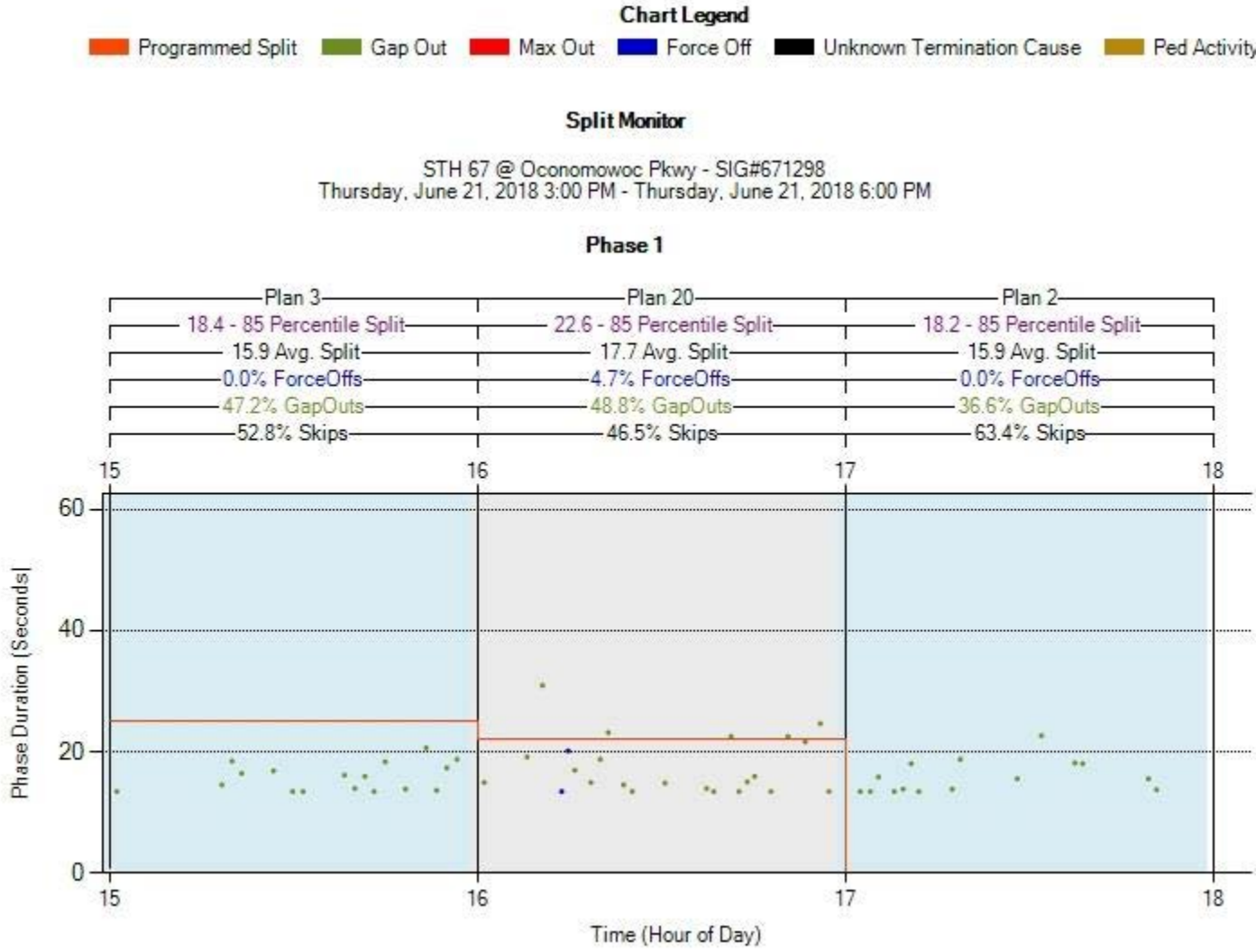
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
HCS Timings
6/20/2018 – 3:00 PM – 6:00 PM



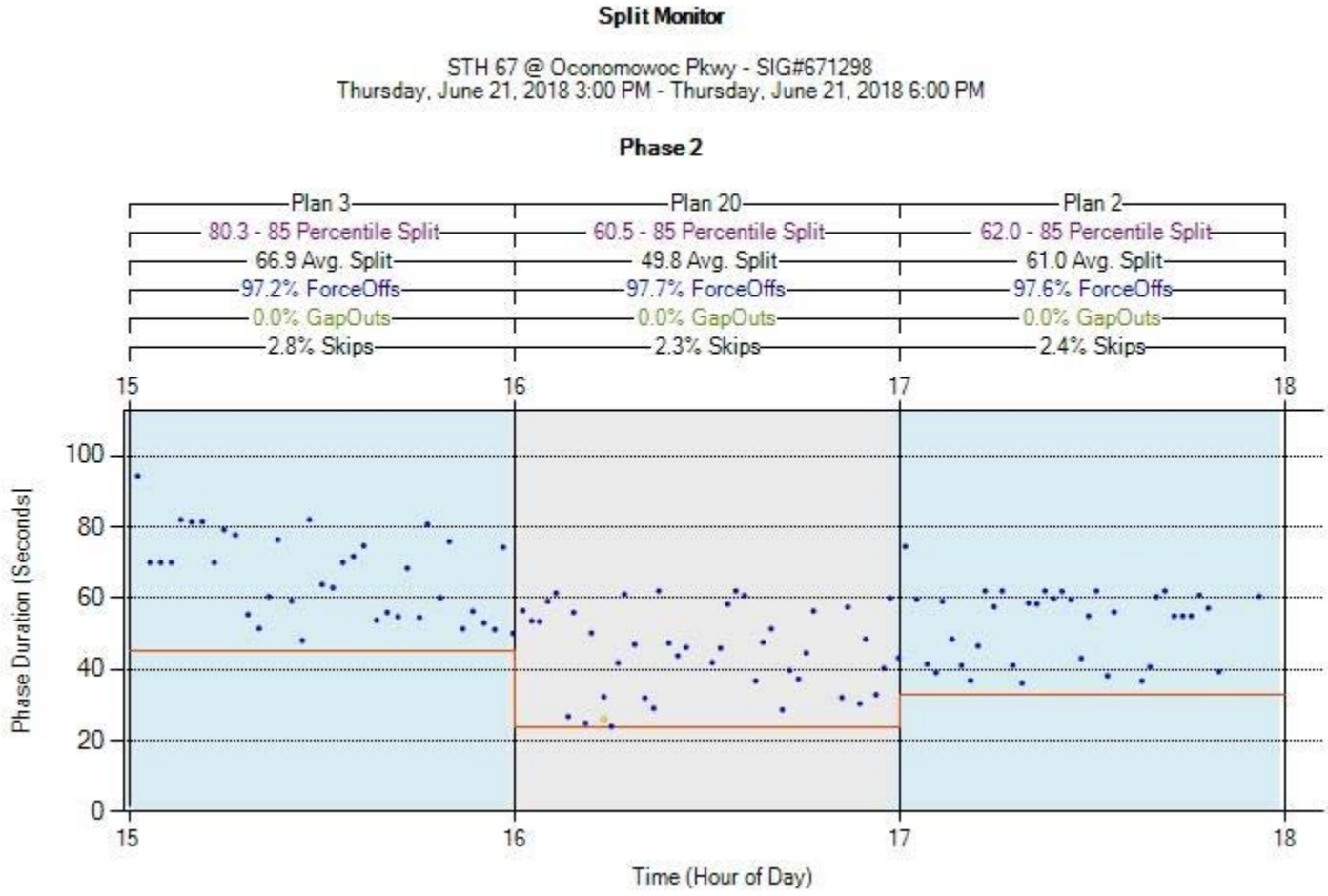
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
HCS Timings
6/20/2018 – 3:00 PM – 6:00 PM



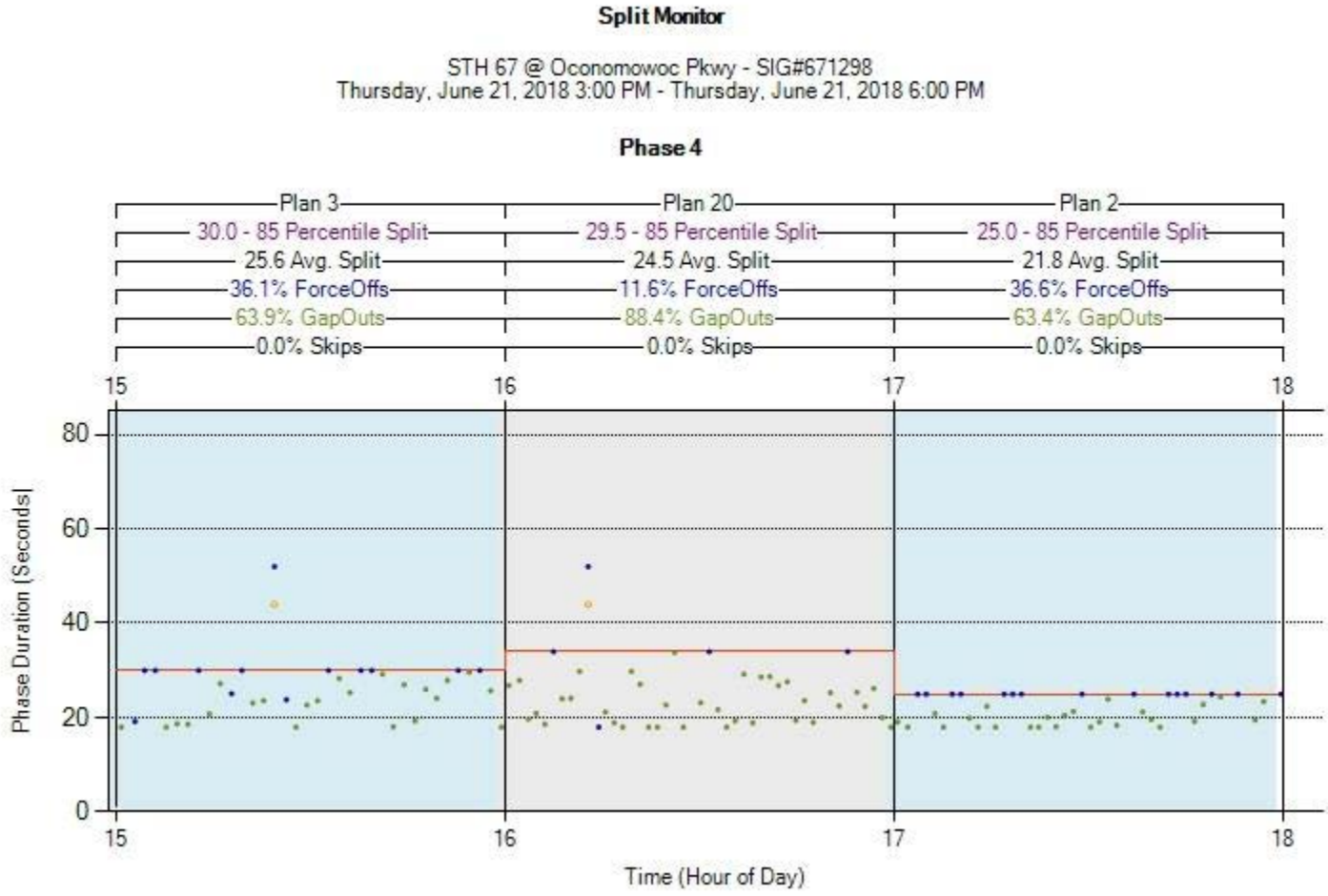
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
HCS Timings
6/21/2018 – 3:00 PM – 6:00 PM



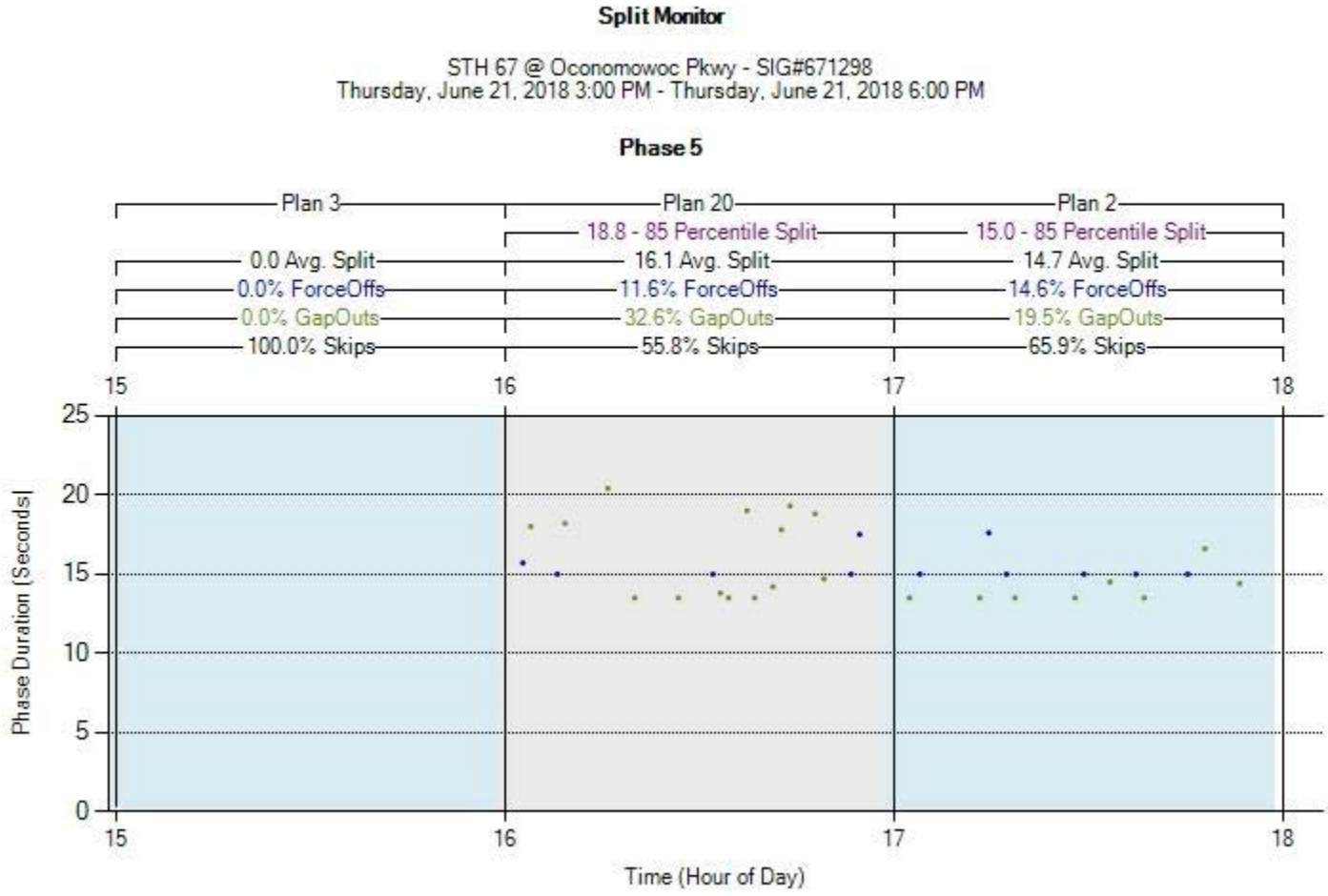
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
HCS Timings
6/21/2018 – 3:00 PM – 6:00 PM



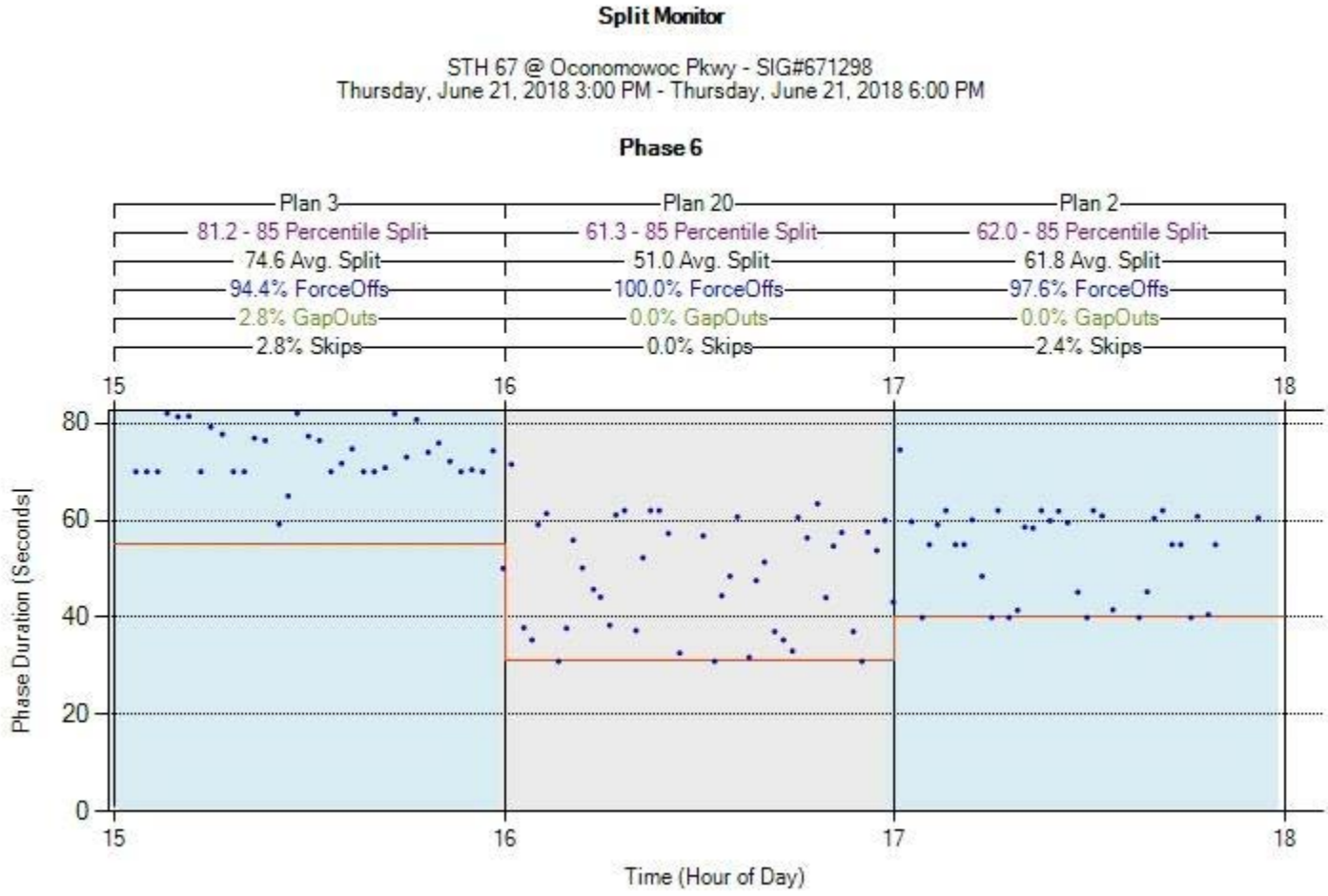
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
HCS Timings
6/21/2018 – 3:00 PM – 6:00 PM



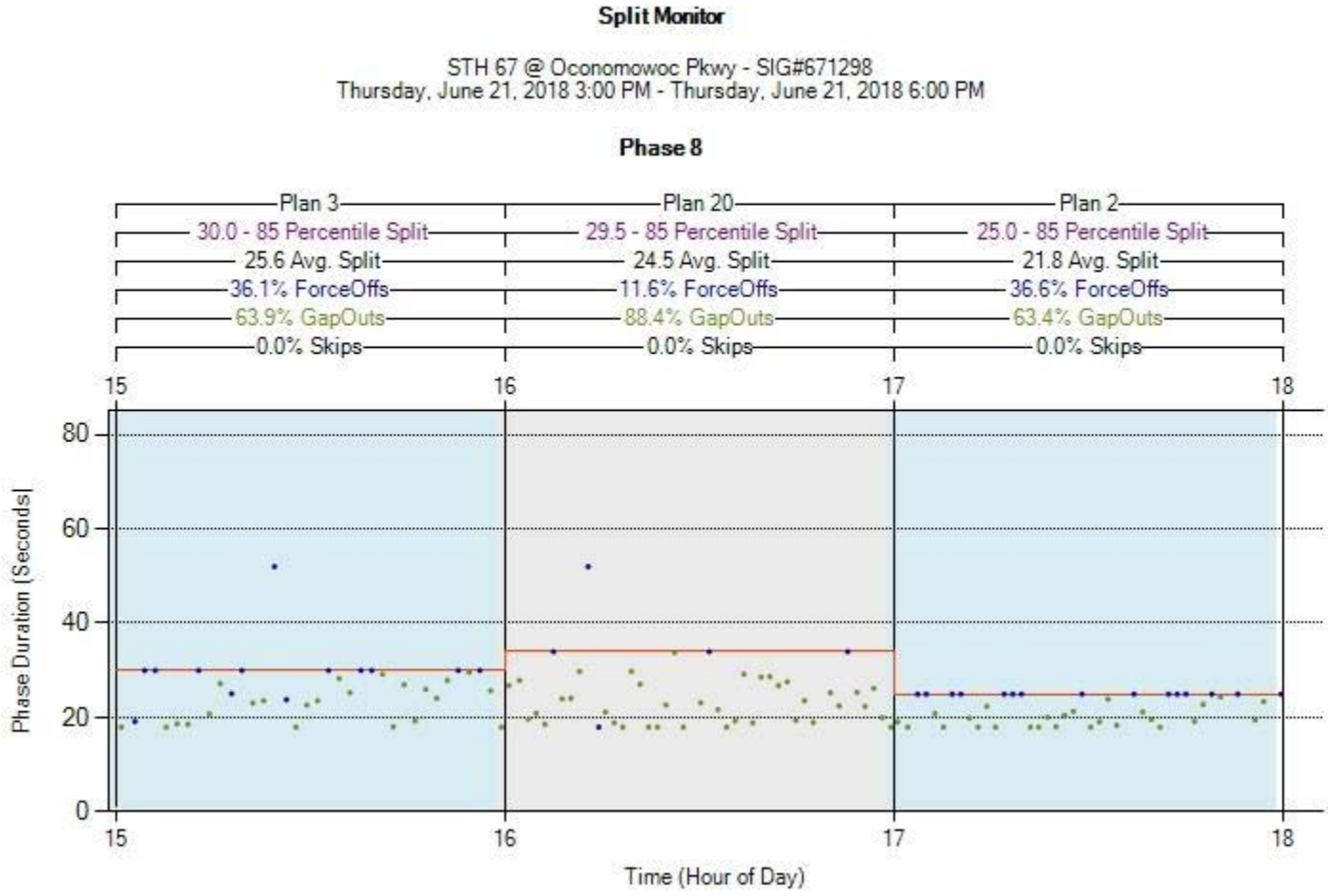
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
HCS Timings
6/21/2018 – 3:00 PM – 6:00 PM



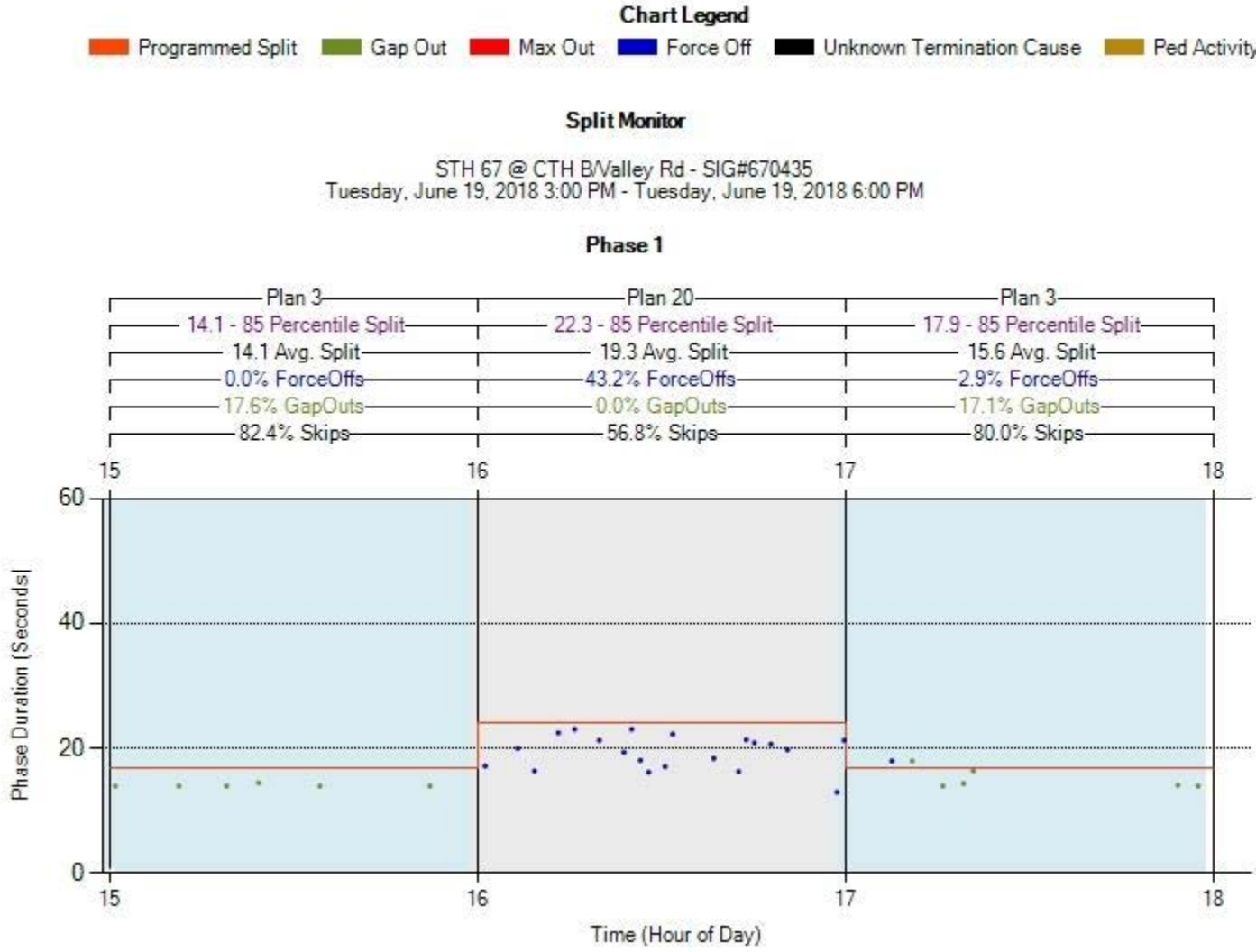
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
HCS Timings
6/21/2018 – 3:00 PM – 6:00 PM



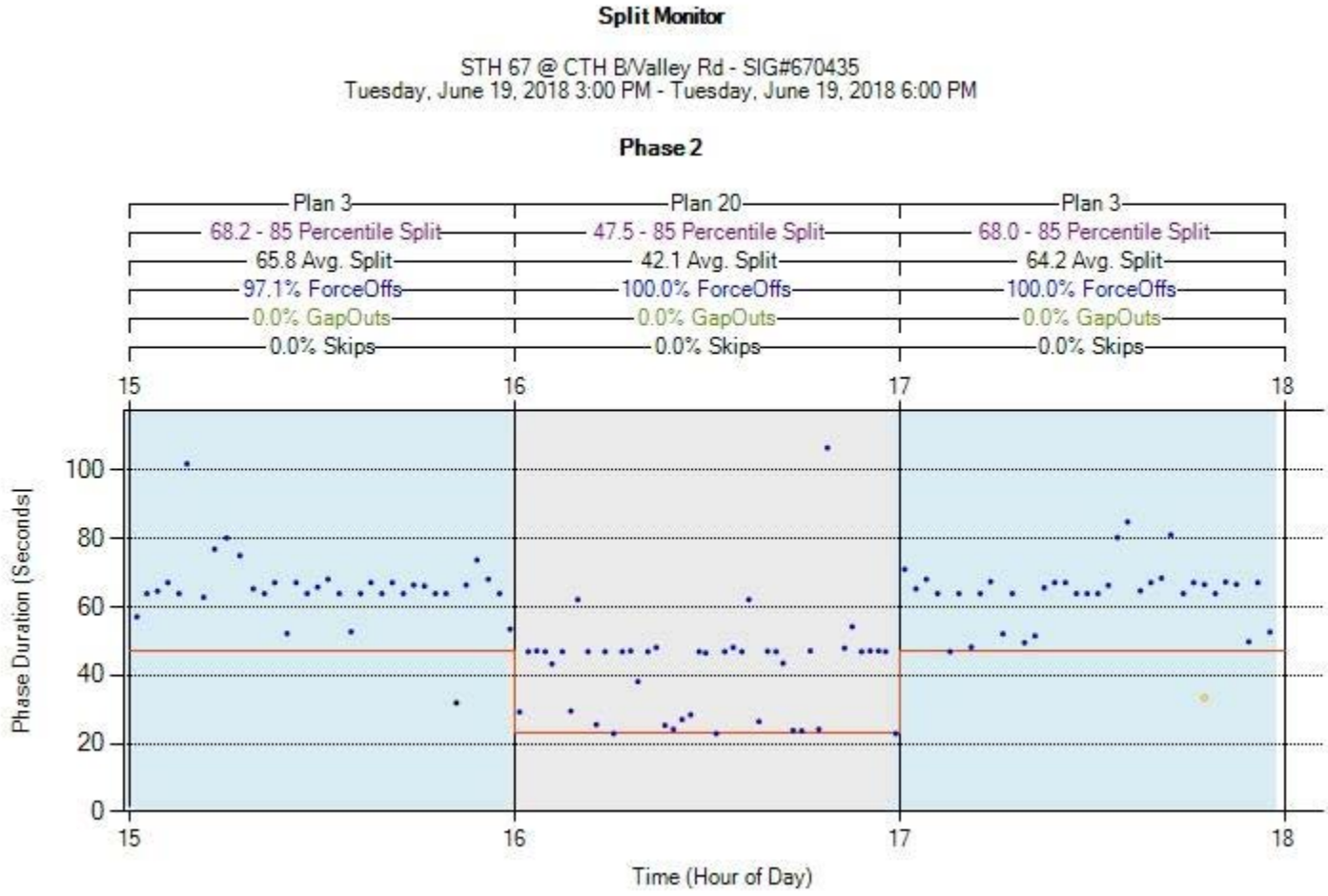
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
HCS Timings
6/21/2018 – 3:00 PM – 6:00 PM



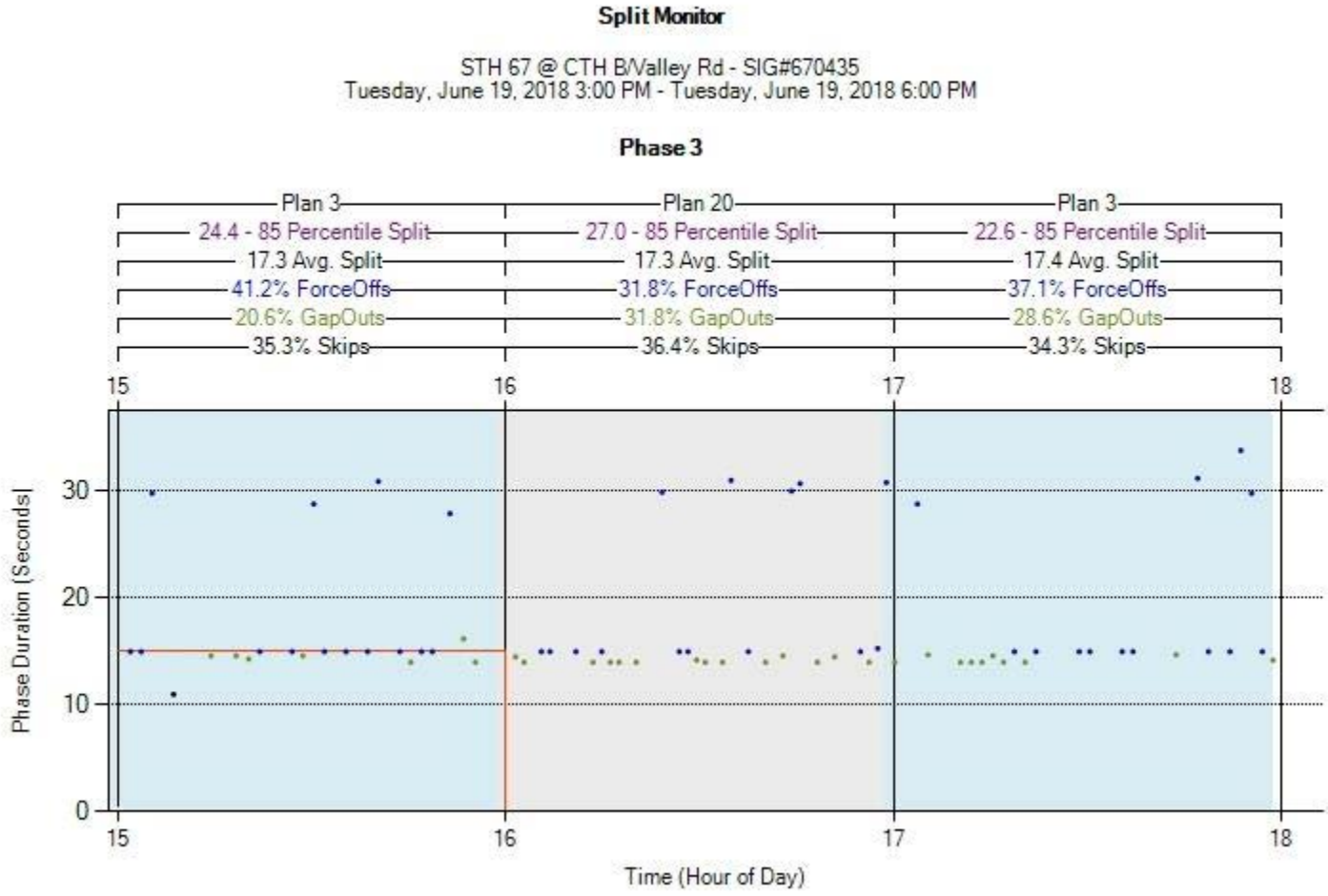
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
HCS Timings
6/19/2018 – 3:00 PM – 6:00 PM



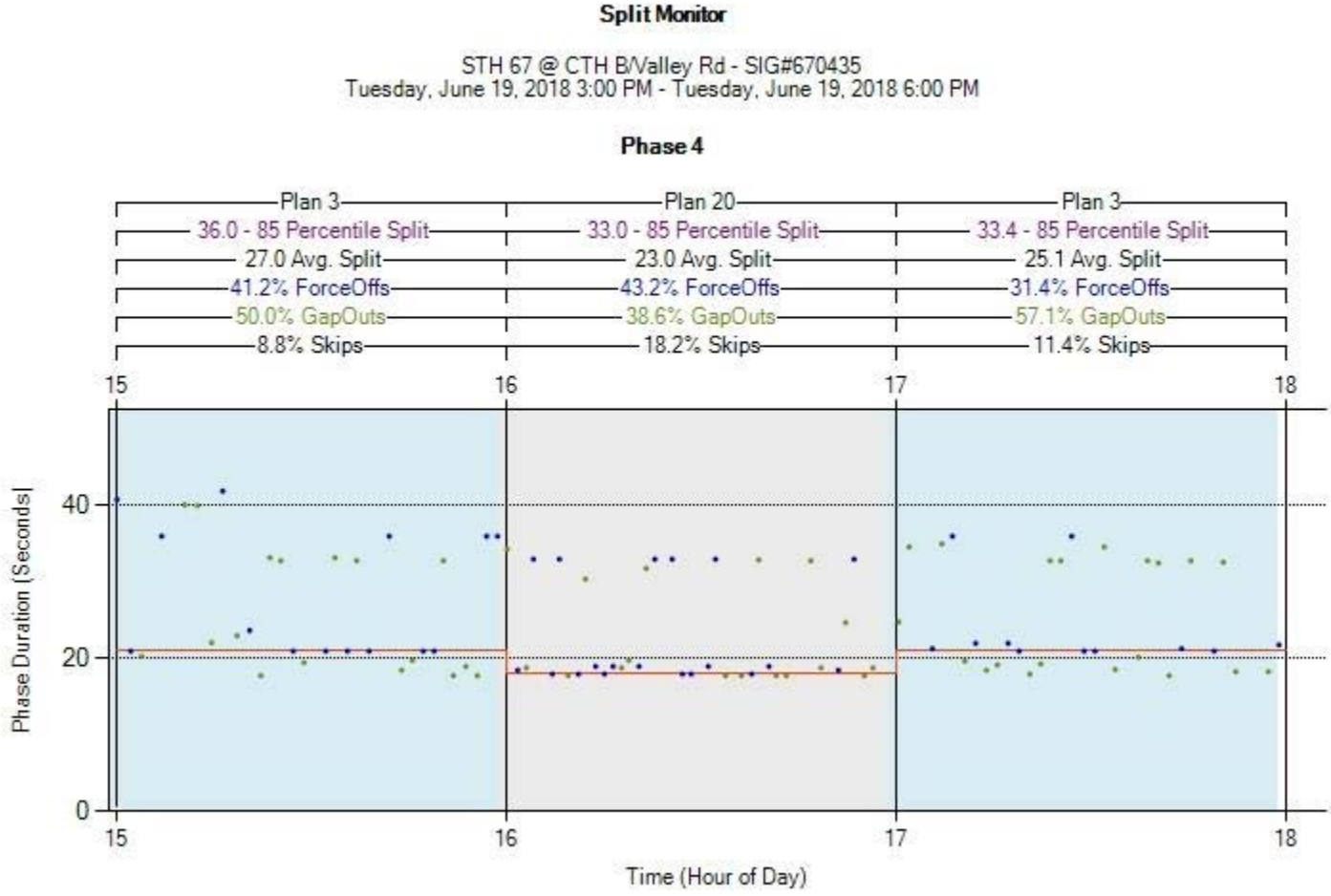
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
HCS Timings
6/19/2018 – 3:00 PM – 6:00 PM



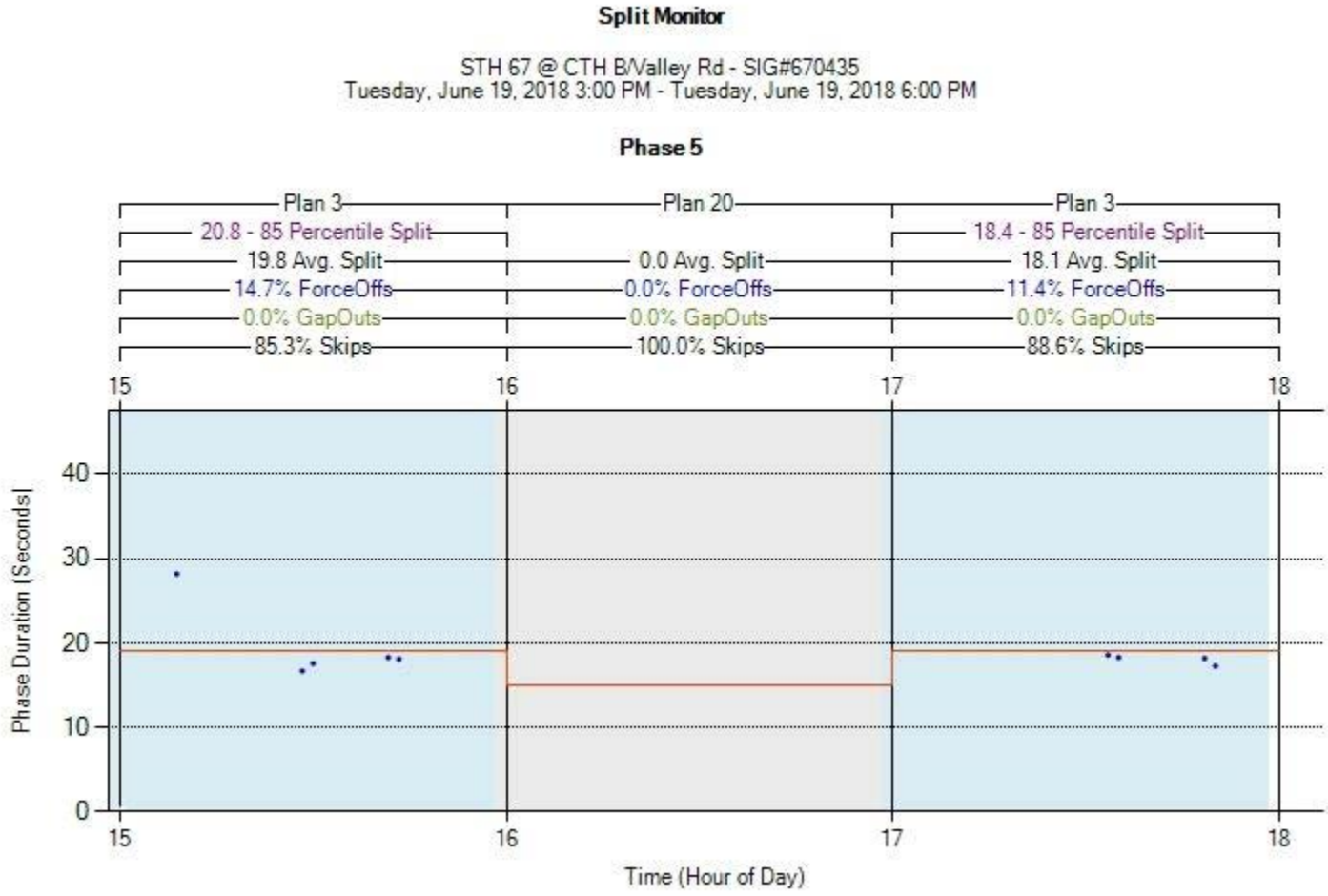
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
HCS Timings
6/19/2018 – 3:00 PM – 6:00 PM



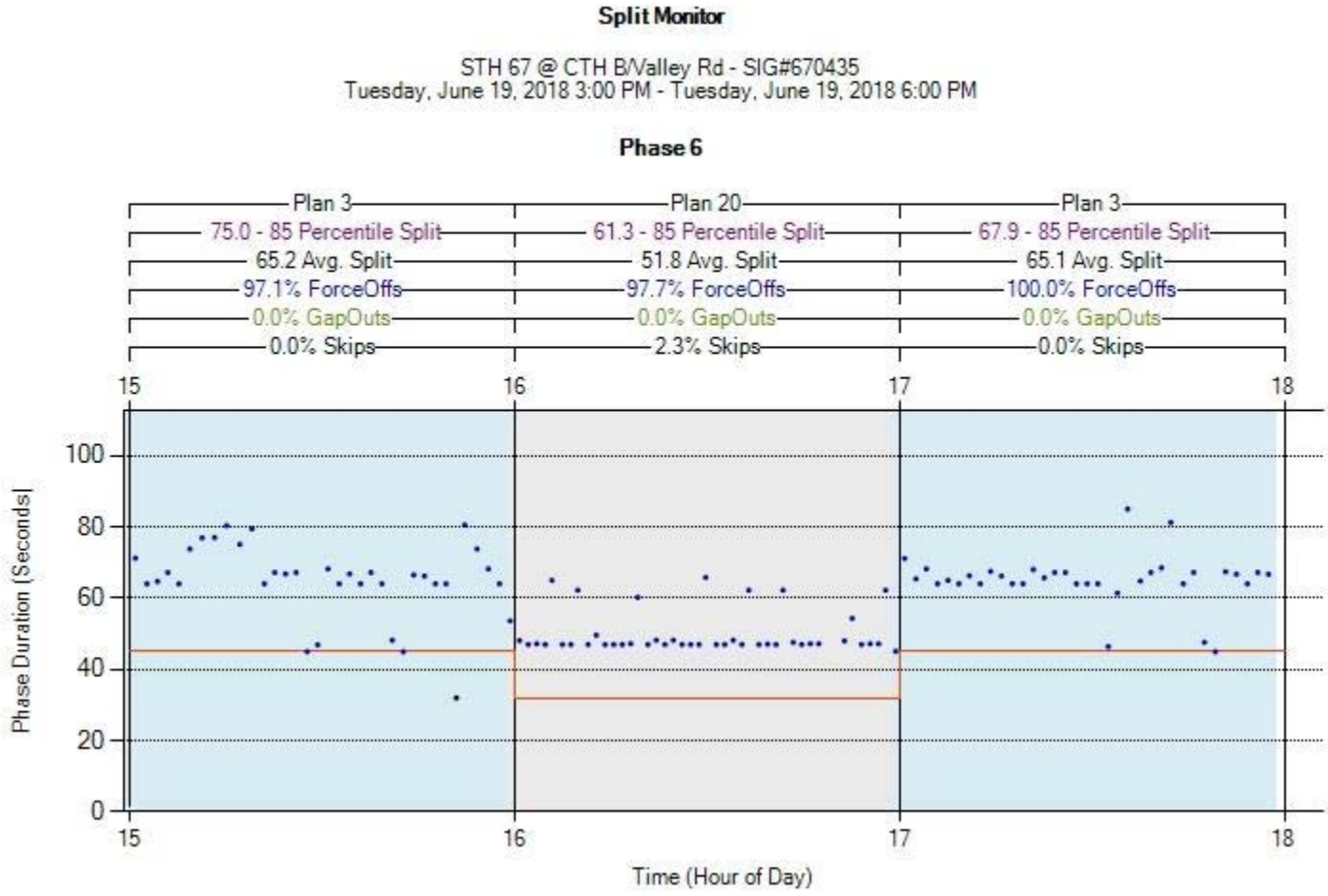
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
HCS Timings
6/19/2018 – 3:00 PM – 6:00 PM



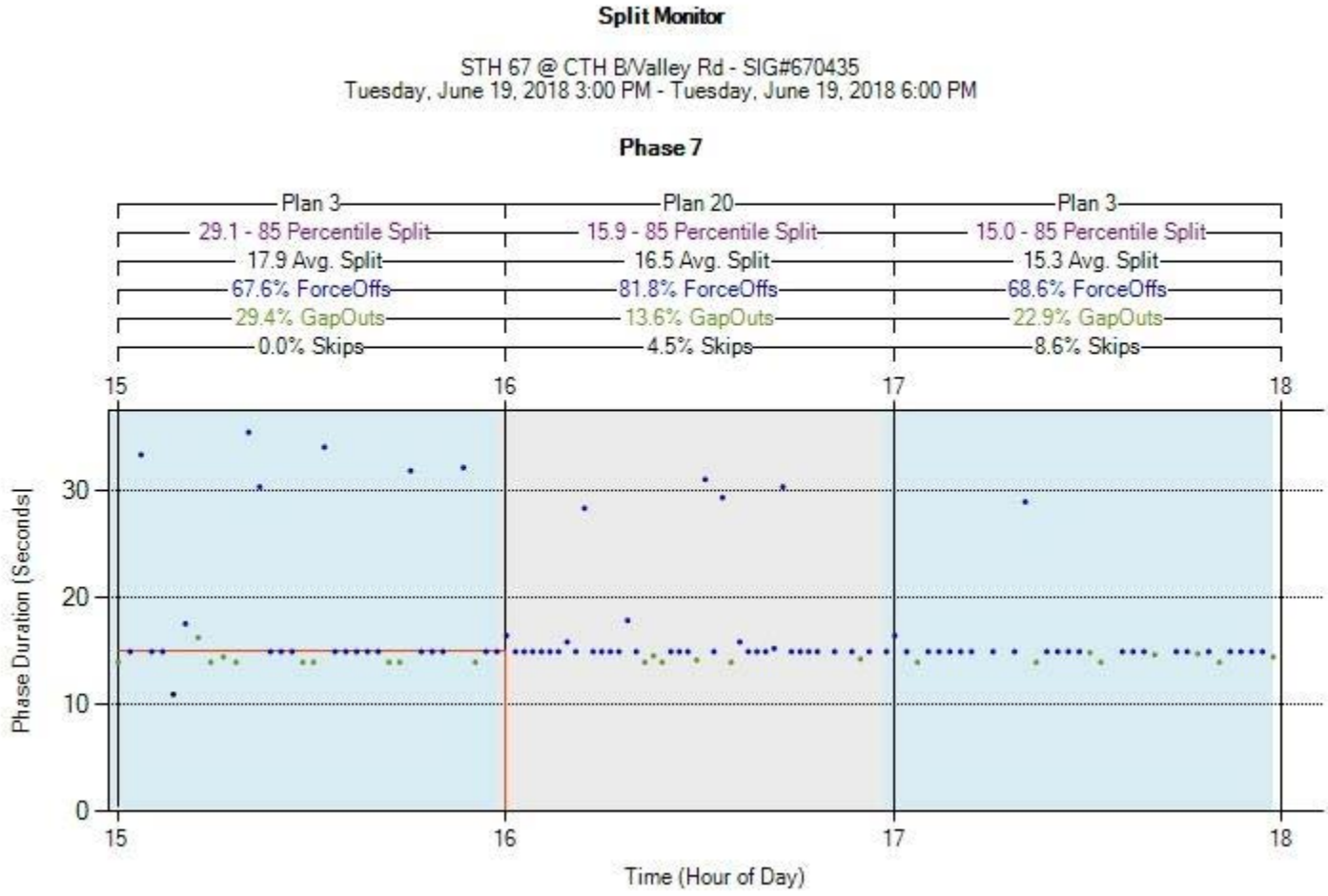
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
HCS Timings
6/19/2018 – 3:00 PM – 6:00 PM



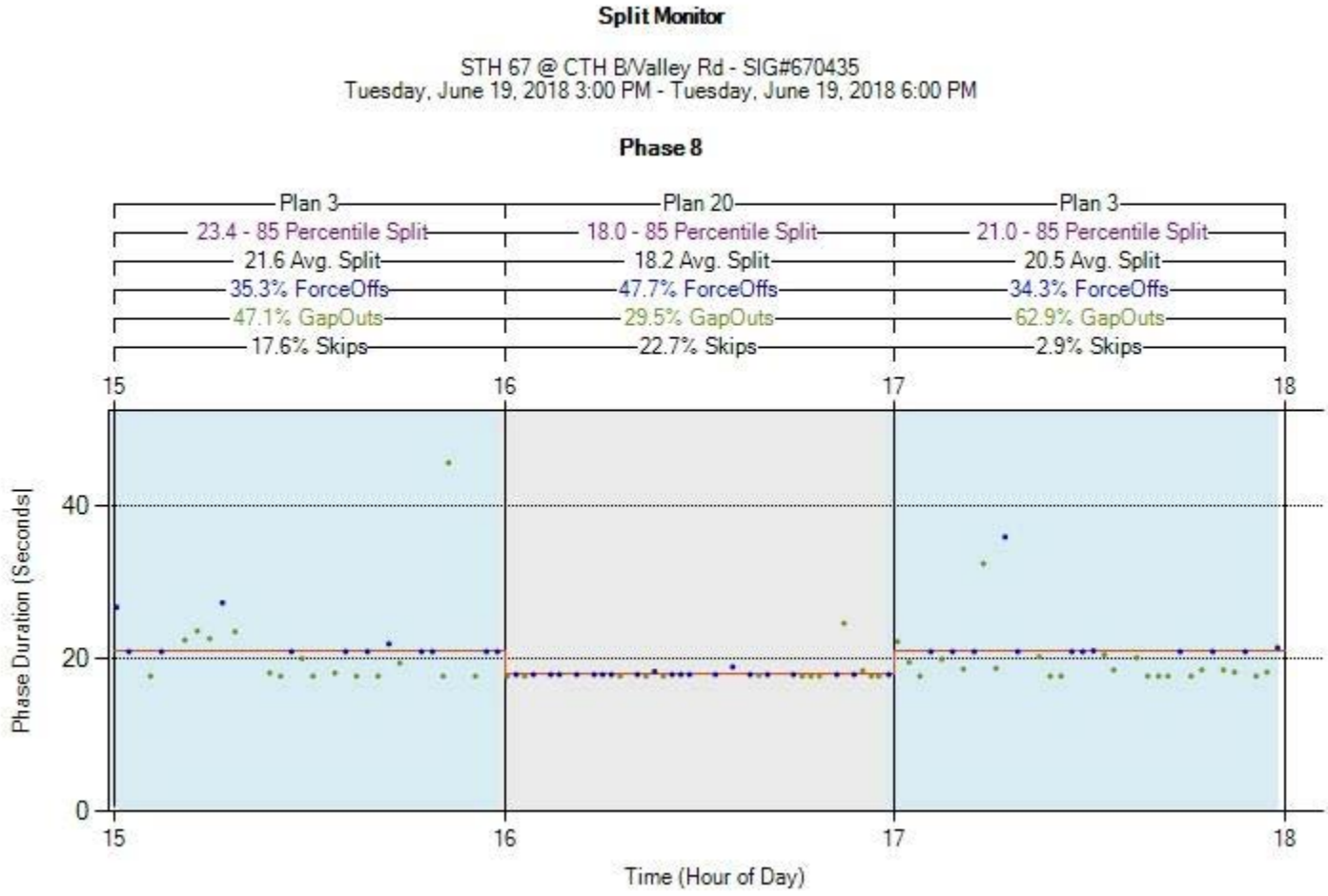
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
HCS Timings
6/19/2018 – 3:00 PM – 6:00 PM



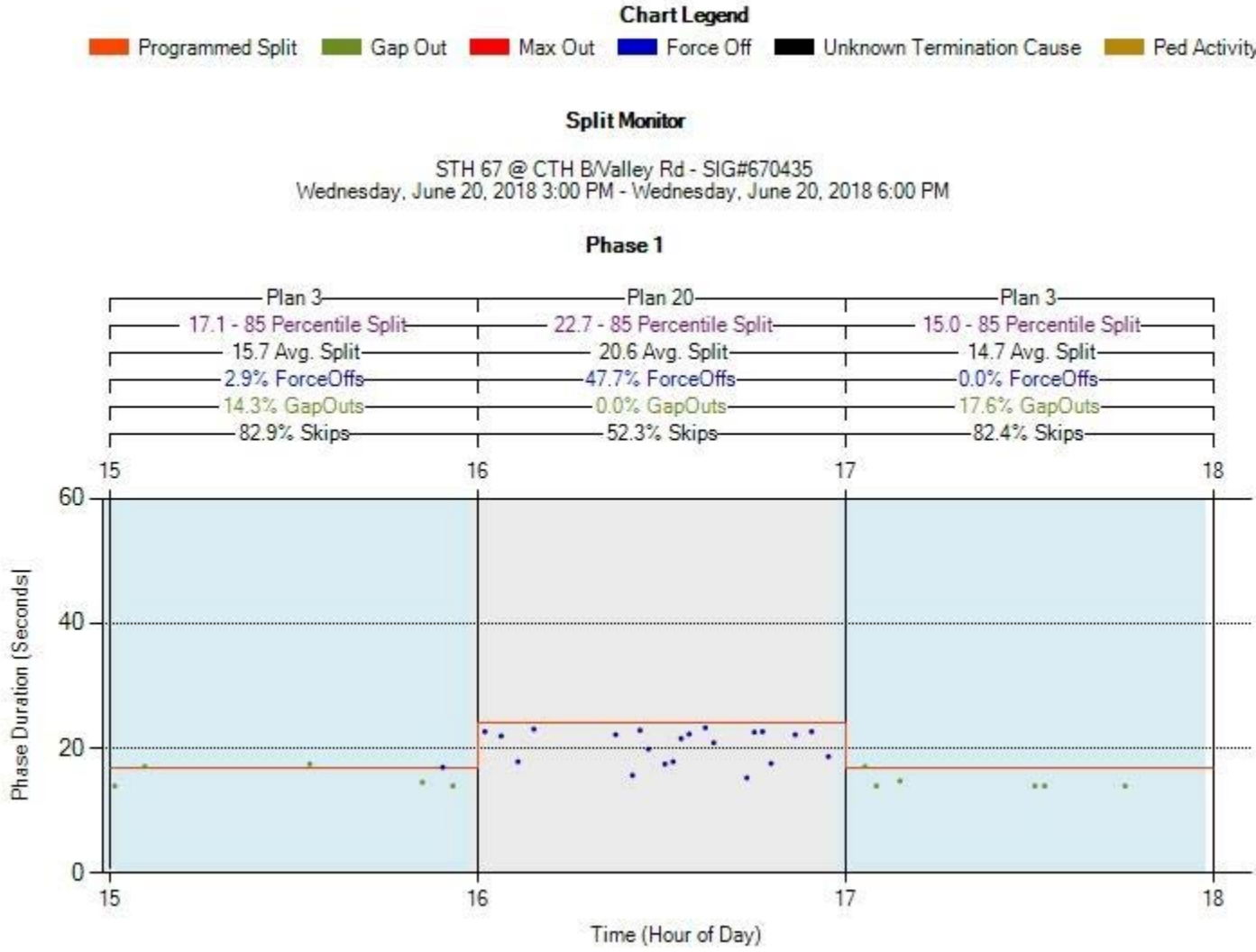
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
HCS Timings
6/19/2018 – 3:00 PM – 6:00 PM



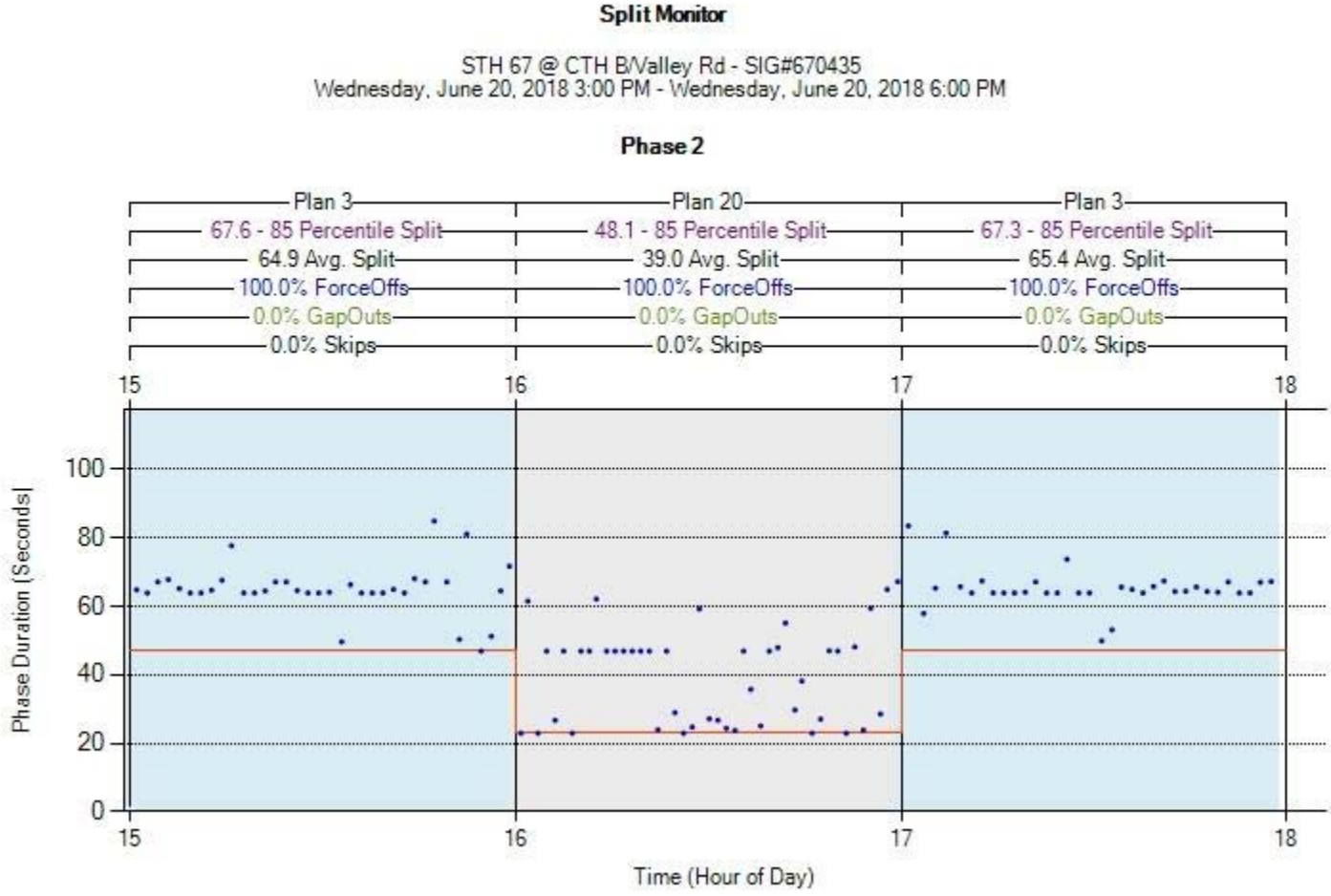
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
HCS Timings
6/19/2018 – 3:00 PM – 6:00 PM



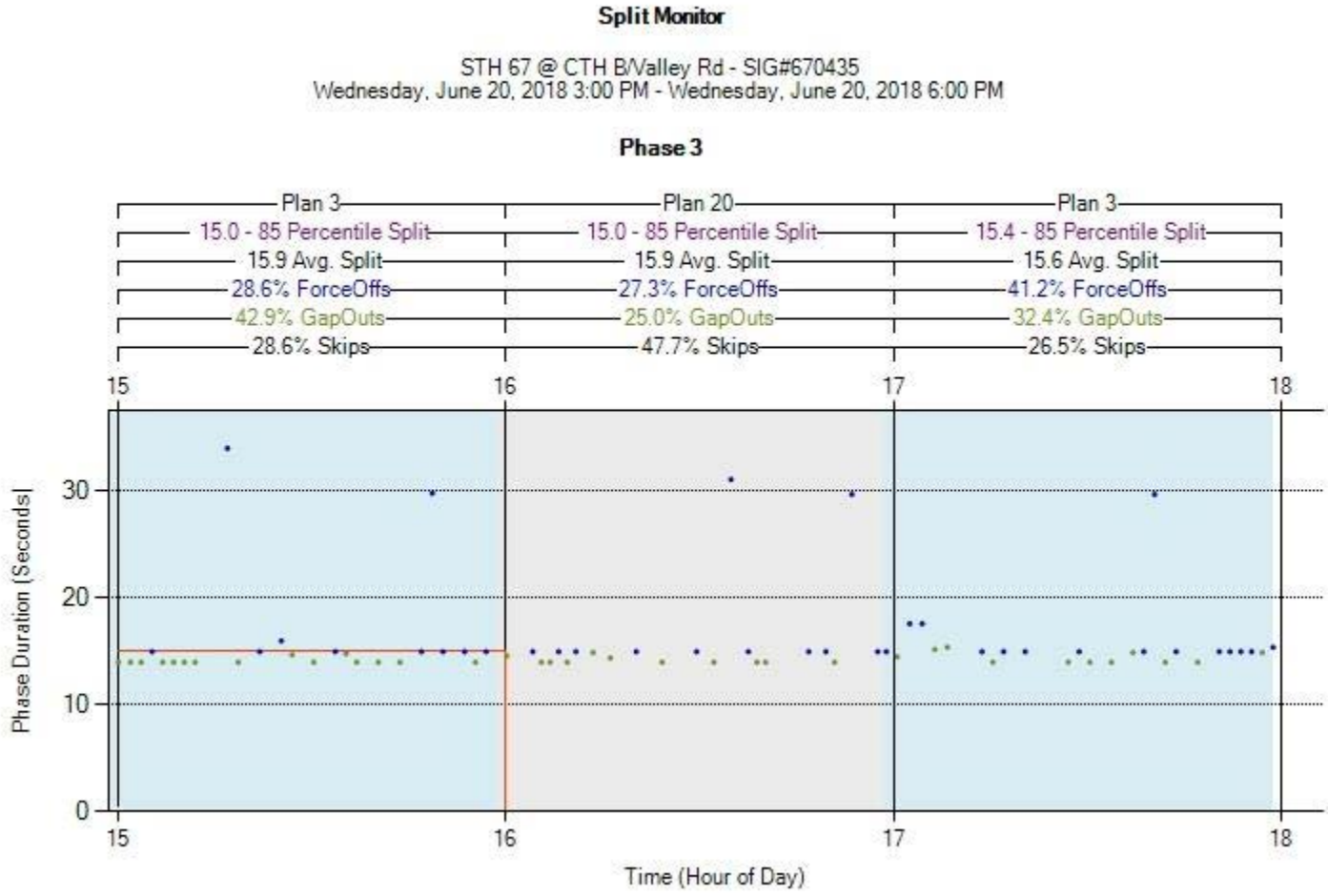
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
HCS Timings
6/20/2018 – 3:00 PM – 6:00 PM



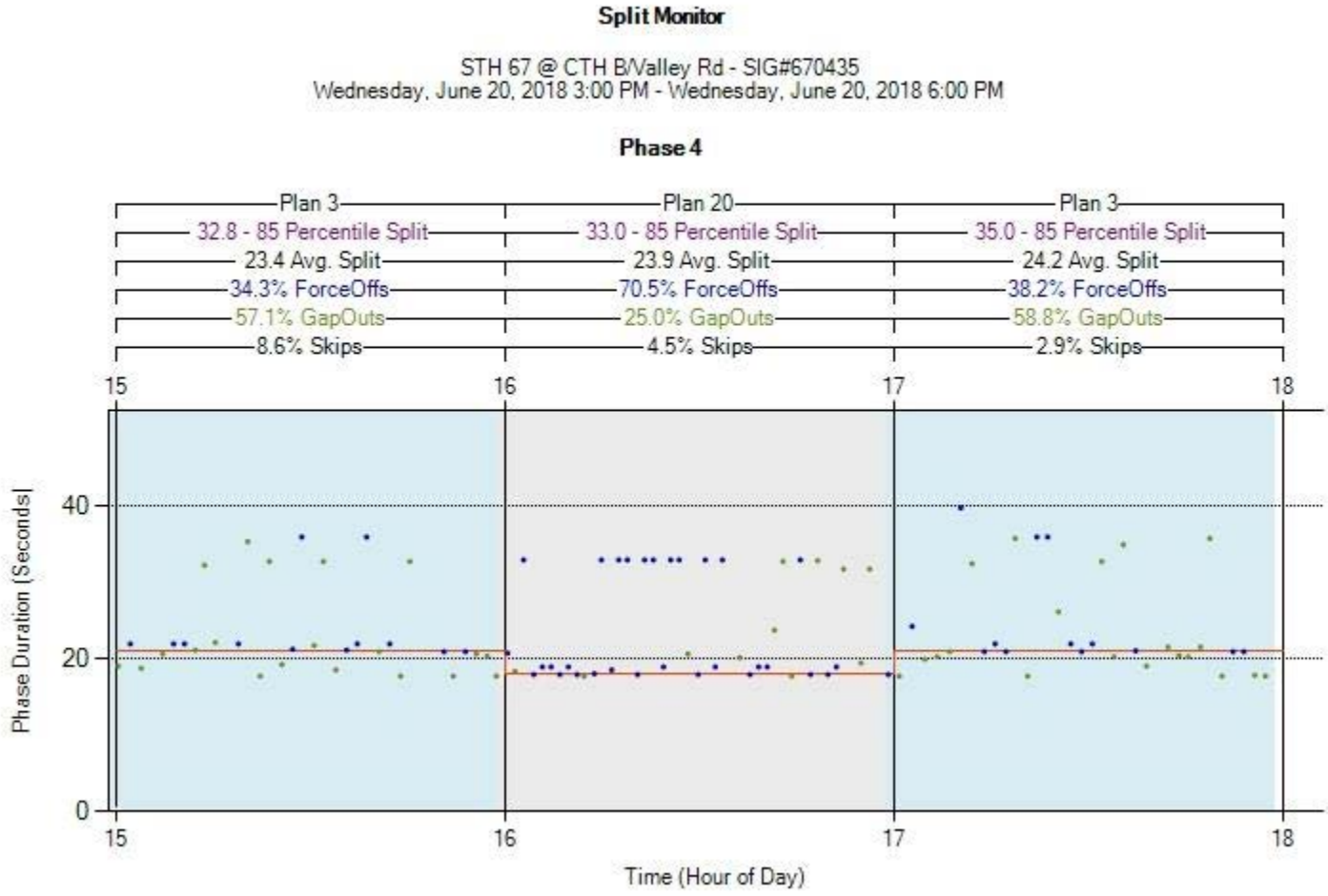
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
HCS Timings
6/20/2018 – 3:00 PM – 6:00 PM



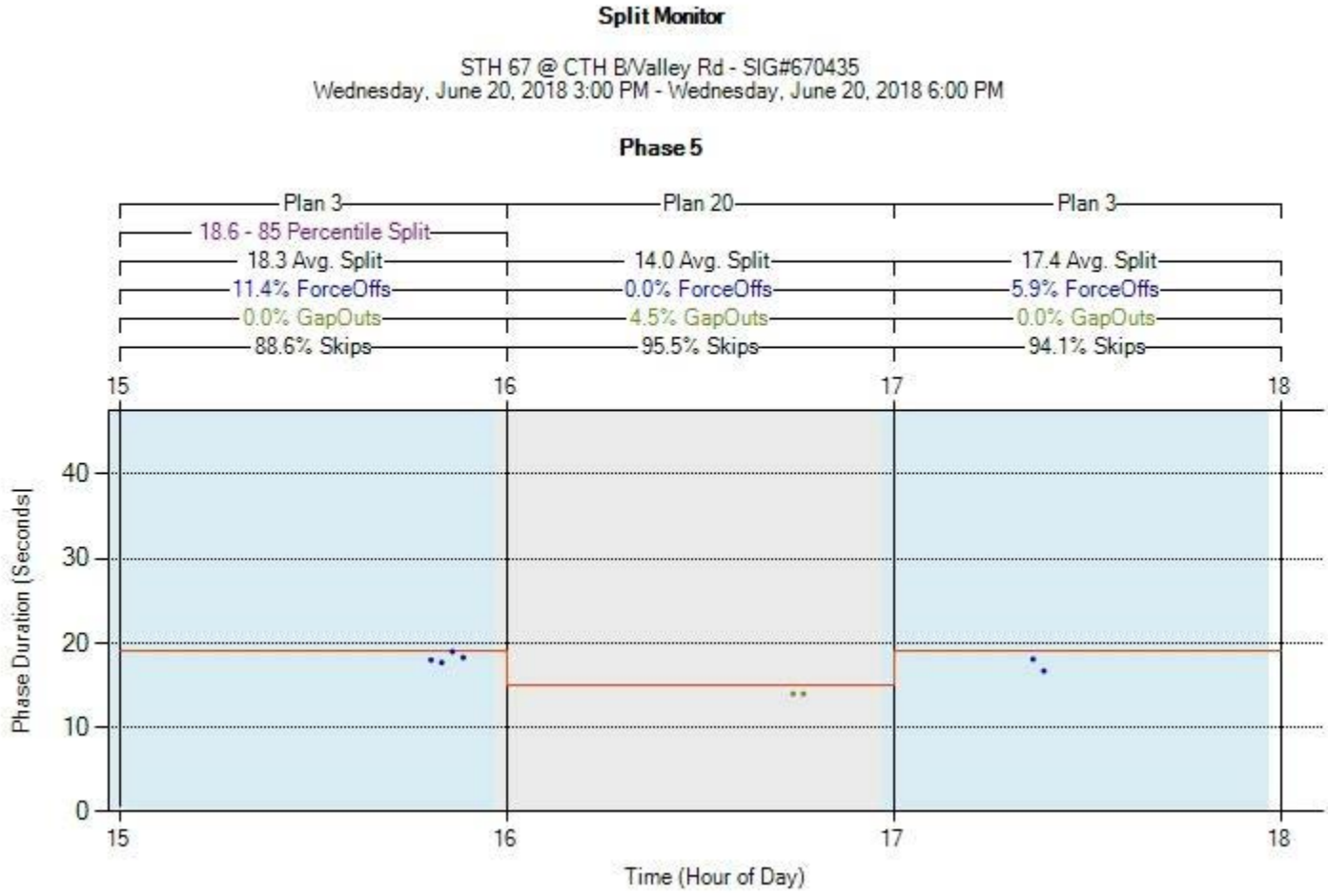
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
HCS Timings
6/20/2018 – 3:00 PM – 6:00 PM



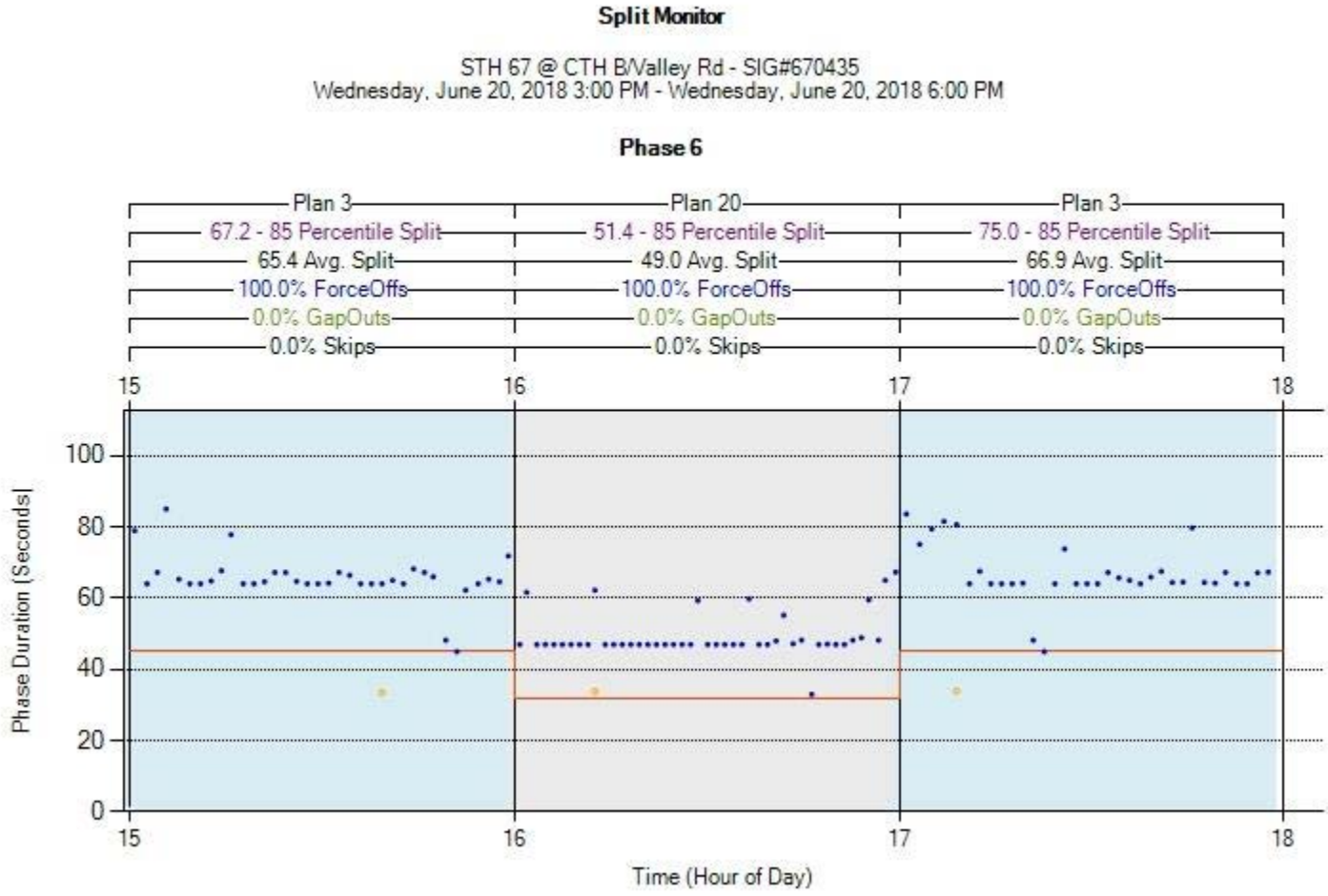
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
HCS Timings
6/20/2018 – 3:00 PM – 6:00 PM



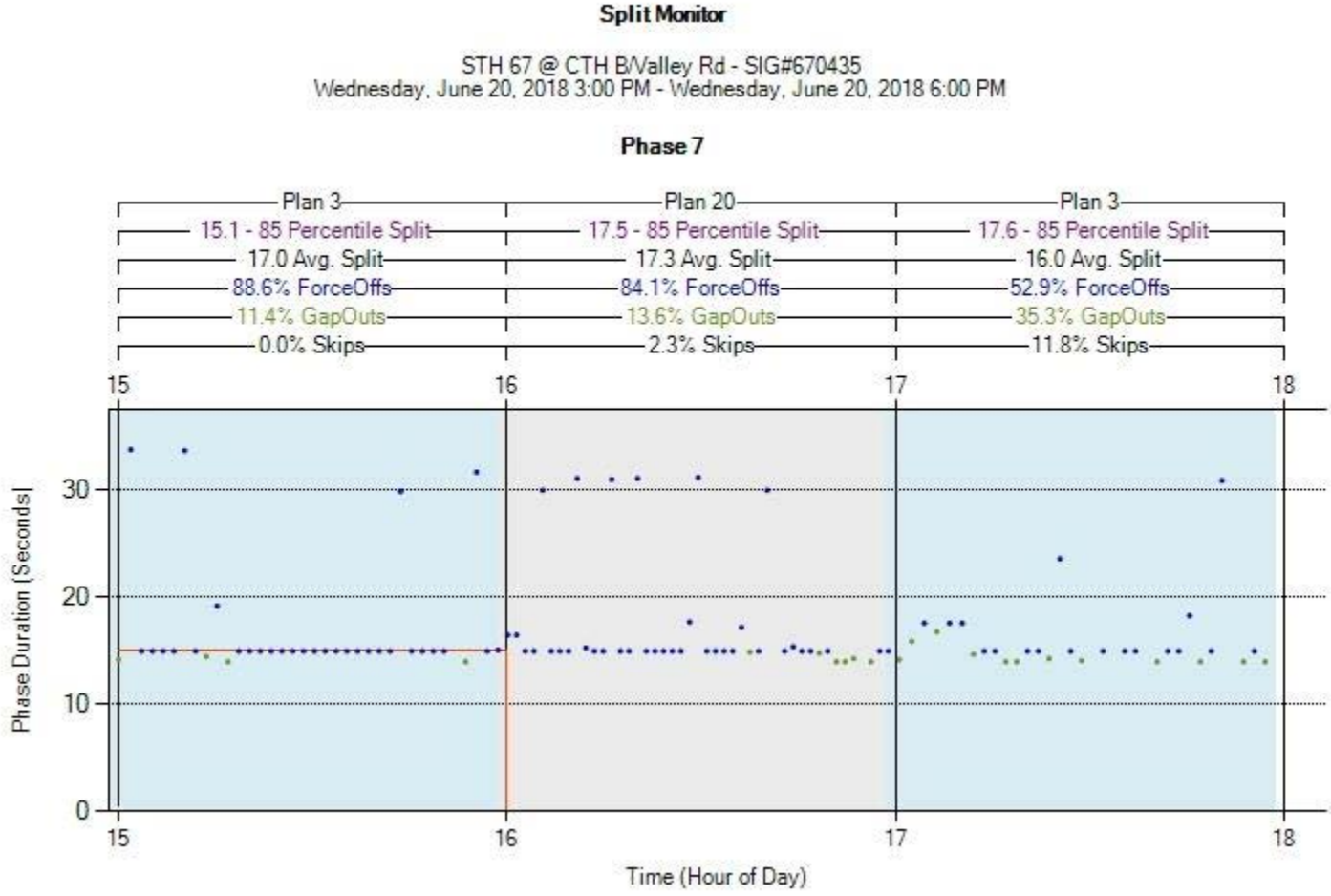
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
HCS Timings
6/20/2018 – 3:00 PM – 6:00 PM



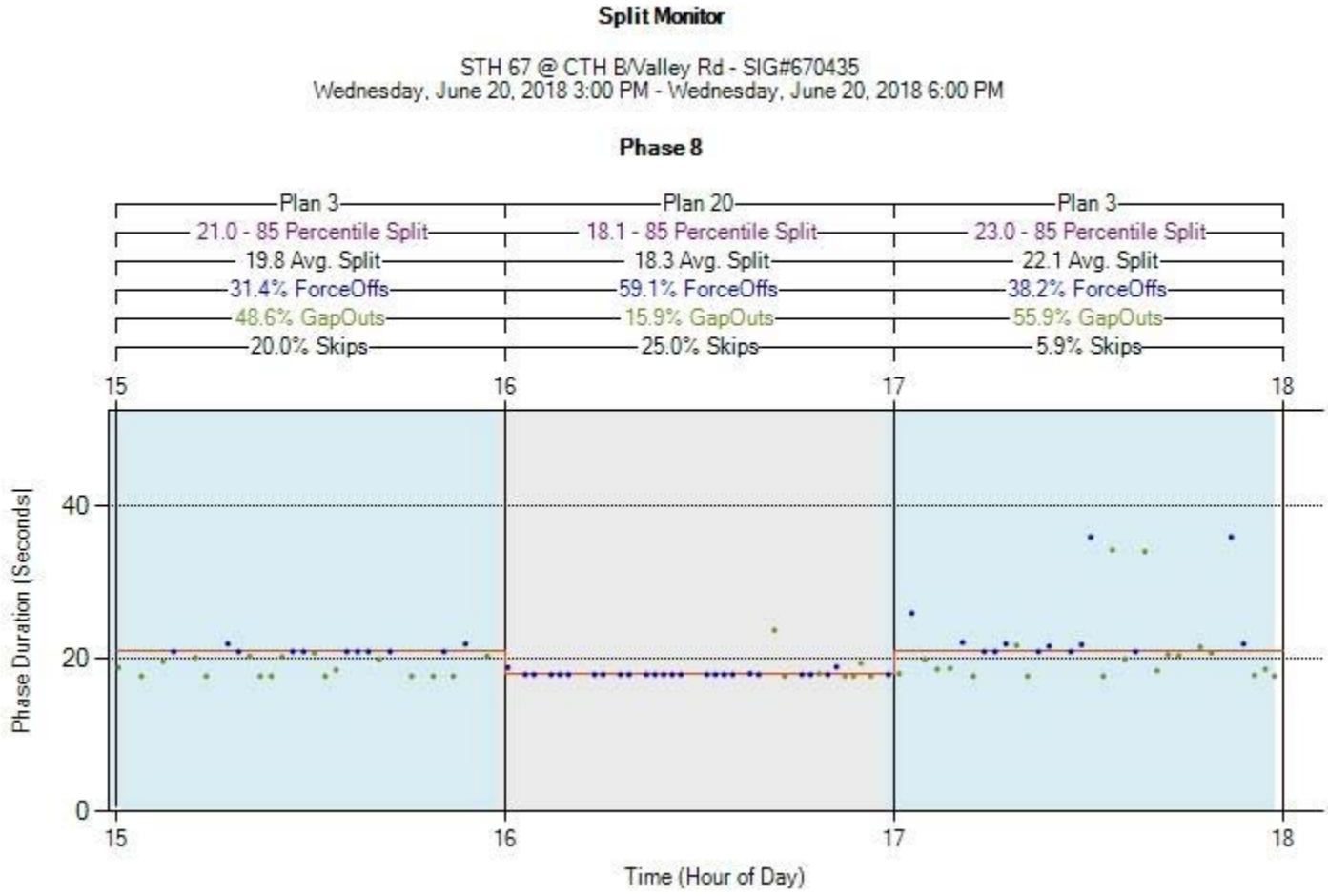
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
HCS Timings
6/20/2018 – 3:00 PM – 6:00 PM



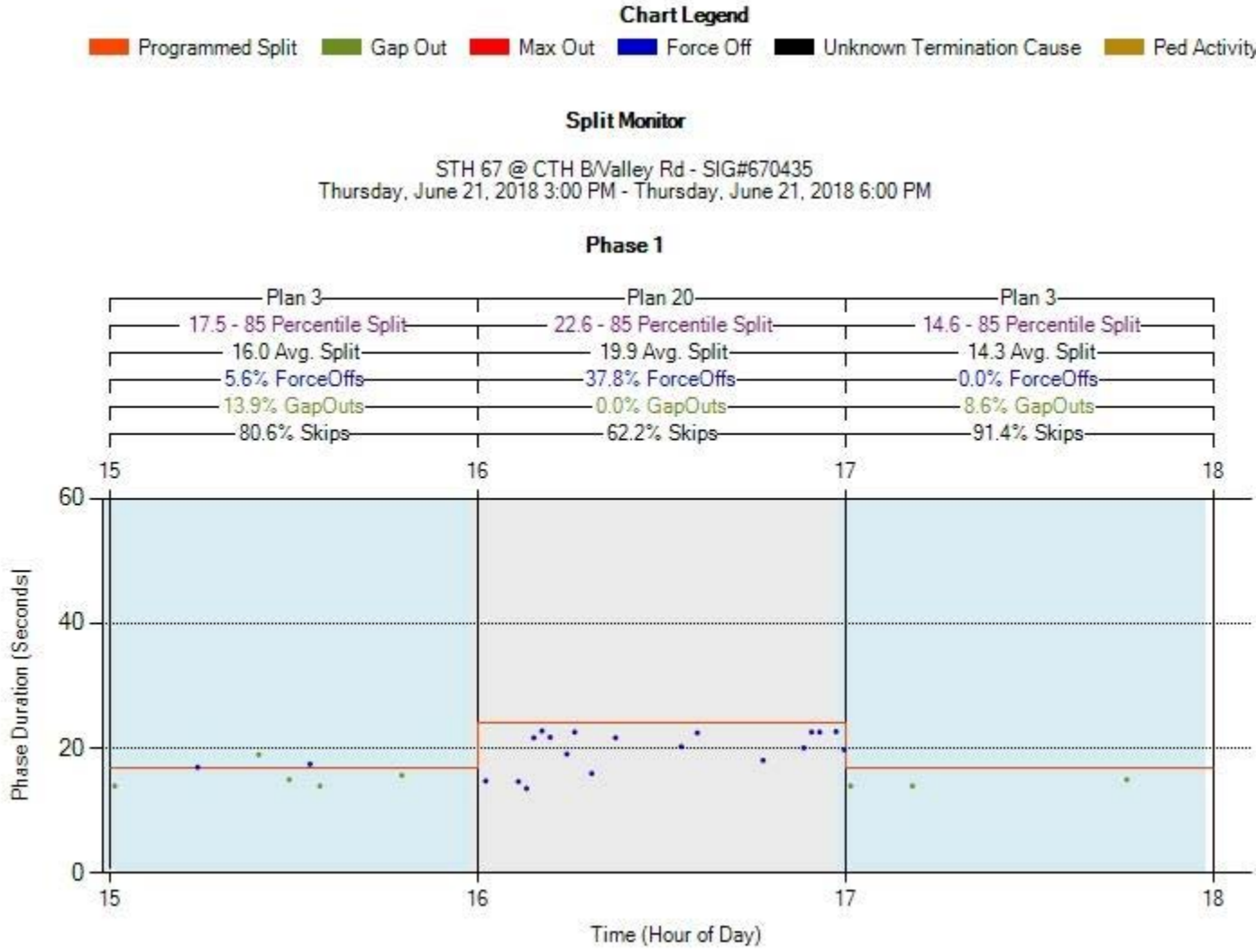
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
HCS Timings
6/20/2018 – 3:00 PM – 6:00 PM



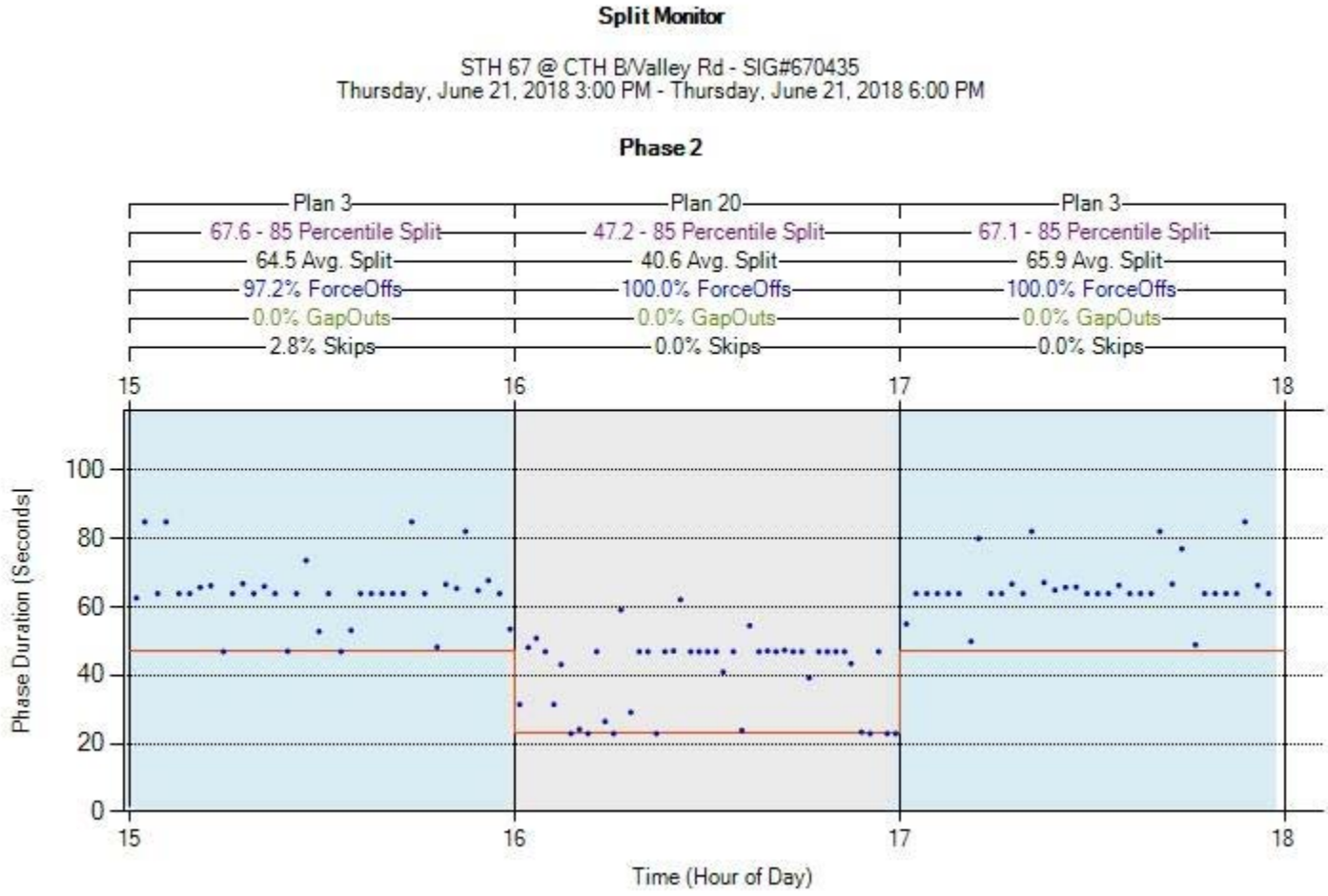
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
HCS Timings
6/20/2018 – 3:00 PM – 6:00 PM



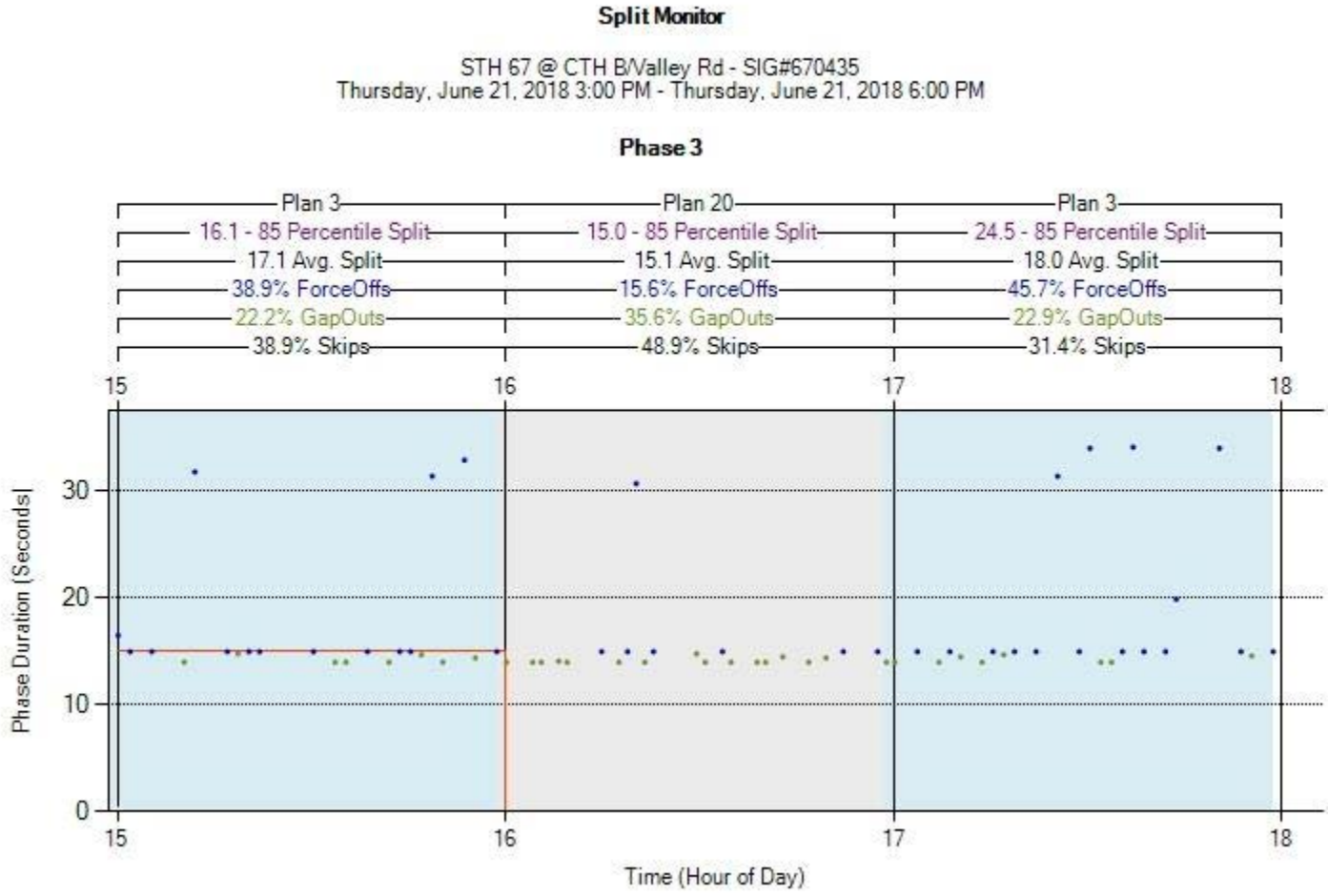
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
HCS Timings
6/21/2018 – 3:00 PM – 6:00 PM



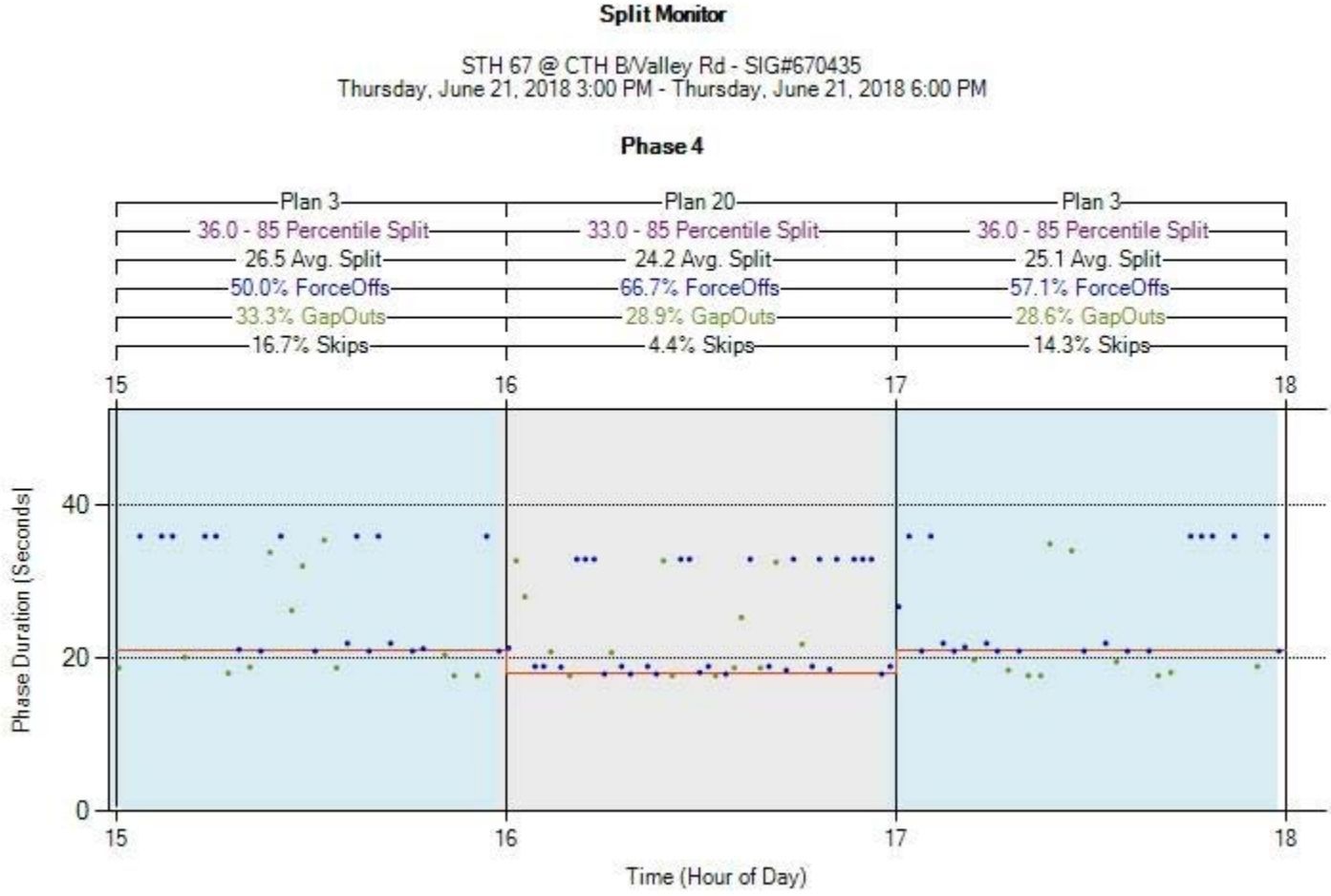
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
HCS Timings
6/21/2018 – 3:00 PM – 6:00 PM



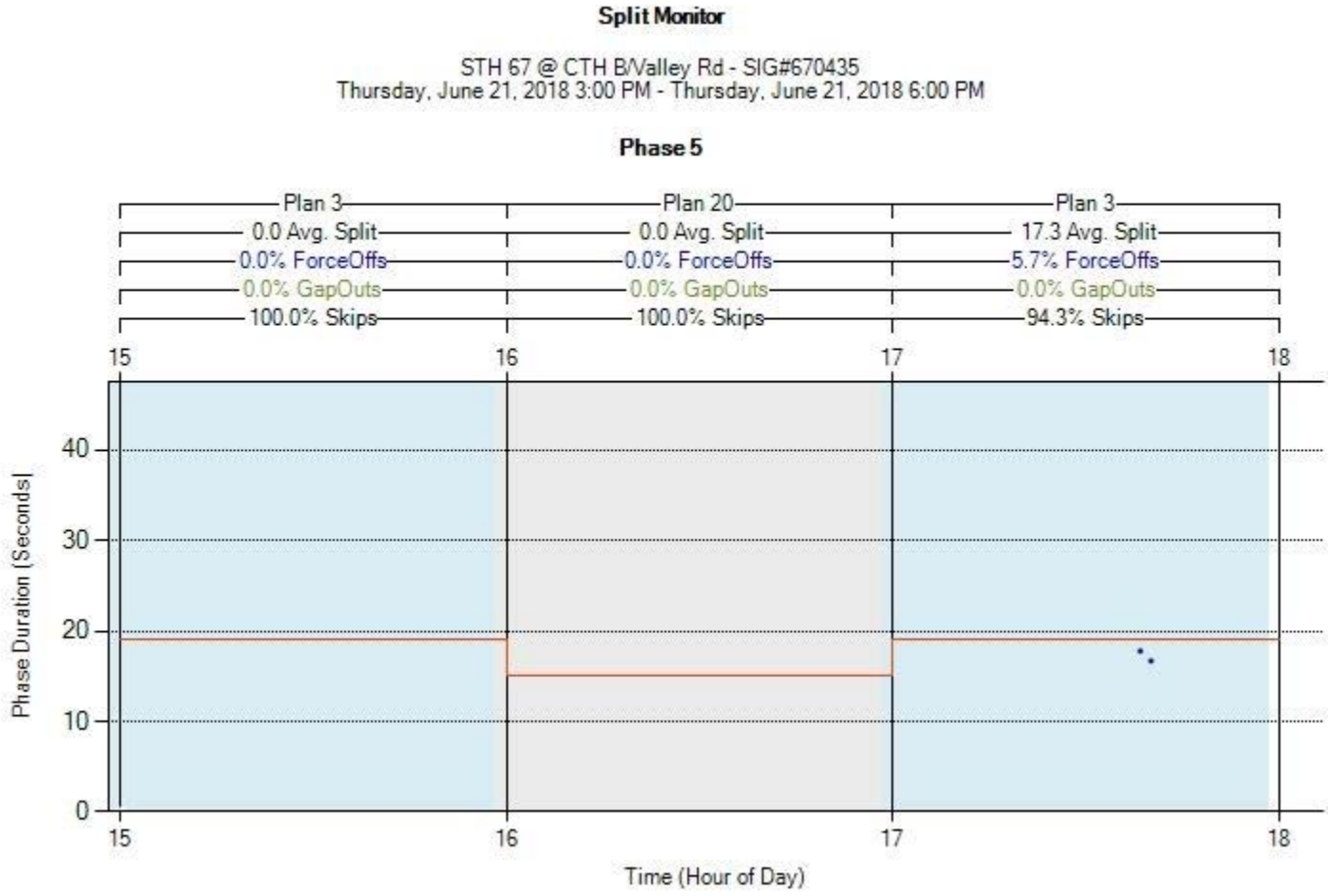
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
HCS Timings
6/21/2018 – 3:00 PM – 6:00 PM



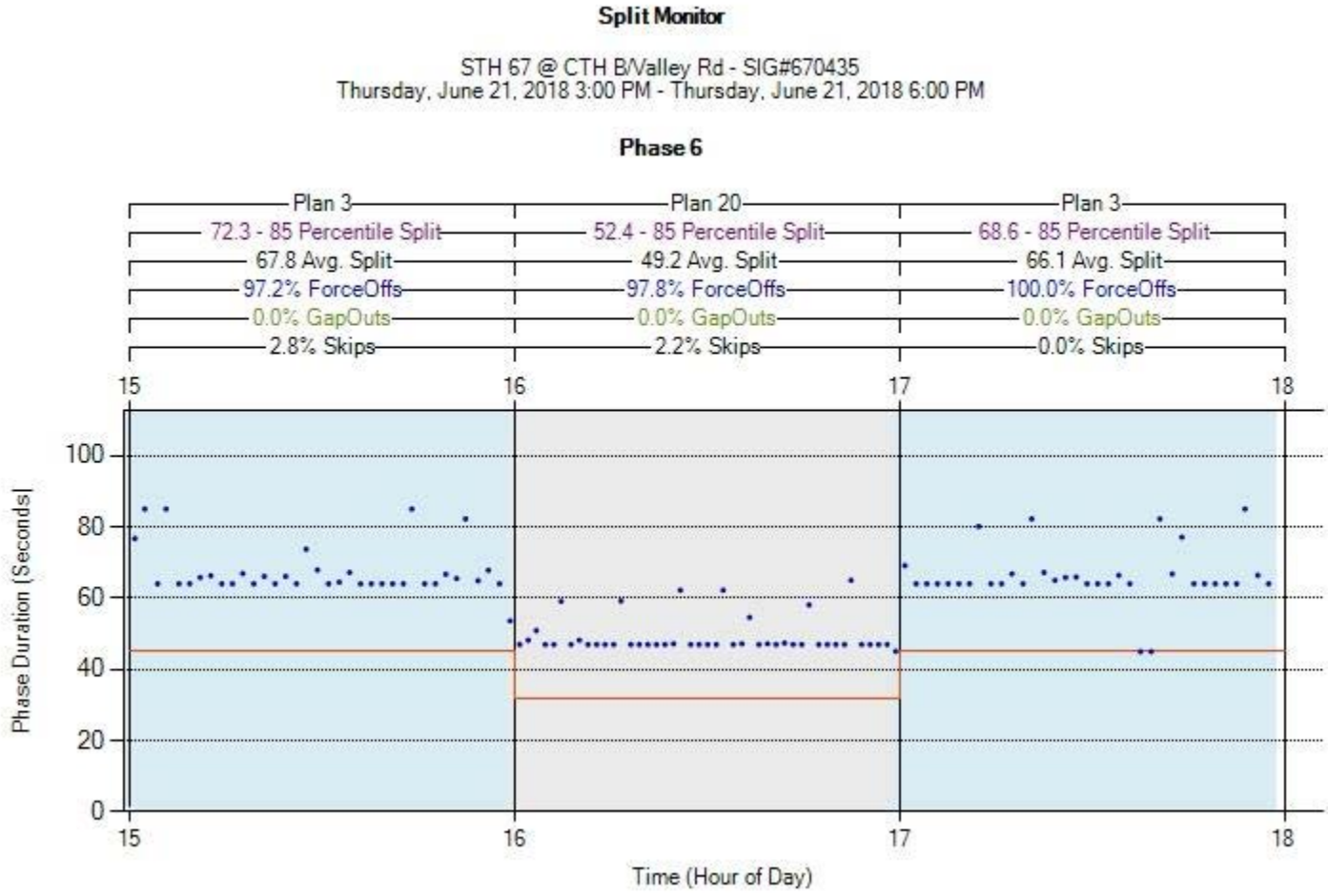
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
HCS Timings
6/21/2018 – 3:00 PM – 6:00 PM



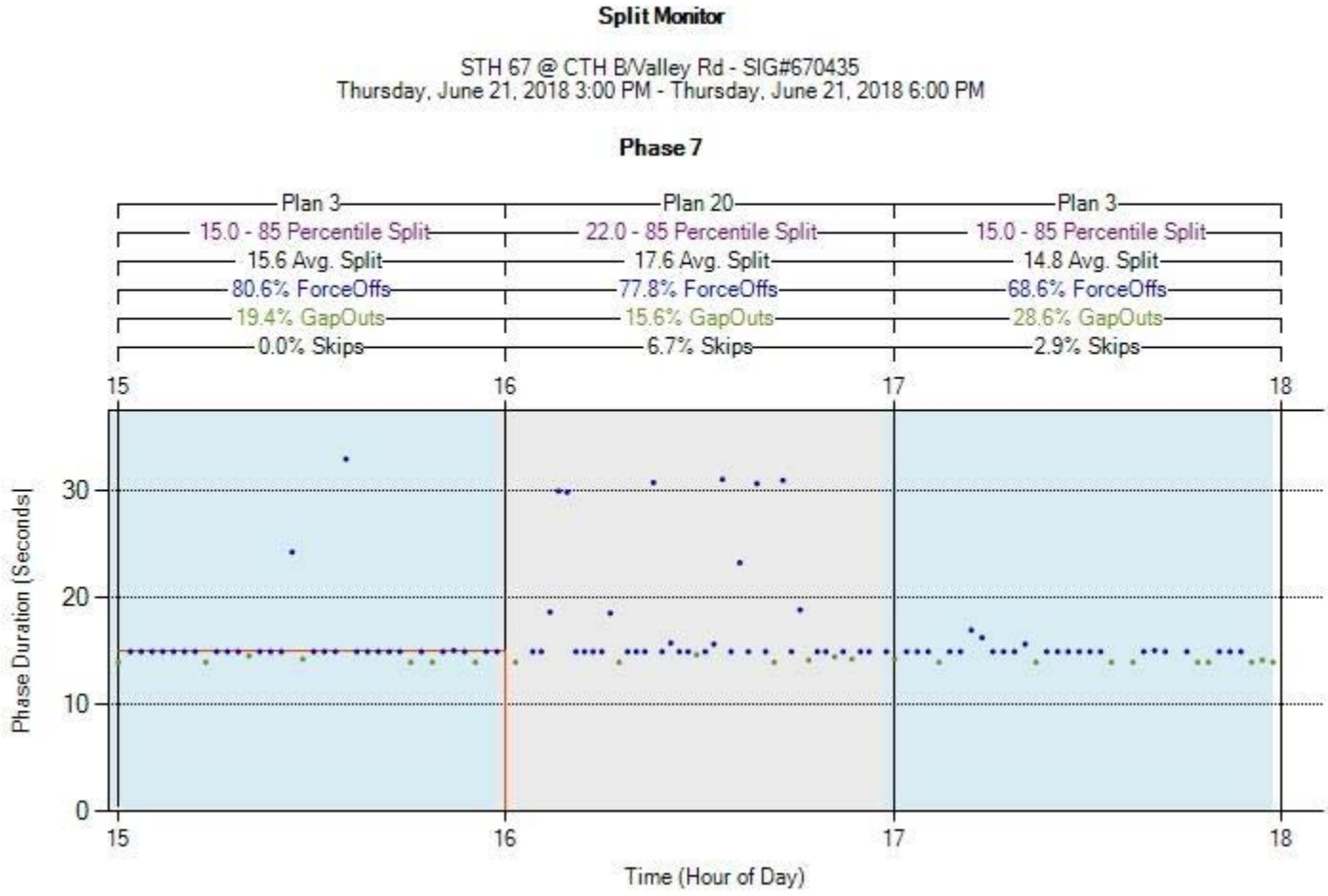
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
HCS Timings
6/21/2018 – 3:00 PM – 6:00 PM



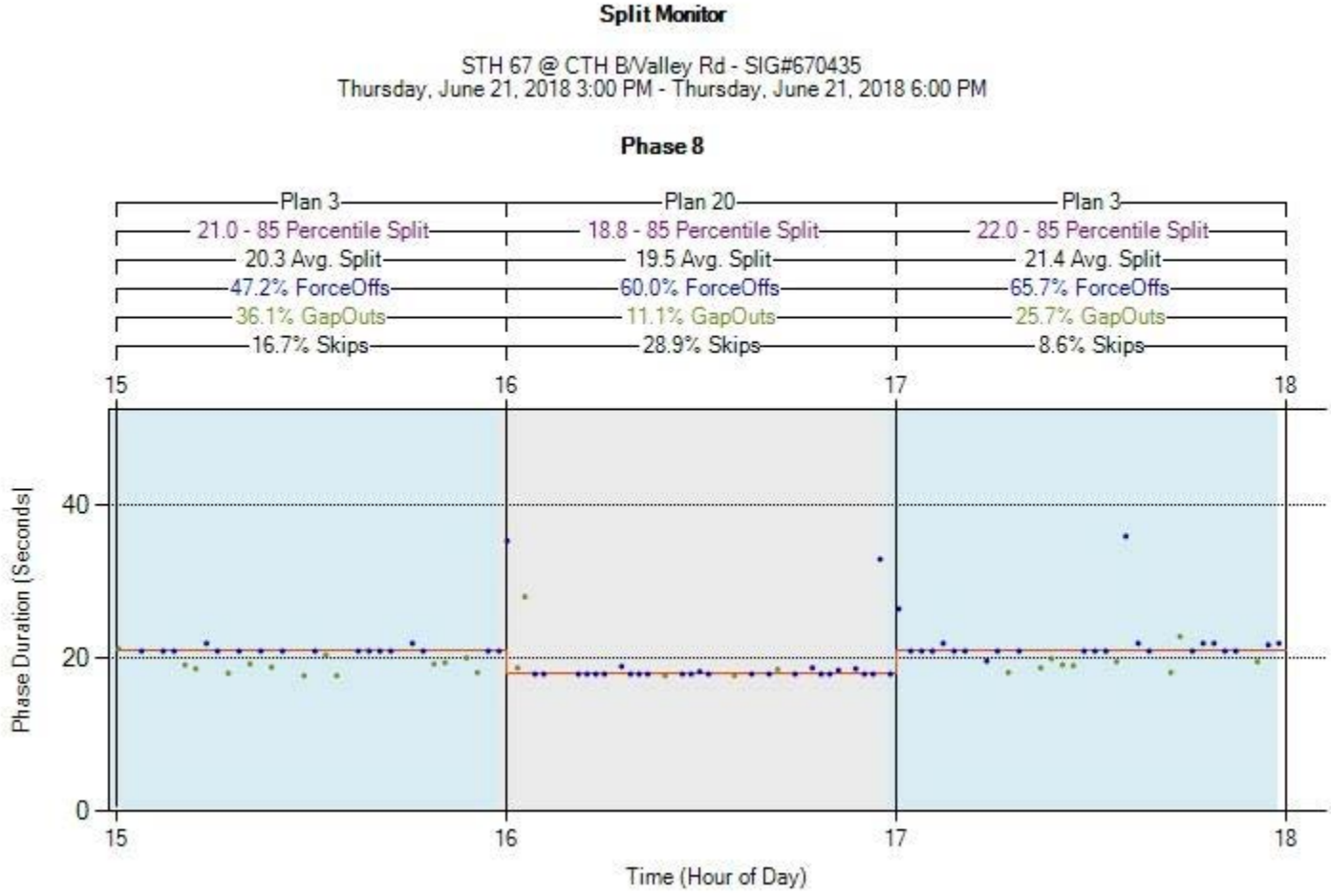
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
HCS Timings
6/21/2018 – 3:00 PM – 6:00 PM



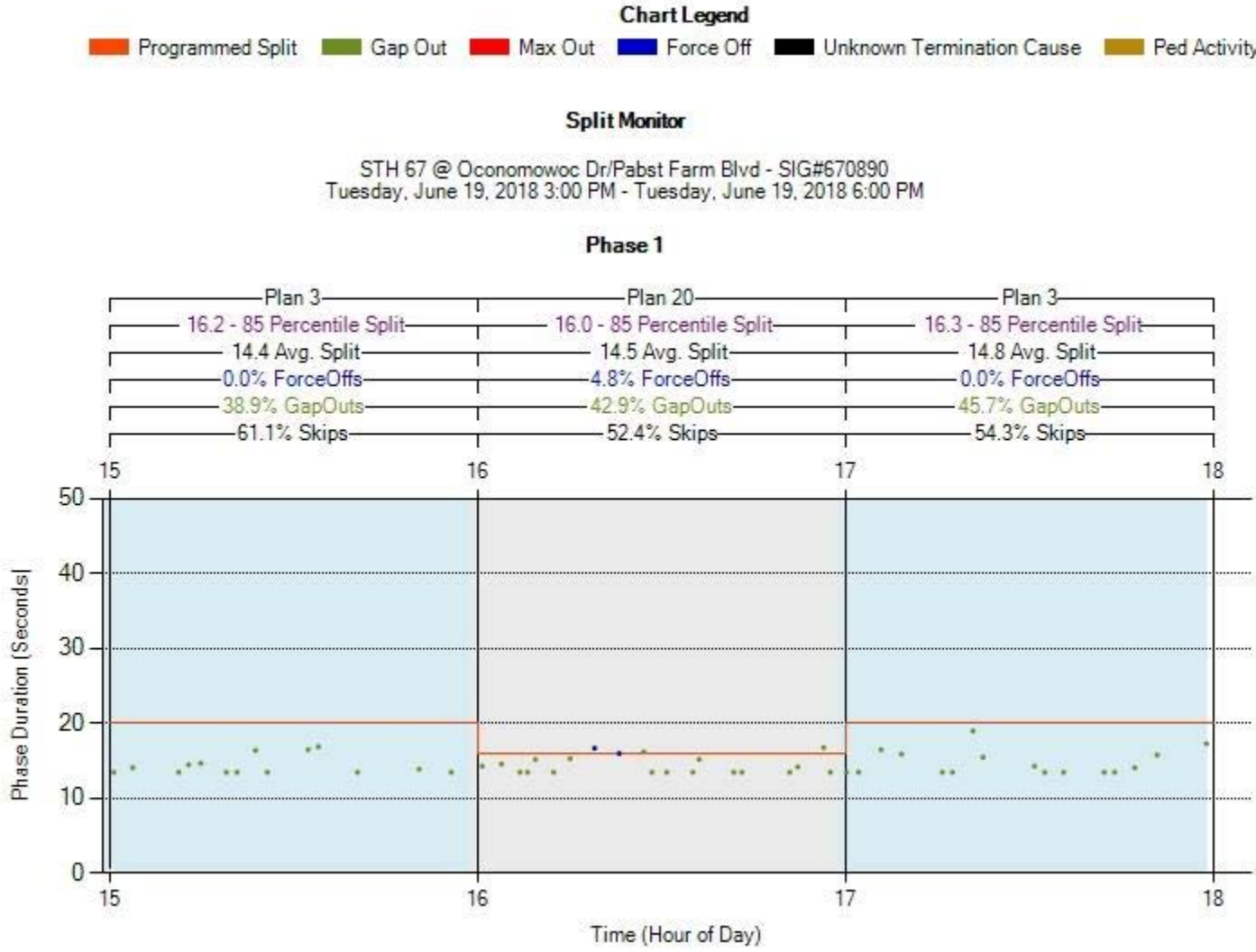
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
HCS Timings
6/21/2018 – 3:00 PM – 6:00 PM



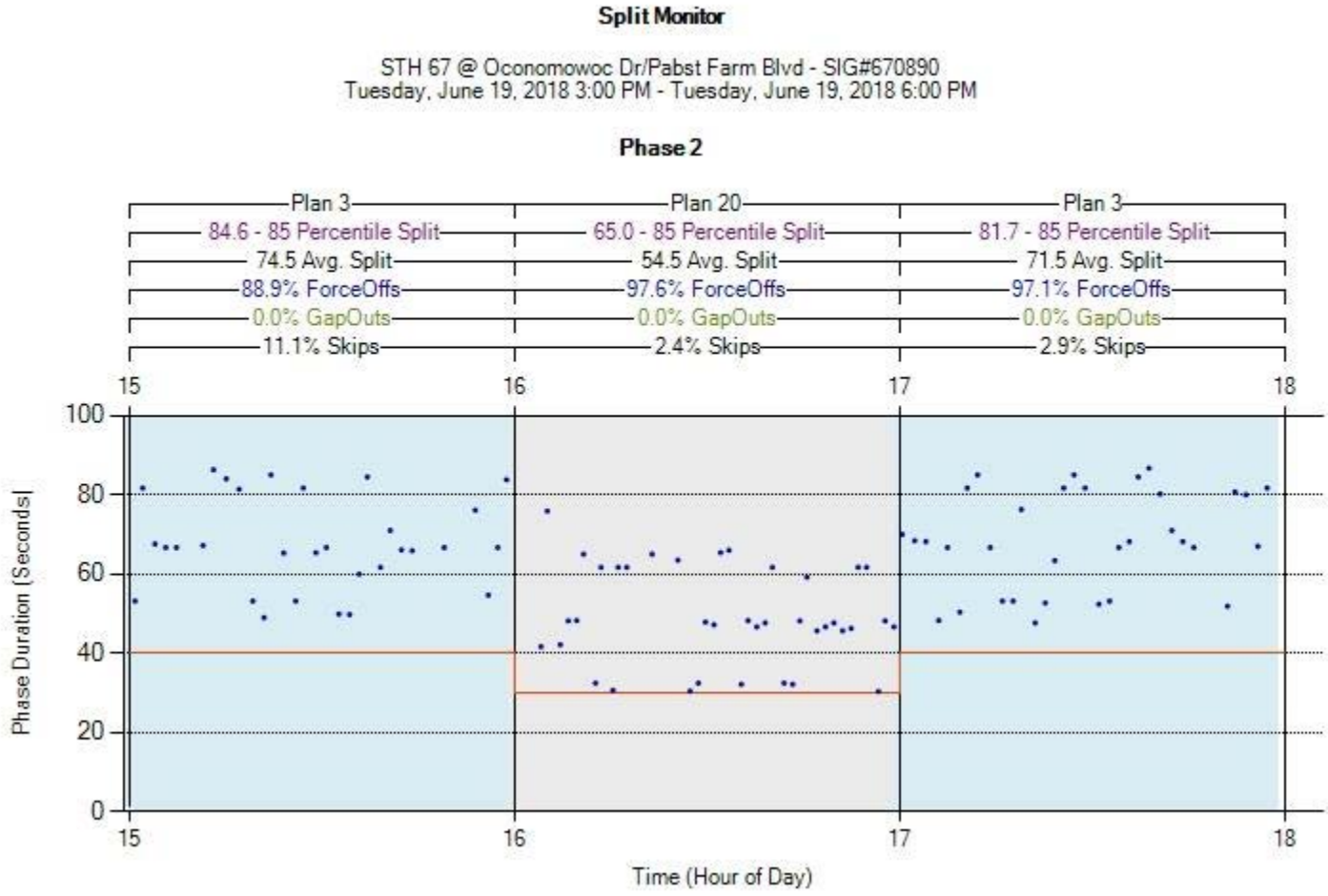
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
HCS Timings
6/21/2018 – 3:00 PM – 6:00 PM



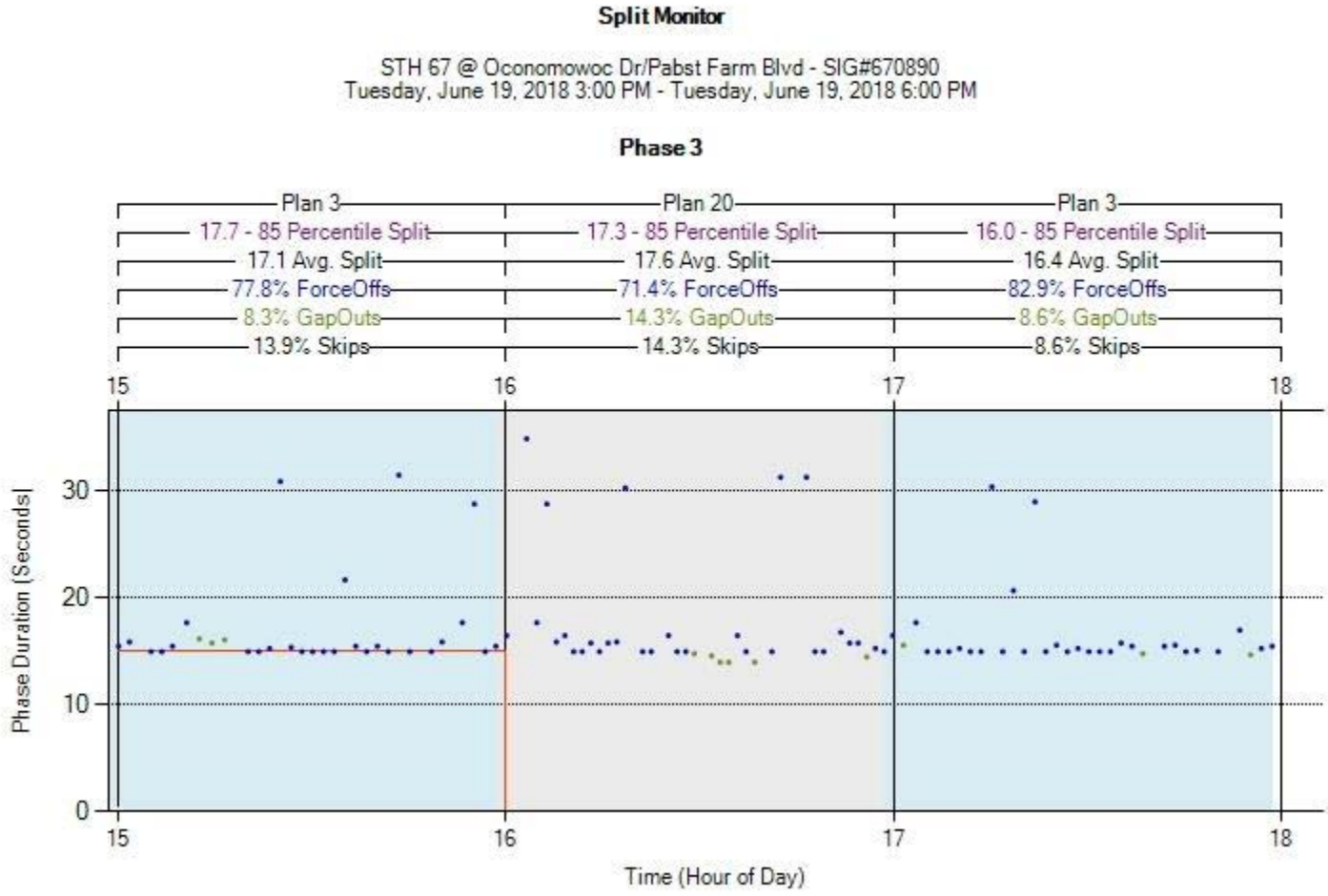
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
HCS Timings
6/19/2018 – 3:00 PM – 6:00 PM



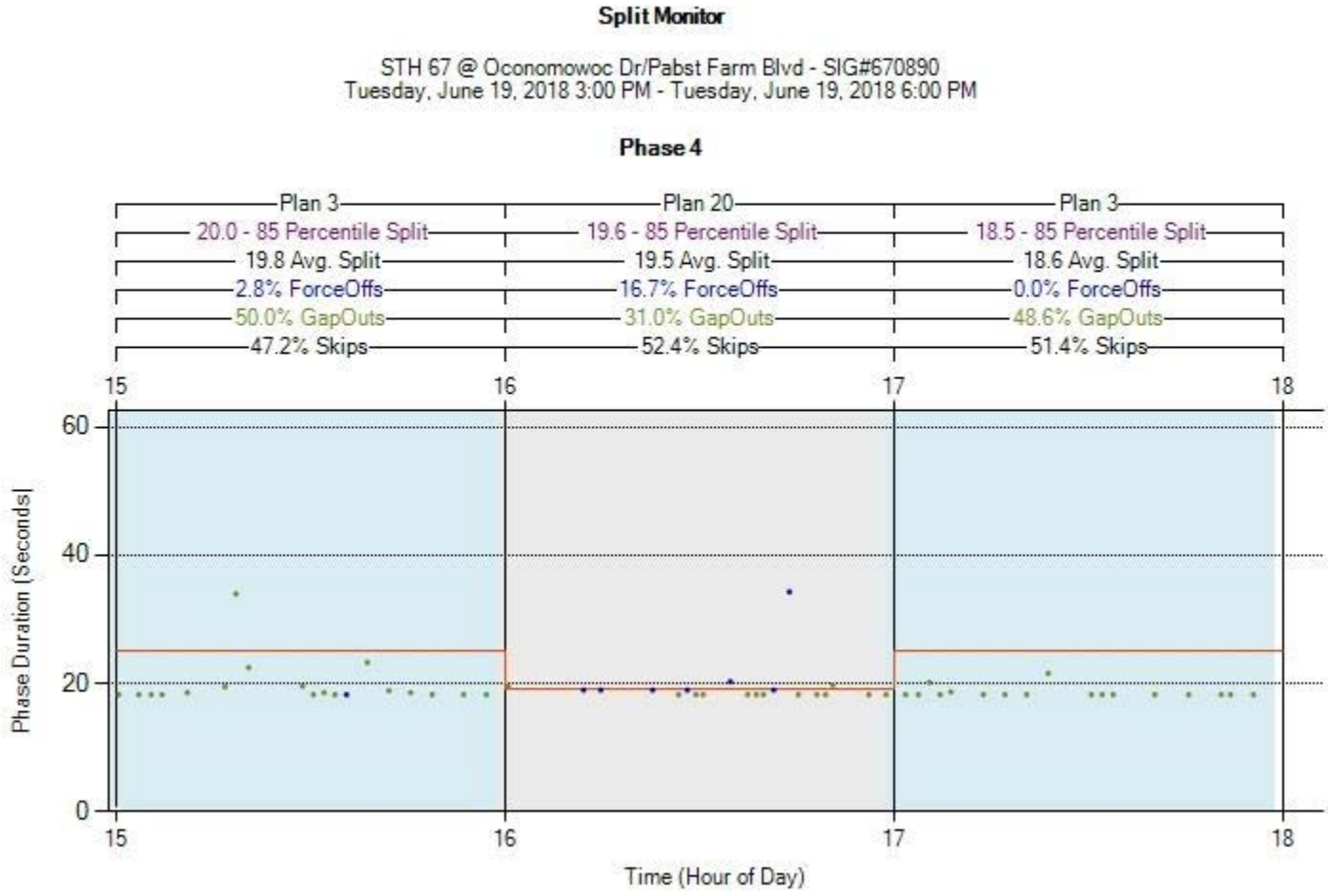
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
HCS Timings
6/19/2018 – 3:00 PM – 6:00 PM



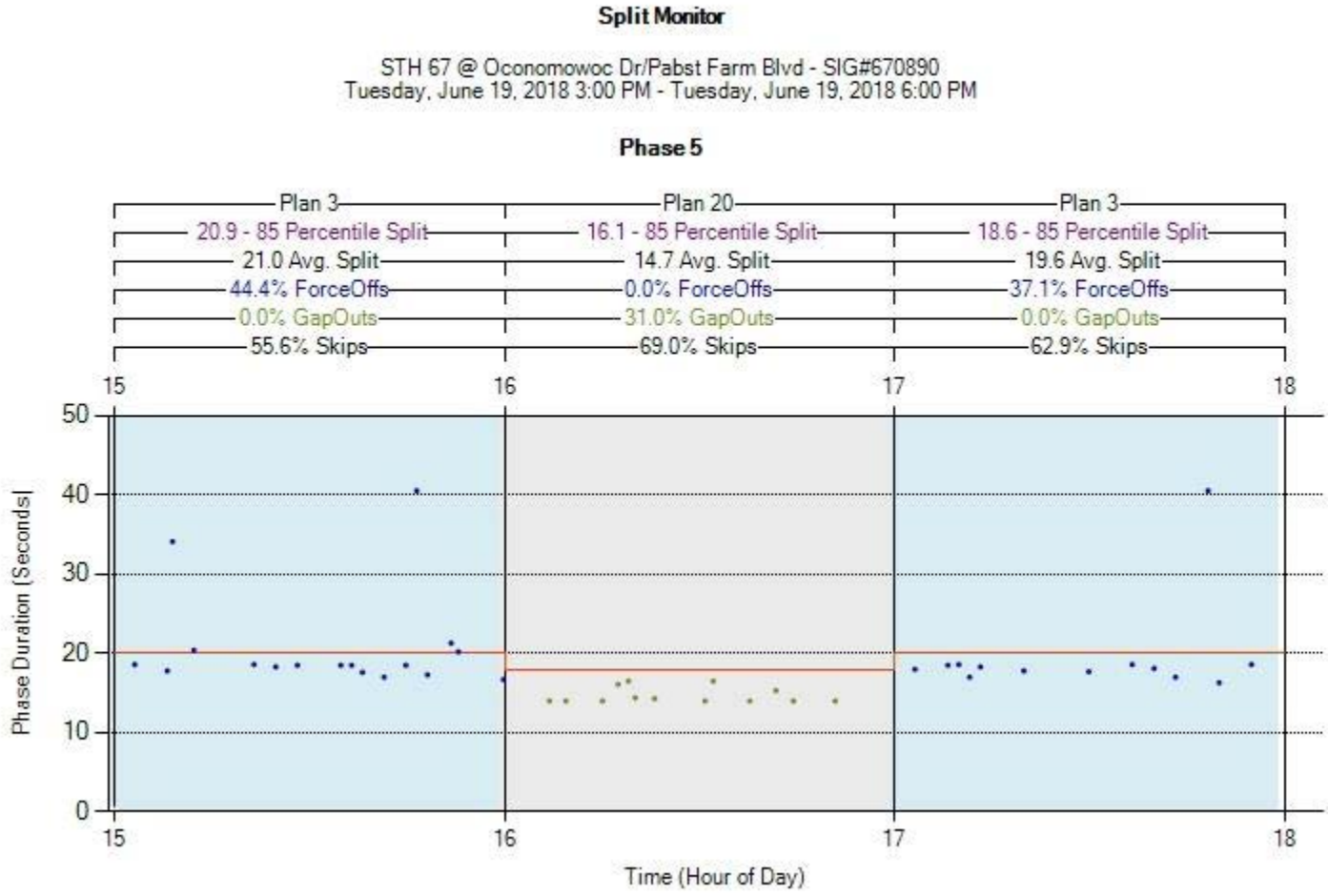
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
HCS Timings
6/19/2018 – 3:00 PM – 6:00 PM



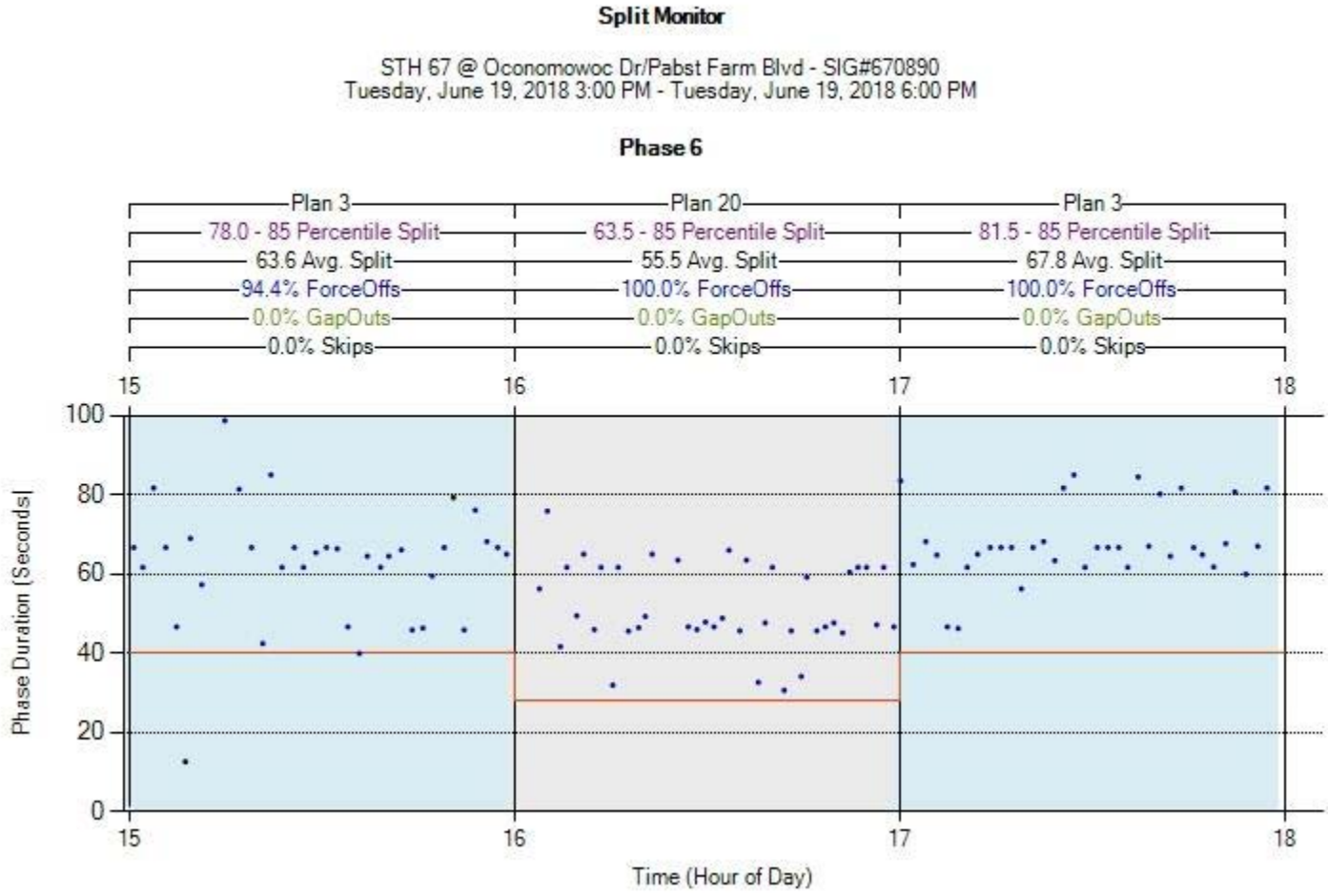
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
HCS Timings
6/19/2018 – 3:00 PM – 6:00 PM



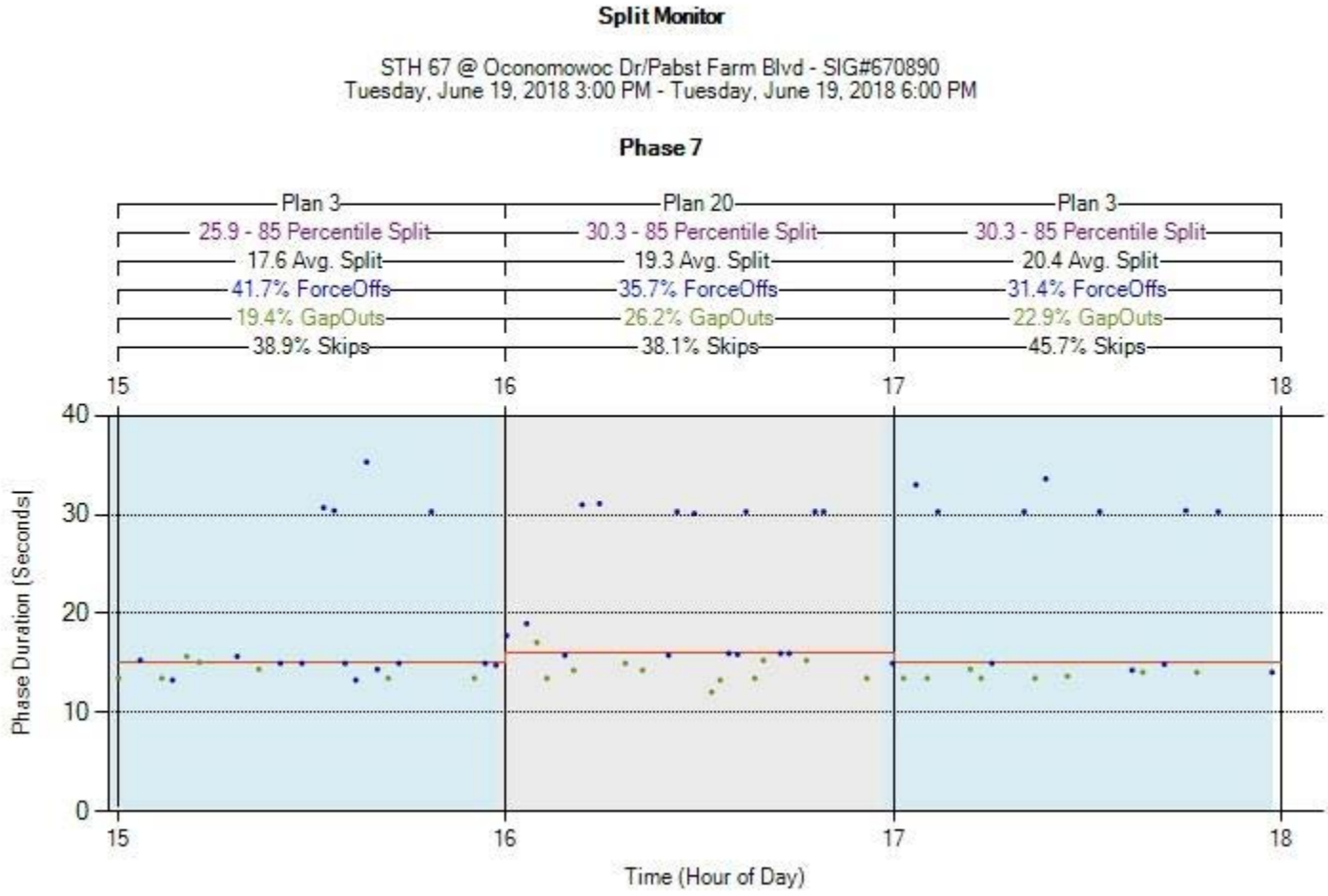
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
HCS Timings
6/19/2018 – 3:00 PM – 6:00 PM



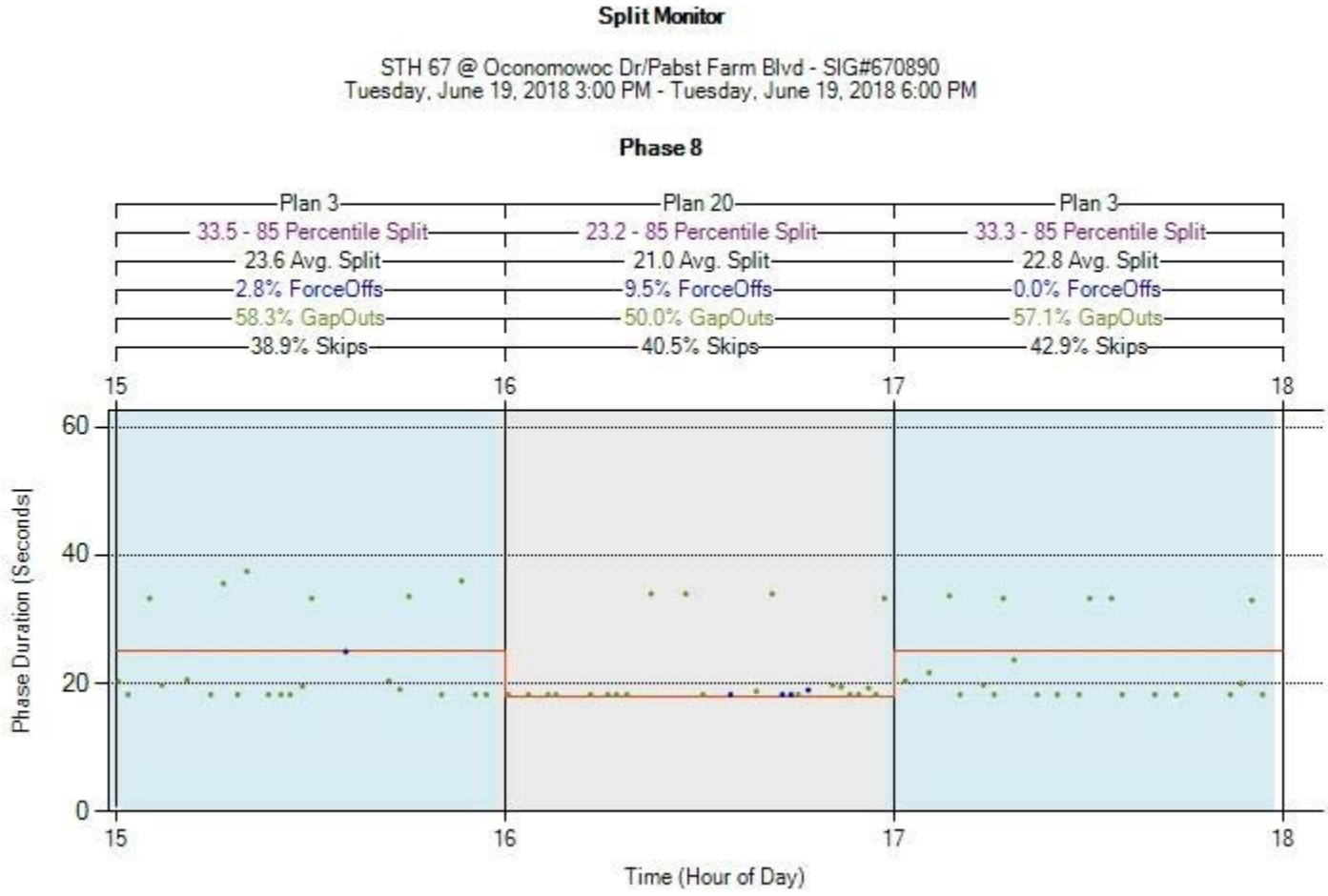
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
HCS Timings
6/19/2018 – 3:00 PM – 6:00 PM



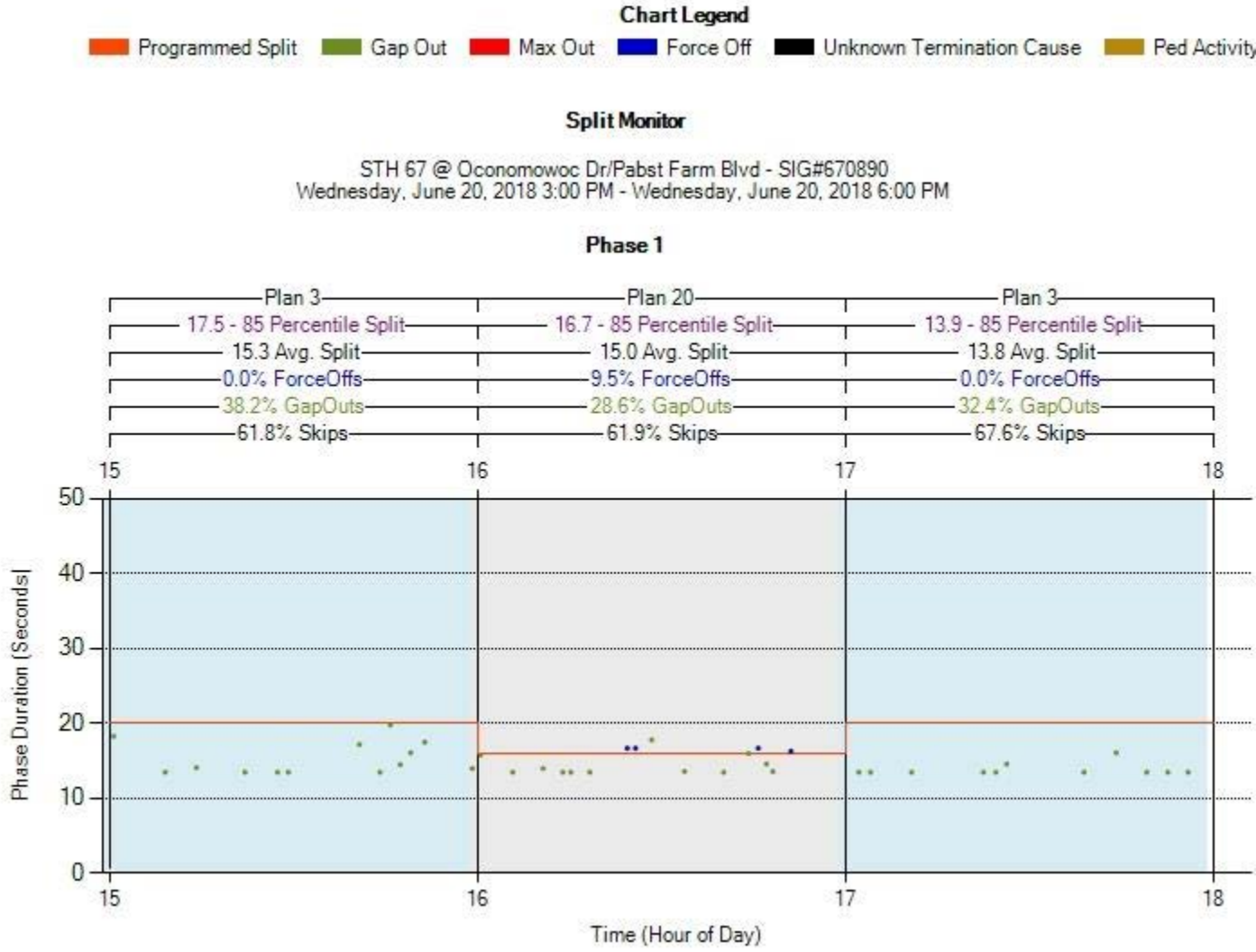
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
HCS Timings
6/19/2018 – 3:00 PM – 6:00 PM



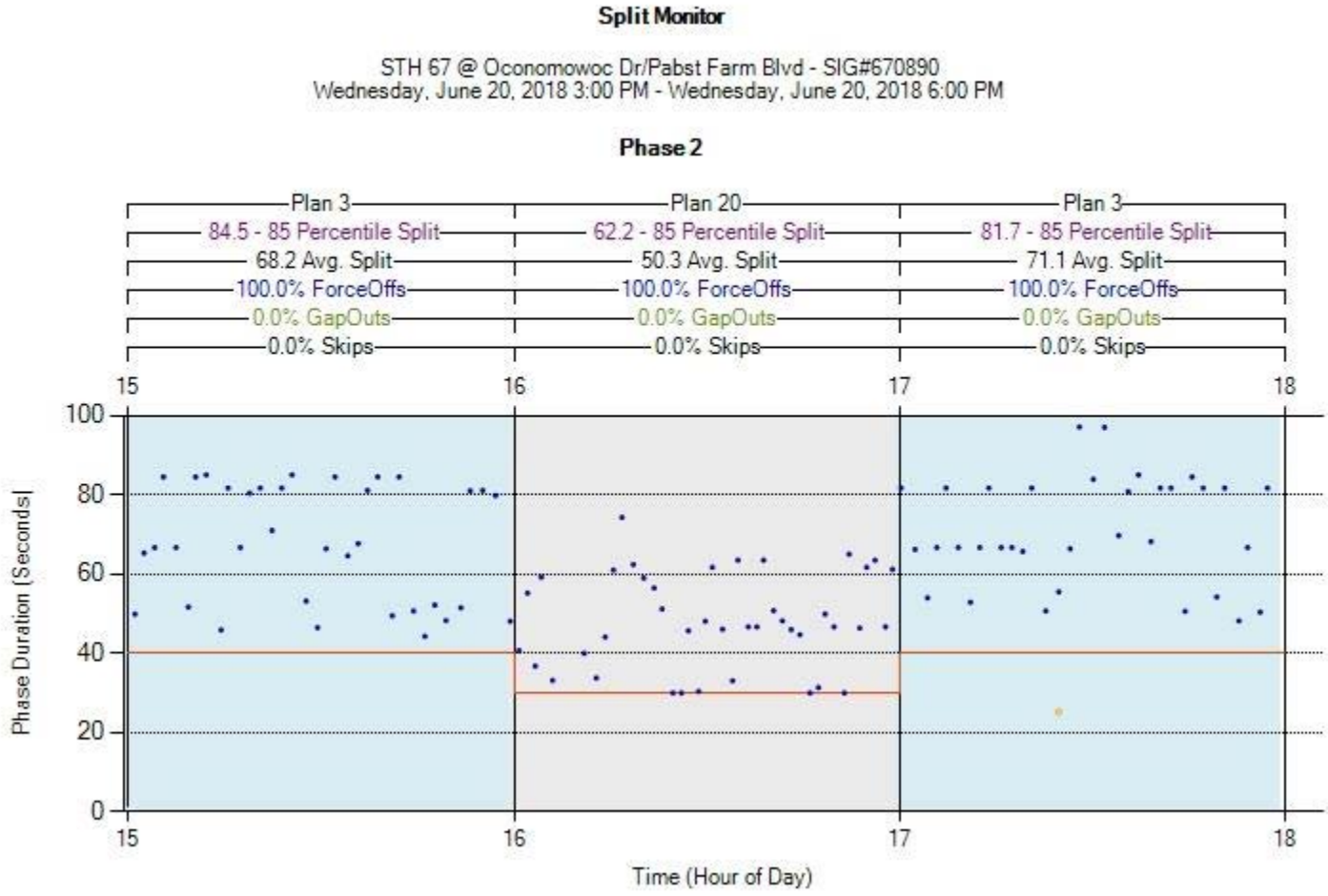
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
HCS Timings
6/19/2018 – 3:00 PM – 6:00 PM



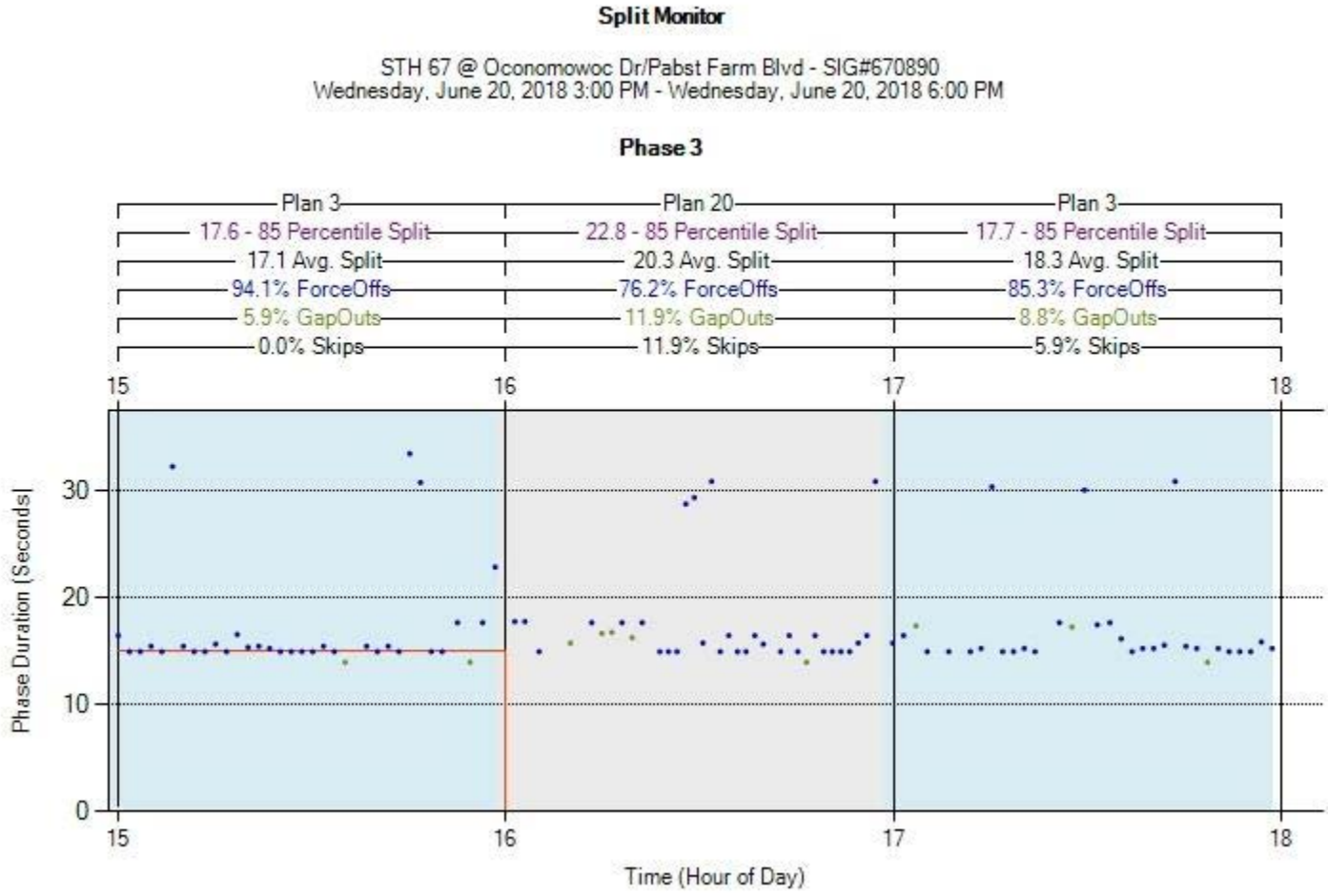
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
HCS Timings
6/20/2018 – 3:00 PM – 6:00 PM



WIS 67 Corridor – STH 67 & Oconomowoc Dr.
HCS Timings
6/20/2018 – 3:00 PM – 6:00 PM



WIS 67 Corridor – STH 67 & Oconomowoc Dr.
HCS Timings
6/20/2018 – 3:00 PM – 6:00 PM



WIS 67 Corridor – STH 67 & Oconomowoc Dr.
HCS Timings
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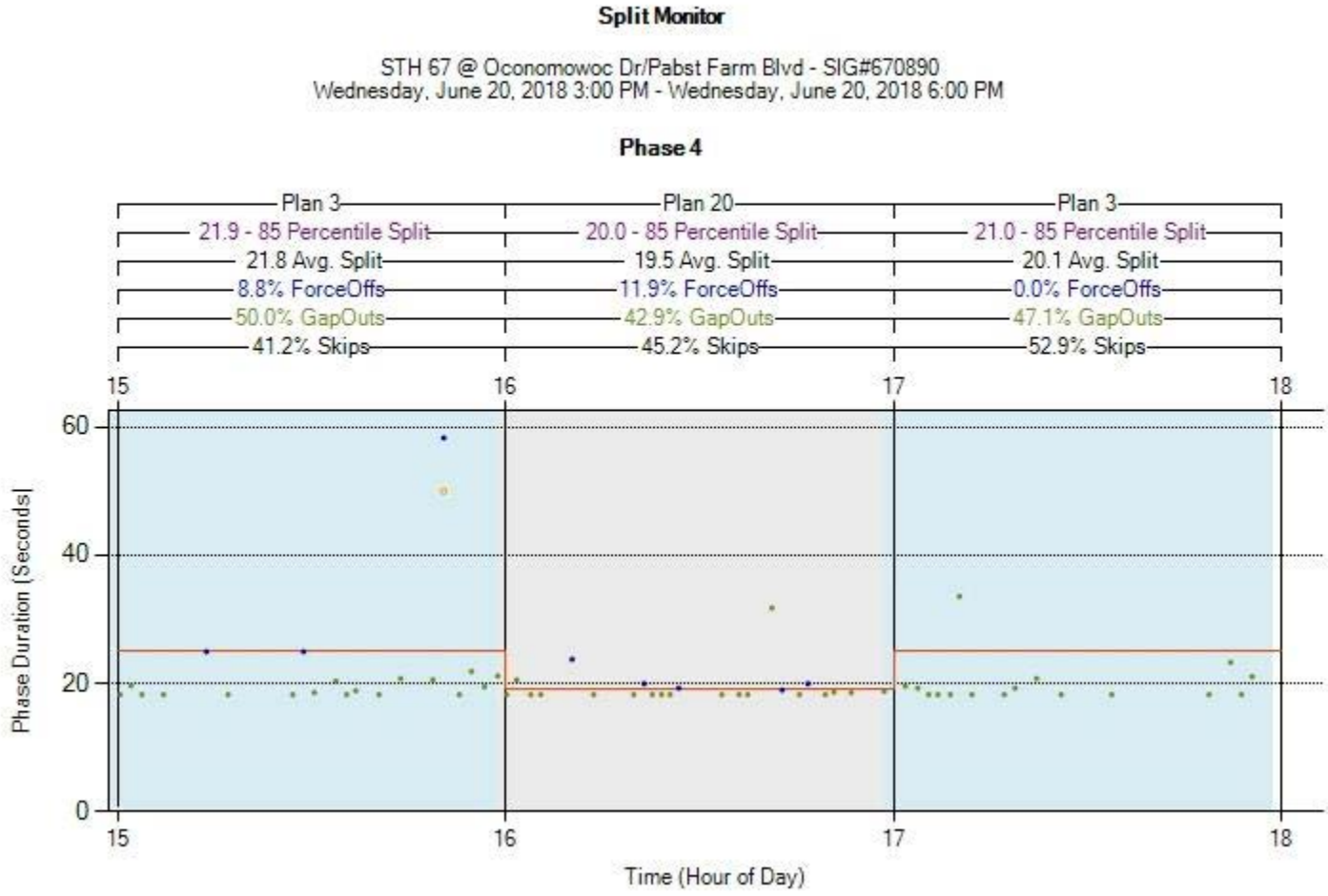
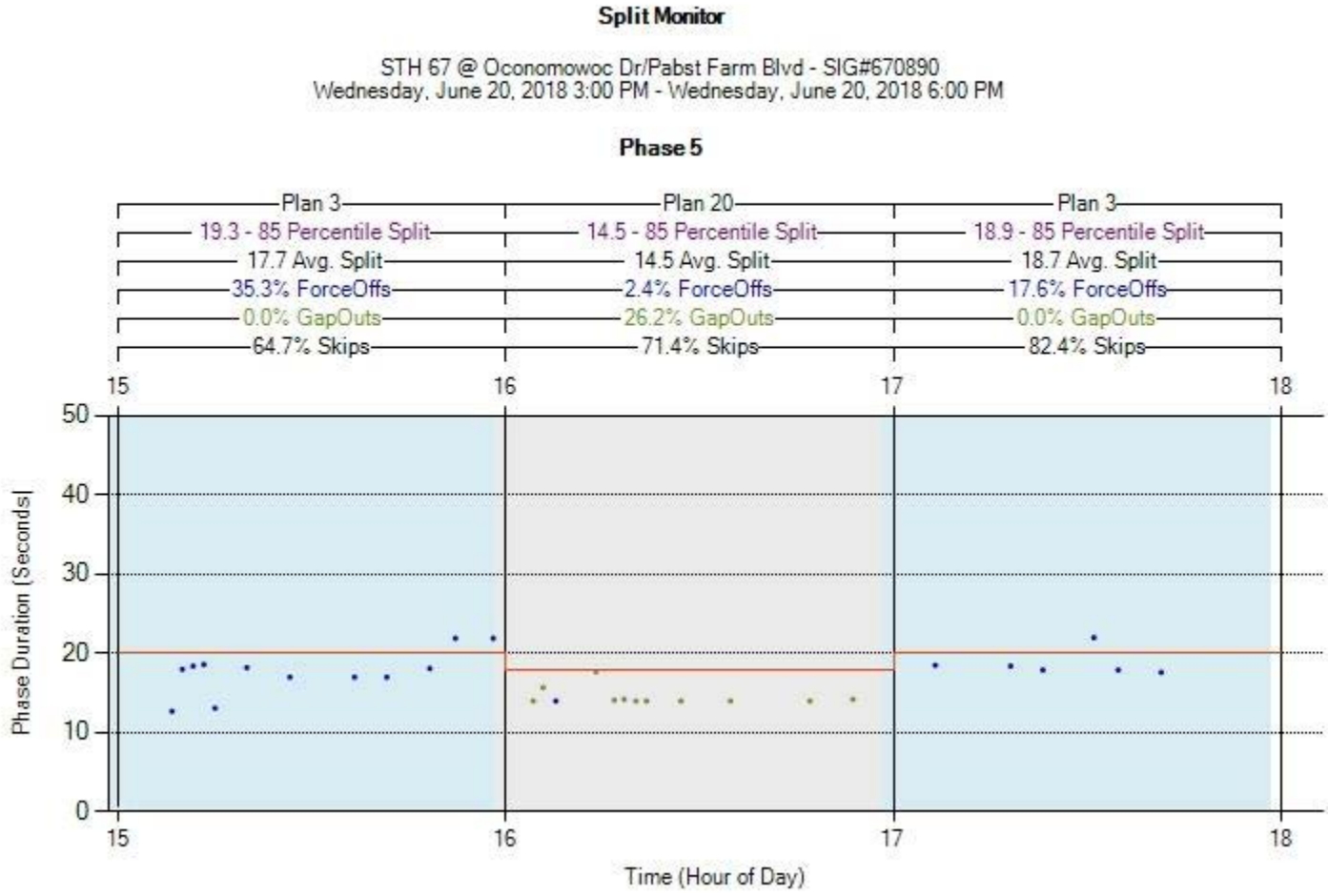
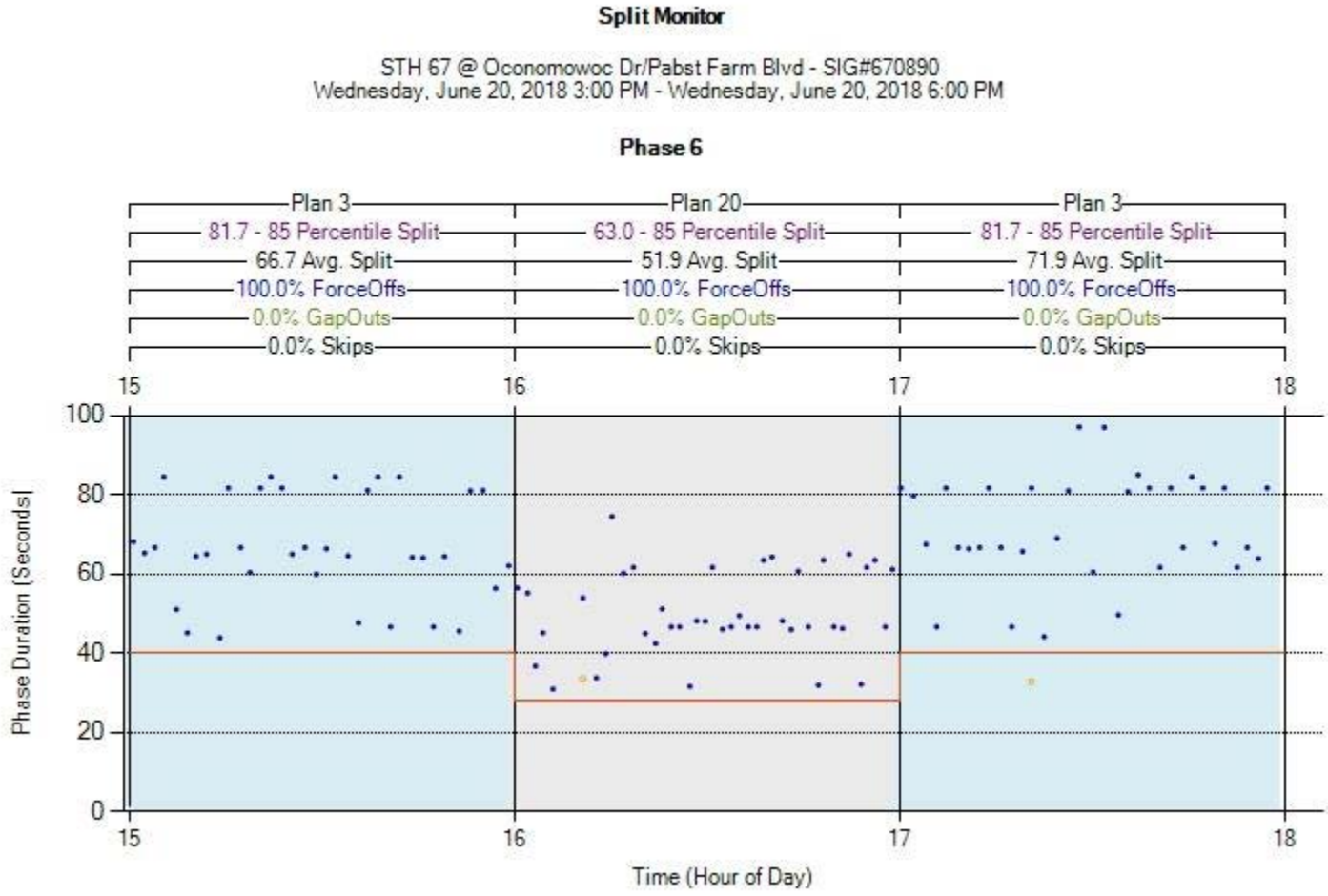


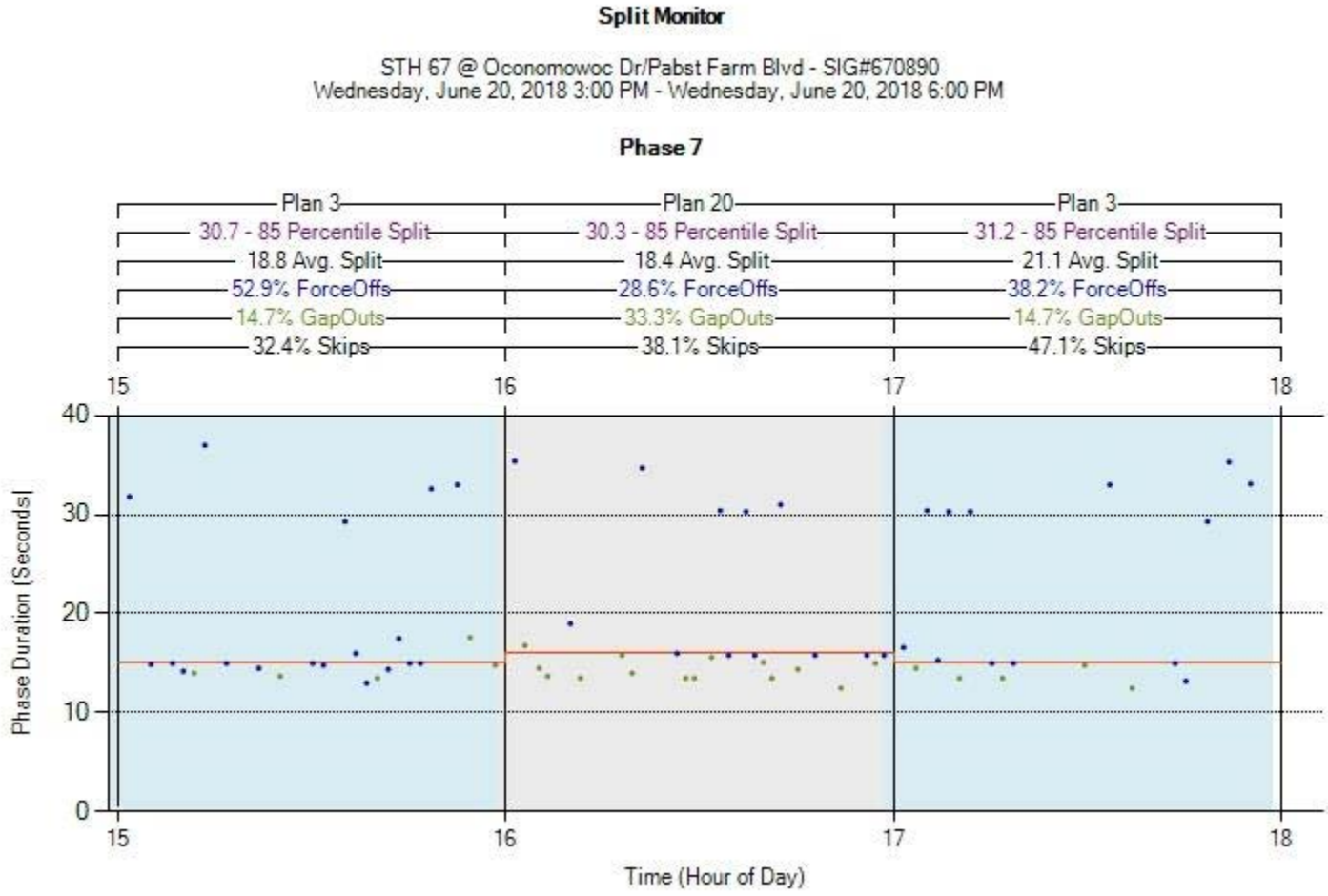
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
HCS Timings
6/20/2018 – 3:00 PM – 6:00 PM



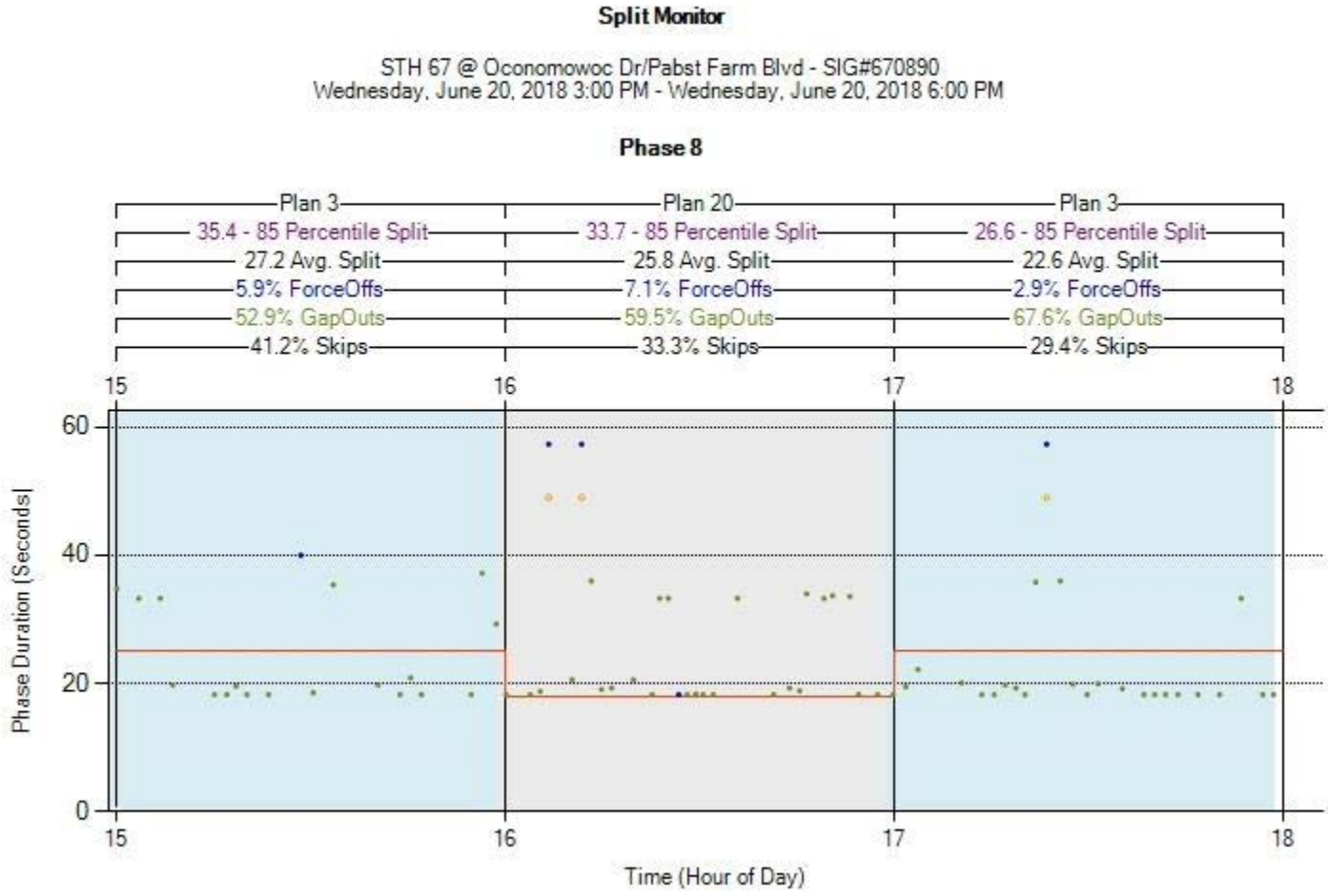
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
HCS Timings
6/20/2018 – 3:00 PM – 6:00 PM



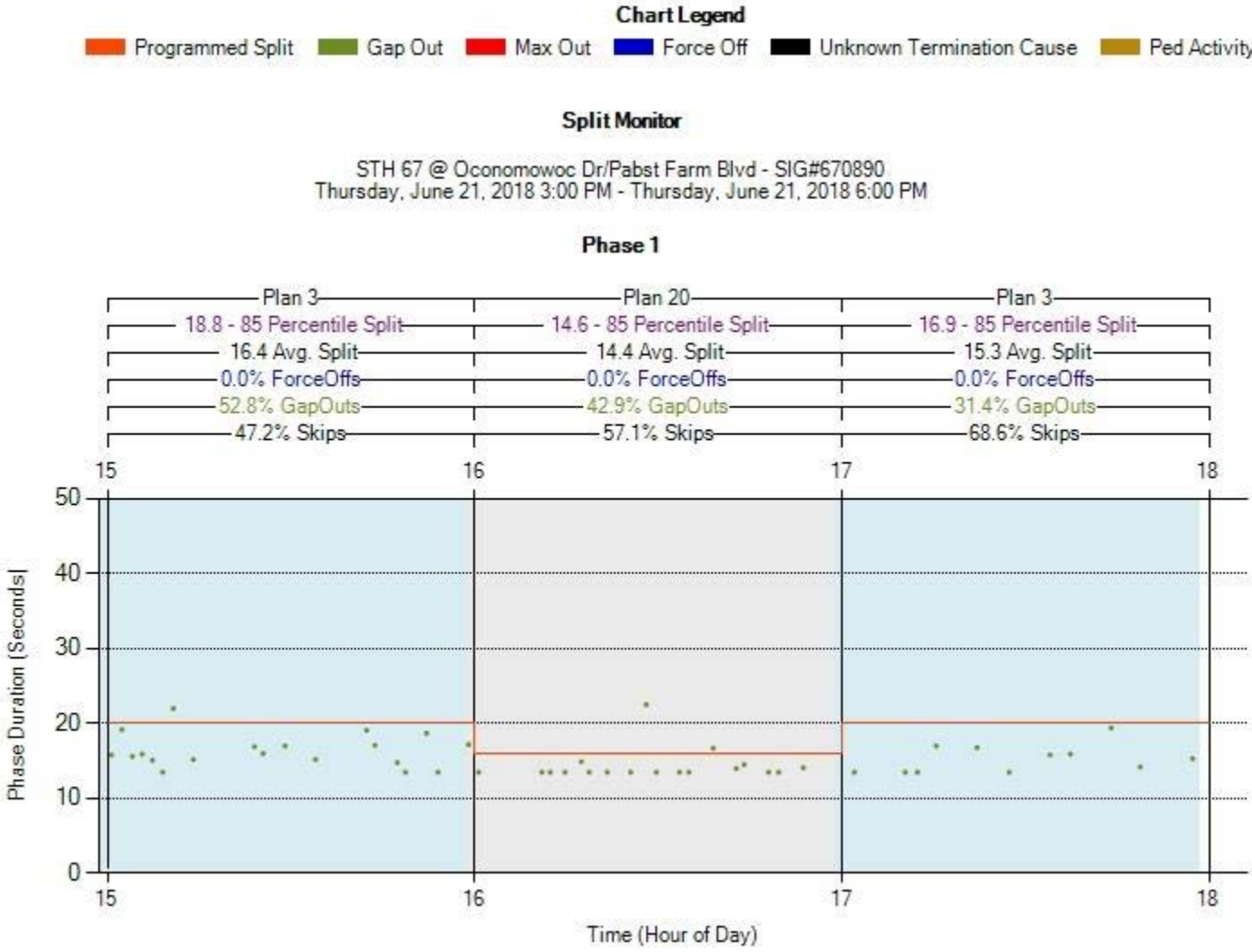
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
HCS Timings
6/20/2018 – 3:00 PM – 6:00 PM



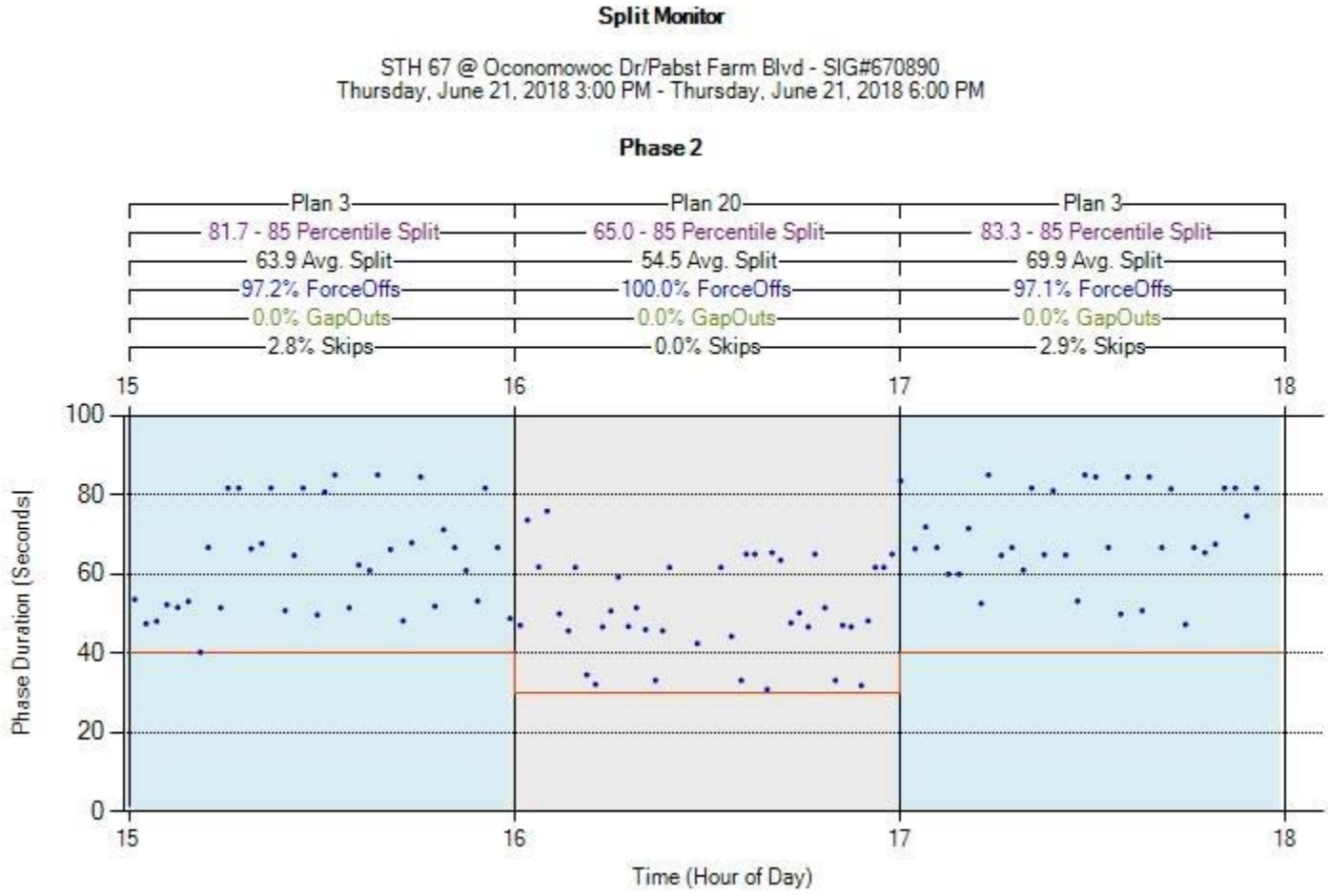
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
HCS Timings
6/20/2018 – 3:00 PM – 6:00 PM



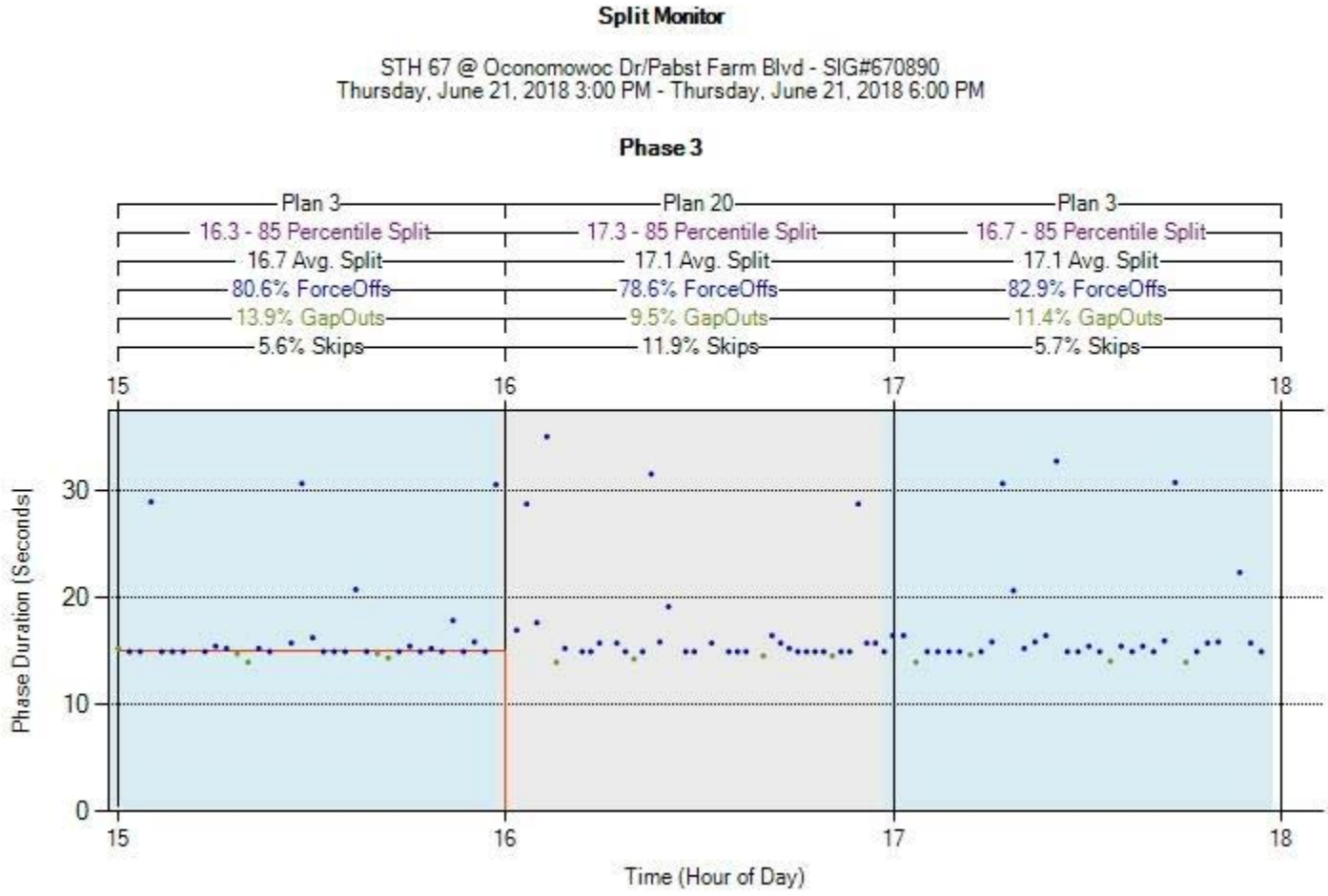
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
HCS Timings
6/21/2018 – 3:00 PM – 6:00 PM



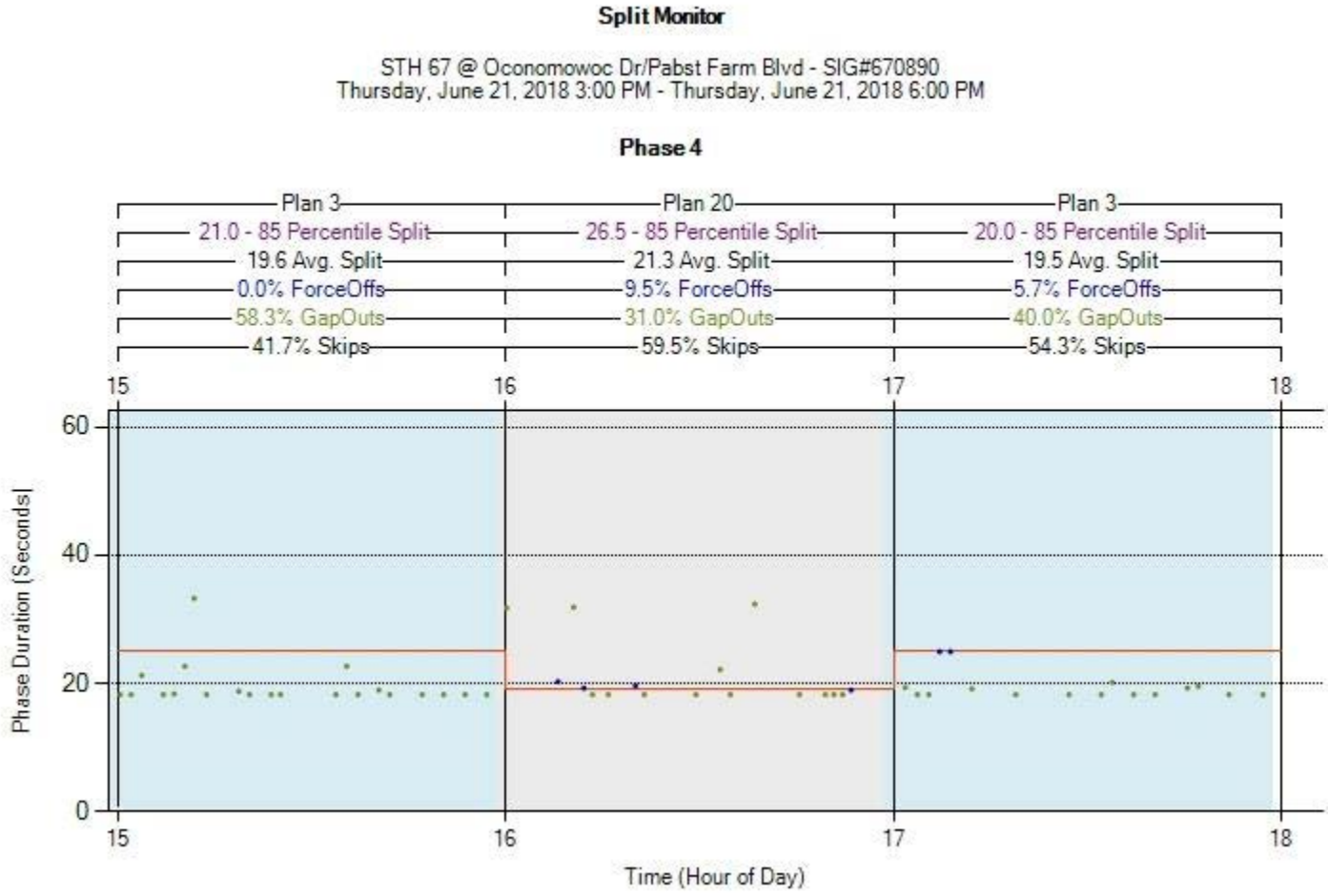
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
HCS Timings
6/21/2018 – 3:00 PM – 6:00 PM



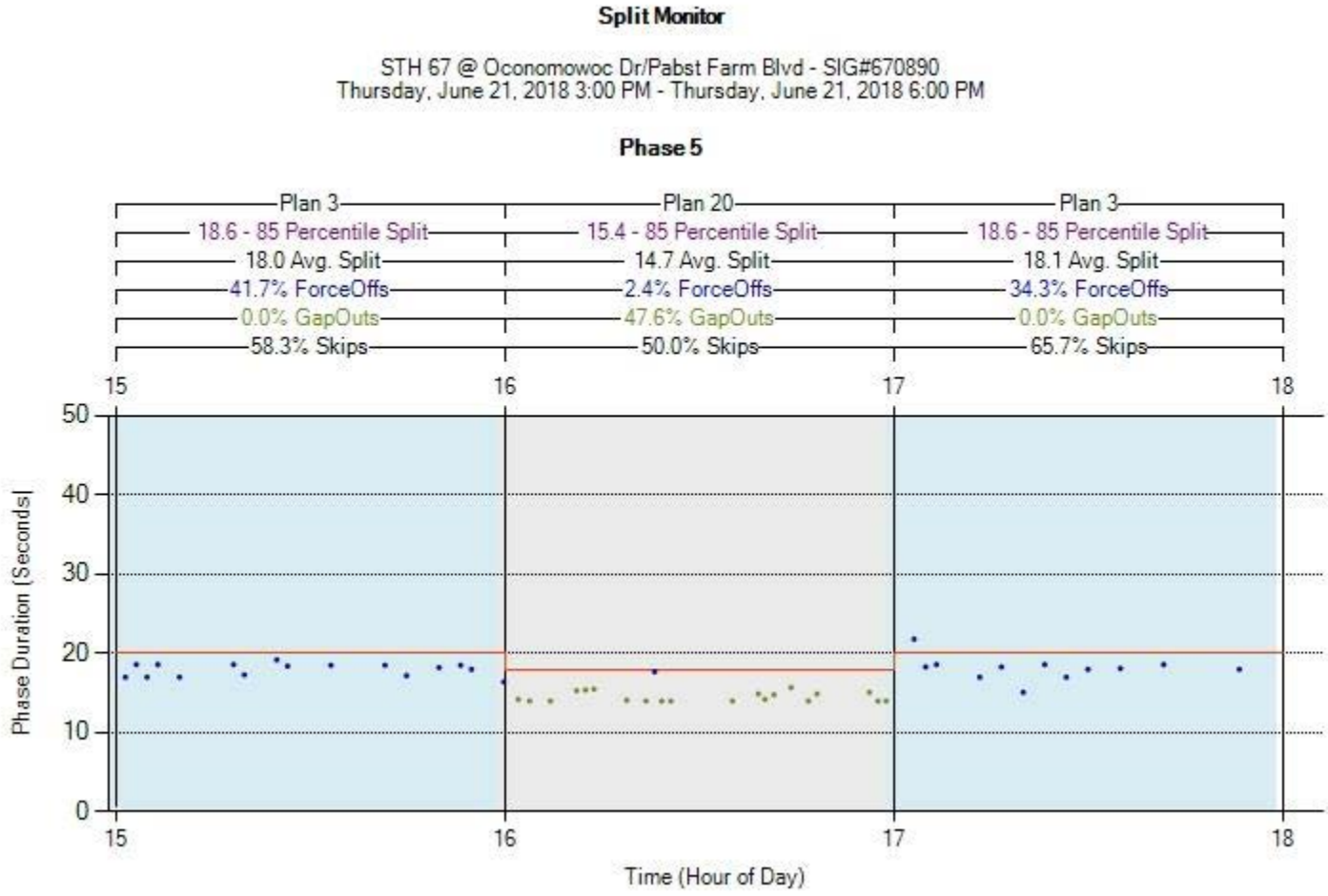
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
HCS Timings
6/21/2018 – 3:00 PM – 6:00 PM



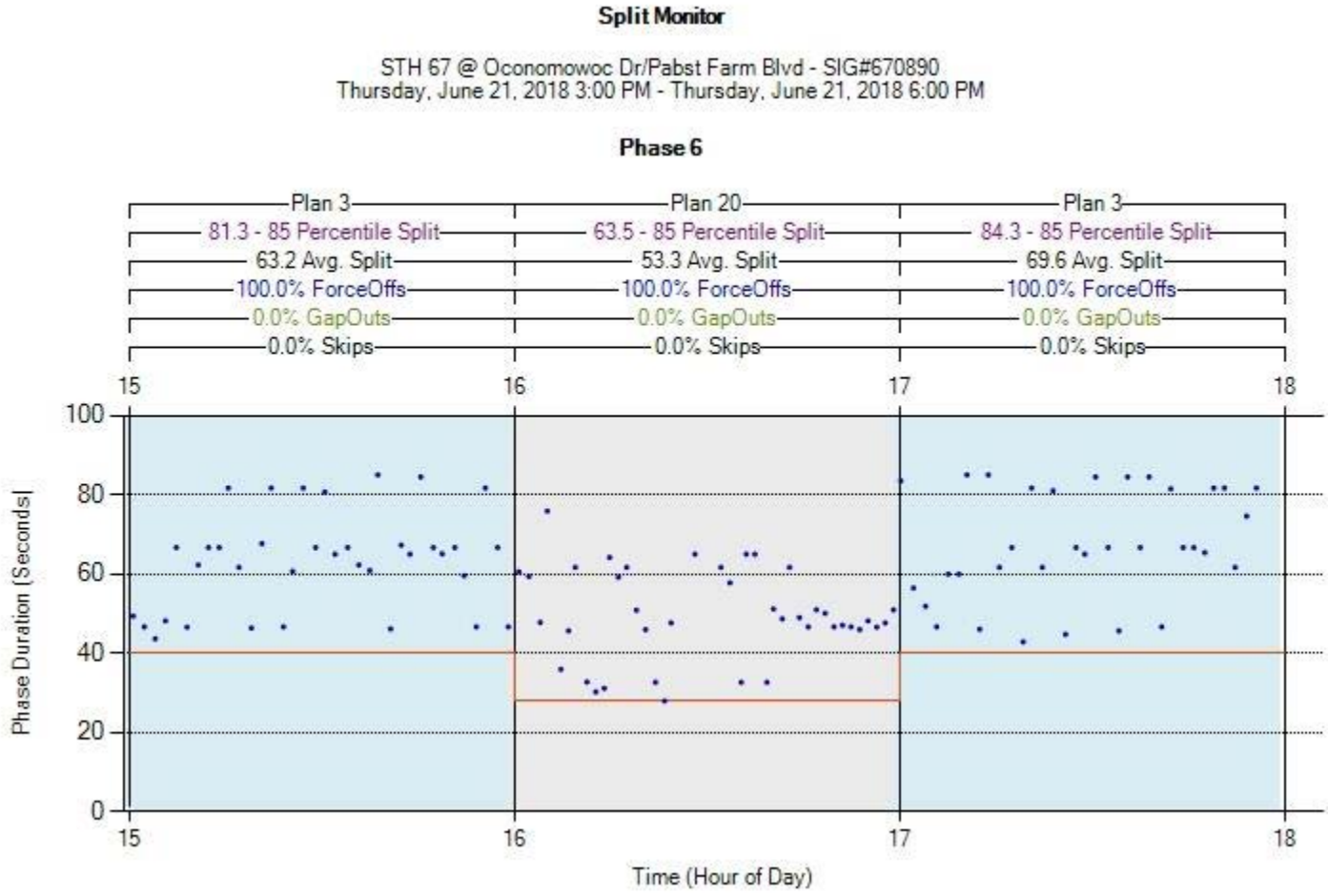
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
HCS Timings
6/21/2018 – 3:00 PM – 6:00 PM



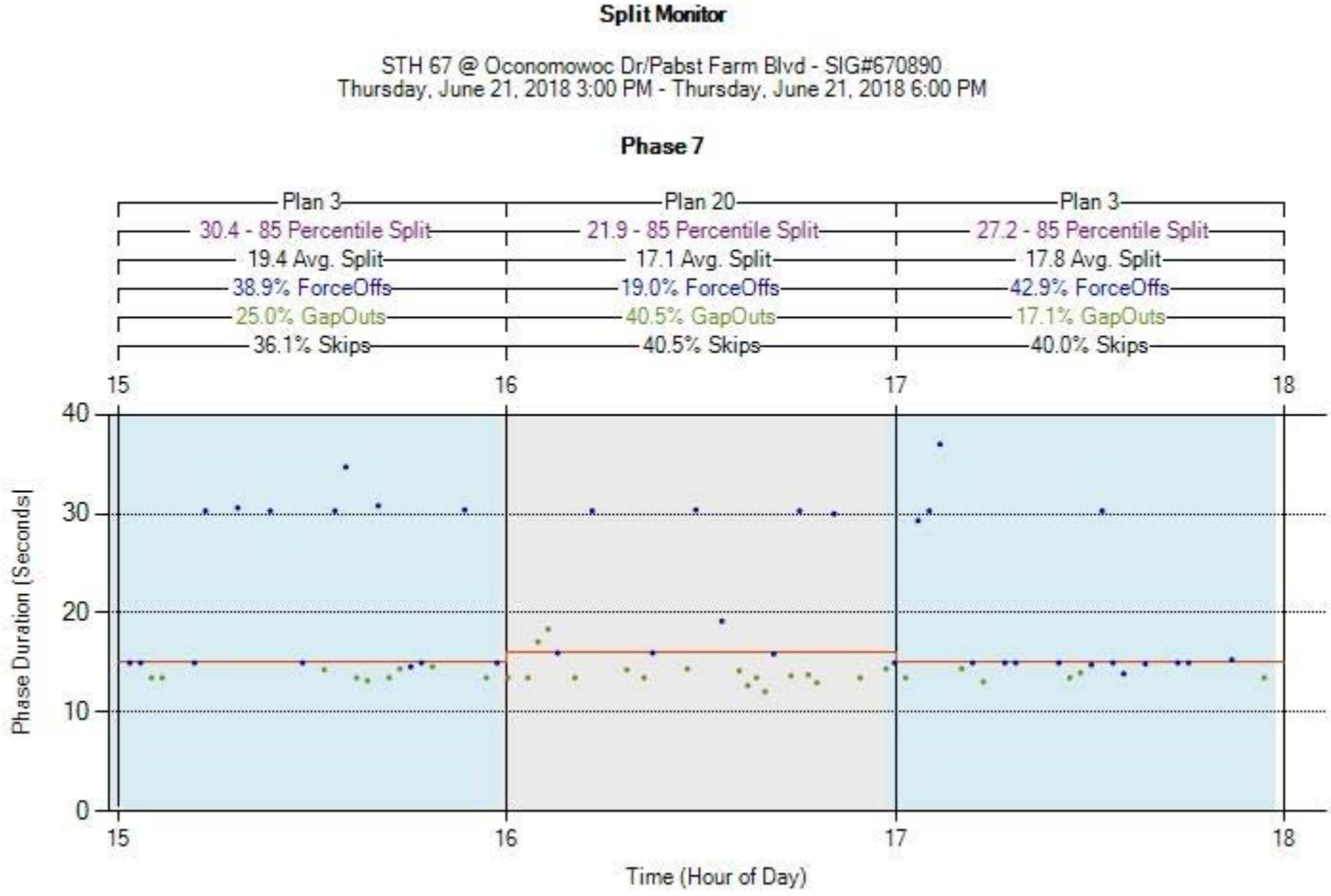
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
HCS Timings
6/21/2018 – 3:00 PM – 6:00 PM



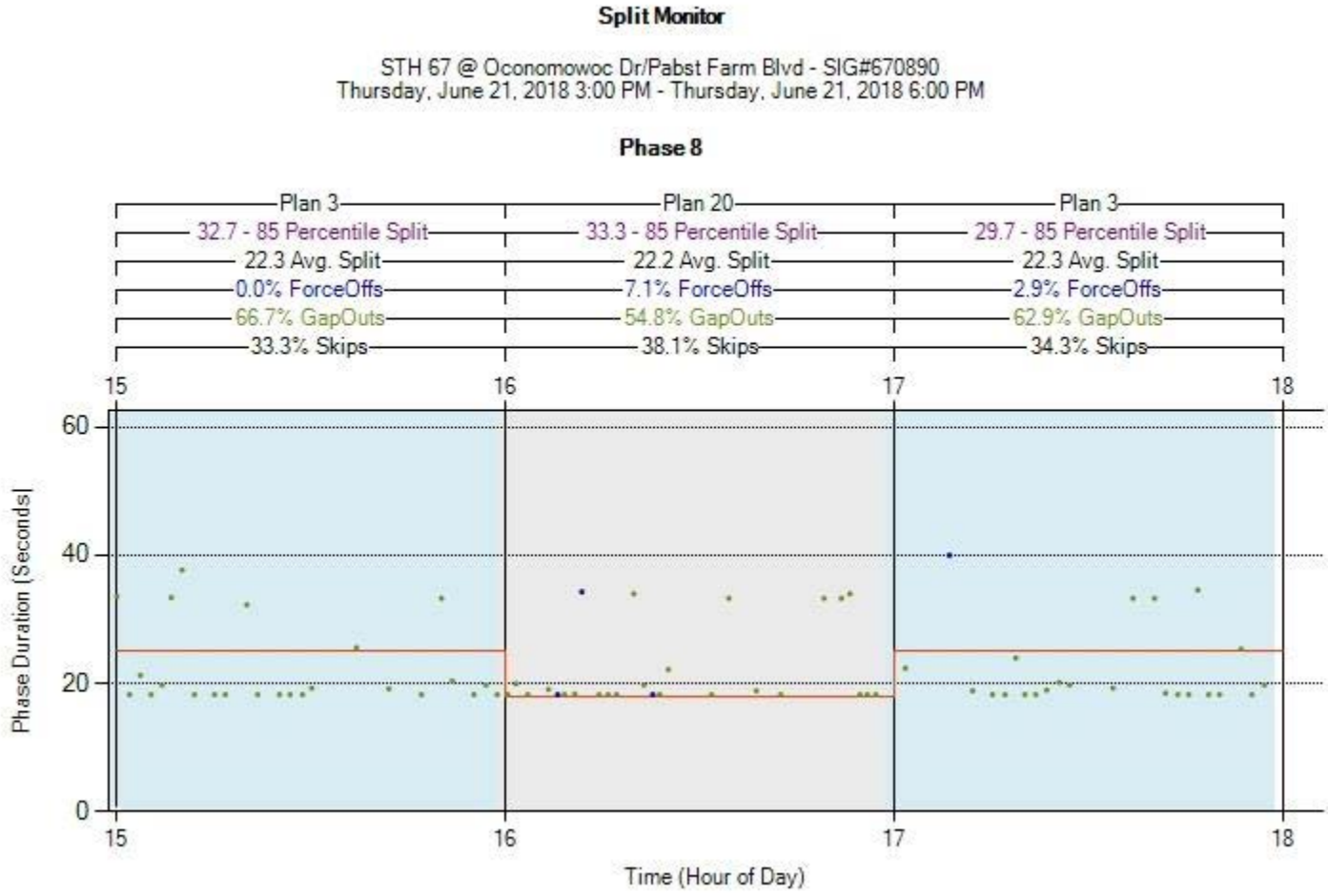
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
HCS Timings
6/21/2018 – 3:00 PM – 6:00 PM



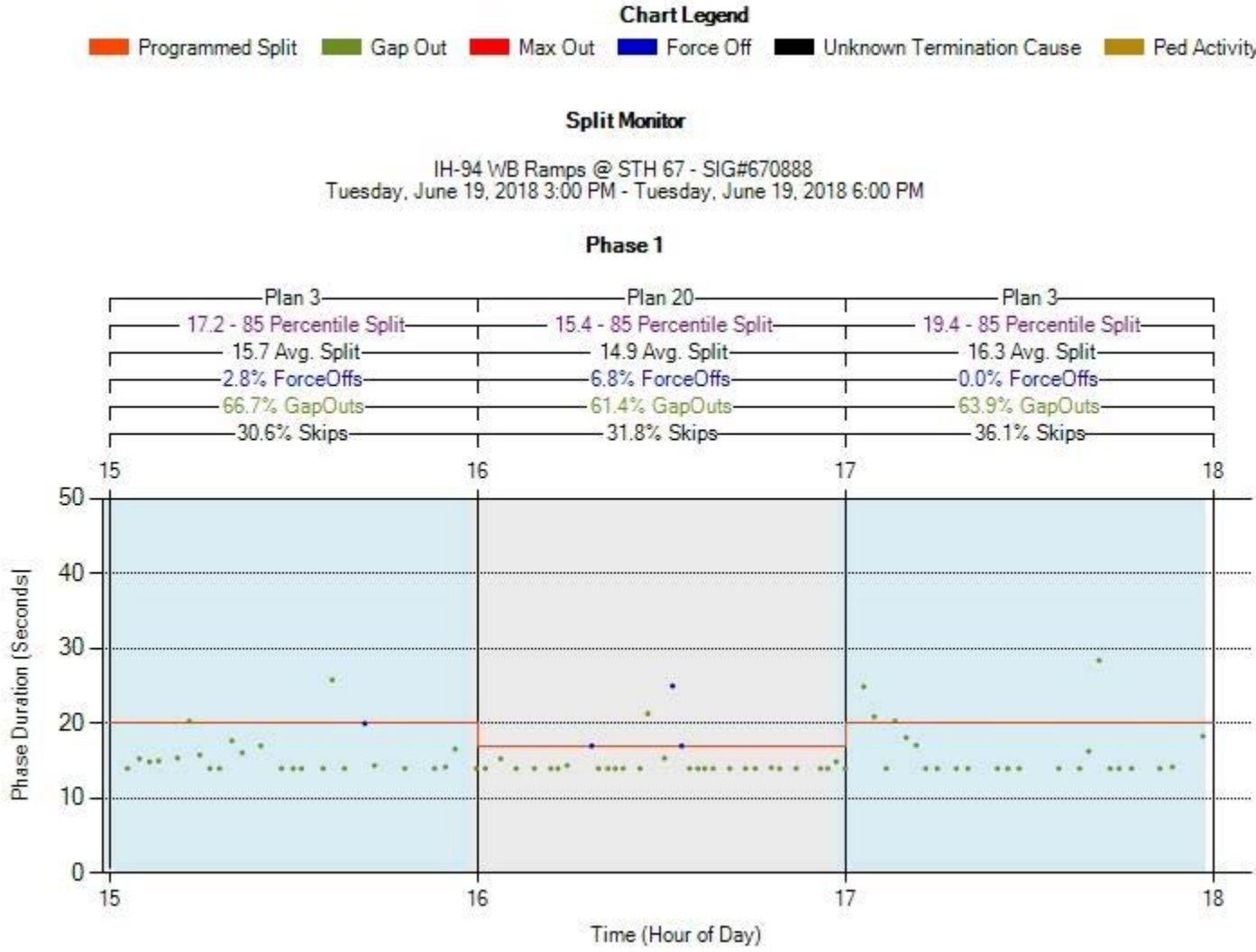
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
HCS Timings
6/21/2018 – 3:00 PM – 6:00 PM

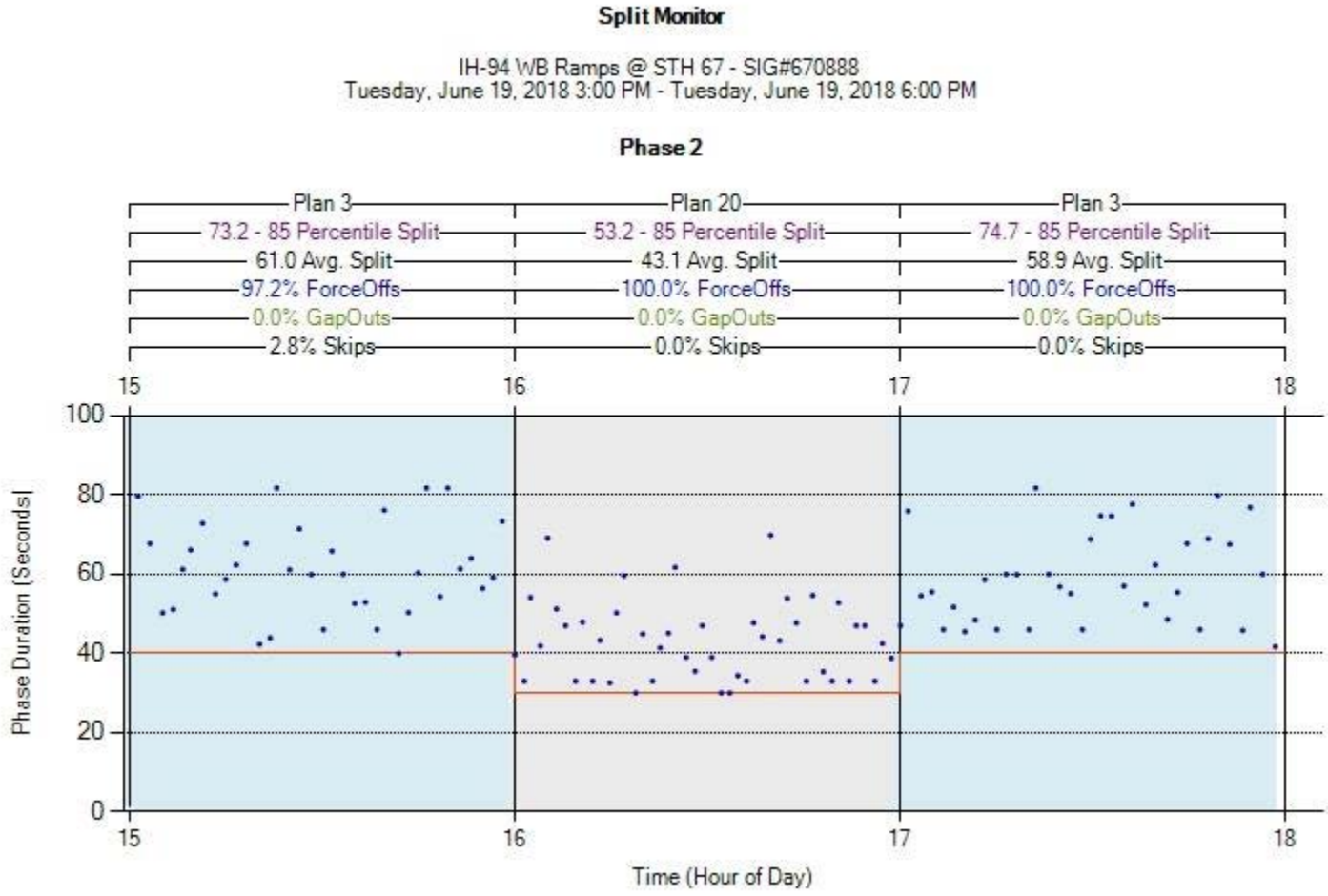


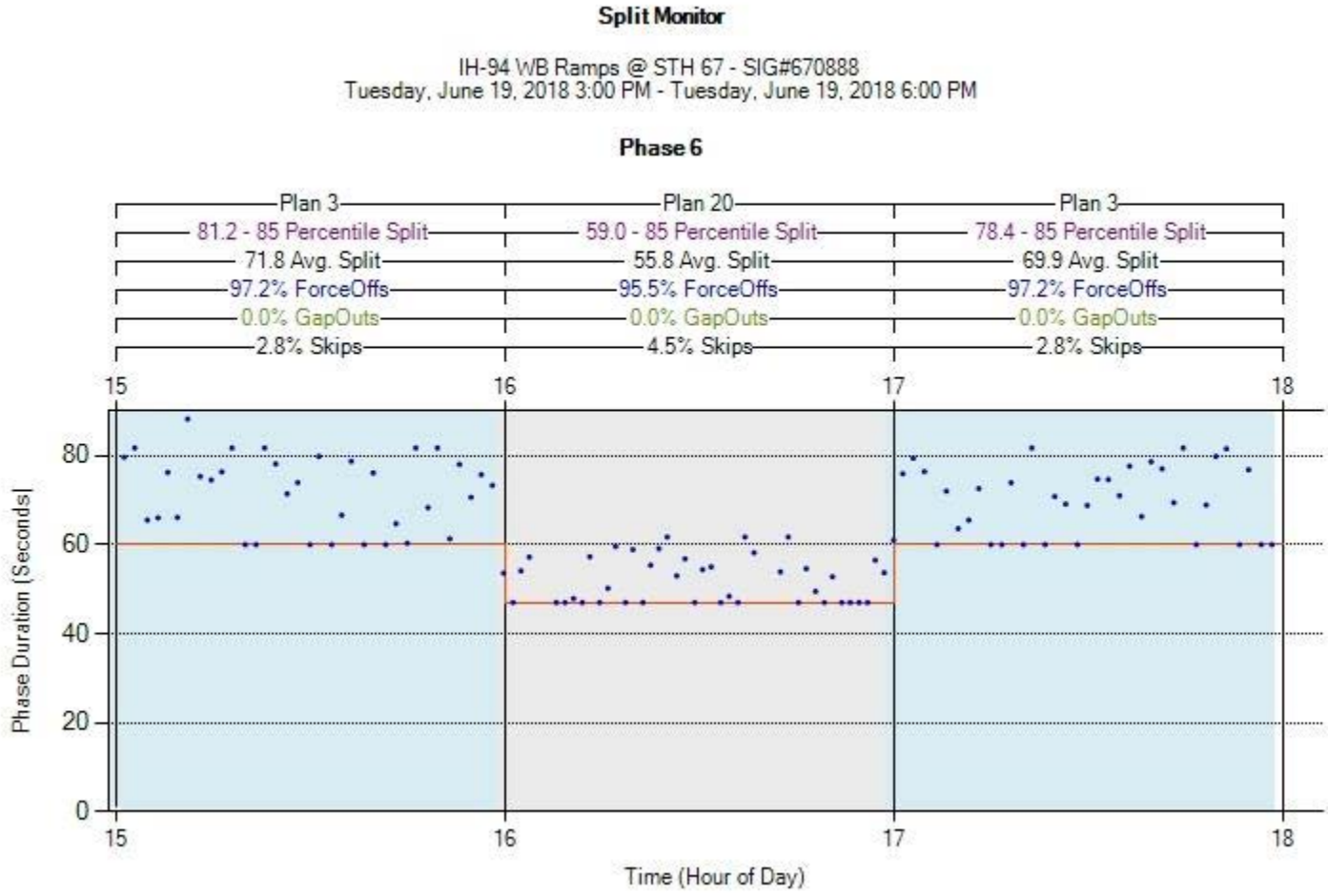
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
HCS Timings
6/21/2018 – 3:00 PM – 6:00 PM

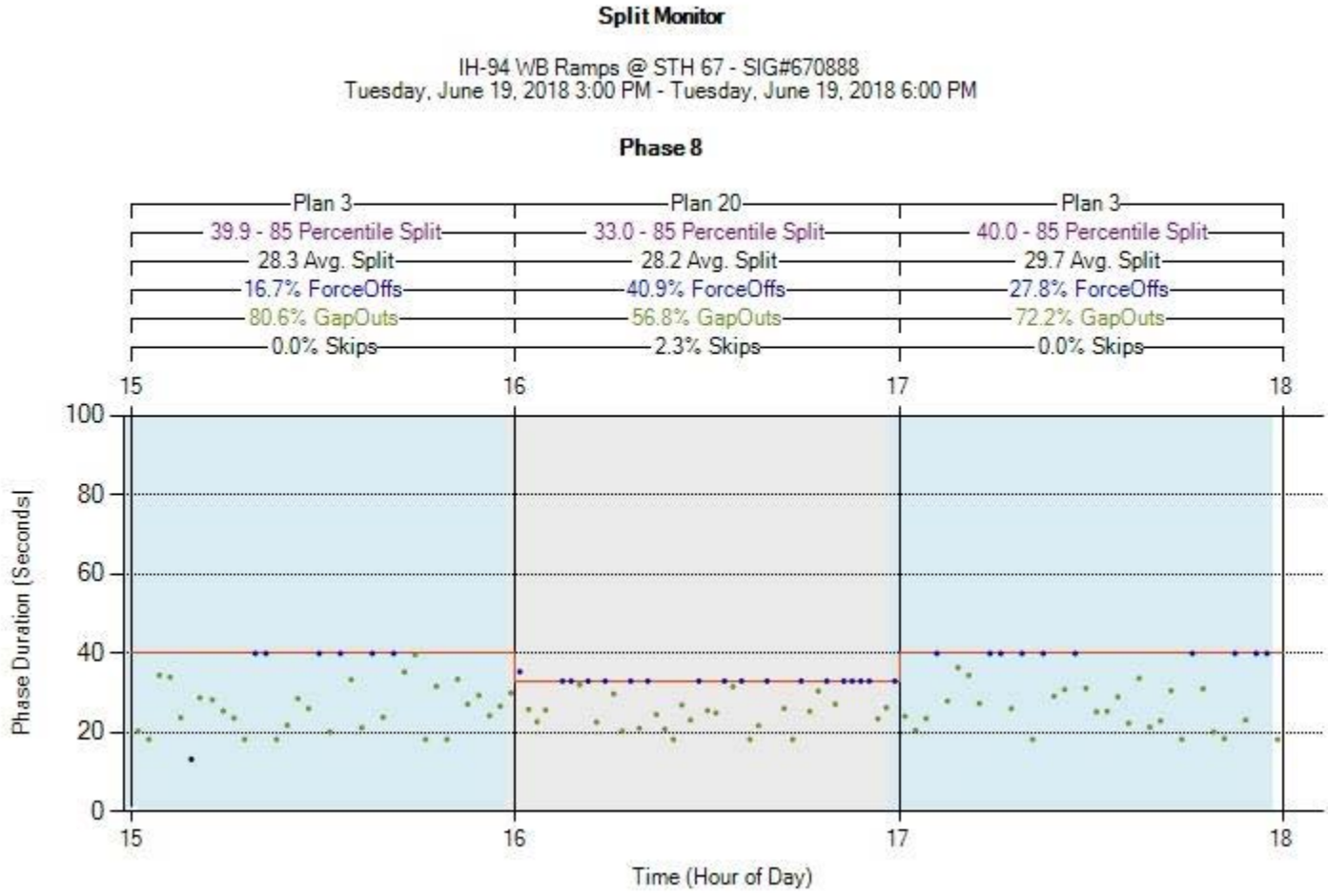


WIS 67 Corridor – STH 67 & I-94 WB Ramps
HCS Timings
6/19/2018 – 3:00 PM – 6:00 PM

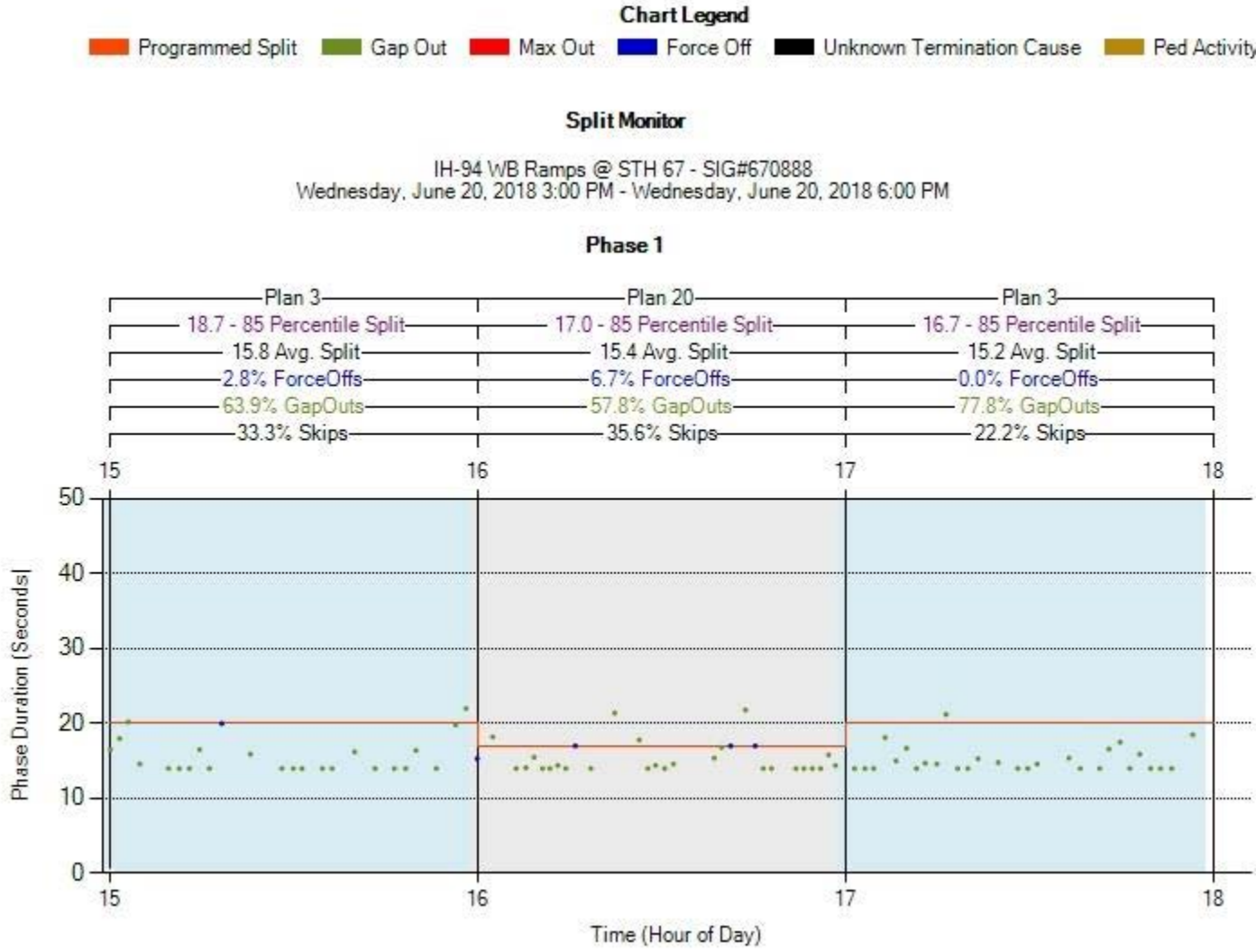


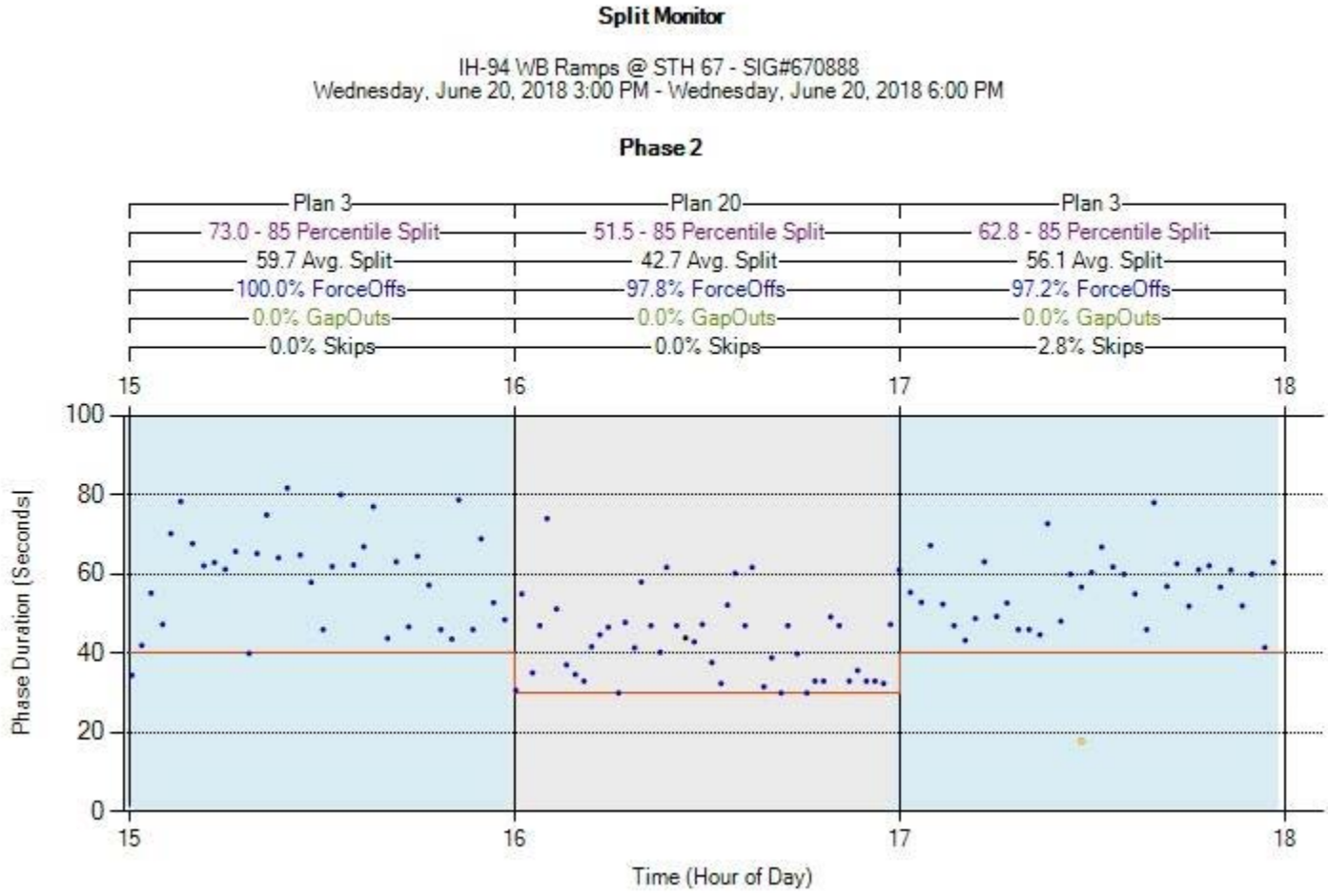

Split Monitor
IH-94 WB Ramps @ STH 67 - SIG#670888
Tuesday, June 19, 2018 3:00 PM - Tuesday, June 19, 2018 6:00 PM
Phase 2
Plan 3
73.2 - 85 Percentile Split
61.0 Avg. Split
97.2% ForceOffs
0.0% GapOuts
2.8% Skips
Plan 20
53.2 - 85 Percentile Split
43.1 Avg. Split
100.0% ForceOffs
0.0% GapOuts
0.0% Skips
Plan 3
74.7 - 85 Percentile Split
58.9 Avg. Split
100.0% ForceOffs
0.0% GapOuts
0.0% Skips
15
16
17
18
100
80
60
40
20
0
Phase Duration (Seconds)
Time (Hour of Day)


Split Monitor
IH-94 WB Ramps @ STH 67 - SIG#670888
Tuesday, June 19, 2018 3:00 PM - Tuesday, June 19, 2018 6:00 PM
Phase 6
Plan 3
81.2 - 85 Percentile Split
71.8 Avg. Split
97.2% ForceOffs
0.0% GapOuts
2.8% Skips
Plan 20
59.0 - 85 Percentile Split
55.8 Avg. Split
95.5% ForceOffs
0.0% GapOuts
4.5% Skips
Plan 3
78.4 - 85 Percentile Split
69.9 Avg. Split
97.2% ForceOffs
0.0% GapOuts
2.8% Skips
Phase Duration (Seconds)
0
20
40
60
80
15
16
17
18
Time (Hour of Day)

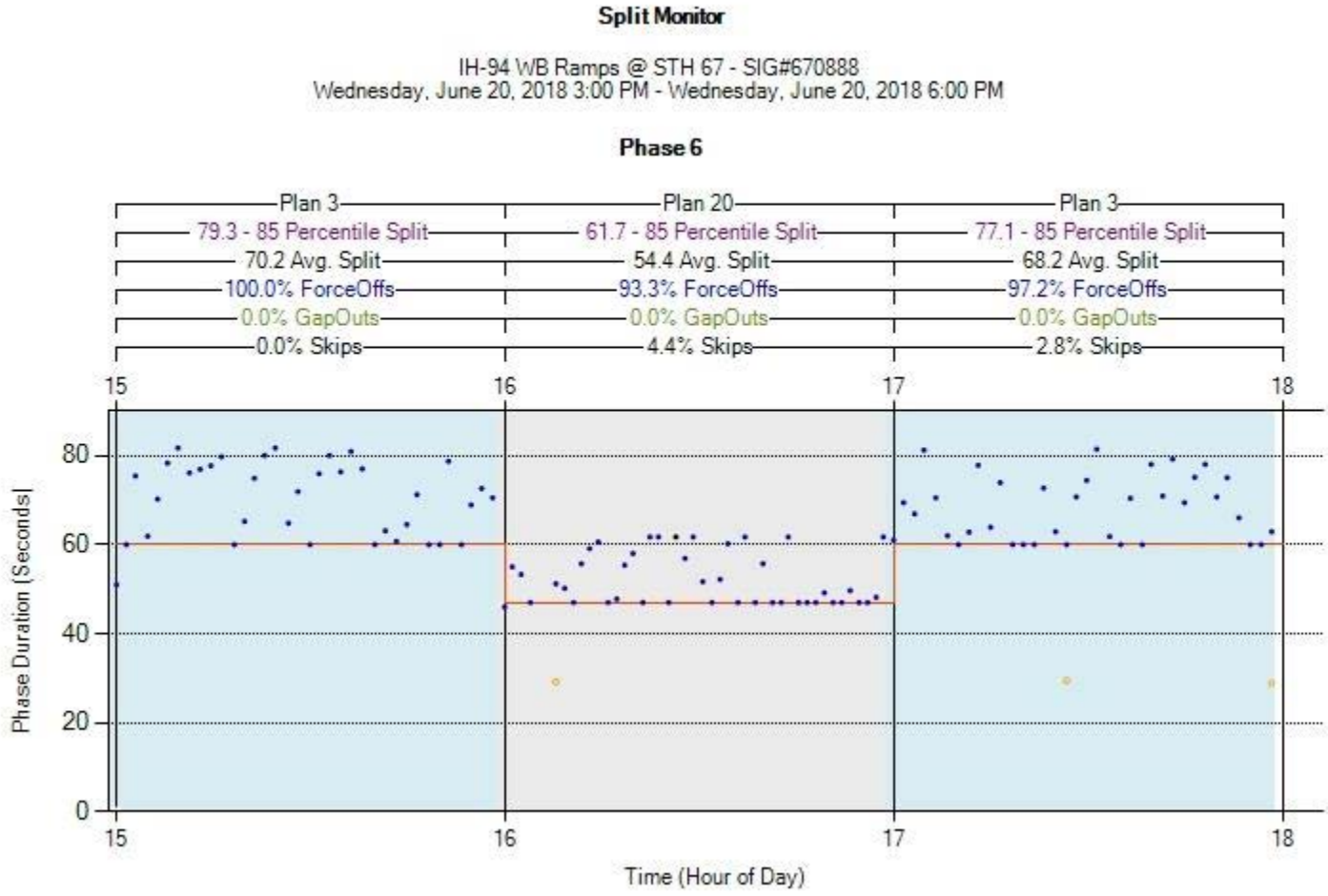

Split Monitor
IH-94 WB Ramps @ STH 67 - SIG#670888
Tuesday, June 19, 2018 3:00 PM - Tuesday, June 19, 2018 6:00 PM
Phase 8
Plan 3
39.9 - 85 Percentile Split
28.3 Avg. Split
16.7% ForceOffs
80.6% GapOuts
0.0% Skips
Plan 20
33.0 - 85 Percentile Split
28.2 Avg. Split
40.9% ForceOffs
56.8% GapOuts
2.3% Skips
Plan 3
40.0 - 85 Percentile Split
29.7 Avg. Split
27.8% ForceOffs
72.2% GapOuts
0.0% Skips
15
16
17
18
100
80
60
40
20
0
Phase Duration (Seconds)
Time (Hour of Day)

WIS 67 Corridor – STH 67 & I-94 WB Ramps
HCS Timings
6/20/2018 – 3:00 PM – 6:00 PM

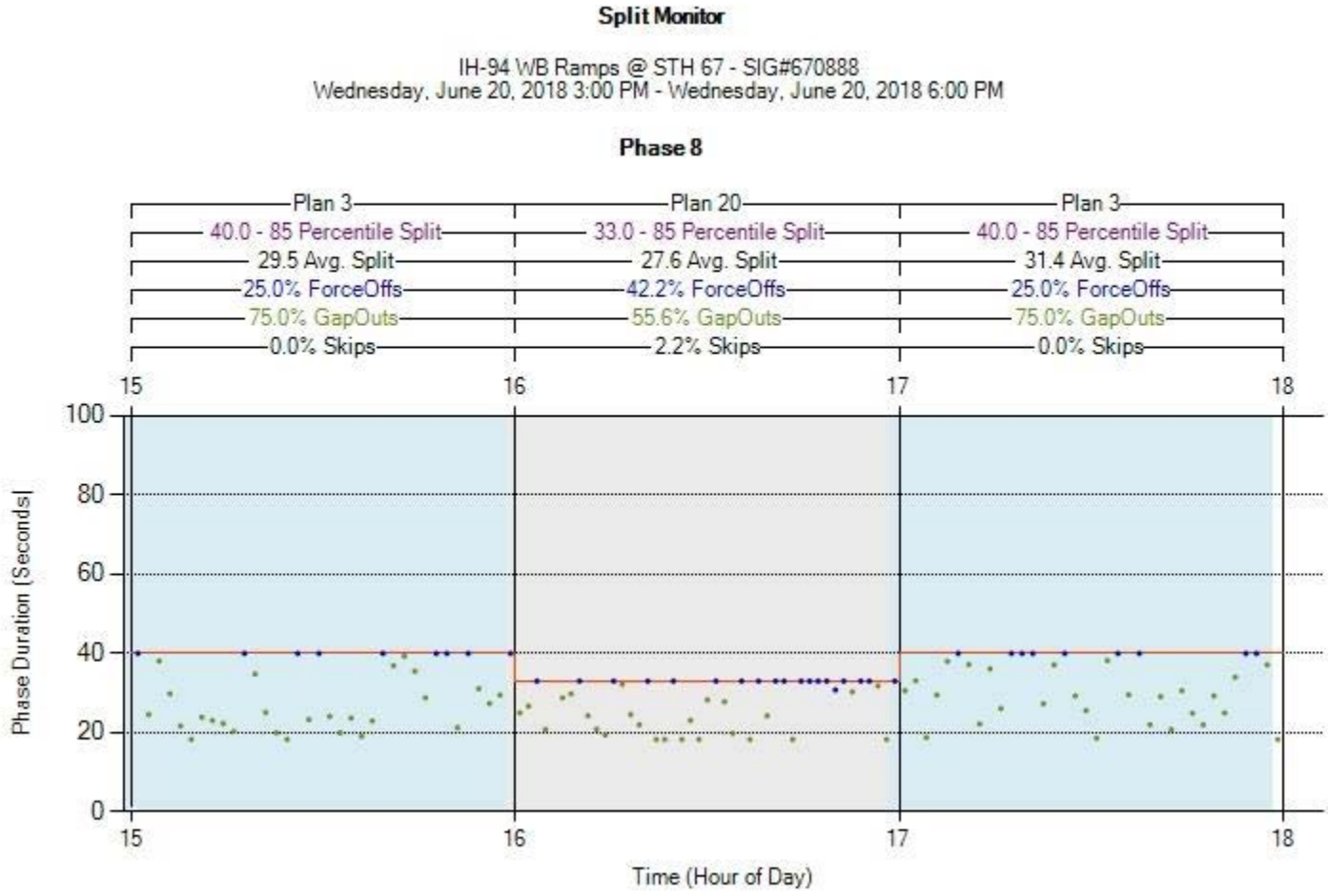



Split Monitor
IH-94 WB Ramps @ STH 67 - SIG#670888
Wednesday, June 20, 2018 3:00 PM - Wednesday, June 20, 2018 6:00 PM
Phase 2
Plan 3
73.0 - 85 Percentile Split
59.7 Avg. Split
100.0% ForceOffs
0.0% GapOuts
0.0% Skips
Plan 20
51.5 - 85 Percentile Split
42.7 Avg. Split
97.8% ForceOffs
0.0% GapOuts
0.0% Skips
Plan 3
62.8 - 85 Percentile Split
56.1 Avg. Split
97.2% ForceOffs
0.0% GapOuts
2.8% Skips
15
16
17
18
100
80
60
40
20
0
Phase Duration (Seconds)
Time (Hour of Day)

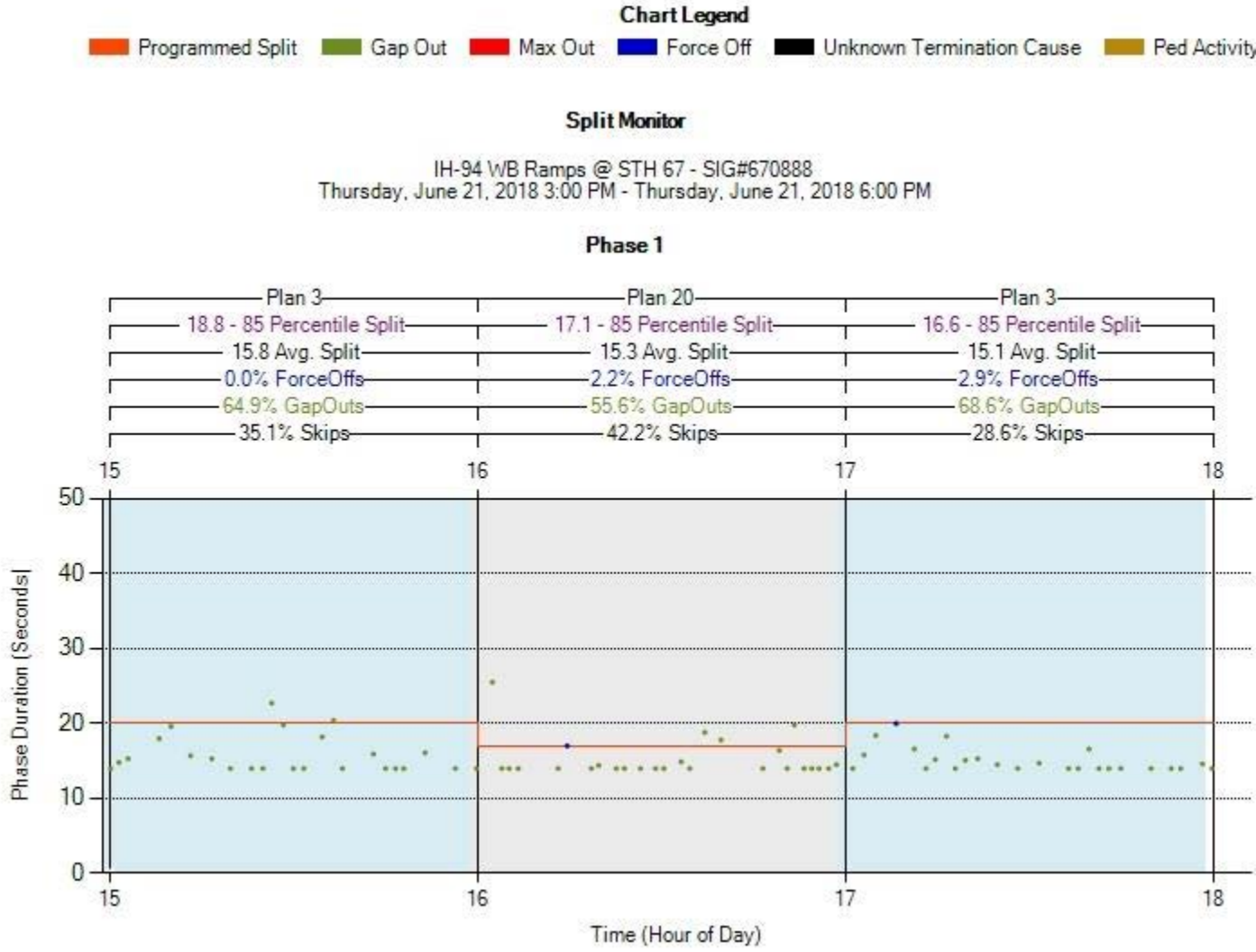
WIS 67 Corridor – STH 67 & I-94 WB Ramps
HCS Timings
6/20/2018 – 3:00 PM – 6:00 PM



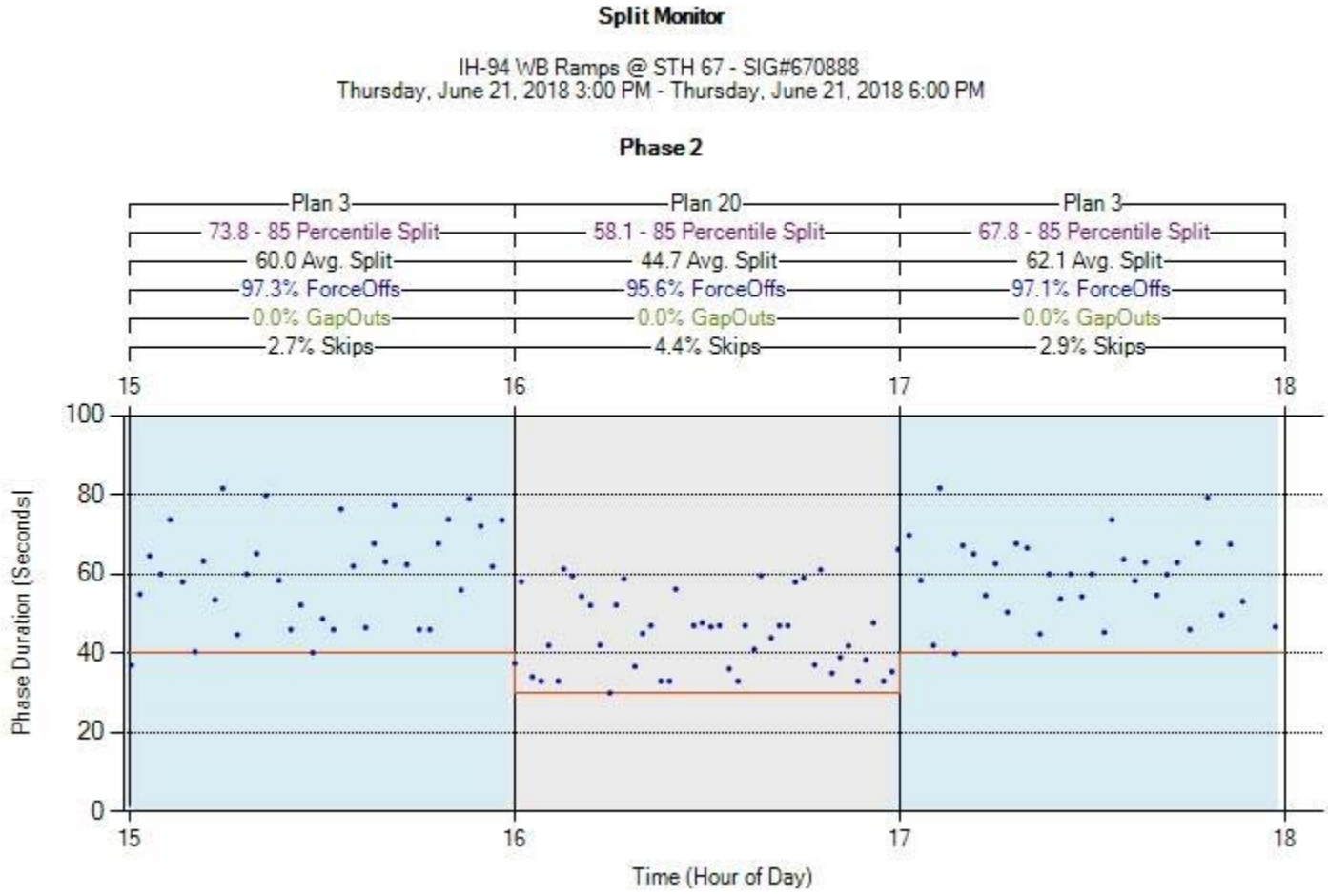
WIS 67 Corridor – STH 67 & I-94 WB Ramps
HCS Timings
6/20/2018 – 3:00 PM – 6:00 PM

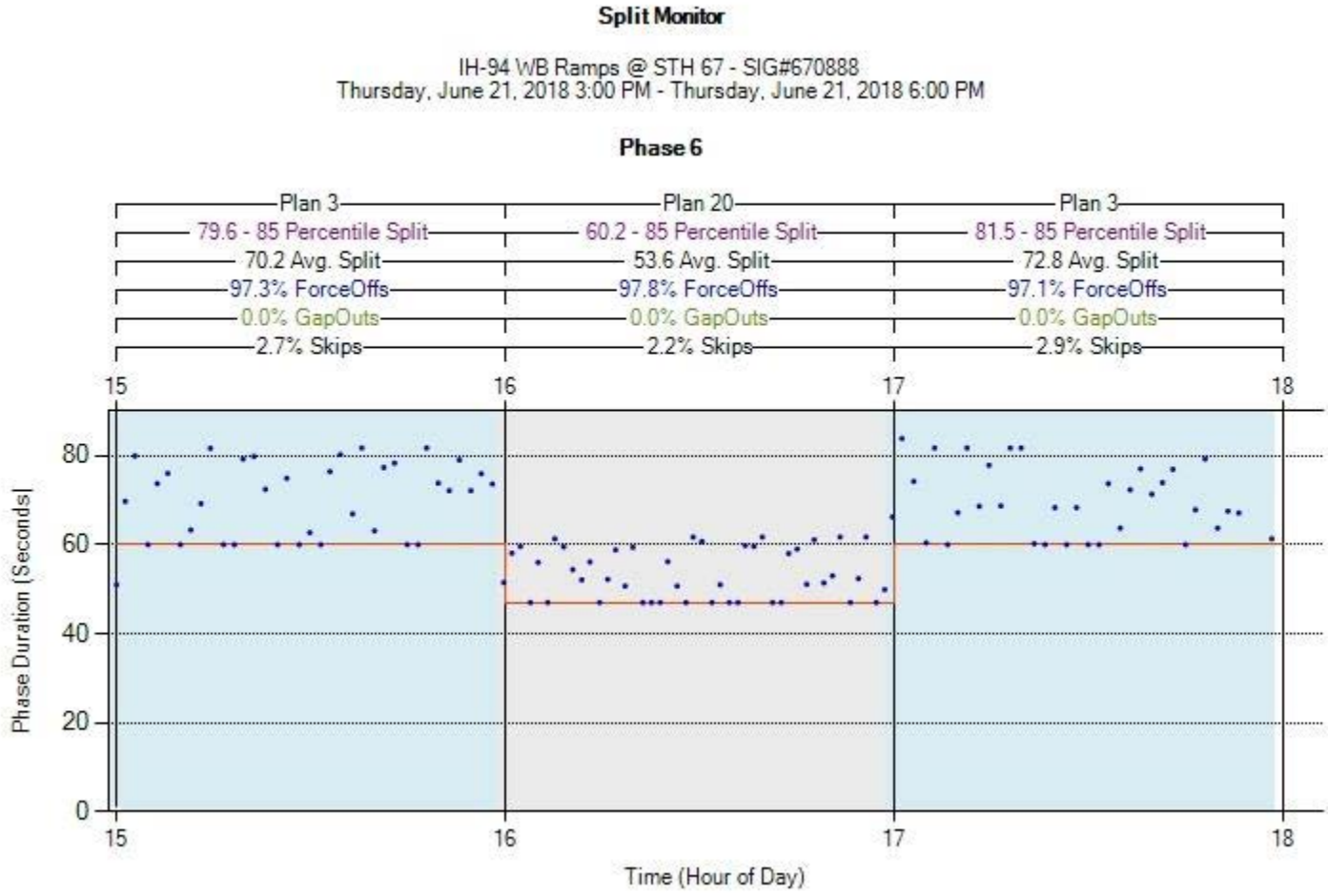


WIS 67 Corridor – STH 67 & I-94 WB Ramps
HCS Timings
6/21/2018 – 3:00 PM – 6:00 PM

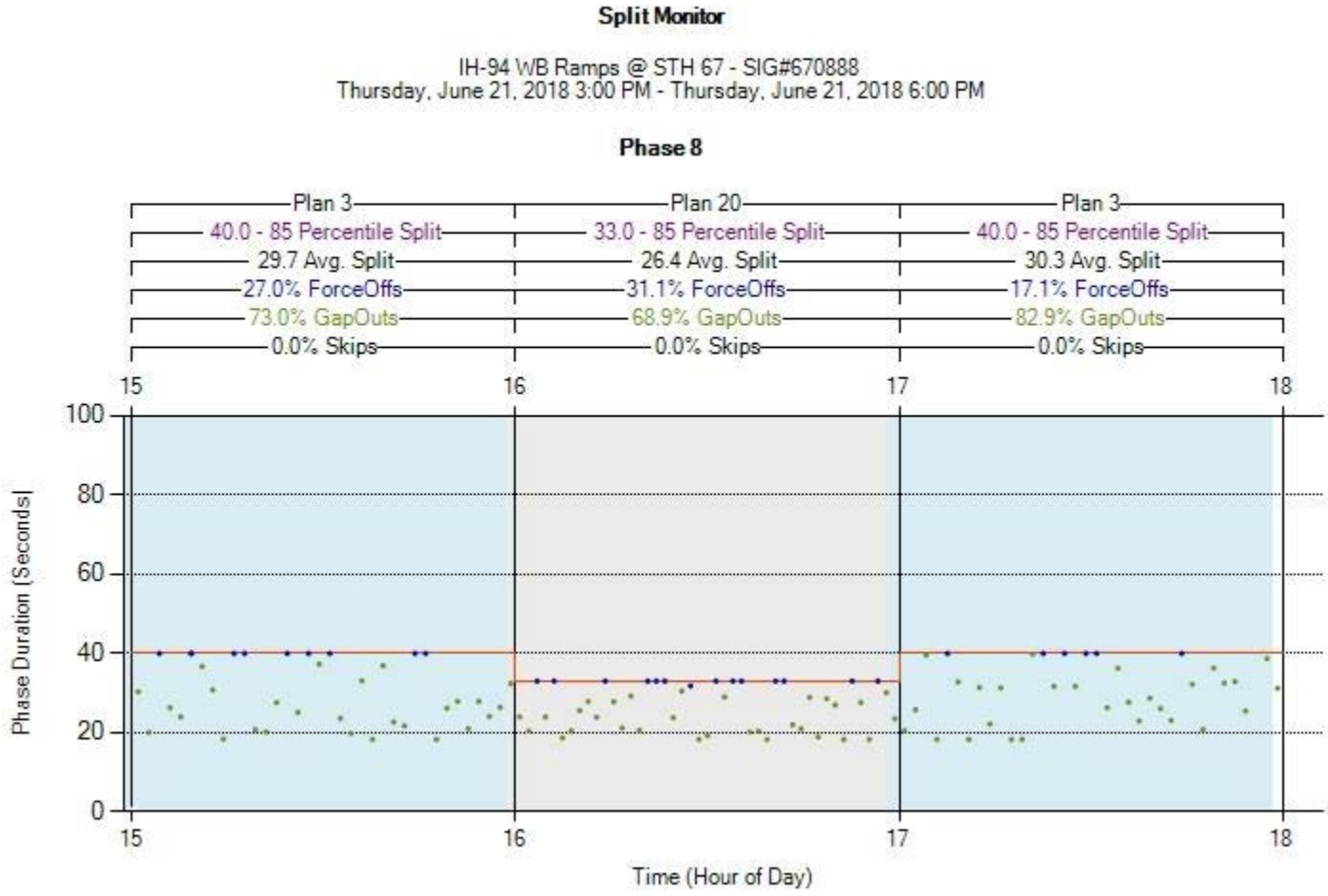


WIS 67 Corridor – STH 67 & I-94 WB Ramps
HCS Timings
6/21/2018 – 3:00 PM – 6:00 PM




Split Monitor
IH-94 WB Ramps @ STH 67 - SIG#670888
Thursday, June 21, 2018 3:00 PM - Thursday, June 21, 2018 6:00 PM
Phase 6
Plan 3
79.6 - 85 Percentile Split
70.2 Avg. Split
97.3% ForceOffs
0.0% GapOuts
2.7% Skips
Plan 20
60.2 - 85 Percentile Split
53.6 Avg. Split
97.8% ForceOffs
0.0% GapOuts
2.2% Skips
Plan 3
81.5 - 85 Percentile Split
72.8 Avg. Split
97.1% ForceOffs
0.0% GapOuts
2.9% Skips
Phase Duration (Seconds)
0
20
40
60
80
15
16
17
18
Time (Hour of Day)

WIS 67 Corridor – STH 67 & I-94 WB Ramps
HCS Timings
6/21/2018 – 3:00 PM – 6:00 PM



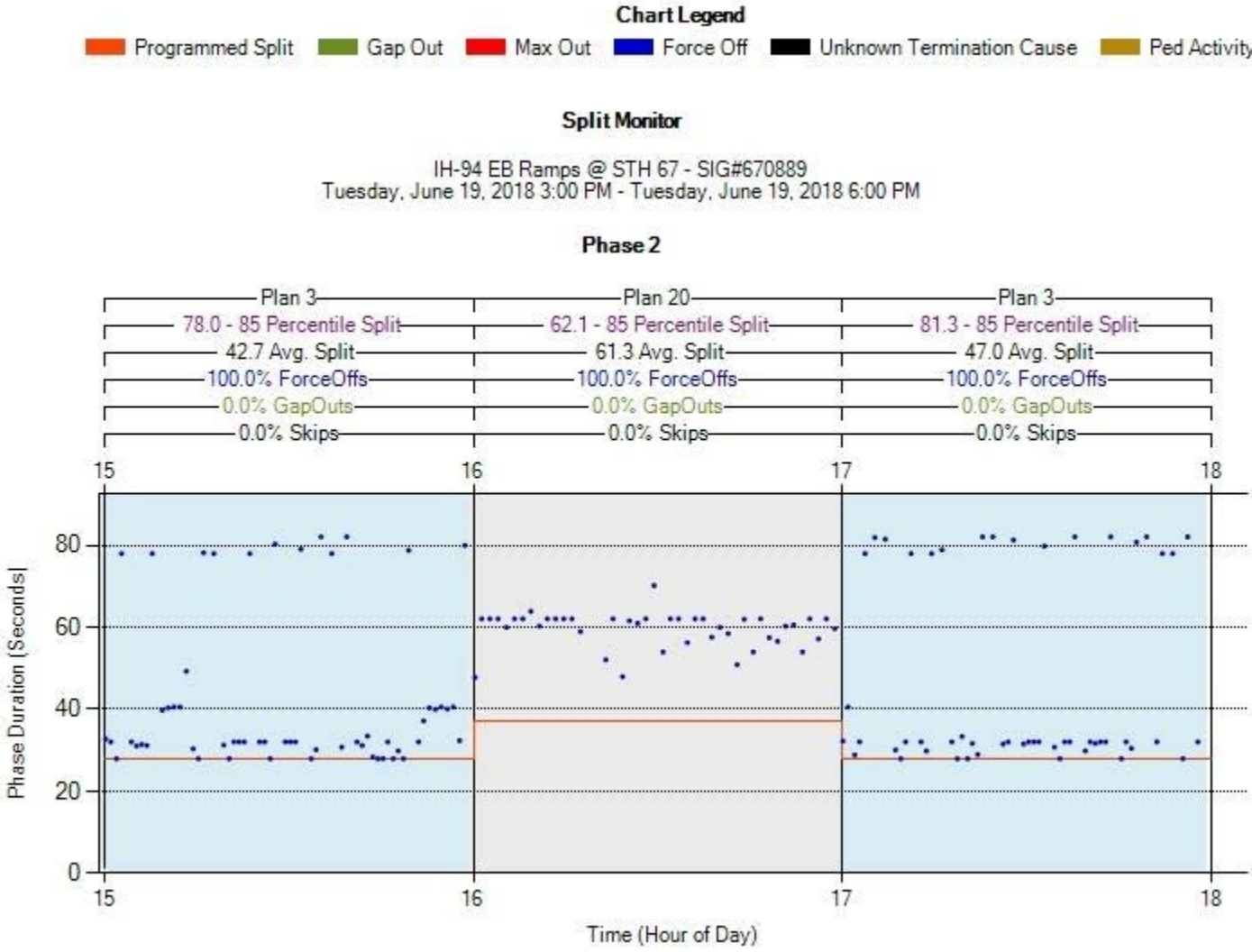
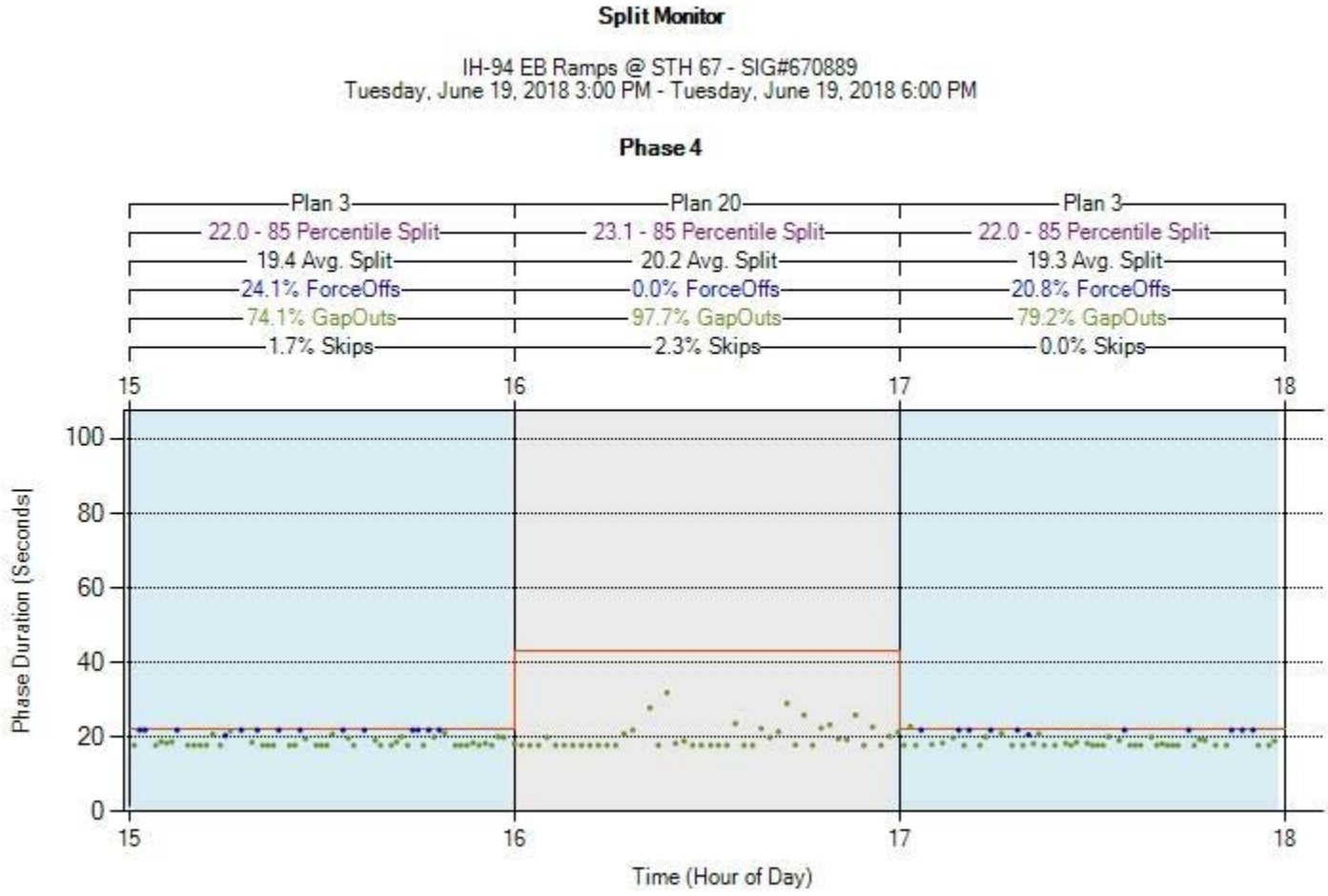
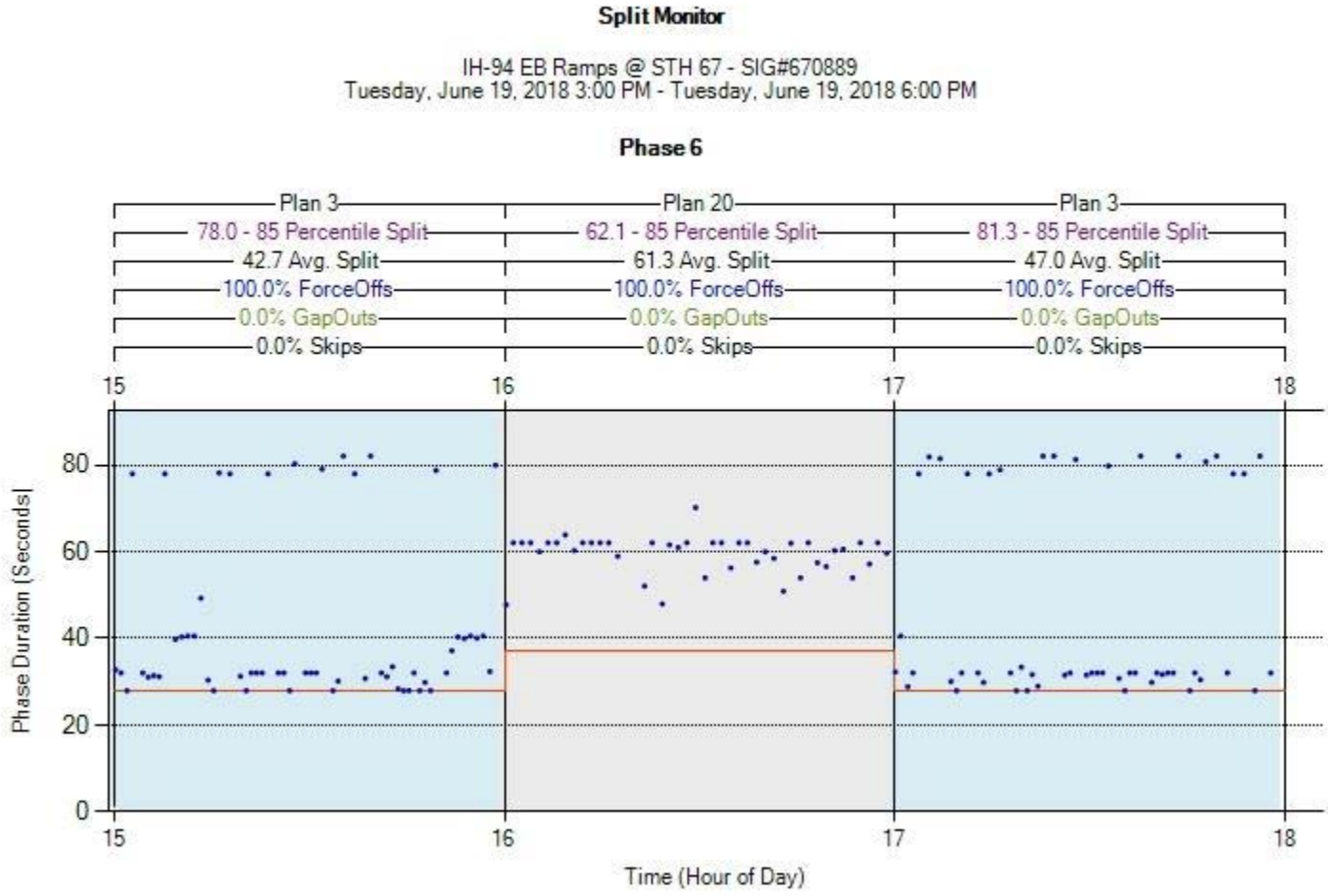
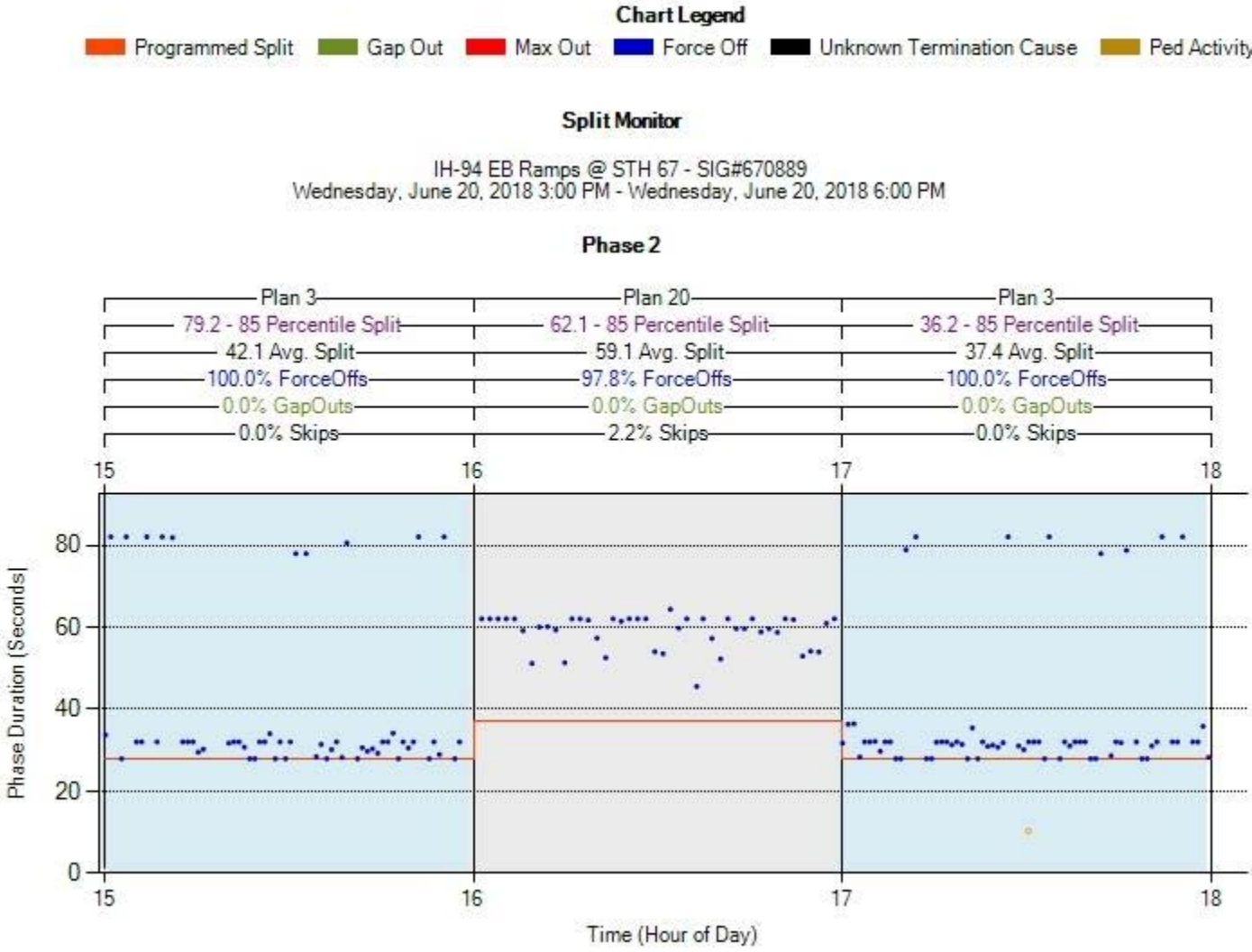


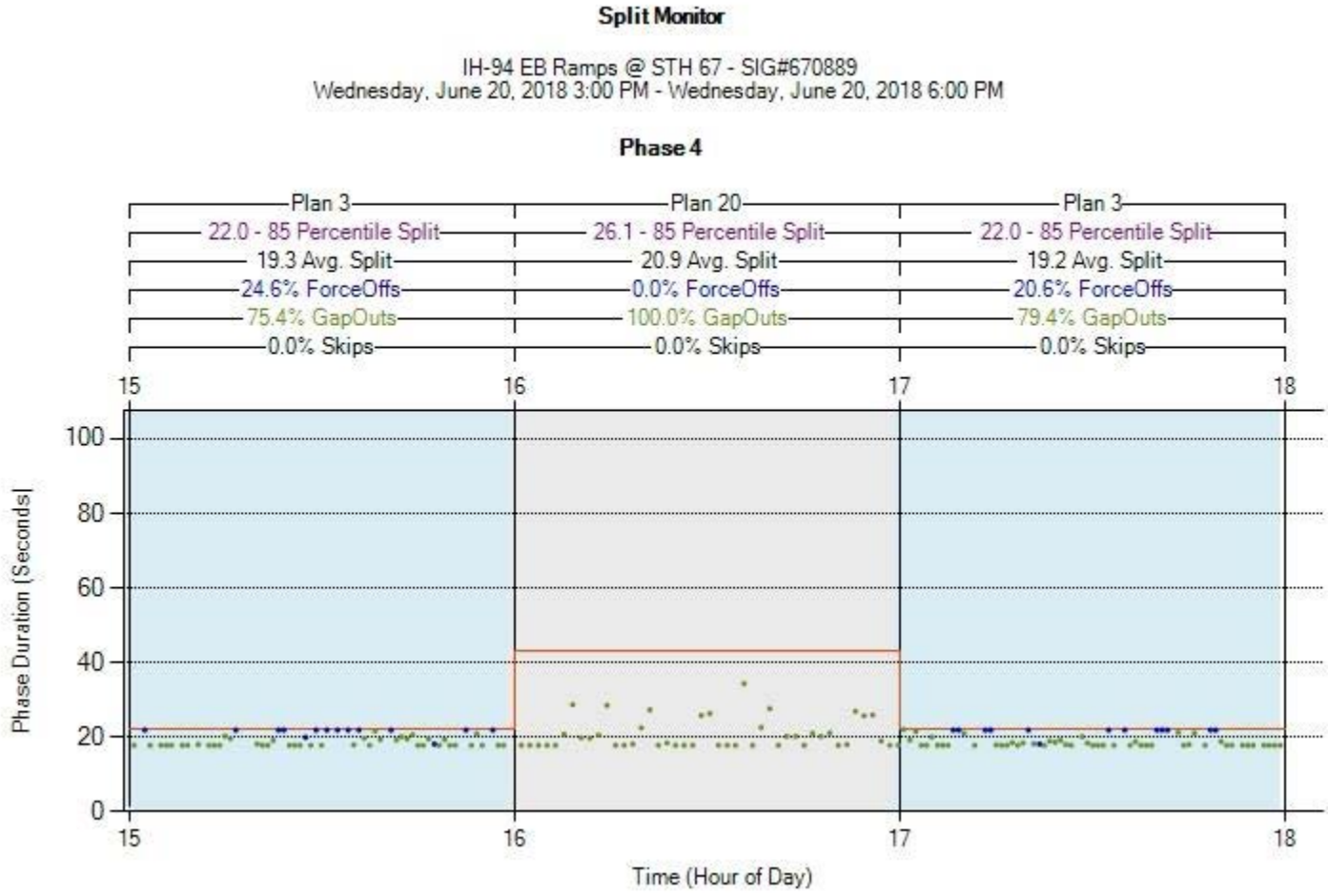
Chart Legend
Programmed Split
Gap Out
Max Out
Force Off
Unknown Termination Cause
Ped Activity
Split Monitor
IH-94 EB Ramps @ STH 67 - SIG#670889
Tuesday, June 19, 2018 3:00 PM - Tuesday, June 19, 2018 6:00 PM
Phase 2
Plan 3
78.0 - 85 Percentile Split
42.7 Avg. Split
100.0% ForceOffs
0.0% GapOuts
0.0% Skips
Plan 20
62.1 - 85 Percentile Split
61.3 Avg. Split
100.0% ForceOffs
0.0% GapOuts
0.0% Skips
Plan 3
81.3 - 85 Percentile Split
47.0 Avg. Split
100.0% ForceOffs
0.0% GapOuts
0.0% Skips
15
16
17
18
80
60
40
20
0
Phase Duration (Seconds)
Time (Hour of Day)

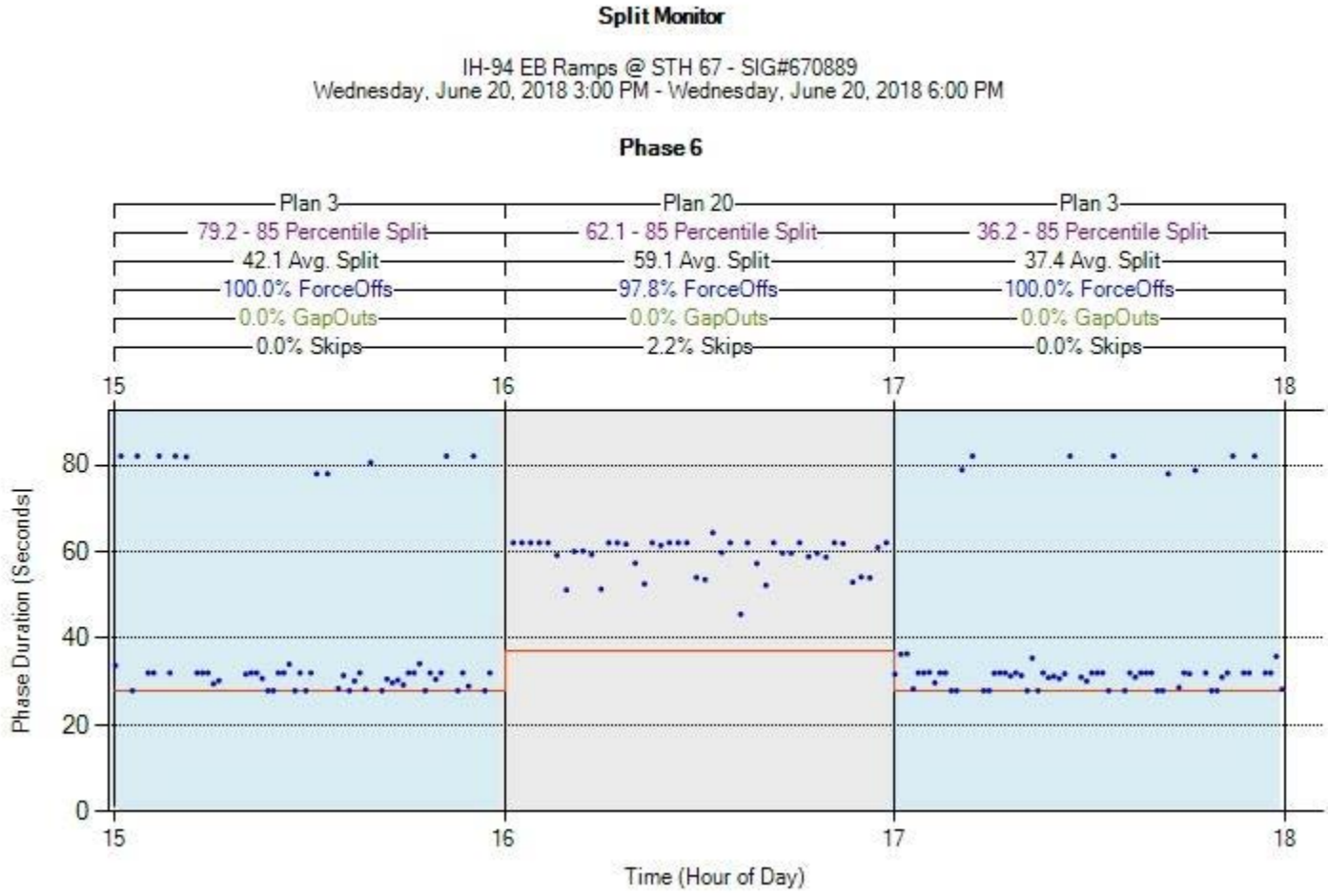

Split Monitor
IH-94 EB Ramps @ STH 67 - SIG#670889
Tuesday, June 19, 2018 3:00 PM - Tuesday, June 19, 2018 6:00 PM
Phase 4
Plan 3
22.0 - 85 Percentile Split
19.4 Avg. Split
24.1% ForceOffs
74.1% GapOuts
1.7% Skips
Plan 20
23.1 - 85 Percentile Split
20.2 Avg. Split
0.0% ForceOffs
97.7% GapOuts
2.3% Skips
Plan 3
22.0 - 85 Percentile Split
19.3 Avg. Split
20.8% ForceOffs
79.2% GapOuts
0.0% Skips
15
16
17
18
100
80
60
40
20
0
Phase Duration (Seconds)
Time (Hour of Day)


Split Monitor
IH-94 EB Ramps @ STH 67 - SIG#670889
Tuesday, June 19, 2018 3:00 PM - Tuesday, June 19, 2018 6:00 PM
Phase 6
Plan 3
78.0 - 85 Percentile Split
42.7 Avg. Split
100.0% ForceOffs
0.0% GapOuts
0.0% Skips
Plan 20
62.1 - 85 Percentile Split
61.3 Avg. Split
100.0% ForceOffs
0.0% GapOuts
0.0% Skips
Plan 3
81.3 - 85 Percentile Split
47.0 Avg. Split
100.0% ForceOffs
0.0% GapOuts
0.0% Skips
Phase Duration (Seconds)
0
20
40
60
80
15
16
17
18
Time (Hour of Day)

WIS 67 Corridor – STH 67 & I-94 EB Ramps
HCS Timings
6/20/2018 – 3:00 PM – 6:00 PM




Split Monitor
IH-94 EB Ramps @ STH 67 - SIG#670889
Wednesday, June 20, 2018 3:00 PM - Wednesday, June 20, 2018 6:00 PM
Phase 4
Plan 3
22.0 - 85 Percentile Split
19.3 Avg. Split
24.6% ForceOffs
75.4% GapOuts
0.0% Skips
Plan 20
26.1 - 85 Percentile Split
20.9 Avg. Split
0.0% ForceOffs
100.0% GapOuts
0.0% Skips
Plan 3
22.0 - 85 Percentile Split
19.2 Avg. Split
20.6% ForceOffs
79.4% GapOuts
0.0% Skips
Phase Duration (Seconds)
Time (Hour of Day)


Split Monitor
IH-94 EB Ramps @ STH 67 - SIG#670889
Wednesday, June 20, 2018 3:00 PM - Wednesday, June 20, 2018 6:00 PM
Phase 6
Plan 3
79.2 - 85 Percentile Split
42.1 Avg. Split
100.0% ForceOffs
0.0% GapOuts
0.0% Skips
Plan 20
62.1 - 85 Percentile Split
59.1 Avg. Split
97.8% ForceOffs
0.0% GapOuts
2.2% Skips
Plan 3
36.2 - 85 Percentile Split
37.4 Avg. Split
100.0% ForceOffs
0.0% GapOuts
0.0% Skips
Phase Duration (Seconds)
Time (Hour of Day)

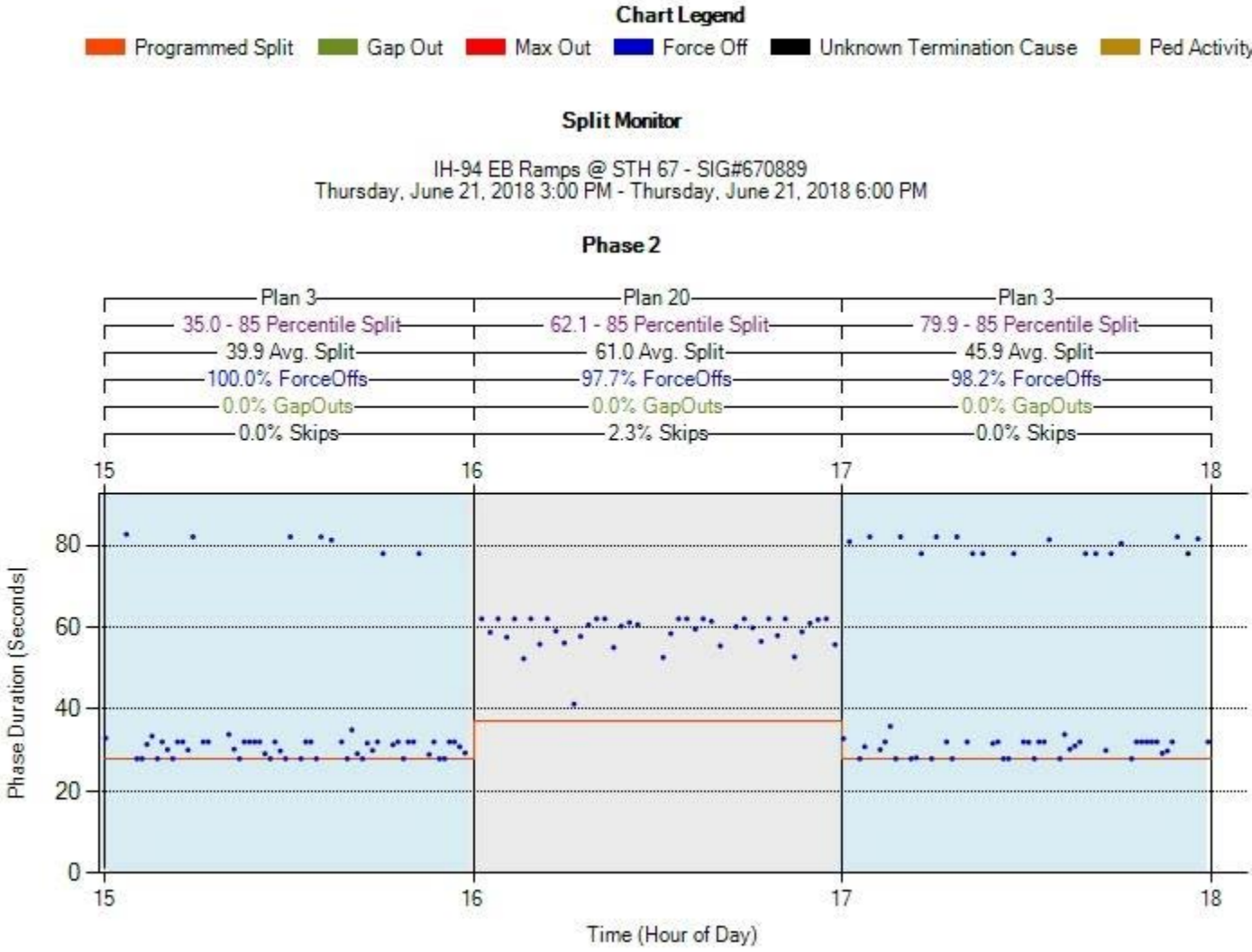
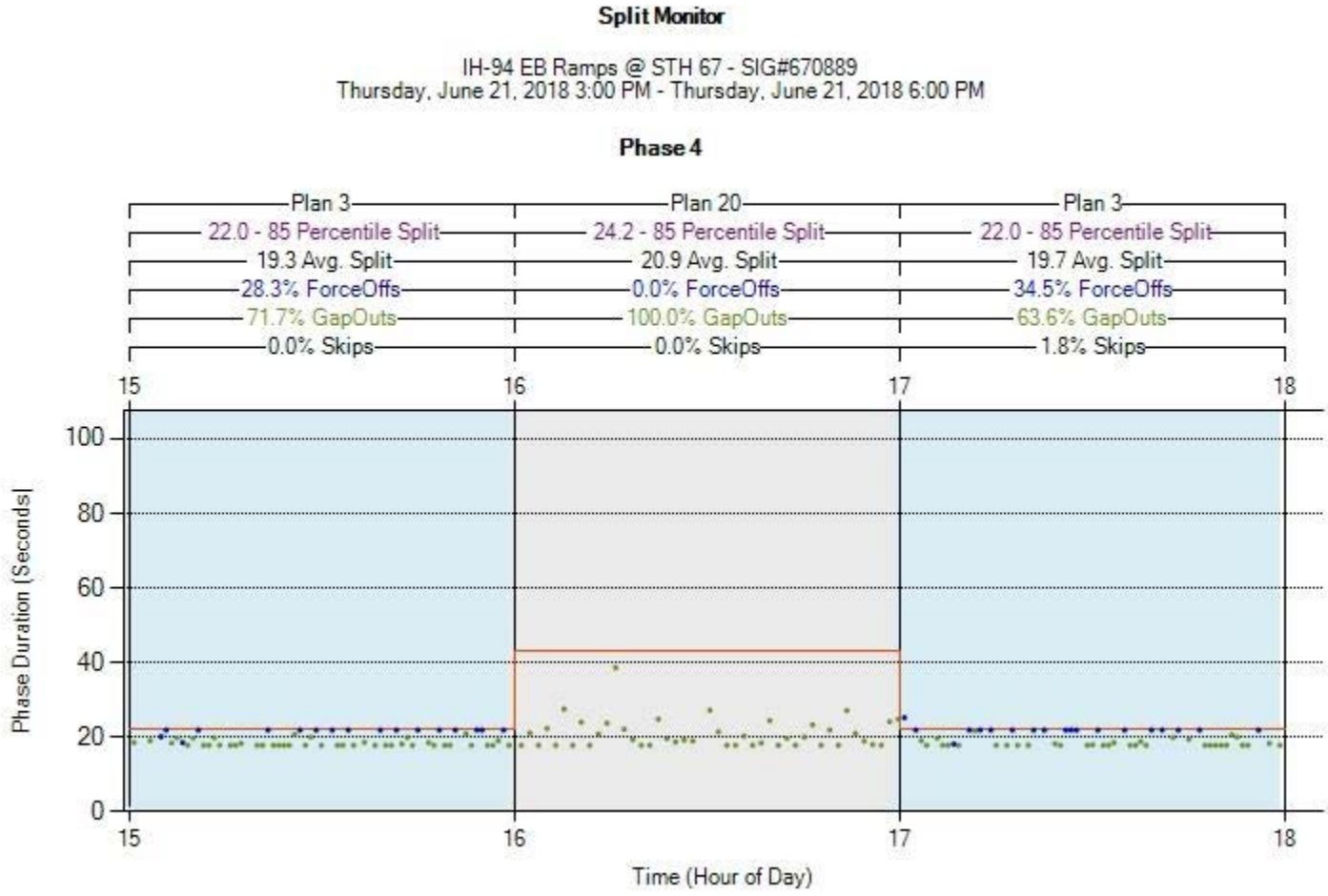
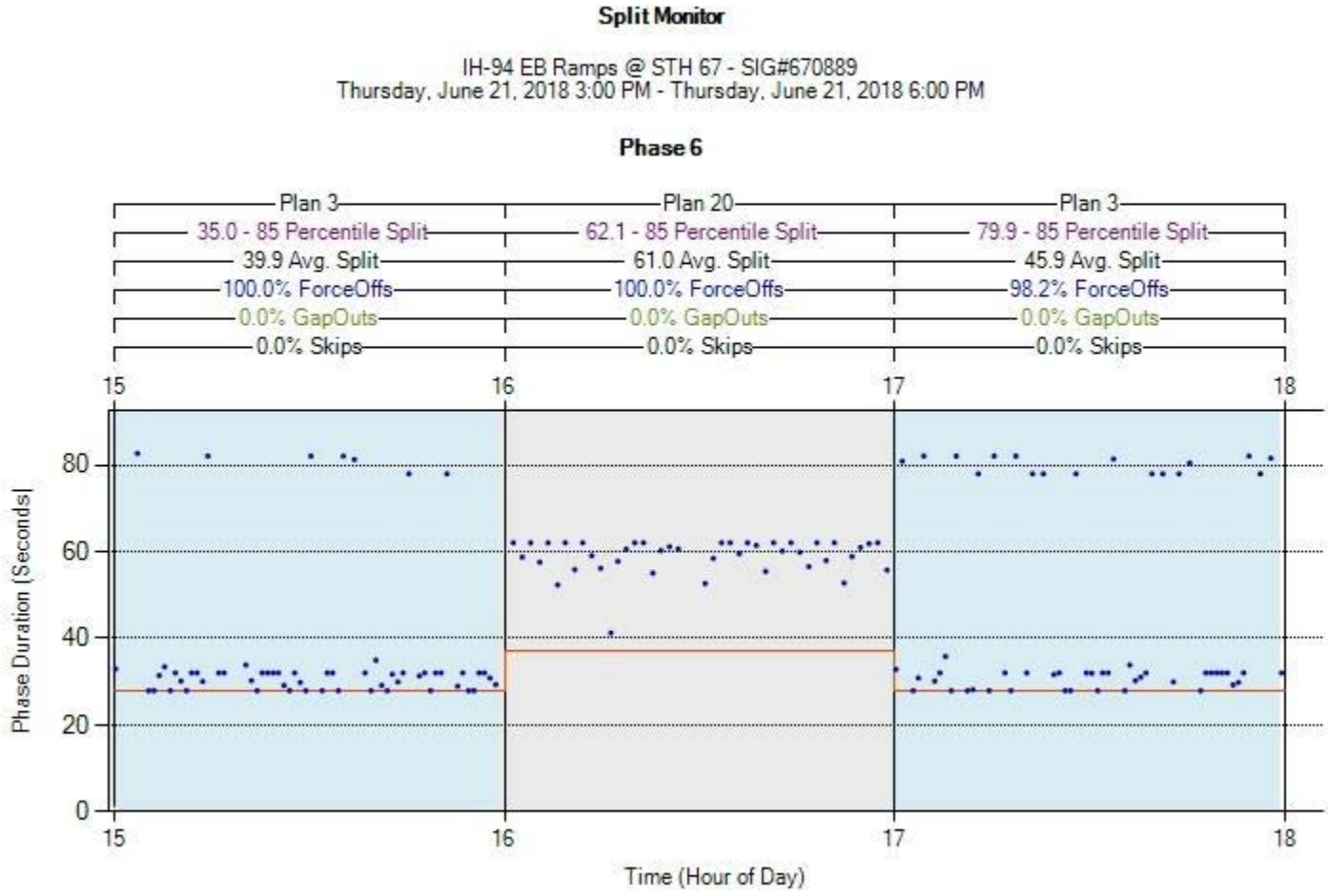


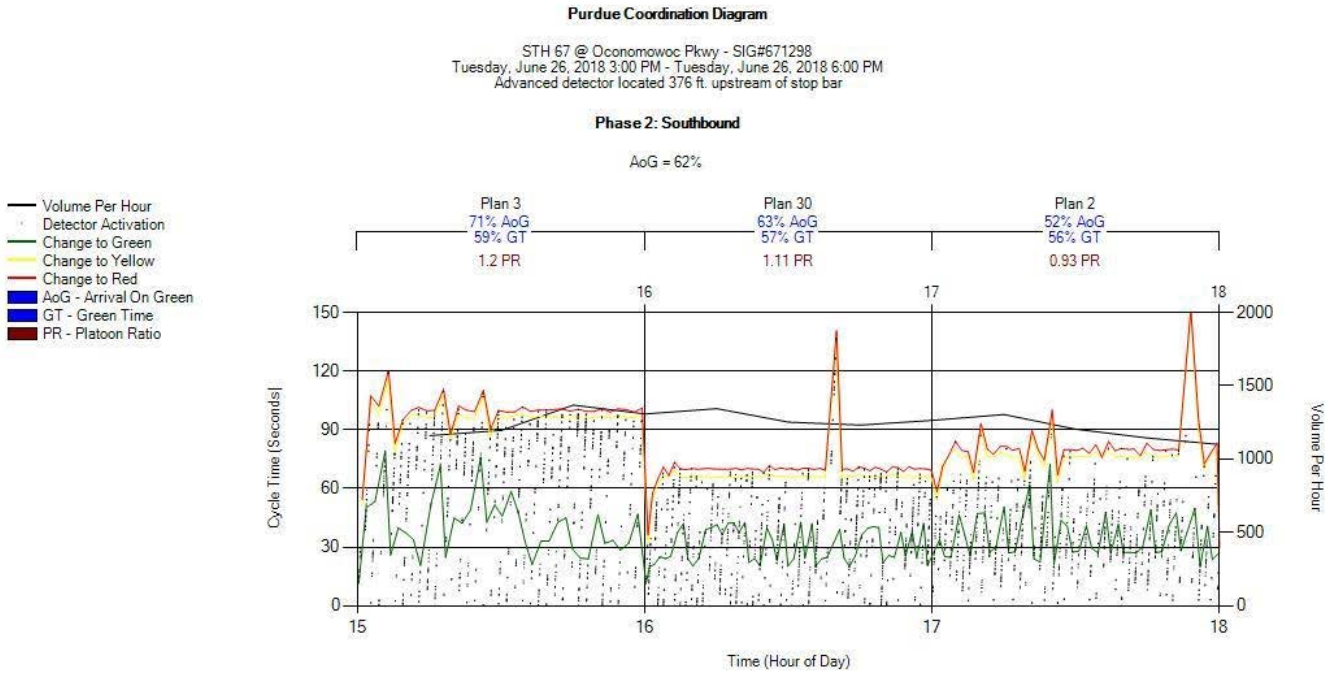
Chart Legend
Programmed Split
Gap Out
Max Out
Force Off
Unknown Termination Cause
Ped Activity
Split Monitor
IH-94 EB Ramps @ STH 67 - SIG#670889
Thursday, June 21, 2018 3:00 PM - Thursday, June 21, 2018 6:00 PM
Phase 2
Plan 3
35.0 - 85 Percentile Split
39.9 Avg. Split
100.0% ForceOffs
0.0% GapOuts
0.0% Skips
Plan 20
62.1 - 85 Percentile Split
61.0 Avg. Split
97.7% ForceOffs
0.0% GapOuts
2.3% Skips
Plan 3
79.9 - 85 Percentile Split
45.9 Avg. Split
98.2% ForceOffs
0.0% GapOuts
0.0% Skips
15
16
17
18
80
60
40
20
0
Phase Duration (Seconds)
Time (Hour of Day)

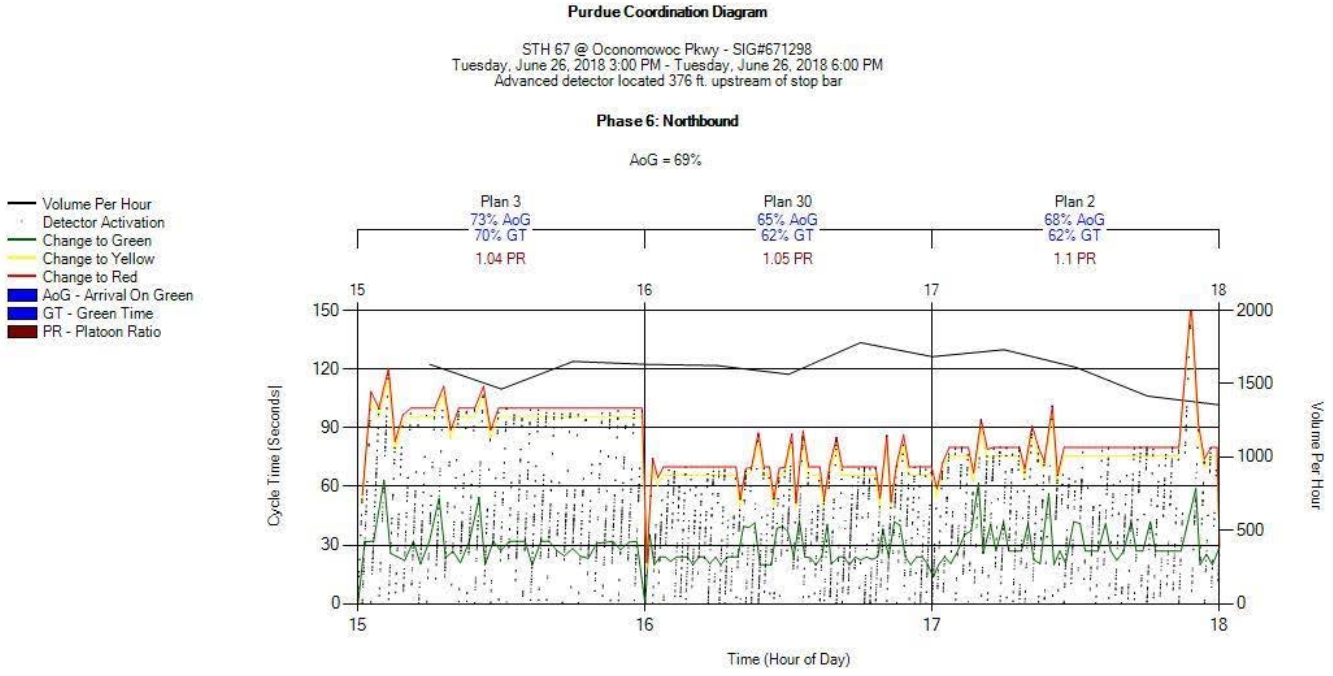

Split Monitor
IH-94 EB Ramps @ STH 67 - SIG#670889
Thursday, June 21, 2018 3:00 PM - Thursday, June 21, 2018 6:00 PM
Phase 4
Plan 3
22.0 - 85 Percentile Split
19.3 Avg. Split
28.3% ForceOffs
71.7% GapOuts
0.0% Skips
Plan 20
24.2 - 85 Percentile Split
20.9 Avg. Split
0.0% ForceOffs
100.0% GapOuts
0.0% Skips
Plan 3
22.0 - 85 Percentile Split
19.7 Avg. Split
34.5% ForceOffs
63.6% GapOuts
1.8% Skips
15
16
17
18
100
80
60
40
20
0
Phase Duration (Seconds)
Time (Hour of Day)


Split Monitor
IH-94 EB Ramps @ STH 67 - SIG#670889
Thursday, June 21, 2018 3:00 PM - Thursday, June 21, 2018 6:00 PM
Phase 6
Plan 3
35.0 - 85 Percentile Split
39.9 Avg. Split
100.0% ForceOffs
0.0% GapOuts
0.0% Skips
Plan 20
62.1 - 85 Percentile Split
61.0 Avg. Split
100.0% ForceOffs
0.0% GapOuts
0.0% Skips
Plan 3
79.9 - 85 Percentile Split
45.9 Avg. Split
98.2% ForceOffs
0.0% GapOuts
0.0% Skips
Phase Duration (Seconds)
Time (Hour of Day)

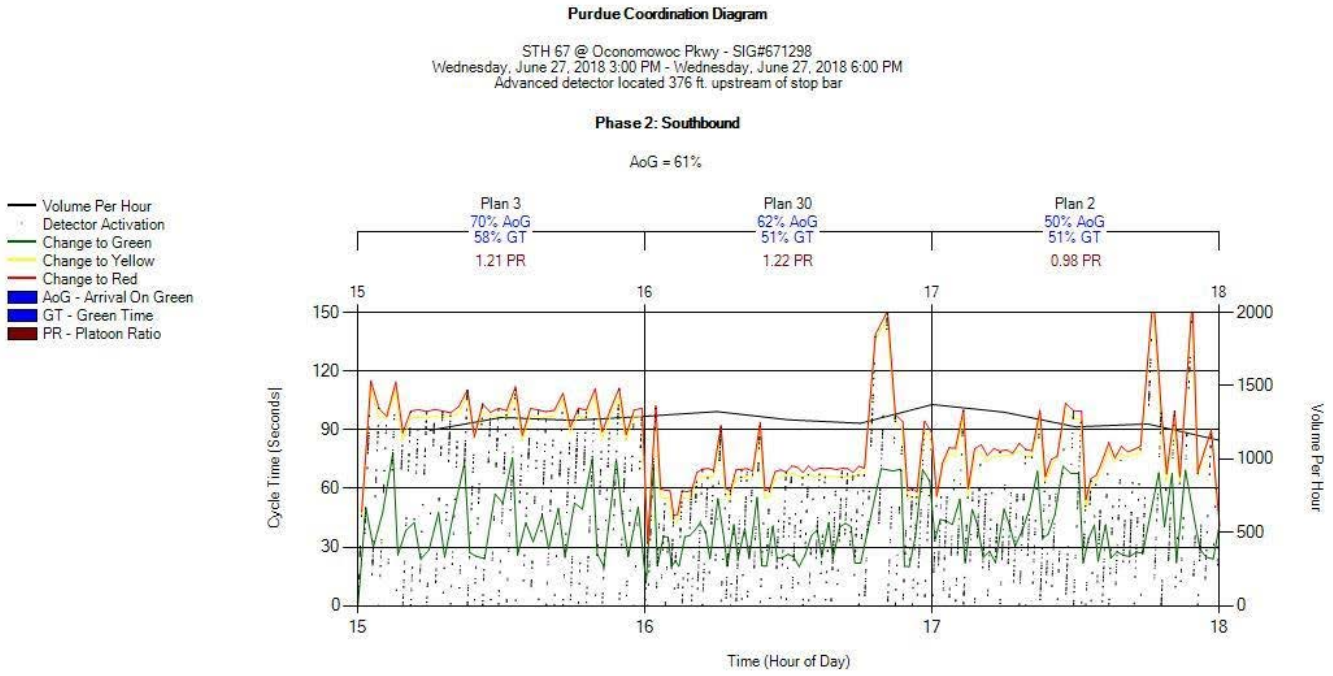
WisBOOM Outputs
WIS 67 Corridor
Synchro Optimized Timings

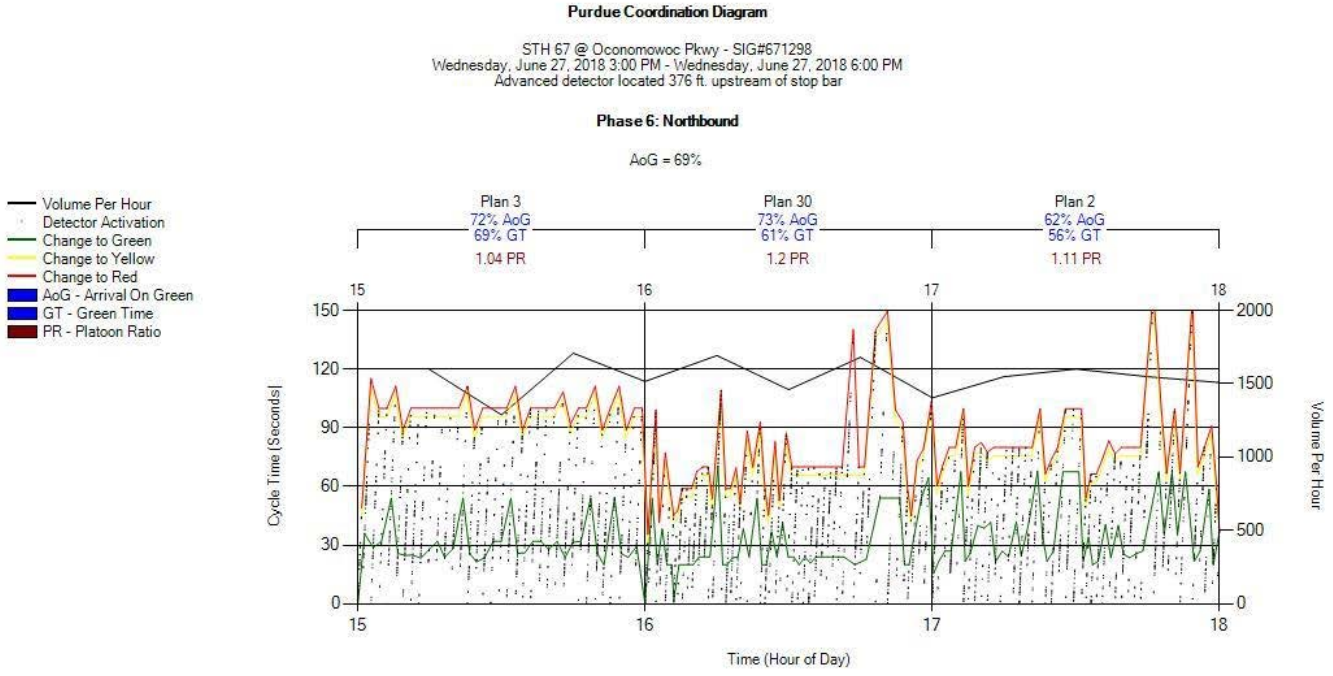
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM



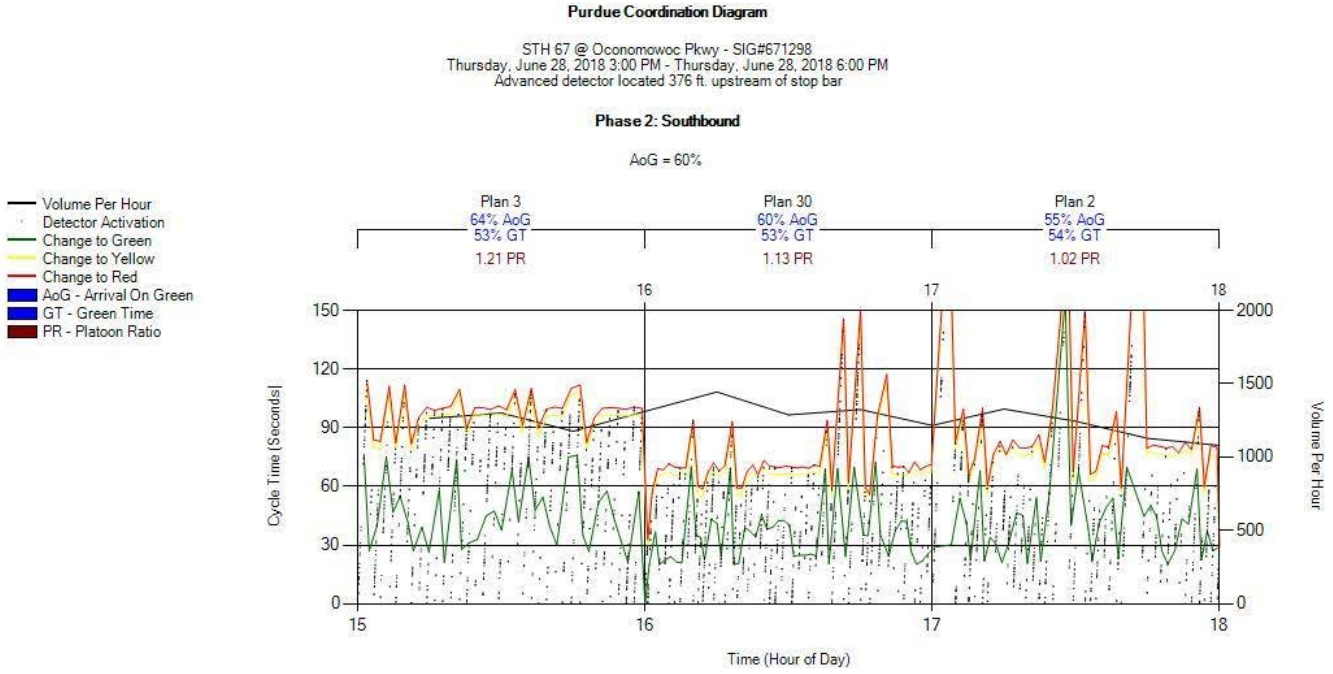


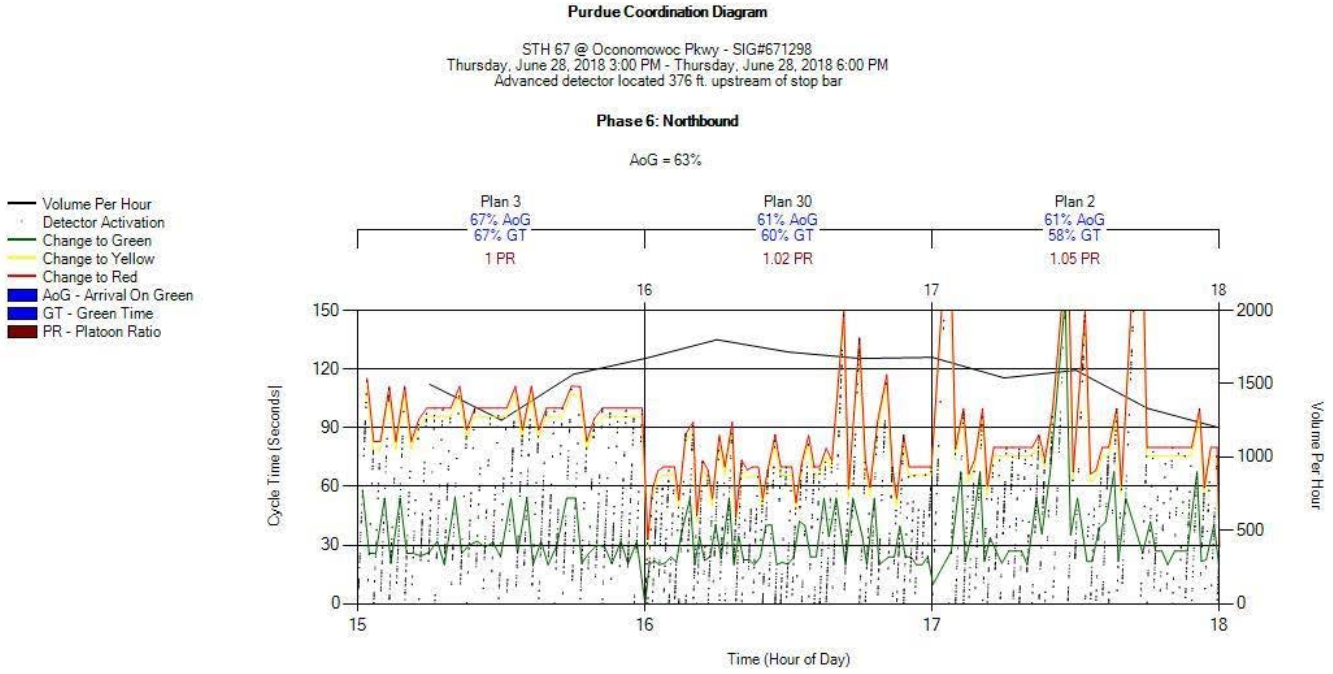
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM



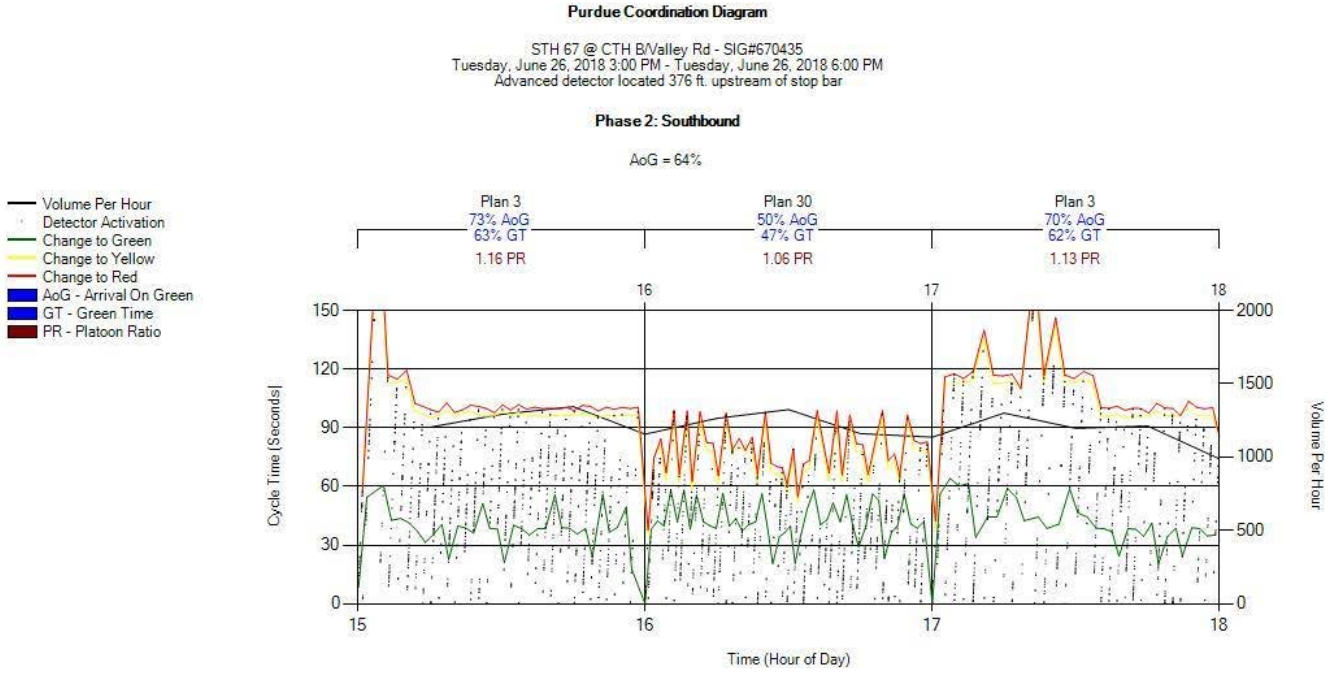


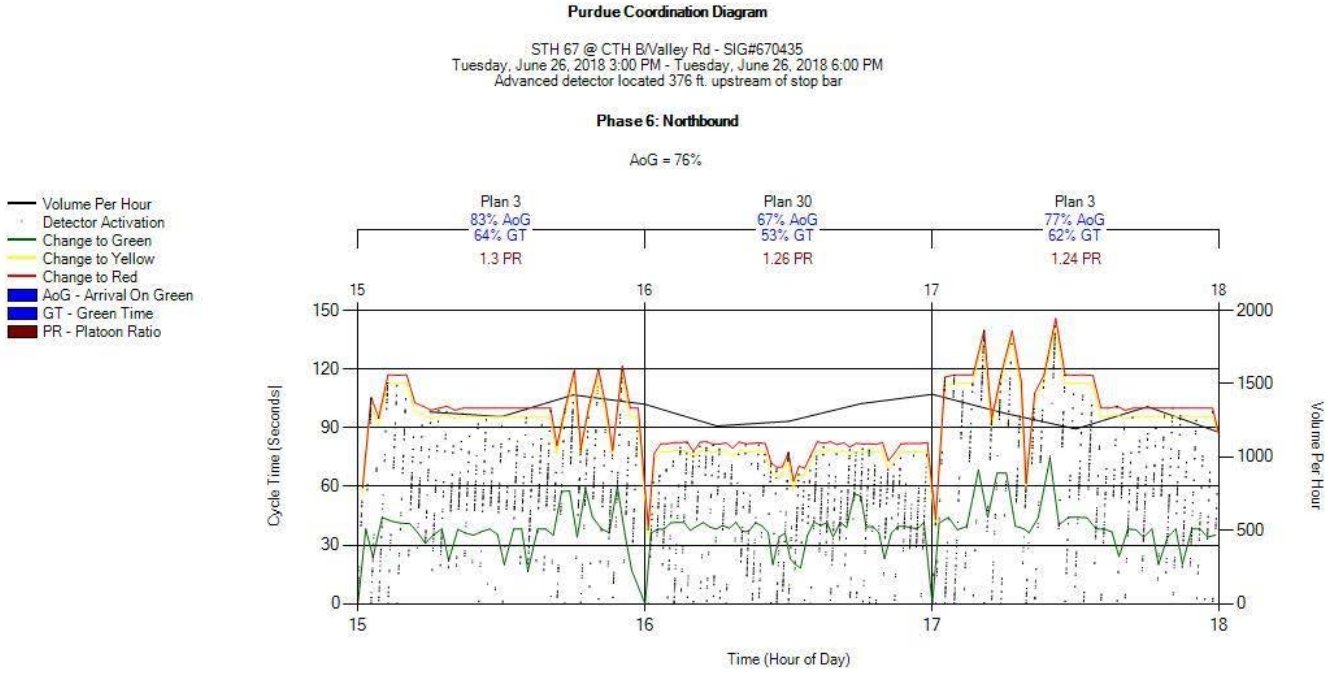
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM





WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM





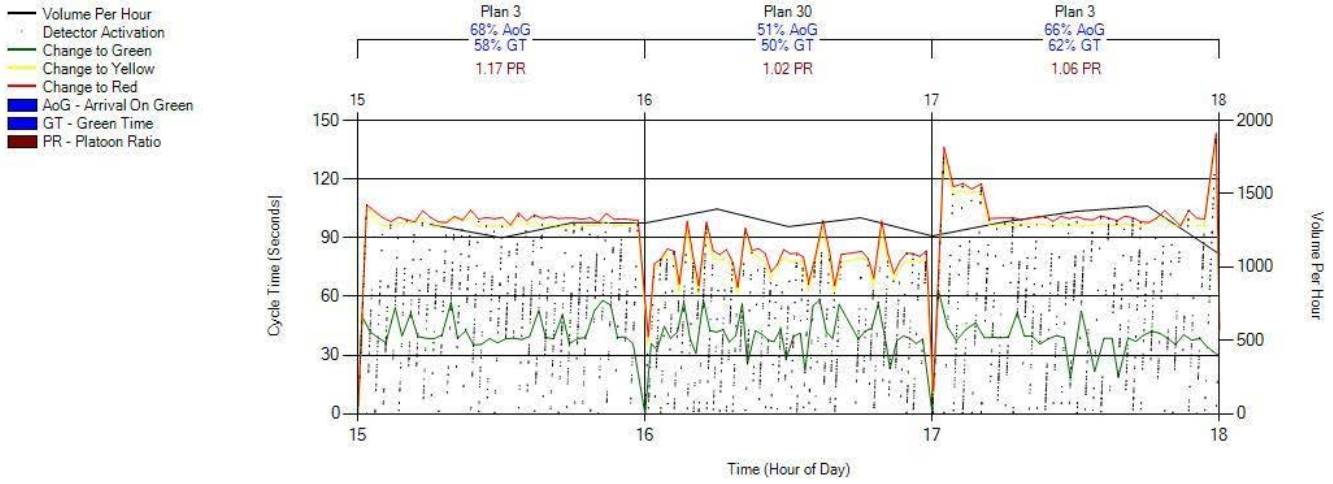
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM

Purdue Coordination Diagram

STH 67 @ CTH B/Valley Rd - SIG#670435
Wednesday, June 27, 2018 3:00 PM - Wednesday, June 27, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar

Phase 2: Southbound

AoG = 62%

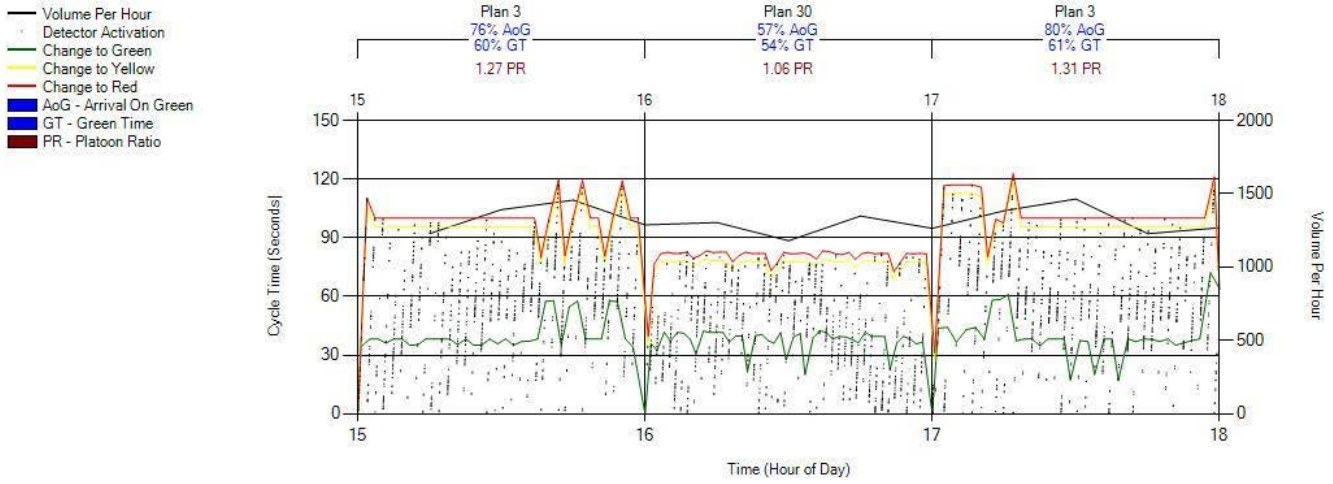


Purdue Coordination Diagram

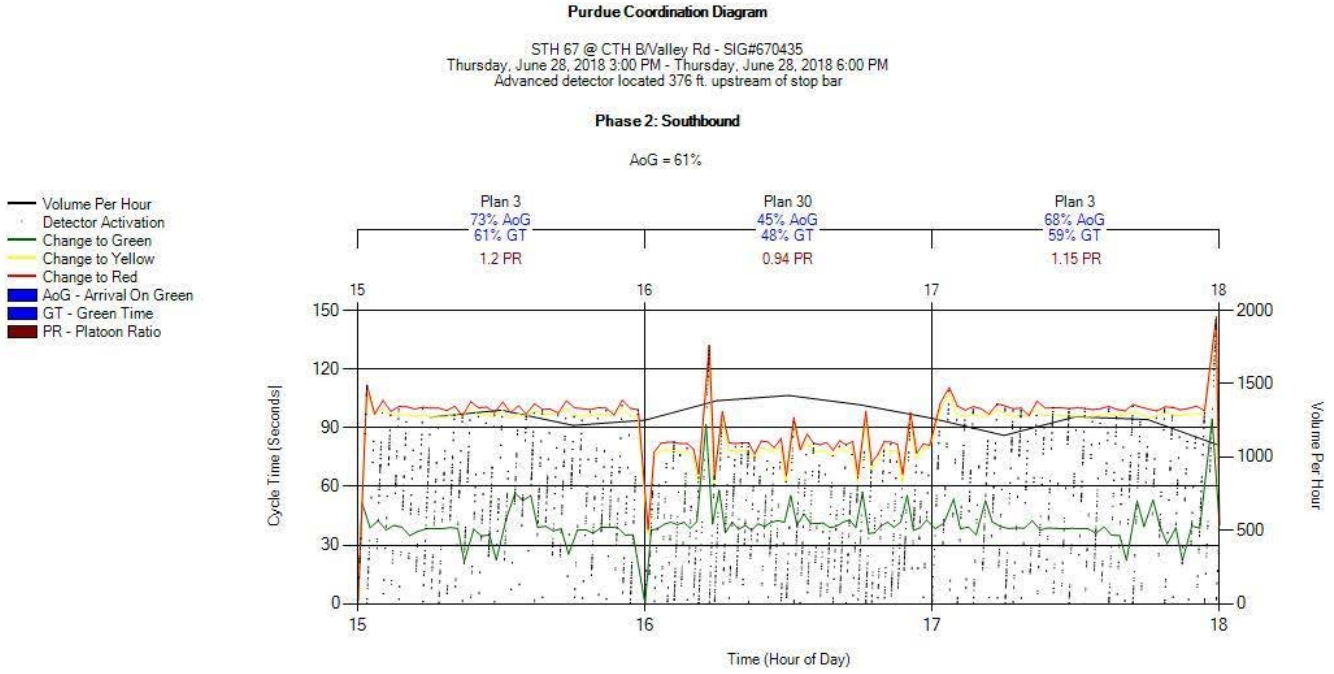
STH 67 @ CTH B/Valley Rd - SIG#670435
Wednesday, June 27, 2018 3:00 PM - Wednesday, June 27, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar

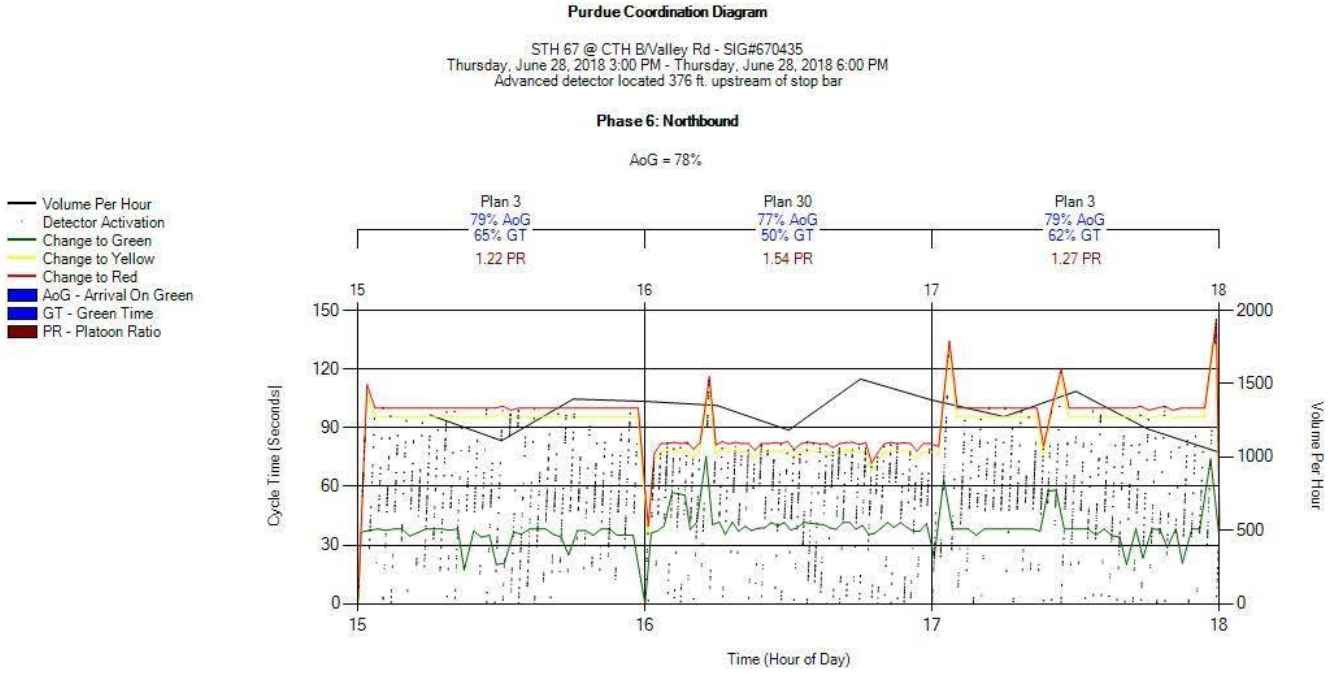
Phase 6: Northbound

AoG = 71%

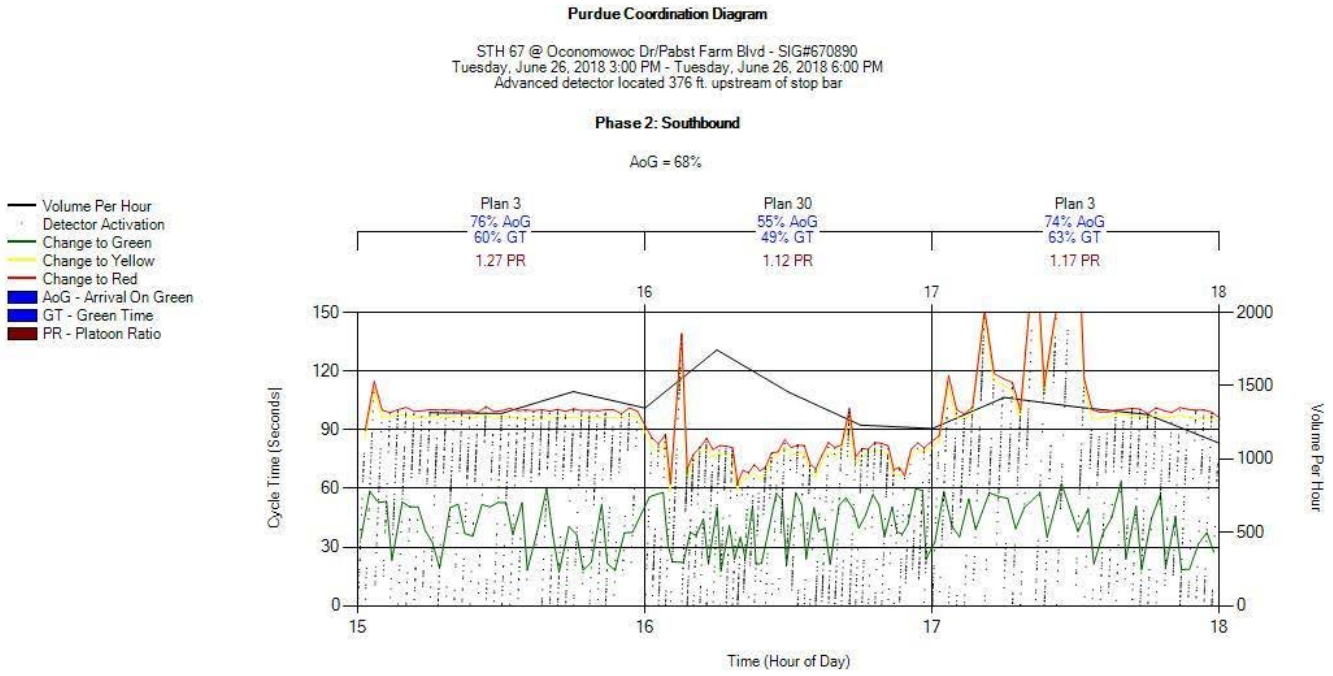


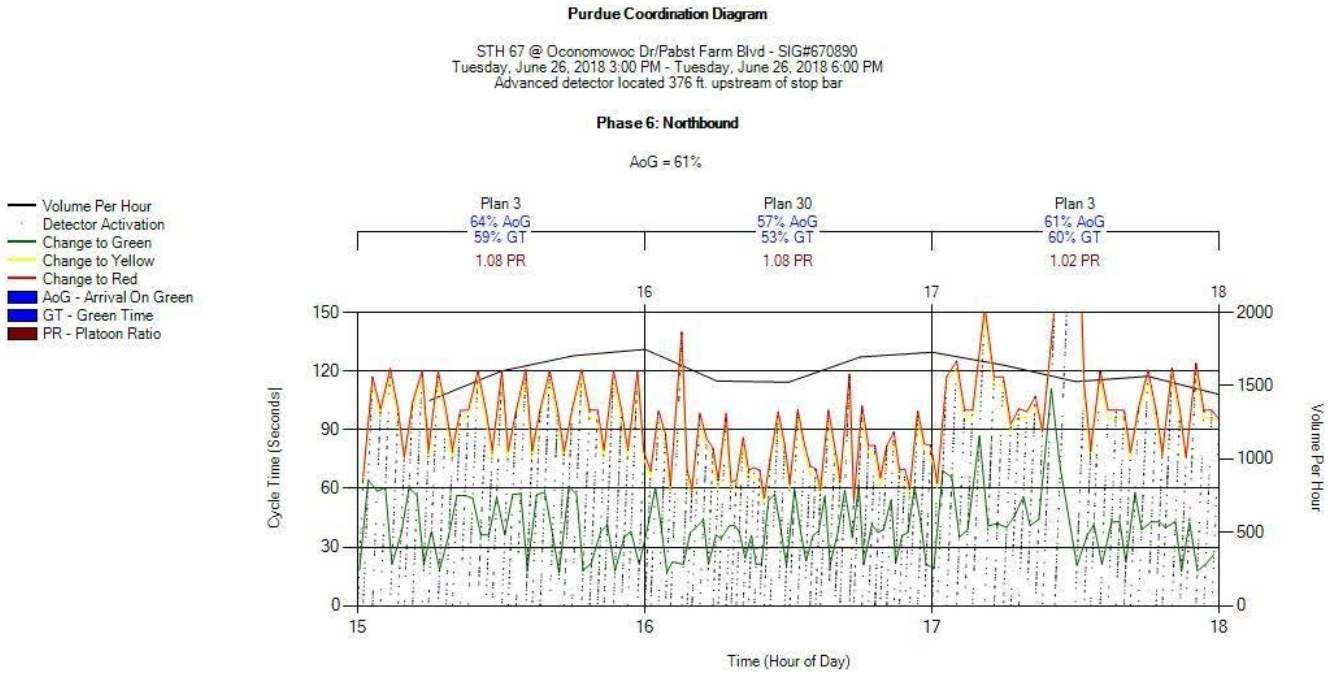
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM



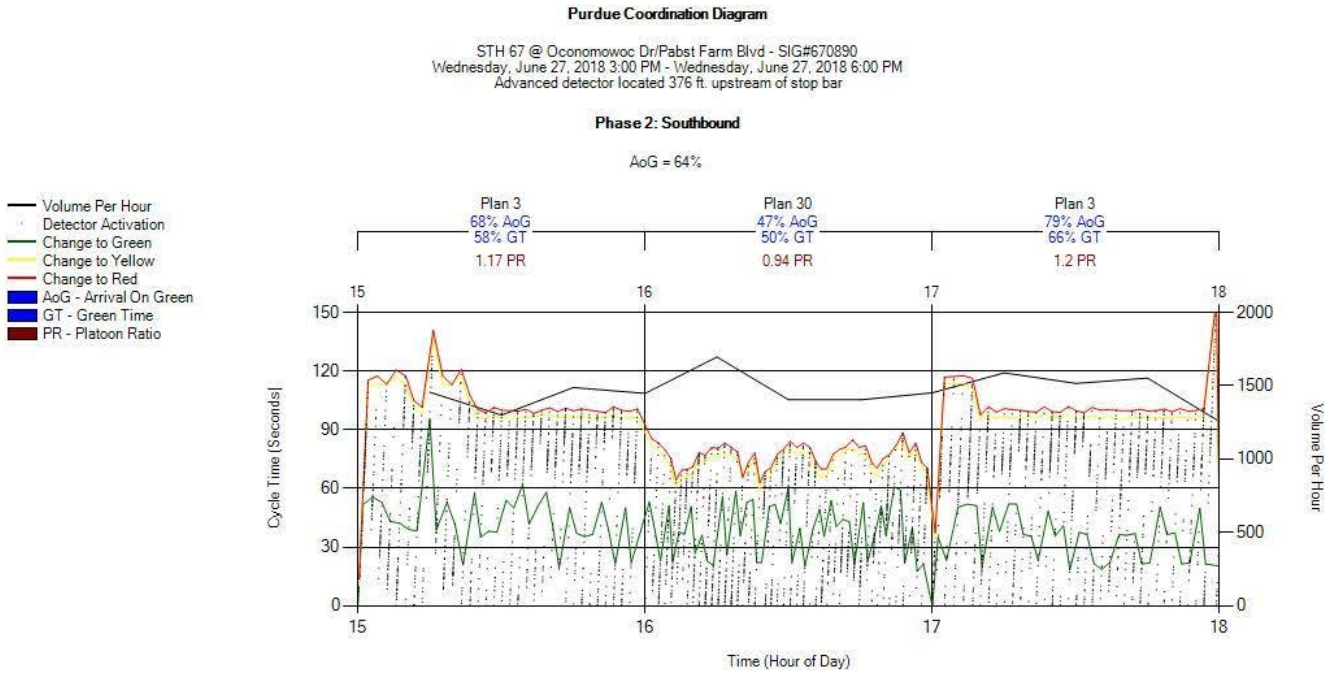


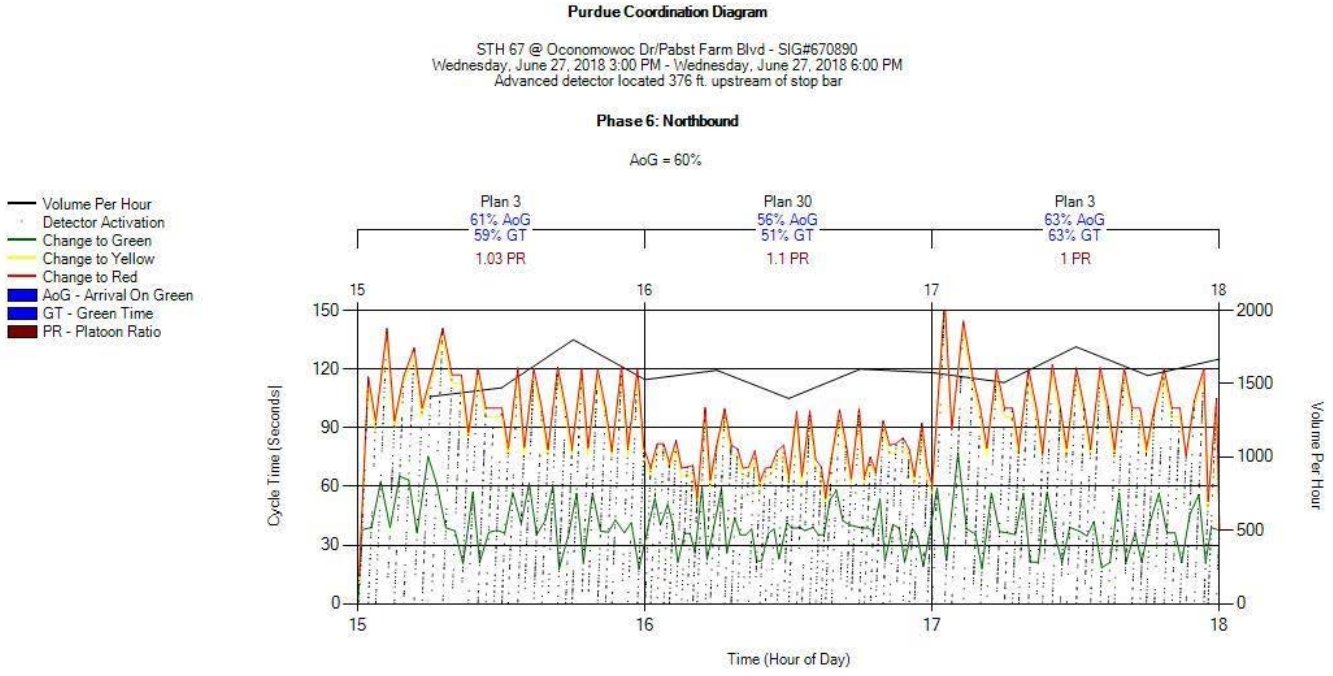
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM





WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM



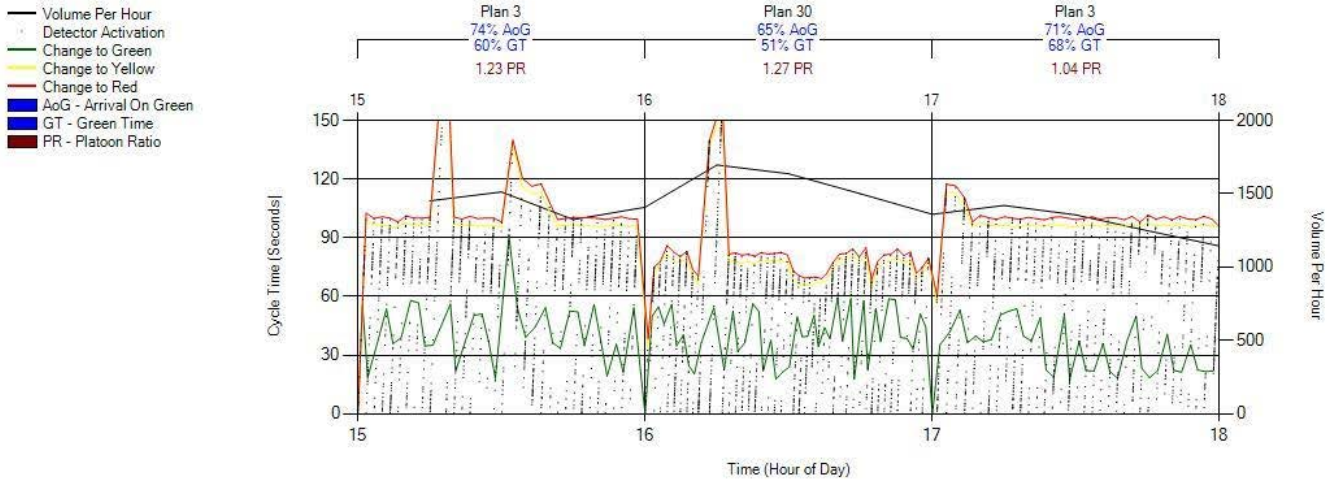


Purdue Coordination Diagram

STH 67 @ Oconomowoc Dr/Pabst Farm Blvd - SIG#670890
Thursday, June 28, 2018 3:00 PM - Thursday, June 28, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar

Phase 2: Southbound

AoG = 70%

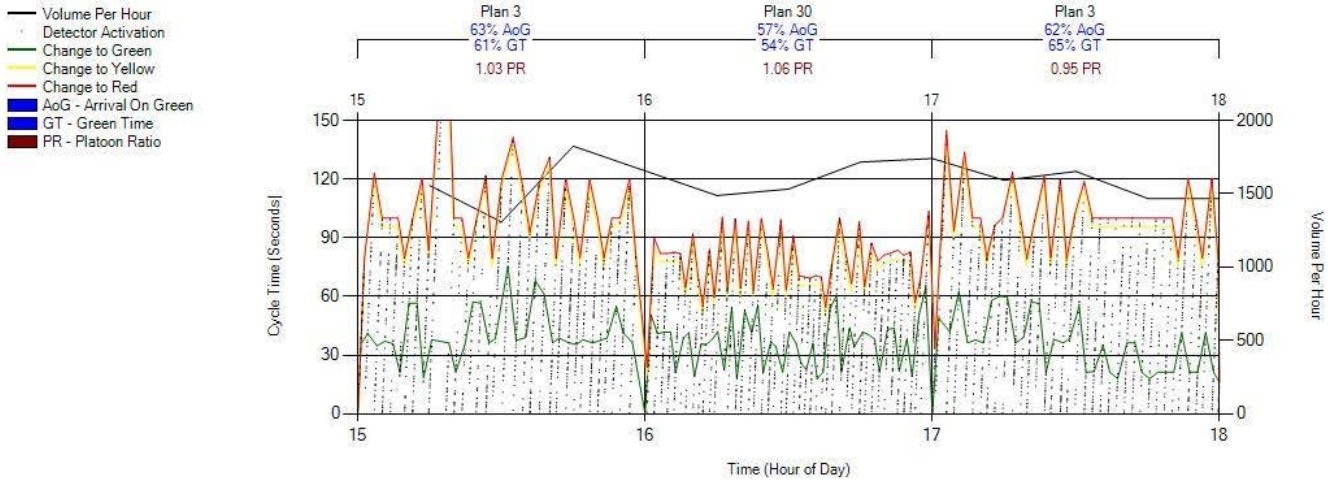


Purdue Coordination Diagram

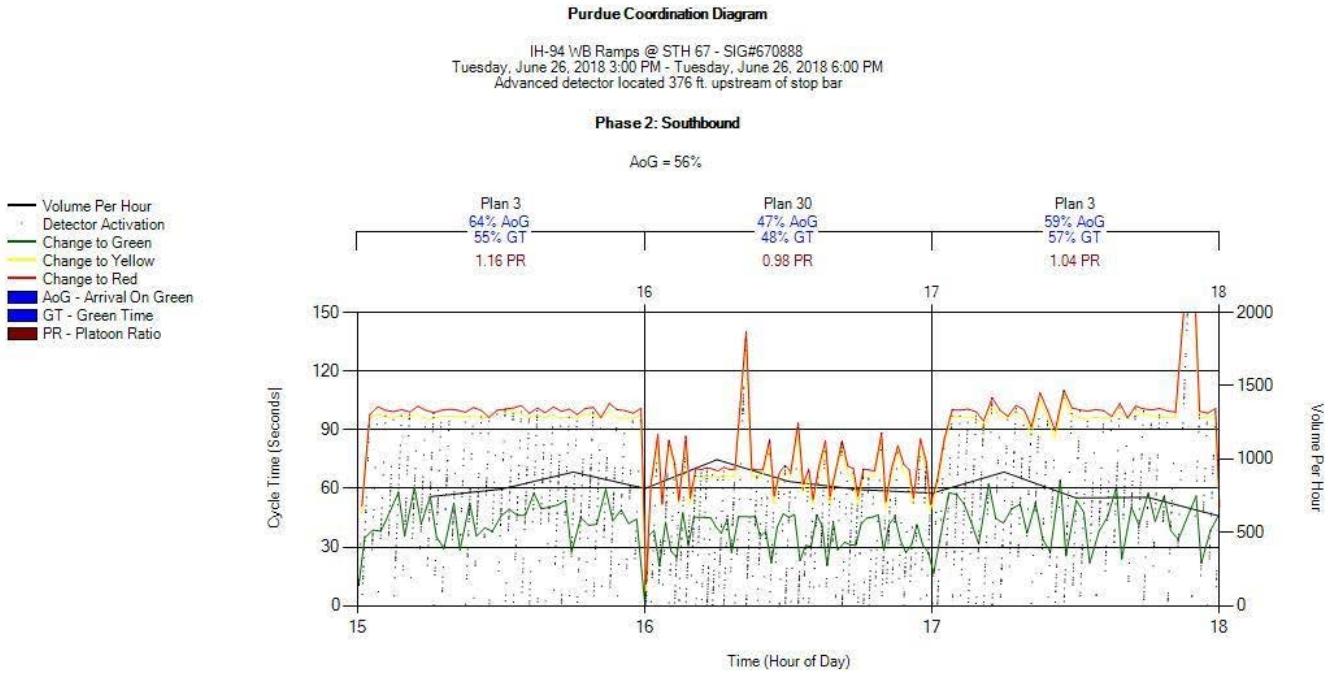
STH 67 @ Oconomowoc Dr/Pabst Farm Blvd - SIG#670890
Thursday, June 28, 2018 3:00 PM - Thursday, June 28, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar

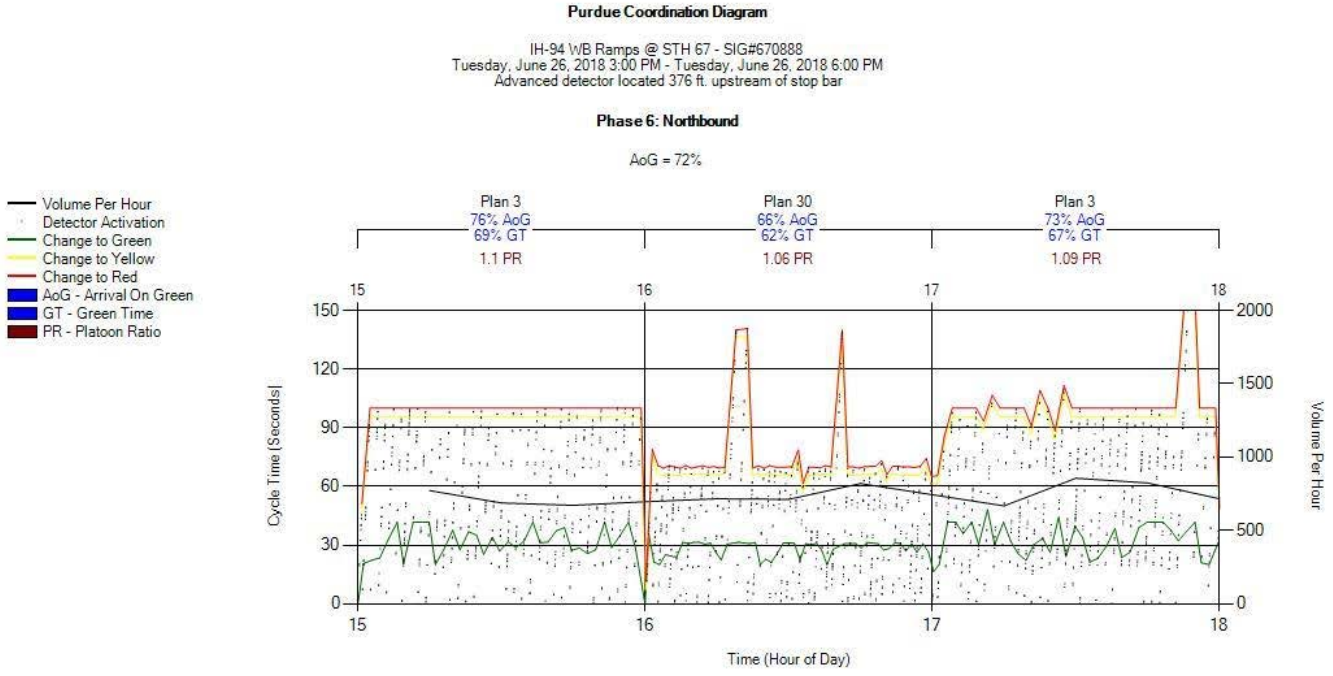
Phase 6: Northbound

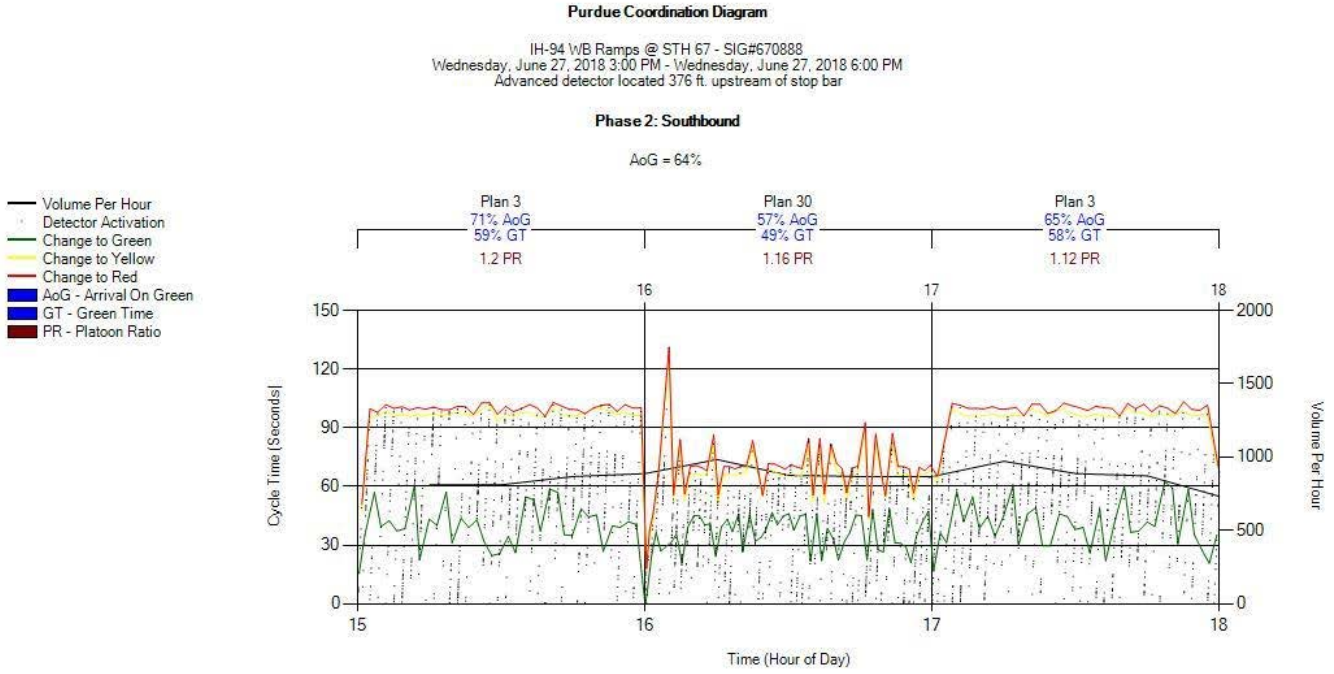
AoG = 61%

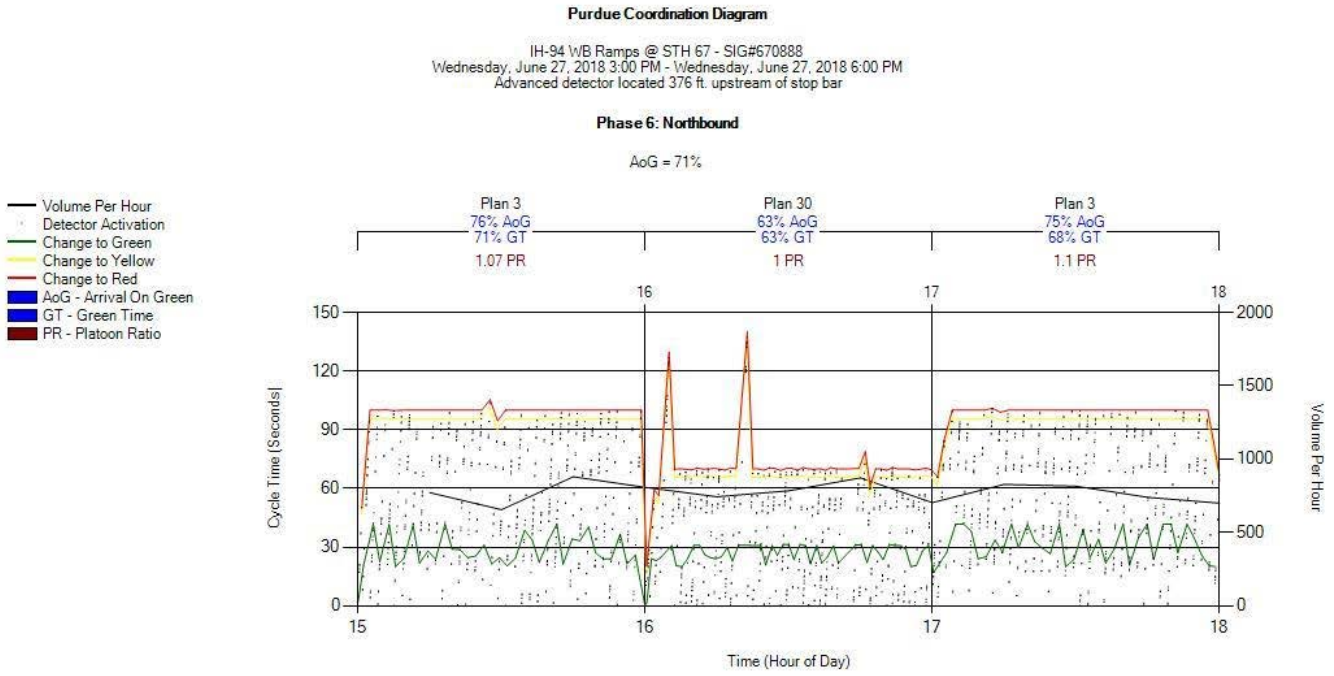


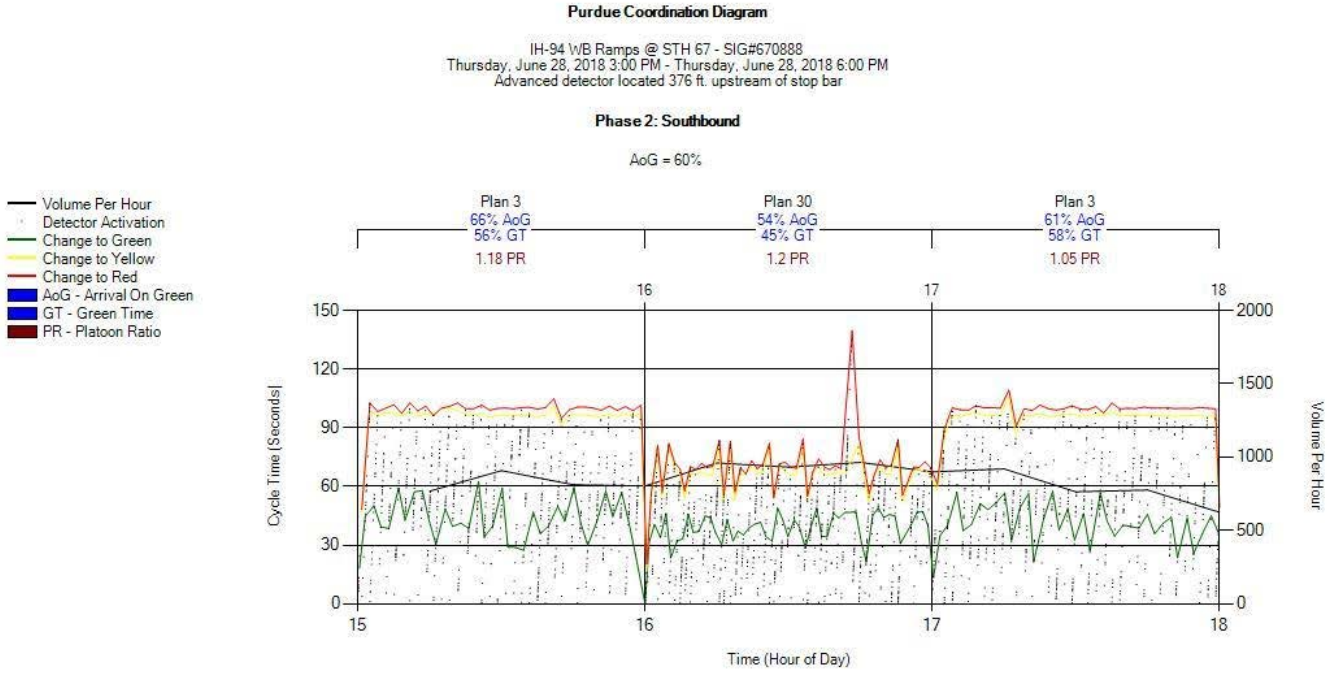
WIS 67 Corridor – STH 67 & I-94 WB Ramps
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM

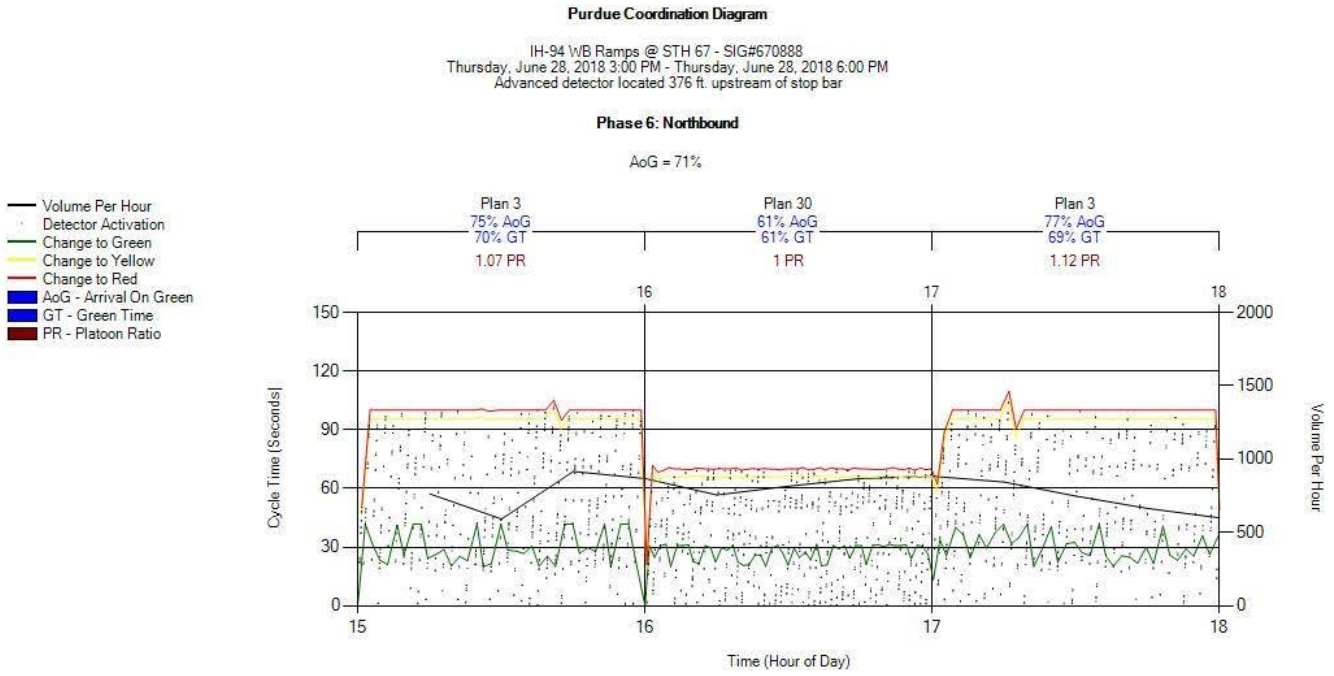


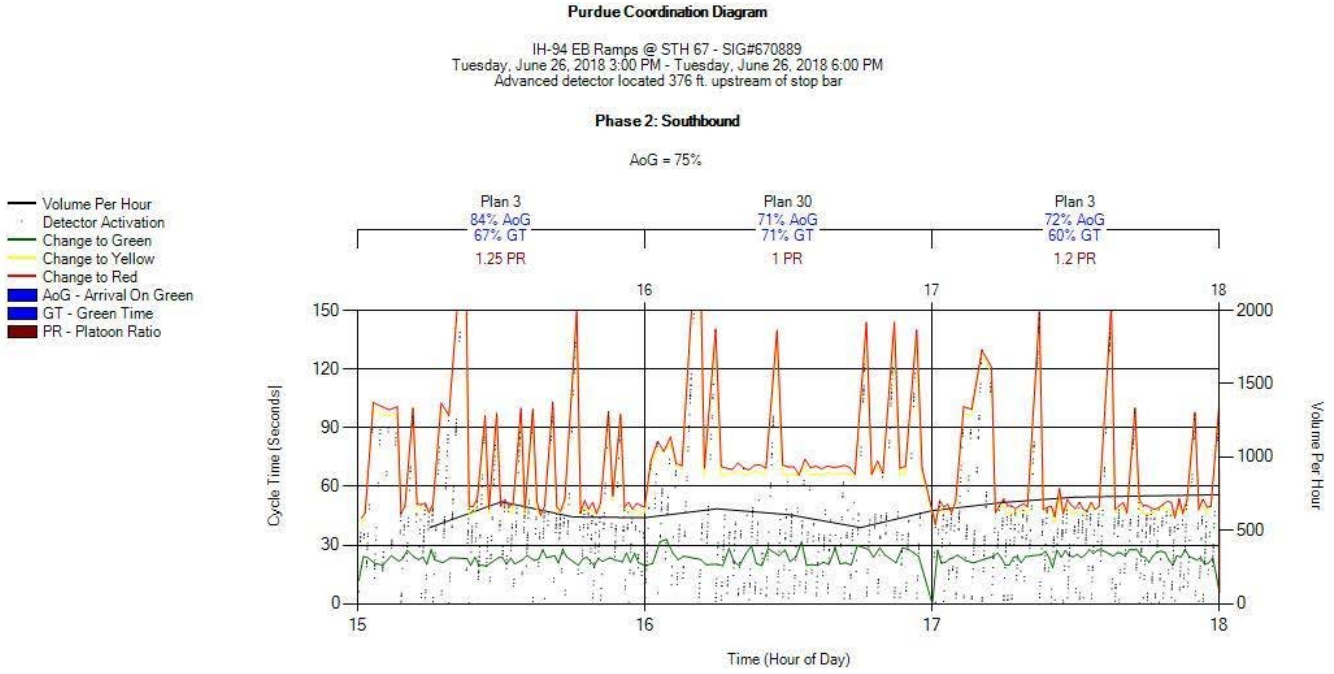


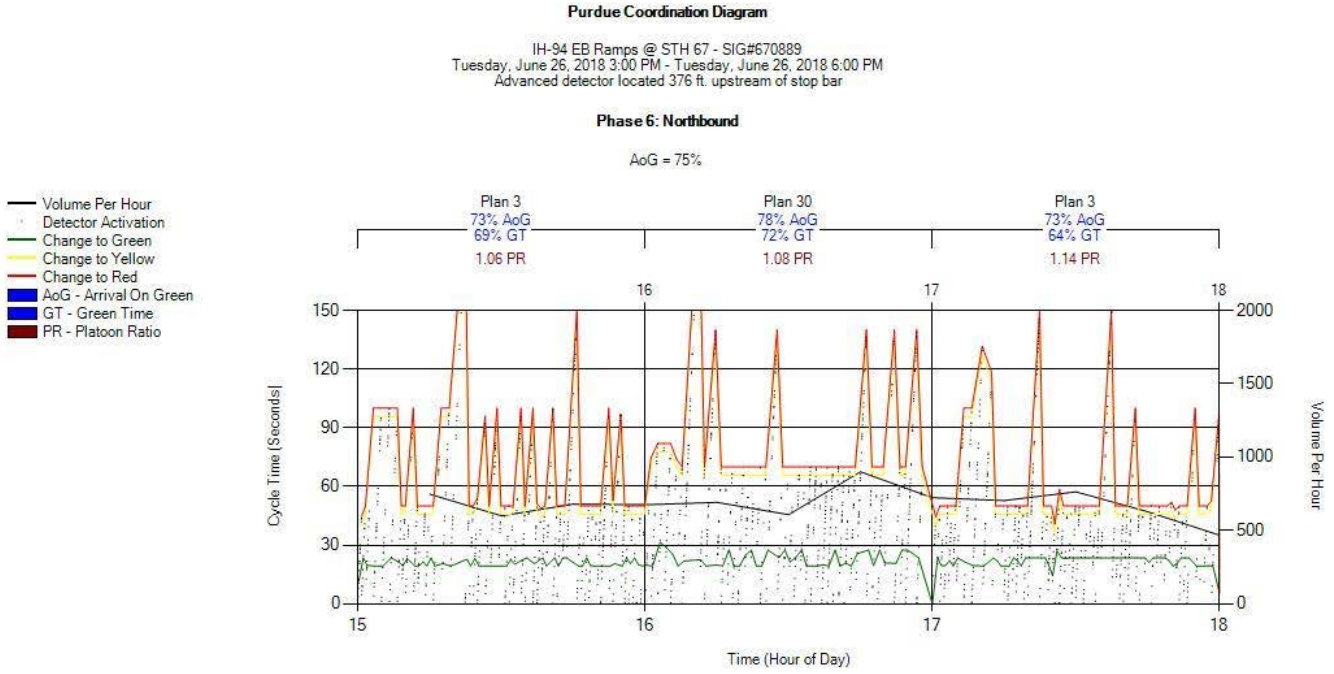

Purdue Coordination Diagram
IH-94 WB Ramps @ STH 67 - SIG#670888
Wednesday, June 27, 2018 3:00 PM - Wednesday, June 27, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar
Phase 2: Southbound
AoG = 64%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
71% AoG
59% GT
1.2 PR
Plan 30
57% AoG
49% GT
1.16 PR
Plan 3
65% AoG
58% GT
1.12 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)

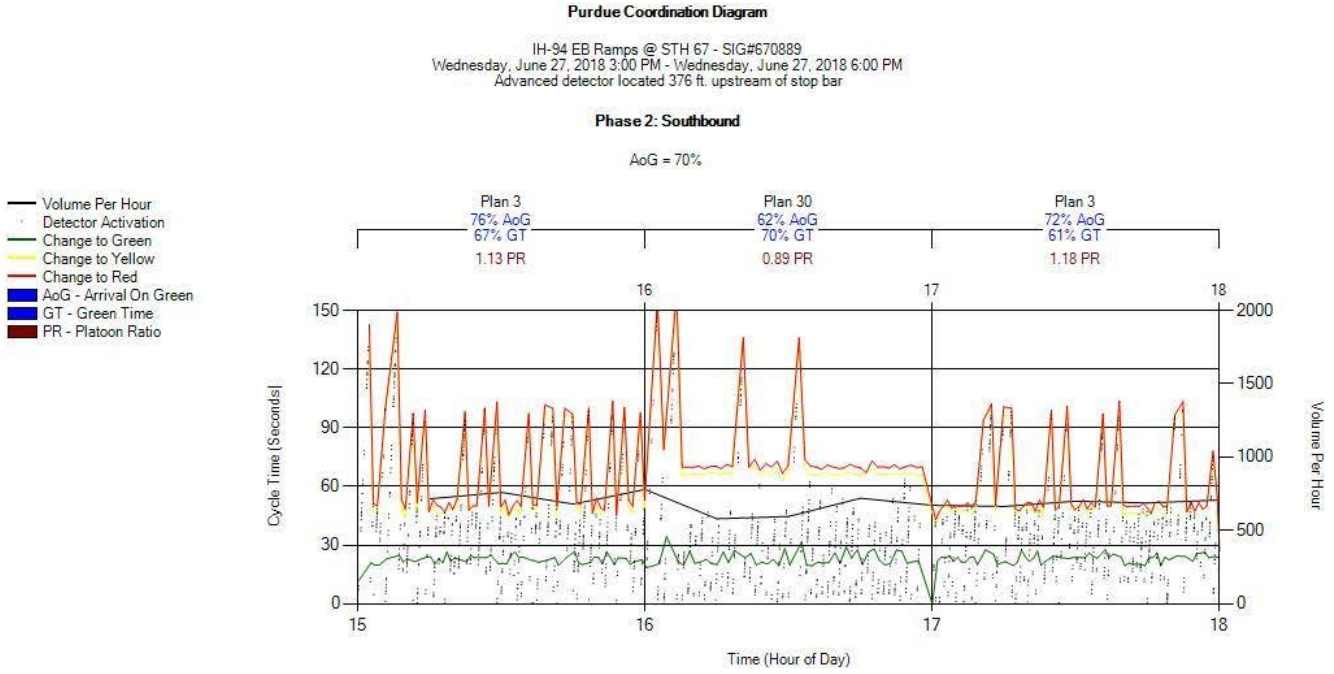

Purdue Coordination Diagram
IH-94 WB Ramps @ STH 67 - SIG#670888
Wednesday, June 27, 2018 3:00 PM - Wednesday, June 27, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar
Phase 6: Northbound
AoG = 71%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
76% AoG
71% GT
1.07 PR
Plan 30
63% AoG
63% GT
1 PR
Plan 3
75% AoG
68% GT
1.1 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)

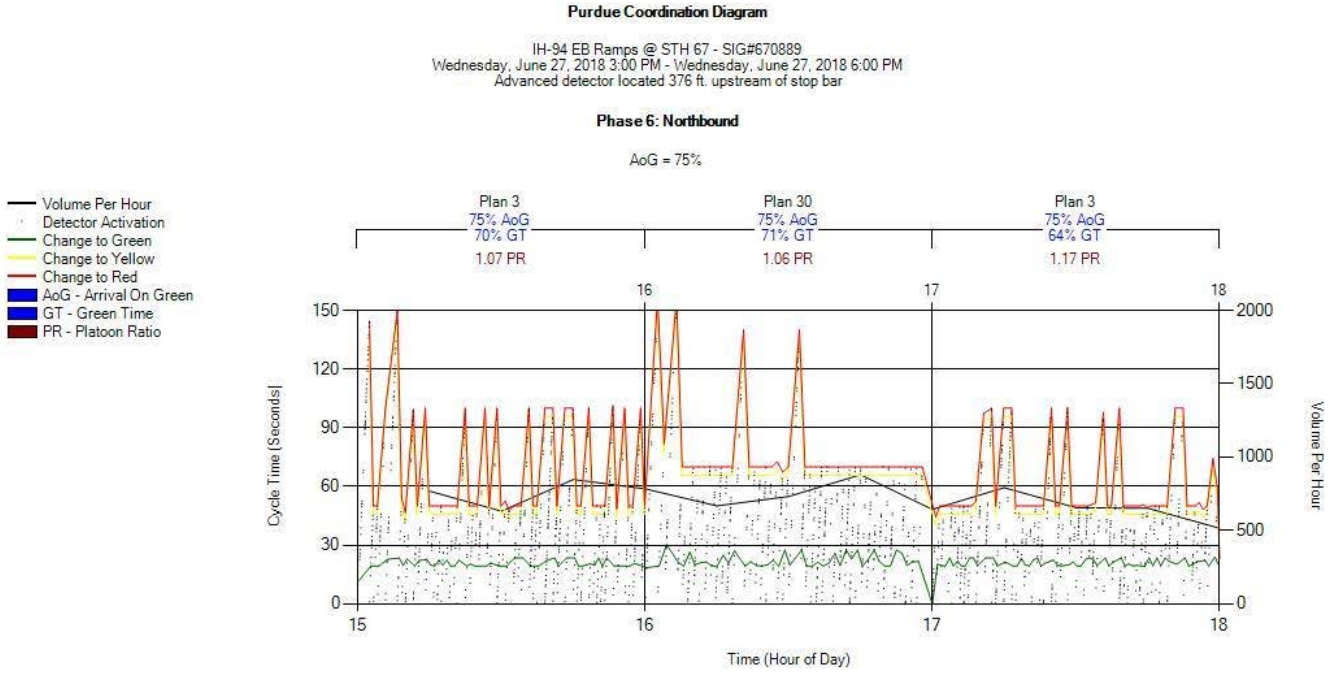

Purdue Coordination Diagram
IH-94 WB Ramps @ STH 67 - SIG#670888
Thursday, June 28, 2018 3:00 PM - Thursday, June 28, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar
Phase 2: Southbound
AoG = 60%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
66% AoG
56% GT
1.18 PR
Plan 30
54% AoG
45% GT
1.2 PR
Plan 3
61% AoG
58% GT
1.05 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)


Purdue Coordination Diagram
IH-94 WB Ramps @ STH 67 - SIG#670888
Thursday, June 28, 2018 3:00 PM - Thursday, June 28, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar
Phase 6: Northbound
AoG = 71%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
75% AoG
70% GT
1.07 PR
Plan 30
61% AoG
61% GT
1 PR
Plan 3
77% AoG
69% GT
1.12 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)


Purdue Coordination Diagram
IH-94 EB Ramps @ STH 67 - SIG#670889
Tuesday, June 26, 2018 3:00 PM - Tuesday, June 26, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar
Phase 2: Southbound
AoG = 75%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
84% AoG
67% GT
1.25 PR
Plan 30
71% AoG
71% GT
1 PR
Plan 3
72% AoG
60% GT
1.2 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)


Purdue Coordination Diagram
IH-94 EB Ramps @ STH 67 - SIG#670889
Tuesday, June 26, 2018 3:00 PM - Tuesday, June 26, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar
Phase 6: Northbound
AoG = 75%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
73% AoG
69% GT
1.06 PR
Plan 30
78% AoG
72% GT
1.08 PR
Plan 3
73% AoG
64% GT
1.14 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)


Purdue Coordination Diagram
IH-94 EB Ramps @ STH 67 - SIG#670889
Wednesday, June 27, 2018 3:00 PM - Wednesday, June 27, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar
Phase 2: Southbound
AoG = 70%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
76% AoG
67% GT
1.13 PR
Plan 30
62% AoG
70% GT
0.89 PR
Plan 3
72% AoG
61% GT
1.18 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)

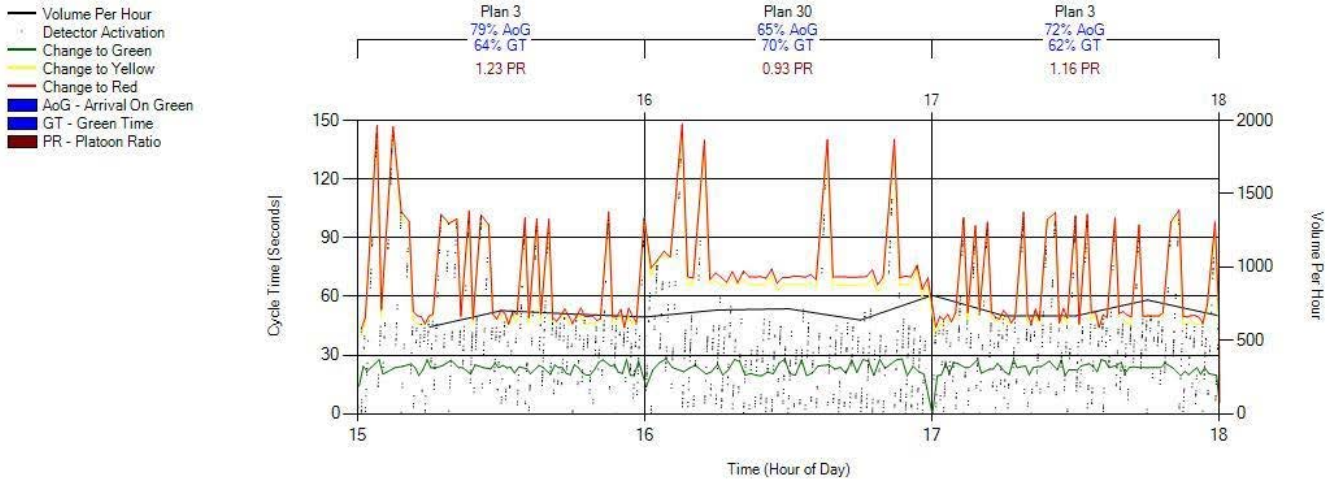

Purdue Coordination Diagram
IH-94 EB Ramps @ STH 67 - SIG#670889
Wednesday, June 27, 2018 3:00 PM - Wednesday, June 27, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar
Phase 6: Northbound
AoG = 75%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
75% AoG
70% GT
1.07 PR
Plan 30
75% AoG
71% GT
1.06 PR
Plan 3
75% AoG
64% GT
1.17 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)

Purdue Coordination Diagram

IH-94 EB Ramps @ STH 67 - SIG#670889
Thursday, June 28, 2018 3:00 PM - Thursday, June 28, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar

Phase 2: Southbound

AoG = 72%

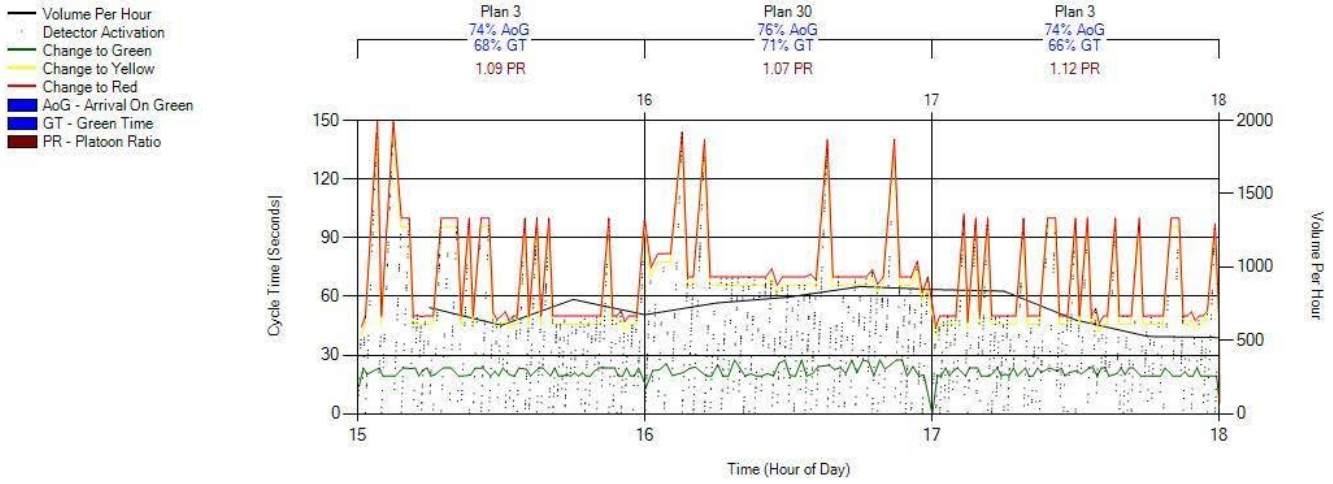


Purdue Coordination Diagram

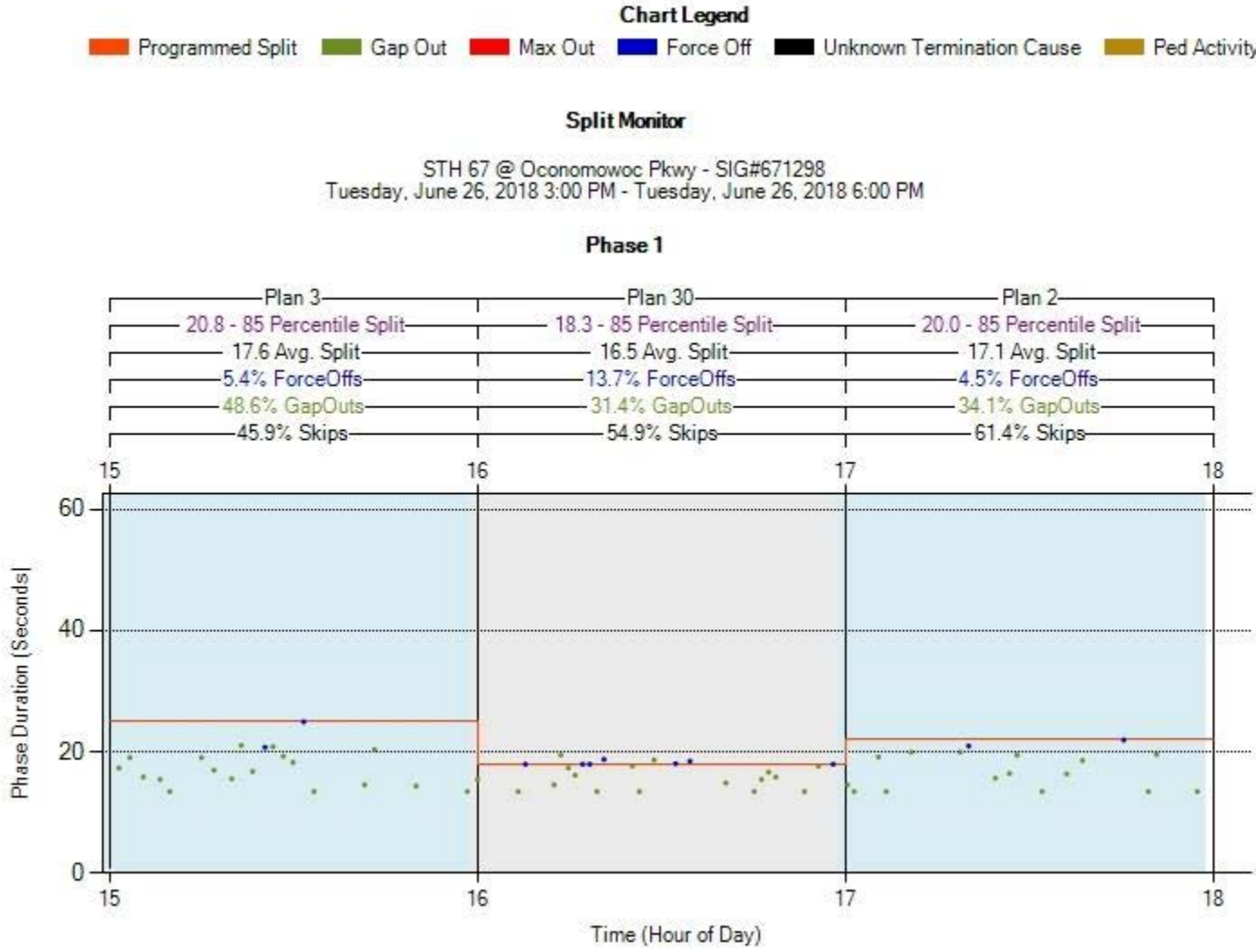
IH-94 EB Ramps @ STH 67 - SIG#670889
Thursday, June 28, 2018 3:00 PM - Thursday, June 28, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar

Phase 6: Northbound

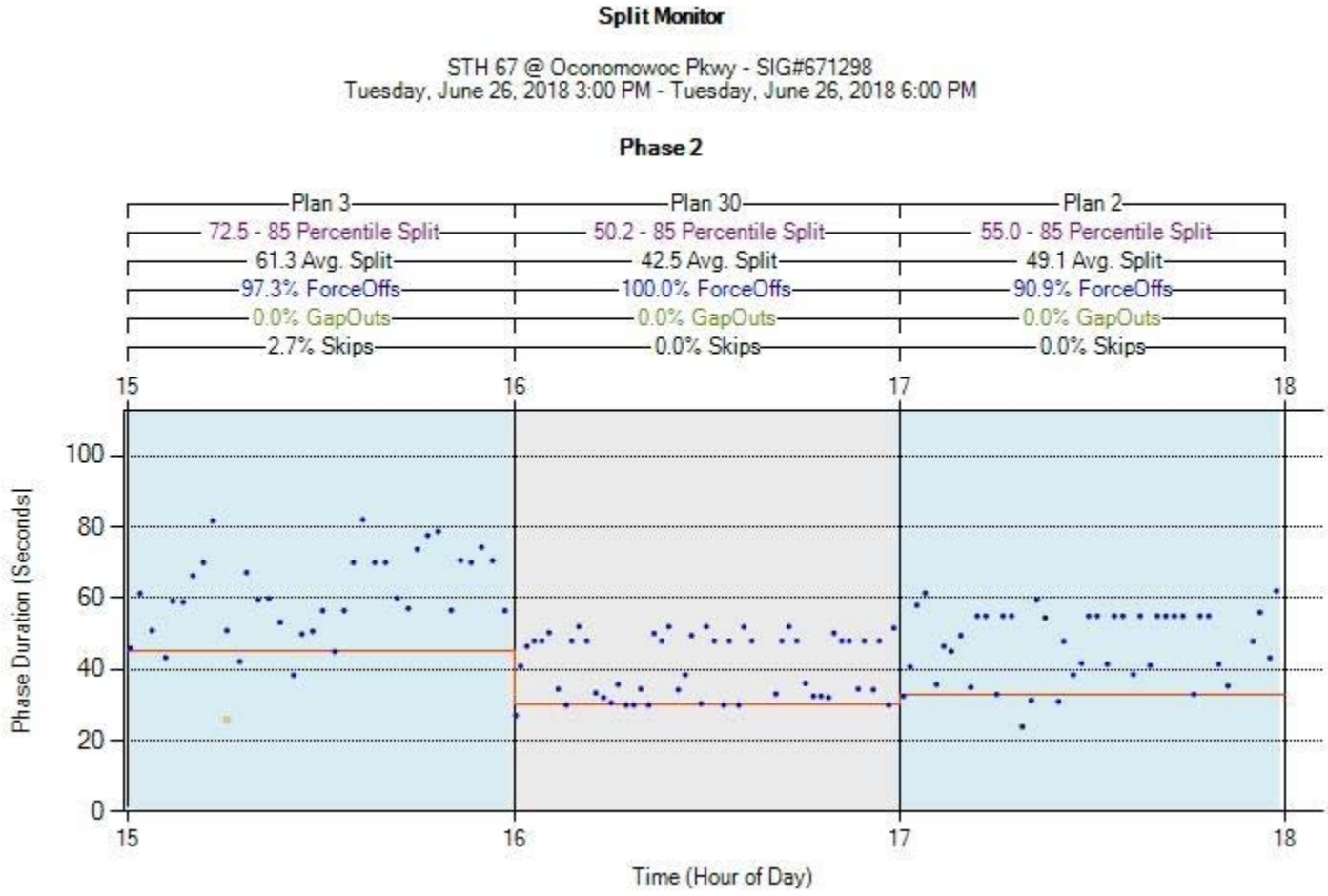
AoG = 75%



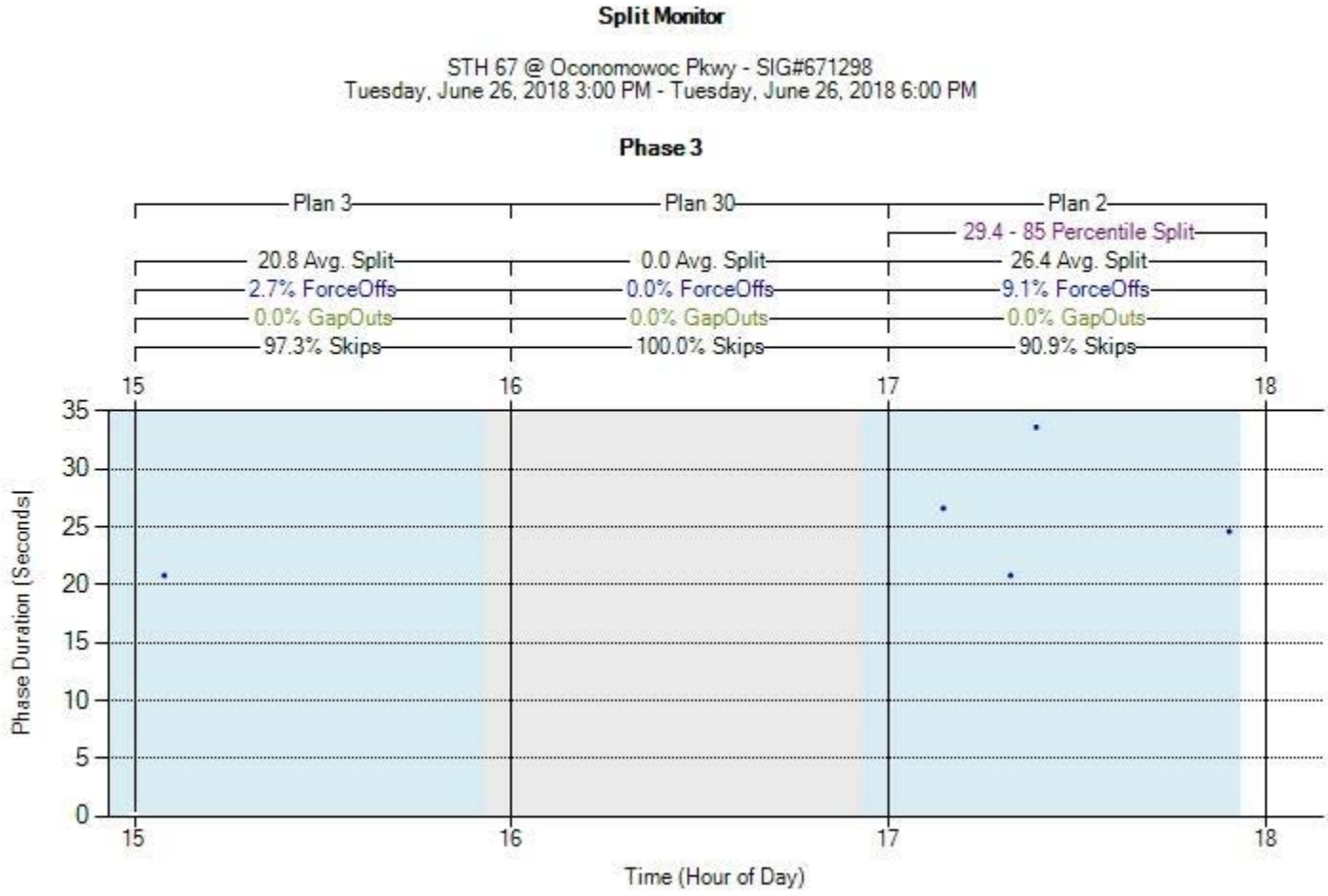
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM



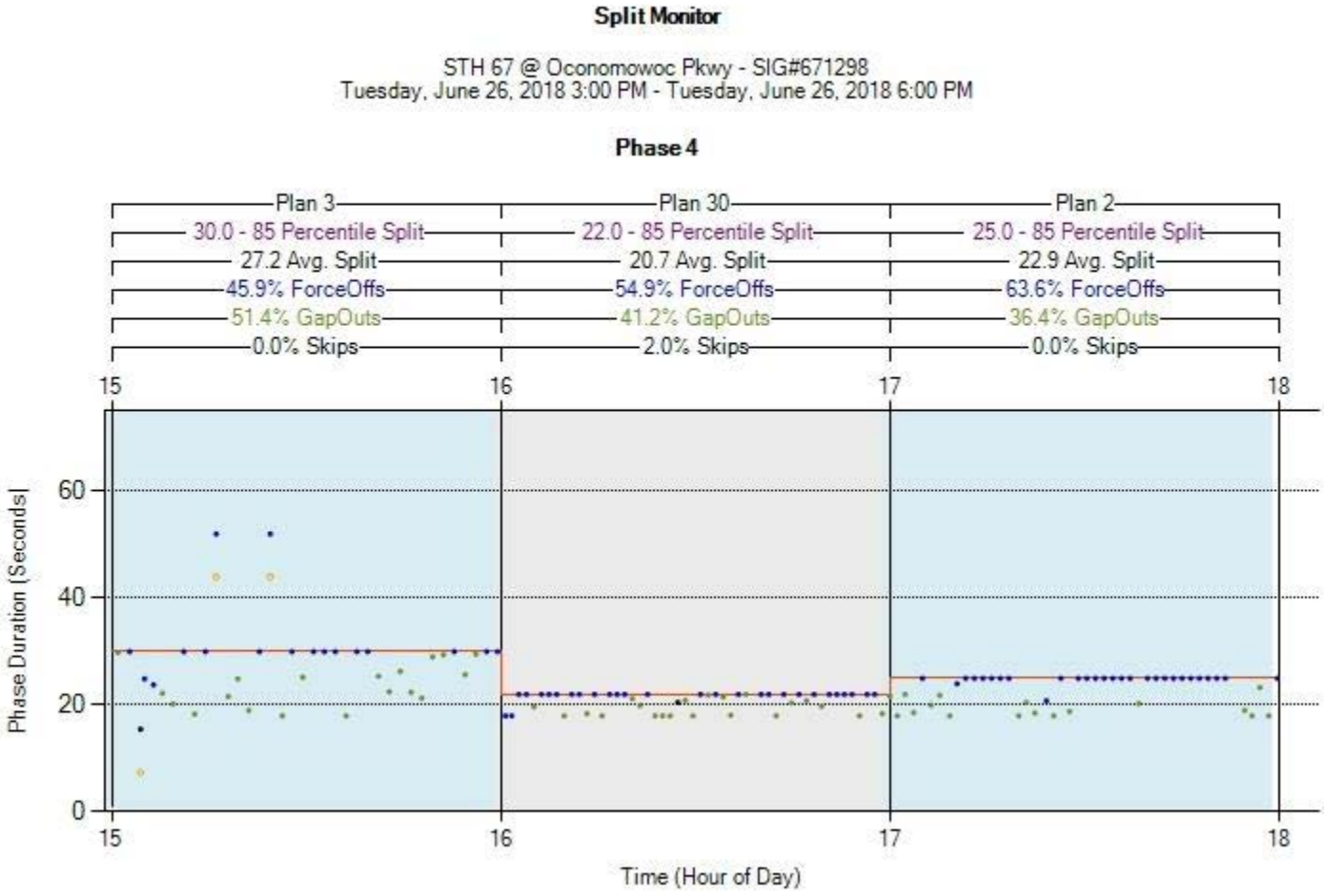
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM



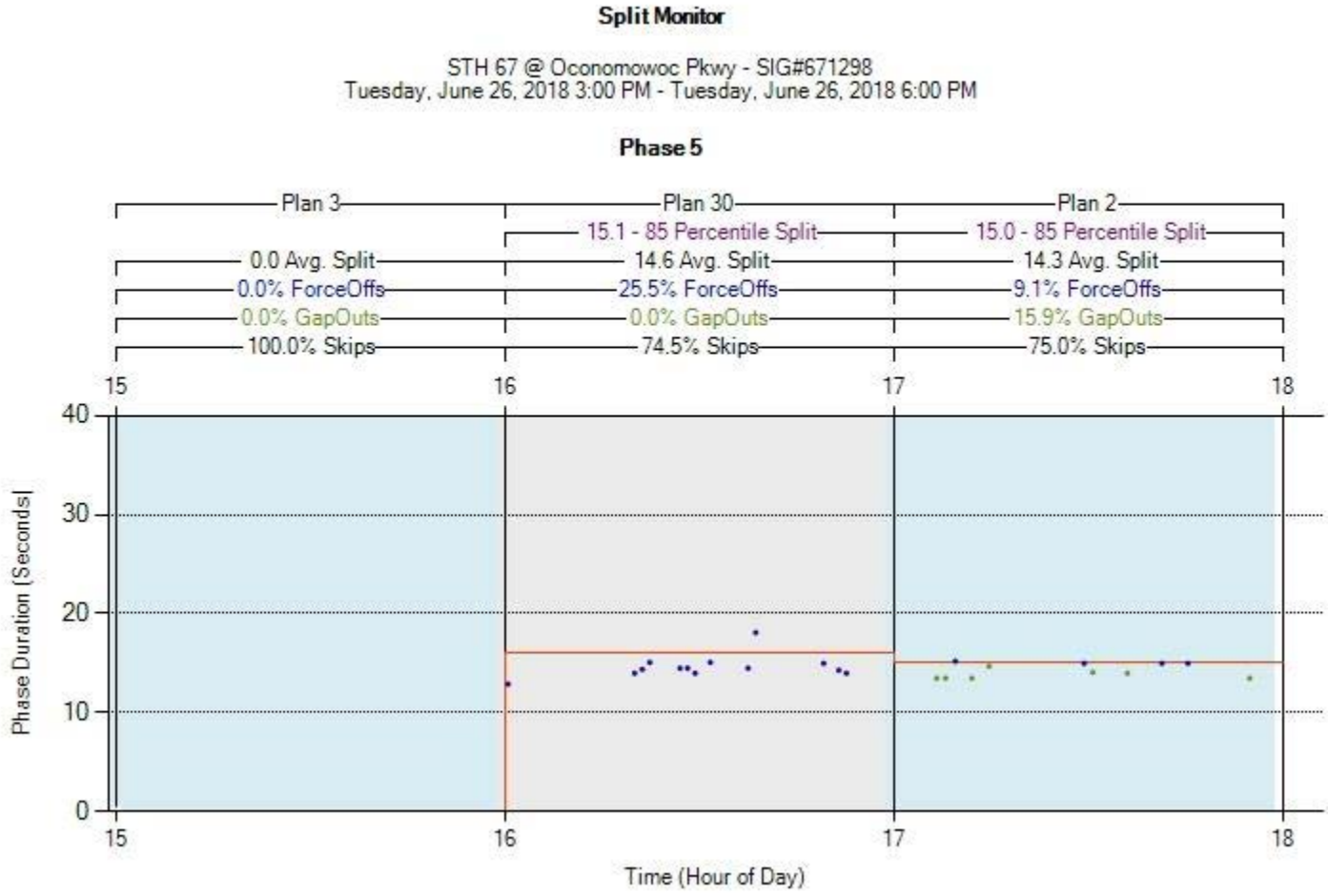
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM

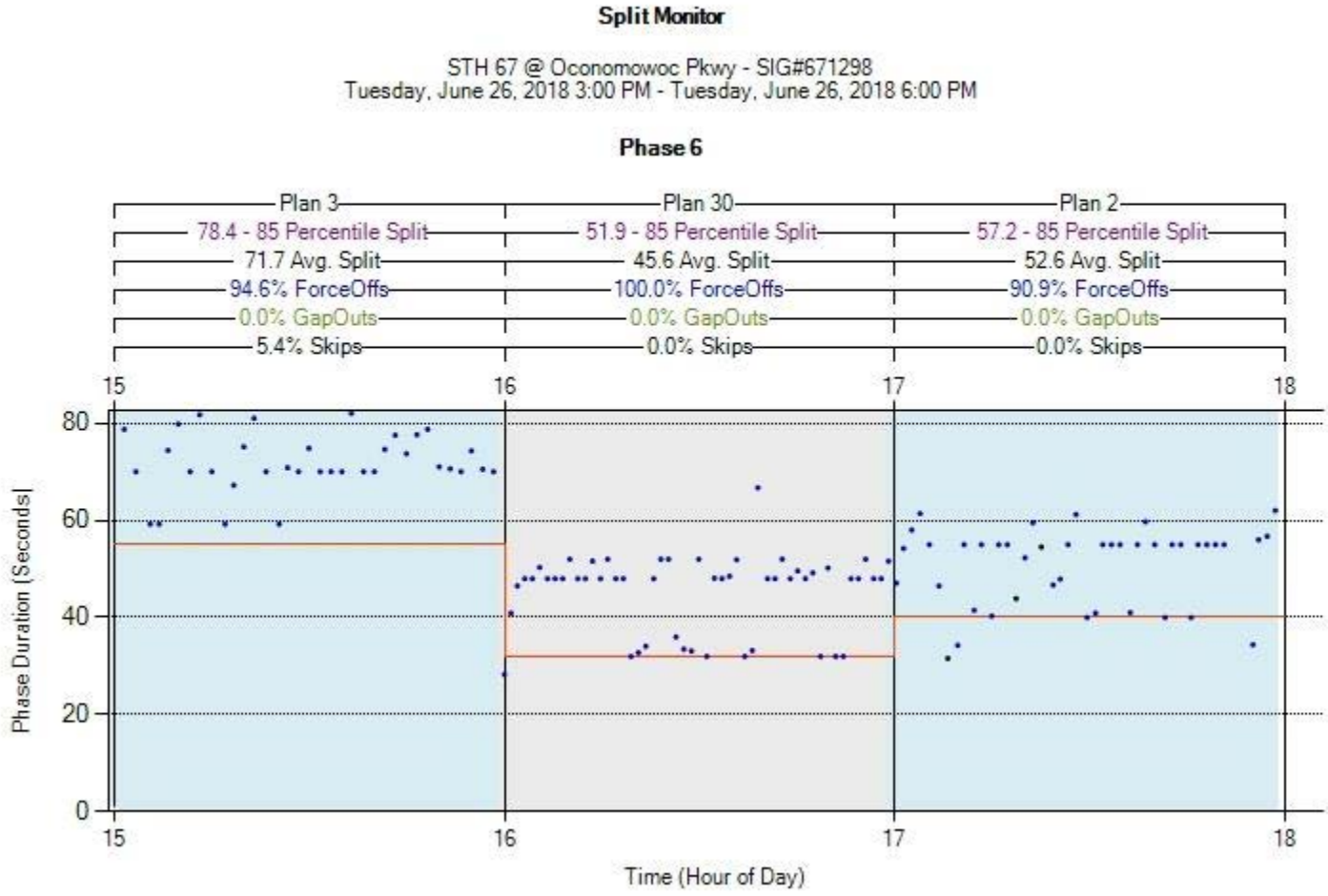


WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM

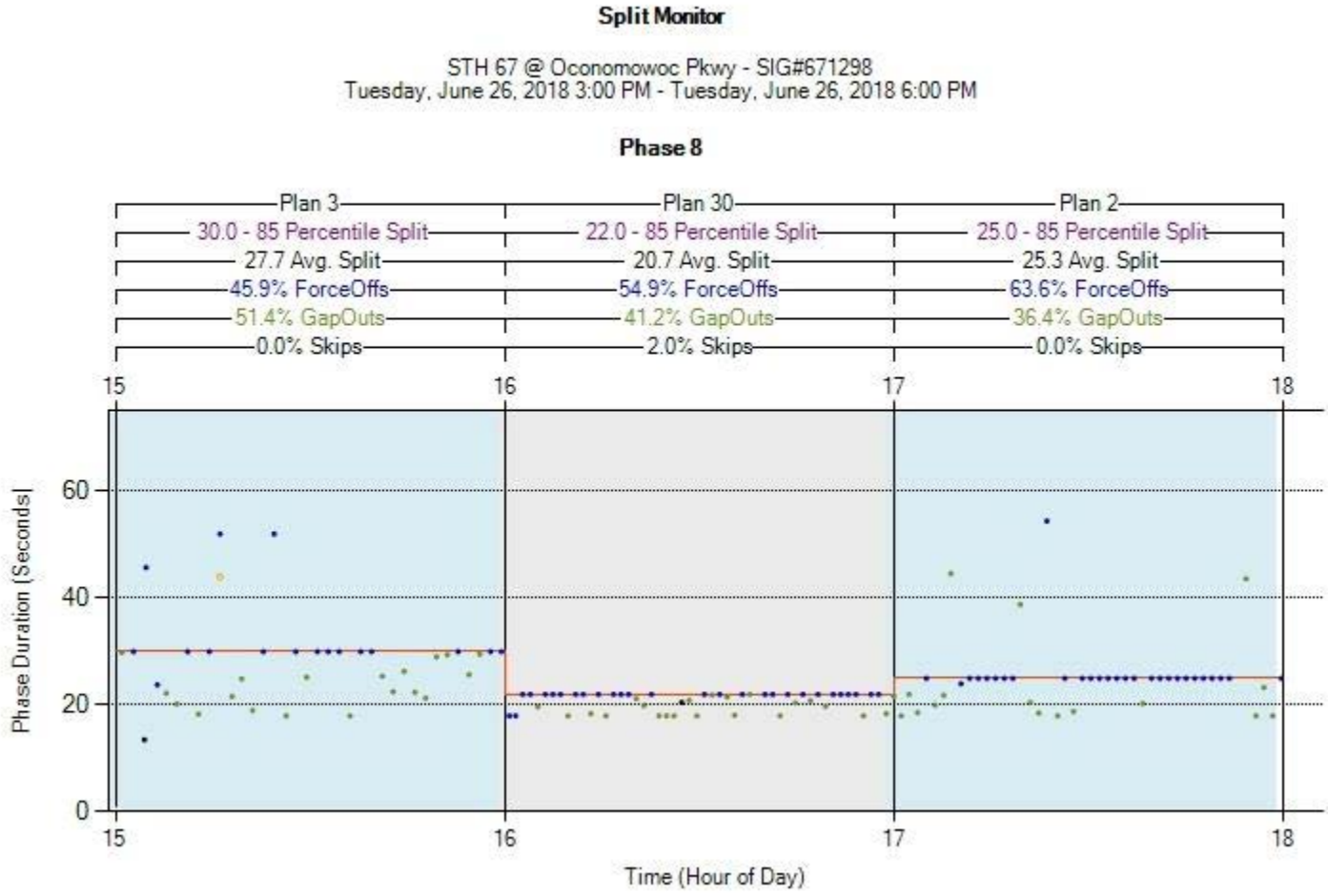


WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM

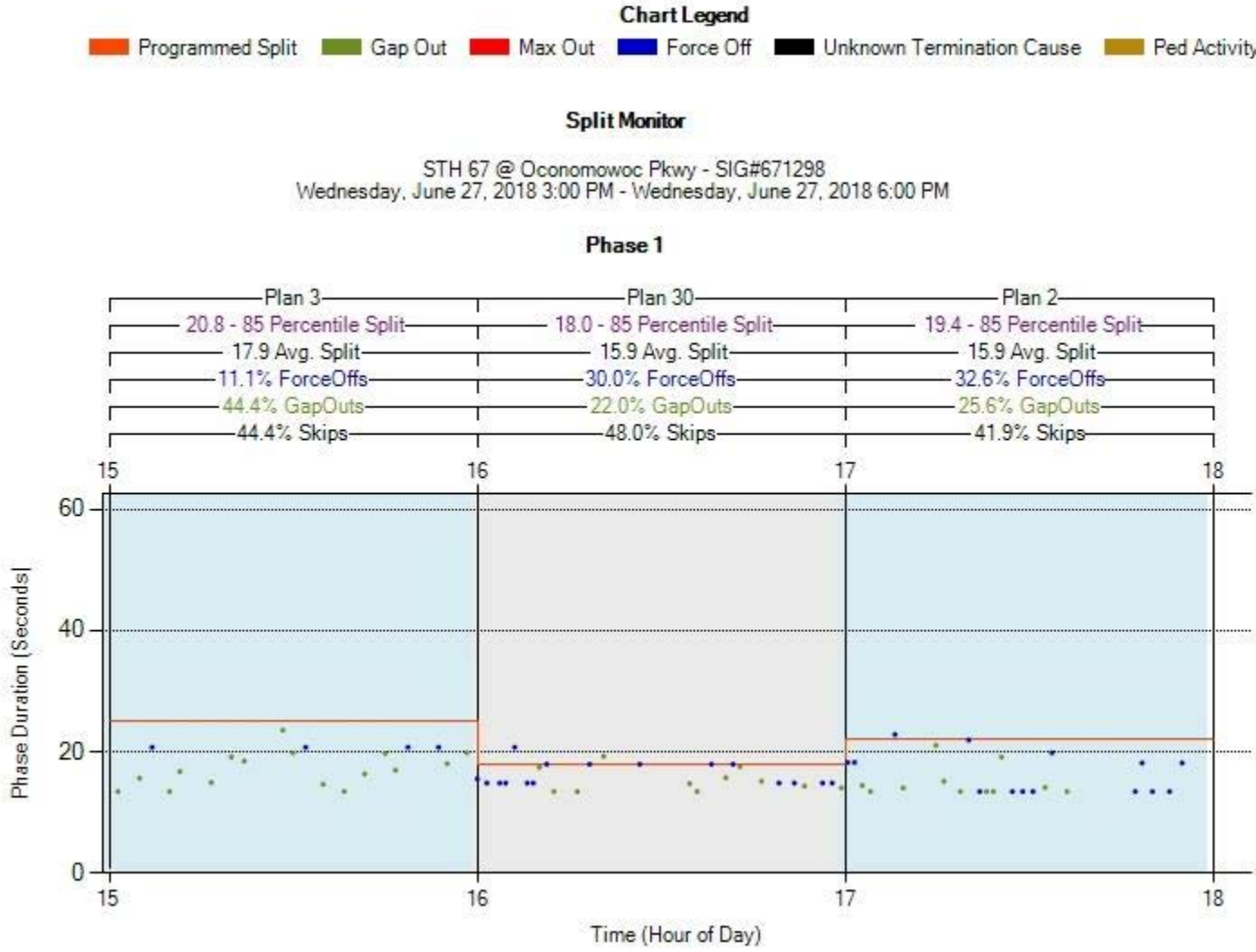



Split Monitor
STH 67 @ Oconomowoc Pkwy - SIG#671298
Tuesday, June 26, 2018 3:00 PM - Tuesday, June 26, 2018 6:00 PM
Phase 6
Plan 3
78.4 - 85 Percentile Split
71.7 Avg. Split
94.6% ForceOffs
0.0% GapOuts
5.4% Skips
Plan 30
51.9 - 85 Percentile Split
45.6 Avg. Split
100.0% ForceOffs
0.0% GapOuts
0.0% Skips
Plan 2
57.2 - 85 Percentile Split
52.6 Avg. Split
90.9% ForceOffs
0.0% GapOuts
0.0% Skips
Phase Duration (Seconds)
Time (Hour of Day)

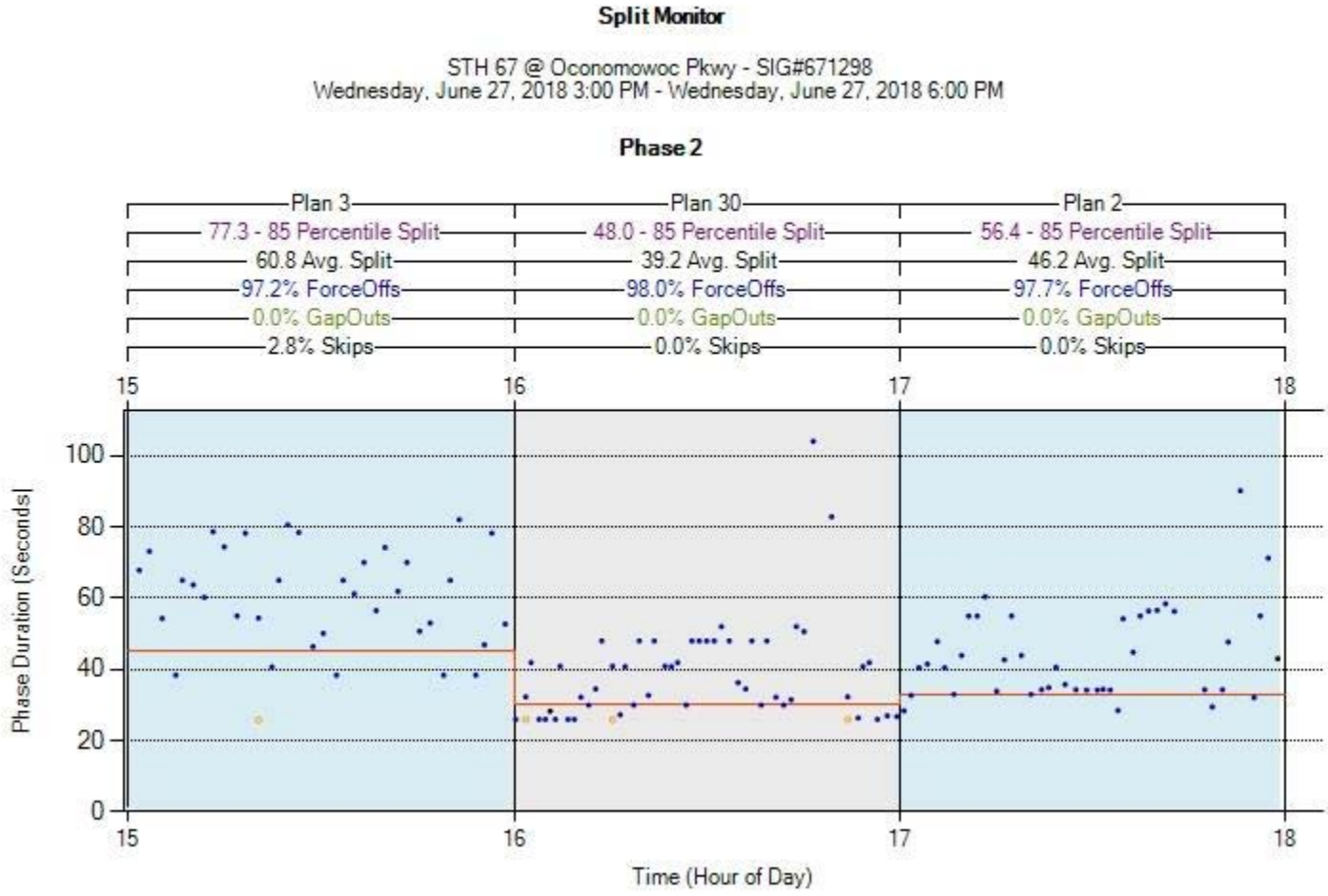
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM



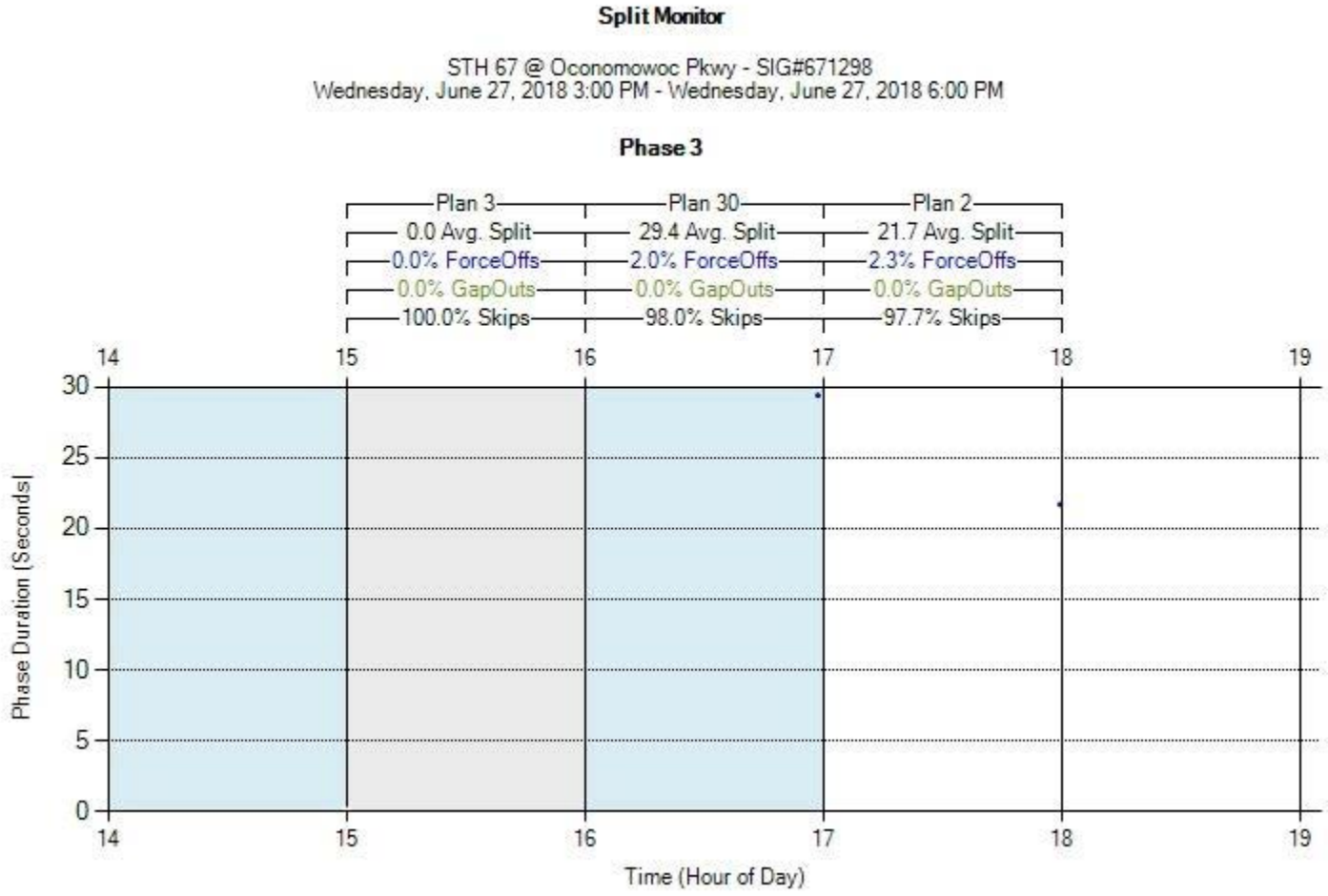
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM



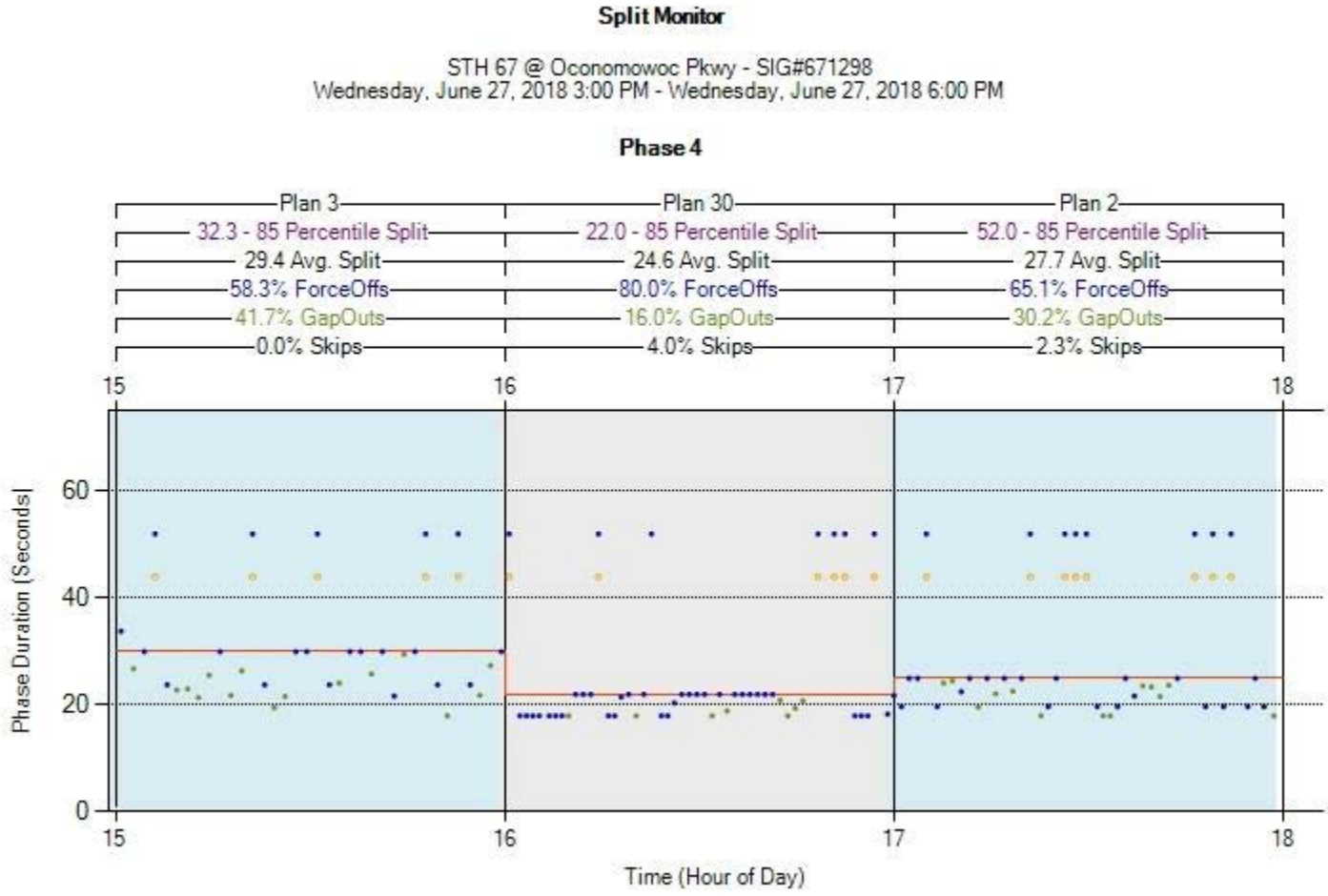
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM



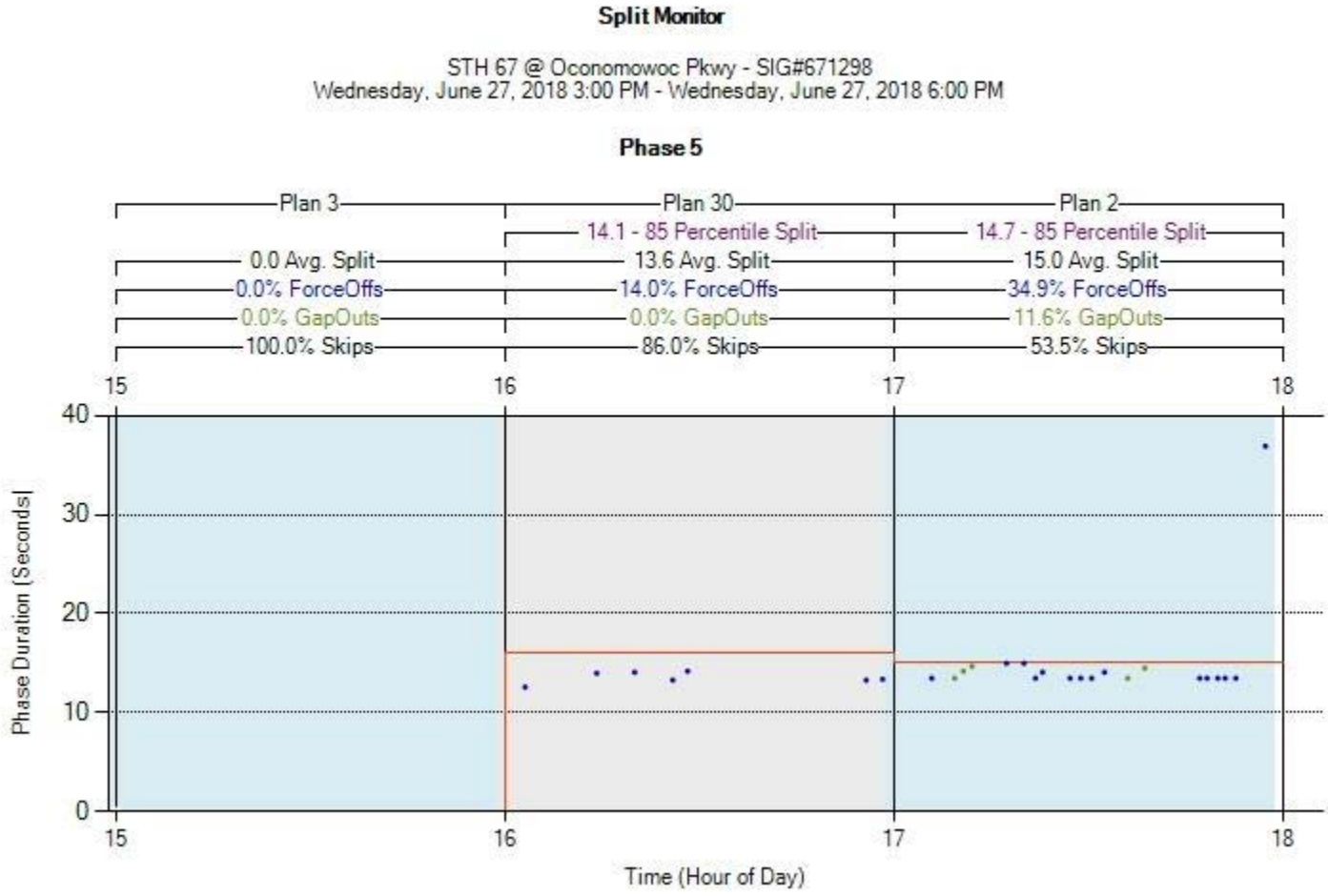
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM



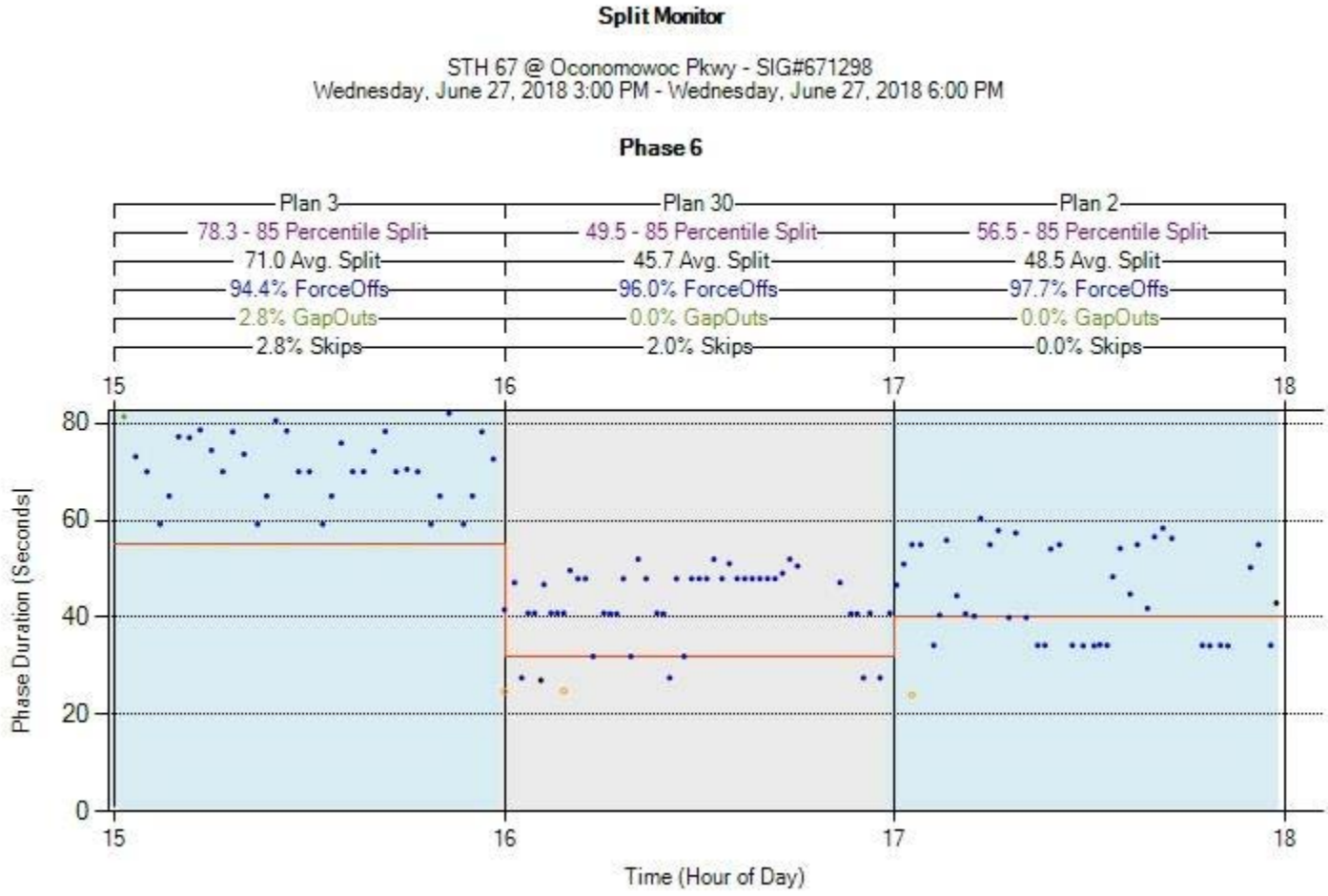
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM



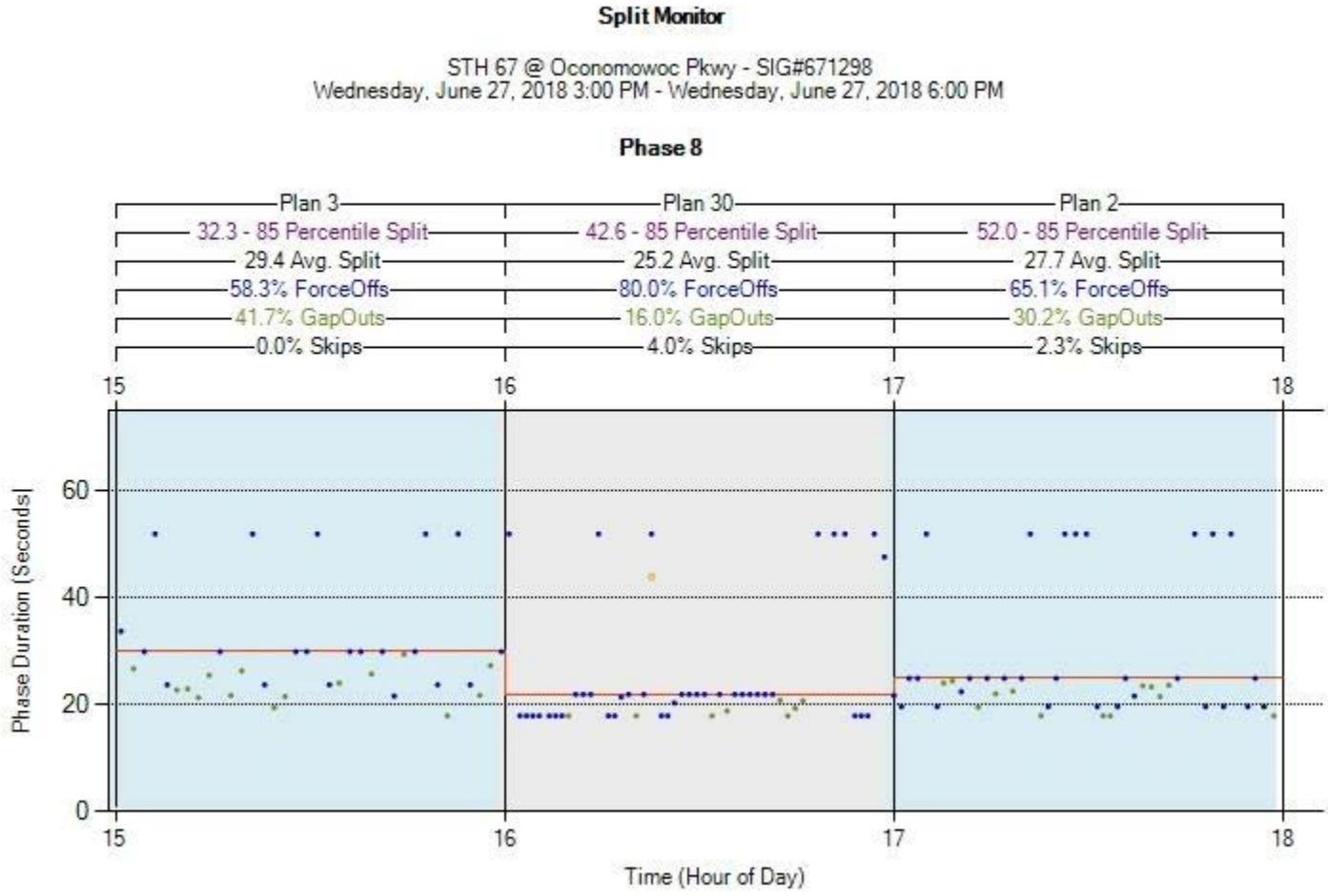
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM



WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM

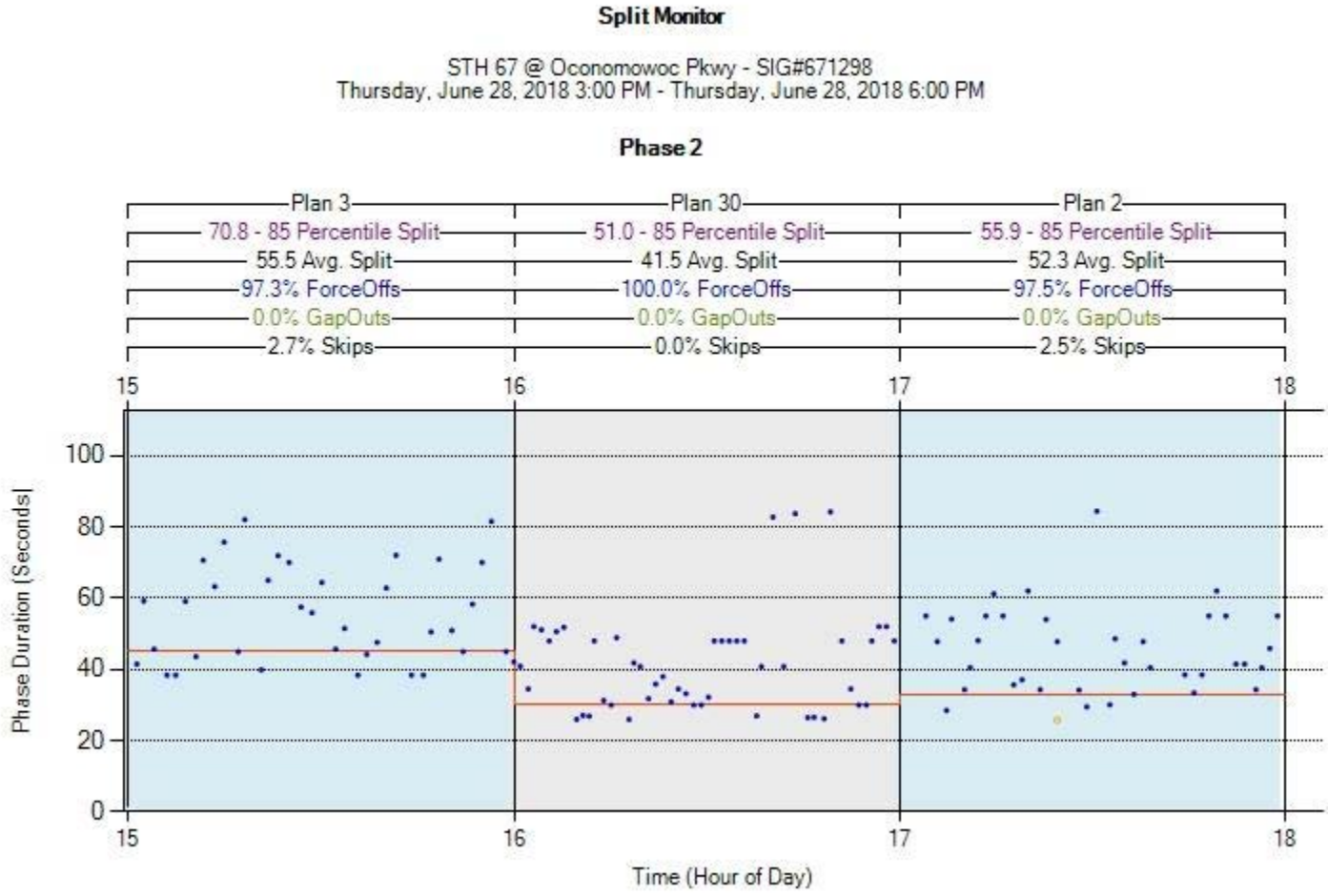


WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM

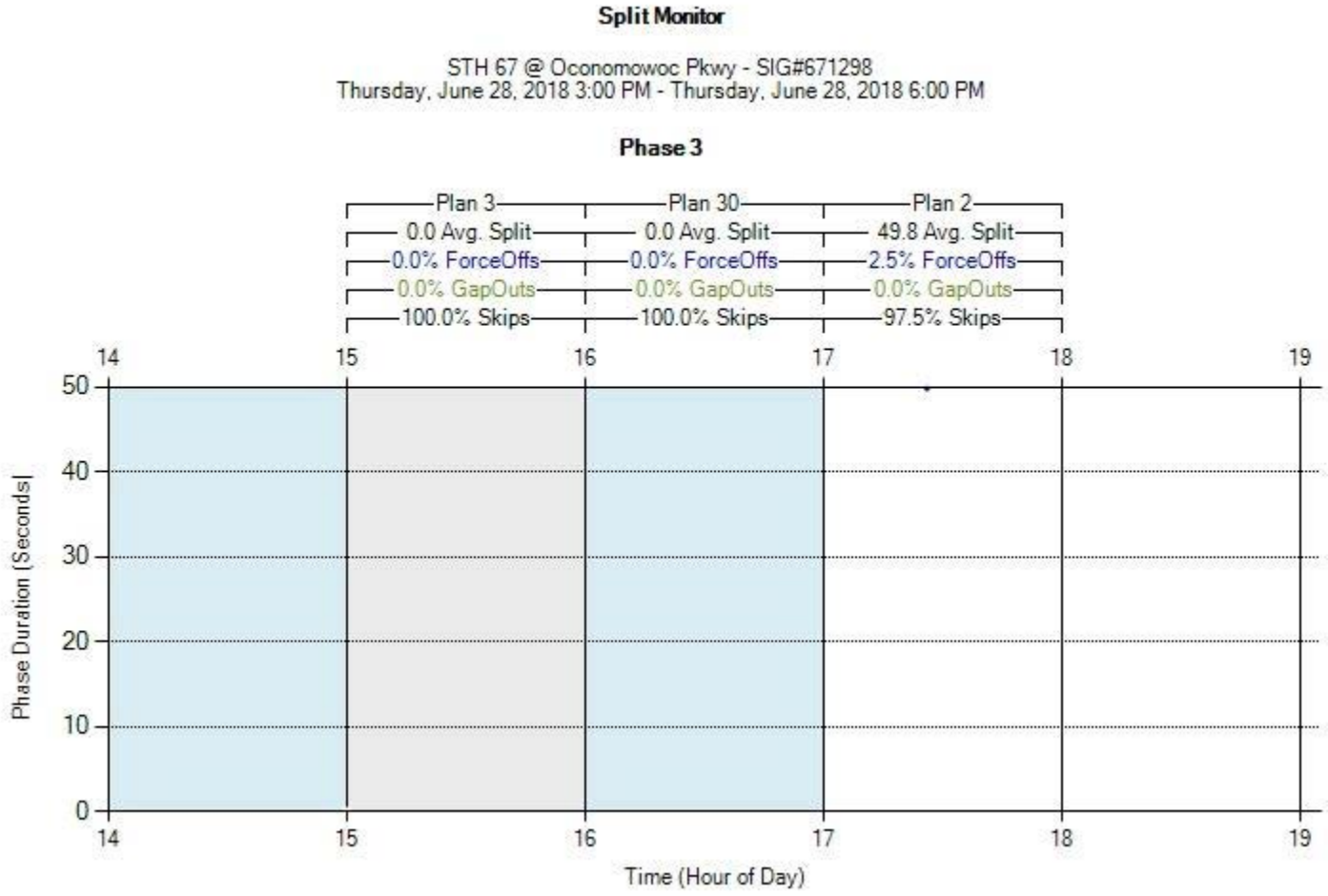


WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM

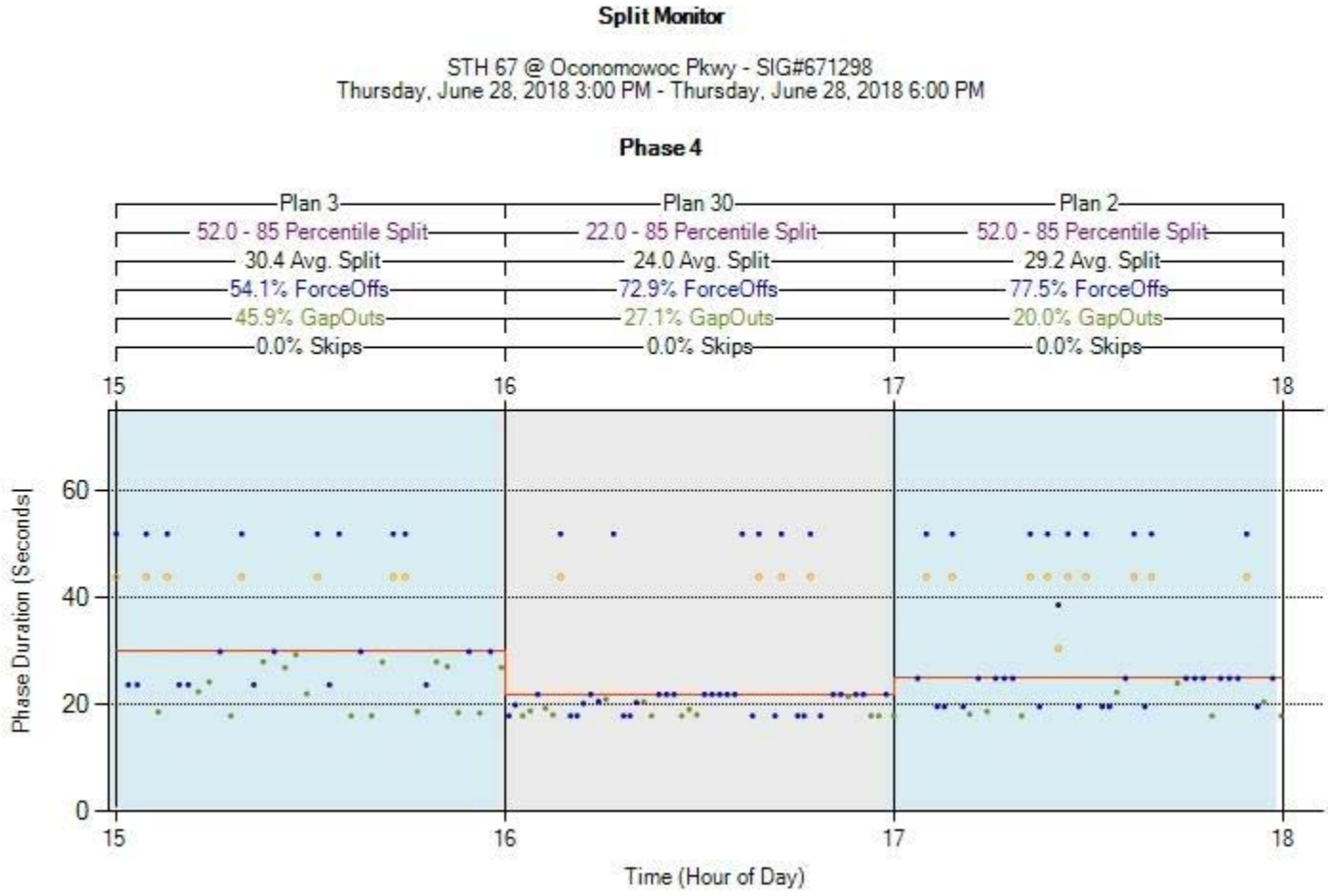
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM



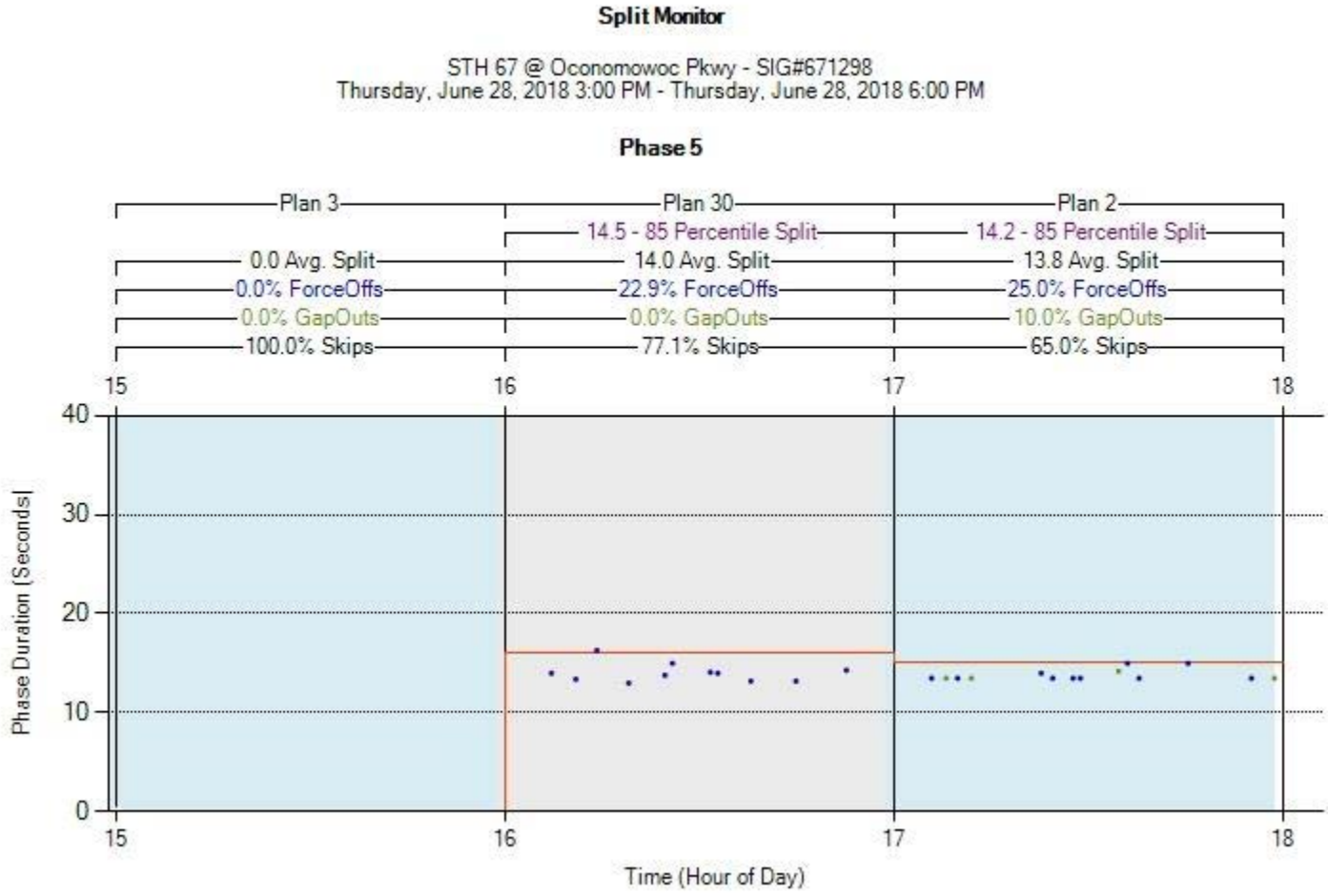
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM



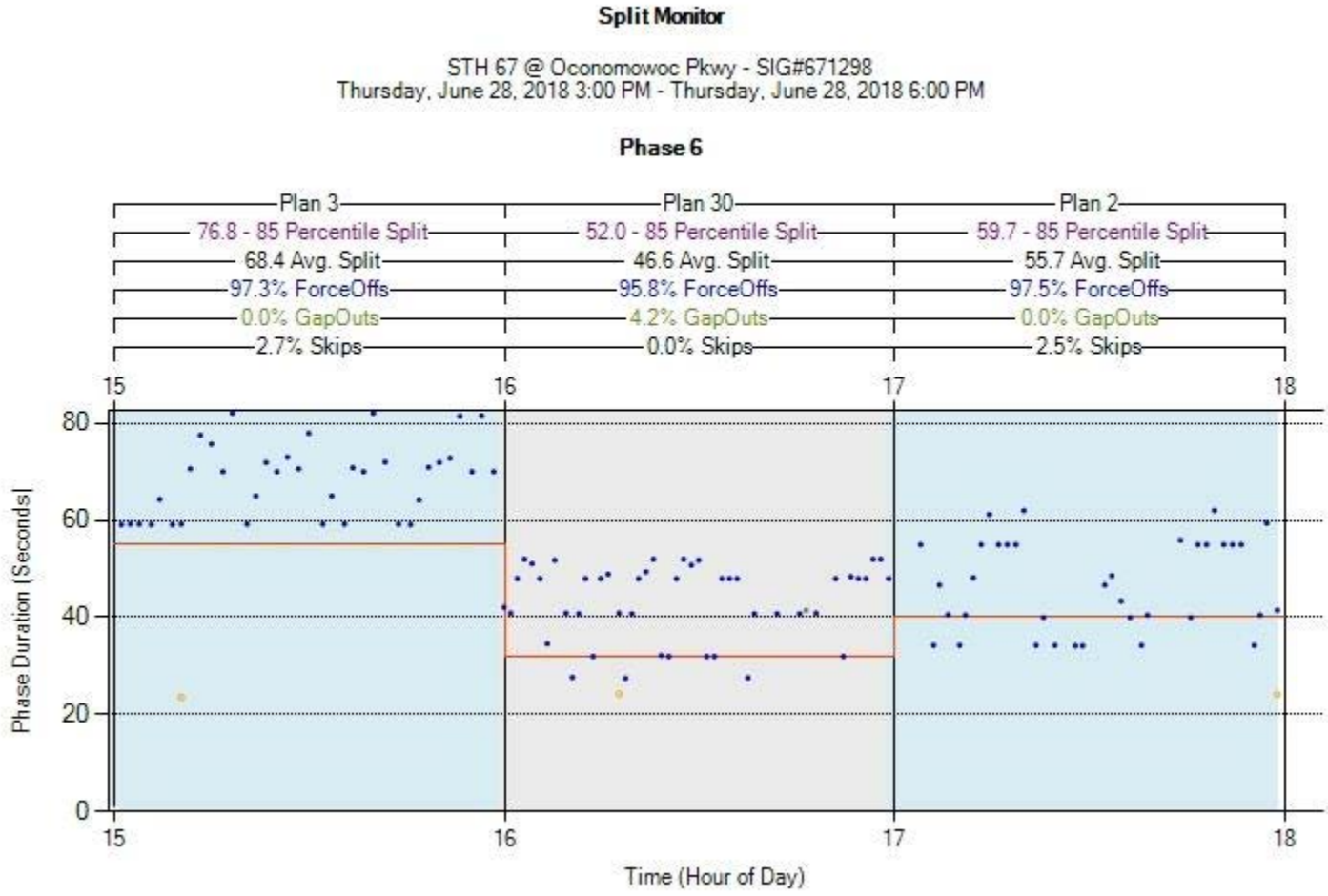
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM



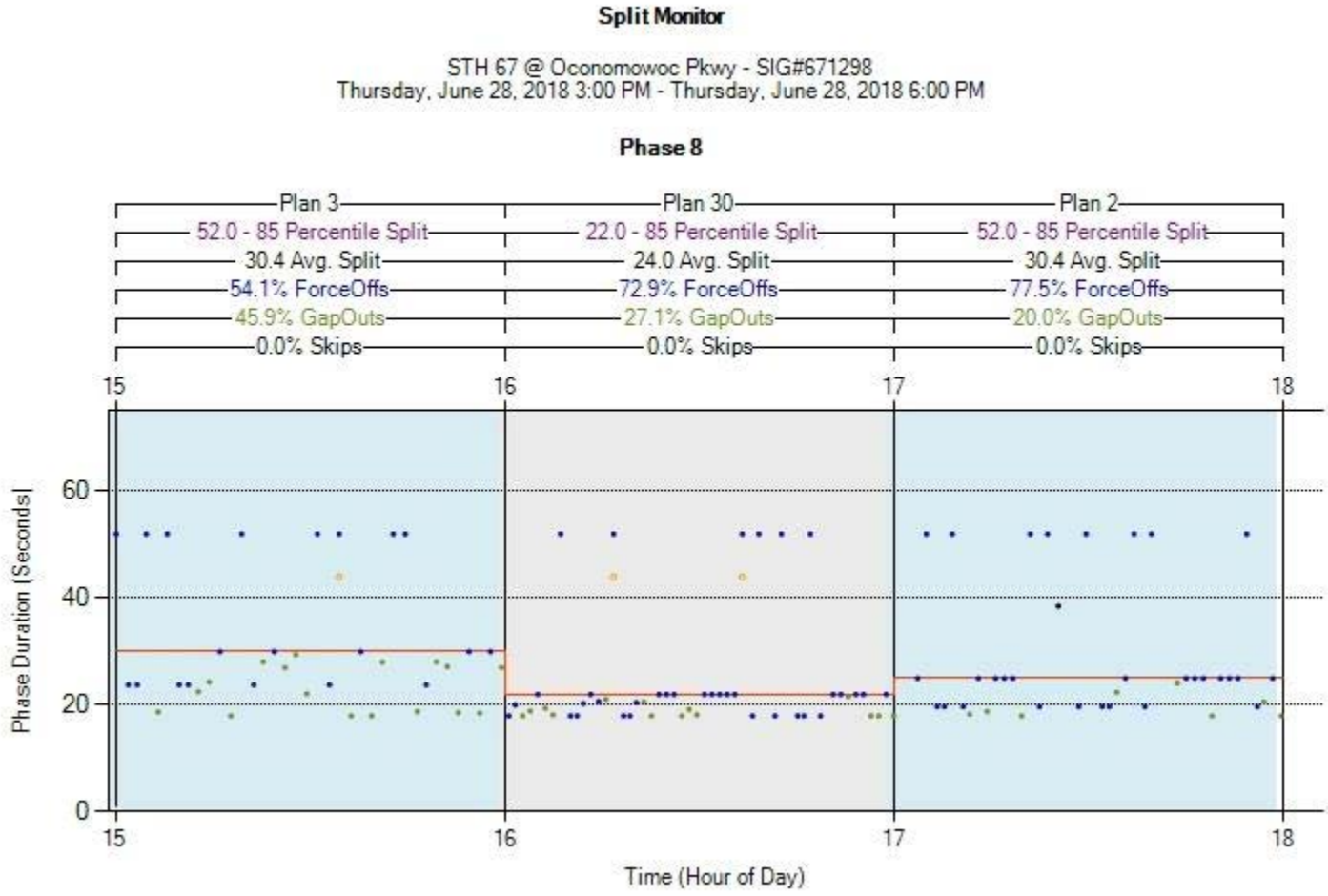
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM



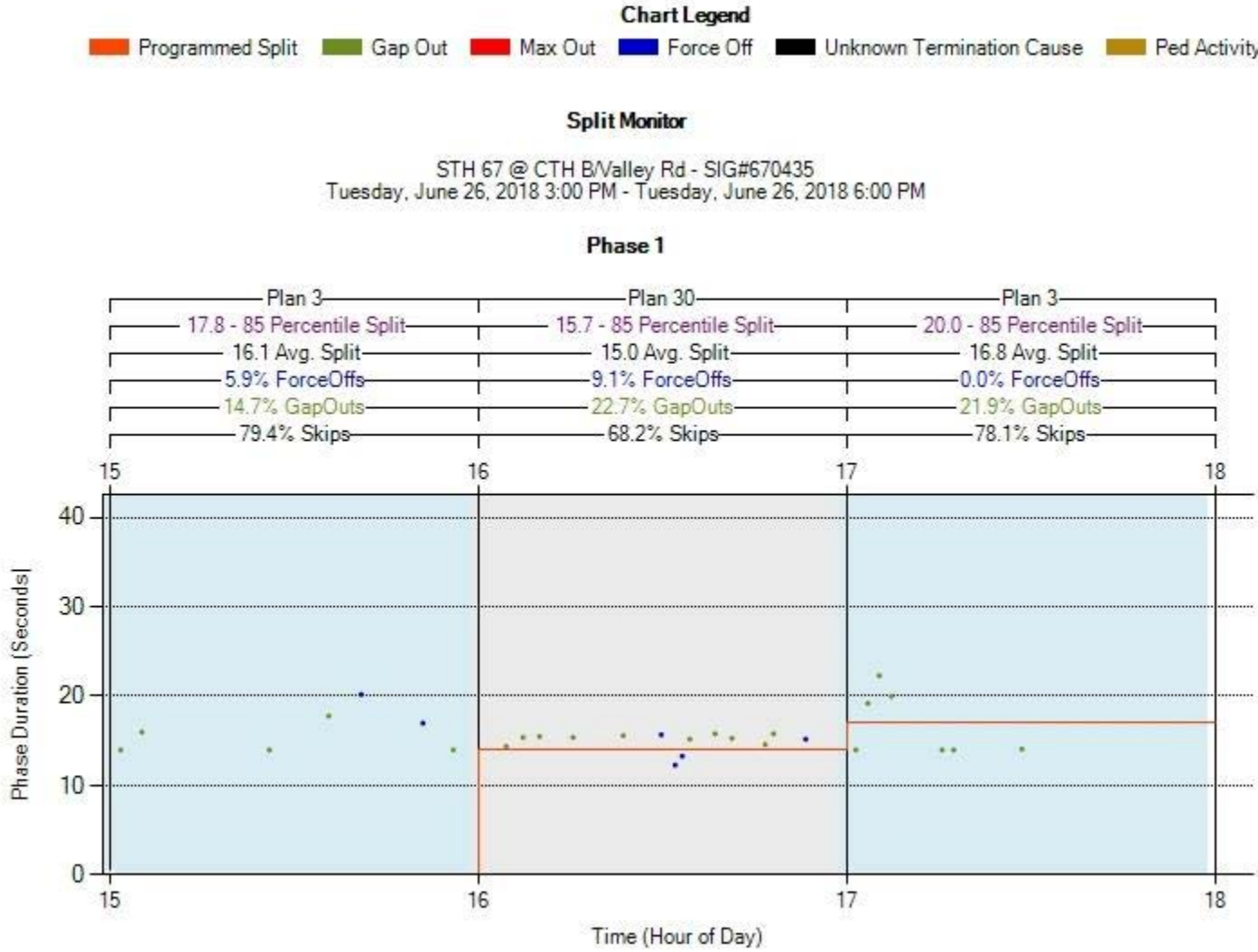
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM



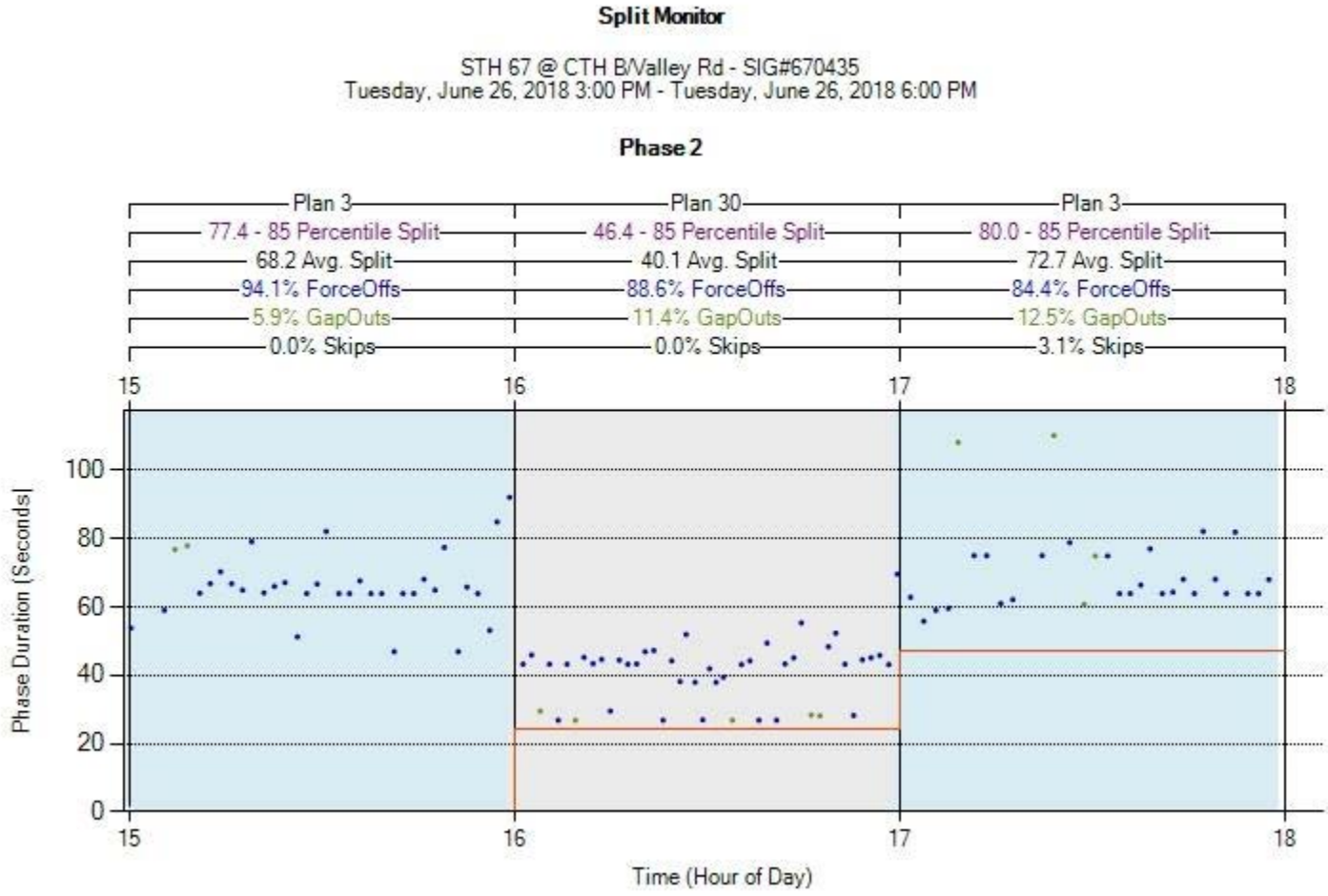
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM



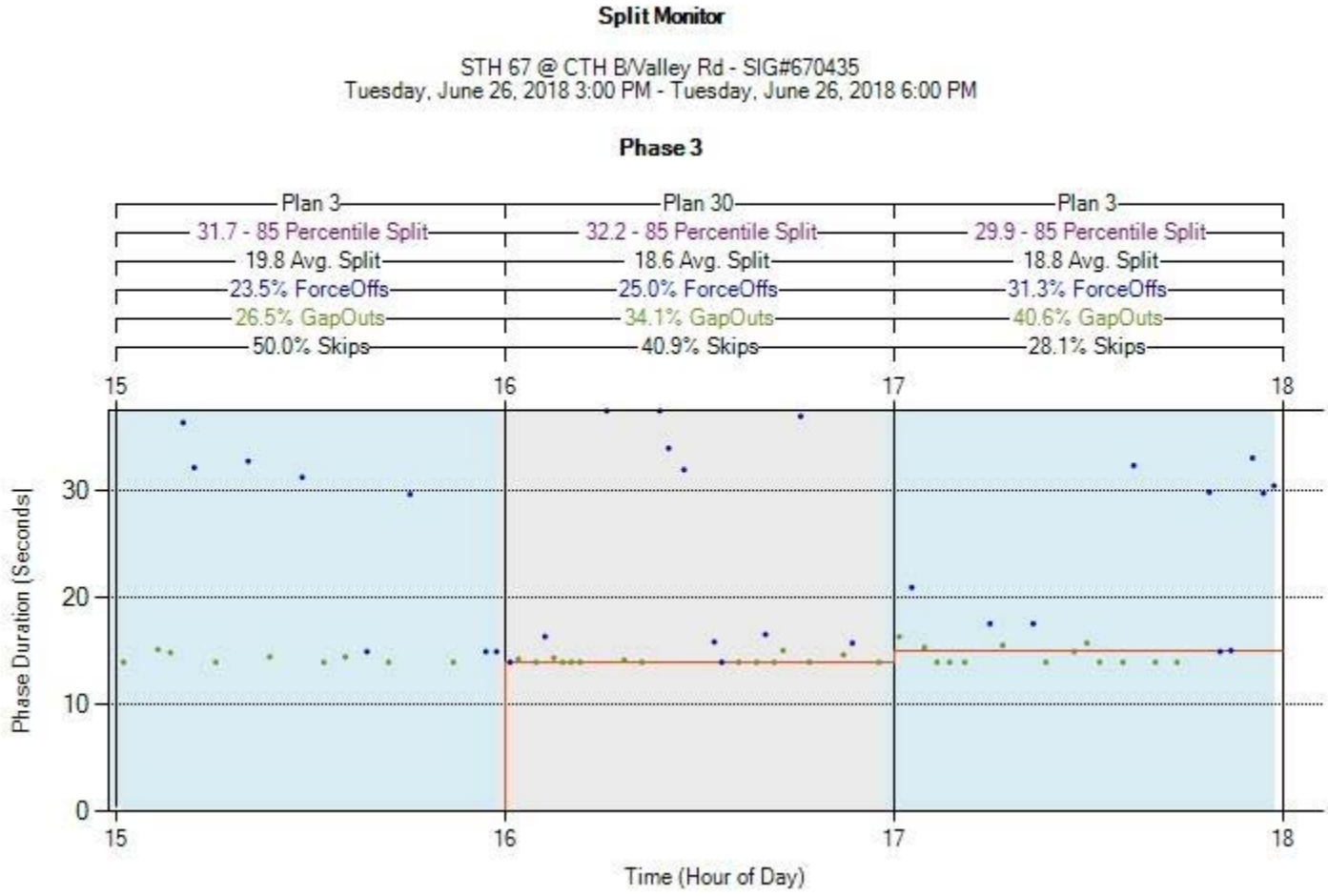
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM



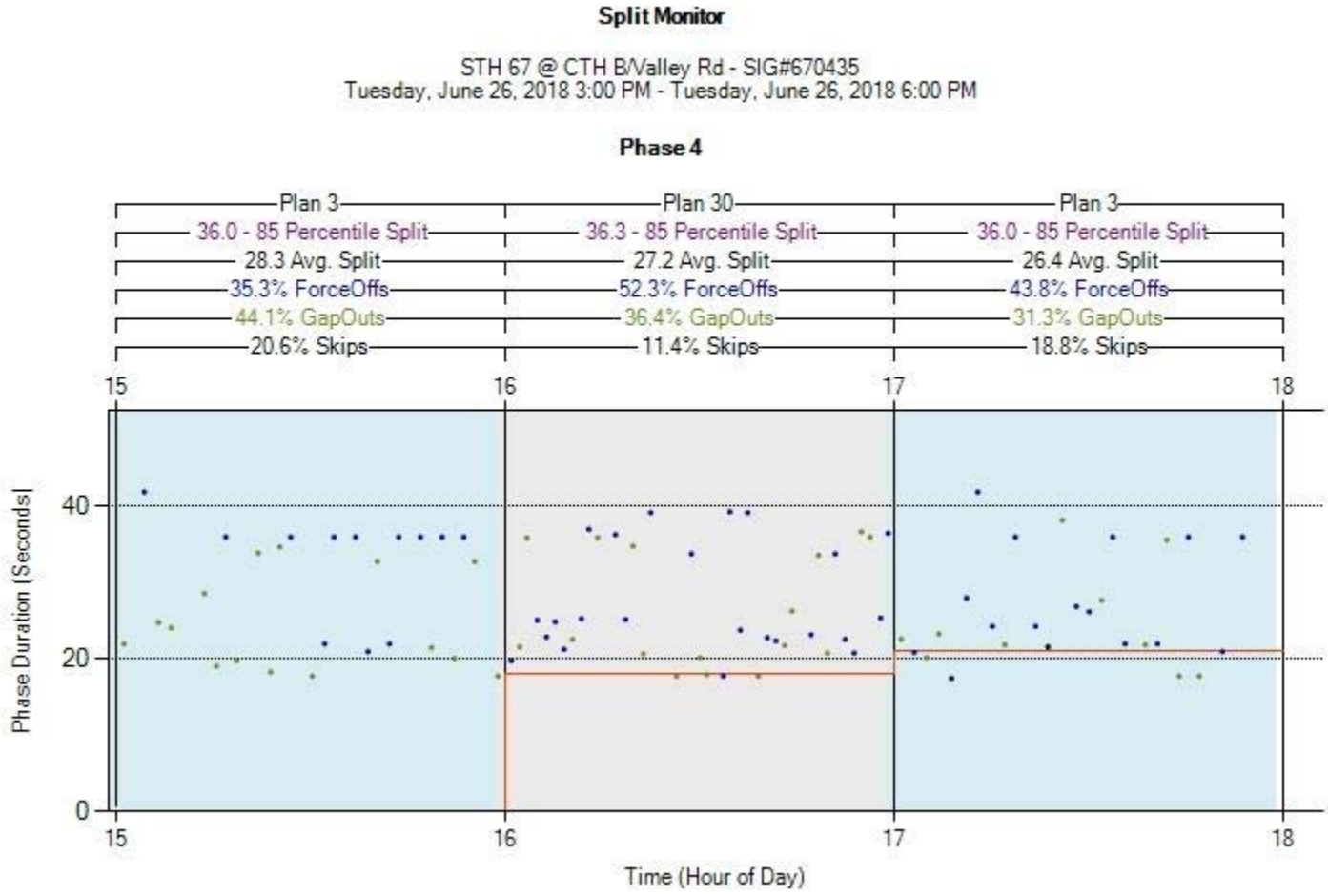
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM



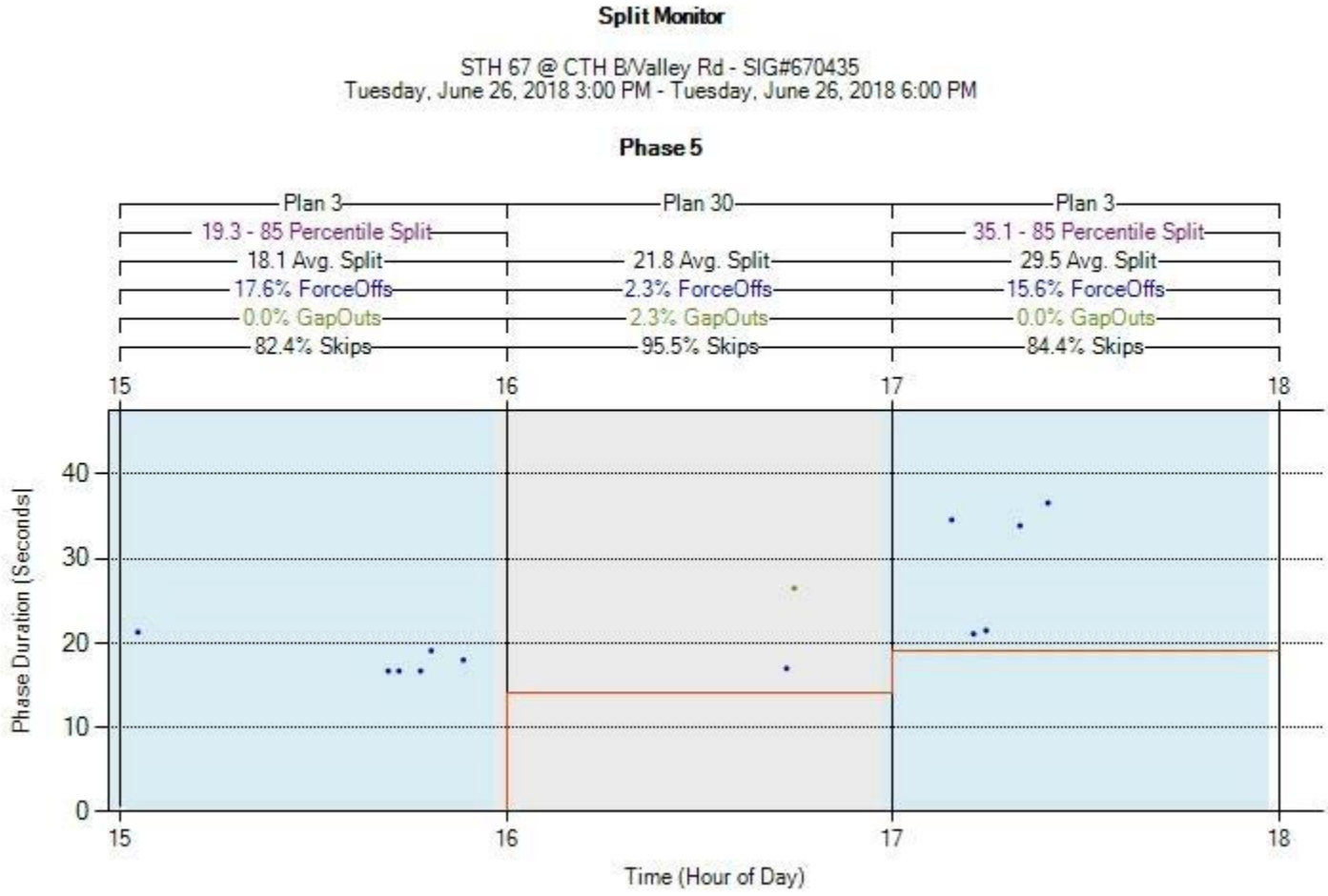
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM



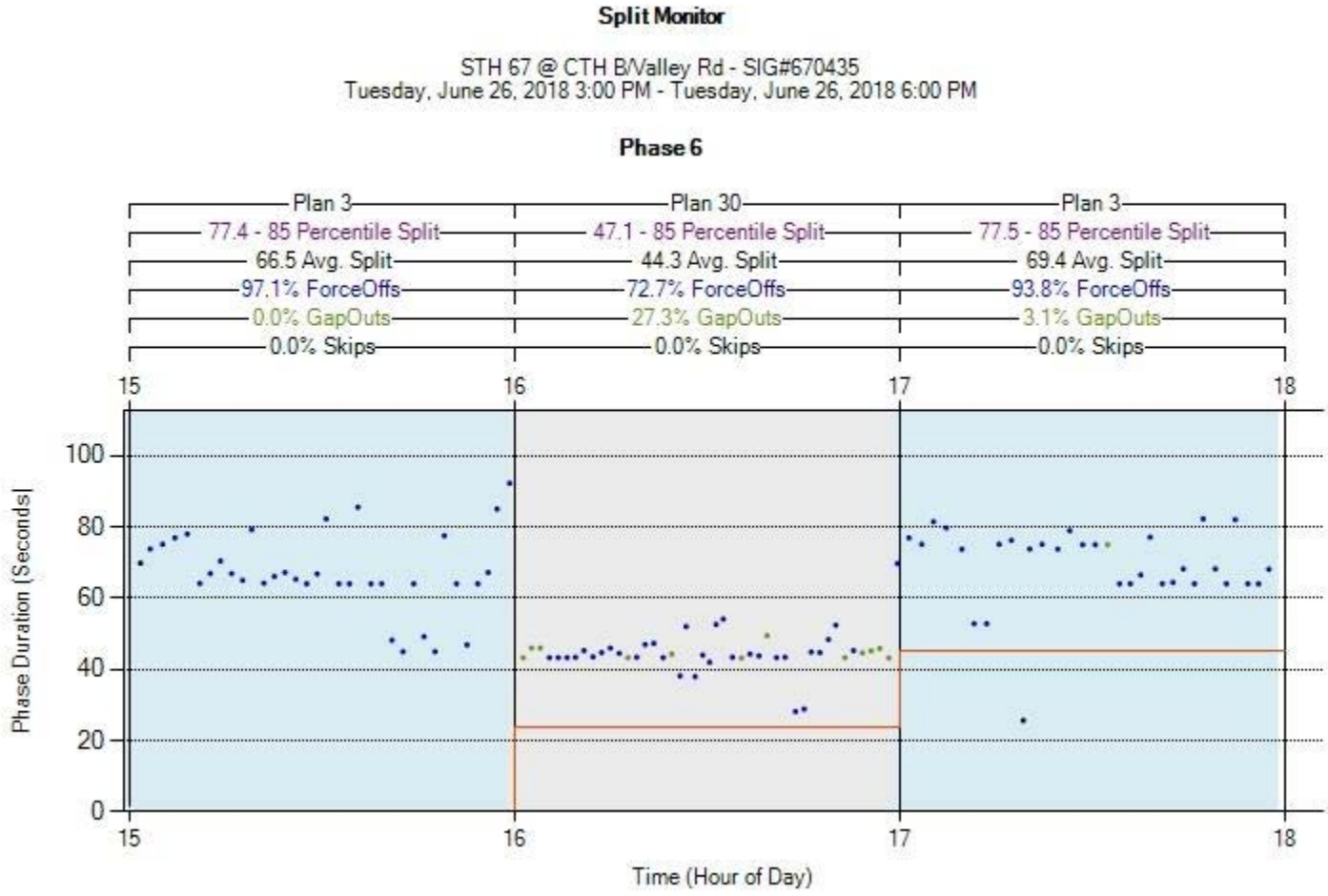
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM



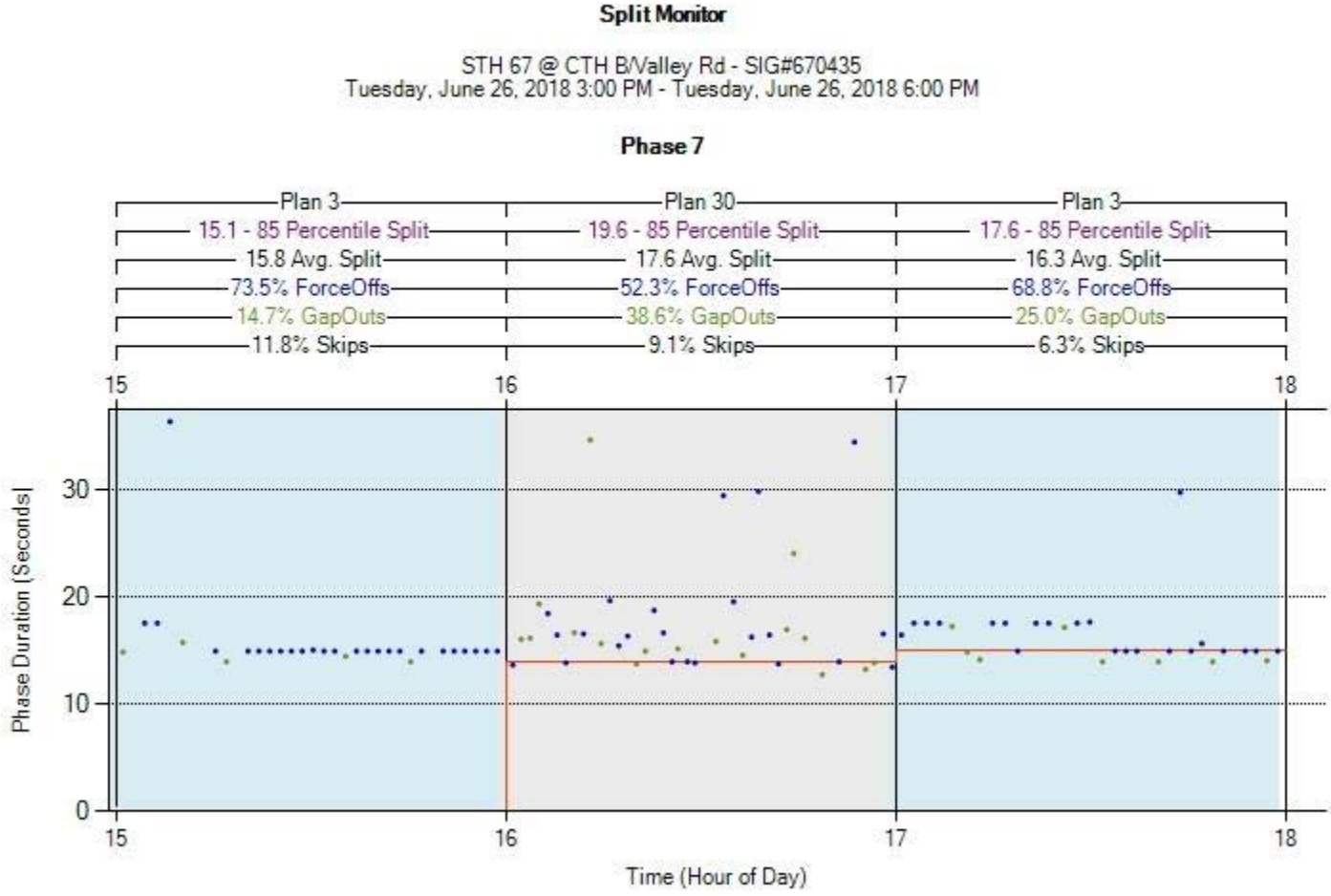
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM



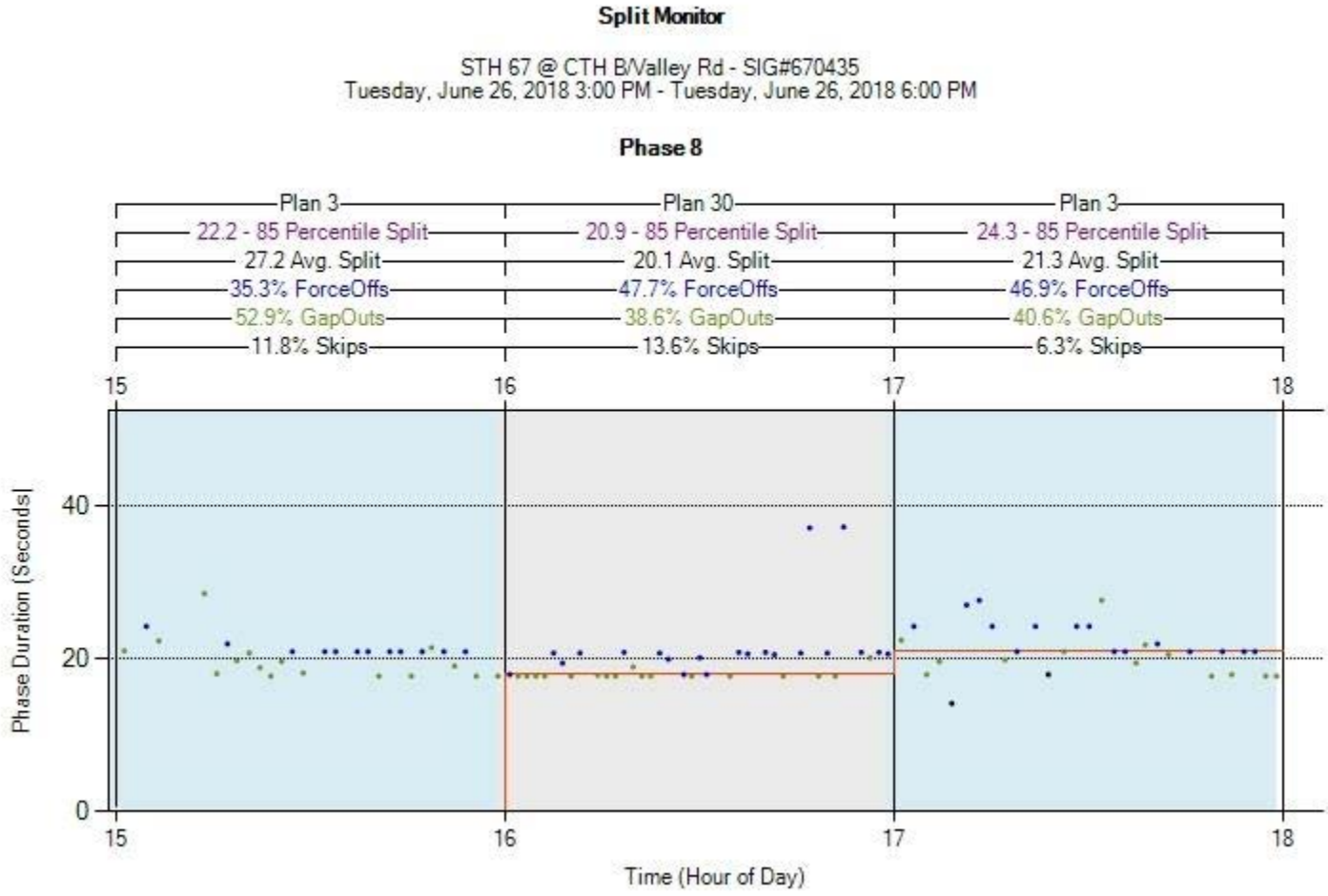
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM



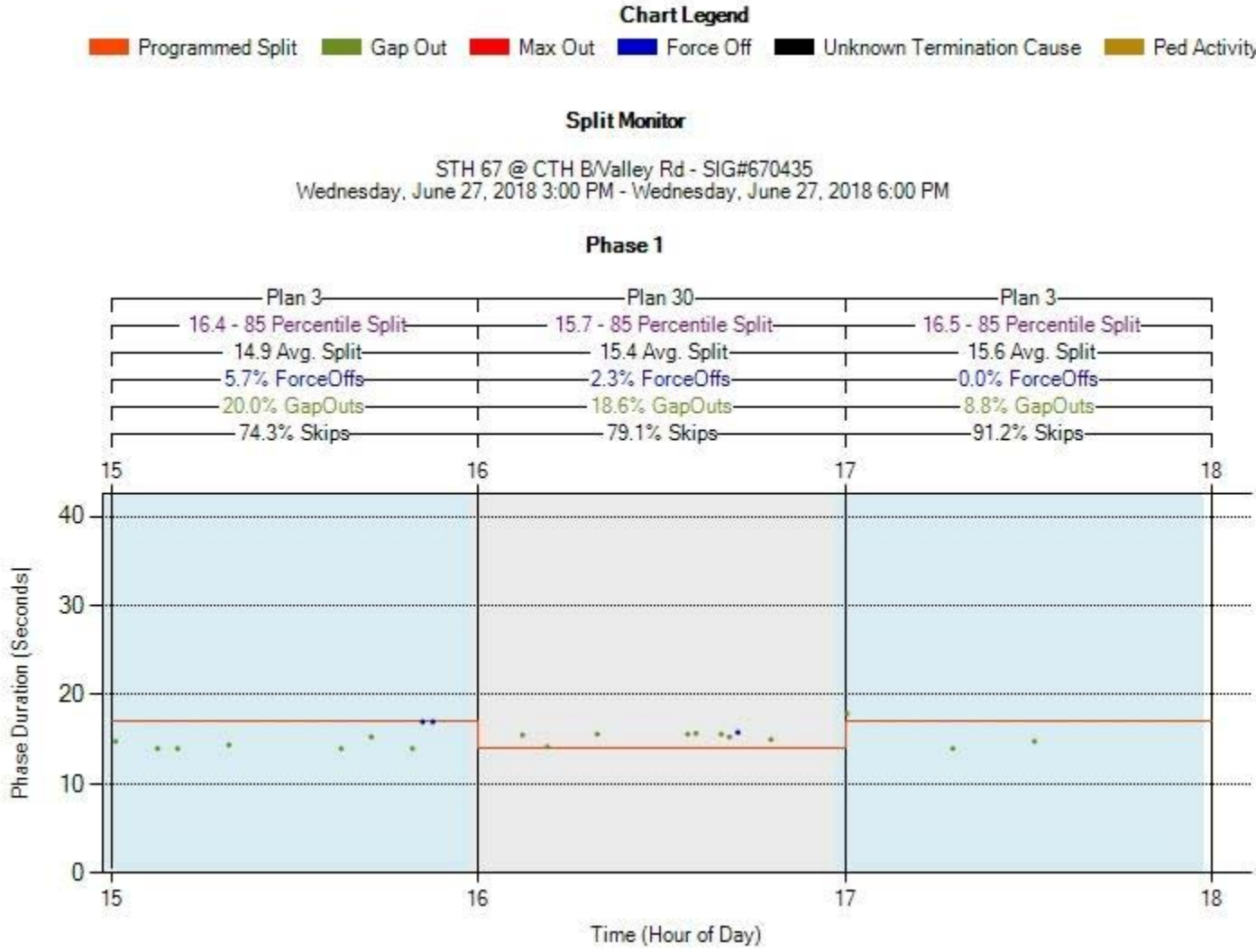
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM



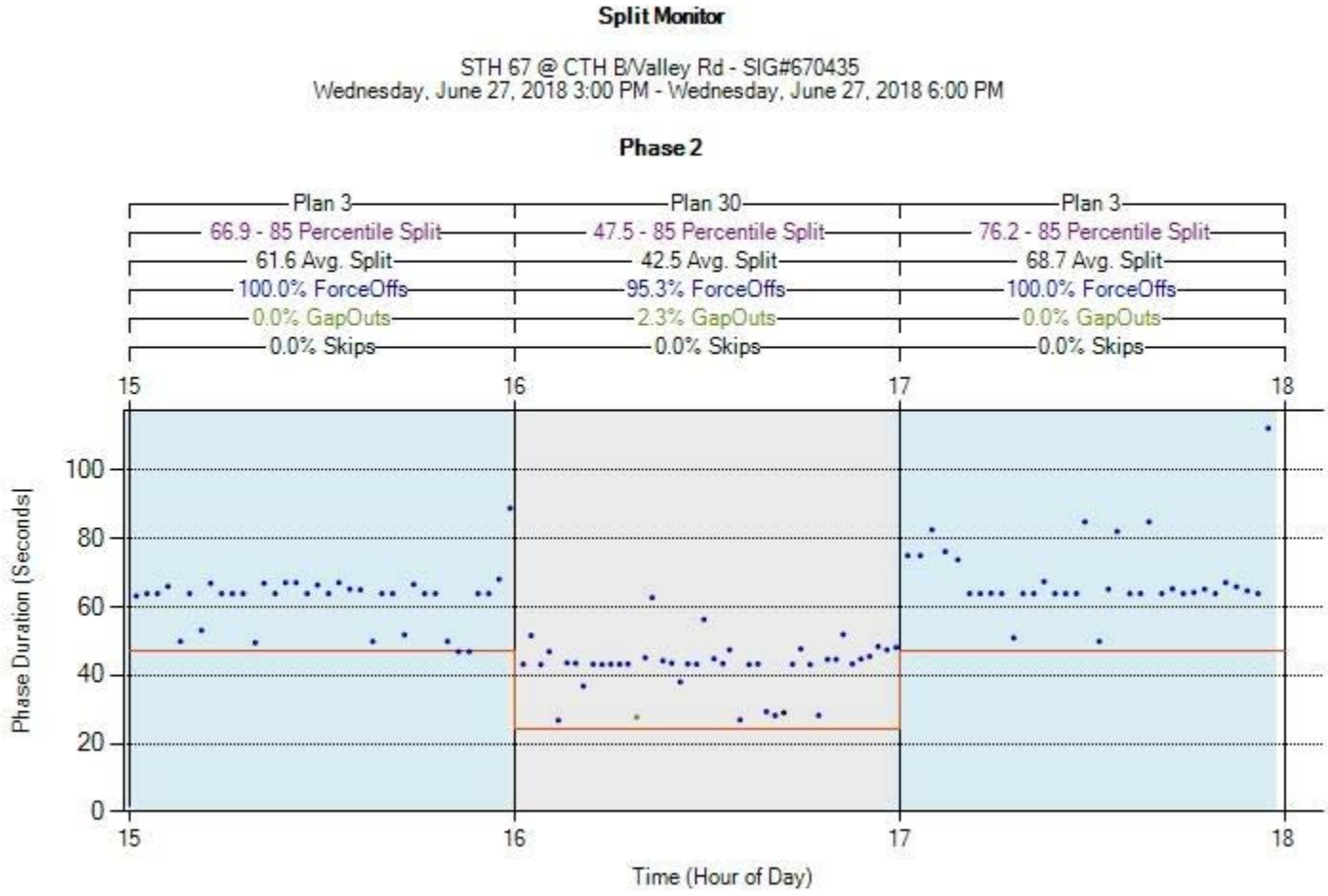
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM



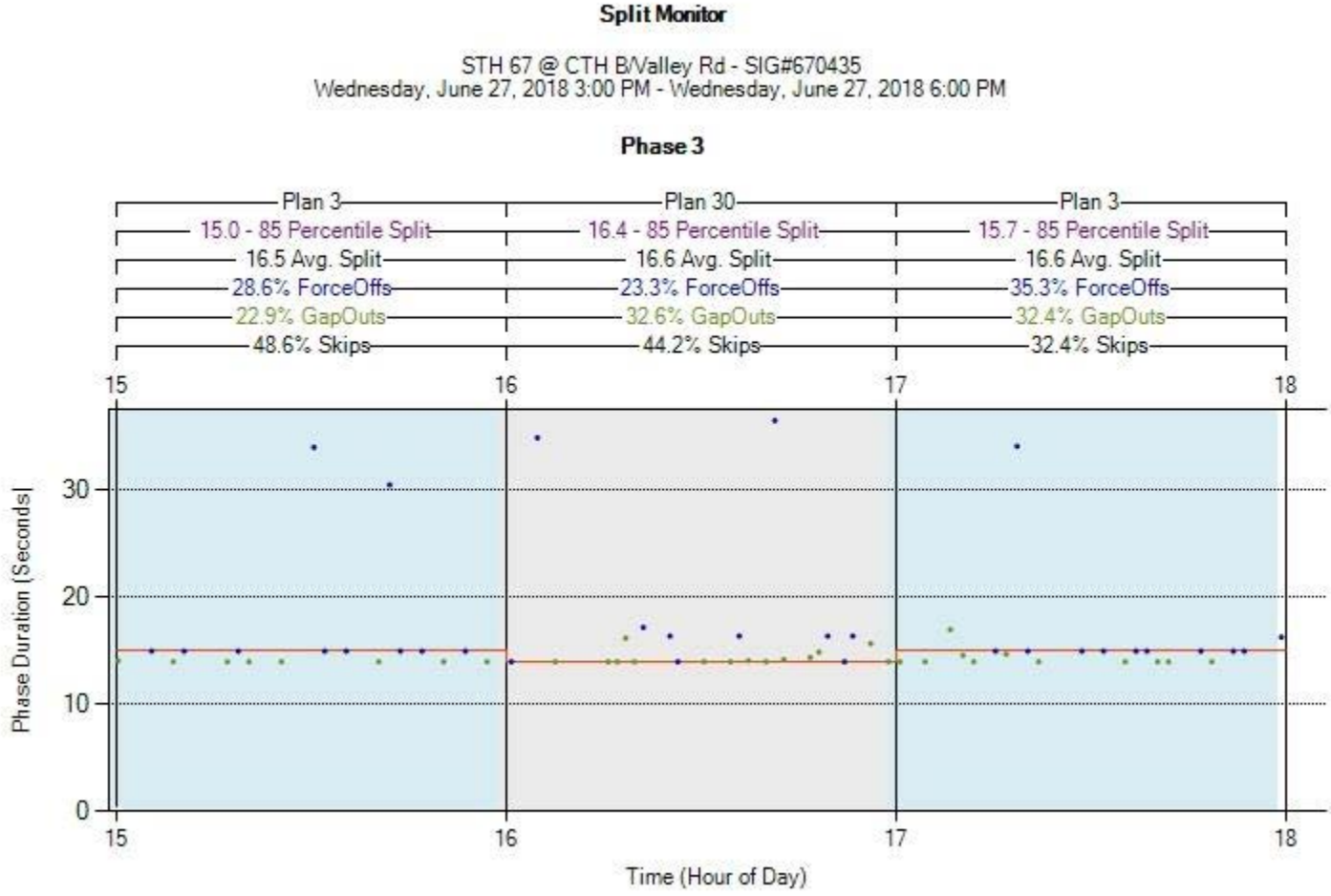
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM



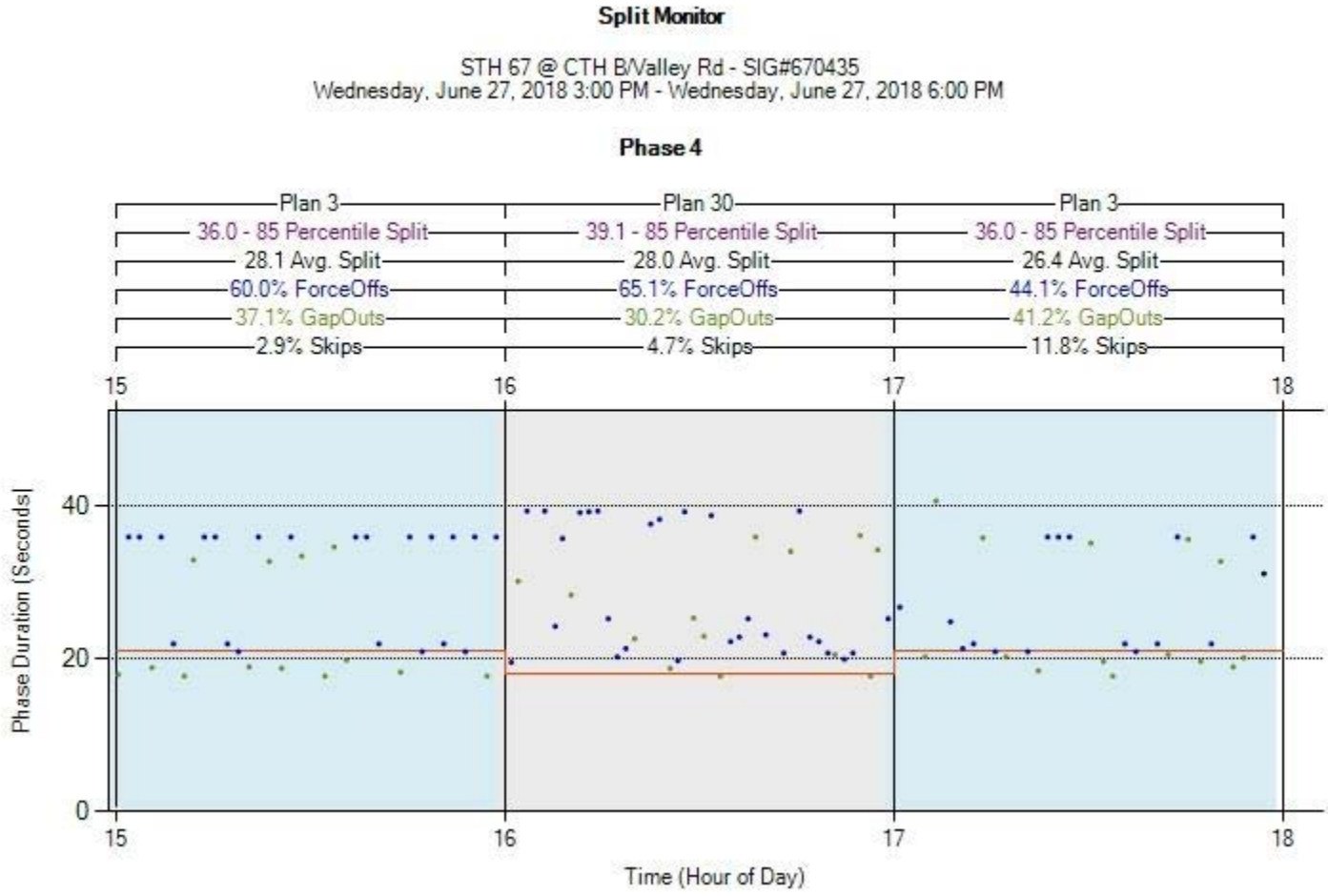
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM



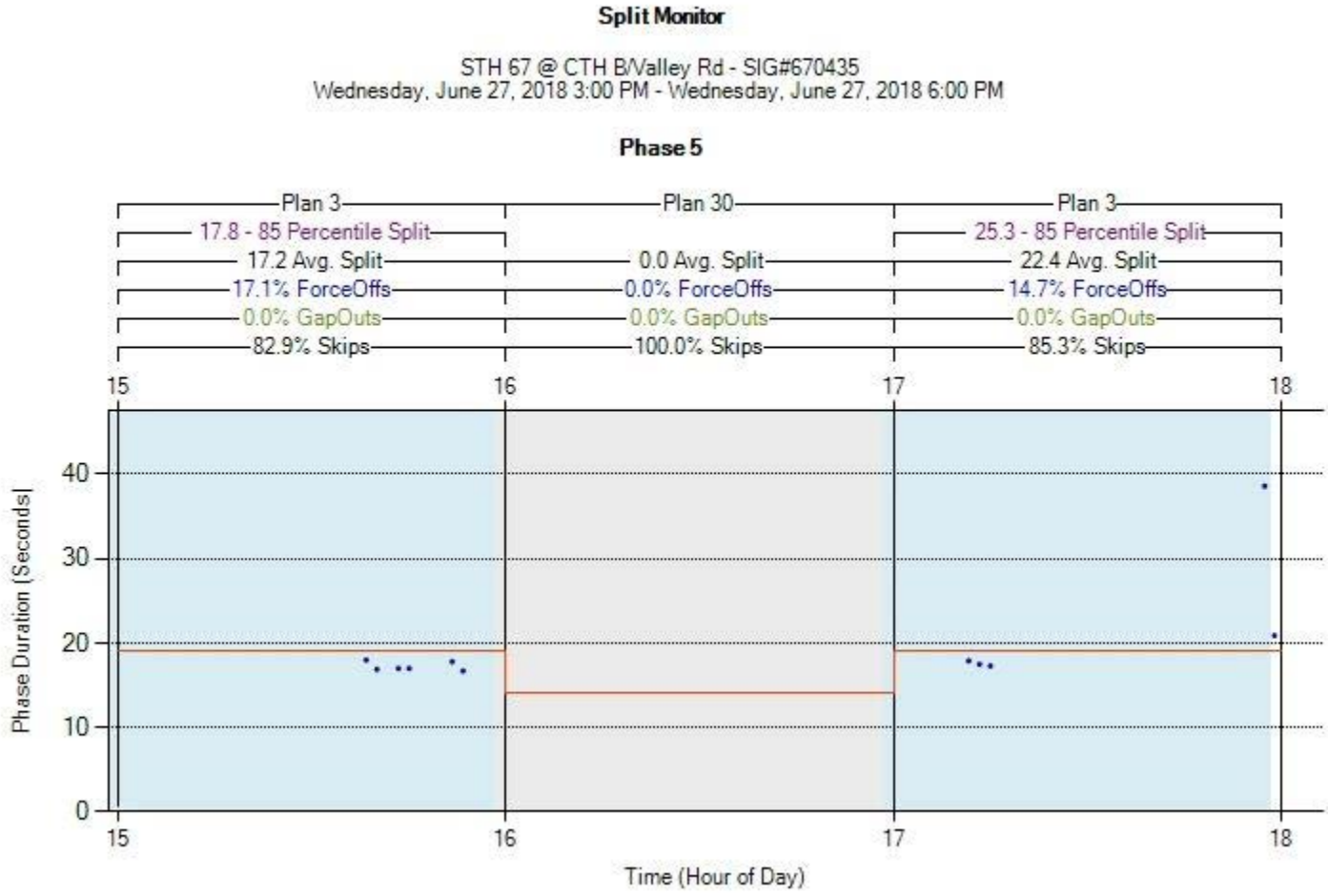
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM



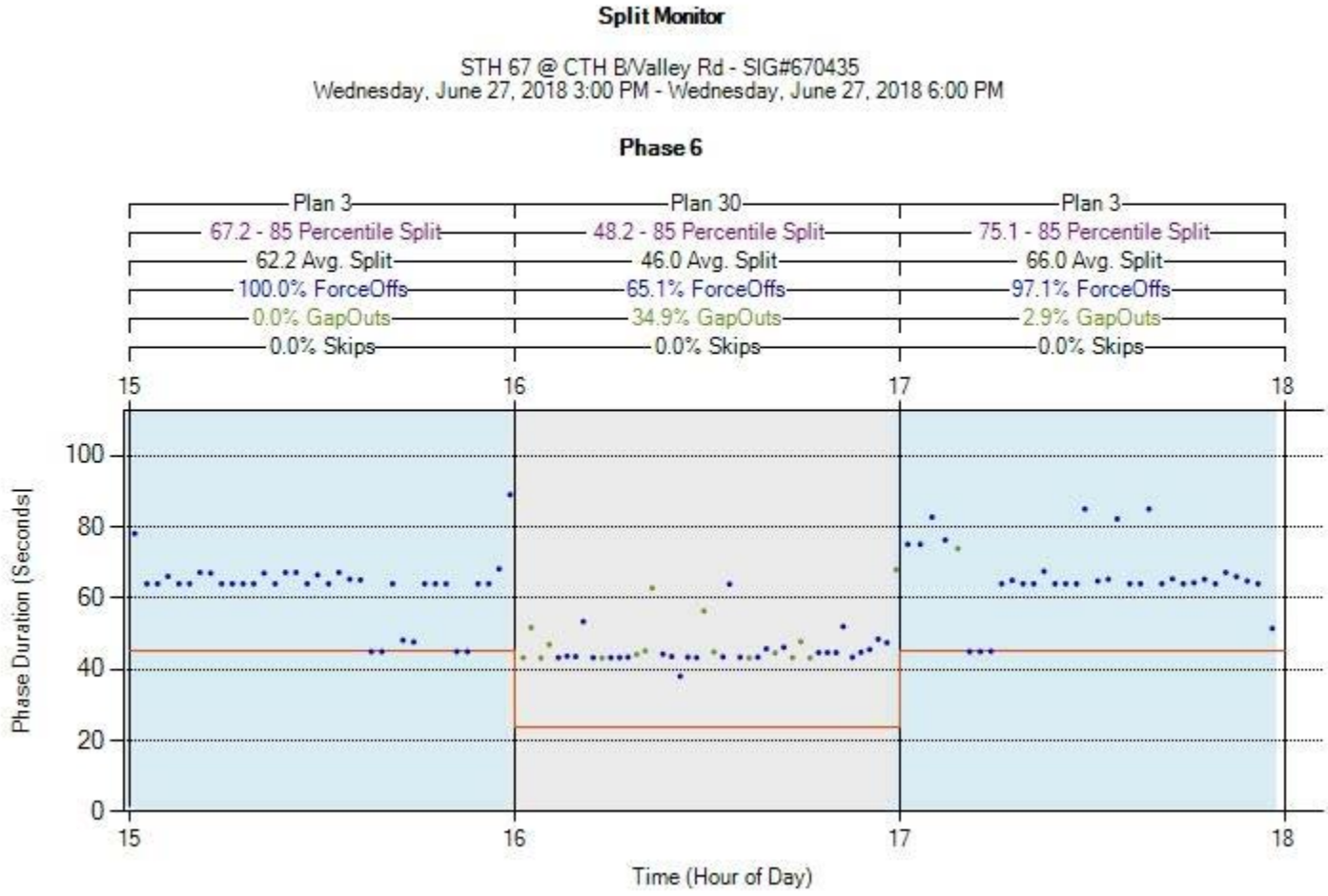
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM



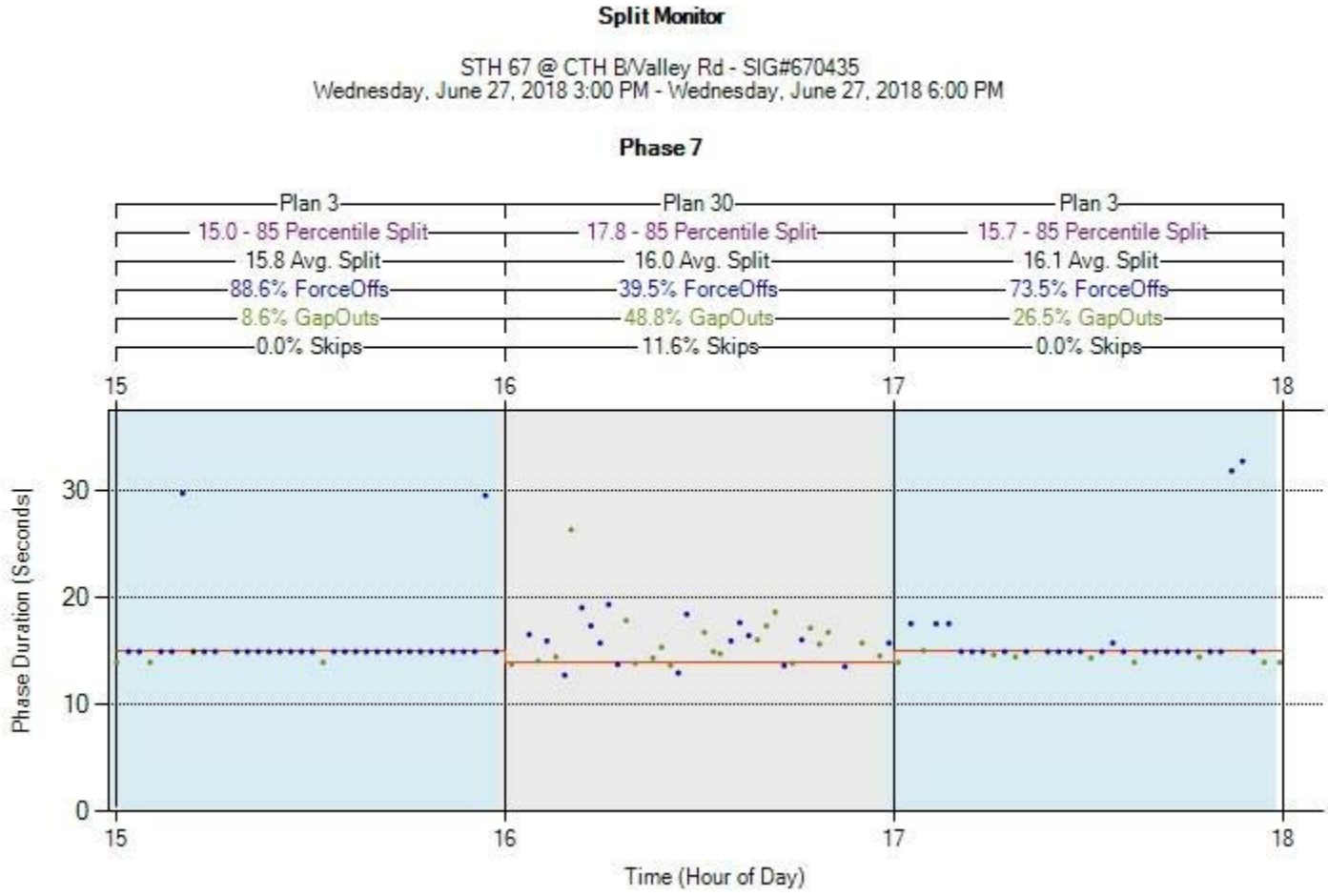
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM



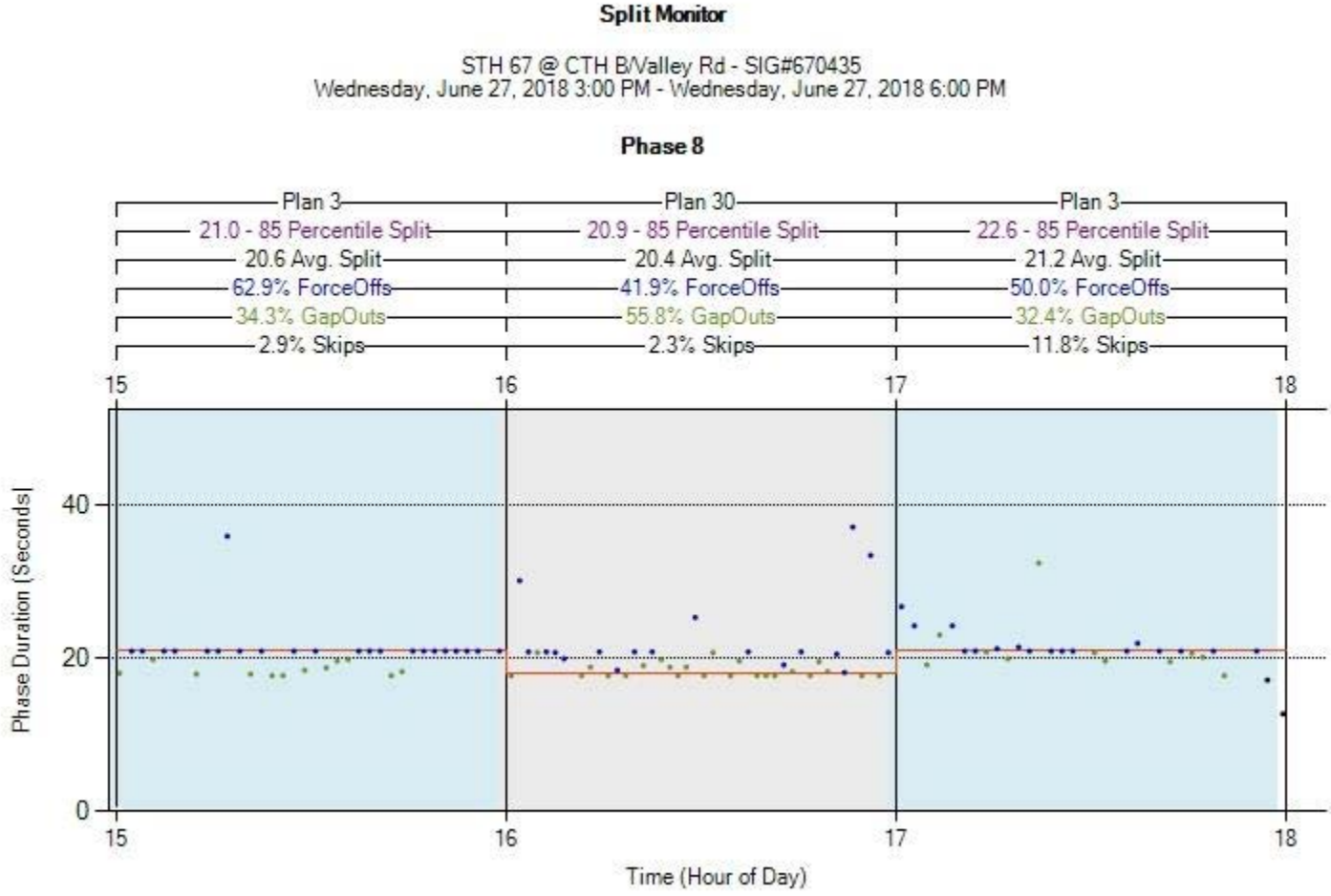
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM



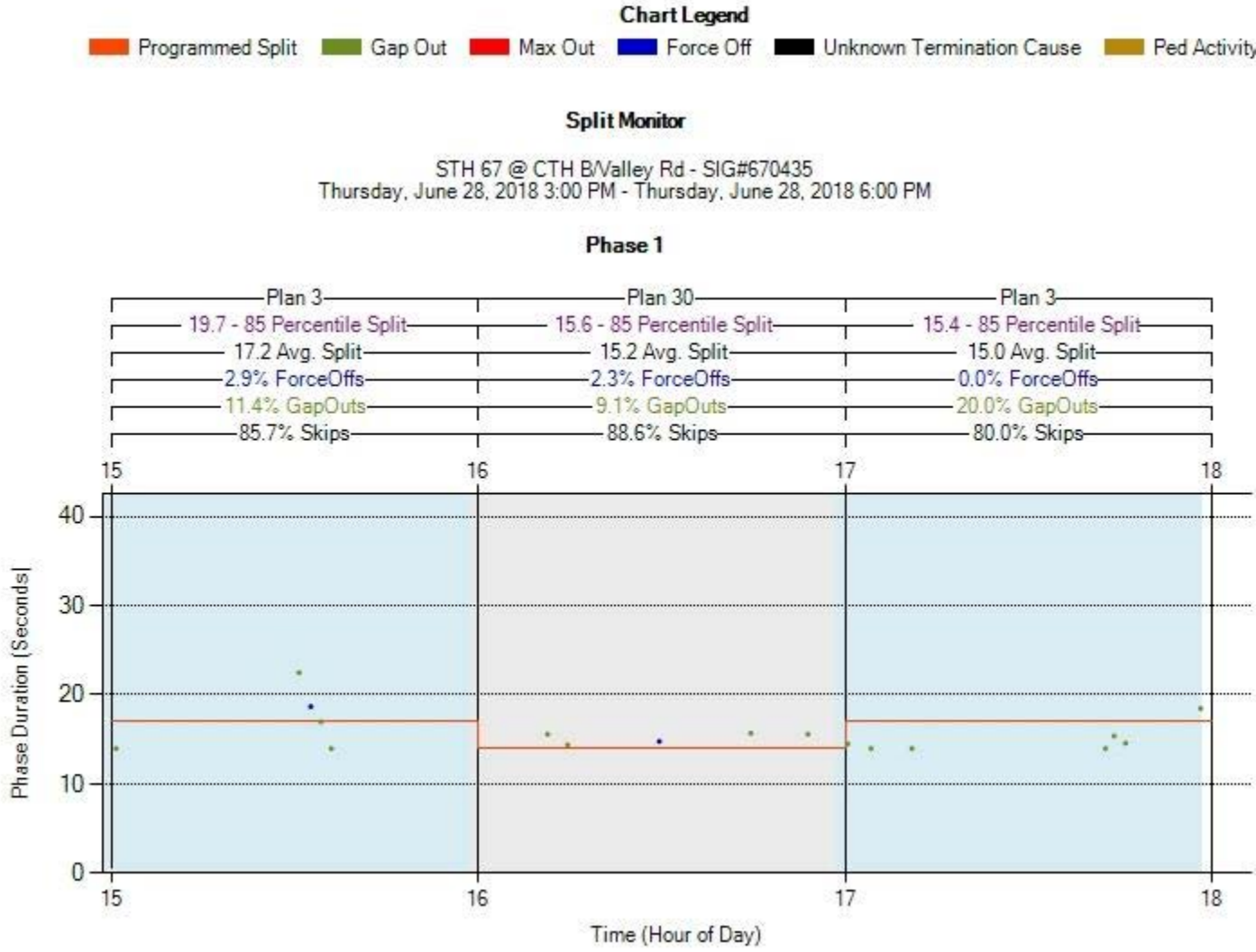
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM



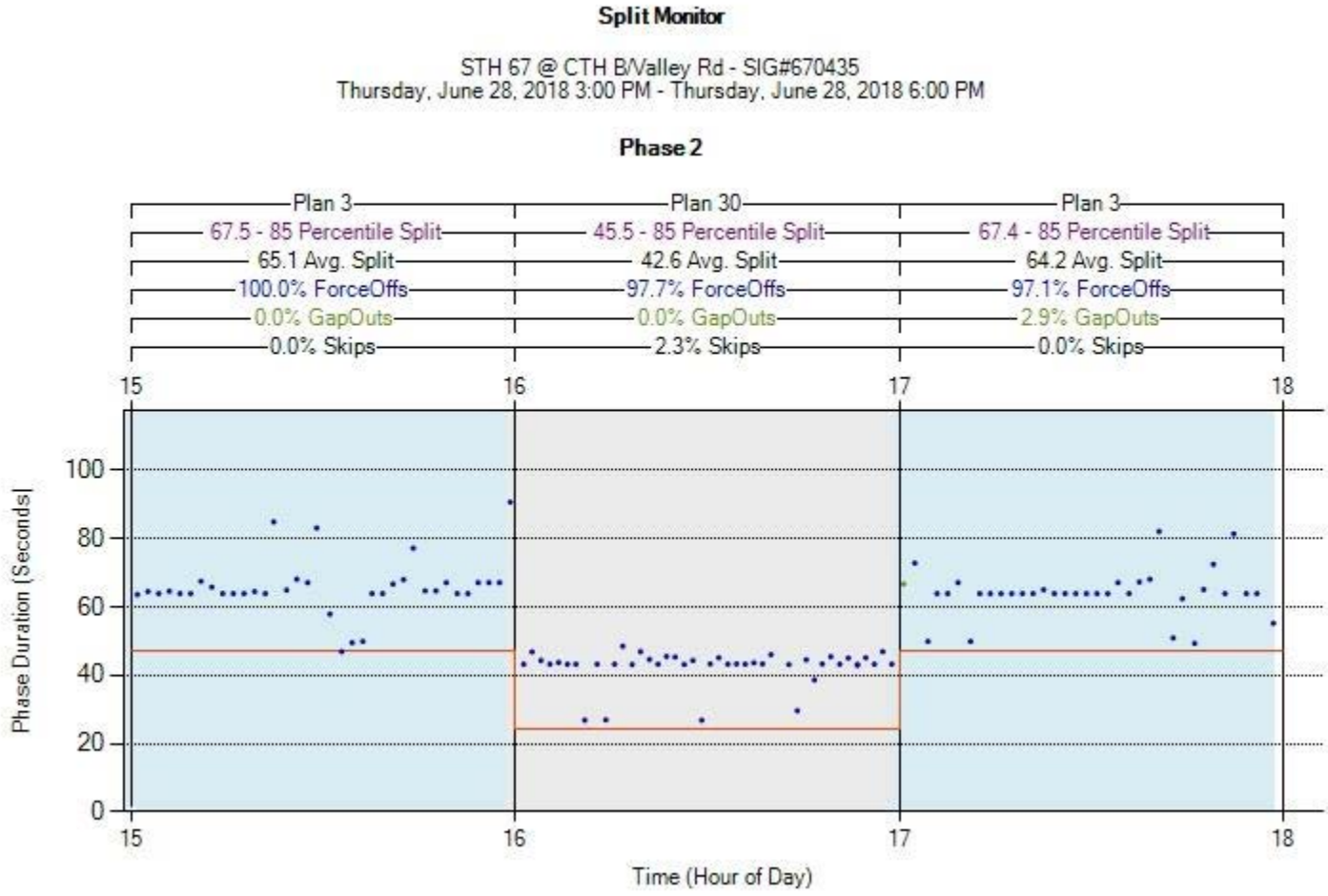
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM



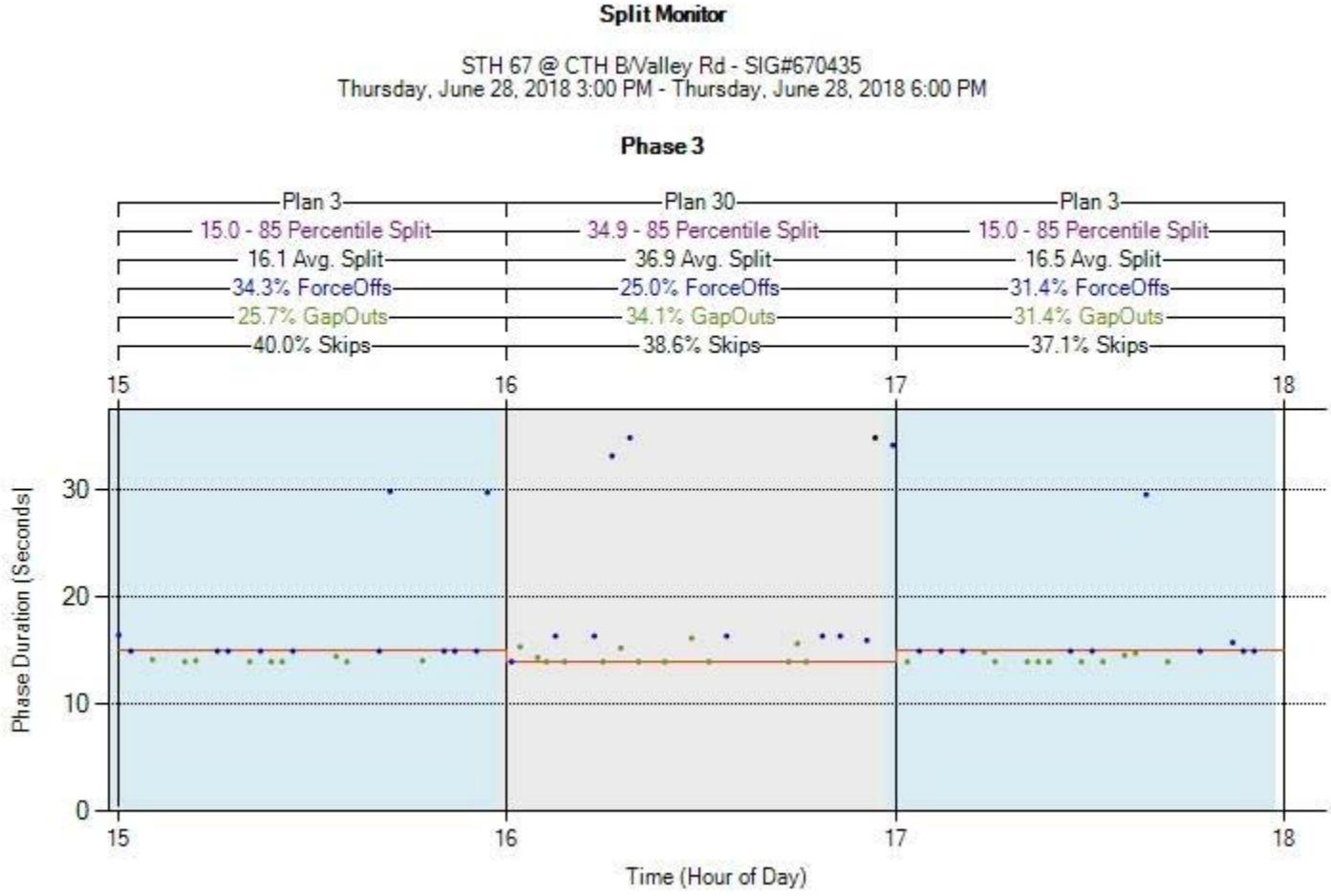
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM

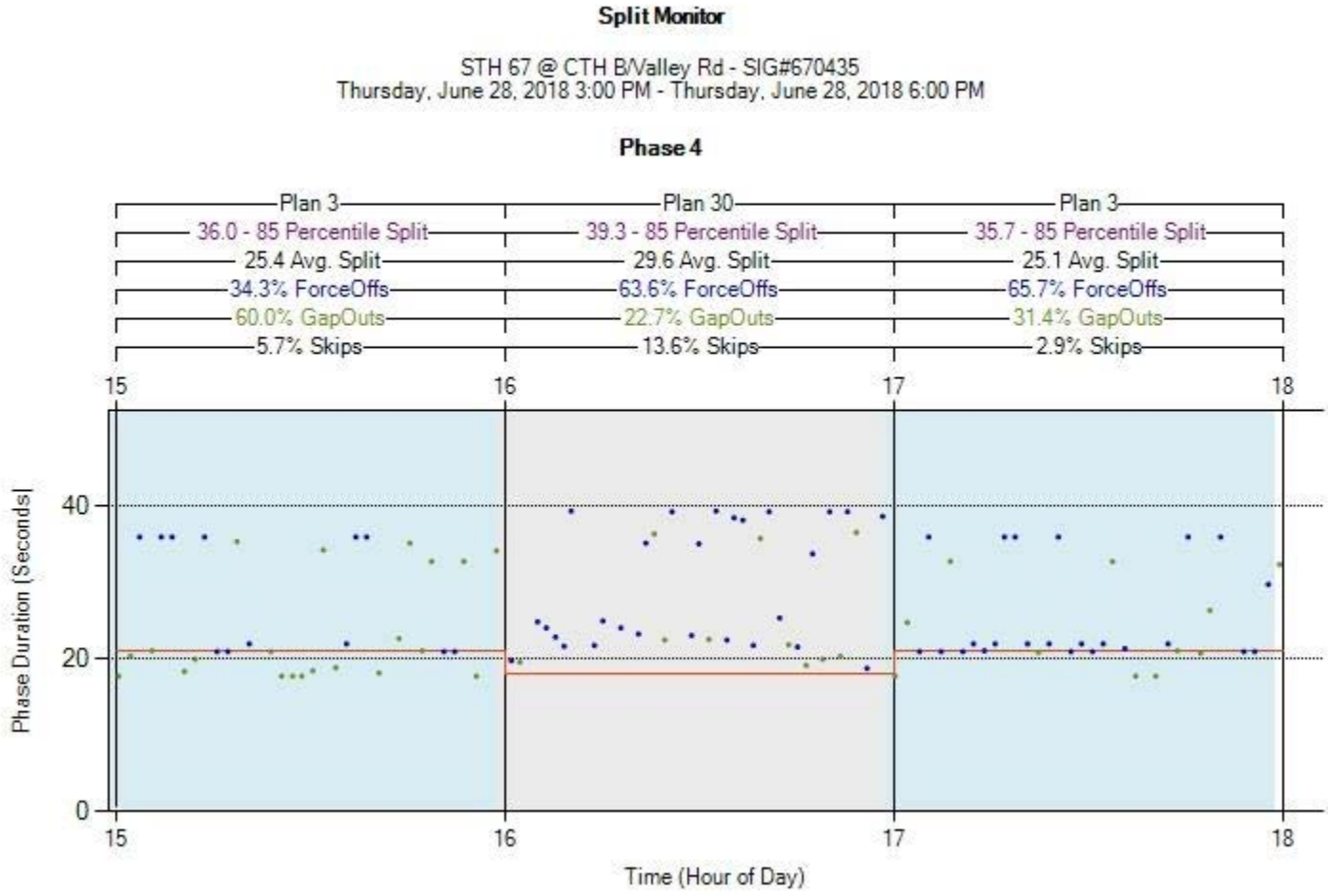


WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM

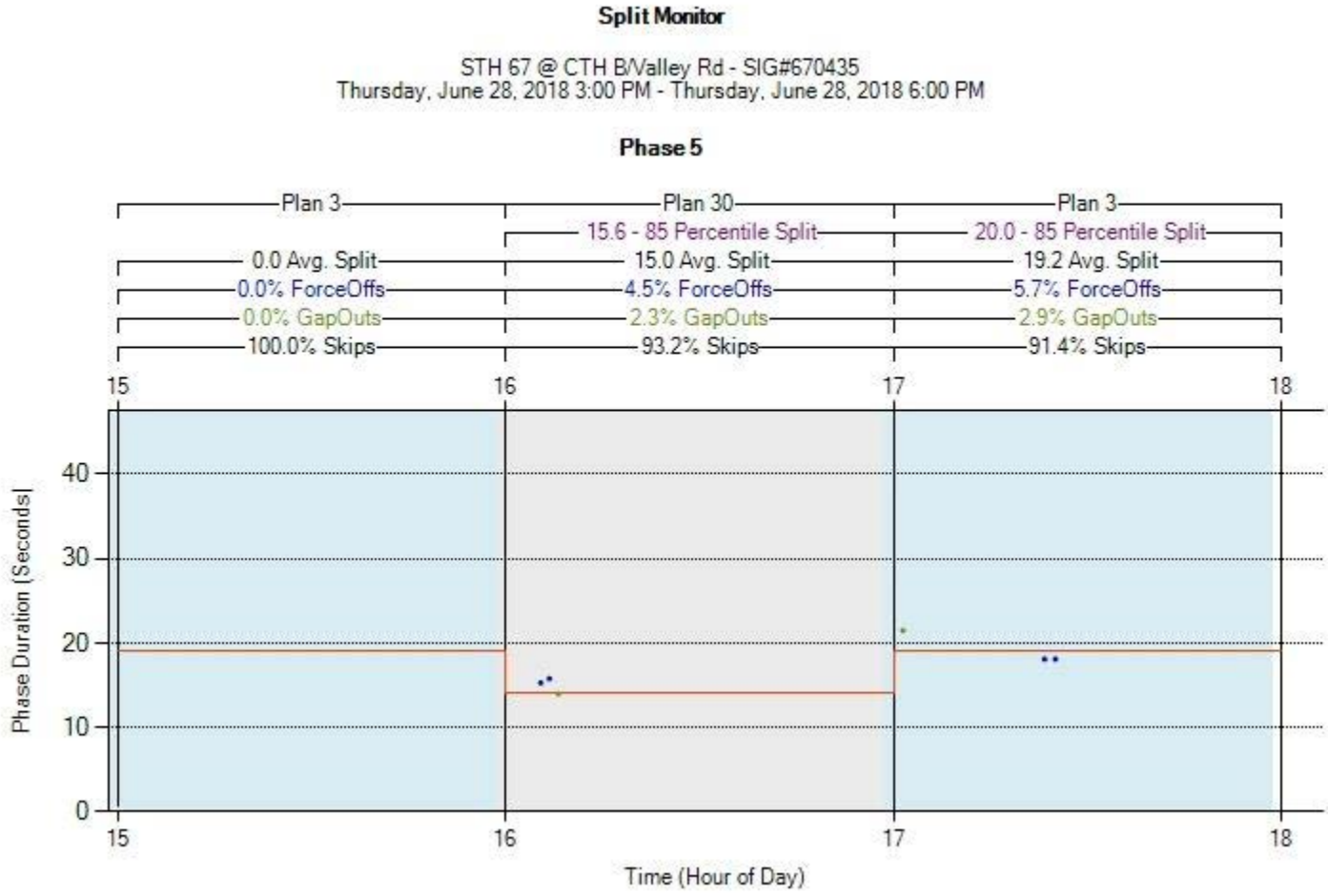


WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM

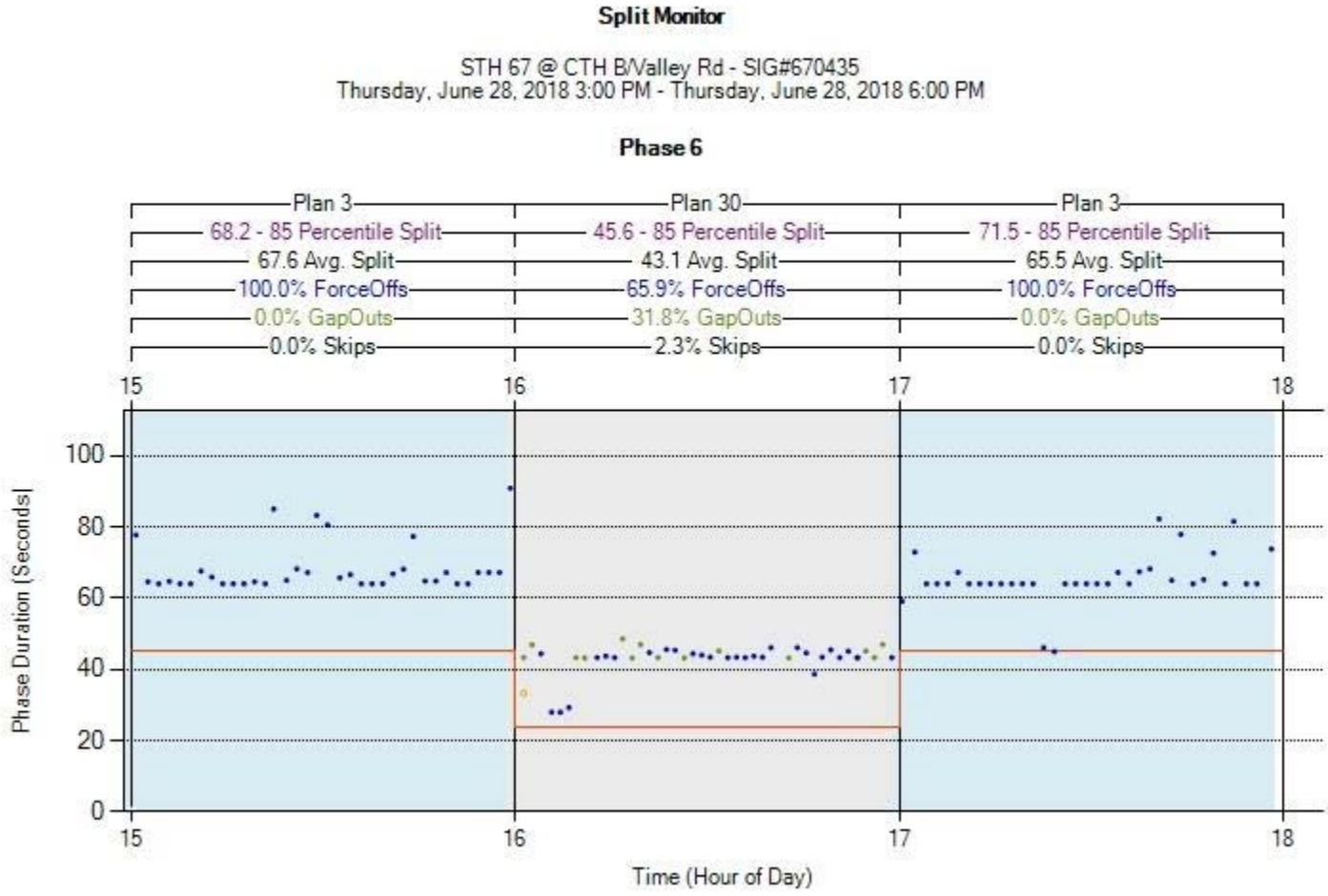



Split Monitor
STH 67 @ CTH B/Valley Rd - SIG#670435
Thursday, June 28, 2018 3:00 PM - Thursday, June 28, 2018 6:00 PM
Phase 4
Plan 3
36.0 - 85 Percentile Split
25.4 Avg. Split
34.3% ForceOffs
60.0% GapOuts
5.7% Skips
Plan 30
39.3 - 85 Percentile Split
29.6 Avg. Split
63.6% ForceOffs
22.7% GapOuts
13.6% Skips
Plan 3
35.7 - 85 Percentile Split
25.1 Avg. Split
65.7% ForceOffs
31.4% GapOuts
2.9% Skips
15
16
17
18
40
20
0
Phase Duration (Seconds)
Time (Hour of Day)

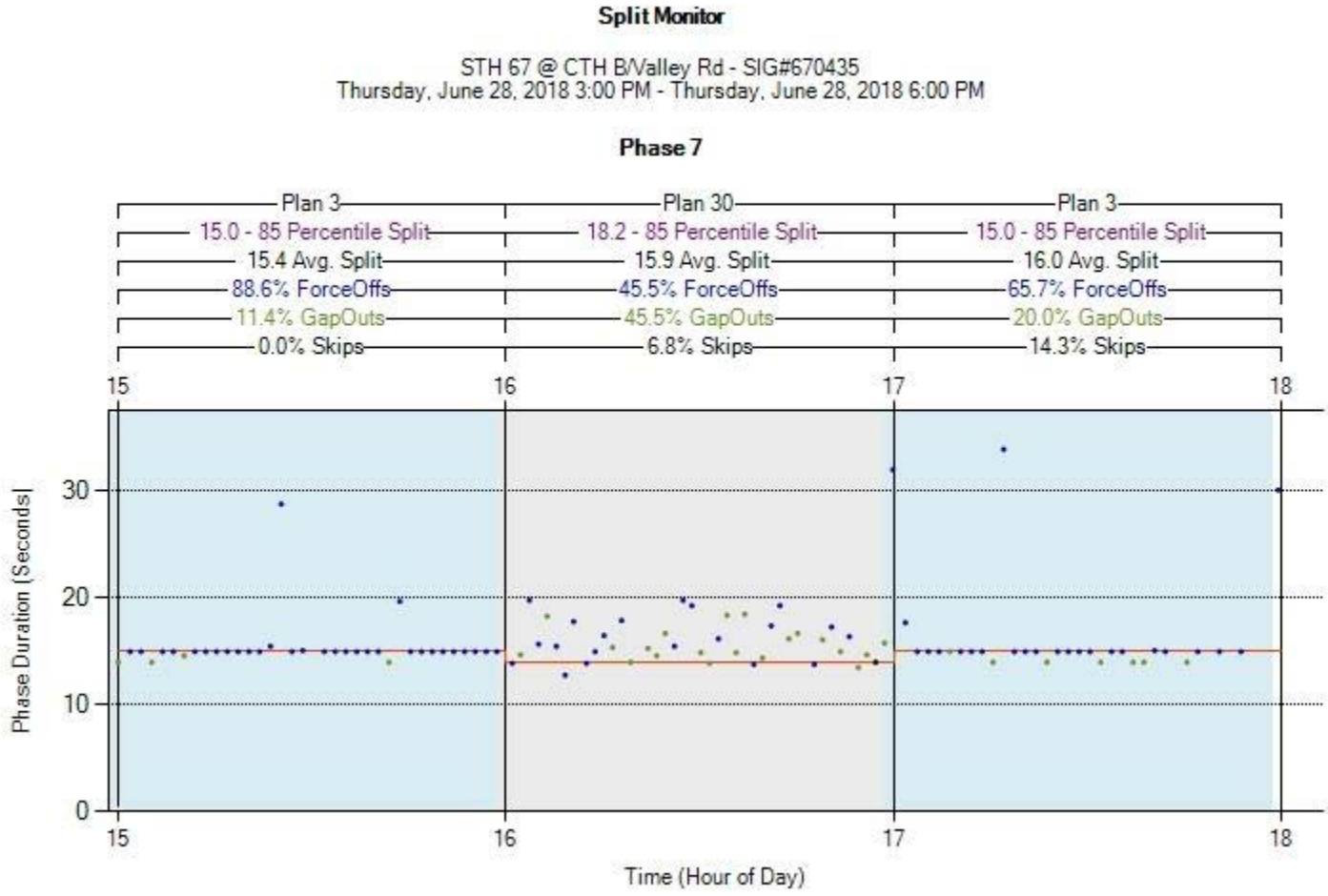
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM



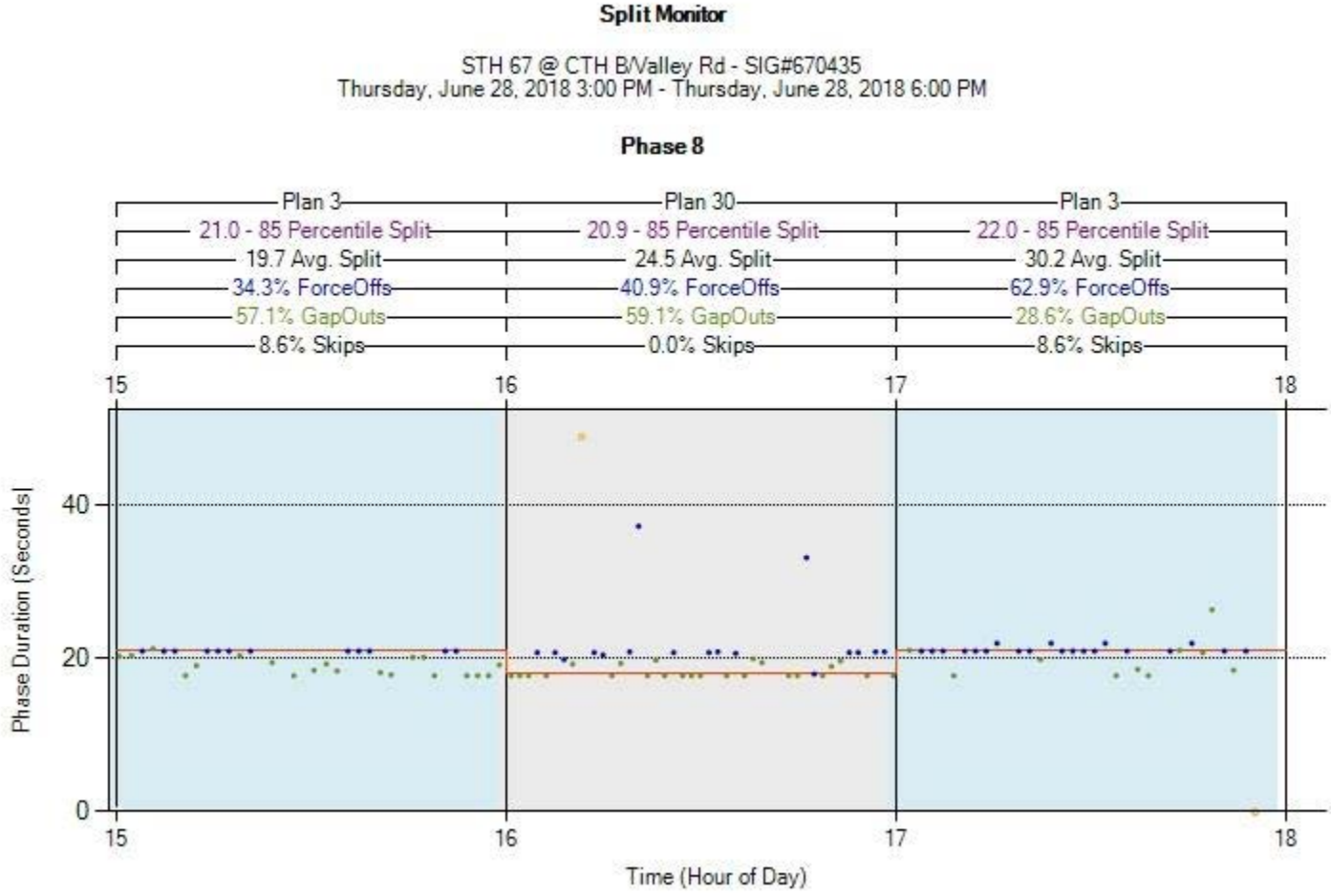
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM



WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM



WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM



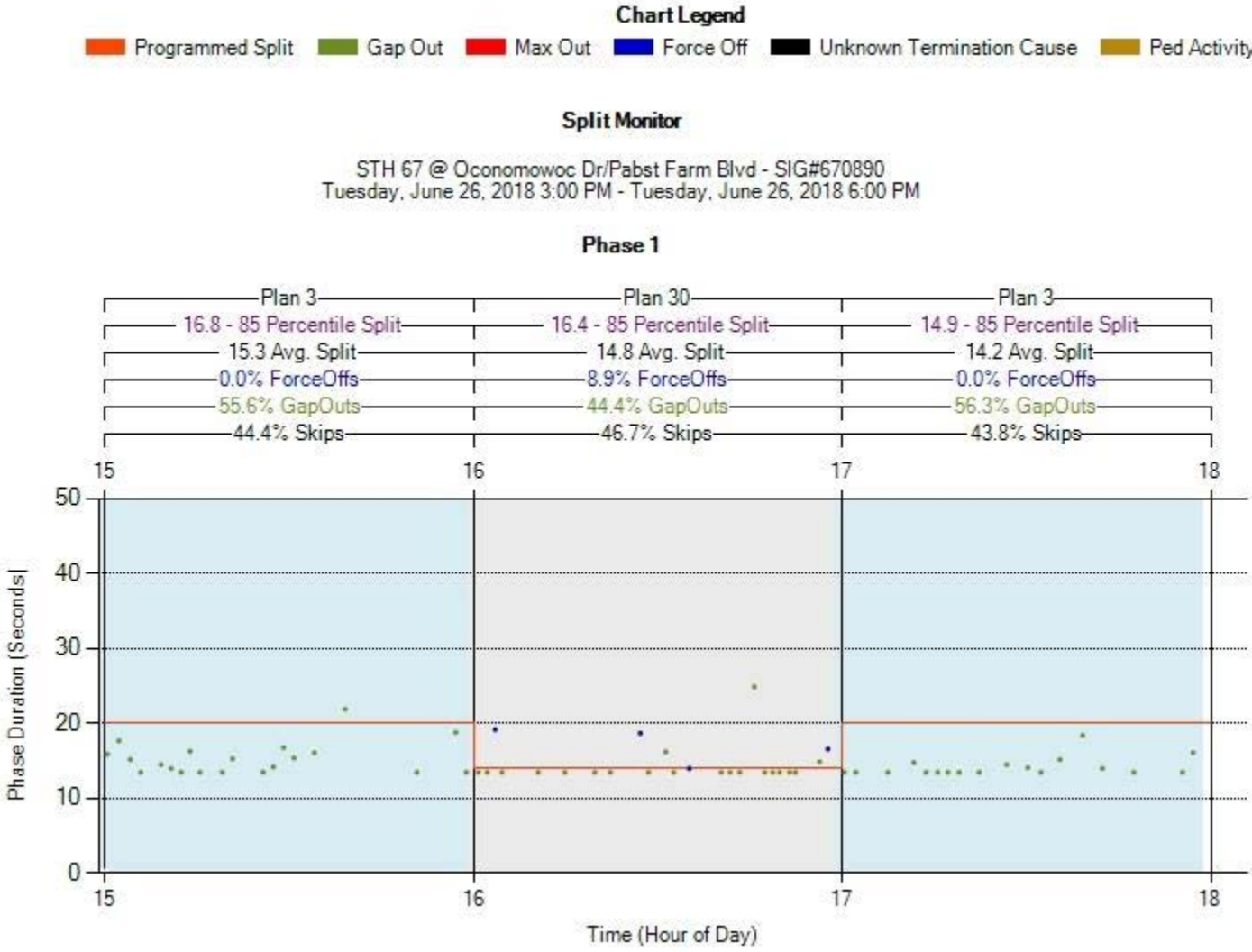
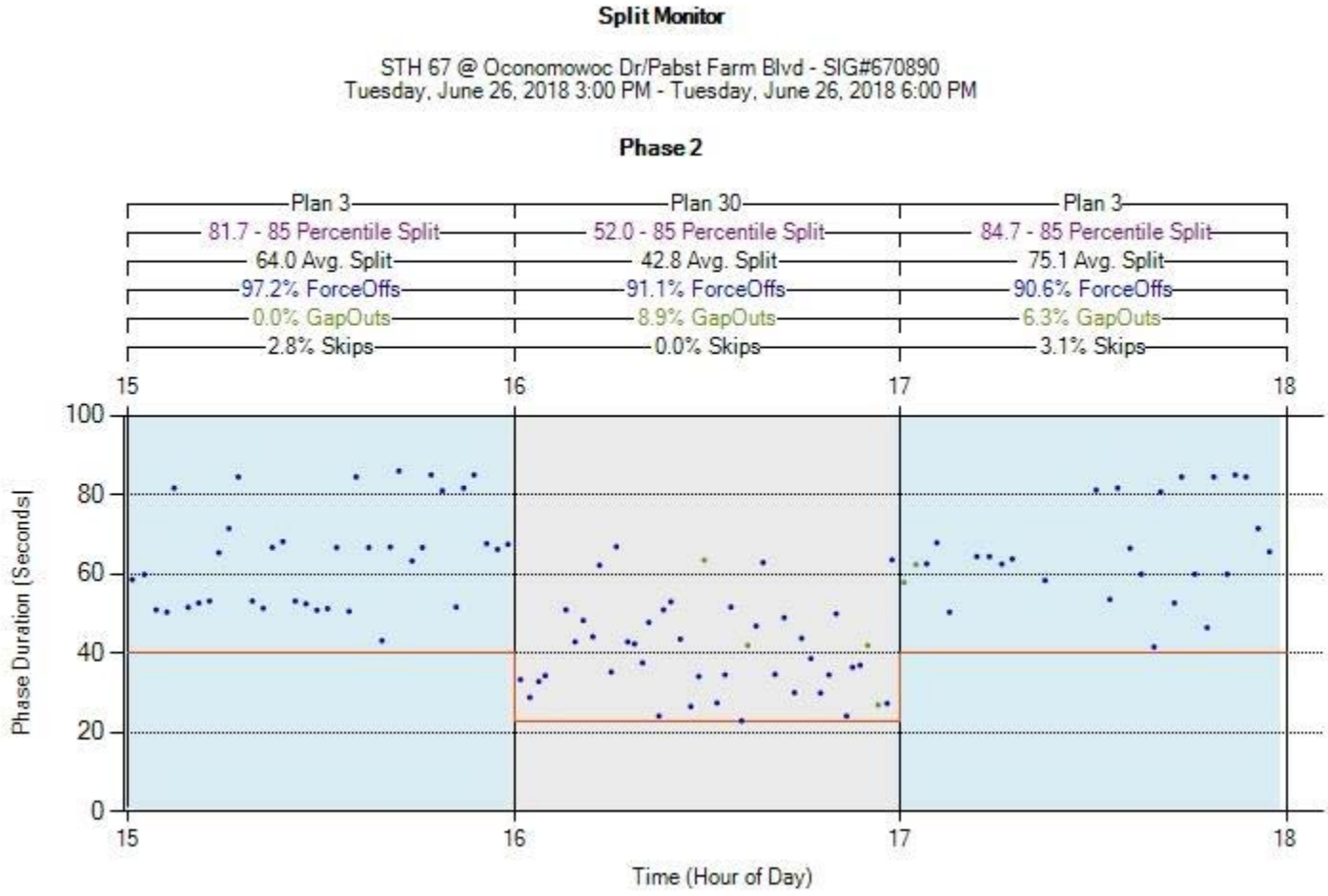
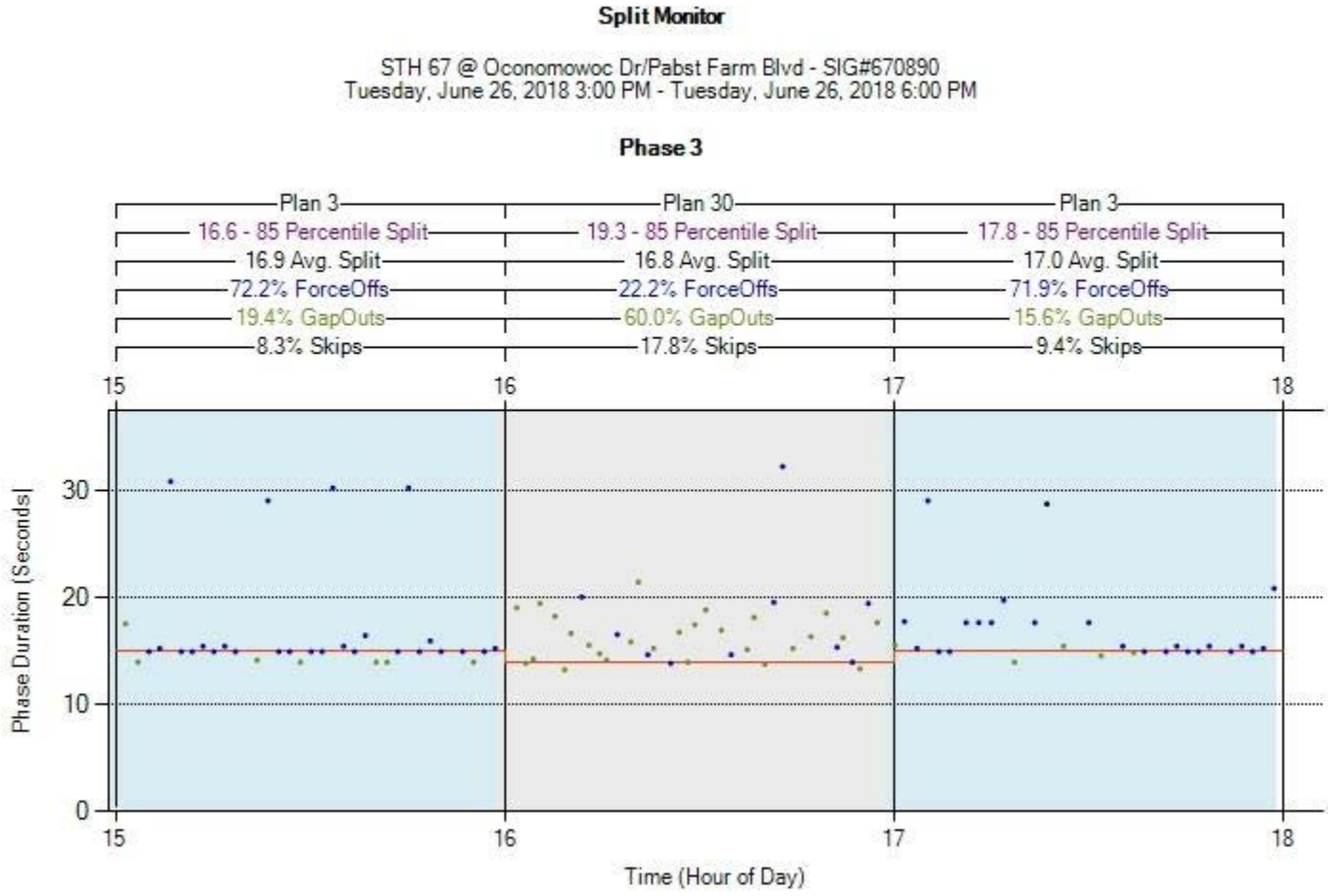


Chart Legend
Programmed Split
Gap Out
Max Out
Force Off
Unknown Termination Cause
Ped Activity
Split Monitor
STH 67 @ Oconomowoc Dr/Pabst Farm Blvd - SIG#670890
Tuesday, June 26, 2018 3:00 PM - Tuesday, June 26, 2018 6:00 PM
Phase 1
Plan 3
16.8 - 85 Percentile Split
15.3 Avg. Split
0.0% ForceOffs
55.6% GapOuts
44.4% Skips
Plan 30
16.4 - 85 Percentile Split
14.8 Avg. Split
8.9% ForceOffs
44.4% GapOuts
46.7% Skips
Plan 3
14.9 - 85 Percentile Split
14.2 Avg. Split
0.0% ForceOffs
56.3% GapOuts
43.8% Skips
15
16
17
18
50
40
30
20
10
0
Phase Duration (Seconds)
Time (Hour of Day)

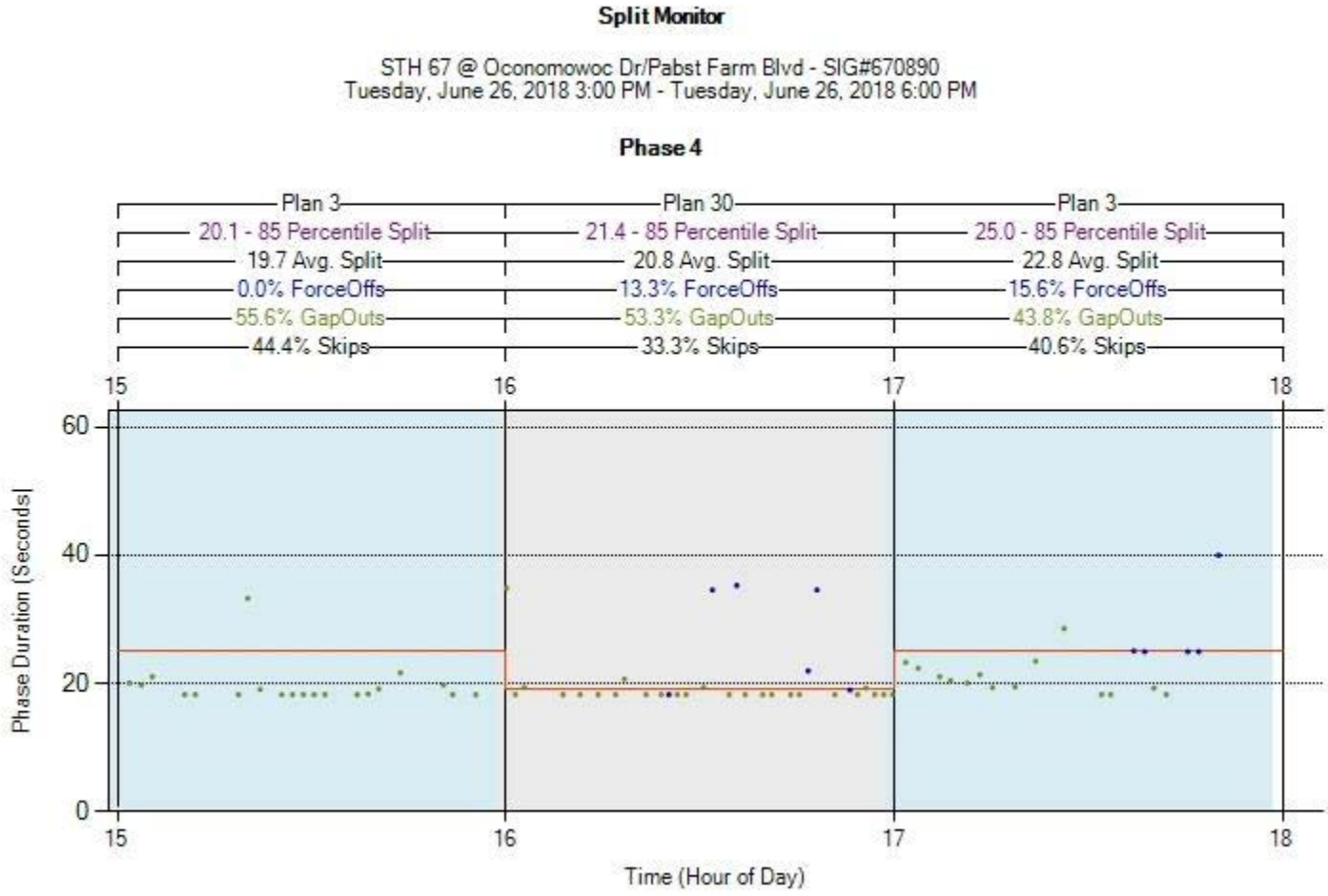
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM



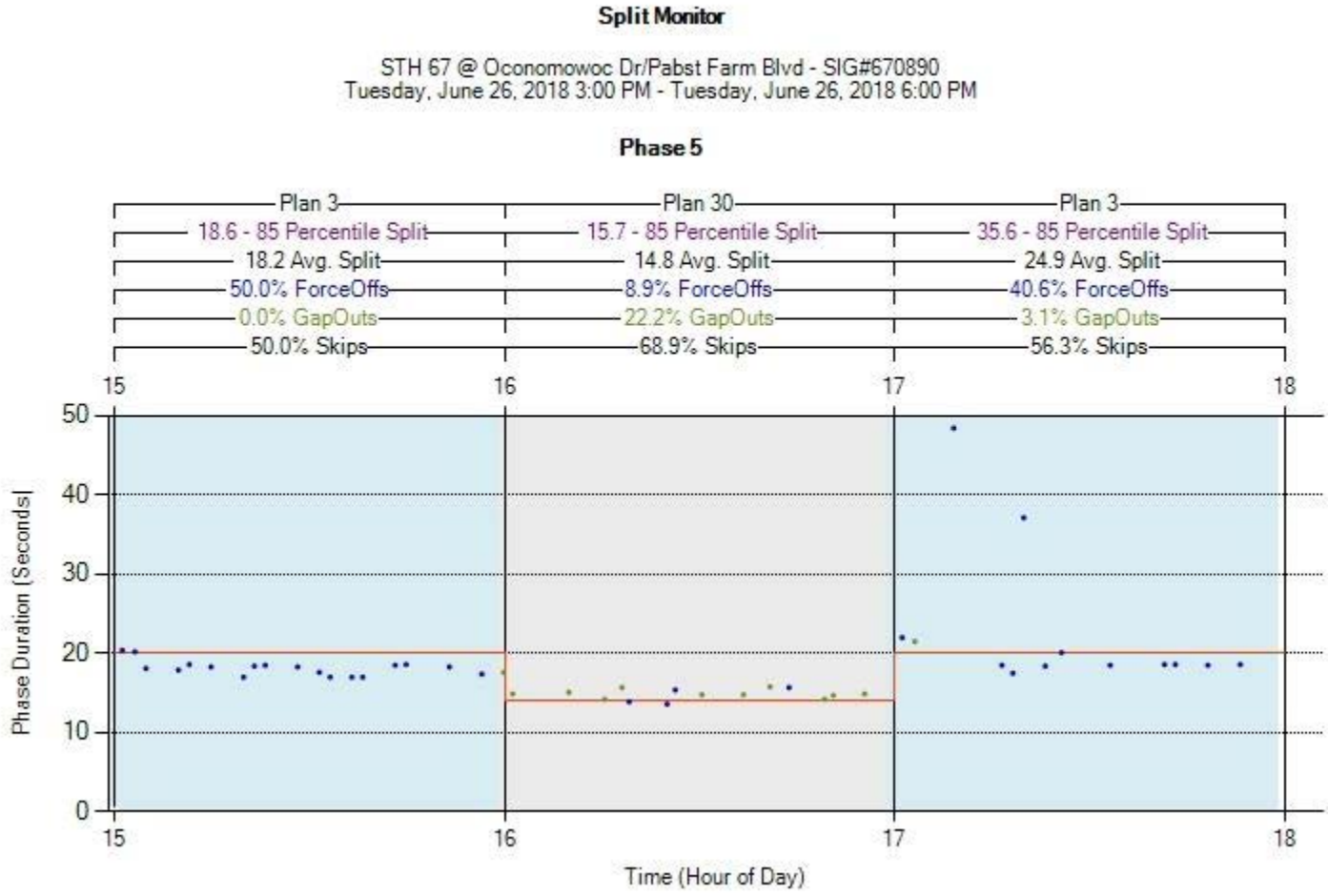
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM



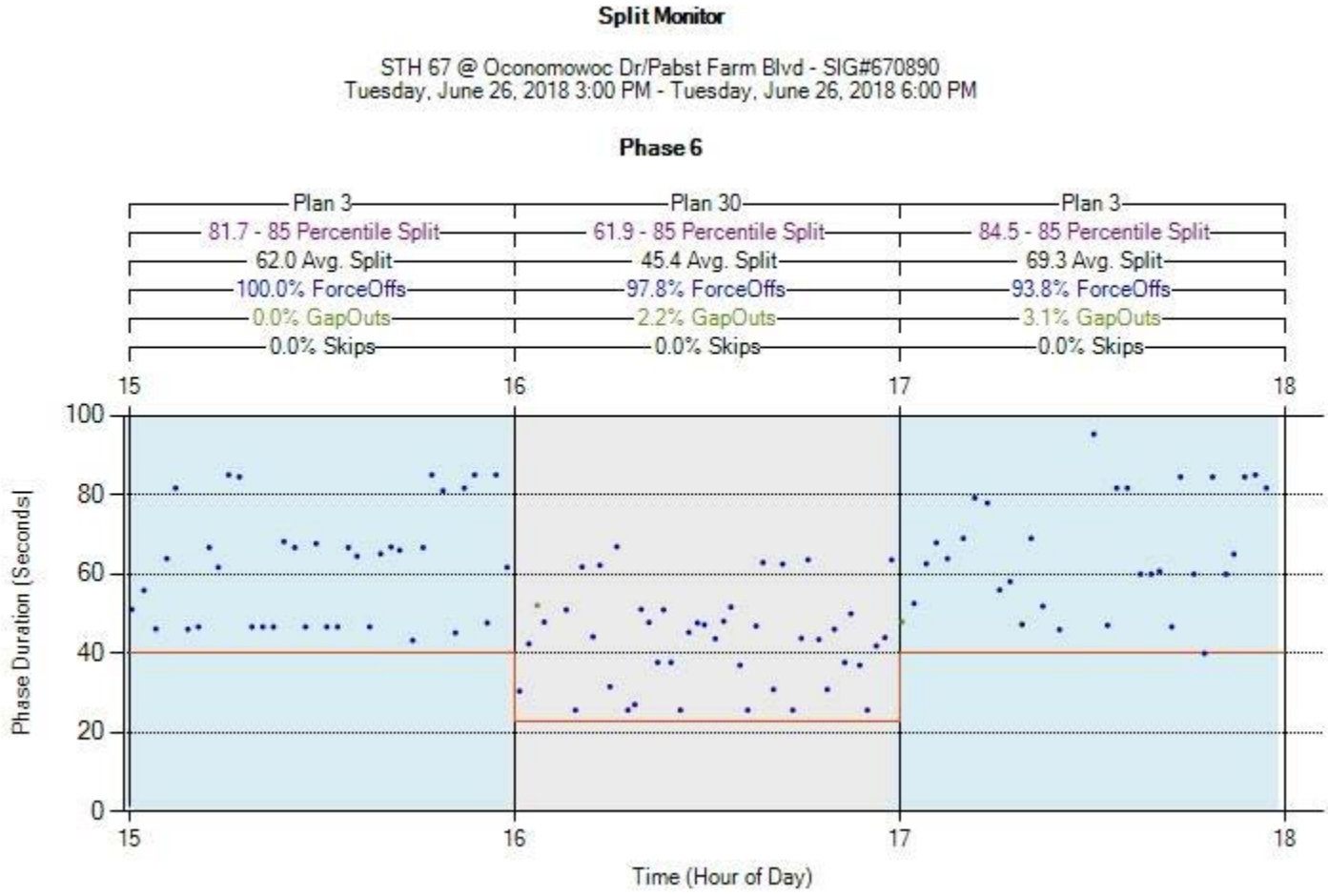
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM



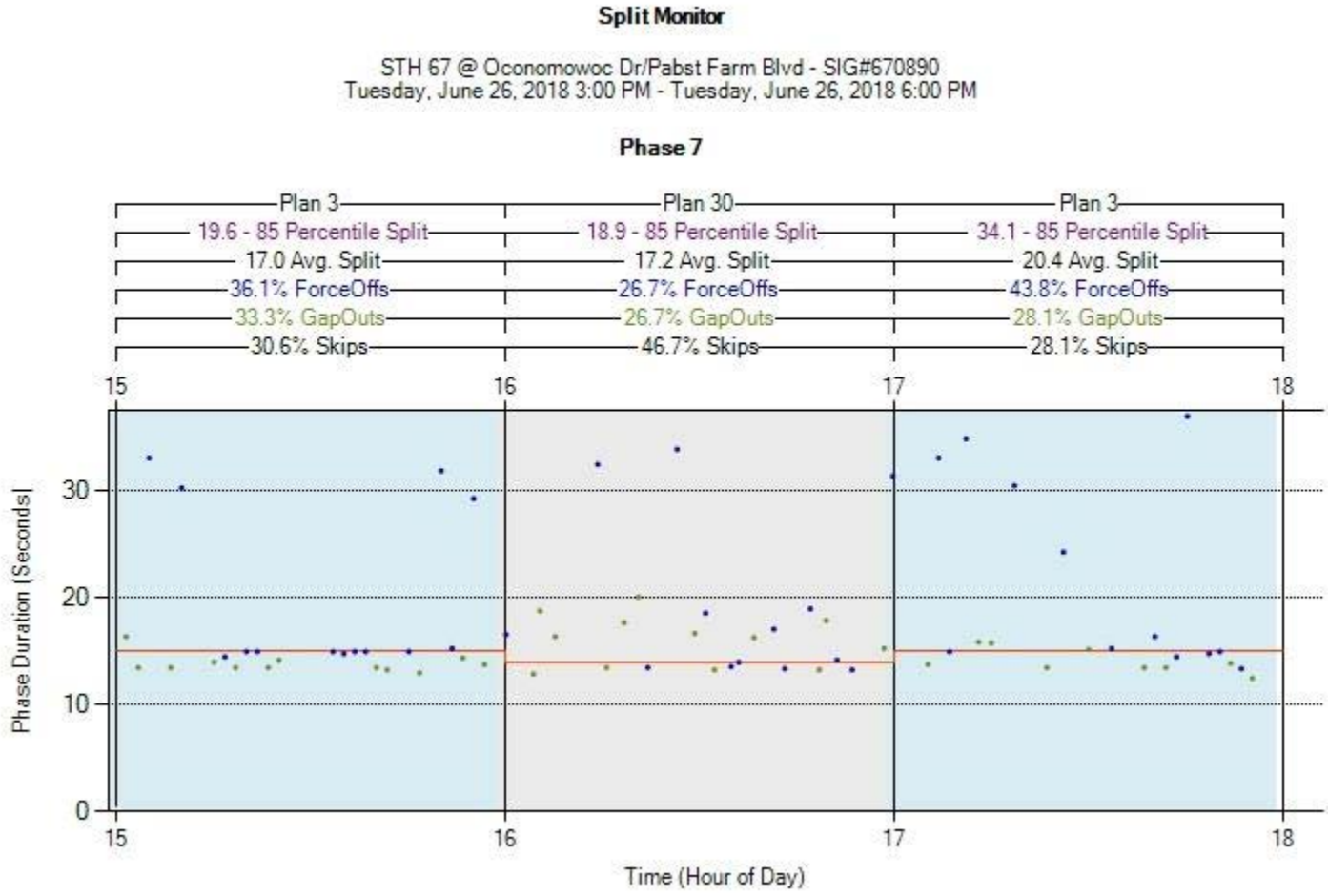
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM



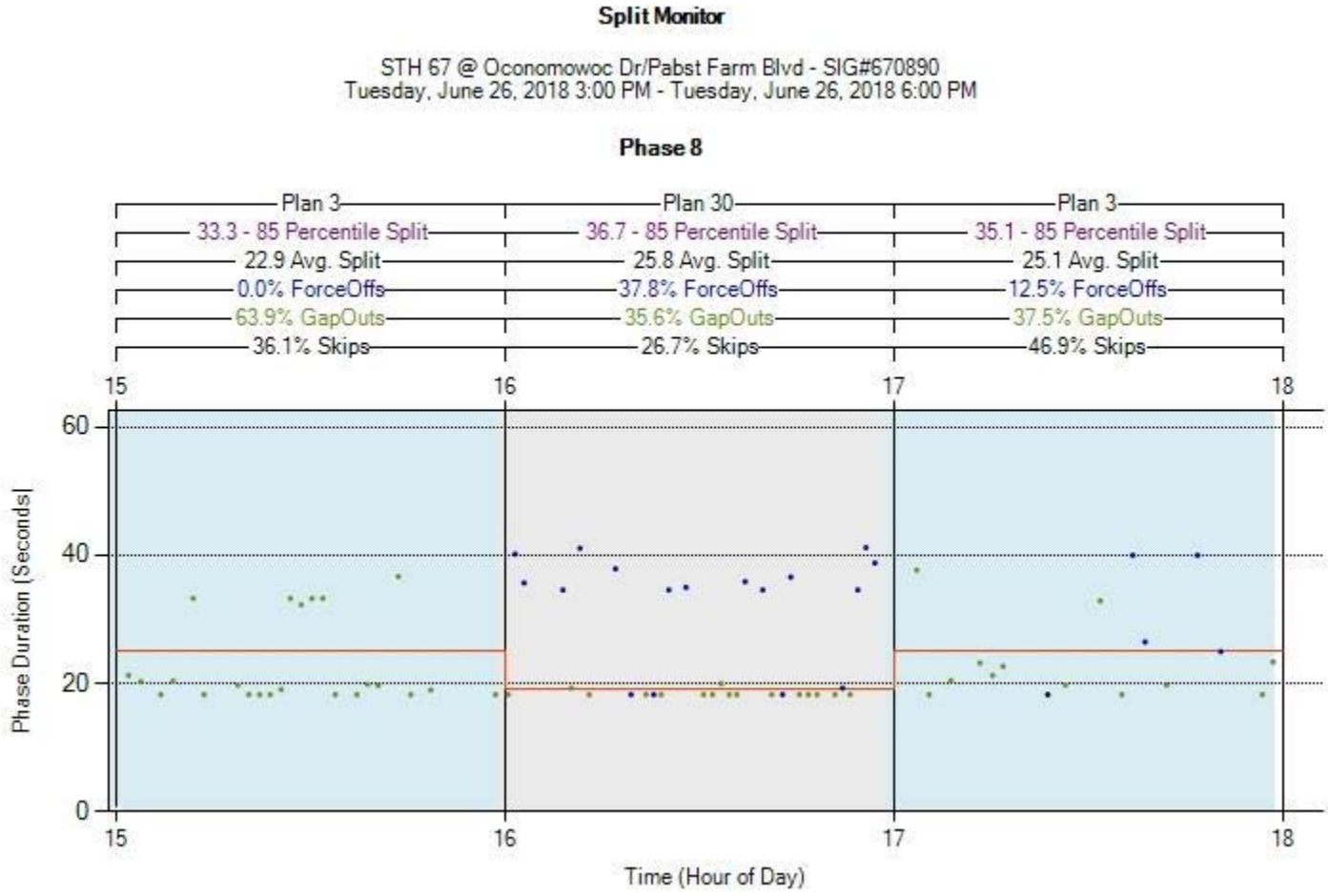
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM



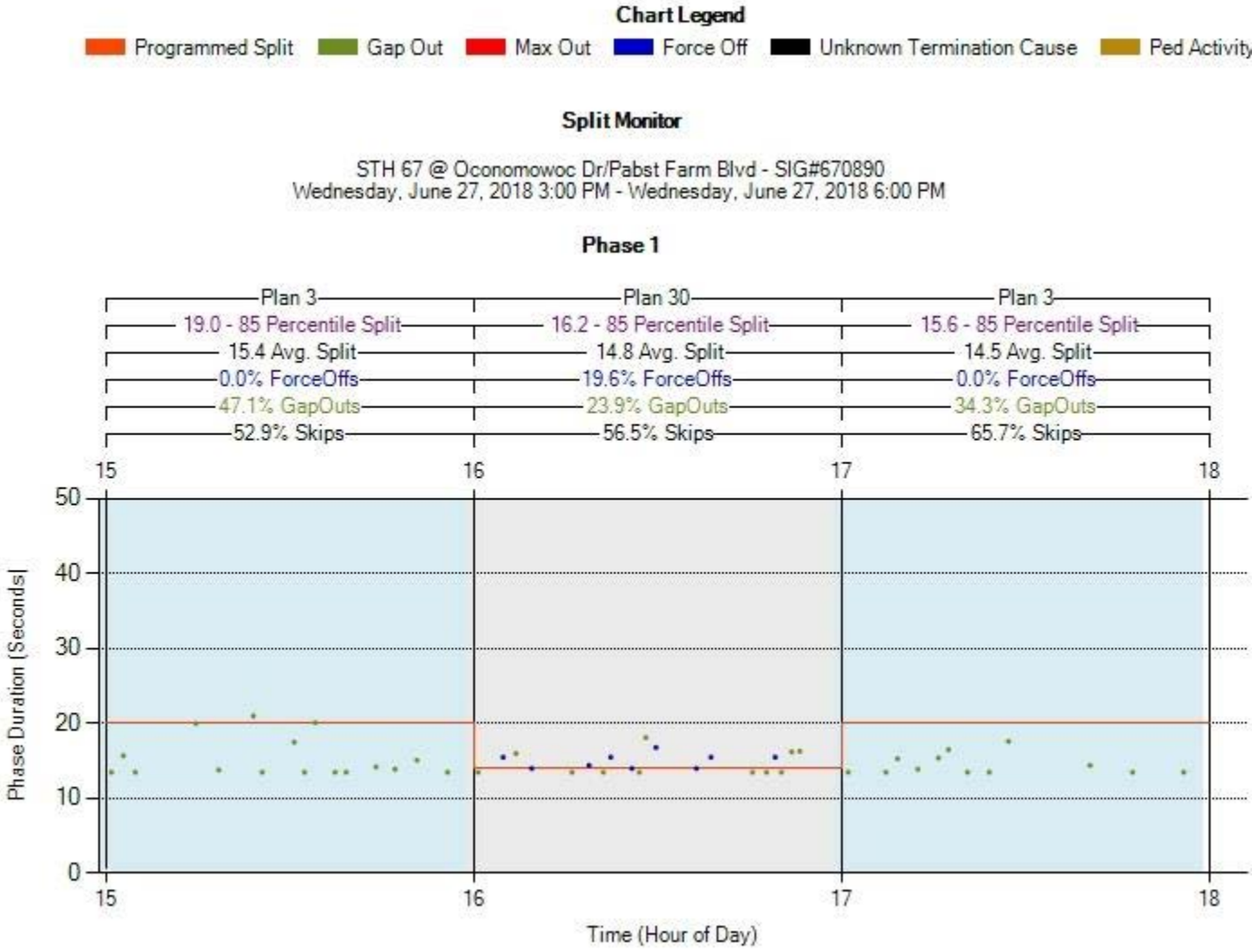
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM



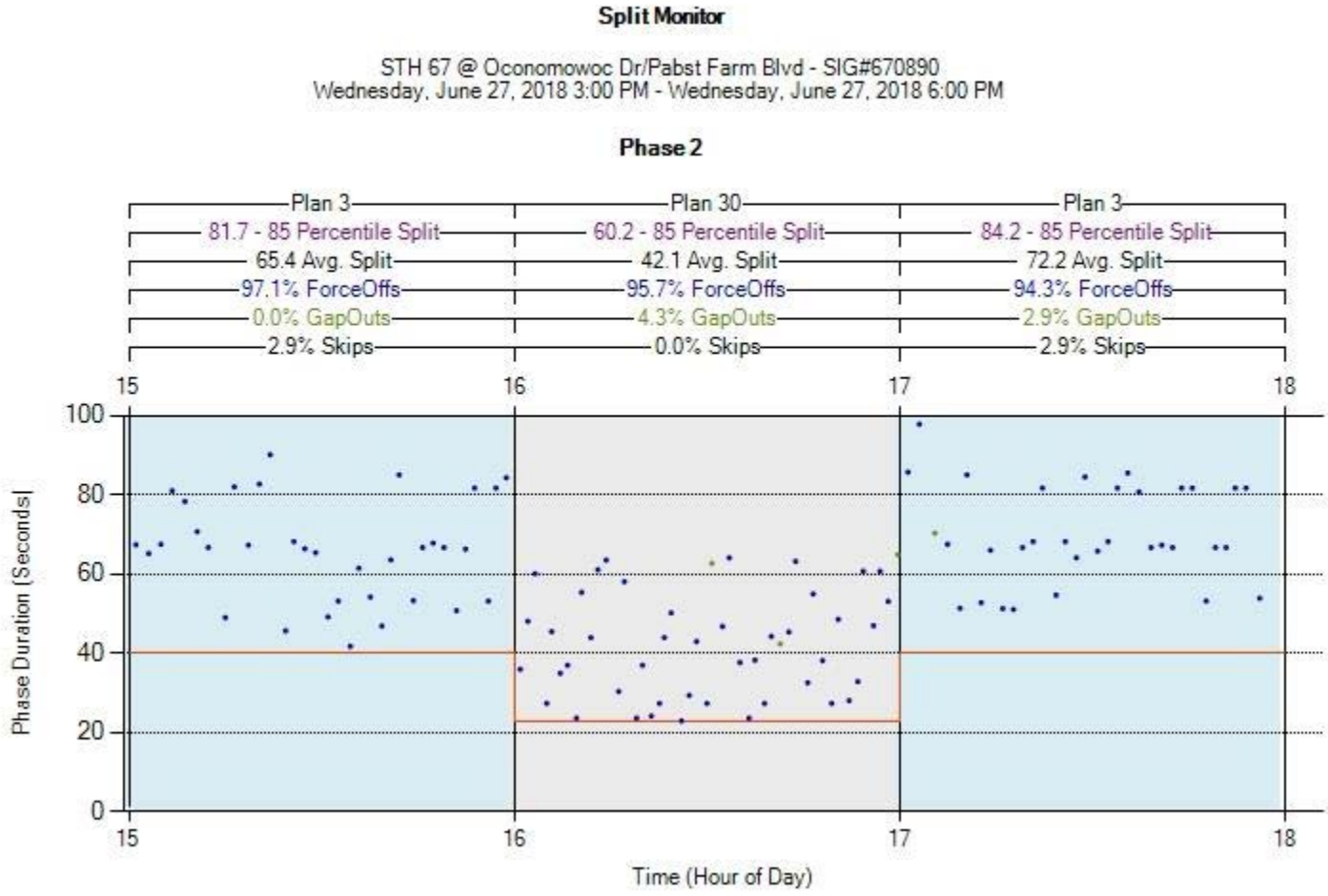
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM



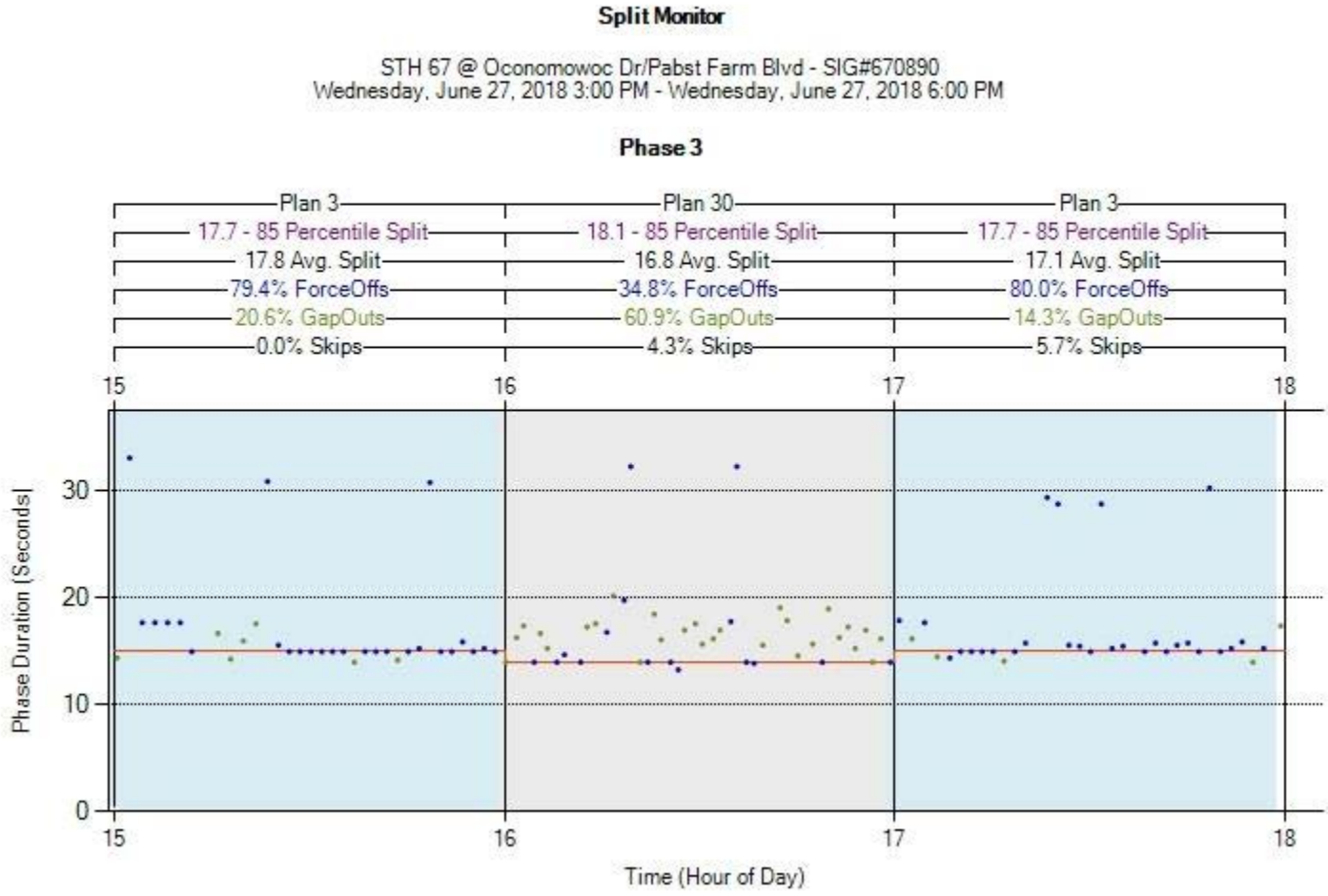
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM



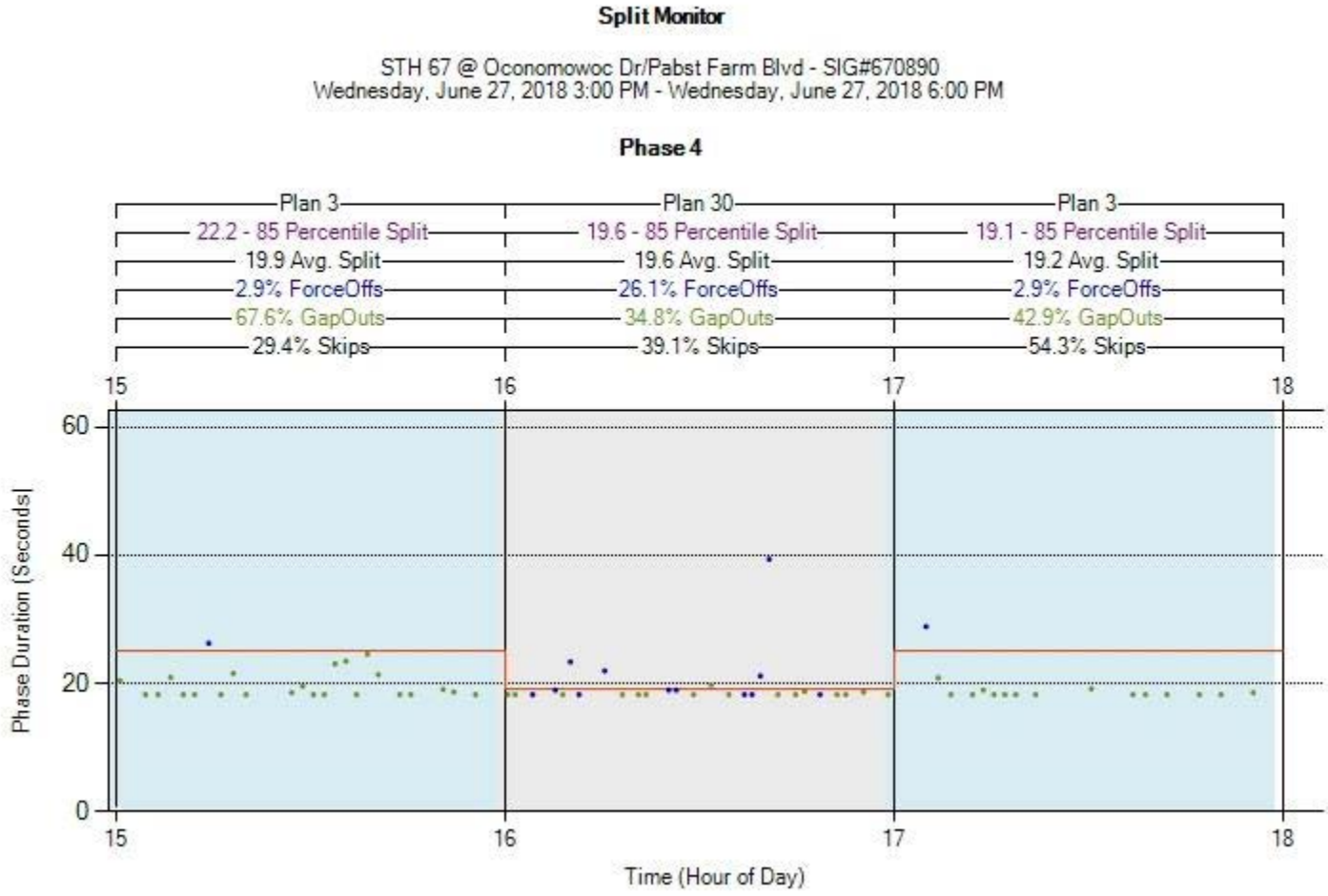
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM



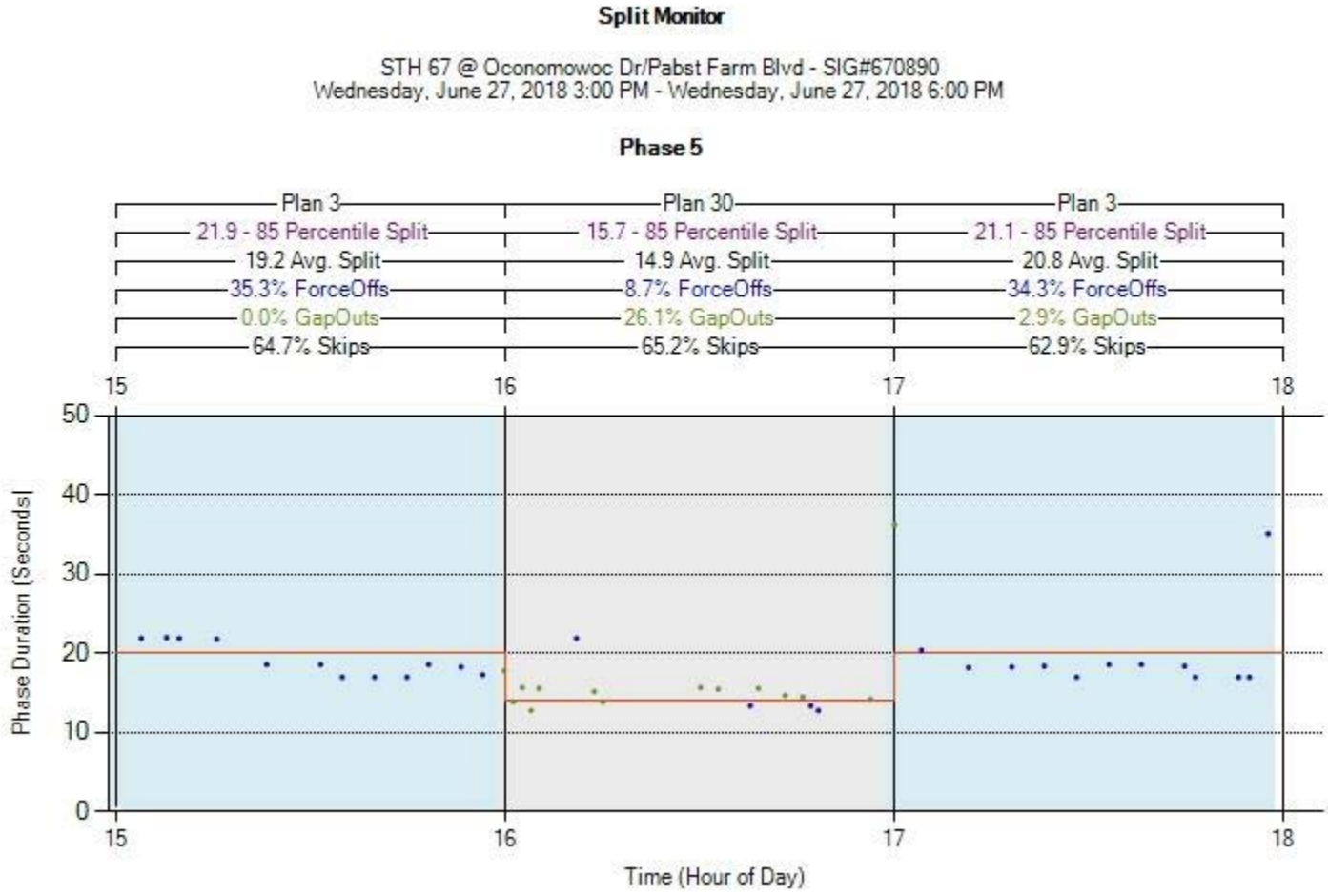
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM



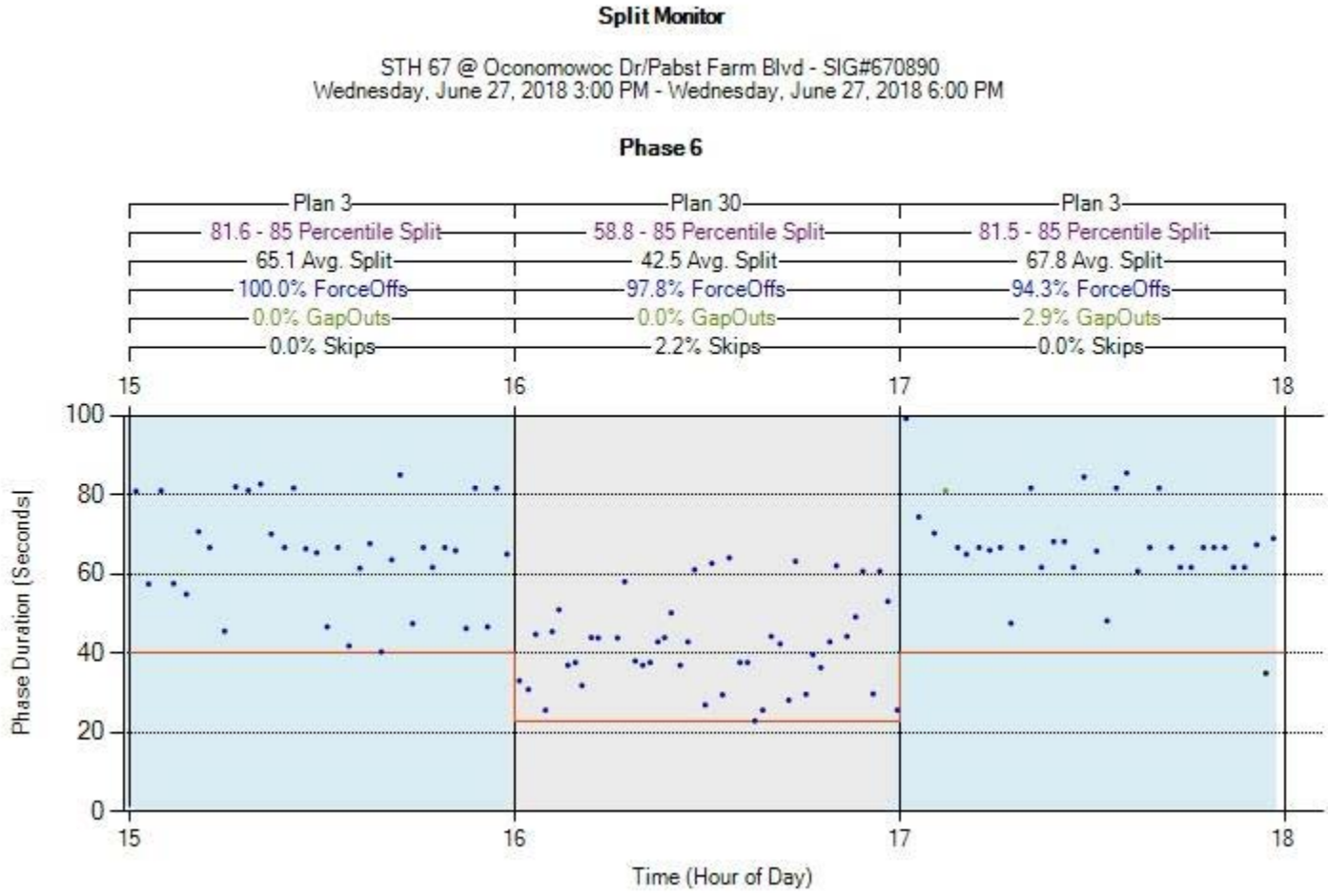
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM



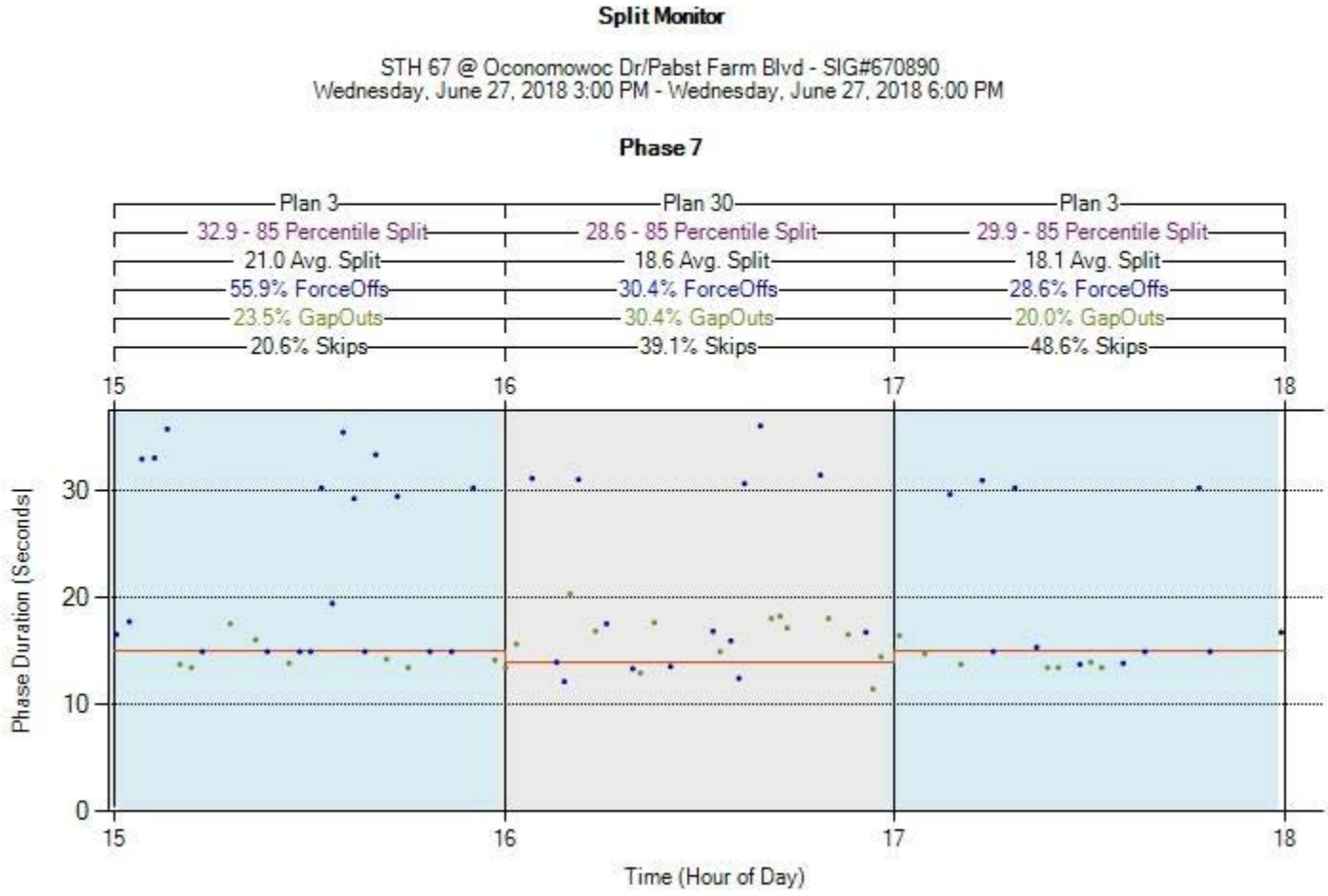
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM



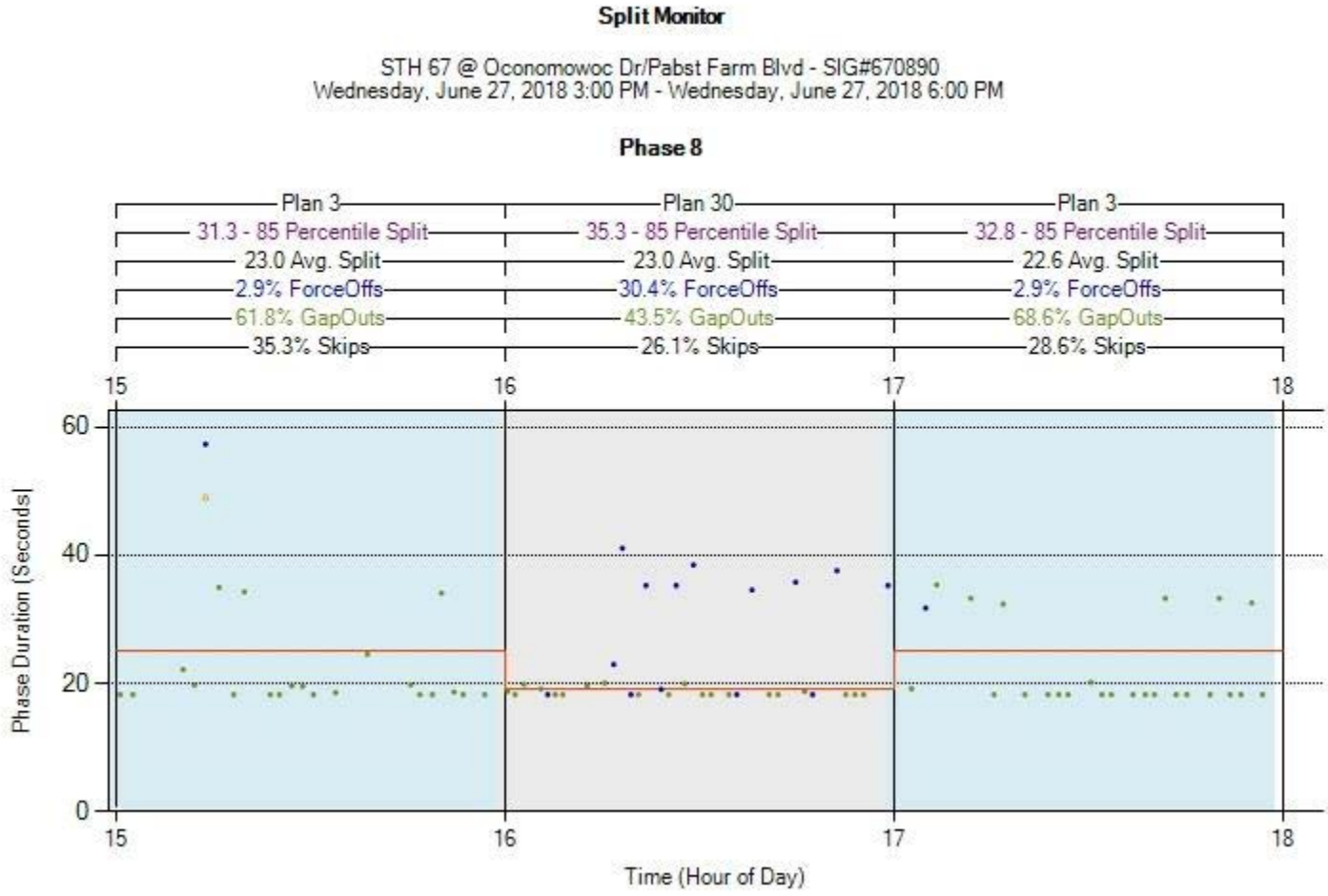
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM



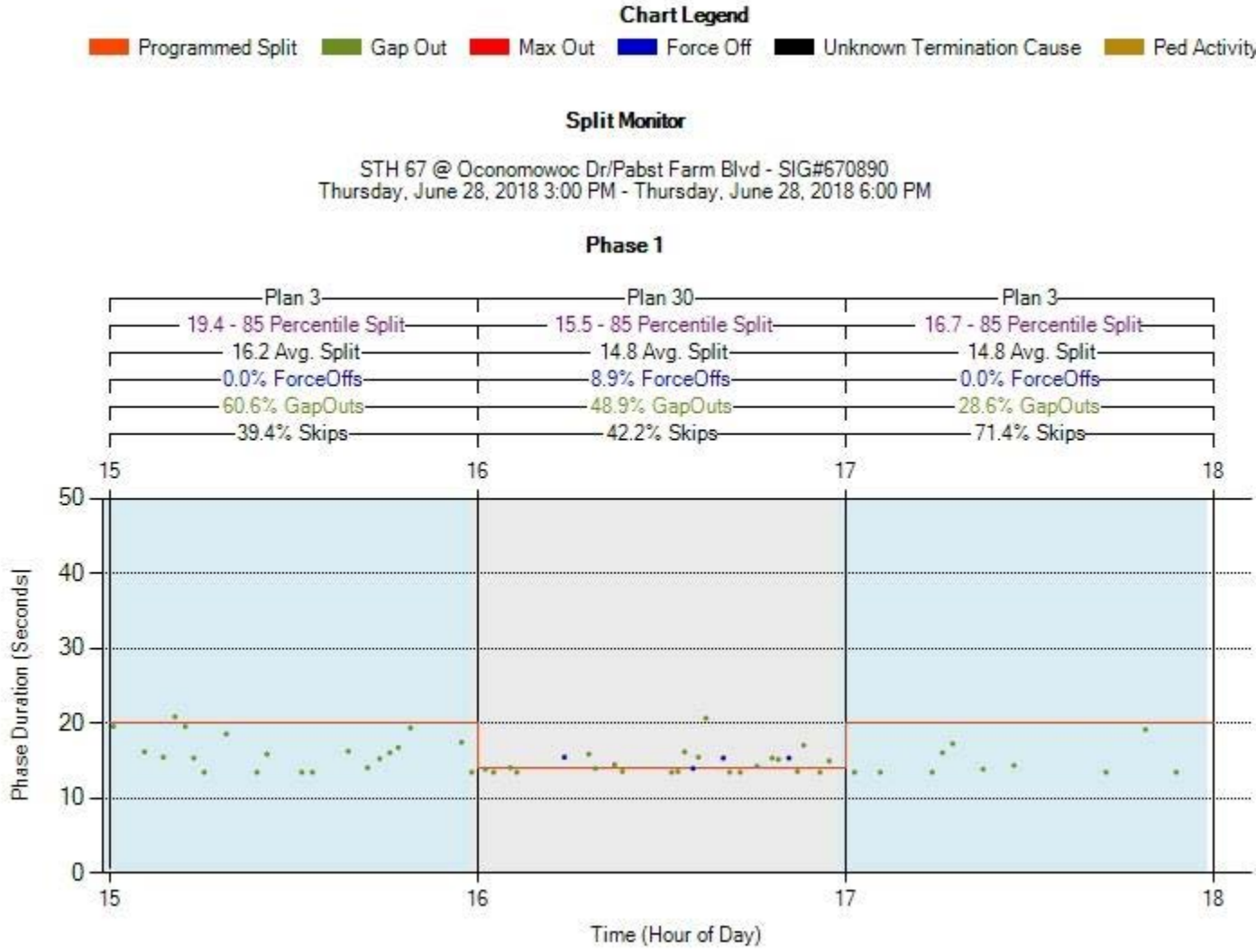
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM



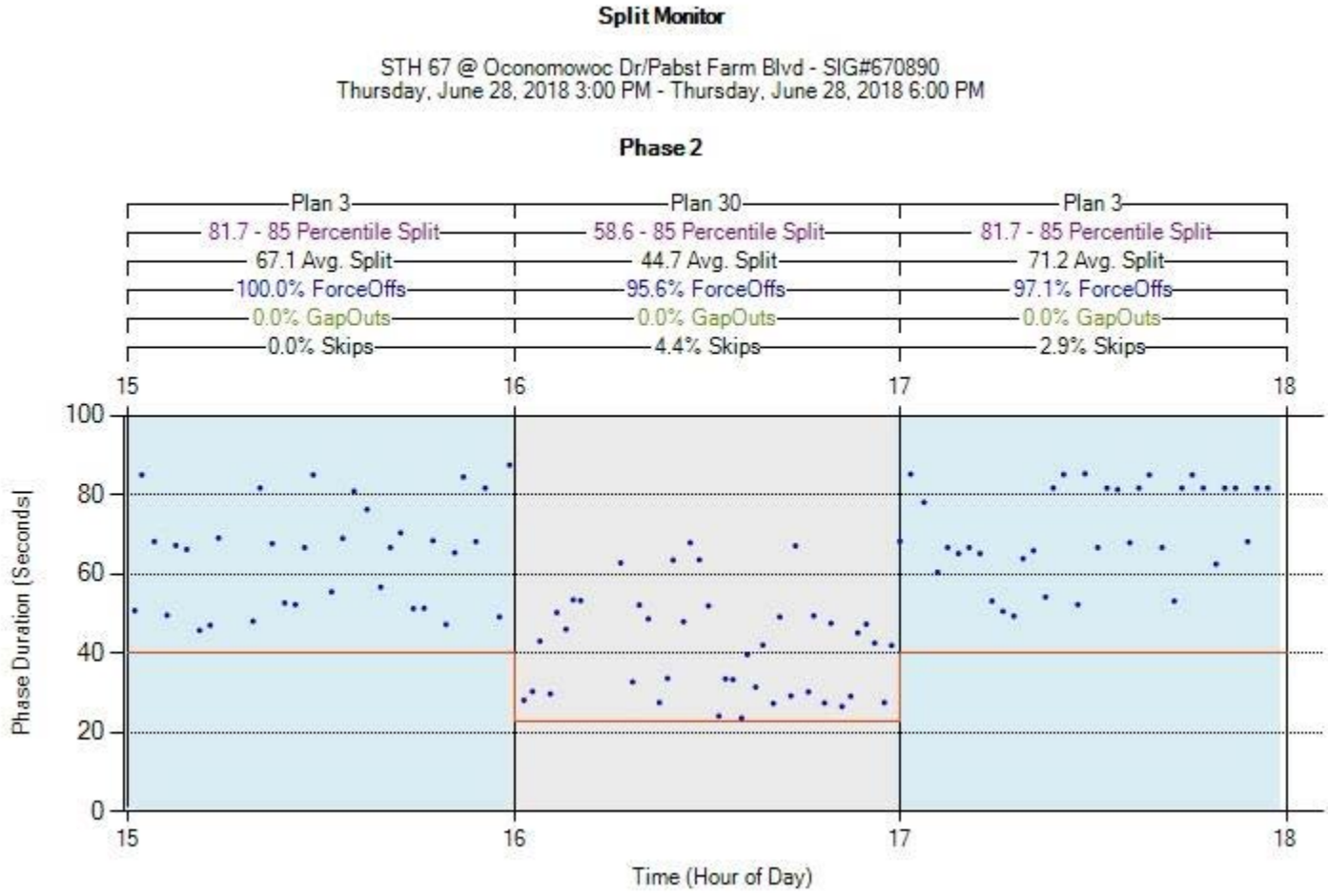
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM



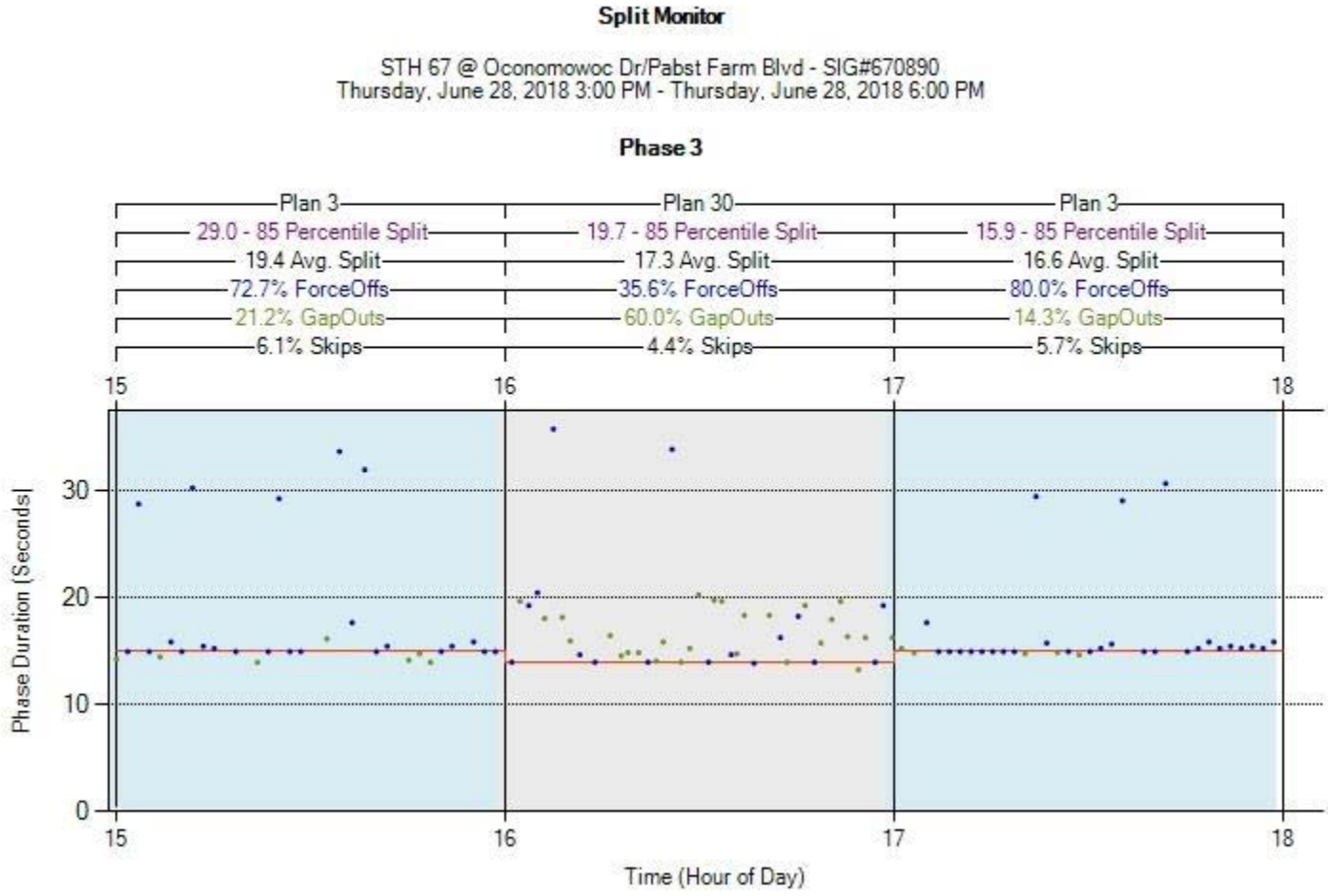
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM



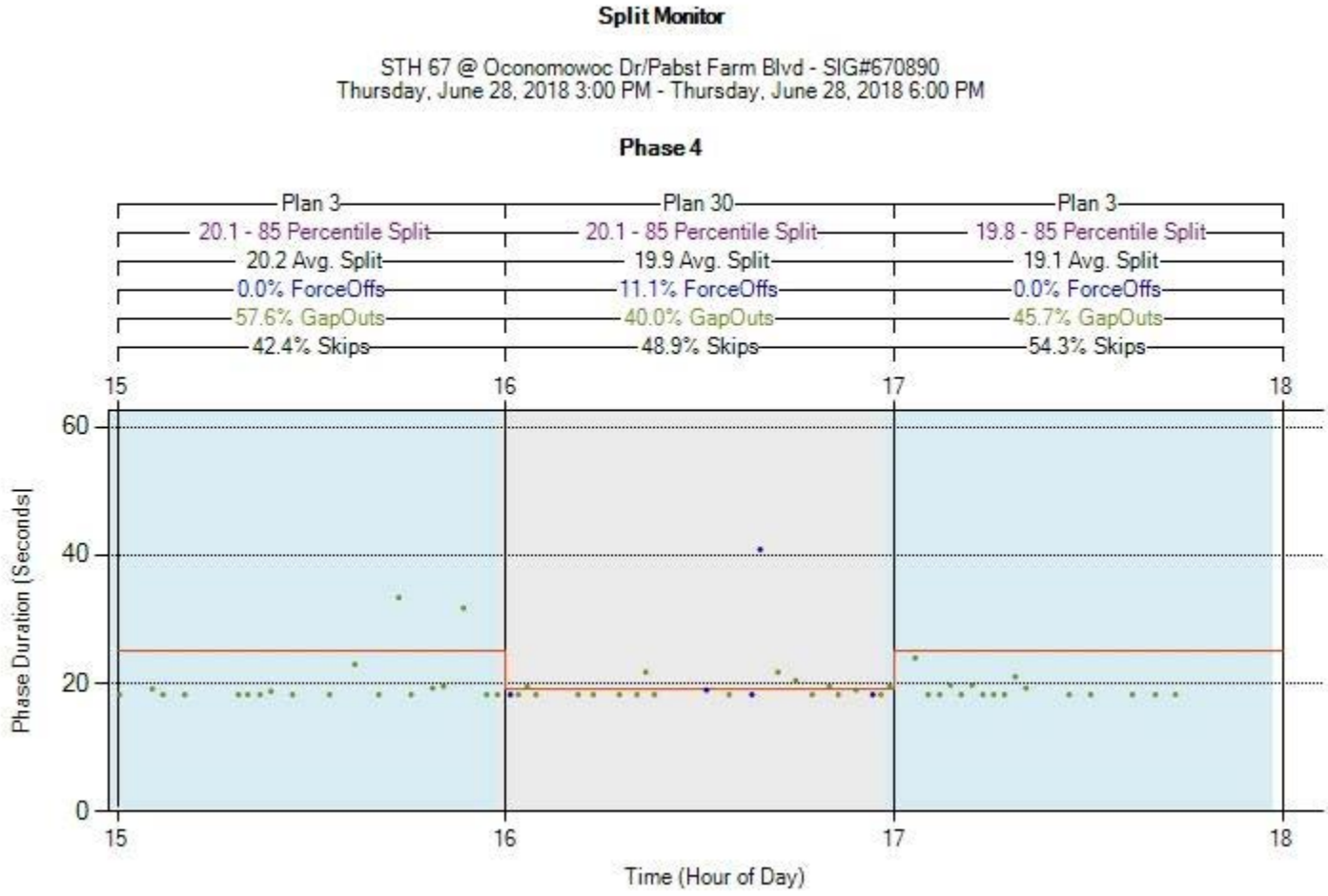
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM



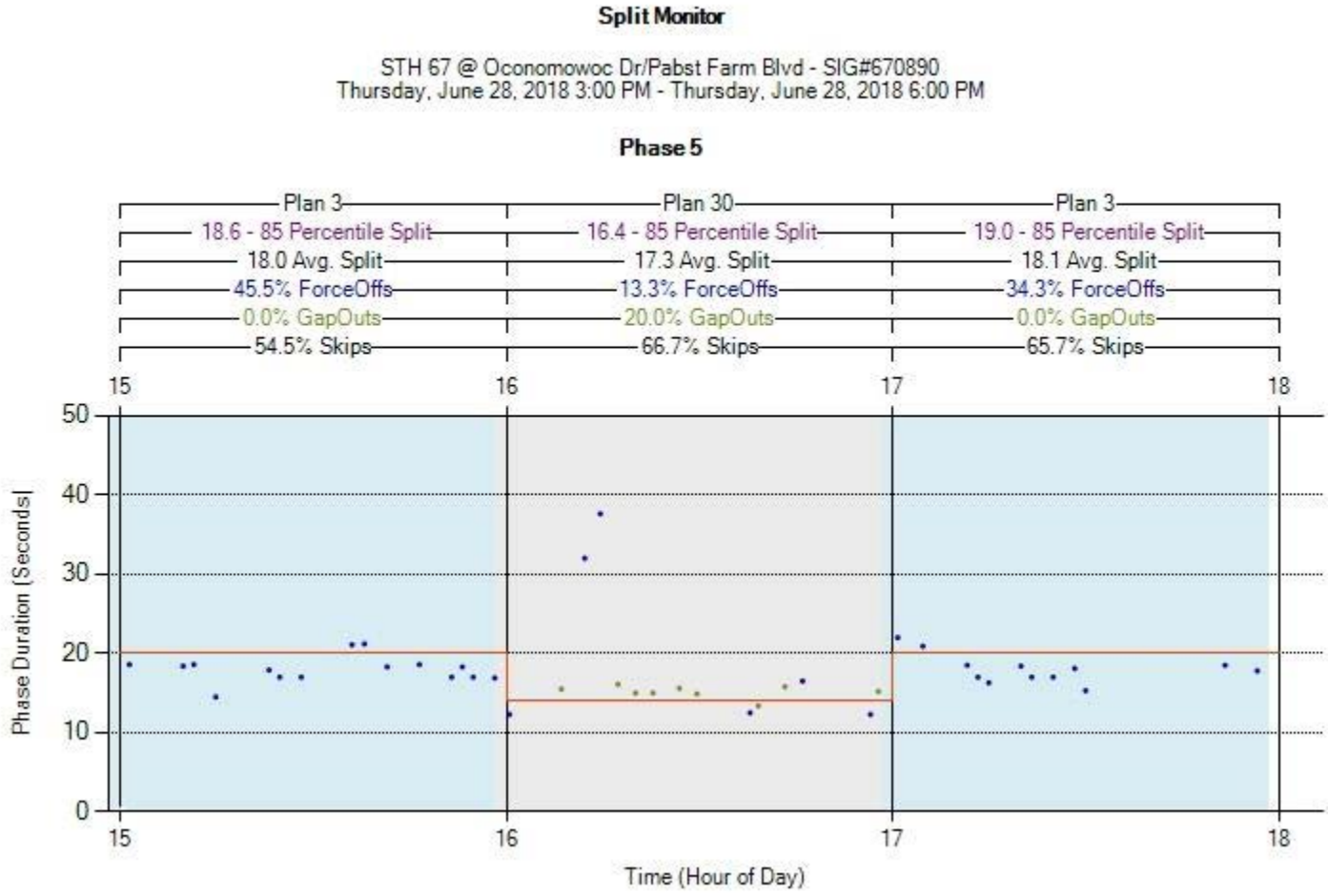
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM

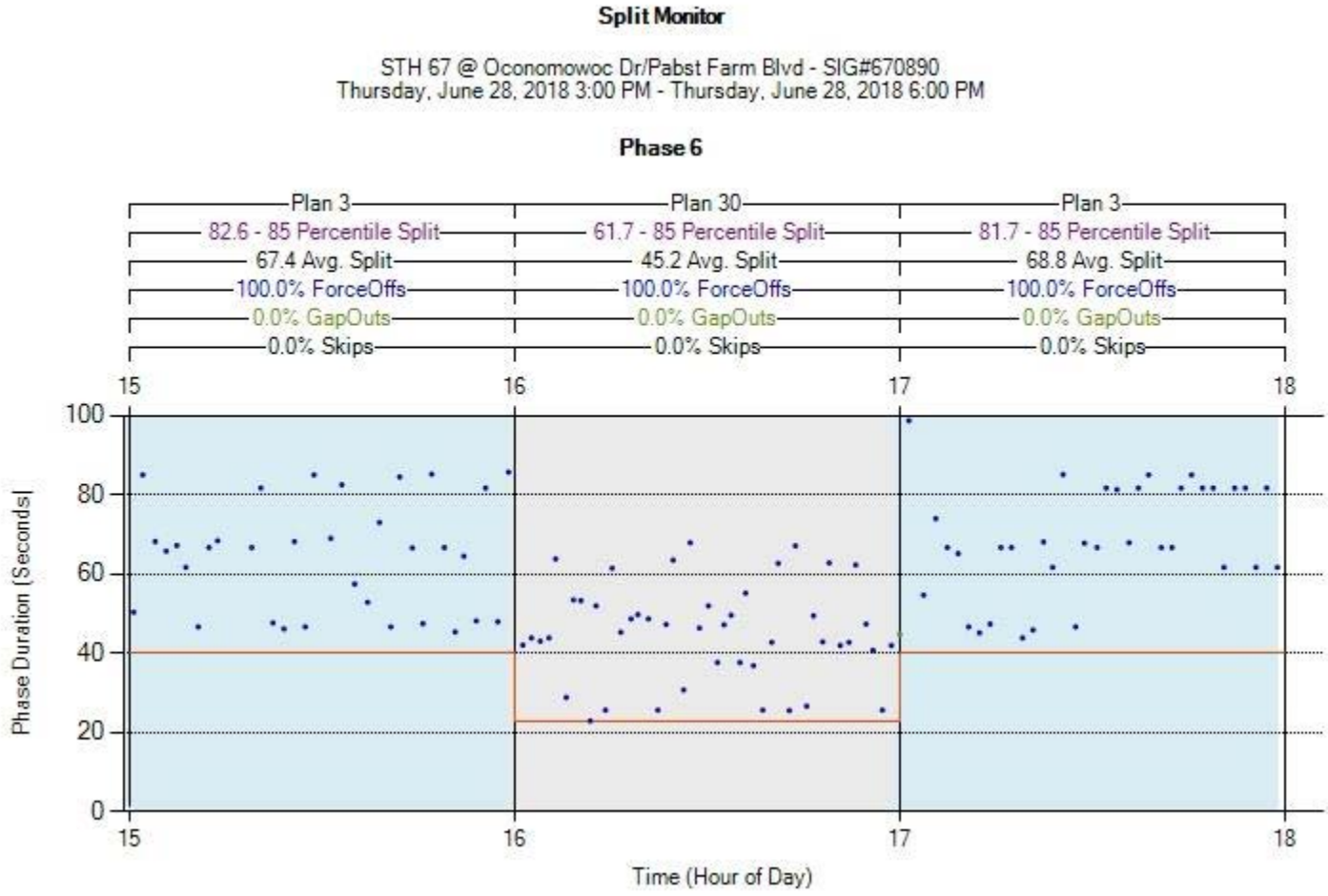


WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM

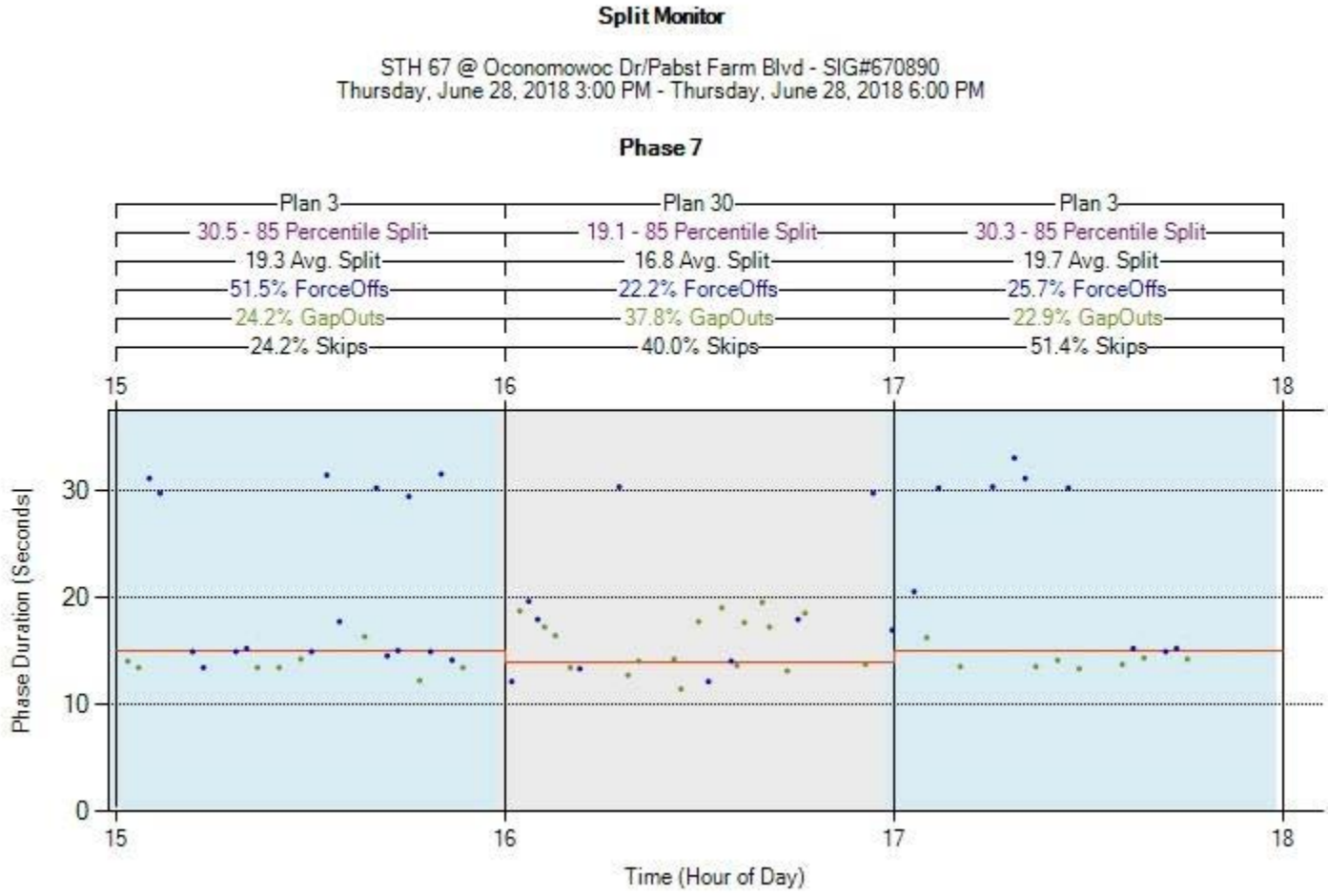


WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM

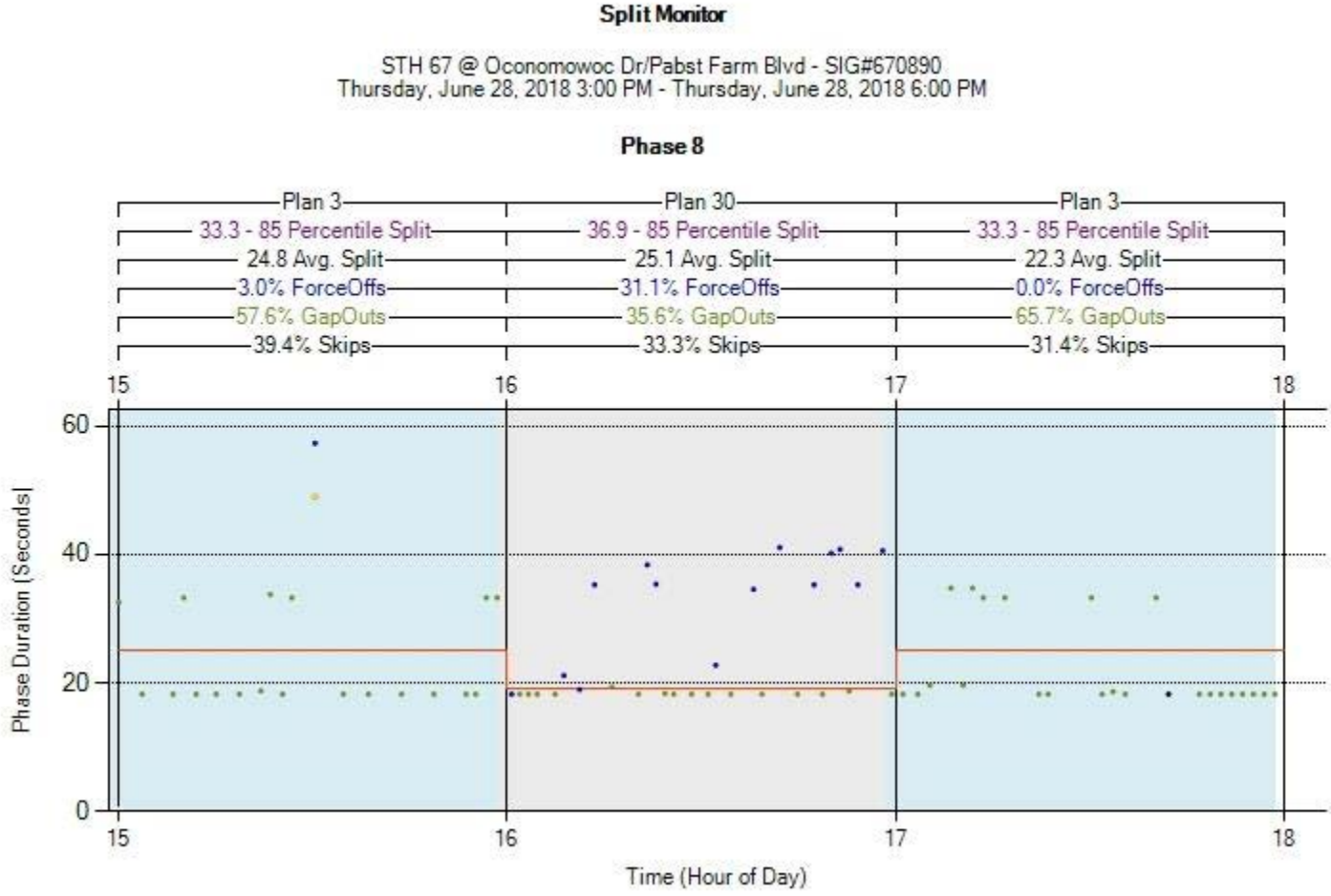



Split Monitor
STH 67 @ Oconomowoc Dr/Pabst Farm Blvd - SIG#670890
Thursday, June 28, 2018 3:00 PM - Thursday, June 28, 2018 6:00 PM
Phase 6
Plan 3
82.6 - 85 Percentile Split
67.4 Avg. Split
100.0% ForceOffs
0.0% GapOuts
0.0% Skips
Plan 30
61.7 - 85 Percentile Split
45.2 Avg. Split
100.0% ForceOffs
0.0% GapOuts
0.0% Skips
Plan 3
81.7 - 85 Percentile Split
68.8 Avg. Split
100.0% ForceOffs
0.0% GapOuts
0.0% Skips
15
16
17
18
100
80
60
40
20
0
Phase Duration (Seconds)
Time (Hour of Day)

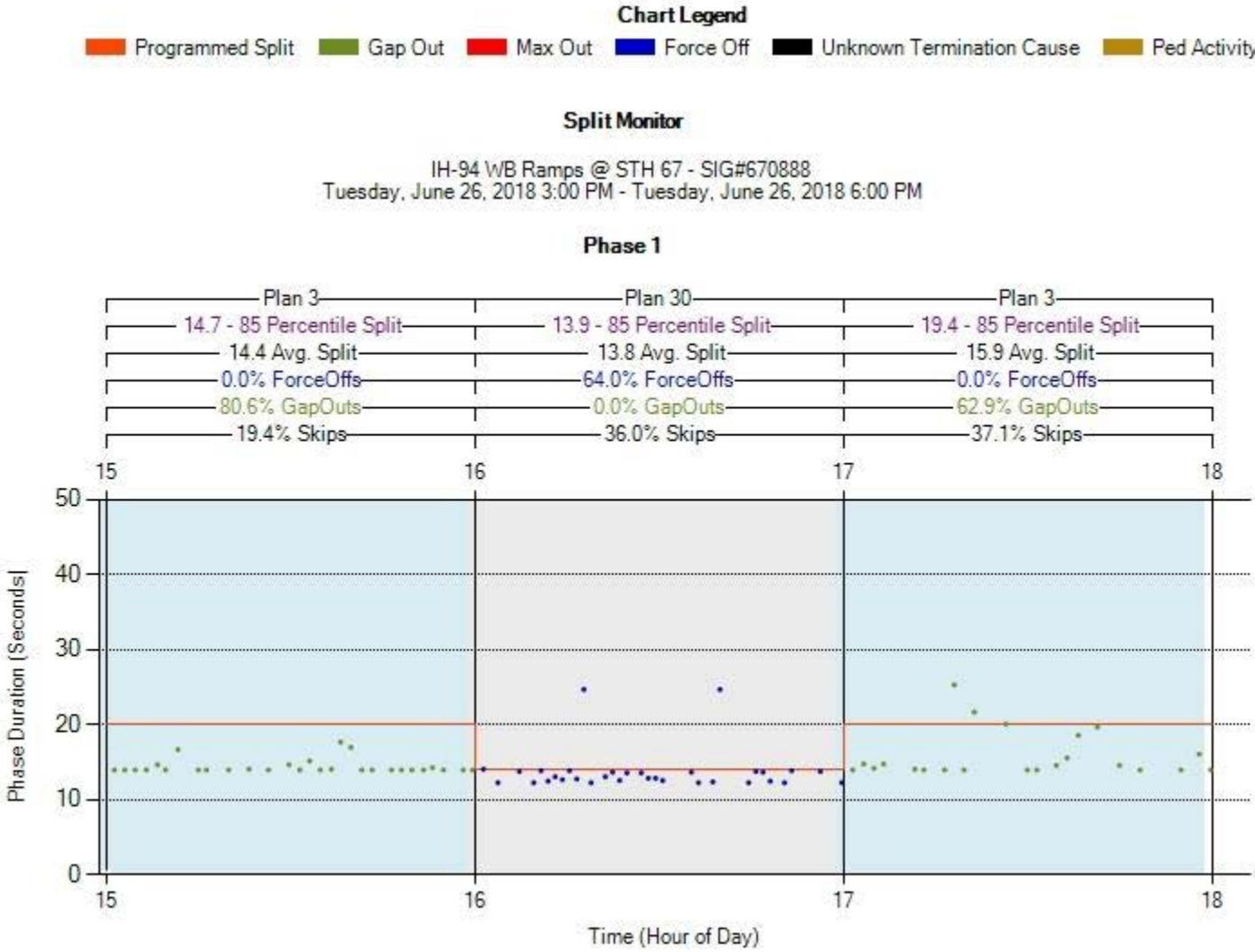
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM



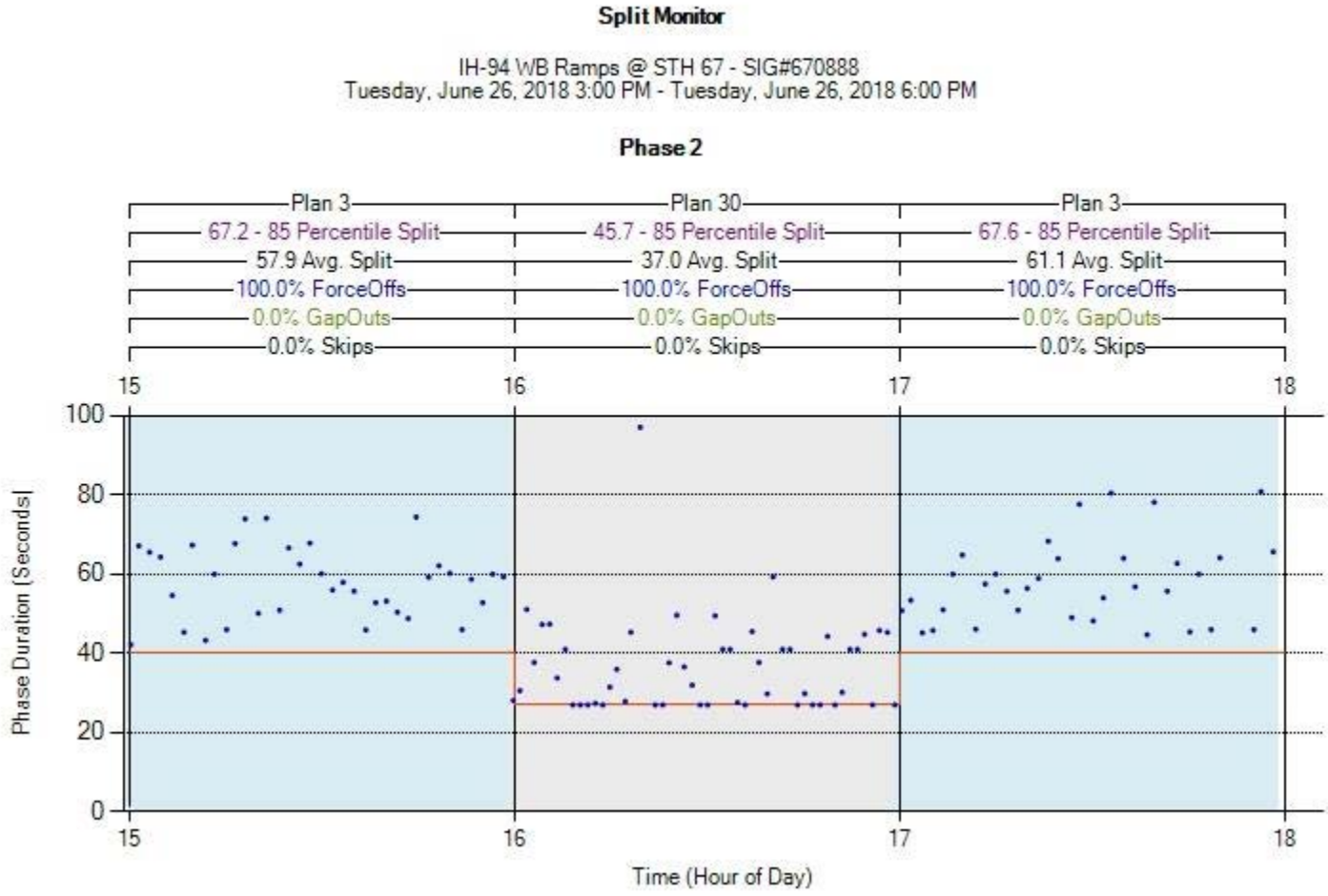
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM

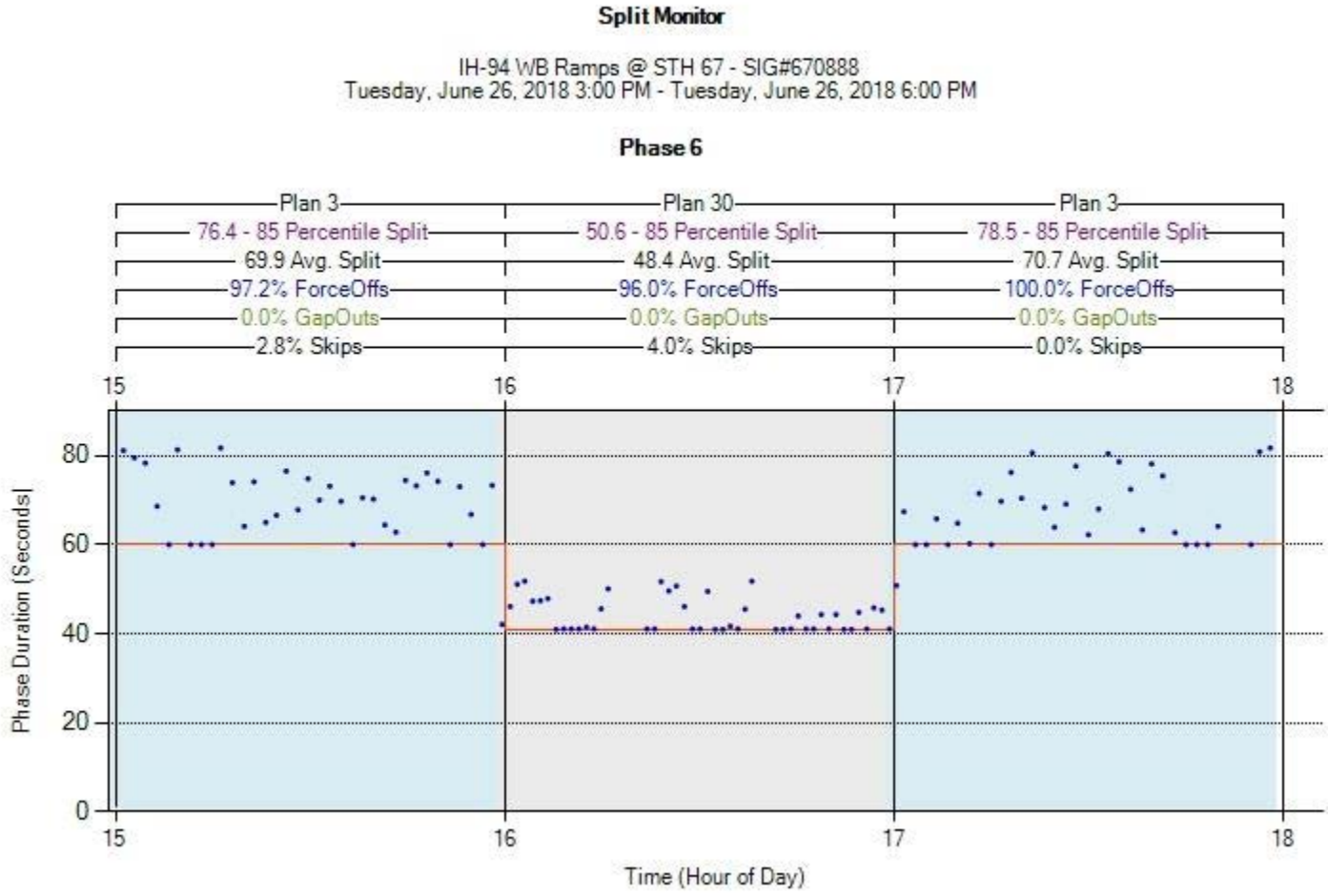


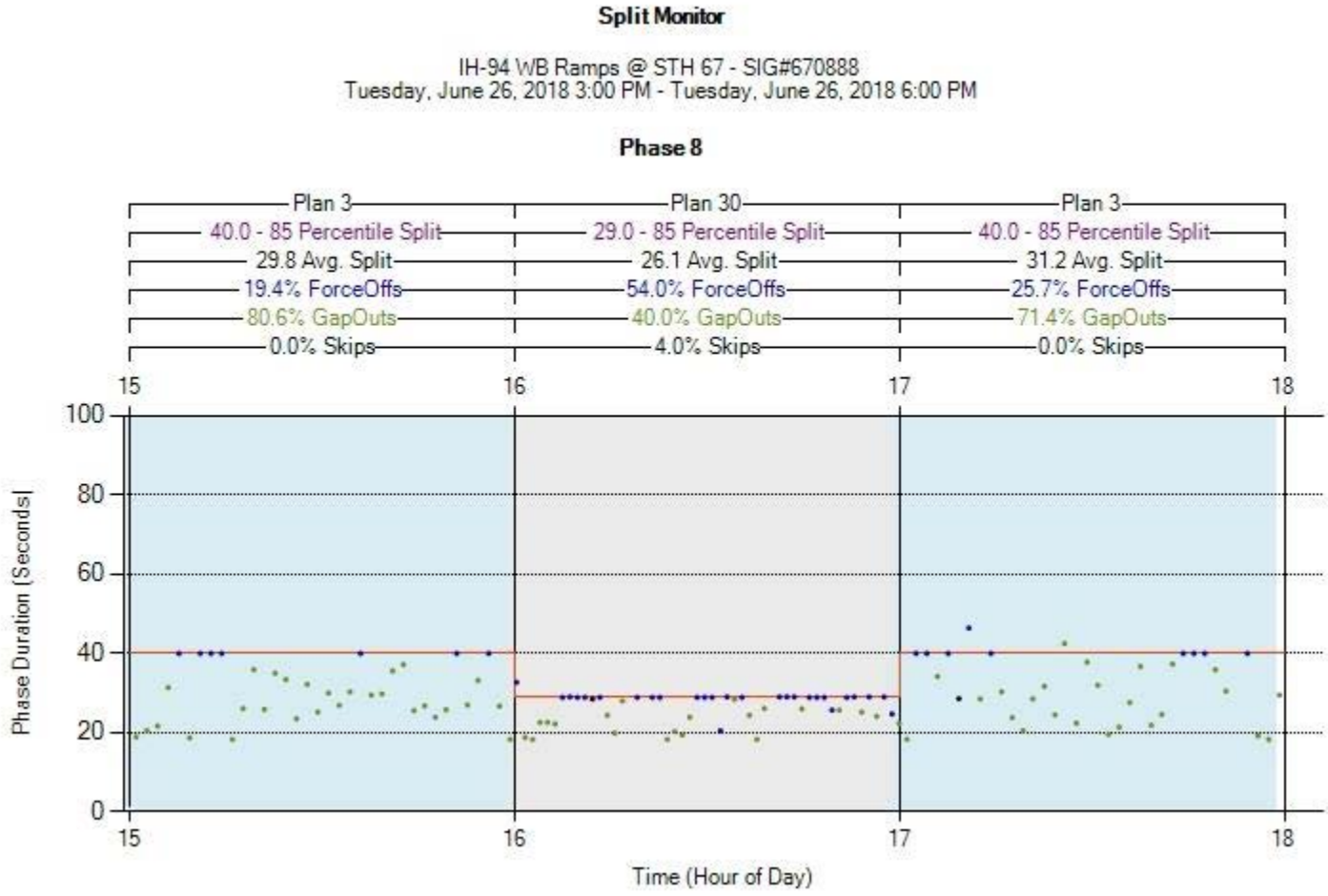
WIS 67 Corridor – STH 67 & I-94 WB Ramps
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM



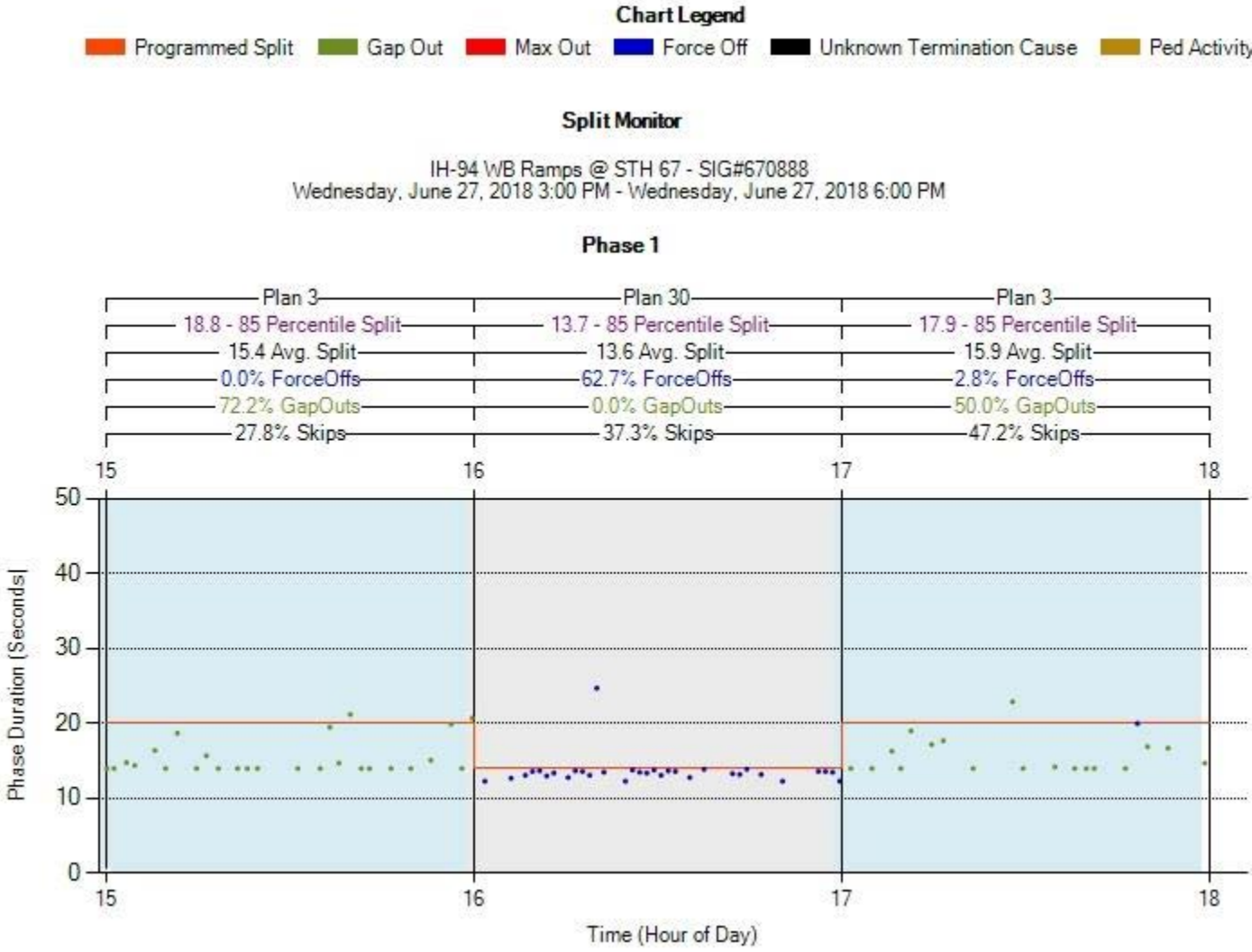
WIS 67 Corridor – STH 67 & I-94 WB Ramps
Synchro Timings
6/26/2018 – 3:00 PM – 6:00 PM



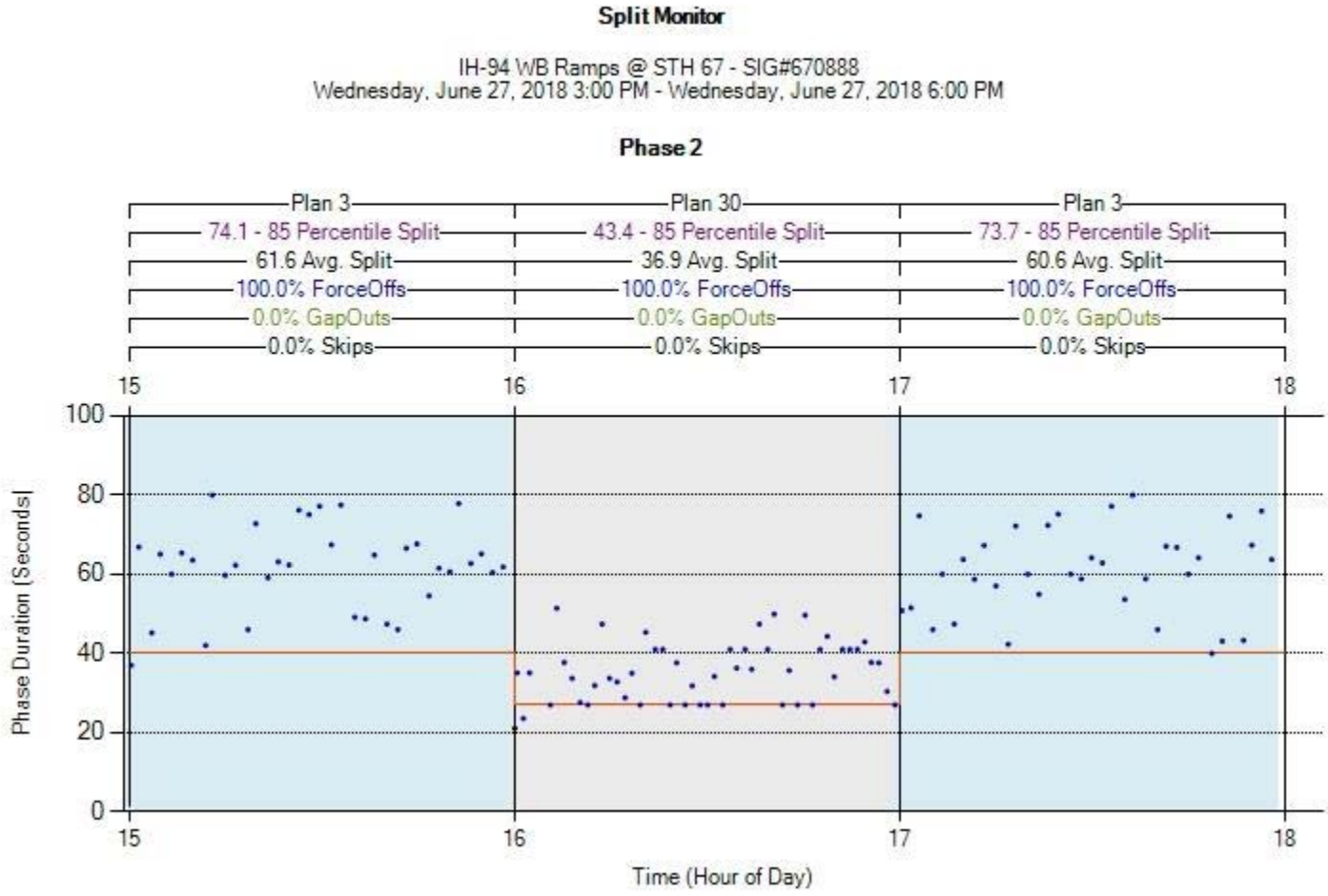

Split Monitor
IH-94 WB Ramps @ STH 67 - SIG#670888
Tuesday, June 26, 2018 3:00 PM - Tuesday, June 26, 2018 6:00 PM
Phase 6
Plan 3
76.4 - 85 Percentile Split
69.9 Avg. Split
97.2% ForceOffs
0.0% GapOuts
2.8% Skips
Plan 30
50.6 - 85 Percentile Split
48.4 Avg. Split
96.0% ForceOffs
0.0% GapOuts
4.0% Skips
Plan 3
78.5 - 85 Percentile Split
70.7 Avg. Split
100.0% ForceOffs
0.0% GapOuts
0.0% Skips
15
16
17
18
80
60
40
20
0
Phase Duration (Seconds)
Time (Hour of Day)

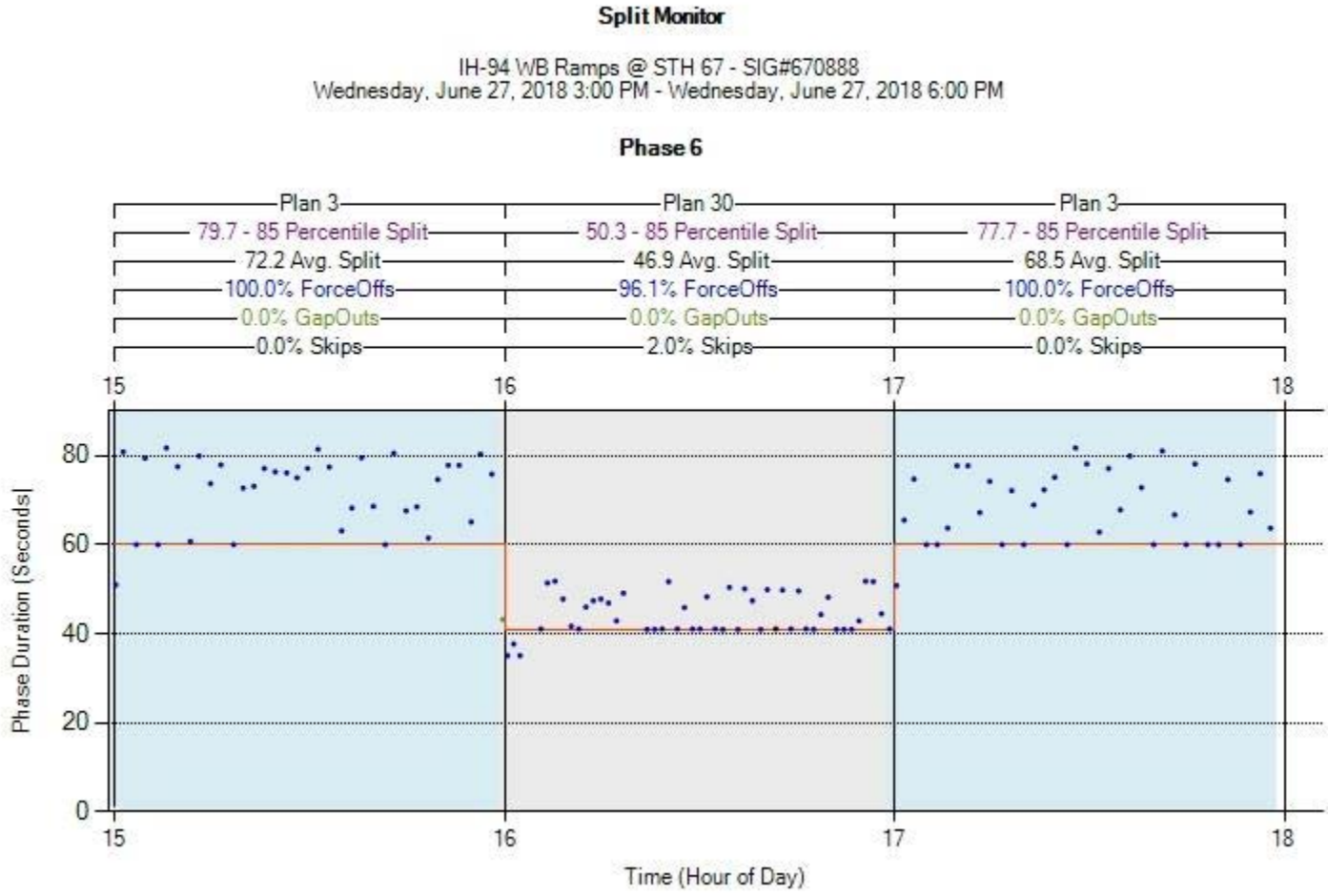

Split Monitor
IH-94 WB Ramps @ STH 67 - SIG#670888
Tuesday, June 26, 2018 3:00 PM - Tuesday, June 26, 2018 6:00 PM
Phase 8
Plan 3
40.0 - 85 Percentile Split
29.8 Avg. Split
19.4% ForceOffs
80.6% GapOuts
0.0% Skips
Plan 30
29.0 - 85 Percentile Split
26.1 Avg. Split
54.0% ForceOffs
40.0% GapOuts
4.0% Skips
Plan 3
40.0 - 85 Percentile Split
31.2 Avg. Split
25.7% ForceOffs
71.4% GapOuts
0.0% Skips
15
16
17
18
100
80
60
40
20
0
Phase Duration (Seconds)
Time (Hour of Day)

WIS 67 Corridor – STH 67 & I-94 WB Ramps
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM

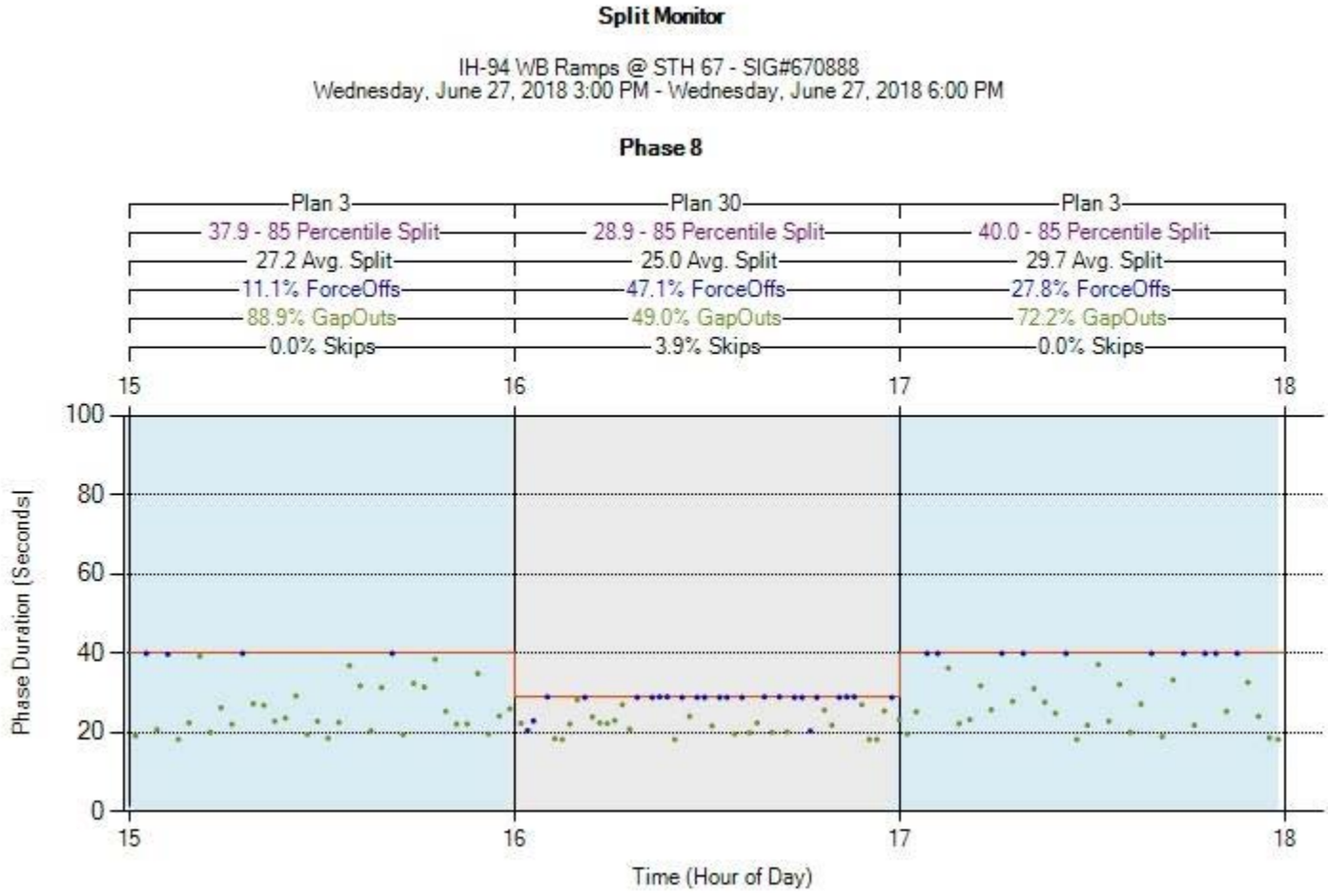


WIS 67 Corridor – STH 67 & I-94 WB Ramps
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM

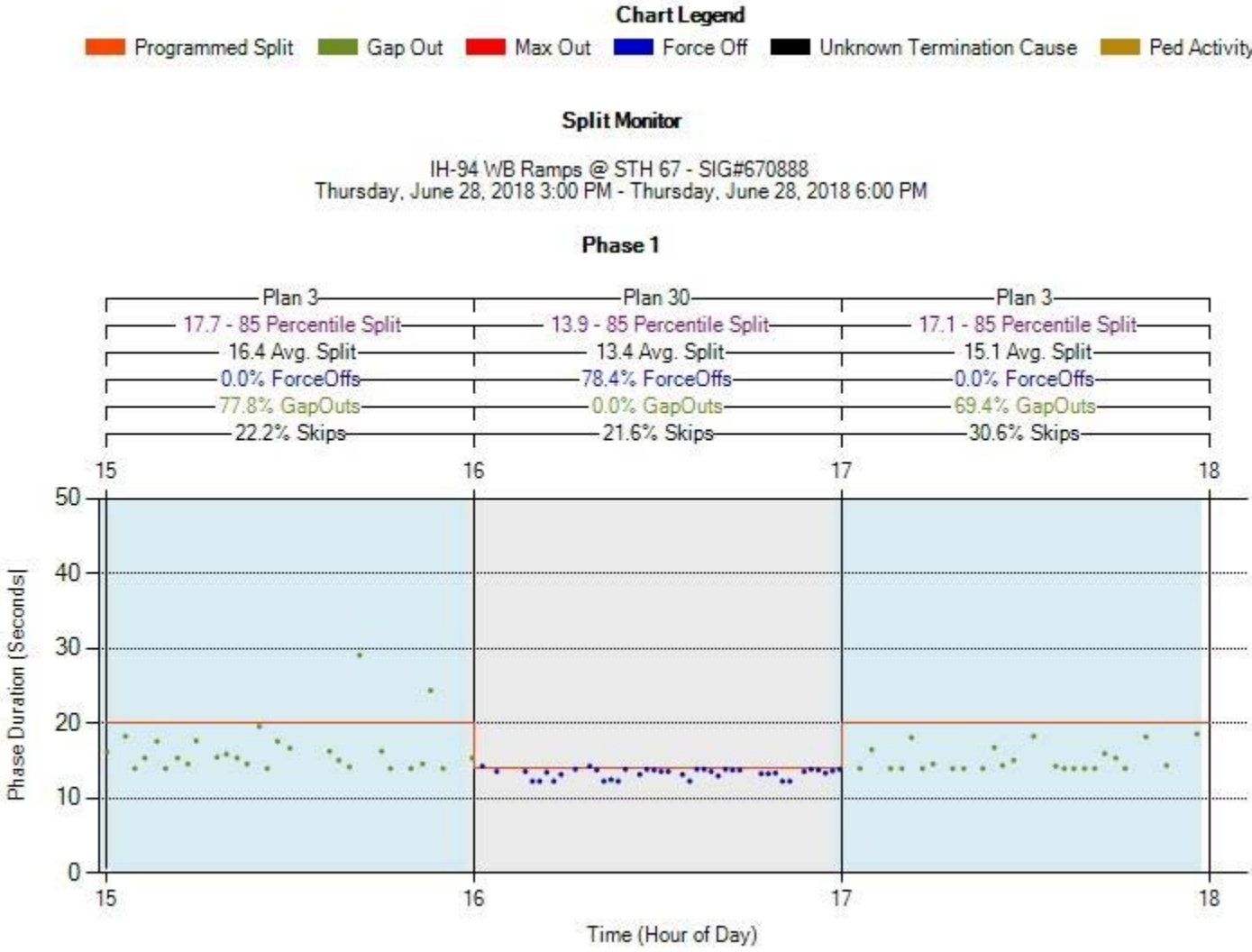



Split Monitor
IH-94 WB Ramps @ STH 67 - SIG#670888
Wednesday, June 27, 2018 3:00 PM - Wednesday, June 27, 2018 6:00 PM
Phase 6
Plan 3
79.7 - 85 Percentile Split
72.2 Avg. Split
100.0% ForceOffs
0.0% GapOuts
0.0% Skips
Plan 30
50.3 - 85 Percentile Split
46.9 Avg. Split
96.1% ForceOffs
0.0% GapOuts
2.0% Skips
Plan 3
77.7 - 85 Percentile Split
68.5 Avg. Split
100.0% ForceOffs
0.0% GapOuts
0.0% Skips
Phase Duration (Seconds)
Time (Hour of Day)

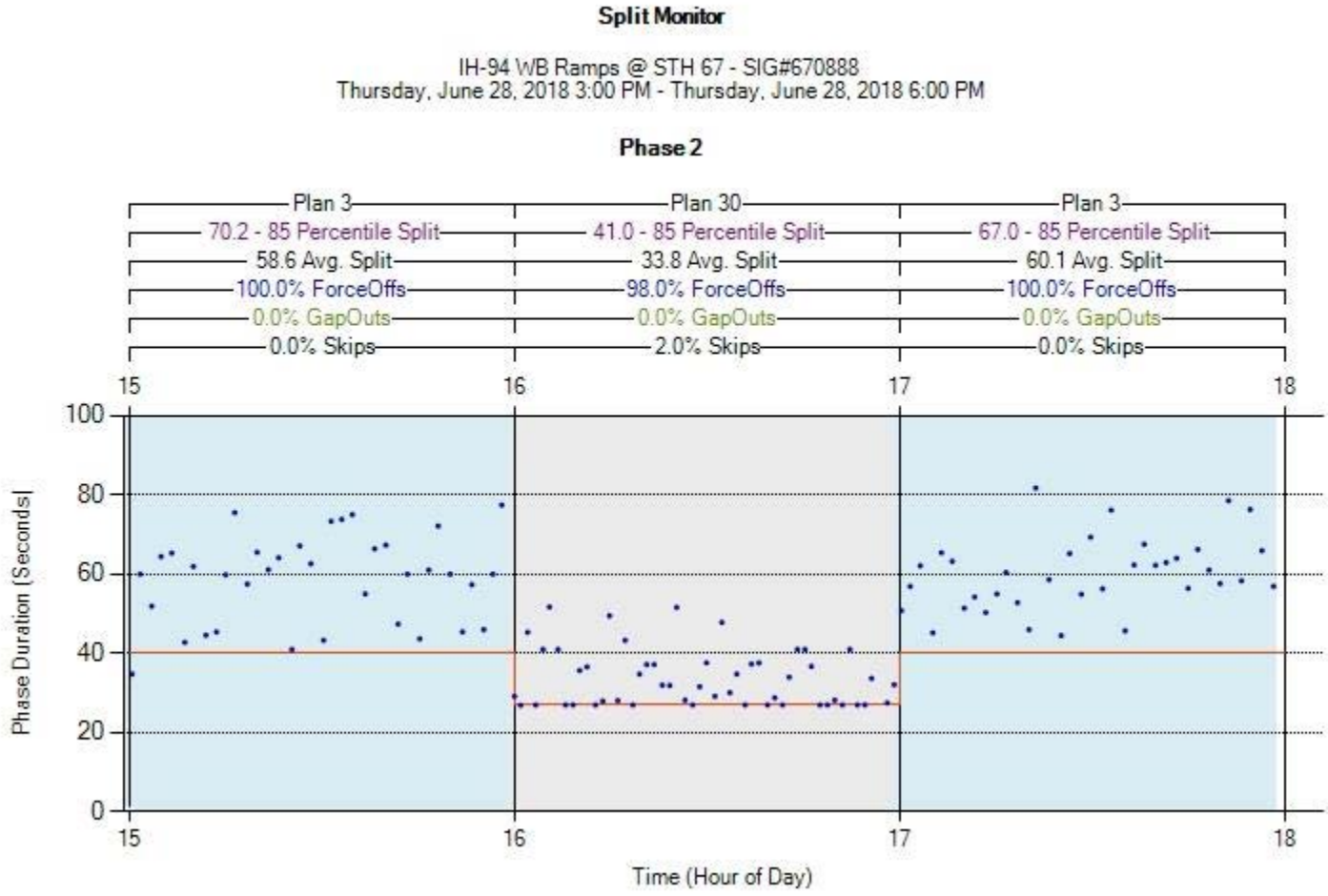
WIS 67 Corridor – STH 67 & I-94 WB Ramps
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM

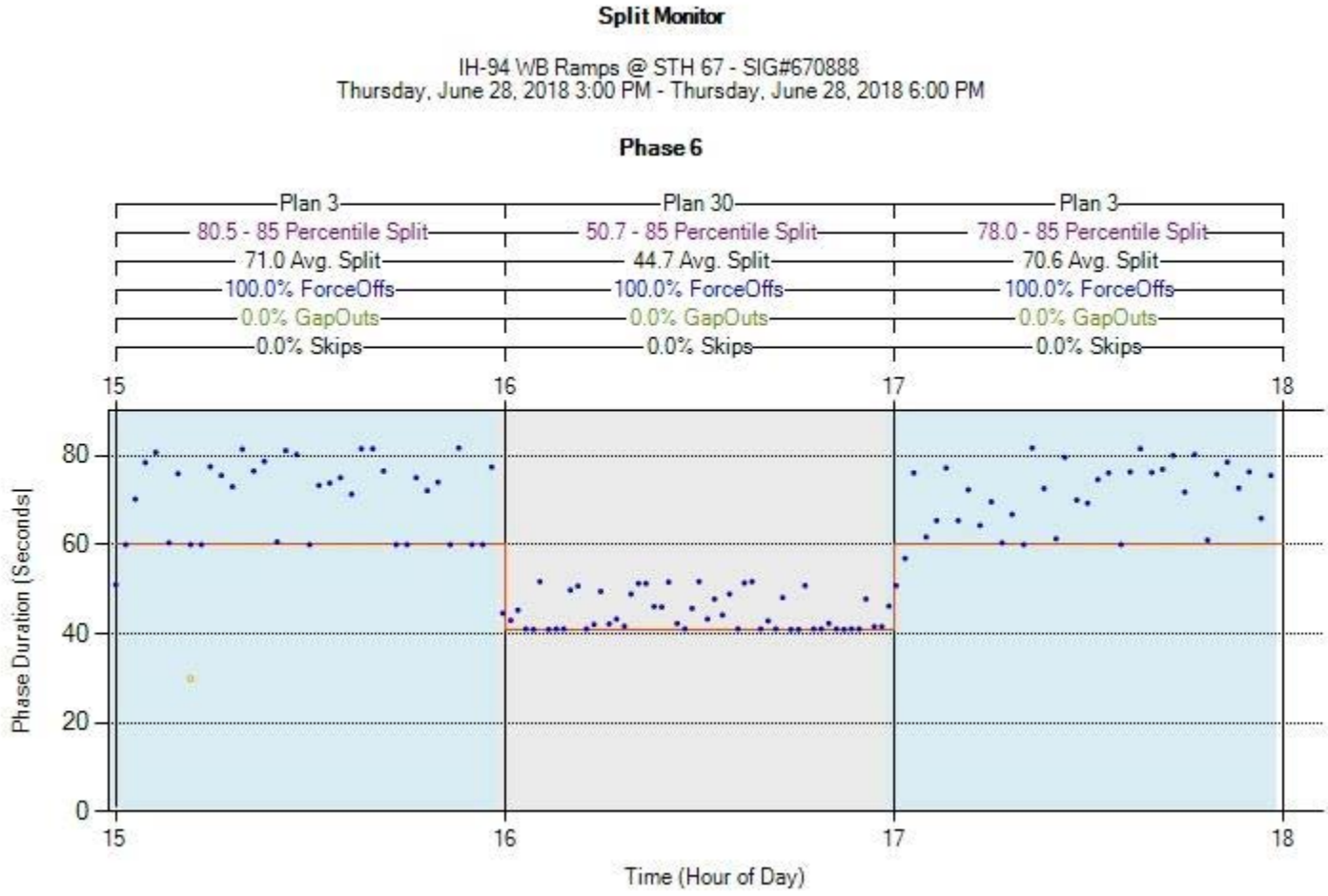


WIS 67 Corridor – STH 67 & I-94 WB Ramps
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM

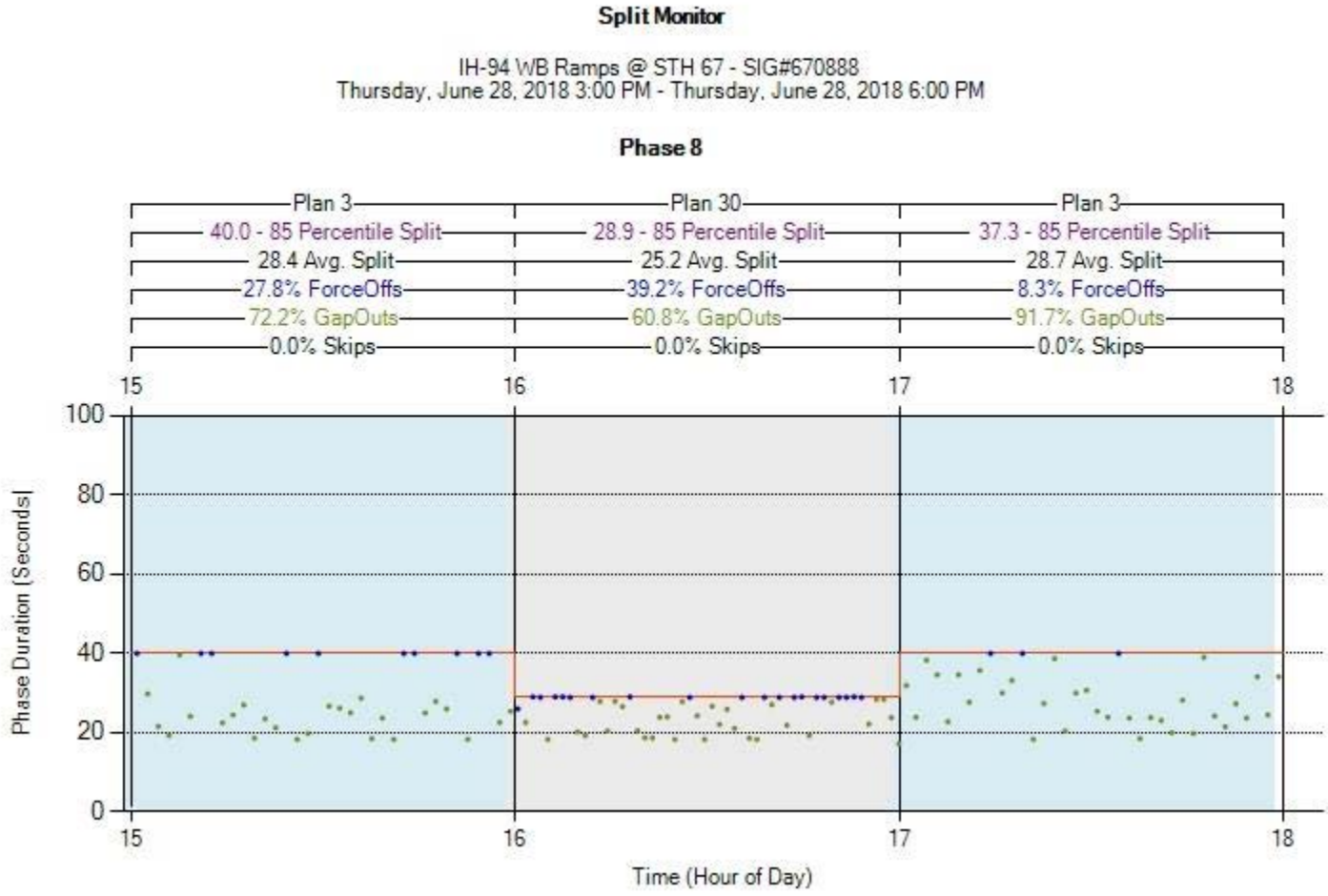


WIS 67 Corridor – STH 67 & I-94 WB Ramps
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM




Split Monitor
IH-94 WB Ramps @ STH 67 - SIG#670888
Thursday, June 28, 2018 3:00 PM - Thursday, June 28, 2018 6:00 PM
Phase 6
Plan 3
80.5 - 85 Percentile Split
71.0 Avg. Split
100.0% ForceOffs
0.0% GapOuts
0.0% Skips
Plan 30
50.7 - 85 Percentile Split
44.7 Avg. Split
100.0% ForceOffs
0.0% GapOuts
0.0% Skips
Plan 3
78.0 - 85 Percentile Split
70.6 Avg. Split
100.0% ForceOffs
0.0% GapOuts
0.0% Skips
Phase Duration (Seconds)
Time (Hour of Day)

WIS 67 Corridor – STH 67 & I-94 WB Ramps
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM



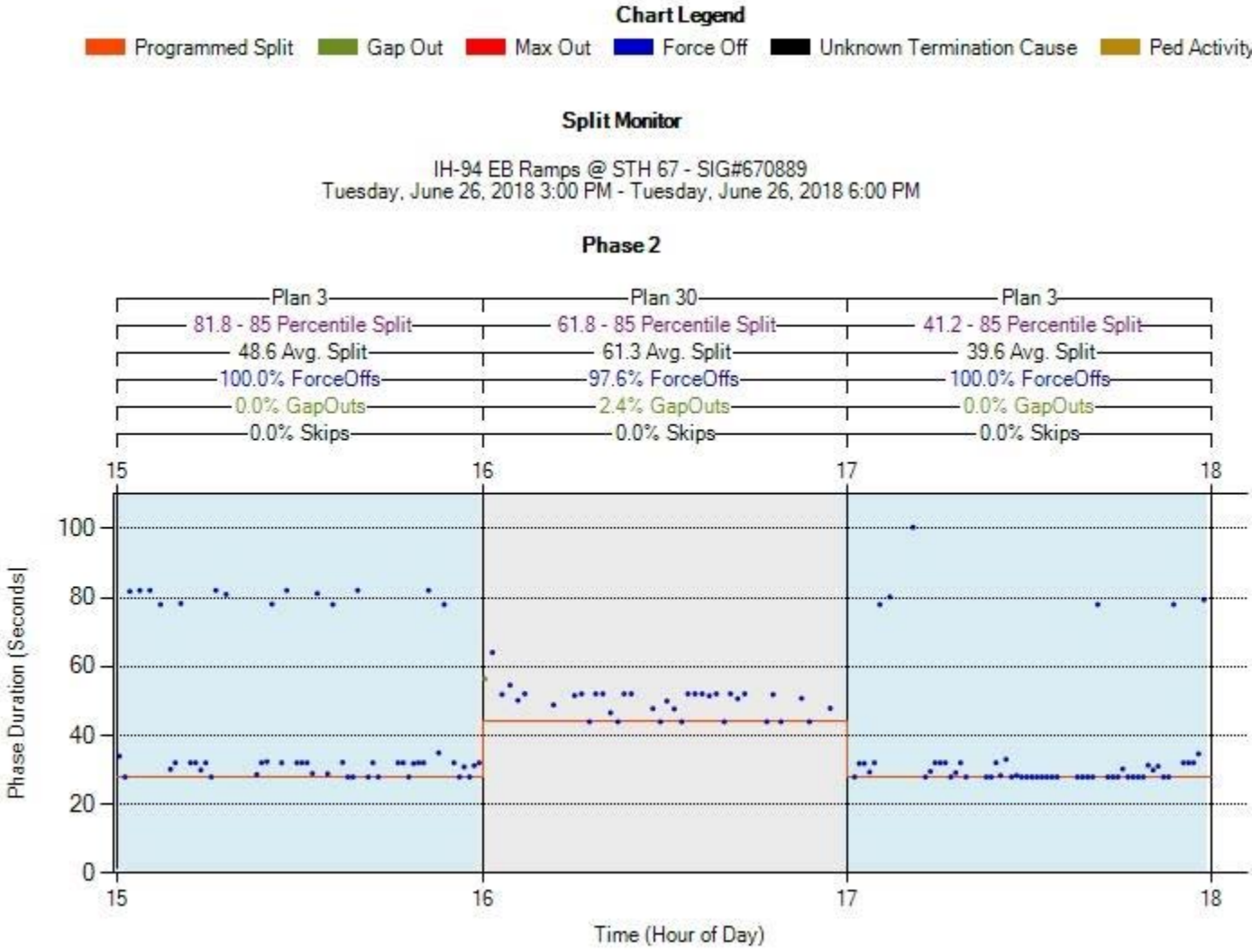
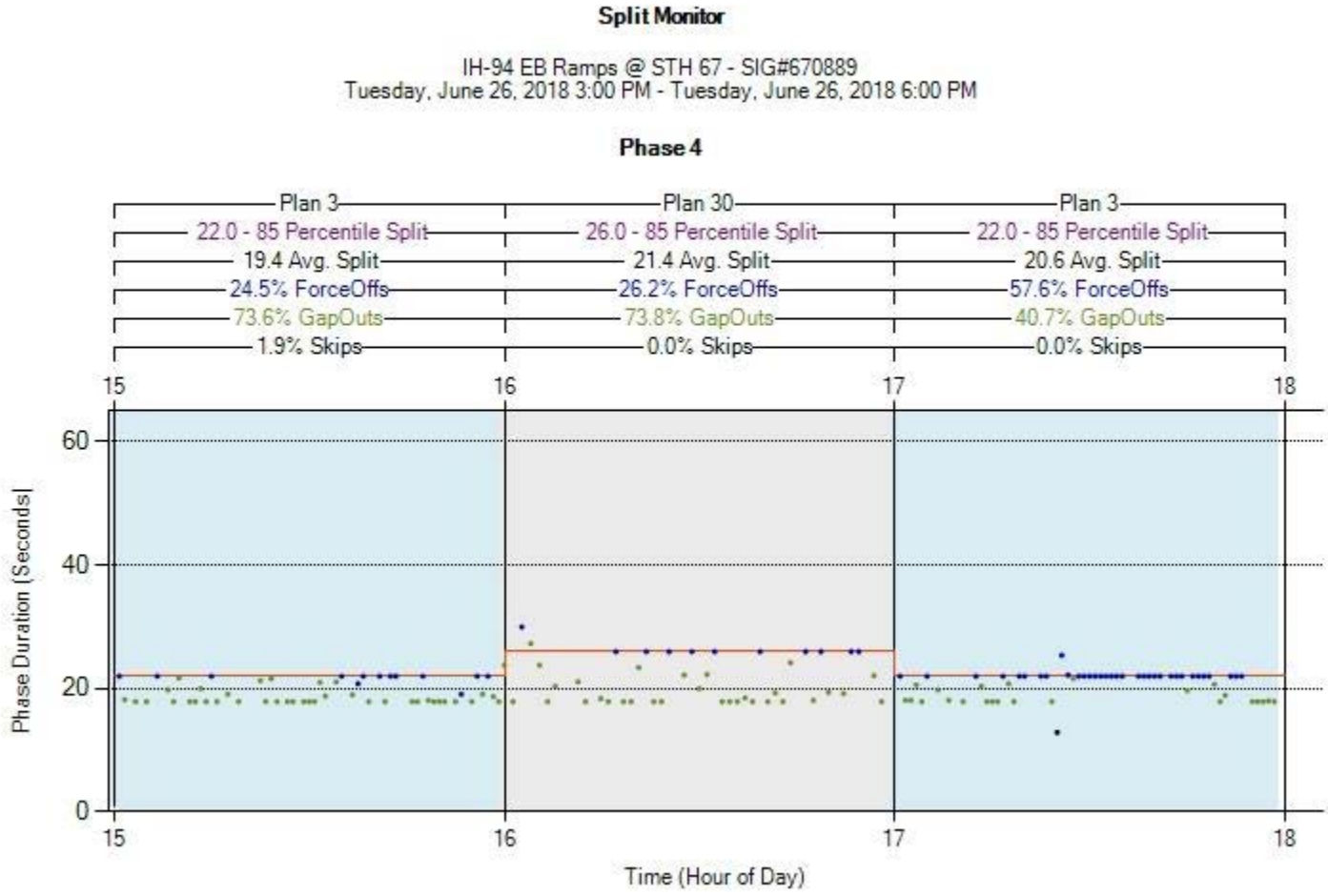
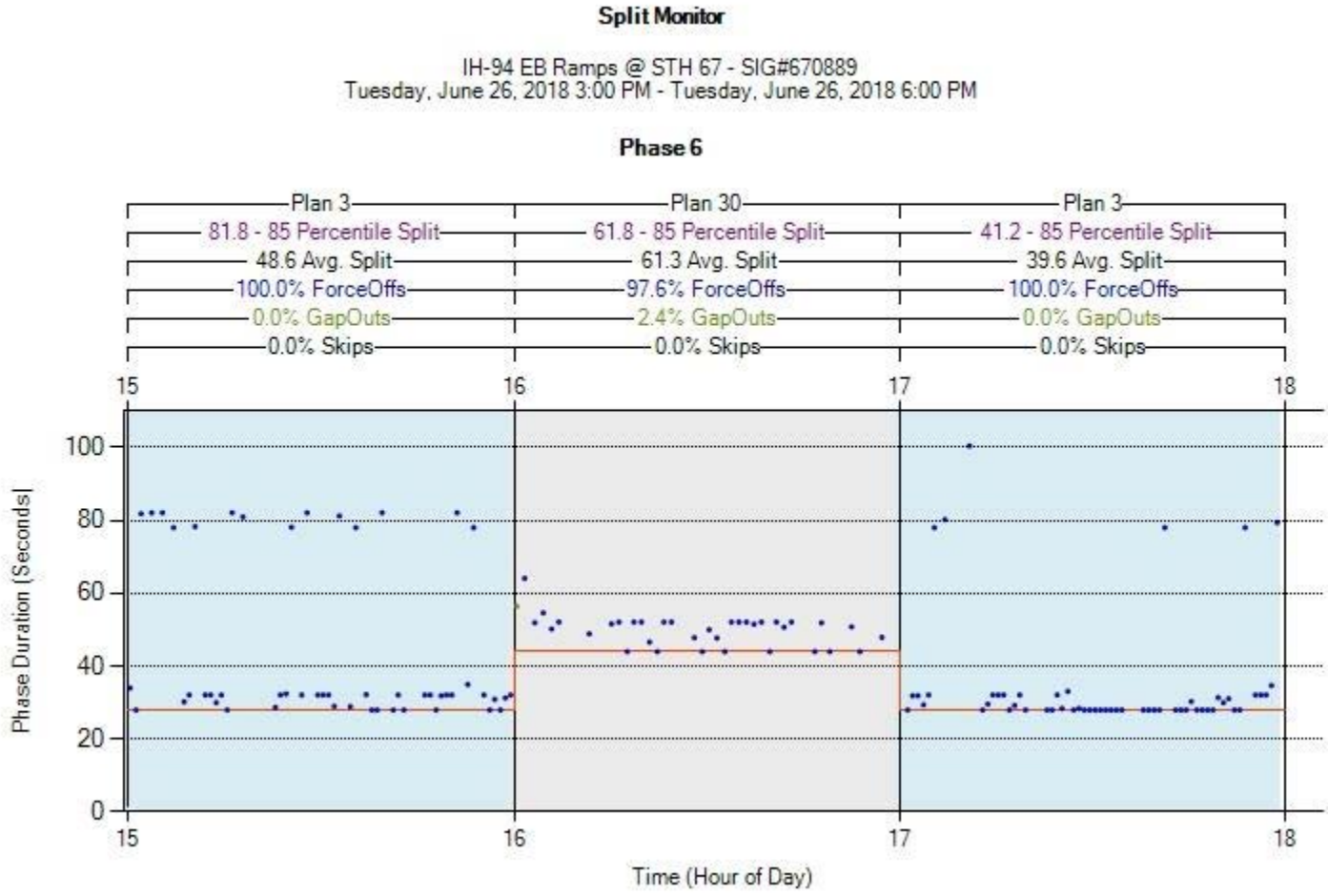
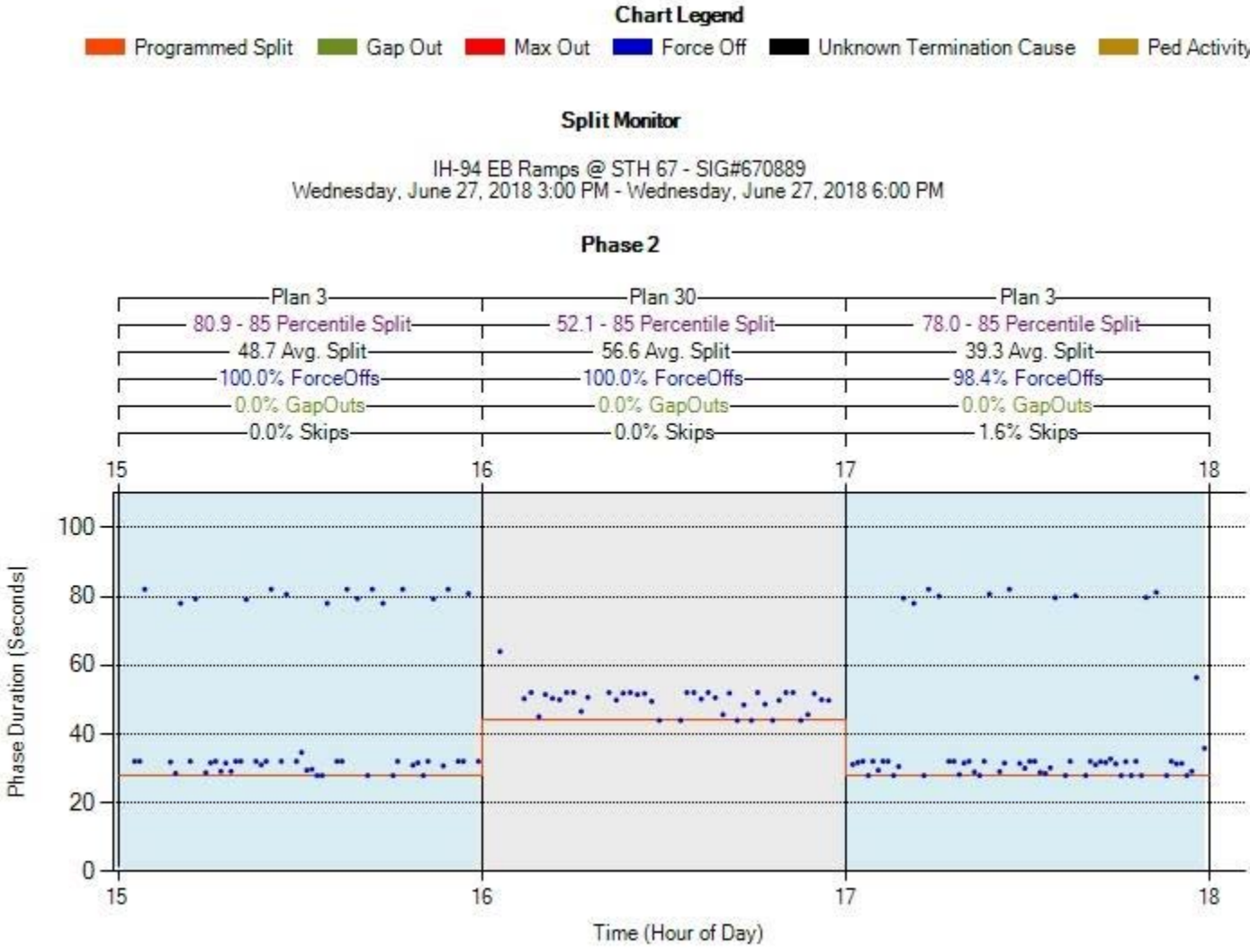


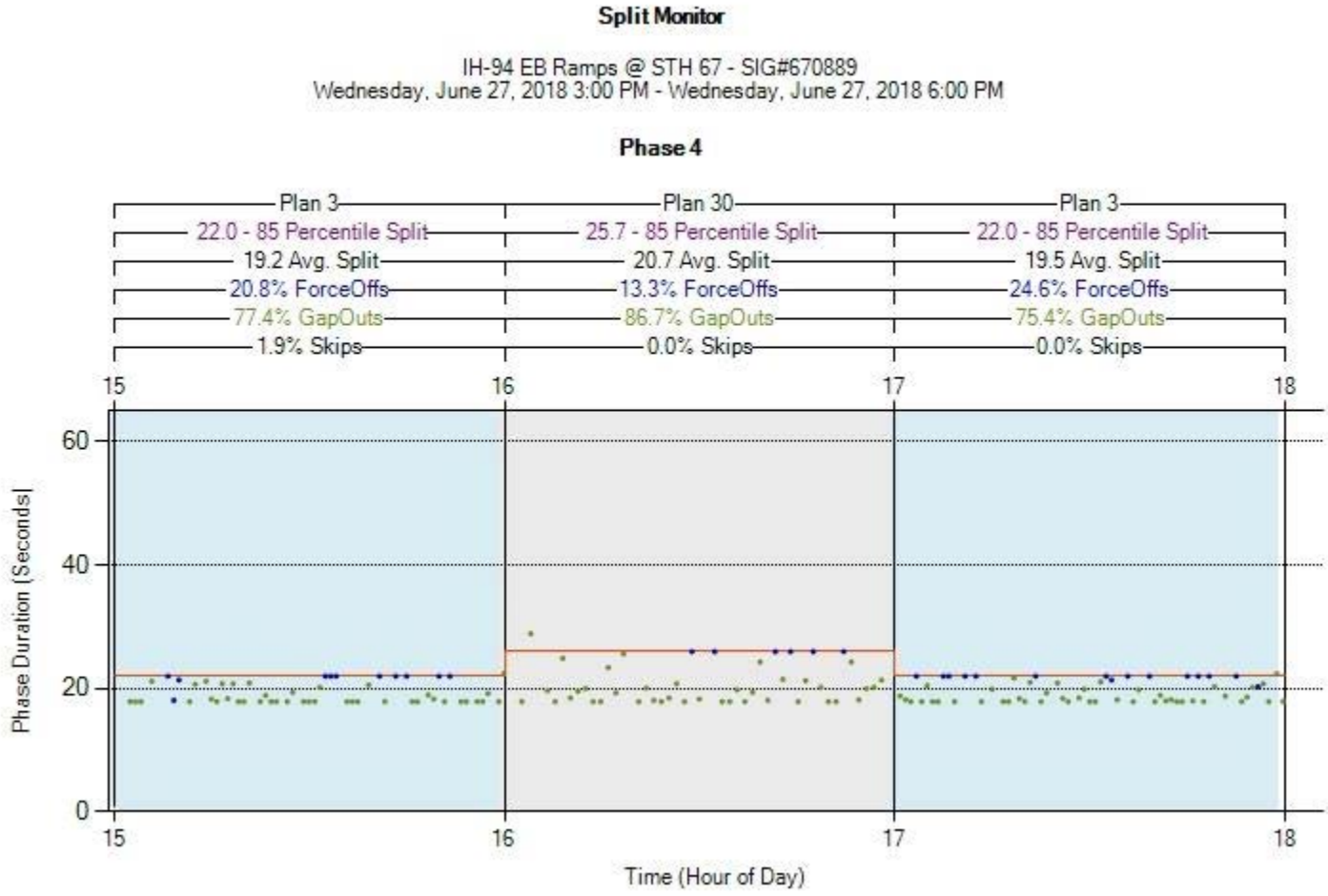
Chart Legend
Programmed Split
Gap Out
Max Out
Force Off
Unknown Termination Cause
Ped Activity
Split Monitor
IH-94 EB Ramps @ STH 67 - SIG#670889
Tuesday, June 26, 2018 3:00 PM - Tuesday, June 26, 2018 6:00 PM
Phase 2
Plan 3
81.8 - 85 Percentile Split
48.6 Avg. Split
100.0% ForceOffs
0.0% GapOuts
0.0% Skips
Plan 30
61.8 - 85 Percentile Split
61.3 Avg. Split
97.6% ForceOffs
2.4% GapOuts
0.0% Skips
Plan 3
41.2 - 85 Percentile Split
39.6 Avg. Split
100.0% ForceOffs
0.0% GapOuts
0.0% Skips
15
16
17
18
100
80
60
40
20
0
Phase Duration (Seconds)
Time (Hour of Day)


Split Monitor
IH-94 EB Ramps @ STH 67 - SIG#670889
Tuesday, June 26, 2018 3:00 PM - Tuesday, June 26, 2018 6:00 PM
Phase 4
Plan 3
22.0 - 85 Percentile Split
19.4 Avg. Split
24.5% ForceOffs
73.6% GapOuts
1.9% Skips
Plan 30
26.0 - 85 Percentile Split
21.4 Avg. Split
26.2% ForceOffs
73.8% GapOuts
0.0% Skips
Plan 3
22.0 - 85 Percentile Split
20.6 Avg. Split
57.6% ForceOffs
40.7% GapOuts
0.0% Skips
15
16
17
18
60
40
20
0
Phase Duration (Seconds)
Time (Hour of Day)

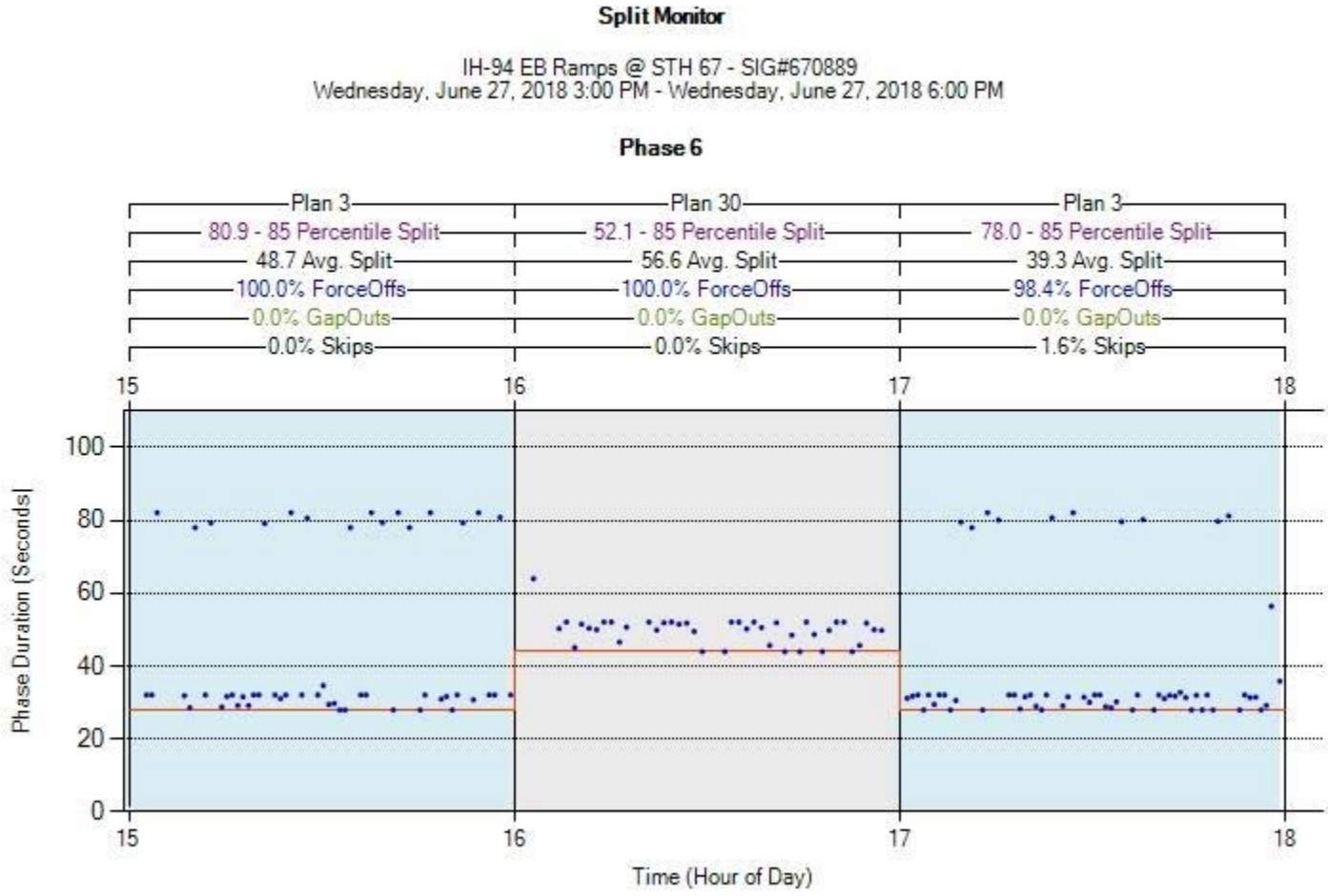

Split Monitor
IH-94 EB Ramps @ STH 67 - SIG#670889
Tuesday, June 26, 2018 3:00 PM - Tuesday, June 26, 2018 6:00 PM
Phase 6
Plan 3
81.8 - 85 Percentile Split
48.6 Avg. Split
100.0% ForceOffs
0.0% GapOuts
0.0% Skips
Plan 30
61.8 - 85 Percentile Split
61.3 Avg. Split
97.6% ForceOffs
2.4% GapOuts
0.0% Skips
Plan 3
41.2 - 85 Percentile Split
39.6 Avg. Split
100.0% ForceOffs
0.0% GapOuts
0.0% Skips
15
16
17
18
100
80
60
40
20
0
Phase Duration (Seconds)
Time (Hour of Day)

WIS 67 Corridor – STH 67 & I-94 EB Ramps
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM

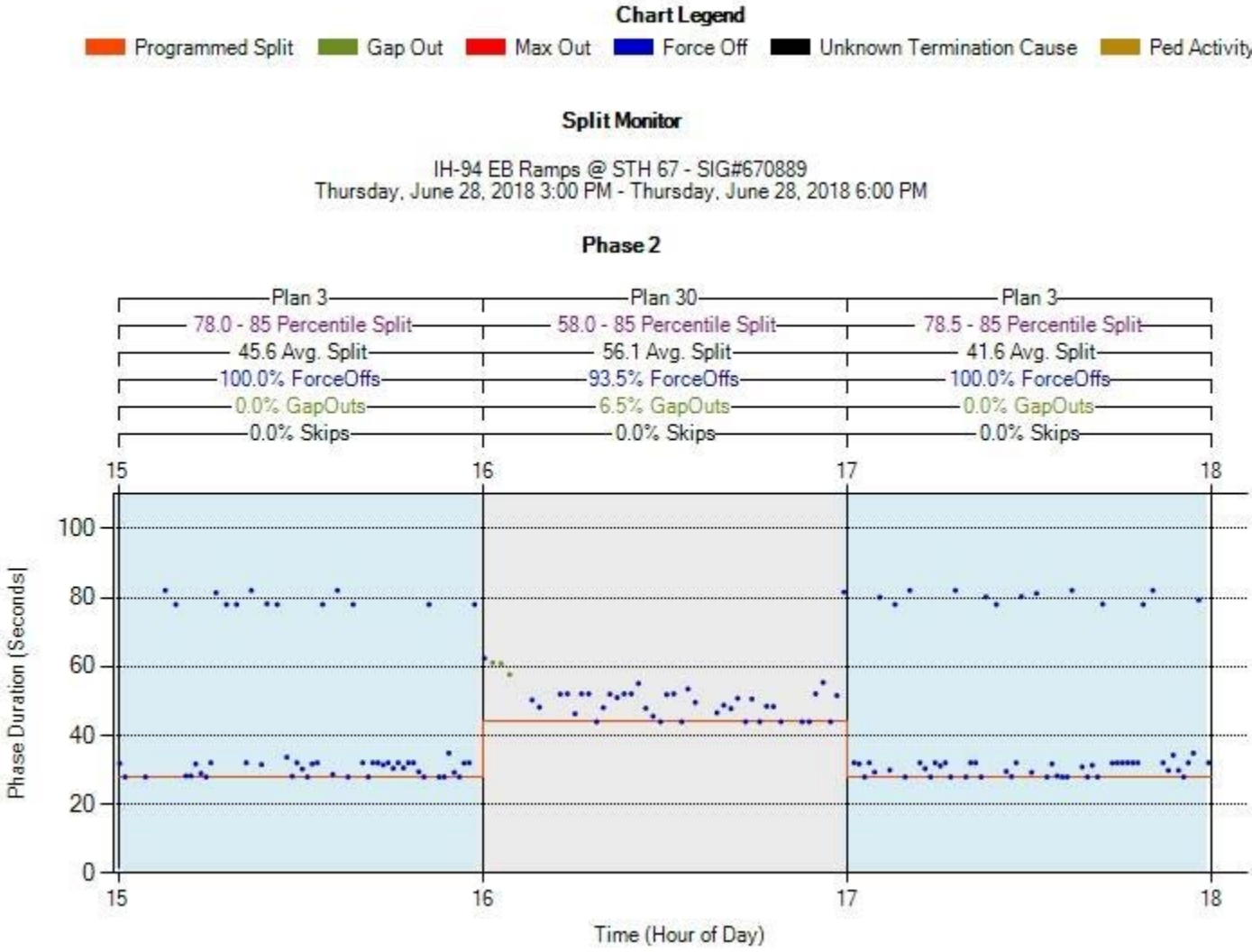


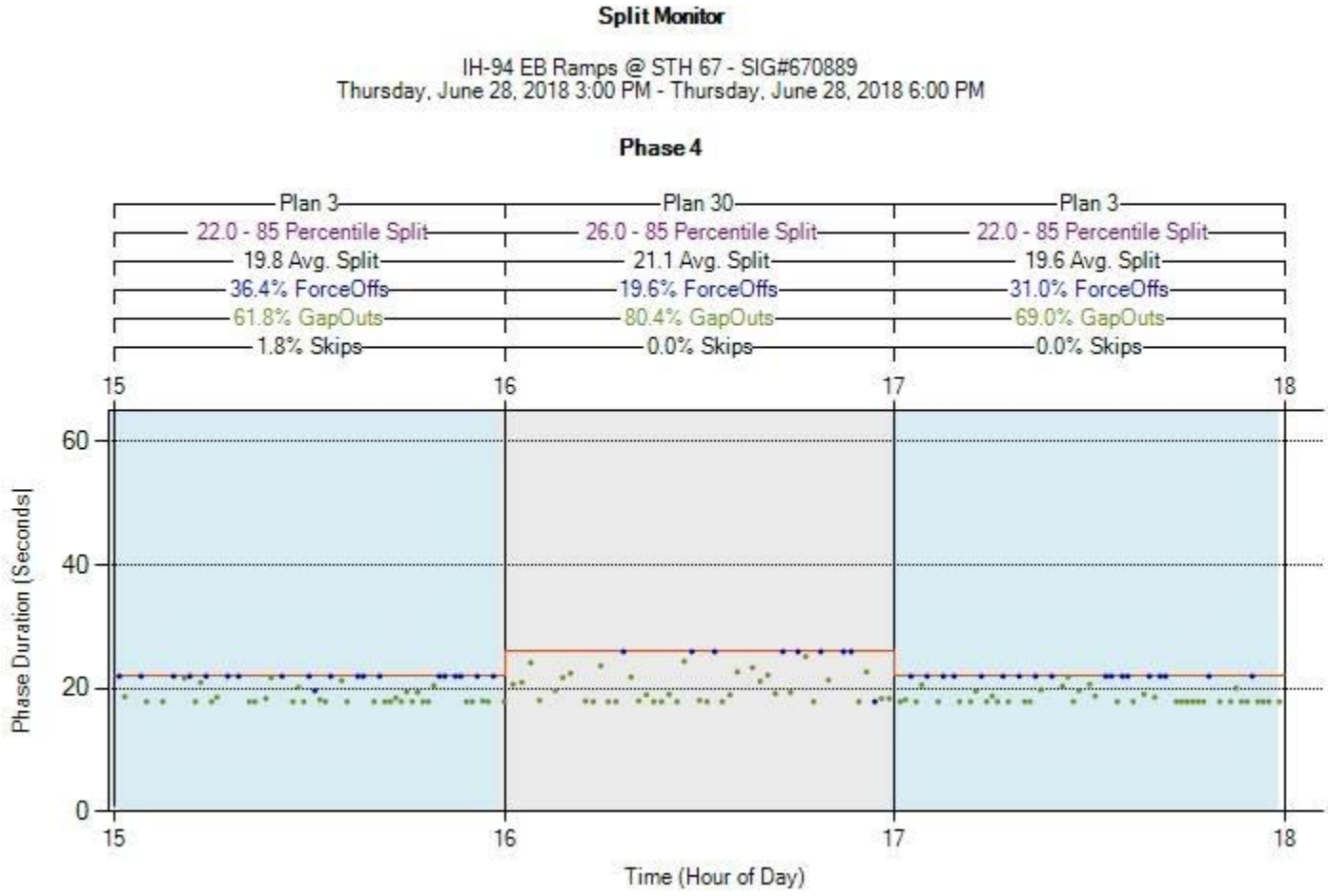

Split Monitor
IH-94 EB Ramps @ STH 67 - SIG#670889
Wednesday, June 27, 2018 3:00 PM - Wednesday, June 27, 2018 6:00 PM
Phase 4
Plan 3
22.0 - 85 Percentile Split
19.2 Avg. Split
20.8% ForceOffs
77.4% GapOuts
1.9% Skips
Plan 30
25.7 - 85 Percentile Split
20.7 Avg. Split
13.3% ForceOffs
86.7% GapOuts
0.0% Skips
Plan 3
22.0 - 85 Percentile Split
19.5 Avg. Split
24.6% ForceOffs
75.4% GapOuts
0.0% Skips
15
16
17
18
60
40
20
0
Phase Duration (Seconds)
Time (Hour of Day)

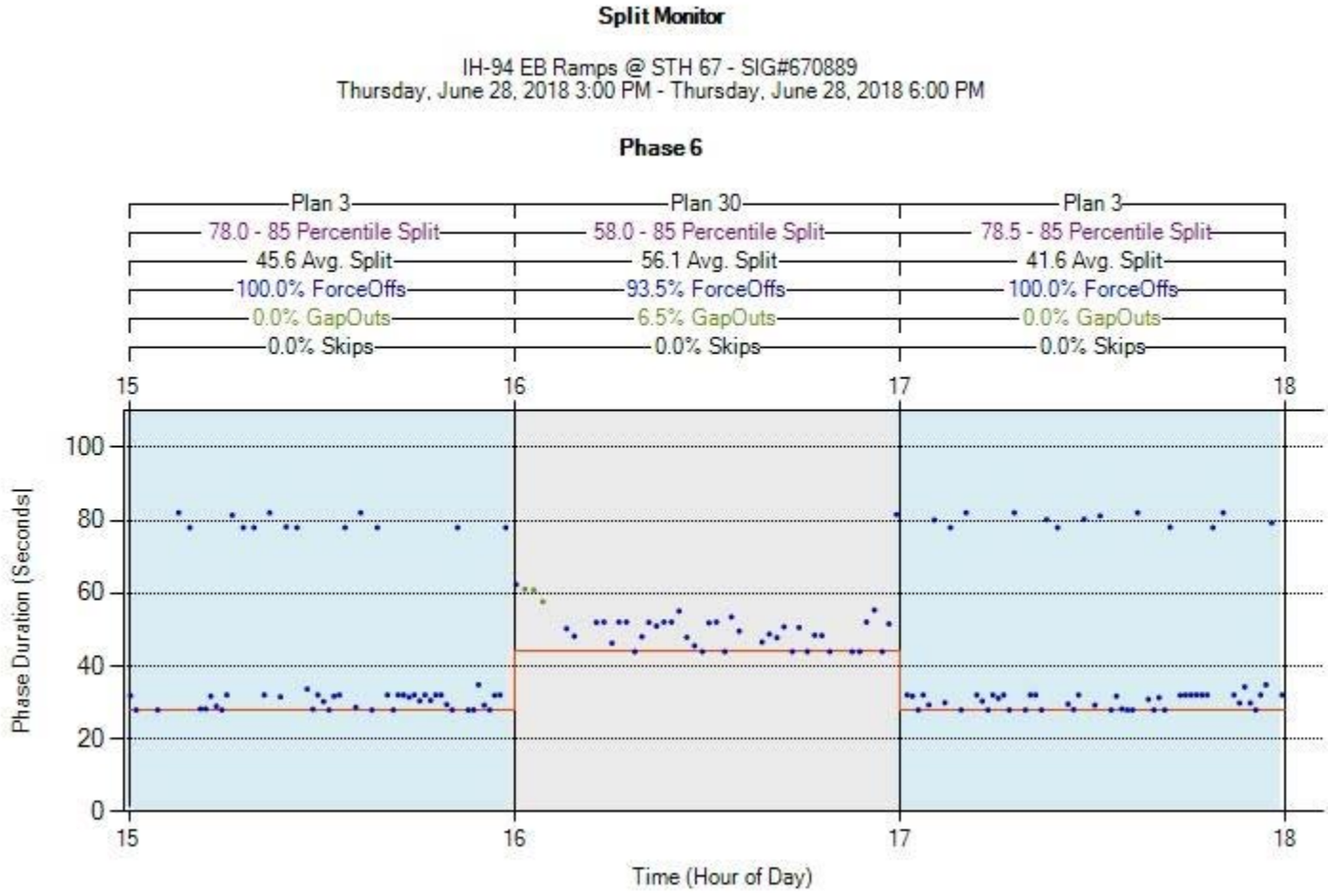
WIS 67 Corridor – STH 67 & I-94 EB Ramps
Synchro Timings
6/27/2018 – 3:00 PM – 6:00 PM



WIS 67 Corridor – STH 67 & I-94 EB Ramps
Synchro Timings
6/28/2018 – 3:00 PM – 6:00 PM

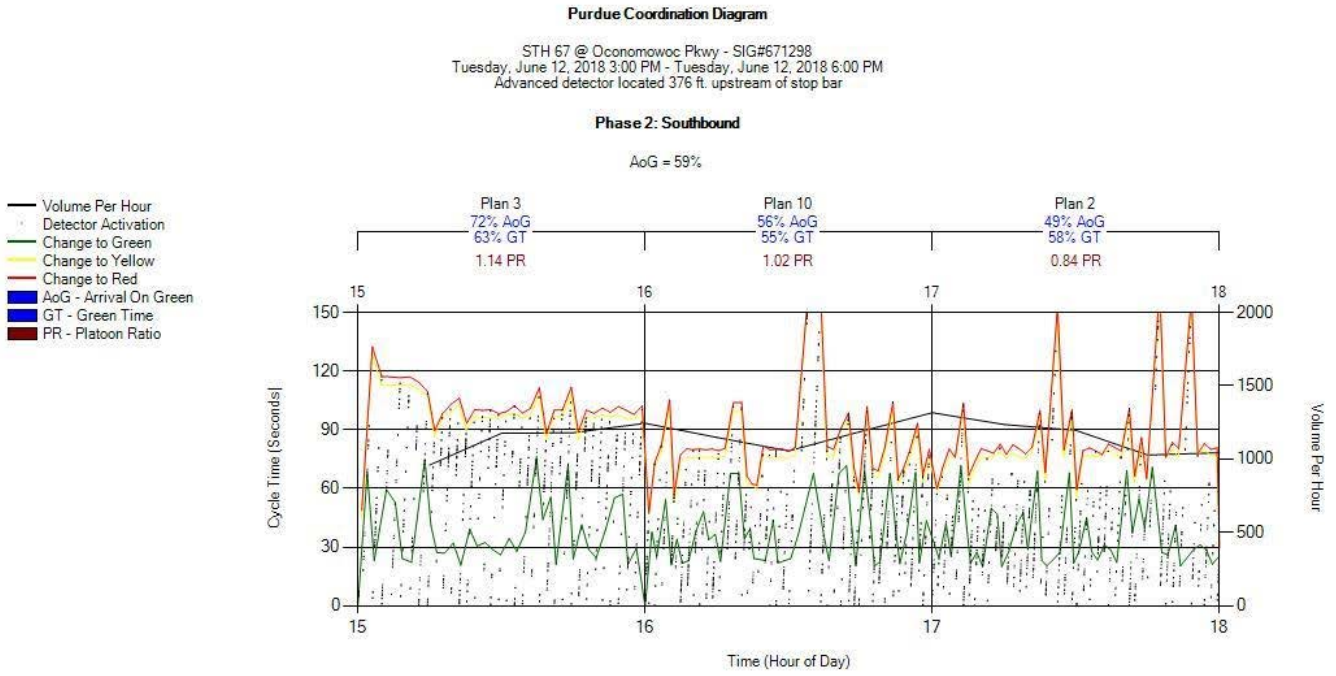


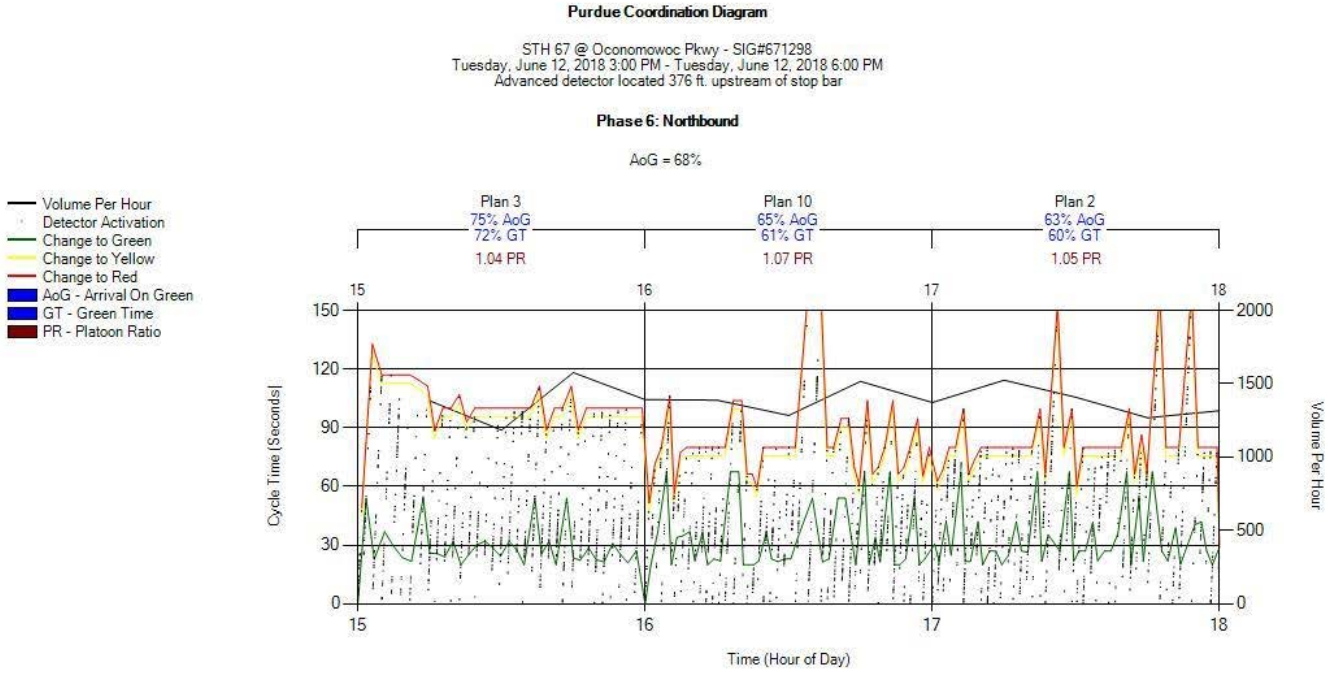

Split Monitor
IH-94 EB Ramps @ STH 67 - SIG#670889
Thursday, June 28, 2018 3:00 PM - Thursday, June 28, 2018 6:00 PM
Phase 4
Plan 3
22.0 - 85 Percentile Split
19.8 Avg. Split
36.4% ForceOffs
61.8% GapOuts
1.8% Skips
Plan 30
26.0 - 85 Percentile Split
21.1 Avg. Split
19.6% ForceOffs
80.4% GapOuts
0.0% Skips
Plan 3
22.0 - 85 Percentile Split
19.6 Avg. Split
31.0% ForceOffs
69.0% GapOuts
0.0% Skips
15
16
17
18
60
40
20
0
Phase Duration (Seconds)
Time (Hour of Day)


Split Monitor
IH-94 EB Ramps @ STH 67 - SIG#670889
Thursday, June 28, 2018 3:00 PM - Thursday, June 28, 2018 6:00 PM
Phase 6
Plan 3
78.0 - 85 Percentile Split
45.6 Avg. Split
100.0% ForceOffs
0.0% GapOuts
0.0% Skips
Plan 30
58.0 - 85 Percentile Split
56.1 Avg. Split
93.5% ForceOffs
6.5% GapOuts
0.0% Skips
Plan 3
78.5 - 85 Percentile Split
41.6 Avg. Split
100.0% ForceOffs
0.0% GapOuts
0.0% Skips
Phase Duration (Seconds)
Time (Hour of Day)

WisBOOM Outputs
WIS 67 Corridor
Vistro Optimized Timings

WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM





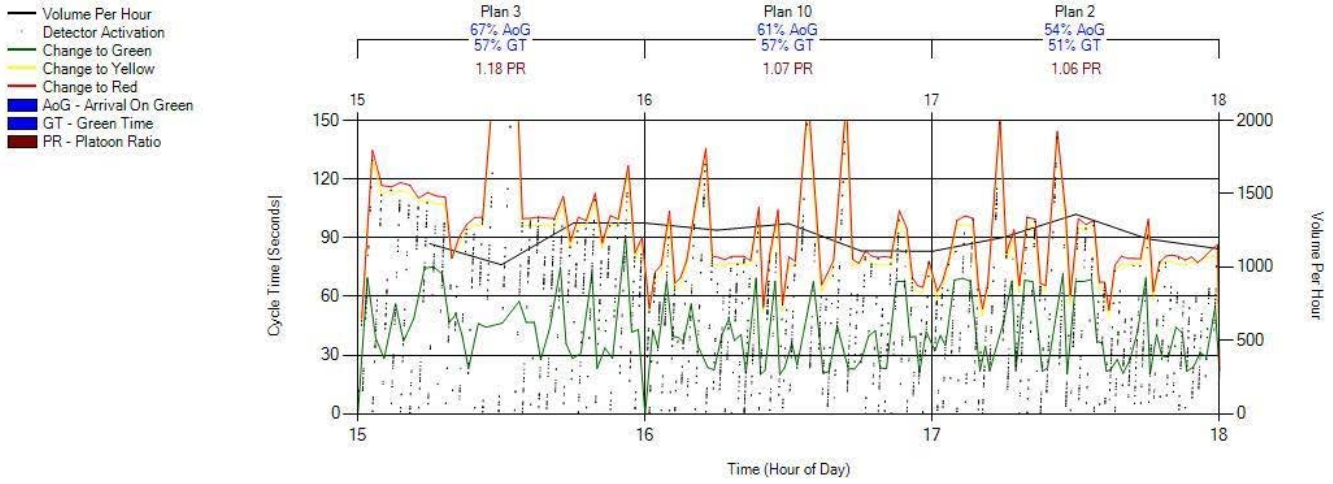
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Vistro Timings
6/13/2018 – 3:00 PM – 6:00 PM

Purdue Coordination Diagram

STH 67 @ Oconomowoc Pkwy - SIG#671298
Wednesday, June 13, 2018 3:00 PM - Wednesday, June 13, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar

Phase 2: Southbound

AoG = 60%

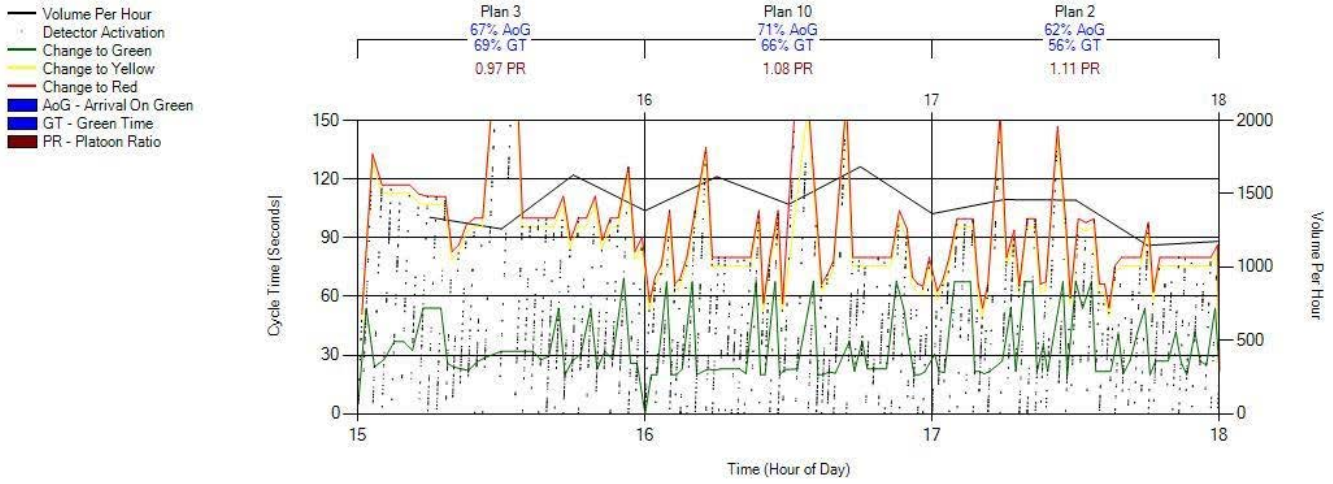


Purdue Coordination Diagram

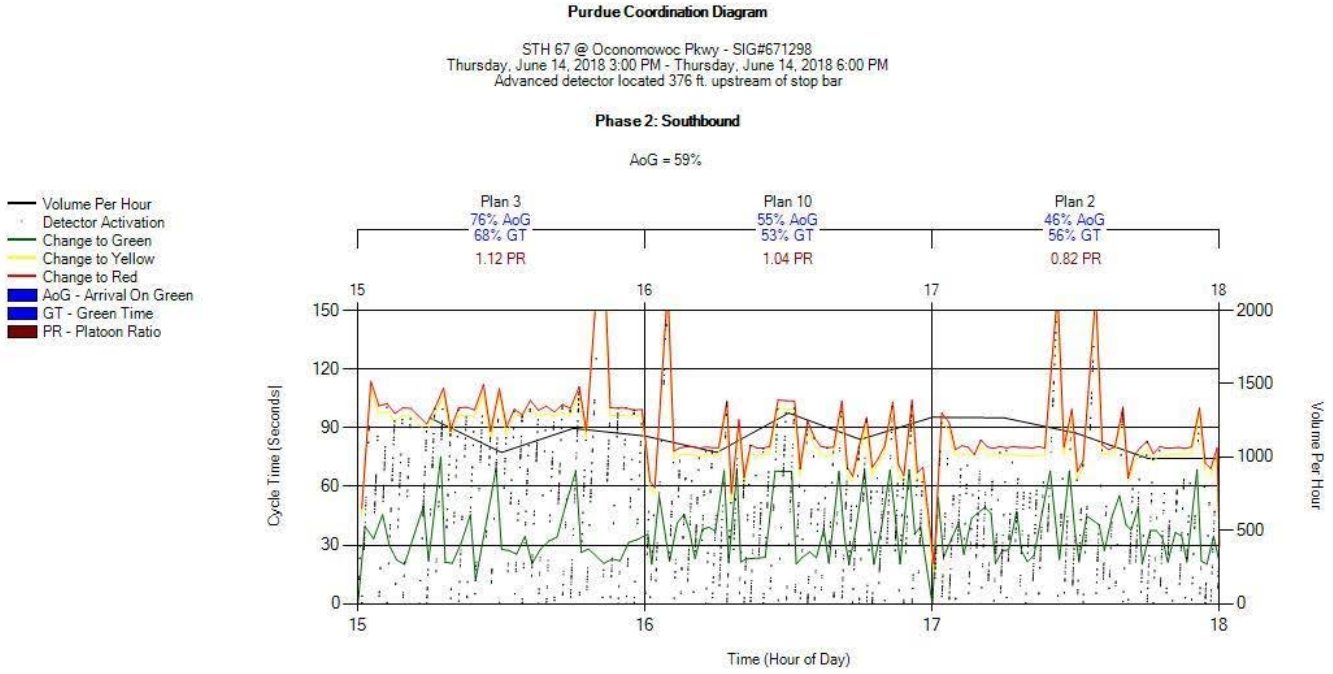
STH 67 @ Oconomowoc Pkwy - SIG#671298
Wednesday, June 13, 2018 3:00 PM - Wednesday, June 13, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar

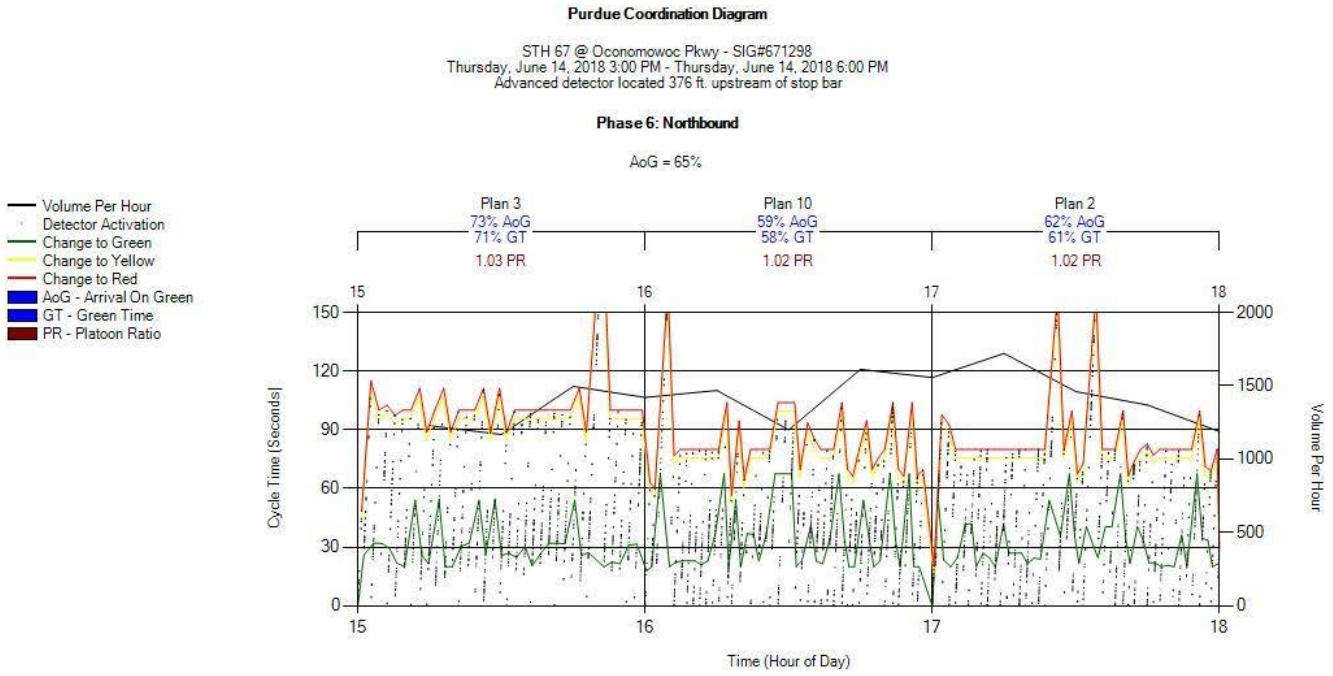
Phase 6: Northbound

AoG = 67%

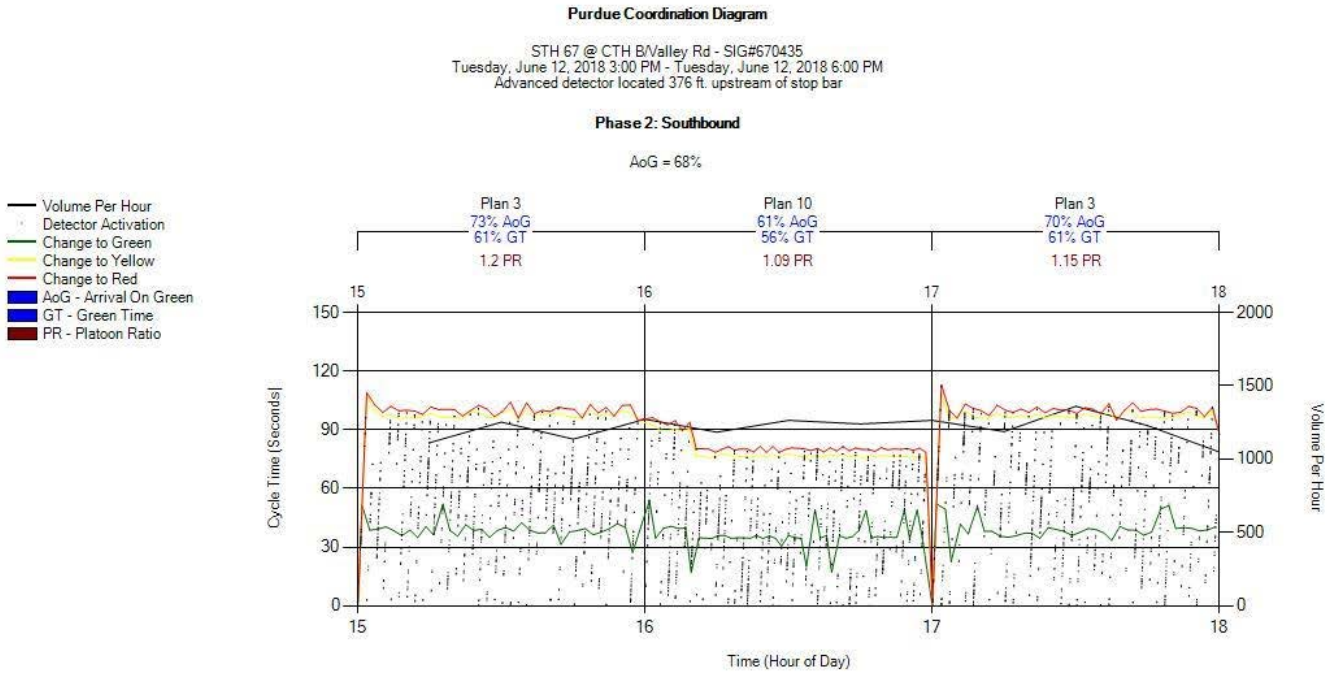


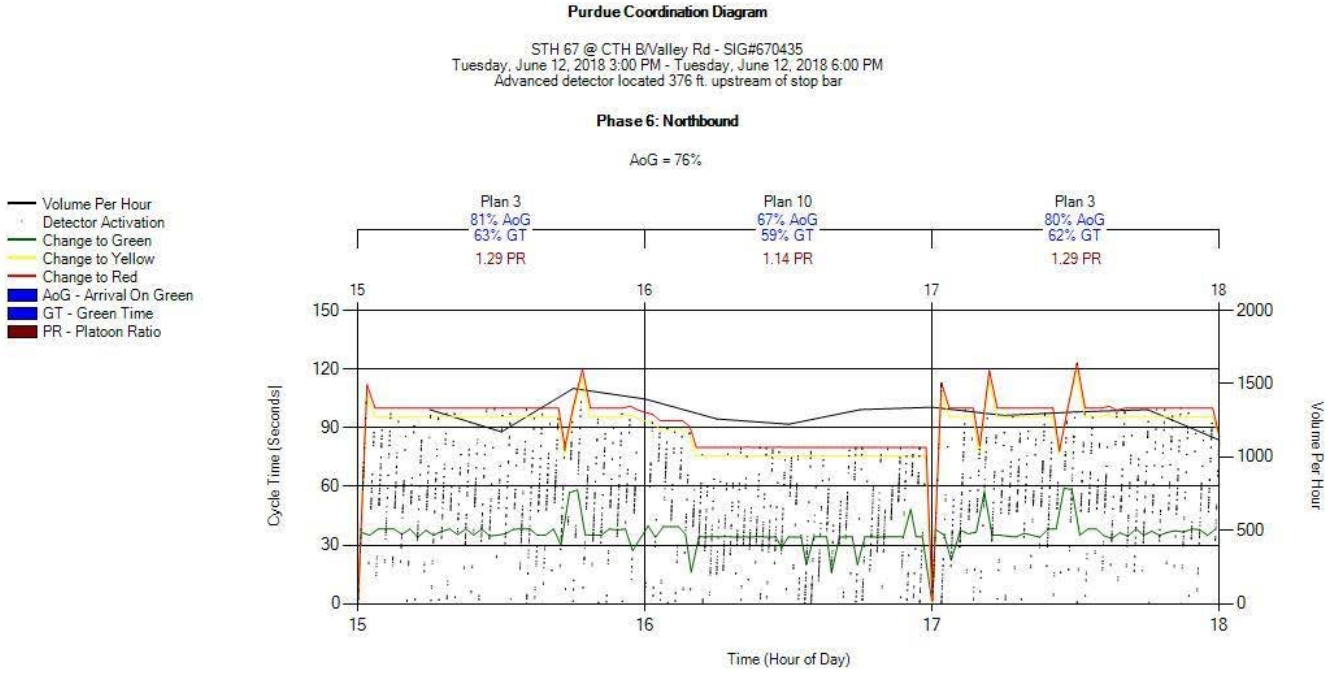
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Vistro Timings
6/14/2018 – 3:00 PM – 6:00 PM





WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM





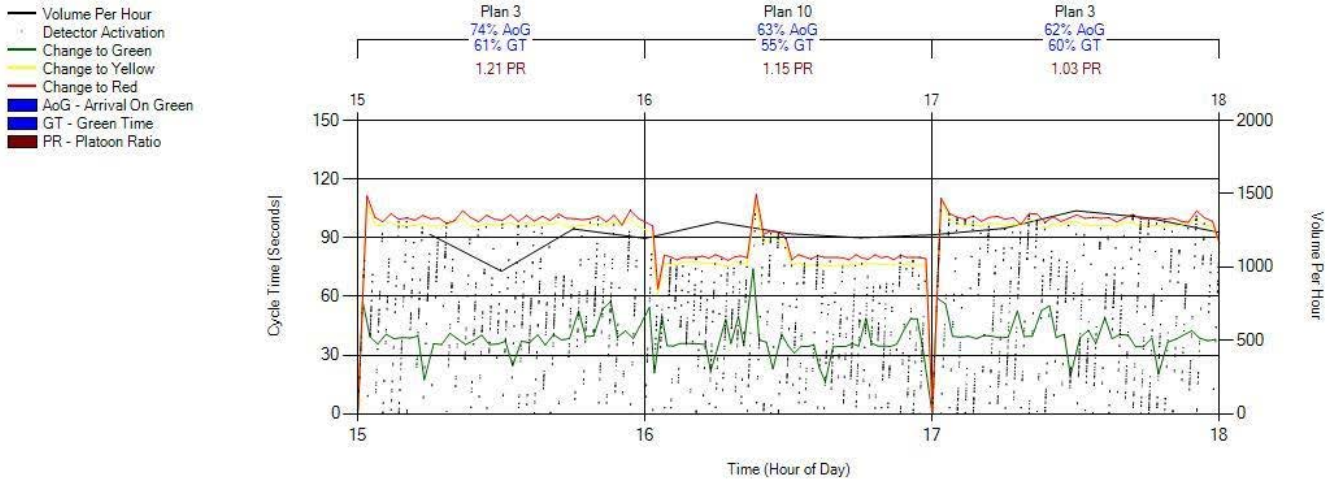
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Vistro Timings
6/13/2018 – 3:00 PM – 6:00 PM

Purdue Coordination Diagram

STH 67 @ CTH B/Valley Rd - SIG#670435
Wednesday, June 13, 2018 3:00 PM - Wednesday, June 13, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar

Phase 2: Southbound

AoG = 66%

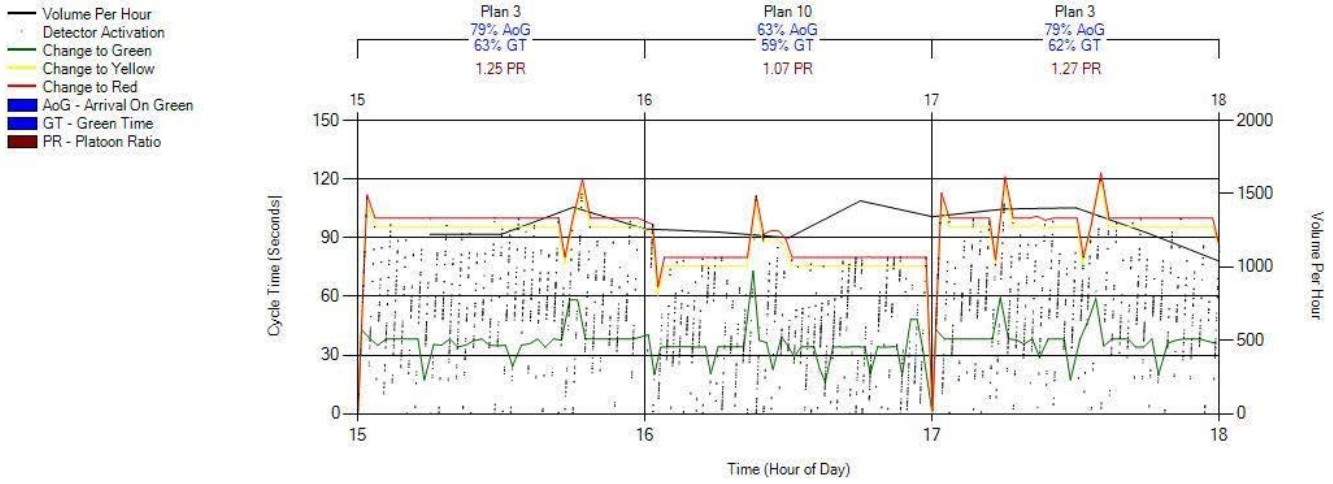


Purdue Coordination Diagram

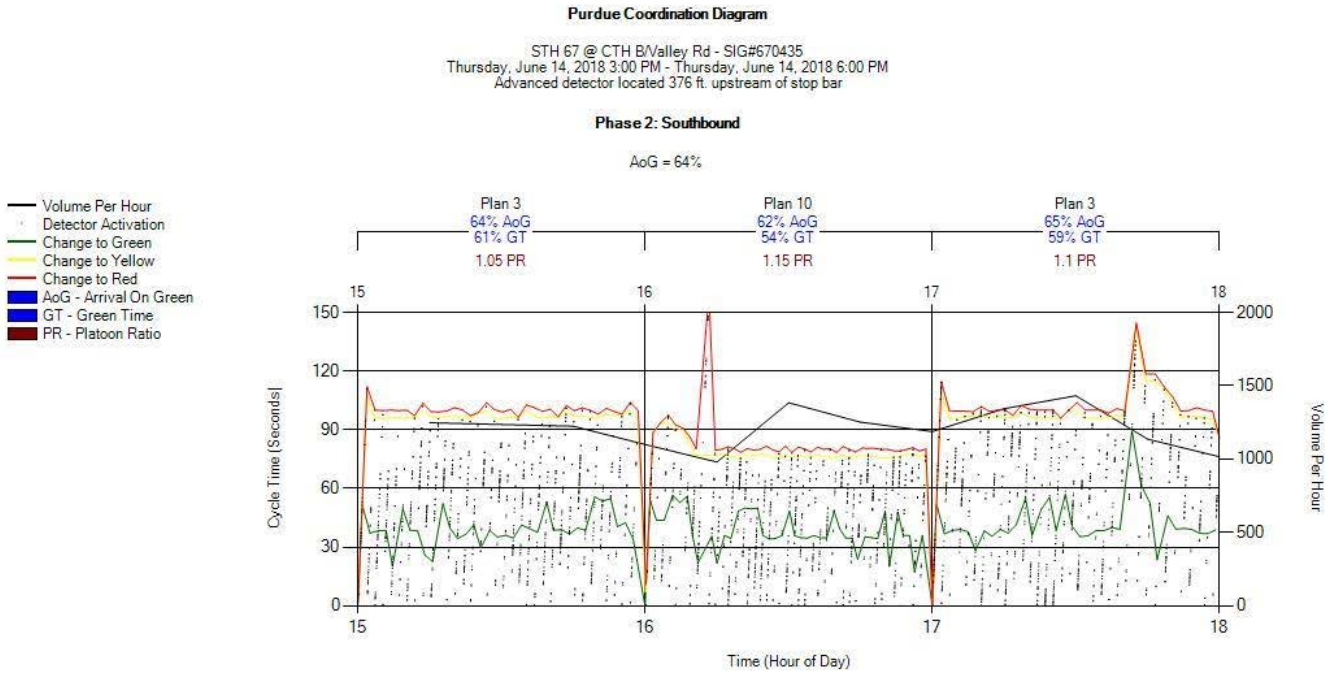
STH 67 @ CTH B/Valley Rd - SIG#670435
Wednesday, June 13, 2018 3:00 PM - Wednesday, June 13, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar

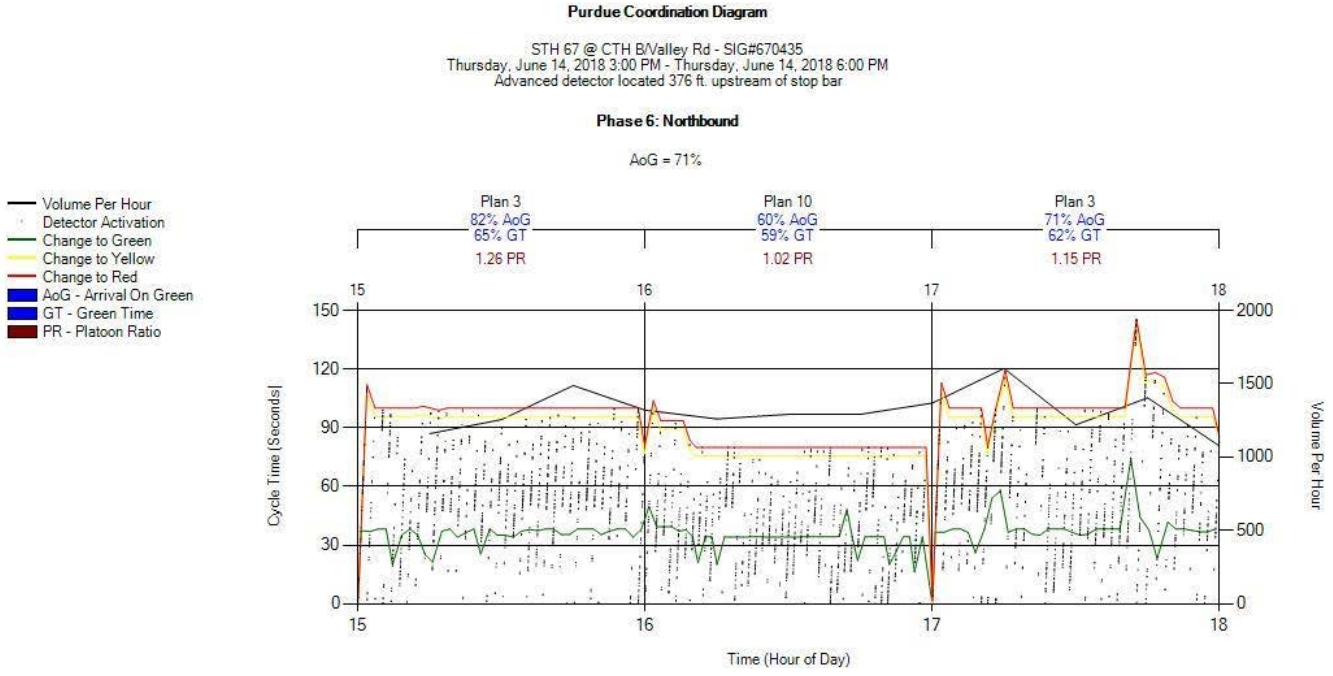
Phase 6: Northbound

AoG = 74%

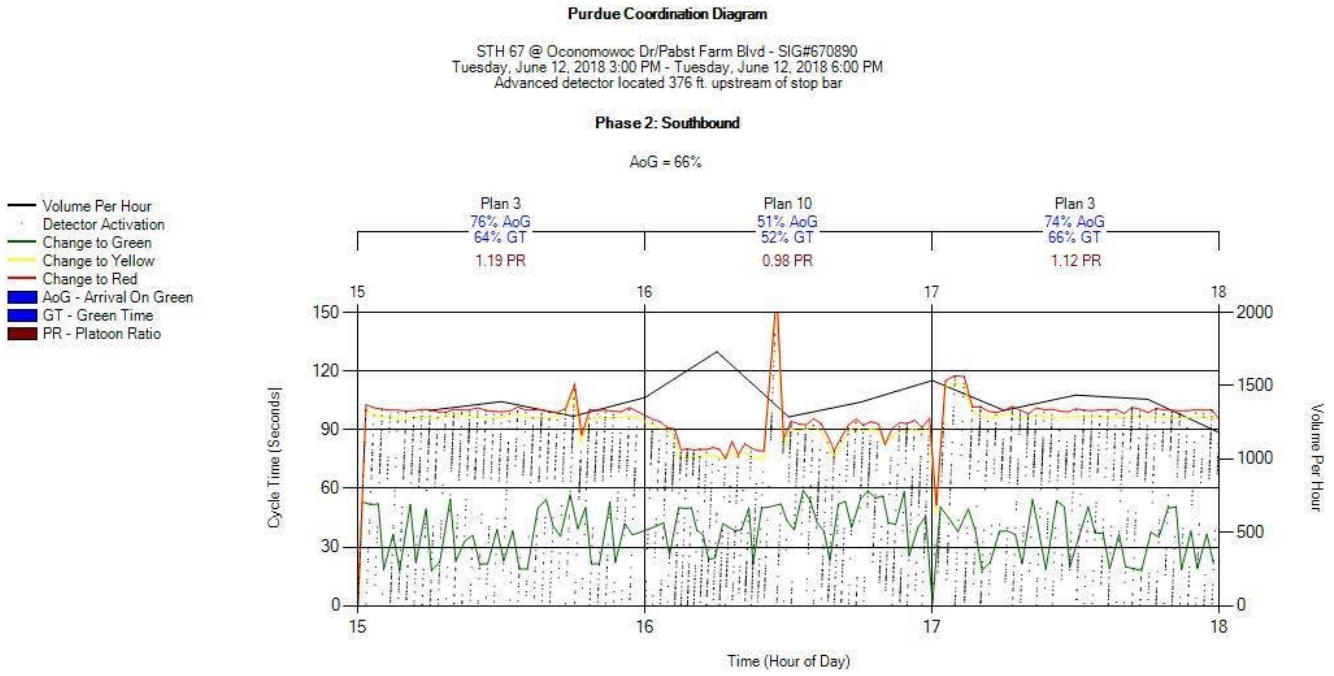


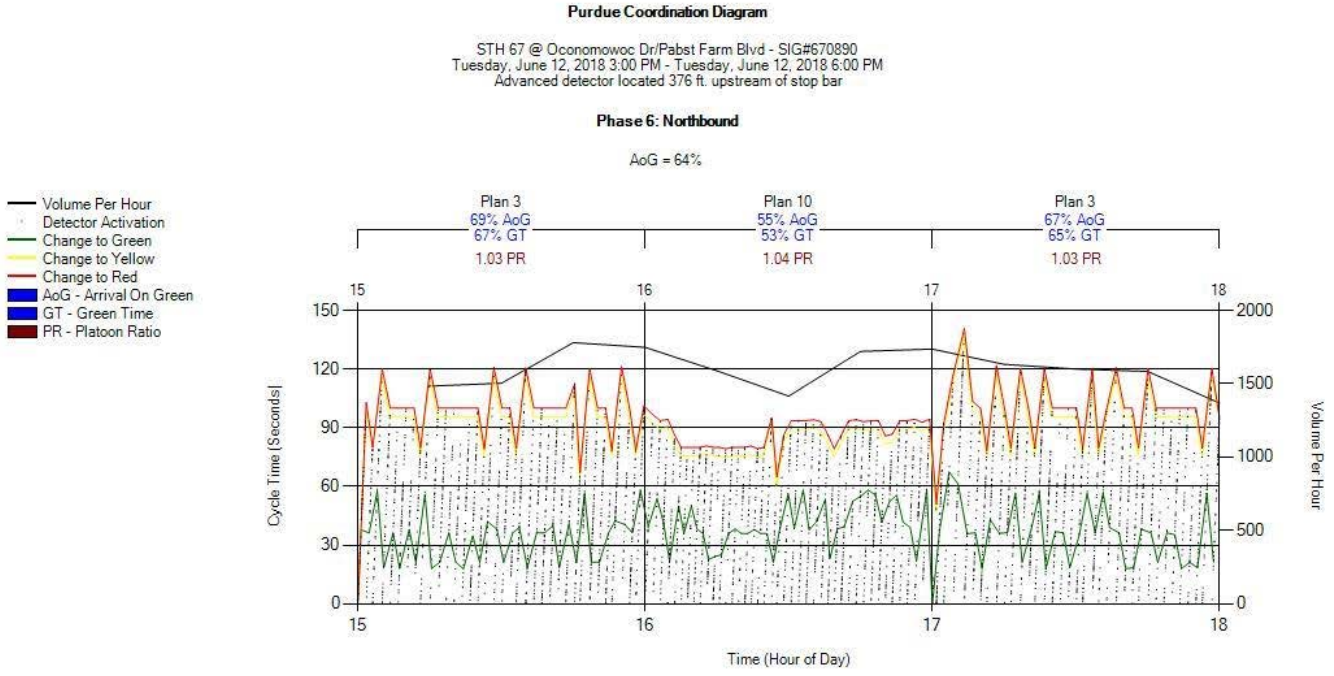
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Vistro Timings
6/14/2018 – 3:00 PM – 6:00 PM



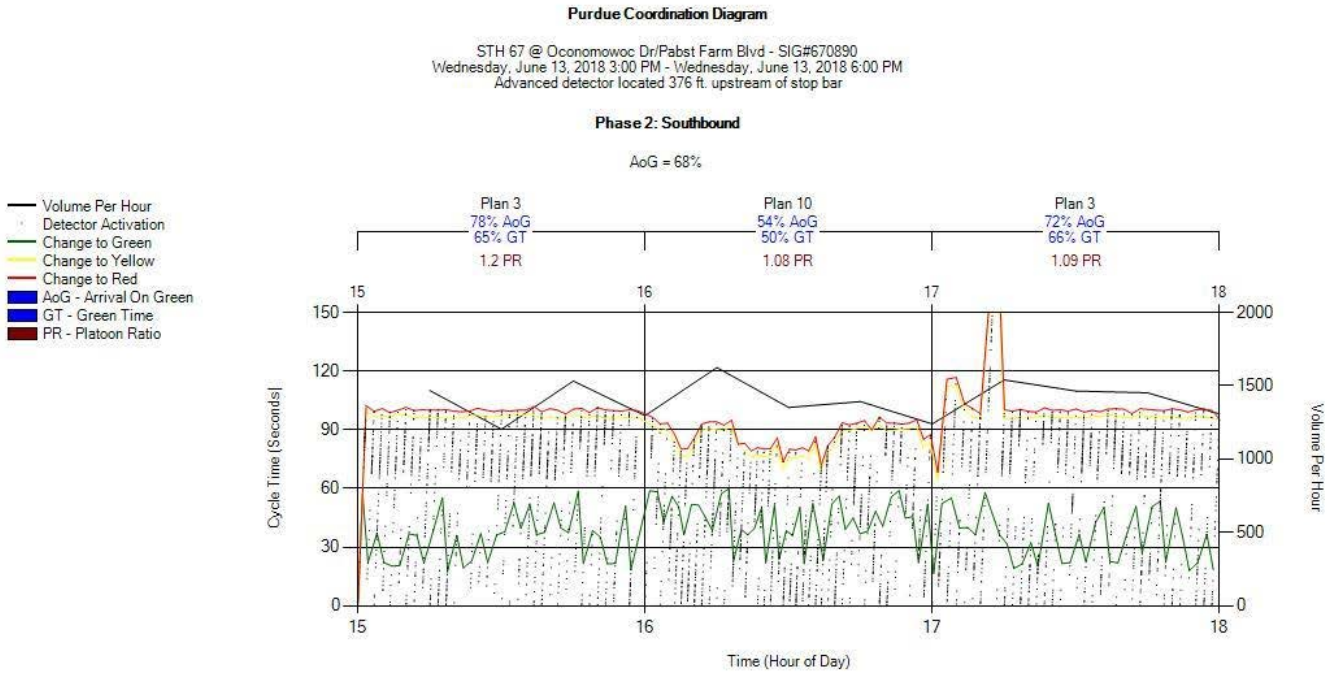


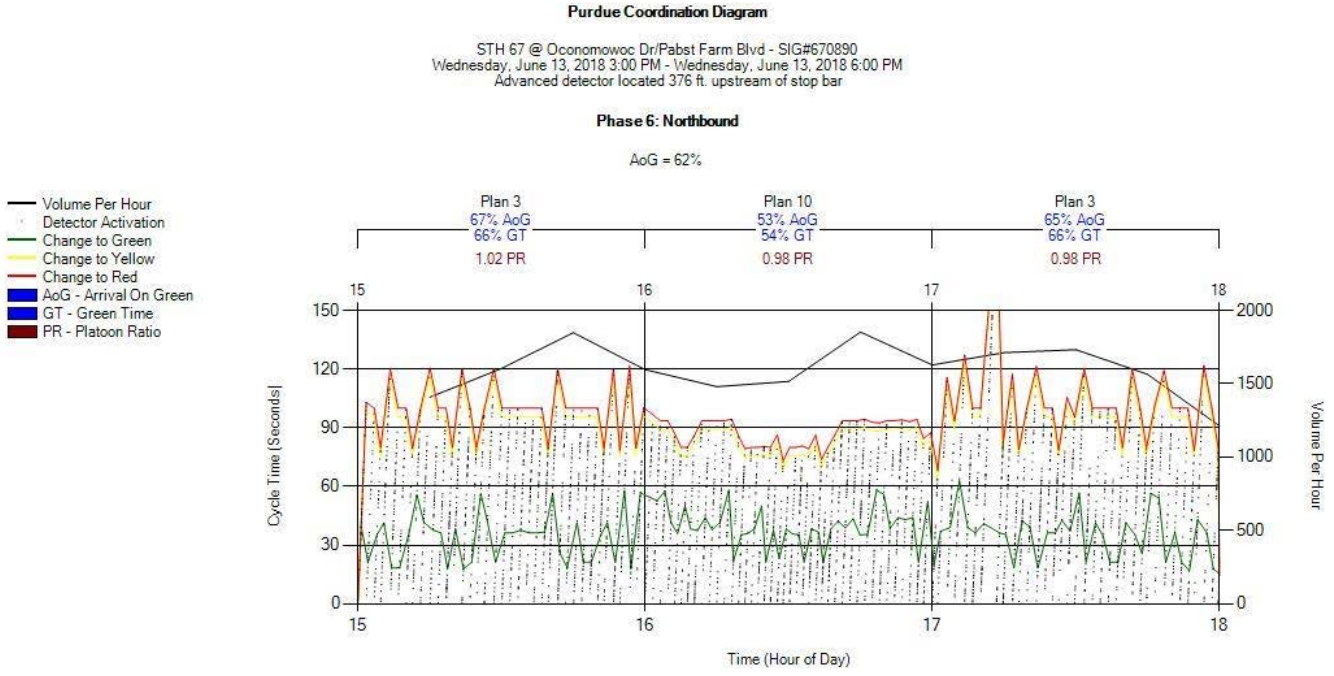
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM





WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Vistro Timings
6/13/2018 – 3:00 PM – 6:00 PM





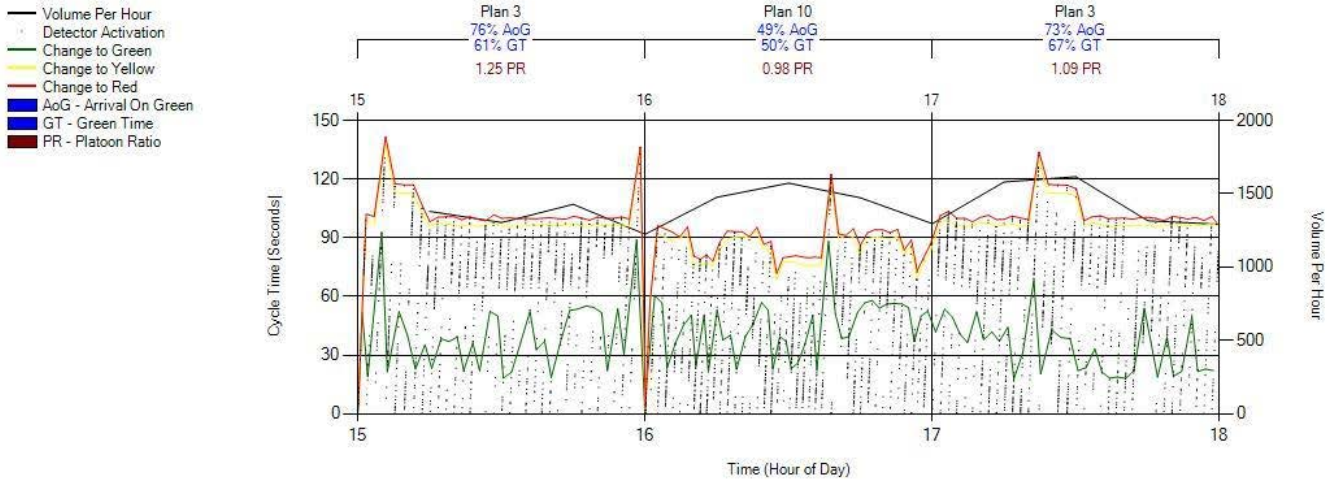
WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Vistro Timings
6/14/2018 – 3:00 PM – 6:00 PM

Purdue Coordination Diagram

STH 67 @ Oconomowoc Dr/Pabst Farm Blvd - SIG#670890
Thursday, June 14, 2018 3:00 PM - Thursday, June 14, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar

Phase 2: Southbound

AoG = 66%

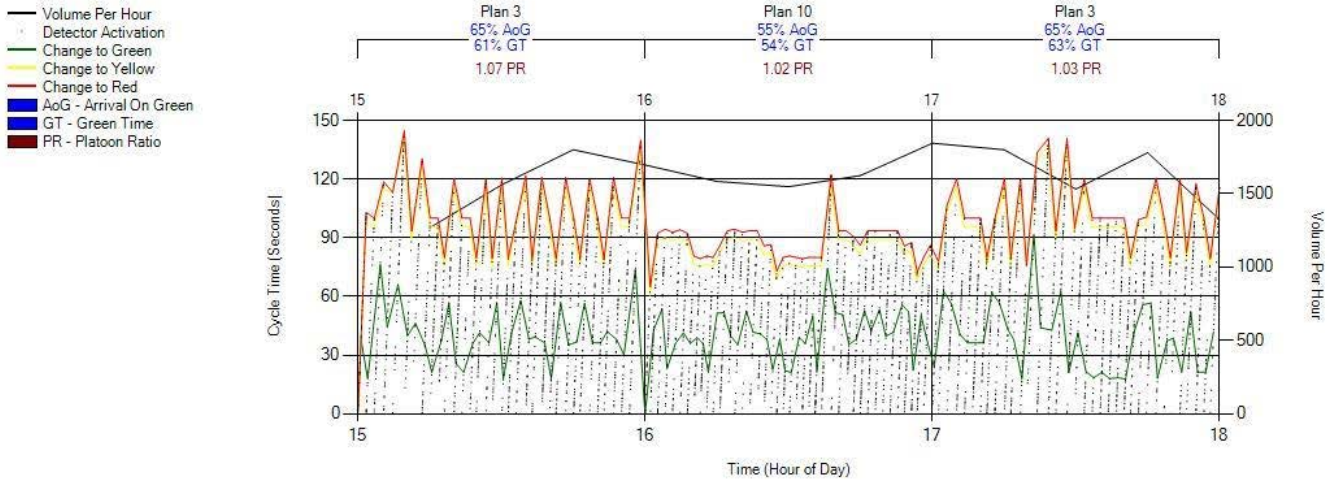


Purdue Coordination Diagram

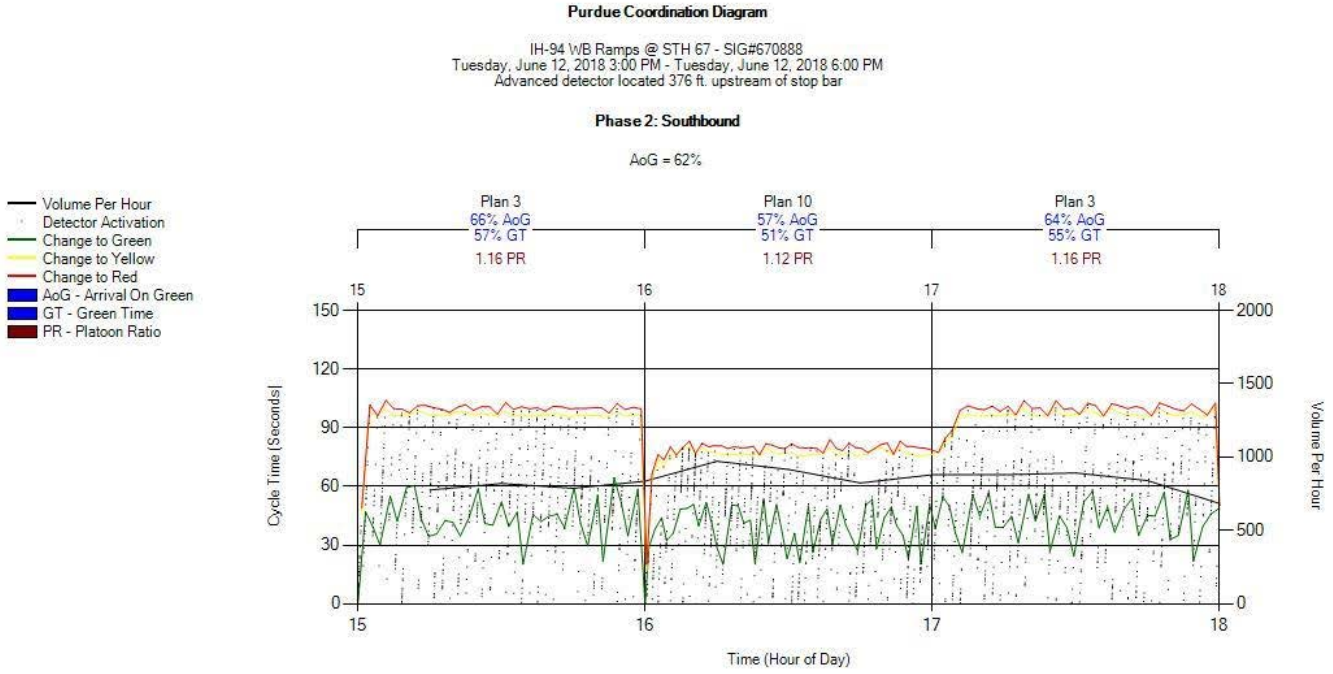
STH 67 @ Oconomowoc Dr/Pabst Farm Blvd - SIG#670890
Thursday, June 14, 2018 3:00 PM - Thursday, June 14, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar

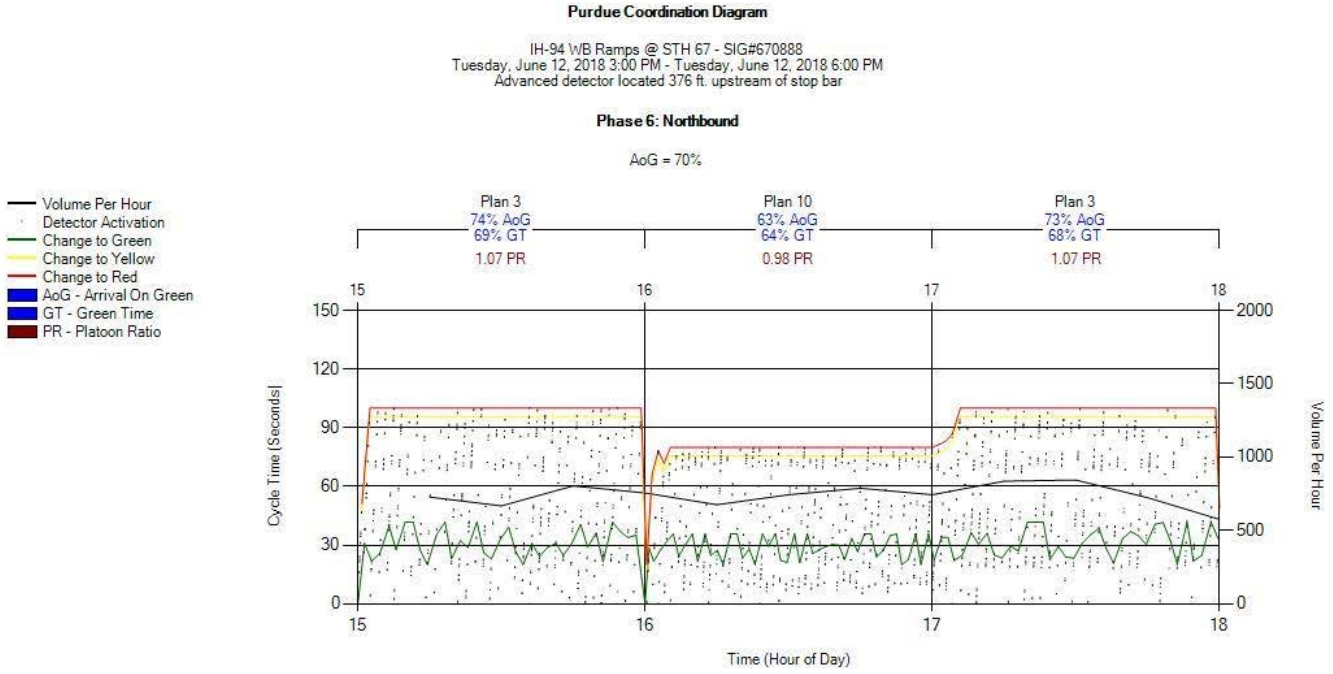
Phase 6: Northbound

AoG = 62%

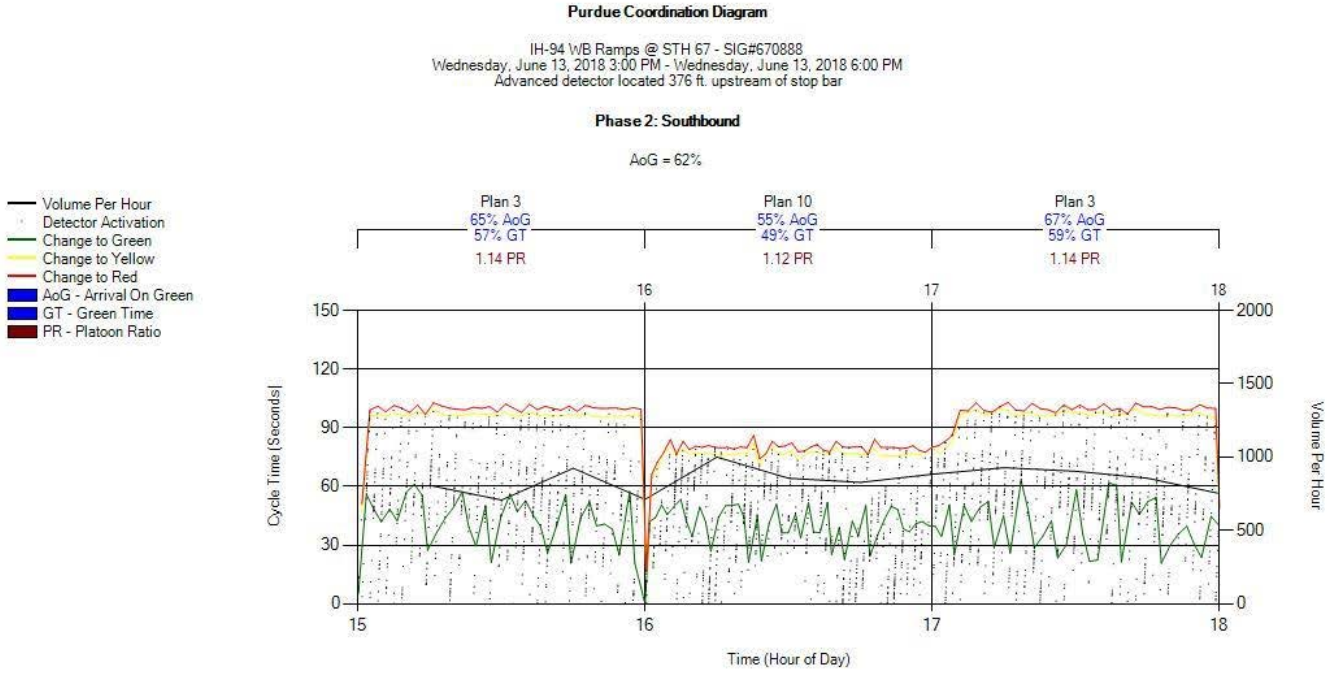


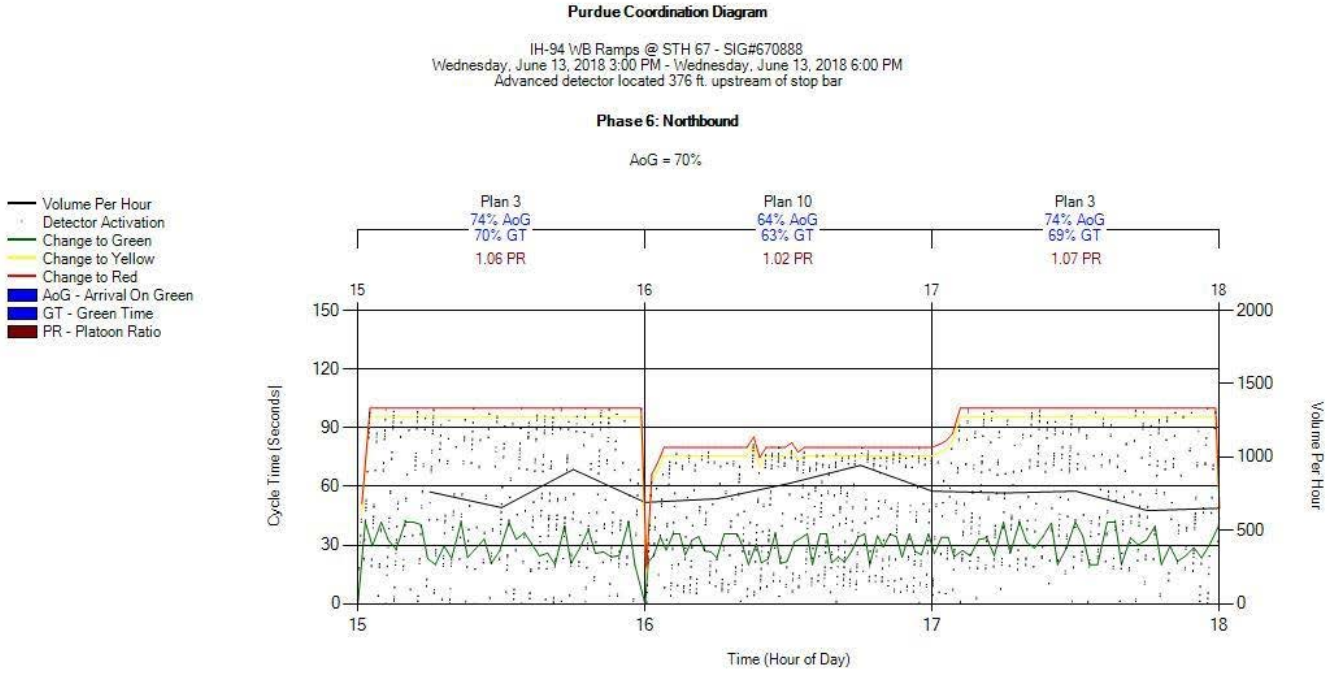
WIS 67 Corridor – STH 67 & I-94 WB Ramps
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM



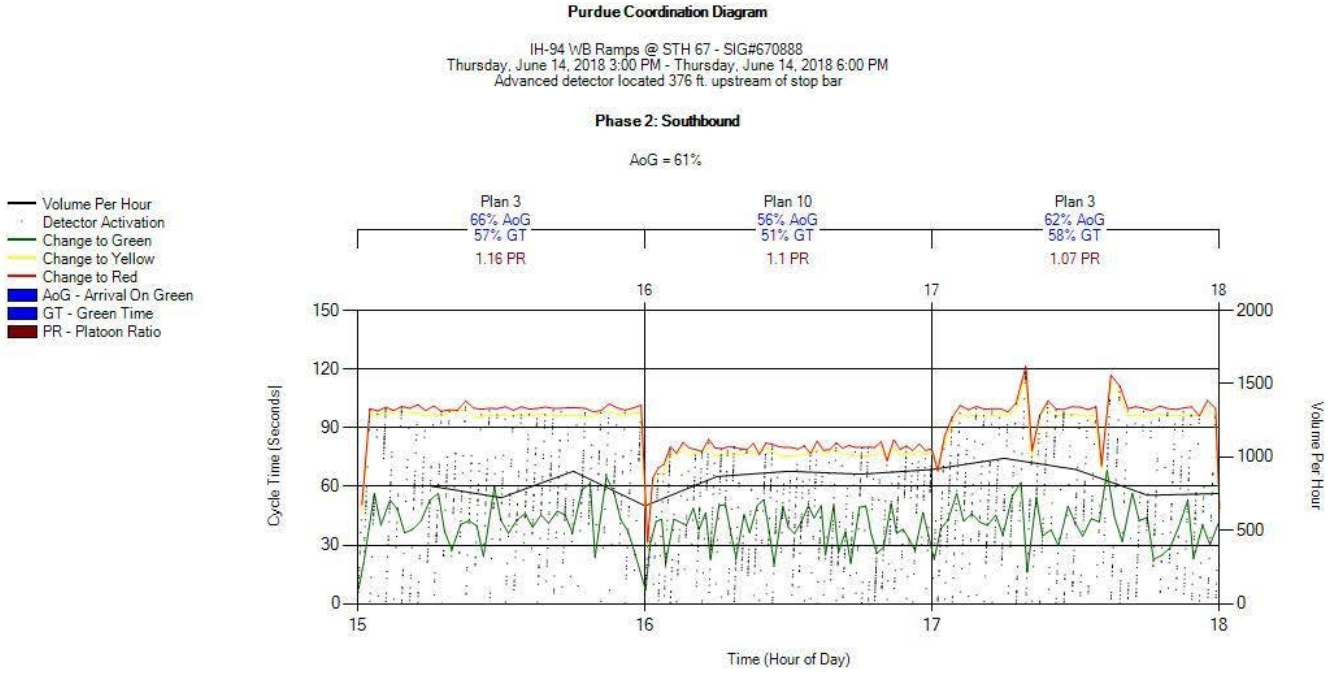


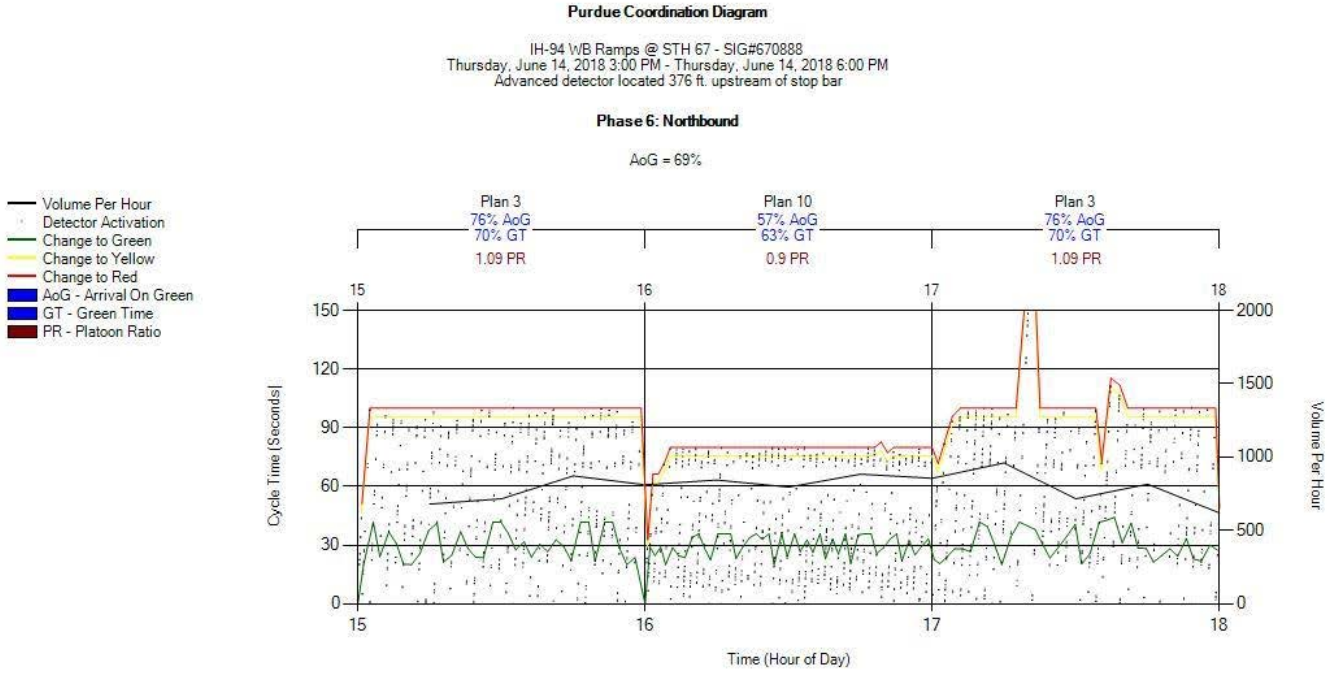
WIS 67 Corridor – STH 67 & I-94 WB Ramps
Vistro Timings
6/13/2018 – 3:00 PM – 6:00 PM

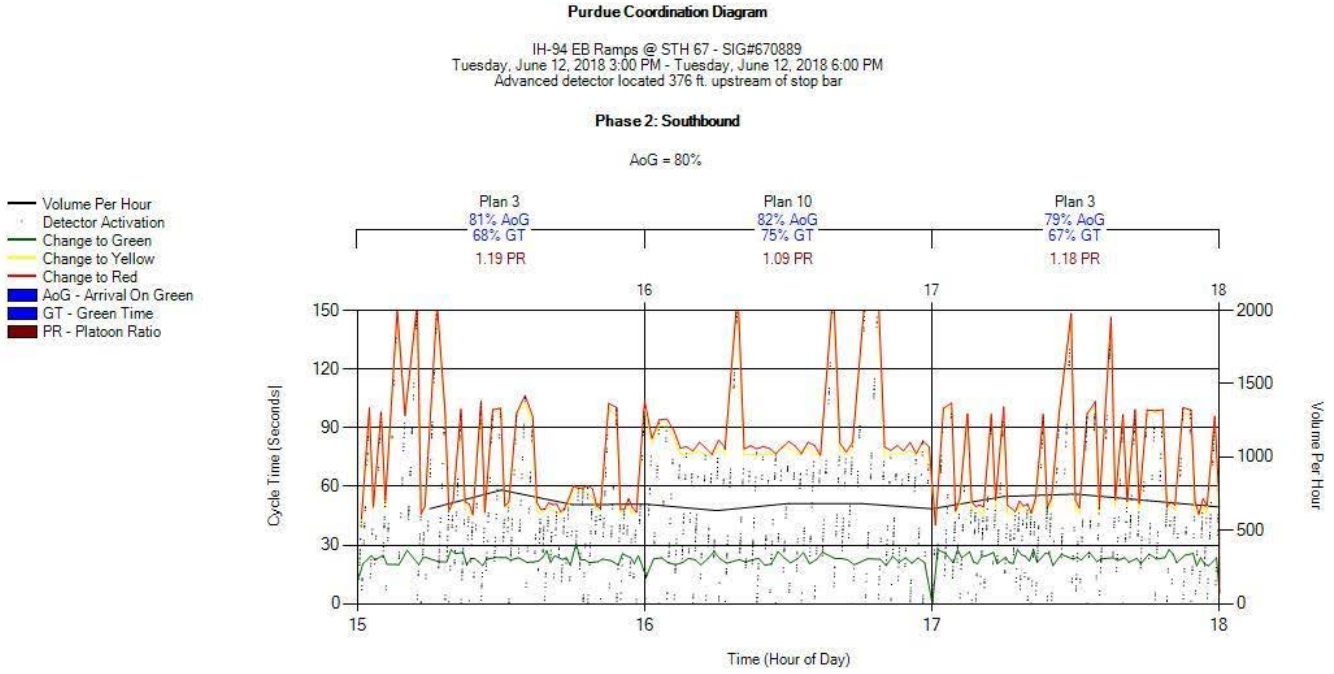


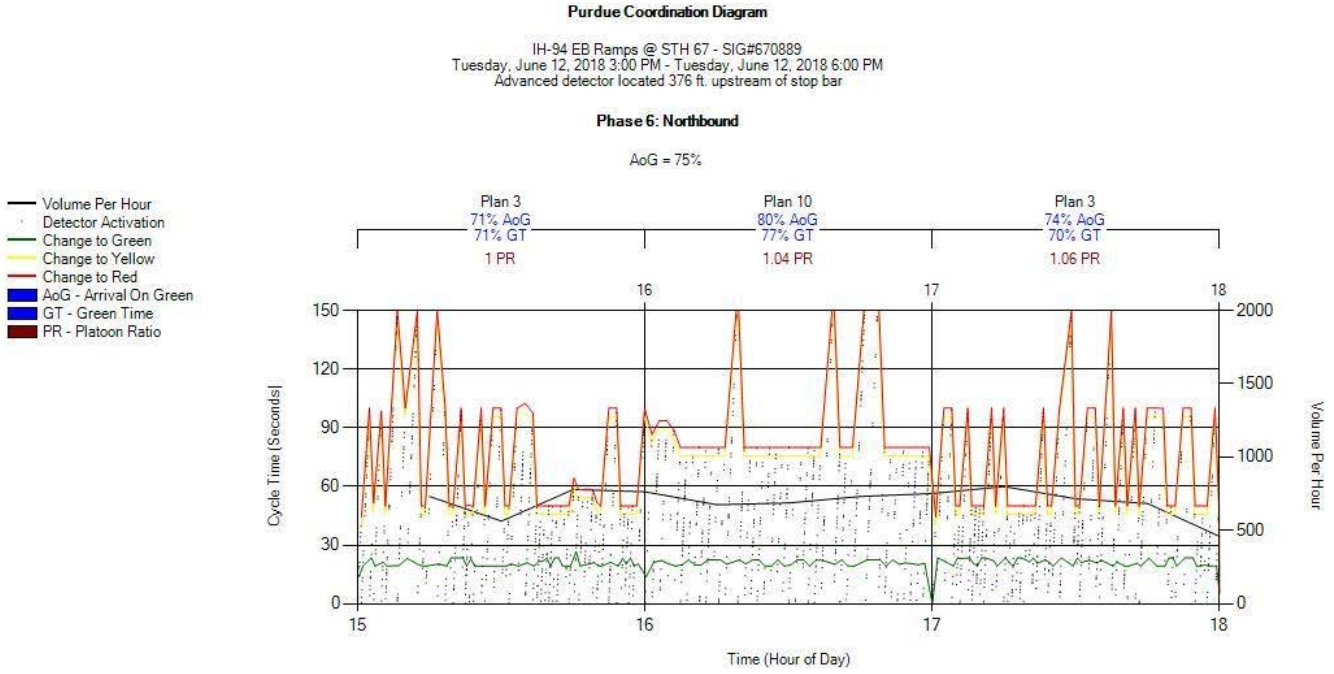


WIS 67 Corridor – STH 67 & I-94 WB Ramps
Vistro Timings
6/14/2018 – 3:00 PM – 6:00 PM

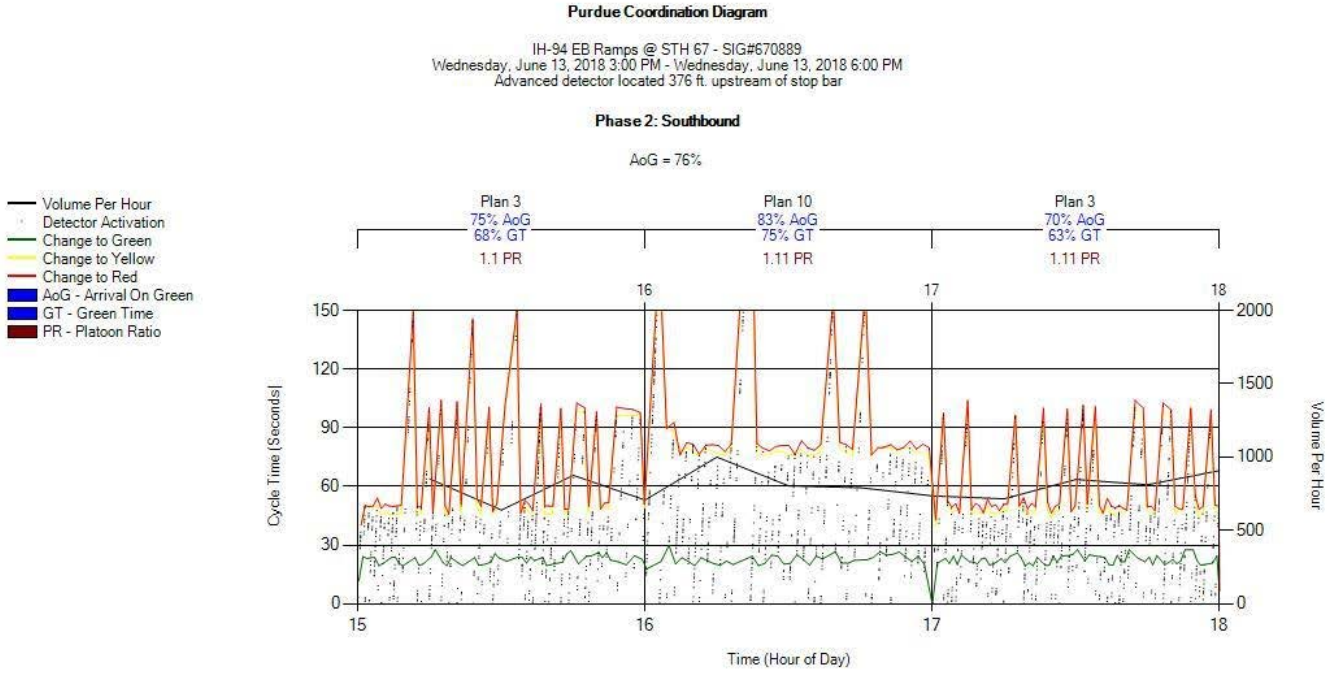


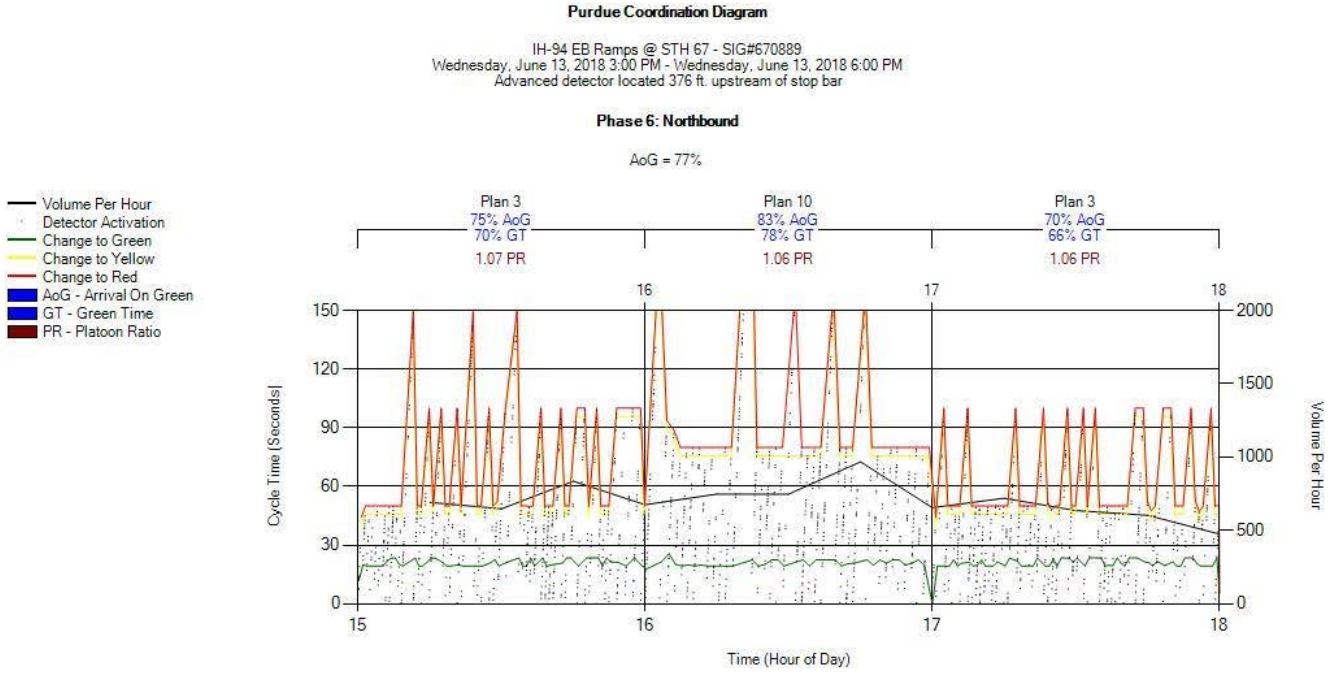



Purdue Coordination Diagram
IH-94 EB Ramps @ STH 67 - SIG#670889
Tuesday, June 12, 2018 3:00 PM - Tuesday, June 12, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar
Phase 2: Southbound
AoG = 80%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
81% AoG
68% GT
1.19 PR
Plan 10
82% AoG
75% GT
1.09 PR
Plan 3
79% AoG
67% GT
1.18 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)

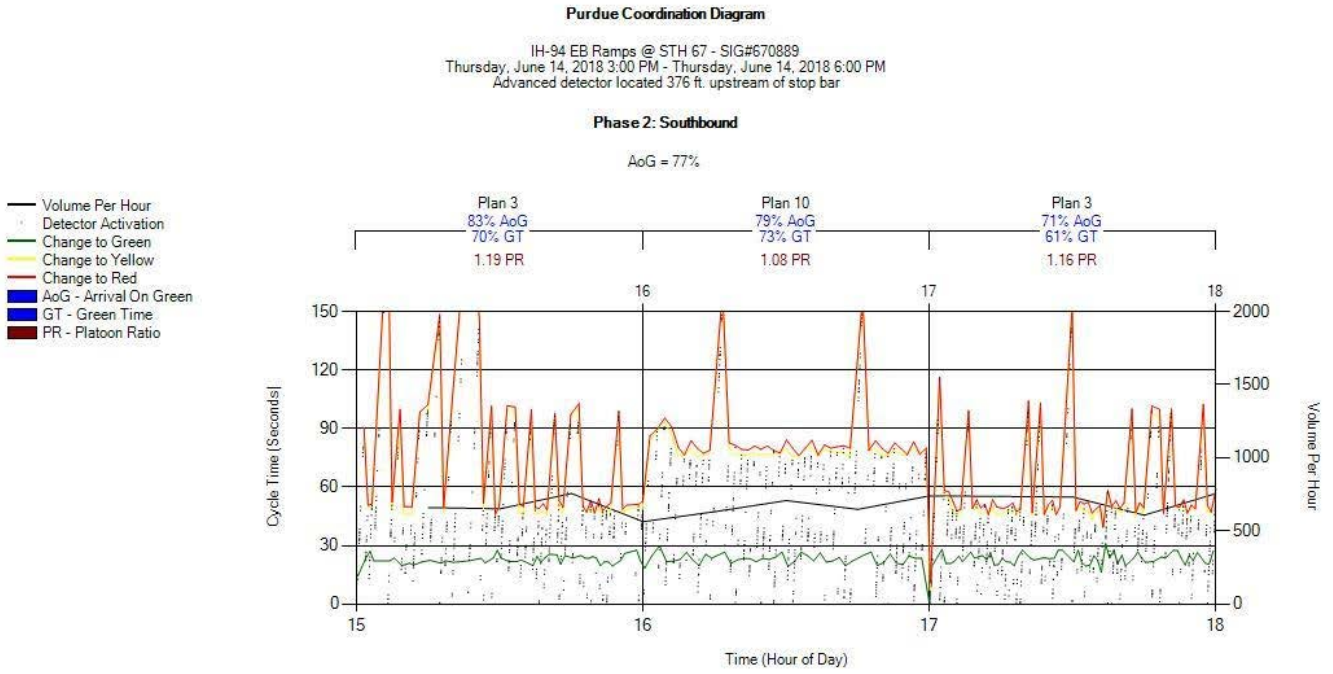

Purdue Coordination Diagram
IH-94 EB Ramps @ STH 67 - SIG#670889
Tuesday, June 12, 2018 3:00 PM - Tuesday, June 12, 2018 6:00 PM
Advanced detector located 376 ft. upstream of stop bar
Phase 6: Northbound
AoG = 75%
Volume Per Hour
Detector Activation
Change to Green
Change to Yellow
Change to Red
AoG - Arrival On Green
GT - Green Time
PR - Platoon Ratio
Plan 3
71% AoG
71% GT
1 PR
Plan 10
80% AoG
77% GT
1.04 PR
Plan 3
74% AoG
70% GT
1.06 PR
Cycle Time (Seconds)
Volume Per Hour
Time (Hour of Day)

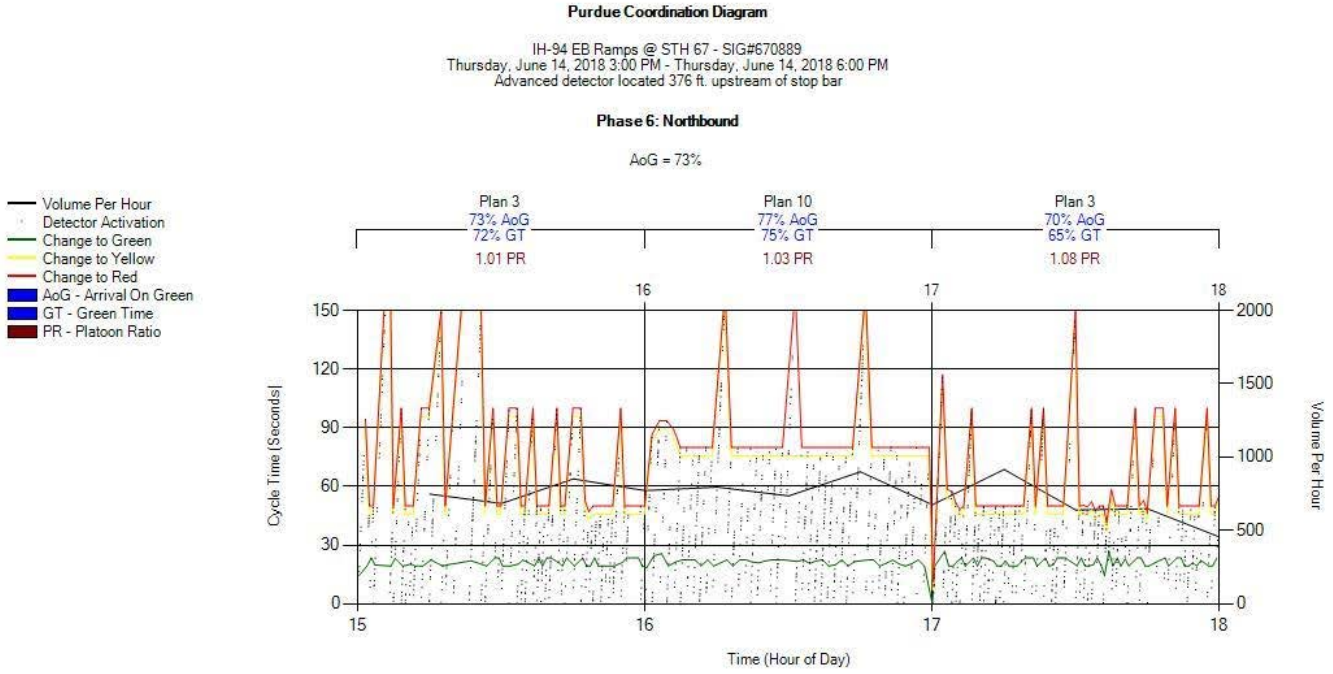
WIS 67 Corridor – STH 67 & I-94 EB Ramps
Vistro Timings
6/13/2018 – 3:00 PM – 6:00 PM



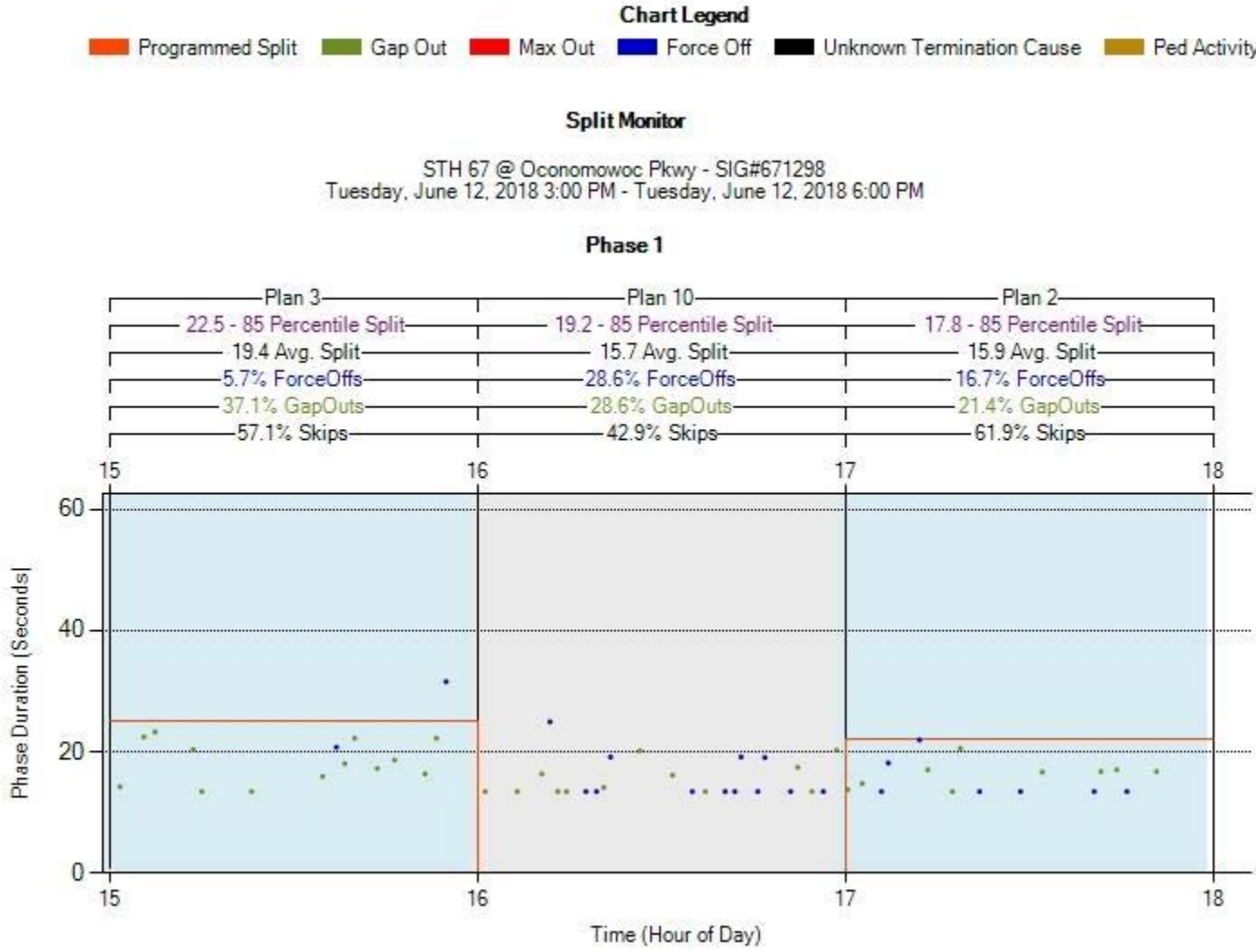


WIS 67 Corridor – STH 67 & I-94 EB Ramps
Vistro Timings
6/14/2018 – 3:00 PM – 6:00 PM

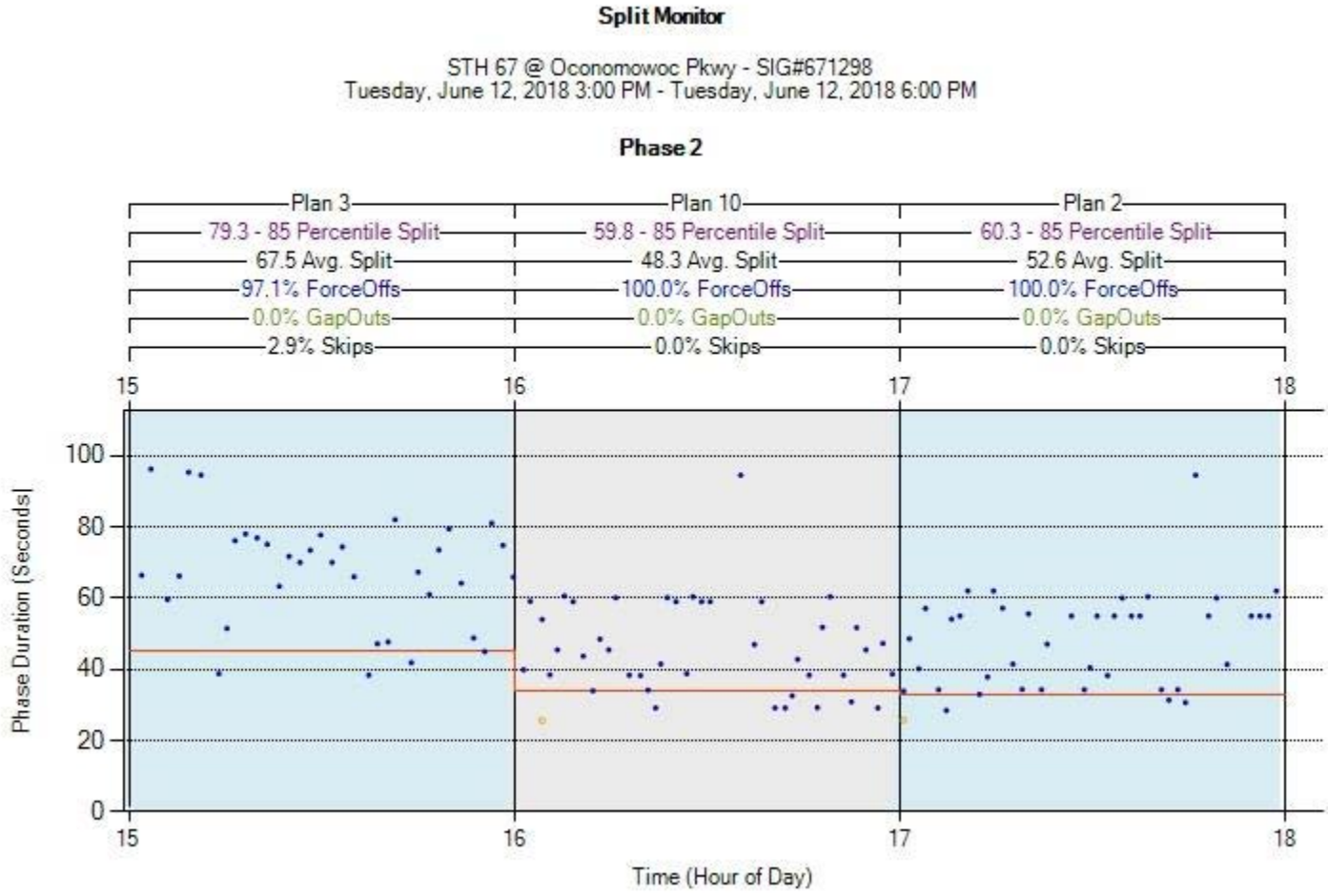




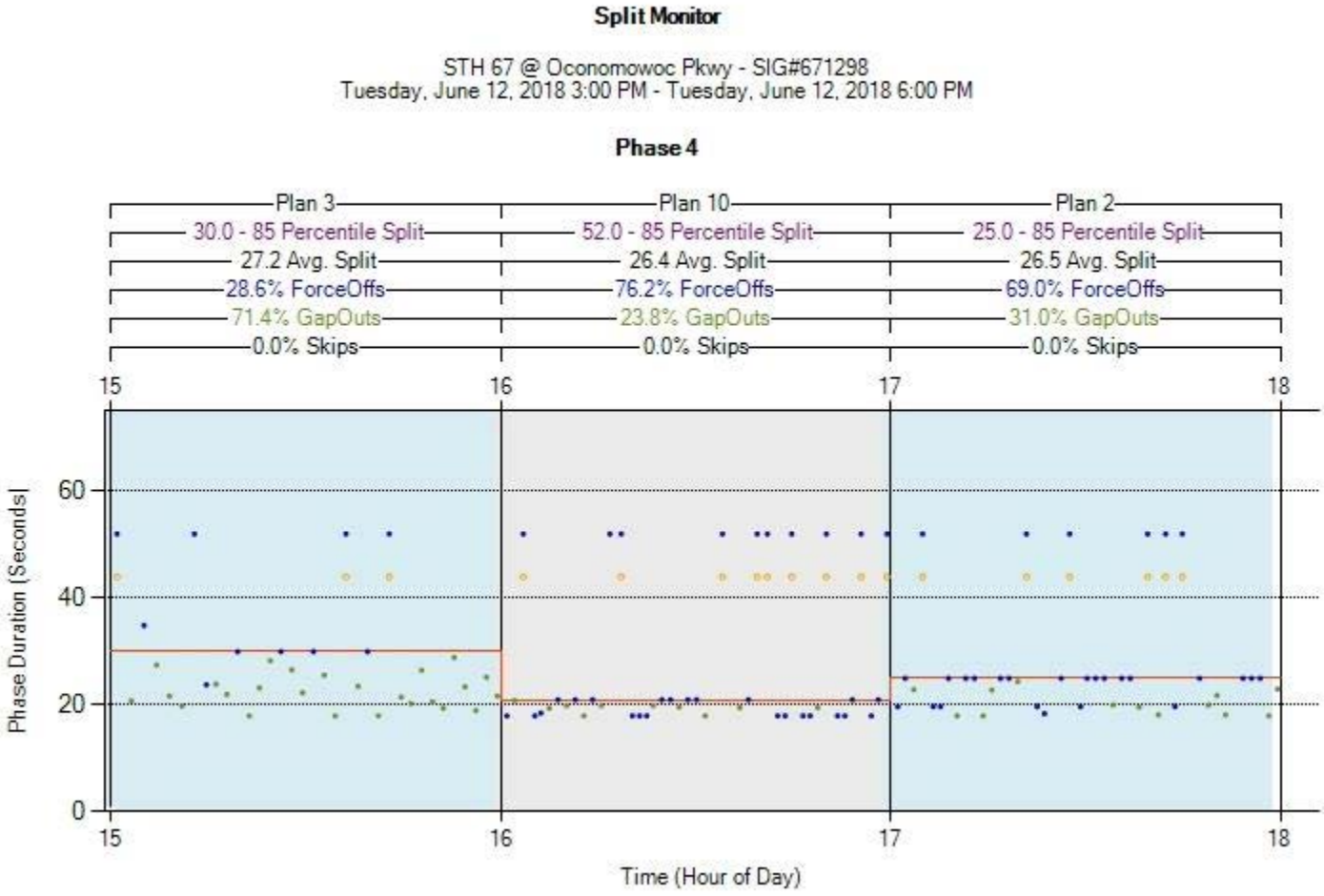
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM



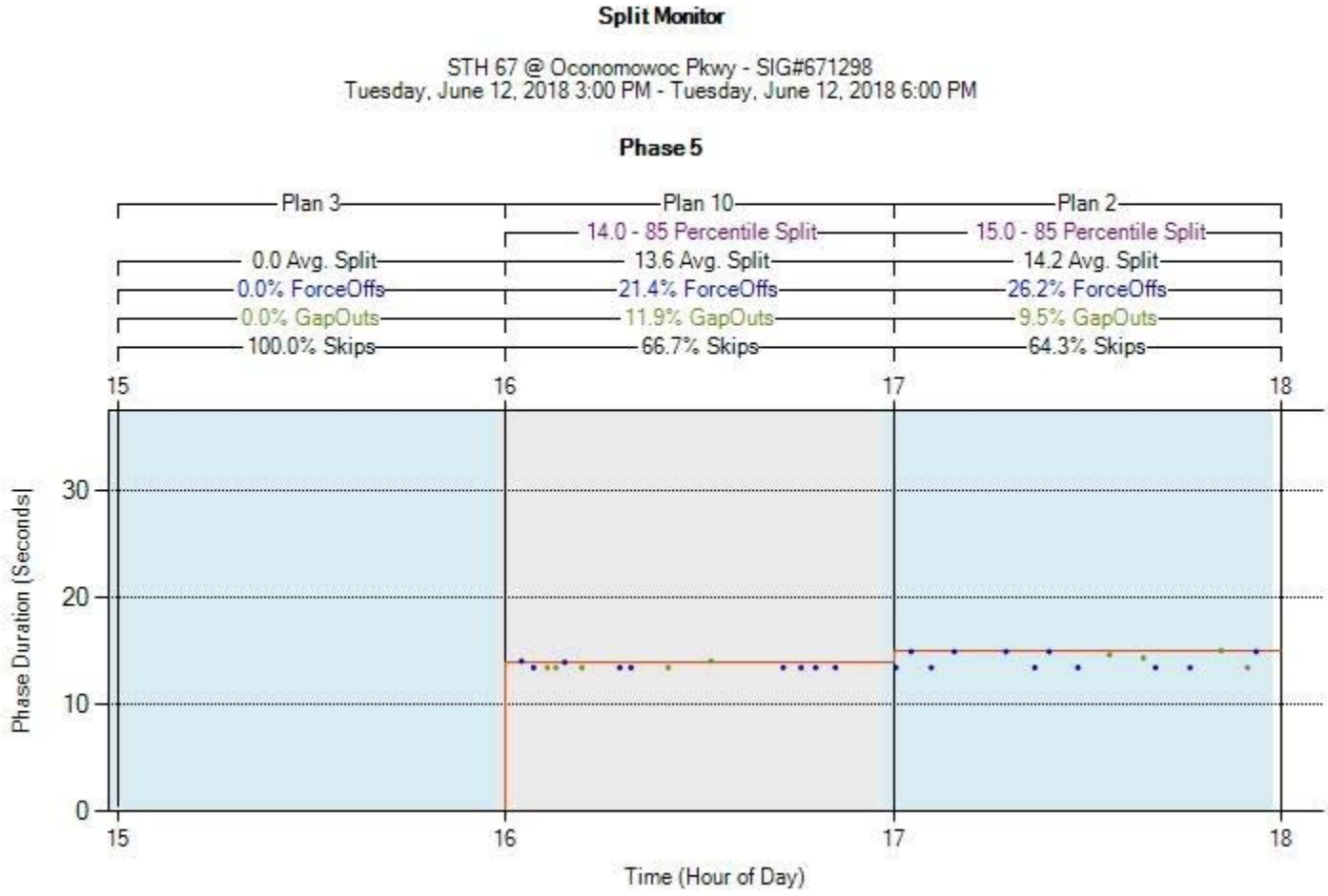
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM



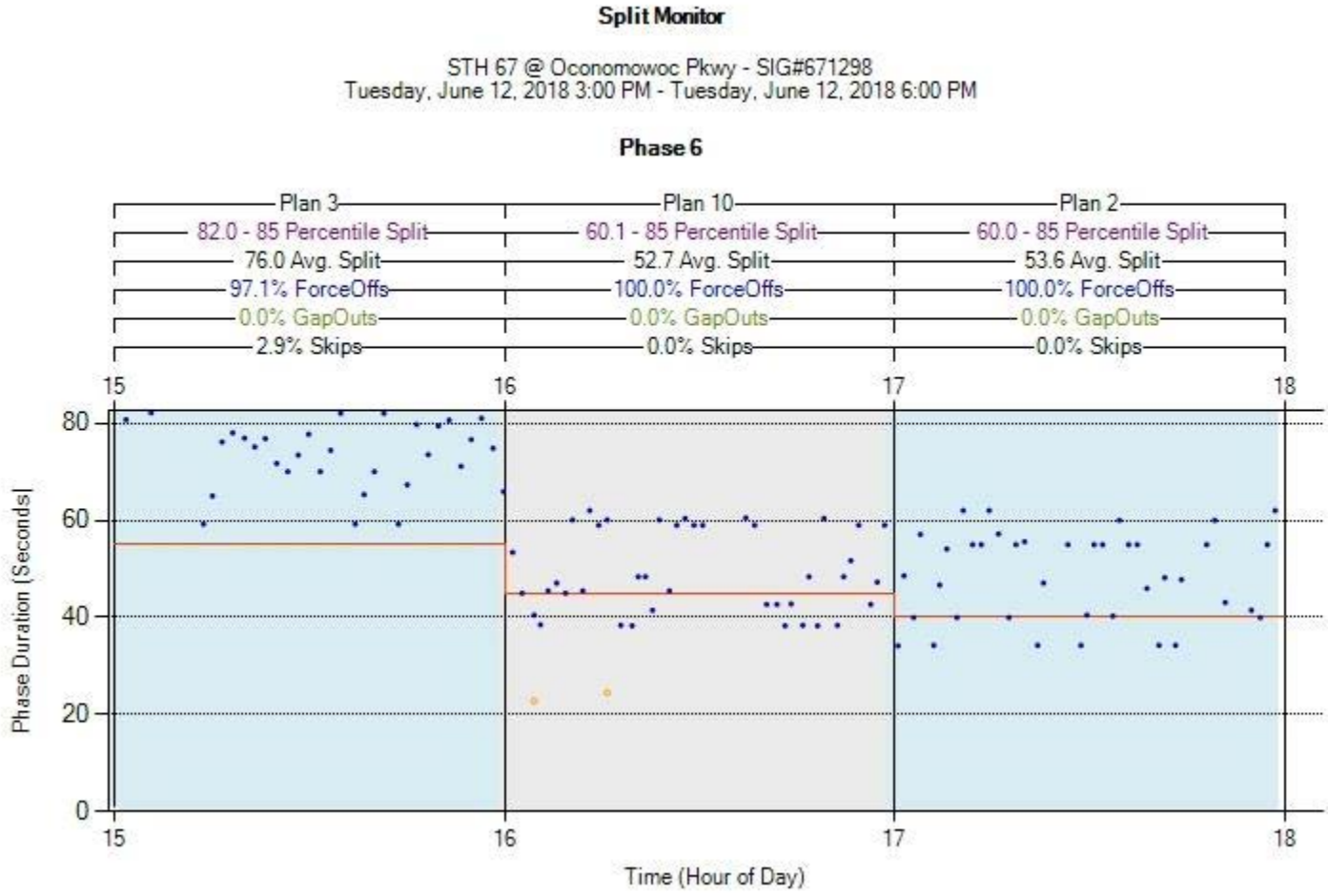
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM



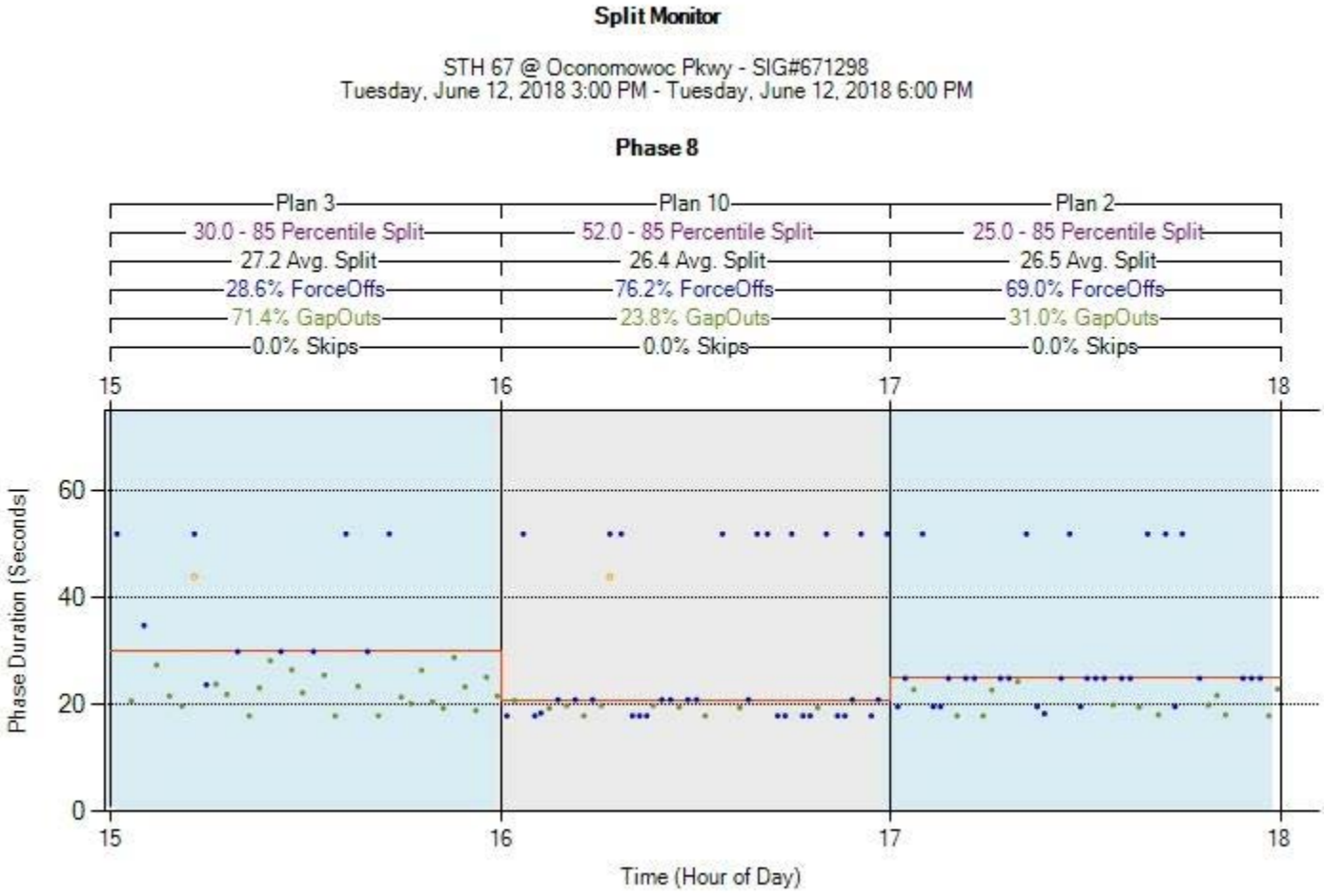
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM



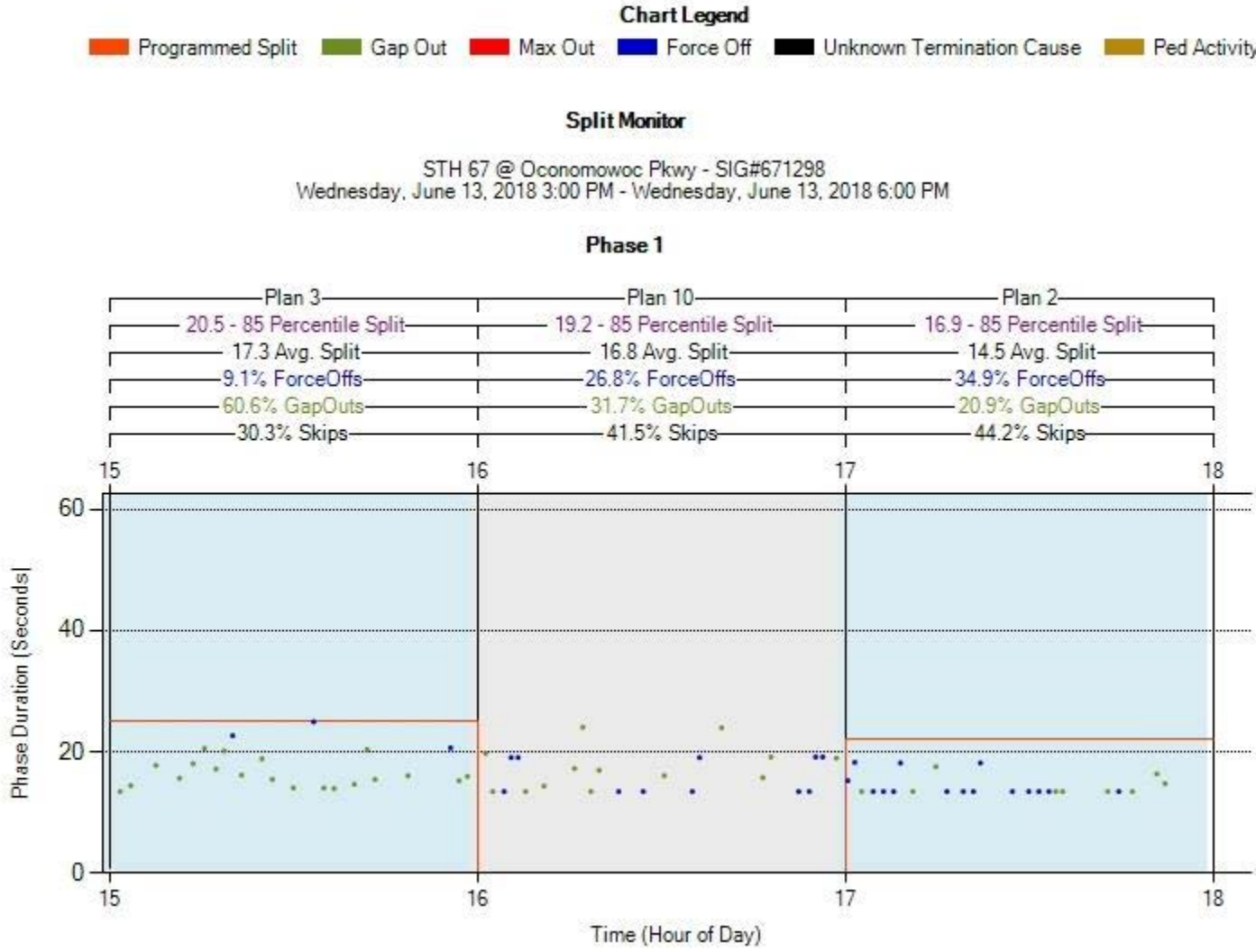
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM



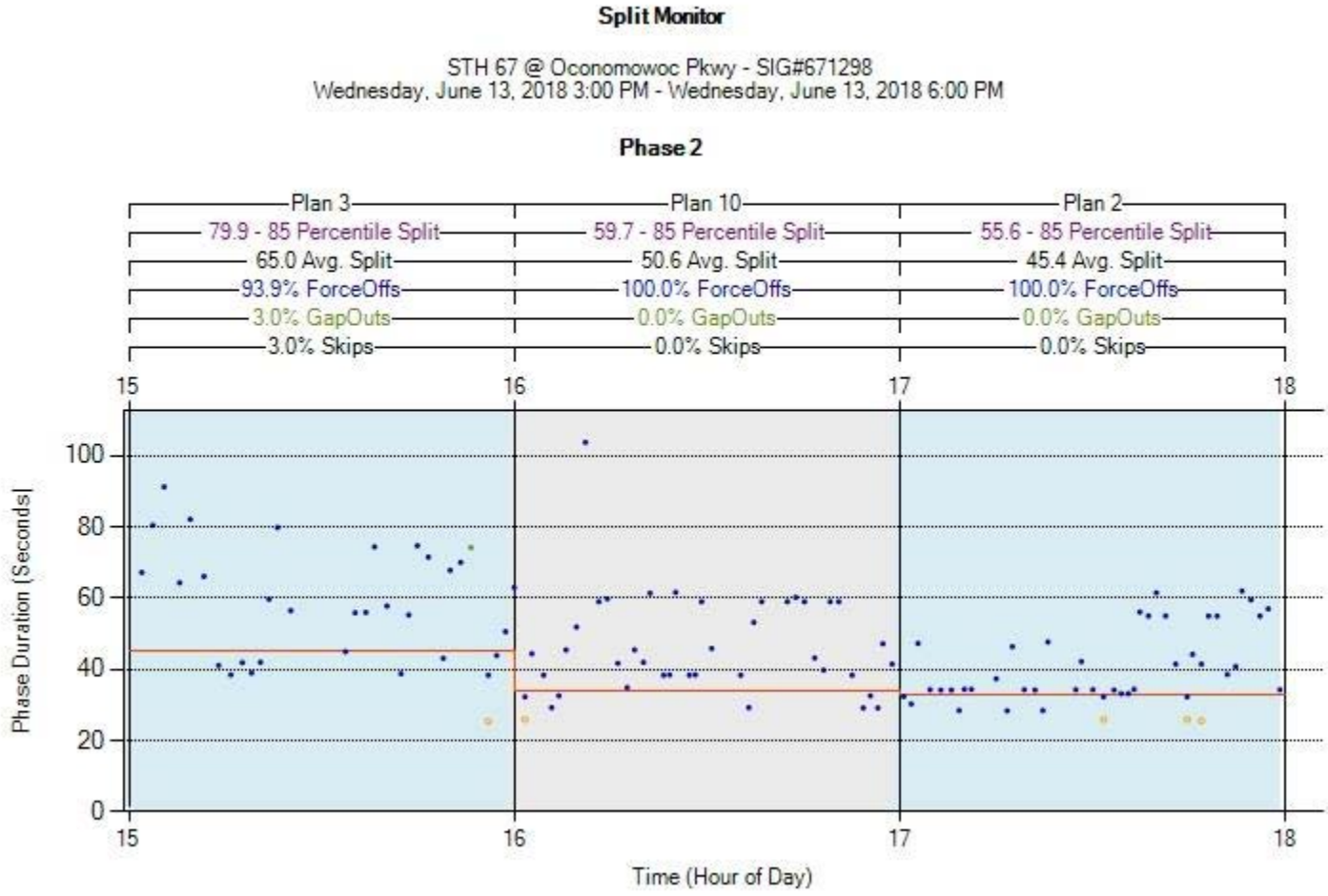
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM



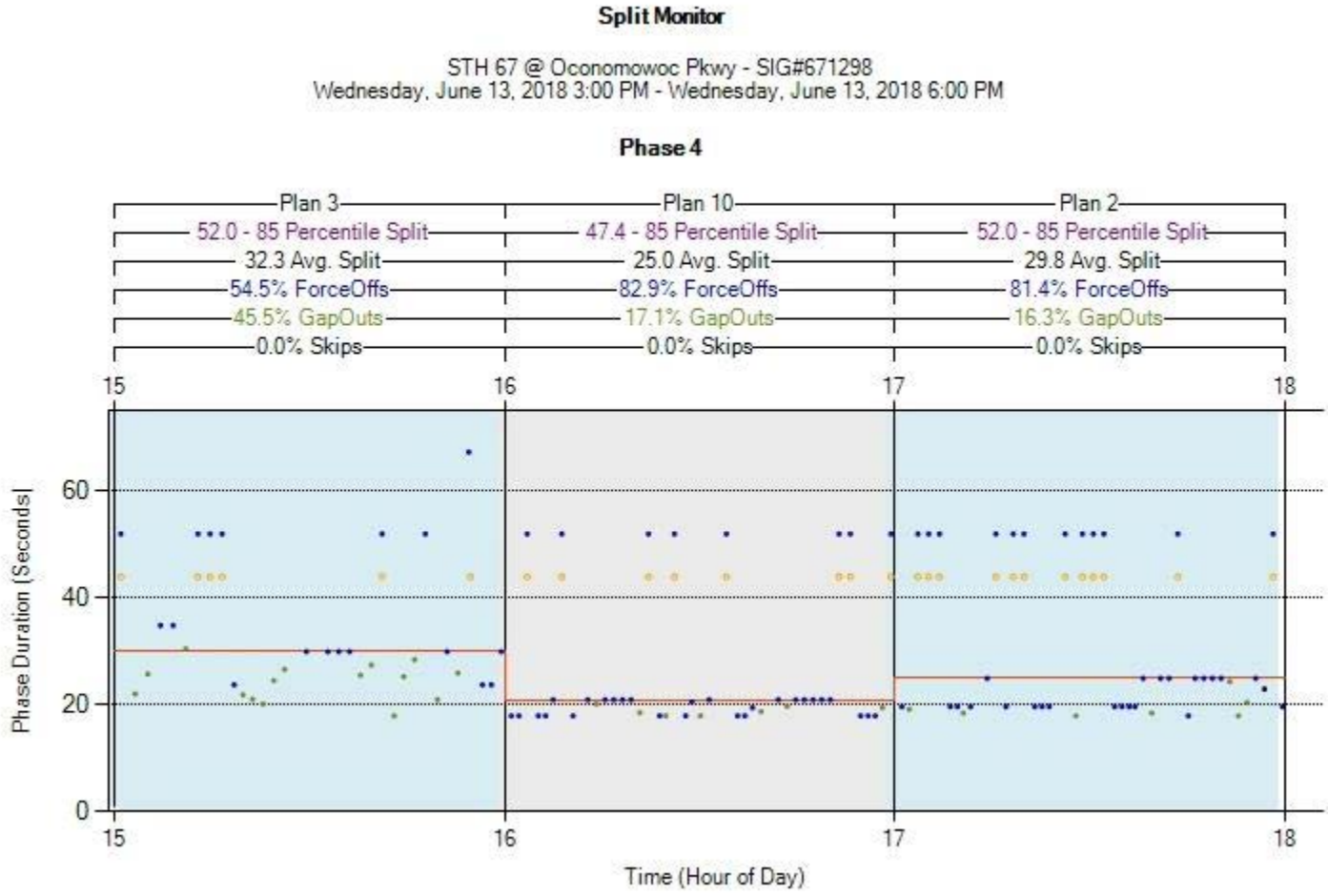
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Vistro Timings
6/13/2018 – 3:00 PM – 6:00 PM



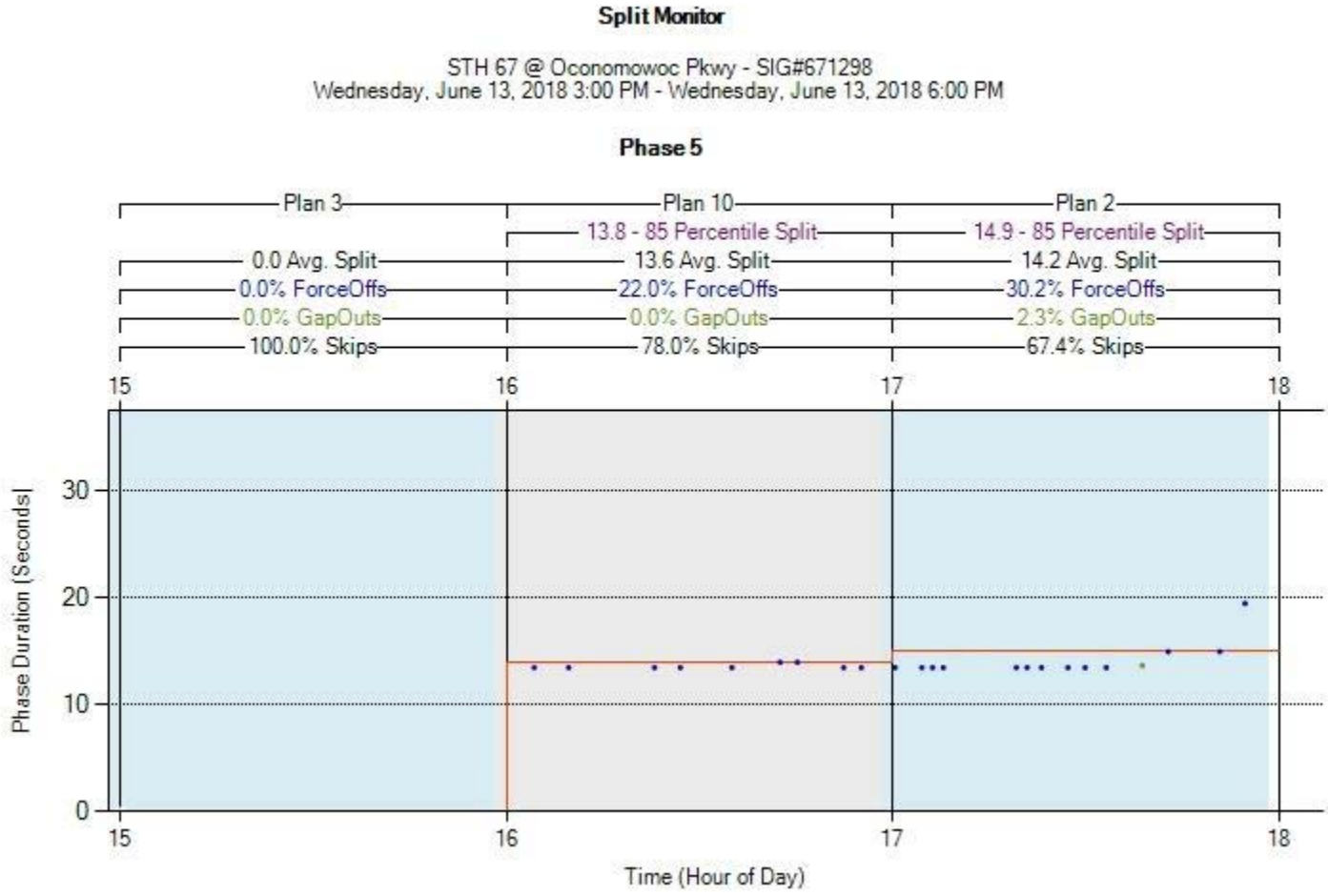
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Vistro Timings
6/13/2018 – 3:00 PM – 6:00 PM



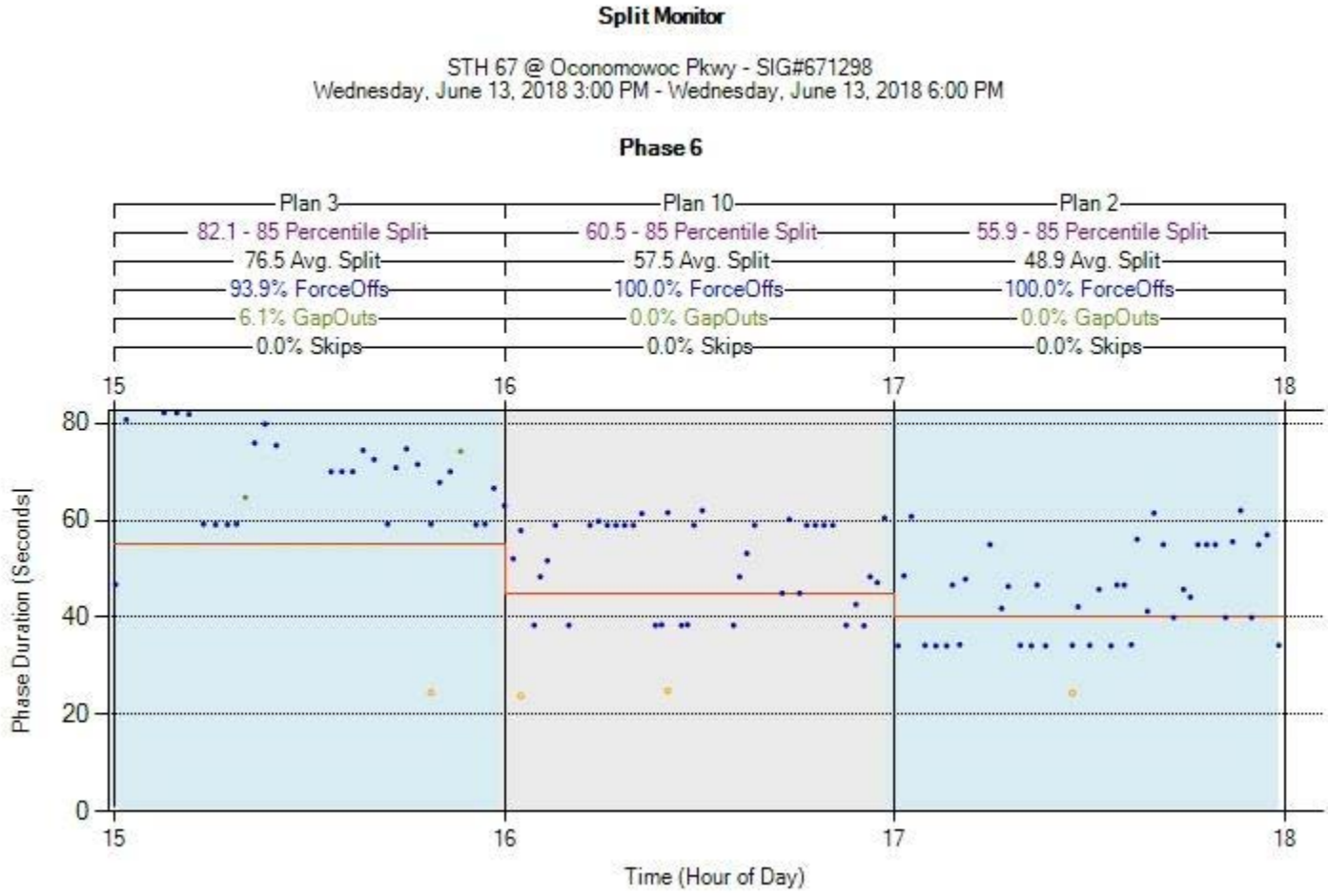
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Vistro Timings
6/13/2018 – 3:00 PM – 6:00 PM



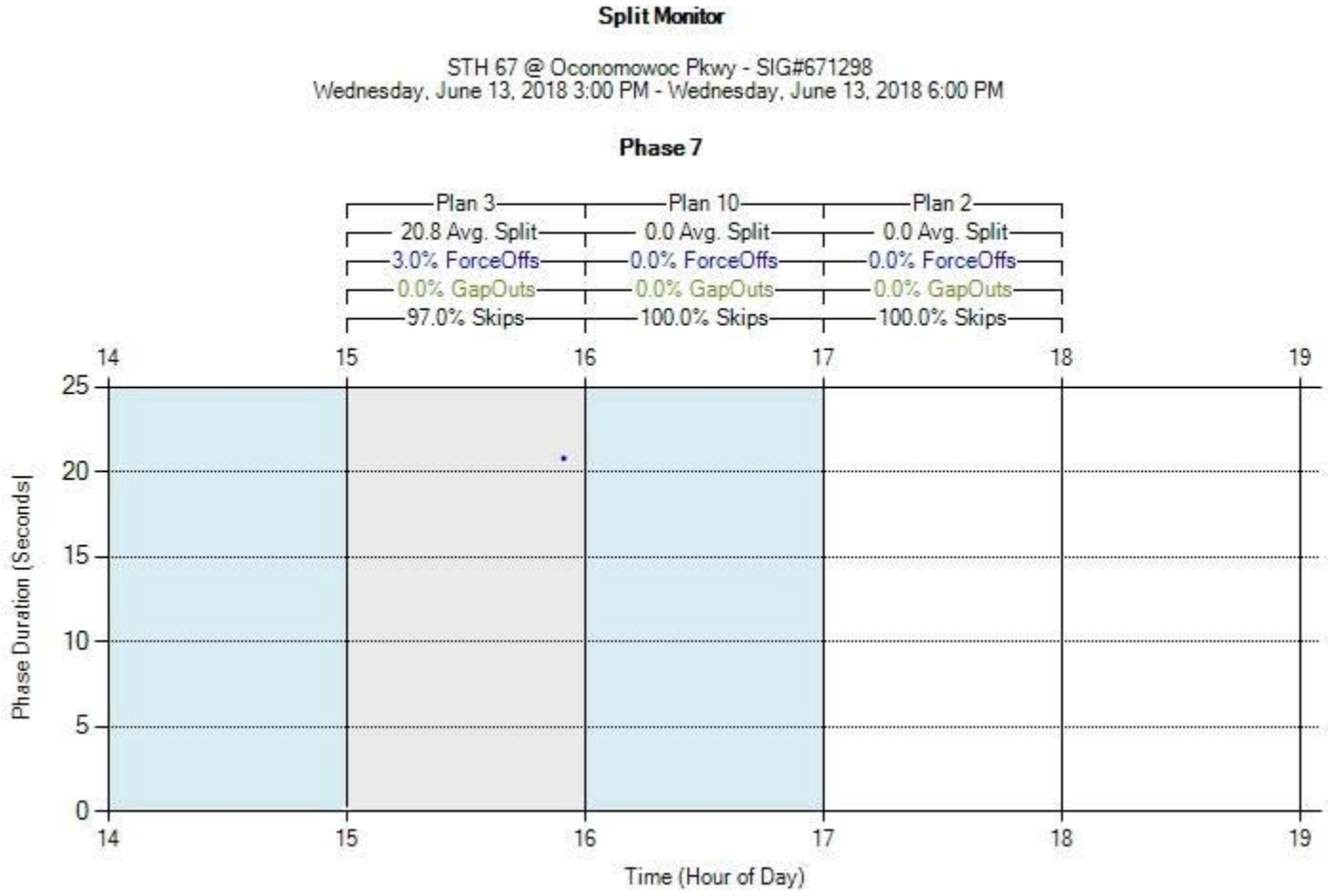
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Vistro Timings
6/13/2018 – 3:00 PM – 6:00 PM



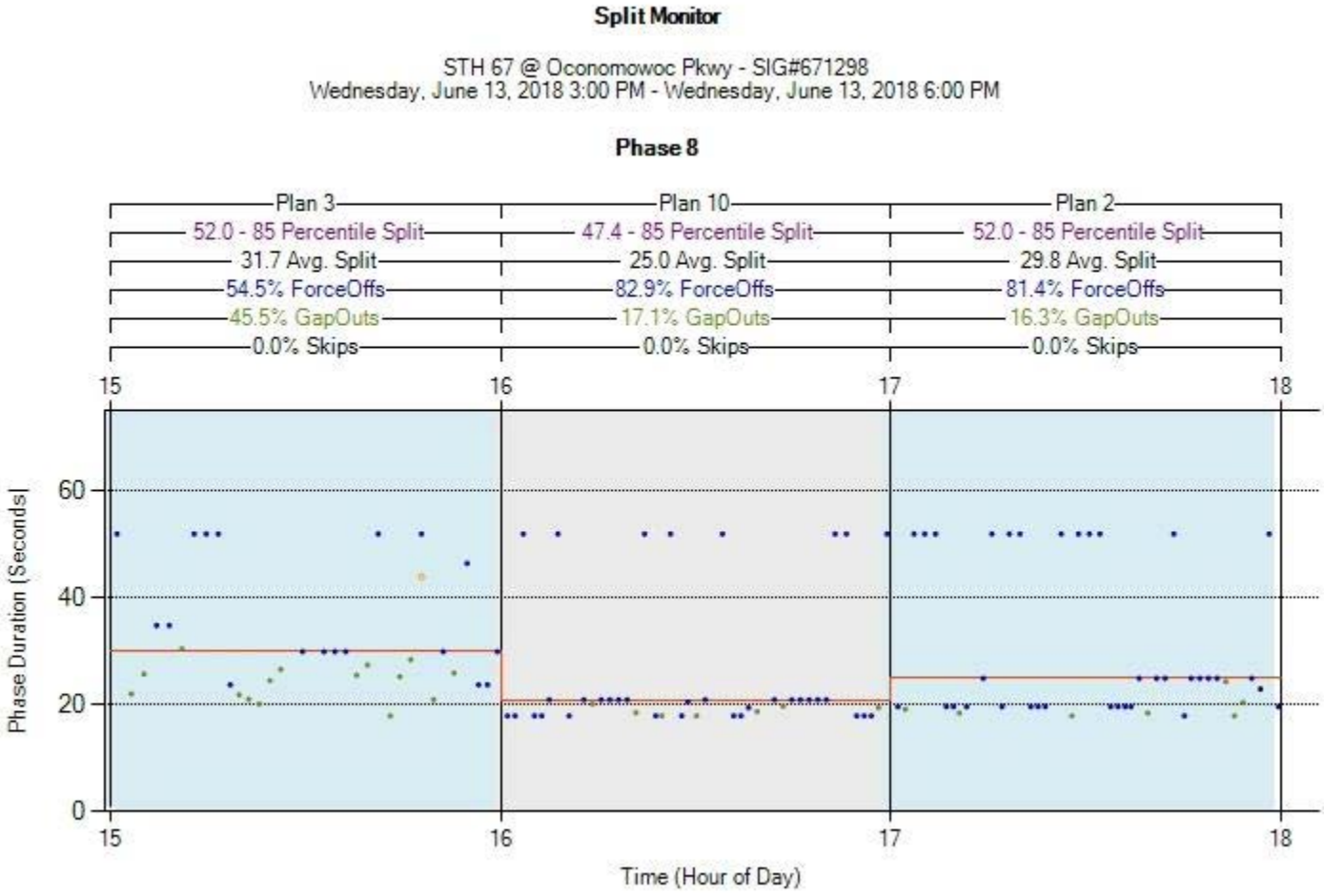
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Vistro Timings
6/13/2018 – 3:00 PM – 6:00 PM



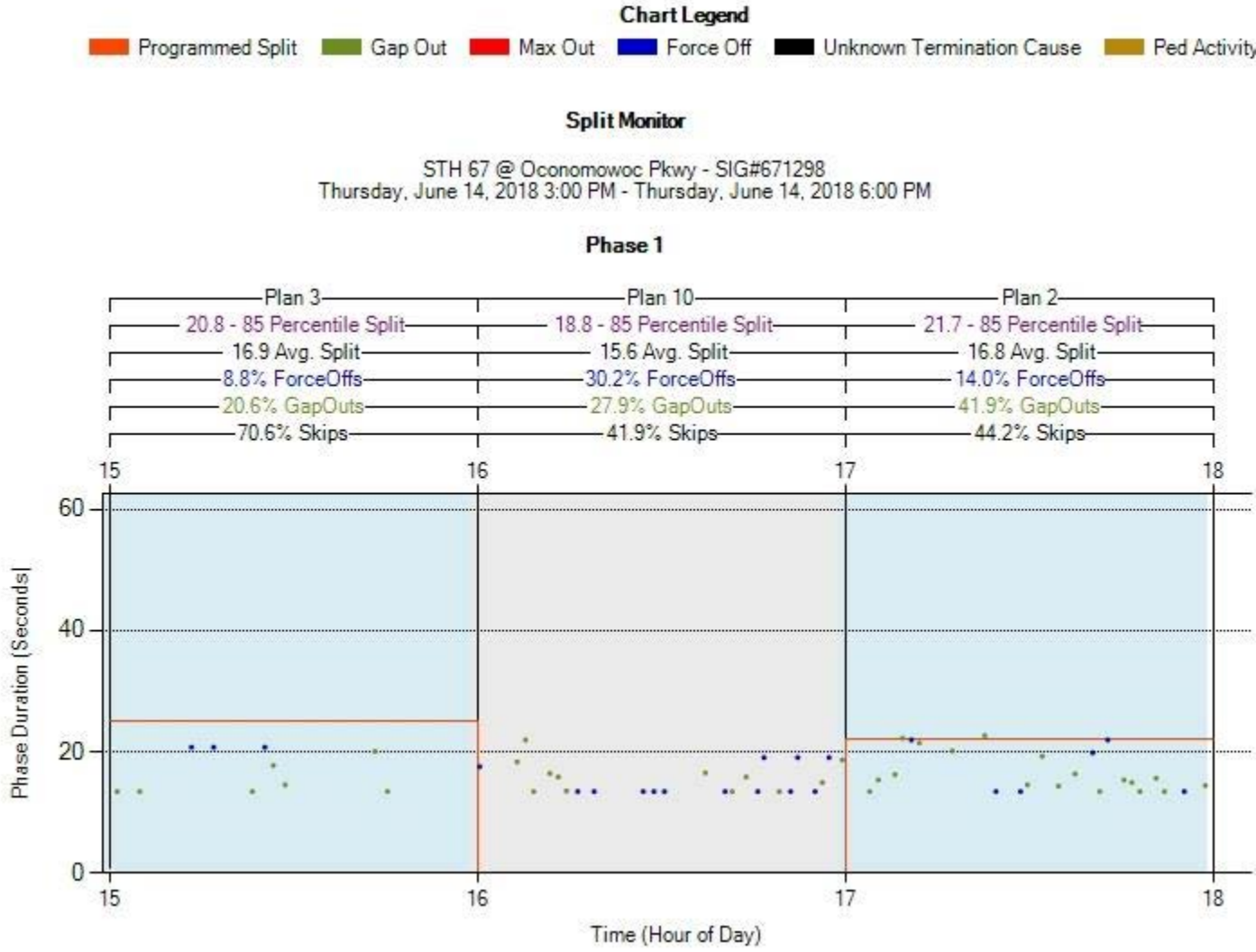
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Vistro Timings
6/13/2018 – 3:00 PM – 6:00 PM



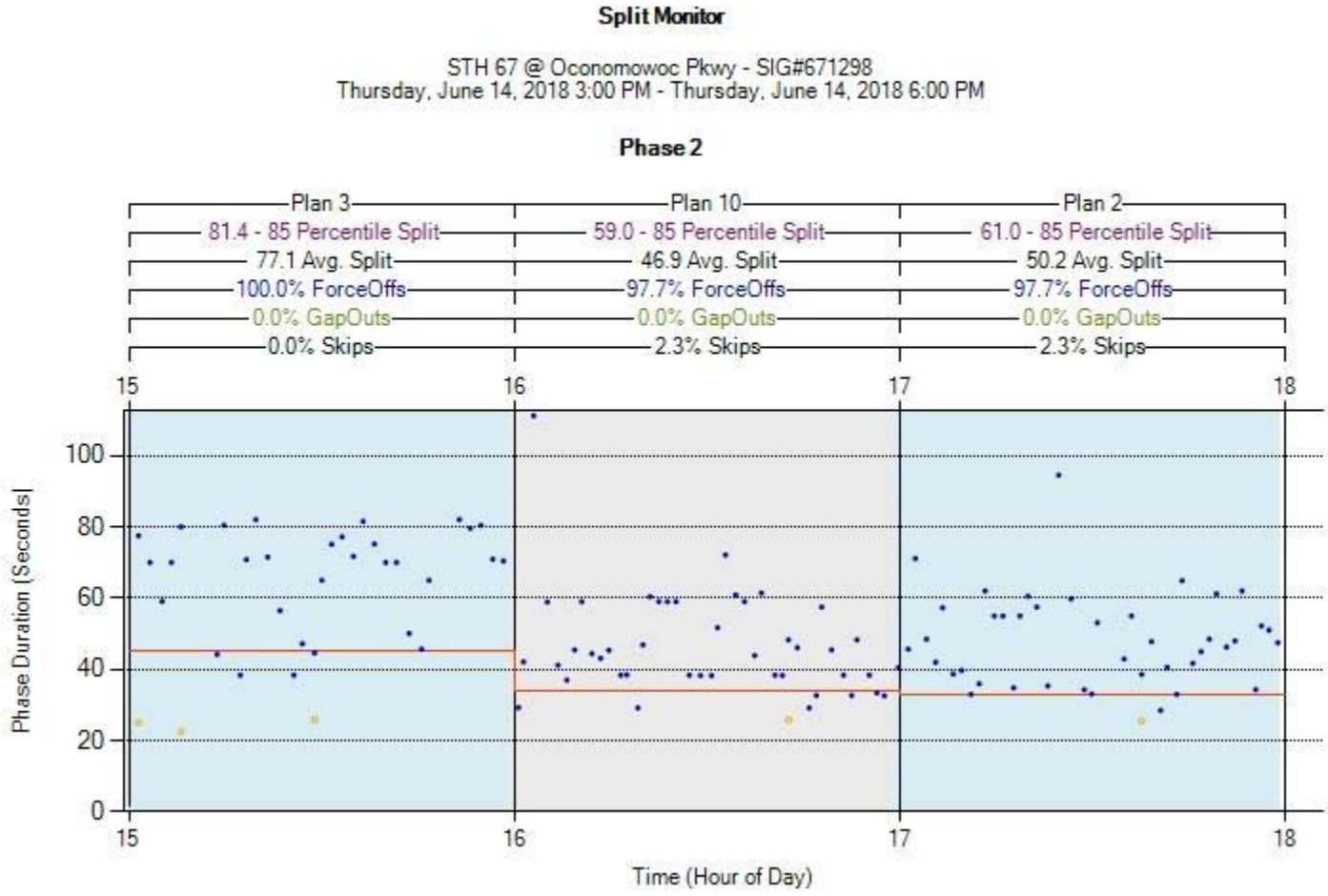
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Vistro Timings
6/13/2018 – 3:00 PM – 6:00 PM



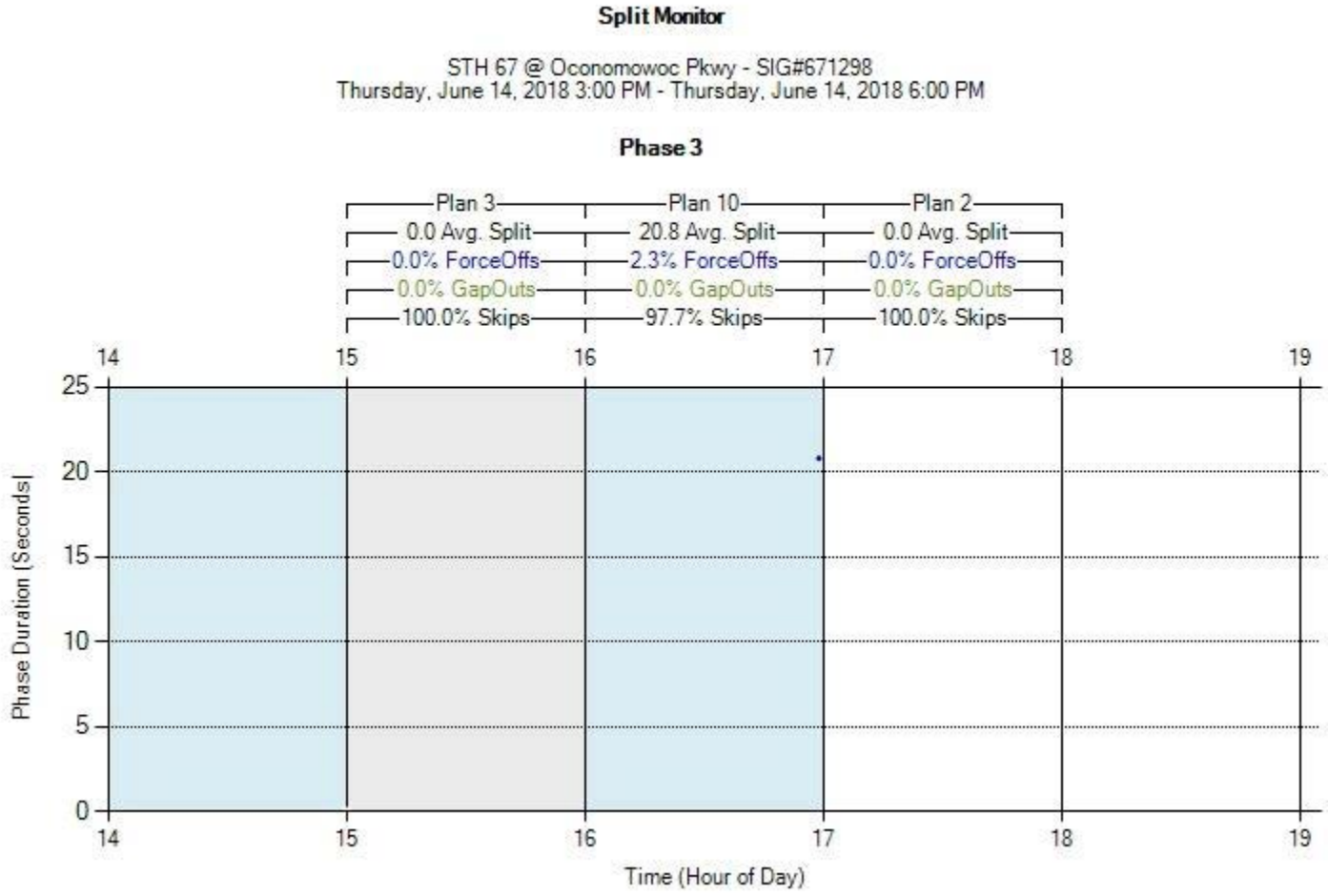
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Vistro Timings
6/14/2018 – 3:00 PM – 6:00 PM



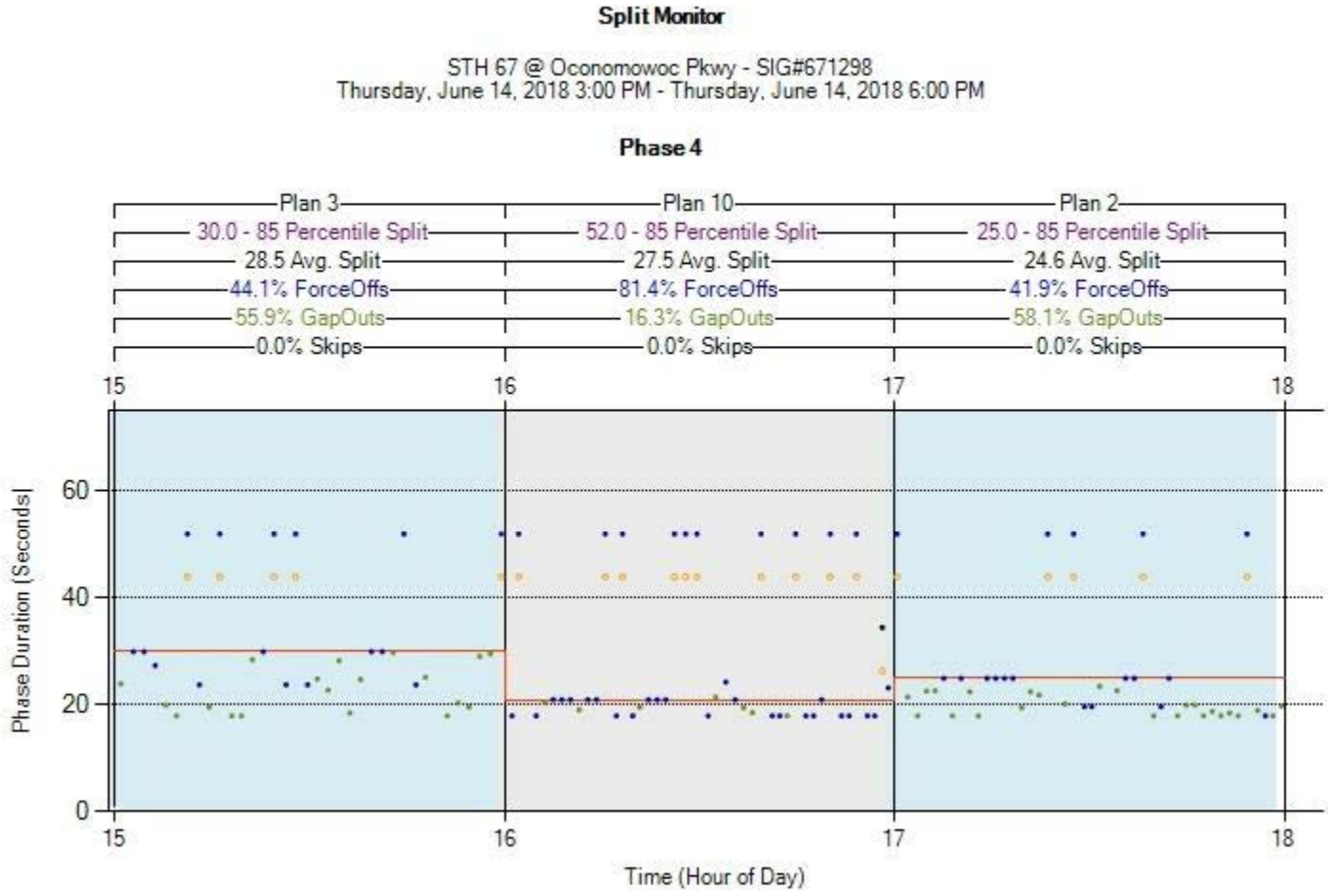
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Vistro Timings
6/14/2018 – 3:00 PM – 6:00 PM



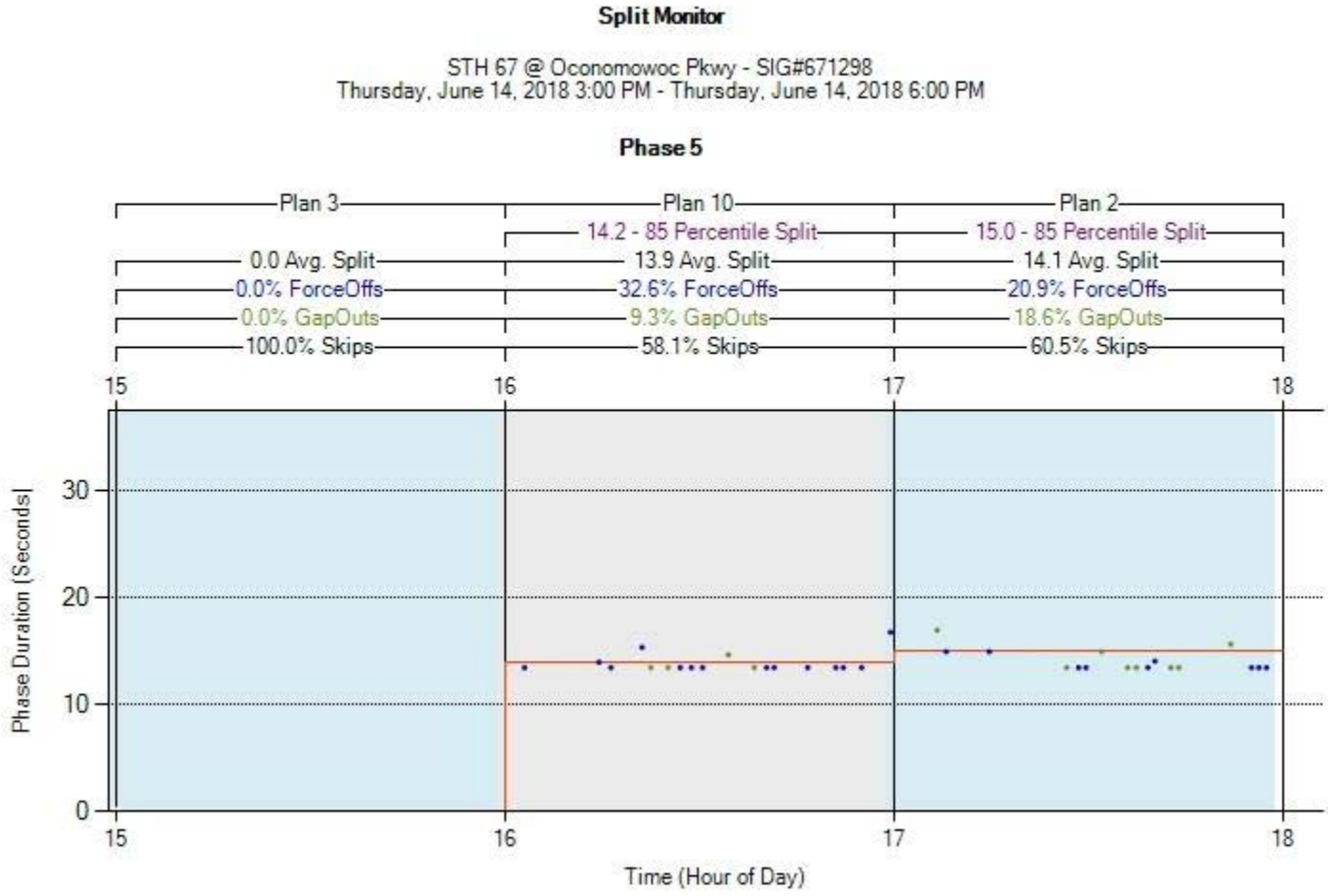
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Vistro Timings
6/14/2018 – 3:00 PM – 6:00 PM



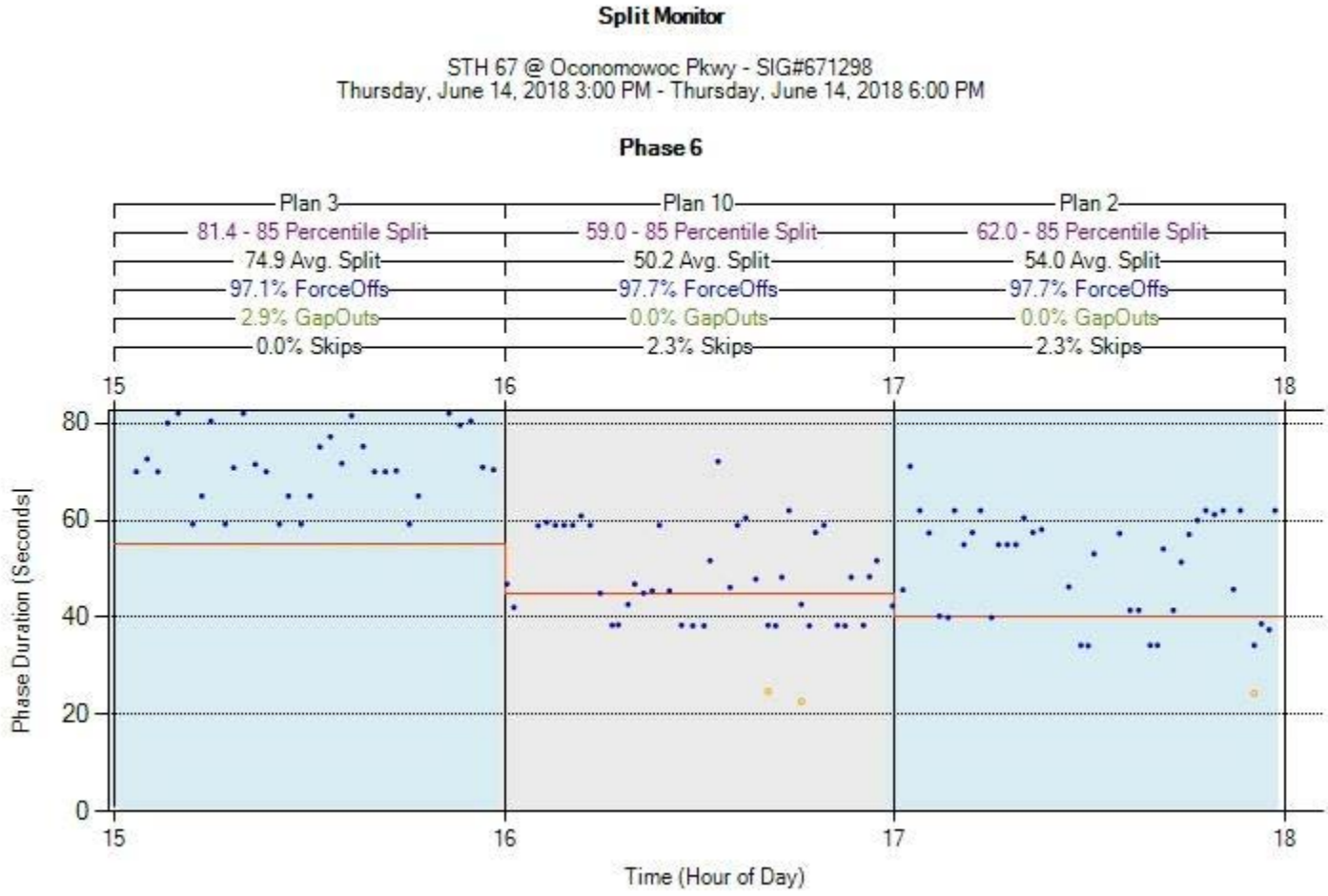
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Vistro Timings
6/14/2018 – 3:00 PM – 6:00 PM



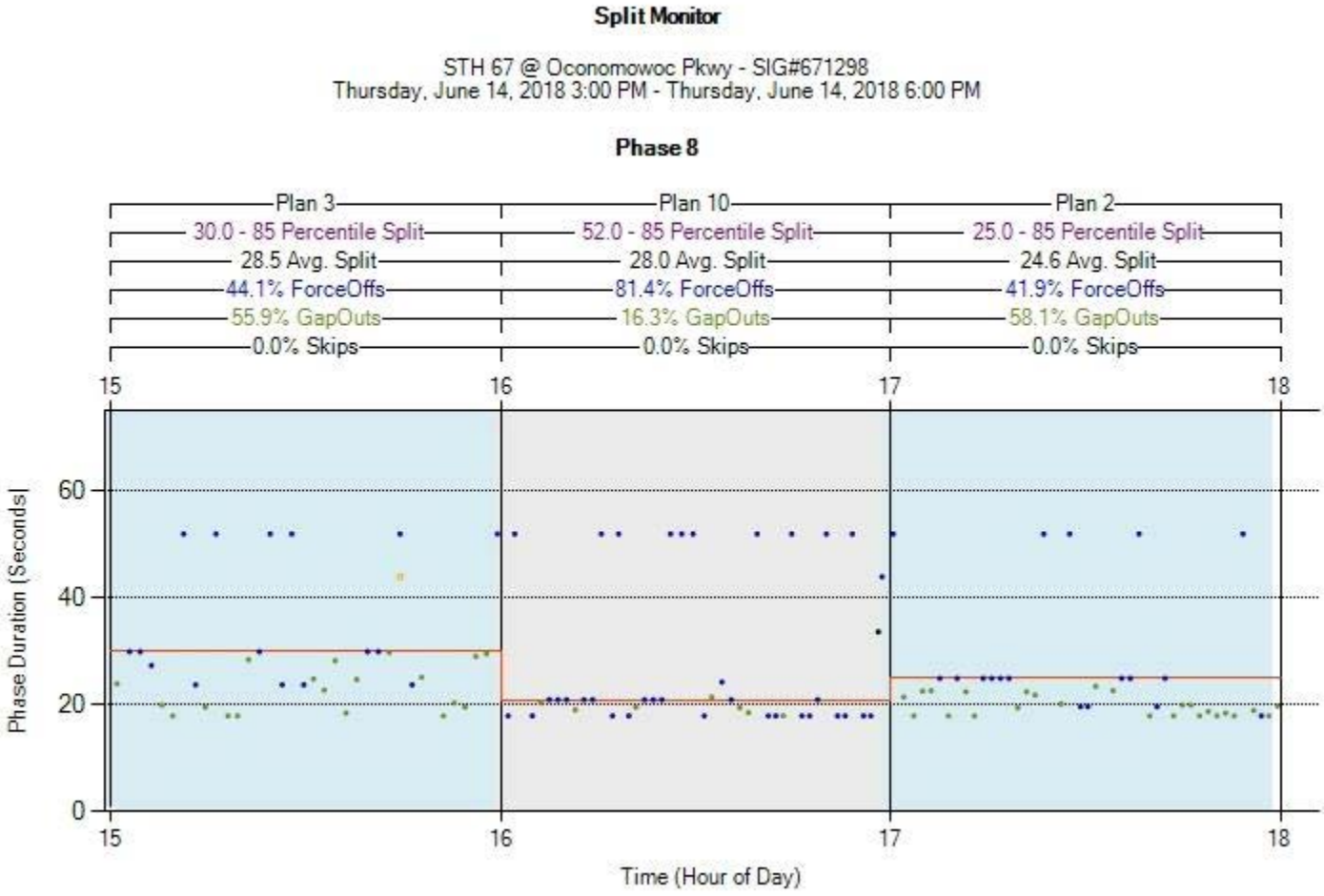
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Vistro Timings
6/14/2018 – 3:00 PM – 6:00 PM



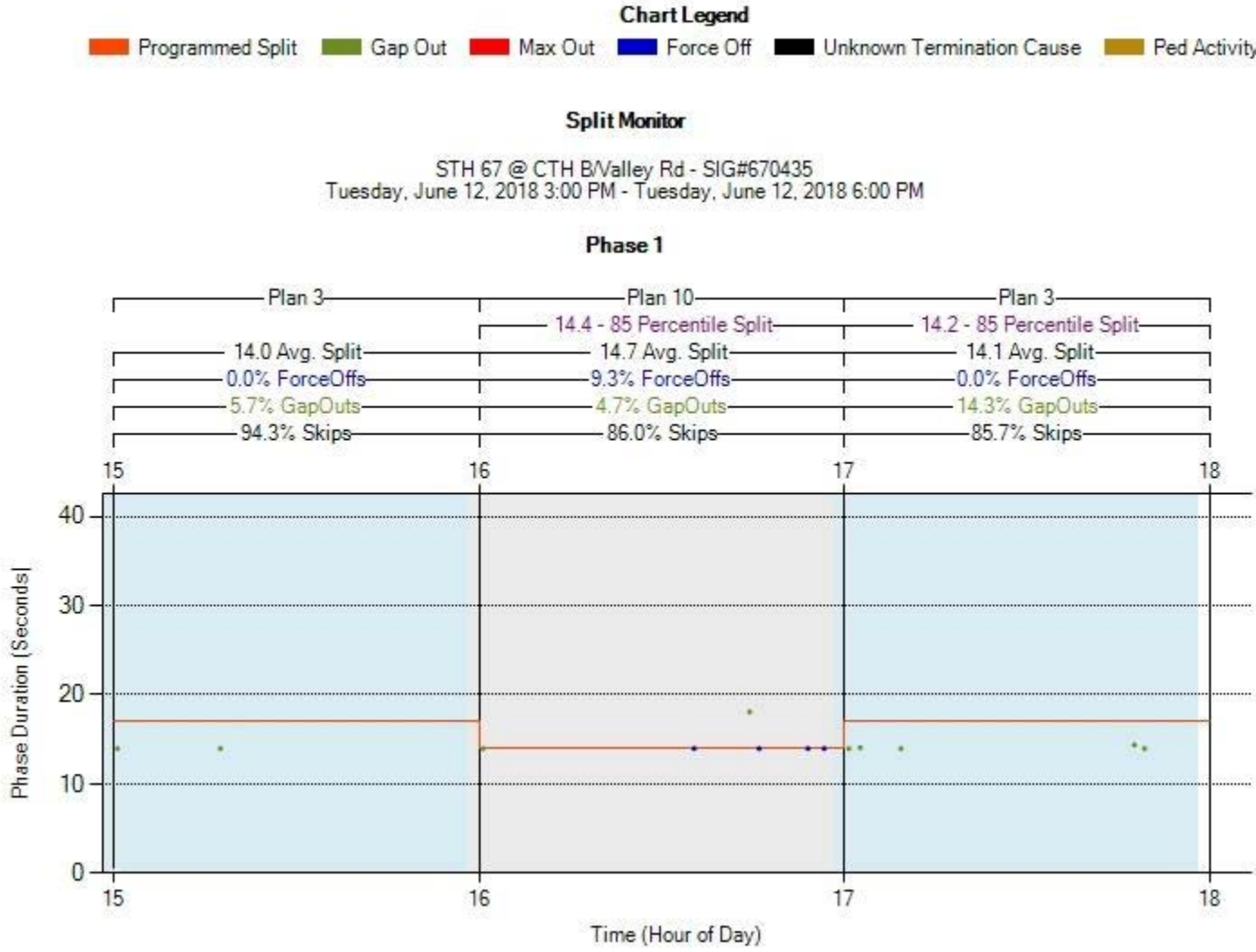
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Vistro Timings
6/14/2018 – 3:00 PM – 6:00 PM



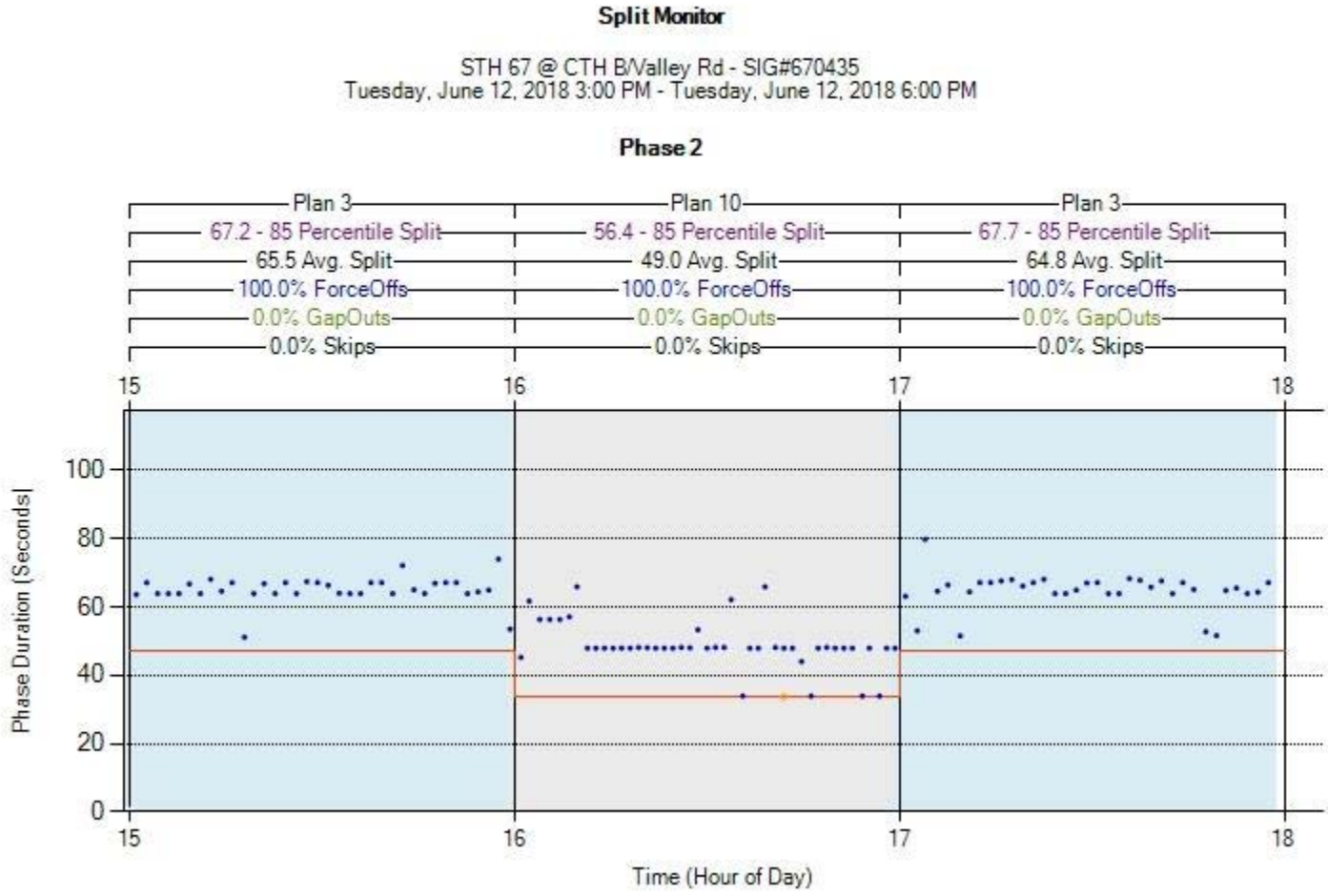
WIS 67 Corridor – STH 67 & Oconomowoc Pkwy.
Vistro Timings
6/14/2018 – 3:00 PM – 6:00 PM



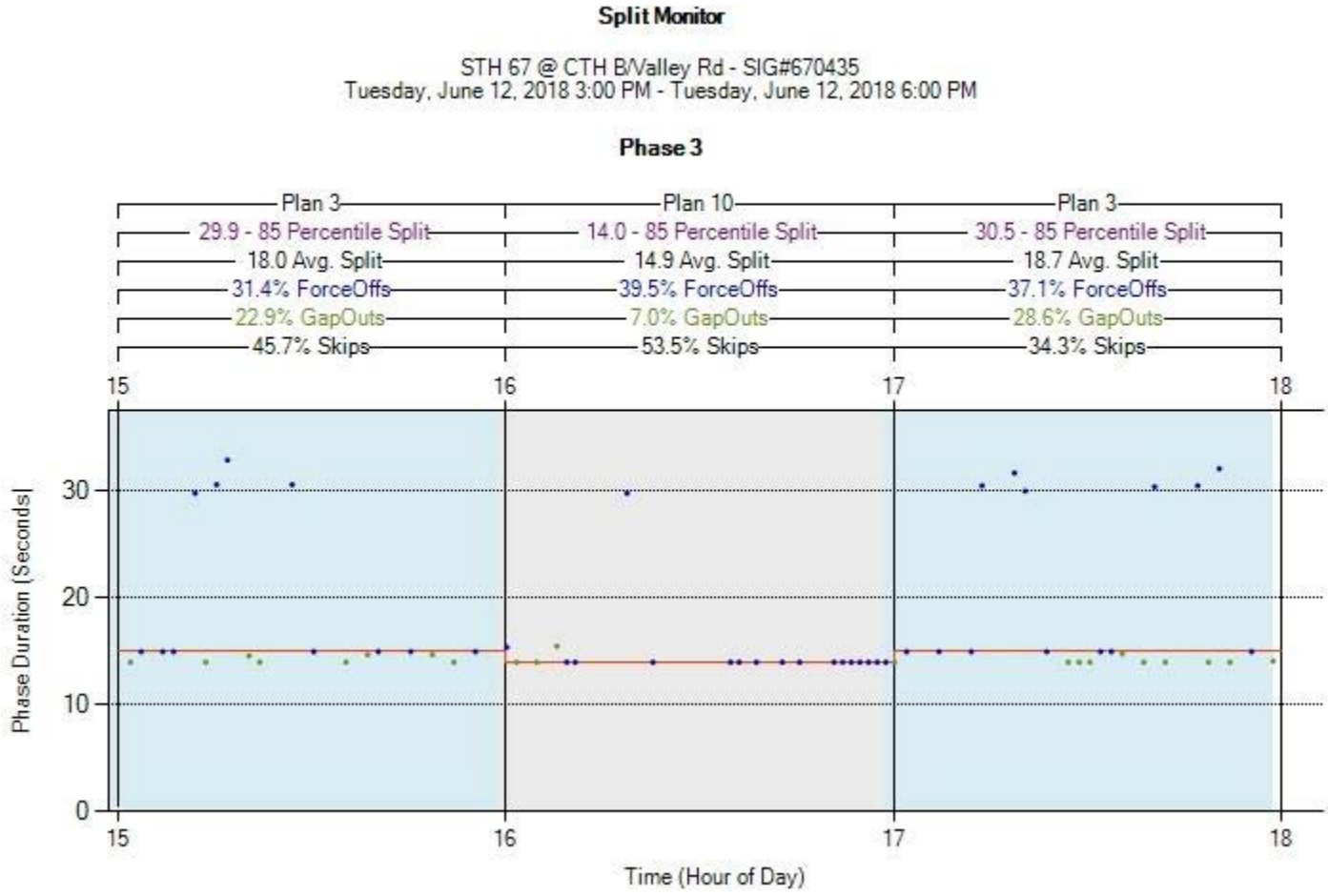
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM



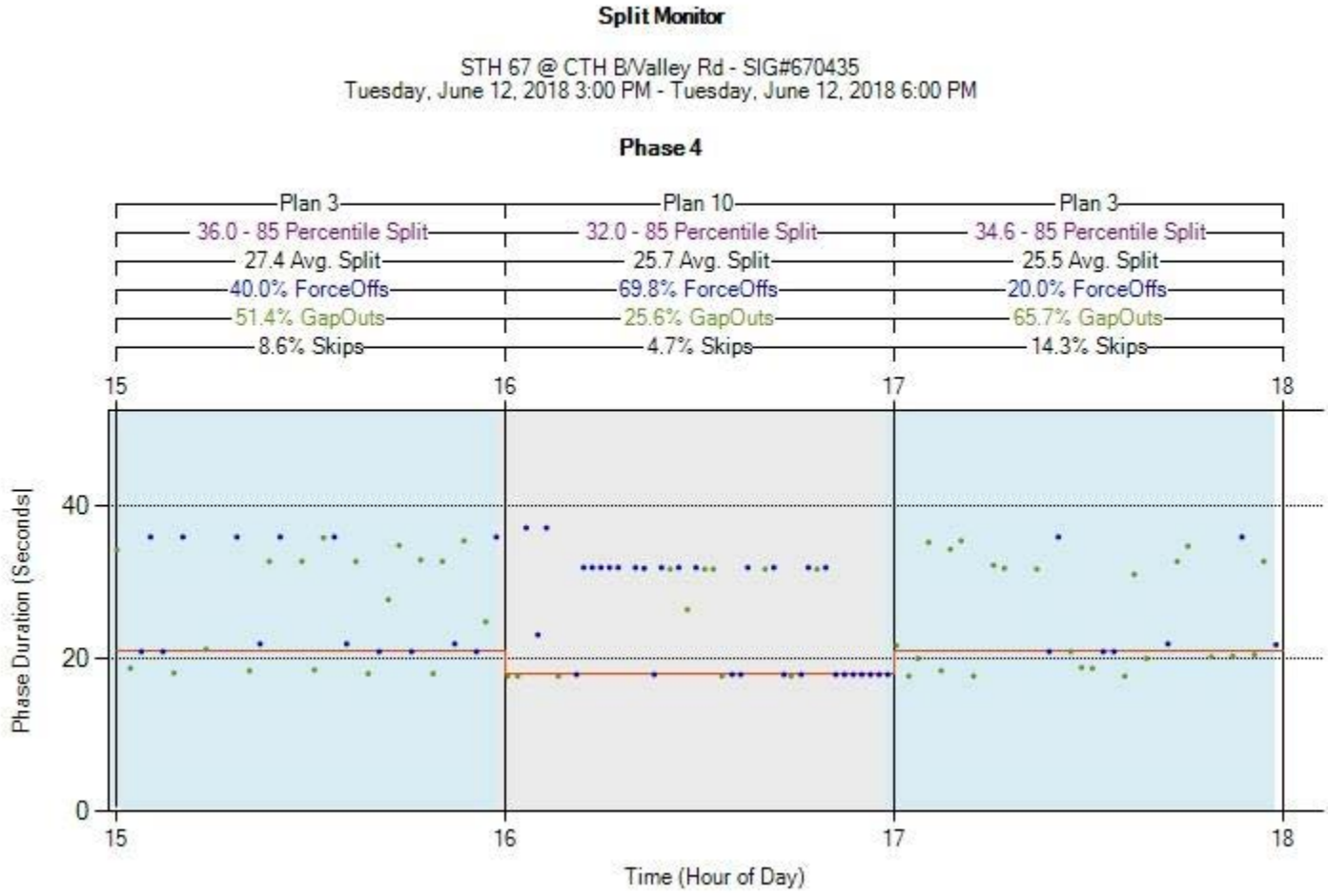
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM



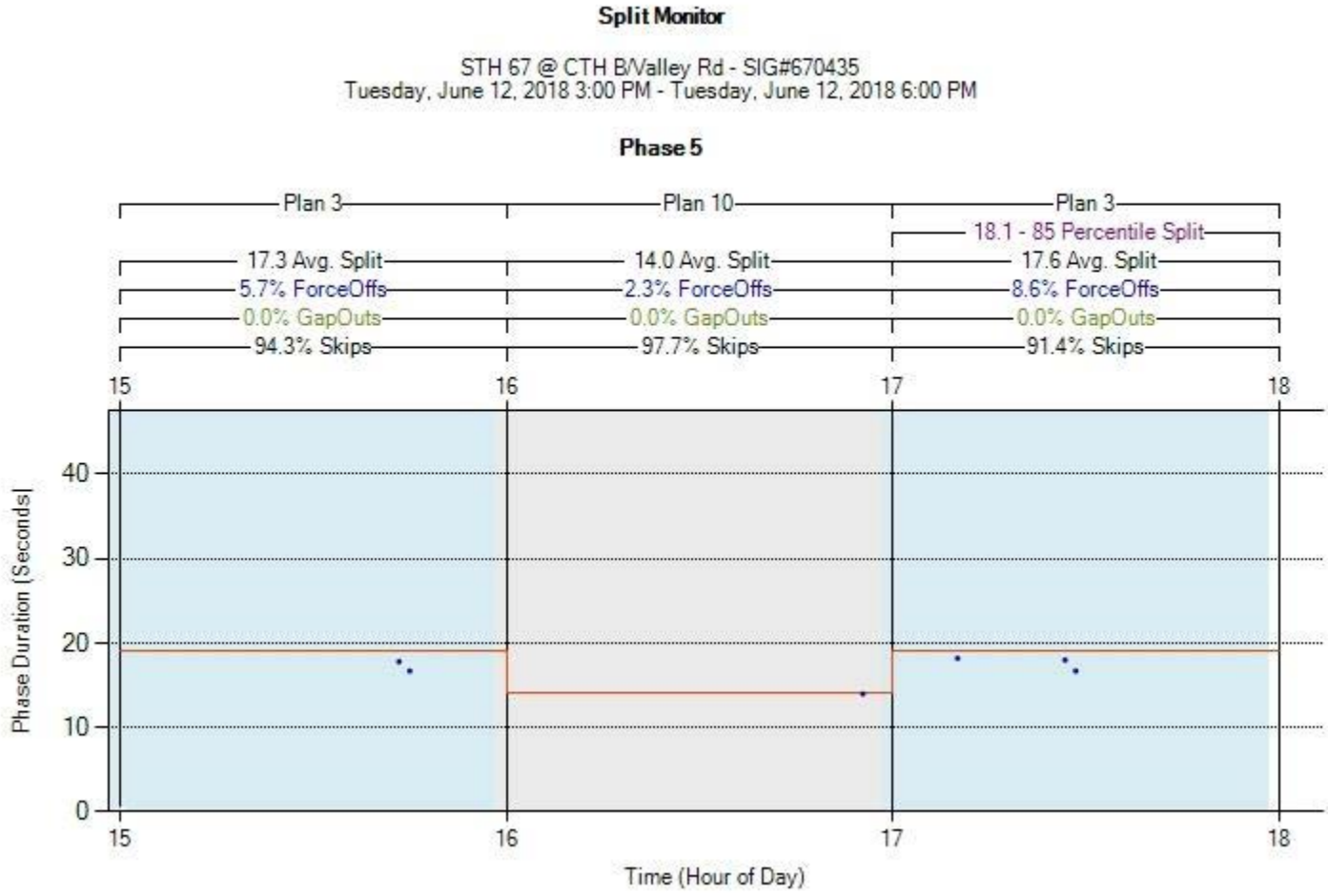
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM



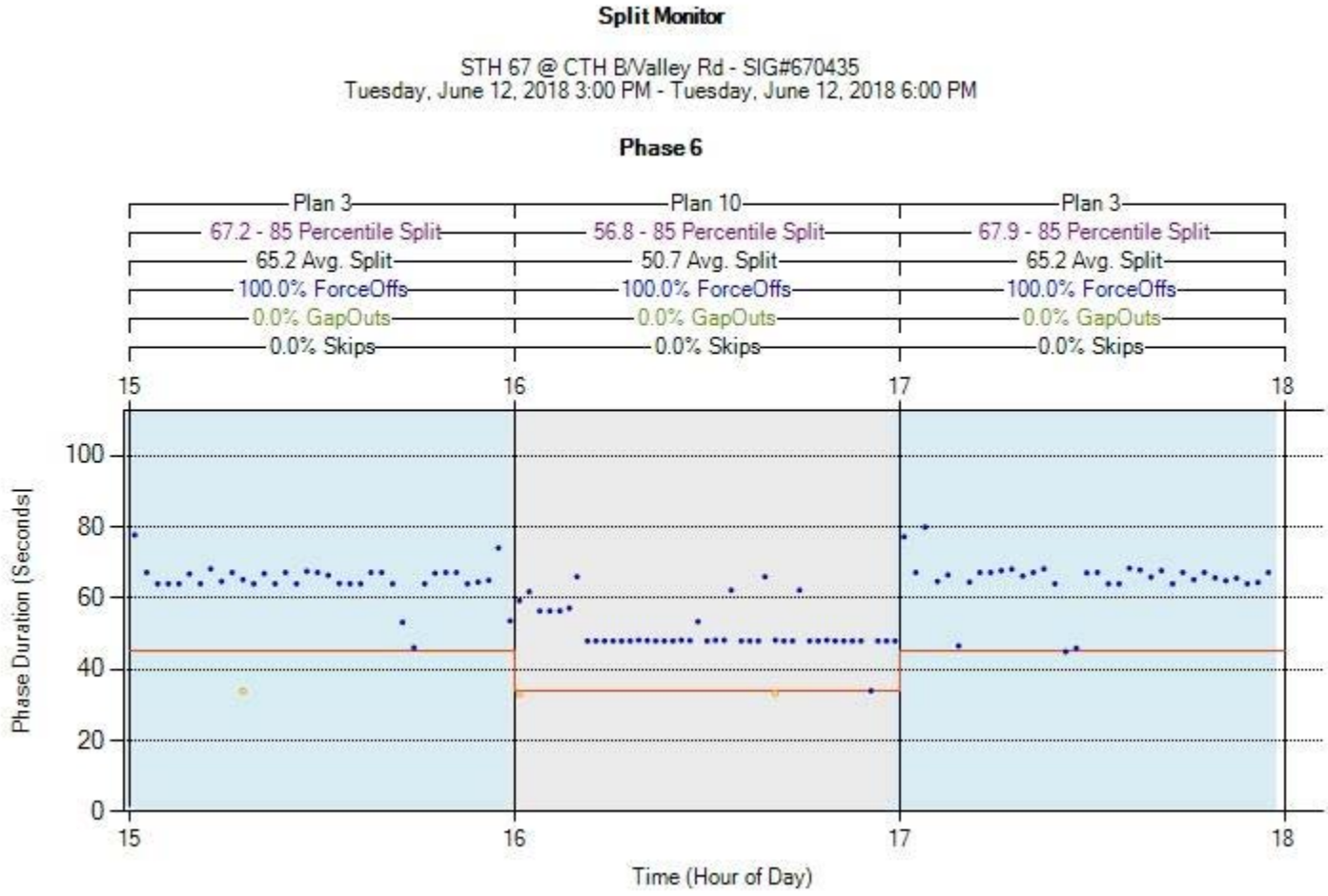
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM



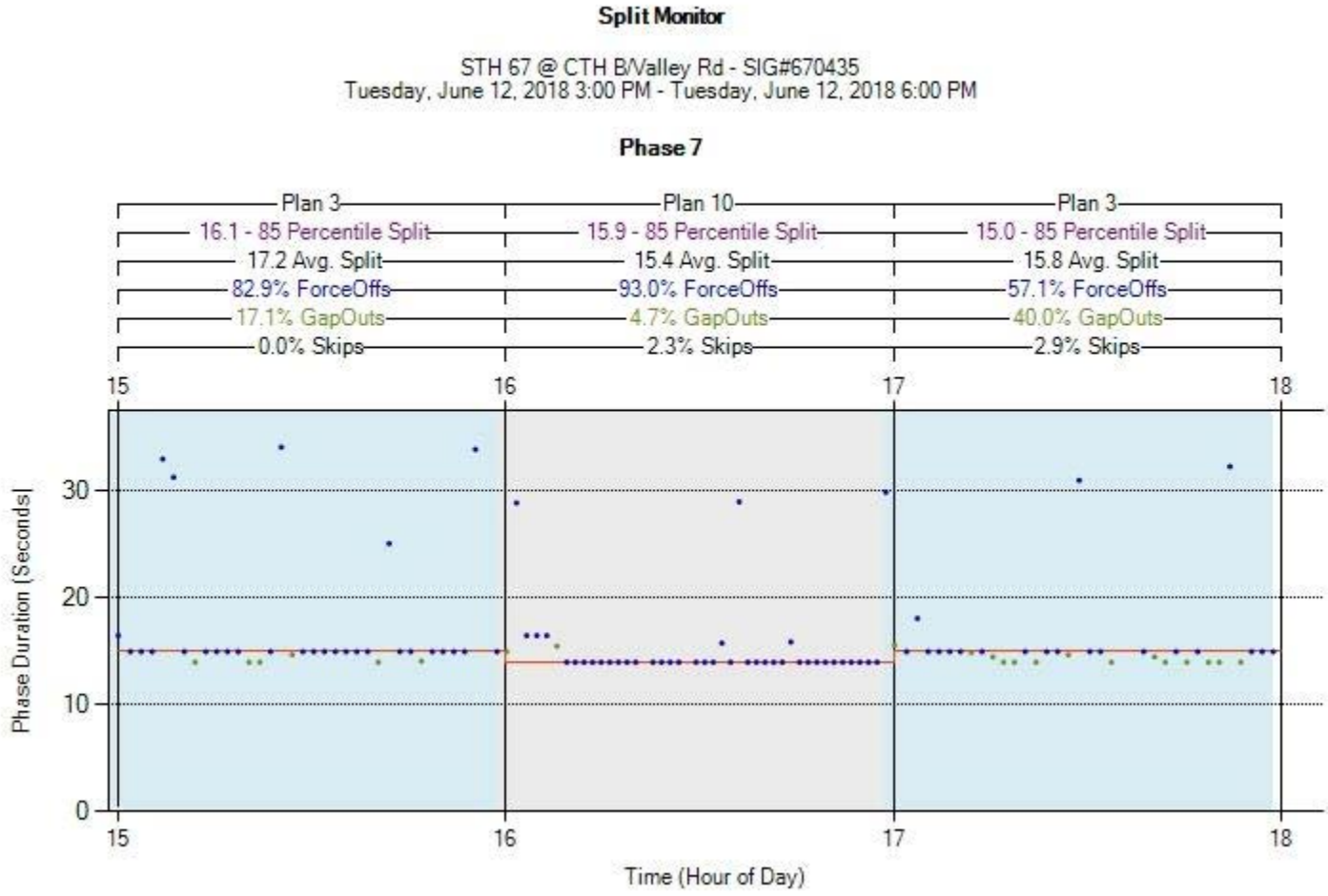
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM



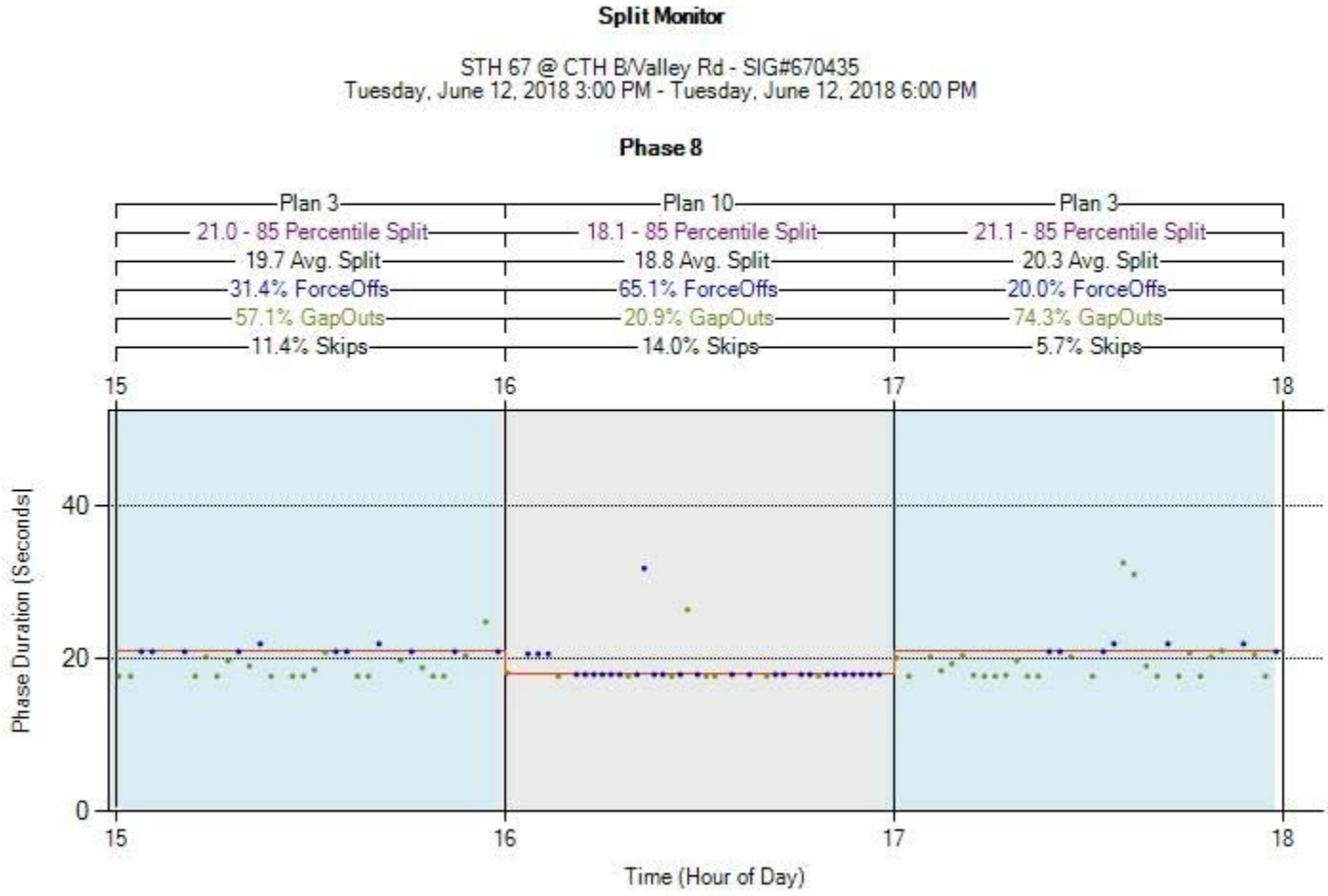
WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM



WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM



WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM



WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
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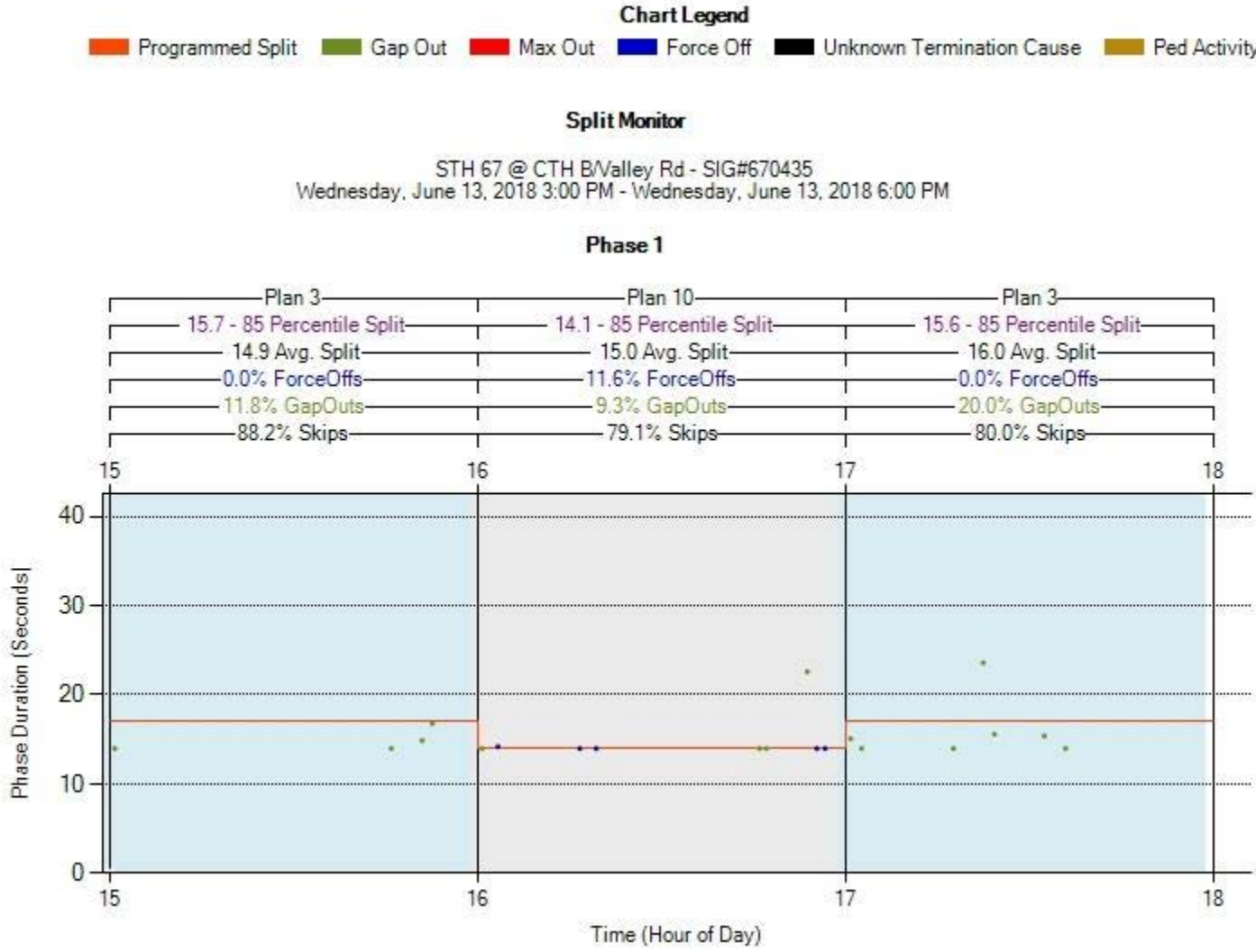
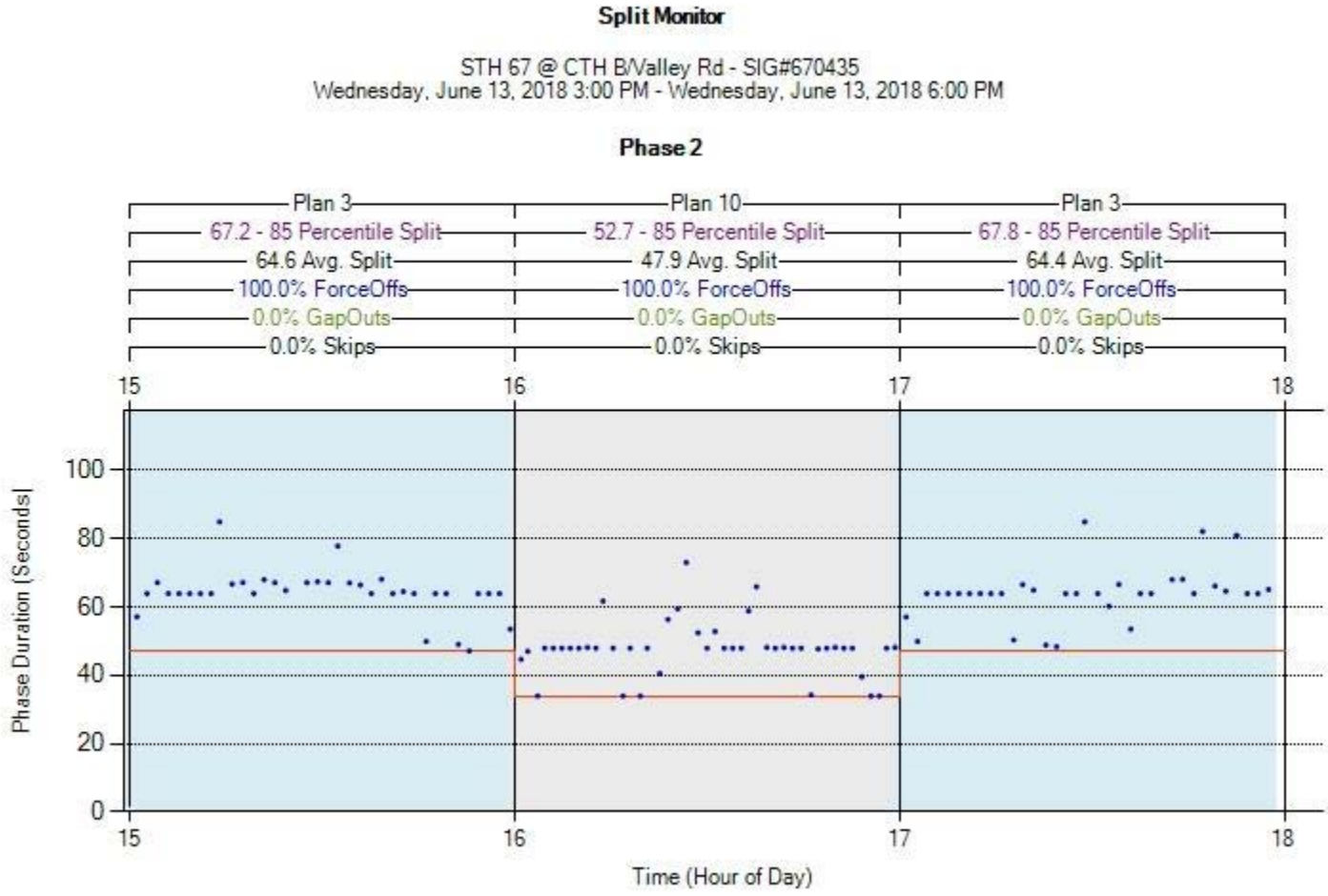
6/13/2018 – 3:00 PM – 6:00 PM



WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Vistro Timings
6/13/2018 – 3:00 PM – 6:00 PM



WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
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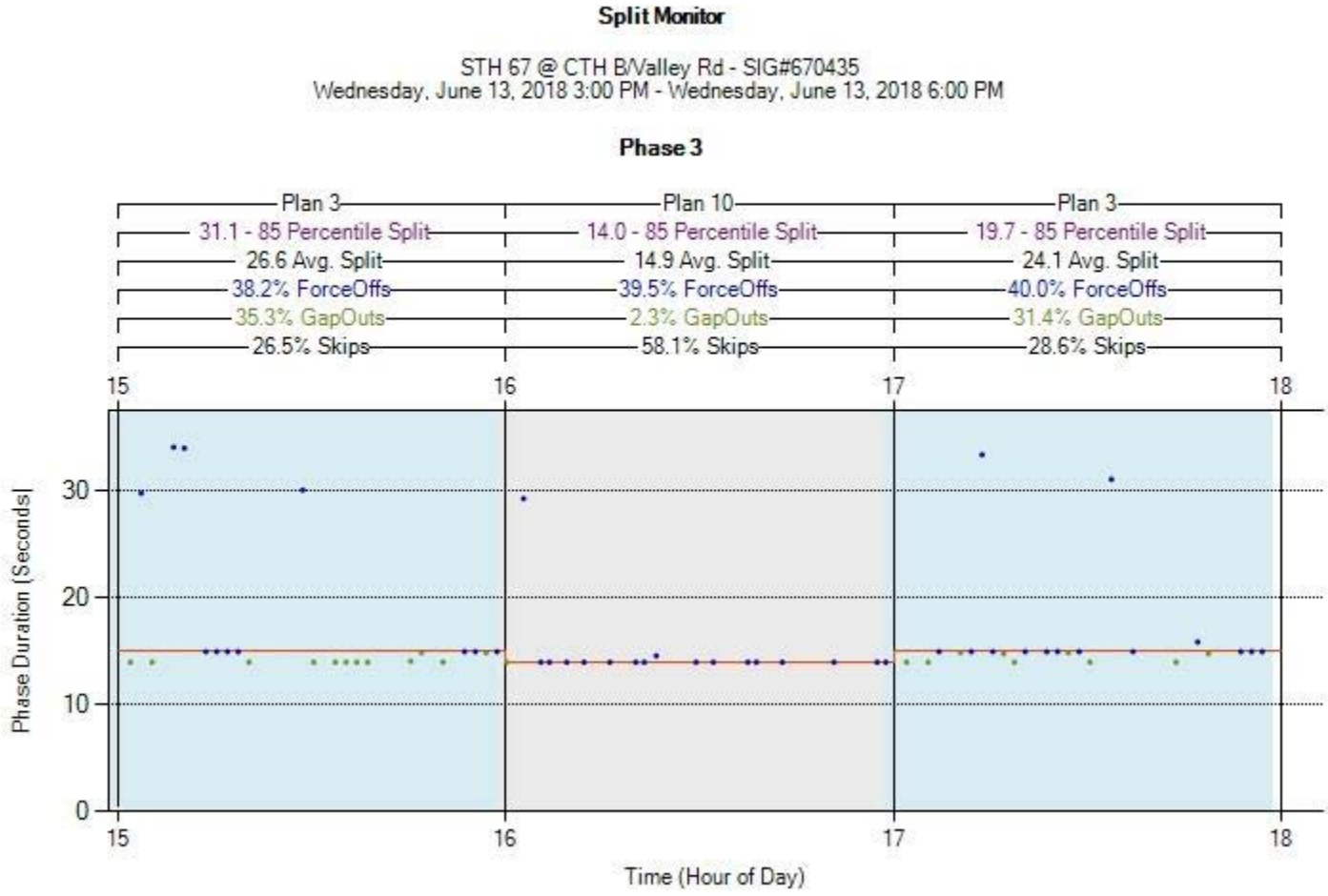
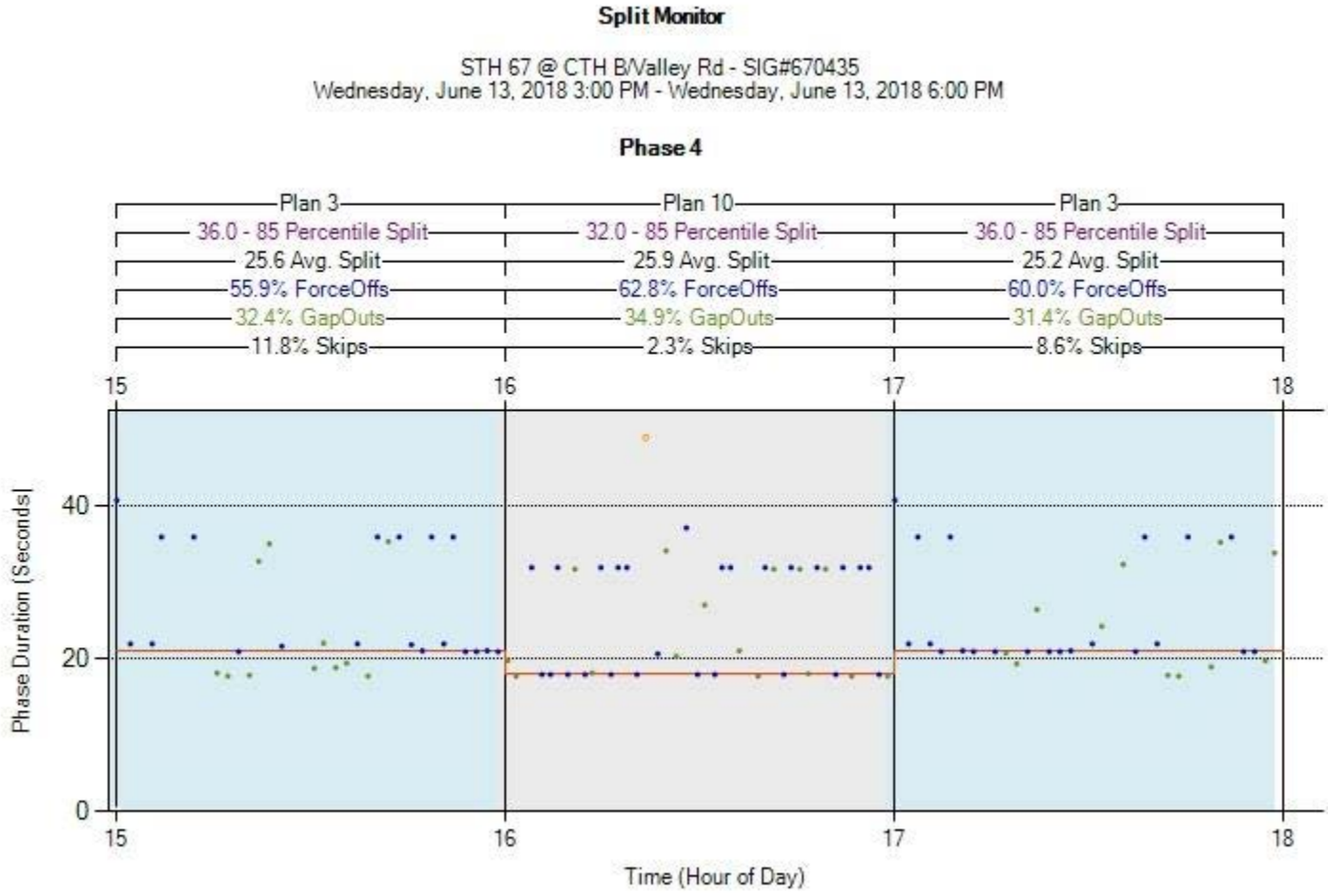
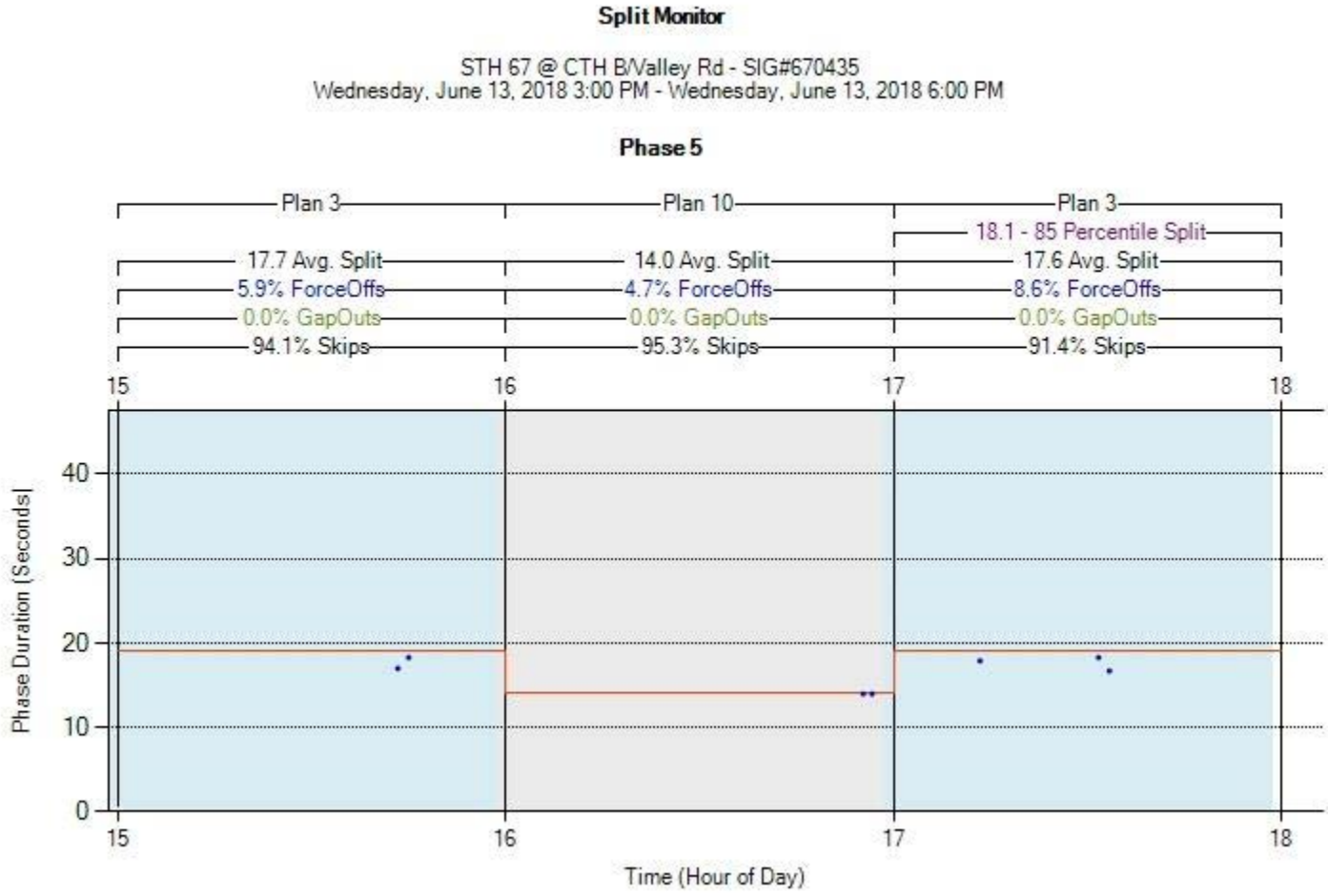
6/13/2018 – 3:00 PM – 6:00 PM



WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Vistro Timings
6/13/2018 – 3:00 PM – 6:00 PM



WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Vistro Timings
6/13/2018 – 3:00 PM – 6:00 PM



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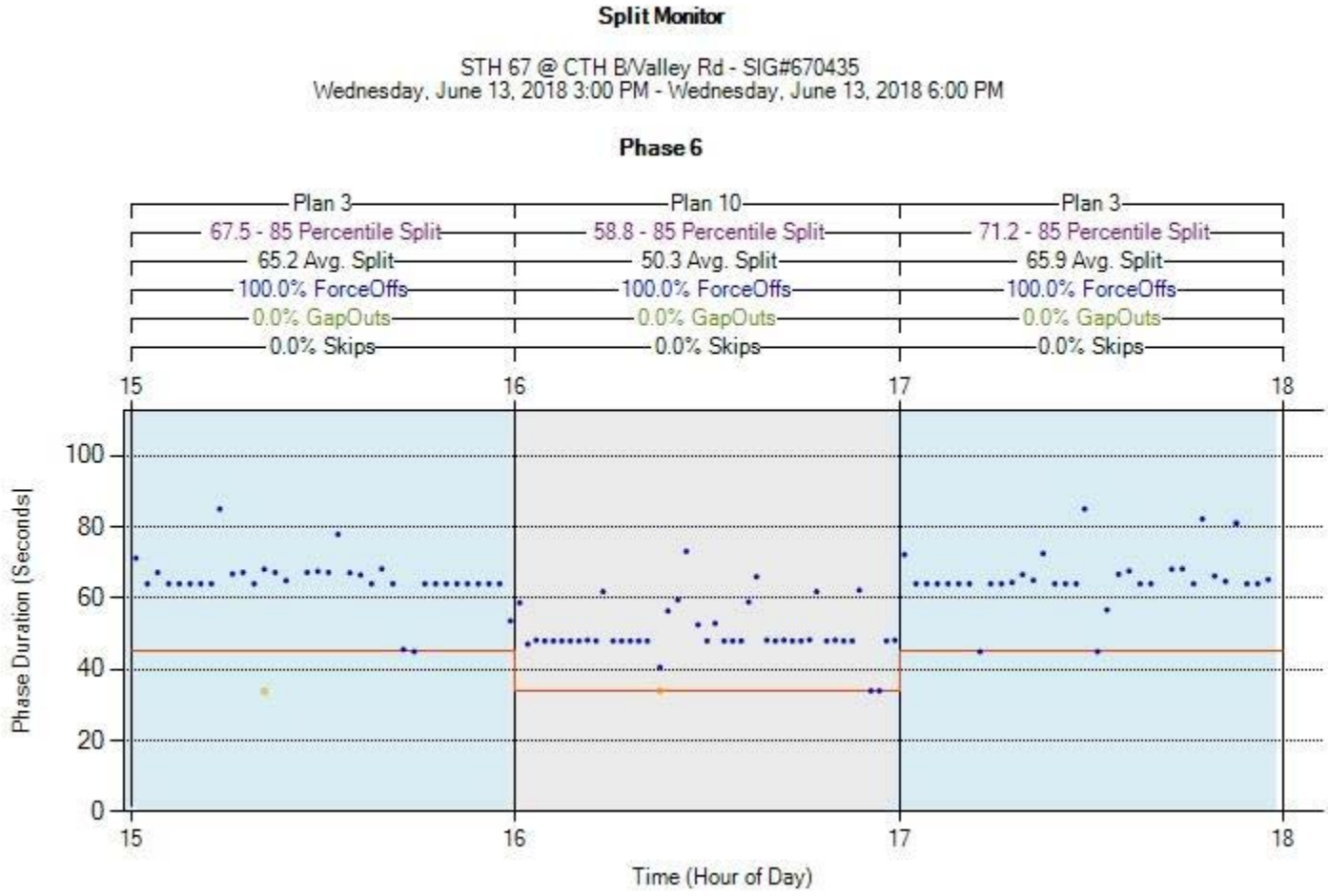

WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
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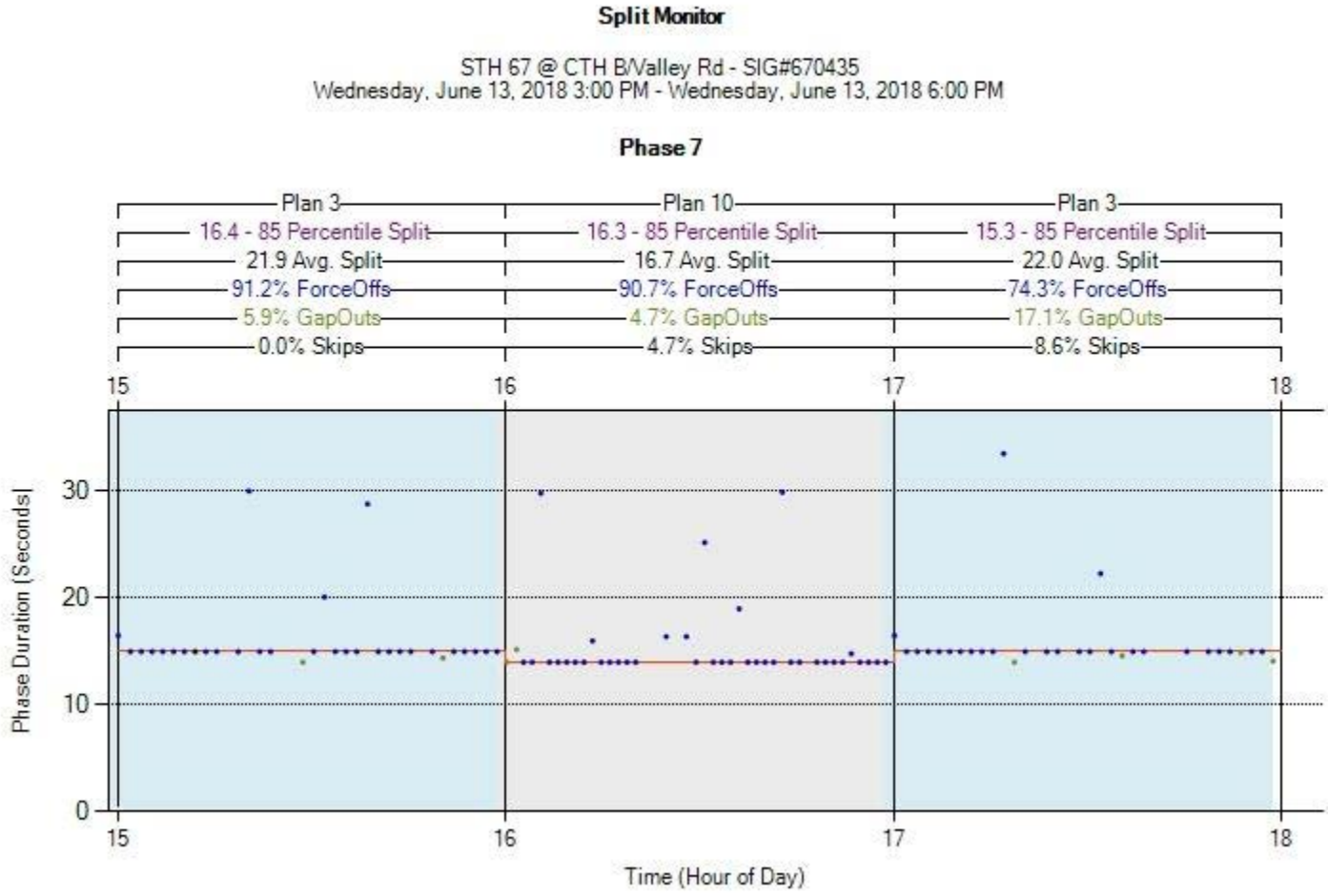
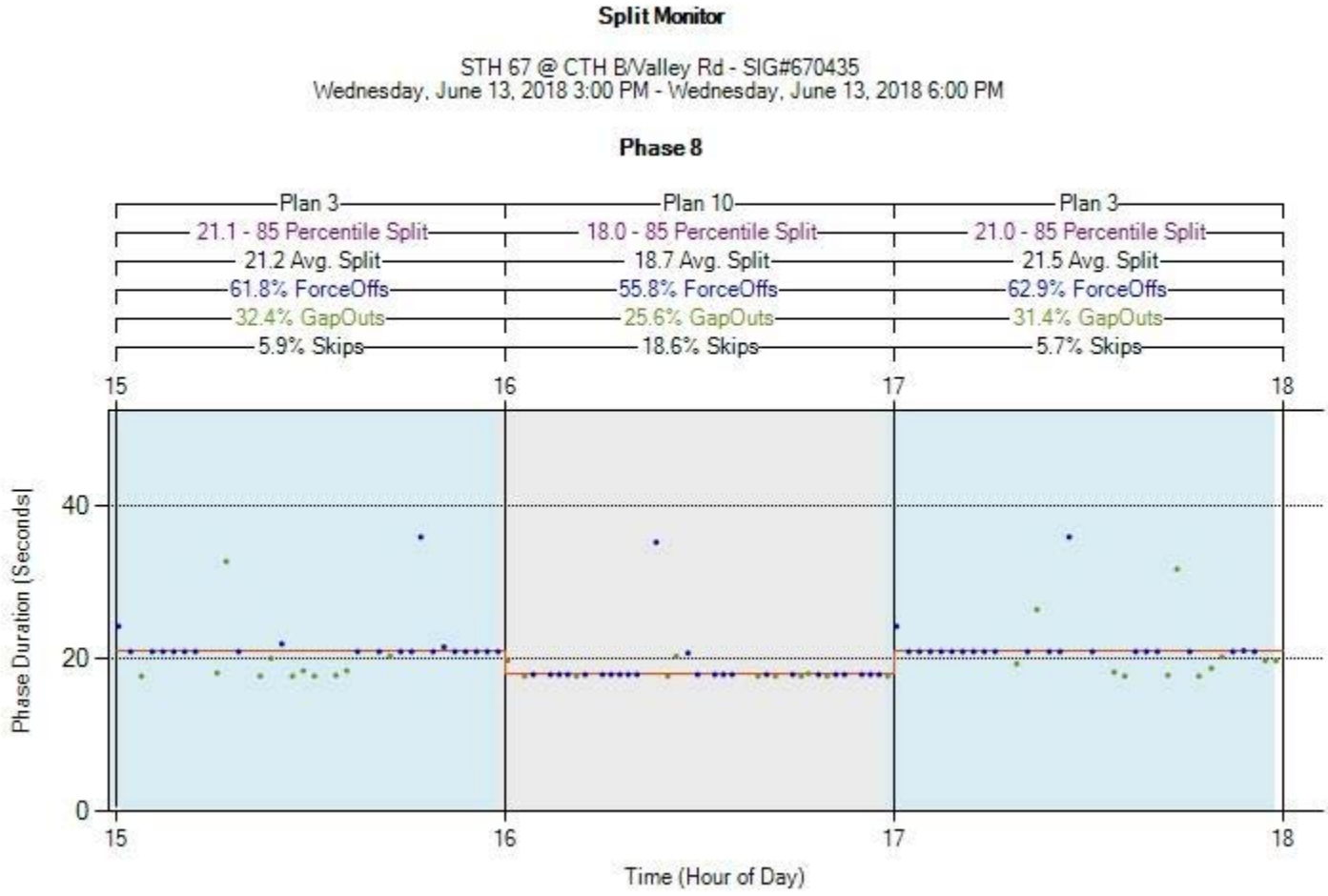
6/13/2018 – 3:00 PM – 6:00 PM



WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
Vistro Timings
6/13/2018 – 3:00 PM – 6:00 PM



WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
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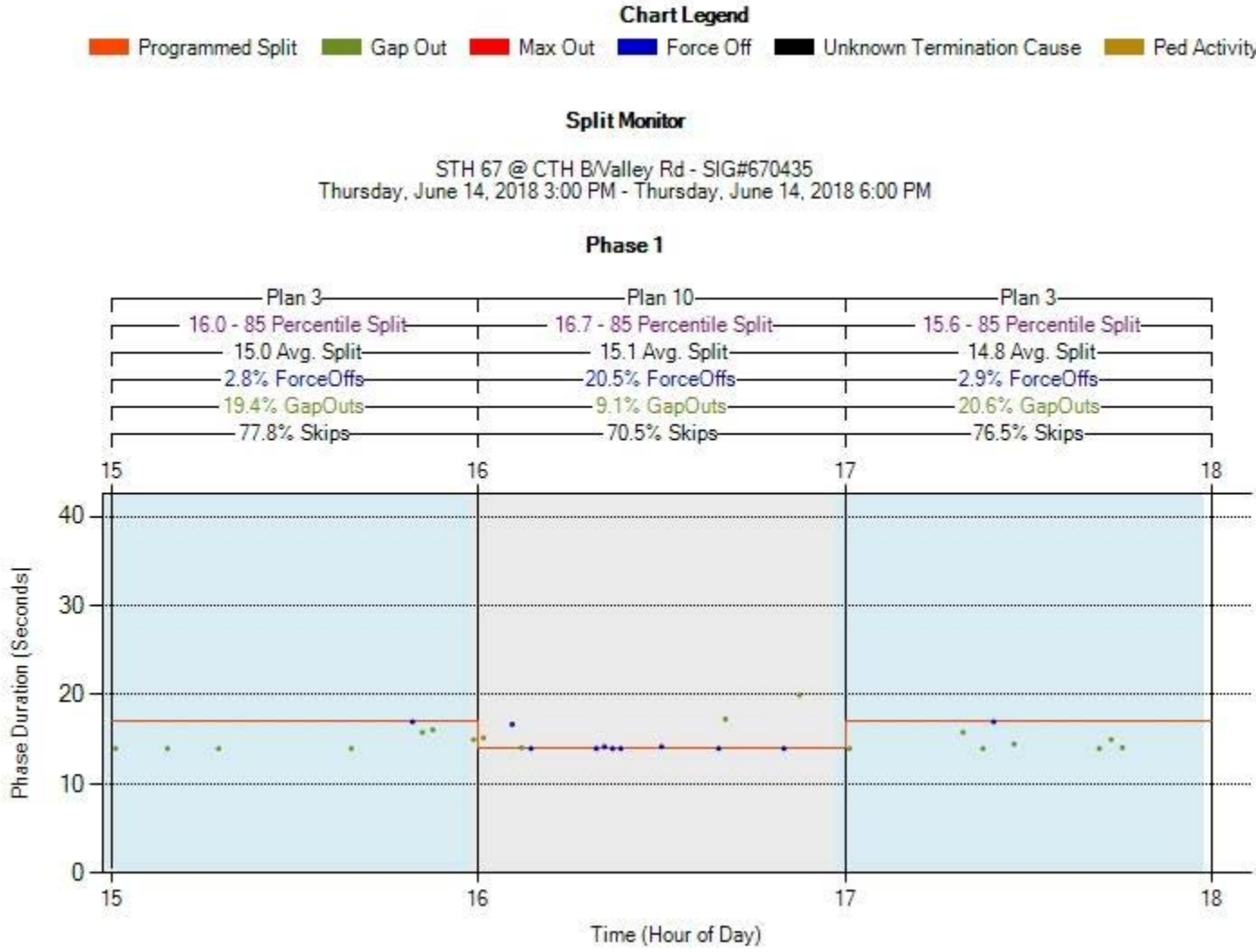
6/14/2018 – 3:00 PM – 6:00 PM



WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
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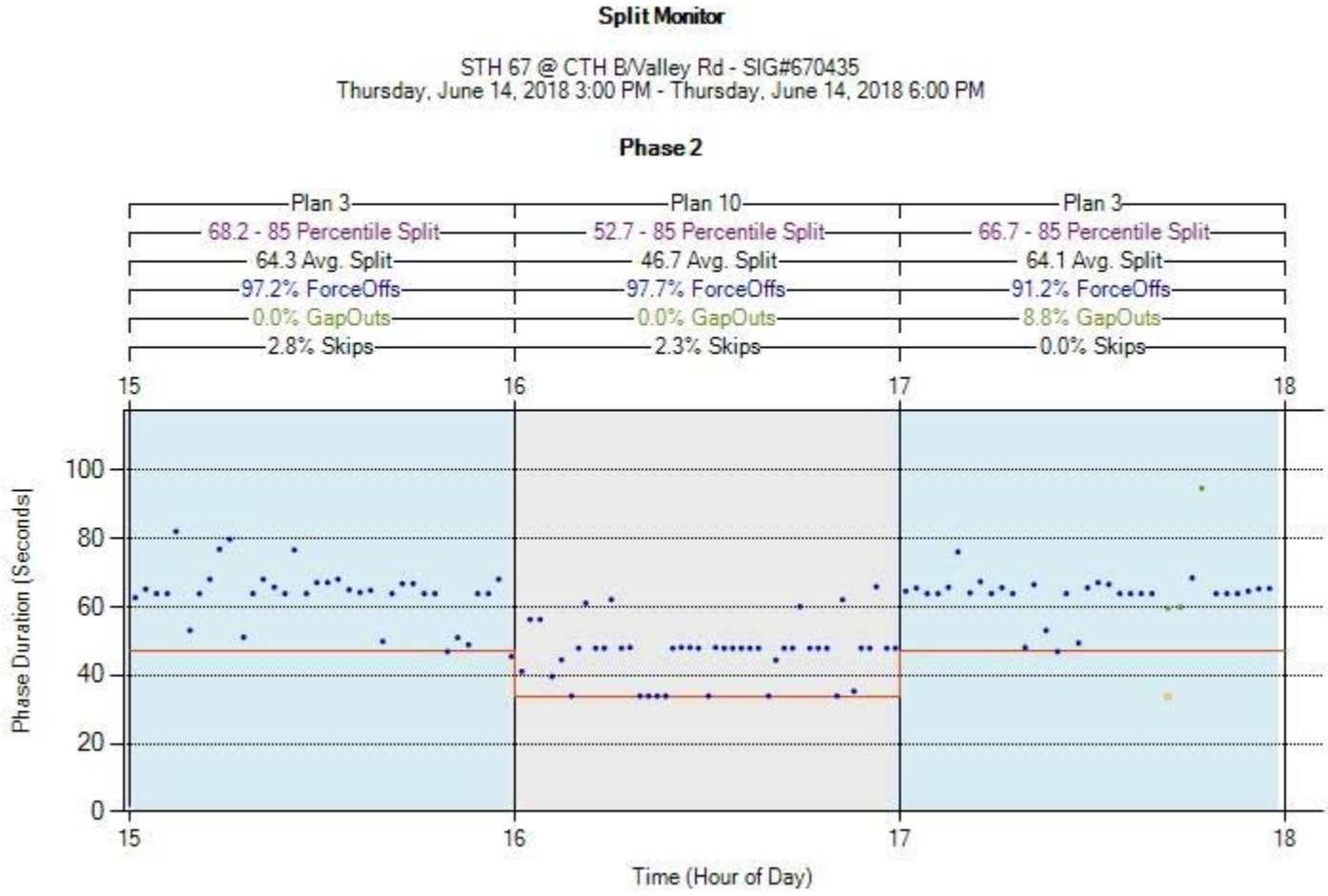
6/14/2018 – 3:00 PM – 6:00 PM



WIS 67 Corridor – STH 67 & CTH B/Valley Rd.
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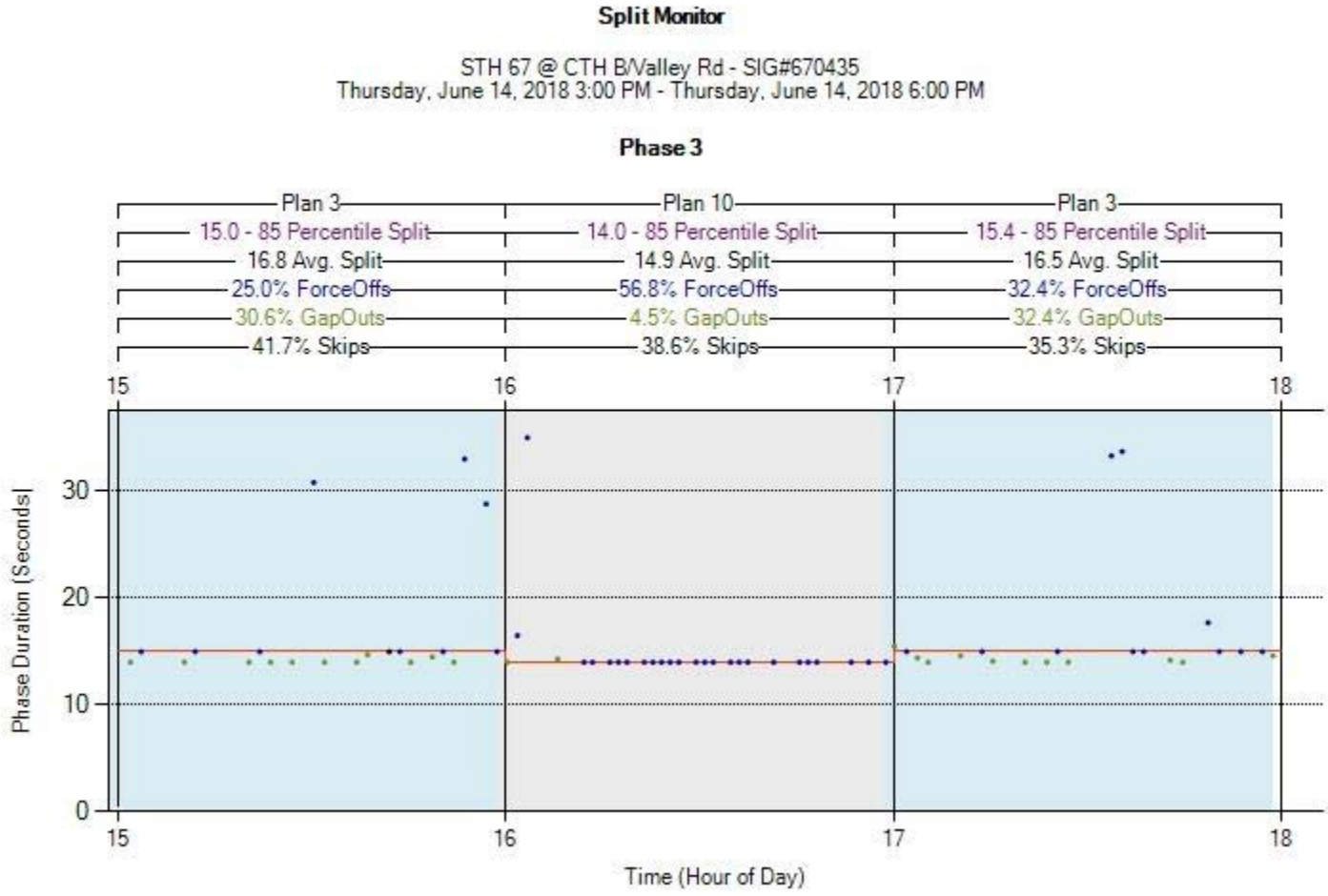

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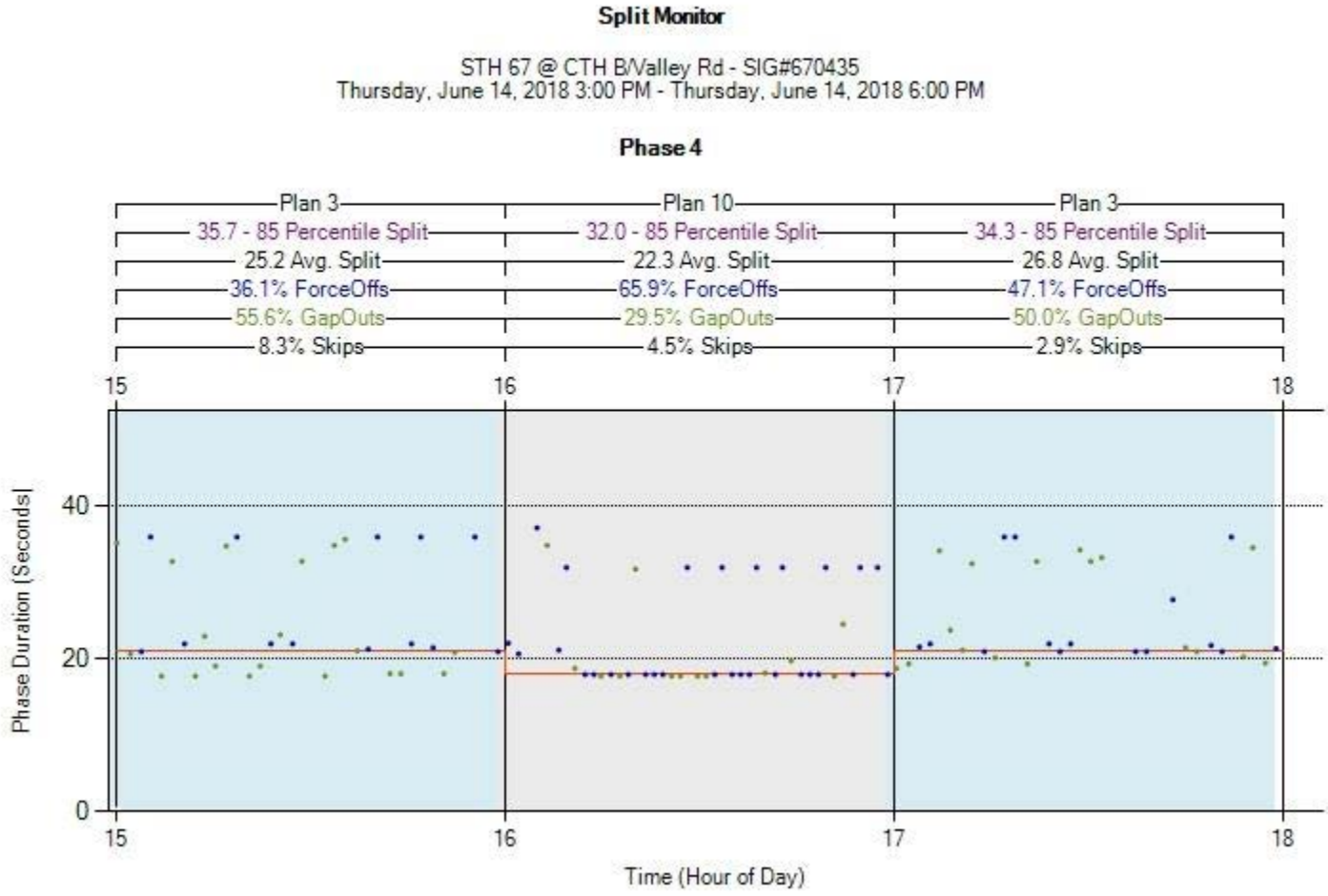

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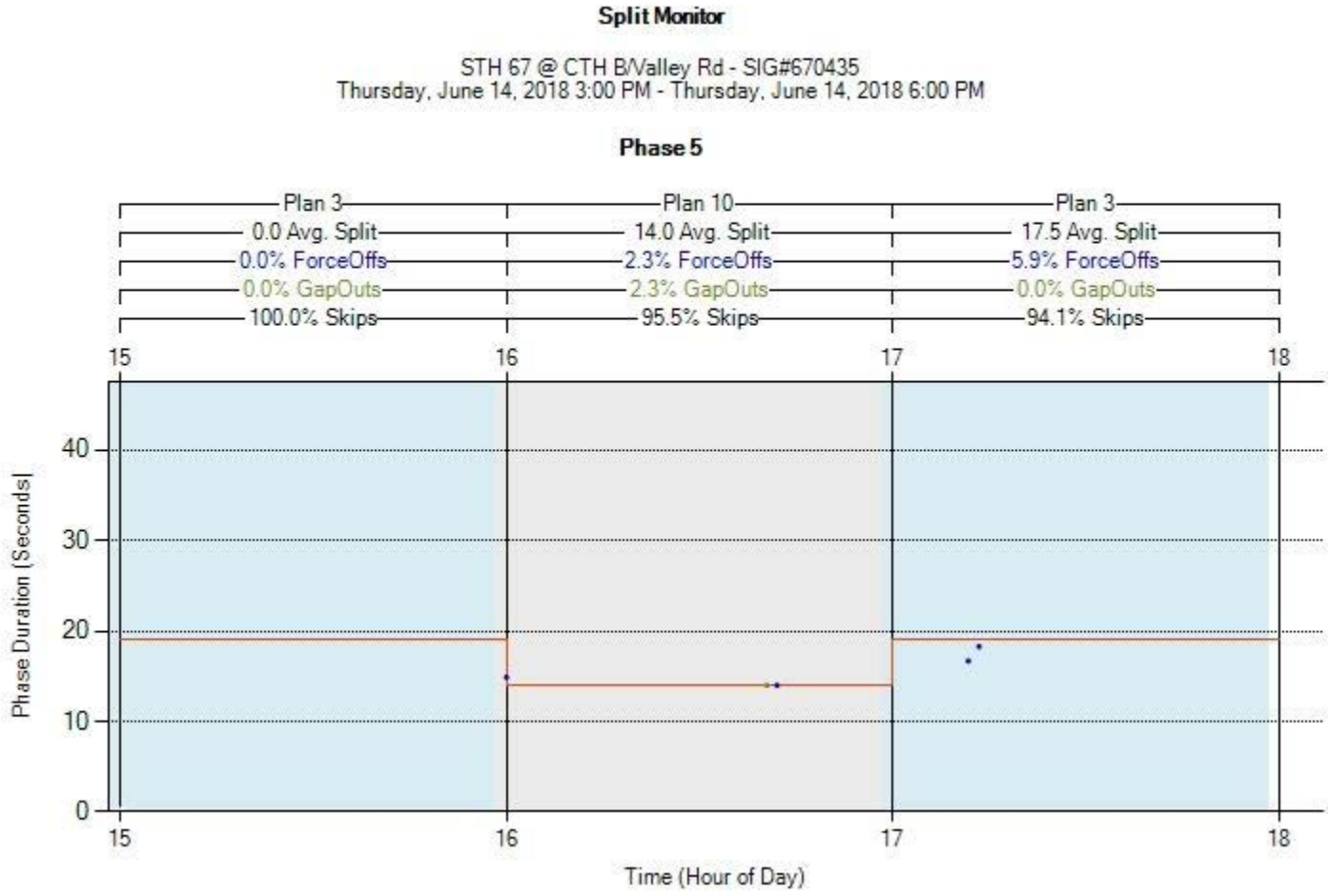

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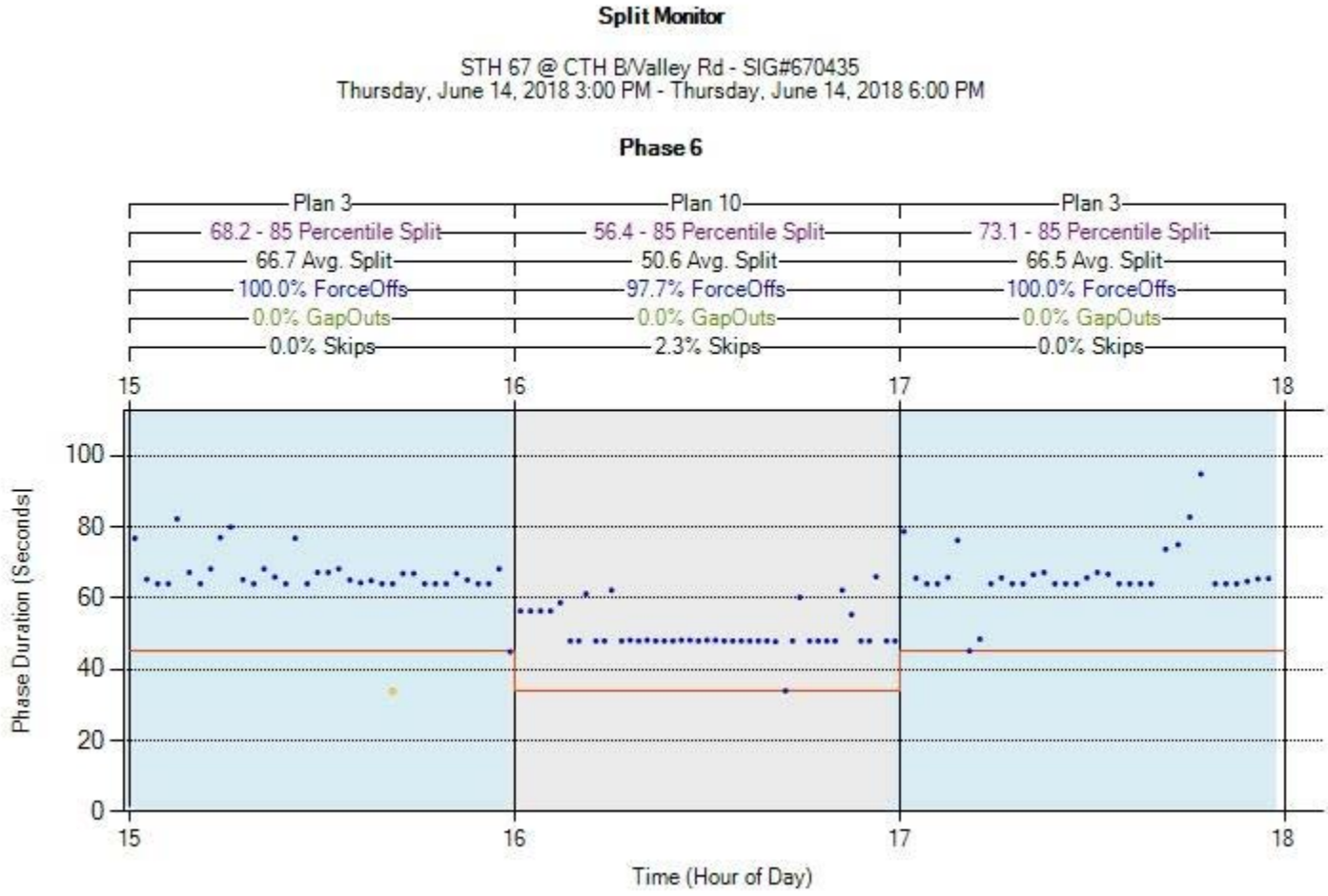

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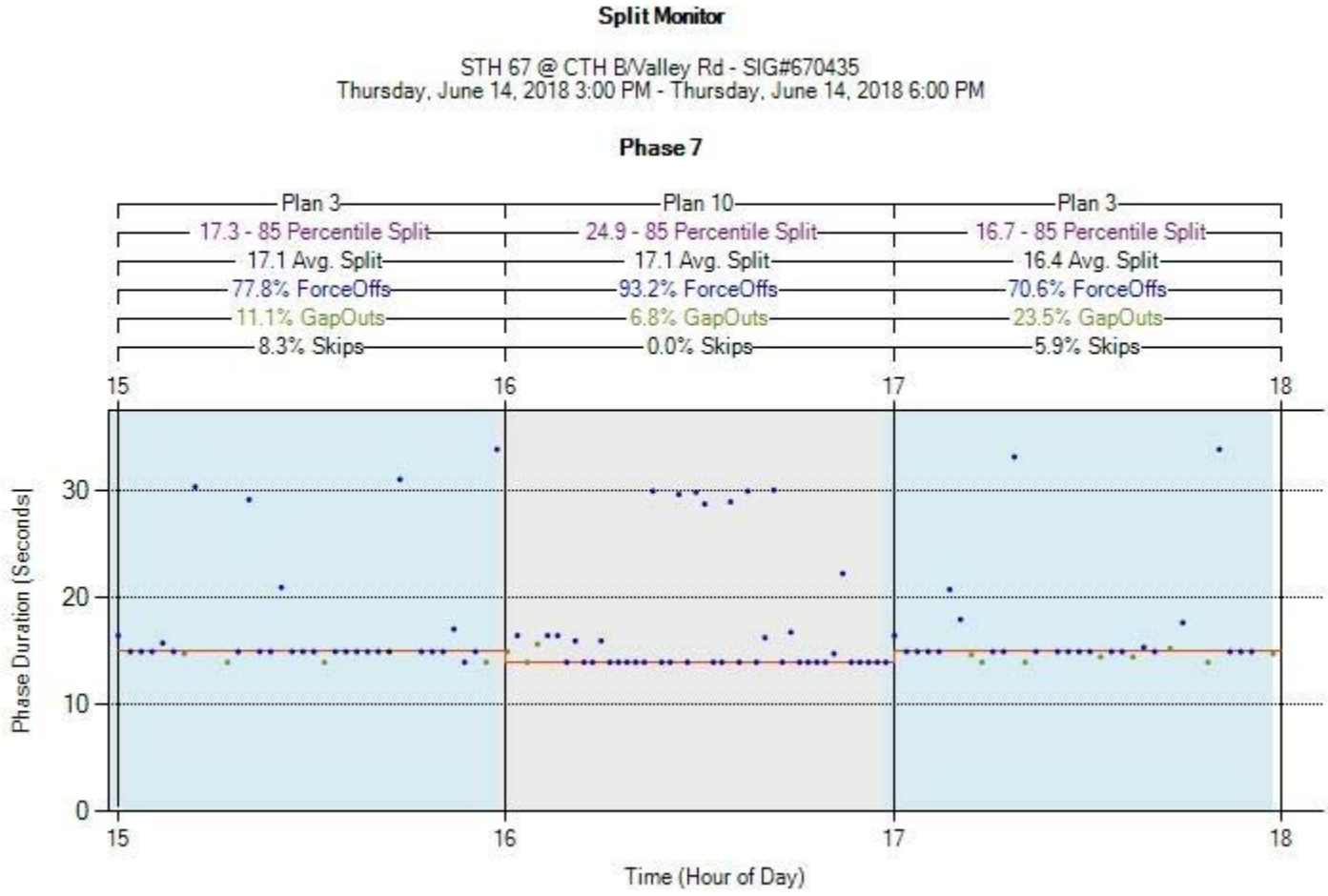

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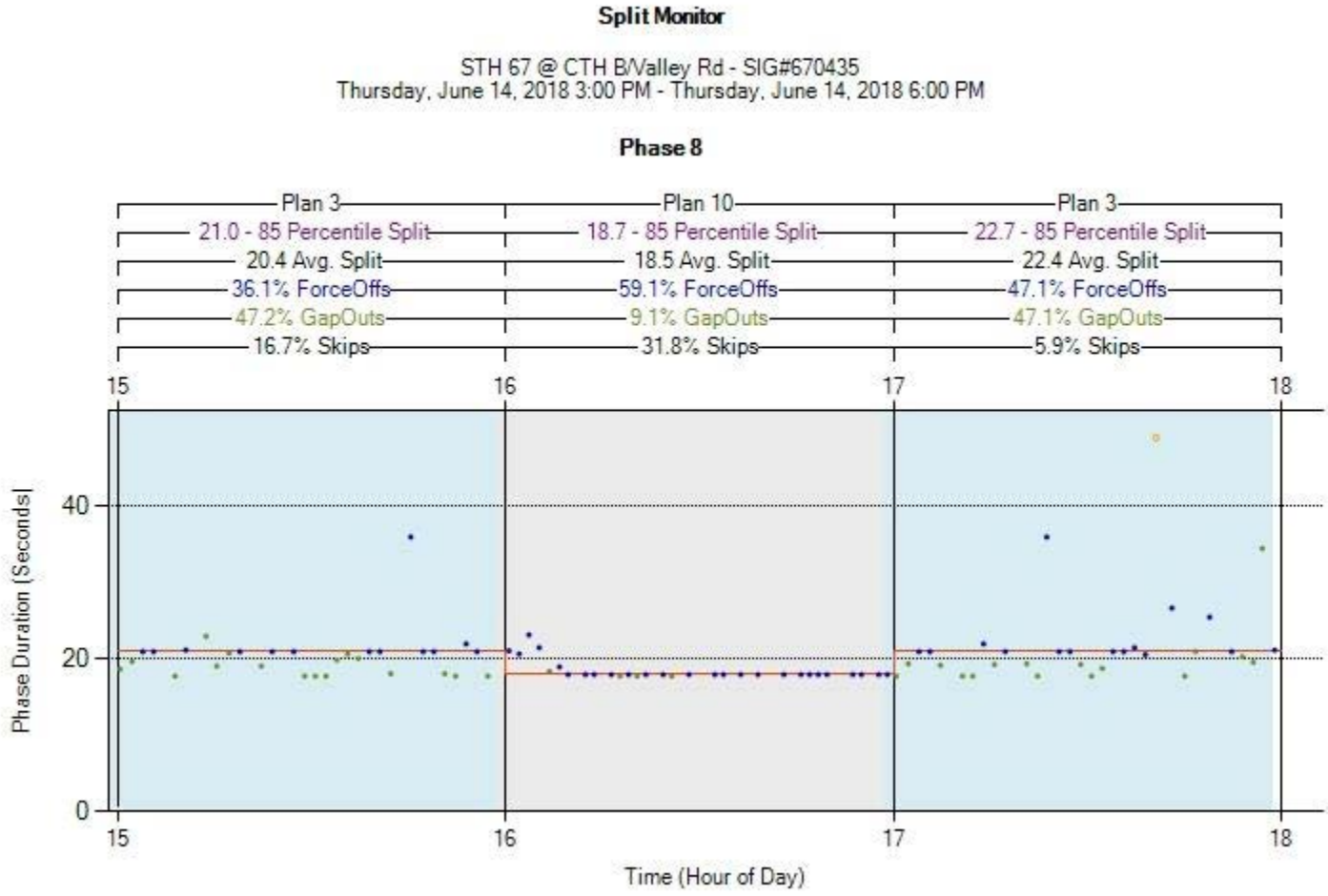
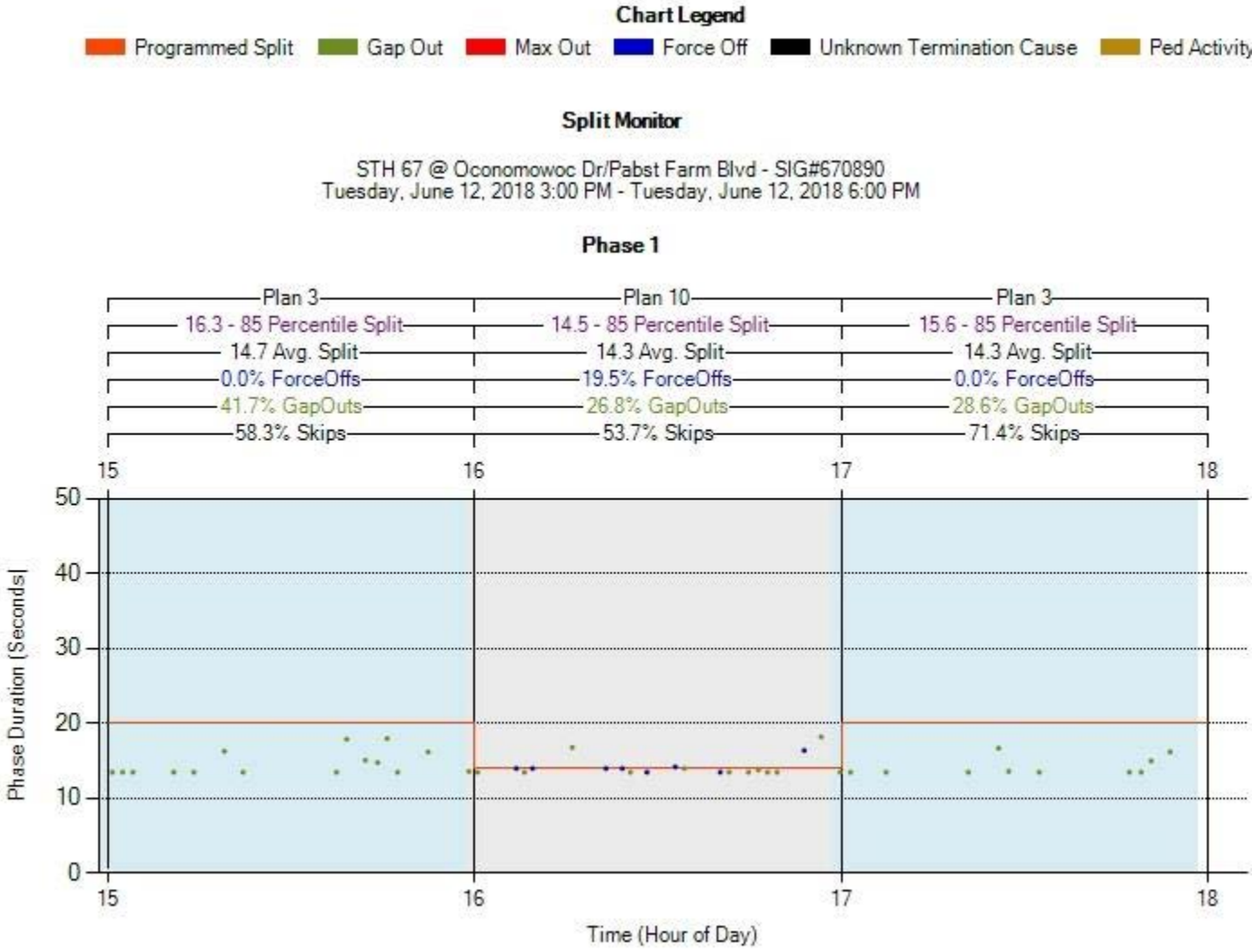
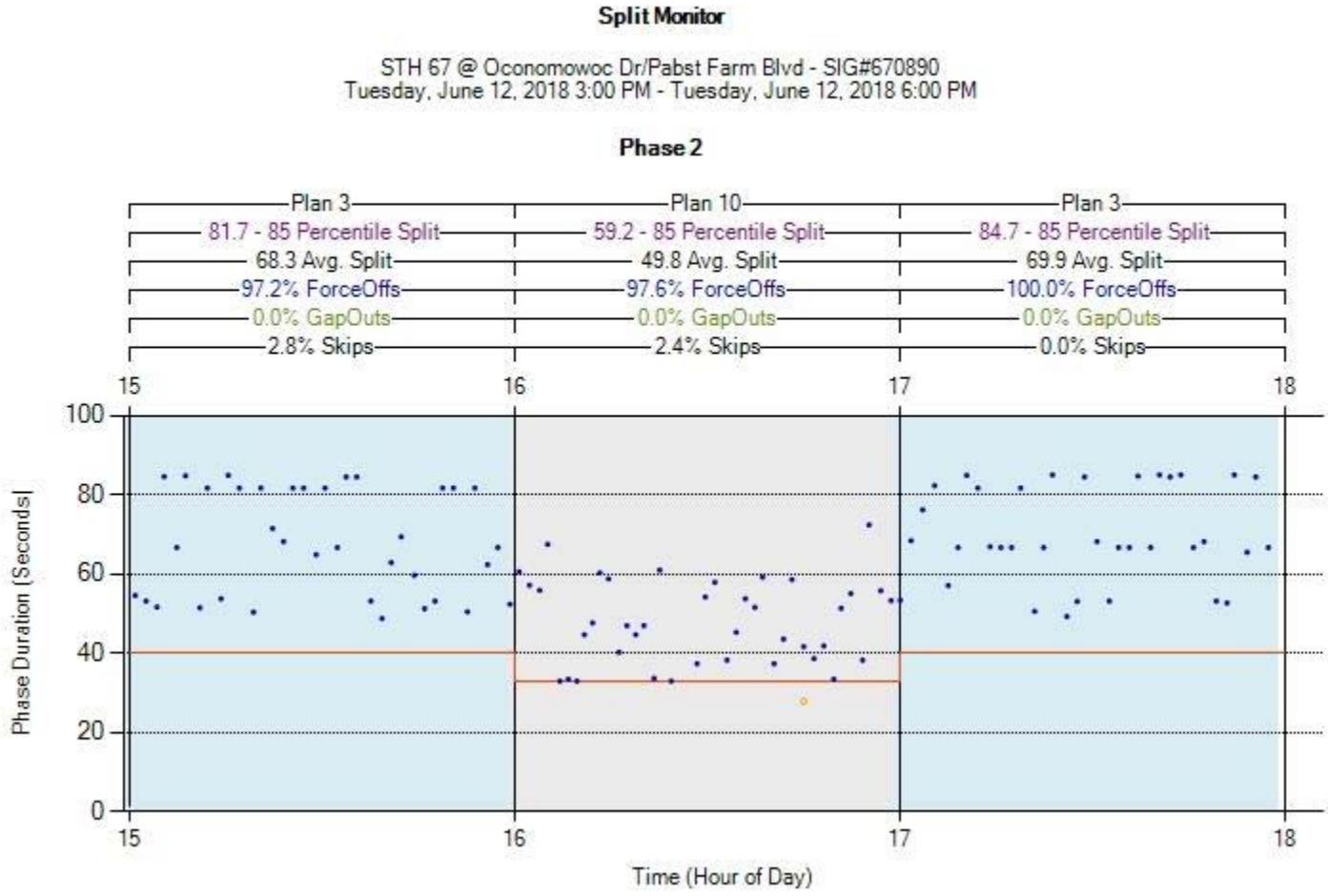
Vistro Timings
6/14/2018 – 3:00 PM – 6:00 PM



WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM



WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM



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Vistro Timings
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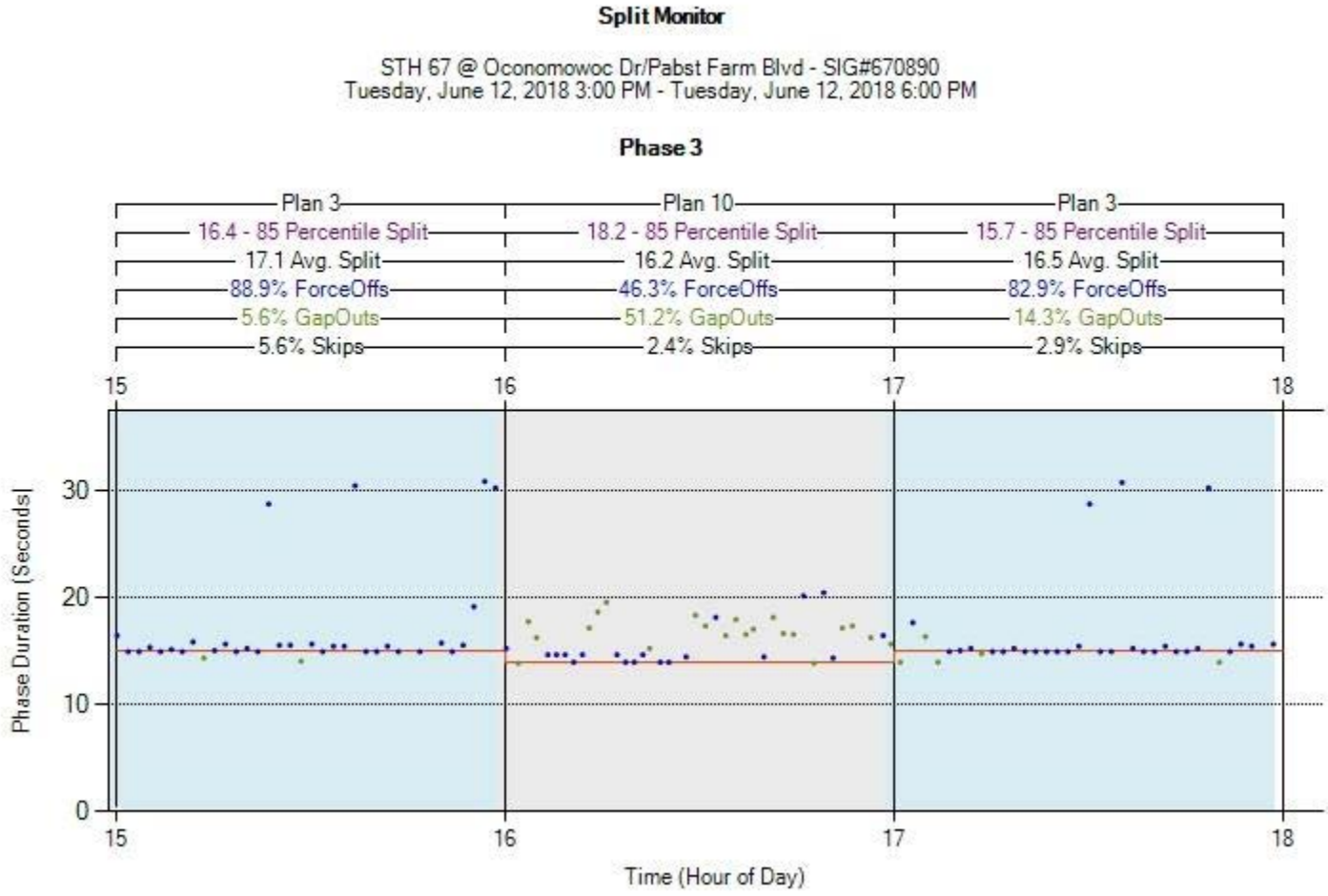

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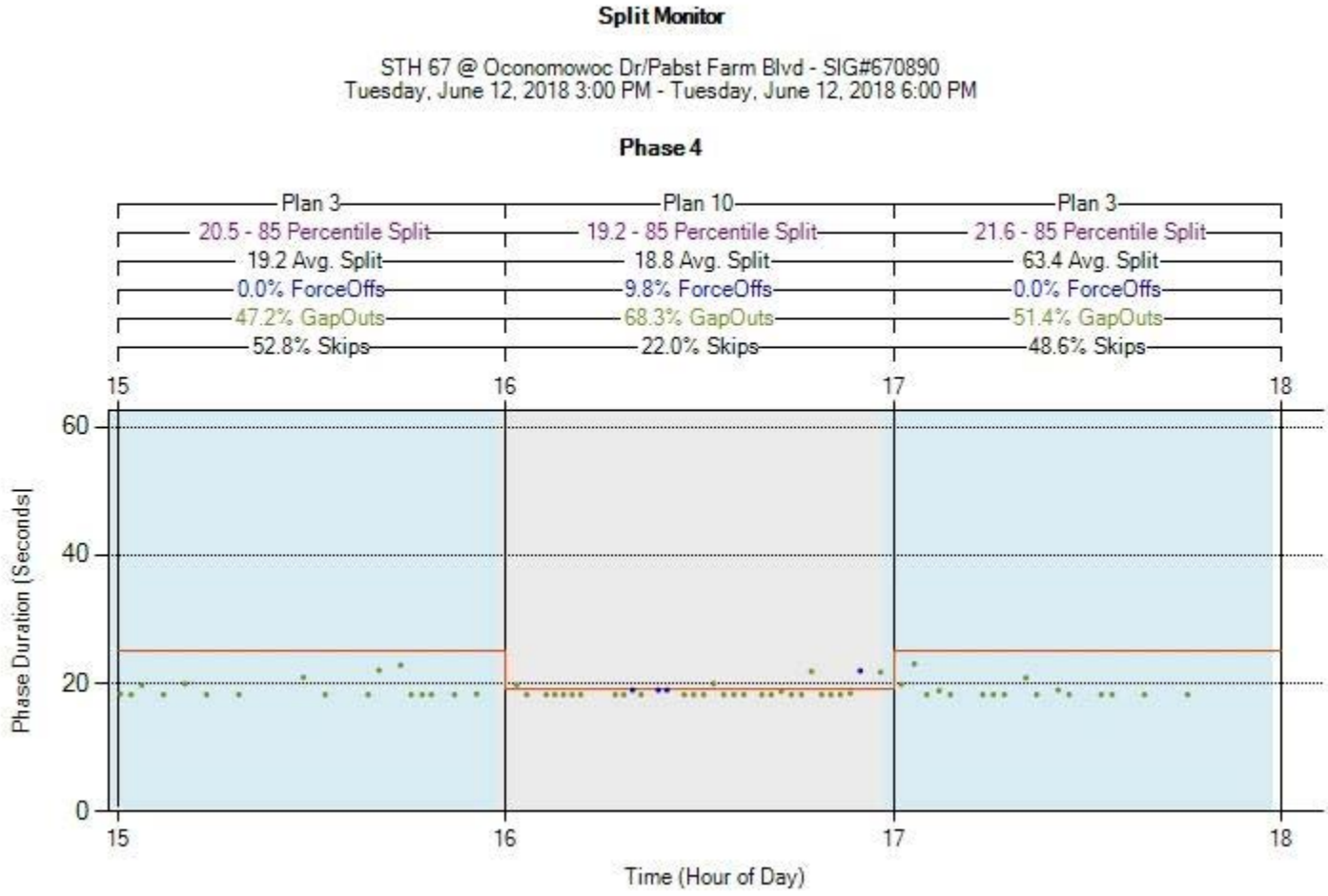

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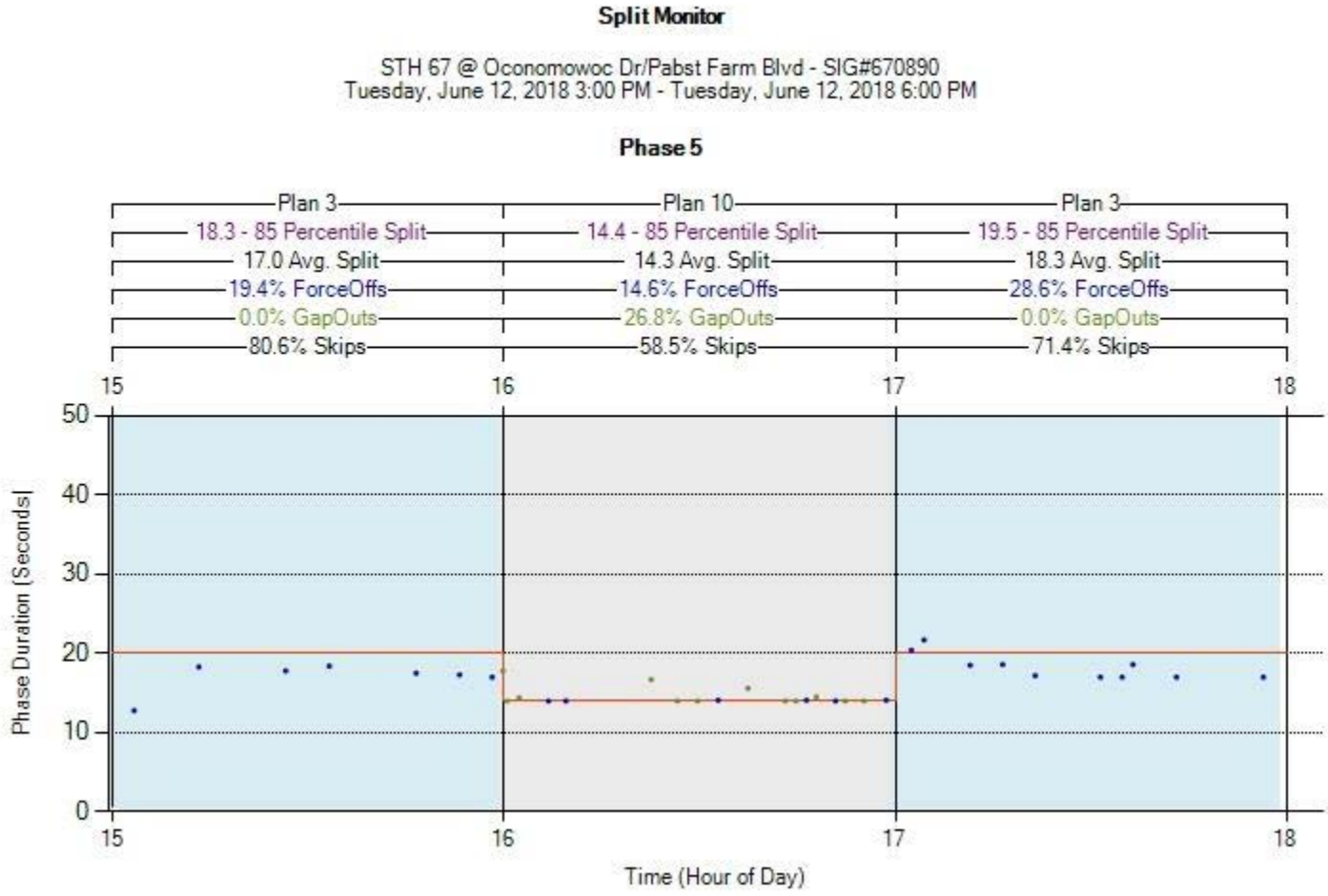

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Vistro Timings
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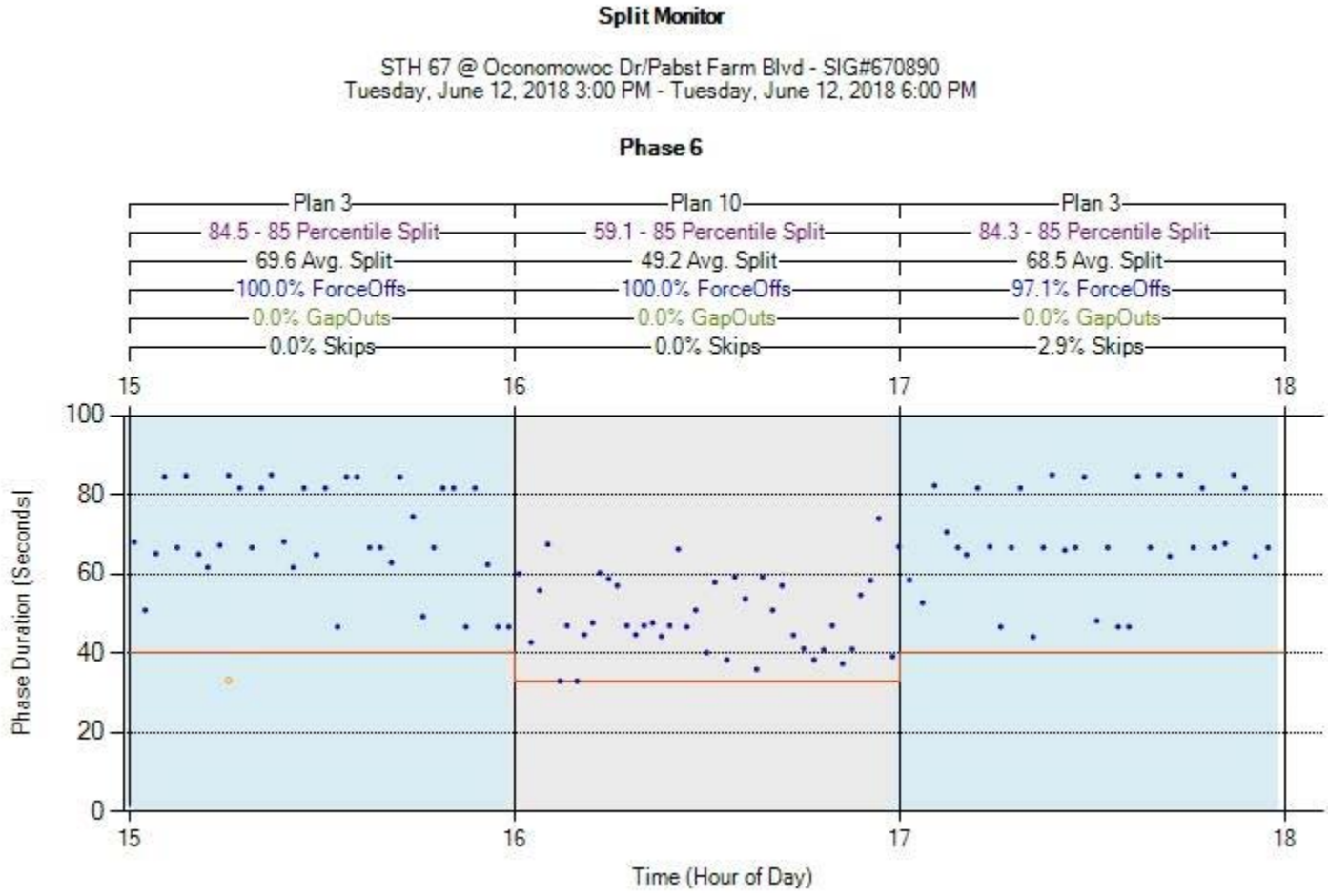

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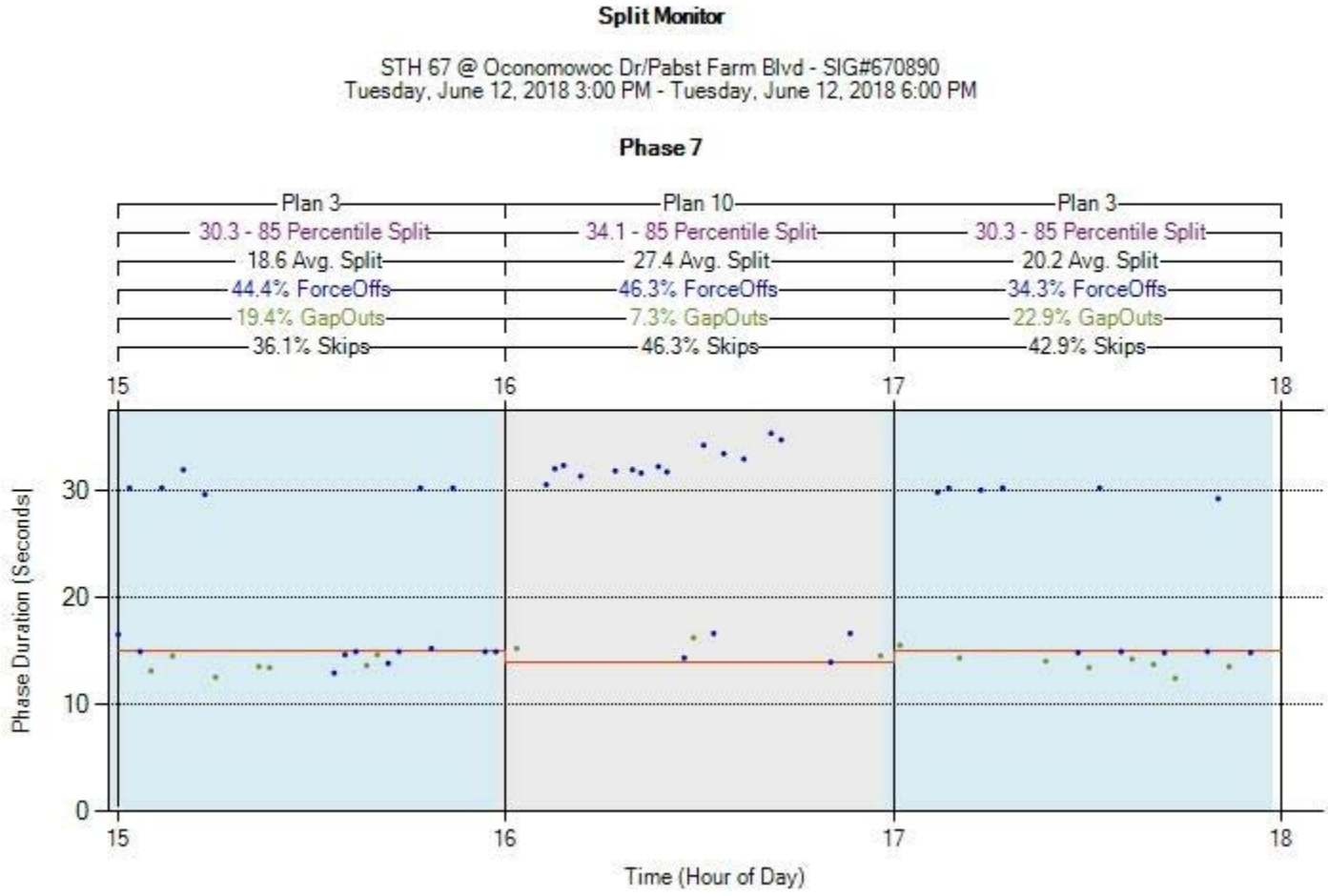

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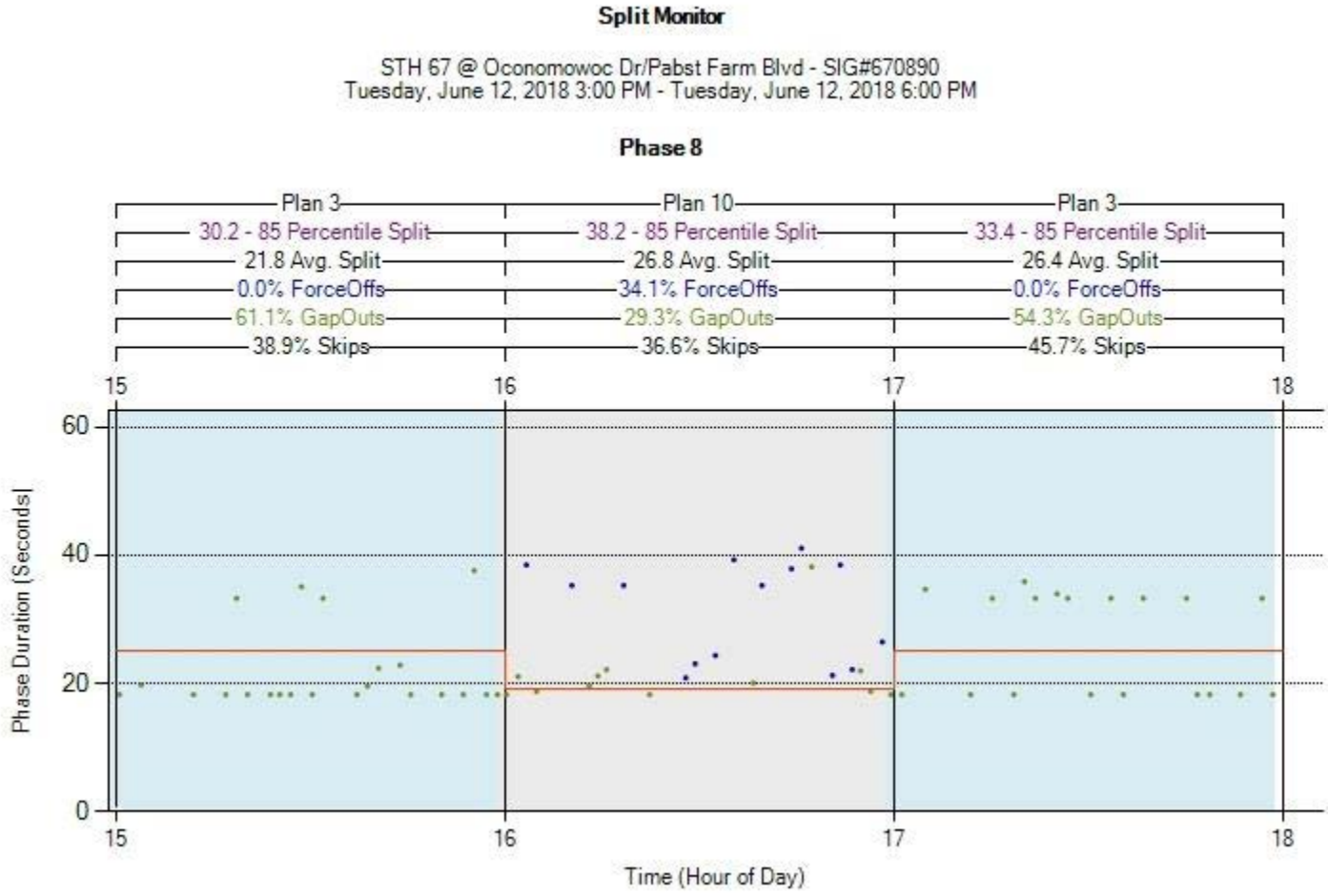

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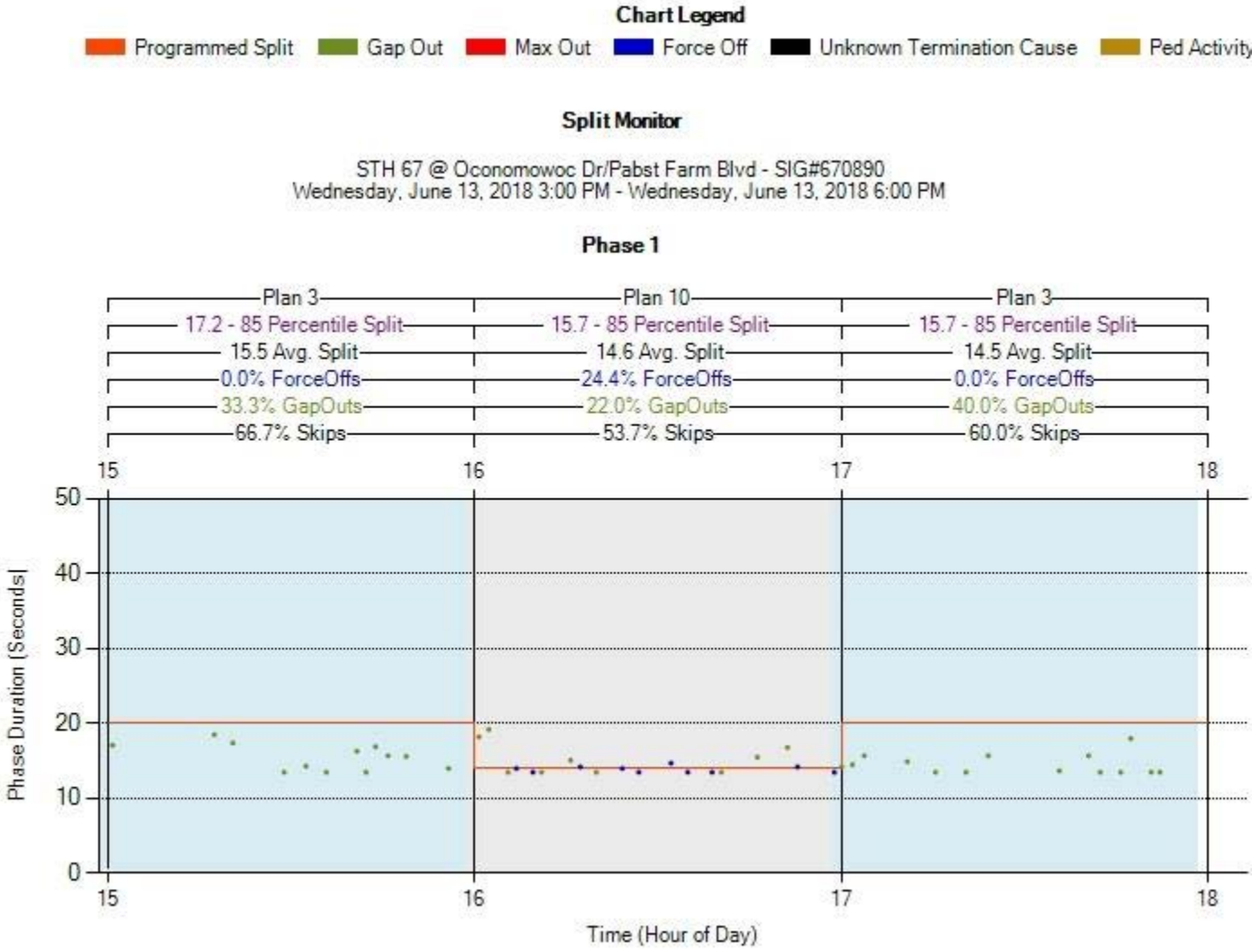

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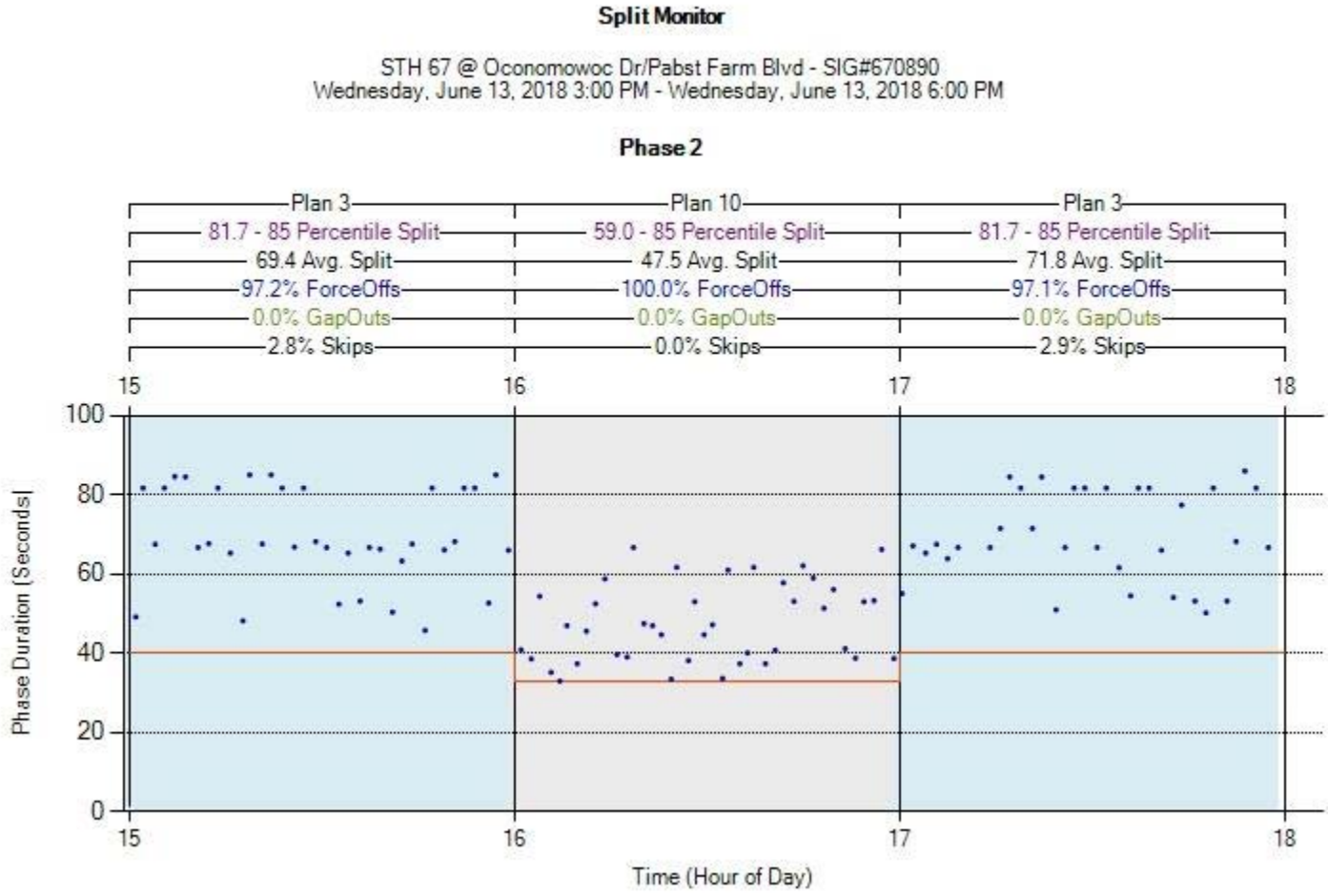

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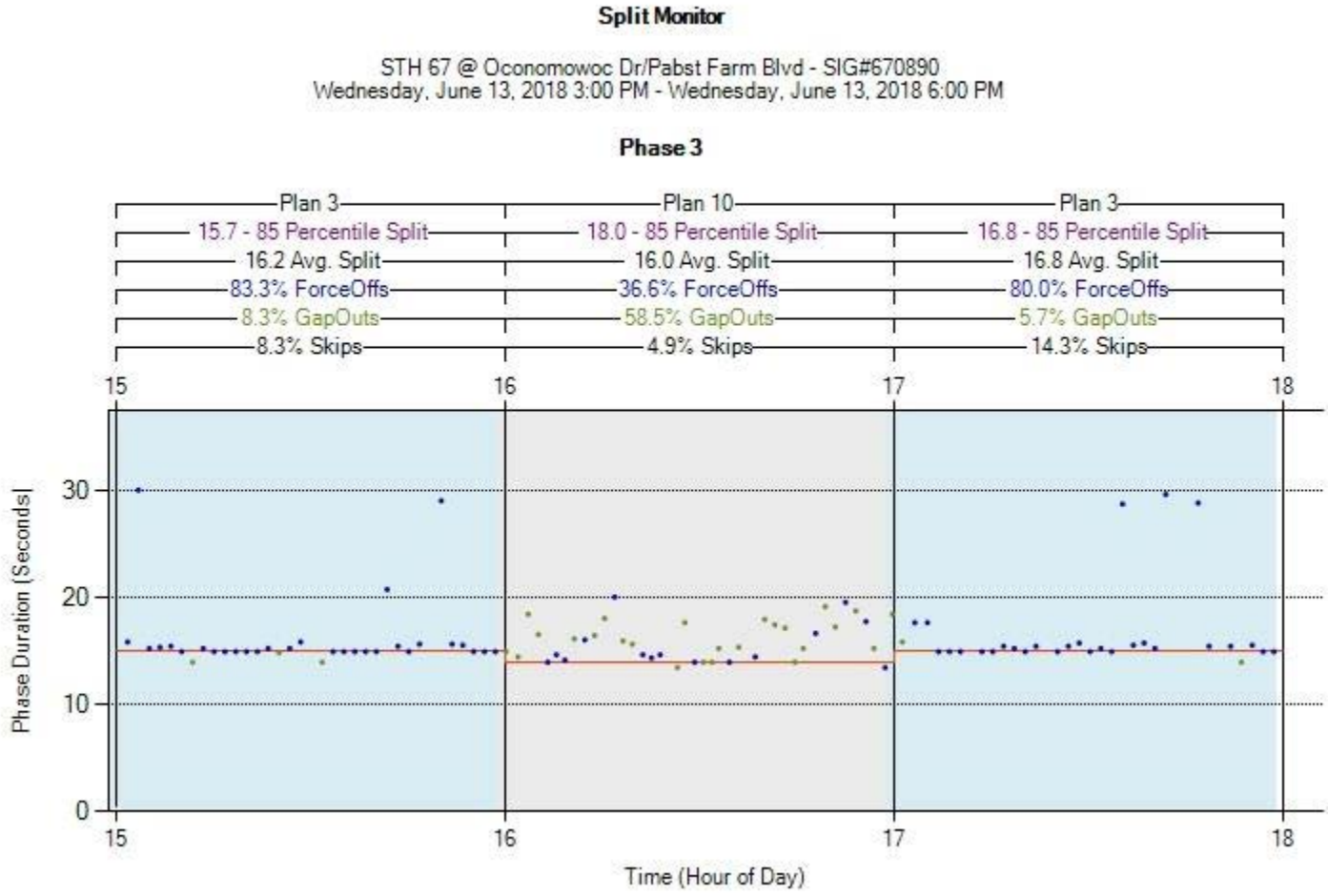

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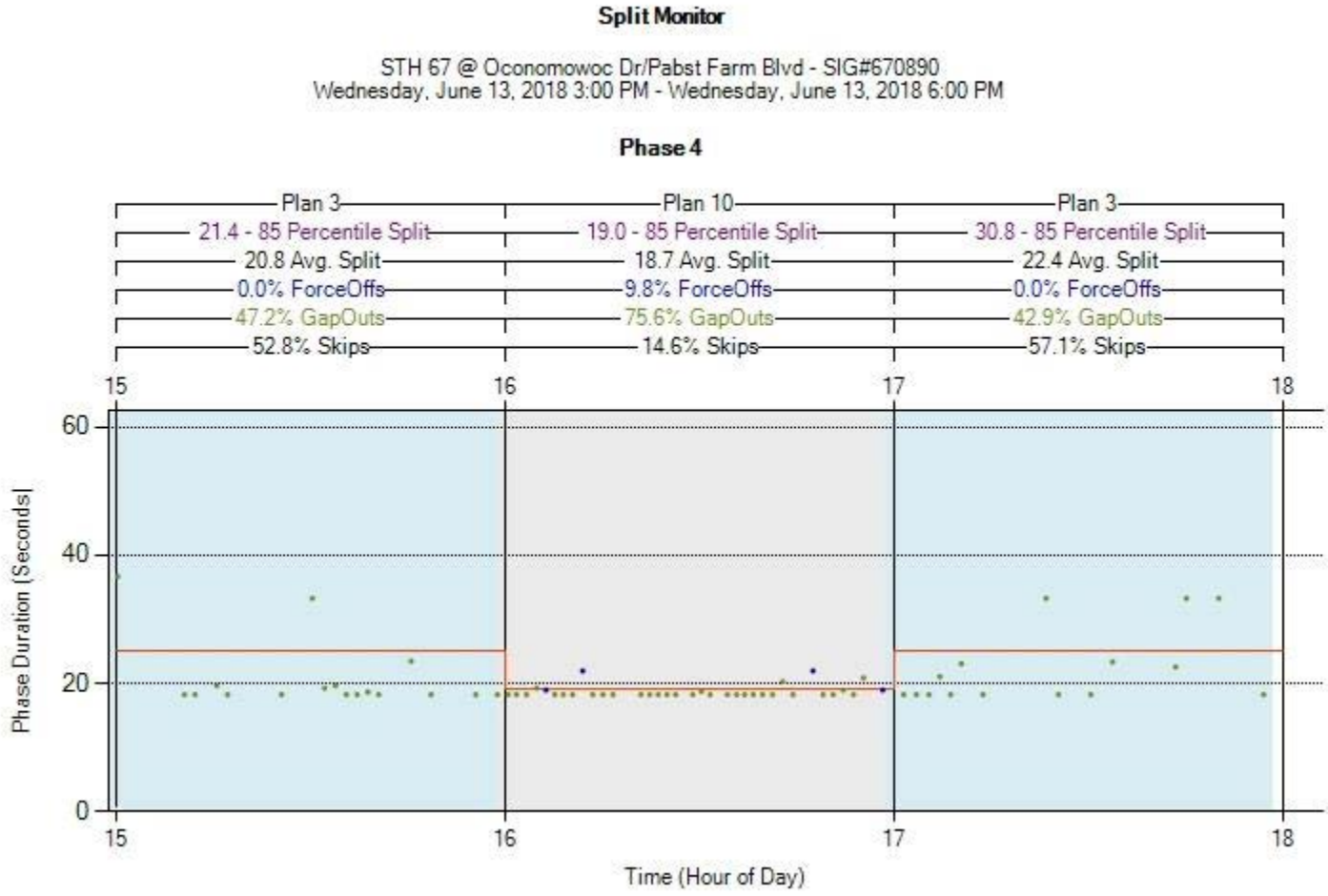

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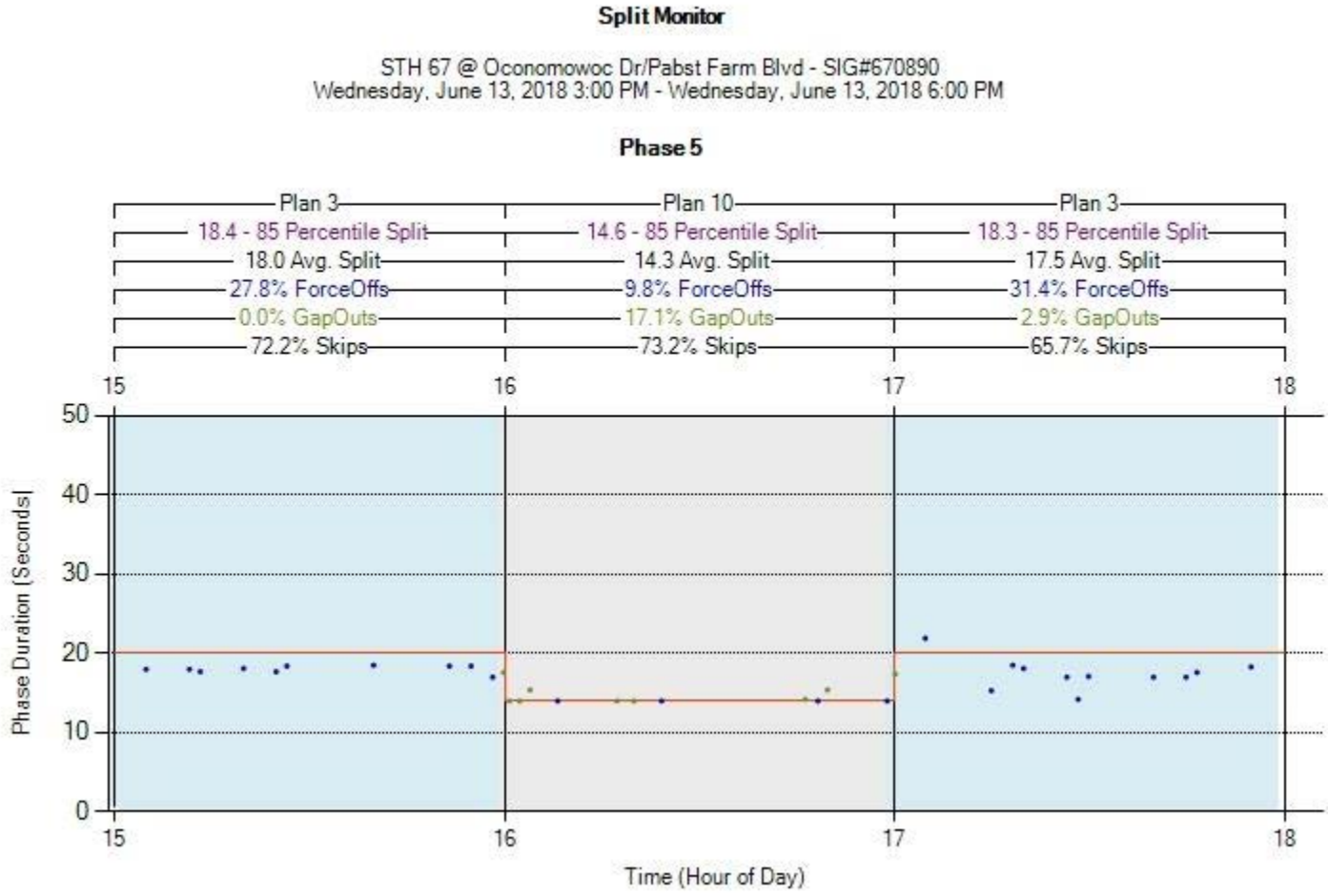

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Vistro Timings
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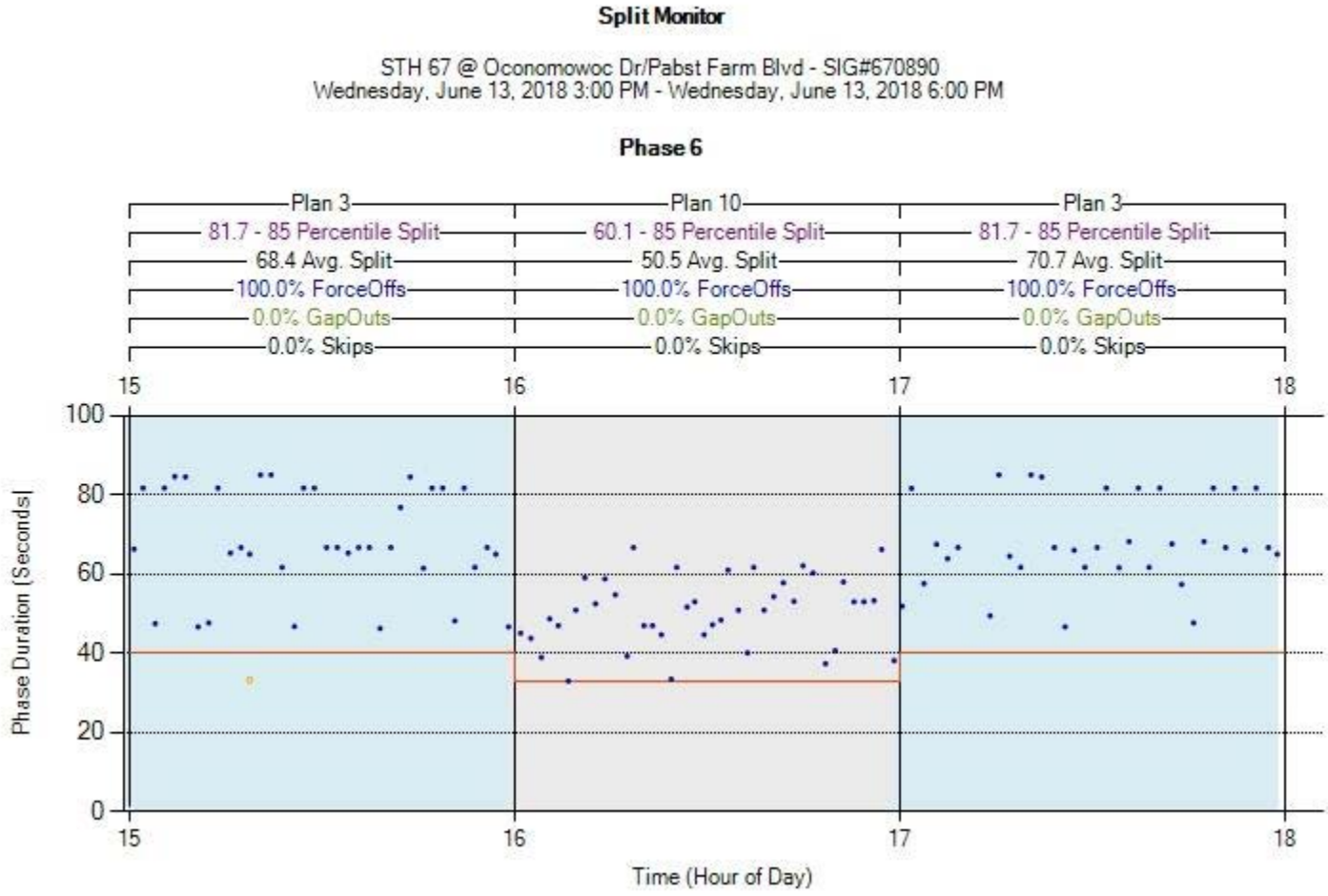

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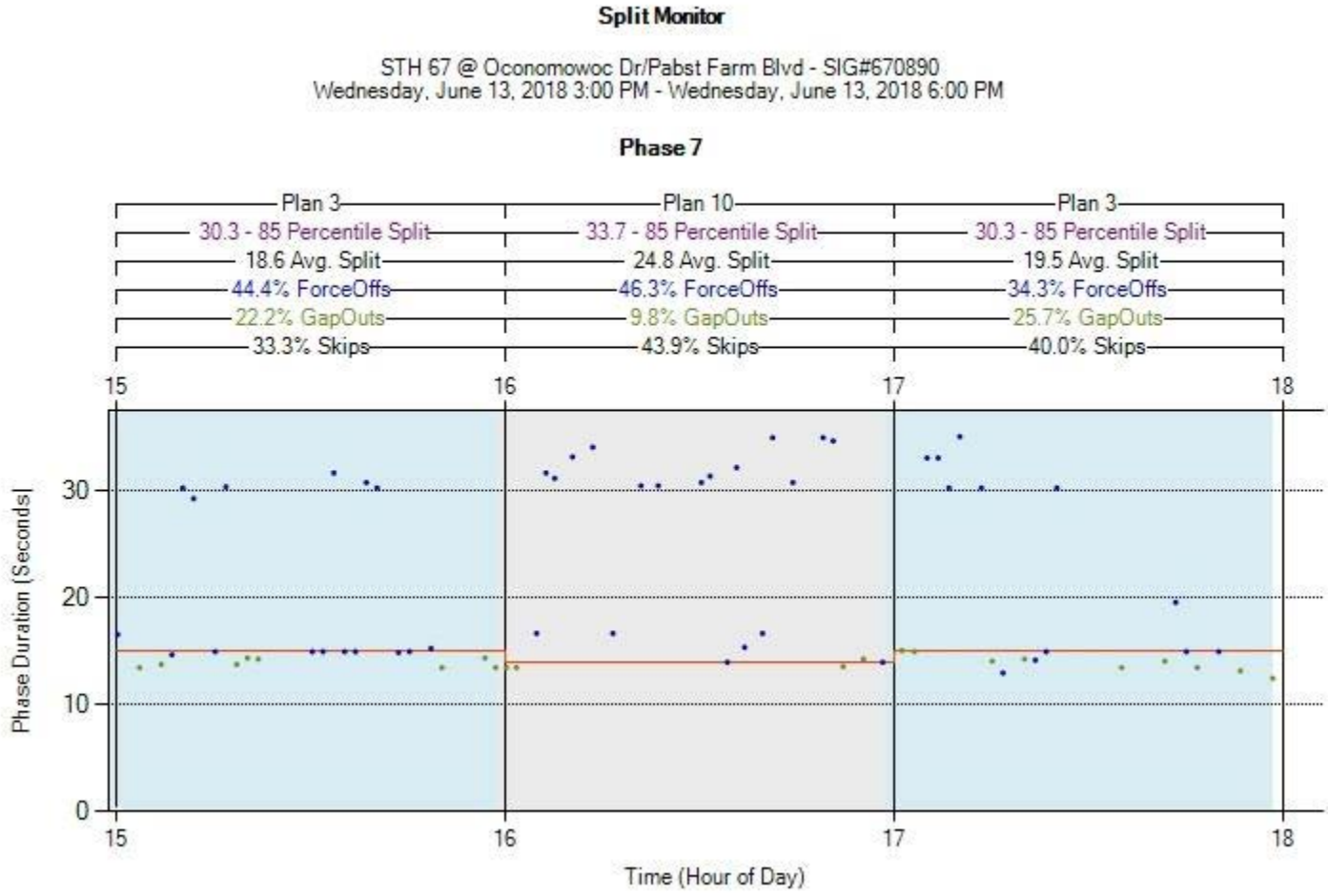

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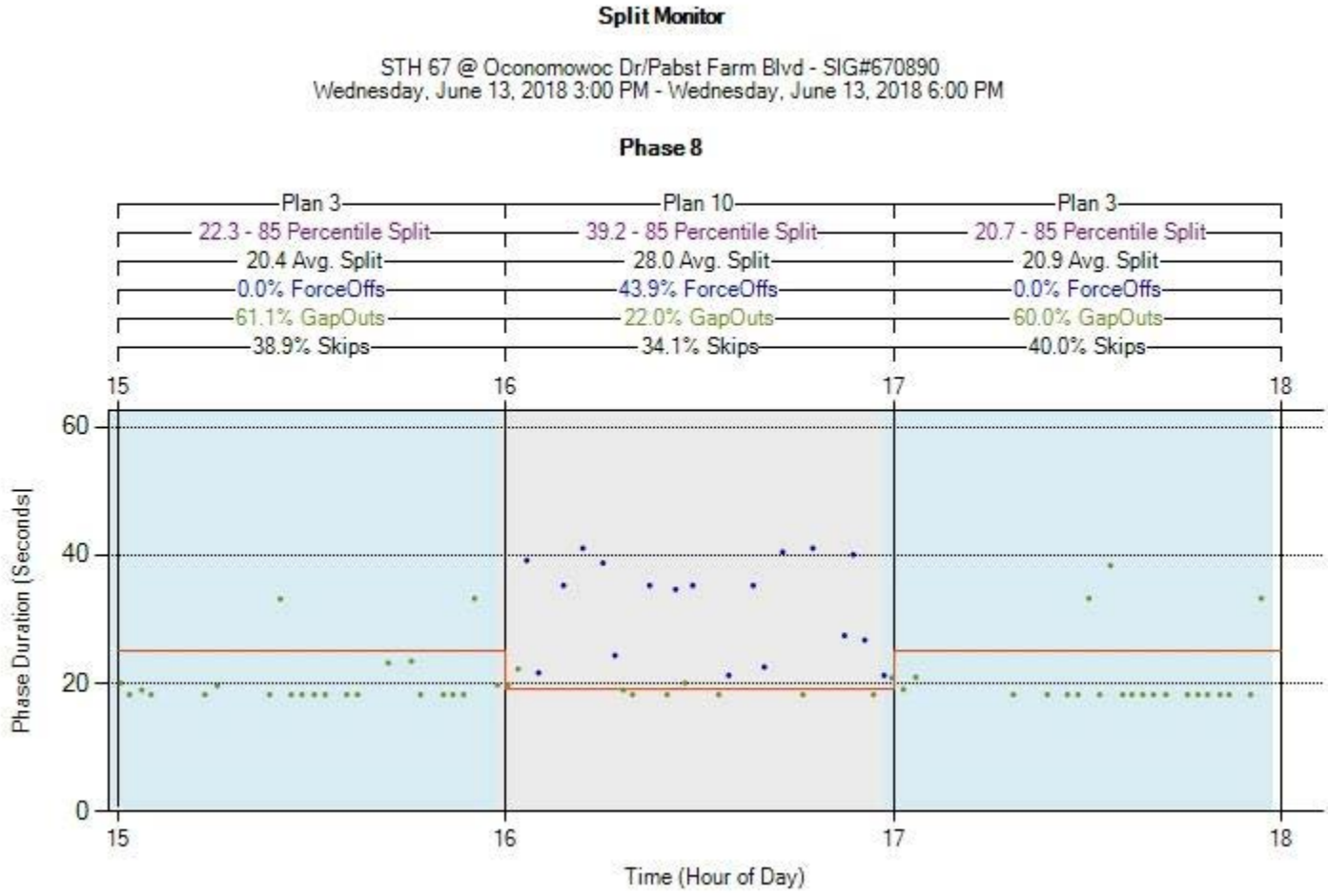

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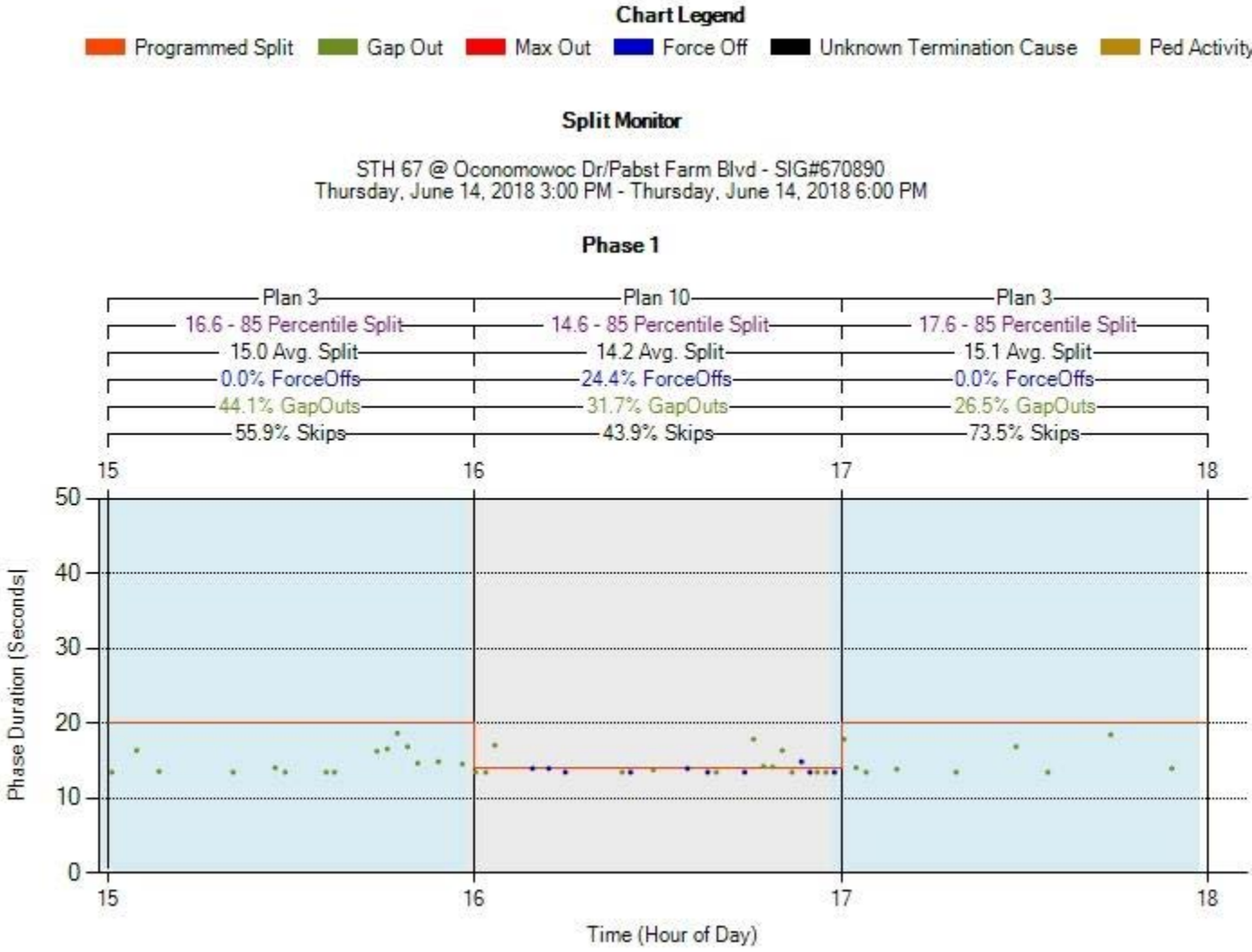

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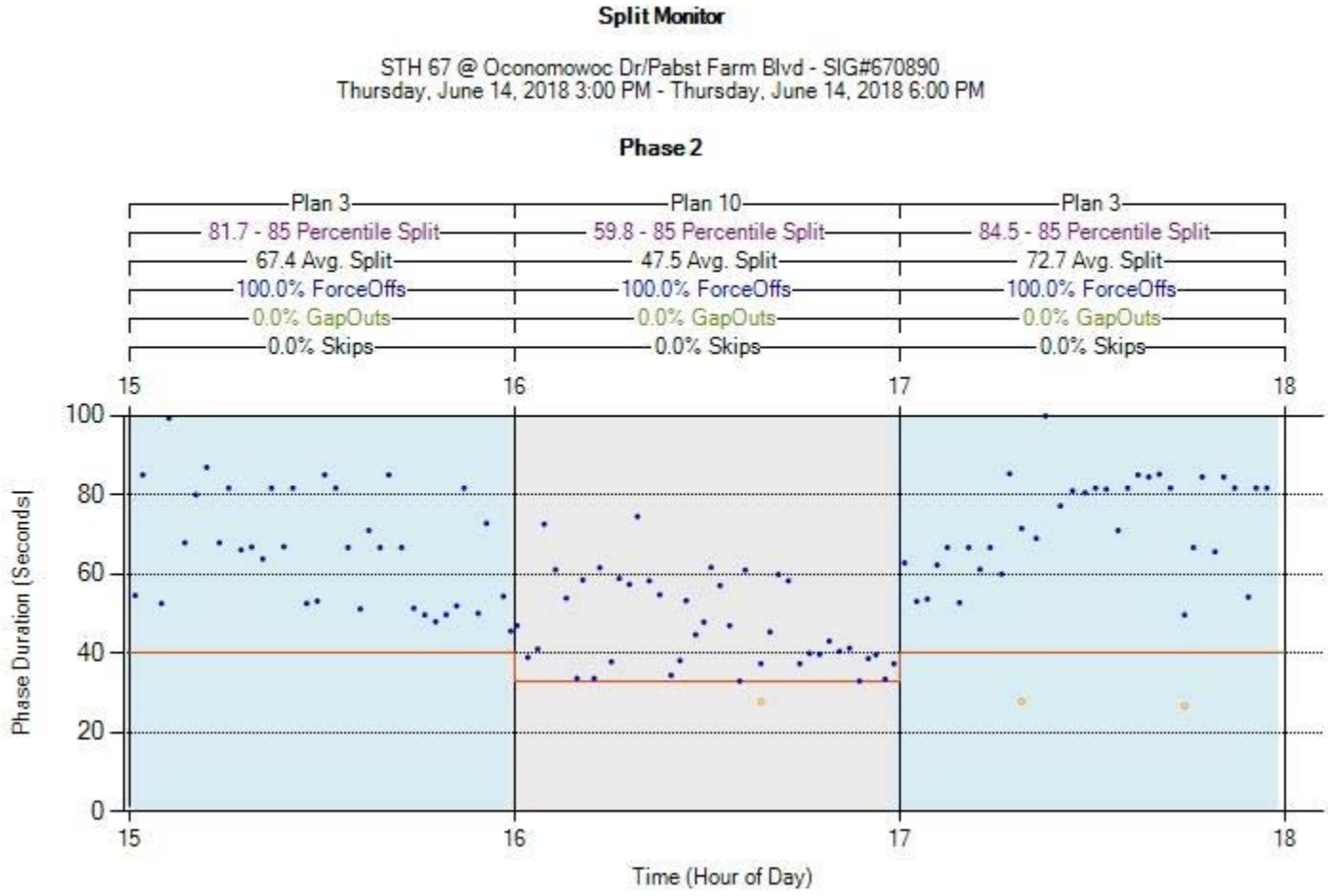
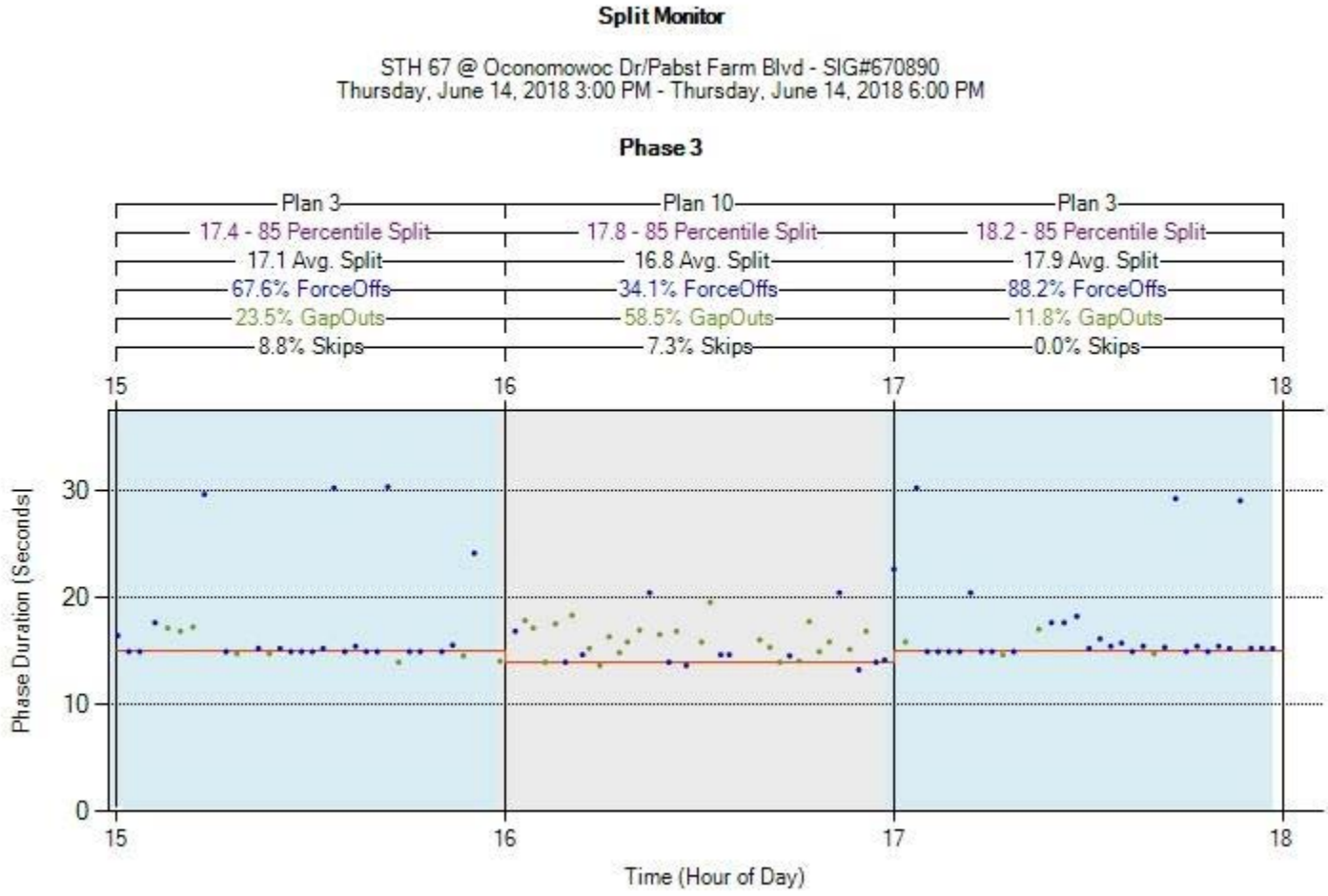
Vistro Timings
6/14/2018 – 3:00 PM – 6:00 PM



WIS 67 Corridor – STH 67 & Oconomowoc Dr.
Vistro Timings
6/14/2018 – 3:00 PM – 6:00 PM



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Vistro Timings
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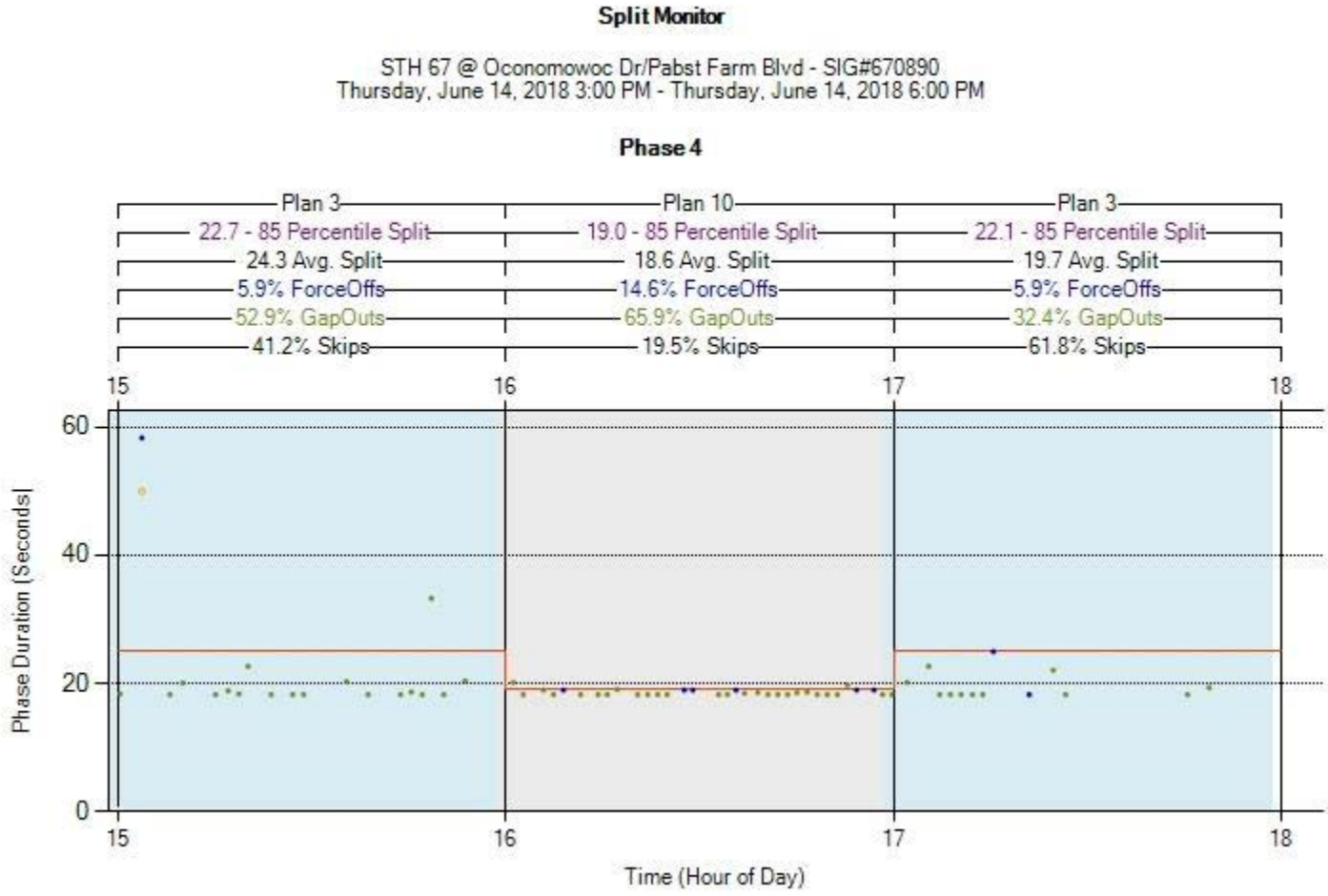

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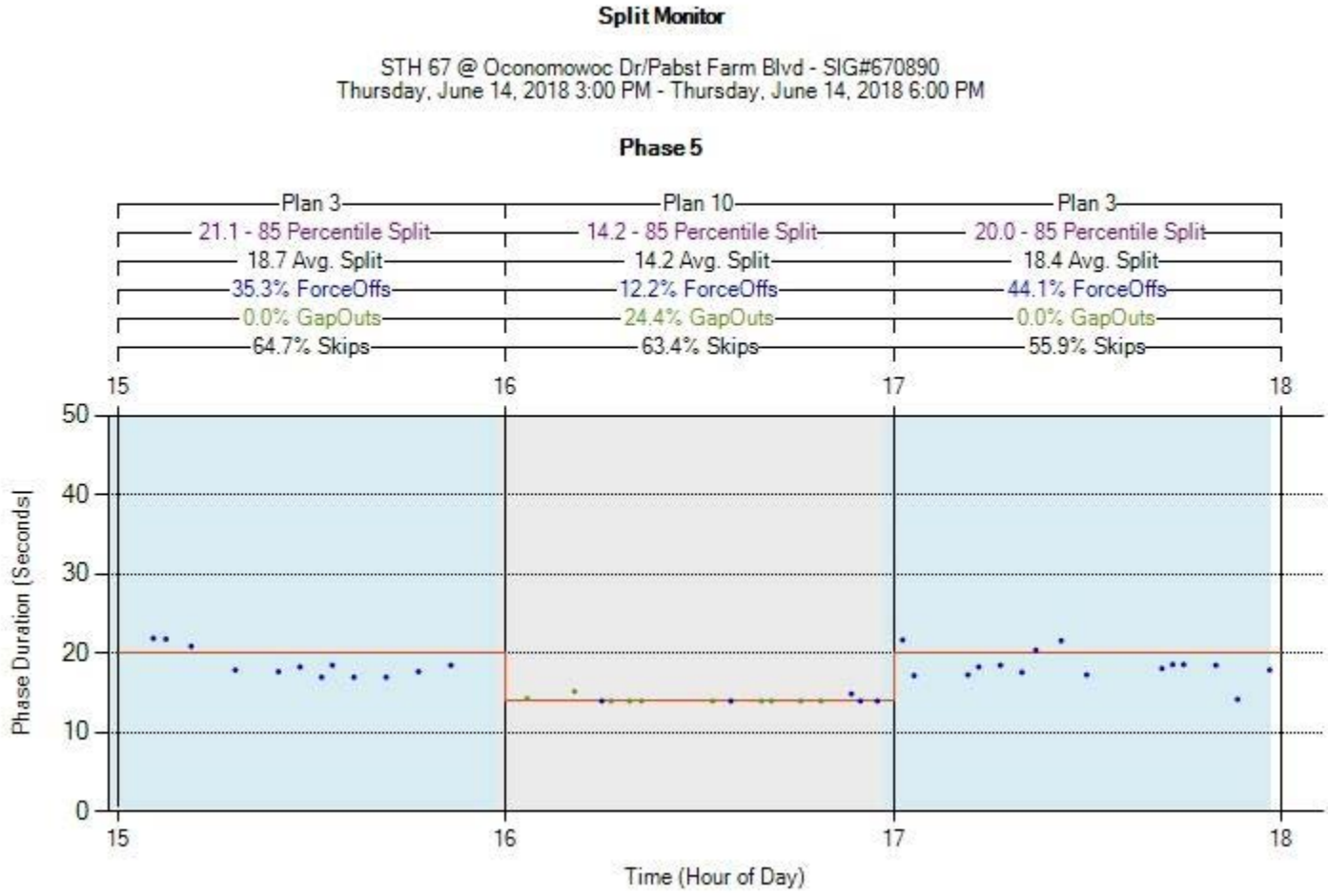
Vistro Timings
6/14/2018 – 3:00 PM – 6:00 PM



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Vistro Timings
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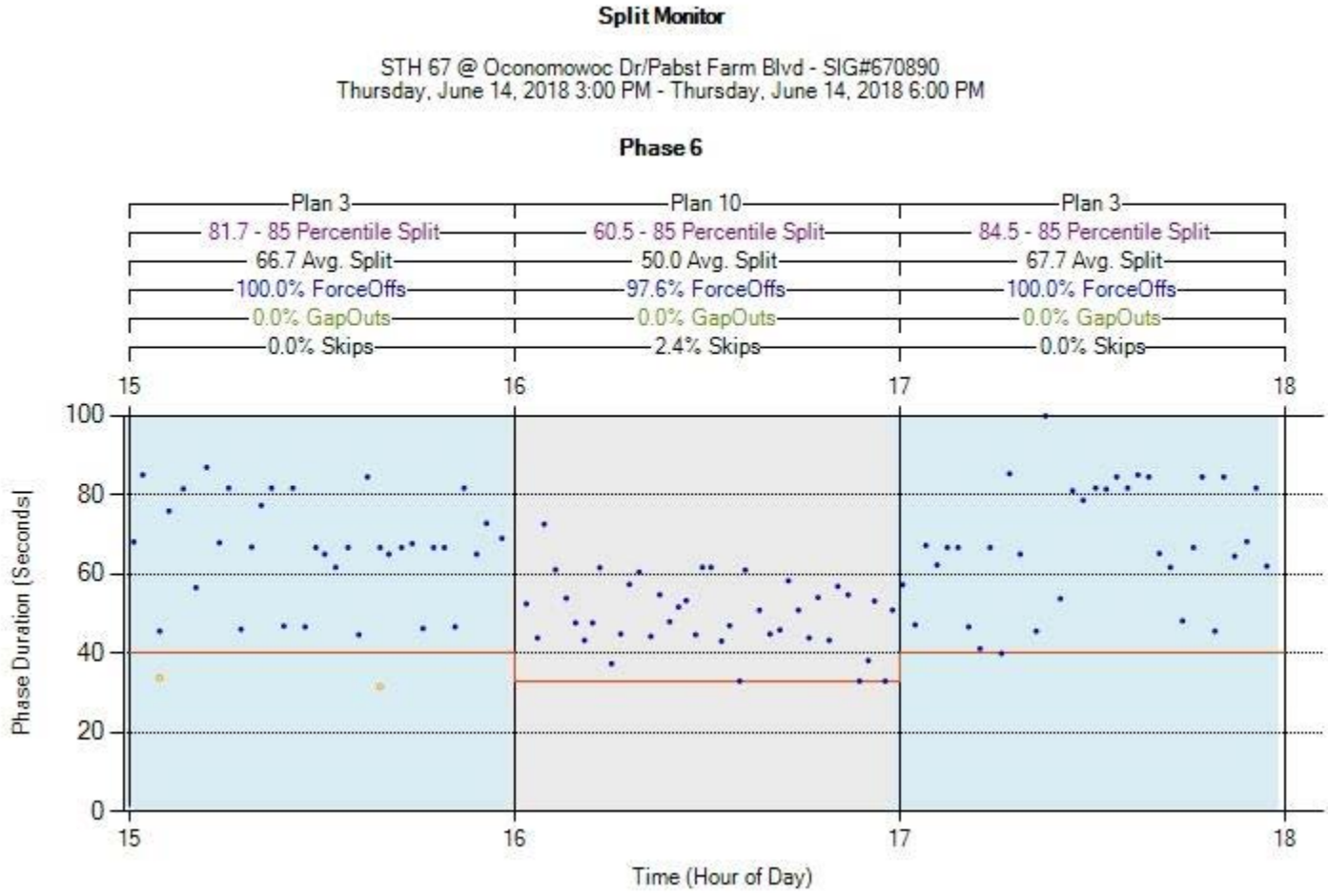

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Vistro Timings
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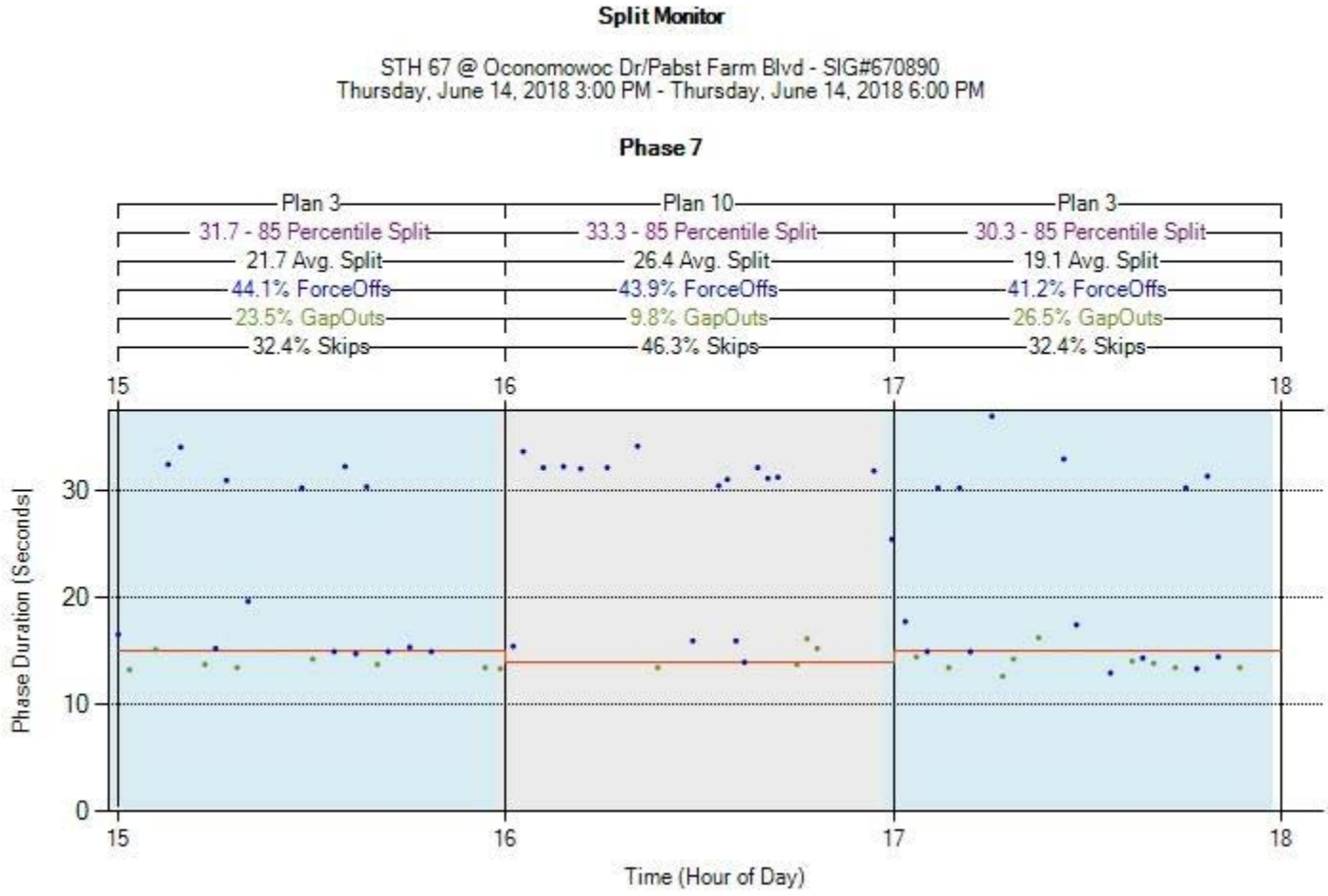

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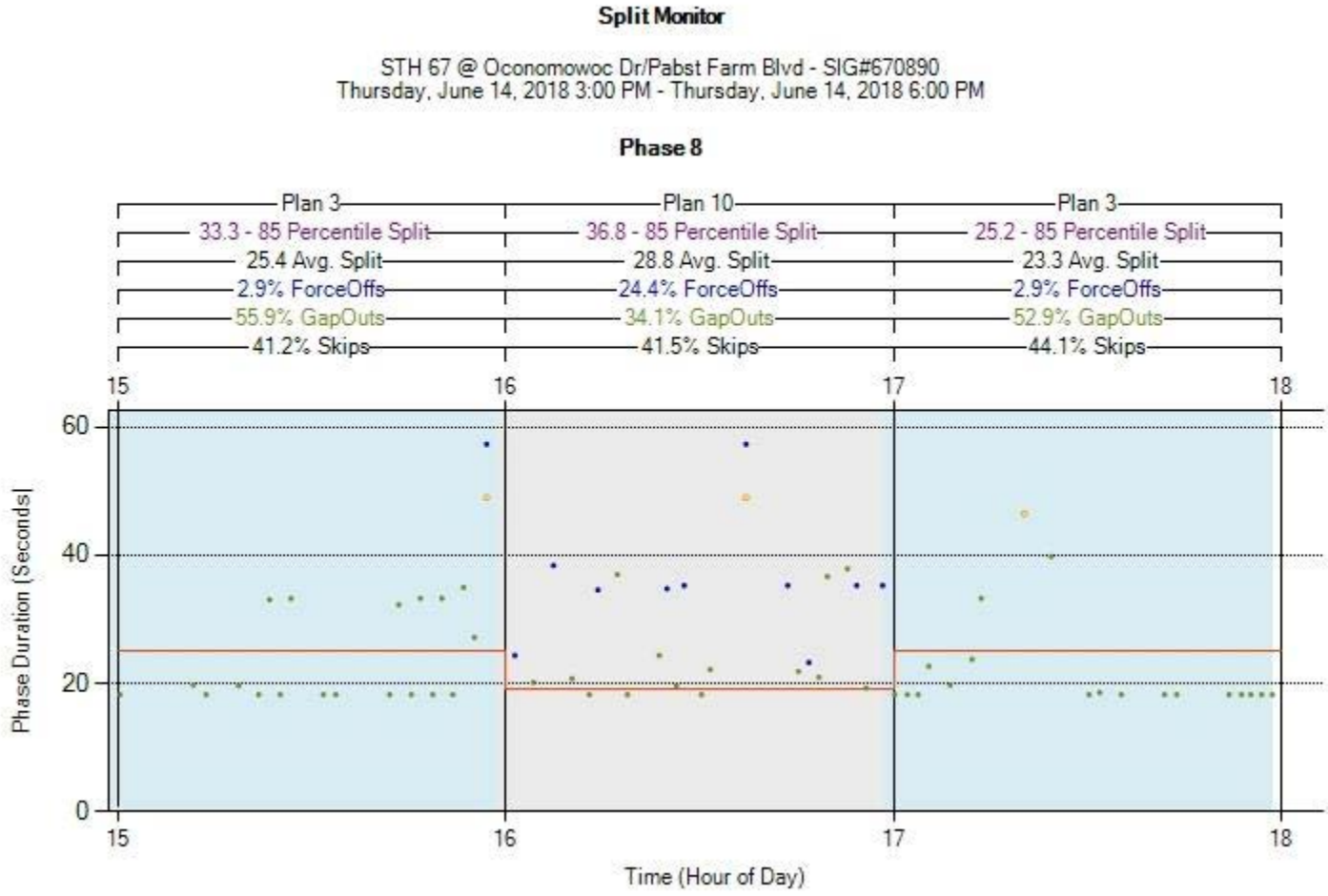
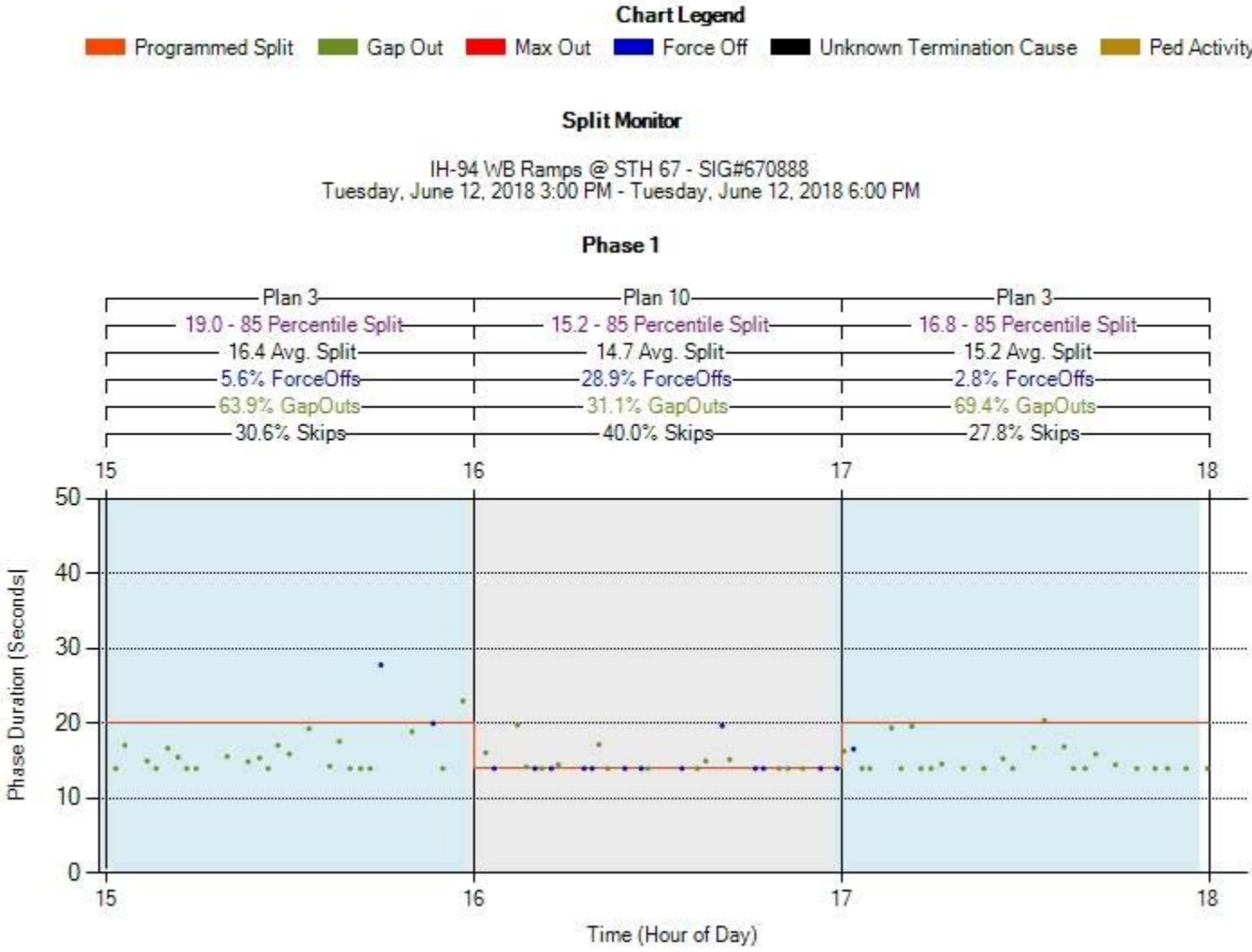
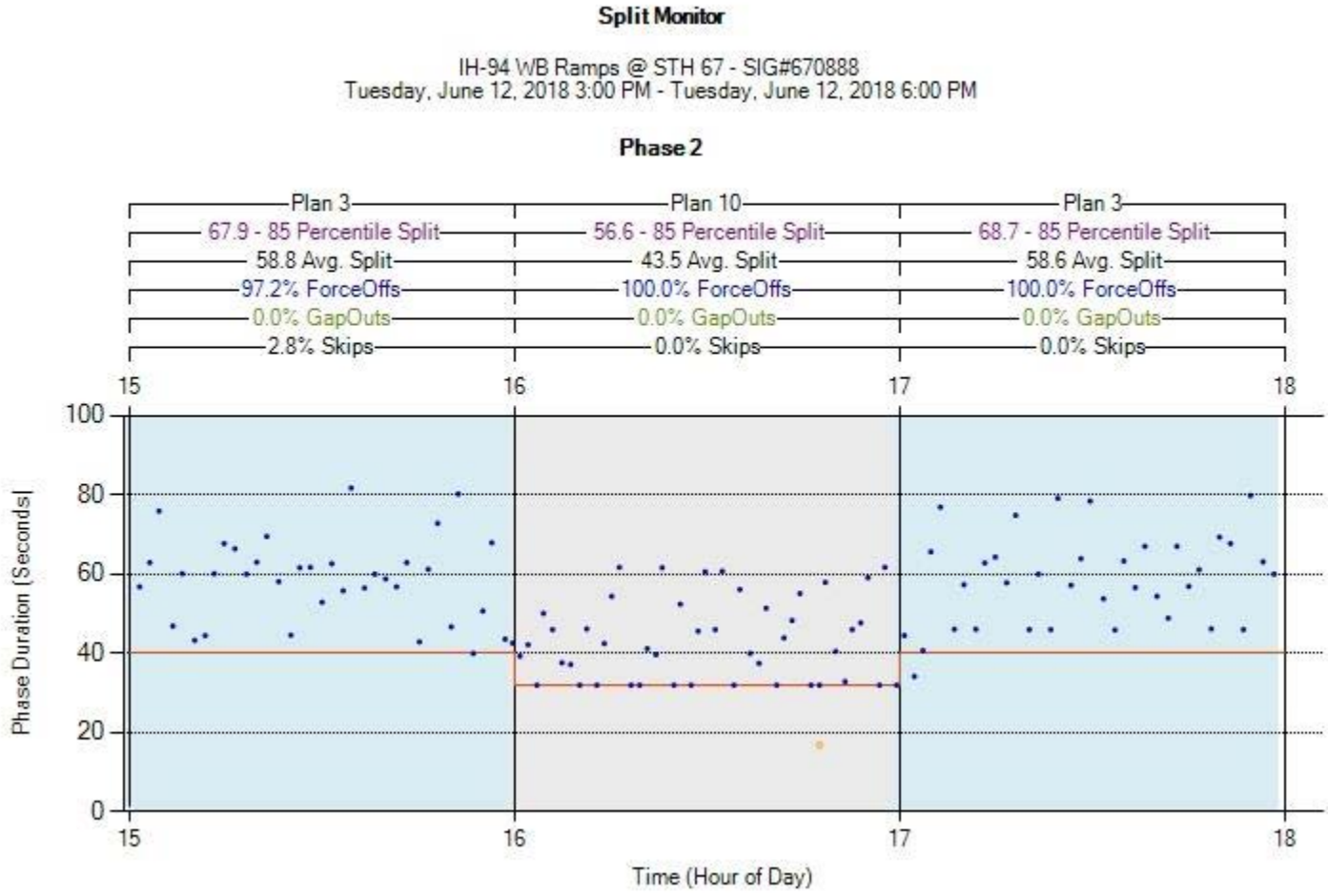
Vistro Timings
6/14/2018 – 3:00 PM – 6:00 PM



WIS 67 Corridor – STH 67 & I-94 WB Ramps
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM



WIS 67 Corridor – STH 67 & I-94 WB Ramps
Vistro Timings
6/12/2018 – 3:00 PM – 6:00 PM



WIS 67 Corridor – STH 67 & I-94 WB Ramps
Vistro Timings
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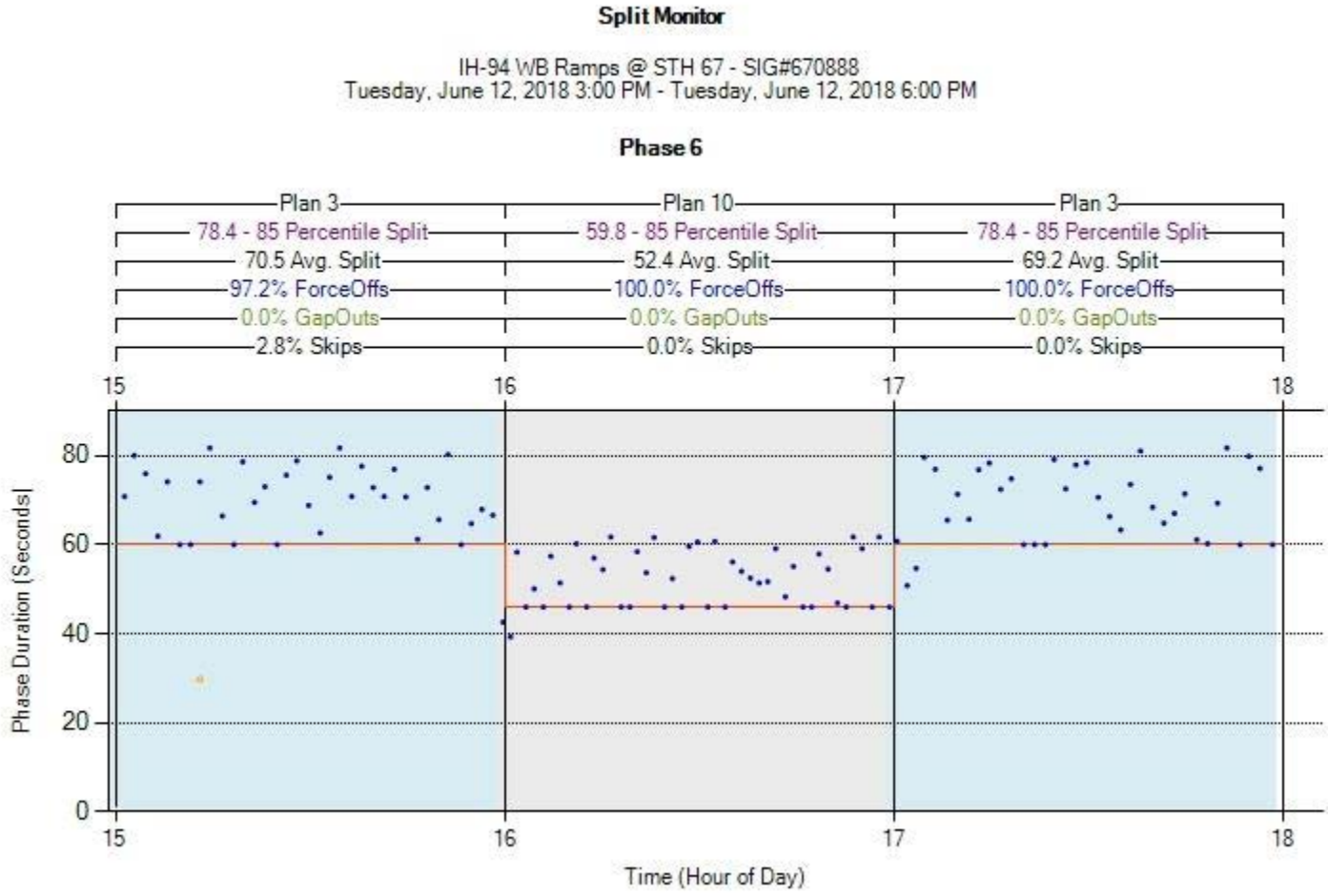

WIS 67 Corridor – STH 67 & I-94 WB Ramps
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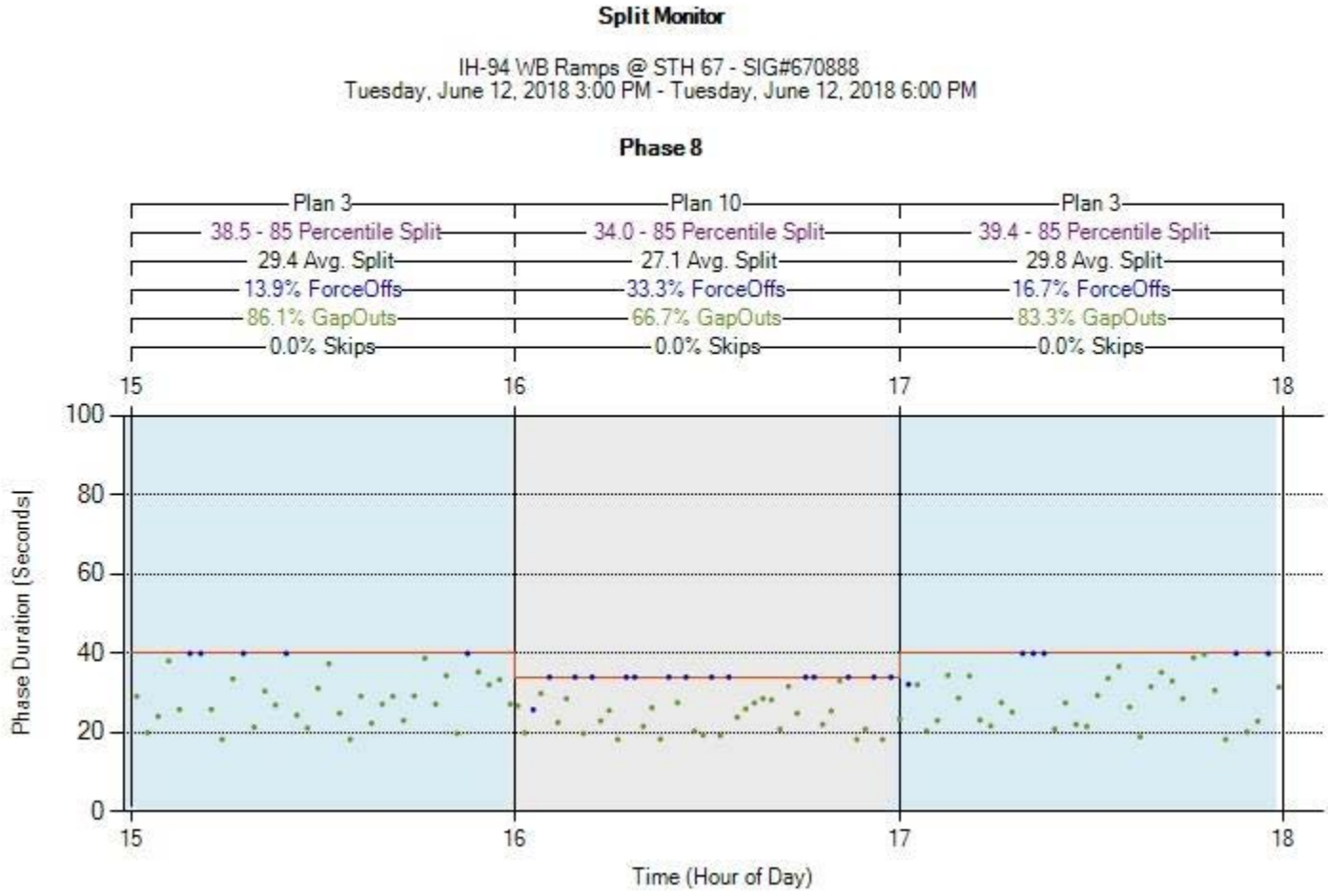

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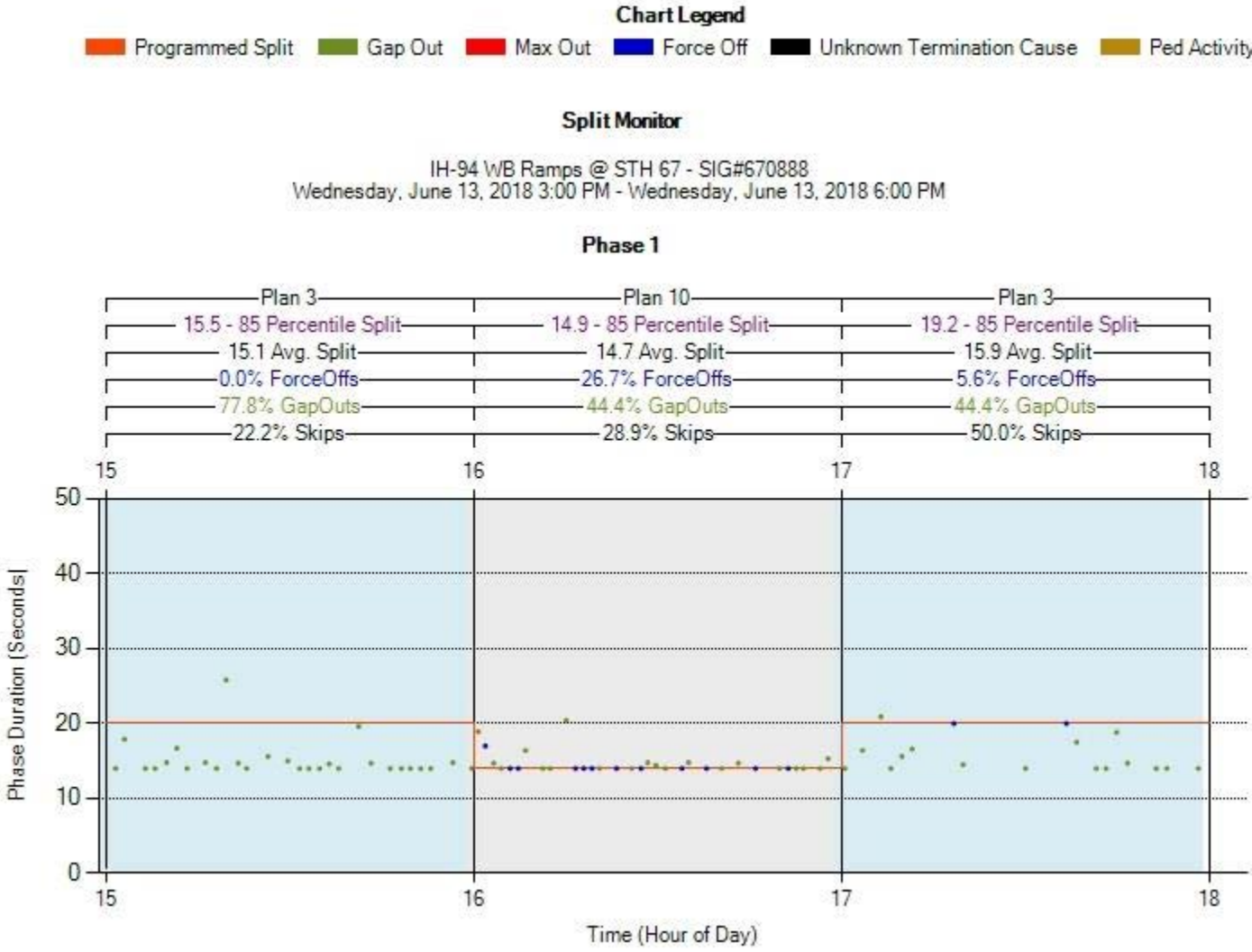

WIS 67 Corridor – STH 67 & I-94 WB Ramps
Vistro Timings
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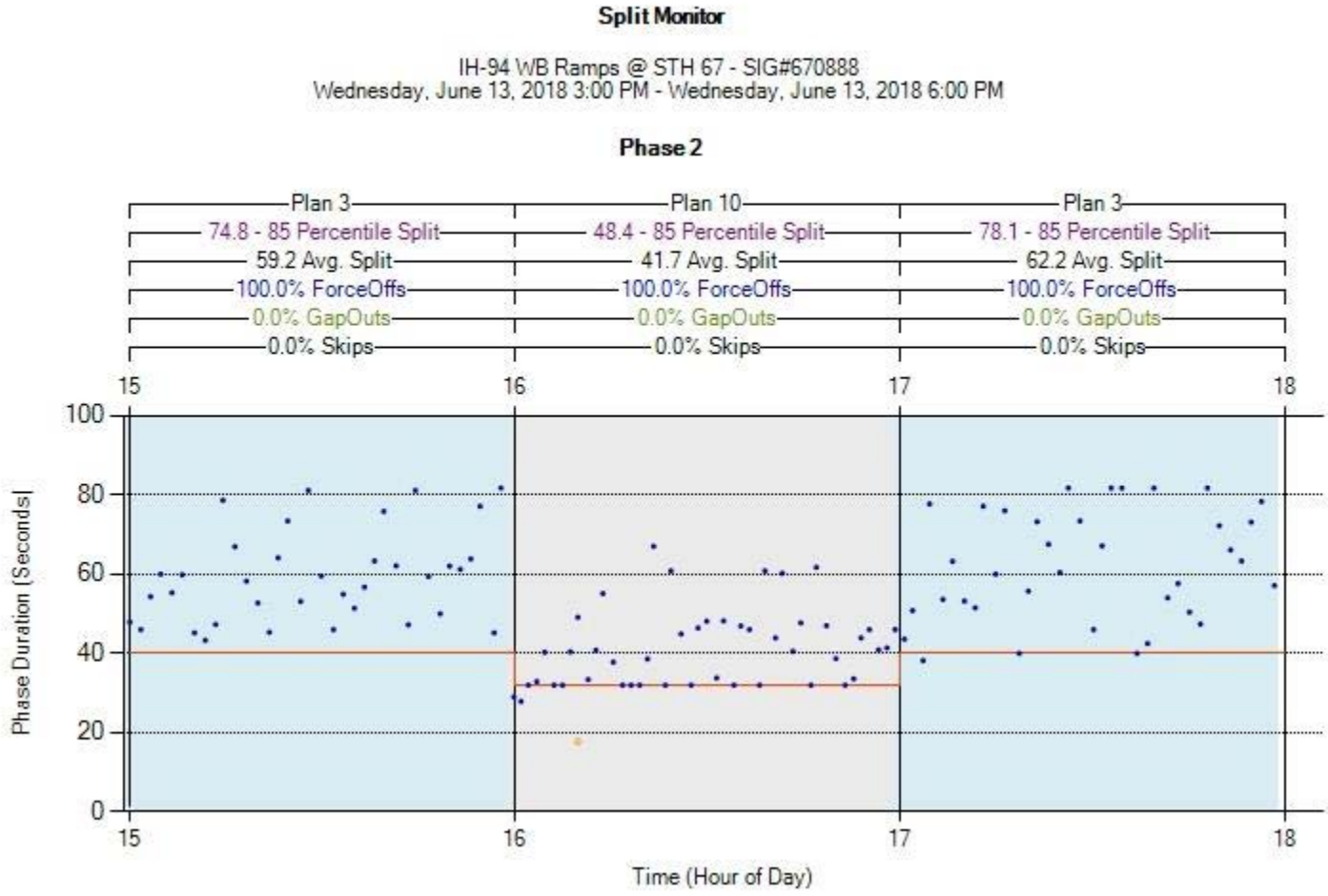

WIS 67 Corridor – STH 67 & I-94 WB Ramps
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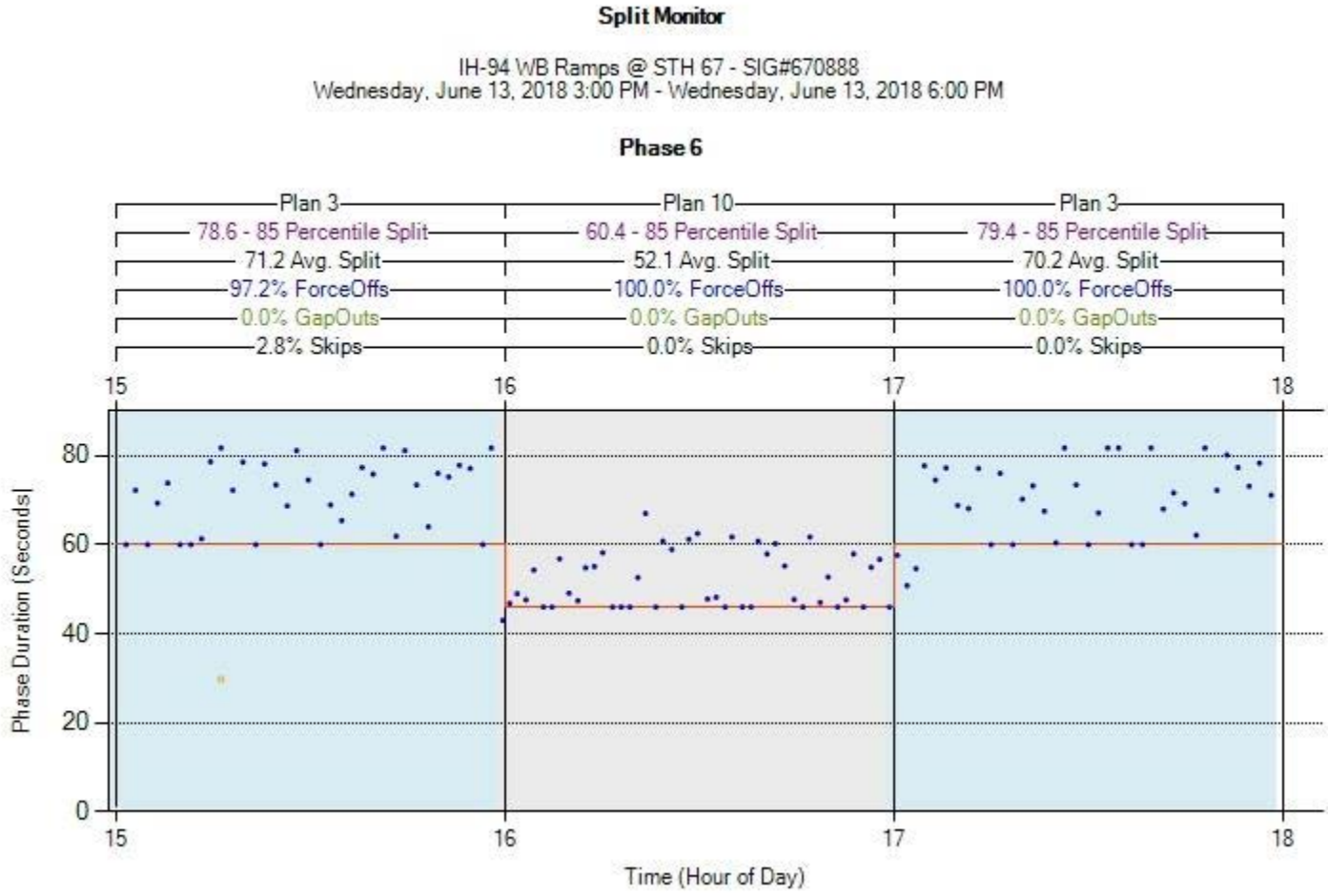

WIS 67 Corridor – STH 67 & I-94 WB Ramps
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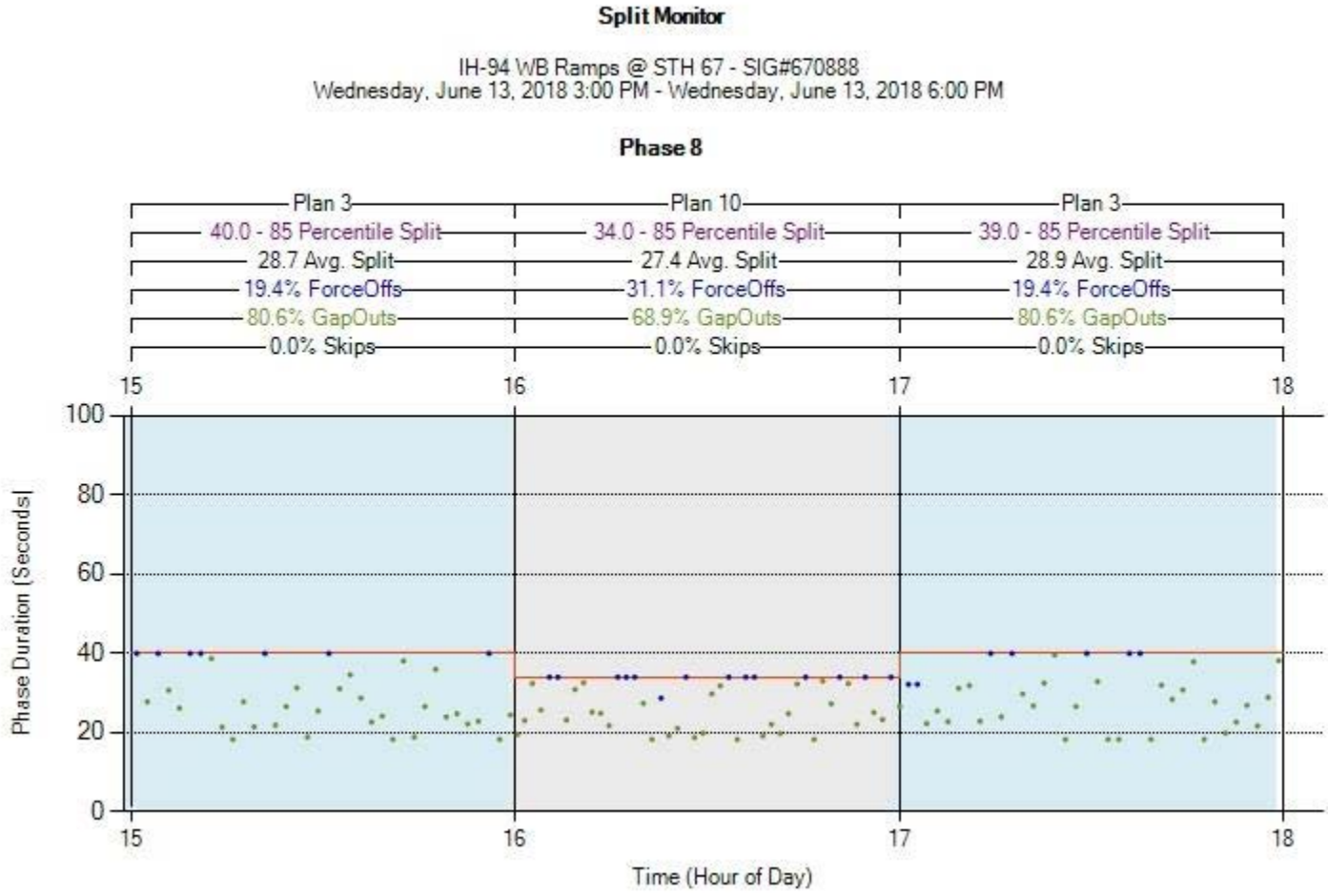

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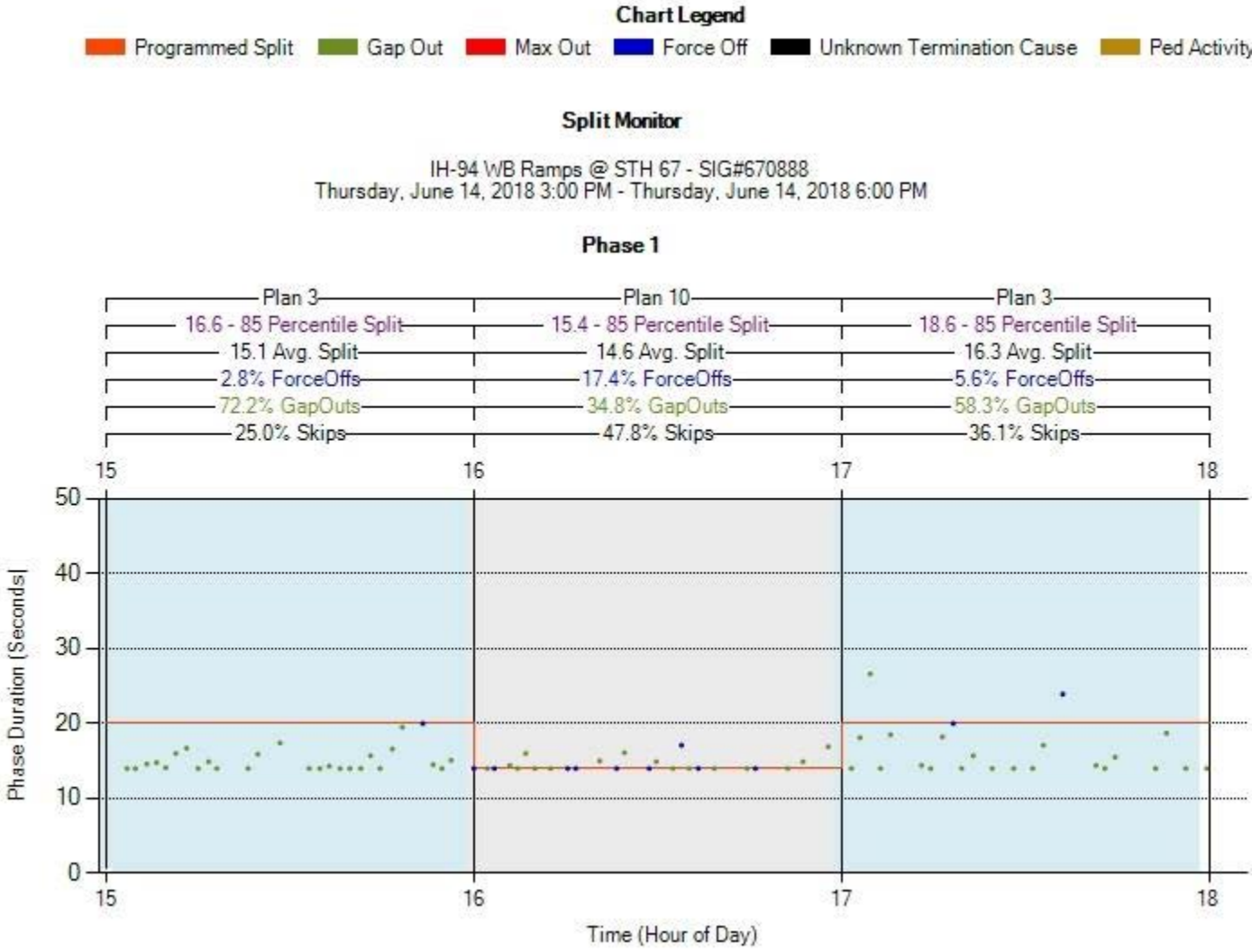

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Vistro Timings
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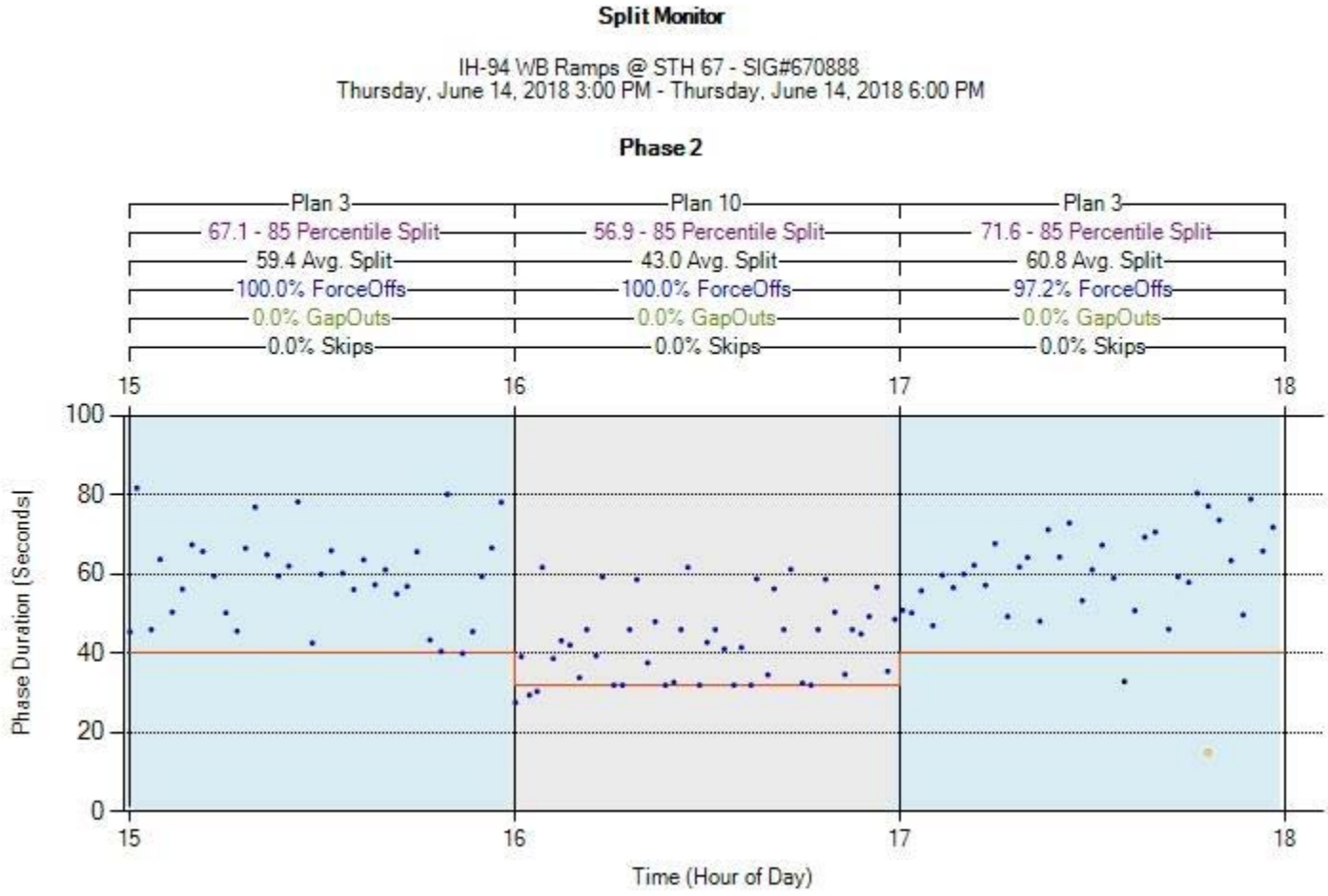

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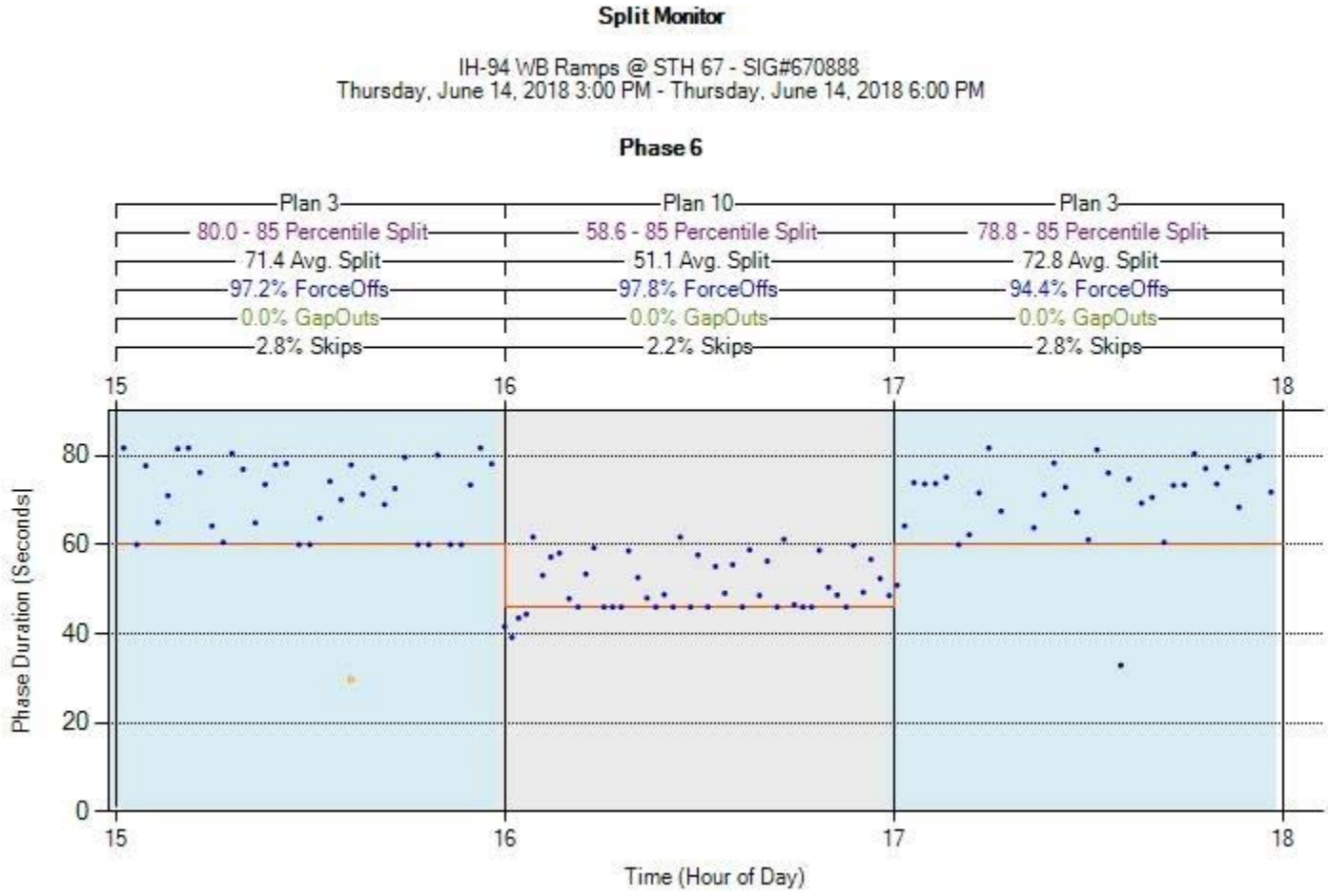

WIS 67 Corridor – STH 67 & I-94 WB Ramps
Vistro Timings
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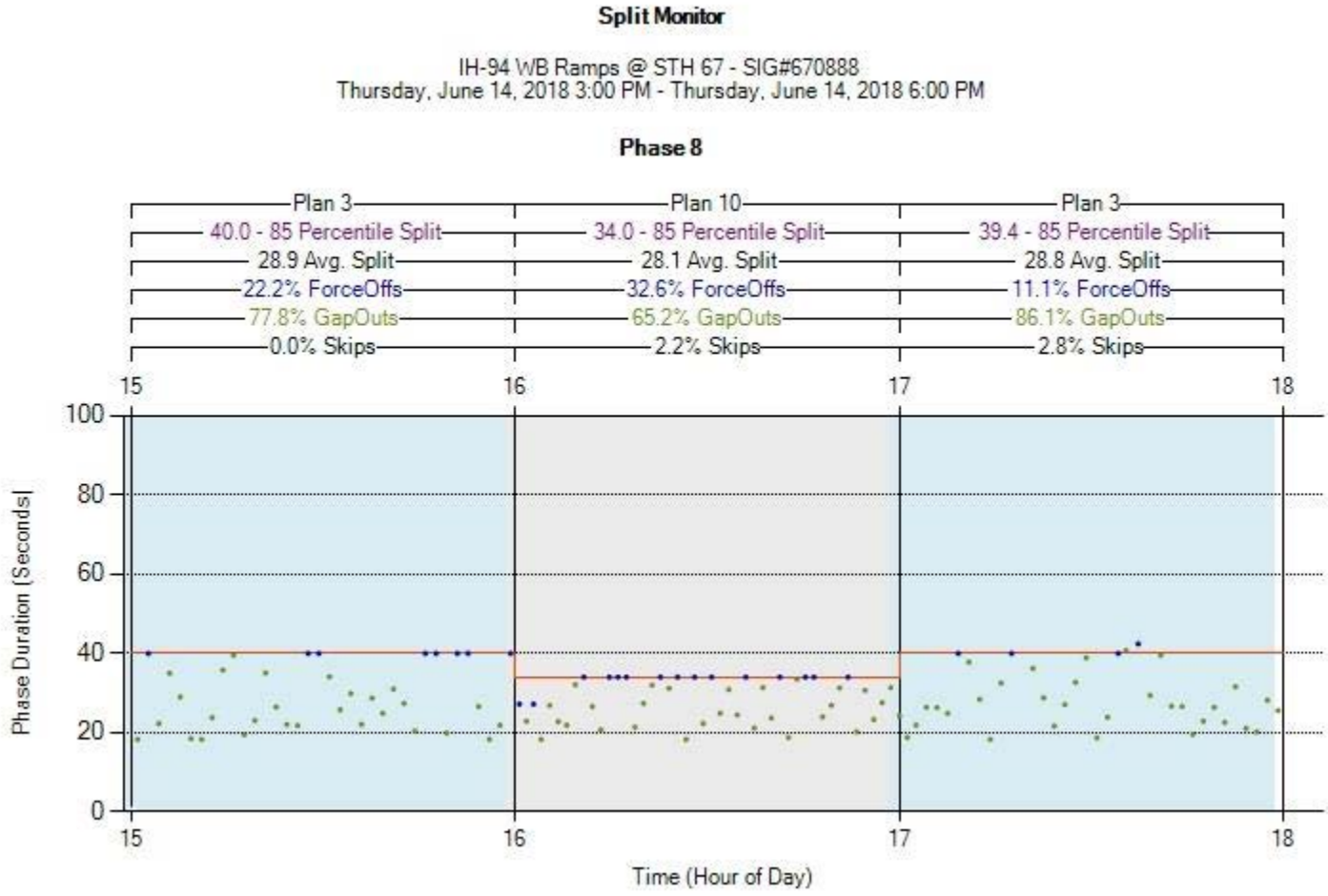

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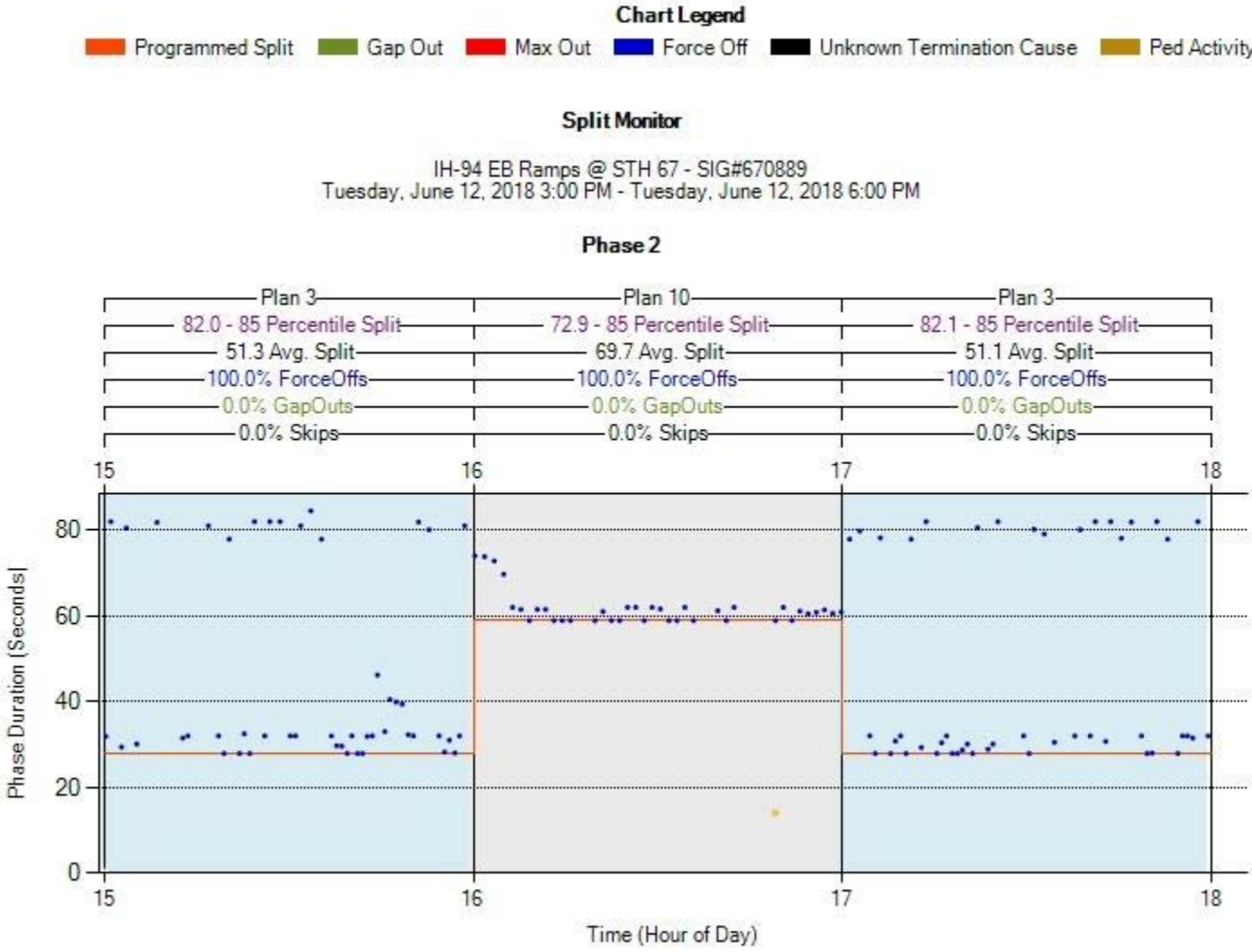

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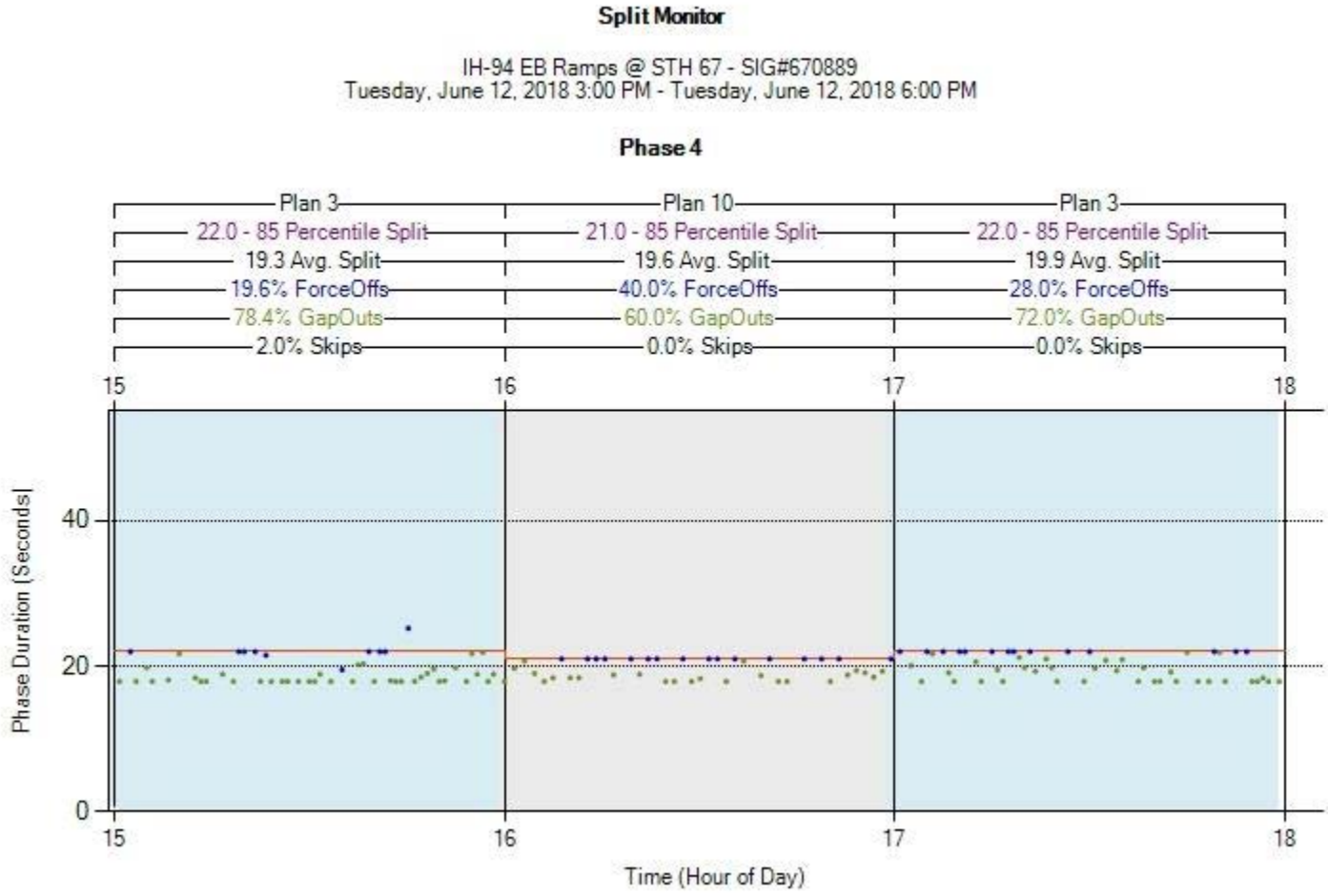

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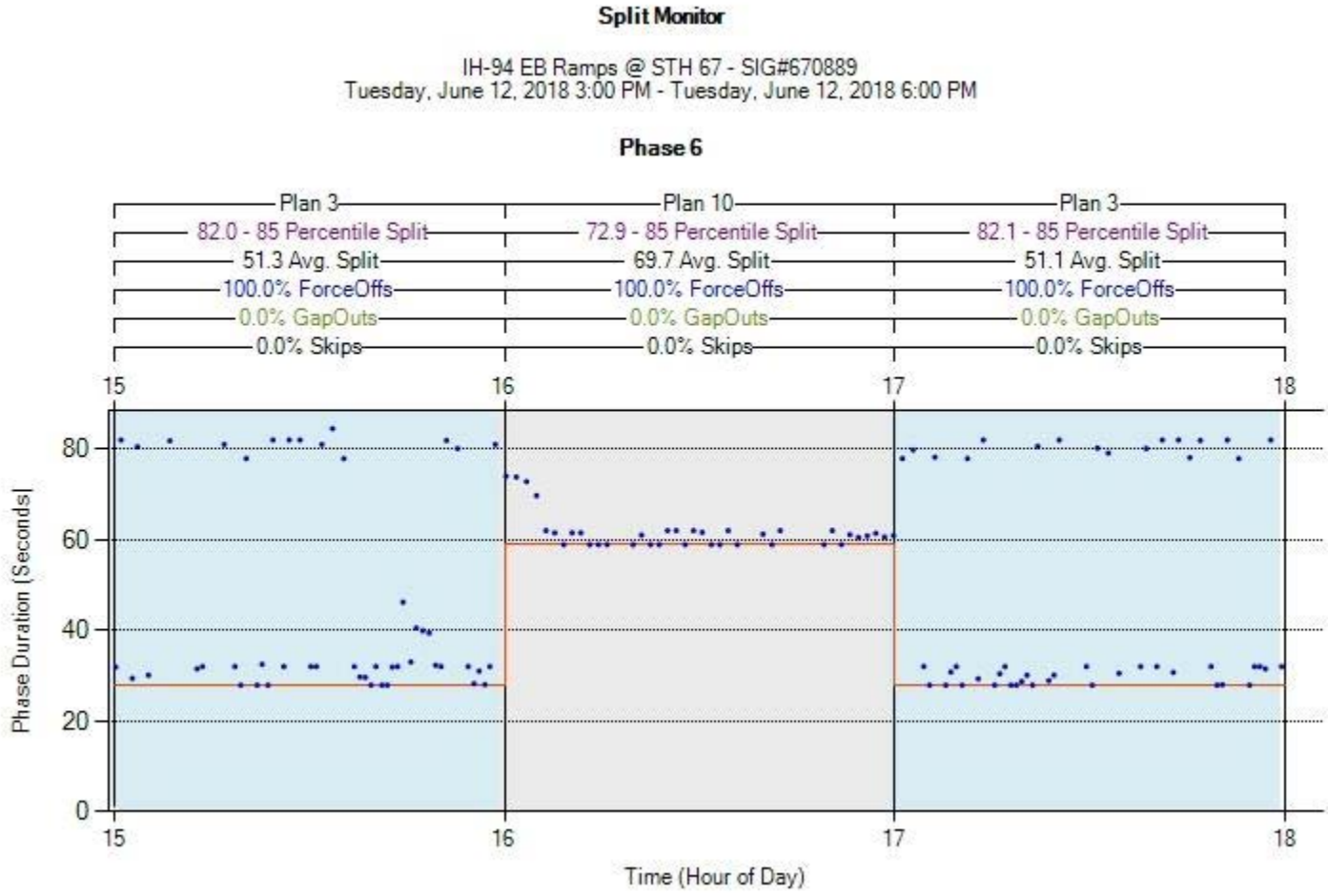

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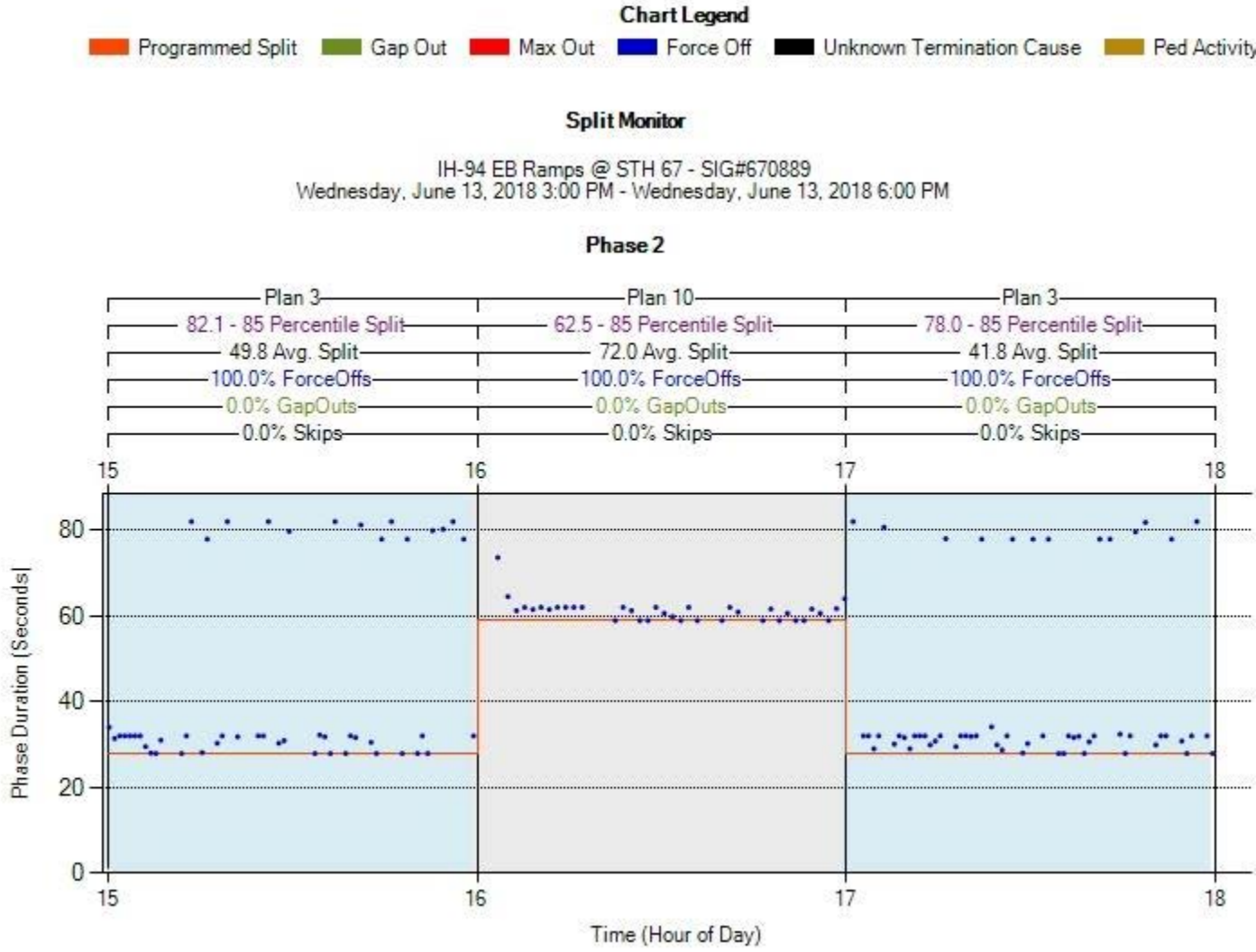

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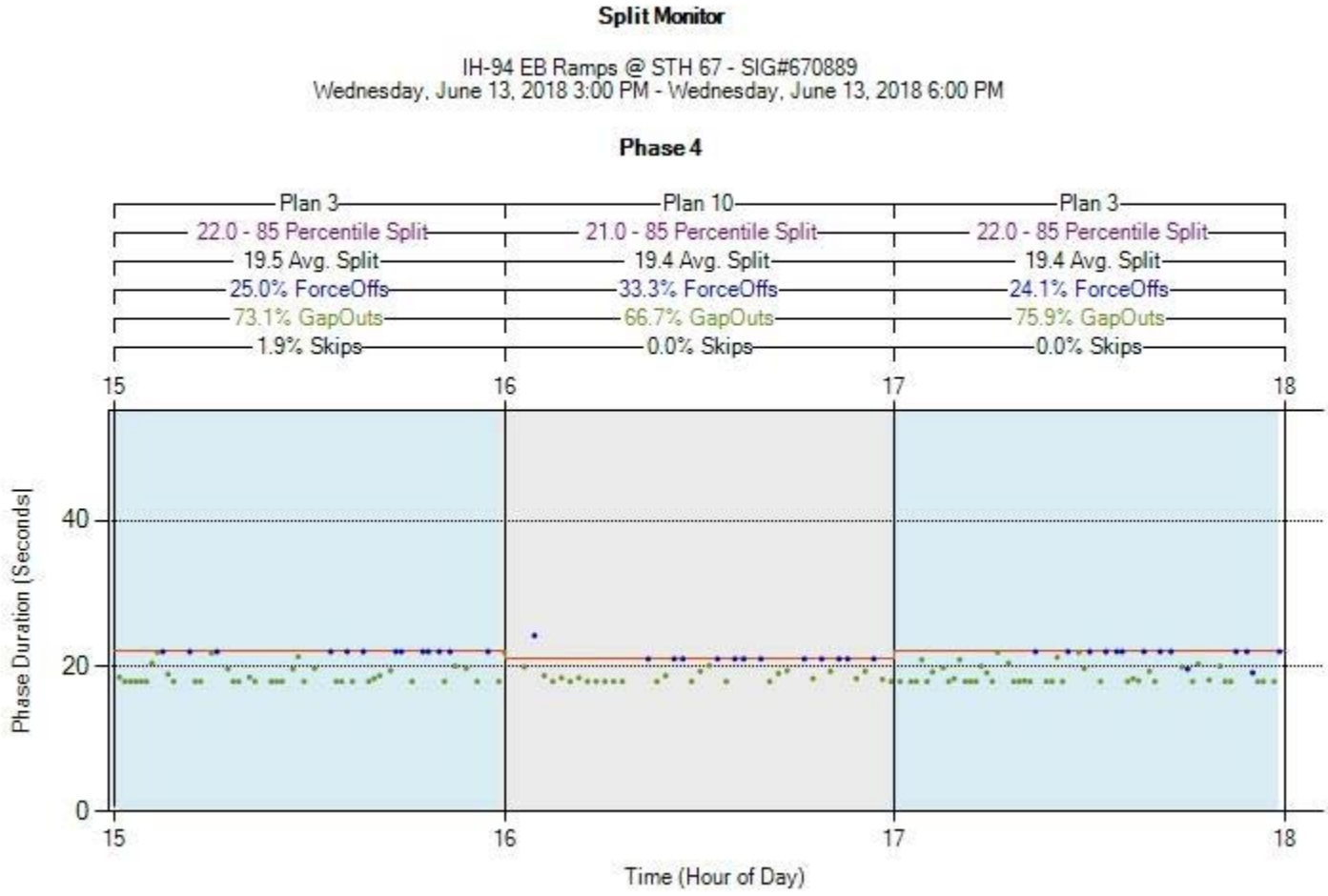

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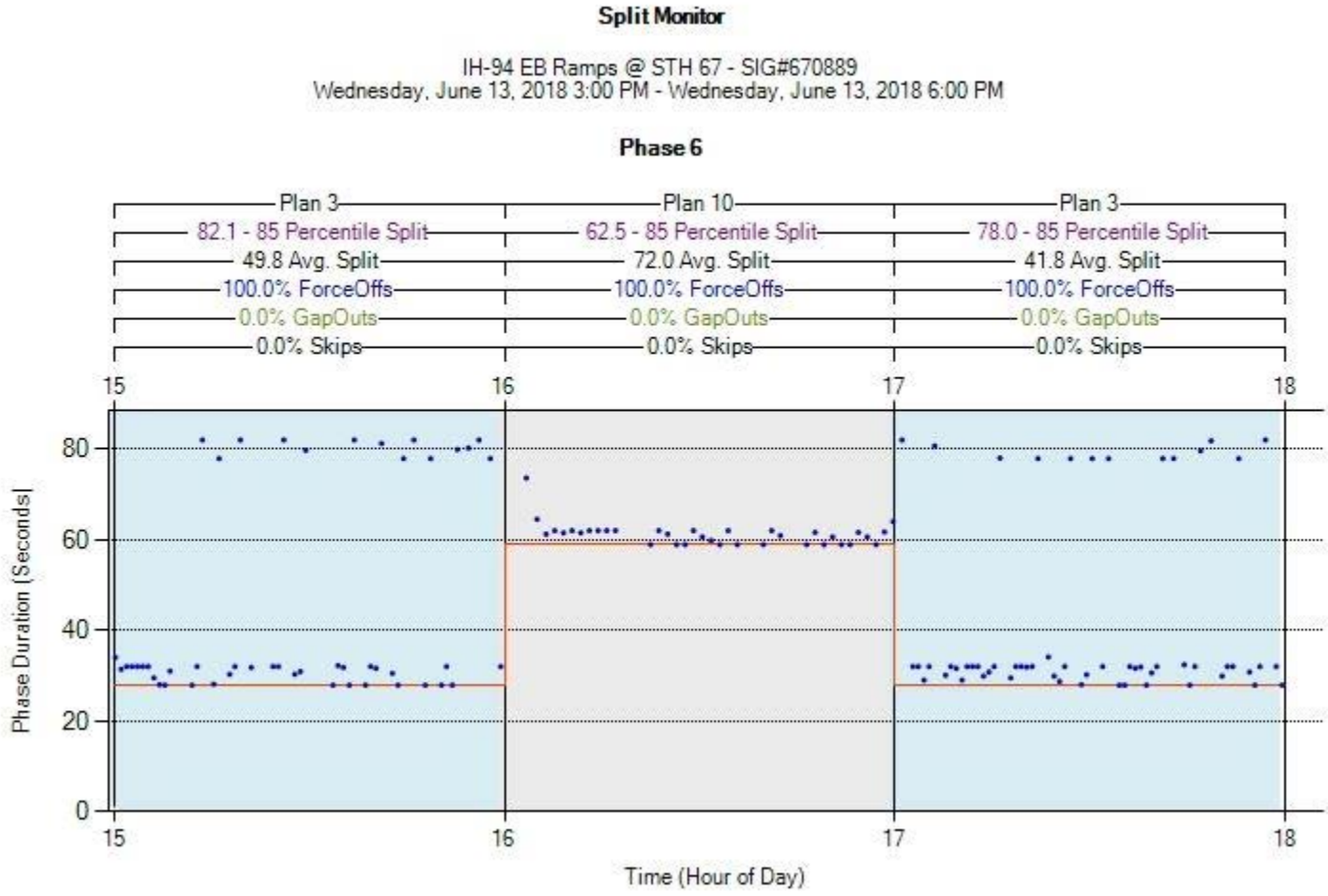

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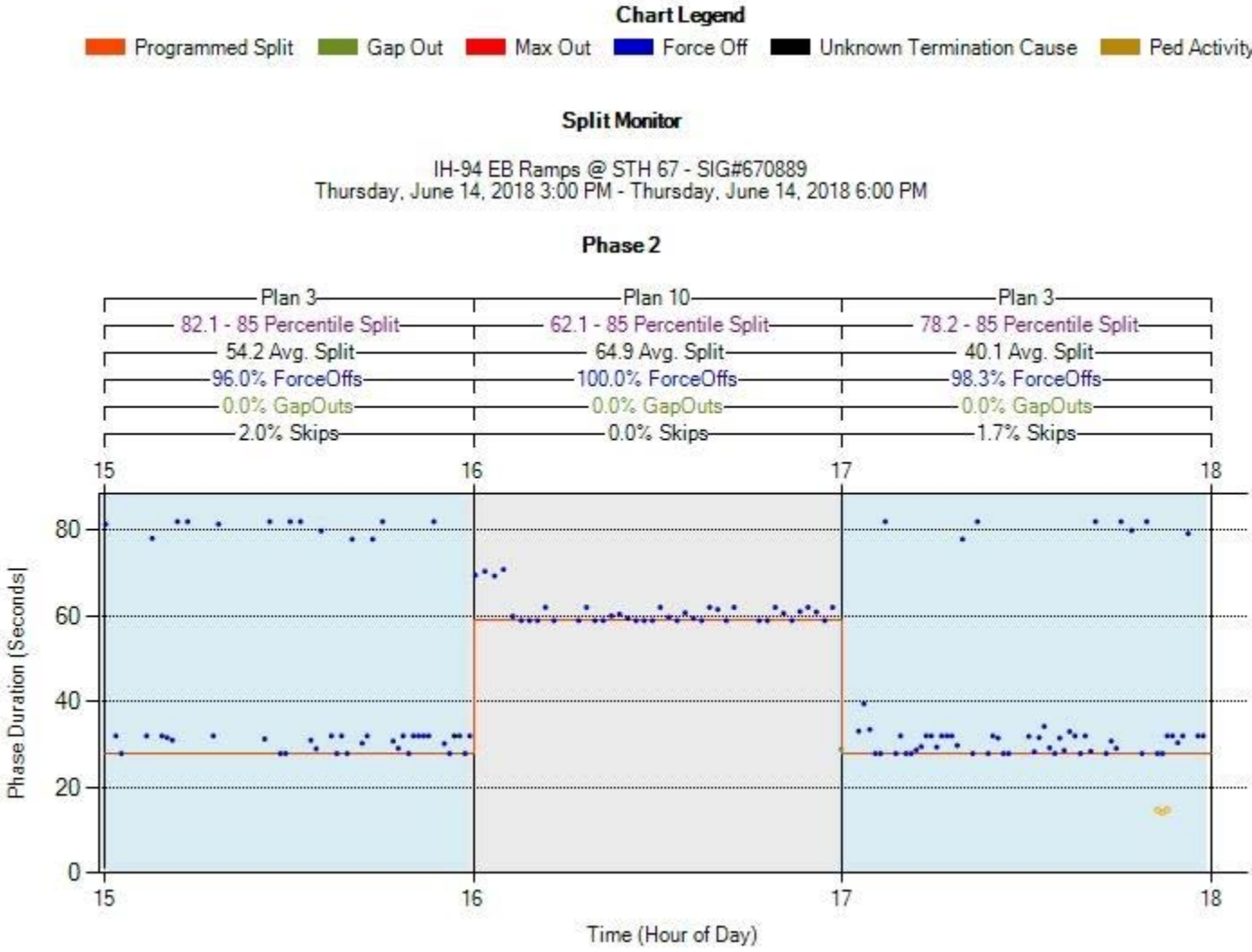

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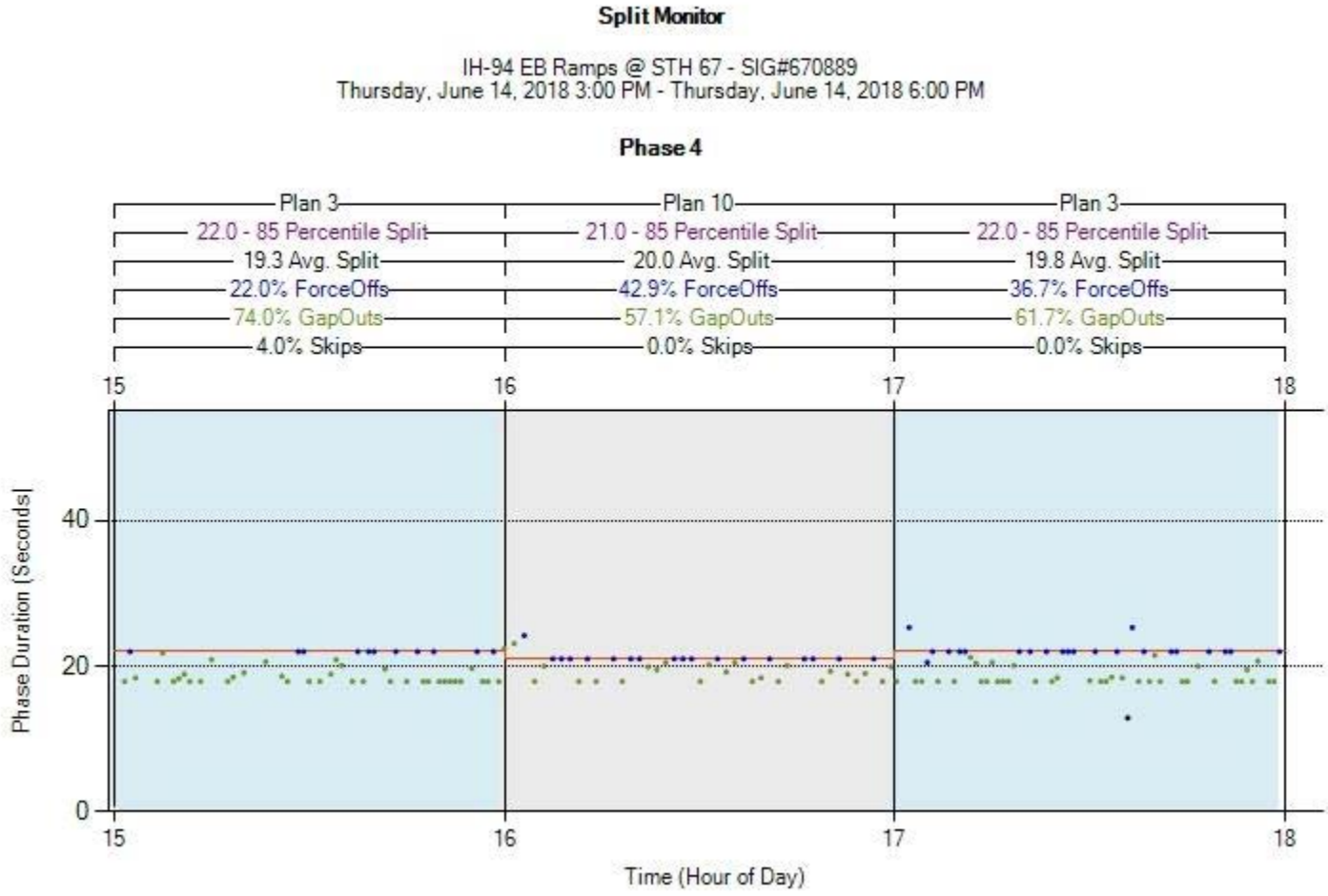

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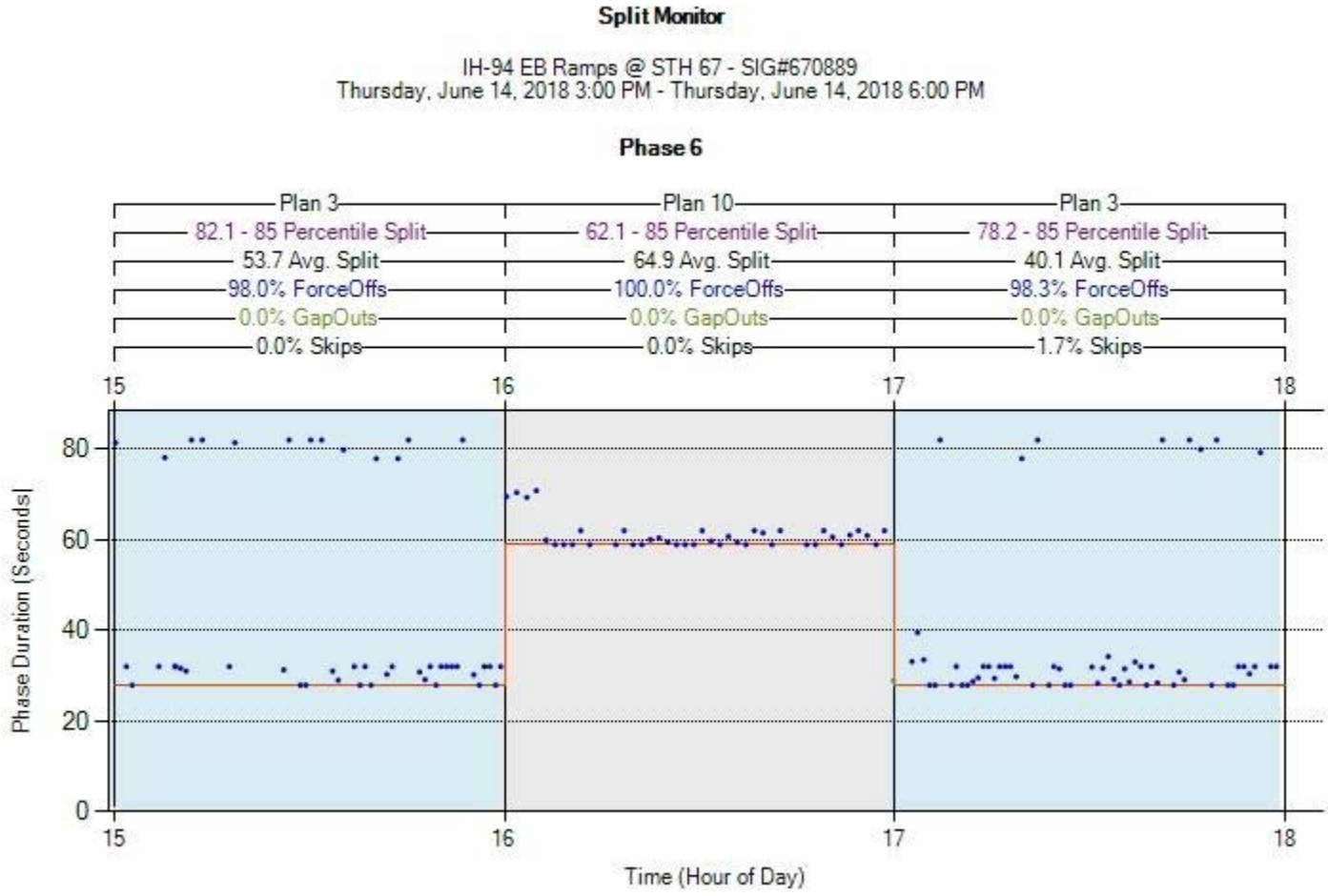

APPENDIX J

WisBOOM Performance Evaluation
Spreadsheet Comparison Data

Signalized Corridor Phase Termination Data with Balance Measure
Average by Phase and Intersection

			Phase 1				Phase 3				Phase 4				Phase 5				Phase 7				Phase 8			
			% Force Offs	% Gap Outs	% Skips	**Balance**	% Force Offs	% Gap Outs	% Skips	**Balance**	% Force Offs	% Gap Outs	% Skips	**Balance**	% Force Offs	% Gap Outs	% Skips	**Balance**	% Force Offs	% Gap Outs	% Skips	**Balance**	% Force Offs	% Gap Outs	% Skips	**Balance**
WIS 38	Drexel Ave	Baseline	26.9	71.8	1.3	**0.45**	14.1	82.0	3.9	**0.71**	65.4	32.1	2.5	**0.34**	19.2	76.9	3.8	**0.60**	1.3	96.2	2.6	**0.97**	62.8	32.1	5.1	**0.32**
		HCS	100.0	0.0	0.0	**1.00**	84.8	8.6	6.6	**0.82**	91.5	4.3	4.1	**0.91**	81.4	12.8	5.8	**0.73**	34.6	57.9	7.5	**0.25**	91.5	4.3	4.1	**0.91**
		Synchro	86.6	11.7	1.7	**0.76**	90.8	5.9	3.3	**0.88**	95.8	2.5	1.7	**0.95**	91.6	6.7	1.7	**0.86**	94.1	4.2	1.7	**0.91**	95.8	2.5	1.7	**0.95**
		Vistro	87.1	12.1	0.8	**0.76**	78.4	14.7	6.9	**0.68**	81.0	15.5	3.5	**0.68**	95.7	0.9	3.4	**0.98**	85.3	8.7	6.0	**0.81**	90.5	5.2	4.3	**0.89**
	Susan/Town Square Way	Baseline	1.2	97.5	1.2	**0.98**	19.3	10.5	70.2	**0.30**	7.9	80.6	11.5	**0.82**	6.6	2.7	90.8	**0.42**	46.7	52.0	1.3	**0.05**	5.2	13.0	81.7	**0.43**
		HCS	91.7	1.7	6.6	**0.96**	8.3	9.1	82.6	**0.04**	10.9	75.8	13.3	**0.75**	2.5	6.6	90.9	**0.45**	90.9	0.8	8.3	**0.98**	8.4	12.5	79.2	**0.20**
		Synchro	40.2	45.3	14.5	**0.06**	12.8	7.7	79.5	**0.25**	30.8	58.1	11.1	**0.31**	12.0	18.8	69.2	**0.22**	24.8	69.2	6.0	**0.47**	0.9	72.6	26.5	**0.98**
		Vistro	16.9	64.6	18.5	**0.58**	14.7	4.6	80.7	**0.52**	5.4	83.0	11.5	**0.88**	3.9	14.7	81.5	**0.58**	93.1	0.8	6.1	**0.98**	3.8	16.2	80.0	**0.62**
	Forest Hill Ave	Baseline	65.9	1.3	32.8	**0.96**	39.2	15.2	45.6	**0.44**	1.2	88.8	10.0	**0.97**	1.2	48.1	50.6	**0.95**	11.5	78.3	10.2	**0.74**	1.2	71.1	27.7	**0.97**
		HCS	4.3	52.6	43.1	**0.85**	30.7	13.5	55.8	**0.39**	35.2	45.6	19.2	**0.13**	20.4	49.7	29.9	**0.42**	52.3	10.1	37.6	**0.68**	30.1	35.8	34.1	**0.09**
		Synchro	17.3	39.3	43.4	**0.39**	10.7	27.9	61.4	**0.45**	44.3	51.6	4.1	**0.08**	23.8	39.3	36.9	**0.25**	53.2	8.3	38.5	**0.73**	25.4	45.1	29.5	**0.28**
		Vistro	31.5	21.5	47.0	**0.19**	31.9	10.5	57.6	**0.50**	30.0	54.9	15.1	**0.29**	22.4	33.6	44.0	**0.20**	58.5	5.6	35.9	**0.83**	29.1	39.9	31.1	**0.16**
	Puetz Rd	Baseline	48.6	44.4	7.0	**0.04**	13.4	65.2	21.4	**0.66**	53.0	42.7	4.3	**0.11**	33.2	61.4	5.4	**0.30**	44.4	44.4	11.2	**0.00**	53.0	42.7	4.3	**0.11**
		HCS	88.7	1.6	9.7	**0.96**	19.6	31.6	48.8	**0.24**	71.3	24.7	4.0	**0.49**	79.5	15.9	4.6	**0.67**	48.7	30.4	20.8	**0.23**	70.7	23.4	6.0	**0.50**
		Synchro	37.3	57.7	5.1	**0.21**	33.0	30.5	36.4	**0.04**	53.3	44.1	2.5	**0.09**	95.8	0.8	3.4	**0.98**	17.0	43.3	39.7	**0.44**	49.1	49.2	1.7	**0.00**
		Vistro	82.5	10.4	7.1	**0.78**	39.0	17.2	43.8	**0.39**	69.8	25.5	4.7	**0.46**	90.6	4.0	5.5	**0.92**	60.2	16.6	23.2	**0.57**	68.2	27.0	4.8	**0.43**
	Centennial Dr	Baseline	26.3	0.0	73.7	**1.00**	32.3	52.0	15.7	**0.23**	22.9	55.3	21.7	**0.41**	6.5	66.8	26.7	**0.82**	37.4	54.7	7.9	**0.19**	27.0	63.9	9.1	**0.41**
		HCS	4.4	33.4	62.2	**0.77**	56.0	11.6	32.5	**0.66**	41.2	37.0	21.8	**0.05**	86.0	0.0	14.0	**1.00**	88.5	5.3	6.1	**0.89**	44.7	16.8	38.5	**0.45**
		Synchro	16.3	3.4	80.3	**0.66**	62.3	9.8	27.9	**0.73**	28.0	49.6	22.4	**0.28**	32.6	40.5	26.9	**0.11**	23.7	49.5	26.7	**0.35**	52.9	39.7	7.4	**0.14**
		Vistro	22.3	14.0	63.7	**0.23**	59.7	12.1	28.2	**0.66**	40.5	35.0	24.5	**0.07**	41.4	27.7	30.9	**0.20**	86.8	7.9	5.3	**0.83**	41.3	20.9	37.8	**0.33**
WIS 67	Oconomowoc Pkwy	Baseline	6.5	45.9	47.6	**0.75**					45.9	54.1	0.0	**0.08**	2.9	0.0	97.1	**1.00**					45.9	54.1	0.0	**0.08**
		HCS	11.5	45.3	43.2	**0.60**					23.0	76.2	0.8	**0.54**	14.6	25.5	59.9	**0.27**					23.0	76.2	0.8	**0.54**
		Synchro	24.3	26.1	49.6	**0.04**					69.3	28.1	2.6	**0.42**	20.8	0.0	79.2	**1.00**					69.3	28.1	2.6	**0.42**
		Vistro	28.5	29.4	42.1	**0.01**					80.2	19.1	0.8	**0.62**	25.3	7.1	67.6	**0.56**					80.2	19.1	0.8	**0.62**
	County B/ Valley Rd	Baseline	3.9	11.4	84.8	**0.49**	27.6	38.3	34.2	**0.16**	45.6	48.6	5.8	**0.03**	12.8	0.0	87.3	**1.00**	79.9	15.2	4.8	**0.68**	43.8	41.9	14.3	**0.02**
		HCS	42.9	0.0	57.1	**1.00**	24.9	30.8	44.3	**0.11**	60.1	30.8	9.0	**0.32**	0.0	1.5	98.5	**1.00**	81.2	14.3	4.5	**0.70**	55.6	18.8	25.6	**0.49**
		Synchro	4.6	16.8	78.6	**0.57**	24.4	33.6	42.0	**0.16**	60.3	29.8	9.9	**0.34**	2.3	1.5	96.2	**0.19**	45.8	44.3	9.9	**0.02**	43.5	51.2	5.3	**0.08**
		Vistro	13.8	7.7	78.5	**0.28**	45.3	4.6	50.1	**0.82**	66.2	30.0	3.8	**0.38**	3.1	0.8	96.1	**0.60**	92.3	5.4	2.3	**0.89**	60.0	18.5	21.5	**0.53**
	Oconomowoc Dr	Baseline	0.0	32.5	67.5	**1.00**	80.8	11.5	7.7	**0.75**	1.9	43.3	54.8	**0.91**	39.4	0.0	60.6	**1.00**	41.3	30.7	28.0	**0.15**	1.9	48.2	49.9	**0.92**
		HCS	4.8	38.1	57.1	**0.78**	75.4	11.9	12.7	**0.73**	12.7	35.0	52.3	**0.47**	1.6	34.9	63.5	**0.91**	27.8	33.3	38.9	**0.09**	7.9	54.8	37.3	**0.75**
		Synchro	12.5	39.1	48.5	**0.52**	30.9	60.3	8.8	**0.32**	16.8	42.7	40.5	**0.43**	10.3	22.8	66.9	**0.38**	26.4	31.6	41.9	**0.09**	33.1	38.2	28.7	**0.07**
		Vistro	22.8	26.8	50.4	**0.08**	39.0	56.1	4.9	**0.18**	11.4	69.9	18.7	**0.72**	12.2	22.8	65.0	**0.30**	45.5	9.0	45.5	**0.67**	34.1	28.5	37.4	**0.09**
	I-94 WB Ramps	Baseline	3.7	72.2	24.0	**0.90**																	17.6	82.4	0.0	**0.65**
		HCS	5.2	58.3	36.5	**0.84**																	38.1	60.4	1.5	**0.23**
		Synchro	68.4	0.0	31.6	**1.00**																	46.8	49.9	3.3	**0.03**
		Vistro	24.3	36.8	38.9	**0.20**																	32.3	66.9	0.7	**0.35**
	I-94 EB Ramps	Baseline									24.5	74.9	0.6	**0.51**												
		HCS									0.0	99.2	0.8	**1.00**												
		Synchro									19.7	80.3	0.0	**0.61**												
		Vistro									38.7	61.3	0.0	**0.23**												

Balance Measure Summary

	Average	Median	Std. Dev.
Baseline	0.55	0.51	0.35
HCS	0.59	0.66	0.31
Synchro	0.42	0.35	0.32
Vistro	0.51	0.56	0.27

Average Phase Termination Data

	Avg. % FO	Avg. % GO	Avg % Skip
Baseline	27.4	46.9	25.7
HCS	42.4	28.1	29.5
Synchro	40.4	31.8	27.8
Vistro	47.3	23.4	29.3

Median and Average Balance Measure Data
Summary by Phase and Type

		average					median		
WIS 38		maj lts	min lts	min thrus			maj lts	min lts	min thrus
		1 & 5	3 & 7	4 & 8			1 & 5	3 & 7	4 & 8
	Baseline	0.56	0.49	0.66		Baseline	0.58	0.32	0.79
	HCS	0.68	0.63	0.55		HCS	0.77	0.70	0.53
	Synchro	0.41	0.54	0.34		Synchro	0.37	0.59	0.29
	Vistro	0.44	0.55	0.42		Vistro	0.34	0.55	0.35
WIS 67		average					median		
		maj lts	min lts	min thrus			maj lts	min lts	min thrus
		1 & 5	3 & 7	4 & 8			1 & 5	3 & 7	4 & 8
	Baseline	0.38	0.56	0.59		Baseline	0.19	0.55	0.79
	HCS	0.71	0.51	0.40		HCS	0.89	0.56	0.24
	Synchro	0.46	0.47	0.31		Synchro	0.38	0.44	0.24
	Vistro	0.65	0.66	0.48		Vistro	0.56	0.72	0.59

Median and Average Platoon Ratio Data
Summary by Phase and Type

IX Name	Average Platoon Ratio							
	Baseline 2	HCS 2	Synchro 2	Vistro 2	Baseline 6	HCS 6	Synchro 6	Vistro 6
38 & Drexel					1.4	1.26	1.31	1.21
38 & Susan	1.16	1.04	1.05	1.1	0.99	0.94	1.06	1.04
38 & Forest Hill	1.29	1.16	1.08	1.29	1.04	1.24	1.11	1.23
38 & Puetz	1.43	1.04	1.12	1.21	1.2	1.15	1.02	1.09
38 & Centennial	1.3	1.28	1.14	1.26				
67 & Oconomowoc Pkwy					1.05	1	1.09	1.06
67 & County B	1.15	1.29	1.01	1.13	1.27	1.3	1.29	1.08
67 & Oconomowoc Dr	1.18	0.82	1.11	1.01	1.04	1.1	1.08	1.01
67 & I-94 WB	1.15	0.95	1.11	1.11	1.08	1.1	1.02	0.97
67 & I-94 EB	1.16	0.95	0.94	1.09				

IX Name	Median Platoon Ratio							
	Baseline 2	HCS 2	Synchro 2	Vistro 2	Baseline 6	HCS 6	Synchro 6	Vistro 6
38 & Drexel					1.39	1.23	1.17	1.2
38 & Susan	1.17	1.05	1.06	1.11	0.99	0.93	1.05	1.04
38 & Forest Hill	1.29	1.18	1.05	1.28	1.06	1.2	1.13	1.25
38 & Puetz	1.42	1.05	1.12	1.21	1.21	1.17	1.05	1.08
38 & Centennial	1.31	1.31	1.18	1.27				
67 & Oconomowoc Pkwy					1.04	1	1.05	1.07
67 & County B	1.11	1.23	1.02	1.15	1.3	1.3	1.26	1.07
67 & Oconomowoc Dr	1.17	0.85	1.12	0.98	1.02	1.1	1.08	1.02
67 & I-94 WB	1.16	0.94	1.16	1.12	1.07	1.11	1	0.98
67 & I-94 EB	1.17	0.95	0.93	1.08				

	Average WIS 38 Phase 2 PR	Average WIS 67 Phase 6 PR
Baseline	1.30	1.11
HCS	1.13	1.13
Synchro	1.10	1.12
Vistro	1.22	1.03

WIS 38 Travel Time Data

tmc_code	measurement_tstamp	speed	travel_time_seconds	data_density	
107-14511	6/5/18 4:30 PM	23	155.11	A	5
107-14511	6/5/18 4:45 PM	31	115.08	A	5
107-14511	6/5/18 4:55 PM	20	178.38	A	5
107-14511	6/5/18 5:05 PM	32	111.49	A	5
107-14511	6/5/18 5:15 PM	27	132.13	A	5
107-14511	6/5/18 5:20 PM	21	169.89	A	5
107-14511	6/5/18 5:25 PM	31	115.08	A	5
107-14511	6/5/18 5:30 PM	26	137.22	A	5
107+14512	6/5/18 4:30 PM	21	166.63	A	5
107+14512	6/5/18 4:35 PM	27	129.6	A	5
107+14512	6/5/18 4:40 PM	25	139.97	A	5
107+14512	6/5/18 5:20 PM	27	129.6	A	5
107-14511	6/6/18 4:55 PM	38	93.88	A	6
107-14511	6/6/18 5:00 PM	34	104.93	A	6
107-14511	6/6/18 5:05 PM	24	148.65	A	6
107-14511	6/6/18 5:10 PM	9	396.4	A	6
107-14511	6/6/18 5:15 PM	26	137.22	A	6
107-14511	6/6/18 5:20 PM	19	187.77	A	6
107-14511	6/6/18 5:25 PM	16	222.98	A	6
107-14511	6/6/18 5:30 PM	22	162.16	A	6
107+14512	6/6/18 4:30 PM	19	184.17	A	6
107+14512	6/6/18 4:35 PM	25	139.97	A	6
107+14512	6/6/18 4:50 PM	29	120.66	A	6
107+14512	6/6/18 5:05 PM	29	120.66	A	6
107+14512	6/6/18 5:20 PM	29	120.66	A	6
107-14511	6/7/18 4:30 PM	32	111.49	A	7
107-14511	6/7/18 4:35 PM	26	137.22	A	7
107-14511	6/7/18 4:40 PM	15	237.84	A	7
107-14511	6/7/18 4:50 PM	23	155.11	A	7
107-14511	6/7/18 4:55 PM	37	96.42	A	7
107-14511	6/7/18 5:05 PM	42	84.94	A	7
107-14511	6/7/18 5:10 PM	20	178.38	A	7
107-14511	6/7/18 5:20 PM	20	178.38	A	7
107-14511	6/7/18 5:25 PM	17	209.86	A	7
107-14511	6/7/18 5:30 PM	19	187.77	A	7
107+14512	6/7/18 4:50 PM	30	116.64	A	7
107+14512	6/7/18 4:55 PM	31	112.88	A	7
107+14512	6/7/18 5:00 PM	24	145.8	A	7
107-14511	6/12/18 4:35 PM	17	209.86	A	12
107-14511	6/12/18 4:40 PM	21	169.89	A	12
107-14511	6/12/18 4:45 PM	13	274.43	A	12
107-14511	6/12/18 4:50 PM	20	178.38	A	12
107-14511	6/12/18 4:55 PM	7	509.66	A	12
107-14511	6/12/18 5:05 PM	33	108.11	A	12
107-14511	6/12/18 5:20 PM	29	123.02	A	12
107-14511	6/12/18 5:30 PM	35	101.93	A	12
107+14512	6/12/18 4:40 PM	40	87.48	A	12
107+14512	6/12/18 4:45 PM	22	159.06	A	12
107+14512	6/12/18 4:50 PM	37	94.57	A	12
107+14512	6/12/18 4:55 PM	36	97.2	A	12
107+14512	6/12/18 5:00 PM	31	112.88	A	12
107+14512	6/12/18 5:20 PM	40	87.48	A	12
107-14511	6/13/18 4:35 PM	21	169.89	A	13
107-14511	6/13/18 4:40 PM	22	162.16	A	13
107-14511	6/13/18 4:45 PM	9	396.4	A	13
107-14511	6/13/18 4:50 PM	15	237.84	A	13
107-14511	6/13/18 4:55 PM	19	187.77	A	13
107-14511	6/13/18 5:00 PM	25	142.7	A	13
107-14511	6/13/18 5:10 PM	23	155.11	A	13
107-14511	6/13/18 5:15 PM	30	118.92	A	13
107-14511	6/13/18 5:20 PM	23	155.11	A	13
107-14511	6/13/18 5:25 PM	24	148.65	A	13
107-14511	6/13/18 5:30 PM	31	115.08	A	13
107+14512	6/13/18 4:30 PM	23	152.14	A	13
107+14512	6/13/18 5:00 PM	27	129.6	A	13
107+14512	6/13/18 5:25 PM	25	139.97	A	13
107+14512	6/13/18 5:30 PM	27	129.6	A	13
107-14511	6/14/18 4:35 PM	26	137.22	A	14
107-14511	6/14/18 4:40 PM	16	222.98	A	14
107-14511	6/14/18 4:45 PM	14	254.83	A	14
107-14511	6/14/18 4:50 PM	15	237.84	A	14
107-14511	6/14/18 5:15 PM	13	274.43	A	14
107-14511	6/14/18 5:30 PM	16	222.98	A	14
107+14512	6/14/18 4:30 PM	29	120.66	A	14

WIS 38 Travel Time Data

tmc_code	measurement_tstamp	speed	travel_time_seconds	data_density	
107+14512	6/14/18 4:50 PM	27	129.6	A	14
107+14512	6/14/18 5:15 PM	40	87.48	A	14
107+14512	6/14/18 5:25 PM	35	99.98	A	14
107-14511	6/19/18 4:35 PM	24	148.65	A	19
107-14511	6/19/18 4:45 PM	16	222.98	A	19
107-14511	6/19/18 4:55 PM	12	297.3	A	19
107-14511	6/19/18 5:00 PM	6	594.6	A	19
107-14511	6/19/18 5:15 PM	13	274.43	A	19
107-14511	6/19/18 5:20 PM	9	396.4	A	19
107-14511	6/19/18 5:25 PM	12	297.3	A	19
107-14511	6/19/18 5:30 PM	26	137.22	A	19
107+14512	6/19/18 4:30 PM	33	106.04	A	19
107+14512	6/19/18 4:40 PM	20	174.96	A	19
107+14512	6/19/18 4:45 PM	19	184.17	A	19
107+14512	6/19/18 4:50 PM	43	81.38	A	19
107+14512	6/19/18 4:55 PM	26	134.59	A	19
107+14512	6/19/18 5:00 PM	23	152.14	A	19
107+14512	6/19/18 5:10 PM	23	152.14	A	19
107+14512	6/19/18 5:30 PM	19	184.17	A	19
107-14511	6/20/18 4:35 PM	22	162.16	A	20
107-14511	6/20/18 4:40 PM	22	162.16	A	20
107-14511	6/20/18 4:50 PM	21	169.89	A	20
107-14511	6/20/18 4:55 PM	17	209.86	A	20
107-14511	6/20/18 5:00 PM	12	297.3	A	20
107-14511	6/20/18 5:05 PM	15	237.84	A	20
107-14511	6/20/18 5:10 PM	7	509.66	A	20
107-14511	6/20/18 5:30 PM	26	137.22	A	20
107+14512	6/20/18 4:30 PM	20	174.96	A	20
107+14512	6/20/18 4:35 PM	28	124.97	A	20
107+14512	6/20/18 4:40 PM	32	109.35	A	20
107+14512	6/20/18 5:20 PM	24	145.8	A	20
107+14512	6/20/18 5:25 PM	35	99.98	A	20
107+14512	6/20/18 5:30 PM	17	205.84	A	20
107-14511	6/21/18 4:30 PM	21	169.89	A	21
107-14511	6/21/18 4:50 PM	13	274.43	A	21
107-14511	6/21/18 5:05 PM	7	509.66	A	21
107-14511	6/21/18 5:10 PM	14	254.83	A	21
107-14511	6/21/18 5:15 PM	14	254.83	A	21
107-14511	6/21/18 5:20 PM	9	396.4	A	21
107+14512	6/21/18 4:30 PM	34	102.92	A	21
107+14512	6/21/18 4:35 PM	32	109.35	A	21
107+14512	6/21/18 4:40 PM	23	152.14	A	21
107+14512	6/21/18 4:50 PM	22	159.06	A	21
107+14512	6/21/18 5:00 PM	23	152.14	A	21
107+14512	6/21/18 5:05 PM	13	269.17	A	21
107+14512	6/21/18 5:20 PM	18	194.4	A	21
107+14512	6/21/18 5:25 PM	16	218.7	A	21
107-14511	6/26/18 4:45 PM	28	127.42	A	26
107-14511	6/26/18 4:50 PM	22	162.16	A	26
107-14511	6/26/18 4:55 PM	19	187.77	A	26
107-14511	6/26/18 5:00 PM	13	274.43	A	26
107-14511	6/26/18 5:05 PM	19	187.77	A	26
107-14511	6/26/18 5:10 PM	22	162.16	A	26
107-14511	6/26/18 5:15 PM	17	209.86	A	26
107-14511	6/26/18 5:20 PM	20	178.38	A	26
107-14511	6/26/18 5:25 PM	18	198.2	A	26
107-14511	6/26/18 5:30 PM	22	162.16	A	26
107+14512	6/26/18 4:30 PM	35	99.98	A	26
107+14512	6/26/18 4:35 PM	11	318.11	A	26
107+14512	6/26/18 4:40 PM	24	145.8	A	26
107+14512	6/26/18 4:45 PM	23	152.14	A	26
107+14512	6/26/18 4:50 PM	21	166.63	A	26
107+14512	6/26/18 4:55 PM	25	139.97	A	26
107+14512	6/26/18 5:00 PM	31	112.88	A	26
107+14512	6/26/18 5:05 PM	18	194.4	A	26
107+14512	6/26/18 5:10 PM	9	388.81	A	26
107+14512	6/26/18 5:20 PM	27	129.6	A	26
107+14512	6/26/18 5:25 PM	21	166.63	A	26
107-14511	6/27/18 4:30 PM	13	274.43	A	27
107-14511	6/27/18 4:35 PM	17	209.86	A	27
107-14511	6/27/18 4:40 PM	34	104.93	A	27
107-14511	6/27/18 4:45 PM	20	178.38	A	27
107-14511	6/27/18 4:50 PM	21	169.89	A	27
107-14511	6/27/18 4:55 PM	40	89.19	A	27

WIS 38 Travel Time Data

tmc_code	measurement_tstamp	speed	travel_time_seconds	data_density	
107-14511	6/27/18 5:15 PM	13	274.43	A	27
107-14511	6/27/18 5:20 PM	17	209.86	A	27
107+14512	6/27/18 4:50 PM	15	233.28	A	27
107+14512	6/27/18 4:55 PM	22	159.06	A	27
107+14512	6/27/18 5:00 PM	24	145.8	A	27
107+14512	6/27/18 5:05 PM	25	139.97	B	27
107+14512	6/27/18 5:10 PM	12	291.61	A	27
107-14511	6/28/18 4:30 PM	22	162.16	A	28
107-14511	6/28/18 4:35 PM	23	155.11	A	28
107-14511	6/28/18 4:40 PM	22	162.16	A	28
107-14511	6/28/18 4:45 PM	23	155.11	A	28
107-14511	6/28/18 4:50 PM	29	123.02	A	28
107-14511	6/28/18 4:55 PM	27	132.13	A	28
107-14511	6/28/18 5:15 PM	35	101.93	A	28
107-14511	6/28/18 5:20 PM	15	237.84	A	28
107-14511	6/28/18 5:25 PM	28	127.42	A	28
107-14511	6/28/18 5:30 PM	39	91.48	A	28
107+14512	6/28/18 4:35 PM	17	205.84	A	28
107+14512	6/28/18 4:45 PM	39	89.72	A	28
107+14512	6/28/18 4:50 PM	37	94.57	A	28
107+14512	6/28/18 4:55 PM	28	124.97	A	28
107+14512	6/28/18 5:00 PM	23	152.14	A	28
107+14512	6/28/18 5:05 PM	30	116.64	A	28
107+14512	6/28/18 5:10 PM	35	99.98	A	28
107+14512	6/28/18 5:15 PM	16	218.7	A	28
107+14512	6/28/18 5:20 PM	25	139.97	A	28
107+14512	6/28/18 5:30 PM	33	106.04	A	28

WIS 38 Travel Time Data

NEG direction

tmc_code	measurement_tstamp	speed	travel_time_seconds	data_density	
107-14511	6/5/18 4:30 PM	23	155.11	A	5
107-14511	6/5/18 4:45 PM	31	115.08	A	5
107-14511	6/5/18 4:55 PM	20	178.38	A	5
107-14511	6/5/18 5:05 PM	32	111.49	A	5
107-14511	6/5/18 5:15 PM	27	132.13	A	5
107-14511	6/5/18 5:20 PM	21	169.89	A	5
107-14511	6/5/18 5:25 PM	31	115.08	A	5
107-14511	6/5/18 5:30 PM	26	137.22	A	5
107-14511	6/6/18 4:55 PM	38	93.88	A	6
107-14511	6/6/18 5:00 PM	34	104.93	A	6
107-14511	6/6/18 5:05 PM	24	148.65	A	6
107-14511	6/6/18 5:10 PM	9	396.4	A	6
107-14511	6/6/18 5:15 PM	26	137.22	A	6
107-14511	6/6/18 5:20 PM	19	187.77	A	6
107-14511	6/6/18 5:25 PM	16	222.98	A	6
107-14511	6/6/18 5:30 PM	22	162.16	A	6
107-14511	6/7/18 4:30 PM	32	111.49	A	7
107-14511	6/7/18 4:35 PM	26	137.22	A	7
107-14511	6/7/18 4:40 PM	15	237.84	A	7
107-14511	6/7/18 4:50 PM	23	155.11	A	7
107-14511	6/7/18 4:55 PM	37	96.42	A	7
107-14511	6/7/18 5:05 PM	42	84.94	A	7
107-14511	6/7/18 5:10 PM	20	178.38	A	7
107-14511	6/7/18 5:20 PM	20	178.38	A	7
107-14511	6/7/18 5:25 PM	17	209.86	A	7
107-14511	6/7/18 5:30 PM	19	187.77	A	7
107-14511	6/12/18 4:35 PM	17	209.86	A	12
107-14511	6/12/18 4:40 PM	21	169.89	A	12
107-14511	6/12/18 4:45 PM	13	274.43	A	12
107-14511	6/12/18 4:50 PM	20	178.38	A	12
107-14511	6/12/18 4:55 PM	7	509.66	A	12
107-14511	6/12/18 5:05 PM	33	108.11	A	12
107-14511	6/12/18 5:20 PM	29	123.02	A	12
107-14511	6/12/18 5:30 PM	35	101.93	A	12
107-14511	6/13/18 4:35 PM	21	169.89	A	13
107-14511	6/13/18 4:40 PM	22	162.16	A	13
107-14511	6/13/18 4:45 PM	9	396.4	A	13
107-14511	6/13/18 4:50 PM	15	237.84	A	13
107-14511	6/13/18 4:55 PM	19	187.77	A	13
107-14511	6/13/18 5:00 PM	25	142.7	A	13
107-14511	6/13/18 5:10 PM	23	155.11	A	13
107-14511	6/13/18 5:15 PM	30	118.92	A	13
107-14511	6/13/18 5:20 PM	23	155.11	A	13
107-14511	6/13/18 5:25 PM	24	148.65	A	13
107-14511	6/13/18 5:30 PM	31	115.08	A	13
107-14511	6/14/18 4:35 PM	26	137.22	A	14
107-14511	6/14/18 4:40 PM	16	222.98	A	14
107-14511	6/14/18 4:45 PM	14	254.83	A	14
107-14511	6/14/18 4:50 PM	15	237.84	A	14
107-14511	6/14/18 5:15 PM	13	274.43	A	14
107-14511	6/14/18 5:30 PM	16	222.98	A	14
107-14511	6/19/18 4:35 PM	24	148.65	A	19
107-14511	6/19/18 4:45 PM	16	222.98	A	19
107-14511	6/19/18 4:55 PM	12	297.3	A	19
107-14511	6/19/18 5:00 PM	6	594.6	A	19
107-14511	6/19/18 5:15 PM	13	274.43	A	19
107-14511	6/19/18 5:20 PM	9	396.4	A	19
107-14511	6/19/18 5:25 PM	12	297.3	A	19
107-14511	6/19/18 5:30 PM	26	137.22	A	19
107-14511	6/20/18 4:35 PM	22	162.16	A	20
107-14511	6/20/18 4:40 PM	22	162.16	A	20
107-14511	6/20/18 4:50 PM	21	169.89	A	20
107-14511	6/20/18 4:55 PM	17	209.86	A	20
107-14511	6/20/18 5:00 PM	12	297.3	A	20
107-14511	6/20/18 5:05 PM	15	237.84	A	20
107-14511	6/20/18 5:10 PM	7	509.66	A	20
107-14511	6/20/18 5:30 PM	26	137.22	A	20
107-14511	6/21/18 4:30 PM	21	169.89	A	21
107-14511	6/21/18 4:50 PM	13	274.43	A	21
107-14511	6/21/18 5:05 PM	7	509.66	A	21
107-14511	6/21/18 5:10 PM	14	254.83	A	21
107-14511	6/21/18 5:15 PM	14	254.83	A	21
107-14511	6/21/18 5:20 PM	9	396.4	A	21
107-14511	6/26/18 4:45 PM	28	127.42	A	26

	Mdn Spd	Avg Spd
Baseline	23.5	25.0
Vistro	21.0	20.7
HCS	14.0	15.4
Synchro	22.0	22.8

WIS 38 Travel Time Data

NEG direction

tmc_code	measurement_tstamp	speed	travel_time_seconds	data_density	
107-14511	6/26/18 4:50 PM	22	162.16	A	26
107-14511	6/26/18 4:55 PM	19	187.77	A	26
107-14511	6/26/18 5:00 PM	13	274.43	A	26
107-14511	6/26/18 5:05 PM	19	187.77	A	26
107-14511	6/26/18 5:10 PM	22	162.16	A	26
107-14511	6/26/18 5:15 PM	17	209.86	A	26
107-14511	6/26/18 5:20 PM	20	178.38	A	26
107-14511	6/26/18 5:25 PM	18	198.2	A	26
107-14511	6/26/18 5:30 PM	22	162.16	A	26
107-14511	6/27/18 4:30 PM	13	274.43	A	27
107-14511	6/27/18 4:35 PM	17	209.86	A	27
107-14511	6/27/18 4:40 PM	34	104.93	A	27
107-14511	6/27/18 4:45 PM	20	178.38	A	27
107-14511	6/27/18 4:50 PM	21	169.89	A	27
107-14511	6/27/18 4:55 PM	40	89.19	A	27
107-14511	6/27/18 5:15 PM	13	274.43	A	27
107-14511	6/27/18 5:20 PM	17	209.86	A	27
107-14511	6/28/18 4:30 PM	22	162.16	A	28
107-14511	6/28/18 4:35 PM	23	155.11	A	28
107-14511	6/28/18 4:40 PM	22	162.16	A	28
107-14511	6/28/18 4:45 PM	23	155.11	A	28
107-14511	6/28/18 4:50 PM	29	123.02	A	28
107-14511	6/28/18 4:55 PM	27	132.13	A	28
107-14511	6/28/18 5:15 PM	35	101.93	A	28
107-14511	6/28/18 5:20 PM	15	237.84	A	28
107-14511	6/28/18 5:25 PM	28	127.42	A	28
107-14511	6/28/18 5:30 PM	39	91.48	A	28

	Mdn Spd	Avg Spd

WIS 38 Travel Time Data

POS Direction

tmc_code	measurement_tstamp	speed	travel_time_seconds	data_density	
107+14512	6/5/18 4:30 PM	21	166.63	A	5
107+14512	6/5/18 4:35 PM	27	129.6	A	5
107+14512	6/5/18 4:40 PM	25	139.97	A	5
107+14512	6/5/18 5:20 PM	27	129.6	A	5
107+14512	6/6/18 4:30 PM	19	184.17	A	6
107+14512	6/6/18 4:35 PM	25	139.97	A	6
107+14512	6/6/18 4:50 PM	29	120.66	A	6
107+14512	6/6/18 5:05 PM	29	120.66	A	6
107+14512	6/6/18 5:20 PM	29	120.66	A	6
107+14512	6/7/18 4:50 PM	30	116.64	A	7
107+14512	6/7/18 4:55 PM	31	112.88	A	7
107+14512	6/7/18 5:00 PM	24	145.8	A	7
107+14512	6/12/18 4:40 PM	40	87.48	A	12
107+14512	6/12/18 4:45 PM	22	159.06	A	12
107+14512	6/12/18 4:50 PM	37	94.57	A	12
107+14512	6/12/18 4:55 PM	36	97.2	A	12
107+14512	6/12/18 5:00 PM	31	112.88	A	12
107+14512	6/12/18 5:20 PM	40	87.48	A	12
107+14512	6/13/18 4:30 PM	23	152.14	A	13
107+14512	6/13/18 5:00 PM	27	129.6	A	13
107+14512	6/13/18 5:25 PM	25	139.97	A	13
107+14512	6/13/18 5:30 PM	27	129.6	A	13
107+14512	6/14/18 4:30 PM	29	120.66	A	14
107+14512	6/14/18 4:50 PM	27	129.6	A	14
107+14512	6/14/18 5:15 PM	40	87.48	A	14
107+14512	6/14/18 5:25 PM	35	99.98	A	14
107+14512	6/19/18 4:30 PM	33	106.04	A	19
107+14512	6/19/18 4:40 PM	20	174.96	A	19
107+14512	6/19/18 4:45 PM	19	184.17	A	19
107+14512	6/19/18 4:50 PM	43	81.38	A	19
107+14512	6/19/18 4:55 PM	26	134.59	A	19
107+14512	6/19/18 5:00 PM	23	152.14	A	19
107+14512	6/19/18 5:10 PM	23	152.14	A	19
107+14512	6/19/18 5:30 PM	19	184.17	A	19
107+14512	6/20/18 4:30 PM	20	174.96	A	20
107+14512	6/20/18 4:35 PM	28	124.97	A	20
107+14512	6/20/18 4:40 PM	32	109.35	A	20
107+14512	6/20/18 5:20 PM	24	145.8	A	20
107+14512	6/20/18 5:25 PM	35	99.98	A	20
107+14512	6/20/18 5:30 PM	17	205.84	A	20
107+14512	6/21/18 4:30 PM	34	102.92	A	21
107+14512	6/21/18 4:35 PM	32	109.35	A	21
107+14512	6/21/18 4:40 PM	23	152.14	A	21
107+14512	6/21/18 4:50 PM	22	159.06	A	21
107+14512	6/21/18 5:00 PM	23	152.14	A	21
107+14512	6/21/18 5:05 PM	13	269.17	A	21
107+14512	6/21/18 5:20 PM	18	194.4	A	21
107+14512	6/21/18 5:25 PM	16	218.7	A	21
107+14512	6/26/18 4:30 PM	35	99.98	A	26
107+14512	6/26/18 4:35 PM	11	318.11	A	26
107+14512	6/26/18 4:40 PM	24	145.8	A	26
107+14512	6/26/18 4:45 PM	23	152.14	A	26
107+14512	6/26/18 4:50 PM	21	166.63	A	26
107+14512	6/26/18 4:55 PM	25	139.97	A	26
107+14512	6/26/18 5:00 PM	31	112.88	A	26
107+14512	6/26/18 5:05 PM	18	194.4	A	26
107+14512	6/26/18 5:10 PM	9	388.81	A	26
107+14512	6/26/18 5:20 PM	27	129.6	A	26
107+14512	6/26/18 5:25 PM	21	166.63	A	26
107+14512	6/27/18 4:50 PM	15	233.28	A	27
107+14512	6/27/18 4:55 PM	22	159.06	A	27
107+14512	6/27/18 5:00 PM	24	145.8	A	27
107+14512	6/27/18 5:05 PM	25	139.97	B	27
107+14512	6/27/18 5:10 PM	12	291.61	A	27

	Mdn Spd	Avg Spd
Baseline	27.0	26.3
Vistro	30.0	31.4
HCS	23.0	24.7
Synchro	22.5	21.4

LT 85th %tile	LT Avg Split	Thru 85th %tile	Thru Avg Split
85%	70%	90%	75%
100%	90%	125%	100%

Isolated Intersection WisBOM Data Comparison

		1	2	3	4	5	6	7	8	LT	THRU
WIS 172 & County EB	Base	MEETS	MEETS		MEETS	MEETS	MEETS		MEETS	2	4
	HCS									0	0
	Synchro	MEETS	MEETS	MEETS	MEETS	MEETS	MEETS		MEETS	3	4
	Vistro		MEETS				MEETS		MEETS	0	3

		1	2	3	4	5	6	7	8	LT	THRU
WIS 52 & 28th	Base		MEETS			MEETS				1	1
	HCS						MEETS		MEETS	0	2
	Synchro			MEETS						1	0
	Vistro	MEETS							MEETS	1	1

		1	2	3	4	5	6	7	8	LT	THRU
WIS 20 & WIS 36	Base		MEETS				MEETS			0	2
	HCS		MEETS				MEETS			0	2
	Synchro	MEETS			MEETS				MEETS	1	2
	Vistro		MEETS			#DIV/0!	MEETS				

		1	2	3	4	5	6	7	8	LT	THRU	RT
WIS 67 & US 14	Base								MEETS	0	1	0
	HCS								MEETS	0	1	0
	Synchro			MEETS						0	0	1
	Vistro								MEETS	0	1	0

Number of Phases that meet, and % of total phases analyzed

		LT	TH	RT
Total	Base	3	8	0
		30.0%	53.3%	0.0%
	HCS	0	5	0
		0.0%	33.3%	0.0%
	Synchro	5	6	1
		50.0%	40.0%	100.0%
	Vistro	1	5	0
		11.1%	45.5%	0.0%

Number of total Phases Analyzed (for reference)

	LT	TH	RT
Base	10	15	1
HCS	10	15	1
Synchro	10	15	1
Vistro	9	11	1

WIS 172 &County EB/Packerland Drive
Northeast Region
Optimized and Baseline WisBOOM Data
Isolated Signalized Intersection

WisBOOM Data				Split Monitor															
				Phase 1		Phase 2		Phase 3		Phase 4		Phase 5		Phase 6		Phase 7		Phase 8	
Timing Plan	Dates	Time Periods		85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split
Baseline	8/7/2018	Peak Hour	4:00 - 5:00 PM	17.2	14.3	51.5	42.5	19.0	17.1	42.5	35.5	19.0	15.9	54.1	41.1	19.0	17.6	41.5	35.1
	8/8/2018	Peak Hour	4:00 - 5:00 PM	19.0	15.6	56.5	45.1	19.0	17.3	41.5	33.3	19.0	16.7	56.5	42.8	19.0	17.1	41.5	34.6
	8/9/2018	Peak Hour	4:00 - 5:00 PM	19.0	17.6	53.6	42.3	19.0	17.6	41.5	38.0	19.0	16.9	56.5	45.2	19.0	17.4	41.5	38.1
HCS	7/31/2018	Peak Hour	4:00 - 5:00 PM	11.0	11.0	55.4	45.4	11.0	11.1	42.0	34.2	11.0	11.0	63.2	45.4	11.0	11.0	43.9	36.1
	8/1/2018	Peak Hour	4:00 - 5:00 PM	11.0	11.0	65.4	49.5	11.0	11.0	44.8	36.5	11.0	11.0	62.5	49.0	11.0	11.0	44.8	36.5
	8/2/2018	Peak Hour	4:00 - 5:00 PM	11.0	11.0	64.4	47.5	11.0	11.0	44.8	35.0	11.0	11.0	65.5	49.1	11.0	11.0	43.5	35.3
Synchro	7/17/2018	Peak Hour	4:00 - 5:00 PM	17.0	13.9	55.5	46.8	20.0	16.3	43.9	35.3	22.0	17.4	51.7	43.2	18.0	16.0	44.6	36.1
	7/18/2018	Peak Hour	4:00 - 5:00 PM	17.0	14.7	60.6	49.6	20.0	17.9	45.4	35.1	22.0	18.2	50.7	44.3	18.0	16.7	43.0	35.7
	7/19/2018	Peak Hour	4:00 - 5:00 PM	17.0	14.2	59.2	50.9	20.0	17.8	40.5	32.8	21.5	16.0	57.7	48.5	18.0	16.7	44.8	36.8
Vistro	7/24/2018	Peak Hour	4:00 - 5:00 PM	20.5	14.9	59.7	45.6	24.1	18.7	34.4	27.6	25.0	18.6	52.8	41.7	11.0	11.0	45.0	35.9
	7/25/2018	Peak Hour	4:00 - 5:00 PM	18.6	14.8	56.5	47.5	21.3	18.6	33.3	29.2	25.7	16.9	57.1	46.8	11.0	11.0	45.4	37.9
	7/26/2018	Peak Hour	4:00 - 5:00 PM	17.9	14.9	62.4	49.7	21.9	18.9	29.2	27.0	25.1	17.0	57.6	50.8	11.0	11.0	43.3	36.4

	EBL		WBT		NBL		SBT		WBL		EBT		SBL		NBT		
	Phase 1		Phase 2		Phase 3		Phase 4		Phase 5		Phase 6		Phase 7		Phase 8		
	Max Split	Min Split	Max Split	Min Split	Max Split	Min Split	Max Split	Min Split	Max Split	Min Split	Max Split	Min Split	Max Split	Min Split	Max Split	Min Split	CL
Existing	**19.0**	**11.0**	**56.5**	**26.5**	**19.0**	**11.0**	**41.5**	**16.5**	**19.0**	**11.0**	**56.5**	**26.5**	**19.0**	**11.0**	**41.5**	**16.5**	136
HCS Optimized	**11.0**		**65.0**		**11.0**		**49.0**		**11.0**		**65.0**		**11.0**		**49.0**		136
Synchro Optimized	**17.0**		**55.0**		**20.0**		**44.0**		**22.0**		**50.0**		**18.0**		**46.0**		136
Vistro Optimized	**22.0**		**56.0**		**32.0**		**26.0**		**27.0**		**51.0**		**11.0**		**47.0**		136

		EBL		WBT		NBL		SBT		WBL		EBT		SBL		NBT	
		Phase 1		Phase 2		Phase 3		Phase 4		Phase 5		Phase 6		Phase 7		Phase 8	
		85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split
Baseline	Three Day Avg	18.4	15.8	53.9	43.3	19.0	17.3	41.8	35.6	19.0	16.5	55.7	43.0	19.0	17.4	41.5	35.9
	Percent of Max Split	97%	83%	95%	77%	100%	91%	101%	86%	100%	87%	99%	76%	100%	91%	100%	87%
HCS	Three Day Avg	11.0	11.0	61.7	47.5	11.0	11.0	43.9	35.2	11.0	11.0	63.7	47.8	11.0	11.0	44.1	36.0
	Percent of Max Split	100%	100%	95%	73%	100%	100%	90%	72%	100%	100%	98%	74%	100%	100%	90%	73%
Synchro	Three Day Avg	17.0	14.3	58.4	49.1	20.0	17.3	43.3	34.4	21.8	17.2	53.4	45.3	18.0	16.5	44.1	36.2
	Percent of Max Split	100%	84%	106%	89%	100%	87%	98%	78%	99%	78%	107%	91%	100%	91%	96%	79%
Vistro	Three Day Avg	19.0	14.9	59.5	47.6	22.4	18.7	32.3	27.9	25.3	17.5	55.8	46.4	11.0	11.0	44.6	36.7
	Percent of Max Split	86%	68%	106%	85%	70%	59%	124%	107%	94%	65%	109%	91%	100%	100%	95%	78%

WIS 52 & 28th Avenue
North Central Region
Optimized and Baseline WisBOOM Data
Isolated Signalized Intersection

Requested WisBOOM Data			Split Monitor															
			Phase 1		Phase 2		Phase 3		Phase 4		Phase 5		Phase 6		Phase 7		Phase 8	
Timing Plan	Dates	Time Periods	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split
Baseline	7/17/2018	Peak Hour 4:15 - 5:15 PM	16.7	13.8	51.5	42.0	12.1	12.1	42.9	36.9	19.1	17.0	40.3	33.6	25.1	20.1	23.0	19.7
	7/18/2018	Peak Hour 4:15 - 5:15 PM	16.1	14.3	58.4	43.4	12.0	12.0	46.8	38.6	23.8	18.8	45.8	34.8	24.2	19.5	27.3	21.3
	7/19/2018	Peak Hour 4:15 - 5:15 PM	14.0	12.8	54.8	44.4	12.0	12.0	47.0	39.2	23.2	22.7	36.5	28.5	24.4	19.1	27.4	22.9
HCS	7/24/2018	Peak Hour 4:15 - 5:15 PM	17.0	14.1	51.6	40.8	12.0	12.0	48.4	37.2	22.2	18.8	43.5	32.3	24.5	19.0	25.5	21.8
	7/25/2018	Peak Hour 4:15 - 5:15 PM	15.7	13.5	55.6	44.7	12.0	12.0	53.4	40.7	24.7	18.8	44.5	33.6	26.7	20.6	29.9	23.4
	7/26/2018	Peak Hour 4:15 - 5:15 PM	13.6	12.8	50.0	41.6	unknown	12.0	48.4	40.2	21.3	17.1	40.0	31.5	25.0	19.2	27.6	22.1
Synchro	8/7/2018	Peak Hour 4:15 - 5:15 PM	15.9	13.7	48.6	38.7	12.9	12.5	52.1	42.5	21.0	17.4	37.7	32.0	30.1	21.8	29.2	22.7
	8/8/2018	Peak Hour 4:15 - 5:15 PM	16.4	14.6	52.7	42.6	12.0	12.0	52.3	41.4	23.8	19.0	41.0	32.5	25.9	20.6	32.9	23.8
	8/9/2018	Peak Hour 4:15 - 5:15 PM	15.0	13.2	48.6	39.0	12.0	12.0	51.3	38.4	22.2	18.0	37.9	30.0	25.8	19.5	29.5	21.8
Vistro	8/21/2018	Peak Hour 4:15 - 5:15 PM	16.8	14.2	49.0	38.3	12.0	12.0	51.4	40.8	20.2	17.2	43.1	31.2	28.7	23.6	28.7	23.6
	8/22/2018	Peak Hour 4:15 - 5:15 PM	13.9	13.8	48.2	40.3	15.8	13.3	46.9	35.6	22.8	18.1	34.9	28.7	25.2	20.0	34.7	26.8
	8/23/2018	Peak Hour 4:15 - 5:15 PM	15.0	13.2	45.7	37.9	22.6	18.7	54.2	43.7	22.7	18.5	31.9	28.6	24.6	19.5	35.3	27.1

	EBL		WBT		NBL		SBT		WBL		EBT		SBL		NBT		
	Phase 1		Phase 2		Phase 3		Phase 4		Phase 5		Phase 6		Phase 7		Phase 8		
	Max Split	Min Split	Max Split	Min Split	Max Split	Min Split	Max Split	Min Split	Max Split	Min Split	Max Split	Min Split	Max Split	Min Split	Max Split	Min Split	CL
Existing	**24.0**	**12.0**	**57**	**23**	**16.0**	**12.0**	**37**	**17**	**24.0**	**12.0**	**67**	**23**	**29.0**	**12.0**	**32**	**17**	152
HCS Optimized	**13.0**		**72.0**		**12.0**		**55.0**		**46.0**		**39.0**		**44.0**		**23.0**		152
Synchro Optimized	**20.0**		**59.0**		**14.0**		**59.0**		**29.0**		**50.0**		**36.0**		**37.0**		152
Vistro Optimized	**17.0**		**63.0**		**12.0**		**60.0**		**39.0**		**41.0**		**45.0**		**27.0**		152

		EBL		WBT		NBL		SBT		WBL		EBT		SBL		NBT	
		Phase 1		Phase 2		Phase 3		Phase 4		Phase 5		Phase 6		Phase 7		Phase 8	
		85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split
Baseline	Three Day Avg	15.6	13.6	54.9	43.3	12.0	12.0	45.6	38.2	22.0	19.5	40.9	32.3	24.6	19.6	25.9	21.3
	Percent of Max Sp	65%	57%	96%	76%	75%	75%	123%	103%	92%	81%	61%	48%	85%	67%	81%	67%
HCS	Three Day Avg	15.4	13.5	52.4	42.4	12.0	12.0	50.1	39.4	22.7	18.2	42.7	32.5	25.4	19.6	27.7	22.4
	Percent of Max Sp	119%	104%	73%	59%	100%	100%	91%	72%	49%	40%	109%	83%	58%	45%	120%	98%
Synchro	Three Day Avg	15.8	13.8	50.0	40.1	12.3	12.2	51.9	40.8	22.3	18.1	38.9	31.5	27.3	20.6	30.5	22.8
	Percent of Max Sp	79%	69%	85%	68%	88%	87%	88%	69%	77%	63%	78%	63%	76%	57%	83%	62%
Vistro	Three Day Avg	15.2	13.7	47.6	38.8	16.8	14.7	50.8	40.0	21.9	17.9	36.6	29.5	26.2	21.0	32.9	25.8
	Percent of Max Sp	90%	81%	76%	62%	140%	122%	85%	67%	56%	46%	89%	72%	58%	47%	122%	96%

WIS 36 & WIS 20/83
Southeast Region
Optimized and Baseline WisBOOM Data
Isolated Signalized Intersection

= The WisBOOM data for the optimized Vistro signal timings showed outputs for the southbound left turn phase (phase 5). Optimized timings produced from this study excluded the southbound left-turn phase, consistent with the existing timings. The optimized HCS and Synchro timings did not include the southbound left-turn phase.

= Phase 1 of the HCS timings had one ocurance (10/11/18) where a very high phase duration was reported (almost 300 seconds). This resulted in a unusually high 85th percentile split and average split.

Requested WisBOOM Data				Split Monitor															
				Phase 1		Phase 2		Phase 3		Phase 4		Phase 5		Phase 6		Phase 7		Phase 8	
Timing Plan	Dates	Time Periods		85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split
Baseline	10/23/2018	Peak Hour	4:45 - 5:45 PM	14.4	12.2	54.0	57.2			37.2	30.3			66.8	56.8			37.2	30.3
	10/24/2018	Peak Hour	4:45 - 5:45 PM	14.4	12.4	55.0	40.5			37.2	44.4			57.6	44.1			37.2	44.4
	10/25/2018	Peak Hour	4:45 - 5:45 PM	18.5	13.7	53.7	47.7			37.2	37.6			63.2	53.8			37.2	37.6
HCS	10/9/2018	Peak Hour	4:45 - 5:45 PM	10.5	10.5	63.7	55.7			38.2	29.1			65.9	59.5			38.2	29.1
	10/10/2018	Peak Hour	4:45 - 5:45 PM	10.5	10.5	53.1	45.1			36.7	28.5			61.6	48.2			36.7	28.5
	10/11/2018	Peak Hour	4:45 - 5:45 PM	149.5	66.1	68.1	60.5			38.2	29.0			97.6	75.4			38.2	29.0
Syncrho	10/16/2018	Peak Hour	4:45 - 5:45 PM	13.5	12.5	79.4	81.7			33.0	24.2			84.7	81.0			33.0	24.2
	10/17/2018	Peak Hour	4:45 - 5:45 PM	13.5	11.5	61.3	50.0			43.2	33.9			65.3	53.5			43.2	33.9
	10/18/2018	Peak Hour	4:45 - 5:45 PM	13.5	12.9	70.6	63.6			43.2	44.5			74.2	68.9			43.2	44.5
Vistro	10/2/2018	Peak Hour	4:45 - 5:45 PM	10.5	10.5	68.9	50.4			35.9	48.6	13.4	12.1	68.8	50.8			35.9	48.6
	10/3/2018	Peak Hour	4:45 - 5:45 PM	10.5	10.5	67.1	52.7			34.6	24.1	15.8	12.8	66.9	52.5			34.6	24.1
	10/4/2018	Peak Hour	4:45 - 5:45 PM	10.5	10.5	62.8	52.6			32.5	26.9	14.7	13.0	64.5	51.7			32.5	26.9

	NBL		SBT				EBT				NBT				WBT			
	Phase 1		Phase 2		Phase 3		Phase 4		Phase 5		Phase 6		Phase 7		Phase 8			
	Max Split	Min Split	Max Split	Min Split	Max Split	Min Split	Max Split	Min Split	Max Split	Min Split	Max Split	Min Split	Max Split	Min Split	Max Split	Min Split	CL	
Existing	**19.5**	**10.5**	**52.4**	**22.4**			**37.2**	**15.2**			**52.4**	**22.4**			**37.2**	**15.2**	109	
HCS Optimized	**11.0**		**59.0**				**39.0**				**70.0**				**39.0**		109	
Synchro Optimized	**14.0**		**51.0**				**44.0**				**65.0**				**44.0**		109	
Vistro Optimized	**11.0**		**54.0**				**44.0**				**65.0**				**44.0**		109	

		NBL		SBT				EBT				NBT				WBT	
		Phase 1		Phase 2		Phase 3		Phase 4		Phase 5		Phase 6		Phase 7		Phase 8	
		85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split
Baseline	Three Day Avg	15.8	12.8	54.2	48.5			37.2	37.4			62.5	51.6			37.2	37.4
	Percent of Max Sp	81%	65%	103%	92%			100%	101%			119%	98%			100%	101%
HCS	Two Day Avg	10.5	10.5	58.4	50.4			37.5	28.8			63.8	53.9			37.5	28.8
	Percent of Max Sp	95%	95%	99%	85%			96%	74%			91%	77%			96%	74%
Synchro	Three Day Avg	13.5	12.3	70.4	65.1			39.8	34.2			74.7	67.8			39.8	34.2
	Percent of Max Sp	96%	88%	138%	128%			90%	78%			115%	104%			90%	78%
Vistro	Three Day Avg	10.5	10.5	66.3	51.9			34.3	33.2	14.6	12.6	66.7	51.7			34.3	33.2
	Percent of Max Sp	95%	95%	123%	96%			78%	75%	#DIV/0!	#DIV/0!	103%	79%			78%	75%

WIS 67 & US 14
Southeast Region
Optimized and Baseline WisBOOM Data
Isolated Signalized Intersection

= All-ped phase, not included in optimization.

Requested WisBOOM Data				Split Monitor															
				Phase 1		Phase 2		Phase 3		Phase 4		Phase 5		Phase 6		Phase 7		Phase 8	
Timing Plan	Dates	Time Periods		85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split
Baseline	10/23/2018	Peak Hour	4:00 - 5:00 PM			53.5	49.4	34.0	27.7			18.0	18.0	36.4	37.7			34.0	27.7
	10/24/2018	Peak Hour	4:00 - 5:00 PM			56.9	53.9	36.0	38.0			18.0	18.0	41.0	42.0			36.0	38.0
	10/25/2018	Peak Hour	4:00 - 5:00 PM			56.9	59.4	35.9	27.7			18.0	18.0	38.6	41.1			35.9	27.7
HCS	10/9/2018	Peak Hour	4:00 - 5:00 PM			80.5	78.8	34.0	29.6			43.0	54.3	28.1	24.4			34.0	29.6
	10/10/2018	Peak Hour	4:00 - 5:00 PM			89.5	97.4	34.0	25.0			43.0	49.1	37.5	48.5			34.0	25.0
	10/11/2018	Peak Hour	4:00 - 5:00 PM			79.6	73.6	34.0	39.1			43.0	48.5	33.9	24.8			34.0	39.1
Synchro	10/16/2018	Peak Hour	4:00 - 5:00 PM			72.6	73.6	38.0	27.7			32.0	37.2	43.4	54.9			38.0	27.7
	10/17/2018	Peak Hour	4:00 - 5:00 PM			69.5	65.6	34.7	25.9			32.0	36.7	37.5	35.1			34.7	25.9
	10/18/2018	Peak Hour	4:00 - 5:00 PM			67.7	59.6	32.7	30.1			32.0	32.0	35.6	27.7			32.7	30.1
Vistro	10/2/2018	Peak Hour	4:00 - 5:00 PM			69.5	64.8	36.0	25.5			26.0	26.0	49.9	55.1			36.0	25.5
	10/3/2018	Peak Hour	4:00 - 5:00 PM			64.3	69.3	35.4	40.9			26.0	39.6	37.6	30.2			35.4	40.9
	10/4/2018	Peak Hour	4:00 - 5:00 PM			63.3	63.3	36.0	37.3			26.0	30.8	36.2	32.0			36.0	37.3

		WBT		EBR		PED		WBL		EBT				NBT		
		Phase 1		Phase 2		Phase 3		Phase 4		Phase 5		Phase 6		Phase 7		Phase 8		
		Max Split	Min Split	Max Split	Min Split	Max Split	Min Split	Max Split	Min Split	Max Split	Min Split	Max Split	Min Split	Max Split	Min Split	Max Split	Min Split	CL
Existing				**45.5**	**20.5**	**26.0**	**12.0**			**26.0**	**14.0**	**35.5**	**20.5**			**36**	**21**	133
HCS Optimized				**64.0**		**34.0**				**43.0**		**21.0**				**34.0**		133
Synchro Optimized				**60.0**		**38.0**				**32.0**		**28.0**				**38.0**		133
Vistro Optimized				**62.0**		**36.0**				**26.0**		**36.0**				**36.0**		133

		WBT		EBR		PED		WBL		EBT				NBT		
		Phase 1		Phase 2		Phase 3		Phase 4		Phase 5		Phase 6		Phase 7		Phase 8	
		85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split	85th Percentile Split	Avg Split
Baseline	Three Day Avg			55.8	54.2	35.3	31.1			18.0	18.0	38.7	40.3			35.3	31.1
	Percent of Max Split			123%	119%	136%	120%			69%	69%	109%	113%			98%	86%
HCS	Three Day Avg			83.2	83.3	34.0	31.2			43.0	50.6	33.2	32.6			34.0	31.2
	Percent of Max Split			130%	130%	100%	92%			100%	118%	158%	155%			100%	92%
Synchro	Three Day Avg			69.9	66.3	35.1	27.9			32.0	35.3	38.8	39.2			35.1	27.9
	Percent of Max Split			117%	110%	92%	73%			100%	110%	139%	140%			92%	73%
Vistro	Three Day Avg			65.7	65.8	35.8	34.6			26.0	32.1	41.2	39.1			35.8	34.6
	Percent of Max Split			106%	106%	99%	96%			100%	124%	115%	109%			99%	96%

US 12 & County K
Southwest Region
Optimized and Baseline WisBOOM Data
Isolated Signalized Intersection

	SBL		NBT		EBL		WBT		NBL		SBT		WBL		EBT		
	Phase 1		Phase 2		Phase 3		Phase 4		Phase 5		Phase 6		Phase 7		Phase 8		
	Max Split	Min Split	Max Split	Min Split	Max Split	Min Split	Max Split	Min Split	Max Split	Min Split	Max Split	Min Split	Max Split	Min Split	Max Split	Min Split	CL
Existing	**28.3**	**13.3**	**71.6**	**18.6**	**25.8**	**10.8**	**27.5**	**15.5**	**32.9**	**12.9**	**71.6**	**18.6**	**56.6**	**11.6**	**27.5**	**15.5**	190
HCS Optimized	**13.0**		**123.0**		**19.0**		**35.0**		**26.0**		**110.0**		**38.0**		**16.0**		190
Synchro Optimized	**14.0**		**117.0**		**16.0**		**43.0**		**26.0**		**105.0**		**42.0**		**17.0**		190
Vistro Optimized	**14.0**		**124.0**		**14.0**		**38.0**		**20.0**		**118.0**		**36.0**		**16.0**		190

WIS 172 &County EB/Packerland Drive

Northeast Region

Optimized and Baseline WisBOOM Data

Isolated Signalized Intersection

WisBOOM Data												
Timing Plan	Dates	Time Periods		Phase 2: Westbound				Phase 6: Eastbound				
				Avg. Delay/Veh (Sec)				Avg. Delay/Veh (Sec)				
				Day	Avg.	Max	Min	Day	Avg.	Max	Min	
Baseline	**8/7/2018**	**Peak Period**	**3:00 - 6:00 PM**	**13**	**16**	**22**	**13**	**17**	**18**	**19**	**17**	
	8/8/2018		**3:00 - 6:00 PM**	**14**				**18**				
	8/9/2018		**3:00 - 6:00 PM**	**22**				**19**				
HCS	7/31/2018*	Peak Period	3:00 - 6:00 PM	7	9	10	7	11	12	14	11	
	8/1/2018*		3:00 - 6:00 PM	9				12				
	8/2/2018		3:00 - 6:00 PM	10				14				
Synchro	7/17/2018	Peak Period	3:00 - 6:00 PM	17	15	17	14	19	18	19	16	
	7/18/2018**		3:00 - 6:00 PM	14				16				
	7/19/2018		3:00 - 6:00 PM	15				18				
Vistro	7/24/2018	Peak Period	3:00 - 6:00 PM	11	14	16	11	16	16	17	16	
	7/25/2018		3:00 - 6:00 PM	16				16				
	7/26/2018		3:00 - 6:00 PM	15				17				
Baseline	**8/7/2018**	**Peak Hour**	**4:00 - 5:00 PM**	**19**	**20**	**24**	**17**	**18**	**19**	**21**	**18**	
	8/8/2018		**4:00 - 5:00 PM**	**17**				**19**				
	8/9/2018		**4:00 - 5:00 PM**	**24**				**21**				
HCS	7/31/2018*	Peak Hour	4:00 - 5:00 PM	7	7	8	7	12	14	17	12	
	8/1/2018*		4:00 - 5:00 PM	7				17				
	8/2/2018		4:00 - 5:00 PM	8				14				
Synchro	7/17/2018	Peak Hour	4:00 - 5:00 PM	22	18	22	14	21	20	21	18	
	7/18/2018**		4:00 - 5:00 PM	-				-				
	7/19/2018		4:00 - 5:00 PM	14				18				
Vistro	7/24/2018	Peak Hour	4:00 - 5:00 PM	19	13	19	9	19	17	19	16	
	7/25/2018		4:00 - 5:00 PM	9				16				
	7/26/2018		4:00 - 5:00 PM	12				16				

*** Note: WisBoom Delay Outputs from HCS on 7/31/18 & 8/1/18 do not appear to capture all of the delay**

**** Note: WisBoom Delay Outputs from Synchro on 7/18/18 do not appear to capture all of the delay**

WIS 52 & 28th Street
North Central Region
Optimized and Baseline WisBOOM Data
Isolated Signalized Intersection

WisBOOM Data												
Timing Plan	Dates	Time Periods		Phase 2: Westbound Avg. Delay/Veh (Sec)				Phase 6: Eastbound Avg. Delay/Veh (Sec)				
				Day	Avg.	Max	Min	Day	Avg.	Max	Min	
Baseline	**7/17/2018**	**Peak Period**	**3:00 - 6:00 PM**	**12**	**13**	**14**	**12**	**15**	**16**	**17**	**15**	
	7/18/2018		**3:00 - 6:00 PM**	**12**				**16**				
	7/19/2018		**3:00 - 6:00 PM**	**14**				**17**				
HCS	7/24/2018	Peak Period	3:00 - 6:00 PM	14	13	14	12	18	19	20	18	
	7/25/2018		3:00 - 6:00 PM	13				20				
	7/26/2018		3:00 - 6:00 PM	12				18				
Synchro	8/7/2018	Peak Period	3:00 - 6:00 PM	15	13	15	12	18	18	18	18	
	8/8/2018		3:00 - 6:00 PM	12				18				
	8/9/2018		3:00 - 6:00 PM	12				18				
Vistro	8/21/2018	Peak Period	3:00 - 6:00 PM	15	14	15	14	19	19	20	19	
	8/22/2018		3:00 - 6:00 PM	14				19				
	8/23/2018		3:00 - 6:00 PM	14				20				
Baseline	**7/17/2018**	**Peak Hour**	**4:15 - 5:15 PM**	**13**	**13**	**15**	**12**	**17**	**17**	**18**	**17**	
	7/18/2018		**4:15 - 5:15 PM**	**12**				**17**				
	7/19/2018		**4:15 - 5:15 PM**	**15**				**18**				
HCS	7/24/2018	Peak Hour	4:15 - 5:15 PM	16	18	24	14	22	21	24	18	
	7/25/2018		4:15 - 5:15 PM	24				24				
	7/26/2018		4:15 - 5:15 PM	14				18				
Synchro	8/7/2018	Peak Hour	4:15 - 5:15 PM	17	14	17	12	19	20	20	19	
	8/8/2018		4:15 - 5:15 PM	12				20				
	8/9/2018		4:15 - 5:15 PM	14				20				
Vistro	8/21/2018	Peak Hour	4:15 - 5:15 PM	17	16	17	16	20	21	25	18	
	8/22/2018***		4:15 - 5:15 PM	16				18				
	8/23/2018		4:15 - 5:15 PM	16				25				

***** Note: WisBoom Delay Outputs from Vistro on 8/22/18 do not appear to capture all of the delay for the Eastbound Approach**

APPENDIX K

Qualitative Assessment Information

Figure K-1: Software User Observations

	Signal	Two-Way Stop Control	General

HCS 2010	• Once a file is created, the "forward direction" cannot be changed. (Forward direction = direction favored for coordination.) The min green for the forward direction also can't be changed after initial setup.
	• When there is no through movement on a leg (i.e. two-way street meets one way street), the speed limit, RTOR, and ped times can't be entered.
	• Can't change min gap for coordinated phases
	• Can't enter vehicle extensions, time before reduce or time to reduce.
	• For isolated intersections, the cycle length is determined by the program as the "natural cycle." The user cannot specify cycle length. This makes optimization of isolated signals difficult. For corridors, the cycle length can be optimized within a specific range.
	• Half cycle timing plans cannot be modeled.
	• Can't model non-signalized right turns. HCS 7 can model unsignalized right-turns, but no LOS is provided.
	• No growth factor option, must enter RTOR volume
	• Unable to model many phasing options, which limits the flexibility. Cannot model right-turn over lap phasing and most nonstandard applications.
	• The only way to model Dallas Phasing is with a checkbox for "Dallas E/W phasing" or "Dallas N/S phasing." The user can't specify one approach with Dallas phasing.
	• The optimization process takes considerably longer than other software programs. Larger and more complex signal systems can take up to 5 minutes to optimize. In comparison, a similar system in Synchro and Vistro only take a few seconds to optimize.
		• Various median types change the way vehicles are stored in the median.
		  • Undivided = no vehicle storage
		  • LT +TH = either type of vehicle can use median storage
		  • LT only = only left-turns can use median storage
		  • LT+TH median or LT only median can have 1 or 2 vehicle storage
		  • The number of vehicles stored in the median can be specified, but the input field allows the user to enter any number from 0 to 9. Capacity is affected with the higher number of vehicles in the median. This field should be limited to 0 to 2.
		• Doesn't require speed limit input or %HV on major street (except for exclusive LT movements)
		• Accounts for upstream signal, but must enter proportion of time blocked from streets analysis (or other software analysis)
		• RT Channelized and Flared Minor Street options change approach capacity.
		• Can only specify turn lane length for minor street flare or major street left.
		• Turn lane length or flare length is measured in vehicles, not feet. Major left storage limited to 9 vehicles (225')
		• Percent through traffic in the shared lane defaults to 50% even with three through lanes
			• Site license available
			• Remote access allowed
			• HCS does not analyze U-turns. As a work-around, the u-turn volumes are added to the left-turn volumes to replicate their impact.
			• Stop control simple to set up (5-10 minutes) and signal complex to set up (15 minutes or more)

SIDRA 7	• Phase names default to letters instead of numbers. User can change phase names to numbers. • Allows user to code different length per lane for dual or triple turn lanes. • Can't model pedestrians crossing sign controlled slip/by-pass lane • Can't specify lane alignment (i.e. can't specify that a thru lane drops as a turn lane downstream). • Turn on red not allowed for slip/continuous lanes • Network diagram doesn't allow user to specify link distances. Distance is incorporated into network optimization, but not shown in diagram. • For a coordinated network, one intersection offset must be zero. • Uses single ring signal phasing. This is difficult to code and very difficult to optimize certain conditions. • Can model non-signalized right turns. • Growth factors below 50% allowed. • Clearance times, pedestrian times and green times must be rounded to full seconds. • Half cycles are allowed.	• Doesn't account for upstream signal affects unless part of a network model • Two stage crossing requires two intersections in a network setup. This also requires the user to manually change the gap acceptance values and manually dissect and assign the volumes to the two intersections. • Medians can be added, but they don't impact the capacity.	• Must choose model set up, in up to THREE locations • User or site license available • SIDRA Solutions provided a free trial version for this evaluation. The customer service was easy to work with, and the trial version was easy to coordinate. Questions were answered in detail and within a reasonable amount of time. • Remote access allowed • Stop control and signal are complex to set up (15 minutes or more) • Some technical terms are described using language common in Australia and New Zealand, but not commonly used in the US • Requires use of 'Network License' to model more than two locations • Report printouts have a larger file size.
Synchro 10	• HCM 2010 results don't take pedestrian timings into account if no pedestrian volumes are entered. Synchro operational results include pedestrian timings without pedestrian volumes (effects queues) • Can model non-NEMA phasing, but due to limitation with the HCM methodology, HCM results are not provided for non-NEMA phasing. • Can model non-signalized right turns, but no LOS is provided. • Growth factor below 50% not allowed (for modeling right-turn on red) • Still contains "bugs" such as the shared through-left opposing the shared through-left • Half cycles are allowed.	• Accounts for upstream signal affects with appropriate checkbox toggled in HCM window and if signal is within appropriate distance.	• User license only • raSmith upgraded to (purchased) Synchro 10 prior to starting this evaluation. The software was ordered, and raSmith contacted Trafficware a few times but did not receive software for 12 business days. After receiving the email with instructions on how to download the software, raSmith still had difficulty acquiring the software. Customer service response times were higher and there was less valuable information in the response. • Remote access not allowed • U-turns should be modeled with left-turns for accurate HCM results • Stop control and signal are simple to set up (5-10 minutes)
Vistro 6	• An error in the optimization coding for isolated fully-actuated signals was causing the max green parameters to be violated. PTV recommended modeling the Isolated signals as "running free" to avoid this issue. At the time the analysis was finalized, PTV was working on a software patch to fix this issue. • Can model non-signalized right turns and provides HCM LOS for these movements. • Growth factor below 50% allowed • Uses total lost time, clearance lost time, and start-up lost time. The default value for clearance lost time and start up lost time is 2 seconds. Total lost time is a summation of the two lost times. • Half cycles are allowed.	• Difficult to determine output value to use because results are given by movement not by lane.	• Synchro files can be imported into Vistro, but some data is lost/incorrect. In particular, the heavy vehicle percentage and right-turn on red growth factors don't seem to transfer correctly. • User or site license • Provided trial version • Easy customer service/coordination, but software still being vetted by customers • Network dongle presents certain IT challenges • Remote access allowed • Stop control and signal are simple to set up (5-10 minutes)

Traffic Analysis Software: Performance Evaluation of Wisconsin Conditions
Peer Survey

Notes:

- The formatting/order of the peer survey summary shown below is different than the on-line survey. Many of the questions were combined in this summary to show a direct comparison between the software programs.
- Questions on each specific software were only provided and answered if the respondent answered that they used the software. Therefore, each software has a different number of responses.
- The percentages were rounded to the nearest tenth. The totals may not add up to 100% due to rounding.

Have you used the following software programs for traffic signal analysis and optimization?

	Yes	No	Total Responses
HCS	35 (83.3%)	7 (16.7%)	42
SIDRA	4 (10.3%)	35 (89.7%)	39
Synchro	37 (97.4%)	1 (2.6%)	38
Vistro	3 (8.3%)	33 (91.7%)	36

What is your experience level using the following software programs?

	Novice	Intermediate	Expert	Total Responses
HCS	3 (9.7%)	22 (71.0%)	6 (19.4%)	31
SIDRA	4 (80.0%)	1 (20.0%)	0 (0%)	5
Synchro	0 (0%)	14 (40.0%)	21 (60.0%)	35
Vistro	1 (50.0%)	1 (50.0%)	0 (0%)	2

Rate the learning curve for using the following software programs based on your experience. Assess the intuitiveness of the software's interface, ability to trouble shoot inputs, use of standard terminology, etc.

	Easy	Average	Challenging	Total Responses
HCS	6 (19.4%)	22 (71.0%)	3 (9.7%)	31
SIDRA	1 (20.0%)	1 (20.0%)	3 (60.0%)	5
Synchro	12 (34.3%)	21 (60.0%)	2 (5.7%)	35
Vistro	0 (0%)	1 (50.0%)	1 (50.0%)	2

Rate your experience dealing with the following software programs' customer support for technical issues with their user manual or in-software support, or with direct communication (email, phone or on-line forums). Assess the clarity of user manual, responsiveness of support staff, technical competence of support staff, etc

	Excellent	Average	Poor	Not Applicable – have not used their customer support	Total Responses
HCS (McTrans)	5 (16.1%)	7 (22.6%)	1 (3.2%)	18 (58.1%)	31
SIDRA (SIDRA Solutions)	0 (0.0%)	2 (40.0%)	0 (0.0%)	3 (60.0%)	5
Synchro (Trafficware)	8 (22.9%)	12 (34.3%)	7 (20.0%)	8 (22.9%)	35
Vistro (PTV Group)	0 (0%)	2 (100%)	0 (0%)	0 (0%)	2

Rate your experience dealing with the following software programs' customer support for licensing issues. Assess overall support, ease of transferring licenses between computers or people, processing time, responsiveness of support staff, etc.

	Excellent	Average	Poor	Not Applicable – have not used their customer support	Total Responses
HCS (McTrans)	6 (19.4%)	8 (25.8%)	0 (0%)	17 (54.8%)	31
SIDRA (SIDRA Solutions)	0 (0.0%)	2 (40.0%)	0 (0.0%)	3 (60.0%)	5
Synchro (Trafficware)	7 (20.0%)	8 (22.9%)	12 (34.3%)	8 (22.9%)	35
Vistro (PTV Group)	1 (50.0%)	1 (50.0%)	0 (0%)	0 (0%)	2

Have you collected field data to verify HCS reported queues, delays, travel times or other measures of effectiveness? If yes, please explain in the text block below or send additional detail via email to pat.hawley@rasmith.com

	Yes	No	Total Responses
HCS	7 (22.6%)	24 (77.4%)	31
SIDRA	1 (20.0%)	4 (80.0%)	5
Synchro	14 (41.2%)	20 (58.8%)	34
Vistro	0 (0%)	2 (100%)	2

HCS comments

- Collected queues, delays & travel times
- Used the signals model to verify the operation failures shown during the 15-minute intervals. These results were not seen in the average of data sets over the hour time period when using the Synchro software.
- Been a long time since i field checked a MOE from HCS.
- Manual verification of queue lengths and delay studies
- Sat flow rates
- Just field verification of queue lengths.

SIDRA comments

- None provided

Synchro comments

- Travel time before and after studies, checking signal offsets
- Collected queues, delays and travel times
- Used video from TMC collection
- We verify Synchro reports by watching our traffic cameras, as well as driving corridors during certain peak times.
- Queues - I have found when timing traffic signals that when Synchro reports both a "~" and a "#" simultaneously for a movement, the movement will experience more than two cycles to clear in the field. This has been observed several times. Based on this, when I see both ~ and # appear, I know that LOS and delay may be acceptable but additional modifications (to timings, etc.) need to be considered. I can't get this type of flag in HCS.
- Saturation flow rates, queues, travel times
- Occasionally, observations of maximum queue lengths will be noted during intersection turning movement counts and compared to results reported by Synchro in the base model conditions. Although I do not have a detailed study with data to support the opinion, we generally find that Synchro provides reasonably similar results "out of the box" and if necessary, the model can be easily adjusted to reflect existing conditions.
- The only verification I've used is my own familiarity with intersection(s).
- Field queue length and delay studies.
- field observed queues compared to Synchro predicted
- Queue observation
- Check of queue lengths

Vistro Comments

- None provided

Give your opinion on the effectiveness of the following software programs for the following categories.

		Not Applicable	Poor	Average	Excellent	Total Responses
Ease of data entry - volumes, geometry, signal timing/phasing	HCS	0 (0%)	5 (16.7%)	20 (66.7%)	5 (16.7%)	30
	SIDRA	0 (0%)	1 (25.0%)	2 (50%)	1 (25.0%)	4
	Synchro	0 (0%)	1 (3.0%)	9 (27.3%)	23 (69.7%)	33
	Vistro	0 (0%)	1 (50.0%)	0 (0%)	1 (50.0%)	2
Ease of trouble shooting files	HCS	2 (6.7%)	6 (20.0%)	20 (66.7%)	2 (6.7%)	30
	SIDRA	1 (25.0%)	1 (25.0%)	1 (25.0%)	1 (25.0%)	4
	Synchro	1 (3.0%)	2 (6.1%)	25 (75.8%)	5 (15.2%)	33
	Vistro	0 (0%)	1 (50.0%)	1 (50.0%)	0 (0%)	2
Functionality of output data and reports (ie does the software provide the flexibility to report your desired outputs)	HCS	0 (0%)	7 (23.3%)	21 (70.0%)	2 (6.7%)	30
	SIDRA	0 (0%)	0 (0%)	3 (75.0%)	1 (25.0%)	4
	Synchro	0 (0%)	2 (6.1%)	19 (57.6%)	12 (36.4%)	33
	Vistro	0 (0%)	0 (0%)	2 (100%)	0 (0%)	2
Analysis of existing signal timings for isolated intersections	HCS	1 (3.3%)	3 (10.0%)	20 (66.7%)	6 (20.0%)	30
	SIDRA	0 (0%)	3 (75.0%)	0 (0%)	1 (25.0%)	4
	Synchro	0 (0%)	2 (6.1%)	14 (42.4%)	17 (51.5%)	33
	Vistro	0 (0%)	0 (0%)	2 (100%)	0 (0%)	2
Analysis of existing signal timings for coordinated systems	HCS	7 (23.3%)	12 (40.0%)	11 (36.7%)	0 (0%)	30
	SIDRA	0 (0%)	3 (75.0%)	1 (25.0%)	0 (0%)	4
	Synchro	0 (0%)	1 (3.0%)	13 (39.4%)	19 (57.6%)	33
	Vistro	0 (0%)	0 (0%)	2 (100%)	0 (0%)	2
Development of optimized signal phasing/timing plans for isolated intersections	HCS	4 (13.3%)	8 (26.7%)	16 (53.3%)	2 (6.7%)	30
	SIDRA	0 (0%)	4 (100%)	0 (0%)	0 (0%)	4
	Synchro	0 (0%)	2 (6.1%)	16 (48.5%)	15 (45.5%)	33
	Vistro	0 (0%)	0 (0%)	2 (100%)	0 (0%)	2
Development of optimized signal phasing/timing plans for coordinated systems	HCS	8 (26.7%)	16 (53.3%)	6 (20.0%)	0 (0%)	30
	SIDRA	0 (0%)	4 (100%)	0 (0%)	0 (0%)	4
	Synchro	0 (0%)	1 (3.0%)	15 (45.5%)	17 (51.5%)	33
	Vistro	0 (0%)	0 (0%)	2 (100%)	0 (0%)	2

		Not Applicable	Poor	Average	Excellent	Total Responses
Compatibility with traffic signal controller inputs	HCS	12 (40.0%)	3 (10.0%)	15 (50.0%)	0 (0.0%)	30
	SIDRA	2 (50.0%)	1 (25.0%)	1 (25.0%)	0 (0%)	4
	Synchro	9 (27.3%)	1 (3.0%)	16 (48.5%)	7 (21.2%)	33
	Vistro	1 (50.00%)	0 (0%)	1 (50.0%)	0 (0%)	2
Analysis of unconventional intersection designs (DDI, SPUI, jug handle, CFI, median u-turn, etc)	HCS	15 (50.0%)	13 (43.3%)	2 (6.7%)	0 (0%)	30
	SIDRA	2 (50.0%)	2 (50.0%)	0 (0%)	0 (0%)	4
	Synchro	4 (12.1%)	5 (15.2%)	20 (60.6%)	4 (12.1%)	33
	Vistro	0 (0%)	0 (0%)	2 (100%)	0 (0%)	2
Ability to develop and manage multiple scenarios (different time periods/years, improvement scenarios, etc)	HCS	2 (6.7%)	5 (16.7%)	22 (73.3%)	1 (3.3%)	30
	SIDRA	1 (25.0%)	0 (0%)	1 (25.0%)	2 (50.0%)	4
	Synchro	2 (6.1%)	7 (21.2%)	13 (39.4%)	11 (33.3%)	33
	Vistro	0 (0%)	0 (0%)	1 (50.0%)	1 (50.0%)	2
Value provided for the cost	HCS	6 (20.0%)	1 (3.3%)	20 (66.7%)	3 (10.0%)	30
	SIDRA	1 (25.0%)	1 (25.0%)	1 (25.0%)	1 (25.0%)	4
	Synchro	7 (21.1%)	3 (9.1%)	16 (48.5%)	7 (21.2%)	33
	Vistro	0 (0%)	0 (0%)	2 (100%)	0 (0%)	2

HCS Comments

- HCS interface is archaic and poor at analyzing signals in a system.
- The user interface allows for limited control of timing plans especially at uncontrolled intersections. Cannot test different scenarios of Max Green times or easily evaluate how the signal will operate in the field.
- There isn't much "optimization" that happens for an isolated signal. If they run free/isolated, they just run with their passage/extensions to max if applicable.
- Methodology used by HCS/HCM have been consistently too conservative when using WISDOT recommended default values and struggles to reflect coordination of closely spaced intersections accurately. Prefer to use Sychro or TRANSYT 7F for more accurate macroscopic simulation modeling of offsets and closely spaced intersections. Software also has limitations with complex geometric configurations or unusual signal phasing.
- It's been many years since using HCS. My answers reflect my experiences with older versions of HCS.

SIDRA Comments

- No comments provided

Synchro Comments

- Customer support is rude and slow to respond
- Synchro is incredibly intuitive and user friendly, but their licensing structure and licensing customer support is challenging
- Pricing/licensing scheme and "in-person" (phone, email, etc.) support leave much to be desired.

- Would like to see a based cost + yearly maintenance option for licensing. Upgrading with every major version is not convenient.
- We have used Synchro to time hundreds of traffic signals across Wisconsin with success. The interface is intuitive, and the use of SimTraffic helps the user "see" how things operate with relative ease. SimTraffic also helps in public meetings to quickly and easily illustrate operations.
- In general, Synchro is our preferred software tool for intersection analysis.
- Models can be set up very easily and quickly.
- I have noticed conflicts between queue length and LOS reported in near saturated conditions.
- Synchro is my go-to traffic signal timing evaluation and optimization software tool. After years of using TEAPAC and the various software tools required to use TEAPAC, it was an easy switch to use Synchro, as it's user interface is rather easy to use. Its relatively recent acquisition by Naztec has helped the software be more user friendly in providing useful outputs for controller input data. The newest version is a little buggy; I'm presuming so because they changed the user interface to match the Windows 10 environment. I recently worked through one issue with them which they really didn't find an answer for me but rather I was able to use the backup file but lost some data in doing so. It wasn't a big deal. But I was concerned that they didn't really solve the issue of why my file crashed and couldn't be restored. Nonetheless, they were on the issue right away, which stays true to my experiences with their customer support.

Vistro Comments

- No comments provided

Provide additional comments for WisDOT to consider related to the four software programs being evaluated by WisDOT (HCS, SIDRA, Synchro and Vistro) or the evaluation project in general.

- Consider how the software could be used by WisDOT & consultants consistently, especially data input/output for sharing with simulation models
- I am interesting in working in Vistro and would like an opportunity to try it as an alternative to Synchro.
- I would be happy to help serve on a volunteer focus group or committee regarding traffic signal operations and modeling. Though my strongest experience is with Synchro, I believe my knowledge of how traffic signals operate and my breadth of modeling alternative intersection types (CFI, DDI, SPUI, Echelon, etc) and development of "non-conventional" sequences of operation could be of service. mmay@tadi-us.com, 414-807-1912.
  Thank you for performing this study. We look forward to the results!
- Synchro has been a good program to use for traffic signal analysis. I think they could be better about making positive changes to the program. Little improvements seem to have been made from version to version.
- I have not had experience utilizing SIDRA for traffic signals, but it is a very capable software for analysis of roundabouts and I would imagine it will be acceptable for traffic signals. Also I have not used Vistro, but have used other PTV products and like their user interface. HCS feels like a basic default software that will run the formulas, but does not give you the testing and customization to really evaluate alternatives.
- synchro has a lot of support and is improved often...i like that.
- The software I have the most experience with is Synchro. I find it very easy to use and troubleshoot. I do have some difficulty producing the reports I want.
- Please consider extent/qty of existing analysis files & current consultant usage/familiarity if switching to any new products.