



Traffic Engineering, Operations & Safety Manual

Chapter 4 Signals

Section 10 Temporary Signals

4-10-1 Temporary Signal Plan

April 2025

TEMPORARY SIGNAL PLAN

Once the decision to install temporary signals on the state trunk highway system has been made, a temporary signal plan **shall** be developed. The temporary signal plan set **shall** include construction staging plan, temporary pavement marking and signing plan, temporary timing plan, placement of lane control devices (barrel or wands), a temporary signal plan, and an abbreviated sequence of operation sheet for the temporary signal.

Temporary signals, as part of a construction project, are installed and maintained by the contractor for the length of the project. The Regional Traffic Unit or consultant *may* provide signal timing. Contact the Regional Traffic Unit to determine the responsible party for providing the temporary signal timing plans. The temporary signal timing plan *may* be included in the plan set and *may* be included in the PS&E submittal.

Decisions regarding the design and operation of temporary signals on the local system, including connecting highways, are at the discretion of the local municipality.

General Plan Development

1. Temporary signal plans for construction do not contain signature blocks indicating approvals or revision history. To show changes made to temporary signals caused by construction staging, individual plan sheets *should* be developed. Complex staging projects, which are likely to be field modified, can develop a single plan sheet which details pole placement and standard head quantities and locations. A note on the plan sheet **shall** define proper head placement based on the requirements. The signal plan for each stage **shall** indicate:
 - North arrow
 - Route designations
 - Symbol legend
 - Cabinet location (if known)
 - Signing & marking
 - Supports
 - Signal indications
 - Lighting
 - Detection (if used)
 - Signal timing
 - Temporary roadway geometrics
 - Roadway geometrics
 - Right-of-way lines
 - Reference lines
 - Access points (temporary & permanent)
 - Utilities
 - Lane assignments
 - Work zone areas
 - Work zone traffic control devices
 - EVP Detection (if used)
 - Pedestrian Crossings
 - Pedestrian Detection (if used)
2. The STH *should* be designated as the mainline.
3. NEMA phasing convention **shall** be used. Typically, NEMA phase 6 is in the Cardinal direction (Northbound/Eastbound).
4. Show right-turn control. STOP or YIELD if separated by an island and not controlled by the signal.
5. Configuration of each individual head **shall** be shown (3-v, 5-v, etc., **shall not** be used). The State signal cell library **shall** be used for signal design. Each signal head **shall** have a number.
6. It is the policy of the Department to provide intersection lighting with temporary signals per [TEOpS 11-05-01](#).
7. If used, each detector **shall** be assigned a two-digit number, the first digit of the number being the phase number with which it is associated.
8. Signal plans **shall** be printed at 1"=40' scale on an 11"x17" (D-size) number 2 tab plan sheet. For signal plans to be included in a PS&E submittal, refer to FDM Chapter 15, Plan Preparation.
9. The Department has a cell library specifically to aid in the creation of signal and lighting plans. All temporary signal plans **shall** use the latest signal cell library.

Cabinet Numbering

If a temporary cabinet is shown on the plan, it **shall** be labeled "TCB#".

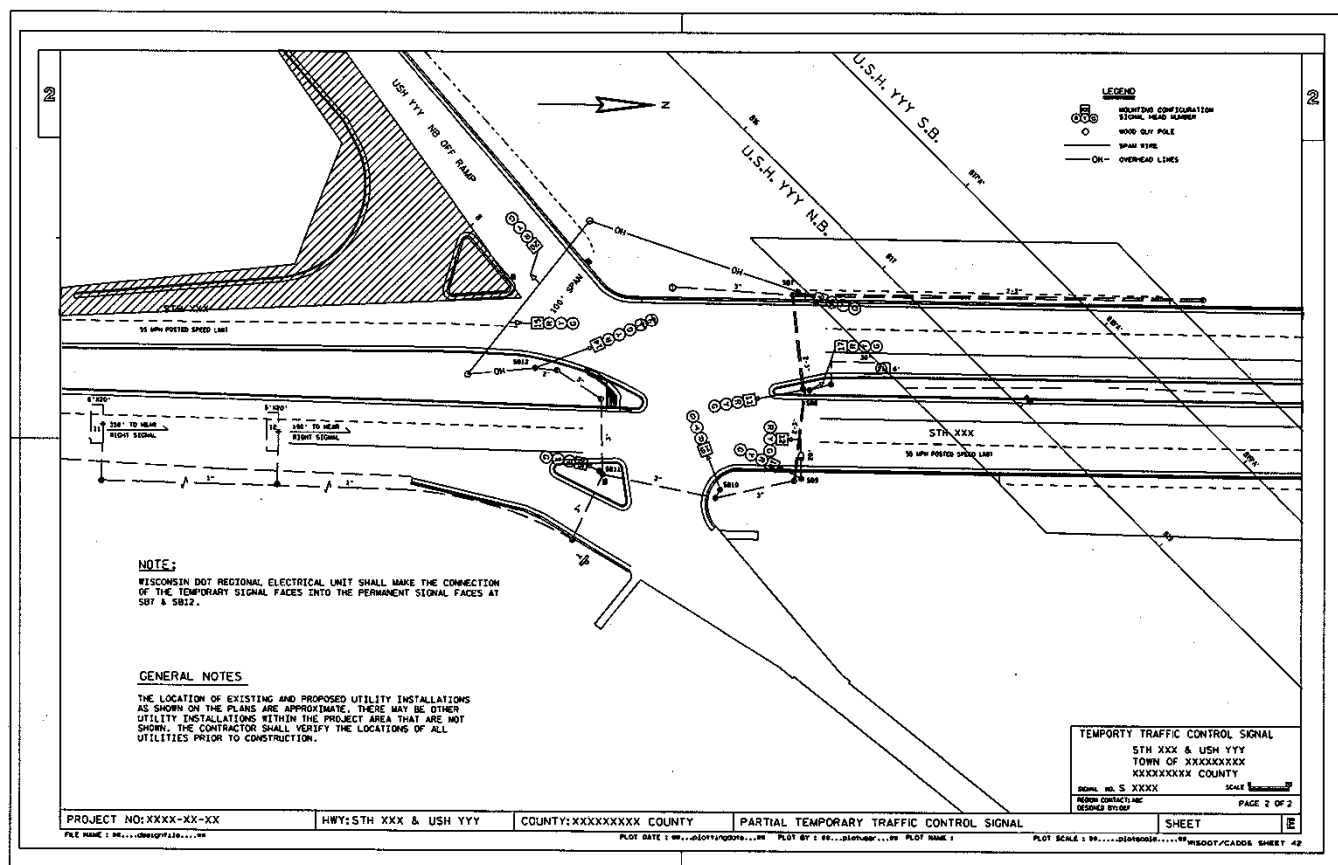
PARTIAL TEMPORARY SIGNAL PLAN

Partial-temporary signals are generally used at an existing signal when only one approach is to be reconstructed. The signal is a hybrid of existing permanent signal equipment (standard bases, poles, mast arms, etc.) and temporary supports (wood poles, span wire, etc.). The use of these types of installations are generally dependent on the type of improvement project or construction staging that will be performed.

Since the partial-temporary signal will be wired into an existing, permanent signal, the Regional Traffic Signal Engineer **shall** be contacted prior to plan development. When partial-temporary signal indications will be connected to the state-owned signal, the final wiring connections **shall** be performed by state-forces.

The partial-temporary signal plan **shall** indicate the entire signalized intersection. Existing signal equipment **shall** be gray-shaded. Temporary equipment **shall** be shown in standard line weights. The required plan elements **shall** be used. Refer to Figure 1.1 for an example of a partial-temporary signal plan.

Figure 1.1. Partial-Temporary Signal Plan Example



TEMPORARY BRIDGE SIGNAL PLAN

According to the WMUTCD [4D.11](#) Temporary and Portable Traffic Control Signals:

Option:

Temporary or portable traffic signals associated with one lane, two-way facilities in temporary traffic control zones, may use a minimum of 2 signal faces per direction.

Standard:

*For temporary or portable traffic signals associated with one lane, two-way facilities in temporary traffic control zones, one of the two heads **shall** be located at least 50 feet, but not more than 100 feet beyond the stopping point. If both heads are located more than 50 feet beyond the stopping point, at least one of the indications **shall** extend out over the roadway.*

Standard detail drawings (SDD 9G1 sheet a through g, 9G2 sheet a through c, and 15D33) for temporary or portable traffic signals are available in the FDM. There is only need to develop a signal plan for these applications if the design will be substantially different from that indicated by the SDD.

4-10-2 Signal Infrastructure Design - Temporary Signals

April 2025

The design of temporary traffic signal installations have many interrelated elements. Uniformity in the design of those elements promotes efficient traffic operations and reduces the potential for driver confusion and crashes. Temporary traffic signals must be designed and installed to convey clear and positive guidance to drivers and

pedestrians. This subject contains discussions, illustrations, and examples of the design elements that are necessary to achieve this.

In addition to the information contained in this subject there are several standard references that *may* prove valuable to the designer.

4-10-3 Temporary Signal Head Design/Layout

April 2025

SIGNAL HEAD DESIGN/LAYOUT

If the reconstruction of an existing signalized intersection does not require major shifting of the traffic due to lane reconstruction, such as replacement of underground conduits and rewiring, then the temporary signal heads **shall** be positioned to mirror the placement of those same heads on the permanent signal plan.

If the reconstruction project requires all the traffic to be on one side of the median while the other lanes are being reconstructed, then the span wire mounted temporary signal heads *should* be positioned over the driving lanes that they control. This type of installation provides better visibility and direction for the motorists during the reconstruction project.

Before developing a temporary signal plan, consult with the Regional Traffic Unit concerning placement of the temporary signal heads.

4-10-4 Temporary Signal Detection

April 2025

Due to product improvements, the practice of using vehicle detection at temporary signal installations has become more common. Reasons that detection at temporary signals *may not* be considered feasible include: relatively short duration, construction staging, and cost of non-intrusive detection technologies. Detection for specific movements that experience high variability *may* be considered (i.e. a left-turn movement that exhibits excessive queuing by time-of-day). Verify the type of operation for temporary signals with the Region Traffic Signal Engineer.

Requests for pedestrian detection and emergency vehicle preemption are allowable. However, because of conditions associated with construction zones, these types users *should* ideally consider other routes. For example, due to lane reductions, delay through a work zone for an emergency vehicle *may* be greater than using an alternate route.

Factors that *may* influence the type and amount of detection for a temporary signal include:

- Type and location of supports used to mount non-intrusive detection (that *may* be prone to movement depending on construction activities),
- Variability in traffic volumes (this *may* be accounted for by time-of-day plans),
- Duration of the construction project,
- Type of construction being performed,
- Construction staging plans,
- Route significance to pedestrians and emergency vehicles,
- Availability of alternate routes.