

Appendix N. County CS Interchange USACE Stream Features Worksheet

August 1, 2024
Project No. 2201696

VIA EMAIL: BrianF.Taylor@dot.wi.gov

Brian Taylor
Environmental Coordinator
2101 Wright Street
Madison, WI 53704

**Re: USACE Stream Features Worksheet
IH39/90/94 CS Interchange
Columbia City, Wisconsin**

Dear Mr. Taylor:

Introduction

GEI Consultants, Inc. (GEI) was contracted by Wisconsin Department of Transportation (WisDOT) to conduct a US Army Corps of Engineers (USACE) stream features assessment for different portions of the CS interchange that is planning for reconstruction as a part of the IH39/90/94 interstate rebuild project. These assessments will aid in Section 404 permitting. Field surveys were completed on May 14, 2024, it was determined that four stream features assessment forms would be completed to provide representative information of different reaches of the feature being assessed.

Surveys were started at the northern most point where it intersected the project area at the CS interchange (Figure 1) before continuing south to where it left the project area, generally south of Smokey Hollow Road.

Tables 1 and 2 provide the overview information for each of the assessment areas.

Table 1.- Assessment Area Overview Information

Label	Latitude	Longitude	Waterbody Name	Investigator	Date	County, State
Area 1	43.391999	-89.464586	Unnamed (WBIC 5032242)	G. Heindel & C. Bell	5/14/2024	Columbia, WI
Area 2	43.386563	-89.464876				
Area 3	43.381214	-89.462548				
Area 4	43.378293	-89.461559				

Table 2. Assessment Area Reach Information

Label	Length of Reach (ft)	Top of Bank Width (ft)	OHWM Elevation (ft above mean sea level)	Special Designations
Area 1	+/- 1,063	+/- 6.1	+/- 806-808	None
Area 2	+/- 2,012	Unable to Determine	N/A	
Area 3	+/- 1,162	+/- 20.0	+/- 846-848	
Area 4	+/- 1,692	Unable to Determine	N/A	

The following sections have been structured based on the Stream Features Worksheet to provide the results of the surveys for each of the individual assessment areas.

Site Description and Site History

Based on an air photo review, the section of IH39-90, from County CS to just south of the Smokey Hollow Rd. overpass has historically been surrounded by forested and agriculture-based land-uses since at least 1937. The Unnamed waterway is evident on aerial imagery from 1937; tree cover along the waterway appears to increase between 1937 and 1995, likely due to the placement of the highway, cutting off accessibility of farms to adjacent areas along the waterway.

Associated Wetlands

Wetlands were previously delineated within the project area, including the CS interchange. A full detailed report can be found in the Environmental Impact Statement for the IH39/90/94 project. Locations of the wetlands are shown on Figure 5.

Table 3. Associated Wetlands

Label	Associated Wetlands	Area (sq. ft.)
Area 1	Riparian Wooded (Degraded)	11,374.25
	Riparian Emergent (Degraded)	2,156.08
	Wooded Swamp (Degraded)	5,433.97
Area 2	None	N/A
Area 3	Wooded Swamp	51,411
Area 4	None	N/A

Methods

Please see page 31-33 of the Saint Paul Stream Mitigation Procedures for methods:

https://www.mvp.usace.army.mil/Portals/57/docs/regulatory/Mitigation/MVP_Stream_Mitigation_Procedures_version_1.pdf?ver=mV5VYSnslcFh2RvRNq50Ew%3d%3d

Results

Water Regime: NOTE: Antecedent Precipitation on 5/14/2024 was normal (See Appendix F)

- **Assessment Area 1:** Ephemeral, no connection to groundwater.
- **Assessment Area 2:** None. This area has been constructed as a stormwater conveyance feature. Soil probe hit rock refusal at 8 inches with no groundwater present.
- **Assessment Area 3:** Ephemeral, no connection to groundwater. Soil probe hit rock refusal at 10 inches with no groundwater present.
- **Assessment Area 4:** None. This area has been constructed as a stormwater conveyance feature.

Ordinary High Water Mark Criteria:

- **Assessment Area 1:** Sediment sorting, presence of litter or debris
- **Assessment Area 2:** No OHWM was able to be determined and therefore was considered to be absent. Area was reconstructed as a stormwater conveyance feature (Photo 3, 4).
- **Assessment Area 3:** Vegetation matted down, bent, or absent, sediment deposition, sediment sorting, presence of litter or debris, leaf litter disturbed or washed away (Photo 6, 7).
- **Assessment Area 4:** No OHWM was able to be determined and therefore was considered to be absent. Area was reconstructed as a stormwater conveyance feature (Photo 15-18).

Unique Features:

- **Assessment Area 1:** Bridge/culvert (North of photo 1).
- **Assessment Area 2:** None (Photo 3, 4).
- **Assessment Area 3:** Bridge/culvert, Erosion, large woody debris, undercut banks (Photo 8, 10).
- **Assessment Area 4:** Bridge/culvert (Photo 13).

Bed Material Characteristics:

- **Assessment Area 1:** Clay/silt (100%).
- **Assessment Area 2:** Sand (70%), Cobble (30%).
- **Assessment Area 3:** Clay/silt (95%), Sand (5%).
- **Assessment Area 4:** Sand (100%).

Vegetation:

- **Assessment Area 1:** Herb Strata (Reed Canary Grass-85%, Garlic Mustard-5%, Wood Nettle-5%, Angelica-3%) (Photo 1). Tree and Shrub Stratum were not included due to recent clearing in that area.
- **Assessment Area 2:** Herb strata (Annual Rye 60%, Red Clover-5%) (Photo 6, 7)
- **Assessment Area 3:** Tree Strata (Basswood-60%, American Elm-5%, Box Elder-5% Red Oak-3%, Hackberry- 3%), Shrub Strata (Common Buckthorn-10%, Basswood-2%, American Elm-3%, Nannyberry-3%), Herb Strata (Garlic Mustard-25%, Common Violet-20%, Wood Sorrel-10%, Reed

Canary Grass-5%, Yellow Avens-5%, Orange Jewelweed-2%, Wild Geranium 1%, Virginia Creeper-1%) (Photo 9).

- **Assessment Area 4:** Herb Strata (Kentucky Bluegrass-75%, Crown Vetch-5%, Wild Parsnip-3%, Bull Thistle-3%, Birds Foot Trefoil-3%, Wild Carrot-1%) (Photo 14).

Riparian Area Width:

- **Assessment Area 1:** Approximately 14-23 feet (Figure 5).
- **Assessment Area 2:** N/A. Area is incised and disconnected to a floodplain (Photo 3, 4).
- **Assessment Area 3:** Approximately 80 feet (Figure 5).
- **Assessment Area 4:** N/A. Area is incised and disconnected to a floodplain (Photo 15)

Recommendations

It is GEI's professional opinion, that based on the site conditions observed on 5/14/24, that the feature at Assessment Area 1 is an ephemeral stream. This feature is approximately 1,063 feet in length. Site conditions at Assessment Area 2 were not observed to have the morphology present to be classified as a stream and appeared to be in line with a stormwater conveyance feature due to the lack of ordinary high water mark criteria and unique features. This conveyance feature was approximately 2,012 feet in length and continued generally southward within the interstate median. Conditions at Assessment Area 3 appeared to revert back to an ephemeral stream where a bed and bank, sediment deposition, water staining on leaves, large woody debris, and erosion were observed. This stream feature was approximately 1,162 feet in length before again transitioning back to a stormwater conveyance feature at Assessment Area 4 (approximately 1,692 feet in length) where similar conditions to Assessment 2 were documented.

If you have any questions, please feel free to contact me at 920.455.8200.

Sincerely,

GEI Consultants, Inc.



Gabe Heindel
Environmental Scientist



Eric Englund
Senior Project Manager

GTH/EE:amp

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Attachments

Figure 1 – Site Location Map

Figure 2 – Contour Map

Figure 3 – Wisconsin Wetland Inventory, Wetland Indicators, and 24K Hydrography

Figure 4 – USDA NRCS Soils Map

Figure 5 – Assessment Areas Map

Figure 6 – Aerial Imagery Review

Appendix A – Photo Log

Appendix B – APT Results

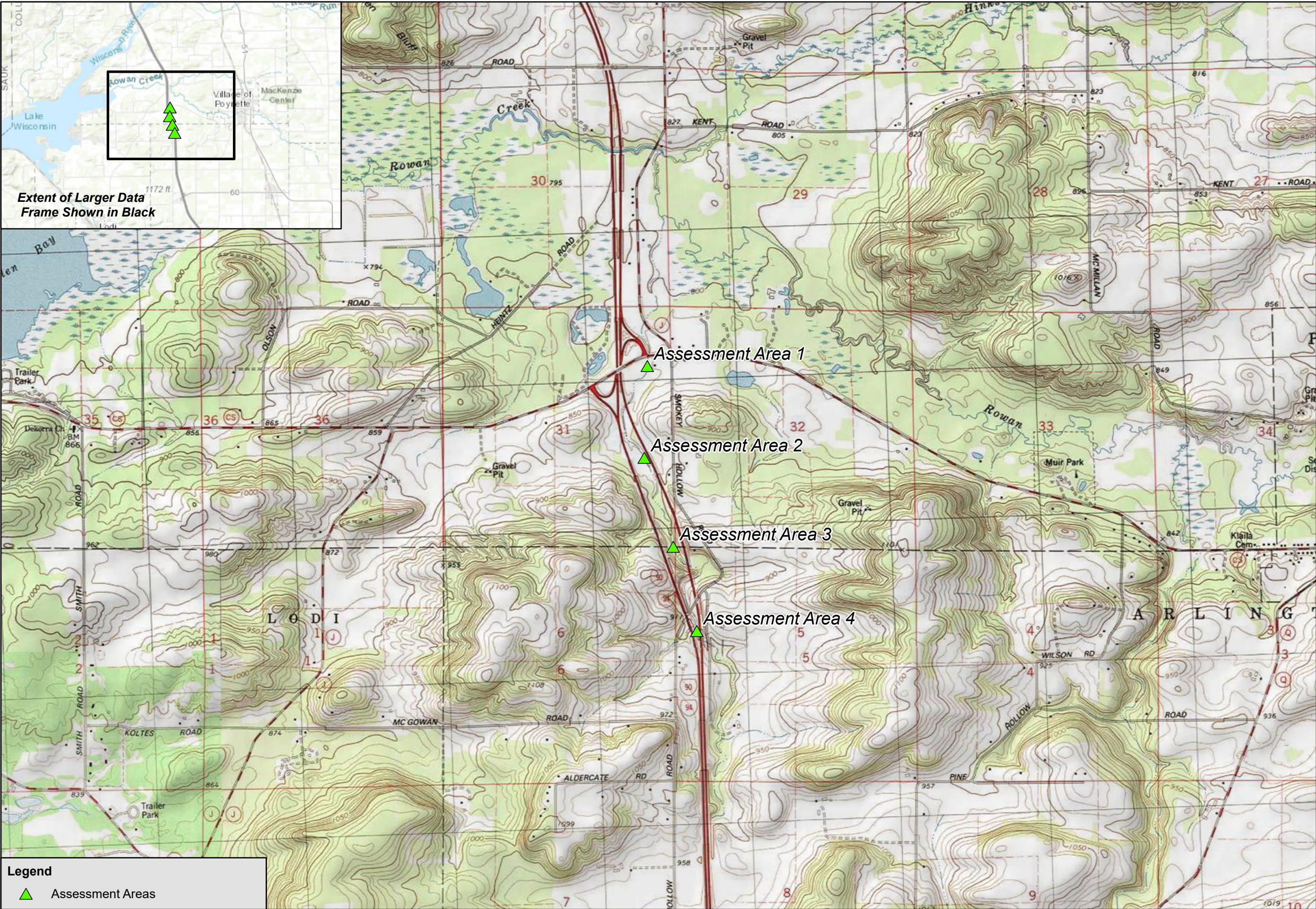


FIGURE 1
SITE LOCATION AND USGS TOPOGRAPHIC MAP
WISCONSIN DEPARTMENT OF TRANSPORTATION
WISDOT PROJECT ID: 1015-05-00
WETLAND DELINEATION - IH-39/90/94
GREATER MADISON AREA
DANE, COLUMBIA, SAUK, JUNEAU COUNTIES, WISCONSIN

Drawn: GTH 5/16/2024
Approved: EEE 5/16/2024
Scale: As Shown
GEI Project No: 2201696
Page 1 of 1

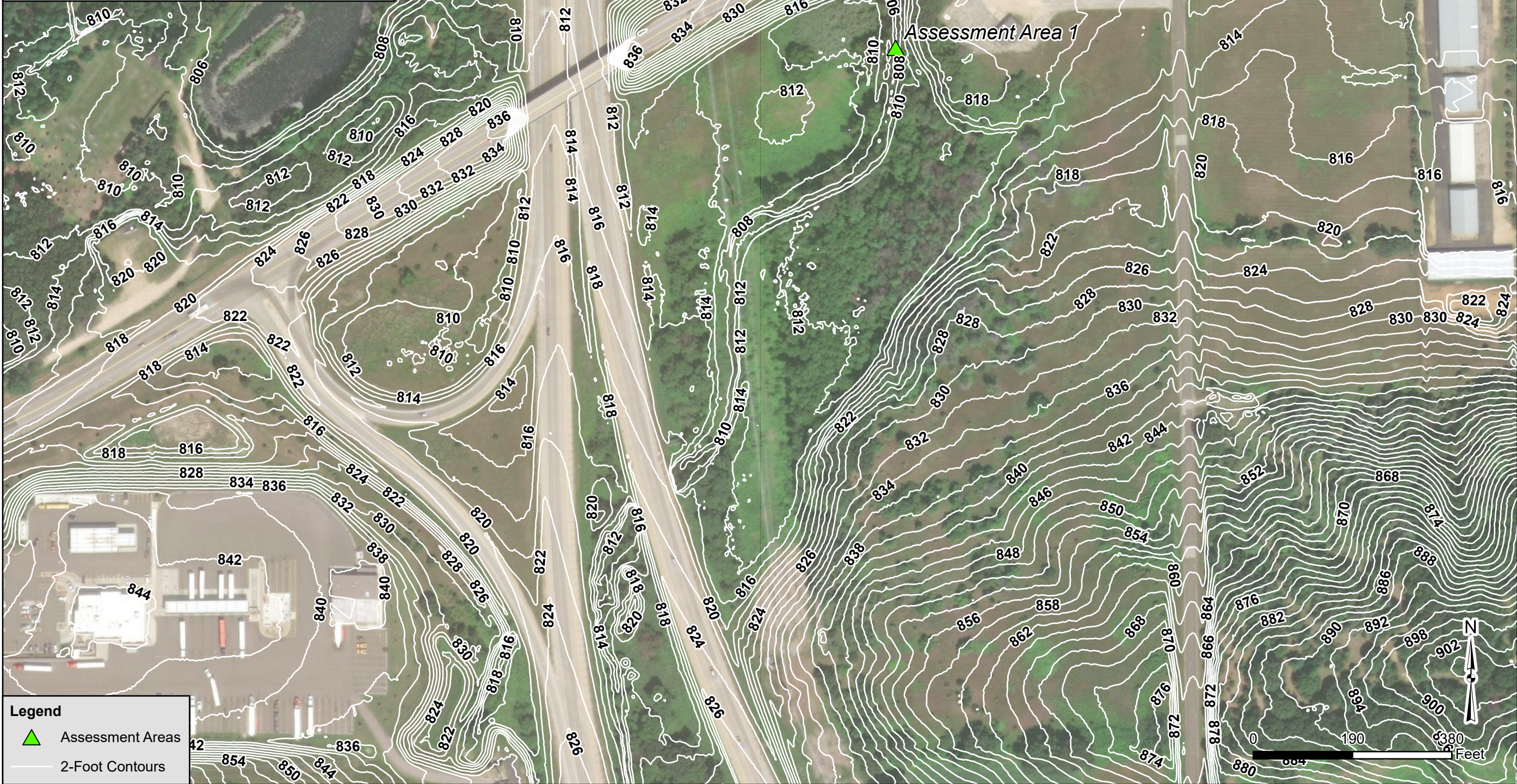
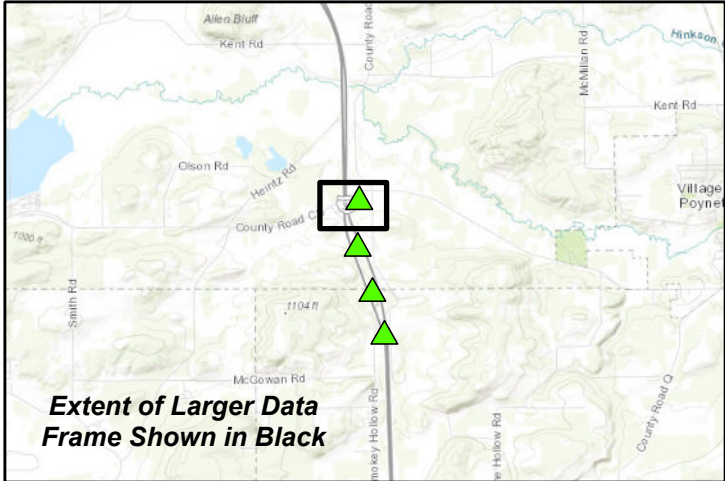
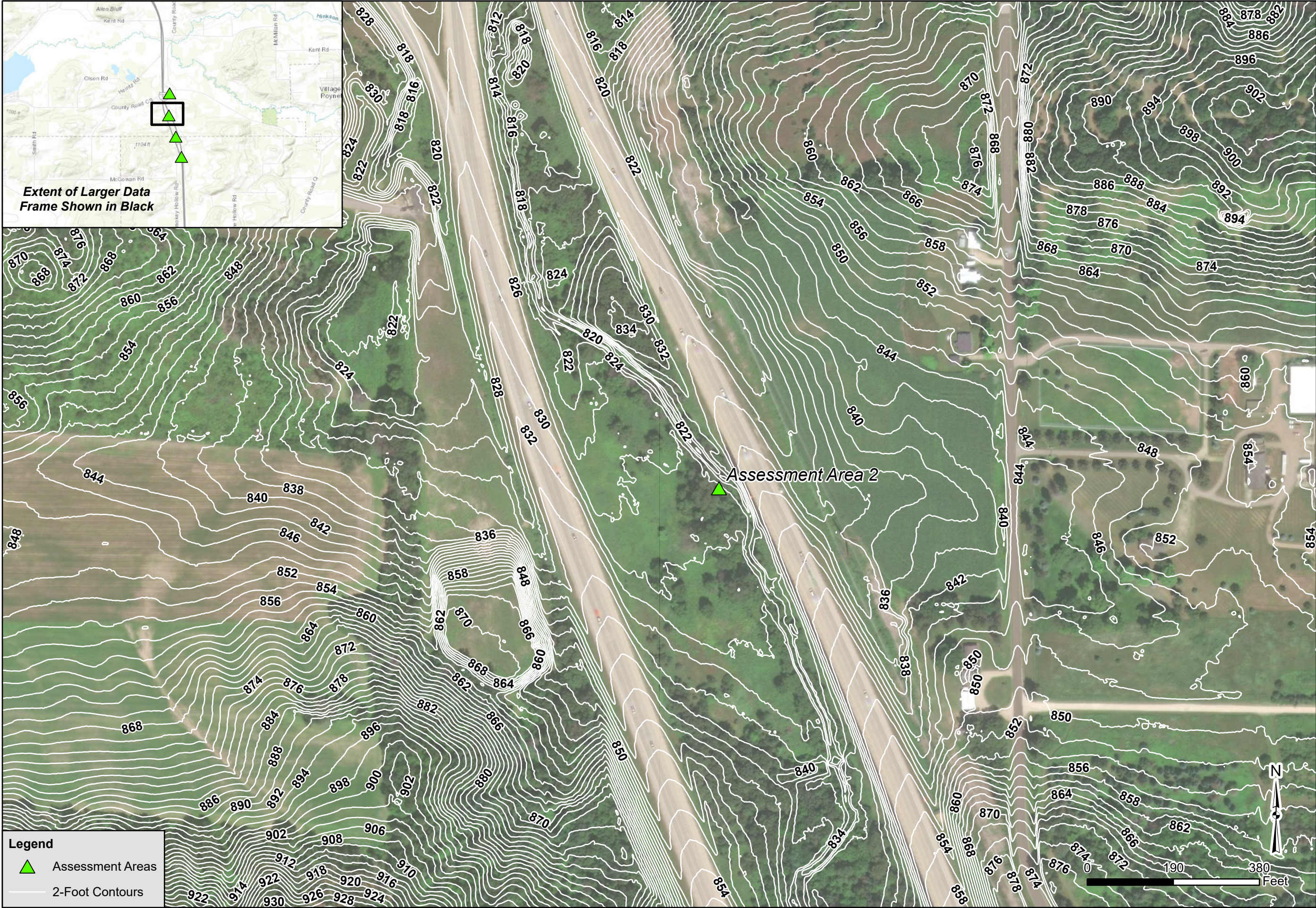
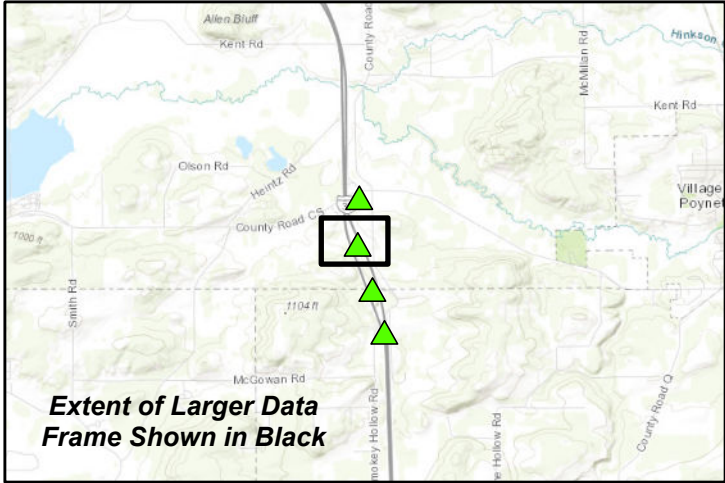


FIGURE 2
2-FOOT CONTOUR MAP

WISCONSIN DEPARTMENT OF TRANSPORTATION
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WETLAND DELINEATION - IH-39/90/94
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Page 1 of 4



Legend

- Assessment Areas
- 2-Foot Contours

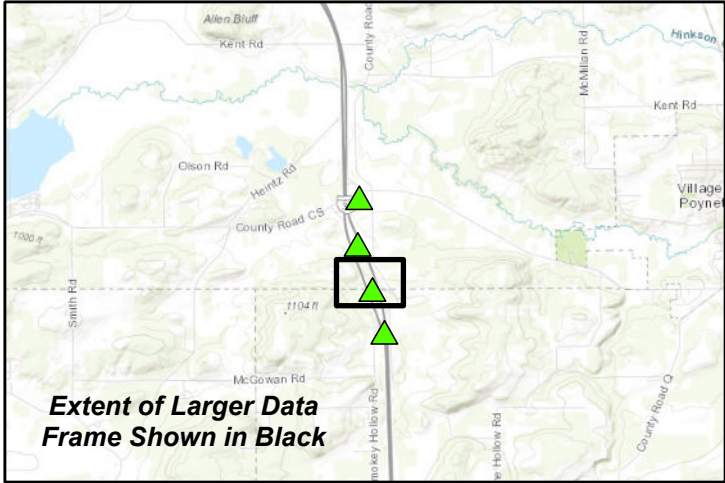
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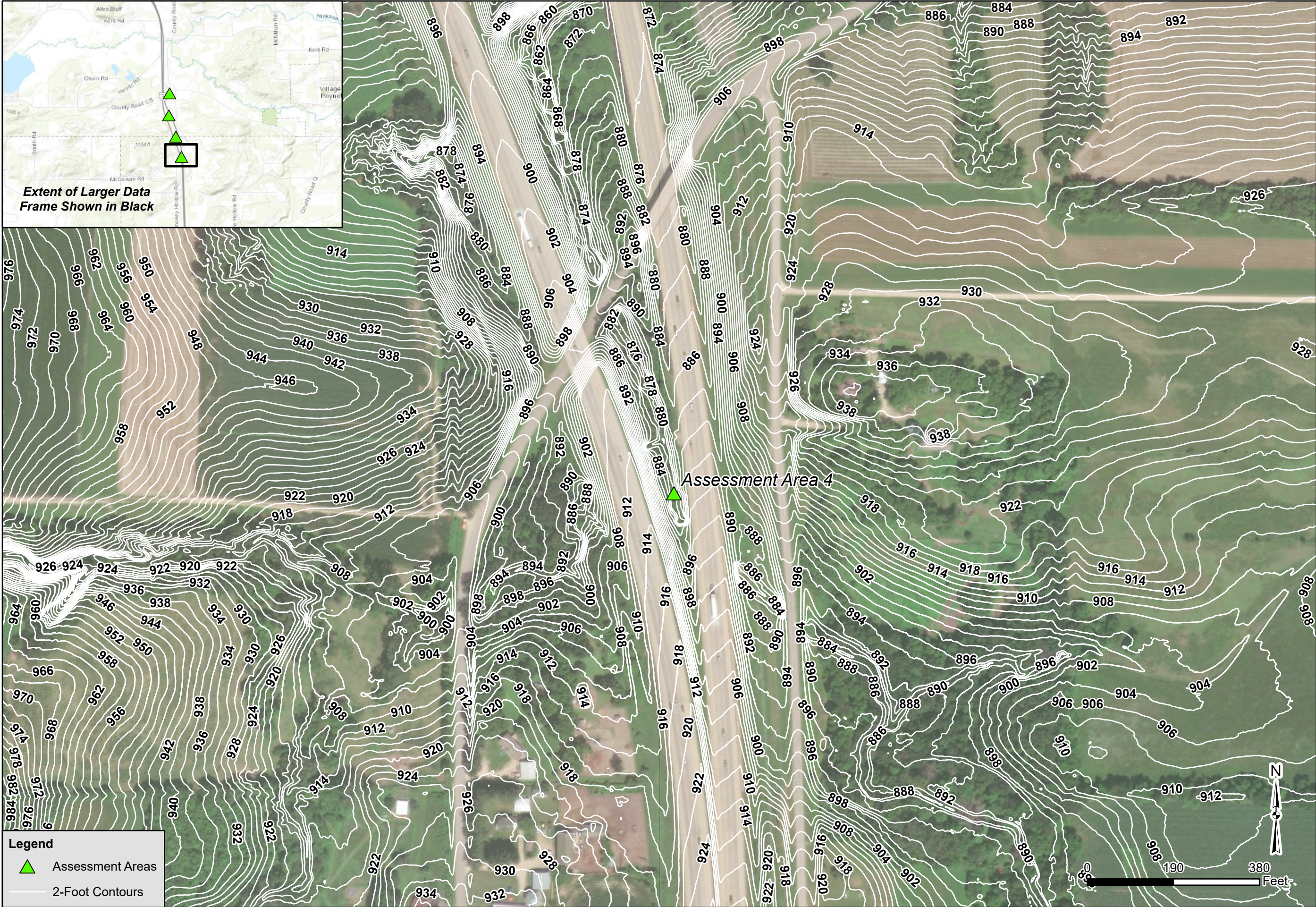
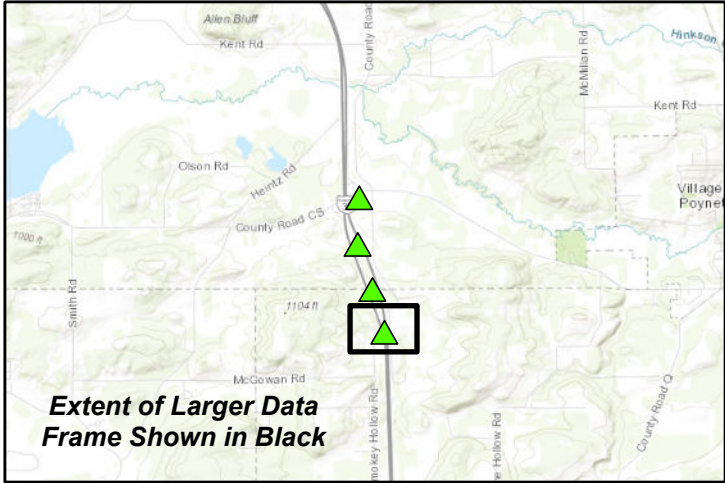
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FIGURE 2
2-FOOT CONTOUR MAP

WISCONSIN DEPARTMENT OF TRANSPORTATION
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Legend

- Assessment Areas
- 2-Foot Contours

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FIGURE 2
2-FOOT CONTOUR MAP

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FIGURE 3
WISCONSIN WETLAND INVENTORY, WETLAND INDICATORS, AND 24K HYDROGRAPHY MAP

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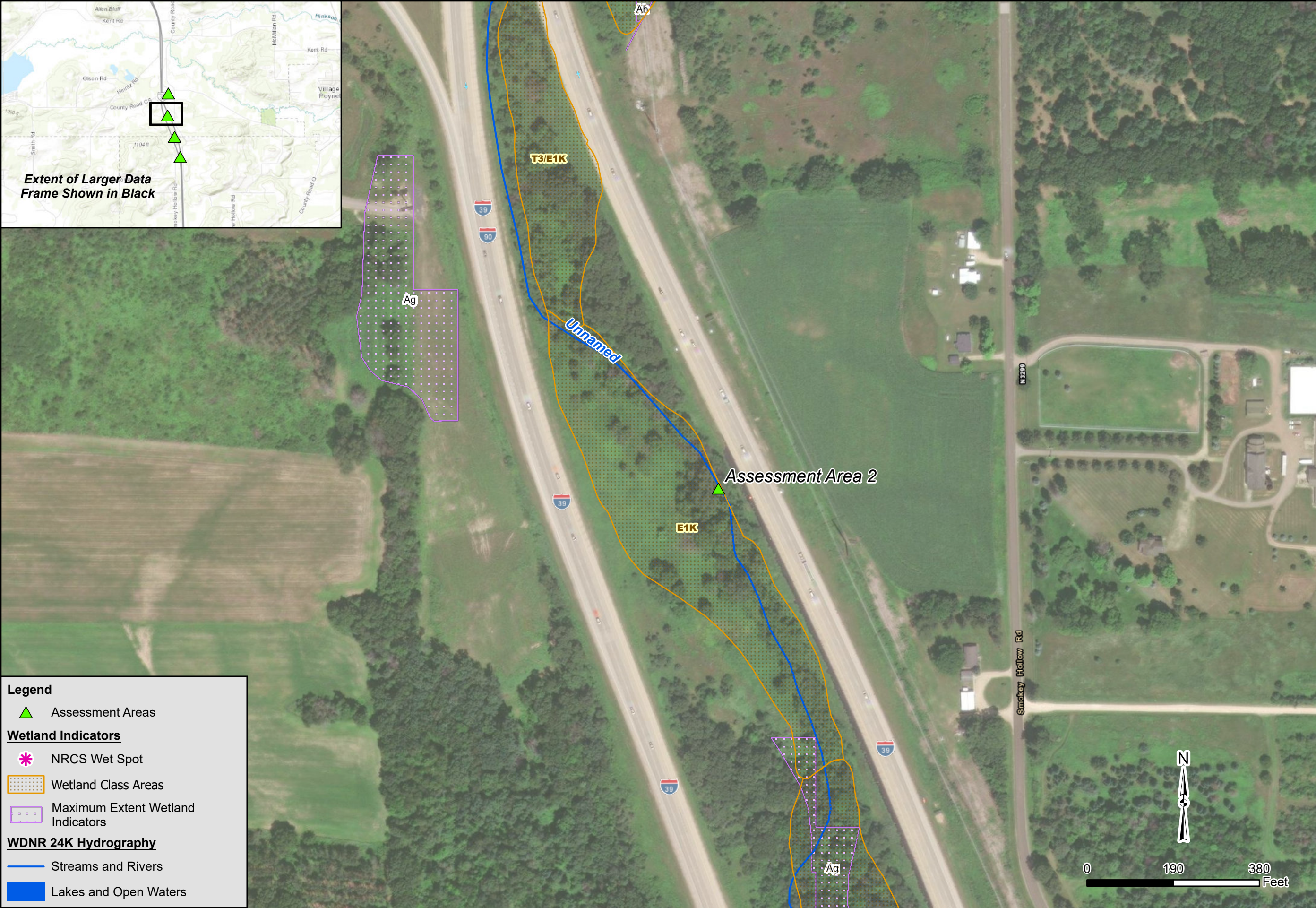
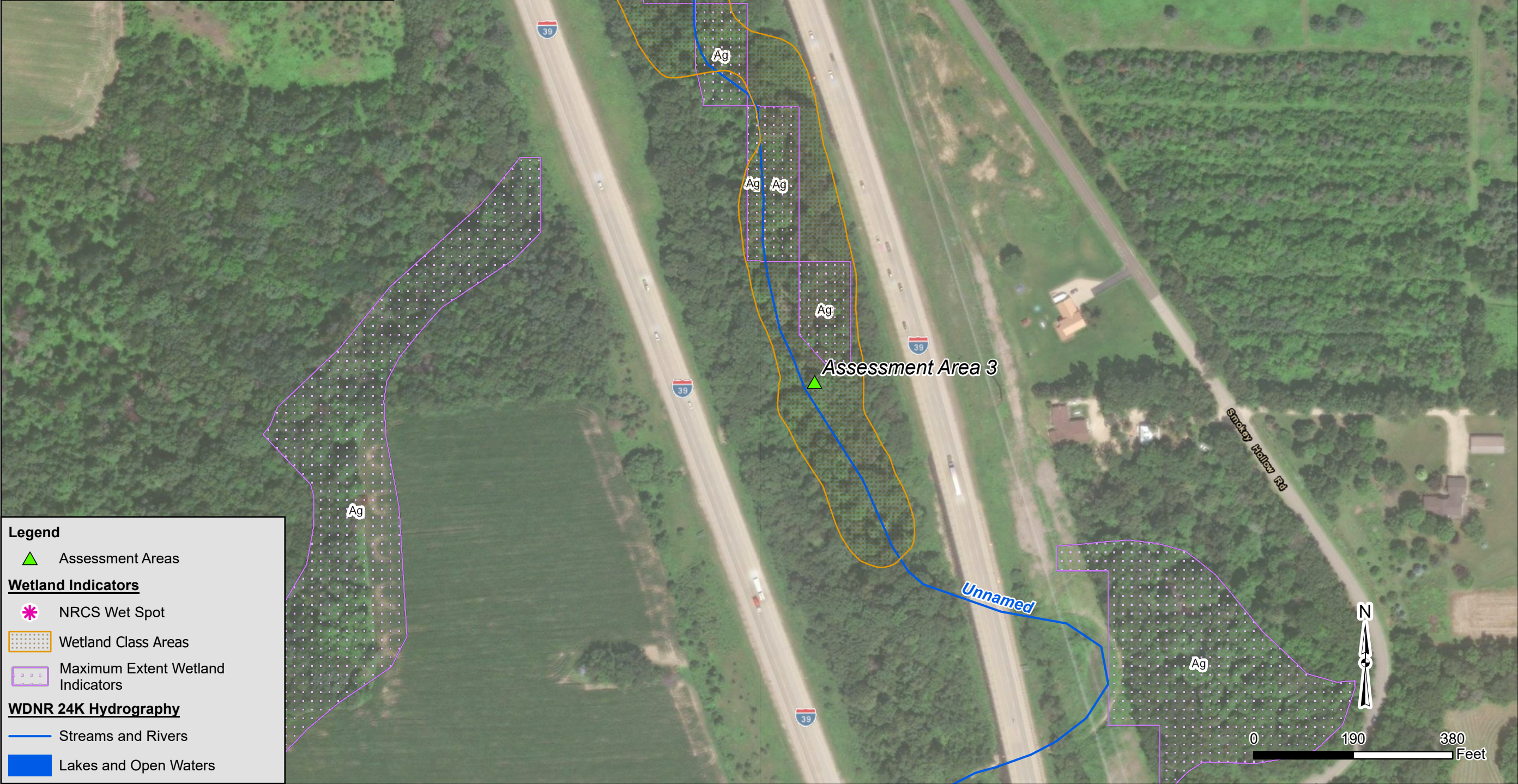
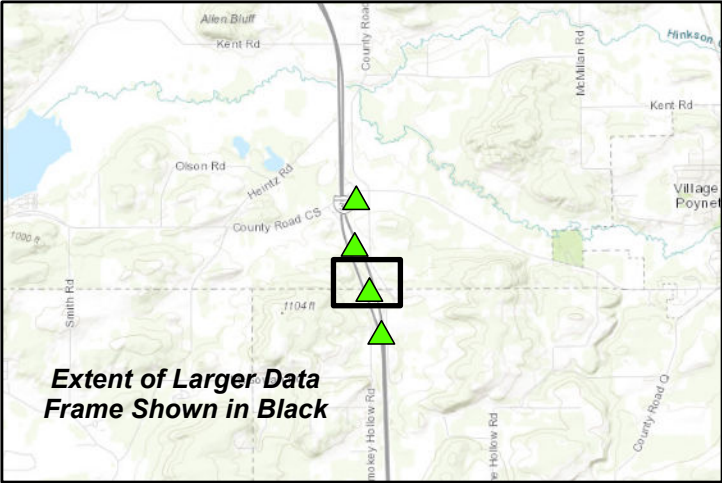


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Legend

▲ Assessment Areas

Wetland Indicators

✱ NRCS Wet Spot

Wetland Class Areas

Maximum Extent Wetland Indicators

WDNR 24K Hydrography

Streams and Rivers

Lakes and Open Waters

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FIGURE 3

WISCONSIN WETLAND INVENTORY, WETLAND INDICATORS, AND 24K HYDROGRAPHY MAP

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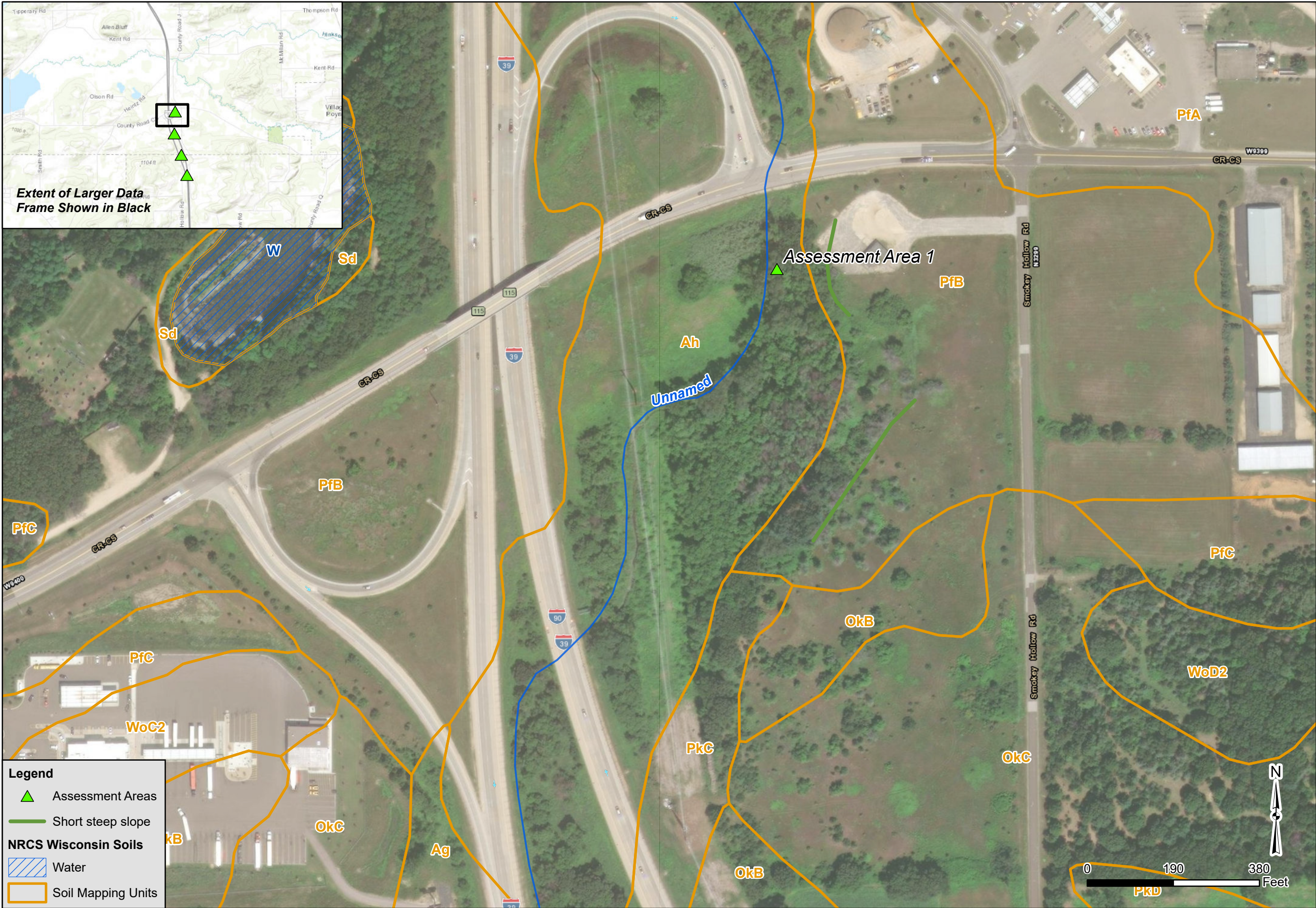


FIGURE 4
USDA NRCS SOILS MAP

WISCONSIN DEPARTMENT OF TRANSPORTATION
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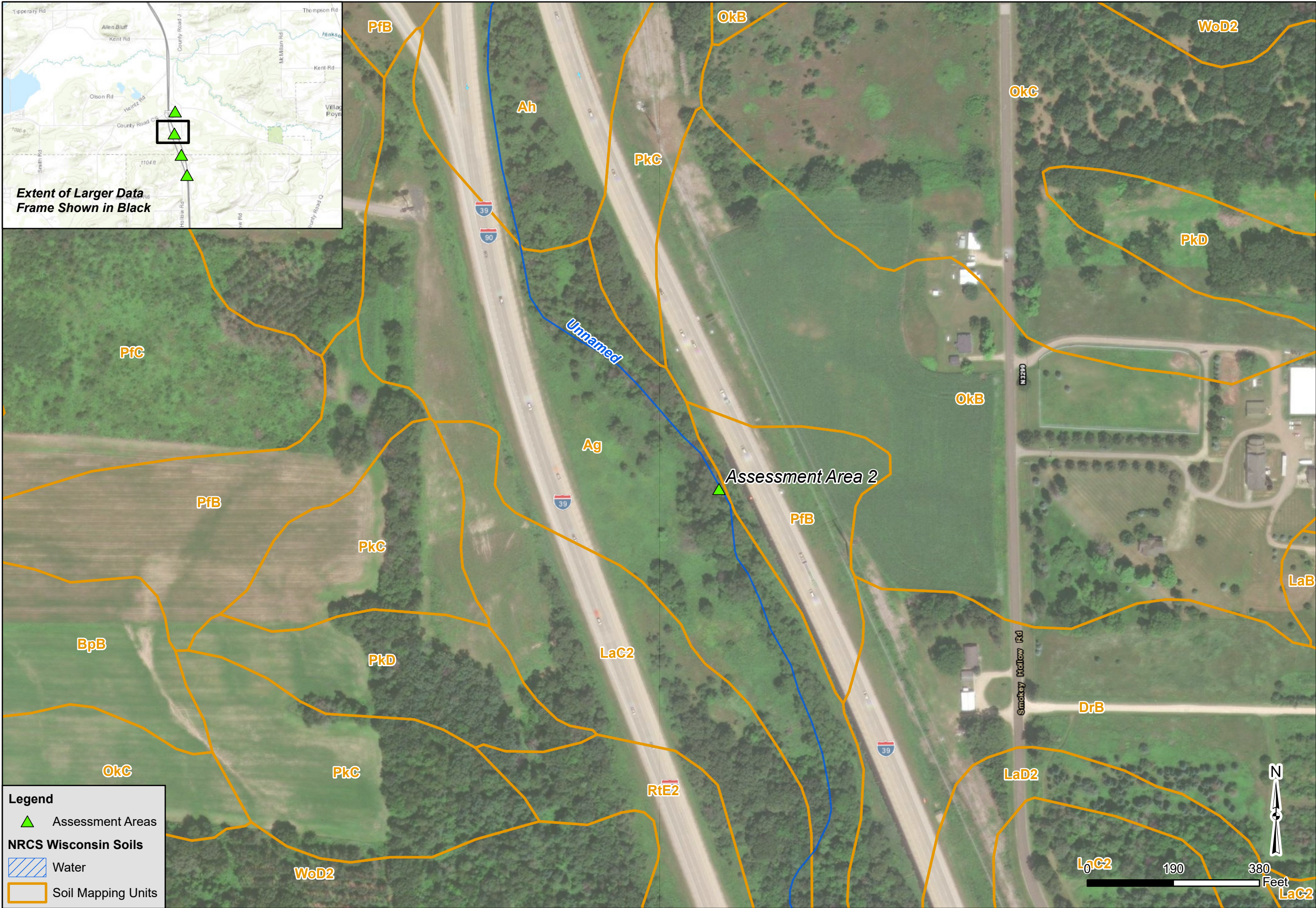
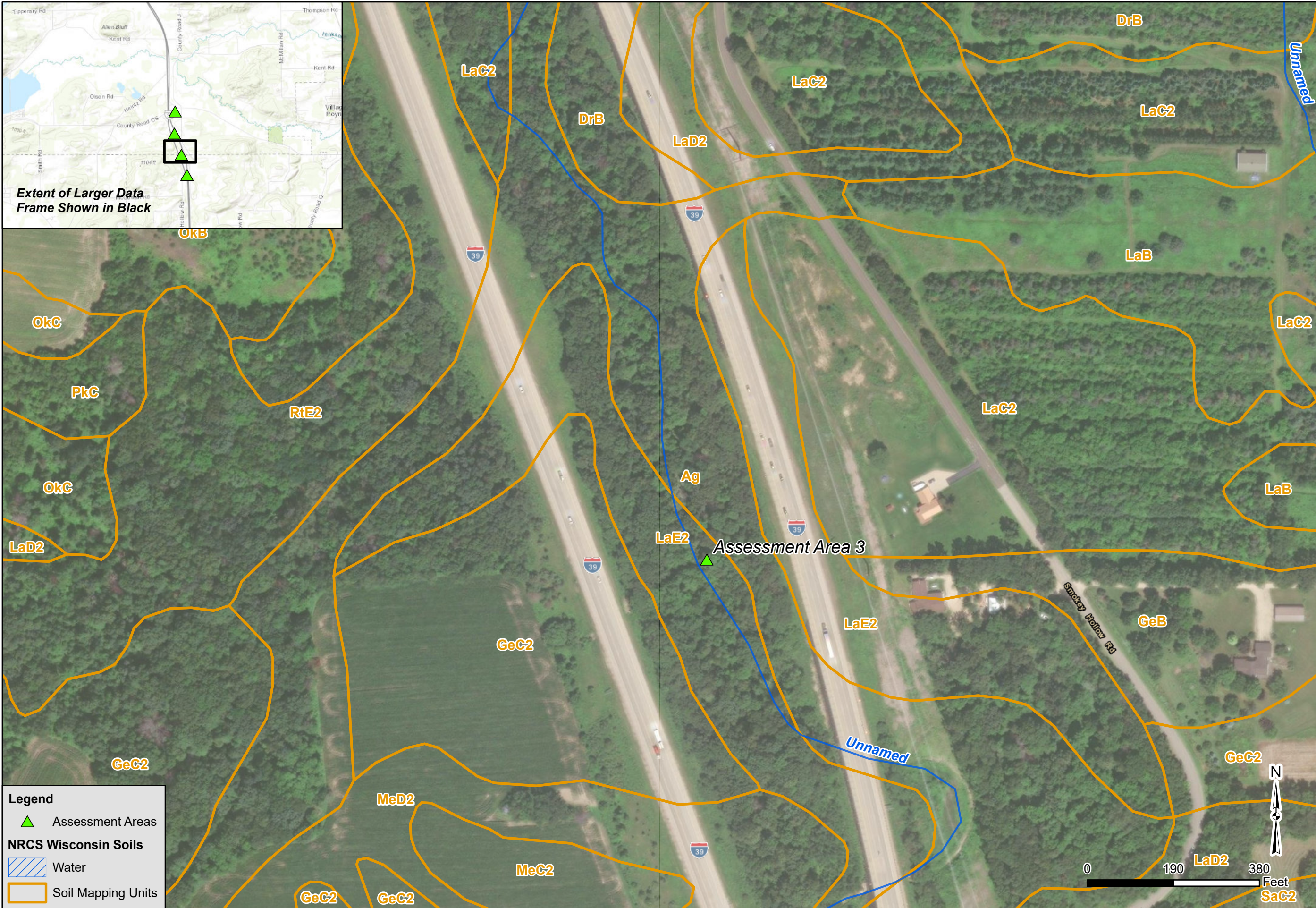


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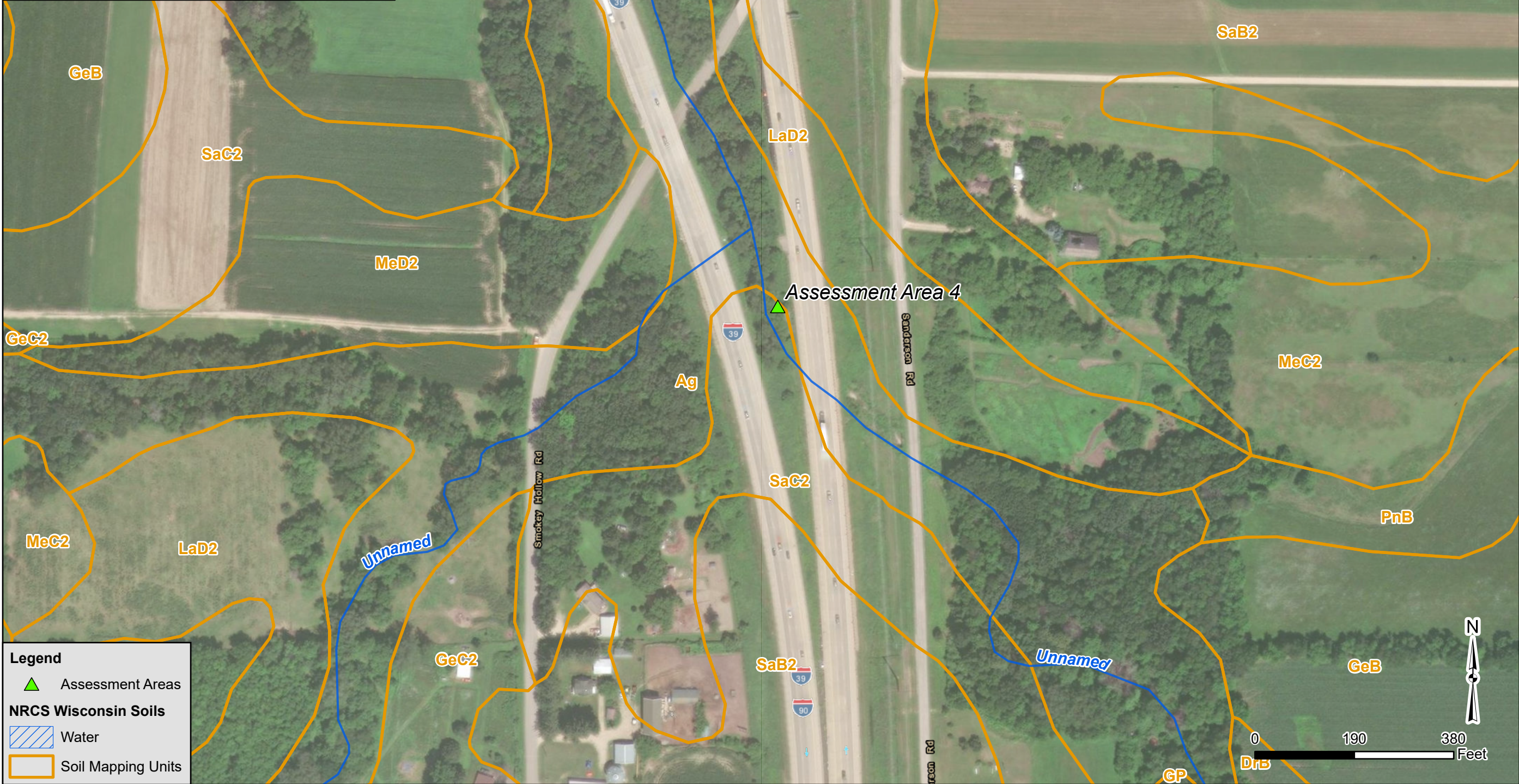
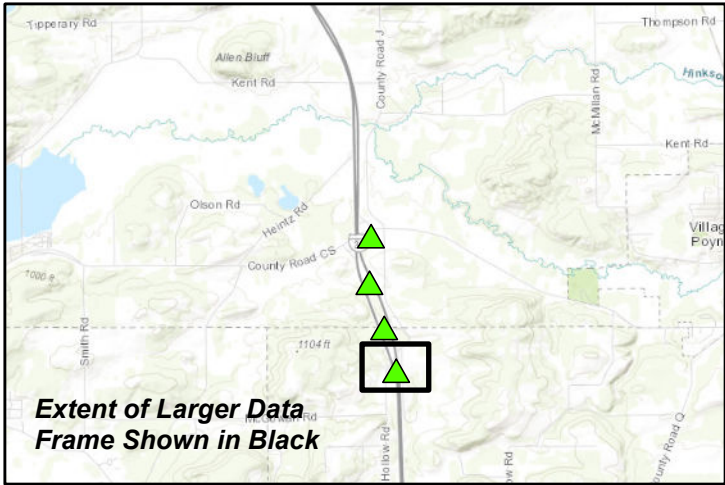
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FIGURE 4
USDA NRCS SOILS MAP

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Legend

Assessment Areas

NRCS Wisconsin Soils

Water

Soil Mapping Units

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FIGURE 4
USDA NRCS SOILS MAP

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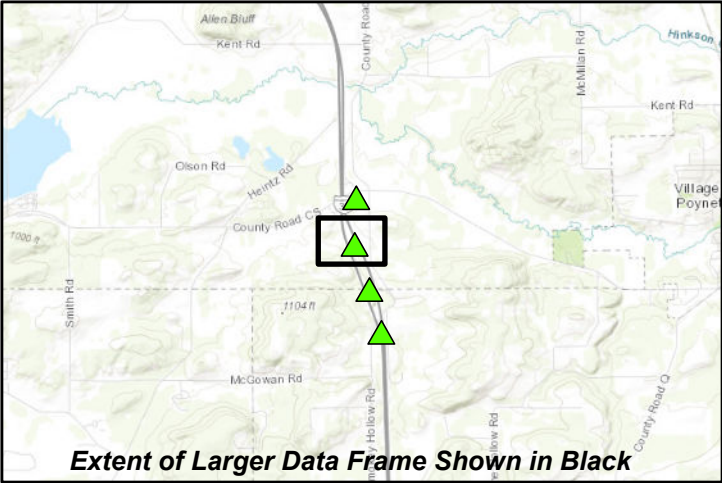
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Legend

- Assessment Areas
- Approximate Ordinary High Water Mark Points
- Culvert-Pipe
- Delineated Waterways
- Delineated Waterways
- Box Culvert Span
- Stormwater Conveyance Feature
- Wetland Boundary
- Flow Direction

WDNR 24K Hydrography

- Streams and Rivers
- Lakes and Open Waters

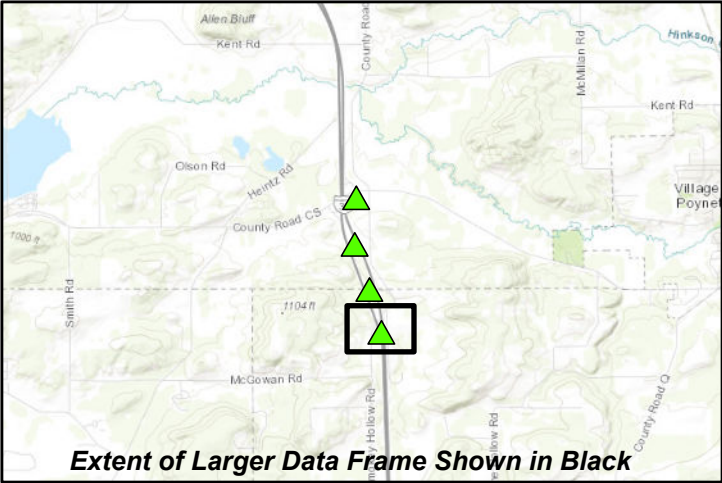
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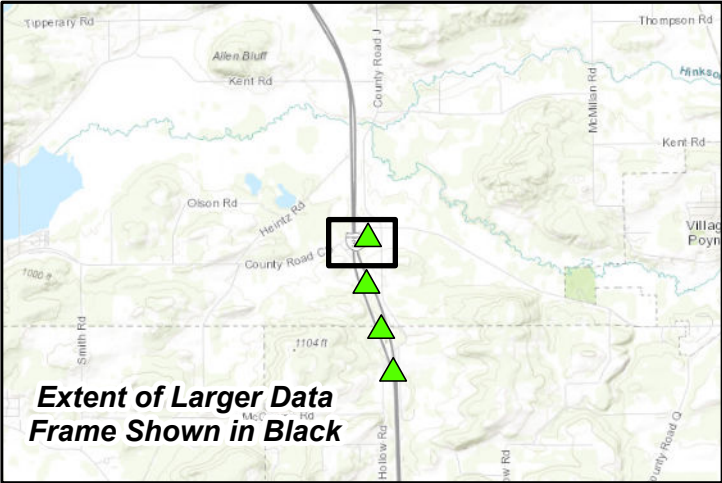
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FIGURE 5
ASSESSMENT AREAS

WISCONSIN DEPARTMENT OF TRANSPORTATION
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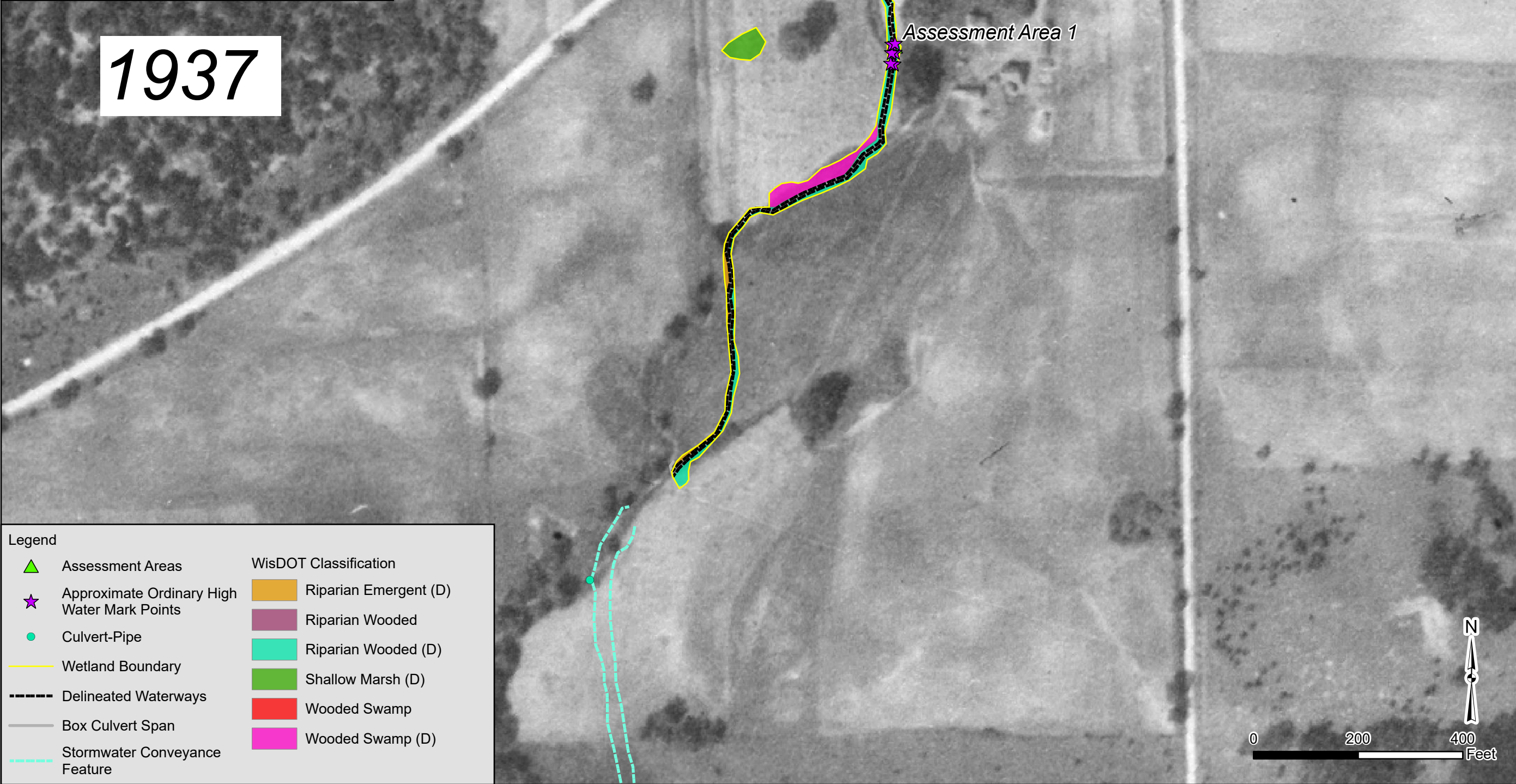
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Extent of Larger Data
Frame Shown in Black

1937



Legend

Assessment Areas

Approximate Ordinary High Water Mark Points

Culvert-Pipe

Wetland Boundary

Delineated Waterways

Box Culvert Span

Stormwater Conveyance Feature

WisDOT Classification

Riparian Emergent (D)

Riparian Wooded

Riparian Wooded (D)

Shallow Marsh (D)

Wooded Swamp

Wooded Swamp (D)

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FIGURE 6
Aerial Imagery review

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GREATER MADISON AREA
DANE, COLUMBIA, SAUK, JUNEAU COUNTIES, WISCONSIN

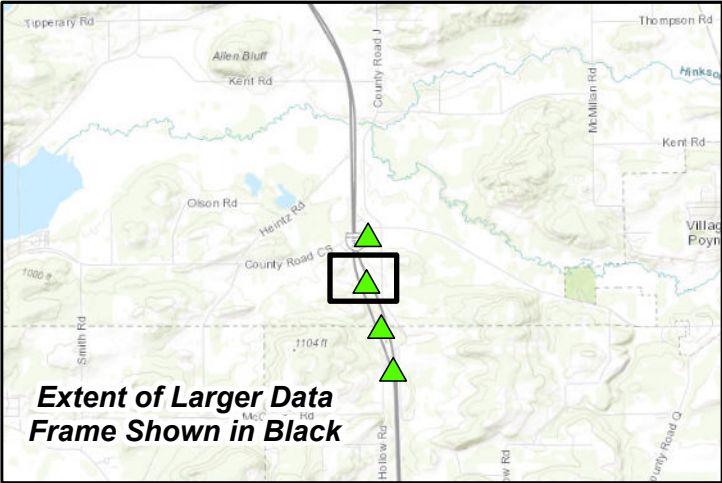
Drawn: GTH 5/21/2024

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Figure 6



1937

Legend

Assessment Areas

Approximate Ordinary High Water Mark Points

Culvert-Pipe

Wetland Boundary

Delineated Waterways

Box Culvert Span

Stormwater Conveyance Feature

WisDOT Classification

Riparian Emergent (D)

Riparian Wooded

Riparian Wooded (D)

Shallow Marsh (D)

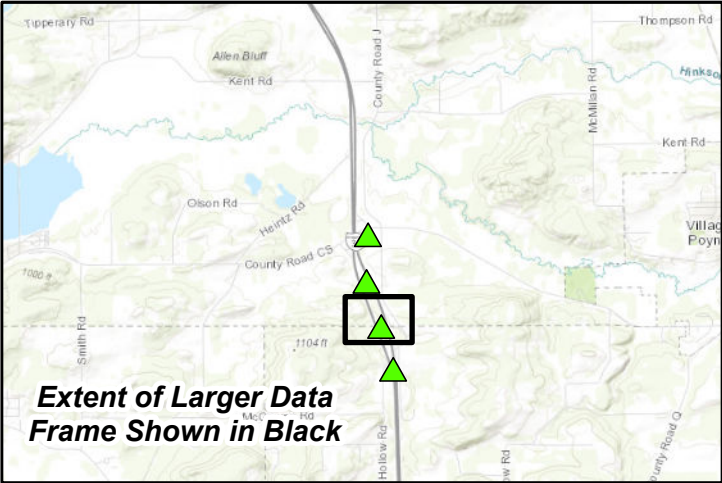
Wooded Swamp

Wooded Swamp (D)

FIGURE 6
Aerial Imagery review

WISCONSIN DEPARTMENT OF TRANSPORTATION
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Figure 6



1937

Legend

Assessment Areas

Approximate Ordinary High Water Mark Points

Culvert-Pipe

Wetland Boundary

Delineated Waterways

Box Culvert Span

Stormwater Conveyance Feature

WisDOT Classification

Riparian Emergent (D)

Riparian Wooded

Riparian Wooded (D)

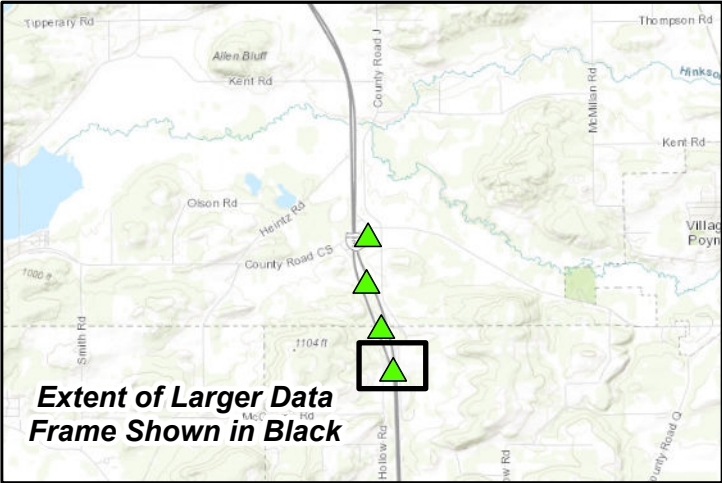
Shallow Marsh (D)

Wooded Swamp

Wooded Swamp (D)

FIGURE 6
Aerial Imagery review

WISCONSIN DEPARTMENT OF TRANSPORTATION
WISDOT PROJECT ID: 1015-05-00
WETLAND DELINEATION - IH-39/90/94
GREATER MADISON AREA
DANE, COLUMBIA, SAUK, JUNEAU COUNTIES, WISCONSIN



1937

Legend

Assessment Areas

Approximate Ordinary High Water Mark Points

Culvert-Pipe

Wetland Boundary

Delineated Waterways

Box Culvert Span

Stormwater Conveyance Feature

WisDOT Classification

Riparian Emergent (D)

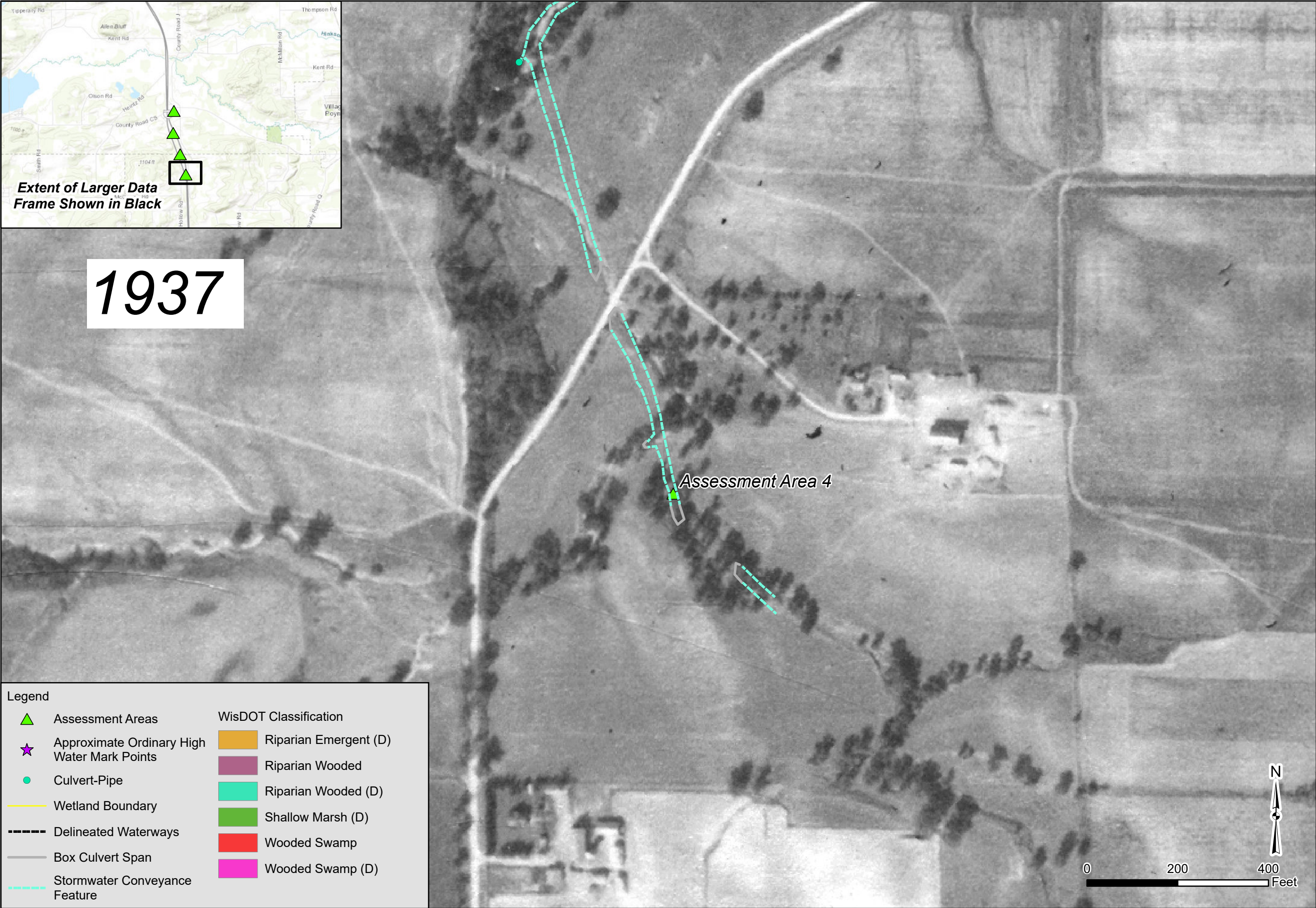
Riparian Wooded

Riparian Wooded (D)

Shallow Marsh (D)

Wooded Swamp

Wooded Swamp (D)



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FIGURE 6

Aerial Imagery review

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WETLAND DELINEATION - IH-39/90/94
GREATER MADISON AREA
DANE, COLUMBIA, SAUK, JUNEAU COUNTIES, WISCONSIN

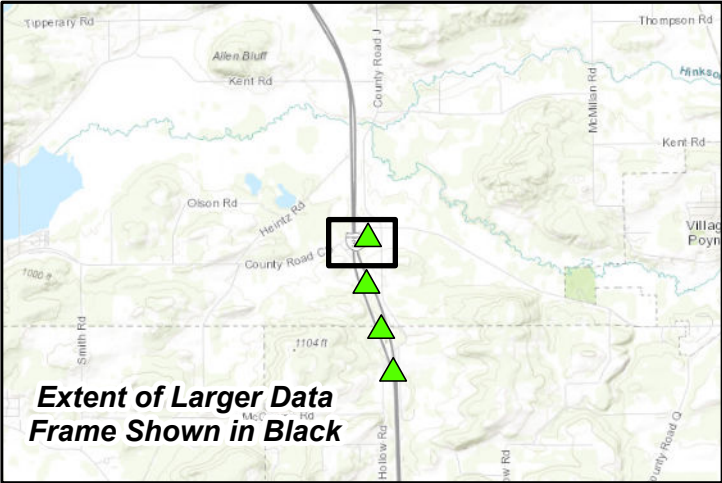
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Scale: As Shown

GEI Project No: 2201696

Figure 6



1995

Legend

Assessment Areas

Approximate Ordinary High Water Mark Points

Culvert-Pipe

Wetland Boundary

Delineated Waterways

Box Culvert Span

Stormwater Conveyance Feature

WisDOT Classification

Riparian Emergent (D)

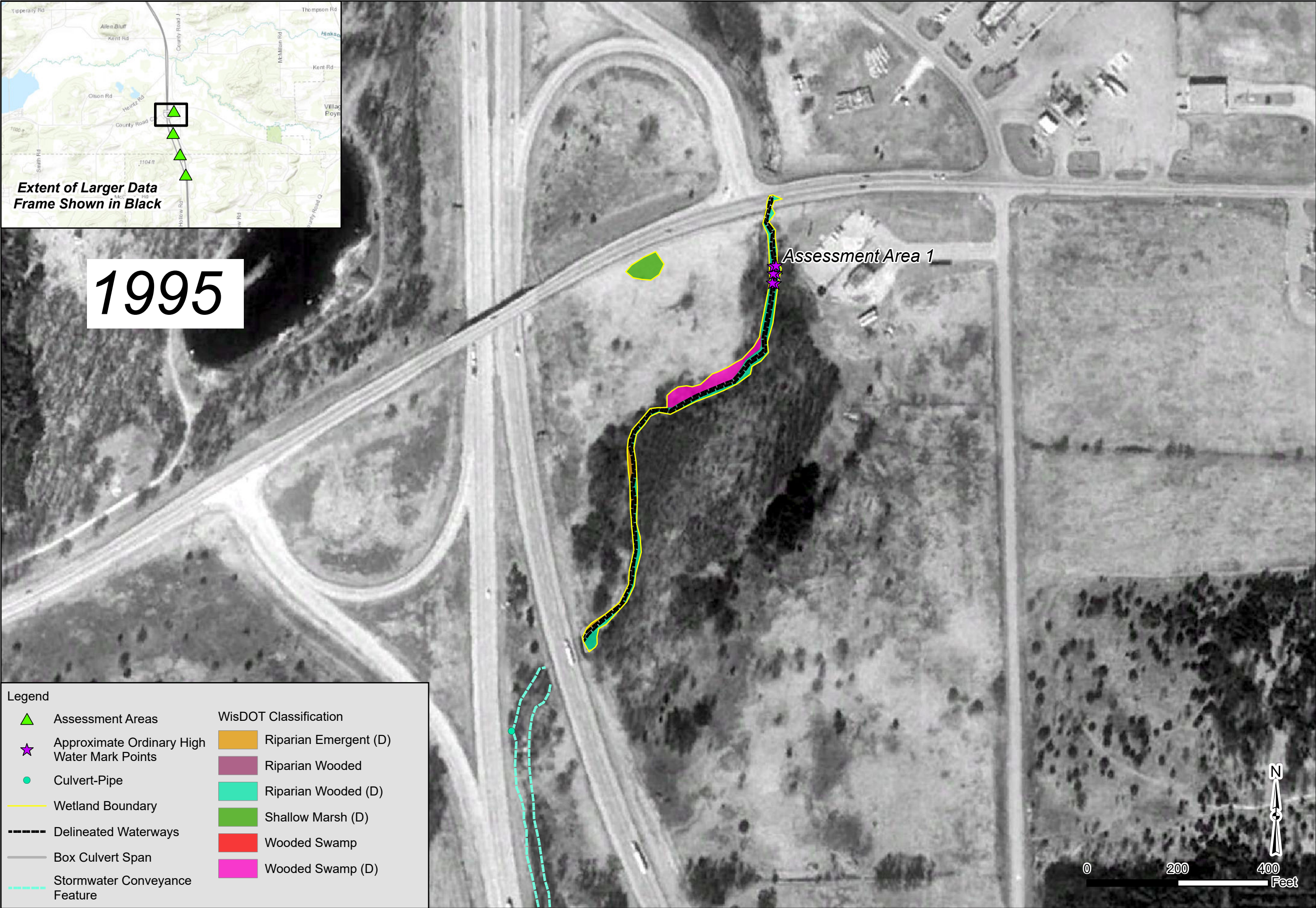
Riparian Wooded

Riparian Wooded (D)

Shallow Marsh (D)

Wooded Swamp

Wooded Swamp (D)



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FIGURE 6
Aerial Imagery review

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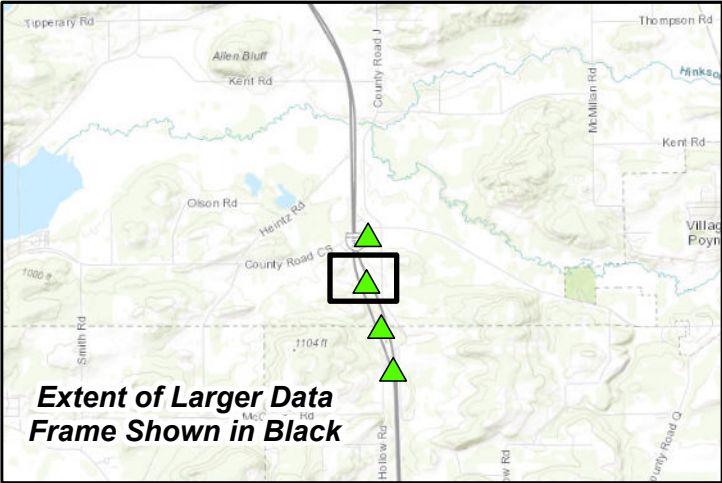
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Figure 6



1995

Legend

Assessment Areas

Approximate Ordinary High Water Mark Points

Culvert-Pipe

Wetland Boundary

Delineated Waterways

Box Culvert Span

Stormwater Conveyance Feature

WisDOT Classification

Riparian Emergent (D)

Riparian Wooded

Riparian Wooded (D)

Shallow Marsh (D)

Wooded Swamp

Wooded Swamp (D)



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Aerial Imagery review

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WETLAND DELINEATION - IH-39/90/94
GREATER MADISON AREA
DANE, COLUMBIA, SAUK, JUNEAU COUNTIES, WISCONSIN

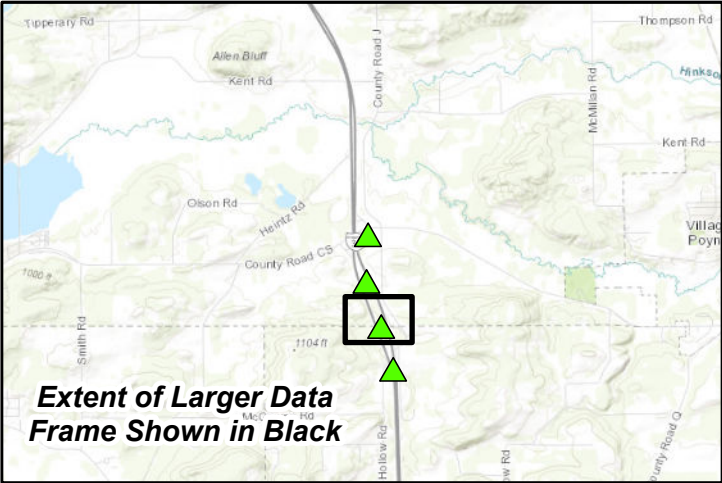
Drawn: GTH 5/21/2024

Approved: EEE 5/21/2024

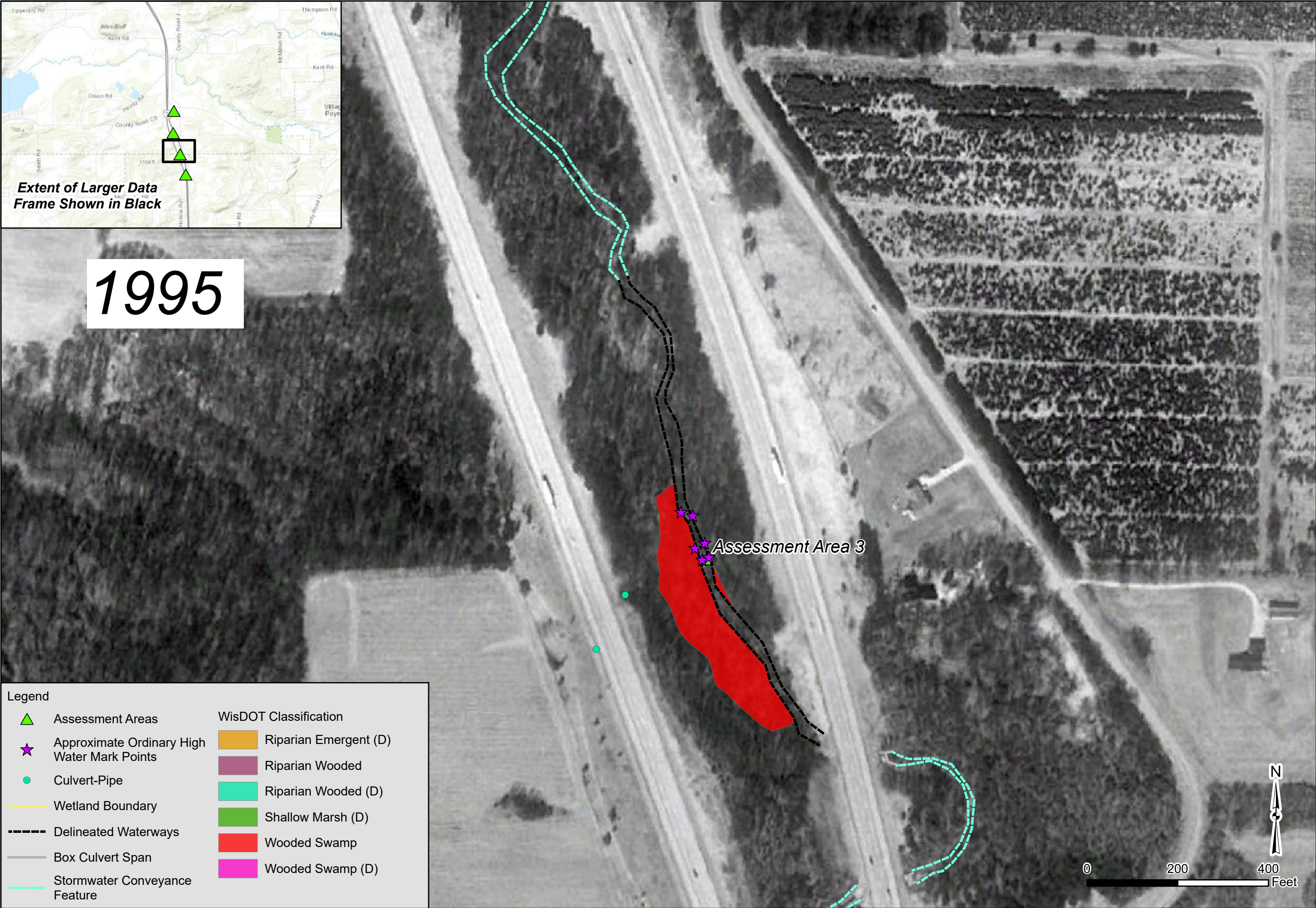
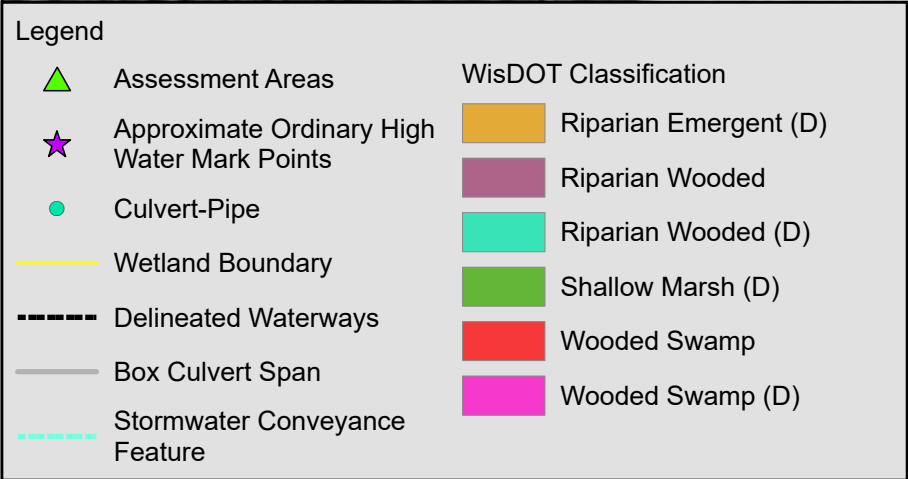
Scale: As Shown

GEI Project No: 2201696

Figure 6



1995



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FIGURE 6
Aerial Imagery review

WISCONSIN DEPARTMENT OF TRANSPORTATION
WISDOT PROJECT ID: 1015-05-00
WETLAND DELINEATION - IH-39/90/94
GREATER MADISON AREA
DANE, COLUMBIA, SAUK, JUNEAU COUNTIES, WISCONSIN

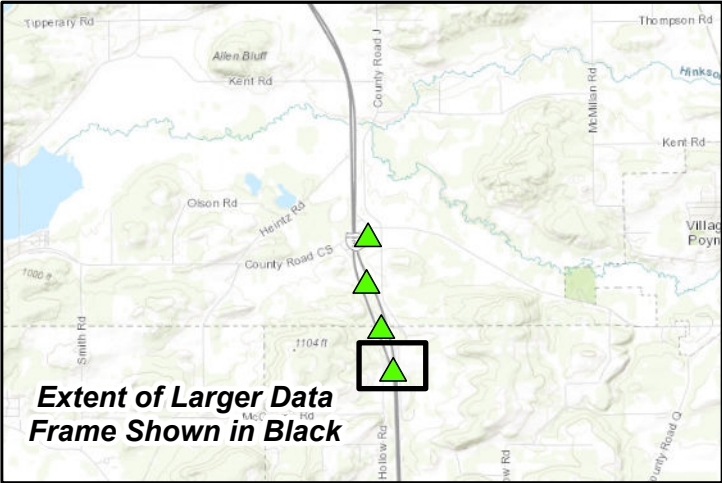
Drawn: GTH 5/21/2024

Approved: EEE 5/21/2024

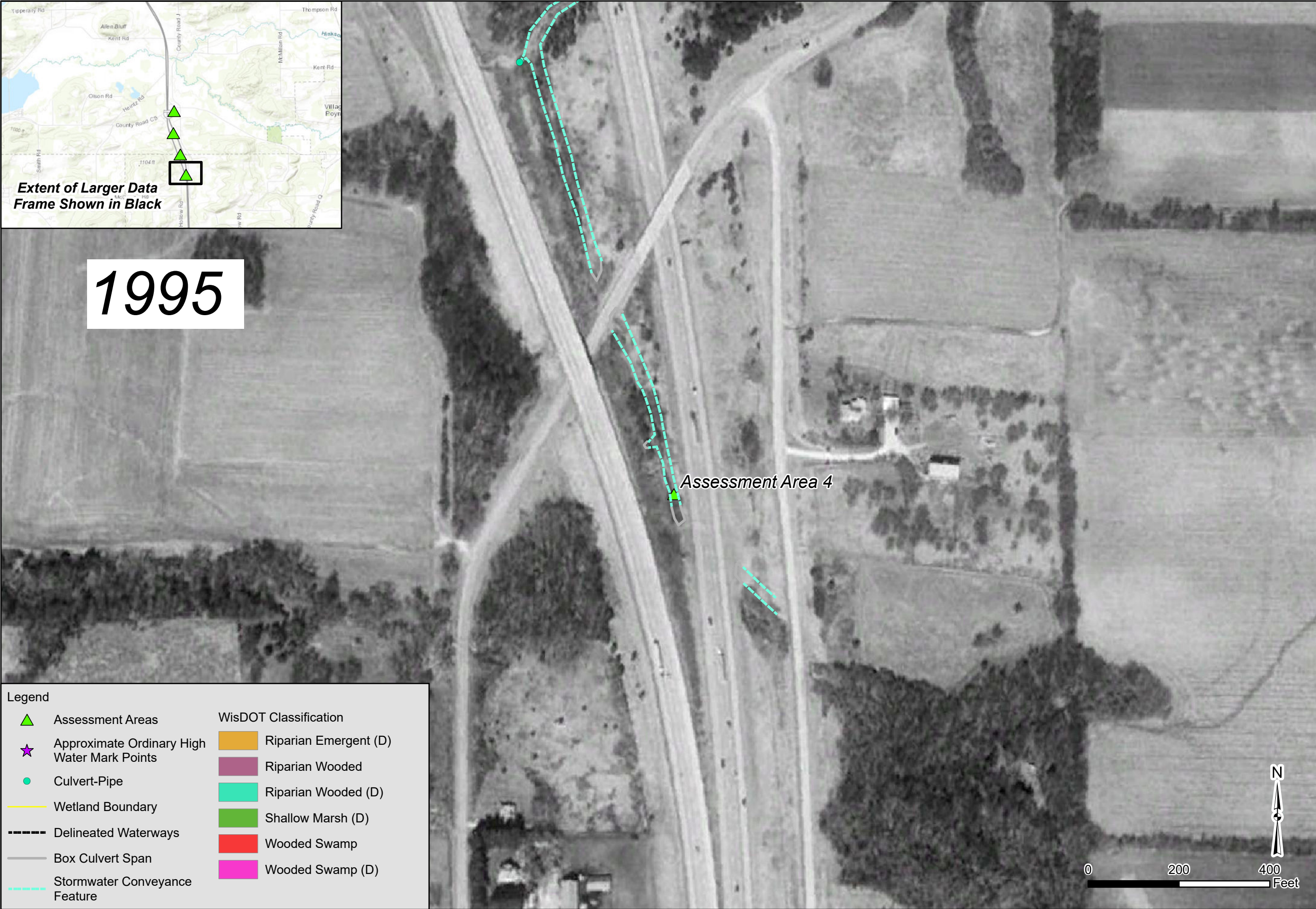
Scale: As Shown

GEI Project No: 2201696

Figure 6



1995



Legend

Assessment Areas	WisDOT Classification
Approximate Ordinary High Water Mark Points	Riparian Emergent (D)
Culvert-Pipe	Riparian Wooded
Wetland Boundary	Riparian Wooded (D)
Delineated Waterways	Shallow Marsh (D)
Box Culvert Span	Wooded Swamp
Stormwater Conveyance Feature	Wooded Swamp (D)

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FIGURE 6
Aerial Imagery review

WISCONSIN DEPARTMENT OF TRANSPORTATION
WISDOT PROJECT ID: 1015-05-00
WETLAND DELINEATION - IH-39/90/94
GREATER MADISON AREA
DANE, COLUMBIA, SAUK, JUNEAU COUNTIES, WISCONSIN

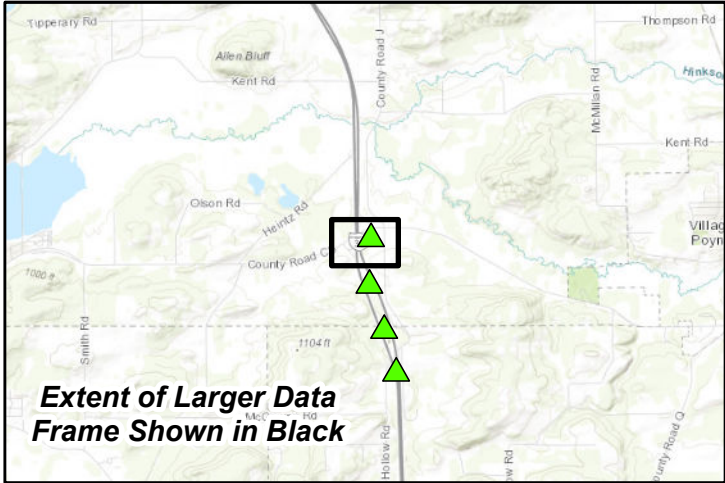
Drawn: GTH 5/21/2024

Approved: EEE 5/21/2024

Scale: As Shown

GEI Project No: 2201696

Figure 6



2005

Legend

 Assessment Areas

 Approximate Ordinary High Water Mark Points

 Culvert-Pipe

 Wetland Boundary

 Delineated Waterways

 Box Culvert Span

 Stormwater Conveyance Feature

WisDOT Classification

 Riparian Emergent (D)

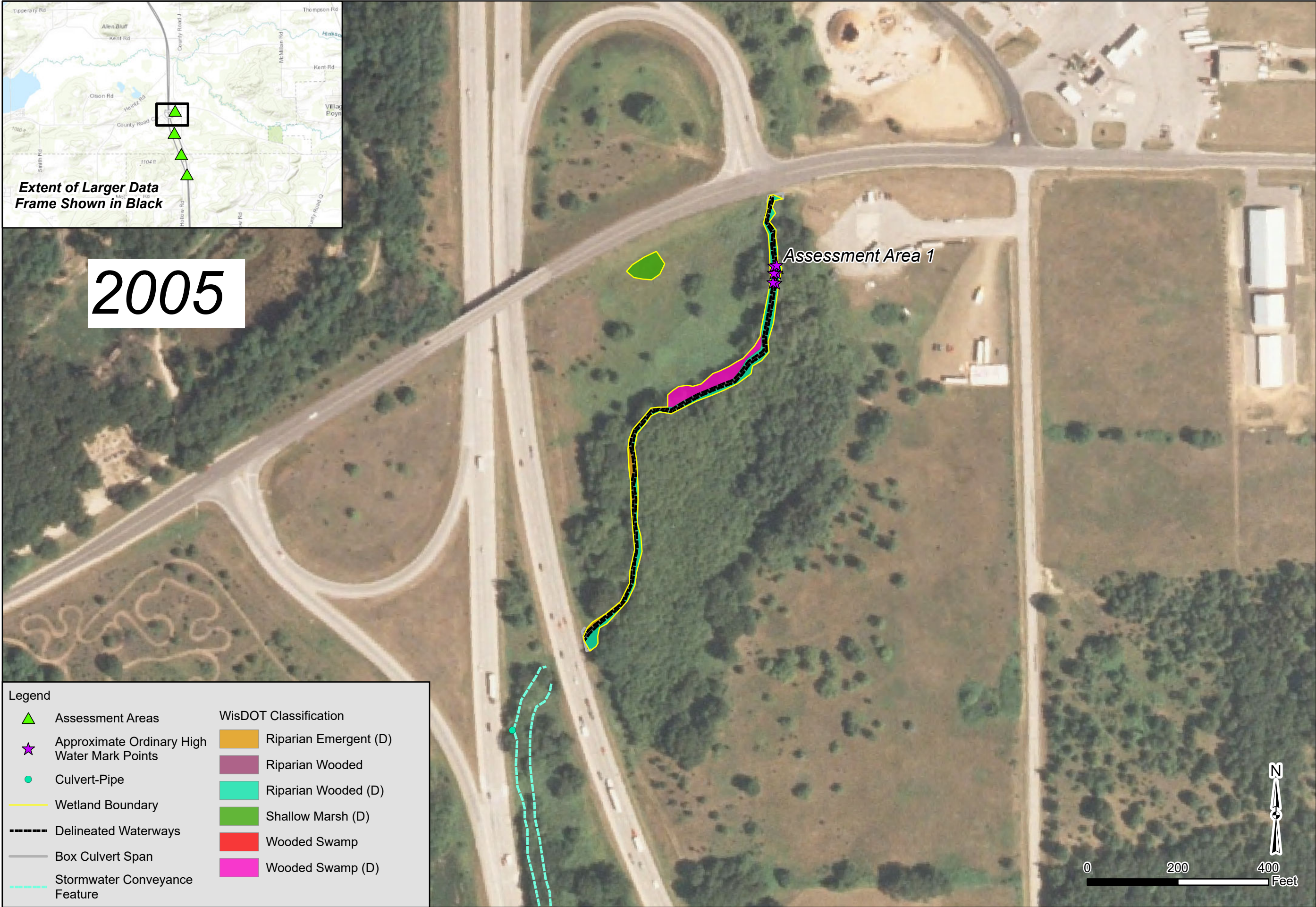
 Riparian Wooded

 Riparian Wooded (D)

 Shallow Marsh (D)

 Wooded Swamp

 Wooded Swamp (D)





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FIGURE 6
Aerial Imagery review

WISCONSIN DEPARTMENT OF TRANSPORTATION
WISDOT PROJECT ID: 1015-05-00
WETLAND DELINEATION - IH-39/90/94
GREATER MADISON AREA
DANE, COLUMBIA, SAUK, JUNEAU COUNTIES, WISCONSIN

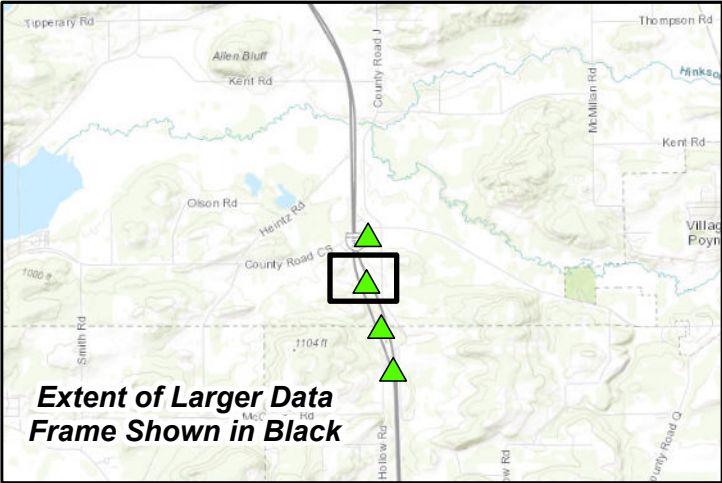
Drawn: GTH 5/21/2024

Approved: EEE 5/21/2024

Scale: As Shown

GEI Project No: 2201696

Figure 6



2005



Legend

Assessment Areas

Approximate Ordinary High Water Mark Points

Culvert-Pipe

Wetland Boundary

Delineated Waterways

Box Culvert Span

Stormwater Conveyance Feature

WisDOT Classification

Riparian Emergent (D)

Riparian Wooded

Riparian Wooded (D)

Shallow Marsh (D)

Wooded Swamp

Wooded Swamp (D)

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FIGURE 6

Aerial Imagery review

WISCONSIN DEPARTMENT OF TRANSPORTATION

WISDOT PROJECT ID: 1015-05-00

WETLAND DELINEATION - IH-39/90/94

GREATER MADISON AREA

DANE, COLUMBIA, SAUK, JUNEAU COUNTIES, WISCONSIN

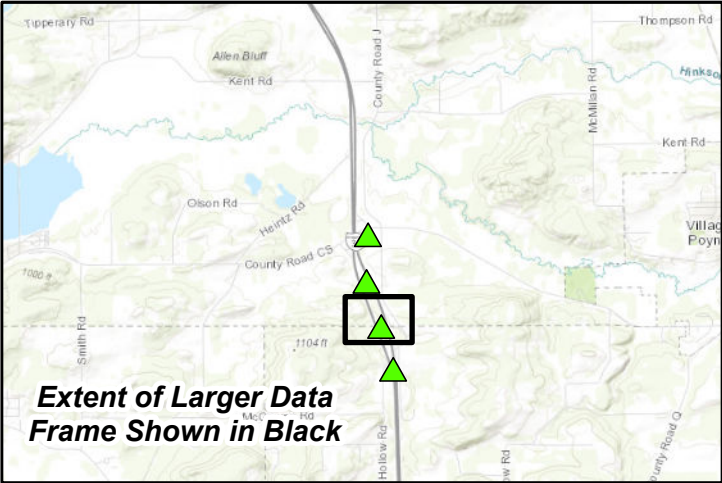
Drawn: GTH 5/21/2024

Approved: EEE 5/21/2024

Scale: As Shown

GEI Project No: 2201696

Figure 6



2005

Legend

Assessment Areas

Approximate Ordinary High Water Mark Points

Culvert-Pipe

Wetland Boundary

Delineated Waterways

Box Culvert Span

Stormwater Conveyance Feature

WisDOT Classification

Riparian Emergent (D)

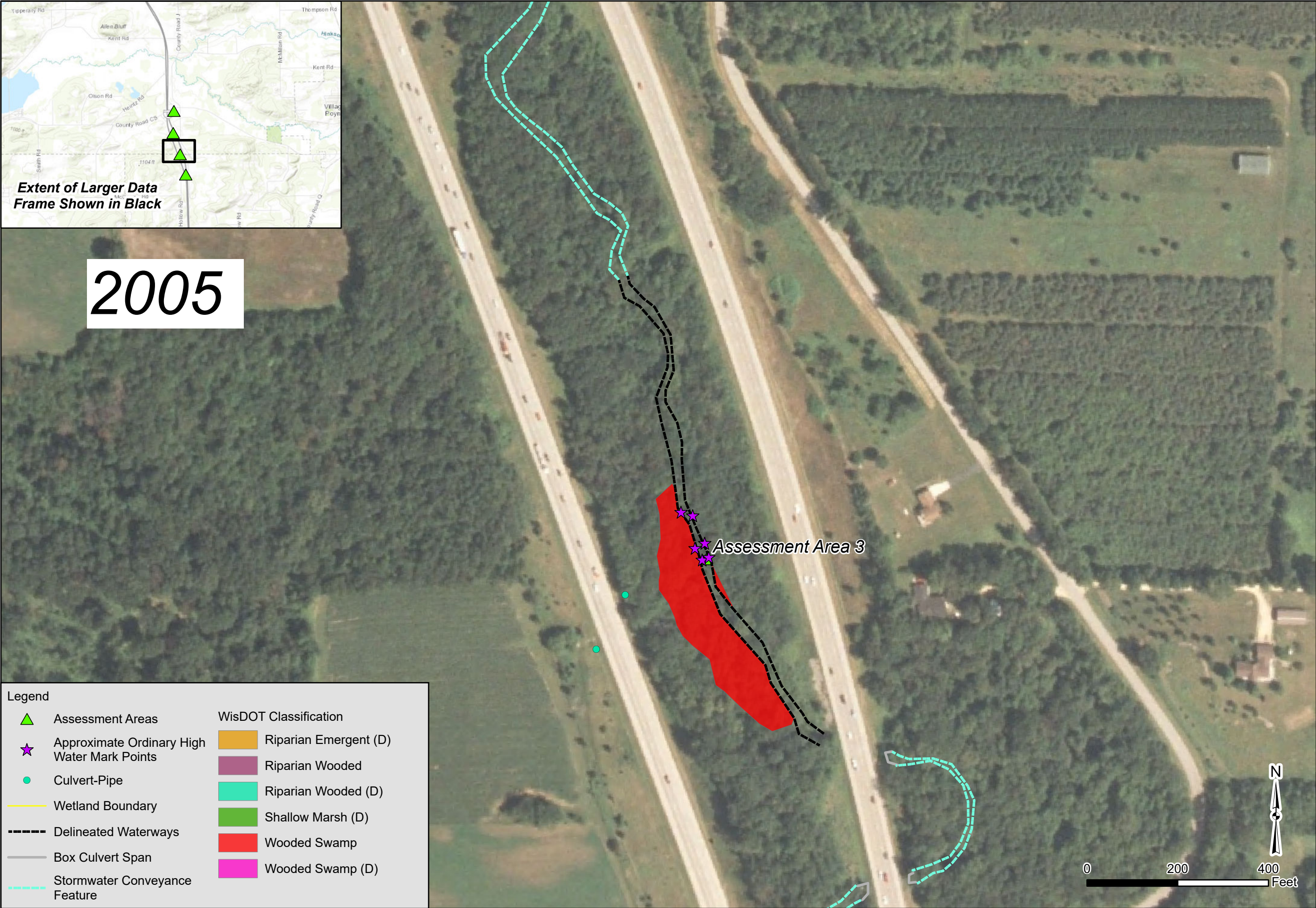
Riparian Wooded

Riparian Wooded (D)

Shallow Marsh (D)

Wooded Swamp

Wooded Swamp (D)



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FIGURE 6

Aerial Imagery review

WISCONSIN DEPARTMENT OF TRANSPORTATION

WISDOT PROJECT ID: 1015-05-00

WETLAND DELINEATION - IH-39/90/94

GREATER MADISON AREA

DANE, COLUMBIA, SAUK, JUNEAU COUNTIES, WISCONSIN

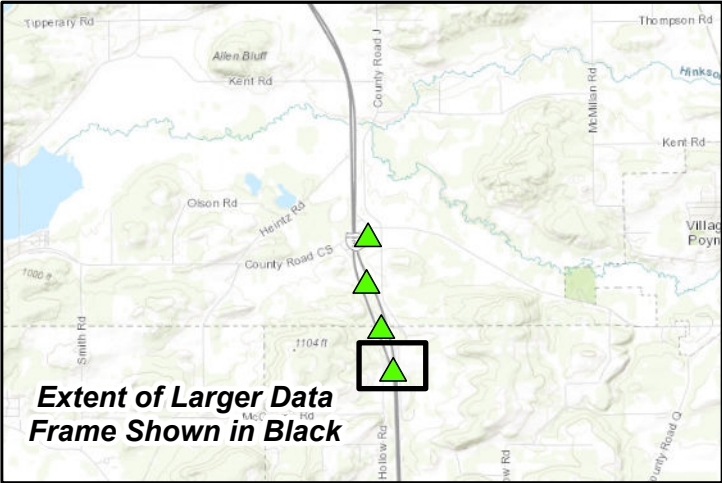
Drawn: GTH 5/21/2024

Approved: EEE 5/21/2024

Scale: As Shown

GEI Project No: 2201696

Figure 6



2005

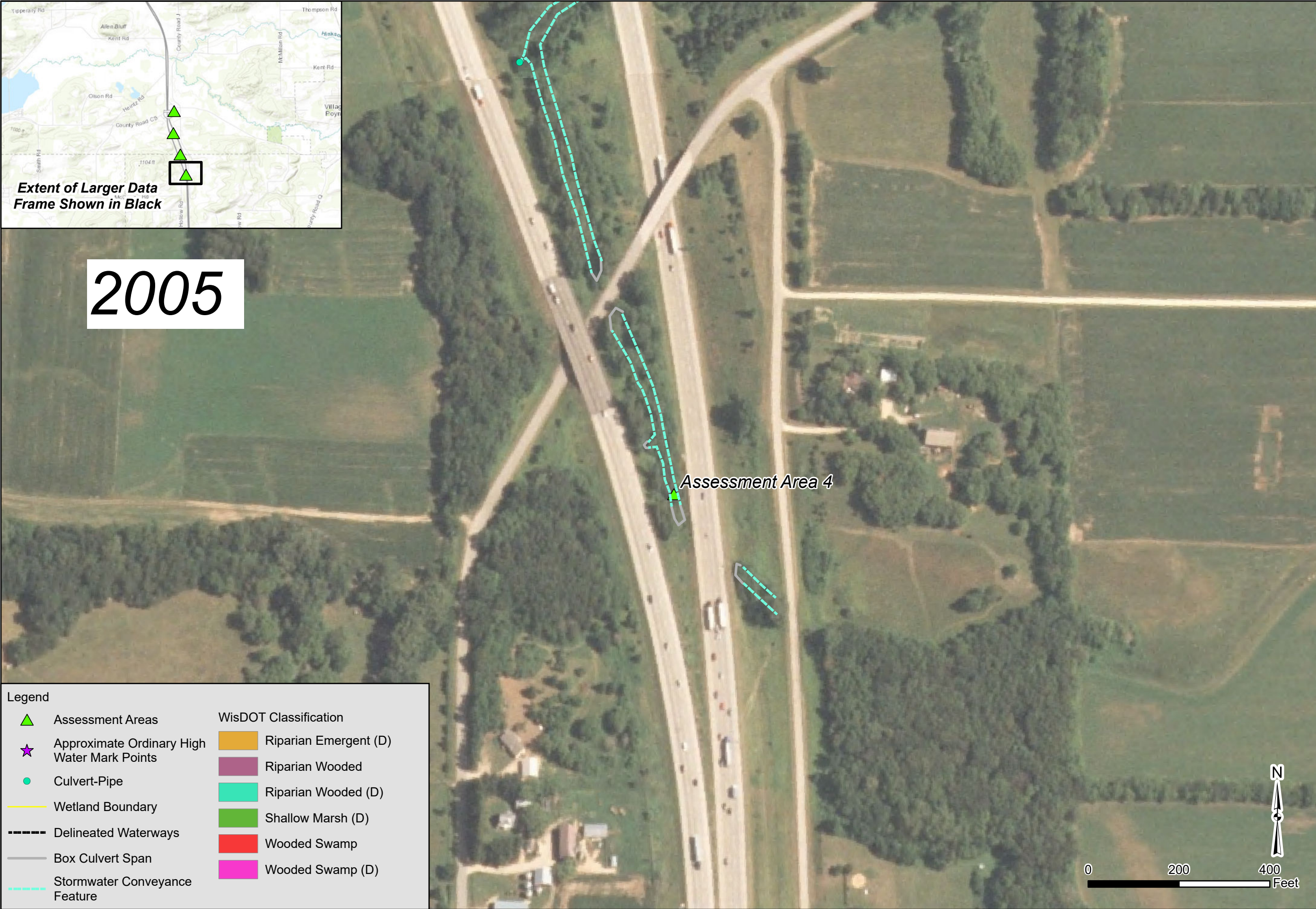
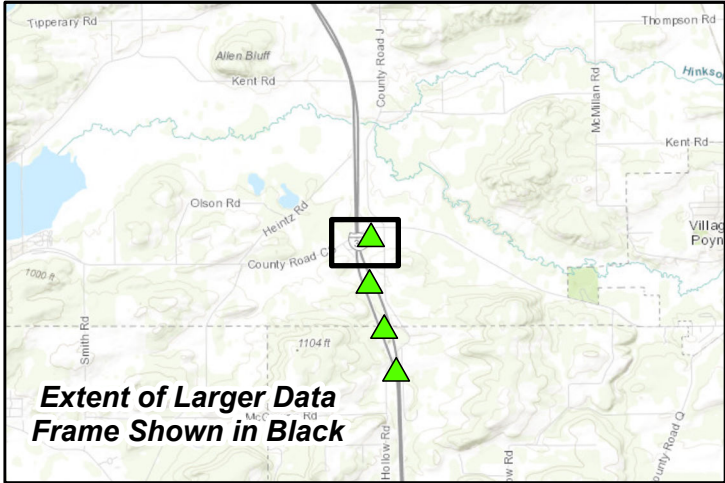


FIGURE 6
Aerial Imagery review

WISCONSIN DEPARTMENT OF TRANSPORTATION
WISDOT PROJECT ID: 1015-05-00
WETLAND DELINEATION - IH-39/90/94
GREATER MADISON AREA
DANE, COLUMBIA, SAUK, JUNEAU COUNTIES, WISCONSIN

Drawn: GTH 5/21/2024
Approved: EEE 5/21/2024
Scale: As Shown
GEI Project No: 2201696
Figure 6



2022



Legend

Assessment Areas

Approximate Ordinary High Water Mark Points

Culvert-Pipe

Wetland Boundary

Delineated Waterways

Box Culvert Span

Stormwater Conveyance Feature

WisDOT Classification

Riparian Emergent (D)

Riparian Wooded

Riparian Wooded (D)

Shallow Marsh (D)

Wooded Swamp

Wooded Swamp (D)

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FIGURE 6

Aerial Imagery review

WISCONSIN DEPARTMENT OF TRANSPORTATION

WISDOT PROJECT ID: 1015-05-00

WETLAND DELINEATION - IH-39/90/94

GREATER MADISON AREA

DANE, COLUMBIA, SAUK, JUNEAU COUNTIES, WISCONSIN

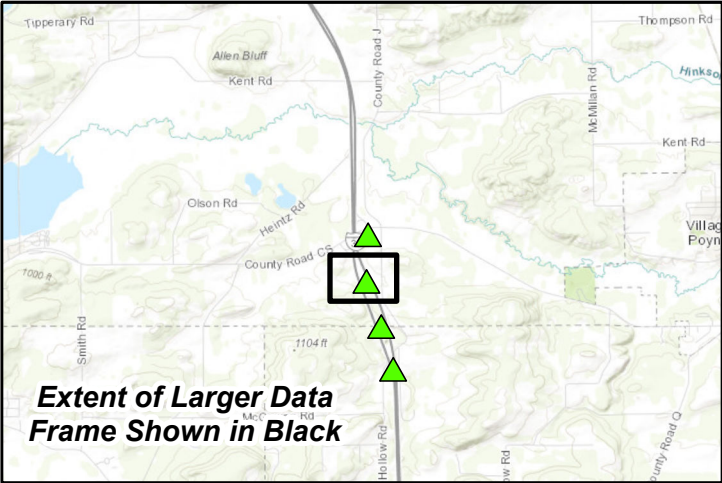
Drawn: GTH 5/21/2024

Approved: EEE 5/21/2024

Scale: As Shown

GEI Project No: 2201696

Figure 6



2022

Legend

Assessment Areas

Approximate Ordinary High Water Mark Points

Culvert-Pipe

Wetland Boundary

Delineated Waterways

Box Culvert Span

Stormwater Conveyance Feature

WisDOT Classification

Riparian Emergent (D)

Riparian Wooded

Riparian Wooded (D)

Shallow Marsh (D)

Wooded Swamp

Wooded Swamp (D)



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FIGURE 6

Aerial Imagery review

WISCONSIN DEPARTMENT OF TRANSPORTATION

WISDOT PROJECT ID: 1015-05-00

WETLAND DELINEATION - IH-39/90/94

GREATER MADISON AREA

DANE, COLUMBIA, SAUK, JUNEAU COUNTIES, WISCONSIN

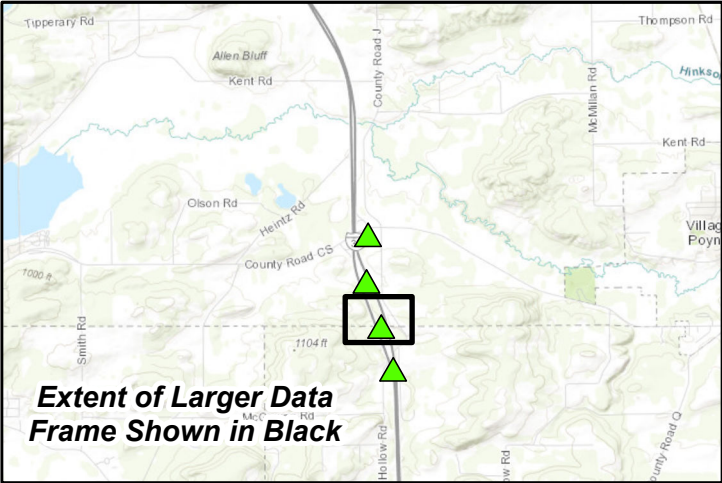
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Approved: EEE 5/21/2024

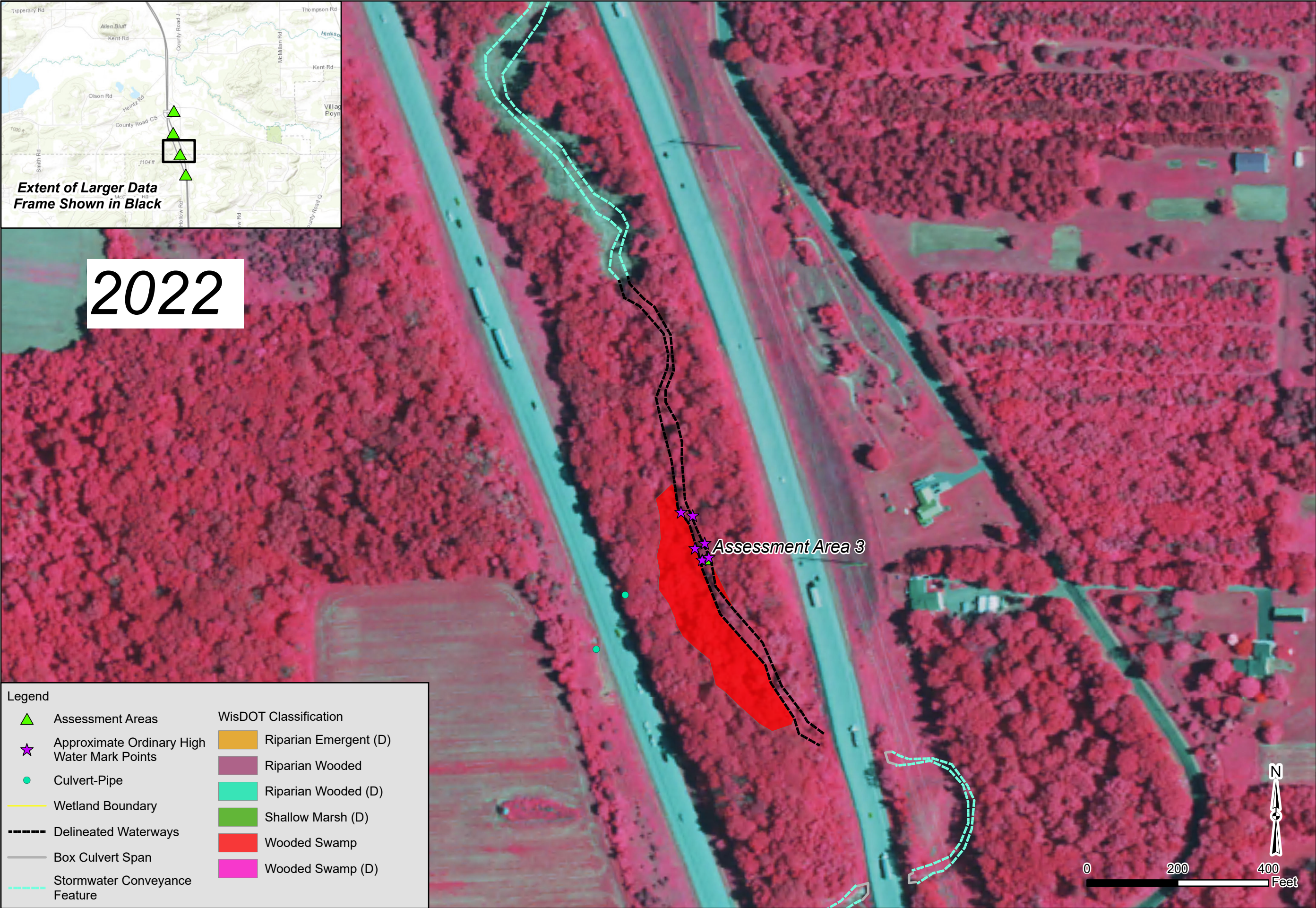
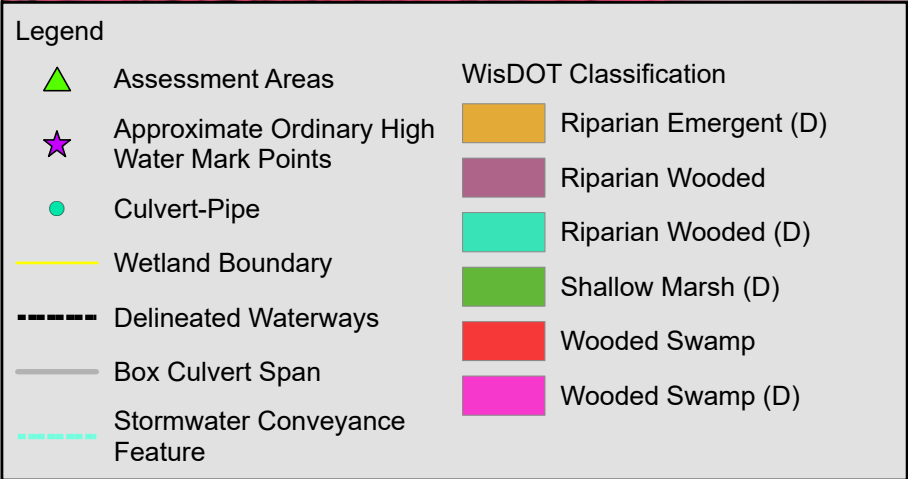
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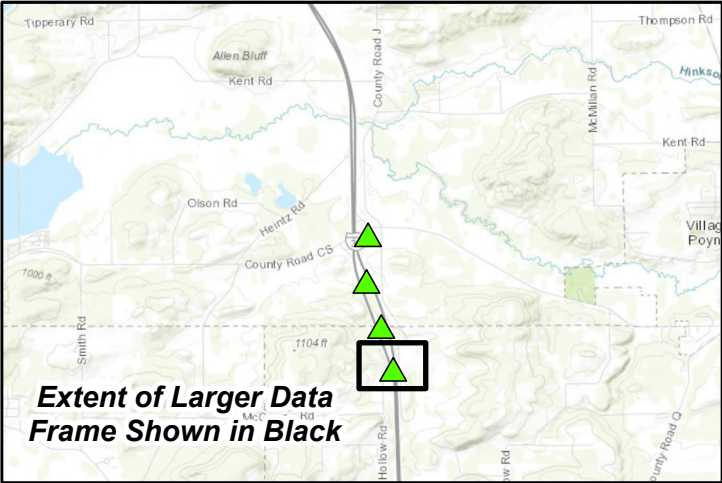
GEI Project No: 2201696

Figure 6



2022





2022



Legend

Assessment Areas	WisDOT Classification
Approximate Ordinary High Water Mark Points	Riparian Emergent (D)
Culvert-Pipe	Riparian Wooded
Wetland Boundary	Riparian Wooded (D)
Delineated Waterways	Shallow Marsh (D)
Box Culvert Span	Wooded Swamp
Stormwater Conveyance Feature	Wooded Swamp (D)

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FIGURE 6
Aerial Imagery review

WISCONSIN DEPARTMENT OF TRANSPORTATION
WISDOT PROJECT ID: 1015-05-00
WETLAND DELINEATION - IH-39/90/94
GREATER MADISON AREA
DANE, COLUMBIA, SAUK, JUNEAU COUNTIES, WISCONSIN

Drawn: GTH 5/21/2024

Approved: EEE 5/21/2024

Scale: As Shown

GEI Project No: 2201696

Figure 6

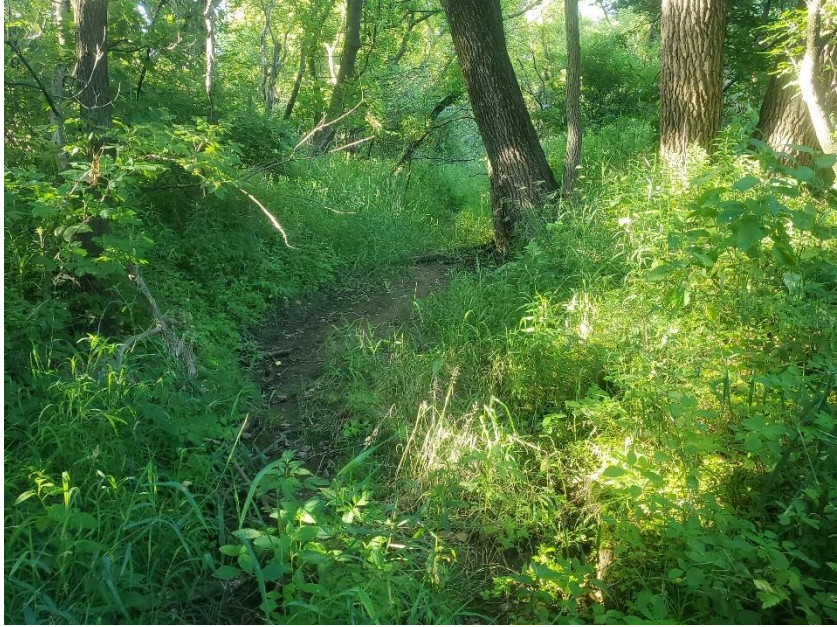
Photographic Log

Project Name: IH 39/90/94 Intersection with USH 12/18 to Intersection with Dees Rd.

Client: Wisconsin Department of Transportation

GEI Project No.

2201696

PHOTOGRAPH No: 1	DATE: July 13,2022 07:32 AM	LATITUDE: 43.39210099	LONGITUDE: -89.46458358
DIRECTION: South	SITE LOCATION: COLUMBIA COUNTY		
DESCRIPTION: Assessment Area 1: Unnamed ephemeral stream crossing through a riparian wooded (degraded) wetland. Waterway observations include sediment sorting and sorting of debris.			
PHOTO BY: GTH			

PHOTOGRAPH No: 2	DATE: July 13, 2022	LATITUDE: 43.38970409	LONGITUDE: -89.46642098
DIRECTION: West	SITE LOCATION: COLUMBIA COUNTY		
DESCRIPTION: Assessment Area 2: Stormwater conveyance feature.			
PHOTO BY: GTH			

Photographic Log

Project Name: IH 39/90/94 Intersection with USH 12/18 to Intersection with Dees Rd
Client: Wisconsin Department of Transportation **GEI Proposal No.** 2201696

PHOTOGRAPH No: 3	DATE: May 14, 2024	LATITUDE: 43.387831	LONGITUDE: -89.46638
DIRECTION: North	SITE LOCATION: COLUMBIA COUNTY		
DESCRIPTION: Assessment Area 2: Stormwater conveyance feature.			
PHOTO BY: GTH			

PHOTOGRAPH No: 4	DATE: May 14, 2024	LATITUDE: 43.386689	LONGITUDE: -89.464966
DIRECTION: North-east	SITE LOCATION: COLUMBIA COUNTY		
DESCRIPTION: Assessment Area 2: Stormwater conveyance feature.			
PHOTO BY: GTH			

Photographic Log

Project Name: IH 39/90/94 Intersection with USH 12/18 to Intersection with Dees Rd
Client: Wisconsin Department of Transportation **GEI Proposal No.** 2201696

PHOTOGRAPH No: 5	DATE: May 14, 2024	LATITUDE: 43.384853	LONGITUDE: -89.463913
DIRECTION: North	SITE LOCATION: COLUMBIA COUNTY		
DESCRIPTION: Assessment Area 2: Stormwater conveyance feature.			
PHOTO BY: GTH			

PHOTOGRAPH No: 6	DATE: May 14, 2024	LATITUDE: 43.382778	LONGITUDE: -89.463091
DIRECTION: North-west	SITE LOCATION: COLUMBIA COUNTY		
DESCRIPTION: Assessment Area 3: Unnamed ephemeral stream. Evidence of sediment deposition.			
PHOTO BY: GTH			

Photographic Log

Project Name: IH 39/90/94 Intersection with USH 12/18 to Intersection with Dees Rd
Client: Wisconsin Department of Transportation **GEI Proposal No.** 2201696

PHOTOGRAPH No: 7	DATE: May 14, 2024	LATITUDE: 43.382434	LONGITUDE: -89.462807
DIRECTION: North	SITE LOCATION: COLUMBIA COUNTY		
DESCRIPTION: Assessment Area 3: Unnamed ephemeral stream. Evidence of erosion and defined bed and bank.			
PHOTO BY: GTH			

PHOTOGRAPH No: 8	DATE: May 14, 2024	LATITUDE: 43.381756	LONGITUDE: -89.462807
DIRECTION: North	SITE LOCATION: COLUMBIA COUNTY		
DESCRIPTION: Assessment Area 3: Unnamed ephemeral stream. Presence of large woody debris.			
PHOTO BY: GTH			

Photographic Log

Project Name: IH 39/90/94 Intersection with USH 12/18 to Intersection with Dees Rd
Client: Wisconsin Department of Transportation **GEI Proposal No.** 2201696

PHOTOGRAPH No: 9	DATE: May 14, 2024	LATITUDE: 43.381173	LONGITUDE: -89.462502
DIRECTION: South	SITE LOCATION: COLUMBIA COUNTY		
DESCRIPTION: Assessment Area 3: Unnamed ephemeral stream with approximate ordinary high-water level and waterway centerline.			
PHOTO BY: GTH			

PHOTOGRAPH No: 10	DATE: May 14, 2024	LATITUDE: 43.380139	LONGITUDE: -89.461641
DIRECTION: East	SITE LOCATION: COLUMBIA COUNTY		
DESCRIPTION: Assessment Area 3: Unnamed ephemeral stream with erosion around box culvert.			
PHOTO BY: GTH			

Photographic Log

Project Name: IH 39/90/94 Intersection with USH 12/18 to Intersection with Dees Rd
Client: Wisconsin Department of Transportation **GEI Proposal No.** 2201696

PHOTOGRAPH No: 11	DATE: May 14, 2024	LATITUDE: 43.3801	LONGITUDE: -89.461755
DIRECTION: North	SITE LOCATION: COLUMBIA COUNTY		
DESCRIPTION: Assessment Area 3: Unnamed ephemeral waterway. Presence of large woody debris and litter piling up, as well as scouring under tree roots.			
PHOTO BY: GTH			

PHOTOGRAPH No: 12	DATE: May 14, 2024	LATITUDE: 43.379778	LONGITUDE: -89.460352
DIRECTION: West	SITE LOCATION: COLUMBIA COUNTY		
DESCRIPTION: Assessment Area 4: Stormwater conveyance feature.			
PHOTO BY: GTH			

Photographic Log

Project Name: IH 39/90/94 Intersection with USH 12/18 to Intersection with Dees Rd
Client: Wisconsin Department of Transportation **GEI Proposal No.** 2201696

PHOTOGRAPH No: 13	DATE: May 14, 2024	LATITUDE: 43.379189	LONGITUDE: -89.461274
DIRECTION: East	SITE LOCATION: COLUMBIA COUNTY		
DESCRIPTION: Assessment Area 4: Stormwater conveyance feature extending from culvert.			
PHOTO BY: GTH			

PHOTOGRAPH No: 14	DATE: May 14, 2024	LATITUDE: 43.378725	LONGITUDE: -89.461741
DIRECTION: South	SITE LOCATION: COLUMBIA COUNTY		
DESCRIPTION: Assessment Area 4: Stormwater conveyance feature.			
PHOTO BY: GTH			

Photographic Log

Project Name: IH 39/90/94 Intersection with USH 12/18 to Intersection with Dees Rd
Client: Wisconsin Department of Transportation **GEI Proposal No.** 2201696

PHOTOGRAPH No: 15	DATE: May 14, 2024	LATITUDE: 43.377781	LONGITUDE: -89.461396
DIRECTION: Northwest	SITE LOCATION: COLUMBIA COUNTY		
DESCRIPTION: Assessment Area 4: Stormwater conveyance feature.			
PHOTO BY: GTH			

PHOTOGRAPH No: 16	DATE: July 12, 2022 11:10 AM	LATITUDE: 43.37606263	LONGITUDE: -89.46063945
DIRECTION: North	SITE LOCATION: COLUMBIA COUNTY		
DESCRIPTION: Assessment Area 4: Stormwater conveyance feature.			
PHOTO BY: GTH			

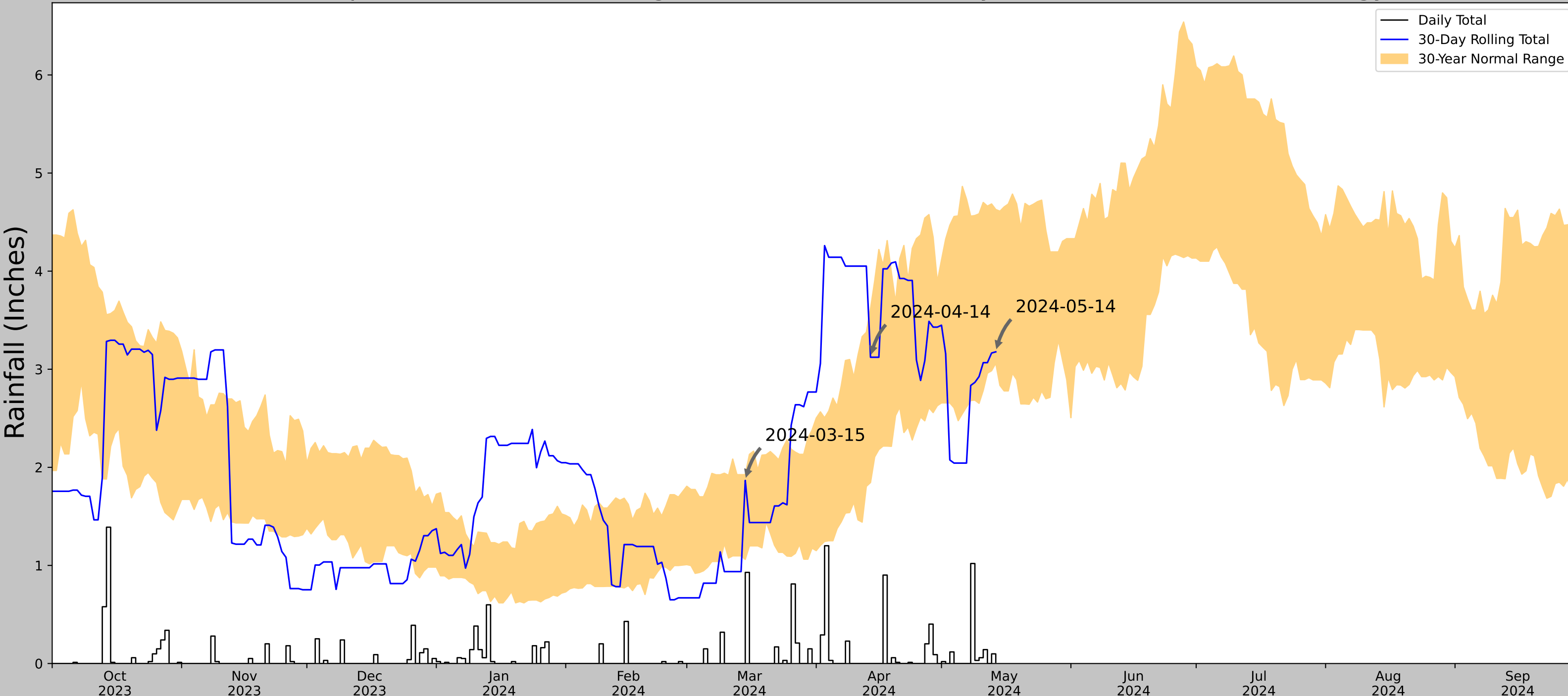
Photographic Log

Project Name: IH 39/90/94 Intersection with USH 12/18 to Intersection with Dees Rd
Client: Wisconsin Department of Transportation **GEI Proposal No.** 2201696

PHOTOGRAPH No: 17	DATE: July 12, 2022	LATITUDE: 43.37866966	LONGITUDE: -89.46172182
DIRECTION: South	SITE LOCATION: COLUMBIA COUNTY		
DESCRIPTION: Assessment Area 4: Stormwater conveyance feature.			
PHOTO BY: GTH			

PHOTOGRAPH No: 18	DATE: July 12, 2022	LATITUDE: 43.37801309	LONGITUDE: -89.46139848
DIRECTION: North	SITE LOCATION: COLUMBIA COUNTY		
DESCRIPTION: Assessment Area 4: Stormwater conveyance feature.			
PHOTO BY: GTH			

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	43.381284, -89.462653
Observation Date	2024-05-14
Elevation (ft)	850.033
Drought Index (PDSI)	Mild wetness (2024-04)
WebWIMP H ₂ O Balance	Dry Season

30 Days Ending	30 th %ile (in)	70 th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2024-05-14	3.061024	4.628347	3.177165	Normal	2	3	6
2024-04-14	1.844882	3.61378	3.122047	Normal	2	2	4
2024-03-15	1.061417	1.925197	1.866142	Normal	2	1	2
Result							Normal Conditions - 12



**US Army Corps
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Figures and tables made by the
Antecedent Precipitation Tool
Version 2.0

Developed by:
U.S. Army Corps of Engineers and
U.S. Army Engineer Research and
Development Center



ERDC
ENGINEER RESEARCH & DEVELOPMENT CENTER

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
ARLINGTON	43.3042, -89.3453	1051.837	7.946	201.804	5.179	10901	90
SUN PRAIRIE 3 W	43.1936, -89.2822	950.131	8.275	101.706	4.565	7	0
LODI WWTP	43.3217, -89.5311	803.15	9.419	248.687	6.581	127	0
MADISON DANE CO RGNL AP	43.1406, -89.3453	858.924	11.304	192.913	7.267	317	0