Wisconsin Department of Transportation

CTH KR Stormwater Wetland Delineations

October 2018

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Document Information

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Cardno Project #	J177001M24
Project Manager	Eric Englund, Cardno
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Prepared for:

Wisconsin Department of Transportation – Southeast Region
141 NW Barstow Street, Waukesha, WI 53187 USA

Prepared by:

Cardno, Inc.
5765 West Grand Market Drive, Suite B, Grand Chute, WI 54915 USA

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1 Introduction

Cardno was contracted by the Wisconsin Department of Transportation (WisDOT) to complete a wetland delineation and classification of wetland resources within the proposed County Highway (CTH) KR road corridor in Racine and Kenosha Counties, Wisconsin. The survey area is in addition to previously surveyed areas along CTH KR under WisDOT work order 3763-00-04 (see previous, independent wetland report). The new surveys includes eight discontinuous parcels that total approximately 93.29 acres. These parcels range from 0.78 to 44.69 acres in size and are depicted with the associated delineation boundaries in Figures 1-5.

Based on field investigations conducted by Cardno on September 26 and 27, 2018, and desktop review of related resource maps, it is our professional opinion that ten wetland complexes, totaling 7.01 acres (305,336ft^2), and one perennial waterway are located within the parcel boundaries.

This report has been compiled by the following staff that are trained and experienced in delineation methodologies and applicable regulations:

- **Eric Englund – Assistant Staff Scientist; Wetland Delineator, Report Author:** Eric has over four years of experience working in the fields of natural resources and environmental compliance. He holds a Bachelor's of Science in Water Resources with a Minor in GIS and Spatial Analysis from the University of Wisconsin- Stevens Point. Currently, his job responsibilities include wetland delineations, conducting field surveys for T&E species and habitat, permitting, and environmental monitoring for a variety of utility projects.
- **Ken Carlson – Staff Scientist; Lead Wetland Delineator:** Ken has five years of experience in wetland restoration and ecology with Cardno and the past four years participating in wetland delineations and surveys. He holds a B.S. degree in Environmental Policy and Planning/Environmental Science from UW-Green Bay and has completed training including USACE and WDNR Advanced Wetland Delineation, NRCS Hydric Soils Identification, and NASECA erosion control inspection. Ken's experience includes wetland delineation, field surveys for threatened/endangered species and habitat, and environmental project management.
- **Alex Cohen – Senior GIS Analyst, Geospatial Manager:** Alex has over seven years of experience in natural resource ecology, including field work, GIS analysis, cartography, and modelling. He holds a Master of Science in Computational Ecology from Purdue University and a Bachelor of Science in Biology/Psychology from Calvin College. Currently, Alex is responsible for managing the Cardno WI/MN GIS team as well as Cardno's ArcGIS Online organization for the entire Midwest. Alex develops and maintains datasets and web maps for short-term and long-term multi-year projects, and is responsible for setting up GIS data collection files, turning raw field-collected data into project deliverables (including figures and tables), and managing pictures using custom scripts to format and name field-collected photos. Alex also develops custom geospatial tools to meet the many needs of clients.
- **Madalyn Lupinek – Assistant Staff Scientist:** Madalyn has several seasons of field experience and several years of GIS experience in both laboratory and field settings. She holds a B.S. degree in Environmental Sciences from UW-Madison where she completed cartography/GIS courses and a two-year undergraduate research project in soil science. Currently, Madalyn assists with wetland delineations, erosion control monitoring, field surveys for threatened and endangered species and habitat, as well as GIS tasks such as maintaining web maps for projects, setting up GIS data collection files, and processing field data into project figures.

2 Methods

Cardno conducted a field wetland determination and delineation on September 26 and 27, 2018 to identify wetland and waterway limits within the project boundaries provided by WisDOT. Prior to the field investigation, Cardno conducted a desktop review to determine the likelihood and potential location of wetlands and waterways. Sources reviewed include:

- United States Geological Survey (USGS) Topographical Map (Figure 2)
- USDA-NRCS Web Soil Survey Database for Racine and Kenosha Counties, Wisconsin (Figure 3)
- WDNR Wisconsin Wetland Inventory (WWI) Mapping (Figure 4)
- WDNR Surface Water Data Viewer

These maps display wetland indicators, including hydrology and hydric soil units, within the project corridor. Locations that exhibited wetland signatures from aerial imagery review, especially in agricultural areas, were further reviewed in the field to make a final determination on wetland limits. The sole use of any of these maps to make wetland determinations is not acceptable to the regulating agencies.

The delineation of wetlands and waterways was based on the methodology described in the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory, 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region* Version 2.0 (Environmental Laboratory, 2010) as required by current policy.

2.1 Survey Method

During site reconnaissance, Cardno walked the extent of each parcel project boundary with the specific intent of determining wetland and waterway limits. Data points were collected within and near potential wetland areas to document soil characteristics, evidence of hydrology, and vegetation. Wetland ditch systems that were connected through culverted access drives and contained like communities were typically grouped with a representative pair of data points.

Cardno crews surveyed all data point locations and wetland boundaries using GPS technology. Data collection settings for the GPS units use available satellites, including two DGPS (Differential Global Positioning System) satellites, to capture location data. Cardno's GPS units acquire multiple readings per data point and use the Wide Area Augmentation System (WAAS) satellite readings to increase accuracy to sub-meter. While Cardno's GPS surveys provide reasonably spatial accuracy, they do not provide the same accuracy as a professional land survey.

2.2 Naming Protocol

Feature naming for spatial data collected in field followed the following conventions:

- DP-xx = Data Point (may also include photos)
- PP-xx = Photo Point
- S-xx = Stream
- W-xx = Wetland

Feature naming resumed with numbering where the previous CTH KR surveys ended to ensure data integrity when cross referencing between survey efforts.

2.3 Site Photographs

Representative site photographs were taken at wetland and upland sample point locations as well as for general documentation throughout the project corridor and are included in Appendix A. These photographs represent site conditions at the time of inspection within the project corridor.

2.4 Delineation Data Sheets

The Midwest Region routine wetland delineation data sheets used in the wetland delineation process are located in Appendix B. These forms are the written documentation of how representative data point locations meet or do not meet each of the wetland criteria. Plant species nomenclature follows the 2016 National Wetland Plant List (Lichvar et al., 2016). Soils were identified using the methods outlined in the *USDA NRCS Field Indicators of Hydric Soils in the United States*, *Version 8.1* (USDA-NRCS 2017). Wetland community types are based on the WisDOT community classification guide (Appendix C).

3 Results and Discussion

3.1 Desktop Review

3.1.1 Recent Climatic Conditions and Precipitation Data

Recent precipitation data was compared with historic precipitation data from a 46-year dataset (1971-2017) from a nearby weather station (Racine, WI) to determine if normal hydrologic and climatic conditions were present on-site during the delineation. When compared to the WETS Station data, the observed precipitation data from three months prior to the delineation indicated normal precipitation conditions at the time of the delineation. The antecedent hydrologic condition analysis is provided below:

		Long-term rainfall records (1971 - 2017)							
WETS Station: Racine, WI	Month	<30%	Mean	>30%	Actual	Condition	Condition Value	Month Weight Value	Condition Value X Month Weight
3rd Prior Month	June	2.52	3.89	4.68	**7.06**	Wet	3	1	3
2nd Prior Month	July	2.51	3.45	4.06	**2.40**	Dry	1	2	2
1st Prior Month	August	2.46	3.86	4.65	**5.46**	Wet	3	3	9
								Sum:	14
								Conditions Onsite:	Normal

If sum is:	
6 to 9	then prior period has been drier than normal
10 to 14	then prior period has been normal
15 to 18	then prior period has been wetter than normal

Condition Values:
(1) Dry
(2) Normal
(3) Wet

Because the wetland delineation effort was completed at the end of September, antecedent precipitation data was also reviewed for the month of the delineation using the same methods described above. In September 2018, rainfall totaled 4.51". WETS Table averages for September indicate a normal precipitation range of 1.71-4.09" for the month of September. Thus, September would also be considered a wetter than normal month. Field delineators took this antecedent precipitation result into account when conducting field delineation of wetland and waterway limits in the field, noting that evidence of hydrology may be difficult to determine during these conditions.

3.1.2 Topography

The survey area for this project is discontinuous. A review of the USGS Topographical Map (Figure 2) for this project corridor shows rolling hills towards the western portion of the survey area, becoming increasingly irregular to the east. Wetland complexes are evident along much of the route, and the Pike River intersects the survey area in two of the parcels.

3.1.3 Soil Survey

The USDA-NRCS Web Soil Survey Maps (Figure 3) identified 14 soil types, two of which are considered hydric (water is unranked), within the survey boundaries. The WDNR Surface Water Data Viewer layer was also reviewed to further investigate the area. Areas where hydric soil indicators exist were given priority; however data points were collected in all areas as necessary despite existing hydric rating if wetland hydrological or topographical characteristics were present. A summary of mapped soil types and their hydric and wetland soil indicator status are outlined in Table 3-1 below.

Table 3-1 Mapped Soil Units

Symbol	Map Unit Name	Hydric Rating	Acreage	Percent of Project Area
Am	Alluvial land	No	3.53	3.78%
AtA	Ashkum silty clay loam, 0 to 2 percent slopes	Hydric	1.23	1.32%
AzB	Aztalan loam, 2 to 6 percent slopes	No	1.60	1.71%
BcA	Beecher silt loam, 1 to 3 percent slopes	No	0.90	0.96%
EtB	Elliott silty clay loam, 2 to 6 percent slopes	No	4.74	5.08%
MeB2	Markham silt loam, 2 to 6 percent slopes, eroded	No	0.92	0.99%
MzdB	Ozaukee silt loam, 2 to 6 percent slopes	No	6.64	7.11%
MzdB2	Ozaukee silt loam, 2 to 6 percent slopes, eroded	No	20.11	21.55%
MzdC2	Ozaukee silt loam, 6 to 12 percent slopes, eroded	No	1.25	1.34%
Na	Navan silt loam	Hydric	15.00	16.08%
SzB	Symerton loam, 2 to 6 percent slopes	No	23.67	25.37%
VaB	Varna silt loam, 2 to 6 percent slopes	No	6.70	7.19%
VaB2	Varna silt loam, 2 to 6 percent slopes, eroded	No	6.73	7.22%
VaC2	Varna silt loam 6 to 12 percent slopes, eroded	No	0.26	0.28%
Total			**93.29**	**100.00%**

3.1.4 Wisconsin Wetland Inventory

The WWI (Figure 4) was reviewed to identify potential wetlands mapped within the boundaries of the project corridor. Areas where mapped wetland features exist were given priority; however data points were collected in all areas as necessary despite existing mapped wetland features if wetland hydrological, topographical, or vegetative characteristics were present. The WWI data identified the approximately 4.49 acres of wetlands outlined in the table below. A summary of mapped WWI wetlands is outlined in Table 3-2 below.

Table 3-2 Mapped WWI Wetlands

Symbol	Wetland Type	Square Feet	Acreage	Percent of Project Area
T3/E2K	Forested, Emergent/wet meadow, Subclass Broad-leaved deciduous, Narrow-leaved persistent, Wet soil, Palustrine	149,875.25	3.44	76.67%
E2K	Emergent/wet meadow, Narrow-leaved persistent, Wet soil, Palustrine	821.21	0.02	0.42%
E2Kf	Emergent/wet meadow, Narrow-leaved persistent, Wet soil, Palustrine	44,794.79	1.03	22.91%
Total		**195,492.01**	**4.49**	**100.00%**

3.2 General Site Conditions

The project parcels consists primarily of row crop agriculture with suburban and farm housing, becoming increasingly urban towards the east end of the project area. Upland areas are dominated by European grasses and agricultural ruderals.

3.2.1 Wetlands

Based on this field investigation and desktop review of related resource maps, it is our professional opinion that ten wetland complexes containing three wetland communities totaling 7.01 acres and one waterway is located within the parcel boundaries. These features are further described below.

A total of ten wetland communities were identified within the parcel boundaries (Figure 5) and were assigned community types according to WisDOT classification (Appendix C). The wetlands that were identified were generally located in lowland areas where water tends to collect and drain more slowly, such as in roadside ditches. Factors in determining wetland boundaries included topography of the landscape, dominant vegetation, soil, and hydrology observation. Documentation of these features, including wetland community type, associated data points, observed hydrology and hydric soil indictors, and dominant vegetation may be found in the wetland determination forms found in Appendix B, while general descriptions for observed wetland communities are found in Table 3-3 below.

3.2.1.1 Wet Meadow

Approximately 6.41 acres (6.87% project area) of wet meadow community were identified and was the most abundant wetland type found. Dominant vegetation in the wet meadow community included large barnyard grass (*Echinochloa crus-galli),* curlydock (*Rumex crispus*), spotted lady's-thumb (*Persicaria maculosa*), black girdle bulrush (*Scirpus atrocinctus*), prairie cord grass (*Spartina pectinate*), uptight sedge (*Carex stricta*), and hybrid cattail (*Typha* X *glauca*). In addition, non-dominant vegetation observed included reed canary grass (*Phalaris arundinacea*), monkey flower (*Mimulus* ringens), common reed (*Phragmites australis*), European buckthorn (*Rhamnus cathartica*), and boneset (*Eupatorium perfoliatum*). The dominant soils across the wet meadow communities ranged from silty clay loam, to clay loam to clay. Indicators of hydric soils present included Depleted Matrix (F3), Redox Dark Surface (F6), Redox Depressions (F8), and Thick Dark Surface (A12). Hydrology indicators consisted of Geomorphic Position (D2), FAC Neutral Test (D5), and Saturation (A3).

3.2.1.2 Riparian Wooded Swamp

Approximately 0.28 acres (0.30% project area) of riparian wooded swamp community were identified and was the second most abundant wetland type found. Vegetation in the wooded swamp community was dominated by black willow (*Salix nigra*), eastern cottonwood (*Populus deltoides*), and silver maple (*Acer saccharinum*) in the canopy layer. Shrub layer vegetation consisted of species such as European buckthorn (*Rhamnus cathartica*). Herbaceous vegetation was often sparse or was similar to wet meadow vegetation. Dominant soils across the wooded swamps ranged from clay loam to clay. The most common hydric soils indicators for these areas were found to be Thick Dark Surface (A12) and Redox Dark Surface (F6). Hydrology indicators consisted of Geomorphic Position (D2), FAC Neutral Test (D5), High Water Table (A2), and Saturation (A3).

3.2.1.3 Wooded Swamp

Approximately 1.67 acres (1.79% project area) of wooded swamp community were identified and was the second most abundant wetland type found. Vegetation in the wooded swamp community

was dominated by black willow (*Salix nigra*), eastern cottonwood (*Populus deltoides*), and silver maple (*Acer saccharinum*) in the canopy layer. Shrub layer vegetation consisted of species such as European buckthorn (*Rhamnus cathartica*). Herbaceous vegetation was often sparse or was similar to wet meadow vegetation but also contained species such as reed canary grass (*Phalaris arundinacea*), stinging nettle (*Urtica dioica*), and green ash (*Fraxinus pennsylvanica*) saplings. Dominant soils across the wooded swamps ranged from clay loam to clay. The most common hydric soils indicators for these areas were found to be Thick Dark Surface (A12) and Redox Dark Surface (F6). Hydrology indicators consisted of Geomorphic Position (D2), FAC Neutral Test (D5), High Water Table (A2), and Saturation (A3).

3.2.1.4 Shrub Scrub

Approximately 0.08 acres (0.09% project area) of shrub scrub community were identified and was the third most abundant wetland type found. Dominant vegetation in the shrub scrub community included white dogwood (*Cornus* alba), gray dogwood (*Cornus racemosa*), and European buckthorn (*Rhamnus cathartica*). Dominant herbaceous vegetation consisted of grass-leaved goldenrod (*Euthamia graminifolia*), Canada goldenrod (*Solidago Canadensis*), and sawtooth sunflow (*Helianthus grosseserratus*). In- addition, non-dominant vegetation observed included western poison ivy (*Toxicodendron* radicans), New England aster (*Symphyotrichum novae-angliae*), and uptight sedge (*Carex stricta*). Dominant soils across the shrub scrub community type ranged from silty clay to clay. The most common hydric soil indicators observed in this community were Depleted Below Dark Surface (A11) and Depleted Matrix (F3). Hydrology indicators consisted of Geomorphic Position (D2) and FAC Neutral Test (D5).

Table 3-3 Delineated Wetland Summary Table

Wetland ID	Wetland Type	Square Feet	Acres
W-40	Wet Meadow (M)	30,927.60	0.71
W-41	Wet Meadow (M)	212,560.65	4.88
W-42	Wet Meadow (M)	2,177.09	0.05
W-43	Wet Meadow (M)	9,208.58	0.21
W-44	Wet Meadow (M)	14,784.92	0.34
W-45	Riparian Wooded Wetland (RPF)	12,380.14	0.28
W-46	Wooded Swamp	9,583.20	0.22
W-47	Shrub Scrub (SS)	3,620.45	0.08
W-48	Wet Meadow (M)	8,839.54	0.20
W-49	Wet Meadow (M)	1,141.05	0.03
Total		**305,223.22**	**7.01**

3.2.2 Naturally Problematic and Significantly Disturbed Wetlands

Based on the guidance provided in Section 5, Difficult Wetland Situations in the Midwest Region, of the Regional Supplement to the USACE Delineation Manual: Midwest Region, Version 2.0, it was determined that several of the recorded wetland data points existed within significantly disturbed conditions. Details can be found in the wetland determination data forms in Appendix B and are also summarized in Table 3-4 below.

Table 3-4 Naturally Problematic and Significantly Disturbed Data Point Summary

Data Point ID	Naturally Problematic?	Significantly Disturbed?	Remarks
DP-100	-	Vegetation	Sample was located in a cultivated agricultural field. Vegetation in this area is considered significantly disturbed as the area has been planted for soybeans.
DP-101	-	Soil	Sample was located in a cultivated agricultural field. Soils at this location are considered significantly disturbed due to the mixing of layers during tilling operations.

3.3 Waterways

One water feature, the Pike River, was documented at two locations during field surveys (Figure 5). The first location (S-04) has an ordinary high water mark (OHWM) of 15ft and a depth of 3.0ft. The bank width is 18ft with a bank depth of 4ft, and the substrate is mud/silt. The second location (S-05) has an OHWM of 25ft with a depth of 6.0ft. The bank width was estimated at 30ft with a bank depth of 8ft. The substrate of the Pike River was documented as Mud/Silt and it is a tributary of Lake Michigan. Photographs of waterway features are located in Appendix A.

4 Summary and Conclusion

Cardno was contracted to perform a wetland delineation and classification of wetland resources for parcels along the County Highway KR road corridor in Racine and Kenosha Counties, Wisconsin and is in addition to previously surveyed areas along CTH KR under WisDOT work order 3763-00-04 (see previous, independent wetland report). The study limits includes eight discontinuous parcels that range from 0.78 to 44.69 acres in size. The entire project area totals approximately 93.29 acres.

Based on field investigations conducted by Cardno on September 26th and 27th, 2018 and desktop review of related resource maps, it is our professional opinion that ten wetland complexes totaling approximately 7.01 acres (305,335ft^2) and one waterway exist within the project corridor.

This report represents our best professional judgment based on our knowledge and experience. The field wetland determination and delineation was conducted within the project corridor boundary provided to Cardno. The project corridor is described generally above and is depicted on all figures that accompany this report.

The wetlands identified for this report may be subject to federal regulation under the jurisdiction of the U.S. Army Corps of Engineers, state regulation under the jurisdiction of Wisconsin DNR, and local jurisdiction under the county, town, city or village.

5 Literature Cited

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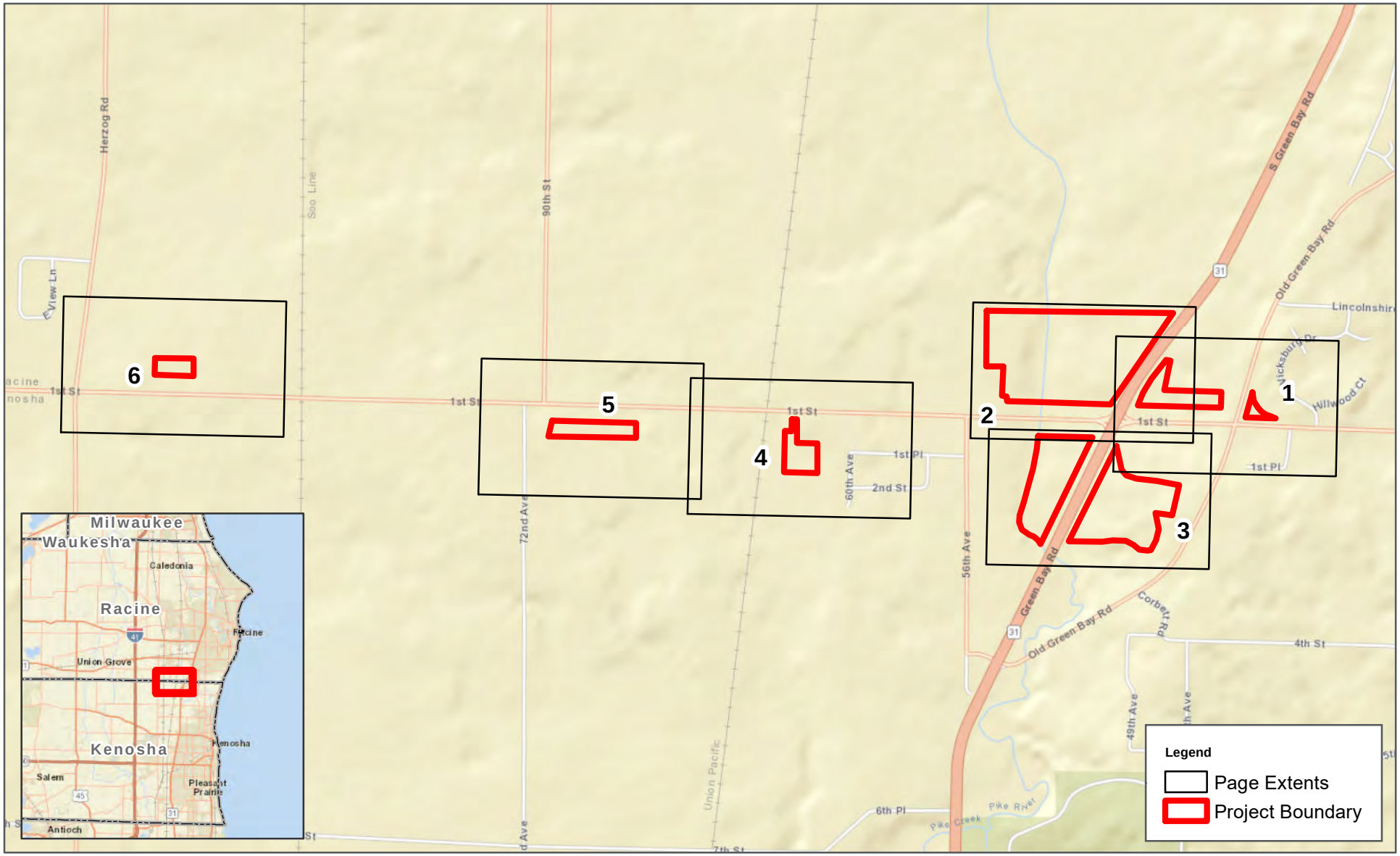
CTH KR Stormwater
Wetland Delineations

Figure

1

Location Map



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Location Map

County Highway KR Stormwater Wetland Delineation
Wisconsin Department of Transportation
Racine and Kenosha Counties, Wisconsin

0 625 1,250 2,500
Feet

Cardno
6140 Cottonwood Dr., Suite A, Fitchburg, WI 53719 USA
Phone (+1) 608-661-2955 Fax (+1) 608-661-2961
www.cardno.com

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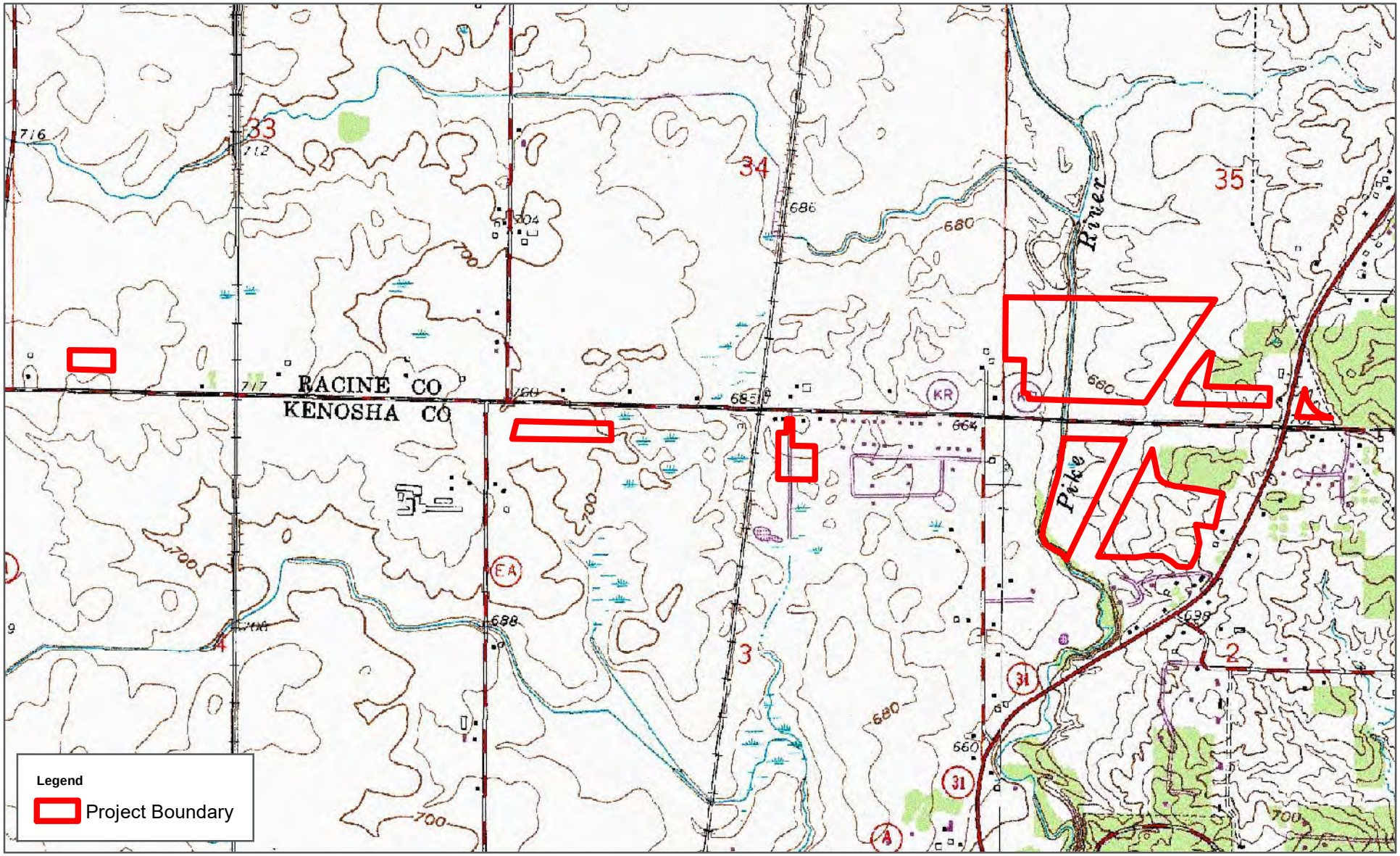
GIS Analyst: madalyn.lupinek

CTH KR Stormwater
Wetland Delineations

Figure

2

Topographic Map



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Topographic Map

County Highway KR Stormwater Wetland Delineation
Wisconsin Department of Transportation
Racine and Kenosha Counties, Wisconsin

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Feet

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Figure
3

Mapped Soil Units

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Mapped Soil Units - Page 1 of 6

County Highway KR Stormwater Wetland Delineation
Wisconsin Department of Transportation
Racine and Kenosha Counties, Wisconsin

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GIS Analyst: madalyn.lupinek

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Mapped Soil Units - Page 2 of 6

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GIS Analyst: madalyn.lupinek

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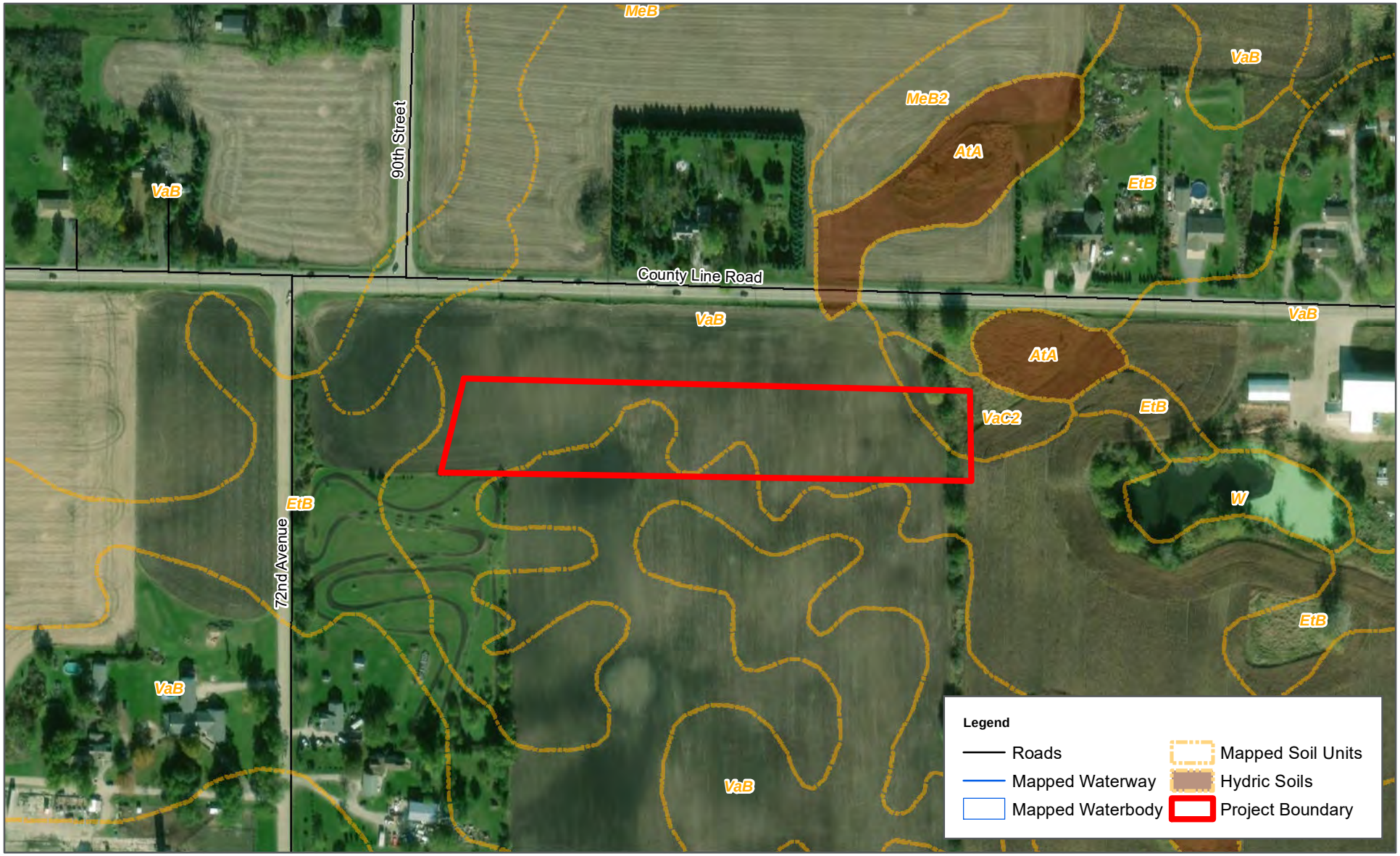

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Mapped Soil Units - Page 5 of 6

County Highway KR Stormwater Wetland Delineation
Wisconsin Department of Transportation
Racine and Kenosha Counties, Wisconsin

0 100 200 400
Feet

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Data Sources: ESRI Imagery Basemap - Aerial Imagery; Hydrology - WDNR; Soil - NRCS; Roads - WisDOT

GIS Analyst: madalyn.lupinek

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Mapped Soil Units - Page 6 of 6

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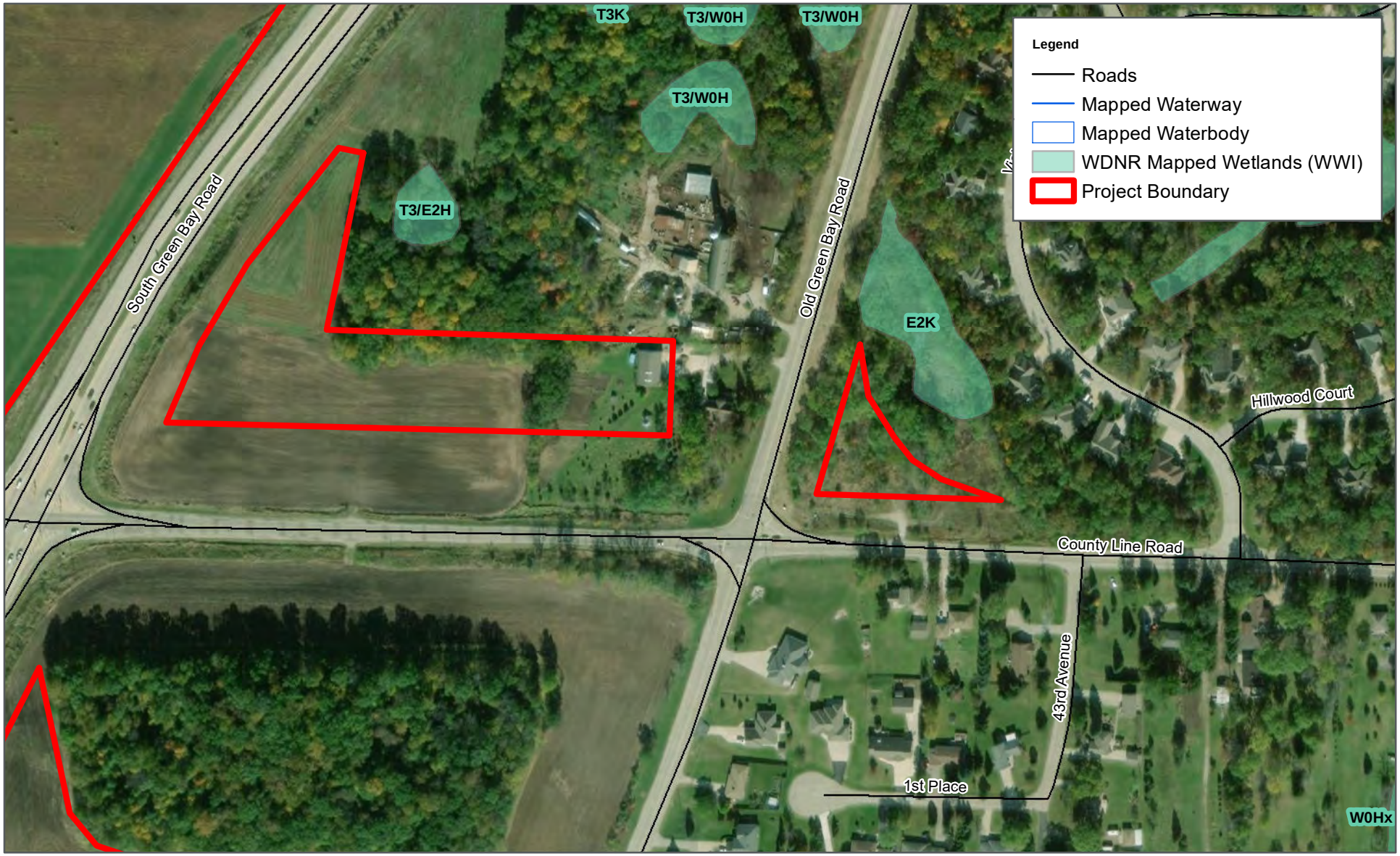
GIS Analyst: madalyn.lupinek

CTH KR Stormwater
Wetland Delineations

Figure

4

Wisconsin Wetland Inventory (WWI)



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WWI Mapped Wetlands - Page 1 of 6

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Racine and Kenosha Counties, Wisconsin

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WWI Mapped Wetlands - Page 2 of 6

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Racine and Kenosha Counties, Wisconsin

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WWI Mapped Wetlands - Page 3 of 6

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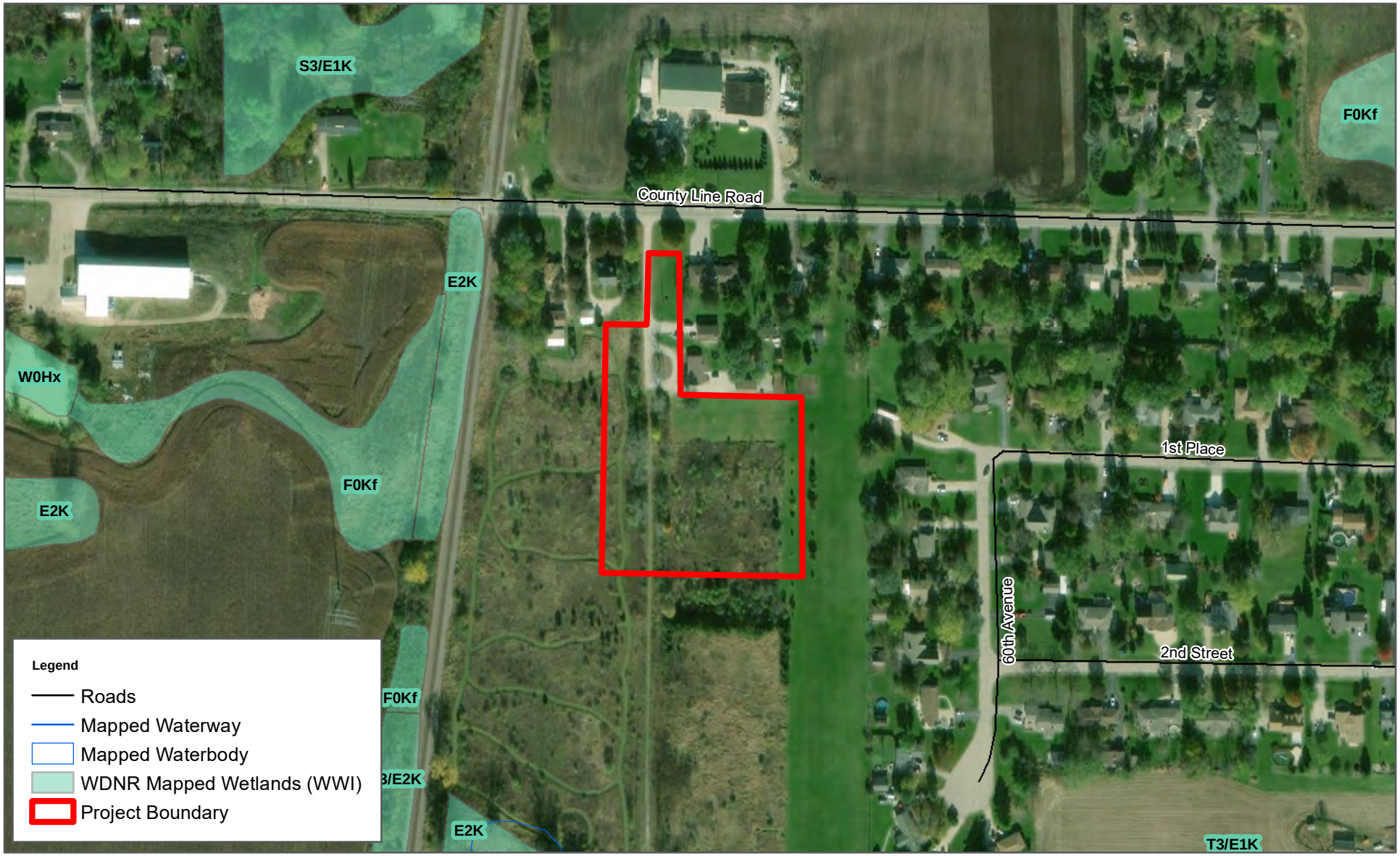

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WWI Mapped Wetlands - Page 4 of 6

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WWI Mapped Wetlands - Page 5 of 6

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GIS Analyst: madalyn.lupinek

CTH KR Stormwater
Wetland Delineations

Figure

5

Wetland Delineation

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Delineated Wetlands - Page 1 of 6

County Highway KR Stormwater Wetland Delineation
Wisconsin Department of Transportation
Racine and Kenosha Counties, Wisconsin

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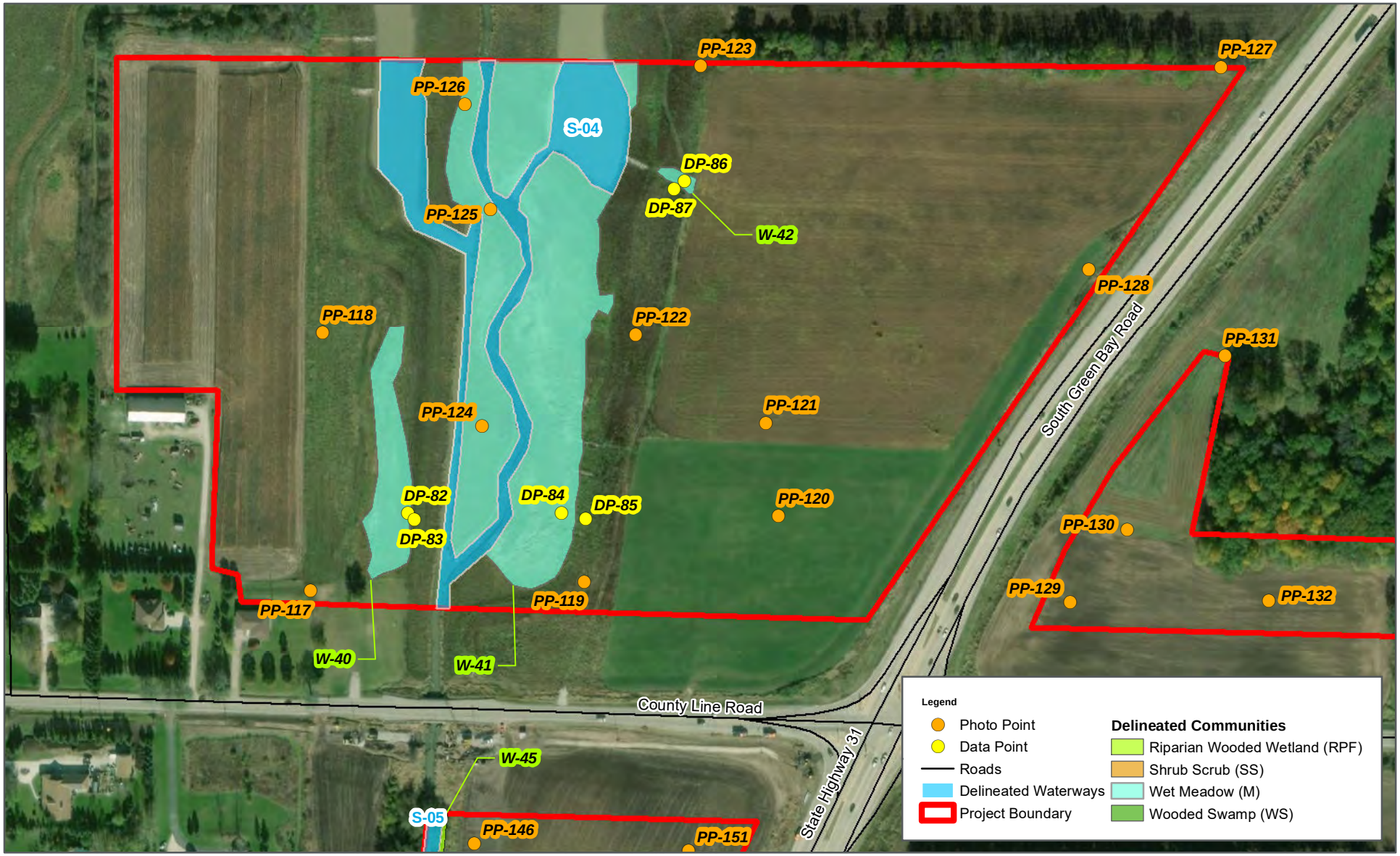

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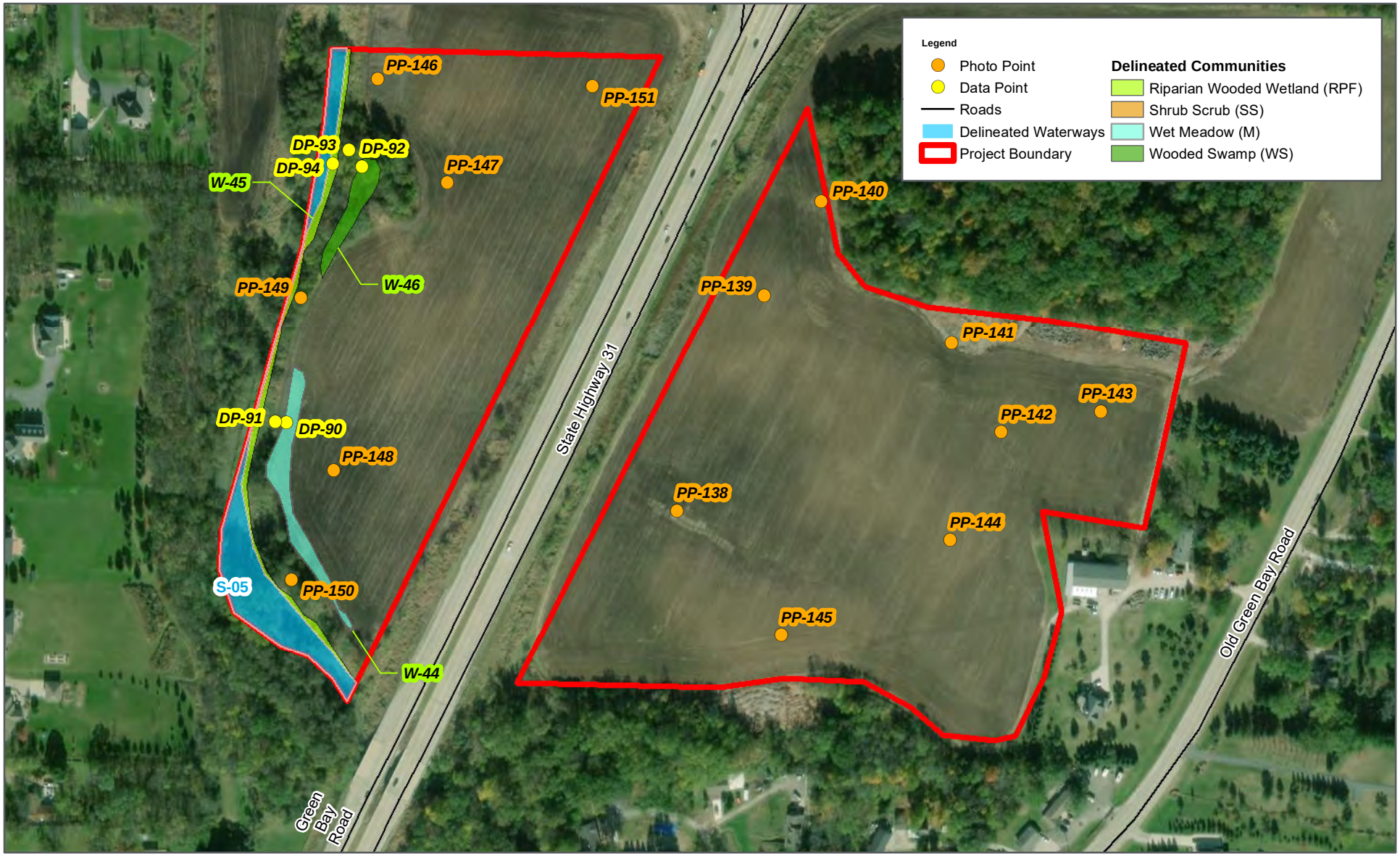

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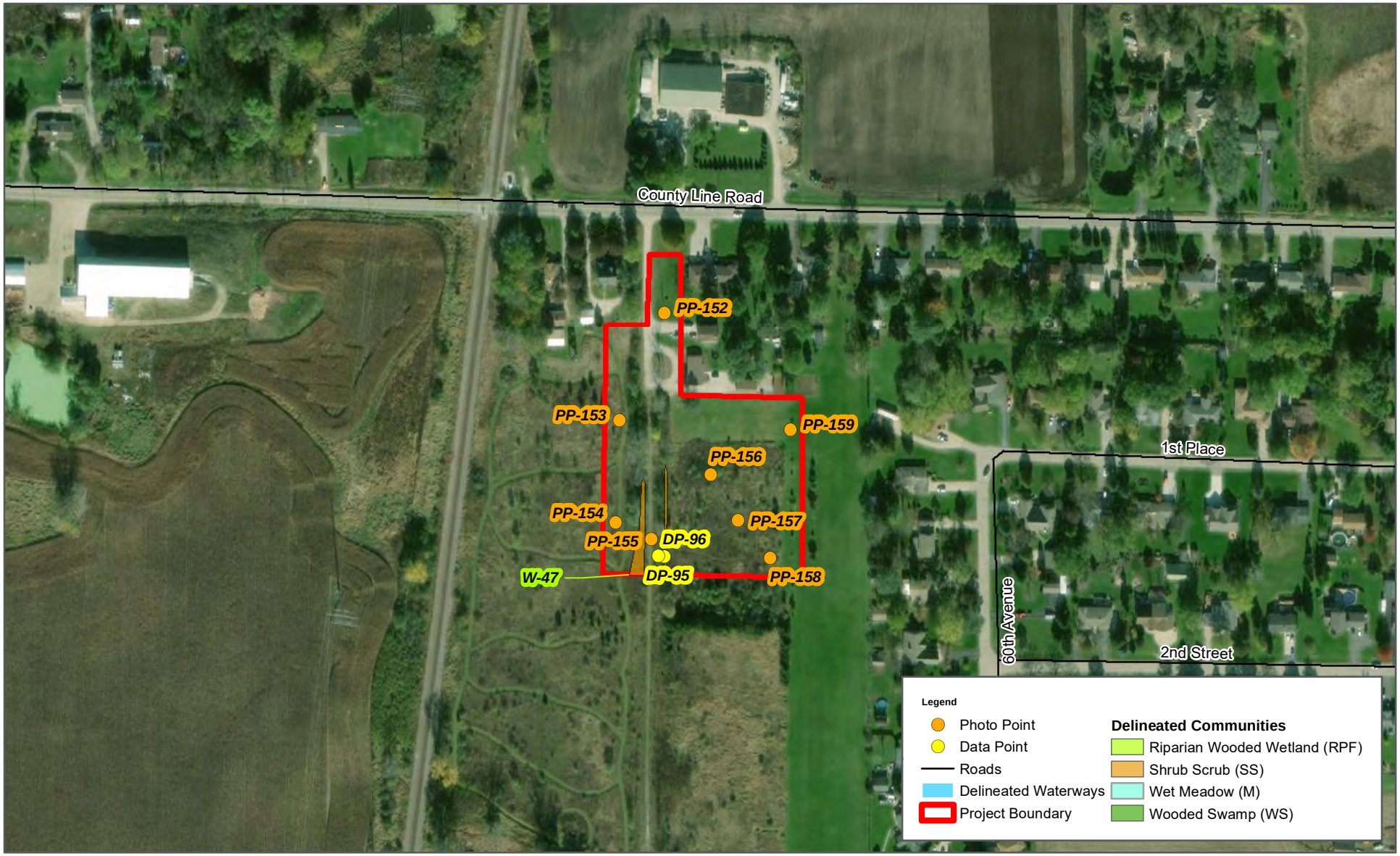

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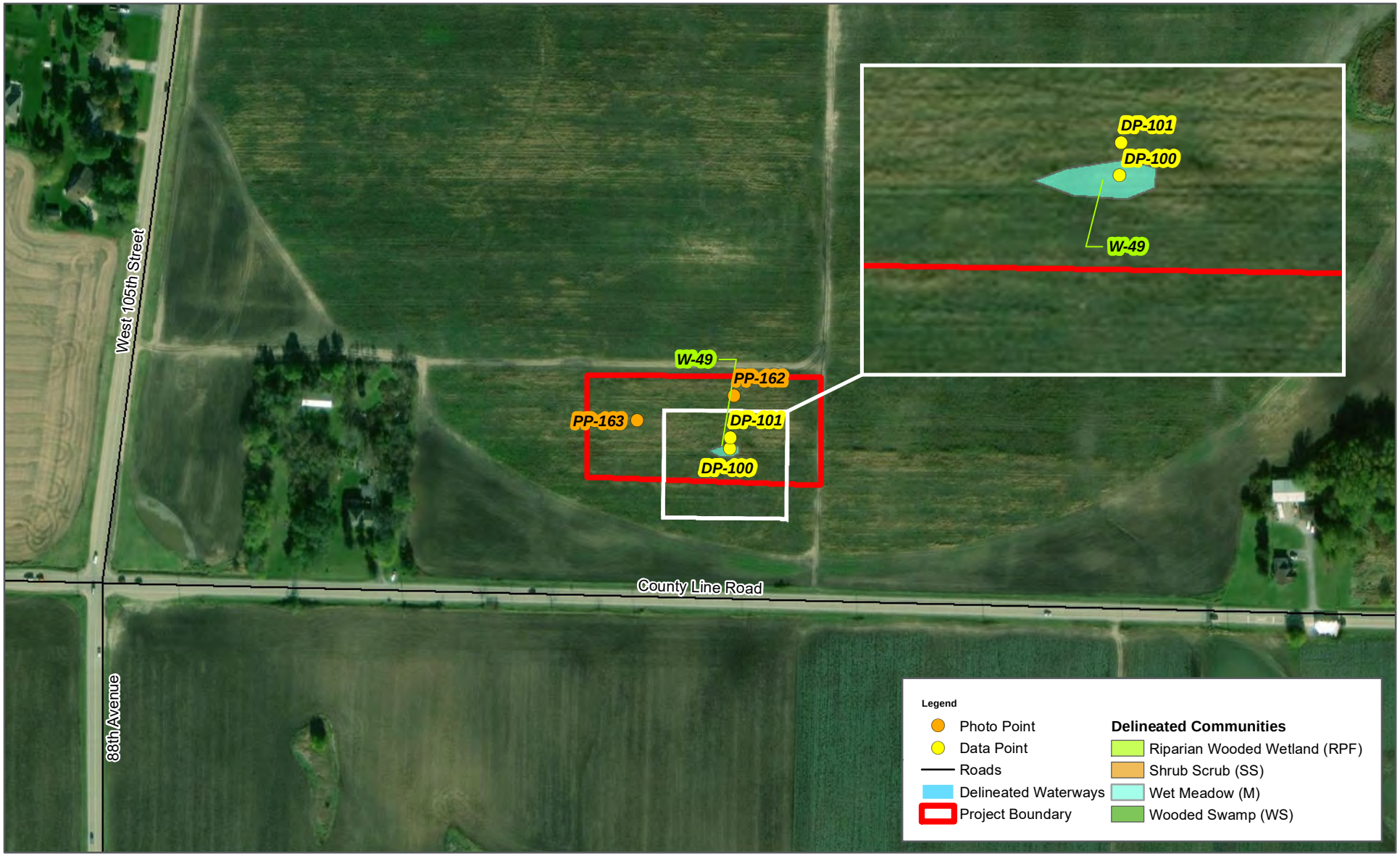

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CTH KR Stormwater
Wetland Delineations

APPENDIX

A

Site Photographs

Photograph DP-82 - View East

Photograph DP-82 - View North

Photograph DP-82 - View South

Photograph DP-82 - View West

Photograph DP-83 - View East

Photograph DP-83 - View North

Photograph DP-83 - View South

Photograph DP-83 - View West

Photograph DP-84 - View East

Photograph DP-84 - View North

Photograph DP-84 - View South

Photograph DP-84 - View West

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Photograph PP-146 - View East

Photograph PP-146 - View North

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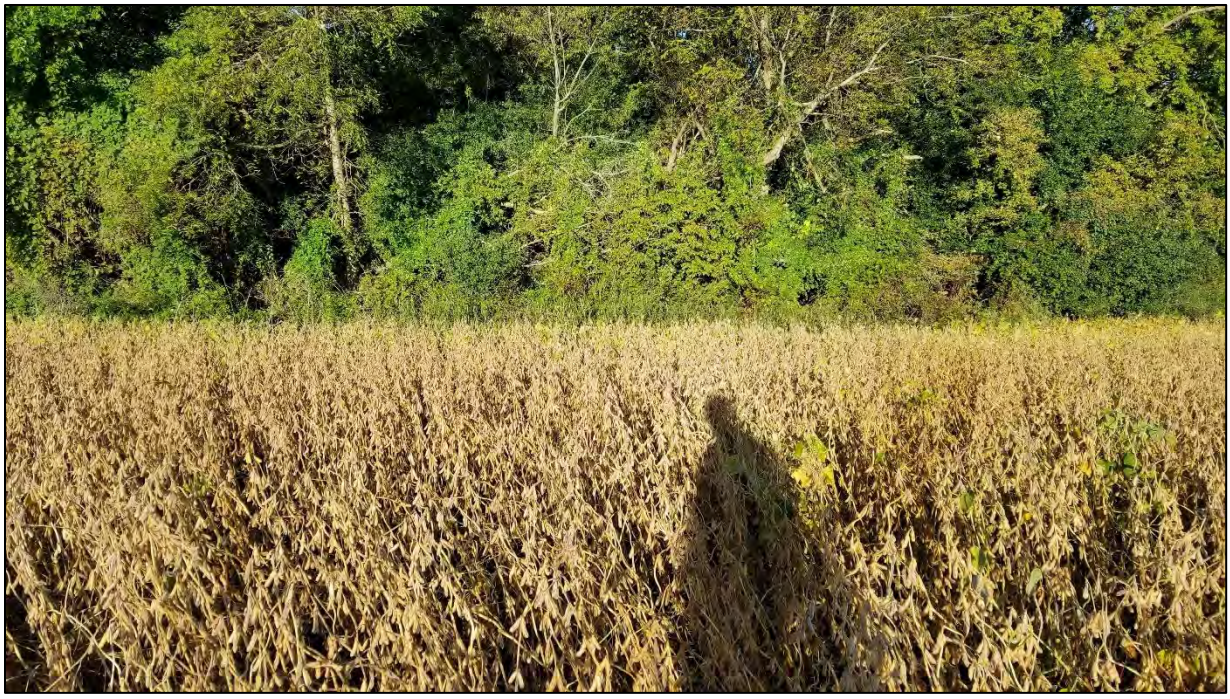
Photograph PP-146 - View West

Photograph PP-147 - View East

Photograph PP-147 - View North

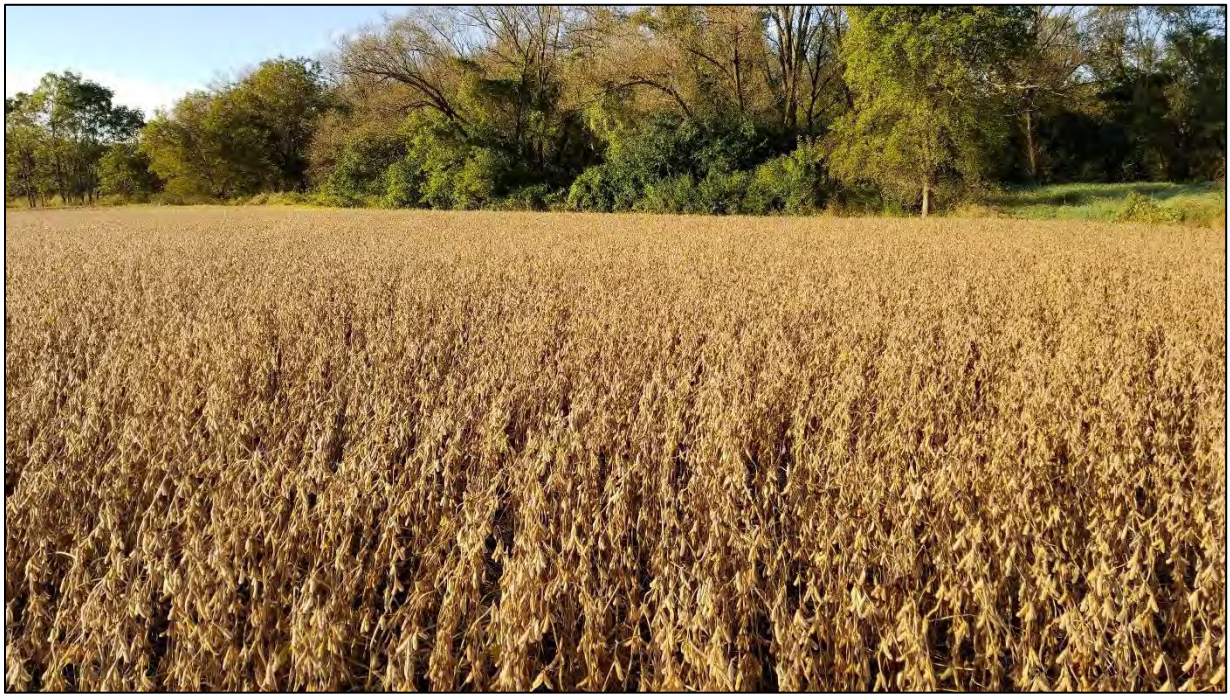
Photograph PP-147 - View South



Photograph PP-147 - View West

Photograph PP-148 - View East

Photograph PP-148 - View North



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Photograph PP-148 - View West

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Photograph PP-150 - View East

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Photograph PP-158 - View South

Photograph PP-158 - View West

Photograph PP-159 - View East

Photograph PP-159 - View North

Photograph PP-159 - View South

Photograph PP-159 - View West

Photograph PP-160 - View East

Photograph PP-160 - View North

Photograph PP-160 - View South

Photograph PP-160 - View West

Photograph PP-161 - View East

Photograph PP-161 - View North

Photograph PP-161 - View South

Photograph PP-161 - View West

Photograph PP-162 - View East

Photograph PP-162 - View North

Photograph PP-162 - View South

Photograph PP-162 - View West

Photograph PP-163 - View East

Photograph PP-163 - View North

Photograph PP-163 - View South

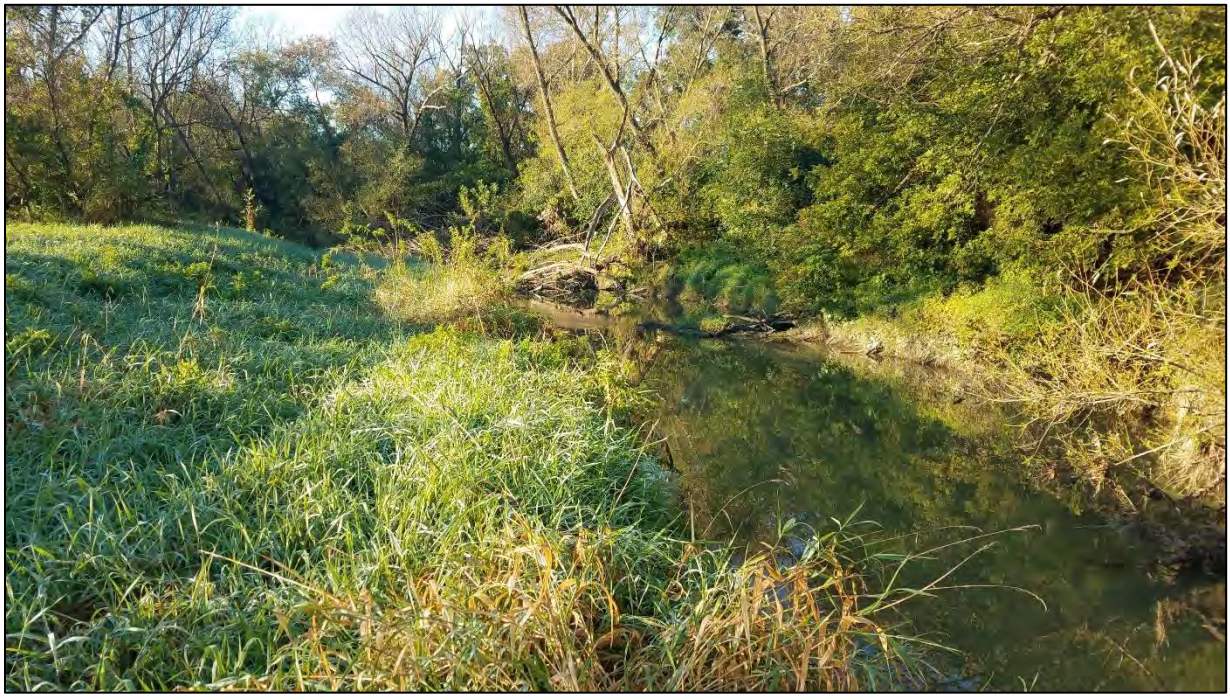
Photograph PP-163 - View West

Photograph S-04 - View East

Photograph S-04 - View North

Photograph S-04 - View South

Photograph S-05 - View North



Photograph S-05 - View South

CTH KR Stormwater
Wetland Delineations

APPENDIX

B

Wetland Delineation Forms – Midwest Region

WETLAND DETERMINATION DATA FORM -- Midwest Region

Project/Site: CTH KR Stormwater WD | City/County: Racine County | Sampling Date: 9/26/2018

Applicant/Owner: Wisconsin Dept. of Transportation | State: WI | Sampling Point: DP-82

Investigator(s): K. Carlson, E. Englund | Section, Township, Range: TWP 3N, RNG 22E, SEC 35

Landform (hillslope, terrace, etc.): Toeslope | Local relief (concave, convex, none): concave

Slope (%): 0-1% | Lat: 42.6696892 | Long: -87.8728561 | Datum: NAD83 UTM16N

Soil Map Unit Name: Na - Navan silt loam | NWI classification: E2Kf

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
WETS analysis determined that antecedent precipitation conditions were normal during the months of June-August. WETS analysis also determined that during the month of September the antecedent precipitation conditions were wetter than normal. This was taken into considerations during field surveys. The feature is located within an fallow field with active construction to the west and is a depressed wetland isolated from the stream by upland berm.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

Herb Stratum (Plot size: 5' radius)			
1. *Echinochloa crus-galli*	30%	Yes	FACW
2. *Lythrum salicaria*	20%	Yes	OBL
3. *Rumex crispus*	15%	No	FAC
4. *Bidens frondosa*	10%	No	FACW
5. *Setaria pumila*	10%	No	FAC
6. *Symphyotrichum lanceolatum*	5%	No	FAC
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
	90%	= Total Cover	

Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
That Are OBL, FACW, or FAC:			A/B
OBL species	20%	x1 =	0.2
FACW species	40%	x2 =	0.8
FAC species	30%	x3 =	0.9
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	0.90 (A)		1.9 (B)

Prevalence Index = B/A = 2.11

Hydrophytic Vegetation Indicators:

- X 1-Rapid Test for Hydrophytic Vegetation
- X 2-Dominance Test is >50%
- X 3-Prevalence Index is ≤3.0[1]
- ____ 4-Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)
Vegetation consisted of species typical of a fallow field depression and was largly comprised of wet grasses and invasive and weedy species.

SOIL

Sampling Point: DP-82

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-30"	10YR 2/1	90	10YR 4/6	5	C	M	Clay Loam	
			10YR 6/1	5	C	M	Clay Loam	
30-36"	10YR 5/1	80	10YR 4/6	20	C	M	Sandy Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators[3]:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- X Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)

Test Indicators of Hydric Soils:

- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]The hydric soil indicators have been updated to comply with the *Field Indicators of Hydric Soils in the United States*, Version 8.0, 2016.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

Redox was observed throughout most of the profile with a depleted layer with redox observed under a thick dark surface.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches):	N/A
Water Table Present?	Yes ___ No X	Depth (inches):	>18"
Saturation Present? (includes capillary fringe)	Yes ___ No X	Depth (inches):	>18"

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

The feature appears to hold surface water during a portion of the growing season.

WETLAND DETERMINATION DATA FORM -- Midwest Region

Project/Site: CTH KR Stormwater WD | City/County: Racine County | Sampling Date: 9/26/2018

Applicant/Owner: Wisconsin Dept. of Transportation | State: WI | Sampling Point: DP-83

Investigator(s): K. Carlson, E. Englund | Section, Township, Range: TWP 3N, RNG 22E, SEC 35

Landform (hillslope, terrace, etc.): Shoulder | Local relief (concave, convex, none): convex

Slope (%): 3% | Lat: 42.6696548 | Long: -87.8728027 | Datum: NAD83 UTM16N

Soil Map Unit Name: Na - Navan silt loam | NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area**	
Hydric Soil Present?	Yes ____	No X	**within a Wetland?**	Yes ____ No X
Wetland Hydrology Present?	Yes ____	No X		

Remarks:
WETS analysis determined that antecedent precipitation conditions were normal during the months of June-August. WETS analysis also determined that during the month of September the antecedent precipitation conditions were wetter than normal. This was taken into considerations during field surveys. DP taken on slight berm between W-01 and waterway, about 1.5' above DP-01.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
		= Total Cover	

Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	

Herb Stratum (Plot size: 5' radius)			
1. *Securigera varia*	30%	Yes	UPL
2. *Secale cereale*	15%	Yes	UPL
3. *Symphyotrichum lanceolatum*	15%	Yes	FAC
4. *Daucus carota*	10%	No	UPL
5. *Trifolium pratense*	10%	No	FACU
6. *Ambrosia trifida*	5%	No	FAC
7. *Taraxacum officinale*	5%	No	FACU
8. *Arctium minus*	3%	No	FACU
9. *Ambrosia artemisiifolia*	3%	No	FACU
10. *Cirsium arvense*	3%	No	FACU
11. *Sonchus arvensis*	3%	No	FACU
12. *Echinacea purpurea*	2%	No	UPL
13. *Ratibida pinnata*	2%	No	UPL
14. *Phalaris arundinacea*	2%	No	FACW
15. *Oxalis stricta*	2%	No	FACU
16. *Rudbeckia hirta*	2%	No	FACU
17. *Monarda fistulosa*	1%	No	FACU
18.			
19.			
20.			
	113%	= Total Cover	

Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
		= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
That Are OBL, FACW, or FAC:			A/B
OBL species		x1 =	
FACW species	2%	x2 =	0.04
FAC species	20%	x3 =	0.6
FACU species	32%	x4 =	1.28
UPL species	59%	x5 =	2.95
Column Totals:	1.13 (A)		4.87 (B)

Prevalence Index = B/A = 4.31

Hydrophytic Vegetation Indicators:

____ 1-Rapid Test for Hydrophytic Vegetation
____ 2-Dominance Test is >50%
____ 3-Prevalence Index is ≤3.0[1]
____ 4-Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks: (Include photo numbers here or on a separate sheet.)
Vegetation is expected for a fallow farm field along a berm.

SOIL

Sampling Point: DP-83

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12"	10YR 3/2	100			C	M	Clay Loam	gravel inclusions throughout upper 12"
12-21"	10YR 4/3	98	10YR 4/6	2	C	M	Sandy Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators[3]:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Test Indicators of Hydric Soils:

- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]The hydric soil indicators have been updated to comply with the *Field Indicators of Hydric Soils in the United States*, Version 8.0, 2016.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** X

Remarks:
No hydric indicators were observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches):	N/A
Water Table Present?	Yes ___ No X	Depth (inches):	>18"
Saturation Present? (includes capillary fringe)	Yes ___ No X	Depth (inches):	>18"

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No wetland hydrology was observed.

WETLAND DETERMINATION DATA FORM -- Midwest Region

Project/Site: CTH KR Stormwater WD | City/County: Racine County | Sampling Date: 9/26/2018

Applicant/Owner: Wisconsin Dept. of Transportation | State: WI | Sampling Point: DP-84

Investigator(s): K. Carlson, E. Englund | Section, Township, Range: TWP 3N, RNG 22E, SEC 35

Landform (hillslope, terrace, etc.): Toeslope | Local relief (concave, convex, none): concave

Slope (%): 0-1% | Lat: 42.6697006 | Long: -87.8717194 | Datum: NAD83 UTM16N

Soil Map Unit Name: SzB - Symerton loam, 2 to 6 percent slopes | NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**	
Hydric Soil Present?	Yes X	No ____	**within a Wetland?**	Yes X No ____
Wetland Hydrology Present?	Yes X	No ____		

Remarks:
WETS analysis determined that antecedent precipitation conditions were normal during the months of June-August. WETS analysis also determined that during the month of September the antecedent precipitation conditions were wetter than normal. This was taken into considerations during field surveys. A number of areas of the adjacent field to the east drain down the slope. Hydro vegetation creeps up berm in these areas.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
		= Total Cover	

Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	

Herb Stratum (Plot size: 5' radius)			
1. *Scirpus atrocinctus*	20%	Yes	OBL
2. *Spartina pectinata*	15%	Yes	FACW
3. *Typha X glauca*	10%	Yes	OBL
4. *Phalaris arundinacea*	10%	Yes	FACW
5. *Helenium autumnale*	5%	No	FACW
6. *Carex lacustris*	5%	No	OBL
7. *Lythrum salicaria*	5%	No	OBL
8. *Symphyotrichum lanceolatum*	3%	No	FAC
9. *Mimulus ringens*	2%	No	OBL
10. *Silphium perfoliatum*	2%	No	FACW
11. *Phragmites australis*	2%	No	FACW
12. *Eupatorium perfoliatum*	1%	No	OBL
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
	80%	= Total Cover	

Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
		= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
			A/B
OBL species	43%	x1 =	0.43
FACW species	34%	x2 =	0.68
FAC species	3%	x3 =	0.09
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	0.80 (A)		1.2 (B)

Prevalence Index = B/A = 1.50

Hydrophytic Vegetation Indicators:

X 1-Rapid Test for Hydrophytic Vegetation

X 2-Dominance Test is >50%

X 3-Prevalence Index is ≤3.0[1]

____ 4-Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)
Vegetation is typical for a wetland restoration which the area appeared to be.

SOIL

Sampling Point: DP-84

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2"	10YR 2/2	98	10YR 4/6	2	C	M	Silty Clay Loam	
2-8"	10YR 4/2	100					Silty Clay Loam	
8-18"	10YR 7/1	98	10YR 5/6	2	C	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators[3]:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Test Indicators of Hydric Soils:

- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]The hydric soil indicators have been updated to comply with the *Field Indicators of Hydric Soils in the United States*, Version 8.0, 2016.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

A depleted layer with redox was observed underneath two layers of silty clay.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches):	N/A
Water Table Present?	Yes X No ___	Depth (inches):	5"
Saturation Present? (includes capillary fringe)	Yes X No ___	Depth (inches):	Surface

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

The feature appears to hold surface water during a portion of the growing season. The water table was near the soil surface with leopard frogs abundant in feature.

WETLAND DETERMINATION DATA FORM -- Midwest Region

Project/Site: CTH KR Stormwater WD | City/County: Racine County | Sampling Date: 9/26/2018

Applicant/Owner: Wisconsin Dept. of Transportation | State: WI | Sampling Point: DP-85

Investigator(s): K. Carlson, E. Englund | Section, Township, Range: TWP 3N, RNG 22E, SEC 35

Landform (hillslope, terrace, etc.): Backslope | Local relief (concave, convex, none): convex

Slope (%): 10% | Lat: 42.6696701 | Long: -87.8715439 | Datum: NAD83 UTM16N

Soil Map Unit Name: SzB - Symerton loam, 2 to 6 percent slopes | NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area**	
Hydric Soil Present?	Yes ____	No X	**within a Wetland?**	Yes ____ No X
Wetland Hydrology Present?	Yes ____	No X		

Remarks:
WETS analysis determined that antecedent precipitation conditions were normal during the months of June-August. WETS analysis also determined that during the month of September the antecedent precipitation conditions were wetter than normal. This was taken into considerations during field surveys. DP taken on berm between ag field and wetland. DP taken approximately 3.5' above the wetland represented by DP-84.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

Herb Stratum (Plot size: 5' radius)			
1. *Arctium minus*	25%	Yes	FACU
2. *Daucus carota*	20%	Yes	UPL
3. *Lotus corniculatus*	10%	Yes	FACU
4. *Phalaris arundinacea*	10%	Yes	FACW
5. *Ambrosia artemisiifolia*	5%	No	FACU
6. *Pastinaca sativa*	5%	No	UPL
7. *Ambrosia trifida*	5%	No	FAC
8. *Cirsium arvense*	5%	No	FACU
9. *Sonchus arvensis*	3%	No	FACU
10. *Secale cereale*	2%	No	UPL
11. *Echinacea purpurea*	2%	No	UPL
12. *Ratibida pinnata*	1%	No	UPL
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
	93%	= Total Cover	

Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
That Are OBL, FACW, or FAC:			A/B
OBL species		x1 =	
FACW species	10%	x2 =	0.2
FAC species	5%	x3 =	0.15
FACU species	48%	x4 =	1.92
UPL species	30%	x5 =	1.5
Column Totals:	0.93 (A)		3.77 (B)

Prevalence Index = B/A = 4.05

Hydrophytic Vegetation Indicators:

____ 1-Rapid Test for Hydrophytic Vegetation
____ 2-Dominance Test is >50%
____ 3-Prevalence Index is ≤3.0[1]
____ 4-Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks: (Include photo numbers here or on a separate sheet.)
Vegetation consisted mostly of ag weed species.

SOIL

Sampling Point: DP-85

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-7"	10YR 2/2	100			C	M	Silty Clay Loam	
7-16"	10YR 5/3	100			C	M	Sandy Clay Loam	
16-24"	10YR 5/1	100			C	M	Sandy Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators[3]:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Test Indicators of Hydric Soils:

- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]The hydric soil indicators have been updated to comply with the *Field Indicators of Hydric Soils in the United States*, Version 8.0, 2016.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** X

Remarks:
No hydric indicators were observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches):	N/A
Water Table Present?	Yes ___ No X	Depth (inches):	>18"
Saturation Present? (includes capillary fringe)	Yes ___ No X	Depth (inches):	>18"

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No wetland hydrology was observed.

WETLAND DETERMINATION DATA FORM -- Midwest Region

Project/Site: CTH KR Stormwater WD | City/County: Racine County | Sampling Date: 9/26/2018

Applicant/Owner: Wisconsin Dept. of Transportation | State: WI | Sampling Point: DP-86

Investigator(s): K. Carlson, E. Englund | Section, Township, Range: TWP 3N, RNG 22E, SEC 35

Landform (hillslope, terrace, etc.): Toeslope | Local relief (concave, convex, none): concave

Slope (%): 0-1% | Lat: 42.6715126 | Long: -87.870842 | Datum: NAD83 UTM16N

Soil Map Unit Name: Na - Navan silt loam | NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
WETS analysis determined that antecedent precipitation conditions were normal during the months of June-August. WETS analysis also determined that during the month of September the antecedent precipitation conditions were wetter than normal. This was taken into considerations during field surveys. Feature is a low drainage way where field drainage concentrates and settles before draining down to pond/stream.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

Herb Stratum (Plot size: 5' radius)			
1. *Phalaris arundinacea*	75%	Yes	FACW
2. *Symphyotrichum lanceolatum*	10%	No	FAC
3. *Calamagrostis canadensis*	5%	No	OBL
4. *Euthamia graminifolia*	5%	No	FACW
5. *Trifolium pratense*	3%	No	FACU
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
	98% = Total Cover		

Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
That Are OBL, FACW, or FAC:			A/B
OBL species	5%	x1 =	0.05
FACW species	80%	x2 =	1.6
FAC species	10%	x3 =	0.3
FACU species	3%	x4 =	0.12
UPL species		x5 =	
Column Totals:	0.98 (A)		2.07 (B)

Prevalence Index = B/A = 2.11

Hydrophytic Vegetation Indicators:

- X 1-Rapid Test for Hydrophytic Vegetation
- X 2-Dominance Test is >50%
- X 3-Prevalence Index is ≤3.0[1]
- ____ 4-Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)
The feature is dominated by reed canary grass throughout.

SOIL

Sampling Point: DP-86

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-24"	10YR 7/1	90	10YR 4/6	10	C	M	Silty Clay Loam	
24-36"	10YR 6/2	85	10YR 4/6	15	C	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators[3]:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)

Test Indicators of Hydric Soils:

- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]The hydric soil indicators have been updated to comply with the *Field Indicators of Hydric Soils in the United States*, Version 8.0, 2016.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:
Redox was observed throughout most of the profile.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches):	N/A
Water Table Present?	Yes ___ No X	Depth (inches):	>18"
Saturation Present? (includes capillary fringe)	Yes ___ No X	Depth (inches):	>18"

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The feature appears to hold surface water during a portion of the growing season.

WETLAND DETERMINATION DATA FORM -- Midwest Region

Project/Site: CTH KR Stormwater WD | City/County: Racine County | Sampling Date: 9/26/2018

Applicant/Owner: Wisconsin Dept. of Transportation | State: WI | Sampling Point: DP-87

Investigator(s): K. Carlson, E. Englund | Section, Township, Range: TWP 3N, RNG 22E, SEC 35

Landform (hillslope, terrace, etc.): Shoulder | Local relief (concave, convex, none): convex

Slope (%): 3-5% | Lat: 42.6714706 | Long: -87.8709183 | Datum: NAD83 UTM16N

Soil Map Unit Name: SzB - Symerton loam, 2 to 6 percent slopes | NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area**		
Hydric Soil Present?	Yes X	No ____	**within a Wetland?**	Yes ____	No X
Wetland Hydrology Present?	Yes ____	No X			

Remarks:
WETS analysis determined that antecedent precipitation conditions were normal during the months of June-August. WETS analysis also determined that during the month of September the antecedent precipitation conditions were wetter than normal. This was taken into considerations during field surveys. DP taken approximately 1.5' above the wetland represented by DP-86.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
		= Total Cover	

Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	

Herb Stratum (Plot size: 5' radius)			
1. *Trifolium pratense*	30%	Yes	FACU
2. *Daucus carota*	20%	Yes	UPL
3. *Ambrosia artemisiifolia*	15%	Yes	FACU
4. *Symphyotrichum lanceolatum*	10%	No	FAC
5. *Cirsium arvense*	10%	No	FACU
6. *Sonchus arvensis*	5%	No	FACU
7. *Phalaris arundinacea*	5%	No	FACW
8. *Secale cereale*	5%	No	UPL
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
	100%	= Total Cover	

Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
		= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
		That Are OBL, FACW, or FAC:	A/B
OBL species		x1 =	
FACW species	5%	x2 =	0.1
FAC species	10%	x3 =	0.3
FACU species	60%	x4 =	2.4
UPL species	25%	x5 =	1.25
Column Totals:	1.00 (A)		4.05 (B)

Prevalence Index = B/A = 4.05

Hydrophytic Vegetation Indicators:

____ 1-Rapid Test for Hydrophytic Vegetation
____ 2-Dominance Test is >50%
____ 3-Prevalence Index is ≤3.0[1]
____ 4-Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks: (Include photo numbers here or on a separate sheet.)
Vegetation is a mix of clover, wild carrot, and ragweed typical of a fallow field.

SOIL

Sampling Point: DP-87

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14"	10YR 3/1	90	10YR 4/6	10	C	M	Silty Clay Loam	
14-24"	10YR 5/2	95	10YR 4/6	5	C	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators[3]:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Test Indicators of Hydric Soils:

- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]The hydric soil indicators have been updated to comply with the *Field Indicators of Hydric Soils in the United States*, Version 8.0, 2016.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:
A depleted layer with redox was observed under a dark surface.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches):	N/A
Water Table Present?	Yes ___ No X	Depth (inches):	>18"
Saturation Present? (includes capillary fringe)	Yes ___ No X	Depth (inches):	>18"

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No wetland hydrology was observed.

WETLAND DETERMINATION DATA FORM -- Midwest Region

Project/Site: CTH KR Stormwater WD | City/County: Racine County | Sampling Date: 9/26/2018

Applicant/Owner: Wisconsin Dept. of Transportation | State: WI | Sampling Point: DP-88

Investigator(s): K. Carlson, E. Englund | Section, Township, Range: TWP 3N, RNG 22E, SEC 35

Landform (hillslope, terrace, etc.): Toeslope | Local relief (concave, convex, none): concave

Slope (%): 0-1% | Lat: 42.6691628 | Long: -87.86306 | Datum: NAD83 UTM16N

Soil Map Unit Name: MzdB - Ozaukee silt loam, 2 to 6 percent slopes | NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
WETS analysis determined that antecedent precipitation conditions were normal during the months of June-August. WETS analysis also determined that during the month of September the antecedent precipitation conditions were wetter than normal. This was taken into considerations during field surveys. Area contains lots of historic fill material. Wetland is a small isolated depression amongst fill deposits.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus deltoides*	10%	Yes	FAC
2.			
3.			
4.			
5.			
	10%	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	

Herb Stratum (Plot size: 5' radius)			
1. *Phalaris arundinacea*	100%	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
	100%	= Total Cover	

Woody Vine Stratum (Plot size: 30' radius)			
1. *Vitis riparia*	5%	Yes	FACW
2.			
	5%	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
That Are OBL, FACW, or FAC:			A/B
OBL species		x1 =	
FACW species	105%	x2 =	2.1
FAC species	10%	x3 =	0.3
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	1.15 (A)		2.4 (B)

Prevalence Index = B/A = 2.09

Hydrophytic Vegetation Indicators:

____ 1-Rapid Test for Hydrophytic Vegetation
X 2-Dominance Test is >50%
X 3-Prevalence Index is ≤3.0[1]
____ 4-Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)
Feature is dominated by reed canary grass that has outcompeted all other herbaceous vegetation.

SOIL

Sampling Point: DP-88

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10"	10YR 2/2	95	10YR 5/2	5	C	M	Silty Clay Loam	
10-22"	10YR 5/2	85	10YR 5/6	15	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators[3]:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)

Test Indicators of Hydric Soils:

- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]The hydric soil indicators have been updated to comply with the *Field Indicators of Hydric Soils in the United States*, Version 8.0, 2016.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:
Redox was observed throughout most of the profile with a depleted layer with redox observed under a thick dark surface.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches):	N/A
Water Table Present?	Yes ___ No X	Depth (inches):	>18"
Saturation Present? (includes capillary fringe)	Yes ___ No X	Depth (inches):	>18"

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The feature appears to hold surface water during a portion of the growing season.

WETLAND DETERMINATION DATA FORM -- Midwest Region

Project/Site: CTH KR Stormwater WD | City/County: Racine County | Sampling Date: 9/26/2018

Applicant/Owner: Wisconsin Dept. of Transportation | State: WI | Sampling Point: DP-89

Investigator(s): K. Carlson, E. Englund | Section, Township, Range: TWP 3N, RNG 22E, SEC 35

Landform (hillslope, terrace, etc.): Shoulder | Local relief (concave, convex, none): convex

Slope (%): 5-7% | Lat: 42.6691017 | Long: -87.8630524 | Datum: NAD83 UTM16N

Soil Map Unit Name: MzdB - Ozaukee silt loam, 2 to 6 percent slopes | NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation Y, Soil Y, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**	
Hydric Soil Present?	Yes ____	No X	**within a Wetland?**	Yes ____ No X
Wetland Hydrology Present?	Yes ____	No X		

Remarks:
WETS analysis determined that antecedent precipitation conditions were normal during the months of June-August. WETS analysis also determined that during the month of September the antecedent precipitation conditions were wetter than normal. This was taken into considerations during field surveys. DP taken about 5' above the wetland represented by DP-88.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer negundo*	30%	Yes	FAC
2. *Populus deltoides*	10%	Yes	FAC
3.			
4.			
5.			
	40%	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	

Herb Stratum (Plot size: 5' radius)			
1. *Schedonorus arundinaceus*	25%	Yes	FACU
2. *Toxicodendron radicans*	20%	Yes	FAC
3. *Solidago canadensis*	15%	No	FACU
4. *Taraxacum officinale*	10%	No	FACU
5. *Parthenocissus quinquefolia*	5%	No	FACU
6. *Robinia pseudoacacia*	3%	No	FACU
7. *Sanguinaria canadensis*	2%	No	FACU
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
	80%	= Total Cover	

Woody Vine Stratum (Plot size: 30' radius)			
1. *Vitis riparia*	5%	Yes	FACW
2.			
	5%	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
That Are OBL, FACW, or FAC:			A/B
OBL species		x1 =	
FACW species	5%	x2 =	0.1
FAC species	60%	x3 =	1.8
FACU species	60%	x4 =	2.4
UPL species		x5 =	
Column Totals:	1.25 (A)		4.3 (B)

Prevalence Index = B/A = 3.44

Hydrophytic Vegetation Indicators:

____ 1-Rapid Test for Hydrophytic Vegetation
X 2-Dominance Test is >50%
____ 3-Prevalence Index is ≤3.0[1]
____ 4-Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)
Site appears to be dominated by vegetation that prefers sites that are significantly disturbed.

SOIL

Sampling Point: DP-89

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-36"	10YR 5/3	60	10YR 3/6	10	C	M	Silty Clay	apperas significantly disturbed-historic fill
			10YR 4/6	30	C	M	Silty Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators[3]:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Test Indicators of Hydric Soils:

- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]The hydric soil indicators have been updated to comply with the *Field Indicators of Hydric Soils in the United States*, Version 8.0, 2016.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

Soils appear to be historically fill and are significantly disturbed. No hydric indicators were observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches):	N/A
Water Table Present?	Yes ___ No X	Depth (inches):	>18"
Saturation Present? (includes capillary fringe)	Yes ___ No X	Depth (inches):	>18"

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No wetland hydrology was observed.

WETLAND DETERMINATION DATA FORM -- Midwest Region

Project/Site: CTH KR Stormwater WD | City/County: Kenosha County | Sampling Date: 9/27/2018

Applicant/Owner: Wisconsin Dept. of Transportation | State: WI | Sampling Point: DP-90

Investigator(s): K. Carlson, E. Englund | Section, Township, Range: TWP 2N, RNG 22, SEC 2

Landform (hillslope, terrace, etc.): Toeslope | Local relief (concave, convex, none): concave

Slope (%): 0-1% | Lat: 42.6660233 | Long: -87.8729858 | Datum: NAD83 UTM16N

Soil Map Unit Name: Am - Alluvial land | NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? | Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? | (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**	
Hydric Soil Present?	Yes X	No ____	**within a Wetland?**	Yes X No ____
Wetland Hydrology Present?	Yes X	No ____		

Remarks:
WETS analysis determined that antecedent precipitation conditions were normal during the months of June-August. WETS analysis also determined that during the month of September the antecedent precipitation conditions were wetter than normal. This was taken into considerations during field surveys. DP taken in lowland field edge. Berm/levee between field and waterway, draws up water at this location.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer negundo*	5%	Yes	FAC
2.			
3.			
4.			
5.			
	5%	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

Herb Stratum (Plot size: 5' radius)			
1. *Persicaria maculosa*	40%	Yes	FACW
2. *Toxicodendron radicans*	20%	Yes	FAC
3. *Echinochloa crus-galli*	15%	No	FACW
4. *Phalaris arundinacea*	5%	No	FACW
5. *Hibiscus trionum*	2%	No	UPL
6. *Ambrosia trifida*	1%	No	FAC
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
	83%	= Total Cover	

Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
	____	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
That Are OBL, FACW, or FAC:			A/B
OBL species		x1 =	
FACW species	60%	x2 =	1.2
FAC species	26%	x3 =	0.78
FACU species		x4 =	
UPL species	2%	x5 =	0.1
Column Totals:	0.88 (A)		2.08 (B)

Prevalence Index = B/A = 2.36

Hydrophytic Vegetation Indicators:

____ 1-Rapid Test for Hydrophytic Vegetation
X 2-Dominance Test is >50%
X 3-Prevalence Index is ≤3.0[1]
____ 4-Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)
Vegetation consisted of species that are typical agricultural weeds and species that have established in from the wood edge.

SOIL

Sampling Point: DP-90

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20"	10YR 2/1	95	10YR 4/6	5	C	M	Silty Clay Loam	
20-30"	10YR 2/1	85	10YR 5/1	10	C	M	Clay	
			10YR 5/6	5	C	M	Clay	
30-36"	10YR 2/1	60	10YR 6/1	25	C	M	Clay	
			10YR 5/6	15	C	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators[3]:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)

Test Indicators of Hydric Soils:

- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]The hydric soil indicators have been updated to comply with the *Field Indicators of Hydric Soils in the United States*, Version 8.0, 2016.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:
Redox was observed throughout most of the profile.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches):	N/A
Water Table Present?	Yes X No ___	Depth (inches):	24"
Saturation Present? (includes capillary fringe)	Yes X No ___	Depth (inches):	19"

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The feature appears to hold surface water during a portion of the growing season.

WETLAND DETERMINATION DATA FORM -- Midwest Region

Project/Site: CTH KR Stormwater WD | City/County: Kenosha County | Sampling Date: 9/27/2018

Applicant/Owner: Wisconsin Dept. of Transportation | State: WI | Sampling Point: DP-91

Investigator(s): K Carlson, E. Englund | Section, Township, Range: TWP 2N, RNG 22, SEC 2

Landform (hillslope, terrace, etc.): Shoulder | Local relief (concave, convex, none): convex

Slope (%): 5% | Lat: 42.6660309 | Long: -87.8730698 | Datum: NAD83 UTM16N

Soil Map Unit Name: Am - Alluvial land | NWI classification: T3/E2K

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? | Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? | (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area**	
Hydric Soil Present?	Yes X	No ____	**within a Wetland?**	Yes ____ No X
Wetland Hydrology Present?	Yes ____	No X		

Remarks:
WETS analysis determined that antecedent precipitation conditions were normal during the months of June-August. WETS analysis also determined that during the month of September the antecedent precipitation conditions were wetter than normal. This was taken into considerations during field surveys. DP taken on berm/levee between field and waterway approximately 2' above the wetland represented by DP-90.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

Herb Stratum (Plot size: 5' radius)			
1. *Securigera varia*	55%	Yes	UPL
2. *Phalaris arundinacea*	25%	Yes	FACW
3. *Asclepias syriaca*	20%	Yes	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
	100%	= Total Cover	

Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
		= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
		That Are OBL, FACW, or FAC:	A/B
OBL species		x1 =	
FACW species	25%	x2 =	0.5
FAC species		x3 =	
FACU species	20%	x4 =	0.8
UPL species	55%	x5 =	2.75
Column Totals:	1.00 (A)		4.05 (B)

Prevalence Index = B/A = 4.05

Hydrophytic Vegetation Indicators:

____ 1-Rapid Test for Hydrophytic Vegetation
____ 2-Dominance Test is >50%
____ 3-Prevalence Index is ≤3.0[1]
____ 4-Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks: (Include photo numbers here or on a separate sheet.)
Site is dominated by non-native species that prefer uplands.

SOIL

Sampling Point: DP-91

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-36"	10YR 2/2	95	10YR 3/6	5	C	M	Sandy Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators[3]:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Test Indicators of Hydric Soils:

- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]The hydric soil indicators have been updated to comply with the *Field Indicators of Hydric Soils in the United States*, Version 8.0, 2016.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

Although hydric indicators were present within the soil profile, no other wetland indicators were present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches):	N/A
Water Table Present?	Yes ___ No X	Depth (inches):	>18"
Saturation Present? (includes capillary fringe)	Yes ___ No X	Depth (inches):	>18"

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No wetland hydrology was observed.

WETLAND DETERMINATION DATA FORM -- Midwest Region

Project/Site: CTH KR Stormwater WD | City/County: Kenosha County | Sampling Date: 9/27/2018

Applicant/Owner: Wisconsin Dept. of Transportation | State: WI | Sampling Point: DP-92

Investigator(s): K. Carlson, E. Englund | Section, Township, Range: TWP 2N, RNG 22, SEC 2

Landform (hillslope, terrace, etc.): Toeslope | Local relief (concave, convex, none): concave

Slope (%): 0-1% | Lat: 42.6674232 | Long: -87.8724518 | Datum: NAD83 UTM16N

Soil Map Unit Name: Na - Navan silt loam | NWI classification: T3/E2K

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? | Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? | (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**	
Hydric Soil Present?	Yes X	No ____	**within a Wetland?**	Yes X No ____
Wetland Hydrology Present?	Yes X	No ____		

Remarks:
WETS analysis determined that antecedent precipitation conditions were normal during the months of June-August. WETS analysis also determined that during the month of September the antecedent precipitation conditions were wetter than normal. This was taken into considerations during field surveys. DP located in swale between two berms/levees.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer negundo*	30%	Yes	FAC
2. *Populus deltoides*	25%	Yes	FAC
3. *Juglans nigra*	5%	No	FACU
4.			
5.			
	60%	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15' radius)			
1. *Rhamnus cathartica*	15%	Yes	FAC
2. *Acer negundo*	5%	Yes	FAC
3.			
4.			
5.			
	20%	= Total Cover	

Herb Stratum (Plot size: 5' radius)			
1. *Phalaris arundinacea*	30%	Yes	FACW
2. *Impatiens capensis*	15%	Yes	FACW
3. *Hydrophyllum virginianum*	10%	No	FAC
4. *Rhamnus cathartica*	5%	No	FAC
5. *Acer negundo*	2%	No	FAC
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
	62%	= Total Cover	

Woody Vine Stratum (Plot size: 30' radius)			
1. *Parthenocissus quinquefolia*	5%	Yes	FACU
2. *Vitis riparia*	2%	Yes	FACW
	7%	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 88% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
		That Are OBL, FACW, or FAC:	A/B
OBL species		x1 =	
FACW species	47%	x2 =	0.94
FAC species	92%	x3 =	2.76
FACU species	10%	x4 =	0.4
UPL species		x5 =	
Column Totals:	1.49 (A)		4.1 (B)

Prevalence Index = B/A = 2.75

Hydrophytic Vegetation Indicators:

____ 1-Rapid Test for Hydrophytic Vegetation
X 2-Dominance Test is >50%
X 3-Prevalence Index is ≤3.0[1]
____ 4-Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)
Canopy layer is dense and has limited herbacous layer growth.

SOIL

Sampling Point: DP-92

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-30"	10YR 2/1	95	10YR 4/6	5	C	M	Silty Clay Loam	
30-36"	10YR 5/2	85	10YR 4/6	10	C	M	Sandy Clay	
			10YR 5/6	5	C	M	Sandy Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators[3]:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- X Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)

Test Indicators of Hydric Soils:

- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]The hydric soil indicators have been updated to comply with the *Field Indicators of Hydric Soils in the United States*, Version 8.0, 2016.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

Redox was observed throughout most of the profile with a depleted layer with redox observed under a thick dark surface

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches):	N/A
Water Table Present?	Yes ___ No X	Depth (inches):	>18"
Saturation Present? (includes capillary fringe)	Yes ___ No X	Depth (inches):	>18"

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

The feature appears to hold surface water during a portion of the growing season.

WETLAND DETERMINATION DATA FORM -- Midwest Region

Project/Site: CTH KR Stormwater WD | City/County: Kenosha County | Sampling Date: 9/27/2018

Applicant/Owner: Wisconsin Dept. of Transportation | State: WI | Sampling Point: DP-93

Investigator(s): K. Carlson, E. Englund | Section, Township, Range: TWP 2N, RNG 22, SEC 2

Landform (hillslope, terrace, etc.): Shoulder | Local relief (concave, convex, none): convex

Slope (%): 3% | Lat: 42.667511 | Long: -87.872551 | Datum: NAD83 UTM16N

Soil Map Unit Name: Na - Navan silt loam | NWI classification: T3/E2K

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? | Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? | (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area**	
Hydric Soil Present?	Yes X	No ____	**within a Wetland?**	Yes ____ No X
Wetland Hydrology Present?	Yes ____	No X		

Remarks:
WETS analysis determined that antecedent precipitation conditions were normal during the months of June-August. WETS analysis also determined that during the month of September the antecedent precipitation conditions were wetter than normal. This was taken into considerations during field surveys. DP taken on berm/levee closest to waterway approximately 2.5' above DP-92. Phalaris arundinacea dominance persistant throughout the woodland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer negundo*	10%	Yes	FAC
2. *Juglans nigra*	10%	Yes	FACU
3.			
4.			
5.			
	20%	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15' radius)			
1. *Juglans nigra*	10%	Yes	FACU
2. *Rhamnus cathartica*	5%	Yes	FAC
3. *Acer negundo*	2%	No	FAC
4.			
5.			
	17%	= Total Cover	

Herb Stratum (Plot size: 5' radius)			
1. *Arctium minus*	25%	Yes	FACU
2. *Phalaris arundinacea*	15%	Yes	FACW
3. *Convolvulus arvensis*	10%	Yes	UPL
4. *Alliaria petiolata*	10%	Yes	FAC
5. *Securigera varia*	10%	Yes	UPL
6. *Oxalis stricta*	5%	No	FACU
7. *Brassica nigra*	5%	No	UPL
8. *Parthenocissus quinquefolia*	2%	No	FACU
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
	82%	= Total Cover	

Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
		= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 44% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
That Are OBL, FACW, or FAC:			A/B
OBL species		x1 =	
FACW species	15%	x2 =	0.3
FAC species	27%	x3 =	0.81
FACU species	52%	x4 =	2.08
UPL species	25%	x5 =	1.25
Column Totals:	1.19 (A)		4.44 (B)

Prevalence Index = B/A = 3.73

Hydrophytic Vegetation Indicators:

____ 1-Rapid Test for Hydrophytic Vegetation
____ 2-Dominance Test is >50%
____ 3-Prevalence Index is ≤3.0[1]
____ 4-Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks: (Include photo numbers here or on a separate sheet.)
Vegetation consisted mostly of weedy species.

SOIL

Sampling Point: DP-93

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-30"	10YR 2/1	97	7.5YR 4/6	3	C	M	Silty Clay Loam	
30-36"	10YR 6/2	90	7.5YR 4/6	8	C	M	Sandy Clay Loam	
			10YR 4/6	2	C	M	Sandy Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators[3]:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- X Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Test Indicators of Hydric Soils:

- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]The hydric soil indicators have been updated to comply with the *Field Indicators of Hydric Soils in the United States*, Version 8.0, 2016.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

Redox was observed throughout most of the profile with a depleted layer with redox observed under a dark surface.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches):	N/A
Water Table Present?	Yes ___ No X	Depth (inches):	>18"
Saturation Present? (includes capillary fringe)	Yes ___ No X	Depth (inches):	>18"

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No wetland hydrology was observed.

WETLAND DETERMINATION DATA FORM -- Midwest Region

Project/Site: CTH KR Stormwater WD | City/County: Kenosha County | Sampling Date: 9/27/2018

Applicant/Owner: Wisconsin Dept. of Transportation | State: WI | Sampling Point: DP-94

Investigator(s): K. Carlson, E. Englund | Section, Township, Range: TWP 2N, RNG 22, SEC 2

Landform (hillslope, terrace, etc.): Toeslope | Local relief (concave, convex, none): concave

Slope (%): 0-1% | Lat: 42.6674309 | Long: -87.8726654 | Datum: NAD83 UTM16N

Soil Map Unit Name: Na - Navan silt loam | NWI classification: T3/E2K

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
WETS analysis determined that antecedent precipitation conditions were normal during the months of June-August. WETS analysis also determined that during the month of September the antecedent precipitation conditions were wetter than normal. This was taken into considerations during field surveys. DP taken in flatter area along waterway edge.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix nigra*	20%	Yes	OBL
2.			
3.			
4.			
5.			
	20%	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15' radius)			
1. *Rhamnus cathartica*	5%	Yes	FAC
2.			
3.			
4.			
5.			
	5%	= Total Cover	

Herb Stratum (Plot size: 5' radius)			
1. *Phalaris arundinacea*	75%	Yes	FACW
2. *Fraxinus pennsylvanica*	10%	No	FACW
3. *Urtica dioica*	10%	No	FACW
4. *Echinocystis lobata*	3%	No	FACW
5. *Convolvulus arvensis*	2%	No	UPL
6. *Solidago canadensis*	2%	No	FACU
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
	102%	= Total Cover	

Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
		= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
			A/B
OBL species	20%	x1 =	0.2
FACW species	98%	x2 =	1.96
FAC species	5%	x3 =	0.15
FACU species	2%	x4 =	0.08
UPL species	2%	x5 =	0.1
Column Totals:	1.27 (A)		2.49 (B)

Prevalence Index = B/A = 1.96

Hydrophytic Vegetation Indicators:

____ 1-Rapid Test for Hydrophytic Vegetation

X 2-Dominance Test is >50%

X 3-Prevalence Index is ≤3.0[1]

____ 4-Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)
Vegetation is dominated by reed canary grass along the banks of the Pike River.

SOIL

Sampling Point: DP-94

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-24"	10YR 2/1	90	10YR 3/6	5	C	M	Silty Clay Loam	
			10YR 5/2	5	C	M	Sandy Clay Loam	
24-36"	10YR 4/2	90	10YR 4/6	10	C	M	Silty Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators[3]:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- X Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)

Test Indicators of Hydric Soils:

- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]The hydric soil indicators have been updated to comply with the *Field Indicators of Hydric Soils in the United States*, Version 8.0, 2016.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

Redox was observed throughout most of the profile with a depleted layer with redox observed under a thick dark surface.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- X Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches):	N/A
Water Table Present?	Yes ___ No X	Depth (inches):	>18"
Saturation Present? (includes capillary fringe)	Yes ___ No X	Depth (inches):	>18"

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Feature appears to be frequently inundated with seasonal flooding along the Pike River.

WETLAND DETERMINATION DATA FORM -- Midwest Region

Project/Site: CTH KR Stormwater WD | City/County: Kenosha County | Sampling Date: 9/27/2018

Applicant/Owner: Wisconsin Dept. of Transportation | State: WI | Sampling Point: DP-95

Investigator(s): K. Carlson, E. Englund | Section, Township, Range: TWP 2N, RNG 22E, SEC 3

Landform (hillslope, terrace, etc.): Toeslope | Local relief (concave, convex, none): concave

Slope (%): 0-1% | Lat: 42.6668816 | Long: -87.8835144 | Datum: NAD83 UTM16N

Soil Map Unit Name: EtB - Elliott silty clay loam, 2 to 6 percent slopes | NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
WETS analysis determined that antecedent precipitation conditions were normal during the months of June-August. WETS analysis also determined that during the month of September the antecedent precipitation conditions were wetter than normal. This was taken into considerations during field surveys. Drainage way off edge of old driveway.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

Sapling/Shrub Stratum (Plot size: 15' radius)			
1. *Cornus racemosa*	20%	Yes	FAC
2. *Rhamnus cathartica*	15%	Yes	FAC
3. *Cornus alba*	10%	Yes	FACW
4. *Acer negundo*	5%	No	FAC
5.			
	50%	= Total Cover	

Herb Stratum (Plot size: 5' radius)			
1. *Euthamia graminifolia*	25%	Yes	FACW
2. *Cornus racemosa*	20%	Yes	FAC
3. *Carex stricta*	15%	Yes	OBL
4. *Helianthus grosseserratus*	10%	No	FACW
5. *Toxicodendron radicans*	10%	No	FAC
6. *Symphyotrichum novae-angliae*	5%	No	FACW
7. *Solidago canadensis*	5%	No	FACU
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
	90%	= Total Cover	

Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
		= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
That Are OBL, FACW, or FAC:			A/B
OBL species	15%	x1 =	0.15
FACW species	50%	x2 =	1
FAC species	70%	x3 =	2.1
FACU species	5%	x4 =	0.2
UPL species		x5 =	
Column Totals:	1.40 (A)		3.45 (B)

Prevalence Index = B/A = 2.46

Hydrophytic Vegetation Indicators:

____ 1-Rapid Test for Hydrophytic Vegetation

X 2-Dominance Test is >50%

X 3-Prevalence Index is ≤3.0[1]

____ 4-Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)
Feature is dominated by shrub species that have established after the area has been left fallow.

SOIL

Sampling Point: DP-95

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6"	10YR 3/1	90	10YR 5/6	10	C	M	Clay	
6-24"	10YR 6/2	80	10YR 5/6	15	C	M	Silty Clay	
			10YR 4/6	5	C	M	Silty Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators[3]:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)

Test Indicators of Hydric Soils:

- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]The hydric soil indicators have been updated to comply with the *Field Indicators of Hydric Soils in the United States*, Version 8.0, 2016.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

Redox was observed throughout most of the profile with a depleted layer with redox observed under a dark surface.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches):	N/A
Water Table Present?	Yes ___ No X	Depth (inches):	>18"
Saturation Present? (includes capillary fringe)	Yes ___ No X	Depth (inches):	>18"

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

The feature appears to hold surface water during a portion of the growing season.

WETLAND DETERMINATION DATA FORM -- Midwest Region

Project/Site: CTH KR Stormwater WD | City/County: Kenosha County | Sampling Date: 9/27/2018

Applicant/Owner: Wisconsin Dept. of Transportation | State: WI | Sampling Point: DP-96

Investigator(s): K. Carlson, E. Englund | Section, Township, Range: TWP 2N, RNG 22E, SEC 3

Landform (hillslope, terrace, etc.): Shoulder | Local relief (concave, convex, none): convex

Slope (%): 3-5% | Lat: 42.6668854 | Long: -87.8835602 | Datum: NAD83 UTM16N

Soil Map Unit Name: EtB - Elliott silty clay loam, 2 to 6 percent slopes | NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**	
Hydric Soil Present?	Yes ____	No X	**within a Wetland?**	Yes ____ No X
Wetland Hydrology Present?	Yes ____	No X		

Remarks:
WETS analysis determined that antecedent precipitation conditions were normal during the months of June-August. WETS analysis determined that during the month of September the antecedent precipitation conditions were wetter than normal. This was taken into considerations during field surveys. DP taken on an old overgrown driveway about 2' above DP-95. Gravel road bed encountered at 4".

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

Sapling/Shrub Stratum (Plot size: 15' radius)			
1. *Acer negundo*	5%	Yes	FAC
2. *Prunus serotina*	5%	Yes	FACU
3. *Rhamnus cathartica*	8%	Yes	FAC
4. *Cornus racemosa*	5%	Yes	FAC
5.			
	23% = Total Cover		

Herb Stratum (Plot size: 5' radius)			
1. *Poa pratensis*	30%	Yes	FAC
2. *Bromus inermis*	30%	Yes	FACU
3. *Solidago canadensis*	20%	Yes	FACU
4. *Symphyotrichum cordifolium*	5%	No	UPL
5. *Melilotus officinalis*	5%	No	FACU
6. *Plantago major*	5%	No	FAC
7. *Potentilla simplex*	3%	No	FACU
8. *Asparagus officinalis*	2%	No	FACU
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
	100% = Total Cover		

Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 57% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
		That Are OBL, FACW, or FAC:	A/B
OBL species		x1 =	
FACW species		x2 =	
FAC species	53%	x3 =	1.59
FACU species	65%	x4 =	2.6
UPL species	5%	x5 =	0.25
Column Totals:	1.23 (A)		4.44 (B)

Prevalence Index = B/A = 3.61

Hydrophytic Vegetation Indicators:

____ 1-Rapid Test for Hydrophytic Vegetation
X 2-Dominance Test is >50%
____ 3-Prevalence Index is ≤3.0[1]
____ 4-Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)
Kentucky bluegrass was dominant throughout herbaceous layer.

SOIL

Sampling Point: DP-96

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4"	10YR 3/2	100					Loam	gravel after 4"

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators[3]:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Test Indicators of Hydric Soils:

- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]The hydric soil indicators have been updated to comply with the *Field Indicators of Hydric Soils in the United States*, Version 8.0, 2016.

Restrictive Layer (if observed):

Type: gravel

Depth (inches): 4"

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

Gravel inclusions prevented sampling below 4". Soils are assumed not to be hydric given the lack of presense of hydrophytic vegetation.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches):	N/A
Water Table Present?	Yes ___ No X	Depth (inches):	>18"
Saturation Present? (includes capillary fringe)	Yes ___ No X	Depth (inches):	>18"

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No wetland hydrology was observed.

SOIL

Sampling Point: DP-97

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10"	10YR 2/1	100			C	M	Silty Clay Loam	
10-21"	10YR 2/1	100			C	M	Silty Clay	
21-28"	10YR 6/1	80	10YR 4/6	18	C	M	Silt Loam	
			7.5YR 5/8	2	C	M	Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators[3]:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Test Indicators of Hydric Soils:

- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (F22)
- X Other (Explain in Remarks)

[3]The hydric soil indicators have been updated to comply with the *Field Indicators of Hydric Soils in the United States*, Version 8.0, 2016.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

Soils are highly disturbed due to agricultual activities and were assumed to be hydric if normal conditions were present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches):	N/A
Water Table Present?	Yes ___ No X	Depth (inches):	>18"
Saturation Present? (includes capillary fringe)	Yes ___ No X	Depth (inches):	>18"

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

The feature appears to hold surface water during a portion of the growing season.

WETLAND DETERMINATION DATA FORM -- Midwest Region

Project/Site: CTH KR Stormwater WD | City/County: Kenosha County | Sampling Date: 9/27/2018

Applicant/Owner: Wisconsin Dept. of Transportation | State: WI | Sampling Point: DP-97

Investigator(s): DP-97 | Section, Township, Range: TWP 2N, RNG 22E, SEC 3

Landform (hillslope, terrace, etc.): Toeslope | Local relief (concave, convex, none): concave

Slope (%): 0-1% | Lat: 42.6680412 | Long: -87.8933182 | Datum: NAD83 UTM16N

Soil Map Unit Name: EtB - Elliott silty clay loam, 2 to 6 percent slopes | NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation N , Soil Y , or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation N , Soil N , or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**	
Hydric Soil Present?	Yes X	No ____	**within a Wetland?**	Yes X No ____
Wetland Hydrology Present?	Yes X	No ____		

Remarks:
WETS analysis determined that antecedent precipitation conditions were normal during the months of June-August. WETS analysis also determined that during the month of September the antecedent precipitation conditions were wetter than normal. This was taken into considerations during field surveys. DP taken in an ag field enclosed depression.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

Herb Stratum (Plot size: 5' radius)			
1. *Persicaria maculosa*	20%	Yes	FACW
2. *Panicum capillare*	15%	Yes	FAC
3. *Persicaria hydropiper*	5%	No	OBL
4. *Portulaca oleracea*	3%	No	FACU
5. *Amaranthus retroflexus*	2%	No	FACU
6. *Abutilon theophrasti*	2%	No	FACU
7. *Hibiscus trionum*	1%	No	UPL
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
	48%	= Total Cover	

Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
That Are OBL, FACW, or FAC:			A/B
OBL species	5%	x1 =	0.05
FACW species	20%	x2 =	0.4
FAC species	15%	x3 =	0.45
FACU species	7%	x4 =	0.28
UPL species	1%	x5 =	0.05
Column Totals:	0.48 (A)		1.23 (B)

Prevalence Index = B/A = 2.56

Hydrophytic Vegetation Indicators:

____ 1-Rapid Test for Hydrophytic Vegetation
X 2-Dominance Test is >50%
X 3-Prevalence Index is ≤3.0[1]
____ 4-Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)
Relatively sparse vegetation that is is largely common ag invasives.

WETLAND DETERMINATION DATA FORM -- Midwest Region

Project/Site: CTH KR Stormwater WD | City/County: Kenosha County | Sampling Date: 9/27/2018

Applicant/Owner: Wisconsin Dept. of Transportation | State: WI | Sampling Point: DP-98

Investigator(s): K. Carlson, E. Englund | Section, Township, Range: TWP 2N, RNG 22E, SEC 3

Landform (hillslope, terrace, etc.): Backslope | Local relief (concave, convex, none): convex

Slope (%): 3% | Lat: 42.668087 | Long: -87.893364 | Datum: NAD83 UTM16N

Soil Map Unit Name: VaB - Varna silt loam, 2 to 6 percent slopes | NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area**	
Hydric Soil Present?	Yes ____	No X	**within a Wetland?**	Yes ____ No X
Wetland Hydrology Present?	Yes ____	No X		

Remarks:
WETS analysis determined that antecedent precipitation conditions were normal during the months of June-August. WETS analysis also determined that during the month of September the antecedent precipitation conditions were wetter than normal. This was taken into considerations during field surveys. DP collected about 1' above DP-97.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
		= Total Cover	

Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	

Herb Stratum (Plot size: 5' radius)			
1. *Glycine max*	65%	Yes	UPL
2. *Amaranthus retroflexus*	10%	No	FACU
3. *Portulaca oleracea*	10%	No	FACU
4. *Panicum capillare*	2%	No	FAC
5. *Abutilon theophrasti*	2%	No	FACU
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
	89%	= Total Cover	

Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
		= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
			A/B
OBL species		x1 =	
FACW species		x2 =	
FAC species	2%	x3 =	0.06
FACU species	22%	x4 =	0.88
UPL species	65%	x5 =	3.25
Column Totals:	0.89 (A)		4.19 (B)

Prevalence Index = B/A = 4.71

Hydrophytic Vegetation Indicators:

____ 1-Rapid Test for Hydrophytic Vegetation
____ 2-Dominance Test is >50%
____ 3-Prevalence Index is ≤3.0[1]
____ 4-Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks: (Include photo numbers here or on a separate sheet.)
Portulaca and Panicum fade out considerably and transition to soybean crop.

SOIL

Sampling Point: DP-98

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8"	10YR 3/1	100					Silty Clay Loam	
8-30"	10YR 3/1	100					Clay	
30-36"	10YR 6/2	85	10YR 4/6	15	C	M	Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators[3]:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Test Indicators of Hydric Soils:

- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]The hydric soil indicators have been updated to comply with the *Field Indicators of Hydric Soils in the United States*, Version 8.0, 2016.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** X

Remarks:
No hydric indicators were observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches):	N/A
Water Table Present?	Yes ___ No X	Depth (inches):	>18"
Saturation Present? (includes capillary fringe)	Yes ___ No X	Depth (inches):	>18"

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No wetland hydrology was observed.

WETLAND DETERMINATION DATA FORM -- Midwest Region

Project/Site: CTH KR Stormwater WD | City/County: Kenosha County | Sampling Date: 9/27/2018

Applicant/Owner: Wisconsin Dept. of Transportation | State: WI | Sampling Point: DP-99

Investigator(s): K. Carlson, E. Englund | Section, Township, Range: TWP 2N, RNG 22E, SEC 3

Landform (hillslope, terrace, etc.): Backslope | Local relief (concave, convex, none): convex

Slope (%): 2-3% | Lat: 42.6683388 | Long: -87.8907928 | Datum: NAD83 UTM16N

Soil Map Unit Name: VaC2 - Varna silt loam 6 to 12 percent slopes, eroded | NWI classification: E2K

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation N , Soil N , or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N , Soil N , or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**	
Hydric Soil Present?	Yes ____	No X	**within a Wetland?**	Yes ____ No X
Wetland Hydrology Present?	Yes ____	No X		

Remarks:
WETS analysis determined that antecedent precipitation conditions were normal during the months of June-August. WETS analysis also determined that during the month of September the antecedent precipitation conditions were wetter than normal. This was taken into considerations during field surveys. This area is gradually sloping down from the ag field before a sharp drop off into the wetland just outside the site. Does not meet wetland hydrology.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Ulmus pumila*	15%	Yes	UPL
2. *Acer saccharinum*	10%	Yes	FACW
3. *Acer negundo*	5%	No	FAC
4. *Gleditsia triacanthos*	5%	No	FACU
5.			
	35%	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15' radius)			
1. *Rhamnus cathartica*	10%	Yes	FAC
2. *Cornus racemosa*	5%	Yes	FAC
3.			
4.			
5.			
	15%	= Total Cover	

Herb Stratum (Plot size: 5' radius)			
1. *Phalaris arundinacea*	90%	Yes	FACW
2. *Helianthus grosseserratus*	5%	No	FACW
3. *Solidago canadensis*	3%	No	FACU
4. *Asclepias syriaca*	2%	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
	100%	= Total Cover	

Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
		= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
That Are OBL, FACW, or FAC:			A/B
OBL species		x1 =	
FACW species	105%	x2 =	2.1
FAC species	20%	x3 =	0.6
FACU species	10%	x4 =	0.4
UPL species	15%	x5 =	0.75
Column Totals:	1.50 (A)		3.85 (B)

Prevalence Index = B/A = 2.57

Hydrophytic Vegetation Indicators:

____ 1-Rapid Test for Hydrophytic Vegetation
X 2-Dominance Test is >50%
____ 3-Prevalence Index is ≤3.0[1]
____ 4-Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)
Tree species are typical of a planted windrow with an understory herbacous layer dominated by reed canary grass.

SOIL

Sampling Point: DP-99

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12"	10YR 2/2	98	10YR 3/6	2	C	M	Sandy Clay Loam	
12-24"	10YR 5/2	90	10YR 4/6	10	C	M	Sandy Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators[3]:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Test Indicators of Hydric Soils:

- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]The hydric soil indicators have been updated to comply with the *Field Indicators of Hydric Soils in the United States*, Version 8.0, 2016.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** X

Remarks:
No hydric indicators were observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches):	N/A
Water Table Present?	Yes ___ No X	Depth (inches):	>18"
Saturation Present? (includes capillary fringe)	Yes ___ No X	Depth (inches):	>18"

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Only Fac-Neutral test hydrology was observed. No other wetland hydrology was present at this location.

WETLAND DETERMINATION DATA FORM -- Midwest Region

Project/Site: CTH KR Stormwater WD | City/County: Racine County | Sampling Date: 9/27/2018

Applicant/Owner: Wisconsin Dept. of Transportation | State: WI | Sampling Point: DP-100

Investigator(s): K. Carlson, E. Englund | Section, Township, Range: TWP 3N, RNG 22E, SEC 33

Landform (hillslope, terrace, etc.): Toeslope | Local relief (concave, convex, none): convex

Slope (%): 0-1% | Lat: 42.6699333 | Long: -87.9109955 | Datum: NAD83 UTM16N

Soil Map Unit Name: VaB - Varna silt loam, 2 to 6 percent slopes | NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation Y, Soil Y, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**	
Hydric Soil Present?	Yes X	No ____	**within a Wetland?**	Yes X No ____
Wetland Hydrology Present?	Yes X	No ____		

Remarks:
WETS analysis determined that antecedent precipitation conditions were normal during the months of June-August. WETS analysis also determined that during the month of September the antecedent precipitation conditions were wetter than normal. This was taken into considerations during field surveys. Feature is a shallow ag field depression, water likely collects here before draining downslope. Area is significantly disturbed.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
		= Total Cover	

Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	

Herb Stratum (Plot size: 5' radius)			
1. *Glycine max*	35%	Yes	UPL
2. *Panicum capillare*	25%	Yes	FAC
3. *Amaranthus retroflexus*	3%	No	FACU
4. *Portulaca oleracea*	2%	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
	65%	= Total Cover	

Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
		= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
That Are OBL, FACW, or FAC:			A/B
OBL species		x1 =	
FACW species		x2 =	
FAC species	25%	x3 =	0.75
FACU species	5%	x4 =	0.2
UPL species	35%	x5 =	1.75
Column Totals:	0.65 (A)		2.7 (B)

Prevalence Index = B/A = 4.15

Hydrophytic Vegetation Indicators:

____ 1-Rapid Test for Hydrophytic Vegetation
____ 2-Dominance Test is >50%
____ 3-Prevalence Index is ≤3.0[1]
____ 4-Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)
Vegetation is significantly disturbed due to the feature being located in a soy bean field. Existing vegetation appeared stunted at the time of survey.

SOIL

Sampling Point: DP-100

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14"	10YR 2/1	95	10YR 3/6	5	C	M	Clay Loam	
14-20"	10YR 5/2	90	10YR 4/6	10	C	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators[3]:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- X Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Test Indicators of Hydric Soils:

- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]The hydric soil indicators have been updated to comply with the *Field Indicators of Hydric Soils in the United States*, Version 8.0, 2016.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

Redox was observed throughout most of the profile with a depleted layer with redox observed under a thick dark surface.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- X Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches):	N/A
Water Table Present?	Yes ___ No X	Depth (inches):	>18"
Saturation Present? (includes capillary fringe)	Yes ___ No X	Depth (inches):	>18"

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

The feature appears to hold surface water during a portion of the growing season.

WETLAND DETERMINATION DATA FORM -- Midwest Region

Project/Site: CTH KR Stormwater WD | City/County: Racine County | Sampling Date: 9/27/2018

Applicant/Owner: Wisconsin Dept. of Transportation | State: WI | Sampling Point: DP-101

Investigator(s): K. Carlson, E. Englund | Section, Township, Range: TWP 3N, RNG 22E, SEC 33

Landform (hillslope, terrace, etc.): Backslope | Local relief (concave, convex, none): convex

Slope (%): 3% | Lat: 42.6699944 | Long: -87.9109955 | Datum: NAD83 UTM16N

Soil Map Unit Name: VaB - Varna silt loam, 2 to 6 percent slopes | NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation N, Soil Y, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area**	
Hydric Soil Present?	Yes X	No ____	**within a Wetland?**	Yes ____ No X
Wetland Hydrology Present?	Yes ____	No X		

Remarks:
WETS analysis determined that antecedent precipitation conditions were normal during the months of June-August. WETS analysis also determined that during the month of September the antecedent precipitation conditions were wetter than normal. This was taken into considerations during field surveys. DP taken in healthy soybean crop approximately 1' above DP-100.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
		= Total Cover	

Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	

Herb Stratum (Plot size: 5' radius)			
1. *Glycine max*	70%	Yes	UPL
2. *Hibiscus trionum*	5%	No	UPL
3. *Amaranthus retroflexus*	5%	No	FACU
4. *Panicum capillare*	1%	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
	81%	= Total Cover	

Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
		= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
			A/B
OBL species		x1 =	
FACW species		x2 =	
FAC species	1%	x3 =	0.03
FACU species	5%	x4 =	0.2
UPL species	75%	x5 =	3.75
Column Totals:	0.81 (A)		3.98 (B)

Prevalence Index = B/A = 4.91

Hydrophytic Vegetation Indicators:

____ 1-Rapid Test for Hydrophytic Vegetation
____ 2-Dominance Test is >50%
____ 3-Prevalence Index is ≤3.0[1]
____ 4-Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks: (Include photo numbers here or on a separate sheet.)
Vegetation is dominated by soy beans which had been planted at the location.

SOIL

Sampling Point: DP-101

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12"	10YR 2/1	98	10YR 3/6	2	C	M	Clay Loam	
12-24"	10YR 5/2	60	10YR 4/6	40	C	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators[3]:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- X Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Test Indicators of Hydric Soils:

- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]The hydric soil indicators have been updated to comply with the *Field Indicators of Hydric Soils in the United States*, Version 8.0, 2016.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

Soils appear to be mixed from agricultural land use but still showed evidence of hydric indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches):	N/A
Water Table Present?	Yes ___ No X	Depth (inches):	>18"
Saturation Present? (includes capillary fringe)	Yes ___ No X	Depth (inches):	>18"

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No wetland hydrology was observed.

CTH KR Stormwater Wetland Delineations

APPENDIX

C

WisDOT Community Classification Guide

Table 1C. Wetland Type Classification for the Wisconsin Wetland Mitigation Bank.

Cir39 Classification	Wetland Type Bank Site *	Examples of Vegetational Community Types
1A Seasonally flooded basin or flat	Riparian wetland (RPF) (wooded)	Floodplain Forest (includes Bottomland Hardwood forests **), Riparian Shrub Carr and Alder Thickets
1B Seasonally flooded basin or flat	Riparian wetland (RPE) (emergent)	Riparian Wet and Sedge Meadows, Bars and Mudflats
2 Inland fresh meadow	Wet Meadow (M)	Wet Meadow, Wet/Wet Mesic Prairie, Sedge Meadow, Vernal pools, (also includes Fens **)
3 Inland shallow fresh marsh	Shallow Marsh (SM)	Emergent Aquatic
4 Inland deep fresh marsh	Deep Marsh (DM)	Emergent and Submergent Aquatic
5 Inland open fresh water	Aquatic Bed (AB)	Submergent Aquatic, Aquatic Bed (depth less than 3 Meters)
6 Shrub swamp	Shrub Scrub (SS)	Shrub Carr, Alder Thicket
7 Wooded swamp	Wooded Swamp (WS) (Forested Wetland)	Wet/Wet-Mesic Deciduous Forests White Cedar Swamps
8 Bog	Bog (Bog)	Open Bog, Forested Bog

* Wetland types used for purposes of this bank system.
These should be refered to by name or by acronym (e.g. RPF, SM, AB, etc.)
** Red flag wetlands

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