2014 Supplemental Wetland Investigation Report

Southwest LRT (METRO Green Line Extension)

Minneapolis, St. Louis Park, Hopkins, Minnetonka, and Eden Prairie, Minnesota

Anderson Engineering of MN, LLC.—Project No. 13485

October 2014

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2 Executive Summary

Anderson Engineering of Minnesota, LLC is a subcontractor to CH2M Hill, Inc. and the Metropolitan Council to provide professional wetland services to identify areas within the Southwest Light Rail Transit (LRT) study area that meet the wetland criteria of the 1987 United States Army Corps of Engineers Wetland Delineation Manual (*Technical Report Y-87-1; January 1987*) and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Midwest Regional Supplement).

In December of 2013, a comprehensive Wetland Investigation Report was completed for the wetland basins that were identified and delineated within the original proposed Southwest LRT study area. Upon the completion of the original Report, the project design was advanced and the limits of disturbance of the study area were expanded as a result of design adjustments, the expansion of the study area created the need for additional wetland investigation. Following an off-site review of the additional areas identified by the Metropolitan Council, Anderson Engineering systematically identified the parcels that would require further on-site wetland investigation and completed all required additional field work within the updated study area.

The proposed Southwest LRT study area remains within the cities of Eden Prairie, Minnetonka, Hopkins, St. Louis Park, and Minneapolis. The area of wetland investigation includes any additional corridors along potential light rail alignments; sites for potential operation and maintenance facilities, stations, and parking; and other project-associated improvements potentially including, but not limited to, temporary construction workspaces, temporary access roads, permanent road realignments, and bicycle and pedestrian paths that are within the expanded study area.

The Local Government Units (LGUs) that have Minnesota Wetland Conservation Act jurisdiction over water resources within the study area are the Minnesota Department of Transportation (DOT), the City of Eden Prairie (EP), Nine Mile Creek Watershed District (NM), the City of Minnetonka (MTA), Minnehaha Creek Watershed District (MC), and the City of Minneapolis (MPL). The United States Army Corps of Engineers (Corps) has Clean Water Act Section 404 jurisdiction on wetlands within the entire corridor and the Minnesota Department of Natural Resources (MDNR) regulates all public waters.

For the purpose of this Supplemental Report, wetlands are grouped into two categories: Extended and Additional.

- **Extended Wetlands:** Due to the increase in size of the study area, it was necessary to re-delineate and extend the boundaries of some wetland basins that had previously been identified and delineated in the 2013 report. In order to maintain clarity and consistency, both the original and updated data for these wetlands are included in this Supplemental Report. The only changes that were made to the data associated with these wetlands is the basin size as well as the addition of sample points and corresponding data sheets for each basin.

- **Additional Wetlands:** New wetland basins were also identified and delineated as a result of the expanded project study area. These wetlands were not located in the original study area, and were not included in the 2013 report. In addition, this category includes wetlands located within the original study area for which permission to perform an on-site investigation was only recently obtained. In the original Wetland Investigation Report, these sites were digitally mapped using off-site review methods. After right of entry was granted, field delineations were performed to allow for an accurate and precise wetland identification and delineation.

A total of 4 previously identified wetlands were field delineated and extended due to the increase in size of the updated study area. These wetlands are briefly summarized in Table 2-1. A total of 16 additional wetland basins or waterways were identified and field delineated within the updated study area. These wetlands are briefly summarized in Table 2-2.

For clarity and consistency, the extended basins in this report maintain the wetland labels that were assigned to them in the 2013 report. To avoid duplicate labeling, the number identification sequence for the additional wetlands in this supplemental report begins where each LGU number sequence from the 2013 report left off. If a wetland was previously digitally mapped in the 2013 report and has since been field delineated, it has been assigned a new identification label and is marked with an asterisk.

Wetlands are classified using the Cowardin, Circular 39, and Eggers and Reed Wetland Classification systems, described in Appendix B. In Tables 2-1 and 2-2, each of the field delineated wetlands are grouped by LGU. The format for the wetland identification labels is as follows: LGU abbreviation listed first, followed by geographic municipal location and a number identification. A detailed summarization of all wetlands mentioned in this report can be found in Appendix A.

Table 2-1
Summary of the **Extended** 2014 Field Delineated Wetlands
(As identified in the 2013 Wetland Investigation Report)

Wetland ID	Wetland Classifications		
	Circ. 39	**Cowardin**	**Eggers and Reed**
Minnesota Department of Transportation			
DOT-EP-09	Type 3	PEMC	Shallow Marsh
City of Eden Prairie			
EP-EP-07	Type 3/7	PEM/FO1C	Shallow Marsh/Hardwood Swamp
Nine Mile Creek Watershed District			
None Extended			
City of Minnetonka			
MTA-MTA-11	Type 3/5/6/7	PEM/FO1/SS1 /UB/C/G	Shallow Marsh/Shallow Open Water/Shrub Carr/Hardwood Swamp
MTA-MTA-12	Type 5	PUBGx	Shallow Open Water
Minnehaha Creek Watershed District			
None Extended			
City of Minneapolis			
None Extended			

Sources: *"Wetlands of the United States"* (U.S. Fish and Wildlife Service-Circular 39 Document)
"Classification of Wetlands and Deepwater Habitats of the United States" (U.S. Fish and Wildlife Service-Cowardin et al. method)
"Wetland Plants and Plant Communities of MN and WI"; (USACOE-St. Paul District; Eggers and Reed)

Table 2-2
Summary of **Additional** 2014 Field Delineated Wetlands in the updated Southwest LRT study area (Newly identified in 2014)

Wetland ID	Wetland Classifications		
	Circ. 39	Cowardin	Eggers and Reed
Minnesota Department of Transportation			
DOT-EP-12	Type 1	PEMA	Seasonally Flooded Basin
DOT-EP-13	Type 3	PEMC	Shallow Marsh
DOT-EP-14	Type 1	PEMA	Seasonally Flooded Basin
DOT-EP-15	Type 1	PEMA	Seasonally Flooded Basin
DOT-EP-16	Type 90	NA	Riverine System
DOT-EP-17	Type 2/5	PEMC1/PUBGx	Fresh Wet Meadow/Shallow Open Water
DOT-EP-18	Type 3	PEMC	Shallow Marsh
DOT-EP-19	Type 1	PEMA	Seasonally Flooded Basin
DOT-EP-20	Type 1	PEMA	Seasonally Flooded Basin
DOT-EP-21	Type 1	PEMA	Seasonally Flooded Basin
DOT-EP-22	Type 2/3	PEMB/C	Fresh Wet Meadow/Shallow Marsh
City of Eden Prairie			
*EP-EP-22 (Formerly DIG-EP-EP-01)	Type 3	PEMC	Shallow Marsh
EP-EP-23	Type 3	PEMC	Shallow Marsh
*EP-EP-24 (Formerly DIG-EP-EP-02 & DIG-EP-EP-03)	Type 5	PUB1Gx	Shallow Open Water
Nine Mile Creek Watershed District			
No Additional Wetlands			
City of Minnetonka			
MTA-MTA-13	Type 5/1	PUB/EM/Gx/A	Shallow Open Water/Seasonally Flooded Basin
Minnehaha Creek Watershed District			
No Additional Wetlands			
City of Minneapolis (Basset Creek Watershed)			
MPL-MPL-01	Type 5	PUBG	Shallow Open Water

*Indicates a wetland that was digitally mapped in the original Report and has since been field delineated
Sources: *"Wetlands of the United States"* (U.S. Fish and Wildlife Service-Circular 39 Document)
"Classification of Wetlands and Deepwater Habitats of the United States" (U.S. Fish and Wildlife Service-Cowardin et al. method)
"Wetland Plants and Plant Communities of MN and WI"; (USACOE-St. Paul District; Eggers and Reed)

3 Background

As requested by the Metropolitan Council and CH2M Hill, Inc., Anderson Engineering of Minnesota, LLC has performed all necessary additional wetland determinations and jurisdictional delineations in accordance with the 1987 United States Army Corps of Engineers Wetland Delineation Manual and the Midwest Regional Supplement.

The purpose of this study was to investigate all additional areas within the updated 2014 project study area that meet the technical criteria for wetlands, delineate the jurisdictional extent of the wetland basins, and classify the observed wetland habitats. As mentioned, some of the wetlands identified in this report were previously identified and delineated in the 2013 report, and have simply been extended to account for the additional construction area added in 2014.

Fieldwork for this project was completed by Environmental Scientists Ben Hodapp, Marc Cottingham, and Todd Udvig, and Environmental Associates Kristina Justen, Alison Hruby, Courtney Luensman, and Lucy Dahl in August, September, and October of 2014.

4 Methodology

Field investigations and off-site reviews were performed to identify, delineate, and assess wetland areas within the updated Southwest LTR study area. The wetland boundary delineations and wetland functional assessments were completed using data collected along sampling transects within the wetland, and through analysis of available data mapping resources. All wetland delineations were conducted under the oversight of a Minnesota Certified Wetland Delineator and in accordance with the 1987 United States Army Corps of Engineers Wetland Delineation Manual and the Midwest Regional Supplement.

4.1 Background Data Research Review

Mapping resources were used to initially locate potential wetland habitats prior to conducting field investigations. Data resources used include:

- United States Geologic Service 7.5" Topographic Quadrangle maps
- United States Fish and Wildlife Service National Wetlands Inventory maps
- United States Department of Agriculture Natural Resources Conservation Service Soil Survey of Hennepin County, Minnesota
- Minnesota Department of Natural Resources Public Water Inventory
- Aerial photographs
- City of Eden Prairie GIS data
- City of Minnetonka Water Resources Management Plan
- Minnehaha Creek Watershed District Functional Assessment of Wetlands

Potential wetland habitats, designated "sampling units", were distinguished by marked differences in vegetative cover, landscape position, soil types, and/or disturbances relevant to aquatic resources. The most effective way to detect these differences was to review vegetative signatures on aerial photographs, since it typically reflects spatial variations in geomorphology, hydrology, soils, and other factors important to the formation and maintenance of wetlands. When natural vegetation was absent or disturbed, however, sampling units were determined based on landscape position, soil types, and/or other disturbances. During on-site data collection, sampling units were adjusted as needed based on observed field conditions.

4.2 On-Site Data Collection and Field Demarcation

All land parcels required Right of Entry permits prior to an on-site investigation and property owners were contacted by the Metropolitan Council to coordinate field investigation date, time, and preferred demarcation method (temporary pin-flags, lath, flagging ribbon, etc.). Following coordination with the property owner, Gopher State One Call was notified to ensure underground utilities were marked and avoided during soil investigations.

On-site data were collected at sample points within sampling units to determine wetland boundaries and assess wetland habitat quality. Vegetation, soil, and hydrology data were recorded at each wetland. At least one sample point transect crosses the delineated wetland edge of each wetland basin. The transect consists of two sample points: one point within the basin, the wetland point, and one point outside of the basin, the upland point. Other sample points may have been taken in areas which have one or more of the wetland vegetative, soil, or hydrologic characteristics present; where questionable conditions exist; or to verify the absence of wetland criteria. Sample point locations were selected to be representative of the sampling unit.

The hydric soil assessment procedure of the Routine On-site Determination Method was used during this investigation. This method includes the following procedures:

1) Sampling of the vegetative community in all present strata (herbaceous, sapling/shrub, tree, and woody vine) to determine whether the sampling unit meets the hydrophytic vegetation criteria specified by the Midwest Regional Supplement.

2) Digging soil pits with a Dutch auger typically to depths of 16”-36”, noting soil profile and any hydric soil characteristics to determine whether the sampling unit meets the hydric soil criteria specified by the Midwest Regional Supplement.

3) Observing and recording indicators of surface and subsurface hydrology to determine whether the sampling unit meets the wetland hydrology criteria specified by the Midwest Regional Supplement.

A data form was completed for each sample point in the sampling unit and for any additional investigative sampling points (Appendix D). In wetland-upland transition areas, sample points and associated data forms from the wetland and upland were used to illustrate and document differences between the wetland and upland. Digital photographs were taken of each wetland delineated to document general condition and status. Photographs are included in Appendix E.

After data collection, the identified wetland boundary was marked with sequentially numbered pink pin-flags or flagging ribbon. Sample point locations were marked in the field with orange pin-flags. The spacing of flags or other identification markers was relative to the level of detail needed to accurately depict the edge of the boundary: a more irregularly shaped wetland required more markers with less space between them. Markers were also placed so that at each point, adjacent markers in each direction are visible. Property owners were informed of the need to place physical markers on their land during initial contact. If the owner requested that all physical markers be removed, the markers were removed immediately following field review by the responsible regulatory agency.

The positions of physical markers were recorded with a mapping-grade Trimble GeoXH Global Positioning Satellite (GPS) unit with sub-meter accuracy.

4.4 Wetland Functional Assessment

Minnesota Routine Assessment Method (MnRAM) is a process designed to help assess qualitative functions and values associated with Minnesota wetlands. Anderson Engineering of MN, LLC environmental staff completed wetland functional evaluations for field-delineated natural wetlands using

MnRAM, Version 3.4 (Appendix F). Natural wetlands are historically and currently existing wetlands, either naturally occurring or created specifically to be a functioning wetland. MnRAM analyses were not completed for "incidental" wetlands, those created as a result of development or human activity without the intent of creating a wetland, because "incidental" wetlands are not regulated under the Minnesota Wetland Conservation Act. MnRAM analyses were also not completed for digitized wetlands that were not field delineated, as not all data necessary to complete the MnRAM assessment could be accurately obtained without direct field observations.

5 Resource Review

The following resources were reviewed and are included on the Environmental Map exhibits in Appendix B:

5.1 U.S. Fish and Wildlife Service National Wetlands Inventory

The National Wetlands Inventory (NWI) identifies numerous wetlands within the study area of the proposed Southwest LRT project.

5.2 Natural Resources Conservation Service Soil Survey

The Soil Survey of Hennepin County, MN identifies numerous hydric soil map units within the study area of the proposed Southwest LRT project.

5.3 Minnesota Department of Natural Resources Public Water Inventory

According to the Minnesota Department of Natural Resources Public Water Inventory, several public watercourses are located near the proposed Southwest LRT project.

5.4 Minnesota Climatology Working Group Antecedent Precipitation Data

A review of the antecedent precipitation data collected from the Minnesota Climatology Working Group (Appendix G) indicated that precipitation totals for the previous months were slightly above average in Hennepin County and hydrologic conditions were suitable for completing an accurate wetland determination and boundary delineation.

6 2014 Field Delineation Results and Discussion

6.1 Field Results

Sixteen additional wetland basins, waterways, or portions thereof have been classified, field delineated and mapped within the updated Southwest LRT study area. In addition, the boundaries of four previously identified wetland basins were further investigated and extended within the updated Southwest LRT study area. The results of the wetland investigation within the updated Southwest LRT study area are divided by LGU and described below. Wetland descriptions include wetland type, size, wetland and upland dominant vegetation and soil descriptions, wetland to upland transition description, and observed wetland hydrology indicators. Wetlands are described as either being located entirely within the study area or extending outside the study area. If the wetland basin is located completely within the study area boundaries, the size of the entire wetland is given. For wetlands that extend outside of the study area boundaries, the size of only the on-site portion is given and the portion outside of the study area is

excluded. For extended wetlands that were also identified in the original Report, the former size of the wetland is included for reference.

6.1.1 Minnesota Department of Transportation

DOT-EP-09 (Extended): DOT-EP-09 is a PEMC, Type 3, shallow marsh that is part of the roadway drainage system. It is located entirely in the study area and is approximately 0.70 acres in size (formerly 0.25 acres). The wetland vegetation is dominated by narrow-leaf cat-tail (*Typha angustifolia*) and reed canary grass (*Phalaris arundinacea*). The underlying soils are mapped as Urban Land-Udorthents. Dark silt loam over depleted silt loam soils in the investigated area meets the depleted below dark surface (A11) hydric soil indicator. A gleyed layer of soil is located below the depleted silt loam. Indicators of wetland hydrology include saturation at 10 inches (A3) and the FAC-neutral test (D5).

The transition from wetland to upland is an abrupt elevation change. Upland vegetation is dominated by white spruce (*Picea glauca*), Scotch pine (*Pinus sylvestris*), and reed canary grass (*Phalaris arundinacea*). Upland soils consist of very dark gray loam with a restrictive layer at 12 inches and do not meet any hydric soil indicators. One secondary hydrology indicator, the FAC-neutral test (D5), was observed in the upland.

DOT-EP-12 (Additional): DOT-EP-12 is a small isolated PEMA, Type 1, seasonally flooded basin. The wetland is located entirely within the study area, and is approximately 540 square feet in size. The wetland vegetation is dominated by reed canary grass (*Phalaris arundinacea*). The underlying soils are mapped as Urban Land complex. Soils in the investigation area meet the depleted matrix (F3) hydric soil indicator. Wetland hydrology indicators include geomorphic position (D2) and FAC-neutral test (D5).

The transition from wetland to upland is a gradual change. Upland vegetation is dominated by smooth brome (*Bromus inermis*) and Kentucky bluegrass (*Poa pratensis*). Upland soils are a black silty clay loam and do not meet any hydric soil indicators. No hydrology indicators were observed in the upland.

DOT-EP-13 (Additional): DOT-EP-13 is a small isolated PEMC, Type 3, shallow marsh. The wetland is located entirely within the study area, and is approximately 799 square feet in size. The wetland vegetation is dominated by broad-leaf cat-tail (*Typha latifolia*) and reed canary grass (*Phalaris arundinacea*). The underlying soils are mapped as Urban Land complex. Soils in the investigation area meet the redox dark surface (F6) hydric soil indicator. Wetland hydrology indicators include saturation (A3), geomorphic position (D2), and FAC-neutral test (D5).

The transition from wetland to upland is a gradual change. Upland vegetation is dominated by smooth brome (*Bromus inermis*) and field thistle (*Cirsium discolor*). Upland soils are a black silty clay loam and do not meet any hydric soil indicators. No hydrology indicators were observed in the upland.

DOT-EP-14 (Additional): DOT-EP-14 is a small isolated PEMA, Type 1, seasonally flooded basin. The wetland is located entirely within the study area, and is approximately 603 square feet in size. The wetland vegetation is dominated by fox sedge (*Carex vulpinoidea*), smooth brome (*Bromus inermis*), and Virginia wild rye (*Elymus virginicus*). The underlying soils are mapped as Le Sueur loam. Soils in the investigation area meet the depleted matrix (F3) hydric soil indicator. Wetland hydrology indicators include algal mat or crust (B4), surface soil cracks (B6), geomorphic position (D2), and FAC-neutral test (D5).

The transition from wetland to upland is a subtle, gradual change. Upland vegetation is dominated by Philadelphia panicgrass (*Panicum philadelphicum*), Canada goldenrod (*Solidago canadensis*), and Kentucky bluegrass (*Poa pratensis*). Upland soils are a very dark grayish brown loam and do not meet any hydric soil indicators. No hydrology indicators were observed in the upland.

DOT-EP-15 (Additional): DOT-EP-15 is a small isolated PEMA, Type 1, seasonally flooded basin. The wetland is located entirely within the study area, and is approximately 533 square feet in size. The wetland vegetation is dominated by leafy spurge (*Euphorbia esula*), fox sedge (*Carex vulpinoidea*), and sandbar willow (*Salix interior*). The underlying soils are mapped as Lester loam. Soils in the investigation area did not meet a hydric soil indicator; however are considered to be hydric based on best professional judgment. Wetland hydrology indicators include geomorphic position (D2) and FAC-neutral test (D5).

The transition from wetland to upland is a moderate change. Upland vegetation is dominated by Kentucky bluegrass (*Poa pratensis*) and Canada goldenrod (*Solidago canadensis*). Upland soils are a dark brown loam and do not meet any hydric soil indicators. No hydrology indicators were observed in the upland.

DOT-EP-16 (Additional): DOT-EP-16 is a Type 90 permanently flooded riverine system. The on-site banks are primarily vegetated with reed canary grass (*Phalaris arundinacea*). The banks of the creek are approximately 2 feet high and moderately incised. Underlying soils are mapped as Muskego/Klossner muck, however no soil samples were taken, as the creek bottom comprised of a gravel substrate. At the time of field investigation, water in the creek was approximately 6 inches deep. This area does not meet wetland criteria, but is a portion of Purgatory Creek and will be regulated as a Waters of the United States.

DOT-EP-17 (Additional): DOT-EP-17 is a large isolated PEM1C/PUBGx, Type 2/5, Fresh Wet Meadow/Shallow Open Water. The wetland extends off site to the north. The on-site portion is approximately 0.42 acres in size. The wetland vegetation is dominated by reed canary grass (*Phalaris arundinacea*) and stinging nettle (*Urtica dioica*). The underlying soils are mapped as Houghton muck and Muskego muck. Soils in the investigation area meet the depleted below dark surface (A11) hydric soil indicator. Wetland hydrology indicators include high water table (A2), saturation (A3), crayfish burrows (C8), geomorphic position (D2), and FAC-neutral test (D5).

The transition from wetland to upland is a moderate change. Upland vegetation is dominated by reed canary grass (*Phalaris arundinacea*) and stinging nettle (*Urtica dioica*). Upland soils are a black clay loam and do not meet any hydric soil indicators. No hydrology indicators were observed in the upland.

DOT-EP-18 (Additional): DOT-EP-18 is a small isolated PEMC, Type 3, shallow marsh. The wetland extends off-site to the east. The on-site portion is approximately 346 square feet in size. The wetland vegetation is dominated by common spikerush (*Eleocharis palustris*). The underlying soils are mapped as Hamel loam. Soils in the investigation area meet the depleted below dark surface (A11), depleted matrix (F3), and redox dark surface (F6) hydric soil indicators. Wetland hydrology indicators include saturation (A3), geomorphic position (D2), and FAC-neutral test (D5).

The transition from wetland to upland is an abrupt change. Upland vegetation is dominated by field thistle (*Cirsium discolor*) and smooth brome (*Bromus inermis*). Upland soils are a dark grayish brown silty clay loam and do not meet any hydric soil indicators. No hydrology indicators were observed in the upland.

DOT-EP-19 (Additional): DOT-EP-19 is a small isolated PEMA, Type 1, seasonally flooded basin. The wetland is located entirely within the study area, and is approximately 0.10 acres in size. The wetland vegetation is dominated by smooth brome (*Bromus inermis*). The underlying soils are mapped as Lester loam. Soils in the investigation area meet the depleted below dark surface (A11) hydric soil indicator. Wetland hydrology indicators include high water table (A2), saturation (A3), geomorphic position (D2), and FAC-neutral test (D5).

The transition from wetland to upland is a gradual change. Upland vegetation is dominated by crownvetch (*Coronilla varia*), Canada goldenrod (*Solidago canadensis*), and Canada thistle (*Cirsium arvense*). Upland soils are a very dark gray loam and do not meet any hydric soil indicators. No hydrology indicators were observed in the upland.

DOT-EP-20 (Additional): DOT-EP-20 is a small isolated PEMA, Type 1, seasonally flooded basin. The wetland is located entirely within the study area, and is approximately 0.05 acres in size. The wetland vegetation is dominated by reed canary grass (*Phalaris arundinacea*) and narrow-leaf cat-tail (*Typha angustifolia*). The underlying soils are mapped as Koronis Kingsley loam. Soils in the investigation area meet the depleted matrix (F3) hydric soil indicator. Wetland hydrology indicators include geomorphic position (D2), and FAC-neutral test (D5).

The transition from wetland to upland is a moderate change. Upland vegetation is dominated by smooth brome (*Bromus inermis*). Upland soils are a very dark gray loam and do not meet any hydric soil indicators. No hydrology indicators were observed in the upland.

DOT-EP-21 (Additional): DOT-EP-21 is a small isolated PEMA, Type 1, seasonally flooded basin. The wetland is located entirely within the study area, and is approximately 561 square feet in size. The wetland vegetation is dominated by reed canary grass (*Phalaris arundinacea*). The underlying soils are mapped as Lester loam. Soils in the investigation area were historically disturbed and based on professional judgment were considered to be functioning as hydric. Wetland hydrology indicators include drainage patterns (B10), geomorphic position (D2), and FAC-neutral test (D5).

The transition from wetland to upland is a gradual change. Upland vegetation is dominated by reed canary grass (*Phalaris arundinacea*) and leafy spurge (*Euphorbia esula*). Upland soils are a very dark grayish brown silt loam and do not meet any hydric soil indicators. The FAC-neutral test was the only hydrology indicator observed.

DOT-EP-22 (Additional): DOT-EP-22 is a small isolated PEMB/C, Type 2/3, fresh wet meadow/shallow marsh. The wetland is located entirely within the study area, and is approximately 0.08 acres in size. The wetland vegetation is dominated by narrow-leaf cat-tail (*Typha angustifolia*) and reed canary grass (*Phalaris arundinacea*). The underlying soils are mapped as Lester loam. Soils in the investigation area met the redox dark surface hydric soil indicator. Wetland hydrology indicators include surface soil cracks (B6), drainage patterns (B10), geomorphic position (D2), and FAC-neutral test (D5). A 12 inch pvc culvert inlet was observed at the south end of the wetland.

The transition from wetland to upland is a gradual to abrupt change. Upland vegetation is dominated by reed canary grass (*Phalaris arundinacea*) and leafy spurge (*Euphorbia esula*). Upland soils are a very dark grayish brown silt loam and do not meet any hydric soil indicators. The FAC-neutral test was the only hydrology indicator observed.

6.1.2 City of Eden Prairie

EP-EP-07 (Extended): EP-EP-07 is a moderately-sized isolated PEM/FO1C, Type 3/7, shallow marsh/hardwood swamp. The wetland extends out of the study area to the south and east. The on-site portion is approximately 1.99 acres in size (formerly 1.54 ac). Wetland vegetation is dominated by American elm (*Ulmus americana*), reed canary grass (*Phalaris arundinacea*), and narrow-leaf cat-tail (*Typha angustifolia*). The underlying soils are mapped as Water. Loamy sand soils in the investigated

area meet the redox dark surface (F6) hydric soil indicator. Wetland hydrology indicators include geomorphic position (D2) and the FAC-neutral test (D5).

The transition from wetland to upland is a significant rise in elevation. Upland vegetation is dominated by American elm (*Ulmus americana*), common buckthorn (*Rhamnus cathartica*), garlic mustard (*Alliaria petiolata*), and common burdock (*Arctium minus*). Soils in the upland are very dark grayish brown silty clay over dark gray silty clay and do not meet hydric soil indicators. No hydrology indicators were observed.

EP-EP-22 (Additional, Formerly DIG-EP-EP-01): EP-EP-22 is a PEMC, Type 3, shallow marsh, constructed stormwater pond. It is located entirely within the study area and is approximately 0.20 acres in size. The wetland vegetation is dominated by narrow-leaf cat-tail (*Typha angustifolia*), and purple loosestrife (*Lythrum salicaria).* The underlying soils are mapped as Muskego Muck. The investigated soil profile meets the depleted below dark surface (A11), depleted matrix (F3), and redox dark surface (F6) hydric soil indicators. Indicators of wetland hydrology include geomorphic position (D2), and the FAC-neutral test (D5).

The transition from wetland to upland is an abrupt elevation change. Upland vegetation is dominated by smooth brome grass (*Bromus inermis*) and Kentucky bluegrass (*Poa Pratensis*). Upland soils are a dark greyish brown silty clay loam and do not meet any hydric soil indicators. No hydrology indicators were observed in the upland.

EP-EP-23 (Additional): EP-EP-23 is a PEMC, Type 3, shallow marsh. The wetland extends outside of the study area to the southeast. The on-site portion is approximately 0.20 acres in size. The wetland vegetation is dominated by reed canary grass (*Phalaris arundinacea*) and common buckthorn (*Rhamus cathatrica)*. The investigated soil profile meets the histisol (A1) hydric soil indicator. Indicators of wetland hydrology include geomorphic position (D2), drainage patterns (B10) and the FAC-neutral test (D5).

The transition from wetland to upland is slightly sloped. Upland vegetation is dominated by common buckthorn (*Rhamus cathatrica)* and America basswood (*Tilia americana)*. Upland soils are dark brown silty loam and do not meet hydric soil indicators. No wetland hydrology indicators were observed in the upland.

EP-EP-24 (Additional, Formerly DIG-EP-EP-02 & DIG-EP-EP-03): EP-EP-24 is a PUB1Gx, Type 5, shallow open water excavated stormwater pond (two connected stormwater ponds). It is located entirely within the study area and is approximately 0.38 acres in size. The wetland vegetation is dominated by sandbar willow (*Salix interior*) and narrow-leaf cat-tail (*Typha angustifolia*). The underlying soils are mapped as Muskego Muck. Obtaining a soil sample was not possible due to a restrictive layer of riprap at the soil surface. The soil is assumed hydric based on the presence of hydrophytic vegetation and best professional judgment. Indicators of wetland hydrology include 0.5 inches of standing water at the surface (A1), geomorphic position (D2), and the FAC-neutral test (D5).

The transition from wetland to upland is an abrupt change in elevation. Upland vegetation is dominated by prickly lettuce (*Lactuca serriola*) and Kentucky bluegrass (*Poa Pratensis*). Upland soils are a dark greyish brown loam and do not meet any hydric soil indicators. There is a restrictive layer at 8 inches. No hydrology indicators were observed in the upland.

6.1.3 Nine Mile Creek Watershed District

No additional or extended wetland basins have been identified within the Nine Mile Creek Watershed District.

6.1.4 City of Minnetonka

MTA-MTA-11 (Extended): MTA-MTA-11 is a large PEM/FO1/SS1/UB/C/G, Type 3/5/6/7, shallow marsh/ floodplain forest/scrub-shrub/shallow open water wetland complex. It is located entirely within the updated study area and is approximately 11.31 acres in size (formerly 5.05 acres, extending to the west). It is currently bisected by a paved pedestrian path. The wetland vegetation is dominated by reed canary grass (*Phalaris arundinacea*), sandbar willow *(Salix interior)*, box elder (*Acer negundo*), and green ash (*Fraxinus pennsylvanica*). The underlying soils are mapped as the Klossner soil series. Fibric peat over depleted silty clay and depleted silty clay loam layers in the investigated areas meet the redox dark surface (F6), histisol (A1), and thick dark surface (A12) hydric soil indicators. Indicators of wetland hydrology include surface water at a depth of 6 inches (A1), saturation at the surface (A3), geomorphic position (D2), and the FAC-neutral test (D5).

The transitions from wetland to upland are gradual to abrupt elevation changes. Upland vegetation is dominated by green ash (*Fraxinus pennsylvanica*), basswood (*Tilia americana*), common buckthorn (*Rhamnus cathartica*), garlic mustard (*Alliaria petiolata*), and Canada thistle (*Cirsium arvense*). Upland soils consist of various colors of dark silty clay and loam and do not meet any hydric soil indicators. No hydrology indicators were observed in the upland.

MTA-MTA-12 (Extended): MTA-MTA-12 is a PUBGx, Type 5, shallow open water wetland that is used as a stormwater treatment pond. It is located entirely within the updated study area and is approximately 2.67 acres in size (formerly 0.09 acres, extending to the west).The wetland vegetation is dominated by box elder (*Acer negundo*), Eastern cottonwood (*Populus deltoides*), black willow (*Salix nigra*), common buckthorn (*Rhamnus cathartica*), and reed canary grass (*Phalaris arundinacea*). The underlying soils are mapped as Urban Land-Udorthents. The dark sandy loam over depleted sandy loam in the investigated areas meets the sandy redox (S5) hydric soil indicator. Indicators of wetland hydrology include saturation at 6 inches from the surface (A3), geomorphic position (D2), and the FAC-neutral test (D5).

The transition from wetland to upland is an abrupt elevation change. Upland vegetation is dominated by box elder (*Acer negundo*), Eastern cottonwood (*Populus deltoides*), common buckthorn (*Rhamnus cathartica*), and Virginia creeper (*Parthenocissus quinquefolia*). Upland soils consist of very dark grayish brown sand and do not meet any hydric soil indicators. One secondary hydrology indicator, the FAC-neutral test (D5), was observed in the upland.

MTA-MTA-13 (Additional): MTA-MTA-13 is a PUB/EM/Gx/A, Type 5/1, shallow open water/seasonally flooded basin, part of which is used as a stormwater treatment pond. It is located entirely within the updated study area and is approximately 0.16 acres in size. The wetland vegetation is dominated by reed canary grass (*Phalaris arundinacea*), sandbar willow (*Salix interior)*, and lesser duckweed (*Lemna minor)*. The underlying soils are mapped as Shorewood. The dark silty clay loam over depleted silty clay in the investigated areas meets the depleted below dark surface (A11), depleted matrix (F3), and redox dark surface (F6) hydric soil indicators. Indicators of wetland hydrology include surface water inundation of 3 inches (A1), geomorphic position (D2), and the FAC-neutral test (D5).

The transition from wetland to upland is an abrupt elevation change. Upland vegetation is dominated by Kentucky blue gress (*Poa pratensis*), reed canary grass (*Phalaris arundinacea*), and Canada goldenrod (*Solidago canadensis*). Upland soils consist of a grayish brown silt loam which meets the depleted matrix (F3) hydric soil indicator. No hydrology indicators were observed in the upland.

6.1.5 Minnehaha Creek Watershed District

No additional or extended wetland basins have been identified within the Minnehaha Creek Watershed District.

6.1.6 City of Minneapolis (Bassett Creek Watershed)

MPL-MPL-01: MPL-MPL-01 is a small isolated PUBG, Type 5, shallow open water basin. The wetland is located entirely within the study area, and is approximately 116 square feet in size. The wetland vegetation is dominated by common duckweed (*Lemna minor*). The underlying soils are mapped as Urban Land complex. Soils in the investigation area meet the depleted below dark surface (A11) hydric soil indicator. Wetland hydrology indicators include surface water (A1), geomorphic position (D2), and FAC-neutral test (D5).

The transition from wetland to upland is a gradual change. Upland vegetation is dominated by boxelder (*Acer negundo*) and common buckthorn (*Rhamnus cathartica*). Upland soils are a very dark gray silt loam and do not meet any hydric soil indicators. No hydrology indicators were observed in the upland.

6.2 2014 Local Government Unit Field-Delineated Wetland Totals

Table 6.2-1 shows the number of wetlands field delineated within each LGU jurisdiction area for the updated study area. They are grouped into the categories natural wetlands, incidental wetlands, and waterways:

- **Natural wetlands** are historically and currently existing wetlands that are hydrologically supported by non-point surface runoff, groundwater, or a combination of the two.
- **Incidental wetlands** are not historical wetlands, but are created as a result of development or human activity without the intent of wetland replacement or creation.
- **Waterways** are riverine systems (rivers, creeks, and streams) that are contained in natural or artificial channels containing periodically or continuously flowing water, or a connecting link between two standing bodies of water.

Table 6.2-1
LGU Field Delineated Wetland Totals - Identified or Extended in 2014

Local Government Unit	Wetland Category			Total
	Natural	Incidental	Waterway	
Minnesota Dept. of Transportation	1	10	1	**12**
City of Eden Prairie	4	0	0	**4**
Nine Mile Creek Watershed District	0	0	0	**0**
City of Minnetonka	3	0	0	**3**
Minnehaha Creek Watershed District	0	0	0	**0**
City of Minneapolis	0	1	0	**1**
Totals	**8**	**11**	**1**	**20**

7 Conclusion

Field investigation in 2014 resulted in a total of 16 additional wetland basin delineations (or portions thereof) and 4 boundary extensions of previously identified wetland basins. All delineations were performed in accordance with the 1987 United States Army Corps of Engineers Wetland Delineation Manual and Midwest Regional Supplement within the updated Southwest Light Rail Transit Project study area located in Hennepin County, Minnesota.

The Local Government Units responsible for implementing the Minnesota Wetland Conservation Act at this project location are the Minnesota Department of Transportation, the City of Eden Prairie, Nine Mile Creek Watershed District, the City of Minnetonka, Minnehaha Creek Watershed District, and the City of Minneapolis. Wetlands within the updated study area are potentially regulated by multiple regulatory agencies including, but not limited to, the United States Army Corps of Engineers and state and local government units. Any work within or adjacent to regulated wetlands will require permits and authorization from the appropriate regulatory agency(s).

This wetland investigation meets the standards and criteria described in the 1987 U.S. Army Corps of Engineers Wetland Delineation Manual and the Midwest Regional Supplement. The results reflect the conditions present at the time of the delineation.

I certify that I performed the field analysis and wrote the report for this wetland determination.

Marc Cottingham 10/15/2014
Date
Environmental Scientist
MN Certified Wetland Delineator #1207
Anderson Engineering of Minnesota, LLC

Alison Hruby 10/15/2014
Date
Environmental Associate
Anderson Engineering of Minnesota, LLC

Courtney Luensman 10/15/2014
Date
Environmental Associate
MN Certified Wetland Delineator #1251
Anderson Engineering of Minnesota, LLC

Kristina Justen 10/15/2014
Date
Environmental Associate
Anderson Engineering of Minnesota, LLC

Lucy Dahl 10/15/2014
Date
Environmental Associate
Anderson Engineering of Minnesota, LLC

I certify that I performed the field analysis and/or reviewed work completed by above staff.

Benjamin J Hodapp, PWS 10/15/2014
Date
Environmental Services Manager
MN Certified Wetland Delineator #1016
Anderson Engineering of Minnesota, LLC

APPENDIX A

Southwest Light Rail Transit

Wetland Delineation Summary Table

Southwest Light Rail Transit Supplemental Wetland Delineation Summary Table-West to East (Eden Prairie to Minneapolis) - 2014 Delineations

October 15, 2014

Wetland ID	Map Exhibit Sheet Number	Wetland Type			Field Notes	NWI	LGU Inventory	PWI	LGU Association	Regulatory Authority		MnRAM Management Class	Comments
		Circ. 39	Cowardin	Eggers and Reed						WCA	CWA		
DOT-EP-09	5	Type 3	PEMC	Shallow Marsh	Roadside Ditch	NI	01-24-C	NI	MNDOT (In Eden Prairie)	Incidental	Non-Waters	NI	Basin Previously Identified in 2013. Boundary Extended in 2014.
DOT-EP-12	1	Type 1	PEMA	Seasonally Flooded Basin	Roadside Ditch	NI	NI	NI	MNDOT (In Eden Prairie)	Incidental	Non-Waters	NI	Newly Identified Basin in 2014.
DOT-EP-13	1	Type 3	PEMC	Shallow Marsh	Roadside Ditch	NI	NI	NI	MNDOT (In Eden Prairie)	Incidental	Non-Waters	NI	Newly Identified Basin in 2014.
DOT-EP-14	1	Type 1	PEMA	Seasonally Flooded Basin	Roadside Ditch	NI	NI	NI	MNDOT (In Eden Prairie)	Incidental	Non-Waters	NI	Newly Identified Basin in 2014.
DOT-EP-15	1,2	Type 1	PEMA	Seasonally Flooded Basin	Roadside Ditch	NI	NI	NI	MNDOT (In Eden Prairie)	Incidental	Non-Waters	NI	Newly Identified Basin in 2014.
DOT-EP-16	2	Type 90	NA	Riverine System	Creek	RUBG	10-33-A	Purgatory Creek	MNDOT (In Eden Prairie)	Non-Wetland	Jurisdictional	NI	Newly Identified Basin in 2014.
DOT-EP-17	2	Type 2/5	PEM1C/PUBGx	Fresh Wet Meadow/Shallow Open Water	Stormwater Detention Pond	PEM1C/PUBGx	11-33-C	NI	MNDOT (In Eden Prairie)	Yes	Non-Waters	Manage 2	Newly Identified Basin in 2014.
DOT-EP-18	3	Type 3	PEMC	Shallow Marsh	Roadside Ditch	NI	NI	NI	MNDOT (In Eden Prairie)	Incidental	Non-Waters	NI	Newly Identified Basin in 2014.
DOT-EP-19	3	Type 1	PEMA	Seasonally Flooded Basin	Roadside Ditch	NI	NI	NI	MNDOT (In Eden Prairie)	Incidental	Non-Waters	NI	Newly Identified Basin in 2014.
DOT-EP-20	3	Type 1	PEMA	Seasonally Flooded Basin	Roadside Ditch	NI	NI	NI	MNDOT (In Eden Prairie)	Incidental	Non-Waters	NI	Newly Identified Basin in 2014.
DOT-EP-21	5	Type 1	PEMA	Seasonally Flooded Basin	Roadside Ditch	NI	NI	NI	MNDOT (In Eden Prairie)	Incidental	Non-Waters	NI	Newly Identified Basin in 2014.
DOT-EP-22	5	Type 2/3	PEMB/C	Fresh Wet Meadow/Shallow Marsh	Roadside Ditch	NI	NI	NI	MNDOT (In Eden Prairie)	Incidental	Non-Waters	NI	Newly Identified Basin in 2014.
EP-EP-07	1	Type 3/7	PEM/FO1C	Shallow Marsh/Hardwood Swamp		PEM/UBF	16-14-B	Unnamed 27099200	Eden Prairie	Yes	Jurisdictional	Manage 2	Basin Previously Identified in 2013. Boundary Extended in 2014.
EP-EP-22	2	Type 3	PEMC	Shallow Marsh	Stormwater Pond	PEM1C	15-12-B	NI	Eden Prairie	Yes	Jurisdictional	Manage 3	Newly Identified Basin in 2014.
EP-EP-23	1	Type 3	PEMC	Shallow Marsh		PEM1C	15-23-D	Unnamed 27099100	Eden Prairie	Yes	Jurisdictional	Manage 2	Newly Identified Basin in 2014.
EP-EP-24	2	Type 5	PUB1Gx	Shallow Open Water	Stormwater Pond (two connected stormwater ponds)	PUBGx/PUBGh/PEM1A	Constructed Ponds 15-12-D & 15-12-E	NI	Eden Prairie	Yes	Jurisdictional	Manage 2	Newly Identified Basin in 2014.
MTA-MTA-11	6	Type 3/5/6/7	PEM/FO1/SS1/UB/C/G	Shallow Marsh/Shallow Open Water/Shrub Carr/Hardwood Swamp		PEM/FO1/SS1C	Manage 1	NI	Minnetonka	Yes	Jurisdictional	Manage 1	Basin Previously Identified in 2013. Boundary Extended in 2014.
MTA-MTA-12	7	Type 5	PUBGx	Shallow Open Water	Stormwater Pond	PUBGx	NI	NI	Minnetonka	Yes	Jurisdictional	Manage 2	
MTA-MTA-13	6	Type 5/1	PUB/EM/Gx/A	Shallow Open Water/Seasonally Flooded Basin	Stormwater Pond	PUBG	NI	NI	Minnetonka	Yes	Jurisdictional	Manage 1	Newly Identified Basin in 2014.
MPL-MPL-01	14	Type 5	PUBG	Shallow Open Water	Excavated pond below electrical tower	NI	NI	NI	Minneapolis	Incidental	Non-Waters	NI	Newly Identified Basin in 2014.

Legend:

DOT= Minnesota Department of Transportation
MC= Minnehaha Creek Watershed District
NM= Nine Mile Creek Watershed District
EP= Eden Prairie
HOP= Hopkins
MTA= Minnetonka
MPL= Minneapolis
SLP= St. Louis Park
NI= Not Inventoried

APPENDIX B

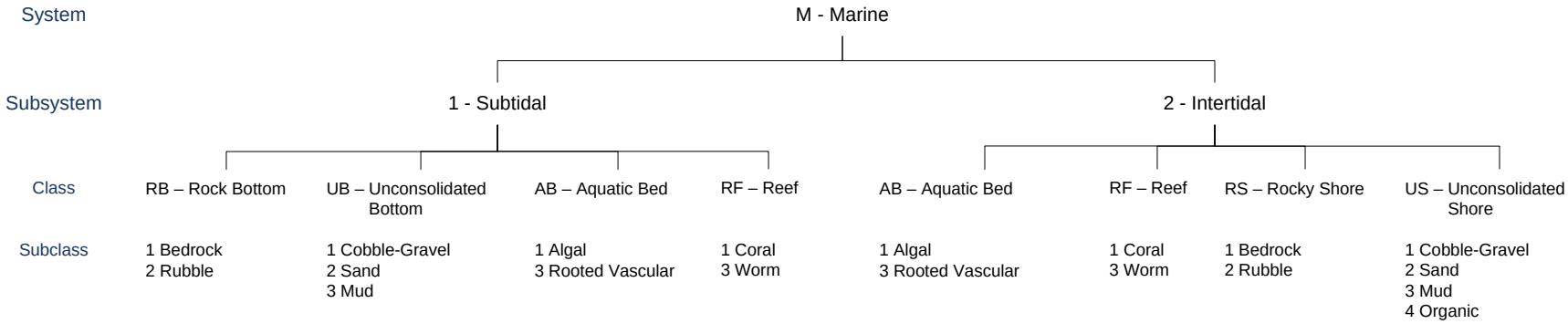
Wetland Classification Descriptions

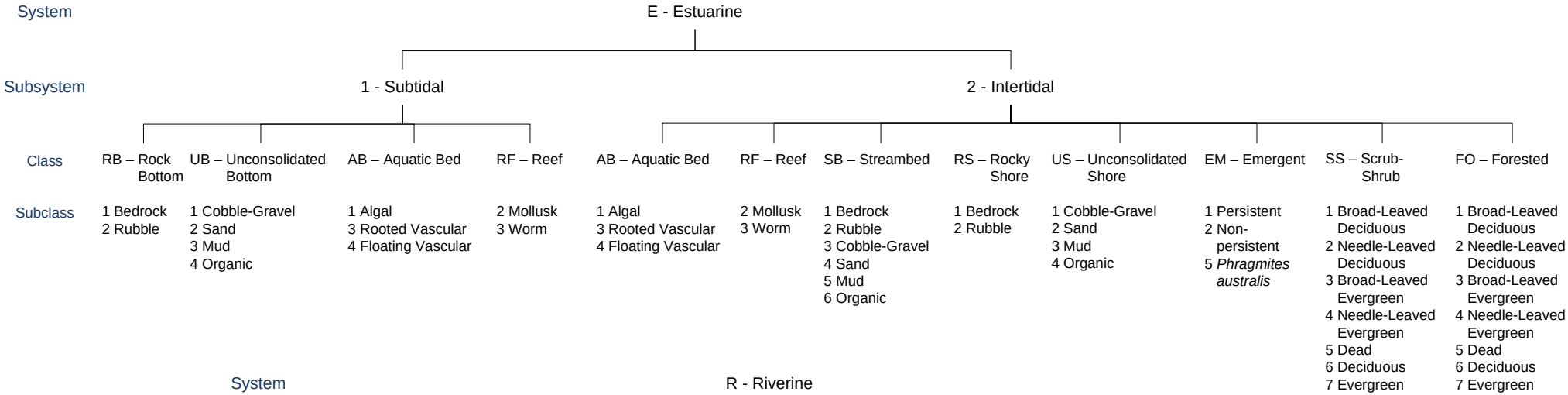
Circular 39 Wetland Classification System

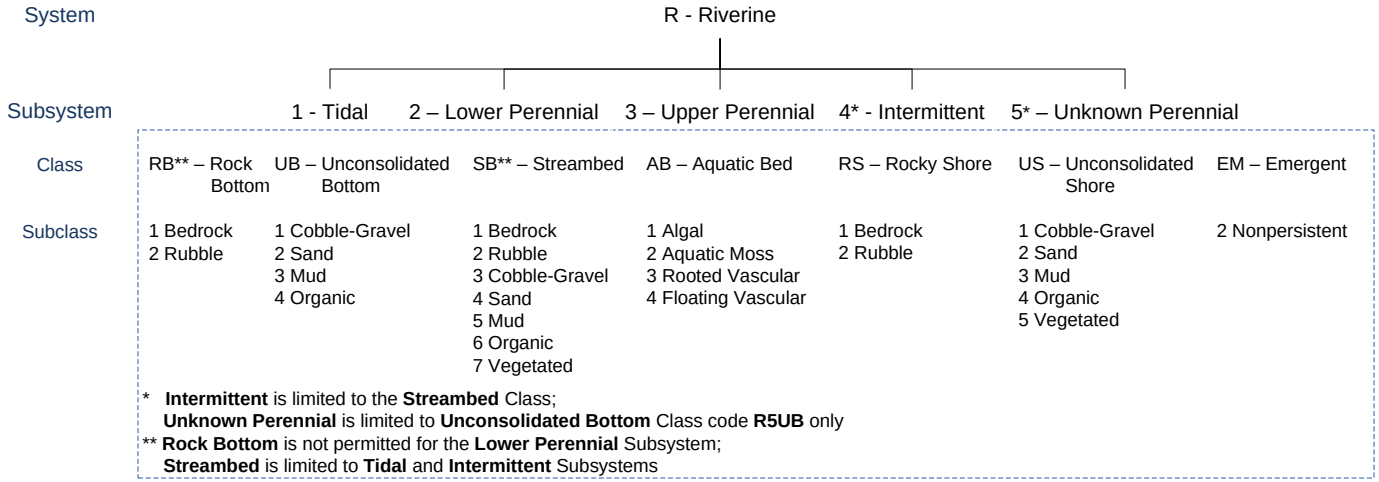
Type 1	**Seasonally Flooded Basins or Floodplains** • Vegetation varies according to the season and the amount of flooding. • Benefits of Type 1 wetlands include seasonal waterfowl habitat, water quality, protection and groundwater recharge and discharge.
Type 2	**Wet Meadows** • Soil is without standing water during the growing season, but is saturated below the surface. • Vegetation includes grasses, sedges, rushes, and various broad-leaved plants. • Type 2 wetlands provide waterfowl and wildlife habitat, water quality benefits and groundwater discharge and recharge.
Type 3	**Shallow Marshes** • Soil is usually waterlogged early in the spring and often covered with six or more inches of water. • Vegetation includes grasses, bullrushes, spikerushes, cattails, arrowheads, pickerelweed, and smartweed. • Type 3 wetlands protect water quality and shoreland, retain floodwater, provide habitat for waterfowl, amphibians and fish, and offer recreation, including hunting, fishing, and canoeing.
Type 4	**Deep Marshes** • Soil is usually covered with water during spring and summer--anywhere from six to three feet. • Vegetation includes cattails, reeds, bulrushes, spikerushes, and wild rice. In open areas, pondweed, naiads, coontail, watermilfoils, waterweeds, duckweeds, waterliles or spatterdocks may grow. • Deep marshes may completely fill shallow lake basins, potholes, limestone sinks and depressions. • Type 4 wetlands provide water quality protection, floodwater detention, wildlife and fisheries habitat and recreation, including hunting, fishing and canoeing.
Type 5	**Open Water Wetlands** (Including shallow ponds and reservoirs) • Water is less than six feet deep and fringed by a border of emergent vegetation. • Type 5 wetlands provide floodwater detention, wildlife and fish habitat, and recreation, including hunting, fishing, and canoeing.
Type 6	**Shrub swamps** • Soil is waterlogged during much of the growing season, and is covered with as much as six inches of water. • Vegetation includes alders, willows, buttonbush, dogwoods, leatherleaf and swamp-privet. • Benefits of Type 6 wetlands include water quality, floodwater detention, low flow augmentation, and wildlife habitat.
Type 7	**Wooded swamps** • Soil is waterlogged to within a few inches of the surface during the growing season, and can be covered with as much as a foot of water. • Typical trees include tamarack, white cedar, arborvitae, black spruce, balsam, red maple, and black ash. • Type 7 wetland benefits include water quality, low flow augmentation, floodwater detention, and timber harvesting.
Type 90	**Riverine System** • All wetland and deepwater habitats contained within a channel. Wetlands typically develop in the floodplain on either side of the defined channel.

Source: Cowardin, L. M., V. Carter, F. C. Golet, E. T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. Jamestown, ND: Northern Prairie Wildlife Research Center Online. http://www.npwrc.usgs.gov/resource/wetlands/classwet/index.htm (Version 04DEC1998).

WETLANDS AND DEEPWATER HABITATS CLASSIFICATION



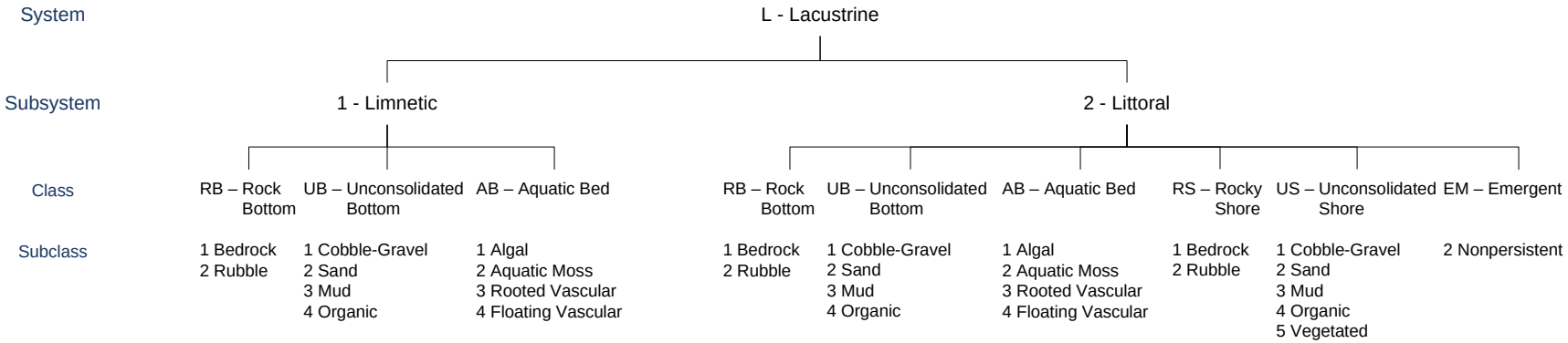


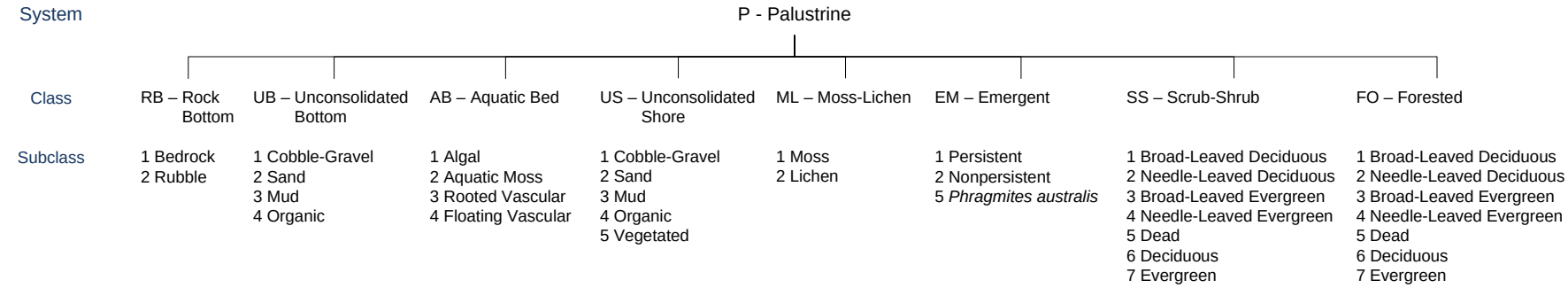


* **Intermittent** is limited to the **Streambed** Class;
Unknown Perennial is limited to **Unconsolidated Bottom** Class code **R5UB** only
** **Rock Bottom** is not permitted for the **Lower Perennial** Subsystem;
Streambed is limited to **Tidal** and **Intermittent** Subsystems

Classification of Wetlands and Deepwater Habitats of the United States, Cowardin *et al*. 1979

WETLANDS AND DEEPWATER HABITATS CLASSIFICATION





MODIFIERS

In order to more adequately describe the wetland and deepwater habitats, one or more of the water regime, water chemistry, soil, or special modifiers may be applied at the class or lower level in the hierarchy. The farmed modifier may also be applied to the ecological system.

Water Regime			Special Modifiers	Water Chemistry			Soil
Nontidal	**Saltwater Tidal**	**Freshwater Tidal**		**Coastal Halinity**	**Inland Salinity**	**pH Modifiers for all Fresh Water**	
A Temporarily Flooded	L Subtidal	S Temporarily Flooded-Tidal	b Beaver	1 Hyperhaline	7 Hypersaline	a Acid	g Organic
B Saturated	M Irregularly Exposed	R Seasonally Flooded-Tidal	d Partly Drained/Ditched	2 Euhaline	8 Eusaline	t Circumneutral	n Mineral
C Seasonally Flooded	N Regularly Flooded	T Semipermanently Flooded-Tidal	f Farmed	3 Mixohaline (Brackish)	9 Mixosaline	i Alkaline	
E Seasonally Flooded/ Saturated	P Irregularly Flooded	V Permanently Flooded-Tidal	h Diked/Impounded	4 Polyhaline	0 Fresh		
F Semipermanently Flooded			r Artificial	5 Mesohaline			
G Intermittently Exposed			s Spoil	6 Oligohaline			
H Permanently Flooded			x Excavated	0 Fresh			
J Intermittently Flooded							
K Artificially Flooded							

Eggers and Reed
Wetland Plants and Plant Communities of Minnesota and Wisconsin

Shallow Open Water	• Generally have water depths of less than 6.6 feet (2 meters). • Submergent, floating and floating-leaved aquatic vegetation including pondweeds, water-lilies, water milfoil, coontail, and duckweeds characterize this wetland type. • Size can vary from a one-quarter acre pond, to a long oxbow of a river or shallow bay of a lake.
Deep Marsh	• Deep marsh plant communities have standing water depths of between 6 inches and 3 or more feet during the growing season. • Herbaceous emergent, floating, floating-leaved, and submergent vegetation compose this community, with the major dominance by cattails, hardstem bulrush, pickerelweed, giant bur-reed, *Phragmites*, wild rice, pondweeds and/or water-lilies.
Shallow Marsh	• Shallow marsh plant communities have soils that are saturated to inundated by standing water up to 6 inches in depth, throughout most of the growing season. • Herbaceous emergent vegetation such as cattails, bulrushes, arrowheads, and lake sedges characterize this community.
Fresh Wet Meadow	• Faxon soils have a seasonal high water table at the surface to 12 inches below the surface during November through May of most years. • Fresh (wet) meadows are dominated by grasses, such as redtop grass and reed canary grass, and by forbs such as giant goldenrod, growing on saturated soils. • The grass family (Gramineae) and aster family (Compositae) are well represented in fresh (wet) meadows. • The forbs and grasses of these meadows tend to be less competitive, more nutrient demanding, and often shorter-lived species than the sedges of the sedge meadow community.
Shrub Carr	• Shrub-carrs are plant communities composed of tall, deciduous shrubs growing on saturated to seasonally flooded soils. • Usually dominated by willows and/or red-osier dogwood, and sometimes silky dogwood. • The groundlayer typically includes some of the ferns, sedges, grasses and forbs of sedge meadow and fresh (wet) meadow communities. • Hydrology is primarily groundwater and overland runoff. Rifle muck is typically saturated to the surface and may have as much as 6 inches of standing water after spring snowmelt and heavy rainfall events.
Hardwood Swamp	• Hardwood swamps are dominated by deciduous hardwood trees and have soils that are saturated during much of the growing season, and may be inundated by as much as a foot of standing water. • Dominant trees include black ash, red maple, yellow birch and, south of the vegetation tension zone, silver maple.
Floodplain Forest	• Wetlands dominated by mature, deciduous hardwood trees growing on alluvial soils associated with riverine systems. • The soils are inundated during flood events, but are usually somewhat well-drained for much of the growing season.
Seasonally Flooded	• Poorly drained, shallow depressions that may have standing water for a few weeks each year, but are usually dry for much of the growing season. • Ponding following spring snowmelt and heavy summer rainfall events, as well as a high water table. • Typical species include smartweeds, beggarticks, nut-grasses, and wild millet.

Source: Eggers, Steve D., and Donald M. Reed. 1997. Wetland plants and communities of Minnesota and Wisconsin. U.S. Army Corps of Engineers, St. Paul District. Jamestown, ND: Northern Prairie Wildlife Research Center Online. http://www.npwrc.usgs.gov/resource/plants/mnplant/index.htm (Version 03SEP1998).

APPENDIX C

Map Exhibits

SOUTHWEST LRT

2014 Wetland Investigation Area

Map Index
Rev 00.00
10/2/2014

NORTH

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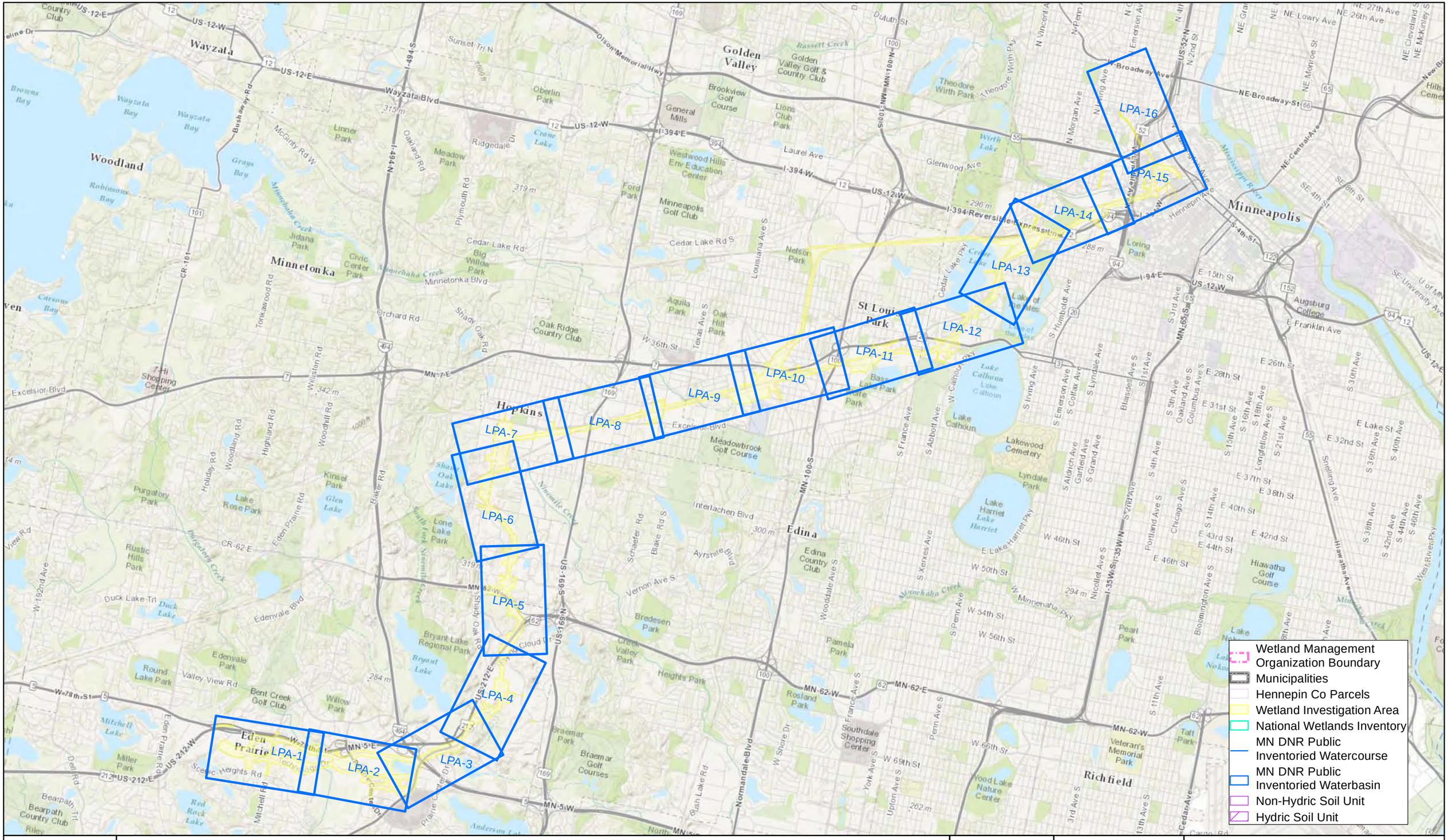
Miles

Wetland Investigation Area



SOUTHWEST LRT

Environmental MapBook Index

Map Index
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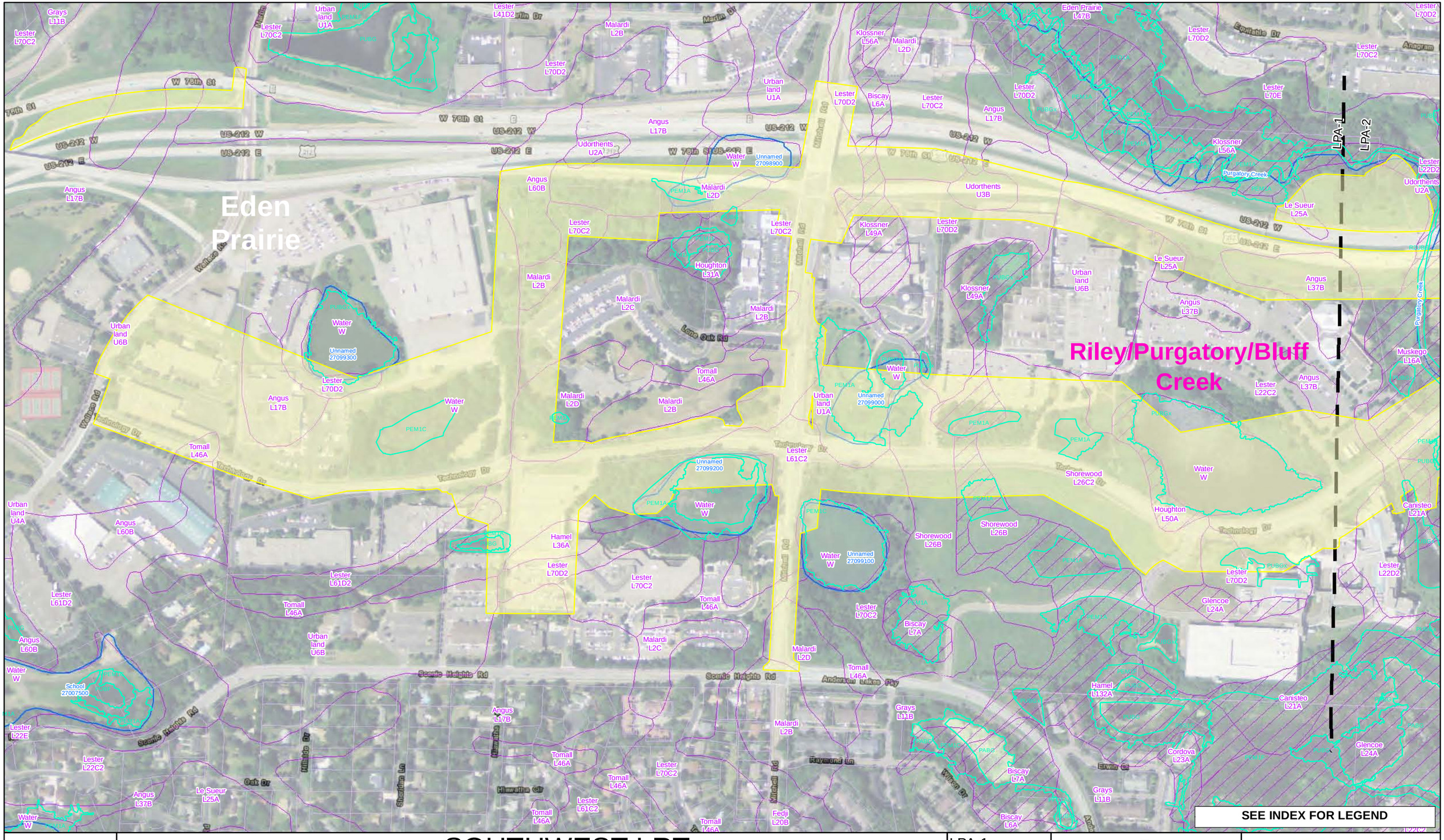
10/2/2014



SOUTHWEST LRT

Environmental MapBook

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10/2/2014
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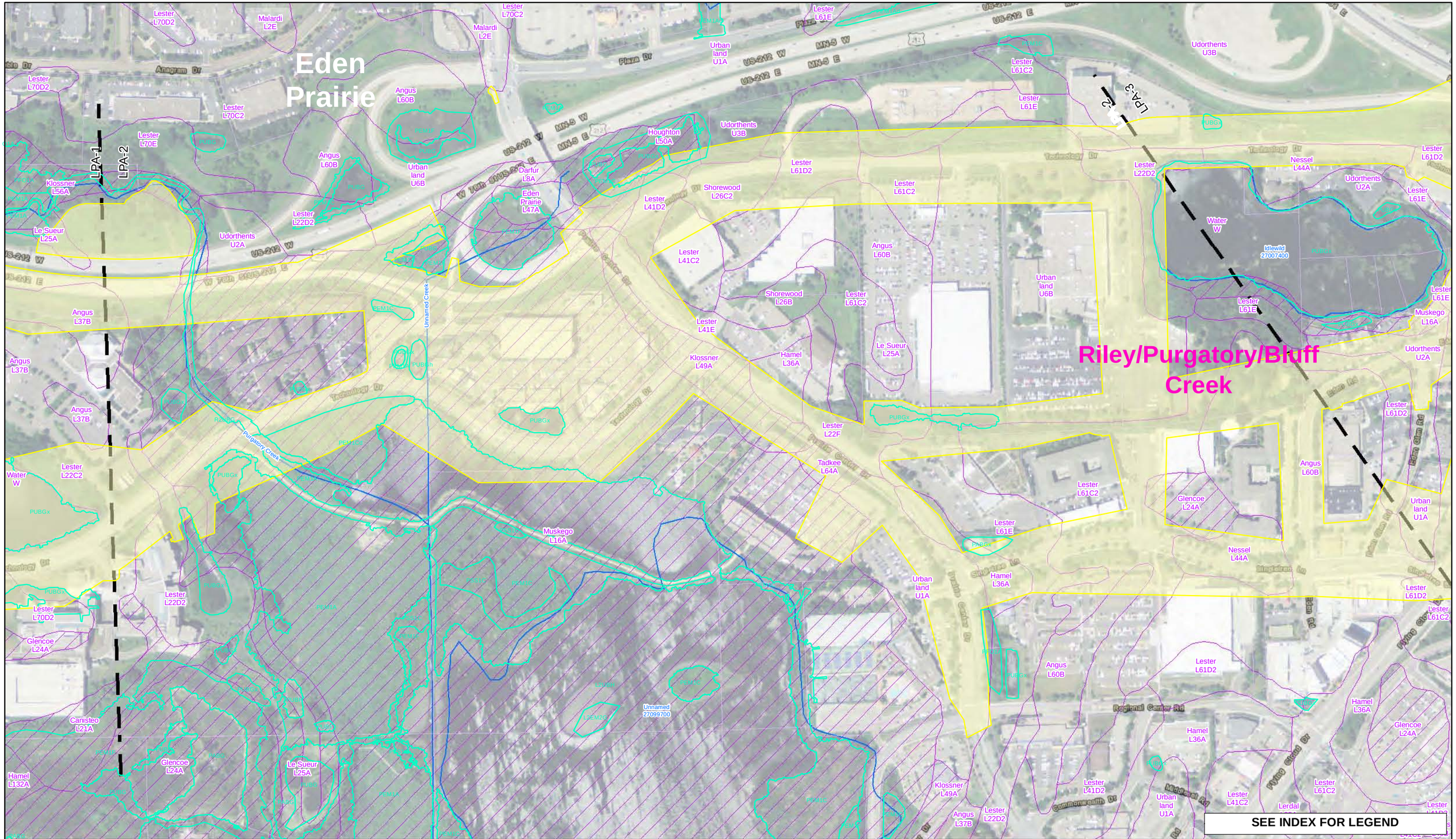

SOUTHWEST LRT

Environmental MapBook

LPA-2
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10/2/2014
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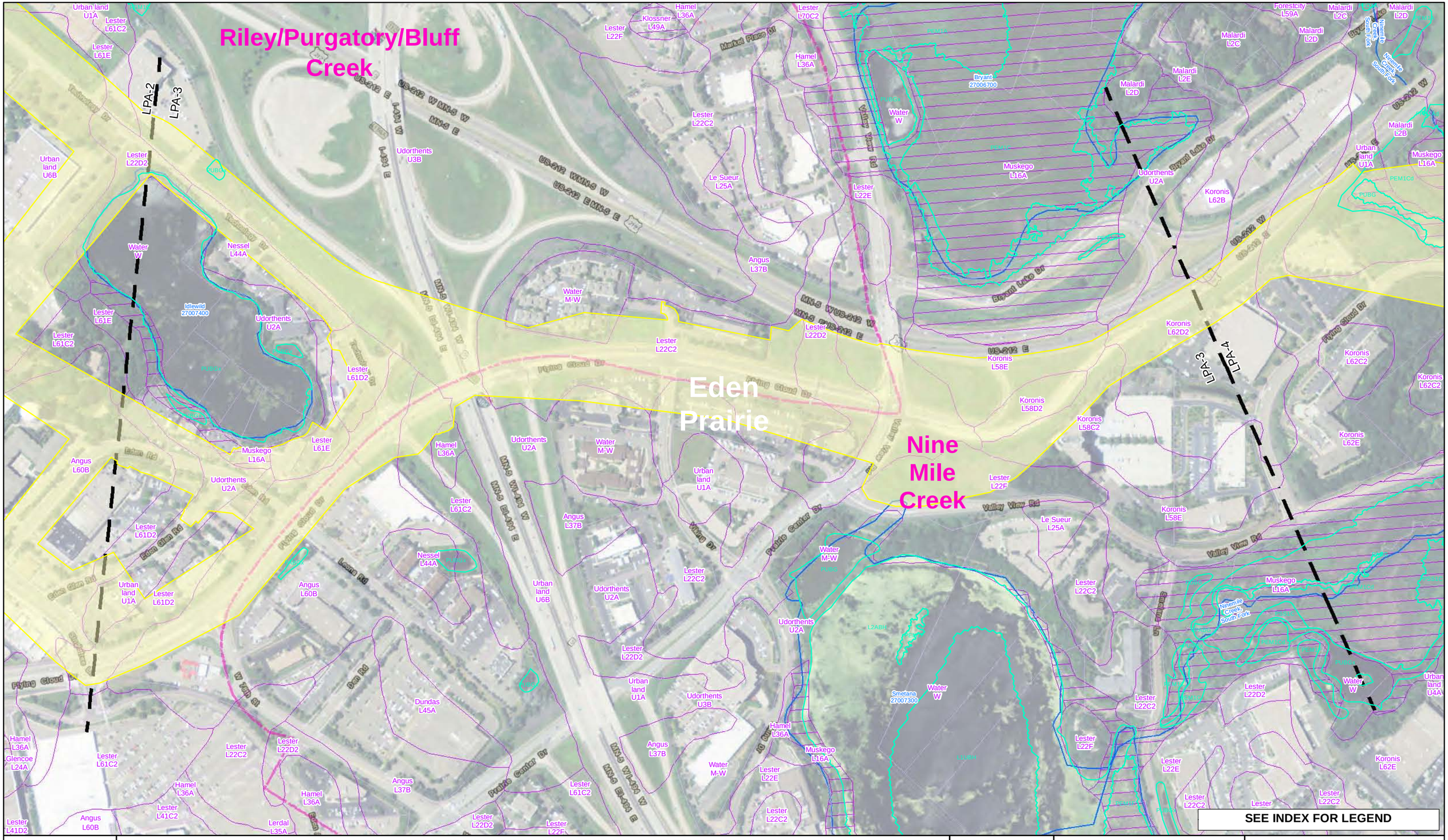

SOUTHWEST LRT

Environmental MapBook

LPA-3
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NORTH

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Scale

METROPOLITAN COUNCIL

SEE INDEX FOR LEGEND

SOUTHWEST LRT

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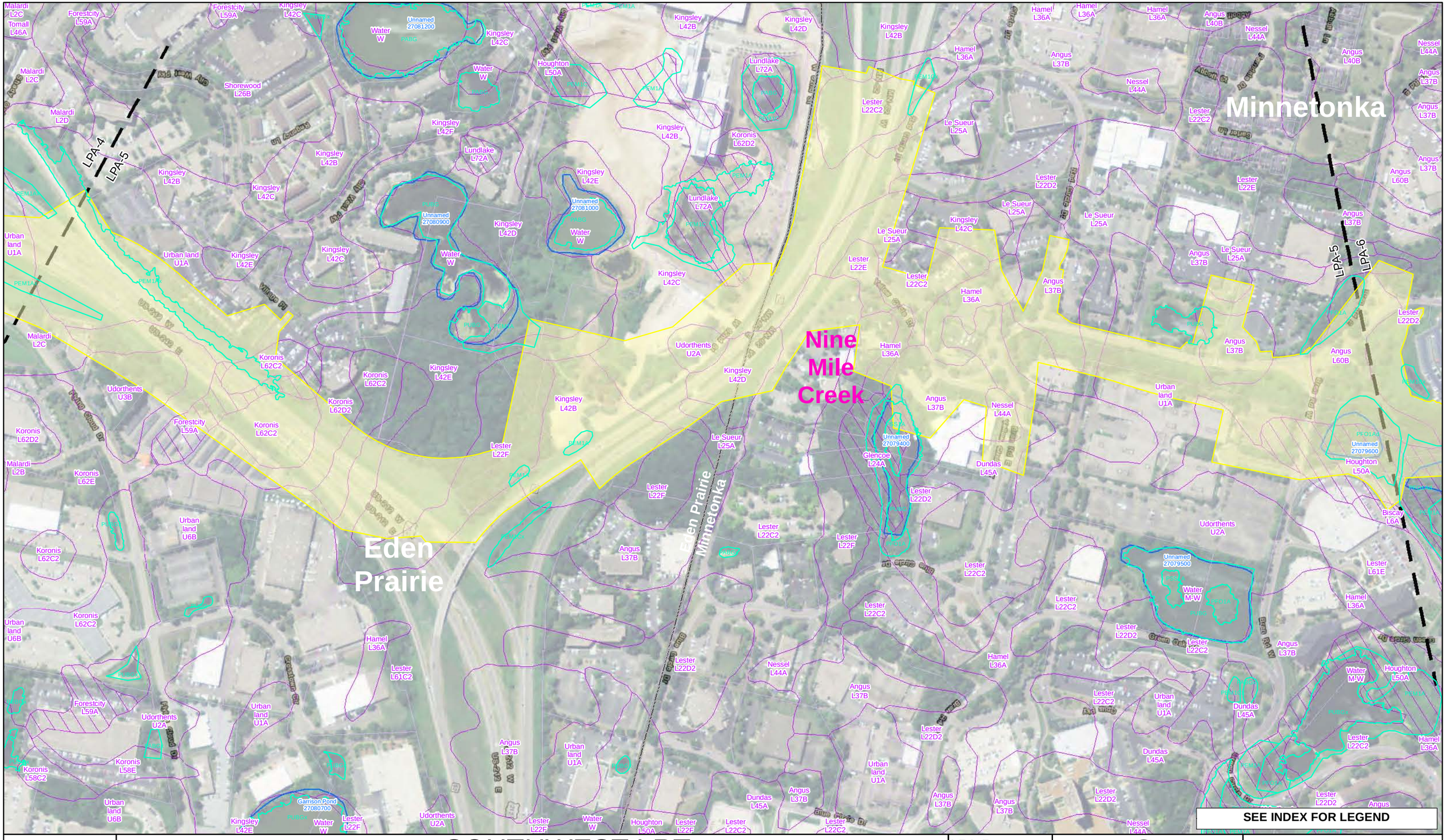

SOUTHWEST LRT

Environmental MapBook

LPA-5
Rev 00.00
10/2/2014
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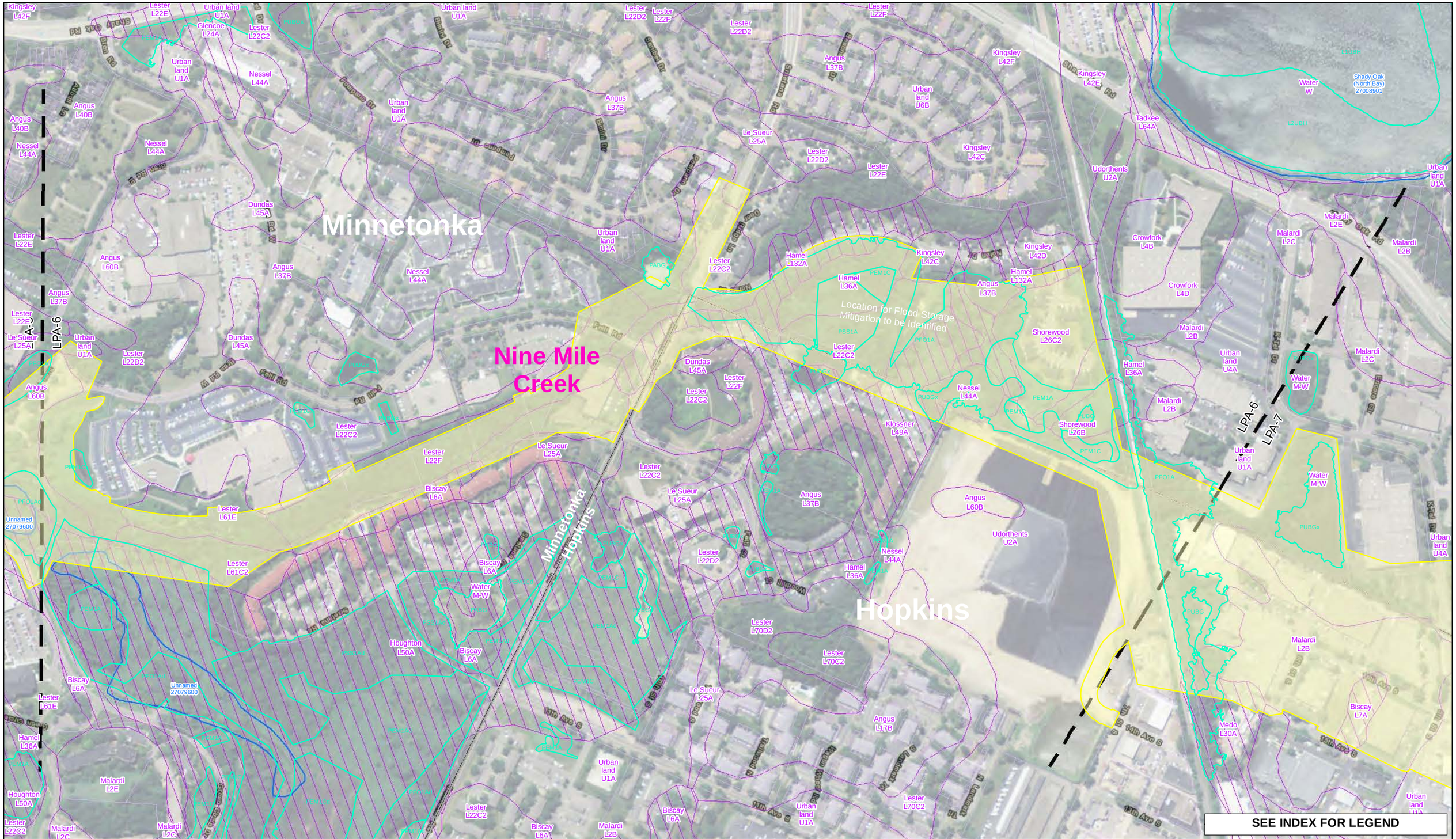
Scale



SOUTHWEST LRT

Environmental MapBook

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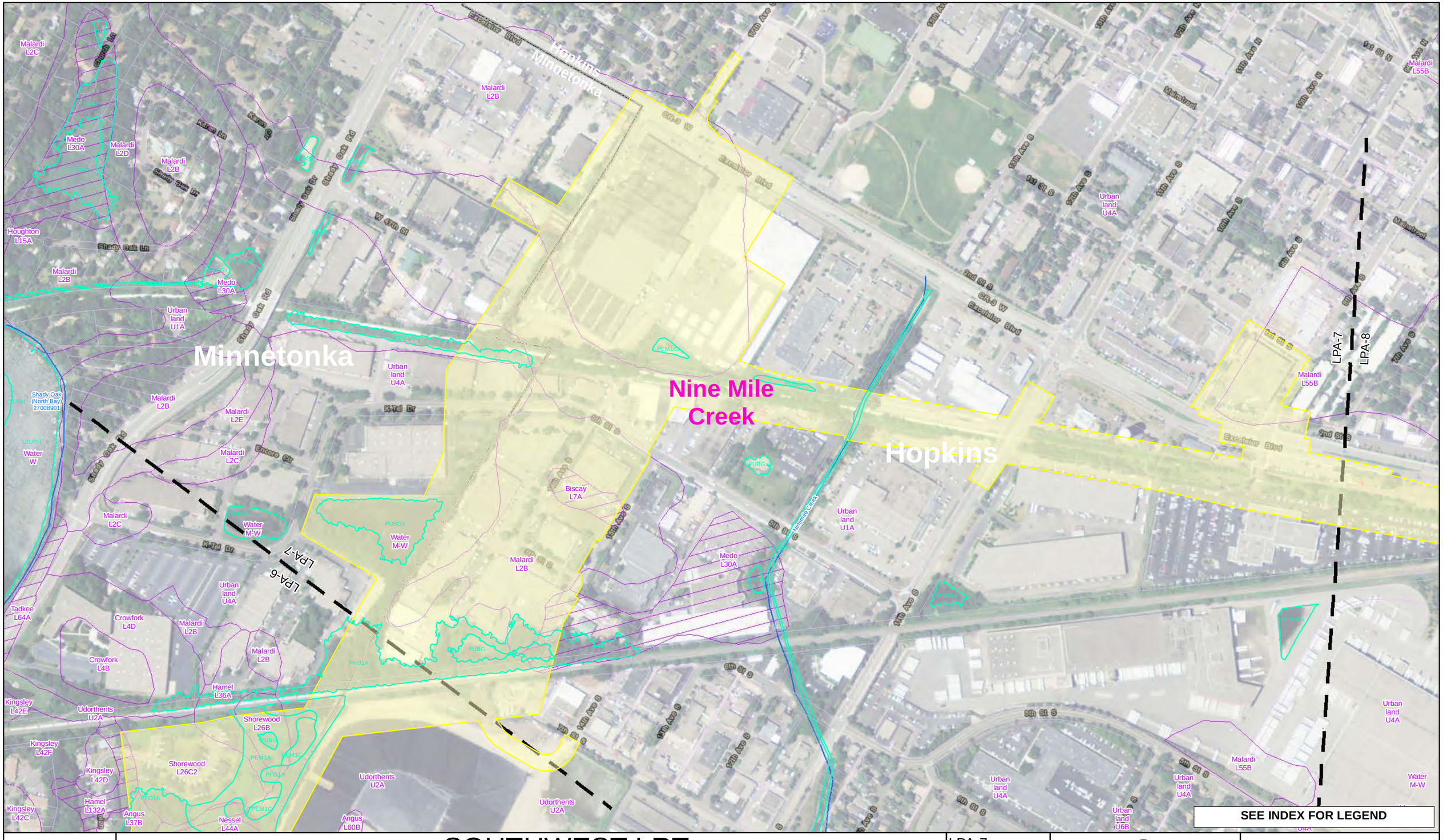

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METROPOLITAN COUNCIL

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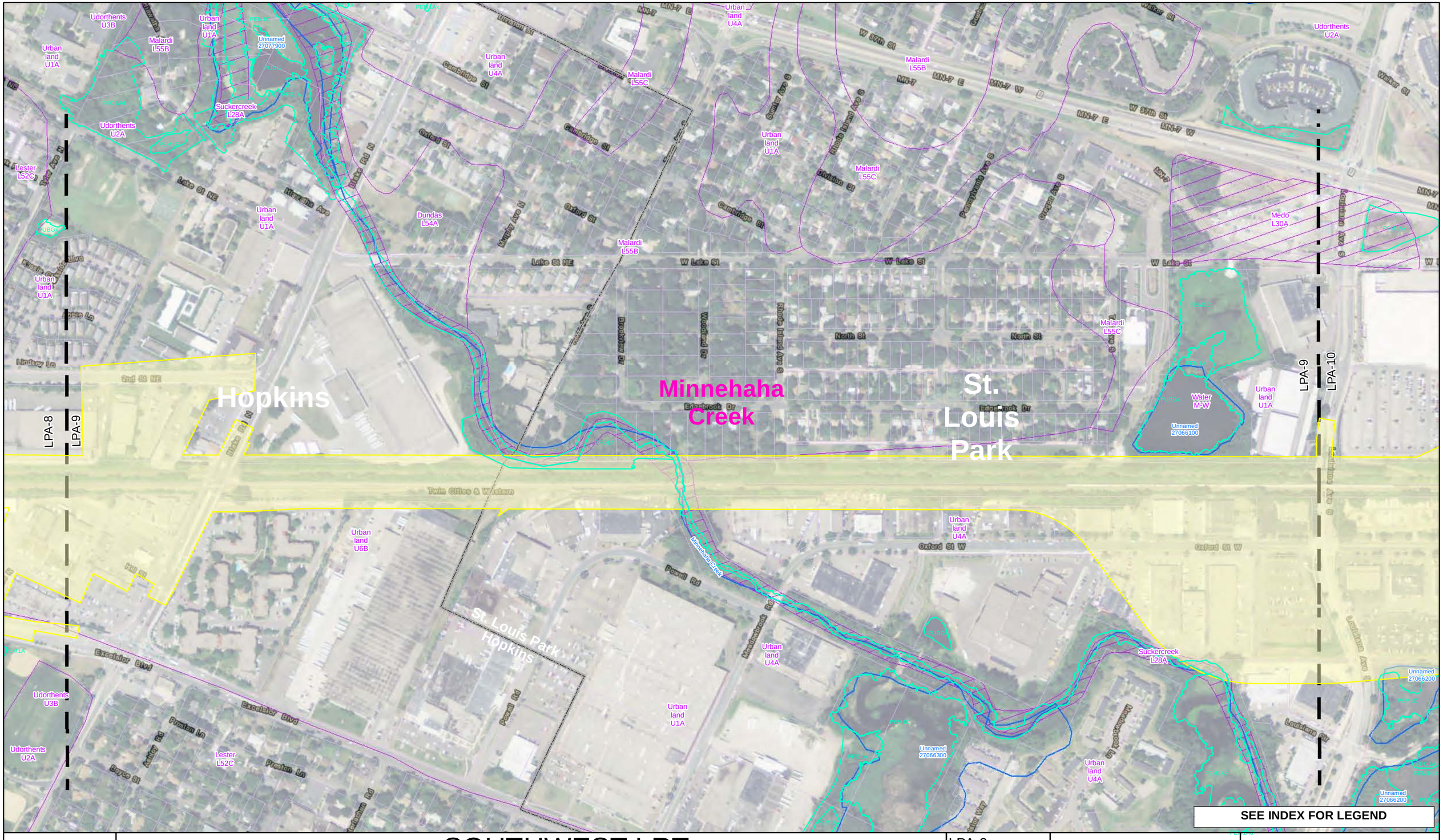

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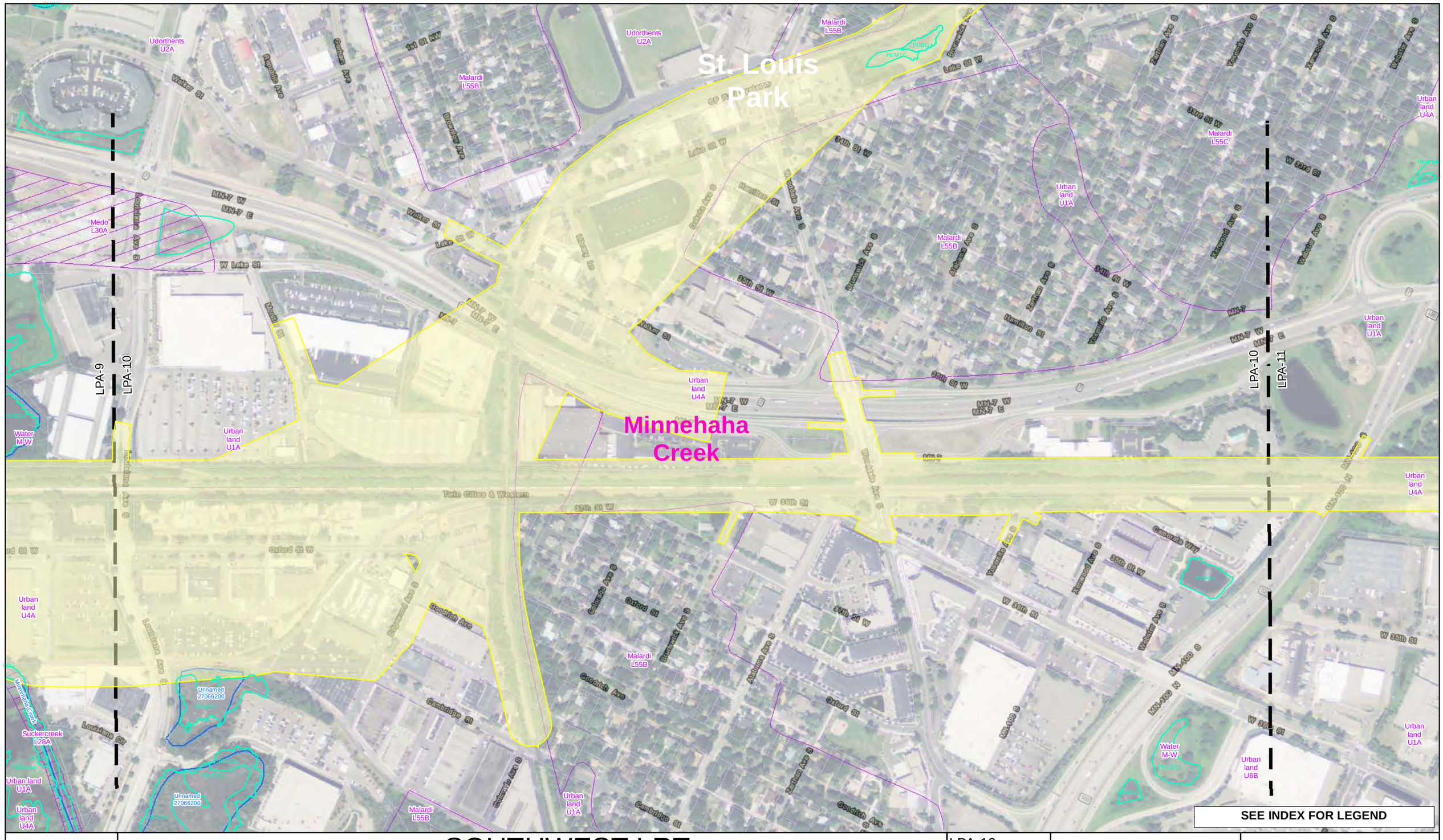

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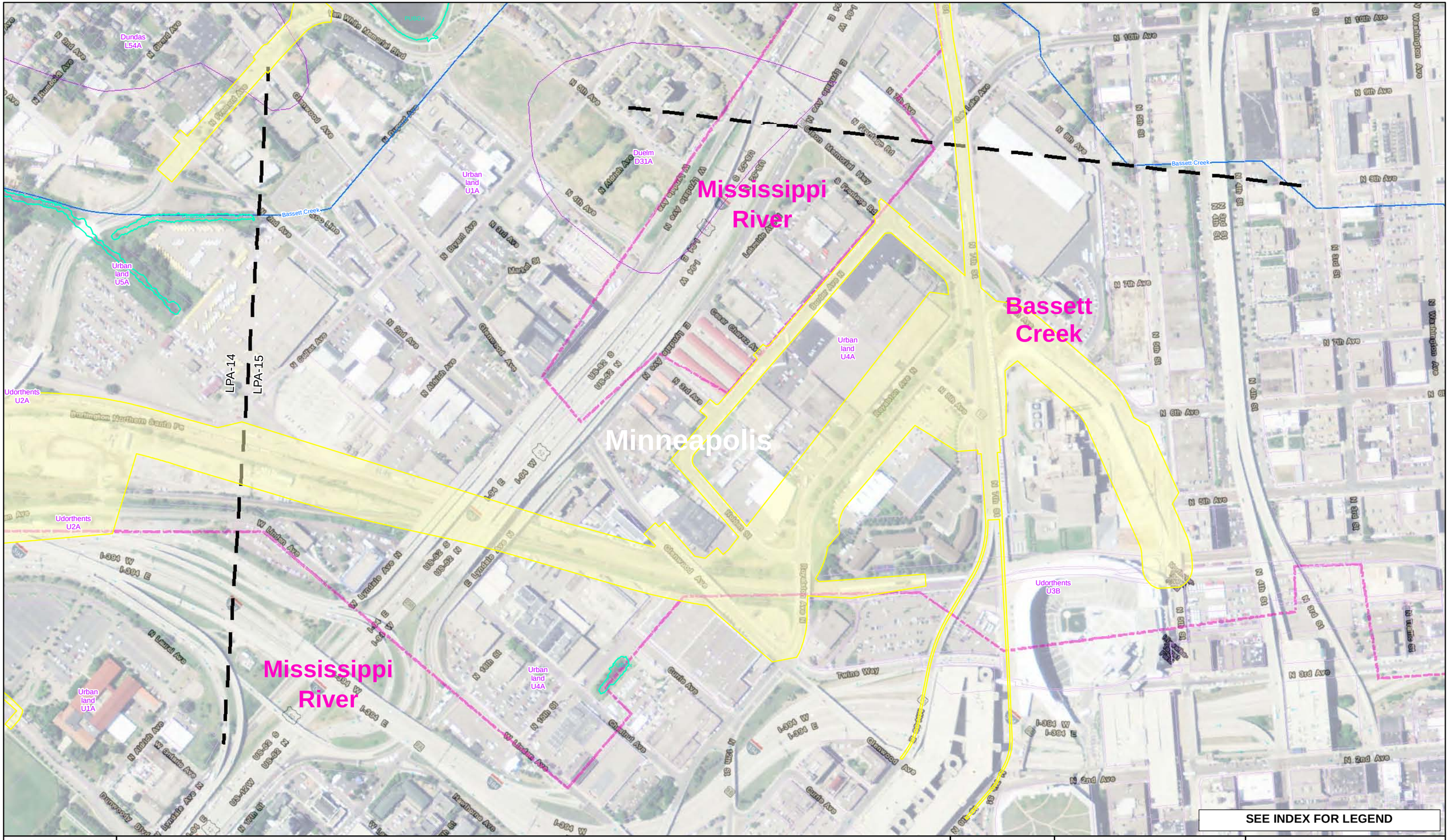

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Bassett Creek

Bassett Creek

Mississippi River

Minneapolis

Bassett Creek

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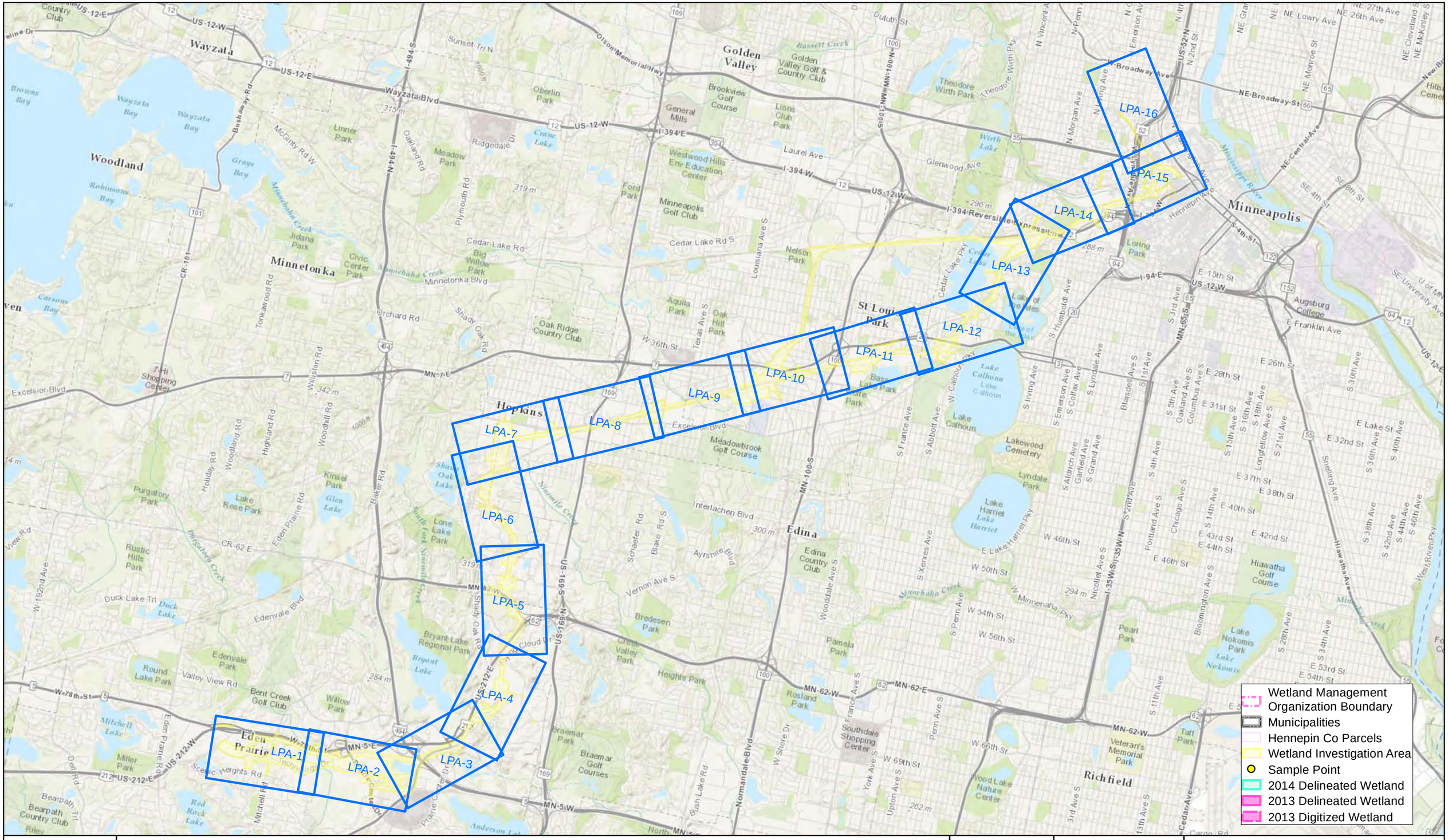

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Riley/Purgatory/Bluff Creek

Eden Prairie

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US-212 W
US-212 E
Mitchell Rd
Equitable Dr
Anagram
Lone Oak Rd
Technology Dr
Wallace Rd
Scenic Heights Rd
Andersen Lakes Pky
Hillside Dr
Shandra Ln
Hiawatha Ave
Hiawatha Cir
Oak Dr
Raymond Ln
Wilson Dr
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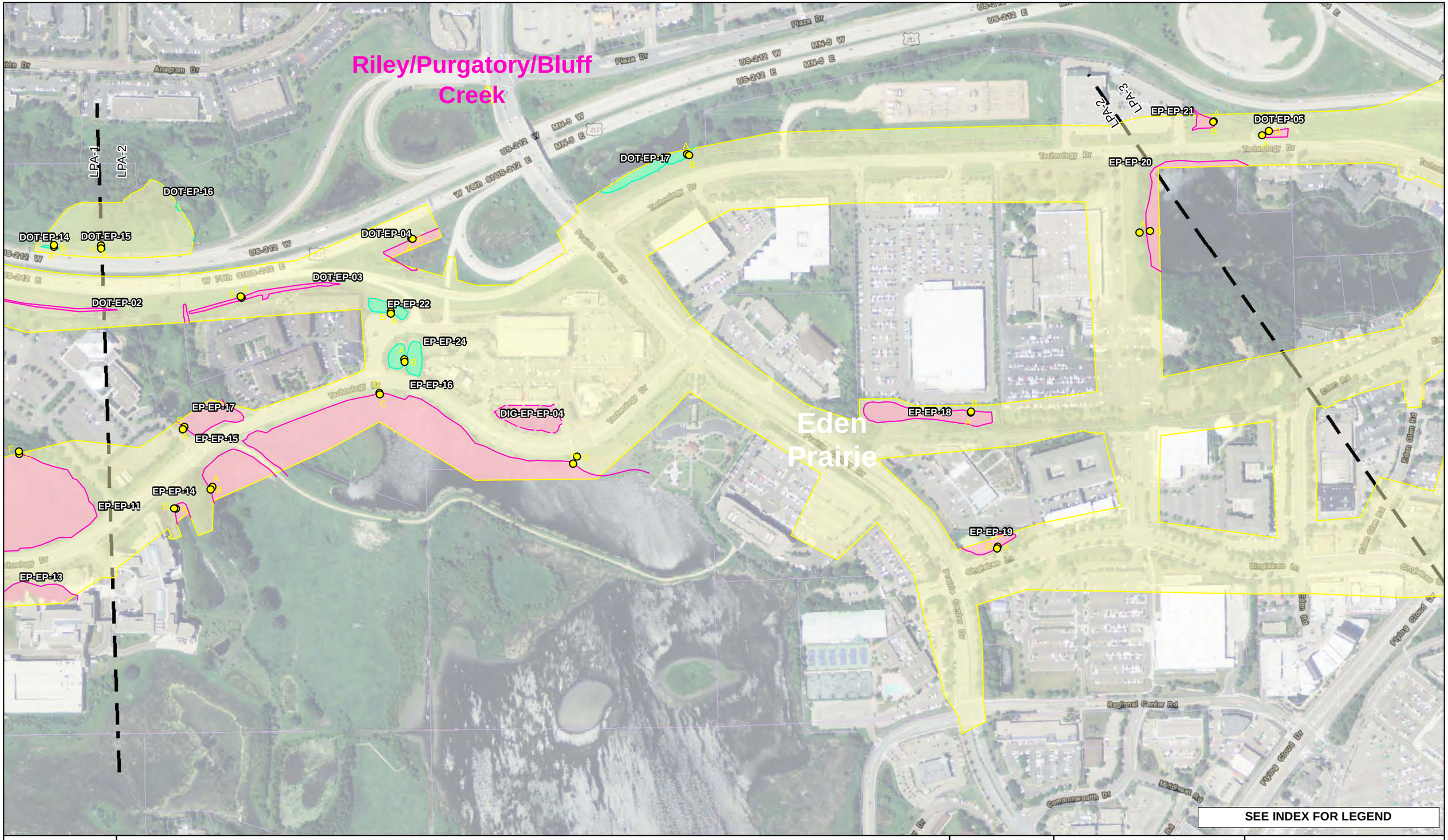

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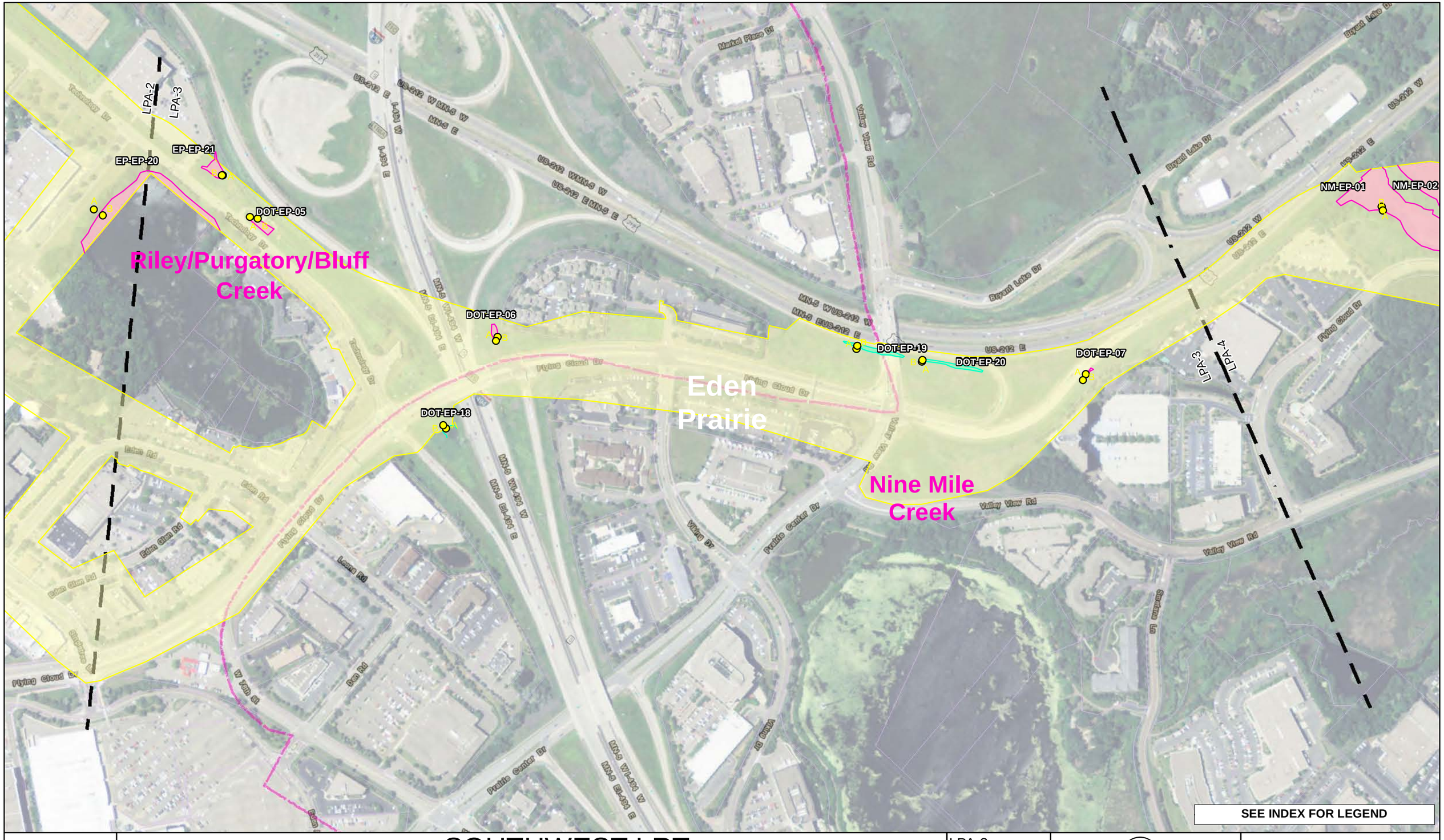

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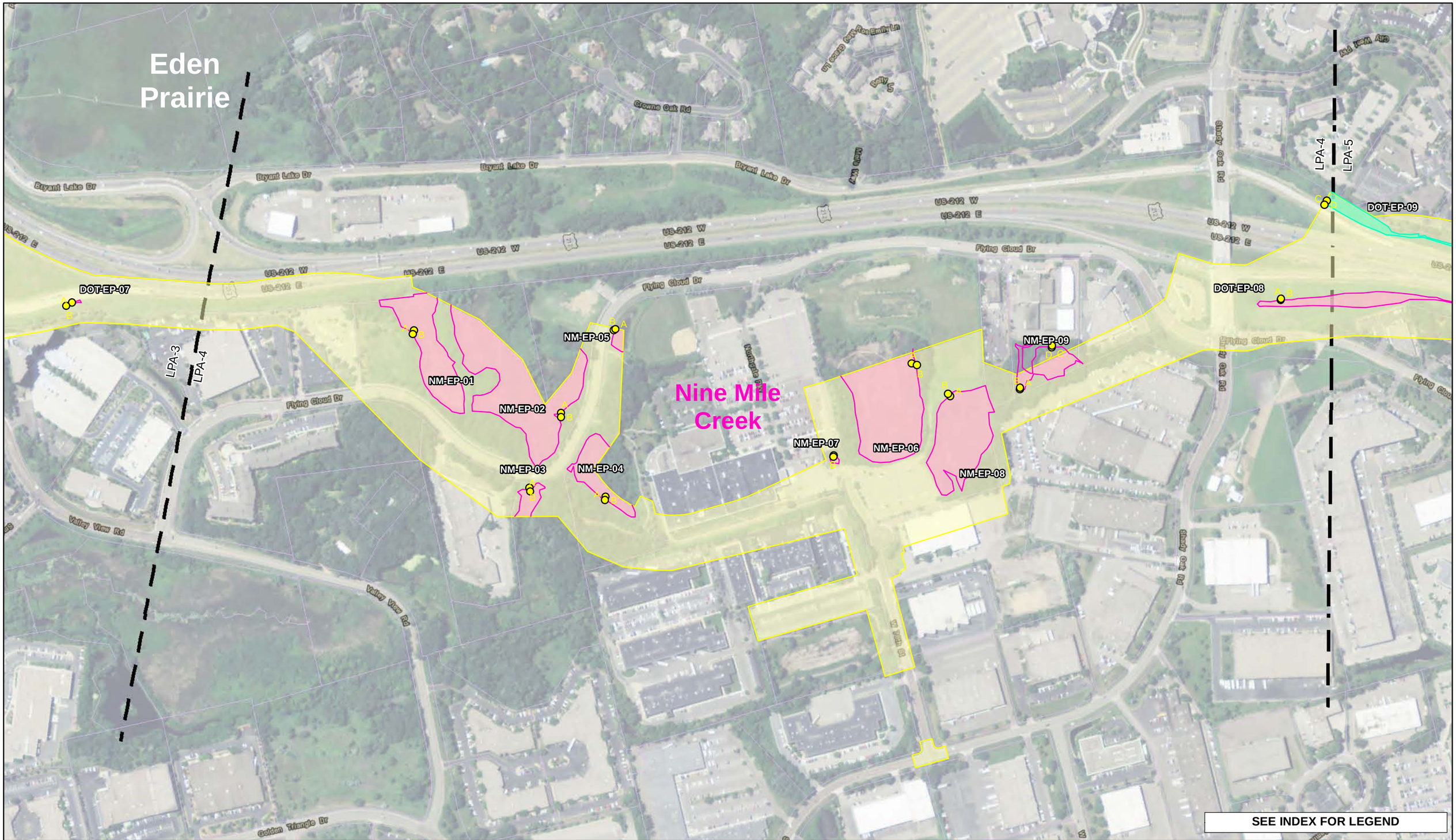

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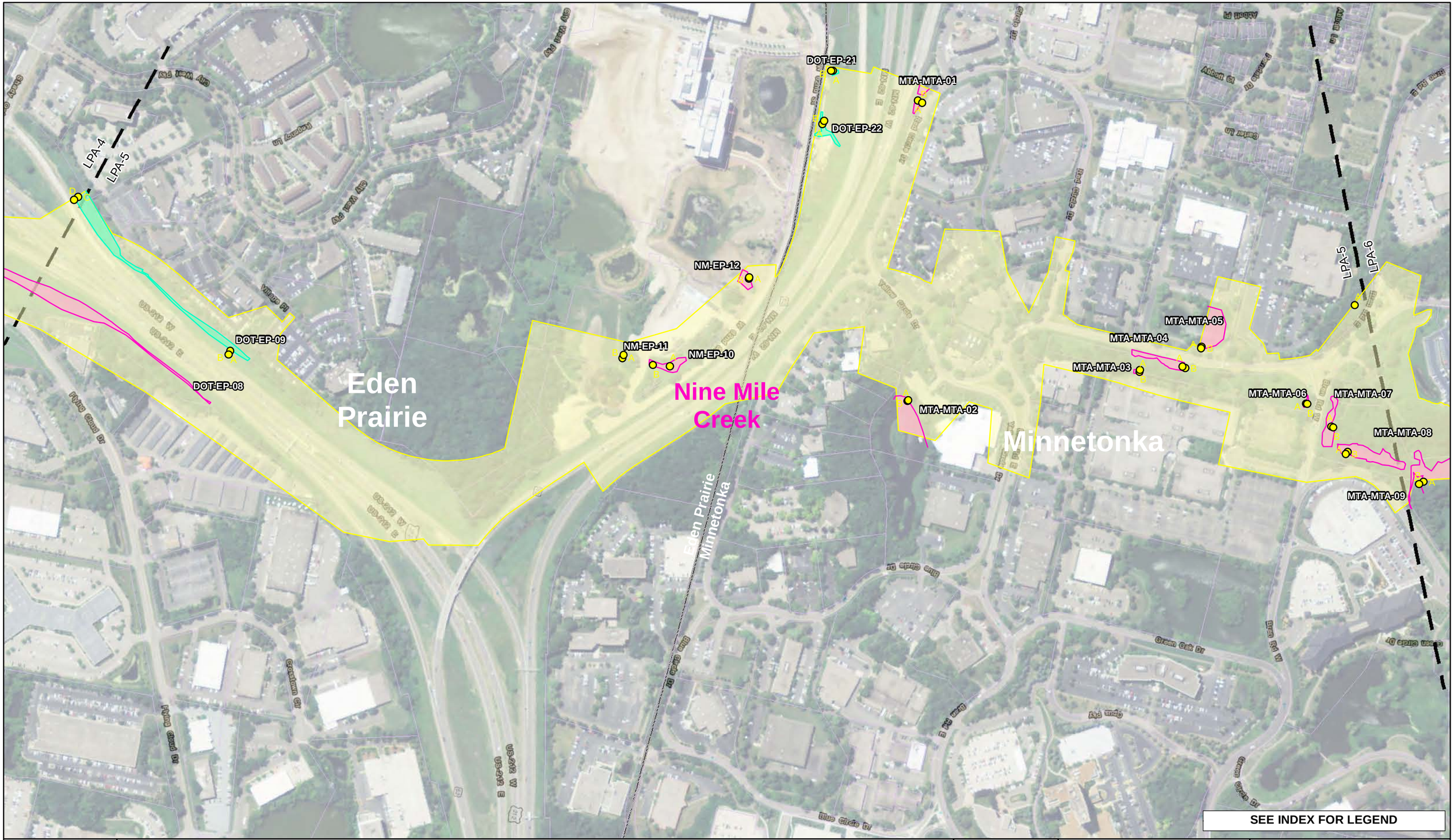

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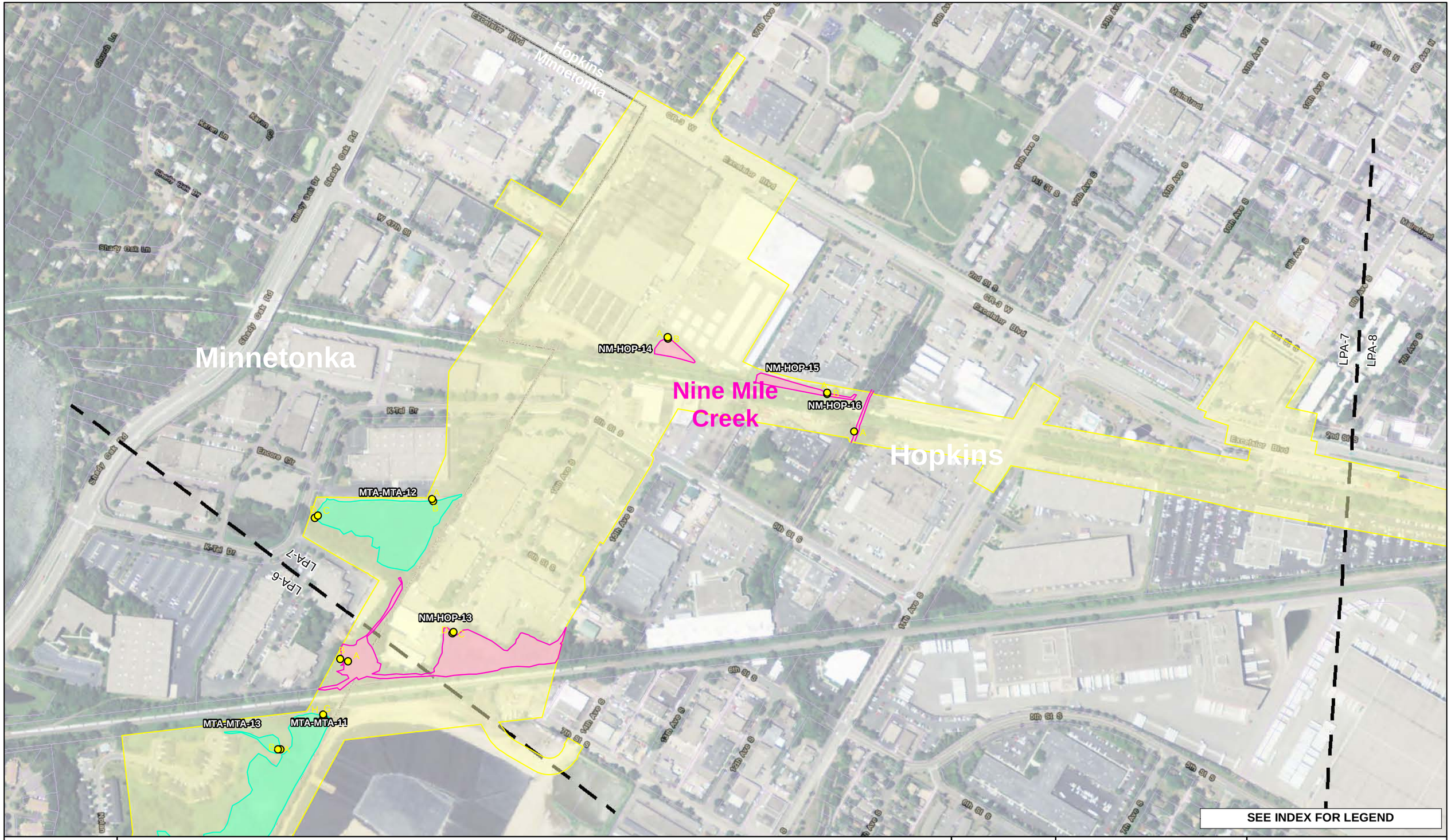

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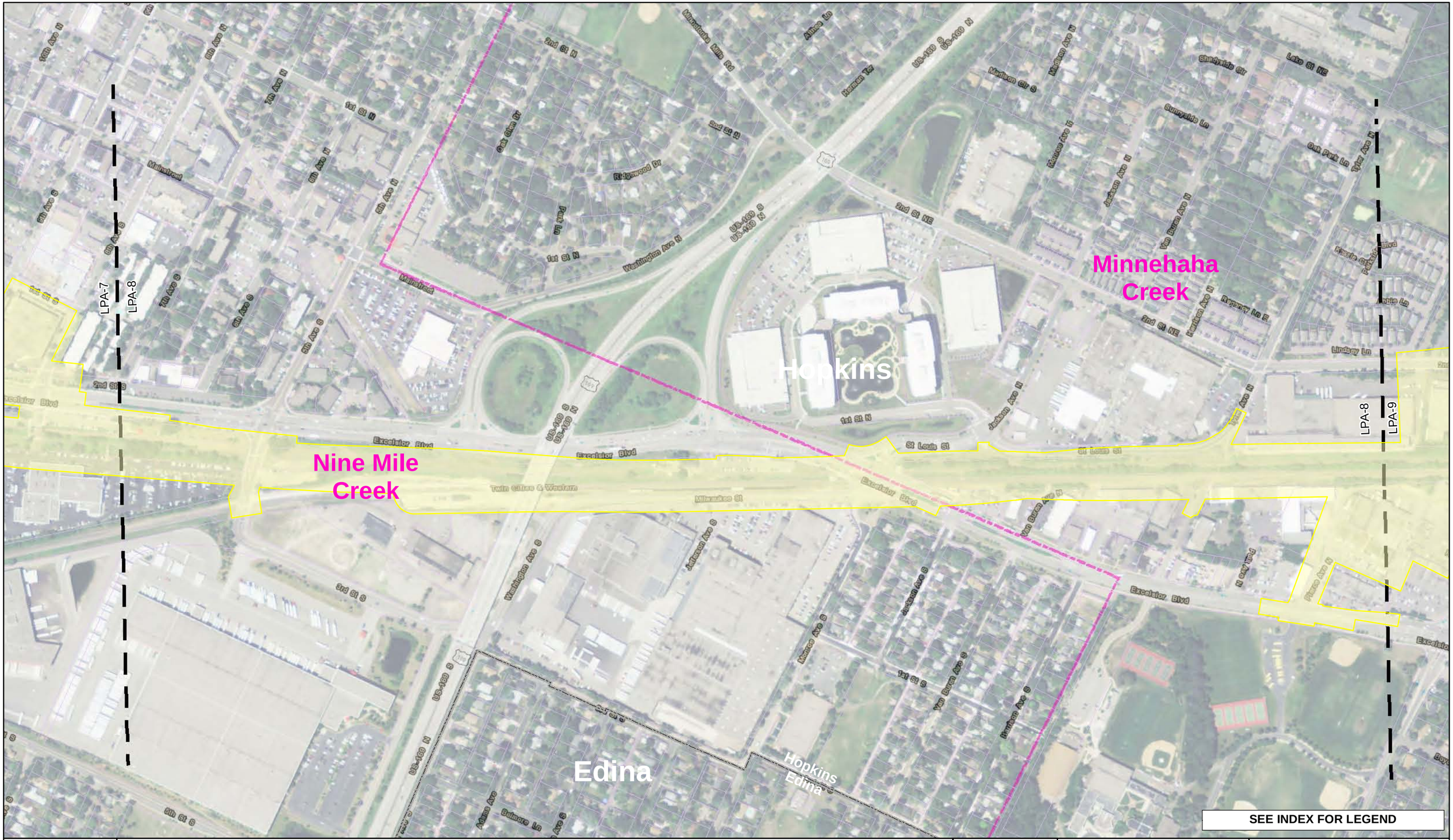

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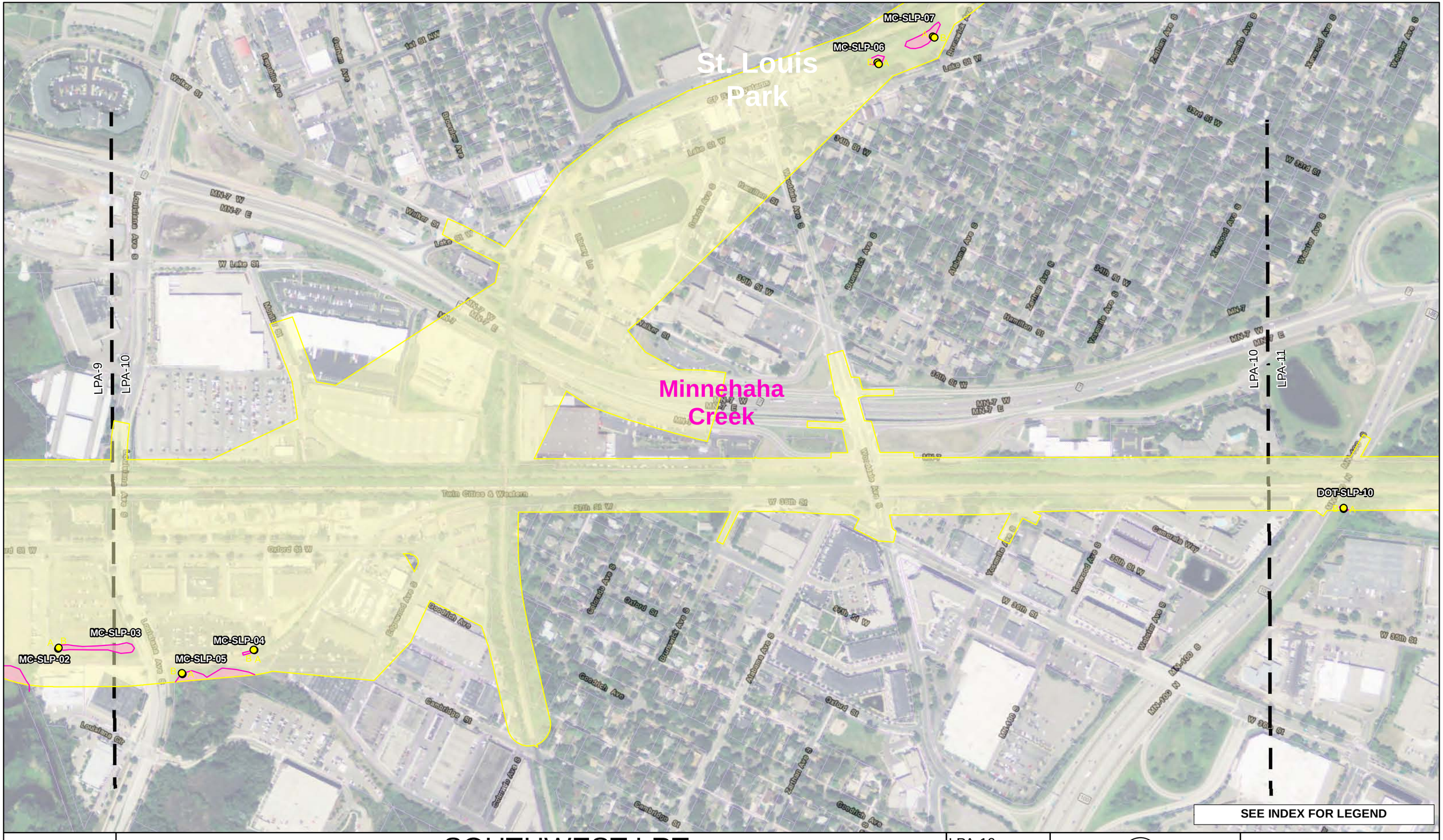

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Minneapolis

Bassett Creek

Minnehaha Creek

Mississippi River

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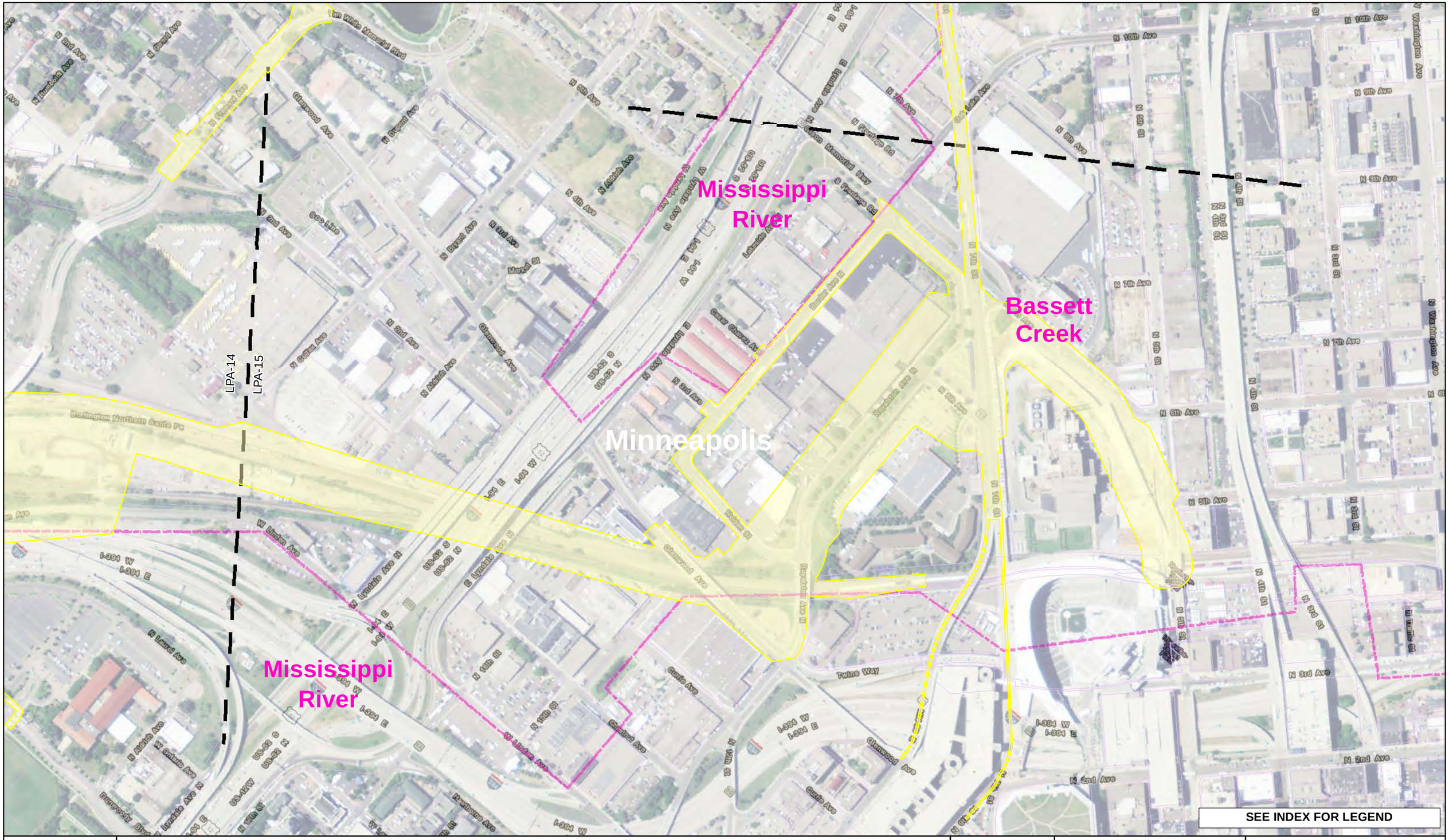

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APPENDIX D

Routine On-site Determination Method Datasheets

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: DOT-EP-09 (Original) | City/County: Eden Prairie/Hennepin | Sampling Date: 09/10/2013

Applicant/Owner: SWLRT | State: MN | Sampling Point: A

Investigator(s): Todd Udvig/Alison Hruby | Section, Township, Range: 01-116-22

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

Slope (%): 1-4/6-12 | Lat: | Long: | Datum:

Soil Map Unit Name: L36A-Hamel Overwash/L42C-Kingsley-Gotham Complex | NWI Classification:

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil X, or hydrology ____ significantly disturbed? Are "normal circumstances" present? No

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y	**Is the sampled area within a wetland?**	Y
Hydric soil present?	Y	If yes, optional wetland site ID:	
Indicators of wetland hydrology present?	Y		

Remarks: (Explain alternative procedures here or in a separate report.)

All three criteria were met. Area is a roadside ditch. Normal circumstances not met because soil profile disturbed by road construction.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
	0	= Total Cover	

Sapling/Shrub stratum (Plot size:)			
1			
2			
3			
4			
5			
	0	= Total Cover	

Herb stratum (Plot size:)			
1 *Typha angustifolia*	80	Y	OBL
2 *Phalaris arundinacea*	20	Y	FACW
3			
4			
5			
6			
7			
8			
9			
10			
	100	= Total Cover	

Woody vine stratum (Plot size:)			
1			
2			
	0	= 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: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:				
OBL species	80	x 1 =	80	
FACW species	20	x 2 =	40	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	100	(A)	120	(B)

Prevalence Index = B/A = 1.20

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

Large culvert discharging into ditch-24" in diameter.

SOIL

Sampling Point: A

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-6	10YR2/1	100					Silt Loam	
6-10	10YR2/1	98	5Y4/6	2	C	M	Silt Loam	
10-15	10YR2/1		Gley1-4/5GY					

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (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)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- X Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Y

Remarks:

Soil profile disturbed by road construction. Determined to be hydric based on redoximorphic features in the profile, gleyed matrix within the profile, the presence of hydrophytic vegetation, and landscape position.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ 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)
- ___ Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes		No	X	Depth (inches):	
Water table present?	Yes		No	X	Depth (inches):	
Saturation present? (includes capillary fringe)	Yes	X	No		Depth (inches):	10"

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Area is a roadside ditch.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: DOT-EP-09 (Original) | City/County: Eden Prairie/Hennepin | Sampling Date: 09/10/2013

Applicant/Owner: SWLRT | State: MN | Sampling Point: B

Investigator(s): Todd Udvig/Alison Hruby | Section, Township, Range: 01-116-22

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

Slope (%): 1-4/6-12 | Lat: | Long: | Datum:

Soil Map Unit Name: L36A-Hamel Overwash/L42C-Kingsley-Gotham Complex | NWI Classification:

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y
Hydric soil present?	N
Indicators of wetland hydrology present?	N

Is the sampled area within a wetland? N

f yes, optional wetland site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

Hydric soil and wetland hydrology criteria were not met. Area is not a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species	Indicator Staus
1 *Picea glauca*	30	Y	FACU
2 *Pinus strobus*	20	Y	FACU
3			
4			
5			
	50	=Total Cover	

Sapling/Shrub stratum (Plot size:)			
1			
2			
3			
4			
5			
	0	=Total Cover	

Herb stratum (Plot size:)			
1 *Phalaris arundinacea*	90	Y	FACW
2			
3			
4			
5			
6			
7			
8			
9			
10			
	90	=Total Cover	

Woody vine stratum (Plot size:)			
1			
2			
	0	=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: 33.33% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	90	x 2 =	180
FAC species	0	x 3 =	0
FACU species	50	x 4 =	200
UPL species	0	x 5 =	0
Column totals	140 (A)		380 (B)

Prevalence Index = B/A = 2.71

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- ____ Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

Large culvert discharging into ditch-24" in diameter.

SOIL **Sampling Point:** B

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-12	10YR3/1	100					Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (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)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric soil present? N

Remarks:

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): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: DOT-EP-09 (Extended Boundary) | City/County: Hennepin | Sampling Date: 9/23/2014

Applicant/Owner: SWLRT | State: MN | Sampling Point: C

Investigator(s): Todd Udvig, Alison Hruby | Section, Township, Range: S1 T116N R22W

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

Slope (%): 0-2 | Lat: | Long: | Datum:

Soil Map Unit Name: Urban Land | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? N (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y
Hydric soil present?	Y
Indicators of wetland hydrology present?	Y

Is the sampled area within a wetland? Y

f yes, optional wetland site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

Above average precipitation. All wetland criteria were met. Area is a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
	0	=Total Cover	

Sapling/Shrub stratum (Plot size:)			
1			
2			
3			
4			
5			
	0	=Total Cover	

Herb stratum (Plot size:)			
1 *Typha angustifolia*	60	Y	OBL
2 *Phalaris arundinacea*	40	Y	FACW
3			
4			
5			
6			
7			
8			
9			
10			
	100	=Total Cover	

Woody vine stratum (Plot size:)			
1			
2			
	0	=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: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	60	x 1 =	60
FACW species	40	x 2 =	80
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	100 (A)		140 (B)

Prevalence Index = B/A = 1.40

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: C

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-6	10YR 4/1	80	10YR 4/4	10	D	M	SiL	
6-18	10YR 4/1	100					SL	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (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)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- X Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Y

Remarks:

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)
- X 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):	
Water table present?	Yes	X	No		Depth (inches):	7
Saturation present? (includes capillary fringe)	Yes	X	No		Depth (inches):	0

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: DOT-EP-09 (Extended Boundary) | City/County: Hennepin | Sampling Date: 9/23/2014

Applicant/Owner: SWLRT | State: MN | Sampling Point: D

Investigator(s): Todd Udvig, Alison Hruby | Section, Township, Range: S1 T116N R22W

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

Slope (%): 0-2 | Lat: | Long: | Datum:

Soil Map Unit Name: Urban Land | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? N (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y
Hydric soil present?	N
Indicators of wetland hydrology present?	N

Is the sampled area within a wetland? N

If yes, optional wetland site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

Above average precipitation. Hydric soil and hydrology criteria not met, area is not a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
	0	=Total Cover	

Sapling/Shrub stratum (Plot size:)			
1			
2			
3			
4			
5			
	0	=Total Cover	

Herb stratum (Plot size:)			
1 *Phalaris arundinacea*	60	Y	FACW
2 *Cirsium arvense*	20	Y	FACU
3 *Solidago canadensis*	20	Y	FACU
4			
5			
6			
7			
8			
9			
10			
	100	=Total Cover	

Woody vine stratum (Plot size:)			
1			
2			
	0	=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: 33.33% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	60	x 2 =	120
FAC species	0	x 3 =	0
FACU species	40	x 4 =	160
UPL species	0	x 5 =	0
Column totals	100 (A)		280 (B)

Prevalence Index = B/A = 2.80

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- ____ Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL **Sampling Point:** D

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-6	10YR 2/1	40					SiCL	A few small pebbles
	10YR 5/2	30					SiCL	
	10YR 4/4	30					SiCL	
6-18	10YR 2/1	100					SiCL	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (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)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric soil present? N

Remarks:
Soil moist, mixed soil matrix in upper 6".

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): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No hydrology

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: DOT-EP-12 | City/County: Eden Prairie/Hennepin | Sampling Date: 9/22/2014

Applicant/Owner: SWLRT | State: MN | Sampling Point: A

Investigator(s): Marc Cottingham, Lucy Dahl | Section, Township, Range: S9 T116N R22W

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

Slope (%): 0-5 | Lat: | Long: | Datum:

Soil Map Unit Name: Urban Land | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? N (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y
Hydric soil present?	Y
Indicators of wetland hydrology present?	Y
Is the sampled area within a wetland?	Y
f yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

Above average precipitation. All wetland criteria were met. Area is a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
	0	=Total Cover	

Sapling/Shrub stratum (Plot size:)			
1			
2			
3			
4			
5			
	0	=Total Cover	

Herb stratum (Plot size:)			
1 *Phalaris arundinacea*	60	Y	FACW
2 *Cyperus esculentus*	10	N	FACW
3			
4			
5			
6			
7			
8			
9			
10			
	70	=Total Cover	

Woody vine stratum (Plot size:)			
1			
2			
	0	=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: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	70	x 2 =	140
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	70 (A)		140 (B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL **Sampling Point:** A

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-8	10YR 2/1	100					SiCl	
8-20	10YR 4/2	95	10YR 4/5	5	C	PL	SiCl	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (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)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric soil present? Y

Remarks:

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): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: DOT-EP-12 | City/County: Eden Prairie/Hennepin | Sampling Date: 9/22/2014

Applicant/Owner: SWLRT | State: MN | Sampling Point: B

Investigator(s): Marc Cottingham, Lucy Dahl | Section, Township, Range: S9 T116N R22W

Landform (hillslope, terrace, etc.): Hill slope | Local relief (concave, convex, none): None

Slope (%): 0-5 | Lat: | Long: | Datum:

Soil Map Unit Name: Urban Land | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? N (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	N
Hydric soil present?	N
Indicators of wetland hydrology present?	N

Is the sampled area within a wetland? N

If yes, optional wetland site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

Above average precipitation. Wetland criteria not met, area is not a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
	0	=Total Cover	

Sapling/Shrub stratum (Plot size:)			
1			
2			
3			
4			
5			
	0	=Total Cover	

Herb stratum (Plot size:)			
1 *Bromus inermis*	60	Y	FACU
2 *Poa pratensis*	30	Y	FAC
3			
4			
5			
6			
7			
8			
9			
10			
	90	=Total Cover	

Woody vine stratum (Plot size:)			
1			
2			
	0	=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: 50.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	30	x 3 =	90
FACU species	60	x 4 =	240
UPL species	0	x 5 =	0
Column totals	90 (A)		330 (B)

Prevalence Index = B/A = 3.67

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- ____ Dominance test is >50%
- ____ Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? N

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: B

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-10	10YR 2/1	100					SiCl	
10-20	10YR 4/2	100					SiCl	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (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)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? N

Remarks:

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): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: DOT-EP-13 | City/County: Eden Prairie/Hennepin | Sampling Date: 9/22/2014

Applicant/Owner: SWLRT | State: MN | Sampling Point: A

Investigator(s): Marc Cottingham, Lucy Dahl | Section, Township, Range: S9 T116N R22W

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

Slope (%): 0-5 | Lat: | Long: | Datum:

Soil Map Unit Name: Urban Land | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? N (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y
Hydric soil present?	Y
Indicators of wetland hydrology present?	Y

Is the sampled area within a wetland? Y

If yes, optional wetland site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

Above average precipitation. All wetland criteria were met. Area is a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
	0	=Total Cover	

Sapling/Shrub stratum (Plot size:)			
1			
2			
3			
4			
5			
	0	=Total Cover	

Herb stratum (Plot size:)			
1 *Typha latifolia*	60	Y	OBL
2 *Phalaris arundinacea*	15	Y	FACW
3			
4			
5			
6			
7			
8			
9			
10			
	75	=Total Cover	

Woody vine stratum (Plot size:)			
1			
2			
	0	=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: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:				
OBL species	60	x 1 =	60	
FACW species	15	x 2 =	30	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	75	(A)	90	(B)

Prevalence Index = B/A = 1.20

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: A

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-12	10YR 2/1	95	10YR 4/6	5	C	PL	SiCl	
12-20	10YR 4/1	95	10YR 4/6	1	C	PL	SiCl	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (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)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ 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):	___
Water table present?	Yes	___	No	X	Depth (inches):	___
Saturation present? (includes capillary fringe)	Yes	X	No	___	Depth (inches):	Surface

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: DOT-EP-13 | City/County: Eden Prairie/Hennepin | Sampling Date: 9/22/2014

Applicant/Owner: SWLRT | State: MN | Sampling Point: B

Investigator(s): Marc Cottingham, Lucy Dahl | Section, Township, Range: S9 T116N R22W

Landform (hillslope, terrace, etc.): Hill slope | Local relief (concave, convex, none): None

Slope (%): 0-5 | Lat: | Long: | Datum:

Soil Map Unit Name: Urban Land | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? N (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	N
Hydric soil present?	N
Indicators of wetland hydrology present?	N

Is the sampled area within a wetland? N

If yes, optional wetland site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

Above average precipitation. Wetland criteria not met, area is not a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
	0	=Total Cover	

Sapling/Shrub stratum (Plot size:)			
1			
2			
3			
4			
5			
	0	=Total Cover	

Herb stratum (Plot size:)			
1 *Bromus inermis*	60	Y	FACU
2 *Cirsium discolor*	15	Y	FACU
3			
4			
5			
6			
7			
8			
9			
10			
	75	=Total Cover	

Woody vine stratum (Plot size:)			
1			
2			
	0	=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: 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	75	x 4 =	300
UPL species	0	x 5 =	0
Column totals	75 (A)		300 (B)

Prevalence Index = B/A = 4.00

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- ____ Dominance test is >50%
- ____ Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? N

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: B

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-10	10YR 2/1	100					SiCl	
10-20	10YR 4/1	100					SiCl	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (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)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? N

Remarks:

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): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: DOT-EP-14 | City/County: Eden Prairie/Hennepin | Sampling Date: 9/24/2014

Applicant/Owner: SWLRT | State: MN | Sampling Point: A

Investigator(s): Courtney Luensman, Tina Justen | Section, Township, Range: S9 T116N R22W

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

Slope (%): 1-3. | Lat: 44.861184 | Long: -93.45137 | Datum:

Soil Map Unit Name: Le Sueur loam | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? N (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y
Hydric soil present?	Y
Indicators of wetland hydrology present?	Y
Is the sampled area within a wetland?	Y
f yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

Above average precipitation. All wetland criteria were met. Area is a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
	0	=Total Cover	
Sapling/Shrub stratum (Plot size:)			
1			
2			
3			
4			
5			
	0	=Total Cover	
Herb stratum (Plot size:)			
1 *Carex vulpinoidea*	30	Y	FACW
2 *Bromus inermis*	20	Y	FACU
3 *Elymus virginicus*	15	Y	FACW
4			
5			
6			
7			
8			
9			
10			
	65	=Total Cover	
Woody vine stratum (Plot size:)			
1			
2			
	0	=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: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 66.67% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	45	x 2 =	90
FAC species	0	x 3 =	0
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column totals	65 (A)		170 (B)

Prevalence Index = B/A = 2.62

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: A

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-5	10YR 3/1	100					L	
5-12	10YR 5/2	98	10YR 4/6	2	C	M	CL	
12-20	10YR 6/1	80	2.5YR 3/4	20	C	M	CL	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (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)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Y

Remarks:

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)
- X 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)

- X 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): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: DOT-EP-14 | City/County: Eden Prairie/Hennepin | Sampling Date: 9/24/2014

Applicant/Owner: SWLRT | State: MN | Sampling Point: B

Investigator(s): Courtney Luensman, Tina Justen | Section, Township, Range: S15 T116N R22W

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

Slope (%): 1-3. | Lat: 44.861184 | Long: -93.45137 | Datum:

Soil Map Unit Name: Le Suer loam | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? N (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y
Hydric soil present?	N
Indicators of wetland hydrology present?	N

Is the sampled area within a wetland? N

If yes, optional wetland site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

Above average precipitation. Wetland soil and hydrology criteria were not met . Area is not a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
	0	=Total Cover	

Sapling/Shrub stratum (Plot size:)			
1			
2			
3			
4			
5			
	0	=Total Cover	

Herb stratum (Plot size:)			
1 *Panicum philadelphicum*	40	Y	FACW
2 *Solidago canadensis*	30	Y	FACU
3 *Poa pratensis*	20	Y	FAC
4 *Bromus inermis*	10	N	FACU
5			
6			
7			
8			
9			
10			
	100	=Total Cover	

Woody vine stratum (Plot size:)			
1			
2			
	0	=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: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 66.67% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	40	x 2 =	80
FAC species	20	x 3 =	60
FACU species	40	x 4 =	160
UPL species	0	x 5 =	0
Column totals	100 (A)		300 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: B

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-10	10YR 3/2	100					L	
10-18	10YR 4/2	100					L	
18-20	10YR 5/1	100					L	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (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)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? N

Remarks:

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): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: DOT-EP-15 | City/County: Eden Prairie/Hennepin | Sampling Date: 9/24/2014

Applicant/Owner: SWLRT | State: MN | Sampling Point: A

Investigator(s): Courtney Luensman, Tina Justen | Section, Township, Range: S15 T116N R22W

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

Slope (%): 6-12. | Lat: 44.86113 | Long: -93.450437 | Datum:

Soil Map Unit Name: Lester loam | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? N (If no, explain in remarks)

Are vegetation ____, soil X, or hydrology ____ significantly disturbed? Are "normal circumstances" present? No

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y
Hydric soil present?	Y
Indicators of wetland hydrology present?	Y
Is the sampled area within a wetland?	Y
If yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

Above average precipitation. Wetland criteria were met .Area is a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
	0	=Total Cover	
Sapling/Shrub stratum (Plot size:)			
1 *Salix interior*	5	Y	FACW
2			
3			
4			
5			
	5	=Total Cover	
Herb stratum (Plot size:)			
1 *Euphorbia esula*	50	Y	FACU
2 *Carex vulpinoidea*	40	Y	FACW
3 *Salix interior*	20	N	FACW
4 *Poa pratensis*	10	N	FAC
5			
6			
7			
8			
9			
10			
	120	=Total Cover	
Woody vine stratum (Plot size:)			
1			
2			
	0	=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: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 66.67% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	65	x 2 =	130
FAC species	10	x 3 =	30
FACU species	50	x 4 =	200
UPL species	0	x 5 =	0
Column totals	125 (A)		360 (B)

Prevalence Index = B/A = 2.88

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: A

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-7	10YR 3/1	80					L, gravelly	Mixed
	10YR 4/3	20					L, gravelly	
7-14	10YR 5/6	98	10YR 4/6	2	C	M	L	
14-20	10YR 5/4	95	10R 3/6	5	C	M	SL, very fine	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (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)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- X Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Y

Remarks:

Soil is mixed. Soil determined to be hydric based on best professional judgment.

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): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: DOT-EP-15 | City/County: Eden Prairie/Hennepin | Sampling Date: 9/24/2014

Applicant/Owner: SWLRT | State: MN | Sampling Point: B

Investigator(s): Courtney Luensman, Tina Justen | Section, Township, Range: S15 T116N R22W

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

Slope (%): 6-12. | Lat: 44.86113 | Long: -93.450437 | Datum:

Soil Map Unit Name: Lester loam | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? N (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	N
Hydric soil present?	N
Indicators of wetland hydrology present?	N

Is the sampled area within a wetland? N

If yes, optional wetland site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

Above average precipitation. No wetland criteria were met. Area is not a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
	0	=Total Cover	

Sapling/Shrub stratum (Plot size:)			
1			
2			
3			
4			
5			
	0	=Total Cover	

Herb stratum (Plot size:)			
1 *Poa pratensis*	50	Y	FAC
2 *Solidago canadensis*	20	Y	FACU
3 *Taraxacum officinale*	10	N	FACU
4 *Erigeron strigosus*	10	N	FACU
5 *Plantago major*	10	N	FAC
6			
7			
8			
9			
10			
	100	=Total Cover	

Woody vine stratum (Plot size:)			
1			
2			
	0	=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: 50.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	60	x 3 =	180
FACU species	40	x 4 =	160
UPL species	0	x 5 =	0
Column totals	100 (A)		340 (B)

Prevalence Index = B/A = 3.40

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- ____ Dominance test is >50%
- ____ Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? N

Remarks: (Include photo numbers here or on a separate sheet)

SOIL **Sampling Point:** B

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-4	10YR 3/3	100					L	
4-8	10YR 4/4	99	7.5YR 5/8	1	C	M	L	
8+							Gravel	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (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)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: Gravel hard pan
Depth (inches): 8

Hydric soil present? N

Remarks:
Met a restrictive layer at 8 inches. Assumed to be non-hydric

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):
Water table present?	Yes		No	X	Depth (inches):
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches):

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: DOT-EP-17 | City/County: Eden Prairie/Hennepin | Sampling Date: 9/24/2014

Applicant/Owner: SWLRT | State: MN | Sampling Point: A

Investigator(s): Courtney Luensman, Tina Justen | Section, Township, Range: S15 T116N R22W

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

Slope (%): 0-1 | Lat: 44.862239 | Long: -93.439858 | Datum:

Soil Map Unit Name: Houghton and Muskego | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? N (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y
Hydric soil present?	Y
Indicators of wetland hydrology present?	Y
Is the sampled area within a wetland?	Y
If yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

Above average precipitation. All wetland criteria were met. Area is a wetland.

VEGETATION -- Use scientific names of plants.

	Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species	Indicator Staus
1				
2				
3				
4				
5				
		0	=Total Cover	
	Sapling/Shrub stratum (Plot size:)			
1				
2				
3				
4				
5				
		0	=Total Cover	
	Herb stratum (Plot size:)			
1	*Phalaris arundinacea*	40	Y	FACW
2	*Urtica dioica*	20	Y	FACW
3	*Solidago altissima*	10	N	FACU
4	*Euphorbia esula*	10	N	FACU
5	*Lemna minor*	5	N	OBL
6	*Symphyotrichum praealtum*	5	N	FACW
7				
8				
9				
10				
		90	=Total Cover	
	Woody vine stratum (Plot size:)			
1				
2				
		0	=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: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	5	x 1 =	5
FACW species	65	x 2 =	130
FAC species	0	x 3 =	0
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column totals	90 (A)		215 (B)

Prevalence Index = B/A = 2.39

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: A

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-6	10YR 2/1	100					CL	
6-11	10YR 3/1	100					CL	
11-20	10YR 4/1	98	10YR 4/6	2	C	M	CL	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (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)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Y

Remarks:

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)
- X 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	Depth (inches):	
Water table present?	Yes	X	No	Depth (inches):	12
Saturation present? (includes capillary fringe)	Yes		No	Depth (inches):	

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: DOT-EP-17 | City/County: Eden Prairie/Hennepin | Sampling Date: 9/24/2014

Applicant/Owner: SWLRT | State: MN | Sampling Point: B

Investigator(s): Courtney Luensman, Tina Justen | Section, Township, Range: S9 T116N R22W

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

Slope (%): 0-1 | Lat: 44.862239 | Long: -93.439858 | Datum:

Soil Map Unit Name: Houghton and Muskego | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? N (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y
Hydric soil present?	N
Indicators of wetland hydrology present?	N

Is the sampled area within a wetland? N

If yes, optional wetland site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

Above average precipitation. Wetland soil and hydrology criteria were not met. Area is not a wetland.

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Staus
Tree Stratum (Plot size: ____)			
1			
2			
3			
4			
5			
	0	=Total Cover	
Sapling/Shrub stratum (Plot size: ____)			
1 *Rhus typhina*	15	Y	UPL
2			
3			
4			
5			
	15	=Total Cover	
Herb stratum (Plot size: ____)			
1 *Phalaris arundinacea*	30	Y	FACW
2 *Urtica dioica*	20	Y	FACW
3 *Arctium minus*	10	N	FACU
4 *Euphorbia esula*	10	N	FACU
5 *Impatiens capensis*	5	N	FACW
6 *Rubus idaeus*	5	N	FACU
7			
8			
9			
10			
	80	=Total Cover	
Woody vine stratum (Plot size: ____)			
1			
2			
	0	=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: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 66.67% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	55	x 2 =	110
FAC species	0	x 3 =	0
FACU species	25	x 4 =	100
UPL species	15	x 5 =	75
Column totals	95 (A)		285 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: B

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-24	10YR 2/1	100					CL	
24+	10YR 3/1	95	10YR 4/6	5	C	M	CL	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (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)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? N

Remarks:

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): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: DOT-EP-18 | City/County: Eden Prairie/Hennepin | Sampling Date: 9/22/2014

Applicant/Owner: SWLRT | State: MN | Sampling Point: A

Investigator(s): Marc Cottingham, Lucy Dahl | Section, Township, Range: S14 T116N R22W

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

Slope (%): 0-5 | Lat: | Long: | Datum:

Soil Map Unit Name: Hamel | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? N (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y
Hydric soil present?	Y
Indicators of wetland hydrology present?	Y

Is the sampled area within a wetland? Y

If yes, optional wetland site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

Above average precipitation. All wetland criteria were met. Area is a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
	0	=Total Cover	

Sapling/Shrub stratum (Plot size:)			
1			
2			
3			
4			
5			
	0	=Total Cover	

Herb stratum (Plot size:)			
1 *Eleocharis palustris*	70	Y	OBL
2 *Cirsium discolor*	10	N	FACU
3 *Typha angustifolia*	10	N	OBL
4			
5			
6			
7			
8			
9			
10			
	90	=Total Cover	

Woody vine stratum (Plot size:)			
1			
2			
	0	=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: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	80	x 1 =	80
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column totals	90 (A)		120 (B)

Prevalence Index = B/A = 1.33

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: A

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-6	10YR 2/1	95	10YR 4/6	5	C	PL	SiCl	
6-20	10YR 4/1	90	10YR 4/6	10	C	PL	SiCl	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (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)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ 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):	
Water table present?	Yes		No	X	Depth (inches):	
Saturation present? (includes capillary fringe)	Yes	X	No		Depth (inches):	Surface

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: DOT-EP-18 | City/County: Eden Prairie/Hennepin | Sampling Date: 9/22/2014

Applicant/Owner: SWLRT | State: MN | Sampling Point: B

Investigator(s): Marc Cottingham, Lucy Dahl | Section, Township, Range: S14 T116N R22W

Landform (hillslope, terrace, etc.): Hill slope | Local relief (concave, convex, none): None

Slope (%): 0-5 | Lat: | Long: | Datum:

Soil Map Unit Name: Hamel | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? N (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	N
Hydric soil present?	N
Indicators of wetland hydrology present?	N

Is the sampled area within a wetland? N

If yes, optional wetland site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

Above average precipitation. Wetland criteria not met, area is not a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
	0	=Total Cover	

Sapling/Shrub stratum (Plot size:)			
1			
2			
3			
4			
5			
	0	=Total Cover	

Herb stratum (Plot size:)			
1 *Cirsium discolor*	60	Y	FACU
2 *Bromus inermis*	20	Y	FACU
3			
4			
5			
6			
7			
8			
9			
10			
	80	=Total Cover	

Woody vine stratum (Plot size:)			
1			
2			
	0	=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: 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	80	x 4 =	320
UPL species	0	x 5 =	0
Column totals	80 (A)		320 (B)

Prevalence Index = B/A = 4.00

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- ____ Dominance test is >50%
- ____ Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? N

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: B

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-10	10YR 4/2	100					SiCl	
10-20	10YR 4/3	100					SiCl	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (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)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? N

Remarks:

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): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: DOT-EP-19 | City/County: Eden Prairie/Hennepin | Sampling Date: 9/24/2014

Applicant/Owner: SWLRT | State: MN | Sampling Point: A

Investigator(s): Courtney Luensman, Tina Justen | Section, Township, Range: S11 T116N R22W

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

Slope (%): 6-12. | Lat: 44.866011 | Long: -93.42031 | Datum:

Soil Map Unit Name: Lester loam | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? N (If no, explain in remarks)

Are vegetation X, soil , or hydrology significantly disturbed? Are "normal circumstances" present? No

Are vegetation , soil , or hydrology naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	N
Hydric soil present?	Y
Indicators of wetland hydrology present?	Y

Is the sampled area within a wetland? N

If yes, optional wetland site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

Above average precipitation. Vegetation is disturbed but assumed hydrophytic in normal circumstances. Area is a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
	0	=Total Cover	

Sapling/Shrub stratum (Plot size:)			
1			
2			
3			
4			
5			
	0	=Total Cover	

Herb stratum (Plot size:)			
1 *Bromus inermis*	90	Y	FACU
2			
3			
4			
5			
6			
7			
8			
9			
10			
	90	=Total Cover	

Woody vine stratum (Plot size:)			
1			
2			
	0	=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: 0.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	90	x 4 =	360
UPL species	0	x 5 =	0
Column totals	90 (A)		360 (B)

Prevalence Index = B/A = 4.00

Hydrophytic Vegetation Indicators:

- Rapid test for hydrophytic vegetation
- Dominance test is >50%
- Prevalence index is ≤3.0*
- Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? N

Remarks: (Include photo numbers here or on a separate sheet)

Vegetation mowed regularly

SOIL

Sampling Point: A

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-5	10YR 2/1	100					CL	
5-10	2.5Y 5/1	95	10YR 4/6	5	C	M	L, gravelly	
10-12	5GY 6/1	20	10YR 4/6	10	C	M	CL	
	10YR 3/1	70					CL	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (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)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: 12

Depth (inches): ___

Hydric soil present? Y

Remarks:

Gravel hard pan

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):	
Water table present?	Yes	X	No		Depth (inches):	10
Saturation present? (includes capillary fringe)	Yes	X	No		Depth (inches):	0

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: DOT-EP-19 | City/County: Eden Prairie/Hennepin | Sampling Date: 9/24/2014

Applicant/Owner: SWLRT | State: MN | Sampling Point: B

Investigator(s): Courtney Luensman, Tina Justen | Section, Township, Range: S11 T116N R22W

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

Slope (%): 6-12. | Lat: 44.866011 | Long: -93.42031 | Datum:

Soil Map Unit Name: Lester loam | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? N (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	N
Hydric soil present?	N
Indicators of wetland hydrology present?	N

Is the sampled area within a wetland? N

If yes, optional wetland site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

Above average precipitation. Wetland criteria were not met. Area is not a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
	0	=Total Cover	

Sapling/Shrub stratum (Plot size:)			
1			
2			
3			
4			
5			
	0	=Total Cover	

Herb stratum (Plot size:)			
1 *Coronilla varia*	30	Y	NI
2 *Solidago canadensis*	20	Y	FACU
3 *Cirsium arvense*	20	Y	FACU
4 *Poa pratensis*	15	N	FAC
5 *Alliaria petiolata*	10	N	FAC
6 *Lactuca serriola*	10	N	FACU
7 *Barbarea vulgaris*	5	N	FAC
8			
9			
10			
	110	=Total Cover	

Woody vine stratum (Plot size:)			
1			
2			
	0	=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: 0.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	30	x 3 =	90
FACU species	50	x 4 =	200
UPL species	0	x 5 =	0
Column totals	80 (A)		290 (B)

Prevalence Index = B/A = 3.63

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- ____ Dominance test is >50%
- ____ Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? N

Remarks: (Include photo numbers here or on a separate sheet)

SOIL **Sampling Point:** B

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-5	10YR 3/1	85					L	Mixed
	10YR 5/6	15					L	
5-10	10YR 5/6	100					SL, gravelly	
10-12	2.5Y 6/1	80	10YR4/6	20	C	M	SiL	
12-20	2.5Y 6/1	100					SiL	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (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)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric soil present? N

Remarks:

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): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: DOT-EP-20 | City/County: Eden Prairie/Hennepin | Sampling Date: 9/24/2014

Applicant/Owner: SWLRT | State: MN | Sampling Point: A

Investigator(s): Courtney Luensman, Tina Justen | Section, Township, Range: S12 T116N R22W

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

Slope (%): 18-25 | Lat: 44.866574 | Long: -93.418765 | Datum:

Soil Map Unit Name: Koronis Kingsley | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? N (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y
Hydric soil present?	Y
Indicators of wetland hydrology present?	Y
Is the sampled area within a wetland?	Y
If yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

Above average precipitation. Wetland criteria were met. Area is a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
	0	=Total Cover	

Sapling/Shrub stratum (Plot size:)			
1			
2			
3			
4			
5			
	0	=Total Cover	

Herb stratum (Plot size:)			
1 *Phalaris arundinacea*	40	Y	FACW
2 *Typha angustifolia*	20	Y	OBL
3			
4			
5			
6			
7			
8			
9			
10			
	60	=Total Cover	

Woody vine stratum (Plot size:)			
1			
2			
	0	=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: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	20	x 1 =	20
FACW species	40	x 2 =	80
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	60 (A)		100 (B)

Prevalence Index = B/A = 1.67

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

Vegetation mowed regularly

SOIL

Sampling Point: A

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-8	2.5Y 5/2	50	10YR 4/6	10	C	M	SL	
	10YR 3/1	30					SL	
	10GY 6/1	10					SL	
8-14	10YR 4/3	90	10YR 4/6	10	C	M	SL	
14-20	10YR 6/1	85	10YR 4/6	15	C	M	SL	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (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)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Y

Remarks:

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): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: DOT-EP-20 | City/County: Eden Prairie/Hennepin | Sampling Date: 9/24/2014

Applicant/Owner: SWLRT | State: MN | Sampling Point: B

Investigator(s): Courtney Luensman, Tina Justen | Section, Township, Range: S12 T116N R22W

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

Slope (%): 18-25 | Lat: 44.86574 | Long: -93.418765 | Datum:

Soil Map Unit Name: Koronis Kingsley | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? N (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	N
Hydric soil present?	N
Indicators of wetland hydrology present?	N

Is the sampled area within a wetland? N

If yes, optional wetland site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

Above average precipitation. Wetland criteria were not met. Area is not a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
	0	=Total Cover	

Sapling/Shrub stratum (Plot size:)			
1			
2			
3			
4			
5			
	0	=Total Cover	

Herb stratum (Plot size:)			
1 *Bromus inermis*	80	Y	FACU
2 *Cirsium discolor*	15	N	FACU
3 *Euphorbia esula*	10	N	FACU
4			
5			
6			
7			
8			
9			
10			
	105	=Total Cover	

Woody vine stratum (Plot size:)			
1			
2			
	0	=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: 0.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	105	x 4 =	420
UPL species	0	x 5 =	0
Column totals	105 (A)		420 (B)

Prevalence Index = B/A = 4.00

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- ____ Dominance test is >50%
- ____ Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? N

Remarks: (Include photo numbers here or on a separate sheet)

Vegetation mowed regularly

SOIL

Sampling Point: B

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-6	10YR 3/1	100					L	
6-12	10YR 5/4	100					L	
12-16	2.5Y 6/2	90	10YR 4/6	10	C	M	SiL	
16-20	10YR 5/6	100					SL	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (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)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? N

Remarks:

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): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: DOT-EP-21 | City/County: Eden Prairie/Hennepin | Sampling Date: 9/23/2014

Applicant/Owner: SWLRT | State: MN | Sampling Point: A

Investigator(s): Todd Udvig, Alison Hruby | Section, Township, Range: S36 T117N R22W

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

Slope (%): 0-5 | Lat: | Long: | Datum:

Soil Map Unit Name: Kingsley | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? N (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y
Hydric soil present?	Y
Indicators of wetland hydrology present?	Y
Is the sampled area within a wetland?	Y
f yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

Above average precipitation. All wetland criteria were met. Area is a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
	0	=Total Cover	

Sapling/Shrub stratum (Plot size:)			
1			
2			
3			
4			
5			
	0	=Total Cover	

Herb stratum (Plot size:)			
1 *Phalaris arundinacea*	100	Y	FACW
2			
3			
4			
5			
6			
7			
8			
9			
10			
	100	=Total Cover	

Woody vine stratum (Plot size:)			
1			
2			
	0	=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: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	100	x 2 =	200
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	100 (A)		200 (B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL **Sampling Point:** A

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-12	10YR 3/2	100					SiL	
12-18	10YR 3/2	80	10YR 5/6	20	C	M	SiL	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (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)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- X Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric soil present? Y

Remarks:
Based on professional judgement, the soils appear to be functioning as hydric.

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)
- X 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):	___
Water table present?	Yes	___	No	X	Depth (inches):	___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches):	___

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: DOT-EP-21 | City/County: Hennepin | Sampling Date: 9/23/2014

Applicant/Owner: SWLRT | State: MN | Sampling Point: B

Investigator(s): Todd Udvig, Alison Hruby | Section, Township, Range: S36 T117N R22W

Landform (hillslope, terrace, etc.): Hill slope | Local relief (concave, convex, none): None

Slope (%): 12-18% | Lat: | Long: | Datum:

Soil Map Unit Name: Kingsley | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? N (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y
Hydric soil present?	N
Indicators of wetland hydrology present?	N

Is the sampled area within a wetland? N

If yes, optional wetland site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

Above average precipitation. Hydric soil and hydrology criteria not met, area is not a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
	0	=Total Cover	
Sapling/Shrub stratum (Plot size:)			
1			
2			
3			
4			
5			
	0	=Total Cover	
Herb stratum (Plot size:)			
1 *Phalaris arundinacea*	50	Y	FACW
2 *Euphorbia esula*	50	Y	FACU
3			
4			
5			
6			
7			
8			
9			
10			
	100	=Total Cover	
Woody vine stratum (Plot size:)			
1			
2			
	0	=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: 50.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	50	x 2 =	100
FAC species	0	x 3 =	0
FACU species	50	x 4 =	200
UPL species	0	x 5 =	0
Column totals	100 (A)		300 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- ___ Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: B

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-18	10YR 3/2	100					SiL	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (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)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? N

Remarks:

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): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: DOT-EP-22 | City/County: Hennepin | Sampling Date: 9/23/2014

Applicant/Owner: SWLRT | State: MN | Sampling Point: A

Investigator(s): Todd Udvig, Alison Hruby | Section, Township, Range: S36 T117N R22W

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

Slope (%): 6-12% | Lat: | Long: | Datum:

Soil Map Unit Name: Lester | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? N (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y
Hydric soil present?	Y
Indicators of wetland hydrology present?	Y

Is the sampled area within a wetland? Y

If yes, optional wetland site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

Above average precipitation. All wetland criteria met, area is a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
	0	=Total Cover	

Sapling/Shrub stratum (Plot size:)			
1			
2			
3			
4			
5			
	0	=Total Cover	

Herb stratum (Plot size:)			
1 *Typha angustifolia*	50	Y	OBL
2 *Phalaris arundinacea*	20	Y	FACW
3 *Agrostis gigantea*	10	N	FACW
4 *Eleocharis sp*	10	N	
5			
6			
7			
8			
9			
10			
	90	=Total Cover	

Woody vine stratum (Plot size:)			
1			
2			
	0	=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: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:				
OBL species	50	x 1 =	50	
FACW species	30	x 2 =	60	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	80	(A)	110	(B)

Prevalence Index = B/A = 1.38

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: A

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-6	10YR 3/2	70	10YR 5/6	30	C	M	SL	
6-12	10YR 3/2	70	10YR 5/6	30	C	M	SCL	
12-18	10YR 3/2	70	10YR 5/6	30	C	M	SL	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (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)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Y

Remarks:

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)

- X Surface Soil Cracks (B6)
- X 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):	___
Water table present?	Yes	___	No	X	Depth (inches):	___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches):	___

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

12 in PVC Culvert, south end - 12 in Corrugated metal, north end

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: DOT-EP-22 | City/County: Hennepin | Sampling Date: 9/23/2014

Applicant/Owner: SWLRT | State: MN | Sampling Point: B

Investigator(s): Todd Udvig, Alison Hruby | Section, Township, Range: S36 T117N R22W

Landform (hillslope, terrace, etc.): Hill slope | Local relief (concave, convex, none): Convex

Slope (%): 6-12% | Lat: | Long: | Datum:

Soil Map Unit Name: Lester | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? N (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y
Hydric soil present?	N
Indicators of wetland hydrology present?	N

Is the sampled area within a wetland? N

If yes, optional wetland site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

Above average precipitation. Hydric soil and hydrology criteria not met, area is not a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
	0	=Total Cover	

Sapling/Shrub stratum (Plot size:)			
1			
2			
3			
4			
5			
	0	=Total Cover	

Herb stratum (Plot size:)			
1 *Phalaris arundinacea*	60	Y	FACW
2 *Euphorbia esula*	30	Y	FACU
3			
4			
5			
6			
7			
8			
9			
10			
	90	=Total Cover	

Woody vine stratum (Plot size:)			
1			
2			
	0	=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: 50.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	60	x 2 =	120
FAC species	0	x 3 =	0
FACU species	30	x 4 =	120
UPL species	0	x 5 =	0
Column totals	90 (A)		240 (B)

Prevalence Index = B/A = 2.67

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- ___ Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: B

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-12	10YR 3/2	100					SiL	
12-18	10YR 3/2	95	10YR 5/6	5	C	M	L	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (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)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? N

Remarks:

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):	___
Water table present?	Yes	___	No	X	Depth (inches):	___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches):	___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: EP-EP-07_Original | City/County: Eden Prairie | Sampling Date: 8-6-2013

Applicant/Owner: SWLRT | State: MN | Sampling Point: A

Investigator(s): Marc Cottingham, Mohamed Elabbady | Section, Township, Range: 16-116-22

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

Slope (%): 0-3 | Lat: | Long: | Datum:

Soil Map Unit Name: Water | NWI Classification: PEMC

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y
Hydric soil present?	Y
Indicators of wetland hydrology present?	Y

Is the sampled area within a wetland? Y

If yes, optional wetland site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

All wetland criteria were met. Area is a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species	Indicator Staus
1 *Ulmus americana*	10	Y	FACW
2			
3			
4			
5			
	10	=Total Cover	

Sapling/Shrub stratum (Plot size:)			
1			
2			
3			
4			
5			
	0	=Total Cover	

Herb stratum (Plot size:)			
1 *Phalaris arundinacea*	70	Y	FACW
2 *Typha angustifolia*	25	Y	OBL
3			
4			
5			
6			
7			
8			
9			
10			
	95	=Total Cover	

Woody vine stratum (Plot size:)			
1			
2			
	0	=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: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	25	x 1 =	25
FACW species	80	x 2 =	160
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	105 (A)		185 (B)

Prevalence Index = B/A = 1.76

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: A

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-15	10YR 3/1	98	10YR 4/6	2	C	M	LyS	
15-30	10YR 4/1	98	10YR 4/6	2	C	M	LyS	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (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)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Y

Remarks:

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): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: EP-EP-07_Original | City/County: Eden Prairie | Sampling Date: 8-6-2013
Applicant/Owner: SWLRT | State: MN | Sampling Point: B
Investigator(s): Marc Cottingham, Mohamed Elabbady | Section, Township, Range: 46-116-22
Landform (hillslope, terrace, etc.): Hillslope | Local relief (concave, convex, none): Convex
Slope (%): 0-3 | Lat: | Long: | Datum:
Soil Map Unit Name: Lester-Malardi complex | NWI Classification:
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes
Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y
Hydric soil present?	N
Indicators of wetland hydrology present?	N

Is the sampled area within a wetland? N
f yes, optional wetland site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

Hydric soil and wetland hydrology criteria not met. Area is not a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species	Indicator Staus
1 *Ulmus americana*	10	Y	FACW
2			
3			
4			
5			
	10	=Total Cover	

Sapling/Shrub stratum (Plot size:)			
1 *Rhamnus cathartica*	60	Y	FAC
2			
3			
4			
5			
	60	=Total Cover	

Herb stratum (Plot size:)			
1 *Alliaria petiolata*	60	Y	FAC
2 *Arctium minus*	25	Y	FACU
3			
4			
5			
6			
7			
8			
9			
10			
	85	=Total Cover	

Woody vine stratum (Plot size:)			
1			
2			
	0	=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: 4 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 75.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	120	x 3 =	360
FACU species	25	x 4 =	100
UPL species	0	x 5 =	0
Column totals	155 (A)		480 (B)

Prevalence Index = B/A = 3.10

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- ____ Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: B

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-13	10YR 3/2						SiCL	
13-25	10YR 4/1						SiCL	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (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)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? N

Remarks:

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):
Water table present?	Yes		No	X	Depth (inches):
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches):

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: EP-EP-07_Extended | City/County: Eden Prairie | Sampling Date: 8-18-2014

Applicant/Owner: SWLRT | State: MN | Sampling Point: C

Investigator(s): Marc Cottingham, Lucy Dahl | Section, Township, Range: 16-116-22

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

Slope (%): 0-3 | Lat: | Long: | Datum:

Soil Map Unit Name: Water | NWI Classification: PEM1A

Are climatic/hydrologic conditions of the site typical for this time of the year? N (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y
Hydric soil present?	Y
Indicators of wetland hydrology present?	Y
Is the sampled area within a wetland?	Y
f yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

Above average precipitation. All wetland criteria were met. Area is a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species	Indicator Staus
1 *Acer negundo*	10	Y	FAC
2			
3			
4			
5			
	10	=Total Cover	

Sapling/Shrub stratum (Plot size:)			
1			
2			
3			
4			
5			
	0	=Total Cover	

Herb stratum (Plot size:)			
1 *Phalaris arundinacea*	80	Y	FACW
2			
3			
4			
5			
6			
7			
8			
9			
10			
	80	=Total Cover	

Woody vine stratum (Plot size:)			
1			
2			
	0	=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: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	80	x 2 =	160
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	90 (A)		190 (B)

Prevalence Index = B/A = 2.11

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: C

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-10	10YR 2/1	98	10YR 4/6	2	C	M	SiL	
10-14	10YR 2/1	100					Fibric Peat	
14-20	10YR 4/1	98	10YR 4/6	2	C	M	SiL	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (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)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Y

Remarks:

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)
- X 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): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: EP-EP-07_Extended | City/County: Eden Prairie | Sampling Date: 8-18-2014
Applicant/Owner: SWLRT | State: MN | Sampling Point: D
Investigator(s): Marc Cottingham, Lucy Dahl | Section, Township, Range: 46-116-22
Landform (hillslope, terrace, etc.): Hillslope | Local relief (concave, convex, none): Convex
Slope (%): 0-3 | Lat: | Long: | Datum:
Soil Map Unit Name: Lester-Malardi complex | NWI Classification:
Are climatic/hydrologic conditions of the site typical for this time of the year? N (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances"
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y		
Hydric soil present?	N	**Is the sampled area within a wetland?**	N
Indicators of wetland hydrology present?	N	f yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

Above average precipitation. Hydric soil and wetland hydrology criteria not met. Area is not a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species	Indicator Staus
1 *Acer negundo*	50	Y	FAC
2			
3			
4			
5			
	50	=Total Cover	
Sapling/Shrub stratum (Plot size:)			
1 *Rhamnus cathartica*	15	Y	FAC
2			
3			
4			
5			
	15	=Total Cover	
Herb stratum (Plot size:)			
1 *Cirsium discolor*	15	Y	FACU
2 *Arctium minus*	15	Y	FACU
3 *Xanthium strumarium*	10	Y	FAC
4 *Parthenocissus quinquefolia*	10	Y	FACU
5 *Urtica dioica*	10	Y	FACW
6 *Alliaria petiolata*	10	Y	FAC
7 *Athyrium filix-femina*	5	N	FAC
8			
9			
10			
	75	=Total Cover	
Woody vine stratum (Plot size:)			
1			
2			
	0	=Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 5 (A)
Total Number of Dominant Species Across all Strata: 8 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 62.50% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	90	x 3 =	270
FACU species	40	x 4 =	160
UPL species	0	x 5 =	0
Column totals	140 (A)		450 (B)

Prevalence Index = B/A = 3.21

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- ____ Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: D

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-14	10YR 3/1	100					SiCL	
14-20	10YR 4/1	98	10YR 4/6	2	C	M	SiCL	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (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)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? N

Remarks:

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):
Water table present?	Yes		No	X	Depth (inches):
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches):

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: EP-EP-22 (Formerly DIG-EP-EP-01) City/County: Eden Prairie/Hennepin Sampling Date: 8/18/2014

Applicant/Owner: SWLTR State: MN Sampling Point: A

Investigator(s): Marc Cottingham, Lucy Dahl Section, Township, Range: 15-116-22

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

Slope (%): 0-6 Lat: Long: Datum:

Soil Map Unit Name: L16A, Muskego Muck NWI Classification: PEM1C

Are climatic/hydrologic conditions of the site typical for this time of the year? N (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances"

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y		
Hydric soil present?	Y	**Is the sampled area within a wetland?**	Y
Indicators of wetland hydrology present?	Y	f yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

Above average precipitation. All wetland criteria were met. Area is a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species	Indicator Staus
1 *Populus deltoides*	15	Y	FAC
2			
3			
4			
5			
	15	=Total Cover	

Sapling/Shrub stratum (Plot size: 15')			
1			
2			
3			
4			
5			
	0	=Total Cover	

Herb stratum (Plot size: 5')			
1 *Typha angustifolia*	30	Y	OBL
2 *Lythrum salicaria*	25	Y	OBL
3 *Poa Pratensis*	20	Y	FAC
4 *Agrostis stolonifera*	10	N	FACW
5			
6			
7			
8			
9			
10			
	85	=Total Cover	

Woody vine stratum (Plot size: 30')			
1			
2			
	0	=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: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	55	x 1 =	55	
FACW species	10	x 2 =	20	
FAC species	35	x 3 =	105	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	100	(A)	180	(B)

Prevalence Index = B/A = 1.80

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: A

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-8	10YR 3/1	98	10YR 4/6	2	C	M	SiCL	
8-20	10YR 5/1	98	10YR 4/6	2	C	M	SiCL	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (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)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Y

Remarks:

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	___	Depth (inches): ___
Water table present?	Yes	___	No	___	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	X	No	___	Depth (inches): 0

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: EP-EP-22 (Formerly DIG-EP-EP-01) City/County: Eden Prairie/Hennepin Sampling Date: 8/18/2014

Applicant/Owner: SWLTR State: MN Sampling Point: B

Investigator(s): Marc Cottingham, Lucy Dahl Section, Township, Range: 15-116-22

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

Slope (%): 0-6 Lat: Long: Datum:

Soil Map Unit Name: L16A, Muskego Muck NWI Classification:

Are climatic/hydrologic conditions of the site typical for this time of the year? N (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances"

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	N		
Hydric soil present?	N	**Is the sampled area within a wetland?**	N
Indicators of wetland hydrology present?	N	f yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

Above average precipitation. Wetland criteria was not met. Area is not a wetland.

VEGETATION -- Use scientific names of plants.

		Absolute % Cover	Dominant Species	Indicator Staus
Tree Stratum (Plot size: 30')				
1				
2				
3				
4				
5				
		0	=Total Cover	
Sapling/Shrub stratum (Plot size: 15')				
1				
2				
3				
4				
5				
		0	=Total Cover	
Herb stratum (Plot size: 5')				
1	*Bromus arvensis*	40	Y	FACU
2	*Poa Pratensis*	25	Y	FAC
3	*Solidago altissima*	20	Y	FACU
4	*Phalaris Arundinacea*	15	N	FACW
5				
6				
7				
8				
9				
10				
		100	=Total Cover	
Woody vine stratum (Plot size: 30')				
1				
2				
		0	=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: 33.33% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0	
FACW species	15	x 2 =	30	
FAC species	25	x 3 =	75	
FACU species	60	x 4 =	240	
UPL species	0	x 5 =	0	
Column totals	100	(A)	345	(B)

Prevalence Index = B/A = 3.45

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- ____ Dominance test is >50%
- ____ Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? N

Remarks: (Include photo numbers here or on a separate sheet)

SOIL **(y)** **Sampling Point:** B

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-7	10YR 3/1	100					SiCL	
7-14	10YR 4/4	100					SiCL	
14-20	10YR 4/6	98	10YR 4/6	2	C	M	SiCL	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (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)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric soil present? N

Remarks:

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		Depth (inches):
Water table present?	Yes		No		Depth (inches):
Saturation present? (includes capillary fringe)	Yes		No		Depth (inches):

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: EP-EP-23 | City/County: Eden Prairie/Hennepin | Sampling Date: 08/22/2014

Applicant/Owner: SWLRT | State: MN | Sampling Point: A

Investigator(s): Marc Cottingham, Lucy Dahl | Section, Township, Range: S15 T116N R22W

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

Slope (%): None | Lat: 44.855 | Long: -93.4499 | Datum:

Soil Map Unit Name: Water | NWI Classification: PEM1C

Are climatic/hydrologic conditions of the site typical for this time of the year? N (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y
Hydric soil present?	Y
Indicators of wetland hydrology present?	Y

Is the sampled area within a wetland? Y

If yes, optional wetland site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

Above average precipitation. All wetland criteria were met. Area is a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
	0	=Total Cover	
Sapling/Shrub stratum (Plot size:)			
1 *Rhamnus cathartica*	5	Y	FAC
2			
3			
4			
5			
	5	=Total Cover	
Herb stratum (Plot size:)			
1 *Phalaris arundinacea*	70	Y	FACW
2 *Hackelia virginiana*	10	N	FACU
3 *Typha angustifolia*	10	N	OBL
4 *Asclepias incarnata*	5	N	OBL
5 *Solanum dulcamara*	5	N	FAC
6			
7			
8			
9			
10			
	100	=Total Cover	
Woody vine stratum (Plot size:)			
1			
2			
	0	=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: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	15	x 1 =	15
FACW species	70	x 2 =	140
FAC species	10	x 3 =	30
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column totals	105 (A)		225 (B)

Prevalence Index = B/A = 2.14

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: A

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-20	10YR 3/1	100					Sapric Peat	
20-30	10YR 2/1	100					SiL	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- X Histisol (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)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Y

Remarks:

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)
- X 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): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: EP-EP-23 | City/County: Eden Prairie/Hennepin | Sampling Date: 08/22/2014

Applicant/Owner: SWLRT | State: MN | Sampling Point: B

Investigator(s): Marc Cottingham, Lucy Dahl | Section, Township, Range: S15 T116N R22W

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

Slope (%): 0-5 | Lat: 44.855 | Long: -93.4499 | Datum:

Soil Map Unit Name: Lester Loam | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? N (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	N
Hydric soil present?	N
Indicators of wetland hydrology present?	N

Is the sampled area within a wetland? N

If yes, optional wetland site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

Above average precipitation. Wetland criteria not met. Area is not a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species	Indicator Staus
1 *Tilia americana*	10	Y	FACU
2			
3			
4			
5			
	10	=Total Cover	

Sapling/Shrub stratum (Plot size:)			
1 *Rhamnus cathartica*	70	Y	FAC
2			
3			
4			
5			
	70	=Total Cover	

Herb stratum (Plot size:)			
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	0	=Total Cover	

Woody vine stratum (Plot size:)			
1			
2			
	0	=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: 50.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:			
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	70	x 3 =	210
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column totals	80 (A)		250 (B)

Prevalence Index = B/A = 3.13

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- ____ Dominance test is >50%
- ____ Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? N

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: B

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-10	10YR 3/1	100					SiL	
10-20	10YR 3/2	100					SiL	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (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)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? N

Remarks:

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		Depth (inches):
Water table present?	Yes		No		Depth (inches):
Saturation present? (includes capillary fringe)	Yes		No		Depth (inches):

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: EP-EP-24 (Formerly DIG-EP-EP-02 & 03) City/County: Hennepin/Eden Prairie Sampling Date: 10/1/2014
Applicant/Owner: SWLRT State: MN Sampling Point: A
Investigator(s): Courtney Luensman, Lucy Dahl Section, Township, Range: 15-116-22
Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
Slope (%): 0-5 Lat: 44.8479346 Long: -93.4597225 Datum:
Soil Map Unit Name: Muskego Muck NWI Classification: PEM1A/PUBGx/PUBGh
Are climatic/hydrologic conditions of the site typical for this time of the year? N (If no, explain in remarks)
Are vegetation ____, soil X, or hydrology ____ significantly disturbed? Are "normal circumstances"
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? present? No

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y
Hydric soil present?	Y
Indicators of wetland hydrology present?	Y
Is the sampled area within a wetland?	Y
f yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

Above average precipitation. Soil is disturbed due to wetland being an excavated pond. Vegetation and Hydrology criteria met; soil assumed hydric based on best professional judgement. Area is a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
	0	=Total Cover	
Sapling/Shrub stratum (Plot size:)			
1 *Salix interior*	40	Y	FACW
2			
3			
4			
5			
	40	=Total Cover	
Herb stratum (Plot size:)			
1 *Typha angustifolia*	20	Y	OBL
2 *Solidago gigantea*	10	Y	FACW
3 *Impatiens capensis*	10	Y	FACW
4 *Phalaris arundinacea*	10	Y	FACW
5 *Verbena hastata*	10	Y	FACW
6 *Persicaria pensylvanica*	5	N	FACW
7 *Lactuca serriola*	2	N	FACU
8			
9			
10			
	67	=Total Cover	
Woody vine stratum (Plot size:)			
1			
2			
	0	=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: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:				
OBL species	20	x 1 =	20	
FACW species	85	x 2 =	170	
FAC species	0	x 3 =	0	
FACU species	2	x 4 =	8	
UPL species	0	x 5 =	0	
Column totals	107	(A)	198	(B)

Prevalence Index = B/A = 1.85

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: A

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (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)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- X Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: Riprap

Depth (inches): Surface

Hydric soil present? Y

Remarks:

Unable to obtain a soil sample due to restrictive layer of riprap at the soil surface (excavated pond).

Soil assumed hydric based on presence of hydrophytic vegetation and best professional judgement

HYDROLOGY

Wetland Hydrology Indicators:

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

- X 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	X	No		Depth (inches):	0.5
Water table present?	Yes		No		Depth (inches):	
Saturation present? (includes capillary fringe)	Yes		No		Depth (inches):	

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: EP-EP-24 (Formerly DIG-EP-EP-02 & 03) City/County: Hennepin/Eden Prairie Sampling Date: 10/1/2014

Applicant/Owner: SWLRT State: MN Sampling Point: B

Investigator(s): Courtney Luensman, Lucy Dahl Section, Township, Range: 15-116-22

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex

Slope (%): 5-20% Lat: 44.8479346 Long: -93.4597225 Datum:

Soil Map Unit Name: Muskego Muck NWI Classification: PEM1A/PUBGx/PUBGh

Are climatic/hydrologic conditions of the site typical for this time of the year? N (If no, explain in remarks)

Are vegetation ____, soil X, or hydrology ____ significantly disturbed? Are "normal circumstances" present? No

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	N		
Hydric soil present?	N	**Is the sampled area within a wetland?**	N
Indicators of wetland hydrology present?	N	f yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

Above average precipitation. Soil is disturbed due to being on the edge of an excavated pond. Wetland criteria not met. Area is not a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species	Indicator Staus
1 *Crataegus crus-galli*	20	Y	FAC
2			
3			
4			
5			
	20	=Total Cover	
Sapling/Shrub stratum (Plot size:)			
1			
2			
3			
4			
5			
	0	=Total Cover	
Herb stratum (Plot size:)			
1 *Lactuca serriola*	30	Y	FACU
2 *Poa pratensis*	20	Y	FAC
3 *Parietaria pensylvanica*	20	Y	FACU
4 *Andropogon gerardii*	5	N	FAC
5 *Salix interior*	5	N	FACW
6			
7			
8			
9			
10			
	80	=Total Cover	
Woody vine stratum (Plot size:)			
1			
2			
	0	=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: 4 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 50.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	45	x 3 =	135
FACU species	50	x 4 =	200
UPL species	0	x 5 =	0
Column totals	100 (A)		345 (B)

Prevalence Index = B/A = 3.45

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- ____ Dominance test is >50%
- ____ Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? N

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: B

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-2	7.5R 2.5/2	100					L	Red due to mulch
2-6	10YR 3/1	100					L	Mixed with gravel
6-8	10YR 3/1	98	5YR 4/6	2	C	PL	L	Restrictive layer

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (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)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: Gravel

Depth (inches): 8

Hydric soil present? N

Remarks:

Landscaped

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		Depth (inches):
Water table present?	Yes		No		Depth (inches):
Saturation present? (includes capillary fringe)	Yes		No		Depth (inches):

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: MTA-MTA-11 (Original) | City/County: Minnetonka/Hennepin | Sampling Date: 7-26-2013

Applicant/Owner: SW LRT | State: MN | Sampling Point: A

Investigator(s): Mohamed Elabbady, Todd Udvig | Section, Township, Range: 25-117-22

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

Slope (%): 0-3 | Lat: | Long: | Datum:

Soil Map Unit Name: L49A-Klossner soils. L132A-Hamel-Glencoe depressional comp | NWI Classification: PEM/FO1/SS1C

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	Y
Hydric soil present?	Y
Indicators of wetland hydrology present?	Y
Is the sampled area within a wetland?	Y
f yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

Meets all wetland criteria. Area is a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species	Indicator Staus
1 *Fraxinus nigra*	25	Y	FACW
2			
3			
4			
5			
	25	=Total Cover	

Sapling/Shrub stratum (Plot size: 15ft)			
1			
2			
3			
4			
5			
	0	=Total Cover	

Herb stratum (Plot size: 5ft)			
1 *Typha angustifolia*	30	Y	OBL
2 *Phalaris arundinacea*	15	Y	FACW
3			
4			
5			
6			
7			
8			
9			
10			
	45	=Total Cover	

Woody vine stratum (Plot size: 30ft)			
1			
2			
	0	=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: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	30	x 1 =	30
FACW species	40	x 2 =	80
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	70 (A)		110 (B)

Prevalence Index = B/A = 1.57

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: A

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-6	10YR 2/2	90	10YR 4/4	10	C	M	SiCL	
6-14	10YR 2/1	100					Silt	Organic Matter

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (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)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- X 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	X	No		Depth (inches):	6
Water table present?	Yes		No		Depth (inches):	
Saturation present? (includes capillary fringe)	Yes		No		Depth (inches):	

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: MTA-MTA-11 (Original) | City/County: Minnetonka/Hennepin | Sampling Date: 7-26-2013

Applicant/Owner: SW LRT | State: MN | Sampling Point: B

Investigator(s): Mohamed Elabbady, Todd Udvig | Section, Township, Range: 25-117-22

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

Slope (%): | Lat: | Long: | Datum:

Soil Map Unit Name: L49A-Klossner soils/L132A-Hamel-Glencoe depressional comple | NWI Classification:

Are climatic/hydrologic conditions of the site typical for this time of the year? (If no, explain in remarks)

Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances"

Are vegetation , soil , or hydrology naturally problematic? present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	N
Hydric soil present?	N
Indicators of wetland hydrology present?	N

Is the sampled area within a wetland? N

f yes, optional wetland site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

None of the wetland criteria were met. Area is not a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
	0	=Total Cover	

Sapling/Shrub stratum (Plot size: 15ft)			
1			
2			
3			
4			
5			
	0	=Total Cover	

Herb stratum (Plot size: 5ft)			
1 *Cirsium arvense*	10	Y	FACU
2			
3			
4			
5			
6			
7			
8			
9			
10			
	10	=Total Cover	

Woody vine stratum (Plot size: 30ft)			
1			
2			
	0	=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: 0.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column totals	10 (A)		40 (B)

Prevalence Index = B/A = 4.00

Hydrophytic Vegetation Indicators:

- Rapid test for hydrophytic vegetation
- Dominance test is >50%
- Prevalence index is ≤3.0*
- Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? N

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: B

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-3	10YR 3/1	100					SiCL	
6-14	10YR 4/4	30					SiCL	
	10YR 3/1	30					SiCL	
	10YR 3/1	40					SyL	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (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)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? N

Remarks:

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): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: MTA-MTA-11 (Original) | City/County: Minnetonka/Hennepin | Sampling Date: 8/7/2013

Applicant/Owner: SWLRT | State: MN | Sampling Point: C

Investigator(s): Mohamed Elabbady, Marc Cottingham | Section, Township, Range: 25-117-22

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

Slope (%): 0-3 | Lat: | Long: | Datum:

Soil Map Unit Name: L132A-Hamel-Glencoe complex | NWI Classification: PEM/FO1/SS1C

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	Y
Hydric soil present?	Y
Indicators of wetland hydrology present?	Y

Is the sampled area within a wetland? Y

If yes, optional wetland site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

All wetland criteria were met. Area is a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species	Indicator Staus
1 *Acer negundo*	20	Y	FAC
2			
3			
4			
5			
	20	=Total Cover	

Sapling/Shrub stratum (Plot size: 15ft)			
1 *Rhamnus cathartica*	15	Y	FAC
2			
3			
4			
5			
	15	=Total Cover	

Herb stratum (Plot size: 5ft)			
1 *Phalaris arundinacea*	40	Y	FACW
2			
3			
4			
5			
6			
7			
8			
9			
10			
	40	=Total Cover	

Woody vine stratum (Plot size: 30ft)			
1			
2			
	0	=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: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	40	x 2 =	80
FAC species	35	x 3 =	105
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	75 (A)		185 (B)

Prevalence Index = B/A = 2.47

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL **Sampling Point:** C

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-8	10YR 2/1	100					Fibric Peat	
8-18	10YR 2/1	98	10YR 4/6	2	C	M	SiCL	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- X 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)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ 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):	
Water table present?	Yes		No	X	Depth (inches):	
Saturation present? (includes capillary fringe)	Yes	X	No		Depth (inches):	Surface

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: MTA-MTA-11 (Original) | City/County: Minnetonka/Hennepin | Sampling Date: 8/7/2013

Applicant/Owner: SWLRT | State: MN | Sampling Point: D

Investigator(s): Mohamed Elabbady, Marc Cottingham | Section, Township, Range: 25-117-22

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

Slope (%): 0-3 | Lat: | Long: | Datum:

Soil Map Unit Name: L132A-Hamel-Glencoe complex | NWI Classification:

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y
Hydric soil present?	N
Indicators of wetland hydrology present?	N

Is the sampled area within a wetland? N

f yes, optional wetland site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

Hydric Soil and Hydrology criteria were not met. Area is not a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species	Indicator Staus
1 *Fraxinus pennsylvanica*	10	Y	FACW
2 *Tilia americana*	10	Y	FACU
3			
4			
5			
	20	=Total Cover	

Sapling/Shrub stratum (Plot size: 15ft)			
1 *Rhamnus cathartica*	80	Y	FAC
2			
3			
4			
5			
	80	=Total Cover	

Herb stratum (Plot size: 5ft)			
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	0	=Total Cover	

Woody vine stratum (Plot size: 30ft)			
1			
2			
	0	=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: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 66.67% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	80	x 3 =	240
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column totals	100 (A)		300 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL **Sampling Point:** D

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-25	10YR 2/1	100					SiCL	
25-30	10YR 4/1	100					SiCL	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (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)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric soil present? N

Remarks:

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): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: MTA-MTA-11 (Original) | City/County: Minnetonka/Hennpein | Sampling Date: 8/7/2013

Applicant/Owner: SWLRT | State: MN | Sampling Point: E

Investigator(s): Mohamed Elabbady, Marc Cottingham | Section, Township, Range: 25-117-22

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

Slope (%): 0-3 | Lat: | Long: | Datum:

Soil Map Unit Name: L132A-Hamel-Glencoe complex | NWI Classification: PEM/FO1/SS1C

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y		
Hydric soil present?	Y	**Is the sampled area within a wetland?**	Y
Indicators of wetland hydrology present?	Y	f yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

All wetland criteria were met. Area is a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species	Indicator Staus
1 *Salix nigra*	40	Y	OBL
2			
3			
4			
5			
	40	=Total Cover	

Sapling/Shrub stratum (Plot size: 15ft)			
1 *Rhamnus cathartica*	15	Y	FAC
2			
3			
4			
5			
	15	=Total Cover	

Herb stratum (Plot size: 5ft)			
1 *Phalaris arundinacea*	50	Y	FACW
2 *Schoenoplectus fluviatilis*	5	N	OBL
3			
4			
5			
6			
7			
8			
9			
10			
	55	=Total Cover	

Woody vine stratum (Plot size: 30ft)			
1			
2			
	0	=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: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	45	x 1 =	45
FACW species	50	x 2 =	100
FAC species	15	x 3 =	45
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	110 (A)		190 (B)

Prevalence Index = B/A = 1.73

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: E

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-12	10YR 2/1	90	10YR 4/6	10	C	M	SiCL	
12-18	10YR 4/1	85	10YR 4/6	15	C	M	SiCL	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (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)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- X Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Y

Remarks:

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): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: MTA-MTA-11 (Original) | City/County: Minnetonka/Hennepin | Sampling Date: 8/7/2013

Applicant/Owner: SWLRT | State: MN | Sampling Point: F

Investigator(s): Marc Cottingham, Mohamed Elabbady | Section, Township, Range: 25-117-22

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

Slope (%): 0-3 | Lat: | Long: | Datum:

Soil Map Unit Name: L132A-Hamel-Glencoe complex | NWI Classification:

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y
Hydric soil present?	N
Indicators of wetland hydrology present?	N

Is the sampled area within a wetland? N

f yes, optional wetland site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

Hydric Soil and Hydrology criteria were not met. Area is not a wetland.

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Staus
Tree Stratum (Plot size: 30ft)			
1 *Acer negundo*	50	Y	FAC
2			
3			
4			
5			
	50	=Total Cover	
Sapling/Shrub stratum (Plot size: 15ft)			
1 *Rhamnus cathartica*	30	Y	FAC
2			
3			
4			
5			
	30	=Total Cover	
Herb stratum (Plot size: 5ft)			
1 *Arctium minus*	20	Y	FACU
2 *Alliaria petiolata*	10	Y	FAC
3			
4			
5			
6			
7			
8			
9			
10			
	30	=Total Cover	
Woody vine stratum (Plot size: 30ft)			
1 *Vitis riparia*	15	Y	FACW
2			
	15	=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: 80.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:			
OBL species	0	x 1 =	0
FACW species	15	x 2 =	30
FAC species	90	x 3 =	270
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column totals	125 (A)		380 (B)

Prevalence Index = B/A = 3.04

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- ____ Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: F

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-10	10YR 3/1	100					SiCL	
10-18	10YR 4/3	95	10YR 4/4	5	C	M	SiCL	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (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)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? N

Remarks:

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): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: MTA-MTA-11 (Original) | City/County: Minnetonka/Hennepin | Sampling Date: 9/4/2013

Applicant/Owner: SWLRT | State: MN | Sampling Point: G

Investigator(s): Marc Cottingham | Section, Township, Range: 25-117-22

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

Slope (%): 0-3 | Lat: | Long: | Datum:

Soil Map Unit Name: U1A-Urban Land - Udorthents | NWI Classification: PEM/FO1/SS1C

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y
Hydric soil present?	Y
Indicators of wetland hydrology present?	Y
Is the sampled area within a wetland?	Y
f yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

All three criteria were met. Area is a wetland

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species	Indicator Staus
1 *Salix nigra*	10	Y	OBL
2			
3			
4			
5			
	10	=Total Cover	

Sapling/Shrub stratum (Plot size: 15ft)			
1			
2			
3			
4			
5			
	0	=Total Cover	

Herb stratum (Plot size: 5ft)			
1 *Phalaris arundinacea*	90	Y	FACW
2			
3			
4			
5			
6			
7			
8			
9			
10			
	90	=Total Cover	

Woody vine stratum (Plot size: 30ft)			
1			
2			
	0	=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: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	10	x 1 =	10
FACW species	90	x 2 =	180
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	100 (A)		190 (B)

Prevalence Index = B/A = 1.90

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL **Sampling Point:** G

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-8	10YR 3/1	100					SiL	
8-18	10YR 4/2	95	10YR 4/6	5	C	M	LyS	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (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)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric soil present? Y

Remarks:

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): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: MTA-MTA-11 (Original) | City/County: Minnetonka/Hennepin | Sampling Date: 9/4/2013

Applicant/Owner: SWLRT | State: MN | Sampling Point: H

Investigator(s): Marc Cottingham | Section, Township, Range: 25-117-22

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

Slope (%): 0-2 | Lat: | Long: | Datum:

Soil Map Unit Name: U1A-Urban Land - Udorthents | NWI Classification:

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y
Hydric soil present?	N
Indicators of wetland hydrology present?	N

Is the sampled area within a wetland? N

f yes, optional wetland site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

Hydric soil and wetland hydrology criteria were not met. Area is not a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species	Indicator Staus
1 *Salix nigra*	25	Y	OBL
2			
3			
4			
5			
	25	=Total Cover	

Sapling/Shrub stratum (Plot size: 15ft)			
1 *Rhamnus cathartica*	40	Y	FAC
2			
3			
4			
5			
	40	=Total Cover	

Herb stratum (Plot size: 5ft)			
1 *Alliaria petiolata*	30	Y	FAC
2 *Ageratina altissima*	10	Y	FACU
3			
4			
5			
6			
7			
8			
9			
10			
	40	=Total Cover	

Woody vine stratum (Plot size: 30ft)			
1			
2			
	0	=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: 4 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 75.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	25	x 1 =	25
FACW species	0	x 2 =	0
FAC species	70	x 3 =	210
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column totals	105 (A)		275 (B)

Prevalence Index = B/A = 2.62

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: H

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-10	10YR 3/3	100					Loam	
10-18	10YR 4/3	100					Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (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)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? N

Remarks:

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): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: MTA-MTA-11 (Original) | City/County: Minnetonka | Sampling Date: 9/4/2013

Applicant/Owner: SWLRT | State: MN | Sampling Point: I

Investigator(s): Marc Cottingham | Section, Township, Range: 25-117-22

Landform (hillslope, terrace, etc.): Excavated Pond | Local relief (concave, convex, none): Concave

Slope (%): 0-2 | Lat: | Long: | Datum:

Soil Map Unit Name: U1A-Urban Land - Udorthents | NWI Classification:

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	N
Hydric soil present?	N
Indicators of wetland hydrology present?	Y

Is the sampled area within a wetland? N

If yes, optional wetland site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

Hydrophytic vegetation and hydric soil criteria not met. Area is not a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
	0	=Total Cover	

Sapling/Shrub stratum (Plot size: 15ft)			
1			
2			
3			
4			
5			
	0	=Total Cover	

Herb stratum (Plot size: 5ft)			
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	0	=Total Cover	

Woody vine stratum (Plot size: 30ft)			
1			
2			
	0	=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: 0 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	0	(A)	0	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- ____ Dominance test is >50%
- ____ Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? N

Remarks: (Include photo numbers here or on a separate sheet)

Un-vegetated excavated sedimentation pond.

SOIL **Sampling Point:** I

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-5	10YR 3/1	100					SiCL	
5-13	10YR 2/1	100					SiCL	
13-24	10YR 2/1	70					SiCL	Mixed matrix
	10YR 4/2	30						

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (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)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric soil present? N

Remarks:

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)

- X 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)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Area is an excavated stormwater basin.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: MTA-MTA-11 (Extended) | City/County: Minnetonka/Hennepin | Sampling Date: 10/10/2014
Applicant/Owner: SWLRT | State: MN | Sampling Point: J
Investigator(s): Lucy Dahl, Marc Cottingham | Section, Township, Range: 25-117-22
Landform (hillslope, terrace, etc.): Depression | Local relief (concave, convex, none): Concave
Slope (%): 0-3 | Lat: | Long: | Datum:
Soil Map Unit Name: Hamel L36A | NWI Classification: PFO1A
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances"
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? present? No

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y		
Hydric soil present?	Y	**Is the sampled area within a wetland?**	Y
Indicators of wetland hydrology present?	Y	f yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

Above average precipitation. Meets all wetland criteria. Area is a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
	0	=Total Cover	
Sapling/Shrub stratum (Plot size: 15ft)			
1 *Rhamnus cathartica*	25	Y	FAC
2			
3			
4			
5			
	25	=Total Cover	
Herb stratum (Plot size: 5ft)			
1 *Phalaris arundinacea*	50	Y	FACW
2 *Pilea pumila*	10	N	FACW
3 *Typha angustifolia*	10	N	OBL
4			
5			
6			
7			
8			
9			
10			
	70	=Total Cover	
Woody vine stratum (Plot size: 30ft)			
1			
2			
	0	=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: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	10	x 1 =	10	
FACW species	60	x 2 =	120	
FAC species	25	x 3 =	75	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	95	(A)	205	(B)

Prevalence Index = B/A = 2.16

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: J

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-4	10YR 2/1	100					Fibric Peat	
4-20	10YR 4/1	90	10YR 4/6	10	C	PL	SiCL	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (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)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Y

Remarks:

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)
- X 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	___	Depth (inches): ___
Water table present?	Yes	___	No	___	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	___	Depth (inches): ___

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: MTA-MTA-11 (Extended) | City/County: Minnetonka/Hennepin | Sampling Date: 10/10/2014
Applicant/Owner: SWLRT | State: MN | Sampling Point: K
Investigator(s): Lucy Dahl, Marc Cottingham | Section, Township, Range: 25-117-22
Landform (hillslope, terrace, etc.): Gentle Slope | Local relief (concave, convex, none): Convex
Slope (%): 0-3 | Lat: | Long: | Datum:
Soil Map Unit Name: Hamel | NWI Classification: PFO1A
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances"
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? present? No

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y		
Hydric soil present?	N	**Is the sampled area within a wetland?**	N
Indicators of wetland hydrology present?	N	f yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

Above average precipitation. Wetland soil and hydrology indicators not met. Area is not a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species	Indicator Staus
1 *Ulmus americana*	15	Y	FACW
2			
3			
4			
5			
	15	=Total Cover	

Sapling/Shrub stratum (Plot size: 15ft)			
1 *Rhamnus cathartica*	30	Y	FAC
2 *Lonicera tatarica*	10	Y	FACU
3			
4			
5			
	40	=Total Cover	

Herb stratum (Plot size: 5ft)			
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	0	=Total Cover	

Woody vine stratum (Plot size: 30ft)			
1			
2			
	0	=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: 3 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 66.67% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	15	x 2 =	30
FAC species	30	x 3 =	90
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column totals	55 (A)		160 (B)

Prevalence Index = B/A = 2.91

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: K

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-6	10YR 3/1	100					SiL	
6-20	10YR 4/3	98	10YR 4/6	2	C	PL	Fine Sandy Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (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)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? N

Remarks:

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		Depth (inches):
Water table present?	Yes		No		Depth (inches):
Saturation present? (includes capillary fringe)	Yes		No		Depth (inches):

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: MTA-MTA-11 (Extended) | City/County: Minnetonka/Hennepin | Sampling Date: 10/10/2014
Applicant/Owner: SWLRT | State: MN | Sampling Point: L
Investigator(s): Lucy Dahl, Marc Cottingham | Section, Township, Range: 25-117-22
Landform (hillslope, terrace, etc.): Depression | Local relief (concave, convex, none): Concave
Slope (%): 0-3 | Lat: | Long: | Datum:
Soil Map Unit Name: Hamel L132A | NWI Classification: PFO1A
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances"
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? present? No

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y		
Hydric soil present?	Y	**Is the sampled area within a wetland?**	Y
Indicators of wetland hydrology present?	Y	f yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

Above average precipitation. Meets all wetland criteria. Area is a wetland.

VEGETATION -- Use scientific names of plants.

	Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species	Indicator Staus
1	*Ulmus americana*	10	Y	FACW
2				
3				
4				
5				
		10	=Total Cover	
	Sapling/Shrub stratum (Plot size: 15ft)			
1	*Salix interior*	10	Y	FACW
2				
3				
4				
5				
		10	=Total Cover	
	Herb stratum (Plot size: 5ft)			
1	*Phalaris arundinacea*	50	Y	FACW
2	*Pilea pumila*	15	N	FACW
3	*Carex lacustris*	10	N	OBL
4	*Solidago gigantea*	5	N	FACW
5				
6				
7				
8				
9				
10				
		80	=Total Cover	
	Woody vine stratum (Plot size: 30ft)			
1				
2				
		0	=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: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	10	x 1 =	10
FACW species	90	x 2 =	180
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	100 (A)		190 (B)

Prevalence Index = B/A = 1.90

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: L

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-5	10YR 2/1	100					SiCL	
5-20	10YR 4/1	95	10YR 4/6	5	C	PL	SiCL	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (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)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Y

Remarks:

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)
- X 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	___	Depth (inches): ___
Water table present?	Yes	___	No	___	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	___	Depth (inches): ___

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: MTA-MTA-11 (Extended) | City/County: Minnetonka/Hennepin | Sampling Date: 10/10/2014
Applicant/Owner: SWLRT | State: MN | Sampling Point: M
Investigator(s): Lucy Dahl, Marc Cottingham | Section, Township, Range: 25-117-22
Landform (hillslope, terrace, etc.): Gentle Slope | Local relief (concave, convex, none): Convex
Slope (%): 0-3 | Lat: | Long: | Datum:
Soil Map Unit Name: Hamel L132A | NWI Classification: PFO1A
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances"
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? present? No

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y
Hydric soil present?	Y
Indicators of wetland hydrology present?	N

Is the sampled area within a wetland? N
f yes, optional wetland site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

Above average precipitation. Wetland hydrology criteria not met. Area is not a wetland.

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Staus
Tree Stratum (Plot size: 30ft)			
1 *Populus deltoides*	15	Y	FAC
2			
3			
4			
5			
	15	=Total Cover	
Sapling/Shrub stratum (Plot size: 15ft)			
1 *Rhamnus cathartica*	15	Y	FAC
2			
3			
4			
5			
	15	=Total Cover	
Herb stratum (Plot size: 5ft)			
1 *Solidago canadensis*	10	Y	FACU
2 *Solidago gigantea*	10	Y	FACW
3 *Arctium minus*	10	Y	FACU
4 *Cirsium discolor*	5	N	FACU
5 *Phalaris arundinacea*	5	N	FACW
6			
7			
8			
9			
10			
	40	=Total Cover	
Woody vine stratum (Plot size: 30ft)			
1			
2			
	0	=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: 5 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 60.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	15	x 2 =	30
FAC species	30	x 3 =	90
FACU species	25	x 4 =	100
UPL species	0	x 5 =	0
Column totals	70 (A)		220 (B)

Prevalence Index = B/A = 3.14

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- ____ Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: M

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-6	10YR 2/1	100					SiCL	
6-20	10YR 4/2	95	10YR 4/6	5	C	PL	Clay	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (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)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Y

Remarks:

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		Depth (inches):
Water table present?	Yes		No		Depth (inches):
Saturation present? (includes capillary fringe)	Yes		No		Depth (inches):

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: MTA-MTA-12_Original | City/County: Minnetonka/Hennepin | Sampling Date: 7-23-13

Applicant/Owner: SW Light Rail Transit | State: MN | Sampling Point: B

Investigator(s): Mohamed Elabbady, Todd Udvig | Section, Township, Range: Section 25 Township 117N Range 22

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

Slope (%): 0-3 | Lat: | Long: | Datum:

Soil Map Unit Name: Urban Urdents | NWI Classification: PUBGx

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y
Hydric soil present?	N
Indicators of wetland hydrology present?	N

Is the sampled area within a wetland? N

If yes, optional wetland site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

Hydric Soil and Hydrology criteria were not met. Area is not a wetland.

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Staus
Tree Stratum (Plot size:)			
1 *Acer negundo*	30	Y	FAC
2 *Populus deltoides*	30	Y	FAC
3			
4			
5			
	60	=Total Cover	
Sapling/Shrub stratum (Plot size:)			
1 *Rhamnus cathartica*	40	Y	FAC
2			
3			
4			
5			
	40	=Total Cover	
Herb stratum (Plot size:)			
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	0	=Total Cover	
Woody vine stratum (Plot size:)			
1 *Parthenocissus quinquefolia*	30	Y	FACU
2			
	30	=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: 4 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 75.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	100	x 3 =	300
FACU species	30	x 4 =	120
UPL species	0	x 5 =	0
Column totals	130 (A)		420 (B)

Prevalence Index = B/A = 3.23

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- ____ Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: B

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-4	10YR 2/2	100					SL	
4-14	10YR 3/2	100					SL	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (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)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? N

Remarks:

Soil was dry, no saturation to 12".

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): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No Hydrology.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: MTA-MTA-12_Extended | City/County: Minnetonka/Hennepin | Sampling Date: 8-22-14

Applicant/Owner: SW Light Rail Transit | State: MN | Sampling Point: C

Investigator(s): Marc Cottingham, Lucy Dahl | Section, Township, Range: Section 25 Township 117N Range 22

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

Slope (%): 0-3 | Lat: | Long: | Datum:

Soil Map Unit Name: Urban Urdents | NWI Classification: PUBGx

Are climatic/hydrologic conditions of the site typical for this time of the year? N (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	Y
Hydric soil present?	Y
Indicators of wetland hydrology present?	Y
Is the sampled area within a wetland?	Y
f yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

Above average precipitation. All wetland criteria met. Area is a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species	Indicator Staus
1 *Acer negundo*	30	Y	FAC
2			
3			
4			
5			
	30	=Total Cover	

Sapling/Shrub stratum (Plot size:)			
1			
2			
3			
4			
5			
	0	=Total Cover	

Herb stratum (Plot size:)			
1 *Alliaria petiolata*	15	Y	FAC
2 *Impatiens capensis*	10	Y	FACW
3			
4			
5			
6			
7			
8			
9			
10			
	25	=Total Cover	

Woody vine stratum (Plot size:)			
1 *Parthenocissus quinquefolia*	20	Y	FACU
2			
	20	=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: 4 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 75.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	45	x 3 =	135
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column totals	75 (A)		235 (B)

Prevalence Index = B/A = 3.13

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- ____ Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: C

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-8	10YR 3/1	98	10YR 4/6	2	C	PL/M	Loam	
8-20	10YR 4/2	98	10YR 4/6	2	C	PL/M	Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (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)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Y

Remarks:

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): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: MTA-MTA-12_Extended | City/County: Minnetonka/Hennepin | Sampling Date: 08-22-2014

Applicant/Owner: SW Light Rail Transit | State: MN | Sampling Point: D

Investigator(s): Marc Cottingham, Lucy Dahl | Section, Township, Range: Section 25 Township 117N Range 22

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

Slope (%): 0-3 | Lat: | Long: | Datum:

Soil Map Unit Name: Urban Urdents | NWI Classification:

Are climatic/hydrologic conditions of the site typical for this time of the year? N (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y
Hydric soil present?	N
Indicators of wetland hydrology present?	N

Is the sampled area within a wetland? N

If yes, optional wetland site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

Above average precipitation. Hydric soil criteria was not met. Area is not a wetland based on best professional judgment.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species	Indicator Staus
1 *Acer negundo*	30	Y	FAC
2			
3			
4			
5			
	30	=Total Cover	

Sapling/Shrub stratum (Plot size:)			
1 *Rhamnus cathartica*	30	Y	FAC
2			
3			
4			
5			
	30	=Total Cover	

Herb stratum (Plot size:)			
1 *Alliaria petiolata*	15	Y	FAC
2			
3			
4			
5			
6			
7			
8			
9			
10			
	15	=Total Cover	

Woody vine stratum (Plot size:)			
1			
2			
	0	=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: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:			
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	75	x 3 =	225
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	75 (A)		225 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: D

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-8	10YR 3/2	100					Loam	
8-20	10YR 4/2	100					Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (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)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? N

Remarks:

Soil was dry, no saturation to 12".

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)
- X 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): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Shallow Roots

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: MTA-MTA-12_Original | City/County: Minnetonka/Hennepin | Sampling Date: 7-23-13

Applicant/Owner: SW Light Rail Transit | State: MN | Sampling Point: A

Investigator(s): Mohamed Elabbady, Todd Udvig | Section, Township, Range: Section 25 Township 117N Range 22

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

Slope (%): 0-3 | Lat: | Long: | Datum:

Soil Map Unit Name: Urban Urdents | NWI Classification: PUBGx

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y
Hydric soil present?	Y
Indicators of wetland hydrology present?	Y

Is the sampled area within a wetland? Y

If yes, optional wetland site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

All three criteria were met. Area is a wetland.

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Staus
Tree Stratum (Plot size: ____)			
1 *Acer negundo*	30	Y	FAC
2 *Populus deltoides*	30	Y	FAC
3 *Salix nigra*	20	Y	OBL
4			
5			
	80	=Total Cover	
Sapling/Shrub stratum (Plot size: ____)			
1 *Rhamnus cathartica*	60	Y	FAC
2 *Cornus racemosa*	20	Y	FAC
3			
4			
5			
	80	=Total Cover	
Herb stratum (Plot size: ____)			
1 *Phalaris arundinacea*	40	Y	FACW
2 *Impatiens capensis*	20	Y	FACW
3			
4			
5			
6			
7			
8			
9			
10			
	60	=Total Cover	
Woody vine stratum (Plot size: ____)			
1 *Parthenocissus quinquefolia*	20	Y	FACU
2			
	20	=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: 87.50% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	20	x 1 =	20
FACW species	60	x 2 =	120
FAC species	140	x 3 =	420
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column totals	240 (A)		640 (B)

Prevalence Index = B/A = 2.67

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: A

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-12	10YR 2/1	100					Peat	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- X Histisol (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)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- X Water Marks (B1)
- ___ Sediment Deposits (B2)
- X Drift Deposits (B3)
- X Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- X 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)
- X 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	X	No	Depth (inches):	3
Water table present?	Yes		No	Depth (inches):	
Saturation present? (includes capillary fringe)	Yes		No	Depth (inches):	

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: MTA-MTA-13 | City/County: Minnetonka/Hennepin | Sampling Date: 10/10/2014

Applicant/Owner: SWLRT | State: MN | Sampling Point: A

Investigator(s): Lucy Dahl, Marc Cottingham | Section, Township, Range: 25-117-22

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

Slope (%): 0-10 | Lat: | Long: | Datum:

Soil Map Unit Name: Shorewood L26B | NWI Classification: PUBG

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? No

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y
Hydric soil present?	Y
Indicators of wetland hydrology present?	Y

Is the sampled area within a wetland? Y

If yes, optional wetland site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

Above average precipitation. Meets all wetland criteria. Area is a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
	0	=Total Cover	

Sapling/Shrub stratum (Plot size: 15ft)			
1			
2			
3			
4			
5			
	0	=Total Cover	

Herb stratum (Plot size: 5ft)			
1 *Phalaris arundinacea*	30	Y	FACW
2 *Solidago gigantea*	20	Y	FACW
3 *Poa pratensis*	10	N	FAC
4 *Lycopus americanus*	5	N	OBL
5			
6			
7			
8			
9			
10			
	65	=Total Cover	

Woody vine stratum (Plot size: 30ft)			
1			
2			
	0	=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: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	5	x 1 =	5
FACW species	50	x 2 =	100
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	65 (A)		135 (B)

Prevalence Index = B/A = 2.08

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: A

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-8	10YR 3/1	95	10YR 4/6	5	C	PL	SiCL	
8-20	10YR 6/1	90	10YR 4/6	10	C	PL	SiC	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (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)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- X 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	X	No	Depth (inches):	3
Water table present?	Yes		No	Depth (inches):	
Saturation present? (includes capillary fringe)	Yes		No	Depth (inches):	

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: MTA-MTA-13 | City/County: Minnetonka/Hennepin | Sampling Date: 10/10/2014

Applicant/Owner: SWLRT | State: MN | Sampling Point: B

Investigator(s): Lucy Dahl, Marc Cottingham | Section, Township, Range: 25-117-22

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

Slope (%): 0-10 | Lat: | Long: | Datum:

Soil Map Unit Name: Shorewood L26B | NWI Classification:

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil X, or hydrology ____ significantly disturbed? Are "normal circumstances" present? No

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y		
Hydric soil present?	Y	**Is the sampled area within a wetland?**	N
Indicators of wetland hydrology present?	N	f yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

Above average precipitation. Soil restricted at 10 inches. Wetland hydrology criteria not met. Area is not a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
	0	=Total Cover	
Sapling/Shrub stratum (Plot size: 15ft)			
1			
2			
3			
4			
5			
	0	=Total Cover	
Herb stratum (Plot size: 5ft)			
1 *Poa pratensis*	70	Y	FAC
2 *Phalaris arundinacea*	25	Y	FACW
3 *Solidago canadensis*	25	Y	FACU
4 *Cirsium discolor*	5	N	FACU
5			
6			
7			
8			
9			
10			
	125	=Total Cover	
Woody vine stratum (Plot size: 30ft)			
1			
2			
	0	=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: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 66.67% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	25	x 2 =	50
FAC species	70	x 3 =	210
FACU species	30	x 4 =	120
UPL species	0	x 5 =	0
Column totals	125 (A)		380 (B)

Prevalence Index = B/A = 3.04

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- ____ Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: B

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-4	10YR 4/1	100					SiL	
4-10	10YR 4/2	98	10YR 4/6	2	C	PL	SiL	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (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)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: Rocky

Depth (inches): 10

Hydric soil present? Y

Remarks:

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		Depth (inches):
Water table present?	Yes		No		Depth (inches):
Saturation present? (includes capillary fringe)	Yes		No		Depth (inches):

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: MPL-MPL-01 | City/County: Eden Prairie | Sampling Date: 9-4-2014

Applicant/Owner: SWLRT | State: MN | Sampling Point: A

Investigator(s): Marc Cottingham, Lucy Dahl | Section, Township, Range: S28-T29-R24

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

Slope (%): 0-3 | Lat: | Long: | Datum:

Soil Map Unit Name: Urban Land | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? N (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y
Hydric soil present?	Y
Indicators of wetland hydrology present?	Y

Is the sampled area within a wetland? Y

If yes, optional wetland site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

Above average precipitation. All wetland criteria were met. Area is a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
	0	=Total Cover	

Sapling/Shrub stratum (Plot size:)			
1			
2			
3			
4			
5			
	0	=Total Cover	

Herb stratum (Plot size:)			
1 *Lemna minor*	70	Y	OBL
2 *Lythrum salicaria*	5	N	OBL
3			
4			
5			
6			
7			
8			
9			
10			
	75	=Total Cover	

Woody vine stratum (Plot size:)			
1			
2			
	0	=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: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	75	x 1 =	75
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	75 (A)		75 (B)

Prevalence Index = B/A = 1.00

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: A

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-10	10YR 3/1	100					SiL	
10-20	10YR 4/1	98	10YR 4/6	2	C	M	SiL	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (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)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- X 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	X	No		Depth (inches):	4
Water table present?	Yes		No	X	Depth (inches):	
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches):	

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: MPL-MPL-01 | City/County: Eden Prairie | Sampling Date: 9-4-2014

Applicant/Owner: SWLRT | State: MN | Sampling Point: B

Investigator(s): Marc Cottingham, Lucy Dahl | Section, Township, Range: S28-T29-R24

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

Slope (%): 20 | Lat: | Long: | Datum:

Soil Map Unit Name: Urban Land | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? N (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y
Hydric soil present?	N
Indicators of wetland hydrology present?	N

Is the sampled area within a wetland? N

If yes, optional wetland site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

Above average precipitation. Area's Soil and Hydrology do not meet wetland criteria. Area is not a wetland.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species	Indicator Staus
1 *Acer negundo*	25	Y	FAC
2			
3			
4			
5			
	25	=Total Cover	

Sapling/Shrub stratum (Plot size:)			
1 *Rhamnus cathartica*	30	Y	FAC
2			
3			
4			
5			
	30	=Total Cover	

Herb stratum (Plot size:)			
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	0	=Total Cover	

Woody vine stratum (Plot size:)			
1			
2			
	0	=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: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:				
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	55	x 3 =	165	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	55	(A)	165	(B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: B

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-10	10YR 3/1	100					SiL	
10-20	10YR 4/2	100					SiL	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (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)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? N

Remarks:

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): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

APPENDIX E

Field Delineated Wetland Photographs

DOT-EP-09 (Extended)

DOT-EP-12

DOT-EP-13

DOT-EP-14

DOT-EP-15

DOT-EP-16 (Waterway)

DOT-EP-17

DOT-EP-18

DOT-EP-19

DOT-EP-20

DOT-EP-21

DOT-EP-22

EP-EP-07 (Extended)

EP-EP-22 (Formerly DIG-EP-EP-01)

EP-EP-23

EP-EP-24, East (Formerly DIG-EP-EP-03)

EP-EP-24, West (Formerly DIG-EP-EP-02)

MTA-MTA-11 (Extended) - North

MTA-MTA-11 (Extended) - South

MTA-MTA-12 (Extended)

MTA-MTA-13

MPL-MPL-01

APPENDIX F

MnRAM: Minnesota Routine Assessment Methodology

Management Classification Report for 13485 DOT-EP-17 **13485 SW Light Rail Transit**

ID: 13

HENNEPIN County
Mississippi (Metro) Watershed, #20
Corps Bank Service Area 7

Based on the MnRAM data input from field and office review and using the classification settings as shown below, this wetland is classified as Manage 2

Functional rank of this wetland based on MnRAM data	Functional Category	Self-defined classification value settings for this management level
Low	Vegetative Diversity/Integrity	Moderate
Low	Habitat Structure (wildlife)	Moderate
Low	Amphibian Habitat	Low
Moderate	Fish Habitat	Moderate
Not Applicable	Shoreline Protection	Low
Low	Aesthetic/Cultural/Rec/Ed and Habitat	Moderate / Low
Moderate	Stormwater/Urban Sensitivity and Vegetative Diversity	- / -
Low	Wetland Water Quality and Vegetative Diversity	- / -
Low	Characteristic Hydrology and Vegetative Diversity	- / -
Moderate	Flood/Stormwater Attenuation*	-
Not Applicable	Commericial use*	-
Moderate	Downstream Water Quality*	-

The critical function that caused this wetland to rank as **Manage 2** was
Maintenance of Characteristic Amphibian Habitat

Details of the formula for this action are shown below:

Maintenance of Characteristic Amphibian Habitat (Q43) * [(Q44 + 2*Q23wildlife + Q14 +Q 41 + Q20 reversed)/6]

Question	*Value*	*Description*
14	0.1	Upland land use
20	0.5	Stormwater runoff
23	0.5	Buffer width
41	0.1	Wildlife barriers
43	0.5	Amphib breeding potential--fish presence
44	0.1	Amphib & reptile overwintering habitat

This report was printed on: Monday, September 29, 2014

* The classification value settings for these functions are not adjustable

Wetland Functional Assessment Summary

Wetland Name	Hydrogeomorphology	Maintenance of Hydrologic Regime	Flood/ Stormwater/ Attenuation	Downstream Water Quality	Maintenance of Wetland Water Quality	Shoreline Protection
13485 DOT-EP-17	Depressional/Flow-through (apparent inlet and outlet), Depressional/Flow-through (apparent inlet and outlet)	0.30	0.40	0.38	0.32	0.00
		Low	Moderate	Moderate	Low	Not Applicable

						Additional Information		
Wetland Name	Maintenance of Characteristic Wildlife Habitat Structure	Maintenance of Characteristic Fish Habitat	Maintenance of Characteristic Amphibian Habitat	Aesthetics/ Recreation/ Education/ Cultural	Commercial Uses	Ground-Water Interaction	Wetland Restoration Potential	Wetland Sensitivity to Stormwater and Urban Development	Additional Stormwater Treatment Needs
13485 DOT-EP-17	0.32	0.38	0.15	0.15	0.00	Combination Discharge, Recharge	0.00	0.10	0.32
	Low	Moderate	Low	Low	Not Applicable		Not Applicable	Moderate	Low

Wetland Community Summary

		Vegetative Diversity/Integrity								
		Community								
Wetland Name	Location	Cowardin Classification	Circular 39	Plant Community	Wetland Proportion	Individual Community Rating	Highest Wetland Rating	Average Wetland Rating	Weighted Average Wetland Rating	
13485 DOT-EP-17	27-116-22-15-001	PEMB	Type 2	Fresh (Wet) Meadow	40	0.1	0.10	0.10	0.10	
							Low	Low	Low	
		PUBG	Type 5	Shallow Marsh	60	0.1	0.10	0.10	0.10	
							Low	Low	Low	
					100		0.10	0.10	0.10	☐

☑ *Denotes incomplete calculation data.*

MnRAM: Site Response Record

For Wetland: 13485 DOT-EP-17

Location: 27-116-22-15-001

13485 SW Light Rail Transit

Plant Community: Fresh (Wet) Meadow

Cowardin Classification: PEMB — Circular 39: Type 2

Plant Community: Shallow Marsh

Cowardin Classification: PUBG — Circular 39: Type 5

4	*Listed, rare, special species?*	No
5	*Rare community or habitat?*	No
6	*Pre-European-settlement condition?*	No

Hydrogeomorphology / topography:

7		Depressional/FlowThru
8-1	*Maximum water depth*	36 inche
8-2	*% inundated*	60%
9	*Immediate drainage--local WS*	7 acres
10	*Esimated size/existing site:*	*(see #66)*
11-Upland Soil		Houghton and Muskego soils
11-Wetland Soil		Houghton and Muskego soils

12	*Outlet for flood control*	C
13	*Outlet for hydro regime*	C
14	*Dominant upland land use*	C
15	*Wetland soil condition*	B
16	*Vegetation (% cover)*	70%
17	*Emerg. veg flood resistance*	B
18	*Sediment delivery*	C
19	*Upland soils (soil group)*	B
20	*Stormwater runoff*	B
21	*Subwatershed wetland density*	B
22	*Channels/sheet flow*	C
23	*Adjacent buffer width*	100 feet

Adjacent area management

24-A	*Full*	100%
24-B	*Manicured*	0%
24-C	*Bare*	0%

Adjacent area diversity/structure

25-A	*Native*	0%
25-B	*Mixed*	100%
25-C	*Sparse*	0%

Adjacent area slope

26-A	*Gentle*	20%
26-B	*Moderate*	70%
26-C	*Steep*	10%

27	*Downstream sens./WQ protect.*	B
28	*Nutrient loading*	B
29	*Shoreline wetland?*	No

Shoreline Wetland

30	*Rooted veg., % cover*	0%
31	*Wetland in-water width*	0 feet
32	*Emerg. veg. erosion resistance*	
33	*Erosion potential of site*	
34	*Upslope veg./bank protection*	
35	*Rare wildlife?*	No
36	*Scare/Rare/S1/S2 community*	No
37	*Vegetative cover*	B
38	*Veg. community interspersion*	C
39	*Wetland detritus*	B
40	*Interspersion on landscape*	B
41	*Wildlife barriers*	C

Amphibian-breeding potential

42	*Hydroperiod adequacy*	Adequate
43	*Fish presence*	B
44	*Overwintering habitat*	C
45	*Wildlife species (list)*	
46	*Fish habitat quality*	C
47	*Fish species (list)*	
48	*Unique/rare opportunity*	No
49	*Wetland visibility*	B
50	*Proximity to population*	No
51	*Public ownership*	C
52	*Public access*	C
53	*Human influence on wetland*	C
54	*Human influence on viewshed*	C
55	*Spatial buffer*	B
56	*Recreational activity potential*	C

57	*Commercial crop--hydro impact*	NA

Groundwater-specific questions

58	*Wetland soils*	Recharge
59	*Subwatershed land use*	Recharge
60	*Wetland size/soil group*	Recharge
61	*Wetland hydroperiod*	Discharge
62	*Inlet/Outlet configuration*	Discharge
63	*Upland topo relief*	Discharge

Additional information

64	*Restoration potential*	No
65	*LO affected by restoration*	
66	*Existing size*	1
	Restorable size	0
	Potential new wetland	0
67	*Average width of pot. buffer*	0 feet
68	*Ease of potential restoration*	
69	*Hydrologic alterations*	0
70	*Potential wetland type*	0
71	*Stormwater sensitivity*	B
72	*Additional treatment needs*	B

Watershed Mississippi (Metro)

WS# 20 Service Area: 7

For functional ratings, please run the Summary tab report.

This report printed on: 9/29/2014

MnRAM Site Assessment Report

Monday, September 29, 2014

Wetland: 13485 DOT-EP-17 **Project: 13485 SW Light Rail Transit**

Wetland ID: 13, Township 116, Section 15, Range 22

HENNEPIN County, Mississippi (Metro) Watershed, Corps Bank Service Area #7

Site conditions were Normal. This wetland is estimated to cover 1 acres.

This report reflects conditions on the ground at the date of the assessment and, unless noted or implicit in the standard questions, does not reflect speculation on the future or past conditions.

This wetland is located in or near the city of Eden Prairie

General Features

Hydrogeomorphology

The maximum water depth at this site is 36 inches, with 60 percent inundated. With an immedidate drainage area of 7 acres, it is doubtful that this wetland is sustainable given its small catchment area.

As a Depressional/Flow-through wetland, this site has an apparent inlet and outlet. As such,
Placeholder for Depressional/Flow-through discussion

This wetland has been drained or altered 0% from its original size of 1 acres.

Soils

The soils in the immediate wetland area are primarily Houghton and Muskego soils. The adjacent upland, to about 500 feet, is Houghton and Muskego soils.

Vegetation and Upland Buffer

The extent of vegetation in this wetland is about 70 percent and the naturalized buffer width averages 100 feet. Vegetated buffers around wetlands provide multiple benefits including wildlife habitat, erosion protection, and a reduction in surface water runoff.

This buffer not only provides an excellent buffer for wetland water quality, it also serves as an important resources for wildlife habitat.

Special Features

There were no special features observed at the site at the time of this assessment

Vegetative Communities

The following plant communities were observed:

(See Appendix A for details on the Dominant Species per plant community)

Fresh Wet Meadow Type 2, PEMB. This community had a vegetative index of low and comprised 40 percent of the entire area.

Shallow Marsh Type 5, PUBG. This community had a vegetative index of low and comprised 60 percent of the entire area.

The highest rated community was the Fresh Wet Meadow community rated at 1. Averaging all the communities together, the Vegetative Diversity and Integrity of this wetland is Low. A more accurate look uses a weighted average; using this method, this site shows a Low Vegetative Diversity and Integrity.

The majority of vegetation at this site, such as it is, does not contribute to wetland function beyond water retention and flow resistance. However, because the weighted average can "hide" smaller communities, always check for even small patches of high-quality species.

Functional Ratings

Function	*Rating*	*Comment*
Vegetative Diversity	Low	If vegetation is present, the primary communities are compromised by extensive invasive and/or non-native species. Ongoing maintenance will be necessary to restore native ecologic communities, although the presence of invasives upstream will limit the success of restoration efforts.
Additional stormwater treatment needs	Low	Both sediment and nutrient removal are called for to prevent further degradation of this site.
Maintenance of Hydrologic Regime	Low	Extensive alteration of wetland hydrology has altered the original wetland, changing wetland type, vegetative communities, and severely impacting the natural hydrologic function. However, a constructed outlet may allow the the site to provide significant floodwater attenuation.
Flood/Stormwater/Attenuation	Moderate	The wetland provides some flood storage and/or flood wave attenuation. It may have either an altered or unrestricted outlet, disturbed wetland soils, thin or little emergent vegetation (with channels) or it may be situated high in a watershed with a low proportion of impervious surfaces, moderate runoff volumes, loamy upland soils, and one or more other wetlands present within the subwatershed.
Downstream Water Quality	Moderate	This wetland has some ability and opportunity to protect downstream resources. The ability of the wetland to remove sediment from stormwater is determined by emergent vegetation and overland flow characteristics. A high nutrient removal rating indicates dense vegetation and sheet flow to maximize nutrient uptake and residence time within the wetland. The opportunity for a wetland to protect a valuable water resource diminishes with distance from the wetland so wetlands with valuable waters within 0.5 miles downstream have the greatest opportunity to provide protection, as do those that receive more (and less-treated) runoff.
Maintenance of Wetland Water Quality	Low	Wetland water quality is poor. Additional resources are needed to protect any existing plant or animal communities that exist, using both sediment-removal and nutrient-reduction technologies.
Shoreline Protection	Not Applicable	The site does not fringe a deepwater habitat, lake, or is not within any type of watercourse.

Maintenance of Characteristic Wildlife Habitat Structure	Low	Isolated by development, the vegetation impacted and reduced, this site does not support an integral community of species.
Maintenance of Characteristic Fish Habitat	Moderate	Permanently flooded but isolated wetlands can support native populations of minnows and some isolated deep marshes have intermittent populations of sunfish and northern pike after flood events. Poor water quality, due to runoff and insufficient buffer and vegetation, can affect the sustainability of fish populations.
Maintenance of Characteristic Amphibian Habitat	Low	Predatory fish are always present and winter habitat unsuitable as site often freezes to the bottom. High inputs of untreated stormwater or unfiltered runoff contribute to poor water quality and reproductive conditions.
Aesthetics/Recreation /Education/Cultural	Low	Inaccessible, distant from population centers, little-used sites that are not culturally significant rank poorly even if their other functions rank high. Usually, however, even the most distant sites have a potential for recreational use and will drop to the lowest ranking only if they are negatively affected by human alteration.
Wetland restoration potential	Not Applicable	Because restoration would affect permanent structures or infrastructure (houses, roads, septic systems), this site is not suitable for restoration.
Wetland Sensitivity to Stormwater and Urban Development	Moderate	This wetland is moderately sensitive to stormwater; Floodplain forests, fresh wet meadows dominated by reed canary grass, shallow and deep marshes dominated by cattail, reed canary grass, giant reed or purple loosestrife, and shallow, open water communities with low to moderate vegetative diversity.

Appendix A: Dominant Species By Plant Community

	Wetland Type	Plant Community	Dominant Species	Percent Cover
PEMB	**Type 2**	**Fresh Wet Meadow**		
			Stinging nettle	>25-50%
			Reed canary grass	>25-50%
			Red-osier dogwood	>10-25%
PUBG	**Type 5**	**Shallow Marsh**		
			Narrow-leaved cattail	>10-25%
			Lesser duckweed	>10-25%

Management Classification Report for EP-EP-07 **SWLRT**

ID: 50

HENNEPIN County
Minnesota (Shakopee) Watershed, #33
Corps Bank Service Area 9

Based on the MnRAM data input from field and office review and using the classification settings as shown below, this wetland is classified as Manage 2

Functional rank of this wetland based on MnRAM data	Functional Category	Self-defined classification value settings for this management level
Low	Vegetative Diversity/Integrity	Moderate
Moderate	Habitat Structure (wildlife)	Moderate
Low	Amphibian Habitat	Low
Not Applicable	Fish Habitat	Moderate
Not Applicable	Shoreline Protection	Low
Low	Aesthetic/Cultural/Rec/Ed and Habitat	Moderate / Low
Moderate	Stormwater/Urban Sensitivity and Vegetative Diversity	- / -
Moderate	Wetland Water Quality and Vegetative Diversity	- / -
Moderate	Characteristic Hydrology and Vegetative Diversity	- / -
High	Flood/Stormwater Attenuation*	-
Not Applicable	Commericial use*	-
Moderate	Downstream Water Quality*	-

The critical function that caused this wetland to rank as **Manage 2** was
Maintenance of Characteristic Wildlife Habitat Structure

Details of the formula for this action are shown below:

Maintenance of Characteristic Wildlife Habitat Str **(Q3e*2+Q39+Q37+Q38+Q40+Q41+(Q23+Q24+Q25)/3+Q13+Q20)/10**

Question	*Value*	*Description*
13	1	Outlet: hydrologic regime
20	0.5	Stormwater runoff
23	0.5	Buffer width
24	1	Adjacent area Management
25	0.5	Adjacent area diversity
37	0.5	Vegetation cover interspersion
38	0.1	Community interspersion
39	0.1	Detritus

* The classification value settings for these functions are not adjustable

Management Classification Report for EP-EP-07 **SWLRT**

ID: 50

HENNEPIN County
Minnesota (Shakopee) Watershed, #33
Corps Bank Service Area 9

3e	0.1	<No Description Found>
40	0.5	Wetland interspersion/landscape
41	0.1	Wildlife barriers

This report was printed on: Monday, March 03, 2014

* The classification value settings for these functions are not adjustable

Wetland Functional Assessment Summary

Wetland Name	Hydrogeomorphology	Maintenance of Hydrologic Regime	Flood/ Stormwater/ Attenuation	Downstream Water Quality	Maintenance of Wetland Water Quality	Shoreline Protection
EP-EP-07	Depressional/Isolated (no discernable inlets or outlets)	0.65	0.75	0.54	0.36	0.00
		Moderate	High	Moderate	Moderate	Not Applicable

							Additional Information		
Wetland Name	Maintenance of Characteristic Wildlife Habitat Structure	Maintenance of Characteristic Fish Habitat	Maintenance of Characteristic Amphibian Habitat	Aesthetics/ Recreation/ Education/ Cultural	Commercial Uses	Ground-Water Interaction	Wetland Restoration Potential	Wetland Sensitivity to Stormwater and Urban Development	Additional Stormwater Treatment Needs
EP-EP-07	0.37	0.00	0.28	0.31	0.00	Recharge	0.00	0.10	0.36
	Moderate	Not Applicable	Low	Low	Not Applicable		Not Applicable	Moderate	Moderate

Wetland Community Summary

		Vegetative Diversity/Integrity								
		Community								
Wetland Name	Location	Cowardin Classification	Circular 39	Plant Community	Wetland Proportion	Individual Community Rating	Highest Wetland Rating	Average Wetland Rating	Weighted Average Wetland Rating	
EP-EP-07	27-116-22-12-001	PEMC	Type 3	Shallow Marsh	70	0.1	0.10	0.10	0.10	
							Low	Low	Low	
		PFO1C	Type 7	Hardwood Swamp	30	0.1	0.10	0.10	0.10	
							Low	Low	Low	
					100		0.10	0.10	0.10	☐

☑ *Denotes incomplete calculation data.*

MnRAM: Site Response Record

For Wetland: EP-EP-07

Location: 27-116-22-12-001

SWLRT

Plant Community: Shallow Marsh

Cowardin Classification: PEMC

Circular 39: Type 3

Plant Community: Hardwood Swamp

Cowardin Classification: PFO1C

Circular 39: Type 7

4	*Listed, rare, special species?*	No
5	*Rare community or habitat?*	No
6	*Pre-European-settlement condition?*	No

Hydrogeomorphology / topography:

7 Depressional/Isolated

8-1	*Maximum water depth*	6 inches
8-2	*% inundated*	15%
9	*Immediate drainage--local WS*	10 acres
10	*Esimated size/existing site:*	*(see #66)*

11-Upland Soil	Lester Malardi complex
11-Wetland Soil	Water

12	*Outlet for flood control*	A
13	*Outlet for hydro regime*	A
14	*Dominant upland land use*	C
15	*Wetland soil condition*	A
16	*Vegetation (% cover)*	50%
17	*Emerg. veg flood resistance*	NA
18	*Sediment delivery*	B
19	*Upland soils (soil group)*	B
20	*Stormwater runoff*	B
21	*Subwatershed wetland density*	A
22	*Channels/sheet flow*	B
23	*Adjacent buffer width*	100 feet

Adjacent area management

24-A	*Full*	100%
24-B	*Manicured*	0%
24-C	*Bare*	0%

Adjacent area diversity/structure

25-A	*Native*	0%
25-B	*Mixed*	100%
25-C	*Sparse*	0%

Adjacent area slope

26-A	*Gentle*	0%
26-B	*Moderate*	0%
26-C	*Steep*	100%

27	*Downstream sens./WQ protect.*	B
28	*Nutrient loading*	B
29	*Shoreline wetland?*	No

Shoreline Wetland

30	*Rooted veg., % cover*	0%
31	*Wetland in-water width*	0 feet
32	*Emerg. veg. erosion resistance*	
33	*Erosion potential of site*	
34	*Upslope veg./bank protection*	
35	*Rare wildlife?*	No
36	*Scare/Rare/S1/S2 community*	No
37	*Vegetative cover*	B
38	*Veg. community interspersion*	C
39	*Wetland detritus*	C
40	*Interspersion on landscape*	B
41	*Wildlife barriers*	C

Amphibian-breeding potential

42	*Hydroperiod adequacy*	Adequate
43	*Fish presence*	A
44	*Overwintering habitat*	
45	*Wildlife species (list)*	
46	*Fish habitat quality*	NA
47	*Fish species (list)*	
48	*Unique/rare opportunity*	No
49	*Wetland visibility*	C
50	*Proximity to population*	Yes
51	*Public ownership*	C
52	*Public access*	C
53	*Human influence on wetland*	B
54	*Human influence on viewshed*	C
55	*Spatial buffer*	B
56	*Recreational activity potential*	C

57	*Commercial crop--hydro impact*	NA

Groundwater-specific questions

58	*Wetland soils*	Recharge
59	*Subwatershed land use*	Recharge
60	*Wetland size/soil group*	Recharge
61	*Wetland hydroperiod*	Recharge
62	*Inlet/Outlet configuration*	Recharge
63	*Upland topo relief*	Discharge

Additional information

64	*Restoration potential*	No
65	*LO affected by restoration*	
66	*Existing size*	5.5
	Restorable size	0
	Potential new wetland	0
67	*Average width of pot. buffer*	0 feet
68	*Ease of potential restoration*	
69	*Hydrologic alterations*	0
70	*Potential wetland type*	0
71	*Stormwater sensitivity*	B
72	*Additional treatment needs*	A

Watershed Minnesota (Shakopee)

WS# 33 Service Area: 9

For functional ratings, please run the Summary tab report.

This report printed on: 3/3/2014

MnRAM Site Assessment Report

Monday, March 03, 2014

Wetland: EP-EP-07 **Project: SWLRT**

Wetland ID: 50, Township 116, Section 12, Range 22

HENNEPIN County, Minnesota (Shakopee) Watershed, Corps Bank Service Area #9

Site conditions were Normal. This wetland is estimated to cover 5.5 acres.

This report reflects conditions on the ground at the date of the assessment and, unless noted or implicit in the standard questions, does not reflect speculation on the future or past conditions.

This wetland is located in or near the city of Eden Prairie in Hassan Township.

General Features

Hydrogeomorphology

The maximum water depth at this site is 6 inches, with 15 percent inundated. With an immedidate drainage area of 10 acres, it is doubtful that this wetland is sustainable given its small catchment area.

As a Depressional/Isolated wetland, this site has no discernable inlets or outlets. As such, t is valued for its ability to store water, especially if located lower in the watershed. If it does not already have invasive species in the plant community, its lack of connection to upstream sites with such species may protect it.

This wetland has been drained or altered 0% from its original size of 5.5 acres.

Soils

The soils in the immediate wetland area are primarily Water. The adjacent upland, to about 500 feet, is Lester Malardi complex.

Vegetation and Upland Buffer

The extent of vegetation in this wetland is about 50 percent and the naturalized buffer width averages 100 feet. Vegetated buffers around wetlands provide multiple benefits including wildlife habitat, erosion protection, and a reduction in surface water runoff.

This buffer not only provides an excellent buffer for wetland water quality, it also serves as an important resources for wildlife habitat.

Special Features

There were no special features observed at the site at the time of this assessment

Vegetative Communities

The following plant communities were observed:

(See Appendix A for details on the Dominant Species per plant community)

Shallow Marsh Type 3, PEMC. This community had a vegetative index of low and comprised 70 percent of the entire area.

Hardwood Swamp Type 7, PFO1C. This community had a vegetative index of low and comprised 30 percent of the entire area.

The highest rated community was the Shallow Marsh community rated at 1. Averaging all the communities together, the Vegetative Diversity and Integrity of this wetland is Low. A more accurate look uses a weighted average; using this method, this site shows a Low Vegetative Diversity and Integrity.

The majority of vegetation at this site, such as it is, does not contribute to wetland function beyond water retention and flow resistance. However, because the weighted average can "hide" smaller communities, always check for even small patches of high-quality species.

Functional Ratings

Function	*Rating*	*Comment*
Vegetative Diversity	Low	If vegetation is present, the primary communities are compromised by extensive invasive and/or non-native species. Ongoing maintenance will be necessary to restore native ecologic communities, although the presence of invasives upstream will limit the success of restoration efforts.
Additional stormwater treatment needs	Moderate	Sediment removal would improve the ability of this site to maintain water quality.
Maintenance of Hydrologic Regime	Moderate	There has been some degree of human alteration of the wetland hydrology, either by outlet control or by altering immediate watershed conditions. However, the wetland retains some of the hydrologic regime similar to the original wetland type, either in part of the wetland or overall to some extent. Because of the interference (whether active or inadvertant), some characteristic vegetative communities have likely been affected, as also have the functions of flood attenuation, water quality and groundwater interaction.
Flood/Stormwater/Attenuation	High	The wetland provides ample flood storage and/or flood wave attenuation. Outlet configuration is restricted (or unaltered) and undisturbed wetland soils, and dense emergent vegetation without channels allow the wetland to retard flood water. A high proportion of impervious surfaces in the subwatershed, large runoff volumes, clayey upland soils, and few wetlands present within the subwatershed may position any wetland to be a good attenuator of excess water.
Downstream Water Quality	Moderate	This wetland has some ability and opportunity to protect downstream resources. The ability of the wetland to remove sediment from stormwater is determined by emergent vegetation and overland flow characteristics. A high nutrient removal rating indicates dense vegetation and sheet flow to maximize nutrient uptake and residence time within the wetland. The opportunity for a wetland to protect a valuable water resource diminishes with distance from the wetland so wetlands with valuable waters within 0.5 miles downstream have the greatest opportunity to provide protection, as do those that receive more (and less-treated) runoff.

Maintenance of Wetland Water Quality	Moderate	Wetland water quality is average. Sediment removal from incoming water would benefit the site. Also consider reducing the amount of stormwater directed at the site. Sustaining a diverse wetland may require additional control over upland land use and the buffer.
Shoreline Protection	Not Applicable	The site does not fringe a deepwater habitat, lake, or is not within any type of watercourse.
Maintenance of Characteristic Wildlife Habitat Structure	Moderate	The site provides good habitat and is relatively accessible to wildlife, although it may be somewhat isolated on the landscape and lack the rich vegetative community and complex structure that would support a wider range of wildlife.
Maintenance of Characteristic Fish Habitat	Not Applicable	The site is too isolated or does not remain wet enough to support a population of fish or to allow for even temporary use as a refuge.
Maintenance of Characteristic Amphibian Habitat	Low	Predatory fish are always present and winter habitat unsuitable as site often freezes to the bottom. High inputs of untreated stormwater or unfiltered runoff contribute to poor water quality and reproductive conditions.
Aesthetics/Recreation /Education/Cultural	Low	Inaccessible, distant from population centers, little-used sites that are not culturally significant rank poorly even if their other functions rank high. Usually, however, even the most distant sites have a potential for recreational use and will drop to the lowest ranking only if they are negatively affected by human alteration.
Wetland restoration potential	Not Applicable	Because restoration would affect permanent structures or infrastructure (houses, roads, septic systems), this site is not suitable for restoration.
Wetland Sensitivity to Stormwater and Urban Development	Moderate	This wetland is moderately sensitive to stormwater; Floodplain forests, fresh wet meadows dominated by reed canary grass, shallow and deep marshes dominated by cattail, reed canary grass, giant reed or purple loosestrife, and shallow, open water communities with low to moderate vegetative diversity.

Appendix A: Dominant Species By Plant Community

	Wetland Type	Plant Community	Dominant Species	Percent Cover
PEMC	**Type 3**	**Shallow Marsh**		
			Reed canary grass	>50-75%
			Narrow-leaved cattail	>25-50%
PFO1	**Type 7**	**Hardwood Swamp**		

Management Classification Report for EP-EP-22

SWLRT - EP-EP-22

ID: 113

HENNEPIN County
Minnesota (Shakopee) Watershed, #33
Corps Bank Service Area 9

Based on the MnRAM data input from field and office review and using the classification settings as shown below, this wetland is classified as Manage 3

Functional rank of this wetland based on MnRAM data	Functional Category	Self-defined classification value settings for this management level
Low	Vegetative Diversity/Integrity	Low
Low	Habitat Structure (wildlife)	Low
Not Applicable	Amphibian Habitat	NA
Not Applicable	Fish Habitat	Low
Not Applicable	Shoreline Protection	NA
Low	Aesthetic/Cultural/Rec/Ed and Habitat	Low / Low
Moderate	Stormwater/Urban Sensitivity and Vegetative Diversity	- / -
Low	Wetland Water Quality and Vegetative Diversity	Low / Low
Low	Characteristic Hydrology and Vegetative Diversity	Low / Low
High	Flood/Stormwater Attenuation*	High
Not Applicable	Commericial use*	-
Moderate	Downstream Water Quality*	High

The critical function that caused this wetland to rank as **Manage 3** was
Vegetative Diversity

Details of the formula for this action are shown below:

Vegetative Diversity **NA**

Question	*Value*	*Description*
NA	NA	NA

This report was printed on: Tuesday, August 26, 2014

* The classification value settings for these functions are not adjustable

Wetland Functional Assessment Summary

Wetland Name	Hydrogeomorphology	Maintenance of Hydrologic Regime	Flood/ Stormwater/ Attenuation	Downstream Water Quality	Maintenance of Wetland Water Quality	Shoreline Protection
EP-EP-22	Depressional/Flow-through (apparent inlet and outlet), Depressional/Flow-through (apparent inlet and outlet)	0.33	0.74	0.58	0.17	0.00
		Low	High	Moderate	Low	Not Applicable

	Additional Information								
Wetland Name	Maintenance of Characteristic Wildlife Habitat Structure	Maintenance of Characteristic Fish Habitat	Maintenance of Characteristic Amphibian Habitat	Aesthetics/ Recreation/ Education/ Cultural	Commercial Uses	Ground-Water Interaction	Wetland Restoration Potential	Wetland Sensitivity to Stormwater and Urban Development	Additional Stormwater Treatment Needs
EP-EP-22	0.29	0.00	0.00	0.10	0.00	Recharge	0.00	0.10	0.17
	Low	Not Applicable	Not Applicable	Low	Not Applicable		Not Applicable	Moderate	Low

Wetland Community Summary

		Vegetative Diversity/Integrity							
		Community							
Wetland Name	Location	Cowardin Classification	Circular 39	Plant Community	Wetland Proportion	Individual Community Rating	Highest Wetland Rating	Average Wetland Rating	Weighted Average Wetland Rating
EP-EP-22	27-116-22-15-001	PEMC	Type 3	Shallow Marsh	100	0.1	0.10	0.10	0.10
							Low	Low	Low
					100		0.10	0.10	0.10

☑ *Denotes incomplete calculation data.*

MnRAM: Site Response Record

For Wetland: EP-EP-22

Location: 27-116-22-15-001

SWLRT - EP-EP-22

Plant Community: Shallow Marsh

Cowardin Classification: PEMC

Circular 39: Type 3

4	*Listed, rare, special species?*	No
5	*Rare community or habitat?*	No
6	*Pre-European-settlement condition?*	No

Hydrogeomorphology / topography:

7		Depressional/FlowThru
8-1	*Maximum water depth*	12 inche
8-2	*% inundated*	30%
9	*Immediate drainage--local WS*	8 acres
10	*Esimated size/existing site:*	*(see #66)*

11-Upland Soil	Muskego, Blue Earth and Houghton complex
11-Wetland Soil	Muskego, Blue Earth and Houghton complex

12	*Outlet for flood control*	A
13	*Outlet for hydro regime*	A
14	*Dominant upland land use*	C
15	*Wetland soil condition*	C
16	*Vegetation (% cover)*	80%
17	*Emerg. veg flood resistance*	B
18	*Sediment delivery*	C
19	*Upland soils (soil group)*	B
20	*Stormwater runoff*	A
21	*Subwatershed wetland density*	A
22	*Channels/sheet flow*	A
23	*Adjacent buffer width*	200 feet

Adjacent area management

24-A	*Full*	30%
24-B	*Manicured*	70%
24-C	*Bare*	0%

Adjacent area diversity/structure

25-A	*Native*	0%
25-B	*Mixed*	100%
25-C	*Sparse*	0%

Adjacent area slope

26-A	*Gentle*	0%
26-B	*Moderate*	0%
26-C	*Steep*	100%

27	*Downstream sens./WQ protect.*	B
28	*Nutrient loading*	C
29	*Shoreline wetland?*	No

Shoreline Wetland

30	*Rooted veg., % cover*	0%
31	*Wetland in-water width*	0 feet
32	*Emerg. veg. erosion resistance*	
33	*Erosion potential of site*	
34	*Upslope veg./bank protection*	
35	*Rare wildlife?*	No
36	*Scare/Rare/S1/S2 community*	No
37	*Vegetative cover*	C
38	*Veg. community interspersion*	NA
39	*Wetland detritus*	C
40	*Interspersion on landscape*	B
41	*Wildlife barriers*	C

Amphibian-breeding potential

42	*Hydroperiod adequacy*	Inadequate
43	*Fish presence*	A
44	*Overwintering habitat*	C
45	*Wildlife species (list)*	
46	*Fish habitat quality*	NA
47	*Fish species (list)*	
48	*Unique/rare opportunity*	No
49	*Wetland visibility*	C
50	*Proximity to population*	No
51	*Public ownership*	C
52	*Public access*	C
53	*Human influence on wetland*	C
54	*Human influence on viewshed*	C
55	*Spatial buffer*	C
56	*Recreational activity potential*	C
57	*Commercial crop--hydro impact*	NA

Groundwater-specific questions

58	*Wetland soils*	Recharge
59	*Subwatershed land use*	Recharge
60	*Wetland size/soil group*	Recharge
61	*Wetland hydroperiod*	Recharge
62	*Inlet/Outlet configuration*	Recharge
63	*Upland topo relief*	Discharge

Additional information

64	*Restoration potential*	No
65	*LO affected by restoration*	
66	*Existing size*	0.25
	Restorable size	0
	Potential new wetland	0
67	*Average width of pot. buffer*	0 feet
68	*Ease of potential restoration*	
69	*Hydrologic alterations*	0
70	*Potential wetland type*	0
71	*Stormwater sensitivity*	C
72	*Additional treatment needs*	A

Watershed . Minnesota (Shakopee)

WS# 33 Service Area: 9

For functional ratings, please run the Summary tab report.

This report printed on: 8/26/2014

MnRAM Site Assessment Report

Tuesday, August 26, 2014

Wetland: EP-EP-22 **Project: SWLRT - EP-EP-22**

Wetland ID: 113, Township 116, Section 15, Range 22

HENNEPIN County, Minnesota (Shakopee) Watershed, Corps Bank Service Area #9

Site conditions were Normal. This wetland is estimated to cover 0.25 acres.

This report reflects conditions on the ground at the date of the assessment and, unless noted or implicit in the standard questions, does not reflect speculation on the future or past conditions.

This wetland is located in or near the city of Eden Prairie

General Features

Hydrogeomorphology

The maximum water depth at this site is 12 inches, with 30 percent inundated. With an immedidate drainage area of 8 acres, it is doubtful that this wetland is sustainable given its small catchment area.

As a Depressional/Flow-through wetland, this site has an apparent inlet and outlet. As such,
Placeholder for Depressional/Flow-through discussion

This wetland has been drained or altered 0% from its original size of 0.25 acres.

Soils

The soils in the immediate wetland area are primarily Muskego, Blue Earth and Houghton complex. The adjacent upland, to about 500 feet, is Muskego, Blue Earth and Houghton complex.

Vegetation and Upland Buffer

The extent of vegetation in this wetland is about 80 percent and the naturalized buffer width averages 200 feet. Vegetated buffers around wetlands provide multiple benefits including wildlife habitat, erosion protection, and a reduction in surface water runoff.

This buffer not only provides an excellent buffer for wetland water quality, it also serves as an important resources for wildlife habitat.

Special Features

There were no special features observed at the site at the time of this assessment

Vegetative Communities

The following plant communities were observed:

(See Appendix A for details on the Dominant Species per plant community)

Shallow Marsh Type 3, PEMC. This community had a vegetative index of low and comprised 100 percent of the entire area.

The highest rated community was the Shallow Marsh community rated at 1. Averaging all the communities together, the Vegetative Diversity and Integrity of this wetland is Low. A more accurate look uses a weighted average; using this method, this site shows a Low Vegetative Diversity and Integrity.

The majority of vegetation at this site, such as it is, does not contribute to wetland function beyond water retention and flow resistance. However, because the weighted average can "hide" smaller communities, always check for even small patches of high-quality species.

Functional Ratings

Function	*Rating*	*Comment*
Vegetative Diversity	Low	If vegetation is present, the primary communities are compromised by extensive invasive and/or non-native species. Ongoing maintenance will be necessary to restore native ecologic communities, although the presence of invasives upstream will limit the success of restoration efforts.
Additional stormwater treatment needs	Low	Both sediment and nutrient removal are called for to prevent further degradation of this site.
Maintenance of Hydrologic Regime	Low	Extensive alteration of wetland hydrology has altered the original wetland, changing wetland type, vegetative communities, and severely impacting the natural hydrologic function. However, a constructed outlet may allow the the site to provide significant floodwater attenuation.
Flood/Stormwater/Attenuation	High	The wetland provides ample flood storage and/or flood wave attenuation. Outlet configuration is restricted (or unaltered) and undisturbed wetland soils, and dense emergent vegetation without channels allow the wetland to retard flood water. A high proportion of impervious surfaces in the subwatershed, large runoff volumes, clayey upland soils, and few wetlands present within the subwatershed may position any wetland to be a good attenuator of excess water.
Downstream Water Quality	Moderate	This wetland has some ability and opportunity to protect downstream resources. The ability of the wetland to remove sediment from stormwater is determined by emergent vegetation and overland flow characteristics. A high nutrient removal rating indicates dense vegetation and sheet flow to maximize nutrient uptake and residence time within the wetland. The opportunity for a wetland to protect a valuable water resource diminishes with distance from the wetland so wetlands with valuable waters within 0.5 miles downstream have the greatest opportunity to provide protection, as do those that receive more (and less-treated) runoff.
Maintenance of Wetland Water Quality	Low	Wetland water quality is poor. Additional resources are needed to protect any existing plant or animal communities that exist, using both sediment-removal and nutrient-reduction technologies.
Shoreline Protection	Not Applicable	The site does not fringe a deepwater habitat, lake, or is not within any type of watercourse.

Maintenance of Characteristic Wildlife Habitat Structure	Low	Isolated by development, the vegetation impacted and reduced, this site does not support an integral community of species.
Maintenance of Characteristic Fish Habitat	Not Applicable	The site is too isolated or does not remain wet enough to support a population of fish or to allow for even temporary use as a refuge.
Maintenance of Characteristic Amphibian Habitat	Not Applicable	Wetland never or rarely contains standing water and is not inundated longenough most years to allow amphibians to successfully breed.
Aesthetics/Recreation /Education/Cultural	Low	Inaccessible, distant from population centers, little-used sites that are not culturally significant rank poorly even if their other functions rank high. Usually, however, even the most distant sites have a potential for recreational use and will drop to the lowest ranking only if they are negatively affected by human alteration.
Wetland restoration potential	Not Applicable	Because restoration would affect permanent structures or infrastructure (houses, roads, septic systems), this site is not suitable for restoration.
Wetland Sensitivity to Stormwater and Urban Development	Moderate	This wetland is moderately sensitive to stormwater; Floodplain forests, fresh wet meadows dominated by reed canary grass, shallow and deep marshes dominated by cattail, reed canary grass, giant reed or purple loosestrife, and shallow, open water communities with low to moderate vegetative diversity.

Appendix A: Dominant Species By Plant Community

	Wetland Type	Plant Community	Dominant Species	Percent Cover
PEMC	**Type 3**	**Shallow Marsh**		
			Purple loosestrife	>25-50%
			Narrow-leaved cattail	>50-75%

Management Classification Report for EP-EP-23 **SWLRT - EP-EP-23**

ID: 114

HENNEPIN County
Minnesota (Shakopee) Watershed, #33
Corps Bank Service Area 9

Based on the MnRAM data input from field and office review and using the classification settings as shown below, this wetland is classified as Manage 2

Functional rank of this wetland based on MnRAM data	Functional Category	Self-defined classification value settings for this management level
Low	Vegetative Diversity/Integrity	Moderate
Moderate	Habitat Structure (wildlife)	Moderate
Low	Amphibian Habitat	Low
Not Applicable	Fish Habitat	Moderate
Not Applicable	Shoreline Protection	Low
Low	Aesthetic/Cultural/Rec/Ed and Habitat	Moderate / Low
Moderate	Stormwater/Urban Sensitivity and Vegetative Diversity	- / -
Moderate	Wetland Water Quality and Vegetative Diversity	- / -
Moderate	Characteristic Hydrology and Vegetative Diversity	- / -
High	Flood/Stormwater Attenuation*	-
Not Applicable	Commericial use*	-
Moderate	Downstream Water Quality*	-

The critical function that caused this wetland to rank as **Manage 2** was
Maintenance of Characteristic Wildlife Habitat Structure

Details of the formula for this action are shown below:

Maintenance of Characteristic Wildlife Habitat Str **(Q3e*2+Q39+Q37+Q40+Q41+(Q23+Q24+Q25)/3+Q13+Q20)/9**

Question	*Value*	*Description*
13	1	Outlet: hydrologic regime
20	0.5	Stormwater runoff
23	0.5	Buffer width
24	1	Adjacent area Management
25	0.5	Adjacent area diversity
37	0.1	Vegetation cover interspersion
39	0.1	Detritus
3e	0.1	<No Description Found>

* The classification value settings for these functions are not adjustable

Management Classification Report for EP-EP-23

SWLRT - EP-EP-23

ID: 114

HENNEPIN County
Minnesota (Shakopee) Watershed, #33
Corps Bank Service Area 9

40	0.5	Wetland interspersion/landscape
41	0.1	Wildlife barriers

This report was printed on: Tuesday, August 26, 2014

* The classification value settings for these functions are not adjustable

Wetland Functional Assessment Summary

Wetland Name	Hydrogeomorphology	Maintenance of Hydrologic Regime	Flood/ Stormwater/ Attenuation	Downstream Water Quality	Maintenance of Wetland Water Quality	Shoreline Protection
EP-EP-23	Depressional/Flow-through (apparent inlet and outlet), Depressional/Flow-through (apparent inlet and outlet)	0.52	0.73	0.56	0.38	0.00
		Moderate	High	Moderate	Moderate	Not Applicable

	Additional Information								
Wetland Name	Maintenance of Characteristic Wildlife Habitat Structure	Maintenance of Characteristic Fish Habitat	Maintenance of Characteristic Amphibian Habitat	Aesthetics/ Recreation/ Education/ Cultural	Commercial Uses	Ground-Water Interaction	Wetland Restoration Potential	Wetland Sensitivity to Stormwater and Urban Development	Additional Stormwater Treatment Needs
EP-EP-23	0.35	0.00	0.30	0.31	0.00	Recharge	0.00	0.10	0.38
	Moderate	Not Applicable	Low	Low	Not Applicable		Not Applicable	Moderate	Moderate

Wetland Community Summary

		Vegetative Diversity/Integrity							
		Community							
Wetland Name	Location	Cowardin Classification	Circular 39	Plant Community	Wetland Proportion	Individual Community Rating	Highest Wetland Rating	Average Wetland Rating	Weighted Average Wetland Rating
EP-EP-23	27-000-00-00-001	PEMC	Type 3	Shallow Marsh	100	0.1	0.10	0.10	0.10
							Low	Low	Low
					100		0.10	0.10	0.10

☑ *Denotes incomplete calculation data.*

MnRAM: Site Response Record

For Wetland: EP-EP-23

Location: 27-000-00-00-001

SWLRT - EP-EP-23

Plant Community: Shallow Marsh

Cowardin Classification: PEMC

Circular 39: Type 3

4	*Listed, rare, special species?*	No
5	*Rare community or habitat?*	No
6	*Pre-European-settlement condition?*	No

Hydrogeomorphology / topography:

7 Depressional/FlowThru

8-1	*Maximum water depth*	12 inche
8-2	*% inundated*	40%
9	*Immediate drainage--local WS*	36 acres
10	*Esimated size/existing site:*	*(see #66)*
11-Upland Soil		Lester
11-Wetland Soil		Water

12	*Outlet for flood control*	A
13	*Outlet for hydro regime*	A
14	*Dominant upland land use*	C
15	*Wetland soil condition*	B
16	*Vegetation (% cover)*	40%
17	*Emerg. veg flood resistance*	B
18	*Sediment delivery*	B
19	*Upland soils (soil group)*	C
20	*Stormwater runoff*	B
21	*Subwatershed wetland density*	B
22	*Channels/sheet flow*	A
23	*Adjacent buffer width*	300 feet

Adjacent area management

24-A	*Full*	100%
24-B	*Manicured*	0%
24-C	*Bare*	0%

Adjacent area diversity/structure

25-A	*Native*	0%
25-B	*Mixed*	100%
25-C	*Sparse*	0%

Adjacent area slope

26-A	*Gentle*	0%
26-B	*Moderate*	100%
26-C	*Steep*	0%

27	*Downstream sens./WQ protect.*	B
28	*Nutrient loading*	B
29	*Shoreline wetland?*	No

Shoreline Wetland

30	*Rooted veg., % cover*	0%
31	*Wetland in-water width*	0 feet
32	*Emerg. veg. erosion resistance*	
33	*Erosion potential of site*	
34	*Upslope veg./bank protection*	
35	*Rare wildlife?*	No
36	*Scare/Rare/S1/S2 community*	No
37	*Vegetative cover*	C
38	*Veg. community interspersion*	NA
39	*Wetland detritus*	C
40	*Interspersion on landscape*	B
41	*Wildlife barriers*	C

Amphibian-breeding potential

42	*Hydroperiod adequacy*	Adequate
43	*Fish presence*	A
44	*Overwintering habitat*	C
45	*Wildlife species (list)*	
46	*Fish habitat quality*	NA
47	*Fish species (list)*	
48	*Unique/rare opportunity*	No
49	*Wetland visibility*	C
50	*Proximity to population*	Yes
51	*Public ownership*	C
52	*Public access*	C
53	*Human influence on wetland*	B
54	*Human influence on viewshed*	C
55	*Spatial buffer*	B
56	*Recreational activity potential*	C
57	*Commercial crop--hydro impact*	NA

Groundwater-specific questions

58	*Wetland soils*	Recharge
59	*Subwatershed land use*	Recharge
60	*Wetland size/soil group*	Recharge
61	*Wetland hydroperiod*	Recharge
62	*Inlet/Outlet configuration*	Recharge
63	*Upland topo relief*	Discharge

Additional information

64	*Restoration potential*	No
65	*LO affected by restoration*	
66	*Existing size*	5
	Restorable size	0
	Potential new wetland	0
67	*Average width of pot. buffer*	0 feet
68	*Ease of potential restoration*	
69	*Hydrologic alterations*	0
70	*Potential wetland type*	0
71	*Stormwater sensitivity*	B
72	*Additional treatment needs*	A

Watershed Minnesota (Shakopee)

WS# 33 Service Area: 9

For functional ratings, please run the Summary tab report.

This report printed on: 8/26/2014

MnRAM Site Assessment Report

Tuesday, August 26, 2014

Wetland: EP-EP-23 **Project: SWLRT - EP-EP-23**

Wetland ID: 114, Township 0, Section 0, Range 0

HENNEPIN County, Minnesota (Shakopee) Watershed, Corps Bank Service Area #9

Site conditions were Normal. This wetland is estimated to cover 5 acres.

This report reflects conditions on the ground at the date of the assessment and, unless noted or implicit in the standard questions, does not reflect speculation on the future or past conditions.

This wetland is located in or near the city of Eden Prairie

General Features

Hydrogeomorphology

The maximum water depth at this site is 12 inches, with 40 percent inundated. With an immedidate drainage area of 36 acres, it is doubtful that this wetland is sustainable given its small catchment area.

As a Depressional/Flow-through wetland, this site has an apparent inlet and outlet. As such,
Placeholder for Depressional/Flow-through discussion

This wetland has been drained or altered 0% from its original size of 5 acres.

Soils

The soils in the immediate wetland area are primarily Water. The adjacent upland, to about 500 feet, is Lester.

Vegetation and Upland Buffer

The extent of vegetation in this wetland is about 40 percent and the naturalized buffer width averages 300 feet. Vegetated buffers around wetlands provide multiple benefits including wildlife habitat, erosion protection, and a reduction in surface water runoff.

This buffer not only provides an excellent buffer for wetland water quality, it also serves as an important resources for wildlife habitat.

Special Features

There were no special features observed at the site at the time of this assessment

Vegetative Communities

The following plant communities were observed:

(See Appendix A for details on the Dominant Species per plant community)

Shallow Marsh Type 3, PEMC. This community had a vegetative index of low and comprised 100 percent of the entire area.

The highest rated community was the Shallow Marsh community rated at 1. Averaging all the communities together, the Vegetative Diversity and Integrity of this wetland is Low. A more accurate look uses a weighted average; using this method, this site shows a Low Vegetative Diversity and Integrity.

The majority of vegetation at this site, such as it is, does not contribute to wetland function beyond water retention and flow resistance. However, because the weighted average can "hide" smaller communities, always check for even small patches of high-quality species.

Functional Ratings

Function	*Rating*	*Comment*
Vegetative Diversity	Low	If vegetation is present, the primary communities are compromised by extensive invasive and/or non-native species. Ongoing maintenance will be necessary to restore native ecologic communities, although the presence of invasives upstream will limit the success of restoration efforts.
Additional stormwater treatment needs	Moderate	Sediment removal would improve the ability of this site to maintain water quality.
Maintenance of Hydrologic Regime	Moderate	There has been some degree of human alteration of the wetland hydrology, either by outlet control or by altering immediate watershed conditions. However, the wetland retains some of the hydrologic regime similar to the original wetland type, either in part of the wetland or overall to some extent. Because of the interference (whether active or inadvertant), some characteristic vegetative communities have likely been affected, as also have the functions of flood attenuation, water quality and groundwater interaction.
Flood/Stormwater/Attenuation	High	The wetland provides ample flood storage and/or flood wave attenuation. Outlet configuration is restricted (or unaltered) and undisturbed wetland soils, and dense emergent vegetation without channels allow the wetland to retard flood water. A high proportion of impervious surfaces in the subwatershed, large runoff volumes, clayey upland soils, and few wetlands present within the subwatershed may position any wetland to be a good attenuator of excess water.
Downstream Water Quality	Moderate	This wetland has some ability and opportunity to protect downstream resources. The ability of the wetland to remove sediment from stormwater is determined by emergent vegetation and overland flow characteristics. A high nutrient removal rating indicates dense vegetation and sheet flow to maximize nutrient uptake and residence time within the wetland. The opportunity for a wetland to protect a valuable water resource diminishes with distance from the wetland so wetlands with valuable waters within 0.5 miles downstream have the greatest opportunity to provide protection, as do those that receive more (and less-treated) runoff.
Maintenance of Wetland Water Quality	Moderate	Wetland water quality is average. Sediment removal from incoming water would benefit the site. Also consider reducing the amount of stormwater directed at the site. Sustaining a diverse wetland may require additional control over upland land use and the buffer.
Shoreline Protection	Not Applicable	The site does not fringe a deepwater habitat, lake, or is not within any type of watercourse.

Maintenance of Characteristic Wildlife Habitat Structure	Moderate	The site provides good habitat and is relatively accessible to wildlife, although it may be somewhat isolated on the landscape and lack the rich vegetative community and complex structure that would support a wider range of wildlife.
Maintenance of Characteristic Fish Habitat	Not Applicable	The site is too isolated or does not remain wet enough to support a population of fish or to allow for even temporary use as a refuge.
Maintenance of Characteristic Amphibian Habitat	Low	Predatory fish are always present and winter habitat unsuitable as site often freezes to the bottom. High inputs of untreated stormwater or unfiltered runoff contribute to poor water quality and reproductive conditions.
Aesthetics/Recreation /Education/Cultural	Low	Inaccessible, distant from population centers, little-used sites that are not culturally significant rank poorly even if their other functions rank high. Usually, however, even the most distant sites have a potential for recreational use and will drop to the lowest ranking only if they are negatively affected by human alteration.
Wetland restoration potential	Not Applicable	Because restoration would affect permanent structures or infrastructure (houses, roads, septic systems), this site is not suitable for restoration.
Wetland Sensitivity to Stormwater and Urban Development	Moderate	This wetland is moderately sensitive to stormwater; Floodplain forests, fresh wet meadows dominated by reed canary grass, shallow and deep marshes dominated by cattail, reed canary grass, giant reed or purple loosestrife, and shallow, open water communities with low to moderate vegetative diversity.

Appendix A: Dominant Species By Plant Community

	Wetland Type	Plant Community	Dominant Species	Percent Cover
PEMC	**Type 3**	**Shallow Marsh**		
			Reed canary grass	>50-75%
			Narrow-leaved cattail	>25-50%

Management Classification Report for EP-EP-24 **SWLRT EP-EP-24**

ID: 5

HENNEPIN County
Minnesota (Shakopee) Watershed, #33
Corps Bank Service Area 9

Based on the MnRAM data input from field and office review and using the classification settings as shown below, this wetland is classified as Manage 2

Functional rank of this wetland based on MnRAM data	Functional Category	Self-defined classification value settings for this management level
Moderate	Vegetative Diversity/Integrity	Moderate
Low	Habitat Structure (wildlife)	Moderate
Low	Amphibian Habitat	Low
Not Applicable	Fish Habitat	Moderate
Not Applicable	Shoreline Protection	Low
Low	Aesthetic/Cultural/Rec/Ed and Habitat	Moderate / Low
Moderate	Stormwater/Urban Sensitivity and Vegetative Diversity	- / -
Moderate	Wetland Water Quality and Vegetative Diversity	- / -
Low	Characteristic Hydrology and Vegetative Diversity	- / -
Moderate	Flood/Stormwater Attenuation*	-
Not Applicable	Commericial use*	-
Moderate	Downstream Water Quality*	-

The critical function that caused this wetland to rank as **Manage 2** was
Vegetative Diversity

Details of the formula for this action are shown below:

Vegetative Diversity **NA**

Question	*Value*	*Description*
NA	NA	NA

This report was printed on: Thursday, October 02, 2014

* The classification value settings for these functions are not adjustable

Wetland Functional Assessment Summary

Wetland Name	Hydrogeomorphology	Maintenance of Hydrologic Regime	Flood/ Stormwater/ Attenuation	Downstream Water Quality	Maintenance of Wetland Water Quality	Shoreline Protection
EP-EP-24	Depressional/Flow-through (apparent inlet and outlet), Depressional/Flow-through (apparent inlet and outlet)	0.10	0.52	0.53	0.42	0.00
		Low	Moderate	Moderate	Moderate	Not Applicable

							Additional Information		
Wetland Name	Maintenance of Characteristic Wildlife Habitat Structure	Maintenance of Characteristic Fish Habitat	Maintenance of Characteristic Amphibian Habitat	Aesthetics/ Recreation/ Education/ Cultural	Commercial Uses	Ground-Water Interaction	Wetland Restoration Potential	Wetland Sensitivity to Stormwater and Urban Development	Additional Stormwater Treatment Needs
EP-EP-24	0.28	0.00	0.05	0.15	0.00	Combination Discharge, Recharge	0.00	0.50	0.42
	Low	Not Applicable	Low	Low	Not Applicable		Not Applicable	Moderate	Moderate

Wetland Community Summary

		Vegetative Diversity/Integrity							
		Community							
Wetland Name	Location	Cowardin Classification	Circular 39	Plant Community	Wetland Proportion	Individual Community Rating	Highest Wetland Rating	Average Wetland Rating	Weighted Average Wetland Rating
EP-EP-24	27-116-22-15-001	PUBG	Type 5	Shallow, Open Water Communities	100	0.5	0.50	0.50	0.50
							Moderate	Moderate	Moderate
					100		0.50	0.50	0.50

☑ *Denotes incomplete calculation data.*

MnRAM: Site Response Record

For Wetland: EP-EP-24

Location: 27-116-22-15-001

SWLRT EP-EP-24

Plant Community: Shallow, Open Water C

Cowardin Classification: PUBG

Circular 39: Type 5

4	*Listed, rare, special species?*	No
5	*Rare community or habitat?*	No
6	*Pre-European-settlement condition?*	No

Hydrogeomorphology / topography:

7		Depressional/FlowThru
8-1	*Maximum water depth*	36 inche
8-2	*% inundated*	90%
9	*Immediate drainage--local WS*	2 acres
10	*Esimated size/existing site:*	*(see #66)*
11-Upland Soil		Muskego Muck, depressional, 0-2% Slopes
11-Wetland Soil		Muskego Muck, depressional, 0-2% Slopes

12	*Outlet for flood control*	C
13	*Outlet for hydro regime*	C
14	*Dominant upland land use*	C
15	*Wetland soil condition*	C
16	*Vegetation (% cover)*	50%
17	*Emerg. veg flood resistance*	NA
18	*Sediment delivery*	A
19	*Upland soils (soil group)*	B
20	*Stormwater runoff*	A
21	*Subwatershed wetland density*	A
22	*Channels/sheet flow*	C
23	*Adjacent buffer width*	5 feet

Adjacent area management

24-A	*Full*	30%
24-B	*Manicured*	20%
24-C	*Bare*	50%

Adjacent area diversity/structure

25-A	*Native*	20%
25-B	*Mixed*	30%
25-C	*Sparse*	50%

Adjacent area slope

26-A	*Gentle*	10%
26-B	*Moderate*	20%
26-C	*Steep*	70%

27	*Downstream sens./WQ protect.*	A
28	*Nutrient loading*	B
29	*Shoreline wetland?*	No

Shoreline Wetland

30	*Rooted veg., % cover*	0%
31	*Wetland in-water width*	0 feet
32	*Emerg. veg. erosion resistance*	
33	*Erosion potential of site*	
34	*Upslope veg./bank protection*	
35	*Rare wildlife?*	No
36	*Scare/Rare/S1/S2 community*	No
37	*Vegetative cover*	C
38	*Veg. community interspersion*	NA
39	*Wetland detritus*	NA
40	*Interspersion on landscape*	B
41	*Wildlife barriers*	C

Amphibian-breeding potential

42	*Hydroperiod adequacy*	Adequate
43	*Fish presence*	B
44	*Overwintering habitat*	C
45	*Wildlife species (list)*	None
46	*Fish habitat quality*	NA
47	*Fish species (list)*	
48	*Unique/rare opportunity*	No
49	*Wetland visibility*	A
50	*Proximity to population*	No
51	*Public ownership*	C
52	*Public access*	C
53	*Human influence on wetland*	C
54	*Human influence on viewshed*	C
55	*Spatial buffer*	B
56	*Recreational activity potential*	C
57	*Commercial crop--hydro impact*	NA

Groundwater-specific questions

58	*Wetland soils*	Recharge
59	*Subwatershed land use*	Recharge
60	*Wetland size/soil group*	Recharge
61	*Wetland hydroperiod*	Discharge
62	*Inlet/Outlet configuration*	Recharge
63	*Upland topo relief*	Discharge

Additional information

64	*Restoration potential*	No
65	*LO affected by restoration*	C
66	*Existing size*	0.38
	Restorable size	0
	Potential new wetland	0
67	*Average width of pot. buffer*	20 feet
68	*Ease of potential restoration*	C
69	*Hydrologic alterations*	Lowered Outlet
70	*Potential wetland type*	5
71	*Stormwater sensitivity*	B
72	*Additional treatment needs*	B

Watershed Minnesota (Shakopee)

WS# 33 Service Area: 9

For functional ratings, please run the Summary tab report.

This report printed on: 10/2/2014

MnRAM Site Assessment Report

Thursday, October 02, 2014

Wetland: EP-EP-24 **Project: SWLRT EP-EP-24**

Wetland ID: 5, Township 116, Section 15, Range 22

HENNEPIN County, Minnesota (Shakopee) Watershed, Riley Purgatory Bluff Creek Subwatershed, Corps Bank Service Area #9

Site conditions were Above Average Precipitation. This wetland is estimated to cover 0.38 acres.

This report reflects conditions on the ground at the date of the assessment and, unless noted or implicit in the standard questions, does not reflect speculation on the future or past conditions.

This wetland is located in or near the city of Eden Prairie

General Features

Hydrogeomorphology

The maximum water depth at this site is 36 inches, with 90 percent inundated. With an immedidate drainage area of 2 acres, it is doubtful that this wetland is sustainable given its small catchment area.

As a Depressional/Flow-through wetland, this site has an apparent inlet and outlet. As such,
Placeholder for Depressional/Flow-through discussion

This wetland has been drained or altered 0% from its original size of 0.38 acres.

Soils

The soils in the immediate wetland area are primarily Muskego Muck, depressional, 0-2% Slopes. The adjacent upland, to about 500 feet, is Muskego Muck, depressional, 0-2% Slopes.

Vegetation and Upland Buffer

The extent of vegetation in this wetland is about 50 percent and the naturalized buffer width averages 5 feet. Vegetated buffers around wetlands provide multiple benefits including wildlife habitat, erosion protection, and a reduction in surface water runoff.

This buffer provides very little, if any, protection of water quality or habitat for wildlife.

Special Features

There were no special features observed at the site at the time of this assessment

Vegetative Communities

The following plant communities were observed:

(See Appendix A for details on the Dominant Species per plant community)

Shallow, Ow Communities Type 5, PUBG. This community had a vegetative index of moderate and comprised 100 percent of the entire area.

The highest rated community was the Shallow, Ow Communities community rated at 0.5. Averaging all the communities together, the Vegetative Diversity and Integrity of this wetland is Moderate. A more accurate look uses a weighted average; using this method, this site shows a Moderate Vegetative Diversity and Integrity.

The weighted average provides the best measure for an entire wetland. Plant communities at this site are, overall, of average quality. Individual community ratings should be examined to provide a complete picture of possible high-value communities or smaller-but-poor-quality segments that might degrade the site over time.

Functional Ratings

Function	*Rating*	*Comment*
Vegetative Diversity	Moderate	Moderate-functioning vegetative communities indicate a presence of native wetland species with substantial non-native or invasive species.
Additional stormwater treatment needs	Moderate	Sediment removal would improve the ability of this site to maintain water quality.
Maintenance of Hydrologic Regime	Low	Extensive alteration of wetland hydrology has altered the original wetland, changing wetland type, vegetative communities, and severely impacting the natural hydrologic function. However, a constructed outlet may allow the the site to provide significant floodwater attenuation.
Flood/Stormwater/Attenuation	Moderate	The wetland provides some flood storage and/or flood wave attenuation. It may have either an altered or unrestricted outlet, disturbed wetland soils, thin or little emergent vegetation (with channels) or it may be situated high in a watershed with a low proportion of impervious surfaces, moderate runoff volumes, loamy upland soils, and one or more other wetlands present within the subwatershed.
Downstream Water Quality	Moderate	This wetland has some ability and opportunity to protect downstream resources. The ability of the wetland to remove sediment from stormwater is determined by emergent vegetation and overland flow characteristics. A high nutrient removal rating indicates dense vegetation and sheet flow to maximize nutrient uptake and residence time within the wetland. The opportunity for a wetland to protect a valuable water resource diminishes with distance from the wetland so wetlands with valuable waters within 0.5 miles downstream have the greatest opportunity to provide protection, as do those that receive more (and less-treated) runoff.
Maintenance of Wetland Water Quality	Moderate	Wetland water quality is average. Sediment removal from incoming water would benefit the site. Also consider reducing the amount of stormwater directed at the site. Sustaining a diverse wetland may require additional control over upland land use and the buffer.
Shoreline Protection	Not Applicable	The site does not fringe a deepwater habitat, lake, or is not within any type of watercourse.
Maintenance of Characteristic Wildlife Habitat Structure	Low	Isolated by development, the vegetation impacted and reduced, this site does not support an integral community of species.

Maintenance of Characteristic Fish Habitat	Not Applicable	The site is too isolated or does not remain wet enough to support a population of fish or to allow for even temporary use as a refuge.
Maintenance of Characteristic Amphibian Habitat	Low	Predatory fish are always present and winter habitat unsuitable as site often freezes to the bottom. High inputs of untreated stormwater or unfiltered runoff contribute to poor water quality and reproductive conditions.
Aesthetics/Recreation /Education/Cultural	Low	Inaccessible, distant from population centers, little-used sites that are not culturally significant rank poorly even if their other functions rank high. Usually, however, even the most distant sites have a potential for recreational use and will drop to the lowest ranking only if they are negatively affected by human alteration.
Wetland restoration potential	Not Applicable	Because restoration would affect permanent structures or infrastructure (houses, roads, septic systems), this site is not suitable for restoration.
Wetland Sensitivity to Stormwater and Urban Development	Moderate	This wetland is moderately sensitive to stormwater; Floodplain forests, fresh wet meadows dominated by reed canary grass, shallow and deep marshes dominated by cattail, reed canary grass, giant reed or purple loosestrife, and shallow, open water communities with low to moderate vegetative diversity.

Appendix A: Dominant Species By Plant Community

	Wetland Type	Plant Community	Dominant Species	Percent Cover
PUBG	**Type 5**	**Shallow, Ow Communities**		
			Spotted touch-me-not	10
			Sandbar willow	40
			Reed canary grass	10
			Narrow-leaved cattail	20
			Giant goldenrod	10
			Blue vervain	10

Management Classification Report for MTA-MTA-11 **SWLRT MTA-MTA-11**

ID: 28

HENNEPIN County
Minnesota (Shakopee) Watershed, #33
Corps Bank Service Area 9

Based on the MnRAM data input from field and office review and using the classification settings as shown below, this wetland is classified as Manage 1

Functional rank of this wetland based on MnRAM data	Functional Category	Self-defined classification value settings for this management level
Low	Vegetative Diversity/Integrity	High
Moderate	Habitat Structure (wildlife)	High
Moderate	Amphibian Habitat	Moderate
Not Applicable	Fish Habitat	High
Not Applicable	Shoreline Protection	Moderate
Moderate	Aesthetic/Cultural/Rec/Ed and Habitat	High / Moderate
Moderate	Stormwater/Urban Sensitivity and Vegetative Diversity	High / Moderate
Moderate	Wetland Water Quality and Vegetative Diversity	High / Moderate
Moderate	Characteristic Hydrology and Vegetative Diversity	High / Moderate
High	Flood/Stormwater Attenuation*	-
Not Applicable	Commericial use*	High
Moderate	Downstream Water Quality*	-

The critical function that caused this wetland to rank as **Manage 1** was
Maintenance of Characteristic Amphibian Habitat

Details of the formula for this action are shown below:

Maintenance of Characteristic Amphibian Habitat **(Q43) * [(Q44 + 2*Q23wildlife + Q14 +Q 41 + Q20 reversed)/6]**

Question	*Value*	*Description*
14	0.1	Upland land use
20	0.5	Stormwater runoff
23	0.5	Buffer width
41	0.5	Wildlife barriers
43	1	Amphib breeding potential--fish presence
44	1	Amphib & reptile overwintering habitat

This report was printed on: Friday, October 18, 2013

* The classification value settings for these functions are not adjustable

Wetland Functional Assessment Summary

Wetland Name	Hydrogeomorphology	Maintenance of Hydrologic Regime	Flood/ Stormwater/ Attenuation	Downstream Water Quality	Maintenance of Wetland Water Quality	Shoreline Protection
MTA-MTA-11	Extensive Peatland/Organic Flat	0.52	0.71	0.48	0.40	0.00
		Moderate	High	Moderate	Moderate	Not Applicable

	Additional Information								
Wetland Name	Maintenance of Characteristic Wildlife Habitat Structure	Maintenance of Characteristic Fish Habitat	Maintenance of Characteristic Amphibian Habitat	Aesthetics/ Recreation/ Education/ Cultural	Commercial Uses	Ground-Water Interaction	Wetland Restoration Potential	Wetland Sensitivity to Stormwater and Urban Development	Additional Stormwater Treatment Needs
MTA-MTA-11	0.51	0.00	0.38	0.36	0.00	Combination Discharge, Recharge	0.00	0.10	0.40
	Moderate	Not Applicable	Moderate	Moderate	Not Applicable		Not Applicable	Moderate	Moderate

Wetland Community Summary

		Vegetative Diversity/Integrity							
		Community							
Wetland Name	Location	Cowardin Classification	Circular 39	Plant Community	Wetland Proportion	Individual Community Rating	Highest Wetland Rating	Average Wetland Rating	Weighted Average Wetland Rating
MTA-MTA-11	27-117-22-25-001	PEMC	Type 3	Shallow Marsh	60	0.1	0.10	0.10	0.10
							Low	Low	Low
		PUBG	Type 5	Shallow, Open Water Communities	10	0.1	0.10	0.10	0.10
							Low	Low	Low
		PFO1C	Type 7	Floodplain Forest	15	0.1	0.10	0.10	0.10
							Low	Low	Low
		PSS1C	Type 6	Shrub Carr	15	0.1	0.10	0.10	0.10
							Low	Low	Low
					100		0.10	0.10	0.10 ☐

☑ *Denotes incomplete calculation data.*

MnRAM: Site Response Record

For Wetland: MTA-MTA-11

Location: 27-117-22-25-001

SWLRT MTA-MTA-11

Plant Community: Shallow Marsh

Cowardin Classification: PEMC — Circular 39: Type 3

Plant Community: Floodplain Forest

Cowardin Classification: PFO1C — Circular 39: Type 7

Plant Community: Shrub Carr

Cowardin Classification: PSS1C — Circular 39: Type 6

Plant Community: Shallow, Open Water C

Cowardin Classification: PUBG — Circular 39: Type 5

4	*Listed, rare, special species?*	No
5	*Rare community or habitat?*	No
6	*Pre-European-settlement condition?*	No

Hydrogeomorphology / topography:

7		Extensive Peatland
8-1	*Maximum water depth*	48 inche
8-2	*% inundated*	10%
9	*Immediate drainage--local WS*	150 acres
10	*Esimated size/existing site:*	*(see #66)*
11-Upland Soil		Udorthents
11-Wetland Soil		Klossner

12	*Outlet for flood control*	NA
13	*Outlet for hydro regime*	A
14	*Dominant upland land use*	C
15	*Wetland soil condition*	B
16	*Vegetation (% cover)*	90%
17	*Emerg. veg flood resistance*	B
18	*Sediment delivery*	B
19	*Upland soils (soil group)*	B
20	*Stormwater runoff*	B
21	*Subwatershed wetland density*	A
22	*Channels/sheet flow*	A
23	*Adjacent buffer width*	30 feet

Adjacent area management

24-A	*Full*	40%
24-B	*Manicured*	30%
24-C	*Bare*	30%

Adjacent area diversity/structure

25-A	*Native*	0%
25-B	*Mixed*	60%
25-C	*Sparse*	40%

Adjacent area slope

26-A	*Gentle*	0%
26-B	*Moderate*	100%
26-C	*Steep*	0%

27	*Downstream sens./WQ protect.*	B
28	*Nutrient loading*	A
29	*Shoreline wetland?*	No

Shoreline Wetland

30	*Rooted veg., % cover*	0%
31	*Wetland in-water width*	0 feet
32	*Emerg. veg. erosion resistance*	
33	*Erosion potential of site*	
34	*Upslope veg./bank protection*	
35	*Rare wildlife?*	No
36	*Scare/Rare/S1/S2 community*	No
37	*Vegetative cover*	A
38	*Veg. community interspersion*	B
39	*Wetland detritus*	C
40	*Interspersion on landscape*	A
41	*Wildlife barriers*	B

Amphibian-breeding potential

42	*Hydroperiod adequacy*	Adequate
43	*Fish presence*	A
44	*Overwintering habitat*	A
45	*Wildlife species (list)*	
46	*Fish habitat quality*	NA
47	*Fish species (list)*	
48	*Unique/rare opportunity*	No
49	*Wetland visibility*	B
50	*Proximity to population*	Yes
51	*Public ownership*	C
52	*Public access*	C
53	*Human influence on wetland*	B
54	*Human influence on viewshed*	C
55	*Spatial buffer*	B
56	*Recreational activity potential*	C
57	*Commercial crop--hydro impact*	NA

Groundwater-specific questions

58	*Wetland soils*	Discharge
59	*Subwatershed land use*	Recharge
60	*Wetland size/soil group*	Recharge
61	*Wetland hydroperiod*	Recharge
62	*Inlet/Outlet configuration*	Discharge
63	*Upland topo relief*	Discharge

Additional information

64	*Restoration potential*	No
65	*LO affected by restoration*	
66	*Existing size*	15
	Restorable size	0
	Potential new wetland	0
67	*Average width of pot. buffer*	0 feet
68	*Ease of potential restoration*	
69	*Hydrologic alterations*	0
70	*Potential wetland type*	0
71	*Stormwater sensitivity*	B
72	*Additional treatment needs*	C

Watershed Minnesota (Shakopee)

WS# 33 Service Area: 9

For functional ratings, please run the Summary tab report.

This report printed on: 10/18/2013

MnRAM Site Assessment Report

Friday, October 18, 2013

Wetland: MTA-MTA-11 **Project: SWLRT MTA-MTA-11**

Wetland ID: 28, Township 117, Section 25, Range 22

HENNEPIN County, Minnesota (Shakopee) Watershed, Nine Mile Creek Subwatershed, Corps Bank Service Area #9

Assessment Purpose: Classification

Site conditions were Normal. This wetland is estimated to cover 15 acres.

This report reflects conditions on the ground at the date of the assessment and, unless noted or implicit in the standard questions, does not reflect speculation on the future or past conditions.

This wetland is located in or near the city of Hopkins and Minnetonka in Hassan Township.

General Features

Hydrogeomorphology

The maximum water depth at this site is 48 inches, with 10 percent inundated. With an immedidate drainage area of 150 acres, it is doubtful that this wetland is sustainable given its small catchment area.

As a Extensive Peatland/Organic Flat wetland, this site [No Data] [No Data]

This wetland has been drained or altered 0% from its original size of 15 acres.

Soils

The soils in the immediate wetland area are primarily Klossner. The adjacent upland, to about 500 feet, is Udorthents.

Vegetation and Upland Buffer

The extent of vegetation in this wetland is about 90 percent and the naturalized buffer width averages 30 feet. Vegetated buffers around wetlands provide multiple benefits including wildlife habitat, erosion protection, and a reduction in surface water runoff.

This buffer provides some protection for the wetland water quality but little habitat for wildlife.

Special Features

There were no special features observed at the site at the time of this assessment

Vegetative Communities

The following plant communities were observed:

(See Appendix A for details on the Dominant Species per plant community)

Shallow Marsh Type 3, PEMC. This community had a vegetative index of low and comprised 60 percent of the entire area.

Floodplain Forest Type 7, PFO1C. This community had a vegetative index of low and comprised 15 percent of the entire area.

Shrub-carr Type 6, PSS1C. This community had a vegetative index of low and comprised 15 percent of the entire area.

Shallow, Ow Communities Type 5, PUBG. This community had a vegetative index of low and comprised 10 percent of the entire area.

The highest rated community was the Shallow Marsh community rated at 1. Averaging all the communities together, the Vegetative Diversity and Integrity of this wetland is Low. A more accurate look uses a weighted average; using this method, this site shows a Low Vegetative Diversity and Integrity.

The majority of vegetation at this site, such as it is, does not contribute to wetland function beyond water retention and flow resistance. However, because the weighted average can "hide" smaller communities, always check for even small patches of high-quality species.

Functional Ratings

Function	*Rating*	*Comment*
Vegetative Diversity	Low	If vegetation is present, the primary communities are compromised by extensive invasive and/or non-native species. Ongoing maintenance will be necessary to restore native ecologic communities, although the presence of invasives upstream will limit the success of restoration efforts.
Additional stormwater treatment needs	Moderate	Sediment removal would improve the ability of this site to maintain water quality.
Maintenance of Hydrologic Regime	Moderate	There has been some degree of human alteration of the wetland hydrology, either by outlet control or by altering immediate watershed conditions. However, the wetland retains some of the hydrologic regime similar to the original wetland type, either in part of the wetland or overall to some extent. Because of the interference (whether active or inadvertant), some characteristic vegetative communities have likely been affected, as also have the functions of flood attenuation, water quality and groundwater interaction.
Flood/Stormwater/Attenuation	High	The wetland provides ample flood storage and/or flood wave attenuation. Outlet configuration is restricted (or unaltered) and undisturbed wetland soils, and dense emergent vegetation without channels allow the wetland to retard flood water. A high proportion of impervious surfaces in the subwatershed, large runoff volumes, clayey upland soils, and few wetlands present within the subwatershed may position any wetland to be a good attenuator of excess water.

Downstream Water Quality	Moderate	This wetland has some ability and opportunity to protect downstream resources. The ability of the wetland to remove sediment from stormwater is determined by emergent vegetation and overland flow characteristics. A high nutrient removal rating indicates dense vegetation and sheet flow to maximize nutrient uptake and residence time within the wetland. The opportunity for a wetland to protect a valuable water resource diminishes with distance from the wetland so wetlands with valuable waters within 0.5 miles downstream have the greatest opportunity to provide protection, as do those that receive more (and less-treated) runoff.
Maintenance of Wetland Water Quality	Moderate	Wetland water quality is average. Sediment removal from incoming water would benefit the site. Also consider reducing the amount of stormwater directed at the site. Sustaining a diverse wetland may require additional control over upland land use and the buffer.
Shoreline Protection	Not Applicable	The site does not fringe a deepwater habitat, lake, or is not within any type of watercourse.
Maintenance of Characteristic Wildlife Habitat Structure	Moderate	The site provides good habitat and is relatively accessible to wildlife, although it may be somewhat isolated on the landscape and lack the rich vegetative community and complex structure that would support a wider range of wildlife.
Maintenance of Characteristic Fish Habitat	Not Applicable	The site is too isolated or does not remain wet enough to support a population of fish or to allow for even temporary use as a refuge.
Maintenance of Characteristic Amphibian Habitat	Moderate	Predatory fish may be present due to occasional connection to other waters. Winter habitat unreliable if shallow water allows winterkill. As with fish, excess sedimentation may smother eggs so pretreatment of stormwater runoff and a wide, unmanicured buffer improves conditions for reproduction. Barriers to migration may also impact the value of a site to more-mobile frogs, salamanders, and turtles.
Aesthetics/Recreation /Education/Cultural	Moderate	Many wetlands are visible from nearby buildings or roads and are accessible for some recreational activities. Excess negative human influence (such as trash or alteration) will reduce the ranking of well-used and highly-accessible sites.
Wetland restoration potential	Not Applicable	Because restoration would affect permanent structures or infrastructure (houses, roads, septic systems), this site is not suitable for restoration.
Wetland Sensitivity to Stormwater and Urban Development	Moderate	This wetland is moderately sensitive to stormwater; Floodplain forests, fresh wet meadows dominated by reed canary grass, shallow and deep marshes dominated by cattail, reed canary grass, giant reed or purple loosestrife, and shallow, open water communities with low to moderate vegetative diversity.

Appendix A: Dominant Species By Plant Community

	Wetland Type	Plant Community	Dominant Species	Percent Cover
PEMC	**Type 3**	**Shallow Marsh**		
			Sandbar willow	10
			Reed canary grass	30
			Narrow-leaved cattail	10
			Green ash	10
			Box elder	10
PFO1	**Type 7**	**Floodplain Forest**		
PSS1	**Type 6**	**Shrub-carr**		
PUBG	**Type 5**	**Shallow, Ow Communities**		
			Reed canary grass	20
			Narrow-leaved cattail	10
			Common buckthorn	10
			Box elder	10

Management Classification Report for MTA-MTA-12 **MTA-MTA-12**

ID: 27

HENNEPIN County
Minnesota (Shakopee) Watershed, #33
Corps Bank Service Area 9

Based on the MnRAM data input from field and office review and using the classification settings as shown below, this wetland is classified as Manage 2

Functional rank of this wetland based on MnRAM data	Functional Category	Self-defined classification value settings for this management level
Not Applicable	Vegetative Diversity/Integrity	Moderate
Low	Habitat Structure (wildlife)	Moderate
Low	Amphibian Habitat	Low
Low	Fish Habitat	Moderate
Not Applicable	Shoreline Protection	Low
Low	Aesthetic/Cultural/Rec/Ed and Habitat	Moderate / Low
Moderate	Stormwater/Urban Sensitivity and Vegetative Diversity	- / -
Low	Wetland Water Quality and Vegetative Diversity	- / -
Low	Characteristic Hydrology and Vegetative Diversity	- / -
High	Flood/Stormwater Attenuation*	-
Not Applicable	Commericial use*	-
Moderate	Downstream Water Quality*	-

The critical function that caused this wetland to rank as **Manage 2** was
Maintenance of Characteristic Amphibian Habitat

Details of the formula for this action are shown below:

Maintenance of Characteristic Amphibian Habitat **(Q43) * [(Q44 + 2*Q23wildlife + Q14 +Q 41 + Q20 reversed)/6]**

Question	*Value*	*Description*
14	0.1	Upland land use
20	0.1	Stormwater runoff
23	0.1	Buffer width
41	0.1	Wildlife barriers
43	1	Amphib breeding potential--fish presence
44	0.1	Amphib & reptile overwintering habitat

This report was printed on: Friday, October 18, 2013

* The classification value settings for these functions are not adjustable

Wetland Functional Assessment Summary

Wetland Name	Hydrogeomorphology	Maintenance of Hydrologic Regime	Flood/ Stormwater/ Attenuation	Downstream Water Quality	Maintenance of Wetland Water Quality	Shoreline Protection
MTA-MTA-12	Depressional/Isolated (no discernable inlets or outlets)	0.33	0.72	0.57	0.25	0.00
		Low	High	Moderate	Low	Not Applicable

						Additional Information			
Wetland Name	Maintenance of Characteristic Wildlife Habitat Structure	Maintenance of Characteristic Fish Habitat	Maintenance of Characteristic Amphibian Habitat	Aesthetics/ Recreation/ Education/ Cultural	Commercial Uses	Ground-Water Interaction	Wetland Restoration Potential	Wetland Sensitivity to Stormwater and Urban Development	Additional Stormwater Treatment Needs
MTA-MTA-12	0.29	0.33	0.23	0.26	0.00	Combination Discharge, Recharge	0.00	0.10	0.25
	Low	Low	Low	Low	Not Applicable		Not Applicable	Moderate	Low

Wetland Community Summary

		Vegetative Diversity/Integrity							
		Community							
Wetland Name	Location	Cowardin Classification	Circular 39	Plant Community	Wetland Proportion	Individual Community Rating	Highest Wetland Rating	Average Wetland Rating	Weighted Average Wetland Rating
MTA-MTA-12	27-117-22-25-001	PUBG	Type 5	Shallow, Open Water Communities	0	0.1	0.10	0.10	0.00
							Low	Low	Not Applicable
							0.10	0.10	0.00 ☐

☑ *Denotes incomplete calculation data.*

MnRAM: Site Response Record

For Wetland: MTA-MTA-12

Location: 27-117-22-25-001

MTA-MTA-12

Plant Community: Shallow, Open Water C

Cowardin Classification: PUBG

Circular 39: Type 5

4	*Listed, rare, special species?*	No
5	*Rare community or habitat?*	No
6	*Pre-European-settlement condition?*	No

Hydrogeomorphology / topography:

7		Depressional/Isolated
8-1	*Maximum water depth*	48 inche
8-2	*% inundated*	90%
9	*Immediate drainage--local WS*	40 acres
10	*Esimated size/existing site:*	*(see #66)*
11-Upland Soil		Urban Land - Udorthents
11-Wetland Soil		Water

12	*Outlet for flood control*	NA
13	*Outlet for hydro regime*	A
14	*Dominant upland land use*	C
15	*Wetland soil condition*	C
16	*Vegetation (% cover)*	10%
17	*Emerg. veg flood resistance*	B
18	*Sediment delivery*	B
19	*Upland soils (soil group)*	B
20	*Stormwater runoff*	A
21	*Subwatershed wetland density*	A
22	*Channels/sheet flow*	A
23	*Adjacent buffer width*	50 feet

Adjacent area management

24-A	*Full*	50%
24-B	*Manicured*	30%
24-C	*Bare*	20%

Adjacent area diversity/structure

25-A	*Native*	0%
25-B	*Mixed*	80%
25-C	*Sparse*	20%

Adjacent area slope

26-A	*Gentle*	0%
26-B	*Moderate*	100%
26-C	*Steep*	0%

27	*Downstream sens./WQ protect.*	B
28	*Nutrient loading*	B
29	*Shoreline wetland?*	No

Shoreline Wetland

30	*Rooted veg., % cover*	0%
31	*Wetland in-water width*	0 feet
32	*Emerg. veg. erosion resistance*	
33	*Erosion potential of site*	
34	*Upslope veg./bank protection*	
35	*Rare wildlife?*	No
36	*Scare/Rare/S1/S2 community*	No
37	*Vegetative cover*	C
38	*Veg. community interspersion*	NA
39	*Wetland detritus*	NA
40	*Interspersion on landscape*	B
41	*Wildlife barriers*	C

Amphibian-breeding potential

42	*Hydroperiod adequacy*	Adequate
43	*Fish presence*	A
44	*Overwintering habitat*	C
45	*Wildlife species (list)*	
46	*Fish habitat quality*	C
47	*Fish species (list)*	
48	*Unique/rare opportunity*	No
49	*Wetland visibility*	B
50	*Proximity to population*	Yes
51	*Public ownership*	C
52	*Public access*	C
53	*Human influence on wetland*	C
54	*Human influence on viewshed*	C
55	*Spatial buffer*	B
56	*Recreational activity potential*	C
57	*Commercial crop--hydro impact*	NA

Groundwater-specific questions

58	*Wetland soils*	Recharge
59	*Subwatershed land use*	Recharge
60	*Wetland size/soil group*	Recharge
61	*Wetland hydroperiod*	Discharge
62	*Inlet/Outlet configuration*	Recharge
63	*Upland topo relief*	Discharge

Additional information

64	*Restoration potential*	No
65	*LO affected by restoration*	
66	*Existing size*	3.48
	Restorable size	0
	Potential new wetland	0
67	*Average width of pot. buffer*	0 feet
68	*Ease of potential restoration*	
69	*Hydrologic alterations*	0
70	*Potential wetland type*	0
71	*Stormwater sensitivity*	C
72	*Additional treatment needs*	A

Watershed . Minnesota (Shakopee)

WS# 33 Service Area: 9

For functional ratings, please run the Summary tab report.

This report printed on: 10/18/2013

MnRAM Site Assessment Report

Friday, October 18, 2013

Wetland: MTA-MTA-12 **Project: MTA-MTA-12**

Wetland ID: 27, Township 117, Section 25, Range 22

HENNEPIN County, Minnesota (Shakopee) Watershed, Nine Mile Creek Subwatershed, Corps Bank Service Area #9

Assessment Purpose: Classification

Site conditions were Normal. This wetland is estimated to cover 3.48 acres.

This report reflects conditions on the ground at the date of the assessment and, unless noted or implicit in the standard questions, does not reflect speculation on the future or past conditions.

This wetland is located in or near the city of Minnetonka

General Features

Hydrogeomorphology

The maximum water depth at this site is 48 inches, with 90 percent inundated. With an immedidate drainage area of 40 acres, it is doubtful that this wetland is sustainable given its small catchment area.

As a Depressional/Isolated wetland, this site has no discernable inlets or outlets. As such, t is valued for its ability to store water, especially if located lower in the watershed. If it does not already have invasive species in the plant community, its lack of connection to upstream sites with such species may protect it.

This wetland has been drained or altered 0% from its original size of 3.48 acres.

Soils

The soils in the immediate wetland area are primarily Water. The adjacent upland, to about 500 feet, is Urban Land - Udorthents.

Vegetation and Upland Buffer

The extent of vegetation in this wetland is about 10 percent and the naturalized buffer width averages 50 feet. Vegetated buffers around wetlands provide multiple benefits including wildlife habitat, erosion protection, and a reduction in surface water runoff.

This buffer not only provides an excellent buffer for wetland water quality, it also serves as an important resources for wildlife habitat.

Special Features

There were no special features observed at the site at the time of this assessment

Vegetative Communities

The following plant communities were observed:

(See Appendix A for details on the Dominant Species per plant community)

(See Appendix A for details on the Dominant Species per plant community)

Shallow, Ow Communities Type 5, PUBG. This community had a vegetative index of low and comprised 0 percent of the entire area.

Functional Ratings

Function	*Rating*	*Comment*
Vegetative Diversity	Low	If vegetation is present, the primary communities are compromised by extensive invasive and/or non-native species. Ongoing maintenance will be necessary to restore native ecologic communities, although the presence of invasives upstream will limit the success of restoration efforts.
Additional stormwater treatment needs	Low	Both sediment and nutrient removal are called for to prevent further degradation of this site.
Maintenance of Hydrologic Regime	Low	Extensive alteration of wetland hydrology has altered the original wetland, changing wetland type, vegetative communities, and severely impacting the natural hydrologic function. However, a constructed outlet may allow the the site to provide significant floodwater attenuation.
Flood/Stormwater/Attenuation	High	The wetland provides ample flood storage and/or flood wave attenuation. Outlet configuration is restricted (or unaltered) and undisturbed wetland soils, and dense emergent vegetation without channels allow the wetland to retard flood water. A high proportion of impervious surfaces in the subwatershed, large runoff volumes, clayey upland soils, and few wetlands present within the subwatershed may position any wetland to be a good attenuator of excess water.
Downstream Water Quality	Moderate	This wetland has some ability and opportunity to protect downstream resources. The ability of the wetland to remove sediment from stormwater is determined by emergent vegetation and overland flow characteristics. A high nutrient removal rating indicates dense vegetation and sheet flow to maximize nutrient uptake and residence time within the wetland. The opportunity for a wetland to protect a valuable water resource diminishes with distance from the wetland so wetlands with valuable waters within 0.5 miles downstream have the greatest opportunity to provide protection, as do those that receive more (and less-treated) runoff.
Maintenance of Wetland Water Quality	Low	Wetland water quality is poor. Additional resources are needed to protect any existing plant or animal communities that exist, using both sediment-removal and nutrient-reduction technologies.
Shoreline Protection	Not Applicable	The site does not fringe a deepwater habitat, lake, or is not within any type of watercourse.
Maintenance of Characteristic Wildlife Habitat Structure	Low	Isolated by development, the vegetation impacted and reduced, this site does not support an integral community of species.

Maintenance of Characteristic Fish Habitat	Low	No direct connection to a waterbody with a native fishery or poor water quality make this site a poor candidate for fish habitat. High carp populations degrade habitat for other fish.
Maintenance of Characteristic Amphibian Habitat	Low	Predatory fish are always present and winter habitat unsuitable as site often freezes to the bottom. High inputs of untreated stormwater or unfiltered runoff contribute to poor water quality and reproductive conditions.
Aesthetics/Recreation /Education/Cultural	Low	Inaccessible, distant from population centers, little-used sites that are not culturally significant rank poorly even if their other functions rank high. Usually, however, even the most distant sites have a potential for recreational use and will drop to the lowest ranking only if they are negatively affected by human alteration.
Wetland restoration potential	Not Applicable	Because restoration would affect permanent structures or infrastructure (houses, roads, septic systems), this site is not suitable for restoration.
Wetland Sensitivity to Stormwater and Urban Development	Moderate	This wetland is moderately sensitive to stormwater; Floodplain forests, fresh wet meadows dominated by reed canary grass, shallow and deep marshes dominated by cattail, reed canary grass, giant reed or purple loosestrife, and shallow, open water communities with low to moderate vegetative diversity.

Appendix A: Dominant Species By Plant Community

	Wetland Type	Plant Community	Dominant Species	Percent Cover
PUBG	**Type 5**	**Shallow, Ow Communities**		
			Purple loosestrife	10
			Pennsylvania smartweed	10

Management Classification Report for MTA-MTA-13 **SWLRT- MTA-MTA-13**

ID: 115

HENNEPIN County
Minnesota (Shakopee) Watershed, #33
Corps Bank Service Area 9

Based on the MnRAM data input from field and office review and using the classification settings as shown below, this wetland is classified as Manage 1

Functional rank of this wetland based on MnRAM data	Functional Category	Self-defined classification value settings for this management level
Low	Vegetative Diversity/Integrity	High
Moderate	Habitat Structure (wildlife)	High
Moderate	Amphibian Habitat	Moderate
Moderate	Fish Habitat	High
Low	Shoreline Protection	Moderate
Low	Aesthetic/Cultural/Rec/Ed and Habitat	High / Moderate
Moderate	Stormwater/Urban Sensitivity and Vegetative Diversity	High / Moderate
Low	Wetland Water Quality and Vegetative Diversity	High / Moderate
Low	Characteristic Hydrology and Vegetative Diversity	High / Moderate
Moderate	Flood/Stormwater Attenuation*	-
Not Applicable	Commericial use*	High
Moderate	Downstream Water Quality*	-

The critical function that caused this wetland to rank as **Manage 1** was
Maintenance of Characteristic Amphibian Habitat

Details of the formula for this action are shown below:

Maintenance of Characteristic Amphibian Habitat **(Q43) * [(Q44 + 2*Q23wildlife + Q14 +Q 41 + Q20 reversed)/6]**

Question	*Value*	*Description*
14	0.1	Upland land use
20	0.1	Stormwater runoff
23	0.1	Buffer width
41	0.5	Wildlife barriers
43	1	Amphib breeding potential--fish presence
44	1	Amphib & reptile overwintering habitat

This report was printed on: Wednesday, October 15, 2014

* The classification value settings for these functions are not adjustable

Wetland Functional Assessment Summary

Wetland Name	Hydrogeomorphology	Maintenance of Hydrologic Regime	Flood/ Stormwater/ Attenuation	Downstream Water Quality	Maintenance of Wetland Water Quality	Shoreline Protection
MTA-MTA-13	Depressional/Flow-through (apparent inlet and outlet), Depressional/Flow-through (apparent inlet and outlet)	0.33	0.64	0.58	0.32	0.18
		Low	Moderate	Moderate	Low	Low

						Additional Information			
Wetland Name	Maintenance of Characteristic Wildlife Habitat Structure	Maintenance of Characteristic Fish Habitat	Maintenance of Characteristic Amphibian Habitat	Aesthetics/ Recreation/ Education/ Cultural	Commercial Uses	Ground-Water Interaction	Wetland Restoration Potential	Wetland Sensitivity to Stormwater and Urban Development	Additional Stormwater Treatment Needs
MTA-MTA-13	0.35	0.39	0.45	0.15	0.00	Combination Discharge, Recharge	0.00	0.10	0.32
	Moderate	Moderate	Moderate	Low	Not Applicable		Not Applicable	Moderate	Low

Wetland Community Summary

		Vegetative Diversity/Integrity								
		Community								
Wetland Name	Location	Cowardin Classification	Circular 39	Plant Community	Wetland Proportion	Individual Community Rating	Highest Wetland Rating	Average Wetland Rating	Weighted Average Wetland Rating	
MTA-MTA-13	27-117-22-25-001	PUBG	Type 5	Shallow, Open Water Communities	80	0.1	0.10	0.10	0.10	
							Low	Low	Low	
		PEM1A	Type 1	Seasonally Flooded Basin	20	0.1	0.10	0.10	0.10	
							Low	Low	Low	
					100		0.10	0.10	0.10	☐

☑ *Denotes incomplete calculation data.*

MnRAM: Site Response Record

For Wetland: MTA-MTA-13

Location: 27-117-22-25-001

SWLRT- MTA-MTA-13

Plant Community: Shallow, Open Water C

Cowardin Classification: PUBG

Circular 39: Type 5

Plant Community: Seasonally Flooded Ba

Cowardin Classification: PEM1A

Circular 39: Type 1

4	*Listed, rare, special species?*	No
5	*Rare community or habitat?*	No
6	*Pre-European-settlement condition?*	No

Hydrogeomorphology / topography:

7 Depressional/FlowThru

8-1	*Maximum water depth*	48 inche
8-2	*% inundated*	95%
9	*Immediate drainage--local WS*	3.8 acres
10	*Esimated size/existing site:*	*(see #66)*

11-Upland Soil Shorewood

11-Wetland Soil Shorewood

12	*Outlet for flood control*	A
13	*Outlet for hydro regime*	A
14	*Dominant upland land use*	C
15	*Wetland soil condition*	C
16	*Vegetation (% cover)*	20%
17	*Emerg. veg flood resistance*	C
18	*Sediment delivery*	B
19	*Upland soils (soil group)*	B
20	*Stormwater runoff*	A
21	*Subwatershed wetland density*	B
22	*Channels/sheet flow*	A
23	*Adjacent buffer width*	150 feet

Adjacent area management

24-A	*Full*	100%
24-B	*Manicured*	0%
24-C	*Bare*	0%

Adjacent area diversity/structure

25-A	*Native*	0%
25-B	*Mixed*	100%
25-C	*Sparse*	0%

Adjacent area slope

26-A	*Gentle*	0%
26-B	*Moderate*	100%
26-C	*Steep*	0%

27	*Downstream sens./WQ protect.*	B
28	*Nutrient loading*	B
29	*Shoreline wetland?*	Yes

Shoreline Wetland

30	*Rooted veg., % cover*	5%
31	*Wetland in-water width*	3 feet
32	*Emerg. veg. erosion resistance*	C
33	*Erosion potential of site*	C
34	*Upslope veg./bank protection*	B
35	*Rare wildlife?*	No
36	*Scare/Rare/S1/S2 community*	No
37	*Vegetative cover*	C
38	*Veg. community interspersion*	C
39	*Wetland detritus*	NA
40	*Interspersion on landscape*	B
41	*Wildlife barriers*	B

Amphibian-breeding potential

42	*Hydroperiod adequacy*	Adequate
43	*Fish presence*	A
44	*Overwintering habitat*	A
45	*Wildlife species (list)*	
46	*Fish habitat quality*	C
47	*Fish species (list)*	
48	*Unique/rare opportunity*	No
49	*Wetland visibility*	C
50	*Proximity to population*	No
51	*Public ownership*	C
52	*Public access*	C
53	*Human influence on wetland*	B
54	*Human influence on viewshed*	C
55	*Spatial buffer*	C
56	*Recreational activity potential*	C

57	*Commercial crop--hydro impact*	NA

Groundwater-specific questions

58	*Wetland soils*	Recharge
59	*Subwatershed land use*	Recharge
60	*Wetland size/soil group*	Recharge
61	*Wetland hydroperiod*	Discharge
62	*Inlet/Outlet configuration*	Recharge
63	*Upland topo relief*	Discharge

Additional information

64	*Restoration potential*	No
65	*LO affected by restoration*	
66	*Existing size*	0.16
	Restorable size	0
	Potential new wetland	0
67	*Average width of pot. buffer*	0 feet
68	*Ease of potential restoration*	
69	*Hydrologic alterations*	0
70	*Potential wetland type*	0
71	*Stormwater sensitivity*	B
72	*Additional treatment needs*	A

Watershed Minnesota (Shakopee)

WS# 33 Service Area: 9

For functional ratings, please run the Summary tab report.

This report printed on: 10/15/2014

MnRAM Site Assessment Report

Wednesday, October 15, 2014

Wetland: MTA-MTA-13 **Project: SWLRT- MTA-MTA-13**

Wetland ID: 115, Township 117, Section 25, Range 22

HENNEPIN County, Minnesota (Shakopee) Watershed, Corps Bank Service Area #9

Site conditions were Normal. This wetland is estimated to cover 0.16 acres.

This report reflects conditions on the ground at the date of the assessment and, unless noted or implicit in the standard questions, does not reflect speculation on the future or past conditions.

This wetland is located in or near the city of Minnetonka

General Features

Hydrogeomorphology

The maximum water depth at this site is 48 inches, with 95 percent inundated. With an immedidate drainage area of 3.8 acres, it is doubtful that this wetland is sustainable given its small catchment area.

As a Depressional/Flow-through wetland, this site has an apparent inlet and outlet. As such,
Placeholder for Depressional/Flow-through discussion

This wetland has been drained or altered 0% from its original size of 0.16 acres.

Soils

The soils in the immediate wetland area are primarily Shorewood. The adjacent upland, to about 500 feet, is Shorewood.

Vegetation and Upland Buffer

The extent of vegetation in this wetland is about 20 percent and the naturalized buffer width averages 150 feet. Vegetated buffers around wetlands provide multiple benefits including wildlife habitat, erosion protection, and a reduction in surface water runoff.

This buffer not only provides an excellent buffer for wetland water quality, it also serves as an important resources for wildlife habitat.

As a shoreline wetland, this site has the potential to protect from erosion and provide spawning and nursery habitat for fish and wildlife. Wetlands less than six feet wide are relatively eneffective in wave buffering. Bare soils or shallow-rooted grasses manicured regularly provide the least protection. Rip-rap, while effective, is not desireable for a natural wetland. Some wetlands may provide adequate protection but, if located in areas with little erosive activity, will rate low for the function due to lack of opportunity.

Special Features

There were no special features observed at the site at the time of this assessment

Vegetative Communities

The following plant communities were observed:

The following plant communities were observed:

(See Appendix A for details on the Dominant Species per plant community)

Shallow, Ow Communities Type 5, PUBG. This community had a vegetative index of low and comprised 80 percent of the entire area.

Seasonally Fl Basin Type 1, PEM1A. This community had a vegetative index of low and comprised 20 percent of the entire area.

The highest rated community was the Shallow Marsh community rated at 1. Averaging all the communities together, the Vegetative Diversity and Integrity of this wetland is Low. A more accurate look uses a weighted average; using this method, this site shows a Low Vegetative Diversity and Integrity.

The majority of vegetation at this site, such as it is, does not contribute to wetland function beyond water retention and flow resistance. However, because the weighted average can "hide" smaller communities, always check for even small patches of high-quality species.

Functional Ratings

Function	*Rating*	*Comment*
Vegetative Diversity	Low	If vegetation is present, the primary communities are compromised by extensive invasive and/or non-native species. Ongoing maintenance will be necessary to restore native ecologic communities, although the presence of invasives upstream will limit the success of restoration efforts.
Additional stormwater treatment needs	Low	Both sediment and nutrient removal are called for to prevent further degradation of this site.
Maintenance of Hydrologic Regime	Low	Extensive alteration of wetland hydrology has altered the original wetland, changing wetland type, vegetative communities, and severely impacting the natural hydrologic function. However, a constructed outlet may allow the the site to provide significant floodwater attenuation.
Flood/Stormwater/Attenuation	Moderate	The wetland provides some flood storage and/or flood wave attenuation. It may have either an altered or unrestricted outlet, disturbed wetland soils, thin or little emergent vegetation (with channels) or it may be situated high in a watershed with a low proportion of impervious surfaces, moderate runoff volumes, loamy upland soils, and one or more other wetlands present within the subwatershed.
Downstream Water Quality	Moderate	This wetland has some ability and opportunity to protect downstream resources. The ability of the wetland to remove sediment from stormwater is determined by emergent vegetation and overland flow characteristics. A high nutrient removal rating indicates dense vegetation and sheet flow to maximize nutrient uptake and residence time within the wetland. The opportunity for a wetland to protect a valuable water resource diminishes with distance from the wetland so wetlands with valuable waters within 0.5 miles downstream have the greatest opportunity to provide protection, as do those that receive more (and less-treated) runoff.

Maintenance of Wetland Water Quality	Low	Wetland water quality is poor. Additional resources are needed to protect any existing plant or animal communities that exist, using both sediment-removal and nutrient-reduction technologies.
Shoreline Protection	Low	This site provides little protection against erosion. Low vegetative cover and intense management reduces vegetative ability to resist wave action and could lead to slope failure.
Maintenance of Characteristic Wildlife Habitat Structure	Moderate	The site provides good habitat and is relatively accessible to wildlife, although it may be somewhat isolated on the landscape and lack the rich vegetative community and complex structure that would support a wider range of wildlife.
Maintenance of Characteristic Fish Habitat	Moderate	Permanently flooded but isolated wetlands can support native populations of minnows and some isolated deep marshes have intermittent populations of sunfish and northern pike after flood events. Poor water quality, due to runoff and insufficient buffer and vegetation, can affect the sustainability of fish populations.
Maintenance of Characteristic Amphibian Habitat	Moderate	Predatory fish may be present due to occasional connection to other waters. Winter habitat unreliable if shallow water allows winterkill. As with fish, excess sedimentation may smother eggs so pretreatment of stormwater runoff and a wide, unmanicured buffer improves conditions for reproduction. Barriers to migration may also impact the value of a site to more-mobile frogs, salamanders, and turtles.
Aesthetics/Recreation /Education/Cultural	Low	Inaccessible, distant from population centers, little-used sites that are not culturally significant rank poorly even if their other functions rank high. Usually, however, even the most distant sites have a potential for recreational use and will drop to the lowest ranking only if they are negatively affected by human alteration.
Wetland restoration potential	Not Applicable	Because restoration would affect permanent structures or infrastructure (houses, roads, septic systems), this site is not suitable for restoration.
Wetland Sensitivity to Stormwater and Urban Development	Moderate	This wetland is moderately sensitive to stormwater; Floodplain forests, fresh wet meadows dominated by reed canary grass, shallow and deep marshes dominated by cattail, reed canary grass, giant reed or purple loosestrife, and shallow, open water communities with low to moderate vegetative diversity.

Appendix A: Dominant Species By Plant Community

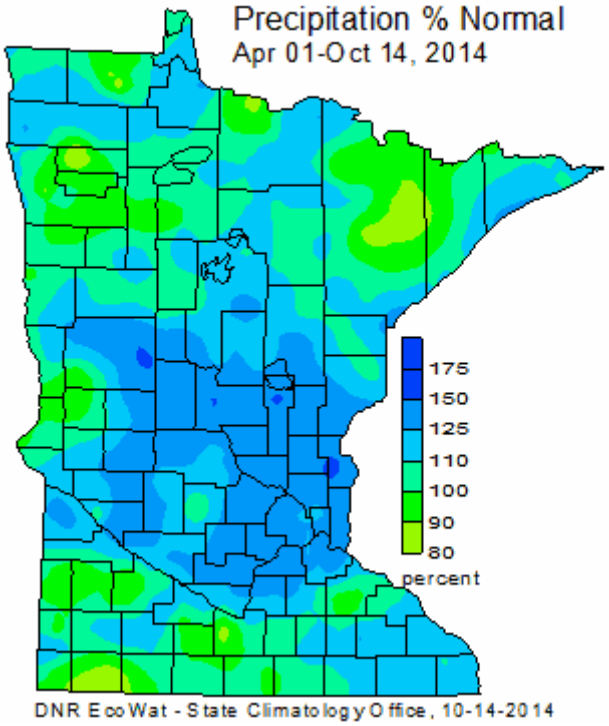
	Wetland Type	Plant Community	Dominant Species	Percent Cover
PUBG	**Type 5**	**Shallow, Ow Communities**		
			Reed canary grass	>10-25%
			Lesser duckweed	>10-25%
PEM1	**Type 1**	**Seasonally Fl Basin**		
			Sandbar willow	>25-50%
			Reed canary grass	>25-50%

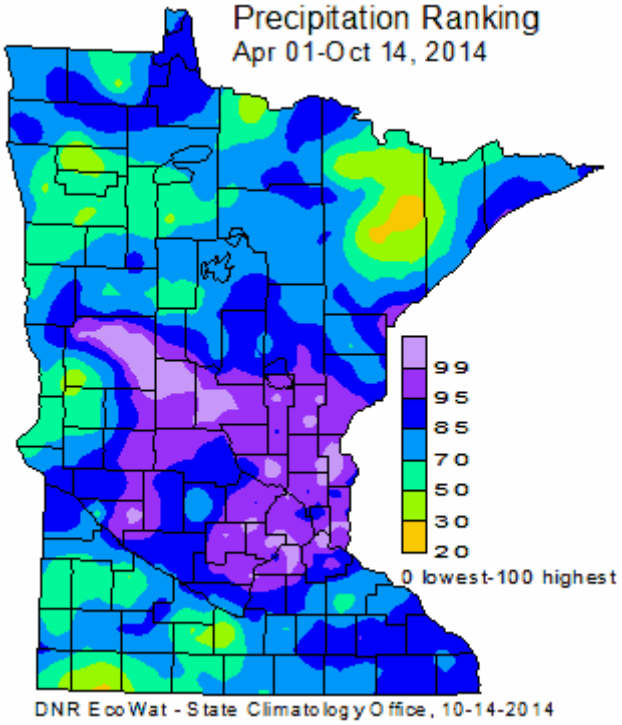
APPENDIX G

Antecedent Precipitation Record

Appendix G: Antecedent Precipitation Record

http://climate.umn.edu/doc/weekmap/weekmap_141014.htm





ATTACHMENT 1

Anderson Engineering of Minnesota, LLC

Environmental Staff Credentials

ANDERSON ENGINEERING
MINNEAPOLIS, MINNESOTA • TAMPA, FLORIDA

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BENJAMIN J. HODAPP, PWS

Environmental Services Manager
Professional Wetland Scientist #1832
MN Certified Wetland Delineator #1016

Education:

MS Water Resources Management
University of Wisconsin-Madison

BS Biology; Ecology
Minnesota State University- Mankato

Specialized Training:

Wetland Delineation & Management Training
Richard Chinn Environmental Training, Inc.

Wetland Plant Identification
Biotic Consultants Inc.

Plant Identification for Wetland Delineation
University of Wisconsin-La Crosse

Watershed Academy Web Certificate
United States Environmental Protection Agency

Professional Associations:

Society of Wetland Scientists
MN Wetland Professionals Association (WPA)
MN WPA President 2010
Wisconsin Wetlands Association
Minnesota Native Plant Society
Ecological Society of America

Total Years of Experience:

14 years

Years with Current Firm:

2004 to Present

Selected Publications:

The Future of Rowan Creek Watershed: Connecting Land Use and Management with Water Quality. 2003. Water resources Management Workshop 2002 Gaylord Nelson Institute for Environmental Studies, University of Wisconsin, Madison.

The Tumultuous World of Drainage Districts: An Analysis of Existing Management Arrangements, with Recommendations. Working Paper Series 2002-1. Water Resources Institutions and Policies, Department of Urban and Regional Planning, University of Wisconsin, Madison.

Experience Summary:

Benjamin Hodapp, a Biologist and Project Manager, brings a broad background of knowledge and experience in the natural resource field to the Anderson Engineering team. Benjamin has a unique combination of biologic training and field skills in addition to working experience at various levels of government (NRCS, FSA, University of MN Extension, Watonwan County Soil and Water Conservation District and Watonwan County Environmental Services).

Benjamin's project experience includes natural resource inventory, wetland determinations, delineations, mitigation design and monitoring, regulatory permit applications, wetland functions and values assessments, flood plain analysis, ordinary high water determinations, aerial photo interpretation. Benjamin has training and experience with Global Positioning Systems (GPS) and Geographic Information Systems (GIS).

Representative Projects:

- **Farmed Wetland Determination Inventory - USDA NRCS – Various Counties, ND:** Project manager and field crew chief for farmed wetland determination inventory project within three counties in North Dakota. Project tasks included project management oversight of all supporting staff, client point of contact, scheduling field investigations with dozens of landowners, supervision of field staff during data collection, and quality control of deliverables sent to the USDA NRCS.

- **Wetland Delineation/Assessment – Northern Natural Gas – Dakota County and Freeborn County, MN & Worth County, IA:** Project manager and field crew chief for wetland determinations, boundary delineations and threatened and endangered species habitat assessments for three proposed natural gas line corridors located in Iowa and Minnesota. Project tasks and included project management oversight of all supporting staff, providing point of contact services for client, supervising field staff in completion of a wetland investigations and habitat assessments, and quality control of deliverables.

- **Wetland Delineation/Assessment – Northern Natural Gas – Redfield, IA:** Project manager and field crew chief for wetland determinations, boundary delineations and threatened and endangered species habitat assessments for 20 miles of proposed natural gas line corridors and 1,000 acres of proposed natural gas well pads. Project tasks and included project management oversight of all supporting staff, providing point of contact services for client, supervising field staff in completion of a wetland investigations and habitat assessments, and quality control of deliverables

- **Section 401/404 Wetland Permitting – Fort McCoy Commemorative Park Expansion – Fort McCoy, WI:** Provided project management services for Section 401/404 permitting associated with proposed wetland impacts resulting from the Commemorative Park Expansion Project at the Fort McCoy U.S. Army installation. Project tasks included project management of supporting staff, providing point of contact services for the U.S. Army, developing a wetland mitigation strategy in compliance with Section 401/404 and state wetland permitting requirements and oversight and quality control in preparing Section 401/404 permit application

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MARC COTTINGHAM, CPESC

Environmental Services Consultant
Certified Professional in Erosion and Sediment Control #4491
MN Certified Wetland Delineator #1207

Education:

MS Water Resources Management
University of Wisconsin-Madison

BS Soil Science
University of Wisconsin-Madison

Specialized Training:

Using the Midwest Interim Regional Supplement for Wetland Delineation, Illinois Soil Classifiers Association, February 27, 2009

Certified Professional in Erosion and Sediment Control, March 13, 2008

Railroad Right-of-Way Contractor Orientation Course Certification, April 11, 2007

Designated Erosion Control Inspector, Lake County, IL, March 22, 2007

Certified Wetland Specialist, Lake County, IL, February 7, 2007

Illinois Department of Agriculture Herbicide Applicator License, June, 2006

Wetland Plant Identification, Biotic Consultants, Inc. June 4, 2004

Federally Licensed Wetland Delineator Certification Training, Richard Chinn Environmental Training, Inc., August, 2004

Professional Associations:

Illinois Environmental Professionals Association
Soil Science Society of America
Environmental Consulting Professionals
MN Wetland Professionals Association
Society of Wetland Scientists

Total Years of Experience:

12 years

Years with Current Firm:

2009 to Present

Selected Publications:

Innovating Stormwater Management on the University of Wisconsin-Madison Campus. 2003. Water resources Management Workshop 2003 Gaylord Nelson Institute for Environmental Studies, University of Wisconsin, Madison.

Experience Summary:

Marc Cottingham, an Environmental Scientist, has over twelve years of professional experience completing wetland delineation/investigations. Prior to his employment with Anderson Engineering of MN, LLC, Marc worked as a wetland consultant in Illinois. The skills Marc has developed through his educational background and years of experience as a wetland/environmental consultant give him a firm understanding of each of the wetland indicators. Marc is able to correctly and thoroughly identify and delineate each wetland type within the Midwestern United States, including disturbed and problematic wetlands.

Marc's project experience includes wetland determinations, delineations, collection of wetland data using the data forms provided in the U.S. Army Corps of Engineers (USACE) Regional Supplement(s) to the 1987 Delineation Manual, farmed wetland assessments using the protocol established by the USDA and USACE for purposes of the Food Security Act, wetland mitigation design, wetland mitigation monitoring and maintenance, water resource regulatory permit applications, wetland functions and values assessments, natural resource inventories, watershed assessments, and aerial photo interpretation. Marc has training and experience with Global Positioning Systems (GPS) and Geographic Information Systems (GIS).

Representative Projects

- **Wetland Delineation/Assessment – Northern Natural Gas – Dakota County and Freeborn County, MN & Worth County, IA:** Services included wetland determinations, boundary delineations and threatened and endangered species habitat assessments for three proposed natural gas line corridors located in Iowa and Minnesota. Project tasks included completion of wetland boundary investigations following the 1987 USACE Wetland Manual and all appropriate Regional Supplements; classification of the wetland habitat types based on soil profiles, dominant vegetative communities and hydrology indicators, completion of a habitat assessment for native tall grass prairie for potential occurrence of the federally listed prairie bush clover (*Lespedeza leptostachya)*, and preparation of a comprehensive wetland delineation report documenting the findings.

- **Farmed Wetland Determination Inventory – USDA NRCS – Various Counties, ND:** Field crew chief for farmed wetland determination inventory project within three counties in North Dakota. Project tasks included collecting field data following the procedures of the USACE and USDA, supervision of supporting field staff, and preparation of deliverables to the NRCS.

- **Wetland Delineation/Assessment – Fort McCoy Alderwood Dam Removal – Fort McCoy, WI:** Services included a wetland determination and delineation of wetland associated with a proposed dam removal project at the Fort McCoy U.S. Army installation. Project tasks included completion of a wetland delineation following the 1987 USACE Wetland Manual and the Midwest Regional Supplement and preparation of the wetland delineation report to document findings and help assess potential wetland impacts for Section 401/404 permitting,

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Todd Udvig, CWD, CPSS

Senior Project Scientist
MN Certified Wetland Delineator #1051

Education:

MS Candidate Geographic Information Science
St Mary's University

MS Forestry
Southern Illinois University at Carbondale

BS Biology
University of Wisconsin- River Falls

Specialized Training:

Environmental Law

Water and Wastewater Treatment

Wetland Creation and design

Plants for Storm Water Design

BWSR Advanced Wetland Delineation Training

VFA Training

MLCCS Certification Training

Water Quality Regulations

Professional Associations:

Society of Wetland Scientists
MN Wetland Professionals Association (WPA)

Total Years of Experience:

30 years

Years with Current Firm:

2013 to Present

Experience Summary:

Mr. Udvig is a senior project scientist at Anderson Engineering. He has over 30 years' experience and academic training in wetland, natural resources, permitting projects and project management. He is experienced in public meeting and regulatory approval processes. Areas of expertise include natural resources management and inventories, wetland functions and values assessments, wetland permitting, mitigation design, delineation, threatened and endangered species surveys, environmental documents (EIS's, EA's, EAW's) , specialized soils studies and drainage projects. He has completed wind projects in Minnesota, Wisconsin, Illinois, and Ohio and was involved with a major transmission line (345 Kv's) siting project specifically routing. He has extensive experience in wind related projects completing field surveys for natural resources, SPCC issues, and permitting and regulatory issues for siting. He has served as a Minnesota Wetland Conservation Act administrator for the Washington Conservation District, McLeod County, City of Albertville, City of Hamburg, White Bear Township, and Capitol Region WD.

He has also been responsible for marketing natural resource services to existing and new clients, including proposal and statement of qualifications package preparation. Mr. Udvig has extensive experience in Health and Safety including conducting training, development of Health and safety plans, and site safety management. Former Health and Safety manager for Geraghty and Miller, Inc. (now Arcadis).

Representative Projects:

Petersburg Ranger District, Petersburg, Alaska
Project involved the preparation of an Environmental Assessment (EA) for a Travel and Management Plan within the Petersburg Ranger District managed by the USFS. Sections of the EA completed included vegetation, invasive plant species, timber management, forest health, and threatened and endangered plant species impacts. Additionally, a separate Invasive Plant Species report was prepared for the District. The Petersburg District encompasses four larger islands, part of the mainland and several smaller islands totaling 1.7 million acres.

Community Wind Wind Farm, Lincoln County, Minnesota
Preliminary work on the siting of a wind farm project. Preliminary tasks included wetland delineations, site evaluation for native prairie remnants, habitat assessment, and an evaluation of threatened and endangered species presence. Wetland delineations were completed for the 2600 acre proposed windfarm development site. Preliminary wetland assessments were conducted from National Wetland Inventory mapping. Particular emphasis was placed on those areas where infrastructure would be installed. Regulatory coordination was completed for wetland delineation concurrence and for threatened and endangered species occurrence. The federally endangered Topeka Shiner (*Notropis topeka*) was recorded in Medary Creek on a portion of the site.

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ALISON HRUBY, MS

Principal Investigator Archaeologist
Environmental Associate
MN Archaeological Survey License #13-003
MHS Repository Agreement License #617
ND Archaeological Survey License #Pending
OSHA 40 Hour HAZWOPER #130402171590
MN DNR Certified Tree Inspector #20104116

Education:

MS Anthropology/Archaeology
Minnesota State University- Mankato

BA Anthropology and History
St. Cloud State University

Specialized Training:

Wetland Delineator Certification Program
University of Minnesota Extension Service

Basic Wetland Delineation-5 Day Course
Wetland Boundary Plant ID Course
Advanced Wetland Boundary Plant ID Course
Hydrology Indicators Course
Hydric Soils Course
Land Use Based Wetland Delineation
Wetland Mitigation in Minnesota

Customized Training & Consulting,
Project Management Certification
St. Paul College

Project Management Fundamentals
Project Management Applications
Fundamentals of Supervision and
Management, Parts 1 and 2

Professional Associations:

MN Wetland Professionals Association (WPA)

Total Years of Experience:

17 years

Years with Current Firm:

2013 to Present

Selected Publications:

The Use of Forensic Archaeology in Cultural Resource Management at Blackwater Draw Site in Eastern New Mexico. 2004. Master of Science Thesis. Minnesota State University, Mankato.

Investigating Poorly Known Areas of Minnesota: An Archaeological Survey of McLeod County. 2012-2013. Minnesota Historical Society. Published by the Minnesota Department of Administration.

Experience Summary:

Alison Hruby, a Principal Investigator Archaeologist and Wetland Professional, brings a broad background of knowledge and experience in both cultural and natural resource fields to the Anderson Engineering team. Alison has a unique combination of training and field skills in addition to work experience at various levels of government (USFW, FCC, and various THPO offices).

Alison's project experience includes the management and execution of Phase I-III cultural resources projects that entailed research, lab work, curation and report writing. Other experience includes the rehabilitation and stabilization of sites, evaluation and consultation of sites to determine future land use, and the development of museum quality interpretive displays, tours and programs. Alison also has experience in Phase I environmental assessments and experience with Global Positioning Systems (GPS) and X-ray Fluorescence Technology.

Representative Archaeology Projects:

- **McLeod County Archaeological Survey – Minnesota Historical Society – St. Paul, MN:** Principal Investigator for archaeological reconnaissance survey to identify new archaeological sites in McLeod County. Project tasks included management oversight, landowner contact, completion of survey, analysis and quality control of deliverables.

- **Science Museum of Minnesota Excavation – SMM – St. Paul, MN:** Archaeologist and Lab Supervisor for the Phase III excavation and of the new Science Museum of Minnesota. Project tasks included assisting in the large scale excavation and the supervision of volunteers, which numbered a minimum of 50 people per day. Lab Supervisor in charge of interns and curation once the excavation was complete. Contributed to final report, including the analysis and photographing of artifacts.

- **Site Expansion and Interpretive Center Building – Blackwater Draw Site – Portales, NM:** Archaeologist involved in all aspects of conservation and maintenance in order to rehabilitate and stabilize the site and to reproduce the natural environment of 10,000 years ago for future visitors. Project tasks included excavation of the future interpretive center, along with designing and completing unique thesis research through identification of the soil chemical profile at the site. Supervised student interns and guest volunteers from other universities, in addition to designing and delivering interpretive tours.

Representative Wetland Projects:

- **Southwest Light Rail – Southwest Light Rail Transit – St. Louis Park, MN:** Wetland scientist involved in the delineation of wetlands along various proposed routes of the Southwest Light Rail Corridor. Project tasks included field investigations, creation and dissemination of meeting materials and participation in the final report writing process.

- **Parkland 2nd Addition Development – Parkland Addition, LLC – Faribault, MN:** Wetland scientist involved in the determination of a created wetland to fulfill the requirements of mitigated wetlands in a foreclosed development. Project tasks included field delineation, client contact, previous records investigation and a final written report with recommendations for the new owner of the development.

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KRISTINA A. JUSTEN

Environmental Associate

Education:

BS Biology
University of Wisconsin - River Falls

Specialized Training

Certified in Stream Electrofishing
WI DNR, April 2010

Professional Associations:

MN Wetland Professionals Association

Total Years Experience:

4 years

Years with Current Firm:

2010 to Present

Experience Summary:

Kristina Justen, an Environmental Associate, brings a range of knowledge and experience in the field of biological monitoring to the Anderson Engineering team. Prior to her employment with Anderson Engineering of MN, LLC, Kristina worked as a wetland technician for the Minnesota Pollution Control Agency. The skills Kristina has developed through her educational background and experience as a wetland technician make her proficient in assessing and addressing a range of natural resource issues, and clearly communicating solutions to clients and various regulatory agencies.

Kristina's project experience includes natural resource inventory, watershed assessments, biologic assessments, Threatened and Endangered Species analysis, NEPA project management and document preparation, wetland determinations, delineations, mitigation design and monitoring, regulatory permit applications, wetland functions and values assessments, flood plain analysis, ordinary high water determinations, wetland macroinvertebrate sampling, Floristic Quality Assessments, Total Maximum Daily Load (TMDL) investigation, and aerial photo interpretation. Kristina has experience with Global Positioning Systems (GPS), remote sensing, and Geographic Information Systems (GIS).

Representative Projects:

- Linear Corridor Projects including biologic assessment for critical habitat, threatened and endangered species, wetland determination, wetland delineation, and wetland mitigation replacement services for Northern Natural Gas– Ventura North III Natural Gas Pipeline
  Dakota County, MN, Freeborn County, MN & Worth County, IA

- Project Scientist for NEPA Environmental Assessment and Section 106 historic coordination as subcontractor for the United States Department of Veteran Affairs proposed parking ramp construction at Minneapolis VA Health Care System located in Minneapolis, MN.

- Project Scientist and Technical Writer for Nation-wide Environmental Management System (EMS) program development at 160 National Cemetery sites and EMS Manual preparation for 65 supervisory cemetery facilities; tracking database development; and Safety and Health Management System audits and manuals for 11 selected facilities for the United States Department of Veterans Affairs, National Cemetery Administration.

- Project Scientist for investigation and summary report regarding the shared storm water conveyance, treatment, and permitting requirements at Fort Snelling National Cemetery, Minneapolis, MN.

- Stream biological monitoring including fish and macroinvertebrate community and habitat assessment, as well as water chemistry collection for MPCA.

- Using an Index of Biotic Integrity to Measure the Effects of a Tributary (Parker Creek) on the Biotic Integrity of the Kinnickinnic River for UWRF.

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COURTNEY M. LUENSMAN

Environmental Associate

Education:

BA Environmental Studies
Illinois Wesleyan University

Professional Associations:

MN Wetland Professionals Association
Minnesota Naturalists' Association

Total Years Experience:

2 years

Years with Current Firm:

2013 to Present

Experience Summary:

Courtney Luensman, an Environmental Associate, brings a range of knowledge and experience in the field of biological monitoring to the Anderson Engineering team. Prior to her employment with Anderson Engineering of MN, LLC, Courtney worked as an Assistant Ecologist for Arrowhead Environmental Consulting and as an environmental educator in Cuyahoga Valley National Park. The skills Courtney has developed through her educational background and work experience make her proficient in clearly communicating a variety of solutions to clients and regulatory agencies.

Courtney's project experience includes natural resource inventories; watershed assessments; biologic assessments; collection of wetland data using the data forms provided in the U.S. Army Corps of Engineers (USACE) Regional Supplement(s) to the 1987 Delineation Manual; wetland determinations, delineations, and monitoring; regulatory permit applications; aquatic macro invertebrate sampling; Low Impact Development strategies; and technical document preparation. Courtney has experience with Global Positioning Systems (GPS), remote sensing, and Geographic Information Systems (GIS).

Representative Projects:

- **Farmed Wetland Determination Inventory – USDA NRCS – Various Counties, ND:** Services included completion of a farmed wetland determination inventory project within three counties in North Dakota. Performed on-site investigation on farmed wetlands on over 24,000 acres of agricultural land. Implemented standard sampling protocols such as standard transect sampling, vegetation identification, quantitative vegetative data collection and completion of standardized data sheets.

- Stream biological monitoring including macro invertebrate community and habitat assessment as well as water chemistry collection for Cuyahoga Valley National Park

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Lucy A Dahl
Environmental Associate

Education:
BA Environmental Science
University of Wisconsin, River Falls

Total Experience:
1 year

Years with Current Firm:
2014 to Present

Experience Summary:
Lucy Dahl, an Environmental Associate, brings a variety of knowledge and experience in the field of biological monitoring to the Anderson Engineering team. Prior to her employment with Anderson Engineering of MN, LLC, Lucy worked as a Federal Contractor for the USDA – Natural Resources Conservation Service (NRCS). The skills Lucy has developed through her educational background and work experience make her proficient in analyzing and interpreting data in order to clearly communicate a variety of solutions to clients and regulatory agencies.

Lucy's project experience includes NRCS wetland determinations; watershed assessments; National Environmental Policy Act (NEPA) report preparation; collection of wetland data using the data forms provided in the U.S. Army Corps of Engineers (USACE) Regional Supplement(s) to the 1987 Delineation Manual; regulatory permit applications; and technical document preparation. Lucy has experience with Global Positioning Systems (GPS), remote sensing, and Geographic Information Systems (GIS).

Representative Projects:

- **Wetland Determinations – USDA NRCS – Dunn, Pierce, and St. Croix Counties, WI:** Services included assisting the WI NRCS Wetland Specialist in completing requested wetland determinations for farmers participating in USDA Farm Bill programs. Determinations were completed on and off-site as necessary, and maps were developed and added to the existing wetland inventory for each county.

- National Environmental Policy Act (NEPA) report preparation experience includes completing environmental assessments on conservation practices being implemented through NRCS cost-share programs. Projects included wetland restoration projects, stream bank stabilization projects, manure storage facilities, and grade stabilization structures among others.