



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

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1 Contact Information

Prepared For:

Project Sponsor:	Southwest Light Rail Transit Project Office 6465 Wayzata Blvd., Suite 500 St. Louis Park, MN 55426
	Nani Jacobson Assistant Director, Environmental and Agreements (612) 373-3808 nani.jacobson@metrotransit.org
Prime Consultant:	CH2M Hill, Inc. 1295 Northland Drive, Suite 200 Mendota Heights, MN 55120
Prepared By:	Anderson Engineering of Minnesota, LLC 13605 1st Avenue North Suite 100 Plymouth, MN 55441 Ben Hodapp Environmental Services Manager (763) 412-4005 bhodapp@ae-mn.com

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 Classifications						
Wetland ID	Circ. 39	Cowardin	Eggers and Reed				
Minnesota Depart	ment of Trans	sportation					
DOT-EP-09	Туре З	PEMC	Shallow Marsh				
City of Eden Prairi	е						
EP-EP-07	Type 3/7	PEM/FO1C	Shallow Marsh/Hardwood Swamp				
Nine Mile Creek W	atershed Dist	trict					
None Extended							
City of Minnetonk	a						
MTA-MTA-11	Туре	PEM/F01/SS1	Shallow Marsh/Shallow Open Water/Shrub				
	3/5/6/7	/UB/C/G	Carr/Hardwood Swamp				
MTA-MTA-12	Type 5	PUBGx	Shallow Open Water				
Minnehaha Creek	Watershed Di	istrict					
None Extended							
City of Minneapoli	S						

"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)

		tland Classifications			
Wetland ID	Circ. 39	Cowardin	Eggers and Reed		
Minnesota Departi	ment of Trans	sportation			
DOT-EP-12 Type 1 PEMA			Seasonally Flooded Basin		
DOT-EP-13	Туре З	e 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/PUBG x	Fresh Wet Meadow/Shallow Open Water		
DOT-EP-18	Туре З	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	e				
*EP-EP-22 (Formerly DIG-EP-EP- 01)	Туре 3	РЕМС	Shallow Marsh		
EP-EP-23	Туре З	РЕМС	Shallow Marsh		
*EP-EP-24 (Formerly DIG-EP-EP-02 & DIG-EP-EP-03)	Type 5	PUB1Gx	Shallow Open Water		
Nine Mile Creek W No Additional Wetla		rict			
No Additional Wetta	anus				
City of Minnetonka	a				
MTA-MTA-13	Type 5/1	PUB/EM/Gx/A	Shallow Open Water/Seasonally Flooded Basir		
Minnehaha Creek	Watershed Di	strict			
No Additional Wetla	ands				
City of Minneapoli	s (Basset Cred	k Watershed)			
MPL-MPL-01	Type 5	PUBG	Shallow Open Water		
	51		d has since been field delineated		
Sources: "Wetlands of the U "Classification of W	nited States" (U.S. Fi Vetlands and Deepwe	ish and Wildlife Service-C ater Habitats of the United			

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 pinflags 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 complete 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 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-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.

Local Government Unit	V	Total		
Local dover innent onit	Natural	Incidental	Waterway	IUtal
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

Table 6.2-1

LGU Field Delineated Wetland Totals - Identified or Extended in 2014

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 Environmental Scientist MN Certified Wetland Delineator #1207 Anderson Engineering of Minnesota, LLC

10/15/2014

Date

10/15/2014 Date

Courtney Luensman Environmental Associate MN Certified Wetland Delineator #1251 Anderson Engineering of Minnesota, LLC

Alison Hruby

10/15/2014 Date

Environmental Associate Anderson Engineering of Minnesota, LLC

10/15/2014_ Date

Kristina Justen **Environmental Associate** Anderson Engineering of Minnesota, LLC

10/15/2014 Date

Lucy Dahl 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 **Environmental Services Manager** MN Certified Wetland Delineator #1016 Anderson Engineering of Minnesota, LLC

10/15/2014 Date



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

			Wetland Type							Regulator	y Authority		
Wetland ID	Map Exhibit Sheet Number	Circ. 39	Cowardin	Eggers and Reed	Field Notes	NWI	LGU Inventory	PWI	LGU Association	WCA	CWA	MnRAM Management Class	Comments
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	Туре 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	Туре 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/PE M1A	Constructed Ponds 15- 12-D & 15-12-E	NI	Eden Prairie	Yes	Jurisdictional	Manage 2	Newly Identified Basin in 2014.
MTA-MTA-11	6	Туре 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.

MPL-MPL-01 14 Type 5 PUBG	Shallow Open Water	Excavated pond below electrical tower	NI	NI	NI	Minneapolis	Incidental	Non-Waters	

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

October 15, 2014

APPENDIX B

Wetland Classification Descriptions

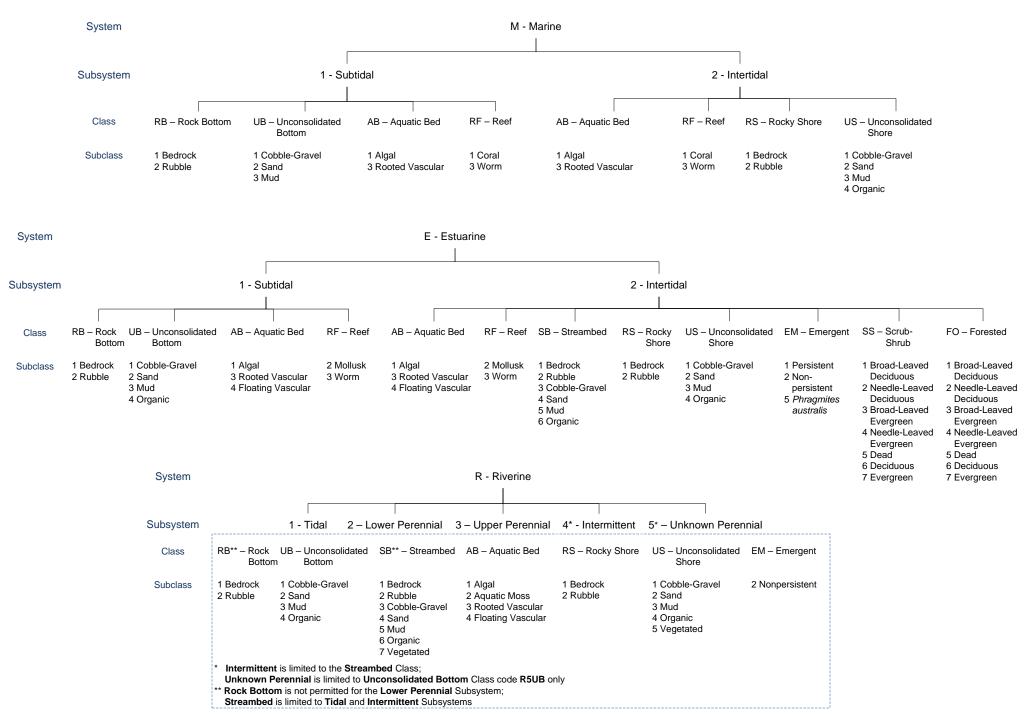
Type 1	Seasonally Flooded Basins or Floodplains
<i>.</i>	 Vegetation varies according to the season and the amount of flooding.
	 Benefits of Type 1 wetlands include seasonal waterfowl habitat, water quality, protection and
	groundwater recharge and discharge.
Type 2	Wet Meadows
.,,,,,	 Soil is without 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.
Туре 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 summeranywhere 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.
C	in, 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

Circular 39 Wetland Classification System

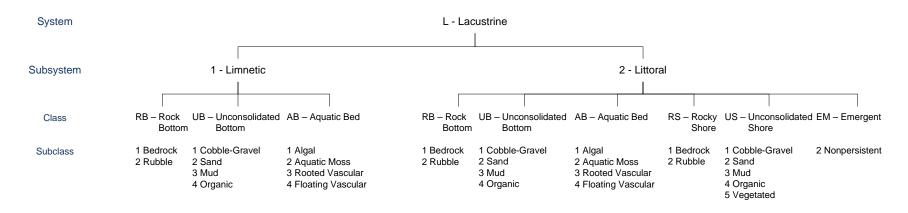
Source: Cowardin, L. M., V. Carter, F. C. Golet, E. T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. Jamestown, ND: Northern Prairie Wildlife Research Center Online.

http://www.npwrc.usgs.gov/resource/wetlands/classwet/index.htm (Version 04DEC1998).

WETLANDS AND DEEPWATER HABITATS CLASSIFICATION

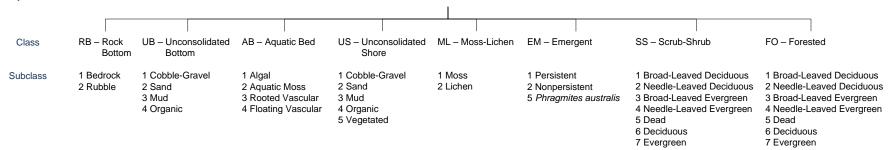


WETLANDS AND DEEPWATER HABITATS CLASSIFICATION



System

P - Palustrine



		quately describe the wetland and deep		•			
<u> </u>	Water Regime	applied at the class or lower level in the Ə	Special Modifiers		ater Chemisti		Soil
Nontidal	Saltwater Tidal	Freshwater Tidal		Coastal Halinity	Inland Salinity	pH M odifiers for all Fresh Water	
A Temporarily Flooded	L Subtidal	S Temporarily Flooded-Tidal	b Beaver	1 Hyperhaline	7 Hypersaline	a A cid	g Organic
B Saturated	M Irregularly Exposed	R Seasonally Flooded-Tidal	d Partly Drained/Ditched	2 Euhaline	8 Eusaline	t Circumneutral	n M ineral
C Seasonally Flooded	N Regularly Flooded	T Semipermanently Flooded-Tidal	f Farmed	3 Mixohaline (Brackish)	9 M ixo saline	i Alkaline	
E Seasonally Flooded/	P Irregularly Flooded	V Permanently Flooded-Tidal	h Diked/Impounded	4 Polyhaline	0 Fresh		
Saturated			r Artificial	5 M eso haline			
F Semipermanently Flooded			s Spoil	6 Oligo haline			
G Intermittently Exposed			x Excavated	0 Fresh			
H Permanently Flooded							
J Intermittently Flooded							
K Artificially Flooded							

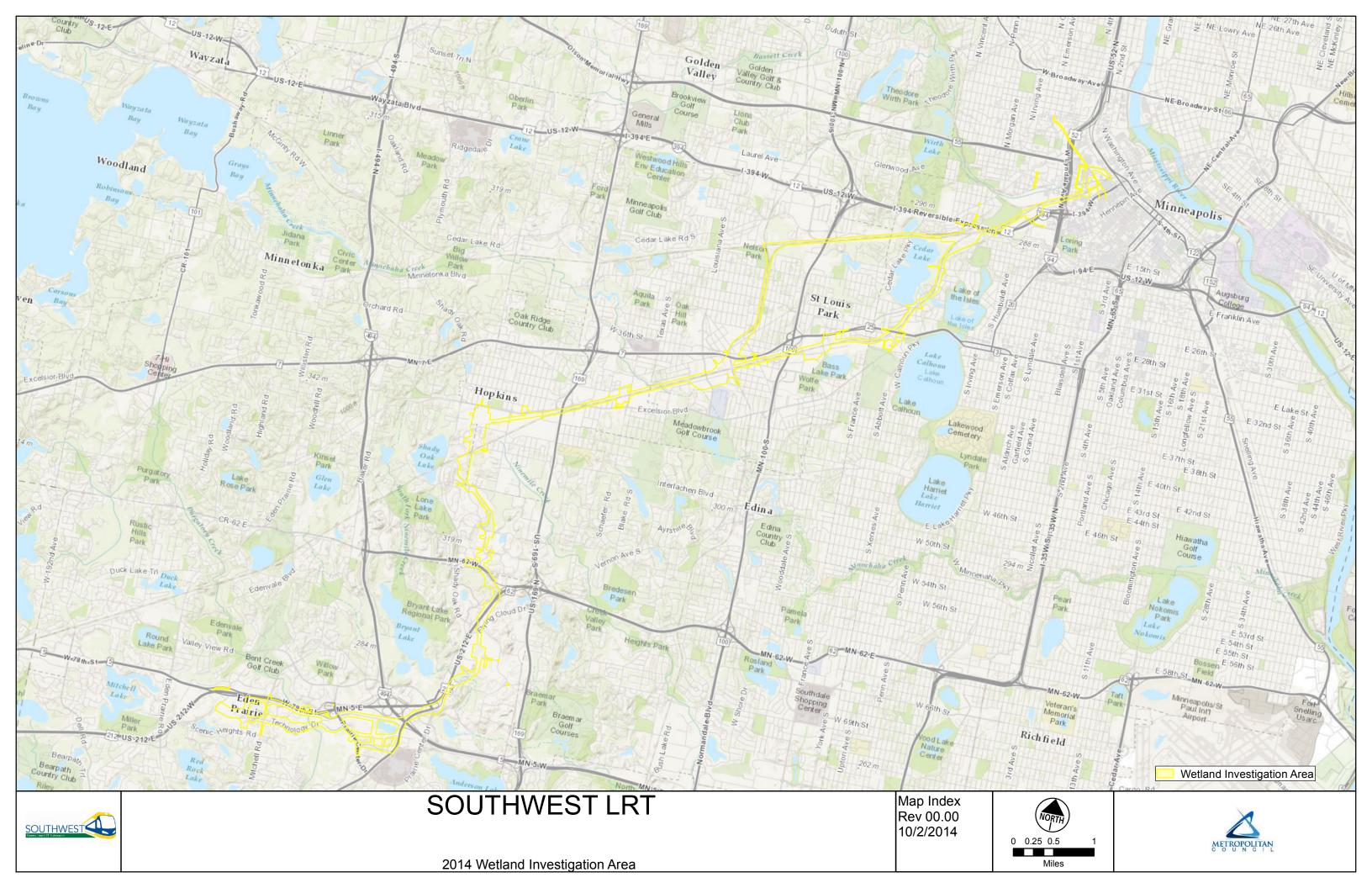
Shallow Open Water	 Generally have water depths of less than 6.6 feet (2 meters). Submergent, floating and floating-leaved aquatic vegetation including pondweeds, water-lilies, water milfoil, coontail, and duckweeds characterize this wetland type. Size can vary from a one-quarter acre pond, to a long 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, <i>Phragmites</i>, 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. M. Reed. 1997. Wetland plants and communities of Minnesota and Wisconsin. U.S. Army Corps of Engineers, St. Paul District.

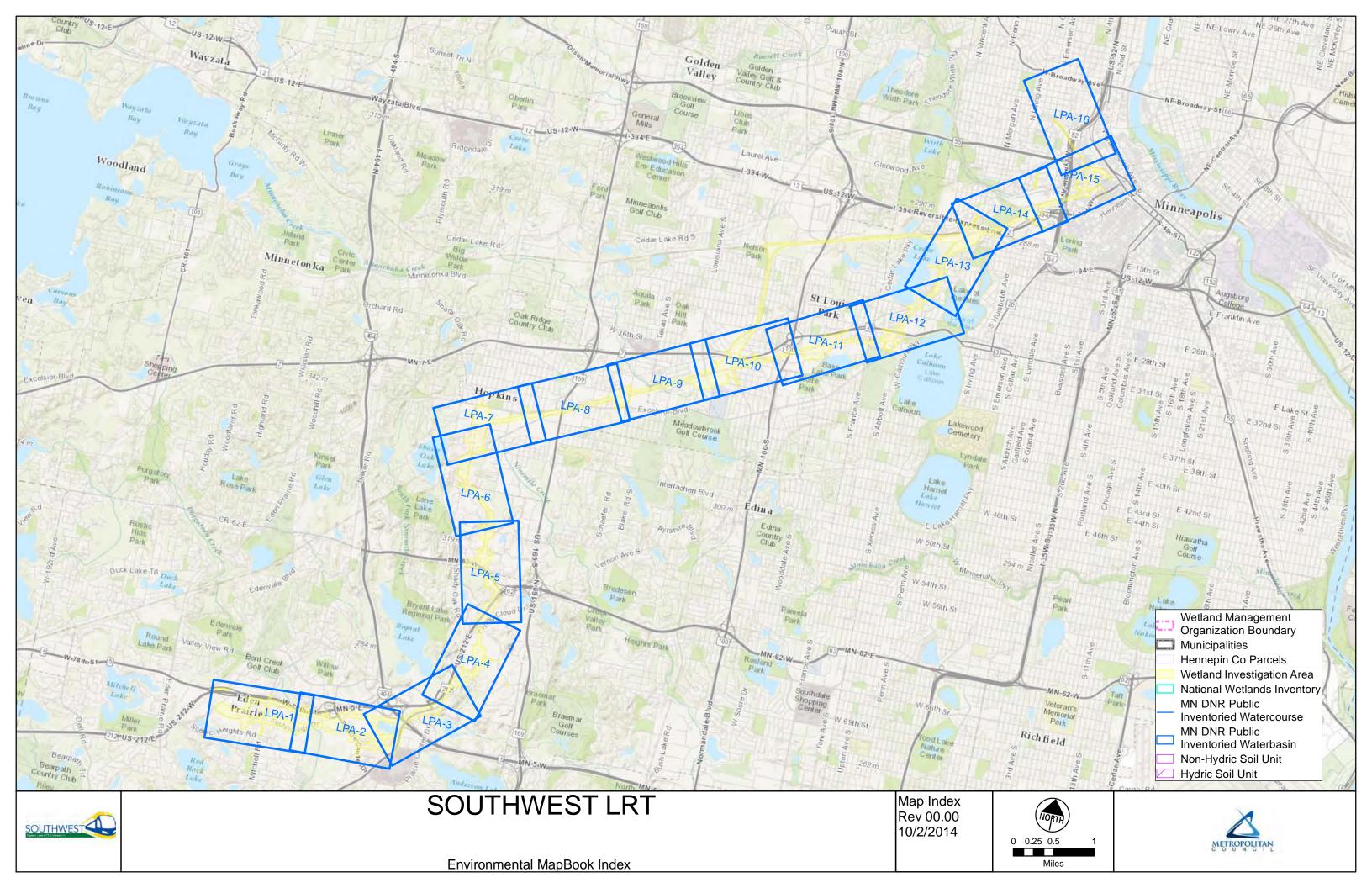
Eggers and Reed Wetland Plants and Plant Communities of Minnesota and Wisconsin

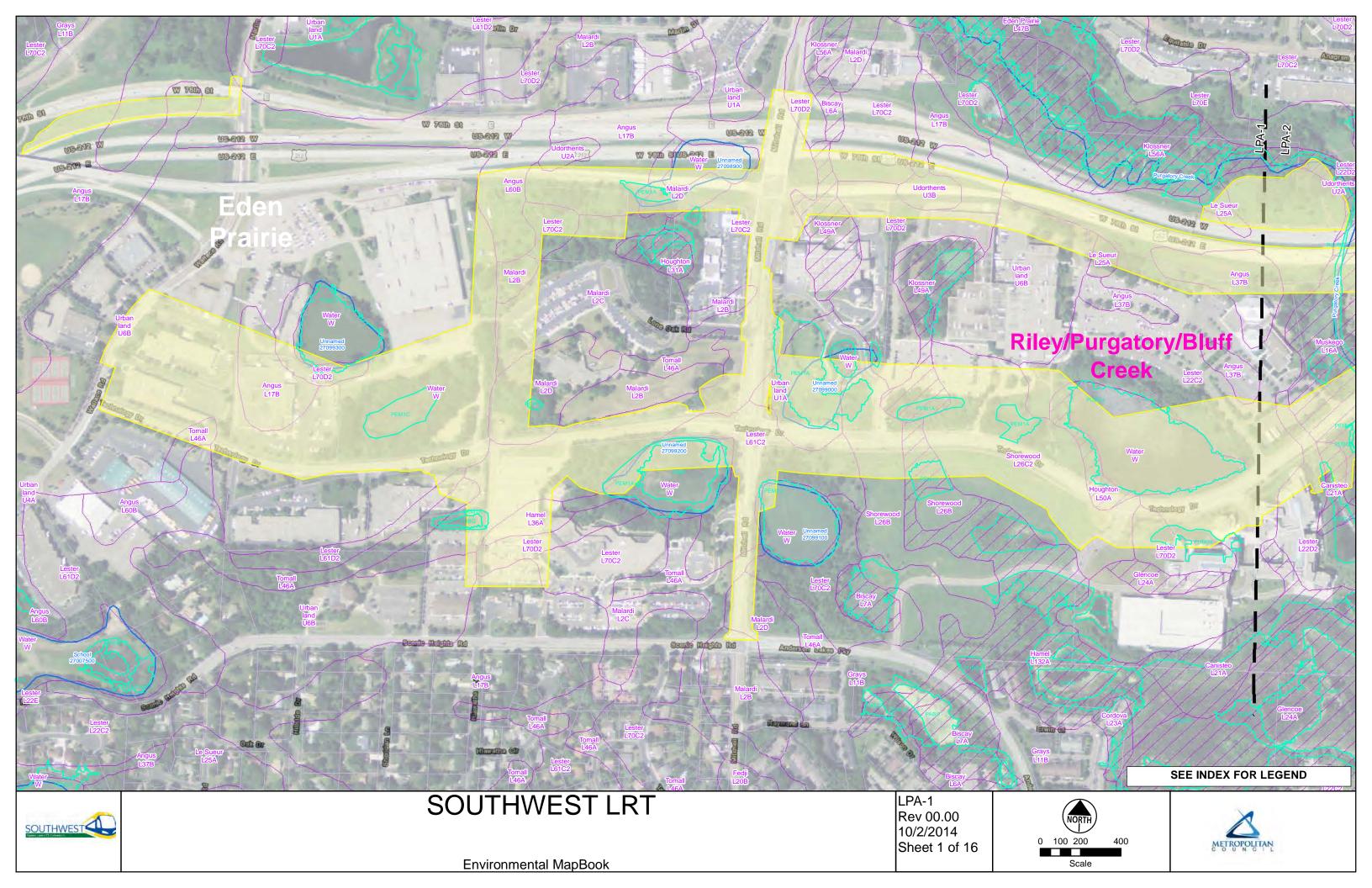
Source: Eggers, Steve D., and Donald M. Reed. 1997. Wetland plants and communities of Minnesota and Wisconsin. U.S. Army Corps of Engineers, St. Paul District. Jamestown, ND: Northern Prairie Wildlife Research Center Online. <u>http://www.npwrc.usgs.gov/resource/plants/mnplant/index.htm</u> (Version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

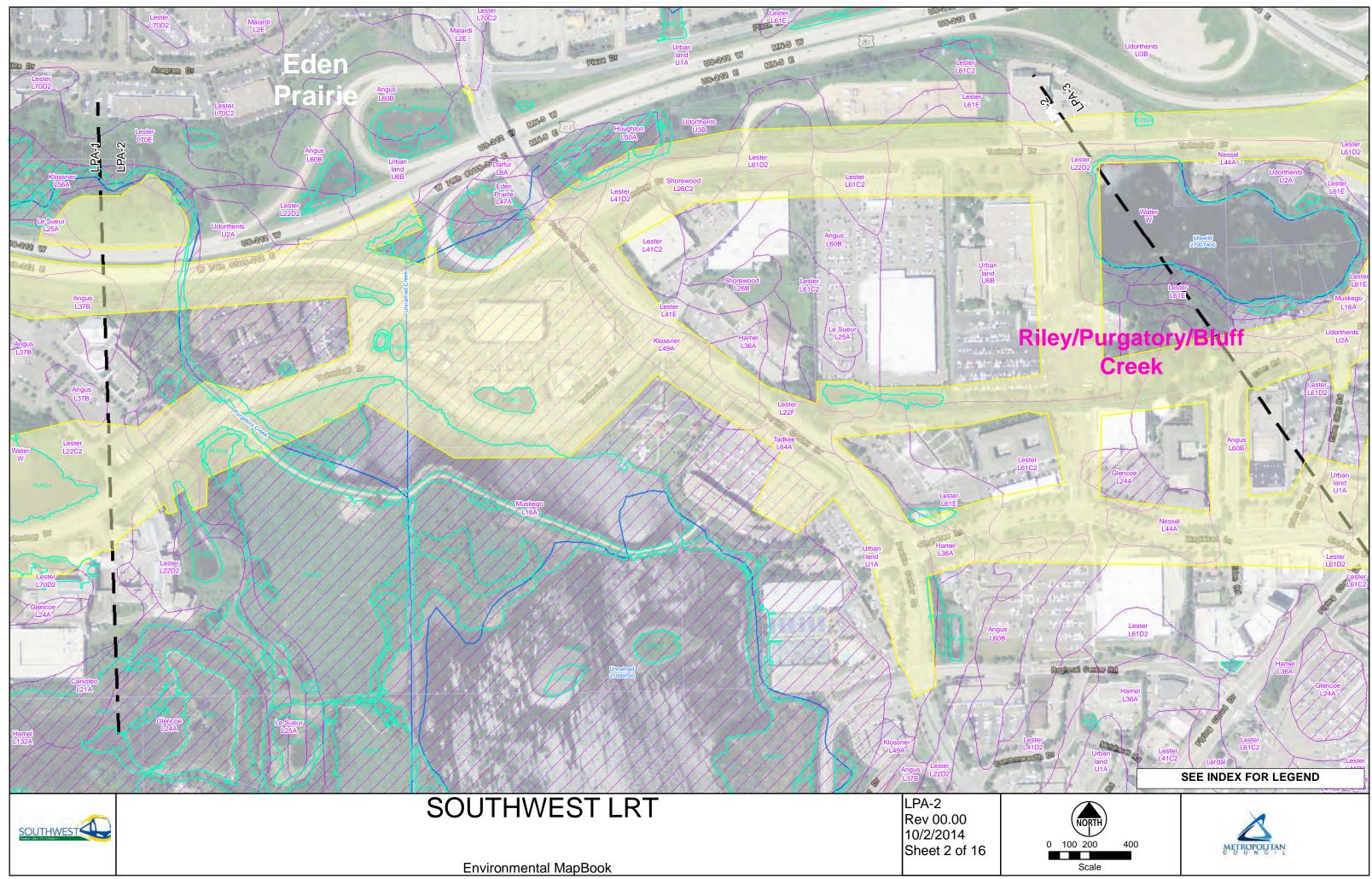
APPENDIX C

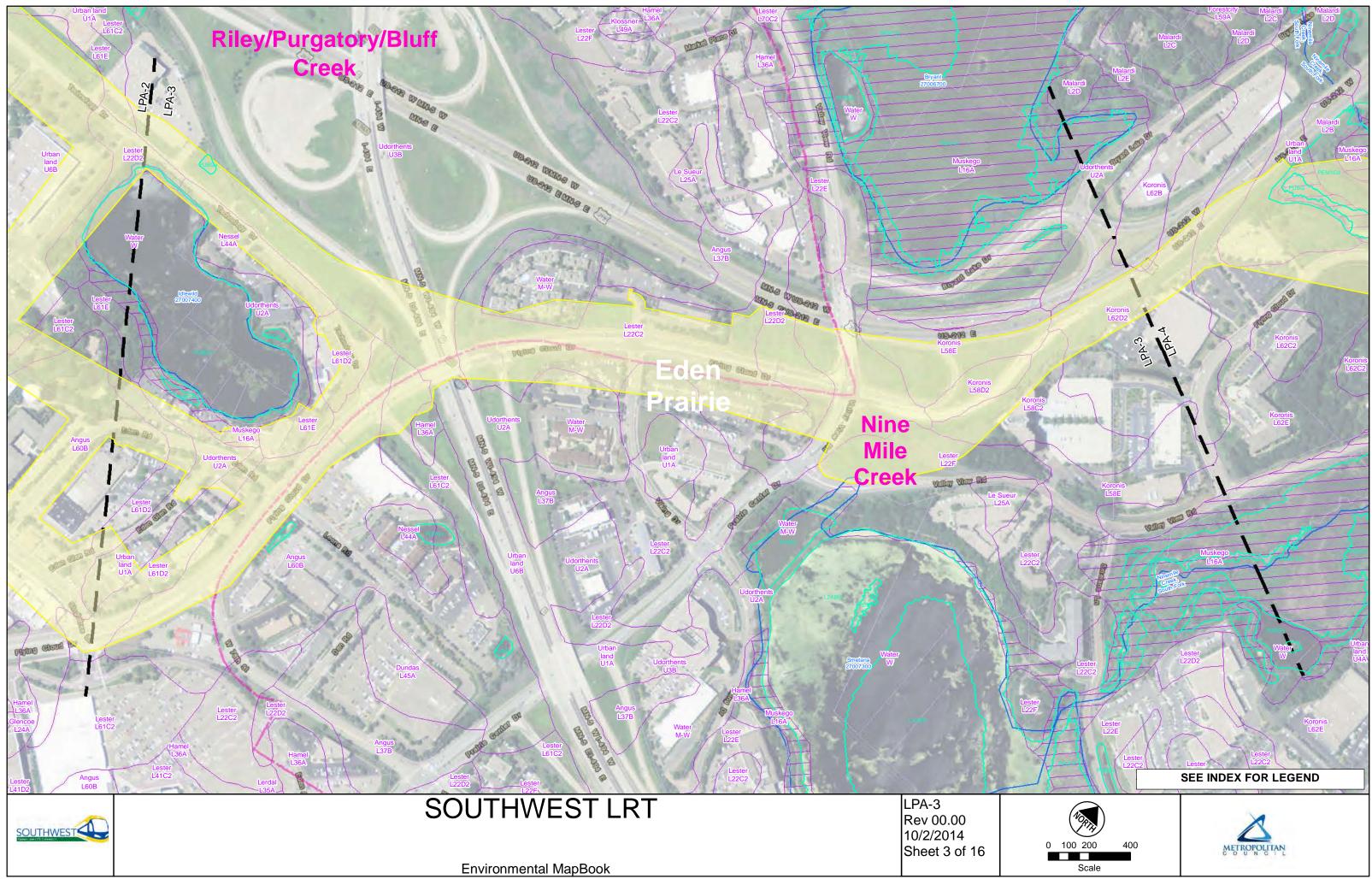
Map Exhibits

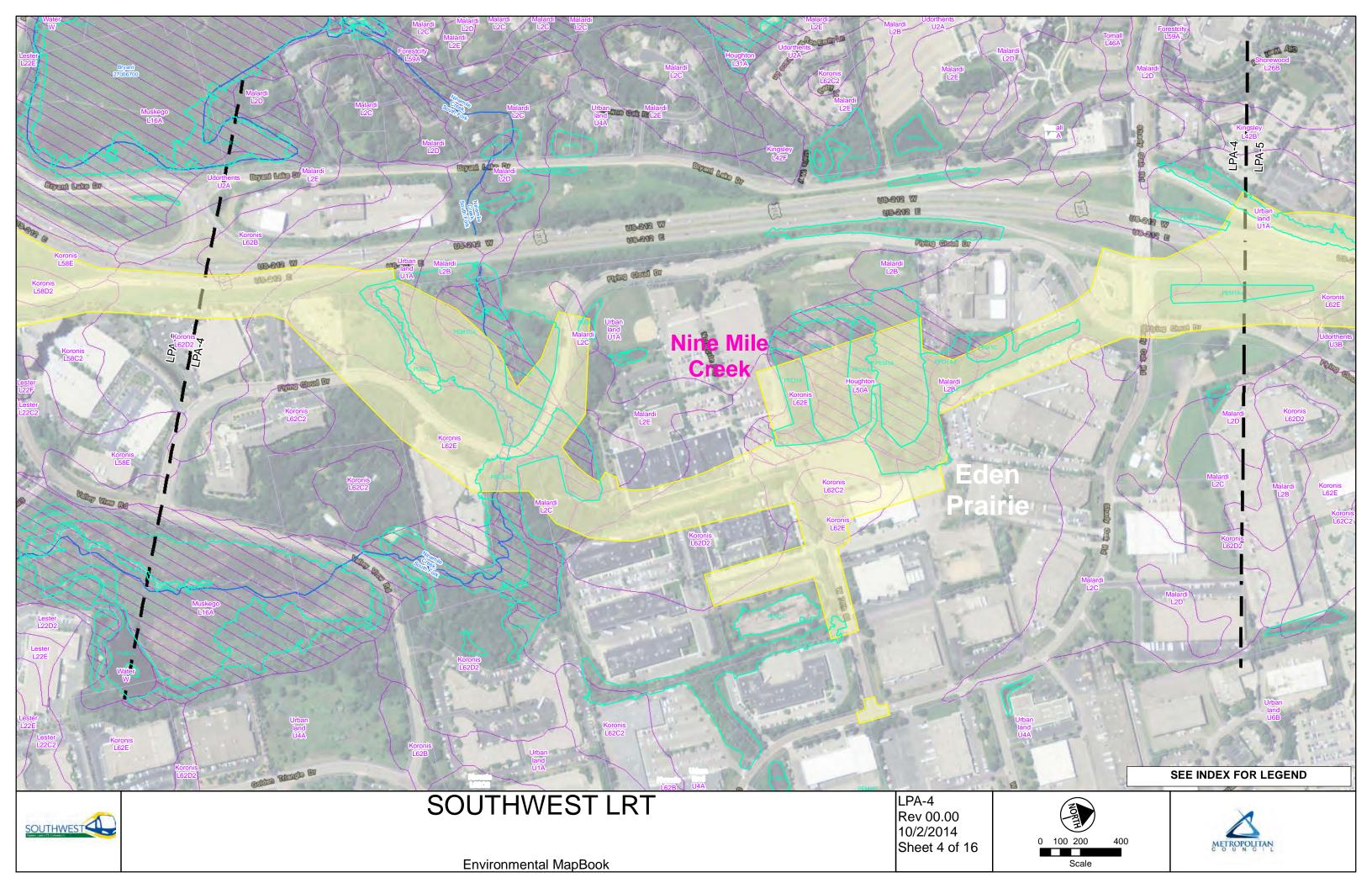


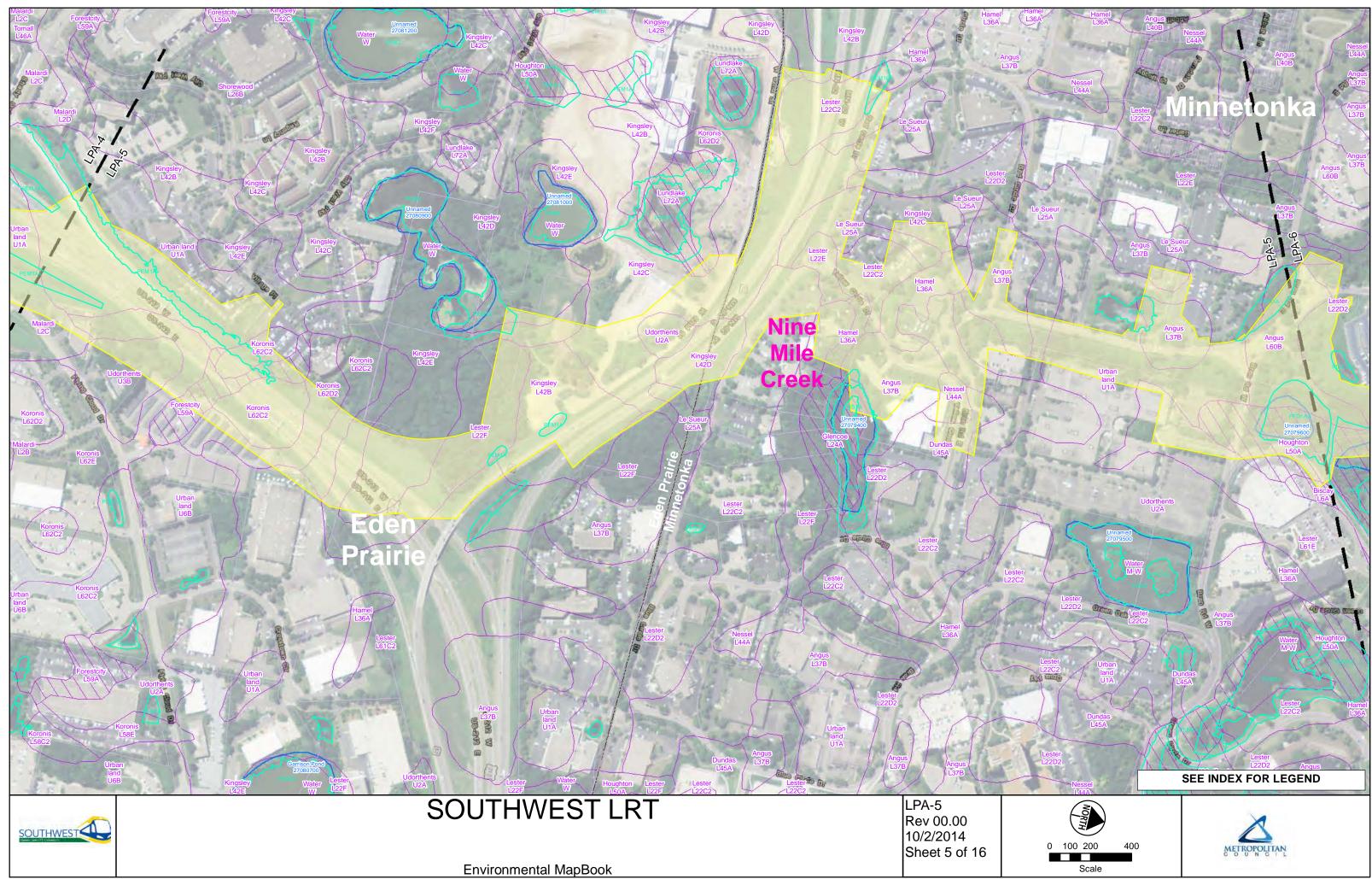


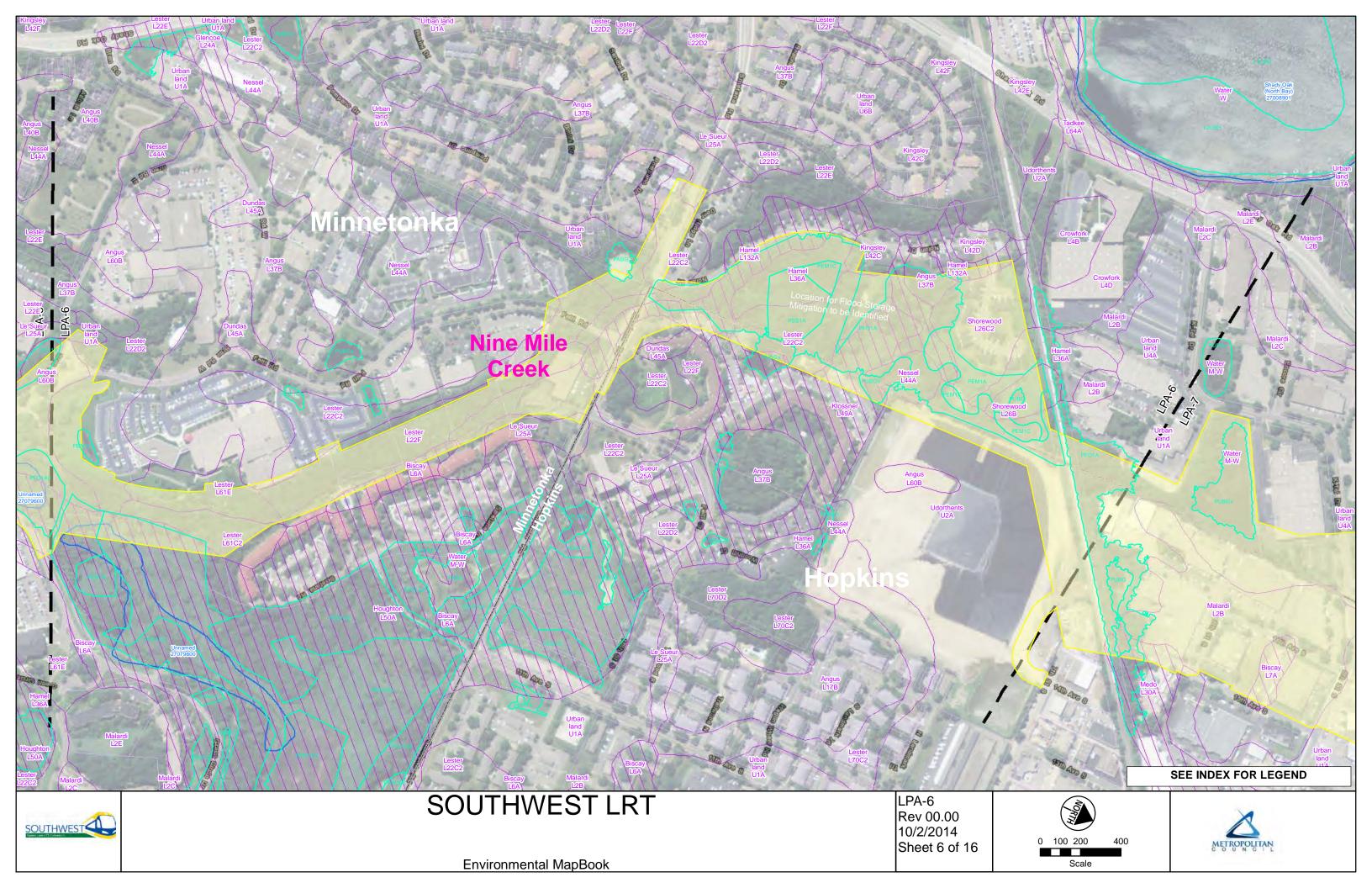


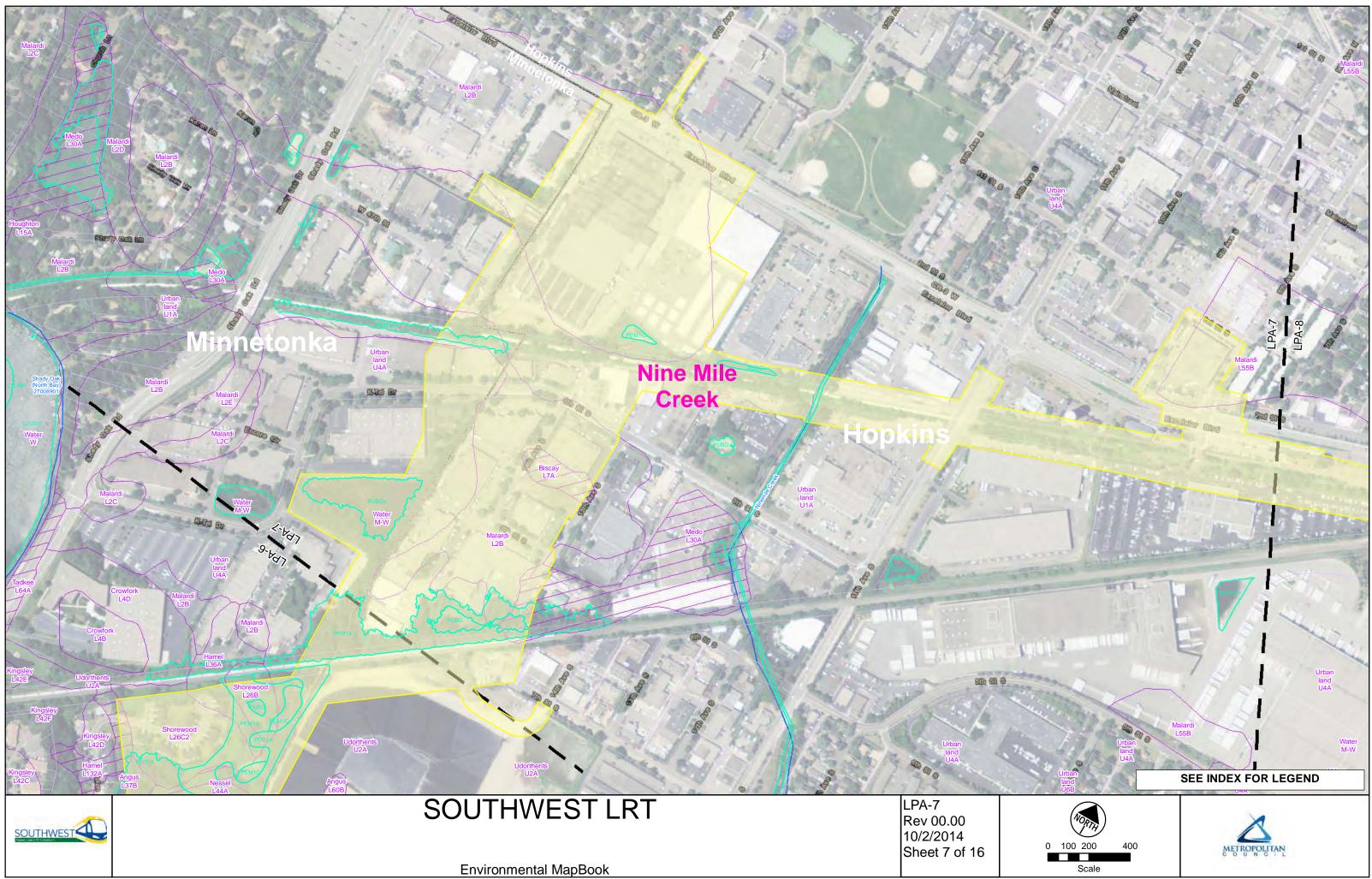


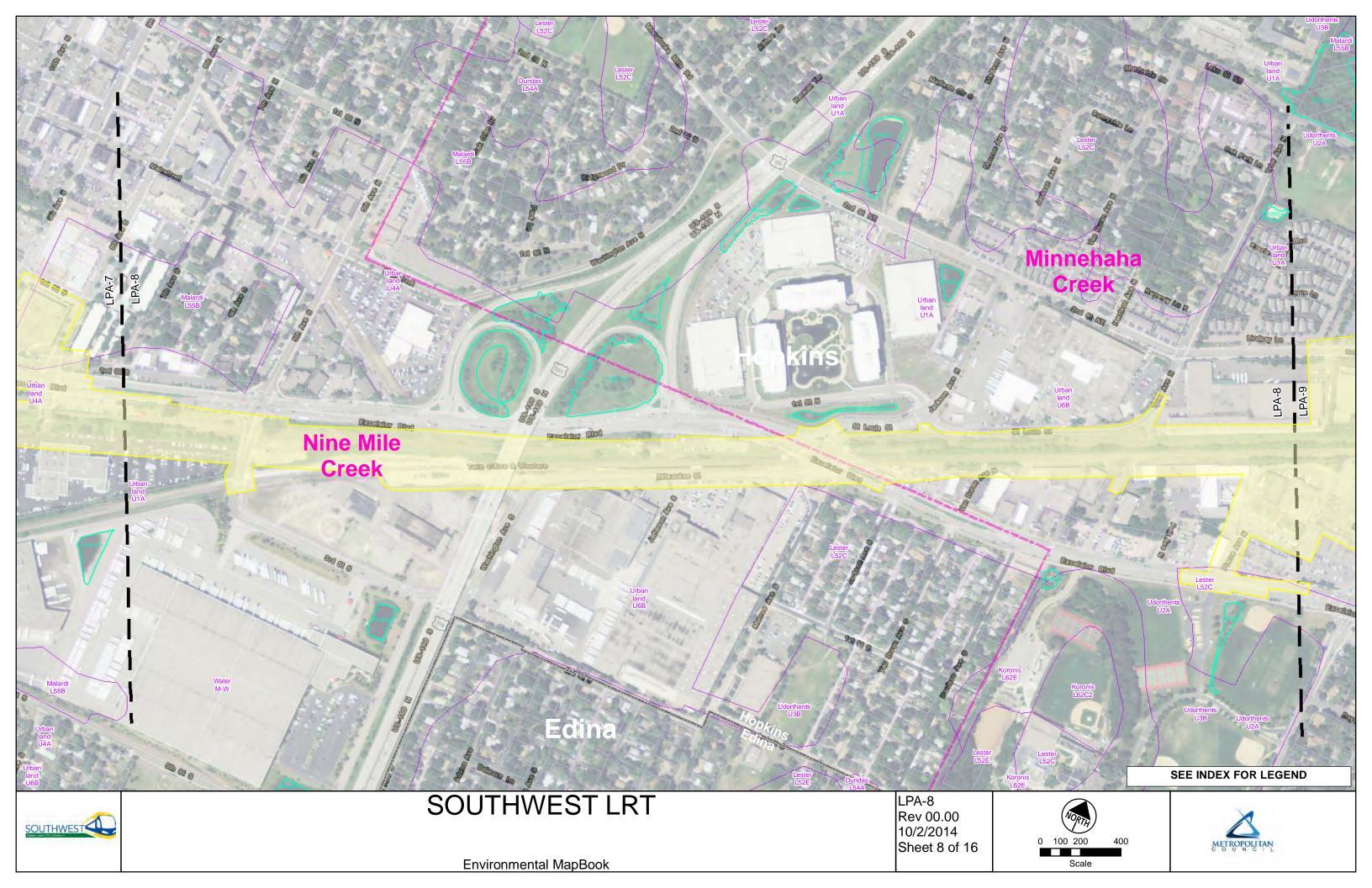


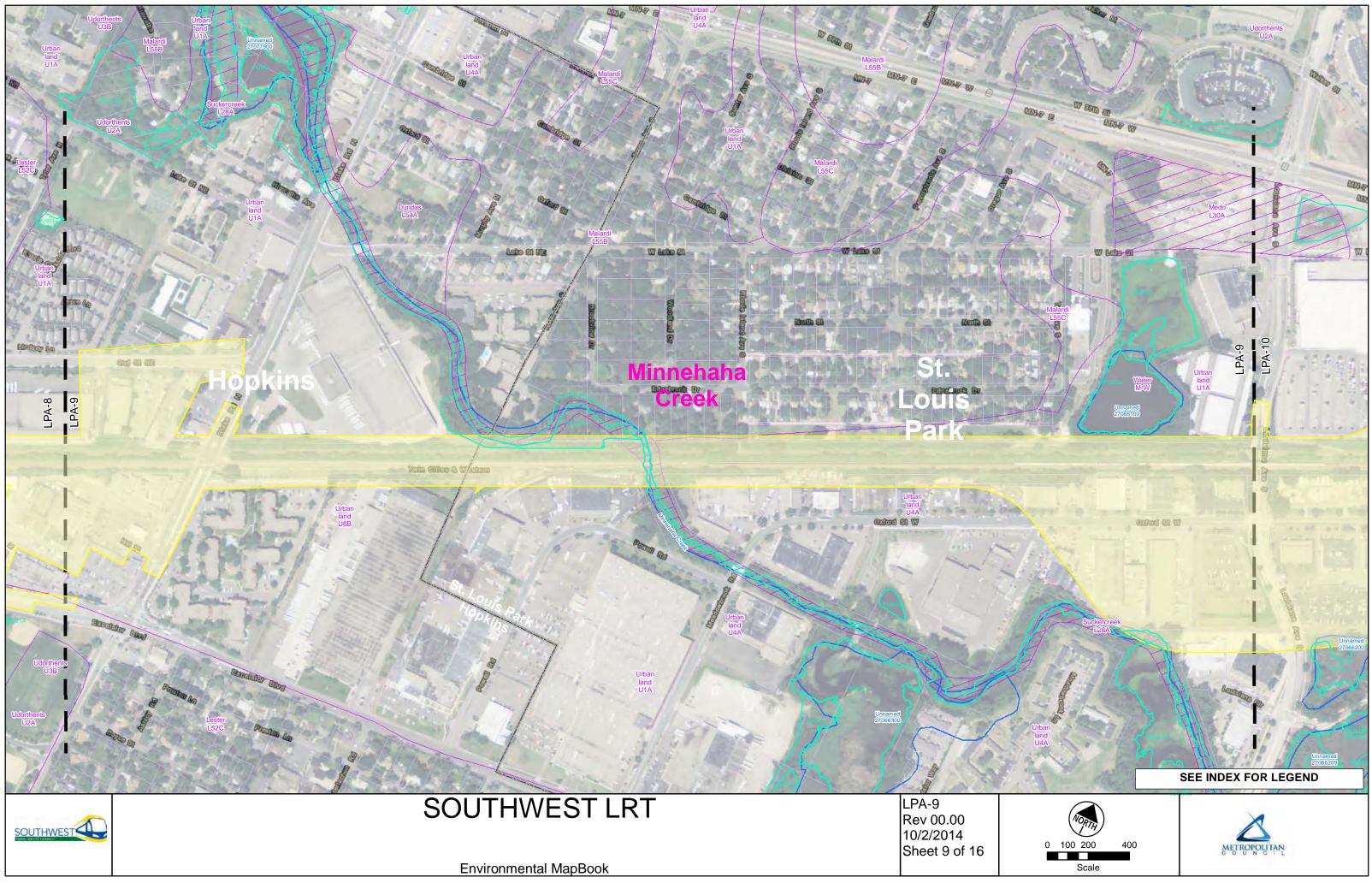


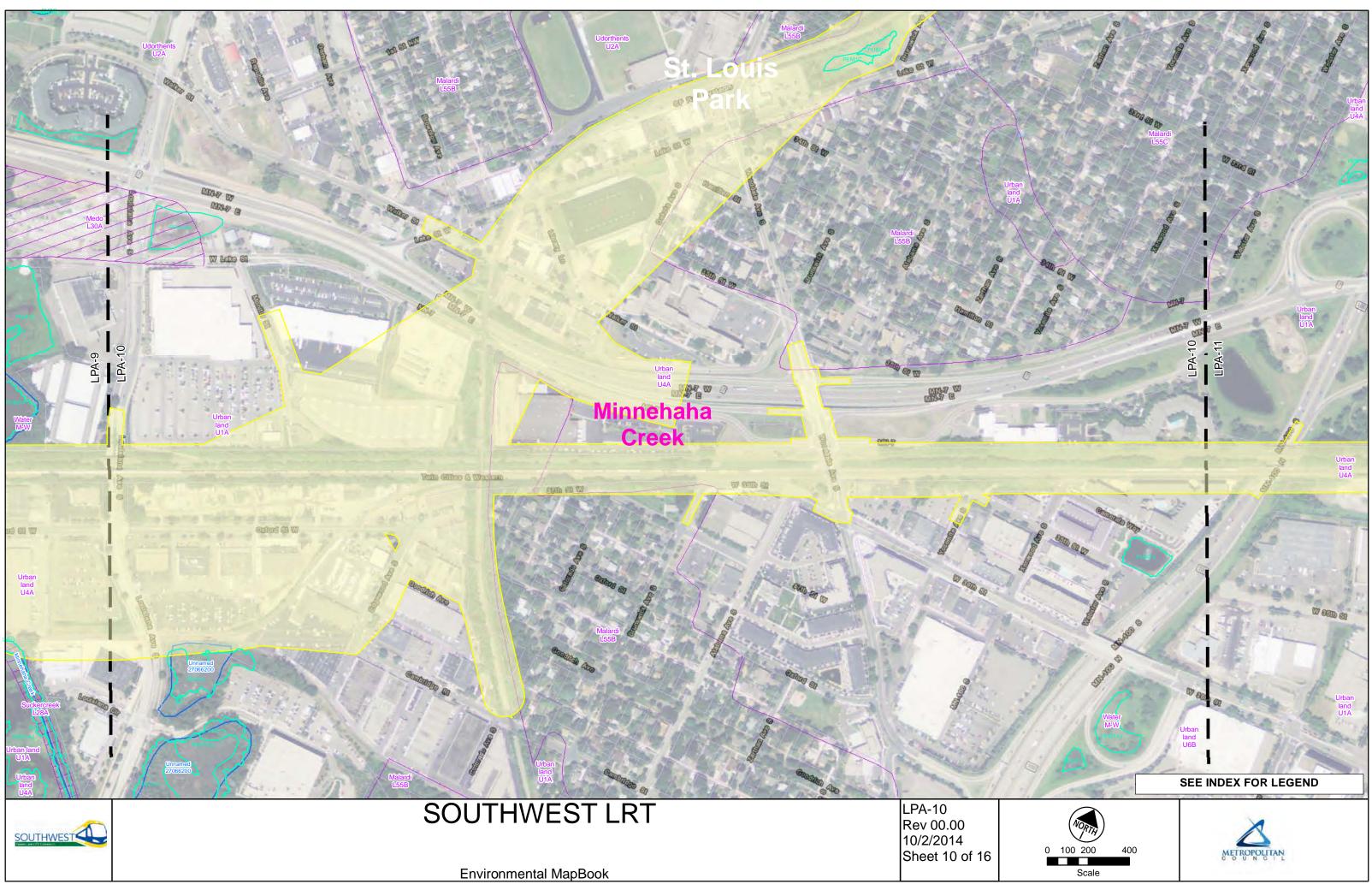




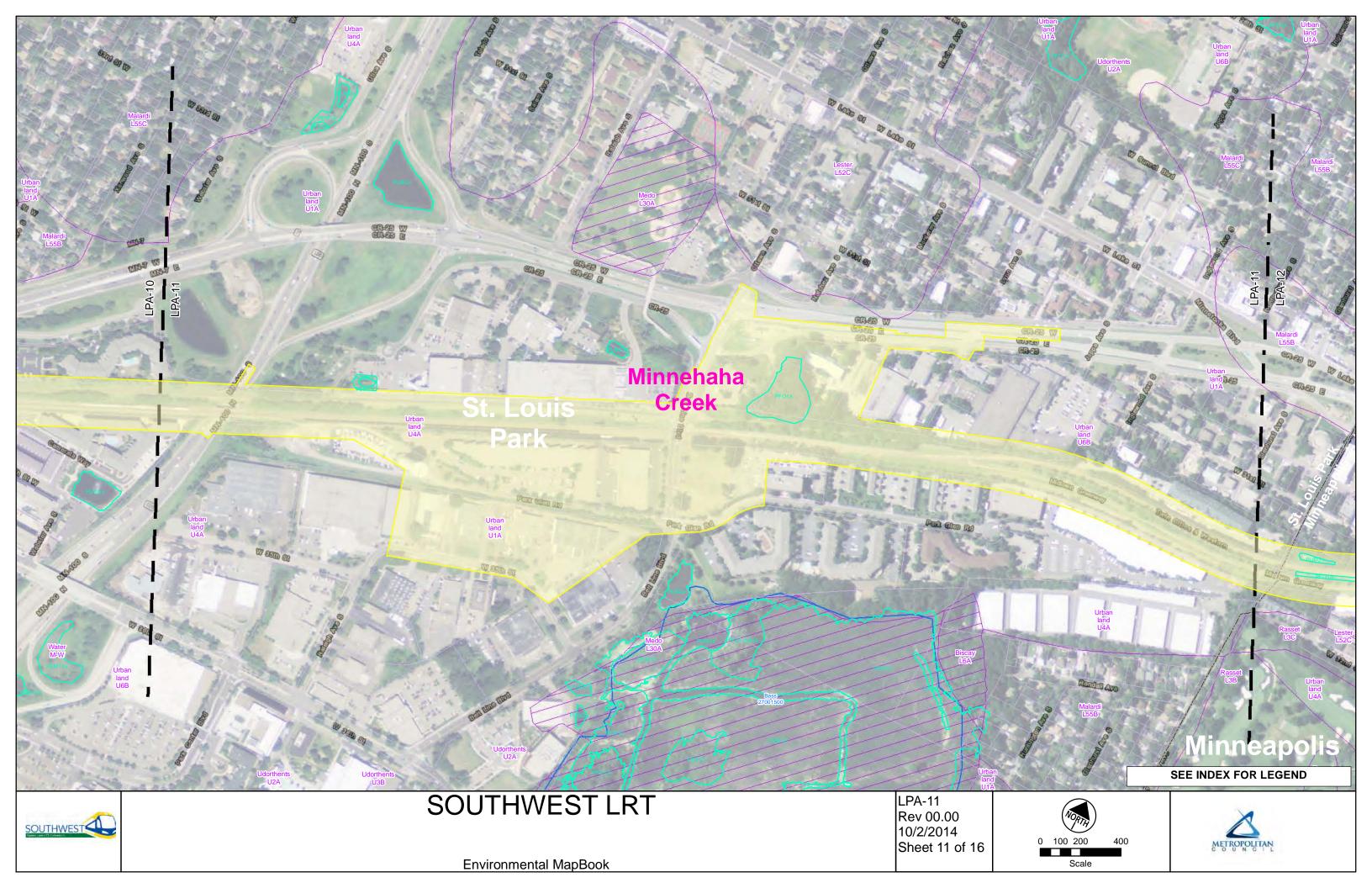


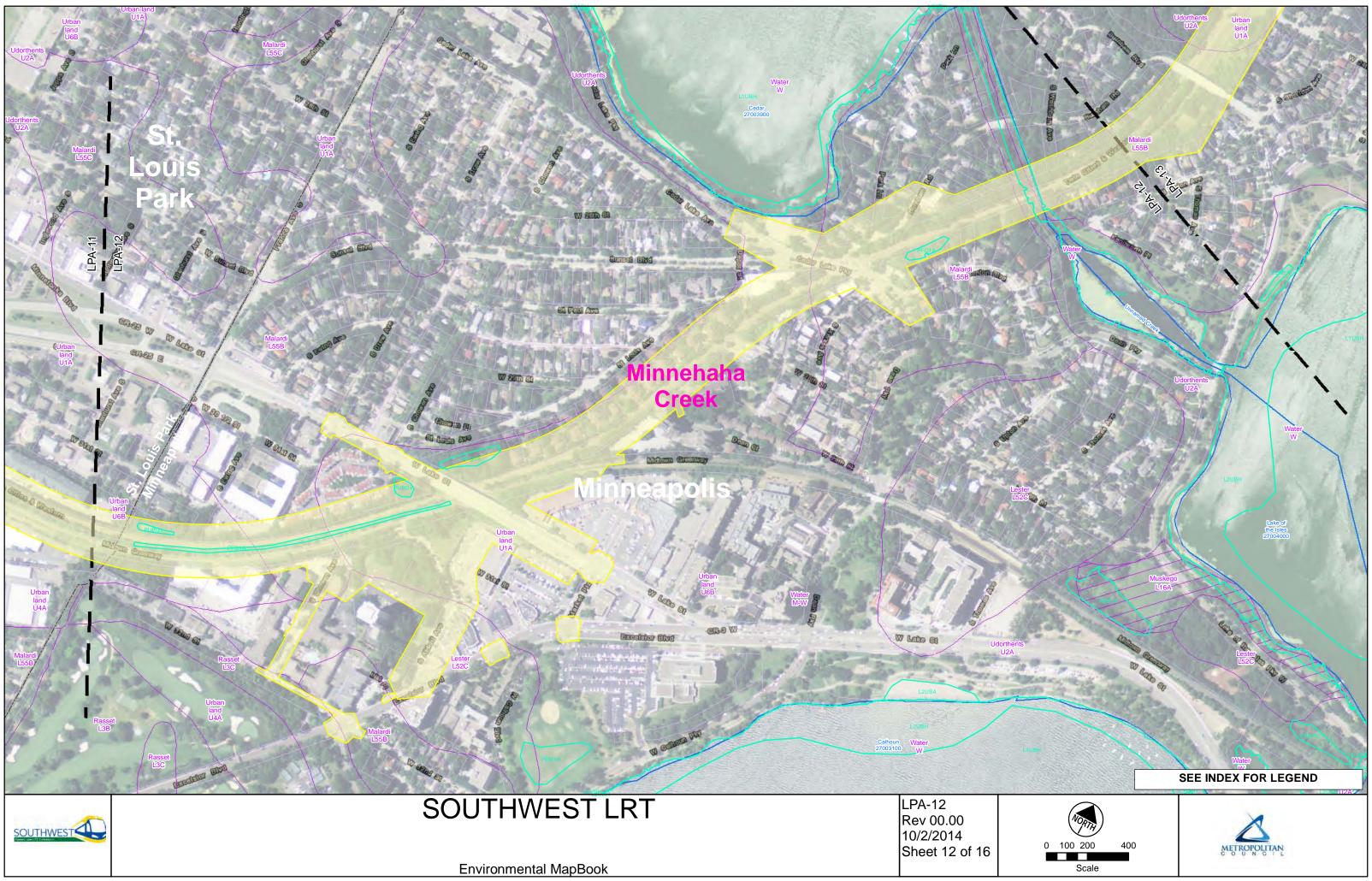


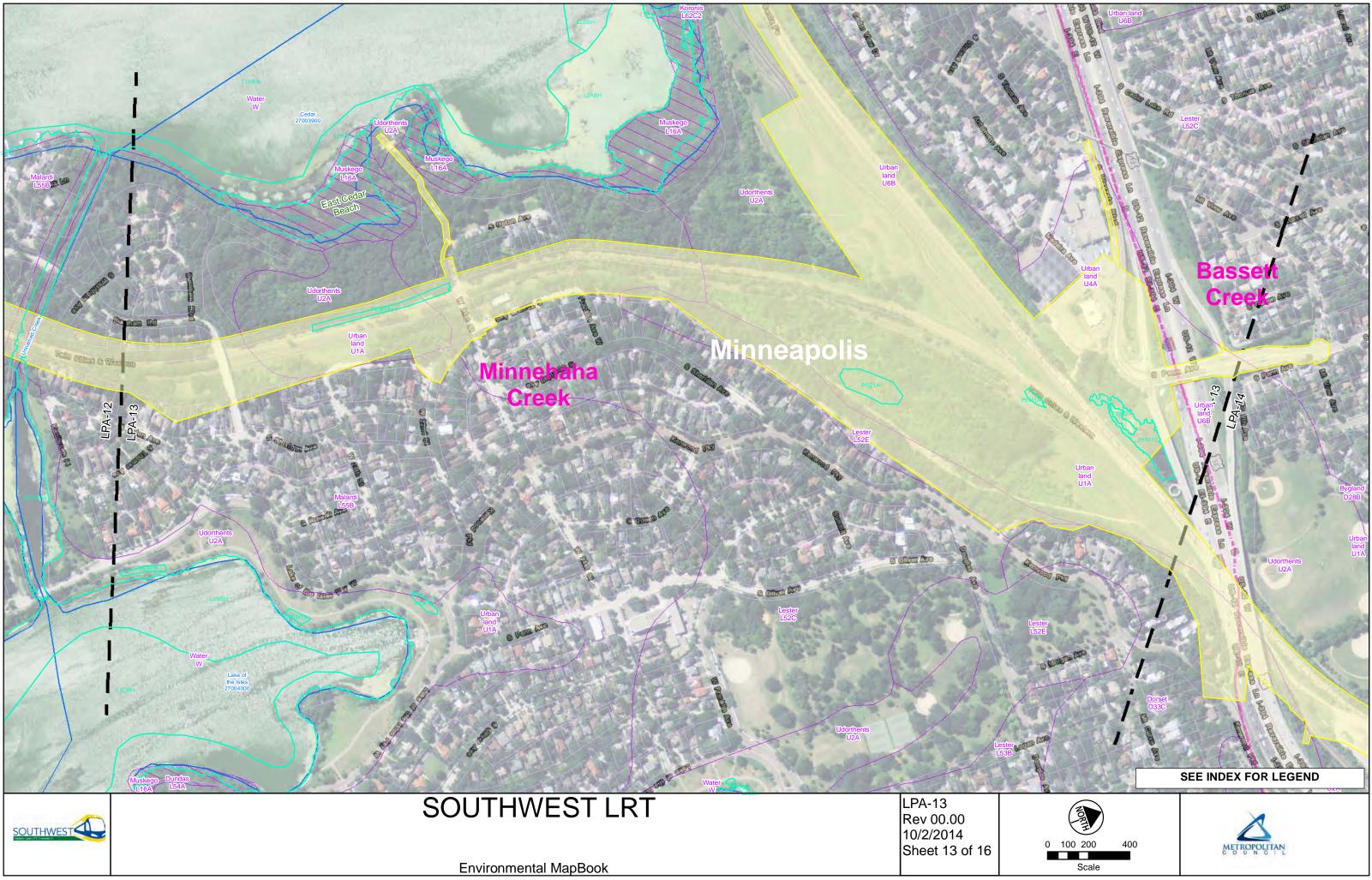




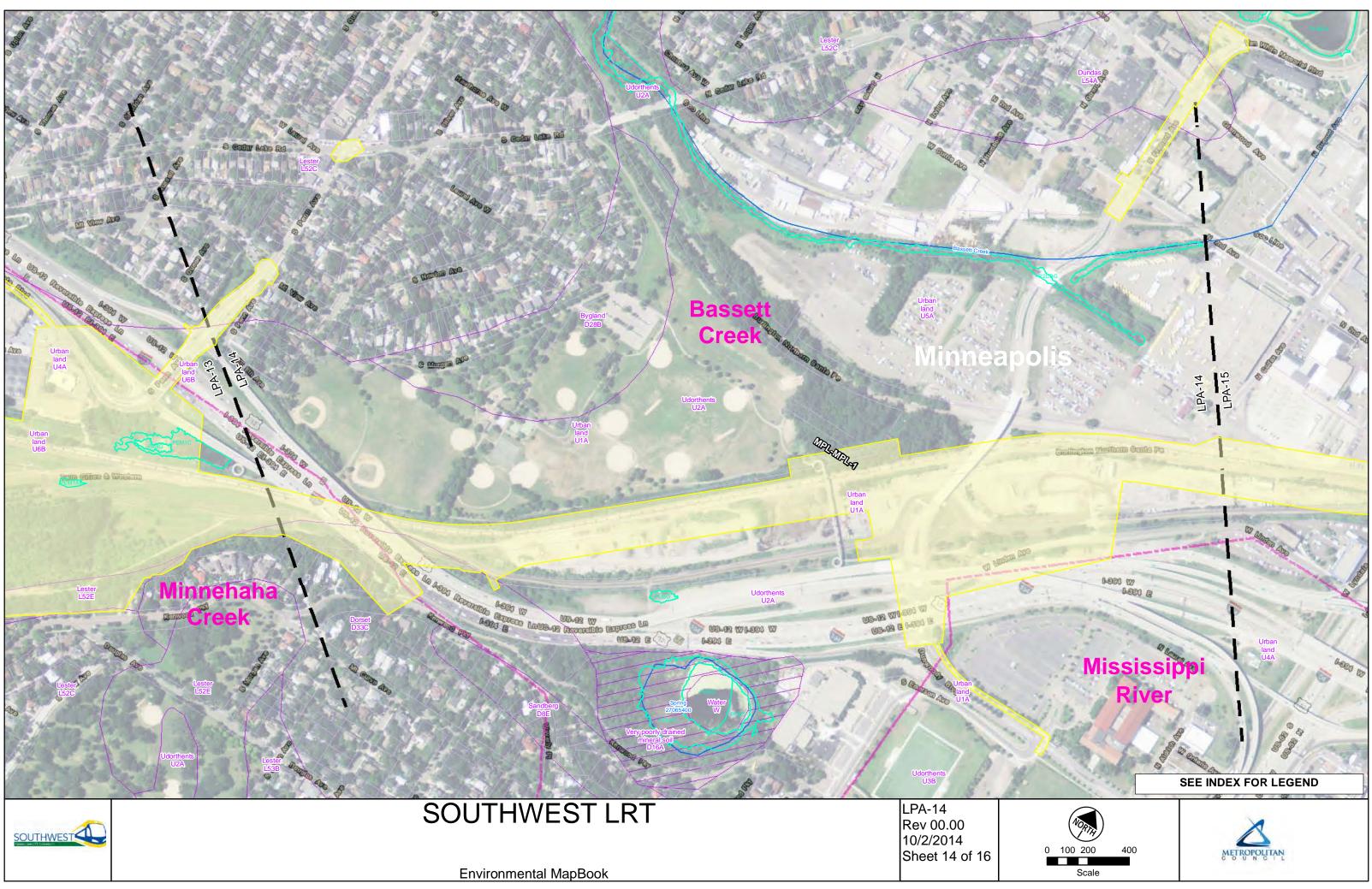


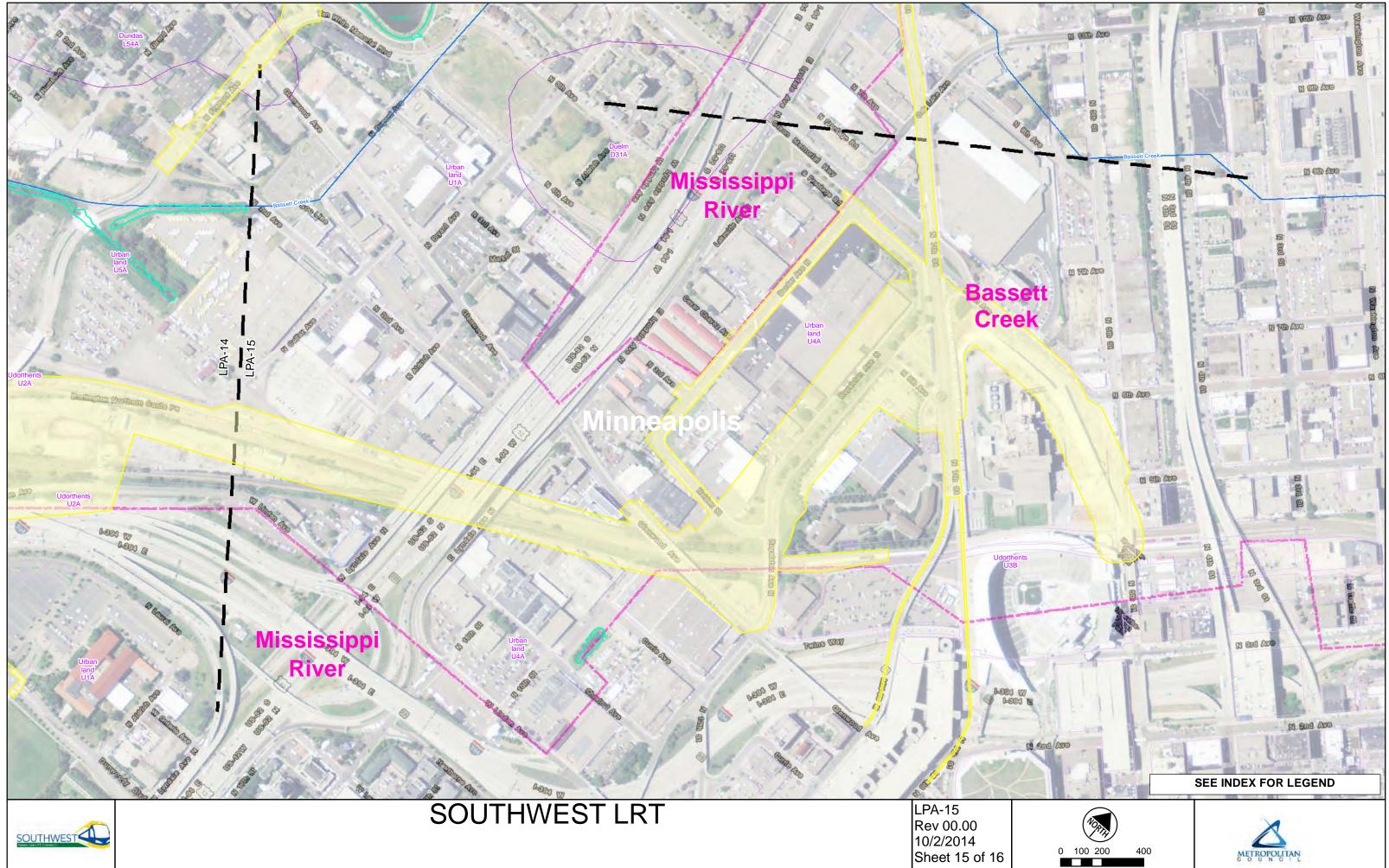








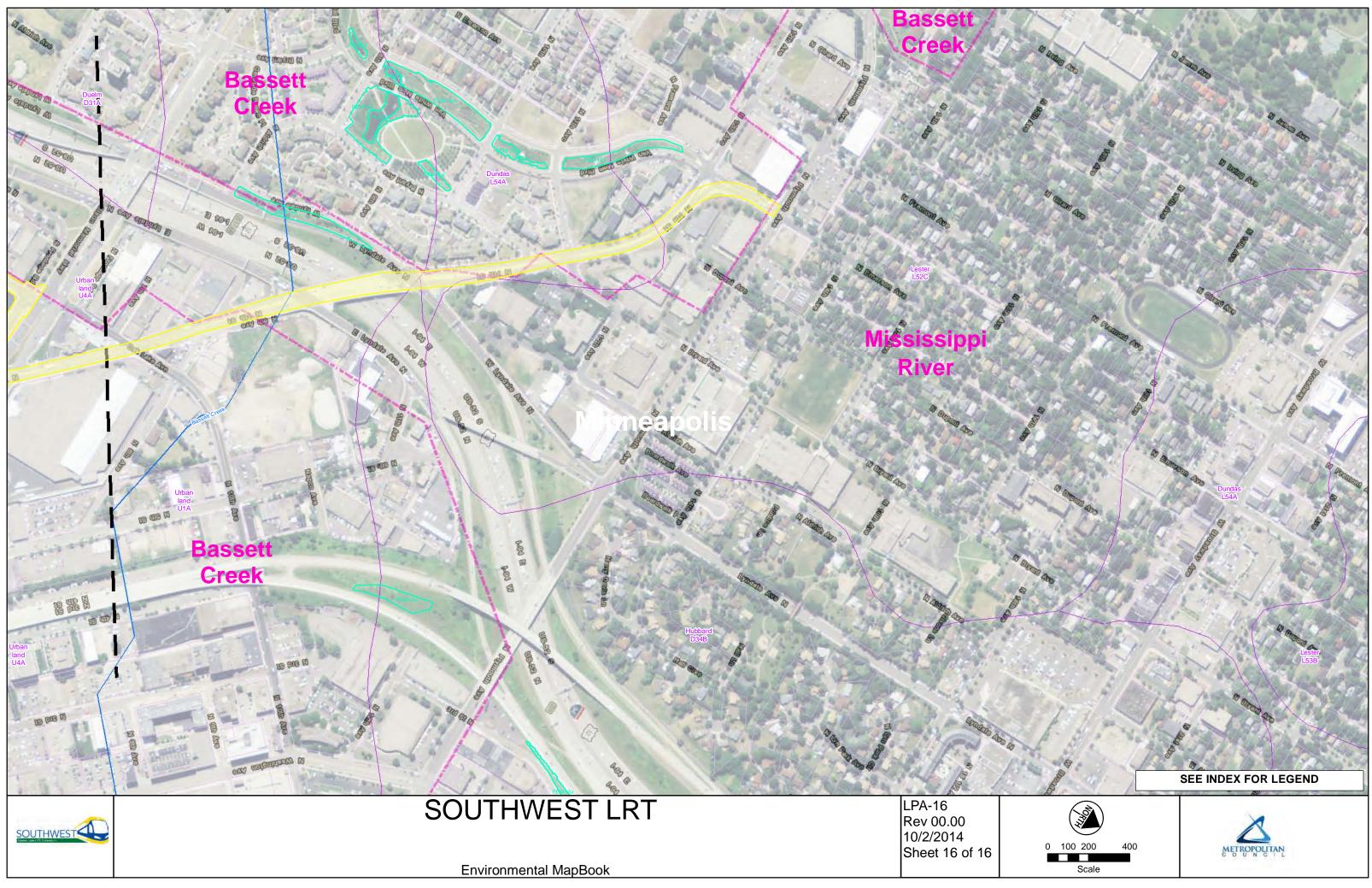


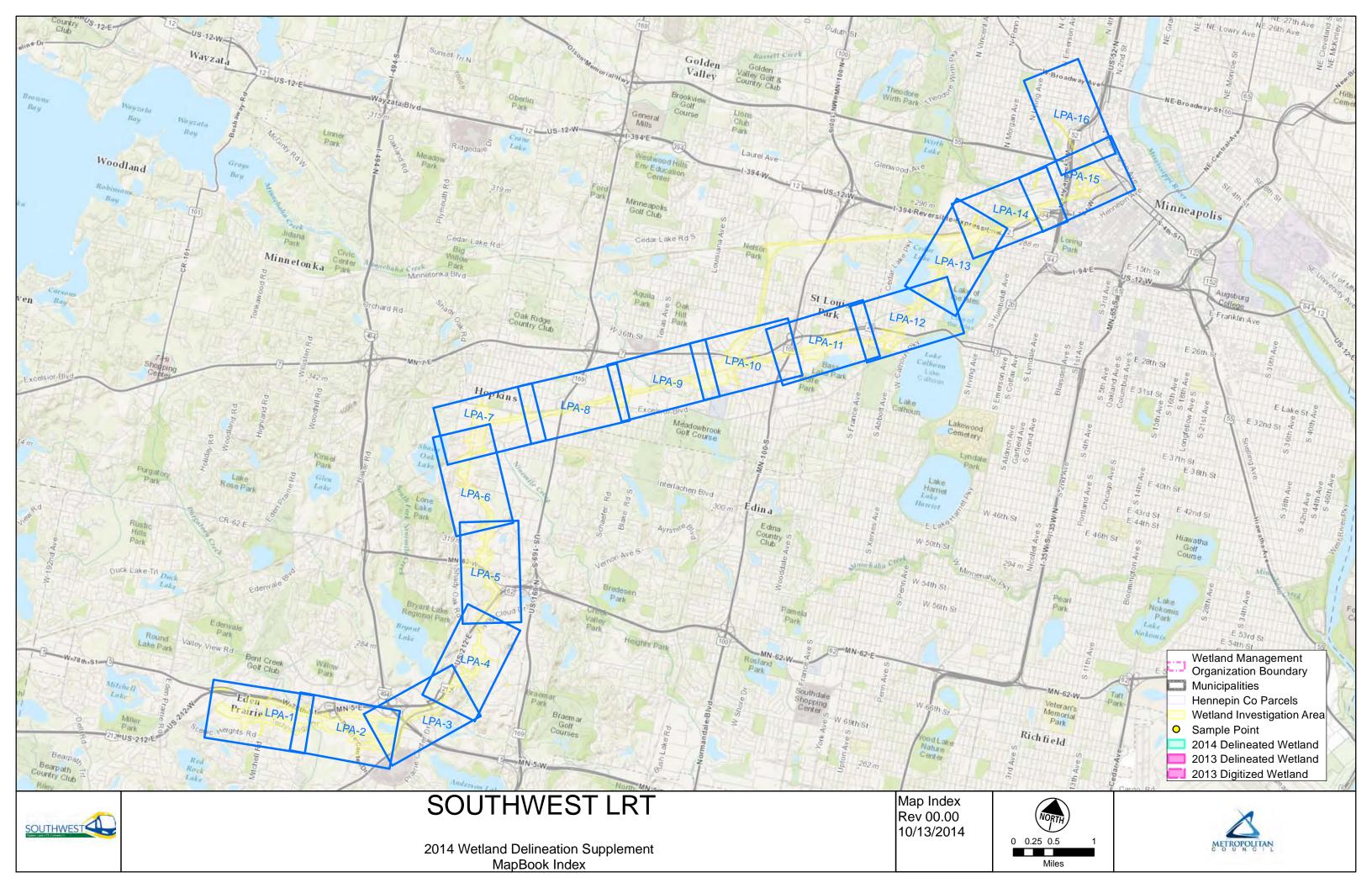


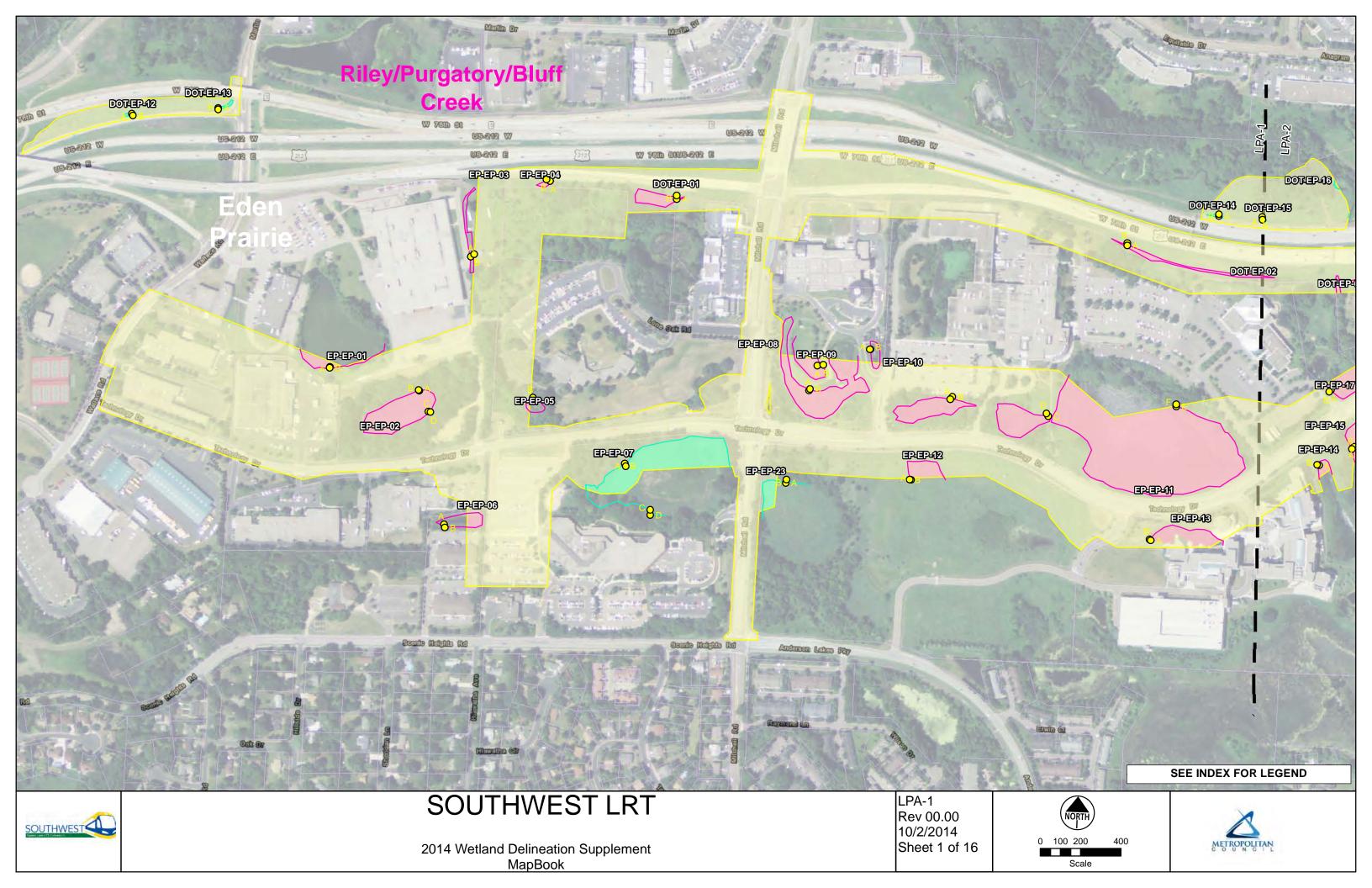
Environmental MapBook

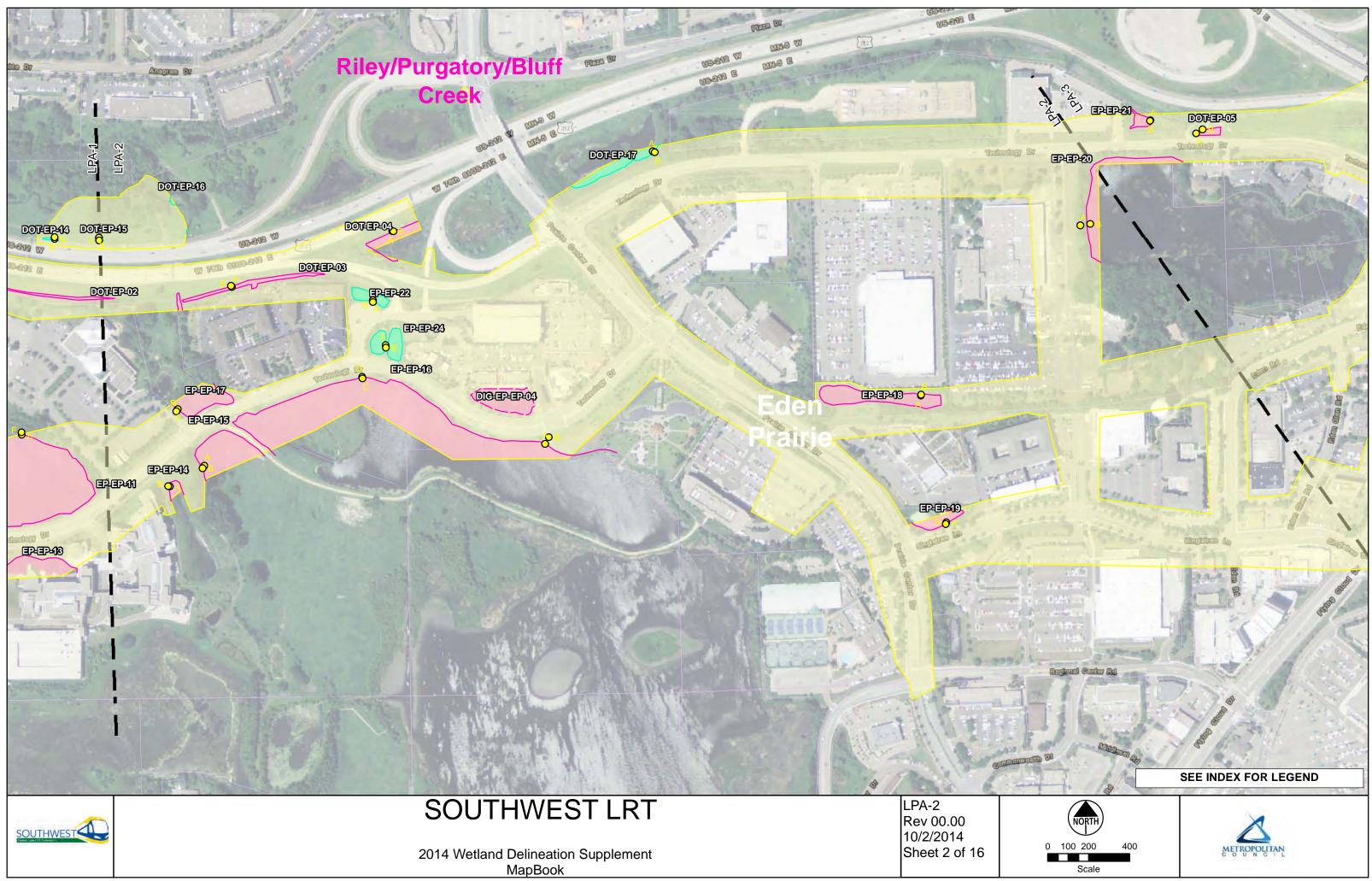
Sheet 15 of 16

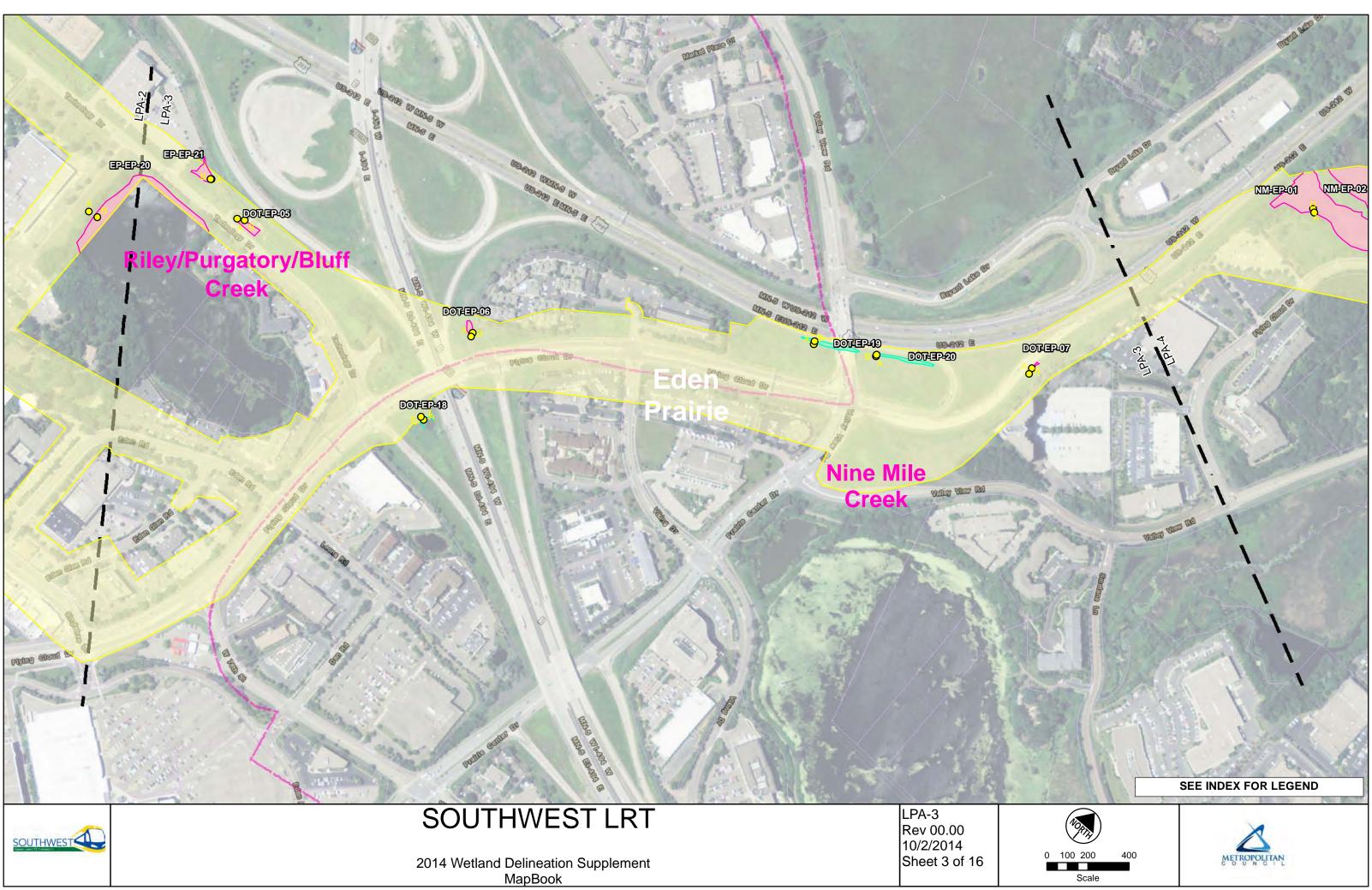
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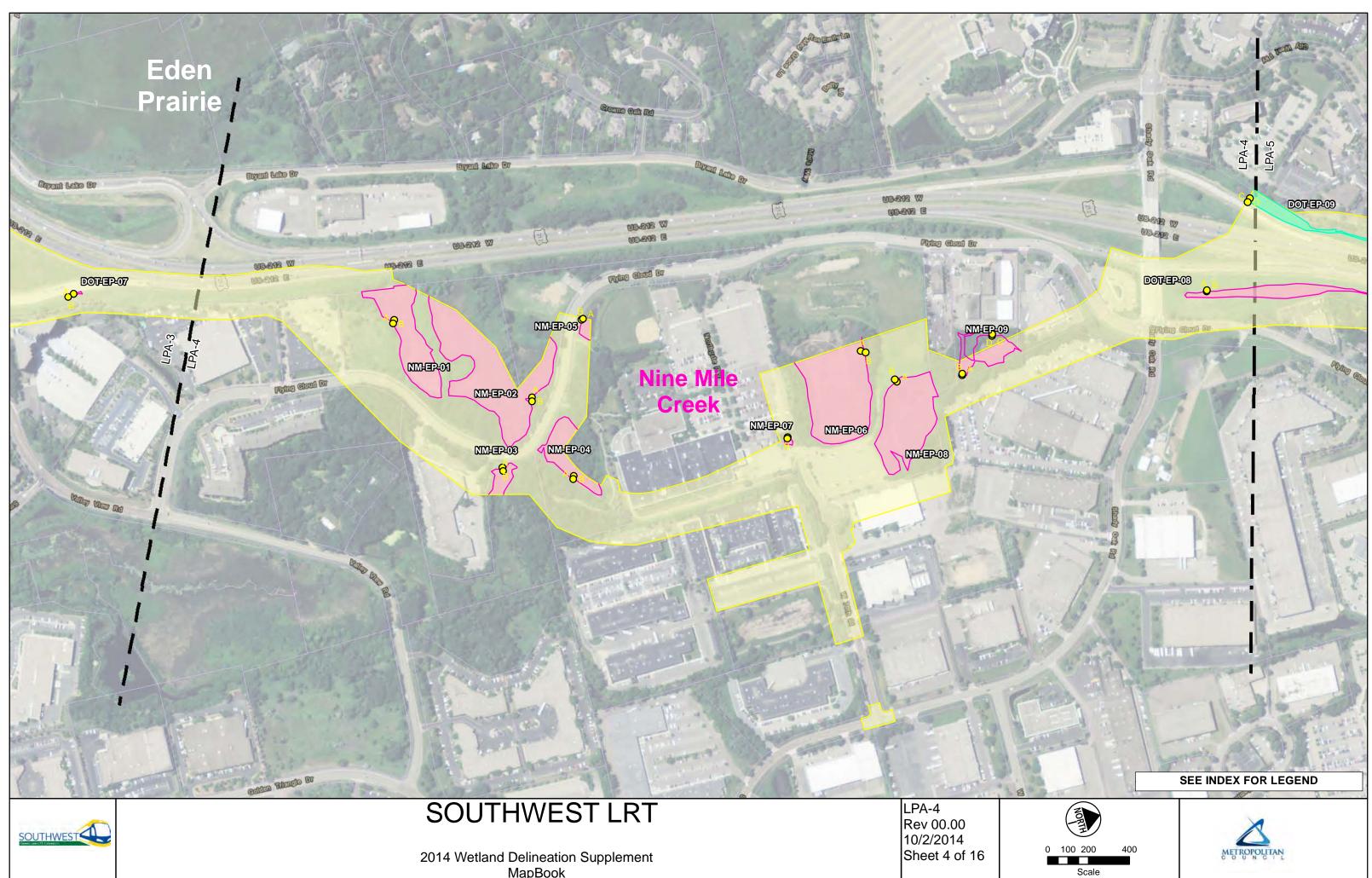




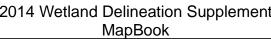


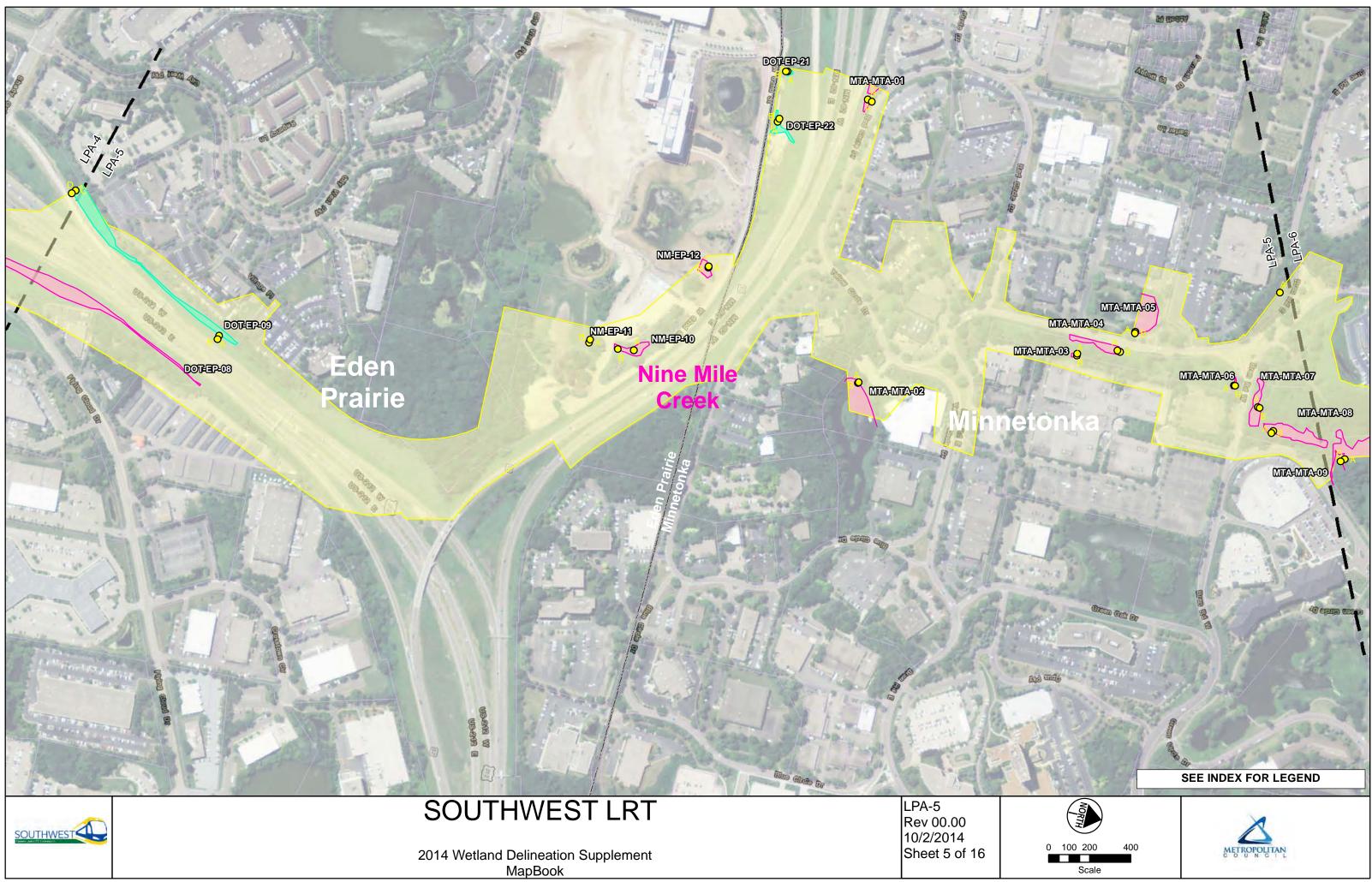


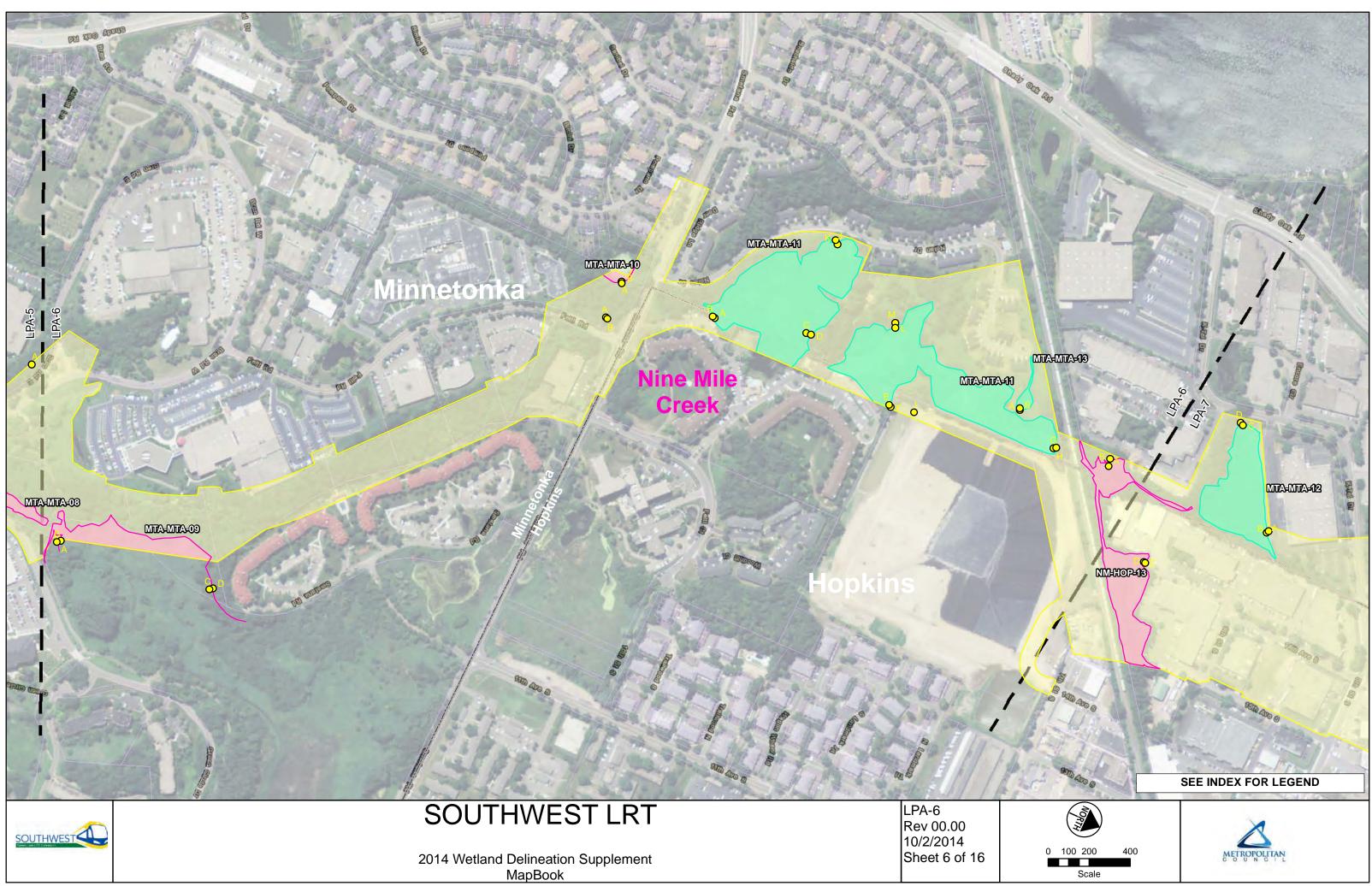






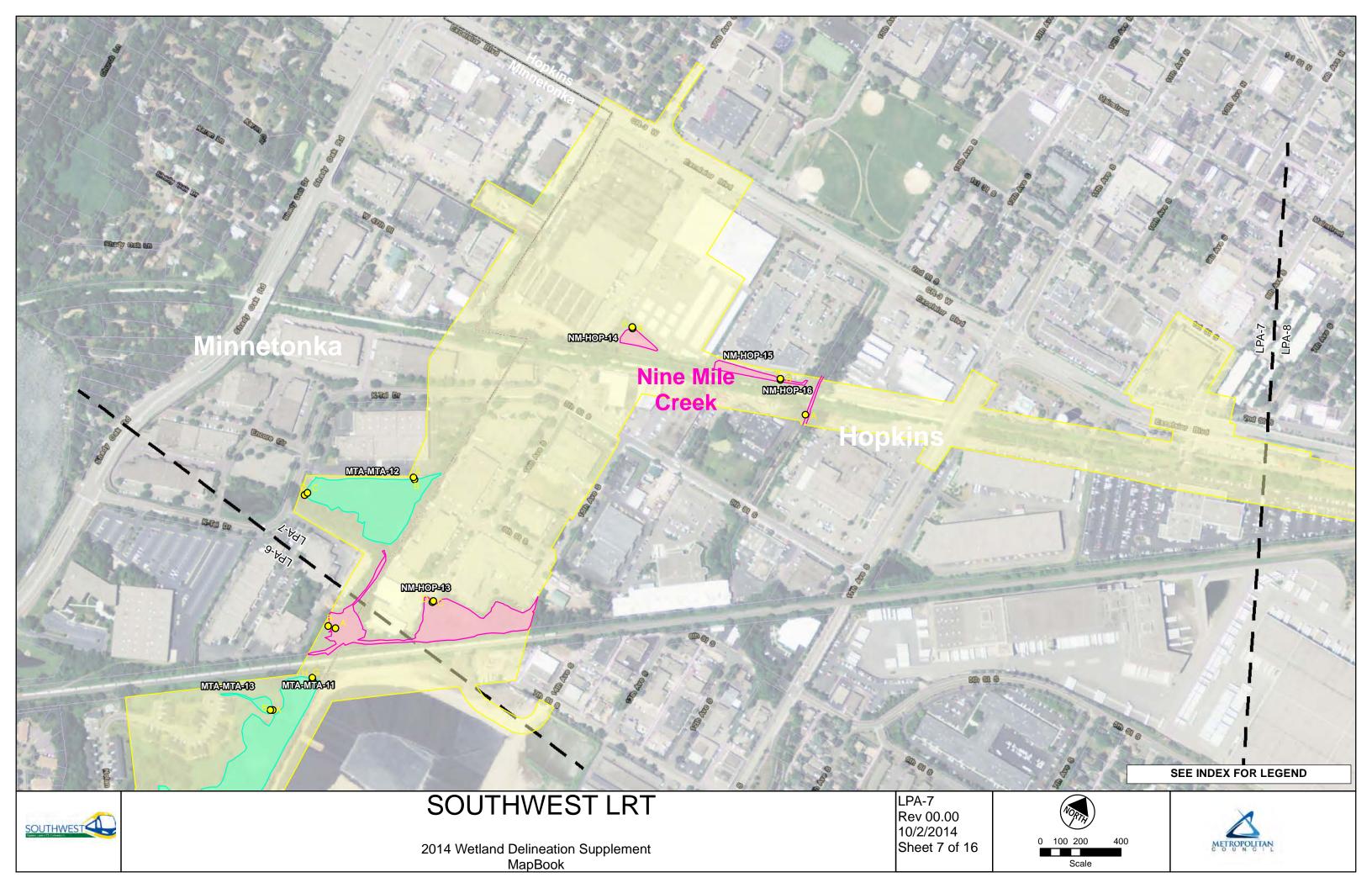


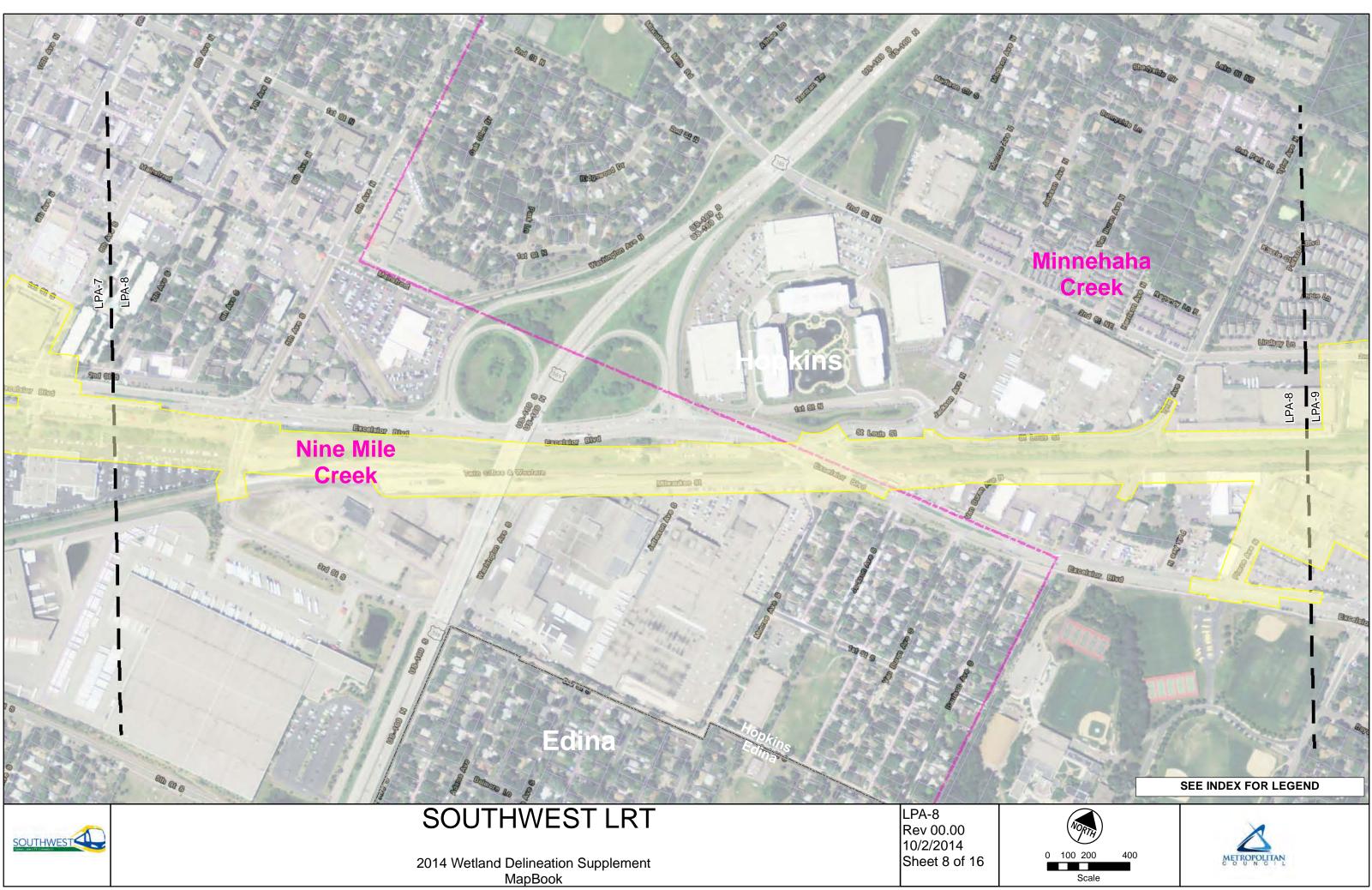


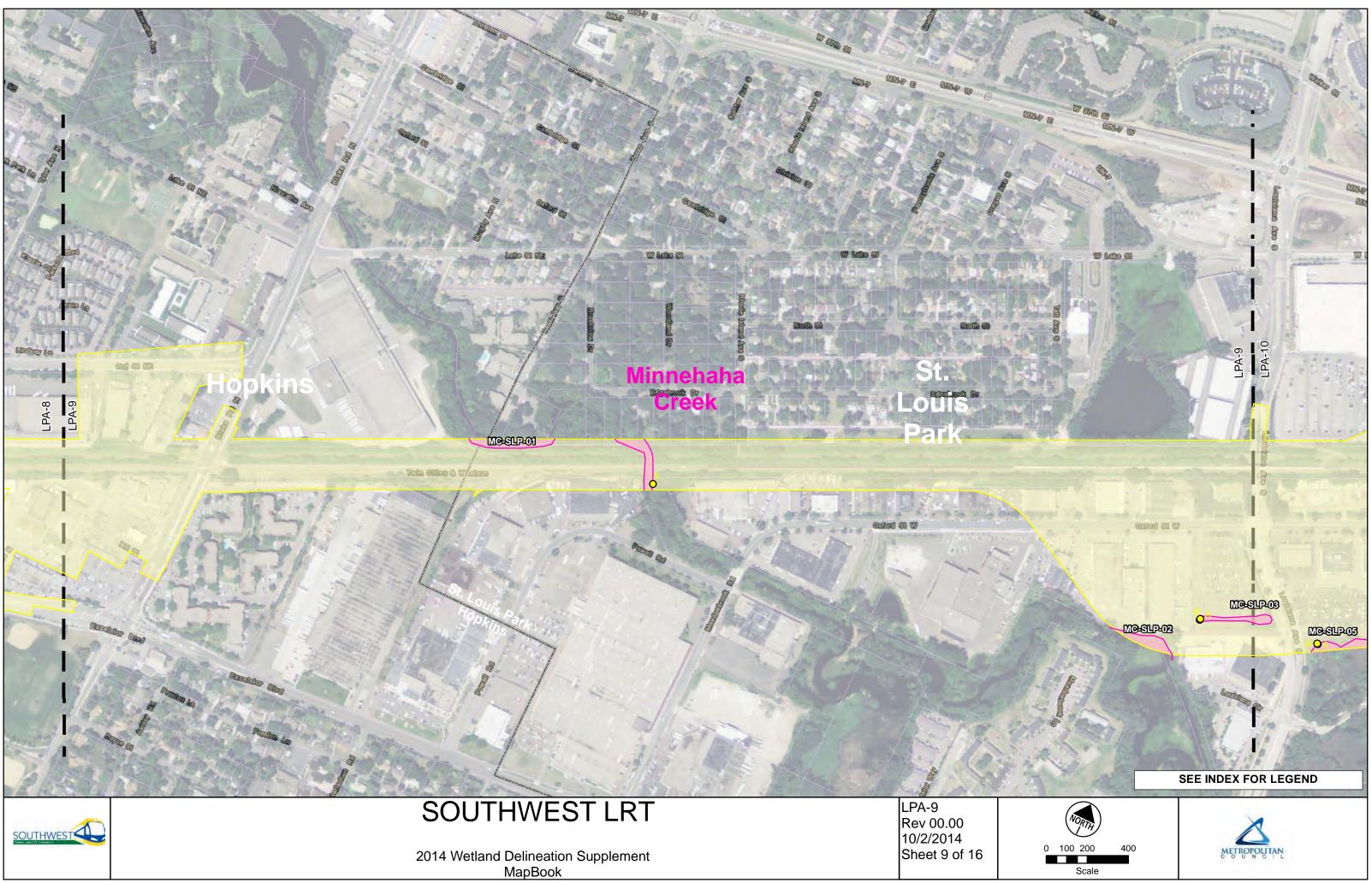




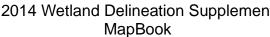


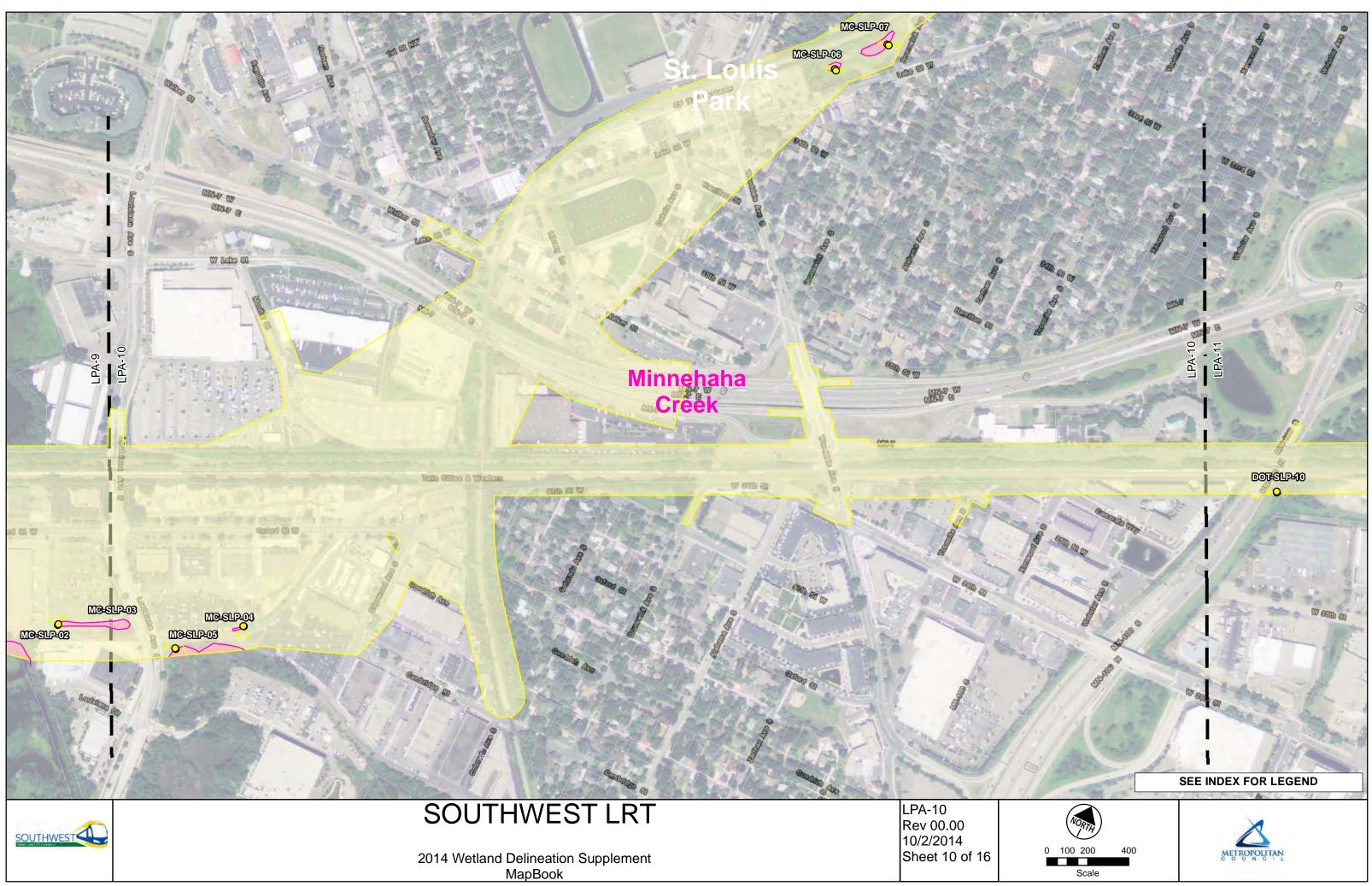




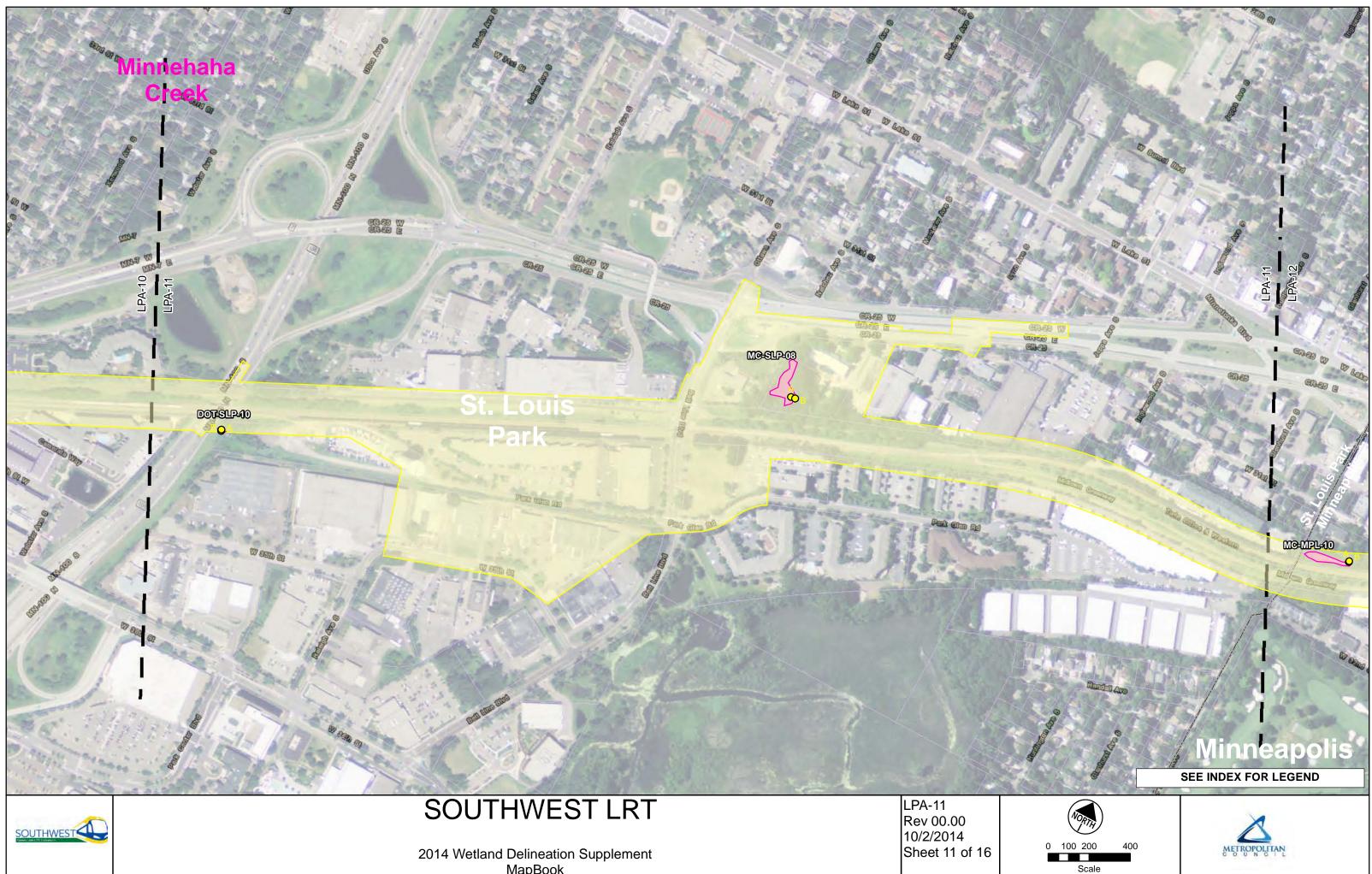






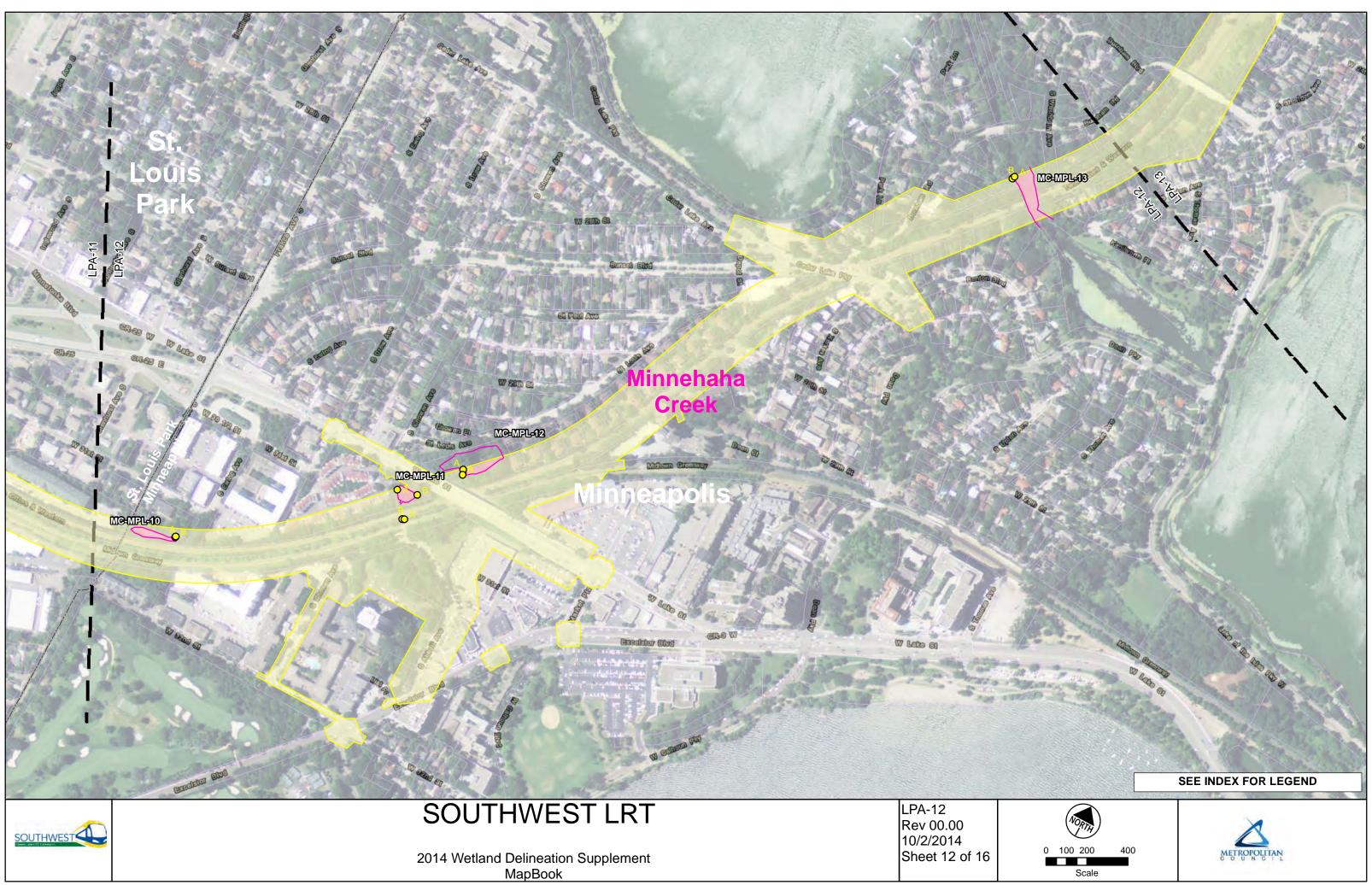




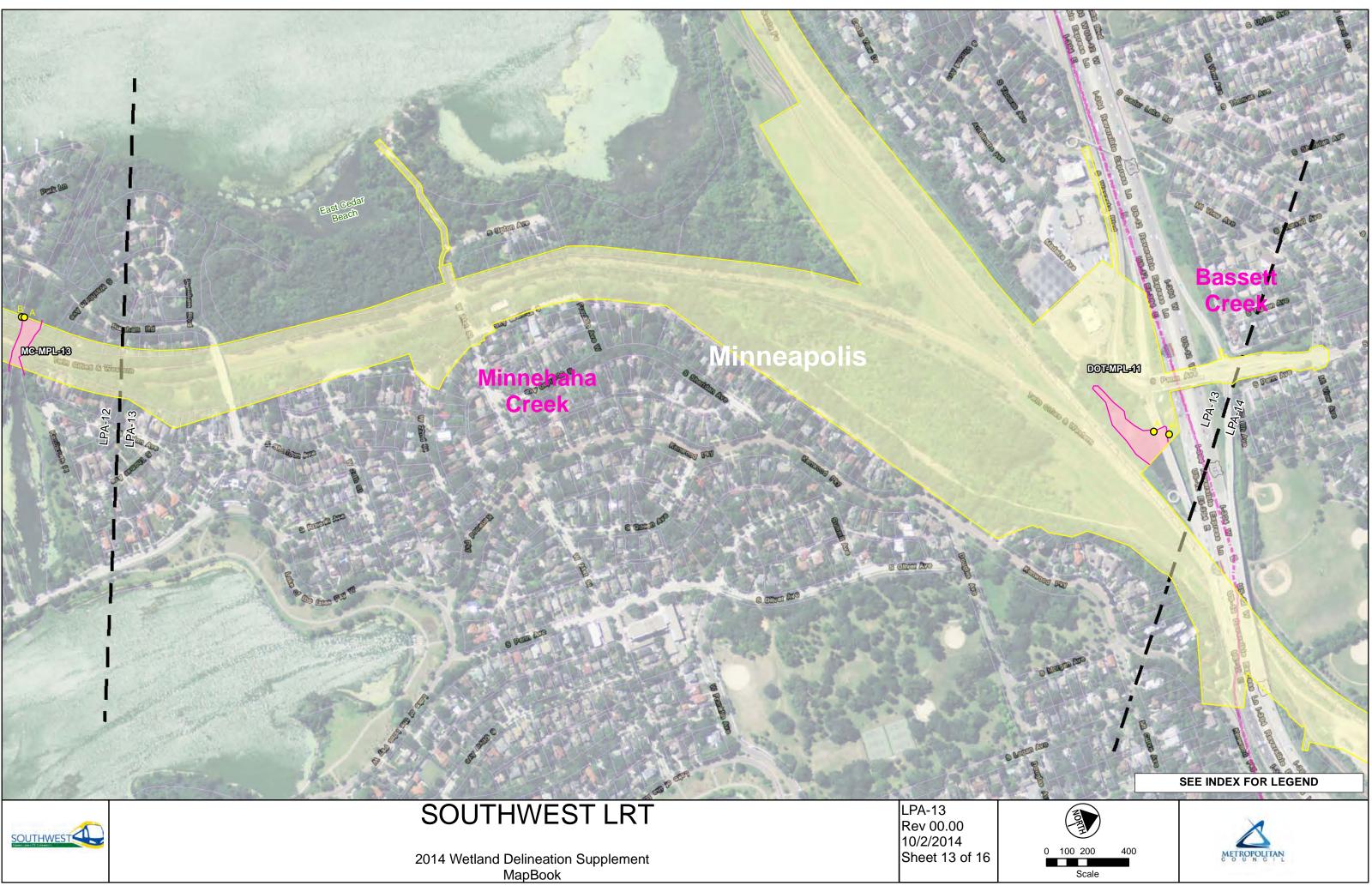




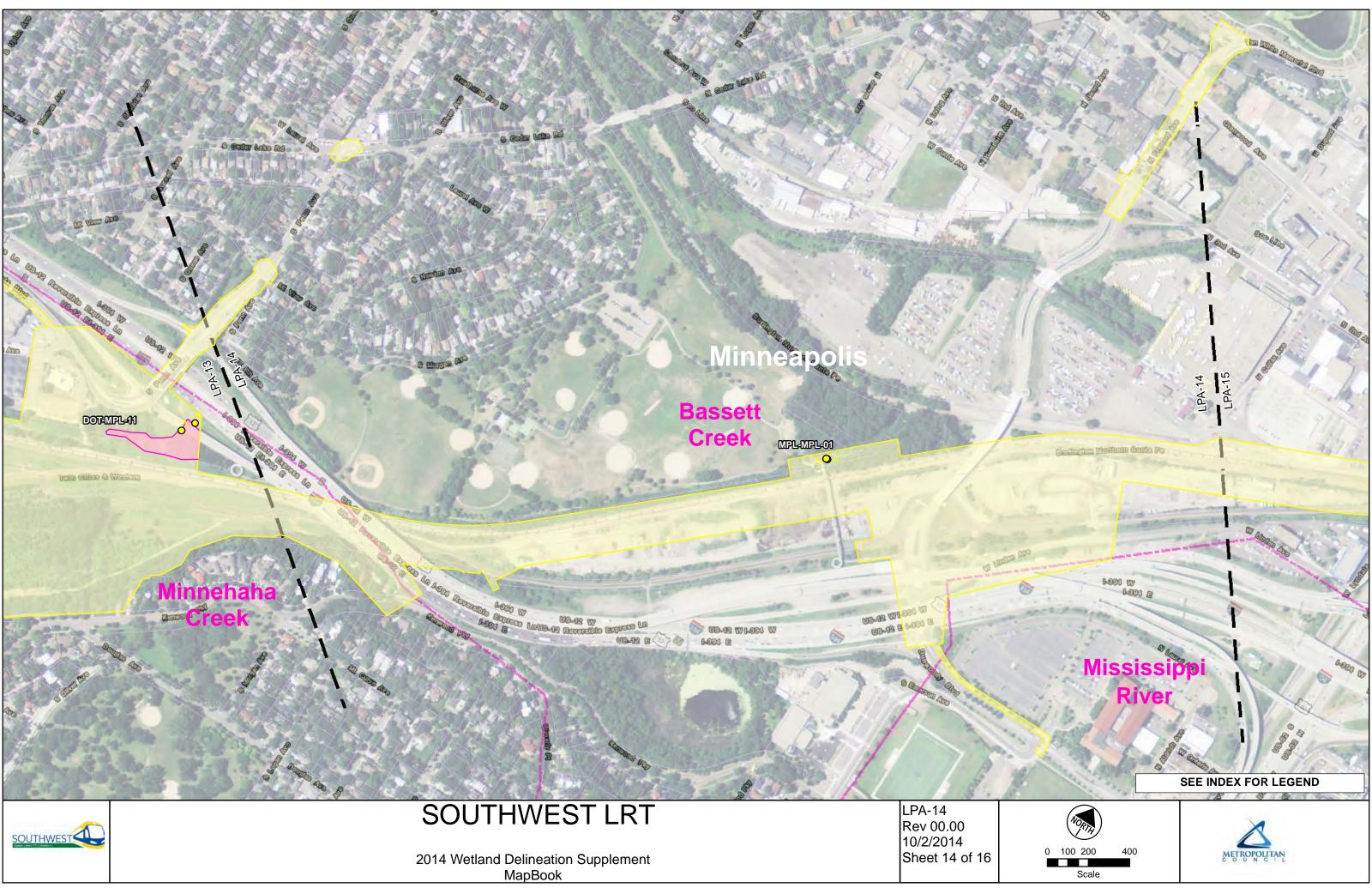
2014 Wetland Delineation Supplement MapBook



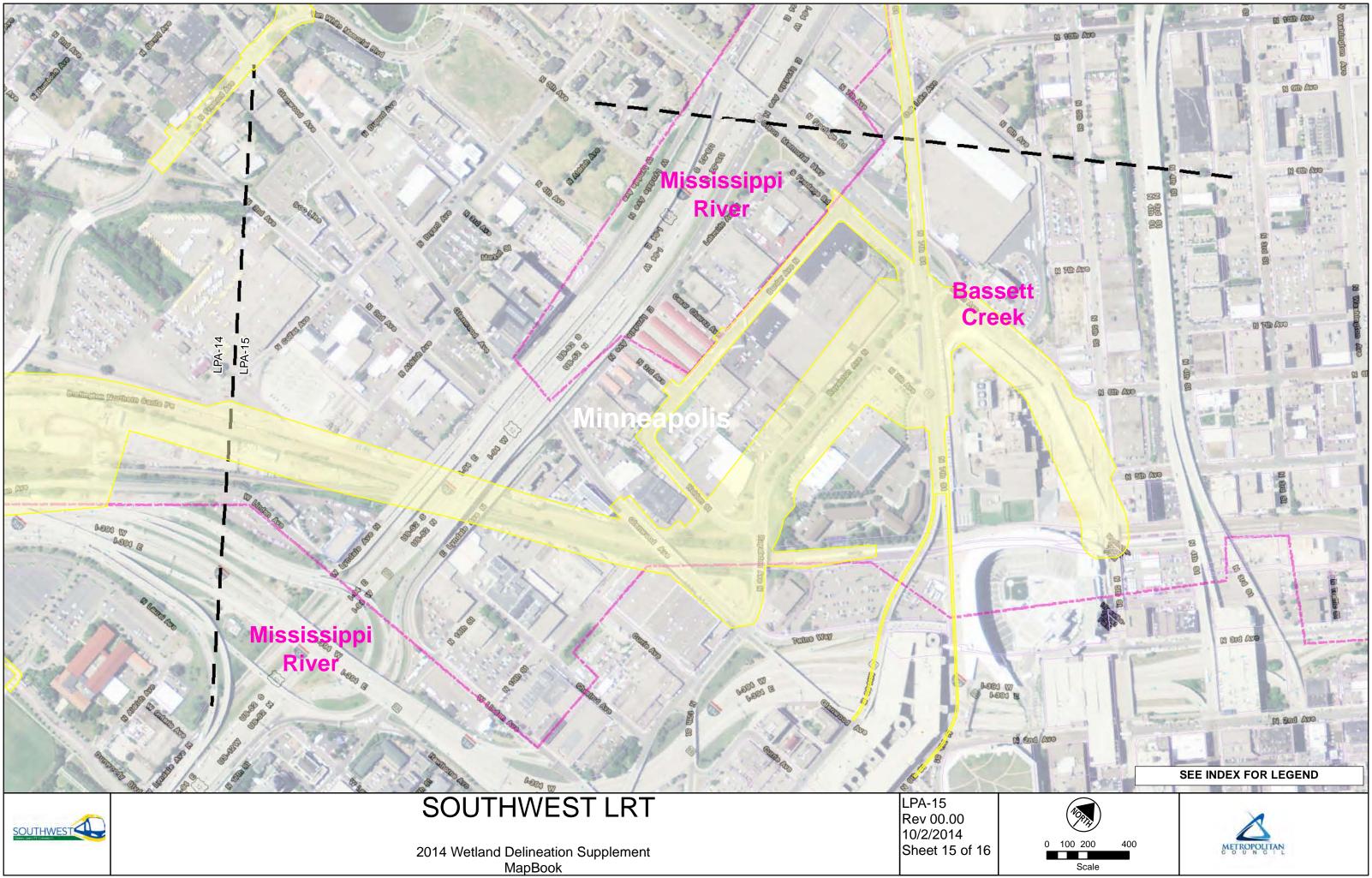


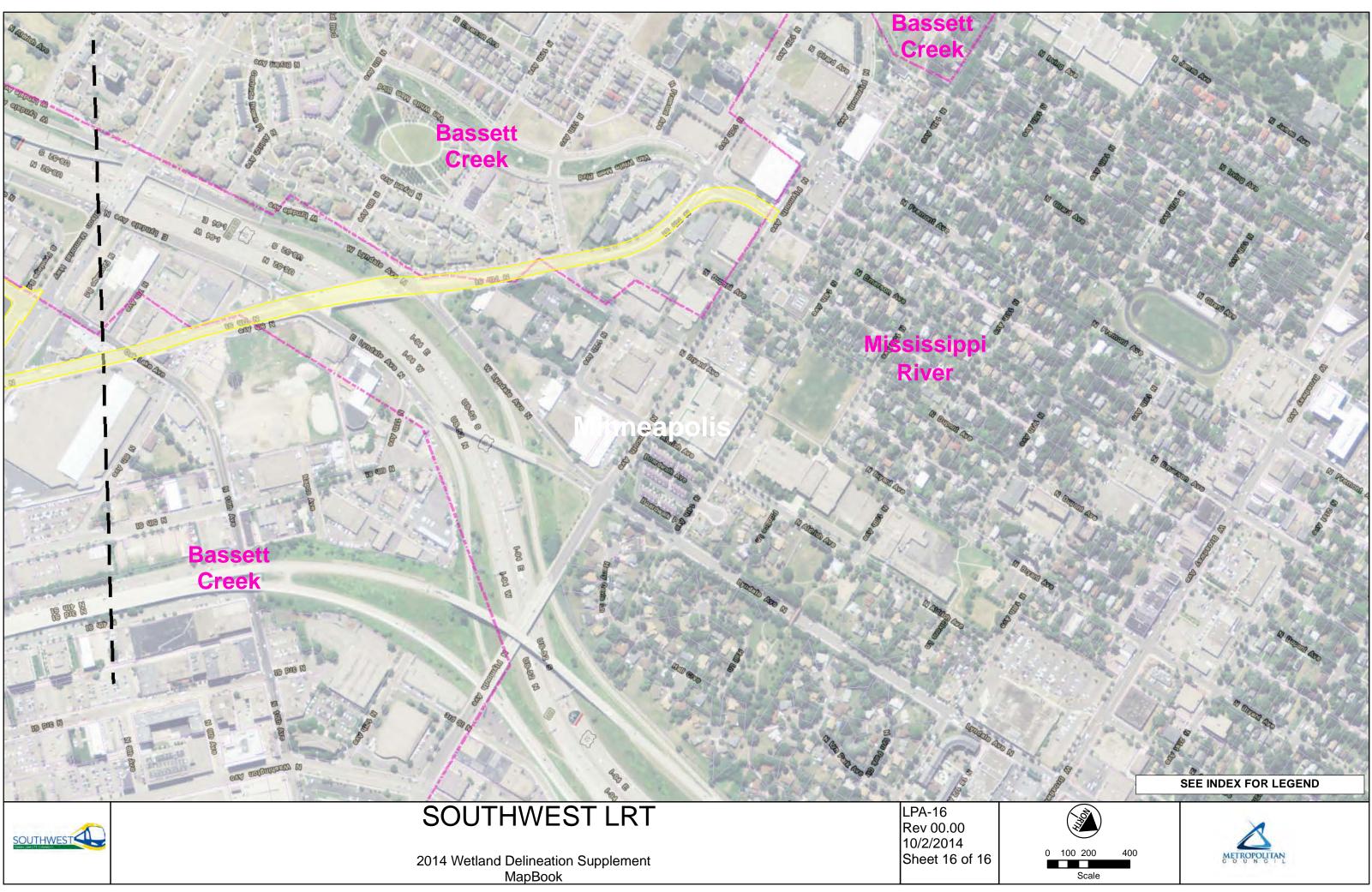














APPENDIX D

Routine On-site Determination Method Datasheets

Project/Site DOT-EP-09 (Original)	City/0	County:	Ede	en Prairie/H	ennepin	Sampling Date:	09/10/2013
Applicant/Owner: SWLRT	-	Stat	te:	MN		Sampling Point:	А
Investigator(s): Todd Udvig/Alison Hruby		s	Sectio	n, Townshij	o, Range:	01-1	116-22
Landform (hillslope, terrace, etc.): Depression	on	Lo	cal re	lief (concav	ve, convex	(, none):	Concave
Slope (%): 1-4/6-12 Lat:		Long:				Datum:	
Soil Map Unit Name L36A-Hamel Overwash/L42C-Kingsle	ey-Gotha	am Comp	olex	NWI (Classificat	tion:	
Are climatic/hydrologic conditions of the site typical for the	is time o	f the yea	ır?	Y (I	f no, expla	ain in remarks)	
Are vegetation , soil X , or hydrology	/	significa	antly	disturbed?		Are "normal circum	nstances"
Are vegetation , soil , or hydrology	/	naturall	ly pro	blematic?			present? No
SUMMARY OF FINDINGS					(If need	led, explain any ans	wers in remarks.)
Hydrophytic vegetation present? Y							
Hydric soil present? Y		ls ti	he sa	mpled area	a within a	wetland?	Y
Indicators of wetland hydrology present? Y		f yes	s, opt	ional wetlar	nd site ID:		
Remarks: (Explain alternative procedures here or in a ser	parate re	eport.)					
All three criteria were met. Area is a roadside d			circu	mstances	not met	because soil pro	ofile disturbed b
		constru					
VEGETATION Use scientific names of plants.							
Al	bsolute	Domina	an	Indicator	Domina	ance Test Worksho	eet
Tree Stratum (Plot size:) % 1 1	Cover	t Speci	es	Staus		of Dominant Specie OBL, FACW, or FAC	
2					Total	Number of Dominar	nt
3					Spec	cies Across all Strata	a: <u>2</u> (B)
4						of Dominant Specie	
5	0	= Total C			that are	OBL, FACW, or FAC	: <u>100.00%</u> (A/E
Sapling/Shrub stratum (Plot size:)	0	- 10(a) 0	over		Prevale	ence Index Worksh	neet
1						Cover of:	
2					OBL sp	ecies <u>80</u> x ⁻	1 = 80
3						species <u>20</u> x 2	
4					FAC sp		3 = 0
5	0	= Total C	ovor		FACU s UPL sp	·	4 = 0 5 = 0
Herb stratum (Plot size:)	0		over		Column		
1 Typha angustifolia	80	Y		OBL		ence Index = B/A =	1.20
2 Phalaris arundinacea	20	Y		FACW	1 TOTAIO		
3					Hydrop	hytic Vegetation I	ndicators:
4					Rap	oid test for hydrophy	ytic vegetation
5						minance test is >50	
6					X Pre	valence index is ≤3	.0*
/						rphogical adaptation	
9					-	porting data in Ren parate sheet)	larks of on a
10						blematic hydrophyt	ic vegetation*
	100	= Total C	over			plain)	0
Woody vine stratum (Plot size:)					*Indicat	ors of hydric soil and we	etland hydrology must l
1						present, unless disturbe	ed or problematic
2		T .() 0			-	drophytic jetation	
	0	= Total C	over			sent? Y	
Remarks: (Include photo numbers here or on a separate	sheet)				I -		
Large culvert discharging into ditch-24" in dia							

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm the abse	ence of indicators.)
Depth	Matrix		Re	dox Feat	ures			
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks
0-6	10YR2/1	100					Silt Loam	
6-10	10YR2/1	98	5Y4/6	2	С	М	Silt Loam	
		90		2	C	IVI		
10-15	10YR2/1		Gley1-4/5GY					
	Concentration, D	= Depleti	on, RM = Reduce	ed Matrix	, MS = №	lasked S		ation: PL = Pore Lining, M = Matrix
-	oil Indicators:					(0.1)		blematic Hydric Soils:
	tisol (A1)			ndy Gleye		: (S4)		Redox (A16) (LRR K, L, R)
	tic Epipedon (A2)			ndy Redo				(S7) (LRR K, L)
	ck Histic (A3)			pped Ma	· · ·			se Masses (F12) (LRR K, L, R)
· · ·	Irogen Sulfide (A			my Mucl	•	• •		Dark Surface (TF12)
	atified Layers (A5)		my Gley			X Other (explain	in remarks)
	m Muck (A10)			pleted Ma				
	bleted Below Dark			dox Dark		· · ·		
	ck Dark Surface (pleted Da				drophytic vegetation and weltand
	ndy Mucky Minera			dox Depr	essions	(F8)	hydrology mus	t be present, unless disturbed or
5 cr	m Mucky Peat or	Peat (S3	5)					problematic
Restrictive	Layer (if observe	ed):						
Type:							Hydric soil pres	ent? Y
Depth (inche	es):				•			
Remarks:								
	le disturbed by	roodo	onotruction D	otormin	ad to b	o budrio	based on redevine	rabic factures in the
						-		rphic features in the
profile, g	leyed matrix w	ithin the	e profile, the pr	esence	of hydr	ophytic	vegetation, and land	scape position.
HYDROLO								
-	drology Indicato							
	cators (minimum	of one is	required; check					Indicators (minimum of two required)
	Water (A1)				Fauna (B			ce Soil Cracks (B6)
	ater Table (A2)				uatic Plar			age Patterns (B10)
X Saturatio	larks (B1)					Odor (C1		eason Water Table (C2)
	()			(C3)	i Rhizosp	neres on		sh Burrows (C8)
	nt Deposits (B2) posits (B3)				o of Pod	uced Iron		ation Visible on Aerial Imagery (C9) ed or Stressed Plants (D1)
	at or Crust (B4)							orphic Position (D2)
	osits (B5)			(C6)	ION Keut			Neutral Test (D5)
	on Visible on Aeria	l Imager	(B7)	. ,	ck Surfac	e (C7)		
	Vegetated Conca				or Well Da			
	tained Leaves (B9			-		Remarks	.)	
Field Obser		,		_	1	,	,	
Surface wat		Yes	No	х	Depth (i	nches).		
Water table		Yes	No		Depth (i			Indicators of wetland
Saturation p	•	Yes	X No		Depth (i		10"	hydrology present? Y
-	pillary fringe)				-	/-	——— I	
-		am daug	e, monitoring wel	aerial n	hotos n	revious ir	nspections), if available	
Describe rec		in gaug	s, monitoring wer	i, acriai p	notos, p			
Remarks:								
Area is a	roadside ditch	ı.						

Project/Site DOT-EP-09 (Original)	City/0	County: Ed	en Prairie/H	ennepin	Sampling Date:	09/10/2013
Applicant/Owner: SWLRT		State:	MN		Sampling Point:	В
Investigator(s): Todd Udvig/Alison Hruby		Section	on, Townshij	p, Range:	: 01-	·116-22
Landform (hillslope, terrace, etc.): Terrac	е	Local r	elief (concav	ve, conve	x, none):	none
Slope (%): 1-4/6-12 Lat:		Long:			Datum:	
Soil Map Unit Name L36A-Hamel Overwash/L42C-Kings	sley-Gotha	am Complex	NWI	Classifica	tion:	
Are climatic/hydrologic conditions of the site typical for the	his time o	f the year?	Y (I	f no, expl	lain in remarks)	
Are vegetation , soil , or hydrolog	ду	significantly	disturbed?		Are "normal circur	nstances"
Are vegetation , soil , or hydrolog	ау	naturally pr	oblematic?			present? Yes
SUMMARY OF FINDINGS				(If need	ded, explain any an	swers in remarks.)
Hydrophytic vegetation present? Y						
Hydric soil present? N		Is the s	ampled area	a within a	a wetland?	N
Indicators of wetland hydrology present? N		f yes, op	tional wetlar	nd site ID:	:	
Remarks: (Explain alternative procedures here or in a se	eparate re	eport.)				
Hydric soil and wetland hyd	drology c	riteria were	e not met.	Area is	not a wetland.	
VEGETATION Use scientific names of plants						
	Absolute	Dominan	Indicator	Domin	ance Test Worksh	leet
Tree Stratum (Plot size:)	% Cover	t Species	Staus	Number	r of Dominant Specie	es
1 Picea glauca	30	Y	FACU	that are	OBL, FACW, or FA	C: <u> </u>
2 Pinus strobus	20	Y	FACU		I Number of Domina	
3				-	cies Across all Strat	、
5					t of Dominant Specie OBL, FACW, or FA	
	50	=Total Cover			0000, 17, 0000, 0000	
Sapling/Shrub stratum (Plot size:)				Preval	ence Index Works	heet
1				Total %	6 Cover of:	
2				OBL sp		1 =
					species <u>90</u> x	
4				FAC sp		3 = 0 4 = 200
	0	=Total Cover		UPL sp		5 = 0
Herb stratum (Plot size:)	-				n totals 140 (A	
1 Phalaris arundinacea	90	Y	FACW	Prevale	ence Index = B/A =	
2						
3				Hydrop	phytic Vegetation	Indicators:
4					pid test for hydroph	
5					minance test is >50	
6					evalence index is ≤	
					orphogical adaptatic oporting data in Rer	
9					parate sheet)	
10					blematic hydrophy	tic vegetation*
	90	=Total Cover		(ex	plain)	-
Woody vine stratum (Plot size:)				*Indica	tors of hydric soil and w	etland hydrology must be
1					present, unless disturb	ed or problematic
2		Tatal One			drophytic getation	
	0	=Total Cover			esent? Y	
Remarks: (Include photo numbers here or on a separate	e sheet)			1		
Large culvert discharging into ditch-24" in dia	,					

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm	the absenc	e of indicators.)
Depth	Matrix			dox Feat					·
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Textu	re	Remarks
0-12	10YR3/1	100					Loam		
0.1							200		
*Tvpe: C = 0	Concentration, D	= Depleti	on. RM = Reduce	ed Matrix	. MS = N	lasked S	and Grains.	**Locatio	n: PL = Pore Lining, M = Matrix
	oil Indicators:	200100	,		,				ematic Hydric Soils:
•	tisol (A1)		Sar	dy Gleye	ad Matrix	(\$4)			dox (A16) (LRR K, L, R)
	tic Epipedon (A2)			idy Redo		(0+)			i) (LRR K, L)
									Masses (F12) (LRR K, L, R)
	ck Histic (A3)	4)		pped Ma				-	
	Irogen Sulfide (A			my Mucł	•	. ,			rk Surface (TF12)
	atified Layers (A5)		my Gley			Other	(explain in	remarks)
	m Muck (A10)			leted Ma					
	oleted Below Dark		· · ·	lox Dark		. ,			
Thio	ck Dark Surface (A12)	Dep	leted Da	ark Surfa	ce (F7)	*Indicat	tors of hydro	ophytic vegetation and weltand
Sar	ndy Mucky Minera	al (S1)	Red	lox Depr	essions ((F8)	hydrol	ogy must be	e present, unless disturbed or
5 cr	m Mucky Peat or	Peat (S3)						problematic
Restrictive	Layer (if observe	ed).				1			
Type:		cuj.					Hydrics	soil presen	t? N
Depth (inche	<i>be)</i> .				-		Tryunc s	son presen	
Deptil (ment					-				
HYDROLO	DGY								
Wetland Hy	drology Indicate	ors:							
Primary Indi	cators (minimum	of one is	required; check	all that a	pply)		Sec	condary Ind	icators (minimum of two required
	Water (A1)				Fauna (B	13)			Soil Cracks (B6)
	ater Table (A2)				uatic Plar	,			Patterns (B10)
Saturatio						Odor (C	1) —		son Water Table (C2)
	larks (B1)						Living Roots	-	Burrows (C8)
	nt Deposits (B2)			(C3)				-	n Visible on Aerial Imagery (C9)
	posits (B3)				e of Redu	uced Iron	(C4)		or Stressed Plants (D1)
	at or Crust (B4)						illed Soils		phic Position (D2)
-	oosits (B5)			(C6)					itral Test (D5)
	on Visible on Aeria	al Imager	/ (B7)		ck Surfac	e (C7)		_	
	Vegetated Conca			-	or Well Da				
	tained Leaves (B9					Remarks)		
Field Obser	·	,					,		
Surface wat		Yes	No	х	Depth (i	nches).			
Water table		Yes	No		Depth (i			Ind	licators of wetland
Saturation p		Yes	No		Depth (i				drology present? N
	pillary fringe)	100			- Bopin (i	101100).		,	
			monitoring wall	aorial a	hotos n		epoctione) if a	wailable:	
Describe rec	corded data (strea	am gauge	e, monitoring well	, aeriai p	niolos, pi	ievious li	ispections), if a	avaliable:	
Remarks:									
. comuno.									

WETLAND DETERMINATION DATA FORM - Midwest R	legion
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Project/Site DOT-EP-09 (Extended Boundary)	City/C	County:	Hennepi	n Sampli	ng Date:	9/23/2014
Applicant/Owner: SWLRT	-	State:	MN	Samplir	ng Point:	С
Investigator(s): Todd Udvig, Alison Hruby		Section	on, Township	o, Range:	S1 T116	N R22W
Landform (hillslope, terrace, etc.): Depression	on	Local r	elief (concav	re, convex, none):	(Concave
Slope (%): 0-2 Lat:		Long:		Datum:		
Soil Map Unit Name Urban Land				Classification:	Ν	lone
Are climatic/hydrologic conditions of the site typical for thi	is time of	f the year?	N (I	f no, explain in re	marks)	
Are vegetation, soil, or hydrology	/	significantly	disturbed?	Are "no	rmal circums	tances"
Are vegetation , soil , or hydrology	/	naturally pr	oblematic?			resent? Yes
SUMMARY OF FINDINGS				(If needed, expl	ain any answ	ers in remarks.)
Hydrophytic vegetation present? Y						
Hydric soil present? Y		Is the s	ampled area	a within a wetlan	d?	Υ
Indicators of wetland hydrology present? Y		f yes, op	tional wetlar	nd site ID:		
Remarks: (Explain alternative procedures here or in a ser	parate re	port.)				
Above average precipitatior	n. All we	etland crite	ria were m	et. Area is a we	etland.	
VEGETATION Use scientific names of plants.						
· ·	bsolute	Dominan	Indicator	Dominance Te	st Workshee	et
		t Species	Staus	Number of Domi that are OBL, FA	nant Species	2 (A)
2				Total Number	of Dominant	
3				-	oss all Strata:	2(B)
5				Percent of Domi that are OBL, FA		100.00% (A/B)
	0 =	-Total Cover			•	(```,
Sapling/Shrub stratum (Plot size:)				Prevalence Inc		et
1				Total % Cover of OBL species	on: 60 x1:	= 60
3				FACW species		
4				FAC species	0 x 3 :	
5				FACU species	0 x 4 :	= 0
	0 =	=Total Cover	-	UPL species	0 x 5 :	
Herb stratum (Plot size:)				Column totals	(A)	<u>140</u> (B)
1 Typha angustifolia	60	Y	OBL	Prevalence Inde	ex = B/A =	1.40
2 Phalaris arundinacea	40	Y	FACW	Uvdrophytic V	anatation In	diaatara
3				Hydrophytic V Rapid test f	or hydrophyti	
5				X Dominance	, , ,	0
6				X Prevalence		
7				Morphogica	al adaptations	* (provide
8					data in Rema	
9				separate sh		
10	100 =	 =Total Cover		Problematio (explain)	c hydrophytic	vegetation*
Woody vine stratum (Plot size:) 1					ric soil and wetla Inless disturbed	and hydrology must be or problematic
2				Hydrophyt		
	0 =	Total Cover		vegetation present?	Y	
Remarks: (Include photo numbers here or on a separate s	sheet)					

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm th	e absence	of indicators.)
Depth	Matrix		-	dox Feat					
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	•	Remarks
0-6	10YR 4/1	80	10YR 4/4	10	D	М	SiL		
6-18	10YR 4/1	100				1	SL		
0.0									
I									
*Tupo: C = (Concentration, D	– Doploti	on PM – Poduo	d Matrix	/ MS _ N	lackod S	and Grains	**Location:	PL = Pore Lining, M = Matrix
		= Depieti	OH, RIVI = Reduct		1000 = 10	laskeu S			
-	bil Indicators:		Sec.		od Motrix	(64)			natic Hydric Soils:
	tisol (A1)				ed Matrix	(54)			x (A16) (LRR K, L, R)
	tic Epipedon (A2)			ndy Redo ipped Ma				urface (S7)	asses (F12) (LRR K, L, R)
	ck Histic (A3) drogen Sulfide (A4	4)		••	· · /	ol (E1)		-	
					ky Minera ed Matrix				Surface (TF12)
	atified Layers (A5)				, ,		explain in re	marks)
	m Muck (A10) bleted Below Darł	(Surface			atrix (F3) Surface				
	ck Dark Surface (ark Surfa	. ,	*1		I de la contrate de l
	ndy Mucky Minera				essions (hytic vegetation and weltand
	m Mucky Peat or	. ,		JOX Debi	62210112	(го)	Πγαιοιοί		oresent, unless disturbed or oblematic
	5	``)					þ	oblematic
	Layer (if observ	ed):							
Type:					-		Hydric so	il present?	<u>Y</u>
Depth (inche	es):				-				
HYDROL	JGY								
	drology Indicate	vre:							
•	cators (minimum		roquired: check	all that a			Saca	ndon (India	ators (minimum of two requires
	Water (A1)	or one is	required, check		ppiy) Fauna (B	12)	Seco		ators (minimum of two requirec il Cracks (B6)
	ater Table (A2)				uatic Plar		X	-	atterns (B10)
X Saturatio				- ·	en Sulfide	`` '		- 0	n Water Table (C2)
	larks (B1)						Living Roots	Crayfish Bu	
	nt Deposits (B2)			(C3)	2 .				Visible on Aerial Imagery (C9)
	posits (B3)				e of Redu	uced Iron	(C4)		Stressed Plants (D1)
	at or Crust (B4)			Recent	Iron Redu	uction in T	illed Soils X		c Position (D2)
Iron Dep	oosits (B5)			(C6)			X	FAC-Neutra	al Test (D5)
	on Visible on Aeria				ck Surfac			-	
	Vegetated Conca		ce (B8)	_	or Well Da	. ,			
Water-S	tained Leaves (B9))		Other (E	xplain in	Remarks)		
Field Obser									
Surface wat	•	Yes	No	Х	Depth (i	,		_	
Water table		Yes	X No		Depth (i	,	7		ators of wetland
Saturation p		Yes	X No		Depth (i	nches):	0	hyd	rology present? Y
	pillary fringe)								
Describe red	corded data (strea	am gaug	e, monitoring wel	l, aerial p	photos, p	revious ir	nspections), if ava	ailable:	
Remarks:									
Nomaino.									

Project/Site DOT-EP-09 (Extended Boundary)	City/County:	Hennepi	n Sampling D	Date: 9/23/2014			
Applicant/Owner: SWLRT	State:	MN	Sampling Point: D				
Investigator(s): Todd Udvig, Alison Hruby	Secti	on, Township	o, Range:	S1 T116N R22W			
Landform (hillslope, terrace, etc.):	Local r	elief (concav	e, convex, none):	Convex			
Slope (%): 0-2 Lat:	Long:	Long: Datum:					
Soil Map Unit Name Urban Land		NWI (Classification:	None			
Are climatic/hydrologic conditions of the site typical for this tir	me of the year?	N (I	f no, explain in remarl	ks)			
Are vegetation , soil , or hydrology	significantly	/ disturbed?	Are "norma	Il circumstances"			
Are vegetation , soil , or hydrology	naturally pr	oblematic?	/ 0	present? Yes			
SUMMARY OF FINDINGS			(If needed, explain a	any answers in remarks.)			
Hydrophytic vegetation present? Y							
Hydric soil present? N	Is the s	ampled area	a within a wetland?	Ν			
Indicators of wetland hydrology present? N	f yes, op	tional wetlan	d site ID:				
Remarks: (Explain alternative procedures here or in a separa	te report)						
Above average precipitation. Hydric so	il and hydrolog	y criteria n	ot met, area is not	a wetland.			
VEGETATION Liss scientific names of plants							
VEGETATION Use scientific names of plants.	ute Dominan	Indicator	Dominance Test V	Vorksheet			
	ver t Species	Staus	Number of Dominant				
1,,,,			that are OBL, FACW				
2			Total Number of E Species Across a				
4			Percent of Dominant				
5			that are OBL, FACW				
0	=Total Cove	r					
Sapling/Shrub stratum (Plot size:)			Prevalence Index	Worksheet			
1			Total % Cover of:				
2			· · ·	0 x 1 = 0			
3			· · ·	$\begin{array}{cccccccccccccccccccccccccccccccccccc$			
5			· · ·	$\frac{0}{40} \times 4 = 160$			
0	=Total Cove			0 x 5 = 0			
Herb stratum (Plot size:)			Column totals 1	00 (A) 280 (B)			
1 Phalaris arundinacea 60	Y	FACW	Prevalence Index =	B/A = 2.80			
2 Cirsium arvense 20	Y	FACU					
3 Solidago canadensis 20	Y	FACU	Hydrophytic Vege				
4				ydrophytic vegetation			
5			Dominance test				
6 7			X Prevalence inde				
8				laptations* (provide a in Remarks or on a			
9			separate sheet				
10				, drophytic vegetation*			
) =Total Cove	r	(explain)				
Woody vine stratum (Plot size:)				bil and wetland hydrology must be			
2			Present, unless Hydrophytic	s disturbed or problematic			
	=Total Cove		vegetation				
			present?	Y			
Remarks: (Include photo numbers here or on a separate she	et)						

Depth Color (mots) % Color (mots) % Type* Lec** Texture Remarks 10YR 2/1 40 1 SiCL A few small pebbles 10YR 2/1 40 1 SiCL A few small pebbles 10YR 2/1 30 1 SiCL A few small pebbles 6-18 10YR 2/1 100 1 SiCL Image: Sick of the state o	Profile Desc	ription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm	the absend	ce of indicators.)
0-6 10YR 2/1 40 SICL A few small pebbles 10YR 6/2 30 SICL SICL A few small pebbles 10YR 6/2 30 SICL SICL SICL 6-18 10YR 2/1 100 SICL SICL SICL 6-18 10YR 2/1 100 SICL SICL SICL 7/ype: C = Concentration, D = Depletion, RM = Reduced Matrix, IMS = Masked Sand Grains. "Location: PL = Pore Lining, M = Matrix Hydric Suil Indicators: Histisc (A1) Sandy Gleyed Matrix (S4) Coast Praitine Redox (A16) (LRR K, L, R) Histisc Epipedon (A2) Sandy Gleyed Matrix (S4) Dark Surface (S7) (LRR K, L, R) Dark Surface (S7) (LRR K, L, R) 9 Stratified Layers (A5) Learny Gleyed Matrix (F3) Other (explain in remarks) Yery Shalow Dark Surface (F7) 2 Conduck (A10) Depleted Matrix (F3) Tore Angate or Past (S3) Parelet Dark Surface (F7) 2 Truk Ork Surface (A11) Redox Depressions (F8) hydrology must be pressent, unless disturbed or problematic 5 cm Mucky Paet or Paet (S3) Depreted Dark Surface (F7) "Indicators of hyd	Depth	Matrix		Re	dox Featu	ures				
10YR 5/2 30 SICL 6-18 10YR 2/1 100 SICL 6-18 10YR 2/1 100 SICL 10YR 2/1 100 SICL SICL 10YR 3/2 Sandy Redox 2nk Surface Sice Sice Sice 10YR 3/2 Sandy Redox 2nk Surface (F3) Dark Surface (F12) (LRR K, L, R) Dark Surface (F12) 10YR 3/2 Coarr Muck (A10) Depleted Matrix (F2) Other (explain in remarks) Other (explain in remarks) 10YR 3/2 Coarr Muck (A10) Depleted Matrix (F3) Problematic Hydro Surface (F17) Notacators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic 10YR 3/2 Truck Dark Surface (A11) Redox Dark Surface (F17) Notacators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic	(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Textu	ire	Remarks
Invrk 4/4 30 SiCL 6-18 10YR 2/1 100 SiCL 7 Invrk 1/4 30 SiCL 1 10YR 2/1 100 SiCL 1 10YR 2/1 100 SiCL 1 10YR 2/1 100 SiCL 1 10 10 SiCL 1 10 10 10 1 10 10 10 1 10 10 10 1 10 10 10 1 10 10 10 1 10 10 10 1 10 10 10 1 10 10 10 1 10 10 10 1 10 10 10 1 10 10 10 10 10 10 10 10 10 10 10 10 10	0-6	10YR 2/1	40					SiCL		A few small pebbles
6-18 10YR 2/1 100 Image: Construction in the image: Constructin in the image: Consthe image: Construction i		10YR 5/2	30					SiCL		
6-18 10YR 2/1 100 Image: Construction in the image: Constructin in the image: Consthe image: Construction i		10YR 4/4	30					SiCL		
Image: Secondary Indicators: Image: Secondary Indicators: No Xurate Plants (B1) Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix Hydric Soil Indicators: Indicators for Problematic Hydric Soils: Indicators for Problematic Hydric Soils: Histico (A1) Sandy Gleyed Matrix (S4) Coast Praine Redox (A16) (LRR K, L, R) Black Histic (A3) Stripped Matrix (S6) Ionr-Manganese Masses (P12) (LRR K, L, R) Depleted Below Dark Surface (A10) Depleted Matrix (F3) Other (explain in remarks) Depleted Below Dark Surface (A12) Depleted Matrix (F3) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) Redox Depressions (F8) *Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic Type: Soil moist, mixed soil matrix in upper 6". Hydric soil present? N Peth (inches):	6-18									
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2 cm Muck (A10) Depleted Matrix (F3) Redox Dark Surface (A12) Depleted Dark Surface (F7) Sandy Mucky Mineral (S1) Redox Depressions (F8) * Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic Restrictive Layer (if observed): Type: Depth (inches):										
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Thick Dark Surface (A12) Depleted Dark Surface (F7) *Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic Sandy Mucky Peat or Peat (S3) Present (S3) *Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic Restrictive Layer (if observed):		· /	Surface			. ,	(F6)			
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5 cm Mucky Peat or Peat (S3) problematic Restrictive Layer (if observed):		,	,							
Type:	5 cn	n Mucky Peat or	Peat (S3)			. ,	,	0,	
Type:	Restrictive I	Layer (if observe	ed):							
Remarks: Soil moist, mixed soil matrix in upper 6". HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) Secondary Indicators (minimum of two required; Surface Water (A1) Surface Water (A1) Aquatic Fauna (B13) Surface Soil Cracks (B6) High Water Table (A2) True Aquatic Plants (B14) Drainage Patterns (B10) Saturation (A3) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Water Marks (B1) Oxidized Rhizospheres on Living Roots Crayfish Burrows (C8) Sediment Deposits (B2) (C3) Saturation Visible on Aerial Imagery (C9) Drift Deposits (B3) Presence of Reduced Iron (C4) Stunet or Stressed Plants (D1) Algal Ma or Crust (B4) Recent Iron Reduction in Tilled Soils Geomorphic Position (D2) Iron Deposits (B5) (C6) FAC-Neutral Test (D5) Inundation Visible on Aerial Imagery (B7) Thin Muck Surface (C7) Sparsely Vegetated Concave Surface (B8) Gauge or Well Data (D9) Water Stained Leaves (B9) Other (Explain in Remarks) Indicators of wetland hydrology present? No X Depth (inches): Indicators o								Hydric :	soil presen	t? N
Soil moist, mixed soil matrix in upper 6". HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) Secondary Indicators (minimum of two required; surface Water (A1) High Water Table (A2) True Aquatic Fauna (B13) Surface Soil Cracks (B6) High Water Table (A2) True Aquatic Plants (B14) Drainage Patterns (B10) Saturation (A3) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Water Marks (B1) Oxidized Rhizospheres on Living Roots Crayfish Burrows (C8) Sediment Deposits (B2) (C3) Saturation Visible on Aerial Imagery (C9) Drift Deposits (B3) Presence of Reduced Iron (C4) Stunted or Stressed Plants (D1) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils Geomorphic Position (D2) Iron Deposits (B5) (C6) FAC-Neutral Test (D5) Inudation Visible on Aerial Imagery (B7) Thin Muck Surface (C7) Sparsely Vegetated Concave Surface (B8) Gauge or Well Data (D9) Water Table present? Yes No X Depth (inches): Indicators of wetland hydrology present? N Surface water present? Yes No X Depth (i	Depth (inche	s):								
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Water-Stained Leaves (B9) Other (Explain in Remarks) Field Observations: Other (Explain in Remarks) Surface water present? Yes No X Depth (inches): Indicators of wetland Water table present? Yes No X Depth (inches): Indicators of wetland Saturation present? Yes No X Depth (inches): No (includes capillary fringe) No X Depth (inches): No					-					
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Saturation present? Yes No X Depth (inches): hydrology present? N (includes capillary fringe) No X Depth (inches): N N									Inc	licators of wetland
				No	Х				hy	/drology present? N
Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	(includes cap	oillary fringe)								
	Describe rec	orded data (strea	am gauge	e, monitoring wel	, aerial p	hotos, pi	revious ir	nspections), if a	available:	
Remarks:	Remarks:									
No hydrology		loav								
		- 3)								

Project/Site DOT-EP-12	City/C	county:	Ede	en Prairie/He	ennepin	Sampling Date:	9/22/2014
Applicant/Owner: SWLRT	-	Stat	e:	MN		Sampling Point:	A
Investigator(s): Marc Cottingham, Lucy Dahl		s	ectio	n, Township	o, Range:		T116N R22W
Landform (hillslope, terrace, etc.): Depressio	n	Loc	cal re	lief (concav	e, convex	(, none):	Concave
Slope (%): 0-5 Lat:		Long:				Datum:	
Soil Map Unit Name Urban Land		-		NWI C	Classificat	tion:	None
Are climatic/hydrologic conditions of the site typical for this	s time of	the yea	r?	N (l	f no, expla	ain in remarks)	
Are vegetation, soil, or hydrology	,	significa	antly	disturbed?		Are "normal cire	cumstances"
Are vegetation , soil , or hydrology		naturall	y pro	blematic?			present? Yes
SUMMARY OF FINDINGS					(If need	led, explain any	answers in remarks.)
Hydrophytic vegetation present? Y							
Hydric soil present? Y		ls th	ne sa	mpled area	a within a	a wetland?	Y
Indicators of wetland hydrology present? Y		f yes	s, opti	ional wetlan	d site ID:		
Remarks: (Explain alternative procedures here or in a sep	parate rep	oort.)					
Above average precipitation	n. All we	etland c	riteri	ia were m	et. Area	is a wetland.	
VEGETATION Use scientific names of plants.							
-	osolute	Domina		Indicator	Domina	ance Test Work	sheet
Tree Stratum (Plot size:) % 1	Cover	t Specie	es	Staus		of Dominant Spe OBL, FACW, or F	
2						Number of Domi cies Across all St	
4					Percent	of Dominant Spe	ecies
5					that are	OBL, FACW, or F	FAC: 100.00% (A/B)
<u> </u>	0 =	Total C	over				
Sapling/Shrub stratum (Plot size:)						ence Index Wor Cover of:	ksheet
2					OBL sp		x 1 = 0
3					-		$x^{2} = 140$
4					FAC sp		x 3 = 0
5					FACU s	species 0	x 4 = 0
	0 =	Total C	over		UPL sp		x 5 = 0
Herb stratum (Plot size:)					Column		(A) <u>140</u> (B)
1 Phalaris arundinacea	60	<u>Y</u>		FACW	Prevale	ence Index = B/A	. = 2.00
2 Cyperus esculentus	10	N		FACW	Hydron	hytic Vegetatic	n Indicators:
4							ophytic vegetation
5						minance test is >	
6					X Pre	valence index is	; ≤3.0*
7					Mo	rphogical adapta	ations* (provide
8							Remarks or on a
9						parate sheet)	
10	70 =	Total C	over			plain)	hytic vegetation*
Woody vine stratum (Plot size:) 1							d wetland hydrology must be urbed or problematic
2						drophytic	
	0 =	Total C	over		_	getation esent?	Y
Remarks: (Include photo numbers here or on a separate s	sheet)						

Profile Desc	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm th	ne absenc	e of indicators.)
Depth	Matrix		Red	dox Feat	ures				
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Э	Remarks
0-8	10YR 2/1	100					SiCl		
8-20	10YR 4/2	95	10YR 4/5	5	С	PL	SiCl		
				-					
*Type: C = C	Concentration, D	= Depleti	on, RM = Reduce	ed Matrix	, MS = N	lasked S	and Grains.	**Location	n: PL = Pore Lining, M = Matrix
	il Indicators:	·							ematic Hydric Soils:
Hist	tisol (A1)		Sar	ndy Gleye	ed Matrix	(S4)	Coast	Prairie Rec	dox (A16) (LRR K, L, R)
Hist	tic Epipedon (A2)	1	Sar	ndy Redo	ox (S5)				") (LRR K, L)
Blac	ck Histic (A3)		Stri	pped Ma	trix (S6)		Iron-Ma	anganese	Masses (F12) (LRR K, L, R)
	Irogen Sulfide (A			•	ky Minera	. ,			rk Surface (TF12)
	atified Layers (A5)			ed Matrix	(F2)	Other (explain in	remarks)
	n Muck (A10)				atrix (F3)				
	leted Below Dark				Surface	. ,			
	ck Dark Surface (ark Surfa				ophytic vegetation and weltand
	dy Mucky Minera			lox Depr	essions ((F8)	hydrolo		e present, unless disturbed or
5 cr	m Mucky Peat or	Peat (S3)						problematic
	Layer (if observ	ed):							
Туре:					-		Hydric so	oil present	t? <u>Y</u>
Depth (inche	es):				_				
HYDROLO									
-	drology Indicate								
		of one is	required; check				Seco		icators (minimum of two required)
	Water (A1)				Fauna (B	,			Soil Cracks (B6)
Saturatio	ter Table (A2)				uatic Plar n Sulfide	```			Patterns (B10) on Water Table (C2)
	larks (B1)						Living Roots	_ `	Burrows (C8)
	nt Deposits (B2)			(C3)					n Visible on Aerial Imagery (C9)
	oosits (B3)				e of Redu	uced Iron	(C4)		or Stressed Plants (D1)
	at or Crust (B4)								phic Position (D2)
	osits (B5)			(C6)			X	FAC-Neu	itral Test (D5)
	on Visible on Aeria				ck Surfac	. ,			
	Vegetated Conca		ce (B8)	-	or Well Da		N N		
	tained Leaves (BS)		Other (E	xplain in	Remarks)		
Field Obser		Vac	No	v	Dopth (
Surface wate Water table		Yes Yes	No No	$\frac{x}{x}$	Depth (i Depth (i	,		Ind	licators of wetland
Saturation p	-	Yes	No	<u> </u>	Depth (i	,	<u> </u>		drology present? Y
-	pillary fringe)					/			<u> </u>
Describe rec	corded data (strea	am gaug	e, monitoring well	, aerial p	hotos, pi	revious ir	nspections), if av	ailable:	
Remarks:									
1									

Project/Site DOT-EP-12	City/C	County:	Ede	en Prairie/H	ennepin	Sampling D	ate: 9/	22/2014
Applicant/Owner: SWLRT		Stat	e:	MN		Sampling P	oint:	В
Investigator(s): Marc Cottingham, Lucy Dahl		S	ectio	n, Townshi	p, Range:	-	S9 T116N R2	2W
Landform (hillslope, terrace, etc.): Hill slope		Loc	cal re	lief (concav	ve, convex	k, none):	Nor	ne
Slope (%): 0-5 Lat:		Long:				Datum:		
Soil Map Unit Name Urban Land		_		NWI	Classificat	tion:	None	
Are climatic/hydrologic conditions of the site typical for this	s time of	the yea	r?	N (I	f no, expla	ain in remarl	<s)< td=""><td></td></s)<>	
Are vegetation, soil, or hydrology		significa	antly	disturbed?		Are "norma	l circumstance	es"
Are vegetation , soil , or hydrology		naturall	y pro	blematic?			prese	nt? Yes
SUMMARY OF FINDINGS					(If need	led, explain a	any answers i	n remarks.)
Hydrophytic vegetation present? N								
Hydric soil present? N		ls th	ne sa	mpled area	a within a	a wetland?	N	
Indicators of wetland hydrology present? N		f yes	, opti	ional wetlar	nd site ID:			
Remarks: (Explain alternative procedures here or in a sepa	arate re	port.)						
Above average precipitation.	. Wetla	and crit	eria	not met, a	area is n	ot a wetlan	ıd.	
VEGETATION Use scientific names of plants.								
	solute	Domina		Indicator	Domina	ance Test W	/orksheet	
Tree Stratum (Plot size:) % 0 1	Cover	t Specie	es	Staus		of Dominant OBL, FACW,		<u>1</u> (A)
2						Number of D		2 (B)
4					Percent	of Dominant	Species	
5					that are	OBL, FACW,	or FAC: 50	.00% (A/B)
	0 =	Total C	over				A/	
Sapling/Shrub stratum (Plot size:)						ence Index \ Cover of:	worksneet	
2	<u> </u>				OBL sp		0 x 1 =	0
3					-		$\frac{1}{0} x 2 =$	0
4					FAC sp	ecies 3	30 x 3 =	90
5					FACU s	-	60 x 4 =	240
	0 =	Total C	over		UPL sp		0 x 5 = -	0
Herb stratum (Plot size:)	~ ~	.,			Column		90 (A)	330 (B)
	60 30	Y		FACU FAC	Prevale	ence Index =	B/A = 3	3.67
2 Poa pratensis	30	T		FAC	Hydron	hytic Veget	ation Indicat	ors.
4							ydrophytic ve	
5					Dor	minance test	t is >50%	-
6					Pre	evalence inde	ex is ≤3.0*	
7							aptations* (pr	
8							in Remarks o	or on a
9 10						parate sheet)	drophytic vege	station*
	90 =	Total C	over			plain)		elalion
Woody vine stratum (Plot size:) 1						present, unless	il and wetland hy disturbed or pro	/drology must be oblematic
2						drophytic		
	0 =	=Total C	over		-	getation esent?	N	
Remarks: (Include photo numbers here or on a separate sh	heet)							
	,							

Profile Desc	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm	the absend	e of indicators.)
Depth	Matrix		Red	dox Feat	ures				
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Textu	ire	Remarks
0-10	10YR 2/1	100					SiCl		
10-20	10YR 4/2	100					SiCl		
10 20	1011(4/2	100					0101		
*T	Democratica D	Danlati		- INA - tuis				**! +: -	a Di Dana Lining M. Mateira
	Concentration, D	= Depleti	on, $RIVI = Reduce$	ed iviatrix	, IVIS = IV	lasked S			n: PL = Pore Lining, M = Matrix
-	bil Indicators:		0			(04)			ematic Hydric Soils:
	tisol (A1)				ed Matrix	(\$4)			dox (A16) (LRR K, L, R)
	tic Epipedon (A2)			idy Redo					7) (LRR K, L)
	ck Histic (A3)			pped Ma				-	Masses (F12) (LRR K, L, R)
	Irogen Sulfide (A				ky Minera				rk Surface (TF12)
	atified Layers (A5)			ed Matrix	(⊦2)	Other	r (explain in	remarks)
	m Muck (A10)	- ·			atrix (F3)				
	leted Below Dark				Surface	. ,			
	ck Dark Surface (,			ark Surfa				ophytic vegetation and weltand
	ndy Mucky Minera	. ,		lox Depr	essions	(F8)	hydro		e present, unless disturbed or
5 cr	n Mucky Peat or	Peat (S3)						problematic
Restrictive	Layer (if observe	ed):							
Type:							Hydric	soil presen	t? N
Depth (inche	es):				•				
HYDROLO	DGY								
Wetland Hy	drology Indicate	ors:							
Primary Indi	cators (minimum	of one is	required; check	all that a	<u>pply)</u>		Se	condary Ind	icators (minimum of two required)
Surface	Water (A1)			Aquatic	Fauna (B	13)		Surface	Soil Cracks (B6)
High Wa	ter Table (A2)			True Aq	uatic Plar	nts (B14)	—	Drainage	Patterns (B10)
Saturatio	on (A3)			Hydroge	n Sulfide	Odor (C2	1)	Dry-Seas	son Water Table (C2)
Water M	larks (B1)			Oxidized	l Rhizosp	heres on	Living Roots	Crayfish	Burrows (C8)
Sedimer	nt Deposits (B2)			(C3)			_	Saturatio	n Visible on Aerial Imagery (C9)
-	oosits (B3)					uced Iron			or Stressed Plants (D1)
-	at or Crust (B4)				ron Redu	iction in T	illed Soils		phic Position (D2)
	osits (B5)		(2-2)	(C6)		· >	_	FAC-Neu	utral Test (D5)
	on Visible on Aeria				ck Surfac				
	Vegetated Conca		се (В8)		or Well Da		、 、		
	tained Leaves (B9)		Other (E	xplain in	Remarks)		
Field Obser		~			D				
Surface wate		Yes	No No	<u> </u>	Depth (i				liantana of watten d
Water table	-	Yes	No No	X	Depth (i				licators of wetland
Saturation p		Yes	No	Х	Depth (i	ncnes):		ny	vdrology present? N
	pillary fringe)				h a fa i			a vallat ti	
Describe rec	corded data (strea	am gauge	e, monitoring well	, aerial p	hotos, p	revious ir	nspections), if a	available:	
Remarks:									

Project/Site DOT-EP-13	City/C	County:	Ede	en Prairie/He	ennepin	Sampling Date:	9/22/2014
Applicant/Owner: SWLRT	-	Sta	te:	MN		Sampling Point:	А
Investigator(s): Marc Cottingham, Lucy Dahl		S	Sectio	n, Township	o, Range:	S9 T	116N R22W
Landform (hillslope, terrace, etc.): Depression	on	Lo	cal re	lief (concav	ve, convex	, none):	Concave
Slope (%): 0-5 Lat:		Long:				Datum:	
Soil Map Unit Name Urban Land		-		NWI (Classificat	ion:	None
Are climatic/hydrologic conditions of the site typical for the	is time of	the yea	ar?	N (I	f no, expla	ain in remarks)	
Are vegetation, soil, or hydrology	/	signific	antly	disturbed?		Are "normal circ	cumstances"
Are vegetation , soil , or hydrology	/	natural	ly pro	blematic?			present? Yes
SUMMARY OF FINDINGS					(If need	ed, explain any a	answers in remarks.)
Hydrophytic vegetation present? Y							
Hydric soil present? Y		ls t	he sa	mpled area	a within a	wetland?	Y
Indicators of wetland hydrology present? Y		f yes	s, opti	ional wetlan	nd site ID:		
Remarks: (Explain alternative procedures here or in a ser	parate re	port.)					
Above average precipitation	n. All we	etland o	criter	ia were m	et. Area	is a wetland.	
VEGETATION Use scientific names of plants.							
	bsolute	Domina		Indicator	Domina	ince Test Work	sheet
Tree Stratum (Plot size:) % 1	o Cover	t Speci	es	Staus		of Dominant Spe OBL, FACW, or F	
2						Number of Doministics Across all Str	
4					-	of Dominant Spe	
5					that are 0	OBL, FACW, or F	AC: 100.00% (A/B)
	0 =	=Total C	over				
Sapling/Shrub stratum (Plot size:)						nce Index Worl Cover of:	ksheet
2					OBL sp		x 1 = 60
3					FACW		$x^{2} = 30$
4					FAC sp	·	x 3 = 0
5					FACU s		x 4 = 0
	0 =	=Total C	over		UPL spe		x 5 = 0
Herb stratum (Plot size:)					Column		(A) <u>90</u> (B)
1 Typha latifolia	60	Y		OBL	Prevale	nce Index = B/A	= <u>1.20</u>
2 Phalaris arundinacea	15	Y		FACW	Hydron	hytic Vegetatio	n Indicators:
4							phytic vegetation
5						ninance test is >	
6					X Pre	valence index is	≤3.0*
7						phogical adapta	
8						porting data in R	Remarks or on a
9 10						arate sheet)	butio vogototion*
	75 =	Total C	Cover			blain)	hytic vegetation*
<u>Woody vine stratum</u> (Plot size:) 1							l wetland hydrology must be urbed or problematic
2						Irophytic	
	0 =	=Total C	Cover			etation sent?	Y
Remarks: (Include photo numbers here or on a separate	sheet)						

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm the	absence	of indicators.)
Depth	Matrix		Re	dox Feat	ures				
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture		Remarks
0-12	10YR 2/1	95	10YR 4/6	5	С	PL	SiCl		
12-20	10YR 4/1	95	10YR 4/6	1	С	PL	SiCl		
				-	-				
*Tvpe: C = 0	Concentration, D	= Depleti	on. RM = Reduc	ed Matrix	. MS = N	lasked S	and Grains. *	*Location	: PL = Pore Lining, M = Matrix
	oil Indicators:		,		,				matic Hydric Soils:
-	tisol (A1)		Sar	ndy Gleye	ed Matrix	(S4)			ox (A16) (LRR K, L, R)
	tic Epipedon (A2)			ndy Redo		(-)			(LRR K, L)
	ck Histic (A3)			pped Ma					lasses (F12) (LRR K, L, R)
	lrogen Sulfide (A4	4)		my Mucł	· · ·	al (F1)		-	Surface (TF12)
	atified Layers (A5			my Gley				xplain in re	
	m Muck (A10)	,		oleted Ma			`	•	,
	bleted Below Dark	c Surface		dox Dark	. ,				
· · ·	ck Dark Surface (oleted Da		. ,	*Indicators	s of hvdroi	phytic vegetation and weltand
	ndy Mucky Minera			dox Depr					present, unless disturbed or
	m Mucky Peat or	. ,				、	, · · · 3.	-	roblematic
Restrictive	Layer (if observe	ed).							
Type:		cu).					Hydric soil	l present?	? Y
Depth (inche	es):				-			r present	
Remarks:									
HYDROLO									
	drology Indicato	vre:							
-	cators (minimum		roquired: check	all that a	nnly)		Sacar	don India	ators (minimum of two required)
-	Water (A1)	or one is	required, check		<u>ppiy)</u> Fauna (B	12)			ators (minimum of two required) bil Cracks (B6)
	ater Table (A2)				uatic Plar	,			Patterns (B10)
X Saturatio						Odor (C1			n Water Table (C2)
	larks (B1)							-	urrows (C8)
	nt Deposits (B2)			(C3)				-	Visible on Aerial Imagery (C9)
	posits (B3)				e of Redu	uced Iron			Stressed Plants (D1)
	at or Crust (B4)			Recent I	ron Redu	ction in T			ic Position (D2)
Iron Dep	osits (B5)			(C6)			X	FAC-Neut	ral Test (D5)
Inundatio	on Visible on Aeria	al Imager	y (B7)	Thin Mu	ck Surfac	e (C7)			
Sparsely	Vegetated Conca	ave Surfa	ce (B8)		or Well Da				
Water-S	tained Leaves (B9))		Other (E	xplain in	Remarks)		
Field Obser									
Surface wat		Yes	No	Х	Depth (i			_	
Water table		Yes	No	Х	Depth (i	,			cators of wetland
Saturation p		Yes	X No		Depth (i	nches):	Surface	hyd	Irology present? Y
	pillary fringe)								
Describe rec	corded data (strea	am gaug	e, monitoring wel	l, aerial p	hotos, pi	revious ir	nspections), if ava	ilable:	
Remarks:									
1									

Project/Site DOT-EP-13	City/C	County:	Ede	en Prairie/H	ennepin	Sampling Da	ate: 9	/22/2014
Applicant/Owner: SWLRT		Stat	te:	MN		Sampling Po	pint:	В
Investigator(s): Marc Cottingham, Lucy Dahl		s	Sectio	n, Township	o, Range:		69 T116N R2	2W
Landform (hillslope, terrace, etc.): Hill slope		Lo	cal re	lief (concav	ve, convex	, none):	No	ne
Slope (%): 0-5 Lat:		Long:				Datum:		
Soil Map Unit Name Urban Land		-		NWI	Classificat	ion:	None	!
Are climatic/hydrologic conditions of the site typical for this	s time of	f the yea	ar?	N (I	f no, expla	ain in remark	s)	
Are vegetation, soil, or hydrology		signific	antly	disturbed?		Are "normal	circumstanc	es"
Are vegetation, soil, or hydrology		natural	ly pro	blematic?			prese	nt? Yes
SUMMARY OF FINDINGS					(If need	ed, explain a	iny answers	in remarks.)
Hydrophytic vegetation present? N								
Hydric soil present? N		ls ti	he sa	mpled area	a within a	wetland?	N	
Indicators of wetland hydrology present? N		f yes	s, opt	ional wetlar	nd site ID:			
Remarks: (Explain alternative procedures here or in a sepa	arate re	port.)						
Above average precipitation	. Wetla	and crit	eria	not met, a	area is no	ot a wetlan	d.	
VEGETATION Use scientific names of plants.								
· · · · ·	solute	Domina	an	Indicator	Domina	ance Test W	orksheet	
Tree Stratum (Plot size:) %0	Cover	t Speci	es	Staus		of Dominant OBL, FACW,		0 (A)
2						Number of D cies Across al		2 (B)
4					-	of Dominant		(=)
5						OBL, FACW,	•	.00% (A/B)
	0 =	=Total C	over					
Sapling/Shrub stratum (Plot size:)						ence Index V	Vorksheet	
1 2						Cover of:) x1=	0
3					OBL sp FACW s		$x_{1} = \frac{1}{2}$	0
4					FAC sp		$x_{2} = \frac{x_{2}}{x_{3}}$	0
5					FACU s	species 7	5 x 4 =	300
	0 =	=Total C	over		UPL sp) x 5 =	0
Herb stratum (Plot size:)					Column	totals 7	5 (A)	300 (B)
	60	Y		FACU	Prevale	nce Index =	B/A =	4.00
	15	Y		FACU	Lb cdrop	hutie Veret	otion Indiaa	hara.
3						hytic Vegeta bid test for hy		
5					· — ·	ninance test	1 2	getation
6						valence inde		
7					Mor	rphogical ada	aptations* (pi	ovide
8					sup	porting data		
9						arate sheet)		
	75 =	=Total C	over			blematic hyd olain)	rophytic veg	etation*
Woody vine stratum (Plot size:) 1						ors of hydric soi present, unless		ydrology must be oblematic
2					-	drophytic		
	0 =	=Total C	over		-	jetation sent?	N	
Remarks: (Include photo numbers here or on a separate sl	haot)				pie			
Incentaries, (include prioro numbers here of on a separate si	neel)							

Profile Desc	cription: (Descr	ibe to th	e depth needed	to docu	ment the	indicat	or or confirm	the absend	e of indicators.)
Depth	Matrix		Red	dox Feat	ures				
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Text	ure	Remarks
0-10	10YR 2/1	100					SiCl		
10-20	10YR 4/1	100					SiCl		
10 20		100					0101		
	Concentration, D	= Depleti	on, RM = Reduce	ed Matrix	., MS = N	lasked S			n: PL = Pore Lining, M = Matrix
-	il Indicators:								ematic Hydric Soils:
	isol (A1)				ed Matrix	: (S4)			dox (A16) (LRR K, L, R)
	ic Epipedon (A2)			ndy Redo	. ,				7) (LRR K, L)
	ck Histic (A3)			pped Ma	. ,			-	Masses (F12) (LRR K, L, R)
	lrogen Sulfide (A4				ky Minera				rk Surface (TF12)
	tified Layers (A5)	Loa	my Gley	ed Matrix	(F2)	Othe	er (explain in	remarks)
	n Muck (A10)			pleted Ma	. ,				
	leted Below Dark		(A11) Rec	dox Dark	Surface	(F6)			
	ck Dark Surface (,			ark Surfac	. ,	*Indica	ators of hydro	ophytic vegetation and weltand
	dy Mucky Minera	. ,		dox Depr	essions ((F8)	hydro	ology must b	e present, unless disturbed or
5 cr	n Mucky Peat or	Peat (S3)						problematic
Restrictive	Layer (if observ	ed):							
Type:							Hydric	soil presen	t? N
Depth (inche	es):				-		-	•	
Remarks:	·								
-	drology Indicato								
-	cators (minimum	of one is	required; check				<u>Se</u>		icators (minimum of two required)
	Water (A1)				Fauna (B	,	-		Soil Cracks (B6)
	ter Table (A2)				uatic Plar	. ,			e Patterns (B10)
Saturatio					n Sulfide				son Water Table (C2)
	arks (B1)			(C3)	i Rhizosp	neres on	Living Roots		Burrows (C8) n Visible on Aerial Imagery (C9)
	nt Deposits (B2) posits (B3)				e of Redu	ucod Iron	(C4) -		or Stressed Plants (D1)
	it or Crust (B4)						illed Soils		bhic Position (D2)
	osits (B5)			(C6)	Ton Redu				utral Test (D5)
	on Visible on Aeria	al Imagery	(B7)	. ,	ck Surfac	e (C7)	-		
	Vegetated Conca			-	or Well Da	. ,			
	tained Leaves (B9				xplain in	. ,)		
Field Obser	•	,					/		
Surface wate		Yes	No	х	Depth (i	nches).			
Water table		Yes	No		Depth (i			Ind	licators of wetland
Saturation p	•	Yes	No		Depth (i	,			/drology present? N
	pillary fringe)				<u> </u>	- /			
	corded data (strea	am gauge	e, monitoring well	, aerial p	hotos, pr	revious ir	nspections), if	available:	
Remarks:									

Project/Site DOT-EP-14	City/C	county:	Ede	n Prairie/He	ennepin	Sampling Dat	te: 9/24/2014
Applicant/Owner: SWLRT		Stat	e:	MN		Sampling Poir	nt: A
Investigator(s): Courtney Luensman, Tina Justen		s	ectio	n, Township	o, Range:	S	9 T116N R22W
Landform (hillslope, terrace, etc.): Depression	۱	Loc	al re	lief (concav	e, convex	, none):	Concave
Slope (%): 1-3. Lat: 44.861184		Long:		-93.4513	7	Datum:	
Soil Map Unit Name Le Sueur Ioam		_		NWI C	Classificat	tion:	None
Are climatic/hydrologic conditions of the site typical for this	time of	the yea	r?	N (l	f no, expla	ain in remarks))
Are vegetation, soil, or hydrology		significa	antly	disturbed?		Are "normal c	ircumstances"
Are vegetation , soil , or hydrology		naturall	y pro	blematic?			present? Yes
SUMMARY OF FINDINGS					(If need	led, explain an	y answers in remarks.)
Hydrophytic vegetation present? Y							
Hydric soil present? Y		ls th	ne sa	mpled area	a within a	wetland?	Y
Indicators of wetland hydrology present? Y		f yes	, opti	onal wetlan	d site ID:		
Remarks: (Explain alternative procedures here or in a sepa	arate rep	oort.)					
Above average precipitation.	. All we	tland c	riteri	a were m	et. Area	is a wetland	l.
VEGETATION Use scientific names of plants.							
	solute	Domina		Indicator	Domina	ance Test Wo	rksheet
Tree Stratum (Plot size:) % 0 1	Cover	t Specie	es	Staus		of Dominant S OBL, FACW, o	
2						Number of Do	
4					Percent	of Dominant S	pecies
5					that are	OBL, FACW, o	r FAC: 66.67% (A/B)
	0 =	Total Co	over				
Sapling/Shrub stratum (Plot size:)						ence Index We Cover of:	orksheet
2					OBL sp		x 1 = 0
3					-	species 45	
4					FAC sp	·	x 3 = 0
5					FACU s	species 20	x 4 = 80
	0 =	Total Co	over		UPL sp		x 5 = 0
Herb stratum (Plot size:)					Column		
,	30	Y		FACW	Prevale	ence Index = B	/A = <u>2.62</u>
	20 15	Y Y		FACU FACW	Hydron	hytic Vogota	tion Indicators:
4	15			TACIV			rophytic vegetation
5						minance test is	
6					X Pre	valence index	is ≤3.0*
7					Mo	rphogical adap	otations* (provide
8							n Remarks or on a
9						arate sheet)	
	65 =	Total C	over			plain)	ophytic vegetation*
Woody vine stratum (Plot size:) 1							and wetland hydrology must be isturbed or problematic
2						drophytic	
	0 =	Total Co	over		_	etation sent?	Y
Remarks: (Include photo numbers here or on a separate sh	heet)						

Profile Desc	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm th	ne absence	e of indicators.)
Depth	Matrix		Rec	lox Feat	ures				
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	е	Remarks
0-5	10YR 3/1	100					L		
5-12	10YR 5/2	98	10YR 4/6	2	С	М	CL		
					-				
12-20	10YR 6/1	80	2.5YR 3/4	20	С	М	CL		
*T 0								**1	
		= Depleti	on, RM = Reduce	ed Matrix	, MS = N	lasked S			n: PL = Pore Lining, M = Matrix
-	il Indicators:		0			(04)			matic Hydric Soils:
	isol (A1)				ed Matrix	(54)			lox (A16) (LRR K, L, R)
	ic Epipedon (A2)			dy Redo) (LRR K, L)
	ck Histic (A3)	•		oped Ma	. ,			-	Masses (F12) (LRR K, L, R)
	Irogen Sulfide (A			-	ky Minera				k Surface (TF12)
	atified Layers (A5)			ed Matrix	(F2)	Other (explain in r	remarks)
	n Muck (A10)	~ <i>(</i>			. ,	(50)			
	leted Below Dark				Surface	. ,			
	ck Dark Surface (rk Surfa				phytic vegetation and weltand
	dy Mucky Minera	. ,		lox Depr	essions ((F8)	hydrolo		e present, unless disturbed or
5 cr	n Mucky Peat or	Peat (S3)					I	problematic
	Layer (if observ	ed):							
Туре:							Hydric so	oil present	? <u>Y</u>
Depth (inche	es):								
HYDROLO									
Wetland Hy	drology Indicate	ors:							
Primary Indi	cators (minimum	of one is	required; check	all that a	pply)		Seco	ondary Indi	cators (minimum of two required)
	Water (A1)			Aquatic	Fauna (B	13)	X	Surface S	Soil Cracks (B6)
	ter Table (A2)			•	uatic Plar	```			Patterns (B10)
Saturatio						Odor (C1			on Water Table (C2)
	arks (B1)				l Rhizosp	heres on	Living Roots	-	Burrows (C8)
	nt Deposits (B2)			(C3)			(C4)		n Visible on Aerial Imagery (C9)
	oosits (B3)					uced Iron			r Stressed Plants (D1)
	it or Crust (B4) osits (B5)			(C6)	ION Redu			-	hic Position (D2) tral Test (D5)
	on Visible on Aeria	al Imager	/ (B7)	. ,	ck Surfac	e (C7)			
	Vegetated Conca				or Well Da				
	tained Leaves (B9			-		Remarks)		
Field Obser	·			,			-		
Surface wate		Yes	No	х	Depth (i	nches):			
Water table		Yes	No	X	Depth (i	,		Indi	icators of wetland
Saturation p	•	Yes	No	Х	Depth (i	,			drology present? Y
(includes ca	pillary fringe)				· · ·				
Describe rec	corded data (strea	am gauge	e, monitoring well	, aerial p	hotos, pi	revious ir	nspections), if av	vailable:	
Remarks:									

Project/Site DOT-EP-14	City/Cour	nty: Edei	n Prairie/He	nnepin	Sampling Date:	9/24/2014
Applicant/Owner: SWLRT		State:	MN		Sampling Point:	В
Investigator(s): Courtney Luensman, Tina Justen		Section	n, Township,	, Range:	S15 T11	6N R22W
Landform (hillslope, terrace, etc.): slope		Local rel	lief (concave	, convex,	none):	none
Slope (%): 1-3. Lat: 44.861184	Lo	ng:	-93.45137		Datum:	
Soil Map Unit Name Le Suer Ioam			NWI C	lassificati	on:	None
Are climatic/hydrologic conditions of the site typical for th	is time of the	vear?	N (If	no, expla	in in remarks)	
Are vegetation , soil , or hydrology		-	disturbed?	-	Are "normal circum	etopoor"
Are vegetation , soil , or hydrology		-				present? Yes
SUMMARY OF FINDINGS	, <u> </u>			(If neede	ed, explain any ans	·
Hydrophytic vegetation present? Y				(,
Hydric soil present? N		Is the sar	mpled area	within a	wetland?	Ν
Indicators of wetland hydrology present? N			onal wetland			
Remarks: (Explain alternative procedures here or in a se	parate report	.)				
Above average precipitation. Wetland s			riteria were	e not me	et . Area is not a	wetland.
VEGETATION Use scientific names of plants.						
	bsolute Do	minan I	Indicator	Domina	nce Test Workshe	et
	Cover tS		Staus		of Dominant Species DBL, FACW, or FAC	
2					Number of Dominan	
3				Spec	ies Across all Strata	: <u>3</u> (B)
4				Percent	of Dominant Species	6
5				that are C	OBL, FACW, or FAC	: <u>66.67%</u> (A/B)
	0 =Tot	tal Cover	_			
Sapling/Shrub stratum (Plot size:)					nce Index Worksh Cover of:	eet
2				OBL spe		= 0
3				FACW s		
4				FAC spe		
5				FACU s		= 160
	0 =Tot	tal Cover		UPL spe	ecies 0 x 5	5 = 0
Herb stratum (Plot size:)				Column	totals 100 (A) <u>300</u> (B)
1 Panicum philadelphicum	40	Υ	FACW	Prevaler	nce Index = B/A =	3.00
2 Solidago canadensis	30	Υ	FACU			
3 Poa pratensis	20	Υ	FAC		hytic Vegetation I	
4 Bromus inermis	10	N	FACU		id test for hydrophy	•
5					ninance test is >50°	
6					/alence index is ≤3	
/					phogical adaptation	
9					porting data in Rem arate sheet)	larks or on a
10					plematic hydrophyti	c vegetation*
	100 =Tot	tal Cover			lain)	5
Woody vine stratum (Plot size:)					ors of hydric soil and we present, unless disturbe	tland hydrology must be d or problematic
2			-		rophytic	
	0 =Tot	tal Cover		veg	etation	
				pres	sent? Y	-
Remarks: (Include photo numbers here or on a separate	sheet)					

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm	the absend	e of indicators.)
Depth	Matrix		Red	dox Feat	ures				
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Textu	re	Remarks
0-10	10YR 3/2	100					L		
10-18	10YR 4/2	100					L		
18-20	10YR 5/1	100					L		
		= Depleti	on, RM = Reduce	ed Matrix	., MS = N	lasked S			n: PL = Pore Lining, M = Matrix
-	oil Indicators:					(0.1)			ematic Hydric Soils:
	tisol (A1)				ed Matrix	(S4)			dox (A16) (LRR K, L, R)
	tic Epipedon (A2)			idy Redo					(LRR K, L)
	ck Histic (A3)			pped Ma	· · ·			-	Masses (F12) (LRR K, L, R)
	drogen Sulfide (A			•	ky Minera	. ,			rk Surface (TF12)
	atified Layers (A5)		• •	ed Matrix	. ,	Other	(explain in	remarks)
	m Muck (A10)		·		atrix (F3)				
	pleted Below Darl		· /		Surface	· · ·			
	ck Dark Surface (. ,			ark Surfac				ophytic vegetation and weltand
	ndy Mucky Minera	. ,		lox Depr	essions ((F8)	hydrol	•••	e present, unless disturbed or
5 cr	m Mucky Peat or	Peat (S3	3)						problematic
Restrictive	Layer (if observ	ed):							
Туре:							Hydric s	soil presen	t? N
Depth (inche	es):				•				
Remarks:									
HYDROLO									
Wetland Hy	drology Indicate	ors:							
Primary Indi	cators (minimum	of one is	required; check	all that a	<u>pply)</u>		Sec	condary Ind	icators (minimum of two required)
Surface	Water (A1)			Aquatic	Fauna (B	13)		Surface	Soil Cracks (B6)
Ű	ater Table (A2)				uatic Plar	,			Patterns (B10)
Saturatio					n Sulfide		· · · · · · · · · · · · · · · · · · ·		son Water Table (C2)
	larks (B1)				l Rhizosp	heres on	Living Roots		Burrows (C8)
	nt Deposits (B2)			(C3)					n Visible on Aerial Imagery (C9)
-	posits (B3)				e of Redu				or Stressed Plants (D1)
	at or Crust (B4)				ron Redu	iction in 1	illed Soils		phic Position (D2)
	oosits (B5)		(P7)	(C6)	ale Curfaa	(C7)	_	FAC-Net	ıtral Test (D5)
	on Visible on Aeria / Vegetated Conca			-	ck Surfac				
	tained Leaves (B9		Le (B0)	-	or Well Da Explain in		`		
	(<i>')</i>				Remarks)		
Field Obser Surface wate		Yes	No	Х	Depth (i	nchee).			
Water table		Yes	No	×	Depth (i	-		Inc	licators of wetland
Saturation p	•	Yes	No	<u> </u>	Depth (i	,			vdrology present? N
-	pillary fringe)				(1			,	
		am daulo	e, monitoring well	aerial n	hotos n	revious ir	spections) if a	available [.]	
		un gaugi	s, mornioring wen	, aona p					
2000									
2000									
Remarks:									

Project/Site DOT-EP-15	City/C	ounty: E	den Prairie/He	ennepin	Sampling Date:	9/24/2014
Applicant/Owner: SWLRT	-	State:	MN	Ş	Sampling Point:	А
Investigator(s): Courtney Luensman, Tina Justen		Sect	ion, Township	o, Range:	S15 T1	16N R22W
Landform (hillslope, terrace, etc.): Depression	n	Local	relief (concav	e, convex,	none):	Concave
Slope (%): 6-12. Lat: 44.86113		Long:	-93.45043	37	Datum:	
Soil Map Unit Name Lester loam			NWI C	Classificati	on:	None
Are climatic/hydrologic conditions of the site typical for this	s time of	the year?	N (II	f no, expla	in in remarks)	
Are vegetation , soil X , or hydrology		significantl	ly disturbed?		Are "normal circur	nstances"
Are vegetation , soil , or hydrology		naturally p	roblematic?			present? No
SUMMARY OF FINDINGS				(If neede	ed, explain any an	swers in remarks.)
Hydrophytic vegetation present? Y						
Hydric soil present? Y		Is the s	sampled area	a within a	wetland?	Y
Indicators of wetland hydrology present? Y		f yes, o	ptional wetlan	d site ID:		
Remarks: (Explain alternative procedures here or in a sep	arate rep	ort.)				
Above average precipitatio	-		ia were met	t .Area is	a wetland.	
VEGETATION Use scientific names of plants.						
· · · ·	solute	Dominan	Indicator	Domina	nce Test Worksh	eet
Tree Stratum (Plot size:) %	Cover	t Species	Staus		of Dominant Specie DBL, FACW, or FAC	
2	·				Number of Domina	
3	·				ies Across all Strat	
4				Percent	of Dominant Specie	es
5				that are C	OBL, FACW, or FAC	C: <u>66.67%</u> (A/B)
	0 =	Total Cove	er	<u> </u>		
Sapling/Shrub stratum (Plot size:) 1 Salix interior	5	Y	FACW		nce Index Works Cover of:	neet
2	<u> </u>	-	1700	OBL spe		1 = 0
3				FACW s		
4				FAC spe		3 = 30
5				FACU s	pecies 50 x	4 = 200
	5 =	Total Cove	er	UPL spe		5 = 0
Herb stratum (Plot size:)				Column	`	· · · ·
1 Euphorbia esula	50	Y	FACU	Prevaler	nce Index = B/A =	2.88
2 Carex vulpinoidea 3 Salix interior	40 20	Y N	FACW FACW	Uudropi	hytic Vegetation	Indiactora
3 Salix interior 4 Poa pratensis	10	<u>N</u>	FAC		id test for hydroph	
5				·	ninance test is >50	, ,
6					/alence index is ≤3	
7				Mor	phogical adaptatio	ns* (provide
8					porting data in Rer	marks or on a
9				·	arate sheet)	
10	120 =	Total Cove	er		plematic hydrophy lain)	tic vegetation*
Woody vine stratum (Plot size:)				*Indicato	ors of hydric soil and w	etland hydrology must be
1					present, unless disturb	ed or problematic
2		Tatal Oau			rophytic etation	
	0 =	Total Cove	er	_	sent? Y	_
Remarks: (Include photo numbers here or on a separate s	sheet)			L		

А

Depth (Inchoo)	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm the	e absence	e of indicators.)
(lnahaz)	Matrix		Re	dox Feat	ures				
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture		Remarks
0-7	10YR 3/1	80					L, gravelly		Mixed
	10YR 4/3	20					L, gravelly		
7 1 4			10VP 4/6	2	С	Ν4	L, graveny		
7-14	10YR 5/6	98	10YR 4/6	2	-	М	L		
14-20	10YR 5/4	95	10R 3/6	5	С	М	SL, very fine		
*Turnet C (Concentration D	Danlati	an DM Dadua	ad Matrix		lookod C		**!	D Dere Lining M Metrix
	Concentration, D	= Depleti	on, RIVI = Reduc	ed iviatrix	, 1015 = 10	lasked S			: PL = Pore Lining, M = Matrix
-	bil Indicators:		0			(04)			matic Hydric Soils:
	tisol (A1)			ndy Gleye		(S4)			ox (A16) (LRR K, L, R)
	tic Epipedon (A2)			ndy Redo	. ,				(LRR K, L)
	ck Histic (A3)	~		pped Ma	. ,			-	Masses (F12) (LRR K, L, R)
	drogen Sulfide (A	,		my Mucl	-				k Surface (TF12)
	atified Layers (A5)		my Gley		(F2)	X Other (e	explain in i	emarks)
	m Muck (A10)	0		oleted Ma					
	oleted Below Dark			dox Dark		. ,			
	ck Dark Surface (oleted Da					phytic vegetation and weltand
	ndy Mucky Minera	. ,		dox Depr	essions ((F8)	hydrolog	-	present, unless disturbed or
5 cr	m Mucky Peat or	Peat (S3)					I	problematic
	Layer (if observ	ed):							
Туре:					_		Hydric soi	il present	? <u>Y</u>
Depth (inche	es):				-				
Remarks:									
30115111	ixed. Soil detei	mineu	o be nyunc ba	Seu on	best pro	51655101	la juugment.		
HYDROLO	OGY								
	drology Indicato	ors:							
-	icators (minimum		required: check	all that a	(vlaa			adan (Indi	
-	Water (A1)						Secor		rators (minimum of two required
	ater Table (A2)				Fauna (R	13)			cators (minimum of two required
				True Aa	Fauna (B uatic Plar			Surface S	oil Cracks (B6)
					uatic Plar	nts (B14)		Surface S Drainage	oil Cracks (B6) Patterns (B10)
Saturatio	· · ·			Hydroge	uatic Plar n Sulfide	nts (B14) Odor (C1)	Surface S Drainage Dry-Sease	oil Cracks (B6) Patterns (B10) on Water Table (C2)
Saturatio Water M	farks (B1) nt Deposits (B2)		=	Hydroge	uatic Plar n Sulfide	nts (B14) Odor (C1) Living Roots	Surface S Drainage Dry-Sease Crayfish E	oil Cracks (B6) Patterns (B10)
Saturatio Water M Sedimer	larks (B1)			Hydroge Oxidized (C3)	uatic Plar n Sulfide	nts (B14) Odor (C1 heres on) Living Roots	Surface S Drainage Dry-Sease Crayfish E Saturation	oil Cracks (B6) Patterns (B10) on Water Table (C2) Burrows (C8)
Saturatio Water M Sedimer Drift Dep	larks (B1) nt Deposits (B2)		=	Hydroge Oxidized (C3) Presenc	uatic Plar n Sulfide I Rhizosp e of Redu	nts (B14) Odor (C1 heres on uced Iron) Living Roots	Surface S Drainage Dry-Sease Crayfish E Saturation Stunted o	oil Cracks (B6) Patterns (B10) on Water Table (C2) Burrows (C8) n Visible on Aerial Imagery (C9)
Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep	Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5)		=	Hydroge Oxidized (C3) Presenc	uatic Plar n Sulfide I Rhizosp e of Redu	nts (B14) Odor (C1 heres on uced Iron) Living Roots (C4) illed Soils X	Surface S Drainage Dry-Sease Crayfish E Saturation Stunted o Geomorp	oil Cracks (B6) Patterns (B10) on Water Table (C2) Burrows (C8) o Visible on Aerial Imagery (C9) r Stressed Plants (D1)
Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatic	Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria			Hydroge Oxidized (C3) Presenc Recent I (C6) Thin Mu	uatic Plar on Sulfide I Rhizosp e of Redu ron Redu ck Surfac	nts (B14) Odor (C1 heres on uced Iron uction in T) Living Roots (C4) illed Soils X	Surface S Drainage Dry-Sease Crayfish E Saturation Stunted o Geomorp	oil Cracks (B6) Patterns (B10) on Water Table (C2) Burrows (C8) n Visible on Aerial Imagery (C9) r Stressed Plants (D1) hic Position (D2)
Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatic Sparsely	Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Conca	ave Surfac		Hydroge Oxidized (C3) Presenc Recent I (C6) Thin Mu Gauge o	uatic Plar In Sulfide I Rhizosp e of Redu ron Redu ck Surfac or Well Da	nts (B14) Odor (C1 heres on uced Iron uction in T ee (C7) ata (D9)) Living Roots (C4) iilled Soils X X	Surface S Drainage Dry-Sease Crayfish E Saturation Stunted o Geomorp	oil Cracks (B6) Patterns (B10) on Water Table (C2) Burrows (C8) n Visible on Aerial Imagery (C9) r Stressed Plants (D1) hic Position (D2)
Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatic Sparsely Water-S	Marks (B1) Int Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Conca Stained Leaves (B9	ave Surfac		Hydroge Oxidized (C3) Presenc Recent I (C6) Thin Mu Gauge o	uatic Plar on Sulfide I Rhizosp e of Redu ron Redu ck Surfac	nts (B14) Odor (C1 heres on uced Iron uction in T ee (C7) ata (D9)) Living Roots (C4) iilled Soils X X	Surface S Drainage Dry-Sease Crayfish E Saturation Stunted o Geomorp	oil Cracks (B6) Patterns (B10) on Water Table (C2) Burrows (C8) n Visible on Aerial Imagery (C9) r Stressed Plants (D1) hic Position (D2)
Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatid Sparsely Water-S Field Obser	Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Conca Stained Leaves (B9 rvations:	ave Surfac 9)	ce (B8)	Hydroge Oxidized (C3) Presenc Recent I (C6) Thin Mu Gauge c Other (E	uatic Plar In Sulfide I Rhizosp e of Redu ron Redu ck Surfac or Well Da xplain in	nts (B14) Odor (C1 heres on uced Iron inction in T ee (C7) ata (D9) Remarks) Living Roots (C4) iilled Soils X X	Surface S Drainage Dry-Sease Crayfish E Saturation Stunted o Geomorp	oil Cracks (B6) Patterns (B10) on Water Table (C2) Burrows (C8) n Visible on Aerial Imagery (C9) r Stressed Plants (D1) hic Position (D2)
Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatid Sparsely Water-S Field Obser Surface wate	Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Conca Stained Leaves (B9 rvations: er present?	ave Surfac)) Yes	ce (B8)	Hydroge Oxidized (C3) Presenc Recent I (C6) Thin Mu Gauge c Other (E	uatic Plar n Sulfide I Rhizosp e of Redu ron Redu ck Surfac or Well Da xplain in	nts (B14) Odor (C1 heres on uced Iron uction in T e (C7) ata (D9) Remarks nches):) Living Roots (C4) iilled Soils X X	Surface S Drainage Dry-Sease Crayfish E Saturation Stunted o Geomorpi FAC-Neur	oil Cracks (B6) Patterns (B10) on Water Table (C2) Burrows (C8) n Visible on Aerial Imagery (C9) r Stressed Plants (D1) hic Position (D2) tral Test (D5)
Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatid Sparsely Water-S Field Obser Surface wate Water table	Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Conca Stained Leaves (B9 rvations: present?	ave Surfac 9) Yes Yes	Ce (B8)	Hydroge Oxidized (C3) Presenc Recent I (C6) Thin Mu Gauge c Other (E X X	uatic Plar n Sulfide I Rhizosp e of Redu ron Redu ck Surfac or Well Da xplain in Depth (i Depth (i	nts (B14) Odor (C1 heres on uced Iron nction in T e (C7) ata (D9) Remarks nches): nches):) Living Roots (C4) iilled Soils X X	Surface S Drainage Dry-Sease Crayfish E Saturation Stunted o Geomorpi FAC-Neur	oil Cracks (B6) Patterns (B10) on Water Table (C2) Burrows (C8) n Visible on Aerial Imagery (C9) r Stressed Plants (D1) nic Position (D2) tral Test (D5)
Saturation Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatio Sparsely Water-S Field Obser Surface wate Water table Saturation p	Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Conca Stained Leaves (B9 rvations: rer present? present?	ave Surfac)) Yes	ce (B8)	Hydroge Oxidized (C3) Presenc Recent I (C6) Thin Mu Gauge c Other (E	uatic Plar n Sulfide I Rhizosp e of Redu ron Redu ck Surfac or Well Da xplain in	nts (B14) Odor (C1 heres on uced Iron nction in T e (C7) ata (D9) Remarks nches): nches):) Living Roots (C4) iilled Soils X X	Surface S Drainage Dry-Sease Crayfish E Saturation Stunted o Geomorpi FAC-Neur	oil Cracks (B6) Patterns (B10) on Water Table (C2) Burrows (C8) n Visible on Aerial Imagery (C9) r Stressed Plants (D1) hic Position (D2) tral Test (D5)
Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatic Sparsely Water-S Field Obser Surface wate Water table Saturation p (includes ca	Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Conca Stained Leaves (B9 rvations: present? present? present? pillary fringe)	ave Surfac)) Yes Yes Yes	Ce (B8)	Hydroge Oxidized (C3) Presenc (C6) Thin Mu Gauge c Other (E X X X	uatic Plar n Sulfide I Rhizosp e of Redu ron Redu ck Surfac or Well Da xplain in Depth (i Depth (i	nts (B14) Odor (C1 heres on uced Iron uction in T ee (C7) ata (D9) Remarks nches): nches): nches):) Living Roots (C4) iilled Soils X X	Surface S Drainage Dry-Sease Crayfish E Saturation Stunted o Geomorp FAC-Neur	oil Cracks (B6) Patterns (B10) on Water Table (C2) Burrows (C8) n Visible on Aerial Imagery (C9) r Stressed Plants (D1) nic Position (D2) tral Test (D5)
Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatic Sparsely Water-S Field Obser Surface wate Water table Saturation p (includes ca	Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Conca Stained Leaves (B9 rvations: rer present? present?	ave Surfac)) Yes Yes Yes	Ce (B8)	Hydroge Oxidized (C3) Presenc (C6) Thin Mu Gauge c Other (E X X X	uatic Plar n Sulfide I Rhizosp e of Redu ron Redu ck Surfac or Well Da xplain in Depth (i Depth (i	nts (B14) Odor (C1 heres on uced Iron uction in T ee (C7) ata (D9) Remarks nches): nches): nches):) Living Roots (C4) iilled Soils X X	Surface S Drainage Dry-Sease Crayfish E Saturation Stunted o Geomorp FAC-Neur	oil Cracks (B6) Patterns (B10) on Water Table (C2) Burrows (C8) n Visible on Aerial Imagery (C9) r Stressed Plants (D1) nic Position (D2) tral Test (D5)
Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatic Sparsely Water-S Field Obser Surface wate Water table Saturation p (includes ca	Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Conca Stained Leaves (B9 rvations: present? present? present? pillary fringe)	ave Surfac)) Yes Yes Yes	Ce (B8)	Hydroge Oxidized (C3) Presenc (C6) Thin Mu Gauge c Other (E X X X	uatic Plar n Sulfide I Rhizosp e of Redu ron Redu ck Surfac or Well Da xplain in Depth (i Depth (i	nts (B14) Odor (C1 heres on uced Iron uction in T ee (C7) ata (D9) Remarks nches): nches): nches):) Living Roots (C4) iilled Soils X X	Surface S Drainage Dry-Sease Crayfish E Saturation Stunted o Geomorp FAC-Neur	oil Cracks (B6) Patterns (B10) on Water Table (C2) Burrows (C8) n Visible on Aerial Imagery (C9) r Stressed Plants (D1) nic Position (D2) tral Test (D5)
Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatic Sparsely Water-S Field Obser Surface wate Water table Saturation p (includes ca Describe rec	Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Conca Stained Leaves (B9 rvations: present? present? present? pillary fringe)	ave Surfac)) Yes Yes Yes	Ce (B8)	Hydroge Oxidized (C3) Presenc (C6) Thin Mu Gauge c Other (E X X X	uatic Plar n Sulfide I Rhizosp e of Redu ron Redu ck Surfac or Well Da xplain in Depth (i Depth (i	nts (B14) Odor (C1 heres on uced Iron uction in T ee (C7) ata (D9) Remarks nches): nches): nches):) Living Roots (C4) iilled Soils X X	Surface S Drainage Dry-Sease Crayfish E Saturation Stunted o Geomorp FAC-Neur	oil Cracks (B6) Patterns (B10) on Water Table (C2) Burrows (C8) n Visible on Aerial Imagery (C9) r Stressed Plants (D1) nic Position (D2) tral Test (D5)

Project/Site DOT-EP-15	City/C	County:	Ede	en Prairie/He	ennepin	Sampling D	Date:	9/24/2014
Applicant/Owner: SWLRT	_	Stat	te:	MN		Sampling P	oint:	В
Investigator(s): Courtney Luensman, Tina Justen		s	Sectio	n, Township	, Range:		S15 T116N	R22W
Landform (hillslope, terrace, etc.): slope		Lo	cal re	lief (concav	e, convex	, none):	n	one
Slope (%): 6-12. Lat: 44.86113		Long:		-93.45043	37	Datum:		
Soil Map Unit Name Lester Ioam		-		NWI C	Classificat	ion:	Nor	ne
Are climatic/hydrologic conditions of the site typical for th	is time of	the yea	ır?	N (II	f no, expla	ain in remarl	ks)	
Are vegetation , soil , or hydrology	y	significa	antly	disturbed?		Are "norma	l circumstar	nces"
Are vegetation , soil , or hydrology	y	naturall	ly pro	blematic?				sent? Yes
SUMMARY OF FINDINGS					(If need	ed, explain	any answer	s in remarks.)
Hydrophytic vegetation present? N								
Hydric soil present? N		ls ti	he sa	mpled area	a within a	wetland?	N	
Indicators of wetland hydrology present? N		f yes	s, opti	ional wetlan	d site ID:			
Remarks: (Explain alternative procedures here or in a sep	parate re	oort.)						
		-						
Above average precipitation.	No wet	and cri	teria	were met	. Area is	not a wet	land.	
VEGETATION Use scientific names of plants.								
•	bsolute	Domina	an	Indicator	Domina	ance Test V	Vorksheet	
	6 Cover			Staus	Number	of Dominant	Species	
1					that are 0	OBL, FACW	, or FAC:	1 (A)
2						Number of D		
3						cies Across a		2(B)
4						of Dominant OBL, FACW	•	50.00% (A/B)
	0 =	Total C	over		that are v	OBL, FACIN	, 01 FAC	<u>50.00%</u> (А/В)
Sapling/Shrub stratum (Plot size:)			0001		Prevale	ence Index	Worksheet	
1						Cover of:		
2					OBL sp	ecies	0 x 1 =	0
3					FACW	·	0 x 2 =	0
4					FAC sp		60 x 3 =	180
5		Tatal C			FACU s	-	$\frac{40}{2} \times 4 =$	160
Herb stratum (Plot size:)	0 =	Total C	over		UPL sp Column		$\frac{0}{00}$ x 5 = (A)	0 340 (B)
·	50	Y		FAC		nce Index =		<u>3.40</u> (B)
1 Poa pratensis 2 Solidago canadensis	20			FAC	Flevale		D/A =	3.40
3 Taraxacum officinale	10	N		FACU	Hydrop	hytic Vege	tation Indic	ators:
4 Erigeron strigosus	10	N		FACU		oid test for h		
5 Plantago major	10	Ν		FAC	Dor	ninance test	t is >50%	
6					Pre	valence inde	ex is ≤3.0*	
7						rphogical ad	• •	
8						porting data		s or on a
9 10						arate sheet) blematic hyd		actation*
	100 =	Total C	over			plain)		getation
Woody vine stratum (Plot size:)							oil and wetland	hydrology must be
1						present, unless		, ,,
2					-	drophytic		
	0 =	Total C	over		-	jetation sent?	N	
Demontra disclose a bata anno 1 a chata anno 1					pre	Sont :		
Remarks: (Include photo numbers here or on a separate	sneet)							

Profile Desc	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm the abs	ence of indicators.)
Depth	Matrix		Red	dox Feat	ures			
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks
0-4	10YR 3/3	100					L	
4-8	10YR 4/4	99	7.5YR 5/8	1	С	М	1	
	1011(4/4	55	7.511(5/6	1	Ŭ	101	_	
8+							Gravel	
		= Depleti	on, RM = Reduce	ed Matrix	, MS = N	lasked S		ation: PL = Pore Lining, M = Matrix
-	il Indicators:							oblematic Hydric Soils:
	isol (A1)				ed Matrix	: (S4)		Redox (A16) (LRR K, L, R)
	ic Epipedon (A2)			idy Redo				(S7) (LRR K, L)
	ck Histic (A3)			pped Ma	. ,			ese Masses (F12) (LRR K, L, R)
	lrogen Sulfide (A4				ky Minera			Dark Surface (TF12)
	tified Layers (A5)	Loa	my Gley	ed Matrix	(F2)	Other (explain	n in remarks)
	n Muck (A10)				atrix (F3)			
	leted Below Dark				Surface	. ,		
	ck Dark Surface (,			irk Surfa	. ,	*Indicators of h	ydrophytic vegetation and weltand
	dy Mucky Minera	· · ·		lox Depr	essions ((F8)	hydrology mu	st be present, unless disturbed or
5 cr	n Mucky Peat or	Peat (S3	s)					problematic
Restrictive	Layer (if observ	ed):						
	ravel hard pan	,					Hydric soil pre	sent? N
Depth (inche								
	,							
Remarks:								
Met a res	strictive layer a	t 8 inch	es. Assumed to	o be no	n-hydrio	2		
HYDROLO								
Wetland Hy	drology Indicato	ors:						
Primary Indi	cators (minimum	of one is	required; check	all that a	pply)		Secondary	Indicators (minimum of two required)
Surface	Water (A1)			Aquatic	Fauna (B	13)	Surfa	ice Soil Cracks (B6)
High Wa	ter Table (A2)			True Aq	uatic Plar	nts (B14)	Drair	age Patterns (B10)
Saturatio	on (A3)			Hydroge	n Sulfide	Odor (C1) Dry-S	Season Water Table (C2)
Water M	arks (B1)			Oxidized	l Rhizosp	heres on	Living Roots Cray	fish Burrows (C8)
	nt Deposits (B2)			(C3)				ation Visible on Aerial Imagery (C9)
	oosits (B3)				e of Redu			ed or Stressed Plants (D1)
	t or Crust (B4)				ron Redu	ction in T		norphic Position (D2)
	osits (B5)			(C6)			FAC-	Neutral Test (D5)
	on Visible on Aeria				ck Surfac			
	Vegetated Conca		се (В8)		or Well Da	• •		
	tained Leaves (B9	')		Utner (E	xplain in	Remarks)	
Field Obser								
Surface wate		Yes	No	<u> </u>	Depth (i			
Water table	•	Yes	No	<u> </u>	Depth (i			Indicators of wetland
Saturation p		Yes	No	Х	Depth (i	ncnes):		hydrology present? N
	pillary fringe)							
Describe rec	corded data (strea	am gaug	e, monitoring well	, aerial p	hotos, pi	revious ir	nspections), if available	2:
Dament								
Remarks:								
l								

Project/Site DOT-EP-17	City/0	County:	Eder	n Prairie/He	ennepin	Sampling Date	9/24/2014
Applicant/Owner: SWLRT		State	e:	MN		Sampling Point	t: A
Investigator(s): Courtney Luensman, Tina Justen		Se	ection	, Township	, Range:	S15	5 T116N R22W
Landform (hillslope, terrace, etc.): Depression	า	Loc	cal reli	ief (concav	e, convex	, none):	Concave
Slope (%): 0-1 Lat: 44.862239		Long:		-93.43985	58	Datum:	
Soil Map Unit Name Houghton and Muskego	<u> </u>			NWI C	Classificat	ion:	None
Are climatic/hydrologic conditions of the site typical for this	s time o	f the year	r?	N (If	ⁱ no, expla	ain in remarks)	
Are vegetation , soil , or hydrology		significa	antly d	listurbed?		Are "normal ci	rcumstances"
Are vegetation , soil , or hydrology			y prob	lematic?			present? Yes
SUMMARY OF FINDINGS	<u> </u>				(If need	ed, explain any	answers in remarks.)
Hydrophytic vegetation present? Y							
Hydric soil present? Y		Is th	ne sar	npled area	within a	wetland?	Y
Indicators of wetland hydrology present? Y		f yes	, optic	onal wetlan	d site ID:		
Remarks: (Explain alternative procedures here or in a sepa	arate re	port)					
					_		
Above average precipitation.	. All we	etland c	riteria	a were me	et. Area	is a wetland.	
VEGETATION Use scientific names of plants.							
· · · · ·	solute	Domina	an li	ndicator	Domina	ance Test Wor	ksheet
Tree Stratum (Plot size:) % 0	Cover	t Specie	es	Staus		of Dominant Sp	
1					that are 0	OBL, FACW, or	FAC: 2 (A)
2						Number of Dom	
3						cies Across all S	(,
						of Dominant Sp OBL, FACW, or	FAC: 100.00% (A/B)
·	0	=Total Co	over				(,,,,,)
Sapling/Shrub stratum (Plot size:)	<u> </u>				Prevale	nce Index Wo	rksheet
1					Total %	Cover of:	
2					OBL spe		x 1 = 5
3					FACW s	·	x 2 = <u>130</u>
4					FAC spe		$x^3 = 0$
5	0	=Total Co			FACU s UPL spe	·	x 4 = 80 x 5 = 0
Herb stratum (Plot size:)	<u> </u>		000		Column		(A) 215 (B)
/	40	Y		FACW		nce Index = B//	_ ` ` ` `
	20	Y		FACW	. reruie		
	10	N		FACU	Hydrop	hytic Vegetati	on Indicators:
4 Euphorbia esula	10	Ν		FACU	Rap	oid test for hydr	ophytic vegetation
	5	N		OBL		ninance test is	
6 Symphyotrichum praealtum	5	N		FACW	X Prev	valence index i	s ≤3.0*
/							ations* (provide
8 9						arate sheet)	Remarks or on a
10							phytic vegetation*
	90 =	=Total Co	over			plain)	
Woody vine stratum (Plot size:)	<u> </u>				*Indicate	ors of hydric soil ar	nd wetland hydrology must be
1					F	present, unless dis	sturbed or problematic
2					•	Irophytic	
	0 :	=Total Co	over		-	etation sent?	Y
Remarks: (Include photo numbers here or on a separate sh	haat)				p. 0.		
ncemarks. (Include proto numbers here of on a separate sr	neel)						

Profile Desc	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm the at	osence of indicators.)
Depth	Matrix		Red	dox Feat	ures			
(Inches)	Color (moist)	%	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	С	М	CL	
11-20	1011(4/1	90	1011(4/0	2		IVI	0L	
*Type: C = (Concentration D :	– Depleti	ion, RM = Reduce	l A Matrix	 MS = M	lasked S	and Grains **Lo	ocation: PL = Pore Lining, M = Matrix
	il Indicators:	- Depict			., 100 – 10			Problematic Hydric Soils:
-	isol (A1)		Sar	dv Gleve	ed Matrix	(S4)		ie Redox (A16) (LRR K, L, R)
	ic Epipedon (A2)			idy Redo		(04)		ce (S7) (LRR K, L)
	ck Histic (A3)			pped Ma				nese Masses (F12) (LRR K, L, R)
	lrogen Sulfide (A4	4)			ky Minera	al (F1)		w Dark Surface (TF12)
	atified Layers (A5)			-	ed Matrix			ain in remarks)
	n Muck (A10)	/			atrix (F3)	- (/		
	leted Below Dark	c Surface			Surface	(F6)		
· · ·	ck Dark Surface (ark Surfa	. ,	*Indicators of	hydrophytic vegetation and weltand
	dy Mucky Minera				essions (nust be present, unless disturbed or
	n Mucky Peat or	. ,		·		,	, ,	problematic
Postrictivo	Layer (if observe	od).						-
Type:		eu).					Hydric soil pr	resent? V
Depth (inche	<i>be)</i> .				-		nyune son pi	
					-			
Remarks:								
	DGY							
	drology Indicato	ors:						
-			required; check	all that a	nnlv)		Soconda	ry Indicators (minimum of two roquirod)
-	Water (A1)		required, check		Fauna (B	12)		ry Indicators (minimum of two required) face Soil Cracks (B6)
	iter Table (A2)				uatic Plar			ainage Patterns (B10)
X Saturatio					en Sulfide	()		-Season Water Table (C2)
	arks (B1)					•		ayfish Burrows (C8)
	nt Deposits (B2)			(C3)	1		-	turation Visible on Aerial Imagery (C9)
	osits (B3)			Presenc	e of Redu	uced Iron		inted or Stressed Plants (D1)
Algal Ma	t or Crust (B4)			Recent I	ron Redu	ction in T	illed Soils X Ge	omorphic Position (D2)
Iron Dep	osits (B5)			(C6)			X FA	C-Neutral Test (D5)
	on Visible on Aeria			-	ck Surfac			
	Vegetated Conca		ce (B8)		or Well Da	. ,		
	tained Leaves (B9))		Other (E	xplain in	Remarks)	
Field Obser					_			
Surface wate		Yes	No		Depth (i			
Water table		Yes	X No		Depth (i	,	12	Indicators of wetland
Saturation p		Yes	No		Depth (i	nches):		hydrology present? Y
-	pillary fringe)							
Describe rec	corded data (strea	am gaug	e, monitoring well	, aerial p	photos, pi	revious ir	nspections), if availat	ble:
Pomorko								
Remarks:								

Project/Site DOT-EP-17	City/C	County:	Ede	n Prairie/He	ennepin	Sampling Date:	9/24/2014
Applicant/Owner: SWLRT	-	Stat	e:	MN		Sampling Point:	В
Investigator(s): Courtney Luensman, Tina Justen		s	ection	n, Township	, Range:	S9 T1	16N R22W
Landform (hillslope, terrace, etc.): slope		Loc	cal rel	lief (concav	e, convex	(, none):	none
Slope (%): 0-1 Lat: 44.862239		Long:		-93.43985		Datum:	
Soil Map Unit Name Houghton and Muskego		-		NWIC	Classificat	tion:	None
Are climatic/hydrologic conditions of the site typical for thi	is time of	f the yea	r?	N (II	no, expl	ain in remarks)	
Are vegetation , soil , or hydrology	/	significa	antly	disturbed?		Are "normal circur	mstances"
Are vegetation, soil, or hydrology							present? Yes
SUMMARY OF FINDINGS					(If need	led, explain any an	swers in remarks.)
Hydrophytic vegetation present? Y					,	· · · ·	,
Hydric soil present? N		ls th	ne sa	mpled area	within a	wetland?	Ν
Indicators of wetland hydrology present? N				onal wetlan			
		-	, -1 -				
Remarks: (Explain alternative procedures here or in a sep	parate re	port.)					
Above average precipitation. Wetland s	oil and	hydrold	ogy c	riteria wer	e not m	et. Area is not a	wetland.
		,	0,				
VEGETATION Use scientific names of plants.							
	osolute	Domina		Indicator		ance Test Worksh	
Tree Stratum (Plot size:) %	Cover	t Specie	es	Staus		of Dominant Specie	
2						OBL, FACW, or FA	
3						Number of Domina cies Across all Strat	
4						of Dominant Specie	、 ,
5						OBL, FACW, or FA	
	0 =	Total C	over				
Sapling/Shrub stratum (Plot size:)					Prevale	ence Index Works	heet
1 Rhus typhina	15	Y		UPL		o Cover of:	
2					OBL sp		
3						species <u>55</u> x	
4					FAC sp		3 = 0
	15 =	=Total C	over		FACU s UPL sp	-	4 = 100 5 = 75
Herb stratum (Plot size:)	10 -		0.001		Column		A) 285 (B)
1 Phalaris arundinacea	30	Y		FACW		ence Index = B/A =	· · ·
2 Urtica dioica	20			FACW	1 lovalo		
3 Arctium minus	10	N		FACU	Hydrop	hytic Vegetation	Indicators:
4 Euphorbia esula	10	N		FACU	Rap	pid test for hydroph	ytic vegetation
5 Impatiens capensis	5	N		FACW	X Dor	minance test is >50)%
6 Rubus idaeus	5	N		FACU	X Pre	valence index is ≤	3.0*
7						rphogical adaptatic	
8					•	porting data in Rer	marks or on a
9					'	arate sheet)	
10	80 =	=Total C	over			blematic hydrophy plain)	tic vegetation*
Woody vine stratum (Plot size:)					*Indicat	ors of hydric soil and w	retland hydrology must be
1						present, unless disturb	, ,,
2					-	drophytic	
	0 =	=Total C	over		-	sent? Y	
Demositor (Include at the second and the	ob a =4				P16		—
Remarks: (Include photo numbers here or on a separate s	sneet)						

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm	the absend	e of indicators.)
Depth	Matrix		Red	dox Feat	ures				
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Text	ure	Remarks
0-24	10YR 2/1	100					CL		
24+	10YR 3/1	95	10YR 4/6	5	С	М	CL		
271	1011(0/1		1011(+/0	<u> </u>	<u> </u>	101	01		
	Concentration, D	= Depleti	on, RM = Reduce	ed Matrix	:, MS = N	lasked S			n: PL = Pore Lining, M = Matrix
Hydric So	il Indicators:								ematic Hydric Soils:
	tisol (A1)				ed Matrix	(S4)			dox (A16) (LRR K, L, R)
Hist	tic Epipedon (A2)			ndy Redo					7) (LRR K, L)
	ck Histic (A3)			pped Ma	. ,		Iron-	Manganese	Masses (F12) (LRR K, L, R)
Hyc	Irogen Sulfide (A	4)	Loa	my Mucl	ky Minera	al (F1)	Very	Shallow Da	rk Surface (TF12)
Stra	atified Layers (A5)	Loa	my Gley	ed Matrix	(F2)	Othe	er (explain in	remarks)
2 cr	m Muck (A10)		Dep	pleted Ma	atrix (F3)				
	leted Below Dark		(A11) Red	dox Dark	Surface	(F6)			
Thio	ck Dark Surface (A12)	Dep	pleted Da	ark Surfa	ce (F7)	*Indica	ators of hydr	ophytic vegetation and weltand
Sar	ndy Mucky Minera	al (S1)	Rec	lox Depr	essions ((F8)	hydro	ology must b	e present, unless disturbed or
5 cr	n Mucky Peat or	Peat (S3)						problematic
Restrictive	Layer (if observ	ed):							
Туре:		cu).					Hydric	soil presen	t? N
Depth (inche	<i>be)</i> .				-		Tiyane	Son presen	
Deptil (mone					-				
HYDROLO									
•	drology Indicato								
-	cators (minimum	of one is	required; check				Se		icators (minimum of two required)
	Water (A1)				Fauna (B		-		Soil Cracks (B6)
0	ter Table (A2)				uatic Plar			0	e Patterns (B10)
Saturatio	larks (B1)				en Sulfide		Living Roots		son Water Table (C2) Burrows (C8)
	nt Deposits (B2)			(C3)	a Knizosp	neres on			on Visible on Aerial Imagery (C9)
	bosits (B3)				e of Redu	iced Iron	(C4)		or Stressed Plants (D1)
	at or Crust (B4)			-			illed Soils		bhic Position (D2)
	osits (B5)			(C6)			-		utral Test (D5)
	on Visible on Aeria	al Imager	/ (B7)	. ,	ck Surfac	e (C7)	-		
	Vegetated Conca				or Well Da				
	tained Leaves (B9		. ,	-	xplain in)		
Field Obser		,		. `	•		,	1	
Surface wat		Yes	No	х	Depth (i	nches):			
Water table		Yes	No		Depth (i			Inc	licators of wetland
Saturation p		Yes	No	X	Depth (i				/drology present? N
	pillary fringe)				<u> </u>	,			
	corded data (strea	am gauge	e, monitoring well	, aerial p	hotos, pi	revious ir	nspections), if	available:	
_									
Remarks:									

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" Are vegetation , soil , or hydrology naturally problematic? present? Yes SUMMARY OF FINDINGS (If needed, explain any answers in remarks.) Hydrophytic vegetation present? Y Ves
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" Are vegetation , soil , or hydrology naturally problematic? present? Yes SUMMARY OF FINDINGS Y Y Yes Yes
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" Are vegetation , soil , or hydrology naturally problematic? present? Yes SUMMARY OF FINDINGS (If needed, explain any answers in remarks.) Hydrophytic vegetation present? Y
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" Are vegetation , soil , or hydrology naturally problematic? present? Yes SUMMARY OF FINDINGS (If needed, explain any answers in remarks.) Hydrophytic vegetation present? Y
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
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
Are vegetation , soil , or hydrology naturally problematic? present? Yes SUMMARY OF FINDINGS (If needed, explain any answers in remarks.) Hydrophytic vegetation present? Y
SUMMARY OF FINDINGS (If needed, explain any answers in remarks.) Hydrophytic vegetation present? Y
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.
Above average precipitation. Air wettand chiena were met. Area is a wettand.
VEGETATION Use scientific names of plants.
Absolute Dominan Indicator Dominance Test Worksheet
Tree Stratum (Plot size:) % Cover t Species Staus Number of Dominant Species
1 that are OBL, FACW, or FAC: 1 (A) 2 Total Number of Dominant
3 Species Across all Strata: 1 (B)
4 Percent of Dominant Species
5 that are OBL, FACW, or FAC: 100.00% (A/B)
0 =Total Cover
Sapling/Shrub stratum (Plot size:) Prevalence Index Worksheet
1 Total % Cover of: 2 OBL species 80 x 1 = 80
$\frac{2}{3}$ FACW species 0 $x = 0$
4 FAC species $0 \times 3 = 0$
5 FACU species 10 x 4 = 40
$0 = \text{Total Cover} \qquad \text{UPL species} \qquad 0 \qquad x \ 5 = 0$
Herb stratum (Plot size:) Column totals0 (A)120 (B)
$1 \underbrace{Eleocharis palustris}_{O_1 \cup V_2} \underbrace{70}_{V_2} \underbrace{Y}_{OBL} \\ Prevalence Index = B/A = \underbrace{1.33}_{V_2 \cup V_2} \underbrace{FAOU}_{V_2 \cup V$
2 Cirsium discolor 10 N FACU 3 Typha angustifolia 10 N OBL Hydrophytic Vegetation Indicators:
4 Rapid test for hydrophytic vegetation indicators.
5 X Dominance test is >50%
6 X Prevalence index is ≤3.0*
7 Morphogical adaptations* (provide
8supporting data in Remarks or on a
9 separate sheet)
10 Problematic hydrophytic vegetation* 90 =Total Cover (explain)
Weedy vine stratum (Plot size:)
1 *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
2 Hydrophytic
0 = Total Cover vegetation present? Y
Remarks: (Include photo numbers here or on a separate sheet)

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm th	e absence	of indicators.)
Depth	Matrix		Re	dox Feat	ures				
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	•	Remarks
0-6	10YR 2/1	95	10YR 4/6	5	С	PL	SiCl		
6-20	10YR 4/1	90	10YR 4/6	10	С	PL	SiCl		
				-	-				
*Type: C = (Concentration, D =	= Depleti	ion RM = Reduc	ed Matrix	MS = M	lasked S	and Grains	**Location	: PL = Pore Lining, M = Matrix
	oil Indicators:	- Bopioti			, 110 – 11				matic Hydric Soils:
-	tisol (A1)		Sa	ndy Gleye	ed Matrix	(S4)			ox (A16) (LRR K, L, R)
	tic Epipedon (A2)			ndy Redo		(0.)			(LRR K, L)
	ck Histic (A3)			pped Ma					Masses (F12) (LRR K, L, R)
	lrogen Sulfide (A4	4)		my Mucł	. ,	al (F1)		-	Surface (TF12)
	atified Layers (A5			amy Gley	•	. ,		explain in r	
	m Muck (A10)	/		oleted Ma		. ,		- 1	
	pleted Below Dark	Surface		dox Dark	. ,				
	ck Dark Surface (oleted Da		. ,	*Indicator	rs of hydro	phytic vegetation and weltand
	ndy Mucky Minera			dox Depr					present, unless disturbed or
	m Mucky Peat or	. ,				< - /			problematic
	Layer (if observe	,	,			1			
Type:	Layer (II Observ	eu).					Hydric so	il prosont	? Y
Depth (inche	<i>sc).</i>				-		liyunc so	ii present	·
Remarks:					-				
HYDROLO									
Wetland Hy	drology Indicato	ors:							
Primary Indi	cators (minimum	of one is	required; check	all that a	pply)		Seco	ndary Indic	ators (minimum of two required)
	Water (A1)			Aquatic	Fauna (B	13)		Surface Se	oil Cracks (B6)
	ater Table (A2)				uatic Plar	()			Patterns (B10)
X Saturatio						Odor (C1			on Water Table (C2)
	larks (B1)				Rhizosp	heres on	Living Roots		Surrows (C8)
	nt Deposits (B2)			(C3)			(04)		Visible on Aerial Imagery (C9)
	posits (B3)			-		uced Iron	. ,		· Stressed Plants (D1) nic Position (D2)
	at or Crust (B4) oosits (B5)			(C6)	ION Redu				ral Test (D5)
	on Visible on Aeria	al Imager	v (B7)		ck Surfac	e (C7)	<u></u>		
	Vegetated Conca			-	or Well Da	. ,			
	tained Leaves (B9					Remarks)		
Field Obser							-	T	
Surface wat		Yes	No	х	Depth (i	nches):			
Water table	•	Yes	No	X	Depth (i	,		Indi	cators of wetland
Saturation p		Yes	X No		Depth (i	,	Surface	hyc	Irology present? Y
	pillary fringe)			· · · · · · · · · · · · · · · · · · ·	• · · ·				
Describe red	corded data (strea	am gauge	e, monitoring wel	l, aerial p	hotos, pi	revious ir	nspections), if ava	ailable:	
Remarks:									

Project/Site DOT-EP-18	City/C	County:	Ede	en Prairie/H	ennepin	Sampling Dat	te: 9/22/2014
Applicant/Owner: SWLRT		Stat	e:	MN		Sampling Poir	nt: B
Investigator(s): Marc Cottingham, Lucy Dahl		s	ectio	n, Townshij	o, Range:	- S14	4 T116N R22W
Landform (hillslope, terrace, etc.): Hill slope		Loc	cal re	lief (concav	ve, convex	k, none):	None
Slope (%): 0-5 Lat:		Long:				Datum:	
Soil Map Unit Name Hamel				NWI	Classificat	tion:	None
Are climatic/hydrologic conditions of the site typical for this	s time of	the yea	r?	N (I	f no, expla	ain in remarks)
Are vegetation, soil, or hydrology		significa	antly	disturbed?		Are "normal c	circumstances"
Are vegetation, soil, or hydrology		naturall	y pro	blematic?			present? Yes
SUMMARY OF FINDINGS					(If need	led, explain an	y answers in remarks.)
Hydrophytic vegetation present? N							
Hydric soil present? N		ls th	ne sa	mpled area	a within a	a wetland?	N
Indicators of wetland hydrology present? N		f yes	s, opt	ional wetlar	nd site ID:		
Remarks: (Explain alternative procedures here or in a sepa	arate re	port.)					
Above average precipitation	. Wetla	and crite	eria	not met, a	area is n	ot a wetland	
VEGETATION Use scientific names of plants.							
Ab	solute	Domina	an	Indicator	Domina	ance Test Wo	rksheet
Tree Stratum (Plot size:) % 1 1	Cover	t Specie	es	Staus		of Dominant S OBL, FACW, o	
2						Number of Do	
4			_ :		Percent	of Dominant S	
5					that are	OBL, FACW, o	or FAC: 0.00% (A/B)
Copling/Chruh stratum (Dist size)	0 =	=Total C	over		Drevela	nee Index W	o rkoho ot
Sapling/Shrub stratum (Plot size:)						ence Index We Cover of:	orksneet
2					OBL sp		x 1 = 0
3					-	species 0	x 2 = 0
4					FAC sp	ecies 0	x 3 = 0
5					FACU s	-	
	0 =	=Total C	over		UPL sp		x 5 = 0
Herb stratum (Plot size:)					Column		(,(,
1 Cirsium discolor 2 Bromus inermis	60 20	Y		FACU FACU	Prevale	ence Index = B	/A = <u>4.00</u>
3	20	1		FACO	Hydron	hytic Vegetat	tion Indicators:
4							rophytic vegetation
5					Dor	minance test is	s >50%
6					Pre	evalence index	is ≤3.0*
7							otations* (provide
8							n Remarks or on a
9 10						parate sheet)	ophytic vegetation*
	80 =	=Total Co	over			plain)	phytic vegetation
Woody vine stratum (Plot size:) 1)						present, unless d	and wetland hydrology must be listurbed or problematic
2	0	Total O	<u></u>			drophytic getation	
	0 =	=Total C	over			esent?	N
Remarks: (Include photo numbers here or on a separate s	heet)				-		

Profile Desc	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm	the absend	e of indicators.)
Depth	Matrix		Ree	dox Feat	ures				-
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Textu	ire	Remarks
0-10	10YR 4/2	100					SiCl		
10-20	10YR 4/3	100					SiCl		
10-20	101 K 4/3	100					3101		
	Concentration, D =	= Depleti	on, RM = Reduce	ed Matrix	., MS = №	lasked S			n: PL = Pore Lining, M = Matrix
-	il Indicators:								ematic Hydric Soils:
	isol (A1)			ndy Gleye		: (S4)			dox (A16) (LRR K, L, R)
	ic Epipedon (A2)			ndy Redo					7) (LRR K, L)
	ck Histic (A3)			pped Ma				-	Masses (F12) (LRR K, L, R)
	lrogen Sulfide (A4			my Mucł					rk Surface (TF12)
Stra	atified Layers (A5))		my Gley		< (F2)	Other	· (explain in	remarks)
2 cr	n Muck (A10)		Dep	pleted Ma	atrix (F3)				
Dep	leted Below Dark	s Surface		dox Dark		. ,			
Thic	ck Dark Surface (A12)	Dep	pleted Da	ark Surfa	ce (F7)	*Indica	tors of hydro	ophytic vegetation and weltand
San	dy Mucky Minera	al (S1)	Red	dox Depr	essions ((F8)	hydrol	logy must b	e present, unless disturbed or
5 cr	m Mucky Peat or	Peat (S3)						problematic
Restrictive	Layer (if observe	ed):							
Type:							Hydric s	soil presen	t? N
Depth (inche	es):				•			•	
Remarks:	,								
HYDROLO									
	drology Indicato	Nrc ·							
-				- 11 41 4 -			0.		
-	cators (minimum	of one is	required; check			()	Sec		icators (minimum of two required)
	Water (A1)				Fauna (B				Soil Cracks (B6)
	ter Table (A2)				uatic Plar				Patterns (B10)
Saturatio	arks (B1)					Odor (C1	Living Roots		son Water Table (C2) Burrows (C8)
	nt Deposits (B2)			(C3)	i Knizosp	neres on			n Visible on Aerial Imagery (C9)
	osits (B3)				e of Redu	uced Iron	(C4) —		or Stressed Plants (D1)
	it or Crust (B4)						illed Soils		phic Position (D2)
	osits (B5)			(C6)					itral Test (D5)
	on Visible on Aeria	al Imager	/ (B7)	. ,	ck Surfac	e (C7)	<u> </u>		
	Vegetated Conca			-	or Well Da				
	tained Leaves (B9		. ,			Remarks)		
Field Obser	,			- `					
Surface wate		Yes	No	х	Depth (i	nches):			
Water table		Yes	No		Depth (i			Ind	licators of wetland
Saturation p		Yes	No	X	Depth (i				vdrology present? N
-	pillary fringe)								
Describe rec	corded data (strea	am gauge	e, monitoring well	, aerial p	hotos, pi	revious ir	nspections), if a	available:	
Domortori									
Remarks:									

Project/Site DOT-EP-19	City/C	County:	Eden	Prairie/He	ennepin	Sampling Da	ate: 9/24/2014
Applicant/Owner: SWLRT	-	Stat	e:	MN		Sampling Po	pint: A
Investigator(s): Courtney Luensman, Tina Justen		S	ection,	Township	o, Range:	S	11 T116N R22W
Landform (hillslope, terrace, etc.): Depressio	n	Loc	al relie	f (concave	e, convex,	none):	Concave
Slope (%): 6-12. Lat: 44.866011		Long:		-93.4203	1	Datum:	
Soil Map Unit Name Lester Ioam		-		NWI C	Classificati	on:	None
Are climatic/hydrologic conditions of the site typical for this	s time of	f the year	r? I	N (If	f no, expla	in in remark	s)
Are vegetation X , soil , or hydrology	,	significa	antly dis	sturbed?		Are "normal	circumstances"
Are vegetation , soil , or hydrology	,	naturally	y proble	ematic?			present? No
SUMMARY OF FINDINGS					(If neede	ed, explain a	iny answers in remarks.)
Hydrophytic vegetation present? N							
Hydric soil present? Y		ls th	ne sam	pled area	a within a	wetland?	Ν
Indicators of wetland hydrology present? Y		f yes	, option	al wetlan	d site ID:		
Remarks: (Explain alternative procedures here or in a sep	oarate re	port.)					
Above average precipitation. Vegetation is dist			umed	hydroph	nytic in no	ormal circu	Imstances. Area is a
		wetland		<i>,</i> ,	5		
VEGETATION Use scientific names of plants.							
	osolute	Domina	in Ind	dicator	Domina	nce Test W	orksheet
Tree Stratum (Plot size:) % 1 1	Cover	t Specie	es S	Staus		of Dominant 3 DBL, FACW,	•
2						Number of De	
4						of Dominant	
5						OBL, FACW,	•
	0 =	=Total Co	over				
Sapling/Shrub stratum (Plot size:)				ſ		nce Index V	Vorksheet
1						Cover of:	
2					OBL spe		$x_1 = 0$
3					FACW s	·	
5					FACU s		
	0 =	=Total Co	over		UPL spe		
Herb stratum (Plot size:)					Column		0 (A) 360 (B)
1 Bromus inermis	90	Y	F	ACU	Prevaler	nce Index = I	B/A = 4.00
2							
3							ation Indicators:
4					·	,	drophytic vegetation
5						ninance test /alence inde	
8							
8							aptations* (provide in Remarks or on a
9						arate sheet)	
10	90 =	-Total Co	over			olematic hyd Iain)	rophytic vegetation*
Woody vine stratum (Plot size:)							l and wetland hydrology must be
1							disturbed or problematic
2						rophytic	
	0 =	=Total Co	over		-	etation sent?	N
Remarks: (Include photo numbers here or on a separate s	sheet)						
Vegetation mowed regularly							

Profile Desc	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm the absen	ce of indicators.)
Depth	Matrix		-	dox Featu				
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks
0-5	10YR 2/1	100					CL	
5-10	2.5Y 5/1	95	10YR 4/6	5	С	М	L, gravelly	
				-	_			
10-12	5GY 6/1	20	10YR 4/6	10	С	М	CL	
	10YR 3/1	70					CL	
	Concentration, D	= Depleti	on, RM = Reduce	ed Matrix	., MS = №	lasked S		on: PL = Pore Lining, M = Matrix
-	il Indicators:							lematic Hydric Soils:
	tisol (A1)			dy Gleye		: (S4)		edox (A16) (LRR K, L, R)
	tic Epipedon (A2)			idy Redo			Dark Surface (S	
	ck Histic (A3)			pped Ma	. ,			e Masses (F12) (LRR K, L, R)
	Irogen Sulfide (A4			my Mucł	-			ark Surface (TF12)
	atified Layers (A5)		my Gley		< (F2)	Other (explain in	n remarks)
	n Muck (A10)			leted Ma	atrix (F3)			
	leted Below Dark			lox Dark		• •		
Thic	ck Dark Surface (A12)		oleted Da			*Indicators of hyc	rophytic vegetation and weltand
San	ndy Mucky Minera	al (S1)	Red	lox Depr	essions ((F8)	hydrology must	be present, unless disturbed or
5 cr	n Mucky Peat or	Peat (S3	s)					problematic
Restrictive	Layer (if observe	ed):						
Type: 12		,					Hydric soil prese	nt? Y
Depth (inche					•		,	
	,				-			
Remarks:								
Gravel h	ard pan							
HYDROLO								
-	drology Indicate							
Primary Indi	<u>cators (minimum</u>	of one is	required; check	all that a	pply)			dicators (minimum of two required)
	Water (A1)				Fauna (B			Soil Cracks (B6)
-	ter Table (A2)				uatic Plar			e Patterns (B10)
X Saturatio	()					Odor (C		ason Water Table (C2)
	larks (B1)				l Rhizosp	heres on		n Burrows (C8)
	nt Deposits (B2)			(C3)				on Visible on Aerial Imagery (C9)
	oosits (B3)			-		uced Iron		or Stressed Plants (D1)
	at or Crust (B4)				ron Redu	iction in 1		rphic Position (D2)
	osits (B5) on Visible on Asric	Imagan	(P7)	(C6)	ale Curfaa	(C7)	X FAC-Ne	eutral Test (D5)
	on Visible on Aeria				ck Surfac	. ,		
	Vegetated Conca				or Well Da	. ,	\	
	tained Leaves (B9	')			xpiain in	Remarks)	
Field Obser		Var	N1 -	v	Denth "	nohoc):		
Surface wate		Yes	No No	X	Depth (i			diastors of watland
Water table	-	Yes	X No		Depth (i	,		dicators of wetland
Saturation p	resent? pillary fringe)	Yes	X No		Depth (i		h	ydrology present? Y
			** **		h ed : :			
Describe rec	corded data (strea	am gauge	e, monitoring well	, aerial p	notos, pi	revious ir	nspections), if available:	
Remarks:								
Komarka.								

Project/Site DOT-EP-19	City/Co	unty: E	Eden P	rairie/Henne	pin Sampling	Date: 9/24	4/2014
Applicant/Owner: SWLRT		State:		MN	Sampling I	Point:	В
Investigator(s): Courtney Luensman, Tina Justen		Sec	ction, T	ownship, Ra	inge:	S11 T116N R22	W
Landform (hillslope, terrace, etc.): slope		Loca	l relief	(concave, co	onvex, none):	none	
Slope (%): 6-12. Lat: 44.866011	L	_ong:	-9	93.42031	Datum:		
Soil Map Unit Name Lester Ioam				NWI Class	sification:	None	
Are climatic/hydrologic conditions of the site typical for this	s time of th	ne year?	'N	(If no,	explain in rema	ırks)	
Are vegetation , soil , or hydrology	s	ignifican	ntly dist	urbed?	Are "norm	al circumstances	5"
Are vegetation , soil , or hydrology		aturally	probler	natic?		present	
SUMMARY OF FINDINGS				(If	needed, explain	any answers in	remarks.)
Hydrophytic vegetation present? N							
Hydric soil present? N		Is the	sampl	led area wit	hin a wetland?	N	
Indicators of wetland hydrology present? N		f yes, o	optiona	I wetland site	e ID:		
Remarks: (Explain alternative procedures here or in a sepa	arate repo	ort.)					
	-					a tha wal	
Above average precipitation. W	vetiand d	criteria	were r	not met. Ar	ea is not a we	etiand.	
VEGETATION Use scientific names of plants.							
Abs	solute D	Dominan	Indi	cator Do	minance Test	Worksheet	
Tree Stratum (Plot size:) %0	Cover t	Species	s Sta		mber of Dominar	•	
2					t are OBL, FACV) (A)
3					Total Number of Species Across		B (B)
4				Pe	rcent of Dominar		(-)
5					t are OBL, FACV	•	0% (A/B)
	0 =T	otal Cov	ver				
Sapling/Shrub stratum (Plot size:)					evalence Index	Worksheet	
1					tal % Cover of:	0	0
2					BL species	0 x 1 = 0 x 2 = 0	0
4					C species	$\frac{0}{30} \times 3 =$	90
5					CU species		200
	0 =T	otal Cov	ver	UF	L species	0 x 5 =	0
Herb stratum (Plot size:)				Co	lumn totals	80 (A)	290 (B)
1 Coronilla varia	30	Y	1	NI Pre	evalence Index	= B/A =3.6	63
0	20	Y	-	CU			
	20	Y	-			etation Indicato	
	15 10	N N	-	AC	_ Rapid test for Dominance test	hydrophytic vege	etation
	10	N	_		Prevalence ind		
7 Barbarea vulgaris	5	N	-	AC	-	idaptations* (prov	vide
8						ta in Remarks or	
9					separate shee		
10	440 T	atal Car				ydrophytic vegeta	ation*
Woody vine stratum (Plot size:)	110 =T	otal Cov	ver		(explain)		
1				*1		soil and wetland hyd ss disturbed or probl	
2					Hydrophytic		
	0 =T	otal Cov	ver		vegetation present?	Ν	
Remarks: (Include photo numbers here or on a separate sl	heet)			1	-		

Profile Desc	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm the ab	sence of indicators.)
Depth	Matrix		-	dox Feat				
(Inches)	Color (moist)	%	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	С	М	SiL	
			10114/0	20	C	IVI		
12-20	2.5Y 6/1	100					SiL	
*Type: C = C	Concentration, D =	= Depleti	on, RM = Reduce	ed Matrix	, MS = N	lasked S	and Grains. **Lo	cation: PL = Pore Lining, M = Matrix
Hydric So	il Indicators:						Indicators for P	roblematic Hydric Soils:
Hist	isol (A1)		San	dy Gleye	ed Matrix	(S4)	Coast Prairie	e Redox (A16) (LRR K, L, R)
Hist	ic Epipedon (A2)			dy Redo	. ,			e (S7) (LRR K, L)
	ck Histic (A3)			pped Ma	. ,			nese Masses (F12) (LRR K, L, R)
	lrogen Sulfide (A4			-	ky Minera			v Dark Surface (TF12)
	atified Layers (A5)				ed Matrix	(F2)	Other (expla	in in remarks)
	n Muck (A10)	. <i>.</i>			atrix (F3)	(==)		
	leted Below Dark				Surface	. ,		
	ck Dark Surface (ark Surface essions (hydrophytic vegetation and weltand
	idy Mucky Minera n Mucky Peat or	. ,			essions (<u>го)</u>	nyarology m	ust be present, unless disturbed or problematic
	-)					problematic
	Layer (if observe	ed):						
Type:					-		Hydric soil pro	esent? <u>N</u>
Depth (inches):								
Remarks:								
HYDROLO								
-	drology Indicato							
-	cators (minimum	of one is	required; check					y Indicators (minimum of two required)
	Water (A1)				Fauna (B	,		ace Soil Cracks (B6)
Saturatic	iter Table (A2)				uatic Plar n Sulfide			nage Patterns (B10) Season Water Table (C2)
	arks (B1)						· _ ·	yfish Burrows (C8)
	nt Deposits (B2)			(C3)	11112000			uration Visible on Aerial Imagery (C9)
	osits (B3)				e of Redu	uced Iron		nted or Stressed Plants (D1)
	t or Crust (B4)							morphic Position (D2)
Iron Dep	osits (B5)			(C6)			FAC	C-Neutral Test (D5)
	on Visible on Aeria		. ,		ck Surfac			
	Vegetated Conca		ce (B8)	-	or Well Da			
Water-St	tained Leaves (B9)		Other (E	xplain in	Remarks)	
Field Obser								
Surface wate		Yes	No	<u> </u>	Depth (i			Indiantana of worthers d
Water table		Yes	No	X	Depth (i			Indicators of wetland
Saturation pr	pillary fringe)	Yes	No	X	Depth (i	ncnes):		hydrology present? N
-					hotoo ni		anastiana) if sucilab	
Describe rec	Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:							
Remarks:								

Project/Site DOT-EP-20	City/C	county:	Ede	n Prairie/He	ennepin	Sampling	Date:	9/24/2014	
Applicant/Owner: SWLRT		State	e:	MN		Sampling F	Point:	А	
Investigator(s): Courtney Luensman, Tina Justen		Se	ectio	n, Township	, Range:	-	S12 T116	N R22W	
Landform (hillslope, terrace, etc.): Depression	n	Loc	al re	lief (concav	e, convex	k, none):	С	oncave	
Slope (%): 18-25 Lat: 44.866574		Long:		-93.41876	65	Datum:			
Soil Map Unit Name Koronis Kingsley		_		NWI (Classificat	tion:	N	one	
Are climatic/hydrologic conditions of the site typical for this	s time of	the year	?	N (l	f no, expla	ain in rema	rks)		
Are vegetation , soil , or hydrology		significa	antly	disturbed?		Are "norma	al circumst	ances"	
Are vegetation , soil , or hydrology		naturally	y pro	blematic?				esent? Yes	5
SUMMARY OF FINDINGS					(If need	led, explain	any answe	ers in remark	(s.)
Hydrophytic vegetation present? Y									
Hydric soil present? Y		ls th	e sa	mpled area	a within a	a wetland?		Y	
Indicators of wetland hydrology present? Y		f yes,	, opti	onal wetlan	d site ID:				
Remarks: (Explain alternative procedures here or in a sepa	arate rep	oort.)							
Above average precipitation	n. Wetl	and crit	teria	were me	t. Area is	s a wetlar	nd.		
VEGETATION Use scientific names of plants.									
	solute	Domina		Indicator	Domina	ance Test	Worksheet		
Tree Stratum (Plot size:) % (Cover	t Specie	es	Staus		of Dominar OBL, FACW		2 (A)
2						Number of cies Across		2 (B)
4					Percent	of Dominar	nt Species		,
5							•	100.00% (A/B)
	0 =	Total Co	over						
Sapling/Shrub stratum (Plot size:)						ence Index	Workshee	et	
2					OBL sp	Cover of:	20 x 1 =	20	
3					-		$\frac{20}{40}$ x 2 =		
4					FAC sp	·	$\frac{10}{0} \times 3 =$		
5					FACU	species	0 x 4 =	0	
	0 =	Total Co	over		UPL sp	ecies	0 x 5 =	0	
Herb stratum (Plot size:)					Column	totals	60 (A)	100 (B)
	40	Y		FACW	Prevale	ence Index =	= B/A =	1.67	
	20	Y		OBL	11	1			
3						ohytic Vege		vegetation	
5						minance tes		vegetation	
6						valence inc			
7					 	rphogical a	daptations*	(provide	
8						porting dat	•		
9						parate shee			
10	60 =	Total Co	over			blematic hy plain)	/drophytic \	egetation*	
Woody vine stratum (Plot size:)					*Indicat	ors of hydric s	soil and wetlar	nd hydrology m	ust be
1						present, unles	ss disturbed c	or problematic	
2		<u></u>			-	drophytic getation			
	0 =	Total Co	over		_	esent?	Y		
Remarks: (Include photo numbers here or on a separate sl Vegetation mowed regularly	heet)								

Profile Desc	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or co	nfirm the absend	ce of indicators.)
Depth	. <u>Matrix</u>			lox Feat					•
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**		Texture	Remarks
0-8	2.5Y 5/2	50	10YR 4/6	10	С	М	SL		
	10YR 3/1	30					SL		
	10GY 6/1	10					SL		
0.14			10VP 4/6	10	С	Ν4	SL		
8-14	10YR 4/3	90	10YR 4/6	10		М			
14-20	10YR 6/1	85	10YR 4/6	15	С	М	SL		
*Type: C = C	Concentration, D =	= Depleti	on, RM = Reduce	ed Matrix	, MS = N	lasked S	and Grai	ins. **Locatio	n: PL = Pore Lining, M = Matrix
Hydric So	il Indicators:						Indi	icators for Probl	ematic Hydric Soils:
Hist	isol (A1)		San	dy Gleye	ed Matrix	: (S4)		Coast Prairie Re	dox (A16) (LRR K, L, R)
Hist	ic Epipedon (A2)		San	dy Redo	ox (S5)			Dark Surface (S7	
	Black Histic (A3) Stripped Matrix								Masses (F12) (LRR K, L, R)
Hydrogen Sulfide (A4) Loamy Mucky					•	. ,			rk Surface (TF12)
Stratified Layers (A5) Loamy Gleyed Matrix (F2) Other (explain in remarks)							remarks)		
2 cm Muck (A10) X Depleted Matrix (F3) Depleted Below Dark Surface (A11) Redox Dark Surface (F6)									
·	leted Below Dark		· · ·			· ·			
	ck Dark Surface (,			ark Surfa	. ,			ophytic vegetation and weltand
	dy Mucky Minera	. ,		lox Depr	essions ((F8)		hydrology must b	e present, unless disturbed or
5 cr	n Mucky Peat or	Peat (S3)						problematic
	Layer (if observe	ed):							
Type:					-		Hy	ydric soil presen	t? <u>Y</u>
Depth (inche	es):				-				
HYDROLO									
-	drology Indicato								
		of one is	required; check						icators (minimum of two required)
	Water (A1)				Fauna (B				Soil Cracks (B6)
	iter Table (A2)				uatic Plar				e Patterns (B10)
Saturatio	arks (B1)				n Sulfide Rhizosp				son Water Table (C2) Burrows (C8)
	nt Deposits (B2)			(C3)	лтп205р				on Visible on Aerial Imagery (C9)
	osits (B3)				e of Redu	uced Iron	(C4)		or Stressed Plants (D1)
	it or Crust (B4)				ron Redu		()		phic Position (D2)
	osits (B5)			(C6)					utral Test (D5)
Inundatio	on Visible on Aeria	al Imagery	/ (B7)	Thin Mu	ck Surfac	e (C7)			
Sparsely	Vegetated Conca	ave Surfa	ce (B8)	Gauge c	or Well Da	ata (D9)			
Water-S	tained Leaves (B9)		Other (E	xplain in	Remarks)		
Field Obser									
Surface wate		Yes	No	X	Depth (i				
Water table		Yes	No	X	Depth (i				licators of wetland
Saturation p		Yes	No	Х	Depth (i	nches):		ny	/drology present? Y
	pillary fringe)			o orial -	hote		an a -th		
Describe rec	corded data (strea	am gauge	e, monitoring well	, aeriai p	notos, pi	revious ir	ispection	is), if available:	
Remarks:									

Project/Site DOT-EP-20	City/C	ounty:	Eden	Prairie/He	ennepin	Sampling Date:	9/24/2014
Applicant/Owner: SWLRT	-	State	e:	MN		Sampling Point:	В
Investigator(s): Courtney Luensman, Tina Justen		Se	ection,	Township	, Range:	S12 T	116N R22W
Landform (hillslope, terrace, etc.): slope		Loca	al relie	f (concave	e, convex	, none):	none
Slope (%): 18-25 Lat: 44.86574		Long:		-93.41876	5	Datum:	
Soil Map Unit Name Koronis Kingsley				NWI C	lassificat	ion:	None
Are climatic/hydrologic conditions of the site typical for this	s time of	the year	?	N (If	no, expla	ain in remarks)	
Are vegetation , soil , or hydrology		significa	ntly di	sturbed?		Are "normal circ	umstances"
Are vegetation , soil , or hydrology		naturally	/ probl	ematic?			present? Yes
SUMMARY OF FINDINGS					(If need	ed, explain any a	nswers in remarks.)
Hydrophytic vegetation present? N							
Hydric soil present? N		Is the	e sam	pled area	within a	wetland?	Ν
Indicators of wetland hydrology present? N		f yes,	, optior	nal wetland	d site ID:		
Remarks: (Explain alternative procedures here or in a sepa	arate rer	ort)					
		5011.)					
Above average precipitation. W	Vetland	criteria	were	e not met	. Area is	s not a wetland	ł.
VECETATION Lies asigntific names of plants							
VEGETATION Use scientific names of plants.	solute	Domina	n In	dicator	Domina	ance Test Works	sheet
-		t Specie		Staus		of Dominant Spec	
1						OBL, FACW, or F	
2			_		Total	Number of Domir	
3					Spec	cies Across all Str	ata: <u> </u>
4						of Dominant Spec	
5					that are (OBL, FACW, or F	AC: 0.00% (A/B)
Conting/Chruh stratum / Plat size	0 =	Total Co	over		Drevelo	maa Inday Wark	
Sapling/Shrub stratum (Plot size:)						ence Index Work Cover of:	sneet
2					OBL sp		x 1 = 0
3					FACW		$x^{2} = 0$
4					FAC sp		x 3 = 0
5					FACU s	pecies 105	x 4 = 420
	0 =	Total Co	over		UPL sp		x 5 = 0
Herb stratum (Plot size:)					Column		(A) <u>420</u> (B)
1 Bromus inermis	80	Y		FACU	Prevale	nce Index = B/A	= 4.00
2 Cirsium discolor	15 10	N N	_	ACU	lludron	hytic Vegetatio	- Indiantara
3 Euphorbia esula	10	IN	F	ACU		bid test for hydror	
5						ninance test is >	
6						valence index is	
7					Mor	phogical adaptat	ions* (provide
8						porting data in R	
9						arate sheet)	
10						blematic hydroph	vtic vegetation*
	105 =	Total Co	over			olain)	
Woody vine stratum (Plot size:)						ors of hydric soil and present, unless distu	wetland hydrology must be
2						present, unless distu Irophytic	
[_] —	0 =	Total Co	over		veg	etation	
					pre	sent?	1
Remarks: (Include photo numbers here or on a separate s	sheet)						
Vegetation mowed regularly							

Profile Desc	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm t	he absend	e of indicators.)			
Depth	Matrix		Red	dox Featu	ures							
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Textu	e	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	С	М	SiL					
			101K 4/0	10	C	IVI						
16-20	10YR 5/6	100					SL					
*Type: C - C	Concentration D	I — Denleti	on, RM = Reduce	d Matrix	MS – M	laskad S	and Grains	**Locatio	n: PL = Pore Lining, M = Matrix			
	il Indicators:	- Depieti			, 1010 – 10	laskeu S			ematic Hydric Soils:			
-	isol (A1)		Sar	dy Glave	ed Matrix	(\$4)			-			
	ic Epipedon (A2)			idy Gleye								
	ck Histic (A3)			pped Ma								
	Hydrogen Sulfide (A4) Loamy Mucky					al (E1)		-	rk Surface (TF12)			
	atified Layers (A5			•	•	. ,						
Stratified Layers (A5) Loamy Gleyed Matrix (F2) Other (explain in remarks) 2 cm Muck (A10) Depleted Matrix (F3)												
	eted Below Dark	Surface			Surface	(F6)						
	ck Dark Surface (· /		irk Surface	``	*Indiaat	ore of bude	apply tic vegetation and weltand			
	dy Mucky Minera				essions (ophytic vegetation and weltand e present, unless disturbed or			
	n Mucky Peat or	. ,			00010113	10)	Tiyarok		problematic			
	-		')			1			problemate			
	Layer (if observe	ed):										
Type:					-		Hydric s	oil presen	t? <u>N</u>			
Depth (inche	es):				-							
HYDROLO												
-	drology Indicate											
		of one is	required; check				<u>Sec</u>		icators (minimum of two required)			
	Water (A1)				Fauna (B				Soil Cracks (B6)			
Ŭ Ŭ	iter Table (A2)				uatic Plar	```			Patterns (B10)			
Saturatio					n Sulfide		-	-	son Water Table (C2)			
	arks (B1)				l Rhizosp	heres on	Living Roots		Burrows (C8)			
	nt Deposits (B2)			(C3)			(04)		n Visible on Aerial Imagery (C9)			
	oosits (B3)				e of Redu ron Rodu		(C4) illed Soils		or Stressed Plants (D1)			
	it or Crust (B4) osits (B5)			(C6)	Ion Redu	ICTION IN 1			ohic Position (D2) utral Test (D5)			
	on Visible on Aeria	al Imagen	(B7)		ck Surfac	e (C7)	—	- FAC-INEL	itiai Test (D3)			
	Vegetated Conca				or Well Da							
	tained Leaves (B9			-	xplain in)					
Field Obser		,			e		,					
Surface wate		Yes	No	х	Depth (i	nches):						
Water table		Yes	No	X	Depth (i			Ind	licators of wetland			
Saturation p		Yes	No	X	Depth (i	,			vdrology present? N			
-	pillary fringe)					,						
Describe rec	corded data (strea	am gauge	e, monitoring well	, aerial p	hotos, pı	revious ir	nspections), if a	vailable:				
Remarks:												

Project/Site DOT-EP-21	City/C	ounty:	Ede	en Prairie/He	ennepin	Sampling Date:	9/23/2014		
Applicant/Owner: SWLRT		Stat	e:	MN	5	Sampling Point:	A		
Investigator(s): Todd Udvig, Alison Hruby		S	ectio	n, Township	o, Range:	S36	T117N R22W		
Landform (hillslope, terrace, etc.): Depression	n	Loc	cal re	lief (concav	e, convex,	none):	Concave		
Slope (%): 0-5 Lat:		Long:				Datum:			
Soil Map Unit Name Kingsley		_		NWI C	Classificati	on:	None		
Are climatic/hydrologic conditions of the site typical for this	s time of	the year	r?	N (l	f no, expla	in in remarks)			
Are vegetation , soil , or hydrology		significa	antly	disturbed?		Are "normal cire	cumstances"		
Are vegetation , soil , or hydrology		naturally	y pro	blematic?			present? Yes		
SUMMARY OF FINDINGS					(If neede	ed, explain any	answers in remarks.)		
Hydrophytic vegetation present? Y									
Hydric soil present? Y		Is th	ne sa	mpled area	a within a	wetland?	Y		
Indicators of wetland hydrology present? Y		f yes	, opti	ional wetlan	d site ID:				
Remarks: (Explain alternative procedures here or in a sepa	arate rep	oort.)							
Above average precipitation. All wetland criteria were met. Area is a wetland.									
VEGETATION Use scientific names of plants.									
	solute	Domina		Indicator	Domina	nce Test Work	sheet		
Tree Stratum (Plot size:) % 1) %	Cover	t Specie	es	Staus		of Dominant Spe DBL, FACW, or F			
2						Number of Domi ies Across all St			
4						of Dominant Spe			
5							FAC: 100.00% (A/B)		
	0 =	Total Co	over						
Sapling/Shrub stratum (Plot size:)						nce Index Wor	ksheet		
1					OBL spe	Cover of:	x 1 = 0		
3					FACW s		x = 0 x = 200		
4					FAC spe	·	$x_{3} = 0$		
5					FACU sp		x 4 = 0		
	0 =	Total Co	over		UPL spe	cies 0	x 5 = 0		
Herb stratum (Plot size:)					Column	totals 100	(A) <u>200</u> (B)		
1 Phalaris arundinacea	100	Y		FACW	Prevaler	nce Index = B/A	.=		
3					Hydropł	nytic Vegetatic	on Indicators:		
4					Rapi	id test for hydro	phytic vegetation		
5					X Dom	ninance test is >	>50%		
6					X Prev	alence index is	5 ≤3.0*		
7						U	ations* (provide		
8 9						oorting data in F arate sheet)	Remarks or on a		
9 10							hytic vegetation*		
	100 =	Total Co	over		(exp		nylic vegetation		
Woody vine stratum (Plot size:) 1)					р	resent, unless dist	d wetland hydrology must be urbed or problematic		
2						rophytic etation			
	0 =	Total Co	over		-	sent?	Υ		
Remarks: (Include photo numbers here or on a separate s	sheet)				-				

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	indicat	or or confirm the	absence of ind	icators.)
Depth	Matrix			dox Feat					·
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture		Remarks
0-12	10YR 3/2	100					SiL		
12-18	10YR 3/2	80	10YR 5/6	20	С	М	SiL		
12-10	10110 3/2	00	10110.3/0	20	0	IVI	SIL		
		= Depleti	on, RM = Reduce	ed Matrix	., MS = №	lasked S			Pore Lining, M = Matrix
-	il Indicators:							r Problematic H	-
	isol (A1)				ed Matrix	: (S4)		airie Redox (A16	
	ic Epipedon (A2)			idy Redo				face (S7) (LRR I	
	ck Histic (A3)			pped Ma	. ,			-	(F12) (LRR K, L, R)
Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) Very Shallow Dark Surface (*									
	tified Layers (A5)			ed Matrix	(F2)	X Other (ex	plain in remarks)
	n Muck (A10)				atrix (F3)				
	leted Below Dark				Surface	. ,			
	ck Dark Surface (,			ark Surfa				regetation and weltand
	dy Mucky Minera			lox Depr	essions ((F8)	hydrology		t, unless disturbed or
5 cr	n Mucky Peat or	Peat (S3	5)					problem	atic
Restrictive	Layer (if observ	ed):							
Type:		,					Hydric soil	present?	(
Depth (inche	es):				-				
	,				•				
Remarks:									
Based or	n professional	judgem	ent, the soils a	ppear to	o be fur	nctioning	g as hydric.		
HYDROLO									
-	drology Indicato								
Primary Indi	cators (minimum	of one is	required; check	all that a	pply)		Second	dary Indicators (i	<u>minimum of two required)</u>
Surface	Water (A1)			Aquatic	Fauna (B	13)	S	Surface Soil Crac	ks (B6)
High Wa	iter Table (A2)			True Aq	uatic Plar	nts (B14)	X	Drainage Patterns	s (B10)
Saturatio	on (A3)			Hydroge	n Sulfide	Odor (C2	I)	Dry-Season Wate	r Table (C2)
Water M	arks (B1)			Oxidized	l Rhizosp	heres on	Living Roots	Crayfish Burrows	(C8)
Sedimer	nt Deposits (B2)			(C3)				Saturation Visible	on Aerial Imagery (C9)
Drift Dep	oosits (B3)			Presenc	e of Redu	uced Iron	(C4) S	Stunted or Stress	ed Plants (D1)
Algal Ma	t or Crust (B4)			Recent I	ron Redu	ction in T	illed Soils X C	Geomorphic Posit	ion (D2)
Iron Dep	osits (B5)			(C6)			XF	AC-Neutral Test	(D5)
Inundatio	on Visible on Aeria	al Imager	y (B7)	Thin Mu	ck Surfac	e (C7)			
Sparsely	Vegetated Conca	ave Surfa	ce (B8)	Gauge o	or Well Da	ata (D9)			
Water-S	tained Leaves (B9)		Other (E	xplain in	Remarks)		
Field Obser	vations:								
Surface wat	er present?	Yes	No	Х	Depth (i	nches):			
Water table		Yes	No	Х	Depth (i			Indicators	of wetland
Saturation p		Yes	No	Х	Depth (i	nches):		hydrology	present? Y
(includes ca	pillary fringe)				-				
Describe rec	corded data (strea	am gaug	e, monitoring well	, aerial p	hotos, pi	revious ir	nspections), if avai	lable:	
	```		5		••		. ·		
Remarks:		-							

Project/Site DOT-EP-21	City/0	County:	Hennepi	n Samp	ling Date:	9/23/2014	
Applicant/Owner: SWLRT	_	State:	MN	Sampl	Sampling Point: B		
Investigator(s): Todd Udvig, Alison Hruby		Secti	on, Townshij	o, Range:	S36 T117	'N R22W	
Landform (hillslope, terrace, etc.): Hill slop	be	Local r	elief (concav	e, convex, none	):	None	
Slope (%): 12-18% Lat:		Long:		Datun	ו:		
Soil Map Unit Name Kingsley			NWI	Classification:		None	
Are climatic/hydrologic conditions of the site typical for the	his time o	f the year?	N (I	f no, explain in r	emarks)		
Are vegetation , soil , or hydrolog	у	significantly	/ disturbed?	Are "r	ormal circum	stances"	
Are vegetation , soil , or hydrolog	ay	naturally pr	oblematic?		F	present? Yes	
SUMMARY OF FINDINGS				(If needed, ex	plain any answ	vers in remarks.)	
Hydrophytic vegetation present? Y							
Hydric soil present? N		Is the s	ampled area	a within a wetla	nd?	Ν	
Indicators of wetland hydrology present? N		f yes, op	tional wetlar	id site ID:			
Remarks: (Explain alternative procedures here or in a se	eparate re	eport.)					
	-						
Above average precipitation. Hydri	ic soil ar	nd hydrolog	ly criteria n	ot met, area is	s not a wetla	ind.	
VEGETATION Use scientific names of plants							
	Absolute	Dominan	Indicator	Dominance T	est Workshe	et	
		t Species	Staus	Number of Don			
1				that are OBL, F	•		
2				Total Numb	er of Dominant		
3				Species Ac	ross all Strata:	(B)	
4				Percent of Don	•		
5	0 :	=Total Cove		that are OBL, F	ACVV, OF FAC:	50.00% (A/B)	
	0.		I	Prevalence Ir	dex Worksh	et	
1				Total % Cover			
2				OBL species	0 x 1	= 0	
3				FACW specie	s 50 x 2	= 100	
4				FAC species	0 x 3	= 0	
5				FACU species			
Herb stratum (Plot size: )	0 :	=Total Cove	r	UPL species Column totals	0 x 5 100 (A)		
· · · · · · · · · · · · · · · · · · ·	50	V			( /	( )	
1 Phalaris arundinacea 2 Euphorbia esula	50 50	<u>Y</u>	FACW FACU	Prevalence In	dex = B/A =	3.00	
3	50	<u> </u>	TACO	Hydrophytic	Vegetation In	dicators:	
4					for hydrophy		
5				Dominand	e test is >50%	, D	
6				X Prevalenc	e index is ≤3.	)*	
7					al adaptation		
8					data in Rema	arks or on a	
9 10				separate s	,	vogototion*	
	100	=Total Cove		(explain)	tic hydrophytic	vegetation	
Woody vine stratum (Plot size: )					dric coil and wat	and hydrology must be	
1					unless disturbed	, ,,	
2				Hydrophy			
	0 :	=Total Cove	r	vegetatio	n v		
				present?	T		
Remarks: (Include photo numbers here or on a separate	e sheet)						

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm	the absenc	e of indicators.)
Depth	Matrix			dox Feat					•
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Textu	re	Remarks
0-18	10YR 3/2	100					SiL		
	Concentration, D =	= Depleti	on, RM = Reduce	ed Matrix	a, MS = №	lasked S			n: PL = Pore Lining, M = Matrix
-	il Indicators:					(0.1)			ematic Hydric Soils:
	isol (A1)				ed Matrix	(S4)			dox (A16) (LRR K, L, R)
	ic Epipedon (A2)			dy Redo					() (LRR K, L)
	ck Histic (A3)			pped Ma	. ,			•	Masses (F12) (LRR K, L, R)
	lrogen Sulfide (A4			-	ky Minera				k Surface (TF12)
	atified Layers (A5)	)			ed Matrix	, ,	Other	(explain in	remarks)
	n Muck (A10)	. <i>.</i>			atrix (F3)				
	leted Below Dark				Surface	```			
	ck Dark Surface (	,			ark Surfa				ophytic vegetation and weltand
	dy Mucky Minera	. ,		lox Depr	essions (	(F8)	hydrol		e present, unless disturbed or
5 cr	n Mucky Peat or	Peat (S3	)						problematic
Restrictive	Layer (if observe	ed):							
Type:							Hydric s	oil present	t? N
Depth (inche	es):				-				
Remarks:					-				
HYDROLO	DGY								
Wetland Hy	drology Indicate	ors:							
Primary Indi	cators (minimum	of one is	required; check	all that a	pply)		Sec	ondary Indi	icators (minimum of two required)
Surface	Water (A1)			Aquatic	Fauna (B	13)			Soil Cracks (B6)
High Wa	iter Table (A2)			True Aq	uatic Plar	nts (B14)		Drainage	Patterns (B10)
Saturatio	on (A3)			Hydroge	en Sulfide	Odor (C	1) —	Dry-Seas	on Water Table (C2)
Water M	arks (B1)			Oxidized	d Rhizosp	heres on	Living Roots	Crayfish	Burrows (C8)
Sedimer	nt Deposits (B2)			(C3)			_	Saturatio	n Visible on Aerial Imagery (C9)
	oosits (B3)					uced Iron			or Stressed Plants (D1)
	t or Crust (B4)				ron Redu	ction in T	illed Soils		phic Position (D2)
	osits (B5)		(2-2)	(C6)		( <b>-</b> -)	<u> </u>	K FAC-Neu	itral Test (D5)
	on Visible on Aeria			-	ck Surfac				
	Vegetated Conca		се (ва)	-	or Well Da		<b>`</b>		
	tained Leaves (B9	)		Other (E	xpiain in	Remarks	)		
Field Obser		V	N 1 -	v	Derth (	a a la c - N			
Surface wate		Yes	No No	X	Depth (i			- m - 1	lipping of wotload
Water table		Yes	No	X	Depth (i	,			licators of wetland
Saturation p	resent? pillary fringe)	Yes	No	Х	Depth (i	ncnes):		ny	drology present? N
					h at : :				
Describe rec	corded data (strea	am gauge	e, monitoring well	, aerial p	notos, pi	revious ir	nspections), if a	ivailable:	
Remarks:									
Noniaino.									

Project/Site DOT-EP-22	City/C	County:	Hennepii	n Sampling	Date: 9/23/2014			
Applicant/Owner: SWLRT		State:	MN	Sampling	Point: A			
Investigator(s): Todd Udvig, Alison Hruby		Sectio	on, Township	o, Range:	S36 T117N R22W			
Landform (hillslope, terrace, etc.): Depression	on	Local re	elief (concav	e, convex, none):	Concave			
Slope (%): 6-12% Lat:		Long:		Datum:				
Soil Map Unit Name Lester			NWI C	Classification:	None			
Are climatic/hydrologic conditions of the site typical for th	is time of	the year?	N (li	f no, explain in rema	arks)			
Are vegetation , soil , or hydrology	/	significantly	disturbed?	Are "norm	nal circumstances"			
Are vegetation , soil , or hydrology	/	naturally pro	blematic?		present? Ye	S		
SUMMARY OF FINDINGS				(If needed, explair	n any answers in remarl	ks.)		
Hydrophytic vegetation present? Y								
Hydric soil present? Y		Is the sa	ampled area	a within a wetland?	? Y			
Indicators of wetland hydrology present? Y		f yes, optional wetland site ID:						
Remarks: (Explain alternative procedures here or in a sep	parate re	port.)						
Above average precipita	ition. All	wetland cr	iteria met,	area is a wetland	J.			
VEGETATION Use scientific names of plants.								
•	bsolute	Dominan	Indicator	Dominance Test	Worksheet			
Tree Stratum (Plot size:) %	5 Cover	t Species	Staus	Number of Domina	nt Species			
1				that are OBL, FACW	<i>N</i> , or FAC: 2	(A)		
2				Total Number of				
3		·		Species Across		(B)		
5		·		Percent of Domina	nt Species N, or FAC: 100.00%	(A/B)		
· · · · · · · · · · · · · · · · · · ·	0 =	Total Cover			100.0070	(700)		
Sapling/Shrub stratum (Plot size: )				Prevalence Index	k Worksheet			
1				Total % Cover of:				
2				OBL species	50 x 1 = 50			
3				FACW species	$30 \times 2 = 60$			
4		·		FAC species	$\begin{array}{c} 0 \\ 0 \\ x \\ 4 \\ \end{array} = \begin{array}{c} 0 \\ 0 \\ 0 \\ \end{array}$			
	0 =	Total Cover		UPL species	0 x 4 = 0 0 x 5 = 0			
Herb stratum (Plot size: )				Column totals	80 (A) 110	(B)		
1 Typha angustifolia	50	Y	OBL	Prevalence Index		( )		
2 Phalaris arundinacea	20	Y ·	FACW					
3 Agrostis gigantea	10	N	FACW	Hydrophytic Veg	etation Indicators:			
4 Eleocharis sp	10	Ν		Rapid test for	hydrophytic vegetation			
5				X Dominance te				
<u>6</u>		<u> </u>		X Prevalence in				
8		<u> </u>			adaptations* (provide			
9		·		separate shee	ta in Remarks or on a et)			
10		·			ydrophytic vegetation*			
	90 =	Total Cover		(explain)				
Woody vine stratum (Plot size:)				*Indicators of hydric	soil and wetland hydrology m	nust be		
1					ess disturbed or problematic			
2		<u></u>		Hydrophytic vegetation				
	0 =	Total Cover		present?	Y			
Remarks: (Include photo numbers here or on a separate	sheet)							
, ,	- 1							

Profile Desc	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm the	absence of	indicators.)
Depth	Matrix			lox Feat					
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture		Remarks
0-6	10YR 3/2	70	10YR 5/6	30	С	М	SL		
6-12	10YR 3/2	70	10YR 5/6	30	C	M	SCL		
					-				
12-18	10YR 3/2	70	10YR 5/6	30	С	М	SL		
		= Depleti	on, RM = Reduce	ed Matrix	, MS = N	lasked S			= Pore Lining, M = Matrix
-	il Indicators:								ic Hydric Soils:
	tisol (A1)				ed Matrix	: (S4)			A16) ( <b>LRR K, L, R</b> )
Hist	tic Epipedon (A2)			dy Redo				rface (S7) ( <b>LF</b>	
	ck Histic (A3)		Stri	oped Ma	trix (S6)		Iron-Mar	nganese Mass	ses (F12) ( <b>LRR K, L, R</b> )
	Irogen Sulfide (A4			-	ky Minera			allow Dark Su	
	atified Layers (A5	)			ed Matrix	k (F2)	Other (e:	xplain in rema	arks)
	m Muck (A10)				atrix (F3)				
Depleted Below Dark Surface (A11) X Redox Dark Surface (F6) Thick Dark Surface (A12) Depleted Dark Surface (F7) *Indicators of hydrophytic vegetation and weltand									
	ck Dark Surface (					. ,	*Indicators	s of hydrophy	tic vegetation and weltand
	ndy Mucky Minera	. ,		lox Depr	essions (	(F8)	hydrolog		sent, unless disturbed or
5 cr	m Mucky Peat or	Peat (S3	)					prob	lematic
Restrictive	Layer (if observe	ed):							
Type:		,					Hydric soi	present?	Y
Depth (inche	es):				-			-	
Remarks:									
HYDROLO	DGY								
Wetland Hy	drology Indicato	ors:							
Primary Indi	cators (minimum	of one is	required; check	all that a	(ylqq		Secon	darv Indicato	rs (minimum of two required)
-	Water (A1)				Fauna (B	13)		Surface Soil C	
	ater Table (A2)				uatic Plar	,		Drainage Patt	
Saturatio	on (A3)				n Sulfide			-	Vater Table (C2)
Water M	larks (B1)			Oxidized	l Rhizosp	heres on	Living Roots	Crayfish Burro	ows (C8)
Sedimer	nt Deposits (B2)			(C3)				Saturation Vis	ible on Aerial Imagery (C9)
	oosits (B3)			Presenc	e of Redu	uced Iron	(C4)	Stunted or Str	essed Plants (D1)
-	at or Crust (B4)				ron Redu	iction in T		Geomorphic F	
	osits (B5)			(C6)		(0-)	X	FAC-Neutral 1	Test (D5)
	on Visible on Aeria	• •			ck Surfac	. ,			
	Vegetated Conca		се (ва)	0	or Well Da	( )	\		
	tained Leaves (B9	)		Other (E	xplain in	Remarks	)		
Field Obser		V	N1-	V	Dorth (	noh c = );			
Surface wate		Yes	No No	X 	Depth (i			Indiaate	ors of wetland
Water table Saturation p		Yes	No No	X X	Depth (i				ogy present? Y
	pillary fringe)	Yes		^	Depth (i	10103).		nyuror	
Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:									
Describe recorded data (stream gauge, monitoring weil, aenal photos, previous inspections), il available.									
Remarks:									
	C. Culvert sout	h end -	12 in Corrugat	ed met	al north	n end			
		- enu -							

Project/Site DOT-EP-22	City/0	County:	Hennepi	in Sampling Date: 9/23/2014				
Applicant/Owner: SWLRT	_	State:	MN	Samplir	ng Point:	В		
Investigator(s): Todd Udvig, Alison Hruby		Secti	on, Townshij	o, Range:	S36 T117	N R22W		
Landform (hillslope, terrace, etc.): Hill slop	e	Local r	elief (concav	e, convex, none):		Convex		
Slope (%): 6-12% Lat:		Long:		Datum:				
Soil Map Unit Name Lester			NWI	Classification:	1	None		
Are climatic/hydrologic conditions of the site typical for the	nis time o	f the year?	N (I	f no, explain in rei	marks)			
Are vegetation , soil , or hydrolog	у	significantly	/ disturbed?	Are "no	rmal circums	stances"		
Are vegetation , soil , or hydrolog	у	naturally problematic? present? Yes						
SUMMARY OF FINDINGS				(If needed, expl	ain any answ	vers in remarks.)		
Hydrophytic vegetation present? Y								
Hydric soil present? N		Is the s	ampled area	a within a wetlan	d?	Ν		
Indicators of wetland hydrology present? N		f yes, op	tional wetlar	nd site ID:				
Remarks: (Explain alternative procedures here or in a se	parate re	eport.)						
	-							
Above average precipitation. Hydri	c soil ar	nd hydrolog	jy criteria n	ot met, area is	not a wetla	nd.		
VEGETATION Use scientific names of plants.								
	bsolute	Dominan	Indicator	Dominance Te	st Workshee	et		
		t Species	Staus	Number of Domi	nant Species			
1				that are OBL, FA	•	1 (A)		
2				Total Number				
3				Species Acro		2 (B)		
4			·······	Percent of Domi	•	50.00% (A/B)		
	0	=Total Cove		that are OBL, FA	CVV, OF FAC.	50.00% (A/B)		
Sapling/Shrub stratum (Plot size: )			1	Prevalence Ind	lex Workshe	et		
1				Total % Cover of				
2				OBL species	0 x 1	= 0		
3				FACW species	60 x 2	= 120		
4				FAC species $0 \times 3 = 0$				
5		Tatal O		FACU species	<u>30</u> x 4			
Herb stratum (Plot size: )	0	=Total Cove	r	UPL species Column totals	0 x 5 90 (A)	= <u>0</u> 240 (B)		
· · · · · · · · · · · · · · · · · · ·	60	V	FACW	Prevalence Inde		2.67		
1 Phalaris arundinacea 2 Euphorbia esula	60 30	Y Y	FACU	Prevalence inde	BX = D/A =	2.07		
3			17,00	Hydrophytic V	egetation In	dicators:		
4					-	ic vegetation		
5				Dominance	test is >50%	)		
6				X Prevalence	index is ≤3.0	)*		
7					adaptations			
8					data in Rema	arks or on a		
9 10		<u> </u>	······	separate sh	bydrophytic	vogotation*		
	90	=Total Cove		(explain)		vegetation		
Woody vine stratum (Plot size: )			-		ric coil and wot	and hydrology must be		
1					inless disturbed	, .,		
2				Hydrophyt				
	0	=Total Cove	r	vegetation present?	v			
	.1 . 9			present?	Ĭ			
Remarks: (Include photo numbers here or on a separate	sheet)							

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm t	the absenc	e of indicators.)	
Depth	Matrix		Ree	dox Feat	ures					
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Textu	re	Remarks	
0-12	10YR 3/2	100					SiL			
12-18	10YR 3/2	95	10YR 5/6	5	С	М	L			
12-10	10110.3/2	90	10113/0	5	0	IVI	L			
					ļ					
*Type: C = 0	Concentration, D	= Depleti	on, RM = Reduce	ed Matrix	, MS = N	lasked S	and Grains.	**Location	n: PL = Pore Lining, M = Matrix	
Hydric Sc	il Indicators:						Indicators	s for Proble	ematic Hydric Soils:	
Hist	tisol (A1)		Sar	ndy Gleye	ed Matrix	: (S4)	Coast	Prairie Red	dox (A16) ( <b>LRR K, L, R</b> )	
Hist	tic Epipedon (A2)		Sar	ndy Redo	ox (S5)		Dark S	Surface (S7	") (LRR K, L)	
Bla	ck Histic (A3)	Stri	pped Ma	trix (S6)		Iron-M	langanese	Masses (F12) ( <b>LRR K, L, R</b> )		
Hyd	Irogen Sulfide (A	4)	Loa	my Mucł	ky Minera	al (F1)	Very S	Shallow Dar	k Surface (TF12)	
	atified Layers (A5			-	ed Matrix			(explain in	. ,	
2 cm Muck (A10) Depleted Matrix (F3)										
Dep	leted Below Dark	Surface	(A11) Red	dox Dark	Surface	(F6)				
	ck Dark Surface (				ark Surfa	. ,	*Indicat	ors of hydro	ophytic vegetation and weltand	
	dy Mucky Minera				essions (				e present, unless disturbed or	
	m Mucky Peat or			•	·	<b>`</b>	<b>y</b>		problematic	
	-		/			1			1	
	Layer (if observ	ea):					Liveirie e			
Type:					-		Hydric S	oil present	t? <u>N</u>	
Depth (inche	es):				-					
HYDROLO										
Wetland Hy	drology Indicate	ors:								
Primary Indi	cators (minimum	of one is	required; check	all that a	<u>pply)</u>		Sec	ondary Indi	icators (minimum of two required)	
Surface	Water (A1)			Aquatic	Fauna (B	13)		Surface S	Soil Cracks (B6)	
High Wa	ater Table (A2)			True Aq	uatic Plar	nts (B14)		Drainage	Patterns (B10)	
Saturatio	on (A3)			Hydroge	en Sulfide	Odor (C	1)	Dry-Seas	son Water Table (C2)	
	larks (B1)				d Rhizosp	heres on	Living Roots		Burrows (C8)	
	nt Deposits (B2)			(C3)					n Visible on Aerial Imagery (C9)	
	oosits (B3)				e of Redu				or Stressed Plants (D1)	
	at or Crust (B4)				ron Redu	iction in T	illed Soils		phic Position (D2)	
	osits (B5)		(DZ)	(C6)			>	K FAC-Neu	itral Test (D5)	
	on Visible on Aeria				ck Surfac					
	Vegetated Conca			-	or Well Da Explain in		<b>`</b>			
	tained Leaves (B9	')			xpiain in	Remarks	)			
Field Obser		V	N1-	V	Darth (	noh c = );				
Surface wat		Yes	No	<u> </u>	Depth (i			- In - I	licators of watland	
Water table		Yes	No No	<u> </u>	Depth (i				licators of wetland	
Saturation p	pillary fringe)	Yes		Х	Depth (i	nunes).		i i y	drology present? N	
					h at : :					
Describe red	corded data (strea	am gauge	e, monitoring well	, aerial p	notos, pi	revious ir	nspections), if a	ivailable:		
Remarks:										
Nonaika.										

Project/Site EP-EP-07_Original	City/0	County:	Eden Prai	airie Sampling Date: 8-6-2013			
Applicant/Owner: SWLRT		State:	MN	<u>ا</u>	Sampling Point:	А	
Investigator(s): Marc Cottingham, Mohamed Elabbady		Sectio	on, Townshi	p, Range:	16	-116-22	
Landform (hillslope, terrace, etc.): Depressi	ion	Local re	elief (concav	/e, convex,	none):	Concave	
Slope (%): 0-3 Lat:		Long:		[	Datum:		
Soil Map Unit Name Water			NWI	Classificatio	on:	PEMC	
Are climatic/hydrologic conditions of the site typical for the	nis time o	f the year?	Y (I	lf no, explai	n in remarks)		
Are vegetation , soil , or hydrolog	У	significantly	disturbed?	A	Are "normal circu	mstances"	
Are vegetation , soil , or hydrolog	у	naturally pro	oblematic?			present? Yes	
SUMMARY OF FINDINGS				(If neede	d, explain any ar	swers 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, op	tional wetlar	nd site ID:			
Remarks: (Explain alternative procedures here or in a se	enarate re	eport)					
	-						
All wetland o	criteria v	vere met. A	rea is a we	etland.			
VEGETATION Use scientific names of plants.							
A	Absolute	Dominan	Indicator	Dominar	nce Test Worksl	neet	
		t Species	Staus		of Dominant Speci		
1 Ulmus americana	10	Y	FACW		BL, FACW, or FA		
2					Number of Domina es Across all Stra		
					of Dominant Speci		
5						c: 100.00% (A/B)	
	10	=Total Cover			, ,	(```)	
Sapling/Shrub stratum (Plot size: )				Prevaler	nce Index Works	sheet	
1				Total % (			
2				OBL spe			
3				FACW s			
4				FAC spe FACU sp		3 = 0 4 = 0	
	0	=Total Cover		UPL spe		5 = 0	
Herb stratum (Plot size: )				Column t		A) 185 (B)	
1 Phalaris arundinacea	70	Y	FACW	Prevalen	ce Index = B/A =	1.76	
2 Typha angustifolia	25	Y	OBL				
3				Hydroph	ytic Vegetation	Indicators:	
4				·	d test for hydropl		
5				I	inance test is >5		
6					alence index is ≤		
8		·			hogical adaptation orting data in Re		
9					rate sheet)	Indiks of on a	
10				·	lematic hydrophy	tic vegetation*	
	95	=Total Cover		(expl		Ũ	
Woody vine stratum (Plot size:)				*Indicator	s of hydric soil and v	vetland hydrology must be	
1					resent, unless disturt	ped or problematic	
2		<u></u>			ophytic tation		
	0	=Total Cover		pres			
Remarks: (Include photo numbers here or on a separate	sheet)			1			
	,						

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm th	e absence of indi	cators.)	
Depth Matrix Redox Features									,	
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture		Remarks	
0-15	10YR 3/1	98	10YR 4/6	2	C	М	LyS			
15-30	10YR 4/1	98	10YR 4/6	2	C	M	-			
15-30	101R 4/1	90	101K 4/0	2	C	IVI	LyS			
	Concentration, D =	= Depleti	on, RM = Reduce	ed Matrix	, MS = №	lasked S			ore Lining, M = Matrix	
-	oil Indicators:							or Problematic H		
	tisol (A1)				ed Matrix	: (S4)		Prairie Redox (A16)		
	tic Epipedon (A2)			dy Redo				urface (S7) (LRR K		
	ck Histic (A3)			oped Ma	· · ·			-	F12) ( <b>LRR K, L, R</b> )	
	drogen Sulfide (A4			-	ky Minera			allow Dark Surface		
	atified Layers (A5)	)			ed Matrix	k (F2)	Other (e	explain in remarks)		
	m Muck (A10)				atrix (F3)					
	oleted Below Dark				Surface	· · ·				
	ck Dark Surface (	,			rk Surfa				egetation and weltand	
	ndy Mucky Minera	. ,		lox Depr	essions (	(F8)	hydrolog		, unless disturbed or	
5 cr	m Mucky Peat or	Peat (S3	)					problema	atic	
Restrictive	Layer (if observe	ed):								
Type:		,					Hydric so	il present? Y		
Depth (inche	es):				-			•		
	,									
Remarks:										
HYDROLO										
-	drology Indicato									
Primary Indi	cators (minimum	of one is	required; check a	all that a	pply)		<u>Seco</u>	ndary Indicators (m	ninimum of two required)	
Surface	Water (A1)			Aquatic	Fauna (B	13)		Surface Soil Crack	s (B6)	
	ater Table (A2)				uatic Plar	,		Drainage Patterns	(B10)	
Saturatio						Odor (C1		Dry-Season Water		
	larks (B1)				I Rhizosp	heres on	Living Roots	Crayfish Burrows (	,	
	nt Deposits (B2)			(C3)					on Aerial Imagery (C9)	
	posits (B3)					uced Iron		Stunted or Stresse		
	at or Crust (B4)				ron Redu	iction in T		Geomorphic Positi		
	oosits (B5)		(2 -)	(C6)		( <b>-</b> -)	X	FAC-Neutral Test	(D5)	
	on Visible on Aeria				ck Surfac	. ,				
	/ Vegetated Conca		ce (B8)		or Well Da					
	tained Leaves (B9	)		Other (E	xplain in	Remarks	)			
Field Obser										
Surface wat	•	Yes	No	X	Depth (i					
Water table	•	Yes	No	<u>X</u>	Depth (i			Indicators of		
Saturation p		Yes	No	Х	Depth (i	nches):		hydrology	present? Y	
	pillary fringe)							L		
Describe rec	corded data (strea	am gauge	e, monitoring well	, aerial p	hotos, p	revious ir	nspections), if av	ailable:		
Domortisi										
Remarks:										
1										

Project/Site EP-EP-07_Original	City/	County:	Eden Pra	irie Sampling Date:	8-6-2013			
Applicant/Owner: SWLRT		State:	MN	Sampling Point:	В			
Investigator(s): Marc Cottingham, Mohamed Elabbad	у	Sect	ion, Townshi	p, Range: 46-	116-22			
Landform (hillslope, terrace, etc.): Hillslope	оре	Local	relief (concav	/e, 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	r this time o	of the year?	Y (	lf no, explain in remarks)				
Are vegetation , soil , or hydrol	ogy	significantl	y disturbed?	Are "normal circur	nstances"			
Are vegetation , soil , or hydrol	ogy	naturally problematic? present? Yes						
SUMMARY OF FINDINGS				(If needed, explain any an	swers in remarks.)			
Hydrophytic vegetation present? Y								
Hydric soil present? N	-	Is the s	sampled are	ea within a wetland? N				
Indicators of wetland hydrology present? N	-	f yes, op	otional wetlar	nd site ID:				
Remarks: (Explain alternative procedures here or in a	senarate ri	enort)						
remarks. (Explain alemative procedures here of in a	Separate N	sport.)						
Hydric soil and wetland	d hydrolog	gy criteria r	not met. Are	ea is not a wetland.				
VECETATION Line acientific names of plan	to							
VEGETATION Use scientific names of plan		Dominon	Indiaator	Dominance Test Worksh				
Tree Stratum (Plot size: )	Absolute % Cover	Dominan t Species	Indicator Staus	Number of Dominant Specie				
1 Ulmus americana	10	Y	FACW	that are OBL, FACW, or FA				
2				Total Number of Domina				
3				Species Across all Strat	a: <u> </u>			
4				Percent of Dominant Specie				
5		<u></u>		that are OBL, FACW, or FA	C: 75.00% (A/B)			
Sopling/Chrub stratum (Dist size)	10	=Total Cove	er	Prevalence Index Works	haat			
Sapling/Shrub stratum (Plot size:) 1 Rhamnus cathartica	60	Y	FAC	Total % Cover of:	neet			
2		·	17.0		1 = 0			
3				· · · · · · · · · · · · · · · · · · ·	2 = 20			
4				FAC species 120 x	3 = 360			
5				· · · · · · · · · · · · · · · · · · ·	4 = 100			
	60	=Total Cove	er	· · · · · · · · · · · · · · · · · · ·	5 = 0			
Herb stratum (Plot size:)				Column totals 155 (A	· · ·			
1 Alliaria petiolata	60	Y	FAC	Prevalence Index = B/A =	3.10			
2 Arctium minus	25	Y	FACU	Hydrophytic Vegetation	Indicators:			
4				Rapid test for hydroph				
5				X Dominance test is >50				
6				Prevalence index is ≤	3.0*			
7				Morphogical adaptatic	ns* (provide			
8				supporting data in Rer	narks or on a			
9				separate sheet)				
10	85	=Total Cove		Problematic hydrophy (explain)	lic vegetation*			
Woody vine stratum (Plot size: )	00		71	` · · ·				
, 1				*Indicators of hydric soil and w present, unless disturb	, ,,			
2				Hydrophytic				
	0	=Total Cove	er	vegetation				
				present? Y	_			
Remarks: (Include photo numbers here or on a separa	ate sheet)							

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm t	the absend	e of indicators.)	
Depth <u>Matrix</u> <u>Redox Features</u>										
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Textu	re	Remarks	
0-13	10YR 3/2						SiCL			
13-25	10YR 4/1						SiCL			
13-23	1011( 4/1						SIGE			
+ <b>T</b> 0 0								441 /·		
	Concentration, D =	= Depleti	on, RM = Reduce	ed Matrix	, MS = N	lasked S			n: PL = Pore Lining, M = Matrix	
-	il Indicators:		0			(04)			ematic Hydric Soils:	
	tisol (A1)				ed Matrix	(\$4)			dox (A16) ( <b>LRR K, L, R</b> )	
Histic Epipedon (A2)       Sandy Redox (S5)       Dark Surface (S7) (LRR K, L)         Black Histic (A3)       Stripped Matrix (S6)       Iron-Manganese Masses (F12) (LRR K, L, R)										
	ck Histic (A3)	•			. ,			•	. , ,	
	Irogen Sulfide (A4			•	ky Minera	. ,			rk Surface (TF12)	
	atified Layers (A5)	)			ed Matrix	(F2)	Other	(explain in	remarks)	
	m Muck (A10)	o (			atrix (F3)	(50)				
	leted Below Dark		· · ·		Surface	. ,				
	ck Dark Surface (	-			rk Surfa	. ,			ophytic vegetation and weltand	
	dy Mucky Minera	. ,		lox Depr	essions (	(F8)	hydrol		e present, unless disturbed or	
5 cr	n Mucky Peat or	Peat (S3	)						problematic	
Restrictive	Layer (if observe	ed):								
Туре:					-		Hydric s	oil presen	t? <u>N</u>	
Depth (inche	es):				-					
HYDROLO	DGY									
Wetland Hy	drology Indicato	ors:								
Primary Indi	cators (minimum	of one is	required; check	all that a	<u>pply)</u>		Sec	ondary Ind	icators (minimum of two required)	
Surface	Water (A1)			Aquatic	Fauna (B	13)		Surface	Soil Cracks (B6)	
High Wa	iter Table (A2)				uatic Plar	( )		Drainage	Patterns (B10)	
Saturatio						Odor (C1	·		son Water Table (C2)	
	arks (B1)				l Rhizosp	heres on	Living Roots		Burrows (C8)	
	nt Deposits (B2)			(C3)					n Visible on Aerial Imagery (C9)	
	oosits (B3)					uced Iron			or Stressed Plants (D1)	
	t or Crust (B4)				ron Redu	iction in 1	illed Soils		phic Position (D2)	
	osits (B5)	Imagan	(P7)	(C6)	ale Curfaa	a (C7)		FAC-Net	utral Test (D5)	
	on Visible on Aeria Vegetated Conca				ck Surfac					
	tained Leaves (B9		.е (во)	-	or Well Da	Remarks	)			
Field Obser	· ·	/				Komarka,	/			
Surface wate		Yes	No	Х	Depth (i	nchee).				
Water table		Yes	No	<u>X</u>	Depth (i			Inc	licators of wetland	
Saturation p		Yes	No		Depth (i				vdrology present? N	
	pillary fringe)					/-		'	<u> </u>	
Describe rec	Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:									
Remarks:										

Project/Site EP-EP-07_Extended	City/0	County:	Eden Prai	rie Sampling Date:	8-18-2014
Applicant/Owner: SWLRT	_ `	State:	MN		С
Investigator(s): Marc Cottingham, Lucy Dahl		Sectio	on, Townshi		6-116-22
Landform (hillslope, terrace, etc.): Depressi	ion	Local r	elief (concav	re, 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 the	his time o	f the year?	N (I	f no, explain in remarks)	
Are vegetation , soil , or hydrolog	IУ	significantly	disturbed?	Are "normal circi	imstances"
Are vegetation , soil , or hydrolog	лу <u>— — — — — — — — — — — — — — — — — — —</u>	naturally pro	oblematic?		present? Yes
SUMMARY OF FINDINGS				(If needed, explain any a	nswers in remarks.)
Hydrophytic vegetation present? Y					
Hydric soil present? Y		Is the s	ampled area	a within a wetland?	Y
Indicators of wetland hydrology present? Y		f yes, op	tional wetlar	nd site ID:	
Remarks: (Explain alternative procedures here or in a se	eparate re	eport.)			
	sparate re	(p o)			
Above average precipitation	on. All we	etland crite	ria were m	et. Area is a wetland.	
VEGETATION Use scientific names of plants.					
	Absolute	Dominan	Indicator	Dominance Test Works	sheet
	% Cover		Staus	Number of Dominant Spec	cies
1 Acer negundo	10	Y	FAC	that are OBL, FACW, or F	AC: 2 (A)
2				Total Number of Domin	
3				Species Across all Stra	(`)
4				Percent of Dominant Spect that are OBL, FACW, or FA	
	10	=Total Cover			чо. <u>100.00 /</u> (А/В)
Sapling/Shrub stratum (Plot size: )				Prevalence Index Work	sheet
1				Total % Cover of:	
2				· · · · · · · · · · · · · · · · · · ·	x 1 =
3					x 2 = 160
4				· ·	$\begin{array}{c} x \ 3 = \underline{30} \\ x \ 4 = \underline{0} \end{array}$
	0	=Total Cover			x = 0 x = 0
Herb stratum (Plot size: )					(A) <u>190</u> (B)
1 Phalaris arundinacea	80	Y	FACW	Prevalence Index = B/A :	
2					
3				Hydrophytic Vegetation	n Indicators:
4				Rapid test for hydrop	
5				X Dominance test is >	
6				X Prevalence index is :	
8				Morphogical adaptat supporting data in Re	
9				separate sheet)	
10				Problematic hydroph	vtic vegetation*
	80	=Total Cover		(explain)	
Woody vine stratum (Plot size:)	_			*Indicators of hydric soil and	
				present, unless distu	rbed or problematic
2	0 :	=Total Cover		Hydrophytic vegetation	
	0 :			present? Y	,
Remarks: (Include photo numbers here or on a separate	e sheet)			· · · · · · · · · · · · · · · · · · ·	
	,				

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm the abser	nce of indicators.)				
Depth Matrix Redox Features								,				
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks				
0-10	10YR 2/1	98	10YR 4/6	2	С	М	SiL					
10-14	10YR 2/1	100		_	<u> </u>		Fibric Peat					
14-20	10YR 4/1	98	10YR 4/6	2	С	М	SiL					
		= Depleti	on, RM = Reduce	ed Matrix	., MS = №	lasked S		on: PL = Pore Lining, M = Matrix				
-	il Indicators:		-			( <b>-</b> .)		elematic Hydric Soils:				
	tisol (A1)				ed Matrix	: (S4)		edox (A16) ( <b>LRR K, L, R</b> )				
	ic Epipedon (A2)			dy Redo			Dark Surface (S					
	ck Histic (A3)			oped Ma	· · ·			e Masses (F12) ( <b>LRR K, L, R</b> )				
	Irogen Sulfide (A4	,		-	ky Minera			ark Surface (TF12)				
	atified Layers (A5				ed Matrix		Other (explain i	n remarks)				
	2 cm Muck (A10)     Depleted Matrix (F3)       X     Depleted Below Dark Surface (A11)     X											
						. ,						
	ck Dark Surface (	,			ark Surfa			rophytic vegetation and weltand				
	dy Mucky Minera			lox Depr	essions (	(F8)	hydrology must	be present, unless disturbed or				
5 cr	n Mucky Peat or	Peat (S3	)					problematic				
Restrictive	Layer (if observe	ed):										
Туре:							Hydric soil prese	nt? Y				
Depth (inche	es):				-							
Remarks:	Pomorke:											
HYDROLO	DGY											
Wetland Hy	drology Indicato	ors:										
Primary Indi	cators (minimum	of one is	required; check	all that a	(ylqq		Secondary In	dicators (minimum of two required)				
	Water (A1)		• •		Fauna (B	13)		Soil Cracks (B6)				
	ter Table (A2)				uatic Plar	,		ge Patterns (B10)				
Saturatio	on (A3)			Hydroge	n Sulfide	Odor (C1	) Dry-Sea	ason Water Table (C2)				
Water M	arks (B1)			Oxidized	l Rhizosp	heres on	Living Roots Crayfis	h Burrows (C8)				
Sedimer	nt Deposits (B2)			(C3)			Saturat	ion Visible on Aerial Imagery (C9)				
Drift Dep	oosits (B3)			Presenc	e of Redu	uced Iron	(C4) Stunted	l or Stressed Plants (D1)				
	at or Crust (B4)				ron Redu	iction in T		rphic Position (D2)				
	osits (B5)			(C6)			X FAC-Ne	eutral Test (D5)				
	on Visible on Aeria				ck Surfac							
	Vegetated Conca		ce (B8)	-	or Well Da							
	tained Leaves (B9	)		Other (E	xplain in	Remarks	)					
Field Obser												
Surface wat		Yes	No	<u>X</u>	Depth (i			diantana af matlers l				
Water table		Yes	No No	X	Depth (i			idicators of wetland				
Saturation p		Yes	No	Х	Depth (i	ncnes):	'	nydrology present? Y				
	pillary fringe)											
Describe rec	corded data (strea	am gauge	e, monitoring well	, aerial p	notos, p	revious ir	nspections), if available:					
Remarks:												
i tomanto.												

Project/Site EP-EP-07_Extended	City/	County:	Eden Prai	rie Sam	pling Date:	8-18-2014					
Applicant/Owner: SWLRT	_	State:	MN	Sam	pling Point:	D					
Investigator(s): Marc Cottingham, Lucy Dahl		Secti	on, Townshij	o, Range:	4 <del>6-1</del>	16-22					
Landform (hillslope, terrace, etc.): Hillslop	e	Local r	elief (concav	e, convex, non	ne):	Convex					
Slope (%): 0-3 Lat:		Long:		Datu	ım:						
Soil Map Unit Name Lester-Malardi complex			NWI	Classification:							
Are climatic/hydrologic conditions of the site typical for t	his time o	f the year?	N (I	f no, explain in	remarks)						
Are vegetation , soil , or hydrolog		-	/ disturbed?		normal circums	stances"					
Are vegetation , soil , or hydrolog											
SUMMARY OF FINDINGS				(If needed, e		vers in remarks.)					
Hydrophytic vegetation present? Y						,					
Hydric soil present? N		Is the sampled area within a wetland? N									
Indicators of wetland hydrology present? N			tional wetlan								
Remarks: (Explain alternative procedures here or in a separate report.)											
Above average precipitation. Hydric so	il and w	etland hydr	ology crite	ria not met. A	Area is not a v	vetland.					
VEGETATION Use scientific names of plants	•										
	Absolute	Dominan	Indicator	Dominance	Test Workshe	et					
	% Cover	•	Staus		ominant Species						
1 Acer negundo	50	<u> </u>	FAC	,	FACW, or FAC:	( )					
3		·			ber of Dominant cross all Strata:						
4		·			ominant Species	( )					
5					FACW, or FAC:						
	50	=Total Cove	r			、					
Sapling/Shrub stratum (Plot size: )				Prevalence	Index Workshe	eet					
1 Rhamnus cathartica	15	Y	FAC	Total % Cov	er of:						
2				OBL species							
3				FACW speci							
4		. <u> </u>		FAC species							
5	15	=Total Cove		FACU species							
Herb stratum (Plot size: )	15		I	Column total		 (B)					
1 Cirsium discolor	15	Y	FACU		ndex = B/A =	3.21					
2 Arctium minus	15	Y	FACU	i revalence i		5.21					
3 Xanthium strumarium	10	Y	FAC	Hydrophytic	c Vegetation In	dicators:					
4 Parthenocissus quinquefolia	10	Y	FACU		st for hydrophyt						
5 Urtica dioica	10	Y	FACW	X Dominar	nce test is >50%	, D					
6 Alliaria petiolata	10	Y	FAC	Prevaler	nce index is ≤3.0	)*					
7 Athyrium filix-femina	5	N	FAC	Morphog	gical adaptations	s* (provide					
8					ng data in Rema	arks or on a					
9				separate							
10	75	=Total Cove			atic hydrophytic	vegetation*					
Woody vine stratum (Plot size: )	75	= I otal Covel		(explain)							
1					hydric soil and wetl nt, unless disturbed	and hydrology must be					
2				Hydroph							
	0	=Total Cove		vegetati							
	-			present	? Y						
Remarks: (Include photo numbers here or on a separate	e sheet)										

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm th	ne absence o	of indicators.)
Depth	Matrix		Rec	lox Feat	ures				·
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	e	Remarks
0-14	10YR 3/1	100					SiCL		
14-20	10YR 4/1	98	10YR 4/6	2	С	М	SiCL		
14-20	1011( 4/1	90	1011( 4/0	2	0	IVI	SICL		
	Concentration, D =	= Depleti	on, RM = Reduce	ed Matrix	k, MS = №	lasked S			PL = Pore Lining, M = Matrix
Hydric So	oil Indicators:								atic Hydric Soils:
	tisol (A1)				ed Matrix	: (S4)			(A16) ( <b>LRR K, L, R</b> )
Hist	tic Epipedon (A2)			dy Redo	. ,			urface (S7) (	
Blac	ck Histic (A3)			•	trix (S6)				asses (F12) ( <b>LRR K, L, R</b> )
	drogen Sulfide (A4		Loa	my Mucl	ky Minera	al (F1)	Very Sł	hallow Dark S	Surface (TF12)
Stra	atified Layers (A5)	1	Loa	my Gley	ed Matrix	k (F2)	Other (	explain in rer	marks)
2 cr	m Muck (A10)		Dep	leted Ma	atrix (F3)				
Dep	oleted Below Dark	Surface	(A11) Red	lox Dark	Surface	(F6)			
Thio	ck Dark Surface (	A12)	Dep	leted Da	ark Surfa	ce (F7)	*Indicato	rs of hydropl	nytic vegetation and weltand
Sar	ndy Mucky Minera	l (S1)	Red	lox Depr	essions (	(F8)			resent, unless disturbed or
5 cr	m Mucky Peat or	Peat (S3	)					pro	oblematic
Restrictive	Layer (if observe	ed):							
Type:							Hydric so	oil present?	Ν
Depth (inche	es):				-				
Remarks:					-				
HYDROLO									
Wetland Hy	drology Indicato	rs:							
Primary Indi	cators (minimum	of one is	required; check a	all that a	<u>pply)</u>		Seco	ndary Indica	tors (minimum of two required)
Surface	Water (A1)			Aquatic	Fauna (B	13)		Surface Soi	l Cracks (B6)
High Wa	ater Table (A2)			True Aq	uatic Plar	nts (B14)		Drainage Pa	atterns (B10)
Saturatio	on (A3)			Hydroge	en Sulfide	Odor (C1	)	Dry-Season	Water Table (C2)
	larks (B1)				d Rhizosp	heres on	Living Roots	Crayfish Bu	
	nt Deposits (B2)			(C3)					/isible on Aerial Imagery (C9)
	posits (B3)					uced Iron	. ,		Stressed Plants (D1)
-	at or Crust (B4)				Iron Redu	iction in T	illed Soils		Position (D2)
	oosits (B5)		. (DZ)	(C6)		(07)		FAC-Neutra	l Test (D5)
	on Visible on Aeria				ck Surfac				
	Vegetated Conca tained Leaves (B9			-	or Well Da	Remarks	N N		
<u> </u>		,			. лріант Ш	Remarks	/	T	
Field Obser		Var	Na	$\mathbf{v}$	Dooth /	nohoc):			
Surface wat		Yes Yes	No No	X X	Depth (i	-		India	ators of wetland
Water table Saturation p		Yes	No	× X	Depth (i Depth (i	-			ology present? N
	pillary fringe)	163		~	-	10103).		liyar	
-		maqua	monitoring wall	aorial a	hotos n		spections) if an	ailable:	
Describe 160	corded data (strea	un gauge	, monitoring well	, aenai p	notos, pl	evious lf	ispections), il av	allaule.	
Remarks:									

Project/Site EP-EP-22 (Formerly DIG-EP-EP-01)	City/C	County: Ec	den Prairie/He	ennepin	Sampling Date:	8/18/2014		
Applicant/Owner: SWLTR	-	State:	MN	5	Sampling Point: A			
Investigator(s): Marc Cottingham, Lucy Dahl		Secti	on, Township	p, Range:	15-	116-22		
Landform (hillslope, terrace, etc.): Depression	on	Local r	elief (concav	/e, convex,	none):	concave		
Slope (%): 0-6 Lat:		Long:		I	Datum:			
Soil Map Unit Name L16A, Muskego Muck			NWI	Classificatio	on:	PEM1C		
Are climatic/hydrologic conditions of the site typical for thi	is time of	the year?	N (l	lf no, expla	in in remarks)			
Are vegetation , soil , or hydrology	/	significantly	y disturbed?		Are "normal circu	mstances"		
Are vegetation , soil , or hydrology	/	naturally problematic? Ye						
SUMMARY OF FINDINGS				(If neede	ed, explain any an	swers in remarks.)		
Hydrophytic vegetation present? Y								
Hydric soil present? Y		Is the s	ampled area	a within a	wetland?	Y		
Indicators of wetland hydrology present? Y		f yes, op	otional wetlan	nd site ID:	_			
Remarks: (Explain alternative procedures here or in a ser	parate re	port)		-				
Above average precipitation	n. All we	etland crite	eria were m	et. Area i	s a wetland.			
VEGETATION Use scientific names of plants.								
	bsolute	Dominan	Indicator	Domina	nce Test Worksh	leet		
		t Species	Staus		of Dominant Specie			
1 Populus deltoides	15	Ŷ	FAC		OBL, FACW, or FA			
2				Total I	Number of Domina	nt		
3				Speci	ies Across all Strat	a: 4 (B)		
4					of Dominant Specie			
5	45	Total Caulo		that are C	OBL, FACW, or FA	C: <u>100.00%</u> (A/B)		
Sapling/Shrub stratum (Plot size: 15')	15 =	Total Cove	ſ	Provale	nce Index Works	heet		
1					Cover of:	lieet		
2				OBL spe		1 = 55		
3				FACW s		2 = 20		
4				FAC spe	ecies 35 x	3 = 105		
5				FACU sp		4 = 0		
	0 =	Total Cove	r	UPL spe		5 = 0		
Herb stratum (Plot size: 5' )				Column	·	· · · ·		
1 Typha angustifolia	30	<u>Y</u>	OBL	Prevaler	nce Index = B/A =	1.80		
2 Lythrum salicaria 3 Poa Pratensis	25 20	Y Y	OBL FAC	Hydropk	nytic Vegetation	Indicators		
4 Agrostis stolonifera	10	 N	FAC		id test for hydroph			
5	10			· · · · ·	ninance test is >50			
6					alence index is ≤			
7				Mor	phogical adaptation	ons* (provide		
8					porting data in Rei			
9					arate sheet)			
10	05	Tatal O			lematic hydrophy	tic vegetation*		
Woody vine stratum (Plot size: 30')	85 =	Total Cove	ſ	(exp	,			
(FIOUSIZE)					rs of hydric soil and w present, unless disturb	etland hydrology must be		
2					rophytic			
	0 =	Total Cove	r	vege	etation			
				pres	sent? Y			
Remarks: (Include photo numbers here or on a separate s	sheet)							

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm the ab	sence of indicators.)
Depth	Matrix			dox Feat				, 
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks
0-8	10YR 3/1	98	10YR 4/6	2	C	М	SiCL	
8-20	10YR 5/1	98	10YR 4/6	2	C	M	SiCL	
8-20	1018 5/1	98	101R 4/0	2	U	IVI	SICL	
*Type: C = C	Concentration, D =	= Depleti	on, RM = Reduc	ed Matrix	, MS = N	lasked S	and Grains. **Lo	cation: PL = Pore Lining, M = Matrix
Hydric So	il Indicators:						Indicators for P	roblematic Hydric Soils:
Hist	tisol (A1)		Sa	ndy Gleye	ed Matrix	(S4)	Coast Prairi	e Redox (A16) ( <b>LRR K, L, R</b> )
	ic Epipedon (A2)			ndy Redo				e (S7) ( <b>LRR K, L)</b>
	ck Histic (A3)			pped Ma				Peat or Peat (S3) (LRR K, L, R)
	Irogen Sulfide (A4	L)		amy Mucl	. ,	al (F1)		nese Masses (F12) (LRR K, L, R)
	atified Layers (A5)			amy Gley				w Dark Surface (TF12)
	n Muck (A10)			oleted Ma		()		in in remarks)
	eted Below Dark	Surface		dox Dark	· · ·	(F6)		
	ck Dark Surface (		· · ·	oleted Da		· · ·	*Indicators of	hydrophytic vegetation and weltand
	idy Mucky Minera	,		dox Depr				hydrophytic vegetation and weltand ust be present, unless disturbed or
		1(01)			63310113 (	(10)	nyurology m	problematic
						-		problematic
	Layer (if observe	ed):						
Туре:					_		Hydric soil pr	esent? Y
Depth (inche	es):				-			
Remarks:								
-	drology Indicato							
	cators (minimum	of one is	required; check					y Indicators (minimum of two required)
	Water (A1)				Fauna (B	,		face Soil Cracks (B6)
U	iter Table (A2)				uatic Plar	· · ·		inage Patterns (B10)
Saturatio						Odor (C1		-Season Water Table (C2)
	arks (B1)				d Rhizosp	heres on	-	yfish Burrows (C8)
	nt Deposits (B2)			(C3)	o of Dod	and Iron		uration Visible on Aerial Imagery (C9)
	oosits (B3)					uced Iron		nted or Stressed Plants (D1)
	t or Crust (B4)				Iron Reau	Iction in T		pmorphic Position (D2)
	osits (B5) on Visible on Aeria	Ilmagon	(B7)	(C6)	ok Surfor	o (C7)		C-Neutral Test (D5)
	Vegetated Conca				ck Surfac			
	tained Leaves (B9				or Well Da	Remarks	N N	
<u> </u>		)			xpiain in	Remarks	)	
Field Obser		Vee	Nia		Danth /			
Surface wate		Yes	No No		Depth (i			Indicators of watland
Water table		Yes	No No		Depth (i	,		Indicators of wetland
Saturation p	resent? pillary fringe)	Yes	X No		Depth (i	nunes):	0	hydrology present? Y
				Lastel	h at a -			1
Describe rec	corded data (strea	im gauge	e, monitoring wel	l, aerial p	photos, p	revious ir	nspections), if availab	le:
Remarks:								

WETLAND	DETERMINATIO	N DATA FORM	I - Midwest	Region
	-	-		

Project/Site EP-EP-22 (Formerly DIG-EP-EP-01)	Citv/	County: Ed	en Prairie/H	lennepin	Sampling Date:	8/18/2014
Applicant/Owner: SWLTR		State:	MN		Sampling Point:	В
Investigator(s): Marc Cottingham, Lucy Dahl			on, Townshij		· · · -	116-22
Landform (hillslope, terrace, etc.): Depres	sion		elief (concav			concave
Slope (%): 0-6 Lat:		Long:	,		Datum:	
Soil Map Unit Name L16A, Muskego Muck		Ū	NWI	Classificati	on:	
Are climatic/hydrologic conditions of the site typical for	this time c	of the year?	N (I	lf no, expla	in in remarks)	
Are vegetation , soil , or hydrold		significantly		-	Are "normal circum	nstances"
Are vegetation , soil , or hydrold	ogy	naturally pro		·		present? Yes
SUMMARY OF FINDINGS				(If neede	ed, explain any ans	wers in remarks.)
Hydrophytic vegetation present? N						
Hydric soil present? N		Is the sa	ampled area	a within a	wetland?	Ν
Indicators of wetland hydrology present? N		f yes, op	tional wetlar	nd site ID:		
Remarks: (Explain alternative procedures here or in a	separate re	eport.)				
		• •				
Above average precipitation	n. Wetlan	id criteria w	as not met	t. Area is	not a wetland.	
VEGETATION Use scientific names of plant	s.					
	Absolute	Dominan	Indicator	Domina	nce Test Worksh	eet
Tree Stratum (Plot size: 30')	% Cover	t Species	Staus		of Dominant Specie	
1				that are C	OBL, FACW, or FAC	C: 1 (A)
2					Number of Dominar	
3					ies Across all Strata	. ,
+ 5					of Dominant Specie DBL, FACW, or FAC	
°	0	=Total Cover			,,,	
Sapling/Shrub stratum (Plot size: 15')				Prevale	nce Index Worksh	neet
1				Total %	Cover of:	
2				OBL spe		1 =
3				FACW s		2 = 30 3 = 75
4 5				FAC spe FACU sp		3 = 75 4 = 240
°	0	=Total Cover		UPL spe		5 = 0
Herb stratum (Plot size: 5')				Column		.) <u>345</u> (B)
1 Bromus arvensis	40	Y	FACU	Prevaler	nce Index = $B/A$ =	3.45
2 Poa Pratensis	25	Y	FAC			
3 Solidago altissima	20	Y	FACU		hytic Vegetation I	
4 Phalaris Arundinacea	15	N	FACW	· · ·	id test for hydrophy	, 0
5 6					ninance test is >50 valence index is ≤3	
7						
8					phogical adaptation porting data in Ren	
9					arate sheet)	
10				Prot	plematic hydrophyt	ic vegetation*
	100	=Total Cover		(exp	lain)	
Woody vine stratum (Plot size: 30')						etland hydrology must be
1					present, unless disturbe rophytic	eu or problematic
۲ <u>ــــــ</u>	0	=Total Cover		-	etation	
	č			pres	sent? N	_
Remarks: (Include photo numbers here or on a separa	ite sheet)			-		

SOIL	(	у		)				Sampling Point:	В		
Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)											
Depth	Matrix			dox Feat					,		
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Ren	narks		
0-7	10YR 3/1	100					SiCL				
7-14	10YR 4/4	100					SiCL				
				0	0						
14-20	10YR 4/6	98	10YR 4/6	2	С	М	SiCL				
*Typo: C = (	Concontration D.	– Doplati	ion PM – Poduce	d Matrix	MS – M	laskod S	and Grains	**Location: PL – Poro Lini	ing M – Matrix		
*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix Hydric Soil Indicators: Indicators for Problematic Hydric Soils:											
-	tisol (A1)		San	dy Gleve	ed Matrix	(\$4)		rairie Redox (A16) (LRR			
	tic Epipedon (A2)			idy Redo		(04)		Inface (S7) ( <b>LRR K, L)</b>	<b>κ</b> , <b>Ε</b> , <b>κ</b> )		
	ck Histic (A3)			oped Ma	. ,			ucky Peat or Peat (S3) (LI	RR K. I. R)		
	lrogen Sulfide (A4	1)		•	ky Minera	al (F1)		nganese Masses (F12) (L			
	atified Layers (A5)			•	ed Matrix	. ,		allow Dark Surface (TF12			
	m Muck (A10)	/			atrix (F3)			explain in remarks)	7		
	leted Below Dark	Surface			Surface						
	ck Dark Surface (				rk Surfa	· · /	*Indicator	s of hydrophytic vegetatic	on and weltand		
	dy Mucky Minera	,			essions (			y must be present, unless			
_		( )		•		· · ·	, ,	problematic			
Restrictive	Layer (if observe	ed).				1					
Туре:		cuj.					Hydric soi	il present? N			
Depth (inche	es).				-		i iyano so				
					•						
Remarks:											
-	drology Indicato						_				
-			required; check a				<u>Seco</u>	ndary Indicators (minimun	<u>n of two required)</u>		
	Water (A1)				Fauna (B			Surface Soil Cracks (B6)			
	iter Table (A2)				uatic Plar		· · · · ·	Drainage Patterns (B10)			
Saturatio	( )					Odor (C		Dry-Season Water Table (	(C2)		
	arks (B1) nt Deposits (B2)			(C3)	i Rnizosp	neres on	Living Roots	Crayfish Burrows (C8) Saturation Visible on Aeria	l Imagony (CO)		
	bosits (B3)				o of Rodu	uced Iron	(C4)	Stunted or Stressed Plants			
	at or Crust (B4)						illed Soils	Geomorphic Position (D2)	( )		
	osits (B5)			(C6)	ion neue			FAC-Neutral Test (D5)			
	on Visible on Aeria	l Imager	y (B7)		ck Surfac	e (C7)					
	Vegetated Conca				or Well Da						
Water-S	tained Leaves (B9	)	· · ·	-		Remarks	)				
Field Obser	vations:										
Surface wat		Yes	No		Depth (i	nches):					
Water table	present?	Yes	No		Depth (i			Indicators of wetla	ind		
Saturation p		Yes	No		Depth (i	nches):		hydrology presen	nt? N		
(includes ca	pillary fringe)										
Describe rec	corded data (strea	am gaug	e, monitoring well	, aerial p	hotos, p	revious ii	nspections), if ava	ailable:			
	Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:										
Remarks:											

Project/Site EP-EP-23	City/Cou	unty: Ede	en Prairie/Her	nnepin S	Sampling Date:	08/22/2014
Applicant/Owner: SWLRT	-	State:	MN	s	Sampling Point:	А
Investigator(s): Marc Cottingham, Lucy Dahl		Sectio	n, Township,	, Range:	S15 T1	16N R22W
Landform (hillslope, terrace, etc.): Depression	on	Local re	lief (concave	, convex,	none):	Concave
Slope (%): None Lat: 44.855	L	ong:	-93.4499		Datum:	
Soil Map Unit Name Water		J		lassificatio	on:	PEM1C
Are climatic/hydrologic conditions of the site typical for th	is time of th	e vear?			n in remarks)	
Are vegetation , soil , or hydrology		-	disturbed?		Are "normal circur	motonooo"
Are vegetation , soil , or hydrology				F	Are normal circui	present? Yes
SUMMARY OF FINDINGS	/ <u></u> ik	aturally pro		(If neede	d. explain any an	swers in remarks.)
Hydrophytic vegetation present? Y				(		
Hydric soil present? Y		Is the sa	mpled area	within a v	wetland?	Y
Indicators of wetland hydrology present? Y			ional wetland		_	
Remarks: (Explain alternative procedures here or in a se	parate repo	rt.)				
Above average precipitation			ia were me	et. Area is	s a wetland.	
VEGETATION Use scientific names of plants.						
-	bsolute D	ominan	Indicator	Dominar	nce Test Worksh	eet
Tree Stratum (Plot size:) %	Cover t	Species			of Dominant Specie BL, FACW, or FA	
2					Number of Domina	
3				Specie	es Across all Strat	a: 2 (B)
4					of Dominant Specie	
5			1	that are O	BL, FACW, or FA	C: <u>100.00%</u> (A/B)
	0 =To	otal Cover				L (
Sapling/Shrub stratum (Plot size:) 1 Rhamnus cathartica	5	Y		Total % (	nce Index Works	neet
2	J			OBL spe		1 = 15
3				FACW sp		
4				FAC spe		
5				FACU sp		4 = 40
	5 =To	otal Cover		UPL spee	cies 0 x	5 = 0
Herb stratum (Plot size:)				Column t	otals 105 (A	A) 225 (B)
1 Phalaris arundinacea	70	Y	FACW	Prevalen	ce Index = B/A =	2.14
2 Hackelia virginiana	10	N	FACU			
3 Typha angustifolia	10	N			ytic Vegetation	
4 Asclepias incarnata	5	<u>N</u>	OBL		d test for hydroph	
5 Solanum dulcamara	5	N	FAC		inance test is >50 alence index is ≤3	
7			·			
					hogical adaptatic orting data in Rei	
9					rate sheet)	
10	100 =Te	otal Cover			lematic hydrophy	tic vegetation*
Woody vine stratum (Plot size: )	100 =10		·	``	,	
1					s of hydric soil and w resent, unless disturb	etland hydrology must be ed or problematic
2			-		ophytic	
	0 =T0	otal Cover		vege pres	etation ent? Y	
Demarka: (Include photo numbers have as an a service)	aboat)			p. 00		
Remarks: (Include photo numbers here or on a separate	sneet)					

Depth         Matrix         Redox Features           (Inches)         Color (moist)         %         Type*         Loc**         Texture         Remain	
(Inches) Color (moist) % Color (moist) % Type* Loc** Texture Rema	
	rks
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: Indicators for Problematic Hydric Soi	
X Histisol (A1) Sandy Gleyed Matrix (S4) Coast Prairie Redox (A16) (LRR K,	
Histic Epipedon (A2) Sandy Redox (S5) Dark Surface (S7) (LRR K, L)	. ,
Black Histic (A3) Stripped Matrix (S6) Iron-Manganese Masses (F12) (LR	R K, L, R)
Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) Very Shallow Dark Surface (TF12)	
Stratified Layers (A5) Loamy Gleyed Matrix (F2) Other (explain in remarks)	
2 cm Muck (A10) Depleted Matrix (F3)	·
Depleted Below Dark Surface (A11) Redox Dark Surface (F6)	
Thick Dark Surface (A12) Depleted Dark Surface (F7) *Indicators of hydrophytic vegetation	and weltand
Sandy Mucky Mineral (S1) Redox Depressions (F8) hydrology must be present, unless of	
5 cm Mucky Peat or Peat (S3) problematic	
Restrictive Layer (if observed):	
Type: Hydric soil present? Y	
Depth (inches):	
Remarks:	
Kendiks.	
HYDROLOGY	
Wetland Hydrology Indicators:	
Primary Indicators (minimum of one is required; check all that apply) Secondary Indicators (minimum of	
	f two required)
ADJACE WARELIA LI ADDA ADDA ADDA ADDA ADDA ADDA ADD	of two required)
Surface Water (A1)     Aquatic Fauna (B13)     Surface Soil Cracks (B6)       High Water Table (A2)     True Aquatic Plants (B14)     X Drainage Patterns (B10)	of two required)
High Water Table (A2)       True Aquatic Plants (B14)       X Drainage Patterns (B10)	
High Water Table (A2)       True Aquatic Plants (B14)       X Drainage Patterns (B10)         Saturation (A3)       Hydrogen Sulfide Odor (C1)       Dry-Season Water Table (C2)	
High Water Table (A2)True Aquatic Plants (B14)XDrainage Patterns (B10)Saturation (A3)Hydrogen Sulfide Odor (C1)Dry-Season Water Table (C2)Water Marks (B1)Oxidized Rhizospheres on Living RootsCrayfish Burrows (C8)	2)
High Water Table (A2)True Aquatic Plants (B14)XDrainage Patterns (B10)Saturation (A3)Hydrogen Sulfide Odor (C1)Dry-Season Water Table (C2)Water Marks (B1)Oxidized Rhizospheres on Living RootsCrayfish Burrows (C8)	2) magery (C9)
High Water Table (A2)       True Aquatic Plants (B14)       X Drainage Patterns (B10)         Saturation (A3)       Hydrogen Sulfide Odor (C1)       Dry-Season Water Table (C2)         Water Marks (B1)       Oxidized Rhizospheres on Living Roots       Crayfish Burrows (C8)         Sediment Deposits (B2)       (C3)       Saturation Visible on Aerial I	2) magery (C9)
High Water Table (A2)True Aquatic Plants (B14)XDrainage Patterns (B10)Saturation (A3)Hydrogen Sulfide Odor (C1)Dry-Season Water Table (C2)Water Marks (B1)Oxidized Rhizospheres on Living RootsCrayfish Burrows (C8)Sediment Deposits (B2)(C3)Saturation Visible on Aerial IDrift Deposits (B3)Presence of Reduced Iron (C4)Stunted or Stressed Plants (Algal Mat or Crust (B4)Recent Iron Reduction in Tilled SoilsXIron Deposits (B5)(C6)XFAC-Neutral Test (D5)	2) magery (C9)
High Water Table (A2)True Aquatic Plants (B14)XDrainage Patterns (B10)Saturation (A3)Hydrogen Sulfide Odor (C1)Dry-Season Water Table (C2)Water Marks (B1)Oxidized Rhizospheres on Living RootsCrayfish Burrows (C8)Sediment Deposits (B2)(C3)Saturation Visible on Aerial IDrift Deposits (B3)Presence of Reduced Iron (C4)Stunted or Stressed Plants (Algal Mat or Crust (B4)(C6)XGeomorphic Position (D2)Iron Deposits (B5)(C6)XFAC-Neutral Test (D5)Inundation Visible on Aerial Imagery (B7)Thin Muck Surface (C7)X	2) magery (C9)
High Water Table (A2)True Aquatic Plants (B14)XDrainage Patterns (B10)Saturation (A3)Hydrogen Sulfide Odor (C1)Dry-Season Water Table (C2Water Marks (B1)Oxidized Rhizospheres on Living RootsCrayfish Burrows (C8)Sediment Deposits (B2)(C3)Saturation Visible on Aerial IDrift Deposits (B3)Presence of Reduced Iron (C4)Stunted or Stressed Plants (Algal Mat or Crust (B4)(C6)XIron Deposits (B5)(C6)XInundation Visible on Aerial Imagery (B7)Thin Muck Surface (C7)Sparsely Vegetated Concave Surface (B8)Gauge or Well Data (D9)	2) magery (C9)
High Water Table (A2)True Aquatic Plants (B14)XDrainage Patterns (B10)Saturation (A3)Hydrogen Sulfide Odor (C1)Dry-Season Water Table (C2Water Marks (B1)Oxidized Rhizospheres on Living RootsCrayfish Burrows (C8)Sediment Deposits (B2)(C3)Saturation Visible on Aerial IDrift Deposits (B3)Presence of Reduced Iron (C4)Stunted or Stressed Plants (Algal Mat or Crust (B4)(C6)XIron Deposits (B5)(C6)XInundation Visible on Aerial Imagery (B7)Thin Muck Surface (C7)Sparsely Vegetated Concave Surface (B8)Other (Explain in Remarks)	2) magery (C9)
High Water Table (A2)       True Aquatic Plants (B14)       X       Drainage Patterns (B10)         Saturation (A3)       Hydrogen Sulfide Odor (C1)       Dry-Season Water Table (C2)         Water Marks (B1)       Oxidized Rhizospheres on Living Roots       Crayfish Burrows (C8)         Sediment Deposits (B2)       (C3)       Saturation Visible on Aerial I         Drift Deposits (B3)       Presence of Reduced Iron (C4)       Stunted or Stressed Plants (         Algal Mat or Crust (B4)       (C6)       X       Geomorphic Position (D2)         Iron Deposits (B5)       (C6)       X       FAC-Neutral Test (D5)         Inundation Visible on Aerial Imagery (B7)       Thin Muck Surface (C7)       X       FAC-Neutral Test (D5)         Water-Stained Leaves (B9)       Other (Explain in Remarks)       Other (Explain in Remarks)       X	2) magery (C9)
High Water Table (A2)       True Aquatic Plants (B14)       X       Drainage Patterns (B10)         Saturation (A3)       Hydrogen Sulfide Odor (C1)       Dry-Season Water Table (C2)         Water Marks (B1)       Oxidized Rhizospheres on Living Roots       Crayfish Burrows (C8)         Sediment Deposits (B3)       Presence of Reduced Iron (C4)       Saturation Visible on Aerial I         Algal Mat or Crust (B4)       Recent Iron Reduction in Tilled Soils       X         Iron Deposits (B5)       (C6)       X       FAC-Neutral Test (D5)         Inundation Visible on Aerial Imagery (B7)       Thin Muck Surface (C7)       X       FAC-Neutral Test (D5)         Water-Stained Leaves (B9)       Other (Explain in Remarks)       Other (Explain in Remarks)       Face transmit in Remarks)	2) magery (C9) D1)
High Water Table (A2)       True Aquatic Plants (B14)       X       Drainage Patterns (B10)         Saturation (A3)       Hydrogen Sulfide Odor (C1)       Dry-Season Water Table (C2)         Water Marks (B1)       Oxidized Rhizospheres on Living Roots       Crayfish Burrows (C8)         Sediment Deposits (B2)       (C3)       Saturation Visible on Aerial I         Drift Deposits (B3)       Presence of Reduced Iron (C4)       Stunted or Stressed Plants (         Algal Mat or Crust (B4)       Recent Iron Reduction in Tilled Soils       X       Geomorphic Position (D2)         Iron Deposits (B5)       (C6)       X       FAC-Neutral Test (D5)         Inundation Visible on Aerial Imagery (B7)       Gauge or Well Data (D9)       X       FAC-Neutral Test (D5)         Water-Stained Leaves (B9)       Other (Explain in Remarks)       Indicators of wetland         Field Observations:       Yes       No       X       Depth (inches):       Indicators of wetland	2) magery (C9) D1)
High Water Table (A2)       True Aquatic Plants (B14)       X       Drainage Patterns (B10)         Saturation (A3)       Hydrogen Sulfide Odor (C1)       Dry-Season Water Table (C2         Water Marks (B1)       Oxidized Rhizospheres on Living Roots       Crayfish Burrows (C8)         Sediment Deposits (B2)       (C3)       Saturation (C4)         Algal Mat or Crust (B4)       Recent Iron Reduction in Tilled Soils       Stunted or Stressed Plants (         Iron Deposits (B5)       (C6)       X       Geomorphic Position (D2)         Inundation Visible on Aerial Imagery (B7)       Thin Muck Surface (C7)       Sparsely Vegetated Concave Surface (B8)       Gauge or Well Data (D9)         Water table present?       Yes       No       X       Depth (inches):       Indicators of wetlant         Saturation present?       Yes       No       X       Depth (inches):       Indicators of wetlant	2) magery (C9) D1)
High Water Table (A2)       True Aquatic Plants (B14)       X       Drainage Patterns (B10)         Saturation (A3)       Hydrogen Sulfide Odor (C1)       Dry-Season Water Table (C2)         Water Marks (B1)       Oxidized Rhizospheres on Living Roots       Crayfish Burrows (C8)         Sediment Deposits (B2)       (C3)       Saturation Visible on Aerial I         Drift Deposits (B3)       Presence of Reduced Iron (C4)       Stunted or Stressed Plants (         Algal Mat or Crust (B4)       Recent Iron Reduction in Tilled Soils       X       Geomorphic Position (D2)         Iron Deposits (B5)       (C6)       X       FAC-Neutral Test (D5)         Inundation Visible on Aerial Imagery (B7)       Thin Muck Surface (C7)       Saturation I resent?       Saturation in Remarks)         Field Observations:       Yes       No       X       Depth (inches):       Indicators of wetland hydrology present?         Water table present?       Yes       No       X       Depth (inches):       Indicators of wetland hydrology present?         Saturation present?       Yes       No       X       Depth (inches):       hydrology present?         (includes capillary fringe)       Yes       No       X       Depth (inches):       hydrology present?	2) magery (C9) D1)
High Water Table (A2)       True Aquatic Plants (B14)       X       Drainage Patterns (B10)         Saturation (A3)       Hydrogen Sulfide Odor (C1)       Dry-Season Water Table (C2         Water Marks (B1)       Oxidized Rhizospheres on Living Roots       Crayfish Burrows (C8)         Sediment Deposits (B2)       (C3)       Saturation (C4)         Algal Mat or Crust (B4)       Recent Iron Reduction in Tilled Soils       Stunted or Stressed Plants (         Iron Deposits (B5)       (C6)       X       Geomorphic Position (D2)         Inundation Visible on Aerial Imagery (B7)       Thin Muck Surface (C7)       Sparsely Vegetated Concave Surface (B8)       Gauge or Well Data (D9)         Water table present?       Yes       No       X       Depth (inches):       Indicators of wetlant         Saturation present?       Yes       No       X       Depth (inches):       Indicators of wetlant	2) magery (C9) D1)
High Water Table (A2)       True Aquatic Plants (B14)       X       Drainage Patterns (B10)         Saturation (A3)       Hydrogen Sulfide Odor (C1)       Dry-Season Water Table (C2)         Water Marks (B1)       Oxidized Rhizospheres on Living Roots       Crayfish Burrows (C8)         Sediment Deposits (B2)       (C3)       Saturation Visible on Aerial I         Drift Deposits (B3)       Presence of Reduced Iron (C4)       Stunted or Stressed Plants (         Algal Mat or Crust (B4)       Recent Iron Reduction in Tilled Soils       X       Geomorphic Position (D2)         Iron Deposits (B5)       (C6)       X       FAC-Neutral Test (D5)         Inundation Visible on Aerial Imagery (B7)       Thin Muck Surface (C7)       Saturation in Remarks)         Field Observations:       Gauge or Well Data (D9)       Other (Explain in Remarks)       Indicators of wetland hydrology present?         Yes       No       X       Depth (inches):       Indicators of wetland hydrology present?         Saturation present?       Yes       No       X       Depth (inches):       hydrology present?         (includes capillary fringe)       Yes       No       X       Depth (inches):       hydrology present?	2) magery (C9) D1)
High Water Table (A2)       True Aquatic Plants (B14)       X       Drainage Patterns (B10)         Saturation (A3)       Hydrogen Sulfide Odor (C1)       Dry-Season Water Table (C2)         Water Marks (B1)       Oxidized Rhizospheres on Living Roots       Crayfish Burrows (C8)         Sediment Deposits (B2)       (C3)       Saturation Visible on Aerial I         Drift Deposits (B3)       Presence of Reduced Iron (C4)       Stunted or Stressed Plants (         Algal Mat or Crust (B4)       (C6)       X       Geomorphic Position (D2)         Iron Deposits (B5)       (C6)       Thin Muck Surface (C7)       Sauration Visible on Aerial Imagery (B7)         Sparsely Vegetated Concave Surface (B8)       Other (Explain in Remarks)       Persent (Inches):       Indicators of wetlants (D5)         Field Observations:       No       X       Depth (inches):       Indicators of wetlants hydrology present?         Saturation present?       Yes       No       X       Depth (inches):       Indicators of wetlants hydrology present?         Cincludes capillary fringe)       Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:       Indicators of wetlants hydrology present?	2) magery (C9) D1)
High Water Table (A2)       True Aquatic Plants (B14)       X       Drainage Patterns (B10)         Saturation (A3)       Hydrogen Sulfide Odor (C1)       Dry-Season Water Table (C2)         Water Marks (B1)       Oxidized Rhizospheres on Living Roots       Crayfish Burrows (C8)         Sediment Deposits (B2)       (C3)       Saturation Visible on Aerial I         Drift Deposits (B3)       Presence of Reduced Iron (C4)       Stunted or Stressed Plants (         Algal Mat or Crust (B4)       Recent Iron Reduction in Tilled Soils       X       Geomorphic Position (D2)         Iron Deposits (B5)       (C6)       X       FAC-Neutral Test (D5)         Inundation Visible on Aerial Imagery (B7)       Thin Muck Surface (C7)       Saturation in Remarks)         Field Observations:       Gauge or Well Data (D9)       Other (Explain in Remarks)       Indicators of wetland hydrology present?         Yes       No       X       Depth (inches):       Indicators of wetland hydrology present?         Saturation present?       Yes       No       X       Depth (inches):       hydrology present?         (includes capillary fringe)       Yes       No       X       Depth (inches):       hydrology present?	2) magery (C9) D1)
High Water Table (A2)       True Aquatic Plants (B14)       X       Drainage Patterns (B10)         Saturation (A3)       Hydrogen Sulfide Odor (C1)       Dry-Season Water Table (C2)         Water Marks (B1)       Oxidized Rhizospheres on Living Roots       Crayfish Burrows (C8)         Sediment Deposits (B3)       (C3)       Saturation Visible on Aerial I         Algal Mat or Crust (B4)       Recent Iron Reduction in Tilled Soils       X       Geomorphic Position (D2)         Iron Deposits (B5)       (C6)       X       FAC-Neutral Test (D5)         Inundation Visible on Aerial Imagery (B7)       Thin Muck Surface (C7)       Saure or Well Data (D9)         Water-Stained Leaves (B9)       Other (Explain in Remarks)       Indicators of wetland hydrology present?         Field Observations:       No       X       Depth (inches):       Indicators of wetland hydrology present?         Saturation present?       Yes       No       X       Depth (inches):       hydrology present?         Cincludes capillary fringe)       Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:       hydrology present?	2) magery (C9) D1)

Project/Site EP-EP-23	City/C	County:	Ede	en Prairie/H	ennepin	Sampling	Date:	08/22/201	4
Applicant/Owner: SWLRT		Stat	e:	MN		Sampling	Point:	В	
Investigator(s): Marc Cottingham, Lucy Dahl		s	ectio	n, Townshij	p, Range:	-	S15 T116N	I R22W	
Landform (hillslope, terrace, etc.): Terrace		Loc	cal re	elief (concav	ve, convex	k, none):		None	
Slope (%): 0-5 Lat: 44.855		Long:		-93.449	9	Datum:			
Soil Map Unit Name Lester Loam		_		NWI	Classificat	tion:	No	one	
Are climatic/hydrologic conditions of the site typical for this	s time of	the yea	r?	N (I	f no, expla	ain in rema	arks)		
Are vegetation , soil , or hydrology		significa	antly	disturbed?		Are "norm	nal circumsta	ances"	
Are vegetation , soil , or hydrology		naturall	y pro	blematic?				esent? Ye	es
SUMMARY OF FINDINGS					(If need	led, explair	n any answe	rs in rema	rks.)
Hydrophytic vegetation present? N									
Hydric soil present? N		ls th	ne sa	mpled area	a within a	a wetland?	?	N	
Indicators of wetland hydrology present? N		f yes	, opt	ional wetlar	nd site ID:				
Remarks: (Explain alternative procedures here or in a sepa	arate rep	port.)							
Above average precipitation.	. Wetla	and crite	eria	not met. A	Area is n	ot a wetla	and.		
<b>VEGETATION</b> Use scientific names of plants.									
Abs	solute	Domina	an	Indicator	Domina	ance Test	Worksheet		
	Cover	t Specie	es	Staus		of Domina	•		
	10	Y		FACU	that are	OBL, FAC\	N, or FAC:	1	(A)
2							f Dominant	2	(P)
<u> </u>							s all Strata:	Z	(B)
5						of Domina	N, or FAC:	50.00%	(A/B)
	10 =	=Total C	over			- , -	_		(
Sapling/Shrub stratum (Plot size: )					Prevale	ence Index	k Workshee	t	
1 Rhamnus cathartica	70	Y		FAC		Cover of:			
2					OBL sp		0 x 1 =		-
3						species	0 x 2 =		-
4					FAC sp FACU s		$70 \times 3 =$ 10 x 4 =		-
	70 =	=Total C	over		UPL sp	·	$\frac{10}{0}$ x 5 =		-
Herb stratum (Plot size: )					Column		80 (A)		(B)
1					Prevale	ence Index		3.13	. ,
2							-		-
3					Hydrop	ohytic Veg	etation Indi	cators:	
4							hydrophytic	vegetatior	ו
5							est is >50%		
6							dex is ≤3.0*		
8							adaptations* ta in Remar		
9						porting da		ks or on a	
10							ydrophytic v	egetation*	
	0 =	Total C	over			plain)	, , ,	5	
Woody vine stratum (Plot size:)							soil and wetlar	, ,,	
1						present, unle drophytic	ess disturbed o	i propiematic	
⁻	0 =	=Total C	over			getation			
	-				pre	esent?	<u>N</u>		
Remarks: (Include photo numbers here or on a separate sh	heet)				-				

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm	the absend	ce of indicators.)
Depth	Matrix		Red	dox Feat	ures				-
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Textu	ure	Remarks
0-10	10YR 3/1	100					SiL		
10-20	10YR 3/2	100					SiL		
10-20	10110 3/2	100					SIL		
	Concentration, D	= Depleti	on, RM = Reduce	ed Matrix	, MS = N	lasked S			n: PL = Pore Lining, M = Matrix
-	il Indicators:								ematic Hydric Soils:
	tisol (A1)				ed Matrix	: (S4)			dox (A16) ( <b>LRR K, L, R</b> )
	ic Epipedon (A2)			ndy Redo					7) (LRR K, L)
	ck Histic (A3)			pped Ma				•	Masses (F12) (LRR K, L, R)
	Irogen Sulfide (A4			•	ky Minera	. ,			rk Surface (TF12)
Stra	atified Layers (A5)	)	Loa	my Gley	ed Matrix	k (F2)	Othe	r (explain in	remarks)
2 cr	n Muck (A10)		Dep	pleted Ma	atrix (F3)				
Dep	leted Below Dark	Surface	· · ·		Surface	. ,			
Thio	ck Dark Surface (	A12)	Dep	pleted Da	ark Surfa	ce (F7)	*Indica	ators of hydr	ophytic vegetation and weltand
San	dy Mucky Minera	al (S1)	Red	dox Depr	essions (	(F8)	hydro	logy must b	e present, unless disturbed or
5 cr	m Mucky Peat or	Peat (S3	)						problematic
Restrictive	Layer (if observe	ed):							
Туре:		,-					Hvdric	soil presen	t? N
Depth (inche	es):				-				
Remarks:	,								
HYDROLO									
Wetland Hy	drology Indicato	ors:							
Primary Indi	cators (minimum	of one is	required; check	all that a	pply)		<u>Se</u>	condary Ind	icators (minimum of two required)
Surface	Water (A1)			Aquatic	Fauna (B	13)		Surface	Soil Cracks (B6)
High Wa	iter Table (A2)			True Aq	uatic Plar	nts (B14)	_	Drainage	e Patterns (B10)
Saturatio				Hydroge	n Sulfide	Odor (C1	)		son Water Table (C2)
	arks (B1)				l Rhizosp	heres on	Living Roots		Burrows (C8)
	nt Deposits (B2)			(C3)			_		on Visible on Aerial Imagery (C9)
	oosits (B3)					uced Iron			or Stressed Plants (D1)
-	at or Crust (B4)				ron Redu	iction in T	illed Soils		phic Position (D2)
	osits (B5)		· (DZ)	(C6)		(07)	_	FAC-Neu	utral Test (D5)
	on Visible on Aeria				ck Surfac				
	Vegetated Conca		се (ва)	-	or Well Da		N N		
	tained Leaves (B9	')			xpiain in	Remarks	)		
Field Obser		V-	<b>N</b> 1 -		Denti "	nok - r)			
Surface wate	•	Yes	No No		Depth (i				
Water table		Yes	No		Depth (i	,			dicators of wetland
Saturation p	resent? pillary fringe)	Yes	No		Depth (i	ncnes):		ny	/drology present? N
-					h			a 9 - 1 2	
Describe rec	corded data (strea	am gauge	e, monitoring well	, aerial p	hotos, pi	revious ir	nspections), if	available:	
Pomorkov									
Remarks:									

Project/Site EP-EP-24 (Formerly DIG-EP-EP-02 & 03)	City/	County:	Henn	epin/Eden	Prairie	Sampling [	Date:	10/1/2014
Applicant/Owner: SWLRT	_	Stat	te:	MN		Sampling F	Point:	А
Investigator(s): Courtney Luensman, Lucy Dahl		s	Section,	Township	, Range:		15-116	-22
Landform (hillslope, terrace, etc.): Depress	ion	Lo	cal relie	ef (concave	e, convex,	, none):	Сс	oncave
Slope (%): 0-5 Lat: 44.8479346		Long:		-93.459722		Datum:		
Soil Map Unit Name Muskego Muck					Classificati	ion: F	PEM1A/PUE	3Gx/PUBGh
Are climatic/hydrologic conditions of the site typical for the	his time o	f the yea	ar?			ain in remar	rks)	
Are vegetation , soil X , or hydrolog	ay .	significa	antly di	sturbed?	-	Are "norma	al circumsta	nces"
Are vegetation , soil , or hydrolog		naturall	ly probl	ematic?				sent? No
SUMMARY OF FINDINGS					(If neede	ed, explain	any answe	rs in remarks.)
Hydrophytic vegetation present? Y								
Hydric soil present? Y		ls ti	he sam	pled area	within a	wetland?	Ň	ſ
Indicators of wetland hydrology present? Y		f yes	s, optior	nal wetlan	d site ID:			
Pomarke: (Explain alternative precedures here or in a se	oparato re	port )			-			
Remarks: (Explain alternative procedures here or in a se	-		ما ام			and Van	atation on	d Lludrolo eu (
Above average precipitation. Soil is disturbed criteria met; soil assumed hydric								
		nnesrh	pioles	Sional juc	ugement	. Alea is	a wellanu	
VEGETATION Use scientific names of plants			<u> </u>		Domino	man Tant V	Norksheet	
	Absolute % Cover	Domina t Specie		dicator Staus				
1		t Opeen		olaus		of Dominan OBL, FACW	•	6 (A)
2						Number of		()
3						ies Across		6 (B)
4					Percent	of Dominan	t Species	
5					that are C	OBL, FACW	/, or FAC:	100.00% (A/B)
_	0	=Total C	Cover					
Sapling/Shrub stratum (Plot size:)	40	Ň	-				Worksheet	t
1 <u>Salix interior</u>	40	Y		ACW		Cover of:	20 v 1	20
3					OBL spe FACW s		20 x 1 = 85 x 2 =	<u>20</u> 170
4	,				FAC spe	·	$\frac{00}{0}$ x 2 =	0
5					FACU s		2 x 4 =	8
	40	=Total C	Cover		UPL spe	ecies	0 x 5 =	0
Herb stratum (Plot size:)					Column	totals 2	107 (A)	198 (B)
1 Typha angustifolia	20	Y		OBL	Prevaler	nce Index =	= B/A =	1.85
2 Solidago gigantea	10	Y		ACW				
3 Impatiens capensis	10	<u>Y</u>		ACW			etation Indi	
4 Phalaris arundinacea	10	Y		FACW			hydrophytic	vegetation
5 Verbena hastata 6 Persicaria pensylvanica	10 5	Y N		FACW FACW		ninance tes	lex is ≤3.0*	
7 Lactuca serriola	2	N		FACU				(provide
8							daptations* a in Remark	
9						arate sheet		
10					Prot	blematic hy	/drophytic v	egetation*
	67	=Total C	Cover		(exp	olain)		
Woody vine stratum (Plot size:)								d hydrology must be
1							ss disturbed or	problematic
2		Tetel O	<u></u>		-	Irophytic etation		
	0	=Total C	over		-	sent?	Y	
Remarks: (Include photo numbers here or on a separate	e sheet)				-			

Profile Des	cription: (Descr	ibe to th	e depth n	eeded	to docu	ment the	e indicat	or or confirm	the absend	e of indicators.)
Depth	Matrix		-		dox Feat					
(Inches)	Color (moist)	%	Color (r	noist)	%	Type*	Loc**	Textu	re	Remarks
*Turno: C = (	Concentration, D =	- Doploti	on PM -	Poduo	d Matrix		lackad S	and Grains	**Locatio	n: PL = Pore Lining, M = Matrix
		= Depiet	OII, RIVI =	Reduce	eu mainx	., 1013 = 10	laskeu S			-
-	bil Indicators:			0			(0.4)			ematic Hydric Soils:
	tisol (A1)		_		ndy Gleye		(S4)			dox (A16) ( <b>LRR K, L, R</b> )
	tic Epipedon (A2)		_		ndy Redo					7) (LRR K, L)
	ck Histic (A3)		_		pped Ma	. ,			-	Masses (F12) (LRR K, L, R)
	drogen Sulfide (A4		_		my Mucl	-				rk Surface (TF12)
Stra	atified Layers (A5)	)		Loa	my Gley	ed Matrix	x (F2)	X Other	(explain in	remarks)
2 ci	m Muck (A10)			Dep	pleted Ma	atrix (F3)				
Dep	pleted Below Dark	Surface	e (A11)	Red	dox Dark	Surface	(F6)			
Thi	ck Dark Surface (	A12)	_	Dep	oleted Da	ark Surfa	ce (F7)	*Indica	tors of hvdr	ophytic vegetation and weltand
	ndy Mucky Minera		-		dox Depr					e present, unless disturbed or
	m Mucky Peat or		-) <u> </u>				( - )		•••	problematic
	-		/				<b>.</b>			
	Layer (if observe	ed):								
<u> </u>	iprap					-		Hydric s	soil presen	t? <u>Y</u>
Depth (inche	es): Surface					-				
Remarks:										
	a abtain a aail i	aomala	due te re	otriati		r of rior	on of th			ad paped)
Unable t	o obtain a soil s	sample	due to re	estricti	ve laye	r or npra	ap at the	e son sunace	e (excaval	ed pond).
Soil assu	med hydric bas	ed on r	presence	of hv	drophyt	tic vege	tation a	nd best prof	essional i	udgement
	,			- /	1- /	0 -			···· ,	
HYDROL										
Wetland Hy	drology Indicato	ors:								
Primary Indi	cators (minimum	of one is	required;	check	all that a	pply)		Sec	condary Ind	icators (minimum of two required
X Surface	Water (A1)				Aquatic	Fauna (B	(13)			Soil Cracks (B6)
	ater Table (A2)					uatic Plar		_		Patterns (B10)
Saturati	( )						Odor (C1		0	son Water Table (C2)
	larks (B1)							Living Roots		Burrows (C8)
	nt Deposits (B2)				(C3)	і Кпігозр			-	on Visible on Aerial Imagery (C9)
	posits (B3)					o of Dodu	uced Iron	(C4) —		or Stressed Plants (D1)
	. ,									
	at or Crust (B4)					ron Reau	Iction in 1			bhic Position (D2)
	oosits (B5)				(C6)		(07)	<u> </u>	X FAC-Neu	utral Test (D5)
	on Visible on Aeria	•				ck Surfac				
	Vegetated Conca		ce (B8)		-	or Well Da				
Water-S	tained Leaves (B9	)			Other (E	xplain in	Remarks	)		
Field Obser	vations:									
Surface wat	er present?	Yes	Х	No		Depth (i	inches):	0.5		
Water table		Yes		No		Depth (i			Ind	licators of wetland
Saturation p		Yes		No		Depth (i	,			/drology present? Y
•	pillary fringe)									
				المريب		hotoo n		anastiana) if a		
Describe ree	corded data (strea	am gaug	e, monitori	ng wei	i, aeriai p	photos, p	revious ir	ispections), if a	avallable:	
D										
Remarks:										

Investigator(s):       Courtney Luensman, Lucy Dahl       Section, Township, Range:       15-116-22         Convex, Index, terrare, etc.):       Hillstope       Local relief (concave, convex, none):       Convex         Solid Map Unit Name Muskago Muck       NWI Classification:       PEMIA/PUBGx/PUBGA         Are climatic/hydrologic conditions of the site typical for this time of the year?       N       (if ne, explain in remarks)         Wre vegetation       , soil	Project/Site EP-EP-24 (Formerly DIG-EP-EP-02 & 03)	City/C	County: He	nnepin/Eden	Prairie Sampling Date: 10/1/2014
Landorm (hillslope, terrace, etc.):       Hillslope       Local relief (concave, convex, none):       Convex         Slope (%):       520%       Lat:       44.8479346       Long:       -93.859725       Datum:         Slope (%):       520%       Lat:       44.8479346       Long:       -93.459725       Datum:         Slope (%):       520%       Lat:       44.8479346       Long:       -93.459725       Datum:         Are instructed of the site typical for this time of the year?       N       (If no, explain in remarks)         Are vegetation       , or hydrology       isginificantly disturbed?       Are "normal circumstances"         Hydrophytic vegetation present?       N       Is the sampled area within a wetland?       N         Hydrophytic vegetation present?       N       f yes, optional wetland site ID:	Applicant/Owner: SWLRT	_	State:	MN	Sampling Point: B
Stope (%): 5-20%       Lat:       44.8479346       Long:       -93.4587225       Detum:       PEM1A/PUBGx/PUBGh         Soli Map Unit Name Muskego Muck       NVII Classification:       PEM1A/PUBGx/PUBGh         Are vegetation       . soil       X. or hydrology       significantly disturbed?       Are "normal circumstances"         Are vegetation       . soil       X. or hydrology       naturally problematic?       Are "normal circumstances"         Hydrophytic vegetation present?       N       Is the sampled area within a wetland?       N         Hydrophytic vegetation present?       N       Is the sampled area within a wetland?       N         Indicators of wetland hydrology present?       N       Is the sampled area within a wetland?       N         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         Above average precipitation.       Mostore       Dominant Creations       Mominant Spacies         1       Cratagus crus-galin       20       Y       FAC         2       Total Number of Dominant Spacies       that are OBL, FACW, or FAC:       2 (A)         3       O       =Total Cover       FACU       Pervalence Index Worksheet         1       Cratagus crus-galin <td>Investigator(s): Courtney Luensman, Lucy Dahl</td> <td></td> <td>Section</td> <td>on, Township</td> <td>o, Range: 15-116-22</td>	Investigator(s): Courtney Luensman, Lucy Dahl		Section	on, Township	o, Range: 15-116-22
Soil Map Unit Name Muskego Muck       NWI Classification:       PEM1A/PUBGx/PUBGh         Are clinationydrologic conditions of the site in pical for this time of the year?       N       (If no, explain in remarks)         Are vegetation       , soil       X       , or hydrology       instirulty problematic?         Are vegetation resent?       N       (If needed, explain any answers in remarks.)         Hydrophytic vegetation present?       N       Is the sampled area within a wotland?       N         Hydrophytic vegetation present?       N       Is the sampled area within a wotland?       N         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         Above average precipitation. Soil is disturbed due to being on the edge of an excavated pond.       Wetland         Creategus crus-galli       20       Y       FAC         1       Absolute       Dominant       Indicator         3       Creategus crus-galli       20       Y       FAC         4	Landform (hillslope, terrace, etc.): Hillslope	e	Local r	elief (concav	e, convex, none): Convex
Are climatichydrologic 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"         SUMMARY OF FINDINGS       (If no, explain in remarks)       (If no, explain in remarks)       N         Hydrophytic vegetation present?       N       Is the sampled area within a wetland?       N         Hydrophytic vegetation present?       N       Is the sampled area within a wetland?       N         Indicators of watland hydrology present?       N       Is the sampled area within a wetland?       N         Remarks: (Explain alternative procedures here or in a separate report.)       Absolute to being on the edge of an excavated pond.       Wetland criteria not net. Area is not a wetland.         VEGETATION Use scientific names of plants.       20       Y       FAC         Tradegus crus-galii       20       Y       FAC         2       20       Y       FAC         3       20       Y       FAC         4       20       Y       FAC         2       20       Y       FAC         3       20       Y       FAC         4       20       Y       FAC	Slope (%): 5-20% Lat: 44.8479346		Long:	-93.45972	25 Datum:
Are vegetation	Soil Map Unit Name Muskego Muck			NWIC	Classification: PEM1A/PUBGx/PUBGh
Are vegetation       ool       or hydrology       naturally problematic?       present?       No         SUMMARY OF Findings       If needed, explain any answers in remarks.)       If we appled area within a wetland?       N         Hydrophylic vegetation present?       N       Is the sampled area within a wetland?       N         Hydrophylic vegetation present?       N       Is the sampled area within a wetland?       N         Remarks: (Explain alternative procedures here or in a separate report.)       Above average precipitation. Soli is disturbed due to being on the edge of an excavated pond. criteria not met. Area is not a wetland.       Wetland criteria not met. Area is not a wetland.         VEGETATION Use scientific names of plants.       Indicator       Dominance Test Worksheet       N         1       Crataegus crus-galii       Abcolue       Dominant       Species Arcas all Strata:       4       (B)         2       20       Y       FAC       Total Number of Dominant       Species all Strata:       4       (B)         3       20       Y       FAC       Total Number of Dominant       Species Arcas all Strata:       4       (B)         2       20       Y       FAC       Total Cover of:       OBL, FACW, or FAC:       2       (A)         3       0       Y       FACU       Prev	Are climatic/hydrologic conditions of the site typical for th	nis time of	the year?	N (li	f no, explain in remarks)
Are vegetation       ool       or hydrology       naturally problematic?       present?       No         SUMMARY OF Findings       If needed, explain any answers in remarks.)       If we appled area within a wetland?       N         Hydrophylic vegetation present?       N       Is the sampled area within a wetland?       N         Hydrophylic vegetation present?       N       Is the sampled area within a wetland?       N         Remarks: (Explain alternative procedures here or in a separate report.)       Above average precipitation. Soli is disturbed due to being on the edge of an excavated pond. criteria not met. Area is not a wetland.       Wetland criteria not met. Area is not a wetland.         VEGETATION Use scientific names of plants.       Indicator       Dominance Test Worksheet       N         1       Crataegus crus-galii       Abcolue       Dominant       Species Arcas all Strata:       4       (B)         2       20       Y       FAC       Total Number of Dominant       Species all Strata:       4       (B)         3       20       Y       FAC       Total Number of Dominant       Species Arcas all Strata:       4       (B)         2       20       Y       FAC       Total Cover of:       OBL, FACW, or FAC:       2       (A)         3       0       Y       FACU       Prev	Are vegetation , soil X , or hydrology	у	significantly	disturbed?	Are "normal circumstances"
SUMMARY OF FINDINGS       (If needed, explain any answers in remarks.)         Hydric soil present?       N         Indicators of wetland hydrology present?       N         Indicators of wetland hydrology present?       N         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. criteria not met. Area is not a wetland.       Wetland criteria not met. Area is not a wetland.         VECETATION Use scientific names of plants.       Dominant Species       Status       Dominant Species         1       Crataegus crus-galii       20       Y       FAC       N       Total Number of Dominant Species       Hut are OBL, FACW, or FAC:       2       (A)         3       20       =Total Cover       Prevalence Index Worksheet       Number of Dominant Species       Hut are OBL, FACW, or FAC:       2       (A)         3       20       =Total Cover       Prevalence Index Worksheet       Notal% Cover of:       OBL species       5       1       5         4			naturally pr	oblematic?	
Hydric soil present?       N       Is the sampled area within a wetland?       N         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. criteria not met. Area is not a wetland.       Wetland criteria not met. Area is not a wetland.         VEGETATION Use scientific names of plants.       Dominance Test Worksheet       Number of Dominant Species         1       Crataegus crus-galli       20       Y       FAC         2       Y       FAC       Total Number of Dominant Species       that are OBL, FACW, or FAC:       2 (A)         3       20       Y       FAC       Total Number of Dominant Species       that are OBL, FACW, or FAC:       2 (A)         3       20       Y       FAC       Total Number of Dominant Species       that are OBL, FACW, or FAC:       2 (A)         4       20       Total Number of Dominant Species       that are OBL, FACW, or FAC:       2 (A)         5       20       =Total Cover       Frectent Dotal Number of Dominant Species       that are OBL, FACW, or FAC:       5 (A)         6       0       =Total Cover       FACU species       5 x 1 = 0       FACU species       5 x 2 = 10         1       1       Eactacta serials       20       Y       FACU <td< td=""><td>SUMMARY OF FINDINGS</td><td></td><td></td><td></td><td>(If needed, explain any answers in remarks.)</td></td<>	SUMMARY OF FINDINGS				(If needed, explain any answers in remarks.)
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. criteria not met. Area is not a wetland.       Wetland due to being on the edge of an excavated pond. criteria not met. Area is not a wetland.         VECETATION Use scientific names of plants.       Dominant factor is that are OBL, FACW, or FAC: 2 (A)       Absolute         1       Crataegus crus-galli       20       Y       FAC         2       20       Y       FAC       Number of Dominant Species that are OBL, FACW, or FAC: 50.00% (A/B)         3       20       = Total Cover       Prevalence Index Worksheet       Total Number of Dominant Species that are OBL, FACW, or FAC: 50.00% (A/B)         3       20       = Total Cover       Prevalence Index Worksheet       Total % Cover of:         3       0       = Total Cover       OBL species 0 x 5 = 0       0         4       0       = Total Cover       Prevalence Index Elso on x 4 = 0       Prevalence Index Elso on x 4 = 0         1       1       0       = Total Cover       Prevalence Index = B(A = 3.45       Prevalence Index = B(A = 3.45         2       0       Y       FACU       Species 0 x 5 = 0       0       Columbra on x = 0	Hydrophytic vegetation present? N				
Remarks: (Explain alternative procedures here or in a separate report.)         Metamarks: (Explain alternative procedures here or in a separate report.)         Wetland criteria not met. Area is not a wetland.         VEGETATION Use scientific names of plants.         Dominan Indicator         Tree Stratum (Plot size:)       Mosolute Dominan Indicator         2       Y       FAC       Number of Dominant Species that are OBL, FACW, or FAC: (A)         3	Hydric soil present? N		Is the s	ampled area	a within a wetland? N
Above average precipitation. Soil is disturbed due to being on the edge of an excavated pond. criteria not met. Area is not a wetland.         VEGETATION Use scientific names of plants.         Tree Stratum       (Plot size:)       Absolute       Dominant       Indicator       Dominant Species         1       Crateegus crus-galti       20       Y       FAC       FAC       Indicator       Number of Dominant Species       that are OBL, FACW, or FAC: (A)         2       20       =       Total Number of Dominant Species       that are OBL, FACW, or FAC: (A)         5        20       =       Total Number of Dominant Species       that are OBL, FACW, or FAC: (A)         2        20       =       Total Number of Dominant Species       that are OBL, FACW, or FAC: (A)         3        20       =       Total Number of Dominant Species       that are OBL, FACW, or FAC: (A)         4	Indicators of wetland hydrology present? N		f yes, op	tional wetlan	d site ID:
Above average precipitation. Soil is disturbed due to being on the edge of an excavated pond. criteria not met. Area is not a wetland.         VEGETATION Use scientific names of plants.         Tree Stratum       (Plot size:)       Absolute       Dominant       Indicator       Dominant Species         1       Crateegus crus-galti       20       Y       FAC       FAC       Indicator       Number of Dominant Species       that are OBL, FACW, or FAC: (A)         2       20       =       Total Number of Dominant Species       that are OBL, FACW, or FAC: (A)         5        20       =       Total Number of Dominant Species       that are OBL, FACW, or FAC: (A)         2        20       =       Total Number of Dominant Species       that are OBL, FACW, or FAC: (A)         3        20       =       Total Number of Dominant Species       that are OBL, FACW, or FAC: (A)         4	Remarks: (Explain alternative procedures here or in a ser	parate rer	port.)		
criteria not met. Area is not a wetland.         VEGETATION Use scientific names of plants.         Image: transmission of the stratum       (Plot size:)       % Cover       typecies       Status         1       Crataegus crus-galti        Y       FAC       Number of Dominant Species         2          Kover of:       Description         3          (A/B)         4          (A/B)         5          (A/B)         1         (A/B)       Total Cover       FAC species        0         2				e dae of a	n excavated pond Wetland
VEGETATION Use scientific names of plants.         Tree Stratum       (Plot size:)       Absolute       Dominan       Indicator       Number of Dominant Species         1       Crataegus crus-galli       20       Y       FAC       Total Number of Dominant Species       It are OBL, FACW, or FAC: (A)         3	• • •		-	-	•
Tree Stratum       (Plot size:)       Absolute       Dominan       Indicator         1       Crataegus crus-galli       20       Y       FAC         2					
Tree Stratum       (Plot size:)       % Cover       t Species       Staus       Number of Dominant Species         1       Creategus crus-galli       20       Y       FAC       Total Number of Dominant Species         2		bsolute	Dominan	Indicator	Dominance Test Worksheet
1       Crataegus crus-galii       20       Y       FAC       that are OBL, FACW, or FAC:       2       (A)         2					Number of Dominant Species
3	1 Crataegus crus-galli	20	Y	FAC	•
4	2				Total Number of Dominant
5	3				Species Across all Strata: 4 (B)
20       =Total Cover         Sapling/Shrub stratum       (Plot size:)         1	4				
Sapling/Shrub stratum       (Plot size:)       Prevalence Index Worksheet         1	5	20	Total Covo		that are OBL, FACW, or FAC: $50.00\%$ (A/B)
1Total % Cover of:2	Sapling/Shrub stratum (Plot size: )				Prevalence Index Worksheet
3	1				
4	2				OBL species 0 x 1 = 0
5	3				FACW species $5 \times 2 = 10$
Herb stratum(Plot size:) $0$ =Total CoverUPL species $0$ $x 5 =$ $0$ 1Lactuca serriola30YFACUFACUPrevalence Index = B/A = $3.45$ 2Poa pratensis20YFACHydrophytic Vegetation Indicators:3Parietaria pensylvanica20YFACURapid test for hydrophytic vegetation4Andropogon gerardii5NFACRapid test for hydrophytic vegetation5Salix interior5NFACWDominance test is >50%6	4				
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	5		Tatal O		
1       Lactuca serriola       30       Y       FACU       Prevalence Index = B/A =       3.45         2       Poa pratensis       20       Y       FACU       Hydrophytic Vegetation Indicators:         3       Parietaria pensylvanica       20       Y       FACU       Rapid test for hydrophytic vegetation         4       Andropogon gerardii       5       N       FAC       Rapid test for hydrophytic vegetation         5       Salix interior       5       N       FACW       Dominance test is >50%         6	Horb stratum (Plot size:	0 =	= I otal Covel		
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       5       N       FACW       Dominance test is >50%         7       6       6       9       9         10       6       6       9       9         10       80       =Total Cover       Problematic hydrophytic vegetation*         11       0       =Total Cover       *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic         11       0       =Total Cover       N	· · · · · · · · · · · · · · · · · · ·	20	V	EACU	
3       Parietaria pensylvanica       20       Y       FACU       Hydrophytic Vegetation Indicators:         4       Andropogon gerardii       5       N       FAC       Rapid test for hydrophytic vegetation         5       Salix interior       5       N       FACW       Dominance test is >50%         6			<u> </u>		Prevalence index = B/A = 5.45
4       Andropogon gerardii       5       N       FAC       Rapid test for hydrophytic vegetation         5       Salix interior       5       N       FACW       Dominance test is >50%         6					Hydrophytic Vegetation Indicators:
6		5	Ν		
7	5 Salix interior	5	Ν	FACW	Dominance test is >50%
8	6				Prevalence index is ≤3.0*
9	7				
10					
Woody vine stratum       (Plot size:)         1					
Woody vine stratum       (Plot size:)         1          2          0       =Total Cover         Present?       N		80 =	Total Cove		
1     present, unless disturbed or problematic       2     0       0     =Total Cover       0     =Total Cover	Woody vine stratum (Plot size: )				
0 =Total Cover vegetation present? N	1				, , , ,
present? <u>N</u>	2				
		0 =	Total Cover		-
Romarke: Unclude photo numbere here or on a congrate cheet)	Describe that had a second second				
Remains. (include photo numbers here of on a separate sheet)	Remarks: (Include photo numbers here or on a separate	sheet)			

Profile Desc	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm tl	he absend	e of indicators.)
Depth	Matrix			lox Feat					•
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Textur	е	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	С	PL	L		Restrictive layer
	101110/1		01111 1/10		Ű		-		
	Concentration, D =	= Depleti	on, RM = Reduce	ed Matrix	, MS = N	lasked S			n: PL = Pore Lining, M = Matrix
-	il Indicators:		_						ematic Hydric Soils:
	tisol (A1)				ed Matrix	: (S4)			dox (A16) ( <b>LRR K, L, R</b> )
	tic Epipedon (A2)			dy Redo					(LRR K, L)
	ck Histic (A3)	N		oped Ma	. ,				Masses (F12) ( <b>LRR K, L, R</b> )
	Irogen Sulfide (A4 atified Layers (A5)			-	ky Minera ed Matrix			nallow Dai (explain in	rk Surface (TF12)
	m Muck (A10)				atrix (F3)	(Г2)			Terrarks)
	bleted Below Dark	Surface			Surface	(F6)			
	ck Dark Surface (				ark Surfa	· · ·	*Indicate	ors of hydr	ophytic vegetation and weltand
	ndy Mucky Minera	,			essions (	. ,			e present, unless disturbed or
	m Mucky Peat or	. ,		•		,	,		problematic
Restrictive	Layer (if observe	ed):							
	ravel						Hydric so	oil presen	t? N
Depth (inche					-		,	•	
Remarks:	· · · · · · · · · · · · · · · · · · ·				-				
Landsca	ned								
Lanusca	peu								
HYDROLO	DGY								
Wetland Hy	drology Indicate	ors:							
Primary Indi	cators (minimum	of one is	required; check	all that a	<u>pply)</u>		Seco	ondary Ind	icators (minimum of two required)
Surface	Water (A1)			Aquatic	Fauna (B	13)			Soil Cracks (B6)
	ater Table (A2)				uatic Plar				Patterns (B10)
Saturatio	( )				n Sulfide				son Water Table (C2)
	larks (B1)				Rhizosp	heres on	Living Roots		Burrows (C8)
	nt Deposits (B2) posits (B3)			(C3)	e of Redu	ucod Iron	(C4)		n Visible on Aerial Imagery (C9) or Stressed Plants (D1)
	at or Crust (B4)						illed Soils		phic Position (D2)
	osits (B5)			(C6)					itral Test (D5)
	on Visible on Aeria	I Imagery	/ (B7)	. ,	ck Surfac	e (C7)		_	
Sparsely	Vegetated Conca	ve Surfa	ce (B8)	Gauge c	or Well Da	ata (D9)			
<u> </u>	tained Leaves (B9	)		Other (E	xplain in	Remarks	)		
Field Obser									
Surface wate		Yes	No		Depth (i	,			
Water table		Yes	No No		Depth (i	-			licators of wetland
Saturation p	resent? pillary fringe)	Yes	No		Depth (i	ncnes):		ny	vdrology present? N
		magua		aorial a	hotos r		enections) if a	vailable:	
Describe rec	corded data (strea	an gauge	, monitoring well	, aenai p	niolos, pl	evious lí	ispections), if a	valiable:	
Remarks:									

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 compNWI 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"	Project/Site MTA-MTA-11 (Original)	City/C	County:	Min	netonka/He	ennepin	Sampling Date:	7-26-2013
Landrom (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Convex Slope (%): 0.3 Lat: Dong: Datum: Datum: Slope (%): 0.4 put/ht Name L3A-Klossner solis. L132A-Hamel-Glencoe depresional compWVI Classification: PEM/F01/SS1C Are elimital:hydrologic conditions of the site typical for this time of the year? Y (ft no, explain in remarks) Are vegetation, soil, or hydrology naturally problematic? Present? Yes Are vegetation for hydrology present? Yes (ft needed, explain any answers in remarks.) Hydrophytic vegetation present? Yes (ft needed, explain any answers in remarks.) Hydrophytic vegetation present? Y fyes, optional wetland site ID: / fot ID optionant ID optionant ID optionant ID optio	Applicant/Owner: SW LRT	-	State	e:	MN		Sampling Point:	А
Slope (%): 0.3       Lat:       Long:       Datum:       PEWF01/SS1C         Soil Map Unit Name L48A-Klossner zoils. L132A-Hamel-Glencee depressional compNWI Classification:       PEWF01/SS1C       PEWF01/SS1C         Are vegetation       , soil       . or hydrology       significantly disturbed?       Are 'normal circumstances'         Are vegetation       , soil       . or hydrology       naturally problematic?       present?       Yas         Hydrophytic vegetation present?       Y       Is the sampled area within a wetland?       Y         Hydrophytic vegetation present?       Y       Is the sampled area within a wetland?       Y         Indicators of wetland hydrology present?       Y       Is the sampled area within a wetland?       Y         Remarks: (Explain alternative procedures here or in a separate report.)       Meets all wetland criteria. Area is a wetland.       Number of Dominant Species         1       Fraxinus nigra       25       Y       FACW       Number of Dominant Species         3       25       Y       FACW       Foreine to Dominant Species       Number of Dominant Species         4       25       Total % Cover of:       00       CBL Species       0 x 1 = 00       00         2       0       =Total Cover       OBE Species       0 x 1 = 00       00	Investigator(s): Mohamed Elabbady, Todd Udvig		Se	ectior	n, Township	, Range:	2	5-117-22
Soil Map Unit Name L49A-Klossner soils. L132A-Hamel-Glencce depressional com/WVI Classification:       PEM/F01/SS1C         Are climatichydrologic conditions of the site typical for this time of the year?       V (If no, explain in remarks)         Are vegetation       , soil       , or hydrology       instinue of the year?       Are 'normal circumstances'         Are vegetation       , soil       , or hydrology       instinue of the year?       Are 'normal circumstances'         Hydrophylic vegetation present?       Y       Is the sampled area within a wetland?       Y         Hydrophylic vegetation present?       Y       Is the sampled area within a wetland?       Y         Remarks: (Explain alternative procedures here or in a separate report.)       Meets all wetland criteria. Area is a wetland.         VEGETATION Use scientific names of plants.       Dominant Species       Mumber of Dominant Species         1       72       Absolute       Dominance Test Worksheet         1       25       Y       Facture       Test Number of Dominant Species         1       25       Y       Foldel Cover       Total Worksheet         1       0       =Total Cover       OBL species       0x 1 =       0         2       0       =Total Cover       FACW       Hydrophydic vegetation       1.57         1	Landform (hillslope, terrace, etc.): Slope		Loc	al rel	ief (concav	e, convex	, none):	Convex
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       naturally problematic?       Are "normal circumstances" Are vegetation         Are vegetation       , or hydrology       naturally problematic?       Are "normal circumstances"         SUMMARY OF FINDINGS       (If needed, explain any answers in remarks.)         Hydrophytic vegetation present?       Y         Indicators of wetland hydrology present?       Y         Indicators of wetland hydrology present?       Y         Image: Circumstances       Y         Remarks: (Explain alternative procedures here or in a separate report.)       Meets all wetland criteria. Area is a wetland.         VEGETATION Use scientific names of plants.       Dominant Indicator         Tree Stratum       (Plot size: 30ft )       Absolute         2       25       Y       FACW         3       25       Y       FACW         4       25       Y       FACW         5       25       Y       FACW         1       Faxinus nigra       30       Y         2       0       = Total Cover       FAC species       0 x 4 = 0         1       (Plot size: 5ft )	Slope (%): 0-3 Lat:		Long:				Datum:	
Are vegetation	Soil Map Unit Name L49A-Klossner soils. L132A-Hamel-G	Glencoe		onal	compNWI C	Classificat	ion: PE	M/FO1/SS1C
Are vegetation, soil, or hydrology naturally problematic?       (If needed, explain any answers in remarks.)         Hydrophytic vegetation present?       Y         Hydrophytic vegetation present?       Y         Indicators of wetland hydrology present?       Y         Indicators of wetland hydrology present?       Y         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:30f)         Assolute Dominan indicator       Dominant Species         1       Faxinus nigra       25         2       Y       FACW         3       25       Y         4	Are climatic/hydrologic conditions of the site typical for this	s time of	the year	?	Y (If	f no, expla	ain in remarks)	
Are vegetation	Are vegetation , soil , or hydrology		significa	ntly o	disturbed?		Are "normal circ	umstances"
Hydrophytic vegetation present?       Y       Y         Hydrophytic vegetation present?       Y       Is the sampled area within a wetland?       Y         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:	Are vegetation , soil , or hydrology		naturally	/ proł	blematic?			
Hydric soil present?       Y       Is the sampled area within a wetland?       Y         Indicators of wetland hydrology present?       Y       f yes, optional wetland site ID.	SUMMARY OF FINDINGS					(If need	ed, explain any a	nswers in remarks.)
Indicators of wetland hydrology present?       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.       Dominane       Indicator         Tree Stratum       (Plot size:       30t       Y       FACW         3       25       Y       FACW         4       25       Y       FACW         5       25       Y       FACW         1       25       Y       FACW         1       25       Y       FACW         2       25       Y       FACW         1       25       26       Y       FACW         1       25       26       Y       FACW         1       25       26       10       00       11       30       Y         2       30       X1 =       30       X1 =       30       X1 =       30         2       30       1       30       Y       OBL       Social Stratum       00       X1 =       30         2       30       1       30       Y       OBL       Provalence Index Worksheet	Hydrophytic vegetation present? Y							
Remarks: (Explain alternative procedures here or in a separate report.)         Meets all wetland criteria. Area is a wetland.         VEGETATION Use scientific names of plants.         Dominant Indicator         1       Trae Stratum       (Plot size: 30ft )       % Cover t Species       Staus         2       2       Y       FACW       Number of Dominant Species         3       2       Y       FACW       Total Number of Dominant Species         4       2       25       Y       FACW         5       25       25       Total Number of Dominant Species         5       25       25       Total Number of Dominant Species         1       2       25       Total Number of Dominant Species         1       2       25       Total Cover         1       2       0       =Total Cover         1       0       =Total Cover       OBL species 30 x 1 = 30         FACU species 0 x 4 = 0       0       UPL species 0 x 4 = 0         1       10       0       =Total Cover         1       Typha angustifolia       30       Y       OBL         2       Phalaris arundinacea       15       Y       FACW	Hydric soil present? Y		Is th	e sai	mpled area	a within a	wetland?	Y
Meets all wetland criteria. Area is a wetland.         VEGETATION Use scientific names of plants.         Tree Stratum (Plot size:30ft)       Absolute Dominan Indicator % Cover t Species Staus 7 Y FACW         1       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7	Indicators of wetland hydrology present? Y		f yes,	, optie	onal wetlan	d site ID:	· · · · · · · · · · · · · · · · · · ·	
Meets all wetland criteria. Area is a wetland.         VEGETATION Use scientific names of plants.         Tree Stratum (Plot size:30ft)       Absolute Dominan Indicator % Cover t Species Staus 7 Y FACW         1       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7	Remarks: (Explain alternative procedures here or in a sep	arate rei	port)					
VEGETATION Use scientific names of plants.         Tree Stratum (Plot size:30ft)         1       Fraxinus nigra       25       Y       FACW         2       25       Y       FACW       Total Number of Dominant Species that are OBL, FACW, or FAC:3 (A)         3       25       Y       FACW       Total Number of Dominant Species that are OBL, FACW, or FAC:3 (A)         4								
Iree Stratum       (Plot size: 30ft)       Absolute       Dominan       Indicator         1       Fraxinus nigra       25       Y       FACW       Number of Dominant Species         3	Meets all we	etland o	criteria.	Area	a is a wetl	and.		
Iree Stratum       (Plot size: 30ft)       Absolute       Dominan       Indicator         1       Fraxinus nigra       25       Y       FACW       Number of Dominant Species         3	VEGETATION Use scientific names of plants							
Tree Stratum       (Plot size:30ft)       % Cover       t Species       Staus       Number of Dominant Species       that are OBL_FACW, or FAC:3(A)         1       Fraxinus nigra       25       Y       FACW       Total Number of Dominant Species       that are OBL_FACW, or FAC:3(A)         2		solute	Domina	n l	ndicator	Domina	ance Test Works	sheet
2	Tree Stratum (Plot size: 30ft ) %	Cover				Number	of Dominant Spec	cies
3	1 Fraxinus nigra	25	Y		FACW	that are	OBL, FACW, or F	AC: <u>3</u> (A)
4								
5	3							( )
Zapling/Shrub stratum       (Plot size:15ft )         1          2          3          4          5          0       =Total Cover         FACW species       30       x1 =         0       =Total Cover         Herb stratum       (Plot size:)          1       Typha angustifolia       30       Y         2       Phalaris arundinacea       15       Y         4        Golumn totals       70         4        Golumn totals       70         4        Y       OBL         5        Golumn totals       70         6	4							
Sapling/Shrub stratum(Plot size: 15ft )Prevalence Index Worksheet1		25 =	Total Co	over		that are v		AC. 100.00 % (A/B)
1Total % Cover of:23	Sapling/Shrub stratum (Plot size: 15ft )					Prevale	ence Index Work	sheet
3						Total %	Cover of:	
4	2					OBL sp	ecies 30	x 1 = <u>30</u>
5	3						·	
Herb stratum(Plot size: $5ft$ )1Typha angustifolia30YOBL2Phalaris arundinacea15YFACW3	4					-		
Herb stratum       (Plot size:       5ft       )         1       Typha angustifolia       30       Y       OBL         2       Phalaris arundinacea       15       Y       FACW         3	5	0	Total Ca				· · · · · · · · · · · · · · · · · · ·	
1       Typha angustifolia       30       Y       OBL       Prevalence Index = B/A =         2       Phalaris arundinacea       15       Y       FACW         3	Herb stratum (Plot size: 5ft )			Jvei		-		
2       Phalaris arundinacea       15       Y       FACW         3	/	30	V		OBI			
3						Tievale		
5						Hydrop	hytic Vegetation	n Indicators:
6	4					Rap	oid test for hydror	phytic vegetation
7	5							
8	6					X Pre	valence index is	≤3.0*
9	7							
10								emarks or on a
Woody vine stratum       (Plot size: 30ft)         1       *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic         2       0         0       =Total Cover         Hydrophytic         vegetation         present?       Y								vtic vegetation*
1		45 =	Total Co	over				ly lo vogotation
1     present, unless disturbed or problematic       2     0       0     =Total Cover       Present?     Y	Woody vine stratum (Plot size: 30ft )					*Indicate	ors of hvdric soil and	wetland hydrology must be
0 = Total Cover vegetation present? Y	1						present, unless distu	
present? Y	2					-		
		0 =	Total Co	over		-		(
	Remarks: (Include photo numbers horo or on a sonarato a	sheet)				P. 0		
		nicel)						

Profile Desc	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirn	n the absend	ce of indicators.)
Depth	Matrix		Re	dox Feat	ures				
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Tex	ture	Remarks
0-6	10YR 2/2	90	10YR 4/4	10	С	М	SiCL		
6-14	10YR 2/1	100					Silt		Organic Matter
									2.9
*Type: C = C	Concentration, D :	– Depleti	on RM = Reduc	ed Matrix	MS = M	lasked S	and Grains	**Locatio	n: PL = Pore Lining, M = Matrix
	il Indicators:				, 100 – 10				ematic Hydric Soils:
-	isol (A1)		Sa	ndy Gleye	ad Matrix	(\$4)			dox (A16) ( <b>LRR K, L, R</b> )
	ic Epipedon (A2)			ndy Redo		(04)			7) (LRR K, L)
	ck Histic (A3)			pped Ma	. ,				Masses (F12) ( <b>LRR K, L, R</b> )
	lrogen Sulfide (A4	4)		amy Mucl	. ,	al (F1)		-	rk Surface (TF12)
	atified Layers (A5)			amy Gley	-			er (explain in	
	n Muck (A10)	/		oleted Ma					l'omanto)
	leted Below Dark	Surface		dox Dark	· · ·				
	ck Dark Surface (		· · ·	pleted Da		· · ·	*India	sators of hydr	ophytic vegetation and weltand
	dy Mucky Minera			dox Depr					e present, unless disturbed or
	n Mucky Peat or	· · /				()	nya	ology made b	problematic
	-		/			1			P
Type:	Layer (if observe	ea):					Hydric	soil presen	t?Y
Depth (inche	<i>ve).</i>				-		Tiyunc	son presen	
Remarks:					-				
HYDROLO									
Wetland Hy	drology Indicate	ors:							
Primary Indi	cators (minimum	of one is	required; check	all that a	<u>pply)</u>		S	econdary Ind	licators (minimum of two required)
X Surface	Water (A1)				Fauna (B			Surface	Soil Cracks (B6)
High Wa	iter Table (A2)				uatic Plar			Drainage	e Patterns (B10)
Saturatio	( )					Odor (C1	· · · · · · · · · · · · · · · · · · ·		son Water Table (C2)
	arks (B1)				l Rhizosp	heres on	Living Roots		Burrows (C8)
	nt Deposits (B2)			(C3)					on Visible on Aerial Imagery (C9)
	oosits (B3)					uced Iron			or Stressed Plants (D1)
_	it or Crust (B4) osits (B5)			(C6)	ION Redu	ICTION IN 1	illed Soils		ohic Position (D2) utral Test (D5)
	on Visible on Aeria	al Imagen	/ (B7)	,	ck Surfac	e (C7)			
	Vegetated Conca				or Well Da				
	tained Leaves (B9			-		Remarks	)		
Field Obser	•			- `	-				
Surface wate		Yes	X No		Depth (i	nches):	6		
Water table		Yes	No		Depth (i			Inc	licators of wetland
Saturation p		Yes	No		Depth (i			hy	vdrology present? Y
(includes ca	pillary fringe)				-				
Describe rec	corded data (strea	am gauge	e, monitoring wel	l, aerial p	hotos, pi	revious ir	nspections), if	f available:	
Remarks:									

Project/Site MTA-MTA-11 (Original)	City/County:	Minnetonka/He	ennepin Sampling Date	: 7-26-2013
Applicant/Owner: SW LRT	Sta	te: MN	Sampling Point	:: B
Investigator(s): Mohamed Elabbady, Todd Udvig	s	ection, Townshi	p, Range:	25-117-22
Landform (hillslope, terrace, etc.): Slope	Lo	cal relief (concav	ve, convex, none):	Convex
Slope (%): Lat:	Long:		Datum:	
Soil Map Unit Name L49A-Klossner soils/L132A-Hamel-Gle	encoe depressio			
Are climatic/hydrologic conditions of the site typical for this	time of the yea	ır? (I	f no, explain in remarks)	
Are vegetation, soil, or hydrology	signific	antly disturbed?	Are "normal cir	cumstances"
Are vegetation , soil , or hydrology	natural	ly problematic?		present? Yes
SUMMARY OF FINDINGS			(If needed, explain any	answers in remarks.)
Hydrophytic vegetation present? N				
Hydric soil present? N	ls t	he sampled area	a within a wetland?	<u>N</u>
Indicators of wetland hydrology present? N	f yes	s, optional wetlar	nd site ID:	
Remarks: (Explain alternative procedures here or in a sepa	arate report.)			
None of the wetland	criteria were	met. Area is n	iot a wetland.	
<b>VEGETATION</b> Use scientific names of plants.				
· · · · ·	solute Domina	an Indicator	Dominance Test Wor	ksheet
Tree Stratum (Plot size: 30ft ) % C	Cover t Speci	es Staus	Number of Dominant Sp	ecies
1			that are OBL, FACW, or	FAC: 0 (A)
2			Total Number of Dom	
3			Species Across all S	
5			Percent of Dominant Sp that are OBL, FACW, or	
	0 =Total C	over	, . , . , .	(+=)
Sapling/Shrub stratum (Plot size: 15ft )			Prevalence Index Wo	rksheet
1			Total % Cover of:	
2			· · · · · · · · · · · · · · · · · · ·	x 1 = 0
3			FACW species 0 FAC species 0	$x^{2} = 0$ x 3 = 0
5				$x = \frac{1}{x^2} = \frac{1}{x^2}$
	0 =Total C	over	UPL species 0	x 5 = 0
Herb stratum (Plot size: 5ft )			Column totals 10	(A) 40 (B)
1 Cirsium arvense	10 Y	FACU	Prevalence Index = B/A	A = 4.00
2				
3			Hydrophytic Vegetati	
4			Rapid test for hydro	
5			Dominance test is Prevalence index is	
7			Morphogical adapt	
8			supporting data in	
9			separate sheet)	
10	<u> </u>		Problematic hydror	ohytic vegetation*
	10 =Total C	over	(explain)	
Woody vine stratum (Plot size: 30ft )				nd wetland hydrology must be sturbed or problematic
2			Hydrophytic	
	0 =Total C	over	vegetation	
			present?	<u>N</u>
Remarks: (Include photo numbers here or on a separate sh	neet)			

Profile Desc	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm th	ne absenc	e of indicators.)
Depth	Matrix		Red	dox Feat	ures				
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Э	Remarks
0-3	10YR 3/1	100					SiCL		
6-14	10YR 4/4	30					SiCL		
0	10YR 3/1	30					SiCL		
	10YR 3/1	40					SyL		
*Type: C = 0	L Concentration, D :	I = Depleti	on, RM = Reduce	ed Matrix	. MS = N	lasked S	and Grains.	**Locatio	n: PL = Pore Lining, M = Matrix
	il Indicators:	2 0 0 1 0 1	,		,				ematic Hydric Soils:
-	tisol (A1)		Sar	dv Gleve	ed Matrix	: (S4)			dox (A16) ( <b>LRR K, L, R</b> )
	tic Epipedon (A2)			idy Redo		(01)			') (LRR K, L)
	ck Histic (A3)			pped Ma					Masses (F12) ( <b>LRR K, L, R</b> )
	Irogen Sulfide (A4	4)		-	ky Minera	al (F1)		-	rk Surface (TF12)
	atified Layers (A5)			-	ed Matrix			explain in	
	m Muck (A10)	/		leted Ma		( )			,
	leted Below Dark	Surface			Surface	(F6)			
	ck Dark Surface (		· · ·		rk Surfa	. ,	*Indicate	ors of hydro	ophytic vegetation and weltand
	dy Mucky Minera	,			essions (				e present, unless disturbed or
	m Mucky Peat or	. ,			·	<b>、</b>	,		problematic
Restrictive	Layer (if observe	ed).							-
Туре:							Hvdric so	oil present	t? N
Depth (inche	es):				•				
Remarks:	,								
HYDROLO									
-	drology Indicato				I		-		
-	cators (minimum	of one is	required; check			(0)	Seco		icators (minimum of two required)
	Water (A1)				Fauna (B	,			Soil Cracks (B6)
Saturatio	ter Table (A2)				uatic Plar	Odor (C1	· · · · ·		Patterns (B10) son Water Table (C2)
	larks (B1)						Living Roots	_ `	Burrows (C8)
	nt Deposits (B2)			(C3)	r ttiliz03p				n Visible on Aerial Imagery (C9)
	posits (B3)				e of Redu	uced Iron	(C4)		or Stressed Plants (D1)
	at or Crust (B4)						illed Soils	_	phic Position (D2)
	osits (B5)			(C6)					utral Test (D5)
Inundatio	on Visible on Aeria	al Imager	/ (B7)	Thin Mu	ck Surfac	e (C7)		-	
Sparsely	Vegetated Conca	ave Surfa	ce (B8)	Gauge o	or Well Da	ata (D9)			
Water-S	tained Leaves (B9	)		Other (E	xplain in	Remarks	)		
Field Obser	vations:								
Surface wate		Yes	No	Х	Depth (i				
Water table	-	Yes	No	Х	Depth (i				licators of wetland
Saturation p		Yes	No	Х	Depth (i	nches):		hy	vdrology present? N
	pillary fringe)								
	corded data (strea	am gauge	e, monitoring well	, aerial p	hotos, pi	revious ir	nspections), if av	ailable:	
Remarks:									
1									

Project/Site MTA-MTA-11 (Original)	City/0	County:	Mir	nnetonka/He	ennepin	Sampling Da	ate: 8/7/20	)13
Applicant/Owner: SWLRT	-	Stat	te:	MN		Sampling Po	oint: C	
Investigator(s): Mohamed Elabbady, Marc Cottingham		s	Sectio	on, Township	o, Range:	•	25-117-22	
Landform (hillslope, terrace, etc.): Depression	on	Lo	cal re	elief (concav	ve, convex	, none):	Concave	
Slope (%): 0-3 Lat:		Long:				Datum:		
Soil Map Unit Name L132A-Hamel-Glencoe complex				NWI	Classificat	ion:	PEM/FO1/SS10	)
Are climatic/hydrologic conditions of the site typical for thi	is time of	f the yea	ar?	Y (I	f no, expla	ain in remarks	s)	
Are vegetation , soil , or hydrology	/	signific	antly	disturbed?		Are "normal	circumstances"	
Are vegetation , soil , or hydrology	/	natural	ly pro	oblematic?			present?	Yes
SUMMARY OF FINDINGS					(If need	ed, explain a	ny answers in rer	narks.)
Hydrophytic vegetation present? Y								
Hydric soil present? Y		ls ti	he sa	ampled area	a within a	wetland?	Y	
Indicators of wetland hydrology present? Y		f yes	s, opt	ional wetlan	nd site ID:			
Remarks: (Explain alternative procedures here or in a ser	narate re	nort)						
All wetland c			ot Λ	roa is a w	atland			
			51. A					
VEGETATION Use scientific names of plants.	1 1 . 2	<u> </u>		1. 1	Domin	ance Test W	orkeheet	1
	bsolute Cover	Domina t Speci		Indicator Staus				
1 Acer negundo	20	Y	00	FAC		of Dominant S OBL, FACW,	•	(A)
2						Number of Do		
3						cies Across al		(B)
4			_ :		Percent	of Dominant	Species	
5					that are	OBL, FACW,	or FAC: 100.00%	% (A/B)
	20 =	=Total C	over					
Sapling/Shrub stratum (Plot size: 15ft ) 1 Rhamnus cathartica	15	Y		FAC		ence Index W Cover of:	Vorksheet	
2	15	T		FAC	OBL sp		) x 1 = 0	
3					FACW			)
4					FAC sp	· · · · · · · · · · · · · · · · · · ·		5
5					FACU s	pecies 0	x 4 = 0	
	15 =	=Total C	over		UPL sp			
Herb stratum (Plot size: 5ft )					Column	totals 7	5 (A) <u>185</u>	5 (B)
1 Phalaris arundinacea	40	Y		FACW	Prevale	nce Index = E	B/A = 2.47	
2								
3							ation Indicators: /drophytic vegetat	
5					· ·	ninance test		
6						valence index		
7					 	rphogical ada	aptations* (provide	<del>,</del>
8							in Remarks or on	
9					sep	arate sheet)		
10							rophytic vegetatic	on*
	40 =	=Total C	over		(ex	olain)		
Woody vine stratum (Plot size: 30ft )							and wetland hydrolo	
						drophytic	disturbed or problema	allo
<u> </u>	0 =	=Total C	over			etation		
					pre	sent?	Y	
Remarks: (Include photo numbers here or on a separate s	sheet)				•			

Depth (Inches)         Matrix Color (moist)         Redox Features Color (moist)         Type*         Loc**         Texture         R           0-8         10YR 2/1         100         Fibric Peat	emarks
0-8       10YR 2/1       100       Fibric Peat         8-18       10YR 2/1       98       10YR 4/6       2       C       M       SiCL         Image: Single Si	emarks
8-18       10YR 2/1       98       10YR 4/6       2       C       M       SiCL         Image: Second stress of the stres	
8-18       10YR 2/1       98       10YR 4/6       2       C       M       SiCL         Image: Second stress of the secon	
Image: state of the state o	
*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains.       **Location: PL = Pore L	
*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains.       **Location: PL = Pore L	
*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains.       **Location: PL = Pore L	
*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore L	
*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore L	
*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore L	
*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore L	
*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore L	
Hydric Soil Indicators: Indicators for Problematic Hydric	
Histisol (A1) Sandy Gleyed Matrix (S4) Coast Prairie Redox (A16) (LR	R K, L, R)
Histic Epipedon (A2)Sandy Redox (S5)Dark Surface (S7) (LRR K, L)	
X Black Histic (A3) Stripped Matrix (S6) Iron-Manganese Masses (F12)	(LRR K, L, R)
Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) Very Shallow Dark Surface (TF	12)
Stratified Layers (A5) Loamy Gleyed Matrix (F2) Other (explain in remarks)	
2 cm Muck (A10) Depleted Matrix (F3)	
Depleted Below Dark Surface (A11) Redox Dark Surface (F6)	
Thick Dark Surface (A12) Depleted Dark Surface (F7) *Indicators of hydrophytic vegeta	tion and weltand
Sandy Mucky Mineral (S1) Redox Depressions (F8) hydrology must be present, unle	
5 cm Mucky Peat or Peat (S3) problematic	
Restrictive Layer (if observed):	
Type: Hydric soil present? Y	
Depth (inches):	
Remarks:	
HYDROLOGY	
Wetland Hydrology Indicators:	
Primary Indicators (minimum of one is required; check all that apply) Secondary Indicators (minim	um of two required)
Surface Water (A1) Aquatic Fauna (B13) Surface Soil Cracks (B6	
Surface Water (A1)     Aquatic Fauna (B13)     Surface Soil Cracks (B6 Drainage Patterns (B10)       High Water Table (A2)     True Aquatic Plants (B14)     Drainage Patterns (B10)	
High Water Table (A2)     True Aquatic Plants (B14)     Drainage Patterns (B10)	)
High Water Table (A2)       True Aquatic Plants (B14)       Drainage Patterns (B10)	)
High Water Table (A2)True Aquatic Plants (B14)Drainage Patterns (B10XSaturation (A3)Hydrogen Sulfide Odor (C1)Dry-Season Water Table	) e (C2)
High Water Table (A2)True Aquatic Plants (B14)Drainage Patterns (B10)X Saturation (A3)Hydrogen Sulfide Odor (C1)Dry-Season Water TableWater Marks (B1)Oxidized Rhizospheres on Living RootsCrayfish Burrows (C8)	) e (C2) rial Imagery (C9)
High Water Table (A2)True Aquatic Plants (B14)Drainage Patterns (B10X Saturation (A3)Hydrogen Sulfide Odor (C1)Dry-Season Water TableWater Marks (B1)Oxidized Rhizospheres on Living RootsCrayfish Burrows (C8)Sediment Deposits (B2)(C3)Saturation Visible on Ae	) e (C2) rial Imagery (C9) nts (D1)
High Water Table (A2)True Aquatic Plants (B14)Drainage Patterns (B10X Saturation (A3)Hydrogen Sulfide Odor (C1)Dry-Season Water TableWater Marks (B1)Oxidized Rhizospheres on Living RootsCrayfish Burrows (C8)Sediment Deposits (B2)(C3)Saturation Visible on AeDrift Deposits (B3)Presence of Reduced Iron (C4)Stunted or Stressed Place	) e (C2) rial Imagery (C9) nts (D1)
High Water Table (A2)True Aquatic Plants (B14)Drainage Patterns (B10)X Saturation (A3)Hydrogen Sulfide Odor (C1)Dry-Season Water TableWater Marks (B1)Oxidized Rhizospheres on Living RootsCrayfish Burrows (C8)Sediment Deposits (B2)(C3)Saturation Visible on AeDrift Deposits (B3)Presence of Reduced Iron (C4)Stunted or Stressed PlaAlgal Mat or Crust (B4)Recent Iron Reduction in Tilled SoilsX	) e (C2) rial Imagery (C9) nts (D1)
High Water Table (A2)True Aquatic Plants (B14)Drainage Patterns (B10)X Saturation (A3)Hydrogen Sulfide Odor (C1)Dry-Season Water TableWater Marks (B1)Oxidized Rhizospheres on Living RootsCrayfish Burrows (C8)Sediment Deposits (B2)(C3)Saturation Visible on AeDrift Deposits (B3)Presence of Reduced Iron (C4)Stunted or Stressed PlaAlgal Mat or Crust (B4)Recent Iron Reduction in Tilled SoilsXIron Deposits (B5)(C6)XFAC-Neutral Test (D5)	) e (C2) rial Imagery (C9) nts (D1)
High Water Table (A2)True Aquatic Plants (B14)Drainage Patterns (B10)X Saturation (A3)Hydrogen Sulfide Odor (C1)Dry-Season Water TableWater Marks (B1)Oxidized Rhizospheres on Living RootsCrayfish Burrows (C8)Sediment Deposits (B2)(C3)Saturation Visible on AetDrift Deposits (B3)Presence of Reduced Iron (C4)Stunted or Stressed PlaAlgal Mat or Crust (B4)Recent Iron Reduction in Tilled SoilsX Geomorphic Position (DIron Deposits (B5)(C6)X FAC-Neutral Test (D5)Inundation Visible on Aerial Imagery (B7)Thin Muck Surface (C7)	) e (C2) rial Imagery (C9) nts (D1)
High Water Table (A2)True Aquatic Plants (B14)Drainage Patterns (B10)XSaturation (A3)Hydrogen Sulfide Odor (C1)Dry-Season Water TableWater Marks (B1)Oxidized Rhizospheres on Living RootsCrayfish Burrows (C8)Sediment Deposits (B2)(C3)Saturation Visible on AetDrift Deposits (B3)Presence of Reduced Iron (C4)Stunted or Stressed PlaAlgal Mat or Crust (B4)(C6)XIron Deposits (B5)(C6)XInundation Visible on Aerial Imagery (B7)Thin Muck Surface (C7)Sparsely Vegetated Concave Surface (B8)Gauge or Well Data (D9)	) e (C2) rial Imagery (C9) nts (D1)
High Water Table (A2)True Aquatic Plants (B14)Drainage Patterns (B10)X Saturation (A3)Hydrogen Sulfide Odor (C1)Dry-Season Water TableWater Marks (B1)Oxidized Rhizospheres on Living RootsCrayfish Burrows (C8)Sediment Deposits (B2)(C3)Saturation Visible on AeiDrift Deposits (B3)Presence of Reduced Iron (C4)Stunted or Stressed PlaAlgal Mat or Crust (B4)(C6)X Geomorphic Position (DIron Deposits (B5)(C6)X FAC-Neutral Test (D5)Inundation Visible on Aerial Imagery (B7)Thin Muck Surface (C7)Sparsely Vegetated Concave Surface (B8)Gauge or Well Data (D9)Water-Stained Leaves (B9)Other (Explain in Remarks)	) e (C2) rial Imagery (C9) nts (D1)
High Water Table (A2)True Aquatic Plants (B14)Drainage Patterns (B10)X Saturation (A3)Hydrogen Sulfide Odor (C1)Dry-Season Water TableWater Marks (B1)Oxidized Rhizospheres on Living RootsCrayfish Burrows (C8)Sediment Deposits (B2)(C3)Saturation Visible on AeiDrift Deposits (B3)Presence of Reduced Iron (C4)Stunted or Stressed PlaAlgal Mat or Crust (B4)(C6)X Geomorphic Position (DIron Deposits (B5)(C6)X FAC-Neutral Test (D5)Inundation Visible on Aerial Imagery (B7)Thin Muck Surface (C7)Sparsely Vegetated Concave Surface (B8)Gauge or Well Data (D9)Water-Stained Leaves (B9)Other (Explain in Remarks)	) e (C2) rial Imagery (C9) nts (D1) 2)
High Water Table (A2)       True Aquatic Plants (B14)       Drainage Patterns (B10)         X Saturation (A3)       Hydrogen Sulfide Odor (C1)       Dry-Season Water Table (A2)         Water Marks (B1)       Oxidized Rhizospheres on Living Roots       Crayfish Burrows (C8)         Sediment Deposits (B2)       (C3)       Saturation Visible on Aetrial Imagery (B7)         Inundation Visible on Aerial Imagery (B7)       Thin Muck Surface (C7)       X FAC-Neutral Test (D5)         Water-Stained Leaves (B9)       Other (Explain in Remarks)       Other (Explain in Remarks)	) e (C2) nts (D1) 2) <b>tland</b>
High Water Table (A2)       True Aquatic Plants (B14)       Drainage Patterns (B10)         X Saturation (A3)       Hydrogen Sulfide Odor (C1)       Dry-Season Water Table (A2)         Water Marks (B1)       Oxidized Rhizospheres on Living Roots       Crayfish Burrows (C8)         Sediment Deposits (B2)       (C3)       Saturation Visible on Aeial Imagery (B7)         Iron Deposits (B5)       Recent Iron Reduction in Tilled Soils       X Geomorphic Position (D         Inundation Visible on Aerial Imagery (B7)       Thin Muck Surface (C7)       X FAC-Neutral Test (D5)         Sparsely Vegetated Concave Surface (B8)       Gauge or Well Data (D9)       Other (Explain in Remarks)         Field Observations:       Yes       No       X Depth (inches):       Indicators of we         Water table present?       Yes       No       X Depth (inches):       Indicators of we	) e (C2) nts (D1) 2) <b>tland</b>
High Water Table (A2)True Aquatic Plants (B14)Drainage Patterns (B10)X Saturation (A3)Hydrogen Sulfide Odor (C1)Dry-Season Water TableWater Marks (B1)Oxidized Rhizospheres on Living RootsCrayfish Burrows (C8)Sediment Deposits (B2)(C3)Saturation Visible on AeDrift Deposits (B3)Presence of Reduced Iron (C4)Stunted or Stressed PlaAlgal Mat or Crust (B4)Recent Iron Reduction in Tilled SoilsX Geomorphic Position (DIron Deposits (B5)(C6)X FAC-Neutral Test (D5)Inundation Visible on Aerial Imagery (B7)Thin Muck Surface (C7)Sparsely Vegetated Concave Surface (B8)Other (Explain in Remarks)Field Observations:YesNoSurface water present?YesWater table present?YesYesNoDepth (inches):Saturation present?YesYesNoSaturation present?Y	) e (C2) nts (D1) 2) <b>tland</b>
High Water Table (A2)       True Aquatic Plants (B14)       Drainage Patterns (B10)         X Saturation (A3)       Hydrogen Sulfide Odor (C1)       Dry-Season Water Table (A2)         Water Marks (B1)       Oxidized Rhizospheres on Living Roots       Crayfish Burrows (C8)         Sediment Deposits (B2)       (C3)       Saturation Visible on Aerial Imagery (B7)         Inon Deposits (B5)       Recent Iron Reduction in Tilled Soils       X         Inundation Visible on Aerial Imagery (B7)       Thin Muck Surface (C7)       Sauge or Well Data (D9)         Water Stained Leaves (B9)       Other (Explain in Remarks)       Indicators of we hydrology pres         Field Observations:       Yes       No       X       Depth (inches):         Water table present?       Yes       No       X       Depth (inches):       Indicators of we hydrology pres	) e (C2) nts (D1) 2) <b>tland</b>
High Water Table (A2)True Aquatic Plants (B14)Drainage Patterns (B10)X Saturation (A3)Hydrogen Sulfide Odor (C1)Dry-Season Water TableWater Marks (B1)Oxidized Rhizospheres on Living RootsCrayfish Burrows (C8)Sediment Deposits (B2)(C3)Saturation Visible on AeDrift Deposits (B3)Presence of Reduced Iron (C4)Stunted or Stressed PlaAlgal Mat or Crust (B4)Recent Iron Reduction in Tilled SoilsX Geomorphic Position (DInundation Visible on Aerial Imagery (B7)Thin Muck Surface (C7)X FAC-Neutral Test (D5)Sparsely Vegetated Concave Surface (B8)Other (Explain in Remarks)Indicators of weField Observations:YesNoX Depth (inches):Indicators of weSurface water present?YesNoDepth (inches):Indicators of weSaturation present?YesNoDepth (inches):Indicators of weMater table present?YesNoDepth (inches):Indicators of weSaturation present?YesNoDepth (inches):Mydrology pres(includes capillary fringe)YesNoDepth (inches):No	) e (C2) nts (D1) 2) <b>tland</b>
High Water Table (A2)True Aquatic Plants (B14)Drainage Patterns (B10)X Saturation (A3)Hydrogen Sulfide Odor (C1)Dry-Season Water TableWater Marks (B1)Oxidized Rhizospheres on Living RootsCrayfish Burrows (C8)Sediment Deposits (B2)(C3)Saturation Visible on AeDrift Deposits (B3)Presence of Reduced Iron (C4)Stunted or Stressed PlaAlgal Mat or Crust (B4)Recent Iron Reduction in Tilled SoilsX Geomorphic Position (DInundation Visible on Aerial Imagery (B7)Thin Muck Surface (C7)X FAC-Neutral Test (D5)Sparsely Vegetated Concave Surface (B8)Other (Explain in Remarks)Indicators of weField Observations:YesNoX Depth (inches):Indicators of weSurface water present?YesNoDepth (inches):Indicators of weSaturation present?YesNoDepth (inches):Indicators of weMater table present?YesNoDepth (inches):Indicators of weSaturation present?YesNoDepth (inches):Mydrology pres(includes capillary fringe)YesNoDepth (inches):No	) e (C2) nts (D1) 2) <b>tland</b>
High Water Table (A2)       True Aquatic Plants (B14)       Drainage Patterns (B10)         X Saturation (A3)       Hydrogen Sulfide Odor (C1)       Dry-Season Water Table         Water Marks (B1)       Oxidized Rhizospheres on Living Roots       Crayfish Burrows (C8)         Sediment Deposits (B2)       (C3)       Saturation (C4)       Saturation Visible on Ae         Algal Mat or Crust (B4)       Recent Iron Reduction in Tilled Soils       X Geomorphic Position (D         Iron Deposits (B5)       (C6)       X FAC-Neutral Test (D5)         Inundation Visible on Aerial Imagery (B7)       Thin Muck Surface (C7)       FAC-Neutral Test (D5)         Sparsely Vegetated Concave Surface (B8)       Other (Explain in Remarks)       Indicators of we hydrology pres         Water table present?       Yes       No       X Depth (inches):       Indicators of we hydrology pres         Saturation present?       Yes       No       Depth (inches):       Surface       hydrology pres         Cincludes capillary fringe)       Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	) e (C2) nts (D1) 2) <b>tland</b>
High Water Table (A2)       True Aquatic Plants (B14)       Drainage Patterns (B10)         X Saturation (A3)       Hydrogen Sulfide Odor (C1)       Dry-Season Water Table         Water Marks (B1)       Oxidized Rhizospheres on Living Roots       Crayfish Burrows (C8)         Sediment Deposits (B2)       (C3)       Saturation (C4)       Saturation Visible on Ae         Algal Mat or Crust (B4)       Recent Iron Reduction in Tilled Soils       X Geomorphic Position (D         Iron Deposits (B5)       (C6)       X FAC-Neutral Test (D5)         Inundation Visible on Aerial Imagery (B7)       Thin Muck Surface (C7)       FAC-Neutral Test (D5)         Sparsely Vegetated Concave Surface (B8)       Other (Explain in Remarks)       Indicators of we hydrology pres         Water table present?       Yes       No       X Depth (inches):       Indicators of we hydrology pres         Saturation present?       Yes       No       Depth (inches):       Surface       hydrology pres         Cincludes capillary fringe)       Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	) e (C2) nts (D1) 2) <b>tland</b>

Project/Site MTA-MTA-11 (Original)	City/	County:	Minnetonka/He	ennepin	Sampling Date:	8/7/2013
Applicant/Owner: SWLRT		State:	MN	l	Sampling Point:	D
Investigator(s): Mohamed Elabbady, Marc Cottingham		Sec	ction, Townshi	p, Range:	25-	·117-22
Landform (hillslope, terrace, etc.): Slope	9	Loca	I relief (concav	ve, conve	x, none):	Convex
Slope (%): 0-3 Lat:		Long:			Datum:	
Soil Map Unit Name L132A-Hamel-Glencoe complex			NWI	Classificat	tion:	
Are climatic/hydrologic conditions of the site typical for t	this time c	of the year?	Y (	If no, expl	ain in remarks)	
Are vegetation, soil, or hydrolog	ду	significan	tly disturbed?		Are "normal circur	nstances"
Are vegetation, soil, or hydrolog	ду	naturally	problematic?			present? Yes
SUMMARY OF FINDINGS				(If need	ded, explain any an	swers in remarks.)
Hydrophytic vegetation present? Y						
Hydric soil present? N			sampled are			N
Indicators of wetland hydrology present? N		f yes,	optional wetlar	nd site ID:		
Remarks: (Explain alternative procedures here or in a s	eparate re	eport.)				
Liveria Cail and Liveral				o io 1001 o		
Hydric Soil and Hydrol	ogy crite	ria were i	iot met. Area	a is not a	a wetland.	
VEGETATION Use scientific names of plants	5.					
	Absolute	Dominan	Indicator	Domina	ance Test Worksh	eet
	% Cover	•			of Dominant Specie	
1 Fraxinus pennsylvanica	10 10	Y Y	FACW		OBL, FACW, or FA	
2 <u>Tilia americana</u> 3	10	ř	FACU		l Number of Domina cies Across all Strat	
4				-	t of Dominant Specie	
5					OBL, FACW, or FA	
	20	=Total Cov	/er			
Sapling/Shrub stratum (Plot size: 15ft )					ence Index Works	heet
1 Rhamnus cathartica	80	Y	FAC		Cover of:	1 0
2				OBL sp	species 0 x	1 = 0 2 = 20
4				FAC sp	· · · · · · · · · · · · · · · · · · ·	3 = 240
5				-		4 = 40
	80	=Total Cov	/er	UPL sp		5 = 0
Herb stratum (Plot size: 5ft )				Column		A) <u>300</u> (B)
1				Prevale	ence Index = B/A =	3.00
2				Lb ideau	abutia Vagatatian	Indiantara
3					phytic Vegetation	
5					minance test is >50	
6				X Pre	evalence index is ≤3	3.0*
7				Mo	rphogical adaptatio	ons* (provide
8					porting data in Rer	narks or on a
9					parate sheet)	
10	0	=Total Cov	/er		blematic hydrophy plain)	tic vegetation*
Woody vine stratum (Plot size: 30ft )					tors of hydric soil and w present, unless disturb	etland hydrology must be ed or problematic
2					drophytic	
	0	=Total Cov	ver	-	getation esent? Y	
Remarks: (Include photo numbers here or on a separate	o choct)					
	e sneet)					

Profile Desc	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm	the absend	e of indicators.)
Depth	Matrix		Re	dox Feat	ures				
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Textu	re	Remarks
0-25	10YR 2/1	100					SiCL		
25-30	10YR 4/1	100					SiCL		
23-30	1011( 4/1	100					SICL		
				L					
	Concentration, D	= Depleti	on, RM = Reduce	ed Matrix	, MS = N	lasked S			n: PL = Pore Lining, M = Matrix
-	il Indicators:					(0.1)			ematic Hydric Soils:
	tisol (A1)			ndy Gleye		(S4)			dox (A16) (LRR K, L, R)
	tic Epipedon (A2)			ndy Redo					(LRR K, L)
	ck Histic (A3)			pped Ma	. ,			•	Masses (F12) (LRR K, L, R)
	Irogen Sulfide (A			my Mucł	•	. ,			rk Surface (TF12)
	atified Layers (A5	)		my Gley		(F2)	Other	(explain in	remarks)
	m Muck (A10)			pleted Ma					
	leted Below Dark		· · ·	dox Dark		``			
	ck Dark Surface (	,		pleted Da					ophytic vegetation and weltand
	ndy Mucky Minera	· · /		dox Depr	essions (	(F8)	hydrol	•••	e present, unless disturbed or
5 cr	n Mucky Peat or	Peat (S3	3)						problematic
Restrictive	Layer (if observe	ed):							
Туре:							Hydric s	soil presen	t? N
Depth (inche	es):				•				
HYDROLO									
-	drology Indicato						_		
-	cators (minimum	of one is	required; check				Sec		icators (minimum of two required)
	Water (A1)				Fauna (B		_		Soil Cracks (B6)
	ter Table (A2)				uatic Plar	```			Patterns (B10)
Saturatio					n Sulfide				son Water Table (C2)
	larks (B1)				i Rhizosp	neres on	Living Roots		Burrows (C8)
	nt Deposits (B2)			(C3)	a of Dodu	and Iron	(CA) —		n Visible on Aerial Imagery (C9)
	oosits (B3)				e of Redu		illed Soils		or Stressed Plants (D1)
-	at or Crust (B4) oosits (B5)			(C6)	IOII Redu				ohic Position (D2) utral Test (D5)
	on Visible on Aeria	al Imager	(B7)	. ,	ck Surfac	e (C7)	<u> </u>		
	Vegetated Conca				or Well Da				
	tained Leaves (B9			-	xplain in		)		
Field Obser	(	,					•	1	
Surface wate		Yes	No	х	Depth (i	nches):			
Water table		Yes	No		Depth (i			Inc	licators of wetland
Saturation p	-	Yes	No	X	Depth (i	'			vdrology present? N
	pillary fringe)				<u> </u>	,			
Describe rec	corded data (strea	am gaug	e, monitoring wel	l, aerial p	hotos, pi	revious ir	nspections), if a	available:	
Remarks:									
. comunto.									

Project/Site MTA-MTA-11 (Original)	City/C	County:	Minn	etonka/He	ennpein S	Sampling Da	te: 8/7/2013
Applicant/Owner: SWLRT	-	State	e:	MN	s	ampling Poi	int: E
Investigator(s): Mohamed Elabbady, Marc Cottingham		S	ection,	, Township	o, Range:		25-117-22
Landform (hillslope, terrace, etc.): Depression	on	Loc	cal relie	ef (concav	ve, convex,	none):	Concave
Slope (%): 0-3 Lat:		Long:			0	Datum:	
Soil Map Unit Name L132A-Hamel-Glencoe complex				NWI C	Classificatio	on:	PEM/FO1/SS1C
Are climatic/hydrologic conditions of the site typical for thi	is time of	the year	r?	Y (lt	f no, explai	n in remarks	s)
Are vegetation, soil, or hydrology	/	significa	antly d	isturbed?	A	Are "normal o	circumstances"
Are vegetation, soil, or hydrology	/	naturally	y prob	lematic?			present? Yes
SUMMARY OF FINDINGS					(If neede	d, explain ar	ny answers in remarks.)
Hydrophytic vegetation present? Y							
Hydric soil present? Y		Is th	ne sam	npled area	a within a v	wetland?	Y
Indicators of wetland hydrology present? Y		f yes	, optio	nal wetlan	nd site ID:		
Remarks: (Explain alternative procedures here or in a sep	parate re	oort.)					
All wetless to					- 41		
All wetland c	riteria w	ere me	et. Are	ea is a we	etland.		
VEGETATION Use scientific names of plants.							
At	bsolute	Domina	an Ir	ndicator	Dominar	nce Test Wo	orksheet
		t Specie	es	Staus		f Dominant S	•
1 Salix nigra	40	Y		OBL		BL, FACW, c	
2						lumber of Do es Across all	
<u> </u>						f Dominant S	
5						BL, FACW, c	•
	40 =	Total Co	over				
Sapling/Shrub stratum (Plot size: 15ft )					Prevalen	ice Index W	orksheet
1 Rhamnus cathartica	15	Y		FAC	Total % C		
2					OBL spec		$5 \times 1 = 45$
3					FACW sp FAC spee		
5					FACU sp		
	15 =	Total Co	over		UPL spec		
Herb stratum (Plot size: 5ft )					Column t	otals 110	0 (A) <u>190</u> (B)
1 Phalaris arundinacea	50	Y	I	FACW	Prevalen	ce Index = B	B/A = 1.73
2 Schoenoplectus fluviatilis	5	Ν		OBL			
3							tion Indicators:
4						d test for hyd inance test is	drophytic vegetation
5 6						alence index	
7							ptations* (provide
8							n Remarks or on a
9						rate sheet)	
10		<u> </u>				-	ophytic vegetation*
Woody vine stratum (Plot size: 30ft )	55 =	Total Co	over		(expl		
1							and wetland hydrology must be disturbed or problematic
2						ophytic	
	0 =	Total Co	over		vege	tation	
					pres	ent?	Y
Remarks: (Include photo numbers here or on a separate s	sheet)						

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm the	absence of i	ndicators.)
Depth	Matrix		-	lox Feat					·
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture		Remarks
0-12	10YR 2/1	90	10YR 4/6	10	С	М	SiCL		
12-18	10YR 4/1	85	10YR 4/6	15	С	М	SiCL		
*Type: C = C	Concentration, D :	= Depleti	on, RM = Reduce	ed Matrix	, MS = N	lasked S	and Grains. **	Location: PL	= Pore Lining, M = Matrix
Hydric So	il Indicators:						Indicators for	r Problemati	c Hydric Soils:
	tisol (A1)				ed Matrix	(S4)			A16) ( <b>LRR K, L, R</b> )
	tic Epipedon (A2)			dy Redo				ace (S7) ( <b>LR</b>	
	ck Histic (A3)			oped Ma	· · /				es (F12) ( <b>LRR K, L, R</b> )
	Irogen Sulfide (A4			-	ky Minera			low Dark Su	. ,
	atified Layers (A5)	)			ed Matrix	(F2)	Other (ex	plain in rema	rks)
	m Muck (A10)	o (			atrix (F3)	(50)			
	oleted Below Dark ck Dark Surface (				Surface ark Surface	. ,	<b></b>		
	dy Mucky Minera	,			essions (	. ,			ic vegetation and weltand
	n Mucky Peat or	. ,		lox Depi	essions (	(го)	nydrology		sent, unless disturbed or ematic
		•	)					piobi	entatic
	Layer (if observe	ed):							
Type:					-		Hydric soil	present?	Y
Depth (inche	es):				-				
HYDROLO									
•	drology Indicato								
-	cators (minimum	of one is	required; check						s (minimum of two required)
	Water (A1)				Fauna (B	,		Surface Soil C	. ,
Saturatio	ater Table (A2)				uatic Plar n Sulfide			Prainage Patte	ater Table (C2)
	larks (B1)							Crayfish Burro	
	nt Deposits (B2)			(C3)			-	•	ble on Aerial Imagery (C9)
	oosits (B3)				e of Redu	uced Iron			essed Plants (D1)
Algal Ma	at or Crust (B4)			Recent I	ron Redu	ction in T	illed Soils X G	Geomorphic P	osition (D2)
	osits (B5)			(C6)			XF	AC-Neutral T	est (D5)
	on Visible on Aeria				ck Surfac				
	Vegetated Conca		се (В8)	-	or Well Da Explain in		N N		
	tained Leaves (B9	)			хріантін	Remarks	)		
Field Obser Surface wate		Yes	No	Х	Depth (i	nches).			
Water table		Yes	No	X	Depth (i			Indicato	rs of wetland
Saturation p		Yes	No	X	Depth (i	,			ogy present? Y
-	pillary fringe)					/			
		am aaua	e. monitorina well	. aerial p	hotos, pr	revious ir	nspections), if avail	able:	
		33		· ··· P	· · · · ·				
Remarks:									

Project/Site MTA-MTA-11 (Original)	City/C	ounty: N	linnetonka/He	ennepin Sampling Date:	8/7/2013
Applicant/Owner: SWLRT	-	State:	MN	Sampling Point:	F
Investigator(s): Marc Cottingham, Mohamed Elabbady		Sect	ion, Township	o, Range: 25	5-117-22
Landform (hillslope, terrace, etc.): Slope		Local	relief (concav	e, convex, none):	Convex
Slope (%): 0-3 Lat:		Long:		Datum:	
Soil Map Unit Name L132A-Hamel-Glencoe complex			NWI C	Classification:	
Are climatic/hydrologic conditions of the site typical for this	s time of	the year?	Y (li	f no, explain in remarks)	
Are vegetation, soil, or hydrology		significantl	y disturbed?	Are "normal circu	umstances"
Are vegetation, soil, or hydrology		naturally p	roblematic?		present? Yes
SUMMARY OF FINDINGS				(If needed, explain any a	nswers in remarks.)
Hydrophytic vegetation present? Y					
Hydric soil present? N			-	a within a wetland?	N
Indicators of wetland hydrology present? N		f yes, o	otional wetlan	d site ID:	
Remarks: (Explain alternative procedures here or in a sepa	arate rep	oort.)			
Hydric Soil and Hydrolog	n oritori	o woro p	ot mot Aroa	is not a watland	
	ly chien		Ji mel. Alea	a is not a wettand.	
<b>VEGETATION</b> Use scientific names of plants.					
	solute	Dominan	Indicator	Dominance Test Works	sheet
		t Species	Staus	Number of Dominant Spec	
1 Acer negundo	50	Y	FAC	that are OBL, FACW, or FA	、
3				Total Number of Domin Species Across all Stra	
4				Percent of Dominant Spec	、
5				that are OBL, FACW, or FA	AC: 80.00% (A/B)
	50 =	Total Cove	er		
<u>Sapling/Shrub stratum</u> (Plot size: <u>15ft</u> ) 1 Rhamnus cathartica	30	Y	FAC	Prevalence Index Work Total % Cover of:	sheet
2	30	1	FAC		x 1 = 0
3					$x^{2} = 30$
4					x 3 = 270
5				·	x 4 = <u>80</u>
	30 =	Total Cove	er	· · · ·	x 5 = 0
Herb stratum (Plot size: 5ft )	00	v	FACU		(A) $380$ (B) $2.04$
1 Arctium minus 2 Alliaria petiolata	20	Y	FACU FAC	Prevalence Index = B/A =	= <u>3.04</u>
3	10			Hydrophytic Vegetation	n Indicators:
4				Rapid test for hydrop	
5				X Dominance test is >5	
6				Prevalence index is a	≤3.0*
7	·			Morphogical adaptati	
8 9				supporting data in Re separate sheet)	emarks or on a
10				Problematic hydroph	vtic vegetation*
	30 =	Total Cove	er	(explain)	,
Woody vine stratum (Plot size: 30ft )				*Indicators of hydric soil and	wetland hydrology must be
1 Vitis riparia	15	Y	FACW	present, unless distur	rbed or problematic
2	45	Total Caur		Hydrophytic vegetation	
	15 =	Total Cove	;1	present? Y	,
Remarks: (Include photo numbers here or on a separate s	sheet)				

Profile Desc	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm the ab	sence of indicators.)
Depth	Matrix		Red	lox Featu	ures			
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks
0-10	10YR 3/1	100					SiCL	
10-18	10YR 4/3	95	10YR 4/4	5	С	М	SiCL	
*Type: C = C	Concentration, D =	= Depleti	on, RM = Reduce	d Matrix	, MS = N	lasked S	and Grains. **Lo	cation: PL = Pore Lining, M = Matrix
Hydric So	il Indicators:						Indicators for F	Problematic Hydric Soils:
Hist	tisol (A1)				ed Matrix	(S4)		e Redox (A16) ( <b>LRR K, L, R</b> )
	tic Epipedon (A2)			dy Redo				e (S7) ( <b>LRR K, L)</b>
	ck Histic (A3)			oped Ma	. ,		-	nese Masses (F12) ( <b>LRR K, L, R</b> )
	Irogen Sulfide (A4			-	ky Minera			w Dark Surface (TF12)
	atified Layers (A5)	)			ed Matrix	(F2)	Other (expla	ain in remarks)
	m Muck (A10)	0		leted Ma		(50)		
· · ·	bleted Below Dark				Surface	. ,		
	ck Dark Surface ( idy Mucky Minera	,			irk Surfa essions (			hydrophytic vegetation and weltand ust be present, unless disturbed or
	n Mucky Peat or	. ,		lox Deph	65510115 (	(го)	nyarology m	problematic
	2	,	1			1		problemate
	Layer (if observe	ed):						
Type:	20);				-		Hydric soil pr	esent? N
Depth (inche					-			
Remarks:								
	drology Indicato	ve:						
-			required, sheeld		n n lu v		Co co do	
-		of one is	required; check			40)		ry Indicators (minimum of two required)
	Water (A1) iter Table (A2)				Fauna (B uatic Plar	,		face Soil Cracks (B6) inage Patterns (B10)
Saturatio					n Sulfide			-Season Water Table (C2)
	larks (B1)						· ·	yfish Burrows (C8)
	nt Deposits (B2)			(C3)				uration Visible on Aerial Imagery (C9)
	oosits (B3)				e of Redu	uced Iron		nted or Stressed Plants (D1)
Algal Ma	at or Crust (B4)			Recent I	ron Redu	ction in T	illed Soils Ge	omorphic Position (D2)
	osits (B5)			(C6)			FA	C-Neutral Test (D5)
	on Visible on Aeria		,		ck Surfac	. ,		
	Vegetated Conca		ce (B8)	-	or Well Da			
	tained Leaves (B9	)		Other (E	xplain in	Remarks	)	
Field Obser		N.			D			
Surface wate		Yes	No No	X	Depth (i			Indicators of watland
Water table	-	Yes	No No	X X	Depth (i			Indicators of wetland hydrology present? N
Saturation p	pillary fringe)	Yes		^	Depth (i	nches).		
			monitoring well	oorial n	hotos n		enactions) if availab	
Describe rec		an yauge	e, monitoring well	, aeriai p	ποιοs, ρι	Evious II	nspections), if availab	<i>n</i> c.
Remarks:								

Project/Site MTA-MTA-11 (Original)	City/C	ounty:	Minnetonk	a/Hennepin	Sampling Date:	9/4/2013				
Applicant/Owner: SWLRT		State		MN	Sampling Point:	G				
Investigator(s): Marc Cottingham		Se	ction, Tow	nship, Range:	25-	25-117-22				
Landform (hillslope, terrace, etc.): Depression					k, none):	Concave				
Slope (%): 0-3 Lat:		Long:			Datum:					
Soil Map Unit Name U1A-Urban Land - Udorthents			Ν	IWI Classifica	tion: PEN	I/FO1/SS1C				
Are climatic/hydrologic conditions of the site typical for this	time of	the year?	Y Y	(If no, expl	ain in remarks)					
Are vegetation , soil , or hydrology		significar	tly disturb	ed?	Are "normal circun	nstances"				
Are vegetation , soil , or hydrology	problemat	ic?		present? Yes						
SUMMARY OF FINDINGS				(If need	led, explain any ans	swers 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 sepa	rate rep	ort)								
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.										
Abs	olute	Dominan	Indicat	or Domin	ance Test Worksh	eet				
		t Species		Number	of Dominant Specie					
	10	Y	OBL		OBL, FACW, or FAC	· /				
2					l Number of Dominar cies Across all Strata					
4			_	_ · ·	of Dominant Specie	( ,				
5						C: 100.00% (A/B)				
1	10 =	Total Cov	/er	_		、 ,				
Sapling/Shrub stratum (Plot size: 15ft )				Preval	ence Index Worksl	heet				
1					Cover of:					
2				OBL sp						
3				FACW	species 90 x becies 0 x	2 = 180 3 = 0				
5			_			4 = 0				
	0 =	Total Cov	/er	UPL sp		5 = 0				
Herb stratum (Plot size: 5ft )				Columr						
1 Phalaris arundinacea	90	Y	FACV	V Prevale	ence Index = $B/A$ =	1.90				
2				_						
3					ohytic Vegetation I					
4					pid test for hydroph					
5					minance test is >50					
6 7					evalence index is ≤3					
8					rphogical adaptatio porting data in Rer					
9					parate sheet)					
10				`	blematic hydrophyt	tic vegetation*				
g	90 =	Total Cov	/er	(ex	plain)	_				
Woody vine stratum (Plot size: 30ft )				*Indicat	tors of hydric soil and we	etland hydrology must be				
1				_	present, unless disturbe	ed or problematic				
2		Tatal O		-	drophytic getation					
	0 =	Total Cov	/er		esent? Y					
Remarks: (Include photo numbers here or on a separate sh	neet)									

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm the abs	sence of indicators.)		
Profile Description:         (Describe to the depth needed to document the indicator or confirm the absence of indicators.)           Depth         Matrix         Redox Features										
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks		
0-8	10YR 3/1	100					SiL			
8-18	10YR 4/2	95	10YR 4/6	5	С	М	LyS			
0.10	101111/1/2	00	101111.0	Ű	Ŭ		2,0			
	Concentration, D =	= Deplet	ion, RM = Reduce	ed Matrix	., MS = №	lasked S		ation: PL = Pore Lining, M = Matrix		
-	oil Indicators:							oblematic Hydric Soils:		
	tisol (A1)			ndy Gleye		: (S4)		Redox (A16) ( <b>LRR K, L, R</b> )		
	tic Epipedon (A2)			ndy Redo	. ,			(S7) ( <b>LRR K, L)</b>		
	ck Histic (A3)			pped Ma	. ,			ese Masses (F12) (LRR K, L, R)		
Hyd	drogen Sulfide (A4	4)		my Mucl				Dark Surface (TF12)		
Stra	atified Layers (A5)	)	Loa	my Gley	ed Matrix	k (F2)	Other (explai	n in remarks)		
	m Muck (A10)			pleted Ma	. ,					
	oleted Below Dark			dox Dark						
Thie	ck Dark Surface (	A12)	Dep	oleted Da	ark Surfa	ce (F7)	*Indicators of h	hydrophytic vegetation and weltand		
Sar	ndy Mucky Minera	l (S1)	Rec	dox Depr	essions (	(F8)		st be present, unless disturbed or		
5 ci	m Mucky Peat or	Peat (S3	3)					problematic		
Restrictive	Layer (if observe	ed).				1				
Туре:		cuj.					Hydric soil pre	sont? V		
Depth (inche	20).				-		riyunc son pre			
Depth (inche	=5).				-					
Remarks:										
HYDROL	OGY									
Wetland Hy	drology Indicato	ors:								
-	cators (minimum		required: check	all that a	(vlaa		Secondary	Indicators (minimum of two required)		
-		0. 0.10 10				(13)				
	Surface Water (A1)Aquatic Fauna (B13)Surface Soil Cracks (B6)High Water Table (A2)True Aquatic Plants (B14)Drainage Patterns (B10)							. ,		
U	Saturation (A3) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2)									
	larks (B1)							fish Burrows (C8)		
	nt Deposits (B2)			(C3)			· · · ·	ration Visible on Aerial Imagery (C9)		
	Drift Deposits (B3) Presence of Reduced Iron (C4) Stunted or Stressed Plants (D1)									
	Algal Mat or Crust (B4)     Recent Iron Reduction in Tilled Soils     X Geomorphic Position (D2)									
	oosits (B5)			(C6)				Neutral Test (D5)		
Inundation Visible on Aerial Imagery (B7) Thin Muck Surface (C7)										
	Sparsely Vegetated Concave Surface (B8) Gauge or Well Data (D9)									
	tained Leaves (B9			-		Remarks	;)			
Field Obser		,		(			<u>′</u>			
Surface wat		Yes	No	х	Depth (i	nches).				
Water table		Yes	No		Depth (i		[	Indicators of wetland		
Saturation p		Yes	No	<u> </u>	Depth (i	,	[	hydrology present? Y		
	pillary fringe)	103		~		nenes).				
-				oorioln	hotoo n		nonactiona) if available	~		
Describe red	corded data (strea	am gaug	e, monitoring weil	, aenai p	notos, p	revious ii	nspections), if available	ð.		
Remarks:										
Nornarks.										

Project/Site MTA-MTA-11 (Original)	City/C	County:	Min	inetonka/He	ennepin	Sampling Date:	9/4/2013
Applicant/Owner: SWLRT		Stat	e:	MN		Sampling Point:	Н
Investigator(s): Marc Cottingham		s	ectio	n, Townshij	o, Range:	25-1	17-22
Landform (hillslope, terrace, etc.): Terrace		Loc	cal re	lief (concav	e, convex	(, none):	None
Slope (%): 0-2 Lat:		Long:				Datum:	
Soil Map Unit Name U1A-Urban Land - Udorthents		-		NWI	Classificat	tion:	
Are climatic/hydrologic conditions of the site typical for this	time of	the yea	r?	Y (I	f no, expla	ain in remarks)	
Are vegetation , soil , or hydrology		significa	antly	disturbed?		Are "normal circum	stances"
Are vegetation , soil , or hydrology		naturall	y pro	blematic?			present? Yes
SUMMARY OF FINDINGS					(If need	led, explain any ans	wers in remarks.)
Hydrophytic vegetation present? Y							
Hydric soil present? N		ls th	ne sa	mpled area	a within a	wetland?	Ν
Indicators of wetland hydrology present? N		f yes	, opti	ional wetlar	d site ID:		
Remarks: (Explain alternative procedures here or in a sepa	arate rer	oort.)					
Hydric soil and wetland hydro	-		vere	not met.	Area is i	not a wetland.	
<b>VEGETATION</b> Use scientific names of plants.							
Abs	solute	Domina	an	Indicator	Domina	ance Test Workshe	et
		t Specie	es	Staus		of Dominant Species	
	25	Y		OBL		OBL, FACW, or FAC	
2						Number of Dominan cies Across all Strata	
4						of Dominant Species	
5						OBL, FACW, or FAC	
	25 =	Total C	over				、
Sapling/Shrub stratum (Plot size: 15ft )					Prevale	ence Index Worksh	eet
	40	Y		FAC		Cover of:	
2					OBL sp		
3					FAC vv FAC sp	species 0 x 2 ecies 70 x 3	
5					FACU s		
	40 =	Total C	over		UPL sp		
Herb stratum (Plot size: 5ft )					Column		) 275 (B)
1 Alliaria petiolata	30	Y		FAC	Prevale	ence Index = B/A =	2.62
2 Ageratina altissima	10	Y		FACU			
3						ohytic Vegetation In	
4						oid test for hydrophy	-
5						minance test is >509 valence index is ≤3	
7							
8						rphogical adaptatior porting data in Rem	
9					-	parate sheet)	
10	40 =	-Total C	over			blematic hydrophyti plain)	c vegetation*
Woody vine stratum (Plot size: 30ft )					*Indicat	ors of hydric soil and we	tland hydrology must be
1						present, unless disturbe	, ,,
2						drophytic jetation	
	0 =	Total C	over			sent? Y	
Remarks: (Include photo numbers here or on a separate sl	heet)				•		

Profile Desc	cription: (Descri	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm the al	bsence of indicators.)
Depth	Matrix			lox Feat				
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks
0-10	10YR 3/3	100					Loam	
10-18	10YR 4/3	100					Loam	
*Type: C = C	Concentration, D =	= Depleti	on, RM = Reduce	ed Matrix	, MS = N	lasked S	and Grains. **Lo	ocation: PL = Pore Lining, M = Matrix
Hydric So	il Indicators:						Indicators for I	Problematic Hydric Soils:
Hist	tisol (A1)		San	dy Gleye	ed Matrix	: (S4)	Coast Prair	ie Redox (A16) ( <b>LRR K, L, R</b> )
Hist	tic Epipedon (A2)		San	dy Redo	x (S5)			ce (S7) ( <b>LRR K, L)</b>
Blac	ck Histic (A3)		Stri	oped Ma	trix (S6)			nese Masses (F12) ( <b>LRR K, L, R</b> )
	lrogen Sulfide (A4		Loa	my Mucł	ky Minera	al (F1)	Very Shallo	w Dark Surface (TF12)
	atified Layers (A5)	)			ed Matrix	k (F2)	Other (expl	ain in remarks)
	m Muck (A10)				atrix (F3)			
	leted Below Dark				Surface	· ·		
	ck Dark Surface (	,	•		ark Surfa	. ,		f hydrophytic vegetation and weltand
	dy Mucky Minera	. ,		lox Depr	essions (	(F8)	hydrology n	nust be present, unless disturbed or
5 cr	m Mucky Peat or	Peat (S3	5)					problematic
	Layer (if observe	ed):						
Туре:					-		Hydric soil p	resent? N
Depth (inche	es):				-			
Remarks:								
HYDROLO								
-	drology Indicato							
		of one is	required; check					ry Indicators (minimum of two required)
	Water (A1)				Fauna (B			rface Soil Cracks (B6)
	ter Table (A2)				uatic Plar			ainage Patterns (B10)
Saturatio					n Sulfide			y-Season Water Table (C2)
	larks (B1) nt Deposits (B2)			(C3)	i Rhizosp	neres on	<b>°</b>	ayfish Burrows (C8) turation Visible on Aerial Imagery (C9)
	bosits (B3)				e of Redu	iced Iron		unted or Stressed Plants (D1)
-	at or Crust (B4)						. ,	omorphic Position (D2)
	osits (B5)			(C6)				C-Neutral Test (D5)
	on Visible on Aeria	I Imager	y (B7)	. ,	ck Surfac	e (C7)		
Sparsely	Vegetated Conca	ve Surfa			or Well Da			
Water-S	tained Leaves (B9	)		Other (E	xplain in	Remarks	)	
Field Obser	vations:							
Surface wate	er present?	Yes	No	Х	Depth (i	nches):		
Water table	present?	Yes	No	Х	Depth (i	nches):		Indicators of wetland
Saturation p		Yes	No	Х	Depth (i	nches):		hydrology present? N
	pillary fringe)							
Describe rec	corded data (strea	am gauge	e, monitoring well	, aerial p	hotos, pi	revious ir	nspections), if availal	ble:
Pomorko								
Remarks:								

Project/Site MTA-MTA-11 (Original)	City/C	ounty:	Minneton	ka S	Sampling Date:	9/4/2013
Applicant/Owner: SWLRT		State:	MN	S	Sampling Point:	I
Investigator(s): Marc Cottingham		Sectio	on, Township	o, Range:	25-	117-22
Landform (hillslope, terrace, etc.): Excavated Po	ond	Local re	elief (concav	re, convex,	none):	Concave
Slope (%): 0-2 Lat:		Long:		[	Datum:	
Soil Map Unit Name U1A-Urban Land - Udorthents			NWIC	Classificatio	on:	
Are climatic/hydrologic conditions of the site typical for this	s time of	the year?	Y (li	f no, explai	n in remarks)	
Are vegetation , soil , or hydrology		significantly	disturbed?	ļ	Are "normal circun	nstances"
Are vegetation , soil , or hydrology		naturally pro	oblematic?			present? Yes
SUMMARY OF FINDINGS				(If neede	d, explain any ans	swers in remarks.)
Hydrophytic vegetation present? N						
Hydric soil present? N		Is the sa	ampled area	a within a v	wetland?	Ν
Indicators of wetland hydrology present? Y		f yes, opt	tional wetlan	nd site ID:		
Remarks: (Explain alternative procedures here or in a sepa	arate rec	port.)				
	-					
Hydrophytic vegetation and h	nydric s	oil criteria	not met. A	Area is no	ot a wetland.	
VEGETATION Use scientific names of plants.						
Abs	solute	Dominan	Indicator	Dominar	nce Test Worksh	eet
<u>Tree Stratum</u> (Plot size: <u>30ft</u> ) % (	Cover	t Species	Staus		of Dominant Specie	
2		·			BL, FACW, or FAC	· ` `
3					Number of Dominar es Across all Strata	
4		·			of Dominant Specie	(`)
5					BL, FACW, or FAC	
	0 =	Total Cover				
Sapling/Shrub stratum (Plot size: 15ft )					nce Index Works	neet
1				Total % (		
2				OBL spe		
3		·		FACW s FAC spe		2 = 0 3 = 0
5				FACU sp		4 = 0
	0 =	Total Cover		UPL spe		5 = 0
Herb stratum (Plot size: 5ft )				Column t	otals 0 (A	a) <u>0</u> (B)
1				Prevalen	ce Index = B/A =	
2						
3					ytic Vegetation I	
4					d test for hydroph	
5		·			inance test is >50 alence index is ≤3	
6 7						
8		·			hogical adaptation orting data in Ren	
9	·	·			rate sheet)	
10					lematic hydrophyt	ic vegetation*
	0 =	Total Cover		(expl	ain)	
Woody vine stratum (Plot size: 30ft )						etland hydrology must be
1		·			resent, unless disturbe rophytic	ed or problematic
2	0 =	Total Cover			etation	
	0 =			pres		_
Remarks: (Include photo numbers here or on a separate sl	heet)					
Un-vegetated excavated sedimentation pond.						

Profile Desc	cription: (Descri	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm	the absend	e of indicators.)
Depth	Matrix		Rec	dox Featu	ures				
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Textu	re	Remarks
0-5	10YR 3/1	100					SiCL		
5-13	10YR 2/1	100					SiCL		
13-24	10YR 2/1	70					SiCL		Mixed matrix
13-24							SICL		Mixed matrix
	10YR 4/2	30							
*Type: C = C	Concentration, D =	– Denleti	on RM = Reduce	d Matrix	MS = M	lasked S	and Grains	**Locatio	n: PL = Pore Lining, M = Matrix
	il Indicators:	- Depieti			, 100 – 10	laskeu o			ematic Hydric Soils:
-	tisol (A1)		San	dy Gleve	ed Matrix	(\$4)			dox (A16) ( <b>LRR K, L, R</b> )
	tic Epipedon (A2)			dy Redo		(04)			7) ( <b>LRR K, L)</b>
	ck Histic (A3)			oped Ma					Masses (F12) ( <b>LRR K, L, R</b> )
	Irogen Sulfide (A4	1)			(30) (y Minera	al (F1)		-	rk Surface (TF12)
	atified Layers (A5)			•	ed Matrix	. ,		(explain in	
	n Muck (A10)	,			atrix (F3)	(I Z)			Temarks)
	bleted Below Dark	Surface			Surface	(F6)			
	ck Dark Surface (				irk Surface	. ,	*Indiaci	ora of hydr	apply tig vegetation and weltand
	idy Mucky Minera	,			essions (	. ,			ophytic vegetation and weltand e present, unless disturbed or
	n Mucky Peat or	. ,			0001010	10)	nyuru	ogy must b	problematic
		,	)						problemate
	Layer (if observe	ed):							
Type:							Hydric s	soil presen	t? <u>N</u>
Depth (inche	es):				-				
HYDROLO	DGY								
	drology Indicato	ors:							
-	cators (minimum		required: check :	all that a	nnlv)		Sec	ondary Ind	icators (minimum of two required)
-	Water (A1)		required, check i		Fauna (B	13)			Soil Cracks (B6)
	iter Table (A2)				uatic Plar				e Patterns (B10)
Saturatio					n Sulfide				son Water Table (C2)
	larks (B1)						Living Roots		Burrows (C8)
	nt Deposits (B2)			(C3)					on Visible on Aerial Imagery (C9)
	oosits (B3)				e of Redu	uced Iron	(C4)		or Stressed Plants (D1)
Algal Ma	at or Crust (B4)								phic Position (D2)
Iron Dep	osits (B5)			(C6)			_	FAC-Neu	utral Test (D5)
Inundatio	on Visible on Aeria	I Imagery	/ (B7)	Thin Mu	ck Surfac	e (C7)	_		
	Vegetated Conca		ce (B8)	-	or Well Da				
Water-S	tained Leaves (B9	)		Other (E	xplain in	Remarks	)		
Field Obser									
Surface wate	er present?	Yes	No	Х	Depth (i				
Water table		Yes	No		Depth (i	-			licators of wetland
Saturation p		Yes	No	Х	Depth (i	nches):		hy	/drology present? Y
	pillary fringe)								
Describe rec	corded data (strea	am gauge	e, monitoring well	, aerial p	hotos, pi	evious ir	nspections), if a	available:	
Remarks:									
		orm	orbasis						
Area is a	in excavated st	onnwai	er basin.						

Project/Site MTA-MTA-11 (Extended)	City/C	County:	Min	netonka/He	ennepin	Sampling Date:	10/10/2014
Applicant/Owner: SWLRT	_	Stat	e:	MN		Sampling Point:	J
Investigator(s): Lucy Dahl, Marc Cottingham		s	ectio	n, Township	o, Range:	25	-117-22
Landform (hillslope, terrace, etc.): Depression	on	Loc	cal re	lief (concav	e, conve	k, none):	Concave
Slope (%): 0-3 Lat:		Long:				Datum:	
Soil Map Unit Name Hamel L36A		-		NWI C	Classificat	tion:	PFO1A
Are climatic/hydrologic conditions of the site typical for th	is time of	the yea	r?	Y (l	f no, expl	ain in remarks)	
Are vegetation , soil , or hydrology	y	significa	antly	disturbed?		Are "normal circu	mstances"
Are vegetation , soil , or hydrology	y	naturall	y pro	blematic?			present? No
SUMMARY OF FINDINGS					(If need	led, explain any ar	nswers in remarks.)
Hydrophytic vegetation present? Y							
Hydric soil present? Y		ls th	ne sa	mpled area	a within a	a wetland?	Y
Indicators of wetland hydrology present? Y		f yes	s, opti	ional wetlan	d site ID:		
Remarks: (Explain alternative procedures here or in a se	parate re	port.)					
Above average precipitati	ion. Mee	ets all w	vetla	nd criteria	. Area is	a wetland.	
L VEGETATION Use scientific names of plants.							
•	bsolute	Domina	an	Indicator	Domina	ance Test Works	heet
	6 Cover			Staus		of Dominant Speci	
1						OBL, FACW, or FA	
2						Number of Domina	
3					Spe	cies Across all Stra	ta: <u>2</u> (B)
4						of Dominant Speci	
5	0 =	=Total C			that are	OBL, FACVV, OF FA	AC: <u>100.00%</u> (A/B)
Sapling/Shrub stratum (Plot size: 15ft )			0.00		Prevale	ence Index Works	sheet
1 Rhamnus cathartica	25	Y		FAC		Cover of:	
2					OBL sp	ecies 10 x	(1 = 10
3						·	(2 = 120
4					FAC sp		(3 = 75
5	- 25	Total C			FACU s		4 = 0
Herb stratum (Plot size: 5ft )	25 =	=Total C	over		UPL sp Columr		(5 = 0) A) 205 (B)
1 Phalaris arundinacea	50	Y		FACW		ence Index = $B/A$ =	,( ,
2 Pilea pumila	10	N		FACW	Flevale	$\text{ filler index} = \mathbf{D}/\mathbf{A} =$	2.10
3 Typha angustifolia	10	N		OBL	Hvdrog	ohytic Vegetation	Indicators:
4						pid test for hydropl	
5					X Doi	minance test is >5	0%
6					X Pre	evalence index is ≤	3.0*
7						rphogical adaptation	
89						porting data in Re	marks or on a
9 10						parate sheet) Iblematic hydrophy	rtic vegetation*
	70 =	-Total C	over			plain)	
Woody vine stratum (Plot size: 30ft )	-						vetland hydrology must be
1						present, unless disturb	, ,,
2						drophytic	
	0 =	=Total C	over			getation esent? Y	
Demontos (Includo aboto puesto en boro en en e	abact)				Pie	<u> </u>	
Remarks: (Include photo numbers here or on a separate	sneet)						

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm the a	absence of indicators.)
Depth	Matrix		Red	dox Feat	ures			
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks
0-4	10YR 2/1	100		,.			Fibric Peat	
4-20	10YR 4/1	90	10YR 4/6	10	С	PL	SiCL	
*Type: C = 0	Concentration, D :	= Depleti	on, RM = Reduce	ed Matrix	, MS = N	lasked S	and Grains. **	Location: PL = Pore Lining, M = Ma
Hydric So	oil Indicators:						Indicators for	Problematic Hydric Soils:
-	tisol (A1)		Sar	dy Gleye	ed Matrix	(S4)		irie Redox (A16) (LRR K, L, R)
	tic Epipedon (A2)			idy Redo				ace (S7) ( <b>LRR K, L)</b>
								janese Masses (F12) (LRR K, L, R)
	ck Histic (A3)			pped Ma	. ,			
	drogen Sulfide (A4			my Mucl				low Dark Surface (TF12)
	atified Layers (A5)	)		my Gley			Other (exp	olain in remarks)
2 c	m Muck (A10)		X Dep	leted Ma	atrix (F3)			
X De	oleted Below Dark	Surface	(A11) Rec	lox Dark	Surface	(F6)		
Thi	ck Dark Surface (	A12)	Dep	leted Da	rk Surfa	ce (F7)	*Indicators	of hydrophytic vegetation and welta
Sar	ndy Mucky Minera	ıl (S1)		lox Depr				must be present, unless disturbed of
	m Mucky Peat or					()	, a. e. e g j	problematic
	-	-	)			-		problemade
Restrictive	Layer (if observe	ed):						
Туре:							Hydric soil	present? Y
Depth (inche	es):				•			
Remarks:					•			
HYDROL	OGY							
	drology Indicato	NC:						
	cators (minimum	of one is	required; check	all that a	<u>pply)</u>			ary Indicators (minimum of two requ
Surface	Water (A1)			Aquatic	Fauna (B	13)	S	urface Soil Cracks (B6)
High Wa	ater Table (A2)			True Aq	uatic Plar	nts (B14)		rainage Patterns (B10)
Saturati	on (A3)			Hydroge	n Sulfide	Odor (C	1) D	ry-Season Water Table (C2)
Water M	larks (B1)			Oxidized	l Rhizosp	heres on	Living Roots C	rayfish Burrows (C8)
Sedime	nt Deposits (B2)			(C3)			s	aturation Visible on Aerial Imagery (C
Drift De	oosits (B3)			Presenc	e of Redu	uced Iron	(C4) S	tunted or Stressed Plants (D1)
Algal Ma	at or Crust (B4)			Recent I	ron Redu	uction in T	illed Soils X G	eomorphic Position (D2)
	oosits (B5)			(C6)				AC-Neutral Test (D5)
	on Visible on Aeria	al Imagery	/ (B7)		ck Surfac	e (C7)		
	Vegetated Conca			-	or Well Da	. ,		
	tained Leaves (B9			-		Remarks	)	
Field Obse	,	,					/	
		Vee	Nia		Danth (			
Surface wat		Yes	No		Depth (i			Indianters of motion 1
Water table	•	Yes	No		Depth (i	,		Indicators of wetland
Saturation p		Yes	No		Depth (i	inches):		hydrology present? Y
(includes ca	pillary fringe)							
Describe re	corded data (strea	am gauge	e, monitoring well	, aerial p	hotos, p	revious i	nspections), if availa	able:
	•	- 0	-	•	•			
Remarks:								

Project/Site MTA-MTA-11 (Extended)	City/County:	Minnetonka/He	ennepin Sa	ampling Date:	10/10/2014
Applicant/Owner: SWLRT	Stat	e: MN	Sa	mpling Point:	К
Investigator(s): Lucy Dahl, Marc Cottingham	s	ection, Township	o, Range:	25-1	117-22
Landform (hillslope, terrace, etc.): Gentle Slope	e Loc	al relief (concav	e, convex, n	one):	Convex
Slope (%): 0-3 Lat:	Long:		Da	atum:	
Soil Map Unit Name Hamel		NWI	Classification	n: I	PFO1A
Are climatic/hydrologic conditions of the site typical for this t	time of the yea	r? Y (l'	f no, explain	in remarks)	
Are vegetation , soil , or hydrology	significa	antly disturbed?	Ar	e "normal circum	nstances"
Are vegetation , soil , or hydrology	naturall	y problematic?			present? No
SUMMARY OF FINDINGS			(If needed,	, explain any ans	wers in remarks.)
Hydrophytic vegetation present? Y					
Hydric soil present? N	ls th	e sampled area	a within a we	etland?	N
Indicators of wetland hydrology present? N	f yes	, optional wetlan	nd site ID:		
Remarks: (Explain alternative procedures here or in a separ	rate report.)				
Above average precipitation. Wetland so	oil and hydro	ogy indicators	s not met. A	Area is not a w	etland.
VEGETATION Use scientific names of plants.					
· · · · · ·	olute Domina	n Indicator	Dominanc	e Test Workshe	eet
Tree Stratum (Plot size: 30ft ) % C	over t Specie	es Staus	Number of	Dominant Specie	s
	5 Y	FACW	that are OB	L, FACW, or FAC	2 (A)
2				Imber of Dominar	
3				s Across all Strata	. ,
5				Dominant Specie L, FACW, or FAC	
1	5 =Total C	over			(```,
Sapling/Shrub stratum (Plot size: 15ft )			Prevalenc	e Index Worksh	neet
1 Rhamnus cathartica 3	80 Y	FAC	Total % Co		
	0 Y	FACU	OBL speci		
3			FACW spe		
4 5			FAC speci FACU spe		
	0 =Total C	over	UPL specie		5 = 0
Herb stratum (Plot size: 5ft )			Column to		
´				e Index = B/A =	2.91
2					
3			Hydrophy	tic Vegetation I	ndicators:
4				test for hydrophy	•
5				ance test is >50	
6				ence index is ≤3	
8				ogical adaptatior rting data in Rem	N .
9		— —		ate sheet)	Iains UI UII a
10				matic hydrophyti	ic vegetation*
	0 =Total C	over	(explai		5
<u>Woody vine stratum</u> (Plot size: <u>30ft</u> )					etland hydrology must be
1				sent, unless disturbe phytic	ed or problematic
2	0 =Total C	over	vegeta		
			preser	nt? Y	_
Remarks: (Include photo numbers here or on a separate she	eet)				

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm	the absenc	e of indicators.)
Depth	Matrix		Rec	dox Feat	ures				
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Textu	re	Remarks
0-6	10YR 3/1	100					SiL		
6-20	10YR 4/3	98	10YR 4/6	2	С	PL	Fine Sandy	loam	
0-20	1011( 4/3	30	1011( 4/0	2	0		Time Gandy	Loam	
					<u> </u>				
	Concentration, D =	= Depleti	on, RM = Reduce	ed Matrix	:, MS = №	/lasked S			n: PL = Pore Lining, M = Matrix
-	oil Indicators:								ematic Hydric Soils:
	tisol (A1)				ed Matrix	(S4)			dox (A16) ( <b>LRR K, L, R</b> )
	tic Epipedon (A2)			dy Redo	. ,				) (LRR K, L)
	ck Histic (A3)			oped Ma					Masses (F12) (LRR K, L, R)
	Irogen Sulfide (A4			•	ky Minera	. ,			k Surface (TF12)
	atified Layers (A5)	)			ed Matrix		Other	(explain in	remarks)
	n Muck (A10)				atrix (F3)				
	oleted Below Dark		( )		Surface	· · ·			
	ck Dark Surface (	,			ark Surfa	. ,			ophytic vegetation and weltand
	ndy Mucky Minera	. ,		lox Depr	essions (	(F8)	hydrol		e present, unless disturbed or
5 cr	n Mucky Peat or	Peat (S3	)						problematic
Restrictive	Layer (if observe	ed):							
Туре:							Hydric s	soil present	t? N
Depth (inche	es):				-				
Remarks:									
HYDROLO									
Wetland Hy	drology Indicato	ors:							
Primary Indi	cators (minimum	of one is	required; check	all that a	pply)		Sec	condary Indi	icators (minimum of two required)
Surface	Water (A1)			Aquatic	Fauna (B	13)		Surface S	Soil Cracks (B6)
	ater Table (A2)				uatic Plar				Patterns (B10)
Saturatio						Odor (C1			on Water Table (C2)
	larks (B1)				l Rhizosp	heres on	Living Roots		Burrows (C8)
	nt Deposits (B2)			(C3)			<u> </u>		n Visible on Aerial Imagery (C9)
	posits (B3)					uced Iron			or Stressed Plants (D1)
	at or Crust (B4)				ron Redu	iction in 1	illed Soils		phic Position (D2)
	oosits (B5) on Visible on Aeria		( (B7)	(C6) Thip Mu	ok Surfor	xx (C7)	_	FAC-Neu	itral Test (D5)
	Vegetated Conca				ck Surfac or Well Da				
	tained Leaves (B9					Remarks	)		
Field Obser	,	/				- comanto	/		
Surface wat		Yes	No		Depth (i	inches).			
Water table		Yes	No		Depth (i			Ind	icators of wetland
Saturation p		Yes	No		Depth (i				drology present? N
	pillary fringe)					/ .			<u> </u>
-	corded data (strea	am daulo	e. monitorina well	. aerial n	hotos n	revious ir	spections) if a	available.	
			,	, p					
Remarks:									

Project/Site MTA-MTA-11 (Extended)	City/0	County:	Min	netonka/He	ennepin S	ampling Date:	10/10/2014
Applicant/Owner: SWLRT	-	Stat	te:	MN	Sa	ampling Point:	L
Investigator(s): Lucy Dahl, Marc Cottingham		s	Sectior	n, Township	o, Range:	25-	117-22
Landform (hillslope, terrace, etc.): Depression	n	Loc	cal rel	lief (concav	re, convex, r	none):	Concave
Slope (%): 0-3 Lat:		Long:			D	atum:	
Soil Map Unit Name Hamel L132A		-		NWIC	Classificatio	n:	PFO1A
Are climatic/hydrologic conditions of the site typical for this	s time o	f the yea	ar?	Y (It	f no, explair	n in remarks)	
Are vegetation , soil , or hydrology		significa	antly o	disturbed?	А	re "normal circun	nstances"
Are vegetation , soil , or hydrology		naturall	ly prob	blematic?			present? No
SUMMARY OF FINDINGS					(If needed	d, explain any ans	swers in remarks.)
Hydrophytic vegetation present? Y							
Hydric soil present? Y		ls th	he sai	mpled area	a within a w	vetland?	Y
Indicators of wetland hydrology present? Y		f yes	s, optio	onal wetlan	nd site ID:		
Remarks: (Explain alternative procedures here or in a sep	oarate re	port.)					
Above average precipitation			vetlar	nd criteria	. Area is a	a wetland.	
VEGETATION Use scientific names of plants.							
	osolute	Domina	an I	Indicator	Dominan	ce Test Worksh	eet
	Cover	t Specie		Staus	Number of	Dominant Specie	es
1 Ulmus americana	10	Y		FACW	that are OE	BL, FACW, or FAC	C: <u>3</u> (A)
2						umber of Domina	
3						es Across all Strata	
4						Dominant Specie 3L, FACW, or FAC	
	10	-Total C	Cover			DE, FAGW, OFFAC	. <u>100.00%</u> (А/В)
Sapling/Shrub stratum (Plot size: 15ft )	10				Prevalen	ce Index Worksl	heet
1 Salix interior	10	Y		FACW	Total % C		
2					OBL spec	cies <u>10</u> x	1 = 10
3					FACW sp		2 = 180
4					FAC spec		3 = 0
5	10 :	=Total C	<u></u>		FACU spe		4 = 0 5 = 0
Herb stratum (Plot size: 5ft )	10 :		over		UPL spec Column to		
1 Phalaris arundinacea	50	Y		FACW		the lndex = $B/A =$	1.90
2 Pilea pumila	15	N		FACW	Flevalenc	e index – D/A –	1.90
3 Carex lacustris	10	N		OBL	Hydrophy	ytic Vegetation I	Indicators:
4 Solidago gigantea	5	N		FACW		test for hydroph	
5					X Domii	nance test is >50	%
6					X Preva	alence index is ≤3	3.0*
7						hogical adaptatio	
8						orting data in Ren	narks or on a
9 10						ate sheet) ematic hydrophyt	ic vegetation*
····	80 :	=Total C	Cover		(expla		ic vegetation
Woody vine stratum (Plot size: 30ft )			-		` ·		etland hydrology must be
1						esent, unless disturbe	, ,,
2						ophytic	
	0 :	=Total C	Cover		veget prese	tation ent? Y	
Pomarka: (Induda photo numbero horo or on o concreto a	shact)				P1036		
Remarks: (Include photo numbers here or on a separate s	sneet)						

Depth         Color (moist)         %         Color (moist)         %         Texture         Remarks           0-5         10YR 2/1         100         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I	Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm the	absence of indicators.)	
(Inches)         Color (moist)         %         Type*         Texture         Remarks           0.5         10YR 2/1         100         0         0         SICL         0           5:20         10YR 4/1         95         10YR 4/6         5         C         PL         SICL         0           5:20         10YR 4/1         95         10YR 4/6         5         C         PL         SICL         0           1         1         1         1         1         1         1         1         1         1           1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1									,	
0-5         10YR 2/1         100         SICL           5-20         10YR 4/1         95         10YR 4/6         5         C         PL         SICL           5-20         10YR 4/1         95         10YR 4/6         5         C         PL         SICL           5-20         10YR 4/1         95         10YR 4/6         5         C         PL         SICL           5-20         10YR 4/1         95         10YR 4/6         5         C         PL         SICL           5-20         10YR 4/6         5         C         PL         SICL		Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks	
5-20         10YR 4/1         95         10YR 4/6         5         C         PL         SICL           Image: Sufficient Construction           Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains.         "Location: PL = Pore Lining, M = Matrix           Type: C = Concentration, D = Depletion, RM = Reduced Matrix, (S4)         Sandy Gloyd Matrix (S4)         Coast Praim Redox (S16) (LRR K, L, R)           Histisc Expenden (A2)         Sandy Gloyd Matrix (S6)         Dark Surface (A1) (LRR K, L, R)         Dark Surface (A1) (LRR K, L, R)           Stratified Layors (A5)         Loamy Mucky Mineral (F1)         Orbole (axplain Crass (R6)         Very Shallow Dark Surface (A1)           Trick Dark Surface (A1)         Depleted Dark Surface (A1)         Depleted Dark Surface (A1)         Depleted Dark Surface (A1)         Depleted Dark Surface (A1)           Sandy Mucky Mineral (S1)         Redox Depressions (F8)         'mindicators of hydrophytic vegetation and wettand hydrology must be present. unless disturbed or problematic           Trice Zayr (if observed):         Trice Zayr (if observed):         Presence Crass (B6)         Surface S01 Crass (B6)           Surface Water (A1)         Aquatic Fana (B13)	· ·		T				[	SiCl		
Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains.       **Location: PL = Pore Lining, M = Matrix         Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains.       **Location: PL = Pore Lining, M = Matrix         Hydric Soil Indicators:       Indicators for Problematic Hydric Soils:         Histic Epipedon (A2)       Sandy Gleyed Matrix (S4)       Dark Surface (A1)         Black Histic (A3)       Stripped Matrix (S6)       Loamy Gleyed Matrix (F2)       Other (explain in remarks)         2 cm Muck (N10)       X       Depleted Matrix (F3)       Other (explain in remarks)         X       Depleted Below Dark Surface (A12)       Depleted Matrix (F3)       Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic         Sandy Mucky Mineral (S1)       Redox Depressions (F8)       Hydric soil present?       Y         Deptint (inches):				10VD 4/6	F	6	Ы			
Hydric Soil Indicators ::     Indicators for Problematic Hydric Soils:       Histisol (A1)     Sandy Gleyed Matrix (S4)       Histisol Epipedon (A2)     Sandy Redox (S5)       Black Histic (A3)     Stripped Matrix (S4)       Hydrogen Sulfide (A4)     Loamy Mucky Mineral (F1)       Yerry Shallow Dark Surface (T12)     Other (explain in remarks)       Z cm Muck (A10)     X Depleted Matrix (F2)       Sandy Mucky Mineral (S1)     Redox Dark Surface (F6)       Thick Dark Surface (A12)     Depleted Dark Surface (F7)       Restrictive Layer (If observed):     Type:       Pripe:     Hydric soil present?       Peipted Bolow Dark Surface (A12)     Redox Depressions (F8)       Pripe:     Hydric soil present?       Pripe:     Hydric soil present?       Pripe:     Hydric soil present?       Pripe:     Hydric soil present?       Primary Indicators (minimum of one is required: check all that apply)       Surface Water (A1)     Aquatic Fauna (B13)       Surface Water (A1)     Aquatic Fauna (B	5-20	101R 4/1	95	101R 4/0	5	C	PL.	SICL		
Hydric Soil Indicators ::     Indicators for Problematic Hydric Soils:       Histisol (A1)     Sandy Gleyed Matrix (S4)       Histisol Epipedon (A2)     Sandy Redox (S5)       Black Histic (A3)     Stripped Matrix (S4)       Hydrogen Sulfide (A4)     Loamy Mucky Mineral (F1)       Yerry Shallow Dark Surface (T12)     Other (explain in remarks)       Z cm Muck (A10)     X Depleted Matrix (F2)       Sandy Mucky Mineral (S1)     Redox Dark Surface (F6)       Thick Dark Surface (A12)     Depleted Dark Surface (F7)       Restrictive Layer (If observed):     Type:       Pripe:     Hydric soil present?       Peipted Bolow Dark Surface (A12)     Redox Depressions (F8)       Pripe:     Hydric soil present?       Pripe:     Hydric soil present?       Pripe:     Hydric soil present?       Pripe:     Hydric soil present?       Primary Indicators (minimum of one is required: check all that apply)       Surface Water (A1)     Aquatic Fauna (B13)       Surface Water (A1)     Aquatic Fauna (B										
Hydric Soil Indicators ::     Indicators for Problematic Hydric Soils:       Histisol (A1)     Sandy Gleyed Matrix (S4)       Histisol Epipedon (A2)     Sandy Redox (S5)       Black Histic (A3)     Stripped Matrix (S4)       Hydrogen Sulfide (A4)     Loamy Mucky Mineral (F1)       Yerry Shallow Dark Surface (T12)     Other (explain in remarks)       Z cm Muck (A10)     X Depleted Matrix (F2)       Sandy Mucky Mineral (S1)     Redox Dark Surface (F6)       Thick Dark Surface (A12)     Depleted Dark Surface (F7)       Restrictive Layer (If observed):     Type:       Pripe:     Hydric soil present?       Peipted Bolow Dark Surface (A12)     Redox Depressions (F8)       Pripe:     Hydric soil present?       Pripe:     Hydric soil present?       Pripe:     Hydric soil present?       Pripe:     Hydric soil present?       Primary Indicators (minimum of one is required: check all that apply)       Surface Water (A1)     Aquatic Fauna (B13)       Surface Water (A1)     Aquatic Fauna (B										
Hydric Soil Indicators :       Indicators for Problematic Hydric Soils:         Histisol (A1)       Sandy Gleyed Matrix (S4)         Histisol Epipedon (A2)       Sandy Redox (S5)         Black Histic (A3)       Stripped Matrix (S4)         Hydrogen Sulfide (A4)       Loamy Mucky Mineral (F1)       Very Shallow Dark Surface (T12)         Yaratified Layers (A5)       Loamy Mucky Mineral (F1)       Very Shallow Dark Surface (T12)         Z cm Muck (A10)       X Depleted Matrix (F3)       Other (explain in remarks)         Z cm Muck (A10)       X Depleted Dark Surface (F6)       "Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic         Restrictive Layer (If observed):       Type:       Hydric soil present?       Y         Peipted (inches):										
Hydric Soil Indicators ::     Indicators for Problematic Hydric Soils:       Histisol (A1)     Sandy Gleyed Matrix (S4)       Histisol Epipedon (A2)     Sandy Redox (S5)       Black Histic (A3)     Stripped Matrix (S4)       Hydrogen Sulfide (A4)     Loamy Mucky Mineral (F1)       Yerry Shallow Dark Surface (T12)     Other (explain in remarks)       Z cm Muck (A10)     X Depleted Matrix (F2)       Sandy Mucky Mineral (S1)     Redox Dark Surface (F6)       Thick Dark Surface (A12)     Depleted Dark Surface (F7)       Restrictive Layer (If observed):     Type:       Pripe:     Hydric soil present?       Peipted Bolow Dark Surface (A12)     Redox Depressions (F8)       Pripe:     Hydric soil present?       Pripe:     Hydric soil present?       Pripe:     Hydric soil present?       Pripe:     Hydric soil present?       Primary Indicators (minimum of one is required: check all that apply)       Surface Water (A1)     Aquatic Fauna (B13)       Surface Water (A1)     Aquatic Fauna (B										
Hydric Soil Indicators ::     Indicators for Problematic Hydric Soils:       Histisol (A1)     Sandy Gleyed Matrix (S4)       Histisol Epipedon (A2)     Sandy Redox (S5)       Black Histic (A3)     Stripped Matrix (S4)       Hydrogen Sulfide (A4)     Loamy Mucky Mineral (F1)       Yerry Shallow Dark Surface (T12)     Other (explain in remarks)       Z cm Muck (A10)     X Depleted Matrix (F2)       Sandy Mucky Mineral (S1)     Redox Dark Surface (F6)       Thick Dark Surface (A12)     Depleted Dark Surface (F7)       Restrictive Layer (If observed):     Type:       Pripe:     Hydric soil present?       Peipted Bolow Dark Surface (A12)     Redox Depressions (F8)       Pripe:     Hydric soil present?       Pripe:     Hydric soil present?       Pripe:     Hydric soil present?       Pripe:     Hydric soil present?       Primary Indicators (minimum of one is required: check all that apply)       Surface Water (A1)     Aquatic Fauna (B13)       Surface Water (A1)     Aquatic Fauna (B										
Hydric Soil Indicators :       Indicators for Problematic Hydric Soils:         Histisol (A1)       Sandy Gleyed Matrix (S4)         Histisol Epipedon (A2)       Sandy Redox (S5)         Black Histic (A3)       Stripped Matrix (S4)         Hydrogen Sulfide (A4)       Loamy Mucky Mineral (F1)       Very Shallow Dark Surface (T12)         Yaratified Layers (A5)       Loamy Mucky Mineral (F1)       Very Shallow Dark Surface (T12)         Z cm Muck (A10)       X Depleted Matrix (F3)       Other (explain in remarks)         Z cm Muck (A10)       X Depleted Dark Surface (F6)       "Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic         Restrictive Layer (If observed):       Type:       Hydric soil present?       Y         Peipted (inches):										
Hydric Soll Indicators :       Indicators for Problematic Hydric Solls:         Histisci Cappedon (A2)       Sandy Gleyed Matrix (S4)         Black Histic (A3)       Stripped Matrix (S6)         Stratified Layers (A5)       Loamy Mucky Mineral (F1)       Vorty Shallow Dark Surface (T7) (LRR K, L, R)         Stratified Layers (A5)       Loamy Mucky Mineral (F1)       Vorty Shallow Dark Surface (T7)         Sandy Mucky Mineral (S1)       Ton-Manganese Masses (F2) (LRR K, L, R)         Stratified Layers (A5)       Loamy Mucky Mineral (S1)       Other (explain in remarks)         2 cm Muck (A10)       X       Depleted Dark Surface (F6)       Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic         Restrictive Layer (if observed):       Type:       Hydric soil present?       Y         Poletion (Inches):       Meric Soil present?       Y         Poletion (A2)       True Aquatic Fauna (B13)       Surface Soil Cracks (B6)         Surface Water (A1)       Aquatic Fauna (B13)       Surface Soil Cracks (B6)         Surface Water (A1)       Aquatic Fauna (B13)       Surface Soil Cracks (B6)         Surface Water (A1)       Aquatic Fauna (B13)       Surface Soil Cracks (B6)         Surface Water (A1)       Aquatic Fauna (B13)       Surface (C12)         Surface (C12)       Coraylish Burrows (C3) </td <td></td>										
Histisol (A1)       Sandy Gleyed Matrix (S4)       Coast Prairie Redox (A16) (LRR K, L, R)         Histic Expection (A2)       Sandy Redox (S5)       Dark Surface (S7) (LRR K, L, R)         Black Histic (A3)       Loamy Mucky Mineral (F1)       Dark Surface (S7) (LRR K, L, R)         Stratified Layers (A5)       Loamy Mucky Mineral (F1)       Other (explain in remarks)         2 cm Muck (A10)       X       Depleted Matrix (F3)       Other (explain in remarks)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)       Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic         Restrictive Layer (If observed):       Type:       Hydric soil present?       Y         Surface Water (A1)       Aquatic Fana (B13)       Surface Soil Cracks (B6)       Surface Soil Cracks (B6)         Surface Water (A1)       Aquatic Fana (B13)       Surface Soil Cracks (B6)       Surface Soil Cracks (B6)         Surface Water (A1)       Hydrogen Surface (C1)       Surface Soil Cracks (B6)       Surface Soil Cracks (B6)         Sediment Deposits (B2)       (C3)       Presence of Reduced Iron (C4)       Surface (C2)         Sediment Deposits (B3)       (C3)       Surface (C7)       Surface (D5)         Innotation Visible on Aerial Imagery (B7)       Thin Muck Surface (C7)       Surface (D5)       Surface (D5)	*Type: C = 0	Concentration, D	= Depleti	on, RM = Reduce	ed Matrix	x, MS = N	lasked S		-	Matrix
Histic Epipedon (A2)       Sandy Redox (S5)       Dark Surface (S7) (LRR K, L)         Black Histic (A3)       Stripped Matrix (S6)       Iron-Manganese Masses (F12) (LRR K, L, R)         Stratified Layers (A5)       Loamy Mucky Mineral (F1)       Other (explain in remarks)         2 cm Muck (A10)       X       Depleted Matrix (F2)       Other (explain in remarks)         2 stratified Layers (A5)       Loamy Gleyed Matrix (F2)       Other (explain in remarks)         2 stratified Layers (A5)       Depleted Matrix (F3)       "Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic         Standy Mucky Mineral (S1)       Redox Depressions (F8)       "Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic         Restrictive Layer (if observed):       Type:       Pye:       Pye         Depth (inches):	Hydric So	il Indicators:						Indicators fo	r Problematic Hydric Soils:	
Black Histic (A3)       Stripped Matrix (S6)       Iron-Manganese Masses (F12) (LRR K, L, R)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Very Shallow Dark Surface (TF12)         2 cm Muck (A10)       X       Depleted Matrix (F2)       Other (explain in remarks)         X       Depleted Below Dark Surface (A11)       Redox Dark Surface (F6)       Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic         Restrictive Layer (if observed):       Type:       Hydric soil present?       Y         Period (inches):       Period (A12)       Aquatic Fauna (B13)       Secondary Indicators (minimum of two requires Surface Soil Cracks (B6)         Surface Water (A1)       Aquatic Fauna (B13)       Surface Soil Cracks (B6)       Surface Soil Cracks (B6)         HyDROLOGY       Mater Table (A2)       True Aquatic Fauna (B13)       Surface Soil Cracks (B6)         Surface Water (A1)       Oxidee Rhizopheres on Living Roots       Crafkin Burrows (C2)         Surface Water (A1)       Oxidee Rhizopheres on Living Roots       Crafkin Burrows (C2)         Surface Water (A1)       Surface Cracks (B6)       Surface Cracks (B6)         Water Makes (B1)       Oxidee Rhizopheres on Living Roots       Crafkin Burrows (C2)         Settinent Deposits (B2)       (C3)       Presence of Reduced Iron (C4)       Sturtation Visible on Aeria	His	tisol (A1)					(S4)	Coast Pra	airie Redox (A16) ( <b>LRR K, L, R</b> )	
Hydrogen Sulfide (A4)       Loamy Mucky Mineral (F1)       Very Shallow Dark Surface (TF12)         Stratified Layers (A5)       Comy Gleyed Matrix (F2)       Other (explain in remarks)         Yender Stratified Layers (A5)       Comy Gleyed Matrix (F2)       Other (explain in remarks)         Yender Stratified Layers (A5)       Completed Below Dark Surface (A12)       Depleted Matrix (F3)         Thick Dark Surface (A12)       Depleted Dark Surface (F6)       *Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic         Restrictive Layer (if observed):       Type:       Hydric soil present?       Y         Depleted Start (A1)       Aquatic Fauna (B13)       Surface Soil Cracks (B6)       Y         Remarks:       Surface Water (A1)       Aquatic Fauna (B13)       Surface Soil Cracks (B6)       Y         HYDROLOGY       Surface Water (A1)       Aquatic Fauna (B13)       Surface Soil Cracks (B6)       Y         Wetland Hydrology Indicators:       Primary Indicators (minimum of one is required; check all that apply)       Secondary Indicators (minimum of two required)         Saturation (A3)       Hydrogen Suffice Odor (C1)       Dry-season Water Table (C2)       Crayfish Burrows (C8)       Sutrate Soil Cracks (B6)         Sediment Deposits (B2)       (C6)       C(C6)       Saturation Visible on Aerial Imagery (B7)       Think Muck Surface (C7)	His	tic Epipedon (A2)	)	Sar	ndy Redo	ox (S5)				
Stratified Layers (Å5)       Loamy Gleyed Matrix (F2)       Other (explain in remarks)         2 cm Muck (A10)       X       Depleted Matrix (F2)       Other (explain in remarks)         X       Depleted Below Dark Surface (A11)       Redox Dark Surface (F6)       "Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic         Sandy Mucky Mineral (S1)       Redox Depressions (F8)       "Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic         Restrictive Layer (if observed):       Type:       Hydric soil present?       Y         Depleted Dark Surface (A12)       Redox Depressions (F8)       Hydric soil present?       Y         Remarks:       Presence (R14)       Surface Soil Cracks (R6)       Surface Vater (A1)       Surface Soil Cracks (R6)         Metand Hydrology Indicators:       Prinage Patterns (R10)       Surface Soil Cracks (R6)       Drainage Patterns (R10)       Dry-Season Water Table (C2)         Surface Water (A1)       Aquatic Fauna (R13)       Surface Soil Cracks (R6)       Surface Soil Cracks (R6)         High Water Table (A2)       (C3)       Presence of Reduced Iron (C4)       Saturation (Visible on Aerial Imagery (C9)       Saturation (Visible on Aerial Imagery (C9)       Saturation Visible on Aerial Imagery (C9)       Saturation Visible on Aerial Imagery (C9)       Suthace dor Stressed Plants (D1)       Saturation	Bla	ck Histic (A3)		Stri	pped Ma	trix (S6)		Iron-Man	ganese Masses (F12) ( <b>LRR K, L,</b>	, <b>R</b> )
2 cm Muck (A10)       X       Depleted Matrix (F3)         X       Depleted Below Dark Surface (A11)       Redox Dark Surface (F6)         Thick Dark Surface (A12)       Depleted Dark Surface (F7)       "Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic         Restrictive Layer (if observed):       Type:       Hydric soil present?       Y         Depleted Matrix (F3)       Hydric soil present?       Y         Perpleted Restrictive Layer (if observed):       Type:       Hydric soil present?       Y         Depletict (inches):	— Hyo	Irogen Sulfide (A	4)	Loa	my Mucl	ky Minera	al (F1)	Very Sha	llow Dark Surface (TF12)	
Image: Surface (A11)       Redox Dark Surface (F6)         Thick Dark Surface (A12)       Depleted Dark Surface (F7)         Sandy Mucky Mieral (S1)       Redox Depressions (F8)         *Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic         Restrictive Layer (if observed):	Stra	atified Layers (A5	)	Loa	my Gley	ed Matrix	x (F2)	Other (ex	plain in remarks)	
Thick Dark Surface (A12)       Depleted Dark Surface (F7)       *Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic         Sandy Mucky Mineral (S1)       Redox Depressions (F8)       *Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic         Restrictive Layer (If observed):	2 ci	n Muck (A10)		X Dep	leted Ma	atrix (F3)				
Sandy Mucky Mineral (S1)       Redox Depressions (F8)       hydrology must be present, unless disturbed or problematic         Restrictive Layer (if observed):       Type:       Hydric soil present?       Y         Depth (inches):       Hydric soil present?       Y         Remarks:       HYDROLOGY         Wetland Hydrology Indicators:       Finary Indicators (minimum of one is required; check all that apply)       Secondary Indicators (minimum of two required surface Water (A1)         Surface Water (A1)       Aquatic Fauna (B13)       Surface Soil Cracks (B6)         High Water Table (A2)       True Aquatic Plants (B14)       Drahage Patterns (B10)         Saturation (A3)       Phydrogen Sulfide Odor (C1)       Dry-Season Water Table (C2)         Water Marks (B1)       Oxidized Rhizospheres on Living Roots       Crayfish Burrows (C8)         Sediment Deposits (B2)       (C3)       Saturation Visible on Aerial Imagery (C9)         Iton Deposits (B3)       Presence of Reduced Iron (C4)       Saturation Visible on Aerial Imagery (C9)         Mater-Stained Leaves (B9)       Other (Explain in Remarks)       Fled Observations:         Surface water present?       Yes       No       Depth (inches):       Indicators of wetland hydrology present?         Mater-Stained Leaves (B9)       Other (Explain in Remarks)       Endotsery       Y       Indicators of wetland hydrology p	X Dep	leted Below Dark	k Surface	e (A11) Rec	lox Dark	Surface	(F6)			
Sandy Mucky Mineral (S1)       Redox Depressions (F8)       hydrology must be present, unless disturbed or problematic         Restrictive Layer (if observed):       Type:       Hydric soil present?       Y         Depth (inches):	Thi	ck Dark Surface (	(A12)	Dep	leted Da	ark Surfa	ce (F7)	*Indicators	of hydrophytic vegetation and we	eltand
Restrictive Layer (if observed):         Type:	Sar	ndy Mucky Minera	al (S1)	Rec	dox Depr	essions	(F8)			
Type:       Hydric soil present?       Y         Depth (inches):	5 ci	m Mucky Peat or	Peat (S3	s)					problematic	
Type:       Hydric soil present?       Y         Depth (inches):	Rostrictivo	l aver (if observ	od).				1			
Depth (inches):			cu).					Hydric soil	present? V	
Remarks:         HYDROLOGY         Wetland Hydrology Indicators:         Primary Indicators (minimum of one is required; check all that apply)       Secondary Indicators (minimum of two required)         Surface Water (A1)       Aquatic Fauna (B13)       Surface Soil Cracks (B6)         High Water Table (A2)       True Aquatic Plants (B14)       Drainage Patterns (B10)         Saturation (A3)       Hydrogen Sulfide Odor (C1)       Dry-Season Water Table (C2)         Water Marks (B1)       Oxidized Rhizospheres on Living Roots       Crayfish Burrows (C8)         Sediment Deposits (B2)       (C3)       Saturation Nisible on Aerial Imagery (C3)         Drift Deposits (B5)       (C6)       Saturation (D1)         Algal Mat or Crust (B4)       Recent Iron Reduction in Tilled Soils       Geomorphic Position (D2)         Iron Deposits (B5)       (C6)       X       FAC-Neutral Test (D5)         Inundation Visible on Aerial Imagery (B7)       Thin Muck Surface (C7)       X       FAC-Neutral Test (D5)         Surface water present?       Yes       No       Depth (inches):       Indicators of wetland hydrology present?       Y         Surface water present?       Yes       No       Depth (inches):       Indicators of wetland hydrology present?       Y         Surface water present?       Yes		<i>be)</i> .				-		Tryance Son		
HYDROLOGY         Wetland Hydrology Indicators:         Primary Indicators (minimum of one is required; check all that apply)       Secondary Indicators (minimum of two required)         Surface Water (A1)       Aquatic Fauna (B13)       Surface Soil Cracks (B6)         High Water Table (A2)       True Aquatic Plants (B14)       Dariage Patterns (B10)         Saturation (A3)       Hydrogen Suffide Odor (C1)       Dry-Season Water Table (C2)         Water Marks (B1)       Oxidized Rhizospheres on Living Roots       Crayfish Burrows (C8)         Sediment Deposits (B2)       (C3)       Saturation (C4)         Algal Mat or Crust (B4)       Recent Iron Reduction in Tilled Soils       Geomorphic Position (D2)         Iron Deposits (B5)       (C6)       X       FAC-Neutral Test (D5)         Inundation Visible on Aerial Imagery (B7)       Thin Muck Surface (C7)       X       FAC-Neutral Test (D5)         Surface water present?       Yes       No       Depth (inches):       Indicators of wetland hydrology present?       Y         Surface Sailer recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:       P						-				
Wetland Hydrology Indicators:         Primary Indicators (minimum of one is required; check all that apply)       Secondary Indicators (minimum of two required)         Surface Water (A1)       Aquatic Fauna (B13)       Surface Soil Cracks (B6)         High Water Table (A2)       True Aquatic Plants (B14)       X Drainage Patterns (B10)         Saturation (A3)       Hydrogen Sulfide Odor (C1)       Dry-Season Water Table (C2)         Water Marks (B1)       Oxidized Rhizospheres on Living Roots       Crayfish Burrows (C8)         Sediment Deposits (B3)       Presence of Reduced Iron (C4)       Saturation visible on Aerial Imagery (C9)         Algal Mat or Crust (B4)       Recent Iron Reduction in Tilled Soils       X Geomorphic Position (D2)         Inondation Visible on Aerial Imagery (B7)       Thin Muck Surface (C7)       X FAC-Neutral Test (D5)         Surface water present?       Yes       No       Depth (inches):       Indicators of wetland         Sutration present?       Yes       No       Depth (inches):       Indicators of wetland         Sutration present?       Yes       No       Depth (inches):       Indicators of wetland         Mater table present?       Yes       No       Depth (inches):       Indicators of wetland         Mater Stained Leaves (B9)       Other (Explain in Remarks)       Depth (inches):       Y       <										
Primary Indicators (minimum of one is required; check all that apply)       Secondary Indicators (minimum of two required)         Surface Water (A1)       Aquatic Fauna (B13)       Surface Soil Cracks (B6)         High Water Table (A2)       True Aquatic Plants (B14)       Drainage Patterns (B10)         Saturation (A3)       Hydrogen Sulfide Odor (C1)       Dry-Season Water Table (C2)         Water Marks (B1)       Oxidized Rhizospheres on Living Roots       Crayfish Burrows (C8)         Sediment Deposits (B3)       Presence of Reduced Iron (C4)       Sturation Visible on Aerial Imagery (C9)         Drift Deposits (B3)       Presence of Reduced Iron Reduction in Tilled Soils       X Geomorphic Position (D2)         Iron Deposits (B5)       (C6)       X Geomorphic Position (D2)         Inundation Visible on Aerial Imagery (B7)       Thin Muck Surface (C7)       Sparsely Vegetated Concave Surface (B8)         Water Table present?       Yes       No       Depth (inches):       Indicators of wetland         Water table present?       Yes       No       Depth (inches):       Indicators of wetland         Mater table present?       Yes       No       Depth (inches):       Yes         Indicators of wetland       hydrology present?       Y       Yes         Surface water present?       Yes       No       Depth (inches):       Yes			ors:							
Surface Water (A1)       Aquatic Fauna (B13)       Surface Soil Cracks (B6)         High Water Table (A2)       True Aquatic Plants (B14)       X Drainage Patterns (B10)         Saturation (A3)       Hydrogen Sulfide Odor (C1)       Dry-Season Water Table (C2)         Water Marks (B1)       Oxidized Rhizospheres on Living Roots       Crayfish Burrows (C8)         Sediment Deposits (B2)       (C3)       Presence of Reduced Iron (C4)       Saturation Visible on Aerial Imagery (C9)         Drift Deposits (B3)       Presence of Reduction in Tilled Soils       X Geomorphic Position (D2)         Algal Mat or Crust (B4)       Recent Iron Reduction in Tilled Soils       X Geomorphic Position (D2)         Inundation Visible on Aerial Imagery (B7)       Thin Muck Surface (C7)       Sparsely Vegetated Concave Surface (B8)       Gauge or Well Data (D9)         Water Table present?       Yes       No       Depth (inches):       Indicators of wetland         Sutration present?       Yes       No       Depth (inches):       Indicators of wetland         Sutaration present?       Yes       No       Depth (inches):       Y         Cincludes capillary fringe)       Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:       Y	-			required; abook	all that a	nnh()		Casan	landiaatara (minimum of two r	ام میں نیم ما
High Water Table (A2)       True Aquatic Plants (B14)       X       Drainage Patterns (B10)         Saturation (A3)       Hydrogen Sulfide Odor (C1)       Dry-Season Water Table (C2)         Water Marks (B1)       Oxidized Rhizospheres on Living Roots       Crayfish Burrows (C8)         Sediment Deposits (B2)       (C3)       Saturation Visible on Aerial Imagery (C9)         Drift Deposits (B3)       Presence of Reduced Iron (C4)       Stunted or Stressed Plants (D1)         Algal Mat or Crust (B4)       Recent Iron Reduction in Tilled Soils       X       Geomorphic Position (D2)         Iron Deposits (B5)       (C6)       X       FAC-Neutral Test (D5)         Inundation Visible on Aerial Imagery (B7)       Sparsely Vegetated Concave Surface (B8)       Gauge or Well Data (D9)       X         Water-Stained Leaves (B9)       Other (Explain in Remarks)       Indicators of wetland hydrology present?       Y         Saturation present?       Yes       No       Depth (inches):       Indicators of wetland hydrology present?       Y         Saturation present?       Yes       No       Depth (inches):       Indicators of wetland hydrology present?       Y         Saturation present?       Yes       No       Depth (inches):       Indicators of wetland hydrology present?       Y         Cincludes capillary fringe)       Describe recorded dat			of one is	required, check			4.0)			equirea
Saturation (A3)       Hydrogen Sulfide Odor (C1)       Dry-Season Water Table (C2)         Water Marks (B1)       Oxidized Rhizospheres on Living Roots       Crayfish Burrows (C8)         Sediment Deposits (B2)       (C3)       Saturation Visible on Aerial Imagery (C9)         Drift Deposits (B3)       Presence of Reduced Iron (C4)       Stunted or Stressed Plants (D1)         Algal Mat or Crust (B4)       Recent Iron Reduction in Tilled Soils       X Geomorphic Position (D2)         Iron Deposits (B5)       (C6)       X FAC-Neutral Test (D5)         Inundation Visible on Aerial Imagery (B7)       Thin Muck Surface (C7)         Sparsely Vegetated Concave Surface (B8)       Gauge or Well Data (D9)         Water Stained Leaves (B9)       Other (Explain in Remarks)         Field Observations:       Indicators of wetland         Surface water present?       Yes         No       Depth (inches):         Water table present?       Yes         No       Depth (inches):         (includes capillary fringe)       Yes         Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		. ,					,			
Water Marks (B1)       Oxidized Rhizospheres on Living Roots       Crayfish Burrows (C8)         Sediment Deposits (B2)       (C3)       Saturation Visible on Aerial Imagery (C9)         Drift Deposits (B3)       Presence of Reduced Iron (C4)       Stunted or Stressed Plants (D1)         Algal Mat or Crust (B4)       Recent Iron Reduction in Tilled Soils       X Geomorphic Position (D2)         Iron Deposits (B5)       (C6)       X FAC-Neutral Test (D5)         Inundation Visible on Aerial Imagery (B7)       Thin Muck Surface (C7)         Sparsely Vegetated Concave Surface (B8)       Gauge or Well Data (D9)         Water table present?       Yes         Surface water present?       Yes         No       Depth (inches):         Saturation present?       Yes         No       Depth (inches):         (includes capillary fringe)       Yes         Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		. ,								
Sediment Deposits (B2)       (C3)       Saturation Visible on Aerial Imagery (C9)         Drift Deposits (B3)       Presence of Reduced Iron (C4)       Stunted or Stressed Plants (D1)         Algal Mat or Crust (B4)       Recent Iron Reduction in Tilled Soils       Geomorphic Position (D2)         Iron Deposits (B5)       (C6)       FAC-Neutral Test (D5)         Inundation Visible on Aerial Imagery (B7)       Thin Muck Surface (C7)       Geomorphic Position (D2)         Sparsely Vegetated Concave Surface (B8)       Gauge or Well Data (D9)       Vester (Explain in Remarks)         Field Observations:       Surface water present?       Yes       No         Saturation present?       Yes       No       Depth (inches):       Indicators of wetland hydrology present?         Yes       No       Depth (inches):       Yes       Yes       Yes         Saturation present?       Yes       No       Depth (inches):       Yes         (includes capillary fringe)       Depth (inches):       Yes       Yes         Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:       Yes							,			
Drift Deposits (B3)       Presence of Reduced Iron (C4)       Stunted or Stressed Plants (D1)         Algal Mat or Crust (B4)       Recent Iron Reduction in Tilled Soils       X Geomorphic Position (D2)         Iron Deposits (B5)       (C6)       X FAC-Neutral Test (D5)         Inundation Visible on Aerial Imagery (B7)       Thin Muck Surface (C7)       X FAC-Neutral Test (D5)         Sparsely Vegetated Concave Surface (B8)       Gauge or Well Data (D9)       X FAC-Neutral Test (D5)         Water-Stained Leaves (B9)       Other (Explain in Remarks)       Indicators of wetland hydrology present?         Field Observations:       No       Depth (inches):       Indicators of wetland hydrology present?         Saturation present?       Yes       No       Depth (inches):       Y         Gincludes capillary fringe)       Depth (inches):       Y       Y         Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:       Y						1 111203p		-		(C9)
Algal Mat or Crust (B4)       Recent Iron Reduction in Tilled Soils       X       Geomorphic Position (D2)         Iron Deposits (B5)       (C6)       X       FAC-Neutral Test (D5)         Inundation Visible on Aerial Imagery (B7)       Thin Muck Surface (C7)       Gauge or Well Data (D9)         Water-Stained Leaves (B9)       Other (Explain in Remarks)       Field Observations:         Surface water present?       Yes       No       Depth (inches):         Water table present?       Yes       No       Depth (inches):         Gauze capillary fringe)       Yes       No       Depth (inches):         Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:       Y		• • •				e of Redu	uced Iron			(00)
Iron Deposits (B5)       (C6)       X       FAC-Neutral Test (D5)         Inundation Visible on Aerial Imagery (B7)       Thin Muck Surface (C7)       Gauge or Well Data (D9)         Sparsely Vegetated Concave Surface (B8)       Other (Explain in Remarks)       Indicators of wetland         Field Observations:       Surface water present?       Yes       No       Depth (inches):       Indicators of wetland         Surface water present?       Yes       No       Depth (inches):       Indicators of wetland         Saturation present?       Yes       No       Depth (inches):       Yes         (includes capillary fringe)       No       Depth (inches):       Yes         Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:					-					
Inundation Visible on Aerial Imagery (B7)       Thin Muck Surface (C7)         Sparsely Vegetated Concave Surface (B8)       Gauge or Well Data (D9)         Water-Stained Leaves (B9)       Other (Explain in Remarks)         Field Observations:       Surface water present?         Surface water present?       Yes         No       Depth (inches):         Water table present?       Yes         No       Depth (inches):         Saturation present?       Yes         No       Depth (inches):         (includes capillary fringe)       Yes         Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:										
Sparsely Vegetated Concave Surface (B8)       Gauge or Well Data (D9)         Water-Stained Leaves (B9)       Other (Explain in Remarks)         Field Observations:       Surface water present?         Surface water present?       Yes         Water table present?       Yes         No       Depth (inches):         Saturation present?       Yes         No       Depth (inches):         (includes capillary fringe)       No         Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		· · ·	al Imager	y (B7)	. ,	ck Surfac	ce (C7)			
Field Observations:       No       Depth (inches):       Indicators of wetland         Surface water present?       Yes       No       Depth (inches):       Indicators of wetland         Water table present?       Yes       No       Depth (inches):       Indicators of wetland         Saturation present?       Yes       No       Depth (inches):       Indicators of wetland         (includes capillary fringe)       No       Depth (inches):       Yes       Yes         Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:       Indicators of welland       Yes	Sparsely	Vegetated Conca	ave Surfa	ce (B8)	-					
Surface water present?       Yes       No       Depth (inches):       Indicators of wetland         Water table present?       Yes       No       Depth (inches):       Indicators of wetland         Saturation present?       Yes       No       Depth (inches):       Indicators of wetland         (includes capillary fringe)       No       Depth (inches):       Y         Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Water-S	tained Leaves (B9	9)				. ,	)		
Surface water present?       Yes       No       Depth (inches):       Indicators of wetland         Water table present?       Yes       No       Depth (inches):       Indicators of wetland         Saturation present?       Yes       No       Depth (inches):       Indicators of wetland         (includes capillary fringe)       No       Depth (inches):       Y         Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Field Obser	vations:			•			1		
Saturation present?       Yes       No       Depth (inches):       hydrology present?       Y         (includes capillary fringe)       Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:       Y	Surface wat	er present?	Yes	No		Depth (i	inches):			
(includes capillary fringe) Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Water table	present?	Yes	No		Depth (i	inches):		Indicators of wetland	
Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:				No					hydrology present?	r
	(includes ca	pillary fringe)								
	Describe red	corded data (strea	am gaug	e, monitoring well	, aerial p	hotos, p	revious i	nspections), if avai	lable:	
Remarks:				-				-		
Remarks:										
	Remarks:									

Project/Site MTA-MTA-11 (Extended)	City/C	County:	Minn	netonka/He	nnepin	Sampling Date:	10/10/2014
Applicant/Owner: SWLRT		State	e:	MN		Sampling Point:	М
Investigator(s): Lucy Dahl, Marc Cottingham		Se	ection	, Township	, Range:	25-	·117-22
Landform (hillslope, terrace, etc.): Gentle Slope	Э	Loc	al relie	ef (concave	e, convex	, none):	Convex
Slope (%): 0-3 Lat:		Long:				Datum:	
Soil Map Unit Name Hamel L132A				NWI C	Classificat	ion:	PFO1A
Are climatic/hydrologic conditions of the site typical for this t	time of	the year	r?	Y (If	no, expla	ain in remarks)	
Are vegetation , soil , or hydrology		significa	antly d	isturbed?		Are "normal circu	mstances"
Are vegetation , soil , or hydrology		naturally	y prob	lematic?			present? No
SUMMARY OF FINDINGS					(If need	ed, explain any an	swers in remarks.)
Hydrophytic vegetation present? Y							
Hydric soil present? Y		ls th	ne san	npled area	within a	wetland?	Ν
Indicators of wetland hydrology present? N		f yes,	, optio	nal wetland	d site ID:	_	
Remarks: (Explain alternative procedures here or in a separ	rate rep	oort.)					
Above average precipitation. Wetla	and hy	ydrology	y crite	eria not m	net. Area	a is not a wetlan	ıd.
VEGETATION Use scientific names of plants.							
Abso	olute	Domina	in Ir	ndicator	Domina	ince Test Worksh	neet
		t Specie	es	Staus		of Dominant Specie	
	15	Y		FAC		OBL, FACW, or FA	、 ,
2						Number of Domina ies Across all Strat	
4						of Dominant Specie	()
5						OBL, FACW, or FA	
	15 =	Total Co	over				、 ,
Sapling/Shrub stratum (Plot size: 15ft )				ľ	Prevale	nce Index Works	heet
1 Rhamnus cathartica 1	15	Y		FAC		Cover of:	
2					OBL spe		1 =
3					FACW s		2 = 30
4					FAC spe FACU s		3 = 90 4 = 100
	15 =	Total Co	over		UPL spe	· · · · · · · · · · · · · · · · · · ·	5 = 0
Herb stratum (Plot size: 5ft )					Column		A) 220 (B)
· · · · · · · · · · · · · · · · · · ·	10	Y		FACU	Prevale	nce Index = B/A =	
	10	Y		FACW			
3 Arctium minus 1	10	Y		FACU	Hydrop	hytic Vegetation	Indicators:
4 Cirsium discolor 5	5	Ν		FACU	Rap	oid test for hydroph	nytic vegetation
	5	N		FACW		ninance test is >50	
<u>6</u>						valence index is ≤	
7 8						phogical adaptatic	
9						porting data in Rei arate sheet)	marks or on a
10						blematic hydrophy	tic vegetation*
4	40 =	Total Co	over			plain)	5
Woody vine stratum (Plot size: 30ft )					*Indicate	ors of hydric soil and w	etland hydrology must be
1						present, unless disturb	ed or problematic
2	0	Tatal C			-	Irophytic etation	
	0 =	Total Co	over		-	sent? Y	
Remarks: (Include photo numbers here or on a separate she	neet)						

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm the absen	ce of indicators.)
Depth	Matrix		-	dox Feat				,
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks
0-6	10YR 2/1	100	. 7				SiCL	1
				_				
6-20	10YR 4/2	95	10YR 4/6	5	С	PL	Clay	
*Type: C - (	Concentration, D =	- Donloti	on RM – Reduce	d Matrix	 	laskod S	and Grains **Location	on: PL = Pore Lining, M = Matrix
	bil Indicators:	- Depieti			, IVIO – IV			lematic Hydric Soils:
-			Com		ad Matrix			-
	tisol (A1)				ed Matrix	(54)		edox (A16) ( <b>LRR K, L, R</b> )
	tic Epipedon (A2)			dy Redo	. ,		Dark Surface (S	
	ck Histic (A3)			pped Ma	. ,			Masses (F12) (LRR K, L, R)
	drogen Sulfide (A4			-	ky Minera			ark Surface (TF12)
Stra	atified Layers (A5)				ed Matrix		Other (explain in	n remarks)
2 ci	m Muck (A10)				atrix (F3)			
X Dep	oleted Below Dark	Surface	e (A11) Rec	lox Dark	Surface	(F6)		
Thie	ck Dark Surface (	A12)	Dep	leted Da	ark Surfa	ce (F7)	*Indicators of hyd	rophytic vegetation and weltand
Sar	ndy Mucky Minera	l (S1)	Rec	lox Depr	essions (	(F8)		be present, unless disturbed or
	m Mucky Peat or		)				, ,,	problematic
	-	-	,			1		•
	Layer (if observe	ea):					11.1.1.1	
Type:	、 、				-		Hydric soil prese	nt? <u>Y</u>
Depth (inche	es):				_			
Remarks:								
HYDROL								
-	drology Indicato							
Primary Indi	<u>cators (minimum</u>	of one is	required; check					dicators (minimum of two required)
Surface	Water (A1)			Aquatic	Fauna (B	13)	Surface	Soil Cracks (B6)
High Wa	ater Table (A2)			True Aq	uatic Plar	nts (B14)	Drainag	e Patterns (B10)
Saturatio	on (A3)			Hydroge	en Sulfide	Odor (C	I) Dry-Sea	son Water Table (C2)
Water N	larks (B1)			Oxidized	d Rhizosp	heres on	Living Roots Crayfish	Burrows (C8)
Sedimer	nt Deposits (B2)			(C3)			Saturati	on Visible on Aerial Imagery (C9)
Drift Dep	oosits (B3)			Presenc	e of Redu	uced Iron	(C4) Stunted	or Stressed Plants (D1)
Algal Ma	at or Crust (B4)			Recent I	Iron Redu	iction in T	illed Soils Geomor	phic Position (D2)
Iron Dep	osits (B5)			(C6)			FAC-Ne	utral Test (D5)
Inundati	on Visible on Aeria	I Imager	y (B7)	Thin Mu	ck Surfac	e (C7)		
Sparsely	Vegetated Conca	ve Surfa	ce (B8)	Gauge c	or Well Da	ata (D9)		
Water-S	tained Leaves (B9	)	· · ·	Other (E	xplain in	Remarks	)	
Field Obser	vations:				-			
Surface wat		Yes	No		Depth (i	nches).		
Water table		Yes	No		Depth (i		In	dicators of wetland
Saturation p	•	Yes	No		Depth (i	,		ydrology present? N
	pillary fringe)	103			-		——————————————————————————————————————	
-					1			
Describe red	corded data (strea	im gauge	e, monitoring well	, aerial p	photos, p	revious ii	nspections), if available:	
Densis								
Remarks:								

Project/Site MTA-MTA-12_Original	City/0	County:	Minnet	onka/Henn	nepin Sa	ampling Date:	7-23-13
Applicant/Owner: SW Light Rail Transit		State	e:	MN	Sa	ampling Point:	В
Investigator(s): Mohamed Elabbady, Todd Udvig		Se	ection, T	ownship, F	Range: S	_ Section 25 Tow	nship 117N Range 22
Landform (hillslope, terrace, etc.): Hillslop	е	Loc	al relief	(concave,	convex, n	ione):	Convex
Slope (%): 0-3 Lat:		Long:			D	atum:	
Soil Map Unit Name Urban Urdents		_		NWI Cla	assificatior	n:	PUBGx
Are climatic/hydrologic conditions of the site typical for the	nis time of	f the year	'? Y	(If n	no, explain	in remarks)	
Are vegetation , soil , or hydrolog	у	significa	antly dist	urbed?	A	re "normal circu	imstances"
Are vegetation , soil , or hydrolog	у	naturally	y probler	natic?			present? Yes
SUMMARY OF FINDINGS				(	(If needed	l, explain any ar	nswers in remarks.)
Hydrophytic vegetation present? Y							
Hydric soil present? N		ls th	e samp	led area w	within a w	etland?	Ν
Indicators of wetland hydrology present? N		f yes,	, optiona	al wetland s	site ID:		
Remarks: (Explain alternative procedures here or in a se	eparate re	port.)					
Hydric Soil and Hydrold	ogy criter	ria were	not me	et. Area is	s not a w	vetland.	
VEGETATION Use scientific names of plants.							
	Absolute	Domina	n Indi	cator [	Dominan	ce Test Works	heet
	% Cover				Number of	Dominant Spec	ies
1 Acer negundo	30	Y	F			BL, FACW, or FA	
2 Populus deltoides	30	Y	F.	AC		umber of Domina	
3						s Across all Stra	、
4 5						Dominant Spec	
5	60 =	=Total Co	Ner	u	nal ale OE	BL, FACW, or FA	AC: 75.00% (A/B)
			5001	F	Prevalence	ce Index Works	sheet
1 Rhamnus cathartica	40	Y	F		Total % C		
2				(	OBL spec	ies 0 >	(1= 0
3					FACW sp		(2 = 0
4					FAC spec		
5	10	Tatal Or			FACU spe		4 = 120
Herb stratum (Plot size: )	40 =	=Total Co	over		UPL speci Column to		(5 = 0) (A) 420 (B)
						= 130 ( $= 130$ ( $= 130$ )	
2				[	Flevalenc	e muex = D/A =	
3					Hydrophy	tic Vegetation	Indicators:
4						-	hytic vegetation
5					X Domir	nance test is >5	0%
6					Preva	lence index is ≤	3.0*
7						nogical adaptati	N .
8						orting data in Re	emarks or on a
10				-		ate sheet) ematic hydroph	tic vegetation*
	0 =	=Total Co	over		(expla	• • •	
Woody vine stratum (Plot size: )				-			vetland hydrology must be
1 Parthenocissus quinquefolia	30	Y	FA	ACU	pre	esent, unless distur	bed or problematic
2					-	ophytic	
	30 =	=Total Co	over		veget prese		
Pomorka: (Include photo pumbara bara ar an a service	abact)				Pi 030		
Remarks: (Include photo numbers here or on a separate	sneet)						

Depth (Inches)			e depth needed	to aocu	ment the	e indicat	or or confirm the	absence	of indicators.)
(Inches)	Matrix		-	dox Featu					,
	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture		Remarks
0-4	10YR 2/2	100					SL		
4-14	10YR 3/2	100					SL		
	10111 0/2	100					02		
*Type: C = Cc	oncentration. D =	= Depleti	on, RM = Reduce	ed Matrix	. MS = N	lasked S	and Grains. **	*Location:	PL = Pore Lining, M = Matrix
	I Indicators:	Dopiou			, 110 – 11				atic Hydric Soils:
-	sol (A1)		Sar	dy Gleye	ed Matrix	(S4)			(A16) ( <b>LRR K, L, R</b> )
	c Epipedon (A2)			dy Redo		(- )		face (S7) (	
	k Histic (A3)			pped Ma					asses (F12) (LRR K, L, R)
	ogen Sulfide (A4	4)		my Mucł	. ,	al (F1)	Very Sha	llow Dark	Surface (TF12)
	ified Layers (A5)			my Gley	-			plain in rei	
	Muck (A10)		Dep	leted Ma	atrix (F3)			-	
Deple	eted Below Dark	Surface	(A11) Rec	lox Dark	Surface	(F6)			
Thick	k Dark Surface (A	A12)	Dep	leted Da	rk Surfac	ce (F7)	*Indicators	of hydropl	nytic vegetation and weltand
Sand	ly Mucky Minera	l (S1)	Rec	lox Depr	essions (	F8)			resent, unless disturbed or
5 cm	Mucky Peat or	Peat (S3	)					pro	oblematic
Restrictive L	ayer (if observe	ed):							
Туре:		,					Hydric soil	present?	Ν
Depth (inches	3):				•		-		
Remarks:									
	1		0"						
Soil was d	dry, no saturat	ion to 1	2".						
	GY								
HYDROLO									
HYDROLO Wetland Hyd		ors:							
Wetland Hyd	Irology Indicato		required: check	all that a	oply)		Secon	dary Indica	tors (minimum of two required)
Wetland Hyd	Irology Indicato ators (minimum		required; check			13)			tors (minimum of two required)
Wetland Hyd Primary Indica Surface W	<b>Irology Indicato</b> ators (minimum Vater (A1)		required; check	Aquatic	Fauna (B			Surface Soi	I Cracks (B6)
Wetland Hydr Primary Indica Surface W High Wate	<b>Irology Indicato</b> ators <u>(minimum</u> Vater (A1) er Table (A2)		required; check	Aquatic True Aqu	Fauna (B uatic Plar	nts (B14)		Surface Soi Drainage Pa	I Cracks (B6) atterns (B10)
Wetland Hyd Primary Indica Surface W High Wate Saturation	Irology Indicato ators (minimum Vater (A1) er Table (A2) n (A3)		required; check	Aquatic True Aqu Hydroge	Fauna (B uatic Plar n Sulfide	nts (B14) Odor (C1	)	Surface Soi Drainage Pa Dry-Season	l Cracks (B6) atterns (B10) Water Table (C2)
Wetland Hydr Primary Indica Surface W High Wate Saturation Water Mar	Irology Indicato ators (minimum Vater (A1) er Table (A2) n (A3)		required; check	Aquatic True Aqu Hydroge	Fauna (B uatic Plar n Sulfide	nts (B14) Odor (C1	) [ ] Living Roots [	Surface Soi Drainage Pa Dry-Season Crayfish Bu	l Cracks (B6) atterns (B10) Water Table (C2)
Wetland Hydr Primary Indica Surface W High Wate Saturation Water Mar	Irology Indicato ators (minimum Vater (A1) er Table (A2) n (A3) rks (B1) Deposits (B2)		required; check	Aquatic True Aqu Hydroge Oxidized (C3)	Fauna (B uatic Plar n Sulfide	nts (B14) Odor (C1 heres on	) Living Roots	Surface Soi Drainage Pa Dry-Season Crayfish Bu Saturation \	l Cracks (B6) atterns (B10) Water Table (C2) rrows (C8)
Wetland Hydr Primary Indica Surface W High Wate Saturation Water Mar Sediment Drift Depo	Irology Indicato ators (minimum Vater (A1) er Table (A2) n (A3) rks (B1) Deposits (B2)		required; check	Aquatic True Aqu Hydroge Oxidized (C3) Presenc	Fauna (B uatic Plar n Sulfide I Rhizosp e of Redu	nts (B14) Odor (C1 heres on uced Iron	) [ Living Roots [ (C4) 5	Surface Soi Drainage Pa Dry-Season Crayfish Bu Saturation \ Stunted or S	l Cracks (B6) atterns (B10) Water Table (C2) rrows (C8) /isible on Aerial Imagery (C9)
Wetland Hydr Primary Indica Surface W High Wate Saturation Water Mar Sediment Drift Depo	Irology Indicato ators (minimum Vater (A1) er Table (A2) n (A3) Irks (B1) Deposits (B2) Dists (B3) or Crust (B4)		required; check : 	Aquatic True Aqu Hydroge Oxidized (C3) Presenc	Fauna (B uatic Plar n Sulfide I Rhizosp e of Redu	nts (B14) Odor (C1 heres on uced Iron	) [ Living Roots [ (C4) [ illed Soils [	Surface Soi Drainage Pa Dry-Season Crayfish Bu Saturation \ Stunted or S	I Cracks (B6) atterns (B10) Water Table (C2) rrows (C8) /isible on Aerial Imagery (C9) Stressed Plants (D1) c Position (D2)
Wetland Hydr Primary Indica Surface W High Water Saturation Water Mar Sediment Drift Depo Algal Mat Iron Depos Inundation	Irology Indicato ators (minimum Vater (A1) er Table (A2) n (A3) Irks (B1) Deposits (B2) osits (B3) or Crust (B4) osits (B5) n Visible on Aeria	<u>of one is</u> Il Imagery	(B7)	Aquatic True Aqu Hydroge Oxidized (C3) Presenc Recent I (C6) Thin Mu	Fauna (B uatic Plar n Sulfide I Rhizosp e of Redu ron Redu ck Surfac	nts (B14) Odor (C1 heres on uced Iron ction in T e (C7)	) [ Living Roots [ (C4) [ illed Soils [	Surface Soi Drainage Pa Dry-Season Crayfish Bu Saturation \ Stunted or S Geomorphic	I Cracks (B6) atterns (B10) Water Table (C2) rrows (C8) /isible on Aerial Imagery (C9) Stressed Plants (D1) c Position (D2)
Wetland Hydr Primary Indica Surface W High Water Saturation Water Mar Sediment Drift Depo Algal Mat Iron Depos Inundation	Irology Indicato ators (minimum Vater (A1) er Table (A2) n (A3) urks (B1) Deposits (B2) posits (B3) or Crust (B4) posits (B5)	<u>of one is</u> Il Imagery	(B7)	Aquatic True Aqu Hydroge Oxidized (C3) Presenc Recent I (C6) Thin Mu Gauge o	Fauna (B uatic Plar n Sulfide I Rhizosp e of Redu ron Redu ck Surfac r Well Da	nts (B14) Odor (C1 heres on uced Iron ction in T e (C7) ata (D9)	) Living Roots (C4) illed SoilsF	Surface Soi Drainage Pa Dry-Season Crayfish Bu Saturation \ Stunted or S Geomorphic	I Cracks (B6) atterns (B10) Water Table (C2) rrows (C8) /isible on Aerial Imagery (C9) Stressed Plants (D1) c Position (D2)
Wetland Hydr Primary Indica Surface W High Water Saturation Water Mar Sediment Drift Depo Algal Mat Iron Depos Inundation Sparsely V Water-Sta	Irology Indicato ators (minimum Vater (A1) er Table (A2) n (A3) urks (B1) Deposits (B2) or Crust (B4) osits (B5) n Visible on Aeria Vegetated Conca ained Leaves (B9)	<u>of one is</u> Il Imagery Ive Surfac	(B7)	Aquatic True Aqu Hydroge Oxidized (C3) Presenc Recent I (C6) Thin Mu Gauge o	Fauna (B uatic Plar n Sulfide I Rhizosp e of Redu ron Redu ck Surfac	nts (B14) Odor (C1 heres on uced Iron ction in T e (C7) ata (D9)	) Living Roots (C4) illed SoilsF	Surface Soi Drainage Pa Dry-Season Crayfish Bu Saturation \ Stunted or S Geomorphic	I Cracks (B6) atterns (B10) Water Table (C2) rrows (C8) /isible on Aerial Imagery (C9) Stressed Plants (D1) c Position (D2)
Wetland Hydr Primary Indica Surface W High Water Saturation Water Mar Sediment Drift Depo Algal Mat Iron Depo: Inundation Sparsely W Water-Sta Field Observer	Irology Indicato ators (minimum Vater (A1) er Table (A2) n (A3) urks (B1) Deposits (B2) or Crust (B4) or Crust (B4) usits (B5) n Visible on Aeria Vegetated Conca ained Leaves (B9 vations:	<u>of one is</u> Il Imagery Ive Surfac	(B7)	Aquatic True Aqu Hydroge Oxidized (C3) Presenc Recent I (C6) Thin Mu Gauge o	Fauna (B Jatic Plar n Sulfide I Rhizosp e of Redu ron Redu ck Surfac r Well Da xplain in	nts (B14) Odor (C1 heres on uced Iron ction in T e (C7) ata (D9) Remarks	) Living Roots (C4) illed SoilsF	Surface Soi Drainage Pa Dry-Season Crayfish Bu Saturation \ Stunted or S Geomorphic	I Cracks (B6) atterns (B10) Water Table (C2) rrows (C8) /isible on Aerial Imagery (C9) Stressed Plants (D1) c Position (D2)
Wetland Hydr Primary Indica Surface W High Water Saturation Water Mai Sediment Drift Depo Algal Mat Iron Depo: Inundation Sparsely W Water-Sta Field Observer Surface water	Irology Indicato ators (minimum Vater (A1) er Table (A2) n (A3) urks (B1) Deposits (B2) or Crust (B4) osits (B5) n Visible on Aeria Vegetated Conca ained Leaves (B9 vations: r present?	of one is I Imagery Ive Surfac ) Yes	( (B7) ce (B8)	Aquatic True Aqu Hydroge Oxidized (C3) Presenc Recent I (C6) Thin Mu Gauge o Other (E	Fauna (B Jatic Plar n Sulfide I Rhizosp e of Redu ron Redu ck Surfac r Well Da xplain in Depth (ii	nts (B14) Odor (C1 heres on uced Iron ction in T e (C7) ata (D9) Remarks nches):	) Living Roots (C4) illed SoilsF	Surface Soi Drainage Pa Dry-Season Crayfish Bu Saturation \ Stunted or \$ Geomorphic FAC-Neutra	I Cracks (B6) atterns (B10) Water Table (C2) rrows (C8) /isible on Aerial Imagery (C9) Stressed Plants (D1) c Position (D2) I Test (D5)
Wetland Hydr Primary Indica Surface W High Water Saturation Water Mar Sediment Drift Depo Algal Mat Iron Depo Inundation Sparsely W Water-Sta Field Observ Surface water Water table po	Irology Indicato ators (minimum Vater (A1) er Table (A2) n (A3) urks (B1) Deposits (B2) or Crust (B4) osits (B5) n Visible on Aeria Vegetated Conca ained Leaves (B9 <b>rations:</b> r present?	of one is I Imagery ive Surfac ) Yes Yes	/ (B7) ce (B8)	Aquatic True Aqu Hydroge Oxidized (C3) Presenc Recent I (C6) Thin Mud Gauge o Other (E X	Fauna (B Juatic Plan n Sulfide I Rhizosp e of Redu ron Redu ck Surfac r Well Da xplain in Depth (i Depth (i	nts (B14) Odor (C1 heres on uced Iron ction in T e (C7) ata (D9) Remarks nches): nches):	) [ Living Roots [ (C4) [ illed Soils [	Surface Soi Drainage Pa Dry-Season Crayfish Bu Saturation \ Stunted or \$ Geomorphic FAC-Neutra	I Cracks (B6) atterns (B10) Water Table (C2) rrows (C8) /isible on Aerial Imagery (C9) Stressed Plants (D1) : Position (D2) I Test (D5)
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Wetland Hydr Primary Indica Surface W High Water Saturation Water Mar Sediment Drift Depo Algal Mat Iron Depos Inundation Sparsely V Water-Sta Field Observer Surface water Water table po Saturation pre (includes capi	Irology Indicato ators (minimum Vater (A1) er Table (A2) n (A3) urks (B1) Deposits (B2) posits (B3) or Crust (B4) posits (B5) n Visible on Aeria Vegetated Conca ained Leaves (B9 vations: r present? esent? esent? illary fringe)	I Imagery ve Surfac ) Yes Yes Yes	/ (B7) ce (B8)	Aquatic True Aqu Hydroge Oxidized (C3) Presenc Recent I (C6) Thin Muc Gauge o Other (E X X X	Fauna (B Jatic Plar n Sulfide I Rhizosp e of Redu ron Redu ck Surfac r Well Da xplain in Depth (ii Depth (ii	nts (B14) Odor (C1 heres on uced Iron ction in T e (C7) ata (D9) Remarks nches): nches): nches):	) [ Living Roots [ (C4) [ illed Soils [ ]	Surface Soi Drainage Pa Dry-Season Crayfish Bu Saturation N Stunted or S Geomorphic FAC-Neutra Indica hydr	I Cracks (B6) atterns (B10) Water Table (C2) rrows (C8) /isible on Aerial Imagery (C9) Stressed Plants (D1) : Position (D2) I Test (D5)
Wetland Hydr Primary Indica Surface W High Water Saturation Water Mar Sediment Drift Depo Algal Mat Iron Depos Inundation Sparsely V Water-Sta Field Observer Surface water Water table po Saturation pre (includes capi	Irology Indicato ators (minimum Vater (A1) er Table (A2) n (A3) urks (B1) Deposits (B2) posits (B3) or Crust (B4) posits (B5) n Visible on Aeria Vegetated Conca ained Leaves (B9 vations: r present? esent? esent? illary fringe)	I Imagery ve Surfac ) Yes Yes Yes	/ (B7) ce (B8)	Aquatic True Aqu Hydroge Oxidized (C3) Presenc Recent I (C6) Thin Muc Gauge o Other (E X X X	Fauna (B Jatic Plar n Sulfide I Rhizosp e of Redu ron Redu ck Surfac r Well Da xplain in Depth (ii Depth (ii	nts (B14) Odor (C1 heres on uced Iron ction in T e (C7) ata (D9) Remarks nches): nches): nches):	) [ Living Roots [ (C4) [ illed Soils [	Surface Soi Drainage Pa Dry-Season Crayfish Bu Saturation N Stunted or S Geomorphic FAC-Neutra Indica hydr	I Cracks (B6) atterns (B10) Water Table (C2) rrows (C8) /isible on Aerial Imagery (C9) Stressed Plants (D1) : Position (D2) I Test (D5)
Wetland Hydr Primary Indica Surface W High Water Saturation Water Mar Sediment Drift Depo Algal Mat Iron Depos Inundation Sparsely V Water-Sta Field Observer Surface water Water table po Saturation pre (includes capi	Irology Indicato ators (minimum Vater (A1) er Table (A2) n (A3) urks (B1) Deposits (B2) posits (B3) or Crust (B4) posits (B5) n Visible on Aeria Vegetated Conca ained Leaves (B9 vations: r present? esent? esent? illary fringe)	I Imagery ve Surfac ) Yes Yes Yes	/ (B7) ce (B8)	Aquatic True Aqu Hydroge Oxidized (C3) Presenc Recent I (C6) Thin Muc Gauge o Other (E X X X	Fauna (B Jatic Plar n Sulfide I Rhizosp e of Redu ron Redu ck Surfac r Well Da xplain in Depth (ii Depth (ii	nts (B14) Odor (C1 heres on uced Iron ction in T e (C7) ata (D9) Remarks nches): nches): nches):	) [ Living Roots [ (C4) [ illed Soils [ ]	Surface Soi Drainage Pa Dry-Season Crayfish Bu Saturation N Stunted or S Geomorphic FAC-Neutra Indica hydr	I Cracks (B6) atterns (B10) Water Table (C2) rrows (C8) /isible on Aerial Imagery (C9) Stressed Plants (D1) : Position (D2) I Test (D5)
Wetland Hydr Primary Indica Surface W High Water Saturation Water Mar Sediment Drift Depo Algal Mat Iron Depos Inundation Sparsely V Water-Sta Field Observer Surface water Water table pro Saturation pre (includes capi Describe reco	Irology Indicato ators (minimum Vater (A1) er Table (A2) n (A3) urks (B1) Deposits (B2) posits (B3) or Crust (B4) posits (B5) n Visible on Aeria Vegetated Conca ained Leaves (B9 vations: r present? esent? esent? illary fringe)	I Imagery ve Surfac ) Yes Yes Yes	/ (B7) ce (B8)	Aquatic True Aqu Hydroge Oxidized (C3) Presenc Recent I (C6) Thin Muc Gauge o Other (E X X X	Fauna (B Jatic Plar n Sulfide I Rhizosp e of Redu ron Redu ck Surfac r Well Da xplain in Depth (ii Depth (ii	nts (B14) Odor (C1 heres on uced Iron ction in T e (C7) ata (D9) Remarks nches): nches): nches):	) [ Living Roots [ (C4) [ illed Soils [ ]	Surface Soi Drainage Pa Dry-Season Crayfish Bu Saturation N Stunted or S Geomorphic FAC-Neutra Indica hydr	I Cracks (B6) atterns (B10) Water Table (C2) rrows (C8) /isible on Aerial Imagery (C9) Stressed Plants (D1) : Position (D2) I Test (D5)
Wetland Hydr Primary Indica Surface W High Water Saturation Water Mai Sediment Drift Depo Algal Mat Iron Depo: Inundation Sparsely W Water-Sta Field Observer Surface water Water table po Saturation pre (includes capi Describe reco	Irology Indicato ators (minimum Vater (A1) er Table (A2) n (A3) urks (B1) Deposits (B2) or Crust (B4) or Crust (B4) or Crust (B4) sists (B5) n Visible on Aeria Vegetated Conca ained Leaves (B9 vations: r present? esent? esent? illary fringe) orded data (streat	I Imagery ve Surfac ) Yes Yes Yes	/ (B7) ce (B8)	Aquatic True Aqu Hydroge Oxidized (C3) Presenc Recent I (C6) Thin Muc Gauge o Other (E X X X	Fauna (B Jatic Plar n Sulfide I Rhizosp e of Redu ron Redu ck Surfac r Well Da xplain in Depth (ii Depth (ii	nts (B14) Odor (C1 heres on uced Iron ction in T e (C7) ata (D9) Remarks nches): nches): nches):	) [ Living Roots [ (C4) [ illed Soils [ ]	Surface Soi Drainage Pa Dry-Season Crayfish Bu Saturation N Stunted or S Geomorphic FAC-Neutra Indica hydr	I Cracks (B6) atterns (B10) Water Table (C2) rrows (C8) /isible on Aerial Imagery (C9) Stressed Plants (D1) : Position (D2) I Test (D5)
Wetland Hydr Primary Indica Surface W High Water Saturation Water Mar Sediment Drift Depo Algal Mat Iron Depos Inundation Sparsely V Water-Sta Field Observer Surface water Water table pro Saturation pre (includes capi Describe reco	Irology Indicato ators (minimum Vater (A1) er Table (A2) n (A3) urks (B1) Deposits (B2) or Crust (B4) or Crust (B4) or Crust (B4) sists (B5) n Visible on Aeria Vegetated Conca ained Leaves (B9 vations: r present? esent? esent? illary fringe) orded data (streat	I Imagery ve Surfac ) Yes Yes Yes	/ (B7) ce (B8)	Aquatic True Aqu Hydroge Oxidized (C3) Presenc Recent I (C6) Thin Muc Gauge o Other (E X X X	Fauna (B Jatic Plar n Sulfide I Rhizosp e of Redu ron Redu ck Surfac r Well Da xplain in Depth (ii Depth (ii	nts (B14) Odor (C1 heres on uced Iron ction in T e (C7) ata (D9) Remarks nches): nches): nches):	) [ Living Roots [ (C4) [ illed Soils [ ]	Surface Soi Drainage Pa Dry-Season Crayfish Bu Saturation N Stunted or S Geomorphic FAC-Neutra Indica hydr	I Cracks (B6) atterns (B10) Water Table (C2) rrows (C8) /isible on Aerial Imagery (C9) Stressed Plants (D1) : Position (D2) I Test (D5)

Project/Site MTA-MTA-12_Extended				ennepin Samplir	ng Date: 8-22-14
Applicant/Owner: SW Light Rail Transit		State:	MN		ng Point: C
Investigator(s): Marc Cottingham, Lucy Dahl					on 25 Township 117N Range 22
Landform (hillslope, terrace, etc.): Depres	ssion		-	re, convex, none):	
Slope (%): 0-3 Lat:		Long:	,	Datum:	
Soil Map Unit Name Urban Urdents		Ŭ	NWI	Classification:	PUBGx
Are climatic/hydrologic conditions of the site typical for	r this time o	of the year?		f no, explain in rer	
	ogy				rmal circumstances"
- <u> </u>	ogy				present? Yes
SUMMARY OF FINDINGS	···			(If needed, expl	ain any answers in remarks.)
Hydrophytic vegetation present? Y					
Hydric soil present? Y	-	Is the sa	ampled area	a within a wetlan	<b>d?</b> Y
Indicators of wetland hydrology present? Y		f yes, opt	tional wetlar	d site ID:	
Remarks: (Explain alternative procedures here or in a	separate re	eport.)			
	-				
Above average precip	itation. Al	I wetland cr	iteria met.	Area is a wetla	nd.
VEGETATION Use scientific names of plant	te				
	Absolute	Dominan	Indicator	Dominance Te	st Worksheet
Tree Stratum (Plot size: )	% Cover		Staus	Number of Domi	nant Species
1 Acer negundo	30	Y	FAC	that are OBL, FA	•
2				Total Number	
3				-	oss all Strata: 4 (B)
4		·		Percent of Domi	•
⁵	30	=Total Cover		that are OBL, FA	.CW, or FAC: 75.00% (A/B)
Sapling/Shrub stratum (Plot size: )				Prevalence Ind	lex Worksheet
/ <u> </u>				Total % Cover of	
2				OBL species	0 x 1 = 0
3				FACW species	
4				FAC species	$45 \times 3 = 135$
°	0	=Total Cover		FACU species UPL species	$\frac{20}{0} \times 4 = \frac{80}{0}$
Herb stratum (Plot size: )				Column totals	75 (A) 235 (B)
1 Alliaria petiolata	15	Y	FAC	Prevalence Inde	
2 Impatiens capensis	10	Y	FACW		<u> </u>
3				Hydrophytic V	egetation Indicators:
4					or hydrophytic vegetation
5				X Dominance	
6					index is ≤3.0*
8		·			al adaptations* (provide data in Remarks or on a
9		·		separate sh	
10		·			c hydrophytic vegetation*
	25	=Total Cover		(explain)	
Woody vine stratum (Plot size:)				*Indicators of hyd	ric soil and wetland hydrology must be
1 Parthenocissus quinquefolia	20	Y	FACU	present, u Hydrophyt	Inless disturbed or problematic
2	20	=Total Cover		vegetation	
	20			present?	Y
Remarks: (Include photo numbers here or on a separa	ate sheet)				

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm the abse	nce of indicators.)
Depth	Matrix			lox Feat				,
(Inches)	Color (moist)	%	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	С	PL/M	Loam	
*Type: C = C	Concentration, D :	= Depleti	on, RM = Reduce	ed Matrix	i, MS = N	lasked S	and Grains. **Loca	tion: PL = Pore Lining, M = Matrix
Hydric So	il Indicators:						Indicators for Pro	blematic Hydric Soils:
Hist	tisol (A1)		San	dy Gleye	ed Matrix	: (S4)	Coast Prairie F	Redox (A16) ( <b>LRR K, L, R</b> )
Hist	tic Epipedon (A2)		San	dy Redo	ox (S5)			S7) ( <b>LRR K, L)</b>
Blac	ck Histic (A3)		Strip	oped Ma	trix (S6)		Iron-Manganes	se Masses (F12) (LRR K, L, R)
Hyc	Irogen Sulfide (A4	4)	Loa	my Mucł	ky Minera	al (F1)	Very Shallow I	Dark Surface (TF12)
Stra	atified Layers (A5)	)	Loa	my Gley	ed Matrix	k (F2)	Other (explain	in remarks)
2 cr	m Muck (A10)		Dep	leted Ma	atrix (F3)			
X Dep	leted Below Dark	Surface	(A11) X Red	lox Dark	Surface	(F6)		
Thio	ck Dark Surface (	A12)	Dep	leted Da	ark Surfa	ce (F7)	*Indicators of hy	drophytic vegetation and weltand
Sar	ndy Mucky Minera	ul (S1)	Red	lox Depr	essions (	(F8)		t be present, unless disturbed or
5 cr	m Mucky Peat or	Peat (S3	)					problematic
Restrictive	Layer (if observe	ed).				1		
Type:		cuj.					Hydric soil pres	ent? Y
Depth (inche	<i>sc).</i>				-			
Remarks:					-			
HYDROLO								
-	drology Indicato							
-		of one is	required; check a					ndicators (minimum of two required)
	Water (A1)				Fauna (B	,		e Soil Cracks (B6)
Ŭ,	ater Table (A2)			•	uatic Plar	· · ·		ige Patterns (B10)
Saturatio						Odor (C1		eason Water Table (C2)
	larks (B1)				l Rhizosp	heres on	<u> </u>	sh Burrows (C8)
	nt Deposits (B2)			(C3)	a of Dod	and Iron		ation Visible on Aerial Imagery (C9)
X Drift Dep	at or Crust (B4)					uced Iron		d or Stressed Plants (D1) orphic Position (D2)
-	osits (B5)			(C6)	Ion Redu			leutral Test (D5)
	on Visible on Aeria	l Imager	/ (B7)	. ,	ck Surfac	e (C7)	<u></u> TAC-I	
	Vegetated Conca				or Well Da			
	tained Leaves (B9					Remarks	)	
Field Obser	,	,					, 	
Surface wat		Yes	No	х	Depth (i	nches):		
Water table	-	Yes	No		Depth (i	-		ndicators of wetland
Saturation p	-	Yes	No	X	Depth (i	-		hydrology present? Y
	pillary fringe)				<u> </u>	,		
Describe rec	corded data (strea	am gaug	e, monitoring well	, aerial p	hotos, p	revious ir	nspections), if available:	
Remarks:								

Project/Site MTA-MTA-12_Extended	City/	County: M	linnetonka/He	ennepin Sampling Date:	08-22-2014
Applicant/Owner: SW Light Rail Transit		State:	MN		D
Investigator(s): Marc Cottingham, Lucy Dahl		Secti	ion, Townshi	o, Range: Section 25 Towr	ship 117N Range 22
Landform (hillslope, terrace, etc.): Hillsl	оре		-	re, 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 fo	r this time c	of the year?	N (I	f no, explain in remarks)	
Are vegetation , soil , or hydro	logy	significantly	y disturbed?	Are "normal circu	mstances"
Are vegetation , soil , or hydro	logy		roblematic?		present? Yes
SUMMARY OF FINDINGS				(If needed, explain any an	swers in remarks.)
Hydrophytic vegetation present? Y					
Hydric soil present? N	_	Is the s	sampled area	a within a wetland?	Ν
Indicators of wetland hydrology present? N		f yes, op	otional wetlar	nd site ID:	
Remarks: (Explain alternative procedures here or in a	separate re	eport)			
Above average precipitation. Hydric soil of	-		Area is not	a wetland based on bes	st professional
Above average precipitation. Hydrie son		udgment.			n professional
VEGETATION Use scientific names of plan					
	Absolute	Dominan	Indicator	Dominance Test Worksh	neet
Tree Stratum (Plot size: )	% Cover		Staus	Number of Dominant Specie	es
1 Acer negundo	30	Y	FAC	that are OBL, FACW, or FA	
2				Total Number of Domina	int
3				Species Across all Strat	ta: <u>3</u> (B)
4				Percent of Dominant Specie	
5	30	=Total Cove		that are OBL, FACW, or FA	C: <u>100.00%</u> (A/B)
Sapling/Shrub stratum (Plot size:	)		1	Prevalence Index Works	sheet
1 Rhamnus cathartica	30	Y	FAC	Total % Cover of:	
2				OBL species 0 x	1 = 0
3					2 = 0
4				· · · · · · · · · · · · · · · · · · ·	3 = 225
5		Tatal Caus			4 = 0
Herb stratum (Plot size:	30	=Total Cove	ſ		(5 = 0) A) 225 (B)
·	, 15	V	FAC	Prevalence Index = $B/A =$	
1 Alliaria petiolata	15		FAC	Frevalence muex = D/A =	3.00
3				Hydrophytic Vegetation	Indicators:
4				Rapid test for hydroph	
5				X Dominance test is >50	0%
6				X Prevalence index is ≤	3.0*
7				Morphogical adaptation	
8				supporting data in Re	marks or on a
9 10				<pre>separate sheet)Problematic hydrophy</pre>	rtia vagatation*
··	15	=Total Cove	r	(explain)	lic vegetation
Woody vine stratum (Plot size:	)			*Indicators of hydric soil and w	vetland hydrology must be
1				present, unless disturb	, ,,
2				Hydrophytic	
	0	=Total Cove	r	vegetation present? Y	
Domarka: (Include photo pumbars have a second	oto cho-4				
Remarks: (Include photo numbers here or on a separate	ate sneet)				

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm the absen	ce of indicators.)
Depth	Matrix			dox Featu				
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks
0-8	10YR 3/2	100					Loam	
8-20	10YR 4/2	100					Loam	
0.20	1011( 4/2	100					Loam	
						<u> </u>		
	Concentration, D	= Depleti	on, RM = Reduce	ed Matrix	, MS = N	lasked S		on: PL = Pore Lining, M = Matrix
-	oil Indicators:					(0.0)		ematic Hydric Soils:
	tisol (A1)			dy Gleye		(S4)		dox (A16) ( <b>LRR K, L, R</b> )
	tic Epipedon (A2)			idy Redo	. ,		Dark Surface (S	
	ck Histic (A3)			pped Ma	. ,			Masses (F12) ( <b>LRR K, L, R</b> )
	Irogen Sulfide (A4			my Mucł	-			rk Surface (TF12)
	atified Layers (A5)	)		my Gley			Other (explain in	remarks)
	m Muck (A10)	0		leted Ma	. ,			
· · · · ·	bleted Below Dark			lox Dark		```		
	ck Dark Surface (	,		leted Da				ophytic vegetation and weltand
	ndy Mucky Minera			lox Depr	essions	(F8)	hydrology must b	be present, unless disturbed or
5 cr	n Mucky Peat or	Peat (S3	)					problematic
Restrictive	Layer (if observe	ed):						
Туре:					-		Hydric soil preser	nt? <u>N</u>
Depth (inche	es):				_			
Remarks:								
Soil was	dry, no saturat	ion to 1	2"					
	ary, no saturat		2.					
HYDROLO	OGY							
	drology Indicato	nrs:						
-	cators (minimum		roquired: check	all that a	nnly)		Secondary Inc	licators (minimum of two required)
	Water (A1)		required, check		Fauna (B	12)		licators (minimum of two required) Soil Cracks (B6)
	ater Table (A2)					nts (B14)		e Patterns (B10)
Saturatio						Odor (C		son Water Table (C2)
	larks (B1)							Burrows (C8)
	nt Deposits (B2)			(C3)			· ·	on Visible on Aerial Imagery (C9)
	posits (B3)			· ·	e of Redu	uced Iron		or Stressed Plants (D1)
	at or Crust (B4)			Recent I	ron Redu	uction in T		phic Position (D2)
	osits (B5)			(C6)				utral Test (D5)
Inundati	on Visible on Aeria	al Imagery	/ (B7)	Thin Mu	ck Surfac	ce (C7)		
Sparsely	Vegetated Conca	ve Surfa	ce (B8)	Gauge o	or Well Da	ata (D9)		
Water-S	tained Leaves (B9	)	Х	Other (E	xplain in	Remarks	)	
Field Obser	vations:							
Surface wat		Yes	No	Х	Depth (i			
Water table		Yes	No	Х	Depth (i	-		dicators of wetland
Saturation p		Yes	No	Χ	Depth (i	inches):	h	ydrology present? N
(includes ca	pillary fringe)							
Describe red	corded data (strea	am gauge	e, monitoring well	, aerial p	hotos, p	revious ir	nspections), if available:	
Remarks:	_							
Shallow	Roots							

Project/Site MTA-MTA-12_Original	City/0	County:	Minnetonka/He	ennepin Sampling Date:	7-23-13
Applicant/Owner: SW Light Rail Transit		State	: MN	Sampling Point:	А
Investigator(s): Mohamed Elabbady, Todd Udvig		Se	ction, Township	o, Range: Section 25 Town	nship 117N Range 22
Landform (hillslope, terrace, etc.): Depres	ssion	Loca	al relief (concav	e, 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	f the year?	? Y (I	f no, explain in remarks)	
Are vegetation , soil , or hydrole	ogy	significar	ntly disturbed?	Are "normal circu	mstances"
	ogy		problematic?		present? Yes
SUMMARY OF FINDINGS				(If needed, explain any ar	nswers in remarks.)
Hydrophytic vegetation present? Y					
Hydric soil present? Y	-	Is the	e sampled area	a within a wetland?	Y
Indicators of wetland hydrology present? Y	-	f yes,	optional wetlan	d site ID:	
Remarks: (Explain alternative procedures here or in a	separate re	port)			
All three	criteria we	ere met.	Area is a wet	land.	
VEGETATION Use scientific names of plant	s.				
	Absolute	Dominar	Indicator	Dominance Test Works	heet
Tree Stratum (Plot size: )	% Cover			Number of Dominant Speci	es
1 Acer negundo	30	Y	FAC	that are OBL, FACW, or FA	AC: 7 (A)
2 Populus deltoides	30	Y	FAC	Total Number of Domina	
3 Salix nigra	20	Y	OBL	Species Across all Stra	、
4				Percent of Dominant Speci	
5	80 =	=Total Co		that are OBL, FACW, or FA	AC: <u>87.50%</u> (A/B)
Sapling/Shrub stratum (Plot size: )			vei	Prevalence Index Works	sheet
1 Rhamnus cathartica	60	Y	FAC	Total % Cover of:	
2 Cornus racemosa	20	Y	FAC	OBL species 20 x	(1 = 20
3				FACW species 60 x	(2 = 120
4				FAC species 140 x	3 = 420
5				· · ·	4 = 80
	= 80	Total Co	ver	· · · · · · · · · · · · · · · · · · ·	(5 = 0)
Herb stratum (Plot size:)	10				A) <u>640</u> (B)
1 Phalaris arundinacea	40	Y	FACW	Prevalence Index = B/A =	2.67
2 Impatiens capensis 3	20	Y	FACW	Hydrophytic Vegetation	Indicators:
4				Rapid test for hydropl	
5				X Dominance test is >5	
6				X Prevalence index is ≤	3.0*
7				Morphogical adaptation	ons* (provide
8				supporting data in Re	marks or on a
9				separate sheet)	
10	60 =	=Total Co	ver	Problematic hydrophy (explain)	tic vegetation*
Woody vine stratum (Plot size: )				*Indicators of hydric soil and v	watland hydrology must be
1 Parthenocissus quinquefolia	20	Y	FACU	present, unless distur	, ,,
2				Hydrophytic	
	20 =	=Total Co	ver	vegetation present? Y	
Remarks: (Include photo numbers here or on a separa	te sheet)				
	/				

Depth (Inches) (								or or confirm		
(Inches) (	<u>Matrix</u>			Redo	ox Featu	ures				
	Color (moist)	%	Color (mo	oist)	%	Type*	Loc**	Text	ure	Remarks
0-12	10YR 2/1	100						Peat		
*Type: C = Con	ncentration, D =	= Depleti	on, RM = R	educed	d Matrix	, MS = N	lasked S	and Grains.	**Locatio	n: PL = Pore Lining, M = Matrix
Hydric Soil I										ematic Hydric Soils:
X Histiso				Sand	lv Gleve	ed Matrix	(S4)			dox (A16) ( <b>LRR K, L, R</b> )
	Epipedon (A2)			_	ly Redo		(01)			') (LRR K, L)
	Histic (A3)				•	trix (S6)				Masses (F12) ( <b>LRR K, L, R</b> )
		1)			•	. ,				
	gen Sulfide (A4	,			-	ky Minera				rk Surface (TF12)
	ed Layers (A5)	)		_		ed Matrix	(F2)	Othe	er (explain in	remarks)
	Muck (A10)	<b>.</b> .				trix (F3)	(===)			
	ed Below Dark		e (A11)			Surface	. ,			
	Dark Surface (	,				rk Surfa	. ,			ophytic vegetation and weltand
	Mucky Minera	· · ·		Redo	ox Depre	essions (	F8)	hydro	ology must b	e present, unless disturbed or
5 cm N	Aucky Peat or	Peat (S3	)	_						problematic
Restrictive La	ver (if observe	əd).								
Type:		<i></i>						Hydric	soil presen	t? Y
Depth (inches):								Tiyunc	son presen	<u> </u>
Depth (inches).	·					,				
HYDROLOG	iΥ									
		ors:								
Wetland Hydro	ology Indicato		required: cl	heck al	ll that a	(ylgc		Se	econdary Ind	icators (minimum of two require
Wetland Hydro Primary Indicat	ology Indicato		required; cl				13)	<u>Se</u>		icators (minimum of two require Soil Cracks (B6)
Wetland Hydro Primary Indicat X Surface Wa	ology Indicato ors (minimum ater (A1)		required; cl	A	Aquatic I	Fauna (B		<u>Se</u>	Surface \$	Soil Cracks (B6)
Wetland Hydro Primary Indicat X Surface Wa High Water	ology Indicato ors (minimum ater (A1) Table (A2)		required; cl	/	Aquatic I True Aqu	Fauna (B uatic Plar	nts (B14)	-	Surface S X Drainage	Soil Cracks (B6) Patterns (B10)
Wetland Hydro Primary Indicat X Surface Wa High Water Saturation (	ology Indicato cors (minimum ater (A1) Table (A2) (A3)		required; cl		Aquatic I Frue Aqu Hydroge	Fauna (B Jatic Plar n Sulfide	nts (B14) Odor (C1	)	Surface S X Drainage Dry-Seas	Soil Cracks (B6) Patterns (B10) son Water Table (C2)
X     Surface Wa       High Water     Saturation (       X     Water Mark	ology Indicato cors (minimum ater (A1) Table (A2) (A3) (S (B1)		required; cl		Aquatic I True Aqu Hydroge Oxidized	Fauna (B Jatic Plar n Sulfide	nts (B14) Odor (C1	-	Surface S X Drainage Dry-Seas Crayfish	Soil Cracks (B6) Patterns (B10) son Water Table (C2) Burrows (C8)
Wetland Hydro         Primary Indicat         X       Surface Wa         High Water         Saturation (         X       Water Mark         Sediment D	ology Indicato cors (minimum ater (A1) Table (A2) (A3) (A3) (A3) (A3) (A3) (A3) (A3) (A3		required; cl		Aquatic I Frue Aqu Hydroge Oxidized (C3)	Fauna (B uatic Plar n Sulfide Rhizosp	nts (B14) Odor (C1 heres on	) Living Roots	Surface S X Drainage Dry-Seas Crayfish Saturatio	Soil Cracks (B6) Patterns (B10) son Water Table (C2) Burrows (C8) n Visible on Aerial Imagery (C9)
Wetland Hydro       Primary Indicat       X     Surface Wa       High Water       Saturation (       X     Water Mark       Sediment D       X     Drift Deposi	ology Indicato cors (minimum ater (A1) Table (A2) (A3) (A3) (S (B1) Deposits (B2) its (B3)		required; cl		Aquatic I True Aqu Hydroge Oxidized (C3) Presence	Fauna (B uatic Plar n Sulfide Rhizosp e of Redu	nts (B14) Odor (C1 heres on uced Iron	) Living Roots (C4)	Surface S X Drainage Dry-Seas Crayfish Saturatio Stunted of	Soil Cracks (B6) Patterns (B10) son Water Table (C2) Burrows (C8) n Visible on Aerial Imagery (C9) or Stressed Plants (D1)
Wetland Hydro         Primary Indicat         X       Surface Wa         High Water         Saturation (         X       Water Mark         Sediment D         X       Drift Deposition (         X       Algal Mation (	ology Indicato cors (minimum ater (A1) Table (A2) (A3) (A3) (A3) (A3) (A3) (A3) (A3) (A3		required; cl		Aquatic I True Aqu Hydroge Oxidized (C3) Presence Recent I	Fauna (B uatic Plar n Sulfide Rhizosp e of Redu	nts (B14) Odor (C1 heres on uced Iron	) Living Roots	Surface S       X     Drainage       Dry-Seas       Crayfish       Saturatio       Stunted of       X       Geomorp	Soil Cracks (B6) Patterns (B10) son Water Table (C2) Burrows (C8) n Visible on Aerial Imagery (C9) or Stressed Plants (D1) ohic Position (D2)
High Water Saturation ( X Water Mark Sediment D X Drift Deposi X Algal Mat o Iron Deposi	ology Indicato cors (minimum ater (A1) Table (A2) (A3) (A3) (A3) (A3) (A3) (A3) (A3) (A3	<u>of one is</u>			Aquatic I True Aqu Hydroge Oxidized (C3) Presence Recent I (C6)	Fauna (B uatic Plar n Sulfide l Rhizosp e of Redu ron Redu	nts (B14) Odor (C1 heres on uced Iron ction in T	) Living Roots (C4)	Surface S       X     Drainage       Dry-Seas       Crayfish       Saturatio       Stunted of       X       Geomorp	Soil Cracks (B6) Patterns (B10) son Water Table (C2) Burrows (C8) n Visible on Aerial Imagery (C9) or Stressed Plants (D1)
Wetland Hydro         Primary Indicat         X       Surface Wa         High Water         Saturation (         X       Water Mark         Sediment D         X       Drift Deposi         X       Algal Mat o         Iron Deposi         Inundation V	ology Indicato cors (minimum ater (A1) Table (A2) (A3) (A3) (A3) (A3) (A3) (A3) (A3) (A3	<u>of one is</u> Il Imager	/ (B7)		Aquatic I True Aqu Hydroge Oxidized (C3) Presence Recent I (C6) Thin Mu	Fauna (B Juatic Plar n Sulfide Rhizosp e of Redu ron Redu	ots (B14) Odor (C1 heres on uced Iron ction in T e (C7)	) Living Roots (C4)	Surface S       X     Drainage       Dry-Seas       Crayfish       Saturatio       Stunted of       X       Geomorp	Soil Cracks (B6) Patterns (B10) son Water Table (C2) Burrows (C8) n Visible on Aerial Imagery (C9) or Stressed Plants (D1) ohic Position (D2)
Wetland Hydro         Primary Indicat         X       Surface Wa         High Water         Saturation (         X       Water Mark         Sediment D         X       Drift Deposi         X       Algal Mat o         Iron Deposi         Inundation V         Sparsely Ve	ology Indicato ors (minimum ater (A1) Table (A2) (A3) (A3) (A3) (A3) (A3) (A3) (A3) (A3	of one is I Imager	/ (B7)		Aquatic I True Aqu Hydroge Oxidized (C3) Presence Recent I (C6) Thin Mud Gauge o	Fauna (B Jatic Plar n Sulfide Rhizosp e of Redu ron Redu ck Surfac r Well Da	nts (B14) Odor (C1 heres on uced Iron ction in T e (C7) ata (D9)	) Living Roots (C4) illed Soils	Surface S       X     Drainage       Dry-Seas       Crayfish       Saturatio       Stunted of       X       Geomorp	Soil Cracks (B6) Patterns (B10) son Water Table (C2) Burrows (C8) n Visible on Aerial Imagery (C9) or Stressed Plants (D1) ohic Position (D2)
Wetland Hydro         Primary Indicat         X       Surface Wa         High Water         Saturation (         X       Water Mark         Sediment D         X       Drift Deposi         X       Algal Mat o         Iron Deposi         Sparsely Ve         X       Water-Stair	ology Indicato ors (minimum ater (A1) Table (A2) (A3) (A3) (A3) (A3) (A3) (A3) (A3) (A3	of one is I Imager	/ (B7)		Aquatic I True Aqu Hydroge Oxidized (C3) Presence Recent I (C6) Thin Mud Gauge o	Fauna (B Jatic Plar n Sulfide Rhizosp e of Redu ron Redu ck Surfac r Well Da	ots (B14) Odor (C1 heres on uced Iron ction in T e (C7)	) Living Roots (C4) illed Soils	Surface S       X     Drainage       Dry-Seas       Crayfish       Saturatio       Stunted of       X       Geomorp	Soil Cracks (B6) Patterns (B10) son Water Table (C2) Burrows (C8) n Visible on Aerial Imagery (C9) or Stressed Plants (D1) ohic Position (D2)
Wetland Hydro         Primary Indicat         X       Surface Wa         High Water         Saturation (         X       Water Mark         Sediment D         X       Drift Deposi         X       Algal Mat o         Iron Deposi         Sparsely Ve         X       Water-Stair	ology Indicato ors (minimum ater (A1) Table (A2) (A3) (A3) (A3) (A3) (A3) (A3) (A3) (A3	of one is I Imager, ive Surfa )	/ (B7) ce (B8)		Aquatic I True Aqu Hydroge Oxidized (C3) Presence Recent I (C6) Thin Mud Gauge o	Fauna (B Jatic Plar n Sulfide I Rhizosp e of Redu ron Redu ck Surfac r Well Da xplain in	nts (B14) Odor (C1 heres on uced Iron ction in T e (C7) ata (D9) Remarks	) Living Roots (C4) illed Soils	Surface S       X     Drainage       Dry-Seas       Crayfish       Saturatio       Stunted of       X       Geomorp	Soil Cracks (B6) Patterns (B10) son Water Table (C2) Burrows (C8) n Visible on Aerial Imagery (C9) or Stressed Plants (D1) ohic Position (D2)
Wetland Hydro         Primary Indicat         X       Surface Wa         High Water         Saturation (         X       Water Mark         Sediment D         X       Drift Deposi         X       Algal Mat o         Iron Deposi         Inundation V         Sparsely Ve         X         Water-Stair         Field Observar	ology Indicato ors (minimum ater (A1) Table (A2) (A3) (A3) (A3) (A3) (A3) (A3) (A3) (A3	of one is Il Imager, ive Surfa ) Yes	/ (B7) ce (B8) X		Aquatic I True Aqu Hydroge Oxidized (C3) Presence Recent I (C6) Thin Mud Gauge o	Fauna (B Jatic Plar n Sulfide l Rhizosp e of Redu ron Redu ck Surfac r Well Da xplain in	nts (B14) Odor (C1 heres on uced Iron ction in T e (C7) ata (D9) Remarks nches):	) Living Roots (C4) illed Soils	Surface S X Drainage Dry-Seas Crayfish Saturatio Stunted o X Geomorp X FAC-Neu	Soil Cracks (B6) Patterns (B10) son Water Table (C2) Burrows (C8) n Visible on Aerial Imagery (C9) or Stressed Plants (D1) ohic Position (D2) ttral Test (D5)
Wetland Hydro         Primary Indicat         X       Surface Wa         High Water         Saturation (         X       Water Mark         Sediment D         X       Drift Deposi         X       Algal Mat o         Iron Deposi         Inundation V         Sparsely Ve         X         Water-Stair         Field Observar         Surface water p	ology Indicato ors (minimum ater (A1) Table (A2) (A3) (A3) (A3) (A3) (A3) (A3) (A3) (A3	of one is I Imager ive Surfa ) Yes Yes	/ (B7) ce (B8) X		Aquatic I True Aqu Hydroge Oxidized (C3) Presence Recent I (C6) Thin Mud Gauge o	Fauna (B Juatic Plar n Sulfide l Rhizosp e of Redu ron Redu ck Surfac r Well Da xplain in Depth (i Depth (i	nts (B14) Odor (C1 heres on uced Iron ction in T e (C7) ata (D9) Remarks nches): nches):	) Living Roots (C4) illed Soils	Surface S X Drainage Dry-Seas Crayfish Saturatio Stunted o X Geomorp X FAC-Neu	Soil Cracks (B6) Patterns (B10) son Water Table (C2) Burrows (C8) n Visible on Aerial Imagery (C9) or Stressed Plants (D1) ohic Position (D2) ttral Test (D5)
Wetland Hydro         Primary Indicat         X       Surface Wa         High Water         Saturation (         X       Water Mark         Sediment D         X       Drift Deposi         X       Algal Mat o         Iron Deposi         Inundation V         Sparsely Ve         X         Water-Stair         Field Observar         Surface water p         Water table pres	ology Indicato ors (minimum ater (A1) Table (A2) (A3) (A3) (A3) (A3) (A3) (A3) (A3) (A3	of one is Il Imager, ive Surfa ) Yes	/ (B7) ce (B8) X		Aquatic I True Aqu Hydroge Oxidized (C3) Presence Recent I (C6) Thin Mud Gauge o	Fauna (B Jatic Plar n Sulfide l Rhizosp e of Redu ron Redu ck Surfac r Well Da xplain in	nts (B14) Odor (C1 heres on uced Iron ction in T e (C7) ata (D9) Remarks nches): nches):	) Living Roots (C4) illed Soils	Surface S X Drainage Dry-Seas Crayfish Saturatio Stunted o X Geomorp X FAC-Neu	Soil Cracks (B6) Patterns (B10) son Water Table (C2) Burrows (C8) n Visible on Aerial Imagery (C9) or Stressed Plants (D1) ohic Position (D2) ttral Test (D5)
Wetland Hydro         Primary Indicat         X       Surface Wa         High Water         Saturation (         X       Water Mark         Sediment D         X       Drift Deposi         X       Algal Mat or         Iron Deposi         Inundation V         Sparsely Ve         X         Water Stair         Field Observat         Surface water preson         Saturation press         (includes capillation pression)	ology Indicato ors (minimum ater (A1) Table (A2) (A3) (A3) (A3) (A3) (A3) (A3) (A3) (A3	ll Imager ive Surfa ) Yes Yes Yes	/ (B7) ce (B8) 		Aquatic I Frue Aqu Hydroge Dxidized (C3) Presenc Recent I (C6) Thin Muo Gauge o Other (E	Fauna (B Jatic Plar n Sulfide Rhizosp e of Redu ron Redu ck Surfac r Well Da xplain in Depth (i Depth (i	nts (B14) Odor (C1 heres on uced Iron ction in T e (C7) ata (D9) Remarks nches): nches): nches):	) Living Roots (C4) iilled Soils	Surface S X Drainage Dry-Seas Crayfish Saturatio Stunted o X Geomorp X FAC-Neu	Soil Cracks (B6) Patterns (B10) son Water Table (C2) Burrows (C8) n Visible on Aerial Imagery (C9) or Stressed Plants (D1) ohic Position (D2) ttral Test (D5)
Wetland Hydro         Primary Indicat         X       Surface Wa         High Water         Saturation (         X       Water Mark         Sediment D         X       Drift Deposi         X       Algal Mat o         Iron Deposi         Inundation V         Sparsely Ve         X         Water-Stair         Field Observar         Surface water p         Water table pres	ology Indicato ors (minimum ater (A1) Table (A2) (A3) (A3) (A3) (A3) (A3) (A3) (A3) (A3	ll Imager ive Surfa ) Yes Yes Yes	/ (B7) ce (B8) 		Aquatic I Frue Aqu Hydroge Dxidized (C3) Presenc Recent I (C6) Thin Muo Gauge o Other (E	Fauna (B Jatic Plar n Sulfide Rhizosp e of Redu ron Redu ck Surfac r Well Da xplain in Depth (i Depth (i	nts (B14) Odor (C1 heres on uced Iron ction in T e (C7) ata (D9) Remarks nches): nches): nches):	) Living Roots (C4) iilled Soils	Surface S X Drainage Dry-Seas Crayfish Saturatio Stunted o X Geomorp X FAC-Neu	Soil Cracks (B6) Patterns (B10) son Water Table (C2) Burrows (C8) n Visible on Aerial Imagery (C9) or Stressed Plants (D1) ohic Position (D2) ttral Test (D5)
Wetland Hydro         Primary Indicat         X       Surface Wa         High Water         Saturation (         X       Water Mark         Sediment D         X       Drift Deposi         X       Algal Mat or         Iron Deposi         Inundation V         Sparsely Ve         X         Water Stair         Field Observat         Surface water preson         Saturation press         (includes capillation pression)	ology Indicato ors (minimum ater (A1) Table (A2) (A3) (A3) (A3) (A3) (A3) (A3) (A3) (A3	ll Imager ive Surfa ) Yes Yes Yes	/ (B7) ce (B8) 		Aquatic I Frue Aqu Hydroge Dxidized (C3) Presenc Recent I (C6) Thin Muo Gauge o Other (E	Fauna (B Jatic Plar n Sulfide Rhizosp e of Redu ron Redu ck Surfac r Well Da xplain in Depth (i Depth (i	nts (B14) Odor (C1 heres on uced Iron ction in T e (C7) ata (D9) Remarks nches): nches): nches):	) Living Roots (C4) iilled Soils	Surface S X Drainage Dry-Seas Crayfish Saturatio Stunted o X Geomorp X FAC-Neu	Soil Cracks (B6) Patterns (B10) son Water Table (C2) Burrows (C8) n Visible on Aerial Imagery (C9) or Stressed Plants (D1) ohic Position (D2) ttral Test (D5)
Wetland Hydro         Primary Indicat         X       Surface Wa         High Water         Saturation (         X       Water Mark         Sediment D         X       Drift Deposi         X       Algal Mat o         Iron Deposi         Inundation V         Sparsely Ve         X         Water table president composition         Surface water president composition         Saturation press         (includes capilla         Describe record	ology Indicato ors (minimum ater (A1) Table (A2) (A3) (A3) (A3) (A3) (A3) (A3) (A3) (A3	ll Imager ive Surfa ) Yes Yes Yes	/ (B7) ce (B8) 		Aquatic I Frue Aqu Hydroge Dxidized (C3) Presenc Recent I (C6) Thin Muo Gauge o Other (E	Fauna (B Jatic Plar n Sulfide Rhizosp e of Redu ron Redu ck Surfac r Well Da xplain in Depth (i Depth (i	nts (B14) Odor (C1 heres on uced Iron ction in T e (C7) ata (D9) Remarks nches): nches): nches):	) Living Roots (C4) iilled Soils	Surface S X Drainage Dry-Seas Crayfish Saturatio Stunted o X Geomorp X FAC-Neu	Soil Cracks (B6) Patterns (B10) son Water Table (C2) Burrows (C8) n Visible on Aerial Imagery (C9) or Stressed Plants (D1) ohic Position (D2) ttral Test (D5)
Wetland Hydro         Primary Indicat         X       Surface Wa         High Water         Saturation (         X       Water Mark         Sediment D         X       Drift Deposition (         X       Algal Mat of         Iron Deposition Veg         X       Water-Stair         Field Observat         Surface water pressaturation press         (includes capilla)	ology Indicato ors (minimum ater (A1) Table (A2) (A3) (A3) (A3) (A3) (A3) (A3) (A3) (A3	ll Imager ive Surfa ) Yes Yes Yes	/ (B7) ce (B8) 		Aquatic I Frue Aqu Hydroge Dxidized (C3) Presenc Recent I (C6) Thin Muo Gauge o Other (E	Fauna (B Jatic Plar n Sulfide Rhizosp e of Redu ron Redu ck Surfac r Well Da xplain in Depth (i Depth (i	nts (B14) Odor (C1 heres on uced Iron ction in T e (C7) ata (D9) Remarks nches): nches): nches):	) Living Roots (C4) iilled Soils	Surface S X Drainage Dry-Seas Crayfish Saturatio Stunted o X Geomorp X FAC-Neu	Soil Cracks (B6) Patterns (B10) son Water Table (C2) Burrows (C8) n Visible on Aerial Imagery (C9) or Stressed Plants (D1) ohic Position (D2) ttral Test (D5)
Wetland Hydro         Primary Indicat         X       Surface Wa         High Water         Saturation (         X       Water Mark         Sediment D         X       Drift Deposition (         X       Drift Deposition (         X       Algal Mat of         Inon Deposition (       Sparsely Veter Statistic         Field Observat       Surface water pressaturation press         Saturation press       Saturation press         Describe record       Describe record	ology Indicato ors (minimum ater (A1) Table (A2) (A3) (A3) (A3) (A3) (A3) (A3) (A3) (A3	ll Imager ive Surfa ) Yes Yes Yes	/ (B7) ce (B8) 		Aquatic I Frue Aqu Hydroge Dxidized (C3) Presenc Recent I (C6) Thin Muo Gauge o Other (E	Fauna (B Jatic Plar n Sulfide Rhizosp e of Redu ron Redu ck Surfac r Well Da xplain in Depth (i Depth (i	nts (B14) Odor (C1 heres on uced Iron ction in T e (C7) ata (D9) Remarks nches): nches): nches):	) Living Roots (C4) iilled Soils	Surface S X Drainage Dry-Seas Crayfish Saturatio Stunted o X Geomorp X FAC-Neu	Soil Cracks (B6) Patterns (B10) son Water Table (C2) Burrows (C8) n Visible on Aerial Imagery (C9) or Stressed Plants (D1) ohic Position (D2) ttral Test (D5)

Project/Site MTA-MTA-13	City/C	County:	Minnetonka/He	ennepin	Sampling Date:	10/10/2014	
Applicant/Owner: SWLRT	-	State	MN		Sampling Point:	А	
Investigator(s): Lucy Dahl, Marc Cottingham		Se	ction, Township	p, Range:	25	-117-22	
Landform (hillslope, terrace, etc.): Depressio	n	Loca	l relief (concav	/e, convex	, none):	Concave	
Slope (%): 0-10 Lat:		Long:			Datum:		
Soil Map Unit Name Shorewood L26B			NWI (	Classificat	tion:	PUBG	
Are climatic/hydrologic conditions of the site typical for this	is time of	the year?	Y (I	lf no, expla	ain in remarks)		
Are vegetation, soil, or hydrology		significar	tly disturbed?		Are "normal circu	imstances"	
Are vegetation, soil, or hydrology		naturally problematic? present? No					
SUMMARY OF FINDINGS				(If need	led, explain any ar	nswers in remarks.)	
Hydrophytic vegetation present? Y							
Hydric soil present? Y		Is the	sampled area	a within a	wetland?	Y	
Indicators of wetland hydrology present? Y		f yes,	optional wetlan	nd site ID:			
Remarks: (Explain alternative procedures here or in a sep	parate rep	port.)					
		-					
Above average precipitation	on. Mee	ets all we	tland criteria	a. Area is	a wetland.		
VEGETATION Use scientific names of plants.							
· · · · ·	osolute	Dominan	Indicator	Domina	ance Test Works	heet	
Tree Stratum (Plot size: 30ft ) %	Cover	t Species		Number	of Dominant Spec	ies	
1				that are	OBL, FACW, or FA	AC: 2 (A)	
2					Number of Domina		
3				-	cies Across all Stra		
5					of Dominant Spec	ies AC: 100.00% (A/B)	
	0 =	Total Cov	/er		022,17.011,011	(,,,,,)	
Sapling/Shrub stratum (Plot size: 15ft )				Prevale	ence Index Works	sheet	
1				Total %	Cover of:		
2				OBL sp		(1 = 5	
3				FACW		(2 = 100)	
4		$\begin{array}{c} - & - & - \\ \hline & FAC \text{ species} & 10 & x \ 3 = & 30 \\ \hline & FACU \text{ species} & 0 & x \ 4 = & 0 \\ \end{array}$					
	0 =	Total Cov	/er	UPL sp	·	4 = 0 5 = 0	
Herb stratum (Plot size: 5ft )				Column		(A) <u>135</u> (B)	
1 Phalaris arundinacea	30	Y	FACW	Prevale	nce Index = B/A =		
2 Solidago gigantea	20	Y	FACW				
3 Poa pratensis	10	Ν	FAC	Hydrop	hytic Vegetation	Indicators:	
4 Lycopus americanus	5	N	OBL	· · · · · ·	oid test for hydrop		
5					ninance test is >5		
6					valence index is ≤		
/ <u></u>					rphogical adaptati porting data in Re		
9					parate sheet)		
10				· ·	blematic hydrophy	vtic vegetation*	
	65 =	Total Cov	/er	(ex	plain)	_	
Woody vine stratum (Plot size: 30ft )				*Indicat	ors of hydric soil and	wetland hydrology must be	
1					present, unless distur	bed or problematic	
2		Total Ca			drophytic jetation		
	0 =	Total Cov		-	sent? Y		
Remarks: (Include photo numbers here or on a separate s	sheet)			I			
	,						

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm the absen	ce of indicators.)
Depth	Matrix			dox Feat				
(Inches)	Color (moist)	%	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	
0-20		90	101K 4/0	10	C	PL	310	
*Type: C = 0	Concentration, D =	= Depleti	on, RM = Reduce	ed Matrix	, MS = N	lasked S	and Grains. **Locati	on: PL = Pore Lining, M = Matrix
Hydric Sc	il Indicators:						Indicators for Prob	lematic Hydric Soils:
Hist	tisol (A1)		Sar	dy Gleye	ed Matrix	: (S4)	Coast Prairie Re	edox (A16) ( <b>LRR K, L, R</b> )
Hist	tic Epipedon (A2)		Sar	dy Redo	x (S5)		Dark Surface (S	57) ( <b>LRR K, L)</b>
Blae	ck Histic (A3)		Stri	oped Ma	trix (S6)		Iron-Manganese	e Masses (F12) (LRR K, L, R)
	lrogen Sulfide (A4	4)			ky Minera	al (F1)	Very Shallow Da	ark Surface (TF12)
	atified Layers (A5)			-	ed Matrix		Other (explain in	
	m Muck (A10)		X Dep				\	<i>,</i>
	pleted Below Dark	Surface			Surface			
	ck Dark Surface (				rk Surfa	· · ·	*Indicators of hyd	rophytic vegetation and weltand
	ndy Mucky Minera				essions (			be present, unless disturbed or
	n Mucky Peat or					(10)	nyarology mast	problematic
		-	/					problemate
	Layer (if observe	ed):						
Туре:					-		Hydric soil prese	nt? Y
Depth (inche	es):				-			
Remarks:								
HYDROLO								
-	drology Indicato						<b>.</b>	
	cators (minimum	of one is	required; check					dicators (minimum of two required)
X Surface	. ,				Fauna (B	,		Soil Cracks (B6)
	ater Table (A2)				uatic Plar			e Patterns (B10)
Saturatio	. ,					Odor (C1		ason Water Table (C2)
	larks (B1)				l Rhizosp	heres on	J	n Burrows (C8)
	nt Deposits (B2)			(C3)				on Visible on Aerial Imagery (C9)
	oosits (B3)					uced Iron		or Stressed Plants (D1)
-	at or Crust (B4)				ron Redu	iction in T		rphic Position (D2)
	osits (B5)			(C6)			X FAC-Ne	eutral Test (D5)
	on Visible on Aeria				ck Surfac			
	Vegetated Conca		ce (B8)	-	or Well Da			
Water-S	tained Leaves (B9	)		Other (E	xplain in	Remarks	)	
Field Obser	vations:							
Surface wat	•	Yes	X No		Depth (i		3	
Water table	•	Yes	No		Depth (i	,		dicators of wetland
Saturation p		Yes	No		Depth (i	nches):	h	ydrology present? Y
(includes ca	pillary fringe)							
Describe red	corded data (strea	am gauge	e, monitoring well	, aerial p	hotos, p	revious ir	nspections), if available:	
		-	-		-			
Remarks:								

Project/Site MTA-MTA-13	City/C	county:	Min	netonka/He	ennepin	Sampling Date:	10/10/2014
Applicant/Owner: SWLRT		State	e:	MN		Sampling Point:	В
Investigator(s): Lucy Dahl, Marc Cottingham		Se	ectio	n, Township	, Range:	25	-117-22
Landform (hillslope, terrace, etc.): Slope		Loc	al re	lief (concav	e, convex	, none):	Convex
Slope (%): 0-10 Lat:		Long:				Datum:	
Soil Map Unit Name Shorewood L26B		_		NWIC	Classificat	ion:	
Are climatic/hydrologic conditions of the site typical for this	time of	the year	r?	Y (II	f no, expla	ain in remarks)	
Are vegetation , soil X , or hydrology		significa	antly	disturbed?		Are "normal circu	mstances"
Are vegetation , soil , or hydrology		naturally	y pro	blematic?			present? No
SUMMARY OF FINDINGS					(If need	ed, explain any ar	swers in remarks.)
Hydrophytic vegetation present? Y							
Hydric soil present? Y		Is th	ie sa	mpled area	within a	wetland?	Ν
Indicators of wetland hydrology present? N		f yes	, opti	onal wetlan	d site ID:	—	
Remarks: (Explain alternative procedures here or in a sepa	arate rec	oort.)					
	-						
Above average precipitation. Soil restricted at 1	0 inche	es. Wet	tlanc	hydrolog	y criteria	a not met. Area	is not a wetland.
VEGETATION Use scientific names of plants.							
· · · · · · · · · · · · · · · · · · ·	solute	Domina	in	Indicator	Domina	ance Test Works	neet
		t Specie		Staus	Number	of Dominant Speci	es
1					that are	OBL, FACW, or FA	C: <u>2</u> (A)
2						Number of Domina	
3						cies Across all Stra	. ,
4						of Dominant Speci	
	0 =	Total Co	over		linal ale	OBL, FACW, or FA	C: <u>66.67%</u> (A/B)
Sapling/Shrub stratum (Plot size: 15ft )	<u> </u>		0,001		Prevale	ence Index Works	heet
1						Cover of:	
2					OBL sp	ecies <u>0</u> x	1 = 0
3					FACW	·	2 = 50
4					FAC sp		3 = 210
5		Total Ca			FACU s	· · · · · · · · · · · · · · · · · · ·	4 = 120
Herb stratum (Plot size: 5ft )	0 =	Total Co	over		UPL sp Column		(5 = 0) A) 380 (B)
/	70	V		FAC		nce Index = $B/A$ =	,( ,
	70 25	Y Y		FAC	Flevale	$\text{fice findex} = \mathbf{D}/\mathbf{A} =$	3.04
	25	Y		FACU	Hvdrop	hytic Vegetation	Indicators:
	5	N		FACU		oid test for hydropl	
5					X Dor	ninance test is >5	0%
6					Pre	valence index is ≤	3.0*
7						rphogical adaptation	
8						porting data in Re	marks or on a
9 10					·	arate sheet)	tio vocatation*
	125 =	Total Co	over			blematic hydrophy plain)	dic vegetation
Woody vine stratum (Plot size: 30ft )					<u> </u>	,	vetland hydrology must be
1						present, unless disturb	, ,,
2					-	drophytic	
	0 =	Total Co	over		-	jetation sent? Y	
	L ()				hie	<u> </u>	
Remarks: (Include photo numbers here or on a separate sh	neet)						

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm the at	osence of indicators.)
Depth	Matrix		Red	dox Featu	ures			
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks
0-4	10YR 4/1	100					SiL	
4-10	10YR 4/2	98	10YR 4/6	2	С	PL	SiL	
4-10	1011( 4/2	30	1011( 4/0	2	0		0IL	
	Concentration, D	= Depleti	on, RM = Reduce	ed Matrix	, MS = №	lasked S		ocation: PL = Pore Lining, M = Matrix
-	il Indicators:		_					Problematic Hydric Soils:
	tisol (A1)			dy Gleye		: (S4)		ie Redox (A16) ( <b>LRR K, L, R</b> )
	ic Epipedon (A2)			idy Redo	. ,			ce (S7) (LRR K, L)
	ck Histic (A3)			pped Ma	. ,			nese Masses (F12) ( <b>LRR K, L, R</b> )
	Irogen Sulfide (A			my Mucł	-			w Dark Surface (TF12)
	atified Layers (A5	)		my Gley			Other (expla	ain in remarks)
	m Muck (A10)			leted Ma	. ,			
· · ·	leted Below Dark		· · ·	lox Dark		· · ·		
	ck Dark Surface (			leted Da				f hydrophytic vegetation and weltand
	idy Mucky Minera			lox Depr	essions (	(F8)	hydrology m	nust be present, unless disturbed or
5 cr	n Mucky Peat or	Peat (S3	)					problematic
Restrictive	Layer (if observ	ed):						
Type: R	ocky						Hydric soil pr	resent? Y
Depth (inche	es): 10				•			
Remarks:								
HYDROLO								
-	drology Indicate							
-	cators (minimum	of one is	required; check					ry Indicators (minimum of two required)
	Water (A1)				Fauna (B	,		rface Soil Cracks (B6)
	iter Table (A2)				uatic Plar			ainage Patterns (B10)
Saturatio	. ,					Odor (C1	· · · · · ·	/-Season Water Table (C2)
	arks (B1)				Rhizosp	heres on	J	ayfish Burrows (C8)
	nt Deposits (B2)			(C3)	o of Podu	upped from		turation Visible on Aerial Imagery (C9)
	oosits (B3) at or Crust (B4)					uced Iron		inted or Stressed Plants (D1) omorphic Position (D2)
	osits (B5)			(C6)	ION Redu			C-Neutral Test (D5)
	on Visible on Aeria	al Imager	/ (B7)	· ·	ck Surfac	e (C7)		C-Neuliai Test (D3)
	Vegetated Conca			-	or Well Da			
	tained Leaves (B9			-		Remarks	)	
Field Obser	·	/					/	
Surface wat		Yes	No		Depth (i	nches).		
Water table		Yes	No		Depth (i			Indicators of wetland
Saturation p	•	Yes	No		Depth (i	'		hydrology present? N
	pillary fringe)					- /	[	
-		am daude	e, monitoring well	aerial n	hotos n	revious ir	nspections), if availat	ble:
2 0001100 100			,e	,		5		
Remarks:								

Project/Site MPL-MPL-01	City/C	County:	Eden Praii	rie	Sampling Date:	9-4-2014
Applicant/Owner: SWLRT	_	State:	MN		Sampling Point:	А
Investigator(s): Marc Cottingham, Lucy Dahl		Sectio	on, Township	, Range:	S28-	T29-R24
Landform (hillslope, terrace, etc.): Depressi	on	Local re	elief (concave	e, convex	, none):	Concave
Slope (%): 0-3 Lat:		Long:			Datum:	
Soil Map Unit Name Urban Land			NWI C	Classificati	ion:	None
Are climatic/hydrologic conditions of the site typical for the	nis time of	the year?	N (If	no, expla	ain in remarks)	
Are vegetation , soil , or hydrolog	у	significantly			Are "normal circun	nstances"
Are vegetation , soil , or hydrolog	·	naturally pro				present? Yes
SUMMARY OF FINDINGS	·			(If need	ed, explain any ans	wers in remarks.)
Hydrophytic vegetation present? Y				,		,
Hydric soil present? Y		Is the sa	ampled area	within a	wetland?	Y
Indicators of wetland hydrology present? Y			tional wetlan			
Remarks: (Explain alternative procedures here or in a se	parate rep	port.)				
Above average precipitatio			ria were me	et. Area	is a wetland.	
VEGETATION Use scientific names of plants.						
	bsolute	Dominan	Indicator	Domina	nce Test Worksh	eet
	6 Cover	t Species	Staus		of Dominant Specie	
					OBL, FACW, or FAC	、
2					Number of Dominar ies Across all Strata	
<u> </u>						
5					of Dominant Specie OBL. FACW. or FAC	s C: 100.00% (A/B)
	0 =	Total Cover			- , - ,	(**=)
Sapling/Shrub stratum (Plot size: )				Prevale	nce Index Works	neet
1				Total %	Cover of:	
2				OBL spe	ecies 75 x	1 = 75
3				FACW s	·	2 = 0
4				FAC spe		3 = 0
5	0 =	Total Cover		FACU s UPL spe		4 = 0 5 = 0
Herb stratum (Plot size: )	=			Column		
1 Lemna minor	70	Y	OBL		nce Index = $B/A$ =	1.00
2 Lythrum salicaria	5	 	OBL	Trevalei		1.00
3	<u> </u>		002	Hydrop	hytic Vegetation I	ndicators:
4					bid test for hydroph	
5				X Don	ninance test is >50	%
6				X Prev	valence index is ≤3	.0*
7				Mor	phogical adaptation	ns* (provide
8					porting data in Ren	narks or on a
9					arate sheet)	
10	75 =	Total Cover			blematic hydrophyt blain)	ic vegetation [*]
Woody vine stratum (Plot size:)				*Indicato	ors of hydric soil and we	etland hydrology must be
1					present, unless disturbe	ed or problematic
2					Irophytic	
	0 =	Total Cover		-	etation sent? Y	
Remarks: (Include photo numbers here or on a separate	sheet)					
	511000					

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm the ab	sence of indicators.)
Depth	Matrix		Re	dox Feat	ures			
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks
0-10	10YR 3/1	100					SiL	
10-20	10YR 4/1	98	10YR 4/6	2	С	М	SiL	
10-20	1011( 4/1	30	1011( 4/0	2	0	171	0IL	
	Concentration, D =	= Depleti	on, RM = Reduce	ed Matrix	i, MS = N	lasked S		cation: PL = Pore Lining, M = Matrix
-	oil Indicators:							roblematic Hydric Soils:
	tisol (A1)			ndy Gleye		: (S4)		e Redox (A16) ( <b>LRR K, L, R</b> )
	Histic Epipedon (A2) Sandy F Black Histic (A3) Stripped							e (S7) ( <b>LRR K, L)</b>
	· · /							ese Masses (F12) ( <b>LRR K, L, R</b> )
	Irogen Sulfide (A4			my Mucl				v Dark Surface (TF12)
	atified Layers (A5)	)		my Gley		‹ (F2)	Other (expla	n in remarks)
	m Muck (A10)			pleted Ma	. ,			
	oleted Below Dark			dox Dark				
	ck Dark Surface (	,		pleted Da				hydrophytic vegetation and weltand
	ndy Mucky Minera			dox Depr	essions (	(F8)	hydrology mu	ist be present, unless disturbed or
5 cr	m Mucky Peat or	Peat (S3	)					problematic
Restrictive	Layer (if observe	ed):						
Type:							Hydric soil pre	esent? Y
Depth (inche	es):				-			
Remarks:					-			
HYDROLO	DGY							
Wetland Hy	drology Indicato	ors:						
Primary Indi	cators (minimum	of one is	required; check	all that a	<u>pply)</u>		Secondary	/ Indicators (minimum of two required)
X Surface	Water (A1)			Aquatic	Fauna (B	13)	Surf	ace Soil Cracks (B6)
High Wa	ater Table (A2)			True Aq	uatic Plar	nts (B14)	Drai	nage Patterns (B10)
Saturatio	on (A3)			Hydroge	n Sulfide	Odor (C1	) Dry-	Season Water Table (C2)
Water M	larks (B1)				l Rhizosp	heres on	· · · · · · · · · · · · · · · · · · ·	fish Burrows (C8)
	nt Deposits (B2)			(C3)				ration Visible on Aerial Imagery (C9)
	posits (B3)			-		uced Iron		ted or Stressed Plants (D1)
Ŭ,	at or Crust (B4)				ron Redu	iction in T		morphic Position (D2)
	osits (B5)		· (DZ)	(C6)		(07)	X FAC	-Neutral Test (D5)
	on Visible on Aeria			-	ck Surfac			
	Vegetated Conca tained Leaves (B9		се (ва)		or Well Da	ata (D9) Remarks	N N N N N N N N N N N N N N N N N N N	
		)			xpiain in	Remarks	)	
Field Obser		V	V NL		Darth (	nohe-).		
Surface wate		Yes	X No	V	Depth (i		4	Indicators of watland
Water table Saturation p		Yes	No No	$\frac{x}{x}$	Depth (i Depth (i	,	I	Indicators of wetland hydrology present? Y
	pillary fringe)	Yes		^		10165).		
-			a magnitude d		hotes			
Describe rec	corded data (strea	am gauge	e, monitoring wel	i, aerial p	motos, pi	evious ir	nspections), if availabl	e:
Remarks:								
1								

Project/Site MPL-MPL-01	City/C	ounty:	Eden Prair	rie S	Sampling Date:	9-4-2014
Applicant/Owner: SWLRT		State:	MN	S	Sampling Point:	В
Investigator(s): Marc Cottingham, Lucy Dahl		Sectio	on, Township	o, Range:	S28-	Г29-R24
Landform (hillslope, terrace, etc.): hillslope	е	Local re	elief (concave	e, convex,	none):	Steep
Slope (%): 20 Lat:		Long:		C	Datum:	
Soil Map Unit Name Urban Land			NWI C	Classificatio	on:	None
Are climatic/hydrologic conditions of the site typical for the	nis time of	the year?	N (If	f no, explai	n in remarks)	
Are vegetation, soil, or hydrolog	у	significantly	disturbed?	A	Are "normal circun	nstances"
Are vegetation , soil , or hydrolog	у	naturally pro	oblematic?			present? Yes
SUMMARY OF FINDINGS				(If neede	d, explain any ans	wers in remarks.)
Hydrophytic vegetation present? Y						
Hydric soil present? N		Is the sa	ampled area	a within a v	wetland?	Ν
Indicators of wetland hydrology present? N		f yes, opt	ional wetlan	d site ID:		
Remarks: (Explain alternative procedures here or in a se	parate rep	oort.)				
Above average precipitation. Area's Soil a	and Hydro	ology do ne	ot meet we	etland crite	eria. Area is no	t a wetland.
VEGETATION Use scientific names of plants.						
A	bsolute	Dominan	Indicator	Dominar	nce Test Worksh	eet
Tree Stratum (Plot size:) %	6 Cover	t Species	Staus		of Dominant Specie	
1 Acer negundo	25	Y	FAC	that are O	BL, FACW, or FAC	2 (A)
2	<u> </u>	·			Number of Dominar	
3	·	·			es Across all Strata	. ,
5	<u> </u>	·			of Dominant Specie BL, FACW, or FAC	s : 100.00% (A/B)
	25 =	Total Cover				(```,
Sapling/Shrub stratum (Plot size: )				Prevalen	nce Index Works	neet
1 Rhamnus cathartica	30	Y	FAC	Total % C		
2				OBL spe		
3				FACW sp		
4			<u> </u>	FAC spe FACU sp		3 = 165 4 = 0
	30 =	Total Cover		UPL spec		5 = 0
Herb stratum (Plot size: )				Column t		
1				Prevalen	ce Index = $B/A$ =	3.00
2						
3				Hydroph	ytic Vegetation I	ndicators:
4					d test for hydroph	
5					inance test is >50	
6	·	<u> </u>			alence index is ≤3	
					hogical adaptation orting data in Ren	
9					rate sheet)	
10		Total Causer		Prob	lematic hydrophyt	ic vegetation*
Woody vine stratum (Plot size: )	0 =	Total Cover		(expl		
1					s of hydric soil and we resent, unless disturbe	etland hydrology must be ed or problematic
2				Hydr	ophytic	
	0 =	Total Cover		-	etation	
	-			pres	ent? Y	_
Remarks: (Include photo numbers here or on a separate	sheet)					

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm t	the absend	e of indicators.)	
Depth	Matrix		Red	dox Feat	ures					
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Textu	re	Remarks	
0-10	10YR 3/1	100					SiL			
10-20	10YR 4/2	100					SiL			
10 20	1011( 4/2	100					OIL			
*Type: C = (	Concentration, D :	- Doploti	on PM - Poduce	d Matrix		laskod S	and Grains	**Locatio	n: PL = Pore Lining, M = Matrix	
	bil Indicators:	= Depieti			., 1013 = 10	laskeu S			ematic Hydric Soils:	
-	tisol (A1)		Sar	dy Glave	ed Matrix	(\$4)			dox (A16) ( <b>LRR K, L, R</b> )	
	tic Epipedon (A2)			idy Gleya		(34)			7) (LRR K, L)	
	ck Histic (A3)			pped Ma					Masses (F12) (LRR K, L, R)	
	Irogen Sulfide (A4	1)			ky Minera	al (F1)		•	rk Surface (TF12)	
	atified Layers (A5)			-	ed Matrix			(explain in		
	n Muck (A10)	)			atrix (F3)	(12)		(cxpiairi iri	Ternandy	
	pleted Below Dark	Surface			Surface	(E6)				
	ck Dark Surface (				ark Surfa	. ,	*Indicat	ore of bydr	ophytic vegetation and weltand	
	idy Mucky Minera				essions (				e present, unless disturbed or	
	n Mucky Peat or				00010110	(10)	nyurun	ogy must b	problematic	
	,	,	/			1			P. 02.0	
Type:	Layer (if observe	eu):					Hydric s	oil presen	t? N	
Depth (inche	<i>ve)</i> .				-		Tryunc s	on presen		
Remarks:					-					
HYDROLO										
-	drology Indicato									
	cators (minimum	of one is	required; check				Sec		icators (minimum of two required)	
	Water (A1)				Fauna (B	,			Soil Cracks (B6)	
	iter Table (A2)				uatic Plar				e Patterns (B10)	
Saturatio						Odor (C1	· · · · · · · · · · · · · · · · · · ·	-	son Water Table (C2)	
	arks (B1) nt Deposits (B2)			(C3)	i Knizosp	neres on	Living Roots		Burrows (C8) on Visible on Aerial Imagery (C9)	
	osits (B3)				e of Redu	uced Iron	(C4)		or Stressed Plants (D1)	
	at or Crust (B4)			-			illed Soils		phic Position (D2)	
-	osits (B5)			(C6)					utral Test (D5)	
	on Visible on Aeria	al Imager	/ (B7)	· ·	ck Surfac	e (C7)		_		
Sparsely	Vegetated Conca	ave Surfa	ce (B8)	-	or Well Da					
Water-S	tained Leaves (B9	)		Other (E	xplain in	Remarks	)			
Field Obser	vations:			-						
Surface wat	er present?	Yes	No	Х	Depth (i					
Water table		Yes	No	Х	Depth (i				licators of wetland	
Saturation p		Yes	No	Х	Depth (i	nches):		hy	/drology present? N	
-	pillary fringe)									
	corded data (strea	am gaug	e, monitoring well	, aerial p	hotos, p	revious ir	nspections), if a	vailable:		
Remarks:										
1										

# **APPENDIX E**

Field Delineated Wetland Photographs



DOT-EP-09 (Extended)



DOT-EP-12



DOT-EP-13



DOT-EP-15





DOT-EP-16 (Waterway)

## SOUTHWEST LRT (GREEN LINE EXTENSION) PROJECT

## 2014 SUPPLEMENTAL WETLAND INVESTIGATION REPORT



DOT-EP-17



DOT-EP-18



DOT-EP-19





DOT-EP-21



DOT-EP-22

#### 2014 SUPPLEMENTAL WETLAND INVESTIGATION REPORT



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

ID: 13

## 13485 SW Light Rail Transit

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 we based on MnRAM data		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 Diversi	ity -/	-			
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 potentialfish 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

Vetland Fu	etland Functional Assessment Summary						nce Flood/ ic Stormwater/	Downstream Water	Maintenance of Wetland Water		
Wetland Name	Hydrogeomor	phology				Hydrolog Regime			Quality	Shoreline Protection	
3485 DOT-EP-17	T-EP-17 Depressional/Flow-through (apparent inlet and outlet), Depressional/Flow-through (appa inlet and outlet)					0.30	0.40	0.38	0.32	0.00	
						Low	Moderate	Moderate	Low	Not Applicable	
								A	dditional Infor	rmation	
Wetland Name	Maintenance of Characteristic Wildlife Habitat Structure	Maintenance of Characteristic Fish Habitat	Maintenance of Characteristic Amphibian Habitat	Aesthetics/ Recreation/ Education/ Cultural	Commercia	al Uses	Ground- Water Interaction	Wetland Restoration Potential	Wetland Sensiti to Stormwate and Urban Development	er Stormwater Treatment	
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 Appli	cable	-	Not Applicable	Moderate	Low	

# Wetland Community Summary

	summer y			Vege	tative Diversit	y/Integrity				
Wetland Name	Location	Cowardin Classification Classification Classification Community		Plant	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	
					Ľ		Low	Low	Low	
		PUBG	Type 5	Shallow Marsh	60	0.1	0.10	0.10	0.10	
					Ľ		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 (We	et) Meadow
Cowardin Classification: PEMB	Circular 39: Type 2
Plant Community: Shallow M	larsh
Cowardin Classification: PUBG	Circular 39: Type 5
4 Listed, rare, special species?	No
5 Rare community or habitat?	No
6 Pre-European-settlement condi	tion? No
Hydrogeomorphology / topogra	aphy:
7 Depressi	ional/FlowThru
8-1 Maximum water depth	36 inche
8-2 % inundated	60%
9 Immediate drainagelocal 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		С
13	Outlet for hydro regime		С
14	Dominant upland land use		С
15	Wetland soil condition		В
16	Vegetation (% cover)		70%
17	Emerg. veg flood resistance		В
18	Sediment delivery		С
19	Upland soils (soil group)		В
20	Stormwater runoff		В
21	Subwatershed wetland densi	ty	В
22	Channels/sheet flow		С
23	Adjacent buffer width	100	) feet
A di	acont aroa managomont		

#### Adjacent area management **F** 11

24-A	Full	100%	
24-B	Manicured	0%	
24-C	Bare	0%	

1000

#### Adjacent area diversity/structure

25-A	Native	0%
25-B	Mixed	100%
25-C	Sparse	0%

### Adjacent area slope

Aajace	ent area stope	
26-A	Gentle	20%
26-B	Moderate	70%
26-C	Steep	10%

27 Downstream sens./WQ protect. В В 28 Nutrient loading

No

С

Adequate

В

С

С

29 Shoreline wetland?

#### Shoreline Wetland

- 0% 30 Rooted veg., % cover 31 Wetland in-water width 0 feet 32 Emerg. veg. erosion resistance 33 Erosion potential of site 34 Upslope veg./bank protection No 35 Rare wildlife? Scare/Rare/S1/S2 community No 36 37 Vegetative cover В С Veg. community interspersion 38 в 39 Wetland detritus 40 Interspersion on landscape В
- Wildlife barriers

41

#### Amphibian-breeding potential

- 42 Hydroperiod adequacy Fish presence 43 Overwintering habitat 44
- Wildlife species (list) 45
- Fish habitat quality 46
- Fish species (list) 47
- Unique/rare opportunity 48
- Wetland visibility 49
- Proximity to population 50
- Public ownership 51
- Public access 52
- Human influence on wetland 53
- Human influence on viewshed 54
- Spatial buffer 55
- Recreational activity potential 56

#### 57 Commercial crop--hydro impact

NA

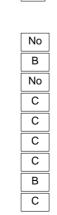
### Groundwater-specific questions

0.0	and area specific question	•••
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
Ad	ditional 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
<u>68</u>	Ease of potential restoration	
69	Hydrologic alterations	0
70	Potential wetland type	0
71	Stormwater sensitivity	В
72	Additional treatment needs	В

#### 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**

### 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/Att enuation	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	Туре 2	Fresh Wet Meadow		
			Stinging nettle	>25-50%
			Reed canary grass	>25-50%
			Red-osier dogwood	>10-25%
PUBG	Туре 5	Shallow Marsh		
			Narrow-leaved cattail	>10-25%
			Lesser duckweed	>10-25%

#### Management Classification Report for EP-EP-07

ID: 50

#### SWLRT

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 we	Self-defined classification value		
based on MnRAM data	Functional Category s	ettings for this mana	gement 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 Diversit	ty -/	-
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+Q2 5)/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				Mainte. oj	f	Flood/	Downstream Water	Maintenance of Wetland	~ .	
Wetland Name	Hydrogeomor	phology			Hydro Reg		Stormwater/ Attenuation	Water Quality	Water Quality	Shoreline Protection
EP-EP-07	Depressional/Is	ressional/Isolated (no discernable inlets or outlets)				0.65	0.75	0.54	0.36	0.00
					Mode	erate	High	Moderate	Moderate	Not Applicable
								Ad	ditional Infor	rmation
Wetland Name	Maintenance of Characteristic Wildlife Habitat Structure	Maintenance of Characteristic Fish Habitat	Maintenance of Characteristic Amphibian Habitat	Aesthetics/ Recreation/ Education/	Commercial Uses	We	ound- ater vaction	Wetland Restoration Potential	Wetland Sensitiv to Stormwater and Urban	r Stormwater Treatment

Wetland Name	Wildlife Habitat Structure	Characteristic Fish Habitat	Amphibian Habitat	Education/ Cultural	Commercial Uses	Water Interaction	Restoration Potential	and Urban Development	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

	summer y		Vegetative Diversity/Integrity						
Wetland Name	Location	Cowardin Classification	Circula	ommunity r 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	Туре 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 M	larsh
Cowardin Classification: PEMC	Circular 39: Type 3
Plant Community: Hardwood	d Swamp
Cowardin Classification: PFO1C	Circular 39: Type 7
4 Listed, rare, special species?	No
5 Rare community or habitat?	No
6 Pre-European-settlement condit	ion? No
Hydrogeomorphology / topogra 7 Depres	<i>uphy:</i> sional/Isolated
8-1 Maximum water depth	6 inches
8-2 % inundated	15%
9 Immediate drainagelocal 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	А
13	Outlet for hydro regime	А
14	Dominant upland land use	С
15	Wetland soil condition	Α
16	Vegetation (% cover)	50%
17	Emerg. veg flood resistance	NA
18	Sediment delivery	В
19	Upland soils (soil group)	В
20	Stormwater runoff	В
21	Subwatershed wetland density	Α
22	Channels/sheet flow	В
23	Adjacent buffer width 100	) feet

#### Adjacent area management

110,000		
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 0% 26-A Gentle 26-B Moderate 0% 26-C Steep 100% В 27 Downstream sens./WQ protect. 28 Nutrient loading В No 29 Shoreline wetland? Shoreline Wetland 0% 30 Rooted veg., % cover 31 Wetland in-water width 0 feet -32 Emerg. veg. erosion resistance _____ 33 Erosion potential of site 34 Upslope veg./bank protection No 35 Rare wildlife? Scare/Rare/S1/S2 community No 36 37 Vegetative cover В С Veg. community interspersion 38 С Wetland detritus 39 Interspersion on landscape В 40 С 41 Wildlife barriers

Amphibian-breeding potential						
42	Hydroperiod adequacy	Adequate				
43	Fish presence	Α				
44	Overwintering habitat					
45	Wildlife species (list)					
46	Fish habitat quality	NA				
47	Fish species (list)					
48	Unique/rare opportunity	No				
49	Wetland visibility	С				
50	Proximity to population	Yes				
51	Public ownership	С				
52	Public access	С				
53	Human influence on wetland	В				
54	Human influence on viewshed	С				
55	Spatial buffer	В				
56	Recreational activity potential	С				

57 Commercial crop--hydro impact

NA

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
Ad	ditional 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	В
	Additional treatment needs	А

For functional ratings, please run the Summary tab report. This report printed on: 3/3/2014

Service Area: 9

WS# 33

## **MnRAM Site Assessment Report**

### 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/Att enuation	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	Туре 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

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 wetl based on MnRAM data	and Functional Category	Self-defined classifi settings for this mana	
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 Diver	sity -/	-
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

ID: 113

Wetland Functional Assessment Summary					Maintenand of Hydrologia	Flood/	Downstream Water	Maintenance of Wetland Water	Shoreline	
Wetland Name	Hydrogeomorp	ohology				Regime	Attenuation	Quality	Quality	Protection
EP-EP-22	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
								A	ditional Infor	rmation
Wetland Name	Maintenance of Characteristic Wildlife Habitat Structure	Maintenance of Characteristic Fish Habitat	Maintenance of Characteristic Amphibian Habitat	Aesthetics/ Recreation/ Education/ Cultural	Commerc	tial Uses	Ground- Water Interaction	Wetland Restoration Potential	Wetland Sensitiv to Stormwate and Urban Development	r Stormwater Treatment
EP-EP-22	0.29	0.00	0.00	0.10	0.0	00	Recharge	0.00	0.10	0.17
	Low	Not Applicable	Not Applicable	Low	Not App	olicable		Not Applicable	Moderate	Low

## Wetland Community Summary

		Vegetative Diversity/Integrity							
Wetland Name	Location	Cowardin Classification	Co Circulai 39	mmunity r 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		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 Communit Cowardin Classifi PEMC		<b>/arsh</b> Circular 39: Type 3
4 Listed, rare, spec	cial species?	No
5 Rare community	or habitat?	No
6 Pre-European-se	ettlement condi	tion? No
<b>Hydrogeomorpho</b> 7		<b>uphy:</b> ional/FlowThru
8-1 Maximum wa	ter depth	12 inche
8-2 % inundated		30%
9 Immediate drain	agelocal WS	8 acres
10 Esimated size/ex	isting site:	(see #66)
11-Upland Soil	Muskego, Blue Houghton com	
11-Wetland Soil	Muskego, Blue Houghton com	

12	Outlet for flood control		А
13	Outlet for hydro regime		А
14	Dominant upland land use		С
15	Wetland soil condition		С
16	Vegetation (% cover)	1	80%
17	Emerg. veg flood resistance		В
18	Sediment delivery		С
19	Upland soils (soil group)		В
20	Stormwater runoff		А
21	Subwatershed wetland density	v	А
22	Channels/sheet flow		А
23	Adjacent buffer width	200	feet
Adj	iacent area management		
24-	A Full	3	0%

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

лијисет игеи море	
26-A Gentle	0%
26-B Moderate	0%
26-C Steep	100%
27 Downstream sens./WQ protect.	В
28 Nutrient loading	С
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	С
38 Veg. community interspersion	NA
39 Wetland detritus	С
40 Interspersion on landscape	В
41 Wildlife barriers	С

#### Amphibian-breeding potential

42	Hydroperiod adequacy	Inadequate
43	Fish presence	A
44	Overwintering habitat	С
45	Wildlife species (list)	
46	Fish habitat quality	NA
47	Fish species (list)	
48	Unique/rare opportunity	No
49	Wetland visibility	С
50	Proximity to population	No
51	Public ownership	С
52	Public access	С
53	Human influence on wetland	С
54	Human influence on viewshed	С
55	Spatial buffer	С
56	Recreational activity potential	l C
57	Commercial crophydro impo	act NA

	58	Wetland soils
	59	Subwatershed land use
	60	Wetland size/soil group
	61	Wetland hydroperiod
	62	Inlet/Outlet configuration
	63	Upland topo relief
	Ad	ditional information
	64	Restoration potential
	65	LO affected by restoration
ŧ	66	Existing size
		Restorable size
		Potential new wetland
	67	Average width of pot. buffe

65	LO affected by restoration	
66	Existing size	0.25
	Restorable size	0
	Potential new wetland	0
67 68	Average width of pot. buffer Ease of potential restoration	0 feet
69	Hydrologic alterations	0
70	Potential wetland type	0
71	Stormwater sensitivity	С
72	Additional treatment needs	A

Groundwater-specific questions

Recharge Recharge

Recharge Recharge

Recharge

Discharge

No

### 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**

### 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 Low Both sediment and nutrient removal are called for to prevent further treatment needs degradation of this site. Extensive alteration of wetland hydrology has altered the original Maintenance of Low Hydrologic Regime 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/Att High The wetland provides ample flood storage and/or flood wave attenuation. Outlet configuration is restricted (or unaltered) and enuation 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, clavey upland soils, and few wetlands present within the subwatershed may position any wetland to be a good attenuator of excess water. **Downstream Water** Moderate This wetland has some ability and opportunity to protect downstream resources. The ability of the wetland to remove sediment from Quality 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 is poor. Additional resources are needed to Low protect any existing plant or animal communities that exist, using both Wetland Water sediment-removal and nutrient-reduction technologies. Quality Shoreline Protection Not The site does not fringe a deepwater habitat, lake, or is not within any type of watercourse. Applicable

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	Туре 3	Shallow Marsh		
			Purple loosestrife	>25-50%
			Narrow-leaved cattail	>50-75%

### Management Classification Report for EP-EP-23

#### SWLRT - EP-EP-23

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 we based on MnRAM data		Self-defined classification value settings for this management level		
	Functional Category			
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 Diversit	ty -/-		
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=""></no>

* The classification value settings for these functions are not adjustable

ID: 114

## 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					Maintenan of Hydrologi	Flood/	Downstream Water	Maintenance of Wetland Water	Shoreline	
Wetland Name	Hydrogeomorp	ohology				Regime	Attenuation		Quality	Protection
EP-EP-23	Depressional/Fl inlet and outlet)	ow-through (apparent	inlet and outlet), Depres	sional/Flow-through	n (apparent	0.52	0.73	0.56	0.38	0.00
						Moderate	High	Moderate	Moderate	Not Applicable
								Ac	lditional Infor	rmation
Wetland Name	Maintenance of Characteristic Wildlife Habitat Structure	Maintenance of Characteristic Fish Habitat	Maintenance of Characteristic Amphibian Habitat	Aesthetics/ Recreation/ Education/ Cultural	Commerc	ial Uses	Ground- Water Interaction	Wetland Restoration Potential	Wetland Sensitiv to Stormwate and Urban Development	r Stormwater Treatment
EP-EP-23	0.35 Moderate	0.00 Not Applicable	0.30 Low	0.31 Low	0.0 Not App		Recharge	0.00 Not Applicable	0.10 Moderate	0.38 Moderate

## Wetland Community Summary

					Vegetative Diversi	ty/Integrity			
Wetland Name	Location	Cowardin Classification	Circula	ommunity r Plant Community	Wetland Proportion	Individual Community Rating	Highest Wetland Rating	Average Wetland Rating	Weighted Average Wetland Rating
EP-EP-23	27-000-00-001	PEMC	Туре 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: 27-000-00-001

#### SWLRT - EP-EP-23

Plant Community: Shallow M Cowardin Classification: PEMC	<b>arsh</b> Circular 39: Type 3
<ol> <li>Listed, rare, special species?</li> <li>Rare community or habitat?</li> <li>Pre-European-settlement condition</li> <li>Hydrogeomorphology / topograp</li> <li>Depression</li> </ol>	
<ul> <li>8-1 Maximum water depth</li> <li>8-2 % inundated</li> <li>9 Immediate drainagelocal WS</li> <li>10 Esimated size/existing site:</li> </ul>	12 inche 40% 36 acres ( <i>see #</i> 66)
11-Upland Soil Lester 11-Wetland Soil Water	

12	Outlet for flood control	Α
13	Outlet for hydro regime	А
14	Dominant upland land use	С
15	Wetland soil condition	В
16	Vegetation (% cover)	40%
17	Emerg. veg flood resistance	В
18	Sediment delivery	В
19	Upland soils (soil group)	С
20	Stormwater runoff	В
21	Subwatershed wetland density	В
22	Channels/sheet flow	Α
23	Adjacent buffer width	800 feet

#### Adjacent area management E..11

najaceni area managemeni					
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%
25-C	Sparse	0%

Adjacent area slope	
26-A Gentle	0%
26-B Moderate	100%
26-C Steep	0%
27 Downstream sens./WQ protect.	В
28 Nutrient loading	В
29 Shoreline wetland?	No
Shoreline Wetland	
30 Rooted veg., % cover	0%
31 Wetland in-water width	0 feet
	0 feet
31 Wetland in-water width	0 feet
31 Wetland in-water width 32 Emerg. veg. erosion resistance	0 feet
<ul><li>31 Wetland in-water width</li><li>32 Emerg. veg. erosion resistance</li><li>33 Erosion potential of site</li></ul>	0 feet
<ul> <li>31 Wetland in-water width</li> <li>32 Emerg. veg. erosion resistance</li> <li>33 Erosion potential of site</li> <li>34 Upslope veg./bank protection</li> </ul>	
<ul> <li>31 Wetland in-water width</li> <li>32 Emerg. veg. erosion resistance</li> <li>33 Erosion potential of site</li> <li>34 Upslope veg./bank protection</li> <li>35 Rare wildlife?</li> </ul>	
<ul> <li>31 Wetland in-water width</li> <li>32 Emerg. veg. erosion resistance</li> <li>33 Erosion potential of site</li> <li>34 Upslope veg./bank protection</li> <li>35 Rare wildlife?</li> <li>36 Scare/Rare/S1/S2 community</li> </ul>	No No
<ul> <li>31 Wetland in-water width</li> <li>32 Emerg. veg. erosion resistance</li> <li>33 Erosion potential of site</li> <li>34 Upslope veg./bank protection</li> <li>35 Rare wildlife?</li> <li>36 Scare/Rare/S1/S2 community</li> <li>37 Vegetative cover</li> </ul>	No No C
<ul> <li>31 Wetland in-water width</li> <li>32 Emerg. veg. erosion resistance</li> <li>33 Erosion potential of site</li> <li>34 Upslope veg./bank protection</li> <li>35 Rare wildlife?</li> <li>36 Scare/Rare/S1/S2 community</li> <li>37 Vegetative cover</li> <li>38 Veg. community interspersion</li> </ul>	No No C NA

#### Amphibian-breeding potential

42	Hydroperiod adequacy	Adequate
43	Fish presence	А
44	Overwintering habitat	С
45	Wildlife species (list)	
46	Fish habitat quality	NA
47	Fish species (list)	
48	Unique/rare opportunity	No
<i>49</i>	Wetland visibility	С
50	Proximity to population	Yes
51	Public ownership	С
52	Public access	С
53	Human influence on wetland	В
54	Human influence on viewshed	С
55	Spatial buffer	В
56	Recreational activity potential	l C
57	Commercial crophydro impo	act NA

#### Groundwater-specific questions

0.0	and and specific questio	
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
Ad	ditional 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	В
72	Additional treatment needs	А
Wate	ershed Minnesota (Shakop	oee)
WS#	33 Service Are	a: 9

#### For functional ratings, please run the Summary tab report. This report printed on: 8/26/2014

## **MnRAM Site Assessment Report**

### 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/Att enuation	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
PEMC	Туре 3	Shallow Marsh

#### Management Classification Report for EP-EP-24

ID: 5

#### SWLRT EP-EP-24

**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 we based on MnRAM data		Self-defined classification value ttings 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

Vetland Functional Assessment Summary						Maintena of Hydrolog	Flood/		Maintenance of Wetland Water	Shoreline
Wetland Name	Hydrogeomor	phology				Regim	e Attenuation	Quality	Quality	Protection
EP-EP-24	Depressional/Flo inlet and outlet)	ow-through (apparent i	nlet and outlet), Depress	sional/Flow-through	(apparent	0.10	0.52	0.53	0.42	0.00
						Low	Moderate	Moderate	Moderate	Not Applicable
								A	dditional Infor	rmation
Wetland Name	Maintenance of Characteristic Wildlife Habitat Structure	Maintenance of Characteristic Fish Habitat	Maintenance of Characteristic Amphibian Habitat	Aesthetics/ Recreation/ Education/ Cultural	Commer	cial Uses	Ground- Water Interaction	Wetland Restoration Potential	Wetland Sensiti to Stormwate and Urban Development	er Stormwater Treatment
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 Ap	olicable	Ū.	Not Applicable	Moderate	Moderate

## Wetland Community Summary

		Vegetative Diversity/Integrity							
Wetland Name	Location	Cowardin Classification	Circular	mmunity r 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

<b>Plant Communit</b> Cowardin Classifi PUBG		<b>Open W</b> Circula Type \$	ar 39:
<ul><li><i>4 Listed, rare, spec</i></li><li><i>5 Rare community</i></li></ul>			No No
6 Pre-European-se	ettlement condii	ion?	No
<b>Hydrogeomorpho</b> 7	<i>logy / topogra</i> Depressi		owThru
8-1 Maximum was 8-2 % inundated	ter depth	36 90	inche %
9 Immediate drain	agelocal WS	2 a	acres
10 Esimated size/ex	isting site:	(see	#66)
11-Upland Soil	Muskego Muck 2% Slopes	, depres	sional, 0-
11-Wetland Soil	Muskego Muck 2% Slopes	, depres	sional, 0-

12 Outlet for flood control	С
13 Outlet for hydro regime	С
14 Dominant upland land use	С
15 Wetland soil condition	С
16 Vegetation (% cover)	50%
17 Emerg. veg flood resistance	NA
18 Sediment delivery	А
19 Upland soils (soil group)	В
20 Stormwater runoff	А
21 Subwatershed wetland density	А
22 Channels/sheet flow	С
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-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%

27Downstream sens./WQ protect.A28Nutrient loadingB

No

0%

No

С

0 feet

- 29 Shoreline wetland?

#### Shoreline Wetland

- 30 Rooted veg., % cover 31 Wetland in-water width
- 32 Emerg. veg. erosion resistance
- 33 Erosion potential of site
- 34 Upslope veg./bank protection
- 35 Rare wildlife?
- 36Scare/Rare/S1/S2 communityNo37Vegetative coverC38Veg. community interspersionNA39Wetland detritusNA40Interspersion on landscapeB
- 41 Wildlife barriers

#### Amphibian-breeding potential

лт	phibian-breeaing potential	
42	Hydroperiod adequacy	Adequate
43	Fish presence	В
44	Overwintering habitat	С
45	Wildlife species (list)	None
46	Fish habitat quality	NA
47	Fish species (list)	
48	Unique/rare opportunity	No
49	Wetland visibility	А
50	Proximity to population	No
51	Public ownership	С
52	Public access	С
53	Human influence on wetland	С
54	Human influence on viewshed	l C
55	Spatial buffer	В
56	Recreational activity potentia	d C
57	Commercial crophydro imp	act NA

#### Groundwater-specific questions

0.0	unumater specific questio	
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
Ad	ditional information	
64	Restoration potential	No
65	LO affected by restoration	С
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 C
69	Hydrologic alterations	Lowere d Outlet
70	Potential wetland type	5
71	Stormwater sensitivity	В
72	Additional treatment needs	В
Wate	ershed Minnesota (Shakop	bee)
WS#	33 Service Are	a: 9

For functional ratings, please run the Summary tab report. This report printed on: 10/2/2014

## **MnRAM Site Assessment Report**

### 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/Att enuation	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	Туре 5	Shallow, Ow Comr	nunities	
			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

ID: 28

#### SWLRT MTA-MTA-11

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		Self-defined classification value settings for this management level	
based on MnRAM data	Functional Category		gementiever
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 Diversi	ty 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 potentialfish 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 Fun	ctional Assessment Summary	Maintenance of Hydrologic Regime	Flood/ Stormwater/ Attenuation	Downstream Water Ouality	Maintenance of Wetland Water Ouality	Shoreline
MTA-MTA-11	Extensive Peatland/Organic Flat	0.52	0.71	0.48	0.40	Protection 0.00
		Moderate	High	Moderate	Moderate	Not Applicable

							Additional Information		on
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								
Wetland Name	Location	Cowardin Classification	Circula	mmunity r 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	Туре 3	Shallow Marsh	60	0.1	0.10	0.10	0.10
			1		I		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
			1		T	' [	Low	Low	Low
		PSS1C	Туре 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.** 

Friday, October 18, 2013

# MnRAM: Site Response Record

For Wetland: MTA-MTA-11 Location: 27-117-22-25-001

# SWLRT MTA-MTA-11

Plant Community: Shallow M	larsh
Cowardin Classification: PEMC	Circular 39: Type 3
Plant Community: Floodplain	n Forest
Cowardin Classification: PFO1C	Circular 39: Type 7
Plant Community: Shrub Car	rr
Cowardin Classification: PSS1C	Circular 39: Type 6
Plant Community: Shallow, 0	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 condit	ion? No
Hydrogeomorphology / topogra	phy:
7 Exter	nsive Peatland
8-1 Maximum water depth	48 inche
8-2 % inundated	10%
9 Immediate drainagelocal 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	А				
14	Dominant upland land use	С				
15	Wetland soil condition	В				
16	Vegetation (% cover)	90%				
17	Emerg. veg flood resistance	В				
18	Sediment delivery	В				
19	Upland soils (soil group)	В				
20	Stormwater runoff	В				
21	Subwatershed wetland density	А				
22	Channels/sheet flow	А				
23	Adjacent buffer width 30	feet				
Adjacent area management						
24-	A Full	40%				

30%

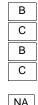
24-C Bare	30%
Adjacent area diversity/structure	
25-A Native	0%
25-B Mixed	60%
25-C Sparse	40%
Adjacent area slope	
26-A Gentle	0%
26-B Moderate	100%
26-C Steep	0%
27 Downstream sens./WQ protect.	В
28 Nutrient loading	Α
29 Shoreline wetland?	No
Shoreline Wetland	
30 Rooted veg., % cover	0%
31 Wetland 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	В
39 Wetland detritus	C
40 Interspersion on landscape	A
41 Wildlife barriers	В

#### Amphibian-breeding potential

Am	phibian-breeaing potential	1
42	Hydroperiod adequacy	Adequate
43	Fish presence	Α
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	В
50	Proximity to population	Yes
51	Public ownership	С
52	Public access	С

53	Human influence on wetland	d	В				
54	Human influence on viewshed						
55	Spatial buffer		В				
56	Recreational activity potent	ial	С				
57	Commercial crophydro im	pact	NA				
Gro	undwater-specific questio	ons					
58	Wetland soils	Discha	rge				
59	Subwatershed land use	Rechar	ge				
60	Wetland size/soil group	Rechar	ge				
61	Wetland hydroperiod	Rechar	ge				
62	Inlet/Outlet configuration	Discha	rge				
63	Upland topo relief	Discha	rge				
Ad	ditional information						
64	Restoration potential	1	١o				
65	LO affected by restoration						
66	Existing size	15					
	Restorable size	0					
	Potential new wetland	0					
67	Average width of pot. buffer	• 0 fe	et				
68	Ease of potential restoration						
69	Hydrologic alterations	C	)				
70	Potential wetland type	C					
71	Stormwater sensitivity	-	В				
	Additional treatment needs	С					
72	Additional treatment heeds	C	,				
Watershed Minnesota (Shakopee)							
WS#	33 Service Are	ea: 9					
For	functional ratings, ple	ease ru	in the				

For functional ratings, please run the Summary tab report. This report printed on: 10/18/2013



# **MnRAM Site Assessment Report**

# 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/Att enuation	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	Туре 3	Shallow Marsh		
			Sandbar willow	10
			Reed canary grass	30
			Narrow-leaved cattail	10
			Green ash	10
			Box elder	10
PFO1	Туре 7	Floodplain Forest		
PSS1	Туре 6	Shrub-carr		
PUBG	Туре 5	Shallow, Ow Commu	nities	
			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 we		Self-defined classifi ettings for this mana		
based on MnRAM data	Functional Category Se			
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	y -/	-	
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 potentialfish 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 Fur	nctional Assessment Summary	Maintenance of Hydrologic	Flood/ Stormwater/	Downstream Water	Maintenance of Wetland Water	Shoreline
Wetland Name	Hydrogeomorphology	Regime	Attenuation	Quality	Quality	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

							A	dditional Informati	on
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

	summer y			Veg	etative Diversi	ty/Integrity			
			Co	mmunity		Individual	Highest	Average	Weighted Average
		Cowardin Ci	rcular	· Plant	Wetland	Community	Wetland	Wetland	Wetland
Wetland Name	Location	Classification	<i>39</i>	Community	Proportion	Rating	Rating	Rating	Rating
MTA-MTA-12	27-117-22-25-001	PUBG T	ype 5	Shallow, Open Water	0	0.1	0.10	0.10	0.00
		LL		Communities					
							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, C Cowardin Classification: PUBG	<b>Open Water C</b> Circular 39: Type 5
<ul> <li>4 Listed, rare, special species?</li> <li>5 Rare community or habitat?</li> <li>6 Pre-European-settlement conditi</li> <li>Hydrogeomorphology / topogra,</li> <li>7 Deprese</li> </ul>	
<ul><li>8-1 Maximum water depth</li><li>8-2 % inundated</li></ul>	48 inche 90%
<ul><li>9 Immediate drainagelocal WS</li><li>10 Esimated size/existing site:</li></ul>	40 acres (see #66)
11-Upland Soil Urban Land - U	dorthents

11-Wetland Soil Water

12	Outlet for flood control	NA
13	Outlet for hydro regime	А
14	Dominant upland land use	С
15	Wetland soil condition	С
16	Vegetation (% cover)	10%
17	Emerg. veg flood resistance	В
18	Sediment delivery	В
19	Upland soils (soil group)	В
20	Stormwater runoff	Α
21	Subwatershed wetland density	Α
22	Channels/sheet flow	Α
23	Adjacent buffer width	50 feet
Adj	acent area management	
21	A Full	50%

24-A	Гин	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

ingueenn al ea brope	
26-A Gentle	0%
26-B Moderate	100%
26-C Steep	0%
27 Downstream sens./WQ protect.	В
28 Nutrient loading	В
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
<ul><li>38 Veg. community interspersion</li><li>39 Wetland detritus</li></ul>	
	NA
39 Wetland detritus	NA NA

### Amphibian-breeding potential

42	Hydroperiod adequacy	Adequate
43	Fish presence	А
44	Overwintering habitat	С
45	Wildlife species (list)	
46	Fish habitat quality	С
47	Fish species (list)	
48	Unique/rare opportunity	No
<i>49</i>	Wetland visibility	В
50	Proximity to population	Yes
51	Public ownership	С
52	Public access	С
53	Human influence on wetland	С
54	Human influence on viewshea	l C
55	Spatial buffer	В
56	Recreational activity potentia	l C
-7	Communial open hudeo inn	act NA
57	Commercial crophydro impo	uci NA

#### Groundwater-specific questions

	1 0 1	
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
Ad	ditional 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	С
72	Additional treatment needs	А
Wate	ershed Minnesota (Shakop	oee)
WS#	33 Service Are	a: 9

#### For functional ratings, please run the Summary tab report. This report printed on: 10/18/2013

# **MnRAM Site Assessment Report**

# 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/Att enuation	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	Туре 5	Shallow, Ow Communities		
			Purple loosestrife	10
			Pennsylvania smartweed	10

# Management Classification Report for MTA-MTA-13

ID: 115

### SWLRT- MTA-MTA-13

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 we		Self-defined classification value settings for this management level		
based on MnRAM data	Functional Category	settings for this mana	gementiever	
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 Diversi	ity 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 potentialfish 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						Maintenan of	Flood/	Downstream Water	Maintenance of Wetland		
Wetland Name	Hydrogeomorp	phology				Hydrolog Regime		Quality	Water Quality	Shoreline Protection	
MTA-MTA-13	Depressional/Fl inlet and outlet)	0 (11	inlet and outlet), Depres	sional/Flow-through	n (apparent	0.33	0.64	0.58	0.32	0.18	
						Low	Moderate	Moderate	Low	Low	
								A	dditional Inform	nation	
Wetland Name	Maintenance of Characteristic Wildlife Habitat Structure	Maintenance of Characteristic Fish Habitat	Maintenance of Characteristic Amphibian Habitat	Aesthetics/ Recreation/ Education/ Cultural	Commerci	al Uses	Ground- Water Interaction	Wetland Restoration Potential	Wetland Sensitivit to Stormwater and Urban Development	ty Additional Stormwater Treatment Needs	
MTA-MTA-13	0.35	0.39	0.45	0.15	0.0	0	Combination Discharge, Recharge	0.00	0.10	0.32	
	Moderate	Moderate	Moderate	Low	Not Appl	icable		Not Applicable	Moderate	Low	

# Wetland Community Summary

Vegetative Div							ve Diversity/Integrity				
Wetland Name	Location	Cowardin Classification	Circula	ommunity r 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, C	<b>Open Water C</b>
Cowardin Classification:	Circular 39:
PUBG	Type 5
Plant Community: Seasonally	<b>y Flooded Ba</b>
Cowardin Classification:	Circular 39:
PEM1A	Type 1
<ol> <li>Listed, rare, special species?</li> <li>Rare community or habitat?</li> <li>Pre-European-settlement condition</li> <li>Hydrogeomorphology / topograt</li> <li>Depression</li> </ol>	
<ul> <li>8-1 Maximum water depth</li> <li>8-2 % inundated</li> <li>9 Immediate drainagelocal WS</li> <li>10 Esimated size/existing site:</li> <li>11-Upland Soil Shorewood</li> </ul>	48 inche 95% 3.8 acres ( <i>see #</i> 66)

11-Wetland Soil	Shorewood
-----------------	-----------

12	Outlet for flood control	Α
13	Outlet for hydro regime	А
14	Dominant upland land use	С
15	Wetland soil condition	С
16	Vegetation (% cover)	20%
17	Emerg. veg flood resistance	С
18	Sediment delivery	В
19	Upland soils (soil group)	В
20	Stormwater runoff	А
21	Subwatershed wetland density	В
22	Channels/sheet flow	Α
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 0% 26-A Gentle 26-B Moderate 100% 26-C Steep 0% Downstream sens./WQ protect. В 27 28 Nutrient loading В Yes 29 Shoreline wetland? Shoreline Wetland 5% 30 Rooted veg., % cover 31 Wetland in-water width 3 feet 32 Emerg. veg. erosion resistance С С 33 Erosion potential of site В 34 Upslope veg./bank protection No 35 Rare wildlife? No 2. (D (0.1

36	Scare/Rare/S1/S2 community	INO
37	Vegetative cover	С
38	Veg. community interspersion	С
39	Wetland detritus	NA
40	Interspersion on landscape	В
41	Wildlife barriers	В

Amphibian-breeding potential				
42	Hydroperiod adequacy	Ade	quate	
43	Fish presence		Α	
44	Overwintering habitat		А	
45	Wildlife species (list)			
46	Fish habitat quality	[	С	
47	Fish species (list)			
48	Unique/rare opportunity	[	No	
49	Wetland visibility		С	
50	Proximity to population		No	
51	Public ownership		С	
52	Public access		С	

52	Public access	С
53	Human influence on wetland	В
54	Human influence on viewshed	С
55	Spatial buffer	С

- Spatial buffer 55
- 56 Recreational activity potential

57	Commercial	cropi	hydro	impact

NA

#### Groundwater-specific questions Wetland soils Recharge 58 Subwatershed land use Recharge 59 Recharge Wetland size/soil group 60 Discharge Wetland hydroperiod 61 Inlet/Outlet configuration Recharge 62 Discharge 63 Upland topo relief Additional information 64 Restoration potential No 65 LO affected by restoration 0.16 Existing size 66 0 Restorable size Potential new wetland 0 67 Average width of pot. buffer 0 feet Ease of potential restoration 68 Hydrologic alterations 0 69 Potential wetland type 0 70 Stormwater sensitivity В 71 Additional treatment needs А 72 Watershed Minnesota (Shakopee)

For functional ratings, please run the Summary tab report. This report printed on: 10/15/2014

Service Area: 9

WS# 33

С

# **MnRAM Site Assessment Report**

# 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 FI 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/Att enuation	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

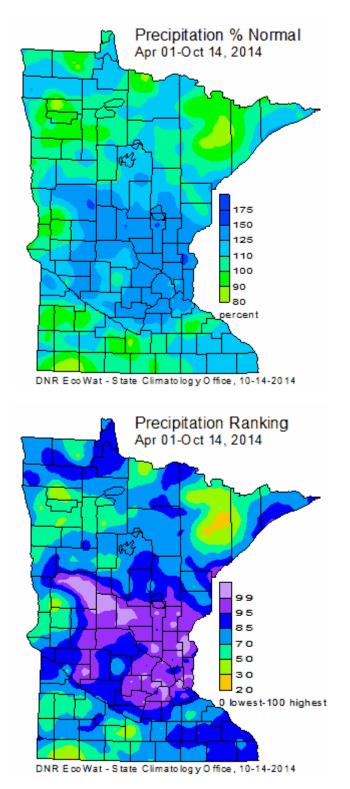
	Wetland Type	Plant Community	Dominant Species	Percent Cover
PUBG	Туре 5	Shallow, Ow Communities		
			Reed canary grass	>10-25%
			Lesser duckweed	>10-25%
PEM1	Туре 1	Seasonally FI Basin		
			Sandbar willow	>25-50%
			Reed canary grass	>25-50%

# **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** 



### **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).

- 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



## **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).

- 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,



## 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.



# **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.

Civil Engineering • Architecture • Land Surveying • Environmental Services • Landscape Architecture



# **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).

- 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.



### **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).

- 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



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).

- 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.