

-  5
-  6
-  7
-  8
-  80
-  90
-  Wetlands New (DNR)
-  Wetlands (NWI)
- Major Roads
 -  Interstate Hwy
 -  US Hwy
 -  State Hwy
 -  County Hwy
 -  Roads
- Municipalities
 -  3
 -  4
- Highway Labels

Parcel ID 92.56532.0001 Alternate ID n/a
 Sec/Twp/Rng 20-125-28 Class 2ANHGA-Agricultural Non-homestead - Non HGA
 Property Address Acreage 25.210
 District 9202 SARTELL 748
 Brief Tax Description 25.21 A. SE4SE4 LESS PLATTED AND LESS 2.20 AC
 (Note: Not to be used on legal documents)

Owner Address TORBORG BUILDERS
 1932 TYROL DR
 ST CLOUD MN 56301-1928

Last Data Upload: 6/26/2015 1:00:39 AM

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Villcheck Soils

July 24, 2015



ROW

- Public ROW
- Private ROW
- NWI Wetlands

Soils

- A: These soils have high infiltration rates when thoroughly wetted.



B: These soils have moderate infiltration rates.



C: These soils have slow infiltration rates.



D: These soils have very slow infiltration rates.



No Hydrologic Group defined

0 195 390 Feet

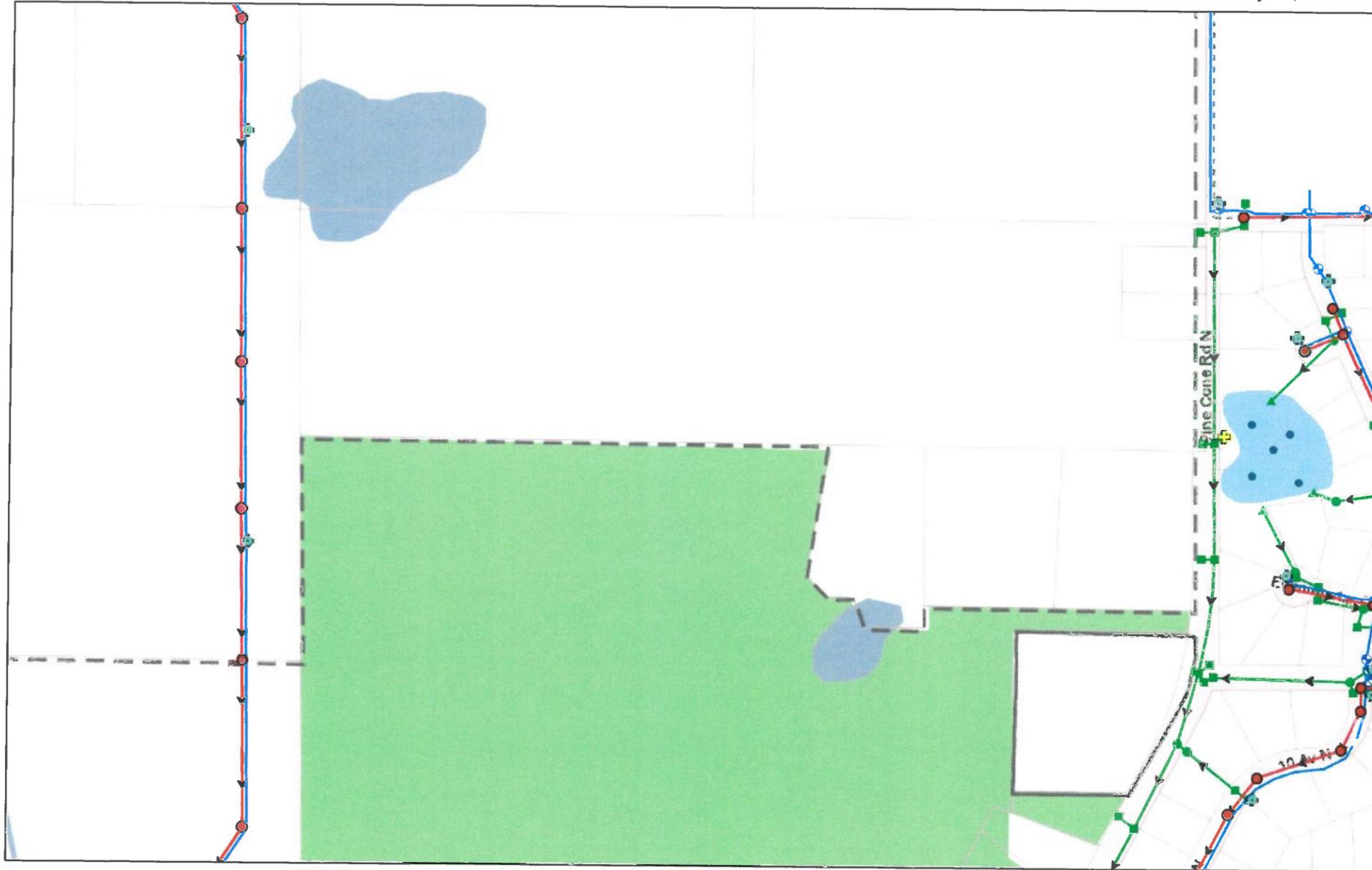


City of Sartell

Map Powered by DataLink
from WSR & Associates

Utilities

July 24, 2015



0 195 390 Feet

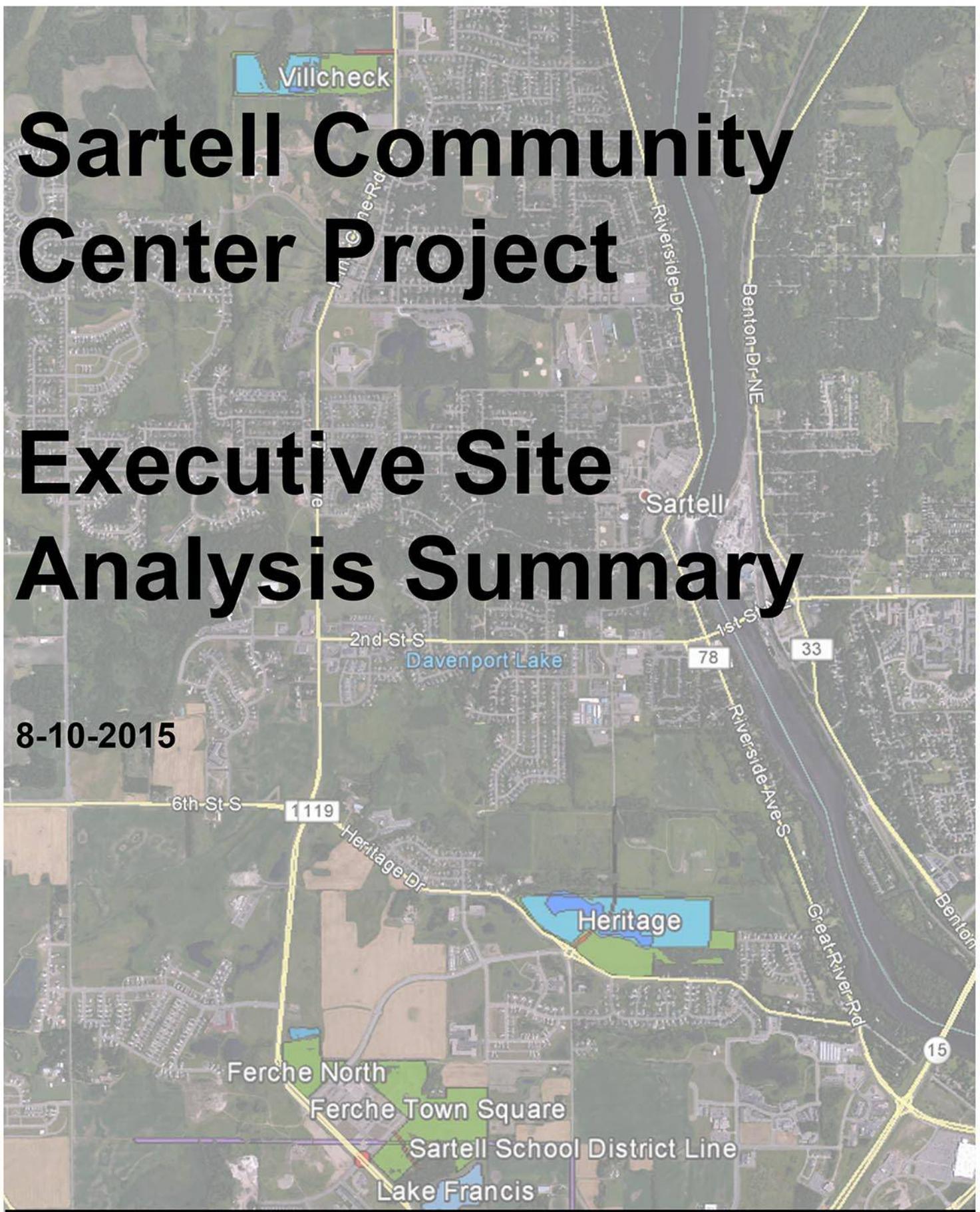
- | | | | |
|---|--|--|---|
| <ul style="list-style-type: none"> ■ Sewer Clean Outs ⊕ Air Release ⊙ Sewer Manholes ● Sewer Network Structures ● Flushing Station ⊠ Lift Station | <ul style="list-style-type: none"> ⊕ Sewer System Valves Sewer Gravity Mains — Abandoned Sanitary Gravity Main — Sanitary Gravity Main Sewer Pressurized Mains - - Abandoned Forcemain | <ul style="list-style-type: none"> - - Forcemain — Sewer Lateral Lines Water Control Valves ⊕ Air Release ⊕ Water Hydrants | <ul style="list-style-type: none"> Water Network Structures ⊕ Water Tower ■ Well ● Treatment Plant |
|---|--|--|---|



Sartell Community Center Project

Executive Site Analysis Summary

8-10-2015



Sartell Community Center Project

Executive Site Analysis Summary

With supporting data appendix

8-10-2015

Introduction:

The following information is an executive summary of information gathered relating to the site selection process that the site/building subcommittee has been gathering for Council consideration. The team includes Murray Mack: HMA Architects, Bob Strack: Strack Construction, Lyle Mathiasen: Operations Consultant, Mary Degiovanni: City Administrator, Anita Rasmussen: City Planner, and Mike Nielson: City Engineer. The information provided attempts to maintain an objective review of the facts known or assumed about each of the sites. It should be noted that site soils information is relatively general at this point and we would expect to conduct soil borings on the selected site.

Eight sites were initially considered and presented for Council review and input at the July 13, 2015 Council meeting. Those sites included:

- Ferche Town Square (originally identified as Ferche / Weyer)
- Ferche Town Square North
- Heritage
- Pine Cone Regional Park (Bernick's Arena)
- City Hall
- Golf Course South
- Golf Course North
- Villcheck

After a review of various site pros/cons for the above noted sites, the Council narrowed the pool of sites to include:

- Ferche Town Square
- Heritage
- Villcheck

The following site analysis summary includes the three sites noted above but also includes further consideration of the Ferche "North" site based on cost factors from our findings of the three selected sites.

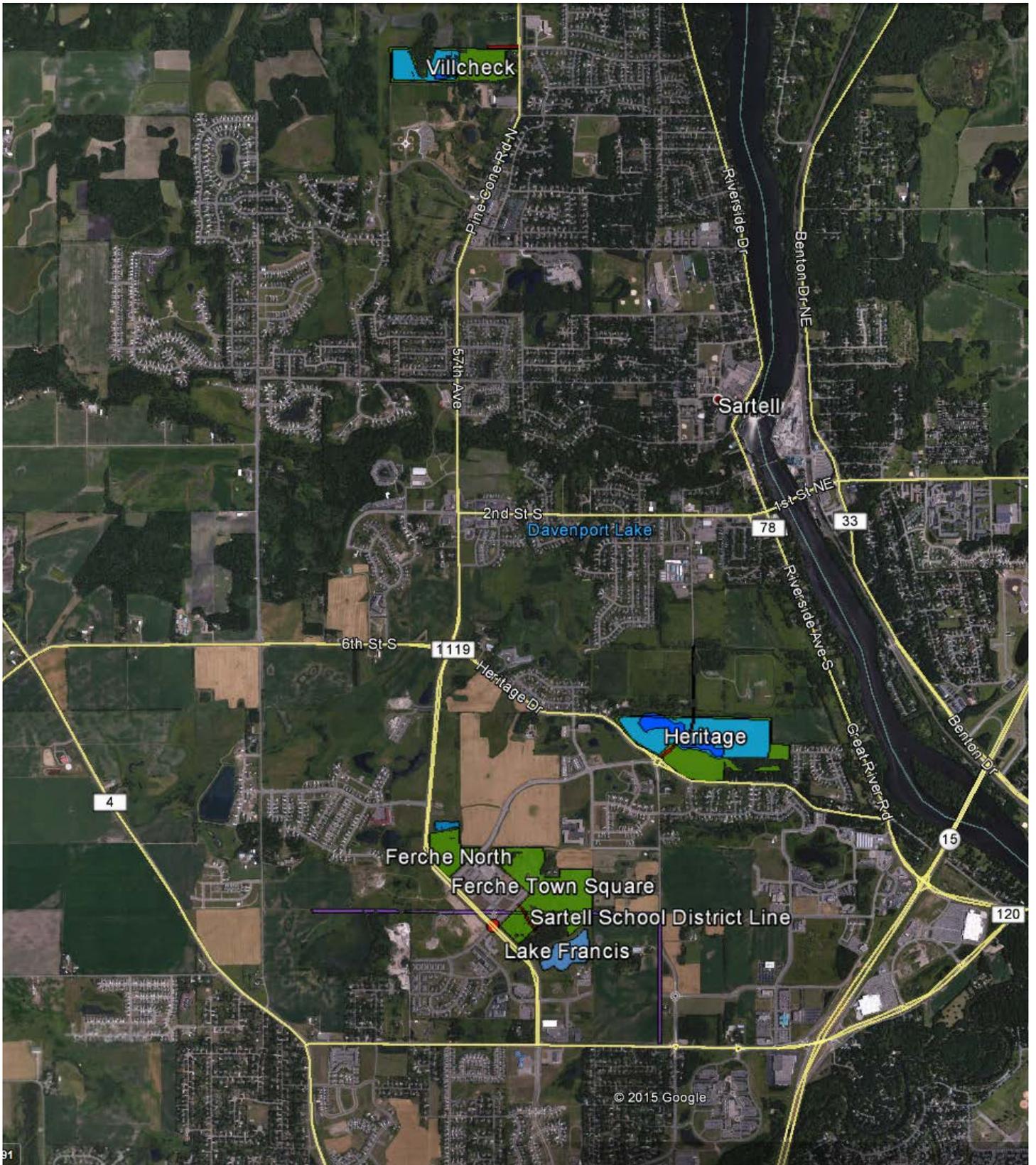
The site schematics shown are somewhat generic in nature but are based on a potential "built-out" building/site so that relative site size, orientation and access can be analyzed. The design team fully expects to study in more detail various building design / site options upon selection of a specific site.

It should be noted that the building program at this point is a “moving target” relative to project size, budget and program elements. The building program used to analyze the sites in general anticipates the following spaces:

- Gymnasiums and supporting restrooms/lockers and storage with an elevated walking/running track
- Senior center
- Library
- Community multi-purpose space with supporting storage and a serving kitchen
- Administrative space
- General building support spaces including, mechanical, electrical, storage
- Consideration of shared spaces for all program elements
- Site and parking development to support the above noted spaces
- Future expansion potential for all program elements including parking
- Consideration of a future outdoor aquatics element

Further refinement of the building program will be contingent upon functional demands along with the establishment of a project budget. In any case, space program variations will have very little impact on any of the proposed sites as long as a 10-15 acre site is established.

Overall City Site Map with Site Locations Depicted:



Villcheck Site:



Site Background:

The Villcheck site is a City owned site located on the north end of Sartell. The site is directly west of Pine Cone Road near 15th Street North. The site was originally purchased with the idea that this site could be an extension of the Pinecone Central Park which would accommodate additional recreations fields, parking etc. The site is rectangular in nature and contains approximately 38 acres of land. This report assumes development of the eastern half which would provide approximately 20 acres of property. The site was previously considered for a housing project which for reasons unknown for this report, was abandoned.

Soils / Topography:

The site is generally flat with some contour to low areas. The site is considered marginal in soils types with wetlands in the south/center part of the site and wet soils to the west. Some granite outcroppings have been noted throughout the site and could pose a problem with the installation of utilities and footing/foundations. It is not anticipated that a basement will be part of the building design but if so, the water table would be of some concern. Soil borings would be highly recommended before proceeding with additional consideration of this site.

Access / Utilities / Trails:

Based upon the above noted soil concerns and a connection to Pine Cone, it is highly likely that the best building site would be on the eastern half of the site. Access would most likely be limited to the 15th Street intersection. It is anticipated that 15th would have to be extended approximately 660' to the west along the eastern half of the site to provide access directly into the parking/building area. It should be noted that Pine Cone Road north of 15th Street is currently not up to urban standards and has no trails. Also, the City may need to advance the improvements on Pinecone Road and complete the extension of 15th street from Pine Cone Road to 19th Avenue. Sewer and water would be extended from the west trunk line and would have to

extend approximately 3,850 feet to the site location. It is anticipated that a stormwater retaining pond would have to be constructed on this site to accommodate the building and parking lot stormwater control. The site would be accessible from the trail along Pine Cone although for those on the east side of Pine Cone it would require a crossing of Pine Cone Road.

Land use:

The property is currently zoned for single family housing which would allow for the use as community center. The City has long considered this site for future soccer and recreational field expansions of the Pine Cone Central Park directly to the south at the west end of the site. It's possible that development of the recreation fields could still take place on the west portion of the site with placement of the building to the east. Again, soils may or may not be a detriment to recreation field development depending on use and adequate drainage provisions.

Building Program / Orientation / Visibility / Views:

The building program will fit on the eastern portion of the site as shown on the schematic site plans. It is somewhat restrictive north to south. Because the community center would be accessed from an extension of 15th, the parking and entry would "typically" face north. That is not a desirable orientation. If a south facing entry and parking lot is desirable a driveway could circulate around the building to provide such an orientation. While this is good for natural light and winter conditions, it would create challenges to first impressions and building aesthetics as you enter the site. An east facing entry is also a viable option. It appears that there are some opportunities for nice views to the north and to the west. There could be some challenges at least in the winter to the views directly south to the industrial use of the adjacent business.

The site is not very visible with the two single family residences and the trees to the south blocking views into the site from the south. From the north the site is reasonably visible at least until development of the property to the north occurs.

Heritage Site:



Site Background:

The Heritage site is a City owned site located north of Heritage Drive near the roundabout at Robert's and Leander. The site is generally rectangular in nature and contains approximately 71 acres of land. This report assumes development of the southern section of the property directly north of Huntington Drive South. The site was previously considered for a housing project which for reasons unknown for this report, was abandoned. The City subsequently acquired the property through tax forfeiture.

Soils / Topography:

The site is considered marginal in soil types with wetlands in the center part of the site and wet soils to the west. It is not anticipated that a basement will be part of the building design but if so, a high water table would be of some concern. Soil borings would be highly recommended before proceeding with additional consideration of this site. Until a survey would be completed there is some additional concern regarding the overall topography in relation to Heritage Drive. The site could be considered "low" in comparison to Heritage which may require additional soil importing which could add to site costs. Additionally, it is anticipated that the elevation of the future 4th Avenue extension will be raised relative to grade. With both Heritage and 4th elevated as compared to the adjacent grade, significant fill may be required to accommodate the building and parking developments area.

Access / Utilities / Trails:

Based upon the above noted soil concerns and a connection to Heritage Drive, it is highly likely that the best building site would be on the southern half of the site. Access would most likely come from a new road extending to the north as the 5th leg of the existing roundabout. It is anticipated that this road (4th Avenue) will be extended in 2016 (aggressive) or 2017 at the latest. Access to the site would have to be approximately 600'-700' north of the roundabout before an access point to the community center site could be introduced. It's possible the road could dead end until the extension to 4th is completed. It's possible although not recommended that another southern access point could be introduced at Huntington. Sewer and water would

be extended along the new 4th Avenue road and enter the site from the west. It is anticipated that a stormwater retaining pond would have to be constructed on this site to accommodate the building and parking lot stormwater control.

The site is easily accessed by minor trail extensions that exist along Roberts and Heritage from the west. These trails currently end at the roundabout. Possible trail extensions may be considered along the anticipated 4th Avenue road through this site and extending north.

Land use:

The property is currently zoned for single, multi-family housing and some business use which would allow for the use as community center.

Building Program / Orientation / Visibility / Views:

The building program will fit on the southern portion of the site as shown on the schematic site plans. As noted above the site is somewhat restrictive to the north and west. The best location appears to be just north of Heritage and east of the roundabout. This location would work well in the development of a south facing entrance and glazing area that would present well to Heritage Drive. A west or southwest orientation would provide some advantages relative to access from 4th as well as the aesthetics in that direction. Views to the west, north and east include trees and to the north some minor rolling hills. Views to the north could change over time with future development. The site is very visible from Heritage as well as the future 4th Avenue.

Ferche “North” & “Town Square” Site:



Site Background:

The Ferche sites are comprised of Ferche “North” and Ferche “Town Square” and are part of what is known as the Ferche 600. This property currently is currently owned by the Ferche Family. The Ferche “North” site is located on the NE corner of the intersection of Pine Cone Road and Roberts Road and would be defined on the north by the existing stormwater pond.

The Ferche “Town Square” site is a large general area of land located to the north of what is known as Lake Francis and to the east of Pine Cone and east and northeast of the Coborn’s store. Lake Francis is a man-made stormwater retainage pond of significant size relative to standard ponds. Initial development of this site area included the Coborn’s Superstore, a retail strip mall, US Bank, St. Cloud Federal Credit Union, and a pet hospital. Recent development includes the new Chateau Waters Senior housing project currently under construction just northwest of Lake Francis. The area depicted is much larger than what is required for the project. It is anticipated that a site area of approximately 15 acres will be identified somewhere within the “Town Square” area for the community center development. The configuration of the site will need to consider anticipated road layouts and utilities. If it is important that the project be located within the school district limits, the site would be located north of the district line as depicted. A “Town Square” concept has been considered in this area and will also have some bearing on the road layouts and possible site delineation. Further study of the vehicular traffic patterns and utilities will be necessary to identify the specific site location. The site schematics provided offer potential options at this early stage of consideration. The City and Ferche have negotiated a preliminary memorandum of understanding on a possible land exchange. Additional details regarding site preparation, roads, utilities and assessments will need to be addressed relative to total site cost.

Soils / Topography:

Both sites are considered to be good soil types for construction. Based on work at the Chateau Waters and the Coborn’s development it is not anticipated that any significant soils conditions would be encountered. Again,

soil borings would be highly recommended before proceeding with additional consideration of either site once a more defined site area is established. Topography is generally flat with some general slope over larger areas depending on location. The Ferche "North" site is actually high relative to Pine Cone and Roberts which will provide some advantages relative to cut/fill, drainage and building visibility. There are existing stock piles of earth on the Town Square site area that would have to be moved or used if locating the site in that area. From an aesthetic standpoint, the removal of these stock piles would be desirable if the project were located anywhere within the Town Square site area.

Access / Utilities / Trails:

(Ferche North):

Access would most certainly come from Roberts Street and could be located at the center of the site across from the Coborn's access or further east across from the service entrance into Coborn's. An access directly from or onto Pine Cone is not anticipated based on engineering input. It's possible that a future connection to the north could take place along the east edge of the existing pond based upon anticipated future road construction planning. Utilities will likely come directly from Roberts Road. The site is easily accessed by the trail that runs along the east edge of Pine Cone. The existing stormwater pond to the north could be utilized by this site reducing the need for "on-site" ponding.

(Ferche Town Square):

Access would likely come from the west from an extension of Scout Drive to the east. It is anticipated that a new roundabout will be installed at the intersection of Scout and Pine Cone Road this year. This roundabout will help facilitate access to Pine Cone for development within this area. Future access points could come from 17 Street South to the north and from an extension of Dehler to the east. As noted above, actual road configurations will be critical to establishing future development plots around the community center site. Utilities are available at Scout Drive and would be extended east as needed to connect with the site. If the site were located further north, utilities may come from an extension of 17th or from Roberts.

Stormwater ponding would not be required on-site as Lake Francis serves as the regional stormwater collection facility. This would allow for more "buildable" site area and reduces the cost of site development over sites where a stormwater pond would have to be constructed.

The City trail systems runs along Pine Cone Road and could extended into the site area or connect with the proposed Lake Francis trail system and then connecting to the site area at the north end of Lake Francis.

Land use:

Both properties are currently zoned for retail, office and multi-family use which would allow for the use as community center.

Building Program / Orientation / Visibility / Views:

(Ferche North):

The land area between Roberts Road and the south edge of the pond would be approximately 10-12 acres depending on platting and location of a north property line. The site works well for a southern or southeast orientation of the building which are both desirable for parking and entry orientation. This site is the most visible of all the sites being considered with its location at the intersection of Pine Cone and Roberts Road. Car counts along Pine Cone are approximately twice that of Heritage with Villcheck about two thirds that. Views and natural amenities are somewhat lacking when compared to other sites with natural features on the site or adjacent to the site. It is anticipated that housing and business development will occur around and near this site in the future. There is adequate land available for on-site landscape development.

(Ferche Town Square):

The building program indicates land needs of approximately 10-15 acres. Land plats of this size are readily achieved in various locations within the overall site area. See site schematics for a general idea of site options. Additional study will be needed to confirm a specific site delineation. Depending on the road configurations, opportunities for a southern orientation existing along with flexibility for a west, north or east access depending on initial / future road layouts.

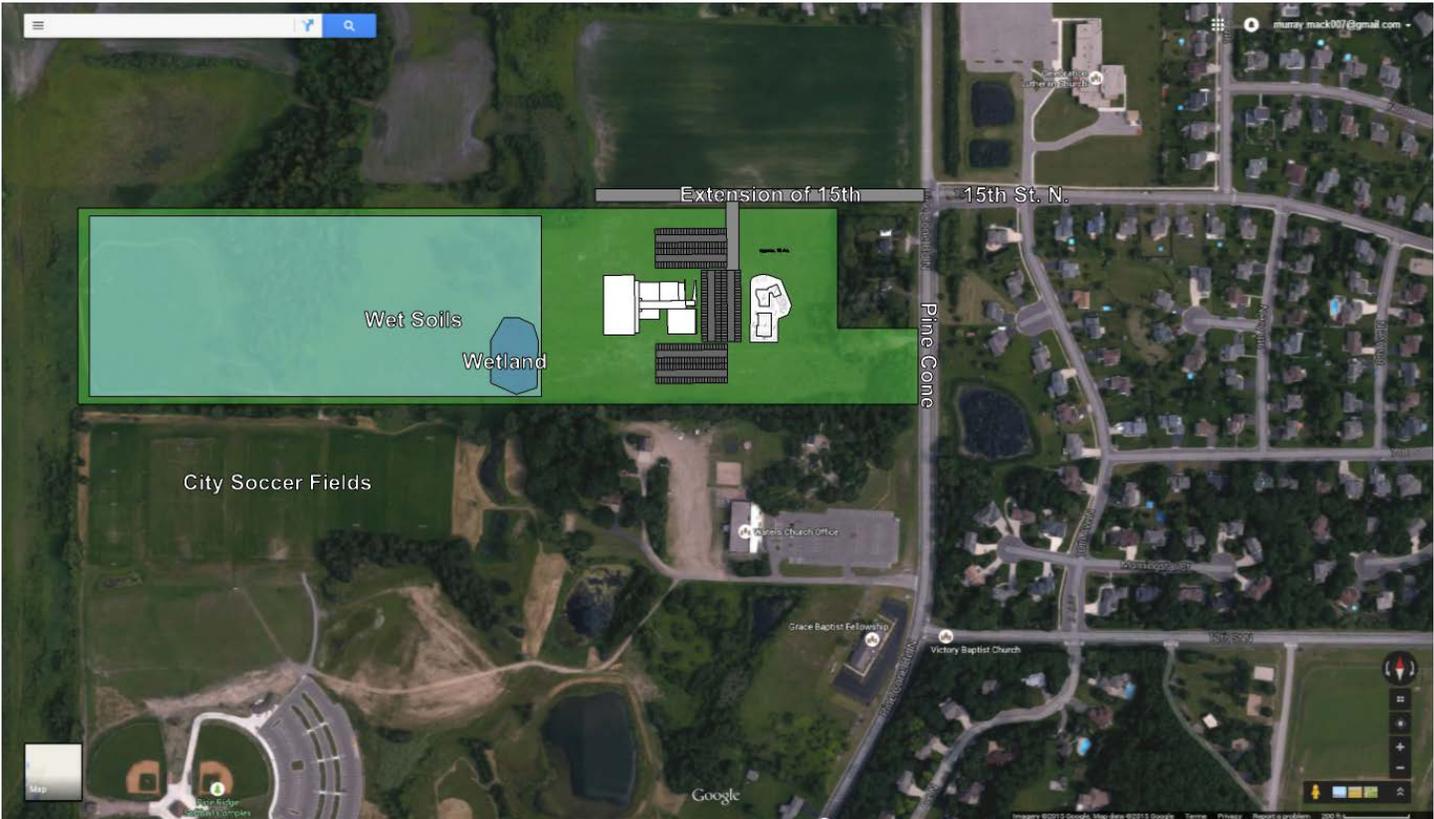
The site would be relatively visible although somewhat screened by the CentraCare project to the south and by Coborn's on the north. A location directly at the north edge of Lake Francis would provide visibility from Pine Cone across Lake Francis although that location would be south of the school district line. Views to the lake and the anticipated lake improvements are a possibility depending on how far south the site is located along with road layouts and potential development along the lake at that point. Views to the west are less than desirable at this point with the service area of Coborn's to the west. To the north and south would be open fields until further development occurs.

Site Schematics:

The following site schematics utilize a somewhat generic building footprint as the program, budget and program elements continue to develop. In general, each schematic shows a roughly 45,000 SF building with 3 blocks of 100 stall parking areas (300 total). We anticipate the need for a main entry point with a drop-off, two secondary entry points into the gymnasium function, an entry for the senior center, a staff entrance for the library and a service entrance for the catering kitchen. A drive up / book drop will also need to be incorporated into the site development.

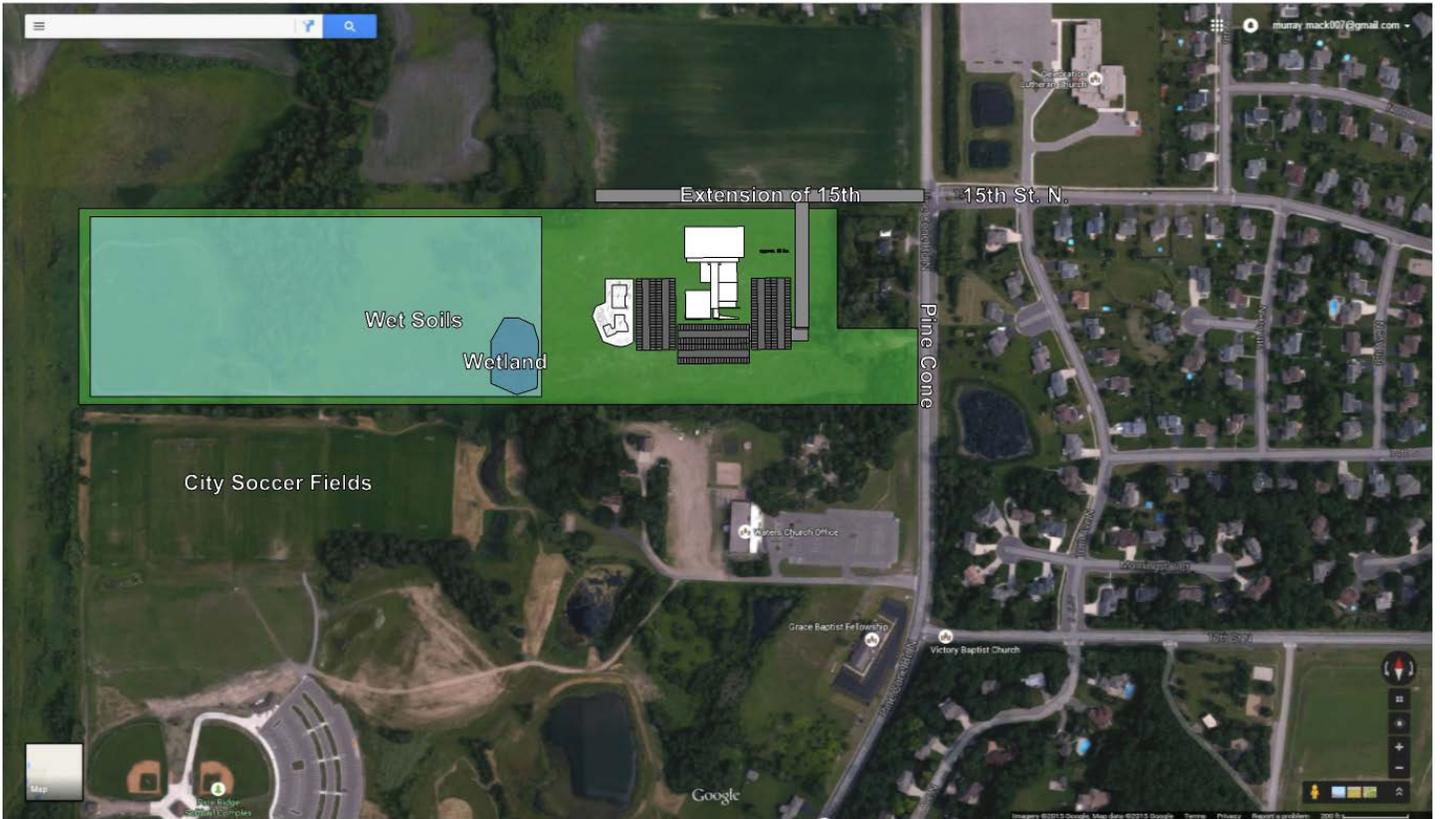
The plans also depict a generic footprint for a future outdoor aquatics element. Adjacent green space will be needed for building expansion and landscaping. Some of the sites will also require on-site stormwater ponding which has not been specifically incorporated into the site schemes at this point. Various criteria that was analyzed include but were not limited to:

- Size of property
- Vehicular access to and within the site
- Road requirements for initial project and/or future road systems
- Trail access
- Natural features
- Views
- Visibility of the building to the community
- Solar orientation
- Future expansion potential
- Stormwater concerns either on-site or through existing regional ponds



Villcheck

Villcheck site showing a north access from extended 15th Street N. with an east orientation. Note concern of visibility to the facility from Pine Cone.



Villcheck

Villcheck site showing a south orientation. Note concern of visibility to the facility from Pine Cone. Additionally some concern over views to the south toward the industrial type development.



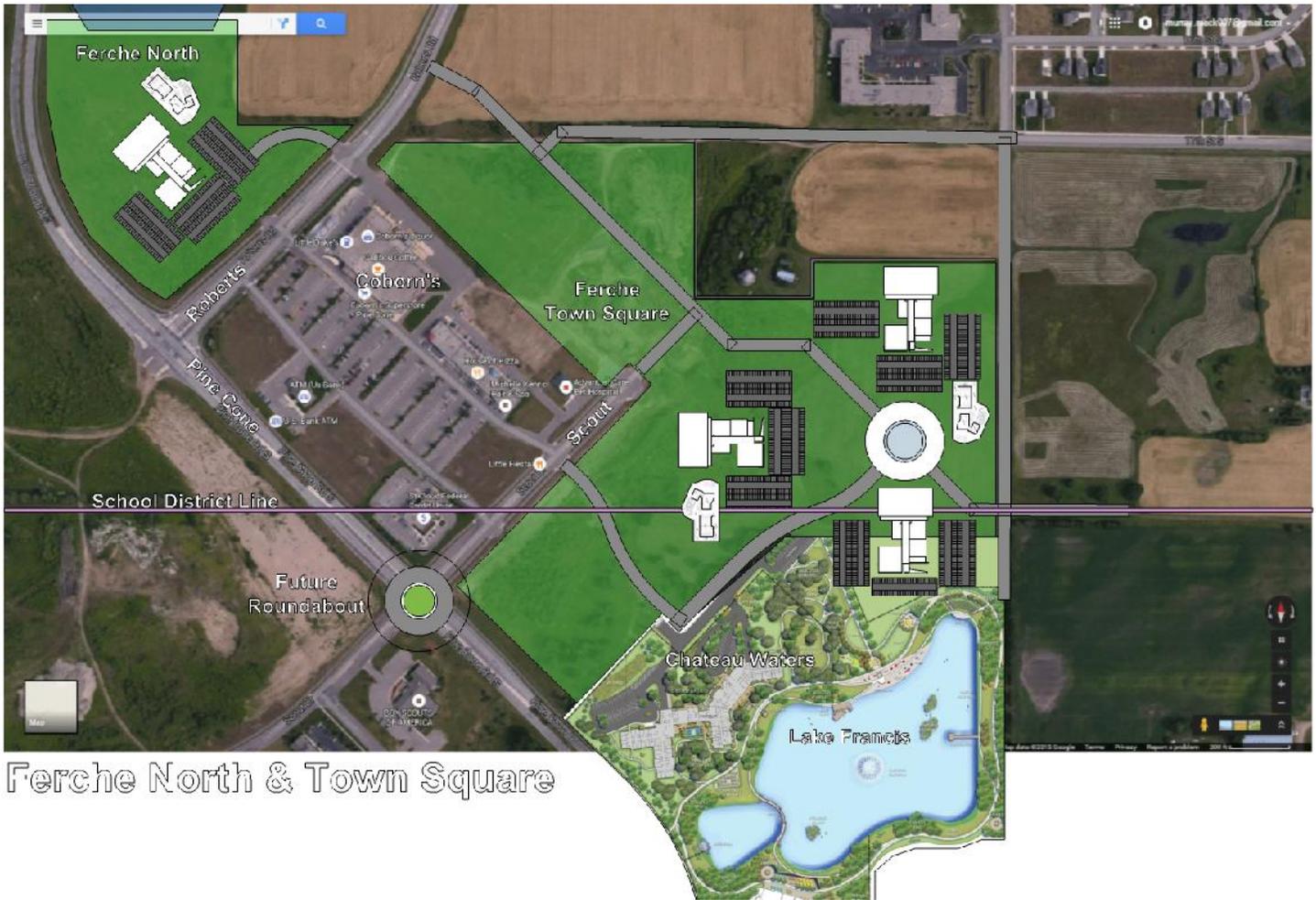
Heritage

Heritage site showing two site options. The NW option is too close to wetlands with limited expansion. The SE option shows a SW orientation with an access approximately 600' north of the existing roundabout and a possible access point from Heritage at Huntington. The Wet areas to the north and east could be expanded for on-site ponding. As noted previously, the site area may require significant fill in order to rise to, or above, the level of Heritage Road and the future 4th Ave. extension



Heritage

Heritage site showing a southern orientation with an access approximately 600' north of the existing roundabout and a possible access point from Heritage at Huntington. The Wet areas to the north and east could be expanded for on-site ponding. As noted previously, the site area may require significant fill in order to rise to, or above, the level of Heritage Road and the future 4th Ave. extension.



Ferche North & Town Square

Ferche North and the Town Square area:

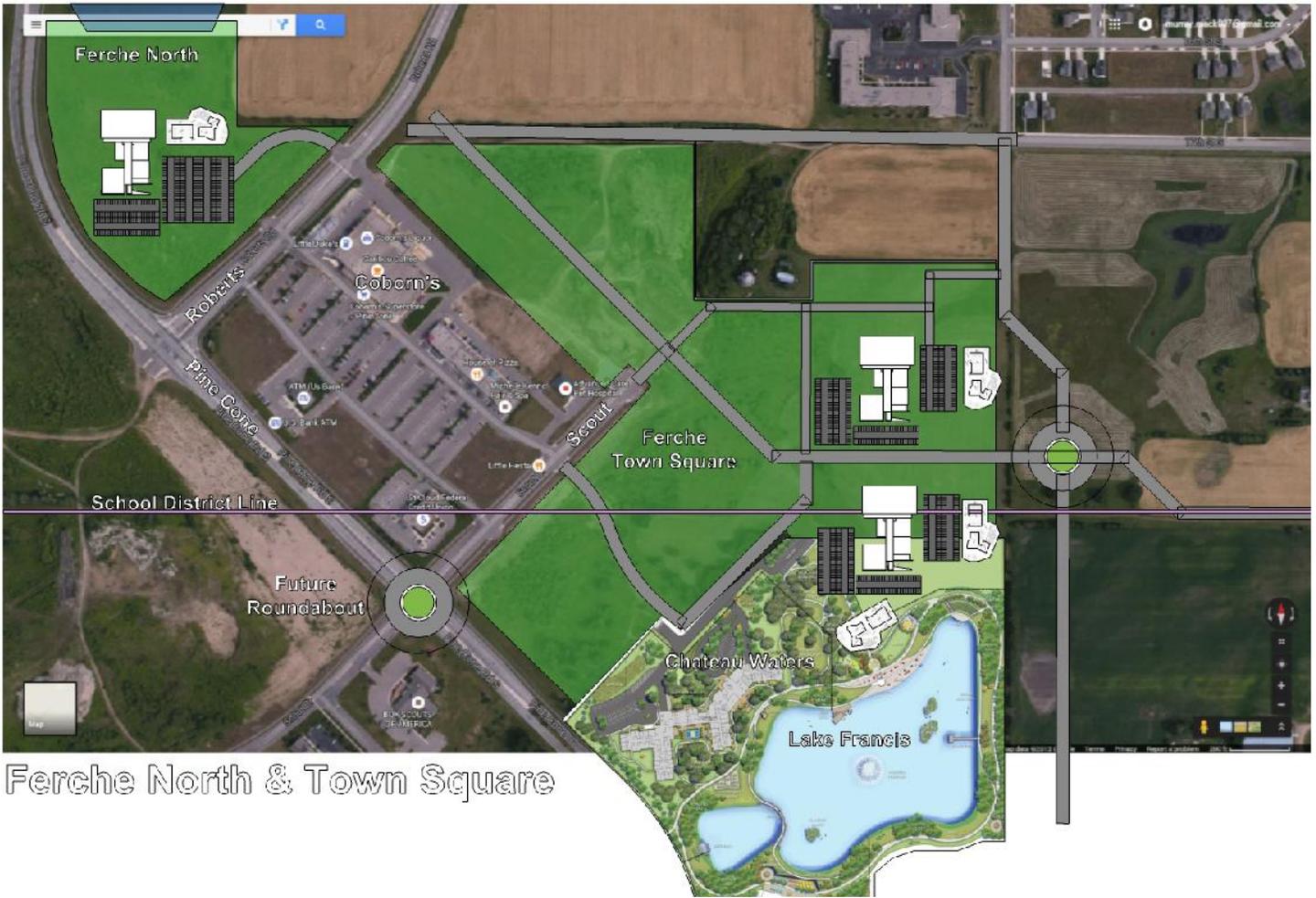
Ferche North shows a southeast orientation of the building with an access from Roberts at the service entry area of the Coborn's building. Utilities are readily available in Roberts Road. The pond to the north could be utilized for stormwater run-off. A more southerly orientation is also workable by simply rotating the building and adjusting the access.

The Town Square area shows the development of the CentraCare Chateau Waters Senior Housing project and the concept plan for the Lake Francis trail and park development. The schematic also shows the school district line and the anticipated roundabout at Pine Cone and Scout. The road configuration is based on proposed roads from a "concept" that the developer had at one time considered as part of the overall site development. This schematic shows three possible site locations around the proposed roundabout. The two northern sites would be north of the school district line with the southern one at or just south of the line.

The southern Town Square (lake) location would provide southern exposure and a direct connection to the Lake Francis development. Depending on location visibility from Pine Cone across Lake Francis may be possible. Parking for the Center could provide for ancillary parking needs for a future beach area, amphitheater, skating / warming house and other park like activities anticipated in that area.

The western Town Square location would facilitate a closer connection to Scout and utilities. The entry orientation may shift to the west to better facilitate that connection.

The northern Town Square site is a bit tight based on the roads shown but could be increased with adjustments to the proposed roads. Orientation would be to the south or west.



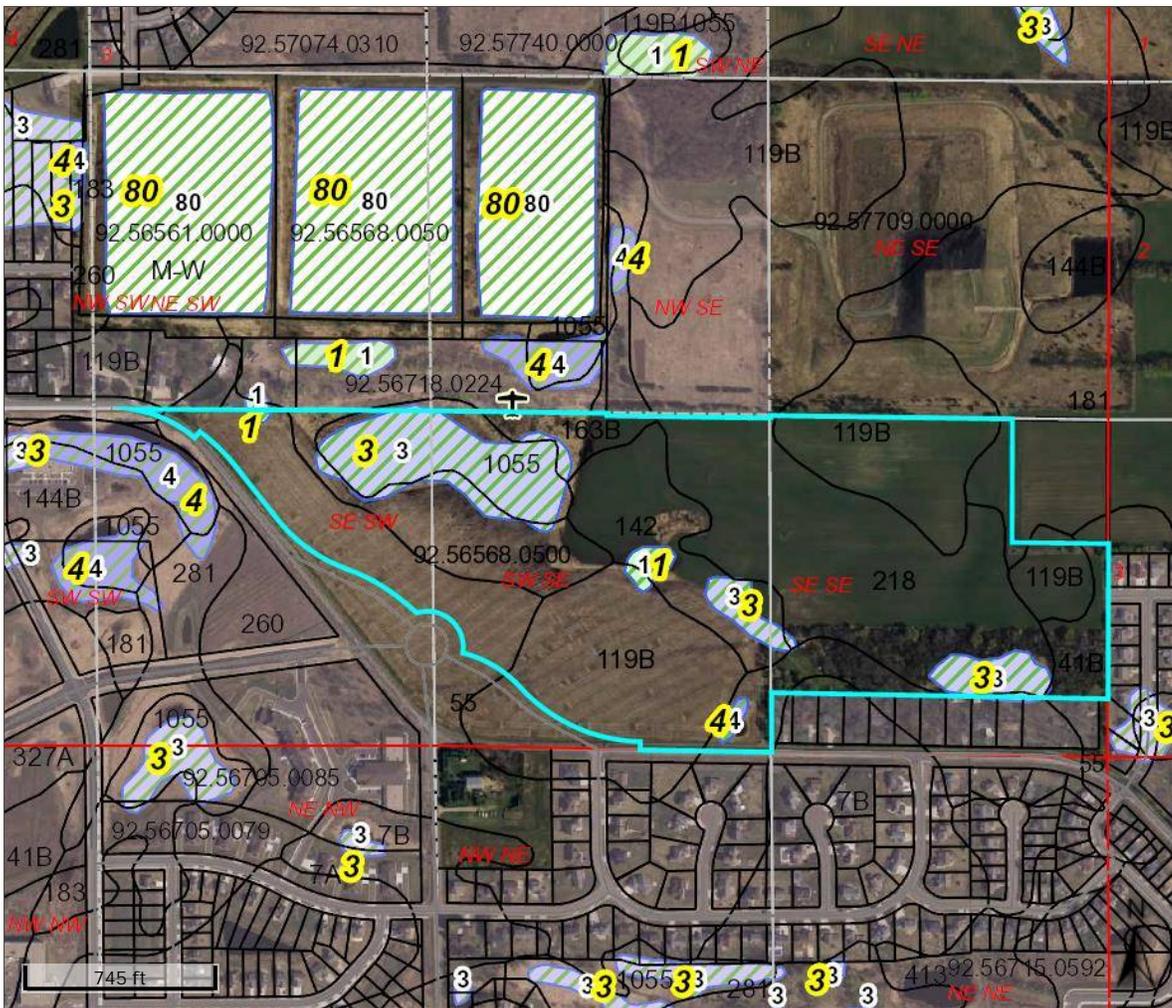
Ferche North & Town Square

Ferche North and the Town Square area:

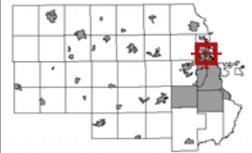
The Ferche North schematic above shows how the building could be oriented in a more southerly direction.

The Ferche Town Square area shows a possible road configuration among many that may be possible where the proposed roundabout from the first scheme is moved east and connects more directly with Dehler and 7th. This would provide more buildable area directly in the central Town Square area and more flexibility in project location.

Further discussion and analysis should be conducted on options for the roadway configuration and how a masterplan for the roads can accommodate the Sartell Community Center, Town Square and overall traffic patterns in this area.



Overview



Legend

- Parcels
- Additions**
- A
- M
- T
- Parcel ID Labels
- Sections
- Quarter-Quarter Sections
- Active Rail Line
- Unincorporated Cities
- Minor Civil Divisions - Township
- Minor Civil Divisions**
- <all other values>
- 0
- 1
- 2
- 3
- 4
- Water Access
- Airport
- Cemetery
- Parks
- Soils
- Lakes
- Streams and Rivers
- Wetlands**
- <all other values>
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8

- 80
- 90
- Wetlands New (DNR)
- Wetlands (NWI)
- Major Roads
 - Interstate Hwy
 - US Hwy
 - State Hwy
 - County Hwy
 - Roads
- Municipalities
 - 3
 - 4
- Highway Labels

Parcel ID	92.56568.0500	Alternate ID	n/a	Owner Address	CITY OF SARTELL
Sec/Twp/Rng	28-125-28	Class	PILT-Payment In-Lieu of Taxes		125 PINE CONE RD N
Property Address		Acreage	75.390		SARTELL MN 56377
District	9202 SARTELL 748				
Brief Tax Description	28-125-28 75.39A P/O SE4SW4 & SW4SE4 LYING NELY OF CL CSAH 119 & SE4SE4 LESS SHADY OAKS ADDN & LESS N 524.70' OF E 379.50' & LESS P/O SE4SW4 & SW4SE4 COM SE COR SE4SE4-N88D W ALG S LN 1831.45' TO POB-N1D E 33' TO NLY ROW HERITAGE DRIVE-NWLY 530.05' ALG CURVE-NWLY ALG CRUVE 243.78'-NWLY ALG CURVE 19.21'-NLY, NWLY & WLY ALG CURVE 286.79'-NWLY ALG CURVE 23.98'-N50D W 50'-NWLY ALG CURVE 248.11'-NWLY ALG CURVE 343.07'-N38D W 253.48'-NWLY ALG CURVE 198.60' TO NLY ROW HERITAGE DRIVE-S41D W 33' TO CL HERITAGE DRIVE-SELY ALG CL 92.74'-S38D E ALG CL 1245.81'-SELY ALG CURVE 380.56' TO S LN SW4SE4-S88D E ALG S LN 571.42' TO POB (Note: Not to be used on legal documents)				

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CITY OF SARTELL RIGHT OF WAY PLAT NO. XX
CITY OF SARTELL, MINNESOTA



2nd Street South

LEGEND

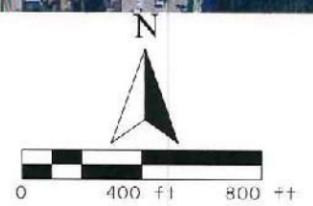
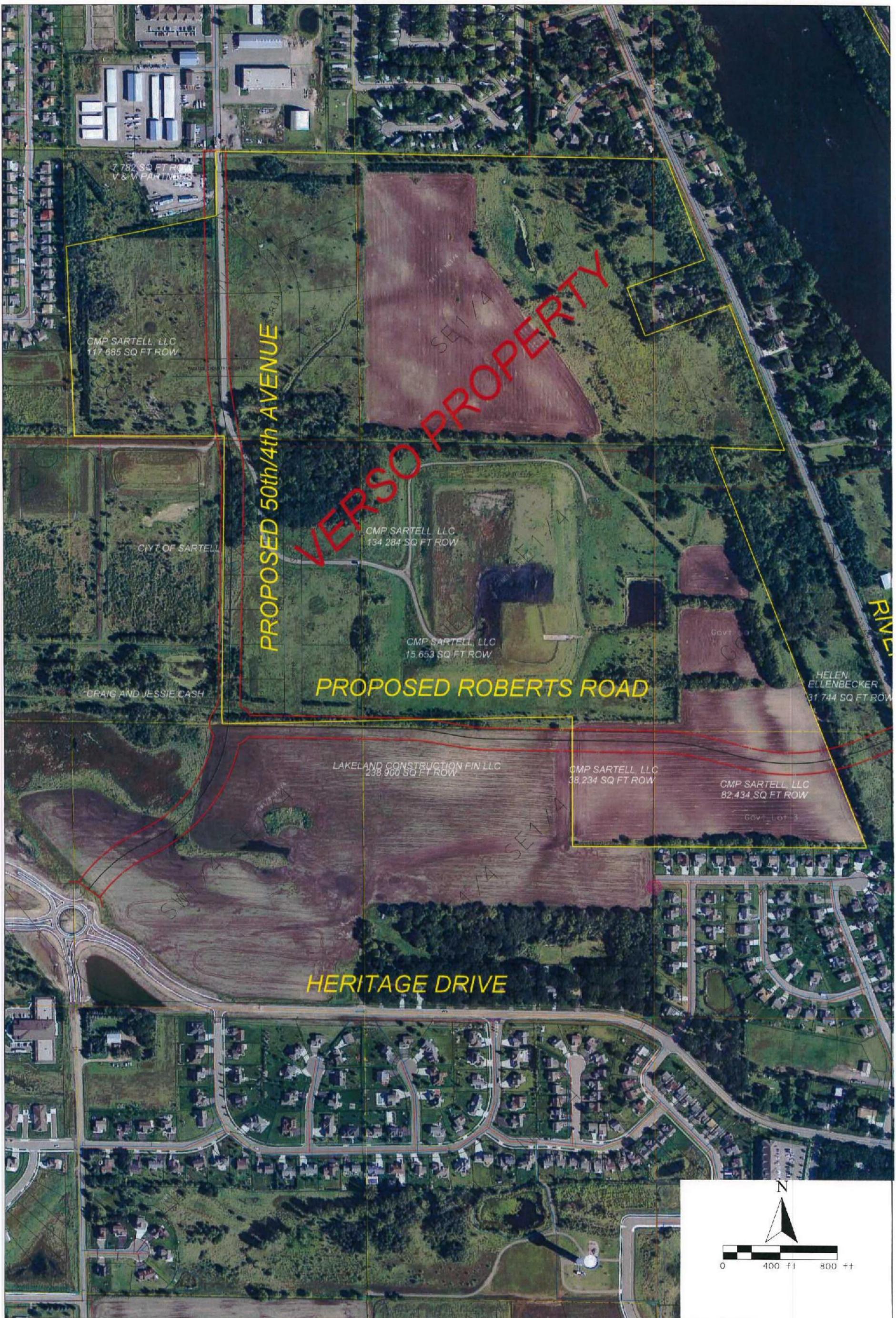
- FOUND MONUMENT
- SET MONUMENT
- NEW PLAT BOUNDARY
- LOT LINE
- EXISTING LOT LINE
- FASBMENT LINE
- EXISTING RIGHT-OF-WAY LINE
- SECTION LINE
- QUARTER LINE
- 18TH LINE



NOTES

COORDINATE SYSTEM: MINNESOTA COUNTY COORDINATES, STEARNS COUNTY US SURVEY FOOT

SECTION 25, TOWNSHIP 125, RANGE 35					HIGHWAY RIGHT OF WAY (RAW)				
PARCEL	OWNER (S) OF RECORD	LOCATION	DEED RECORD DOC. NO. OR BOOK & PAGE	P.I.D.	EXISTING RAW (SQ. FT.)	NEW RAW (SQ. FT.)	TOTAL W/ (SQ. FT.)	PERM. EASEMENT (SQ. FT.)	TEMP. EASEMENT (SQ. FT.)
8	AW DEVELOPMENT LLC	SARTELL INDUSTRIAL PARK	A 103508	827793-0000		122,047	20,347	10,648	33,312
6	WUPU - LINDEN - JERICHO	WUPU OF WETS	BOOK 865 CE 82236, PG 26	824883-0000		7,411	7,411		5,289
4	JC SHERK STORAGE LLC	LOT 4, BLOCK 2, SARTELL PARKS TRAIL PARK		827425-0000		3,844	3,844		3,741
5	FESELY STORAGE LLC	LOT 5, BLOCK 1, J.C. RESERVE STORAGE PLAZA TWO	129404	824778-0000					4,062
2	WIDOLETOWN APARTMENTS LLC	LOT 4, BLOCK A, WIDOLETOWN 2	178732	823883-0000					4,288
1	WIDOLETOWN APARTMENTS LLC	LOT 6, BLOCK L, WIDOLETOWN 2	131044	823883-0000					11,259
10	WAIN HOLDINGS LLC	LOT 3, BLOCK 3, 055 PROPERTIES	82276	827425-0000					2,713
28	CITY OF SARTELL	GRAND RIVER BOULEVARD		823588-0000	38,435		38,435		2,415



Roberts Road / 50th Avenue ROW
Sartell, Minnesota



Figure Number 1
ROW Acquisitions



- | | | | |
|---|--|--|---|
| <ul style="list-style-type: none"> ■ Sewer Clean Outs ○ Air Release ● Sewer Manholes ★ Flushing Station 🏠 Lift Station | <ul style="list-style-type: none"> ✚ Sewer System Valves Sewer Gravity Mains — Abandoned Sanitary Gravity Main — Sanitary Gravity Main Sewer Pressurized Mains — Abandoned Forcemain | <ul style="list-style-type: none"> --- Forcemain — Sewer Lateral Lines Water Control Valves ○ Air Release ✚ Water Hydrants | <p>Water Network Structures</p> <ul style="list-style-type: none"> ⊕ Water Tower ■ Well ⊕ Treatment Plant |
|---|--|--|---|

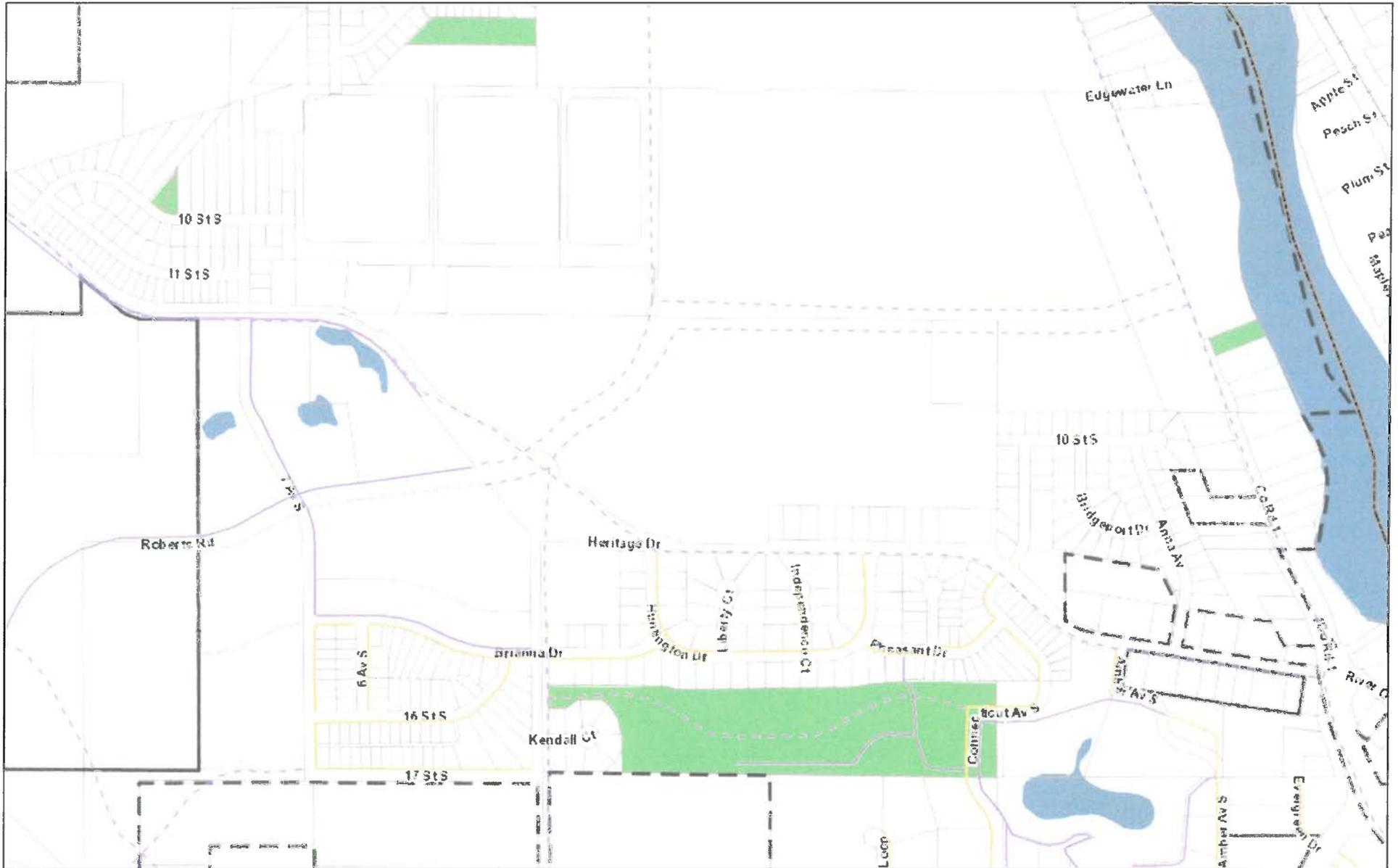
0 195 390 Feet



City of Sartell

Heritage Trails and Sidewalks

July 24, 2015



- Trails and Paths
- Future Trails and Paths
- Sidewalks
- Future Sidewalks
- Raingarden

0 390 780 Feet



Map Powered by DataLink from WSR & Associates



COUNTY OF STEARNS

Environmental Services Department

Administration Center Rm 343 • 705 Courthouse Square • St. Cloud, MN 56303
320-656-3613 • Fax 320-656-6484 • 1-800-450-0852

November 24, 2003

Edwin and Delores Traut
4989 County Road 119
St. Cloud MN 56303-9537

Dear Mr. & Mrs. Traut:

RE: File #17-02-200

The Wetland Delineation Report completed by Westwood Professional Services in November 2003 for your property in the S ½ of the SE ¼ of Section 18, T125N, R28W, LeSauk Township, was received in Stearns County Environmental Services Department (ESD) on November 21, 2003. The wetland boundaries were field checked by staff from the ESD on October 14, 2003.

The ESD found the wetland boundaries as determined in the Wetland Delineation Report dated November 2003 and staked are accurate. The report and delineation follow the guidelines as set out in the 1987 U.S. Corps Wetland Delineation Manual. The wetland boundaries should be surveyed and included in the final plat.

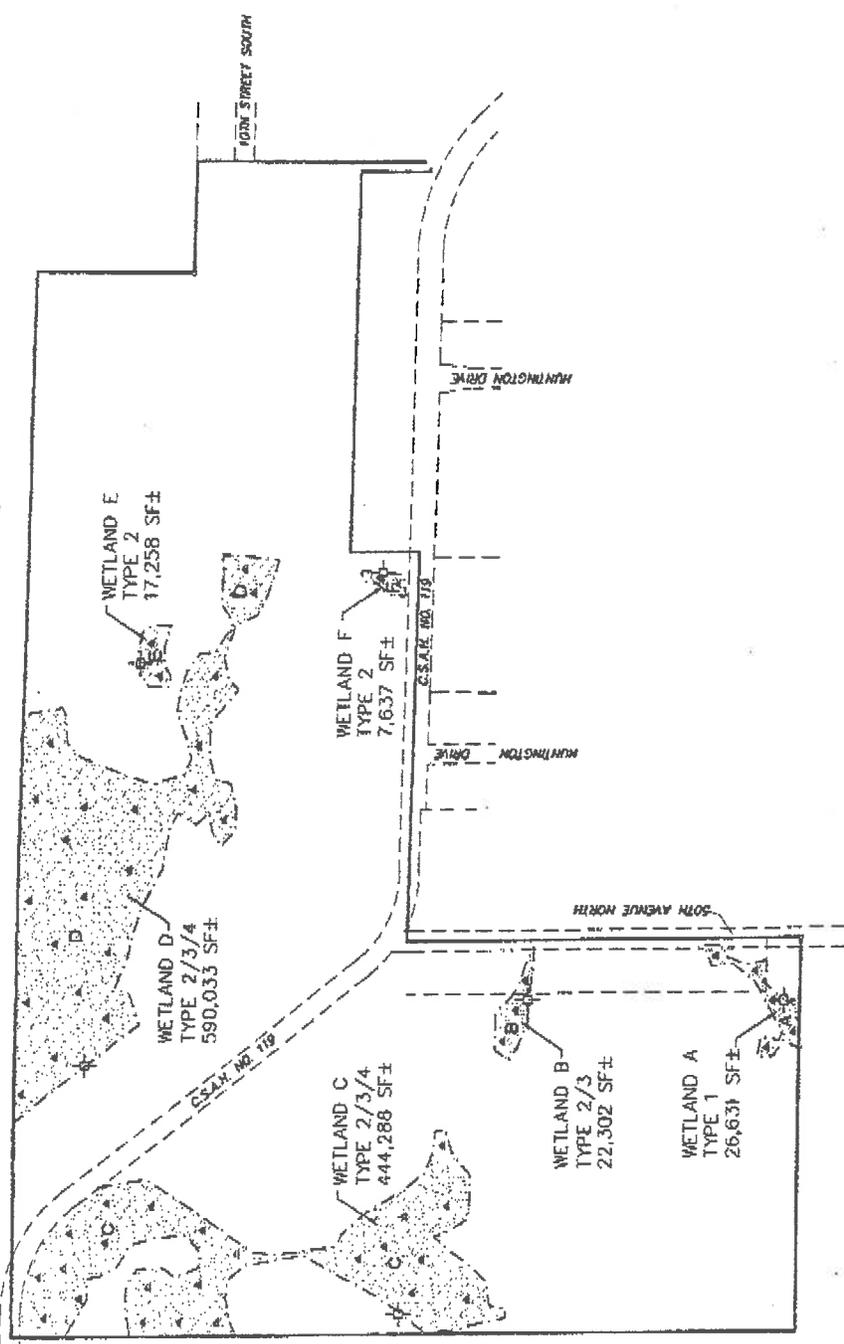
Wetland draining and filling activities are regulated by the Minnesota Wetland Conservation Act. Please be advised that draining or filling of wetland areas is not allowed without first obtaining the proper permits.

Sincerely,

Susan McGuire
Stearns County Environmental Specialist

CC: Matthew Vollbrecht, Westwood Professional Services, Inc.

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LEGEND

- DELINEATED WETLAND
- DELINEATED WETLAND BOUNDARY
- WETLAND SAMPLE POINT

NOTE

Wetland boundaries were delineated and logged in the field by Westwood Professional Services, Inc. on October 3, 2003 using the routine determination method set forth in the Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory, Wetlands Experiment Station, 1987).



Date 11/18/03 Sheet 1 OF 1
2005161WTR01.dwg

Traut Property
Stearns County, Minnesota

Prepared for:
Edwin Traut
4989 County Road 119
St. Cloud, MN 56303

Client:	MEY
Checked:	MEY
Drawn:	MLL
Project:	Wetland Delineation

Westwood Professional Services, Inc.
3701 12th St. North, Ste. 206
St. Cloud, MN 56303
Phone: 320-253-9892 Fax: 320-253-8787

ENVIRONMENTAL ASSESSMENT WORKSHEET

Draft

Note to preparers: An electronic version of this Environmental Assessment Worksheet (EAW) form and a fact sheet on preparing one are available at the Minnesota Pollution Control Agency (MPCA) Web site http://www.pca.state.mn.us/programs/envr_p.html. A booklet, *EAW Guidelines*, is also available at the Minnesota Environmental Quality Board (EQB) Web site <http://www.eqb.state.mn.us/review.html> or by calling (651) 296-8253. The EAW provides information about a project that may have the potential for significant environmental effects. The EAW is prepared by the Responsible Governmental Unit (RGU) or its agents to determine whether an Environmental Impact Statement (EIS) should be prepared. The project proposer must supply any reasonably accessible data for — but should not complete — the final worksheet. If a complete answer does not fit in the space allotted, attach additional sheets as necessary. The complete question as well as the answer must be included if the EAW is prepared electronically.

Note to reviewers: The Environmental Assessment Worksheet (EAW) provides information about a project that may have the potential for significant environmental effects. This EAW was prepared by Surveying and Engineering Professionals, Inc., for City of Sartell, acting as the Responsible Governmental Unit (RGU), to determine whether an Environmental Impact Statement (EIS) should be prepared. The project proposer supplied reasonably accessible data for, but did not complete the final worksheet. Comments on the EAW must be submitted to the MPCA during the 30-day comment period which begins with notice of the availability of the EAW in the *Minnesota Environmental Quality Board (EQB) Monitor*. Comments on the EAW should address the accuracy and completeness of information, potential impacts that are reasonably expected to occur that warrant further investigation, and the need for an EIS. A copy of the EAW may be obtained from the City of Sartell by calling (320) 253-2171.

1. **Project Title:** Fieldstone Village Subdivision

2. **Proposer:** C & S of St. Cloud, Inc. 3. **RGU:** City of Sartell

Contact Person Kevin Schmitz

Contact Person Anita Rasmussen

and Title Owner

and Title Planning Director

Address 2273 15th Street Northeast

Address P.O. Box 140

Sauk Rapids, MN 56379

Sartell, Minnesota 56377

Phone (320) 259-0859

Phone (320) 253-2171

Fax (320) 230-8886

Fax (320) 253-3337

4. **Reason for EAW Preparation:**
 EIS Mandatory Citizen RGU Proposer
 Scoping EAW Petition Discretion Volunteered

If EAW or EIS is mandatory give EQB rule category subpart number and name: _____

5. **Project Location:** County Stearns City/Twp Sartell/Le Sauk

1/4 SE 1/4 Section 28 Township 125N Range 28W

Tables, Figures, and Appendices attached to the EAW:

- County map showing the general location of the project;
- United States Geological Survey 7.5 minute, 1:24,000 scale map indicating project boundaries (photocopy acceptable);
- Site plan showing all significant project and natural features.

6. Description:

- a. Provide a project summary of 50 words or less to be published in the *EQB Monitor*.

The proposed development will include approximately 132 single family lots 72 town home lots and 96 multi-family units on 83 acres of agricultural land in the City of Sartell, Stearns County and will be served by municipal utilities.

- b. Give a complete description of the proposed project and related new construction. Attach additional sheets as necessary. Emphasize construction, operation methods and features that will cause physical manipulation of the environment or will produce wastes. Include modifications to existing equipment or industrial processes and significant demolition, removal or remodeling of existing structures. Indicate the timing and duration of construction activities.

The proposed project is a mixed residential subdivision on an approximately 83-acre parcel, which is currently comprised primarily of agricultural cropland. The parcel includes approximately 13.66 acres of jurisdictional wetland.

Streets will be constructed as 32 foot wide urban sections with curb & gutter and storm sewer. The proposed streets will connect to County Road 119 (an east/west collector street) to the south. CR 119 connects to County Road 1 to the east and Pinecone Road to the west. County Road 119 becomes County Road 133 west of Pinecone Road.

Municipal water and sanitary sewer utilities will be extended to the project site from the existing mains located adjacent to the site. Sewer and water mains will be installed beneath the proposed roadways utilizing standard open trench techniques. Temporary dewatering is anticipated. The site will be extensively re-graded to create roadways and building pads, and to facilitate the management of stormwater runoff. Stormwater runoff will be directed to catch basins and/or vegetated swales, then piped or channeled to detention/sedimentation basins where it will be treated prior to being discharged to infiltration basins and/or existing wetlands or surface waters. Storm water runoff will be limited to predevelopment rates.

Design plans and specifications for the city streets and utilities in the first phase of the development will be completed late in 2006. Construction of the first phase of building sites is also planned for 2006. Building construction is planned to begin immediately after streets and utilities are complete. Future phases are scheduled to be completed in 2007 - 2010.

- c. Explain the project purpose; if the project will be carried out by a governmental unit, explain the need for the project and identify its beneficiaries.

The purpose of the project is to provide additional single and multi-family home development opportunities within the City of Sartell which is consistent with the City's Land Use/Comprehensive Plan.

- d. Are future stages of this development including development on any outlots planned or likely to happen?
 Yes No
 If yes, briefly describe future stages, relationship to present project, timeline and plans for environmental review.
- e. Is this project a subsequent stage of an earlier project? Yes No
 If yes, briefly describe the past development, timeline and any past environmental review.

7. Project Magnitude Data

Total Project Area (acres) 83 or Length (miles) _____
 Number of Residential Units: Unattached 132 Attached 168 maximum units per Building 24
 Commercial/Industrial/Institutional Building Area (gross floor space): total square feet N/A
 Indicate area of specific uses (in square feet):

Office _____ Manufacturing _____
 Retail _____ Other Industrial _____
 Warehouse _____ Institutional _____
 Light Industrial _____ Agricultural _____
 Other Commercial (specify) _____
 Building height 2 stories If over 2 stories, compare to heights of nearby buildings _____

- 8. Permits and approvals required.** List all known local, state and federal permits, approvals and financial assistance for the project. Include modifications of any existing permits, governmental review of plans, and all direct and indirect forms of public financial assistance including bond guarantees, Tax Increment Financing and infrastructure.

Unit of Government	Type of Application	Status
MN DNR	Water Appropriation Permit (dewatering)	To be Submitted
City of Sartell	Annexation	Complete
City of Sartell	Plans and specifications	To be Submitted
City of Sartell	Preliminary Plat	To be Submitted
City of Sartell	Final Plat	To be Submitted
Mn Department of Health	Water main Extension Permit	To be Submitted
MPCA	NPDES Construction Activity	To be Submitted
MPCA	Sanitary Sewer Permit	To be Submitted

- 9. Land use.** Describe current and recent past land use and development on the site and on adjacent lands. Discuss project compatibility with adjacent and nearby land uses. Indicate whether any potential conflicts involve environmental matters. Identify any potential environmental hazards due to past site uses, such as soil contamination or abandoned storage tanks, or proximity to nearby hazardous liquid or gas pipelines.

There are approximately 13.66 acres of jurisdictional wetland at the site; however, the balance of the property appears to have been used exclusively as agricultural cropland. There are no known environmental hazards on the site due to past uses.

The property is located in an area that has historically been farmed; however, residential development now borders the site to the south and east. The property to the north was formerly the City of Sartell Wastewater Treatment Facility, however the ponds have been abandoned and the city now sends its wastewater to the St. Cloud Wastewater Treatment Facility. The conversion of the property to a mixed residential development seems logical and consistent with these adjacent land uses as well as the City of Sartell's 2003 Comprehensive Land Use Plan. No potential conflicts involving environmental matters

are apparent.

10. Cover Types. Estimate the acreage of the site with each of the following cover types before and after development:

	<u>Before</u>	<u>After</u>		<u>Before</u>	<u>After</u>
Types 1-8 wetlands	<u>13.66</u>	<u>13.66</u>	Lawn/landscaping	<u>0</u>	<u>34.54</u>
Wooded/forest	<u>4.2</u>	<u>3.1</u>	Impervious Surfaces	<u>0.85</u>	<u>28.2</u>
Brush/grassland	<u>0</u>	<u>0</u>	Other (pond)	<u>0</u>	<u>3.5</u>
Cropland	<u>64.29</u>	<u>0</u>			
			TOTAL	83.0	83.0

11. Fish, Wildlife, and Ecologically Sensitive Resources.

- a. Identify fish and wildlife resources and habitats on or near the site and describe how they would be affected by the project. Describe any measures to be taken to minimize or avoid impacts.

The wetlands on the site may offer limited habitat for small birds, animals and invertebrates. The habitat is limited by the surrounding development, the absence of open water deep enough for over-wintering habitat for common reptiles such as frogs, turtles, and toads, and lack of adequate tree and shrub cover for winter forage by large mammals. The City of Sartell recognizes the value of its natural resources and enforces an ordinance to protect jurisdictional wetlands in platted developments by setting generous building setbacks and through the establishment of buffer and setback areas surrounding the delineated wetlands. These wetland areas are protected by rule and impacts are only allowed through an extensive permitting process involving the Minnesota Department of Natural Resources, the US Army Corp of Engineers and the City of Sartell. Erosion and sedimentation will be controlled during construction through the implementation of an approved Storm Water Pollution Prevention Plan (SWPPP).

Post development, the ecologic value and function of the wetland area at the site will likely be enhanced through open space preservation, park dedication and the establishment of wetland buffer areas. When compared to untreated agricultural runoff, surface water discharges to the wetland areas will likely be improved through the use of stormwater detention and sedimentation basins.

- b. Are any state (endangered or threatened) species, rare plant communities or other sensitive ecological resources such as native prairie habitat, colonial waterbird nesting colonies or regionally rare plant communities on or near the site? Yes No
If yes, describe the resource and how it would be affected by the project. Indicate if a site survey of the resources has been conducted and describe the results. If the DNR Natural Heritage and Nongame Research program has been contacted give the correspondence reference number. ERDB
Describe measures to minimize or avoid adverse impacts.

According to the Minnesota Department of Natural Resources (MnDNR) there are three known occurrences of rare species in the area of the project (see MnDNR letter and information in the Appendix). Two are bald eagle nesting sites and one is a colonial waterbird nesting site. All were located on Graham's Island which is approximately 3/4 mile east of the site on the Mississippi River. However, as indicated in the letter from the Minnesota Department of Natural Resources, based on the nature and location of the project it is unlikely that it will affect any known occurrences of rare features.

- 12. Physical Impacts on Water Resources.** Will the project involve the physical or hydrologic alteration (dredging, filling, stream diversion, outfall structure, diking, and impoundment) of any surface waters such as a lake, pond, wetland, stream or drainage ditch? Yes No
If yes, identify water resource affected. Describe alternatives considered and proposed mitigation measures

to minimize impacts. Give the DNR Protected Waters Inventory (PWI) number(s) if the water resources affected are on the PWI.

13. **Water Use.** Will the project involve installation or abandonment of any water wells, connection to or changes in any public water supply or appropriation of any ground or surface water (including dewatering)? Yes No

If yes, as applicable, give location and purpose of any new wells; public supply affected, changes to be made, and water quantities to be used; the source, duration, quantity and purpose of any appropriations; and unique well numbers and DNR appropriation permit numbers, if known. Identify any existing and new wells on the site map. If there are no wells known on site, explain methodology used to determine.

Installation of public utilities, particularly sanitary sewer, is likely to require temporary dewatering. Dewatering of utility trenches will be of a short-term nature, usually three to four weeks depending on the trench size, depth, location, water table elevation and soil type. DNR Water Appropriation Permits will be obtained for each construction phase that requires dewatering.

There are no known existing wells on site as determined by interview with current property owner and a review of the Minnesota Department of Health County Well Index. If any unused and unsealed wells are encountered during site development, they will be reported to the project engineer so arrangements can be made to have them sealed by a licensed well contractor in accordance with Minnesota Rules Ch. 4725.

14. **Water-related land use management districts.** Does any part of the project involve a shoreland zoning district, a delineated 100-year flood plain, or a state or federally designated wild or scenic river land use district? Yes No

If yes, identify the district and discuss project compatibility with district land use restrictions.

15. **Water Surface Use.** Will the project change the number or type of watercraft on any water body? Yes No

If yes, indicate the current and projected watercraft usage and discuss any potential overcrowding or conflicts with other uses.

16. **Erosion and Sedimentation.** Give the acreage to be graded or excavated and the cubic yards of soil to be moved: 60 acres; ±120,000 cubic yards. Describe any steep slopes or highly erodible soils and identify them on the site map. Describe any erosion and sedimentation control measures to be used during and after project construction.

Total topographic variation across the site is less than 10 feet and there are no steep slopes within the proposed development area. According to Stearns County Soil Survey, the majority of the soils on the site are sandy loams of the Estherville and Osakis Series. These soils are considered droughty and classified as highly erodible by wind. They are well suited for building site development.

A Storm Water Pollution Prevention Plan (SWPPP) will be prepared for each phase of development and a NPDES Construction Activity Permit will be obtained prior to beginning grading activities.

The site will require temporary seeding and mulch when the soils are to remain bare for more than 21 days. Permanent erosion control will consist of seeded and/or sod lawns, riprap storm pipe outlets, stormwater detention and sedimentation ponds, and stormwater infiltration areas.

Road and construction plans are in the process of being developed. As plans are finalized, soil erosion and sedimentation control plans will be developed following best engineering practices and the guidance as found in the document, Protecting Water Quality in Urban Areas: Best Management Practices in Minnesota, published by the Minnesota Pollution Control Agency. The National Pollutant Discharge Elimination System (NPDES)/State Disposal System (SDS) General Storm-water Permit for

Construction Activity will be required from the MPCA. All conditions of approval by the Stearns County Soil and Water Conservation District not covered under the NPDES Permit will be included in the plans and specifications being prepared for site grading, street and utility construction. These conditions include seeding and final grading of the storm water pond.

Implementation of city ordinances that require the use, management and enforcement of Best Management Practices to control erosion, sedimentation and provide pretreatment of water discharged to receiving water-bodies during and after construction. Strategies for treatment, infiltration and peak flow attenuation will be identified and considered for the protection of receiving water-bodies. The use of infiltration practices will be in accordance with NPDES Permit requirements.

The following general conditions will be incorporated into all plans developed: Temporary erosion control during construction of roads and utilities shall include, but not limited to, rock construction entrances, silt fence, inlet protection, temporary seeding and mulch.

Initially, these erosion control devices will be placed at the down gradient end of the construction limits prior to the beginning of construction. Additional devices as noted on the construction drawings will be added as construction progresses. These devices will be maintained on a daily basis as directed under the permit requirements to maintain sediment control and effectiveness. The maintenance will be the responsibility of the Contractor. The final phase of the road construction will include final grading and seeding of the ditches. Mulch or fiber blankets will be used for temporary protection of the seeded areas. Final excavation of pond floors will take place after all disturbed areas are final stabilized. Pond floor excavation will be completed utilizing track type equipment to minimize compaction and the basin floor will be tilled to a depth of 6 inches. The erosion control devices will be required until the grass in the disturbed areas has become established and all non-biodegradable control devices will be completely removed after final stabilization.

Sediment control for development of the individual lots will be the responsibility of the individual property owners as the lots are developed. The NPDES Permit will be transferred to the builders by the developer. A SWPP Plan will be written to cover each individual building site as required for issuance of building permits by the City of Sartell.

17. Water Quality – Surface-water Runoff.

- a. Compare the quantity and quality of site runoff before and after the project. Describe permanent controls to manage or treat runoff. Describe any storm-water pollution prevention plans.

According to Table 4.2.1: Average Annual Soil Loss for Various Land Uses, found in Protecting Water Quality in Urban Areas, Best Management Practices in Minnesota, the average annual soil loss for developed urban land is 1/10 of that for tilled cropland. The site will be developed using storm sewer for conveying runoff to a detention/sedimentation/infiltration pond system. The ponds will be sized to collect the 2, 10 and 100-year storm events and release them at a rate equal to the pre-development conditions. The treated storm water will meet or exceed current State and Federal water quality discharge requirements. Plans and specifications for these improvements are currently being designed. Surface water runoff will be directed to the streets where it will flow along the curb and gutter to be collected by catch basins and directed to the sedimentation basins via storm sewer piping.

- b. Identify routes and receiving water bodies for runoff from the site; include major downstream water bodies as well as the immediate receiving waters. Estimate impact runoff on the quality of receiving waters.

Treated storm water from the detention/sedimentation/infiltration basins will be discharged to grass swales which will convey the treated storm water to adjacent wetland areas. These wetland areas are

drained by swales and ditches, which in turn ultimately discharge to the Mississippi River (see Attachment B). After treatment the water will meet or exceed the current minimum standards for storm water quality as determined by the Federal EPA and the MPCA. Given that the quality of storm water runoff is dictated by State and Federal rules, and that post development runoff is limited to predevelopment rates, runoff from the site will have minimal if any impact on these receiving waters.

18. Water Quality – Wastewater.

- a. Describe sources, composition and quantities of all sanitary, municipal and industrial wastewater produced or treated at the site.

Wastewater generated from this development will be primarily domestic in nature. For residential development it is estimated that each unit will generate approximately 300 gallons of domestic wastewater per day. Total daily volume is expected to be approximately 86,700 gallons per day.

- b. Describe waste treatment methods or pollution prevention efforts and give estimates of composition after treatment. Identify receiving waters, including major downstream water bodies, and estimate the discharge impact on the quality of receiving waters. If the project involves on-site sewage systems, discuss the suitability of site conditions for such systems.

All wastewaters generated by the proposed development will be treated to standards set and enforced by the MPCA at the city of St. Cloud wastewater treatment facility (WWTF), which provides contract wastewater treatment for the City of Sartell. The St. Cloud WWTF discharges treated wastewater to the Mississippi River.

- c. If wastes will be discharged into a publicly owned treatment facility, identify the facility, describe any pretreatment provisions and discuss the facility's ability to handle the volume and composition of wastes, identifying any improvements necessary.

The City of St. Cloud WWTF is currently designed to handle the volume and the domestic characteristics of the wastewater to be generated from the proposed development. The City of St. Cloud WWTF has no pretreatment provisions for the City of Sartell. The annual average daily flow through the plant from July '03 to June '04 was 9.4 MGD. The plant's design flow is 13 MGD. The addition of the 86,700 gallons/day for the total project build-out would be within the city of Sartell's current allotment and within the St. Cloud WWTF's capacity for treatment. The St. Cloud WWTF is currently in the planning stage of a plant expansion with construction planned within 5 to 7 years. The plant expansion would result in an increased allotment for the city of Sartell. Even without a plant expansion, in the past the City of St. Cloud has allowed contract cities to purchase additional allotment to cover shortfalls.

- d. If the project requires disposal of liquid animal manure, describe disposal technique and location and discuss capacity to handle the volume and composition of manure. Identify any improvements necessary. Describe any required setbacks for land disposal systems.

N/A

19. Geologic hazards and soil conditions.

- a. Approximate depth (in feet) to Ground water: 5 minimum; 10 average.
Bedrock: 80* minimum; 100* average.

Describe any of the following geologic site hazards to ground water and also identify them on the site map: sinkholes, shallow limestone formations or karst conditions. Describe measures to avoid or minimize environmental problems due to any of these hazards.

*Meyer, G.N., 1995, Geologic Atlas of Stearns County, Minnesota, Minnesota Geological Survey, County Atlas Series, Atlas C-10, Part A, Plate 6.

The project site is not in a karst area and there are no known geologic site hazards on this site.

- b. Describe the soils on the site, giving SCS classifications, if known. Discuss soil granularity and potential for groundwater contamination from wastes or chemicals spread or spilled onto the soils. Discuss any mitigation measures to prevent such contamination.

According to Stearns County Soil Survey, the majority of the soils in the proposed building areas of the site are Pomroy Series fine sand, Watab Series loamy fine sand and Duelm Series loamy Sand. These soils vary from well drained to somewhat poorly drained. Each of these units is rapidly permeable in the mantle and moderately slow in the fine underlying soils. They are considered poor filters. The Pomroy Series soils are well suited for building sites, while the Watab and Duelm Series soils are somewhat limited by a high seasonal water table and require sump pumps and foundation drainage systems. The soil survey recommends slab on grade construction or building site fill on the Watab and Duelm Series soils.

Minnesota Statutes require the cleanup of the spills of materials that have the potential to pollute the waters of the State. There is also a reporting requirement for the spills of most substances, including petroleum product spills in quantities greater than 5 gallons, to be sure that the more significant spills are adequately cleaned up.

20. Solid Wastes, Hazardous Wastes, Storage Tanks.

- a. Describe types, amounts and compositions of solid or hazardous wastes, including solid animal manure, sludge and ash, produced during construction and operation. Identify method and location of disposal. For projects generating municipal solid waste, indicate if there is a source separation plan; describe how the project will be modified for recycling. If hazardous waste is generated, indicate if there is a hazardous waste minimization plan and routine hazardous waste reduction assessments.

It is anticipated that little no hazardous wastes will be generated during construction. Motor fuels including temporary, transportable storage tanks may be brought to the site by the grading contractor; however, these materials will be consumed. Significant equipment maintenance will not be performed at the site. As most of the site is currently cropland, clearing and grubbing will be kept to a minimum and on-site burning is not anticipated.

In general, only small quantities of household chemicals and wastes are expected to be used on site following development. Hazardous waste generated on the property will be collected by licensed haulers under contract with the individual property owners and disposed of within the local, state and federal laws and regulations.

- b. Identify any toxic or hazardous materials to be used or present at the site and identify measures to be used to prevent them from contaminating groundwater. If the use of toxic or hazardous materials will lead to a regulated waste, discharge or emission, discuss any alternatives considered to minimize or eliminate the waste, discharge or emission.

As previously indicated only small amounts of chemicals in quantities typical for use will be present at the site. No special discharges or emissions are anticipated and any hazardous or toxic materials present

at the site would be present in quantities unlikely to present a material threat to the groundwater quality of the site.

- c. Indicate the number, location, size and use of any above or below ground tanks to store petroleum products or other materials, except water. Describe any emergency response containment plans.

No storage tanks are known to exist on the site and none are included in the development plans at this time.

21. **Traffic.** Parking spaces added: None Existing spaces (if project involves expansion): N/A
Estimated total average daily traffic generated: 2,304 Estimated maximum peak hour traffic generated (if known) and its timing: PM peak hour (4-6PM) = 233 AM peak hour (7-9AM) = 179
Provide an estimate of the impact on traffic congestion affected roads and describe any traffic improvements necessary. If the project is within the Twin Cities metropolitan area, discuss its impact on the regional transportation system.

The above traffic generation numbers reflect full build-out conditions for the 83 acre site (132 single family units, 72 town home units and 96 multi-family units) and were taken from the Institute of Traffic Engineers *Trip Generation Manual*, 7th Addition.

The streets adjacent to the project connect to County Highway 119 to the south (2-lane rural roadway with turn lanes), and will connect to the future Robert's Road to the north (a 50 to 100 foot right of way for this proposed minor arterial will be dedicated in the proposed plat). County Road 119 connects to County Road 1 approximately 1000 feet east of the site and to Pinecone Road to the west. County Road 1 connects to Trunk Highway 15 approximately 1/2 mile east of the site. This intersection is signalized and has turn lanes.

As this and other adjacent properties develop and build out, additional signalization, turn lanes other types of access management will likely be required at the intersection of CSAH 1 and County Road 119. Additional signalization will take place at intersection on Pine Cone Road at the existing intersections. Both Pine Cone Road and CSAH 1 have been designated as minor arterial roadways by Stearns County and the cities of Sartell or the City of St. Cloud, respectively. The St. Cloud APO has proposed a major east-west collector road ("Robert's Road") that would go through and along the north side of the project, and connect CSAH 1 with CSAH 4 as a part of the 8th Street improvements. The proposed Robert's Road will intersect Pinecone Road approximately 1/2-mile to the east of the project. Pinecone Road is planned to serve as minor north-south arterial route between Sartell and St. Cloud.

Some traffic congestion may be anticipated to occur on surrounding roads as a result of the full build out of this project and development of the adjacent properties, if this development precedes the construction of the proposed infrastructure improvements. It is anticipated that temporary signage and turn lanes will be constructed as congestion occurs until the major road projects proposed are funded.

22. **Vehicle-related Air Emissions.** Estimate the effect of the project's traffic generation on air quality, including carbon monoxide levels. Discuss the effect of traffic improvements or other mitigation measures on air quality impacts. Note: If the project involves 500 or more parking spaces, consult *EAW Guidelines* about whether a detailed air quality analysis is needed.

This project is not anticipated to have any significant impacts or cause any significant air quality concerns because of the moderate traffic volumes generated and moderate levels of congestion (as

discussed in Question #21). The project is located in an area in which an Indirect Source Permit or conformity requirements do not apply, the scope of the project does not indicate that substantial air quality impacts would be expected. Therefore, no further air quality analysis is necessary.

- 23. Stationary Source Air Emissions.** Describe the type, sources, quantities and compositions of any emissions from stationary sources of air emissions such as boilers, exhaust stacks or fugitive dust sources. Include any hazardous air pollutants (consult *EAW Guidelines* for a listing), any greenhouse gases (such as carbon dioxide, methane, and nitrous oxides), and ozone-depleting chemicals (chlorofluorocarbons, hydrofluorocarbons, perfluorocarbons or sulfur hexafluoride). Also describe any proposed pollution prevention techniques and proposed air pollution control devices. Describe the impacts on air quality.

No air emissions sources requiring an air quality permit from the MPCA are included in the proposed project and air emissions from stationary sources are anticipated to be negligible.

- 24. Odors, noise and dust.** Will the project generate odors, noise or dust during construction or during operation? Yes No
If yes, describe sources, characteristics, duration, quantities or intensity and any proposed measures to mitigate adverse impacts. Also identify locations of nearby sensitive receptors and estimate impacts on them. Discuss potential impacts on human health or quality of life. (Note: fugitive dust generated by operations may be discussed at item 23 instead of here.)

The project will develop noise and dust during the road construction phases. The impacts will be of short term duration. All noise levels will be maintained within acceptable Federal and State Standards. Noise mitigation is not proposed at this time because construction noise will be temporary and City roads in the area are exempt from State Noise Standards. Best management plans will be instituted to control dust. Methods, such as, watering, exposing minimal amounts of bare soil and replanting will be used to minimize impacts.

There should be no offensive odors generated either during construction or following completion of the project.

- 25. Nearby resources.** Are any of the following resources on or in proximity to the site?

- a. Archaeological, historical, or architectural resources? Yes No
- b. Prime or unique farmlands or land within an agricultural preserve? Yes No
- c. Designated parks, recreation areas, or trails? Yes No
- d. Scenic views and vistas? Yes No
- e. Other unique resources? Yes No

If yes, describe the resource and identify any project-related impacts on the resources. Describe any measures to minimize or avoid adverse impacts.

- 26. Visual impacts.** Will the project create adverse visual impacts during construction or operation? Such as glare from intense lights, lights visible in wilderness areas and large visible plumes from cooling towers or exhaust stacks? Yes No
If yes, explain.

- 27. Compatibility with plans and land use regulations.** Is the project subject to an adopted local comprehensive plan, land use plan or regulation, or other applicable land use, water, or resource management plan of a local, regional, state or federal agency? Yes No
If yes, describe the plan, discuss its compatibility with the project and explain how any conflicts will be resolved. If no, explain.

The project site was recently annexed into the City of Sartell and is included as a proposed residential use in the City's Comprehensive Plan. The City of Sartell Comprehensive Plan complies with the requirements set out in Minnesota Rules 4410.3610, subpart 1, Which requires local comprehensive plans to address land use, transportation, and sanitary sewer systems and include an implementation program.

The St. Cloud Area Planning Organization (APO) cooperates with the various municipalities within its jurisdiction on matters of regional transportation. The proposed development is not in conflict with any transportation corridor currently under consideration by the APO.

- 28. Impact on infrastructure and public services.** Will new or expanded utilities, roads, other infrastructure or public services be required to serve the project? Yes No
If yes, describe the new or additional infrastructure or services needed. (Note: any infrastructure that is a connected action with respect to the project must be assessed in the EAW; see *EAW Guidelines* for details.)

Infrastructure improvements will include public utilities such as sanitary sewer, water main, storm sewer, storm water ponds, and streets; as well as private utilities such as natural gas, electrical service, cable and telephone. The sanitary sewer and water lines constructed with this project may be oversized to serve properties to the west as they are developed.

- 29. Cumulative impacts.** Minn. R. 4410.1700, subp. 7, item B requires that the RGU consider the "cumulative potential effects of related or anticipated future projects" when determining the need for an environmental impact statement. Identify any past, present or reasonably foreseeable future projects that may interact with the project described in this EAW in such a way as to cause cumulative impacts. Describe the nature of the cumulative impacts and summarize any other available information relevant to determining whether there is potential for significant environmental effects due to cumulative impacts (or discuss each cumulative impact under appropriate item(s) elsewhere on this form).

As with all development, wildlife habitat may be decreased. However, since the current land use is predominantly agricultural and the surrounding area will continue to develop as the need for residential and commercial space in the metropolitan area increases, the impacts should not be significant. Regarding traffic related cumulative impacts, as was discussed in Question #21, major transportation projects in the area have been planned and implemented with the anticipation of growth.

Although additional development will likely take place in this area, it will be in accordance with the City's approved Comprehensive Plan and meet all the city of Sartell's requirements. When constructed, the proposed Roberts Road will adequately carry traffic for the proposed and foreseeable future development in the area while alleviating traffic congestion on County Road 119. As development of this parcel and neighboring properties continues, traffic will increase on CR 119 until the proposed Robert's Road becomes the minor arterial for people to get into and out of the Sartell urban area. The County State Aid Highway designation on County Road 1 allows Stearns County to use State Aid funding for reconstructing this roadway as traffic volumes increase to levels where the existing roadway capacity is exceeded.

As the area continues to develop, the public utilities will have to be upgraded to provide additional capacity for gas, telephone, electric and cable services. The development of the area will provide an economic opportunity for expanded commercial and public services in the St. Cloud Metro Area. Along with the private utilities, public utilities will also have to be expanded to meet the growing demand. The City charges the developers sewer and water fees to pay for these expansion projects.

- 30. Other Potential Environmental Impacts.** If the project may cause any adverse environmental impacts not addressed by items 1 to 28, identify and discuss them here, along with any proposed mitigation.

There appear to be no additional potential adverse environmental impacts not contemplated by this report.

31. Summary of issues. List any impacts and issues identified above that may require further investigation before the project is begun. Discuss any alternatives or mitigative measures that have been or may be considered for these impacts and issues, including those that have been or may be ordered as permit conditions.

The proposed project is contiguous with other similar projects and maximizes the utilization of the existing and proposed infrastructure improvements. It provides an orderly expansion of the urbanized area of Sartell. Any foreseeable direct, cumulative and/or connected adverse environmental impacts have been contemplated and are being minimized to the greatest extent possible. Any unavoidable impacts are being mitigated.

The Proposer is preserving the natural environment area of the property by protecting the wetland area and establishing generous buffer areas around them. Only the cropland is being developed.

The proposed project will be served by municipal utilities so it will not rely on the groundwater at the site, nor will the soils be required to provide wastewater treatment. The anticipated potable water demand is within the city of Sartell's ability to meet. The city of Sartell contracts with the city of St. Cloud to provide sewage treatment and St. Cloud's WWTF has more than enough capacity to meet the wastewater treatment needs of the development.

The project will follow the city of Sartell's and MPCA's requirements for the control of erosion and sedimentation both during construction and following completion of the project. The proposed sedimentation-infiltration pond system will be designed to store storm water surges so that the intensity of total site runoff will not be increased over predevelopment values.

The proposed development will create no special or extraordinary waste streams and the anticipated solid waste volume is within the ability of the private contractors serving the area to manage.

The increased traffic loads to the adjacent roadways have been anticipated and will be mitigated through on-going improvements to roadway widths and geometry, and through the establishment of new traffic corridors.

The potential environmental impacts of the proposed development have been contemplated and are discussed in this EAW. Reasonable measures are being proposed to reduce or eliminate the potential negative environmental impacts. No issues have been identified that require further investigation.

RGU CERTIFICATION.

I hereby certify that:

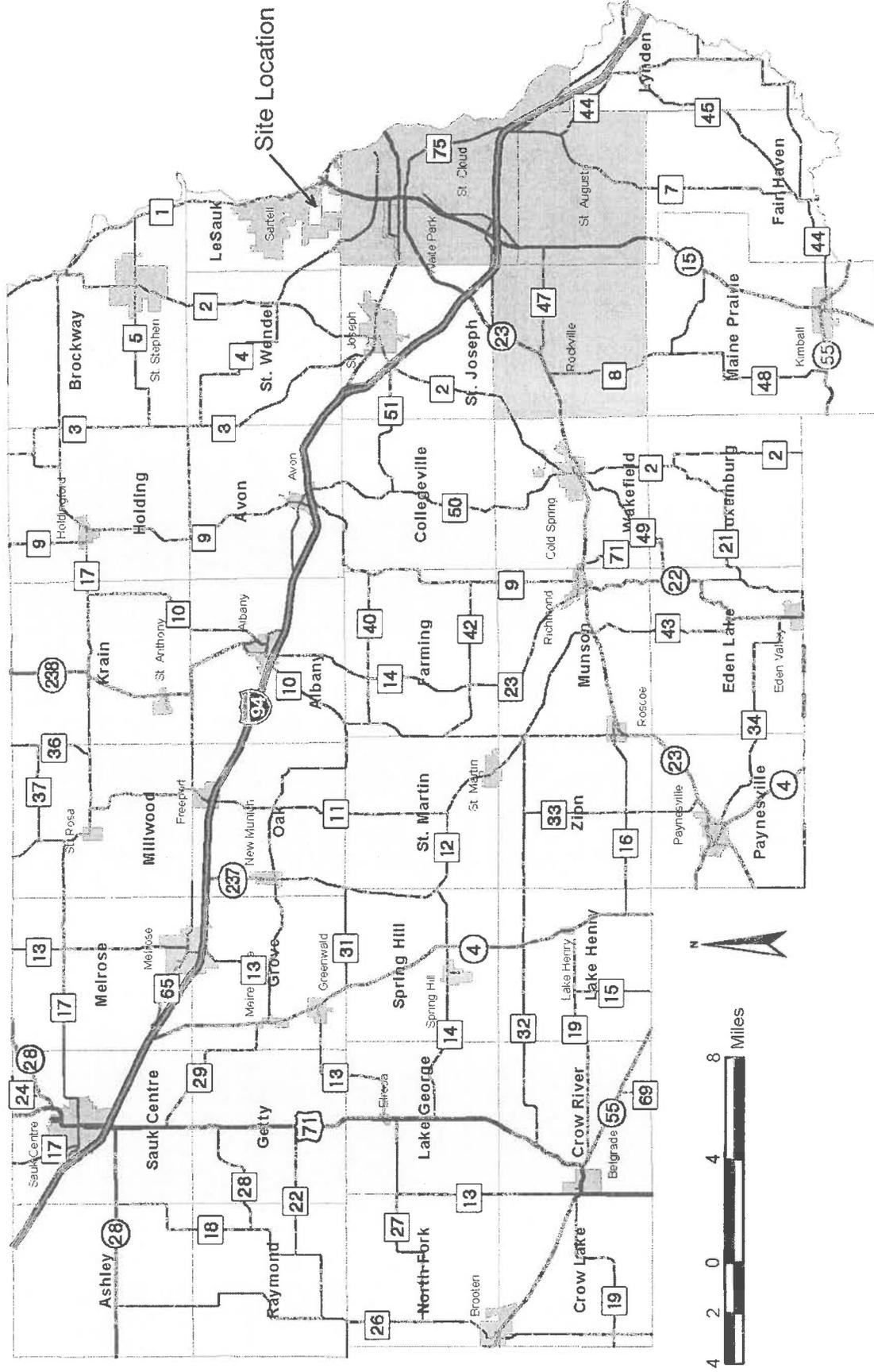
- The information contained in this document is accurate and complete to the best of my knowledge.
- The EAW describes the complete project; there are no other projects, stages or components other than those described in this document, which are related to the project as connected actions or phased actions, as defined at Minn. R. 4410.0200, subps. 9b and 60, respectively.
- Copies of this EAW are being sent to the entire EQB distribution list.

Name and Title of Signer: _____

Date:

The format of the Environmental Assessment Worksheet was prepared by the staff of the Environmental Quality Board at Minnesota Planning. For additional information, worksheets or for *EAW Guidelines*, contact: Environmental Quality Board, 658 Cedar St., St. Paul, MN 55155, 651-296-8253, or at their Web site <http://www.eqb.state.mn.us/review.html>.

Stearns County, Minnesota



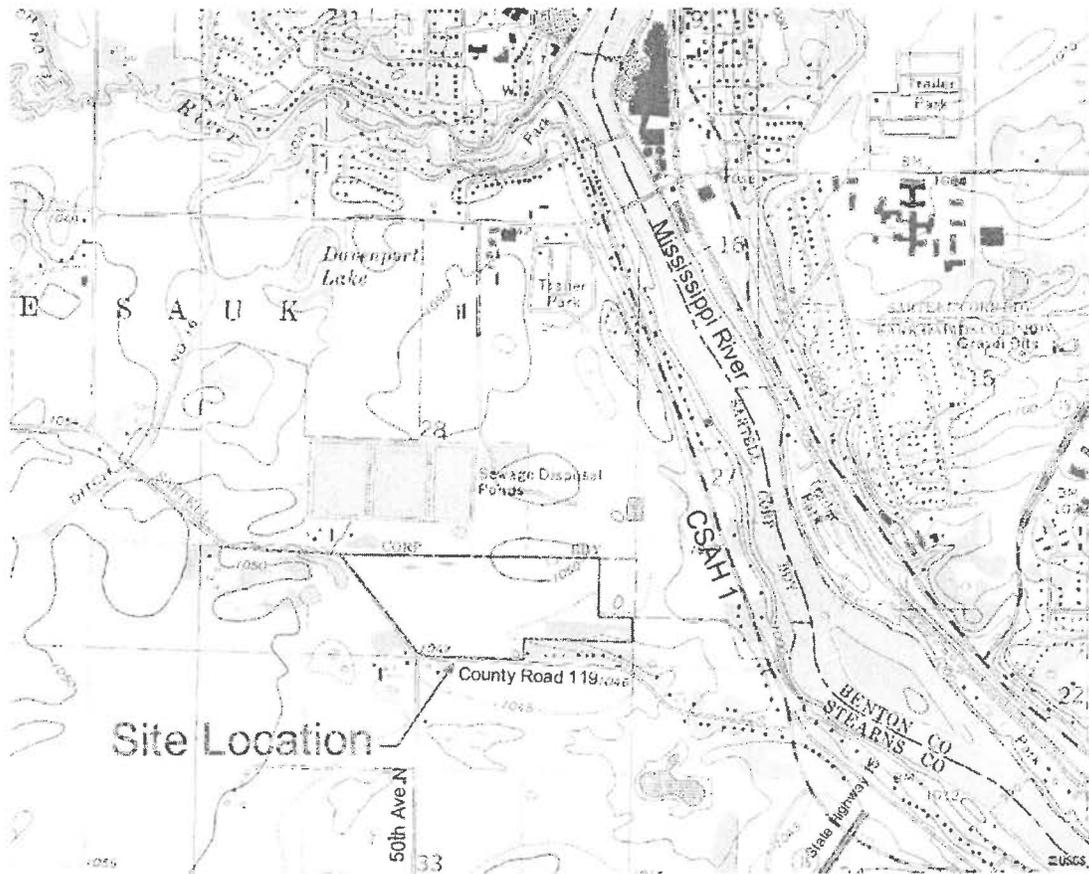
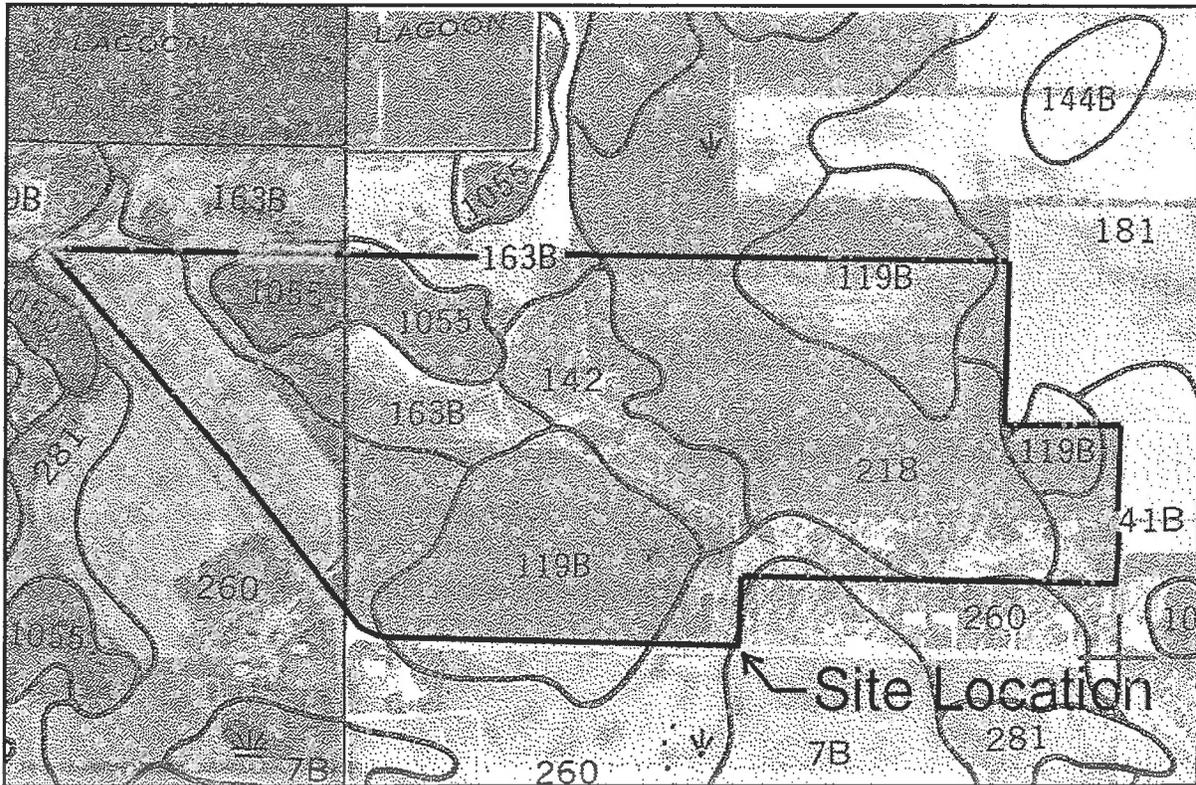


Figure 3
Stearns County Soil Survey Map



Soils Legend

- 7B Hubbard loamy sand, 2-6% slopes
- 41B Estherville sandy loam, 2-6% slopes
- 119B Pomroy fine sand, 1-8% slopes
- 142* Nokay fine sandy loam
- 163B Brainerd fine sandy loam, 1-4% slopes
- 181 Litchfield loamy sand
- 218* Watab loamy fine sand
- 260 Duelm loamy sand
- 1055* Histosols and Haplaquolls, ponded

* indicates whole hydric unit



City of Sartell
125 Pinecone Road North • Sartell, MN 56377

October 10, 2014
Revised November 13, 2014

.....

WETLAND Delineation Report

50th Avenue South
Improvement

Stearns County, Minnesota

.....

WSB Project No. 2174-37



701 Xenia Avenue South, Suite 300
Minneapolis, MN 55416
Tel: (763) 541-4800 · Fax: (763) 541-1700
wsbeng.com

LEVEL 2 WETLAND DELINEATION REPORT

50th Avenue South Improvement

For:
City of Sartell, MN

October 10, 2014

Prepared By:
WSB & Associates, Inc.
701 Xenia Avenue S., Suite 300
Minneapolis, MN 55416
(763) 541-4800
(763) 541-1700 (Fax)

CERTIFICATION

I hereby certify that this report was prepared by me or under my
Direct supervision and that I am a Certified Wetland Delineator in
The State of Minnesota



Alison Harwood

Date: October 9, 2014 Wetland Delineator Certification No.: 1238

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LEVEL 2 WETLAND DELINEATION REPORT

I. Introduction

A. Project Location

This project is located in Sartell, Minnesota between 2nd Street South and Heritage Drive. The project area is a 1.2 mile corridor that runs north to south with a slight southwestern curve at the southern end where it connects to Heritage Drive. The entire project takes place in Section 28 of Township 125N, Range 28W (*Figure 1, Appendix A*).

B. Project Purpose

The City of Sartell is proposing to extend the existing 50th Avenue South through Heritage Drive, north to 2nd Street South. Improvements to 50th Ave South between Heritage Drive, County Road 134, and the connecting round-a-bout have already been completed on this project. This report is intended to address all jurisdictional WCA, Public Water, or Section 404 wetlands and /or waters for final design and permitting of this project. This project was authorized by the City of Sartell, Minnesota.

C. Summary of Findings

A total of four wetlands were identified and delineated for the preparation of this report, as summarized in **Table 1**. For a visual representation of the wetland locations and size, please see *Appendix B, Figure 4*. All potential wetland areas (mapped hydric soils, NWI signatures, and low depressional areas) were reviewed on-site and either delineated or determined to be upland.

Table 1. Summary of Delineated Wetlands, 50th Avenue South, City of Sartell, Minnesota

Delineated Wetland ID	Transect No./Sample Points	Wetland Flag No.	Wetland Plant Community	Wetland Type-Circular 39 (Cowardin)	County Soil Survey (Hydric/Non-Hydric)	DNR Protected Waters Inventory	National Wetlands Inventory (Cowardin)
Wetland A	4 / 12	137	Shallow Marsh	Type 3 (PEMF)	Histosols (Hydric)	-	PEMF
Wetland B	2 / 4	41	Deep Marsh	Type 4 (PUBFd)	Histosols (Hydric)	-	PUBFd
Wetland C	1 / 2	23	Deep Marsh	Type 4 (PUBFd)	Histosols (Hydric)	-	PUBFd
Wetland D	1 / 3	25	Fresh (Wet) Meadow	Type 2 (PEM1B)	Histosols (Hydric)	-	PEMA

LEVEL 2 WETLAND DELINEATION REPORT

II. Delineation Procedure

A. Off-Site Determination: Base Map Review

Topography: The majority of the project area was flat, with pockets of low or depressional areas with predominated wetland features. There is an over-arching elevation slant towards the Mississippi River, which is located northeast of the project area.

The *DNR Public Water and Wetland Map, Stearns County, MN* (Minnesota Department of Natural Resources, 1983) shows a total of no public waters within the project boundary. The closest DNR public waters are the Mississippi River, which is located 0.5 mile east of the northern most point of the project area, and Davenport Lake (32P), which is located 0.5 mile west of the northern most point of the project area (*Figure 2, Appendix A*).

The *National Wetlands Inventory Map (NWI)* (US Fish and Wildlife Service) identified Wetlands A, B C, and D as part of the National Wetlands Inventory (*Figure 2, Appendix A*). The NWI map classifies the delineated wetlands as PEMF, PUBFd, PUBRd, and PEMA respectively.

The *Soil Survey of Stearns County, Minnesota* (<http://soildatamart.nrcs.esda.gov>) identified the mapped soils within the delineated wetlands as Brainerd (non-hydric), Nokay (non-hydric), and Histosols (hydric) (*Figure 3, Appendix A*).

Antecedent Climate Conditions: Historic climate data and WETS data was obtained from the Minnesota Climatology Working Group for the three months preceding the field visit conducted on August 19, 2014. May was wetter than normal, June was wetter than normal, and July was drier than normal. Overall, this data indicated the period has been normal in relation to precipitation. Records of precipitation data can be found in *Appendix C*.

B. On-Site Determination

Field Investigation was conducted by Carli Ewert and Reed Schwarting of WSB & Associates, Inc. on August 19, 2014. No deviation or omissions were undertaken as part of this investigation.

The project site was delineated using the routine methodology described in the *Corps of Engineers Wetlands Delineation Manual* (US Army Corps of Engineers, 1987), with additional guidance provided by the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0)*. Wetlands were classified according to the methodologies set forth in *Wetlands of the United States (Circular 39)*, USFWS Shaw and Fredine 1971; *Classification of Wetlands and Deepwater Habitats of the United States*, Cowardin 1979; and *Wetland Plants and Plant Communities of*

LEVEL 2 WETLAND DELINEATION REPORT

Minnesota and Wisconsin, 2nd ed., Eggers and Reed 1997. The wetland types in this report are classified by the Circular 39, Cowardin, and Eggers and Reed Classifications.

Soil types were researched prior to the on-site investigation with the assistance of the *Soil Survey of Streats County* from the National Resources Conservation Service. All soil test pits were excavated to a minimum depth of twenty inches (20") unless otherwise noted. Soil colors were described on-site according to the *Munsell Soil Color Charts* (2009 Revised Edition) from the test pits in and adjacent to the wetlands. Hydric soils were identified using the current technical criteria for hydric soils developed by the NRCS in 2010 (Version 7.0). The presence of water was observed after time was allowed for movement of water through the substrate. This time varied depending upon soil characteristics.

The quadrant sampling method was employed for all sample points unless otherwise noted. Vegetation was measured as actual areal cover and may exceed 100% of total area due to overlap. Grasses and herbaceous vegetative cover was measured within a circular plot of a 5-foot-radius, all woody shrubs and saplings was measured within a circular plot with a 15-foot-radius, and woody vegetation was measured in a 30-foot-radius circular plot. Regional plant identification resources were utilized in the identification of plant species, with indicator status taken from the *2014 National Wetland Plant List* (US Army Corps of Engineers, 2014). Plant species dominance was estimated based on the absolute percent coverage for herbaceous, shrub-sapling, and tree strata if present.

In addition to the use of indicators of hydrology, hydric soils, and the presence of hydrophytic vegetation, other evidence such as topographic breaks and watershed characteristics were used to determine the wetland boundary.

Midwest Regional Supplement Routine Wetland Delineation data forms were used to record vegetation, hydrology, and soil characteristics at sample points in and adjacent to the wetlands (**Appendix B**). Sampling transects were taken along the wetland-upland boundary of the wetland. Transects and delineated wetland boundaries were field surveyed using Trimble GeoXH hand held GPS unit. Approximate sampling points and delineated wetland edges are shown on **Appendix B, Figures 4, 5, and 6**.

C. Field Review

Wetland boundaries for Wetlands A, B, C, and D were reviewed by the TEP and LGU on October 29th, 2014. Two wetlands required a boundary modification; Wetlands A and D. Wetland vegetation and hydrology appeared to extend beyond the original wetland boundary delineated on August 19, 2014.

Flag point D11 was moved east to accommodate additional area of wetland vegetation and hydrology. This was the only modification to the Wetland D boundary

LEVEL 2 WETLAND DELINEATION REPORT

Flag points A124-A134 were moved north to include additional wetland acreage. This new line follows the vegetation break and closely follows an earlier wetland delineation flag line. In addition, flag points A40 and 41 were moved south and west to include additional wetland acreage.

LEVEL 2 WETLAND DELINEATION REPORT

III. Results and Wetland Information

A. Wetland A

Circular 39: Type 3

Cowardin: PEMF

Eggers and Reed Field Classification: Shallow Marsh

Soil Mapping Unit: Histosols (Hydric)

No. Transects: 4

No. Additional Sample Points: 1

Wetland A is located 200 yards northeast of the intersection of Heritage Drive, Roberts Road, and Leander Avenue. A total of four transects (A1, A2, A3, A5), as well as 1 additional sample point (A4-Wet), were collected to delineate the western portion of the wetland complex that was located within the project area.

Wetland sample points (A1-Wet, A2-Wet1, A2-Wet2, A2-Wet3, A3-Wet, A4-Wet, A5-Wet) were taken adjacent to a visible vegetation transition. Dominant vegetation was chufa (*Cyperus esculentus*), barnyard grass (*Echinochloa crus-galli*), balsam poplar (*Populus balsamifera*), pussy willow (*Salix discolor*), reed canary grass (*Phalaris arundinaceae*), yellow foxtail (*Setaria pumila*), red-root flatsedge (*Cyperus erythrorhizos*), eastern cottonwood (*Populus deltoides*), and common fox sedge (*Carex stipata*). Hydric soils were mostly comprised of black peaty loams with levels of reddish brown to brown concentrations within the pore lining or matrix, observed starting at or just below the surface. This was commonly followed by a dark brown to dark yellowish brown sandy loam which continued to twenty inches (20") or to a rock restrictive rock layer. Hydric soil indicators reached were redox dark surface (F6) and depleted below dark surface (A11). Primary hydrology indicators that were commonly observed were oxidized rhizospheres on living roots (C3) with secondary indicators of saturation visible on aerial imagery (C9) and FAC-neutral test (D5) observed at all sample points.

Accompanying upland points (A1-Up, A2-Up, A3-Up, A5-Up, A5-Up 2) were taken on the opposing side of the vegetation transition. Dominant vegetation was barnyard grass (*Echinochloa crus-galli*), yellow foxtail (*Setaria pumila*), redroot flatsedge (*Cyperus erythrorhizos*), prairie fleabane (*Erigeron strigosus*), Kentucky blue grass (*Poa pratensis*), quaking aspen (*Populus tremuloides*), pussy willow (*Salix discolor*), and reed canary grass (*Phalaris arundinacea*). Surface soils commonly consisted of a black to very dark brown loam. This was predominantly followed by a brown to dark yellow brown layer comprised of a sand or mostly sand texture. A restrictive layer was observed at most locations before a depth of twenty inches (20") could be reached. No upland sample point included primary indicators of hydric soils or hydrology.

A total of 137 (A1-A134) delineation flags were placed along an elevation/topographic break, as dictated by the lack of hydrology indicators and shift in dominant vegetation from wetland to upland species. The Wetland A boundary is outlined in **Appendix B, Figures 4 and 5**.

LEVEL 2 WETLAND DELINEATION REPORT

B. Wetland B

Circular 39: Type 4

Cowardin: PUBDf

Eggers and Reed Field Classification: Deep Marsh

Soil Mapping Unit: Histosols (Hydric)

No. Transects: 2

No. Additional Sample Points: 0

Wetland B is located 50 yards north of Wetland A and is centrally located in the project area. A total of two transects (B1 and B2) were collected to delineate the eastern boundary of the wetland complex that was located within the project area.

Wetland sample points (B1-Wet and B2-Wet) were collected on the southern and northern toe of a slope that surrounded the delineated portion of the wetland. Dominant vegetation was reed canary grass (*Phalaris arundinacea*). Soils consisted of a black mucky mineral followed by a gray to grayish brown layer with predominate sand texture. A restrictive layer was observed at sample point B2-Wet at 16 inches. Primary soil indicators reached were depleted below dark surface (A11) and sandy mucky mineral (S1). Primary hydrology indicators included high water table (A2) and saturation (A3).

Upland points (B1-Up and B2-Up) were collected on the top of bank or slope, adjacent to their respective wetland points. Dominant vegetation was reed canary grass (*Phalaris arundinacea*). Soils consisted completely of black loam/sandy loam. A restrictive layer was observed at sample point B2-Up at six inches (6"). No primary hydric soil or hydrology indicators were observed at upland sample points.

A total of 41 (B1-B41) delineation flags were placed along an elevation/topographic break from wetland to upland, as dictated by hydrology and soil indicators. The Wetland B boundary is outlined in *Appendix B, Figures 4 and 5*.

C. Wetland C

Circular 39: Type 4

Cowardin: PUBDf

Eggers and Reed Field Classification: Deep Marsh

Soil Mapping Unit: Histosols (Hydric)

No. Transects: 1

No. Additional Sample Points: 0

Wetland C is located 70 yards northeast of Wetland B and is centrally located in the project area. One transect (C1) was collected to delineate the boundary of the wetland. Wetland sample point (C1-Wet) was collected at the toe of the slope that surrounds the wetland. Vegetation dominating the sample point was reed canary grass (*Phalaris arundinacea*). Soils consisted of black mucky mineral followed by dark gray loamy sand. A restrictive later was observed at eight inches (8") below the surface. The primary hydric soil indicator reached was sandy mucky mineral (S1). Primary hydrology indicators reached were high water table (A2), observed at 6 inches, and saturation (A3), observed at the surface.

LEVEL 2 WETLAND DELINEATION REPORT

Upland sample point (C1-Up) was collected just east from the wetland point and further up the slope. Dominant vegetation was reed canary grass (*Phalaris arundinacea*). Soils consisted of a black loam layer followed by a dark yellowish brown sandy loam with yellowish brown concentrations in the matrix. No primary hydric soil or hydrology indicators were observed at the upland point.

A total of 23 (C1-C23) delineation flags were placed along an elevation/topographic break from wetland to upland, as dictated by the hydrology and soil indicators. The Wetland C boundary is outlined in **Appendix B, Figures 4 and 6**.

D. Wetland D

Circular 39: Type 2

Cowardin: PEM1B

Eggers and Reed Field Classification: Fresh (Wet) Meadow

Soil Mapping Unit: Histosols (Hydric)

No. Transects: 1

No. Additional Sample Points: 1

Wetland D is located 160 yards north of sample point E and a quarter mile south of the northern boundary of the project area. One transect (D1) along with one additional sample point (D2-Up) were collected to delineate the boundary of the wetland.

Wetland sample point (D1-Wet) was collected on the northwest toe of the slope that surrounds the wetland. Dominant vegetation was quaking aspen (*Populus tremuloides*), European buckthorn (*Rhamnus cathartica*), and reed canary grass (*Phalaris arundinacea*). Soils consisted of very dark brown sandy loam followed by a layer of very dark brown sandy loam with dark reddish brown concentrations in the matrix. A restrictive hard surface was reached eight inches (8") below the surface. Hydric soil indicator sandy redox (S5) was met. Hydrology indicators included surface water (A1), high water table (A2), and saturation (A3).

Upland sample points (D1-Up and D2-Up) were collected adjacent to the wetland point and at the eastern extent of the wetland, respectfully. Dominant vegetation was eastern cottonwood (*Populus deltoides*), quaking aspen (*Populus tremuloides*), European buckthorn (*Rhamnus cathartica*), Kentucky blue grass (*Poa pratensis*), reed canary grass (*Phalaris arundinacea*), and redroot flatsedge (*Cyperus erythrorhizos*). Soils consisted of very dark brown to very dark grayish brown silt and sandy loams followed by a reddish brown or dark yellowish brown sand or sandy loam. Neither point satisfies all three wetland characteristics: hydrophytic vegetation, hydric soils, and wetland hydrology.

A total of 25 (D1-D25) delineation flags were placed along an elevation/topographic break from wetland to upland, as dictated by the hydrology, vegetation changes, and soil indicators. The Wetland D boundary is outlined in **Appendix B, Figures 4 and 6**.

LEVEL 2 WETLAND DELINEATION REPORT

IV. Additional Sampled Areas

A. Sample Point E

Circular 39: N/A

Cowardin: N/A

Eggers and Reed Field Classification: N/A

Soil Mapping Unit: Pomroy (Non-hydric)

No. Transects: 0

No. Additional Sample Points: 1

Sample Point E was taken 75 yards northwest of Wetland C and 160 yards south of wetland D. One sample point was collected to determine if the location was wetland.

The only dominant species observed was barnyard grass (*Echinochloa crus-galli*). Soil samples taken consisted of a black loam underlain by dark yellowish brown sand which was followed by brown sandy clay with brownish yellow concentrations in the matrix. No hydric soil indicators were observed. The hydrology indicator observed was Surface water (A1) and Saturation (A3), however soil was dry below two inches (2") of the soil surface, suggesting that the surface water and saturation was from a recent rain event and did not persist otherwise.

Due to lacking hydric soil indicators or saturation found below two inches (2") of the soil surface, it was determined that this sample point was not wetland. Sample Point E is shown in *Appendix B, Figures 4 and 6*.

B. Top of Bank (TOB)

Circular 39: N/A

Cowardin: N/A

Eggers and Reed Field Classification: N/A

Soil Mapping Unit: Histosols (Hydric)

No. Transects: 0

No. Additional Sample Points: 0

Top of bank (TOB) points mark a channel that connects Wetland B to Wetland C. This feature appeared to be man-made with a deep water channel and steep banks on either side. Due to the nature of the feature, it was not delineated but GPS points were taken on the eastern edge as it connects delineated wetlands.

A total of twelve (TOB1-TOB12) points were marked along the top of bank using the GPS unit. These points mark the eastern boundary of the feature and are shown in *Appendix B, Figures 4, 5 and 6*.

LEVEL 2 WETLAND DELINEATION REPORT

V. Closing Statements

This wetland delineation report was completed by Carli Ewert and Reed Schwarting of WSB & Associates and is being submitted as a request for approval of Wetland Type and Boundary of the wetland described herein. The application for Boundary and Type Approval is included along with this report.

LEVEL 2 WETLAND DELINEATION REPORT

VI. References

The following sources of information were reviewed to assist in performing the wetland delineation.

Literature Sources

- Board of Water and Soil Resources. 2009. Wetland Conservation Act Rules, Chapter 8420. Print Communication Division, St. Paul.
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Appendix A

Appendix A:

Figure 1 – Project Location

Figure 2 – National Wetlands Inventory and DNR Public Waters

Figure 3 – Stearns County Soil Survey

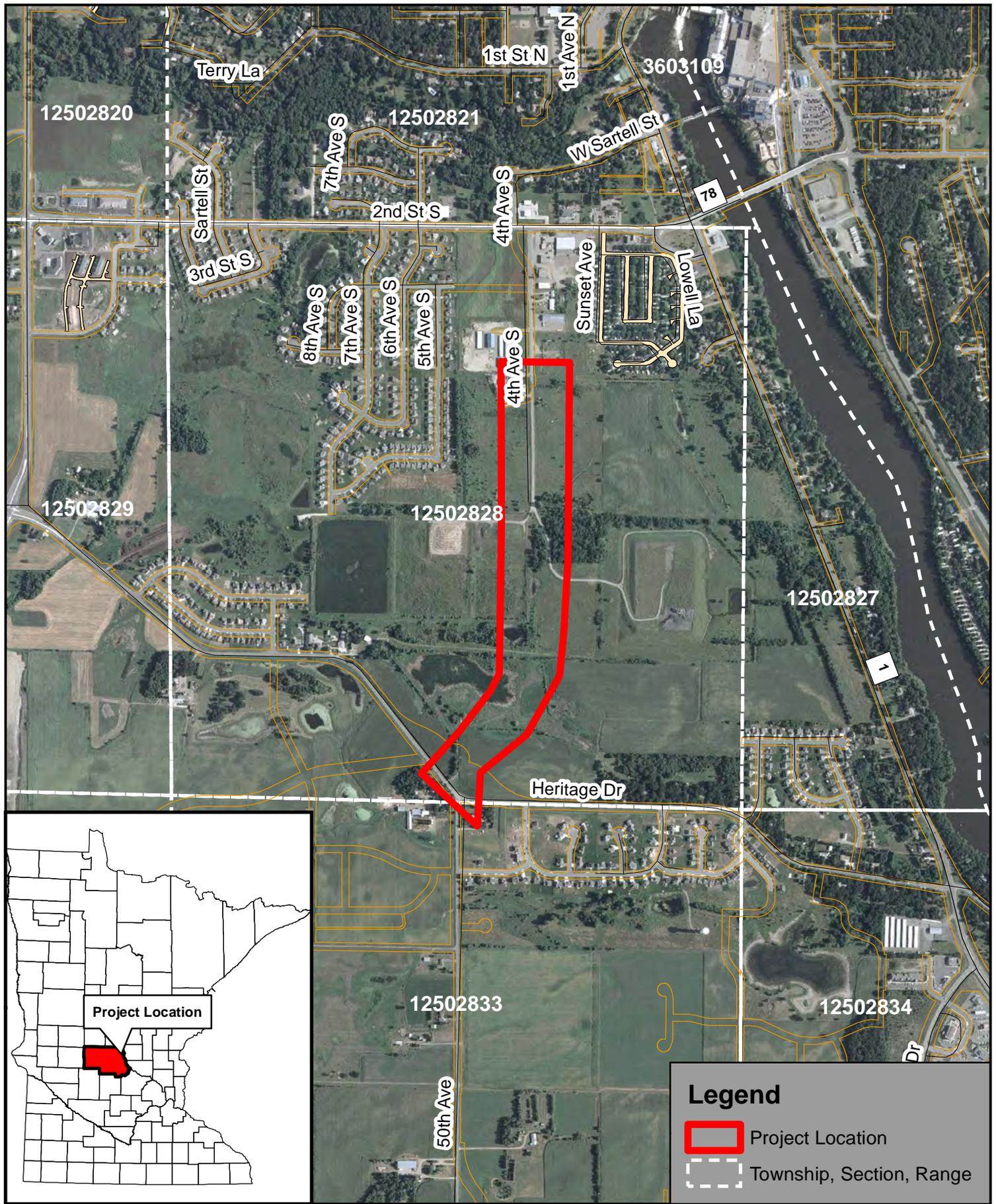


Figure 1. Project Location
50th Avenue South
City of Sartell, MN

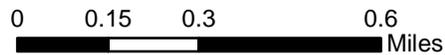
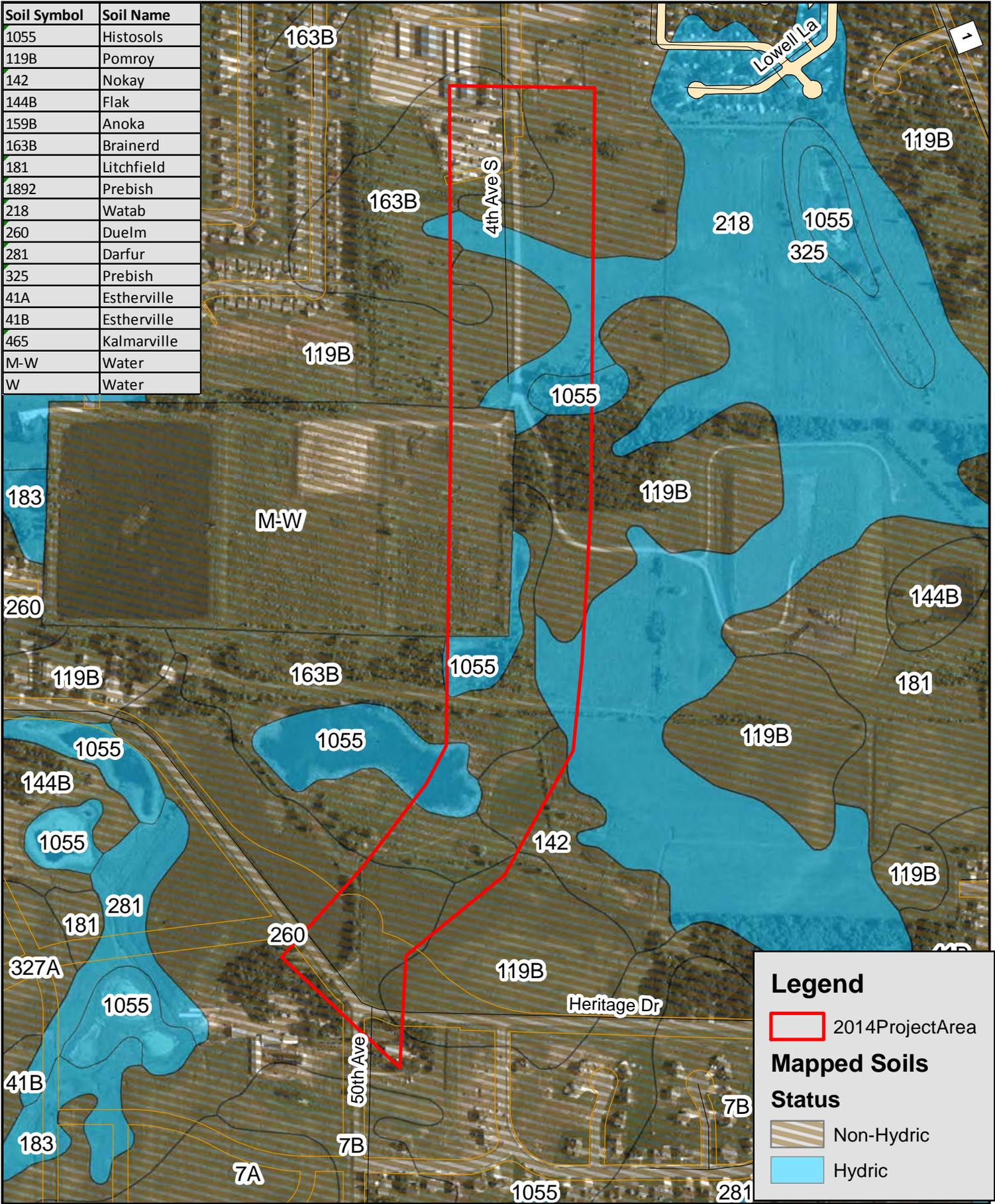




Figure 2. National Wetland Inventory and DNR Public Waters
50th Avenue South
City of Sartell, MN



Soil Symbol	Soil Name
1055	Histosols
119B	Pomroy
142	Nokay
144B	Flak
159B	Anoka
163B	Brainerd
181	Litchfield
1892	Prebish
218	Watab
260	Duelm
281	Darfur
325	Prebish
41A	Estherville
41B	Estherville
465	Kalmarville
M-W	Water
W	Water



Legend

2014ProjectArea

Mapped Soils

Status

Non-Hydric

Hydric



Figure 3. Stearns County Soil Survey
50th Avenue South
City of Sartell, MN

0 0.1 0.2 0.4 Miles

N

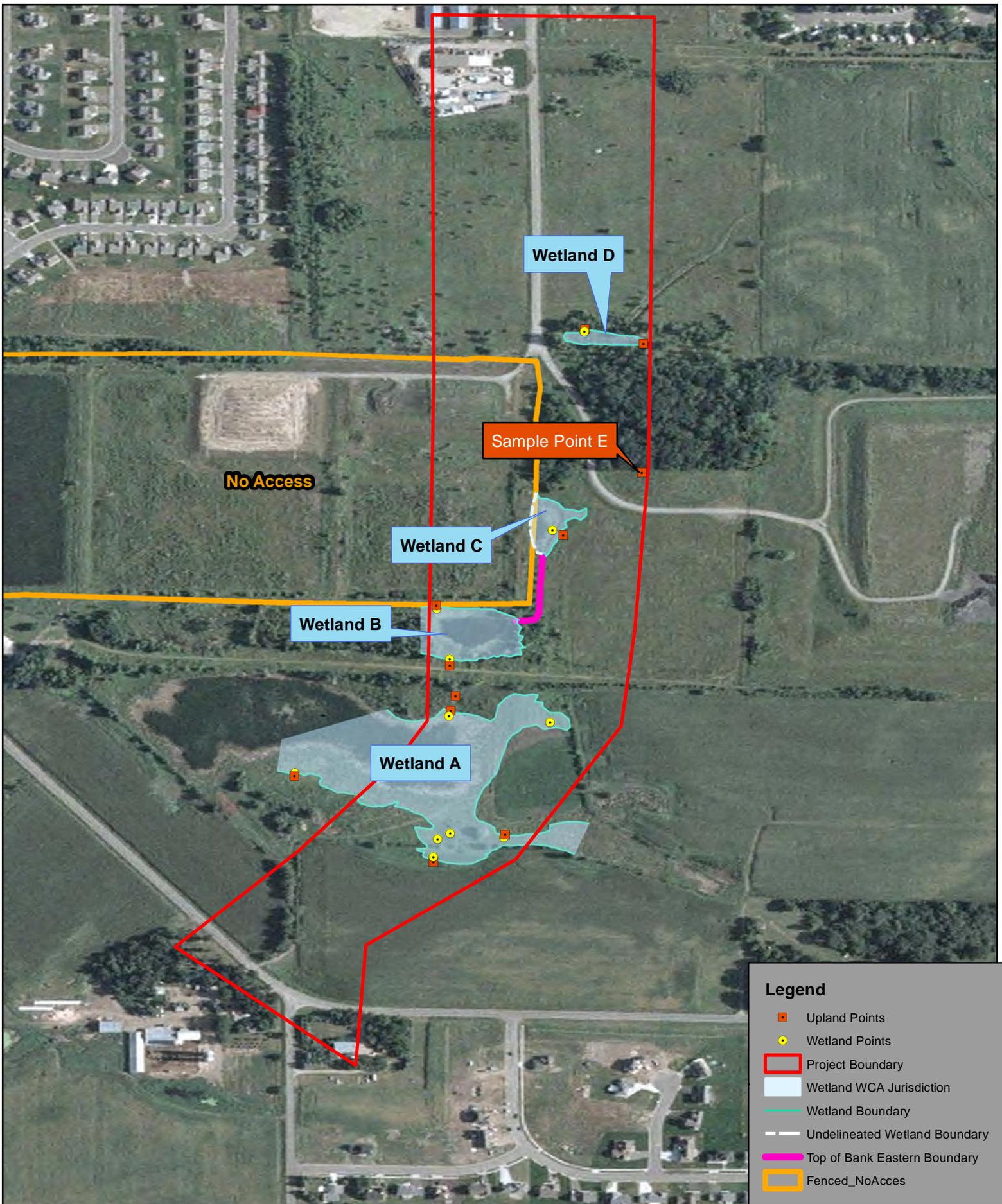
Appendix B

Appendix B:

Figure 4 – Wetland Boundary Map

Figure 5 – Wetland Delineation (Southern Half)

Figure 6 – Wetland Delineation (Northern Half)
Delineation Data Sheets



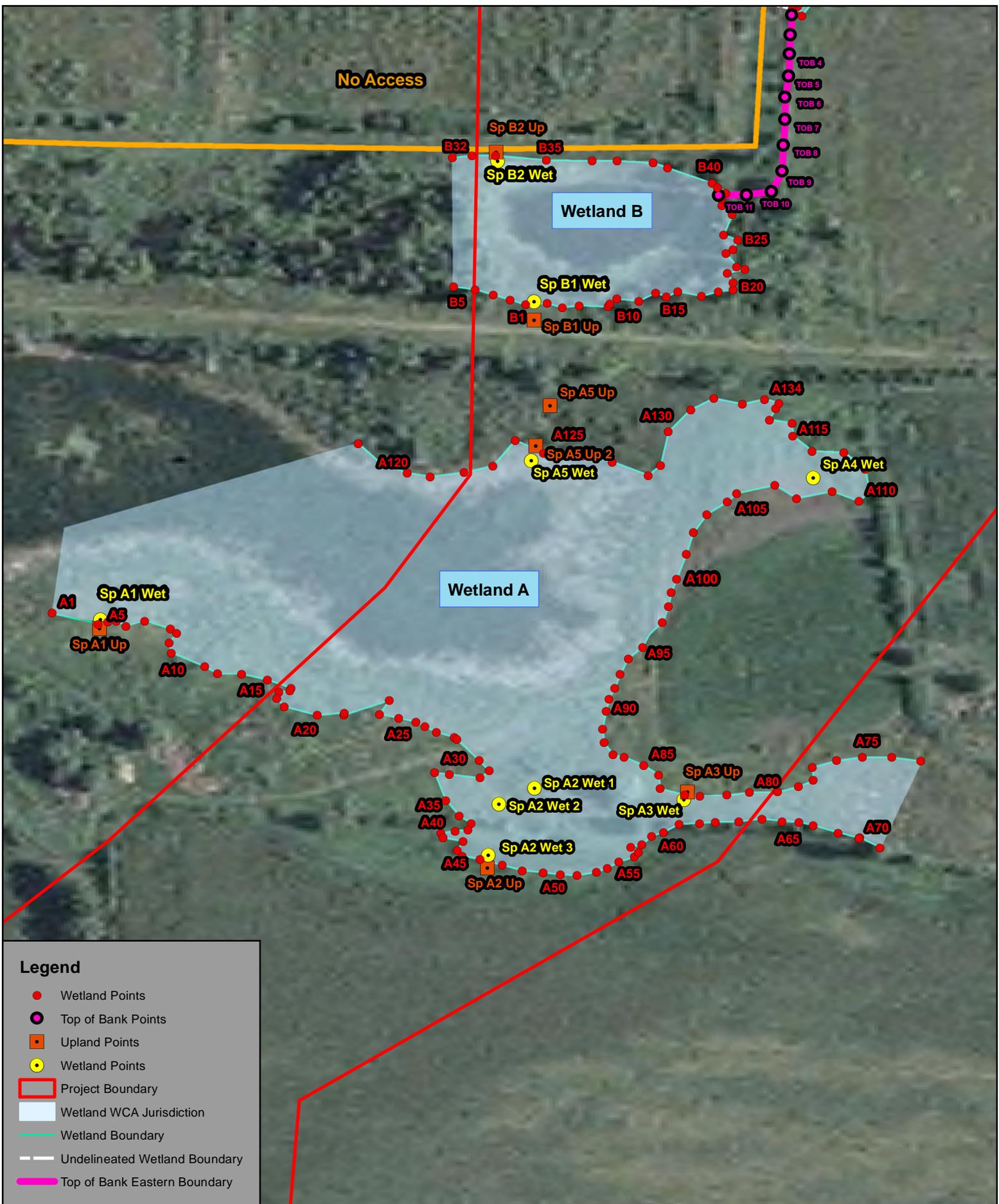
Legend

- Upland Points
- Wetland Points
- Project Boundary
- Wetland WCA Jurisdiction
- Wetland Boundary
- Undelineated Wetland Boundary
- Top of Bank Eastern Boundary
- Fenced_NoAcces



Figure 4. Wetland Boundary
50th Avenue South
City of Sartell, MN





Legend

- Wetland Points
- Top of Bank Points
- Upland Points
- Wetland Points
- ▭ Project Boundary
- ▭ Wetland WCA Jurisdiction
- Wetland Boundary
- Undelineated Wetland Boundary
- Top of Bank Eastern Boundary

Figure 5. Wetland Delineation (Southern half)
50th Avenue South
City of Sartell, MN

0 0.0225 0.045 0.09 Miles





Figure 6. Wetland Delineation (Northern Half)
 50th Avenue South
 City of Sartell, MN



WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 50th Avenue Reconstruction City/County: Sartell/ Stearns Sampling Date: 8/18/2014 11:41:33 AM
 Applicant/Owner: City of Sartell State: MN Sampling Point: A1 Up
 Investigator(s): Carli Ewert & Reed Schwarting Section, Township, Range: Section 28, T125N, R28W
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____
 Slope (%): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Brainerd (163B) NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
	<u>0</u> = Total Cover																	
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
	<u>0</u> = Total Cover																	
<u>Herb Stratum</u> (Plot size: <u>5</u>)																		
1. <u>Echinochloa crus-galli (barnyard grass)</u>	<u>30</u>	Yes	FACW															
2. <u>Agalinis paupercula (s.flower false foxglove)</u>	<u>7</u>	No	OBL															
3. <u>Trifolium repens (whitie clover)</u>	<u>3</u>	No	FACU															
4. <u>Eupatorium perfoliatum (common boneset)</u>	<u>1</u>	No	OBL															
5. <u>Setaria pumila (yellow foxtail)</u>	<u>80</u>	Yes	FAC															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
	<u>121</u> = Total Cover																	
<u>Woody Vine Stratum</u> (Plot size: <u>30</u>)																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
	<u>0</u> = Total Cover																	
Remarks: (Include photo numbers here or on a separate sheet.)				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)														
				Prevalence Index worksheet: <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%; text-align: right;">Total % Cover of:</td> <td style="width:50%; text-align: left;">Multiply by:</td> </tr> <tr> <td>OBL species <u>8</u></td> <td>x 1 = <u>8</u></td> </tr> <tr> <td>FACW species <u>30</u></td> <td>x 2 = <u>60</u></td> </tr> <tr> <td>FAC species <u>80</u></td> <td>x 3 = <u>240</u></td> </tr> <tr> <td>FACU species <u>3</u></td> <td>x 4 = <u>12</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>121</u> (A)</td> <td><u>80</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.64</u>	Total % Cover of:	Multiply by:	OBL species <u>8</u>	x 1 = <u>8</u>	FACW species <u>30</u>	x 2 = <u>60</u>	FAC species <u>80</u>	x 3 = <u>240</u>	FACU species <u>3</u>	x 4 = <u>12</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>121</u> (A)	<u>80</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>8</u>	x 1 = <u>8</u>																	
FACW species <u>30</u>	x 2 = <u>60</u>																	
FAC species <u>80</u>	x 3 = <u>240</u>																	
FACU species <u>3</u>	x 4 = <u>12</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>121</u> (A)	<u>80</u> (B)																	
				Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain)														
				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____														

SOIL

Sampling Point: A1 Up

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 12	10YR 2/1	100					L	
12 - 18	10YR 4/6	100					S	
18 - 24	10YR 4/3	97	10YR 6/8	3.00	C	M	SC	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)	Indicators for Problematic Hydric Soils³: <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
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³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): <u>0.00</u>	Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>
---	---

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 50th Avenue Reconstruction City/County: Sartell/ Stearns Sampling Date: 8/18/2014 12:17:39 PM
 Applicant/Owner: City of Sartell State: MN Sampling Point: A1 Wet
 Investigator(s): Carli Ewert & Reed Schwarting Section, Township, Range: Section 28, T125N, R28W
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____
 Slope (%): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Brainerd (163B) NWI classification: PEMB

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: _____	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
	<u>0</u>	= Total Cover																
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
	<u>0</u>	= Total Cover																
<u>Herb Stratum</u> (Plot size: <u>5</u>)																		
1. <u>Cyperus esculentus (chufa)</u>	<u>80</u>	<u>Yes</u>	<u>FACW</u>															
2. <u>Echinochloa crus-galli (barnyard grass)</u>	<u>30</u>	<u>Yes</u>	<u>FACW</u>															
3. <u>Agalinis pauperula (s.flower false foxglove)</u>	<u>3</u>	<u>No</u>	<u>OBL</u>															
4. <u>Persicaria pensylvanica (pinkweed)</u>	<u>2</u>	<u>No</u>	<u>FACW</u>															
5. <u>Verbena hastata (simpler's joy)</u>	<u>2</u>	<u>No</u>	<u>FACW</u>															
6. <u>Setaria pumila (yellow foxtail)</u>	<u>5</u>	<u>No</u>	<u>FAC</u>															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
	<u>122</u>	= Total Cover																
<u>Woody Vine Stratum</u> (Plot size: <u>30</u>)																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
	<u>0</u>	= Total Cover																
Remarks: (Include photo numbers here or on a separate sheet.)				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)														
				Prevalence Index worksheet: <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%; text-align: right;">Total % Cover of:</td> <td style="width:50%; text-align: left;">Multiply by:</td> </tr> <tr> <td>OBL species <u>3</u></td> <td>x 1 = <u>3</u></td> </tr> <tr> <td>FACW species <u>114</u></td> <td>x 2 = <u>228</u></td> </tr> <tr> <td>FAC species <u>5</u></td> <td>x 3 = <u>15</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>122</u> (A)</td> <td><u>246</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.02</u>	Total % Cover of:	Multiply by:	OBL species <u>3</u>	x 1 = <u>3</u>	FACW species <u>114</u>	x 2 = <u>228</u>	FAC species <u>5</u>	x 3 = <u>15</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>122</u> (A)	<u>246</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>3</u>	x 1 = <u>3</u>																	
FACW species <u>114</u>	x 2 = <u>228</u>																	
FAC species <u>5</u>	x 3 = <u>15</u>																	
FACU species <u>0</u>	x 4 = <u>0</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>122</u> (A)	<u>246</u> (B)																	
				Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain)														
				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____														

SOIL

Sampling Point: A1 Wet

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 6	10YR 2/1	100	2.5YR 2.5/4	2.00	C	PL	L	
6 - 8	10YR 3/2	100					SL	
8 - 10	10YR 4/2	100					SL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input checked="" type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)	Indicators for Problematic Hydric Soils³: <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
---	---	---

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: <u>rock</u> Depth (inches): <u>10.00</u>	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
--	---

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 50th Avenue Reconstruction City/County: Sartell/ Stearns Sampling Date: 8/18/2014 3:20:37 PM
 Applicant/Owner: City of Sartell State: MN Sampling Point: A2 Wet1
 Investigator(s): Carli Ewert & Reed Schwarting Section, Township, Range: Section 28, T125N, R28W
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____
 Slope (%): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Brainerd (163B) NWI classification: PEMB

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: _____ _____ _____	

VEGETATION – Use scientific names of plants.

Stratum	Plot size	Absolute % Cover	Dominant Species?	Indicator Status															
Tree Stratum (Plot size: <u>30</u>)																			
1. <u>Populus balsamifera (balsam poplar)</u>		<u>25</u>	<u>Yes</u>	<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)														
2. _____																			
3. _____																			
4. _____																			
5. _____																			
		<u>25</u> = Total Cover																	
Sapling/Shrub Stratum (Plot size: <u>15</u>)																			
1. <u>Salix discolor (pussy willow)</u>		<u>30</u>	<u>Yes</u>	<u>FACW</u>	Prevalence Index worksheet: <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%;">Total % Cover of:</td> <td style="width:50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>2</u></td> <td>x 1 = <u>2</u></td> </tr> <tr> <td>FACW species <u>150</u></td> <td>x 2 = <u>300</u></td> </tr> <tr> <td>FAC species <u>2</u></td> <td>x 3 = <u>6</u></td> </tr> <tr> <td>FACU species <u>3</u></td> <td>x 4 = <u>12</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>157</u> (A)</td> <td><u>320</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.04</u>	Total % Cover of:	Multiply by:	OBL species <u>2</u>	x 1 = <u>2</u>	FACW species <u>150</u>	x 2 = <u>300</u>	FAC species <u>2</u>	x 3 = <u>6</u>	FACU species <u>3</u>	x 4 = <u>12</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>157</u> (A)	<u>320</u> (B)
Total % Cover of:	Multiply by:																		
OBL species <u>2</u>	x 1 = <u>2</u>																		
FACW species <u>150</u>	x 2 = <u>300</u>																		
FAC species <u>2</u>	x 3 = <u>6</u>																		
FACU species <u>3</u>	x 4 = <u>12</u>																		
UPL species <u>0</u>	x 5 = <u>0</u>																		
Column Totals: <u>157</u> (A)	<u>320</u> (B)																		
2. <u>Acer negundo (ash-leaf maple)</u>		<u>2</u>	<u>No</u>	<u>FAC</u>															
3. _____																			
4. _____																			
5. _____																			
		<u>32</u> = Total Cover																	
Herb Stratum (Plot size: <u>5</u>)																			
1. <u>Phalaris arundinacea (reed canary grass)</u>		<u>95</u>	<u>Yes</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain)														
2. <u>Solidago canadensis (Canadian goldenrod)</u>		<u>3</u>	<u>No</u>	<u>FACU</u>															
3. <u>Eupatorium perfoliatum (common boneset)</u>		<u>2</u>	<u>No</u>	<u>OBL</u>															
4. _____																			
5. _____																			
6. _____																			
7. _____																			
8. _____																			
9. _____																			
10. _____																			
		<u>100</u> = Total Cover																	
Woody Vine Stratum (Plot size: <u>30</u>)																			
1. _____					Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____														
2. _____																			
		<u>0</u> = Total Cover																	

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

SOIL

Sampling Point: A2 Wet1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 8	10YR 2/1	100					L	
8 - 20	10YR 4/1	98	10YR 6/8	2.00	C	M	S	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input checked="" type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)	Indicators for Problematic Hydric Soils³: <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
--	--	---

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
---	---

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 50th Avenue Reconstruction City/County: Sartell/ Stearns Sampling Date: 8/18/2014 3:43:38 PM
 Applicant/Owner: City of Sartell State: MN Sampling Point: A2 Wet2
 Investigator(s): Carli Ewert & Reed Schwarting Section, Township, Range: Section 28, T125N, R28W
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____
 Slope (%): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Brainerd (163B) NWI classification: PEMB

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: _____ _____ _____	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
<u>Herb Stratum</u> (Plot size: <u>5</u>)				
1. <u>Echinochloa crus-galli (barnyard grass)</u>	<u>80</u>	<u>Yes</u>	<u>FACW</u>	
2. <u>Rumex crispus (curly dock)</u>	<u>10</u>	<u>No</u>	<u>FAC</u>	
3. <u>Cyperus erythrorhizos (redroot flatsedge)</u>	<u>4</u>	<u>No</u>	<u>OBL</u>	
4. <u>Ambrosia artemisiifolia (common ragweed)</u>	<u>2</u>	<u>No</u>	<u>FACU</u>	
5. <u>Persicaria pensylvanica (pinkweed)</u>	<u>1</u>	<u>No</u>	<u>FACW</u>	
6. <u>Setaria pumila (yellow foxtail)</u>	<u>50</u>	<u>Yes</u>	<u>FAC</u>	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
	<u>147</u>	= Total Cover		
<u>Woody Vine Stratum</u> (Plot size: <u>30</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
 Total Number of Dominant Species Across All Strata: 2 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by: _____
 OBL species 4 x 1 = 4
 FACW species 81 x 2 = 162
 FAC species 60 x 3 = 180
 FACU species 2 x 4 = 8
 UPL species 0 x 5 = 0
 Column Totals: 97 (A) 204 (B)
 Prevalence Index = B/A = 3.65

Hydrophytic Vegetation Indicators:
 ___ 1 - Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test is >50%
 ___ 3 - Prevalence Index is ≤3.0¹
 ___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes No _____

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

SOIL

Sampling Point: A2 Wet2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 10	10YR 2/1	98	5YR 4/6	2.00	C	M	L	
10 - 20	10YR 3/3	98	10YR 6/8	2.00	C	M	SL	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.					² Location: PL=Pore Lining, M=Matrix.			
Hydric Soil Indicators:			Indicators for Problematic Hydric Soils³:					
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> Coast Prairie Redox (A16)		
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> Dark Surface (S7)		
<input type="checkbox"/> Black Histic (A3)			<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Iron-Manganese Masses (F12)		
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Mucky Mineral (F1)			<input type="checkbox"/> Very Shallow Dark Surface (TF12)		
<input type="checkbox"/> Stratified Layers (A5)			<input type="checkbox"/> Loamy Gleyed Matrix (F2)			<input type="checkbox"/> Other (Explain in Remarks)		
<input type="checkbox"/> 2 cm Muck (A10)			<input type="checkbox"/> Depleted Matrix (F3)			³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input checked="" type="checkbox"/> Redox Dark Surface (F6)					
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Depleted Dark Surface (F7)					
<input type="checkbox"/> Sandy Mucky Mineral (S1)			<input type="checkbox"/> Redox Depressions (F8)					
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)								
Restrictive Layer (if observed):								
Type: _____								
Depth (inches): _____						Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Remarks:								

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)	
Field Observations:		
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	
Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 50th Avenue Reconstruction City/County: Sartell/ Stearns Sampling Date: 8/18/2014 2:47:02 PM
 Applicant/Owner: City of Sartell State: MN Sampling Point: A2 Wet3
 Investigator(s): Carli Ewert & Reed Schwarting Section, Township, Range: Section 28, T125N, R28W
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____
 Slope (%): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Brainerd (163B) NWI classification: PEMB

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: _____ _____ _____	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
<u>Herb Stratum</u> (Plot size: <u>5</u>)				
1. <u>Cyperus erythrorhizos (red root flatsedge)</u>	<u>90</u>	<u>Yes</u>	<u>OBL</u>	
2. <u>Ambrosia artemisiifolia (common ragweed)</u>	<u>3</u>	<u>No</u>	<u>FACU</u>	
3. <u>Rumex crispus (curly dock)</u>	<u>3</u>	<u>No</u>	<u>FAC</u>	
4. <u>Alisma subcordatum (water plantain)</u>	<u>1</u>	<u>No</u>	<u>OBL</u>	
5. <u>Sonchus oleraceus (sow thistle)</u>	<u>1</u>	<u>No</u>	<u>FACU</u>	
6. <u>Setaria pumila (yellow foxtail)</u>	<u>10</u>	<u>No</u>	<u>FAC</u>	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
	<u>108</u>	= Total Cover		
<u>Woody Vine Stratum</u> (Plot size: <u>30</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
 Total Number of Dominant Species Across All Strata: 1 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by: _____
 OBL species 91 x 1 = 91
 FACW species 0 x 2 = 0
 FAC species 13 x 3 = 39
 FACU species 4 x 4 = 16
 UPL species 0 x 5 = 0
 Column Totals: 108 (A) 146 (B)
 Prevalence Index = B/A = 1.35

Hydrophytic Vegetation Indicators:
 ___ 1 - Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test is >50%
 3 - Prevalence Index is ≤3.0¹
 ___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes No _____

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

SOIL

Sampling Point: A2 Wet3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 4	10YR 2/1	100					SL	
4 - 8	10YR 2/1	93	7.5YR 2.5/3	2.00	C	M	SL	
			10YR 5/3	5.00	D	M		
8 - 16	10YR 4/6	100	10YR 6/8	5.00	C	M	S	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	Indicators for Problematic Hydric Soils³: <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input checked="" type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
---	--

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
---	---

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 50th Avenue Reconstruction City/County: Sartell/ Stearns Sampling Date: 8/18/2014 4:30:00 PM
 Applicant/Owner: City of Sartell State: MN Sampling Point: A2 Up
 Investigator(s): Carli Ewert & Reed Schwarting Section, Township, Range: Section 28, T125N, R28W
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____
 Slope (%): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Brainerd (163B) NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: _____ _____ _____	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
<u>Herb Stratum</u> (Plot size: <u>5</u>)				
1. <u>Cyperus erythrorhizos (redroot flatsedge)</u>	<u>15</u>	<u>Yes</u>	<u>OBL</u>	
2. <u>Erigeron strigosus (prairie fleabane)</u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>	
3. <u>Ambrosia artemisiifolia (common ragweed)</u>	<u>3</u>	<u>No</u>	<u>FACU</u>	
4. <u>Echinochloa crus-galli (barnyard grass)</u>	<u>1</u>	<u>No</u>	<u>FACW</u>	
5. <u>Rumex crispus (curly dock)</u>	<u>1</u>	<u>No</u>	<u>FAC</u>	
6. <u>Setaria pumila (yellow foxtail)</u>	<u>75</u>	<u>Yes</u>	<u>NA</u>	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
	<u>110</u>	= Total Cover		
<u>Woody Vine Stratum</u> (Plot size: <u>30</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
Remarks: (Include photo numbers here or on a separate sheet.)				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
 Total Number of Dominant Species Across All Strata: 2 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by: _____
 OBL species 15 x 1 = 15
 FACW species 1 x 2 = 2
 FAC species 76 x 3 = 228
 FACU species 18 x 4 = 72
 UPL species 0 x 5 = 0
 Column Totals: 110 (A) 317 (B)
 Prevalence Index = B/A = 2.88

Hydrophytic Vegetation Indicators:
 ___ 1 - Rapid Test for Hydrophytic Vegetation
 ___ 2 - Dominance Test is >50%
 3 - Prevalence Index is ≤3.0¹
 ___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 50th Avenue Reconstruction City/County: Sartell/ Stearns Sampling Date: 8/19/2014 12:15:37 PM
 Applicant/Owner: City of Sartell State: MN Sampling Point: A3 Up
 Investigator(s): Carli Ewert & Reed Schwarting Section, Township, Range: Section 28, T125N, R28W
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____
 Slope (%): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Brainerd (163B) NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: _____ _____ _____	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
<u>Herb Stratum</u> (Plot size: <u>5</u>)				
1. <u>Poa pratensis (Kentucky blue grass)</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>	
2. <u>Lycopus uniflorus (northern bugleweed)</u>	<u>5</u>	<u>No</u>	<u>OBL</u>	
3. <u>Phalaris arundinacea (reed canary grass)</u>	<u>5</u>	<u>No</u>	<u>FACW</u>	
4. <u>Stachys palustris (hedge-nettle)</u>	<u>3</u>	<u>No</u>	<u>OBL</u>	
5. <u>Echinochloa crus-galli (barnyard grass)</u>	<u>2</u>	<u>No</u>	<u>FACW</u>	
6. <u>Juncus tenuis (slender rush)</u>	<u>1</u>	<u>No</u>	<u>FAC</u>	
7. <u>Persicaria pensylvanica (pinkweed)</u>	<u>1</u>	<u>No</u>	<u>FACW</u>	
8. <u>Setaria pumila (yellow foxtail)</u>	<u>10</u>	<u>No</u>	<u>FAC</u>	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
	<u>47</u>	= Total Cover		
<u>Woody Vine Stratum</u> (Plot size: <u>30</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
Remarks: (Include photo numbers here or on a separate sheet.)				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
 Total Number of Dominant Species Across All Strata: 1 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by: _____
 OBL species 8 x 1 = 8
 FACW species 8 x 2 = 16
 FAC species 31 x 3 = 93
 FACU species 0 x 4 = 0
 UPL species 0 x 5 = 0
 Column Totals: 47 (A) 117 (B)
 Prevalence Index = B/A = 2.49

Hydrophytic Vegetation Indicators:
 ___ 1 - Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test is >50%
 3 - Prevalence Index is ≤3.0¹
 ___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes No _____

SOIL

Sampling Point: A3 Up

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 12	10YR 2/1	100	5YR 4/6	2.00	C	M	L	
			10YR 4/6	3.00	C	M		
12 - 15	10YR 3/3	100	10YR 6/8	1.00	C	M	L	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.					² Location: PL=Pore Lining, M=Matrix.			
Hydric Soil Indicators:			Indicators for Problematic Hydric Soils³:					
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)			<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input checked="" type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)			<input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)		
Restrictive Layer (if observed): Type: <u>rock</u> Depth (inches): <u>15.00</u>						Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Remarks:								

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____		Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 50th Avenue Reconstruction City/County: Sartell/ Stearns Sampling Date: 8/19/2014 11:11:57 AM
 Applicant/Owner: City of Sartell State: MN Sampling Point: A3 Wet
 Investigator(s): Carli Ewert & Reed Schwarting Section, Township, Range: Section 28, T125N, R28W
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____
 Slope (%): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Brainerd (163B) NWI classification: PEMB

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: _____	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
	<u>0</u> = Total Cover			
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)				
1. <u>Populus deltoides (eastern cottonwood)</u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
	<u>5</u> = Total Cover			
<u>Herb Stratum</u> (Plot size: <u>5</u>)				
1. <u>Phalaris arundinacea (reed canary grass)</u>	<u>50</u>	<u>Yes</u>	<u>FACW</u>	
2. <u>Carex stipata (common fox sedge)</u>	<u>30</u>	<u>Yes</u>	<u>OBL</u>	
3. <u>Poa pratensis (Kentucky blue grass)</u>	<u>20</u>	<u>No</u>	<u>FAC</u>	
4. <u>Eupatorium perfoliatum (common boneset)</u>	<u>3</u>	<u>No</u>	<u>OBL</u>	
5. <u>Solidago gigantea (giant goldenrod)</u>	<u>2</u>	<u>No</u>	<u>FACW</u>	
6. <u>Stachys palustris (hedge-nettle)</u>	<u>2</u>	<u>No</u>	<u>OBL</u>	
7. <u>Juncus canadensis (Canadian rush)</u>	<u>1</u>	<u>No</u>	<u>OBL</u>	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
	<u>108</u> = Total Cover			
<u>Woody Vine Stratum</u> (Plot size: <u>30</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
	<u>0</u> = Total Cover			
Remarks: (Include photo numbers here or on a separate sheet.)				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
 Total Number of Dominant Species Across All Strata: 3 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by: _____
 OBL species 36 x 1 = 36
 FACW species 52 x 2 = 104
 FAC species 25 x 3 = 75
 FACU species 0 x 4 = 0
 UPL species 0 x 5 = 0
 Column Totals: 113 (A) 215 (B)
 Prevalence Index = B/A = 1.9

Hydrophytic Vegetation Indicators:
 ___ 1 - Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test is >50%
 3 - Prevalence Index is ≤3.0¹
 ___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes No _____

SOIL

Sampling Point: A3 Wet

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 5	10YR 2/1	100	7.5YR 4/6	2.00	C	M	L	
5 - 12	10YR 2/1	100	5YR 4/6	5.00	C	PL	L	
12 - 14	10YR 4/3	100					SL	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.					² Location: PL=Pore Lining, M=Matrix.			
Hydric Soil Indicators:						Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)			<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input checked="" type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)			<input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)		
Restrictive Layer (if observed): Type: <u>rock</u> Depth (inches): <u>14.00</u>						Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Remarks: 2 holes, same rock restrictive layer at both								

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	
	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)	
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____		
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 50th Avenue Reconstruction City/County: Sartell/ Stearns Sampling Date: 8/19/2014 1:47:44 PM
 Applicant/Owner: City of Sartell State: MN Sampling Point: A4 Wet
 Investigator(s): Carli Ewert & Reed Schwarting Section, Township, Range: Section 28, T125N, R28W
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____
 Slope (%): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Brainerd (163B) NWI classification: PEMB

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: _____	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
<u>Herb Stratum</u> (Plot size: <u>5</u>)				
1. <u>Echinochloa crus-galli (barnyard grass)</u>	<u>95</u>	<u>Yes</u>	<u>FACW</u>	
2. <u>Alisma subcordatum (water plantain)</u>	<u>2</u>	<u>No</u>	<u>OBL</u>	
3. <u>Persicaria amphibia (water smartweed)</u>	<u>2</u>	<u>No</u>	<u>OBL</u>	
4. <u>Rumex crispus (curly dock)</u>	<u>2</u>	<u>No</u>	<u>FAC</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
	<u>101</u>	= Total Cover		
<u>Woody Vine Stratum</u> (Plot size: <u>30</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
 Total Number of Dominant Species Across All Strata: 1 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>4</u>	x 1 = <u>4</u>
FACW species <u>95</u>	x 2 = <u>190</u>
FAC species <u>2</u>	x 3 = <u>6</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>101</u> (A)	<u>200</u> (B)

Prevalence Index = B/A = 1.98

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test is >50%
 3 - Prevalence Index is ≤3.0¹
 ___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes No _____

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

SOIL

Sampling Point: A4 Wet

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 8	10YR 2/1	95	5YR 3/4	5.00	C	PL	L	
8 - 15	10YR 4/3	85	5YR 3/4	15.00	C	M	L	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.					² Location: PL=Pore Lining, M=Matrix.			
Hydric Soil Indicators:						Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)			<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input checked="" type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)			<input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)		
Restrictive Layer (if observed): Type: <u>Restrictive layer</u> Depth (inches): <u>15.00</u>						Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Remarks:								

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 50th Avenue Reconstruction City/County: Sartell/Stearns Sampling Date: 9/19/2014 11:10:15 AM
 Applicant/Owner: City Sartell State: MN Sampling Point: A5 Up
 Investigator(s): Carili Ewert & Reed Schwarting Section, Township, Range: Section 28, T125N, R28W
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____
 Slope (%): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Brainerd (163B) NWI classification: PEMF

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: _____	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Populus tremuloides (quaking aspen)</u>	<u>25</u>	Yes	FAC	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>25</u> = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>120</u> x 2 = <u>240</u> FAC species <u>25</u> x 3 = <u>75</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>145</u> (A) <u>315</u> (B) Prevalence Index = B/A = <u>2.17</u>
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)				
1. <u>Salix discolor (pussy willow)</u>	<u>40</u>	Yes	FACW	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>40</u> = Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5</u>)				
1. <u>Phalaris arundinacea (reed canary grass)</u>	<u>80</u>	Yes	FACW	Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>80</u> = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>30</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
<u>0</u> = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)				

SOIL

Sampling Point: A5 Up

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 10	10YR 2/1	100					SL	
10 - 18	10YR 4/3	95	10YR 3/6	5.00	C	M	SL	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.					² Location: PL=Pore Lining, M=Matrix.			
Hydric Soil Indicators:						Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)			<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)			<input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)		
Restrictive Layer (if observed): Type: <u>rock</u> Depth (inches): <u>18.00</u>						Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Remarks:								

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____		Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 50th Avenue Reconstruction City/County: Sartell/ Stearns Sampling Date: 9/19/2014 11:39:59 AM
 Applicant/Owner: City of Sartell State: MN Sampling Point: A5 Up2
 Investigator(s): Carli Ewert & Reed Schwarting Section, Township, Range: Section 28, T125N, R28W
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____
 Slope (%): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Brainerd (163B) NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: _____	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
	<u>0</u> = Total Cover			
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)				
1. <u>Salix discolor (pussy willow)</u>	<u>50</u>	<u>Yes</u>	<u>FACW</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
	<u>50</u> = Total Cover			
<u>Herb Stratum</u> (Plot size: <u>5</u>)				
1. <u>Phalaris arundinacea (reed carnary grass)</u>	<u>100</u>	<u>Yes</u>	<u>FACW</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
	<u>100</u> = Total Cover			
<u>Woody Vine Stratum</u> (Plot size: <u>30</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
	<u>0</u> = Total Cover			

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
 Total Number of Dominant Species Across All Strata: 2 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by: _____
 OBL species 0 x 1 = 0
 FACW species 150 x 2 = 300
 FAC species 0 x 3 = 0
 FACU species 0 x 4 = 0
 UPL species 0 x 5 = 0
 Column Totals: 150 (A) 300 (B)
 Prevalence Index = B/A = 2

Hydrophytic Vegetation Indicators:
 ___ 1 - Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test is >50%
 3 - Prevalence Index is ≤3.0¹
 ___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes No _____

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

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 50th Avenue Reconstruction City/County: Sartell/ Stearns Sampling Date: 9/19/2014 11:19:28 AM
 Applicant/Owner: City of Sartell State: MN Sampling Point: A5 Wet
 Investigator(s): Carli Ewert & Reed Schwarting Section, Township, Range: Section 28, T125N, R28W
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____
 Slope (%): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Histosols (1055) NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: _____	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
	<u>0</u> = Total Cover			
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Salix discolor (pussy willow)</u>	<u>15</u>	<u>Yes</u>	<u>FACW</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
	<u>15</u> = Total Cover			
<u>Herb Stratum</u> (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Phalaris arundinacea (reed canary grass)</u>	<u>100</u>	<u>Yes</u>	<u>FACW</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
	<u>100</u> = Total Cover			
<u>Woody Vine Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
	<u>0</u> = Total Cover			

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
 Total Number of Dominant Species Across All Strata: 2 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>115</u>	x 2 = <u>230</u>
FAC species <u>0</u>	x 3 = <u>0</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>115</u> (A)	<u>230</u> (B)

Prevalence Index = B/A = 2

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test is >50%
 3 - Prevalence Index is ≤3.0¹
 ___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes No _____

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

SOIL

Sampling Point: A5 Wet

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 4	10YR 2/1	100					L	
4 - 8	10YR 3/1	100					C	
8 - 17	10YR 4/2	95	7.5YR 5/8	5.00	C	M	C	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input checked="" type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)	Indicators for Problematic Hydric Soils³: <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
--	--	---

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
---	---

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 50th Avenue Reconstruction City/County: Sartell/ Stearns Sampling Date: 8/19/2014 3:46:14 PM
 Applicant/Owner: City of Sartell State: MN Sampling Point: B1 Wet
 Investigator(s): Carli Ewert & Reed Schwarting Section, Township, Range: Section 8, T125N, R28W
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____
 Slope (%): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Histosols (1055) NWI classification: PUBFd

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: _____	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
	<u>0</u> = Total Cover			
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
	<u>0</u> = Total Cover			
<u>Herb Stratum</u> (Plot size: <u>5</u>)				
1. <u>Phalaris arundinacea (reed canary grass)</u>	<u>100</u>	<u>Yes</u>	<u>FACW</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
	<u>100</u> = Total Cover			
<u>Woody Vine Stratum</u> (Plot size: <u>30</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
	<u>0</u> = Total Cover			

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
 Total Number of Dominant Species Across All Strata: 1 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>100</u>	x 2 = <u>200</u>
FAC species <u>0</u>	x 3 = <u>0</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>100</u> (A)	<u>200</u> (B)

Prevalence Index = B/A = 2

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test is >50%
 3 - Prevalence Index is ≤3.0¹
 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes No _____

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

SOIL

Sampling Point: B1 Wet

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 8	10YR 2/1	100					MMI	mucky sand
8 - 16	10YR 5/2	90	10YR 3/6	10.00	C	M	S	
16 - 20	10YR 6/8	100					S	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.					² Location: PL=Pore Lining, M=Matrix.			
Hydric Soil Indicators:						Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input checked="" type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input checked="" type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)			<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)			<input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)		
Restrictive Layer (if observed):								
Type: _____								
Depth (inches): _____						Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Remarks:								

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	
	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)	
Field Observations:		
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____
Water Table Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): <u>0.00</u>
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): <u>0.00</u>
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 50th Avenue Reconstruction City/County: Sartell/ Stearns Sampling Date: 8/19/2014 3:31:56 PM
 Applicant/Owner: City of Sartell State: MN Sampling Point: B1 Up
 Investigator(s): Carli Ewert & Reed Schwarting Section, Township, Range: Section 28, T125N, R28W
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____
 Slope (%): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Histosols (1055) NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: _____	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
	<u>0</u> = Total Cover			
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
	<u>0</u> = Total Cover			
<u>Herb Stratum</u> (Plot size: <u>5</u>)				
1. <u>Phalaris arundinacea (reed canary grass)</u>	<u>100</u>	<u>Yes</u>	<u>FACW</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
	<u>100</u> = Total Cover			
<u>Woody Vine Stratum</u> (Plot size: <u>30</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
	<u>0</u> = Total Cover			

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
 Total Number of Dominant Species Across All Strata: 1 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>100</u>	x 2 = <u>200</u>
FAC species <u>0</u>	x 3 = <u>0</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>100</u> (A)	<u>200</u> (B)

Prevalence Index = B/A = 2

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test is >50%
 3 - Prevalence Index is ≤3.0¹
 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes No _____

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

SOIL

Sampling Point: B1 Up

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 2	10YR 2/1	100					L	
2 - 6	10YR 2/1	60	10YR 4/2	35.00	D	M	L	
			10YR 3/6	5.00	C	M		
6 - 20	10YR 2/1	95	10YR 3/4	5.00	C	M	SL	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.					² Location: PL=Pore Lining, M=Matrix.			
Hydric Soil Indicators:			Indicators for Problematic Hydric Soils³:					
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> Coast Prairie Redox (A16)		
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> Dark Surface (S7)		
<input type="checkbox"/> Black Histic (A3)			<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Iron-Manganese Masses (F12)		
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Mucky Mineral (F1)			<input type="checkbox"/> Very Shallow Dark Surface (TF12)		
<input type="checkbox"/> Stratified Layers (A5)			<input type="checkbox"/> Loamy Gleyed Matrix (F2)			<input type="checkbox"/> Other (Explain in Remarks)		
<input type="checkbox"/> 2 cm Muck (A10)			<input type="checkbox"/> Depleted Matrix (F3)			³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input checked="" type="checkbox"/> Redox Dark Surface (F6)					
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Depleted Dark Surface (F7)					
<input type="checkbox"/> Sandy Mucky Mineral (S1)			<input type="checkbox"/> Redox Depressions (F8)					
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)								
Restrictive Layer (if observed):								
Type: _____								
Depth (inches): _____						Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Remarks:								

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)	
Field Observations:		
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	
Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): <u>20.00</u>	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 50th Avenue Reconstruction City/County: Sartell/ Stearns Sampling Date: 9/5/2014 12:13:53 PM
 Applicant/Owner: City of Sartell State: MN Sampling Point: B2 Up
 Investigator(s): Carli Ewert & Reed Schwarting Section, Township, Range: Section 28, T125N, R28W
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____
 Slope (%): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Histosols (1055) NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: _____ _____ _____	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
	<u>0</u> = Total Cover			
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
	<u>0</u> = Total Cover			
<u>Herb Stratum</u> (Plot size: <u>5</u>)				
1. <u>Phalaris arundinacea (reed canary grass)</u>	<u>100</u>	<u>Yes</u>	<u>FACW</u>	
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
	<u>100</u> = Total Cover			
<u>Woody Vine Stratum</u> (Plot size: <u>30</u>)				
1. _____				
2. _____				
	<u>0</u> = Total Cover			

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
 Total Number of Dominant Species Across All Strata: 1 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>100</u>	x 2 = <u>200</u>
FAC species <u>0</u>	x 3 = <u>0</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>100</u> (A)	<u>200</u> (B)

Prevalence Index = B/A = 2

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test is >50%
 3 - Prevalence Index is ≤3.0¹
 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes No _____

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

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 50th Avenue Reconstruction City/County: Sartell/ Stearns Sampling Date: 9/5/2014 12:17:53 PM
 Applicant/Owner: City of Sartell State: MN Sampling Point: B2 Wet
 Investigator(s): Carli Ewert & Reed Schwarting Section, Township, Range: Section 28, T125N, R28W
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____
 Slope (%): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Histosols (1055) NWI classification: PUBFd

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: _____	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
	<u>0</u> = Total Cover			
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
	<u>0</u> = Total Cover			
<u>Herb Stratum</u> (Plot size: <u>5</u>)				
1. <u>Phalaris arundinacea (reed canary grass)</u>	<u>100</u>	<u>Yes</u>	<u>FACW</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
	<u>100</u> = Total Cover			
<u>Woody Vine Stratum</u> (Plot size: <u>30</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
	<u>0</u> = Total Cover			

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
 Total Number of Dominant Species Across All Strata: 1 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>100</u>	x 2 = <u>200</u>
FAC species <u>0</u>	x 3 = <u>0</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>100</u> (A)	<u>200</u> (B)

Prevalence Index = B/A = 2

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test is >50%
 3 - Prevalence Index is ≤3.0¹
 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes No _____

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

SOIL

Sampling Point: B2 Wet

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 8	10YR 2/1	100					SL	
8 - 16	10YR 5/1	100					LS	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input checked="" type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input checked="" type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	Indicators for Problematic Hydric Soils³: <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
---	---

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
---	---

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>10.00</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0.00</u> (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 50th Avenue Reconstruction City/County: Sartell/ Stearns Sampling Date: 9/5/2014 11:15:39 AM
 Applicant/Owner: City of Sartell State: MN Sampling Point: C1 Wet
 Investigator(s): Carli Ewert & Reed Schwarting Section, Township, Range: Section 28, T125N, R28W
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____
 Slope (%): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Brainerd (163B) NWI classification: PUBFd

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: _____	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
	<u>0</u> = Total Cover			
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
	<u>0</u> = Total Cover			
<u>Herb Stratum</u> (Plot size: <u>5</u>)				
1. <u>Phalaris arundinacea (reed canary grass)</u>	<u>100</u>	<u>Yes</u>	<u>FACW</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
	<u>100</u> = Total Cover			
<u>Woody Vine Stratum</u> (Plot size: <u>30</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
	<u>0</u> = Total Cover			
Remarks: (Include photo numbers here or on a separate sheet.)				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
 Total Number of Dominant Species Across All Strata: 1 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:
 Total % Cover of: Multiply by:
 OBL species 0 x 1 = 0
 FACW species 100 x 2 = 200
 FAC species 0 x 3 = 0
 FACU species 0 x 4 = 0
 UPL species 0 x 5 = 0
 Column Totals: 100 (A) 200 (B)
 Prevalence Index = B/A = 2

Hydrophytic Vegetation Indicators:
 ___ 1 - Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test is >50%
 3 - Prevalence Index is ≤3.0¹
 ___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes No _____

SOIL

Sampling Point: C1 Wet

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 6	10YR 2/1	100					MMI	sandy mucky loam
6 - 8	10YR 4/1	100					LS	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input checked="" type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)	Indicators for Problematic Hydric Soils³: <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
--	--	---

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: <u>rock</u> Depth (inches): <u>8.00</u>	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks:

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)	
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>6.00</u> Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0.00</u> (includes capillary fringe)	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 50th Avenue Reconstruction City/County: Sartell/ Stearns Sampling Date: 9/5/2014 11:07:55 AM
 Applicant/Owner: City of Sartell State: MN Sampling Point: C1 Up
 Investigator(s): Carli Ewert & Reed Schwarting Section, Township, Range: Section 28, T125N, R28W
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____
 Slope (%): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Brainerd (163B) NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: _____	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
	<u>0</u> = Total Cover			
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
	<u>0</u> = Total Cover			
<u>Herb Stratum</u> (Plot size: <u>5</u>)				
1. <u>Phalaris arundinacea (reed canary grass)</u>	<u>100</u>	<u>Yes</u>	<u>FACW</u>	
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
	<u>100</u> = Total Cover			
<u>Woody Vine Stratum</u> (Plot size: <u>30</u>)				
1. _____				
2. _____				
	<u>0</u> = Total Cover			

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
 Total Number of Dominant Species Across All Strata: 1 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>100</u>	x 2 = <u>200</u>
FAC species <u>0</u>	x 3 = <u>0</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>100</u> (A)	<u>200</u> (B)

Prevalence Index = B/A = 2

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test is >50%
 3 - Prevalence Index is ≤3.0¹
 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes No _____

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

SOIL

Sampling Point: C1 Up

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 10	10YR 2/1	100					L	
10 - 12	10YR 3/4	94	10YR 5/8	6.00	C	M	SL	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.					² Location: PL=Pore Lining, M=Matrix.			
Hydric Soil Indicators:						Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)			<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)			<input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)		
Restrictive Layer (if observed): Type: <u>rock</u> Depth (inches): <u>12.00</u>						Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Remarks:								

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____		Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

SOIL

Sampling Point: D1 Up

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 3	10YR 2/2	100					SL	
3 - 13	10YR 2/2	95	5YR 4/6	5.00	C	M	SL	
13 - 15	5YR 4/4	100					SL	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.					² Location: PL=Pore Lining, M=Matrix.			
Hydric Soil Indicators:						Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)			<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input checked="" type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)			<input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)		
Restrictive Layer (if observed):								
Type: <u>Hard Surface</u>								
Depth (inches): <u>15.00</u>						Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Remarks:								

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	
	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5)	
Field Observations:		
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <u>12.00</u>
Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 50th Avenue Reconstruction City/County: Sartell/ Stearns Sampling Date: 9/5/2014 1:35:32 PM
 Applicant/Owner: City of Sartell State: MN Sampling Point: D1 Wet
 Investigator(s): Carli Ewert & Reed Schwarting Section, Township, Range: Section 28, T125N, R28W
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____
 Slope (%): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Histosols (1055) NWI classification: PEMA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: _____	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Populus tremuloides (quaking aspen)</u>	<u>45</u>	<u>Yes</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75</u> (A/B)														
2. <u>Quercus rubra (northern red oak)</u>	<u>5</u>	<u>No</u>	<u>FACU</u>															
3. <u>Ulmus americana (American elm)</u>	<u>5</u>	<u>No</u>	<u>FACW</u>															
4. _____																		
5. _____																		
	<u>55</u>	= Total Cover																
Sapling/Shrub Stratum	(Plot size: <u>15</u>)																	
1. <u>Rhamnus cathartica (European buckthorn)</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>	Prevalence Index worksheet: <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%;">Total % Cover of:</td> <td style="width:50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>70</u></td> <td>x 2 = <u>140</u></td> </tr> <tr> <td>FAC species <u>55</u></td> <td>x 3 = <u>165</u></td> </tr> <tr> <td>FACU species <u>10</u></td> <td>x 4 = <u>40</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>135</u> (A)</td> <td><u>345</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.56</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>70</u>	x 2 = <u>140</u>	FAC species <u>55</u>	x 3 = <u>165</u>	FACU species <u>10</u>	x 4 = <u>40</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>135</u> (A)	<u>345</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>70</u>	x 2 = <u>140</u>																	
FAC species <u>55</u>	x 3 = <u>165</u>																	
FACU species <u>10</u>	x 4 = <u>40</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>135</u> (A)	<u>345</u> (B)																	
2. _____																		
3. _____																		
4. _____																		
5. _____																		
	<u>10</u>	= Total Cover																
Herb Stratum	(Plot size: <u>5</u>)																	
1. <u>Phalaris arundinacea (reed canary grass)</u>	<u>65</u>	<u>Yes</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
2. _____																		
3. _____																		
4. _____																		
5. _____																		
6. _____																		
7. _____																		
8. _____																		
9. _____																		
10. _____																		
	<u>65</u>	= Total Cover																
Woody Vine Stratum	(Plot size: <u>30</u>)																	
1. <u>Parthenocissus quinquefolia (V. creeper)</u>	<u>5</u>	<u>Yes</u>	<u>FACU</u>	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____														
2. _____																		
	<u>5</u>	= Total Cover																
Remarks: (Include photo numbers here or on a separate sheet.)																		

SOIL

Sampling Point: D1 Wet

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 3	10YR 2/2	100					SL	
3 - 8	10YR 2/2	95	5YR 3/4	5.00	C	M	SL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input checked="" type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)	Indicators for Problematic Hydric Soils³: <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
---	---	---

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: <u>hard surface</u> Depth (inches): <u>8.00</u>	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
---	---

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)	
Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>6.00</u> Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0.00</u> Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0.00</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 50th Avenue Reconstruction City/County: Sartell/ Stearns Sampling Date: 9/5/2014 2:26:46 PM
 Applicant/Owner: City of Sartell State: MN Sampling Point: D2 Up
 Investigator(s): Carli Ewert & Reed Schwarting Section, Township, Range: Section 28, T125N, R28W
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____
 Slope (%): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Histosols (1055) NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: _____ _____ _____	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Populus deltoides (eastern cottonwood)</u>	<u>5</u>	Yes	FAC	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
<u>5</u> = Total Cover				Prevalence Index worksheet: <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%; text-align: right;">Total % Cover of:</td> <td style="width:50%; text-align: left;">Multiply by:</td> </tr> <tr> <td>OBL species <u>35</u></td> <td>x 1 = <u>35</u></td> </tr> <tr> <td>FACW species <u>50</u></td> <td>x 2 = <u>100</u></td> </tr> <tr> <td>FAC species <u>5</u></td> <td>x 3 = <u>15</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>90</u> (A)</td> <td><u>150</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>1.67</u>	Total % Cover of:	Multiply by:	OBL species <u>35</u>	x 1 = <u>35</u>	FACW species <u>50</u>	x 2 = <u>100</u>	FAC species <u>5</u>	x 3 = <u>15</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>90</u> (A)	<u>150</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>35</u>	x 1 = <u>35</u>																	
FACW species <u>50</u>	x 2 = <u>100</u>																	
FAC species <u>5</u>	x 3 = <u>15</u>																	
FACU species <u>0</u>	x 4 = <u>0</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>90</u> (A)	<u>150</u> (B)																	
<u>0</u> = Total Cover																		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
<u>0</u> = Total Cover																		
<u>Herb Stratum</u> (Plot size: <u>5</u>)																		
1. <u>Phalaris arundinacea (reed canary grass)</u>	<u>50</u>	Yes	FACW	Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
2. <u>Cyperus erythrorhizos (redroot flatsedge)</u>	<u>35</u>	Yes	OBL															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
<u>85</u> = Total Cover																		
<u>Woody Vine Stratum</u> (Plot size: <u>30</u>)																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
<u>0</u> = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.) _____ _____																		

SOIL

Sampling Point: D2 Up

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 3	10YR 3/2	100					SIL	
3 - 11	10YR 5/3	95	5YR 4/6	5.00	C	M	S	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.					² Location: PL=Pore Lining, M=Matrix.			
Hydric Soil Indicators:						Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)			<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)			<input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)		
Restrictive Layer (if observed):						Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Type: <u>Hard Surface</u> Depth (inches): <u>11.00</u>								
Remarks:								

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations:		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 50th Avenue Reconstruction City/County: Sartell/ Stearns Sampling Date: 9/5/2014 3:39:04 PM
 Applicant/Owner: City of Sartell State: MN Sampling Point: E Up
 Investigator(s): Carli Ewert & Reed Schwarting Section, Township, Range: Section 28, T125N, R28W
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____
 Slope (%): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Pomroy (119B) NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: _____ _____ _____	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Quercus macrocarpa (burr oak)</u>	<u>15</u>	Yes	FAC	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>.75</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>15</u> = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>30</u> x 1 = <u>30</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>15</u> x 3 = <u>45</u> FACU species <u>8</u> x 4 = <u>32</u> UPL species <u>1</u> x 5 = <u>5</u> Column Totals: <u>54</u> (A) <u>112</u> (B) Prevalence Index = B/A = <u>2.07</u>
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)	_____	_____	_____	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
<u>0</u> = Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5</u>)	_____	_____	_____	Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Ambrosia artemisiifolia (annual ragweed)</u>	<u>5</u>	Yes	FACU	
2. <u>Fragaria vesca (wild strawberry)</u>	<u>1</u>	No	UPL	
3. <u>Persicaria amphibia (water smartweed)</u>	<u>15</u>	Yes	OBL	
4. <u>Setaria faberi (faber's foxtail)</u>	<u>3</u>	No	FACU	
5. <u>Persicaria hydropiper (marsh pepper)</u>	<u>15</u>	Yes	OBL	
6. <u>Digitaria cognata (fall witchgrass)</u>	<u>5</u>	No	NA	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
<u>44</u> = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>30</u>)	_____	_____	_____	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
<u>0</u> = Total Cover				

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

SOIL

Sampling Point: E Up

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 2	10YR 2/2	100					L	
2 - 10	10YR 3/3	100					FS	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)	Indicators for Problematic Hydric Soils³: <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
---	--	---

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: <u>rock</u> Depth (inches): <u>10</u>	Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
---	---

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5)	
Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>1.00</u> Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0-2</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: No saturation present after first 2 inches of sediment sample core.	

Appendix C

Appendix C: Antecedent Precipitation Data Wetland Photos

**NRCS method - Rainfall Documentation Worksheet Hydrology Tools for Wetland Determination
NRCS Engineering Field Handbook Chapter 19**

Date	19 August, 2014	Landowner/Project	50th Avenue South
Weather Station	Stearns-Le Sauk-Sartell	State	Minnesota
County	Stearns	Growing Season	Yes
Photo/obs Date	19 August, 2014	Soil Name	Histosols

shaded cells are
locked or calculated

Long-term rainfall statistics
(from WETS table or State
Climatology Office)

	30% chance <	30% chance >	Precip	Condition Dry, Wet, Normal	Condition Value	Month Weight Value	Product of Previous 2 Columns
1st Prior Month*	2.46	4.07	1.83	D	1	3	3
2nd Prior Month*	2.97	5.31	6.44	W	3	2	6
3rd Prior Month*	2.27	3.68	5.57	W	3	1	3
Sum							12

*compared to photo/observation date

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

Condition value:
Dry =1
Normal =2
Wet =3

Conclusions: prior period has been normal

Appendix C

Wetland Photos



Photo #1: Wetland A, transect 1, with the soil auger showing the wetland point and pink tape in the foreground showing the upland point, facing north.



Photo #2: Wetland A, transect 2, with auger showing the wetland point and prairie fleabane indicating the transition to upland, facing north.

Appendix C



Photo #3: Wetland B, transect 1, with auger in the background showing the wetland point and the pink flag in the foreground showing the upland point, facing north.



Photo #4: Wetland C, transect 1, with auger showing wetland point and pink flag in foreground showing upland point, facing northwest.

Appendix C



Photo #5: Wetland D, transect 1, with auger showing upland point in background and backpack indicating wetland point in foreground.

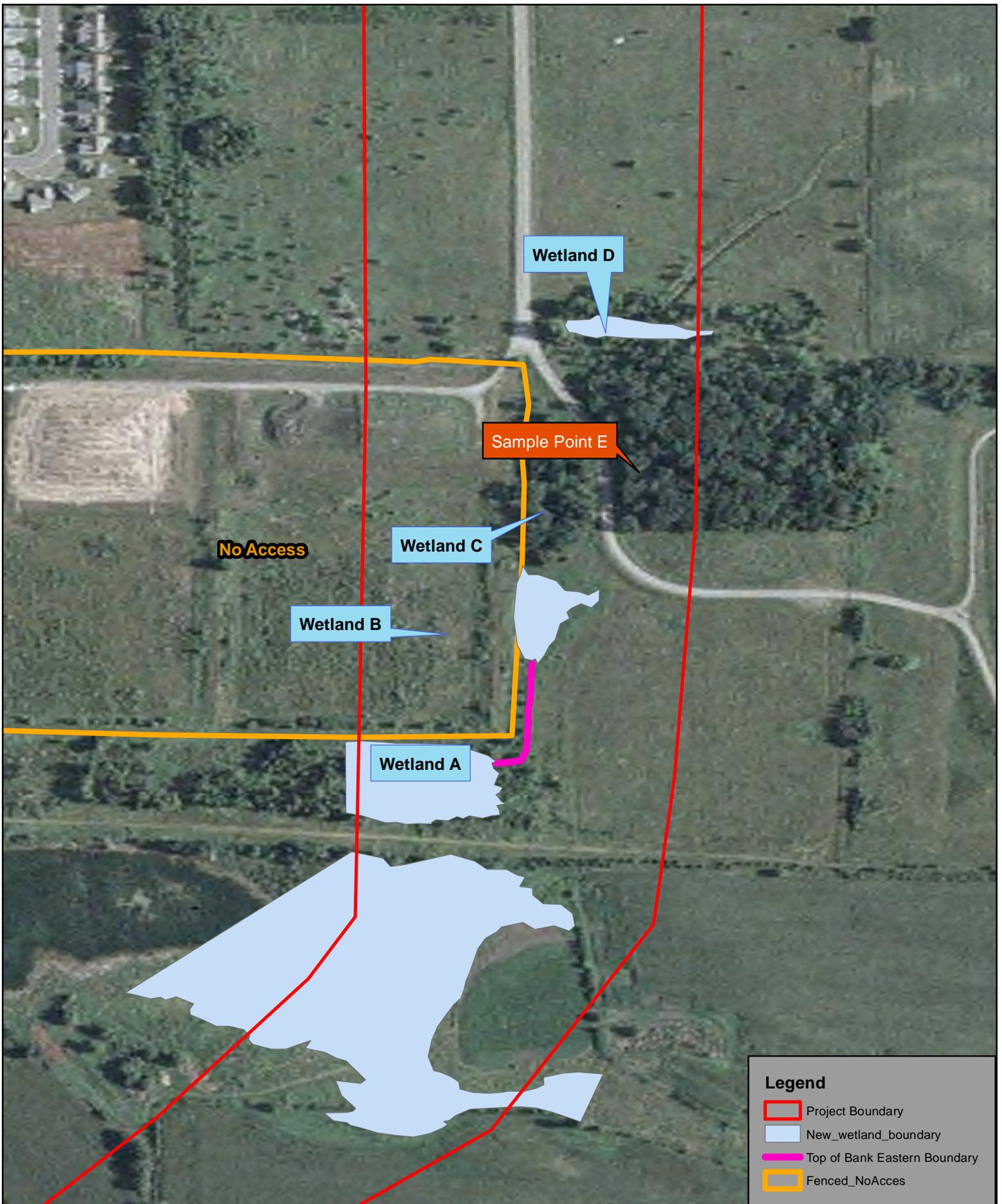


Photo #6: Sample Point E, indicated by soil auger, facing north.

Appendix D

Appendix D:

- Figure 7. New Wetland Boundary Map
- Figure 8. New Wetland Delineation (Southern Half)
- Figure 9. New Wetland Delineation (Northern Half)



Legend

- Project Boundary
- New_wetland_boundary
- Top of Bank Eastern Boundary
- Fenced_NoAcces



Figure 7. New Wetland Boundary
50th Avenue South
City of Sartell, MN



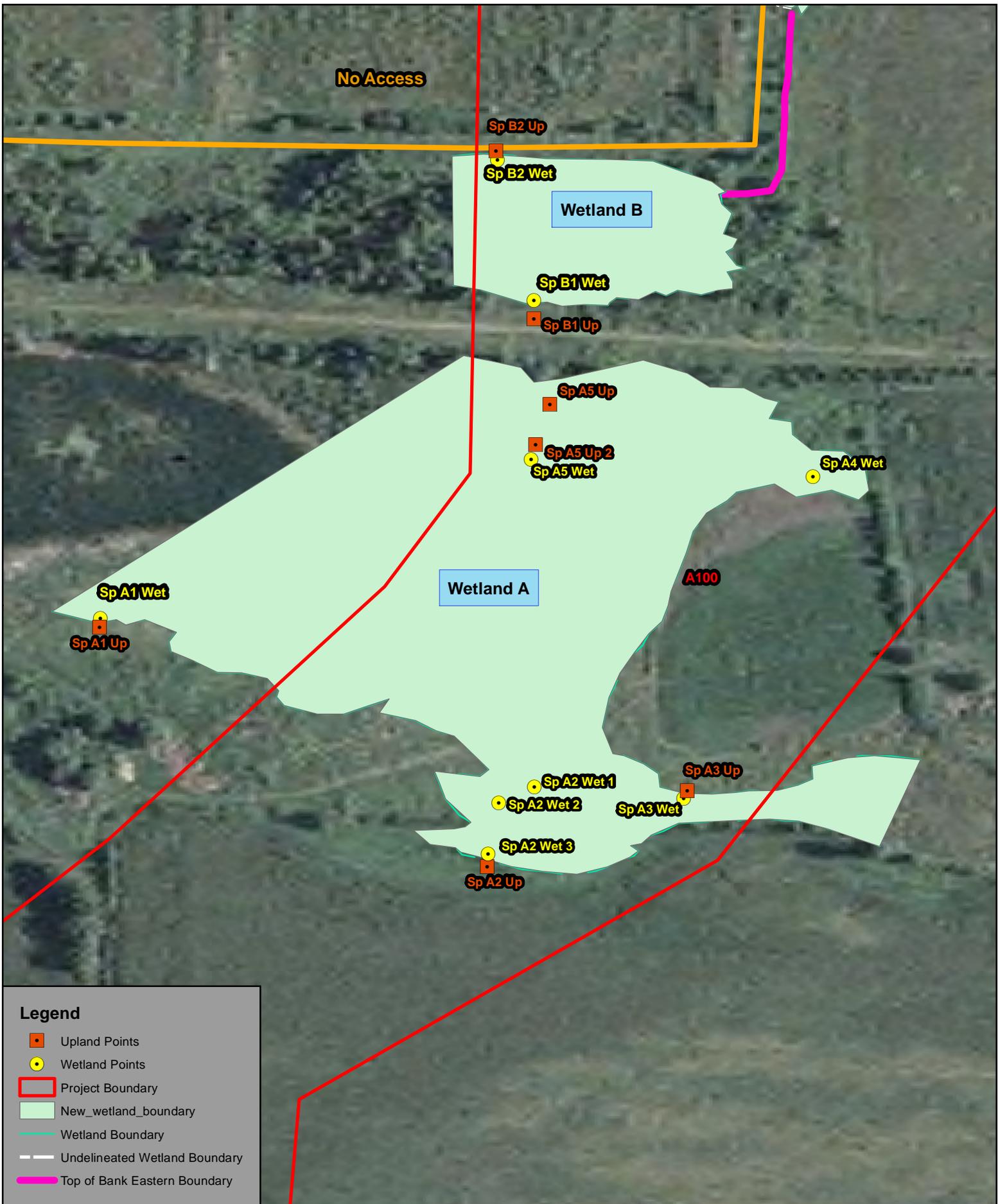


Figure 8. New Wetland Delineation (Southern half)
50th Avenue South
City of Sartell, MN





Legend

- WetDelin
- Wetland Points
- Top of Bank Points
- New_wetland_boundary
- Project Boundary
- Wetland Boundary
- Undelineated Wetland Boundary
- Wetland WCA Jurisdiction
- Top of Bank Eastern Boundary



Figure 9. New Wetland Delineation (Northern Half)
50th Avenue South
City of Sartell, MN





Blackberry Ridge Golf Course

Sartell

Google

Sauk Rapids

Mississippi River



Mississippi River

Pine Ridge Golf Course

PINE MEADOW
ELEMENTARY...

Sartell High School

Sartell

HI-VUE PARK

Five Points

Pine Cone Rd/S

Heritage Dr

FISCHE'S
GARDEN
MOBILE PARK

Heritage Dr

Pine Cone Rd/S

SHADY OAK
MOBILE PARK

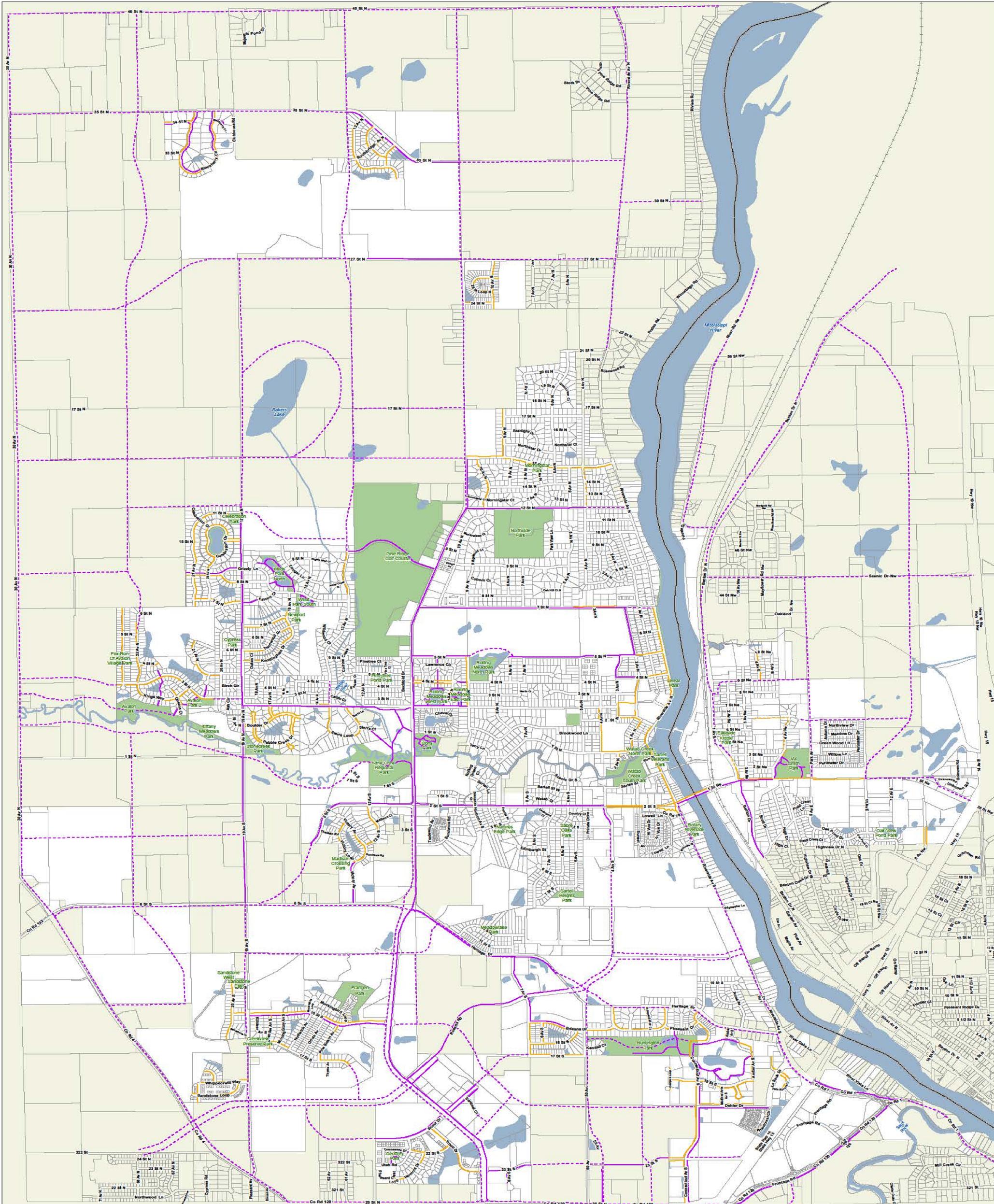


Explore

EVERGREEN
VILLAGE



Explore



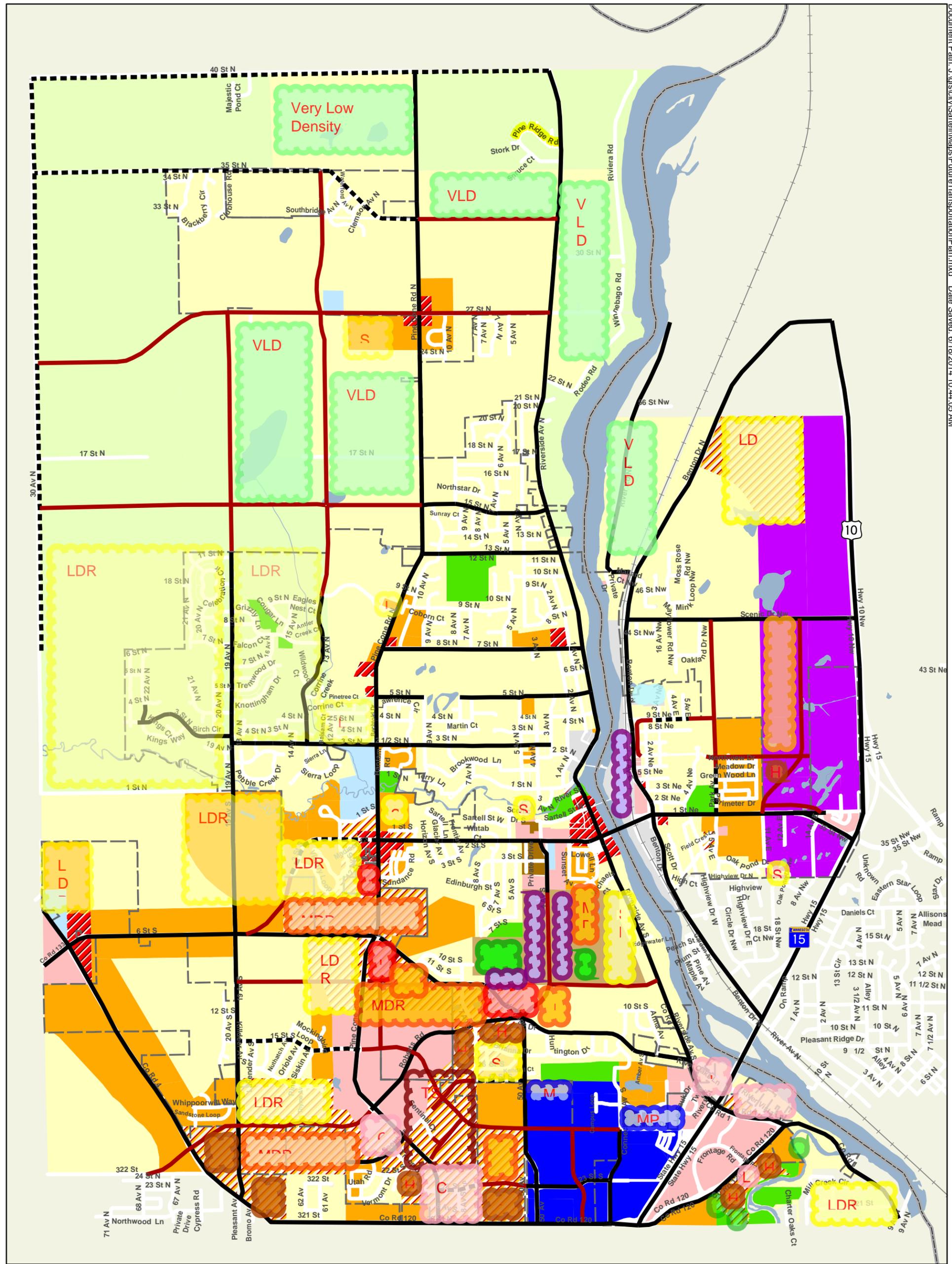
Sartell Sidewalks and Trails
 City of Sartell, MN
 0 500 1,000 2,000 Feet

- Sidewalks
- Proposed Sidewalks
- Trails and Paths
- Proposed Trails and Paths



Your Voice. Your Vision. Your Future.

2014 COMPREHENSIVE PLAN



Proposed Future Land Use 2014

Changes to current land use:
Eliminate Landfill Buffer
Eliminate Mixed Use

draft amendments

- VLD - 0-2
- LDR - 1-4
- MDR - 2-7
- HDR - 5-12

Land Use Classification

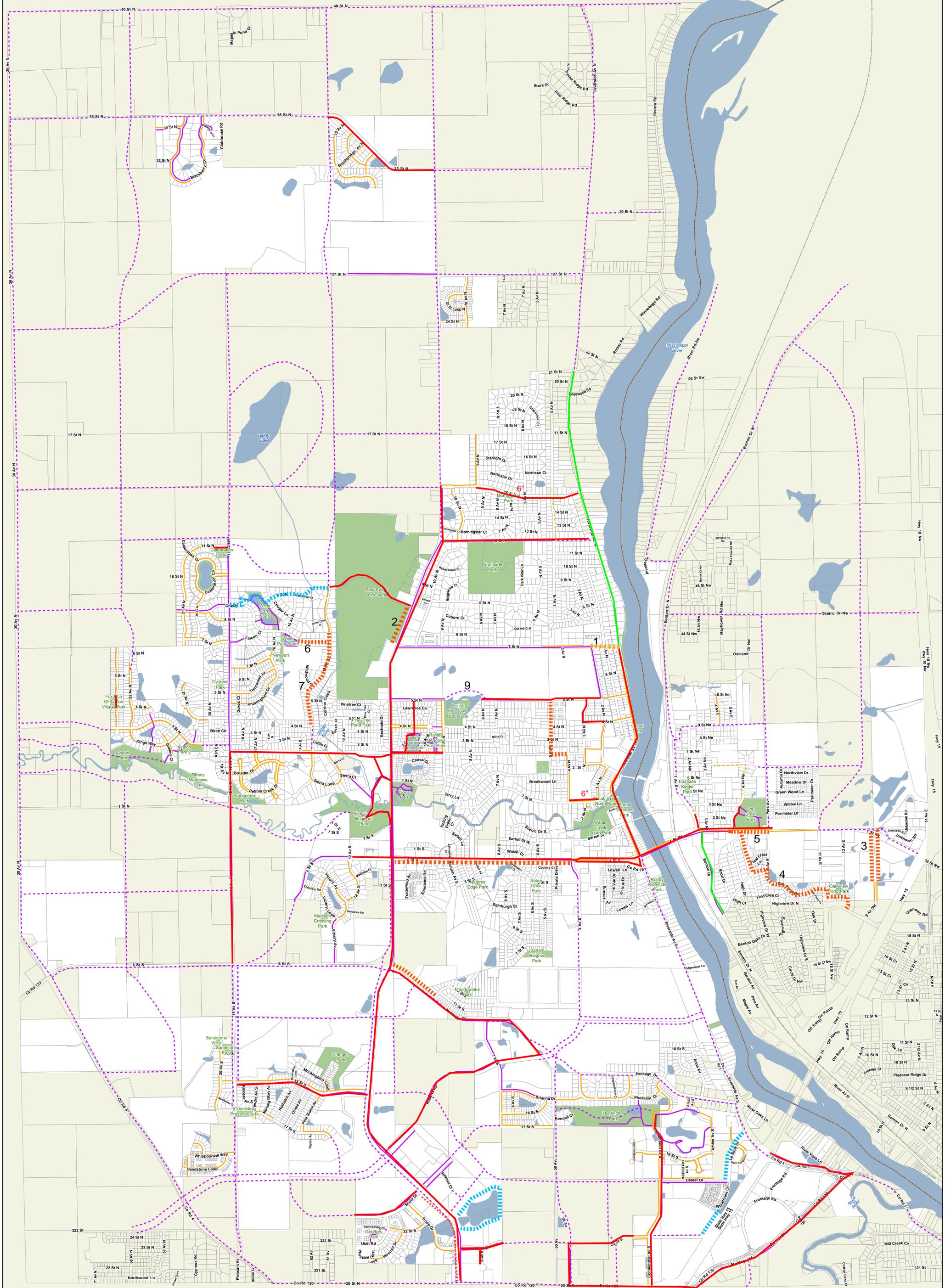
- Very Low Density Residential 0-3
- Low Density Residential 0-5
- Medium Density Residential 0-10
- High Density Residential 0-15
- Mixed Use
- Park

- Public
- Landfill Buffer
- Medical Professional Mix
- General Business
- Limited Business
- Industrial
- Office/Warehouse



0 1,250 2,500 5,000 Feet





Sartell
City of Sartell, MN

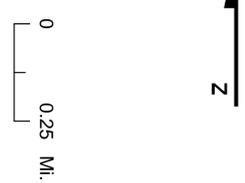
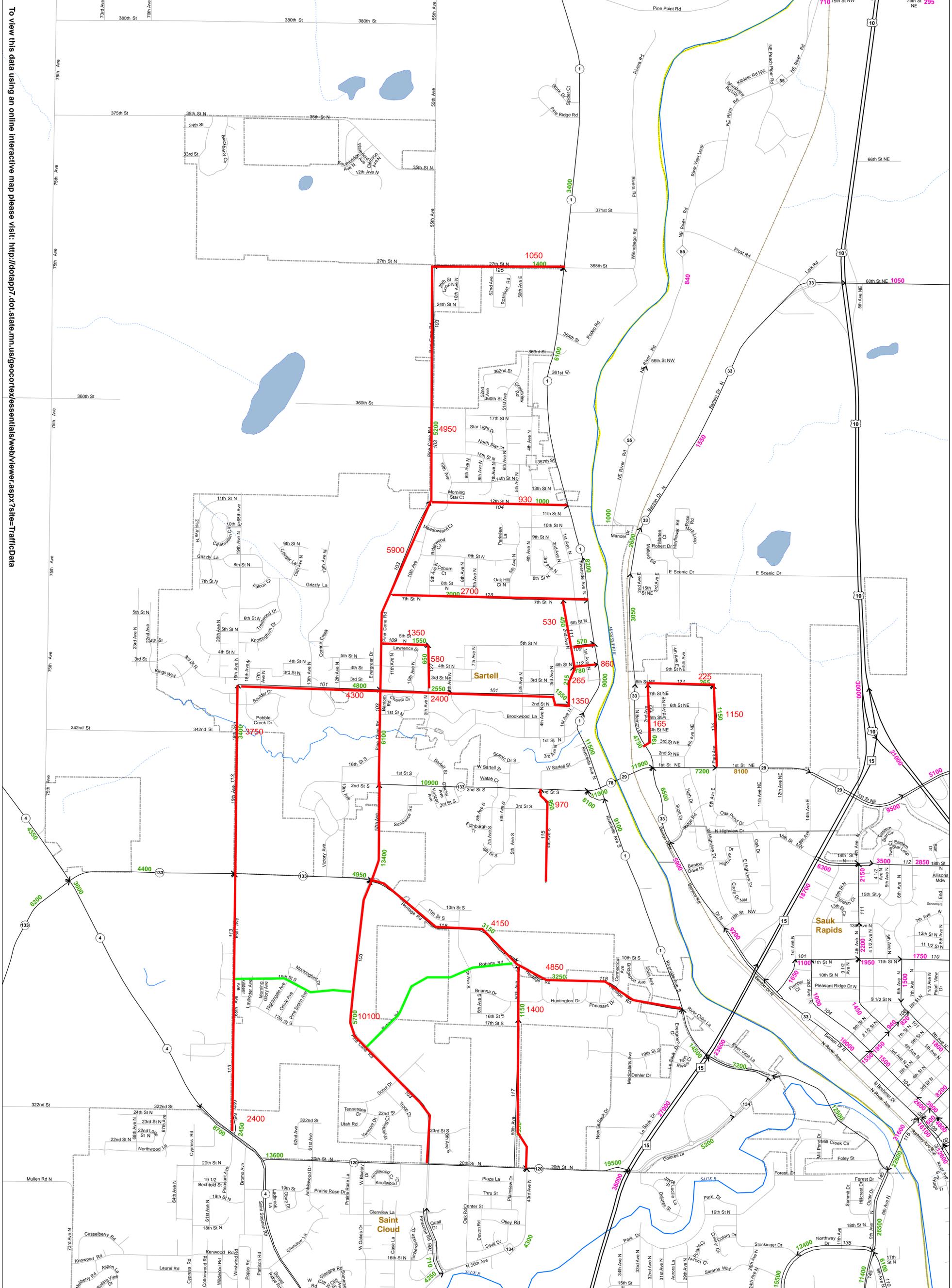
0 500 1,000 2,000
Feet

Sidewalks and Trails

- Sidewalks
- - - Proposed Sidewalks
- Trails and Paths
- - - Proposed Trails and Paths

WSB

- On-Street Bike Lanes
- Sidewalks and Trails Plowed
- - - Proposed Trail Additions
- - - Proposed Sidewalk Additions



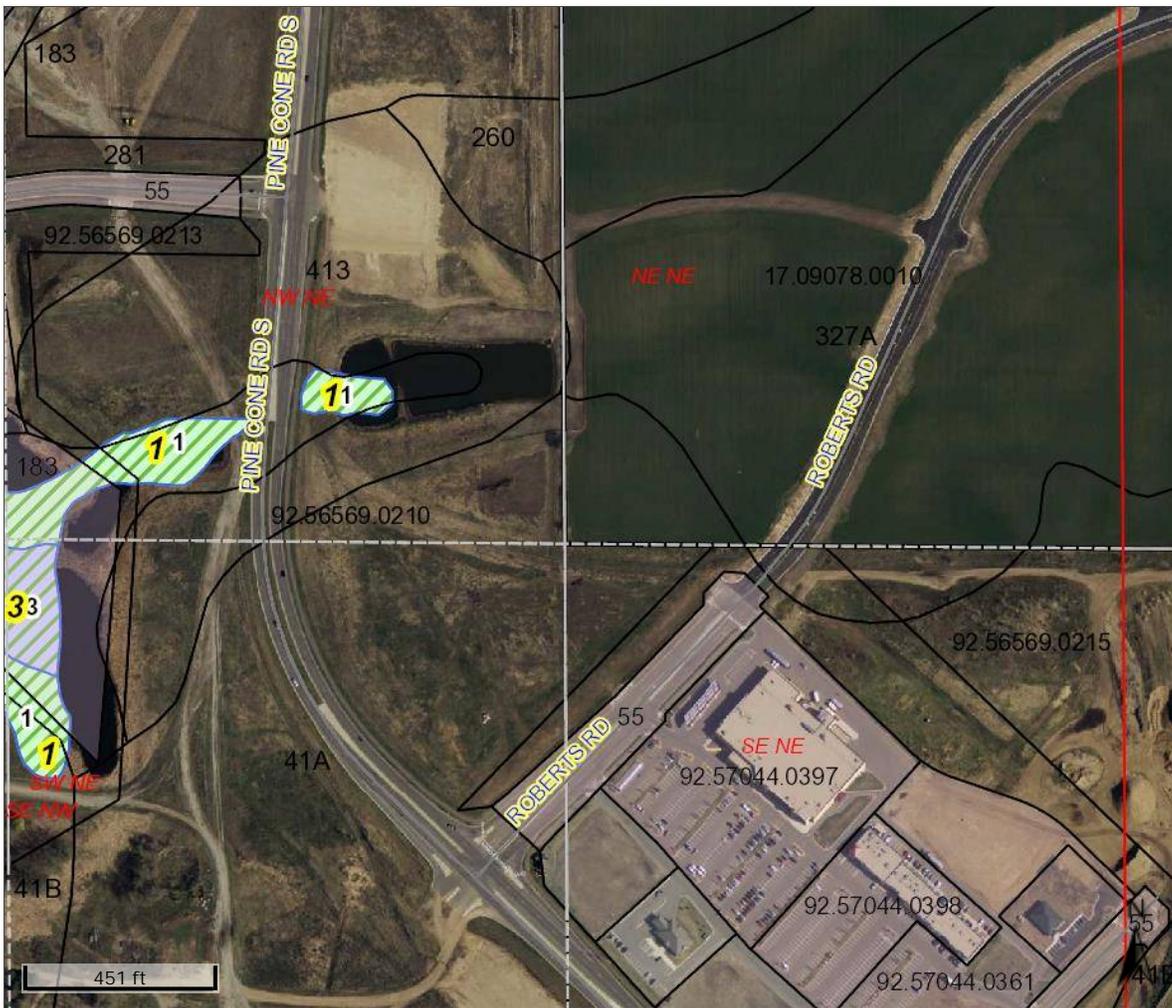
Numerals Indicate Average Annual Daily Traffic (AADT) Volumes on Designated Roads

Traffic Volumes are Subject to Variability and Construction Effects
For More Info Visit:
<http://www.dot.state.mn.us/trafficdata/cell-methods.html>
Minnesota Department of Transportation
Office of Transportation Data and Analysis
<http://www.dot.state.mn.us/trafficdata/index.html>

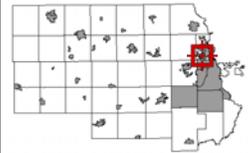
MAP LEGEND

- AADT Year
 - 2011 2010
 - 2009 2008
 - 2007 and older
- Interstate
- US Highway
- MN Highway
- CSAH
- MSAS
- County Road
- Other Road
- Railroads
- CITIES
- COUNTIES
- Lakes
- Rivers
- Perennial Streams
- Ditches
- National Forests
- National Parks
- Tribal Gov'ts
- State Forests
- State Parks

Map Source:
Minnesota Department of Transportation
Office of Transportation Data and Analysis
Traffic Volume Program
2011 AADT Product
<http://www.dot.state.mn.us/trafficdata/data-products.html>



Overview



Legend

-  Parcels
- Additions**
-  A
-  M
-  T
- Parcel ID Labels
-  Sections
-  Quarter-Quarter Sections
-  Active Rail Line
-  Unincorporated Cities
-  Minor Civil Divisions - Township
- Minor Civil Divisions**
-  <all other values>
-  0
-  1
-  2
-  3
-  4
-  Water Access
-  Airport
-  Cemetery
-  Parks
- Floodplain**
-  500 YR Flood Plain
-  100 YR Flood Plain
-  Floodway
-  Soils
-  Lakes
-  Streams and Rivers
- Wetlands**
-  <all other values>
-  1
-  2
-  3
-  4

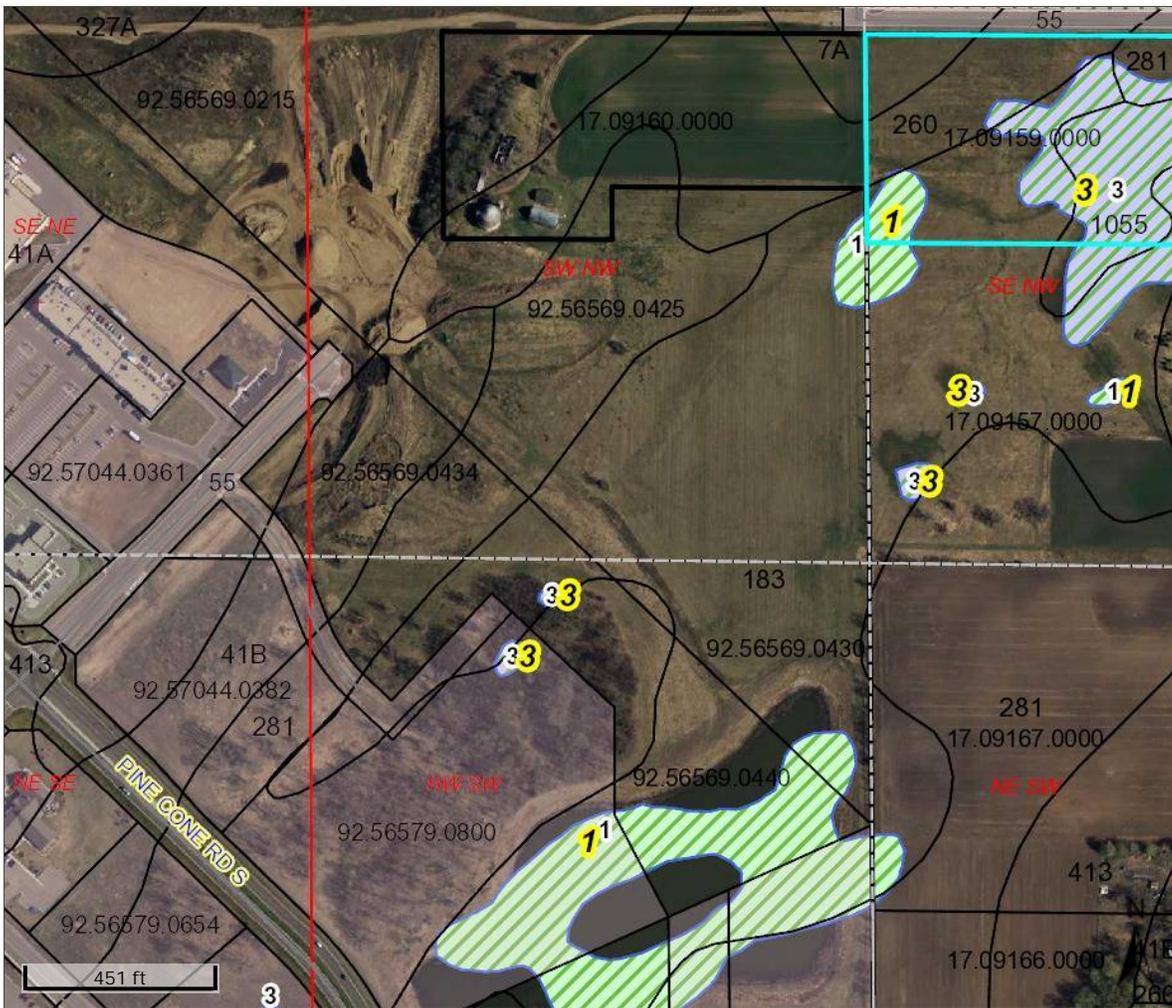
-  5
-  6
-  7
-  8
-  80
-  90
-  Wetlands New (DNR)
-  Wetlands (NWI)
- Major Roads
 -  Interstate Hwy
 -  US Hwy
 -  State Hwy
 -  County Hwy
 -  Roads
- Municipalities
 -  3
 -  4
- Highway Labels

Parcel ID 92.56532.0001 Alternate ID n/a
 Sec/Twp/Rng 20-125-28 Class 2ANHGA-Agricultural Non-homestead - Non HGA
 Property Address Acreage 25.210
 District 9202 SARTELL 748
 Brief Tax Description 25.21 A. SE4SE4 LESS PLATTED AND LESS 2.20 AC
 (Note: Not to be used on legal documents)

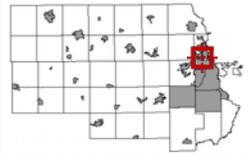
Owner Address TORBORG BUILDERS
 1932 TYROL DR
 ST CLOUD MN 56301-1928

Last Data Upload: 6/26/2015 1:00:39 AM

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Overview



Legend

-  Parcels
- Additions
 -  A
 -  M
 -  T
- Parcel ID Labels
-  Sections
-  Quarter-Quarter Sections
-  Active Rail Line
-  Unincorporated Cities
- Minor Civil Divisions - Township
 -  Minor Civil Divisions - Township
- Minor Civil Divisions
 -  <all other values>
 -  0
 -  1
 -  2
 -  3
 -  4
-  Water Access
-  Airport
-  Cemetery
-  Parks
- Floodplain
 -  500 YR Flood Plain
 -  100 YR Flood Plain
 -  Floodway
- Soils
-  Lakes
-  Streams and Rivers
- Wetlands
 -  <all other values>
 -  1
 -  2
 -  3
 -  4

-  5
-  6
-  7
-  8
-  80
-  90
-  Wetlands New (DNR)
-  Wetlands (NWI)
- Major Roads
 -  Interstate Hwy
 -  US Hwy
 -  State Hwy
 -  County Hwy
 -  Roads
- Municipalities
 -  3
 -  4
- Highway Labels

Parcel ID 17.09159.0000 Alternate ID n/a
 Sec/Twp/Rng 33-125-28 Class 1A-Residential Homestead
 Property Address 32725 50TH AVE Acreage 15.000
 ST CLOUD

Owner Address THOMAS & DONNA WEIHRAUCH
 32725 50TH AVE
 ST CLOUD MN 56303-9523

District 1705 LESAUK 748
 Brief Tax Description 15.00A S 30RDS OF N 34 RDS OF SE4NW4
 (Note: Not to be used on legal documents)

Last Data Upload: 6/26/2015 1:00:39 AM

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— High Priority Rd

--- To be constructed

■ Public Park

— Secondary Rd

O/R - office Retail
 A - Apartment
 T/H = Townhome

R - Retail
 *TH = Central core TH's



For Illustrative Purposes Only

Westwood

Phone (800) 950-8466 1775 1/2 Mile From North, Suite 200
Fax (820) 252-8737 51 Church Street
Toll Free (800) 370-8466 westwoodps.com
Westwood Professional Services, Inc.

Option A

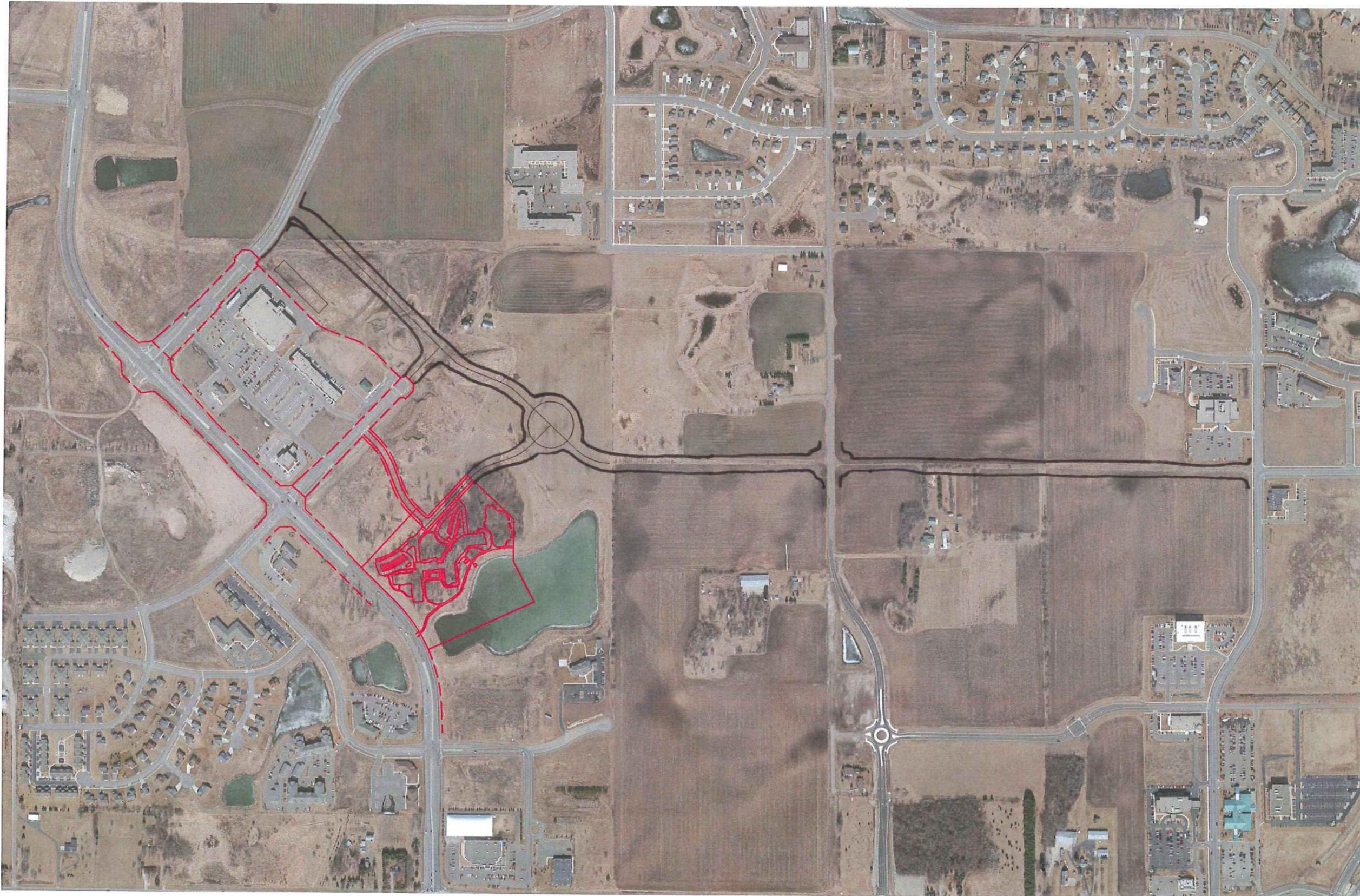


Ferche 600

Sartell, MN

Layout Concept

July 23, 2015

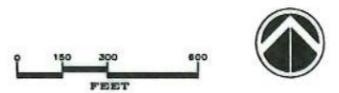


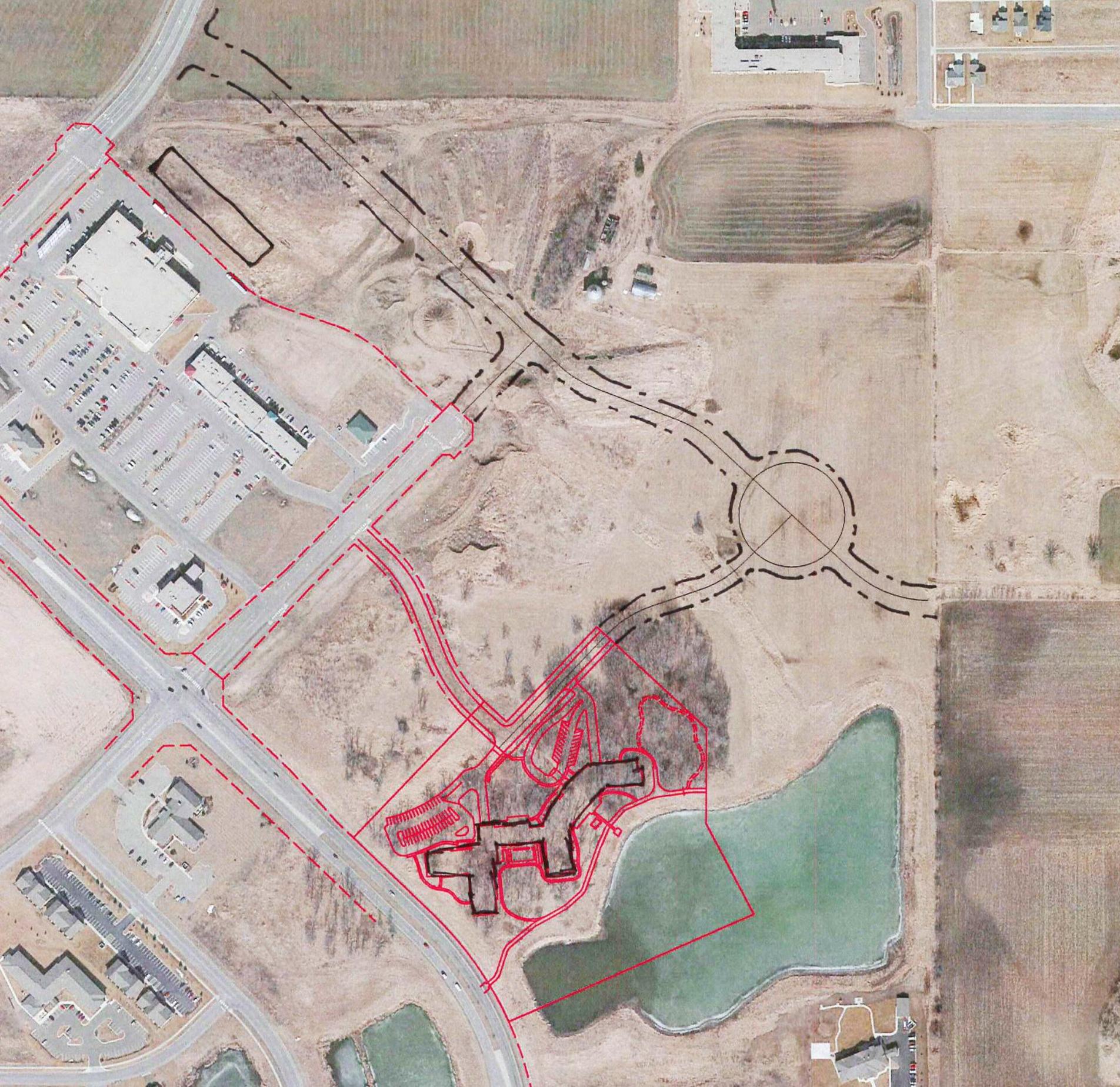
For Illustrative Purposes Only

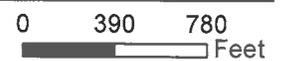
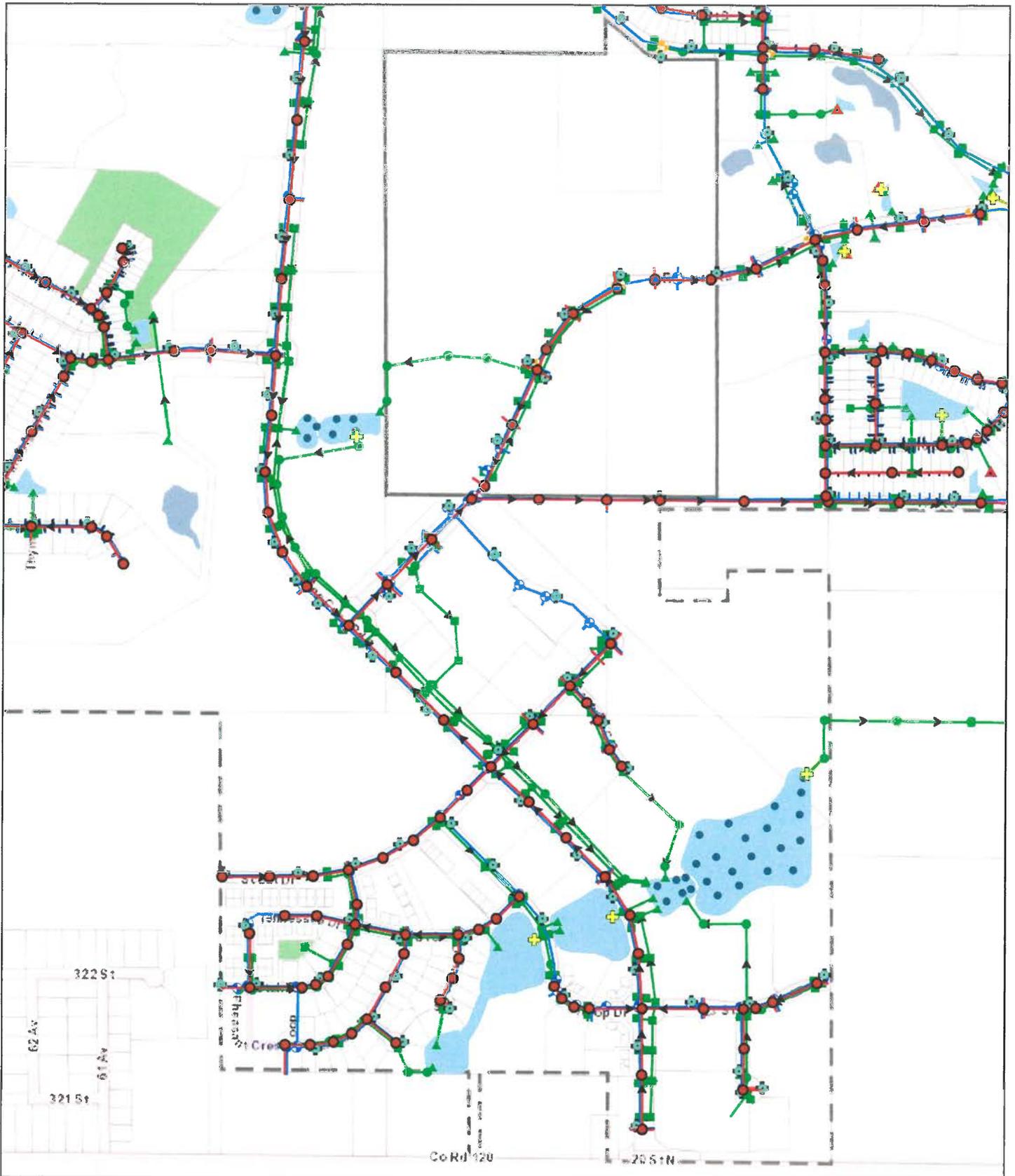
Westwood

Phone (320) 253-8485 3791 12th Street North, Suite 209
Fax (320) 253-8737 St. Cloud, MN 56309
Toll Free (800) 270-8485 westwoodps.com
Westwood Professional Services, Inc.

Option A Overall







- | | |
|--|--|
| <ul style="list-style-type: none"> ■ Sewer Clean Outs ○ Air Release ● Sewer Manholes <p>Sewer Network Structures</p> <ul style="list-style-type: none"> ● Flushing Station ■ Lift Station ⊕ Sewer System Valves | <p>Sewer Gravity Mains</p> <ul style="list-style-type: none"> — Abandoned Sanitary Gravity Main — Sanitary Gravity Main <p>Sewer Pressurized Mains</p> <ul style="list-style-type: none"> — Abandoned Forcemain — Forcemain — Sewer Lateral Lines |
|--|--|

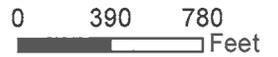
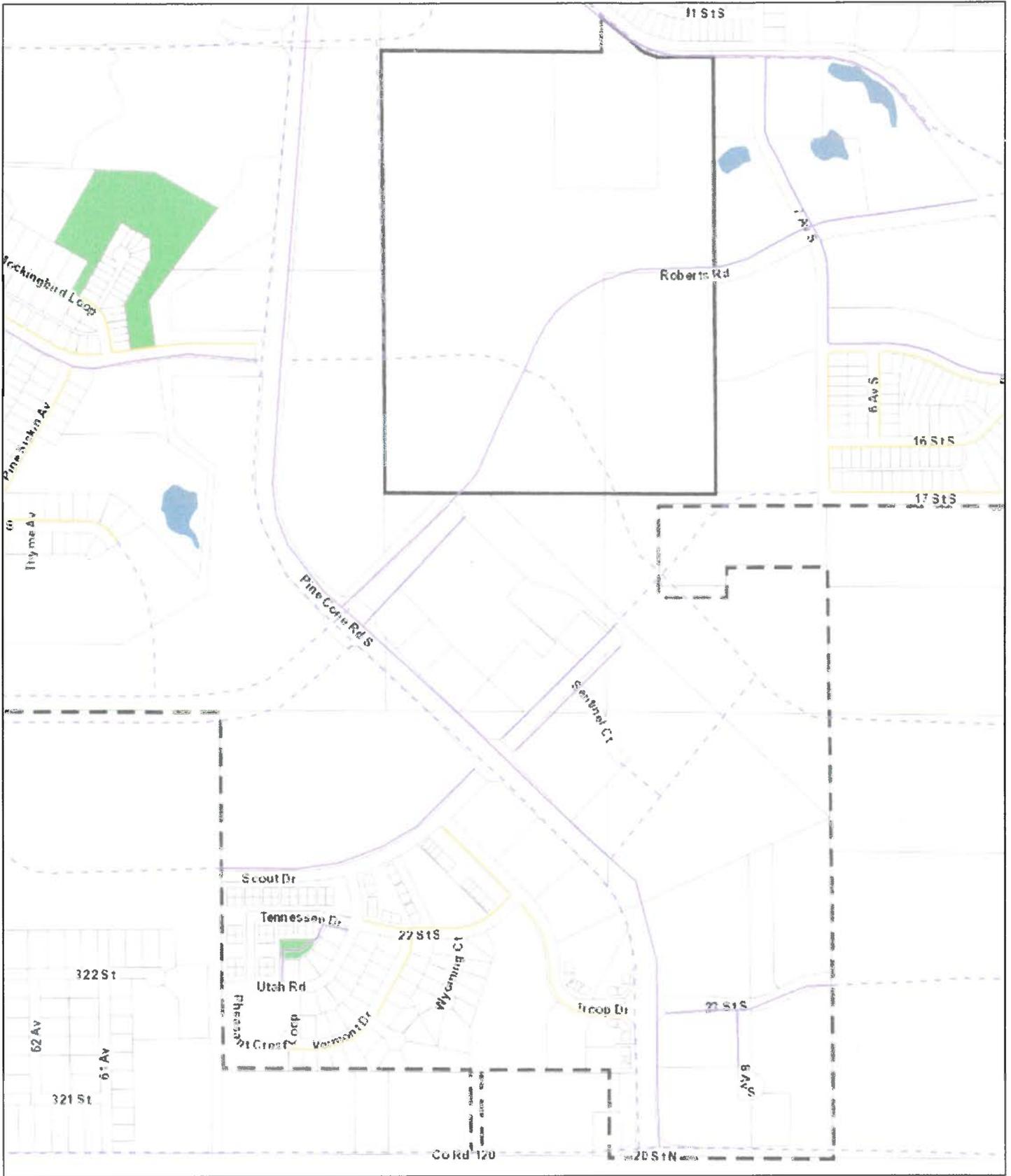


City of Sartell

Map Powered by DataLink
from WSB & Associates

Ferche Trails and Sidewalks

July 24, 2015



City of Sartell

- Trails and Paths
- Future Trails and Paths
- Sidewalks
- Future Sidewalks
- Raingarden

Map Powered by DataLink
from WSB & Associates