



ENVIRONMENTAL ASSESSMENT WORKSHEET

**Savona EAW**

Washington County, Minnesota

April 3, 2013



**Prepared For:**

Lennar

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# ENVIRONMENTAL ASSESSMENT WORKSHEET (EAW)

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## Savona EAW

### CONTENTS

	Page
List of Tables .....	ii
List of Exhibits.....	ii
List of Appendices .....	ii
1. Project Title .....	1
2. Proposer .....	1
3. RGU .....	1
4. Reason for EAW Preparation .....	1
5. Project Location .....	1
6. Description.....	2
7. Project Magnitude Data .....	3
8. Permits and Approvals Required .....	4
9. Land Use .....	5
10. Cover Types .....	8
11. Fish, Wildlife, and Ecologically Sensitive Resources .....	8
12. Physical Impacts on Water Resources .....	10
13. Water Use.....	11
14. Water-Related Land Use Management District .....	12
15. Water Surface Use .....	12
16. Erosion and Sedimentation .....	12
17. Water Quality: Surface Water Runoff .....	13
18. Water Quality: Wastewaters .....	15
19. Geologic Hazards and Soil Conditions .....	16
20. Solid Wastes, Hazardous Wastes, and Storage Tanks .....	19
21. Traffic .....	20
22. Vehicle-Related Air Emissions.....	23
23. Stationary Source Air Emissions .....	23
24. Odors, Noise and Dust .....	23
25. Nearby Resources .....	24
26. Visual Impacts .....	25
27. Compatibility with Plans and Land Use Regulations .....	25
28. Impact on Infrastructure and Public Services .....	25
29. Cumulative Impacts .....	26
30. Other Potential Environmental Impacts.....	26
31. Summary of Issues.....	27

## TABLES

8.1	Permits and Approvals Required.....	4
10.1	Estimated Before and After Cover Types.....	8
18.1	Wastewater Production Predicted.....	15
19.1	Soils Classification.....	17
21.1	Trip Generation Summary.....	21
31.1	Summary of Issues and Mitigation Measures.....	27

## EXHIBITS

Site Location.....	1
USGS Topography.....	2
Proposed Site Plan.....	3
Adjacent Land Use.....	4
Cover Type Mapping.....	5
Zoning Map.....	6
Water Resources Mapping.....	7
Soils Mapping.....	8

## APPENDICES

Liesch Test Pit Location Map.....	A
DNR Natural Heritage Database Search.....	B
County Well Index Well Log.....	C
State Historic Preservation Office Correspondence.....	D
Traffic Impact Study.....	E

# ENVIRONMENTAL ASSESSMENT WORKSHEET (EAW)

## Savona EAW

**Note to preparers:** This form and EAW Guidelines are available at the Environmental Quality Board's website at: <http://www.eqb.state.mn.us/EnvRevGuidanceDocuments.htm>. The Environmental Assessment Worksheet provides information about a project that may have the potential for significant environmental effects. The EAW is prepared by the Responsible Governmental Unit or its agents to determine whether an Environmental Impact Statement should be prepared. The project proposer must supply any reasonably accessible data for — but should not complete — the final worksheet. The complete question as well as the answer must be included if the EAW is prepared electronically.

**Note to reviewers:** Comments must be submitted to the RGU during the 30-day comment period following notice of the EAW in the *EQB Monitor*. Comments should address the accuracy and completeness of information, potential impacts that warrant further investigation and the need for an EIS.

<p><b>1. Project Title:</b> <u>Savona EAW</u></p> <p><b>2. Proposer:</b> <u>Lennar</u></p> <p>Contact person: <u>Joe Jablonski</u></p> <p>Title: <u>Development Area Manager</u></p> <p>Address: <u>16305 36th Ave. N, Ste. 600</u> <u>Plymouth, MN 55446-4270</u></p> <p>Phone: <u>(952) 249-3014</u></p> <p>Fax: <u>NA</u></p> <p>E-mail <u>joe.jablonksi@Lennar.com</u></p>	<p><b>3. RGU:</b> <u>City of Lake Elmo</u></p> <p>Contact person: <u>Kyle Klatt</u></p> <p>Title: <u>Planning Director</u></p> <p>Address: <u>3800 Laverne Ave. North</u> <u>Lake Elmo, MN 55042</u></p> <p>Phone: <u>(651) 747-3911</u></p> <p>Fax: <u>(651) 747-3901</u></p> <p>E mail <u>kklatt@lakeelmo.org</u></p>
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#### 4. Reason for EAW Preparation

EIS Scoping     Mandatory EAW     Citizen Petition     RGU Discretion     Proposer Volunteered

If EAW or EIS is mandatory give EQB rule category subpart numbers(s) Part 4410.4300 Subp. 19.D., Residential Development

#### 5. Project Location

County: Washington County, Minnesota

City: Lake Elmo

Twp: T29N, R21W, S34

GPS Coordinates: 44.954093,-92.913716 (Project Center)

Tax Parcel Numbers: 34.029.21.41.0004; 34.029.21.42.0001; 34.029.21.34.0001;  
34.029.21.34.0003; 34.029.21.31.0001 (All tax parcels within overall project site are listed.)

#### **Attach copies of each of the following to the EAW:**

- County map showing the general location of the project; **See Exhibit 1.**
- U.S. Geological Survey 7.5 minute, 1:24,000 scale map indicating project boundaries (photocopy acceptable); **See Exhibit 2.**
- Site plan showing all significant project and natural features. **See Exhibit 3.**

## 6. Description

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

The Savona residential development is proposed on approximately 112.5 acres of primarily agricultural land in the southern portion of Lake Elmo. The project is proposing 190 single-family lots, and 122 multi-family lots. Twenty-seven acres of open space is also planned, which will include buffers, parks, woods and ponds.

- 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.*

Lennar is proposing construction of a single and multi-family residential development on approximately 112.5 acres of land. The two parcels that constitute the project are referred to as the Dale (west) and Frandsen (east) Properties, and are approximately 72.5 and 40 acres in size, respectively. The proposed project is located in the S ½ of Section 34, T29N, R21W, City of Lake Elmo, Washington County, Minnesota (Exhibits 1 & 2), and is generally located south of 10<sup>th</sup> Street North (CSAH 10) and west of Keats Avenue North (CSAH 19).

Project development will convert approximately 112.5 acres of agricultural fields, woodlands, and constructed ponds to streets, homes, lawns, landscaping, parkland, trails, and stormwater ponding. Land use within the site will include construction of up to 190 single-family lots, and 122 multi-family townhome units. Development plans feature 65 to 75-foot wide single-family lots and 28 foot-wide residential streets. The proposed project will have an overall net density of 4.0 units per acre. Potential adverse effects on the environment will be mitigated by preserving and creating approximately 27 acres of open space in the form of buffers, parks, woodlands, and ponds. The project proposes extensive landscaping, buffering, and berming along adjacent roadways to offset possible visual impacts. Each residential lot will be served by City of Lake Elmo sanitary sewer and water systems. No onsite sewage systems and no private wells are proposed. Public streets will service the development including the construction of a minor collector roadway to serve the development, directing traffic east to Keats Avenue for convenient access to the I-94 corridor.

The Metropolitan Council recently approved an amendment to the Lake Elmo Comprehensive Land Use Plan. Under the amended plan, the city agreed to provide an additional 6,600 Residential Equivalent Connections (RECs) of regional sewer service by 2030. In a 2005 Memorandum of Understanding (MOU) with the Metropolitan Council, the city agreed to meet or exceed an average residential density of three units per acre in sewerred areas south of 10<sup>th</sup> Street. Sewered development will be limited to the city's Village area (area surrounding the historic Lake Elmo Village) and the area south of 10th Street along Interstate 94. The proposed development of the study area is consistent with the total level of density guided by the MOU and Land Use Plan. The City of Lake Elmo I-94 Corridor Development Staging Plan map (July 2012) indicates that the project area falls within the Stage I area. While a specific time period has not been attached to these stages, the stages are intended to develop in numeric order from Stage I to Stage III. Stage I represents new sewerred development located west of Keats Avenue that will connect to the Metropolitan Council Environmental Services (MCES) Woodbury, Oakdale, Northdale and East Oakdale (WONE) interceptor.

**Construction**

It is anticipated that the project will be constructed in six phases, with the first phase expected to begin in 2013. Full build-out is anticipated in 2018; however, construction timing will ultimately depend upon market conditions. It is anticipated that construction will entail moving approximately 750,000 cubic yards of soil. Construction dewatering may be conducted on an as-needed and permitted basis to install sanitary sewer, municipal water, and storm sewer. Best Management Practices will be implemented during and after construction to protect water quality and reduce the potential for soil erosion and sedimentation.

- 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 Savona residential development project is to meet the demand for additional residential housing units within the City of Lake Elmo in accordance with the signed 2005 MOU between the City and the Metropolitan Council. Under this MOU, the City of Lake Elmo committed to adding 6,600 new RECs of regional sewer service by the year 2030. The city also committed to a city-wide population of 24,000 by the year 2030. This project will help meet the city’s obligations as outlined within the MOU by providing an additional 312 living units along the I-94 corridor. The project will be constructed and implemented by Lennar, a private developer.

- d) *Are future stages of this development planned or likely to happen?  Yes  No. If yes, briefly describe future stages, relationship to the present project, timeline, and plans for environmental review.*

There are currently no planned future stages of the Lake Elmo Property residential development project.

- e) *Is the project a subsequent stage of an earlier project?  Yes  No. If yes, briefly describe the past development, timeline, and any past environmental review.*

The Savona residential development project is not a subsequent stage of an earlier development project.

**7. Project Magnitude Data**

Total Project Acreage: 112.5

Number of Residential Units:	Unattached	<u>190</u>	Attached	<u>122</u>	Maximum Units per Building	<u>N/A</u>
Commercial, Industrial, or Institutional Building Area (gross floor space): total square feet						<u>N/A</u>

Indicate area of specific uses (in square feet):

Retail/Office	<u>N/A</u>	Other Industrial	<u>N/A</u>
Warehouse	<u>N/A</u>	Institutional	<u>N/A</u>
Light Industrial	<u>N/A</u>	Agricultural	<u>N/A</u>
Manufacturing	<u>N/A</u>		
Other Commercial (specify)	<u>N/A</u>		
Building Height	<u>1-2 stories; 35’ maximum.</u>		

If over 2 stories, compare to heights of nearby buildings     N/A    

## 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. All of these final decisions are prohibited until all appropriate environmental review has been completed. See Minnesota Rules, Chapter 4410.3100.*

**Table 8.1. Permits and Approvals Required**

Unit of Government	Type of Application	Status
City of Lake Elmo	Concept Plan Approval	Completed
City of Lake Elmo	Preliminary Plat Approval	To be applied for
City of Lake Elmo	Final Plat Approval	To be applied for
City of Lake Elmo	EAW Negative Declaration	To be applied for
City of Lake Elmo	Grading Permit	To be applied for
City of Lake Elmo	Building Permit	To be applied for
City of Lake Elmo	Municipal Water Connection Permit	To be applied for
City of Lake Elmo	Sanitary Sewer Connection Permit	To be applied for
City of Lake Elmo	Rezoning	To be applied for (if needed)
City of Lake Elmo	Wetland Delineation Confirmation	Applied for
City of Lake Elmo	Wetland Conservation Act No-Loss Determination	Applied for
Washington County	Right-of-Way Permit	To be applied for
Washington County	Access Permit	To be applied for
Washington County	Obstruction Permit	To be applied for (if needed)
Washington County	Transportation Permit	To be applied for (if needed)
Metropolitan Council	Sanitary Sewer Connection Permit	To be applied for
Minnesota Department of Health	Water Main Extension Approval	To be applied for
Minnesota DNR Division of Waters	Water Appropriation Permit	To be applied for (if needed)
Minnesota Pollution Control Agency	NPDES / SDS	To be applied for
Minnesota Pollution Control Agency	Sanitary Sewer Extension Approval	To be applied for
U. S. Army Corps of Engineers	Section 404/Letter of No Jurisdiction	Applied for
MN DNR Division of Waters	Water Appropriation Permit(s)	To be applied for if needed
MN Pollution Control Agency	NPDES/SDS General Permit	Covered under general permit; submit NOI prior to



		construction.
Valley Branch Watershed District	Watershed Review/Permit	To be applied for
South Washington Watershed District	Watershed Review/Permit	To be applied for

## 9. Land Use

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

### Existing Land Use within the Project Site

Existing land use within, and adjacent to, the project site is depicted in **Exhibit 4** and summarized in Section 10 below.

A Phase I Environmental Site Assessment (ESA) was conducted on the project area in October 2012 by Liesch Associates, Inc. (Liesch). The report indicates that according to historic aerial photography dating from 1936 to 2008, the Dale Property has been under agricultural production since at least 1936. Recent aerial photography (2008) indicates the Dale Property remains under agricultural use; the Frandsen parcel was converted to a golf practice facility, Mulligan Masters, on or around 2002. The golf business is no longer in operation. No farmsteads or buildings are currently located on the property aside for a small plastic storage shed on the Frandsen parcel. A transmission line extends along the northern project boundary, and Liesch observed a gas pipeline on the Frandsen Parcel. The site currently contains 61.2 acres of cropped field, 1.4 acres of developed area/roads, 33.5 acres of golf course driving range, 9.4 acres of upland meadow, 1.8 acres of excavated pond, and 5.2 acres of upland woodland (**Exhibit 5**).

### Compatibility with Adjacent and Nearby Land Uses

The Lake Elmo Zoning Map is provided on **Exhibit 6**. The Dale property is currently zoned HD-RR-SRD, which is Rural Residential Sewered Residential Holding District. The Frandsen property is currently zoned HD-A-SRD, which is Agricultural Sewered Residential Holding District. Both parcels are planned and staged for sewered residential development, but will require rezoning to Urban Low Density Residential (LDR) and Urban Medium Density Residential (MDR) prior to project approvals. The properties are located within the I-94 development corridor, which is one of two focused locations within the city for future housing expansion and increased housing density. This will allow existing open space within the rural planning districts of Lake Elmo to be maintained, along with the overall rural flavor of the city.

The project is compatible with adjacent and nearby land uses. Surrounding land use (Exhibit 4) is primarily residential development to the north/northwest, gravel mining to the north/northeast, agricultural land and Keats Avenue to the east, the I-94 corridor to the south, small businesses to the southwest, and agricultural land and a business park to the west. The proposed project will fit into the I-94 construction corridor as a separate but similar land use to existing land uses in the area. As described in the amended Comprehensive Land Use Plan, this portion of the city is guided as an “urbanized zone” that will feature higher density residential development and commercial uses. The proposed project is consistent with the land use guidance. Natural buffer strips, located adjacent to

existing rural development, are proposed along the periphery of the Savona residential development to provide a transition zone between the new project and existing land uses in the area.

### **Environmental Hazards Associated with Past Land Use**

Prior to 2002, the project site was undeveloped and used for agricultural crop production. In 2002, the Frandsen portion of the property (eastern 40 acres) was converted to a golf practice facility, Mulligan Masters. A search on the Minnesota Pollution Control Agency's Web site ("What's In My Neighborhood?") revealed no known potential sources of soil or groundwater contamination. This database contains properties that have already been investigated and cleaned up through federal and state cleanup programs, as well as those currently enrolled in MPCA cleanup programs. The database also includes properties that were thought to be contaminated, but after further investigations were determined to be clean.

### **Phase I Environmental Site Assessment**

A Phase I Environmental Site Assessment completed by Liesch revealed no recognized environmental conditions (RECs) on the properties except for seven observed areas containing evidence of dumping, and surficial debris including: appliances, quart-sized oil containers (empty), metal debris/pieces, rusted drums, plastic containers, crushed PVC pipe, a couch, mattresses, televisions, tires, wood scrap/debris, a chiller unit, glass containers, asphalt piles, soil piles, concrete piles, drain tile, plastic posts, and trash.

Liesch's report indicated that *"although the drums and containers were empty, and no obvious staining was observed in the vicinity of the containers, there is potential that the original contents of the containers may have impacted the Property subsurface. The potential for subsurface impacts from the appliances, televisions, and drums and containers observed...is considered a REC."* As a result, Liesch recommended a Phase II Environmental Site Assessment to assess the dump areas identified during the Phase I ESA, and indicated that *"debris should be managed and disposed of properly according to City, County, and State regulations."*

In addition to the dump areas, Liesch observed the following items of environmental note:

- An irrigation well located on the Frandsen Parcel. Liesch recommended that the well be sealed according to the Minnesota Department of Health well code if it is no longer in use. The well is located in a Special Well Construction Area as identified by the MPCA.
- A septic system with a drain field is present on the Frandsen Parcel, but is no longer in use. Liesch recommended that the septic system be removed / abandoned according to local code requirements.
- Suspect asbestos-containing material (ACM) was not observed on the Property during the site walk-over. However, suspect ACM may be present among debris observed on the Property.

### **Phase II Environmental Site Assessment**

A Phase II ESA was completed for the site as recommended during the Phase I process. Based upon the environmental conditions noted, Liesch completed the following scope of services as part of the subsurface Phase II ESA: (1) prepared a health and safety plan and cleared public and private utilities, (2) excavated 17 test pits throughout areas A, C, and D on the Property to assess for buried

debris and potential environmental impacts due to the presence of appliances, televisions, drums, and containers in these areas, (3) screened soil samples for the presence of organic vapors using a photoionization detector (PID) equipped with a 10.6 electron volt (eV) lamp, (4) collected five soil samples for laboratory analysis of diesel range organics (DRO) (analyzed by silica gel method), volatile organic compounds (VOCs), the eight Resource Conservation and Recovery Act (RCRA) metals, polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), and pesticides, (5) observed debris for suspect asbestos containing material (ACM), and (6) prepared a Phase II ESA report with conclusions and recommendations.

Work performed for the Phase II ESA included observing and field screening recovered soil samples, and collection of soil samples for laboratory analysis from soil test pits. Based upon the findings of the Phase II ESA, Liesch confirmed that the debris observed on the Property is mainly surficial. The only areas of deeper debris included concrete in test pit TP-11 and asphalt pieces in test pit TP-12 to approximately 4 feet below grade. General municipal waste was observed to 1.5 feet below grade in test pits TP-15 and TP-16 and to 1 foot below grade in test pits TP-4 and TP-7. Liesch test pit locations are shown in **Appendix A**.

In the RCRA metal analysis, arsenic concentrations were detected above the Residential SRV of 9 mg/kg ranging from 9.2 to 19.9 mg/kg. The Liesch Phase II report indicates that they suspect these concentrations to be within the range of naturally-occurring concentrations for this area. From a regulatory perspective, the MPCA Voluntary Investigation and Cleanup (VIC) Program has not required remedial efforts for arsenic concentrations just above the Residential SRV if the data supports background concentrations. This contention is supported by MPCA Fact Sheet: Best Management Practices for the Off-Site Reuse of Excess Fill from Development Sites dated February 2012, in which the MPCA states that “Naturally occurring concentrations of some metals, such as arsenic, selenium, or copper sometimes exceed the SRV or SLV. Such soils are not considered impacted in the absence of a contaminant source or other field or laboratory indications of contamination.” As noted above, the same assertion would be applicable to the selenium concentrations detected on the Property.

The detection of DRO at 153 mg/kg in TP-15 (1') indicates the presence of low level petroleum impacts in the vicinity of TP-15. The extent and magnitude of the DRO impacted soil is unknown. Based upon the findings, Liesch recommended the following: Inform the Property owner of the release of DRO as detected on the Property, and prepare a Construction Contingency Plan to detail management of debris and impacted soils during development.

Lennar will prepare a Construction Contingency Plan for the site prior to site development to manage known debris and impacted soils within the project area. However, the primary areas where test borings were completed will be largely undisturbed in the final development plan (**Appendix A**). The northernmost area (Area A) is located within an existing transmission line easement, and will therefore be largely avoided. Areas C is predominantly located within a tree and open space preservation area, and about 50 percent of Area D will be preserved and avoided by the project design.

### **Local Soil and Groundwater Contamination**

Perfluorochemical (PFC)-containing wastes were disposed of at two land disposal sites, the 3M-Oakdale Disposal Site in Oakdale and the former Washington County Landfill in Lake Elmo, Minnesota between 1956 and 1974. The Oakdale disposal site is located approximately 3.8 miles northwest of the project area, and the Washington County Landfill is located approximately 3.4 miles to the north.

PFCs were released from the two facilities resulting in contamination of groundwater and nearby drinking water wells as outlined in a Public Health Assessment prepared by the U.S. Department of Health and Human Services (August 29, 2008), and the Agency for Toxic Substance and Disease Registry (ATSDR). The Minnesota Department of Health (MDH) has detected PFCs in several surface waterbodies in the Lake Elmo, Oakdale, and Woodbury area through various sampling studies. Surface water bodies north of the project area that have been found to contain PFCs include: Raleigh Creek, Eagle Point Lake, and Lake Elmo. PFCs are suspected to infiltrate into the groundwater from these water body sources. Sunfish Lake was found to contain perfluorobutanoate (PFBA). Goose Lake, located 0.25-miles north of the project area, was sampled by the MDH in 2010 and was found to contain no PFCs.

According to this Public Health Assessment, PFCs have been detected in public and private wells across a wide area of Oakdale and Lake Elmo. In Lake Elmo, approximately 200 homes were connected to municipal water to mitigate exposure to PFCs in the groundwater. Additional homes, approximately 55, have had in home granular activated carbon filter systems installed to mitigate exposure to PFCs in the groundwater. These homes have also been offered bottled drinking water. Groundwater monitoring of PFCs is an ongoing program. The proposed project will mitigate risks to new residents by providing access to municipal drinking water.

## 10. Cover Types

*Estimate the acreage of the site with each of the following cover types before and after development.*

**Table 10.1. Estimated Before and After Cover Types**

Land Cover	Before (acres)	After (acres)
Cropped field	61.2	0.0
Developed/Road	1.4	85.5
Golf Club/Driving Range	33.5	0.0
Upland Meadow	9.4	20.0
Excavated Pond	1.8	0.0
Upland Woodland	5.2	2.0
Stormwater ponds	0.00	5.00
<b>Totals</b>	<b>112.5</b>	<b>112.5</b>

*If Before and After totals are not equal, explain why:* Before and after totals are equal.

## 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.*

Fish and wildlife resources on and near the site are directly related to the composition, quality, size, and connectivity of natural communities including woodlands, wetlands, and grasslands. Westwood Professional Services, Inc. used aerial photography to map the existing cover types (Exhibit 5). Based on this analysis, the site contains four major habitat components: 61.2 acres of cropped field, 9.4 acres of upland meadow, 1.8 acres of excavated pond, and 5.2 acres of upland woodland. These

habitats are used by a variety of animals common to central Minnesota. Wildlife resources that exist throughout the site likely include those species that have adapted to open lands and cropland habitats such as pheasant, meadowlark, field sparrow, cottontail, red fox, and white-tailed deer. The open fields provide seasonal food and cover for these species.

Project development is expected to convert approximately 100 acres of cropped field, upland meadow, golf course/driving range, upland meadow, excavated pond, and upland woodland. Preservation of approximately 27 acres of upland woodland, upland meadow, and stormwater ponding is expected to mitigate some of the adverse effects on wildlife. Connections between existing meadow/old field and woodlands will be maintained in the development by retaining buffer strips along the property edges, which will allow travel corridors to remain for use by wildlife on the property and from off-site resource areas.

Conversion of agricultural fields, woodlands, and meadow/old field to residential development is expected to result in some local decline in wildlife abundance. Populations of species that depend upon cropland, woodland and fields, such as ring-necked pheasants, wild turkey, and meadowlarks, will likely be displaced. Migratory birds are expected to respond to the development by looking for alternative nesting sites upon their return from wintering habitats. Some songbirds that readily adapt to suburban habitats may become more numerous. Non-migratory species with small home ranges such as small mammals will experience more adverse effects. These species will compete with other individuals of the same or other species to claim territories in neighboring habitats or succumb to mortality during project construction.

Approximately 24 percent of the 112.5-acre project area will be open space, which is expected to help mitigate adverse effects on wildlife. The project is not expected to result in a regionally significant decline in wildlife abundance or species diversity. Measures to reduce the effects on wildlife include preservation of buffers and adjacent woodland integrated with open space and parkland, and construction of stormwater ponding. These measures are expected to provide additional habitat for wildlife and help mitigate adverse effects on some wildlife.

- b) *Are any state-listed (endangered, threatened, or special concern) species, rare plant communities or other sensitive ecological resources on or near the site?*  Yes  No

*If yes, describe the resource and how it would be affected by the project. Describe any measures that will be taken to minimize or avoid adverse impacts. Provide the license agreement number and/or Division of Ecological Resources contact number (#ERDB 20130158) from which the data were obtained and attach the response letter from the DNR Division of Ecological Resources. Indicate if any additional survey work has been conducted within the site and describe the results.*

The Minnesota DNR Natural Heritage Program conducted a database search of the Minnesota Natural Heritage Information System (NHIS) to determine if there are listed plants and animals; native plant communities; wildlife aggregations; geological features; or state rare features that are known to occur within or near the project site. The database search did not identify rare features within an approximate one-mile radius of the proposed project. The DNR Natural Heritage Review response letter is provided in **Appendix B**.

Based on the nature and location of the proposed project, the DNR concluded that it does not believe the project will negatively affect any known occurrences of rare features. Therefore, no additional survey work has been or is scheduled to be conducted on the project area, and no measures to avoid or minimize potential impacts appear warranted.

According to the Natural Communities and Rare Species of Washington County Map (Minnesota County Biological Survey, 1990), the project site does not contain rare plant or animal species or other significant natural 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 water such as a lake, pond, wetland, stream or drainage ditch?  Yes  No If yes, identify water resource affected and give the DNR Public Waters Inventory number(s) if the water resources affected are on the PWI: N/A. Describe alternatives considered and proposed mitigation measures to minimize impacts.*

The project will not involve the physical or hydrologic alteration of natural surface waters such as lakes, ponds, wetlands, or streams. On September 27, 2012, Arrowhead Environmental Consulting, Inc., (AEC) evaluated the project area for wetlands and other jurisdictional waters. No jurisdictional wetlands or waters were identified within the project boundary.

Prior to delineating the site, the United States Geological Survey (USGS) Map (Lake Elmo Quad), the Minnesota Department of Natural Resources (MN DNR) Public Water Inventory Map (PWI), the Washington County Soil Survey Map, and the National Wetland Inventory (NWI) Map were reviewed. Historical images from 1936, 1953, 1957, 1964, 1991, 2000, 2003, and 2010 were also reviewed. The PWI map indicated no Public Water Wetlands are mapped on the property. The NWI map indicated several wetland basins within the property (PEMCd, PEM1C, PSS1C, PFO1C, PUBFx) (**Exhibit 7**); a PEMC wetland was also mapped along the western property line; however, field review indicated it is located off of the property. According to the Washington County Soil Survey map, non-hydric soil is mapped throughout the property.

AEC reviewed the entire site and focused on four specific areas. Soil samples were collected in each of these areas and reviewed, but in each case the soils observed at the sample point locations were determined to be non-hydric, and no hydrology indicators were observed. Consequently, none of the areas examined met jurisdictional wetland criteria.

The eastern portion of the review area was converted to a golf course in the early 2000's. Several "ponds" were created throughout the golf course; most of the ponds have rubber liners. AEC reviewed historical aerial photography to determine if the ponds were created in historical wetland areas. Based on the aerial analysis, it appears that none of the ponds were created in historical wetland. AEC submits that the pond areas should not be regulated as jurisdictional wetland as they were created in upland and have artificial bottoms (rubber liners). AEC reviewed an area in the agricultural field (just west of the golf course near the center of the review area, an area that is quite evident on 2010 aerial imagery. This area was a stockpile of coarse material (mostly sand and gravel) and was dominated by pigweed (*Amaranthus*) species. The area was determined by AEC not to meet jurisdictional wetland criteria.

Due to the timing of late-season field work, findings have not been reviewed in the field by wetland regulatory agencies, and therefore have not been confirmed in writing by the Technical Evaluation Panel (TEP) for the project area, or the U.S. Army Corps of Engineers. The TEP and the U.S. Army Corps of Engineers will be invited to review and comment on the wetland delineation in spring 2013.

### 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 the site, explain methodology used to determine.

#### **Abandonment of water wells**

No new water wells are planned for the project. The Minnesota Geological Survey's (MGS) County Well Index (CWI) indicates there is one registered well within the project site. According to the Phase I Environmental Assessment report, no municipal or private water wells were noted on the Property, except for an irrigation well located on the Frandsen Parcel (former golf practice range). According to Minnesota Department of Health well records for Unique Well No. 686580, this irrigation well is 300 feet deep and was installed in 2002 to irrigate the golf course facility (**Appendix C**). This well will be abandoned during construction. If any other active or inactive wells are discovered on the property, they will be field-located, abandoned, and sealed in accordance with Minnesota Department of Health regulations prior to site development.

#### **Connection to a public water supply system**

The City of Lake Elmo currently operates two wells, which are permitted under DNR Water Appropriations Permit No. 611031. The two wells range in depth from 285 to 808 feet deep, and draw water from the Jordan-Mt. Simon and Prairie Du Chien-Jordan aquifers (2010 Drinking Water Report). The City's DNR water appropriations permit allows a total system pumping capacity of 260 million gallons per year (MGY).

According to DNR Water Appropriation records as of 2010, the city reported pumping 103 MGY (average 282,192 gallons per day). The estimated water demand for the proposed development is 34.3 MGY (94,037 gallons per day) based on the assumption that consumption is approximately 110 percent of wastewater generation (see Item 18). Consequently, there are no water supply issues anticipated as a result of adding the development to the city's water supply system. According to the city engineer, water may be supplied to the development either through an existing services agreement with the City of Oakdale or via the Lake Elmo municipal water supply system.

The current Comprehensive Plan calls for municipal water facilities to be extended from the southeast corner of the Eagle Point Business Park along Hudson Boulevard to service this portion of the city.

#### **Dewatering**

Dewatering will become necessary if surficial groundwater is encountered during utility installation; however, it is unlikely that dewatering will be necessary because the depth to groundwater exceeds the planned depth of sanitary sewer, municipal water, and storm sewer in most areas within the study area. Based on data gathered from Unique Well No. 686580 upon installation in October 2002, static groundwater levels in the area are approximately 120 feet below grade. The quantity and duration of potential construction dewatering is not known at this time, but it is expected that any necessary dewatering for construction will be temporary. If groundwater is encountered during utility installation, it will be discharged to temporary sediment basins located within the project site.

If construction dewatering and pumping from the proposed development exceeds the 10,000-gallon per day or 1,000,000 gallons per year thresholds, a DNR Water Appropriation Permit will be obtained. If it becomes apparent that construction dewatering will not exceed 50 million gallons in total and duration of one year from the start of pumping, the contractor or project proposer will apply to the DNR Division of Waters for coverage under the amended DNR General Permit 97-0005 for temporary water appropriations. It is not anticipated that construction dewatering or pumping from the proposed development will be extensive or continue long enough to impact domestic or municipal wells.

#### 14. Water-Related Land Use Management District

*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.*

The project site is not located within a shoreland zoning district. The site is not within 1,000 feet of a Minnesota DNR Public waterbody or 300 feet of a Minnesota DNR Public Watercourse, which would trigger a shoreland zoning district. According to FEMA Floodplain mapping (2008 Update), the project is located within Flood Panel 27163C0335E; HUC 7010206. The entire project is identified as being outside of either a 100 or 500-year flood zone (Exhibit 7). The site is also not in or adjacent to any state or federally-designated wild or scenic river land use zone.

#### 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.*

The project site does not encompass any surface waters that are used by watercraft.

#### 16. Erosion and Sedimentation

*Give the acreage to be graded or excavated and the cubic yards of soil to be moved:*

*Acres:* Approximately 100 acres of 112.5 acres will be graded for streets, house pads, and stormwater features.

*Cubic Yards:* Approximately 750,000 cubic yards of soil will be moved.

*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.*

The Highly Erodible Land (HEL) List for Washington County, Minnesota (USDA NRCS, 2006) indicates there is one potentially highly erodible soil that covers approximately 23.7 acres in two areas within the study area (**Exhibit 8**). Chetek sandy loam (6-12 percent slopes) is located in the central portion of the western portion and in the southwest corner of the eastern portion of the property.

According to the USDA NRCS SSURGO database for Washington County (Accessed 2013), steep slopes (12 percent or greater) may be associated with the one soil mentioned above. Contour



mapping indicates that the majority of the surface topography is gently undulating. Elevations range from 1,078 feet in the northwestern portion of the site to 950 feet in the eastern portion of the site (Exhibit 2). The western portion of the site drains to the southwest, and the eastern portion drains east-northeast. With the majority of the project area being over 1,000 above mean sea level, the site contains some of the highest elevations in the city.

Because the project will involve disturbance of more than one acre of land, application for coverage under the National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) General Permit will be submitted to the MPCA prior to initiating earthwork on the site. This permit is required for discharge of stormwater during construction activity and requires that Best Management Practices (BMPs) be used to control erosion, and that all erosion controls be inspected after each rainfall exceeding 0.5 inches in 24 hours. Erosion control practices that will be implemented on the site include:

1. Construction of temporary sediment basins in the locations proposed for stormwater ponding, and development of these basins for permanent use following construction.
2. Silt fence and other erosion control features installed prior to initiation of earthwork and maintained until viable turf or ground cover is established on exposed areas.
3. Periodic street cleaning and installation of a rock construction entrance to reduce tracking of dirt onto public streets.
4. Stabilization of exposed soils, phased with grading, within 7 days for slopes steeper than 3:1, 14 days for slopes less than 3:1 but greater than 10:1, and 21 days for slopes flatter than 10:1.
5. Energy dissipation, such as riprap, installed at storm sewer outfalls.
6. Use of cover crops, native seed mixes, sod, and landscaping to stabilize exposed surface soils after final grading.

Erosion control plans must be reviewed and accepted by the City of Lake Elmo and applicable watersheds prior to project construction. Because the above BMPs will be implemented during and after construction, potential adverse effects from construction-related sediment and erosion on water quality will be minimized.

#### **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 stormwater pollution prevention plans.*

The project must meet the requirements of the city's Storm Water Ordinance. The project also must meet the requirements of the Valley Branch and South Washington Watershed Districts (e.g. infiltration, erosion), where applicable.

The city's Storm Water Ordinance is available on the city's website. Lake Elmo is also a mandatory small MS4 (Municipal Separate Storm Sewer System) city, and is required by federal and state law to obtain and implement a NPDES Stormwater permit administered by the MPCA. MS4s are also required to develop and implement a stormwater pollution prevention plan program (SWPPP), and submit an annual report to the MPCA.

### **Pre-Development Site Runoff**

Existing site runoff likely contains pesticides, herbicides, and fertilizer residues due to the presence of agricultural fields and the golf practice area. There is also likely a minor amount of runoff that flows to the site from Keats Avenue North. However, because the site contains some of the highest elevations in the city, runoff primarily drains away from the site to the southwest and east-northeast. It is expected that a portion of the runoff infiltrates into the site's permeable, silty and sandy soils (see Item 19) and some likely reaches existing onsite stormwater ponds located on the golf course practice area.

### **Post-Development Site Runoff**

The change in land use will decrease the amount of agricultural chemicals and suspended solids, and increase other components typical of urban runoff. It is expected that the volume of runoff will increase during significant storm events as a result of the increase in impervious surface area. It is anticipated that only extreme conditions such as those occurring in connection with 50- or 100-year storm events will result in measurable increases in runoff volume and associated pollutant transport. The preservation and creation of open space in the form of buffers, parks, woodlands, and ponds will help to mitigate potential adverse effects from the increase in impervious surface.

Runoff water quality will be typical of residential developments, and will likely be slightly degraded due to pollutants deposited on roads, roofs, and other impervious surfaces. Similar to current conditions, sediment, nutrient, and other pollutant removal will occur when much of the stormwater filters through upland vegetation, vegetated drainage swales, stormwater ponds, and other best management practices, including infiltration. Preserved and newly seeded vegetation will provide filter strips to help remove sediment and nutrients before runoff discharges to area wetlands and surface waters, mitigating potential effects on water quality.

Potential adverse effects of runoff volume and quality will be further mitigated by the construction of approximately 5.0 acres of stormwater ponds, which will be designed to reduce peak runoff rates and meet all requirements of the City of Lake Elmo, and Valley Branch and South Washington Watershed Districts. The design of ponding areas and the quality of stormwater discharging from the development will meet the requirements of the MPCA General Stormwater Permit for Construction Activity (Minnesota Stormwater Manual, and applicable local regulations. In a storm event, stormwater will be retained in the ponds and discharged at or below existing peak runoff rates.

BMPs will be employed during construction to reduce erosion and sediment loading of stormwater runoff. Inspection and maintenance of BMPs during construction will be consistent with NPDES/SDS General Permit requirements, including site inspection after rainfall events, perimeter sediment control maintenance, and sediment removal.

- 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.*

According to available watershed district mapping, the project site is located within the Valley Branch and South Washington Watershed Districts (Exhibit 6). Surface waters generally flow east-northeast towards Lake Elmo, and southwest towards an unnamed creek which connects Armstrong Lake to Wilmes Lake. Because the site represents one of the highest locations in the city, the site does not receive directed runoff from off-site waterbodies such as Raleigh Creek, Eagle Point Lake, or Lake Elmo, and there are no direct hydrologic connections to these waterbodies from the project site.

The goal of the project will be to maintain peak discharge rates at or below the existing condition. Post-construction drainage will follow similar pathways, with minor differences in drainage routes and increases in the volume of road ditches and swale flows. Post-development stormwater runoff will either travel overland, into stormwater ponds, or through storm sewers prior to discharging to receiving waters.

For the following reasons, it is anticipated that site development will have minimal effects on receiving water quality:

- Preservation and creation of approximately 27 acres of buffers, parks, woodlands, and ponds (24 percent of the site).
- Hydraulic storage within sediment basins will be designed, and BMPs implemented, in accordance with the General NPDES/SDS Permit for Construction Activities to protect water quality and control erosion.

### 18. Water Quality: Wastewaters

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

Only normal domestic wastewater production is expected from the project. The types of wastewater produced will be typical of new residential developments. No onsite municipal or industrial wastewater treatment is anticipated or planned.

Both the MPCA and the Metropolitan Council Environmental Services (MCES) have compiled and documented extensive data that relates wastewater flow generation to population and land use. Sanitary wastewater production for the proposed development was estimated based on the methods outlined in the Service Availability Charge (SAC) Procedure Manual (MCES, 2012). The MCES has established 274 gallons per day (gpd) to be the average daily wastewater production from a typical residential connection. One SAC unit is defined as 274 gallons of wastewater flow volume, which is based on the assumption of 2.74 persons per unit and 100 gallons per capita day (gpcd) of wastewater production.

Each single family residence and townhome was assigned one SAC unit. The estimated maximum potential daily wastewater production for the entire development is 85,488 gpd. The following table provides information on wastewater production based on land use.

**Table 18.1**  
**Wastewater Production Predicted**

Proposed Use	SAC Rate	Units	SAC Units	Wastewater (gallons/day)
Single Family Homes	1/Unit	190	190	52,060
Townhomes	1/Unit	122	122	33,428
		<b>Total</b>	<b>312</b>	<b>85,488</b>

- b) *Describe waste treatment methods or pollution prevention efforts and give estimates of composition after treatment. Identify receiving waters, including major downstream water bodies (identifying any impaired waters), 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.*

No on-site sanitary sewage treatment is proposed.

- 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.*

According to the city's approved Comprehensive Plan, the project area is situated within a designated sewer service area (see Future Land Use – Sewer Plan, 2012). Current plans call for the proposed development site to be served by municipal sewer extended from the southeast corner of the Eagle Point Business Park along Hudson Boulevard. All wastewater from the proposed project will be discharged to the Woodbury, Oakdale, Northdale, and East Oakdale (WONE) Interceptor. The amended Land Use Plan (2012) forecasts approximately 515 new households connecting to the WONE Interceptor by 2015, and an additional 1,235 households by 2020. From the WONE Interceptor, wastewater from the development would flow to the Metropolitan Wastewater Treatment Plant in St. Paul, Minnesota for treatment; the largest wastewater treatment facility in Minnesota. This facility currently treats approximately 215 million gallons of wastewater each day, and has the capacity to treat up to 250 million gallons per day. The Metropolitan Council projects ample capacity at this plant through 2030. Consequently, no wastewater facility or treatment capacity issues are anticipated (MCES 2007).

## 19. Geologic Hazards and Soil Conditions

<i>Approximate depth (in feet) to groundwater:</i>	<u>0</u>	<i>minimum</i>	<u>~150</u>	<i>average</i>
<i>Approximate depth (in feet) to bedrock:</i>	<u>~50</u>	<i>minimum</i>	<u>~125</u>	<i>average</i>

- a) *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.*

Groundwater elevations within the vicinity of the site are around 875 feet above sea level based on The Geologic Atlas of Washington County, Minnesota (1990) C-5, Plate 5. Topographic mapping indicates that elevations on the site range from approximately 1,070 above mean sea level in the northwest corner of the site to 980 above mean sea level towards the eastern border of the site. Consequently, the maximum depth to groundwater is estimated at about 195 feet. Because surficial groundwater is sometimes encountered in seasonally wet areas, the minimum depth to groundwater is estimated at 0 feet. The approximate average depth to groundwater was calculated by averaging the topographic elevations on the site (1,025) and subtracting the anticipated depth shown on the Washington County Atlas (875).

Depth to bedrock was estimated from the record of Unique Well No. 686580 (County Well Index, 2012) (**Appendix C**). The well and boring record completed for this new well in October 2002 indicates that Prairie Du Chien bedrock was reached at a depth of 152 feet below grade. The Geologic Atlas of Washington County, Minnesota (1990) C-5, Plate 4 indicates that the distance to bedrock ranges between approximately 50 and 200 feet below grade.

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

The Geologic Atlas of Washington County, Minnesota (1990) C-5, Plate 1 indicates there are no known sinkholes, exposed bedrock, springs, or seeps on or near the site. If such features are encountered on the site, actions will be taken to mitigate potential effects such as stormwater routing, soil stabilization, and groundwater protection practices.

### Soil Classification

The Soil Survey Geographic (SSURGO) digital database for Washington County (USDA NRCS, Accessed 2013) indicates the soils that occur within the project area (**Exhibit 8**) are classified as summarized in Table 19.1. Soils on the site are predominantly non-hydric silty and sandy loams.

**Table 19.1. Soils Classification**

Map Symbol	Soil Classification	Hydric <sup>1</sup>	Prime Farmland <sup>2</sup>
264	Freeon silt loam, 1 to 4 percent slopes	Not hydric	All areas are Prime Farmland
153B	Santiago silt loam, 2 to 6 percent slopes	Not hydric	All areas are Prime Farmland
153C	Santiago silt loam, 6 to 15 percent slopes	Not hydric	Farmland of Statewide importance
155C	Chetek sandy loam, 6 to 12 percent slopes	Not hydric	Not Listed
155D	Chetek sandy loam, 12 to 25 percent slopes	Not hydric	Not Listed
342B	Kingsley sandy loam, 2 to 6 percent slopes	Not hydric	All areas are Prime Farmland
49B	Antigo silt loam, 2 to 6 percent slopes	Not hydric	All areas are Prime Farmland

<sup>1</sup> Based on the NRCS List of Hydric Soils of Minnesota (1995).

<sup>2</sup> Based on the USDA/NRCS Prime Farmland of Washington County, Minnesota (2002).

A geotechnical subsurface investigation has been initiated. Results of the investigation will be published separately.

### Potential for Groundwater Contamination

The *Geologic Atlas of Washington County, Minnesota* (1990) pollution sensitivity map indicates that the sensitivity of groundwater to pollution in the project areas is generally moderate. Sensitivity of groundwater systems to pollution is defined as the approximate time it takes from the moment a contaminant infiltrates the land surface until it reaches an aquifer. Although shallow groundwater is

highly susceptible to contamination, moderately permeable soils with finer textures will slow or restrict the movement of water, which extends the time needed for chemicals to break down before reaching the water table. As stated in Item 19, the average depth to groundwater on the site is estimated at approximately 150 feet below ground surface, providing a significant buffer between the soil surface and the groundwater aquifer.

Because development will be typical of residential uses, no unusual wastes or chemicals are anticipated to be spread or spilled that would cause significant groundwater contamination. The proposed project may offer continued groundwater protection by providing adequate stormwater treatment and vegetated infiltration areas such as rain gardens, and buffers to help capture runoff and filter pollutants.

The project will adhere to the Valley Branch and South Washington Watershed Districts infiltration requirements for stormwater. Because of the site's elevated position in the overall landscape, the propensity for runoff to drain away from rather than towards the site, and the absence of surface water connections to known PFC-contaminated waterbodies (i.e. Raleigh Creek, Eagle Point Lake, and Lake Elmo), the potential for infiltrating contaminated surface waters on the site is low.

### **Special Well and Boring Construction Area**

According to the Minnesota Department of Health, 2012, a special well and boring construction area is "a mechanism which provides for controls on the drilling or alteration of public and private water supply wells, and monitoring wells in an area where groundwater contamination has, or may, result in risks to the public health. The purpose of a Special Well and Boring Construction Area is to inform the public of potential health risks in areas of groundwater contamination, provide for the construction of safe water supplies, and prevent the spread of contamination due to the improper drilling of wells or borings." Contractors proposing to drill a well or boring in an advisory area must first contact the Minnesota Department of Health, Well Management Section to determine proper procedures for installation. As previously discuss, Perfluorochemical (PFC)-groundwater contamination exists near the project area. While the project is located in a Special Well and Boring Construction Area, installation of new groundwater wells is not planned by the project.

### **Groundwater Protection and Mitigation Measures**

The Savona residential development will offer a higher level of groundwater protection than exists under current conditions. Chemical applications can be high in agriculturally-dominated landscapes. The conversion of the site to urban uses will ensure greater protection of groundwater by: (1) covering exposed soils with turf and landscape plants to reduce infiltration of nutrients and pesticides; (2) reducing hazardous materials on the property to include only household quantities; (3) providing 27 acres of park, woodland, and open space; (4) providing stormwater treatment systems; (5) abandoning an existing irrigation well; and (6) not drilling any new wells for the project.

## 20. Solid Wastes, Hazardous Wastes, and 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.*

Construction activities will generate wastes typical of residential development operations. No solid or hazardous wastes, including solid animal manure, sludge, and ash, will be produced during construction and/or operation. The contractor will dispose of wastes generated at the site in an approved method by using commercial dumpsters and disposing construction wastes at an MPCA-permitted landfill. The contractor will recycle construction waste that can be recycled, when feasible.

Following project construction, solid waste generation will be typical of occupied residential developments of this size. It is not anticipated that the proposed project will generate significant amounts of wastes that would be considered hazardous aside from typical household cleaners, paints, lubricants, and fuel storage for small power equipment. The majority of the solid waste generated will include materials such as paper, organics (food wastes, wood, and rubber products), yard waste, and inert solids. The remaining wastes will likely include plastics, metals, and glass.

According to the Metropolitan Solid Waste Management Policy Plan 2010-2030 (MPCA, 2011), a Minnesota family of five generates approximately six tons of garbage per year, or 1.2 tons per occupant. The following residential solid waste generation rates were based on the conservative figures that the average single-family dwelling consists of 2.9 persons based on 2010 City of Lake Elmo census data. The household occupant number was then multiplied by 1.2 tons per person per year, based on the MPCA estimate for Minnesota families. Using these conservative figures, the proposed development could generate as much as 1,086 tons per year (312 units X 2.9 people/unit X 1.2 tons/person/year) of residential municipal solid waste per year.

Residents within the new development will contract individually with waste haulers for solid waste collection and recycling services under the city's open trash and recycling collection system. According to the city's web page, there are currently five licensed waste haulers. Curbside recycling, including paper, plastics, glass, and metals, is available to Lake Elmo residents through their solid waste collector. Participation in the recycling program by future residents of the project area is expected to reduce costs for solid waste trucking and disposal.

Waste generated in Washington County is delivered to the Resource Recovery Facility in Newport, Minnesota. The majority of the waste is processed into Refuse Derived Fuel (RDF). This fuel is burned in place of coal at Xcel's power plants in either Red Wing or Mankato, Minnesota.

- 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.*

Only normal construction and household hazardous wastes are anticipated. Toxic or hazardous material such as fuel for construction equipment and materials used during the normal construction process of residential units (paint, adhesives, stains, acids, bases, herbicides, and pesticides) will

likely be used in typical quantities during site preparation and unit construction. Builders and contractors are responsible for proper management and disposal of wastes generated during construction, which is typically handled by using construction dumpsters and the appropriate certified landfills. No known hazardous materials are currently located onsite. Use of toxic or hazardous materials, outside of vehicle fuels, standard household cleaners, and lawn care chemicals, is not anticipated within the project area in conjunction with the proposed residential development.

- 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.*

As described in Item 9, a Phase I Environmental Site Assessment was conducted by Liesch Associates, Inc. in October 2012. No underground storage tanks or aboveground storage tanks were observed on the property, or reported to Liesch. It is currently not anticipated that above or below ground tanks for storage of petroleum or other materials will be located on the project site. However, if above or below ground tanks are proposed on the site, they will be installed according to MPCA regulations, and consideration will be given to spill and leak detection and prevention technologies, as well as double-walled tank construction.

## 21. Traffic

Parking spaces added:	0
Existing spaces (if project involves expansion):	0
Estimated total average daily traffic generated:	2,518
Estimated maximum peak hour traffic generated and time of occurrence:	253 trips (Peak hour approximately 4:30 to 5:30 PM)
Indicate source of trip generation rates used in the estimates.	<u>Trip Generation, 9th Edition</u>

*If the peak hour traffic generated exceeds 250 vehicles or the total daily trips exceeds 2,500, a traffic impact study must be prepared as part of the EAW. Using the format and procedures described in the Minnesota Department of Transportation's Traffic Impact Study Guidance (available at: <http://www.dot.state.mn.us/accessmanagement/pdf/manualchapters/chapter5.pdf>) or a similar local guidance, provide an estimate of the impact on traffic congestion on affected roads and describe any traffic improvements necessary. The analysis must discuss the project's impact on the regional transportation system.*

A traffic study was completed for the proposed project in April 2013. The traffic study examined the potential traffic-related impacts of the proposed project on the adjacent roadway system and key intersections near the site. A copy of the traffic study is included in Appendix E, and summarized below.

### **Trip Generation**

The trip generation for the proposed project was determined based on the standard trip generation rates contained in Trip Generation, 9th Edition (Institute of Transportation Engineers, 2012). The trip generation estimates for the proposed project are shown in Table 21.1.



**Table 21.1  
Trip Generation Summary**

Land Use	Development Units	Daily Trips (Trip Ends)	A.M. Peak Hour (Approx. 7:15 – 8:15 A.M.)			P.M. Peak Hour (Approx. 4:30 – 5:30 P.M.)		
			In	Out	Total	In	Out	Total
Single-Family Residential	190 DUs	1,810	36	107	143	120	70	190
Multi-Family Residential	122 DUs	708	9	45	54	42	21	63
<b>Totals</b>	<b>312 DUs</b>	<b>2,518</b>	<b>45</b>	<b>152</b>	<b>197</b>	<b>162</b>	<b>91</b>	<b>253</b>

As shown in Table 21.2, the proposed project is expected to generate a total of 2,518 trips on a daily basis, 197 trips during the a.m. peak hour (with 45 inbound and 152 outbound), and 253 trips during the p.m. peak hour (with 162 inbound and 91 outbound). The values listed under the “Daily” column represent total trip ends. A trip end is one movement to or from a location. For example, a resident leaving home in the morning to drive to work produces one morning trip end from the house. The return trip home in the afternoon produces a second trip end to that house.

### Access and Trip Assignment

Access for the proposed project will be provided via a newly constructed collector roadway (5th Street North) which will then intersect with Keats Avenue (CSAH 19). The newly constructed roadway was originally identified in the City of Lake Elmo’s Comprehensive Transportation Plan. The Transportation Plan suggested a new east-west roadway between 10th Street (CSAH 10) and the I-94 frontage road be added to the transportation system. This new roadway alignment has been incorporated into the site plans of the proposed project and represents the southern boundary of the single-family residential development. *“Designated as a minor collector, this route would allow local traffic to access the north-south county roads. Rather than a straight shot between points, this roadway would likely curve between new developments to provide access.”* According to the City’s Transportation Plan, this new east-west roadway is expected to handle approximately 5,000 vpd by the year 2030 between Keats Avenue and Inwood Avenue to the west. Once extended through to Inwood Avenue, some traffic flowing east to Keats Avenue would likely be re-directed west to Inwood Avenue for access to the I-94 corridor. This new east-west roadway will also likely reduce the traffic volumes along 10th Street to levels where capacity improvements will not likely be needed by the year 2030.

The trips generated by the proposed project were distributed to the adjacent roadway system using the following directional distribution:

- 15 percent to/from the north via Keats Avenue (CSAH 19)
- 10 percent to/from the south via Keats Avenue (CSAH 19)
- 20 percent to/from the east via I-94
- 40 percent to/from the west via I-94
- 15 percent to/from the west via Hudson Boulevard

### **Existing Conditions**

An operations analysis was conducted for the a.m. and p.m. peak hours at the following key intersections in order to determine how traffic conditions currently operate in the study area:

- Keats Avenue (CSAH 19) at 10th Street (CSAH 10)
- Keats Avenue (CSAH 19) at Hudson Boulevard
- Keats Avenue (CSAH 19) at I-94 West Ramps
- Keats Avenue (CSAH 19) at I-94 East Ramps
- Inwood Avenue (CSAH 13) at Hudson Boulevard

The Keats Avenue (CSAH 19) intersections with the I-94 West and East Ramps are signalized, as well as the Inwood Avenue (CSAH 13) intersection with Hudson Boulevard. The Keats Avenue intersection with 10th Street (CSAH 10) is all-way stop controlled, and the Keats Avenue (CSAH 19) intersection with Hudson Boulevard is side-street stop controlled.

The existing conditions analysis revealed that all five (5) of the key intersections currently operate at acceptable level of service (LOS) C or better during the a.m. and p.m. peak hour with existing geometrics and traffic control.

### **Future Conditions**

It is anticipated that the proposed project will be fully built-out by the year 2018. Therefore, an operations analysis was also completed for the year 2018 in order to determine the traffic-related impacts of the proposed development on the adjacent roadway system. Two future year development scenarios were analyzed: year 2018 no-build, and year 2018 build. The year 2018 no-build conditions assume that the proposed project is not built; however, background traffic growth in the study area is assumed to grow at a 1.7 percent annual growth rate. The year 2018 no-build conditions is used as a future year base from which the year 2018 build traffic volumes were developed. The year 2018 build conditions assume that the proposed project is fully build-out. In addition to the five (5) key intersections analyzed as part of the existing conditions analysis, the proposed east-west roadway (5th Street) intersection with Keats Avenue (CSAH 19) was also analyzed as part of the year 2018 build conditions operations analysis.

The year 2018 no-build conditions analysis revealed that all of the five (5) key intersections continue to operate at acceptable LOS C or better during the a.m. and p.m. peak hours, with existing geometrics and traffic control.

The analysis results for the year 2018 build-out conditions revealed that even with the addition of the traffic generated by the proposed development, the five (5) key study intersections as well as the Keats Avenue (CSAH 19) intersection with the proposed 5th Street will operate at an acceptable LOS C or better during the a.m. and p.m. peak hours, with existing geometrics and traffic control.

### **Conclusions**

While the proposed development will increase traffic volumes on adjacent roadways, the increase will not have an adverse impact on traffic operations since the adjacent roadways have enough reserve capacity to accommodate the site-related traffic. Therefore, with the exception of the proposed east-west collector roadway (5th Street) that will serve as the primary access to the proposed development, no additional improvements are needed to the existing roadway system to accommodate the proposed project.

## 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.*

Increased traffic will generate a relatively small corresponding increase in carbon monoxide levels and other vehicle-related air emissions. The project is expected to have a negligible impact on air quality. Consequently, baseline air quality monitoring, or predictive air quality modeling, has not been scheduled at this time, and no measures to mitigate air quality impacts have been considered.

## 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) and any greenhouse gases (such as carbon dioxide, methane, nitrous oxide) and ozone-depleting chemicals (chloro-fluorocarbons, hydrofluorocarbons, perfluorocarbons or sulfur hexafluoride). Also describe any proposed pollution prevention techniques and proposed air pollution control devices. Describe the impacts on air quality.*

Because development of heavy industrial facilities is not proposed on this site, no stationary source air emissions are anticipated as a result of this project.

## 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.)*

Project development will not generate odors, noise or dust in excess of levels emitted during typical construction practices of suburban developments. Any odors, noise, or dust produced during construction will meet the requirements of the MPCA and applicable local regulations.

### Odors

The project will not generate significant odors during construction or operation. The emission of odor by any use shall be in compliance with City Code Section 96.03, 4(a).

### Noise

The project will be constructed in accordance with the city's established noise ordinance as outlined in City Code Sections 130.45 to 130.47. It is anticipated that noise levels will temporarily increase locally during project construction, but are expected to return to normal levels following project completion. Noise levels on and adjacent to the site will vary considerably during construction depending on the pieces of construction equipment being operated simultaneously, the percent of time in operation, and the distance from the equipment to the receptors. The nearest receptors to the proposed project are several single-family residences located to the north along Julep Avenue North, and commercial businesses to the south and west along both Eagle Point and Hudson Boulevards. In accordance with Section 130.47 of the City Code, construction equipment will not be operated between the hours of 6:00 pm and 7:00 am on weekdays, and during any hours on Saturdays, Sundays, and state and federal holidays.

## Dust

The construction process is expected to generate some dust, but it is not anticipated that fugitive dust will be generated in objectionable quantities. Consideration will be given to suppression of airborne dust by application of water if significant fugitive dust generation occurs during site grading and equipment operation. In general, incidental dust emissions generated during site construction will be consistent with City Code Section 96.03, 4(a).

## 25. Nearby Resources

*Are any of the following resources on or in proximity to the site?*

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

*Archaeological, historical or architectural resources?  Yes  No*

The Minnesota State Historic Preservation Office (SHPO) conducted a search of the Minnesota Archaeological Inventory and Historic Structure Inventory for the project area (**Appendix D**). Based on their review, no previously-recorded archaeological sites or historic structures were identified in the database for the project area. Consequently, no further review of archaeological, historical or architectural resources is considered warranted at this time.

*Prime or unique farmlands or land within an agricultural preserve?  Yes  No*

According to the Natural Resources Conservation Service (NRCS), four of the eight soil types found on the site are classified as prime farmland (Table 19.1). These soils comprise 73.0 acres or approximately 65 percent of the site area.

Prime farmlands consist of land that has the best combination of physical and chemical characteristics for producing food, feed, forage, and oilseed crops. According to the NRCS, prime farmlands have “an adequate and dependable water supply from precipitation, a favorable temperature and growing season, acceptable acidity or alkalinity, acceptable salt and sodium content and few or no rocks.” This does not mean all soils listed as prime farmland produce exceptionally high crop yields.

No farmland preservation measures have been considered. Because the site is guided for development, no clear alternatives to conversion of prime farmland are readily identifiable.

*Designated parks, recreation areas or trails?  Yes  No*

There are currently no designated parks, recreation areas, or trails within the project boundaries. Lake Elmo Regional Park Reserve is located less than a mile north of the proposed project site. Stonegate Park, located approximately 1,000 feet northwest of the project area, contains a playground and athletic fields.

*Scenic views and vistas?  Yes  No*

There are no scenic views or vistas located on or near the property.

*Other unique resources?  Yes  No*

## 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.*

The project will not create adverse visual impacts. The proposed residential land use is consistent with other established uses in the area, and therefore will not create a significant change in visual aesthetics. Measures to soften visual transitions include providing buffers between existing homes and gravel mining operations to the north, preservation of tree cover where possible, and providing berms, buffers and landscaping adjacent to proposed collector streets and other adjacent land uses.

## 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 is subject to the City of Lake Elmo's Comprehensive Plan and Zoning Ordinance. As described in the recently amended Land Use Plan, the city plans to grow its population by increasing the total number of households from 2,779 to 3,519 by 2015. In accordance with a Memorandum of Understanding with the Metropolitan Council, the city has committed to providing 6,600 additional Residential Equivalent Connections (RECs) by 2030. This will be partially achieved by increasing residential density within the I-94 corridor. The Comprehensive Plan includes a land use and staging plan map that guides future community growth and improvement. The City of Lake Elmo zoning map designates the Dale property as HD-RR-SRD, which is a Rural Residential/Sewered Residential Holding District. The Frandsen property is currently zoned HD-A-SRD, which is an Agricultural/Sewered Residential Holding District. Both are consistent with the proposed use, although re-zoning the properties to the appropriate LDR and MDR zoning will be required prior to development. The Lake Elmo I-94 Development Staging Plan map (2012) designates the project area as being within Stage I (new sewered development located west of Keats Avenue that will connect to the MCES WONE interceptor). Consequently, the proposed project is consistent with the goals and plans of both the City of Lake Elmo and the Metropolitan Council for this area.

## 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.)*

Public and private infrastructure improvements will need to be constructed in association with this development. These include but are not limited to: roadways, trails, stormwater systems, electrical lines, telephone lines, and continued improvements and upgrades to the sanitary sewer and water supply systems. The Comprehensive Plan calls for municipal sewer and water facilities to be extended from the southeast corner of the Eagle Point Business Park along Hudson Boulevard to service this portion of the city and proposed new residential development. The project will also require construction of a collector roadway along the southern portion of the property boundary that

would intersect with Keats Avenue North to the east for proper site access and traffic control. This collector road will eventually be extended west as those properties develop as guided. Impacts related to public improvements directly associated with the proposed development project are discussed throughout this document.

## 29. Cumulative Impacts

*Minnesota Rule part 4410.1700, subpart 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 potential effects. (Such future projects would be those that are actually planned or for which a basis of expectation has been laid.)*

*Describe the nature of the cumulative potential effects and summarize any other available information relevant to determining whether there is potential for significant environmental effects due to these cumulative effects (or discuss each cumulative potential effect under appropriate item(s) elsewhere on this form).*

The changes in regional land use in the Lake Elmo area from open space and agricultural land to more urbanized uses is expected to have a cumulative impact on the area. Cumulative effects of this and future projects on natural resources and infrastructure are expected to be roughly proportional to the impacts discussed in this EAW, or somewhat greater if future projects are developed at a higher density. The City of Lake Elmo has planned for future growth and development in this particular area as part of its Amended Comprehensive Land Use Plan (2012), utility plans, stormwater management plans, and administration of zoning ordinances. These efforts will ensure that the cumulative impacts of future growth and development to the environment, and to the city's service capacity, are anticipated and mitigated.

The project proposer does not currently own or have options on adjacent lands. Consequently, the precise timing and nature of future development in the project vicinity is unknown. However, land adjacent to the project site is eventually expected to develop, per the city's Land Use Plan, thereby converting existing open space and agricultural lands to residential and commercial uses. The City of Lake Elmo's Amended Comprehensive Land Use Plan (2012) anticipates and guides the intensity of development within the city and directs necessary infrastructure improvements to support the planned development.

Parcels to the south, west, and northeast of the proposed project area are currently undeveloped and zoned HD-A-SRD or HD-RR-SRD. In keeping with the city's Comprehensive Plan, and the MOU with the Metropolitan Council, these parcels are expected to develop in the future to medium density residential and/or commercial uses. Undeveloped parcels immediately surrounding the proposed development site contain similar land uses and land features as the project site. Existing land cover on these properties is primarily agricultural, with grasslands, wooded tree lines, and small wetlands interspersed. The proposed project will not result in conversion of jurisdictional wetland to upland, but will result in minor tree removal and conversion of agricultural lands to non-agricultural uses. Consequently, cumulative impacts to natural resources are anticipated to be minimal, and have been purposefully concentrated in this portion of the city to preserve an agricultural core to the north of 10<sup>th</sup> Street (CSAH 10).

Development of surrounding parcels will also result in cumulative impacts to city infrastructure such as roads, sewer, and water. These cumulative impacts have been thoughtfully contemplated and addressed in the city's Comprehensive, Transportation, Wastewater, and Water Plans. As the surrounding properties develop, they will be evaluated under the Minnesota Environmental Policy Act (MEPA) rules, and will adhere to guidelines presented in the city's approved zoning and comprehensive plans for the area.

Mitigation for anticipated minor cumulative impacts in the area will include providing approximately 27 acres of open space (24 percent of the site), providing buffers from surrounding developments, protecting woodlands to the extent practicable, pretreating stormwater and controlling stormwater rates, providing adequate municipal facilities such as potable water and wastewater treatment, and addressing future traffic issues. These provisions will help minimize potential cumulative effects of past developments and future developments within the region.

### 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.*

No other adverse environmental impacts are anticipated as a result of this project. Potential environmental impacts have been addressed in Items 1 through 29.

### 31. Summary of Issues

*Do not complete this section if the EAW is being done for EIS scoping; instead, address relevant issues in the draft Scoping Decision document, which must accompany the EAW.*

*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.*

**Table 31.1. Summary of Issues and Mitigation Measures**

Item	Title	Mitigation Measures
8	Permits and Approvals Required	Apply for and receive all applicable permits prior to project construction.
9	Land Use	Abandon existing septic system on Frandsen parcel according to local code requirements. Prepare a Construction Contingency Plan to detail management of debris and impacted soils during development.
11	Fish, Wildlife, and Ecologically Sensitive Resources	Preservation and creation of approximately 27 acres of open space, stormwater ponding, woodland, and buffers.
13	Water Use	Sealing and abandonment of one irrigation well on the Frandsen parcel; compliance with DNR Water Appropriation Permit requirements; connection to the municipal water supply system.

**Table 31.1. Summary of Issues and Mitigation Measures**

Item	Title	Mitigation Measures
16	Erosion and Sedimentation	Minimize the potential for erosion by BMP implementation; compliance with the city's Erosion and Sediment Control Ordinance and NPDES/SDS General Permit requirements; preparation of a SWPP plan.
17	Water Quality: Surface Water Runoff	Creation of stormwater ponds and BMP's to manage stormwater runoff and adhere to the city's Storm Water Ordinance and watershed rules.
21	Traffic	Detailed traffic recommendations are provided within the conclusions portion of Section 21 of this document.

**RGU CERTIFICATION**

*The Environmental Quality Board will only accept **SIGNED** Environmental Assessment Worksheets for public notice in the EQB Monitor.*

**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 Minnesota Rules, parts 4410.0200, subparts 9b and 60, respectively.
- Copies of this EAW are being sent to the entire EQB distribution list.

Signature \_\_\_\_\_ Date \_\_\_\_\_

Title: Kyle Klatt, Planning Director, City of Lake Elmo

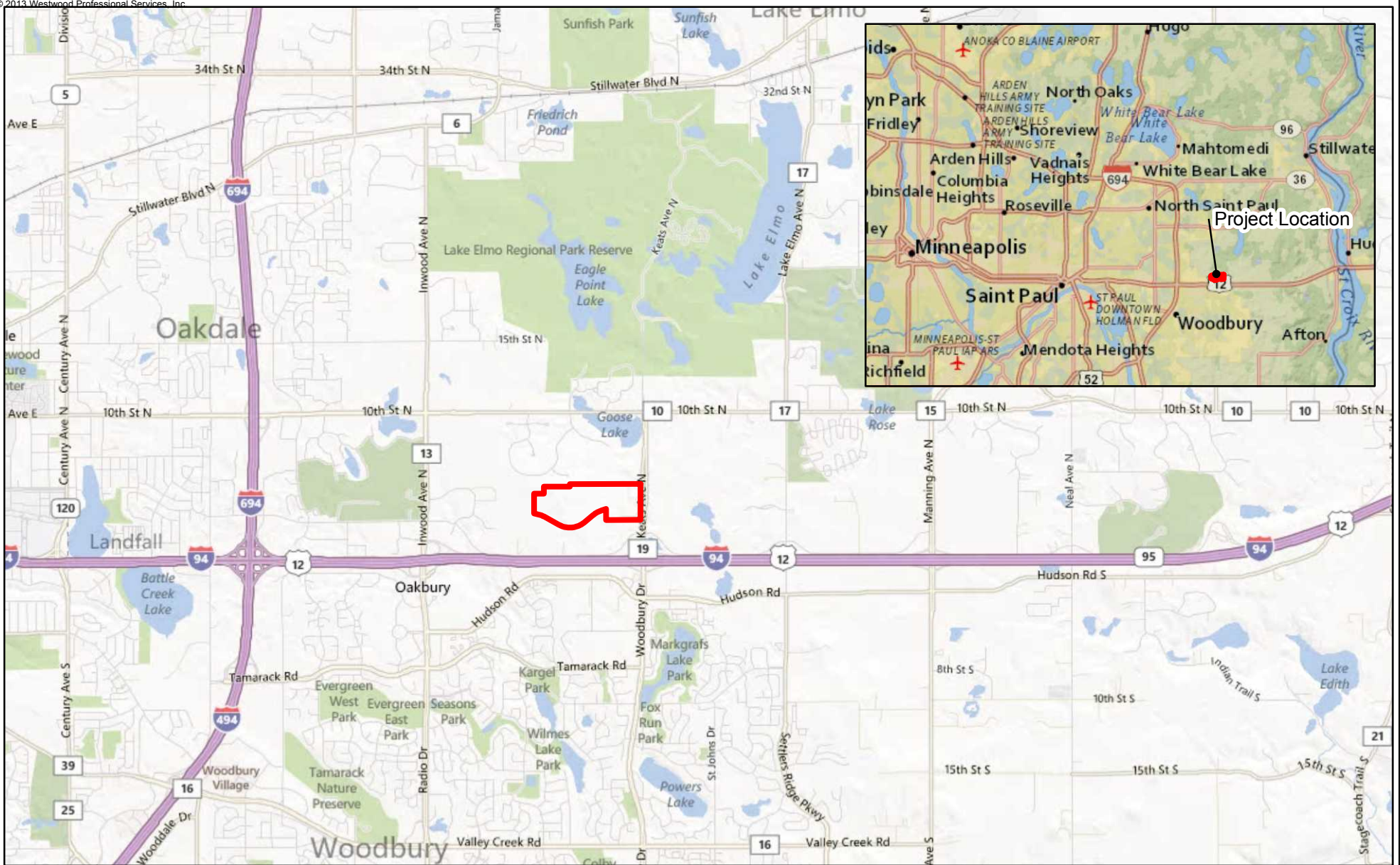
**Environmental Assessment Worksheet** was prepared by the staff of the Environmental Quality Board at the Minnesota Department of Administration, Office of Geographic and Demographic Analysis. For additional information, worksheets or for *EAW Guidelines*, contact: Environmental Quality Board, 658 Cedar St., St. Paul, MN 55155, 651-201-2492, or <http://www.eqb.state.mn.us>



# **Exhibits 1 - 8**

**Savona EAW**  
Washington County, Minnesota

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Data Source(s): Westwood Professional Services Survey Data (2012), USGS DRG (ESRI Basemap, Accessed 2012)

# Savona EAW

Lake Elmo, Minnesota

Site Location

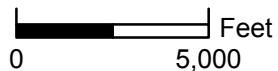
EXHIBIT 1



**Westwood Professional Services, Inc.**  
 7699 Anagram Drive  
 Eden Prairie, MN 55344

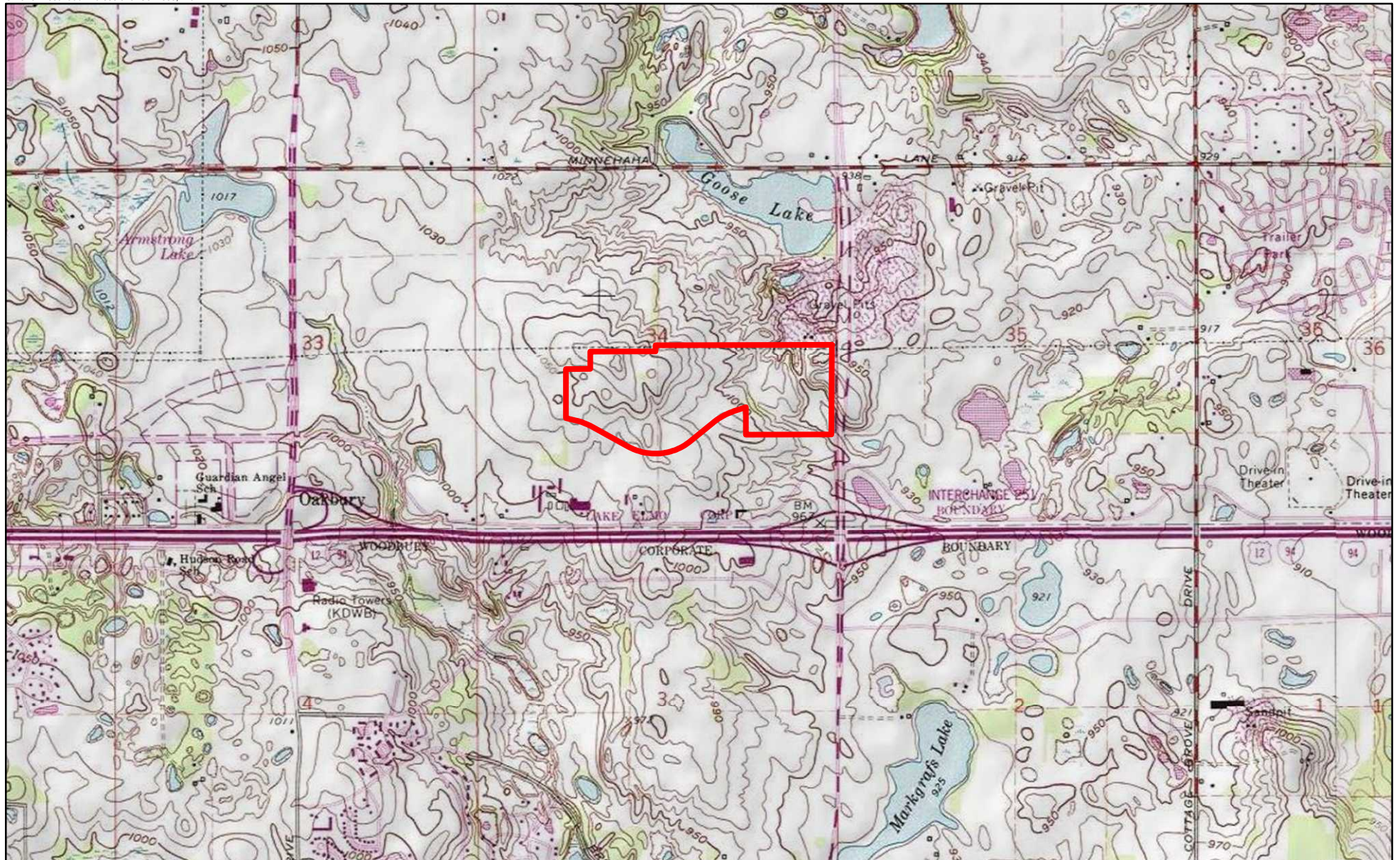
PHONE 952-937-5150  
 FAX 952-937-5822  
 TOLL FREE 1-888-937-5150

www.westwoodps.com



## Legend

 EAW Project Boundary



Data Source(s): Westwood Professional Services Survey Data (2012), USGS DRG (ESRI Basemap, Accessed 2012)

# Savona EAW

Lake Elmo, Minnesota

USGS Topography

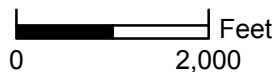
EXHIBIT 2



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Eden Prairie, MN 55344

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## Legend

 EAW Project Boundary



**CONCEPT DATA**

**Gross Site Area:** 112.5 ac  
 Lennar Single Family Residential: 91.5 ac +/-  
 Lennar Multi Family Residential: 21.0 ac +/-

**Collector Road ROW:** 7.9 ac

**Open Space:** 27.0 ac  
 (includes buffers, parks, woods, ponds, green, grass, etc)

**Net Developed Area:** 77.6 ac  
 -Single Family net area: 62.0 ac +/-  
 -Multi Family net area: 15.6 ac +/-

**Proposed Single Fam Lots: 190 lots**  
 65' wide x 140' deep typical: 99 lots  
 75' wide x 140' deep typical: 91 lots

**Proposed Single Family Setbacks:**  
 Front Setback: 25'  
 Side Setbacks: 5/10' (15' total)

**Proposed Multi Fam Units: 122 homes**  
 Row Townhomes: 44 homes  
 Back-Back Townhomes: 78 homes

**Overall Proposed Homes: 312 homes**

**Overall Gross Density: 2.77 un/ac**  
 -Single Family Gross Density: 2.07 un/ac  
 -Multi Family Gross Density: 5.81 un/ac

**Overall Net Density: 4.0 un/ac**  
 -Single Family Net Density: 3.1 un/ac  
 -Multi Family Net Density: 7.8 un/ac

Aerial photography from State of Minnesota;  
 Topography from State LIDAR

Data Source(s): Westwood Professional Services Survey Data (2012), USGS DRG (ESRI Basemap, Accessed 2012)



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# Savona EAW

Lake Elmo, Minnesota

## Proposed Site Plan

EXHIBIT 3



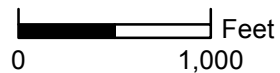
Data Source(s): Westwood Professional Services Survey Data (2012), USGS DRG (ESRI Basemap, Accessed 2012)



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### Legend

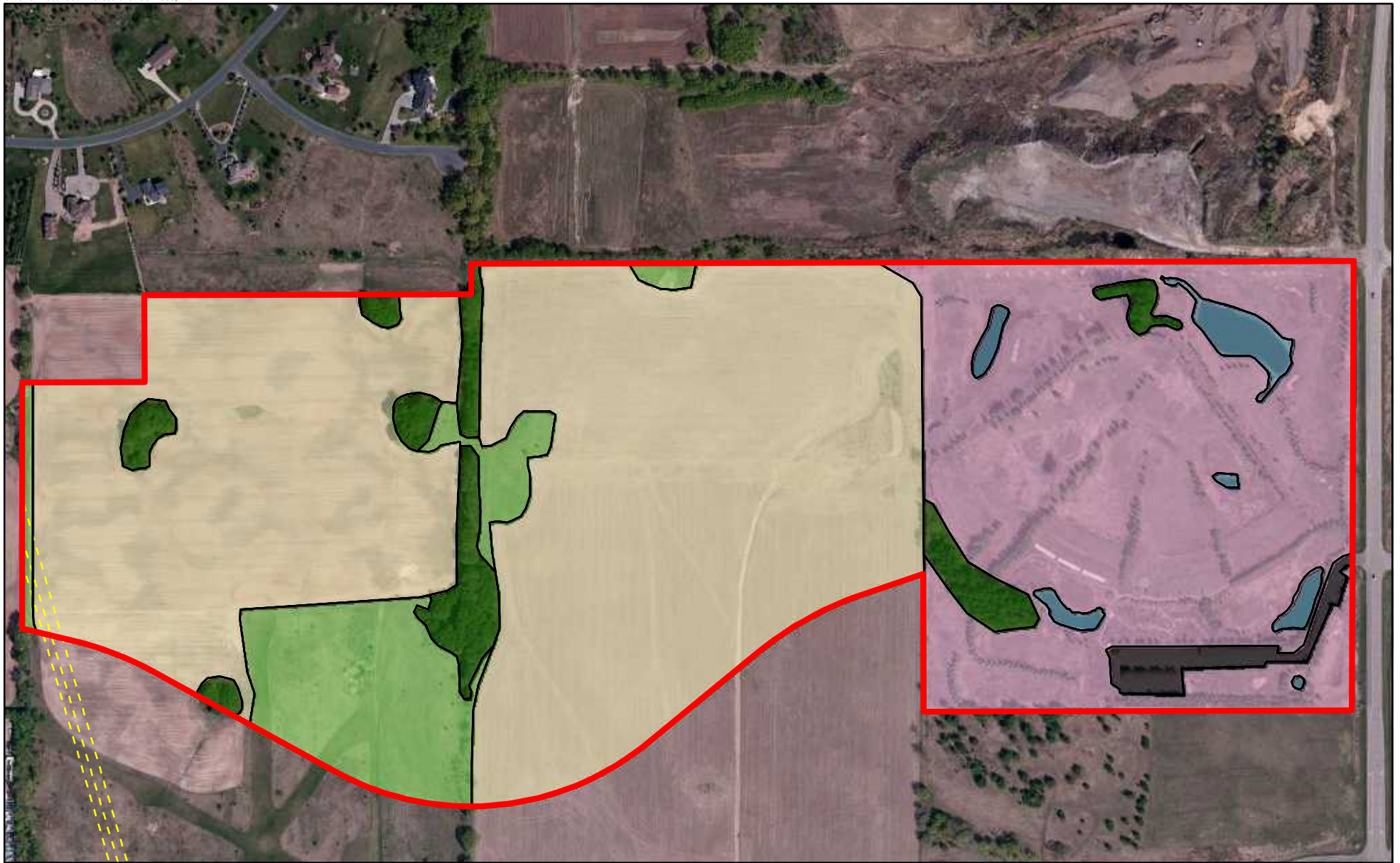
 EAW Project Boundary

# Savona EAW

Lake Elmo, Minnesota

## Adjacent Land Use

EXHIBIT 4



Data Source(s): Westwood Professional Services Survey Data (2012), USGS DRG (ESRI Basemap, Accessed 2012)

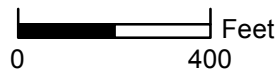


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Legend

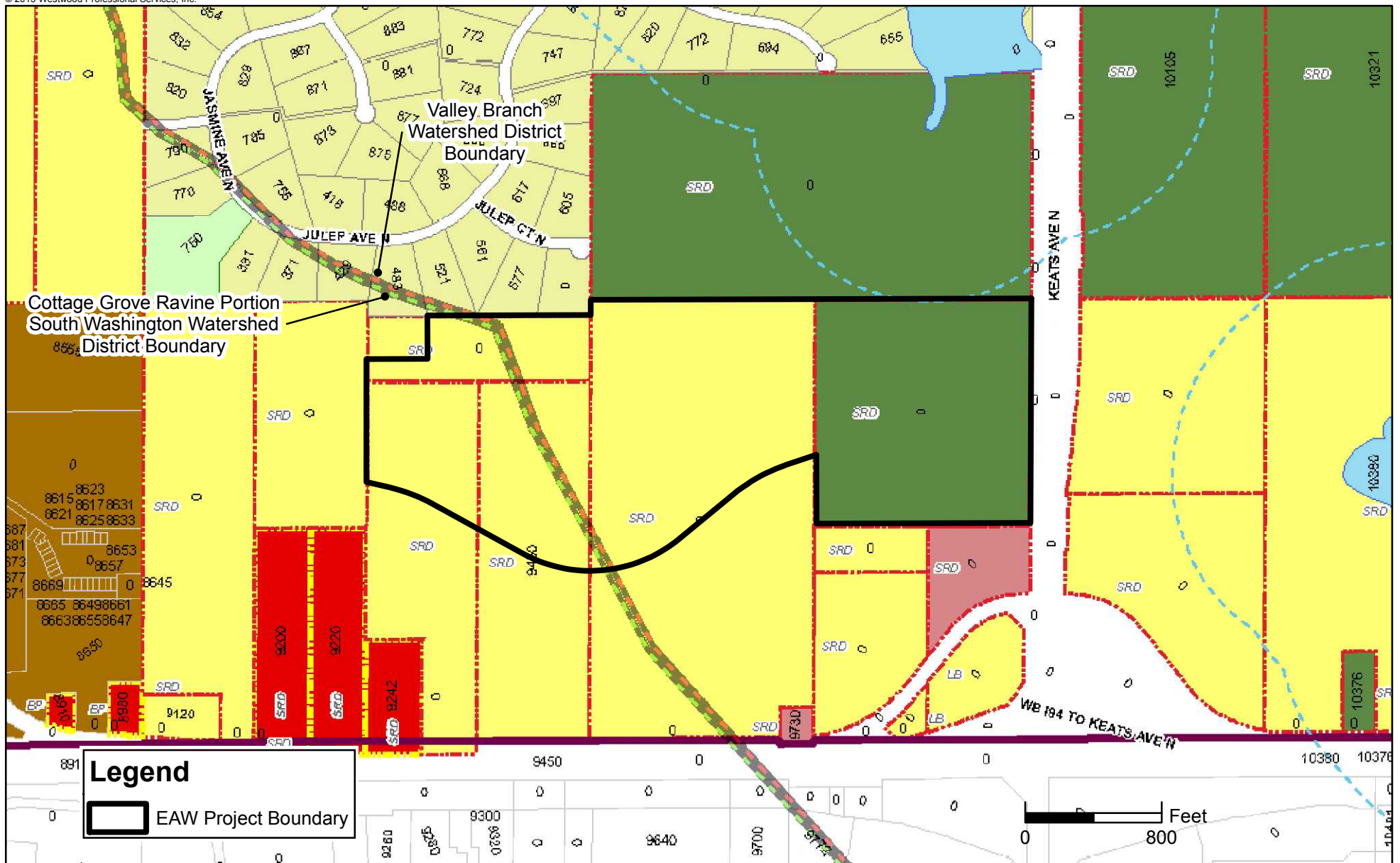
- EAW Project Boundary 112.5 Acres
- Cropped Field 61.2 Acres
- Developed/Road 1.4 Acres
- Golf Course Driving Range 33.5 Acres
- Upland Meadow 9.4 Acres
- Excavated Pond 1.8 Acres
- Upland Woodland 5.2 Acres
- Natural Gas Pipeline Easement

# Savona EAW

Lake Elmo, Minnesota

## Cover Type Mapping

EXHIBIT 5



**Legend**

EAW Project Boundary

Data Source(s): Westwood Professional Services Survey Data (2012), City of Lake Elmo Zoning Map ( Accessed 2012)

# Savona EAW

Lake Elmo, Minnesota

## Zoning Map

EXHIBIT 6



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**Legend**

- |                             |                            |
|-----------------------------|----------------------------|
| <b>General</b>              | <b>Watershed Districts</b> |
| Village Area                | Browns Creek               |
| Lakes                       | Cottage Grove Ravine       |
| Lake Elmo Boundary          | Valley Branch              |
| Shoreland District Boundary |                            |

**Zoning Districts**

- |           |        |   |       |
|-----------|--------|---|-------|
| A         | R1     | GB  | VR-A  |
| A-Baytown | R2-PUD | HB  | VR-GB |
| O/IOS     | R3     | LB  | VR-RR |
| BP        | RE     | LB-PUD  | VR-R1 |
| P/PF      | RR     | I-94 HOLDING DISTRICT (see holding districts inset) |       |

**How to Determine I-94 Holding District Designations**  
 1. All holding districts are identified by three part designation part 1 - part 2 - part 3  
 2. Part 1: the watershed district and the three "0" refers to the holding district  
 3. Part 2: the holding district identified by holding the color of the property in a related zoning distribution  
 4. Part 3: the holding district identified by the letter color the parcel on the map.  
 EXAMPLE: 9400-000-000-000

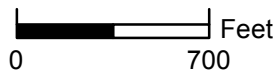
Map created by the Lake Elmo Planning Department - February 2012







Data Source(s): Westwood Professional Services Survey Data (2012),  
 USFWS NWI (1991), MN DNR Minor Watershed Boundaries (2002)  
 FEMA Floodplain Data (2008) USGS DRG (ESRI Basemap, Accessed 2012)



**Legend**

- EAW Project Boundary
- MN DNR Minor Watershed Boundary
- Mapped 100-Year Floodplain
- NWI Mapped Wetland

# Savona EAW

Lake Elmo, Minnesota

## Water Resources Mapping

EXHIBIT 7

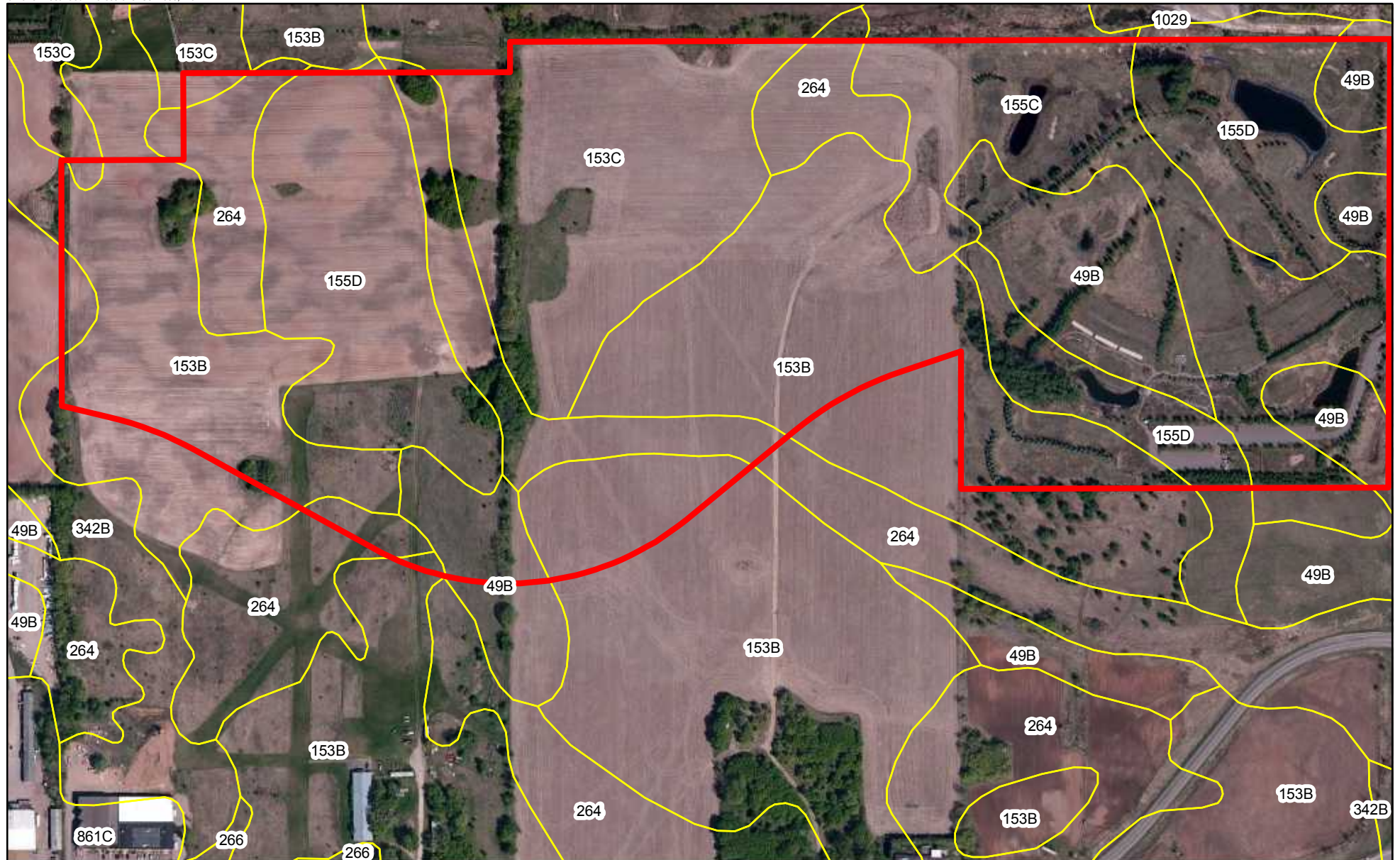


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Data Source(s): Westwood Professional Services Survey Data (2012),  
SURRGO Soils of Washington County (2004) USGS DRG (ESRI Basemap, Accessed 2012)

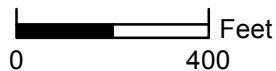


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Legend

- EAW Project Boundary
- Hydric Soil Unit
- Non-Hydric Soil Unit

# Savona EAW

Lake Elmo, Minnesota

## Soils Mapping

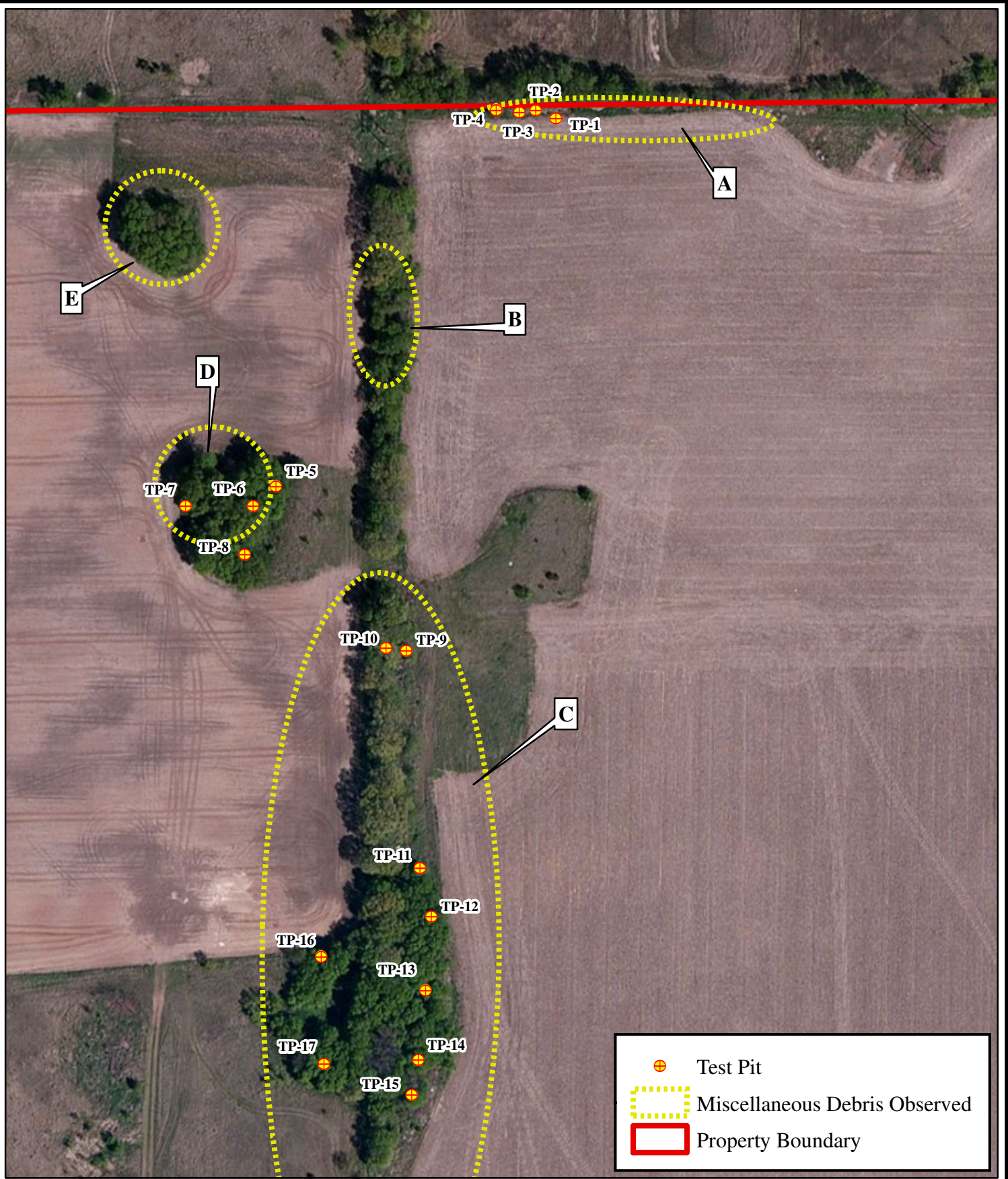
EXHIBIT 8

# **Appendix A**

## **Liesch Test Pit Location Map**

**Savona EAW**  
Washington County, Minnesota

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Source: MS Virtual Earth  
Projection: NAD83 UTM Zone 15N

0 75 150 Feet  
N

**LIESCH**  
Hydrogeologists • Engineers • Environmental Scientists  
www.liesch.com  
Minneapolis • Los Angeles • Milwaukee • Phoenix

Lake Elmo, MN	Nov 12
Test Pit Locations	Figure 4

# **Appendix B**

## **DNR Natural Heritage Database Search**

**Savona EAW**  
Washington County, Minnesota

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# Minnesota Department of Natural Resources

Division of Ecological and Water Resources, Box 25

500 Lafayette Road

St. Paul, Minnesota 55155-4025

Phone: (651) 259-5109 E-mail: [lisa.joyal@state.mn.us](mailto:lisa.joyal@state.mn.us)

December 19, 2012

**Correspondence # ERDB 20130158**

Mr. David Weetman  
Westwood Professional Services, Inc.  
7699 Anagram Drive  
Eden Prairie, MN 55344

RE: Natural Heritage Review of the proposed Lake Elmo Property;  
T29N R21W Section 34; Washington County

Dear Mr. Weetman,

As requested, the above project has been reviewed for potential effects to known occurrences of rare features. A search of the Minnesota Natural Heritage Information System did identify rare features within an approximate one-mile radius of the proposed project, but these records did not include any federally listed species and were either historical or not of concern given the project details that were provided with the data request form. As such, I do not believe the proposed project will adversely affect any known occurrences of rare features.

The Natural Heritage Information System (NHIS), a collection of databases that contains information about Minnesota's rare natural features, is maintained by the Division of Ecological and Water Resources, Department of Natural Resources. The NHIS is continually updated as new information becomes available, and is the most complete source of data on Minnesota's rare or otherwise significant species, native plant communities, and other natural features. However, the NHIS is not an exhaustive inventory and thus does not represent all of the occurrences of rare features within the state. Therefore, ecologically significant features for which we have no records may exist within the project area.

For environmental review purposes, the results of this Natural Heritage Review are valid for one year; the results are only valid for the project location (noted above) and project description provided on the NHIS Data Request Form. Please contact me if project details change or if an updated review is needed.

Please note that locations of the gray wolf (*Canis lupus*), state-listed as special concern, and the Canada lynx (*Lynx canadensis*), federally-listed as threatened, are not currently tracked in the NHIS. As such, the Natural Heritage Review does not address these species.

Furthermore, the Natural Heritage Review does not constitute review or approval by the Department of Natural Resources as a whole. Instead, it identifies issues regarding known occurrences of rare features and potential effects to these rare features. Additional rare features for which we have no data may be present in the project area, or there may be other natural resource concerns associated with the proposed project. For these concerns, please contact your DNR Regional Environmental Assessment Ecologist (contact information available at [http://www.dnr.state.mn.us/eco/ereview/erp\\_regioncontacts.html](http://www.dnr.state.mn.us/eco/ereview/erp_regioncontacts.html)). Please be aware that additional site assessments or review may be required.

Thank you for consulting us on this matter, and for your interest in preserving Minnesota's rare natural resources. An invoice will be mailed to you under separate cover.

Sincerely,

A handwritten signature in black ink that reads "Samantha Bump". The signature is fluid and cursive.

Samantha Bump  
NHIS Review Technician



# **Appendix C**

## **County Well Index Well Log**

**Savona EAW**  
Washington County, Minnesota

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Minnesota Unique Well No.

**686580**

County Washington  
 Quad Lake Elmo  
 Quad ID 102B

MINNESOTA DEPARTMENT OF HEALTH  
**WELL AND BORING RECORD**  
 Minnesota Statutes Chapter 103I

Entry Date 11/13/2002  
 Update Date 05/13/2010  
 Received Date

Well Name M.M. GOLF ONE Township Range Dir Section Subsections Elevation 961 ft. 29 21 W 34 DACDAC Elevation Method 7.5 minute topographic map (+/- 5 feet)		Well Depth 300 ft. Depth Completed 300 ft. Date Well Completed 10/10/2002 Drilling Method Non-specified Rotary
Well Address 400 KEATS AV LAKE ELMO MN 55042		Drilling Fluid Other Well Hydrofractured? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No From Ft. to Ft.
Geological Material SAND/GRAVEL LIME Color BROWN YELLOW Hardness MEDIUM SOFT From 0 152 To 152 300		Use Irrigation Casing Type Steel (black or low carbon) Joint Welded Drive Shoe? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Above/Below ft.
		Casing Diameter Weight Hole Diameter 20 in. to 15 ft. 78.6 lbs./ft. 20 in. to 20 ft. 10 in. to 152 ft. 40.48 lbs./ft. 15 in. to 152 ft.
		Open Hole from 152 ft. to 300 ft. Screen NO Make Type Diameter Slot/Gauze Length Set Between
		Static Water Level 120 ft. from Land surface Date Measured 10/03/2002 PUMPING LEVEL (below land surface) 150 ft. after 6 hrs. pumping 300 g.p.m.
REMARKS WELL INSPECTION BY MDH FOUND ONLY 15 FT. OF 20 IN. CASING IN THE WELL.		Well Head Completion Pitless adapter manufacturer Model <input type="checkbox"/> Casing Protection <input checked="" type="checkbox"/> 12 in. above grade <input type="checkbox"/> At-grade (Environmental Wells and Borings ONLY)
Located by: Minnesota Department of Health Method: Digitization (Screen) - Map (1:24,000) Unique Number Verification: N/A Input Date: 11/03/2003 System: UTM - Nad83, Zone15, Meters X: 507375 Y: 4977762		Grouting Information Well Grouted? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Grout Material: Neat Cement from 0 to 152 ft. 5 yds.
		Nearest Known Source of Contamination _feet _direction _type Well disinfected upon completion? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
		Pump <input type="checkbox"/> Not Installed Date Installed 10/10/2002 Manufacturer's name BERKELEY Model number 7-T120-15 HP 15 Volts 230 Length of drop Pipe 189 ft. Capacity 250 g.p.m. Type Submersible Material
		Abandoned Wells Does property have any not in use and not sealed well(s)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
		Variance Was a variance granted from the MDH for this well? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
First Bedrock Prairie Du Chien Group Last Strat Prairie Du Chien Group Aquifer Prairie Du Chien Group Depth to Bedrock 152 ft.		Well Contractor Certification Kimmes-BauerDrilling 19738 MILLER, M. License Business Name Lic. Or Reg. No. Name of Driller
County Well Index Online Report		686580 Printed 11/27/2012 HE-01205-07

# **Appendix D**

## **State Historic Preservation Office Correspondence**

**Savona EAW**  
Washington County, Minnesota

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**David Weetman**

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**From:** Dean Sather  
**Sent:** Wednesday, November 28, 2012 3:02 PM  
**To:** David Weetman  
**Subject:** FW: Property Search

**From:** Thomas Cinadr [<mailto:thomas.cinadr@mnhs.org>]  
**Sent:** Wednesday, November 28, 2012 2:18 PM  
**To:** Dean Sather  
**Subject:** Re: Property Search

**THIS EMAIL IS NOT A PROJECT CLEARANCE.**

**This message simply reports the results of the cultural resources database search you requested. The database search produced results for only previously known archaeological sites and historic properties. Please read the note below carefully.**

No archaeological sites or historic structures were identified in a search of the Minnesota Archaeological Inventory and Historic Structures Inventory for the search area requested.

The result of this database search provides a listing of recorded archaeological sites and historic architectural properties that are included in the current SHPO databases. Because the majority of archaeological sites in the state and many historic architectural properties have not been recorded, important sites or structures may exist within the search area and may be affected by development projects within that area. Additional research, including field survey, may be necessary to adequately assess the area's potential to contain historic properties.

If you require a comprehensive assessment of a project's potential to impact archaeological sites or historic architectural properties, you may need to hire a qualified archaeologist and/or historian. If you need assistance with a project review, please contact Kelly Gragg-Johnson in Review and Compliance @ 651-259-3455 or by email at [kelly.graggjohnson@mnhs.org](mailto:kelly.graggjohnson@mnhs.org).

The Minnesota SHPO Survey Manuals and Database Metadata and Contractor Lists can be found at <http://www.mnhs.org/shpo/survey/inventories.htm>

**Tom Cinadr**

Survey and Information Management Coordinator  
Minnesota State Historic Preservation Office  
Minnesota Historical Society  
345 Kellogg Blvd. West  
St. Paul, MN 55102

651-259-3453

On Wed, Nov 21, 2012 at 10:32 AM, Dean Sather <[Dean.Sather@westwoodps.com](mailto:Dean.Sather@westwoodps.com)> wrote:

Mr. Cinadr,

I am requesting a Cultural Resource Database search for the following property located in Washington County:

Township 29 North

Range 21 West

Section 34

Please let me know if you have any questions or concerns regarding this request.

Thank you,

Dean T. Sather, MA, RPA

Archaeologist / Principal Investigator

Licensure MN #11-007

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# **Appendix E**

## **Traffic Impact Study**

**Savona EAW**  
Washington County, Minnesota



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**Traffic Impact Study to be inserted when finalized.**