CITY OF LeSueur MINNESOTA

WELLHEAD PROTECTION PLAN - PART II

POTENTIAL CONTAMINANT SOURCE MANAGEMENT STRATEGY

JANUARY 2016

TO

JANUARY 2026

BAYERL WATER RESOURCES

MN RURAL WATER ASSOCIATION

MINNESOTA MDH DEPARTMENT OF HEALTH

TABLE OF CONTENTS

PUBLIC WATER SUPPLY PROFILE

PUBLIC WATER SUPPLY	
NAME	City of Le Sueur
ADDRESS	1500 N Commerce Street
	Le Sueur, MN 56058
TELEPHONE NUMBER	507-665-6401
E-MAIL	gdrent@cityoflesueur.com

WELLHEAD PROTECTION MANAGER	
NAME	Greg Drent
	Public Service Director
ADDRESS	505 Boright Street
	Le Sueur, MN 56058
TELEPHONE NUMBER	507-665-3338
E-MAIL	gdrent@cityoflesueur.com

CONSULTANT	
NAME	Marilyn Bayerl
	Bayerl Water Resources
ADDRESS	9083 State Hwy 114 SW
	Alexandria, MN 56308
TELEPHONE NUMBER	320-766-6126
E-MAIL	marilyn@bayerlwaterresources.com

GENERAL INFORMATION	
UNIQUE WELL NUMBERS	218364 (Well Number 3), 240067 (Well Number 5), 127283 (Well Number 6), 524753 (Well Number 7) 240065 (Well Number 2 – Emergency Use Only)
POPULATION SERVED:	4,058
CONNECTIONS:	1,979
COUNTY:	Le Sueur County

DOCUMENTATION LIST

STEP	DATE PERFORMED
Scoping Meeting 2 Held (4720.5340, subp. 1)	March 9, 2015
Scoping 2 Letter Received (4720.5340, subp. 2)	March 24, 2015
Remaining Portion of Plan Submitted to Local Units of Government (LGUs) (4720.5350)	July, 2015
Review Received From Local Units of Government (4720.5350, subp. 2)	September, 2015
Review Comments Considered (4720.5350, subp. 3)	September, 2015
Public Hearing Conducted (4720.5350, subp.4)	October, 2015
Remaining Portion WHP Plan Submitted (4720.5360, subp. 1)	October 2015
Final WHP Plan Review Received (4720.5360, subp. 4)	January 2016

Members of the Wellhead Protection Team

NAME	REPRESENTING
Greg Drent	City of Le Sueur, Public Service Director
Rick Rogich	City of Le Sueur, Water/Wastewater Operator
Ron Sinell	City of Le Sueur, Public Works
James Kroehler	City of Le Sueur, Water/Wastewater
Mel Dressel	Private Contractor
Kevin Wilke	City of Le Sueur, City Council Member
Robyn Hoerr	MN Rural Water Association, Groundwater Specialist
Marilyn Bayerl	Bayerl Water Resources
Owen Todd	Bolton & Menk, Inc – Principal Engineer

Abbreviations

BMI Bolton and Menk, Inc.
BMP Best Management Practices
CRP Conservation Reserve Program
DNR MN Department of Natural Resources
DWSMA Drinking Water Supply Management Area
EPA Environmental Protection Agency
GIS Geographic Information Systems
HWGP Hazardous Waste Generator Permit
IWMZ Inner Wellhead Management Zone
LGU Local Government Unit
LSCES Le Sueur County Environmental Services
LUST Leaking Underground Storage Tanks
LWMP Local Water Management Plan
MDA MN Department of Agriculture
MDH MN Department of Health
Mg/Y Million Gallons per year
MN Minnesota
MNDOT MN Department of Transportation
MPCA MN Pollution Control Agency
MRWA MN Rural Water Association
NWI National Wetlands Inventory
OBWEL Observation Well
PCSI Potential Contaminant Source Inventory
PWS Public Water Supply
RST Registered Storage Tank
SSTS Sub-surface Sewage Treatment Systems
SWCD Le Sueur Soil & Water Conservation District
TOT Time-of-travel
UST Underground Storage Tank
WHP Wellhead Protection
WHPA Wellhead Protection Area
WHPP Wellhead Protection Plan

EXECUTIVE SUMMARY

Part Two of the City of Le Sueur Wellhead Protection Plan speaks to sections 4720.5220 through 4720.5290 of MN Rules. This portion of the plan is based on the requirements outlined in the scoping document found in the ***Appendix*** of this plan. It addresses:

- Data elements and their assessments;
- Impacts of changes on the public water supply well;
- Issues, problems and opportunities;
- Wellhead protection goals, objectives and action plans;
- Program evaluation; and
- Alternative water supply/contingency strategy.

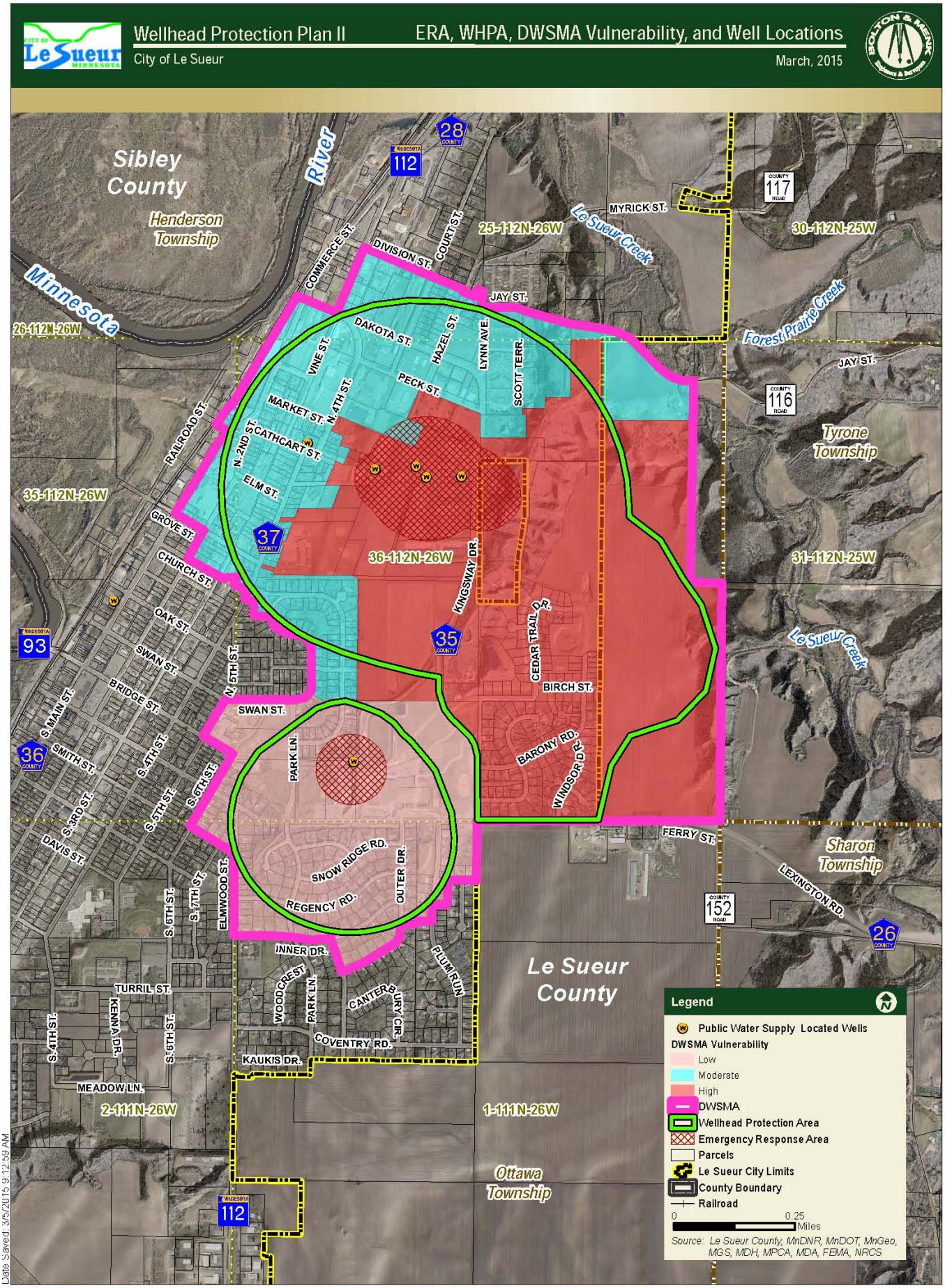
In Part One of the Plan, the delineation of the Wellhead Protection Area (WHPA), the Drinking Water Supply Management Area (DWSMA), vulnerability of the wells, and vulnerability status of the aquifer in which the city's wells are located were completed and approved by the Minnesota Department of Health (MDH). This important information was utilized in the completion of this document.

The vulnerability of the aquifer that underlies the city's well fields was assessed based on geologic logs from wells in the area, surficial geologic and soils maps, and chemical and isotope data. ***Figure One*** maps the area of vulnerability for the city's wells. The DWSMA has high, moderate and low vulnerability. It is comprised of 735.3 acres – 376.5 acres are considered high vulnerability, 197.8 acres medium vulnerability, and 161 acres low vulnerability. This plan will differentiate between the three areas based on required potential contaminant considerations required for each.

The City of Le Sueur actively uses four wells and has one emergency use well. Three of these wells (numbers 2, 3, and 4) are considered vulnerable to contamination due to a missing or non-contiguous layer of clay-rich geologic materials over the aquifer that is sufficient to retard or prevent the vertical movement of contaminants. The other two (numbers 6 and 7) are over 600 feet deep and are not considered vulnerable to surface activities. Water sampling showed indications of well vulnerability in the form of detectable levels of nitrates in wells number 2 and 4).

Management Strategies in Chapter Five focus on actions the city, along with the wellhead team, can focus on for the next ten years. These strategies focus on the following areas of concern: Inner Wellhead Management Zone, One-year Time of Travel, sub-surface sewage treatment systems, hazardous waste permits, wells and underground storage tanks in the high vulnerability area only. Above ground Tanks and wells will be considered in the moderate vulnerability area. Unused, unsealed wells and Class V Wells will be considered in the low vulnerability area and throughout the entire DWSMA. Wells 600 elevation (feet, MSL) of the bottom of the well and deeper and wells of undocumented or unknown depths will be considered in the low vulnerability.

The Wellhead Protection Team intends to work with the City of Le Sueur, Le Sueur County, Le Sueur Soil and Water Conservation District, and state and local agencies to educate and help to mitigate land use within the DWSMA to the extent available. It is the hope of the Wellhead Protection Team that through increased public awareness, habits will be established that will decrease the potential for future water problems and the community can continue to enjoy the current quality of water it has come to expect.


Wellhead Protection Plan II
City of Le Sueur
ERA, WHPA, DWSMA Vulnerability, and Well Locations
March, 2015
Sibley County
Henderson Township
Minnesota River
Le Sueur Creek
Forest Prairie Creek
Tyrone Township
Sharon Township
Le Sueur County
Ottawa Township
26-112N-26W
25-112N-26W
30-112N-25W
35-112N-26W
36-112N-26W
31-112N-25W
2-111N-26W
1-111N-26W
MYRICK ST.
JAY ST.
DAKOTA ST.
VINE ST.
HAZEL ST.
LYNN AVE.
SCOTT TERR.
PECK ST.
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CATHCART ST.
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DAVIS ST.
S. 7TH ST.
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WINDSOR DR.
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OUTER DR.
FERRY ST.
LEXINGTON RD.
INNER DR.
WOODCREST
CANTERBURY CIR.
PLUM RUN
TURRIL ST.
KENNA DR.
COVENTRY RD.
KAUKIS DR.
MEADOW LN.
COMMERCE ST.
DIVISION ST.
COURT ST.
Legend
Public Water Supply Located Wells
DWSMA Vulnerability
Low
Moderate
High
DWSMA
Wellhead Protection Area
Emergency Response Area
Parcels
Le Sueur City Limits
County Boundary
Railroad
0
0.25
Miles
Source: Le Sueur County, MnDNR, MnDOT, MnGeo, MGS, MDH, MPCA, MDA, FEMA, NRCS
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CHAPTER ONE

DATA ELEMENTS/ASSESSMENT

Minnesota Rules 4720.5200

I. REQUIRED DATA ELEMENTS

A. PHYSICAL ENVIRONMENT DATA ELEMENTS

1. Precipitation

Average annual precipitation between 2008 and 2012 near the City of Le Sueur is 30.8 inches, with variation between 26.8 in 2008 and almost 40 inches in 2010. Monthly precipitation amounts for this range can be found in the Part One WHPA Plan in the ***Appendix*** of this document.

Rain falling on the ground can filter through the layers of sediment and enter the aquifer containing the city's vulnerable wells. City wells number three and five are vulnerable to contamination. It is important to address areas where rainfall could cause infiltration of contaminants in the high vulnerability designated areas of the DWSMA.

2. Geology

Geologic data elements pertinent to the Wellhead Protection Area (WHPA) delineation and vulnerability status are included in Part One in the ***Appendix*** of this WHP Plan, summarized below and are on file with the Minnesota Department of Health (MDH) and the City of Le Sueur.

Le Sueur County, with assistance from the Department of Natural Resources (DNR) and the Minnesota Geologic Survey (MGS), completed a Geologic Atlas in 1991. This data, along with stratification data from existing well records and transmissivity testing were utilized to determine the vulnerable status of the aquifer to land uses.

A connection between land use practices and the quality of the water in the aquifer in areas of High and Moderate Vulnerability has been determined. Management strategies to address appropriate land use practices in these two areas will be discussed in Chapter Five.

3. Soils

A map of the soils, ***Figure Two*** shows the major soil types and erodibility of soils located within the DWSMA.

Permeability of soils, as shown in ***Table 1***, describes how fast water on the surface of the land travels through the soils to the aquifer below. Hydrologic Soil Group "A" infiltrates greater than .30 inches per hour – this soil constitutes sixty percent of the land within the DWSMA. This is why land use is important to the protection of the aquifer in the High Vulnerability areas. Strategies to address land use will be discussed in Chapter Five.

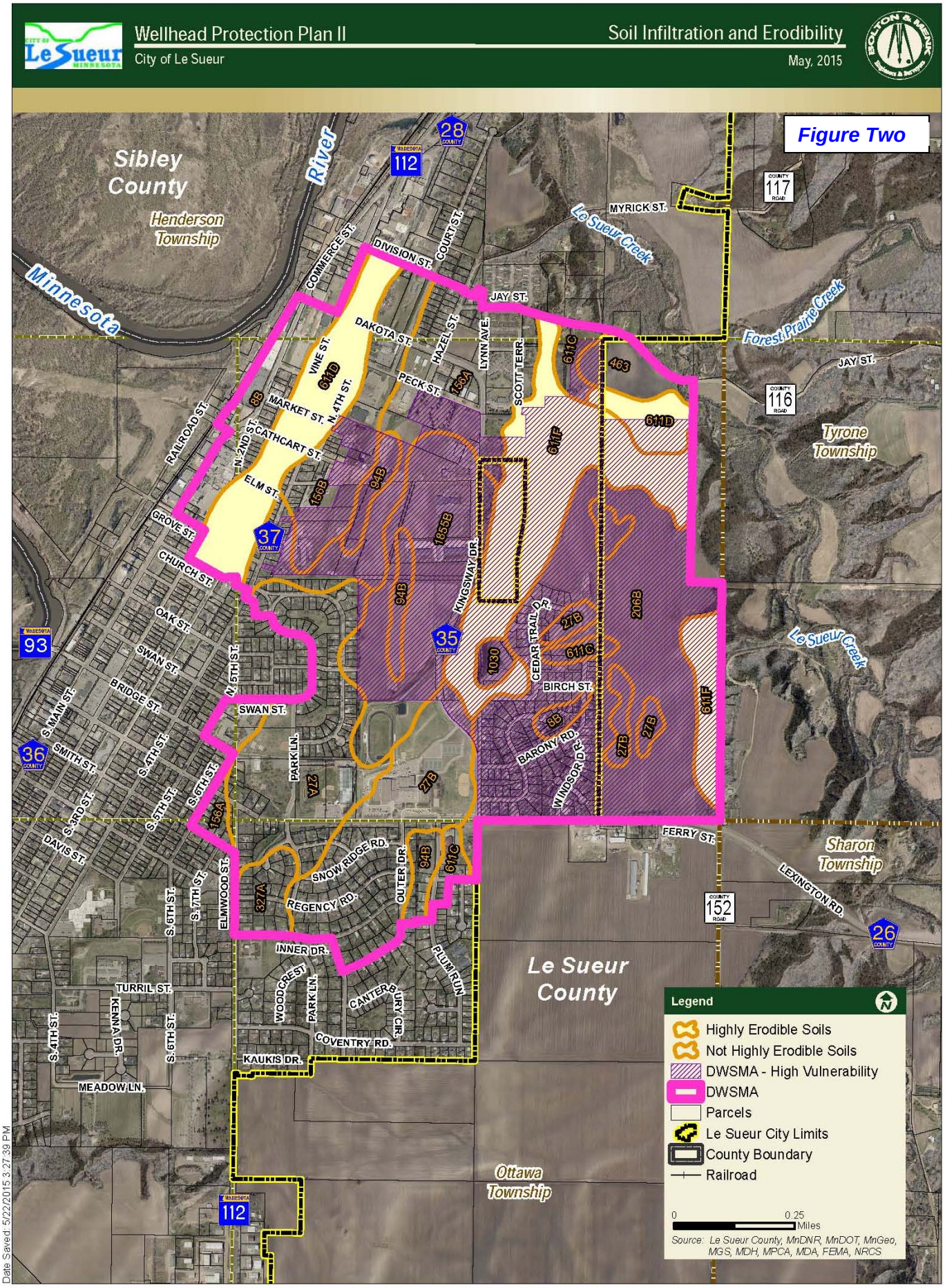
Figure Two
Sibley County
Henderson Township
Minnesota River
Le Sueur County
Tyrone Township
Sharon Township
Ottawa Township
Le Sueur Creek
Forest Prairie Creek
MYRICK ST.
JAY ST.
DIVISION ST.
COURT ST.
COMMERCE ST.
DAKOTA ST.
VINE ST.
HAZEL ST.
LYNN AVE.
SCOTT TERR.
PECK ST.
MARKET ST.
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CATHCART ST.
ELM ST.
RAILROAD ST.
GROVE ST.
CHURCH ST.
OAK ST.
SWAN ST.
BRIDGE ST.
S. MAIN ST.
N. 5TH ST.
S. 4TH ST.
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S. 6TH ST.
S. 3RD ST.
SMITH ST.
DAVIS ST.
PARK LN.
KINGSWAY DR.
CEDAR TRAIL DR.
BIRCH ST.
BARONY RD.
WINDSOR DR.
FERRY ST.
LEXINGTON RD.
SNOW RIDGE RD.
REGENCY RD.
OUTER DR.
INNER DR.
S. 7TH ST.
ELMWOOD ST.
WOODCREST
CANTERBURY CIR.
PLUM RUN
TURRIL ST.
KENNA DR.
MEADOW LN.
COVENTRY RD.
KAUKIS DR.
MINNESOTA 112
MINNESOTA 93
MINNESOTA 26
28 COUNTY
37 COUNTY
35 COUNTY
36 COUNTY
COUNTY 117 ROAD
COUNTY 116 ROAD
COUNTY 152 ROAD
611C
611D
611F
463
94B
156A
156B
1855B
27B
206B
1030
8B
327A
27A
Legend
Highly Erodible Soils
Not Highly Erodible Soils
DWSMA - High Vulnerability
DWSMA
Parcels
Le Sueur City Limits
County Boundary
Railroad
0
0.25
Miles
Source: Le Sueur County, MnDNR, MnDOT, MnGeo, MGS, MDH, MPCA, MDA, FEMA, NRCS
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Soil Permeability within the Le Sueur DWSMA				*Table 1*
Map Unit	**Map Unit Name**	**Erodibility**	**HSG ***	**Acres**
1030	Udorthents	NO		4.2
156A	Fairhaven	NO	B	85.2
156B	Fairhaven	NO	B	40.0
1855B	Dickinson	NO	A	70.8
206B	Kasota	NO	C	145.8
27A	Dickinson	NO	A	72.0
27B	Dickinson	NO	A	76.1
327A	Dickman	NO	A	11.8
41B	Estherville	NO	A	3.7
463	Minneiska	NO	A/D	12.5
611C	Hawick	NO	A	15.2
611D	Hawick	YES	A	57.1
611F	Hawick	YES	A	89.4
8B	Sparta	NO	A	32.5
94B	Terril	NO	B	19.0

* Hydrologic Soil Groups: A= greater than 0.30 in/hr, B= 0.15-0.30 in/hr, C= 0.05-0.15 in/hr, D= 0-0.05 in/hr

The soil types within the DWSMA consist of about 146 acres of highly erodible soil, of the total 735 acres – approximately 20 percent. The portions of the highly erodible areas of the DWSMA that lie within the high vulnerability area present a concern to the drinking water supply and therefore need to be considered in the implementation of this Plan.

4. Water Resources

Rivers/Lakes: The Le Sueur City DWSMA is located entirely within the Lower Minnesota River watershed. The Lower Minnesota River watershed includes the lowest reach of the Minnesota River and flows into the Mississippi at Fort Snelling. The second largest watershed in the Minnesota River Basin, it covers 1,760 square miles, divided by the Minnesota River itself. The Minnesota River is located outside the DWSMA boundaries; however Le Sueur Creek crosses through the northeast corner on its way to the River on parcel number 10.136.2800. This is in the Moderate Vulnerability area of the DWSMA and likely does not present a threat to the drinking water supply aquifer.

Floodplain: A map of the floodplains located in the City of Le Sueur DWSMA is shown in ***Figure Three***. There is a small area of floodplain located adjacent to the Le Sueur River in the northeast corner of the DWSMA in the Moderate Vulnerability area of the DWSMA. There are no legal drainage ditches within the DWSMA.

Wetlands: Wetlands can provide a "nutrient sink" where the water flows into the wetland and is allowed to settle nutrients to the bottom while evaporation and movement through the soils takes some of the water out of the overland system. There are no documented wetlands located within the city DWSMA.

Stormwater Retention Pond: A lined stormwater retention pond was completed in 2003 on parcel number 21.999.1350 to accommodate runoff from the surrounding development of residential housing. It was built at that time to accommodate future housing to the north when the need arises.

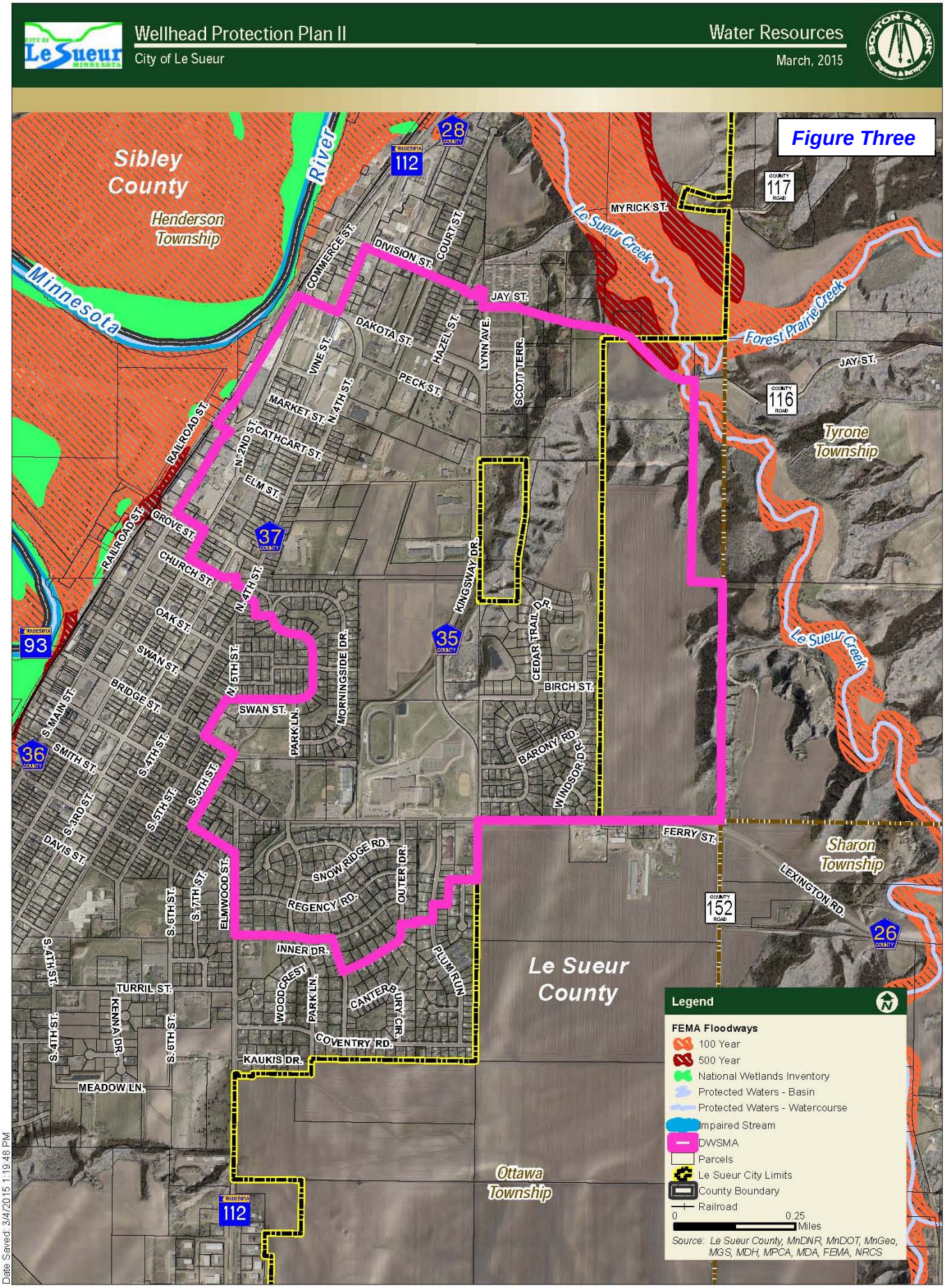
Figure Three
Sibley County
Henderson Township
Minnesota River
Le Sueur County
Tyrone Township
Sharon Township
Ottawa Township
Le Sueur Creek
Forest Prairie Creek
MYRICK ST.
JAY ST.
DIVISION ST.
COURT ST.
COMMERCE ST.
DAKOTA ST.
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KINGSWAY DR.
CEDAR TRAIL DR.
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REGENCY RD.
OUTER DR.
INNER DR.
PLUM RUN
WOODCREST
CANTERBURY CIR.
COVENTRY RD.
KAUKIS DR.
TURRIL ST.
KENNA DR.
MEADOW LN.
112
28
93
35
37
36
117
116
152
26
Legend
FEMA Floodways
100 Year
500 Year
National Wetlands Inventory
Protected Waters - Basin
Protected Waters - Watercourse
Impaired Stream
DWSMA
Parcels
Le Sueur City Limits
County Boundary
Railroad
0
0.25
Miles
Source: Le Sueur County, MnDNR, MnDOT, MnGeo, MGS, MDH, MPCA, MDA, FEMA, NRCS
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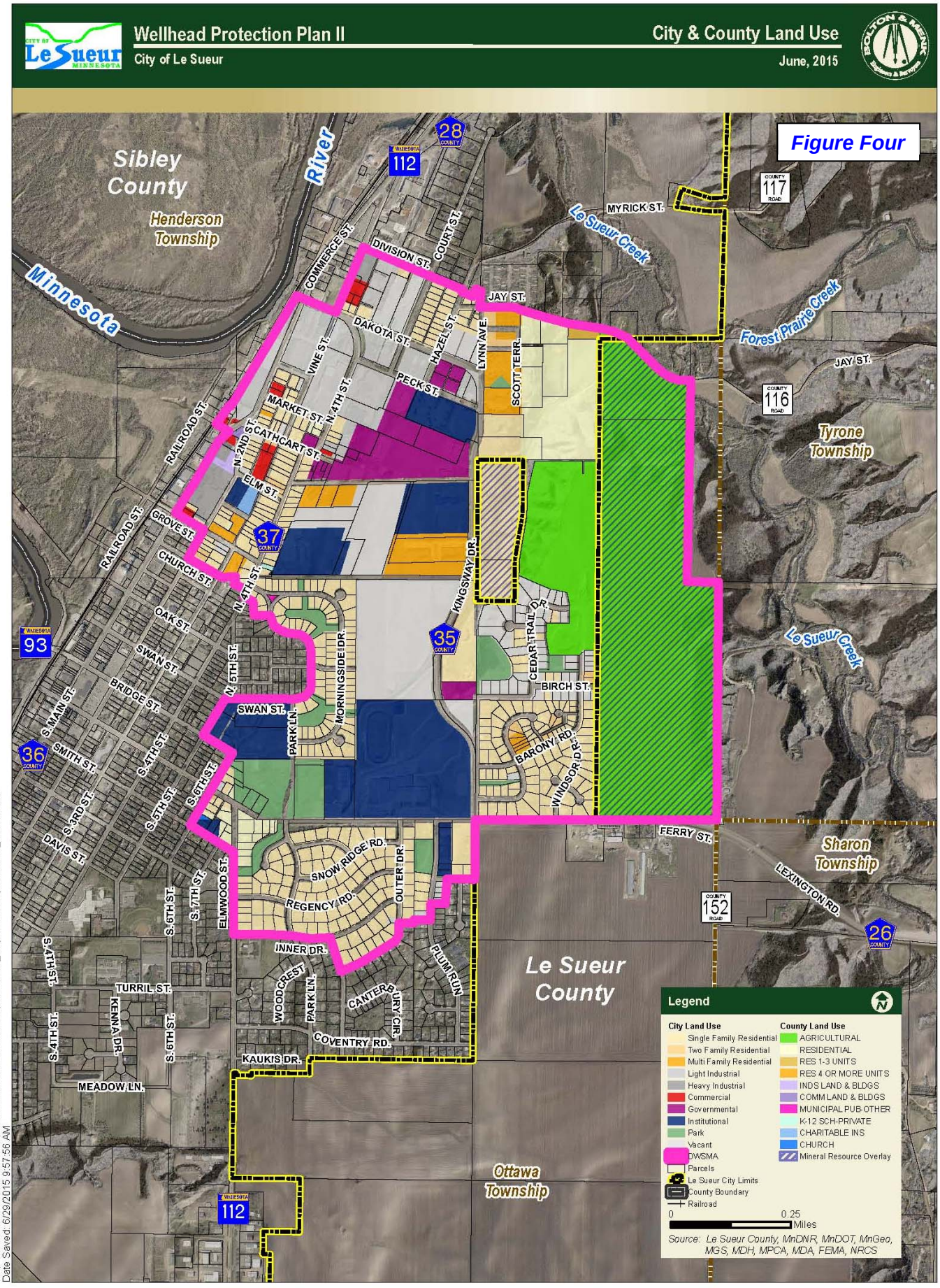
B. LAND USE DATA ELEMENTS

Land Use

The City of Le Sueur DWSMA is located within the city limits and in Le Sueur County. A database of land parcels within the DWSMA, and the property identification number for each parcel as assigned by the County, is included in the ***Appendix*** of this Plan. Land cover and land use are noted in ***Table 2 and - Figure Four.*** Land use in the DWSMA is primarily residential use – 34.4 percent. The next highest use is agriculture at 26.6 percent.

Le Sueur DWSMA City Land Use	**Acres**	***County Land Use***	***Table 2*** **Acres**
Commercial	4.0	Agricultural	167.9
Governmental	25.2	Charitable Institutions	1.0
Heavy Industrial	5.3	Church	0.1
Institutional	79.1	Commercial Land and Buildings	0.3
Light Industrial	34.0	Industrial Land and Buildings	0.8
Multi Family Residential	22.7	K-12 School - Private	0.2
Park	26.5	Municipal Public - Other	0.1
Single Family Residential	154.1	Residential 1-3 Units	1.2
Two Family Residential	4.1	Residential 4 or more Units	0.6
Vacant	70.1	Residential	34.8


Wellhead Protection Plan II
City of Le Sueur
City & County Land Use
June, 2015
Figure Four
Sibley County
Henderson Township
Minnesota River
Le Sueur Creek
Forest Prairie Creek
Tyrone Township
Sharon Township
Le Sueur County
Ottawa Township
MYRICK ST.
JAY ST.
DIVISION ST.
COURT ST.
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CHURCH ST.
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BRIDGE ST.
SMITH ST.
DAVIS ST.
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S. 7TH ST.
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LEXINGTON RD.
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ELMWOOD ST.
PLUM RUN
WOODCREST
CANTERBURY CIR.
COVENTRY RD.
KAUKIS DR.
MEADOW LN.
TURRIL ST.
KENNA DR.
93
112
28
37
35
36
26
117
116
152
Legend
City Land Use
Single Family Residential
Two Family Residential
Multi Family Residential
Light Industrial
Heavy Industrial
Commercial
Governmental
Institutional
Park
Vacant
DWSMA
Parcels
Le Sueur City Limits
County Boundary
Railroad
County Land Use
AGRICULTURAL
RESIDENTIAL
RES 1-3 UNITS
RES 4 OR MORE UNITS
INDS LAND & BLDGS
COMM LAND & BLDGS
MUNICIPAL PUB-OTHER
K-12 SCH-PRIVATE
CHARITABLE INS
CHURCH
Mineral Resource Overlay
0
0.25
Miles
Source: Le Sueur County, MnDNR, MnDOT, MnGeo, MGS, MDH, MPCA, MDA, FEMA, NRCS
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Zoning

Official zoning within the DWSMA is shown in ***Table 3 and Figure Five***.

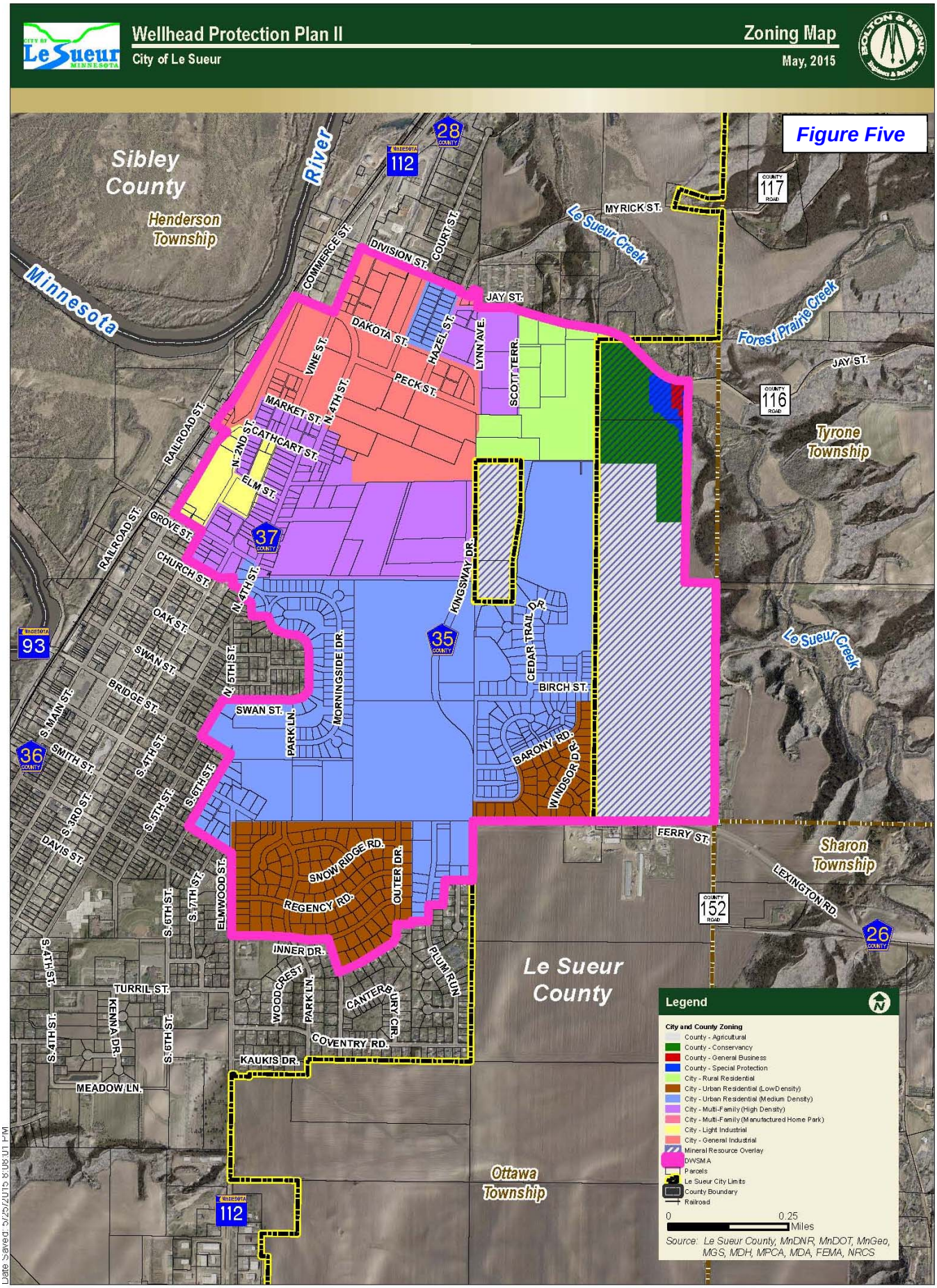
Le Sueur DWSMA City Zoning	**Acres**	***County Zoning***	***Table 3*** **Acres**
CI – Light Industrial	13.8	Agricultural	120.2
I – General Industrial	91.5	Conservancy	26.2
R-1 – Rural Residential	35.6	General Business	1.4
R-2 – Urban Residential (low density)	81.3	Special Protection	3.8
R-3 – Urban Residential (med density)	258.0		
R-4 – Multi-Family (high density)	102.8		
R-5 – Multi-Family (manufactured home park)	0.8		

Over 65 percent of the land within the City of Le Sueur DWSMA is zoned residential, 16 percent agricultural and 14 percent industrial. Four parcels are located outside the city limits in Ottawa Township and comprise the agricultural zoning, along with some conservancy and special protection zoned land.

There is a special county overlay district on the four parcels within the DWSMA. This overlay designates a special "Mineral Resources" area. This area has been determined to contain mineral resources such as sand, gravel, limestone and sandstone as shown in the Le Sueur County Aggregate Resources Inventory – available at the Le Sueur County Environmental Services Department This area has limited housing allowed and is sited for commercial removal of minerals from the ground. These parcels are located in the high vulnerability area of the DWSMA and any mining must be completed in a fashion that will not impact the public drinking water supply aquifer. A strategy to discuss limited mineral extraction will be considered.

Within the City of Le Sueur, land use controls are administered locally. Ottawa Township does not have permitting regulations. Le Sueur County Environmental Services is responsible for all other permits, including Conditional Use, Variances, Sub-surface sewage treatment systems (SSTS), feedlots and shoreland in the areas located outside the city limits of Le Sueur. They also enforce the Wetland Conservation Act. There is one SSTS located within the city limits of Le Sueur and the DWSMA. The City is required to follow Le Sueur County regulations regarding SSTS.

Education, incentives and management practices to protect the aquifer will be addressed in the implementation section of this plan.


Wellhead Protection Plan II
City of Le Sueur
Zoning Map
May, 2015
Figure Five
Sibley County
Henderson Township
Minnesota River
Le Sueur Creek
Forest Prairie Creek
Tyrone Township
Sharon Township
Le Sueur County
Ottawa Township
MYRICK ST.
JAY ST.
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WOODCREST
PARK LN.
CANTERBURY CIR.
PLUM RUN
COVENTRY RD.
KAUKIS DR.
TURRIL ST.
KENNA DR.
MEADOW LN.
Legend
City and County Zoning
County - Agricultural
County - Conservancy
County - General Business
County - Special Protection
City - Rural Residential
City - Urban Residential (Low Density)
City - Urban Residential (Medium Density)
City - Multi-Family (High Density)
City - Multi-Family (Manufactured Home Park)
City - Light Industrial
City - General Industrial
Mineral Resource Overlay
DWSMA
Parcels
Le Sueur City Limits
County Boundary
Railroad
0
0.25
Miles
Source: Le Sueur County, MnDNR, MnDOT, MnGeo, MGS, MDH, MPCA, MDA, FEMA, NRCS
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Potential Contaminant Source Inventory

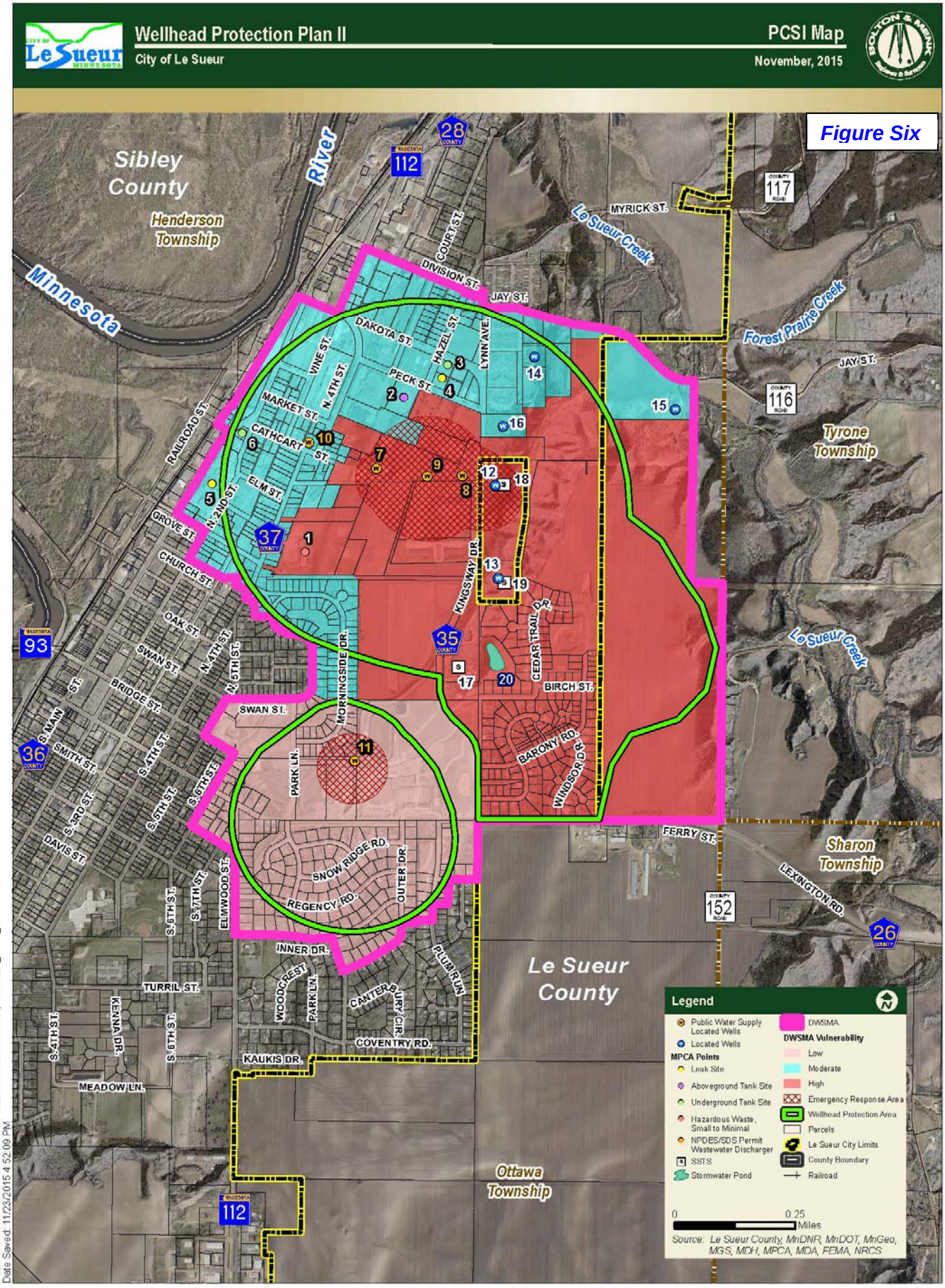
Existing land uses and potential sources of contamination located within the DWSMA were reviewed by the WHP Team. The PCSI, utilizing State and local databases combined with local knowledge, was used to identify most of the contaminant sources. Well location and verification of status for two deep wells drilled by Green Giant was via witness (resident recalls seeing these wells sealed about 20-years ago) and employees from Seneca Foods (verified both wells are located outside the DWSMA and no sealing logs available). While these wells are located outside the DWSMA, if an interconnect with any old municipal wells is discovered, further exploration of sealing status will be conducted. ***Table 4 and Figure Six*** show the location of identified Potential Contaminants. A listing of parcels identified as having potential contaminant sources is shown in the ***Appendix***, along with the current classification.

The level of risk noted on ***Table 4*** is determined by proximity to the City wells, regulation by local and state authorities and perceived potential to affect the aquifer (such as type of contaminant and upstream from the City wells) by the wellhead team.

There are three Sub-Surface Sewage Treatment Systems (SSTS) within the high vulnerability area of the DWSMA, which presents a risk to the drinking water supply if they are not functioning correctly. The University of Minnesota *Septic System Owner's Guide* will be provided to these property owners to help them understand the importance of proper SSTS maintenance. A management strategy to verify the initial inventory and assess contamination potential will be considered.

Table 4

Potential Source Type	High Vulnerability			Moderate Vulnerability			Low Vulnerability		
	Active	Inactive	Level of Risk	Active	Inactive	Level of Risk	Active	Inactive	Level of Risk
Leak Site					2	L			
Above Ground Tanks				1		M			
Underground Storage Tanks				2		L			
Hazardous Waste (Small to Minimal)		1	L						
Stormwater Basin (lined)	1		L						
Public Water Supply Wells	3		L		1	L	1		L
Domestic Wells	2		H	1		M			
Unknown Wells				2		M			
Sub-Surface Sewage Treatment Systems	3		H – 1 M - 2						
Class V Wells	0			0			0		


Wellhead Protection Plan II
City of Le Sueur
PCSI Map
November, 2015
Figure Six
Sibley County
Henderson Township
Minnesota River
Le Sueur Creek
Forest Prairie Creek
Tyrone Township
Sharon Township
Ottawa Township
Le Sueur County
MYRICK ST.
COURT ST.
DIVISION ST.
JAY ST.
DAKOTA ST.
HAZEL ST.
LYNN AVE.
VINE ST.
N. 4TH ST.
PECK ST.
MARKET ST.
CATHCART ST.
RAILROAD ST.
ELM ST.
N. 2ND ST.
GROVE ST.
CHURCH ST.
OAK ST.
SWAN ST.
BRIDGE ST.
S. MAIN ST.
SMITH ST.
S. 4TH ST.
S. 5TH ST.
S. 6TH ST.
S. 3RD ST.
DAVIS ST.
N. 5TH ST.
KINGSWAY DR.
CEDAR TRAIL DR.
BIRCH ST.
MORNINGSIDE DR.
PARK LN.
BARONY RD.
WINDSOR DR.
FERRY ST.
LEXINGTON RD.
SNOW RIDGE RD.
REGENCY RD.
OUTER DR.
INNER DR.
ELMWOOD ST.
S. 7TH ST.
WOODCREST
CANTERBURY CIR.
PLUM RUN
TURRIL ST.
KENNA DR.
COVENTRY RD.
KAUKIS DR.
MEADOW LN.
93
112
37
35
36
26
117
116
152
Legend
Public Water Supply Located Wells
Located Wells
MPCA Points
Leak Site
Aboveground Tank Site
Underground Tank Site
Hazardous Waste, Small to Minimal
NPDES/SDS Permit Wastewater Discharger
SSTS
Stormwater Pond
DWSMA
DWSMA Vulnerability
Low
Moderate
High
Emergency Response Area
Wellhead Protection Area
Parcels
Le Sueur City Limits
County Boundary
Railroad
0
0.25
Miles
Source: Le Sueur County, MnDNR, MnDOT, MnGeo, MGS, MDH, MPCA, MDA, FEMA, NRCS
Map Document: \\arcserver\IG\SUES\JIR221093666\ESRI\Maps\1093666_PCSI_85x11.mxd
Date Saved: 11/23/2015 4:52:09 PM

There are two known wells located within the high vulnerability area and one in the moderate vulnerability. The city will explore opportunities to seal these and other unknown / unused wells identified within the DWSMA. The two wells located in the low vulnerability area (471798 and 764405) will not be included as they do not meet the MDH requirements of depth.

Education strategies to address residential turf and agriculture management practices located within the high vulnerability area will be developed. Incentive programs are available through the Le Sueur County SWCD and the MN Department of Agriculture to help ensure the best use of agriculture land while protecting the groundwater aquifer.

Storage tanks, both above and below ground, are regulated by the MPCA. Owners of storage tanks will be notified that they are within the city's WHPA and any leaks can affect the public drinking water supply. Information on best management practices for tanks will be provided.

The leak site at the City of Le Sueur garage has had the contaminated soils removed. This site was closed in 1992 with no remaining contaminated soil. The second site at Le Sueur Cheese occurred in 2009 and was closed in 2010. The City will request notification from the MPCA if either of these sites becomes re-opened. The hazardous waste generator site at the St. Anne School is inactive. Education will be provided to property owners within the high priority area with hazardous waste generator permits.

Le Sueur Cheese has a permit from the MPCA to discharge cooling water to the Minnesota River. This has no impact on the DWSMA or the drinking water supply. They also have a permit to land apply solids as a whey product which is currently being land applied outside the DWSMA.

Class V injection wells are typically shallow disposal systems that are used to place a variety of fluids below the land surface. Examples of Class V injection wells include: motor vehicle waste disposal wells, large capacity cesspools, storm water drainage wells, aquifer remediation wells and large capacity septic systems. Class V wells are a concern because, in some situations, they may pose a risk to underground sources of drinking water. The risk a Class V well may present depends on factors such as: the type of fluid(s) it receives, its location in relation to water supply sources, its construction, maintenance and local geology. There are no known Class V wells located in the DWSMA. Identification of Class V injection wells will be addressed further in the management strategies found in Chapter Five.

Inner Wellhead Management Zone

Existing land uses, management and local land use controls within the Inner Well Management Zone (IWMZ or 200' radius around the public water supply wells) and the immediate one year time of travel area are summarized in ***Table 5*** and were reviewed and considered by the WHP team during the development of this plan. This is done to identify land use issues and related potential contaminants which may have the most immediate impact upon the public water supply wells.

Potential Contamination Sources for the IWMZ	Well 2	Well 3	Well 5	Well 6	Well 7	*Table 5* Assigned Risk
Floor drain to French drain (GP1)	1	1	1	1	1	L
Buried Sewer (SB1 and SB2)	3	1	7		3	H
Pollutant or Contaminant (PC1)		1			3	M
Storm Water drain pipe 8"+ (SD1)				1		L

A copy of the IWMZ forms and measures that have been identified are included in the ***Appendix*** of this plan. The WHP team discussed the importance of on-going monitoring for land use changes and potential contaminants near the public water supply wells and awareness of State Well Code isolation distances and need to maintain these setback requirements. Several sewer lines to single family residences and buried collector lines were found within the IWMZ. Any sewer lines observed to be leaking, cracked or deteriorated should be replaced. Buildings with a floor drain to a French drain will need proper signage to inform "No Dumping". Management measures will be considered for the storm water drain pipe within the IWMZ of well number six and pollutants or contaminants that exist will also be considered.

Existing land uses, potential contaminants and future land use changes were also considered within the one year time of travel. Based on the land uses and potential contaminants identified in the IWMZ and one year time of travel area described, the city will consider the potential contaminants and land uses a high priority during the implementation of management strategies found in Chapter Five of this plan.

Public Utility Services

The city's storm and sanitary system maps are shown in the ***Appendix*** and are also on file at the City of Le Sueur Public Works Department. Water and wastewater lines should have negligible impact on groundwater quality. A lined stormwater detention basin exists within the high vulnerability area to drain a housing area with capacity to contain runoff when the entire area is built out. There are no public drainage systems or gas/oil pipelines located within the DWSMA.

The city will explore unused, unsealed municipal or other high capacity wells located outside the DWSMA to determine if they have been properly sealed. A list of old municipal wells has been provided by the MDH as a starting point for location and verification of sealing of these wells. The City will utilize this list, found in the ***Appendix*** to verify these wells. According to the Old Municipal Well Records, there are two wells located outside the DWSMA with potential connection to the municipal wells: wells number 218261 and 218262. These wells are owned by Seneca Food Corp and are reported to be sealed but no sealing logs are available. Municipal wells are eligible for 100% sealing assistance through the MDH. Programs for sealing wells are available at up to fifty percent reimbursement at Le Sueur Soil and Water Conservation District (SWCD) for landowners with unused, unsealed wells. The MDH SWP implementation grant program can cover well sealing among other strategies

identified in this plan. Strategies for providing information to property owners, such as newsletters will be identified in Chapter Five.

C. WATER QUANTITY DATA ELEMENTS

Surface Water Quantity

There are no known surface water withdrawals within the Le Sueur DWSMA.

Groundwater Quantity

Adequacy of volume during drought periods has been addressed in Part One of The Plan. While there are six other high capacity wells noted in Part One located within a two-mile radius of the city wells, there are no known well interference problems or water use conflicts. While permitted withdrawal from each of the city wells is allowed at 500 million gallons per year, actual historic well use is considerably less and is shown in ***Table 6***.

ANNUAL WELL PUMPING AMOUNTS ***Table 6***
(IN MILLIONS OF GALLONS)

YEAR	Well 3 218364	Well 5 240067	Well 6 127283	Well 7 524753	TOTAL
2007	182.0	18.2	7.7	234.9	442.8
2008	81.0	91.5	0	225.3	397.8
2009	107.1	61.1	36.6	202.4	407.2
2010	81.7	72.2	106.2	124.7	384.8
2011	76.6	78.9	99.1	150.4	405.0

There are no known environmental bore holes in the DWSMA. Environmental bore holes are used to measure static water levels and can be used for monitoring other parameters as well.

D. WATER QUALITY DATA ELEMENTS

Surface Water Quality

The only surface water located within the DWSMA is a short stretch of the Le Sueur River in the northeast corner. Water quality is unknown.

Groundwater Quality

Detectable levels of nitrate levels have been found on wells two and five that would indicate influence from surface activities. Further data collection will be considered in the implementation strategies. The ***Appendix*** contains the 2014 Consumer Confidence report.

II. ASSESSMENT OF DATA ELEMENTS

A. USE OF THE WELL

The City of Le Sueur utilizes four wells ranging in depth from 245 to 690 feet, as shown in ***Table 7.*** Historic water usage over the past five years has averaged approximately 407 million gallons annually. Usage has varied between 384 million gallons per year in 2010 and 443 million gallons per year in 2007. Water use is expected to increase slightly by 2024.

Table 7

Well Number	Unique well #	Casing Depth (ft)	Depth (ft)	Average pumped (Mg/Y)
3	218364	248	278	105.7
5	240067	210	245	64.4
6	127283	380	660	49.9
7	524753	565	690	187.5

The city pumps an average of 900,000 to one million gallons per day and has three elevated and one underground storage tanks with a total capacity of 1.15 million gallons. The city water system provides drinking water to 1,979 metered service connections through appurtenant distribution mains, lines and services. A State licensed operator currently manages the water system.

B. WELLHEAD PROTECTION AREA DELINEATION CRITERIA

The following data inputs were used in determination of the boundaries of the wellhead protection area.

1. **Time of Travel - 10 year**
2. **Flow Boundaries**
3. **Daily Volume**
4. **Ground Water Flow Field**
5. **Aquifer Transmissivity**

A detailed discussion of the delineation is found in Part One of the Plan. Part One of The City of Le Sueur plan was completed by Erik J. Tomlinson, PG, Source Water Solutions, LLC. Part One is located in the ***Appendix*** of this plan.

C. QUALITY AND QUANTITY OF WATER SUPPLYING THE PUBLIC WATER SUPPLY WELL

The City wells pump about 407 million gallons per year. Results of routine sampling conducted by the MDH in 2014 discovered no violations of any parameters monitored under the Federal Safe Drinking Water Act. A copy of the 2014 Consumer Confidence Report is located in the ***Appendix*** of this plan.

D. THE LAND AND GROUNDWATER USES IN THE DRINKING WATER SUPPLY MANAGEMENT AREA

The area of the DWSMA located within the city limits of Le Sueur consists mainly of Residential homes. Education of landowners about the importance of proper management of hazardous wastes, agricultural chemicals and fertilizers, proper turf management, tank management and monitoring for nitrates in the city wells are issues of concern and will be the focus of management strategies in the high and medium vulnerability areas of the DWSMA. Well sealing will be promoted in the low vulnerability areas.

The intent of this WHPP is to heighten awareness regarding the impact of land use activities on groundwater quality. Through awareness, it is hoped that citizens will voluntarily take the necessary steps, which will maintain the quality of groundwater and drinking water produced by the city.

CHAPTER TWO

IMPACT OF CHANGES ON PUBLIC WATER SUPPLY WELL

Minnesota Rules 4720.5220

I. CHANGES IDENTIFIED IN:

A. PHYSICAL ENVIRONMENT

There is an area for potential residential development if needed in the city limits of Le Sueur.

There is potential for mining extraction within the overlay areas of the four parcels located outside the city limits of Le Sueur.

B. LAND USE

The city completes annexation by request. There is no anticipated annexation at this time.

C. Surface Water

No expected changes or impacts from the Le Sueur River in the northeast corner of the DWSMA.

D. GROUNDWATER

No changes in the groundwater are anticipated.

II. IMPACT OF CHANGES

A. EXPECTED CHANGES IN WATER USE

There are no expected changes in the water use within the DWSMA. No new expected irrigation wells in the area. The north industrial park is located outside the DWSMA. If water use in that area increases, potential exists for a new well and small package plant to service the requirements.

B. INFLUENCE OF EXISTING WATER AND LAND GOVERNMENT PROGRAMS AND REGULATION

The city is considering development of a cross-connections ordinance to address back flow issues and is considering house-to-house compliance inspections if feasible.

County Local Water Management Plan has identified priorities supportive of groundwater protection in its current plan – including education on well maintenance, unused/unsealed wells, arsenic and nitrate testing clinics and support during plan development and implementation.

The following ***Table 8*** shows the departments or programs that may be able to assist the City with issues relating to potential contamination sources that have been inventoried or may result from changes in land and water use within the DWSMA.

Government Unit	Name of Control/Program	*Table 8* Program Description
City of Le Sueur	Comprehensive Land Use Plan Planning and Zoning	Land Use Permitting
Soil and Water Conservation District	Local Water Management Plan	Well Sealing Cost-share Ag Best Management Practices
Le Sueur County Environmental Services	Comprehensive Land Use Plan	Zoning and Land Use Ordinance SSTS, Mining Overlay, Floodplain Overlay Wetland Conservation Act
Le Sueur Public Health Department	Delegated Well Program	Delegated Well Program
Le Sueur County Emergency Management	All Hazard Mitigation Plan	Assistance in spill management

The following ***Table 9*** indicates the state and federal agencies and programs available to implement this WHP plan.

Government Unit	Type of Program	*Table 9* Program Description
MDH	State Well Code (Minnesota Rules, Chapter 4725)	MDH has authority over the construction of new wells and the sealing of wells. MDH staff in the Well Management Program offer technical assistance for enforcing well construction codes, maintaining setback distances for certain contamination sources, and well sealing.
MDH	Wellhead Protection	MDH has staff that will help the city identify technical or financial support that other governmental agencies can provide to assist with managing potential contamination sources. MDH can assist with implementation through MDH & SWP Implementation Grants.
USDA NRCS	Farm Bill Conservation Programs	NRCS provides incentives through cost-share for agriculture related land uses.
MDH	Nutrient Management	MDH provides nutrient management planning and implementation.
DNR	Water appropriation permitting	DNR can require that anyone requesting an increase in existing permitted appropriations, or to pump groundwater, must address concerns regarding the impacts to drinking water if concerns are included in a WHP plan.

Government Unit	Type of Program	*Table 9 (cont.)* Program Description
EPA	Class V Wells	The EPA has authority over Class V wells. Owners are required to notify the EPA.
MPCA	Environmental Permits Potentially Contaminated Sites	The MPCA has authority over potential contaminant sources such as tanks, hazardous waste generators, and dumpsites.

C. Administrative, Technical, and Financial Considerations

The City of Le Sueur, Le Sueur SWCD and the Le Sueur County Environmental Services Office have been supportive of Wellhead Protection efforts. A wellhead committee had been formed and has been actively involved in the planning process. A budget has will be established for implementation of priority strategies identified in this Plan.

The City of Le Sueur will be responsible for implementation of this Plan through the appointed wellhead protection manager. The committee will continue to meet at least every 2.5 years to review and discuss implementation programs.

The city will work with the Le Sueur SWCD, MDH and MRWA providing groundwater education opportunities as they arise. Le Sueur County Local Water Management, SWCD, DNR, MDA and County Environmental Services have provided and will continue to provide technical assistance for this plan.

CHAPTER THREE

ISSUES, PROBLEMS, AND OPPORTUNITES

Minnesota Rules 4720.5230

I. IDENTIFICATION OF:

A. PROBLEMS AND OPPORTUNITIES DISCLOSED AT PUBLIC MEETING AND IN WRITTEN COMMENT

While no public comments were presented at any of the public hearings held in conjunction with this plan, the following ***Table 10*** depicts problems and opportunities identified by the wellhead team.

Issue Identified	Impacted Feature	Problem Associated with the Identified Issue	Opportunity Associated with the Identified Issue	***Table 10*** Adequacy of Existing Controls to Address the Issue
There are unused and unsealed wells on both municipal and residential properties.	Aquifer Well water quality DWSMA	The city needs to assess which wells present a threat to the aquifer based upon their depth, construction, and state of repair.	The city can partner with Le Sueur SWCD and/or apply for MDH Implementation funds to help pay for the costs of properly sealing unused wells.	The city does not have authority to require that unused wells be properly sealed. The MDH has authority to require well sealing.
Land Use (SSTS, Agriculture) – Part of DWSMA outside city limits.	Aquifer Well water quality	The city needs to inform land owners of proper management practices.	The city can work with Le Sueur County Environmental Services (LSCES) and SWCD to provide education and incentives.	The city does not have authority to regulate land use in the DWSMA outside city limits. LSCES controls land use regulation.
Transportation Corridors / Spill Response	Aquifer Well water quality	Potential spills within the highway right-of-way are a threat to the aquifer.	The city can partner with MNDOT, SCES and MDH to produce a spill response/abatement plan.	The city has an emergency management team. MNDOT has spill response protocol.
Lack of adequate information – Monitoring of Surface/ Groundwater connection	Aquifer Well water quality DWSMA	The city needs to work with the MDH to establish and implement a monitoring plan that includes nitrates.	The city can partner with the MDH and apply for MDH Implementation funds to help with costs.	The city can complete the collection of samples for testing. The MDH can complete the tests.
Potential for Mining Extraction on High Vulnerability areas	Aquifer Well water quality	The city needs to inform property owners and operators of potential risk to the aquifer.	The city can work with LSCES on adequate controls to protect the aquifer.	The city does not have authority to regulate the mining in the DWSMA. LSCES controls land use regulation.

There may be unknown Class V Wells located in the DWSMA.	Aquifer Well water quality DWSMA	The city needs to inform property owners of what a Class V Well is and how to report.	The city can apply for MDH grant funding to inform the property owners within the DWSMA.	The EPA has authority over Class V Wells in Minnesota.
The City has detectable nitrates in wells #2 and 5 from an unknown source.	Aquifer Well water quality DWSMA	The City has limited funding to explore possible causes.	The City can apply for MDH grant funding to complete recommended monitoring.	The City blends the water from multiple wells. The City can remove Well #5 from production if necessary.
The City does not have a cross-connection ordinance or man-power to inspect for existing back-flow problems.	Aquifer Well water quality DWSMA	The City has limited funding to complete ordinances and inspections.	The City can apply for MDH grant funding to complete ordinance and inspections.	The City has the authority to enforce a cross-connection ordinance by conducting inspections.
The City has potential for Industrial growth outside the DWSMA.	Aquifer Well water quantity DWSMA	The City would need to site a new well and treatment plant closer to the industrial park.	The City can apply for MDH grant funding to provide infrastructure.	The City does not have the authority to permit a new high-capacity well. DNR has authority to administer high capacity permits.
The City is planning to site a new well.	Aquifer Well water quality DWSMA	The City needs to determine a safe and adequate drinking water supply.	The City can request MDH Hydro support to help screen well sites and fund test wells.	The City does not have the authority to permit a new high-capacity well. DNR has authority to administer high capacity permits.
The City needs an ordinance to address well drilling and hook-up.	Aquifer Well water quantity DWSMA	The City needs to determine a safe and adequate drinking water supply.	The City can apply for MDH funding to hire a consultant to write new Ordinances.	The City has authority to regulate well drilling and hook-up within their city limits.
The City treatment plant is not manned 24-hours presenting potential security issues.	Well water quality	Potential for compromise of the security of the wells and treatment plant.	The City can apply for MDH grant funding to fence the perimeter around wells #5 and #7 and provide door locks linked to existing SCADA cameras.	The city does not have employees at the plant 24-hours a day.

B. DATA ELEMENTS

The State's Wellhead Protection Rule requires that existing information be utilized in developing the Wellhead Protection Plan. Much of the data collected and utilized to delineate the City of Le Sueur WHPA and DWSMA and to determine vulnerability of the aquifer to possible contamination comes from regional sources on a large scale. While much regional information and data is being used as supplied by MDH, the city has verified of many of the contaminant sites to further protect public drinking water supplies.

The city will work with the MDH to develop and implement a monitoring plan to include the stream and the PWS wells to determine if there is any impact to the drinking water supply from the stream. This plan will be updated on ten-year intervals as required by the State of Minnesota. Updated data will be utilized at that time.

C. STATUS AND ADEQUACY OF OFFICIAL CONTROLS, PLANS, AND OTHER LOCAL, STATE, AND FEDERAL PROGRAMS ON WATER USE AND LAND USE

The WHP committee feels adequate protection of the DWSMA are available through existing land use ordinances in the City of Le Sueur, Le Sueur County, and state well and groundwater appropriation permits.

Existing education programs promoting Best Management Practices (BMPs) and working with local landowners on issues is the approach proposed by the city. The city will work with Le Sueur County LWMP and SWCD to provide education and incentives.

The Le Sueur County LWMP, administered by Le Sueur County Environmental Services, addresses ground and surface water protection. Potential funding for well sealing or other BMPs may be available through Local Water Planning or the Soil and Water Conservation District in Le Sueur County, or through MDH Source Water Protection Implementation Grants (available as part of the Clean Water Legacy). The MDH and Minnesota Rural Water Association (MRWA) will continue to provide technical assistance towards the successful implementation of this Plan. Other State agencies including the DNR, MDA, MPCA, and BWSR are available to provide assistance as needed.

CHAPTER FOUR

WELLHEAD PROTECTION GOALS

Minnesota Rules 4720.5240

Goals define the overall purpose for the WHP plan, as well as the end points for implementing objectives and their corresponding actions. The WHP team identified the following goals after considering the impacts that 1) changing land and water uses have presented to drinking water quality over time and 2) future changes that need to be addressed to protect the community's drinking water:

- Maintain a safe and adequate drinking water supply for community residents;
- Prevent contaminants from reaching levels that present a risk to people's health; and
- Provide the citizens with educational materials and other resources to assist landowners with drinking water protection issues such as tank management, turf management, agriculture BMPs, private well use, maintenance and sealing assistance and Class V wells.

CHAPTER FIVE

OBJECTIVES AND PLANS OF ACTION

Minnesota Rules 4720.5252

Objectives provide the focus for ensuring that the goals of the WHP plan are met and that priority is given to specific actions that support multiple outcomes of plan implementation.

Both the objectives and the wellhead protection measures (actions) that support them are based on assessing 1) the data elements, 2) the potential contaminant source inventory, 3) the impacts that changes in land and water use present and 4) issues, problems, and opportunities referenced to administrative, financial, and technical considerations.

A. OBJECTIVES

The following objectives have been identified to support the goals of the WHP plan for the City of Le Sueur and will be utilized in ***Table 11***:

1. Create public awareness and general knowledge about the importance of WHP for maintaining an adequate and safe drinking water supply;
2. Gather new information on potential contaminants.
3. Manage potential contaminants.
4. Ensure emergency preparedness of local agencies.
5. Create awareness among LGUs about the importance of protection of the drinking water supply aquifer.
6. Maintain communications with the MDH and other agencies able to assist with implementation of this plan.
7. Collect additional data to substantiate information contained within this Plan, and to provide more detail for future Plan amendments.
8. Conduct regular evaluations of Plan implementation and effectiveness.

B. WHP MEASURES AND ACTION PLAN

Based upon this information, the WHP team has identified WHP measures that will be implemented by the city over the 10-year period that its WHP plan is in effect. The objective that each measure supports is noted as well as 1) the lead party and any cooperators, 2) the anticipated cost for implementing the measure and 3) the year or years in which it will be implemented.

The following categories are used to further clarify the focus that each WHP measure provides, in addition to helping organize the measures listed in the action plan:

- Data Collection
- IWMZ Management
- Land Use Management
- Potential Contamination Source Management
- Public Education and Outreach
- Reporting and Evaluation
- Water Use and Contingency Strategy

C. ESTABLISHING PRIORITIES

WHP measures reflect the administrative, financial, and technical requirements needed to address the risk to water quality or quantity presented by each type of potential contamination source. Not all of these measures can be implemented at the same time, so the WHP team assigned a priority to each. A number of factors must be considered when WHP action items are selected and prioritized (part 4720.5250, subpart 3):

- Contamination of the public water supply wells by substances that exceed federal drinking water standards.
- Quantifiable levels of contamination resulting from human activity.
- The location of potential contaminant sources relative to the wells.
- The number of each potential contaminant source identified and the nature of the potential contaminant associated with each source.
- The capability of the geologic material to absorb a contaminant.
- The effectiveness of existing controls.
- The time needed to acquire cooperation from other agencies and cooperators.
- The resources needed, i.e., staff, money, time, legal, and technical resources.

The City of Le Sueur defines a priority for implementing a WHP measure as maintaining the quantity and high quality drinking water they have come to expect. The following ***Table 11*** lists each measure that will be implemented over the 10-year period that the City's WHP plan is in effect, including the above-listed objectives and priority assigned to each measure. It is difficult to foresee and plan for the future. The City will use its planning and management capabilities within this plan to respond to any new/unknown source water protection issues that may have an impact on the quality or quantity of its drinking water in the future.

Table 11 - WHP Plan of Action

MONITORING, DATA COLLECTION, AND ASSESSMENT:

Description	Objective	Priority	Responsible Party & Cooperators	Cost	Implementation Time Frame									
					2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
1. Groundwater Quality & Quantity Monitoring **WHP Measure #1:** Work with MDH hydrologist to develop and implement a monitoring plan that would include nitrate and other general chemistry parameters.	**6,7**	H	Le Sueur MDH	MDH will cover lab fees	X	X								
WHP Measure #2: When planning for a new municipal well or scheduling maintenance on an existing well, contact MDH Hydrologist about the need to conduct an aquifer test plan. Work with MDH to develop a work plan that identifies the steps to complete the aquifer test in accordance with WHP program rule requirements and parameters necessary for test pumping a new city well if grant funding is available.	**6,7**	H	Le Sueur MDH	MDH will cover lab fees and Aquifer Test pending availability	←---------- As Needed ----------→									
2. Data Collection **WHP Measure #3:** The MDH and the PWS should continue to verify the location of wells, sealed wells and other borings that are constructed within a two-mile radius of the DWSMA as part of the process for amending this plan.	**7**	H	Le Sueur BMI MRWA MDH	$1,500 - $2,000				X			X			
3. Well and Contaminant Source Inventory and Prioritization **WHP Measure #4:** Update the PCSI every 5 years. Review status of existing potential contaminants and add new potential contaminants identified within the DWSMA.	**2**	H	Le Sueur MRWA MDH	Staff Time				X			X			
WHP Measure #5: Verify unknown wells located on parcels 10.136.2800 and 21.136.2800. Try to locate well numbers and verify depth to determine if they meet the Scoping 2 requirements for inclusion. Report to MDH.	**2/3**	H	Le Sueur MDH	Staff Time			X							
WHP Measure #6: Explore funding options for conducting cross-connection inspections of the city/residential water lines. Apply for MDH funding.	**5**	M	Le Sueur MDH	Up to $10,000					X					

MONITORING, DATA COLLECTION, AND ASSESSMENT (cont.):

Description	Objective	Priority	Responsible Party & Cooperators	Cost	Implementation Time Frame									
					2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
WHP Measure #7: Prioritize unused wells located within the High and Moderate Vulnerability area based on criteria noted in the Scoping 2 document. Apply for grant funding to seal priority wells.	**2/3**	H	Le Sueur SWCD MDH MRWA	$800-$1,000 per well			X							
WHP Measure #8: Work with MDH to review old municipal well inventory to help locate, seal and determine the status of former municipal wells. Submit well records to MDH.	**2**	H	Le Sueur Well Drillers MDH MRWA	Staff Time					X					

WELL AND CONTAMINANT SOURCE MANAGEMENT:

Description	Objective	Priority	Responsible Party & Cooperators	Cost	Implementation Time Frame									
					2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
1. Municipal Well Management Practices **WHP Measure #9:** Review and update the IWMZ survey form for all wells in the system every 5 years working in coordination with the MDH.	**2**	H	Le Sueur MDH, MRWA	Staff Time					X					
WHP Measure #10: Monitor setbacks for all new potential contaminant sources within the IWMZ.	**3**	H	Le Sueur MDH	Staff Time	←----------On-Going----------→									
WHP Measure #11: Provide a map of the DWSMA to the local Fire Department, City Street Department, Le Sueur County Emergency Management, and MNDOT. Request their awareness and prompt response to accidents, spills and clean-up efforts near the PWS wells.	**4/5**	H	Le Sueur City & County MNDOT	Staff Time	X									
2. Municipal Well Security Issues **WHP Measure #12:** Install fencing around the 50-foot perimeter of wells #5 and 7 to help isolate them from trespassers and damage from vehicles or equipment.	**3**	M	Le Sueur MDH	$14/foot Up to 800-feet		X								

WELL AND CONTAMINANT SOURCE MANAGEMENT (CONT.):

Description	Objective	Priority	Responsible Party & Cooperators	Cost	Implementation Time Frame									
					2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
WHP Measure #13: Apply for MDH grant to purchase and install sturdy doors and secure locks for the (3) well house doors to prevent entry by trespassers and vermin.	**3**	H	Le Sueur MDH	$10,000	X									
WHP Measure #14: Apply for MDH grant to purchase and install sturdy doors and secure locks for (3) water treatment plant doors to prevent entry by trespassers and vermin.	**3**	H	Le Sueur MDH	$10,000	X	X								
WHP Measure #15: Apply for MDH grant to purchase and install security cameras at each well (3) and at water treatment facility (2) with link to existing SCADA system to prevent vandalism or potential risk to drinking water supply.	**3**	H	Le Sueur MDH	$10,000		X	X							
3. Old Municipal Wells **WHP Measure #16:** Verify status of old Seneca wells (#218261 and #218262). Send sealing records to MDH or apply for grant to seal if located and found to be unsealed.	**3**	H	Le Sueur MDH MRWA Seneca	Staff Time							X			
4. Private Well Management **WHP Measure #17:** Provide information on the Le Sueur website about proper management of active wells and sealing of unused wells located in the DWSMA.	**1**	H	Le Sueur MDH MRWA	$1,200	X									
5. Class V Wells **WHP Measure #18:** The City will update and identify any new known potential Class V Wells in the DWSMA	**3/6**	M	Le Sueur MDH EPA	Staff Time	←---------- As Needed ----------→									
WHP Measure #19: The City will notify MDH of any Class V wells identified, and provide educational materials to the property owners within the DWSMA about impacts of Class V wells to groundwater.	**1/3/6**	H	Le Sueur MDH	Staff Time	←---------- As Needed ----------→									

WELL AND CONTAMINANT SOURCE MANAGEMENT (CONT.):

Description	Objective	Priority	Responsible Party & Cooperators	Cost	Implementation Time Frame									
					2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
6. High Capacity Wells **WHP Measure #20:** If the City receives High Capacity Well notification from the DNR during the review process; they will contact the MDH SWP Planner or Hydrologist.	**6**	H	Le Sueur MDH DNR	Staff Time	←---------- As Needed ----------→									
7. Tank Management **WHP Measure #21:** Contact the owners of above and below ground storage tanks identified in the PCSI to determine the status of their tanks. If any corrective measures are needed, assist them by applying for a grant via MDH SWP grant to perform any corrective actions and/or secondary containment or tank removal.	**1/3**	H	Le Sueur MDH MPCA	TBD				X						
8. Sub Surface Sewage Treatment Systems **WHP Measure #22:** The City will provide Septic System Owner's Guide to property owners within the high vulnerability area with a septic system.	**1**	M	Le Sueur	$250 plus Staff Time		X								
9. Hazardous Waste Generators **WHP Measure #23:** The City will provide information on hazardous waste generators and links to MPCA website on the City Website.	**1**	M	Le Sueur	$250 plus Staff Time	X									
10. Tank and Leak Site Management **WHP Measure #24:** The City will send DWSMA map with tanks and leak sited identified to the MPCA requesting notification of any activities such as new or removal of existing tanks and re-activation by state agencies regarding known LUST sites.	**2/3/6**	M	Le Sueur MPCA	Staff Time	X									

EDUCATION AND OUTREACH:

Description	Objective	Priority	Responsible Party & Cooperators	Cost	Implementation Time Frame									
					2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
1. WHP and Drinking Water Protection Education **WHP Measure #25**: Select wellhead protection education items from the MRWA and MDH source water protection websites to use to educate the public about identified potential contaminant sources. Place brochures at City Hall, local newspaper and/or other media, and the public library. Apply for MDH SWP funds for printing costs.	**1**	H	Le Sueur MRWA MDH	$500		X							X	
WHP Measure #26: Post and highlight WHP education information on the city website.	**1**	M	Le Sueur MDH MRWA	Staff Time	←-------2016 and As Needed--------→									
WHP Measure #27: The city will support and participate in local educational programs when requested.	**1**	M	Le Sueur MDH	Staff Time plus $500	←---------- As Requested----------→									
2. Well Education **WHP Measure #28:** Provide information to property owners via billing inserts about the hazards of unused wells and options for correctly managing them by having them properly sealed or returning them to operating condition.	**1**	H	Le Sueur MRWA MDH	$500				X					X	
WHP Measure #29: Brief the mayor and city council about the potential for unused wells in the DWSMA and status of sealing efforts. Describe resources needed and available to complete this effort.	**1**	M	Le Sueur MDH	Staff Time	X									

LAND USE AND PLANNING:

Description	Objective	Priority	Responsible Party & Cooperators	Cost	Implementation Time Frame									
					2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
1. Water Use Management **WHP Measure #30:** The City will review and update the Emergency / Contingency Strategy Plan every 5 years to ensure that it reflects current personnel information and any changes in the water supply system.	**4**	H	Le Sueur	Staff Time					X					X
WHP Measure #31: The city will investigate and assess local controls on wells within the city limits and upgrade their ordinance if funding is available.	**3**	H	Le Sueur	$1,000				X						
WHP Measure #32: The City will utilize the City website to educate the public on water conservation practices they can implement to reduce water use.	**1**	M	Le Sueur MDH DNR	Staff Time			X							
2. General Land Use & Water Resource Planning **WHP Measure #33:** The city will send a letter to Le Sueur County Environmental Services expressing concern for current Mineral Overlay and requesting notification of any permit requests or land use changes for the four parcels located within the city of Le Sueur DWSMA.	**5**	H	Le Sueur LSCES	Staff Time	X									
WHP Measure #34: The City will initiate a planning process to adopt municipal land use controls to help protect the city wells and the aquifer used as the drinking water source.	**3**	M	Le Sueur MDH	$1,000				X						
WHP Measure #35: The City will send a letter to LSCES requesting inclusion in planning efforts such as Local Water Management and the County Comprehensive Plan updates.	**5**	M	Le Sueur MDH	Staff Time			X							
WHP Measure #36: Participate in the City Comprehensive Plan update to ensure drinking water is a priority.	**5**	M	Le Sueur MDH	Staff Time			X							

LAND USE AND PLANNING Cont.):

Description	Objective	Priority	Responsible Party & Cooperators	Cost	Implementation Time Frame									
					2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
3. Zoning Controls **WHP Measure #37:** The City will adopt a water conservation ordinance.	**3**	H	Le Sueur	$1,200			X							
WHP Measure #38: Work with local planning staff to adopt and enforce a cross connection ordinance that prohibits the connection of a private well to a public water supply without backflow prevention devices.	**3**	M	Le Sueur MDH	$1,200			X							

WHP COORDINATION, REPORTING, AND EVALUATION:

Description	Objective	Priority	Responsible Party & Cooperators	Cost	Implementation Time Frame									
					2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
1. WHP Coordination **WHP Measure #39:** Coordinate a meeting with the WHP team every 2.5 years. Discuss funding needs and pursuit of SWP Grant funds to help implement activities identified in the WHP Plan.	**5**	H	Le Sueur WHP Team MRWA	Staff Time			X			X			X	
2. Implementation Tracking and Reporting Activities **WHP Measure # 40:** Maintain a "WHP folder" that contains documentation of WHP activities you have completed and a date that it was done. Identify each activity with the number of the measure contained in this table.	**8**	H	Le Sueur	Staff Time	X	X	X	X	X	X	X	X	X	X

WHP COORDINATION, REPORTING, AND EVALUATION (cont.):

Description	Objective	Priority	Responsible Party & Cooperators	Cost	Implementation Time Frame									
					2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
3. <u>WHP Program Evaluation Plan Reporting</u> **WHP Measure #41:** Complete an Evaluation Report every 2.5 years that evaluates the "progress of plan of action and the impact of any contaminant release on the aquifer supplying the public water supply well" MN WHP Rule 4720.5270. Submit copy to MDH.	**8**	H	Le Sueur MDH	Staff Time			X			X			X	
WHP Measure #42: The City will use its planning and management capabilities within this plan to respond to any new/unknown source water protection issues that may impact the quality or quantity of its drinking water in the future.	**3**	L	Le Sueur MDH	TBD	←---------- As Needed ----------→									

CHAPTER SIX

EVALUATION PROGRAM

Minnesota Rules 4720.5270

The success of the Potential Contaminant Source Management Strategy must be measured regularly to ensure The Plan is meeting the community needs on Wellhead understanding and compliance.

The City of Le Sueur's WHPA has been designated as having high, moderate and low vulnerability to contamination. The designation of high vulnerability requires monitoring of all potential contaminant sources within the DWSMA. A program to ensure this is completed has been documented in Chapters One through Five. In addition to this, to ensure compliance, the City will:

- Track the implementation efforts completed;
- determine the effectiveness of these efforts; and
- identify any implementation changes needed to accomplish the goal of the plan.

To accomplish the above, the following activities will be completed:

1. Changes in land use and other development within the DWSMA will be monitored.
2. The wellhead team will meet as needed but at least annually to review completed objectives and their effectiveness. Necessary modifications to the Plan will be discussed with strategies added as needed.
3. A written report will be completed every 2.5 years and presented to the City Council stating progress in implementation of objectives. This report will be sent to the Minnesota Department of Health, Source Water Protection Planner; Minnesota Rural Water Association, Wellhead Liaison; The County Local Water Manager; and be placed on file at the Le Sueur City offices.

CHAPTER SEVEN

ALTERNATIVE WATER SUPPLY / CONTINGENCY STRATEGY

Minnesota Rules 4720.5280

PURPOSE

The Alternative Water Supply and Contingency Strategy can be found in the ***Appendix*** of this Plan. The purpose of this Contingency Strategy is to establish, provide and keep updated, certain emergency response procedures and information for the City of Le Sueur which may become vital in the event of a partial or total loss of public water supply services as a result of natural disaster, chemical contamination, or civil disorder of human-caused disruptions.