CITY OF FOLEY

WELLHEAD PROTECTION PLAN - PART II

POTENTIAL CONTAMINANT SOURCE MANAGEMENT STRATEGY

SEPTEMBER 2015 TO SEPTEMBER 2025

Foley

BAYERL WATER RESOURCES

MINNESOTA MDH DEPARTMENT OF HEALTH

TABLE OF CONTENTS

PUBLIC WATER SUPPLY PROFILE

PUBLIC WATER SUPPLY	
NAME	City of Foley
ADDRESS	251 4th Avenue North
	Foley, MN 56329
TELEPHONE NUMBER	320-968-7260
E-MAIL	rbarbain@ci.foley.mn.us

WELLHEAD PROTECTION MANAGER	
NAME	Mark Pappenfus
	Public Works Director
ADDRESS	251 4th Avenue North
	Foley, MN 56329
TELEPHONE NUMBER	320-290-9186
E-MAIL	foleypwks@cloudnet.com

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

GENERAL INFORMATION	
UNIQUE WELL NUMBERS	240768 (Well Number 3), 721698 (Well Number 4), 777222 (Well Number 5)
POPULATION SERVED:	2,603
CONNECTIONS:	856
COUNTY:	Benton

DOCUMENTATION LIST

STEP	DATE PERFORMED
Scoping Meeting 2 Held (4720.5340, subp. 1)	May 1, 2014
Scoping 2 Letter Received (4720.5340, subp. 2)	May 20, 2014
Remaining Portion of Plan Submitted to Local Units of Government (LGUs) (4720.5350)	February 28, 2015
Review Received From Local Units of Government (4720.5350, subp. 2)	May 4, 2015
Review Comments Considered (4720.5350, subp. 3)	May 4, 2015
Public Hearing Conducted (4720.5350, subp.4)	May 5, 2015
Remaining Portion WHP Plan Submitted (4720.5360, subp. 1)	May 12, 2015
Final WHP Plan Review Received (4720.5360, subp. 4)	

Members of the Wellhead Protection Team

NAME	REPRESENTING
Robert Barbian	City of Foley, City Administrator
Mark Pappenfus	City of Foley, Public Works Director
Brian Weis	City of Foley, Council Member
Doug Lezer	Gilmanton Township Representative
George Minerich	Planner – MDH Drinking Water Protection
Marilyn Bayerl	Bayerl Water Resources
City of Foley Planning Commission as policy guiding body	

Abbreviations

BMP Best Management Practices
BWSR Board of Water and Soil Resources
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
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
NRCS Natural Resources Conservation Services
NWI National Wetlands Inventory
OBWEL Observation Well
OHW Ordinary High Water Level
PCSI Potential Contaminant Source Inventory
PWS Public Water Supply
RST Registered Storage Tank
SSTS Sub-surface Sewage Treatment Systems
SWCD Soil & Water Conservation District
ST Storage Tank
STOR Ag Chemical Storage Permit
SWUDS State Water Use Permit
TMDL Total Maximum Daily Load
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 Foley's 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 ***Appendix II*** 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. ***Figures One A and One B*** map the areas of vulnerability for the city's wells. The DWSMA encompasses two areas – the East DWSMA with high and moderate vulnerability and the West DWSMA with moderate vulnerability. The East DWSMA is comprised of 466.4 acres – 194 acres are considered high vulnerability and 272.4 acres medium vulnerability. The entire West DWSMA is considered moderately vulnerable and is 626.6 acres. This plan will differentiate between the two areas based on required potential contaminant considerations required for each.

The varied vulnerability within the glacial drift aquifer has generated more questions about the geology between the surface and the aquifer. Further monitoring over the next ten years will help to gain a better understanding of the aquifer and the layers between it and the land above. 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, Transportation Corridors, Surface Water Discharges, Tanks, Hazardous Waste, Chemical / Nutrient Use, Wells and Class V Wells.

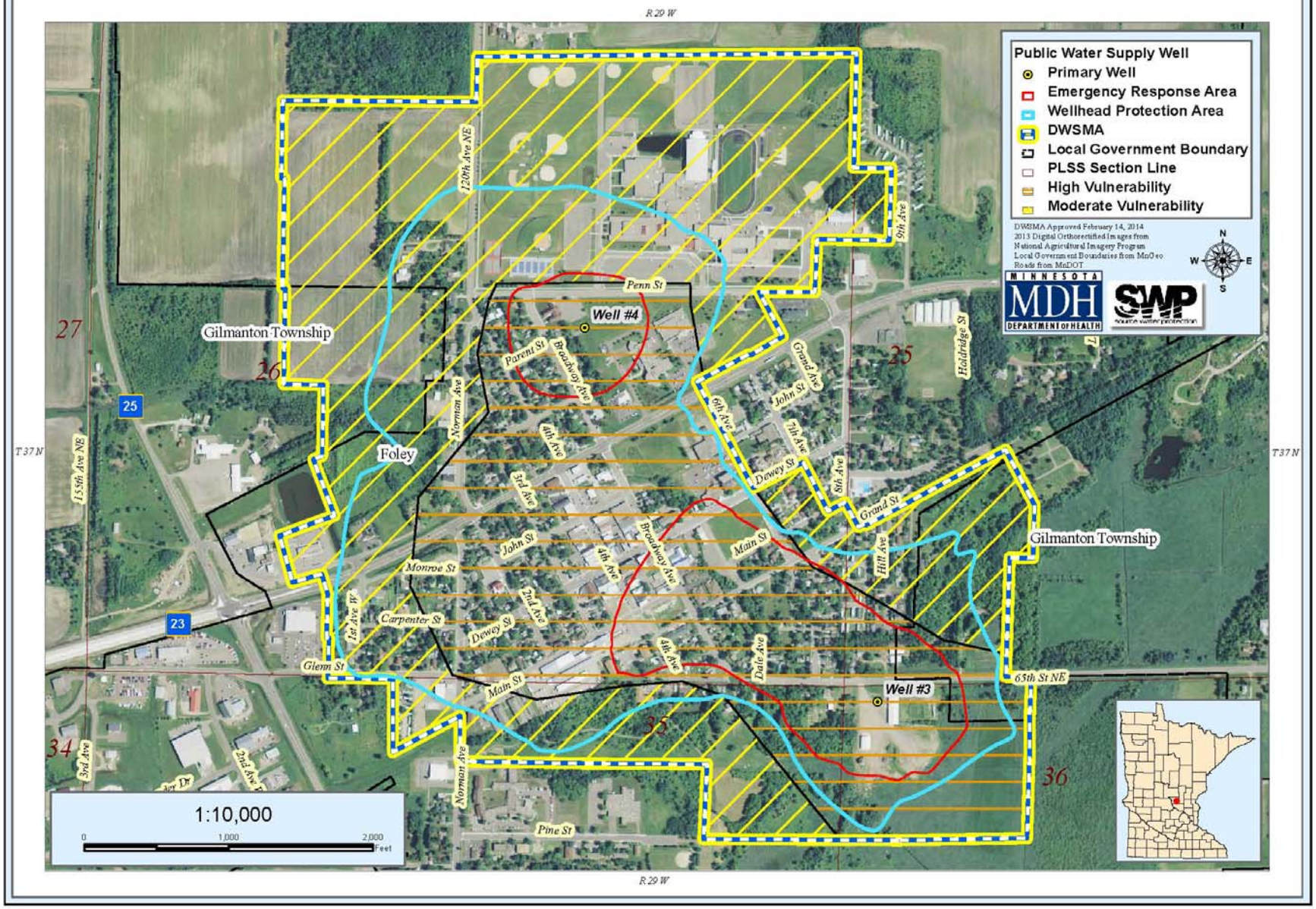
The Wellhead Protection Team intends to work with Benton County, the City of Foley and state and local agencies to mitigate land use within the DWSMAs to the extent available. It is the hope of the Wellhead Protection Team that through increased public awareness, habits will be established that will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

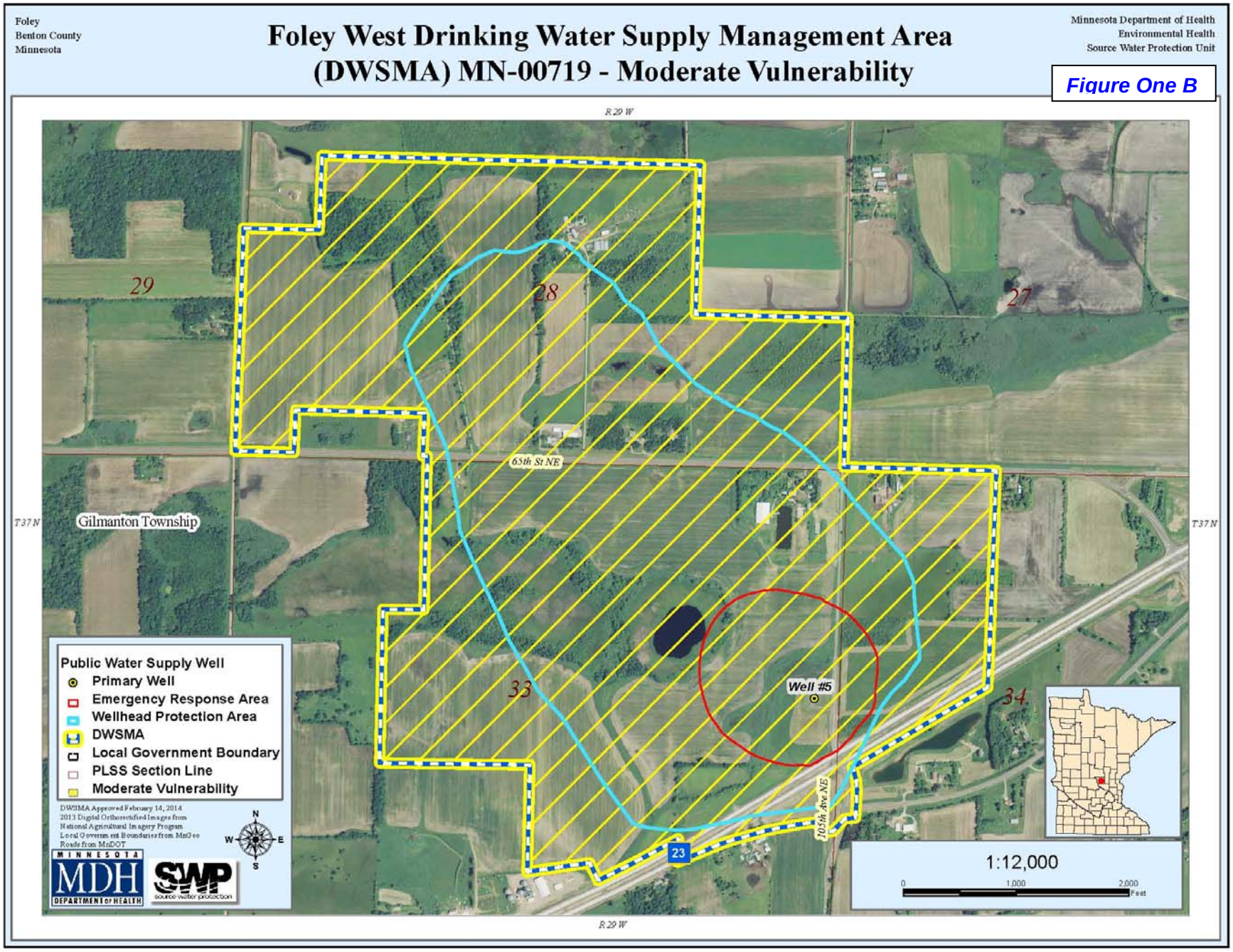
Foley
Benton County
Minnesota

Foley East Drinking Water Supply Management Area (DWSMA) MN-00718 - Variable Vulnerability

Minnesota Department of Health
Environmental Health
Source Water Protection Unit

Figure One A




Foley
Benton County
Minnesota
Foley West Drinking Water Supply Management Area
(DWSMA) MN-00719 - Moderate Vulnerability
Minnesota Department of Health
Environmental Health
Source Water Protection Unit
Figure One B
R 29 W
T 37 N
29
28
27
33
34
65th St NE
105th Ave NE
Gilmanton Township
Well #5
23
Public Water Supply Well
Primary Well
Emergency Response Area
Wellhead Protection Area
DWSMA
Local Government Boundary
PLSS Section Line
Moderate Vulnerability
DWSMA Approved February 14, 2014
2013 Digital Orthorectified Images from
National Agricultural Imagery Program
Local Government Boundaries from MnGeo
Roads from MnDOT
MINNESOTA
MDH
DEPARTMENT of HEALTH
SWP
source water protection
N
W
E
S
1:12,000
0
1,000
2,000
Feet

CHAPTER ONE

DATA ELEMENTS/ASSESSMENT

Minnesota Rules 4720.5200

I. REQUIRED DATA ELEMENTS

A. PHYSICAL ENVIRONMENT DATA ELEMENTS

1. Precipitation

Average annual precipitation during the past five years near the City of Foley is just over 28 inches, with variation between 24.9 and 33.9 inches, as shown in ***Table 1***. Data was obtained from the Minnesota Climatology website at http://climate.umn.edu/hidenannual/ and was gathered by the Benton County SWCD at the two locations nearest to the City wells – one northeast and one southeast of the DWSMA.

Rain falling on the ground can filter through the layers of sediment and enter the aquifer containing the city's vulnerable wells. Two of the city wells - 3 (unique number 240768) and 4 (unique number 721698) are vulnerable to contamination and a portion of the DWSMA is also vulnerable to the uses on the land. It is important to address areas where rainfall could cause infiltration of contaminants.

Precipitation Data for Benton County Near the City of Foley — ***Table 1***

Based on DNR Climatology Data

Measured in inches

	2009	2010	2011	2012	2013
					County Average
January	0.47	0.57	1.15	0.31	0.32
February	0.75	0.40	0.61	0.96	0.94
March	3.46	0.96	1.29	1.14	2.21
April	1.50	1.47	2.27	2.69	1.78
May	0.57	2.35	5.27	8.49	5.42
June	3.67	5.15	3.17	3.45	6.86
July	4.00	4.37	6.89	4.19	1.20
August	4.46	7.38	4.88	0.83	0.57
September	0.83	5.53	0.74	0.28	2.32
October	5.37	3.49	0.99	0.62	4.62
November	0.35	0.67	0.15	0.87	0.37
December	0.89	1.65	0.18	1.12	1.17
Total	**26.29**	**33.97**	**27.56**	**24.92**	**27.75**

2. Geology

A geologic atlas of Benton County has been recently completed. Geologic information such as 1) bedrock geology, 2) surficial geology, 3) quaternary stratigraphy, 4) sand distribution model and Precambrian bedrock geology, and 5) bedrock topography and depth to bedrock was completed in 2010. The Hydrogeology and sensitivity to groundwater pollution was finished in 2012. This will help identify areas of concern.

Geologic data elements pertinent to the Wellhead Protection Area (WHPA) delineation and vulnerability status are included in Part One of this Wellhead Protection Plan (WHPP) and were utilized in the delineation. Part One can be found in ***Appendix I*** and is on file with the Minnesota Department of Health (MDH) and the City of Foley.

Overall, the geology of the Glacial Drift Aquifer, the aquifer the city wells are contained in, is located in confined sands and gravels with till layers. Due to this information and isotope information, the DWSMAs have varied vulnerabilities.

3. Soils

Soils are mapped in ***Figures Two A and B*** and shown in ***Table 2***. According to United States Department of Agriculture, Natural Resources Conservation Services Soil Survey, 1995, the WHPA surficial geologic and soil maps indicate that land surface materials are largely comprised of loam materials. This area of the state has glacial drumlins – molded by glacial action.

SOIL TYPES IN CITY OF FOLEY DWSMA ***Table 2***

ID #	SOIL TYPE	GEOLOGY	ACRES
C68B	Milaca fine sandy loam	Partially hydric	10.8
C69B	Milaca stony-St. Francis complex	Not hydric	4.5
C64B	Mora fine sandy loam, 3 - 5% slopes	Partially hydric	88.7
C73A	Mora loam, 1 - 3% slopes	Partially hydric	217.9
C65A	Parent loam, 0 - 2% slopes	Partially hydric	291.7
C74A	Parent loam, depressional, 0 - 1% slopes, stony	All hydric	69.9
C48A	Ronneby loam, 0 - 2% slopes, stony	Partially hydric	302.4
C75A	Sellyeville & Cathro, depressional, 0 - 1% slopes	All hydric	67.5
C70B	St. Francis-Mahtomedi complex, 2 - 6% slopes	Not hydric	3.4
C70C	St. Francis-Mahtomedi complex, 6 - 12% slopes	Not hydric	15.9
1002A	Undorthents, wet substratum	Not hydric	16.6
W	Water		3.7
			1,093.0

Hydric soil is permanently or seasonally saturated by water. Most of the soils within the DWSMAs are at least partially saturated by water at some point during the year.

Figure Two A

FOLEY - EAST DWSMA

Soil Map Unit

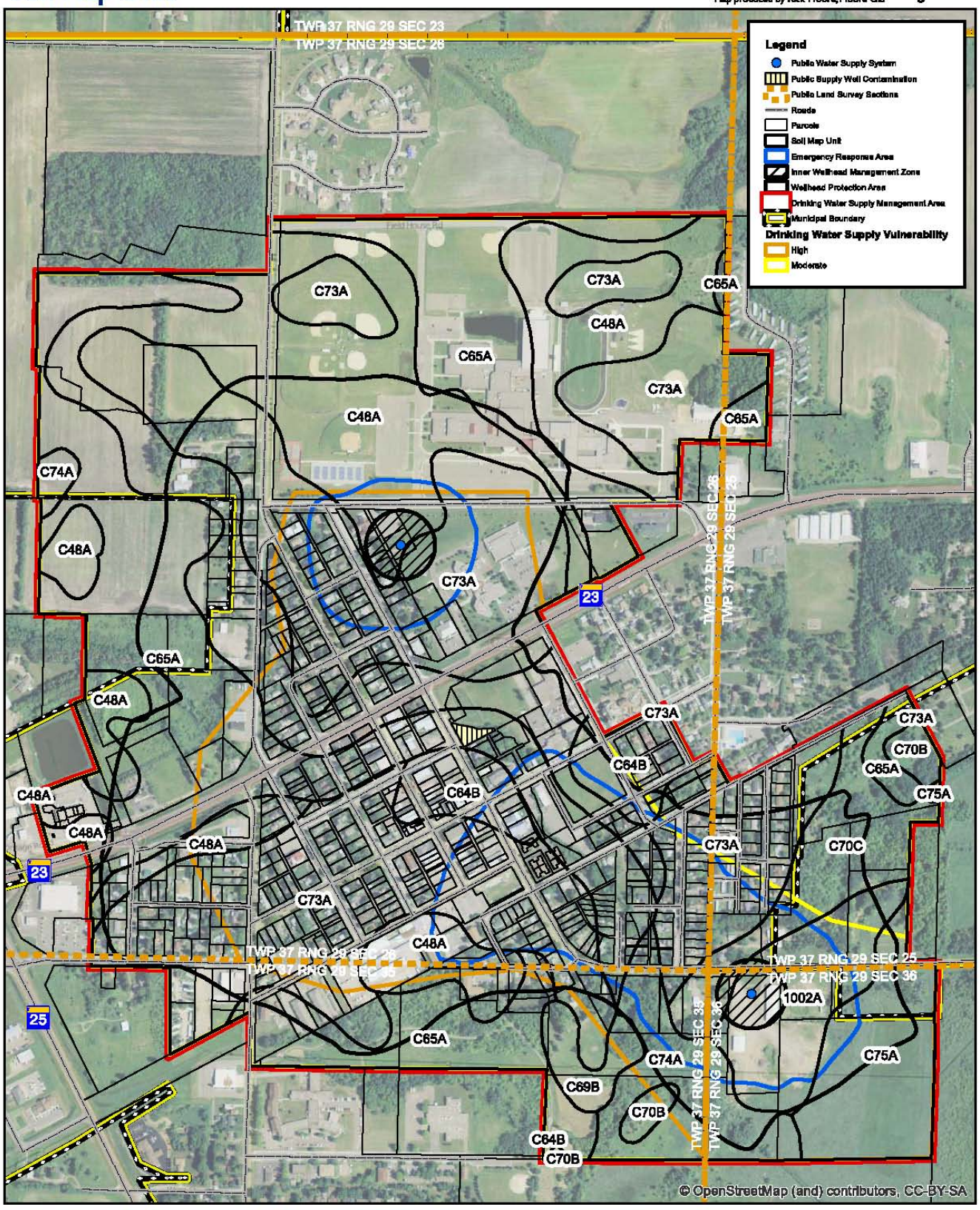
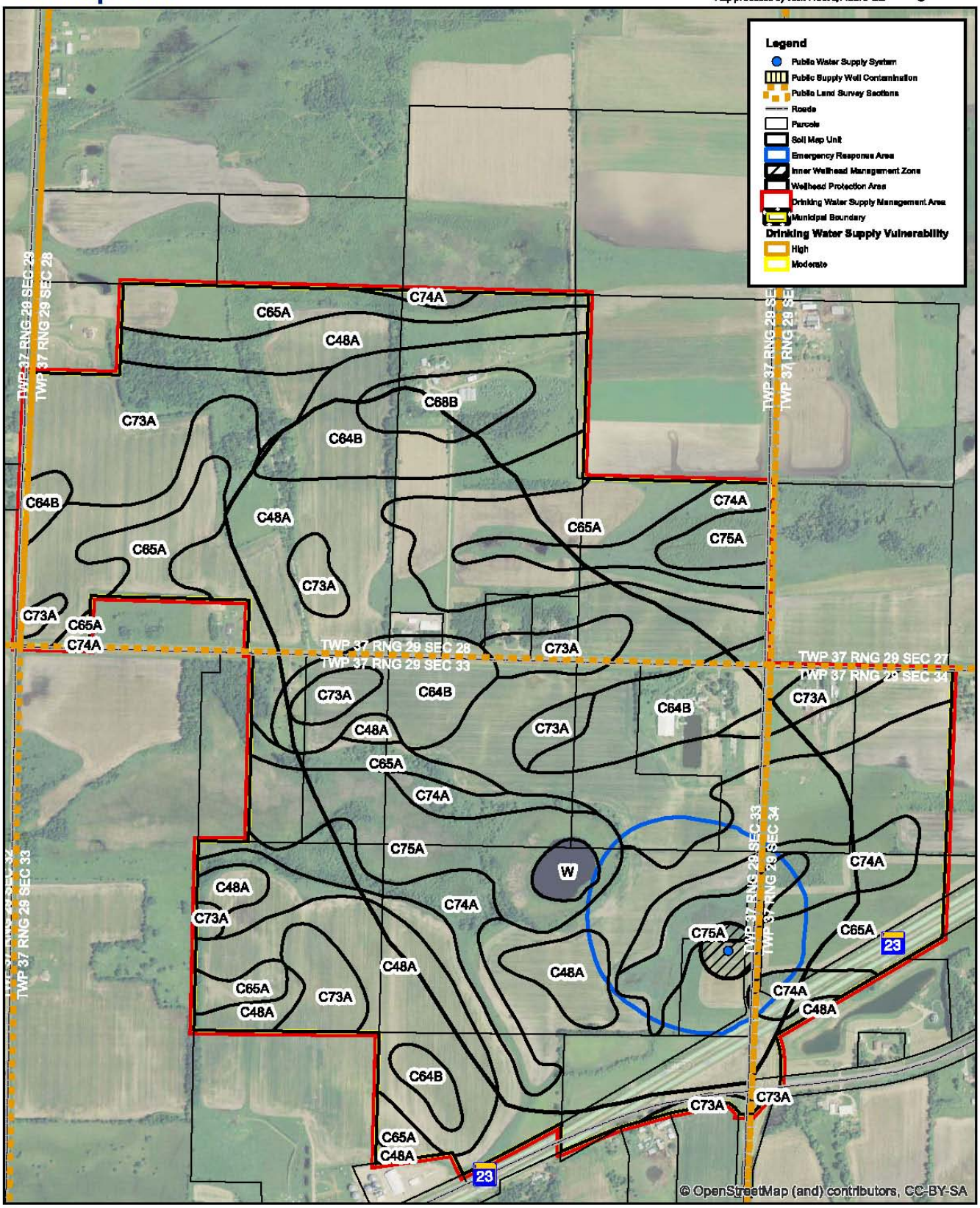


Figure Two B

FOLEY - WEST DWSMA

Soil Map Unit



None of the land located within the DWSMAs are considered erodible, meaning the soils do not tend to run off the land during storm events, therefore erosion and sedimentation have been determined not to have impact in the high vulnerability area surrounding the city wells and does not need to be considered in the implementation of this Plan.

4. Water Resources

The city DWSMAs are located entirely within the Mississippi River Watershed. Water generally flows toward the south in the East DWSMA. The City has a storm sewer system that encompasses most of it and water is managed through this system. In the West DWSMA, water drains generally to a depression and then out to the Highway 23 right-of-way in the southwest corner. Water generally flows to the south-southeast toward the Mississippi River.

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 different types of wetlands, as designated by the National Wetlands Inventory and shown in ***Table 3*** and ***Figures Three A*** and ***B***. There are 137.8 acres of wetlands located in the DWSMAs – 32.2 acres in the East and 105.6 acres in the West DWSMA.

Table 3

	NWI Wetland Type	East Acres	West Acres
1	Freshwater Emergent Wetland	32.2	82.2
2	Freshwater Forest/Shrub Wetland		19.2
3	Freshwater Pond		3.7
	TOTAL	**32.2**	**105.6**

The above Wetland Types, as designated by the Cowardin system, was developed by the US Fish and Wildlife Service in 1979. It divides wetlands into types based on depth, vegetation, seasonal wetness and other factors. The main differences in them are depth of water and variety of vegetation.

Connectivity between the City wells and the surface water is poorly understood. Strategies to improve our understanding of the surface-groundwater interaction will be considered in the implementation section of this plan.

Figure Three A

FOLEY - EAST DWSMA

Wetlands

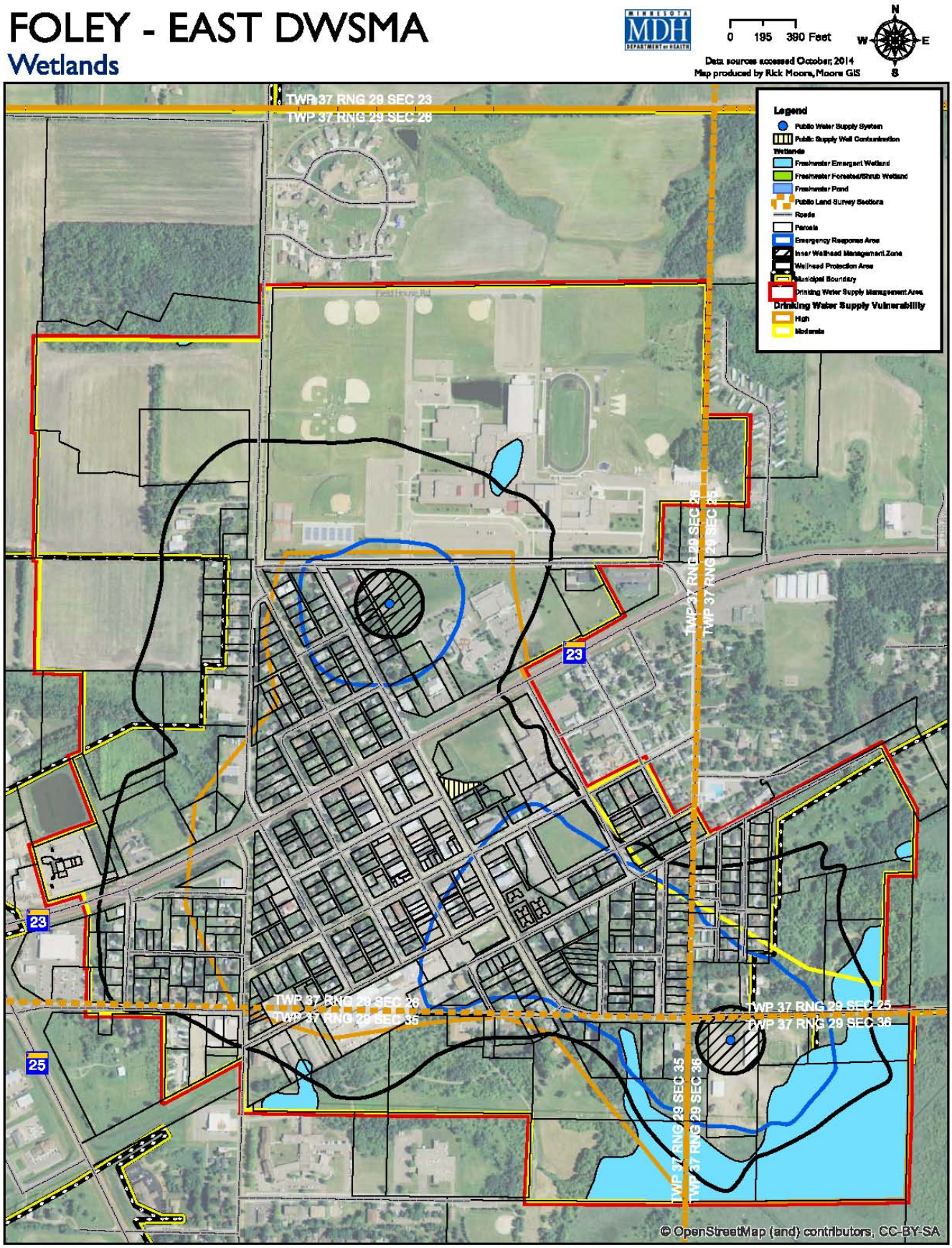
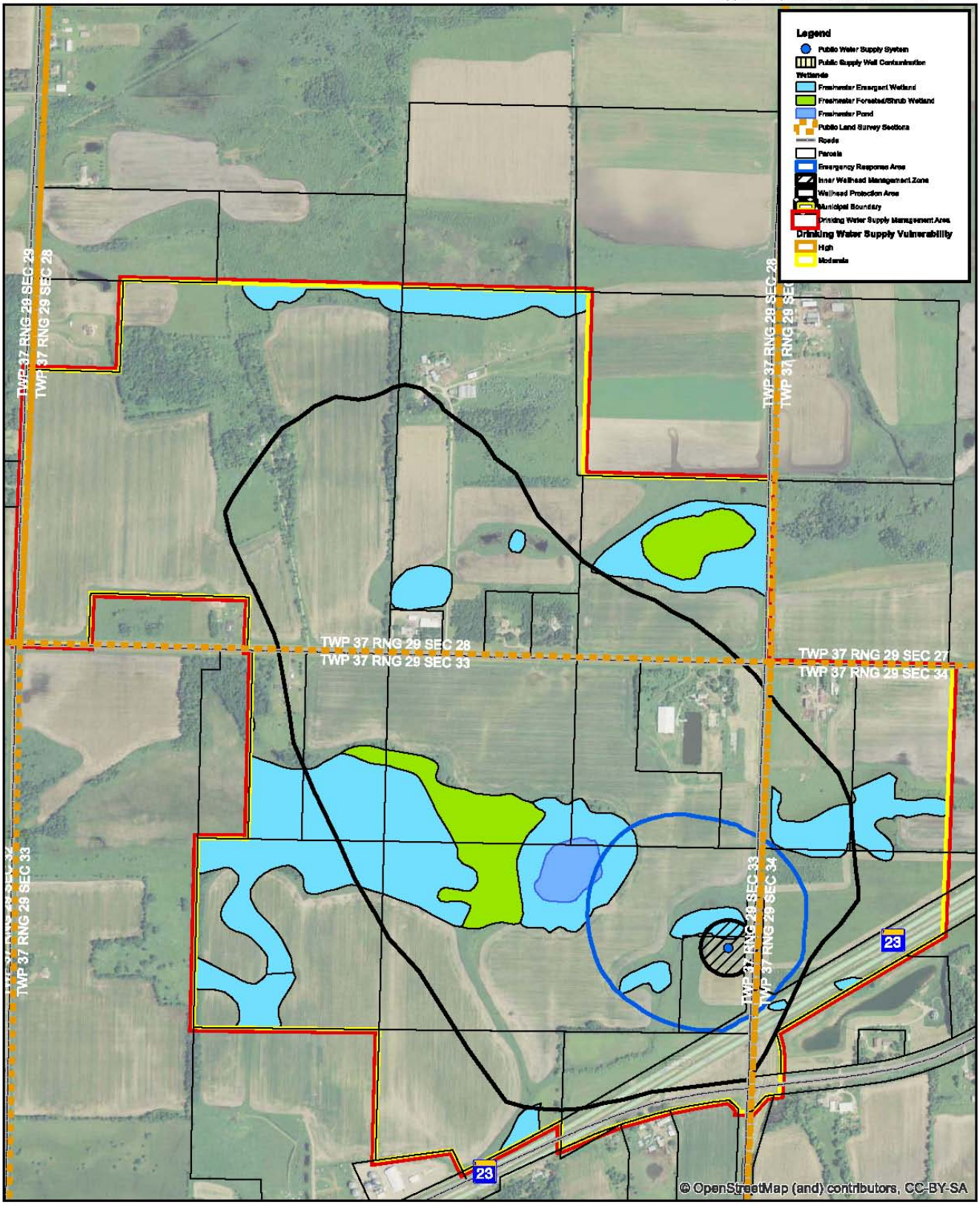


Figure Three B

FOLEY - WEST DWSMA

Wetlands



B. LAND USE DATA ELEMENTS

1. Land Use

The City of Foley is located in Benton County in central Minnesota, 14 miles northeast of the city of St. Cloud. US Highway 23 travels east / west through the southern section of the West DWSMA and through the center of the East DWSMA on a northeastern angle. The total area of the DWSMAs (1,093 acres) encompasses the main business/residential area of the city and an area to the west located outside the city limits. Based on the 2012 land use by the MN Department of Agriculture, land use within the DWSMAs of the city is predominantly cropland and developed – as shown in ***Table 4*** and ***Figures Four A*** and ***B.***

Table 4

2012 Land Use / Land Cover	Acres	% of Total
Corn/Soybeans/Spring Wheat/Rye/Oats/Alfalfa/Other Hay/Non Alfalfa/Dry Beans/Fallow/Idle Cropland	464.1	42.5
Developed/Open Space/Developed/Low Intensity /Developed/Med Intensity/Developed/High Intensity	310.5	28.4
Woody Wetlands/Herbaceous Wetlands	184.8	16.9
Deciduous Forest/Evergreen Forest	81.6	7.5
Grassland / Pasture	45.6	4.2
Barren	1.1	0.1
Water	3.8	0.3
Total	**1,091.5**	**100**

Land use can potentially impact the aquifer containing the City wells. Past leaking underground storage tanks have impacted City well #2, requiring the sealing of this well and the addition of City well #5. Land use activities will be considered in the high vulnerability areas of the DWSMA in the strategies outlined in Chapter Five.

FOLEY - EAST DWSMA

Land Use

Figure Four A

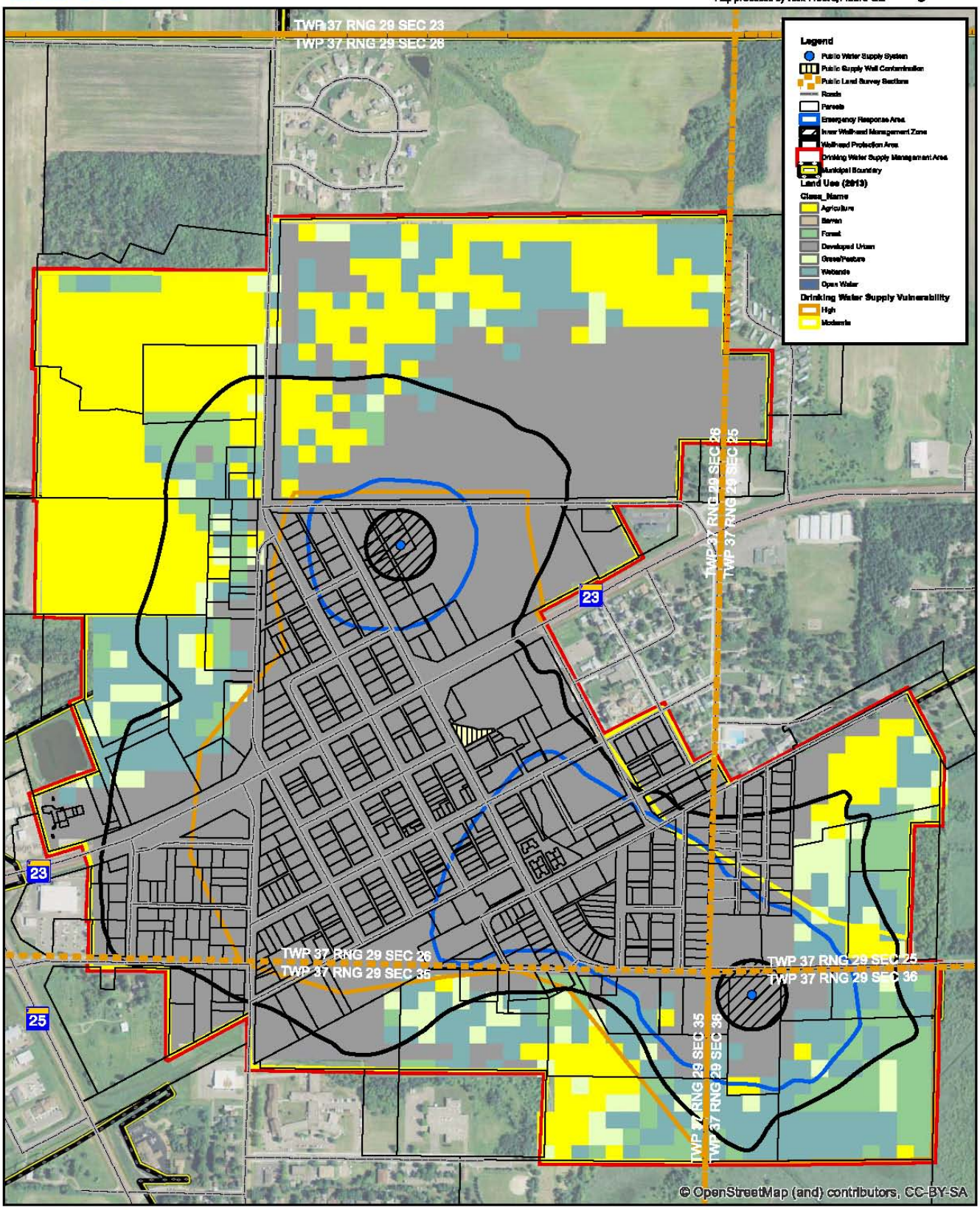
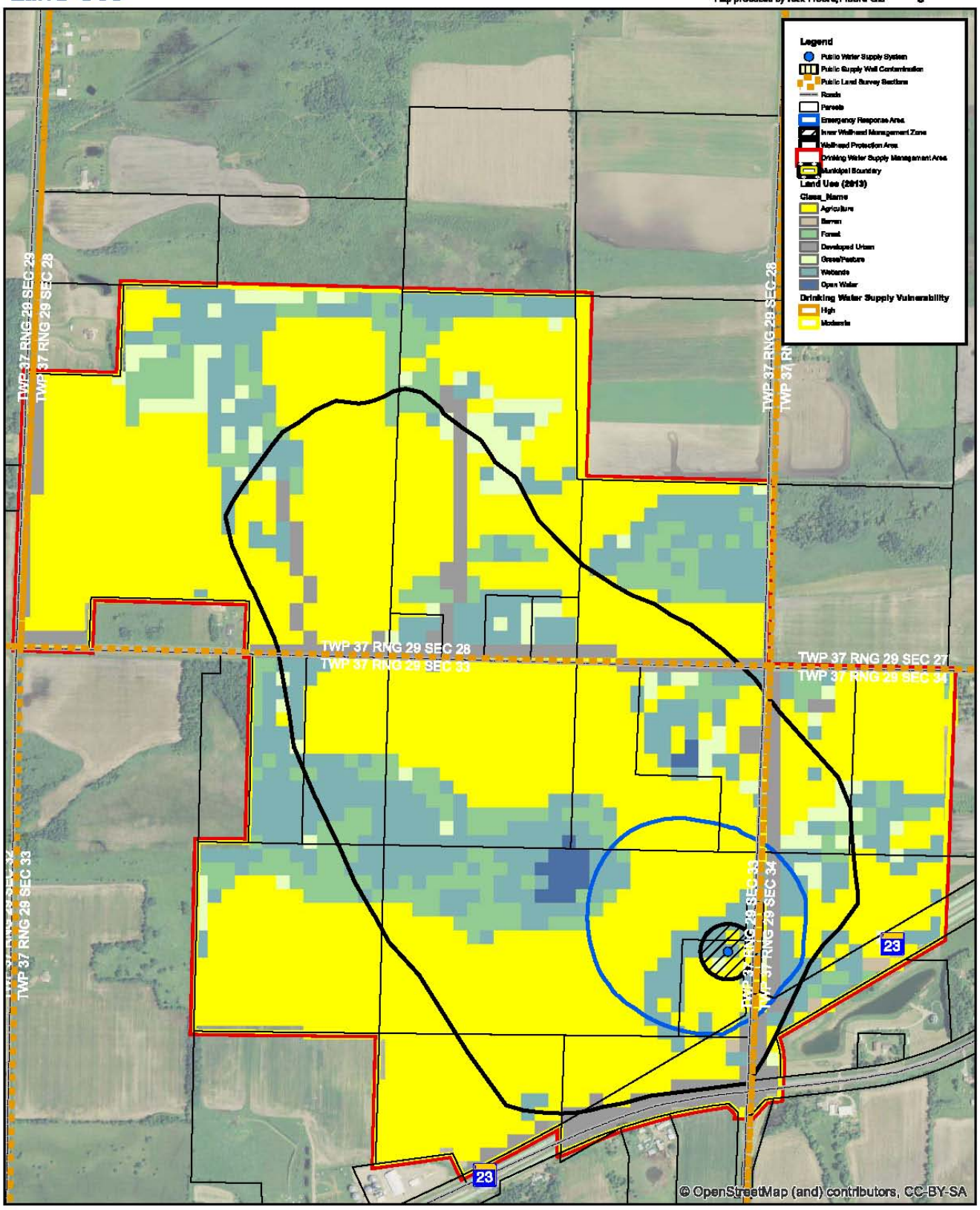


Figure Four B

FOLEY - WEST DWSMA

Land Use



Official zoning within the DWSMAs are shown in ***Table 5*** and ***Figures Five A*** and ***B***. Most of the east DWSMA is located within the city limits of Foley. The exception to this is a small area to the southeast that is zoned agriculture and a section in the northwest zoned single family residential. The entire west DWSMA is located outside the city limits and is zoned agriculture. The City has regulatory authority within their city limits and Benton County regulates the rest of the areas.

Table 5

City of Foley Zoning	Acres	% of Total
Agricultural District	46.9	4.3
Central Business District	37.8	3.4
Neighborhood Business District	32.4	2.9
Light Industrial District	20.4	1.9
Single Family Residence District	256.1	23.3
Single Family and Two Family Residence District	21.9	2.0
Benton County Zoning		
Agricultural	657.3	59.8
Single Family Residence	25.7	2.3
Total	**1,098.5**	**100**

The land located within the DWSMAs of the Foley water supply wells is sixty-two percent within Benton County and thirty-eight percent within the city limits of Foley. Within the east DWSMA, single family residential dominates and in the west, agriculture.

Focus on the light industrial and central/neighborhood business districts to ensure proper tank and leak precautions are being utilized will be part of the strategies in Chapter Five.

Figure Five A

FOLEY - EAST DWSMA

Zoning

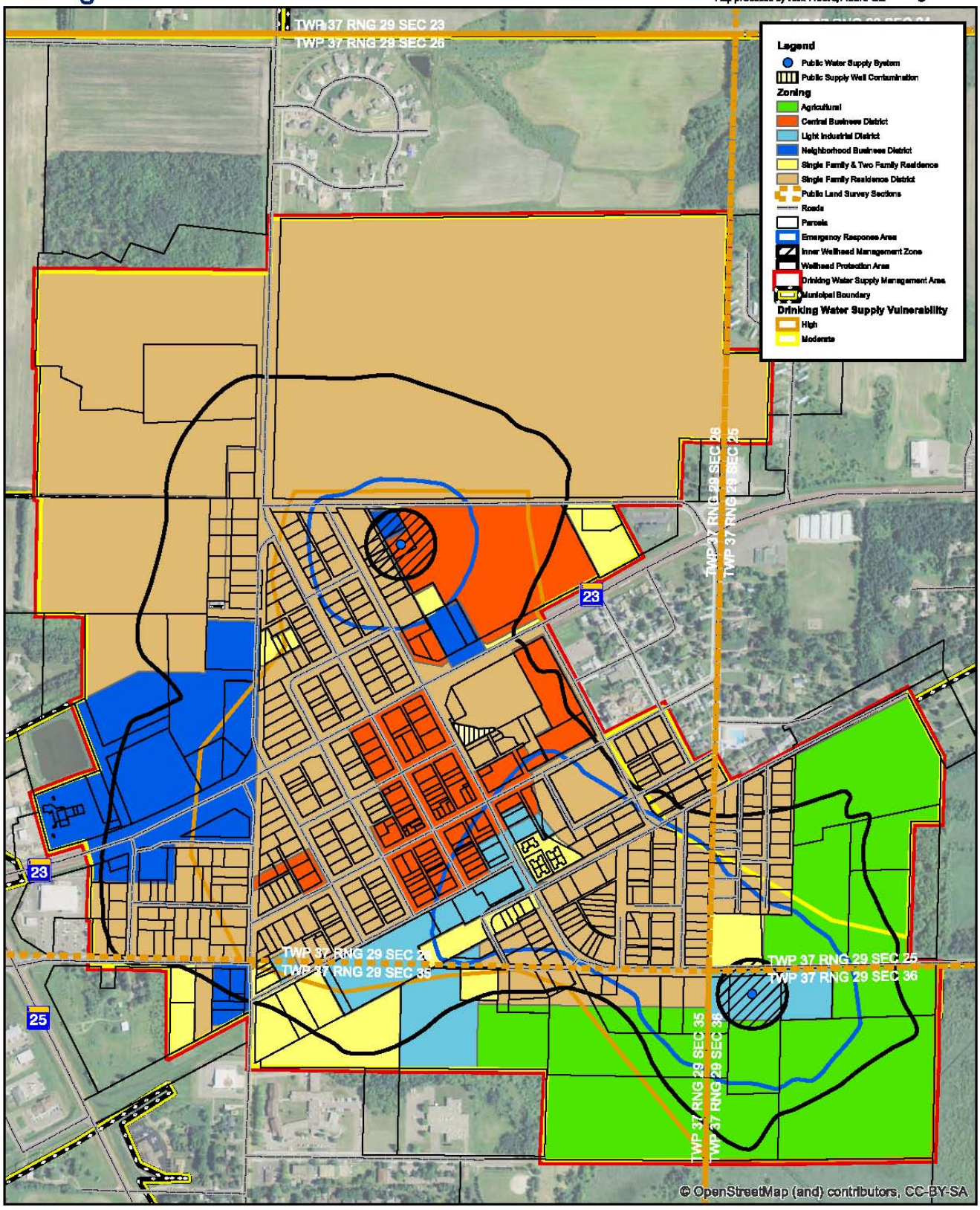
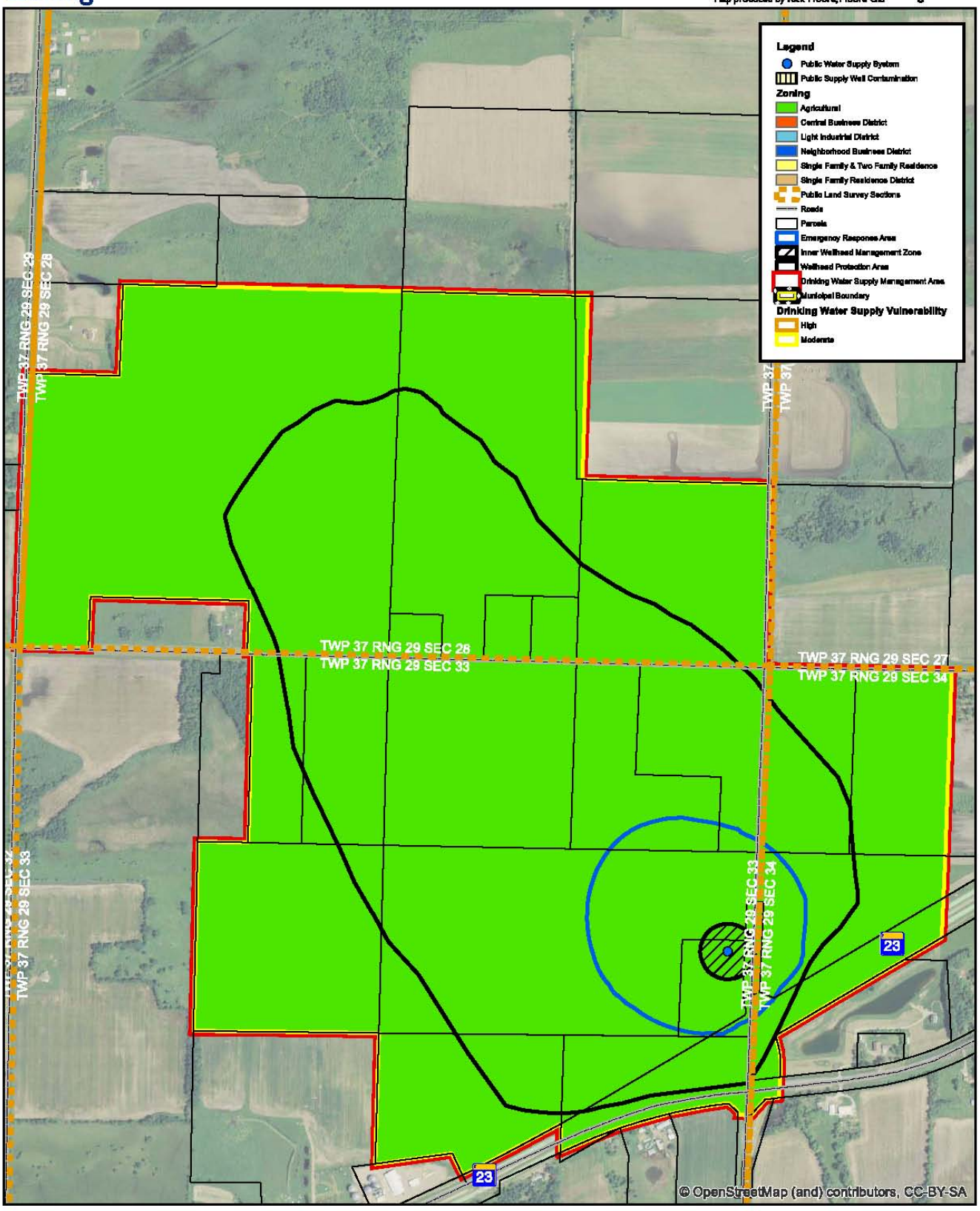


Figure Five B

FOLEY - WEST DWSMA

Zoning



Existing land uses and potential sources of contamination located within the DWSMAs were reviewed by the WHP Team. The Potential Contaminant Source Inventory (PCSI), utilizing State databases combined with local knowledge, was used to identify most of the contaminant sources. ***Table 6*** and ***Figures Six A*** and ***B*** show the location of identified Potential Contaminant Sources. A listing of parcels identified as having potential contaminant sources is shown in the ***Appendix***. A list of property owners, addresses, parcel identification numbers, and current use classification is located at the city office.

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 DWSMAs. Identification of Class V injection wells will be addressed further in the management strategies found in Chapter Five.

Table 6 **- Potential contaminant sources and assigned risk**

Potential Source Type *A=Active, I=Inactive, R=Level of Risk (H=High, M=Medium, L=Low)	Total No.	Number Within High Vulnerability, Status, and Level of Risk*			Number Within Mod Vulnerability, Status, and Level of Risk		
		A	I	R	A	I	R
Leak Sites	**11**		9	M		2	L
Hazardous Waste Generators (Sm. to Min.)	**11**	8	3	L			
Above Ground Storage Tanks	**1**	1		H			
Underground Storage Tanks	**12**	2		H	10		H
Transportation – MN State Hwy 23				H			M
Public Water Supply Wells	**3**	2		L	1		L
Public Supply – Non Community	**1**	1		H			
Domestic Wells	**13**	1		H	12		H
Unknown/Unverified Wells	**1**					1	M
Observation Wells	**1**					1	L
Test Wells	**3**					3	
Sealed Wells			25	L		4	L
Class V Wells	**0**						
CERCLIS Site	**1**					1	M
Industrial Stormwater Permits	**1**	1		L			
Total	**59**	**16**	**37**		**23**	**12**	

According to the Part I recommendations limited monitoring of the city's water supply wells indicated elevated chlorides and bromide concentrations in Wells 3 and 4. These results suggest a connection between the wells and land use activities, particularly in the case of Well 3. The source of the chlorides has not been identified. Additional monitoring of chloride-bromide levels, along with strontium isotopes is recommended by MDH Hydrologist and will be considered in the strategies.

Sealed wells are listed in table 6 for the City's information. They are not listed on the PCSI map but will be included in the ***Appendix***. Twenty of the sealed wells in the highly vulnerable area were drilled as monitoring wells for spill incidents. The city will have a parcel list of the sealed wells as located, but they will not be included in the official PCSI.

Transportation corridors that run through high vulnerability areas can pose a threat if spills occur. Strategies to address MN State Hwy 23 will be addressed by a letter to MNDOT identifying the area of concern. The City of Foley will continue to train the fire department on spill response and Haz Mat.

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 is shown in ***Table 7*** and was 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.

Table 7 **- Potential Contamination Sources and Assigned Risk for the IWMZ**

Source Type	Well 3	Well 4	Well 5	Assigned Risk
SB2 – Buried Sewer Line	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.

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.

Figure Six A

FOLEY - EAST DWSMA

Potential Contaminant Source Inventory

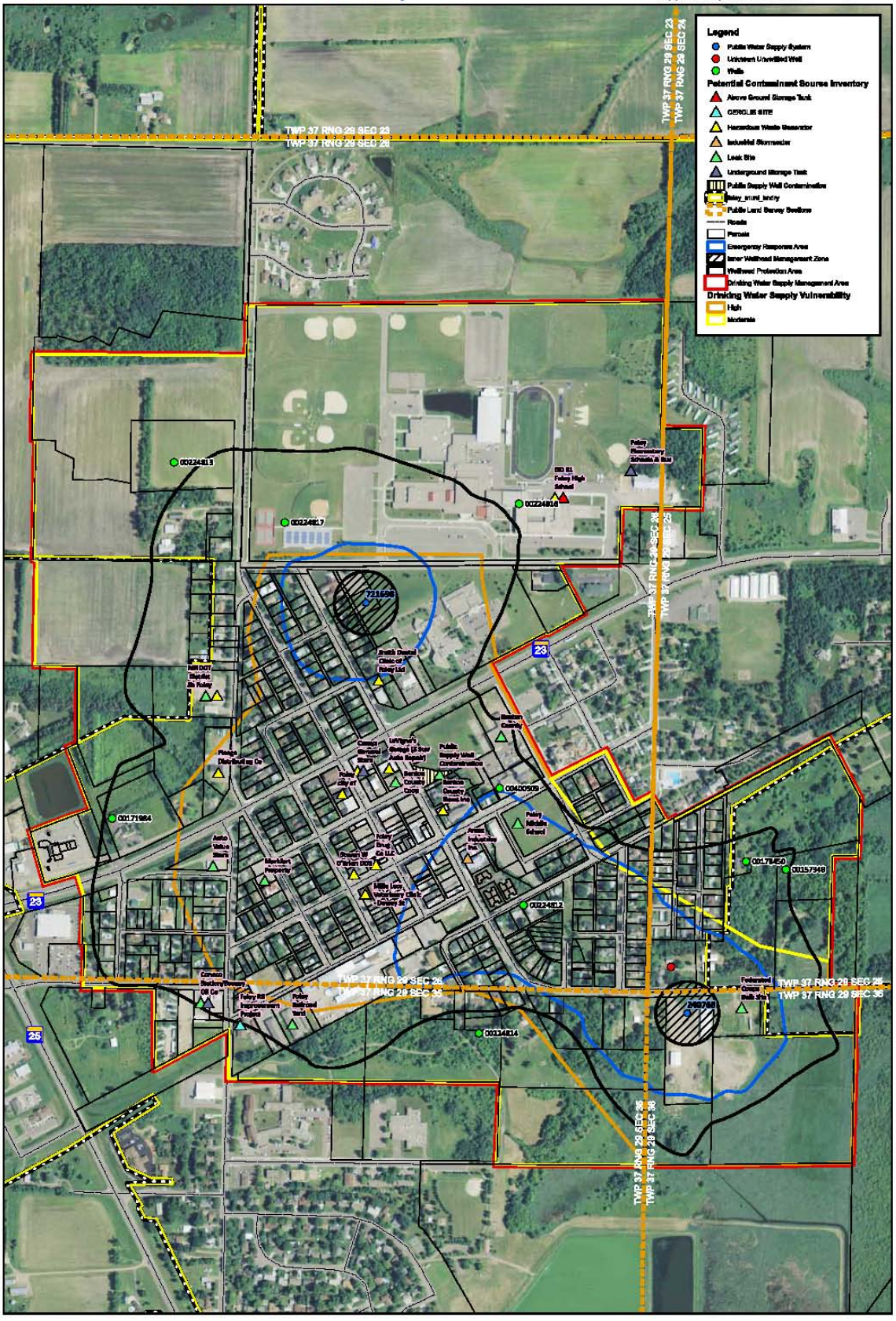


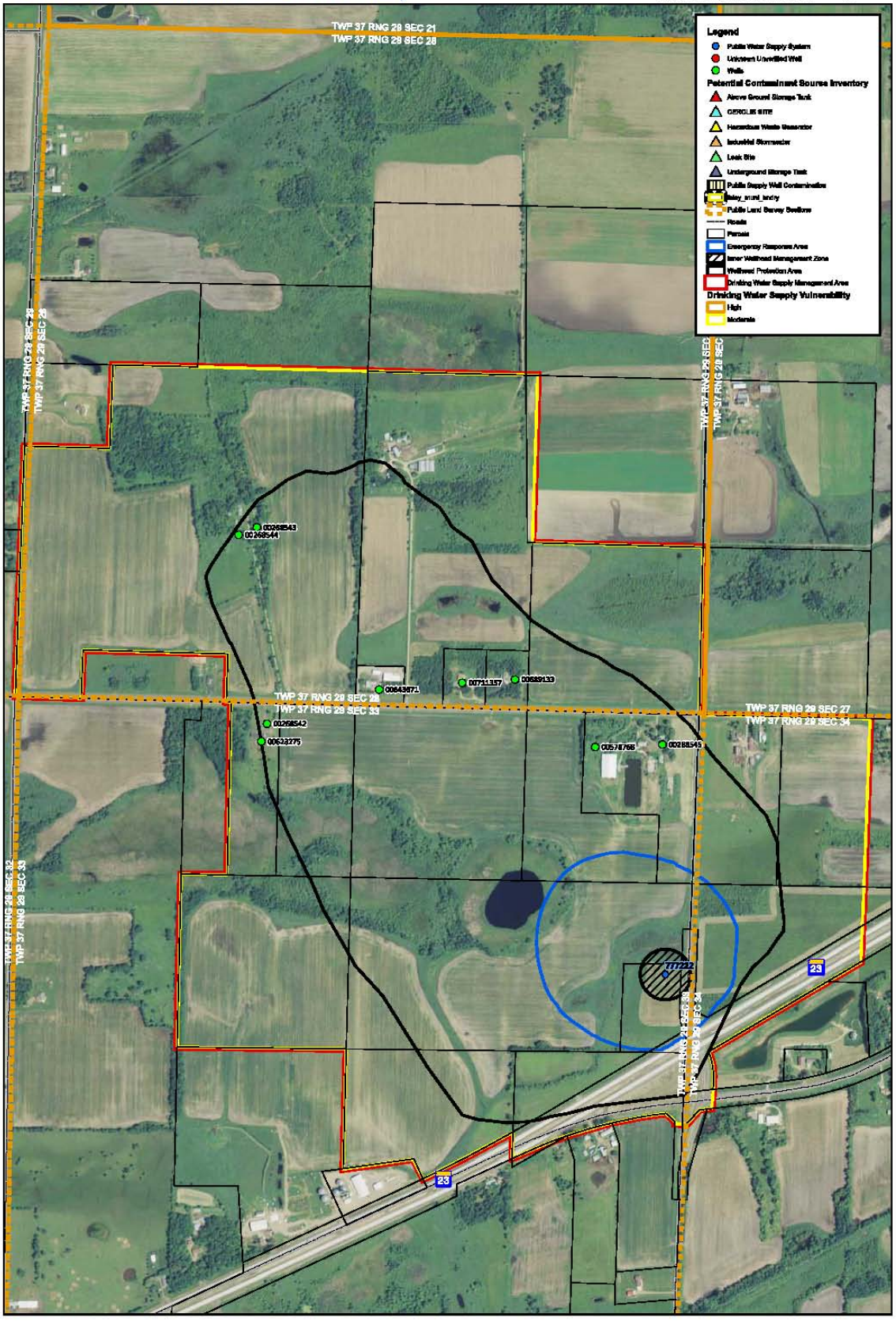
Figure Six B

FOLEY - WEST DWSMA

Potential Contaminant Source Inventory

0 255 510 Feet

Data sources accessed October, 2014
Map produced by Rick Moore, Moore GIS



Public Utility Services

Ground transportation corridors provide a potential source of contamination due to accidental spills and discharges. Transportation corridors located within the East DWSMA include Minnesota Highway 23. Water from the Highway flows overland and infiltrates into the soil. The Minnesota Department of Transportation (MNDOT) has developed a protocol to address spills within the right of way, including notification of a duty officer who assigns clean up. An 800 report number is on file with the city. The Alternative Water Supply and Contingency Plan found in the ***Appendix*** addresses options for back up water supplies and emergency preparedness in the event of a catastrophic event such as a hazardous release that may impact the public water supply.

Stormwater from the City of Foley drains toward the wetlands to the south of the City. The city's utility and public drainage system map is shown in the ***Appendix*** and on file at the City Public Works Department. Water and wastewater lines should have negligible impact on groundwater quality. There are no public drainage systems or gas/oil pipelines located within either DWSMA.

Unused municipal or other high capacity wells located within the DWSMAs must be investigated to determine sealing protocol. A copy of the municipal well index, compiled by the MDH, is located in the ***Appendix*** of this plan.

C. WATER QUANTITY DATA ELEMENTS

1. Surface Water Quantity

According to Part One of the WHPP, there is limited data to determine surface water impacts to the city's wells. Tritium sampling shows that all three wells are vulnerable to activities on the surface. Recent nitrate, chloride and bromide results for well number 3 (240768) confirms this well is impacted by land use but these results for the other two wells, numbers 4 (721698) and 5 (777222) indicate very little impact by existing land use activities. Part One recommendations establishing a monitoring plan with the MDH including the City wells and Stony Brook to determine impacts. This will be considered in the management strategies of Chapter Five.

There are no known surface water impacts to the City of Foley public drinking water supply.

2. Groundwater Quantity

Adequacy of volume during drought periods has been addressed in Part One of The Plan. There are no known or permitted high-capacity wells within three miles of the DWSMA. Any new proposed high-capacity wells will be evaluated by the City and MDH to determine impact to the public water supply. If a new well is needed by the City, they will work with the MDH to determine placement.

While permitted withdrawal from each of the city wells is allowed at 95 million gallons per year, actual historic well use is considerably less and is shown in ***Table 8***. A gradual increase in water use is noted in the past five years.

ANNUAL WELL PUMPING AMOUNTS ***Table 8***
(IN MILLIONS OF GALLONS)

YEAR	Well 3	Well 4	Well 5	TOTAL
2008	50.7	28.3		79.0
2009	49.5	29.7		79.2
2010	63.8	21.8	2.3	87.9
2011	16.9	11.1	53.4	81.4
2012	14.8	3.5	68.9	87.2

There are no known environmental bore holes in the DWSMAs. 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

1. Surface Water Quality

Stony Brook lies within the City of Foley's East DWSMA – running in a south easterly direction. It flows on an intermittent basis.

2. Groundwater Quality

Tritium analysis was conducted on the PWS wells number three and four in 2006. Tritium is a radioactive isotope of hydrogen that was released into the atmosphere during testing of hydrogen bombs. When Tritium is found in groundwater in amounts greater than one tritium unit, it is an indicator that recharge due to rainfall has occurred in the United States. Results of the Tritium testing at 9.7 and 18.4 tritium units, respectively, shows water in the aquifer is "young" in the wells, meaning it has leached from the surface since 1953. Well number five was sampled in 2012 and has Tritium below the limits considered to have been influenced by surface activities. Testing to determine a potential interconnect between wells three and four and Stony Brook Creek will be conducted during implementation of this plan.

Nitrate levels in all wells are within MDH standards. The ***Appendix*** contains the 2013 Consumer Confidence report. The City of Foley will work to maintain their good water quality the community has come to expect.

II. ASSESSMENT OF DATA ELEMENTS

A. USE OF THE WELL

The City of Foley utilizes three wells ranging in depth from 55 to 108 feet, as shown in ***Table 9.*** An average of 83 million gallons per year is pumped from these wells. Usage has varied between 79 million gallons per year in 2008 and 88 million gallons per year in 2012. Since well number five has become fully in service in 2011, the average pumped from each well is shown in ***Table 9.***

Table 9

Well Number	Unique well #	Casing Depth (ft)	Depth (ft)	Average pumped (Mg/Y)
3	240768	45	55	15.9
4	721698	50	60	7.3
5	777222	94	108	61.2

The city pumps an average of 227,233 gallons per day and has one elevated storage tank with a total capacity of 200,000 gallons. The city water system provides drinking water to 856 metered service connections through appurtenant distribution mains, lines and services. Historic water usage over the past five years has averaged approximately 83 million gallons annually. Water use is expected to increase slightly by 2024. 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's plan was completed by Gail Haglund, PG, Hydrologist and Amal M Djerrari, PE, Hydrologist from the MDH Sourcewater Protection Unit. Part One is located in the ***Appendix*** of this plan.

C. Quality and Quantity of Water Supplying the Public Water Supply Well

Foley's wells pumped about 88 million gallons in 2010, 81.4 in 2011 and 87.2 in 2012. Results of routine sampling conducted by the MDH in 2013 discovered no violations of any parameters monitored under the Federal Safe Drinking Water Act. A copy of the 2013 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 DWSMAs located within the city limits of the City of Foley consist mainly of residential with some commercial / light industrial and an area of agricultural use on the southeast edge. Education of landowners about the importance of proper management of hazardous wastes, proper turf management, tank management, old leak sites and monitoring are issues of concern and will be the focus of management strategies in the high and medium vulnerability areas of the DWSMAs.

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 are no expected changes to the physical environment of the City DWSMAs.

B. LAND USE

The City expects to potentially rezone from Agriculture to Residential in the northwest corner of the East DWSMA within the next ten years.

Annexation is petition driven and the City expects little to moderate growth. Newly annexed areas will be evaluated as they are brought into the city limits.

C. SURFACE WATER

There is a poor understanding of surface water considerations within the Foley DWSMAs high vulnerability area. Wells number three and four have potential connectivity.

D. GROUNDWATER

No changes in the groundwater are anticipated.

II. IMPACT OF CHANGES

A. EXPECTED CHANGES IN WATER USE

There is a high potential for an additional well in the West DWSMA within the next ten years. This is due to the possible continued threat to well number four from groundwater contaminants.

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

The City of Foley has regulatory jurisdiction over the area located within its own limits. Benton County regulates the land use within the remaining area. The Wetland Conservation Act is administered by the Benton County Department of Development.

The Benton County Local Water Management Plan has identified priorities supportive of groundwater protection in its 2008 update of the plan.

The DWSMAs are located within the Mississippi River – St. Cloud Watershed and is part of the Mississippi River Basin. More information about the basin including a monitoring and assessment plan can be found at the following MPCA website:

http://www.pca.state.mn.us/index.php/water/water-types-and-programs/watersheds/mississippi-river-st.-cloud.html

C. ADMINISTRATIVE, TECHNICAL, AND FINANCIAL CONSIDERATIONS

The City of Foley, Benton SWCD and Benton County Department of Development 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 will be established for implementation of priority strategies identified in this Plan.

The WHP Manager will be the designated contact person for implementation of this Plan. The committee will continue to meet at least every two years, with intent to try to meet annually to review and discuss implementation programs.

The city will work with the Benton Soil and Water Conservation District providing groundwater education opportunities as they arise. Benton County GIS, Local Water Management, Soil and Water Conservation District and County Department of Development have provided and will continue to provide technical assistance for this plan.

CHAPTER THREE

ISSUES, PROBLEMS, AND OPPORTUNITES

Minnesota Rules 4720.5230

I. LAND USE ISSUES, PROBLEMS, AND OPPORTUNITIES RELATED TO:

A. THE AQUIFER

The glacial drift aquifer providing the City's public water supply has been determined to be influenced by land use based on the geologic setting and the existence of Tritium in city wells number three and four. The City will work with the MDH to conduct further Tritium studies.

Well number five has moderate vulnerability due to the non-contiguous confining layers within the DWSMA – other parts of the area have a confining layer and pose no threat.

B. THE WELL WATER

The City of Foley has adequate water for the projected use in the next ten years. Adding any high capacity well by the city may affect the WHPA and DWSMA and would require a new delineation. They will work with the MDH and DNR to assist with location and construction of any proposed new high capacity wells. Education is one of the main strategies in protection of drinking water supplies.

C. THE DRINKING WATER SUPPLY MANAGEMENT AREA

Land use within the DWSMAs of these aquifers has been relatively stable for years.

II. 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 meetings 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 may be 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 Benton 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 , Tanks, HWG	Aquifer Well water quality	The city needs to inform land owners of proper management practices.	The city can work with Benton County Department of Development and SWCD to provide education and incentives.	The city does not have authority to regulate land use outside city limits. Benton County Department of Development controls land use regulation.
Transportation Corridors / Spill Response	Aquifer Well water quality	Potential spills within the highway right-of-way are a treat to the aquifer.	The city can partner with MNDOT and MDH to inform and train city first responders.	The city has an emergency management team. MNDOT has spill response protocol.
Lack of adequate information - Monitoring	Aquifer Well water quality DWSMA	The city needs to work with the MDH to establish and implement a monitoring plan.	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.
Planning for replacement well	Aquifer Well water quality DWSMA	The city needs to explore potential sites for a replacement well.	The city can work with MDH on site location. The city can apply for grant funding for exploratory work.	MDH permits new public water supply wells.
Potential high-capacity wells within 2-mile radius of DWSMA	Aquifer Well water quality DWSMA	The city needs to establish a review process for new proposed high-capacity wells.	The city can work with MN DNR, MDH and local well drillers to determine impacts.	The city does not have regulatory authority over high-capacity wells. DNR authorizes and regulates high-capacity wells.
There are old leak sites that may impact well number 4.	Aquifer Well water quality DWSMA	The city may need to drill a new well.	The city can apply for MDH grant funding to site and drill a new well.	The city does not have authority over wells. MDH and DNR have authority.

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.

B. DATA ELEMENTS

The State's Wellhead Protection Rule requires that existing information be utilized in developing the initial Wellhead Protection Plan. Much of the data collected and utilized to delineate the City of Foley's 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 initiated verification of many of the contaminant sites to further protect public drinking water supplies.

The City will continue to compile data collected by all entities regarding groundwater and surface water to track potential changes in the quality of water. 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 DWSMAs are available through existing land use ordinances in the City of Foley, Benton 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 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 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.

OBJECTIVES

The following objectives have been identified to support the goals of the WHP plan for the City of Foley:

A. Create public awareness and general knowledge about the importance of WHP for maintaining an adequate and safe drinking water supply;

B. Increase the knowledge base regarding quantity of water available – maintain adequate drinking water supply.

C. Gather new information on potential contaminants.

D. Manage potential contaminants.

E. Ensure emergency preparedness of local agencies.

F. Create awareness among LGUs about the importance of protection of the drinking water supply aquifer.

G. Maintain communications with the MDH and other agencies able to assist with implementation of this plan.

H. Collect additional data to substantiate information contained within this Plan, and to provide more detail for future Plan amendments.

I. Conduct regular evaluations of Plan implementation and effectiveness.

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

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 Foley 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 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 impact 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									
					2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
1. Groundwater Quality Monitoring **WHP Measure #1a:** At the recommendation of MDH, contact the MDH Hydrologist to prepare a monitoring plan (likely quarterly monitoring) to assess the relationship between the aquifer used by the City's wells and potential sources of chloride.	**G/H**	**H**	City of Foley MDH Hydro	City Staff Time			X							
WHP Measure #1b: Pending available funding, coordinate with MDH staff and local partners to implement the monitoring plan, including the collection of water samples and assessment of the results.	**H**	**H**	City of Foley MDH Hydro	City Staff Time MDH will cover lab fees			X	X						
WHP Measure #1c: Coordinate a meeting with the WHP Team, MDH Hydrologist and MDH Planner to assess the results of the monitoring study.	**G/H**	**H**	City of Foley MDH WHP Team	City Staff Time TBD				X	X					
WHP Measure #2: At the recommendation of MDH, contact the MDH Hydrologist to prepare a quarterly monitoring plan of the city wells, the treatment ponds and/or Stony Brook for stable isotopes of hydrogen and oxygen to determine potential of surface water contribution to the PWS wells.	**G/H**	**H**	City of Foley MDH Hydro	City Staff Time MDH will cover lab fees			X	X	X					
WHP Measure #3: At the recommendation of MDH, contact the MDH Hydrologist to conduct Tritium sampling on all the PWS wells to determine if there have been changes over time brought on by pumping.	**G/H**	**H**	City of Foley MDH Hydro	City Staff Time MDH will cover lab fees								X		

MONITORING, DATA COLLECTION, AND ASSESSMENT (CONT):

Description	Objective	Priority	Responsible Party & Cooperators	Cost	Implementation Time Frame									
					2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
WHP Measure #4a: At the recommendation of MDH contact the MDH Hydro geologist to assess the potential for runoff to infiltrate within the vulnerable portions of the DWSMA lacking existing stormwater infrastructure. This assessment involves field inspection, and an evaluation of the ability of existing soils and subsurface geologic materials to retard the vertical movement of contaminants.	**G/H**	**H**	City of Foley MDH Hydro	City Staff Time MDH will cover costs							X	X		
WHP Measure #4b: At the recommendation of MDH contact the MDH Hydro geologist to assess the need for expanding the WHPA to include land area that may be contributing to surface runoff to the aquifer.	**G/H**	**H**	City of Foley MDH Hydro	City Staff Time								X	X	
2. Well Inventory and Prioritization **WHP Measure #5:** Update the PCSI during year five. Review status of existing potential contaminants and add any new ones identified within the DWSMA.	**C**	**M**	City of Foley MDH	Staff Time					X					
WHP Measure #6: Provide for the long term protection of Foley's PWS by planning for an alternate wellfield site for future replacement of existing Well 4. Pending available funding and resources, including water quality sampling of existing wells and the construction of test wells, and well capacity testing to determine potential yield and suitability as a municipal water supply.	**B/H**	**H**	City of Foley MDH Hydro Consultant TBD	Staff Time	←----------As funding becomes available----------→									
WHP Measure #7: Work with MDH to review old municipal well and boring information to help locate and determine efforts needed to address former city wells. Locate well sealing records for test wells and submit to MDH.	**G/D**	**M**	City of Foley MDH	Staff Time		X								

WELL AND CONTAMINANT SOURCE MANAGEMENT:

Description	Objective	Priority	Responsible Party & Cooperators	Cost	Implementation Time Frame									
					2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
1. Municipal Well Management Practices **WHP Measure #8:** Review and update the IWMZ survey form for all wells in the system every 5 years working in coordination with the MDH.	**D**	**H**	City of Foley MDH MRWA	Staff Time					X					X
WHP Measure #9: Monitor setbacks for all new potential contaminant sources within the IWMZ.	**D**	**H**	City of Foley MDH	Staff Time	←----------On-Going----------→									
WHP Measure #10: Implement WHP measures identified on the IWMZ Inventory forms. Any sewer lines observed to be leaking, cracked, or deteriorated should be replaced or repaired.	**D**	**H**	City of Foley MDH	Staff Time TBD	←----------As Needed----------→									
WHP Measure #11: Provide a map of the DWSMA to the local Fire Department, City Street Department, Benton County Emergency Management, Benton County Highway Department, MPCA and MNDOT. Request their awareness and prompt response to accidents, spills and clean-up efforts along MN State Hwy 23 near the PWS wells.	**E/F**	**H**	City of Foley Benton County MNDOT MPCA	Staff Time	X									
2. Private Well Management **WHP Measure #12:** Provide information on the proper management and sealing of wells to known well owners located in the DWSMA and why this is important. Add information to city website. Apply for MDH SWP funding to produce and distribute.	**A**	**H**	City of Foley MDH	$2,500		X								
WHP Measure #13: Apply for a MDH SWP Grant to seal the high priority unused unsealed wells identified in the DWSMA if applicable.	**D**	**H**	City of Foley MDH	$600-$1,000 per well			X							

WELL AND CONTAMINANT SOURCE MANAGEMENT (CONT):

Description	Objective	Priority	Responsible Party & Cooperators	Cost	Implementation Time Frame									
					2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
3. Stormwater Management **WHP Measure #14:** Inspect stormwater inlets, outlets and lines within the Emergency Response Area and repair as needed.	**C/D**	**H**	City of Foley MDH	Staff Time	X		X		X		X		X	
WHP Measure #15: If studies indicate there is a stormwater influence to the aquifer near the city well, develop a plan to finance stormwater management.	**C/D**	**H**	City of Foley MDH	TBD									X	
4. Hazardous Waste Generator Management **WHP Measure #16:** Mail information regarding proper disposal and permitting of hazardous waste to all known hazardous waste generators within the DWSMA.	**C/D**	**H**	City of Foley MDH MRWA	Staff Time $120					X					
5. Class V Wells **WHP Measure #17:** Update and identify any new known potential Class V Wells in the DWSMA. Contact MDH Planner for assistance working with a suspected owner of a Class V well.	**C**	**M**	City of Foley MDH EPA	Staff Time	←----------On-Going----------→									
6. Tank Management **WHP Measure #18:** Provide a brochure to property owners with storage tanks describing what WHP is. Provide information regarding proper containment areas for above and below ground tanks and spill response and clean-up.	**D**	**H**	City of Foley MDH MRWA MPCA	$250				X						
WHP Measure #19: Contact the owners of the 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 to perform any corrective actions, including but not limited to removal of unused tanks.	**D**	**H**	City of Foley MDH	TBD					X					

WELL AND CONTAMINANT SOURCE MANAGEMENT (CONT):

Description	Objective	Priority	Responsible Party & Cooperators	Cost	Implementation Time Frame									
					2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
7. High Capacity Well Management **WHP Measure #20:** Collaborate with the MDH Source Water Protection Unit in the identification of new high-capacity wells that are proposed for construction with the DWSMA or within one mile of the DWSMA.	**G**	**M**	City of Foley MDH DNR	Staff Time	←----------As Needed----------→									

EDUCATION AND OUTREACH:

Description	Objective	Priority	Responsible Party & Cooperators	Cost	Implementation Time Frame									
					2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
1. Education and Outreach **WHP Measure #21:** Select wellhead protection education items from the MN Rural Water Association source water protection website to use to educate the public about WHP and unsealed wells. Place brochures at City Hall and the public library. Apply for MDH SWP funds for printing costs.	**A**	**H**	City of Foley MRWA	Staff Time plus $500 Printing Costs	X			X			X			
WHP Measure #22: Post and highlight WHP education information on the city website.	**A**	**M**	City of Foley MDH	Staff Time		X	X							
WHP Measure #23: Assist city upgrade of website for WHP information.	**A**	**M**	City of Foley MRWA MDH	Staff Time $3,000	X	X								
2. Well Education **WHP Measure #24:** Brief the mayor and city council about Wellhead Protection. Describe resources needed and available to complete this effort.	**F**	**M**	City of Foley	Staff Time	←----------As Needed----------→									

EDUCATION AND OUTREACH (CONT):

Description	Objective	Priority	Responsible Party & Cooperators	Cost	Implementation Time Frame									
					2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
WHP Measure #25: Provide a news release in the local newspaper when the WHP Plan is adopted.	**A**	**M**	City of Foley	Staff Time	X									
WHP Measure #26: Place and article on unused, unsealed wells and availability of well sealing programs in the local newspaper.	**A**	**H**	City of Foley	Staff Time		X								

LAND USE AND PLANNING:

Description	Objective	Priority	Responsible Party & Cooperators	Cost	Implementation Time Frame									
					2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
1. Water Use Management **WHP Measure #27:** Review and update the Alternative Water Supply Contingency Strategy Plan portion of the City's WHP plan annually to ensure that it reflects current personnel information and any changes in the water supply system.	**E**	**H**	City of Foley	Staff Time	X	X	X	X	X	X	X	X	X	X
WHP Measure #28: Educate the public on water conservation practices they can implement to reduce water use. Place information on website.	**A**	**M**	City of Foley MDH	Staff Time		X				X				
2. General Land Use & Water Resource Planning **WHP Measure #29:** Work with local planning staff to explore and adopt a policy that property owners in the DWSMA can be requested to identify the location and status of any wells on their property as part of new building or land use permits issued. Summarize data in year nine.	**C/D**	**H**	City of Foley Benton County	Staff Time	X								X	

LAND USE AND PLANNING (CONT):

Description	Objective	Priority	Responsible Party & Cooperators	Cost	Implementation Time Frame									
					2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
3. Comprehensive Land Use Planning **WHP Measure #30:** Work with local planning & zoning staff to update their comprehensive plan to reflect existing WHP issues and identify changes to local controls that can be made to help protect the community water supply wells and the aquifer. Incorporate WHP plan by reference.	**F**	**M**	City of Foley	Staff Time $5,000		X	X	X						

WHP COORDINATION, REPORTING, AND EVALUATION:

Description	Objective	Priority	Responsible Party & Cooperators	Cost	Implementation Time Frame									
					2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
1. WHP Coordination **WHP Measure #31:** 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.	**I**	**H**	City of Foley WHP Team MRWA	Staff Time	X		X		X		X		X	
2. Implementation Tracking and Reporting Activities **WHP Measure # 32:** 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.	**I**	**H**	City of Foley	Staff Time	X	X	X	X	X	X	X	X	X	X
3. Implementation Assistance: **WHP Measure #33:** The City will explore the option of obtaining implementation and evaluation assistance of wellhead protection plans if grant funding is available.	**A/D/I**	M	City of Foley MDH	$5,000		X			X			X		

WHP COORDINATION, REPORTING, AND EVALUATION (CONT):

Description	Objective	Priority	Responsible Party & Cooperators	Cost	Implementation Time Frame									
					2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
4. WHP Program Evaluation Plan Reporting **WHP Measure #34:** 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.	**I/G**	**H**	City of Foley MDH	Staff Time			X			X			X	
WHP Measure #35: It is difficult to foresee or 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 impact the quality or quantity of its drinking water in the future.	**D**	**L**	City of Foley MDH	$5,000	←----------On-Going----------→									

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 Foley's WHPA has been designated as having moderate vulnerability to contamination. The designation of moderate vulnerability requires monitoring of the following potential contaminant sources within the DWSMA:

a. Above Ground Storage Tanks greater than 1,100 gallons
b. Potential Class V Wells
c. Leaking Underground Storage Tanks
d. Potential Contamination Sites
e. Solid Waste Management Sites
f. Spills
g. Storage or Preparation Areas (Chemicals, Fertilizers, Fuels, Gasses, Oils, Hazardous substances, Solvents and Coatings and Waste
h. Suspected Contaminants of Concern
i. Underground Storage Tanks
j. Wells

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. It is recommended that the WHP team meets annually, although at a minimum they will meet every two-and-one-half years and develop a report which assesses the status of plan implementation and to identify issues that impact the implementation of action steps throughout the DWSMA.
3. A written report will be completed every 2.5 years and presented to the Foley 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 Foley 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 Foley 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.

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