WELLHEAD PROTECTION PLAN PART II AMENDMENT

POTENTIAL CONTAMINANT SOURCE MANAGEMENT STRATEGY

SEPTEMBER 2023 – SEPTEMBER 2033

ALEXANDRIA Minnesota

DEPARTMENT OF HEALTH

BAYERL WATER RESOURCES

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DOCUMENTATION LIST

STEP	DATE PERFORMED
Scoping Meeting 2 Held (4720.5340, subp. 1)	January 12, 2022
Scoping 2 Letter Received (4720.5340, subp. 2)	January 20, 2022
Remaining Portion of Plan Submitted to Local Units of Government (LGUs) (4720.5350)	March 28, 2023
Review Received from Local Units of Government (4720.5350, subp. 2)	May 29, 2023
Review Comments Considered (4720.5350, subp. 3)	May 31, 2023
Public Hearing Conducted (4720.5350, subp.4)	June 12, 2023
Remaining Portion WHP Plan Submitted (4720.5360, subp. 1)	July 31, 2023
Final WHP Plan Review Received (4720.5360, subp. 4)	August 2023

PUBLIC WATER SUPPLY PROFILE

PUBLIC WATER SUPPLY	
NAME	ALP Utilities
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	Alexandria, MN 56308
TELEPHONE NUMBER	320-762-1411
E-MAIL	alp@alputilities.com

WELLHEAD PROTECTION MANAGER	
NAME	Brian Dahl
	Manager of Water Distribution
ADDRESS	316 Fillmore Street
	Alexandria, MN 56308
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CONSULTANT	
NAME	Marilyn Bayerl
	Bayerl Water Resources
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GENERAL INFORMATION		
UNIQUE WELL NUMBERS:	14 (00680655)	16 (00749302
	17 (00762288)	18 (00791566)
	19 (00810340)	20 (00821203)
	7A (00214756)	8A (00214758)
	9 (00214759)	
POPULATION SERVED:	13,554	
CONNECTIONS:	4,047	
COUNTY:	Douglas County	

Members of the Wellhead Protection Team

NAME	REPRESENTING
Brain Dahl	ALP Manager of Water Distribution – Wellhead Protection Manager
Jesse Wohlfeil	ALP GIS Manager
Mike Weber	City of Alexandria
Nick Olson	Alexandria Lakes Area Sanitary District (ALASD)
Julie Anderson	Douglas County Emergency Management
Danielle Anderson	Douglas County Soil and Water Conservation District (SWCD)
Nathan Reinbold	Pope Douglas Solid Waste
Steve Traut	Steven M. Traut Wells, Inc – local well driller
Dan Disrud	Minnesota Department of Health (MDH) – Principal Planner
Marilyn Bayerl	Bayerl Water Resources

ABBREVIATIONS

1W1P One Watershed One Plan
ALASD Alexandria Lakes Area Sanitary District
BMP Best Management Practices
BWSR Board of Water and Soil Resources
CPRail Canadian Pacific Railroad
DNR MN Department of Natural Resources
DWSMA Drinking Water Supply Management Area
GIS Geographic Information Systems
IWMZ Inner Wellhead Management Zone
LPRW Long Prairie River Watershed
MDA MN Department of Agriculture
MDH MN Department of Health
mg/L Milligrams per Liter
MGS Minnesota Geological Survey
MNDOT MN Department of Transportation
MPCA MN Pollution Control Agency
MRWA MN Rural Water Association
NRCS Natural Resources Conservation Services
PCSI Potential Contaminant Source Inventory
PWS Public Water Supply
ROW Right-of-way
SWCD Douglas Soil & Water Conservation District
TBD To be determined
TOT Time-of-travel
WHP Wellhead Protection
WHPA Wellhead Protection Area

EXECUTIVE SUMMARY

Part Two of ALP Utilities' Wellhead Protection Plan Amendment 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
- Impact(s) of changes on the Public Water Supply Well
- Issues, problems, and opportunities
- Wellhead protection goals
- Objectives and action plans
- Program evaluation
- Alternative water supply / contingency strategy

In the Part One of the Utility's WHPP, the delineation of the Wellhead Protection Areas (WHPAs), the Drinking Water Supply Management Areas (DWSMAs), vulnerability of the wells, and vulnerability status of the aquifer in which the Utilities wells are located were completed and approved by the Minnesota Department of Health. This information was utilized in the completion of this document and can be found in ***Appendix I***.

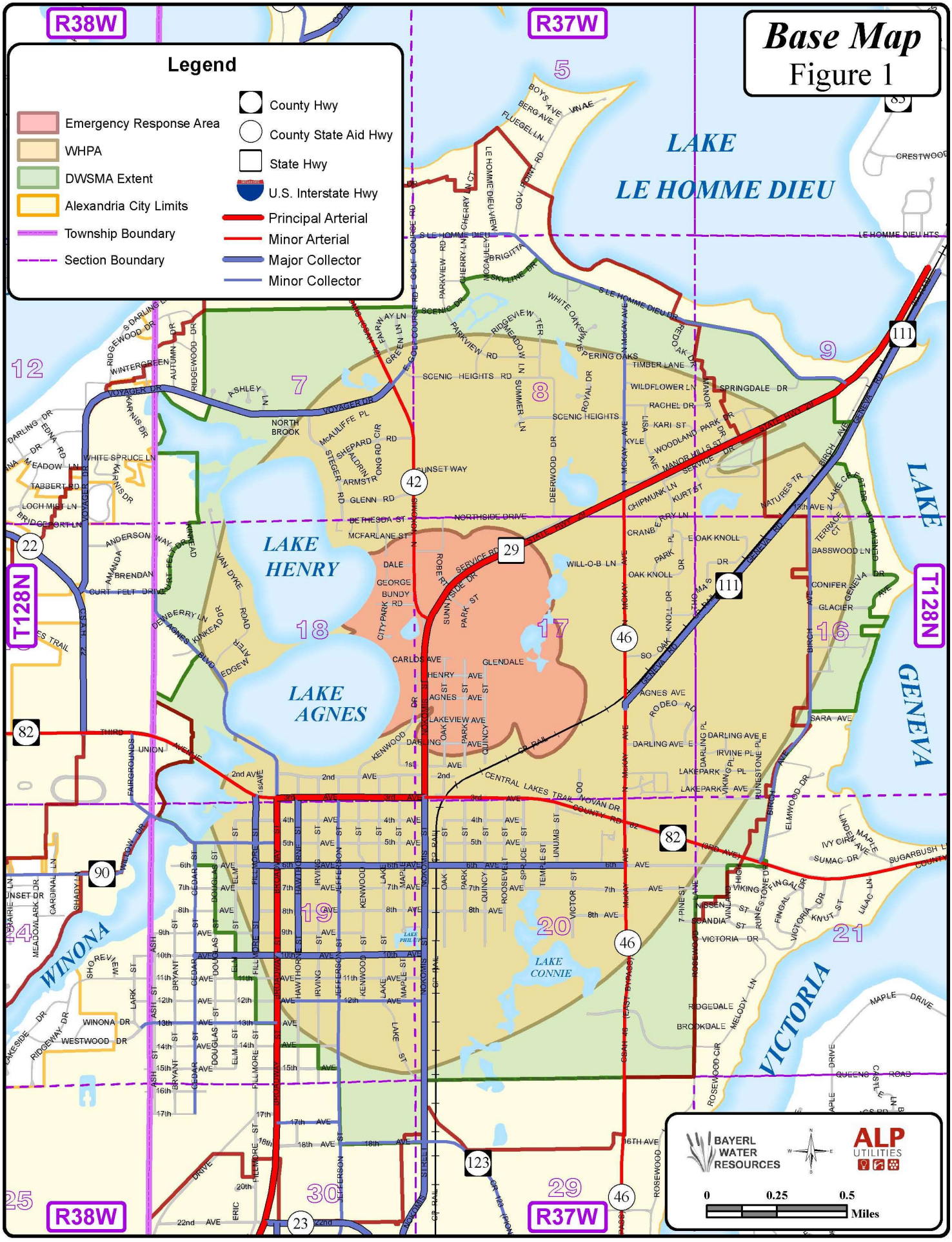
ALP Utilities is in Douglas County. It is mainly comprised of residential and business properties. The amended DWSMA is shown in ***Figure One***. ***Figure Two*** depicts the original and current DWSMA. Slight alterations are shown to correct parcel boundaries, otherwise the DWSMA is unchanged.

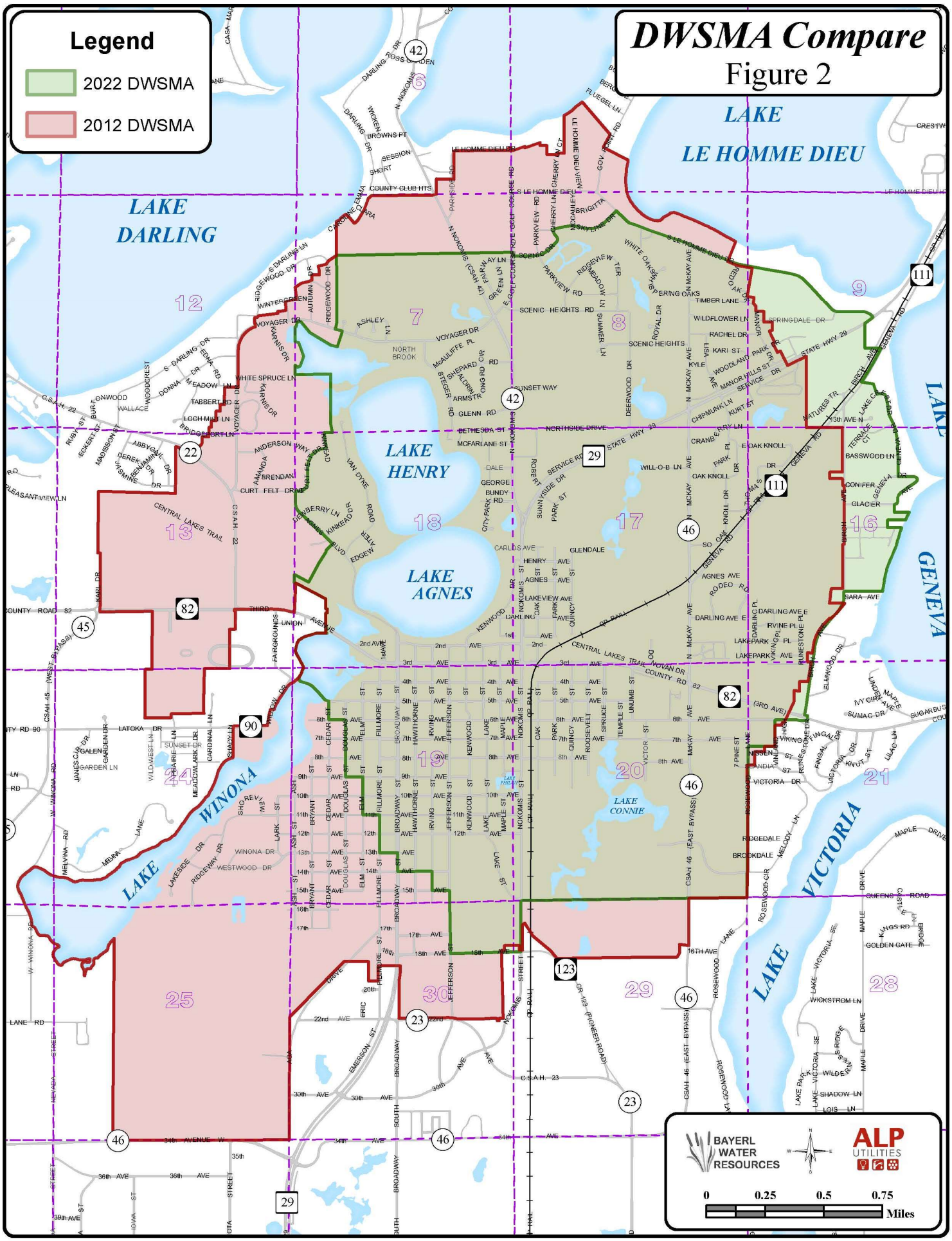
Geologic conditions at the wells include a potentially non-contiguous cover of clay-rich geologic materials over the aquifer, therefore the vulnerability status is designated as moderately vulnerable. Tritium was found in two utility wells and there is also naturally occurring arsenic in the public water supply system.

The moderately vulnerable status calls for inventory of most potential contaminant sources located within the DWSMA. Management strategies identified in Chapter Five focus on actions the utility and the WHP team can focus on for the next ten years. These strategies include the following areas of concern: inner wellhead management zone, tanks, wells (unsealed - unused, high capacity, class V and residential), leaks sites, and education. Sealing existing wells that can be connected to the utility and public education are the highest priorities in this plan.

ALP Utilities and the WHP team intend to work with Douglas County and State and local agencies to encourage preservation of existing open space within the current city limits of the DWSMA. Most of the area is fully developed, but multiple family housing is occurring,

It is the hope of the WHP 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 they have come to expect.


Base Map
Figure 1
Legend
Emergency Response Area
WHPA
DWSMA Extent
Alexandria City Limits
Township Boundary
Section Boundary
County Hwy
County State Aid Hwy
State Hwy
U.S. Interstate Hwy
Principal Arterial
Minor Arterial
Major Collector
Minor Collector
LAKE LE HOMME DIEU
LAKE HENRY
LAKE AGNES
LAKE CONNIE
LAKE GENEVA
WINONA
VICTORIA
R38W
R37W
T128N
BAYERL WATER RESOURCES
ALP UTILITIES
0 0.25 0.5 Miles


Legend
2022 DWSMA
2012 DWSMA
DWSMA Compare
Figure 2
LAKE LE HOMME DIEU
LAKE DARLING
LAKE HENRY
LAKE AGNES
LAKE CONNIE
LAKE WINONA
LAKE VICTORIA
LAKE GENEVA
BAYERL WATER RESOURCES
ALP UTILITIES
0 0.25 0.5 0.75
Miles

CHAPTER ONE

DATA ELEMENTS/ASSESSMENT

Minnesota Rules 4720.5200

I. REQUIRED DATA ELEMENTS

A. PHYSICAL ENVIRONMENT DATA ELEMENTS

1. Precipitation

Precipitation is measured at multiple sites within Douglas County through the Soil and Water Conservation District volunteer and other programs. Data from the sites are compiled and available on the State Climatology Website: https://climateapps.dnr.state.mn.us/hidenannual/. Precipitation is not an issue in this plan due to the determined moderate vulnerability.

2. Geology

A geologic atlas of Douglas County is in the process of being completed. Status updates can be found at: https://cse.umn.edu/mgs/county-geologic-atlas. 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 will be compiled. The Hydrogeology and sensitivity to groundwater pollution will be completed after the atlas is finished. This information will help MDH identify potential areas of concern with the next delineation.

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 ALP Utilities.

ALP Utilities' wells vary in depth from 118 to 134.5-feet and lie in the Quaternary Buried Artesian aquifer. Due to the detection of Tritium in two of the utility wells, the DWSMA has moderate vulnerability rating.

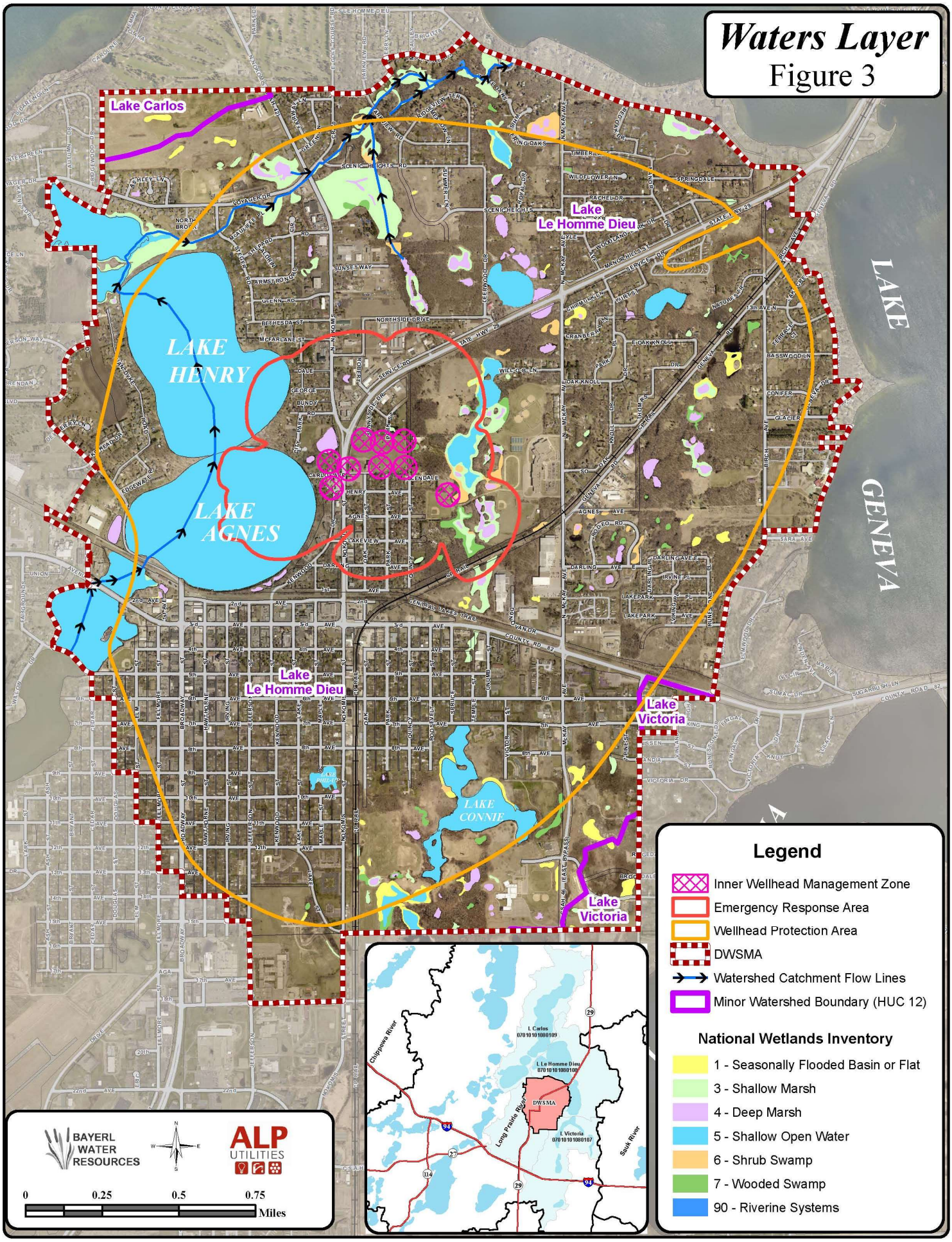
3. Soils

Due to the moderate vulnerability of the aquifer, soils information is not required when determining potential contaminant sources.

4. Water Resources

ALP Utilities DWSMA has three lakes and two public waters wetlands within its boundary. An unnamed waterway flows in a northerly direction from a series of wetlands as shown in ***Figure Three***.

The DWSMA is located entirely within the Long Prairie River Watershed (HUC 07010108). The Long Prairie River watershed covers approximately 565,078 acres (883 square miles) and is located in the central part of the Upper Mississippi River Basin in central Minnesota. The watershed encompasses parts of Douglas, Otter Tail, Todd, Morrison and Wadena counties. The minor watershed within the DWSMA is mainly the Lake LeHomme Dieu watershed (HUC 070101080108). Water generally flows from the watershed area toward the Long Prairie River in a northeasterly direction to the Mississippi River. The far outside edges of the DWSMA include small areas of the Lake Carlos watershed (HUC 070101080109) in the northwest corner and Lake Victoria (HUC 070101080107) in the southeast corner.


Waters Layer
Figure 3
Lake Carlos
Lake Le Homme Dieu
LAKE HENRY
LAKE AGNES
LAKE GENEVA
Lake Le Homme Dieu
Lake Victoria
LAKE CONNIE
Lake Victoria
Legend
Inner Wellhead Management Zone
Emergency Response Area
Wellhead Protection Area
DWSMA
Watershed Catchment Flow Lines
Minor Watershed Boundary (HUC 12)
National Wetlands Inventory
1 - Seasonally Flooded Basin or Flat
3 - Shallow Marsh
4 - Deep Marsh
5 - Shallow Open Water
6 - Shrub Swamp
7 - Wooded Swamp
90 - Riverine Systems
BAYERL WATER RESOURCES
ALP UTILITIES
0 0.25 0.5 0.75 Miles
L Carlos 07010101080109
L Le Homme Dieu 07010101080108
DWSMA
L Victoria 07010101080107
Chippewa River
Long Prairie River
Sauk River

The Upper Mississippi River Watershed information regarding current projects and other completed studies can be found at the MPCA site: https://www.pca.state.mn.us/watershed-information/mississippi-river-headwaters.

Information about the Long Prairie River Watershed is found at: https://www.pca.state.mn.us/watershed-information/long-prairie-river.

The lakes within the ALP Utilities DWSMA have been extensively studied. Current studies and projects can be found on the Lake Area Sanitary District website at: https://alasdistrict.org/. With Todd County as lead, a One Watershed One Plan (1W1P) was developed and approved in 2022. It can be found at: https://www.co.todd.mn.us/1w1p/ . The ALP Utilities DWSMA is located within the "Alexandria Lakes Planning Region" for the 1W1P partnership.

There are about 890 acres of wetland and no floodplain or ditches within ALP Utilities DWSMA. Surface water is not a consideration in this plan.

B. Land Use Data Elements

1. Land Use

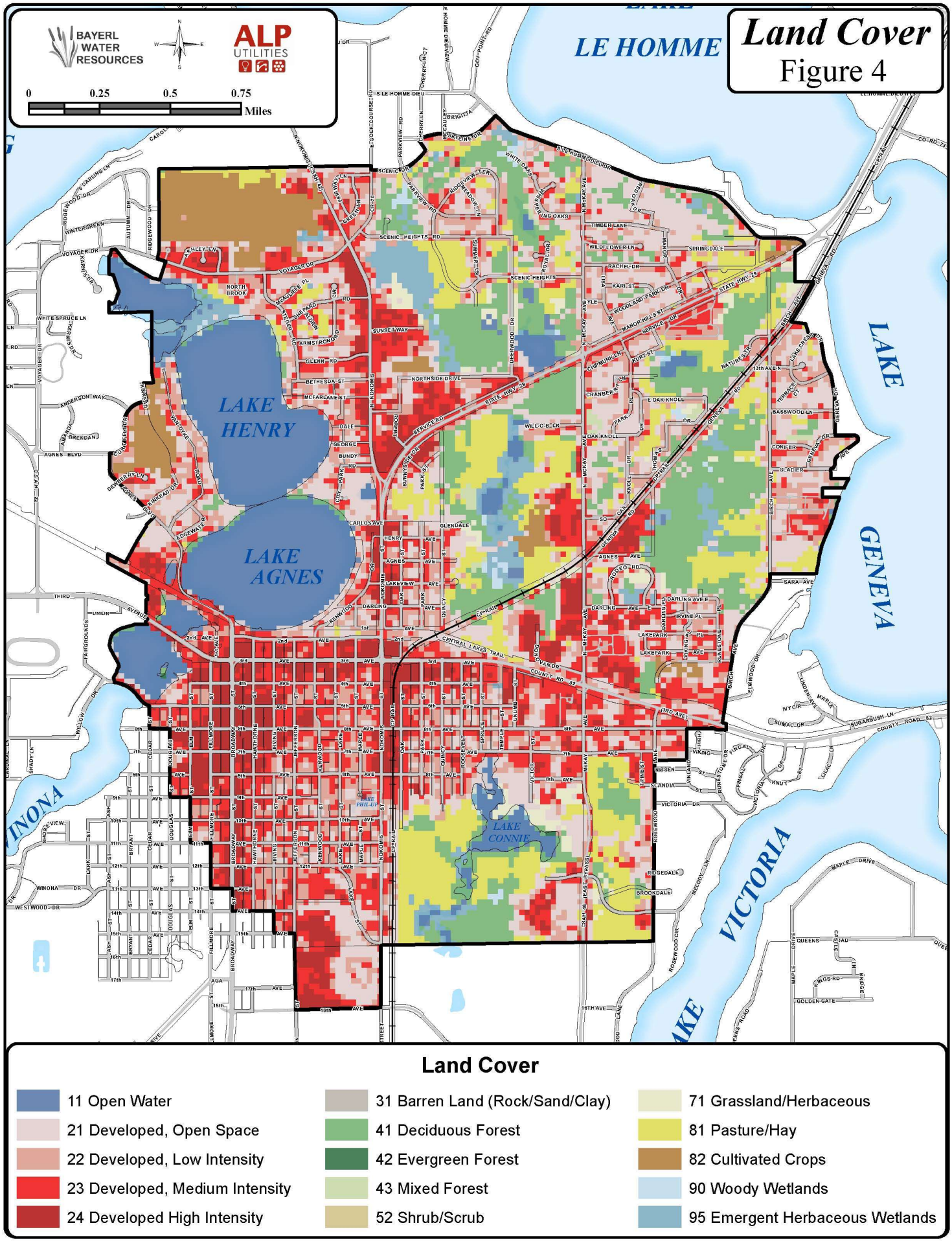
Land use/cover for ALP Utilities' DWSMA is as shown in ***Figure Four*** and ***Table A***. This information is based on the 2021 National Agricultural Statistics Service from the United States Department of Agriculture. The predominant land cover within the DWSMA is developed at sixty-two percent. A mix of tree

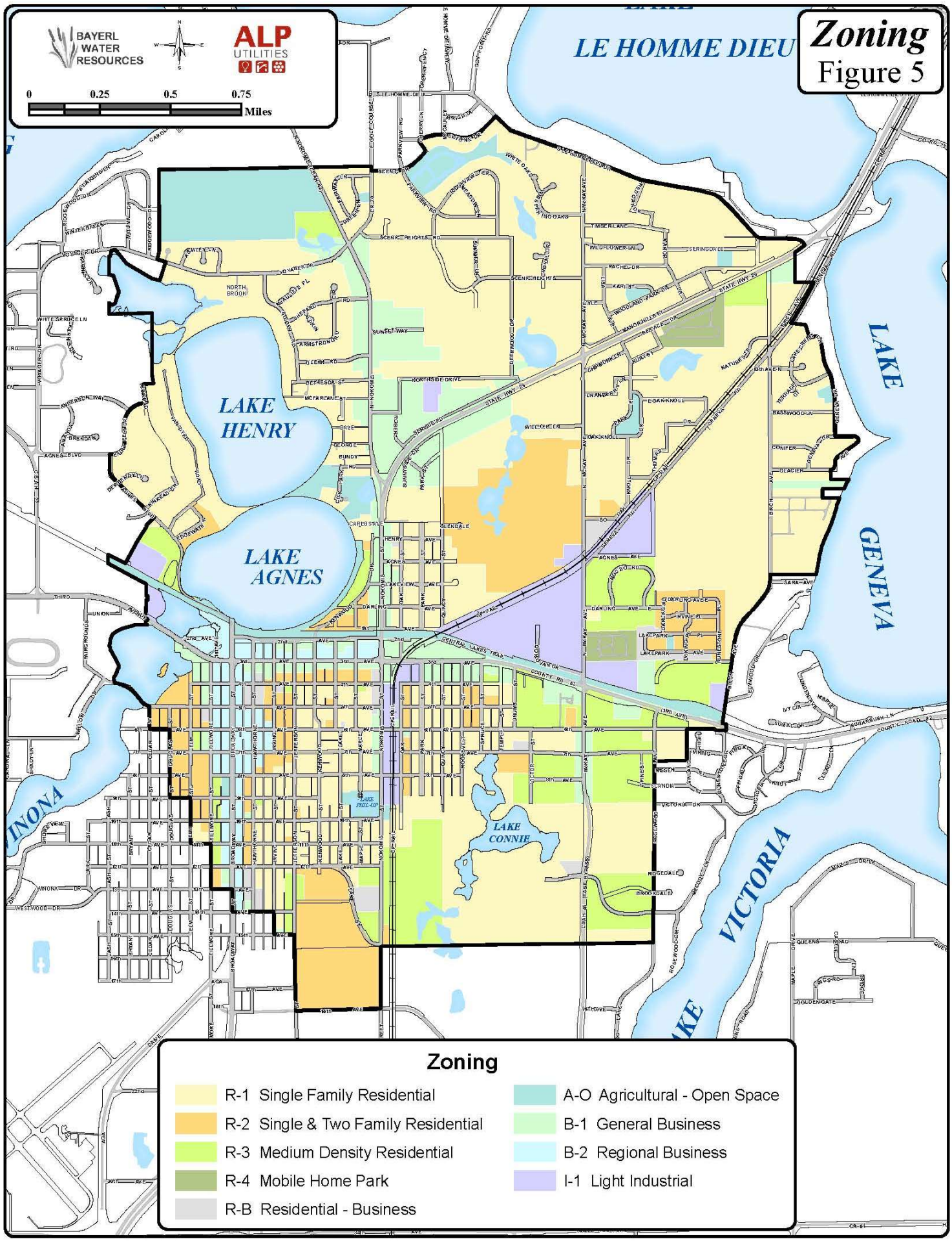
ALP UTILITIES DWSMA		***Table A***
CURRENT LANDUSE / LAND COVER	**ACRES**	**% of DWSMA**
Barren	0.7	0.0
Crops	126.2	3.3
Developed	2,349.3	62.1
Grass/Pasture	382.0	10.1
Shrubland	0.4	0.0
Tree Cover	401.4	10.6
Open Water	404.0	10.7
Wetlands	120.4	3.2
Total		

cover, open water and grass/pasture comprise most of the remainder. Land use does not have a known effect on the drinking water supply wells.

2. Zoning

Zoning is shown in ***Figure Five*** and ***Table B***. The DWSMA is located entirely within the city limits of Alexandria. Over seventy-eight percent of the DWSMA is zoned residential of some sort. Business and light industrial are located along the main road corridors. A complete listing of parcels within the DWSMA is available at the utility.


BAYERL WATER RESOURCES
ALP UTILITIES
0 0.25 0.5 0.75 Miles
Land Cover
Figure 4
LE HOMME
LAKE HENRY
LAKE AGNES
LAKE CONNIE
LAKE GENEVA
LAKE VICTORIA
LAKE WINONA
Land Cover
11 Open Water
21 Developed, Open Space
22 Developed, Low Intensity
23 Developed, Medium Intensity
24 Developed High Intensity
31 Barren Land (Rock/Sand/Clay)
41 Deciduous Forest
42 Evergreen Forest
43 Mixed Forest
52 Shrub/Scrub
71 Grassland/Herbaceous
81 Pasture/Hay
82 Cultivated Crops
90 Woody Wetlands
95 Emergent Herbaceous Wetlands

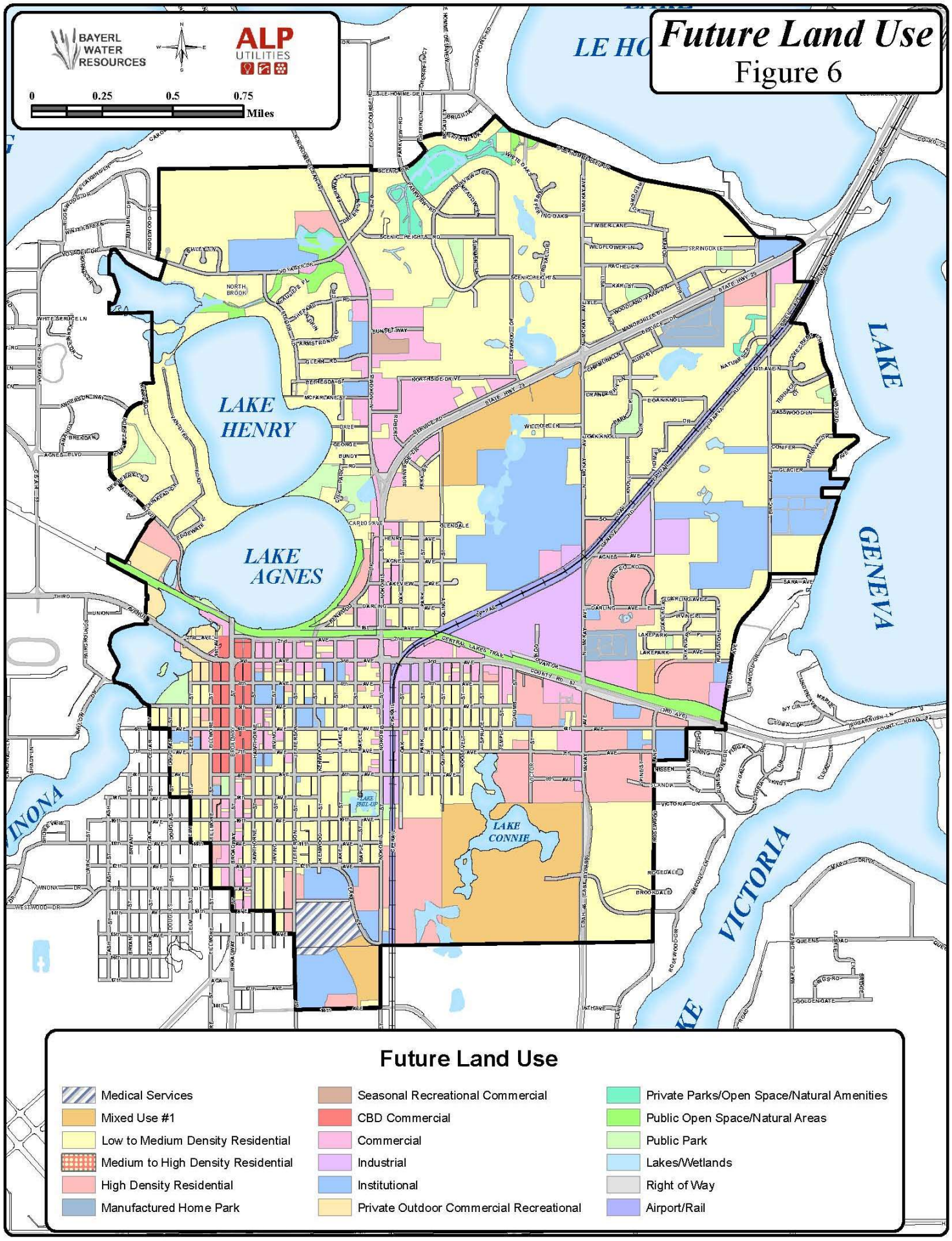

BAYERL WATER RESOURCES
ALP UTILITIES
0 0.25 0.5 0.75 Miles
Zoning
Figure 5
LE HOMME DIEU
LAKE HENRY
LAKE AGNES
LAKE CONNIE
LAKE GENEVA
LAKE VICTORIA
LAKE WINONA
Zoning
R-1 Single Family Residential
R-2 Single & Two Family Residential
R-3 Medium Density Residential
R-4 Mobile Home Park
R-B Residential - Business
A-O Agricultural - Open Space
B-1 General Business
B-2 Regional Business
I-1 Light Industrial

ALP UTILITIES DWSMA CURRENT ZONING	City of Alexandria Acres	*Table B* % of DWSMA
A-O Agricultural – Open Space	197.6	5.7
B-1 General Business	294.4	8.4
B-2 Regional Business	99.2	2.8
I-1 Light Industrial	159.8	4.6
R-1 Single Family Residential	1,973.2	56.5
R-2 Single & Two Family Residential	387.8	11.1
R-3 Medium Density Residential	310.1	8.9
R-4 Mobile Home Park	33.7	1.0
R-8 Residential - Business	39.4	1.1
Total	**3,495.1**	**100.0**

3. Future Land Use

The City of Alexandria completed a comprehensive plan in 2020, outlining future vision for twenty years, including future zoning and land use planning. The future land use map shown in ***Figure Six*** shows clearer definitions of the use of the land. Medical and institutional uses have moved from residential zoning to their actual use. A summary of the changes can be seen in ***Table C***. Copies of the plan and maps can be found at: https://alexandriamn.city/comprehensive-plan/.

ALP UTILITIES DWSMA FUTURE LANDUSE	ACRES	*Table C* % of DWSMA
Airport/Rail	42.2	1.1
CBD Commercial	29.4	0.8
Commercial	187.1	4.9
Low to Medium Density Residential	1,463.4	38.7
Medium to High Density Residential	0.0	0.0
High Density Residential	245.0	6.5
Manufactured Home Park	31.6	0.8
Industrial	100.8	2.7
Institutional	290.0	7.7
Lakes/Wetlands	449.8	11.9
Medical Services	23.3	0.6
Mixed Use #1	198.6	5.2
Private Outdoor Commercial Recreational	48.4	1.3
Private Parks/Open Space/Natural Amenities	28.3	0.7
Public Open Space/Natural Areas	65.8	1.7
Public Park	48.2	1.3
Right of Way	528.0	13.9
Seasonal Recreational Commercial	5.1	0.1
Total	**3,784.9**	100.0


Future Land Use
Figure 6
BAYERL WATER RESOURCES
ALP UTILITIES
0 0.25 0.5 0.75 Miles
LAKE HENRY
LAKE AGNES
LAKE CONNIE
LAKE GENEVA
LAKE VICTORIA
Future Land Use
Medical Services
Mixed Use #1
Low to Medium Density Residential
Medium to High Density Residential
High Density Residential
Manufactured Home Park
Seasonal Recreational Commercial
CBD Commercial
Commercial
Industrial
Institutional
Private Outdoor Commercial Recreational
Private Parks/Open Space/Natural Amenities
Public Open Space/Natural Areas
Public Park
Lakes/Wetlands
Right of Way
Airport/Rail

4. PCSI

A Potential Contaminant Source Inventory (PCSI) was conducted by ALP Utilities with the assistance of the MDH, MPCA and Douglas County as well as local well drillers. Some of the contaminant sources were identified based upon databases and information supplied by various State and Federal Agencies. These items include located, unlocated and sealed wells, Class V wells, tanks, leak sites and potential contaminants of concern. This information was verified by the WHP Team and approved by the MDH. Further verification and mapping of the data will be included in the management strategies found in Chapter Five.

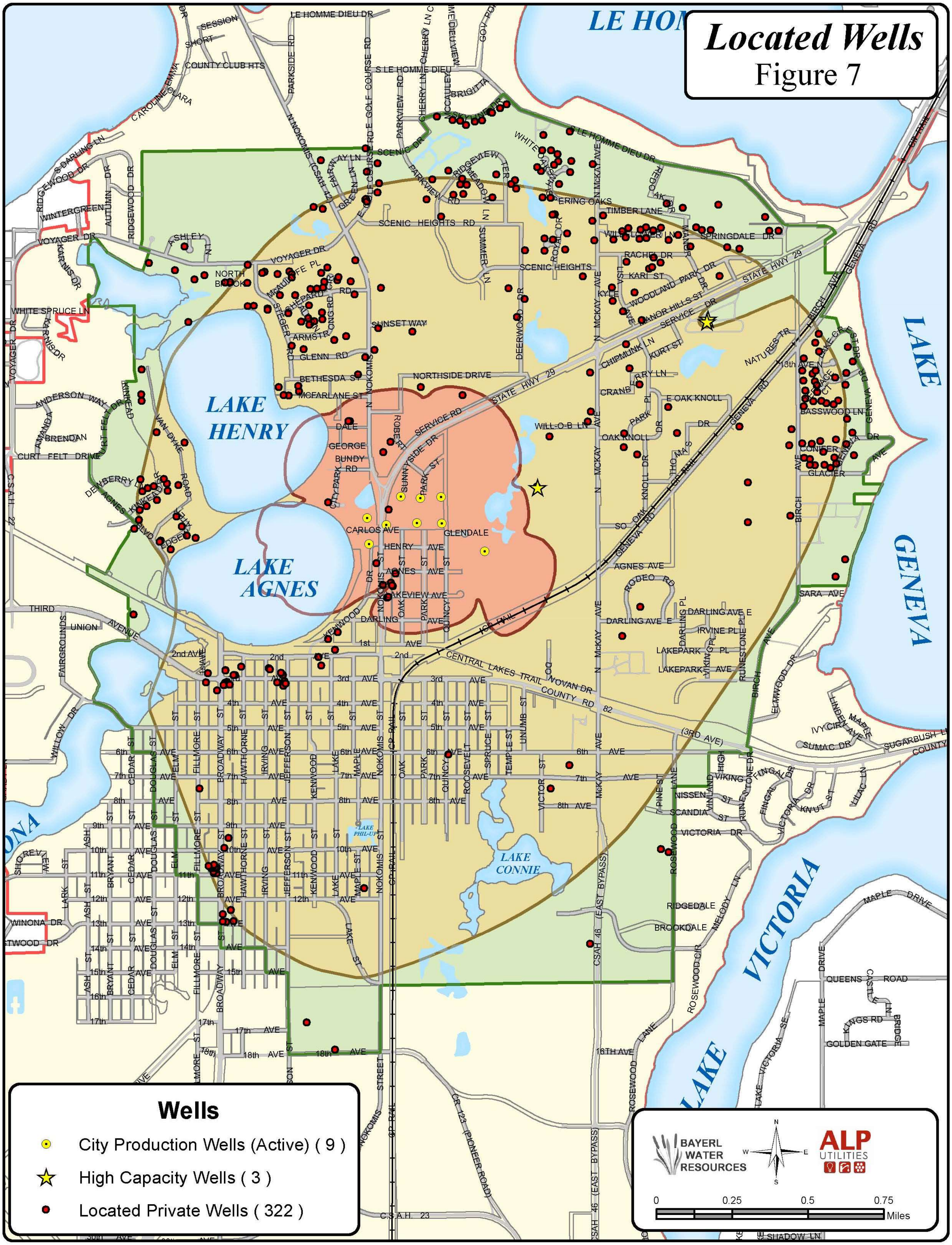
The following ***Table D*** and ***Figures Seven and Eight*** contain the potential sources of contamination along with the level of risk they were assigned by the wellhead team. All are considered priority #1 by the wellhead team. A listing of properties with a potential contaminant source - including wells, along with parcel identification is included in ***Appendix III***. The maps and list of these contaminant sources will be used by the Utility to educate and contact landowners that they are located within the DWSMA and about the impact these items may have on ALP Utilities' PWS wells.

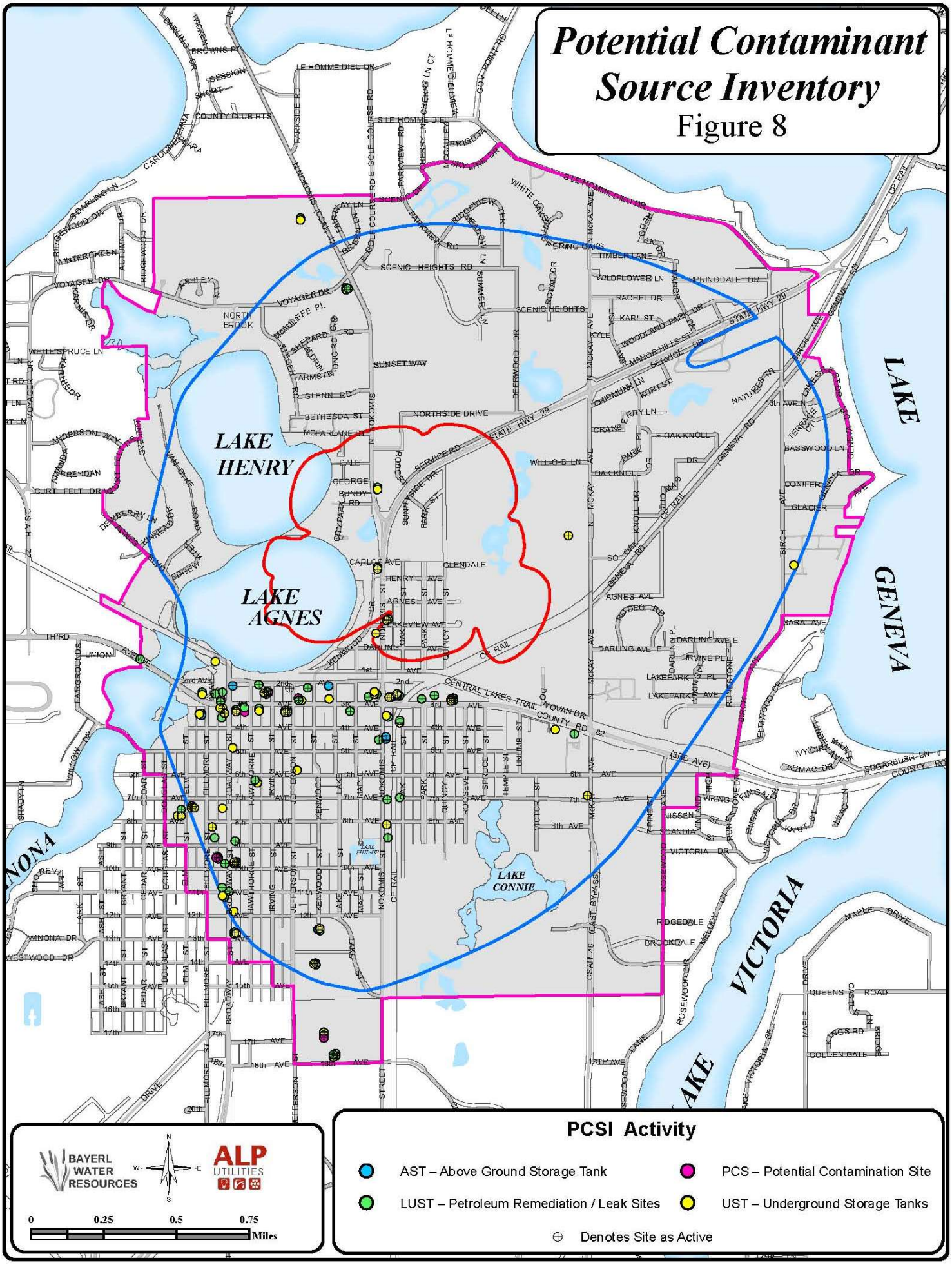
Table D – Potential Contaminant Source Inventory

Potential Source Type *A=Active, I=Inactive, R=Removed, C=Closed, U=Unknown L=Level of Risk (H=High, M=Medium, L=Low)	**Total No.**	**ALP Utilities DWSMA Potential Contaminants**					
		A	**I**	**R**	**C**	**U**	**L**
Underground Storage Tanks (UST)	**166**	22		138	6		H
Above ground Storage Tanks (AST)	**22**	1		19		2	L
Leaking Underground Storage Tanks (LUST)	**54**	4			50		H
Potential Contamination Sites (PCS)	**10**	3			7		L
Public Water Supply Wells	**12**	9				3	L
Wells	**266**	261				5	H
Monitoring Wells	**52**	51				1	M
Test Wells	**1**					1	H
Class V Wells	**0**						
TOTAL	**583**	351		157	63	12	

All known wells have been identified and located. Unlocated wells utilized for this PCSI have been either located within the DWSMA or determined to be outside the DWSMA. Those located outside the DWSMA have not been included in the PCSI.

There are 331 wells within the DWSMA. Twelve of them are public supply wells, of which three have been abandoned with no sealing record available. Fifty-two are monitoring wells, one test well (to be considered by DNR for monitoring purposes), 261 are identified with known well numbers for domestic, commercial or lawn irrigation use, and five are unknown and require verification. Inactive wells and any new wells found will be assessed for sealing potential. Education will be provided to property owners about the risks of unused/unsealed wells and incentives to seal them will be pursued.


Located Wells
Figure 7
LE HOM
LAKE HENRY
LAKE AGNES
LAKE CONNIE
LAKE PHIL-UP
LAKE GENEVA
LAKE VICTORIA
Wells
City Production Wells (Active) (9)
High Capacity Wells (3)
Located Private Wells (322)
BAYERL WATER RESOURCES
ALP UTILITIES
N
S
W
E
0
0.25
0.5
0.75
Miles


Potential Contaminant Source Inventory
Figure 8
LAKE HENRY
LAKE AGNES
LAKE CONNIE
LAKE GENEVA
LAKE VICTORIA
PCSI Activity
AST – Above Ground Storage Tank
PCS – Potential Contamination Site
LUST – Petroleum Remediation / Leak Sites
UST – Underground Storage Tanks
Denotes Site as Active
BAYERL WATER RESOURCES
ALP UTILITIES
0 0.25 0.5 0.75 Miles

There are four active and fifty closed leak sites. According to Part 1 Plan, low level detections of volatile organic compounds, primarily 1,2-DCA, have been detected in the source water of some of the public supply wells. The MPCA is the regulatory authority for these sites and has been unable to pinpoint a singular primary source due to the number of leak sites near the utility wells. Management includes working with MPCA when requested to pinpoint and mitigate sites.

Potential contamination sites (Brownfields, Superfund, and Suspected Hazardous Waste) are generally connected with an already identified Leak site. There are three active and seven closed within the DWSMA. There are no pipelines located within the DWSMA.

There is one active above-ground storage tank located within the DWSMA greater than 1,100 gallons. It is 2,000-gallons and has containment in the event of a spill. Eighteen tanks greater than 1,100 gallons have been removed and two are of unknown status. The two unknown sites are located on Canadian Pacific Rail (CPRail) property. The utility will try to verify the existence or removal of these tanks.

There are twenty-two active underground storage tanks and one large hazardous waste generator permit. Education of the property owners is the focus of the utility. Management of these are the responsibility of the MPCA.

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 commercial and industrial 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 well in the DWSMA.

Inner Wellhead Management Zone (IWMZ): 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) is shown in ***Table E*** 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.

The WHP team discussed the importance of on-going monitoring for land use changes and potential contaminants near the public water supply wells, awareness of the State Well Code isolation distances and the need to maintain these setback requirements. The area around the wells consists of utility owned land.

A copy of the IWMZ forms and measures that have been identified are included in ***Appendix IV***. Management Strategies to address recommendations in the inventory and protect this area will be considered in Chapter Five of this plan.

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

	Well Numbers									
Source Type	**7A**	**8A**	**9**	**14**	**16**	**17**	**18**	**19**	**20**	**Risk**
MON-Monitoring Well					2					H
WEL-Operating Well	1			1						L
UUW-Unused, unsealed well or boring.					1	1				L
SB2-Sewer, buried, collector, municipal, serving a facility handling infectious or pathological wastes, open-jointed or unapproved materials.	1			1			1			M
WB2-Water treatment backwash holding basin							1			L
SD1-Storm water drainpipe, 8'or > in diameter.		1								L
PT4-Petroleum tank or container, not buried, 56-1100 gal.									1	L
OH1-Ordinary high-water level of a stream, river, pond, lake.			1							L

5. Public Utility Services

Public utilities and infrastructure that may impact groundwater quality in the DWSMA were considered in the development of this plan. Public utility maps are available in ***Appendix VII***, and the utility.

A transportation map is shown in ***Figure One***. MN Highway 29 runs north to the center of the DWSMA, then east and northeast. Canadian Pacific Railroad (CPRail) runs adjacent to Nokomis Street through town, then northeast. County Rd 82 runs through the south half of the DWSMA in an east/west direction. The utility will work with the City of Alexandria, Douglas County, CPRail, and MNDOT to mitigate spills along these routes.

The DNR *Water Supply Plan* 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. The utility has an approved plan. The DNR letter of approval can be found in ***Appendix VI*** of this Plan and at ALP Utilities.

The Old Municipal Well Inventory is found in ***Appendix V***. The utility has done extensive investigation and location of old municipal wells in the past 20-years since their first wellhead plan was developed. They will work with MDH to locate any casings on unknown wells and pursue removal of the wells from the inventory.

C. Water Quantity Data Elements

1. Surface Water Quantity

Surface water quantity is not a consideration in this moderately vulnerable DWSMA.

2. Groundwater Quantity

The aquifers appear to have adequate recharge to meet utility needs and there are no indications of impact from other high-capacity wells in the area. Well interferences are addressed in the Part One Plan.

D. Water Quality Data Elements

1. Surface Water Quality

Chloride levels in Lake Agnes present a potential concern to the drinking water supply. The Alexandria Lakes Area Sanitary District (ALASD) monitors water quality levels in Lake Agnes and the utility will consider monitoring chloride and bromide levels in the PWS wells concurrently with ALASD monitoring in Lakes Agnes, Henry, and Winona. This will provide a better understanding of potential connectivity between the surface water and the PWS wells for the 2033 plan amendment.

Surface water quality is not a consideration in this moderately vulnerable DWSMA.

2. Groundwater Quality

Naturally occurring arsenic has been detected at low levels in the utility's drinking water supply wells. No exceedance was found in any of the MDH tested parameters over the past ten years.

According to Part 1 Plan, low level detections of volatile organic compounds, primarily 1,2-DCA, have been detected in the source water of some of the public supply wells. The MPCA is the regulatory authority for these sites and has been unable to pinpoint a singular primary source due to the number of leak sites near the utility wells. Management includes working with MPCA when requested to pinpoint and mitigate sites.

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 since 1953. Tritium analysis was conducted on the utility wells numbers 7A and 8A. Levels of 18.2, and 18.3 tritium units were detected in these wells respectively. The moderate vulnerability of the drinking water aquifer was determined based on this information and the chloride/bromide ratios discussed in the Part One Plan.

II. ASSESSMENT OF DATA ELEMENTS

A. Use of the Well

ALP Utilities utilizes nine wells, varying in depth from 116 to 134.5-feet deep. They have four elevated storage towers containing a 2.3-million-gallon capacity. The utility wells pump an annual average of 1,565,205 gallons per day. The volume of water pumped from 2018 through 2022, as shown in ***Table F***, has ranged from a low of 642.6 million-gallons in 2018 to a high of 792.6 million-gallons in 2022. DNR permitted volume is 742.8 MGY. This was exceeded in 2021 and 2022.

While the part one has found no issues with water quantity available, the installation of other high-capacity wells or increases in water use beyond permitted appropriation levels may affect the delineated WHPA and DWSMA and subsequently require a revision of this WHPP.

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

ANNUAL WELL PUMPING AMOUNTS (IN MILLIONS OF GALLONS)										
	WELL NUMBERS									
YEAR	**7A**	**8A**	**9**	**14**	**16**	**17**	**18**	**19**	**20**	**TOTAL**
2018	35.6	29.5	52.6	91.8	90.6	93.8	98.4	66.3	84.0	642.6
2019	26.2	38.8	48.6	120.2	114.1	64.0	108.4	46.0	100.9	667.1
2020	37.6	30.6	49.7	100.2	95.2	94.0	87.2	64.4	104.0	662.9
2021	41.7	68.3	64.6	95.9	110.1	92.6	85.3	66.9	142.7	768.1
2022	60.5	73.4	24.6	77.8	120.8	96.8	98.1	140.8	99.8	792.6

Treatment includes disinfection, fluoridation, aeration, detention, and filtration. Removal of iron, manganese, and lead/copper corrosion control is part of the process. The utility recycles backwash.

The utility provides service to 4,047 metered connections through appurtenant distribution mains, lines, and services. Water use has been increasing with residential and commercial growth.

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**
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, supplied in ***Appendix I*** of this document.

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

The utility has an adequate supply of groundwater to provide services to its customers. Well interferences are addressed in the Part One Plan. Results of routine sampling conducted by the MDH have shown no violations of any parameters monitored under the Safe Drinking Water Act.

D. The Land and Groundwater Uses in the Drinking Water Supply Management Area

The land use within the DWSMA is mainly residential use. Proactive management of existing wells, unsealed, unused wells, tanks, leak sites, and potential class V wells are of concern due to the moderately vulnerable rating of the aquifer. Potential Contaminant Sources are discussed and addressed in the Management Strategies of this plan.

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.

B. LAND USE

While the area within the DWSMA is mostly built out, there is potential for an increase in multifamily residential and/or commercial within the MN Highway 29 north corridor.

C. SURFACE WATER

With the plant upgrades to ALASD and Alum treatment in Lake Winona, expected trends are for overall water quality improvement in lakes Agnes, Henry, and Winona.

D. GROUNDWATER

Changes in groundwater include potential movement of contamination plumes toward the PWS wells.

II. IMPACT OF CHANGES

A. EXPECTED CHANGES IN WATER USE

Water use within the City of Alexandria is expected to increase.

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

The City of Alexandria has regulatory authority over the DWSMA as it is located entirely within the city limits. They have ordinances in place to prohibit new wells and require hook-up to the public water supply if water is available to the property. Ordinances to ensure prevention of cross-connection into the system are also in place.

Douglas County has regulatory jurisdiction within the areas outside the city limits. Douglas County participated in the Long Prairie River Watershed One Watershed One Plan (1W1P) development. This plan was approved in 2022 and identifies priorities within the County. Priorities from the 1W1P currently include protection of the groundwater resources, participation in wellhead protection planning, assistance in education, and assistance with mitigation of potential contaminants.

C. ADMINISTRATIVE, TECHNICAL, AND FINANCIAL CONSIDERATIONS

ALP Utilities has been supportive of Wellhead Protection efforts. A Wellhead committee has been formed and has been actively involved in the planning process. The Utility has established a line-item budget to include implementation of priority strategies identified in this plan.

ALP Utilities will be responsible for the implementation of this plan. The Wellhead Protection Committee will continue to meet periodically to review and discuss implementation programs.

The City of Alexandria, Douglas County Emergency Management and Land and Resource Management have provided technical assistance for this plan, along with local experts such as the ALASD, Pope Douglas Solid Waste, and Douglas SWCD.

CHAPTER THREE

ISSUES, PROBLEMS, AND OPPORTUNITES

Minnesota Rules 4720.5230

Table G outlines the issues, problems and opportunities determined by the wellhead team to be priorities during the 10-year implementation phase of this plan. It is difficult to foresee or plan for the future. ALP Utilities 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.

Issue Identified	Impacted Feature	Problem Associated with the Identified Issue	Opportunity Associated with the Identified Issue	***Table G*** Adequacy of Existing Controls to Address the Issue
Limited information for next delineation	Aquifer Well water quality DWSMA	The MDH has limited information regarding wells and monitoring.	The utility will consider recommendations from MDH on data gathering and monitoring.	Funding for monitoring will be provided by MDH.
There may be unknown wells located within the DWSMA.	Aquifer Well water quality DWSMA	Unused/unsealed wells pose a threat to the drinking water aquifer.	The utility will pursue 100% funding to seal wells if they are located and the property owner consents.	The utility does not have authority to require that unused wells be properly sealed. The MDH has authority to require well sealing.
Chlorides – Alexandria Lakes Area Sanitary District	Aquifer Well water quality	Chloride levels are elevated in PWS wells and Lake Agnes – potentially due to ALASD discharge and/or road salt.	The utility can conduct monitoring in conjunction with ALASD to determine potential impacts of the district to the PWS wells. The utility can work with the city, county and MNDOT on road salt distribution.	MPCA has regulatory authority over chloride discharge from sanitary treatment plants. ALP Utilities has no authority on road salt distribution.
Leak sites/ Potential Contamination sites (PCS) are located within the DWSMA.	Aquifer Well water quality DWSMA	Leak sites and PCS may pose a threat to the PWS aquifer and the current PWS wells.	The utility will maintain awareness of on-going objectives with state agencies regarding known leak sites and explore alternative options if necessary.	The utility does not have authority to regulate leaks/PCS. The MPCA has authority to regulate leaks and PCS.
Storage Tanks	Aquifer Well water quality DWSMA	Above and underground tanks may pose a threat to the PWS aquifer.	Provide above and underground tanks information via letter.	MPCA is the regulatory authority for above and underground tanks.
Test Well in IWMZ	Aquifer Well water quality	An unused/unsealed test well is located within the PWS wellfield.	The utility can discuss feasibility of utilizing as monitoring well with the DNR or seal.	ALP Utilities has authority to seal this well.
New well – growth	Aquifer Well water quantity DWSMA	Increased distribution due to development may require new well(s).	The utility can work with MDH hydrologist to determine best siting for new wells.	The city currently owns the property the wellfield is located on.

Table G (cont.)

Issue Identified	Impacted Feature	Problem Associated with the Identified Issue	Opportunity Associated with the Identified Issue	Adequacy of Existing Controls to Address the Issue
MN State Hwy 29, CR 82, and CPRail may impact the DWSMA.	Aquifer Well water quality	Potential spills from these areas may impact the drinking water supply aquifer.	The utility can apply for MDH SWP funds for local fire department training and/or supplies (large spill kits / solvent absorbents). The utility can make appropriate responding agencies aware.	CPRail and MNDOT duty officer have emergency response numbers to call for spills. The City of Alexandria and the city fire department have immediate response and Douglas County Emergency Management.
Education	Aquifer Well water quality	ALP Utilities has the opportunity to participate in and support the Kid's Groundwater Festival annually.	The utility can apply for MDH SWP funds to contribute to local educational programs.	
Website updates – hazardous waste, well and conservation information.	Aquifer Well water quality Well water quantity DWSMA	Water conservation measures, hazardous waste and well information is not currently available on the Utility website.	ALP Utilities can update their website to reflect education priorities identified in this plan.	ALP Utilities does website updates in-house.
Ordinances	Aquifer Well water quality	There may be additional ordinances to better protect the drinking water resource.	The utility can review existing ordinances and evaluate to determine needs. They can apply for update funding if a need is determined	The city has regulatory authority over land use ordinances within the city limits of Alexandria.
Potential for inadequate security	Aquifer Well water quality	The utility may have inadequate protection of the wellfield.	The utility can assess security needs and apply for MDH SWP funding if needed.	The utility owns the land surrounding the wells.
Old Municipal Well Inventory (OMW)	Aquifer Well water quality DWSMA	OMW inventory contains wells abandoned without adequate documentation. The utility has been unsuccessful in locating wells or records.	Work with MDH to update the OMW inventory to reflect the current status of wells.	The city can seal wells on city property but does not have authority to require sealing on private property. MDH has well regulatory.
There may be unknown Class V Wells located in the DWSMA.	Aquifer Well water quality DWSMA	The utility needs to inform property owners of what a Class V Well is and how to report.	The utility can apply for MDH grant funding to inform the property owners within the DWSMA.	The EPA has authority over Class V Wells in Minnesota.

I. IDENTIFICATION OF:

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

No public comments were presented at any of the public meetings held in conjunction with this plan.

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 Utility'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, ALP Utilities has initiated ground truthing of many of the contaminant sites and sources within the community to further protect public drinking water supplies.

ALP Utilities has located and mapped the PCSI elements to determine potential areas of concern and will update as necessary.

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

The WHP committee feels adequate protection of the DWSMA is available through existing land use ordinances in the City of Alexandria, Douglas County, and state well and groundwater appropriations permits. Existing education programs, promoting Best Management Practices (BMPs) and working with local landowners on issues is the approach proposed by the utility.

The 1W1P partnership, administered by Douglas Soil and Water Conservation District, addresses ground and surface water protection. Potential funding for well sealing or other BMPs may be available through the SWCD, or through MDH Source Water Protection Implementation Grants (available as part of the Clean Water Legacy). Other agencies within the state have programs that may be helpful in the implementation of this plan. They include MRWA, MDH Well Management, MPCA tanks section, DNR and MDA.

CHAPTER FOUR

WELLHEAD PROTECTION GOALS

Minnesota Rules 4720.5240

I. GOALS

A. PRESENT AND FUTURE WATER AND LAND USE

The overall Goals of ALP Utilities Wellhead Protection Plan are:

1. **Protect the public water supply from contamination.**
   The Potential Contaminant Source Inventory for ALP Utilities' identified sources as potential threats to the drinking water. These include tanks, leaks, potential class V wells, active wells, and unused/unsealed wells. These uses will require management strategies for protection of drinking water, including, but not limited to land use. All landowners with contaminant sources share in the responsibility for accomplishment of this goal with ALP Utilities' WHP team, in partnership with the Local Governmental Units.

2. **Establish and maintain a WHP continuing public education program as an ongoing process.**
   ALP Utilities has participated in public education programs pertaining to wellhead protection and intends to continue to work towards improving public perception pertaining to protection of the public drinking water supply. They intend to upgrade the utility website with wellhead information and opportunities to the property owners within the DWSMA, including but not limited to well sealing cost-share or full funding as grants are available.

   The Utility currently enjoys a safe and sufficient water supply. Through the implementation of this WHP Plan, they propose to further safeguard the public water supply of the users of ALP Utilities.

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 ALP Utilities:

A. Provide land owners with educational materials and other resources to assist them with drinking water protection issues such as private well use, maintenance and sealing assistance and Class V wells.

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 utility over the 10-year period that its WHP plan is in effect. The objective that each measure supports is noted as well as the lead party and any cooperators and 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 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 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.

ALP Utilities 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 H*** lists each measure that will be implemented over the 10-year period that the utility's WHP plan is in effect, including the priority assigned to each measure. The utility is the responsible party for all measures.

It is difficult to foresee and plan for the future. The utility 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.

MONITORING, DATA COLLECTION, AND ASSESSMENT:

Table H - WHP Plan of Action

Description	Objective	Priority	Responsible Party & Cooperators	Cost	Implementation Time Frame									
					2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Water Quality Monitoring: **WHP Measure #1:** Contact MDH Hydrologist to set up the standard assessment monitoring package during year 5 of plan implementation. MDH can provide sample bottles and cover analytical costs, assuming adequate resources exist at the time. The utility may need to collect and ship samples to MDH.	G/H	H	MDH ALP Utilities	Staff Time					X					
WHP Measure #2: Work with ALASD and MDH Hydro to determine feasibility of conducting monitoring of chloride and bromide in Lakes Henry, Winona, and Agnes and the PWS wells #9, 14, and 16 during June, July, August, and September to obtain additional data for future delineations.	G/H	H	ALP Utilities MDH ALASD	Staff Time TBD					X	X				
Well Inventory and Prioritization **WHP Measure #3:** Update the PCSI as needed with a full update during year six. Review status of existing potential contaminants and add new ones identified in the DWSMA.	C/H	H	ALP Utilities MDH Consultant	Staff Time TBD						X				
WHP Measure #4: Contact MDH to update the IWMZ survey form for all wells in the system every 7 years working in coordination with the MDH.	G/H	H	ALP Utilities MDH	Staff Time								X		
WHP Measure #5: Request listing from MDH of new wells drilled within 1-mile of the DWSMA. Verify these wells and send information to MDH Hydrologist.	C/G	L	ALP Utilities MDH	Staff Time						X				
WHP Measure #6: Contact the DNR regarding test well #221401 to determine their wishes to use as a monitoring well. If they decline, apply for MDH funding to seal.	G/D	H	ALP Utilities DNR MDH	Staff Time TBD	X									
Old Municipal Well Management **WHP Measure #7:** Work with the MDH to update the inventory to reflect the currents status of wells.	D/G	M	ALP Utilities MDH MRWA	Staff Time	X	X								

WELL AND CONTAMINANT SOURCE MANAGEMENT

Description	Objective	Priority	Responsible Party & Cooperators	Cost	Implementation Time Frame									
					2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Municipal Well Management Practices **WHP Measure #8:** Monitor setbacks for all new potential contaminant sources within the IWMZ.	**D**	**H**	ALP Utilities MDH	Staff Time	←----------On-Going----------→									
WHP Measure #9: The utility shall implement activities directed in the IWMZ recommendations and the MDH Sanitary Survey inspection. The utlity will apply for grants as necessary to implement.	**D**	**H**	ALP Utilities MDH Consultant	Staff Time TBD	←----------As Needed----------→									
WHP Measure #10: Add additional wells as need is determined. 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**	ALP Utilities MDH Hydro Consultant	TBD	←--As funding becomes available---→									
WHP Measure #11: If deemed necessary and feasible, work with the MDH Hydrologist to explore alternate wellfield site.	**E**	**H**	ALP Utilities MDH Hydro Consultant	TBD	←------If need is determined ------→									
WHP Measure #12: Provide a map of the DWSMA to the local Fire Department, CPRail, MNDOT, and Douglas County Emergency Management. Request their awareness and prompt response to accidents, spills and clean-up efforts along CP Rail and Highway 29 and CR 82 near the PWS wells.	**E/F**	**H**	ALP Utilities County EM Alexandria MNDOT CPRail	Staff Time	X									
WHP Measure #13: Apply for MDH SWP funds for local fire department training and/or supplies (large spill kits / solvent absorbents) as needed.	**E**	**H**	ALP Utilities Local Fire Department	TBD	←----------As Needed----------→									
WHP Measure #14: Assess security needs and apply for funding if identified. Purchase and install equipment to secure the wellheads if feasible.	**E**	**M**	ALP Utilities Consultant	TBD	←------If need is determined ------→									

WELL AND CONTAMINANT SOURCE MANAGEMENT (cont.)

Description	Objective	Priority	Responsible Party & Cooperators	Cost	Implementation Time Frame									
					2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Class V Wells **WHP Measure #15:** Identify any new known potential Class V Wells in the DWSMA. Contact MDH for assistance with a suspected owner of a Class V well.	**C**	**M**	ALP Utilities MDH EPA	Staff Time	←----------On-Going----------→									
Private Well Management **WHP Measure #16:** Work with property owners via mailing to determine status of unknown wells within the DWSMA.	**D**	**H**	ALP Utilities DNR MDH	Staff Time TBD			X							
WHP Measure #17: Apply for SWP or SWCD funding to seal any wells located within the DWSMA with owner consent.	**D**	**H**	ALP Utilities MDH SWCD	Staff Time TBD	←----------On-Going----------→									
Tanks, Leaks, Contaminants of Concern **WHP Measure #18:** Maintain awareness of on-going objectives with state agencies regarding known leak sites.	**D/G**	**M**	ALP Utilities MPCA Consultant	Staff Time	←----------On-Going----------→									
WHP Measure #19: Provide mailings for active tanks and information on inactive/removed above and below ground tanks on the utility website.	**A**	**M**	ALP Utilities MDH MRWA	Staff Time TBD	X	X								

LAND USE AND PLANNING:

Description	Objective	Priority	Responsible Party & Cooperators	Cost	Implementation Time Frame									
					2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Ordinance Controls **WHP Measure #20:** Research need for Ordinance update to address groundwater protection issues within the PWS area and apply for funding if need identified.	**D**	**M**	ALP Utilities Consultant	Staff Time TBD	←----------If Needed----------→									

EDUCATION AND OUTREACH:

Description	Objective	Priority	Responsible Party & Cooperators	Cost	Implementation Time Frame									
					2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Education and Outreach **WHP Measure #21:** Contact MDH/MRWA and request or create well brochures to be placed at city hall and ALP Utilities to educate about unused/unsealed wells and well maintenance.	**A/G**	**H**	ALP Utilities MDH MRWA	Staff Time	X					X				
WHP Measure #22: Provide information on the utility website regarding chloride reduction, tanks, hazardous wastes, wells, unused/unsealed wells, conservation and sealing opportunities.	**A/D**	**M**	ALP Utilities MPCA MDH MRWA	Staff Time TBD		X								
WHP Measure #23: The utility will work cooperatively with the Long Prairie River Watershed as applicable on drinking water projects in the future.	**D/F**	**M**	ALP Utilities LPRW SWCD	Staff Time	←----------On-Going----------→									
WHP Measure #24: Provide teaching staff at local elementary school 4th grades with MRWA poster contest annually.	**A/D**	**M**	ALP Utilities MRWA	Staff Time	X	X	X	X	X	X	X	X	X	X
WHP Measure #25: Continue to participate in the Kid's Groundwater Festival as a member of the planning team, presentation of Treatment Plant Tours, and support of activities stressing connection between land use and groundwater quality for local 4th grade students.	**A**	**H**	ALP Utilities KGW Committee 4th Grade	Staff Time $2,000 annually	X	X	X	X	X	X	X	X	X	X

WHP COORDINATION, REPORTING, AND EVALUATION:

Description	Objective	Priority	Responsible Party & Cooperators	Cost	Implementation Time Frame									
					2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
WHP Coordination **WHP Measure #26:** Coordinate an internal meeting with the public utility, city administrator, technical assistance provider, or appropriate staff to discuss WHP Plan implementation and coordination every 2.5 years. Discuss funding needs and pursuit of SWP Grant funds to help implement activities identified in the WHP Plan.	**I**	**H**	ALP Utilities MRWA MDH WHP Team	Staff Time	X		X		X		X		X	
Implementation Tracking and Reporting Activities **WHP Measure #27:** Maintain a "WHP folder" that contains documentation of WHP activities you have completed and the date that it was done. Identify each activity with the number of the measure contained in this table.	**H/I**	**H**	ALP Utilities	Staff Time	X	X	X	X	X	X	X	X	X	X
WHP Measure #28: Develop a spreadsheet that coincides with measures found in your plan to track and monitor plan implementation activities and completion dates.	**H/I**	**H**	ALP Utilities	Staff Time	X									
WHP Program Evaluation Plan Reporting **WHP Measure #29:** 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	**G/I**	**H**	ALP Utilities MDH MRWA	Staff Time			X			X			X	
WHP Measure # 30: Summarize WHP Plan implementation efforts in a report to MDH in the 8th year.	**G/I**	**M**	ALP Utilities MDH MRWA	Staff Time								X		

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.

ALP Utility'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 DWSMAs:

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 utility 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.

CHAPTER SEVEN

ALTERNATIVE WATER SUPPLY / CONTINGENCY STRATEGY

Minnesota Rules 4720.5280

PURPOSE

The DNR Water Emergency and Conservation Plan approval letter can be found in ***Appendix VI*** of this Plan. The purpose of this plan is to establish, provide and keep updated, certain emergency response procedures and information for ALP Utilities, 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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