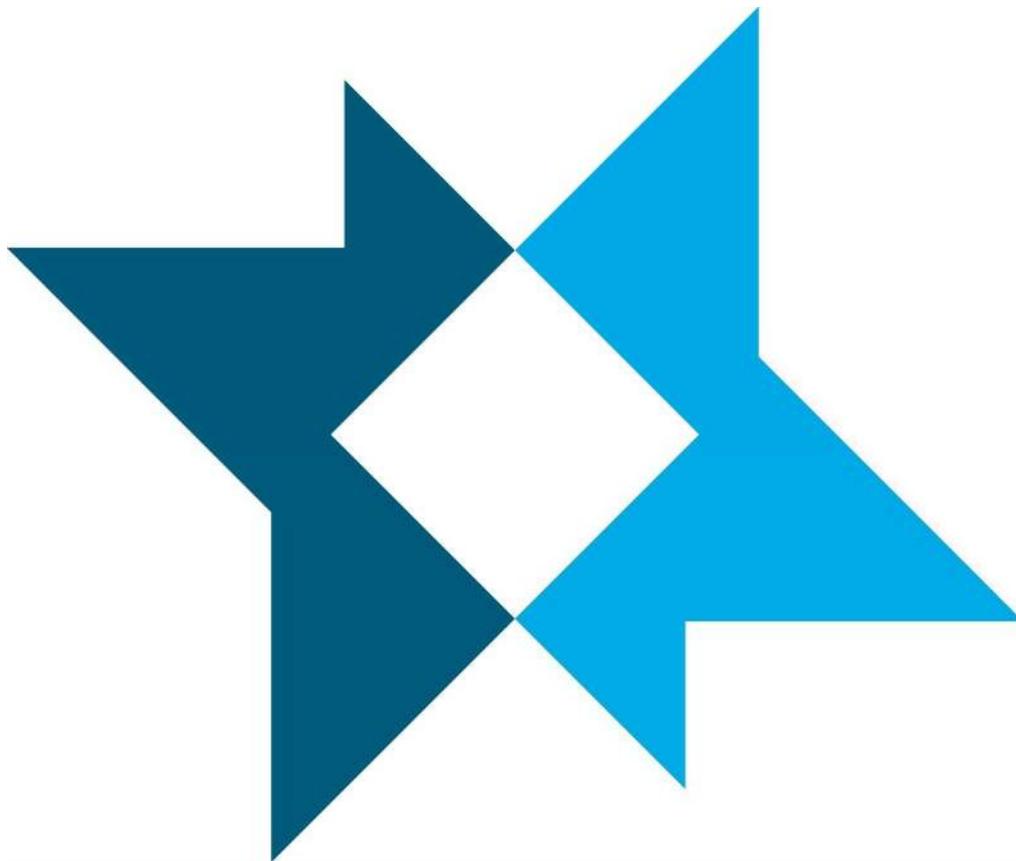




Plan

Water Supply Service Area Plan (WSSAP)



Village of Germantown

Washington County, Wisconsin

December 2025

Project ID: 25G018.03

**Solving our clients' toughest
science and engineering challenges.**

Water Supply Service Area Plan

Project ID: 25G018.23

Prepared for
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Prepared by
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December 2025

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Water Supply Service Area Plan

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- Appendix A 2014 – 2024 Top 10 Water Users
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Water Supply Service Area Plan (WSSAP)

Executive Summary

Purpose

Wisconsin law requires communities serving a population over 10,000 people that withdraw water from waters of the State to prepare a Water Supply Service Area Plan (WSSAP) by the end of 2025. The purpose of this plan is to help the Germantown Water Utility ensure they can meet water demands for the next 10 years. This is accomplished through a high-level analysis of the existing and anticipated future water supply and storage facilities.

Existing Water System

Germantown's water system is comprised of six (6) groundwater wells, two (2) water treatment facilities, four (4) elevated storage tanks, one (1) booster station, and three (3) pressure reducing valve vaults. An additional groundwater well will be placed into service in January 2026. The water distribution system provides a means of transporting and distributing water from the water treatment plants and wells to the utility customers. Within Germantown's water system, there are three pressure zones including the Primary Pressure Zone, the Low/Reduced Pressure Zone, and the High/Boosted Pressure Zone. The majority of the infrastructure is within the Primary Pressure Zone, but the system can provide water between the three zones.

Water Quality

Raw water quality is generally good with the exception of radium and iron being present in some of the water captured from the wells. Treatment is completed prior to the water entering the distribution system. All treatment points are regularly monitored to ensure water entering the distribution system meets all state and federal requirements for consumption.

Current Water Use

Germantown's average day water demand is approximately 2.1 million gallons per day with a maximum daily demand of approximately 4.2 million gallons/day.

2035 Water Use Projections

Germantown's average day water demand in 2035 is projected to be approximately 3.0 million gallons per day with a maximum daily demand of approximately 6.0 million gallons/day.

WSSAP Recommendations

Based on the supply analysis, the Village will have sufficient supply through the 10-year planning period. In 2035, the combined reliable supply capacity is anticipated to be at 98%. In addition, the High/Boosted Pressure Zone would have a supply deficit in the event of failure of the booster station supply or discharge main. It is recommended that the Village continue planning for two (2) additional deep wells. One will be located in the Primary Pressure Zone and the second in the High/Boosted Pressure Zone. The Village should also plan for an elevated storage tank in the High/Boosted Pressure Zone. Additionally, the Village should plan to monitor water use annually and review the WSSAP a minimum of every five (5) years. Significant changes to water use may adjust the timeframe for the recommended improvements.

Public Participation

The Village shall undertake a public participation process and invite comments before finalizing the WSSAP. All comments will be incorporated via Appendix B.

1. Introduction

The Village of Germantown Water Utility is a municipally owned utility that provides water service to residences and businesses within the Village’s corporate boundaries and a portion of the Village of Menomonee Falls. The Village currently obtains water from six (6) groundwater wells. A seventh (7) well will be placed into service in January 2026. The water from two (2) of the wells is treated using pressure filtration and hydrous manganese oxide (HMO) addition at the well stations prior to being discharged to the distribution system. The distribution system is separated into three (3) pressure zones.

Wisconsin State Statute s281.348 requires all public water systems serving a population of 10,000 or more that withdraw water from waters of the State to have a water supply service area plan (WSSAP) prepared by December 31, 2025. Requirements and procedures for the WSSAP, established in Wisconsin Administrative Code NR 854 (Water Supply Service Area Planning Rule), became effective On July 1, 2024. In response to the need for this plan, the Village of Germantown retained Foth Infrastructure and Environment, LLC to prepare a WSSAP to meet the requirements set forth in NR 854.

1.1 Purpose

The objective of the WSSAP is to develop a process that helps a water utility ensure they can adequately supply their customers over a 10-to-20-year planning period. The WSSAP is intended to be used as a planning document and is not meant to contain the level of detail required for an engineered facility plan.

The purpose of this plan is to provide background on the Village of Germantown’s existing water system and water use, develop a high-level basis of criteria required to evaluate water supply and storage requirements, and identify the required supply and storage improvements necessary to serve the Village of Germantown over the next 10-year planning period until 2035.

1.2 Previously Approved Plans and Agreements

In the development of the WSSAP, the Village was requested to provide all previously approved planning documents to ensure a consistent plan. Planning documents used in the development of the WSSAP include:

- ◆ Village of Germantown 2050 Comprehensive Plan, Adopted September 26, 2022.
 - Amendment No. 1 – Adopted May 15, 2023
 - Amendment No. 2 – Adopted November 20, 2023
- ◆ A Regional Water Supply Plan for Southeastern Wisconsin – Planning Report No. 52, SEWRPC, 2010.
- ◆ Community Assistance Planning Report No. 70 (2nd Edition), Sanitary Sewer Service Area for the Village of Germantown and Environs, Washington County, Wisconsin, SEWRPC, 2023, 2025.

1.3 Scope of Work

The Village requested preparation of a 10-year WSSAP to accomplish the objectives set forth in NR 854 of the Wisconsin Administrative Code. The primary objectives of the work are listed below:

- ◆ Provide background information on the Village of Germantown.
- ◆ Determine the estimated water service area population throughout the planning period.
- ◆ Provide a summary of existing sources of supply.
- ◆ Provide a summary of the existing water system.
- ◆ Identify water quality issues in the Village’s existing sources of supply.
- ◆ Determine the Village’s projected water demand throughout the planning period.
- ◆ Summarize the basis of design criteria used for evaluating supply and storage capacities.
- ◆ Evaluate alternative water sources.
- ◆ Provide recommendations for future water system improvements and water sources.
- ◆ Provide recommendations for the analysis of consistency with other plans and agreements, public participation, and submission policies.
- ◆ Prepare a report documenting all phases of the plan.

1.4 Location

The Village of Germantown is located in the southeast corner of Washington County, Wisconsin. The Village is located northwest of Milwaukee and approximately 10 miles west of Lake Michigan. The Village encompasses a combined area of approximately 34.45 square miles. The northern portion of the Village is primarily rural residential and agricultural. The majority of the existing urban development is located in the southern central portion of the Village. The Village is bound on the north by the Town of Jackson, on the west by the Village of Richfield, on the east by the City of Mequon, and on the south by the Village of Menomonee Falls.

1.5 Water Service Area

The Village of Germantown currently provides water service within the corporate boundaries of the Village of Germantown and a portion of the Village of Menomonee Falls. As part of this Study, the existing water service area was approximated based on GIS data and billing meter data. The ultimate water service area coincides with the sanitary sewer service area that is anticipated to be approved by the Milwaukee Metropolitan Sewerage District (MMSD) and the Wisconsin Department of Natural Resources (WDNR) in early 2026. The parcels currently served and the ultimate service area are shown in **Figure 1-1**. Parcels shown on the figure within the ultimate service area boundary that are not served are either not developed or are served by private wells. To determine the proposed service area at the end of the planning period, the Village Staff identified all parcels they anticipate will be developed by 2035. These areas are shown in **Figure 1-1**.

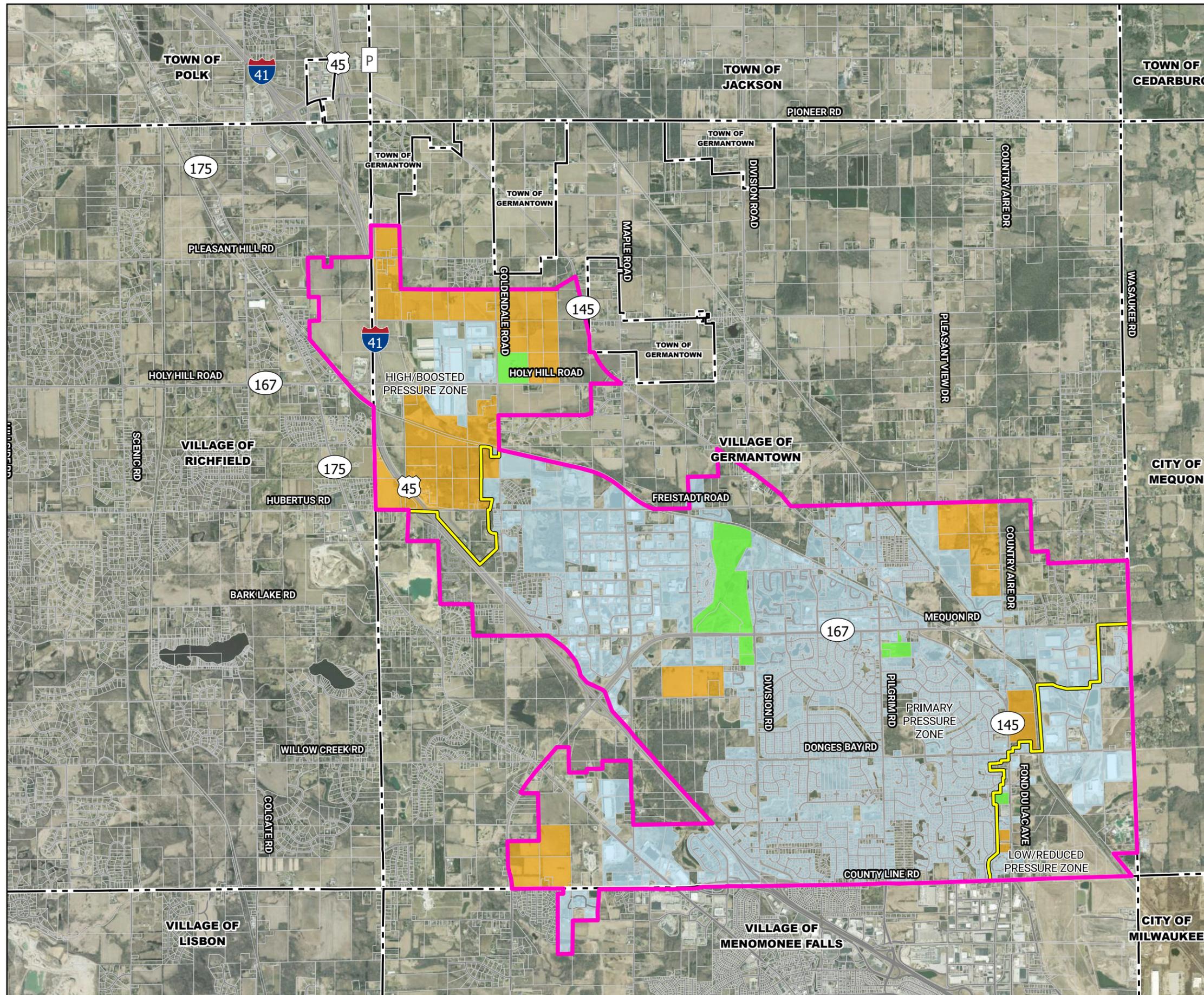
1.6 Land Use

Land use data, when combined with water use data, provides a basis for estimating water demands throughout the Village of Germantown. Existing land use classifications used in this report were based on current zoning information provided by the Village and are shown in **Figure 1-2**. The future land use for parcels proposed to be developed by 2035 was provided by the Village and is summarized in **Table 1-1**.

1.7 Population Projections

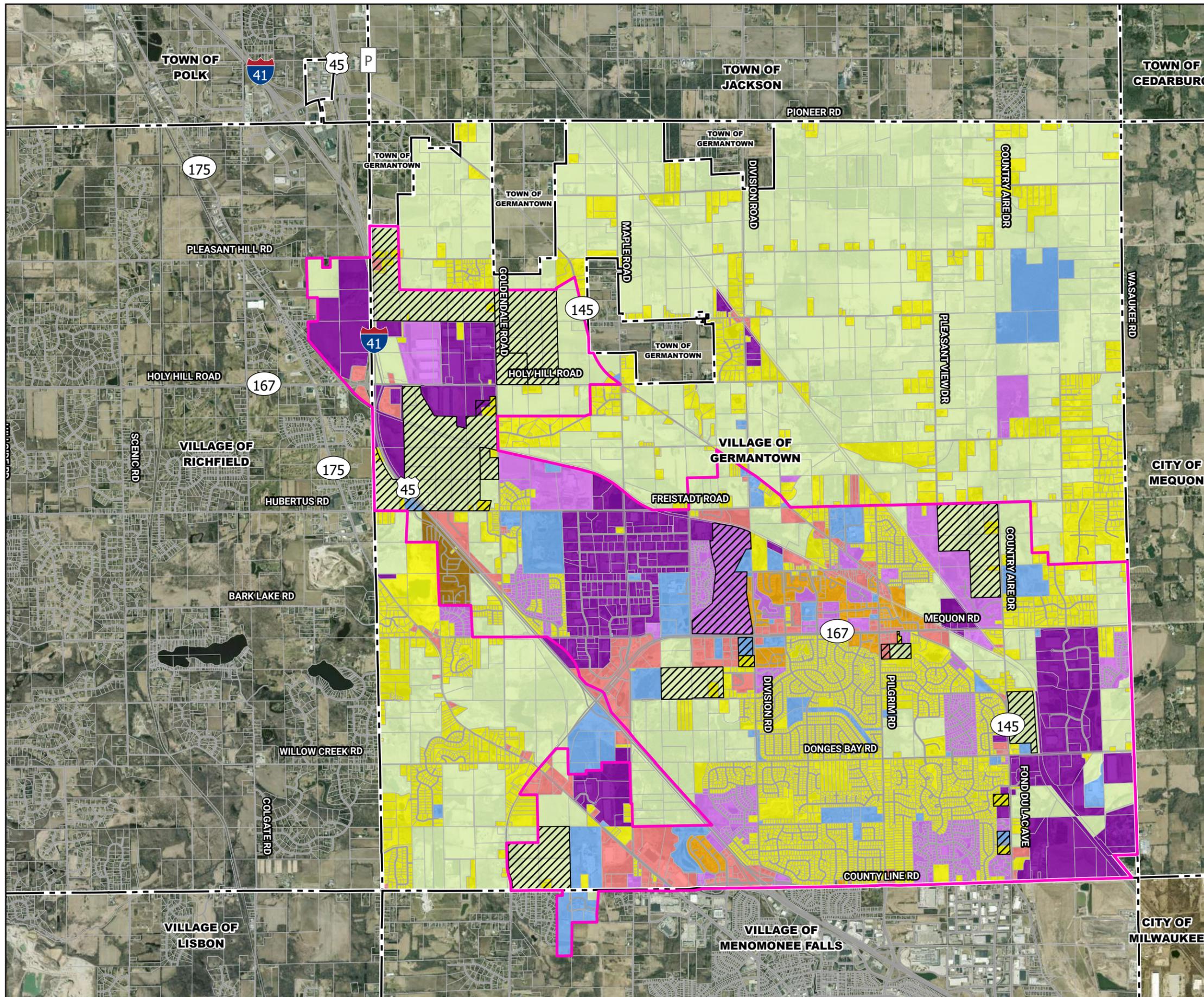
There is generally a close relationship between a community’s population and water use. As a result, it can be expected that water demands will increase as the population grows. Precise

VILLAGE OF GERMANTOWN
 FIGURE 1-1: FUTURE WATER SERVICE AREA



- Water Service Area
- Properties Currently Served
- 2035 Development Areas to be Served
- 2035 Development Areas Already Served
- Municipal Boundaries
- Parcels
- Roads
- Pressure Zone Boundary

VILLAGE OF GERMANTOWN
 FIGURE 1-2: LAND USE



- Water Service Area
- Municipal Boundaries
- Parcels
- Roads

- Existing Land Use
- Agriculture/Open Land
- Residential
- Multi-Family Residential
- MHP Mobile Home Park Residential
- Business
- Industrial
- Governmental/Institutional
- PDD Planned Development District
- 2035 Development and Rezoning Areas



Table 1-1 2035 Service Area Land Use Summary

Classification	Area (acres)		
	Existing	10 Year Planning Period	
		Add'l Dev.	Total
Low Density Residential	2,105	153	2,258
Medium Density Residential			0
High Density Residential	308	248	556
Residential Farmstead & Agriculture	230	(52)	178
Mixed Use		878	878
Commercial	664	(5)	659
Governmental/Institutional	467	(10)	457
Industrial	1,236	237	1,473
Park Open Space/Natural	4		4
Total	5,014	1,448	6,462

statistics on population and the number of dwelling units are reported by the Bureau of the Census for each decade. Population projections for each municipality in Wisconsin are developed by the Wisconsin Department of Administration (WDOA) and the Southeastern Wisconsin Regional Planning Commission (SEWRPC). The historic population estimates and WDOA and SEWRPC population projections are shown in **Figure 1-3**.

The water service area population was estimated based on the number of residential customers that are currently served by the Village of Germantown. The water service area population shown in **Figure 1-3** does not include Village residents that are served by private wells. It was assumed that by 2050, the water service population will include all Village residents currently served by private wells.

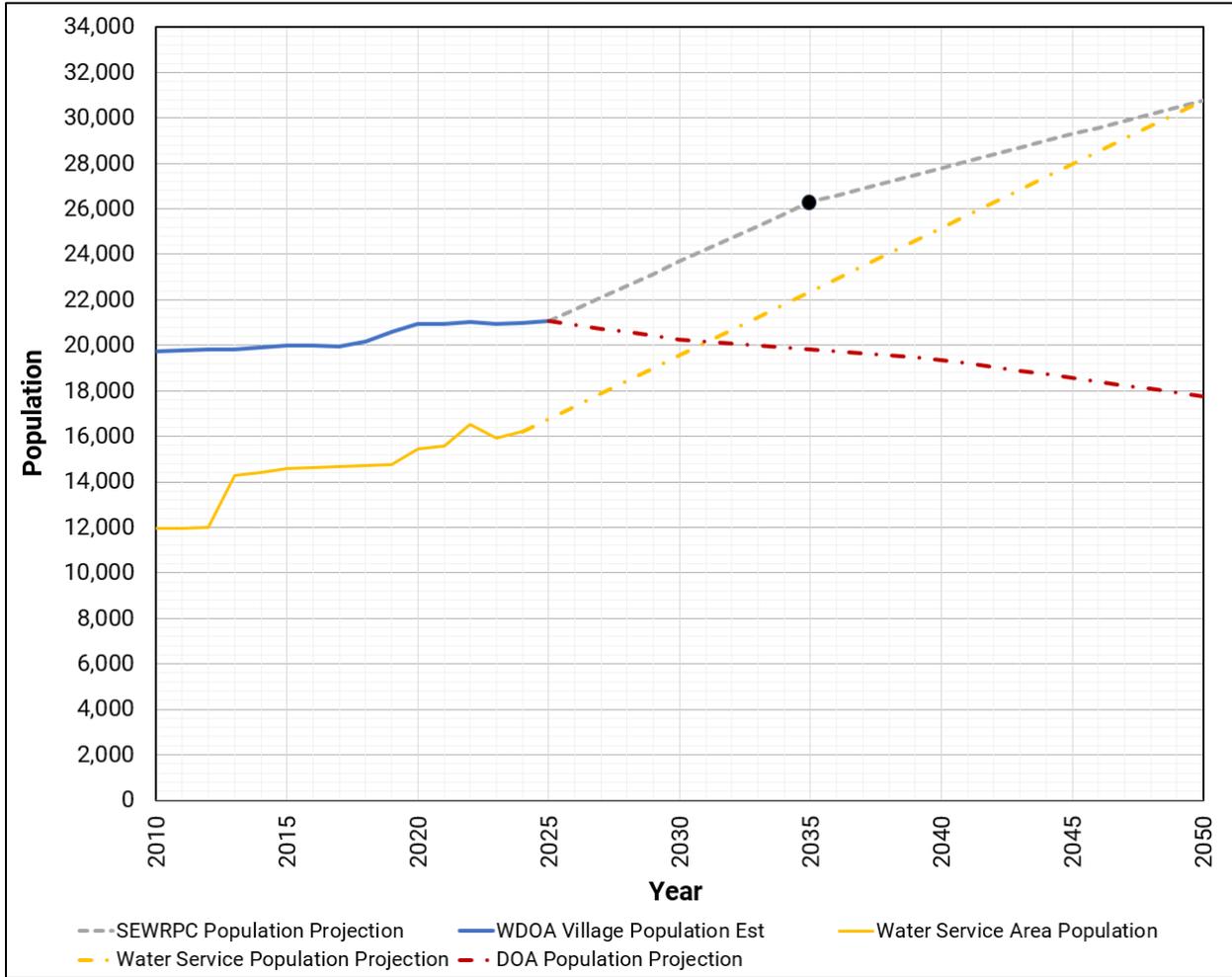
As shown, the population has increased slightly since 2010. WDOA is currently predicting that the Village’s population will begin to decline. This decline contradicts the anticipated growth previously projected by the WDOA and projected by the SEWRPC in the Village’s 2050 Comprehensive Plan. The 2035 and 2050 population, based on SEWRPC projections, is estimated to be **26,304** and **30,766** respectively.

For the purposes of this Study, the projected population of the Village will be based on SEWRPC projections. It was assumed that the growth will be linear from 2025 to 2035. The 2035 Village population and water service area population were estimated to be 26,304 and 22,400 respectively.

2. Sources of Supply

As part of the requirements for NR 854, the municipality is required to evaluate alternative sources of supply. There are over 11,000 public water systems in the State of Wisconsin, of which 268 are located in Washington County. A total of seven (7) of the 268 public water systems in Washington County are classified as municipal community water systems. Surface water and groundwater are both used as sources of supply by communities in the State of Wisconsin. Typically, smaller communities have relied on groundwater sources while larger communities adjacent to major rivers, large lakes, or the Great Lakes have used surface water.

Figure 1-3 Population Projection



2.1 Existing Sources of Supply

The Village is currently supplied by six (6) groundwater wells. A seventh well (Well No. 12) will be placed in-service in January 2026. A summary of the individual well characteristics is included in **Table 2-1**. The discharge capacity of the wells is regulated by the WDNR. The WDNR approved well discharge capacities are summarized in **Table 2-2**. The average annual water withdrawal rate for each of the seven (7) wells over the past 10 years is summarized in **Table 2-3**.

Table 2-1 Summary of Wells

Characteristic	Well 2	Well 3	Well 4	Well 5	Well 7	Well 11	Well 12
Construction Date	12/01/64	10/01/67	06/18/75	12/22/87	05/26/94	02/28/09	11/9/21
Service Zone	Primary	Primary	Primary	Primary	Primary	Primary	High
Diameter of Inner Casing, in	16.375	14	10	12	16	16	24
Depth of Inner Casing, ft	123	531	536.5	102.4	112	617	101
Diameter of Borehole, in	15.25	13.25	10	12	19.25 & 13	15	21
Depth of Borehole, ft	342	1,282	1,271	40	370	1,401	394
Static Water Level ^(a) , ft	9	188	260	1	4.5	326	58
Pumping Water Level ^(a) , ft	63	320	485	19	87.3	528	86
Specific Capacity ^(a) , gpm/ft	9.3	7.6	1.6	44.4	8.5	3.7	28.6
Well Pumping Rate ^(a) , gpm	500	1,001	357	800	700	751	800

(a) As reported on the Well Construction Reports.

Table 2-2 WDNR Approved Well Capacities

Well	WDNR HiCap Well I.D.	Approved Pump Capacity (gpm)	Approval Date	Maximum Monthly Approved Withdrawal (gpd)
Well 2	BH245	500	10/12/1962	720,000
Well 3	BH246	680	3/30/1967	979,000
Well 4	BH247	500	6/18/1975	604,000
Well 5	BH277	1,100	9/3/1987	1,224,000
Well 7	HN169	1,200	8/25/1993	1,728,000
Well 11	WJ910	750	5/12/2008	1,080,000
Well 12	AAJ181	800	9/7/2021	691,000
Maximum Average Monthly Withdrawal				6,418,600
Maximum Reliable Monthly Withdrawal				4,690,600

Table 2-3 Average Well Withdrawal Rates

Well	Average Daily Withdrawal (000's gpd)											Average	
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	000's gpd	gpm
2	155	156	198	200	219	182	224	220	179	177	183	190	132
3	231	293	301	218	62	264	349	364	288	243	257	261	181
4	207	245	249	236	270	185	325	172	231	248	248	238	165
5	569	552	388	378	397	333	382	451	422	452	358	425	295
7	611	742	658	543	631	536	691	625	498	526	366	584	406
11	535	305	289	259	347	284	189	232	289	331	321	307	213
12	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	2,308	2,292	2,083	1,833	1,926	1,785	2,160	2,064	1,905	1,976	1,733	2,006	1,393

2.2 Alternate Water Supply Sources

Alternative water sources near the Village of Germantown evaluated for this Study include surface water, groundwater wells, and connections to neighboring water systems. The following are summaries of the alternative water sources for the Village of Germantown.

2.2.1 Surface Water Supply Source

The significant surface waters in the vicinity of the Village of Germantown include the Menomonee River and Lake Michigan. The Menomonee River is not viewed as a suitable source of supply for the Village of Germantown and is not being considered as an alternative supply source. Lake Michigan is the source of supply for numerous communities in eastern Wisconsin and is considered a suitable source of supply for the Village of Germantown.

2.2.2 Groundwater Supply Source

Groundwater serves as the primary source of supply for all seven (7) of the municipal community water systems in Washington County, including the Village of Germantown. There are three (3) primary groundwater aquifers in the vicinity of the Village including the Quaternary-age sand and gravel (Sand and Gravel Aquifer), Silurian-age Niagara Formation (Niagara Aquifer), and the Ordovician-age and Cambrian-age sandstone formations (Sandstone Aquifer). The bedrock geology and known aquifers in the vicinity of Washington and Ozaukee Counties are shown in **Table 2-4**.

The Sand and Gravel Aquifer consist of outwash, glacial-lake deposits, or alluvium. The thickness of the Sand and Gravel Aquifer varies based on location and is primarily considered an adequate aquifer in areas west of the Village of Germantown. Generally, the Sand and Gravel Aquifer is not considered an adequate source of supply in the vicinity of the Village.

The Niagara aquifer in the vicinity of the Village of Germantown is predominantly comprised of dolomite rock. The Niagara Aquifer can be locally confined; however, it is often hydraulically connected to the overlying Sand and Gravel Aquifer. Groundwater flow and availability within the Niagara is often dependent on local horizontal and vertical fracturing, typical of dolomite aquifers; however, more recent studies have shown that porous coarse-grained stratigraphic units, specifically the Racine Formation and Mayville Formation (lowest formation in the aquifer), can significantly contribute to well yield. The Niagara and underlying sandstone aquifers are separated by the Maquoketa shale formation, which is considered a low-permeable aquitard formation.

The Sandstone Aquifer includes all Ordovician and Cambrian rocks older than the Maquoketa Shale formation. The Sandstone Aquifer in the Vicinity of the Village of Germantown can be divided into hydraulically connected subgroups consisting of the Galena-Platteville aquifer, upper sandstone aquifer, and lower sandstone aquifer. Of the three primary aquifers (Sand and Gravel, Niagara, and Sandstone), the Niagara and Sandstone aquifers are considered the most suitable sources of water supply for the Village.

Water quality in the individual aquifers varies based on location. Overall, the quality of the groundwater is fair to good; however, some water has characteristics that are unsuitable and require different levels of treatment to be suitable for industrial and domestic uses. Chemical characteristics of concern in the area include hardness, iron and manganese, sulfate, radium and

gross alpha, and arsenic. These characteristics need to be evaluated at individual sites to determine the adequacy of the individual aquifers.

Table 2-4 Washington County Bedrock Geology

System	Rock Unit	Lithology	Aquifer	Saturated Thickness	Water Yield	Comments
Quaternary	Holocene Deposits	Unconsolidated clay, silt, sand, gravel, and organic matter.	Sand and Gravel	0 – 500 ft; generally, 0 – 100 ft	Up to +500 gpm	Sufficient for domestic use
	Pleistocene Deposits	Unconsolidated clay, silt, sand, gravel, cobbles, boulders, and organic matter.				
Devonian	Undifferentiated Dolomite and Shale	Dolomite, brown to gray and gray shale. Crevices and solution channels are abundant but discontinuous.	Niagara	0 – 700 ft	Up to 1,000 gpm; generally 150 – 500 gpm	Sufficient for domestic, municipal, industrial, or irrigation use
Silurian	Undifferentiated Dolomite	Dolomite, white to gray. Crevices and solution channels are abundant but discontinuous.				
Ordovician	Maquoketa Shale	Shale, dolomitic, blue-gray; dolomitic beds as thick as 65 feet occur at the top.		Na	Na	Confining
	Galena Dolomite, Decorah Formation, and Platteville Formation, Undifferentiated	Dolomite and some slightly shaly dolomite, light-gray to blue-gray.	Sandstone	300 – 900 ft	Up to 1,200 gpm; generally 300 – 600 gpm	Rarely used for domestic use because of depth and cost
	St. Peter Sandstone	Sandstone, fine- to medium grained, white to light-gray; dolomitic in some places, shaly at base in some places.				
	Prairie du Chien Group	Dolomite, gray or white; some sandstone and sandy dolomite.				
Trempealeau Formation	Sandstone, very fine to medium grained; dolomite, light gray, interbedded with siltstone.					
Cambrian	Franconia Sandstone	Sandstone, very fine to medium grained, siltstone or dolomite, sandstone, dolomitic at base, medium to coarse grained.				
	Galesville Sandstone	Sandstone, fine to medium grained, light gray				
	Eau Claire Sandstone	Sandstone, fine to medium grained, light gray to light pink, dolomitic, some shale beds.				
	Mount Simon Sandstone	Sandstone, white to light-gray; fine- to coarse-grained, mostly medium; some beds dolomitic, some interbedded shale.				
Precambrian	Precambrian rocks, Undifferentiated	Crystalline rocks.				

2.2.3 Connection to Neighboring Water Communities

The municipal community water systems nearest in proximity to the Village of Germantown include the Village of Jackson located approximately 9 miles to the north, the Village of Menomonee Falls located approximately 4 miles to the south, and the City of Mequon located approximately 5 miles to the east.

The Village of Jackson is supplied with water from five (5) groundwater wells. The Village of Menomonee Falls is supplied with water from three (3) groundwater wells and surface water from Lake Michigan. The City of Mequon is supplied with surface water from Lake Michigan. The surplus capacities and transmission capacities of these water systems are unknown and are not currently being considered as alternative supply sources for the Village of Germantown.

3. Water Quality of Existing Sources

Water quality characteristics determine the level and type of treatment that is required for a municipal water supply. Raw water quality can be generally based on inorganic, radionuclide, and per/poly-fluoroalkyls (PFAS) characteristics. Water quality sample results obtained from the WDNR public water system database were analyzed as part of this Plan. Inorganic raw water quality characteristics from the existing groundwater wells are summarized in **Table 3-1**. Radionuclide raw water quality characteristics from the existing groundwater wells are summarized in **Table 3-2**.

As shown in the tables, raw water from Well No. 4 exceeds the secondary standard for iron, raw water from Well No. 12 exceeds the secondary standard for copper, and raw water from all wells except Wells No. 3 and No. 4 exceed the secondary standard for TDS. Raw water from Wells No. 3 and No. 11 exceed the Wisconsin DNR Maximum Contaminant Limit (MCL) for total radium and gross alpha.

Raw water samples have been collected at the entry points to the distribution system and analyzed for PFAS. The sampling results for PFAS are summarized in **Table 3-3**. As shown, PFAS concentrations are all below the MCL in the treated water entering the distribution system.

4. Existing Water System

The Village of Germantown's water system consists of a water distribution system, seven (7) groundwater wells, two (2) water treatment facilities (WTF), four (4) elevated storage tanks, one (1) booster station, and three (3) pressure reducing valve vaults.

The water distribution system provides a means of transporting and distributing water from the water treatment plants and wells to the utility customers and other points of usage. Per the Village of Germantown's 2024 Water, Electric, or Joint Utility Annual Report submitted to the Wisconsin Public Service Commission (WPSC), the Village's water distribution system consists of approximately 66.8 miles of water main ranging in size from 4-inch to 16-inch in diameter. The distribution system consists of three (3) pressure zones, including the Primary Pressure Zone, the High/Boosted Pressure Zone, and the Low/Reduced Pressure Zone. The pressure zones operate on different hydraulic grades, allowing the Village to serve a larger elevation range. A schematic of the Village of Germantown's existing water system is shown in **Figure 4-1**.

Table 3-1 Inorganic Raw Water Characteristics

Characteristic	Concentration							MCL	Secondary Standard
	Well 2 ^(a)	Well 3 ^(a)	Well 4 ^(a)	Well 5 ^(a)	Well 7 ^(a)	Well 11 ^(a)	Well 12 ^(b)		
Alkalinity, total, mg/l	300	300	260	330	310	210	350		
Aluminum, mg/l	ND	ND	ND	ND	ND	ND	ND		0.05 to 0.2
Antimony total, mg/l	0.00014	ND	ND	ND	ND	ND	ND	0.006	
Arsenic, mg/l	0.0013	ND	0.00059	0.0011	0.0009	0.0006	0.0017	0.010	
Asbestos, FIB/l	NT	NT	NT	NT	NT	NT		7	
Barium, mg/l	0.11	0.066	0.057	0.12	0.073	0.011	0.12	2	
Beryllium total, mg/l	ND	ND	ND	ND	ND	ND	ND	0.004	
Cadmium, mg/l	ND	0.00011	0.0001	ND	ND	ND	ND	0.005	
Calcium, mg/l	110	100	110	92	110	140	96		
Chloride, mg/l	81	4.8	5	92	56	18	81		250
Chromium, mg/l	ND	ND	ND	ND	ND	ND	ND	0.1	
Copper ug/l	NT	NT	NT	NT	NT	NT	2.7		1.0
Cyanide, mg/l	NT	NT	NT	NT	NT	NT	ND	0.2	
Fluoride, mg/l	0.49	0.41	0.58	0.46	0.51	0.68	0.14	4.0	2.0
Hardness, Total (CaCO3), mg/l	480	380	380	420	440	430	460		
Iron, mg/l	0.13	ND	0.3	ND	ND	ND	0.2		0.3
Lead, ug/l	NT	NT	NT	NT	NT	NT	ND		
Magnesium, mg/l	46	30	25	46	42	23	50		
Manganese, ug/l	6.4	9.9	29	17	5.4	ND	17		50
Mercury, mg/l	ND	ND	ND	ND	ND	ND	ND	0.002	
Nickel, mg/l	0.0061	0.002	0.0011	0.014	0.0032	0.0019	0.0017	0.1	
Nitrate, mg/l	NT	NT	NT	NT	NT	NT	0.053	10	
Nitrate-Nitrite (N03+N02), mg/l	0.93	ND	ND	0.087	0.27	ND	0.053	10	
Nitrite (N02-N), mg/l	ND	ND	ND	ND	ND	ND	ND	1	
Nitrogen-Ammonia as (N), mg/l	NT	NT	NT	NT	NT	NT			
pH, S.U.	7.19	7.52	7.47	7.25	7.19	7.22	7.27		
Residue, TOT, Filt (TDS), mg/l	650	440	460	570	600	640	550		500
Selenium, mg/l	ND	ND	ND	ND	ND	ND	ND	0.05	
Silver, ug/l	ND	ND	ND	ND	ND	ND	ND		0.1
Sodium, mg/l	31	7	7.5	36	33	18	37		
Strontium, ug/l	NT	NT	NT	NT	NT	NT			
Sulfate, mg/l	130	70	110	61	130	240	49		250
Thallium Total, mg/l	ND	ND	ND	ND	ND	ND	ND	0.002	

NT – Not Tested

ND – Non-Detect

(a) Results from sample collected on 02/14/2017.

(b) Results from sample collected on 11/2/2021.

Table 3-2 Radionuclide Raw Water Characteristics

Characteristic	Activity, pCi/l (unless indicated otherwise)							MCL
	Well 2 ^{(a)(e)}	Well 3 ^(b)	Well 4 ^{(c)(e)}	Well 5 ^{(a)(e)}	Well 7 ^{(a)(e)}	Well 11 ^(b)	Well 12 ^(d)	
Radium 226	ND	6.01	2.42	ND	0.553	10.2	ND	5
Radium 228	ND	5.2	1.86	ND	ND	4.75	ND	5
Total Combined Radium	ND	11.21	4.28	ND	0.553	14.95	ND	5
Gross Alpha (excl. radon & Uranium)	0.921	28.9	11.5	0.822	1.56	32.7	0.97	15
Radon-222	NT	NT	NT	NT	NT	NT	ND	
Combined Uranium, ug/l	0.575	0.2	0.289	0.351	0.286	0.424	ND	30

NT – Not Tested
 ND – Non-Detect
 (a) Results from sample collected on 01/29/2020.
 (b) Results from sample collected on 08/05/2025.
 (c) Results from sample collected on 03/07/2023.
 (d) Results from sample collected on 11/02/2021.
 (e) Results from grab at entry point to the system

Table 3-3 PFAS Treated Water Characteristics

Characteristic	Concentration, ng/l							MCL
	Well 2 ^(a)	Well 3 ^(a)	Well 4 ^(a)	Well 5 ^(a)	Well 7 ^(a)	Well 11 ^(b)	Well 12 ^(d)	
PFBS	0.66	NT	NT	0.56	0.46	NT	0.41	
PFHXS	0.73	NT	NT	0.64	0.53	NT	0.68	
PFOA	ND	ND	ND	ND	0.59	ND	0.54	
PFOS	0.64	ND	ND	0.34	1.1	ND	ND	
PFOA and PFOS Total	0.64	ND	ND	0.34	1.69	ND	0.54	70

NT – Not Tested
 ND – Non-Detect
 (a) Results from sample collected on 01/24/2023.

4.1 Primary Pressure Zone

The Primary Pressure Zone serves most of the Village and is supplied by six (6) groundwater wells (Wells No. 2, No. 3, No. 4, No. 5, No. 7, and No. 11). Well Stations No. 3 and No. 11 are provided with HMO feed systems and pressure filters for radium removal. Raw water from Wells No. 3 and No. 11 is pumped through pressure filters before being directly discharged to the distribution system. All well stations are provided with chlorination feed systems for disinfection and fluoride feed systems for prevention of dental caries.

There are three (3) spheroid style elevated storage tanks that provide storage in the Primary Pressure Zone. Water Towers No. 1 and No. 2 have total volumes of 500,000 gallons. Water Tower No. 3 has a total volume of 1,000,000 gallons.

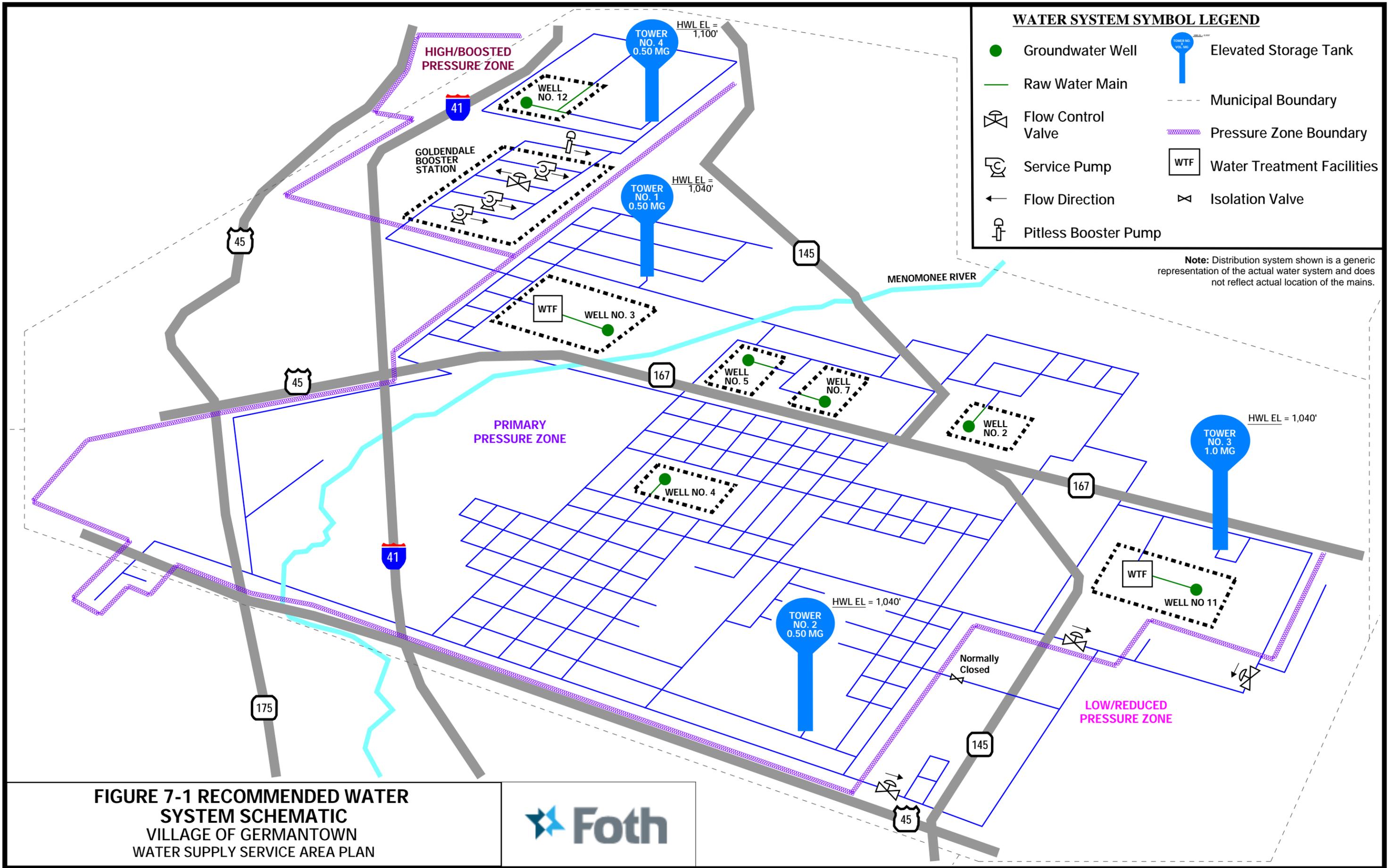


FIGURE 7-1 RECOMMENDED WATER SYSTEM SCHEMATIC
 VILLAGE OF GERMANTOWN
 WATER SUPPLY SERVICE AREA PLAN



4.2 High/Boosted Pressure Zone

The High/Boosted Pressure Zone serves the northwestern portion of the Village and is supplied by one (1) groundwater well (Well No. 12). Prior to discharge into the distribution system, raw water from Well No. 12 is treated with sodium hypochlorite for disinfection and fluoride for prevention of dental caries. There is one elevated storage tank that provides storage in the High/Boosted Pressure Zone. Water Tower No. 4 has a volume of 500,000 gallons and is a spheroid style tank.

4.3 Low/Reduced Pressure Zone

The Low/Reduced Pressure Zone serves the southeastern portion of the Village and is supplied entirely by the Primary Pressure Zone. Water enters the Low/Reduced Pressure Zone through three pressure reducing valve stations. There are currently no groundwater wells or elevated storage tanks in the Low/Reduced Pressure Zone.

4.4 Interzone Transfer

The Village operates one booster station. The Goldendale Booster Station houses two (2) service pumps and a flow control valve. In addition, a pitless style booster pump is located at the Goldendale Booster Station site. The service pumps and pitless booster pump allow transfer of water from the Primary Pressure Zone to the High/Boosted Pressure Zone. The flow control valve can transfer water from the High/Boosted Pressure Zone to the Primary Pressure Zone.

5. Water Use

The analysis of present and past water use, as well as the projection of future water use, serve as the basis for capital improvements planning for the water supply and distribution system. Present and past water use was analyzed using water use information obtained from the WPSC and the Village. From this information, basic water use design criteria was developed. When applied to the land use and/or population data, the basic water use design criteria can be used to determine the water use requirements at various stages of development. The following sections summarize the methodology used to determine the basic water use design criteria.

5.1 Past and Present Water Demand

An analysis of past and present water demand was completed based on information obtained from the PSC and Village. The total volume of water supplied to the users is measured at the well stations. Water use factors that must be determined to design storage, pumping, and pipeline facilities include average annual water use, maximum day water use, and peak hourly fluctuations.

5.2 Average Annual Water Use

The volume of water supplied to the Village from 2014 to 2024 was evaluated to determine the average annual water use. A summary of total water pumpage and total water sold is provided in **Table 5-1**. The total average annual finished water pumpage (treated water entering the Village) has decreased 19.4 percent since 2014 from 2.15 mgd to 1.73 mgd. The total water sold within the Village's water service area has decreased 18.0 percent since 2014 from 1.798 mgd to 1.475 mgd. For the purposes of this plan, a conservative existing average annual design demand of **2.10 mgd** will be used for evaluating system capacities.

Table 5-1 Average Annual Water Use

Year	Total Raw Water Pumpage (000's gal)	Total Finished Water Pumpage (000's gal)	Avg Annual Demand (gpd)	Total Sales (000's gal)	Average Annual Sales (mgd)	Non-Revenue (000's gal)	Non - Revenue (%)	Water Loss (000's gal)	Water Loss (%)
2014	787,390	784,990	2,150,658	656,303	1.798	128,687	16%	114,673	15%
2015	820,000	820,000	2,246,575	698,737	1.914	121,263	15%	104,459	13%
2016	755,701	755,701	2,064,757	582,434	1.596	173,267	23%	83,209	11%
2017	665,190	665,190	1,822,438	539,912	1.479	125,278	19%	39,280	6%
2018	702,879	702,879	1,925,696	582,561	1.596	120,318	17%	40,318	6%
2019	648,856	648,856	1,777,688	512,608	1.404	136,248	21%	98,407	15%
2020	791,124	791,124	2,161,541	655,106	1.795	136,018	17%	24,018	3%
2021	752,382	752,382	2,061,321	740,013	2.027	12,369	2%	122,631	16%
2022	668,326	668,326	1,831,030	613,236	1.680	55,085	8%	55,085	8%
2023	720,928	720,928	1,975,145	654,907	1.794	66,021	9%	66,021	9%
2024	634,329	634,329	1,733,139	538,236	1.475	96,093	15%	96,093	15%
Avg	722,464	722,246	1,977,272	615,823	1.687	106,422	15%	76,745	11%
5yr - Running Avg.	713,418	713,418	1,952,435	640,300	1.754	73,117	10%	72,770	10%

5.3 Historical Water Sales

A historical summary of the number of customers served and total water used based on individual customer class is shown in **Table 5-2**. As shown in the table, the residential, multi-family, commercial, industrial, and public water has been relatively constant. Overall, residential water use consists of approximately 42 percent of the total retail sales, multi-family water use consists of approximately 9 percent of the total retail sales, commercial water use consists of approximately 20 percent of the total retail sales, industrial water use consists of approximately 27 percent of the total retail sales, and public water use consists of approximately 2 percent of the total retail sales.

5.4 Non-Revenue Water

Non-revenue water includes the water that is pumped but not sold in the water system. Non-revenue water consists of unbilled authorized consumption, apparent losses, and real losses. Unbilled authorized consumption includes some metered uses such as water use to prevent freezing and unmetered estimated uses such as hydrant flushing and fire protection. Apparent losses include estimated losses due to unauthorized consumption (theft), data and billing errors, and meter inaccuracies. Real losses include estimated reported and unreported leakage. A summary of the Village's non-revenue water is included in **Table 5-1**. The total non-revenue water has ranged from 2 to 23 percent from 2014 to 2024 and averaged 15 percent. The total real losses have ranged from 3 to 16 percent from 2014 to 2024 and averaged 11 percent. For the purposes of this study, a non-revenue water use of **15 percent** will be used when determining water demands.

Table 5-2 Historical Water Sales

Year	Total Sales (000's Gal)	Residential		Multi-Family		Commercial		Industrial		Public	
		000's Gal	% of Retail	000's Gal	% of Retail	000's Gal	% of Retail	000's Gal	% of Retail	000's Gal	% of Retail
2014	656,303	264,880	40%	49,317	8%	106,747	16%	227,407	35%	7,952	1%
2015	698,737	270,293	39%	51,143	7%	121,561	17%	247,368	35%	8,372	1%
2016	582,434	262,740	45%	49,760	9%	126,118	22%	134,939	23%	8,877	2%
2017	539,912	255,115	47%	49,659	9%	128,166	24%	96,416	18%	10,556	2%
2018	582,561	249,242	43%	51,029	9%	128,235	22%	144,840	25%	9,215	2%
2019	512,608	242,644	47%	50,407	10%	127,015	25%	82,754	16%	9,788	2%
2020	655,106	248,957	38%	77,153	12%	117,846	18%	203,066	31%	8,084	1%
2021	740,013	242,287	33%	82,109	11%	125,878	17%	281,292	38%	8,447	1%
2022	613,236	241,063	39%	55,748	9%	118,982	19%	185,523	30%	11,925	2%
2023	654,907	258,972	40%	62,921	10%	142,259	22%	179,538	27%	11,217	2%
2024	538,236	241,955	45%	55,103	10%	123,151	23%	108,077	20%	9,950	2%
Avg.			42%		9%		20%		27%		2%

5.5 Seasonal Water Use

Understanding seasonal fluctuations in water usage are important factors in the design and sizing of water supply and storage facilities. Monthly water use information for the Village was determined using WPSC annual reports from 2014 to 2024. A summary of the monthly water use is included in **Table 5-3**.

Table 5-3 Summary for Monthly Water Use from 2014-2024

Month	Water Use		Percent of Average Month	Average Percent of Total Pump
	000's Gal	gpd		
January	57,693	1,861,070	96%	8%
February	49,439	1,765,695	82%	7%
March	54,692	1,764,258	91%	8%
April	50,976	1,699,191	85%	7%
May	61,046	1,969,226	101%	8%
June	66,796	2,226,542	111%	9%
July	74,495	2,403,076	123%	10%
August	74,952	2,417,795	125%	10%
September	64,366	2,145,533	107%	9%
October	59,115	1,906,941	98%	8%
November	53,427	1,780,894	88%	7%
December	55,464	1,789,152	92%	8%
Total				100%

5.6 Top 10 Water Users

The ten (10) largest water users for each year from 2014 through 2024 were provided by the Village. The largest water users by volume, as reported by the Village, in 2024 are summarized in **Table 5-4**. The largest water user in 2024 was G & H Pets, LLC. These top users make up approximately 30 percent of the total water sales in Germantown. A summary of the top 10 users since 2014 is included in **Appendix A**.

Table 5-4 2024 Largest Water Users by Volume

Customer	Use Category	Amount Sold (000's gal)	Amount Sold (gpd)	Percent of Total Annual Water Sold
G & H PETS LLC	Industrial	86,470 ^(a)	236,904	16.1
DSM FOOD SPECIALTIES	Industrial	16,407	44,951	3.0
SUNLITE PLASTICS	Industrial	10,059	27,559	1.9
HILLTOP HIGHLANDS/BROOKSIDE	Residential	8,711	23,866	1.6
FIRST CHOICE INGREDIENTS	Industrial	8,480	23,233	1.6
WEST ROCK	Industrial	8,359	22,901	1.6
DSM FOOD SPECIALTIES (METER 2)	Industrial	7,600	20,822	1.4
STERLING PHARMA SOLUTIONS	Industrial	7,402	20,279	1.4
FAIRWAY KNOLL	Multifamily	4,314	11,819	0.8
GERMANTOWN HIGH SCHOOL	Institutional	4,042	11,074	0.8
Total		161,884	443,408	30.1

(a) G & H Pets, LLC's meter was replaced in 2025 due to inaccurate readings. Amount sold in 2024 was estimated based on 4th quarter readings from 2025.

5.7 Maximum Day Water Use

The maximum day demand is defined as the amount of water pumped during a single day of the year with the highest water usage. The maximum day demand is often expressed as a ratio (or factor) of the annual average day pumpage. Maximum day demand ratios vary from municipality to municipality based on factors such as population, primary land use, climate, and economic status.

Typically, maximum day demands usually occur during the summer months, on hot days, and during dry periods. The high demands are typically related to watering lawns, irrigation/gardening, washing, and industrial cooling. It is important to note that artificial demands caused by water main breaks, tank filling/overflows, or hydrant flushing be identified and excluded from the evaluation for determining maximum day demands.

Water records were analyzed to determine the maximum daily demand for the Village. Maximum day demand is recorded in the annual WPSC reports. A summary of the historical maximum day water use in the Village is shown in **Table 5-5**. As shown, the ratio of maximum day water use to average annual water use has ranged from 1.55 to 2.15. The majority of the maximum day demands occur during periods of high demands in summer. However, some of the highest maximum day demands have historically occurred when one of the Village's largest water consumers takes their private well offline and exclusively relies on the Village as its sole source of supply.

For the purposes of this plan, an evaluation was performed to determine the appropriate maximum day demand ratio to be used for evaluating the water system capacity. A summary of the evaluation is shown in **Table 5-6**. For the years 2014 to 2024, the average maximum day demand ratio was 1.78, with a standard deviation of 16 percent. To evaluate the existing water supply and storage needs for this plan, a **maximum day to average day ratio of 2.00** will be used. Even with the artificial maximum day demands, this ratio provides a confidence level greater than 90 percent based on maximum day pumpage ratios reported over the evaluation period.

Table 5-5 Historical Maximum Day Water Use Summary

Year	Avg. Day Pumpage (MGD)	Max. Day Pumpage (MGD)	Date of Max. Day	Day of Week	Ratio of Max. to Avg. Day	Reason for Max. Day
2014	2.15	4.627	5/21	Wednesday	2.15	Large User On-Line.
2015	2.25	3.695	7/23	Thursday	1.64	High Demand.
2016	2.06	3.643	7/13	Wednesday	1.76	High Demand.
2017	1.82	3.418	8/23	Wednesday	1.88	High Demand.
2018	1.93	3.433	7/13	Friday	1.78	High Demand.
2019	1.78	3.039	9/6	Friday	1.71	High Demand.
2020	2.16	3.342	7/31	Friday	1.55	High Demand.
2021	2.06	4.038	6/9	Wednesday	1.96	High User.
2022	1.83	3.285	8/10	Wednesday	1.79	Summer User.
2023	1.98	3.207	-	-	1.62	-
2024	1.73	3.026	-	-	1.75	-

Table 5-6 Maximum Day to Average Day Ratio Evaluation

Item	2014 – 2024
Number of Years of Data	11
Maximum Ratio - Max. to Avg. Day Pumpage	2.15
Minimum Ratio - Max. to Avg. Day Pumpage	1.55
Average Ratio Max. to Avg. Day Pumpage	1.78
Standard Deviation	16%
Confidence Level (%)	Ratio of Max. to Avg. Day Pumpage
	2014 – 2024
80%	1.92
85%	1.95
90%	1.99
95%	2.05
98%	2.11
99%	2.15

5.8 Unit Consumption Values

Projections of customer demands serve as the basis for capital improvements planning. Water consumption data for the Village serves as the basis for estimating future water needs within the future water service area. All the residential, commercial, industrial, and public customers in the Village are metered. The water data and number of customers for each customer class are presented in **Table 5-7**. Water use and customer data can be used to develop per capita and per customer unit consumption values and consumption values on an acreage basis. The per capita and per acreage unit consumption values are necessary to determine future water requirements for the design of supply and storage facilities.

Table 5-7 Metered Sales

Year	Total Sales 000's Gal	Residential		Multi-Family		Commercial		Industrial		Public	
		000's Gal	No. of Cust.	000's Gal	No. of Cust.	000's Gal	No. of Cust.	000's Gal	No. of Cust.	000's Gal	No. of Cust.
2014	656,303	264,880	4,774	49,317	107	106,747	433	227,407	22	7,952	23
2015	698,737	270,293	4,840	51,143	108	121,561	451	247,368	22	8,372	19
2016	582,434	262,740	4,857	49,760	108	126,118	450	134,939	22	8,877	23
2017	539,912	255,115	4,865	49,659	108	128,166	466	96,416	22	10,556	23
2018	582,561	249,242	4,868	51,029	109	128,235	455	144,840	22	9,215	23
2019	512,608	242,644	4,878	50,407	110	127,015	459	82,754	23	9,788	23
2020	655,106	248,957	4,898	77,153	141	117,846	462	203,066	26	8,084	23
2021	740,013	242,287	4,957	82,109	141	125,878	465	281,292	26	8,447	25
2022	613,236	241,063	5,294	55,748	145	118,982	454	185,523	24	11,925	33
2023	654,907	258,972	5,034	62,921	147	142,259	448	179,538	25	11,217	24
2024	538,236	241,955	5,143	55,103	149	123,151	470	108,077	25	9,950	34

5.8.1 Residential Water Use

Residential water use consists of dwelling buildings that serve a single family or two-family unit through a single meter. Residential water use accounts for the majority of water use within the Village. The residential water use was estimated based on gallon per capita day (gpcd) and gallon per acreage day (gpac) basis.

The residential water use per capita was estimated based on 2024 annual residential water use and estimated water service area population. The estimated water service area population includes customers classified as residential and multi-family. A summary of residential water use is shown in **Table 5-8**. A per capita average day water use of **50 gpcd** will be used for projecting future residential water use.

Table 5-8 Residential Water Use

Year	No. of Customers	Est. Water Service Population	Annual Water Use (000 gal's)	Per Customer (gpd)	Per Capita (gpd)
2014	4,774	14,413	264,880	152	50
2015	4,840	14,602	270,293	153	51
2016	4,857	14,646	262,740	148	49
2017	4,865	14,666	255,115	144	48
2018	4,868	14,694	249,242	140	46
2019	4,878	14,740	242,644	136	45
2020	4,898	15,427	248,957	139	44
2021	4,957	15,578	248,957	138	44
2022	5,294	16,522	241,063	125	40
2023	5,034	15,898	258,972	141	45
2024	5,143	16,218	241,955	129	41
Avg.				140	46

Residential water use, on an acreage basis, was estimated based on parcels with access to water service that were zoned as residential in 2024 and annual residential water use. There are approximately 2,105 acres of land within the existing service area that had access to water service that was classified for residential use. Approximately 241,955,000 gallons of water was

used for residential purposes in 2024. On this basis, residential water use is 314 gpad. Due to the large fluctuation of dwelling unit densities in residential land, a conservative design factor of **400 gpad** will be used for projecting future residential water.

5.8.2 Multi-Family Water Use

Multi-family residential water use includes multiple-dwelling unit buildings serving three (3) or more family units through a single meter. The multi-family residential water use was estimated based on per capita and per acreage basis.

The multi-family water use per capita was estimated based on annual multi-family water use and estimated water service area population. A summary of multi-family water use is shown in **Table 5-9**. A per capita average day water use of **10 gpcd** will be used for projecting future multi-family water use.

Table 5-9 Multi-Family Water Use

Year	No. of Customers	Est. Water Service Population	Annual Water Use (000 gal's)	Per Customer (gpd)	Per Capita (gpd)
2014	107	14,413	49,317	1,263	9
2015	108	14,602	51,143	1,297	10
2016	108	14,646	49,760	1,262	9
2017	108	14,666	49,659	1,260	9
2018	109	14,694	51,029	1,283	10
2019	110	14,740	50,407	1,255	9
2020	141	15,427	77,153	1,499	14
2021	141	15,578	82,109	1,595	14
2022	145	16,522	55,748	1,053	9
2023	147	15,898	62,921	1,173	11
2024	149	16,218	55,103	1,013	9
Avg.				1,269	10

Multi-family water use, on an acreage basis, was estimated using high density land use areas within the existing service area and 2024 annual multi-family water use. There are approximately 308 acres of land within the existing service area that is classified for multi-family use. Approximately 55,103,000 gallons of water was used for multi-family purposes in 2024. On this basis, multi-family water use is 489 gpad. A conservative design factor of **500 gpad** will be used for projecting future multi-family water use.

5.8.3 Commercial/Business Park Water Use

Commercial water use consists of business, not-for-profit organizations, and other institutions (with the exception of governmental) that provide goods or services and that take services for non-residential purposes. Commercial type water uses include churches, private schools/colleges/universities, restaurants, gas stations, strip malls, co-ops, etc. The commercial water use was estimated based on per capita and per acreage basis.

The commercial water use per capita was estimated based on 2024 annual commercial/business park water use and estimated water service area population. A summary of the Village's existing commercial/business park water use is shown in **Table 5-10**. A per capita average day water use of **25 gpcd** will be used for projecting future commercial water use.

Table 5-10 Commercial/Business Park Water Use

Year	No. of Customers	Est. Water Service Population	Annual Water Use (000 gal's)	Per Customer (gpd)	Per Capita (gpd)
2014	433	14,413	106,747	675	20
2015	451	14,602	121,561	738	23
2016	450	14,646	126,118	768	24
2017	466	14,666	128,166	754	24
2018	455	14,694	128,235	772	24
2019	459	14,740	127,015	758	24
2020	462	15,427	117,846	699	21
2021	465	15,578	117,846	694	21
2022	454	16,522	118,982	718	20
2023	448	15,898	142,259	870	25
2024	470	16,218	123,151	718	21
Avg.				742	22

Commercial/business park water use, on an acreage basis, was estimated using commercial land use areas within the existing service area and 2024 annual commercial water use. There are approximately 664 acres of land within the existing service area that is classified for commercial use. Approximately 123,151,000 gallons of water was used for commercial purposes in 2024. On this basis, commercial/business park water use is 507 gpad. A design factor of **550 gpad** will be used for projecting future commercial/business park water use.

5.8.4 Industrial Water Use

Industrial water users include customers that engage in the manufacturing or production of goods. Industrial water use per customer varies greatly depending on the type of industry. The industrial water use was estimated based on per capita and per acreage basis.

The industrial water use per capita was estimated based on 2024 annual industrial water use and estimated water service area population. A summary of industrial water use is shown in **Table 5-11**. A per capita average day water use of **30 gpcd** will be used for projecting future industrial water use.

Table 5-11 Industrial Water Use

Year	No. of Customers	Est. Water Service Population	Annual Water Use (000 gal's)	Per Customer (gpd)	Per Capita (gpd)
2014	22	14,413	227,407	28,320	43
2015	22	14,602	247,368	30,805	46
2016	22	14,646	134,939	16,804	25
2017	22	14,666	96,416	12,007	18
2018	22	14,694	144,840	18,037	27
2019	23	14,740	82,754	9,858	15
2020	26	15,427	203,066	21,398	36
2021	26	15,578	203,066	21,398	36
2022	24	16,522	185,523	21,178	31
2023	25	15,898	179,538	19,675	31
2024	25	16,218	108,077	11,844	18
Avg.				19,211	30

Industrial water use, on an acreage basis, was estimated using industrial land use areas within the existing service area and 2024 annual industrial water use. There are approximately 1,236 acres of land within the existing service area that is classified for industrial use. Approximately 108,077,000 gallons of water was used for industrial purposes in 2024. On this basis, industrial water use is 239 gpad. Due to the large fluctuation in potential water use for an industry, a conservative design factor of **500 gpad** will be used for projecting future industrial water use.

5.8.5 Public Water Use

Public (Government/Institutional) water users include customers that are agencies of local, state, or federal government, or a local, state, or federal entity. Public water users also include public schools. Public water use was estimated based on per capita and per acreage basis.

The public water use per capita was estimated based on 2024 annual public water use and estimated water service area population. A summary of public water use is shown in **Table 5-12**. A per capita average day water use of **5 gpcd** will be used for projecting future public water use.

Table 5-12 Public Water Use

Year	No. of Customers	Est. Water Service Population	Annual Water Use (000 gal's)	Per Customer (gpd)	Per Capita (gpd)
2014	23	14,413	7,952	947	2
2015	19	14,602	8,372	1,207	2
2016	23	14,646	8,877	1,057	2
2017	23	14,666	10,556	1,257	2
2018	23	14,694	9,215	1,098	2
2019	23	14,740	9,788	1,166	2
2020	23	15,427	8,084	963	1
2021	25	15,578	8,084	886	1
2022	33	16,522	11,925	990	2
2023	24	15,898	11,217	1,280	2
2024	34	16,218	9,950	802	2
Avg.				1,059	2

Public water use, on an acreage basis, was estimated using public land use areas within the existing service area and 2024 annual public water use. There are approximately 467 acres of land within the existing service area that is classified for public use. Approximately 9,950,000 gallons of water was used for public purposes in 2024. On this basis, public water use is 58 gpad. A conservative design factor of **100 gpad** will be used for projecting future public water use.

5.9 Summary of Design Factors

Demand design factors developed in the previous sections are summarized in **Tables 5-13, 5-14, and 5-15**. These factors are used for determining the design demands used to evaluate the required capacities of the proposed supply and storage facilities. Future developments will need to be evaluated to ensure their water use falls within the design criteria. Further evaluations

will be required if a development exceeds these design factors to ensure that the Village can provide adequate service.

Table 5-13 Design Demand Rates

Demand Parameter	Value
Maximum Day to Average Day Ratio	2.00
Percent of Non-Revenue Water	15%

Table 5-14 Ultimate Water Use Design Factors per Acre

User Classification	Average Day Value, gpad
Residential	400
Multi-Family Residential	500
Commercial/Business Park	550
Industrial	500
Public	100

Table 5-15 Ultimate Water Use Design Factors per Capita

User Classification	Average Day Value, gpcd	Maximum Day Value, gpcd
Residential	50	100
Multi-Family Residential	10	20
Commercial/Business Park	25	50
Industrial	30	60
Public	5	10
Total Sales	120	240
Non-Revenue (15%)	18	36
Total Water Use	138	276

5.10 Design Water Demands

The existing design demand based on existing water use discussed in the previous sections are summarized in **Table 5-16**. The proposed design demands anticipated in 2035 were developed based on the design demand factors and land use information obtained from the 2050 Comprehensive Plan. The additional demands anticipated in 2035, based on land use classification provided by the Village, are summarized in **Table 5-17**. The future 2035 water system design demands are summarized in **Table 5-18**.

Table 5-16 Existing Design Demands

Demand Criteria	Existing Design Demands					
	Combined System		Primary & Low/Reduced Pressure Zone		High/Boosted Pressure Zone	
	(mgd)	(gpm)	(mgd)	(gpm)	(mgd)	(gpm)
Average Day Demand	2.10	1458	1.85	1285	0.25	174
Max. Day Demand	4.20	2917	3.70	2569	0.50	348
Peak Hour Demand	5.67	3938	4.99	3468	0.68	469

Table 5-17 2035 Design Demands Classifications

Classification	2035 Planning Period		
	Add'l Dev. Acres	Design Factor (gpad)	Water Demand (gpd)
Low Density Residential	153	400	61,000
Medium Density Residential	0	400	0
High Density Residential	248	500	124,160
Residential Farmstead & Agriculture	(52)	0	0
Mixed Use	878	550	482,829
Commercial	(5)	550	(2,778)
Governmental/Institutional	(10)	100	(1,040)
Industrial	237	500	118,260
Park Open Space	0	0	0
Average Day Water Use, gpd			782,431
Non-Revenue Water (15%), gpd			117,365
Total Average Day Demand, gpd			899,796
Total Maximum Day Demand, gpd			1,799,591

Table 5-18 2035 Design Demands

Demand Criteria	2035 Design Demands					
	Combined System		Primary & Low/Reduced Pressure Zone		High/Boosted Pressure Zone	
	(mgd)	(gpm)	(mgd)	(gpm)	(mgd)	(gpm)
Average Day	3.01	2,091	2.23	1,549	0.78	542
Max. Day Demand	6.02	4,182	4.46	3,098	1.56	1,084
Peak Hour Demand	8.13	5,645	6.02	4,182	2.11	1,463

6. Supply and Storage Analysis

Reliable supply and storage capacity evaluations were performed to determine if the existing water system could adequately serve the projected 2035 demand requirements of the Village of Germantown. The reliable supply and storage capacity evaluations and the design criteria used for this evaluation are summarized in the following sections.

6.1 Reliable Supply Capacity Evaluation

The minimum reliable supply capacity for the combined system and individual pressure zones should equal the maximum day demand with the largest source of supply out-of-service. This will allow pumping units or treatment systems to be taken out-of-service for repair and still enable the utility to meet demand requirements. This will also allow supply facilities to replenish storage facilities during off-peak hours while depletion of available storage occurs during peak demand hours.

As previously mentioned, no wells are located in the Low/Reduced Pressure Zone. The sole source of supply for the Low/Reduced Pressure Zone is the Primary Pressure Zone. As a result, for the purposes of this Plan, water demands within the Low/Reduced Pressure Zone are included in the Primary Pressure Zone capacity evaluations.

For the Village of Germantown, two (2) criteria were evaluated to determine the reliable supply capacity of the combined system, as well as each individual pressure zone. The two (2) criteria included:

- ◆ Raw water (well) supply capacity.
- ◆ Interzone transfer capacity.

The raw water well supply capacity is the capacity of the existing supply sources (wells) to supply water from the aquifer to the distribution system. For the purposes of this Plan, the individual well reliable capacity will be considered as 100 percent of the design capacity of the well when operating 24 hours per day. The total reliable raw water supply capacity for the system/pressure zone is the sum of the individual well's reliable capacity less the largest well.

The interzone transfer capacity is the capacity of the transfer pumps and/or flow control valves to deliver water from one pressure zone to another pressure zone. The capacity of the transfer pumps is based on several factors including:

- ◆ Available capacity in the source pressure zone.
- ◆ Capacity of the transfer pumps and flow control valves.
- ◆ Supply and discharge main capacity.
- ◆ Station operation.

For the Village of Germantown's Goldendale Booster Station, the transfer capacity from the Primary Pressure Zone to the High/Boosted Pressure Zone is limited by the supply main capacity of 2,300 gpm and operation of the booster station. The booster station only allows for either the pitless pump or the transfer pumps to operate at one time. A summary of criteria used to determine the reliable supply capacity of each pressure zone and combined system is shown in **Table 6-1**.

As shown in **Table 6-1**, the Village of Germantown's combined system reliable capacity is **6.16 mgd**. The combined systems' reliable capacity is limited by the largest well, Well No. 7, being out-of-service. The Primary and Low/Reduced Pressure Zones reliable capacity is **5.00 mgd**. The Primary and Low/Reduced Pressure Zones reliable capacity is also limited by the largest well, Well No. 7, being out-of-service. The High/Boosted Zone's 2035 maximum day demand exceeds

Table 6-1 Existing Reliable Supply and System Capacity Evaluation

Description	Combined System Capacity		Main & Low/Reduced Pressure Zone Capacity		High/Boosted Pressure Zone Capacity	
	(gpm)	(MGD)	(gpm)	(MGD)	(gpm)	(MGD)
Raw Water Supply (Wells)						
Well 2	500	0.72	500	0.72		
Well 3	700	1.01	700	1.01		
Well 4	425	0.61	425	0.61		
Well 5	1,100	1.58	1,100	1.58		
Well 7	1,200	1.73	1,200	1.73		
Well 11	750	1.08	750	1.08		
Well 12	800	1.15			800	1.15
Interzone Transfer Capacity						
Goldendale Transfer Pump 1					850	1.22
Goldendale Transfer Pump 2					850	1.22
Goldendale Pitless Transfer Pump					2,300	3.31
Goldendale Flow Control Valve			1,700	2.45		
Criteria 1 – Raw Water Supply Capacity						
Total Well Supply Capacity	5,475	7.88	4,675	6.73	800	1.15
<u>Less: Largest Well Supply Unit</u>	<u>1,200</u>	<u>1.73</u>	<u>1,200</u>	<u>1.73</u>	<u>800</u>	<u>1.15</u>
Reliable Raw Water Supply Unit	4,275	6.16	3,475	5.00	0	0.00
Criteria 2 – Interzone Transfer Capacity						
Total Booster Pump Capacity					4,000	5.76
<u>Less: Largest Booster Pump Unit</u>					<u>2,300</u>	<u>3.31</u>
Reliable Transfer Pump Supply					1,700	2.45
Reliable Interzone Transfer Capacity			0	0	1,578	2.27
RELIABLE SUPPLY CAPACITY	4,275	6.16	3,475	5.00	1,578	2.27

the total well capacity in the High/Boosted Zone, so there is no additional capacity for the transfer valve to supply water from the High/Boosted Zone to the Primary Zone.

The High/Boosted Pressure Zones reliable capacity is **2.27 mgd**. The High/Boosted Zones reliable capacity is limited when the only well in the High/Boosted Zone, Well No. 12, is out-of-service; however, the service pumps at the Goldendale Booster Station allow water to be transferred from the Primary and Low/Reduced Pressure Zones to the High/Boosted Pressure Zone. The allowable transfer capacity was determined to be the difference between the Primary and Low/Reduced Pressure Zones supply capacity and the Primary and Low/Reduced Zones 2035 maximum day demand.

A recommended reliable capacity evaluation was performed to ensure the reliable supply capacities could meet the projected 2035 water demands. The results of the evaluation are shown in **Table 6-2**. As shown, the Village currently has adequate supply capacity to meet the projected 2035 demands in the combined system and each pressure zone individually.

Table 6-2 2035 Recommended Reliable Capacity Evaluation

Criteria	Combined System	Primary and Low/Reduced Pressure Zone	High/Boosted Pressure Zone
Total Average Annual Pumpage (MGY)	1,099	814	285
Average Day Pumpage (MGD)	3.01	2.23	0.78
(Gallons Per Minute)	2,091	1,549	542
Design Maximum Day Pumpage (MGD)	<u>6.02</u>	<u>4.46</u>	<u>1.56</u>
(Gallons Per Minute)	4,182	3,098	1,084
Existing Reliable Supply Capacity (MGD)	<u>6.16</u>	<u>5.00</u>	<u>2.27</u>
(Gallons Per Minute)	<u>4,275</u>	<u>3,475</u>	<u>1,578</u>
Additional Reliable Supply Capacity Required (gpm)	None	None	None

Note: Design Maximum Day Pumpage is based upon a Maximum Day Demand Factor of 2.00.

6.2 Water Storage Facilities Design Criteria

Elevated storage provides water for fire protection, peak demand periods use, and operational flexibility for water supply facilities. Operating storage is required to provide a control range to stop and start pumping equipment. Equalizing (peak hour) storage furnishes the increments of demand which exceed the capacity of the supply facilities. Firefighting reserve furnishes the increments of demand imposed during a firefighting period that exceeds the capacity of the supply facilities.

It is anticipated that the peak hour demands and reliable supply capacities will change as the community grows and water supply improvements are implemented. The fire protection requirements may change dependent on the specific development requirements. To assure a reliable supply for fire protection, this portion of storage should be reserved for emergency use only and should not be utilized to meet peak hour or operation requirements. The criteria used to determine the optimum storage volume for this plan are as follows:

- ◆ As a minimum, the reliable supply capacity should equal the projected maximum day supply requirements.
- ◆ The total available storage should be capable of meeting demands in excess of the maximum day demand, as well as fire protection needs.

It is possible to reduce required storage volumes if there are excessive supply capacities within the system or if it is possible to transfer water from one pressure zone to another pressure zone. The following criteria may be used to offset storage requirements when reliable pumping/supply capacity exceeds maximum day demands:

- ◆ Peak Hour Storage: The reliable pumping capacity in excess of the maximum day demand requirement may be utilized to offset peak hour equalization storage.
- ◆ Fire Protection Storage: Reliable pumping capacity in excess of the peak hour demand requirement may offset the required fire protection storage needed for the duration of the maximum fire flow requirement for the pressure zone.

If an automatic control valve(s) exists that allows water to be transferred from a higher pressure zone to a lower pressure zone, the available storage in the higher pressure zone less the sum of the peak hour equalization storage and the operations storage may offset the fire protection storage requirement in the lower pressure zone based upon the available rate of water transfer when assuming a fire at the most hydraulically remote location in the lower pressure zone with the largest contributing control valve out-of-service.

The supply and storage analysis for the Village was completed based on the methodology described above and the following design criteria:

- Operating Storage:** *Approx. 30% of gross storage or top 10 feet of tanks.*
- Peak Hour Equalization Storage:** *As calculated based on a typical diurnal curve.*
- Fire Flow Storage:** *Primary Pressure Zone: 3,500 gpm for 3 hours (630,000 gallons), as determined by the Village Fire Department.*
- High/Boosted Pressure Zone: 2,500 gpm for 3 hours (450,000 gallons), from previous recommendations.*

6.3 Water Storage Facilities Evaluation

The results of the storage evaluation are summarized in **Table 6-3**. As shown and mentioned previously, the Village water system has adequate reliable supply capacity to meet the projected 2035 maximum day demands.

The optimum storage requirements are shown in **Table 6-3**. The optimum storage requirements for the combined system, Primary and Low/Reduced Pressure Zones, and High/Boosted Pressure Zone are 2,079,000 gallons, 1,744,000 gallons, and 780,000 gallons, respectively. Based on the existing storage volume and available transfer capacity, the existing storage will be adequate in the Primary Pressure Zone and inadequate in the High/Boosted Pressure Zone in meeting the projected 2035 water demands. As a result, the Village will need to begin evaluating options to either provide additional storage in this zone or provide additional supply to offset storage requirements.

7. WSSAP Recommendations

As part of this plan, water system recommendations are provided to ensure the Village can adequately provide water service to its customers over the next 10 years. It should be noted that the recommendations of this Plan are solely directed to sources of supply such as wells, surface water intakes, and connections to neighboring communities. This plan does not provide recommendations for additional or redundant transmission or supply mains. While potential deficiencies with elevated storage and transmission mains are noted in the supply capacity evaluation, further discussion will be required confirming the Village's design criteria prior to recommending these improvements.

Based on the supply analysis presented in the previous sections, the Village will have sufficient supply through the 10-year planning period. However, at the end of the planning period, the Combined System reliable supply capacity will be at approximately 98%. In addition, the

Table 6-3 Reliable Supply and Storage Analysis based on Projected 2035 Demands

Criteria	Combined System	Primary and Low/Reduced Pressure Zone	High/Boosted Pressure Zone
SUPPLY			
2035 Supply Requirements			
Design Average Day Demand (gpm)	2,091	1,549	542
Design Maximum Day Demand (gpm)	4,182	3,098	1,084
Design Peak Hour Demand (gpm)	5,645	4,182	1,463
Present/Proposed Reliable Supply Capacity (gpm) ⁽¹⁾	4,275	3,475	1,578
Reliable Supply Capacity Excess or (Deficiency) (gpm)	93	377	494
STORAGE			
2035 Storage Requirements			
Peak Hour Equalizing Requirements (gallons) ⁽²⁾	752,000	557,000	190,000
Optimum Fire Protection Needs (gallons) ⁽³⁾	630,000	630,000	450,000
Operating/Reserve Storage (gallons) ⁽⁴⁾	696,100	556,300	139,800
Total Optimum Storage Requirements (gallons)	2,079,000	1,744,000	780,000
Available Effective Storage Capacity (gallons)			
Tower #1 (327,800 gallons peak hour; 172,200 fire flow)	500,000	500,000	
Tower #2 (327,800 gallons peak hour; 172,200 fire flow)	500,000	500,000	
Tower #3 (613,100 gallons peak hour; 386,900 fire flow)	1,000,000	1,000,000	
Tower #4 (491,700 gallons peak hour; 8,300 fire flow)	500,000		500,000
Total Effective Storage Capacity (gallons) ⁽⁵⁾	2,390,400	1,898,700	500,000
Subtotal Capacity Required (gallons)	None	None	280,000
Credit for Excess Available Reliable System Supply Capacity for Peak Hour ⁽⁶⁾	581,000	506,000	190,000
Credit for Excess Available Reliable System Supply Capacity for Fire Protection ⁽⁷⁾	None	None	20,750
Credit for Available FCVs Transfer Capacity for Fire Protection ⁽⁸⁾	NA	306,000	NA
Credit for Available Sporleder Road Booster Station Service Pumps ⁽⁹⁾	NA	NA	22,000
Subtotal of Available Storage and Offsetting Excessive Supply Capacity (Gallons)	581,000	812,000	232,750
Total Storage Capacity Excess or (Deficiency) (Gallons)	581,000	812,000	47,250
<ol style="list-style-type: none"> 1. Reliable Supply Capacities from Table 6-1. 2. Peak hour storage is storage required to meet demands which exceed the maximum day demand rate assuming the reliable supply capacity is equal to the maximum demand rate. 3. Optimum fire protection based on 3,500 gpm for 180 minutes for the Primary Pressure Zone and 2,500 gpm for 180 minutes for the High/Boosted Pressure Zone. 4. Reserve storage is the storage requirement to provide a start/stop range for pump operation and emergency reserve supply. Based on a SCADA Operating Range of 10 feet to the Overflow. 5. Total effective storage capacity is limited to a total of the optimum fire protection needs plus peak hour available storage. 6. Supply capacity credit cannot exceed peak hour equalization and is calculated utilizing the time-of-day demand curve and current supply capacity. 7. Supply capacity cannot exceed fire protection needs and is calculated as the reliable supply capacity in excess of the peak hour demand x 180 minutes. 8. Available credit when reliable supply capacity exceeds the maximum day demand in the High/Boosted Pressure Zone. Credit is based on three hours of supply and cannot exceed transfer valve capacity. 9. Available credit when reliable supply capacity exceeds the maximum day demand in the Primary Pressure Zone. Credit is based on three hours of supply and cannot exceed booster pump capacity. 			

High/Boosted Pressure Zone would have a supply deficit in the event of failure of the Goldendale Booster Station supply or discharge main. For these reasons, and to offset storage deficiencies and be ready should a high usage customer connect to the water system, Foth recommends the Village continue planning for an additional well. Future deep well sites have been identified in the Primary Pressure Zone and High/Boosted Pressure Zone. The location of the well will be further

evaluated based on future development trends. The following sections provide summaries of source water alternatives, and environmental and economic impacts associated with future wells.

7.1 Previously Recommended Sources of Supply

The Village is currently planning for a future well in the High/Boosted Pressure Zone, a future well in the Primary Pressure Zone, and a future elevated storage tank in the High/Boosted Pressure Zone. Well Station No. 12 has been designed to accommodate a future expansion to house water treatment facilities required for a deep sandstone well. Area for a future well site west of Interstate '41' in the Primary Pressure Zone has also been identified in a recently approved development plan. The Village does not have a site selected for the future elevated tank. It is anticipated that the tank will be located in the vicinity of Interstate '41' on the south side of the High/Boosted Pressure Zone. A schematic of the recommended water system is shown in **Figure 7-1**. With the addition of these wells and elevated storage tank, the Village will have excess supply and storage capacity over the planning period of the WSSAP.

7.2 Alternate Source Evaluation

Alternative sources were previously evaluated. SEWRPC prepared a Regional Water Supply Plan for Southeastern Wisconsin in December of 2010 (Report Number 52). The plan included recommendations on the sources of supply for municipalities located within Southeastern Wisconsin. The plan recommended that the Village of Germantown convert from using groundwater wells to surface water from Lake Michigan. This recommendation was made to allow the deep aquifer to recover, reduce chloride discharges to surface waters, improve impacts on stream flows, preserve groundwater for other sources, and use available excess production capacity at the Milwaukee Water Works. The Village is aware of the recommendation but is not planning to convert at this time due to the complexity and cost associated with the conversion. As a result, the Village is planning to construct additional groundwater wells when required.

A Niagara Aquifer well site investigation was performed in the vicinity of the previously recommended Primary Pressure Zone well site located west of Interstate '41'. Results of the investigation indicated that a Niagara well would impact neighboring private wells. To eliminate these concerns, a deep Sandstone Aquifer well was recommended for that location. To avoid interfering with the existing Niagara Aquifer well, any future well on the Well No. 12 site would also be required to be a deep Sandstone Aquifer well.

7.3 Recommended Alternative

The deep Sandstone Aquifer wells are estimated to yield between 800 and 1,000 gpm based on similar wells in the Village of Germantown. The proposed well sites are not in close proximity to other municipal wells so they are not anticipated to negatively impact other well yields. However, prior to moving forward with any new wells, it is recommended that a preliminary well impact assessment be completed to determine expected potential interference between all municipal and other high-capacity wells in the area.

Water quality concerns of deep Sandstone Aquifer wells in the vicinity of Germantown primarily include radium and iron. It is anticipated that treatment for one or both of these will be required with the proposed wells.

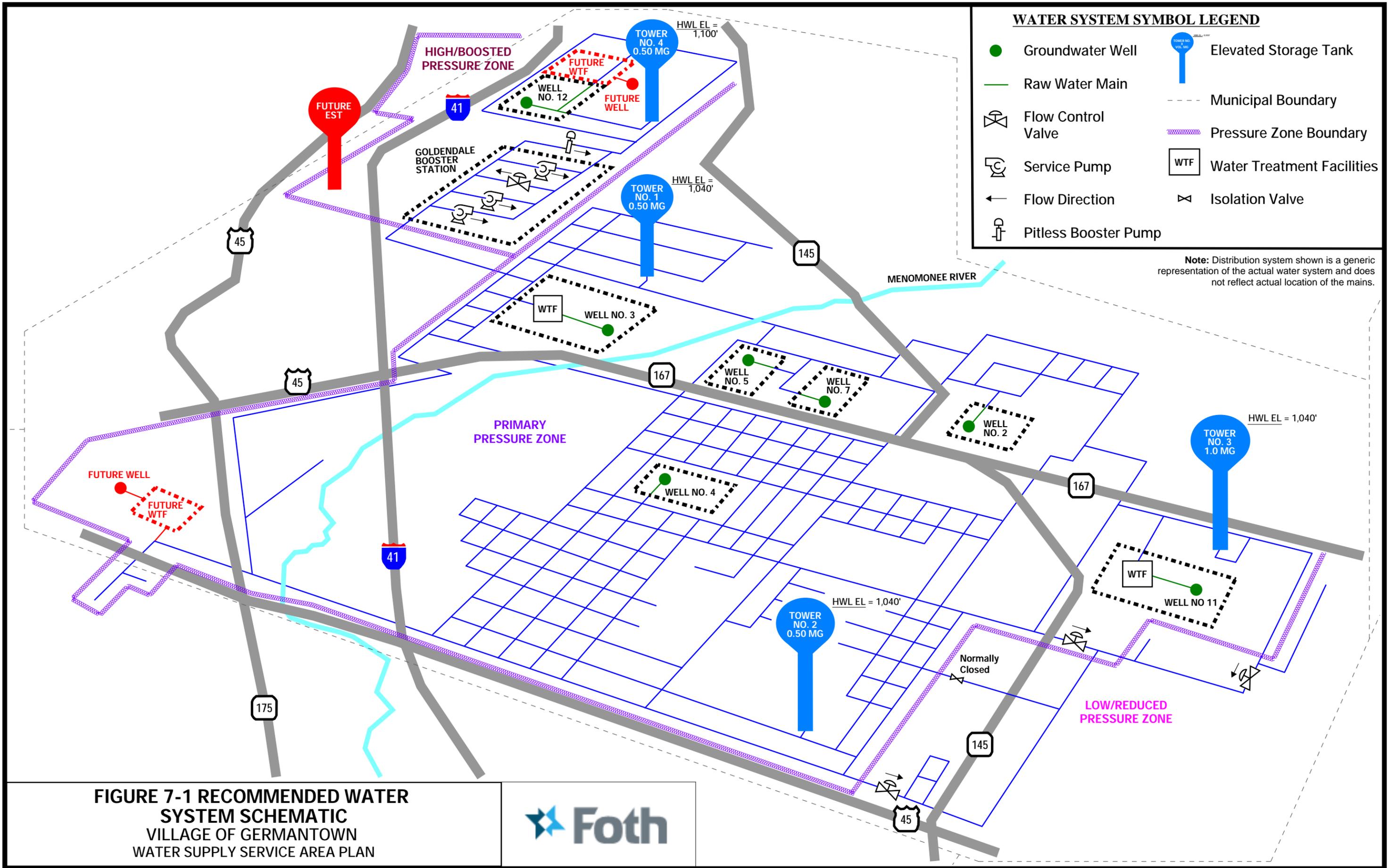


FIGURE 7-1 RECOMMENDED WATER SYSTEM SCHEMATIC
VILLAGE OF GERMANTOWN
WATER SUPPLY SERVICE AREA PLAN



7.4 Environmental Impact

It is not anticipated that deep Sandstone Aquifer wells will have a negative environmental impact on the surrounding area. The Sandstone Aquifer well in the vicinity of Germantown is confined by the Maquoketa Shale. As a result, the wells will not be hydraulically connected to surface waters and will not impact local surface water, wetlands, or flood plains.

7.5 Economic Impact

The economic impact of the future sources of supply is highly dependent on water quality and site constraints. For planning purposes, it can be estimated that construction of a future well, well station, and required treatment facilities will be between \$3 -\$5 million per well.

7.6 Public Participation

The Village shall undertake a public participation process to discuss the WSSAP. This will include:

- ◆ Public notice of the proposed plan.
- ◆ A minimum of one public hearing on the proposed plan.
- ◆ Opportunity to provide written comment on the proposed plan.

Comments and responses from the public hearing will be included in **Appendix B**.

7.7 WSSAP Updates

The Village shall, at a minimum, review the Water Supply Service Area Plan every 5 years and update the Plan every 10 years. Changes in water use and population shall be monitored by the Village to assess the need to update the plan.

Appendix A
2014 – 2024 Top 10 Water Users

Client: Village of Germantown
Title: Appendix A 2014 - 2024 Top 10 Water Users
Date: December 2025

Customer Name	2014		2015		2016		2017		2018		2019		2020		2021		2022		2023		2024		
	Yearly Ranking	000's Gal Sold	Yearly Ranking	000's Gal Sold	Yearly Ranking	000's Gal Sold	Yearly Ranking	000's Gal Sold															
GEHL GUERNSEY FARMS	1	163611	1	181696	1	44,607	1	37,098	1	79,169	1	23,884	1	143,121	2	95,994	1	127,388	1	89,655	-	-	
DSM FOOD SPECIALTIES	2	14812	2	15287	2	17,260	2	16,578	2	19,789	2	17,537	2	16,476	1	919,806 ^(a)	2	15,269	3	13,773	2	16,407	
DSM FOOD SPECIALTIES (METER 2)	3	11384	6	7290	5	7,861	5	7,559	4	8,613	5	7,644	5	7,247	5	8,700	4	7,043	6	6,372	7	7,600	
FIRST CHOICE INGREDIENTS	4	7858	3	8895	3	9,576	8	5,936	6	6,852	6	7,004	6	7,017	7	6,537	6	6,109	8	5,836	5	8,480	
STERLING PHARMA SOLUTIONS	5	7726	5	7305	7	5,515			9	4,345	10	3,613	8	4,100	10	4,675	8	4,961	9	5,088	8	7,402	
MISTER CAR WASH	6	6663	4	7698	6	7,329	4	8,243	3	11,667	3	9,298	3	8,625	3	10,094	-	-	-	-	-	-	
SUNLITE PLASTICS W	7	5080	7	5885	9	5,065	6	6,545	5	8,505	8	5,704	7	5,403	8	6,379	5	6,372	7	5,757	3	10,059	
WEST ROCK W	8	5070	8	5861	10	4,862	9	5,255	7	5,315	7	6,696	4	8,023	4	9,719	3	9,437	4	10,143	6	8,359	
MGS GROUP NORTH	9	4821	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
STEIN'S GARDEN CENTER	10	3039	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
STERLING PHARMA SOLUTIONS (METER 2)	-	-	9	5445	8	5,092	-	-	-	-	-	-	-	-	-	-	-	-	10	4,784	-	-	
GKN SINTER METALS	-	-	10	4309	4	9,198	7	5,950	-	-	4	7,710	9	4,004	-	-	9	4,287	-	-	-	-	
CHRIS JUREWICZ W	-	-	-	-	-	-	3	10,061	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
GEHL GUERNSEY FARMS (METER 2)	-	-	-	-	-	-	10	4,534	10	4,258	9	3,649	-	-	-	-	-	-	-	-	-	-	
MGS GROUP NORTH	-	-	-	-	-	-	-	-	8	4,387	-	-	-	-	-	-	-	-	-	-	-	-	
L T HAMPEL	-	-	-	-	-	-	-	-	-	-	-	-	10	3,845	9	4,963	7	5,336	-	-	-	-	
GLENN & KRISTINE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	8,587	-	-	-	-	-	-	
FAIRWAY KNOLL N	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	4,139	-	-	9	4,314	
G & H PETS LLC ^(b)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	26,820	1	86,470	
HILLTOP HIGHLANDS/BROOKSIDE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	9,429	4	8,711	
GERMANTOWN HIGH SCHOOL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	4,042	
Top 10 Annual Sales (000's Gal)		230,064		249,671		116,365		107,759		152,900		92,739		207,861		155,648		190,341		177,657		161,844	151,457
Total Annual Sales (000's Gal)		656,303		698,737		582,434		539,912		582,561		512,608		655,106		740,013		613,236		654,907		538,236	602,113
Top 10 % of Total Annual Water Sales		35%		36%		20%		20%		26%		18%		32%		21%		31%		27%		30%	25%

(a) The reported value for DSM FOOD SPECIALTIES for the year 2021 was omitted as an outlier due to this value being a result of a major water leak.
(b) G & H Pets, LLC's meter was replaced in 2025 due to inaccurate readings. Amount sold in 2024 was estimated based on 4th quarter readings from 2025.

Appendix B
Public Review Comments



Public Comments

Village of Germantown Water Service Area Plan Public Hearing

Project ID: 25G018.03

Public Hearing

___/___/20___, Start Time ___:___ a.m./p.m. to End Time ___:___ a.m./p.m.

NAME	PHONE NUMBER(S)	COMMENTS	RESPONSE

