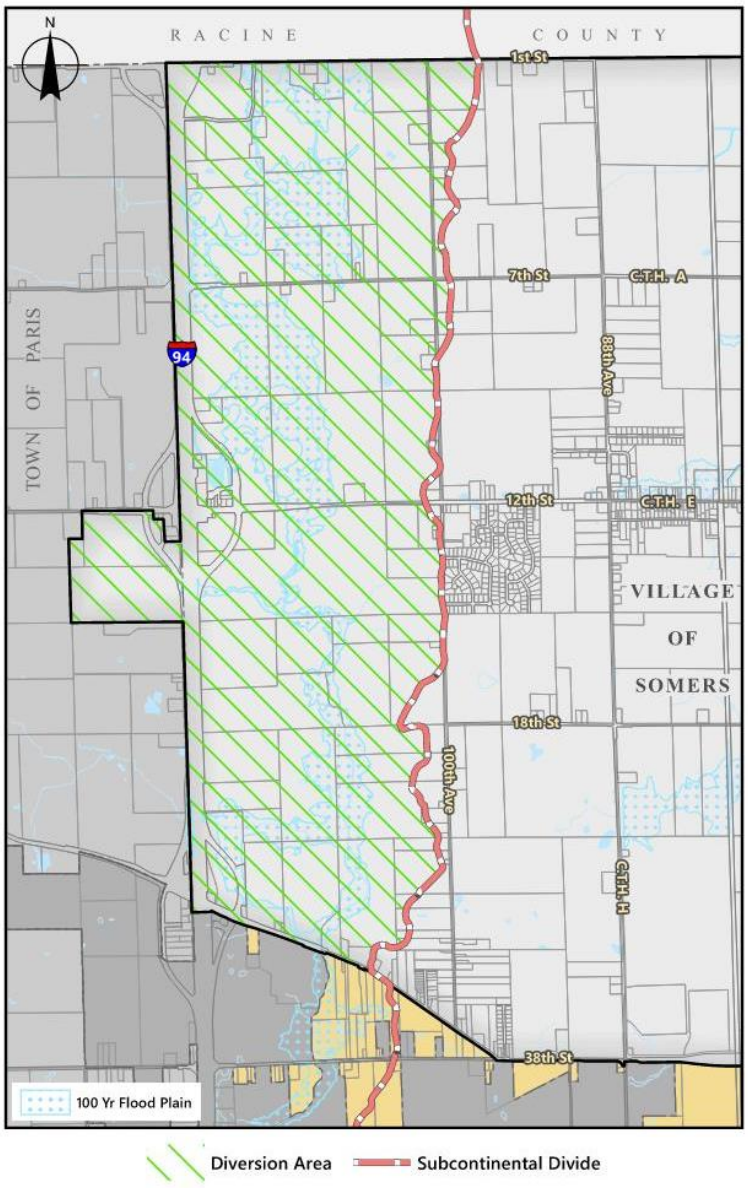
Village of Somers

Somers Water Utility

Annual Water Diversion Report - 2024



March 2025

Village of Somers and Somers Water Utility
Great Lakes Water Diversion Annual 2024 Report

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Summary

The Village of Somers and Somers Water Utility (Village) is submitting this annual report to satisfy the 2021 Diversion Application (2021 Application) requirements of the Wisconsin Department of Natural Resources (DNR)'s approval to the Village's Great Lakes Water Diversion.

Stipulation of the Approval is that the Village must annually report on the following items:

1.) The total amount of water diverted monthly within the approved diversion area.
2.) The total amount of water sold quarterly (or sold monthly if monthly data is available) to each category of customer within the approved diversion area.
3.) The total monthly sewerage flow to the City of Kenosha Wastewater Plant from the diversion area.
4.) The total consumptive use as specified by the DNR.
5.) A summary of the impact of the implemented Conservation and Efficiency Measures (CEMS) required under Wis. Admin. Code NR 852.04 and NR 852.05, including quantifiable impacts to water use intensity, as defined in Wis. Admin. Code NR 852.03(29).
6.) A description of any additional CEMS implemented.

General

In 2022 the Village built and put into operation a water transfer station to serve the area west of 88th Ave, including the Diversion Area. Since there are currently no customers west of 88th Avenue and east of the subcontinental divide, all water that passes into the Diversion Area is metered at the transfer station. In the future, there will be customers west of 88th Avenue that are not within the Diversion Area; these individual customer meters will be deducted from the meter reading at the water transfer station. Also in 2022, the Village installed a sanitary lift station (Lift Station 1A) that collects all sewage generated in the Diversion Area. The sewage flow meter at the lift station will be utilized to measure all sewage that is returned out of the Diversion Area and sent to the Kenosha Water Utility for processing.

The following were completed in 2024 that reflect water sent into the Diversion Area without wastewater returning to the Great Lakes Basin:

- Lawn Watering for Bobcat Extension
- Lawn Watering for Flint 94 – Onsite
- Lawn Watering for Darby

Table 1 below summarizes the water introduced into the Diversion Area by the water transfer station, subtracts metered customers (served by the water transfer station) outside of the Diversion Area, and calculates consumptive use by subtracting the sewage flow returned to the Great Lakes Basin. Please note that several new water mains were flushed and placed into service in the third quarter of 2024, which resulted in higher-than-expected amount of water diverted. Table 2 below summarizes the metered customers within the Diversion area and water used in 2024.

Consumptive Use

The WDNR defines consumptive use as the sum of the water sold and the water used for flushing minus the total return gallons. Table 1 shows the consumptive use ratio within the Diversion Area in 2024. The higher ratio in the third quarter is due to flushing of new water mains. After taking off the total water readings from all of the sprinkler meters, there is a 2% water difference between the water station reading and the lift station reading, indicating a 2% water loss.

Table 1. Total Water Introduced and Returned from the Diversion Area

2024	Volume (Gallons)		
	Water Transfer Station & Water Diverted	**Sanitary Lift Station**	**Consumptive Water Use Ratio**
Q1	796,000	1,644,000	0.7
Q2	1,730,000	1,479,000	1.2
Q3	4,665,000	1,463,000	3.2
Q4	2,020,000	1,411,000	1.4
Total	9,211,000	5,997,000	1.5

Table 2. Customer Usage

2024	Volume Sold (Gallons)				
	Q1	**Q2**	**Q3**	**Q4**	**Total**
Pritzker Military Archives and Armory 10475 12th St	80789	45631	4488	30670	161579
Kwik Trip Store/Gas Station 11350 28th St	375522	388239	461548	42414.5	1649455
Kwik Trip Car Wash 11350 28th St	246857	179532	207210	197485	831085

Kwik Trip Irrigation 11350 28th St	0	0	766005	816872	1582878
Mission 94 Range 1487 120th Ave	748	5236	17205	9725	32914
Mission 94 Range Sprinkler 1487 120th Ave	1496	159335	1013610	283512	1457953
H.S.A. Darby Farms 2655 113th Ave	14961	17953	1708551	1392873	3134338
Bobcat 1242 122nd Ave	0	2244	5984	5985	14213
Total	**720374**	**798171**	**4184602**	**3161268**	**8864416**

Annual 2024 Water Audit

The Annual Water Audit for 2024 has not yet been completed, so it is not included in this report. We anticipate having the audit completed in May. This will also give us our Non-Revenue Water use for Table 4.

Impact of Conservation and Efficiency Measures (CEM)

Table 3 (page 6) summarizes the 2021 application data while Table 4 (page 7) summarizes the current 2024 application data for historical per-capita consumption. Note the per-capita consumption data has been adjusted for 2023 and removed for previous years. The total water demand per REU from 2021 was 193 gallons per day (gpd) per REU, while in 2024 it decreased to 154 gpd per REU. The decrease in water use per REU equates to more than a 20 percent reduction, which indicates the Village has met their conservation goal.

Table 6 (Page 9) summarizes the water use efficiency metrics and estimates a water use of 154 gpd per REU.

Description of Additional CEM's Implemented

The Village expects CEM Item PWS-4 and the future meter reading system and replacement meters to further improve unaccounted water and improve conservation efforts in upcoming years. This includes replacing older style SR2 meters with newer more accurate Sensus Iperl meters.

Description of Additional Conservation Efforts – Sheridan Road Area

The Village has obtained approval and will be implementing rebates for replacing toilets and showerheads with high-efficiency WaterSense. The Village completed construction of water

main replacements on Sheridan Road in 2022. Year 2023 was the first year the Village also tracked the water sold to the individual homes in the Sheridan Road Area. This collected data confirms the difference in the water purchased from KWU and the amount sold to the customers in the Sheridan Road Area is only different by six percent. The former water mains in this area were leaking. The difference is water conserved.

Water Main Installed / Replaced 2024

There was no existing water main replaced in 2024. Most of the non-pvc watermain in Somers has been replaced recently. A total of 12,380 LF of 12" new water main, 336 LF of 8" new water main, and 928 LF of 6" new water main was installed in 2024. All new watermain material is PVC. See attached map on page 11 for locations.

Table 3: 2021 Application Data

HISTORICAL PER CAPITA CONSUMPTION

Year	Total Population[1]	Population Served[2]	Gallons per Capita per Day						
			Residential	Commercial	Industrial	Public	Multifamily Residential[3]	Non-Revenue Water Use	Total
2006	8148	2,236	62.4	45.6	0.0	23.7	-	17.7	149
2007	8120	2,262	72.6	49.1	0.0	39.7	-	36.7	198
2008	8211	2,303	67.6	47.9	0.0	30.9	-	37.5	184
2009	8275	2,388	62.0	50.0	0.0	32.7	-	21.2	166
2010	8356	2,377	78.5	70.3	0.0	19.8	-	18.2	187
2011	8276	2,431	60.4	61.3	0.0	42.3	-	18.7	183
2012	8222	2,406	68.7	75.3	0.0	29.4	-	29.4	203
2013	8128	2,424	57.4	69.2	0.0	42.1	-	(5.8)	163
2014	8271	2,467	50.4	49.3	0.0	42.6	-	17.2	159
2015	8273	2,465	52.8	48.7	0.0	36.9	-	21.6	160
2016	8462	3,099	46.6	41.1	0.0	31.9	-	17.7	137
2017	8615	3,060	53.3	32.3	1.1	29.7	62.0	23.3	202
2018	8827	3,142	53.2	23.3	2.1	28.9	137.9	39.2	284
2019	8371	3,942	50.1	11.6	0.5	21.3	69.7	29.9	183
		Average	**59.7**	**48.2**	**0.3**	**32.3**	**89.8**	**23.0**	**193.3**

Footnotes:

[1] Total population for the Village of Somers was estimated between 2006 and 2016 when the Village incorporated. The estimated Village population between 2006 and 2015 was estimated by subtracting the average Town population in 2016 through 2019 from the Town population between 2006 and 2015. Population data sources include Wisconsin Department of Administration and the United States Census Bureau for census years.

[2] Population served was estimated using residential and multi family customer meters multiplied by the average persons per household of 2.57. A weighted average of 3.39 units per multifamily account was assumed. Per Capita water use for residential and multifamily residential was estimated based on their respective population served for 2017 through 2019.

[3] Prior to 2014, Multifamily Residential was reported as a part of Commercial.

HISTORICAL NUMBER OF CUSTOMERS SERVED

Year	Number of Customers					Total
	Residential	Commercial	Industrial	Public	Multifamily Residential[1]	
2006	870	116	0	12	-	998
2007	880	109	0	14	-	1,003
2008	896	111	0	15	-	1,022
2009	929	130	0	16	-	1,075
2010	925	141	0	18	-	1,084
2011	946	128	0	17	-	1,091
2012	936	120	0	16	-	1,072
2013	943	120	0	16	-	1,079
2014	960	207	0	9	0	1,176
2015	959	205	0	9	0	1,173
2016	1,206	212	0	9	0	1,427
2017	967	152	2	8	66	1,195
2018	992	157	2	8	68	1,227
2019	1,005	69	2	8	156	1,240

Footnote:

[1] Prior to 2014, Multifamily Residential was reported as a part of Commercial.

Table 4: 2024 Application Data

HISTORICAL PER CAPITA CONSUMPTION

Year	Total Population	Population Served		Gallons per Capita per Day						
		Residential	Multifamily	Residential	Commercial	Industrial	Public	Multifamily Residential	Non-Revenue Water Use	Total
2008	8211	2079	-	74.9	53	0	34.2	-	41.6	204
2009	8275	2155	-	68.7	57.4	0	36.2	-	23.4	186
2010	8356	2146	-	**86.9**	80.4	0	21.9	-	20.2	209
2011	8276	2195	-	66.9	71.7	0	46.8	-	20.7	206
2012	8222	2172	-	76.1	**87.2**	0	32.5	-	32.6	228
2013	8128	2188	-	63.6	80.7	0	46.6	-	-6.5	184
2014	8271	2227	-	55.8	58.5	0	**47.2**	-	19	181
2015	8273	2225	-	58.5	57.7	0	40.8	-	23.9	181
2016	8462	2798	-	51.6	61.3	0	35.4	-	19.6	168
2017	8615	2243	-	59.1	47.5	1.5	40.6	-	31.8	181
2018	8827	2301	-	58.9	35.2	2.8	39.4	-	53.5	190
2019	8371	2332	-	55.5	22	0.8	35.9	-	50.3	165
2020	8402	2343	-	62.3	23.2	0.2	24.5	-	38.6	149
2021	8330	2348	-	70.4	34.7	**5.4**	35	-	99.8	**245**
2022	8501	2285	-	64.7	33.8	4.3	33.3	-	21	157
2023	8396	2232	4044	65.7	39.8	2.6	12.5	**28.9**	31.6	181
2024	9387	2677	2868	53.9	14.3	3.7	15.9	41.2	N/A	129.0
Average				64.3	50.5	1.3	34.0	35.1	32.6	184.9

Footnotes:

[1] Total population for the Village of Somers was estimated between 2008 and 2015 when the Village incorporated. The estimated Village population between 2008 and 2015 was estimated by subtracting the average Town population in 2016 through 2021 from the Town population between 2008 and 2015. Population data sources include Wisconsin Department of Administration and the United States Census Bureau for census years.

[2] Population served was estimated using residential customers multiplied by the average persons per household of 2.32. For multifamily population served was based on an actual count of bedrooms provided by the Village for apartments and condominiums.

[3] Prior to 2014, Multifamily Residential was reported as a part of Commercial.

Year	Number of Customers					Total
	Residential	Commercial	Industrial	Public	Multifamily Residential	
2008	896	111	0	15	-	1022
2009	929	130	0	16	-	1075
2010	925	141	0	18	-	1084
2011	946	128	0	17	-	1091
2012	936	120	0	16	-	1072
2013	943	120	0	16	-	1079
2014	960	207	0	9	0	1176
2015	959	205	0	9	0	1173
2016	**1206**	**212**	0	9	0	**1427**
2017	967	152	**2**	8	66	1195
2018	992	157	**2**	8	68	1227
2019	1005	69	**2**	8	**156**	1240
2020	1010	77	**2**	**22**	114	1225
2021	1012	81	**2**	**22**	125	1242
2022	985	83	**2**	**22**	125	1217
2023	1005	93	**2**	20	130	1250
2024	1035	37	**1**	3	368	1444

Footnote:

[1] Prior to 2014, Multifamily Residential was reported as a part of Commercial.
In 2024, the Number of Customers was calculated by using the number of meters allocated to each customer category.

Table 5: Status of CEM Measures from 2021 Diversion Application

CEM#	Description	Required Elements	Implementation Year	Status
PWS-1	Water Use Audit	Perform a water use audit and prepare written documentation of the audit results using the process outlined in PSC 185.	2021	Complete
PWS-2	Leak Detection and Repair Program	Replacement of the Sheridan Road Area water mains.	2022	Complete
PWS-3	Information and Education Outreach	The village's water conservation goals and AWE tool results will be shared with the residents on the village website. The information can be found at the following link: **https://www.somers.org/news/2021/07/23/water-conservation/**	2021	Ongoing
		Partner with UW-Parkside to educate students on water conservation.	2025	2025 Anticipated
PWS-4	Performing Source Measurement	KWU bills the Village for source water and wastewater and the Village bills their residents on a quarterly basis. The data will be plotted and compared to determine discrepancies. KWU regularly tests and recalibrates the Somers master supply meters on an annual basis. Additional Steps may include comparing water sales and wastewater pumped from individual drainage basins- Sheridan Road	2021 2021 2023	Ongoing Ongoing Complete
PWS-R1	Distribution System Pressure Management	Pressure will be monitored at three locations: 1) Fire Station No. 2 in KWU Zone 1, Pike Creek Sewage Lift Station in KWU Zone 2, and the leaving line of the Water Transfer Station on 18th Street serving the Somers Zone. All pressure data will be recorded and transmitted to the Utility's SCADA system.	2022	Complete
PWS-R2	Residential Demand Management Program	A future meter reading system will be used to detect abnormal usage at each metering site so that the customer can be made aware of problems, such as a running toilet, before receiving their monthly bill. The village will consider implementing residential low-flow showerhead rebates for single-family homes. The rebate would consist of a $20 rebate for residents who purchase and install a WaterSense showerhead in their home. In addition, the Village will implement a voluntary lawn sprinkling restriction that residents can participate in to further support the conservation efforts. The village currently maintains a program for residents to contact the Village Clerk if their quarterly water bill is higher than expected.	2023 2025 2021	Anticipated Completion: 2026 Rebates are complete Ongoing
PWS-R3	Commercial and Industrial Demand Management Program	The village will consider implementing rebates for commercial valve-type ultra-low flow toilets in commercial and industrial buildings. The rebate would consist of a $100 rebate for customers who purchase and install a new WaterSense ultra-low-flow toilet in their business. The village maintains a program for commercial customers to contact the Village Clerk if the quarterly water bill is higher than expected.	2024 2021	Complete Ongoing

Table 6: 2023 Water Consumption Per REU—WDNR Spreadsheet

Calculate Residential Equivelent Units

Instructions: Enter system numbers in yellow boxes.

Meter Size	Number of Meters	REU Ratio*	REU
5/8	682	1	682
3/4	286	1	286
1	351	2.5	877.5
1 1/4	0	3.7	0
1 1/2	55	5	275
2	51	8	408
2 1/2	0	12.5	0
3	14	15	210
4	3	25	75
6	2	50	100
8	0	80	0
10	0	122	0
12	0	160	0
Total	1444		2913.5

Calculation Average Day Water User per REU

Total Water Sales	164490000	gallons
Average Day Water Use	450657.53	gallons/day
Water Use/REU	154.68	gpd/REU

Calculated Average Residential Per Capita Use

Instructions: Enter system numbers in yellow boxes

Connections	Q1	Q2	Q3	Q4			
Customer Class	Count	Count	Count	Count	Average	Occupancy Factor **	Population
Condo/Apt	129	147	208	230	178.5	15.0	2683
Residential	1024	1027	1033	1035	1029.75	2.6	2677

Condo/Apartment Population Calculation

	Bedroom	Units	Factor	Population	Total
Apartment	1	55	1.5	30	
Apartment	2	315	2.5	788	
Apartment	3	60	5.5	330	
Apartment	4	56	6.5	370	
Condo		75	18	1350	2868

**Based on p
486 occupied hou

Population 5545

Average Residential Per capita Use

Water Sold by quarter (Use in Thousands)

	Q1	Q2	Q3	Q4			
Customer Class	Water Sold	Water Sold	Water Sold	Water Sold	Total	Population	in gpd
Condo/Apt	9509	10421	12247	11004	43181	2868	41.26
Residential	10386	11334	17381	13551	52652	2677	53.89
Total					95833	5544.5	**47.35**

Calculate Maximum Day to Average Day

		Average Day	
Annual Water Withdrawal	201464616	551957.9	gallons/day
Maximum Day Withdrawal	931000	10-Oct	gallons/day
Maximum to Average Day Ratio	1.69		

Water Mains Installed 2022-2024