

Water Diversion REPORT

2025 Report on Water Diversion
March-2026



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2025 REPORT ON WATER DIVERSION

EXECUTIVE SUMMARY

The City of Racine (Racine) is submitting this report to satisfy the requirements in the Wisconsin Department of Natural Resources (DNR)'s approval of its diversion application.

The DNR's approval stipulated that Racine must annually report on the following items for the prior calendar year:

- 1) The total amount of water sold monthly or quarterly to each category of customer within the approved diversion area.
- 2) The total monthly sewerage flow to the City of Racine Wastewater Treatment Plant (WWTP) from the diversion area.
- 3) The total consumptive use as specified by the DNR.
- 4) A summary of the impact of the implemented conservation and efficiency measures required under Wisconsin Administrative Code NR 852.04 and NR 852.05, including quantifiable impacts to water use intensity, as defined in Wisconsin Administrative Code NR 852.03(29).
- 5) A description of any additional conservation and efficiency measures implemented.

The amount of water diverted in 2025 totaled approximately 25.6 million gallons, which is an average of about 70,000 gallons per day. This reflects an increase compared to 2024. The 2025 diversion volume represents about 1% of the total allowable diversion capacity of 7.0 million gallons per day.

The amount diverted includes water sold to commercial and industrial customers within the diversion area. Although the system previously required water to be flushed for maintenance purposes, RWU has eliminated routine flushing in the diversion area due to the recycling program implemented as a 2021 conservation measure. Only 15,000 gallons were flushed in 2025, and all flushing occurred in Quarter 3.

In 2025, total return flow measured at the Hwy H meter was approximately 9.2 million gallons, reflecting both sanitary wastewater return flow and inflow and infiltration (I/I). This equates to an average of about 25,325 gallons per day.

Based on these values, the total consumptive use for 2025 was approximately 16.3 million gallons, which corresponds to an average consumptive use of roughly 44,000 gallons per day and a consumptive use coefficient of ~63%.

Water usage remained highest during the warm summer months, indicating that a substantial share of 2025 water use was likely associated with landscaping and outdoor activities within the Foxconn development.

Foxconn remained the only permanent water-service customer located within the diversion area in 2025. Microsoft continued with planning and land preparation activities for its multi-phase development. The first phase, anticipated for completion in 2026, is not located within the diversion area. Although Microsoft owns land within the diversion area intended for future phases, those buildings are not expected to be operational for several years.

All return flows from the diversion area met applicable water quality standards before being discharged to the Great Lakes Basin.

SECTION 1: TOTAL AMOUNT OF WATER DIVERTED

The Racine Water Utility (RWU) diverted water to the Mississippi River basin, selling water to one industrial customer, Foxconn. The sales were properly coded within RWU’s billing system to track the amount of water that was diverted. The total amount of water diverted is the sum of the water sold and flushed, which equals 25,610,223 gallons. That represents an average of 70,164 gallons diverted each day (Tables 1,2,3).

The reporting requirements specify the water sold should be segmented into months and/or quarters. RWU uses temporary meters to track water demand associated with the operations and maintenance of the infrastructure, including main flushing. Currently, RWU bills its industrial customers monthly and all others quarterly. These permanent meters will measure the demand to calculate the total amount of water diverted. All water diverted in 2025 was measured by permanent or temporary metering.

Table 1. 2025 Water Diversion Total (gallons)

Water sold-residential	0
Water sold-commercial	7,902,779
Water sold-industrial	17,692,444
<u>Water flushed</u>	<u>15,000</u>
Water Diversion Total (gal)	25,610,223

Table 2. 2025 Industrial Water Sold to Foxconn (gallons)

2025	Monthly Gallons	Quarterly Gallons
January	778,668	
February	631,312	
March	661,980	2,071,960
April	906,576	
May	961,180	
June	2,027,080	3,894,836
July	2,957,592	
August	2,065,976	
September	3,357,772	8,381,340
October	1,767,524	
November	1,089,088	
December	487,696	3,344,308
TOTAL	17,692,444	17,692,444
AVG Day	48,472	

In addition to the water that was sold, RWU may use water to flush mains to maintain water quality. The flushing is metered to record the correct amounts but cannot be attributed to any customer and is instead considered a part of the RWU's operations and maintenance. Fifteen thousand gallons were flushed to the Mississippi River Basin ditch. Flushing is defined as water wasted and is not associated with water recycled for use outside of the diversion area (discussed in Section 5 conservation measures).

Table 3. 2025 Water Flushed by Quarter (gallons)

Quarter	Water Flushed (g)
Q1	0
Q2	0
Q3	15,000
Q4	0
Total	15,000

SECTION 2: TOTAL MONTHLY SEWERAGE FLOW

The return gallons totaled 9,243,564 gallons through both sanitary sewers return flow and I/I (Table 4). That represents an average of 25,325 gallons per day. The sanitary sewer infrastructure for the diversion area was completed in March 2020, with all return flow directed to the Racine Wastewater Utility WWTP. The Foxconn facility began discharging sanitary wastewater in the fourth quarter of 2020 and continues to do so.

All other return flow is attributed to inflow and infiltration (I/I) and cannot be tied to any specific customer. Metering low flows in the large 30-inch pipe introduces a potential error factor. This challenge will persist until additional customers connect to the diversion area water supply and return wastewater flow. In 2025, Foxconn remains the sole connected customer discharging wastewater back to the Great Lakes Basin, with its discharge reflecting sanitary use only and no process wastewater.

A permanent wastewater flow laser meter (Teledyne ISCO LaserFlow) was installed by the Village of Mount Pleasant at the Hwy H metering site on March 1, 2020. The Hwy H site captures all wastewater return flow from the diversion area (Mississippi River basin) back to the Great Lakes basin. The meter was checked for recalibration by manufacturer representative Mark J. Duerr (Mulcahy/Shaw Water, Inc.) on June 24, 2025: water level in the manhole measured 2.00 inches (SN 22010459 in 30-inch pipe SN 220101862), with the meter reading 1.98 inches; no adjustment was necessary, and it was confirmed calibrated and working correctly.

A follow-up verification on January 13, 2026, measured the water level at 1.50 inches, with the meter reading 1.59 inches confirmed by an additional 1.50-inch measurement (SN 22010459 in 30-inch pipe SN 220104862); the meter was calibrated and working correctly. Village staff and the representative confirmed the Hwy H meter is performing as intended. The Village also installed three permanent wastewater flow meters for Foxconn discharge: Gate 5 on November 19, 2020; Gates 6 and 7 on January 10, 2021 (Gate 6 noted for low velocity limitation due to downstream concrete).

The Foxconn meters were recalibrated on June 24, 2025 (Gate 5 set to 0.90 inches; Gate 7 set to 2.00 inches). For 2025, the Foxconn gate meters showed flows averaging 33,219 gpd (for reference only), but the Hwy H total of 9,243,564 gallons remains authoritative per WDNR guidance and should be used for return flow reporting.

Table 4. 2025 Water Returned to Great Lakes Basin (gallons)

Month	Monthly Gallons	Quarterly Gallons
January	583,049	
February	971,161	
March	1,208,652	2,762,862
April	1,152,480	
May	1,266,976	
June	463,391	2,882,847
July	546,643	
August	652,334	
September	518,248	1,717,225
October	556,941	
November	711,937	
December	611,752	1,880,630
TOTAL	9,243,564	
AVG Day	25,325	

SECTION 3: TOTAL CONSUMPTIVE USE

The total consumptive water use is the sum of the water sold (Commercial: 7,902,779 gal; Industrial: 17,694,809 gal; Residential: 0 gal) and the water used for flushing (15,000 gal), also referred to as "water diversion total" (25,610,223 gal), minus the total return gallons (9,243,564 gal) equals 16,366,659 gallons. This annual water supply and return equate to an average daily consumptive use of 44,840 gallons/day, and a consumptive use coefficient of 63.79% (Table 5).

Table 5. Total Diversion Area Consumptive Use (gallons)

Water Diversion Supply Total (gal)	Return Gallons Total (gal)	Total Consumptive Use (gal)	Average Daily Consumptive Use (gpd)	Consumptive Use Coefficient
25,610,223	9,243,564	16,336,659	44,840	63.8%

The Foxconn facility's total consumptive use is calculated by subtracting Foxconn's sewerage return (12,124,805 gallons) from the total gallons purchased (17,692,444 gallons) for a total consumptive use of 5,567,639 gallons. The average daily consumptive use is 14,892 gallons/day and the consumptive use coefficient is 34.6% (Table 6). As Foxconn is the only water user and wastewater discharger in the diversion area, and the diversion return flow exceeds the Foxconn return flow, it is assumed that the lower diversion consumptive use than the Foxconn consumptive use coefficient is impacted by a combination of return water I/I and the difficulty in accurately metering very low flow in large pipe. However, in 2024 total Foxconn flow exceeded the total return flow at Hwy H, which is not possible and correlates to error in the Foxconn metering. This error will be monitored going forward as the meters were calibrated in 2024.

Table 6. Foxconn Consumptive Use (gallons)

Foxconn Water Sold Total (gal)	Foxconn Return Gallons Total (gal)	Foxconn Total Consumptive Use (gal)	Foxconn Average Daily Consumptive Use (gpd)
17,692,444	12,124,805	5,567,639	31.5%

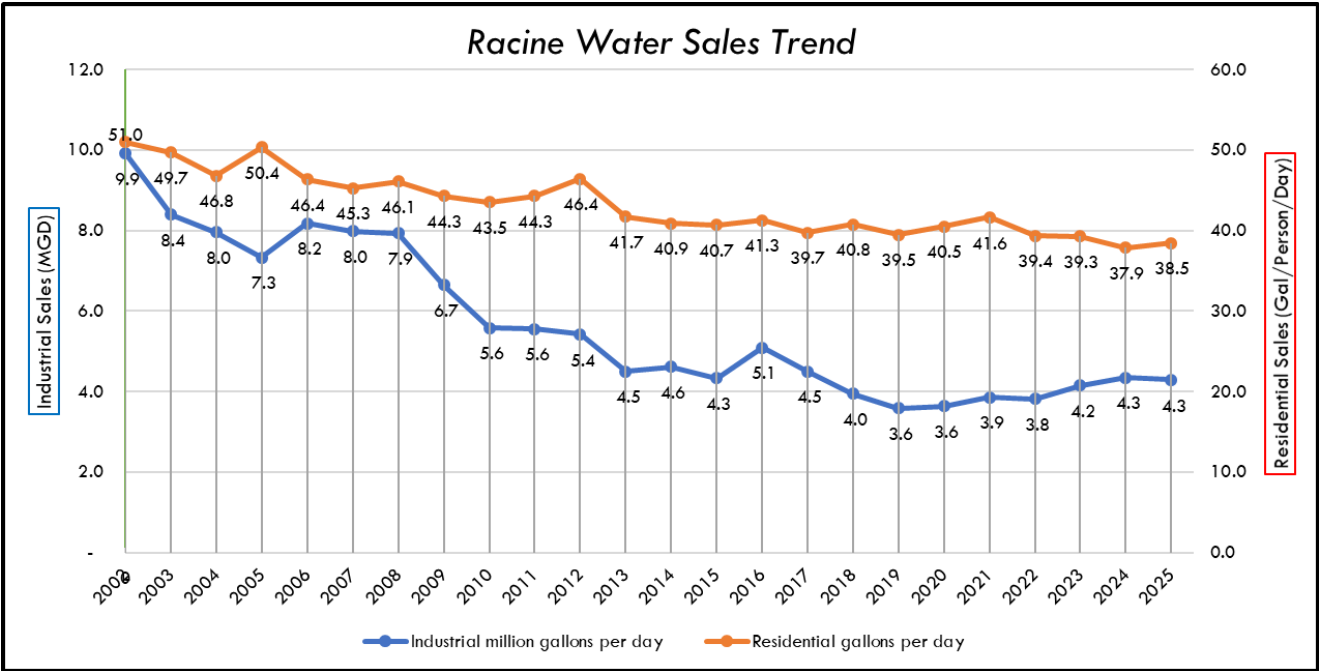
In a letter titled "2020 Documentation of Reporting Requirements for the City of Racine Diversion of Lake Michigan Water" dated August 28, 2020, the Wisconsin Department of Natural Resources assumed a 10% percent consumptive-use coefficient for Racine's Diversion Application. The 2025 overall diversion area consumptive use coefficient of 63.8% exceeds the assumed 10% consumptive use coefficient. There are a number of reasons why this may have occurred in 2025. Foxconn site landscaping water use appears to have increased. Foxconn used about as much water in 2025 as 2024 with about 70% of this usage occurring in the warm months.

Water used for landscaping at the Foxconn site is not returned to the Racine Wastewater Treatment Plant from the diversion area. Overall diversion area usage remains just a fraction of overall diversion area water use allotment (0.5%). The RWU anticipates the overall consumptive use coefficient to stabilize as normal industrial operations at the facility are finalized and more permanent customer connections are made, but that is not the current situation. Water main flushing by the RWU due to extremely low water supply volumes in the Mt. Pleasant TID #5 area was minimized through recycling operations (15,000 gal total).

SECTION 4: SUMMARY OF THE IMPACT OF CONSERVATION AND EFFICIENCY MEASURES AND ADDITIONAL MEASURES IMPLEMENTED

The declining water usage trends noted in the diversion application for RWU have continued. Per-person demand has fallen from 51 gallons per person per day in 2002 to 38 gallons per person per day in 2025, as residential demand continues to slowly decrease (Table 10). This has decreased from 2020-2021, which was impacted by the pandemic and the increase in time spent at home with the exception for 2020/2021 when water usage increased due to pandemic stay-at-home requirements and a sustained dry season. The industrial decline has stabilized with demand falling from 9.9 million gallons per day in 2002 to 3.6 million gallons per day in 2020, and now back to 4.3 million gallons per day in 2025. The expectation is that industrial use will increase with expansion in the Village of Mt Pleasant TID #5 area in the future, including Microsoft data center phases (first phase outside diversion area, completion ~2026).

Figure 1. Racine Water Sales Trend



The ratio of system maximum day pumpage to average day pumpage was 1.56 in 2025, upslightly from 1.55 in 2024 and 1.54 in 2023 (Table 7). Tables 8 and 9 show data and calculations for water use per residential equivalent unit (REU). System REUs totaled 46,504 in 2025 (Table 8). Water usage per REU was 336 gpd/REU in 2025 (Table 9), higher than the 264 gpd/REU in both 2023 and 2024, and slightly above 2021's 266 gpd/REU. This figure comes from dividing average day water use by total REUs. Residential demand rose to 105 gal/person/day in 2025 from 38 gal/person/day in 2024 (Table 10).

Table 7. 2025 Water System Pumpage Maximum to Average Day Ratio

Year	Total Year Pumpage (Mgal)	Average Day Pumpage (Mgal)	Max Day Pumpage (Mgal)	Max to Average Day Ratio
2022	5,482.680	15.021	24.924	1.66
2023	5,532.517	15.155	23.344	1.54
2024	5,517.927	15.076	23.361	1.55
2025	5,697.683	15.610	24.382	1.56

Table 8. 2025 Residential Equivalent Units (REUs)

Meter size	Number of Meters	REU Ratio	REUs
5/8"	27,129	1	27,129
3/4"	5,746	1	5,746
1"	1,069	2.5	2,673
1¼"	0	3.7	0
1½"	0	5	0
2"	589	8	4,712
2½"	0	12.5	0
3"	134	15	2,010
4"	70	25	1,750
6"	24	50	1,200
8"	11	80	880
10"	2	122	244
12"	1	160	160
Total	34,775	-	46,504

Table 9. Water System Average Day Water Use Per REU

Year	Total Water Sales (Kgal)	Average Day Water Use (Kgal)	Water Use / REU (gpd / REU)
2022	4,530,279	12,412	254
2023	4,716,245	12,921	264
2024	4,708,643	12,900	264
2025	4,771,955	13,074	281.1

Table 10. Water System Per Capita Residential Water Usage

Year	Residential Demand (Mgal)	Total Service Area Population	Gal/Per/Day
2015	1,667	112,224	41
2016	1,687	111,865	41
2017	1,625	112,059	40
2018	1,664	111,811	41
2019	1,600	110,986	39
2020	1,674	113,186	41
2021	1,695	111,479	42
2022	1,623	112,951	39
2023	1,615	112,531	39
2024	1,569	113,430	38
2025	1,603	114,185	38

The population served is an estimate because an unknown number of residents rely on private wells rather than the municipal utility water supply. This is particularly the case in Mount Pleasant. Note: The Utility utilized the WI Demographic Services Center (Dept of Administration) as the source of population data.

RWU has worked to implement the conservation and efficiency measures it laid out in the diversion application that meet requirements in Wisconsin Administrative Code NR 852.04. Table 11 below summarizes these efforts. It describes additional measures undertaken since the application was submitted.

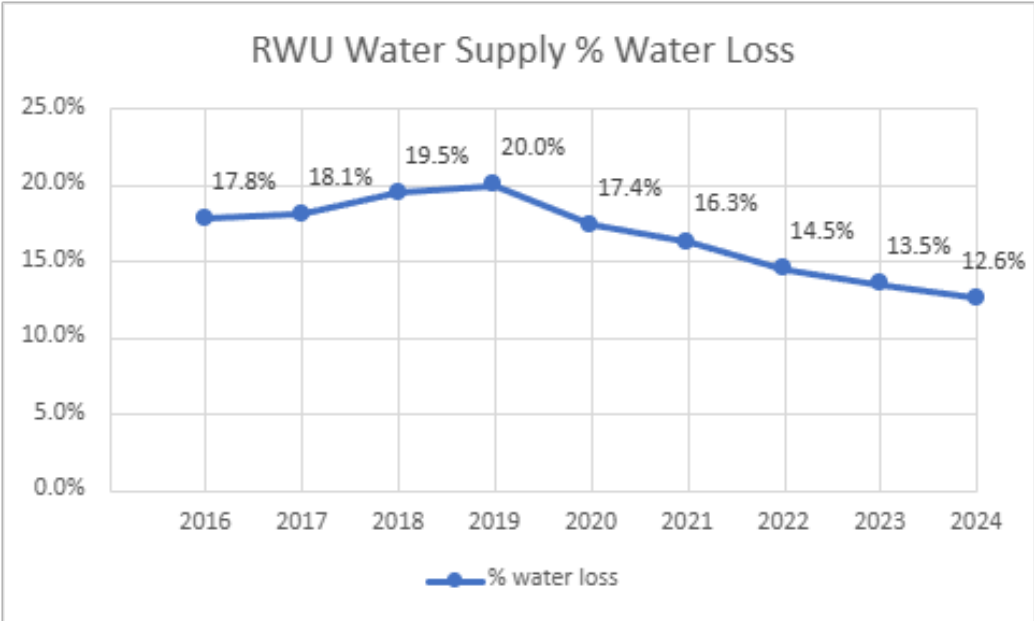
Table 11. Conservation and Efficiency Measures

Abbreviation	Requirement	Location
PWS-1	Water-use audit	<p>RWU annually submits to the PSC its water production, sales, and nonrevenue water with its annual report as required by Wisconsin Administrative Code PSC 185.85(3). RWU also uses the American Water Works Association water audit software to conduct audits that help quantify losses and identify areas to improve efficiency and recovery.</p> <p>RWU submits water production, sales, and nonrevenue water data annually to the PSC per Wisconsin Administrative Code PSC 185.85(3). It also uses American</p>

PWS-2	Leak detection and repair program	Water Works Association audit software to quantify losses and pinpoint efficiency improvements.
		RWU prepared a water loss control plan under Wisconsin Administrative Code PSC 185.85(4) and submitted it to the PSC prior to submitting its diversion application.
		RWU continued its efforts to upgrade water mains by replacing about 12,357ft of older main in 2025. Note: Totals for uncompleted projects not included.
		RWU contracted with AECOM in 2020 to perform a leak detection survey on the entire distribution system over a 2-year period. The 2020-2021 surveys combined for estimated detected leakage of 1.4 mgd. RWU continues this effort to survey roughly 20% of the system annually. In 2025, the AECOM survey comprised ~100 miles of main (21% of system) and found an estimated 140,000 gpd of leakage. RWU has been proactive to repair all detected leaks. Private property leaks take more time to correct, due to access issues but they are being addressed too. See Appendix A for a copy of the 2025 AECOM report. The positive impact of the expanded leak detection program is a main driver to the Utility reduction in system water loss (non-revenue water) as shown in Figure 2 below.
PWS-3	Information and education outreach	RWU includes the information required by Wisconsin Administrative Code PSC 185.33(1) and (1m), e.g. rates and volume unit conversions, in its customer water bills.
		RWU has posted the conservation and efficiency information required by Wisconsin Administrative Code PSC 185.96 online. See https://www.cityofracine.org/Water/WaterConservation/ and click on the Water Conservation links labeled “Conservation Practices” and “Leak Detection Program” to view the conservation and efficiency information.
		The City of Racine is working to ensure green building standards are incorporated into city operations and all new private developments and is committed to the US Green Buildings Council Leadership in Energy and Environmental Design (LEED) certification system.
PWS-4	Source measurement	RWU meters water produced and pumped into the distribution system and verifies the accuracy of its station meters in accordance with Wisconsin Administrative Code PSC 185.83 and 185.85(2). RWU documents its compliance with these requirements in its annual report to the PSC on pages W-14, Sources of Water Supply-Statistics, and W-27, Water Conservation Programs.

PWS-R1	Distribution system pressure management	RWU analyzed distribution system pressure management in a 2017 water-system study. It operates the distribution system to meet pressure requirements in Wisconsin Administrative Code NR 811.70(4). The study concluded that pressure does not appear to be a major contributor to main breaks or leaks.
PWS-R2	Residential demand management program	RWU has posted residential water conservation information on its website. See explanation for PWS-3 for the link. RWU continues to notify customers of high-water use through mailings that accompany the water bills and survey residences for leaks on customer request. RWU generally sends mailings if water use has risen for the quarter over 50% of what it had been in the prior year.
PWS-R3	Commercial and industrial demand management program	<p>The City of Racine's largest industrial user began demand reduction in mid-2020 via geothermal installation (est. 300 million gal/year savings), but 2025 results show only modest progress (~1.3% drop, or 5 mg/year from 2019). RWU will review landscaping/watering rules with served communities.</p> <p>RWU will work with the communities in which it provides service to review their requirements for commercial and industrial landscaping and watering.</p>
PWS-R4	Water reuse	RWU will continue to look for opportunities to work with individual large-volume commercial and industrial water users to explore opportunities for water reuse within their facilities.

Figure2. Racine Water Utility System % Water Loss (Non-Revenue Water)



SECTION 5: ADDITIONAL CONSERVATION MEASURES

The City of Racine Development Department notes that buildings account for 14% of global potable water use. It promotes certifications like USGBC LEED and Wisconsin Green Built Homes, which address indoor/outdoor use, fixtures, process water, irrigation, and metering. Projects prioritize efficiency first, then non-potable sources, with whole-building metering to track and reduce consumption.

In fall 2020, RWU began recycling water between the high-pressure 933 zone and intermediate-pressure 875 zone. Mt. Pleasant's diversion area lies in the 933 zone, where low connections cause stagnation and require flushing for water quality. Recycling maintains flow and chlorine residuals without waste.

Two pump stations (Braun Road and STH 20) boost water to the 933 zone. Recycling pumps into the zone at one station while back-feeding from the other via a throttled bypass line (discharge pumps off), metered on the supply line. Stations alternate every 4 weeks. This cuts flushing needs until more connections are made, though a short dead-end segment in the diversion area may need occasional attention (15,000 gal total in 2025). Figure 3 shows recycling at STH 20.

While recycle water flows through the diversion area, it serves other RWU areas. Normal rate is ~250 gpm, with one-third passing through the diversion area. In 2025, ~131.4 million gallons (~360,000 gpd) were recycled system-wide, saving 3-4 million gallons yearly versus flushing.

Figure 3. Racine Water Utility High Pressure Zone Recycle

