



March 25, 2021

The Honorable Cory Mason  
Mayor's Office  
730 Washington Ave  
Racine WI 53403

Subject: 2022 Documentation of Reporting Requirements for the City of Racine Diversion of Great Lakes Water

Dear Mayor Mason:

On February 17, 2022, the Department of Natural Resources (the DNR) received the *2021 City of Racine, Wisconsin Report on Water Diversion* (Report).

The DNR issued the diversion approval on April 25, 2018, that requires the City of Racine (City) to submit annual reporting information to the DNR by March 1<sup>st</sup> of the following year. Thank you for submitting your report. Specifically, Section 6 of the diversion approval requires the City to report the following information for the prior year (2021) to the DNR:

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 Plant 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 following paragraphs briefly summarize the DNR's review.

1. *The total amount of water sold within the approved diversion area.* The City sold 3,374,976 gallons of water in the diversion area in 2021. The City diverted an additional 15,000 gallons of water to the diversion area in 2021 to flush water mains to ensure water quality. The City diverted a total of 3,389,976 gallons of water in 2021 (or an average of 9,288 gallons per day). The City is authorized to divert an average of 7,000,000 gallons per day.
2. *The total monthly sewerage flow to the City of Racine Wastewater Plant from the diversion area.* The City reports that 6,611,893 gallons of water from the diversion area was returned to the City of Racine Wastewater Plant, based on the measurements from the Hwy H meter. The Hwy H meter was recalibrated on March 24, 2021 and June 15, 2021. Additionally, wastewater meter at the three Foxconn meters were recalibrated on June 15, 2021. Due to the low flow through the wastewater system, the City acknowledges that there may be error in the wastewater measurements, as the meters are intended to measure much higher flows. The department believes that the meter readings are an overestimation of the actual return flow to the Lake Michigan. The City reports that the wastewater return from the Foxconn meters was 3,374,976 gallons

(approximately 95% of the sales) and the department anticipates that there would be additional wastewater flow from the infiltration and inflow into the wastewater system.

3. *The total consumptive use.* The Report indicates that the total consumptive use in 2021 was negative, that is more water returned to the basin than was diverted. From the reported volume diverted minus the volume returned the City calculated that 95% more water was returned to the basin than was diverted (or 195% of the diversion volume was returned to Lake Michigan). Due to likely error in wastewater metering from low volumes in the wastewater infrastructure, the department estimates that the return flow was likely closer to 100% of the volume diverted. Water sales to Foxconn in 2021 were 3,374,976 gallons and wastewater return flow was 3,215,897 gallons, resulting in a consumptive of 4.7% of the water sales.
4. *Water use intensity metrics.* The Report includes three water use intensity metrics: residential per capita water use, the ratio of the maximum day to average day water use and the average day water use per residential equivalent unit. The residential per capita water use is reported as 46 gallons per capita per day in 2021. The ratio of maximum day water use to average day water use is described in Table 7 of the Report. The maximum day to average day water use ratio was 1.60 in 2021. The average day water use per residential equivalent unit calculation is described in Table 8 and 9 of the Report. The average day water use per residential equivalent units was 266 gallons per day per residential equivalent unit.
5. *A summary of the impacts of the implementation of conservation and efficiency measures.* Table 11 of the Report details the City's efforts to implement water conservation and efficiency measures.
6. *A description of any additional conservation and efficiency measures implemented.* Water conservation measure may apply to the entire City, not just the diversion area. The City contracted with AECOM to conduct a leak detection survey of the Racine Water Utility water mains. The first half of this survey was conducted in 2020 and the second half was conducted in 2021. The survey covered approximately 445 miles of water main and found an estimated leakage of 1,359,000 gallons per day. Through follow up communication with the City, the City indicated that all major water leaks have been repaired. The remaining leaks will be repaired but are located on private property and require more time to access. Three major geothermal projects have been implemented or are in process in Racine. An industrial customer implemented a geothermal project in mid-2020 to reduce water usage from a water-cooled air conditioning system. Through follow up communication with the City, the City provided information that water use at the facility in 2021 was 15% lower than the average water use from 2017-2019. The City will continue to monitor water usage to determine if the anticipated water use reduction of 300 million gallons per year is realized. The City reduced water main flushing in the diversion area from 6,356,556 gallons in 2020 to 15,000 gallons in 2021 by recirculating water through the diversion area water mains.

Thank you for submitting the required diversion reporting in compliance with your diversion approval. The diversion report provided indicated that water use is still very low in the diversion area. In addition to the reporting requirements above, the City has also submitted documentation demonstrating compliance with Tier 3 water conservation as required by section 6 of the Approval and ch. NR 852, Wis. Admin. Code. The information provided in the Report appears to meet the annual reporting requirements. The City's 2022 Annual Report is to be submitted to the DNR by March 1, 2023.

Please contact Shaili Pfeiffer, [Shaili.pfeiffer@wisconsin.gov](mailto:Shaili.pfeiffer@wisconsin.gov), (608) 219-2216, with any questions regarding your annual reporting.

Sincerely,



Adam Freihoefer  
Section Chief, Water Use Section  
Bureau of Drinking Water and Groundwater

cc.

Michael Gitter, Interim General Manager, Racine Water Utility (email only)  
Anthony Beyer, Director of Public Works, Village of Mount Pleasant (email only)  
RJ Pire, Water Policy Advisor, PSC (email only)  
Shaili Pfeiffer, Natural Resources Specialist, DNR (email only)  
Steve Elmore, Drinking Water and Groundwater Bureau Director, DNR (email only)  
Jim Zellmer, Deputy Division Administrator, DNR (email only)  
Matt Matrise, Natural Resources Regional Program Manager, DNR (email only)