



Financial Services Audit Committee Communication

Date: October 27, 2023 (Rescheduled to November 9, 2023)

To: Great Lakes Water Authority Audit Committee

From: Matthew S. Lane MPA, Charges Outreach and Modeling Manager

Re: Annual Report on Water System Max Day

Background: Each year, following the designated peak season of June 1 to August 31, the Great Lakes Water Authority (GLWA) reviews the daily water system pumpage and reservoir data to determine the System Maximum Day (Max Day) and the hourly water system pumpage and reservoir data to determine the System Peak Hour (Peak Hour). The GLWA Systems Analytics and Meter Operations team and the Charges Outreach & Modeling team conduct this review in parallel and compare data to help ensure accuracy and completeness.

Once the Max Day and Peak Hour are determined and verified, the teams review daily and hourly performance for all Member Partners on the water model contracts as of that date to evaluate compliance with the values set forth in the Exhibit B of each Member Partner's model contract, which defines projected annual volumes, minimum annual volumes, pressure ranges and maximum flow rates. The teams complete this analysis using the wholesale master meter data available in GLWA's Wholesale Automated Meter Reading (WAMR) portal.

For this report, all measurements are reflected as million gallons per day or MGD.

Analysis: Based on the system pumpage and reservoir analysis completed for 2023, the System Max Day and Peak Hour are as follows:

2023 GLWA System Max Day

- June 2, 2023
- 690 MGD (631 MGD in 2022)

2023 GLWA System Peak Hour

- 7:00 – 8:00 A.M. EST
- 789 MGD (697 MGD in 2022)

Chart 1 below provides an illustration of demand patterns compared to overall system capacity. It identifies the number of days above threshold amounts of pumpage in MGD, showing the reduced use of system capacity over time. Total GLWA water system capacity is 1,720 MGD (or 1.7 billion gallons per day).

Chart 1: Demand Patterns - 2007 - 2023

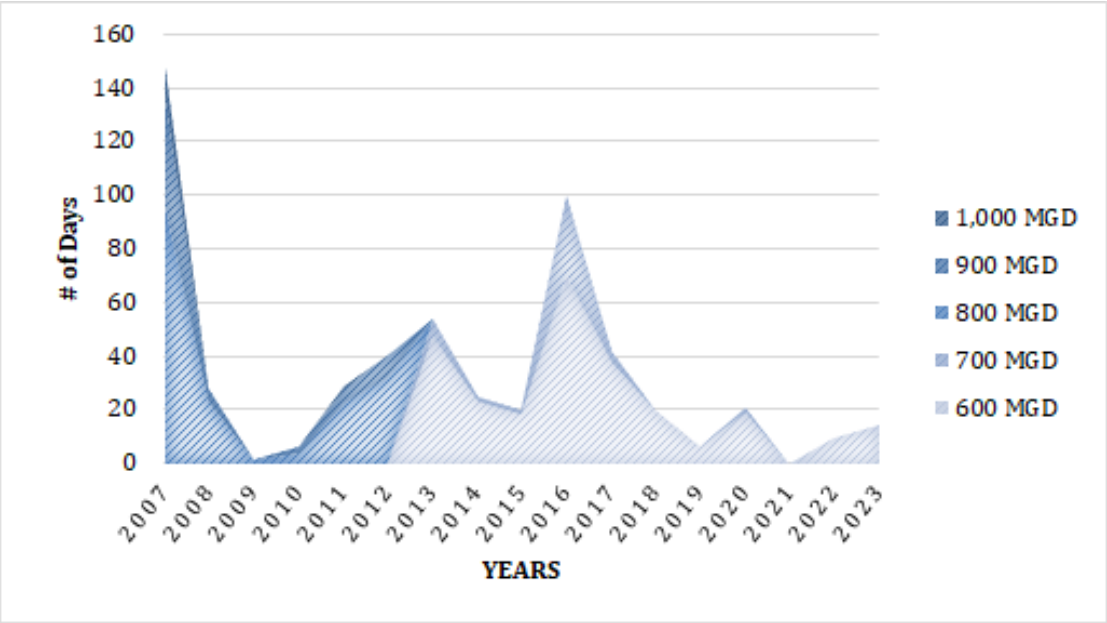
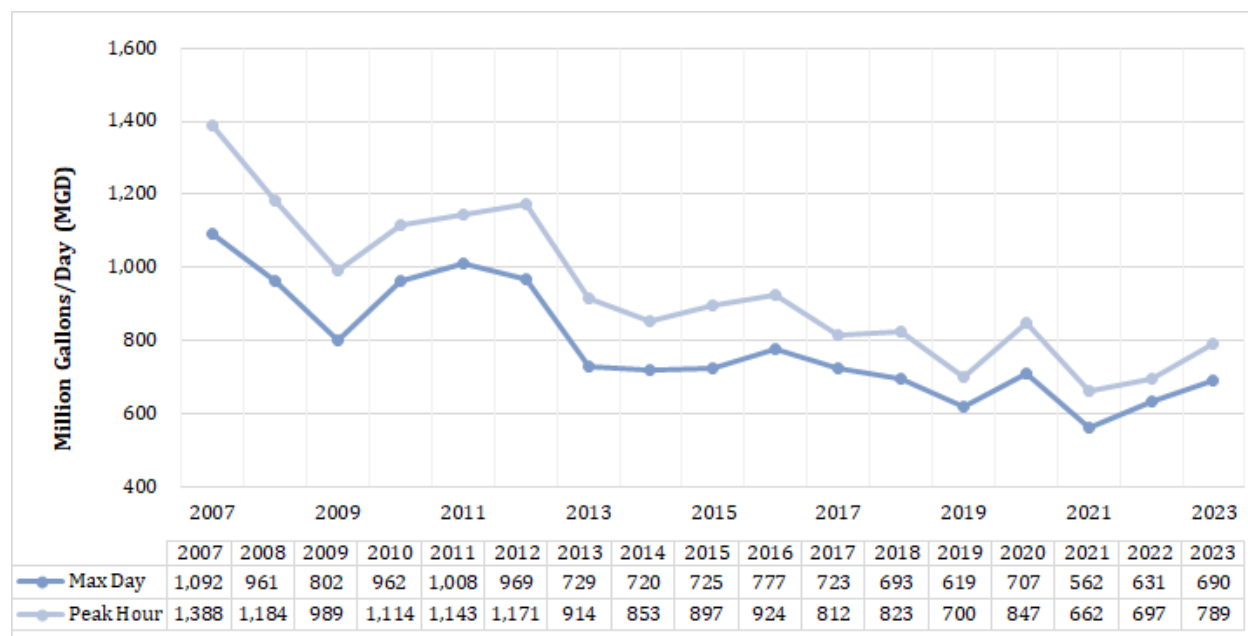


Chart 2 provides historical Max Day and Peak Hour detail by year. It helps further demonstrate the overall downward trend over time representative of system improvements and a focus on water conservation by users of the system. When compared to 2022 data, 2023 reflects an increase of 59 MGD and 92 MGD respectively.

Chart 2: Historic Max Day & Peak Hour - 2003 to 2023



After review of the WAMR data from June 2, 2023, GLWA determined that only one Member Partner had exceedances for the Max Day and/or Peak Hour Value in their model contract. This is the City of Lincoln Park, with results as noted below.

- Contract Max Day – 5.50 MGD
 - ✓ Summer 2023 data showed 1 demonstrated value over 5.50 MGD (6.24 MGD)
- Contract Peak Hour – 6.93 MGD
 - ✓ Summer 2023 data showed 1 demonstrated value over 6.93 MGD (7.13 MGD)

Members of the GLWA and Lincoln Park teams met on October 13, 2023, to review the Lincoln Park WAMR data and determine the cause of the exceedances. Based on verified data provided by the city, the group determined that the exceedances on this date were due to a water main break.

Exceedances resulting from water main breaks are exempt from consideration for establishing a communities' demands, as outlined in the model contract. Both the City and GLWA agree that no consequences should apply, and no corrective action plan will be required. GLWA will present this data to the Water Analytical Work Group for their review on Tuesday, October 31, 2023.

Budget Impact: None

Proposed Action: Receive and file report.