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Fact Sheet

To: Interested Parties to the Proposed Hyperscale Data Center in Howell Township

From: Greg Tatara, Utility Director

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The Marion, Howell, Oceola, and Genoa Sewer and Water Authority (MHOG) have prepared this fact sheet with regard to the service of a proposed hyper scale data center in Howell Township. In this fact sheet we address well field capacity, participating township capacity, the distribution system, and sanitary sewer service as it relates to MHOG.

Definitions

To assist in some of the technical terms, please refer to the below definitions;

Firm Capacity: the reliable, sustained pumping rate of the MHOG well field with one of the wells out of service.

Production Capacity: the total pumping capacity with all available wells in operation

Treatment Capacity: the capacity of the water treatment plant equipment to soften, disinfect, and pump to the distribution system

Physical Capacity: The combined ability of the well field to pump and the plant to treat water for conveyance to the distribution system

Distribution System: the network of pipes, pumps, storage tanks, valves and hydrants that transport treated water from the plant to consumers for drinking, commercial use, and fire fighting needs.

Well Field Capacity

When we discuss capacity of the MHOG Water Treatment Plant, we must consider both the designed and permitted physical capacity of the wells and treatment system as well as the capacity each participating township owns in the MHOG System.

The MHOG plant is situated in Marion Township over the Marshall Sandstone Aquifer. MHOG currently has six (6) 400 feet deep production wells set in the bedrock and isolated by surface and shallower perched aquifers by a confining clay layer(s). Each well is capable of producing 2 Million Gallons Per Day (MGD), for a total production capacity of 12 MGD. Our Baseline Well Capacity as permitted by the State of Michigan is currently set at 13.5 MGD. Our current treatment plant is capable of treating, through lime softening, 12 MGD. It is important to note that with our current well field, our firm capacity is 10 MGD. Currently, MHOG averages peak summer demand days of 4.5 MGD, with an annual average of 2 MGD. Irrigation on hot, dry summer days typically increases our demand from a baseline winter usage of 1.8 MGD to up to 4.5 MGD with our current customer base. On our current site, MHOG is master planned to ultimately install two additional 2 MGD production wells, which, would increase our firm treatment and production capacity to 14 MGD. This is planned based on an analysis of long-term land use plans of the member communities.

Using funds deposited by the proposed developer, MHOG has hired hydrogeologic consultants to review information on the Marshall Aquifer, review current plant production data and well level drawdown data, and review construction of the existing wells in order to complete the following scope to evaluate the Marshall Sandstone aquifer and MHOG system:

1. Provide regional information about the Marshall Sandstone aquifer based on readily available public information.
2. Document local conditions at the MHOG well field based on normal operation.
3. Prediction and modeling of water levels due to added water withdrawal.
4. Provide guidance on the process and potential costs associated with adding additional wells at the MHOG well field location.

The information obtained from this study will be shared with the decision makers so that the impact of the additional withdrawal is factually documented.

Individual Township Capacity

When MHOG was formed in the late 1990's, each township contributed 25% of the cost to build the plant and well field. Therefore, each township owns 25% or 2.5 MGD of the plant's current firm capacity. Under the Master Operating Agreement between MHOG and the participating townships, each township has the unilateral right to utilize their capacity, which is determined by the meter reads in each township. As MHOG has no land use authority in the townships, MHOG must legally provide each township water within its available capacity. If a township desires to go over their current owned capacity then that capacity may be purchased from another township or that township can petition to construct more capacity in the plant. Currently, what is being stated as the proposed additional demand in Howell Township would fall within the township's dedicated available capacity.

Distribution System Capacity & Improvements

Under the Master Operating Agreement, whenever a development is proposed in MHOG that will use more than 100 Residential Equivalents of Water (an REU is 218 gallons per day), then the developer is required to fund MHOG's engineers performing an impact determination study. In the impact determination, demands are placed into MHOG's calibrated hydraulic water model. This allows MHOG to determine what improvements are needed in the distribution system (if any) to serve that development within the entire MHOG distribution system. Our model covers the entire MHOG System as water is dynamic and follows elevations and hydraulic grade lines and not geopolitical boundaries. Therefore, in modeling the demand at the location of the proposed data center, we will look at the improvements to serve the proposed data center, as well as evaluate what other improvements would be necessary to protect the existing MHOG System.

Another important aspect of the distribution system modeling is an evaluation of water age and quality. It is important when designing distribution improvements to look at the age of the water from leaving the plant to ultimate use. In cases where water ages in mains and storage structures due to minimal use, it is difficult for system operators to maintain the water's chlorine residual for disinfection potential as well as other concerns for taste and quality. It is critically important to design main and storage structure size to maintain high water quality in the system.

Financial Considerations

It is our understanding that all costs for improvements to the MHOG system will be borne by the developer, which is also the case for all developments that connect to the MHOG System. However, once a developer constructs infrastructure meeting MHOG's design standards and inspection during construction, then that infrastructure will become part of the MHOG System and MHOG will be responsible for the operation, maintenance, and repair of that infrastructure. The cost for that maintenance and repair is paid for by the rates for water usage. In the case of a large hyper scale data center, MHOG anticipates that it will acquire a large amount of new infrastructure, and therefore must make sure that enough volume is used to cover the cost of the infrastructure maintenance. MHOG desires to have a very efficient cooling system and not consume water at volumes that could negatively impact our ability to serve all of our customers. However, enough water or unique rate structure for the data center must be ensured to make sure this demand does not impact the rates of our existing customers.

Conclusion

It is the goal of MHOG, that if a data center or other high-capacity land use is developed, the following conditions be met to the extent MHOG is able to control them, including:

1. Demand that falls within the Townships available and existing capacity;
2. A use and/or rate structure that covers the long-term cost for maintenance and operation of the infrastructure without negatively impacting our existing or future customers;
3. Proper sizing and location of infrastructure for maintenance of water quality while also being able to meet peak and fire flow demands;
4. A determination by the system and the State of Michigan that there are no detrimental impacts to the existing Marshall Sandstone Aquifer; and,
5. Payment for all infrastructure needed to support the development by the developer without impacting MHOG finances.