CITY OF GRAND RAPIDS

Lake Michigan Filtration Plant High Service Pumping Energy Savings Using AI Advisors

CASE STUDY

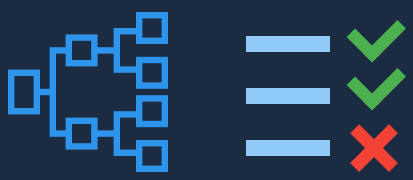
Real-Time Intelligence and Smart Advisor

Multi-Dimensional Optimization

Grand Rapids' energy bill has a 4-tier rate structure which changes based on the season. This makes energy during on-peak hours up to 84% more expensive than off-peak hours.There are nine pumps of varying sizes with VFD or two speed control that pump into two discharge mains and numerous storage tanks making it very complex for operators to determine most energy efficient operations.

Aquasight's ATLAS real-time intelligence platform was used to digitally capture the behavior, cost performance and efficiency of individual pumps and the whole system.
An AI advisor would issue a real-time guidance for most optimal pump run configurations to meet storage, demand and reliability needs.

Additionally, pump asset intelligence measured through aging metrics was used to identify pumps deviating from the factory curve, helping with pump maintenance programs and budget planning.



16% Low & No-Cost Savings

Optimal Pump Combinations, Leveraging Tiered Rate Structure and Managing Storage Resulted in:

- $177,000/year in energy savings achievable with operational changes
- 22.5% weekday summer energy savings
- 23.8% weekday non-summer savings

"It's findings like these that make it easier to justify pursuing other innovative technologies. The operational knowledge captured by the Aquasight platform helps existing and new operators troubleshoot and continuously improve and helps minimize knowledge loss through retirements and transitions."

MIKE GRENIER
Superintendent, LMFP, City of Grand Rapids

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Bringing Lake Michigan Water to Grand Rapids

Water is treated at the Lake Michigan Filtration Plant and pumped 40 miles into the greater Grand Rapids area.

The plant has a 135 MGD capacity and can store up to 76 MG in 17 storage tanks within the distribution system.

The energy cost associated with pumping the water from the plant to Grand Rapids is over 90 $/MG or $1.1 million annually.

"Having a 4-tier electricity structure and a system with many pumps and speed options requires a lot of factors to be considered. That's where Aquasight's ATLAS platform helps operators find energy efficient strategies while meeting system demands."

CHAD REENDERS

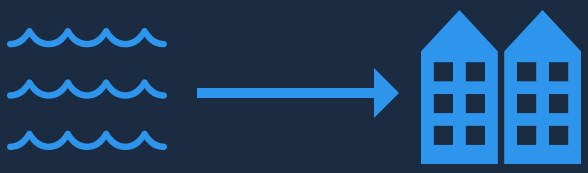
O&M Supervisor, LMFP, City of Grand Rapids

$1.1 Million

annual electric bill for high service pumping

17 Tanks

to maintain system pressure and storage requirements



40 Miles

distance to pump from Lake Michigan to main distribution

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