



moulton niguel water district

Water-Energy Efficiency Project

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About Moulton Niguel

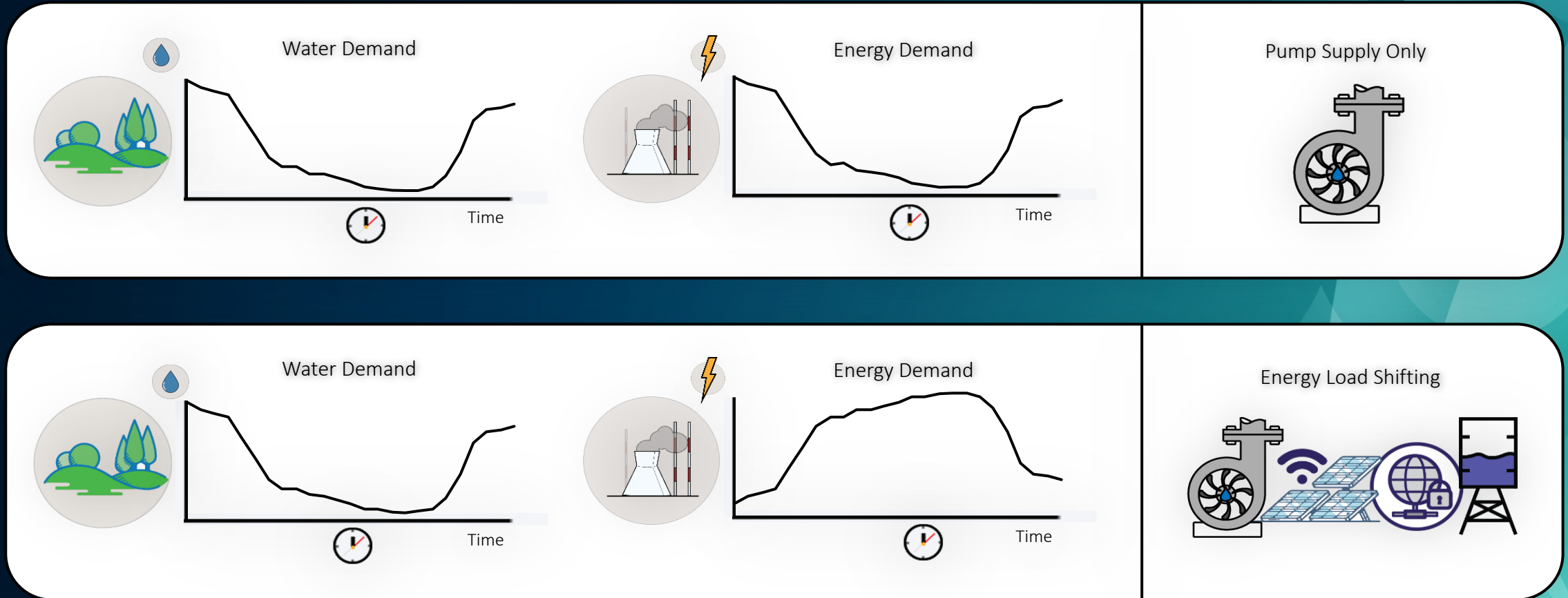
- Water, recycled water & wastewater services
- Serve 6 cities in South Orange County
- Population served: 172,000
- 7 Board Members
- 152 Employees
- Water Budget Based Rate Structure
- AAA rated by Fitch and S&P
- Data-driven utility



Water-Energy Efficiency Project

- Partnered with UC Davis Center for Water-Energy Efficiency (CWEE)
- \$3 million grant funded by California Energy Commission
- Explore opportunities for Demand Responses (DR) in the water sector to take advantage of Time-Of-Use (TOU) Rates
 - Evaluate if MNWD can participate in the wholesale grid to obtain additional incentives to shift when we use electricity
- Develop and implement Energy Demand Management System (eDMS)

Opportunity for Load Shifting

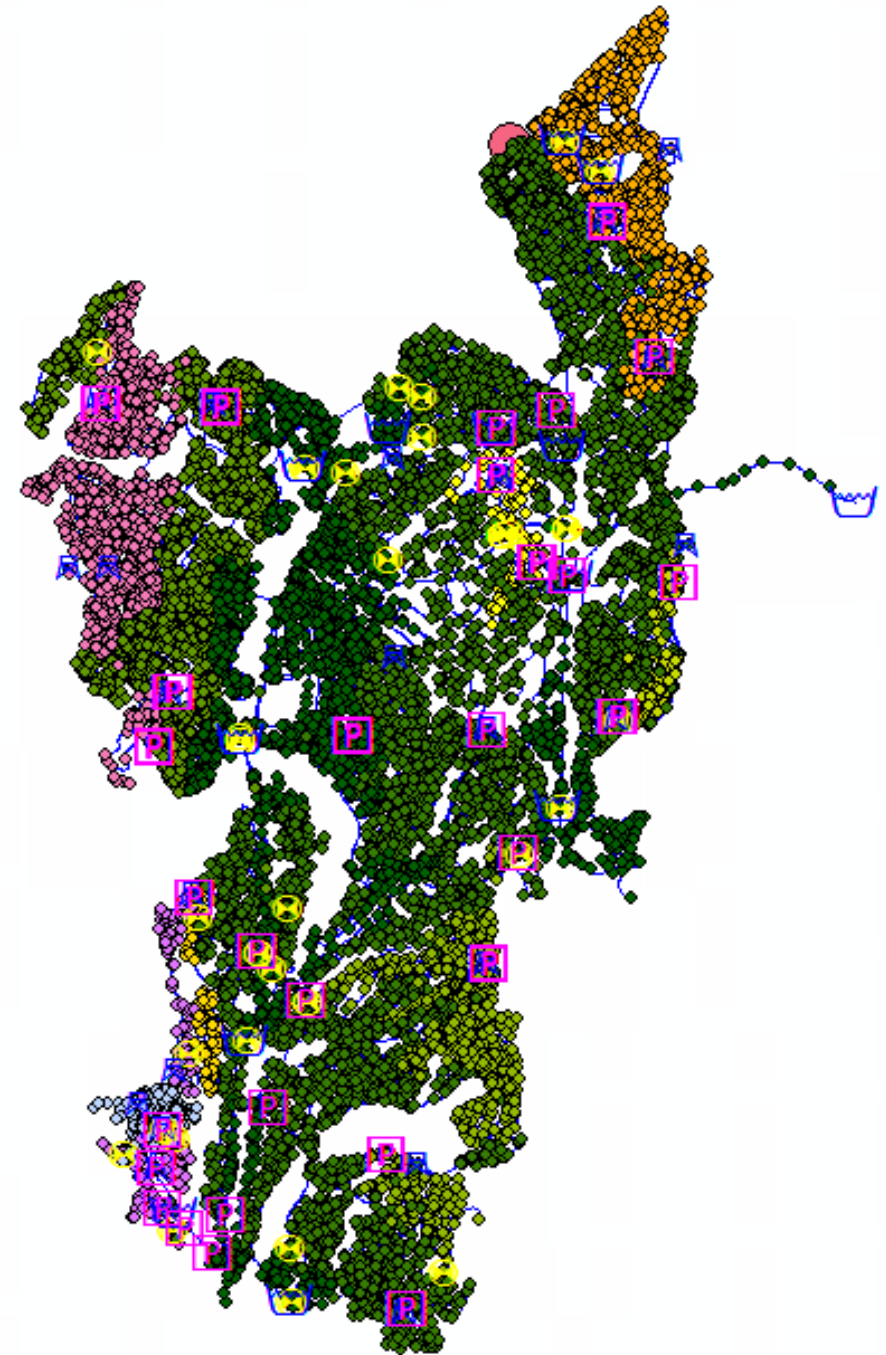


Project Objectives

- Quantify energy intensity of PW & RW systems
- Explore operational changes to manage energy loads differently
 - Ramp up & shift energy use
 - Respond to different energy rate programs
 - Maintain safe water system
- Reduce energy costs & generate revenue
- Reduce GHG intensity of energy use

Project Status

- Performed energy intensity analyses
 - Potable and recycled water systems
- Refining potable hydraulic model
- Installing energy meters at active pump stations
- Utilizing existing communication infrastructure



eDMS Development and Testing

- UC Davis to modify DR technology to enable DR for water utilities
- Configure DR technology to MNWD systems
- Develop Operation Guide for using DR technology
- Pilot the DR technology for 12 months



Next Steps

- Measurement and Verification
 - Utilize energy meters and existing SCADA to evaluate MNWD's potential energy cost savings
- Estimate energy sector benefits of applying DR technology to the water sector