



OBJECTIVE

The California Department of Transportation (Caltrans) District 6 desired a new irrigation solution that would reduce water consumption due to drought conditions, utilize water and energy efficiently, provide a reliable and timely method to gather usage data for the state's right-of-way landscaping as well as offer labor efficiencies maintaining and servicing systems.

CHALLENGE

Along the off-ramps of the I-99 and I-180 corridor, Caltrans District 6 operates more than 300 pump

stations to irrigate plant material, provide fire protection and erosion control.

From mountain peaks to desert floor, District 6 maintains the largest portion of road miles in the state highway system with 476 miles of freeway and 1,554 miles of rural and urban highway.¹ A critical requirement for this project was high-level advanced telemetry software to efficiently manage all the pump stations spread across the vast miles of interstate.

Prior to the upgrade, Caltrans' only method of gathering usage data was by physically visiting each pumping location, which was extremely costly and resulted in

inaccurate and delayed reporting. To diagnose system issues or determine maintenance needs, Caltrans had to drive to each pump location to determine the problem, then dispatch a secondary maintenance crew which was extremely labor-intensive.

CALTRANS AT A GLANCE

- 2,030 road miles along the I-99 & I-180 corridor from Bakersfield to Madera, California
- 275 new high-efficiency WaterMax 5000 booster pump stations
- 30 retrofit kits for existing pumps of any brand <5 years old
- 4-month timeline for design and installation
- Accurate and timely reporting, labor and system service efficiencies with WaterVision® remote telemetry



Caltrans District 6 utilizes 300+ Watertronics WaterMax packaged pumping stations and WaterVision remote telemetry to efficiently manage over 2,000 miles of roadway in central California.

SOLUTION

With Watertronics, Caltrans found the answers they needed to operate a more efficient irrigation operation. Advanced pump technology and station quality offered greater water savings, WaterVision remote telemetry provided improved management of the multiple pump locations, retrofit kits allowed a cost-saving upgrade for existing Caltrans station less than five years old to utilize WaterVision and Watertronics controls platform and manufacturing facilities located both in Wisconsin and California were well equipped to handle the high volume within the timeframe.

Additionally, through Watertronics exclusive Pump Service Network; which includes 200 factory certified services partners nationwide, an authorized local PSN service partner

provided the necessary service component Caltrans required including installation, technical start-up and ongoing maintenance.

According to Greg Ireland, district sales manager for SiteOne Green Tech, "Watertronics' capabilities of manufacturing a wide breadth of pump stations that ranged from booster pump stations to large agricultural stations always impressed me. But it was the benefits of working with a world-class operation that were too numerous to count. Whether it was the raw commodity to finished goods perspective of their operation, or the in-house technology developed specifically for their product line, I knew that I wanted to work with Watertronics on the project specification.

Watertronics is the only company that could have developed, manufactured and delivered the number of pump stations in the small time window given. Secondly, Watertronics is a respected manufacturer within the Green Industry and I was honored that they would want to work with me on a project that had meager prospects when it began to be developed in 2010."



WaterVision mobile app

LEFT: User-friendly controls allow easy interface with WaterMax systems.

RIGHT: Cost-saving retrofit kit upgrades existing stations to a Watertronics controls platform.



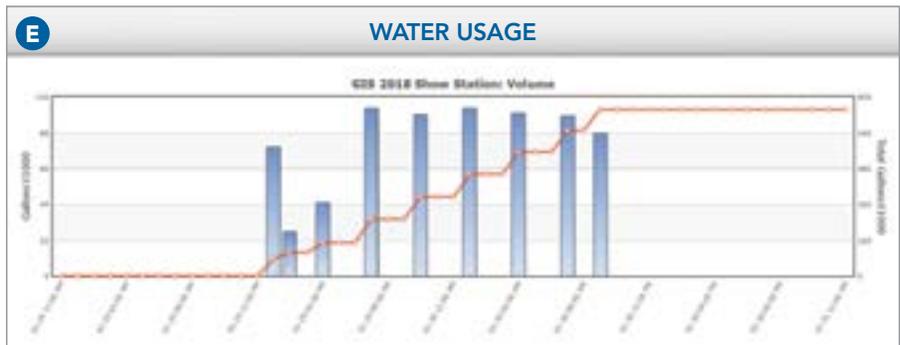
RESULTS

1. Downtime minimized and operational efficiency optimized through monitoring and control of multiple pump stations from any web-enabled device.
2. Timely reporting of 300+ pump locations for compliance.
3. Labor efficiencies for monitoring and service.
4. System efficiencies provide 50% water and energy usage savings.
5. Retrofit kit cost savings – \$10k per unit in materials, as well as labor and shipping. Upgrading existing stations to a Watertronics controls platform allowed those stations to utilize WaterVision.
6. Aggressive 4-month timeline was met.

A CLOSER LOOK AT WATERVISION REMOTE TELEMETRY

Watertronics pump stations with WaterVision remote monitoring controls offer a web-based user-interface with secure cloud storage, and together create a reliable irrigation system. Receiving advanced rules-based alerts allows Caltrans and the service provider to respond faster to system issues by remotely investigating a problem at a specific station. Caltrans can then generate a work order and dispatch the proper team for repairs.

Standard and customized charting of pump station data optimizes pump sequencing, connected horsepower, and pressure set points. System uptime is maximized through remote reset alarms, system adjustments and the ability to enable/disable pumps. Water usage reports can be generated by the hour, day, week or month to comply with state requirements.



- A: Mapview uses GPS coordinates and color coded status icons to provide a complete picture of your pump network.
- B: Detailed aerial view of pump locations at off-ramp.
- C: WaterVision app shows real-time view of VFD readings.
- D: WaterVision dashboard provides overview of critical pump information.
- E: Build reports for water usage regulations.



WATERMAX 5000 BOOSTER PUMP STATION FEATURES

- WaterVision Cloud for AccuDrive
- Variable Frequency Drive (VFD)
- Inverter duty NEMA premium efficient TEFC motor
- Line reactor on VFD primary to mitigate power spikes
- Electronic butterfly master valve
- Vandal-resistant tamper-proof lock
- Marine grade aluminum enclosures with all stainless steel pump components and base for corrosion resistance
- HP range: 5, 7.5 & 10
- GPM: 40-100
- PSI: 30-60 boost
- Voltage range: 208/1, 230/1, 230/3, 460/3

“Watertronics is the only company that could have developed, manufactured and delivered the number of pump stations in the small window given to our companies.”

– Greg Ireland, SiteOne Green Tech
Watertronics Authorized Service Provider



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For more information on how WaterVision can monitor and control your pump systems, locate a sales manager in your area by visiting www.watertronics.com or call 1-800-356-6686.



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1 <http://www.dot.ca.gov/d6/profile.html>