

Town of Los Gatos Uses Aquacue Technology to Meet Water Management Challenges

“We can now easily understand our day-to-day water use and take the necessary steps to decrease water consumption. By using Aquacue’s products and services we are achieving measurable results in our water management practices and decreasing our budget expenses at the same time.”

- Christy Wolter, Parks & Facilities Works Department,
Town of Los Gatos

Executive Summary



Town of Los Gatos
Population: 29,400
Water meters: 83

Program Goals

- Control of water consumption and understand billing info
- Optimize irrigation water use
- Detect leaks at town properties
- Locate meters

Constraints

- Work with existing AMR infrastructure
- Scalable, staged deployment
- No IT investment

Aquacue Products and Services Supplied

- Aquacue Barnacle™
- Aquacue Wave™ Analytics and Visualization Software

Annual Savings

\$13,500 / 1M gallons H₂O

Project Cost

\$12 K

Payback

11 months



Background

The Town of Los Gatos (pop. 29,400) is located 60 miles south of San Francisco in a picturesque southwestern section of Santa Clara County where the Santa Clara Valley meets the lower slopes of the Santa Cruz Mountains. The town, one of Santa Clara County's oldest communities, traces its origins back to 1840 when the Mexican government granted a land patent for a 6,600-acre rancho to Sebastian Peralta and Jose Hernandez.

The economy of Los Gatos is closely tied to the high-tech cluster of the Silicon Valley. Companies such as Netflix, ImageShack and Aquacue are headquartered in the town. Moreover, Los Gatos is an established destination point as the variety of up-scale restaurants and boutique shops attract visitors to its pedestrian-friendly downtown.

Los Gatos is committed to the sustainable development of the community and in 2009 it was chosen as a California Leader in Sustainability by the California Sustainability Alliance. The town actively implements its "Los Gatos: Growing Greener Together" program, uses alternative fuel in its vehicle fleet, introduced solar powered trash compactors, and is constructing its new library using LEED Gold Green Building standards. The Town also recently signed a solar power purchase agreement to purchase renewable power for the Police Operations Building and Town Service Center.

San Jose Water Company supplies the town, its residents and businesses with water from Lexington Reservoir, located near the town in the Santa Cruz Mountains. The town's budget pays for water used by public facilities as well as for the irrigation water used in parks and medians. San Jose Water Company operates 83 meters to monitor water supplied to the town for use in the public facilities and irrigation. The average cost of water is around \$5 per CCF. In 2010 the Town of Los Gatos incurred an annual water cost of \$140,000, while consuming around 27,800 CCF of water.

Business Challenge



In 2011, the Town of Los Gatos planned to broaden its sustainability efforts to include water conservation. As public awareness of water scarcity problems in California increased, town officials became proactive in developing the town's water conservation efforts to further efforts in establishing Los Gatos as a sustainability-conscious community. The rapidly rising cost of water also underscored the importance of curbing water consumption. Los Gatos was eager to manage increases in water-related budget expenses and to decrease these

expenses whenever possible. Moreover, Los Gatos also faced regulatory pressures in the area of water conservation as new legislation, most importantly the California Model Landscape Ordinance and the Water Conservation Act, prompted it to reduce its water consumption.

To address these issues, **Los Gatos needed a new water data management system that would provide better insight into the town's water usage.** At the time, the only water use information source was a bi-monthly bill sent by San Jose Water Company. These bills were sent separately for each of the 83 water meters, which made it difficult to integrate the data and get a complete picture of the town's water consumption. Facilities staff and town managers did not have water use and leak information until several months after the use or leak. Furthermore, maintenance staff often lacked the basic information on where a particular meter was located, and when leaks occurred. Furthermore, up to 80% of repair time was spent on locating the meter. With extremely limited maintenance staff resources, these delays created a significant impact on productivity. The new system had to address these issues in clear and measurable ways and allow the town's employees to focus their efforts on other important civic issues.

Program Goals

The major goals that the Town of Los Gatos planned to achieve with the new water data management system include the following:

Understand water consumption through dynamic observation and billing information manage usage and reduce water expenses. Detailed water consumption information is necessary for developing and carrying out strategic and operational plans aimed at reducing water use and curbing budget expenses.

Optimize irrigation water use. The town's irrigation system represents a patchwork of different vendors' solutions. Los Gatos wishes to implement the most advanced

irrigation technologies. Assessing the efficiency of the different parts of the irrigation system and calibrating the system to increase overall efficiency can result in significant water savings.

Detect leaks at the town’s properties. Timely leak notifications are crucial for preventing excessive water use and property damage.

Locate meters. The ability to quickly and easily locate meters can radically decrease the amount of time needed to repair a leak and increase the efficiency of water system maintenance.

Constraints

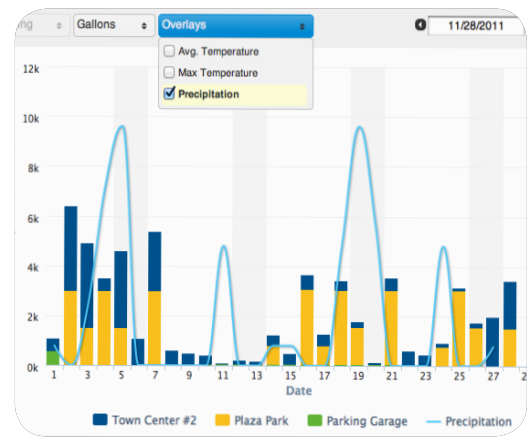
The Town of Los Gatos faced several constraints in implementing the new water data management solution. Firstly, its meters are owned by San Jose Water Company, which use mobile AMR to gather metering data. The new solution had to work alongside mobile AMR without interfering with its operation. The solution also needed the blessing of the San Jose Water Company to allow its deployment on the company’s meters. The vast majority of AMI solutions in the market today cannot co-exist with a mobile AMR from a different vendor, which eliminates them from vendors’ consideration set. Secondly, the water data management system had to allow staged deployment to work within the town’s budget constraints for each period while enabling the town to start the implementation by solving the most important problems. The town needed to identify the areas where the most significant savings could be achieved, and implement the system in those areas before expanding the program. Finally, the town wanted a fully hosted solution to avoid additional investment in IT infrastructure or adding incremental workload for its IT staff.



Solution

Aquacue provided the Town of Los Gatos with the full range of its products and services, including Wave, its web-based analytics and leak alerts software platform, and its meter-reading Barnacle devices. Aquacue conducted an analysis of the town’s water metering infrastructure and recommended that Barnacles be deployed on 15 meters.

The installation including a brief site survey and within hours, the town had full access to realtime metering data. Barnacles transmit water meter data at 15-minute intervals through the wireless cellular network. Aquacue gathers the data, stores it in the cloud and provides the web-based analysis tools through its Wave software platform and makes the information available in real-time through an online and mobile (smartphone) dashboard presentation.



Results

Aquacue’s water data management solution is allowing the Town of Los Gatos to clearly view its water footprint. The new system identified several significant water leaks in the first two weeks of implementation. In fact, almost 50% of the Barnacle-installed meter locations had leaks of varying severity which accounts for approximately 700,000 gallons in annual water loss. Aquacue’s weekly online leak report is especially useful to town managers in assessing the magnitude of leaks and allowing them to prioritize planning efforts.

Moreover, the system maintains accessible information on all Aquacue Barnacle-equipped meters and allows users to quickly locate every meter. Lag time has also been significantly reduced between the identification of leaks and their repair.

Aquacue’s Wave software is helping town officials reduce the time and effort spent on planning future water needs and related budget expenses due to its ability to aggregate system-wide consumption and billing information and to present it in an easy-to-understand format. Town workers are now able to fine-tune irrigation systems and minimize water use based on detailed real-time consumption information.

As of August 2011, 15 Barnacle-equipped meters account for 10M gallons of average annual water consumption. Based on the results of completed projects, an estimated 10% reduction in water use is expected in the first year which translates into annual savings of approximately 1M gallons. The expected annual water cost reduction is nearly \$7,000.

The anticipated savings from prevented property damage due to Aquacue's leak detection capabilities are even greater. Given the scale of the program deployment, the town expects to identify at least three leaks annually that, if undetected, can result in significant property damage. Assuming the expected property damage from one such leak is \$2,250 (50% of average water damage-related insurance claims, according to the Insurance Information Network of California), the resulting annual savings amounts to almost \$7,000.



Together with the savings from decreased water use, total annual water use-related savings for the Town of Los Gatos are estimated at \$13,500 which will allow the town to recoup its investment in 11 months.

Next Steps

The adoption of Aquacue's products and services has become an important part of the sustainability strategy developed by the Town of Los Gatos. As water becomes an increasingly scarce resource, the importance of having an efficient water data management solution is clearly driving the next wave in water use efficiency.

Based on the results of the pilot program, the Town of Los Gatos plans to continue to install Barnacles on its meters. Aquacue is also integrating the town's historic consumption data across all meters to analyze trends in water use.

The town is also identifying its large commercial water consumers to encourage them to adopt water conservation measures. The town's own experience of successfully decreasing water use and related expenses can be useful in articulating the benefits of adopting a water data management system, which, in turn, will further contribute to the sustainable development of the town's community.