

FROST & SULLIVAN

Excellence in Water Resourcefulness Award:

*Las Vegas Valley Water District,
Nevada*

Introduction

Las Vegas Valley Water District (LVVWD) is among the growing list of water municipalities that extreme weather conditions have impacted. Following several years of drought, Tropical Storm Hillary brought the region to a halt because of structural damages caused by flash flooding and strong winds. The storm brought more than 110% of normal precipitation¹. Despite this, the region is not immune to the risk of future droughts. The region projects rising summer month temperatures caused by urban heat domes caused by rising population growth. The population is currently on track to surpass 3 million by 2040, which will result in an increase of 10% in annual water consumption. This potential water uncertainty has led Southern Nevada Water Authority (SNWA) to put barriers on new businesses settling in the region. Consequently, companies are being asked to report how much water they plan to use and are subsequently evaluated to determine whether it can lower its water footprint ahead of receiving approval for settling in.

To manage future expectations and uncertainties related to water availability and consumption LVVWD has taken a proactive approach to modernize and digitize its overall water management operations. By deploying state-of-the-art Itron's AMI (Advanced Meter Infrastructure) the water municipal has successfully rolled out water conservation initiatives.



1 Nevada Drought Update for July 2023 | University of Nevada, Reno (unr.edu)

The AMI system also allows for full utilization of its CIS (Customer Information System) and Meter Data Management System (MDM) through which it can coordinate and optimize field services, plan future infrastructure, and roll out new customer rates.

AMI is a fixed network that enables two-way communication between the utility’s systems and the customers’ water meter endpoints. This system enables daily and hourly meter readings, leak detection, and event monitoring.

Interval data enables all parties to detect and address excessive and unknown water consumption such as leaks. Leaks are especially a concern for smaller and hard-to-reach rural communities. The system has been deployed in their rural water locations of Mt. Charleston, Searchlight, Blue Diamond, and Laughlin. The system can also precisely detect the cause of abnormalities through its data analytics. The utility has since integrated AI component that is able to analyze over 3 million points of data at any given time. Through this LVVWD has been able to roll out conservation programs such as seasonal compliance initiatives and day-of-the-week watering, as well as pre-leak and access usage notifications.

Frost & Sullivan recognizes LVVWD as the 2023 Excellence in Resourcefulness for Water recipient for its technology-forward and community-oriented water conservation program. The table below lists the criteria for measuring LVVWD’s success for water resourcefulness.

SOCIETAL IMPACT	POOR	FAIR	GOOD	EXCELLENT
Improving customer awareness and participation				✓
Enabling behavioral change for reducing waste through customer engagement and technology-driven programs				✓
BUSINESS IMPACT	POOR	FAIR	GOOD	EXCELLENT
Strengthening a utility’s brand image as a leader in sustainability				✓
Achieving operational efficiency as a result of a successful sustainability strategy				✓



Social Impact

AMI is expected to play an important role in enabling and improving water conservation measures. It is designed to provide detailed information on program effectiveness and uncover new potential programs for customers to adopt, such as seasonal compliance rates. Since the system went live, LVVWD has noticed significant behavioral changes over just a few weeks of rolling out programs, allowing customers to become more vigilant and mindful in terms of water usage.

As a result, the municipal projects a 15 percent overall improvement in seasonal compliance rates, which is projected to yield 5.2 billion gallons of water reduction per year of at least 50,000 households. Early 2023, the municipal rolled out an excessive use charge, something that would not have been possible without access to real-time customer consumption data. The amount is \$9 per every 1000 gallons used above the threshold set for the season.

Successful customer participation has been contingent upon LVVWD's proactive and AI-based customer outreach programs. In addition to hosting city council community outreach events, the water municipal has internally built algorithms designed to automatically send notifications to customers via SMS. The SMS directs the customer to their website for more information, and can converse via bot chat to resolve their issue and garner additional insight.

Currently, the municipality has been able to send out between 15,000 to 20,000 SMS notifications a month. Notifications consist of abnormal water usage, higher consumption, or tamper-type events.

Customer satisfaction is considered a key performance index. To measure the effectiveness of their approach, the municipality sends out quarterly customer satisfaction surveys. The water municipal is able to resolve customer inquiries regarding billing and diagnose causes at a much faster pace, usually in less than two weeks.



Business Impact

LVVWD took a methodical approach to implementing AMI. The focus was on minimizing interruptions, retaining and improving customer satisfaction, as well as retrain its staff. The initial deployment of AMI took place in 2017 and was completed as of March 2023. During this period, it retrained its technicians in terms of meter reading, conservation, and maintenance work. Many were also retrained to learn how to apply data analytics.

AMI has also led to operational benefits. Predictive leak detection analytics has allowed the water municipal to identify leaks more effectively and address repairs more quickly. It has seen a 3 percent reduction in non-revenue water losses.

Through AMI the water municipal has been able to lower its carbon footprint by reducing the number of truck rolls sent out to read meter data or search for undetectable leaks and repairs. It also measures and keeps track of how energy-efficient its water pumps are.

By embedding and investing in AI, LVVWD uses AMI data to analyze customer usage patterns, which in return helps with resource planning such as the need for additional wells, water storage, or new pipe infrastructure. Based on collected AMI data, the company has built a data lake that can be accessed by different divisions. LVVWD predicts that through these programs, it will be able to obtain GPCD of 86 by the year 2035.

The water municipal has also been generous in sharing its learnings and best practices with other cities nationwide, including the City of Peoria in Arizona, for normalized water analysis, information sharing, and weather modeling. It has taken the responsibility of setting best practices for water conservation.

Conclusion

LVVWD is the poster child for addressing water scarcity head-on and setting exemplary measures for achieving impressive water resourcefulness and conservation goals.

It is aware that its job is far from over and continues to pilot and invest in advanced technologies. Its collaborative mentality has allowed it to garner success and gain the reputation of a leader in water sustainability.

Growth is a journey. **We are your guide.**

For over six decades, Frost & Sullivan has provided actionable insights to corporations, governments and investors, resulting in a stream of innovative growth opportunities that allow them to maximize their economic potential, navigate emerging Mega Trends and shape a future based on sustainable growth.

Contact us: [Start the discussion](#)