flume DATALABS™

Municipal Water District of Orange County

Using End-Use Data to Improve Utility Planning, Build Future Programs, and Comply with State Regulations.

MWDOC

BACKGROUND

The Municipal Water District of Orange County (MWDOC) is a Southern California wholesale water supplier that delivers water to 27 retail water agencies. These retail water agencies serve approximately 3.2 million residents across Orange County. Around half of MWDOC's water supply comes from local water resources and the other half is imported from northern California and the Colorado River.

As a wholesale water supplier, MWDOC's work centers around ensuring future supply and planning for future resource demand. The organization is currently engaged in an essential planning process to update their Water Efficiency Master Plan. As water demand across the US has become more efficient over the past 20 years, planning for future water efficiency has become more complex. Programs must reduce demand, be equitable and cost-effective. For MWDOC, this requires a holistic approach, including a detailed understanding of water demand across the service area and the efficacy of current and past water use efficiency programs in order to determine future plans. This will also address proposed water use objectives for each water utility mandated by the State of California.

THE CHALLENGE

As a wholesale provider, MWDOC doesn't have direct, consistent, or reliable access to water use data from residential customer meters, which are operated by retail agencies. Water use data is essential for MWDOC to understand even basic water use across their 27 communities and is used as a baseline for all planning for future programming, demand planning, and regulatory compliance. This information is also vital for MWDOC to update their Water Efficiency Master Plan.

MWDOC has historically relied on periodic reported consumption data for its water demand planning. Yet, even when MWDOC is able to get access to customer-level meter data, the resolution is insufficient to discern exactly how water is being used. The majority of meter data is collected monthly, sometimes even bi-monthly. Since outdoor use can occur in all months of the year in Southern California, this data cannot be easily used to disaggregate indoor and outdoor use.

To gain better understanding of where and how water is being used, MWDOC could work with data loggers and traditional end-use studies, but these are expensive and only analyze water use data for a brief window in time. A better approach for understanding water demand at the end use level for future planning was required.

Additionally, new California regulatory requirements set provider-level indoor and outdoor water use objectives and require regular utility reporting on water use throughout systems. California Assembly Bill 1668 and Senate Bill 606 establish guidelines for efficient water use standards and mandate annual reporting on this use. Although the state does provide guidance to communities on how to meet the new requirements, retailers and suppliers alike are currently figuring out how to best calculate their use with the data they have in order to ensure compliance.

THE FLUME DATA LABS SOLUTION

Flume Data Labs has over 600 sensors already deployed throughout many of MWDOC's communities as a result of utility programs and direct-to-consumer sales, with additional sensors added almost every day. These sensors collect essential information well beyond the capacity of standard water meters and can provide MWDOC with data they otherwise would not have access to. By capturing flow every 5-seconds, Flume Data Labs is able to provide a detailed and accurate analysis of water use, separated by indoors and outdoors. Flume Data Labs can even separate water use by appliance and fixture-level, including toilets, showers, clothes washers, dishwashers, and leaks.

Flume Data Labs sensors collect water use continually, allowing MWDOC to look at water use patterns across the course of months and even years. Using the unique aggregated data collected from these devices, Flume Data Labs has provided MWDOC with a vital understanding of long-term trends and current real-time data on water use across their service territory.
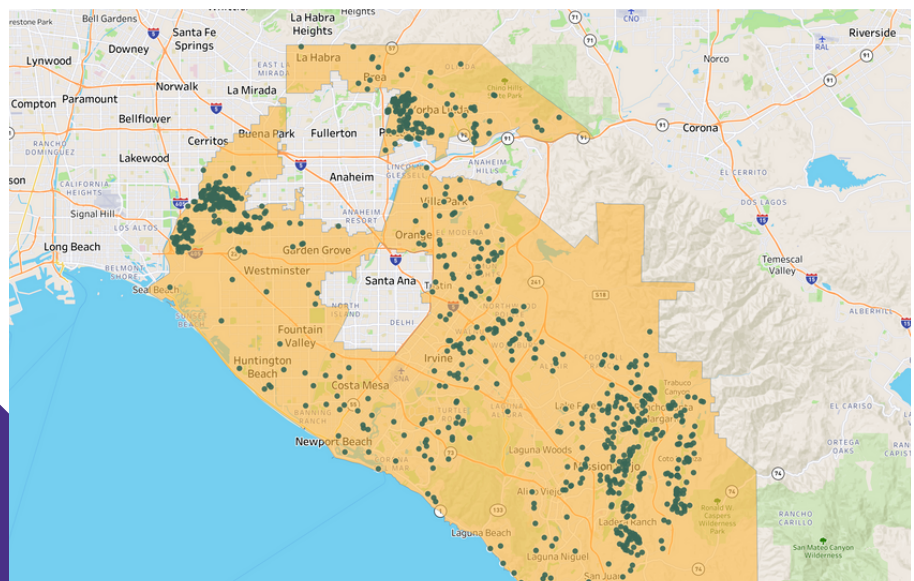
RESULTS

PROGRAM DEVELOPMENT

As MWDOC looks at program funding in the future, partnering with Flume Data Labs became essential to understanding the efficacy of programs funded in the past.

Specifically, MWDOC wanted to evaluate water-efficient plumbing fixture saturation throughout their community. Over the past decade, MWDOC has invested heavily in high-efficiency toilets, showerheads, faucets, and clothes washer rebates.

> *With Flume Data Labs data, MWDOC is able to understand the penetration of high-efficiency appliances throughout their community.*

As a result, MWDOC is now able to use this information to determine future funding for similar rebates and programs while they develop their Water Efficiency Master Plan.

Flume Data Labs found that most toilets used in the MWDOC service area are very efficient, often using less water than the national average. Armed with this information MWDOC will be able to adapt their programs to focus on areas with the greatest savings potential and the lowest cost, while also maximizing the likelihood of customer uptake and ease of implementation.
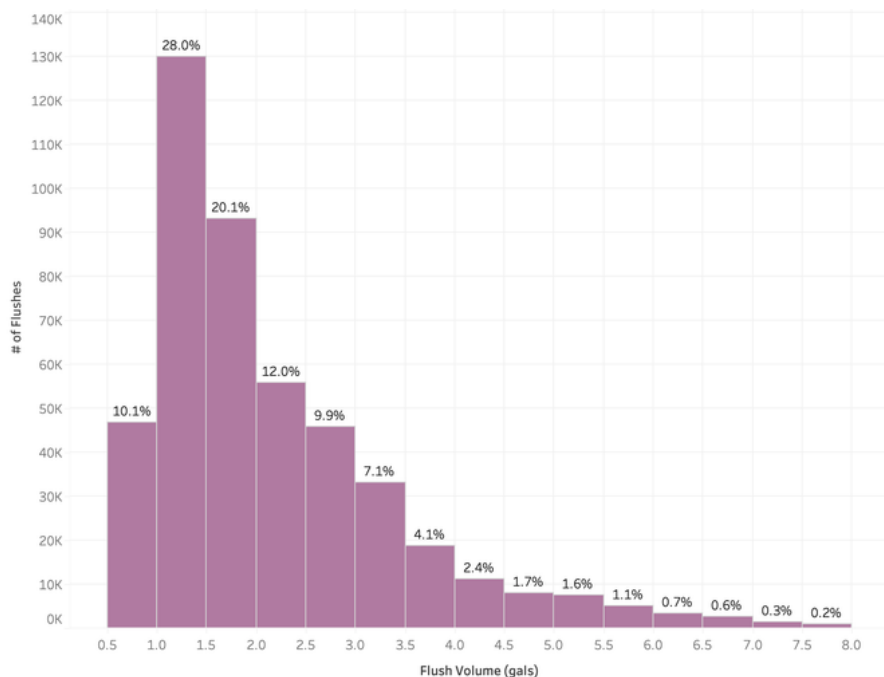
MWDOC TOILET FLUSH VOLUME DISTRIBUTION

Avg. Outdoor GPHD
Avg. Outdoor Objective (GPHD)
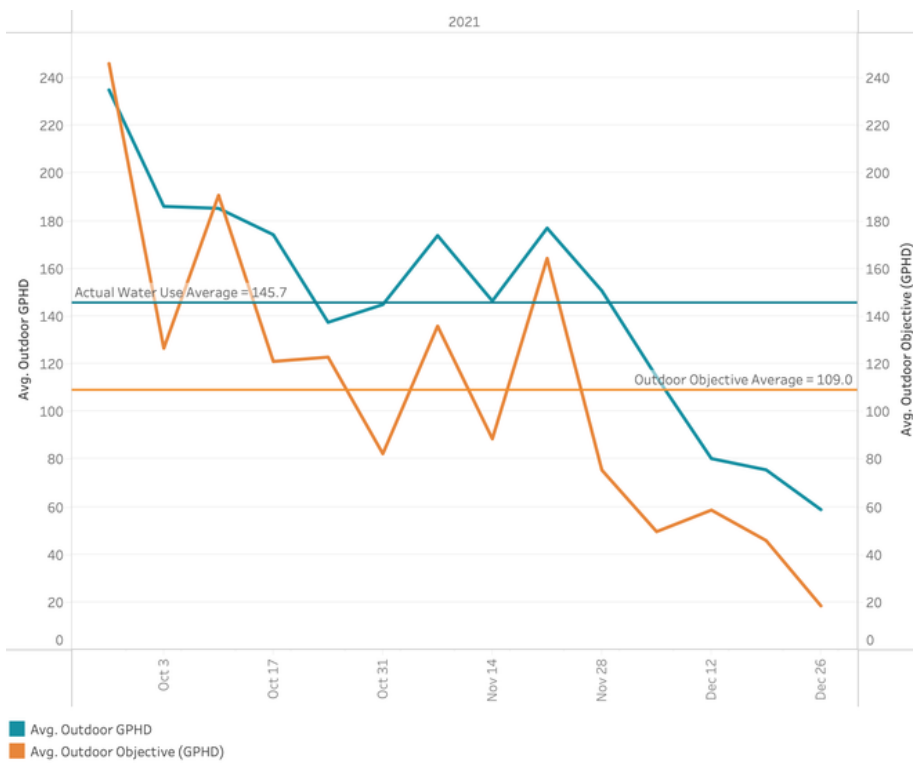
MWDOC OUTDOOR WATER USE

This chart compares actual outdoor use in one region of the MWDOC service area with the proposed Outdoor Objective prescribed by the California Department of Water Resourcres

COMPLIANCE MANAGEMENT

Communities throughout California will soon be subject to water efficiency use standards for residential use. Most retailers rely on metering data to collect information about their customers' water use, but even this data is not detailed enough to separate usage by end-point. Flume Data Labs takes out the guesswork. Using Flume Data Lab's data, MWDOC is able to quickly and efficiently gauge Orange County's compliance with California's evolving long-term efficiency standards, both in its current state and also in the future.

For example, MWDOC found that they are currently in compliance with the state's indoor standard. But, when looking at models for the proposed outdoor standard, they will need to adapt their programming to meet compliance standards both now and in the future. While these standards have not yet been finalized by the state, this data and analysis will help direct MWDOC's efficiency program planning to ensure that they're able to meet the state's requirements long-term. In an effort to meet these objectives, MWDOC has commissioned Flume Data Labs to do a "Potential and Opportunities Study" to chart a course for future water efficiency programs.

"As a wholesale water provider, we don't have access to customer-level data, so this data was foundational to comparing our actual water use to the evolving water use efficiency standards promulgated by the state of California

- Joe Berg, Director of Water Use Efficiency, Municipal Water District of Orange County

ABOUT FLUME DATA LABS

For communities interested in understanding real-time water use and end-use disaggregation in their community, Flume Data Labs can collect and analyze water use from single-family residences in the agreed-upon service area. Flume Data Labs devices will be used to collect water consumption flow data. Each study can be specified as needed to fit individual utility data needs from the list below:

INDOOR/OUTDOOR ANALYSIS:

Includes GPCD, GPHD, weekly and monthly trends, the impact of weather, evapotranspiration, and more.

HOME CHARACTERISTICS:

Analysis of the relationship between water use and the value, age, size, and lot size of the home.

PEER COMPARISON:

Water use trends compared to other neighboring geographic regions.

LEAKAGE ANALYSIS:

Includes water loss trends and community-leak statics.

END-USE:

Includes Fixture and Volumetric Analysis of toilets, showers, clothes washers, dishwashers, faucets, leaks, water softeners, and others.

CONTACT US

Learn more about how Flume Data Labs can help your utility achieve similar results today.

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