

ADVANCING WATER RESOURCE MANAGEMENT THROUGH TEAM COLLABORATION

Three Agency Success Stories



A Chapter of the Alliance for Water Efficiency



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Prepared and written by:

Brad Spilka, Program Planner
Alliance for Water Efficiency

Linda Vo, Program Manager
California Water Efficiency Partnership

Tia Fleming, Executive Director – External Affairs
California Water Efficiency Partnership

Bill Christiansen, Director of Programs
Alliance for Water Efficiency

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- Lindsey Stuvick, Water Efficiency Manager
Moulton Niguel Water District
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- David Wallenstein, Associate Civil Engineer
East Bay Municipal Utility District
- Whitney Ray, Supervisor of Water Conservation
East Bay Municipal Utility District
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Austin Water
- Robert Stefani, Environmental Program Coordinator
Austin Water
- Kendra Olmos, Executive Director
UC Davis Center for Water-Energy Efficiency
- Sarah Foley, Executive Director – Operations
California Water Efficiency Partnership



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INTRODUCTION

Collaboration between the conservation and operation departments in water utilities is key to improving water conservation, mitigating water loss, and developing programs that will benefit the whole service area of a water utility. A strong relationship between the two departments can greatly bolster the success of the water utility and lead to better management of the utility's water and energy resources.

The California Water Efficiency Partnership (CalWEP) and Alliance for Water Efficiency (AWE) interviewed staff members from the conservation departments of three utilities who have successfully navigated this kind of collaboration in their organizations: Moulton Niguel Water District and East Bay Municipal Utility District (EBMUD) in California and Austin Water in Texas. In these interviews, water conservation staff detailed their relationships with operations staff and discussed how similar goals, competing goals, projects, barriers to cooperation, and other factors can affect the ability of conservation and operations to successfully work together.

The responses of all three utilities were aggregated under each specific question or topic and further analyzed by the CalWEP and AWE teams. The analysis focuses on the common themes that defined the successes and failures of cultivating a strong relationship between the conservation and operations department at a utility.

THE RELATIONSHIP BETWEEN CONSERVATION AND OPERATIONS DEPARTMENTS IN WATER UTILITIES

Each conservation department interviewed has a unique relationship with its operations department, and many common themes were evident across the three water utilities. Despite their differences, all three conservation departments emphasized a very collaborative relationship with the operations department, with a strong focus on working together on water loss programs.

Moulton Niguel reported that they have a great relationship with operations and that the two departments work well together. The conservation and operations departments work together annually on the water loss audit and recently collaborated on the WaterWatch software, which is a new energy and water distribution system management software developed by the University of California, Davis.

Austin Water's conservation department emphasized a great deal of overlap between the operations department on legacy projects, specifically citing constant collaboration on reclaimed water and water loss programs. Additionally, Austin Water specified that the collaboration has recently been built upon using incentives and enforcement of the conservation department to address common challenges.

EBMUD detailed that the relationship between conservation and operations has not always been robust, but in recent years, the relationship between the two departments has become more intertwined. Both departments have been focusing on teamwork with one another as supply-side conservation and AMI have become a larger focus within the District.

All three water utilities mentioned water loss when discussing collaboration between the two departments. This signifies the importance of building on the success of water loss collaboration as a connector between conservation and operations.

HOW THE CULTURE OF EACH UTILITY HELPS DRIVE THE CONSERVATION-OPERATIONS DYNAMIC

The overarching work culture at each of the three utilities plays an important role in the relationship between the conservation and operations departments.

Moulton Niguel detailed a culture of no silos and a horizontal work structure, which has led to constant coordination across departments. All Moulton Niguel staff work in the same building, and there is a strong emphasis on all-staff events to help employees of different departments get to know each other. This culture has helped foster a very strong, positive relationship between the conservation and operations departments.

Austin Water discussed how operationally-focused conservation activities, such as water loss control and reclaimed water provision, have been distributed to work groups across the entire water utility over the years. This division of key programmatic activities has forced the conservation department to constantly collaborate with the operations department and other departments to ensure that the utility is holistically working toward improved water conservation throughout the utility's service area.

EBMUD emphasized that the recent crisis events unfolding in California, including drought and water shortages, have led management in different departments to change their thinking on how to approach their work. Management among both conservation and operations now focus more on teamwork and collaboration between the two departments.

The unique environment at all three water utilities underscores the importance of the work culture at a water utility in shaping the relationship between the conservation and operations departments. A strong, positive, collaborative work culture can lead to conservation and operations developing a relationship that exudes those same important qualities.

THE FREQUENCY OF MEETINGS BETWEEN CONSERVATIONS AND OPERATIONS

Scheduling a recurring meeting between the conservation and operations teams can help bolster collaboration between the two departments. Two of the three conservation departments interviewed reported that they attended a monthly meeting with operations and other departments.

Moulton Niguel's conservation department meets with operations roughly once a month to get aligned on water demand response. The utility also has an all-hands meeting monthly at which everyone on staff attends.

Austin Water's conservation department attends a monthly innovative strategies meeting that brings multiple departments together. Austin Water also has a policy initiative to start scheduling pre-meetings with large commercial and multi-family developments, which will create opportunities for conservation staff to meet with multiple departments and further collaborate on demand reduction for these developments during an early planning phase.

EBMUD's conservation department meets regularly with other departments; during this current drought, conservation and operations have worked together to make sure crucial water savings numbers are validated by multiple departments.

As previously discussed, both Moulton Niguel's and Austin Water's conservation departments have an extensive history of collaboration among operations and other departments. While it is probably not the driving force of this strong collaboration, hosting a monthly meeting between conservation and operations or other departments has surely helped these two utilities strengthen interdepartmental teamwork.

THE SIMILAR AND COMPETING GOALS OF CONSERVATION AND OPERATIONS

The interviews from all three utilities revealed that conservation and operations have both similar and competing goals.

Moulton Niguel listed the completion of the annual water loss audit and collaboration on the WaterWatch software as the primary shared goals between departments. Moulton Niguel stated that the biggest competing objective was trying new approaches on top of competing daily operations. For example, one department may want to experiment with an innovative program, but the District has to balance resource and staffing needs, as well as system performance. If there isn't an immediate need to innovate, a new project may encounter a hurdle.

Austin Water noted that historically, reclaimed water and water loss programs have been the main shared goals between departments. The most recent nexus between conservation and operations is the deployment and utilization of the Advanced Metering Infrastructure (AMI) system. While all are committed to successful project implementation, operations is primarily focused on project deployment and successful equipment and systems implementation, while conservation is focused on enhancing the water-use information derived from the project. Improved communications between the departments has lessened any competing goals and strengthened common goals.

EBMUD highlighted AMI initiatives, water supply and delivery, and their leak detection program as the primary shared goals between departments. EBMUD cited the differing agendas between conservation and operations as the main competing goals between the departments. Conservation primarily focuses on water loss and savings while the principal task for operations is to keep the water running. In the past, operations have focused on short term concerns, such as current surfacing leaks, while conservation has focused on long-term leak prevention and reduction. Recently, these goals have become more aligned with both departments focusing on the short- and long-term goals of water loss.

In all three interviews, the utilities revealed that there are similar goals between the two departments relating to water loss and various other programs. However, competing goals, such as different performance indicators and agendas, can cause friction or difficulties between the two departments. Making sure that the priorities, agendas, and performance indicators of both departments are as aligned as possible can potentially help eliminate competing goals between conservation and operations.

OVERCOMING BARRIERS TO COOPERATION BETWEEN CONSERVATION AND OPERATIONS

Barriers can exist between conservation and operations due to differing and competing priorities between the departments. Two of the utilities interviewed provided important advice and strategies for overcoming the barriers that sometimes hinder the collaboration between conservation and operations.

Moulton Niguel discussed the need to build trust between departments by listening and understanding the perspective of other departments and noted that building this trust takes time. Moulton Niguel also highlighted the importance of finding an advocate on the operations team. For example, one operations director noticed his staff were interested in the potential of digital data tools for conservation, which sparked collaboration between the two departments.

EBMUD reiterated how departmental leadership has changed their work approach and that there are now champions on the management teams of both departments who see the benefit of collaboration between conservation and operations. EBMUD shared that relationship building and alignment of goals are some of the reasons operations and conservation work well together now. Additionally, EBMUD noted that having a liaison between departments is extremely helpful for collaboration because they can speak “multiple languages.”

The common themes between the responses of both Moulton Niguel and EBMUD is the need to build trust and relationships to overcome the barriers between conservation and operations. Both conservation departments emphasized the importance of forging relationships with operations and identifying staff members in operations who can serve as an advocate for collaboration and see the value of efficiency.

WATER LOSS AS A SHARED RESPONSIBILITY BETWEEN DEPARTMENTS

All three utilities mentioned water loss as a shared responsibility between conservation and other departments. Limiting water loss is a crucial element of water conservation. Each conservation department shared how they handle water loss responsibilities at their respective utilities in the interviews.

Moulton Niguel’s annual water loss audit is a major collaborative undertaking between departments. The conservation department works in tandem with operations and other departments to determine various metrics, such as operating costs, variable production costs, expected staff needs, overall water use, etc. Moulton Niguel also has a robust proactive leak detection program where conservation and other departments work together in an effort to mitigate water loss.

In the past, Austin Water assigned water loss responsibilities to the conservation department, but several years ago, water loss responsibilities were shifted to operations teams to better align some water conservation accountability with operational responsibility. Austin Water believes and remains committed to the distribution of certain water conservation activities to areas of the organization most appropriately able to affect positive water conservation outcomes.

EBMUD indicated that the conservation department cares deeply about water loss and is very involved in programming related to water loss with other departments. One of the challenges in the past was the varying definitions of water loss among the various departments. EBMUD created a

procedure to formalize shared definitions to ensure consistency in descriptions when referring to water loss and reporting among departments. Through this effort, a committee was established to perform annual reviews with clearly defined roles and responsibilities for each department.

Water loss is undoubtedly a key aspect of any water utility's conservation department. Each utility detailed how conservation works in tandem with other departments to mitigate water loss, and each utility had a different outcome. However, it is evident that the conservation department is integral in managing water loss. Furthermore, the ability of the conservation department to successfully collaborate with other departments is also crucial to mitigating water loss for the whole service area.

SUCCESS IN DETAIL AT EACH UTILITY

The following information in this section provide further details about and examples of what each utility noted regarding the successful collaboration between their respective operations and conservation departments.

Examples of projects that Moulton Niguel's conservation and operations departments successfully collaborated on include the WaterWatch project and annual water loss audit. Moulton Niguel explained that their workplace culture and value system played a huge role in the successful collaboration. Collaboration is essential to success, and the right mindset is essential to collaboration. Their work culture promotes a growth mindset, and their organization's values prioritize collaboration. In fact, their District motto is "HERO," which stands for "Honesty, Effort, Respect, and One Team." They also take the District's responsibility to manage assets in a financially responsible manner very seriously. Moulton Niguel is purchasing imported water at a premium, so the onus is on the District to ensure efficient delivery of that water to its end users. Both the operations and conservation teams agree that they're partners in the effort to ensure supply efficiency.

When asked about a specific example of a successful collaborative project between the conservation and operation departments, Austin Water mentioned the adjustment of their watering schedule to accommodate for the unintended operational consequences of the original watering schedule. Austin Water highlighted that ideal irrigation schedules save water while also being easy to communicate, follow, and manage within their system constraints (i.e., demand doesn't exceed treatment capacity, is evenly distributed throughout the week, and does not create pressure problems). The close interdepartmental collaboration allowed Austin Water to come up with a new and improved watering schedule for its service area.

EBMUD noted its Berkeley Leak Detection project as an example of successful conservation and operations departmental collaboration at the utility. The water conservation department obtained a grant to help pay for approximately 1,000 pipeline leak detection loggers to cover the entire City of Berkeley. In coordination with operations, water conservation staff designed the project and mapped all the locations. The operations department installed all the equipment and was responsible for verifying, documenting, and repairing leaks identified by the system and through other means. Water conservation staff, with assistance from temporarily assigned staff from other departments, patrolled the City's loggers via a mobile network on a biweekly basis and reported the results to operations staff. 250 miles of pipe were patrolled, and over 200 leaks were repaired. The end results were that smaller surfacing leaks were found in clay soils with ground movement, while larger and perhaps longer lasting leaks were found in more sandy soils where the leaks did not surface and had not been previously patrolled. The water savings from fixing these fewer but larger leaks were significant. This project was completed with support and coordination between water conservation and operations staff, which led to the successful detection and resolution of subsurface leaks.

OTHER IMPORTANT LESSONS LEARNED

Throughout the interview process, unique stories and perspectives emerged from each conservation department. While these narratives are specific to the respective water utilities, the lessons learned from all three interviews provide further insight into important aspects of water conservation departments.

Moulton Niguel explained how innovation is an integral part of the culture at the agency, and it has led to many important advances in water conservation. For example, a few years ago, the utility hired its first data science intern. Moulton Niguel quickly realized the value of data science and eventually went on to employ three full-time data scientists who now help create conservation datasets that are replicable, shareable, and helpful to others in the water industry.

Austin Water noted an advantage in distributing conservation responsibilities across departments is that it can broaden the view and conservation ethos of other teams in the utility. Distributing conservation responsibility to other departments helped these groups adopt a conservation mindset and created stronger links between the conservation department and the rest of the utility.

EBMUD stressed that the relationship between conservation and operations has improved tremendously. Cooperation and communications are particularly important during the current drought to help the District manage its water supplies.

CONCLUSION

The interviews with Moulton Niguel Water District, Austin Water, and East Bay Municipal Utility District all revealed invaluable insight on how successful water utilities maintain strong, productive relationships between the conservation and operations departments. All three utilities emphasized the importance of forging a collaborative relationship between the departments. These collaborative relationships can be formed by building trust and establishing personal connections across departments.

All three interviews show that a strong relationship between the conservation and operations department at a water utility is vital for increased productivity in designing water conservation programs and managing water loss across a service area.