INNOVATIVE CONSERVATION PROGRAM
Metropolitan Water District of Southern California

DISCLAIMER

This project was conducted with financial assistance from a grant from the Metropolitan Water District of Southern California (Metropolitan) and the Southern California Gas Company through Metropolitan's Innovative Conservation Program (ICP). The ICP provides funding for research to help document water savings and reliability of innovative water savings devices, technologies, and strategies. The findings of this project, summarized in this report, are solely from the project proponent.

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SoCalGas
A Sempra Energy utility

Evaluating & Optimizing Large-Scale Landscape Irrigation Management and Transformation Strategies

Outdoor Water Savings Studies – Phase 3

Innovation in Conservation Program – Final Report

June 2024

Acknowledgements

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This project was conducted with financial assistance from an Innovative Conservation Program Grant award from the Metropolitan Water District of Southern California. MWD's Innovation Conservation Program (ICP) provides funding for research that documents water savings and the reliability of innovating water saving devices, technologies, and strategies. The findings detailed in this Report are solely from the project proponent and includes water savings and program evaluations from water agencies in California. This Report is part of a larger effort to evaluate and describe programs across North America, including funding and participation from water agencies and stakeholders in Colorado, Arizona, Nevada, Oregon, Texas, and Utah. A separate report will be published by AWE documenting findings detailing findings beyond the scope of the ICP grant award.

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Funding Partners and Program Advisory Committee

The following list includes organizations and partners from the broader project, some of which are outside the scope of the ICP grant and this Report.

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Arizona Municipal Water Users Association (AMWUA)
Austin Water, TX
California Water Service (Cal Water), CA
Central Utah Conservancy District (CUCD), UT
City of Aurora, CO
City of Bend, OR
City of Fort Collins, CO
City of Gilbert, AZ

City of Greeley, CO
City of Phoenix, AZ
City of Sacramento Department of Utilities, CA
Colorado Springs Utilities (CSU), CO
Colorado Wate Conservation Board (CWCB), CO
Denver Water, CO
East Bay Municipal Utilities District (EBMUD), CA
Eastern Municipal Water District (EMWD), CA
Hunter Industries
LA Department of Water and Power (LADWP), CA
Long Beach Utilities Department (LBUD), CA
Metropolitan Water District of Southern California (MWD), CA
Northern Colorado Water Conservancy District (Northern Water), CO
Rain Bird
Regional Water Authority
San Antonio Water System (SAWS), TX
Santa Barbara County Water Agency (SBCWA), CA
San Diego County Water Authority (SDCWA), CA
Santa Rosa Water, CA
Southern Nevada Water Authority (SNWA), NV
The Scotts Miracle-Gro Foundation, OH
Turfgrass Water Conservation Alliance (TGWCA)

Key Terms

Organization Abbreviations (if applicable)

- AWE – Alliance for Water Efficiency
- Cal Water – California Water Service
- EBMUD – East Bay Municipal Utility District
- EMWD – Eastern Municipal Water District
- LBUD – Long Beach Utilities Department
- MWD – Metropolitan Water District of Southern California
- SBCWA – Santa Barbara County Water Agency
- SDCWA – San Diego County Water Authority

Acronyms

- BMP – best management practice

- CRB – Colorado River Basin
- CII – commercial, industrial, institutional
- MF – multi-family
- MOU – memorandum of understanding
- MWELO – Model Water Efficiency Landscape Ordinance
- NFT – non-functional turf
- QWEL – Qualified Water Efficient Landscaper
- SF – single-family

Measurements

- ETo - Evapotranspiration
- gal - Gallon
- gpd - Gallons per Day
- Sq ft – square foot

Definitions

- **Contractor**: a person or company that undertakes a contract to provide materials and/or labor to perform a service or do a job. In the context of this study, a contractor is an external party who provides professional services to develop landscape designs, perform landscape transformation and irrigation optimization projects and landscape and/or irrigation maintenance.
- **Customer:** a person, organization, company, or entity that has an account or multiple accounts with a water purveyor and receives and pays for water service to a parcel of property.
- **Irrigation Optimization Program:** utility-sponsored irrigation audits, landscape water budgets, technology or equipment incentive/rebates, report services, repair/upgrade services, and more. Not designed to change the landscape, but to irrigate the existing landscape efficiently and using less water.
- **Large-scale Landscape:** Often referred to as "Commercial landscapes" and excludes single-family residential properties. This term includes commercial, industrial, and institutional (CII) property landscapes, public and park spaces, and multi-family (MF), municipal, and/or homeowners association (HOA) common spaces.
- **Landscape Transformation Program:** utility-sponsored programs designed to replace high-water using outdoor landscapes with low-water or no water requirement landscapes; often called "cash for grass" or xeriscape programs.

- **Rebate**: a financial incentive program in which a supplier offers their customers a monetary reward for a desired outcome. In the context of this study, a rebate is an amount of money received by customers after they've incurred costs to transform their landscape or installed efficient irrigation-related equipment. Rebates are provided to customers by their water provider, or their water provider's wholesale agency.

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1. Executive Summary

As droughts become more frequent and intense, the removal of "non-functional turf" has become an increasingly popular strategy by water agencies to reduce outdoor water use across their communities. In a 2019 study on residential landscape transformations, Alliance for Water Efficiency[1] found that, across landscape transformation programs analyzed, all produced water savings- ranging from 7 percent up to 39 percent reductions in water use for an average single-family customer participant. However, in order to meet water conservation goals, many agencies are beginning to look beyond the single-family home for outdoor water saving opportunities. The purpose of this project was to evaluate water savings and overall program outcomes resulting from landscape transformation and irrigation optimization programs targeting commercial, industrial, and institutional (CII) property landscapes, and multi-family (MF), municipal, and/or homeowners association (HOA) common spaces. Throughout this Report, these landscapes are referred to as "large-scale landscapes." The Report also details key themes, best practices, and common challenges to administering and implementing these programs that may impact program success and outcomes.

This Report provides programmatic and water savings information from the following California water agencies:

- California Water Service
- City of Sacramento Department of Utilities
- East Bay Municipal Utilities District
- Eastern Municipal Water District
- Los Angeles Department of Water and Power
- Long Beach Utilities Department
- Santa Barbara County Water Agency
- San Diego County Water Authority
- Santa Rosa Water

[1] https://www.allianceforwaterefficiency.org/impact/our-work/landscape-transformation-assessment-water-utility-programs-and-market-readiness

1.1. Overview of Study Outcomes

Results from Water Savings Analysis:

- The analysis focused on the impact of customers participating in one or more program: landscape change, irrigation controller retrofit, irrigation equipment retrofit. Data was analyzed across six agencies.
- Results across all landscape change projects showed statistically significant decreases in summer water use (gallons per day per square foot).
- Estimated savings ranged from 0.35 to 0.5 gallons per day per square foot, which translates to a savings range of 28-40% compared to pre-project average water usage levels.
- Greater savings is associated with properties completing both a landscape transformation and either an irrigation controller and/or irrigation equipment retrofit.

Water agency interviews and research:

The project team performed desktop research and conducted 1:1 interviews with each of the participating agencies to discuss a variety of topics about their community and organization's landscape and irrigation-related efforts – both historical and current.

This work resulted in:

- A literature review resource complete with related resources and reports, a list of plant guides and other educational resources, relevant laws and certification programs, and publicly available datasets and tools. This information is separately contained in a multi-tab spreadsheet.
- Individual participant profiles of each agency summarizing their programs and perspectives. These are included in Appendix A.
- A qualitative synthesis of key themes and observations across all the interviews.

Select themes include:

- **More Resources:** Agencies are increasing financial incentives for customers to transform their landscapes and install more efficient irrigation systems and equipment. Where a wholesale-retail relationship exists, often retailers add additional funds to the wholesaler-provide funds for greater incentives. More agencies are also seeking grant funding to support these programs.
- **Sustainable Landscapes:** Agencies have evolved program requirements and education over time to support more sustainable landscapes, limiting hardscapes,

encouraging more natural plant material and trees to mitigate urban heat, retain stormwater onsite, support pollinator habitat, among other multiple benefits.

- **Divergent Opinions**: There isn't always consensus across agencies. There are mixed perspectives on artificial turf, though most do not allow it as part of their programs even if it is otherwise allowed in their community. There are mixed perspectives on drip irrigation systems, some requiring, some incentivizing, and others who are more skeptical. Finally, there is differing support for native or low water use grasses: some do not allow it in their programs and others incentivize them.
- **Specialized Skills**: Agencies have a variety of specialized skills on staff, some of which are acquired through previous jobs in irrigation, horticulture, among other fields. Specialized skills are critical and agencies emphasized the significant role of on-the-job and in-the-field training, rather than relying on staff to previously have this experience.
- **Partnerships**: Many agencies partner with other organizations to implement various aspects of their education, training, or incentive programs. Others noted value from regional messaging through regional organizations as well as the benefit of broader sustainability efforts to generate support for this work.

This resource is the first of its kind to attempt to gather comprehensive information across multiple water agencies related to commercial scale landscape and irrigation programs. The project team is impressed by our project participants. They exhibit incredible dedication, commitment to continuous improvement, and passion for helping their communities, customers, and the environment. We are optimistic about what can be learned from the past and accomplished together moving forward to achieve a more sustainable water future.

2. Introduction

In 2015, The Alliance for Water Efficiency launched Phase 1 of its Outdoor Water Savings Research Initiative[2] to identify and clarify what programs, practices, and irrigation technologies can support effective utility-driven outdoor water efficiency programs. In Phase 2 of this Initiative, AWE launched its Landscape Transformation Study[3] in 2019, which examined various landscape transformation programs on residential properties.

[2] https://www.allianceforwaterefficiency.org/impact/our-work/research-review-outdoor-water-saving-programs

[3] https://www.allianceforwaterefficiency.org/impact/our-work/landscape-transformation-assessment-water-utility-programs-and-market-readiness

This study found that, across landscape transformation programs analyzed, all produced water savings- ranging from 7 percent up to 39 percent reductions in water use for an average single-family customer participant.

However, with more frequent and intense droughts resulting from climate change, water agencies around the country are scaling up their water efficiency programs and funding to further protect and conserve water resources. In 2022, multiple water agencies across the Colorado River Basin (CRB) signed a joint memorandum of understanding (MOU) committing to "reduce the quantity of non-functional turf grass by 30% through replacement with drought-and climate-resilient landscaping."[4] To meet the goals laid out by the MOU, utilities are increasingly investing in landscape transformation projects beyond the single-family home as opportunities to further optimize outdoor water use on large-scale landscapes.

"Large-scale" landscapes include commercial, industrial, and institutional (CII) property landscapes, and multi-family (MF), municipal, and/or homeowners association (HOA) common spaces. Large-scale landscapes have different functions and are managed differently than single-family residential landscapes. Not only are the landscapes themselves larger and more complex, but there are often multiple stakeholders involved, such as property owners, property managers, landscape and irrigation contractors, and the occupants/users of the landscapes. In addition, it is predicted that water savings from landscape transformations on CII and MF properties will be different from residential programs – but by how much? Because many of these programs are relatively new and ever-changing, there is no comprehensive published research evaluating water savings and program outcomes from large-scale landscape and irrigation optimization strategies.

As Phase 3 of AWE's Outdoor Research Initiative, the goal of "Evaluating & Optimizing Large-scale Landscape Irrigation Management and Transformation Strategies" is to evaluate water savings and overall program outcomes resulting from landscape transformation and irrigation optimization programs on CII and MF properties across multiple California communities.

This research project seeks to answer the following questions:

- How are utilities designing and implementing programs and services to either transform large-scale landscapes and/or optimize water use on large-scale landscapes?

[4] Memorandum of Understanding by and among Colorado River Basin Municipal and Public Water Providers - Nov. 15, 2022 (snwa.com)

- How effective are these programs, what drives differences across programs, and what factors might improve participation and water savings?
- How are these strategies achieving multiple benefits like offering pollinator habitat, mitigating urban heat, providing public education, stormwater capture, etc.?
- What resources are involved from both the agency and the participating customers including monetary expenses, time, and skilled contractors (irrigation and landscapers)?
- What ordinances, rules, or policies enable or enhance these programs? Conversely, what are the potential negative outcomes of such ordinances, rules, and policies on the programs.

This study includes a water savings analysis, detailed descriptions of program designs from participating utilities, and a highlight of smart practices and differences across programs that may drive participation and/or water savings outcomes.

3. Literature Review

A literature review was conducted for this project; information was compiled into an Excel spreadsheet to make information more searchable and accessible. Below are the sections within the literature review:

- Collection of Literature, Research and Reports
    - Keywords include:
- Landscape and Plant Guides
    - This includes a variety of resources found through links on participating agencies' websites or through our desktop research.
- Relevant Laws and Certifications
    - States laws prohibiting HOAs from limiting waterwise landscaping
    - Non-functional turf and related regulations
    - State-level required certifications for contractors
    - Example contractor training and certifications
    - Other notables
- Sample of Publicly Available Datasets and Tools

4. Landscape Transformation & Irrigation Optimization Programs Overview

Qualitative interviews were conducted with agencies to gather insight into program administration, structure, and implementation to supplement the quantitative data analysis. While each agency is unique, key themes emerged among participants regarding lessons learned, challenges and barriers, and best practices for successful landscape transformation and irrigation optimization programs. A detailed summary of each agency's programs can be found in Appendix A.

4.1. Summary Trends

Increased Funding and Incentives:

- Programs are raising funding and incentives per square foot transformed and per device installed.
- Retailers are adding supplemental funding to wholesaler's base funding.
- Agencies are seeking grant funding to increase program funding, mainly from the State of California and USBR.
- Highlight: During the drought, EBMUD offered a "super rebate" as part of a tiered rebate structure where customers could get a larger $/per square foot incentive if the project include more holistic sustainability components like compost, sheet mulching, and native plants, aiming for multiple benefits beyond water savings.

Enhanced Requirements:

- Many agencies have evolved their programs to include additional requirements focused on creating sustainable landscapes that provide multiple benefits, not just water reduction.
- This reflects a shift from zero-scapes to more holistic and beneficial landscapes. This is increasingly important to mitigate increases in urban heat.
- Agencies also see value in ensuring more successful landscapes are completed, offering or requiring enhanced education, too.

Operational Challenges:

- Challenges may arise when both a wholesaler and multiple retailers are involved in funding a single project. When a wholesaler manages the program on behalf of multiple retailers, it can lighten the load but can also limit flexibility and agility for retailers. Coordination challenges may occur related to customer coordination, determining program rules, customizing for a community, approvals, time to

approve and provide rebate, and access to water data for program assessment, evaluation and eventual improvement.
- Relationships with contractors vary, but there is a consensus on the need for more workforce development to be able to effectively design, implement and maintain California friendly landscapes.

Diverse Perspectives:

- There are mixed approaches to artificial or synthetic turf. Most no longer allow it as part of their incentive program, but may not fully ban the installation of artificial turf. Others may have specific locations it is allowed, like recreation and sports fields.
- There are mixed approaches to alternative grasses. For example, any projects completed through MWD's program cannot include anything that looks like turfgrass, whereas the California Water Services plant list includes a variety of native and low water use grasses.
- There are mixed opinions on drip irrigation systems. Some agencies offer rebates while others do not or no longer offer a rebate.

Agency Staff Specialized Skills

- Outdoor programs can be very staff-intensive.
- Many agencies in California have staff or would like to have staff who are fluent in Spanish.
- Wholesalers managing program implementation are less likely to have staff with landscaping or irrigation-related skills, but instead emphasize customer service and program management skills. Contractors and retailers are more likely to have irrigation and landscape related skills.
- Staff may bring in useful skills from prior work in horticulture, parks, irrigation companies, landscape architecture, and more.
- Specialized skills are critical and agencies emphasized the significant role of on-the-job and in-the-field training, rather than relying on staff to previously have this experience.
- Agencies often support staff in continuing education and training, including getting formal certifications.
- The size of teams supporting landscape-related programs vary depending on the level of programming managed in-house vs. through a wholesaler, vendors, and/or consultants.

Education

- Agencies offer a variety of educational resources – some are more hands-on, staff intensive, and/or tailored to the individual community or climate.
- Some agencies partner with other organizations to offer education, like California Native Plant Society or the California Landscape Contractors Association. A more

local example is DailyActs, which is a local nonprofit offering educational resources, events, and workshops focused on landscapes, with an emphasis on educating residents on climate resilience.

- Some agencies already offer program and education resources in both English and Spanish; some want to add this and/or offer in languages beyond English and Spanish. For example SDCWA offers information in English, Spanish, Vietnamese, Tagalog, Chinese and Arabic.
- Agencies utilize a broad array of communication and outreach channels to connect with both customers and contractors.

Regional partnerships and Community Culture

- Several agencies described a broader sustainability or environmentally focused culture in their communities that contribute to the broad support for water conservation programs. A couple of examples:
    - The County of Santa Barbara spoke about widespread awareness and concern for protecting the watershed, water quality, and the ocean. Related organizations like Heal the Ocean and Channel Island Keeper help promote water conservation programs and education.
    - The City of Santa Rosa noted the benefits of the early-established Regional Climate Protection Authority and other efforts that have instilled a broad environmental and conservation ethos across the communities in Somona County. https://rcpa.ca.gov/
- Many agencies celebrated the value of regional messaging. Wholesalers or other regional organizations and partnerships can help provide consistent communications to improve cohesion across communities, which may be especially important for commercial landscapes where property managers and contractors may work across multiple cities. Examples include:
    - Metropolitan Water District and BeWaterWise
    - Sonoma-Marin Saving Water Partnership
    - Regional Water Authority

4.2. Multiple Benefits

While saving water through cost-effective programming is a top priority for agencies, these organizations also recognize the critical role that landscapes play in a community. Thoughtful and well-maintained urban landscapes provide local beauty, contribute to property value, and create vibrant, livable communities. Further, plants and trees can provide shade, absorb carbon dioxide, supply oxygen, reduce soil erosion, give wildlife a home, decrease energy use, and reduce storm water runoff.

They key themes heard throughout the qualitative interviews relate to mitigating urban heat, supporting native plants, and stormwater retention.

Mitigating Urban Heat:

- Increased urbanization including both a) the growth of concrete, asphalt and buildings and b) loss of vegetation is leading to greater temperatures, especially overnight, in urban areas. These materials retain and radiate heat more than natural landscapes. Further, climate change is leading to longer periods of extended heat in communities, prompting many to create plans for helping their residents reduce their risk to negative impacts from heat.
- Agencies recognize that past iterations of landscape transformation programs may have been contributing to this challenge and they have adapted through these key ways:
    - Increasing the plant coverage requirements
    - Prohibiting or reducing allowable inorganic mulches and other materials
    - Encouraging or requiring protection or addition of trees
- Trees to protect and add shade is the most recent of these developments. Starting in 2024, MWD is piloting a new optional tree rebate within their turf replacement program. It is not a standalone program, but must be completed as part of a turf replacement project. Currently the rebate is $100 per tree installed up to 5 trees.
- Agencies often provide links to tree lists or have trees within other plant guides, like this example from City of Santa Rosa which links to a pdf of "Climate Ready Trees" that will thrive in Santa Rosa's current and future climate, as climate change affects Sonoma County. They also point to ReLeaf Petaluma's Tree Planting Guide.

Supporting Native Plants:

- Most agencies noted the importance of encouraging customers to install native plants to support local pollinators and provide habitat for bugs, butterflies, and birds, among other wildlife. They often promote this through interactions with customers, through related educational efforts, and on their websites. Examples and links can be found in the Literature Review.
- MWD's program requires at least 3 California Friendly plants per 100 square feet of turf removed.
- Long Beach has a specific 10 percent California native plant requirement.
- SDCWA's Landscape Optimization Service program offers an addition $1 per square foot incentive if landscape is at least 70 percent native plants.

Stormwater Retention:

- Landscape and irrigation transformations can save water and help manage local stormwater.

- Overirrigation of landscapes can contribute to poor water quality in local waterways by carrying fertilizers, herbicides, and pesticides into nearby waterbodies. Overirrigation can also erode soil and cause sediment run-off.
- Well-designed, properly maintained, high-efficiency irrigation systems can more accurately deliver the right amount of water to the plants, reducing run-off. Native and low-water plants require less water to begin with. Soil amendments and organic mulching can improve the soil's ability water-holding capacity.
- Some agencies have specific requirements to support rain/stormwater capture, while others reflect that they receive very little rainfall so largely focus on messaging to customers to avoid watering when it has recently or is expected to rain.
- MWD's turf replacement program requires a stormwater retention feature and does not allow any hardscape within the transformed area except permeable hardscape.
    - https://socalwatersmart.com/en/residential/rebates/available-rebates/turf-replacement-program/sustainable-approach/
- SDCWA partners with the County Stormwater agency on the Waterscape Rebate Program, combining their resources to offer a "stacked incentive" for landscape transformations that save water and retain stormwater onsite.
- The City of Santa Rosa has a Rainwater Harvesting Rebate Program that currently provides $0.25 per gallon of approved rainwater storage.
    - https://www.srcity.org/834/Rebates-Services
- Some agencies provide links and education to increase awareness, for example MWDOC connects to the Orange County Stormwater Program H2OC
    - https://h2oc.org/

Air Quality

Air quality was not brought up in the interviews, but our desktop research did find one example of an agency cross-promoting a program supporting air quality improvements. The County of Santa Barbara's landscape website promotes and links to the County's Landscape Equipment Electrification Fund (LEEF). This program provides incentives for businesses, public agencies, public schools, and non-profits to trade in their gasoline/diesel landscape equipment for electric equipment. Gasoline- and diesel-powered landscape equipment emit a host of air pollutants including nitrogen oxides, particulate matter, carbon dioxide, and other pollutants. Where these programs exist elsewhere in communities, agencies could consider promoting through their landscape programs and education.

Fire-wise Landscaping Considerations

While not a direct requirement of programs, many agencies are increasingly supporting customers in designing landscapes to reduce risk during a wildfire. Most agencies provide

links to information about fire-wise landscaping, while others have also created their own resources including plant and mulch considerations, design templates, and other guidelines. In some communities or areas designated in a high-risk zone, agencies often adapt the rules of their program to accommodate fire-wise landscaping. For example, while other customers may be required to use only organic mulch, a property in a high-risk zone may be allowed to use inorganic mulch.

Below is a list of the links gathered through the interviews and desktop research:

- https://www.calwater.com/conservation/be-water-wise-and-fire-wise/
- https://readyforwildfire.org/
- https://forests.berkeley.edu/
- https://readyforwildfire.org/prepare-for-wildfire/fire-smart-landscaping/
- https://www.ebmud.com/water/conservation-and-rebates/watersmart-gardener/firescaping
- https://www.srcity.org/3558/Wildfire-Ready
- https://firesafemarin.org/create-a-fire-smart-yard/firescaping/
- https://www.firesafesonoma.org/
- https://firesafemarin.org/
- https://www.ocwatersmartgardens.com/fire-wise.php
- https://ocfa.org/RSG
- https://www.sandiegocounty.gov/content/sdc/pds/fire_resistant.html
- https://firesafesdcounty.org/
- Fire-Wise Water-Wise | MWDOC

Artificial Turf

Most of the agencies do not allow artificial or synthetic turf as part of their landscape transformation incentive programs. Most noted that it is allowed in their communities, but they do not promote it. A few examples of note:

- LADWP allows it through their Technical Assistance Program (TAP) for sports and recreation fields; it is not allow through MWD's program that they also participate in.
- MWDOC noted that they used to allow it in their incentive programs, but stopped in 2018. One of MWDOC's retailers independently rebates it.
- The City of Santa Rosa developed an FAQ for why artificial turf is not rebated.

4.3. Commonly Cited Challenges and Barriers for Customers

Financial Barriers

- Customers must pay for work prior to receiving payment from incentive program. This delay may be significant; customers may not be able to fully outlay the funds at the start of the project.
- Programs vary which project costs are eligible and historically have only included materials. Planning, design, or labor costs in particular might not be covered by rebates but represent significant costs to the customer.
- The rebate amount may be too low to sufficiently motivate project initiation or implementation.
- High water bills may be overlooked in the larger context of other commercial expenses.
- Projects irrigated by a dedicated irrigation meter may have a lower return on investment, because there are no sewer bill savings to factor into the estimated payback period.
- Some customers may only engage if the project is free, requiring contractors to figure out a project that is achievable with the expected rebate amount – which may also result is lower quality projects.

Logistical, Operational Barriers

- Disconnection between bill payers and on-ground decision-makers and water managers.
- Old irrigation systems and mixed-use meters complicate water use tracking.
- The prevalence of microclimates makes selecting the right plant palette difficult.
- Potential for business disruption during project construction.
- Finding reliable, qualified, knowledgeable contractors.
- Program rules may be complex, and typically require pre-approval and pre-inspection, which customers may be unaware of.

Perception, Priority, and Accessibility Issues

- It takes a village, but a champion is critical; when this individual leaves the organization or gets busy, this can derail a project.
- Waterwise landscapes might be viewed as unkempt, conflicting with brand image.
- Landscape projects may be a low priority for organizations.
- Multiple stakeholders can create consensus and progress challenges.
- Programs may inadvertently favor affluent customers with the resources to implement and maintain projects.
- Public agencies may face red tape in reallocating rebates to their departments rather than the general fund.

4.4. Role of and Relationships with Contractors

All agencies noted the role that landscape and irrigation contractors play in commercial landscapes. Some properties might have day-to-day management by an in-house facilities

staff, while others contract out these services to other companies. These individuals are most directly involved with the decisions and actions that influence water use on a property. Agencies actively work to maintain contact and communication with contractors. Agencies see the need to support a skilled and reliable local landscape and irrigation workforce for three main reasons:

- Customers seek contractor recommendations
    - Agencies are often asked for referrals to qualified and reliable contractors; this can be a challenging step for customers and inability to hire a contractor can be a barrier for commercial-scale projects.
    - Public agencies cannot recommend a specific business or individual. Instead, most direct customers to public lists of contractors who have completed certain training or certifications. The most common links are to the California Landscape Contractors Association (CLCA)'s Water Management Certification Program, Qualified Water Efficient Landscaper (QWEL), and ReScape Qualified Professionals.
- Contractors can drive participation in programs
    - Some agencies noted that contractors are the main drivers of customer participation in programs and may incorporate agency-sponsored programs into their business models and marketing. They may also help customers to complete rebate applications and other program requirements.
- Contractors need different skills to support the future of landscapes
    - Skills necessary to install and maintain more diverse, waterwise landscapes are quite different than those required to maintain traditional turfgrass.
    - Many agencies noted challenges including some contractors are hard to reach, on-the-ground workers may turnover regularly, on-the-ground workers may only speak Spanish.
    - To help accelerate improved education and skills in the contractor workforce, many agencies partner with, offer, or subsidize contractor trainings. For example:
        - Metropolitan Water District offers a Water Efficient Landscaper Dual Certification Program (includes both EPA WaterSense certified Qualified Water Efficient Landscape Professional and Certified Water Manager). https://www.bewaterwise.com/weldcp.html#Find-a-landscape-pro
        - The County of Santa Barbara in partnership with Santa Barbara City College's School of Extended Learning in Santa Barbara and Allan Hancock College in Santa Maria offers the Green Gardener Program The class covers topics on resource-efficient and pollution prevention

landscape maintenance practices. It is held twice per year and is taught bilingually in both English and Spanish. After completion of the course and a final test, gardeners are issued a Green Gardener card and certificate of completion and then placed on the Green Gardener list which is promoted to the public.

Several agencies offer additional guidance on what customers should consider when hiring a contractor. Examples include:

- LADWP has a pamphlet titled "Tips on how to hire a landscaper".
- MWDOC offers a performance-based irrigation management contract template to help Homeowners Associations and property managers ensure their landscape is being watered efficiently. The PBIMC uses irrigation scheduling performance measures to define minimum irrigation efficiency standards that must be met by the landscape contractor.
- The City of Santa Rosa provides some guidance on how to select a landscape professional, including a link to the C-27 site to verify that who they are working with is licensed and a link to the EPA WaterSense site about finding a professional contractor.
- The City of Sacramento provides information for contractors working on projects, including a sample invoice with all the information required for the customer to successfully submit for the program.

Note: In California, a contractor's license is mandatory for bidding or contracting construction work exceeding $500 in value, inclusive of materials and labor. The State of California provides a searchable online database to check the status of a contractor's license.

4.5. Unique Initiatives Across California Agencies

- The **County of Santa Barabara** has a partnership with Cachuma Resource Conservation District, which offers a "Mobile Irrigation Lab" to help farmers and managers of large landscapes like schools and parks save water, energy, and money. They provide an onsite irrigation system analysis and technical assistance.
- **EBMUD** has a longstanding Landscape Advisory Committee, formed in the 1980s. They brought stakeholders together to address the challenges of drought and is EBMUD's longest-standing Board-sanctioned committee. They host quarterly meetings of professionals across the green industry and related stakeholders (like educators or property managers) to share information, gather feedback and professional opinions on EBMUD efforts and initiatives, and provide information networking and coordination. They also offer a bimonthly Sustainable Landscape

Speaker Series, which is approved for CEUs for IA, QWEL, Master Gardener, and ReScape California.

- **EMWD** requires separate dedicated irrigation meters and water budgets for landscapes greater than 2,500 square feet. They set the outdoor component of the water budget to reflect water efficiency trends for landscapes. To align with the provisions of the California statewide ban on irrigation of nonfunctional turf for all Commercial, Institutional and Industrial customers, areas with non-functional landscape areas will receive a reduced "conservation factor", effectively reducing the water budget for the landscape.
- **Santa Rosa** has worked to improve accessibility to program information. They provide informational pdfs about all of their rebate and water conservation programs in English and Spanish. Where they also have a webinar about a specific program, they provide the webinar in both English and Spanish.
- The Theodore Payne Foundation has a professional education program called the California Native Plant Landscaper Certificate Program. This is a job-training program for landscape professionals offered in English and Spanish geared toward native plants and irrigation efficiency. **LADWP** partners and attendees learn about LADWP's rebate programs.
- **SDCWA** offers the Landscape Optimization Service which provides personalized assistance for customers tackling landscape transformation projects. This includes a site visit and assessment with recommendations. They help coordinate work with contractors or other vendors and manage the rebate process. They've added 90 days of post-project support and increased education on long-term maintenance.
- **The City of Sacramento** has a memorandum of understanding with the local Parks department to set aside $50,000 of funding per year for multiple years to help upgrade irrigation systems and transform landscapes across parks and streetscapes.
- **Long Beach Utilities** offers a landscape design reimbursement incentive of $1,500 for the cost of a professional landscape design. Designs must include low-water California Native or California-friendly plants, at least 65 percent plant coverage, a stormwater retention feature, habitat development, an efficient irrigation system and use of mulch and other natural materials. Designs must be completed by a landscape professional who has submitted their credentials and been approved by staff.

For more information, "Participant Profiles" detailing each participating utilities' landscape transformation and irrigation programs can be found in Appendix A of this Report.

Additionally, based on key themes observed, a series of learning cohorts were held with projects participants to discuss the most top-of-mind topics, challenges, or barriers

relating to large-scale landscape transformations and irrigation programs in a collaborative forum. See a full list and summary of learning cohorts held to date in Appendix B.

5. Water Savings Analysis

This section details the data preparation and modeling analyses for estimating the change to water consumption after a customer's participation in one or more landscape and irrigation programs sponsored by six California water utilities.

The three types of programs analyzed in this report were:

- Landscape transformation:
  - Projects completed through a turf replacement incentive program where high water use turfgrass was replaced with varying mixes of low-water and native plants, organic and inorganic mulches, stormwater retention features, permeable hardscaping, and sometimes trees.
- Irrigation controller retrofit:
  - Projects completed through an incentive program where an old irrigation controller was replaced with a "smart" and/or centralized irrigation controller system. Most are required to be weather-based irrigation controllers which incorporate current, local weather information to adjust and control watering schedules.
- Irrigation equipment retrofit:
  - Projects completed through an incentive program where old, inefficient, or broken irrigation equipment and components were replaced with new efficient equipment. This may include rotating spray nozzles, soil moisture sensors, drip equipment, pressure regulation, flow sensors, irrigation submeters, and more.

The participating agencies also offer additional programs like a landscape water budget report program or irrigation water audits. Analysis on these programs are not included in this report.

5.1. Data Request

Water Use and Program Participation Data:

A comprehensive data request was sent to utilities to gather quantitative and qualitative information on landscape transformation and irrigation optimization program participants. The data request included the following documents:

- Water Use Data Set Excel Template, including fields for account and meter information, project location, and monthly consumption and billing data from three years before and after the project was completed.
- Program Participation Information Data Set Excel Template, including fields for project start and end dates, project and property area, type of intervention, before and after landscape and irrigation specifications (such as type of turf, plants, or equipment installed), rebate or incentive, multiple benefit features, and contractor information.
- Template Guidance Document PDF, describing the data fields being requested. Utilities were directed to use this document while filling out the two Excel spreadsheet templates provided for descriptions of each data field/column.

View the full data request template guidance document in Appendix C.

Weather data:

Monthly weather data from the State of California's CIMIS program were collected and used in the analysis below. As this data is provided at the station level, we must match each account to the closest weather station to obtain the most localized weather values.

Latitude and longitude of CIMIS weather stations was pulled from the State of California's Open Data site: https://lab.data.ca.gov/dataset/i04-cimis-weather-stations.

Account locations were geocoded using zip code, except for those from SDCWA, which provided the address of each account. Geocoding was performed using the open-source geocoding tool Nominatim (https://nominatim.org), which uses OpenStreetMap data to find locations (globally). Distances between the latitude/longitude of each zip code or address and each CIMIS weather station were computed, and the monthly weather data of the closest weather station was assigned to each account.

Distances between accounts and matched weather stations ranged from 0.49 miles to 14.53 miles. The average distance between the account's zip code or address and the matched station was 5.4 miles.

The model includes all the weather data gathered. While there is likely correlation among many of these variables, the goal is to control for weather, not to specifically estimate the impact of weather on water usage. Further analysis could be done later to understand the specific weather variable or combination of weather variables that most influence water use.

5.2. Data Preparation

Data provided by agencies was thoroughly reviewed and cleaned prior to being included in the analysis. Steps and related notes include:

- Merging account and project-related data with monthly water billing consumption data. Accounts without both sets of data were removed.
- Water use data was translated into gallons for all accounts (some meter and bill in hundred cubic feet, for example).
- Removed leading or trailing zeros in monthly water use data, that is where the water use was zero for several months at the start of the provided historical dataset, likely indicating either an inactive account or a change in account ownership. Accounts with intermittent periods of zeros beyond the start or end of a the data provided are still included in the analysis.
- When multiple meters are associated with an account, water use data is aggregated across all meters.
- Some accounts participated in multiple irrigation and/or landscape programs – sometimes within a similar time period and sometime not. The "intervention period" for an account was defined using the earliest start date of all the programs and the latest end date of all program participation.
- The before intervention period is defined as at least 12 months prior to intervention end date and the post intervention period starts 12 months after the end dates to allow for adjustment of water use post-intervention.
- Most agencies were only able to provide square footage for the project area, which we know is likely to be a subset of the entire irrigated area on a property, with the possible exception of square footage for irrigation controller or irrigation equipment retrofits which may span the entire property. When only one area value was provided, this was the value used to calculate the gallons per square foot per day variable. Where multiple irrigated area values were provided, the largest is assumed to be the total area and the smaller area is assumed to be a subset of the total area and thus the program only affected a subset of the landscape.
- The data used for this analysis reflects only water use during the months of June, July, August and September – to focus in on the impact during the highest water use period of the year. For dedicated irrigation meters, all water use is assumed to be outdoor water use. For accounts with mixed use meters, outdoor water use is calculated as the monthly water use less an average of winter water use during the pre-intervention years, with winter months including December, January, February, and March.

5.3. Final Dataset

This analysis in this report reflects nearly 2,000 unique customer accounts (some data was excluded from the analysis following various data cleaning steps). Table 1 shows the number of unique accounts by water agency as well as basic stats on the project square footage to provide a sense of the varying scales of projects across agencies.

Summary Statistics:

Table 1: Summary of Square Footage by Agency

Water Agency	Number of Accounts	Min area (sq. ft)	Median area (sq. ft)	Avg. area (sq. ft)	Max area (sq. ft)
Cal Water	15	1,100	8,952	16,322	77,935
EBMUD	1,466	135	11,124	37,629	6,444,301
EMWD	313	693	20,175	52,272	1,817,768
LADWP	8	5,000	65,192	128,976	605,556
MWDOC	57	661	7,504	11,242	50,000
SDCWA	25	806	5,575	9,429	36,151
All	**1,884**	**135**	**11,997**	**39,108**	**6,444,301**

Figure 1 below illustrates the average water use in gallons per day per square foot for each of the three broad program "intervention" or "treatment" categories. All three program types show a notable reduction in the average water use after the project is complete, though there may be other factors contributing to this reduction. This is why a regression analysis is completed to control for other factors that may influence water use.

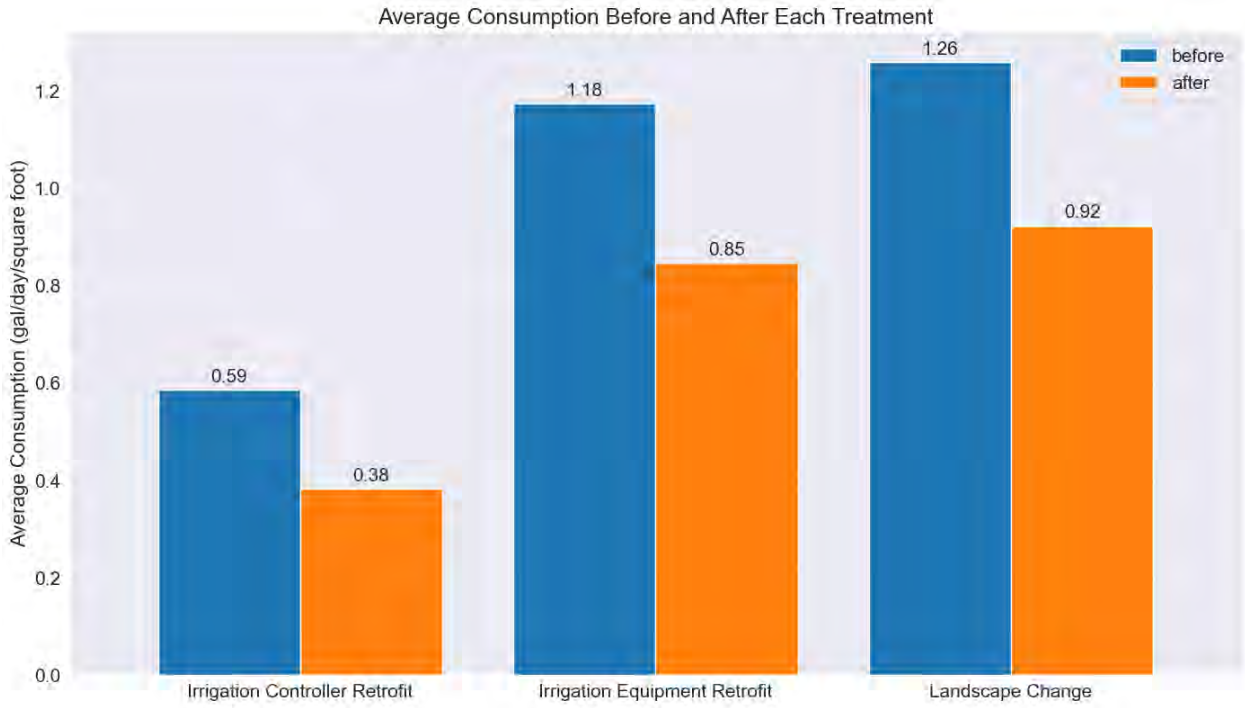

Figure 1: Before and After Average Consumption by Treatment

5.4. Regression Analysis

Simple comparisons of water use before and after a customer completes a project can be a useful first step to exploring the impact of a program, however statistical analysis through regression analysis can allow understanding of how much of the change in water use is due to the project vs. attributable to weather or other unobservable factors and drivers.

Regression analysis is a statistical method used to understand the relationship between variables. It helps determine how changes in one variable (the independent variable) are associated with changes other variables (the dependent variables).

This analysis focuses on gallons per day per square foot as the independent variable, and seeks to assess how participating in a program (the "treatment" or "intervention") influences this water use metric. The analysis approach attempts to control for the variety of differences across customers and time, including some that are observed and some that are not.

A difference-in-difference regression model is used to provide a more reliable and valid method for estimating causal effects by controlling for time-invariant differences between customers who have completed a project ("treatment" group) and those who have not

("control" group), addressing time trends, and mitigating selection bias. This makes it a superior method compared to simple before-and-after comparisons.

Since the projects are happening across multiple agencies and at different time periods, the analysis can make use of some customers' water use as counterfactual or "control" data for other customers who have already completed a project.

The model includes estimating the main effects for each treatment (program) and the observed interaction terms (cases where a customer participating in multiple programs, like both a landscape transformation and an irrigation controller retrofit).

Outdoor water use is heavily influenced by weather. A variety of weather variables are included to control for their impact on water consumption. These variables include evapotranspiration total, precipitation total, solar radiation average, maximum air temperature average, minimum air temperature average, average air temperature, maximum relative humidity average, minimum relative humidity average, average relative humidity, dew point average, wind speed average, and soil temperature average.

Fixed effects for account ID are included to control for unobserved heterogeneity. Fixed effects in a regression model help understand the true relationship between variables by controlling for the unchanging characteristics of each account, that cannot be observed about the account and are assumed to be unchanging over time. The analysis controls for these unobservable factors that may influence water use to get a more accurate estimate of the impact of variables that change over time.

5.5. Regression Model:

This model uses a panel data set across accounts and time.

i = account

t = time (month-year)

Independent variable:

- Average gallons per day per square foot for account i at time t.

Dependent variables:

- "Treatment" variables, which is equal to either 0 or 1. It is 1 if the individual account i is post-project at time t. It is 0 for any account-time observation that either has not yet completed a project or never completes a project.

- Interaction variables, which reflect the combined effect of participating in multiple programs. It is equal to either 0 or 1. It is 1 if the individual account i is post-multiple projects at time t.
- Account fixed effect, which is a unique term for each unique account in the dataset. This controls for unobserved differences across accounts like baseline water usage or type of property.
- Weather variables: the model includes a variety of weather variables with values for each time t including evapotranspiration (inches), precipitation (inches), average solar radiation, minimum air temperature (F), average air temperature (F), maximum air temperature (F), average minimum relative humidity (%), average maximum relative humidity (%), average relative humidity (%), dew point temperature (F), wind speed (miles per hour), soil temperature (F).
- An error term for each i and t captures all other unobserved factors affecting the water metric for account i and time t.

5.6. Results

Figure 2 and Table 2 below capture the key results from the regression analysis, focused on the three main program of Landscape Change, Irrigation Controller Retrofit, and Irrigation Equipment Retrofit. All results are statistically significant and show a strong negative reduction in water use (gallons per day per square foot) for all programs. The landscape change program and related combinations of programs result in the largest reductions in water use.

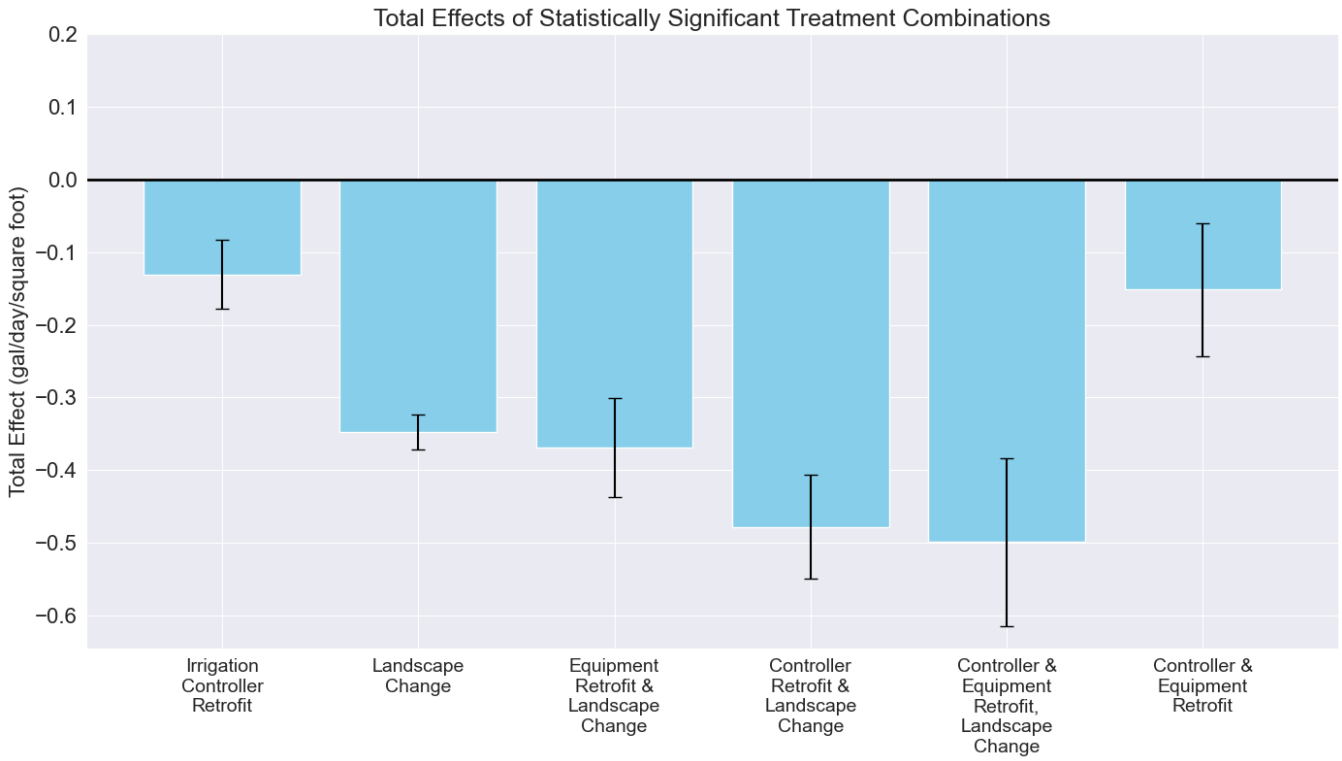

Figure 2: Regression Results, Box-Whiskers Plot

Table 1 organizes the results in order order my most to lease absolute impact. The third data column calculates a percent change relative to pre-treatment water use. This relative impact can vary depending on the average pre-treatment water use patterns. For example, the absolute impact of the combination of both a controller and equipment retrofit is larger than a controller alone, even though the relative impact indicates otherwise. It reveals that perhaps the size of the sites doing both actions is larger or were higher water users for some other reason than sites that only did a controller retrofit.

Table 2: Regression Results

Intervention type	Pre-treatment average consumption (gallons per day per square foot)	Estimated change in gallons per day per square foot	Estimated % Change relative to pre-treatment water use
Landscape change + Irrigation controller retrofit + Irrigation equipment retrofit	1.26	-0.5	-39.60%

Landscape change + Irrigation controller retrofit	1.26	-0.48	-38.00%
Landscape change + Irrigation equipment retrofit	1.26	-0.37	-29.30%
Landscape change	1.26	-0.35	-27.60%
Irrigation controller retrofit + Irrigation equipment retrofit	1.18	-0.15	-12.90%
Irrigation controller retrofit	0.59	-0.13	-22.20%

These results are based on the data provided by the water agencies. We are aware that even though some indicated that a customer only participated in a landscape change program, it is likely that the customer also made changes to its irrigation system. They may not have taken advantage of the water agency's irrigation incentive program, the agency may not have had a rebate program, or it may have been a requirement of the program and was not separately rebated. The results here likely underestimate the impact of irrigation equipment and controller projects on water use after a project is complete.

Another data challenge is related to the areas provided. Most agencies only provided the square footage of the project and did not readily have or share total site area. The key water use metric this study analyzed normalizes all data down to gallons per day per square foot. In the case where we don't have a sense of how the project area compares to the total irrigated landscape area it is possible that this analysis potentially underestimates the impact of transforming a square foot of landscape since the analysis presumably captures all water use but assumes it is being applied over a smaller total area than it really is.

The final data challenge of note is related to landscape area and meters. We requested that agencies submit all meters associated with a landscape. It is possible that not all meters were provided, that the meter data provided does not fully capture the total irrigation related to the project areas, or other challenges. In cases where mixed-use-meters were provided, it is possible that some of these meters may not have been serving the project area at all. Many agencies provided data for dedicated irrigation meters which helps mitigate this potential issue.

6. Discussion

This Report is part of a larger effort to evaluate and describe large-scale landscape transformation programs that are emerging across North America to advance water conservation and efficiency goals, including participation from water agencies and

stakeholders in Arizona, California, Colorado, Nevada, Oregon, Texas, and Utah. Project findings and the water savings analysis are subject to change and will be published in a final resource by AWE. The Program Advisory Committee will continue to be engaged for the remaining components of this project, including a Market Readiness Assessment, additional learning cohort opportunities, stakeholder engagement opportunities, and more.

This study is the first of its kind and has highlighted a need for additional work in this space. The information and analysis cultivated here and as part of the larger study can help water agencies and related vendors, contractors, stakeholders and decision-makers to inform and improve their efforts. As incentives, regulations, water rates, and climate change continue to drive change, is it clear that more water-saving measures will be implemented.

Though this study is reflective of "what is", most agencies also shared ideas for how they plan to and/or may eventually evolve and improve their efforts in the future. This industry, and the area of commercial landscape water use in particular, is ripe for continuous improvement and innovation. Agencies noted wanting to explore greater collaboration with industry partners like irrigation and landscape professionals, design assistance, support or requirements around maintenance, and more.

As with any study, this effort highlighted gaps in knowledge and research.

- Many agencies have just recently started up their programs. It would be beneficial to revisit this analysis after 3-5 years when sufficient post-program data is available across more agencies.
- Improved data systems are needed to improve this analysis. It would be ideal to have more accurate datasets that identify landscape cover, landscape area, and which meters are irrigating which sections of the landscape.
- Given data constraints there are limitations on assessing individual programs and drivers of differences across program results. With a larger dataset and programmatic data, more program evaluation could be completed.
- This study did not dive into program or process evaluation. Additional research is needed to specifically hone in on how program designs might be helping or hindering successful projects.
- Most agencies encourage landscapes that achieve multiple benefits, however, there is less data and research into capture and quantifying these additional benefits, as well as data related to impacts (positive or negative) to post-project maintenance costs and environmental impacts.

- Finally, more work and resources are needed to support the landscape and irrigation industry to support the successful design, installation, and maintenance of waterwise landscapes.

Appendix A: Participant Profiles

A.1. California Water Service (Cal Water)

Water Agency Overview

- **Participant Name**: California Water Service
- **Organization type**: Regulated American Water Utility Company
- **Location**: San Jose, CA
- **Population Served:** 497,700 customer connections, throughout 24 districts in California serving 2.1 million people

Program(s) Offered

Water Conservation Rebate Program

- **Type of Program**: Irrigation Optimization and Water Saving Devices
- **Year Started:** 2003
- **Eligibility**: Commercial and Residential customers
- **Core Program Components**:
    - Applicant must select and purchase irrigation devices from Cal Water's qualified product lists, provided as separate pdf documents to the applicant.
    - Applicants must install the purchased devices before applying for the rebate.
        - Installation must be completed by a C-27 licensed contractor to be eligible for the spray body and large rotary nozzle Part B rebate.
    - After installation, the applicant must submit a copy of the original sales receipt with the rebate application.
    - Rebates are dispersed by check within 6-8 weeks of the application.
    - This offer only applies to qualified toilet(s), clothes washer(s), sprinkler nozzle(s), and smart irrigation controller(s) purchased and installed in the six months prior to your application date. Rebates are available on a first come first serve basis, until rebate program funds are depleted. Participants receiving $600 or more receive an IRS Form 1099 unless exemptions apply.
    - **Turf Replacement Rebate –** This program provides a financial rebate for replacement of turf with approved drought-tolerant landscaping. Cal Water operated this program in 2015/16 as a drought response measure. The program is a part of Cal Water's irrigation equipment/landscape upgrade program offerings.
- **Financial Incentive(s)**:

    - High Efficiency Toilet Rebate: Up to $100
    - High Efficiency Urinal Rebate: Up to $150
    - Smart Irrigation Controller: Up to $25/station
    - High-Efficiency Sprinkler Nozzle: Up to $5/nozzle
    - Spray Body with Integrated Pressure Regulation and Check Valve: Up to $10/spray body (Material) (plus an additional $8/spray body for installation or labor if installed by a C-27 contractor)
    - Large Rotary Nozzle: Up to $30/nozzle (Material) (plus an additional $8/nozzle for installation if installed by a C-27 contractor)
    - Total rebates will not be issued for more than $25,000 for any individual site in a calendar year. Cal Water may elect to waive the $25,000 site limit on a case-by-case basis depending on available funding and other factors.
- **Funding Level and Sources**:
    - Funding is largely derived from rates and sometimes supplemented by grant funding on a calendar and per district basis.
- **Participation**:
    - From 2021-2023 there was an average program participation of 2,482 customers
- **Key Partners**
    - EPA WaterSense

Highlights

- Cal Water offers a Smart Landscape Tune-Up Program, which offers customers a free irrigation system assessment, upgrade, and repair.
- Cal Water's Conservation webpage offers customers self-help videos on how to repair leaks and save water outdoors.

Related Policies or Ordinances

- Water Shortage Contingency Plan
- Urban Water Management Plans
- Watering restrictions vary by district and city
- Drought restrictions

Skills on Staff to Support Programs

- Data Analysis
- Program/Project Management
- Assist customers with designing a water efficient landscape

Engagement with Contractors

- Cal Water refers customers to a list of QWEL certified contractors and offer QWEL trainings to contractors.

Multiple Benefits

- Cal Water provides fire-wise landscaping guidance on their website in coordination with the California Department of Forestry, and Fire Protection (Cal Fire).

Artificial Turf

- No, the installation of artificial turf is not eligible for rebate.

A.2. City of Sacramento Department of Utilities

Participant Overview

- **Organization Type**: Municipal Utility
- **Location**: Sacramento, CA
- **Population Served**: 518,000

Program(s) Offered

Turf Rebate Program

- **Type of Program:** Landscape Transformation
- **Year Started:** 2016
- **Eligibility:** CII and MF customers
- **Core Program Components:**
    - Customer must submit a rebate application, plant coverage worksheet, and landscape plan for City Water Conservation staff approval.
    - Upon approval, Water Conservation staff conducts a pre-inspection of the project site.
    - Once approved, projects must be completed within 120 days and must submit receipts and project photos.
    - Water Conservation staff will conduct a post-inspection. Rebate checks will be received within 12 weeks of post-inspection appointment and approval.
    - Customer must select plants from a pre-approved plant list.
    - Project requirements:
        - A minimum of five non-invasive, drought-tolerant plants (including shrubs and trees)
        - 60% coverage at plant maturity

        - A drip irrigation system including an EPA WaterSense-certified controller OR no irrigation system (hand watering).
        - Organic or inorganic mulch, which must be spread 2-5 inches under trees and shrubs and be 6 inches or less in diameter.
- **Financial Incentive(s):**
    - Grass conversion: $1.50 per sq ft
    - Up $700 for installing each WaterSense-labeled smart irrigation controller
    - The maximum rebate of $50,000 can be used for grass conversion, irrigation upgrades, or a combination of both.
    - Incentives include equipment, installation, and labor costs. Customers who want to be reimbursed for labor costs must hire a licensed landscape contractor in the State of California. Labor costs can be up to 20% of total project's reimbursable amount.
- **Funding Level and Sources:**
    - Funded through rates.
    - Approximately $1 million available for all rebates.
    - Approximately $250,000/$1 million for MF and CII customers.
    - Have multi-year agreements in place with both Streetscapes (Public Works) and Parks to fund up to $50,000 a year ($100,000/ $1 million)
- **Participation:**
    - Average ~4 MF/CII customers per year.
    - 47 completed projects to date
- **Key Partners**
    - Regional Water Authority

Highlights

- Customers may sign up for an informational water scorecard and budget through the City's contract with Waterfluence. The City wants to use this tool to conduct outreach to customers who need the most help managing their water use and who may be good candidates to participate in grass conversation and irrigation rebate programs.
- The City provides customers with a variety of resources for landscape design assistance, including a sample landscape design, landscape design questionnaire, plant coverage worksheet, a guidance document on how to measure your lawn, and a landscape plan sketch printout.
- The City offers a Rain Barrel Rebate to customers, at $0.75 for each gallon of storage capacity up to $150.

Related Policies or Ordinances

- Water Conservation Ordinance
- Year-round Watering schedule

Skills on Staff to Support Programs

- Certified Irrigation Auditor Certification (CLIA)
- QWEL Certification
- ReScape Certifications

Engagement with Contractors

- The City provides a Contractor Guide for contractors who are hired to conduct a turf conversion or irrigation upgrade project for customers.
- The City provides a City-Approved Landscape Designers list on their website for customers.

Multiple Benefits

- Encourage use of native, drought tolerant plants and tree coverage in pre-approved plant list

Artificial Turf

Artificial turf is not eligible for a rebate under the grass conversion program and is subtracted from the turf conversion square footage for projects.

A.3. East Bay Municipal Utility District (EBMUD)

Participant Overview

- **Organization Type**: Public utility district
- **Location**: Oakland, CA
- **Population Served**: 1.4 million water customers in Alameda and Contra Costa counties

Program(s) Offered

Commercial Landscape Conversion

- **Type of Program**: Landscape transformation
- **Year Started**: Late 1990s
- **Eligibility**: CII customers
- **Core Program Components**:

- The project area must be an existing lawn that is actively irrigated and maintained by EBMUD water
- Customer must select between rebate types (standard rebate, super rebate, median strip rebate, and/or landscape design assistance) according to the project specifications. Each rebate type is subject to different rebate requirements.
- Requirements for a standard rebate include:
    - 50% plant coverage at maturity, using low-water-use plants. Exceptions may apply for functional landscape spaces, including picnic areas, fire pits, sporting courts, etc.
    - Biodegradable weed barriers
    - Permeable materials (including pavers, bricks filled with sand, gravel, decomposed granite)
    - Replacement of sprinkler system with a drip irrigation system. High-efficiency sprinklers may be used upon request for a reduced rebate.
    - If installed, drip systems must have pressure regulators and a filter. Plants with different irrigation needs must be placed on separate irrigation zones.
- The "super rebate", launched in 2021, incentivizes "ecological best practices" through additional requirements from the standard rebate. Requirements include using sheet mulch to remove lawn, the addition of compost for soil improvement, the selection of majority CA native plants for the conversion, and planting during the cool season (September – February).
- Customer must submit a rebate application and photos of the existing lawn to EBMUD's Water Conservation team via email.
    - Best practice: EBMUD provides a video with application instructions and a sample completed application as customer support tools.
- EBMUD must provide a written notice of approval before the conversion can begin.
- After project approval, customer must complete project within 9 months or will otherwise lose rebate eligibility. Extensions may be granted if requested prior to the deadline.
- Upon completion, customers must submit photos showing the project area converted (including photos of plants, mulch, and irrigation). Customers must also schedule and conduct a post-completion inspection to determine the final rebate amount.
- Rebate checks are issued within two months of the post-completion inspection.

    - Customers who meet requirements can also participate in the Landscape Design Assistance Program (LDAP), which provides a 2-hour consultation (up to $200 reimbursed) with a professional landscape designer to provide basic recommendations on plants, layout, and irrigation as part of the landscape conversion rebate (professional designs are not required).
- **Financial Incentive(s)**:
    - Standard rebate: $1.00 / sq ft
    - Super rebate: $2.00 / sq ft
    - Median strip rebate: $2.00 / sq sf (for commercial customers only)
    - Landscape design assistance: $200 (2 hour free consultation)
    - Rebates are subject to a maximum of $15,000 over a 2-year period for commercial, municipal, and large multi-family properties (5+ units). As of January 1, 2024, an additional $5,000 is available on a case-by-case basis.
- **Funding Level and Sources** (ideally by year, but at least clarify the time period of funding):
    - Capital budget, but can be augmented when grants are available.
    - Approximately $500,000 yearly ($1M per budget cycle, on a two-year budget cycle) for all rebate incentives for both commercial and residential properties.
- **Key Partners**
    - None, in-house program

Irrigation Equipment Rebate Program

- **Type of Program**: Irrigation Optimization
- **Year Started**: Early 1990s
- **Eligibility**: Commercial, municipal, and large multi-family properties (5+ units)
- **Core Program Requirements**:
    - Customer must fill out and submit the rebate application (same as lawn conversion program) and include photos of old equipment being replaced.
    - EBMUD must provide a written notice of approval before new equipment can be installed.
    - Upon project completion, customer must submit receipts/invoices and photos to EBMUD staff showing purchase within 90 days of submittal. Rebates will be issued as checks within two months.
- **Financial Incentive(s)**:
    - Up to $15,000 during a 2-year period for CII customers. Rebates are offered for:

        - Smart irrigation controllers
        - Irrigation flow sensors
        - Drip irrigation
        - High efficiency rotating nozzles
        - Pressure regulators
        - Irrigation submeter
        - Spring Irrigation Repairs Rebate Pilot
- **Funding Level and Sources**:
    - Capital budget, but can be augmented when grants are available.
    - Approximately $500,000 yearly ($1M per budget cycle, on a two-year budget cycle) for all rebate incentives for both commercial and residential properties.
- **Key Partners**
    - None, in-house program

Highlights

- EBMUD is recently launched a "Pilot Spring Irrigation Repairs Rebate" for CII and MF customers. The program offers rebates for repairing qualified broken irrigation equipment and/or leaks, for up to $25 per active irrigation station inspected and repaired (or up to $1,000 per account).
- EBMUD distributes a newsletter specifically for CII customers and offers bi-annual online meetings with large account holders to discuss progress of water savings across accounts, address barriers, and follow up with on-site water use evaluations
- Individual and customer-by-customer approach to building long-term relationships with HOAs
- Offers advanced, intermediate, and beginner level training webinars and how-to videos available on their Youtube page.
- Offers a variety of educational resources and tools to customers, including plant lists, free landscape designs, a watering schedule guidance, and a sustainable landscape map for customers to visit demonstration gardens.
- Implementing a tiered rebate approach resulted in increased program participation, allowing more people to participate based on their needs and ability.

Related Policies or Ordinances

- EBMUD Section 29 – Water Use Restrictions
- State of California readopted emergency measure (AB 1572) which does not allow decorative turf to be irrigated with drinking water.

- EBMUD drought response to various stages and can include updated outdoor watering restrictions.
- EBMUD Water Shortage Contingency Plan, 2020
- For new water services, all applicants shall comply with EBMUD Sec. 31 water efficiency regulations and those required by applicable local, state and/or federal law, including the California Green Building Standards Code (CALGreen) and the Model Water Efficient Landscape Ordinance (MWELO). https://www.ebmud.com/water/conservation-and-rebates/water-efficiency-review

Skills on Staff to Support Programs

- Landscape contractor experience
- Landscape design, gardening
- Irrigation experience
- Certified Landscape Irrigation Auditor through the Irrigation Association
- ReScape Qualified
- Qualified Applicators License through Department of Pesticide Regulation
- QWEL Certified
- AWWA Water Use Specialists

Engagement with Contractors

EBMUD established a Landscape Advisory Committee (LAC), which brings together professionals from the landscaping industry, including designers, contractors, nursery managers, sod producers, educators, manufacturers, distributors, and property managers. The LAC promotes sustainable landscape design, installation, management practices to help reduce water consumption. Participating organizations include the California Landscape Contractors Association, Irrigation Association, ReScape California, StopWaste, California Native Plant Society, Pacific Horticulture Society, California Water Efficiency Partnership, Master Gardeners of Alameda and Contra Costa County, water agencies, and many other local and statewide governmental, private, and nonprofit organizations.

As part of their Landscape Design Assistance Program (LDAP), EBMUD also provides customers with a list of approved professional designers.

Multiple Benefits

- EBMUD recommends that lawn conversion program participants install trees as part of their rebate for urban heat considerations, but it is not required.
- EBMUD provides stormwater management resources on the website
- The “super rebate” requires a majority of CA native plants to be installed.

- EBMUD provides firescape resources on webpage and encourages residents to check with local city and county for up-to-date wildfire-safe practices. They have also offered presentations on firescaping in the past.

Artificial Turf

Artificial turf is not eligible for rebate. EBMUD points customers to an artificial turf fact sheet to educate customers on the adverse impacts and environmental concerns associated with artificial turf.

A.4. Eastern Municipal Water District (EMWD)

Participant Overview

- **Participant Name**: Eastern Municipal Water District (EMWD)
- **Organization Type**: Wholesale and retail water provider
- **Location**: Southern California
- **Population Served**: ~1 million people, 166,000 service connections

Program(s) Offered

Commercial Turf Replacement Rebate Program

- **Type of Program**: Landscape transformation
- **Year Started**: 2013
- **Eligibility**: Commercial, Industrial, and Institutional (CII) customers
- **Core Program Components**:
    - EMWD customers must apply through SoCal Water$mart
    - Participants must be within the Metropolitan Water District of Southern California's (MWD) service area, have existing and maintained turf, and have a project area of at least 250 sq ft to be eligible for a rebate.
    - Before beginning the project, the participant must submit an online application to reserve funds.
    - Once approved, the participant has 180 days to complete the project and submit a request for rebate.
    - Projects must include:
        - 3 plants per 100 sq ft of area transformed. Invasive plants do not qualify.
        - A stormwater retention feature
        - No hardscape within the transformed area
        - Replacement or modification of overhead spray sprinklers

        - A 3-inch-deep ring of mulch must surround all plants. Mulch must be organic unless within a CalFire designated "Very High Fire Severity Zone."
- **Financial Incentive(s)**:
    - MWD offers a $2 per square foot incentive up to 50,000 sq ft per meter per year.
    - EMWD provides supplemental funding of an additional $2 per square foot, for a total of $4 per square foot.
- **Funding Level and Sources**:
    - The program is funded by MWD
    - Supplemental funding is supported through EMWD's Special Projects and Studies Budget with an annual budget of $2,250,000
- **Participation:**
    - 6,387,985 sf of non-functional turf have been replaced through this program from 2013 - May 2024.
- **Key Partners**
    - The program is administered and implemented by MWD's SoCal Water$mart program and their third-party vendor, EGIA.
    - The Water Conservation Department partners with EMWD's Public and Governmental Affairs (PGA) Department for marketing, outreach, and engagement efforts.

Commercial and Multi-Family Drip Rebate Program (in-house)

- **Type of Program**: Irrigation optimization
- **Year Started**: 2017
- **Eligibility**: CII & MF customers
- **Core Program Components**:
    - Participants must complete an application form, to be submitted via email or mail, and provide pre-installment photos to receive approval from EMWD before beginning the conversion process.
    - Once the application is received, the EMWD Conservation Specialist scheduled a pre-onsite inspection verification.
    - Upon approval, the participant has 45 days to complete the retrofit.
    - Once the project is complete, the participant must submit post installment photos and conduct a post-onsite inspection with the EMWD Conservation Specialist. The rebate will be requested and paid after the inspection, usually within the next 5 days.
    - Program Requirements:

        - A new drip systems installed must include pressure regulation and a filter.
- **Financial Incentive(s)**:
    - $1.00 per sq ft up to $50,000 (50,000 sq ft) to convert overhead spray to drip irrigation.
- **Funding Level and Sources**:
    - 0.20 cents per $1 sq ft removed is reimbursed through MWD's Member Agency Program
    - Funding is supported through the Special Projects and Studies Budget with an annual budget of $600,000.
- **Participation:**
    - 1,580,160 sf of spray heads have been retrofitted to drip systems through this program from 2017- May 2024.
- **Key Partners**
    - This program is administered and managed in-house by EMWD. Partial reimbursement is received through MWD's Member Agency program.
    - The Water Conservation Department partners with EMWD's Public and Governmental Affairs (PGA) Department for marketing, outreach, and engagement efforts.

Commercial Devices Rebate Program

- **Type of Program**: Irrigation optimization
- **Year Started**: 2013
- **Eligibility**: CII and MF customers
- **Core Program Components**:
    - EMWD customers must apply through SoCal Water$mart
    - The customer must purchase a device from the approved list on the SoCal Water$mart website.
    - After purchase, the customer must apply for the rebate online and must upload their water bill and device purchase receipt.
- **Financial Incentive(s)**:
    - Financial incentives are available on SoCal Water$mart.
- **Funding Level and Sources** (ideally by year, but at least clarify the time period of funding):
    - The program is funded by MWD.
    - Supplemental funding is supported through EMWD's Special Projects and Studies Budget with an annual budget of $200,000
- **Participation** (ideally by year, but at least clarify the time period of participation)

    - 2,514 WBIC stations, 348 nozzles and 300 soil moisture sensors have been rebated through this program from 2013 - May 2024.
- **Key Partners**
    - The program is administered and implemented by MWD's SoCal Water$mart program and their third-party vendor, EGIA.
    - The Water Conservation Department partners with EMWD's Public and Governmental Affairs (PGA) Department for marketing, outreach, and engagement efforts.

Highlights

- Using GIS imaging, commercial customers are allotted water budgets according to the parcel's irrigated area by square footage. Based on the age of the landscape, an adjustment factor is used to provide an evapotranspiration figure reflective of the plant pallet for that time frame (in accordance with the State's Model Water Efficient Landscape Ordinance, or MWELO). Most customers stay within their budget. This effort, coupled with an AMI meter infrastructure, helps customers become aware of leaks and irrigation overuse and are incentivized to address these sooner.
- EMWD staff work with CII customers one-on-one to provide a variety of educational resources and tools on water-efficient irrigation and landscape practices. This includes sample landscape designs, suggested irrigation schedules, suggested plant lists, gardening tips, contractor lists, landscape audits, and more.
- EMWD conducted a series of workshops with CII customers to help them comply with a districtwide ban on the irrigation of non-functional turf (ahead of a statewide ban). This resulted in adjusting water budgets for customers with eligible NFT starting December 2022. On average, 83% of customers have lowered their water use to stay in budget since the implementation of this ban.

Related Policies or Ordinances

- Water Conservation Code (Title 5, Article 6)
- Permanent water use efficiency requirements
- Water Shortage Contingency Plan
- Water Waste Report Form
- Model Water Efficiency Landscape Ordinance (MWELO)

Skills on Staff to Support Programs

- Landscape architecture and design
- Project management

- Water management certification
- Landscape plan check review
- Irrigation system design and maintenance

Engagement with Contractors

- EMWD offers a free Online Landscape Contractor Training Program through their new Outdoor Water Efficiency Program, "Landscapes for Living." The program provides contractors an overview of EMWD's outdoor water efficiency programs and covers topics including incentives and rebates, customer service tips, irrigation equipment, water management, landscape design, and planting and maintenance. Contractors who complete the program are listed on the Landscapes for Living website and certain marketing materials to customers.

Multiple Benefits

- EMWD encourages the use of native plants through general education and outreach.
- EMWD worked with MWD to include a tree rebate to incentive customers to plant additional trees when completing a turf conversion project.
- EMWD is working to build regulations to include a minimum plant and tree density to mitigate urban heat on non-hardscape areas.

Artificial Turf

Customer may install artificial turf, but it is not eligible for rebate.

A.5. LA Department of Water and Power (LADWP)

Participant Overview

- **Organization type**: Municipal utility
- **Location**: Los Angeles, CA
- **Population Served**: 4 million residents, 681,000 water customers

Program(s) Offered

Technical Assistance Program (TAP)

- **Type of Program:** Custom Water Saving Project Installations and Irrigation Optimization
- **Year Started:** 1992
- **Eligibility:** CII / MF Customers

- **Core Program Components:**
    - Customer submits a completed "TAP" Application Form and sends it to LADWP staff
    - LADWP staff then conducts a pre-inspection site visit of the proposed project site. If the project is approved, LADWP staff will send the customer a pre-approval letter which includes preliminary water savings estimates and rebate amount estimates
    - After project completion, customer submits invoices, receipts, final meter readings, and other necessary documentation
    - Lastly, LADWP conducts a post-installation inspection and makes a final determination of water and cost savings
    - The rebate is issued to the customer within 3 months of completion for device saving projects that show immediate, consistent savings and 6-months to 1 year for performance-based projects.
- **Financial Incentive(s):**
    - LADWP pays $7.00 per 1,000 gallons of water saved during the first two years of the project, up to $2,000,000.
    - Project must be pre-approved
    - Projects must reduce potable water use by a minimum of 50,000 gallons over a two year time period
- **Funding Level and Sources:**
    - Up to $2 million total per project
    - Funded by ratepayers
- **Participation:**
    - Ranges between 5-50 TAP projects per year
- **Key Partners**
    - Local vendors such as landscape consultants, contractors, and irrigation equipment manufacturers advertise the TAP program to potential customers while selling or installing their own products or services. Vendors often invite LADWP representatives to meetings with customers to discuss water saving technologies and equipment, to further promote LADWP's programs.

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- **Type of Program:** Irrigation optimization, water fixture rebate, landscape transformation
- **Year Started:** 2014
- **Eligibility:** CII / MF Customers

- **Core Program Components:**
  - The rebate program is administered in conjunction with the Metropolitan Water District of Southern California (MWD)
  - Customers visit the SoCal WaterSmart website to reserve a rebate item prior to purchasing equipment or replacing their turf
  - LADWP Water Conservation staff review, verify the project plan, pre-approve, and , and inspect turf projects.
  - The project plan must include:
    - 3 plants per 100 square feet of area transformed
    - A stormwater retention feature, such as a rain garden, rock garden, or rain barrel
    - No hardscape within the project area, except permeable hardscape
    - Replacement or modification of overhead spray sprinklers
  - Rebate customers have 60 days to complete the project after the reservation effective date
  - For the Turf Replacement Program, customers have 180 days to complete the project after project pre-approval.
- **Financial Incentive(s):**
  - SoCal WaterSmart Rebates

Device Name	LADWP Incentive	MWD Incentive	Total Incentive
Large Rotary Nozzle Retrofit	$0	$13 per set	$13 per set
Irrigation Controllers (Weather-Based or Central-Computer)	$15 Per Station	$35 Per Station	$50 Per Station
Soil Moisture Sensor Systems:	$15 Per Station	$35 Per Station	$50 Per Station
In-Stem Flow Regulators	$1 Per Regulator	$1 Per Regulator	$2 Per Regulator
Rotating Sprinkler Nozzle	$4 Per Nozzle	$2 Per Nozzle	$6 Per Nozzle
Hose Bib Irrigation Controller	$0	$35 Each	$35 Each
Turf Replacement Program	3.00 per sq ft up to 7 acres	$2.00 per sq ft up to 50,000 sq ft	$5.00 per sq ft for a minimum of 250 sq ft up to 50,000 sq ft $3.00 per sq ft for 50,001 sq ft up to 7 acres maximum

- **Funding Level and Sources:**

    - MWD funds the SoCal Water Smart Rebate Program through member agency fees. LADWP supplements and increases rebate funding as listed above.
- **Participation:**
    - In the last 5 years, LADWP averaged 540,000 device rebates & 750,000 sq ft of turf removed per year.
- **Key Partners**
    - MWD

Highlights

- LADWP customers can participate in the Los Angeles Outdoor Landscaping Academy, which offers a variety of workshops on California Friendly landscaping, turf removal, garden design, and landscape features.
- LADWP's Small Business Community Sponsorships Program provides sponsorships to local 501(c)(3) nonprofit organizations. These sponsorships provide funding for water use efficiency projects and provide the opportunity for LADWP to advertise conservation and rebate programs for customers.

Related Policies or Ordinances

- Emergency Water Conservation Ordinance
    - Water Waste Report Form
- Water Efficiency Ordinance
- Watering days and restrictions

Skills on Staff to Support Programs

- Cooling tower water treatment expertise
- Recycling system experience
- Irrigation technology expertise
- Landscape design expertise
- Data collection and analysis

Engagement with Contractors

- LADWP partners with contractors to implement programs
- Irrigation equipment manufacturers, consultants, and contractors are involved through the project development, implementation and construction process.
- LADWP sponsors the California Native Plant Landscaper Certification Program (CNPLC) hosted by the Theodore Payne Foundation. This program, focused on landscape professionals, includes classroom and field education on sustainable landscape management practices, California native and friendly plants, irrigation

efficiency, garden evaluation, and weed/pest management. The program also highlights LADWP's rebate programs and how it can create new businesses for landscapers. The program is free and is offered in English and Spanish.

Multiple Benefits

- Turf replacement projects must install CA drought tolerant and native plants
- Turf replacement projects require the implementation of a stormwater capture feature

Artificial Turf

LADWP allows artificial turf for functional spaces such as sports fields and recreational fields. Artificial turf projects do not qualify for the SoCal WaterSmart rebate. However, certain artificial turf projects might qualify for incentives through the TAP.

A.6. Long Beach Utilities Department (LBUD)

Water Agency Overview

- **Participant Name**: Long Beach Utilities Department (LBUD)
- **Organization Type**: Municipal utility
- **Location**: Long Beach, CA
- **Population Served**: 90,000+ customers

Program(s) Offered

Lawn to Garden (L2G) Program

- **Type of Program**: Landscape transformation
- **Year Started**: 2010
- **Eligibility**: CII / MF / Residential customers
- **Core Program Components:**
    - Participants must fill out an online application form on LB's website.
    - Participants must develop a landscape design in accordance with design requirements and submit it to Long Beach staff via email or mail.
        - The design does not have to be professionally-drawn. Participants have the option of participating in a "Design Reimbursement Program," which provides a rebate of up to $1,500 to customers who submit a design from a LBUD-certified landscape professional.
    - LBUD staff conduct a pre-installation site inspection.

- Once the landscape design and plant pallet are approved by LB staff, the participant may begin the project and lawn conversion.
- Projects must include:
  - Low-water using California Native plants and/or California-friendly plants (invasive plants are prohibited)
  - 65% plant coverage of re-landscaped area
    - 10% are required to be native
    - Participants can reference the City's plants page.
  - Habitat development / stormwater retention feature
  - Efficient irrigation system
  - Use of mulch, compost, permeable hardscapes, and other natural materials
    - Best practice: the City offers residents free mulch.
- After project completion, LB staff conducts a post-installation inspection of the project site. Participants must provide W-9 tax form for payment.
- Payments will be made within 60 days upon LB staff approval of the project after the post-inspection.

- **Financial Incentive(s)**:
  - $2.00 / sq ft up to 50,000 square feet.
- **Funding Level and Sources**:
  - Regionally funded from the Metropolitan Water District of Southern California (MWD) that provides funds annually.
- **Participation:**
  - 1-5 participants
- **Key Partners**
  - MWD

SoCal Water$smart Irrigation Devices Rebate

- **Type of Program**: Irrigation optimization
- **Year Started**: unknown
- **Eligibility**: CII / MF customers
- **Core Program Requirements:**
  - LB Water customers must apply through SoCal Water$mart
  - The customer must purchase a device from the approved list on the SoCal Water$mart website.
  - After purchase, the customer must apply for the rebate online and must upload their water bill and device purchase receipt.

- **Financial Incentive(s)**:
    - Financial incentives are available on SoCal Water$mart.
- **Funding Level and Sources**:
    - The program is funded by MWD
- **Participation:**
    - 1-10 participants per year
- **Key Partners**
    - The program is administered and implemented by MWD's SoCal Water$mart program and their third-party vendor, EGIA.

Highlights

LB Water's Design & Ideas webpage is a one-stop-shop that provides customer with resources and guidance on drought tolerant landscaping, efficient irrigation methods, gardening and planting tips, photos and ideas for garden designs, and more.

Customers can visit LB Water's Efficient Irrigation page to learn more about the different kinds of water-efficient irrigation systems and equipment.

Related Policies or Ordinances

- Model Water Efficient Landscaping Ordinance (MWELO) Requirements
- Landscaping Standards Code (Chapter 21.42)
    - Best practice: LBUD provides a guidance document for participants to comply with the municipal code when designing landscapes for parkways.
- Water Shortage Contingency Plan (at Level 1 at time of writing)

Skills on Staff to Support Programs

- Irrigation system evaluation/maintenance
- Irrigation system design
- Horticulture (native and water wise plant knowledge)
- Landscape design and plan review
- Landscaping design and maintenance
- Data analysis
- Program / Project Management

Engagement with Contractors

- LBUD offers participants a suggested landscape designer / contractor list. To be on the list, contractors must submit their credentials to the LB Water Department. All contractors hired for the L2G program must be from a certified list.

- Participants who utilize landscape contractors receive an additional incentive as part of the City's Design Assistance Program .
- LBUD partners with Metropolitan Water District of Southern California to host Water Efficient Landscape Dual Certification Program at LBUD properties to assist on contractor education and certification.

Multiple Benefits

- 65% plant coverage of project
- 10% California Native plant requirement
- Stormwater retention feature requirement
- Irrigation device efficiency

Artificial Turf

Artificial turf is not eligible for rebate. Installation of artificial turf on approved project area will disqualify all payments for the project area.

A.7. Municipal Water District of Orange County (MWDOC)

Water Agency Overview

- **Organization type**: Wholesale water provider
- **Location**: Orange County, CA
- **Population Served**: 2.3 million residents; 649,547 connections.

Program(s) Offered

Turf Replacement Rebate Program

- **Type of Program:** Landscape transformation
- **Year Started**: 2010
- **Eligibility**: CII customers with existing turf grass
- **Core Program Requirements:**
    - Participants must apply online and must submit a water bill, a project site plan, and pictures of the project area for MWDOC staff review and approval. The Turf Replacement Site Plan must include:
        - A drawing of the project area
        - A description of plants intended to be installed
        - A project sustainability feature
        - Irrigation method

- After the application, retail agency or contractor staff conduct a pre-inspection of the site and send the participant a letter to proceed (LTP) via email.
- Upon the participant's e-signature of the LTP, the participant has 90 days to complete the project.
- Once the project is completed, the participant must submit completed project photos, receipts/invoices, and must schedule a post-inspection with retail agency or contractor staff
- Participants will receive the rebate after the post-inspection is complete and approved, usually 6-8 weeks after the project was approved.
- Projects must include:
  - 3 plants per 100 sq ft of turf grass converted
  - Replacement or modification of overhead spray sprinklers
  - No hardscape in transformed area, except for permeable hardscape
  - Mulch in all project areas, and organic mulch ring around plants
  - No invasive plants
  - A sustainability feature (trees, rain garden, vegetated swale, rain barrel, etc.)

- **Financial Incentive(s):**
  - $3 / sq ft for a maximum of 50,000 sq ft per meter
  - MWDOC retailers may add to the rebate. Depending on the customer's location, participants may receive $4-$5 per sq ft.
- **Funding Level and Sources:**
  - The Metropolitan Water District of Southern California (MWD) provides the base funding for the program: $2/sq ft
  - MWDOC adds supplemental funding from state/federal grants: $1/sq ft
  - MWDOC's retailers may elect to add supplemental funding. Start and end dates of supplemental funding vary by agency.
- **Participation:**
  - 108,421sq ft (FY10/11)
  - 241,224 sq ft (FY11/12)
  - 303,923 sq ft (FY12/13)
  - 304,598 sq ft (FY 13/14)
  - 3,692,153 sq ft (FY 14/15)
  - 7,015,357 sq ft (FY15/16), 41 participants
  - 301,648 sq ft (FY 16/17), 17 participants
  - 251,328 sq ft (FY17/18), 22 participants
  - 509,032 sq ft (FY 18/19), 39 participants

- 331,804s q ft (FY 19/20), 20 participants
- 426,436 sq ft (FY 20/21), 23 participants
- 549,168 sq ft (FY 21/22), 49 participants
- 1,628,856 sq ft (FY22/23),143 participants

- **Key Partners**
  - MWD
  - WaterWise Consulting conducts site inspections on behalf of MWD.
  - MWDOC retailers

Spray-to-Drip Rebate Program

- **Type of Program:** Irrigation optimization
- **Year Started**: 2013
- **Eligibility**: CII customers with working spray irrigation systems
- **Core Program Requirements:**
  - Participants must apply online and must submit a water bill, a project site plan, and pictures of the project area for MWDOC staff review and approval. The Spray-to-Drip Site Plan must include:
    - A drawing of the project area in relation to existing fixtures
    - Labeled location of existing sprinkler heads
  - After the application, retail agency or contractor staff conduct a pre-inspection of the site and send the participant a letter to proceed (LTP) via email.
  - Upon the participant's e-signature of the LTP, the participant has 90 days to complete the project.
  - Once the project is completed, the participant must submit completed project photos, receipts/invoices, and must schedule a post-inspection with retail agency or contractor staff.
  - Participants will receive the rebate after the post-inspection is complete and approved, usually 6-8 weeks after the project was approved.
  - Projects must include:
    - A pressure regulator and filter
    - An in-line emitter tubing
    - Separate irrigation valves for drip irrigation with different flow rates or any non-drip irrigation equipment in project area.
    - Remove or cap unused spray heads in project area
- **Financial Incentive(s):**

    - $0.50 / sq ft of converted area up to 50,000 sq ft per meter. In March 2024, the rebate increased to $1 / sq ft.
- **Funding Level and Sources:**
    - MWD provides the base funding for the program: $0.20 per sq ft
    - MWDOC adds supplemental funding from state/federal grants: $0.30 per sq ft
    - MWDOC's retailers may elect to add supplemental funding. Start and end dates of supplemental funding vary by agency.
- **Participation:**
    - 356,772 sq ft (FY 14/15)
    - 402,668 sq ft (FY15/16)
    - 0 sq ft (FY 16/17)
    - 25,532 sq ft (FY17/18), 4 participants
    - 111,381 sq ft (FY18/19), 16 participants
    - 78,222 sq ft (FY19/20), 8 participants
    - 43,066 sq ft (FY20/21), 4 participants
    - 500,094 sq ft (FY 21/22), 29 participants
    - 730,732 sq ft (FY22/23), 62 participants
- **Key Partners**
    - MWD
    - MWDOC retailers
    - Mission Resource Conservation District conducts site inspections on behalf of some MWDOC retailers.

Highlights

- MWDOC provides clear guidelines and resources for customers participating in their turf replacement and spray-to drip programs, including:
    - Program guidelines PDFs, program check-list PDFs, example site plans, an eligible products list, step-by-step participation process flowcharts, and a program resources page for each program.
- MWDOC's Resources webpage provides customers with a variety of water use efficiency resources, tools, classes, trainings, templates, and more.
- In partnership with MWD, MWDOC's offers a Recycled Water Conversion Program to CII customers looking to convert potable or untreated imported water irrigation or industrial systems to recycled water. The program provides up to $1,950 per acre-foot of annual savings from MWD, with an additional #325 per acre-foot from MWDOC.

Related Policies or Ordinances

- 2020 Urban Water Management Plan
- Local ordinances and policies set by MWDOC retail agencies.

Skills on Staff to Support Programs

- Program / Project Management
- Customer service
- Knowledge of CA Friendly Plants, on-site stormwater capture methods, irrigation systems

Engagement with Contractors

- MWDOC's webpage links to a variety of external contractor lists
- Through the Metropolitan Water District, MWDOC offers free Qualified Water Efficient Landscaper (QWEL) certification classes for landscape professionals.
- MWDOC participates in "H20 for HOAs," a water forum to inform and educate homeowner associations, property managers, and contractors about water efficiency, regulations, water management strategies, rebate programs, and more.
- Participation from commercial landscapes in MWDOC rebate programs is mostly driven from contractors who know about the agency's program and use it to advertise their work.

Multiple Benefits

- MWDOC added a sustainability feature component to their turf replacement program in 2018 to promote stormwater capture and a minimum plant requirement to combat urban heat island effects.
- In March 2024, MWDOC added a tree rebate component to their turf replacement program.
- Projects in a high fire severity zone do not need organic mulch in their landscapes. They also added a Firewise landscape template and a fire resistant plants page to their website.

Artificial Turf

- Artificial turf is not prohibited, but it is not eligible for rebate through MWDOC as of July 2018. Some retailers fully funded artificial turf throughout 2018 and 2019. MWDOC processed the rebates because they have the infrastructure to do so and were paid per application by the retailers issuing the artificial rebates.

- One of MWDOC's member agencies still rebates for artificial turf, through a separate program they run themselves (no MWDOC involvement).

A.8. Santa Barbara County Water Agency (SBCWA)

Water Agency Overview

- **Organization type**: County water agency
- **Location**: Santa Barbara, CA
- **Population Served**: 448, 229 County-wide (as of 2020)

Program(s) Offered

Regional WaterWise Landscape Rebate Program

- **Type of Program**: Landscape Transformation
- **Year Started**: 2014-2016 (grant reporting period)[5]
- **Eligibility**:
    - The 2014-206 grant program was administered by the SBCWA on behalf of seven of its service areas, including: Carpinteria Valley Water District, City of Buellton, City of Lompoc, City of Solvang, City of Santa Barbara, Goleta Water District, and Vandenberg Village Community Services District.
    - To meet general eligibility, applicants at each participating water agency must have been a water customer for the past 12 months and must have had a living landscape that was not water-wise (dead grass was not eligible). Applicants must have also met the following criteria:
        - Must be a non-agricultural customer
        - Only retrofitted/replaced items were eligible (unless pre-approved by water provider)
    - Landscape for water conservation could include but were not limited to:
        - High efficiency irrigation
        - Water wise or drought tolerant plants
        - Removal of turf areas
        - Dedicated landscape meters, in place of master meters
        - Rain barrels or tanks and associated equipment
        - Rain gardens and associated equipment

[5] The information provided includes program information and data from SBCWA's 2014-2016 grant cycle. At the time of writing, SBCWA has received additional grant funds from USBR to continue their program administration.

        - Mulch or other groundcover
        - Landscape design services (up to $250)
- **Core Program Requirements**: Program requirements differ at each participating water purveyor service area. However, each water purveyor's requirements for the 2014-206 USBR grant period were at least as strict as the eligibility criteria mentioned above. Water purveyor's may add to the rebate eligibility requirements.
- **Financial Incentive(s):** Rebates were provided for turf removal, landscape design, and the installation of new technology such as smart irrigation controllers and high-efficiency nozzles, and other means of ensuring water-wise landscapes and efficient irrigation systems. Incentive amounts differed at each participating water purveyor service area. All rebates followed the following criteria:
    - Rebate amounts were not to exceed 50% of total project costs
    - Rebates were set dollar amounts based on square footage of landscape converted.
    - Rebates covered 50% of design costs up to $250 (included in rebate)
    - Participants were eligible for a maximum rebate of $1,000 for residential, $2000 per commercial meter, and $4,000 per facility.
- **Funding Level and Sources:**
    - Total: $528,490.79 for a grant period from 2014-2016
    - Sources:
        - US Bureau of Reclamation WEEG Grant - $175,989.78
        - Participating agencies and SB County match - $358,688
- **Participation**
    - Total participation during grant reporting period across all participating water agencies: 443 total rebates
    - Mostly residential participants
- **Key Partners**
    - Participating water agencies and water conservation staff at agencies directly administer programs in their service area and work with customers, including conducting pre- and post-rebate project evaluations.

Mobile Irrigation Lab

- **Type of Program**: Irrigation Optimization
- **Year Started**: 1989
- **Eligibility**: Agricultural growers, turf managers, and CII customers
- **Core Program Requirements:**
    - Landscape irrigation system evaluations, analysis, and technical assistance, including:

        - Irrigation Scheduling Assistance
        - Nutrient Management Assistance
        - Water Quality Analysis
        - Distribution Uniformity Analysis
        - Pump Efficiency Analysis
        - Equipment Recommendations
- **Financial Incentive(s):**
    - Free to agricultural growers
    - Small fee to turf managers
- **Funding Level and Sources:**
    - $100,000 per year
    - Funded by SBCWA
    - For FY24-25, administration of a USBR WEEG grant will increase program funding to $150,000.
- **Participation:**
    - From 1989 to date, 55,000 acres of crop land have been evaluated:
        - FY15-16: 648 acres and 24 evals
        - FY16-17: 353 acres and 14 evals
        - FY17-18: 522 acres and 5 evals
        - FY18-19: 36 acres and 8 evals
        - FY19-20: 145 acres and 13 evals
        - FY20-21: 346 acres and 23 evals
        - FY22-23: 208 acres and 17 evals
- **Key Partners**
    - The program is funded by the County and is administered by the Cachuma Resource Conservation District

Highlights

- SBCWA's Green Gardener Program is administered by the County in partnership with Santa Barbara City College's School of Extended Learning in Santa Barbara and Allan Hancock College in Santa Maria. The class covers topics on resource-efficient and pollution prevention landscape maintenance practices. It is held twice per year and is taught bilingually in both English and Spanish. The class format is fifteen 2.5-hour sessions with class and field time. After completion of the course and a final test, gardeners are issued a Green Gardener card and certificate of completion and then placed on the Green Gardener list (if providing gardening services) which is promoted to the public. There have been over 2,000 graduates since the program started in 2000!

- SBCWA's WaterWise Plant Database webpage provides customers with educational resources including virtual demonstration garden tours, plant lists for firewise, native, and waterwise lawn alternatives (both online and in a downloadable booklet). SBCWA has also built two demonstration gardens for customers to visit, including the Santa Maria Valley Sustainable Garden and the Santa Ynez Valley Botanical Garden.

Related Policies or Ordinances

- Model Water Efficient Landscape Ordinance (MWELO)
- CA Governor Executive Order – NFT Ban

Skills on Staff to Support Programs

- Water efficient landscaping (design and irrigation)
- Outreach
- Education
- Bilingual Services – Spanish and English

Engagement with Contractors

- Green Gardener Program (see Highlights section above)
- Contract with Cachuma Resource Conservation District
- SBCWA's WaterWise webpage provides customers with a list of landscape professionals and resources on how to hire landscape contractors, how to work with gardeners, and how to schedule a water checkup with local water providers.

Multiple Benefits

- Rebate programs encourage the use of California native plants.
- Santa Barbara County's Air Pollution Control District offers a Landscape Equipment Electrification Fund (LEEF) Program for businesses, public agencies, public schools, and non-profits to trade in gasoline/diesel landscape equipment for electric equipment.
- SBCWA provides customers with the link to Cal Fire's fire-smart landscaping webpage.

Artificial Turf

Artificial turf is not prohibited, but it is not eligible for rebates or incentivized in most parts of the county.

A.9. San Diego County Water Authority (SDCWA)

Participant Overview

- **Organization type**: Water wholesaler
- **Location**: San Diego County, CA
- **Customers**: 23 member agencies
- **Population Served:** 3.3 million residents

Program(s) Offered

Landscape Optimization Services (LOS)

- **Type of Program**: Landscape Transformation
- **Year Started:** 2021
- **Eligibility:** CII and MF (focus on HOA) customers
- **Core Program Components**:
    - The Landscape Optimization Services (LOS) program is funded by San Diego County Stormwater. It provides customers with consultant guidance to transform landscapes on large CII properties. This includes providing technical assistance on landscape design and helping to identify and apply for additional rebates for landscaping and irrigation devices the customer may be eligible for in addition to the LOS incentive.
    - Six-step application process:
        - 1) Applicant must meet with SDCWA staff and consultant to confirm program eligibility and develop project plan.
        - 2) LOS program team conducts a landscape assessment to recommend upgrades and a turf replacement plan.
        - 3) Applicant works with consultant to develop a landscape design.
        - 4) LOS program team assesses which rebates applicant is eligible for, estimates cost savings, assists applicant in reserving rebate funds, and gets approvals on SoCalWaterSmart's website.
        - 5) Turf removal and landscape installation.
        - 6) After project completion, LOS program team conducts a post-evaluation to process the rebate.
    - The entire process typically takes 12-18 months.
    - Requirements:
        - Must have existing turfgrass with in-ground irrigation.
        - Must have a minimum of 20,000 sq ft of turf to be replaced.

        - No turf removal prior to receiving a reservation through SoCalWaterSmart.
        - Applicant must be an authorized property owner or manager.
        - Projects must not use artificial turf.
- **Financial Incentive(s)**:
    - $5 per sq ft ($3 MWD, $1 County Stormwater, $1 Grant {no longer available}) OR $1 for native plants)
    - 50% discount on landscape design service to design the project
    - 50% off stormwater feature costs, including up to $3,000 for both labor and materials.
- **Funding Level and Sources**:
    - Irrigation and landscaping device rebates are provided by the Metropolitan Water District of Southern California (MWD).
        - REBATE = MWD turf rebates $2/sqft, $1 County Stormwater, $1 Grant {no longer available} OR $1 for native plants
        - $768,974 for 16 projects (MWD Rebate)
        - $498,844 for 16 projects (SD County Stormwater)
        - $19,352 (MWD DWR rebate – only applied to 2 projects)
        - $20,000 (SDCWA DWR rebate – only applied to 2 projects)
        - $13,000 concierge fee per project
        - $1,588,371 grant total for 16 projects
    - Funding active since launch of program (August 2021)
- **Participation**:
    - 16 projects since August 2021.
- **Key Partners:**
    - The County's Stormwater staff support program administration.
    - The County Stormwater hired a consultant, Environmental Incentives, to assist with community outreach and engagement, technical assistance, customer service, and landscape installations (concierge service).
    - EI team also includes Geosyntec Engineering, Monarch Environmental, and SGA Marketing.

WaterSmart Contractor Incentive Program (WSCIP) to
Landscape Evaluation and Value Enhancement Services (LEAVES)

- **Link**: Not yet published.
- **Type of Program**: Landscape transformation and irrigation optimization
- **Year Started**: (WSCIP) 2020-2023; (LEAVES) 2024~2026

- **Eligibility**: CII Customers
- **Core Program Requirements**:
    - SDCWA previously offered a "WaterSmart Contractor Incentive Program" (WSCIP), which targeted rebates to contractors, landscapers, or property owners conducting irrigation device retrofits that improved water efficiency. Under WSCIP, rebates were offered for irrigation hardware upgrades for four different incentivized devices (smart controllers, high-efficiency sprinkler nozzles, flow sensors, drip irrigation (smart controllers, high-efficiency sprinkler nozzles, flow sensors, drip irrigation). Participants were required to install at least 2 items to participate in program. The program is now being restructured to the "Landscape Evaluation and Value Enhancement Services" Program (LEAVES).
    - **LEAVES**
        - Commercial landscape program to assist and support customers who will have to abide by AB1572 (nonfunctional turf removal). Supplemental funding for water-saving devices, Happy 100 plant list including the Sturdy 30, water use surveys, enhanced training programs, and enhanced customer service for program questions.
        - Program will partner with stormwater agencies to reduce runoff, as well as with departments that generate compost and mulch to provide additional benefits to all private and public participating properties.
- **Financial Incentive(s) for WSCIP (LEAVES still to be determined)**:
    - Funding sources = MWD MAAP funds + USBR Grant Funds
    - Smart controllers ($35 + $15/station)
    - High-efficiency sprinkler nozzles ($6 + $1/nozzle)
    - Flow sensors ($60+$60/sensor)
    - Drip irrigation ($0.20 + $0.20/sqft)
- **Funding Level and Sources**:
    - **WSCIP**
        - MWD Member Agency Administered Program (MAAP): $427,014
        - SDCWA Operating funds: $119,818.82
            - MAAP & SDCWA Operating funds started in 2019
        - Federal Grant: US Bureau of Reclamation WaterSMART Water and Energy Efficiency Grants, $288,500 (August 2021-December 2023)
        - $2,997 consultant fee per site
        - $835,332.82 grand total for 64 projects

    - **LEAVES**
        - Budget is TBD
        - MWD MAAP
        - CA Department of Water Resources: Proposition 1 Round 2 Integrated Regional Water Management Implementation Grant
- **Participation:**
    - **WSCIP:** 64 projects from July 2020 to Aug 2023
    - **LEAVES:** Anticipated start date to be Summer of 2024
- **Key Partners:**
    - **WSCIP**
        - SDCWA hired an external consulting firm, WaterWise Consulting, to oversee the program.
        - Outreach through CLCA (CA Landscape Contractors Association) and SGA Marketing helped provide program outreach.
        - SDCWA staff oversaw the consultant, grant, and MWD's MAAP funds.

Turf Replacement Program

- **Type of Program**: Landscape transformation, stormwater run-off mitigation
- **Year Started**: 2012 to present
- **Eligibility**: CII customers (Note: there is also a Residential program)
- **Core Program Components**:
    - With the Turf Replacement Program, customers can create beautiful, sustainable, water-wise landscapes. The requirements to qualify for the rebate include removing grass and replacing it with 3 California Friendly plants per 100 sq ft, including a stormwater retention feature, and replacing/modifying overhead spray sprinklers with a more water-efficient irrigation system.
    - Rebates are offered through MWD's SoCalWaterSmart.com
    - There is an application process:
        - Applicants must be eligible, apply for a reservation, and get approval before starting their projects.
        - After receiving the reservation, the applicant must complete their projects and submit the request for a rebate within 180 days.
        - Customers may be eligible for additional rebates on devices, such as weather-based irrigation controllers, soil moisture sensors, rotating nozzles, and rain barrels or cisterns, through their water agency.
- **Financial Incentive(s)**:

    - Turf replacement
        - Commercial: $2 per sq ft, up to 50,000 sq ft
        - Note: During the period of this study, additional grant funds were available, and some participating member agencies have provided supplemental funds.
    - In addition, there are rebates for irrigation devices if customers are interested in participating.
- **Funding Level and Sources**:
    - 134 participant location sites that provided data for the study (2019-2023)
        - Total SDCWA Rebate, $279,830
        - Total DWR Rebate, $4,271
        - Total MWD Rebate, $3,037,288
    - Across all 2,808 applications/projects (2019-2023)
        - Total Rebate from Retail Agencies, $1,028,474
        - Total Rebate from Virtual Agency (County), $542,850
        - Total Rebate from Member Agency, $1,343,825
        - Total DWR Rebate, $95,944
        - Total MWD Rebate, $9,424,609
        - Total Rebate, $12,435,701
    - Irrigation device rebates vary by participating member agencies and grants available.
- **Participation:**
    - 214 overall program applicants from Dec 2019 to Dec 2023
        - 2020 = 44
        - 2021 = 38
        - 2022 = 69
        - 2023 = 63
    - The Turf Replacement Program is still ongoing.
- **Key Partners**
    - MWD funds and administers the turf rebate program.
    - MWD and some SDCWA's member agencies have offered supplemental funds for turf removal from grants and operating funds.

Highlights

- SDCWA previously offered a "WaterSmart Contractor Incentive Program (WSCIP)," which targeted rebates to contractors and landscapers implementing irrigation device retrofits with the goal of improving water efficiency. The program is now

being restructured to the "Landscape Evaluation and Value Enhancement Services" Program (LEAVES).

- SDCWA offered enhanced rebates to motivate more commercial customers to make irrigation upgrades with the goal of water savings.
- SDCWA's "WaterSmart Resources" webpage provides customers with a variety of educational resources and tools, including the Happy 100 plant list, landscaping guidebooks, information on fire-wise landscaping, irrigation tips, landscape design templates, landscape makeover videos, turf maintenance tips, and more.
- The Qualified Water Efficient Landscape (QWEL) program was a free 3-part program for professional landscapers. The program was updated in 2023 to MWD's Water Efficient Landscape Dual Certification Program (WELDCP) which combines QWEL with additional Irrigation Association education. It also provides customers with guidance and information on SDCWA's various rebate and educational programs.

Related Policies or Ordinances

- Each retailer has their own ordinances or policies that impact landscaping and irrigation.
- Applicants must follow SoCal Water$mart program requirements.
- Model Water Efficient Landscape Ordinance (MWELO) may apply

Skills on Staff to Support Programs

- Irrigation system evaluation/maintenance
- Irrigation system design
- Horticulture (native and water-wise plant knowledge)
- Landscape design and plan review
- Landscape installation
- Data analysis
- Program / Project Management

Engagement with Contractors

- SDCWA offered Qualified Water Efficient Landscaper (QWEL) and now offers Water Efficient Landscaper Dual Certification Program (WELDCP) certification programs for landscape contractors. Once contractors have gone through the trainings and passed the exam, they are added to a preferred contractor list shared with customers.

- SDCWA works closely with CLCA on all their programs and rebates. SDCWA communicates with CLCA and other contractors to obtain their needs and provide helpful service. SDCWA staff attends CLCA meetings on a regular basis.

Multiple Benefits

- Native and pollinator plants
    - SDCWA works with CA Native Plant Society (CNPS), local nurseries, and landscape professionals to encourage planting of native plants.
    - SDCWA has published its "Nifty 50" and is creating its "Happy 100" plant list which highlight the Sturdy 30. These plant lists contain all low and very low water plants that are low/lower maintenance, almost all are pollinators and have 40% to 50% native plants.
    - MWD's turf replacement rebate program requires 3 California Friendly plants per 100 sq ft of area transformed or 1 tree, which encourages more native plants into large landscapes, inviting an increase in wildlife and pollinating visitors.
    - LOS gives an additional $1 for turf removal if 70% natives are used.
- SDCWA works closely with the SD County Stormwater team, as well as with other Cities, requiring stormwater retention features in turf replacements and implementing rain gardens, rock gardens, dry riverbeds (rock-lined swales), vegetated swales, berms, grades, and rain barrels/cisterns.
- SDCWA will offer MWD's treebate to incentivize tree canopy to prevent tree loss on transformed landscapes for urban heat considerations.

Artificial Turf

No, artificial turf is not eligible for rebate. Some cities also have fake turf bans for front yards.

A.10. Santa Rosa Water

Participant Overview

- **Organization type**: Municipal utility
- **Location**: Santa Rosa, CA
- **Population Served**: 170,000

Program(s) Offered

Cash for Grass Rebate Program

- **Type of Program**: Landscape transformation

- **Year Started**: 2007
- **Eligibility**: CII customers, HOAs
- **Core Program Components:**
    - Customer must have a green and maintained lawn at time of application and pre-inspection to qualify.
    - Customer receive a "Green Exchange Eligibility Form" after pre-inspection to qualify for rebate.
    - Projects must be completed within 240 days of pre-inspection. Customer may be granted 120-day extensions on a case-by-case basis.
    - City staff conducts a post installation inspection to verify project completion, and customers must agree to not reinstall lawn after project. If the lawn is reinstalled, then the rebate amount is refunded.
    - Project requirements:
        - Permeable landscapes
        - Artificial turf, shredded "gorilla hair" mulch, and dyed mulches not permitted.
        - Non-invasive low or very low water use plants with a plant density requirement of 50% at plant maturity (excluding planting areas 6 feet wide or under)
        - Project areas with existing irrigation systems have special requirements. If the project area does not have an existing irrigation system, then the customer must either install one or hand water. Drip irrigation is the only acceptable type of irrigation in the project area.
    - Customers can take a DIY approach.
- **Financial Incentive(s)**: $1.00/square foot up to a maximum of 10,000 square feet or $10,000 annually per meter (for projects approved after April 12, 2023). $1.50/square foot for projects approved between June 12, 2021 and April 12, 2023 during most recent drought. $3.00/square foot for 10 projects that received supplemental funding from United States Bureau of Reclamation WaterSmart Grant in 2022.
- **Funding Level and Sources**
    - Sources: water rates, grants
    - Large-scale landscape programs are not budgeted individually and are paid from one fund. Average spending from this fund since creation of the large-scale landscape programs is $145.000/year.
    - Grants:

- United States Bureau of Reclamation WaterSmart Grant in 2022 for $75,000. Participants required to install one tree for every 600 square feet of project area.
- North Coast Integrated Regional Water Management Grants 2014 - 2018 for $316,864.88 (also available to single-family residential customers).

- **Participation**:

Year	# of Rebates by Meter	Square Feet Removed
2007	9	55,646
2008	23	186,105
2009	17	67,090
2010	25	118,974
2011	18	103,698
2012	21	90.018
2013	5	21,630
2014	28	92,080
2015	48	207,219
2016	23	135,751
2017	3	5,494
2018	3	12,045
2019	0	0
2020	1	3,155
2021	17	69,419
2022	51	125,945
2023	32	107,876

- **Key Partners**
  - In-house program
  - Offer customers plant lists and gardening resources from local organizations including the Master Gardeners GardenSense Program, the CalScape Bay Area Garden Planner, the Sonoma-Marin Saving Water Partnership, and the Resilient Landscapes Coalition.

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- **Type of Program**: Irrigation optimization
- **Year Started**: 2006
- **Eligibility**: CII customers, HOAs
- **Core Program Components**:
  - Customer must get the project approved through a pre-qualification and eligibility verification process before installing new irrigation hardware.

- Customer receive a “Green Exchange Eligibility Form” after pre-inspection to qualify for rebate.
- Projects must be completed within 120 days of pre-inspection. Customer may be granted 120-day extensions on a case-by-case basis.
- City staff conducts a post installation inspection to verify equipment installment.
- Customer must agree that hardware will be retained. If it is replaced with equipment with lower standards, the rebate must be refunded.
- Customer must also participate in the Large Landscape Check-up Program.

- **Financial Incentive(s)**:
  - Up to $1,000 per life of account per meter for pre-qualified equipment/hardware
  - Rebates cover materials only; labor costs are not included.
  - Eligible equipment/hardware include pressure regulation, sprinkler-to-drip irrigation retrofit, high efficiency multi-stream sprinkler nozzles, spray bodies with build-in pressure regulation and check valves, rain/weather sensor, EPA WaterSense Certified water conserving controller, master valve, other pre-approved water conserving equipment
- **Funding Level and Sources**:
  - Source: water rates
  - Large-scale landscape programs are not budgeted individually and are paid from one fund. Average spending from this fund since creation of the large-scale landscape programs is $145.000/year.
- **Participation:**

Year	# of Rebates by Meter
2006	0
2007	14
2008	33
2009	36
2010	50
2011	18
2012	17
2013	7
2014	15
2015	16
2016	10
2017	0
2018	0
2019	4

2020	1
2021	5
2022	5
2023	15

- **Key Partners**
    - In-house program

Large Landscape Check-up Program

- **Type of Program**: Landscape and irrigation optimization
- **Year Started**: 2007
- **Eligibility**: CII customers, HOAs
- **Core Program Components**:
    - Customers participating in irrigation efficiency rebate program must participate in the check-up program.
    - Check-ups may include: review of water meter, inspection of irrigation equipment and hardware, review system condition, efficiency, and schedule, water use analysis, and review of eligibility for other programs or rebates.
    - Upon check-up completion, staff provides report to customer that includes findings, recommendations, and resources to improve water use efficiency.
- **Financial Incentive(s)**: Free to customers
- **Funding Level and Sources**:
    - Source: water rates
    - Large-scale landscape programs are not budgeted individually and are paid from one fund. Average spending from this fund since creation of the large-scale landscape programs is $145.000/year.
- **Participation**:

Year	# of Check-ups by Meter
2007	14
2008	34
2009	40
2010	51
2011	18
2012	19
2013	9
2014	15
2015	17
2016	11
2017	1
2018	4

2019	0
2020	4
2021	45
2022	30
2023	22

- **Key Partners**
    - In-house program

Highlights

- Santa Rosa Water partners with nonprofit organization Daily Acts to provide education, outreach, and engagement opportunities to customers.
- All program marketing and education materials are available in English and Spanish. Santa Rosa Water recently partnered with the WaterNow Alliance Project Accelerator Program to conduct a study to better understand how programs are reaching Spanish-speaking community.
- Provides customers with individual guidance documents for programs.
- Website has a page dedicated to recommendations and best practices on WaterSmart garden maintenance.

Related Policies or Ordinances

- Water Efficient Landscape Ordinance
- Water Waste Ordinance
- Water Supply Alternatives Plan
- Urban Water Management Plan
- Water Shortage Contingency Plan

Skills on Staff to Support Programs

- Certifications: Qualified Water Efficient Landscaper, Irrigation Association Certified Landscape Irrigation Auditor, CA-NV AWWA Water Use Efficiency Practitioner

Engagement with Contractors

- Partnerships with businesses to promote City's programs through plant tags, tabling, and placing posters and program materials on site.
- Do not require certification for participating landscape or irrigation contractors.
- Point customers to QWEL and CLCA resources to find contractors on website.

Multiple Benefits

- City provides a list of "climate ready" trees that is sent to participants of cash for grass program: Climate-Ready-Tree-List (srcity.org)
- City has a rainwater harvesting and greywater rebate.
- Provide fire-wise, pet-friendly, and edible plant landscaping resources and guidance to customers: Garden Design and Plant Selection | Santa Rosa, CA (srcity.org)

Artificial Turf

Artificial turf is not eligible for rebate under Santa Rosa's Cash for Grass Rebate Program. Santa Rosa provides customers with a fact sheet on the adverse impacts and risk of utilizing artificial turf.

Appendix B: Creating Communities of Practice: Learning Cohorts

The Large-Scale Landscapes Project Learning Cohorts were an opportunity for project participants and stakeholders to cultivate a peer network, share ideas, and engage in discussions on topics relating to landscape transformations for CII customers. Session topics were informed by participants and selected based on observed challenges or issues of interest and priority to the PAC.

Learning Cohorts were held virtually, via Microsoft Teams, for an hour-and-a-half long sessions. Sessions were recorded and meeting resources (including presentation slides, recordings, and other relevant materials discussed) were shared to participants after each cohort session. Below is a summary of each learning cohort session held thus far.

Learning Cohort 1: "Marketing and Outreach to CII Customers"

Held January 17, 2024

Implementing landscape transformation and irrigation optimization projects on commercial property landscapes often involves a variety of stakeholders, including property managers, HOA board members, external contractors, and more. As water agencies administer water conservation programs targeting CII customers, they must ensure that they are reaching their target audiences and communicating project benefits in a way that resonates with stakeholders- whether it be water savings, cost savings, or compliance with local or state-level regulations. Many participating organizations have expressed challenges in reaching CII customers and are hit with additional barriers to increase participation in large-scale landscape and irrigation programs. Some reasons include:

- General lack of interest, knowledge, or capacity from CII customers to take on such projects.
- Antagonistic feelings or lack of relationship with water agency organizations.
- Utility staff capacity to conduct 1x1 outreach and maintain relationships with commercial customers.

The goal for this learning cohort was to highlight case study examples and strategies that have been successful to increase CII customer participation in water conservation programs with, effectively communicate program benefits to stakeholder bottom-lines, and to foster relationships for ongoing water conservation efforts.

Guest speakers included:

- “H20 for HOAs Partnership Program” with Luis Genis, Moulton Niguel Water District (MNWD)
- “Strategies for Building Relationships with Large Landscape Property Managers” with Kristin Bowman, East Bay Municipal Utility District (EBMUD)
- “Data-Centric Marketing for CII Customers” with Brian Bair, ET Irrigation & Steve Linnenberger, Western Water Management

Learning Cohort 2: “Unintended Consequences of Landscape Transformations…and How to Avoid Them.”

Held March 4, 2024

When developing and implementing landscape transformation programs, understanding drawbacks is as valuable as understanding the successes. It is important for water agencies to consider the broader impacts of water conservation programs to ensure they are not adversely affecting customers, community members, and other environmental outcomes. This includes considering potential impacts to public health, equity, urban heat, water quality, and more. Water agencies must therefore work to identify potential unintended consequences of turf removal programs and implement strategies to mitigate them. This may include providing a tree canopy and coverage requirement on transformed landscapes to prevent urban heat impacts and loss of green spaces in underserved areas.

Additionally, landscape transformation projects may not result in the anticipated water savings if not installed and maintained correctly. Understanding why projects are unsuccessful and what solutions are available can help agencies more effectively meet water conservation goals.

The goal of this learning cohort was to highlight potential consequences of landscape transformations as well as the strategies and best practices agencies can take to prevent them from happening.

Guest speakers included:

- “Enforcing Efficiency: a high-level overview of the Commercial Facility Irrigation Assessment Program” – Peter Varga, Austin Water, TX
- “Studying Water Quality and Urban Heat Impacts After Landscape Transformations in Denver, CO” – Dr. Aditi S. Bhaskar, University of Colorado Boulder
- Discussion: Tackling Tree Loss After Landscape Transformations

Learning Cohort 3: “Integrating Water and Land Use Planning for Water-Efficient Landscapes”

Held May 7, 2024

Communities across the country are developing and implementing ordinances, municipal codes, or other regulations to limit water use on outdoor landscapes. In California, bill AB 1572 will prohibit the use of potable water for nonfunctional grass on CII and municipal properties. Now more than ever, water conservation departments and planners must collaborate to ensure that landscape transformation and irrigation programs are meeting state and local requirements and mandates. However, lack of staff capacity, siloed departmental structures, and difficulty understanding and accessing municipal codes can make this a challenge- not only for water conservation staff, but for customers too.

To tackle this topic, AWE worked with Kerry Miller, a Master of Urban and Regional Planning student at the University of Colorado Denver, on her capstone project titled "Understanding Collaboration Between Water Agencies and Planning Departments on Landscape Transformation Programs." Project participants worked with Kerry to develop case studies, frameworks, and best practices for collaboration.

The goal of this learning cohort was to share findings from Kerry's capstone project; highlight the barriers to inter-departmental collaborations; as well as the strategies water agencies can take to integrate land use considerations into landscape transformation and overall water use planning- through landscape codes, strategic planning, or programmatic requirements.

Guest speakers included:

- "Understanding Collaborations Between Water Agencies and Planning Departments on Landscape Transformation Programs" – Kerry Miller, MURP Candidate, University of Colorado Denver
- "Integrating Water and Land Use Planning for Landscape Transformations" – Chelsea Benjamin, Policy Advisor, Healthy Rivers, Western Resource Advocates

Appendix C: Water Use and Program Data Request Guidance Document

Outdoor Water Savings Initiative Phase 3

Evaluating & Optimizing "Large-scale" Landscape Irrigation Management & Transformation Strategies

Data Request – Template Guidance Document

This document describes the data fields requested. Please review thoroughly and reach out if you have any questions. You have been provided two Excel spreadsheets as data submission templates. Many columns have pre-populated dropdowns and many are formatted to required the proper data type (e.g. numeric, or date, etc.). The templates are called the **Water Use Data Set** and the **Program Participation Information Data Set.**

General Information Requested for each Landscape Transformation / Irrigation Optimization Project

- Date range requested: 3 Years prior to start of project, All data since completion of project
- For full project participants at "The Works" level, please provide data for as many projects as you can. For others, we are expecting less than 10 sites, but please reach out to discuss as needed. If you have more projects and data, we'll incorporate it.
- Please provide data for all water meters serving the landscape where the project occurred.
- Please share periods of drought where irrigation restrictions were in place and what the restrictions were.
- Please share any GIS files, if you have any shapefiles or land cover data.
- Before/After Photos for the reports would be great too, if you're able to share!
- Please share if your organization has advanced metering infrastructure, and if so, what is the first year that data is available.
- Please share if you have easily accessible historical weather data for your service area or know where to get it? (Precipitation, Temperature, Reference ET).

“Control Group” Data:

- As you are able, please provide the **Water Use Data Set** for control sites that are similar to your participating project sites, plus the **Total Irrigable Area** served by the meter(s).
- Ideally at least two control sites per completed project site.
- A clever way to approach this is to use 2023 applicants as control sites for projects that happened in 2022 or earlier.

What to Include in the Water Use Data Set for Each Project: You do not need to provide separate spreadsheet for each project customers, you can share all water use data within one spreadsheet. For example, if you know the oldest project was implemented in 2016, pull all projects’ data from 2013 through current and we’ll sort through the rest based on information provided about projects in the Program Participation Information Data Set.

- **AccountID**: A unique identifier for the customer. This does not need to be the real account number, just something to connect between datasets.
- **WaterProviderID**: Your organization’s name.
    - All Caps Acronym is preferred. For example, “LADWP” is preferred over “Los Angeles Department of Water and Power.
- **MeterID**: Use this field if the property is served by multiple meters. Does not need to be the real meter number.
- **MeterType**: Indicate if a Dedicated Irrigation Meter (DIM) which only serves irrigation purposes, or if a Mixed Use Meter (MUM) which serves both irrigation and some other end use.
- **MeterSize**: Size of Meter (e.g. 1”)
- If Mixed Use, what else does the meter serve? Text sharing what else the meter serves.
- **PropertyType** (high level)
    - Municipal Building/Facility
    - Municipal Park
    - Commercial
    - Industrial
    - Institutional
    - Residential – Single-Family Neighborhood/HOA Common Space
    - Residential – Multifamily Common Space
    - Other (explain)
- **CIICategory**: Optional. This list is based on the EPA Energy Star Portfolio Manager categories.
- **CustomerName**: Optional.

Location: Location data is requested to help connect this data to weather data and census data. Please reach out if you are limited on what you can share related to location. None of this data will be shared as individual information in any of the publicly available project reports or materials.

- **StreetAddress**
- **City**
- **State**
- **ZipCode**
- **Latitude**
- **Longitude**

Consumption & Billing Data: We assume most will have monthly water use records. Please aim to include three years prior to the project implementation and as many years post-intervention that you have. We understand that some agencies have consumption data in a different data system than their billing data. If you need to share this information as separate spreadsheets, please just ensure that the AccountIDs and/or MeterIDs can be used to connect among datasets. Consumption data is the priority, but billing will be useful to be able to better control for differences across communities and across time.

- **Units**: Select the units of your consumption data. Options are: Gallons, Kilogallons, CF (cubic feet, 7.48 gallons), HCF or CCF (hundred cubic feet, 748 gallons).
- **Consumption**: This is a numeric field, no units or other text in this field please.
- **WaterBill**: The amount billed for the consumption. This should include both fixed and variable charges.
- **BillingDays**: This numeric field should be the number of days associated with the consumption amount. If this isn't an easy field to get from your system, but you can get meter read dates, we can back-calculate billing days.
- **MeterReadDate**: Format is MM/DD/YYYY. This could be two fields, the start and end of a consumption or billing period, but we expect just one single meter read date is common and will be sufficient. This should refer to the meter read dates, not the dates when bills are sent to customers.

Program Participation Information Data Set for Each Project: You do not need to provide a separate spreadsheet per project, all information can be submitted in a single spreadsheet.

- **AccountID**: A unique identifier for the customer. This does not need to be the real account number, just something to connect between datasets

- **TotalPropertyIrrigableArea**: Numeric field, no units. All data should be in square feet. This field should reflect the total Irrigable Area on the property. Other fields will indicate the project area.
- **ProjectArea**: Numeric field, no units. All data should be in square feet. This field should reflect the total square feet that was *affected* by the project/intervention.

Dates: If the project work spanned a few months within a single irrigation season, indicate start month and end month for that phase of project implementation and keep all information about this project within the same entry. Start Date and End Date may be the same month. If work was phased over multiple years or if multiple types of projects occurred – enter a separate line for the AccountID for each distinguishable component of the project.

- **StartDate**: Format MM/YYYY. This is the month the project started.
- **EndDate**: Format MM/YYYY. This is the month the project ended. Start Date and End Date may be the same month.

Project Information:

- Select (Yes or No) for each possible type of **intervention**. If these interventions occurred at different times, please indicate as a separate line item for the given AccountID. If the interventions occurred at roughly the same time, include all together on one entry.
    - **LWBReport**: If the customer was involved in a Landscape Water Budget Report program
    - **IrrigAudit**: Irrigation Audit
    - **IrrigControllerRetrofit**: Irrigation Controller Retrofit
    - **IrrigEquipmentRetrofit:** Irrigation Equipment Retrofit (other than a controller)
    - **LandscapeChange**: If some aspect of the landscape was changed from higher water use plant materials to lower water use plant materials. Also called Landscape Transformation
    - **RecyledConversion**: If this property also converted to utilizing Recycled/Reuse water for irrigation.

Before and After information: We recognize that each organization may or may not have this much detail about their projects. If you can provide this data it will help us be able to better understand drivers of water savings. If you do not have this information, we will simply use the **ProjectArea** square footage field for the analysis.

- Landscape Before (square feet): enter in the square footage of each type of landscape material

    - **BeforeTGC**: Turfgrass – Cool Season – High Water Use Zone
    - **BeforeTGW**: Turfgrass – Warm Season – Low or Moderate Water Use Zone
    - **BeforeAGC**: Alternative ground cover (not grass) – Low or Moderate Water Use Zone
    - **BeforeMOD**: Trees, Shrubs, Plants in Mulch – Moderate Water Use Zone
    - **BeforeLOW**: Trees, Shrubs, Plants in Mulch – Low-to-No Water Use Zone
    - **BeforeHARD**: Hardscaping

- Landscape After (square feet): enter in the square footage of each type of landscape material
    - **AfterTGC**: Turfgrass – Cool Season – High Water Use Zone
    - **AfterTGW**: Turfgrass – Warm Season – Low or Moderate Water Use Zone
    - **AfterAGC**: Alternative ground cover (not grass) – Low or Moderate Water Use Zone
    - **AfterMOD**: Trees, Shrubs, Plants in Mulch – Moderate Water Use Zone
    - **AfterLOW**: Trees, Shrubs, Plants in Mulch – Low-to-No Water Use Zone
    - **AfterHARD**: Hardscaping
- **IrrigationControllerBefore**: WBIC= weather-based irrigation controller. CBIC= clock-based irrigation controller. A clock-based controller does exactly as the clock is programmed and does not adjust for weather, a rain sensor or a soil moisture sensor. A WBIC does automatically adjust for weather, a rain sensor, and/or a soil moisture sensor.
    - WBIC
    - CBIC
- **IrrigationControllerAfter**:
    - WBIC
    - CBIC
- **ControllerAfterMakeModel:** *Optional*, if known to get a sense of industry trends.
- **IrrigationEquipmentBefore:** Select the option that reflects the majority of the irrigation zones *within the project area*. If there is notable mixing of equipment across zones, please choose Mix.
    - Spray
    - Rotor
    - Rotary
    - Bubblers
    - Subsurface Irrigation
    - Drip Irrigation
    - Other
    - Mix
- **IrrigationEquipmentAfter:**

    - Spray
    - Rotor
    - Rotary
    - Bubblers
    - Subsurface Irrigation
    - Drip Irrigation
    - Other
    - Mix
- **HEIrrigEquipAfter**: Were any components upgraded to high efficiency components?
    - Yes
    - No
    - NA
- **StoppedWateringEarly**: Did this site stop or significantly reduce water use ahead of the project? (Yes or No)
    - **DateStoppedWatering**: If yes, approximately when? (MM/YYYY)
- What is the typical irrigation season for this location? Numeric month please. Not specific to this particular project, but specific to this location.
    - **IrrigStart** (MM)
    - **IrrigEnd** (MM)
- **RebateAmount**: This should reflect any financial incentive or rebate provided by your organization to the customer for this project.
- **OtherRebateEntity**: Select which other entity provided financial incentives or rebates for the project.
    - Another Utility
    - Another City Department
    - The contractor
    - Community Grant
    - Other
    - None known
- **OtherRebateAmount**: If yes, and amount is known please enter the dollar amount.
- Project Costs: If you only have total costs, that's great. If you have a breakdown by the following categories, or even just some categories, even better. Ok if you do not have for all categories.
    - **TotalProjectCost**: This should be the total cost of the project. *The rest of the cost categories are optional*.
    - **LaborCost**
    - **LandscapeMaterialsCost**
    - **HardscapeMaterialsCost**
    - **EquipmentCost**

- **DesignCost**
- **MobilizationCost**: This is often labeled as project management or administrative or mobilization costs.
- **OtherCosts**. Explain any other known costs.

Additional Project Information: This set of information is optional, though highly recommended, if you have it available. ***Most are straightforward Yes/No questions***. Even if you only have it for some projects, this will be greatly valuable data. These fields reflect the unique nature of the types of projects we are exploring and will allow us to understand these issues in depth across many project experiences.

- Did this project include specific requirements or features: (Individual fields with **Yes, No, NA** options)
  - **StormwaterFeature**: Project included a stormwater or watershed feature
  - **TreesFeature**: Trees were planted as part of the project
  - **UrbanHeatMitigationFeature**: Project was required to implement components that create shade, minimize hardscaping or other materials that contribute to urban heat.
  - **MinPlantCoverage**: Your projects are required to have a minimum living plant coverage (e.g. 50 percent plant coverage, or a certain number of plants per a given area).
  - **NativesFeature**: Project was required to install native or other plants thatn support local pollinators and generally support local habitat
  - **EducationFeature**: Signage and/or community education
  - **FunctionalFeature**: Project included creation of a functional feature like benches/gathering spaces/paths etc.
  - **FirescapeFeature**: The project utilized firescaping principles to increase the resistance of the property to wildfire.
  - **Other**. (explain, text field)
- **PlantPallette**: Was a certain plant palette *required* for any aspect of the project? Select NA if this was not a landscape project. Select "available but not required" if you have a plant/tree list, but customers are not required to only use plants/trees from that list.
  - Yes
  - No
  - Available but not required
  - NA
- Additional programmatic services provided by your organization: Select **Yes** or **No** for each of the following additional services or supporting programmatic elements.
  - **LandscapeDesignServices**: Free or subsidized landscape design services

    - **IrrigationDesignServices**: Free or subsidized irrigation design
    - **LandscapeMaterials**: Free or subsidized plant or other landscaping material
    - **IrrigationEquipment**: Free or subsidized irrigation equipment
    - **LandscapeTechnicalAssistance**: Free landscape-related technical/educational assistance (e.g. classes, plant lists, 1:1 support, advice, site visits, etc.)
    - **IrrigationTechnicalAssistance**: Free irrigation-related technical/educational assistance (e.g. classes, audits, 1:1 support, advice, etc.
    - **LaborServices**: Free or subsidized implementation labor
    - **CodeVariance**: Temporary or Long-term Variance from code compliance regulations
    - **ExtraWatering**: Extra allowance for increased watering during establishment period
    - **Other**: Use this field to explain anything else your organization provided to the customer that was free or subsidized for their project.
- **ProDesign**: Was a professional design completed for the project?
    - Yes
    - No
- **ProInstall**: Was this project professionally implemented (Yes) or was any of the project implementation a DIY project? Select "No" if implementation was all DIY by customer.
    - Yes
    - No
    - Mixed
- Which external contractors involved in the project? (**Yes, No, NA**)
    - **ProLandscapeDesigner**
    - **ProIrrigationDesigner**
    - **ProLandscapeInstaller**
    - **ProIrrigationInstaller**
    - **ProLandscapeMaintenance**
    - **ProIrrigationMaintenance**
- **SuccessRating**: Your organization's perception of the success rating of project: 1-10
- **ProgramChanged**: Has your program significantly changed since this project occurred? (Y/N)
- **Notes**: Additional notes about this project: enter anything of interest, like if property had a significant irrigation leak during a period of the provided water use data,