



COMMERCIAL AND HOA LANDSCAPE WATER USE EFFICIENCY PROGRAM



WaterSMART: Water and Energy Efficiency Grants for FY 2023

FOA: R23AS00008

July 28, 2022

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List of Acronyms

AF	Acre-feet
AFY	Acre-feet per year
CEQA	California Environmental Quality Act
EPA	U.S. Environmental Protection Agency
IRWM	Integrated Regional Water Management Plan
MNWD	Moulton Niguel Water District
NEPA	National Environmental Policy Act
UCR	University of California, Riverside
UWMP	Urban Water Management Plan
WUCOLS	Water Use Classification of Landscape Species

1 TECHNICAL PROPOSAL AND EVALUATION CRITERIA

1.1 EXECUTIVE SUMMARY

Date: July 28, 2022

Applicant: Moulton Niguel Water District

Applicant City, County, State: Laguna Hills, Orange County California

Project Location: The project is located at various locations throughout the District's service area, within the cities of Aliso Viejo, Laguna Niguel, Laguna Hills, Mission Viejo, San Juan Capistrano and Dana Point, none of which are located on a Federal facility.

Project Name: Outdoor Commercial and Homeowners' Association Water Efficiency Program

Project Duration: 24 months

Estimated Project Completion (mm/yy): June 30, 2025

Funding Group: Tier 1

Grant Funding Requested: \$500,000

Local Matching Funds: \$3,504,400

Project Summary:

The proposed project will:

- (1) Provide convenient, outdoor water use efficiency programs that utilize a customized approach to maximize water savings.
- (2) Inspire commercial customers to reduce landscape irrigation demands through participation in the transformation of traditional lawns to summer-dry California native and climate adapted plant material.
- (3) Utilize technology to improve commercial and homeowners' association water use efficiency.

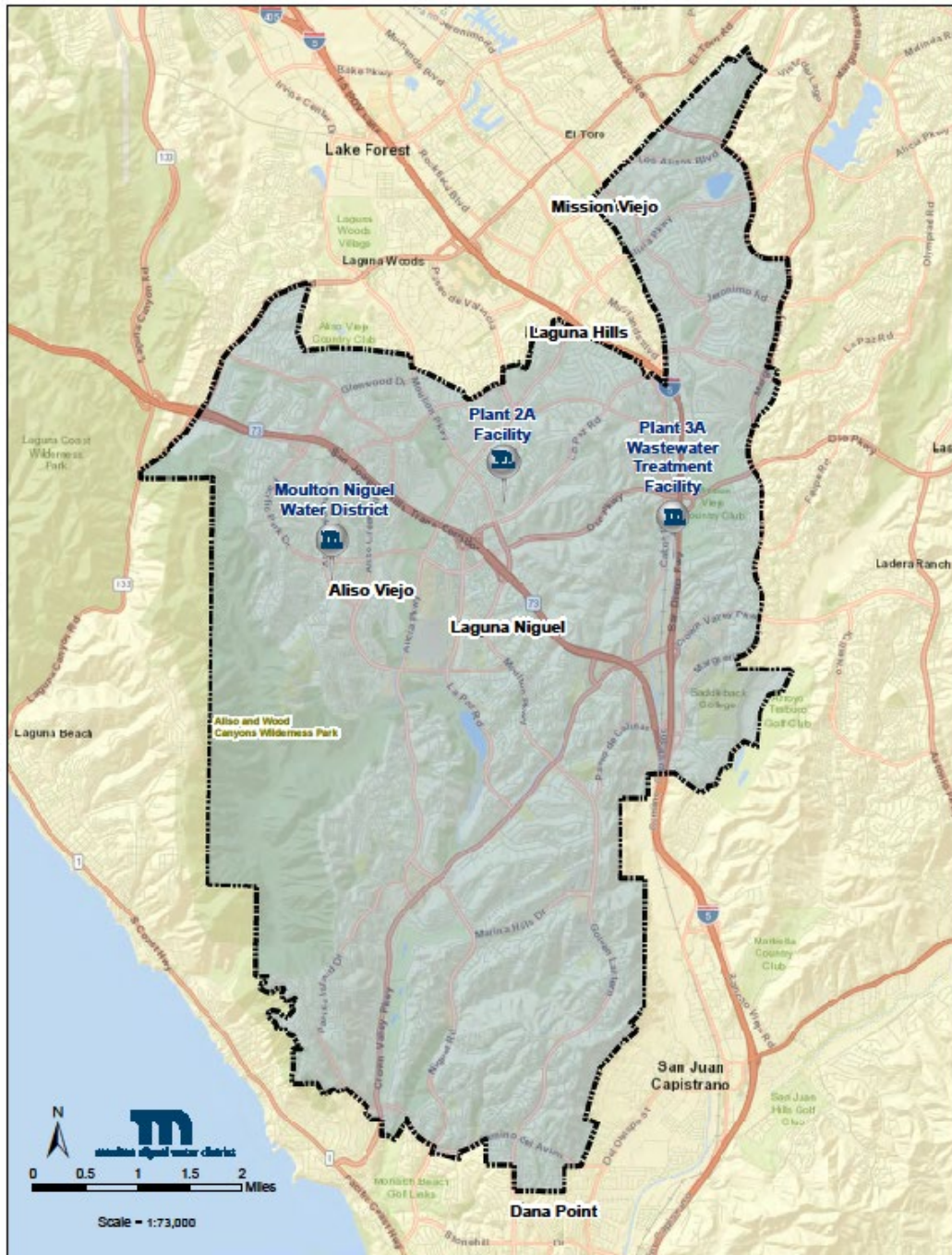
The proposed project will allow the Moulton Niguel Water District to save an estimated 110 AF of water and an estimated 320,397 kWh in avoided energy costs annually. These improvements support Reclamations objectives to leverage local funds and resources to conserve and use water more efficiently, improve energy efficiency, and provide ecological benefits by using California native plants that are climate adapted.

This project is not located on a Federal facility.

1.2 PROJECT LOCATION

The following map is of the District's service area, within which commercial properties may participate in the proposed project.

Figure 1: PROJECT LOCATION MAP



1.3 TECHNICAL PROJECT DESCRIPTION

1.3.1 Background

Established in 1960, the Moulton Niguel Water District (MNWD or District) provides water, recycled water, and wastewater service to more than 170,000 people within a 37 square mile service area located within the southern portion of Orange County. The District service area includes the cities of Aliso Viejo, Laguna Niguel, Laguna Hills, Mission Viejo, San Juan Capistrano, and Dana Point.

All of the potable water supply for the District is imported from the Metropolitan Water District of Southern California (MWD) via its wholesale supplier, the Municipal Water District of Orange County (MWDOC). The imported water is treated at the Diemer Filtration Plant or at the Baker Water Treatment Plant and delivered to the District through three dedicated pipelines. The District operates and maintains approximately 663 miles of potable water distribution pipelines. In addition, the District has 26 steel tank reservoirs and two pre-stressed concrete operational storage reservoirs for a total potable water storage capacity within the District of approximately 70 million gallons. The District owns capacity rights in several adjoining water agencies' reservoirs and pipelines such as El Toro Water District R-6 Reservoir; Santa Margarita Water District (SMWD) Upper Chiquita Reservoir; Joint Transmission Main (a joint powers agreement between the District and other water agencies); Eastern Transmission Main jointly owned by the District and the City of San Juan Capistrano; and the South County Pipeline, which conveys water from the AMP to several south county water agencies. The District also operates 22 pump stations to pump water from lower pressure zones to the higher-pressure zones and 20 pressure-reducing stations and flow control facilities to convey water from high to low zones. 100 percent of the potable water demand is met with imported water. On average, approximately 43 percent of the imported water has been from the State Water Project and 57 percent has been from the Colorado River Aqueduct. Currently, the District receives more than 95% of its supply from the Colorado River Aqueduct. The San Juan Basin Authority has water rights for approximately 10,000 AFY, and the District is a member of the San Juan Basin Authority; however, due to the brackish water quality and the very limited supply, the District has not been able to utilize any of this water.

In addition to water facilities, the District maintains approximately 504 miles of wastewater collection pipelines. The District's wastewater system has 16 lift stations that pump wastewater over the ridge lines to the various treatment plants for treatment and recycling. The District participates in the South Orange County Wastewater Authority (SOCWA), a joint powers agency comprised of ten governmental agencies, which operates three regional treatment plants which the District owns capacity in and two ocean outfalls. The District also owns and operates a fourth wastewater treatment plant, Plant 3A. It is the policy of the District to promote the use of recycled water to provide for the conservation and reuse of all water resources, and to utilize this resource for any approved purpose to the maximum extent possible under the laws of the State of California. In 1974, the District became one of the first water providers in Orange County to deliver recycled water for irrigation use. The District owns two Advanced Wastewater Treatment (AWT) facilities providing expansive recycled water service for landscaping. The District has constructed approximately 140 miles of

recycled water distribution pipelines with five pre-stressed concrete and six steel storage reservoirs to service the recycled water system. The District operates 10 recycled-water pump stations. In addition, the District owns 1,000 acre-feet of capacity rights in the Upper Oso recycled water reservoir, owned by Santa Margarita Water District. The projected annual demand of the recycled water system will be approximately 8,000-acre feet per year over the next few years. Tertiary treated wastewater that would otherwise be sent to the ocean is treated and recycled. Recycled water currently meets 23 percent of the District’s overall demand. Currently, approximately 50 percent of dedicated irrigation meters are served with recycled water and about two-thirds of all dedicated irrigation water use is met with recycled water.

The climate of the District’s service area is characterized by mild, dry summers and winters with temperatures ranging from an average of 55 degrees Fahrenheit in January to 73 degrees Fahrenheit in August, and occasional interruptions of periods of hot weather and strong winter storms. Rainfall averages 14 inches annually.

Water Use by Customer Type

There are currently 55,142 potable and recycled customer connections to the District water distribution system. All of the connections in the District system are metered, and it is anticipated that approximately 1,000 more connections will be added to the system by 2035. The majority of the water demand is residential and accounts for approximately 60 percent of the total water demand. Commercial/industrial/institutional (CII) use, including dedicated landscape irrigation meters, consume about 40 percent of the system water supply. There is no water supply for agricultural use, with the exception of water used by commercial nursery operations, which are accounted for in the commercial sector use figures.

Use Type	Actual			Projected			
	2010	2015	2020	2025	2030	2035	2040
Single Family	17,589	16,426	16,737	16,454	16,221	16,241	16,296
Multi-Family	2,600	2,218	2,656	3,031	2,997	3,000	3,008
Commercial	2,678	2,450	2,537	2,517	2,482	2,485	2,494
Irrigation	3,201	3,641	3,933	1,949	1,787	1,801	1,839
Real Losses	2,369	1,700	1,727	1,542	1,478	1,447	1,420
Apparent Losses		183	196	178	175	175	175
Total	28,437	26,618	27,786	25,850	25,319	25,331	25,850

Outdoor Water Conservation

MNWD started its commercial outdoor water conservation program in 2008 with a Turf Replacement Program and rebate for smart irrigation controllers (WBICs) in 2004 with a focus on homeowners’ associations (HOAs). Most of the Moulton Niguel Water District’s commercial customers participating in these programs are HOAs since most of the MNWD service area is composed of master planned communities. Since beginning the H2O for HOA

program, approximately 5.9 million square feet of turf has been removed and replaced with drought tolerant landscapes.

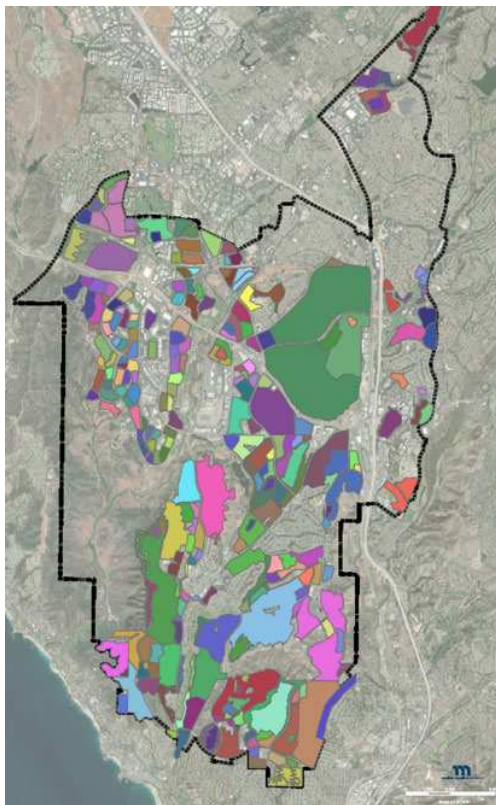
The weather-based irrigation controller rebate program for commercial customers began in 2004 and has saved an estimated 603.1 acre-feet of water.

The proposed Outdoor Commercial and Homeowners' Association Water Efficiency Program (Program) is focused on increasing outdoor water use efficiency of commercial customers using grant funds to increase participation rates in these programs and expand water conservation opportunities. HOA's are not a customer segment often considered for focused outreach for water conservation measures; however, HOAs are likely a significant source of water use. HOA focused water conservation is an opportunity for MNWD to reduce water demands and serve as an example for other water providers to also explore a focused water conservation effort for HOAs in their service areas.

1.3.2 Detailed Scope of Work

The MNWD Outdoor Commercial and Homeowners' Association Water Efficiency Program will co-market turf removal and irrigation system hardware and technology upgrades for commercial customers including Homeowner Associations (HOAs), public agencies, and businesses. The Program builds upon the principles and recommendations from the District's

Figure 2: Homeowner's Association Map



flagship H2O Pro Water Management Program, which offers a comprehensive water use survey, recommendations, and guidance for incentive funding.

The Program will be marketed to commercial customers which include Homeowner Associations (HOAs), public agencies, and businesses. Based on past participation, it is anticipated that the majority of future commercial participation will continue to be from HOAs. The distinguishing factors between an HOA and a business are that HOAs are not-for-profit organizations that benefit the homeowners of an area. While day-to-day operations of an HOA are administered by professional staff such as property managers and landscapers, the leadership is comprised of volunteer residents elected by the owners. Moulton Niguel hosts a leading education and outreach program "H2O for HOAs" each Fall, where HOA property managers, board members, and landscapers are invited to learn about water efficiency programs and services, stormwater pollution prevention, and other relevant topics such as wildfire prevention.

There are over 400 HOAs within the District service area, and 3 out of 4 residents live within an HOA.

The Program will be administered internally using District staff in order to both maximize quality control of projects and to increase customer ease of application and incentive funding. Administering this effort in-house will also allow the District to explore opportunities for streamlining funding for customers to reduce the time in which customers experience out-of-pocket expenses for equipment and landscape upgrades including instant rebates that lessen the costs at the time of installation and/or billing account rebates.

The Program will be composed of two major components:

1. Turf Removal Plus

The District currently offers a Turf Removal Rebate Program, which incentivizes the replacement of turfgrass with climate appropriate plants, and requires the irrigation system be retrofitted to conserve water. Currently, approved plants have water requirements ranging from low to moderate.

Turf Removal Plus will offer additional incentives for turfgrass that is removed and replaced with summer-dry California native and climate-adapted plant material. Summer-dry California native and climate-adapted plants require significantly less water throughout the year than turfgrass, and even less water than the typical low- to moderate-water use plants utilized in urban landscapes. Newly converted landscapes must have an average plant factor of 0.1 and may only include, low and very low water use plants, as specified by the Water Use Classification of Landscape Species list available at (<http://ucanr.edu/sites/WUCOLS/>). California native plants are preferred and the California Native Plant Society at <https://Calscape.org> is a helpful reference for such plants. The Project does not allow for low water turf or turflike species, or any invasive species.

Approved irrigation systems and methods for the new landscape will include drip, high efficiency sprinkler nozzles, or hand watering.

All exposed soil surfaces must be covered with 3" thick mulch, organic material, rock, or decomposed granite.

Turf removal and Landscape Installation must be completed within 90 days of application approval. Extensions may be granted on a case-by-case basis by MNWD in its discretion.

Pre-Qualifying Irrigation and Site Assessment (Free to Customer)

Pre-Qualifying Site Assessment to confirm the Customer Property satisfies the minimum eligibility requirements of the program and to determine whether removal and conversion of the landscape is possible given the existing condition of the Customer's irrigation system and property.

MNWD's consultant or staff will complete a pre-survey interview with the Customer, either via phone, conference call, or email, prior to commencing the landscape survey. The pre-survey interview will gather details to inform the surveyor of any potential

irrigation areas that will require additional attention, gather basic site information, name of HOA, and name of Customer's representative that will be attending the commercial landscape assessment.

The length of time required to conduct the commercial landscape survey will be determined during the pre-survey interview process between the MNWD's surveyor and the Customer.

H2O Pro Commercial Landscape Surveys



The primary method for commercial customers, such as HOAs and businesses, to find out about the Turf Removal Plus program will be through direct-to-consumer marketing, and as a customized recommendation via the District's H2O Pro Commercial Landscape Survey. The survey includes a comprehensive evaluation of the customer's irrigation system and landscape. The survey is typically performed by a consultant under contract with the District.

The District's consultant evaluates each meter at the Customer's site, unless otherwise specified and approved by the District in advance.

During the commercial landscape survey, the Consultant shall:

1. Physically inspect and record the register reading on each water meter dial.
 - i. If flow dial is turning, Consultant shall conduct a two-minute meter test and note the flow rate and volume that passed through the meter during two-minute test.
2. Record the quantity and model of irrigation controller(s), the quantity of active and inactive stations per controller, and number of active programs. If controller is weather based, note details about weather station and data (e.g. sensor or subscription).
3. Record the current irrigation controller watering settings, including the number of watering days per week, total number of start times, watering duration per station, and seasonal adjustment percentage setting if applicable.
4. Recommend or adjust watering times, if necessary, and with permission from the Customer, or Customer's representative.
5. Record recommended or adjusted water times and ensure that it includes considerations for: new irrigation controller watering schedule, reasons for change (e.g. over-irrigation, change to cycle soak method, poor filtration, etc.), new watering schedule per meter based on vegetation type, weather conditions and field assessment results.

6. Perform irrigation assessment by running active irrigation stations and record any issues found. Examples include, but are not limited to:
 - Broken heads, irrigation lines and valves
 - Misdirected heads (watering hardscape, etc.)
 - Areas with high/poor pressure or overspray
 - Poor configuration of irrigation system or improper fittings
 - Instances where vegetation impedes irrigation system
 - Create an irrigation coverage map to illustrate which irrigable areas are covered per meter.
 - Provide a site map of all meters associated with the commercial site and create a key linking the meter to its coverage area.
 - Aerial and/or physical measurements can be used to identify potential turf removal rebate areas along with potential square footage of turf removal area(s) to calculate return on investment.

The following is documented in a detailed report provided to the customer and the District:

1. Vegetation type per zone
2. Soil type per zone
3. Condition of vegetation
4. Degree to which the landscape is hydro-zoned
5. Customer's landscape maintenance protocol
6. Irrigation device types (e.g. spray heads, rotors, etc.), flow rates, irrigation coverage, irrigation system pressures, and presence of master valves, flow sensors, soil sensors, or other active irrigation technology.
7. Document areas where routine over-watering, vegetation/root growth, etc. has resulted in damage to property or hardscape with photos
8. Identify areas of runoff and provide recommendations for retaining water onsite.
9. Perform other landscape or irrigation assessment tests, as necessary, to diagnose issues.
10. The Consultant shall prepare a comprehensive report that provides the information on the commercial landscape survey findings on a per meter basis, identify appropriate water efficiency measures, provides information on resources and incentives, and includes return on investment on analysis on recommend measures. This report is provided to MNWD to review and approve, with the final PDF copy of the report provided to the customer and the District.

2. Irrigation system hardware and technology upgrades.
 - a. Irrigation master valves and flow sensors–

An irrigation master valve is an automatic irrigation valve that is installed upstream of the zone valves. The master valve serves as a fail-safe, to minimize or prevent water

loss that occurs from zone valves not completely shutting off or irrigation mainline failures. The most effective use of a master valve is in combination with a flow sensor that can detect constant or higher-than-usual flows and alert the system operator of a potential leak or malfunction.

While these technologies have been used in the past, they are most common in new irrigation systems that have lower instances of system failures. Therefore, retrofitting existing commercial irrigation systems with a master valve combined with a flow sensor would advance the water savings functions of existing irrigation systems.

The device selection will be performance-based and specific to each irrigation system; therefore, the customer will not be limited to one specific type of master valve and flow sensor. The District will pre-screen the rebate application to ensure the master valve selected must fail in the closed position and that the flow sensor communicates with the controller to automatically turn off the master valve if excess and/or extended continuous flows are sensed.

Specifications: Approved devices would include master valves, flow sensors, Hydrometers with flow sensing, FlowLink, and other wire sharing link devices. An approved device bundle must include at minimum a flow sensor and master valve or a combination device that achieves both functions. At this time, no third-party qualified list exists. However, MNWD intends to utilize a list of devices has been compiled that would meet the program requirements under Appendix B.

b. Weather-based irrigation controllers –

Weather-based irrigation controllers utilize local weather data to automatically adjust irrigation duration and frequency and suspend irrigation during rain events. Additionally, most newer weather-based irrigation controllers can work with master valves and flow sensors, which would further increase their efficacy.

Specifications: Approved devices will only be devices that are EPA WaterSense certified. The WaterSense certification criteria include utilizing evapotranspiration (ET) data to create or modify irrigation schedules, non-volatile memory so as to not lose programming in the event of lost power source, indicate to the user when the controller has lost connection with its source of ET data, be capable of utilizing a rain sensor, be capable of accommodating various watering restrictions that may be utilized during times of water shortage, include a percent adjust feature, capable of reverting to historical weather data should ET data source connection be lost, and capable of allowing for manual operation and testing. A current list of EPA WaterSense labeled weather-based irrigation controllers can be located on



the EPA's website: <https://lookforwatersense.epa.gov/Product-Search-Results-IrrigationController.html>

c. **Spray to Drip Conversion –**

Drip irrigation systems can increase the efficiency of irrigation by 30% or more, and dramatically reduce irrigation runoff. Drip systems deliver water directly to the soil surface, resulting in less water lost to wind and evaporation. Drip irrigation systems can also result in healthier shrubs and trees by reducing the amount of water that comes into contact with plant stems and branches during warm weather that could result in increased instances of plant disease.

Specifications: Approved devices would include in-line emitter drip tubing and related appurtenances, pressure regulators, and filters/strainers. An approved device bundle must include at minimum (a) the in-line emitter drip tubing, (b) a pressure regulator and a filter/strainer or a combination device that achieves both functions, for each irrigation zone that is converted to drip. At this time, no third-party qualified list exists.



However, MNWD intends to utilize a list of devices that has been compiled that would meet the program requirements included under Appendix B.

d. **Rotating Sprinkler Nozzle Conversions –**

Rotating sprinkler nozzles are more efficient than traditional spray irrigation, because of the increase in uniformity and decrease in application rate. This can be an effective upgrade for actively used turf areas that must remain in place, and shrub & tree areas that would be technically difficult to convert to drip.

Specifications: Approved devices would include rotating nozzles as currently approved for incentive funding by Metropolitan Water District of Southern California, as these nozzles have been confirmed to have both low-precipitation and higher distribution uniformity than traditional spray nozzles. <https://socalwatersmart.com/files/pdfs/met-cii-rn.pdf>

Post-Installation Site Visit

The District will complete a follow-up visit to the Customer's property within 30 days after completion of the Landscape Installation. During the post-installation site visit, The District will take photographs of the Customer's new landscape and verify it complies with the terms of the Turf Removal Plus program.

The consultant or MNWD staff will provide training to Customer on how to establish and maintain the new landscape including but not limited to, watering frequency, station run time, and establishment timeline. After training, MNWD will conduct 6-month follow-up visits to check on the status of customer implementation of water use efficiency improvements identified in the Commercial Landscape Survey Report. Water use data will also be monitored to determine progress by customer.

Commercial Rebate Implementation Process

Under the Program, participating commercial customers will receive rebates for the replacement of turf with California native, summery dry plants, WBICs, sprinkler to drip conversions, low flow, rotating sprinklers, and/or master irrigation valves with flow sensors. Commercial and HOA customers will have access to participate in individual programs or combinations. Customers participating in the Turf Removal Plus program will be incentivized to participate in the District program versus the standard MWD program by providing an additional \$2/SF rebate for a total rebate of \$4/SF, and will also be prohibited from participating in the MWDOC program to avoid the potential conflict of receiving additional federal grant funds received by MWD or MWDOC. The customers will not be charged for the Landscape Site Assessment and Survey services but will be required to participate in this assessment in order to access the landscape water use efficiency rebates. Customers will be required to complete the turf removal and installation of the new landscape materials using a MNWD reviewed landscape plan. Customers seeking rebates for devices (e.g. WBICS, drip conversions, low-flow rotating sprinklers, and master valve with flow sensors) will be required to prepare applications prior to purchasing the devices to confirm rebates are still available and will be required to show proof of installation of approved devices via photographs and receipts. Approved devices must be listed as USEPA WaterSense devices, as applicable.

Commercial Landscape and Irrigation Rebates	
Program Components	Rebate
Turf Removal Plus, Per Meter, 250 SF min- 50,000 max., (public agencies max 200,000 SF)	\$4/SF.
Irrigation master valves and flow sensors	\$2,000/max
Landscape Site Assessment and Survey (per site)	Value \$5000
Weather-based irrigation controllers (no max)	\$75/active station
Spray to Drip Conversion (250 SF to 45,000 SF, per meter)	\$1.00/SF
Rotating Sprinkler Nozzle Conversions (30 min, no max)	\$6/nozzle

Estimated Customer Share of Program Costs*		
Program Components	Unit Cost	Total Costs
Pre-Qualifying Assessment, Post-installation site visit	n/a	FREE
Turf Removal & Landscaping	\$4.61/SF	\$ 1,844,000
Master Valve & Flow Sensor	N/A	\$ 0
Weather-Based Irrigation Controllers per active station	\$77.00	\$ 92,400
Spray to Drip Conversion	\$ 0.20/SF	\$ 23,000
Rotating Sprinkler Nozzle Upgrades	\$ 2.00/EA	\$ 10,000
Total		\$ 1,969,400

*Actual costs will be tracked using customer receipts.

Project Management, Data Collection, Organization and Accessibility

The consultant will maintain a cloud-based workflow management system of all site assessments to track the state of the irrigation system and site at time of inspection. The applicable MNWD staff will have access to said information.

The distribution and approval of the Turf Removal Plus and the Master Valve/Flow Sensor rebates will be managed by MNWD staff. The District will utilize an existing online application system on the MNWD website conservation page for commercial customers to complete and submit requests for rebates. This in-house application process will provide easier access for MNWD customers and MNWD will be better able to manage rebate funding and track rebates. The current application system for irrigation devices rebates operated by MWD at the <https://socialwatersmart.com/en/commercial/> website will be used for the other device rebates, with centralized hyperlinks on the MNWD website.

Additional Customer Benefits

Customer Web Portal is designed to facilitate the process of verifying their eligibility and providing them the ability to adjust scheduling and communicate MNWD prompts targeted to adopt improved watering habits.

1.4 EVALUATION CRITERIA

1.4.1 Evaluation Criterion A - Quantifiable Water Savings

ESTIMATED WATER SAVINGS

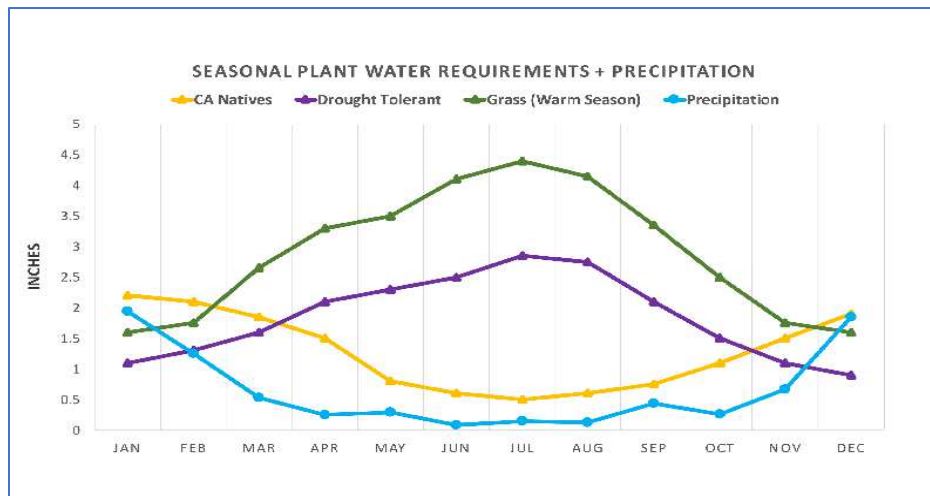
Conservation Incentive	Estimated Quantity	Water Savings (AFY)
Turf Removal Plus Rebate	400,000 SF removed	65.6
Master Valve & Flow Sensor	20	1.5
Weather-Based Irrigation Controllers	1,200 active stations	21.5
Spray to Drip Conversions (SqFt)	115,000	12.2
Rotating Sprinkler Nozzle Upgrades (per sprinkler)	5,000	8.7
Total Estimated Water Savings		109.5

Describe current losses:

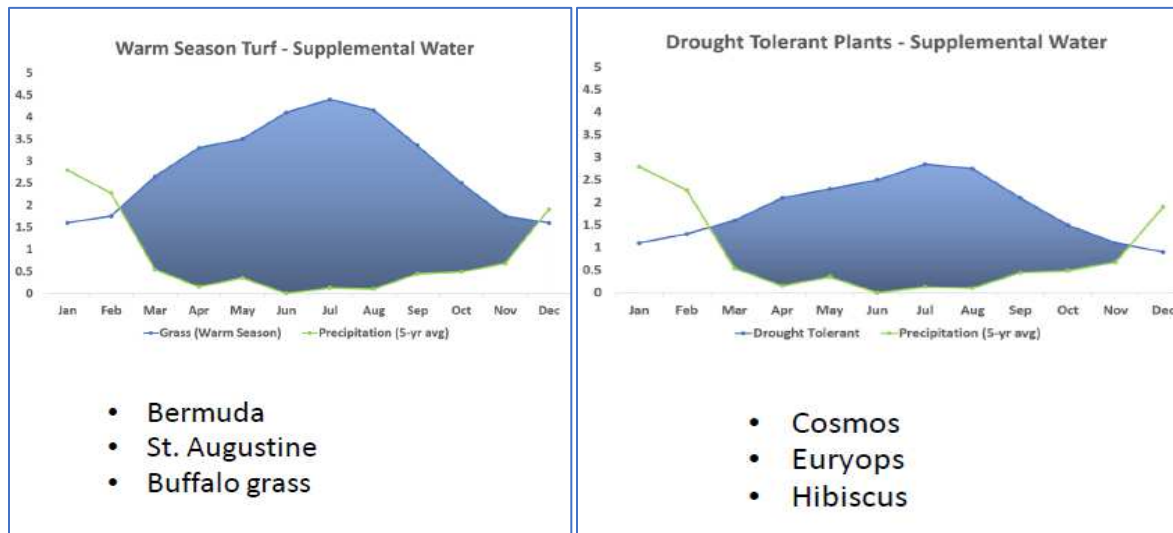
The proposed project is focused on reducing water use and water waste through passive conservation, meaning the customer will not have to actively change their water use habits daily, but will instead conserve water effortlessly by installing landscaping and/or water use efficiency irrigation devices to reduce the amount of water used and use water more efficiently for outdoor water use. The water losses targeted by the proposed conservation program are due to wasted water due to irrigation system inefficiencies and overwatering resulting in excess runoff, which carries fertilizers, pesticides, and herbicides into the stormwater drains and into rivers. Water savings will be achieved by removing warm weather turf and replacing it with California native plants that are not typically identified as “lost water”, however, these savings will be significant.

According to industry information, it is estimated that 30 to 50 percent of commercial water use is used outside. The MNWD service area includes more than 400 homeowners’ associations (HOAs). The HOAs manage common areas within the master-planned developments, including recreational areas, parkways and pathways, and roadside and median landscaping. In neighborhoods 10 years old or older, many of these areas that are managed by the HOAs are landscaped with turf and/or have irrigation systems that use traditional spray sprinklers, old irrigation controllers, and master valves that are designed to fail in an “on” position, which allows water to continue flowing. It is estimated that up to 50 percent of the outdoor water use can be reduced by implementing any one of the proposed water conservation methods, and even more water savings can be achieved by implementing a combination of methods available under the proposed Program. The water savings from master valve & flow sensors, were determined using MNWD’s AMI data to extrapolate how much water is lost due to catastrophic leaks at known irrigation accounts that had leaks, and calculated an average water loss per event.

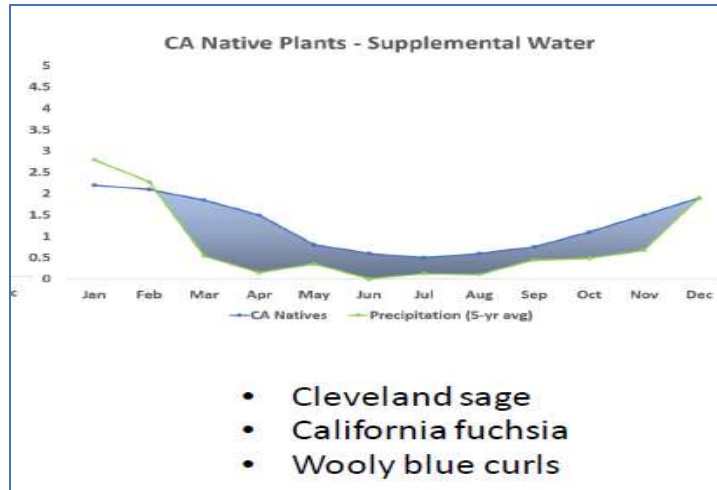
The removal of lawn turf and installation of drought tolerant, California native plants has been shown to reduce outdoor water use by 50 percent, according to actual District participation data 12 months post-installation for previous participants. Traditional lawns have a plant factor of two to three times greater than native, drought tolerant plants. The Commercial Turf Removal Plus program advances this savings by promoting and requiring the planting of summer-dry plants, which typically have a plant factor of 0.1, according to WUCOLS¹, which is a 19.6% increase in savings over typical turf removal program installing low and medium water use plants with a plant factor 0.3. Summer-dry plants are climate adapted to this area of California, therefore little to no water is required for these plants to survive during the summer months. See the below chart showing seasonal plant water needs with the x-axis indicating inches of plant water need and the blue line showing precipitation.



A comparison of supplemental water needs in the following charts reveals a very clear visualization of water needs for turf lawns versus other plants.



¹ https://ucanr.edu/sites/WUCOLS/WUCOLS_IV_User_Manual/Categories_of_Water_Needs/



The conserved water will reduce the amount of imported water required for at least 10 years and will likely persist well beyond 10 years due to the ease of maintenance and lowered water bills enjoyed by the customers. MWD estimates the useful life of drought tolerant landscapes using climate adapted, California native species is 30 years.

While the replacement of turf with California summer-dry plants will yield long-term, measurable savings, the upgrading and/or replacing irrigation components and devices can also generate significant water savings when combined with turf removal or as a standalone upgrade. Additional water losses and inefficiencies are attributed to the commercial irrigation systems specifically. *Timer-based irrigation controllers* do not adjust according to the weather and lack the ability to monitor flow resulting in excessive run times, over-watering, and water runoff. Many commercial/HOA irrigation system master valves do not include flow sensors and are designed to be in an “open” position if there is a failure, resulting on irrigation systems watering continuously for extended periods and even hours before this condition is noticed and repaired. New irrigation systems are required by ordinance to include a master valve with a “closed” default position and flow sensors to identify unusual flow and communicate with the controller to turn off the system and stop watering. Offering a rebate to retrofit existing irrigation systems to use similar master valves and flow sensors is a new program that is anticipated to yield significant water savings.

MNWD has been hosting the H2O for HOAs workshops for more than 5 years as well as in-person visits with commercial customers focused on educating the HOAs and other commercial customers about the inefficiencies inherent in many irrigation systems. As a result of the interest by commercial customers to address these inefficiencies and lower water use, MNWD recently implemented the comprehensive, customized site assessment surveys using a consultant. These surveys are a game-changer for customers, identifying the specific areas water losses are occurring and detailing clear steps towards correcting these inefficiencies. A sample report is included under Appendix C showing the in-depth report that results from this assessment. This is free to the customer and can be used by the customer to work with contractors and/or their professional landscapers to complete the tasks identified and it also includes information on how to obtain rebates.

The requested funding will allow MNWD to expand the type of devices offered to commercial and HOA customers as well as increase the number of customer participation in existing programs, thereby increasing near term and long-term water savings.

Describe the support/documentation of estimated water savings:

The water savings were calculated using two sources: 1) The University of California at Riverside School of Public Policy to evaluate water savings associated with past water conservation programs and estimated savings for future programs based on customer interest under the Water Conservation Study Phases I and II Reports in 2016 and 2017, respectively, and 2) using an MNWD created software and AMI metering that is able to view real time savings of water conservation programs by comparing pre-and post-installation water use by participating customers.

More detailed description is discussed for each water conservation measure.

Commercial Turf Removal Plus Program:

How has the estimated average annual water savings that will result from the project been determined?

The estimated annual savings for turf removal is 45.7 gallons per ft². The water savings for turf removal was calculated by the University of California at Riverside School of Public Policy in a Water Conservation Study completed for the District in March 2016. The Phase I Summary Report states, "The turf removal rebate program has produced savings of about 25-35% of total household water consumption, pays for itself in about 14 years, and is financially equivalent to purchasing water at about \$950 per acre-foot."

What is the total surface area of the turf to be removed and what is the estimated average annual turf consumptive use rate per unit area?

Based on participation from July 2021 – December 2021, the average area of turf expected to be removed per applicant is 20,000 square feet. Based on the budget and costs associated with the Turf Removal Plus program, it is estimated 15 - 25 turf removal and replacement projects will be completed, for a total area of approximately 400,000 square feet of turf removed.

Was historical water consumption data evaluated to estimate average annual turf consumptive use per unit area? If so, did the evaluation include a weather adjustment component?

Yes, as noted previously, historical data from 2007 through March 2015 was evaluated and the evaluation did include an adjustment for periods of water use restrictions.

Will site audits be performed before applicants are accepted into the program?

Turf Removal Plus applicants are required to complete the following steps to be approved for the program:

1. Complete an application

2. Pre-Qualification Assessment

The area(s) of turf that will be removed to determine Customer's maximum turf replacement incentive will be assessed during the pre-qualification assessment including Before photographs of Customer's landscape and irrigation system.

The type and condition of the existing irrigation system will be noted and any irrigation or site issues (e.g. mixed zones, broken heads, damaged solenoids, leaks) will be documented in the audit report. The audit findings in combination with the following criteria developed by the District to determine whether the applicant is eligible to proceed to the Landscape Consultation and Design portion of the Program.

Program eligibility Criteria:

- i. Applicant must be a commercial/HOA customer of the District in good financial standing. (No delinquencies on District bills in the last 12 months.)
- ii. Applicant must have the authority to act on behalf of the business at the service address requesting turf replacement.
- iii. Applicant must not have received a prior rebate for turf removal for and may not currently have synthetic turf.
- iv. Applicant must have a minimum of 250 square feet of irrigated turf grass in the project area to participate (subject to change by District).
- v. Turf may be living or dead at the time of application, however, bare earth areas with no sign of turf are ineligible. Turf grass must still be in place at the time of application for the rebate to be approved. Projects that are underway or already completed prior to submittal of the program application are not eligible.
- vi. District funding for the Turf Removal and Landscape Installation is capped 50,000 SF per meter for all commercial and HOA customers, and 200,000/meter for public agencies.
- vii. Applicant is responsible for the remaining portion of total project costs.
- viii. At the time of application, Applicant shall submit photos of turf areas. Additionally, Applicant shall submit a photo of their existing irrigation controller which clearly identifies the make and model of their device. Photos must be taken recently and provide an accurate depiction of site conditions.
- ix. Applicant must consent to modify their existing irrigation system controller before the end of the project period, if necessary, to provide appropriate irrigation for the new landscape through the addition of one or more of the following devices/upgrades: smart irrigation controller, drip system, master valve and flow sensor, and/or low flow sprinkler nozzles.
- x. If Applicant receives \$600 or more of program benefits (e.g. Comprehensive Site Assessment, and Rebate Incentives), Applicant will be required to sign and submit an IRS W9 tax form.

How will actual water savings be verified upon completion of the project?

A Post-Installation Site Visit and education on the care and upkeep of the plants will be scheduled free to the customer 90 days after landscape installation.

The District tracks water consumption in its billing system, and is able to verify water savings using a software system that uses the following data and formulas to calculate the savings.

- 1) Read in the master invoices file that has all water conservation rebate applications.
- 2) Filter out applications that do not have a work completion date yet.
- 3) Calculate: Difference from budget = budget -water usage
Percentage of budget used – (water usage/budget) * 100(rounded up to decimals).
- 4) Pre-installation average usage/percentage of budget used for each month before installation date (A1)
- 5) Post- Installation average usage/percentage of budget used for each month after installation date (B1)
- 6) Average Water Savings per bill period = A1 – B1.

SMART, WEATHER-BASED IRRIGATION CONTROLLERS:

How have average annual water annual water savings estimates been determined?

The water savings for the Smart Timer Direct Install Program were derived from actual program data from a previous smart timer program operated by MNWD from 2016-2018 that utilized professional installation services.

To calculate water savings, MNWD created custom software that generates real time savings of water conservation programs by comparing pre-and post-installation water use by participating residential customers.

The program evaluation software system uses the following data and formulas to calculate the savings:

- 1) Read in the master invoices file that has all rebate applications.
- 2) Filter out applications that do not have a work completion date yet.
- 3) Calculate: Difference from budget = budget -water usage
Percentage of budget used – (water usage/budget) * 100(rounded up to decimals).

4) Pre-installation average usage/percentage of budget used for each month before installation date (A1)

5) Post- Installation average usage/percentage of budget used for each month after installation date (B1)

6) Average Water Savings per bill period = A1 – B1.

Was historical water consumption data evaluated to estimate the percent reduction in water demand per unit area of irrigate landscape? Did the evaluation include a weather adjustment component?

Yes, actual historical water consumption data was used to estimate both the volumetric reduction in water demand per unit area of irrigated landscape and to evaluate efficiency increases experienced by program participants. MNWD operated a smart timer direct installation program from 2016-2018; water savings from this program was used to inform water savings estimates for the project being submitted to USBR.

Each customer in the MNWD service area receives a monthly water budget calculated based on the number of people in the household and the amount landscaped area on their property. This budget varies seasonally and geographically due to fluctuations in evapotranspiration over the year and across the service area. In addition to volumetric analysis, MNWD's water savings tool evaluates the customer's water consumption as a percent of budget prior to installation and post-installation. Percent use of budget is a measure of efficiency and incorporates weather data, since budgets are calculated using real time, local evapotranspiration data.

What types of devices will be installed and what quantity of each?

The types of devices are detailed in the Scope of Work Section 1.3.2, and lists of eligible devices are included under Appendix B.

Will the devices be installed through a rebate or direct-install program?

The devices will be installed by the customers and rebates will be provided on a reimbursement basis upon verification of installation and/or turf removal and landscaping with summer dry California native plants.

Will site audits be performed before and after installation?

As detailed previously, a comprehensive site assessment and survey will be completed by the District's water conservation consultant who will provide a detailed report of the analysis and recommendations to improve water use efficiency and increase water savings for each customer.

How will actual water savings be verified upon completion of the project?

The Insights Platform aggregates configuration, schedule, and weather data for all devices in the MNWD service area, irrespective of whether they were subsidized by the utility. The platform will be configured so that MNWD can group controllers by distribution method (program) and contrast those controllers against those purchased organically through retail channels. Insights does not allow MNWD to view the exact location of any given controller and provides no access to personally identifiable information.

The data used to monitor performance and water savings includes:

- Controller status: View the status of controllers in the service area and gain insight into how controllers are responding to seasonal changes or weather events such as rain.
- Scheduling and Zone Configuration: Understand how users have programmed their schedules (i.e. state time, duration, and frequency) as well as the configuration of their zones, including information such as vegetation type, nozzle type, soil, etc.
- Engagement: Use AMI system connected to the customer portal to inform customers via email and/or in-app messaging campaigns. These are aimed at changing the irrigation behavior and are designed to be educational and prescriptive.

These data will be compared with historical data to calculate water savings associated with the installation of the water conservation measures.

1.4.2 Evaluation Criterion B— Renewable Energy and/or Energy Efficiency in Water Management

The proposed project does not include the implementation of new renewable energy; however, energy efficiency will be increased by reducing water demands through water conservation.

a) Subcriterion No. B.2: Increasing Energy Efficiency in Water Management

Describe any energy efficiencies that are expected to result from implementation of the water conservation or water efficiency project (e.g., reduced pumping).

The importation of water is extremely energy intensive. “Energy Down the Drain: The Hidden Costs of California’s Water Supply,” by the National Resources Defense Council indicates that the amount of energy used to deliver water from the State Water Project to Southern California over the Tehachapi Mountains is equivalent to one-third of the total average household electric use in the region. This does not include the energy required to import water to Southern California from the Colorado River Aqueduct, and any reduction in water loss and overall consumption would reduce the overall energy consumption from system operations.

An energy intensity study by the University of California, Santa Barbara, estimated that approximately 3,000 kilowatt-hours (kWh) per acre foot of water is required to convey water from the State Water Project to West Basin Municipal Water District, and approximately 2,000 kWh per acre foot is required to convey water from the Colorado River Aqueduct. Historically, approximately 43 percent has been imported from the State Water Project and 57 percent from the Colorado River Aqueduct to meet the District’s water demands. In addition, the distribution and treatment of potable water throughout the District’s system requires approximately 482.7 kWh per acre foot of potable water². This was determined using metered data from the electrical providers, Southern California Edison and San Diego Gas & Electric and included within the Urban Water Management Plan.

Implementation of this project could eliminate the need to purchase 110 AFY of potable water, which would result in an estimated savings of 267,300 kWh for importing water and 53,097 kWh distributing the potable throughout the District; for a total estimated energy savings of 320,397 kWh.

Imported Water Source	kWh/AF	Water Savings (AF)	Energy Savings (kWh/AF)
State Water Project (43%)	3,000	47.3	141,900
Colorado River (57%)	2,000	62.7	125,400
Totals		110	267,300

How will the energy efficiency improvement combat/offset the impacts of climate change, including an expected reduction in greenhouse gas emissions.

According to the US EPA Greenhouse Gas Equivalencies calculator, the reduced importation of water and treatment and delivery of such water, the energy savings of 320,397 kWh equals a reduction in GHG emissions. The following table includes Carbon Dioxide Equivalent reduction calculated using the US EPA calculator.

Greenhouse Gas Emission Reduction

Activity	GHG Emission (Carbon Dioxide Equivalent) Reduction Amount (lbs)
Reduced water imports	417,623
Reduced quantity of potable water treated	82,958
Total	500,581

Source: www.epa.gov/energy/greenhouse-gas-equivalencies-calculator

The US EPA reports that these GHG reductions are equivalent to the greenhouse gas emissions from 48.9 passenger vehicles driven for one year or 563,609 miles driven by an average gasoline powered passenger vehicle.

² MNWD 2020 Urban Water Management Plan, Appendix F.

The proposed project's annual reduction in GHG emissions is the equivalent to the carbon sequestered by 3,754 tree seedlings grown for 10 years—the proposed project will achieve this benefit in just one year and each continuing year.

•If the project will result in reduced pumping, please describe the current pumping requirements and the types of pumps (e.g., size) currently being used. How would the proposed project impact the current pumping requirements and energy usage?

MNWD operates and maintains 650 miles of potable water distribution pipelines. MNWD also operates 24 potable pump stations to pump water from lower pressure zones to the higher-pressure zones and 16 potable water pressure reducing stations and flow control facilities to convey water from high to low zones. Reducing the amount of potable water used will reduce the energy needed to move water, thereby reducing offsetting some of the rising electrical costs associated with water distribution.

•Does the calculation include any energy required to treat the water, if applicable?

Yes, the calculation of 482.7 kWh/AF includes the energy to treat the water locally.

•Will the project result in reduced vehicle miles driven, in turn reducing greenhouse gas emissions? Please provide supporting details and calculations.

Not applicable.

1.4.3 Evaluation Criterion C - Sustainability Benefits

Enhancing Drought Resiliency

Provide information regarding how the project will enhance drought resiliency by benefitting the water supply and ecosystem.

The proposed project does not seek to directly improve ecological resiliency to climate change. MNWD is dependent upon imported water supplies that do include surface water sources, however MNWD does not have direct control of the management of these water sources. The proposed water conservation program will potentially improve ecological resiliency to climate change by reducing water demands by 110 AFY and allow the Delta and Colorado River watermasters to reduce the amount of water drawn from these surface water supplies, thereby benefitting federally threatened and endangered species dependent upon these water sources.

a. Will the project benefit species (e.g., federally threatened or endangered, a federally recognized candidate species, a state listed species, or a species of particular recreational, or economic importance)? Please describe the relationship of the species to the water supply, and whether the species is adversely affected by a Reclamation project.

All of the District's potable water supply is imported from the California State Water Project and the Colorado River Aqueduct. Therefore, any reduction in water consumption would ultimately benefit the endangered species affected by either the California State Water

Project or the Colorado River Aqueduct. Projects that reduce demand on imported water supplies are key for enhancing the Delta, the most significant infrastructure problem in California.

Additionally, California native plants are the larval food source and nectar source for many endemic insects and pollinators. Installing CA natives provides multiple benefits to the local ecology by providing food sources to endemic insects and pollinators.

Other Ecosystem benefits that will be a direct result of the proposed project is improving landscapes to support pollinators, including the Monarch Butterfly, Honeybees, and hummingbirds. Pollinators—from bees to butterflies—are essential for nearly 80% of flowering plant species and are an essential part of the ecosystems, providing food, habitats and other resources for a wide range of other species. In California, pollinator-dependent crops are worth an estimated \$ 11.7 billion. One of the benefits of native pollinators is that they are adapted to local ecosystems, so making use of their pollination services may reduce the need for management and maintenance by farmers, gardeners, and other land managers, which will also reduce the amount of fertilizers used and lessen the concentrations of such entering the waterways. Climate change can amplify the effects of stressors on pollinators. The western population of the monarch butterflies has experienced a 99% reduction since the 1980s. Since habitat loss is one of the greatest threats to pollinators, supporting the creation of pollinator habitats through a commercial turf removal program focused on summer dry California native species increases the connectivity of habitat between patches of habitat and along migratory routes.³

Will the project directly result in more efficiency management of the water supply?

100% of the MNWD potable water supply comes from imported water sources, over which MNWD has no control. Through water conservation efforts, MNWD has been able to reduce water demands and better manage the water received. MNWD also uses recycled water sources for many commercial and industrial customers. Reducing the demand for irrigation water will also increase the quantity of available recycled water.

Specific water and/or energy sustainability concerns. Please address the following:

Explain and provide detail of the specific issue(s) in the area that is impacting water sustainability, such as shortages due to drought, increased demand, or reduced deliveries. Will the project directly address a heightened competition for finite water supplies and over-allocation (e.g., population growth)?

California, water supply sustainability has been an increasing concern as the region water utility districts work to manage water demands versus environmental impacts.

³ California Department Fish and Wildlife Science Institute website, "Science: Pollinators". <https://wildlife.ca.gov/Science-Institute/Pollinators> , accessed 7/7/2022.

On January 17, 2014, California Governor Edmund G. Brown Jr. declared a State of Emergency and directed state officials to take all necessary actions to prepare for the drought conditions and called upon every Californian to conserve water. As water supplies continued to diminish, the Governor's office called on all water agencies to implement drought measures to reduce water demands and the Department of Water Resources reduced SWP allocations for southern California contractors to zero on January 31, 2014, and then 5% for 2014. Water resources remained very low throughout the entire State with DWR restricting SWP suppliers to 15-20 percent of their requested allotments until the drought ended in April of 2017 due to the heavy precipitation across the state. This presented a new problem of landslides and flooding as severe storms swept through the area, resulting in a new declared emergency for severe storms.

California has faced many droughts and strong precipitation cycles, and portions of the District are also plagued by severe, high temperature onshore winds known as the Santa Ana Winds. During periods of drought, the water shortages and the restrictions on imported water have a very serious impact on the communities the District serves, since all of the potable water is from imported sources. The District's reliance on imported water also increases the impact of a drought on the region since the District has no alternate water supply source such as groundwater or local surface water to reduce the need for imported water. Therefore, any effort to reduce the District's water demand will also benefit other communities that rely on imported water sources. The District has 28 storage reservoirs to help mitigate the impact of water shortages, however, these resources can only sustain the water supply for approximately 24 days. District water conservation programs have had the most significant impact toward reducing overall demand. To date, the District has reduced water demand from a high of 36,670 acre-feet per year in 2007, to a current demand of 23,083 acre-feet per year—representing a 37 percent reduction in water use and an equal increase in available water supply for the imported sources.

When northern California water supplies conveyed via the State Water Project are cut, southern California communities rely on water from the Colorado River. The Colorado River watershed is experiencing an extended 20+ years of drought and increasing demands for water due to population growth in the states dependent upon this water supply. Reclamation recently announced that Lake Mead and Lake Powell, the country's largest reservoirs are critically low and next year major water cuts to allocations will be necessary to reduced risks of supplies reaching perilously low levels. These reductions in water allocations will be between 2 million and 4 million acre-feet next year. This may have a significant impact on all who rely on Colorado River water. California, Arizona, and Nevada signed an agreement to take significantly less water out of Lake Mead, and Reclamation is keeping a large quantity of water in Lake Power to reduce risks of the reservoir dropping to a point where the Glen Canyon Dam would no longer generate electricity. Reportedly, Lake Mead is at or near record low levels with only 28% of its full capacity and Lake Powell on the Utah-Arizona border is equally low at only 27% of capacity. The Colorado River supplies water to nearly 40 million people in the cities from Denver to Los Angeles and to farmlands from the Rocky Mountains to the US-Mexico border. In 2021, the federal government declared a shortage on the Colorado River

for the first time.⁴ This water conservation program will yield long-term water savings that supports reducing the demand for declining water supplies in a region where there is the potential for water conflicts as allocations are reduced.

Additionally, the current climate changes causing increased temperature, longer drought conditions, and smaller snowpacks are increasing the occurrence of wildfires in California, which increases the need for water to attack fires in the region. Very recently a portion of the District's service area was impacted by a wildfire. The proposed Program promotes the use of fire-resistant plants under the turf removal plus rebate and includes a long list of plants that will help HOAs and other commercial customers to create attractive defensible spaces which can help reduce the intensity of wildfire and risk of damages to structures and injuries.

Describe how the project will address the water reliability concern.

Using Reclamation funds, the District will be able to expand its outdoor water conservation programs by extending new benefits to the commercial customers and increasing the participation in the existing programs with the increased funding. The best source for increasing water supply reliability is through passive water conservation measures. Similar to indoor water conservation efforts (e.g. low-flow toilets, urinals, and aerators), promoting and incentivizing outdoor water conservation that customers do not have to actively think about and implement are the most effective water conservation measures and permanent changes from high water consumption landscapes and practices (non-smart timers) to low water use landscapes and upgrading irrigation systems to be water use efficient provides the easiest and most effective method to achieve long-term water savings, translating into increased local and regional water reliability.

Reducing the District's water demand directly reduces demands on imported water. This improves reliability for the regions served by SWP and Colorado River water sources, providing more water to recharge groundwater supplies, maintain instream flows, and meet water demands for other agencies.

o Indicate the quantity of conserved water that will be used for the intended purpose.

It is estimated that 110 acre-feet of water will be conserved annually by those participating in this project, with exponential increases as other HOAs and commercial customers recognize the benefits of the programs and opt to replace their non-functional turf landscaping and/or irrigation controllers and components in the future.

The conserved water will be used to reduce demands on imported water supplies, year over year, with an estimated 10-year savings of more than 1,094.70 acre-feet of water; and reduces

⁴ "Major water cutbacks loom as shrinking Colorado River nears moment of reckoning," LA Times, by Ian James June 14, 2022. Web accessed 7/15/2022. <https://www.latimes.com/environment/story/2022-06-14/big-water-cutbacks-ordered-amid-colorado-river-shortage>

the need for increasing water purchases from Reclamation and/or SWP during period of drought.

While immediate savings is important for tracking project performance, long-term savings are more significant for water reliability planning. The long-term savings under these programs allows the District to prepare budgets for purchasing imported water in the future, manage storage supplies to maintain water supplies now and into the future, and forecast needed capital projects and maintenance.

Other Project Benefits:

- **Combating the Climate Crisis including:
Specific details and examples on how the project will address the impacts of climate change and help combat the climate crisis.**

According to the Metropolitan Water District 2015 Integrated Regional Plan (MWD, 2016), the past years have given Southern California a glimpse of the challenges that climate change will pose. Climate variability is a challenge to water reliability for Southern California, because it could result in long-term changes in local temperature and precipitation patterns. The District relies on imported water, which is highly variable due to climate and hydrology. Climate variability is an uncertainty that MNWD considers in ensuring that current and future water demands for our community are met. Consideration of potential climate variability impacts on local water demands is essential when developing a long-term forecast. Warmer temperatures in Southern California will affect water demands by increasing the outdoor water requirements for plant life and landscapes (MWD, 2016). As average temperatures increase, outdoor irrigation water use is also expected to increase due to increased evapotranspiration rates. Warming temperatures increase the severity of our natural drought cycle, which most greatly impacts areas that depend on surface water flows (California Natural Resources Agency, et. al, 2020). The 2020 Water Resilience Portfolio stated historical hydrological patterns can no longer serve water managers as a trustworthy guide around which to plan, and climate science and projections have become increasingly important. Future conditions will continue to change and require ongoing adjustment and adaptation of water management (California Natural Resources Agency, et. al, 2020). While it is uncertain as to the extent to which the climate changing in Southern California is impacting water demands, and specifically how climate change is impacting availability of water supplies generated outside of Southern California, the potential outcomes of a variable climate affect both supplies and demands.

These uncertainties increase the importance of changing the outdoor watering habits of large commercial and HOA landscapes and retrofitting irrigation systems using smart devices that can better adapt to weather (e.g. WBICs) and reduce water waste by converting to drip and/or installing low flow sprinkler, and master valves with flow sensors to turn off irrigation systems automatically. These irrigation upgrades will reduce and possibly eliminate runoff.

The replacement of turf lawns with summer dry California native plants can help combat the climate crisis by turning non-functional turf areas (not for recreational use) to native gardens. Native gardens that are climate adapted to the southern California region will use significantly

less water, will promote healthier surface water because they don't require herbicides, pesticides or fertilizers to grow. These chemicals end up in surface waters impacting the water supply, wildlife and fish.

Using climate adapted, California native plants beautifully support beneficial insects and birds (e.g pollinators), soil stability, and fire safety. All of which are at risk with the increasing heat index and drought.

Does the proposed project strengthen water supply sustainability to increase resilience to climate change?

Yes, this project strengthens water supply sustainability to increase resilience to climate change by reducing water supply water demands and commercial landscape water waste. The conserved water can be stored by the District for use during dry seasons and/or reduce the amount of imported water received. As climate changes include longer periods of drought locally and throughout the Western US, local water conservation efforts become increasingly important to strengthen water supply resilience. The best way to create long-term resilience is to reduce the amount of water needed.

Will the project establish and/or utilize a renewable energy source?

Not applicable

Lower greenhouse gas emissions:

Yes, the following table summarizes how the project will result in lower greenhouse gas emissions:

Activity	GHG Emission (Carbon Dioxide Equivalent) Reduction Amount (lbs)
Reduced water imports	800,698
Reduced quantity of potable water treated	159,052
Total	959,750

Source: www.epa.gov/energy/greenhouse-gas-equivalencies-calculator

Disadvantaged or Underserved Communities:

The District's service area does not directly provide water to Indian tribes, rural or economically disadvantaged communities; however, there are portions of the cities whose residents do meet the definition of economically disadvantaged. Furthermore, multiple small, private mutual water companies also rely on the water from State Water Project and the Colorado River, so any water conserved that lessens the demands for imported water from these sources in turn makes more water available to other communities, including rural and economically disadvantaged.

Will the project address water and/or energy sustainability in other ways not described above? For example:

a. Will the project assist States and water users in complying with interstate compacts?

The State of California has co-equal goals that are defined in the Amended Memorandum of Agreement Regarding Collaboration on Planning, Design, and Environmental Compliance for the Delta Habitat Conservation and Conveyance Program in Connection with the California Bay Delta Conservation Plan (December 13, 2013). The establishment of co-equal goals is part of an effort to improve reliability of the water supply for California by protecting, restoring, and enhancing the Delta ecosystem and habitat (SB 1, Steinberg – Section 85054). The proposed project would help meet the co-equal goals by providing water management strategies to help relieve some of the stress on California’s water resources, and any reduction in water consumption by increasing water use efficiency and promoting conservation helps reduce the amount of water required for import from the California State Water Project and the Colorado River Aqueduct.

Due to worsening drought conditions in the Lower Colorado River Basin, in December 2021 California, Nevada and Arizona entered into a Memorandum of Understanding (MOU) known as the 500+ Plan. The 500+ Plan is a voluntary effort that aims to conserve an additional 1,000,000 acre-feet of water in Lake Mead—500,000 in each of the 2022 and 2023 years. This voluntary effort is focused on reducing demand for water beyond what is required by the 2007 Interim Guidelines and the 2019 Lower Bason Drought Contingency Plan.

This project, when combined with other efforts underway and/or planned for the future, help to prevent a water-related crisis or conflict by improving the District’s water reliability, water efficiency, and implements best management practices for reducing water demand through conservation efforts and reducing water waste supporting short-term and long-term water management strategies.

b. Will the project benefit multiple sectors and/or users (e.g., agriculture, municipal and industrial, environmental, recreation, or others)?

The project will benefit multiple sectors and/or users. The proposed project is focused on commercial, industrial, and institutional (CII) customers, homeowners’ associations managing the common landscaped areas of residential, master planned neighborhoods, and public agencies including cities, parks, and schools. These participants serve various users including residents, students, families, and homeowners, thus benefiting all who live and work within the MNWD service area.

Water runoff from traditional landscapes is a known source of pollution to the creeks and waterways, therefore, eliminating water runoff through replacing turf with low water use landscapes and/or installing eligible irrigation devices will benefit the *environment*, and recreational fishing and swimming.

100 percent of the potable water demand is met with imported water. On average, approximately 43 percent of the imported water has been from the State Water Project and 57 percent has been from the Colorado River Aqueduct. The San Juan Basin Authority has

water rights for approximately 10,000 AFY, and the District is a member of the San Juan Basin Authority; however, due to the brackish water quality and the very limited supply, the District has not been able to utilize any of this water. These imported water supplies also serve water to other agencies for *agricultural, municipal, industrial, environmental, and recreational* purposes. Any water saved that reduces the District's demand for these imported water supplies provides more water for other state water project and Colorado River Aqueduct water users, benefiting multiple water users and the environment.

c. Will the project benefit a larger initiative to address sustainability?

The California Urban Water Agencies (CUWA) defines Water Supply Reliability as, "The ability to meet water demands consistently." Being dependent on imported water to provide potable water services to more than 170,000 people, plus business, schools, etc. requires that the District consider reliability in all project planning. When water resources are finite as they are by restricted water rights and dependence upon imported sources, implementation of all projects that improve reliability and help the District to consistently meet water demands is essential. The proposed outdoor water conservation programs will provide long-term, passive water conservation that will reduce water demands, and allow improved water reliability naturally. Given the 20+ years of drought experienced by the Colorado River Basin and the increasing demand for Colorado River water from increasing populations over the same duration, each water conservation effort by individual users will have an additional benefit to address water reliability for the Colorado River Basin as well as the Delta (State Water Project).

d. Will the project help to prevent a water-related crisis or conflict? Is there frequently tension or litigation over water in the basin?

There are growing tensions over the imported water supplies from both northern California and from the Colorado River, and the water supplies in the Colorado River are approaching crisis levels. The Lower Basin Drought Contingency Plan requires that, "*If any 24-month Study for the minimum probable inflows projects that Lake Mead elevations will be at or below 1,030 feet anytime within the succeeding two Years, the Secretary and the Lower division State shall consult and determine what additional measures will be taken by the Secretary and Lower Division States to avoid and protect against the potential for Lake Mead to decline below 1,020 feet.*" This provision was triggered in August 2021 when the USBR forecast that the water elevation of Lake Mead would fall below 1,030 feet in July of 2023.

In addition to the 500+ Plan MOU discussed previously, Tribes have agreed to take less water and receive cash compensation and it is likely that farmers will divert less water as well and seek compensation for fallowed lands.

The proposed project supports the 500+ Plan MOU by expanding water conservation efforts to reduce demand for imported water.

1.4.4 Evaluation Criterion D—Complementing On-Farm Irrigation Improvements

The proposed project does not include improvements that complement on-farm irrigation improvements; therefore, the questions associated with this criterion are not applicable.

1.4.5 Evaluation Criterion E— Planning and Implementation

1.4.5.1 Subcriterion E.1— Project Planning

Does the applicant have a Water Conservation Plan and/or System Optimization Review (SOR) in place?

Provide the following information regarding project planning:

(1) Identify any district-wide, or system-wide, planning that provides support for the proposed project. This could include a Water Conservation Plan, SOR, Drought Contingency Plan or other planning efforts done to determine the priority of this project in relation to other potential projects.

Multiple plans have either been developed directly by or for MNWD, or MNWD has been a stakeholder in the development of regional plans that address water supplies, water reliability, and water quality. The District self-certifies water conservation planning has been completed both locally and as regional partner. Summaries of these plans are included below:

- The *MNWD 2020 Urban Water Management Plan (UWMP)* provides the framework for managing the water supplies and includes water conservation actions. This plan is updated every five years.
- *California Model Water Efficiency Landscape (MWELo) Ordinance*, adopted 2015.
- The 2020 MNWD Long-Range Water Reliability Plan was published in March 2021. This plan was created to address water supply and system challenges, quantify water supply and system reliability needs, identify potential projects to meet those needs, and develop an adaptive strategy for implementation.
- The Reclamation *Colorado River Basin Study* identifies water use efficiency as a priority and states, “municipal and industrial providers in the metropolitan areas that receive Colorado River water will continue to increase water use efficiency and reuse.”
- *Integrated Regional Water Management Plan for South Orange County*, updated 2018, The IRWM Plan is designed to help local agencies and governments manage their water, wastewater, and ecological resources. The purpose of the IRWM Group in developing this Plan is to identify potential projects intended to improve water quality and supply in order to investigate their feasibility, engage in long range water planning, establish priorities among the member entities, of which MNWD is one. This IRWM Plan establishes goals and objectives for the region. Through regular meetings cities, counties, special districts and tribes collaborate to address common objectives and issues to address and balance water supply, water reliability, and ecological concerns through long range planning and project identification and prioritization to

address the regional goals and objectives.

- *2015 Metropolitan Water District of Southern California Integrated Water Resources plan*, a regional plan that addresses long-range water supply planning, water supply reliability, understanding changing needs, and determining how individual actions can cost-effectively address challenges for member agencies.
- UC Riverside School of Public Policy completed a *Water Conservation Study* for the District in 2016 with an update in 2017. This study analyzed water conservation drivers for effective water management, current District water conservation programs, and surveyed customers to determine the most beneficial conservation programs and policies for the District.

(2) Describe how the project conforms to and meets the goals of any applicable planning efforts and identify any aspect of the project that implements a feature of an existing water plan(s).

The proposed project conforms to and meets the goals of the noted planning documents as follows:

- *MNWD 2020 Urban Water Management Plan* – BMPs G: Plant Low-Water Demand Plants and Trees and H: No excessive Water Flow or Runoff.
- *California Model Water Efficiency Landscape (MWELo) Ordinance, adopted 2015* – establish a structure for planning, designing, installing, maintaining and managing water efficient landscapes, and establish provisions for water management practices and water waste prevention for existing landscapes.
- *MNWD Long-Range Water Reliability Plan*: Objective to Optimize Water Reliability and minimize water shortages.
- *Colorado River Basin Water Supply and Demand Study*: Municipal service area outdoor landscaping conservation measures to achieve a water savings of at least 15% to reduce demand.
- *Integrated Regional Water Management Plan for South Orange County, updated 2018*, this project supports the regional goal to *Increase Water Supply Reliability and Efficiency*, and *Objective WS5 to Reduce consumption from outdoor residential, commercial, industrial, and institutional landscapes*.
- *2015 Metropolitan Water District of Southern California Integrated Water Resources plan*: Pursue water conservation savings through increased emphasis on outdoor water-use efficiency using incentives, outreach/education, and other programs.

Subcriterion E.2— Readiness to Proceed

1. **Identify and provide a summary description of the major tasks necessary to complete the project.**

The proposed project is an expansion of a water conservation incentive program focused on commercial customers and homeowners' associations. Grant funds received will be used to expand this water conservation program and increase participation. The Scope of Work section of the application details the major activities for the proposed project under section 1.3.2. The following figure provides a graphic representation of the conservation program process.



Generally, site assessments will be performed for each commercial property.

Turf Removal Plus Rebates

For the Turf Removal Plus Program, the customer must provide a landscape design and provide a plant palette/list for review and approval by MNWD.

1. Landscape Designs- The plants must be summer dry California native plants with a plant factor of 0.1 and may only include low, and very low water use plants, as specified by the Water Use Classification of Landscape Species list available at <http://ucanr.edu/sites/WUCOLS/>; neither fescue or Bermuda grass or any invasive species are permitted. California native and climate-adapted plants are required.
2. Upon approval to proceed, the customer has 90 days to complete the project (the customer may request an extension, if needed).
3. Upon completion of the turf removal plus project, MNWD will complete a post-completion site visit to verify work was completed in accordance with the landscape plan, plant list, and terms and conditions of the rebate.

Irrigation System Upgrade Rebates

Customers will complete the online application and provide copies of receipts for the irrigation system devices and photographic evidence of completion.

4. Describe any permits that will be required.

Not applicable.

- **Identify and describe any engineering or design work performed specifically in support of the proposed project.**

The proposed water conservation rebate program does not require any engineering or design work. However, it is worth noting that the water conservation rebate application programs already exist and the site assessment process is established. This project is a ready to proceed project that will begin as soon as grant funding is available to expand the water savings opportunities for commercial and HOA customers.

- **Describe any new policies or administrative actions required to implement the project.**

No new policies or administrative actions are required to implement the project. The policies and administrative actions were established in 2017 with the implementation of the program.

- **Please also include an estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates.**

Milestone/Activity	Planned Start Date	Planned Completion Date
25% project completion	6/1/2023	12/31/23
50% project completion	1/01/2024	6/30/2024
75% project completion	7/1/2024	12/31/2024
100% Project Completion	1/1/2025	6/30/2025
Water Savings Analysis and Final Report-6 mos.	3/1/2025	9/30/2025

*Actual start dates are flexible for the direct install programs and can be adjusted to comply with a grant award.

Environmental review was not discussed with USBR prior to the submission of the application; however, based on experience, the proposed project should qualify for a categorical exclusion.

1.4.6 Evaluation Criterion F—Collaboration

Please describe how the project promotes and encourages collaboration. Consider the following:

1. Is there widespread support for the project? Please provide specific details regarding any support and/or partners involved in the project. What is the extent of their involvement in the process?

The primary partners in the project are the commercial customers and homeowners' associations managing the common areas within the more than 400 master-planned communities. The customers and HOAs are agreeing to complete the water conservation activities and agree to not remove the installed landscaping and/or devices for at least 5 years and agree to maintain the landscapes and irrigation systems to maintain water savings. While the MNWD rebate programs provide a cash rebate for participants, the customers invest a significant amount of funds and/or labor to implement the water conservation activities. An estimated cost for the customers' financial contributions are included in the funding section of the application. Generally, each participant will invest an average of \$4.61/square foot of turf removed and replaced with California summer-dry natives. This value was calculated based on actual customer costs for the Naturescape turf removal program.

The rebates for the irrigation system upgrades will cover 50% or more of the material costs, with the customer responsible for the labor costs to install and/or convert existing irrigation. There is widespread support for the project. Every year for the past 6 years MNWD has hosted the H2O for HOA's to reach out to the homeowners' associations board members and community members to promote water conservation savings programs they can participate in. During the workshops, attendees have access to vendors and MNWD staff to learn more about devices, installation, turf removal, and native plants and the benefits of these programs to their communities and to the region. This event is well attended, with more than 200 attendees.

The Orange County Coastkeepers non-profit organization is also supportive of the project, as noted in the letter of support included with this application. The Coastkeepers maintain a demonstration garden and hosts monthly plant share events where locals can share plants and gain free advice on gardening issues. The organization also offers a SmartScape Program that assists property owners with planting and maintaining native landscapes through online videos and workshops. The project aligns with the objectives and education outreach offered by the Coastkeeper's and they will also inform visitors/customers of the MNWD rebate programs, helping to spread the work and increase participation.

MNWD also helped develop the Calscape Nursery Program, a regional partnership with Metropolitan Water District, the California Native Plant Society, and 15 water agencies across the Orange County and Long Beach areas and is now being implemented state-wide with the help of CalWEP. The Calscape Nursery Program provides customers with greater access to California native plants at local nurseries. Nurseries that participate in this program receive free sales and marketing materials to help them advertise the availability of native plants at their locations.

2. What is the significance of the collaboration/support?

All of these resources noted previously help customers to learn how to get started and how to complete the water conservation activities. These resources are essential for helping customers select not just drought tolerant plants but climate adapted, summer dry plants to participate in the Turf Removal Plus program.

The outreach and access to virtual training and site assessments provide a clear direction for customers to implement the device upgrades and turf removal activities; without which many customers are unaware of how or where to begin.

3. Will this project increase the possibility/likelihood of future water conservation improvements by other water users?

When MNWD first began hosting the H2O Pro workshops in 2016, only about 20 people attended. Attendance has increased exponentially since then, with the last in-person workshop hosting more than 200 attendees, irrigation sponsors provide product information and are available to respond to questions from attendees, and the partnering organizations now include all of the cities served by the District as well as the Orange County Coastkeeper.

4. Please attach any relevant supporting documents (e.g., letters of support or memorandum of understanding).

Letters of support are included under Appendix A from the following:

- Congress Members Porter and Steel
- Howard Revere (Bear Brand/Ocean Ranch HOA)
- Mission Viejo Chamber CEO
- Orange County Coastkeeper, a Non-profit organization

1.4.6.1 Subcriterion F.2— Performance Measures

Provide a brief summary describing the performance measure that will be used to quantify actual benefits upon completion of the project (e.g., water saved or better managed, energy generated or saved).

The District tracks water savings using a software system that uses the following data and formulas to calculate the savings.

- Calculate: Difference from budget = budget -water usage
Percentage of budget used – (water usage/budget) * 100(rounded up to decimals).
- Pre-installation average usage/percentage of budget used for each month before installation date by conservation type (A1)
- Post- Installation average usage/percentage of budget used for each month after installation date (B1)
- 6) Average Water Savings per bill period = A1 – B1

1.4.7 Evaluation Criterion G – Additional Non-Federal Funding

State the percentage of non-Federal funding provided using the following calculation.

$$\frac{\text{Non-Federal Funding} = \$ 3,504,400}{\text{Total Project Cost} = \$ 4,004,400}$$

= 88% Non-Federal cost share

1.4.8 Evaluation Criterion H— Nexus to Reclamation Project Activities

Is the proposed project connected to Reclamation project activities? If so, how? Please consider the following:

1. **Does the applicant have a water service, repayment, or operations and maintenance (O&M) contract with Reclamation?**
Not applicable
2. **If the applicant is not a Reclamation contractor, does the applicant receive Reclamation water through a Reclamation contractor or by any other contractual means?**

On an annual basis, the District receives approximately 57% of its water supply from the Colorado River Basin imported from the Metropolitan Water District of southern California (MWD) via its wholesale supplier, the Municipal Water District of Orange County (MWDOC).

3. **Will the proposed work benefit a Reclamation project area or activity?**

The project itself does not directly involve Reclamation project lands or Reclamation facilities, but the proposed project would increase the availability of the overall water supply through improvements in water use efficiency and conservation and ultimately benefit the Colorado River Basin. Any increase in water reliability and greater availability in overall water supply resulting from water use efficiency and conservation efforts would also help Reclamation in meeting the federal Indian trust responsibility, a legally enforceable fiduciary obligation on the part of the United States to protect tribal treaty rights, lands, assets, and resources, to the tribes.

4. **Is the applicant a Tribe?** Not applicable

5. Other Reclamation Nexus: Past Working relationship with Reclamation

The District has received multiple grant awards. The following table summarizes previous grant awards:

Grant Program	Description	Agreement No.	Status
WaterSMART Water and Energy Efficiency Grant FY2015	AMI Implementation Program Phase I	R15AP00128	Completed September 2017
WaterSMART Water and Energy Efficiency Grant FY2018	AMI Implementation Program Phase II	R18AP00172	Completed December 2019
WaterSMART Water and Energy Efficiency Grant FY2019	AMI Implementation Program Phase III	R19AP00134	Completed February 2022
WaterSMART Water and Energy Efficiency Grant FY2021	Outdoor Residential Water Efficiency Program (Turf Removal and WBICs)	R21AP10440	In Progress and on schedule
WaterSMART Water and Energy Efficiency Grant FY2022	Low Resolution Meter Replacement Project Phase I	TBD	Agreement is in progress.

2 PROJECT BUDGET

2.1 Funding Plan and Letters of Commitment

No other federal funds have been received as of the date of this proposal.

Applicant share of the non-Reclamation funds have been committed and secured as of the date of this application submittal.

Metropolitan Water District of Southern California's bi-annual water conservation budget committed for FYs 2022/21 and 2021/22 as of May 10, 2022 was \$136 million for member agencies (\$86M, plus \$50M reserves). During this period, MWD paid \$871,274 for turf removal, WBICs, and spray to drip conversions to MNWD for commercial customer rebates. Based on past expenditures and projected budgets, sufficient funds will be available under the MWD cost share to fund the proposed project. The approved bi-annual MWD budget for FY23-25 is \$86M for the region, plus reserves. MWD will provide a letter confirming the budget and no conflict with federal funds.

Table 1: Total Project Cost Table

SOURCE	AMOUNT
1. Costs to be reimbursed with the requested Federal Funding	\$500,000
2. Costs to be paid by the applicant (MNWD)	\$625,500
3. Other: Participant (Customer) Share	\$1,969,400
4. Metropolitan Water District of Southern California (MWD)	\$909,500
Non-Federal Subtotal	\$3,504,400
TOTAL PROJECT FUNDING	\$4,004,400

2.2 Budget Proposal

BUDGET ITEM DESCRIPTION	COMPUTATION		QTY Type	TOTAL COST
	\$/Unit	QTY		
Salaries and Wages				
N/A				
Fringe Benefits				
N/A				
Travel				
N/A				\$0
Equipment				
N/A				
Supplies and Materials				
N/A				
Contractual/Construction				
Commercial Landscape Surveys	\$150	1000	HR	\$ 150,000
Other Expense: Water Conservation Activities				
Turf Removal Plus	\$ 8.61	400,000	SF	\$ 1,844,000
Master Valve & Flow Sensor	\$ 2,000	25	EA	\$ 50,000
Weather-Based Irrigation Controller (cost per station)	\$ 152.00	1,200	EA	\$ 182,400
Spray to Drip Conversions	\$ 1.20	115,000	SF	\$ 138,000
Rotating Sprinkler Nozzle Upgrades	\$ 8.00	5,000	EA	\$ 40,000
Other Expense Subtotal				\$ 3,854,400
Total Direct Costs				\$4,004,400
Indirect Costs:				0
TOTAL ESTIMATED PROJECT COSTS				\$4,004,400

2.3 Budget Narrative

Salaries and Wages

No staff salaries/wages are included in this project.

Fringe Benefits

Not applicable

Travel

Staff serving the MNWD are local, so no travel required.

Equipment

Not applicable.

Materials and Supplies

None

Contractual/Construction

Two consultants are used to complete the site assessments. MNWD may use in-house staff or one of the consultants to complete the site assessments.

MNWD has existing agreements with Monarch Environmental Inc. and Blue Watchdog to provide Commercial Landscape Surveys which includes a site assessment and a customized comprehensive landscape and irrigation survey report for each customer engaging in this service. An added service provided by Monarch Environmental Inc for high water consumers includes follow-up visits at 2-month and 4-month intervals. The following rate schedule is from the existing contract. The existing contract budget for each consultant is currently not to exceed \$75,000.

The consultant fees for services are detailed as follows.

Blue Watchdog, to provide Commercial Landscape Surveys which includes a site assessment and a customized comprehensive landscape and irrigation survey report for each customer engaging in this service.

- Total contract: \$75,000
 - \$600 < 1 acres
 - \$900 > 1 acres



List of Services	Description of Services
Professional Services	Scope of Services per Commercial Landcape Survey Program RFP NO. OM20-21.050 per meter price is \$750 (0-6 meters)
Professional Services	Scope of Services per Commercial Landcape Survey Program RFP NO. OM20-21.050 per meter price is \$700 (7-12 meters)
Professional Services	Scope of Services per Commercial Landcape Survey Program RFP NO. OM20-21.050 per meter price is \$650 (13-18 meters)
Professional Services	Scope of Services per Commercial Landcape Survey Program RFP NO. OM20-21.050 per meter price is \$600 (19-24 meters)
Value Engineer	Scope of Services per Commercial Landcape Survey Program RFP NO. OM20-21.050 per meter price is \$550 (>25 meters)
Additional Service	An hourly rate of \$150 will be applied to additional work requested or required

Environmental and Regulatory Compliance Costs

There are no costs associated with this task. The proposed project is a rebate program that is exempt under CEQA as an administrative program. It is presumed that the proposed rebate program will also qualify for a categorical exclusion under NEPA.

The cost incurred by the recipient in acquiring any required approvals or permits, or in implementing any required mitigation measures

Not applicable.

Other Expenses: Water Conservation Programs

Rebate Category	Total Rebates	Unit	Total Quantity
Turf Removal Plus	\$1,600,000	\$4/SF	400,000
Hardware & Technology Upgrades Rebates:	\$285,000	<i>See detail below</i>	
Master Valve & Flow Sensor	\$50,000	\$2,000	25
Weather Based Irrigation Controllers (/Station)	\$90,000	\$75/station	1,200
Spray to Drip Conversions (/sq.ft.)	\$115,000	\$1/SF	115,000
Rotating Sprinkler Nozzle Upgrades (/Sprinkler)	\$30,000	\$6/nozzle	5,000

Customer Share Estimates:

Rebate Category	Total Customer Share	Unit	Total Quantity
Turf Removal Plus	\$1,844,000	\$4.61/SF	400,000
Hardware & Technology Upgrades Rebates:	\$125,400	<i>See detail below</i>	
Master Valve & Flow Sensor	\$0	\$2,000	25
Weather Based Irrigation Controllers (/Station)	\$92,400	\$77/station	1,200
Spray to Drip Conversions (/sq.ft.)	\$23,000	\$0.20/SF	115,000
Rotating Sprinkler Nozzle Upgrades (/Sprinkler)	\$10,000	\$2/nozzle	5,000

Indirect Costs: Not applicable.

3 ENVIRONMENTAL AND CULTURAL RESOURCES COMPLIANCE

Will the proposed project impact the surrounding environment (e.g., soil [dust], air, water [quality and quantity], animal habitat)? Please briefly describe all earth-disturbing work and any work that will affect the air, water, or animal habitat in the project area. Please also explain the impacts of such work on the surrounding environment and any steps that could be taken to minimize the impacts.

The proposed project is a government administrative program. Any ground disturbing activity will be limited to and occur only on customer-owned properties and will be limited to improvements to existing landscaping with turf replacement and upgrades to irrigation hardware and technology.

No known impacts to air quality, animal habitat, water quality, or biological resources are related to the proposed activities.

Are you aware of any species listed or proposed to be listed as a Federal threatened or endangered species, or designated critical habitat in the project area? If so, would they be affected by any activities associated with the proposed project?

No, it is not anticipated that any species would be affected by any activities associated with the proposed project.

Are there wetlands or other surface waters inside the project boundaries that potentially fall under Clean Water Act (CWA) jurisdiction as “Waters of the United States?” If so, please describe and estimate any impacts the proposed project may have.

No, there are no wetlands or other surface waters inside the project boundaries that potentially fall under CWA jurisdiction as “waters of the United States.”

When was the water delivery system constructed?

The proposed work will not be completed on the water delivery system; therefore, this is not applicable.

- **Will the proposed project result in any modification of or effects to, individual features of an irrigation system (e.g., headgates, canals, or flumes)? If so, state when those features were constructed and describe the nature and timing of any extensive alterations or modifications to those features completed previously.**

No, the project will not result in any modifications or effects to individual features of an irrigation system with headgates, canals, or flumes.

Are any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places? A cultural resources specialist at your local Reclamation office or the State Historic Preservation Office can assist in answering this question.

No buildings, structures, or features associated with the proposed project are listed or eligible for listing on the National Register of Historic Places.

- **Are there any known archaeological sites in the proposed project area?**

There are no known archaeological sites that would be affected by the proposed project.

Will the proposed project have a disproportionately high and adverse effect on low income or minority populations?

The proposed project will have no impact on low or minority populations. The proposed improvements are intended to offer customer incentives to help them achieve water savings.

The project could actually benefit all populations, with the greatest benefit to low/fixed income or minority populations, by improving water management and reducing water waste, which reduces the need for the District to seek more expensive imported water supplies and increase water rates.

Will the proposed project limit access to and ceremonial use of Indian sacred sites or result in other impacts on tribal lands?

The proposed project will not limit access to, or ceremonial use of Indian sacred sites or result in other impacts on tribal lands as the infrastructure to be improved are not located within such areas.

Will the proposed project contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area?

No, the proposed project specifically prohibits the use of invasive species and will likely reduce the presence of invasive species located on commercial properties as customers remove existing turf grass to convert their landscaping to a watershed friendly design. As a result, the spread and presence of non-native invasive species may be reduced.

4 Required Permits or Approvals

No permits or approvals from outside agencies are required for the proposed project.

5 Letters of Support

- Congress Member Porter
- Congress Member Steel
- Howard Revere (Bear Brand/Ocean Ranch HOA)
- Mission Viejo Chamber CEO
- Orange County Coastkeeper, a non-profit organization, www.Coastkeeper.org

6 Overlap or Duplication of Effort Statement

This funding request will allow for the expansion of the MNWD existing commercial and HOA water conservation program. The Federal funds, if awarded, will not duplicate other federal grant funds received in the past or by MWD or MWDOC. A letter from MWD that states such is pending and will be available.

No other grant funds from state or federal sources have been received for this project. The District may seek state grant funds in the future, if funds become available. Such funds would support increased participation separate from the federal funds and would not duplicate efforts.

7 Conflict of Interest Disclosure

MNWD is not aware of any potential conflict of interest associated with this funding request or for the proposed project.

8 Official Resolution

An unexecuted resolution is included herein. The resolution will be presented to the Moulton Niguel Water District Board of Directors on August 11, 2022, authorizing the general manager to submit grant applications to and execute an agreement with Reclamation for the implement of the proposed project. The resolution agrees to use the funds identified in this funding plan for the proposed project.

RESOLUTION NO. 22-__

**A RESOLUTION OF THE BOARD OF DIRECTORS OF
MOULTON NIGUEL WATER DISTRICT
AUTHORIZING THE GENERAL MANAGER, OR DESIGNEE, TO APPLY FOR,
RECEIVE, AND ENTER INTO A COOPERATIVE AGREEMENT, AND
ADMINISTER AN APPLICATION FOR THE 2023 BUREAU OF RECLAMATION
WATER AND ENERGY EFFICIENCY GRANT**

BE IT RESOLVED, by the Moulton Niguel Water District (“District”) Board of Directors (“Board”) that the District General Manager or his/her designee is hereby authorized and directed to sign and file, for and on behalf of the District, a Water Smart Water and Energy Efficiency Grant Application (“Application”) for a grant from the U.S. Bureau of Reclamation (“Reclamation”) in the amount not to exceed \$500,000; and

BE IT RESOLVED, the District General Manager, or his/her designee, is hereby authorized to acknowledge and approve of the Application and the information submitted for consideration, and is further authorized to certify that the District has and will provide the amount of funding and/or in-kind contributions specified in the funding plan; and

BE IT RESOLVED, that the Board hereby agrees and further does authorize the General Manager, or his/her designee, to certify that the District has and will comply with all statutory and regulatory requirements related to any grant funds, and

BE IT FURTHER RESOLVED, that the General Manager, or his/her designee, is hereby authorized to negotiate and execute a grant and any amendments or change orders thereto on behalf of the District and will work with Reclamation to meet established deadlines for entering into a cooperative agreement and to comply with any and all other Reclamation requirements.

APPROVED, SIGNED and ADOPTED this 11th day of August, 2022.

MOULTON NIGUEL WATER DISTRICT

President/Vice President
MOULTON NIGUEL WATER DISTRICT
and the Board of Directors thereof

Secretary/Assistant Secretary
MOULTON NIGUEL WATER DISTRICT
and the Board of Directors thereof

9 References

"2015 Integrated Water Resources plan: 2015 Update Report No. 1518", Metropolitan Water District of Southern California.

[http://mwdh2o.com/PDF_About_Your_Water/2015%20IRP%20Update%20Report%20\(web\).pdf](http://mwdh2o.com/PDF_About_Your_Water/2015%20IRP%20Update%20Report%20(web).pdf)

"2020 Urban Water Management Plan", Moulton Niguel Water District, adopted 2021.

2018 Integrated Regional Water Management Plan for South Orange County

"California Model Water Efficiency Landscape (MWELo) Ordinance", MNWD adopted 2016.

"Colorado River Basin Water Supply and Demand Study: Technical Report F, Section 5.6", US Bureau of Reclamation, December 2012.

"Evaluation of Municipal Water District of Orange County's Comprehensive Landscape Water Use Efficiency Program (CLWUE)", Municipal Water District of Orange County, 2018.

"Analysis of Water Conservation Drivers for Effective Water Management: Water Conservation Study – Phase I Summary Report", School of Public Policy, University of California, Riverside, 2016.

"Analysis of Water Conservation Drivers for Effective Water Management: Water Conservation Study – Phase II Summary Report", School of Public Policy, University of California, Riverside, 2017.

"MNWD Long-Range Water Reliability Plan", December 2014

Appendix A: Letters of Support

KATIE PORTER
45TH DISTRICT, CALIFORNIA

NATURAL RESOURCES COMMITTEE
CHAIR, SUBCOMMITTEE ON OVERSIGHT
AND INVESTIGATIONS

OVERSIGHT AND REFORM COMMITTEE
VICE CHAIR, SUBCOMMITTEE ON GOVERNMENT
OPERATIONS

Congress of the United States
House of Representatives
Washington, DC 20515-0545

WASHINGTON OFFICE:
1117 LONGWORTH HOUSE OFFICE BUILDING
WASHINGTON, DC 20515
(202) 225-5611

DISTRICT OFFICE:
2151 MICHELSON DRIVE
SUITE #195
IRVINE, CA 92612
(949) 668-6600

porter.house.gov

July 25, 2022

Bureau of Reclamation
Financial Assistance Management Branch
Attn: Mr. Josh German
Mail Code: 84-27814
P.O. Box 25007
Denver, CO 80225

Dear Mr. German,

I am proud to represent the Moulton Niguel Water District in Congress and I commend its conservation efforts throughout our community. I write to offer support for their WaterSMART Water and Energy Efficiency Grant (Grant) request for their proposed Comprehensive Commercial Landscape and Irrigation Improvement Program (Program).

Moulton Niguel's proposed Program will co-market effective turf removal programs with new irrigation system hardware and technology upgrades for commercial customers, including Homeowner Associations (HOAs), apartments, public agencies, and businesses.

With this Grant, Moulton Niguel will deliver meaningful benefits to our community and environment by conserving water, reducing urban runoff, and empowering commercial customers with new technology and irrigation systems to save water and money. In addition, the use of less water will result in energy savings. According to the California Independent System Operator, approximately 19% of the energy used in the state goes to water-related activities, including treating, pumping, and delivering water to homes and businesses.

Moulton Niguel is requesting \$500,000 in funding and has committed to provide a financial match. The Program will deliver significant benefits to our community by saving over 200 acre-feet of water and 500,000+ kWh per year. As a member of the House Committee on Natural Resources, I know the importance of significant water and energy saving programs. The District's proposal for the WaterSMART program would be an excellent investment in our infrastructure and it would benefit the people and businesses of Orange County.

I look forward to seeing the progress that the District's Program will make should this proposal be selected for funding. If you have any questions, please feel free to contact my District Office at (949) 668-6600.

Very truly yours,

A handwritten signature in blue ink that reads "Katie Porter". The signature is written in a cursive, flowing style.

Katie Porter
Member of Congress