Comprehensive Landscape Water Use Efficiency Program

Municipal Water District of Orange County
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Section 1: Executive Summary

Date: January 23, 2015

Applicant Name: Municipal Water District of Orange County (MWDOC)

City, County, State: Fountain Valley, Orange County, California

Project Summary: The proposed Program is specified as **Task Area A – Water Conservation**: Comprehensive Landscape Water Use Efficiency (CLWUE) Program. Over the two-year term of the Program, MWDOC proposes the implementation of a comprehensive and holistic landscape improvement program targeting residential and commercial properties throughout Orange County, California. Through a rebate format, this Program will promote the transformation to a California Friendly landscape utilizing a variety of landscape Best Management Practices (BMPs). This Program will result in the removal of 9.7 acres of non-functional turfgrass; the upgrade of 980 antiquated irrigation timers to smart water application irrigation controllers (weather-based irrigation timers and soil); and the conversion of 127,000 high-volume conventional spray irrigation heads to low-precipitation-rate irrigation equipment (rotating nozzles and drip), conversion of 50 dedicated irrigation meters from utilizing a potable source to an alternative sustainable source (rainwater capture, stormwater runoff, recycled water). These BMPs will result in water savings, a reduction of dry-weather runoff, pollution prevention, and reduced maintenance costs. Collectively, more than 2,400 BMPs will be implemented at approximately 1,300 commercial and residential sites. The existing landscape are targeted for comprehensive improvements through this Program. These BMPs will increase the uniformity, efficiency, and management of irrigation systems with an expected resultant total water savings of more than 1,160 acre-feet per year or 12,783 acre-feet over the life of the improvements. This is in line with the objectives outlined in MWDOC's Water Use Efficiency Master Plan, result in efficiency of water management and promoting activities that support water supply sustainability.

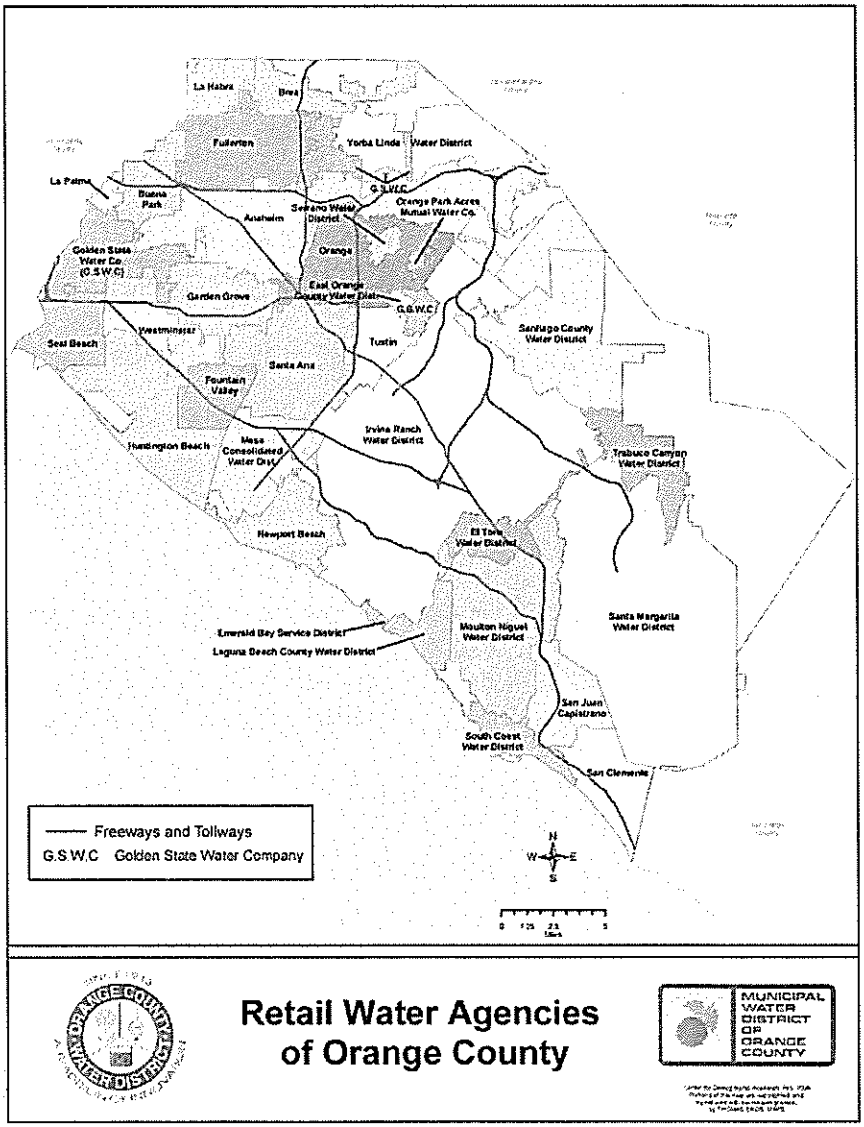
Program Term: The length of time to complete the proposed Program is two years, with an expected start date of October 2015 and completion date of September 2017.

Program Location: The CLWUE Program will be implemented within Orange County, California on existing residential and commercial property landscape. These sites are not located on Federal facilities.

Section 2: Background Data

A map showing the geographic location where the proposed Program will be implemented is provided as Figure 1. The MWDOC service area serves approximately 2.3 million people and is comprised of the 28 retail water agencies (districts and cities) of Orange County. Comprehensive Orange County has a population of 3.2 million with a 948 square-mile area and is located on the California coast between Los Angeles and San Diego Counties. The Pacific Ocean is immediately south-west, and San Bernardino and Riverside Counties are immediately north-east. This Program will be initially implemented within all of Orange County (including Anaheim, Santa Ana, and Fullerton). MWDOC, as the county's wholesale water agency, will act as lead agency for Program implementation.

Figure 1. MWDOC service area and the Cities of Anaheim, Fullerton, and Santa Ana



The five year average of usage in Orange County is 589,853 acre-feet (AF). Imported sources account for 42% (241,000 AF), groundwater accounts for 51% (303,000 AF), recycled water accounts for 6% (37,000 AF), and surface water accounts for 2% (8,000 AF). Due to current drought conditions, the annual water demand in Orange County in Fiscal Year 2013-14 was 629,400 AF. Imported sources account for 35% (223,000 AF), groundwater accounts for 56% (331,000 AF), recycled water accounts for 6% (40,000 AF), and surface water accounts for 2% (12,500 AF).

Groundwater and surface water supplies were made up of a mixture of native runoff from winter storms, imported water and recycled water. Groundwater pumping rights are allocated on an annual basis by the Orange County Water District to the retail water agencies that overlie the large groundwater basin in North/Central OC. Imported water is allocated by MWDOC from the Metropolitan Water District of Southern California's regional conveyance system. Imported supplies provided by Metropolitan include the Colorado River and small amounts form the Bay-Delta via the State Water Project due To a 5% allocation to all state water contractors. Depending on weather conditions it is expected that water demand will slightly increase due to increased development but will probably level out due to more efficient ways to use water and more urbanization throughout the county.

Approximately 99% of Orange County's water demand is for municipal and industrial purposes, and 1% is for agricultural purposes. Municipal and industrial water use in OC is comprised of single- and multi-family residential, commercial, industrial, and institutional users. According to the 2011 MWDOC rates survey; there are approximately 561,000 single family connections, 76,500 multi-family connections, 58,000 commercial Industrial and government facilities, and 14,000 dedicated irrigation connections, at commercial/institutional/industrial sites. There are also 9,000 recycled water connections, primarily for landscape irrigation.

Shortfalls in supply are two-fold. First, the region is experiencing 3 and a half years of below average rainfall, which is inhibiting our ability to access surplus water and could lead to mandatory water rationing this summer. Second, the State Water Project is experiencing the same dry years and pumping restrictions due to endangered species. Due to these ongoing reductions of imported water supply, water agencies have, in some years, been forced to draw from emergency storage to meet demand. These emergency storage levels are all at critical low levels and could be significant lower if dry conditions continue throughout 2015. These events would force all regional water agencies to ration there supplies and force heavy fines for retail agencies that do not comply.

Following the Governor's 2014 drought declaration agencies continue to enforce mandatory water use restrictions, including irrigation time of day and days of the week, washing of hard surfaces, runoff, etc.

MWDOC has had a long-standing and positive relationship with Reclamation. Table 1 lists the grants awarded by Reclamation to MWDOC over the past seven years. We have been awarded grants for a variety of water use efficiency, supply reliability, and water recycling programs, all of which have either been completed successfully or are in the process of being completed. We have worked very closely with the Lower Colorado River Region on Colorado River issues, the

Mid Pacific Region on Bay Delta issues, and with the Southern California Area Office on local issues.

Table 1. List of grants awarded to MWDOC by the Bureau of Reclamaition over the part seven years.

Program Name	Grant Amount Awarded	Year Awarded	Agreement No.	Grant Source
Water Audit Demonstration Project	$65,000	2007	07FG350224	Fld. Svcs.
Residential and Commercial Landscape Survey Program	$91,775	2007	07FG350230	CALFED
Industrial Program-Phase I	$115,000	2008	R08AP35242	Fld. Svcs.
SmarTimer Rebate Program	$299,919	2008	08FG350249	CALFED
Industrial Program--Phase II	$371,650	2009	RO9AP35267	CALFED
Hotel Program	$415,925	2009	RO9AP35266	CALFED
So Orange Coastal Ocean Desalination	$499,000	2010	R10AP35290	WaterSMART
Water Use Efficiency Master Plan	$75,000	2011	R11AP35311	Fld. Svcs.
HOA Training, Certification, and Retrofit Program	$100,000	2011	R11AP35313	Fld. Svcs.
O.C. Smart Irrigation Timer Rebate Program	$299,961	2011	R11AP35297	WaterSMART
Water Use Efficiency Certification and Rebate Program	$299,850	2012	R12AP35354	WaterSMART .
Spray to Drip Conversion Pilot Project	$67,017	2012	R12AP35344	Fld. Svcs.
California Sprinkler Adjustment Subscription System	$34,800	2012	R12AP35341	Fld. Svcs.
CII Performance-Based WUE Program	$97,889	2013	R13AP35362	Fld. Svcs.
Online Base Schedule Calculator	$35,497	2014	R14AP00058	Fld. Svcs.

Section 3: Technical Program Description

The objective of the CLWUE Program is to emphasize MWDOC's suite of existing rebate programs to develop a holistic landscape conversion with irrigation device improvements, management approaches, and turf replacement. The proposed program is designed to continue the establishment of a landscape transformation from turf intensive landscapes to California Friendly landscapes, which emphasize plantings with water needs similar to our natural average precipitation of 12 inches per year. To do so, the project will encourage the

removal of 9.7 acres of non-functional turfgrass; the upgrade of 980 antiquated irrigation timers to smart water application irrigation controllers (weather-based irrigation timers and soil); and the conversion of 127,000 high-volume conventional spray irrigation heads to low-precipitation-rate irrigation equipment (rotating nozzles and drip), conversion of 50 dedicated irrigation meters from utilizing a potable source to an alternative sustainable source (rainwater capture, stormwater runoff, recycled water). These Best Management Practices (BMPs) will result in water savings, a reduction of dry-weather runoff, pollution prevention, and reduced maintenance costs. More than 2,400 BMPs implemented at approximately 1,300 unique commercial and residential sites with existing landscape are targeted for comprehensive improvements through this program, with an expected total water savings of more than 1,160 acre-feet per year (AFY) acre-feet per year and 12,783 acre-feet over the life of the improvements. Dry-weather runoff reduction and non-point source pollution reduction are anticipated to be greater than 50%, as was documented in MWDOC's Residential Runoff Reduction (R3) Study. A reduction in urban runoff will also provide considerable benefits to water quality within Orange County's creeks and streams, an important local issue. The R3 Study found that a reduction in total pollutant migration could be achieved by reducing total dry season urban runoff (MWDOC and Irvine Ranch Water District, 2004).

To encompass a holistic approach to landscape improvements, the CLWUE Program focuses on a variety of efficient landscape water use BMPs:

Turfgrass Removal: Living, non-functional, irrigated turfgrass which, on average, requires more than four feet of supplementary irrigation water each year, will be removed and replaced by low-water-using California Friendly plantings or living groundcovers, which require less than half the water needed by turfgrass. If the new plantings require irrigation, they will be irrigated with low-precipitation-rate equipment and will be adequately mulched to retain soil moisture. This will result in a reduction in landscape irrigation runoff and related non-point source dry weather runoff. An alternative conversion for the area could also include non-living permeable groundcover, resulting in a complete reduction of irrigation water use while still focusing on runoff reduction by maintaining an area that is permeable to both air and water.

Smart Timers: This program will also advance the use of smart water application technologies, such as smart irrigation controllers (smart timers). Smart timers are irrigation controller devices that regulate irrigation water use automatically by adjusting to site conditions via either real time weather data or soil moisture conditions. Weather-based irrigation controllers determine how much irrigation to apply based on factors such as temperature and humidity, with weather data supplied as either signal-based or sensor-based. Soil moisture irrigation controllers offer the opportunity to optimize irrigation based on measured plant demand in the irrigated system. The sensor system can result in the bypass of scheduled irrigation events based on soil moisture content. Smart timers are an effective tool to automate efficient irrigation scheduling management.

MWDOC is a leader in smart timer programs, having implemented a rebate program since 2004. MWDOC has also worked closely with the United States Environmental

Protection Agency to promote WaterSense labeled devices to end-users, installers, and distribution venues, encouraging market transformation. Much of the success of MWDOC's smart timer installation rate can be attributed to enhanced rebates for such devices, which has been made available through grant funding.

High-Efficiency Sprinklers & Drip: Stationary or fixed spray irrigation nozzles are the most common irrigation heads installed for ornamental beds and small turfgrass areas. They apply more irrigation than any other typical domestic irrigation nozzle or head, with an average precipitation rate of 1.5 inches per hour (in/hr) or 60 to 180 gallons per hour (GPH), and they also apply water at a rate faster than the infiltration rate of local soils, causing runoff. In addition to the high application rate, stationary spray heads have poor uniformity rates, with an average distribution uniformity of 0.41. As a result, irrigation with these types of heads is often over-designed (i.e., too many heads are installed per area) and/or over-scheduled (i.e., the irrigation system is set to run too long/beyond the plant water needs), resulting in excessive irrigation water use and runoff.

Low-precipitation-rate irrigation, such as multi-trajectory/multi-stream (rotating) nozzles, in-stem volume control, and drip emitter tubing, can all yield an increase in distribution uniformity, leading to an increase in water use efficiency and a reduction in runoff. Rotating nozzles have shown a 45 percent increase in distribution uniformity compared to stationary spray heads. Furthermore, the precipitation rate of rotating nozzles ranges from 0.4 to 0.6 in/hr.

Drip irrigation in bedded areas results in more efficient water application because it targets the root zone of the plants and irrigates 50 percent or less of the area, yet still results in a significant increase in system efficiency. Typically, drip irrigation does not wet the entire root zone; therefore, the application rate concept does not apply. These emitters have various emission rates ranging from 0.3 to 2 GPH, but most commonly flow at 1 GPH or less. MWDOC is in the final year of a drip irrigation pilot program and has found this BMP to be or great interest for both residential "do it yourselfers" and contractors installing at both residential and commercial sites. The increased interest in this BMP dovetails with the rise in turf removal participation and the California State Water Control Boards requirement for the elimination of irrigation runoff from landscape areas.

Sustainable Water Source Conversion: As noted in the Irrigation Association Landscape Irrigation BMP 2.0, selecting a sustainable water source is a component of responsible irrigation management. In many cases, a source alternative to municipally supplied potable water can be utilized for irrigation purposes. Alternative developed water sources can include, for example, on-site collection, rainwater capture, treated stormwater runoff, or recycled water (IA, 2014). Converting a dedicated meter point of connection to a source alternative to potable water, will result in long-term sustainable water savings. Regardless of water source, as part of this CLWUE program will dictate that the site must utilize irrigation water efficiently and without contributing to dry-weather runoff. Eligible properties will be large landscape commercial and public space

sites (for example areas greater than one acre, homeowner association public areas and street medians).

The CLWUE Program will utilize a rebate program platform to incentivize the implementation of the fore mentioned landscape BMPs. Program participation begins with the submission of an on-line application (paper application available by request) to MWDOC by a residential property owner, commercial property owner/manager, or designated contractor (Participant). For databasing and BMP implementation verification purposes, the Participant will be required to include the following information as applicable: conversion area measurement; existing irrigation equipment; new irrigation equipment; site plan; meter/account information; water source (including modification if applicable); landscape material (including modification if applicable); and site photographs depicting conversion area and existing irrigation equipment. Additionally, upon implementation of the BMPs, MWDOC may perform an onsite installation confirmation inspection.

As part of the holistic nature of the CLWUE Program, sites will be responsible for using landscape water in the most efficient manner possible. Participants will be provided a list of recommended BMPs to ensure optimal water savings. Example BMP resources beyond those included as part of this grant include:

- California Sprinkler Adjustment Notification System
- Irrigation Base Schedule Calculator
- Water Smart Landscape Program (provides monthly water budgets)
- Low Impact Development practices to eliminate runoff
- Landscape water audit

Substantiation of project benefits will be measured through a statistical water savings evaluation. This evaluation will include a robust, regression-based, statistical evaluation of water use before and after the landscape improvements. Working with local water districts, MWDOC will obtain water use information for participating sites for inclusion in the evaluation. One of the primary goals of this analysis will be to quantify water savings at sites which incorporate multiple BMPs.

This Program will include seven tasks, as described below:

Task 1 - Program Administration

Program administration, Task 1, is the total staff hours needed for the day to day operation of the Program and constitutes the salaries/wages and fringe benefits associated with the comprehensive Program administration. As part of the Program reporting (Task 7), MWDOC will supply a data table by task with the actual hours per reporting period and related salary and fringe benefit rates for each staff personnel. The associated staff time for each of the following tasks (Tasks 2 through 7) will be broken out by task.

Task 2 - Marketing and Promotion

MWDOC will design and produce marketing and promotional material that will be distributed to property owners. Promotional pieces will encourage property owners to participate in the Program by logging onto the MWDOC Water Use Efficiency micro-site. The Program webpages

contain information regarding Program rules and regulations, access to the Program application, and information about rebate levels through the Program. This micro-site is utilized as a clearinghouse for rebate program information, application portal, and technical resources.

Marketing will primarily consist of bill inserts, water bill messages, newsletter articles, and posts on water agency websites. Over the 20+ years MWDOC has marketed water use efficiency programs, marketing surveys conducted by MWDOC's Public Affairs Department have rated bill inserts as the most effective forms of marketing collateral to encourage participation. Program promotional materials will acknowledge Reclamation's funding.

Stakeholders will be actively involved in the Project to further educate and promote participation. Stakeholders include retail water agencies, county and city municipal storm water permit holders, landscape maintenance contractors, facilities/property managers, homeowner association board members, and business owners. In addition, environmental organizations such as the Surf Rider Foundation and Coast Keeper, have expressed support for MWDOC's landscape water conservation projects.

Task 3 – Site Inspections

All sites (100%) will be provided with installation verification to determine eligibility for Program rebate funds. As a minimum, the installation verification process will include databasing of the following: site contact information, BMP type, sector, device cost, rebate paid, installation date, make/model information (if applicable), conversion square footage (if applicable). Additional collected information may include the following, as applicable: existing irrigation equipment, new irrigation equipment, site plan, water source (including modification if applicable), conversion area measurement, landscape material (including modification if applicable), and site photographs depicting conversion area and existing irrigation equipment. Additionally, MWDOC will perform approximately 395 (30%) comprehensive on-site post-inspections following the completion of BMP implementation. The on-site post-inspections will serve as a quality control check to verify the reliability of the installation verification process. If the on-site post-inspections identify flaws in the standard installation verification process, the comprehensive onsite post-inspections will be performed at all sites.

MWDOC currently has Mission Resource Conservation District (Mission) under contract for the next three (3) years to provide landscape survey services for MWDOC's various landscape Programs. Mission, as a Non-Profit Special District and an arm of the Natural Resource Conservation Service, is uniquely qualified to perform irrigation audits. They have many years of experience in both the urban and agricultural setting and provide MWDOC with highly competitive rates.

During on-site inspections executed by MWDOC, Mission, or the retail water agency the following will be performed:

- Walk the site with the property owner or person designated by the property owner
- Verify the site and contact information for the property
- Verify the water account information
- Verify point of connection water source
- Perform a post-installation site visit to measure the actual conversion area
- Determine the actual turf versus shrub percentage
- Turn on each valve/station to evaluate the condition of the irrigation system
- Perform a catch-can test to measure actual distribution uniformity for the Conversion

area (as applicable)
- Place irrigation system repair flags to bring needed repairs to the attention of the property owner
- Verify installation of water efficient drip/micro-irrigation
- Provide maintenance and irrigation management literature
- Promote California Friendly landscape irrigation educational classes
- Provide rebate program literature for MWDOC's other rebate programs
- Collect a baseline meter read for commencement of the 12-month water use data collection

Task 4 – Rebate Incentive

Over the 24-month period of the potential grant award, MWDOC proposes to facilitate the implementation of 2,400 BMPs. To achieve this, the Program anticipates the removal of 9.7 acres of non-functional turfgrass; the upgrade of 980 antiquated irrigation timers to smart water application irrigation controllers (weather-based irrigation timers and soil); and the conversion of 127,000 high-volume conventional spray irrigation heads to low-precipitation-rate irrigation equipment (rotating nozzles and drip), conversion of 50 dedicated irrigation meters from utilizing a potable source to an alternative sustainable source (rainwater capture, stormwater runoff, recycled water). MWDOC proposes to provide incentives through a rebate-style format to residential property owners, commercial property owners/managers, or designated contractor for qualifying Conversions. The following proposed rebate amounts will be available for each participant site, these rebate levels may vary due to market transformation during the implementation-phase:

- Turfgrass Removal
  $0.50 to $2.20 per square foot
- Smart Timers
  Up to $310 per smart timer (residential)
  Up to $35 per station (commercial)
- High-Efficiency Sprinklers
  Up to $4.00 rotating nozzle
- Drip Irrigation
  $0.20 to $0.40 per square foot
- Sustainable Water Source Conversion
  $195 to $390 per acre foot water saved (commercial)

Rebate incentives shall be based on the square footage, device/material costs, or actual water savings. To receive the CLWUE rebate funds, the Participant's completed site conversion and irrigation system is required to be consistent with the intent of the Program; ensure efficient landscape water use by implementing BMP measures. Additionally, the Conversion area must remain in compliance with the conversion requirements for a period of five years. If this requirement is violated, the Participant may be required to refund all or a portion of MWDOC/Grant funds. This requirement is void upon transfer of ownership. Conversion area qualification criteria include:

- Site must utilize BMP measures as appropriate to ensure efficient use.
- Site consists of between 250 ft^2 and 10,000 ft^2 of landscape including ornamental

plantings or turfgrass. Areas larger than 10,000 ft^2 will be considered on a case by case basis.

- Conversion area must include the entirety of the irrigation zone(s). Deviations will be considered on a case by case basis.
- Conversions that have been started or are already completed are not eligible as per the Program terms and conditions.
- Conversions must comply with all applicable laws, codes, policies, covenants, conditions, and restrictions.

Task 5 – Database Enhancement

MWDOC's current historical Landscape Program's database would need to be modified to accommodate the Program's participation data. In addition to the database modification, MWDOC staff would upload the monthly Participant data, verify its accuracy, develop reporting documents from the data for the semi-annual Program reporting, and utilize the Program's data set for the Program evaluation.

MWDOC has been utilizing an online tool called Survey Gizmo for online applications, as a portal for participant picture uploads, for associated email client interaction, and as a tool for inspection database entry. MWODC would continue to use this or a similar tool to collect online data to merge into the historical Landscape Program's database.

Task 6 – Program Evaluation

MWDOC staff, starting in the sixth (6) quarter of the agreement term, will initiate a Program process and statistical water savings impact evaluation to quantify Program benefits. The Program process evaluation will assess the Program's goals, format, and effectiveness including how the Program was developed, how success was measured, who the target audience was and how they were reached, and the Program successes and challenges.

The impact evaluation will use robust statistical methods, including regression analysis, to measure the change in water use of Program sites before and after CLWUE Program conversion, with comparison to a control group. This evaluation will also include weather normalization. This will give the water industry another opportunity to quantify actual water savings associated with comprehensive landscape/irrigation improvements occurring at sites. This analysis will include a statistically significant population of Program participants and will maintain 95% confidence. A written report describing the statistical methods and evaluation results will be submitted as the final report for the Program. Results from this Program will be shared with Reclamation, Metropolitan, California Urban Water Conservation Council, and MWDOC retail water agencies.

MWDOC will provide Reclamation a draft and final report of the statistical evaluation on the data provided during the final quarter of the agreement term. MWDOC will conduct the analysis by qualified staff, process the Program's data, liaise between the involved retail water agencies and their site' water consumption data, and develop the draft and final report. If a consultant is hired to aid in the any component of the evaluation, MWDOC will develop and release a request for proposals to several qualified water use evaluation consulting firms, review submitted proposals, and select the most qualified submission per the terms of MWDOC's Administration Code.

Task 7 – Program Reporting

Following the reporting schedule set forth in the Program agreement, MWDOC will submit semi-annual and final reports that will include all required SF forms, a written Program progress narrative, tabular data tables, and all required back up to support the requested reimbursement.

Section 4: Evaluation Criteria

Evaluation Criterion A: Water Conservation

Subcriterion No. A.1 – Quantifiable Water Savings

In order to quantify the average annual water savings, the following methodology was employed for each of the BMPs included in this proposal:

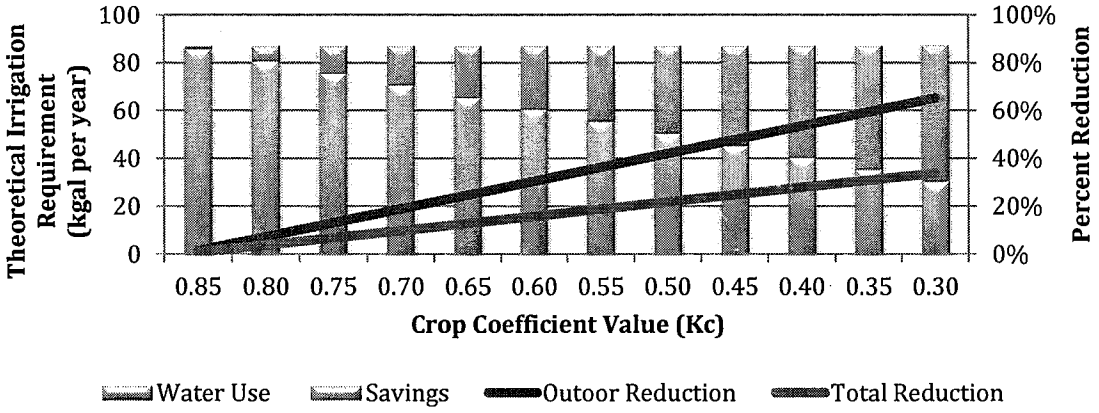
Turf Removal: The average annual water saving was initially calculated utilizing the theoretical irrigation requirement (TIR) water need taking local evapotranspiration (ETo) and rainfall (Pe) into consideration. As part of this analysis, the crop coefficients (Kc) varies from turfgrass (0.8) versus a California Friendly landscape, comprised of low water need plants (0.3).

$$TIR = (ETo \times Kc - Pe) / IE$$

$$WS = (TIR\ final - TIR\ initial) / TIR\ final$$

where, WS = Water Savings (%)
IE = Irrigation Efficiency (%)

The graph below depicts the general relationship between the theoretical irrigation requirement and potential reduction of water for various Kc values (Baum-Haley, 2014).



The weather, ETo and precipitation (P), data utilized for the weather normalization is graphically depicted in Figure 10. The daily evapotranspiration and precipitation measurements were collected from the California Irrigation Management Information System (CIMIS) weather station number 75 located in Irvine. Spatially interpolated or "Spatial ETo" values were collected for additional areas on the basis of zip code. The

weather normalization technique used the actual weather corresponding to the date of interest rather than a historic average.

For the Orange County area, this results in the following:

Annual Average		Assumptions		Theoretical Irrigation Requirement TIR (gallons per ft² per year)		Potential Savings based on TIR	
P (in/yr)	**ETo (in/yr)**	**Pe (in/yr)**	**IE (%)**	**Turfgrass Landscape Kc = 0.8**	**CA Friendly Plantings Kc = 0.3**	**Gallons per ft² per year**	**Percent**
12	47	3.8	60-70	56	14	42	75%

From the data previously collected from onsite inspections at Turf Removal sites within Orange County, the average removal area is 2,000 square feet. This would result in an annual use prior to the conversion of 112,000 to 28,000 gallons per year, in this case a savings of 84,000 gallon per year. On a per square foot basis, this is a savings of approximately 42 gallons per year per ft^2 or 0.12 gallons per day per ft^2. This analysis also concurs with the water savings observed using actual meter data.

Following the theoretical analysis, actual water use at sites was evaluated, utilizing historic water use data as well as the water use data following the turf removal landscape conversion. Metropolitan Water District of Southern California looked at their regional turf removal program and found water savings of approximately 44 to 49 gallons per day per ft^2.

The proposed CLWUE Program anticipates 425,000 ft^2 of turfgrass removal. This would in turn result in 53,125 gallons per day or 60 acre-feet per year. Turfgrass removal is given a ten year lifetime for water savings purposes, therefore contributing to 600 lifetime acre-feet of water savings.

Smart Timers: MWDOC consistently conducts evaluations at the completion of program terms as a means to continuously track the long-term success of this type of rebate program, these results are compared. The following table summarizes the previous irrigation timer evaluation results.

The primary objective of the impact evaluations such as these was to measure the amount of water saved throughout the course program. A statistical analysis of the collected data was performed in order to provide insight into the characteristics of sites that participated in the program and determine if a reduction of water use was due to device installation.

Study Title	Author	Sector	Gallons per Day Savings	Percent of Total Water Use	Percent of Outdoor Water Use
Residential Weather-Based Irrigation Scheduling: Evidence from the Irvine "ET Controller" Study, 2001	Western Policy Research, A. Bamezai, Ph.D.	Res.	37	7%	16%

ET Controller Savings Through the Second Post-Retrocit Year: A Brief Update, 2001	Western Policy Research, A. Bamezai, Ph.D.	Res.	41	8%	18%
Residential Runoff Reduction Study, 2004	A&N Technical Services, T. Chesnutt, Ph.D.	Res.	41	10%	-
		Comm.	545		21%
Commercial ET-Based Irrigation Controller Water Savings Study, 2006	A&N Technical Services, T. Chesnutt, Ph.D.	Comm.	601	-	22%
Pilot Implementation of Smart Controllers: Water Conserv., Urban Runoff Reduction and Water Quality, 2010	Kennedy/Jenks Consultants, Lawrence Y.C. Leong, Ph.D.	Res.	37	7%	-
MWDOC SmarTimer Rebate Program Evaluation, 2011	A&N Technical Services, T. Chesnutt, Ph.D.	Res.	49	9%	-
		Comm.	727		28%
OC Smart Irrigation Timer Rebate Program, 2014	M. Baum-Haley, Ph.D.	Res.	59	11%	18%
		Comm.	320	-	10%

Monthly meter read data was requested for each site from the retail water agency. Historical water use was requested for a least three years prior to the intervention point and one year following. The intervention point is designated as the point in time when the device was purchased/installed. Water savings was determined by comparing the gallons per day water use prior to and following the intervention point. This methodology allowed for direct comparison of water use based on comparable irrigation need and system consistency when utilizing weather normalization (see above). Specifically allowing for the ability to compare not just the net water savings for the sample as a whole, but additionally pairwise analysis for each site resulting in the categorical water use. Additionally, the water use at intervention sites was compared to a control group. That was the analysis sample is all exposed to the same confounding factors such as weather, conservation campaigns, etc.

The proposed CLWUE Program anticipates 980 smart timers (550 commercial and 430 residential). Only those models with EPA WaterSense labeling will be eligible with the Program guidelines. Based on 549.8 gallons per day per timer for commercial timers and 49.3 gallons per day per timer for residential timers, this would yield 323,589 gallons per day or 362 acre-feet per year. As a BMP, smart timers are given a ten year lifetime for water savings purposes, therefore contributing to 3,625 lifetime acre-feet of water savings.

High Efficiency Nozzles & Drip: The proposed Program will achieve quantifiable and sustained water savings through the installation of low precipitation/application rate rotating nozzles and drip irrigation in urban landscapes, specifically in single-family homes and commercial landscapes throughout Orange County, California. Program eligible products will be limited to the latest production high quality products from the competing irrigation management companies.

The spray head is a common sprinkler typically utilized in landscape irrigation for smaller or bedded areas. Conventional fixed spray heads have shorter throws than conventional rotary sprinklers (rotors). Conventional spray heads also have application rates higher than other sprinkler types meaning greater amounts of water are applied in a shorter period of time. According the Metropolitan Water District of Southern California, retrofitting a fixed spray head with a rotating nozzle will result in 3.57 gallons per day per nozzle.

A multi-stream, multi-trajectory rotating nozzle (rotating nozzles) distribute water via a number of individual streams, of varying trajectories which turn slowly, as compared to a fixed spray nozzle or a single stream rotor utilized for irrigating larger areas . An MSMT rotating nozzle is a high(er) uniformity spray nozzle and therefore often referred to as a high-efficiency sprinkler. It is an alternative nozzle that can fit on a conventional spray body because these nozzles are threaded for easy retrofit (Baum-Haley, 2014).

The most touted benefit resulting from the use of MSMT rotating nozzles is an increase in distribution uniformity. For landscape plants with a uniform water requirement and equidistant spacing/density, uniform water application is desirable. The majority of studies have been focused on the low-quarter distribution uniformity (DU_{lq}) improvements, where the potential for water savings is derived from the percent of water reduction attributed to improving uniformity of application.

The proposed CLWUE Program anticipates the retrofit of 86,000 conventional fixed spray heads with rotating nozzles (51,000 commercial and 35,000 residential). Based on 3.57 gallons per day per nozzle, this would yield 307,020 gallons per day or 344 acre-feet per year. Rotating nozzles are given a five year lifetime for water savings purposes, therefore contributing to 1,720 lifetime acre-feet of water savings.

Most of the water savings research for drip irrigation is focused water savings without causing stress or reduced quality to the turfgrass and landscape. A notable project conducted at residential sites with more than 30-months of post installation single-family water use monitoring (Baum 2005; Haley 2007). The conclusions showed that the homes with drip irrigated areas required less water than if those areas were sprinkler irrigated. The treatment homes with both the adjusted controller run time settings and the incorporation of drip irrigation in the bedding areas used 41% less irrigation water than the control group. This yielded a weekly water savings of 200 to 250 gpd.

Irrigation system efficiency varies based on irrigation method, equipment, and design. Applied water can be lost primarily from evaporation, runoff, or drainage. Evaporation can result from water droplets irrigated into the air, from wet leaves, or from the soil surface. A major source of lost water results in runoff from the surface of the landscape. Additionally, water can be lost by deep percolation through the soil profile. Basic system efficiencies are listed below.

Irrigation System Type	Efficiency[a]
Drip/Micro-Irrigation	80 to 95

Landscape Spray Systems	40 to 65
Landscape Rotor Systems	50 to 75
Brass Rotor Systems	60 to 85

Source: Irrigation Association (2007).

Micro-irrigation has less opportunity for losses through transmission. It is applied directly to the root zone and has small wetted soil surface area, reducing evaporative losses. Applying water at a slower rate will reduce ponding and the subsequent flow from the landscape area, thereby minimizing runoff and potentially eliminating overspray. Deep percolation can be minimized through proper scheduling.

Increasing system efficiency will result in water savings by reducing the excess water needed to achieve adequate water within the root zone. The common practice to compensate for system inefficiencies is to apply more water. When scheduling irrigation, a *run time multiplier* is utilized.

As system efficiency decreases, the amount of water need for irrigation use increases. Water savings due to an increase in irrigation efficiency can then be calculated. As the efficiency decreases, the volume of water applied increases, resulting in a negative exponential curve. Therefore, the percentage of water lost, or superfluous application, as a result of inefficiency can be calculated for any Irrigation Efficiency with the resulting equation:

$$WL = -1.854 \ln(IE) - 0.2168$$

where, WL = Water Lost (%)
IE = Irrigation Efficiency (%)

Here, the givens (area, etc.) will not affect the water savings. Therefore, this can be universal within the truncated 35% to 85% irrigation efficiency range. Below 35% efficiency, it is recommended to fix major issues requiring potential redesign/installation. Beyond the 85% efficiency, the impact potential savings are not significant (Dukes et al., 2006).

For example, assume an irrigation zone with stationary spray heads has an initial irrigation efficiency of 40%. If the irrigation efficiency can be increased to 85% by replacing the spray heads with more efficient irrigation equipment, such as drip-irrigation, this would result in a 53% water savings.

The proposed CLWUE Program anticipates the retrofit of 491,450 square feet (440,000 commercial and 51,450 residential) of spray to drip conversion, which is roughly the retrofit of 41,000 conventional fixed spray heads. Based on approximately 0.12 gallons per day per square foot or 1.5 gpd per spray head removed, this would yield 61,431 gallons per day or 69 acre-feet per year. Drip is currently given a five year lifetime for water savings purposes, therefore contributing to 344 lifetime acre-feet of water savings.

Sustainable Water Source Conversion: The CLWUE Program component the included selecting an alternative water source for irrigation purposes will track the water savings per meter as a performance-based measurement. The meters that will be included will be dedicated landscape meters at large landscape commercial and public space sites (for example areas greater than one acre, homeowner association public areas and street median). The estimated water savings was calculated based on the average irrigation water use per site considering TIR and surface area. As the conversion will be made at the point of connection, the lifetime water savings for this component is considered 20 years. Based on similar projects in the MWDOC service area, where each meter will use on average 6.5

Actual water savings will be determined through the statistical analysis described in Section 3, Task 6 – Program Evaluation. For a detailed explanation of the statistical analysis of the water savings refer, to Subcriterion No. F3 – Performance Measures.

Subcriterion No. A.2 – Percentage of Total Supply

MWDOC's five year average annual water supply is 589,853 acre-feet per year. This is the total supply for all retail water agencies in Orange County and is comprised of both imported water from the Metropolitan Water District of Southern California, ground water pumped from the Orange County Water District ground water basin, surface water, and recycled water. This water is currently going to single- and multi-family residential users, landscape irrigation, and commercial, industrial, and institutional users. Of the total, approximately 49% is used for landscape irrigation and 51% is used indoor (Source: MWDOC Water Use Efficiency Master Plan, 2013).

Water conserved through implementation of the proposed Program will be retained in regional storage reservoirs and the groundwater basin for future use, thereby improving water supply reliability for Orange County. The percentage of Orange County's total average annual water supply that will be conserved directly as a result of the Program is 0.2 percent. This is calculated by dividing the water saved by the average annual supply or (1,160 / 589,853)*100 = 0.2 percent per year.

Evaluation Criterion B: Energy-Water Nexus

Subcriterion No. B.2 – Increased Energy Efficiency in Water Management

The proposed Program will result in energy savings through reduced diversions and pumping of imported water into Orange County. Energy used to convey bulk water supplies from one location to another is high in Southern California where approximately fifty percent of the water supply is imported from the State Water Project and the Colorado River. The energy intensity of the water use cycle can be broken down by kilowatt hour per million gallons (kWh/MG) for each segment[1]. According to the California Energy Commission's 2005 Integrated Energy Policy Report, energy savings associated with outdoor water is 3,300 kWh/AF. The water savings from this CLWUE Program are estimated at 1,160 AFY or 12,783 acre-feet of the life of the BMPs.

[1] California Energy Commision. (2005). California's Water-Energy Relationship, Final Staff Report (CEC-700-2005-011-SF). Prepared in Support of the 2005 Integrated Energy Policy Report Proceeding (04-IEPR-01E).

Therefore, approximately 3.8 million kWh per year of energy savings will be realized through this outdoor water conservation program. Over the expected life of the Program, energy savings are estimated at more than 42 million kWh.

The GHG Emissions & Generation Resource Integrated Database (eGRID) U.S. non-baseload carbon dioxide (CO_2) output emission rate can be used to convert reductions of kWh into avoided units of CO_2 emissions with the following emission factor[2]: (6.8956×10^{-4} metric tons CO_2 / kWh). Based on this, greenhouse gas emissions will be reduced, resulting in 2,639 metric tons of carbon dioxide reduction.

Evaluation Criterion C: Benefits to Endangered Species

The proposed Program will benefit several federally-listed threatened and endangered species in the San Francisco Bay and San Joaquin Delta ecosystem. These species include the Delta Smelt, Steelhead Trout, and Spring and Winter-Run Chinook Salmon. The relationship of these species to a Reclamation Program centers on the federal Central Valley Program in California and the impacts the Central Valley Program and State Water Program have on the San Francisco Bay and San Joaquin Delta ecosystem. Due to the listing of these species and recent court rulings, southern California's ability to access imported water from the Bay/Delta has already been restricted. This court action is designed to retain water in the ecosystem for the benefit of and to accelerate the recovery of these listed species. The proposed Program is designed to aid Orange County in reducing its dependence on imported water from the Bay/Delta watershed.

Locally, the proposed Program will benefit the recovery of listed Steelhead Trout in the Aliso and San Juan Creeks by reducing urban runoff and non-point source pollution through better irrigation management. This linkage has been confirmed through MWDOC's Residential Runoff Reduction Study[3].

Evaluation Criterion D: Water Marketing

The proposed Program does not include a Water Marketing component.

Evaluation Criterion E: Other Contributions to Water Supply Sustainability

Subcriterion No. E.3 – Building Drought Resiliency

The proposed Program will improve water supply reliability by being more efficient with existing supplies. As a result, less pumping will occur from the groundwater basin, aiding in refilling the basin more rapidly, and less imported water will be used, allowing unused water to be retained in regional water storage reservoirs for use at a future date or remain in-stream for environmental benefit. Both these benefits will minimize or forestall shortages due to drought.

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[2] EPA. (2011). eGRID2010 Version 1.1, U.S. annual non-baseload CO_2 output emission rate, year 2007 data U.S. Environmental Protection Agency, Washington, D.C.

[3] A&N Technical Services. (2004). "The Residential Runoff Reduction Study." Prepared for the Municipal Water District of Orange County and Irvine Ranch Water District. Fountain Valley, CA.

The proposed Program promotes and encourages collaboration among all water agencies in Orange County. While MWDOC serves approximately 70% of the county, the proposed Program will be implemented throughout 100% of the county in partnership with all retail water agencies. Widespread support for this Program is demonstrated by the 14 letters of support from these retail agencies; provided as an Attachment. This partnership is significant as all water agencies in the county will have a united message of "efficient water use" to water users. Because of this countywide approach, the unfortunate situation of "haves" and "have not" will be avoided – all consumers will have access to one standardized program. Additionally, local environmental organizations including Surf Rider and Coast Keeper, provided key stakeholder contribution in the development of the MWDOC Water Use Efficiency Master Plan from which this Program is derived.

The proposed Program will significantly increase the awareness of water conservation in Orange County. The Program will be promoted through water bill stuffers, water bill messages, newsletters, websites, radio spots, and social media channels. The Program will serve as an example of efficiency that can be replicated not only from user to user, but also by water agency to water agency, thereby increasing the capability of future water conservation and efficiency efforts beyond Orange County. The Program also provides specific tools to help sites reduce their water use with to goal of at least a 20% reduction and elimination of runoff due to landscape irrigation. The smart timer devices selected (WaterSense labeled) are compliant with day of the week and time of day watering restrictions.

Evaluation Criterion F: Implementation and Results

Subcriterion No. F.1 – Program Planning

This Program was identified in MWDOC's 2013 Water Use Efficiency Master Plan, which was accomplished through a Reclamation grant award (see Table 1). Program design work is complete and includes a standard consumer rebate implementation framework. Rebate applications, to be completed by consumers, are established, and rebate administration vendors are in place. The proposed Program is included in the 5-year portfolio of programs identified for implementation in the Master Plan.

Countywide planning has been done to support the proposed Program. Water use efficiency programs such as the Program described in this proposal, are included in local Integrated Regional Watershed Management Plans (IRWMP) as a multi-benefit program. Benefits include water conservation, dry-weather runoff reduction, and non-point source pollution prevention. Comprehensive landscape irrigation water use efficiency programs and smart irrigation timer programs have been ranked first against dozens of other water supply, water reliability, and watershed management programs in these IRWMP efforts.

The proposed Program conforms to California's SBx 7-7, the 2009 Water Conservation Act that calls for a 20% reduction in urban water demand by 2020. This Program represents a key strategy, landscape water use efficiency, which will assist Orange County water agencies to meet their reduction goals.

Subcriterion No. F.2 – Readiness to Proceed

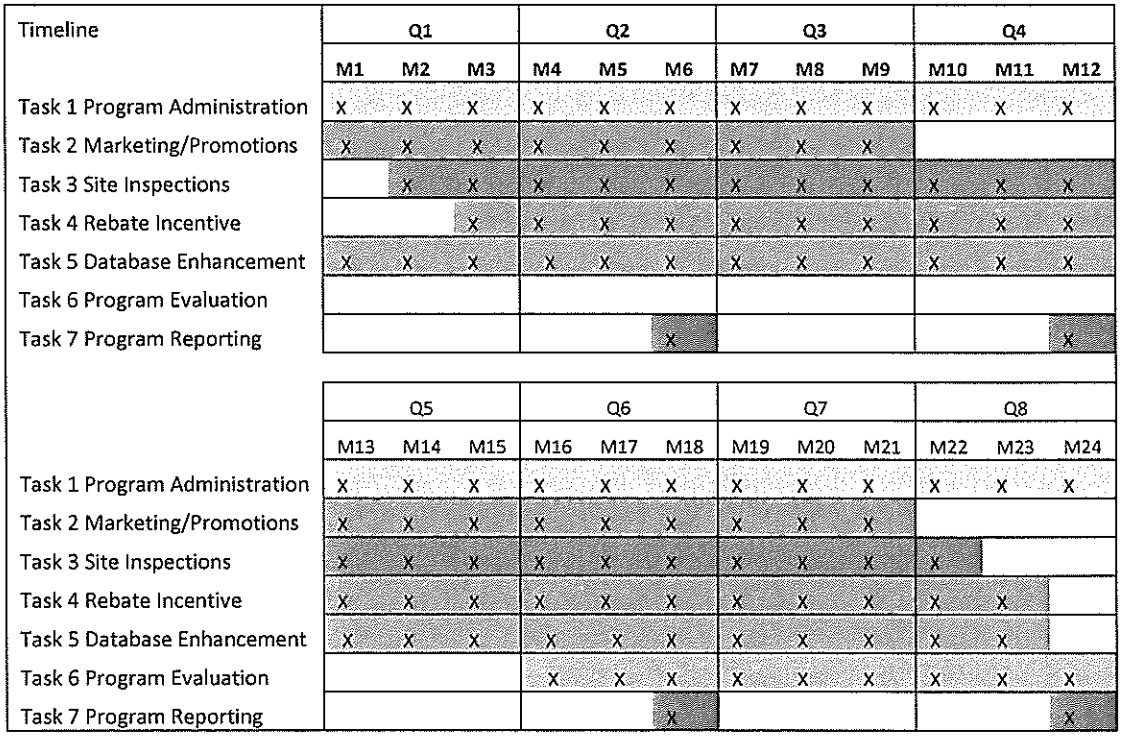
All necessary Program development work is complete, and the Program can begin immediately upon execution of the funding agreement. No delays are expected due to environmental compliance as MWDOC has filed a Categorical Exemption under Section 15304 – MINOR ALTERATIONS TO LAND (Class 4); Section 15306 INFORMATION COLLECTION–(Class 6). The Spray to Drip Irrigation Conversion Program does not involve new construction, rather it involves the Conversion of inefficient fixed sprinkler with drip irrigation, and replacing existing antiquated, manual irrigation timers with state-of-the-art self adjusting smart timers. The Program's activities will not result in any disturbance to undeveloped environmental resources. None of the exceptions to categorical exemptions set forth in CEQA Guidelines Section 15300.2 are applicable. For required permit information, refer to Section 7.

The Program's implementation plan and schedule will be driven by the Program's stated tasks as described in the Technical Program Description. Each task's requirement will occur according to the Program schedule as detailed in Table 2 and Figure 2.

Table 2. Proposed Program schedule

Description	Time Frame
• Task 1 Reclamation/MWDOC scope of work completed and agreement executed (M1) • Task 1 Participation procedures developed • Task 2 Marketing Material designed (including Reclamation's logo) and printed • Task 3 Change order established with Mission RCD, include Program specific expectations (M2) • Task 5 Develop online application process • Task 5 Program's database modified	Months 1 – 2
• Task 2 Disseminate the first round of bill inserts and subsequent rounds throughout agreement term • Task 2 Implement Program promotion	Months 2 – 21
• Task 3 Conduct data collection for all sites (100%) • Task 3 Perform quality control review of visual site inspections by conducting on-site post-inspections (30%)	Months 2 – 22
• Task 4 Provide rebates for the implementation of BMPs at both residential/commercial qualified participants • Task 5 Update database with monthly participant data • Task 5 Perform verification for the accuracy of the database data	Months 3 – 23
• Task 6 Conduct Program process and impact evaluation • Task 6 Submit draft Program evaluation to Reclamation for review	Months 16 – 23
• Task 7 Submit semi-annual reporting and deliverables to Reclamation	Months 6 – 24
• Tasks 4 and 5 Final reporting and deliverables sent to Reclamation	Month 24

Figure 2. Program planning timeline by task.



Subcriterion No. F.3 – Performance Measures

At the Program's conclusion, MWDOC plans to conduct a robust statistical water savings analysis using regression analysis. This will give the water industry another opportunity to quantify actual water savings associated with this Program. This analysis will include a statistically significant population of Program Participants and will maintain 95% confidence. Participant water use data before and after participating in the Program will be used to determine changes in water use associated with the landscape improvements and device installation. The analysis will also weather-normalize the pre- and post-retrofit water use data. A written report describing the statistical methods used and evaluation results will be submitted as the final report for the Program. The sites will be categorized into treatment groups based on the combination of BMPs implemented. The analysis will be unique in that it will consider water saving for individual and multiple BMPs. This will provide greater insight into the benefits of comprehensive landscape/irrigation system modifications and as well as help to quantify the maximum potential water savings as a result of such BMP implementation. See Section 5 details.

Subcriterion No. F.4 – Reasonableness of Costs

The total Program cost is $1,466,342. This investment is anticipated to save 1,160 acre-feet per year. Assuming the life for each BMP for water savings life for the installed devices, the lifecycle savings are anticipated at 12,783 acre feet. By dividing the total Program cost by the lifecycle savings, the cost per acre-foot conserved through implementation of the proposed Program is $115.

$$\frac{\$\ 1{,}466{,}343}{12{,}783 \text{ lifetime acre-feet}} = \$115 \text{ per acre foot saved}$$

Evaluation Criterion G: Additional Non-Federal Funding

The total project cost is $1,466,343. Of this, the Non-Federal funding will total $1,166,387 (80%). This is in excess of 50% of the project costs. See Table 4, Funding Sources.

$$\frac{\$1{,}166{,}387}{\$1{,}466{,}343} \times 100 = 80\%$$

Evaluation Criterion H: Connection to Reclamation Program Activities

The proposed Program is connected to Reclamation Program activities in three ways. First, MWDOC obtains it imported water supplies from the Metropolitan Water District of Southern California via the Colorado River Aqueduct and State Water Program. Metropolitan accesses Colorado River water via an entitlement. Second, Metropolitan also obtains State Water Program water from Northern California. This state system is operated in parallel with Reclamation's Central Valley Program. Both these systems have a negative impact on the San Francisco Bay and San Joaquin Delta Estuary. CALFED, a partnership of State and Federal agencies including Reclamation, is implementing the CALFED Solution. Lastly, the Program will be implemented throughout Orange County, including the Irvine Ranch and Orange County Water District service areas. These agencies have Title 16 contracts with Reclamation.

The proposed Program will not be implemented on Reclamation lands or facilities to our knowledge. However, the Program will be implemented within the Lower Colorado Region and, more specifically, within the Southern California Area Office activity area.

Section 5: Performance Measures

Performance Measure No. A.7 – Landscape Irrigation Measures
At the Program's conclusion, MWDOC plans to conduct a robust statistical water savings regression analysis. This will give the water industry another opportunity to quantify actual water savings associated with this Program. This analysis will include a statistically significant population of Program Participants and will maintain 95% confidence. Participant water use data before and after participating in the Program will be used to determine changes in water use associated with the landscape improvements. The analysis will also weather-normalize the pre- and post-retrofit water use data. A written report describing the statistical methods used and evaluation results will be submitted as the final report for the Program.

The impact evaluation will quantify the total estimated irrigated area that has been converted and/or the improved irrigation devices (confirmed through installation verification and site inspections) with the associated water savings. One of the primary goals of this analysis will be to quantify water savings at sites which incorporate multiple BMPs.

The sites will be categorized into treatment groups based on the combination of BMPs implemented. The analysis will be unique in that it will consider water saving for individual and multiple BMPs. This will provide greater insight into the benefits of comprehensive landscape/irrigation system modifications, as well as help to quantify the maximum potential water savings as a result of such BMP implementation.

The estimated historical average water use will be determined though site past meter data and will be utilized to quantify water application savings per unit (i.e. area). The monthly meter data will be provided by the retail water agency, and the indoor use will be teased out using appropriate methods (such as the theoretical irrigation requirement, TIR). Historical water use will be requested for at least three years and up to five years prior to the intervention point. Sites will either be characterized into control or treatment groups within the study region. Implementation-phase water use will be requested for at least one year following the intervention point for both the control and treatment groups.

The intervention point is designated as the point in time when the BMP is implemented. Water savings will be determined by comparing the gallons per day water use prior to and following the intervention point. This methodology will allow for direct comparison of water use based on comparable irrigation need and system consistency, specifically allowing for the ability to compare not just the net water savings for the sample as a whole, but also pairwise analysis for each site resulting in the categorical water use (e.g. percentage of home that had an decrease in use versus no change). Additionally, the water use will be compared to a sample set. This will allow for consideration of confounding factors such as external influences, conservation campaigns, etc.

Further, the water use data will be weather normalized based on local ETo and precipitation data. The daily evapotranspiration and precipitation measurements will be collected from the California Irrigation Management Information System (CIMIS) weather station number 75, located in Irvine. Spatially interpolated or "Spatial ETo" values will collected for additional areas on the basis of zip code. The weather normalization technique uses the actual weather corresponding to the date of interest, rather than a historic average.

As part of the post-project quantification of benefits, at minimum the following information will be collected at each participating site:

- Through the verification/inspection process, the surface area (turfgrass removal, drip installation, irrigated area, etc.)
- Determine the actual turf versus shrub percentage (as applicable)
- Device type information (pre/post intervention)

Sites may also receive a comprehensive site audit (as applicable)

- Turn on each valve/station to evaluate the condition of the irrigation system
- Perform a catch-can test to measure actual distribution uniformity for the Conversion area

Environmental Compliance

(1) The proposed Program will not negatively impact the surrounding environment. The Program focuses on landscape and irrigation system improvements to existing urban landscape. It is anticipated that these improvements will result in water conservation and reduced dry-weather runoff and non-point source pollution leaving the Program area and entering the natural environment, including local streams and creeks leading to the Pacific Ocean.

(2) There are no known endangered or threatened species or wetlands that will be negatively impacted by the Program or directly impacted within the area.

(3) There are no wetlands or other surface waters in the project boundaries that fall under CWA jurisdiction.

(4) The major regional components of the water delivery system in Orange County were constructed between the 1940s and 1960s. These facilities include the Diemer Filtration Plant, the Orange County Feeder, the East OC Feeder, and the West OC Feeder. The most recent major facilities added include the Allen-McColloch and South County Pipelines, which were constructed in the 1980s. Retail water agency delivery systems were built during this same timeframe, with the majority of expansion starting in the 1950s when there a population more than 200,000. Today's population totals more than 3 million.

(5) The Program will not result in modifications of or changes to individual features of an irrigation system including headgates, canals, or flumes.

(6) No known buildings, structures, or features in MWDOC's service area listed or eligible for listing on the National Register of Historic Places will be impacted by the proposed Program.

(7) No known archeological sites will be impacted by the proposed Program.

(8) The proposed Program will not have a disproportionately high or adverse effect on low income or minority populations. The Program will be offered equally to all residents in Orange County and, for residential customers, can cover up to the full cost of participation, therefore maximizing the opportunity for low income or minority participation.

(9) The proposed Program will not limit access to or ceremonial use of Indian sacred sites or result in other impacts to tribal lands.

(10) The proposed Program will not contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known in Orange County. Within the landscape conversion (turf removal) component of the Program, evidence of invasive species at the site post implementation will deem the project ineligible for rebate.

Required Permits and Approvals

The Municipal Water District of Orange County is not aware of any required permits or approvals to implement the proposed Program as lead agency. Program Participants, however, may be required to obtain a plumbing permit from their local city if modifications to the irrigation system point of connection are made as a result of participation. Because the Program will primarily focus on irrigation control components downstream of the point of connection, the need for a plumbing permit will be rare. The rebate program participant agreement that will be required to participate will contain language placing the permit requirements on the Participant, should a permit be required.

Letters of Program Support

Letters of support from 14 retail water agencies within Orange County and the MWDOC service area are attached stating Program support.

Official Resolution

The MWDOC Board of Directors Official Board Resolution No. 2003, approved on January 21, 2015, is attached providing authorization to proceed with the Program.

Program Budget

Funding Plan and Letters of Commitment

The non-Reclamation funding amount assigned to this Program across the collective 2,400 BMPs installation proposed is $1,166,386.72. MWDOC will contribute all necessary non-Reclamation funding for the Program. No other source of funding is required. A letter of funding commitment signed by the MWDOC General Manager is additionally attached.

Non-Federal Entity – Municipal Water District of Orange County (MWDOC)

Board Resolution No. 2003 (attached) approved on January 15, 2014, states, "[MWDOC] assures its capability to provide the amount of funding and in-kind contributions specified in the funding plan." The funding amount MWDOC will provide is $1,166,386.72, or 80% of the overall Program's cost. This amount is made up of both in-kind contribution in the form of salaries and benefits ($88,571.72) and direct payments to Program participants as incentive funding ($1,077,815.00) provided during the course of the Program (Table 3).

The in-kind contribution MWDOC will provide, totaling $88,571.72, is a combination of both salaries and fringe benefits. It is proposed MWDOC will commit 2,155 hours over the two-year term of the Program. This averages approximately 21 hours per week and will be spread across six (6) of MWDOC's water use efficiency staff. The average dollar rate for salaries is $38.55 and for benefits is $10.97. Of the Program total staff time costs, $106,712.91, MWDOC is requesting $18,141.19 to be funded by Reclamation. The Program's Budget Format details the breakdown by staff member and their corresponding salary/benefit unit rate, the total two-year term hours, and the associated cost.

MWDOC will also contribute another $1,077,815.00 in direct payments both to Program Participants, in the form of rebate incentives. Program rebate incentives paid to Participants will total $1,303,130.00, MWDOC is requesting $225,315.00 from Reclamation. In addition to the rebate incentive funds described above, MWDOC will also provide the following payments to contractors in support of specific tasks outlined in the Budget Narrative.

Table 3. Summary of Non-Federal and Federal funding sources illustrating the Program's funding arrangement.

Funding Sources	Funding Amount
Non-Federal Entities	
1. Municipal Water District of Orange County Direct Contribution	$1,077,815.00
2. Municipal Water District of Orange County In-Kind Staff Time*	$ 88,571.72
Non-Federal Subtotal:	$1,166,386.72
Other Federal Entities	
1. None	$0
Requested Reclamation Funding:	$299,956.21
Total Program Funding	$1,466,342.93

Table 4. Funding Sources

Funding Sources	Percent of Total Program Cost	Total Cost by Source
Recipient Funding	80%	$1,166,386.72
Reclamation Funding:	20%	$299,956.21
Other Funding	0%	$0
Totals	100%	$1,466,342.93

The following are items requested to be addressed:

- No other funding sources will be required; no needed external funding Letters of Commitment are included.
- MWDOC does not expect to have any in-kind costs incurred before the Program start date.
- No other Federal partners will be providing funding to this Program.
- There are no other pending funding requests that have yet to be approved.

Budget Proposal Format

Table 5. Budget proposal table.

Budget Item Description	$/Unit	Quantity	Funding Quantity	Recipient Funding	Reclamation Funding	Total Cost
Task 1 Program Administration						
SALARIES AND WAGES (24 mo. hour ttl)	Rate	Hrs	Salaries			
Program Administrator (Joe Berg)	$65.08	117	$7,614.36	$6,319.92	$1,294.44	$7,614.36
Program Manager (Steve Hedges)	$49.94	312	$15,581.28	$12,932.46	$2,648.82	$15,581.28
Marketing (Jessica Ouwerkerk)	$39.58	52	$2,058.16	$1,708.27	$349.89	$2,058.16
Technical Support/Evaluation (Melissa Baum-Haley)	$41.74	738	$30,804.12	$25,567.42	$5,236.70	$30,804.12
Program Support (Beth Fahl)	$30.95	156	$4,828.20	$4,007.41	$820.79	$4,828.20
Program Staff (Sergio Ramirez)	$28.44	780	$22,183.20	$18,412.06	$3,771.14	$22,183.20
Totals	$38.55 (avg)	2155	$83,069.32	$68,947.54	$14,121.78	$83,069.32
FRINGE BENEFITS (24 mo. hour ttl)	Rate	Hrs	Benefits			
Program Administrator (Joe Berg)	$22.47	117	$2,628.99	$2,182.06	$446.93	$2,628.99
Program Manager (Steve Hedges)	$13.79	312	$4,302.48	$3,571.06	$731.42	$4,302.48
Marketing (Jessica Ouwerkerk)	$12.08	52	$628.16	$521.37	$106.79	$628.16
Technical Support/Evaluation (Melissa Baum-Haley)	$11.84	738	$8,737.92	$7,252.47	$1,485.45	$8,737.92
Program Support (Beth Fahl)	$12.29	156	$1,917.24	$1,591.31	$325.93	$1,917.24
Program Staff (Sergio Ramirez)	$6.96	780	$5,428.80	$4,505.90	$922.90	$5,428.80
Totals	$10.97 (avg)	2155	$23,643.59	$19,624.18	$4,019.41	$23,643.59
Total Salaries/Wages and Fringe Benefits	**$49.52 (avg)**	**2155**	**$106,712.91**	**$88,571.72**	**$18,141.19**	**$106,712.91**
TRAVEL	Does not apply to this Project					
EQUIPMENT	Does not apply to this Project					
SUPPLIES						
Task 2 Marketing/Promotions	Qnty	Price/unit	Cost			Total
Project Marketing/Promotional Material	100,000	$0.025	$2,500	$0	$2,500	$2,500
			Total	**$0**	**$2,500**	**$2,500**
CONTRACTUAL/CONSTRUCTION						
Task 3 Site Inspections	Qnty	Rate	Cost			
Onsite Conversion inspections performed	395	$133	$52,650	$0	$52,650	$52,650
			Total	**$0.00**	**$52,650**	**$52,650**
Task 4 Rebate Incentive						
Sustainable Source Conversion incentive funding is based on $390/AFY water saved: Recipient ($195/AFY) and Reclamation ($195/AFY)				$63,375	$63,375	$126,750
Turf Removal incentive funding is based on $1.20/ft^2: Recipient ($0.30/ft^2) and Reclamation ($0.20/ft^2)				$127,500	$85,000	$212,500
Smart Irrigation Management Technology incentive funding is based on $305/device: Recipient ($155/device) and Reclamation ($155/device)				$444,650	$66,650	$511,300
Sprinkler Converstion to High Efficiency Sprinklers and Drip Irrigation incentive funding is based on: Recipient ($4.00 per nozzle or $0.20/ft^2) and Reclamation ($0.20/ft^2)				$442,290	$10,290	$344,000
			Total	**$1,077,815.00**	**$225,315.00**	**$1,303,130.00**
Task 5 Database Enhancement	Qnty	Rate				
Database Enhancement Tool (monthly cost)	24	$56		$0	$1,350	$1,350
			Total	**$0.00**	**$1,350**	**$1,350**
ENVIRONMENTAL AND REGULATORY COMPLIANCE	No costs associated with this effort					
OTHER						
Task 6 Program Evaluation	Hours	In-kind Total				
Program Contractor Training: Funding is supplied by Recipient & dollars are included in Salaries & Wages (Task 1)	455	$ 25,163		$0	$0	$0
Task 7 Program Reporting						
Quarterly & Final Reporting: Funding is supplied by Recipient & dollars are included in Salaries & Wages (Task 1)	Hours 115	In-kind Total $ 6,685		$0	$0	$0
			TOTALS	**$1,166,386.72**	**$299,956.21**	**$1,466,342.93**
			Percent	**80%**	**20%**	**100%**

Budget Narrative

Salaries/Wages and Fringe Benefits

Task 1 - Program Administration

Task Schedule	Months 1 – 24: Perform the day-to-day operation of the Program
Task Funding	In-kind Funds - $106,712.91
Task Hours	In-kind staff Hours - 2,155
Non-Federal Funding	In-kind Staff Funds - $88,571.72
Federal Funding	Reclamation share of MWDOC In-kind Staff Funds - $18,141.19

In order to properly manage the proposed Program, MWDOC will provide, on average, 21 hours per week from up to six (6) MWDOC staff. Across the two-year term of the Program this equates to 2,155 hours, or a total of $106,712.91 of in-kind services for salaries and fringe benefits. The totals for each identified staff person for salaries and fringe benefits are listed in the following tables. In addition, the hourly and in-kind funding totals are allocated across the specific tasks listed below.

Based on an average hourly rate of $38.55 for salaries and wages across 2,155 total Program hours, the total calculates out to $83,069.32 (Table 6). For fringe benefits, the average hourly rate is $10.97 and totals $23,643.56 (Table 9). Together, this totals $106,712.91 (Table 8), of which Applicant will provide $88,571.72 with a request of $18,141.19 from Reclamation. The following tables list each MWDOC staff member, their salaries, and, separately, their benefits, the weekly and 104-week proposed hours, and the salary and benefit totals.

While each staff member will bring their own experience to the Program, collectively the MWDOC team has over 63 years of experience managing similar water use efficiency Programs. Mr. Berg, as the MWDOC Water Use Efficiency (WUE) Department Programs Manager, will be responsible for reviewing quarterly reports and the evaluation prior to submittal and providing the overall guidance for the Program. Mr. Berg will designating an estimated 117 hours to this Program.

Mr. Hedges will act as Program Manager, overseeing the day-to-day operations of the Program, handling all financial aspects for the Program and reviewing all written reports. Mr. Hedges, the MWDOC WUE Programs Supervisor, will contribute an estimated 312 hours over 24-months to oversee implementation of the Program.

Dr. Baum-Haley, WUE Programs Specialist, will enhance the Program's database with the Program's monthly participant data and provide technical assistance. Due to her extensive experience with program process and impact evaluations, Dr. Baum-Haley will also oversee the Program evaluation (Task 6), the statistical analysis for Program benefits and water savings, and provide support with Program administration, contributing 780 hours.

Ms. Fahl and Mr. Ramirez will assist Mr. Hedges and Dr. Baum-Haley with Program management responsibilities. To administer this Program, they will jointly spend an additional 156 and 780 hours respectively over the same 24-month period. Under the supervision of Mr. Hedges, they

will facilitate the daily operations of the Program, along with preparation of the written reports and management of the Program database.

Ms. Ouwerkerk, Public Affairs Supervisor, as the department marketing expert, will lend her support in designing and implementing the marketing and promotional plan, designating 52 hours to the Program.

Salary increases for the Program staff would occur at the beginning of each fiscal year (July to June) and have averaged 2.0% over the last five years for both cost of living and merit. It is anticipated over the term of this Program agreement that this average will remain. As part of the Program reporting, MWDOC will supply a data table with the actual hours per reporting period and related salary and fringe benefit rates for each staff as certified accurate by MWDOC's Accounting Supervisor, Hilary Chumpitazi.

Table 6. Program's Salaries and Wages

MWDOC Staff	Hourly Rate[1] ($/hr)	Weekly Hours	104 - Week Hours	Weekly Total (Salaries)	Program Total (Salaries)	Recipient Funding (Salaries)	Reclamation Funding (Salaries)
Program Administrator (Joe Berg)	$65.08	1.8	117	$117.00	$7,614.36	$6,319.92	$1,294.44
Program Manager (Steve Hedges)	$49.94	6.2	312	$312.00	$15,581.28	$12,932.46	$2,648.82
Marketing (Jessica Ouwerkerk)	$39.58	1.3	52	$52.00	$2,058.16	$1,708.27	$349.89
Technical Support and Evaluation (Melissa Baum-Haley)	$41.74	17.7	738	$738.00	$30,804.12	$25,567.42	$5,236.70
Program Support (Beth Fahl)	$30.95	5.0	156	$156.00	$4,828.20	$4,007.41	$820.79
Program Staff (Sergio Ramirez)	$28.44	27.4	780	$120.00	$22,183.20	$18,412.06	$3,771.14
Total	$38.55	59.5	2155	$1,495.00	$83,069.32	$68,947.54	$14,121.78

[1] As of January 2015.

Table 7. Program's Fringe Benefits

MWDOC Staff	Hourly Rate[1,2] ($/hr)	Weekly Hours	104 - Week Hours	Weekly Total (Benefits)	Program Total (Benefits)	Recipient Funding (Benefits)	Reclamation Funding (Benefits)
Program Administrator (Joe Berg)	$22.47	1.8	117	$40.40	$2,628.99	$2,182.06	$446.93
Program Manager (Steve Hedges)	$13.79	6.2	312	$86.15	$4,302.48	$3,571.06	$731.42
Marketing (Jessica Ouwerkerk)	$12.08	1.3	52	$15.87	$628.16	$521.37	$106.79
Technical Support and Evaluation (Melissa Baum-Haley)	$11.84	17.7	738	$209.34	$8,737.92	$7,252.47	$1,485.45
Program Support (Beth Fahl)	$12.29	5.0	156	$61.95	$1,917.24	$1,591.31	$325.93
Program Staff (Sergio Ramirez)	$6.96	27.4	780	$120.00	$5,428.80	$4,505.90	$922.90
Total	$10.97	59.5	2155	$533.71	$23,643.59	$19,624.18	$4,019.41

[1] As of January 2015.

[2] Fringe Benefits are comprised of State Unemployment Tax (5.25%), CA State Disability Insurance (1.15%), Dental Coverage (variable), District Paid Life Insurance (.52%), Medicare (1.43%), Pers EE (7%), Pers ER (8.98%), Survivor ER Total (.03%), Vision Coverage (variable), Medicare Total (variable), Disability Total (.52%). Fringe benefit rates are for billing purposes.

Table 8. Program's Totals for both Salaries and Fringe Benefits (S&B)

MWDOC Staff	Hourly Rate[1] ($/hr)	Hrs per Wk	104 - Week Hours	Weekly Total (S&B)	Program Total (S&B)	Recipient Funding (S&B)	Reclamation Funding (S&B)
Program Administrator (Joe Berg)	$87.55	1.3	117	$117.00	$10,243.35	$8,501.98	$1,741.37
Program Manager (Steve Hedges)	$63.73	4.9	312	$312.00	$19,883.76	$16,503.52	$3,380.24
Marketing (Jessica Ouwerkerk)	$51.66	1.0	52	$52.00	$2,686.32	$2,229.65	$456.67
Technical Support and Evaluation (Melissa Baum-Haley)	$53.58	13.8	738	$738.00	$39,542.04	$32,819.89	$6,722.15
Program Support (Beth Fahl)	$43.24	3.6	156	$156.00	$6,745.44	$5,598.72	$1,146.72
Program Staff (Sergio Ramirez)	$35.40	22.0	780	$120.00	$27,612.00	$22,917.96	$4,694.04
Total	$49.52	46.7	2155	$1,495.00	$106,712.91	$88,571.72	$18,141.19

[1] As of January 2015.

Travel

There will be no travel costs associated with this Program.

Equipment Costs

There will be no equipment costs associated with this Program.

Materials and Supplies

Task 2 - Marketing and Promotion

Task Schedule	Months 1-21: Develop, print, and distribute 100,000 bill inserts and develop and host Program websites
Task Funding	Direct Costs - $2,500.00
Task Hours	In-kind staff Hours - 127; In-kind Costs - $7,133.53
Non-Federal Funding	MWDOC Direct Funds - $0; In-kind Staff Funds - $5,920.83
Federal Funding	Reclamation Direct Funds - $2,500.00; Reclamation share of MWDOC In-kind Staff Funds - $1,212.70

To promote the Program, MWDOC will develop, print, and distribute 100,000 marketing materials and other supplies necessary to promote the CLWUE Program. MWDOC has found, though a customer satisfaction survey, the most effective means for potential participants to find out about water related rebate programs is through the extra promotional collateral they find in their water bills. In order to entice these participants to participate in this Program and implement the Program BMPs, Program information will be disseminated through their water bill inserts and well as signage at program sites.

In June 2011, MWDOC developed, distributed, and received back a request for pricing from over 25 graphic artists/printers. This was done to acquire pricing information for the many promotional items MWDOC produces throughout the year. A short list of four printers was selected and approved by the MWDOC Board of Directors based on pricing, material developed, and the ability to meet MWDOC's other related requests. Currently, the established pricing for bill inserts is at $0.025 each or a total for the Program of $2,500 (100,000 inserts x $0.025). Once produced, MWDOC will use Orange County's retail water agencies to distribute the promotional material.

MWDOC is requesting $2,500 from Reclamation. The staff time (127 hours) and associated funding for Task 2 is already accounted for in Task 1.

Contractual/Construction

MWDOC considers Task 3 - Site Inspections, Task 4 - Rebate Incentive, and Task 5 - Database Enhancement to fall under the contractual/construction budget category.

Task 3 – Site Inspections

Task Schedule	Months 2-22: Perform implementation verification at 100% of participating sites and conduct 100 quality control on-site inspections
Task Funding	Direct Costs - $52,650.02
Task Hours	In-kind staff Hours - 486; In-kind Costs - $23,045.46
Non-Federal Funding	MWDOC Direct Funds - $0; In-kind Staff Funds - $19,127.73
Federal Funding	Reclamation Direct Funds - $52,650.02; Reclamation share of MWDOC In-kind Staff Funds - $3,917.73

All sites (100%) will be provided with installation verification to determine eligibility for Program rebate funds. As a minimum, the installation verification process will include databasing of the following: site contact information, BMP type, sector, device cost, rebate paid, installation date, make/model information (if applicable), conversion square footage (if applicable). Additional collected information may include the following, as applicable: existing irrigation equipment, new irrigation equipment, site plan, water source (including modification if applicable), conversion area measurement, landscape material (including modification if applicable), and site photographs depicting conversion area and existing irrigation equipment. This effort will account for 486 hours of MWDOC staff time or $23,045.46, which is 23% of the total staff time encumbrance. MWDOC will fund $19,127.73 of this and is requesting $3,917.73 from Reclamation. The staff time and associated funding for Task 3 is already accounted for in Task 1.

Additionally, MWDOC will perform 395 on-site post-inspections following the completion of Conversions. The on-site post-inspections will serve as a quality control check to verify the reliability of the visual post-inspection. If the on-site post-inspections identify flaws in the visual inspection process, the onsite post-inspections will be performed at all sites. MWDOC currently has Mission Resource Conservation District (Mission) under contract for the next three (3) years to provide landscape survey services for MWDOC's various landscape programs. Mission, as a Non-Profit Special District and an arm of the Natural Resource Conservation Service, is uniquely qualified to perform irrigation audits. They have many years experience in both the urban and agricultural setting and provide MWDOC with highly competitive rates.

Over the term of the agreement, MWDOC will direct Mission to perform the 395 comprehensive nstallation verification inspections where multiple BMPs have been implemented. The total direct cost for the inspections performed by Mission is $52650.02. This is based on approximately, 50 turf removal inspections at a rate of $210, 150 residential inspections at a rate of $89 and 75 at a rate of $133.50, and 120 commercial inspections at a rate of $150. MWDOC is requesting the full $52,650.02 from Reclamation for this effort.

Task 4 – Rebate Incentives

Task Schedule	Months 3-23: Provide rebate incentives for devices installed
Task Funding	Direct Costs - $1,303,130
Task Hours	In-kind staff Hours - 781; In-kind Costs - $34,391.99
Non-Federal Funding	MWDOC Direct Funds - $1,077,815;

	In-kind Staff Funds - $28,545.35
Federal Funding	Reclamation Direct Funds - $225,315;
	Reclamation share of MWDOC In-kind Staff Funds - $5,846.64

Over the 24-month period of the potential grant award, MWDOC proposes to facilitate the implementation of 2,400 BMPs. To achieve this, the Program anticipates the removal of 9.7 acres of non-functional turfgrass; the upgrade of 980 antiquated irrigation timers to smart water application irrigation controllers (weather-based irrigation timers and soil); and the conversion of 127,000 high-volume conventional spray irrigation heads to low-precipitation-rate irrigation equipment (rotating nozzles and drip), conversion of 50 dedicated irrigation meters from utilizing a potable source to an alternative sustainable source (rainwater capture, stormwater runoff, recycled water). MWDOC proposes to provide incentives through a rebate-style format to residential property owners, commercial property owners/managers, or designated contractor for qualifying Conversions. The following proposed rebate amounts will be available for each participant site, these rebate levels may vary due to market transformation during the implementation-phase:

- Turfgrass Removal
  $0.50 to $2.20 per square foot
- Smart Timers
  Up to $310 per smart timer (residential)
  Up to $35 per station (commercial)
- High-Efficiency Sprinklers
  Up to $4.00 rotating nozzle
- Drip Irrigation
  $0.20 to $0.40 per square foot
- Sustainable Water Source Conversion
  $195 to $390 per acre foot water saved (commercial)

Rebate incentives shall be based on the square footage, device/material costs, or actual water savings. To receive the CLWUE rebate funds, the Participant's completed site conversion and irrigation system is required to be consistent with the intent of the Program; ensure efficient landscape water use by implementing BMP measures. Additionally, the Conversion area must remain in compliance with the conversion requirements for a period of five years. If this requirement is violated, the Participant may be required to refund all or a portion of MWDOC/Grant funds.

MWDOC will provide $1,077,815, and the remaining $225,315 is requested from Reclamation. The Task 1 staff time allocated across the 24-month period for work within Task 4 is 781 hours of the total 2,155 hours, which is 36% of the total Program administration encumbrance. The staff time and associated funding for Task 4 is already accounted for in Task 1.

Task 5 – Database Enhancement

Task Schedule	Months 1-23: Develop online application and modification to existing landscape database
Task Funding	Direct Costs - $1,350
Task Hours	In-kind staff Hours - 191; In-kind Costs - $10,293.18
Non-Federal Funding	MWDOC Direct Funds - $0; In-kind Staff Funds - $8,543.34
Federal Funding	Reclamation Direct Funds - $1,350.00; Reclamation share of MWDOC In-kind Staff Funds - $1,749.84

MWDOC has been utilizing an online tool called Survey Gizmo for online applications, as a portal for participant picture uploads, as associated email client interaction, and as a tool for inspection database entry. MWODC would continue to use this or a similar tool to collect online data to merge into the historical Landscape Program's database. The annual rate for Survey Gizmo is $675 for government agencies. MWDOC is requesting the full $1,350 from Reclamation.

The Task 1 staff time allocated across the 24-month period for work within Task 5 is 191 hours of the total 2,155 hours which is 9% of the total Program administration encumbrance. The staff time and associated funding for Task 5 is already accounted for in Task 1 and contains staff time costs only.

Other

Task 6 – Program Evaluation

Task Schedule	Months 16-24: Conduct the process and impact evaluation; prepare associated draft and final reports
Task Funding	Direct Costs - $0
Task Hours	In-kind staff Hours - 455; In-kind Costs - $25,163.30
Non-Federal Funding	MWDOC Direct Funds - $0; In-kind Staff Funds - $20,885.54
Federal Funding	Reclamation Direct Funds - $0; Reclamation share of MWDOC In-kind Staff Funds - $4,277.76

MWDOC staff, starting in the sixth (6) quarter of the agreement term, will initiate a Program process and statistical water savings impact evaluation to quantify Program benefits. The Program process evaluation will assess the Program's goals, format, and effectiveness including how the Program was developed, how success was measured, who the target audience was and how they were reached, and the Program successes and challenges.

During the final quarter of the agreement term, MWDOC will provide Reclamation a draft and final report of the statistical evaluation on the data provided. MWDOC will conduct the analysis by qualified staff; process the Program's data, liaise between the involved retail water agencies

and their site' water consumption data, and develop the draft and final report. If a consultant is hired to aid in the any component of the evaluation, MWDOC will develop and release a request for proposals to several qualified water use evaluation consulting firms, review submitted proposals, and employing a committee of retail water agency, MWDOC, and Metropolitan staff, select the most qualified submission per the terms of MWDOC's Administration Code.

The Task 1 staff time allocated across the 24-month period for work within Task 6 is 455 hours of the total 2,155 hours, or $25,163.30, which is 21% of the total Program administration encumbrance. MWDOC will fund $20,885.54 of this and is requesting $4,277.76 from Reclamation. The staff time and associated funding for Task 6 is already accounted for in Task 1 and contains staff time costs only.

Reporting

Task 7 – Program Reporting

Task Schedule	Months 16-24: Conduct the process and impact evaluation; prepare associated draft and final reports
Task Funding	Direct Costs - $0
Task Hours	In-kind staff Hours - 115; In-kind Costs - $6,685.45
Non-Federal Funding	MWDOC Direct Funds - $0; In-kind Staff Funds - $5,548.92
Federal Funding	Reclamation Direct Funds - $0; Reclamation share of MWDOC In-kind Staff Funds - $1,136.53

Following the reporting schedule set forth in the agreement, MWDOC will submit semiannual reports and a comprehensive final report that will include all required SF forms, a written Program progress narrative, tabular data tables, and all required back-up to support the requested reimbursement. The funding for Task 7, Program Reporting, is captured within Task 1, Program Administration. Across a 24 month Program period, this would average approximately 29 hours in MWDOC staff time per bi-annual report. The Task 1 staff time allocated across the 24-month period for work within Task 7 is 115 hours of the total 2,155 staff hours, or $6,685.45, which is 5% of the total Program administration encumbrance. MWDOC will fund $5,548.92 of this and is requesting $1,136.53 from Reclamation. The staff time and associated funding for Task 7 is already accounted for in Task 1.

Indirect Costs

There will be no indirect costs associated with this Program.

Contingency Costs

There will be no contingency costs associated with this Program.

Total Costs

Table 9 highlights both MWDOC's and Reclamation's proposed contributions in each of the stated categories. Tasks 6 and 7 are listed as $0, due to the cost being solely In-kind MWDOC staff time and are included as part of the Salaries and Benefit totals.

Table 9. Proposed Contribution by Program Budget Category

	MWDOC	Reclamation	Total
Salaries and Benefits			
Task 1 - Program Administration	$88,571.72	$18,141.19	$106,712.91
Materials and Supplies			
Task 2 - Marketing Promotions	$0	$2,500	$2,500
Contractual/Construction			
Task 3 - Site Inspections	$0	$52,650.02	$52,650.02
Task 4 - Rebate Incentives	$1,077,815.00	$225,315.00	$1,303,130.00
Task 5 - Database Enhancement	$0	$1,350	$1,350
Other			
Task 6 - Program Evaluation	$0	$0	$0
Reporting			
Task 7 - Program Reporting	$0	$0	$0
Total	$1,166,386.72	$299,956.21	$1,466,342.93
	80%	20%	100%

Budget Proposal: Budget Form

Budget Item Description	$/Unit	Quantity	Funding Quantity	Recipient Funding	Reclamation Funding	Total Cost
Task 1 Program Administration						
SALARIES AND WAGES (24 mo. hour ttl)	Rate	Hrs	Salaries			
Program Administrator (Joe Berg)	$65.08	117	$7,614.36	$6,319.92	$1,294.44	$7,614.36
Program Manager (Steve Hedges)	$49.94	312	$15,581.28	$12,932.46	$2,648.82	$15,581.28
Marketing (Jessica Ouwerkerk)	$39.58	52	$2,058.16	$1,708.27	$349.89	$2,058.16
Technical Support/Evaluation (Melissa Baum-Haley)	$41.74	738	$30,804.12	$25,567.42	$5,236.70	$30,804.12
Program Support (Beth Fahl)	$30.95	156	$4,828.20	$4,007.41	$820.79	$4,828.20
Program Staff (Sergio Ramirez)	$28.44	780	$22,183.20	$18,412.06	$3,771.14	$22,183.20
Totals	$38.55 (avg)	2155	$83,069.32	$68,947.54	$14,121.78	$83,069.32
FRINGE BENEFITS (24 mo. hour ttl)	Rate	Hrs	Benefits			
Program Administrator (Joe Berg)	$22.47	117	$2,628.99	$2,182.06	$446.93	$2,628.99
Program Manager (Steve Hedges)	$13.79	312	$4,302.48	$3,571.06	$731.42	$4,302.48
Marketing (Jessica Ouwerkerk)	$12.08	52	$628.16	$521.37	$106.79	$628.16
Technical Support/Evaluation (Melissa Baum-Haley)	$11.84	738	$8,737.92	$7,252.47	$1,485.45	$8,737.92
Program Support (Beth Fahl)	$12.29	156	$1,917.24	$1,591.31	$325.93	$1,917.24
Program Staff (Sergio Ramirez)	$6.96	780	$5,428.80	$4,505.90	$922.90	$5,428.80
Totals	$10.97 (avg)	2155	$23,643.59	$19,624.18	$4,019.41	$23,643.59
Total Salaries/Wages and Fringe Benefits	**$49.52 (avg)**	**2155**	**$106,712.91**	**$88,571.72**	**$18,141.19**	**$106,712.91**
TRAVEL	Does not apply to this Project					
EQUIPMENT	Does not apply to this Project					
SUPPLIES						
Task 2 Marketing/Promotions	Qnty	Price/unit	Cost			Total
Project Marketing/Promotional Material	100,000	$0.025	$2,500	$0	$2,500	$2,500
			Total	**$0**	**$2,500**	**$2,500**
CONTRACTUAL/CONSTRUCTION						
Task 3 Site Inspections	Qnty	Rate	Cost			
Onsite Conversion inspections performed	395	$133	$52,650	$0	$52,650	$52,650
			Total	**$0.00**	**$52,650**	**$52,650**
Task 4 Rebate Incentive						
Sustainable Source Conversion incentive funding is based on $390/AFY water saved: Recipient ($195/AFY) and Reclamation ($195/AFY)				$63,375	$63,375	$126,750
Turf Removal incentive funding is based on $1.20/ft^2: Recipient ($0.30/ft^2) and Reclamation ($0.20/ft^2)				$127,500	$85,000	$212,500
Smart Irrigation Management Technology incentive funding is based on $305/device: Recipient ($155/device) and Reclamation ($155/device)				$444,650	$66,650	$511,300
Sprinkler Converstion to High Efficiency Sprinklers and Drip Irrigation incentive funding is based on: Recipient ($4.00 per nozzle or $0.20/ft^2) and Reclamation ($0.20/ft^2)				$442,290	$10,290	$344,000
			Total	**$1,077,815.00**	**$225,315.00**	**$1,303,130.00**
Task 5 Database Enhancement	Qnty	Rate				
Database Enhancement Tool (monthly cost)	24	$56		$0	$1,350	$1,350
			Total	**$0.00**	**$1,350**	**$1,350**
ENVIRONMENTAL AND REGULATORY COMPLIANCE	No costs associated with this effort					
OTHER						
Task 6 Program Evaluation	Hours	In-kind Total				
Program Contractor Training: Funding is supplied by Recipient & dollars are included in Salaries & Wages (Task 1)	455	$ 25,163		$0	$0	$0
Task 7 Program Reporting						
Quarterly & Final Reporting: Funding is supplied by Recipient & dollars are included in Salaries & Wages (Task 1)	Hours 115	In-kind Total $ 6,685		$0	$0	$0
			TOTALS	**$1,166,386.72**	**$299,956.21**	**$1,466,342.93**
			Percent	**80%**	**20%**	**100%**

MUNICIPAL WATER DISTRICT OF ORANGE COUNTY

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Fountain Valley, CA 92728-0895

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January 22, 2015

Bureau of Reclamation
Financial Assistance Management Branch
Attn: Mr. Shaun Wilken
Mail Code: 84-27852
P.O. Box 25007
Denver, CO 80225

Dear Mr. Wilken:

Re: 2015 WaterSMART: Water and Energy Efficiency Grant Proposal

The Municipal Water District of Orange County (MWDOC) has submitted a fiscal year 2015 grant proposal for the Bureau of Reclamation's WaterSMART: Water and Energy Efficiency Funding Opportunity. MWDOC's proposed project is titled the "Comprehensive Landscape Water Use Efficiency Program." The purpose of this letter is to provide assurances that MWDOC has the ability to and will provide the proposed cost share of $1,466,342.93 for implementation of the project. These funds will be available upon program commencement within fiscal years 2015-16 and 2016-17. In addition, this project has the support of the MWDOC Board (see attached resolution) and there are no known time constraints or contingencies associated with implementing this project.

Should you need additional information, please contact Joe Berg at (714) 593-5008.

Sincerely,

Robert J. Hunter
General Manager

City of Brea

January 20, 2015

Bureau of Reclamation
Financial Assistance Management Branch
Attn: Mr. Shaun Wilken
Mail Code: 84-27852
P.O. Box 25007
Denver, CO 80225

Subject: Support for Municipal Water District of Orange County's 2015 WaterSMART: Water and Energy Efficiency Grant Application

Dear Mr. Wilken:

The City of Brea supports the Municipal Water District of Orange County's (MWDOC) grant application for a Comprehensive Landscape Water Use Efficiency Program (Program). The objective of the Program is to emphasize MWDOC's suite of existing rebate programs to develop a holistic landscape conversion with irrigation device improvements, management approaches, and turf replacement. The Program will encourage the removal of non-functional turf replaced with a California Friendly landscape; the upgrade of antiquated irrigation timers to WaterSense labeled weather-based irrigation controllers and soil moisture sensors; and the conversion of high-volume conventional spray irrigation heads to low-precipitation-rate irrigation equipment such as rotating nozzles and drip irrigation. These Best Management Practices (BMP) will result in water savings, a reduction of dry-weather runoff, pollution prevention, and reduced maintenance costs. The Program will also provide broader regional benefits including, energy savings, building on existing landscape water use efficiency programs being implemented in Orange County, and providing support for implementation of the Landscape BMP (formerly BMP No. 5).

The City of Brea strongly encourages the United States Bureau of Reclamation to award the requested funding to this Program as it will provide local and regional benefits, can be a model to replicate similar programs throughout California and the nation, and is encouraging the comprehensive approach for landscape water use efficiency.

Sincerely,

Brian M. Ingallinera
Environmental Services Coordinator

City of BUENA PARK

January 22, 2015

Bureau of Reclamation
Financial Assistance Management Branch
Attn: Mr. Shaun Wilken
Mail Code: 84-27852
P.O. Box 25007
Denver, CO 80225

Subject: Support for Municipal Water District of Orange County's 2015 WaterSMART: Water and Energy Efficiency Grant Application

Dear Mr. Wilken:

The City of Buena Park supports the Municipal Water District of Orange County's (MWDOC) grant application for a Comprehensive Landscape Water Use Efficiency Program (Program). The objective of the Program is to emphasize MWDOC's suite of existing rebate programs to develop a holistic landscape conversion with irrigation device improvements, management approaches, and turf replacement. The Program will encourage the removal of non-functional turf replaced with a California Friendly landscape; the upgrade of antiquated irrigation timers to WaterSense labeled weather-based irrigation controllers and soil moisture sensors; and the conversion of high-volume conventional spray irrigation heads to low-precipitation-rate irrigation equipment such as rotating nozzles and drip irrigation. These Best Management Practices (BMP) will result in water savings, a reduction of dry-weather runoff, pollution prevention, and reduced maintenance costs. The Program will also provide broader regional benefits including, energy savings, building on existing landscape water use efficiency programs being implemented in Orange County, and providing support for implementation of the Landscape BMP (formerly BMP No. 5).

City of Buena Park strongly encourages the United States Bureau of Reclamation to award the requested funding to this Program as it will provide local and regional benefits, can be a model to replicate similar programs throughout California and the nation, and is encouraging the comprehensive approach for landscape water use efficiency.

Sincerely,

James A. Biery
Director of Public Works

EAST
ORANGE
COUNTY
WATER
DISTRICT

DIRECTORS

Richard E. Barrett
Richard B. Bell
Douglass S. Davert
John Dulebohn
William Vanderwerff

Lisa Ohlund
General Manager

January 20, 2015

Bureau of Reclamation
Financial Assistance Management Branch
Attn: Mr. Shaun Wilken
Mail Code: 84-27852
P.O. Box 25007
Denver, CO 80225

Subject: Support for Municipal Water District of Orange County's 2015 WaterSMART: Water and Energy Efficiency Grant Application

Dear Mr. Wilken:

The East Orange County Water District (EOCWD) supports the Municipal Water District of Orange County's (MWDOC) grant application for a Comprehensive Landscape Water Use Efficiency Program (Program). The objective of the Program is to emphasize MWDOC's suite of existing rebate programs to develop a holistic landscape conversion with irrigation device improvements, management approaches, and turf replacement. The Program will encourage the removal of non-functional turf replaced with a California Friendly landscape; the upgrade of antiquated irrigation timers to WaterSense labeled weather-based irrigation controllers and soil moisture sensors; and the conversion of high-volume conventional spray irrigation heads to low-precipitation-rate irrigation equipment such as rotating nozzles and drip irrigation. These Best Management Practices (BMP) will result in water savings, a reduction of dry-weather runoff, pollution prevention, and reduced maintenance costs. The Program will also provide broader regional benefits including, energy savings, building on existing landscape water use efficiency programs being implemented in Orange County, and providing support for implementation of the Landscape BMP (formerly BMP No. 5).

EOCWD strongly encourages the United States Bureau of Reclamation to award the requested funding to this Program as it will provide local and regional benefits, can be a model to replicate similar programs throughout California and the nation, and is encouraging the comprehensive approach for landscape water use efficiency.

Sincerely,

Lisa Ohlund
General Manager

185 N. McPherson Road
Orange, CA 92869-3720

www.eocwd.com

Phone 714.538.5815
Fax 714.538.0334

City of
FOUNTAIN VALLEY
PUBLIC WORKS DEPARTMENT – UTILITIES DIVISION

January 19, 2015

Bureau of Reclamation
Financial Assistance Management Branch
Attn: Mr. Shaun Wilken
Mail Code: 84-27852
P.O. Box 25007
Denver, CO 80225

Subject: **Support for Municipal Water District of Orange County's 2015 WaterSMART: Water and Energy Efficiency Grant Application**

Dear Mr. Wilken:

The City of Fountain Valley supports the Municipal Water District of Orange County's (MWDOC) grant application for a Comprehensive Landscape Water Use Efficiency Program (Program). The objective of the Program is to emphasize MWDOC's suite of existing rebate programs to develop a holistic landscape conversion with irrigation device improvements, management approaches, and turf replacement. The Program will encourage the removal of non-functional turf replaced with a California Friendly landscape; the upgrade of antiquated irrigation timers to WaterSense labeled weather-based irrigation controllers and soil moisture sensors; and the conversion of high-volume conventional spray irrigation heads to low-precipitation-rate irrigation equipment such as rotating nozzles and drip irrigation. These Best Management Practices (BMP) will result in water savings, a reduction of dry-weather runoff, pollution prevention, and reduced maintenance costs. The Program will also provide broader regional benefits including, energy savings, building on existing landscape water use efficiency programs being implemented in Orange County, and providing support for implementation of the Landscape BMP (formerly BMP No. 5).

Fountain Valley strongly encourages the United States Bureau of Reclamation to award the requested funding to this Program as it will provide local and regional benefits, can be a model to replicate similar programs throughout California and the nation, and is encouraging the comprehensive approach for landscape water use efficiency.

Sincerely,

Mark Sprague
Utilities Manager

Golden State
Water Company
A Subsidiary of American States Water Company

January 20, 2015

Bureau of Reclamation
Financial Assistance Management Branch
Attn: Mr. Shaun Wilken
Mail Code: 84-27852
P.O. Box 25007
Denver, CO 80225

Subject: Support for Municipal Water District of Orange County's 2015 WaterSMART: Water and Energy Efficiency Grant Application

Dear Mr. Wilken:

The Golden State Water Company supports the Municipal Water District of Orange County's (MWDOC) grant application for a Comprehensive Landscape Water Use Efficiency Program (Program). The objective of the Program is to emphasize MWDOC's suite of existing rebate programs to develop a holistic landscape conversion with irrigation device improvements, management approaches, and turf replacement. The Program will encourage the removal of non-functional turf replaced with a California Friendly landscape; the upgrade of antiquated irrigation timers to WaterSense labeled weather-based irrigation controllers and soil moisture sensors; and the conversion of high-volume conventional spray irrigation heads to low-precipitation-rate irrigation equipment such as rotating nozzles and drip irrigation. These Best Management Practices (BMP) will result in water savings, a reduction of dry-weather runoff, pollution prevention, and reduced maintenance costs. The Program will also provide broader regional benefits including, energy savings, building on existing landscape water use efficiency programs being implemented in Orange County, and providing support for implementation of the Landscape BMP (formerly BMP No. 5).

Golden State Water Company strongly encourages the United States Bureau of Reclamation to award the requested funding to this Program as it will provide local and regional benefits, can be a model to replicate similar programs throughout California and the nation, and is encouraging the comprehensive approach for landscape water use efficiency.

Sincerely,

Edwin deLeon

Edwin deLeon
Water Use Efficiency Manager
Golden State Water Company

1920 West Corporate Way, Anaheim, CA 92801
Tel: (714) 535-7711 Fax: (714) 535-8616

City of Huntington Beach

2000 Main Street ♦ PO Box 190 ♦ CA 92648

Travis K. Hopkins, PE
Director

Department of Public Works
(714) 536-5431

January 20, 2015

Bureau of Reclamation
Financial Assistance Management Branch
Attn: Mr. Shaun Wilken
Mail Code: 84-27852
P.O. Box 25007
Denver, CO 80225

Subject: Support for Municipal Water District of Orange County's 2015 WaterSMART: Water and Energy Efficiency Grant Application

Dear Mr. Wilken:

The City of Huntington Beach supports the Municipal Water District of Orange County's (MWDOC) grant application for a Comprehensive Landscape Water Use Efficiency Program (Program). The objective of the Program is to emphasize MWDOC's suite of existing rebate programs to develop a holistic landscape conversion with irrigation device improvements, management approaches, and turf replacement. The Program will encourage the removal of turf replaced with a California Friendly landscape; the upgrade of antiquated irrigation timers to WaterSense labeled weather-based irrigation controllers and soil moisture sensors; and the conversion of high-volume conventional spray irrigation heads to low-precipitation-rate irrigation equipment such as rotating nozzles and drip irrigation. These Best Management Practices (BMP) will result in water savings, a reduction of dry-weather runoff, pollution prevention, and reduced maintenance costs. The Program will also provide broader regional benefits including, energy savings, building on existing landscape water use efficiency programs being implemented in Orange County, and providing support for implementation of the Landscape BMP (formerly BMP No. 5).

The City of Huntington Beach strongly encourages the United States Bureau of Reclamation to award the requested funding to this Program as it will provide local and regional benefits, can be a model to replicate similar programs throughout California and the nation, and is encouraging the comprehensive approach for landscape water use efficiency.

Sincerely,

Brian A. Ragland

Brian A. Ragland, P.E.
Utilities Manager
City of Huntington Beach

City of La Habra

"A Caring Community"

PUBLIC WORKS

621 W. Lambert Road
La Habra, CA 90631
Office: (562) 383-4170
Fax: (562) 383-4497

January 19, 2015

Bureau of Reclamation
Financial Assistance Management Branch
Attn: Mr. Shaun Wilken
Mail Code: 84-27852
P.O. Box 25007
Denver, CO 80225

Subject: Support for Municipal Water District of Orange County's 2015 WaterSMART: Water and Energy Efficiency Grant Application

Dear Mr. Wilken:

The City of La Habra supports the Municipal Water District of Orange County's (MWDOC) grant application for a Comprehensive Landscape Water Use Efficiency Program (Program). The objective of the Program is to emphasize MWDOC's suite of existing rebate programs to develop a holistic landscape conversion with irrigation device improvements, management approaches, and turf replacement. The Program will encourage the removal of non-functional turf replaced with a California Friendly landscape; the upgrade of antiquated irrigation timers to WaterSense labeled weather-based irrigation controllers and soil moisture sensors; and the conversion of high-volume conventional spray irrigation heads to low-precipitation-rate irrigation equipment such as rotating nozzles and drip irrigation. These Best Management Practices (BMP) will result in water savings, a reduction of dry-weather runoff, pollution prevention, and reduced maintenance costs. The Program will also provide broader regional benefits including, energy savings, building on existing landscape water use efficiency programs being implemented in Orange County, and providing support for implementation of the Landscape BMP (formerly BMP No. 5).

City of La Habra strongly encourages the United States Bureau of Reclamation to award the requested funding to this Program as it will provide local and regional benefits, can be a model to replicate similar programs throughout California and the nation, and is encouraging the comprehensive approach for landscape water use efficiency.

Sincerely,

Elias Saykali
Director of Public Works

MesaWater
DISTRICT®

Dedicated to
Satisfying our Community's
Water Needs

1965 Placentia Avenue
Costa Mesa, CA 92627
tel 949.631.1200
fax 949.574.1036
info@MesaWater.org
MesaWater.org

January 20, 2015

Bureau of Reclamation
Financial Assistance Management Branch
Attn: Mr. Shaun Wilken
Mail Code: 84-27852
P.O. Box 25007
Denver, CO 80225

Subject: Support for Municipal Water District of Orange County's 2015 WaterSMART: Water and Energy Efficiency Grant Application

Dear Mr. Wilken:

Mesa Water District supports the Municipal Water District of Orange County's (MWDOC) grant application for a Comprehensive Landscape Water Use Efficiency Program (Program).

The objective of the Program is to emphasize MWDOC's suite of existing rebate programs to develop a holistic landscape conversion with irrigation device improvements, management approaches, and turfgrass replacement. The Program will encourage the removal of non-functional turfgrass to be replaced with a California Friendly landscape; the upgrade of antiquated irrigation timers to WaterSense labeled weather-based irrigation controllers and soil moisture sensors; and the conversion of high-volume conventional spray irrigation heads to low-precipitation-rate irrigation equipment such as rotating nozzles and drip irrigation.

These Best Management Practices (BMP) will result in water savings, a reduction of dry-weather runoff, pollution prevention, and reduced maintenance costs. The Program will also provide broader regional benefits including, energy savings, building on existing landscape water use efficiency programs being implemented in Orange County, and providing support for implementation of the California Urban Water Conservation Council's Landscape BMP.

Mesa Water District strongly encourages the United States Bureau of Reclamation to award the requested funding to this Program as it will provide local and regional benefits, can be a model to replicate similar programs throughout California and the nation, and is encouraging the comprehensive approach for landscape water use efficiency.

Sincerely,

Justin Finch

Justin B. Finch, MPP
Resource Efficiency Specialist

Moulton Niguel Water
Leading the Way in Service

January 21, 2015

Bureau of Reclamation
Financial Assistance Management Branch
Attn: Mr. Shaun Wilken
Mail Code: 84-27852
P.O. Box 25007
Denver, CO 80225

Subject: Support for Municipal Water District of Orange County's 2015 WaterSMART: Water and Energy Efficiency Grant Application

Dear Mr. Wilken:

The Moulton Niguel Water District supports the Municipal Water District of Orange County's (MWDOC) grant application for a Comprehensive Landscape Water Use Efficiency Program (Program). The objective of the Program is to emphasize MWDOC's suite of existing rebate programs to develop a holistic landscape conversion with irrigation device improvements, management approaches, and turf replacement. The Program will encourage the removal of non-functional turf replaced with a California Friendly landscape; the upgrade of antiquated irrigation timers to WaterSense labeled weather-based irrigation controllers and soil moisture sensors; and the conversion of high-volume conventional spray irrigation heads to low-precipitation-rate irrigation equipment such as rotating nozzles and drip irrigation. These Best Management Practices (BMP) will result in water savings, a reduction of dry-weather runoff, pollution prevention, and reduced maintenance costs. The Program will also provide broader regional benefits including, energy savings, building on existing landscape water use efficiency programs being implemented in Orange County, and providing support for implementation of the Landscape BMP (formerly BMP No. 5).

Moulton Niguel Water District strongly encourages the United States Bureau of Reclamation to award the requested funding to this Program as it will provide local and regional benefits, can be a model to replicate similar programs throughout California and the nation, and is encouraging the comprehensive approach for landscape water use efficiency.

Sincerely,

Gregg Hooper
Water Conservation Supervisor

CITY OF NEWPORT BEACH

PUBLIC WORKS DEPARTMENT
David A. Webb, Public Works Director

January 20, 2015

Bureau of Reclamation
Financial Assistance Management Branch
Attn: Mr. Shaun Wilken
Mail Code: 84-27852
P.O. Box 25007
Denver, CO 80225

Subject: Support for Municipal Water District of Orange County's 2015 WaterSMART: Water and Energy Efficiency Grant Application

Dear Mr. Wilken:

The City of Newport Beach supports the Municipal Water District of Orange County's (MWDOC) grant application for a Comprehensive Landscape Water Use Efficiency Program (Program). The objective of the Program is to emphasize MWDOC's suite of existing rebate programs to develop a holistic landscape conversion with irrigation device improvements, management approaches, and turf replacement. The Program will encourage the removal of non-functional turf replaced with a California Friendly landscape; the upgrade of antiquated irrigation timers to WaterSense labeled weather-based irrigation controllers and soil moisture sensors; and the conversion of high-volume conventional spray irrigation heads to low-precipitation-rate irrigation equipment such as rotating nozzles and drip irrigation. These Best Management Practices (BMP) will result in water savings, a reduction of dry-weather runoff, pollution prevention, and reduced maintenance costs. The Program will also provide broader regional benefits including, energy savings, building on existing landscape water use efficiency programs being implemented in Orange County, and providing support for implementation of the Landscape BMP (formerly BMP No. 5).

The City of Newport Beach strongly encourages the United States Bureau of Reclamation to award the requested funding to this Program as it will provide local and regional benefits, can be a model to replicate similar programs throughout California and the nation, and is encouraging the comprehensive approach for landscape water use efficiency.

Sincerely,

Shane Burckle
Watershed/Conservation Specialist
City of Newport Beach

100 Civic Center Drive • Post Office Box 1768 • Newport Beach, California 92660 (P.O. Box 92658-8915)
Telephone: (949) 644-3330 • Fax: (949) 644-3308 • www.newportbeachca.gov

CITY OF SANTA ANA
220 S. Daisy Ave., M-85 • P.O. Box 1988
Santa Ana, California 92703
www.santa-ana.org

January 20, 2015

Bureau of Reclamation
Financial Assistance Management Branch
Attn: Mr. Shaun Wilken
Mail Code: 84-27852
P.O. Box 25007
Denver, CO 80225

Subject: Support for Municipal Water District of Orange County's 2015 WaterSMART: Water and Energy Efficiency Grant Application

Dear Mr. Wilken:

The City of Santa Ana supports the Municipal Water District of Orange County's (MWDOC) grant application for a Comprehensive Landscape Water Use Efficiency Program (Program). The objective of the Program is to emphasize MWDOC's suite of existing rebate programs to develop a holistic landscape conversion with irrigation device improvements, management approaches, and turf replacement. The Program will encourage the removal of non-functional turf replaced with a California Friendly landscape; the upgrade of antiquated irrigation timers to WaterSense labeled weather-based irrigation controllers and soil moisture sensors; and the conversion of high-volume conventional spray irrigation heads to low-precipitation-rate irrigation equipment such as rotating nozzles and drip irrigation. These Best Management Practices (BMP) will result in water savings, a reduction of dry-weather runoff, pollution prevention, and reduced maintenance costs. The Program will also provide broader regional benefits including, energy savings, building on existing landscape water use efficiency programs being implemented in Orange County, and providing support for implementation of the Landscape BMP (formerly BMP No. 5).

The City of Santa Ana strongly encourages the United States Bureau of Reclamation to award the requested funding to this Program as it will provide local and regional benefits, can be a model to replicate similar programs throughout California and the nation, and is encouraging the comprehensive approach for landscape water use efficiency.

Sincerely,

Nabil Saba, P.E.
Water Resources Manager

Santa Margarita Water District

January 22, 2015

Bureau of Reclamation
Financial Assistance Management Branch
Attn: Mr. Shaun Wilken
Mail Code: 84-27852
P.O. Box 25007
Denver, CO 80225

Subject: Support for Municipal Water District of Orange County's 2015 WaterSMART: Water and Energy Efficiency Grant Application

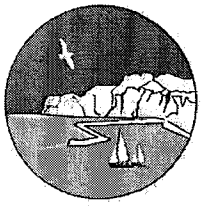
Dear Mr. Wilken:

The Santa Margarita Water District endorses the Municipal Water District of Orange County's (MWDOC) grant application for a Comprehensive Landscape Water Use Efficiency Program (Program). The Program, as proposed, will develop a holistic landscape conversion with irrigation device improvements, management approaches, and turf replacement. For both the District and region, increasing outdoor water use efficiency is foundational to increasing local water supply reliability in addition to meeting existing and future regulatory per capita water use targets. This Program will result in water savings, a reduction of dry-weather runoff, pollution prevention, and reduced maintenance costs. The Program will also provide broader regional benefits including, energy savings, and leverage existing landscape water use efficiency programs being implemented in Orange County.

The Santa Margarita Water District strongly encourages the United States Bureau of Reclamation to award the requested funding to this Program as it will provide local and regional benefits, can be a model to replicate similar programs throughout California and the nation, and is encouraging the comprehensive approach for landscape water use efficiency.

Sincerely,

Nathan Adams
Water Efficiency Administrator

SOUTH COAST  **WATER DISTRICT**

January 19, 2015

Bureau of Reclamation
Financial Assistance Management Branch
Attn: Mr. Shaun Wilken
Mail Code: 84-27852
P.O. Box 25007
Denver, CO 80225

Subject: Support for Municipal Water District of Orange County's 2015 WaterSMART: Water and Energy Efficiency Grant Application

Dear Mr. Wilken:

The South Coast Water District supports the Municipal Water District of Orange County's (MWDOC) grant application for a Comprehensive Landscape Water Use Efficiency Program (Program). The objective of the Program is to emphasize MWDOC's suite of existing rebate programs to develop a holistic landscape conversion with irrigation device improvements, management approaches, and turf replacement. The Program will encourage the removal of non-functional turf replaced with a California Friendly landscape; the upgrade of antiquated irrigation timers to WaterSense labeled weather-based irrigation controllers and soil moisture sensors; and the conversion of high-volume conventional spray irrigation heads to low-precipitation-rate irrigation equipment such as rotating nozzles and drip irrigation. These Best Management Practices (BMP) will result in water savings, a reduction of dry-weather runoff, pollution prevention, and reduced maintenance costs. The Program will also provide broader regional benefits including, energy savings, building on existing landscape water use efficiency programs being implemented in Orange County, and providing support for implementation of the Landscape BMP (formerly BMP No. 5).

South Coast Water District strongly encourages the United States Bureau of Reclamation to award the requested funding to this Program as it will provide local and regional benefits, can be a model to replicate similar programs throughout California and the nation, and is encouraging the comprehensive approach for landscape water use efficiency.

Sincerely,

Andrew Brunhart
General Manager

Mailing Address: *P.O. Box 30205, Laguna Niguel, CA 92607-0205*
Street Address: *31592 West Street, Laguna Beach, CA 92651*
Fax: *(949) 499-4256* ***Phone:*** *(949) 499-4555*

Yorba Linda Water District

January 19, 2015

Bureau of Reclamation
Financial Assistance Management Branch
Attn: Mr. Shaun Wilken
Mail Code: 84-27852
P.O. Box 25007
Denver, CO 80225

Subject: Support for Municipal Water District of Orange County's 2015 WaterSMART: Water and Energy Efficiency Grant Application

Dear Mr. Wilken:

The Yorba Linda Water District (YLWD) supports the Municipal Water District of Orange County's (MWDOC) grant application for a Comprehensive Landscape Water Use Efficiency Program (Program). The objective of the Program is to emphasize MWDOC's suite of existing rebate programs to develop a holistic landscape conversion with irrigation device improvements, management approaches, and turf replacement. The Program will encourage the removal of non-functional turf replaced with a California Friendly landscape; the upgrade of antiquated irrigation timers to WaterSense labeled weather-based irrigation controllers and soil moisture sensors; and the conversion of high-volume conventional spray irrigation heads to low-precipitation-rate irrigation equipment such as rotating nozzles and drip irrigation. These Best Management Practices (BMP) will result in water savings, a reduction of dry-weather runoff, pollution prevention, and reduced maintenance costs. The Program will also provide broader regional benefits including, energy savings, building on existing landscape water use efficiency programs being implemented in Orange County, and providing support for implementation of the Landscape BMP (formerly BMP No. 5).

YLWD strongly encourages the United States Bureau of Reclamation to award the requested funding to this Program as it will provide local and regional benefits, can be a model to replicate similar programs throughout California and the nation, and is encouraging the comprehensive approach for landscape water use efficiency.

Sincerely,

Marc Marcantonio
General Manager

MUNICIPAL WATER DISTRICT OF ORANGE COUNTY

Street Address:
18700 Ward Street
Fountain Valley, California 92708

Mailing Address:
P.O. Box 20895
Fountain Valley, CA 92728-0895

(714) 963-3058
Fax: (714) 964-9389
www.mwdoc.com

January 23, 2015

Bureau of Reclamation
Financial Assistance Management Branch
Attn: Mr. Shaun Wilken
Mail Code: 84-27852
P.O. Box 25007
Denver, CO 80225

Dear Mr. Shaun Wilken:

Per the Bureau of Reclamation 2015 WaterSMART: Water and Energy Efficiency Grant Application, the Municipal Water District of Orange County (MWDOC) is submitting a fiscal year 2015 grant proposal. The purpose of this letter is to provide the Bureau of Reclamation additional information regarding the budget:

1. Explanation of methodology in selecting these contractors along with an explanation of how contractor rates are deemed reasonable.
2. Quotes for all Materials & Supplies.
3. Quotes for all proposed Contractual costs.

Selections of Contactors/Consultants

According to the MWDOC Administrative Code (§8002), authorization procedures for purchases, contracts, and consulting of professional services up to $3,000 require the preparation of two written quotes on purchases with the selection based on qualifications for professional services, authorized by the Program Manager and Finance Manger. Service costs ranging from $3,001 to $25,000, require a competitive bidding process on purchases and competitive proposals on professional services contracts. Service costs in excess of $25,000 requires a request for competitive proposals or bidding as appropriate or justification of a sole source contract, authorized by the General Manager, and approved by the MWDOC Board.

The following criteria shall be used to qualify candidates for professional services.

- Specialized experience and technical competence of the consultant and its personnel considering the type of services required and the complexity of the project.
- The consultant's familiarity with types of problems applicable to the project.
- Past record of performance on projects with MWDOC, other governmental agencies or public bodies and with private industry, including such factors as control of costs, quality of work and ability to meet schedules.
- The consultant's capacity to perform the work within the time limitations and with proposed staff, considering the firm's current and planned workload.
- The consultant's level of financial responsibility.
- The consultant's documentation of no personal or organizational conflicts of interest prohibited under State or local law.

- Types of guarantees or warranties offered by the consultant.
- Estimate of the range of proposed services and costs.

Developing Requests for Proposals include the following procedures: Staff will prepare a description of the proposed project, its purpose, location, and other pertinent facts and shall request interested consultants to submit proposals; consultants may be requested to submit a statement of qualifications for certain activities. The proposals shall contain detailed information, including, but not limited to, the firm's ability to perform the job within the designated timeframe, the firm's design team, the firm's proposed use of sub-contractors, the firm's proposed scope of work, level of effort and estimated cost range, and contract documents.

Every attempt will be made to obtain the best quality materials, equipment supplies and services in the optimum time frame for the minimum price. Quality of performance, as well as lowest cost, will be considered in the process.

Quoted Rates

The consultant service rates provided within the submitted proposal have present existing rates under contract or previous rates based on requests for proposals. Please find attachments here as justification for the realization of these current rates. Additionally, the competitive proposal process for professional services not under contract will be employed if awarded this grant.

In June 2011, MWDOC developed, distributed, and received back a request for pricing from over 25 graphic artists/printers. This was done to acquire pricing information for the many promotional items MWDOC produces throughout the year. A short list of four printers was selected and approved by the MWDOC Board of Directors based on pricing, material developed, and the ability to meet MWDOC's other related requests. Currently, the established pricing for bill inserts is at $0.025 each. The attached invoices show the realizations of this average rate (Attachment A).

MWDOC currently uses Survey Gizmo for online applications as part of the database enhancement. One of the benefits of this tool is the ability for the participant to upload files as part of the application process. This instrument has an annual government rate of $675 per year. An invoice is attached (Attachment B).

MWDOC currently has Mission Resource Conservation District (Mission) under contract for the next three (3) years to provide landscape audit/device installation services for a variety of irrigation system devices. Mission, as a Non-Profit Special District, and an arm of the Natural Resource Conservation Service, is uniquely qualified to perform irrigation audits and device installation verifications. They have many years experience in both the urban and agricultural setting and provide MWDOC with highly competitive rates. Mission's cost range from $89 to $210 per inspection to perform installation verification (Attachment C).

Should you need additional information please contact me at (714) 593-5008 or jberg@mwdoc.com.

Sincerely,

Joseph M. Berg

Joseph M. Berg
Water Use Efficiency Programs Manager
Municipal Water District of Orange County

Attachment A
Marketing Rates

INVOICE

bryten
3345 E Miraloma Avenue, #134
Anaheim, California 92806
714-993-4800 • Fax 714-993-4807

No. 9927

Date 7/31/13

Customer P.O. No.

Jessica Ouwerkerk
Municipal Water District of Orange County
PO Box 20895
Fountian Valley CA 92728
Phone: 714-593-5029

QUANTITY	DESCRIPTION	AMOUNT
6,000	1.3m (1-up) East Orange + 4.5m (1-up) La Palma + 5.2m (1-up) Seal Beach + 5.8m (1-up) MWDOC + 9m (2-up) Laguna Beach + 6m (1-up) Brea, 3.5 x 8.5 White Endurance Dull Book 80lbs., 7 sheets, printed 14 up 4 colors front in cmyk ink, 4 colors back in cmyk ink 1 18x24 Hard Copy Proof 4 Plates - Direct to Plate 18 Final Cutting - Book	932.60
7,000	6m (1-up) Brea + 12.2m (2-up) San Juan Capistrano + 12.5m (2-up) South Coast + 14m (2-up) Tustin, 3.5 x 8.5 White Endurance Dull Book 80lbs., 7 sheets, printed 14 up 4 colors front in cmyk ink, 4 colors back in cmyk ink 1 18x24 Hard Copy Proof 4 Plates - Direct to Plate 18 Final Cutting - Book	1,017.28
23,000	20(m) (1-up) Buena Park + 22m (1-up) Costa?) Mesa + 23m (1-up) Newport Beach + 35.5(m) (2-up) Orange + 53m (2-up) Huntington Beach, 3.5 x 8.5 White Endurance Dull Book 80lbs., 7 sheets, printed 14 up 4 colors front in cmyk ink, 4 colors back in cmyk ink 1 18x24 Hard Copy Proof 4 Plates - Direct to Plate 18 Final Cutting - Book m = 1,000	2,222.86

	SUB	4,172.74
	TAX	333.82
UPS Shipping: $134.99 Delivery to InfoSend: $65.00 Boxing and Handling: $174.00	SHIPPING	373.99
	TOTAL	4,880.55

Attachment B
Survey Gizmo Invoice

surveygizmo | Online Surveys Data Collection and Integration

Mail to or call with credit card:
4888 Pearl East Circle, Ste 300 West
Boulder CO 80301
Call: 800.609.6480
billing@sgizmo.com

Invoice #: 415354
Purchase Order #:
Customer #: 255115

Issued: 11/17/13
Due on: 12/17/13
Status: Quote

12/3/13

Billing Address	edit	Primary Address	
Organization:	Municipal Water District of Orange County	**Organization:**	Melissa Baum-Haley
Name:		**Name:**	Melissa Baum-Haley
Street:	18700 Ward Street	**Street:**	
City:	Fountain Valley	**City:**	
State/Province:	CA	**State/Province:**	
Postal Code:	92708	**Postal Code:**	
Country:	USA	**Country:**	

Items

Qty	Description	Rate	Amount
1	**Subscription:**SurveyGizmo Subscription (12 Months)	900.00	900.00
1	**Subscription:**Nonprofit Discount Applied	-225.00	-225.00
		Total	USD 675.00

Payments/Refunds

Date	Method	Notes	Amount
No payments have been received for this invoice.			

Notes & Comments

Your new subscription will activate when payment is received. Thanks for choosing SurveyGizmo!

Remit to address above. Questions? Call 800.609.6480 or email billing@sgizmo.com.
International Customers: Please note that all payments must be received in USD. If payment is received in a foreign currency (not USD), we will not be able to process it and your account will not be activated.
SurveyGizmo cannot accept terms and conditions other than our services agreement with you (meaning you, your users, and account(s)). By paying this invoice, you accept that our subscription agreement with you shall control all our services with you, and that you agree to waive any purchase order terms and conditions.

Attachment C

Inspection Services rates from Mission Resource Conservation District.

RECEIVED

JAN 08 2015

MWD OF OC

Mission RCD

P.O. Box 1777
Fallbrook, CA 92088-1777
760.728.1332 fax 760.723.5316

Invoice No. 1736

INVOICE

Customer

Name: Municipal Water District of Orange County
Address: P.O. Box 20895
City: Fountain Valley State: CA ZIP: 92728
Phone:

Date: 1/6/2015
Order No.:
Rep:
FOB:

Hours	Description	Unit Price	TOTAL
	From 12/1 - 12/31/14		
	COMMERCIAL		
0.00	Lance Andersen	$37.84	$0.00
12.50	Gabe Payan	$37.84	$473.00
2.00	Dan Denning	$37.84	$75.68
3.00	Erich Portigal	$37.84	$113.52
27.00	Dustin Farrelly	$37.84	$1,021.68
90.00	Patty and Mary - appointment and data entry	$28.00	$2,772.00
	RESIDENTIAL		
Timers			
10.00	Verifications B	$89.00	$890.00
6.00	Double work orders	$133.50	$801.00
24.00	WaterSmart Home A	$178.00	$4,272.00
160.00	Residential Turf Removal	$89.00	$14,240.00
4.00	WaterSmart Home B	$133.50	$534.00
6.00	No Show	$57.00	$342.00
	MATERIALS		
Miles			
1024.00	Mileage for HOA's	$0.550	$563.20
		SubTotal	$26,098.08
			$0.00

Payment Details

- ○ Cash
- ○ Check

Turf Removal

Agency											
Orange	$2,843.66	7040	5235	34	1225	614	3418	0	114	4	$26,098.08
BP	$630.00	7040	5235	34	1225	614	3418	0	103	4	
West	$0.00	7040	5235	34	1225	614	3418	0	105	4	
SC	$3,150.00	7040	5235	34	1225	614	3418	0	325	4	
SJC	$2,536.44	7040	5235	34	1225	614	3418	0	321	4	
La Habra	$528.18	7040	5235	34	1225	614	3418	0	109	4	
Laguna Bch	$315.00	7040	5235	34	1225	614	3418	0	323	4	
GSWC	$5,145.00	7040	5235	34	1225	614	3418	0	117	4	
GG	$2,100.00	7040	5235	34	1225	614	3418	0	106	4	
Tustin	$0.00	7040	5235	34	1225	614	3418	0	138	4	
TTI	$17,248.28										

MET LL Surplus	7040	5025	34	1225	614	3417	434	4	$340.00
Home Cert 8110 USBR surveys	7040	8110	34	1225	614	3422	434	4	$4,433.50
Home Cert 5065 MET ST/RN	7040	5065	34	1225	614	3422	434	4	$372.50
ST/RN Res North Home Cert 8110	7040	8110	34	1225	614	3401	100	4	$1,068.00
ST/RN Res South CLUWE 9109	7040	9109	34	1225	614	3401	300	4	$623.00
ST/RN North CII USBR 8114	7040	8114	34	1225	614	3401	100	4	$1,488.63
ST/RN South CII DWR CLUWE	7040	9109	34	1225	614	3401	300	4	$524.17
ST/RN North CII DWR OWOW 9108	7040	9108	34	1225	614	3401	100	4	$0.00
									$8,849.80
								+	$17,248.28
									$26,098.08
							Invoice total		$26,098.08

RESOLUTION NO. 2003
RESOLUTION OF THE BOARD OF DIRECTORS OF MUNICIPAL WATER DISTRICT OF ORANGE COUNTY SUPPORTING A BUREAU OF RECLAMATION 2015 WATER SMART: WATER AND ENERGY EFFICIENCY GRANT APPLICATION

WHEREAS, the Municipal Water District of Orange County submitted an application to the Bureau of Reclamation for funding for an Water Smart Landscape Program: Comprehensive Landscape Water Use Efficiency Program to improve urban landscape water use efficiency in the Municipal Water District of Orange County service area,

WHEREAS, the Municipal Water District of Orange County is committed to developing and implementing a comprehensive water use efficiency program designed to meet our local water supply reliability goals, comply with the Best Management Practices for urban water conservation in California, and exceed the Governor's call for a 20% reduction in urban per capita water use by 2020,

NOW, THEREFORE, BE IT RESOLVED, that the Municipal Water District of Orange County Board of Directors designates Robert J. Hunter, General Manager, as the official who has reviewed and supports the application submittal and the legal authority to enter into an agreement on behalf of the District, and designates Joseph M. Berg, Water Use Efficiency Programs Manager, as the District's representative to sign the progress reports and approve reimbursement claims.

NOW, THEREFORE, BE IT FURTHER RESOLVED, that the Municipal Water District of Orange County Board of Directors assures its capability to provide the amount of funding and in-kind contributions specified in the funding plan.

NOW, THEREFORE, BE IT FURTHER RESOLVED, that the Municipal Water District of Orange County will work with Reclamation to meet established deadlines for entering into a cooperative agreement.

Said Resolution was adopted on January 21, 2015, by the following roll call vote:

AYES: Directors Barbre, Dick, Hinman, Osborne, Tamaribuchi & Thomas
NOES: None
ABSENT: Director Finnegan
ABSTAIN: None

I HEREBY CERTIFY the foregoing is a full, true, and correct copy of Resolution No. 2003 adopted by the Board of Directors of Municipal Water District of Orange County at its meeting held on January 21, 2015.

Maribeth Goldsby, Secretary
Municipal Water District of Orange County

Municipal Water District of Orange County

Salary and Fringe Benefit Rates

Weekly Staffing for CLWUE Program
RFP - R15AS00002

Name	Weekly Hours	1st year program (52 weeks) Weekly Amount	Hourly Rate S & B		52	Salary + Benefits
Program Administrator (Joe Berg)						
Salary	1.25	$ 81.35	$65.08		$	4,230.20
Benefits		$ 28.09	$22.47	Hrs	$	1,460.55
Total Salary & Benefits	1.25	$ 109.44	$87.55	65	$	5,690.75
Program Manager (Steve Hedges)						
Salary	3.00	$ 149.82	$49.94		$	7,790.64
Benefits		$ 41.37	$13.79		$	2,151.24
Total Salary & Benefits	3.00	$ 191.19	$63.73	156	$	9,941.88
Marketing (Jessica Ouwerkerk)						
Salary	1.00	$ 39.58	$39.58		$	2,058.16
Benefits		$ 12.08	$12.08		$	628.16
Total Salary & Benefits	1.00	$ 51.66	$51.66	52	$	2,686.32
Technical Support/Evaluation (Melissa Baum-Haley)						
Salary	5.38	$ 224.75	$41.74		$	11,687.20
Benefits		$ 63.75	$11.84		$	3,315.20
Total Salary & Benefits	5.38	$ 288.51	$53.58	280	$	15,002.40
Program Support (Beth Fahl)						
Salary	2.00	$ 61.90	$30.95		$	3,218.80
Benefits		$ 24.58	$12.29		$	1,278.16
Total Salary & Benefits	2.00	$ 86.48	$43.24	104	$	4,496.96
Program Staff (Sergio Ramirez)						
Salary	7.50	$ 213.30	$28.44		$	11,091.60
Benefits		$ 52.20	$6.96		$	2,714.40
Total Salary & Benefits	7.50	$ 265.50	$35.40	390	$	13,806.00
Totals						
Salary	20.13	$ 770.70	$38.28		$	40,076.60
Benefits		$ 222.07	$11.03		$	11,547.71
Total Salary & Benefits	**20.13**	$ 992.78	$49.31	1,047	$	51,624.31

Name	Weekly Hours	2nd year of program (52 weeks) Weekly Amount	Hourly Rate S & B			Salary + Benefits
Program Administrator (Joe Berg)						
Salary	1.00	$ 65.08	$65.08		$	3,384.16
Benefits		$ 22.47	$22.47	Hrs	$	1,168.44
Total Salary & Benefits	1.00	$ 87.55	$87.55	52	$	4,552.60
Program Manager (Steve Hedges)						
Salary	3.00	$ 149.82	$49.94		$	7,790.64
Benefits		$ 41.37	$13.79		$	2,151.24
Total Salary & Benefits	3.00	$ 191.19	$63.73	156	$	9,941.88
Marketing (Jessica Ouwerkerk)						
Salary	-	$ -	$39.58		$	-
Benefits		$ -	$12.08		$	-
Total Salary & Benefits	-	$ -	$51.66	0	$	-
Technical Support/Evaluation (Melissa Baum-Haley)						
Salary	8.81	$ 367.63	$41.74		$	19,116.92
Benefits		$ 104.28	$11.84		$	5,422.72
Total Salary & Benefits	8.81	$ 471.92	$53.58	458	$	24,539.64
Program Support (Beth Fahl)						
Salary	1.00	$ 30.95	$30.95		$	1,609.40
Benefits		$ 12.29	$12.29		$	639.08
Total Salary & Benefits	1.00	$ 43.24	$43.24	52	$	2,248.48
Program Staff (Sergio Ramirez)						
Salary	7.50	$ 213.30	$28.44		$	11,091.60
Benefits		$ 52.20	$6.96		$	2,714.40
Total Salary & Benefits	7.50	$ 265.50	$35.40	390	$	13,806.00
Totals						
Salary	21.31	$ 826.78	$38.80	(avg)	$	42,992.72
Benefits		$ 232.61	$10.92	(avg)	$	12,095.88
Total Salary & Benefits	**21.31**	$ 1,059.40	$49.72	1,108	$	55,088.60

Totals				
hours	2,155.00	24-month	Average Salary	$38.55
payroll $	106,712.91	24-month	Average Benefit	$10.97

I have reviewed this document and certify the salary and fringe benefit rates to be true.

Hilary Chumpitazi

Hilary Chumpitazi
Acounting Supervisor, Municipal Water District of Orange County

01/22/2015
Date