

Water Efficient Site Certification and Smart Irrigation Rebate Program

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January 2012

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Technical Proposal and Evaluation Criteria

Section 1: Executive Summary

General Project Information

Date: January 17, 2012

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

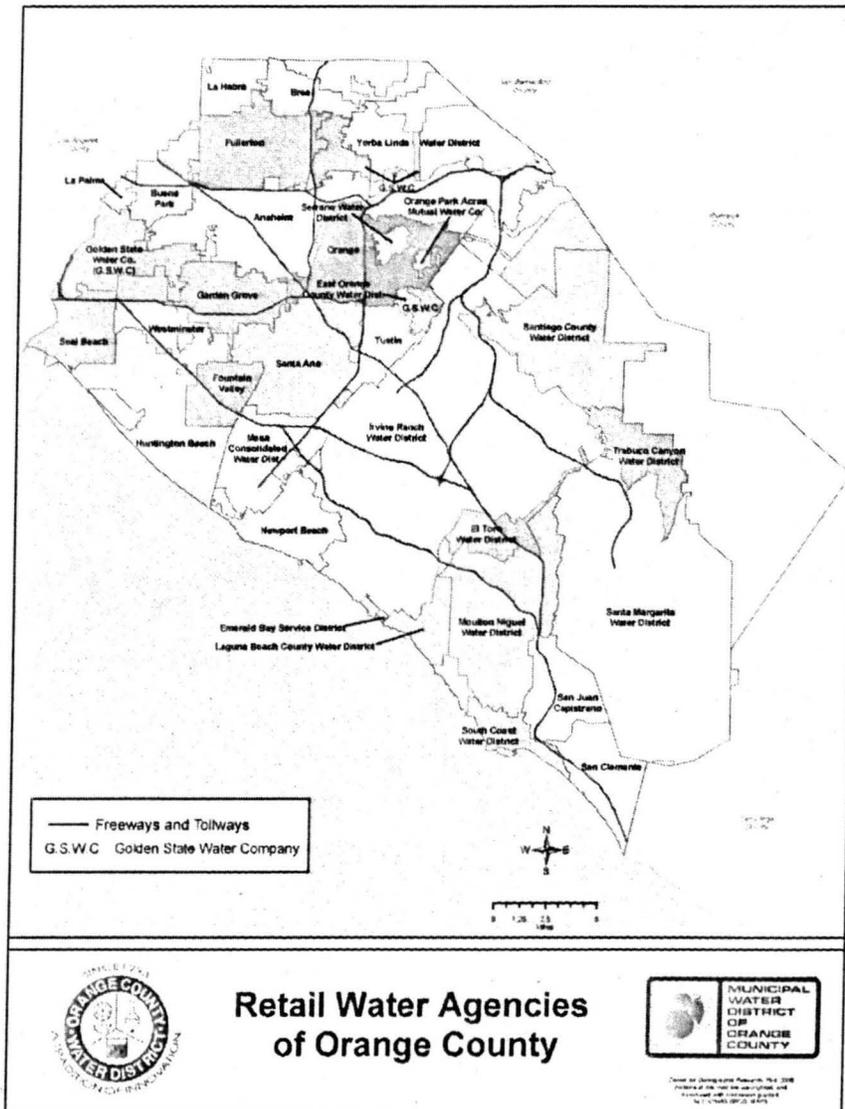
City, County, State: Fountain Valley, Orange County, California

The proposed Project is specified as Task Area A – Water Conservation: The Water Efficient Site Certification and Smart Irrigation Rebate Program (Project). Over the two-year term of the Project, MWDOC will use a rebate program format to facilitate the installation of 576 residential smart timers and 23,400 rotating nozzles with installation verification. Concurrently, MWDOC will use a Site Water Use Audit program format to perform 1,000 comprehensive residential audits. Prior to the performance of the Site Water Use Audit, MWDOC will provide training to auditors on audit standards and guidelines which focus on irrigation systems, landscapes, water use budgeting, appliances, and plumbing fixtures. The Project provides single-family sites with indoor and outdoor audits to identify the importance of installing water saving devices and other water saving area improvements, as part of the audit any applicable rebates for improvements will be recommended. Following verification of the recommended water saving improvements and after review of the audit documentation, sites meeting the minimum qualification scores will be certified as a Water Smart home, and will receive a public recognition plaque. Increasing the water efficiency through site audits and irrigation device upgrades will reduce water consumption, irrigation runoff, and non-point source pollution. Based on results of previous statistical evaluations, the projected water savings for this project will be 138 acre-feet per year with a lifetime water savings of 1,292 acre-feet. Task Area B – Energy-Water Nexus benefits. According to the California Energy Commission’s 2005 Integrated Energy Policy Report, energy savings associated with outdoor water conservation is 3,300 kWh/AF. As a result, approximately 1.85 million kWh per year of energy savings or 4.26 million kWh over the 10-year life of the Program will be realized. Lastly, the proposed Project will provide Task Area C – Addressing Endangered Species Concerns benefits by reducing dry-weather runoff containing non-point source pollution that enters local creeks and, ultimately, the Pacific Ocean. The length of time to complete the proposed Project is two years, with an expected start date of August 2012 and completion date of July 2014.

Section 2: Background data

A map showing the geographic location where the proposed Project will be implemented is provided as Figure 1. This map shows the geographic boundaries of all retail water agencies that will participate in the program. Orange County is located on the coast of southern California, between Los Angeles and San Diego Counties. The Pacific Ocean is immediately south-west, and San Bernardino and Riverside Counties are immediately north-east. MWDOC, as the county's wholesale water agency, will act as lead agency for Project implementation.

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



The annual water demand in Orange County in Fiscal Year 2010-11 was 555,000 acre feet: approximately 274,000 acre feet was supplied by groundwater; 241,000 acre-feet from imported water; 34,000 from recycled water; and 6,000 from surface water. Imported water comes from both the Colorado River and the State Water Project. Approximately one-half of the imported

supply comes from the State Water Project or California Bay-Delta. Approximately 99% of MWDOC's demand is for municipal and industrial purposes, and 1% is for agricultural purposes.

Demand in Orange County in 2020 is projected to be 692,000 acre feet. This includes 359,000 acre feet supplied by groundwater; 275,000 acre-feet from imported water; 52,000 from recycled water; and 6,000 from surface water.

Shortfalls in supply are two-fold. First, the region is experiencing multiple dry-years on the Colorado River, which is inhibiting our ability to access surplus water. Second, on the State Water Project from Northern California, we are experiencing both intermittent dry years and pumping restrictions due to endangered species. Even with above normal rainfall, access to imported water from the State Water Project is limited. Because of these ongoing reductions of imported water supply, water agencies have in some years been forced to draw from emergency storage to meet demand. In addition, agencies continue to enforce mandatory water use restrictions, including irrigation time of day and days of the week restrictions, washing of hard surfaces, zero runoff, etc.

Municipal and industrial water use in Orange County is comprised of single- and multi-family residential, commercial, industrial, and institutional users. According to the 2010 MWDOC rates survey¹, there are approximately 557,000 single family connections, 78,000 multi-family connections, and 72,000 irrigation, commercial, industrial, and institutional connections. There are also 8,000 recycled water connections, primarily for irrigation, and over 100 agriculture connections. These agriculture connections produce high value crops such as strawberries and avocados.

Collectively, retail water agency potable water systems in Orange County contain more than 7,300 miles of 8" or larger distribution pipes, 223 groundwater wells, 296 potable water tanks and reservoirs, and 265 booster pump stations. In addition, recycled water systems contain more than 589 miles of 8" or larger distribution pipes and 44 storage tanks.

MWDOC has had a long-standing and positive relationship with Reclamation. We have been awarded grants for a variety of water use efficiency, supply reliability, and water recycling projects, 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.

Section 3: Technical project description

The Municipal Water District of Orange County (MWDOC) proposes to implement a "Water Efficient Site Certification and Smart Irrigation Rebate Program" (Project) for residential sites in Orange County, California. Over the two-year term of the Project, MWDOC will use a rebate program format to facilitate the installation of 576 residential smart timers and 23,400 rotating

¹ MWDOC. (2011). "Orange County Water Entities: Water System Operations and Financial Information". Prepared by Municipal Water District of Orange County. Fountain Valley, CA.

nozzles with installation verification. Concurrently, MWDOC will use a Site Water-Use Audit program format to perform 1,000 comprehensive residential water use audits.

For the purpose of this Project, residential sites are existing single-family residences. While the focus of the audit aims at reducing both indoor and outdoor water use, with a primary concentration on outdoor water efficiency with rebates for multi trajectory nozzles and smart timers. Smart timers are irrigation controller devices that utilize either real time weather or soil moisture to regulate irrigation water use by automatically adjusting to site conditions. The weather-based irrigation controllers determines how much irrigation to apply based on weather conditions such as temperature and humidity, with weather data supplied as either signal-based (via subscription service) or sensor-based (via on-site weather station). 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. The use of multi-trajectory/multi-stream nozzles and smart timers will increase the uniformity, efficiency, and scheduling management of irrigation systems. Applying the correct amount of water, these devices will reduce water consumption, irrigation runoff and non-point source pollution.

Water audits are a successful, cost effective² method for realizing water savings both inside and outside residential sites. The benefit of an audit is the culmination of water use efficiency techniques through device or appliance installation, verification of proper programming of irrigation timers, leak detection, promotion of additional water savings opportunities such as irrigation device upgrades and plant pallet changes, and water use practice recommendations. Water savings are most evident when the actions are considered in holistic terms, with a focus placed on water efficiency at the home overall rather than solely individual activities³. The holistic approach combines focused strategies on actions (behavioral) around the home along with affecting water efficient appliance/device purchase decisions.

The residential audit approach has been effectively utilized by water management districts as a water efficiency program in Southern California, as well as nationally. Of the few agencies (Section 4 Table 2) that perform statistical evaluations of the actual water savings following a residential audit program, audit programs result in water savings ranging from 25 to 40 gallons per day (gpd) per household⁴. The higher end of this range resulted from successful outdoor savings, even on programs administered prior to the emergence of Smart Irrigation technology⁵.

² Maddaus, M. O. and Maddaus, M. L. (2004). "Evaluating water conservation cost-effectiveness with an end use model". Proceedings 2004 Water Sources Conference, American Water Works Association. Austin, TX.

³ Gilg, A. and Barr, S. (2005). "Behavioural attitudes towards water saving? Evidence from a study of environmental actions". *Ecological Economics*. 57 (2006): 400-414.

⁴ Fiske, G. S. and Weiner, R. A. (1994). "A guide to: Customer incentives for water conservation". Prepared for the California Urban Water Agencies, California Urban Water Conservation Council, and United States Environmental Protection Agency. Barakat & Chamberlin, Inc.

⁵ Whitcomb, J. B. (1991). "Water reduction from residential audits." *Water Resources Bulletin, American Water Resources Association*. 27 (5): 761-767.

MWDOC currently implements rebates for water saving devices and indoor appliances in the Orange County region. Additionally, MWDOC has offered additional rebate money to further offset the product and installation costs for highly desirable devices, such as smart timers which can be both weather or soil moisture sensor based irrigation controllers. Statistical evaluation of the homes participating in a recent MWDOC Smart Timer Rebate Program yielded an average savings of 9.4 percent, approximately 49.3 gpd; ranging from 6.5 percent to 12.3 percent, or 34.3 gpd to 64.4 gpd at the 95 percent confidence level⁶.

Based on these previous statistical evaluations, it is projected that over the 10-year life of the Project proposed here, more than 1,292 acre-feet will be saved through smart timer installations coupled with the Site Water Use Audits.

Sites that complete the Home Water Use Audit process and implement the water saving recommendations will be given the opportunity to be certified as a Water Efficient home. Establishing a certification benchmark creates a level of commitment, where the certification award then continues to serve as a positive reinforcement reminder -- both key components to promoting sustainable behavior. The certification serves as a non-monetary form of an incentive, where public recognition of the individual further sustains the water savings behavior⁷.

The water use Site Water Use Audit and certification component of the Program consists of five stages: (1) auditor training; (2) site water-use audit; (3) installation of qualified device rebates (4) qualified site certification; and (5) water use monitoring to evaluate savings.

Auditor Training. Auditors will be trained by MWDOC. MWDOC will certify each Auditor has qualified to perform both indoor and outdoor water audits; with an understanding of areas where water efficiency can be achieved both inside and outside the residence, with a specific knowledge in the areas of landscape, irrigation, and water efficient appliances. Auditors will follow the Site Water Use Audit guidelines, procedures for the regional device and appliance rebate administrators' process, and customer service protocols, as outlined in the Auditor Manual provided during the Auditor training. Certified auditors will be employees, interns, or partners of the Municipal Water District of Orange County or a local retail water agency. Partnerships will additionally include students of the Water Conservation Practitioner course taught through the Santiago Canyon College Department of Water Utilities Sciences offered during Fall 2012 and 2013 semesters.

Site Audit. For the purposes of this Project, the Audit and will have four components: (1) a customer-specific, on-site survey of water use devices, practices, expected home water use budget; (2) specific recommendations for water efficiency at the site, including existing rebates and water use practices; (3) post-inspection for any water efficient devices installed at the

⁶ A&N Technical Services. (2011). "MWDOC Smart Timer Rebate Program Evaluation". Prepared for the Municipal Water District of Orange County. Fountain Valley, CA.

⁷ McKenzie-Mohr, D., and Smith, W. (1999). *Fostering Sustainable Behavior: An Introduction to Community-Based Social Marketing*, New Society Publishers, Gabriola Island, B.C., Canada.

residence; and (4) follow-up verification, resulting in a finalized site score calculated through the Qualification Points List.

Device Rebates. As part of this Project, rebates for the installation of qualified smart timers and rotating nozzles will be offered to Project participants. Any costs associated with the implementation of other rebates (high efficiency clothes washers) or eligible site improvements (turf removal), beyond smart timers and rotating nozzles, will be covered through the existing MWDOC rebate programs. Partnership with local energy and/or gas companies may result in additional energy rebates available to the participant. It has been found that the combination of water savings activities along with associated energy savings activities yield more sustainable behavior and increased savings³.

Site Certification. The Audit documentation, the Qualification Points list, and the Site Audit follow-up verification are used to recommend sites for certification by MWDOC. The Audit will focus on water savings in the following areas: indoor fixtures and appliances; outdoor site and landscape characteristics, irrigation design, uniformity, operation, and scheduling including water budget compliance. The Qualification Points list outlines point values achievable in each of the water savings areas listed above. In addition to a site meeting specific pre-requisites, a site obtaining Certification must also meet a minimum point total.

Monitoring and Evaluation. Verification of implemented recommendations will be obtained for all sites resulting in Certification, through either database confirmation, customer follow-up, or both. Monitoring of the proposed Project sites is beneficial to maintaining the integrity and longevity of the water savings to be achieved. Where individual rebate programs yield water savings on a per device level, the site certification will illustrate the overall impact of the Project. Continued water savings monitoring of the surveyed sites will allow for a statistical evaluation of actual water savings.

Task Descriptions

The Project MWDOC proposes consist of six tasks: (1) Marketing and promotion will require the development and distribution of marketing/promotional collateral; (2) Auditor Training and Site Audits; (3) Rebate Incentive for the Purchase and Installation of the Smart Irrigation Devices, and Device Installation Verification Inspections; (4) Project Quarterly and Final Reporting; (5) Project Water Savings Evaluation; and (6) Database Enhancement, Modifications, and Data Compiling. These steps come at different points in the overall implementation of the Project and are detailed along Task items below.

Task 1 - Marketing and Promotion

Project Schedule Months 1 and 2: develop and print up to 500,000 bill inserts and related Audit materials. Quarters 1-7 disseminate bill inserts. Quarters 1-7: disseminate Audit materials as part of Auditor Training and Site Audit and Certification support documentation.

Non-Federal Funding MWDOC in-kind staff time: Hours - 207; In-kind Funds - \$11,873.27; MWDOC Direct Funds - \$26,250.

Federal Funding \$0

Work to be completed: Marketing and promotional pieces will include twice yearly retail water agency bill inserts. Over the 15+ years MWDOC has marketed similar type projects, marketing surveys conducted by MWDOC's Public Affairs department have rated water bill inserts as the most effective form of marketing to encourage the public to utilize a rebate to replace a high-water-using device with a low-water-using-device. In Orange County, California there are over 550,000 residential water accounts. The current marketing plan calls for distributing up to 125,000 bill inserts twice yearly over the two year term of the Project.

It is projected that 500,000 bill inserts will cost \$0.04 each. The cost per piece is derived from a Request for Bids MWDOC conducted July 2011 for similar marketing pieces. From this response, MWDOC selected three printing specialists. Eventually, MWDOC will select one to work on the Projects marketing materials. All printed materials will contain the appropriate Reclamation recognition.

Upon award of the grant, MWDOC will develop required Audit materials: Auditor Site Inspection Manual along with associated Audit documentation, Auditor identification materials, and certification award materials. The Manual will include the Program guidelines, description of audit criteria, description of qualification points list, and lists of recommendations for water efficiency both inside and outside the residence and will be disseminated during Auditor training. It is expected that 35 Manuals will be printed and bound for training. Additional Audit materials will include: Audit check lists, Qualification points lists, rebate application brochures, leave behinds for water-saving recommendations, and certification follow-up post-cards. These documents will be in both printed and digital formats. Each Auditor will also be provided with in-field Program identification including a MWDOC employee badge and logo embroidered shirt. A printed plaque will serve as the certification award, it is expected that approximately 25% or 250 sites will obtain full site certification. The Audit materials have a projected cost of \$6,250.

Task 2 – Auditor Training and Site Audits

Project Schedule	Months 2-24: train and certify Auditors and conduct Site Audits at 1,000 residential sites.
Non-Federal Funding	MWDOC in-kind staff time: Hours – 1,000; In-kind Funds - \$66,822.65; MWDOC Direct Funds - \$0,
Federal Funding	\$87,500

Work to be Completed – For the purposes of this Project, the Audit will have four components: (1) a customer-specific, on-site survey of water use devices, practices, and expected home-water-use budget; (2) specific recommendations for water efficiency at the site, including existing smart timer, rotating nozzle, and other rebates and water use practices; and (3) post-inspection for any water efficient device upgrades (Task 3); and follow-up verification, resulting in a finalized site score calculated through the Qualification Points List. Prior to implementing the site audit, MWDOC will facilitate site auditor training.

Certified Auditor Training

MWDOC will conduct Auditor training for the employees, interns, or partners of the Municipal Water District of Orange County or local retail water agencies. The Auditor trainings will be in a

class room setting and is projected to be a two day (12 hour) workshop. Partnerships will additionally include students of the Water Conservation Practitioner course taught through the Santiago Canyon College Department of Water Utilities Sciences offered during the Fall 2012 and 2013 semesters.

MWDOC will certify each Auditor as qualified to perform both indoor and outdoor water audits; with an understanding of the areas where water efficiency can be achieved both inside and outside the residence, with a specific knowledge in the areas of landscape, irrigation, and water efficient appliances. Auditors will follow the Site Audit guidelines, have knowledge of the procedures for device and appliance rebate process, and customer service protocols, as outlined in the Auditor Manual provided during the Auditor training. Auditors will be required to complete 3 supervised and reviewed Audits prior to obtaining Auditor Certification.

Site Audit

The following details the Audit checklist and is documented as part of the Site Audit. The checklist will be used to determine whether all prerequisites have been met and adequate points can be attained to merit the Home Certification. The specific description of audit criteria, description of qualification points list, and lists of recommendations for water efficiency both inside and outside the residence and included in the Auditor Manual.

During each site visit where an Audit is conducted, the Certified Auditor will perform the following prior to the commencement of the Audit:

- Obtain water-use history for the site
- Verification of site and contact information for the property
- Verification of water account information.
- Verification of customer eligibility (single-family residence within MWDOC project area).
- Obtain written permission to enter the resident's property through a signed waiver form (hold harmless) prior to starting the Audit.
- Confirmation that the customer and/or their landscape professional will be present throughout the audit.

Outdoor Audit - Efforts will focus on the outdoor as most opportunities for water savings in high water use residences are in the landscape. The exterior survey will document the following:

- Instruct customer on how to read water meter.
- Complete inspection for leaks at the meter, hose bibs and irrigation system. Document an estimate of water savings if leaks are repaired.
- Measure/document water pressure and advise customer to lower pressure if static pressure measures above 60 pounds per square inch (psi).
- Use a soil probe to determine soil type, water infiltration rate and water retention capacity, root zone depth, and thatch build up.
- Identify type of grass and suggest aeration, dethatching, and proper mowing height, as appropriate.
- Check irrigation system for coverage, leaks, low head drainage, high pressure, mismatched, misdirected, or broken sprinkler heads, and other typical irrigation problems such as missing filters and pressure reducing valves for drip irrigation/microspray systems.

- Determine irrigation system distribution uniformity and precipitation rate.
- Determine eligibility for nozzle upgrade utilizing the Rotating Nozzle Rebate and distribute the Rotating Nozzle Rebate Application Request Form.
- Calculate, document, and provide an irrigation schedule based on local ET, distribution uniformity, plant type, nozzle type, etc.
- As set forth under the California Model Water Efficient Landscape Ordinance, calculate, document, and provide the water budget following the Maximum Applied Water Allowance and the Estimated Total Water Use.
- Determine eligibility for irrigation controller upgrade utilizing the Smart Timer Rebate and distribute the Smart Timer Rebate Application Request Form.
- Existing irrigation controller with calculated schedule (if applicable)
- Recommend low-precipitation irrigation, water-wise plants, and mulch, where appropriate.
- Review all other outdoor water usage (e.g. pool, fountain, water feature, etc.) and make water savings suggestions.
- Determine eligibility for the Turf Removal Rebate Program by measuring living, irrigated turf square footage, documenting number of irrigation controllers and irrigation stations, and completing and distributing a Turf Removal Rebate Program Application Request Form.

Interior Audit - The interior survey will be a review of indoor water savings opportunities. The indoor water use review will consist of:

- Measurement of flow rate of all existing showerheads.
 - Recommend low-flow showerheads, when appropriate (measured flow rate > 3.0 gallons per minute, gpm).
- Measurement of flow rate of all existing faucets.
 - Recommend aerators, when appropriate (measured flow rate >2.0 gpm in bathroom and measured flow rate >3.0 gpm in kitchen).
- Inspection of the following: quarter turn or push-pull valve used for toilet or faucet supply lines.
- Complete inspection and identification of leaks at all toilets, sinks, showers, diverter valves, tubs, dishwashers, washing machines, water heaters, and any other water using device (where applicable).
- When possible, measurement of leak(s) documenting and advising the customer of estimated water savings if leaks are repaired.
- Determine if toilets are High Efficiency (1.28 gallons per flush), Ultra-Low Flush (flush volume of 1.6 gallons) or non Ultra-Low Flush (flush volume greater than 1.6 gallons) and record the date manufactured for each toilet.
- Recommend improved flappers when appropriate.
- Recommend automatic shut-off devices for reverse osmosis systems and water softeners.
- Encourage the customer to consult a licensed plumber about plumbing questions.
- Promote applicable water conservation programs or appliance upgrades eligible for rebate.

The Auditor will obtain the customer's water use history and previous meter readings from the local water retailers for at least the previous year. MWDOC will provide the Auditor with a list of retailer contacts. The water use record will be obtained before the time of the survey to assist the Auditor in evaluating water use at the home. The water use records will be left with the customer to assist the customer in managing water use.

Home Water Use Certification

The Audit documentation, along with the Qualification Points list are needed for completion of the Site Audit follow-up verification and are used to recommend homes for certification by MWDOC. The Qualification Points list outlines point values achievable in each of the water savings areas as part of the Site Water Use Audit. In addition to a site meeting specific pre-requisites, a site obtaining Certification must also meet a minimum point total. Verification of the recommendations will be obtained for all sites resulting in Certification, through either database confirmation, customer follow-up, or both. The Auditor will be responsible for providing the customer with recommendation implementation verification postcards at the time of the Audit with instructions to return the postcard within 30 days of Project recommendation implementation. MWDOC staff will collect 100% of the follow-up verification postcards for sites awarded Certification.

Certified Auditor Quality Control

As part of Auditor training, the Auditor will be required to complete three (3) supervised and reviewed Audits prior to obtaining Auditor Certification. In order to ensure the objectives of the Site Audit are met, the MWDOC Program Manager or a designated representative will make unannounced random on-site inspections of 5% of the Certified Auditor's work effort during the term of the Project. These inspections will be conducted as a ride-along or as a surprise visit. For all inspections, MWDOC receives the survey schedule in advance. Additionally, 100% the completed Audit submission forms will be reviewed by the Program Manager or a designated representative to ensure compliance.

Task 3 - Rebate Incentive for the Purchase and Installation of the Smart Irrigation Devices by the Participant and Device Installation Verification Inspections

Project Schedule	The installation of smart timers and rotating nozzles by residential property owners will begin immediately and will continue through the term of the agreement. Provide rebates for up to 576 residential smart timers and 23,400 rotating nozzles. Perform up to 160 residential smart timer and rotating nozzle post installation verification inspections
Non-Federal Funding	MWDOC in-kind staff time: Hours – 1,047; In-kind Funds - \$73,517.86; MWDOC Direct Funds - \$262,548
Federal Funding	\$169,750

Work to be Completed – Over the 24-month period of the potential grant award, MWDOC proposes to facilitate the installation of up to 576 residential smart timers and up to 23,400 rotating nozzles installations. MWDOC will implement a rebate format program to entice site owners to increase system efficiency and management by means of replacing a working conventional timer with a Project qualified

smart timer and existing spray nozzles with higher uniformity and lower application rate multi-trajectory/multi-stream rotating nozzles.

Currently, smart timers available to the public come from a product qualifying list produced by the Irrigation Association's Smart Water Application Technology (SWAT) testing protocol performed by the Center for Irrigation Technology at Fresno State University. The Center is an independent testing laboratory that evaluates how well current smart timer technology has integrated the scientific data into a practical system that meets the agronomic needs of turf and landscape plants.

The Environmental Protection Agency's WaterSense Specifications establishes labeling criteria for weather-based irrigation controllers. The WaterSense specification provides minimum acceptable criteria in order to achieve certification. The WaterSense performance criteria were built upon the SWAT testing protocol's evaluation of the SmarTimer to adequately and efficiently irrigate the landscape. As the EPA WaterSense begins labeling and certifying irrigation controllers, it is expected that this list will supersede the current list of qualified devices. The Project's product qualification list will be referenced in accordance with MWDOC's rebate eligibility guidelines.

Once participants have purchased their chosen technology, they will provide the Project's rebate administrator with a completed and signed application, water bill, and original purchase receipts. The rebate administrator will process the application, providing MWDOC with application data in order for MWDOC to perform the in-field device installation verification. Once the inspection is complete, MWDOC will return the results to the rebate administrator for final rebate processing.

In previous smart irrigation installation programs, MWDOC has used the same rebate program design as proposed for this Project. Through these historical programs, MWDOC has facilitated the installation of over 6,900 residential and commercial smart timers and over 161,000 rotating nozzles. Utilizing this experience and data derived from these programs, MWDOC has applied historical participation statistics to calculate the proposed numbers for this Project. These statistics include:

Residential smart timer historical data

- 2,993 installed
- 7.1 – average number of active stations/valves at each property
- \$498 – the average cost for each smart timer (data from the last two-years, 1,500+ smart timers)
- 15 - the average number of monthly installs over a similar 24-month period
- \$380 - average paid rebate

Residential rotating nozzle historical data

- 42,211 installed
- 48 – average number of active nozzles replaced at each property
- \$5.50 – the average cost for each rotating nozzle, includes installation costs
- 1,333 - the average number of monthly nozzles installed over a similar 24-month period
- \$315 – average rebate paid across 48 rotating nozzles
- \$6.45 – average rebate paid per 42,211 devices installed.

For residential smart timers, MWDOC proposes to offer an 'up to' rebate of \$425 per smart timer installed (average is approximately \$380), as follows: \$155 provided by MWDOC (Recipient) and up to \$270 (\$425 - \$155) to be provided by the grant. It is estimated the average funding provided by reclamation will be \$225. In addition and as an added quality control step, the Project will conduct

approximately 25% post-installation irrigation inspections on residential smart timer and rotating nozzle installations as part of the Post-Inspection task.

For multi-trajectory/multi-stream rotating nozzles, MWDOC proposes to offer a \$4.00 rebate per head for each of the 23,400 rotating nozzle installed. MWDOC would provide \$3.00, with the grant providing \$1.00. The \$4.00 rebate level has shown to be an effective price point to move site owners to retrofit an existing spray heads. At an average of 48 nozzles replaced per site, this equates to an average rebate of \$192 per site ($\4.00×48). With an average cost per rotating nozzle of \$5.50, this means the rebate funding is approximately 73% of the site owner's purchase cost.

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.

Over the term of the agreement, MWDOC will direct Mission to perform up to 160 residential site verification inspections where both smart timers and rotating nozzles have been installed. Mission's cost to perform residential device installation verification is \$89 each and \$16 administration fee for a total of \$105 for each verification. Across 160 verification this totals \$16,750.

During each site visit where a smart timer and rotating nozzles have been installed, Mission will perform the following functions:

- Walking the site with the property owner or person designated by the property owner as the responsible party.
- Verifying the site and contact information for the property.
- Verifying the water account information.
- Verifying the device of record (smart timer or rotating nozzle) is installed and programmed/adjusted properly.
- Logging the smart timer's clock capacity.
- Counting the number of active stations/valves.
- Measuring the irrigated area of the property by meter or irrigation clock.
- Determining the actual turf versus shrub percentage.
- Performing a catch can test to determine the distribution uniformity of the irrigation system.
- Turning on each valve/station to evaluate the condition of the irrigation system.
- Placing two-foot-tall irrigation system repair flags at every point where the irrigation system needs repairing. Flags have a listing of potential repairs, and the inspector identifies the irrigation system issue with a permanent marker.
- Leaving behind proper maintenance and irrigation management literature.
- Providing rebate program literature for MWDOC's other rebate programs.

In order to ensure the objectives of the site inspection are met, MWDOC staff will perform a minimum 5% on-site inspection of Mission's work effort during the actual survey process. These

inspections will be conducted as a ride-along as or a surprise visit. For all inspections, MWDOC receives the survey schedule in advance

Task 4 - Quarterly and Final Reporting

Project Schedule Quarters 1 – 7: report in a timely manner all Project results.
Following Quarter 8 provide a final report

Non-Federal Funding MWDOC in-kind staff time: Hours – 100; In-kind Funds - \$7,027.65;
MWDOC Direct Funds - \$0,

Federal Funding \$10,000 identified here, but is actually applied across all tasks

Work to be Completed – Following the reporting schedule set forth in the agreement, MWDOC will submit quarterly and final reports that will include all stated deliverables. These deliverables will include at a minimum a written Project progress narrative, Project invoicing, tabular data tables, and all required backup to support the requested reimbursement.

Task 5 - Project Evaluation

Project Schedule Quarter 6: develop a statistical evaluation RFP to hire a qualified consultant. From Project data, perform the evaluation starting in Quarters 7 and 8.

Non-Federal Funding MWDOC in-kind staff time: Hours – 438; In-kind Funds - \$23,529.45; MWDOC Direct Funds - \$26,350.00,

Federal Funding \$26,350.00

Work to be Completed – In Quarter 6 of the Project, MWDOC, following the District’s administrative code, will develop a Request for Proposal and submit it to a minimum of twelve (12) qualified consultants. A committee of Retail Water Agency, MWDOC, and Metropolitan staff will select a consultant with the best combination of price, experience, and approach to evaluate the water savings derived from the residential Site Audits and installation of the water smart devices associated with this Project. MWDOC will provide the consultant with the Project’s database of participants and water consumption histories for those residential sites that have a minimum 12 months of post-installation consumption data. It is estimated the number of sites will be approximately 350 out of the projected 1,500. The consultant will perform a statistical evaluation on the data provided.

Task 6 - Database Enhancement

Project Schedule Month 1 and 2: develop modifications needed to the existing Database, update throughout the Project

Non-Federal Funding MWDOC in-kind staff time: Hours – 536; In-kind Funds - \$34,040.00; MWDOC Direct Funds - \$0,

Federal Funding \$6,250.00

Work to be Completed – MWDOC’s current historical database would be modified to accommodate the Project’s participation data. MWDOC currently has a database consultant under contract, and upon award of the grant would direct the consulting firm to update the existing database to accommodate this new Project. This would require approximately 64 hours.

The currently billing rate is \$125 per hour. Upon award of the grant, the database enhancement would immediately commence.

In addition to the database modification, MWDOC staff would upload the monthly participant data, verify its accuracy, develop reporting from the data for the quarterly Project reports, and provide the Project's data evaluation consultant with the Project's data. Across a 24 month Project period, this would average approximately 22 hours per month in MWDOC staff time.

Section 4: Evaluation criteria

Evaluation Criterion A: Water conservation

Subcriterion No. A.1 – Quantifiable Water Savings

The proposed Project will achieve quantifiable and sustained water savings through the installation of smart irrigation timers in urban landscapes, specifically in single-family homes and commercial landscapes throughout Orange County, California. Through statistical evaluation of past programs, MWDOC has measured water savings of up to 49.3 gallons per day (gpd) per installation of a smart timer with respect to weather normalization and 3.6 gpd per rotating nozzle in single-family homes with a projected 10-year life expectancy. Refer to Section 3 Task 3 - device rebate and installation inspection, for description of qualified devices.

The residential water audit alone yields a savings of 20.1 gpd for the first year, with a diminishing return of 7.6 gpd and 6.5 gpd for years two and three respectively, resulting in an average water savings of 11.4 gpd with a 3-year life expectancy. These savings estimates are documented in the studies listed in Tables 1 and 2 below.

Table 1. Past Studies of Smart Irrigation Timers in Orange County

1.	Residential Weather-Based Irrigation Scheduling: Evidence from the Irvine "ET Controller" Study, 2001
2.	ET Controller Savings Through the Second Post-Retrofit Year: A Brief Update, 2001
3.	MWDOC Residential Runoff Reduction Study, 2004
4.	Commercial ET-Based Irrigation Controller Water Savings Study, 2006
5.	MWDOC Pilot Implementation of Smart Controllers: Water Conservation, Urban Runoff Reduction and Water Quality, 2010
6.	MWDOC Smart Timer Rebate Program Evaluation, 2011

Table 2. Past Studies of Residential Water Audits in California

1.	Water Reductions from Residential Audits, Contra Costa Water District, 1993
2.	Evaluating Water Conservation Cost-Effectiveness with an End-Use Model, 2004
3.	Home Water Survey, City of Pasadena, California
4.	Water Wise House Call, Santa Clara Valley Water District

Based on these previous studies, the water savings that will result as a direct benefit from the Project are estimated at 1,292 lifetime acre-feet. This savings estimate is calculated as follows:

576 single-family timers X 49.3 GPD X 365 days per year / 325,861 = 32 AFY

32 AFY X 10 years = 318 AF

23,400 rotating nozzles X 3.6 GPD X 365 days per year / 325,861 = 94 AFY

94 AFY X 10 years = 936 AF

1,000 residential audits X 11.4 GPD X 365 days per year / 325,861 = 12.8 AFY

12.8 AFY X 3 years = 38 AF

Total Acre Feet per Year Savings = 138 AFY

Total Lifetime Acre Feet Savings = 1,292 AF

Actual water savings will be determined through statistical analysis Section 3 Task 5 – 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 average annual water supply is 590,000 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, 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 55% is used for landscape irrigation and 45% is used indoor.

Water conserved through implementation of the proposed Project 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 Project is 0.095 percent. This is calculated by dividing the water saved by the average annual supply or $(138 / 591,000) * 100 = 0.02$ percent per year.

Subcriterion No. A.3 – Reasonableness of Costs

The total Project cost is \$821,809. This investment is anticipated to save 138 acre-feet per year. Assuming a conservative 10-year water savings life for the installed devices and a 3-year water savings life from the audit itself, the lifecycle savings are anticipated at 1,292 acre feet. By dividing the total Project cost by the lifecycle savings, the cost per acre-foot conserved through implementation of the proposed Project is \$636.

$$\frac{\$ 821,809}{(125 \text{ AFY} \times 10 \text{ years}) + (13 \text{ AFY} \times 3 \text{ years})} = \$636 \text{ per acre foot saved}$$

Evaluation Criterion B: Energy-water nexus

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

The proposed Project will result in energy savings through reduced diversions and pumping of imported water into Orange County. According to the California Energy Commission's 2005 Integrated Energy Policy Report, energy savings associated with outdoor water conservation programs is 3,300 kWh/AF. Project water savings are estimated at 1,292 acre-feet. Therefore, approximately 0.5 million kWh per year of energy savings will be realized through this outdoor water conservation Project. Over the expected life of the Project, energy savings are estimated at more than 4.3 million kWh.

Evaluation Criterion C: Benefits to endangered species

The proposed Project 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 project centers on the federal Central Valley Project in California and the impacts the Central Valley Project and State Water Project 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 Project is designed to aid Orange County in reducing its dependence on imported water from the Bay/Delta watershed.

Locally, the proposed Project 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 Study⁸.

Evaluation Criterion D: Water marketing

The proposed Project does not include a Water Marketing component.

Evaluation Criterion E: Other contributions to water supply sustainability

The proposed Project 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. Both these benefits will minimize or forestall shortages due to drought.

The proposed Project promotes and encourages collaboration among all water agencies in Orange County. While MWDOC serves approximately 70% of the county, the proposed Project will be implemented throughout 100% of the county in partnership with all 32 retail water

⁸ 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.

agencies. Wide spread support for this Project is demonstrated by the twelve letters of support from these retail agencies that are 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 county-wide approach, the unfortunate situation of “haves” and “have not” will be avoided – all consumers will have access to one standardized program.

The proposed Project will significantly increase the awareness of water conservation in Orange County. The Project will be promoted through water bill stuffers, water bill messages, newsletters, websites, radio spots, and social media channels. The Project 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.

Evaluation Criterion F: Implementation and results

Subcriterion No. F.1 – Project Planning

Orange County is included in Metropolitan’s Water Supply Allocation Plan. This Plan, also known as a drought contingency plan, serves as a tool to allocate limited water supplies to water agencies throughout the region. Actual water use is monitored on a monthly basis and compared to the allocation. If an agency exceeds their allocation, financial penalties can be imposed. This Water Supply Allocation Plan at the regional level is complemented by Water Conservation Ordinances adopted by all retail water agencies in Orange County. These ordinances include graduated response levels depending on the severity of the water supply situation that govern acceptable and unacceptable uses of water by consumers. If necessary, consumers can be exposed to graduated enforcement from verbal warnings, to financial penalties, to installation of flow restrictors. By submitting this grant application, MWDOC self-certifies that the Water Supply Allocation Plan and Water Conservation Ordinances are in place.

County-wide planning has been done to support the proposed Project. Water use efficiency projects such as the program described in this proposal, with the site audit and smart timer and rotating nozzle rebates, are included in the North and South Orange County Integrated Regional Watershed Management Plans (IRWMP) as a multi benefit project. Benefits include water conservation, dry-weather runoff reduction, and non-point source pollution prevention. Smart Irrigation Timer Programs have been ranked first against dozens of other water supply, water reliability, and watershed management projects in these IRWMP efforts.

Project 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 Project 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 Project 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 Project development work is complete, and the Project can begin immediately upon execution of the funding agreement. No delays are expected due to environmental compliance as MWDOC previously filed a Categorical Exemption under Section 15304 – MINOR ALTERATIONS TO LAND (Class 4); Section 15306 INFORMATION COLLECTION–(Class 6). The Water Efficient Site Certification and Smart Irrigation Rebate Program does not involve new construction, rather it involves the replacement of existing, antiquated, manual irrigation timers with state-of-the-art self adjusting smart timers and increased the uniformity and efficiency with conversion to rotating nozzles. The Project’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 Project’s implementation plan and schedule will be driven by the Project’s stated tasks as described in the Technical Project Description. Each task’s requirement will occur according to the Project schedule as detailed in Table 3 and Figure 2.

Table 3. Proposed project schedule

Description	Time Frame
<ul style="list-style-type: none"> • Reclamation/MWDOC scope of work completed and agreement executed • Task 1 Marketing Material designed (including Reclamation's logo) and printed • Task 1 Audit Documentation developed and printed • Task 2 Certify Site Auditors • Task 3 Participation procedures developed • Task 3 Change order established with Mission RCD to include Project specific expectations • Task 6 Project's database modified 	Months 1 – 2
<ul style="list-style-type: none"> • Task 1 Disseminate the first round of bill inserts and subsequent rounds throughout agreement term • Task 1 Disseminate Auditor Manuals as part of Auditor Certification 	Months 2 – 21
<ul style="list-style-type: none"> • Task 2 Conduct Site Audits • Task 2 Perform quality control review of site inspection Audit submission forms 10% of Certified Auditor's Site Audits • Task 2 Obtain 5-10% of customers satisfaction/compliance responses • Task 3 Purchase and install both residential smart timers an rotating nozzles • Task 3 Perform smart timer installation verification inspections on 10% of the smart timers installed • Task 3 Perform quality control site inspections on 5% of Mission RCD's device installation verification inspections • Task 3 Issue smart timer rebates to qualified participants • Task 6 Update database with monthly participant data • Task 6 Perform verification for the accuracy of the database data 	Months 2 – 24
<ul style="list-style-type: none"> • Task 4 Quarterly reporting and deliverables sent to Reclamation 	Months 3 – 21
<ul style="list-style-type: none"> • Task 5 Conduct a Request for Proposals to select the Project's statistical evaluation consultant 	Months 18 – 19
<ul style="list-style-type: none"> • Task 5 Provide selected statistical consultant with Project data, and monitor progress, including reviewing draft and final Project evaluation report 	Months 19 – 23
<ul style="list-style-type: none"> • Task 4 Final reporting and deliverables sent to Reclamation 	Month 24

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

Post-project benefits (performance measures)

Within the proposed Project, MWDOC plans to conduct a robust statistical water savings analysis using regression analysis at the Project's conclusion. This will give the water industry another opportunity to quantify actual water savings associated with this Project. This analysis will include a statistically significant population of Project participants and will maintain 95% confidence. Participant water use data before and after participating in the Project 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 Project.

Environmental Compliance

The proposed Project will not negatively impact the surrounding environment. The Project focuses on irrigation system improvements to existing urban landscape. Existing irrigation timers will be replaced with state-of-the-art self-adjusting smart irrigation timers. It is anticipated that these improvements will result in water conservation, reduced dry-weather runoff, and non-point source pollution leaving the Project area and entering the natural environment, including local streams and creeks leading to the Pacific Ocean.

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

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 that 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 with a population of more than 200,000. Today's population totals more than 3 million.

The Project will not result in modifications of or effects to individual features of an irrigation system including headgates, canals, or flumes.

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 Project. In addition, no known archeological sites will be impacted by the proposed Project.

The proposed Project will not have a disproportionately high or adverse effect on low income or minority populations. The Project will be offered equally to all residents in Orange County and,

for residential customers can cover the full cost of participation, therefore maximizing the opportunity for low income or minority participation.

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

The proposed Project will not contribute to the introduction, continued existence or spread of noxious weeds or non-native invasive species known in Orange County.

Required permits and approvals

The Municipal Water District of Orange County is not aware of any required permits or approvals to implement the proposed Project as lead agency. Project 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 Project will 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 Project Support

Letters of from twelve (12) retail water agencies within Orange County and the MWDOC service area are attached stating Project support.

Official Resolution

The MWDOC Board of Directors Official Board Resolution No. 1921 is attached providing authorization to proceed with the Project.

Project Budget

Funding plan and letters of commitment

The non-Reclamation funding amount assigned to this Project across the 576 weather based irrigation controllers (smart timers), 23,400 rotating nozzles, and 1,000 residential audits proposed is \$521,959. The Municipal Water District of Orange County (MWDOC) will contribute all necessary non-Reclamation funding for the Project. No other source of funding is required.

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

Board Resolution No. 1921 (attached) approved on January 18, 2012, 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 \$521,959, or 64% of the overall Project’s cost. This amount is made up of both in-kind contribution in the form of salaries and benefits

(\$206,811) and direct payments to vendors/contractors (\$315,148) for services provided during the course of the Project (Table 4).

The in-kind contribution MWDOC will provide, totaling \$206,811, is a combination of both salaries and fringe benefits. It is proposed MWDOC will commit 3,328 hours over the two-year term of the Project. This averages 32 hours per week and will be spread across five (5) of MWDOC's water use efficiency staff personnel. The average dollar rate for salaries is \$48.98 and for benefits is \$16.17. This totals \$216,811, of which MWDOC is requesting \$10,000 be funded by Reclamation. The Project'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 \$315,148 in direct payments both to Project participant in the form of rebate incentives, and to consultants/contractors supporting the Project's efforts. Rebate incentives paid to the Project's participants will total \$262,548. This will be for both residential smart timers and rotating nozzles.

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:

- Task 1 Marketing/Promotions - \$26,250 for the printing of Project promotion materials
- Task 5 Statistical Water Savings Evaluation - \$26,350 to be paid to a qualified statistical evaluation consultant selected by MWDOC following its Administrative Code

Table 4. Summary of Non-Federal and Federal funding sources illustrates the Project's funding arrangement.

Funding Sources	Funding Amount
Non-Federal Entities	
1. Municipal Water District of Orange County Direct Contribution	\$315,148
2. Municipal Water District of Orange County In-Kind Staff Time*	\$206,811
Non-Federal Subtotal:	\$521,959
Other Federal Entities	
1. None	\$0
Requested Reclamation Funding:	\$299,850
Total Project Funding	\$821,809

The following are items requested to be addressed:

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

Budget Proposal Format

Budget Format

Budget Item Description	\$/Unit	Quantity	Funding Quantity	Recipient Funding	Reclamation Funding	Total Cost
SALARIES AND WAGES (24 mo. hour ttl)						
	<u>Rate</u>	<u>Hrs</u>	<u>Salaries</u>			
Project Administrator (Joe Berg)	\$75	156	\$11,647	\$10,744	\$903	\$11,647
Project Manager (Steve Hedges)	\$59	1,872	\$110,691	\$106,398	\$4,293	\$110,691
Marketing (Jessica Ouwerkerk)	\$38	52	\$1,987	\$1,871	\$116	\$1,987
Project Support (Melissa Baum-Haley)	\$36	728	\$26,186	\$25,454	\$732	\$26,186
Project Support (Sergio Ramirez)	\$24	520	\$12,480	\$10,883	\$1,597	\$12,480
Totals	\$49	\$3,328	\$162,992	\$155,351	\$7,641	\$162,992
FRINGE BENEFITS (24 mo. hour ttl)						
	<u>Rate</u>	<u>Hrs</u>	<u>Benefits</u>			
Project Administrator (Joe Berg)	\$25	\$156	\$3,844	\$3,546	\$298	\$3,844
Project Manager (Steve Hedges)	\$21	\$1,872	\$38,750	\$37,247	\$1,503	\$38,750
Marketing (Jessica Ouwerkerk)	\$12	\$52	\$616	\$580	\$36	\$616
Project Support (Melissa Baum-Haley)	\$10	\$728	\$7,047	\$6,981	\$66	\$7,047
Project Support (Sergio Ramirez)	\$7	\$520	\$3,562	\$3,106	\$456	\$3,562
Totals	\$16	\$3,328	\$53,819	\$51,460	\$2,359	\$53,819
Total Salaries/Wages and Fringe Benefits	\$65	\$3,328	\$216,811	\$206,811	\$10,000	\$216,811
TRAVEL	Does not apply to this Project					
EQUIPMENT	Does not apply to this Project					
Task 1 Marketing/Promotions	<u>Price/unit</u>	<u>Qty</u>	<u>Cost</u>			<u>Total</u>
Project Marketing/Promotional Material	\$0	\$500,250	\$26,250	\$26,250	\$0	\$26,250
CONTRACTUAL/CONSTRUCTION						
Task 2 Site Audits	<u>Type</u>	<u>#</u>	<u>Rate</u>			
Site Audits performed by Certified Auditors	Residential	1000	\$35	\$0	\$87,500	\$87,500
Total		1000		\$0	\$87,500	\$87,500
Task 3 Device Rebate Incentive and Installation Verification						
A. Smart Timer Rebate Incentive Recipient and Reclamation funding is based on the number of proposed residential smart timers x their incentive rate.				\$157,248	\$129,600	\$286,848
B. Rotating Nozzle Rebate Incentive Recipient and Reclamation funding based on the number of proposed residential rotating nozzles x their incentive rate				\$105,300	\$23,400	\$128,700
C. Smart Timer and Rotating Nozzle Installation Verification Inspections				\$0	\$16,750	\$16,750
Total				\$262,548	\$169,750	\$432,298
ENVIRONMENTAL AND REGULATORY COMPLIANCE	No costs associated with this effort					
Task 4 Quarterly and Final Reporting						
Quarterly & Final Reporting (Funding is supplied by Recipient & dollars are included in Salaries & Wages at 100 hours and \$7,147.90)				\$0	\$0	\$0
Task 5 Project Evaluation		<u>Hours</u>	<u>Rate</u>			
Consultant Principal		140	\$220	\$15,400	\$15,400	\$30,800
Information Technician		165	\$110	\$9,075	\$9,075	\$18,150
Associate Technician		75	\$50	\$1,875	\$1,875	\$3,750
Project Water Use Evaluation Total		380	\$139	\$26,350	\$26,350	\$52,700
Task 6 Database Enhancement		<u>Hours</u>	<u>Rate</u>			
Consultant		50	\$125	\$0	\$6,250	\$6,250
Database Enhancement Total		50	\$125	\$0	\$6,250	\$6,250
TOTALS				\$521,959	\$299,850	\$821,809
Percent				64%	36%	100%

Budget Narrative

Salaries and Wages, and Fringe Benefits – Project Administration

In order to properly manage the proposed Project, MWDOC will provide on average 32 hours per week from up to five (5) MWDOC staff personnel. Across the two-year term of the Project this equates to 3,328 hours, or a total of \$206,811 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 \$65.15 for salaries and wages across 3,328 total Project hours; the total calculates out to \$162,992 (Table 5). For fringe benefits, the average hourly rate is \$16.17, and totals \$53,819 (Table 6). Together this totals \$216,811 (Table 7), of which Applicant will provide \$206,811, with a request of \$10,000.00 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.

As Project Manager, Mr. Hedges (Water Use Efficiency Supervisor) has over 18 years of similar program management experience and will contribute an estimated 1,872 hours over 104 - weeks to oversee implementation of the Project. In addition, Mr. Berg, Dr. Baum-Haley, and Mr. Ramirez will spend an additional 1,404 hours over the same 104 - week period in support of the Project. Ms. Ouwerkerk, as the department marketing expert, will lend her expertise in designing and implementing the marketing/promotional plan. Collectively, the overall MWDOC team has over 42 years of experience managing similar water use efficiency programs.

Each Staff member will bring their own experience to the Project. Mr. Berg, as the Water Use Efficiency Department Manager, will be responsible for reviewing quarterly reports prior to submittal and providing the overall guidance for the Project. Mr. Hedges will act as the Program Manager, directing the day to day operations of the Project; seeing that the marketing component is developed and implemented; managing the various Project consultants, including the smart timer installation inspection contractor and the statistical water use consultant; handling all financial aspect for the Project; enhancing the Project's database with this Project's monthly participant data; and preparing all written reports. Mr. Ramirez and Dr. Baum-Haley will assist Mr. Hedges with Project management responsibilities. Ms. Ouwerkerk will provide marketing and promotional experience as detailed below.

Salary increases for the proposed Project staff would occur at the beginning of each fiscal year (July to June) and have averaged 0% over the last three years for both cost of living and merit. It is anticipated over the term of this Project agreement salary increases will return to 2% for cost of living and merit.

Salaries and Fringe Benefits: Reclamation \$10,000; Recipient \$206,811; Total \$216,811

Table 5. Project's Salaries and Wages

<u>MWDOC Staff</u>	<u>Hourly Rate</u>	<u>Weekly Hours</u>	<u>104 - Week Hours</u>	<u>Salaries Weekly Total</u>	<u>Project Total (Salaries)</u>
Project Administrator (Joe Berg)	\$74.66	1.5	156	\$111.99	\$11,646.96
Project Manager (Steve Hedges)	\$59.13	18	1,872	\$1,064.34	\$110,691.36
Marketing (Jessica Ouwerkerk)	\$38.22	0.5	52	\$19.11	\$1,987.44
Project Support (Melissa Baum-Haley)	\$35.97	7	728	\$251.79	\$26,186.16
Project Support (Sergio Ramirez)	\$24.00	5	520	\$120.00	\$12,480.00
Total	\$48.98	32	3,328	\$1,567.23	\$162,991.92

Table 6. Project's Fringe Benefits

<u>MWDOC Staff</u>	<u>Hourly Rate</u>	<u>Weekly Hours</u>	<u>104 - Week Hours</u>	<u>Salaries Weekly Total</u>	<u>Project Total (Fringe Benefits)</u>
Project Administrator (Joe Berg)	\$24.64	1.5	156	\$36.96	\$3,843.84
Project Manager (Steve Hedges)	\$20.70	18	1,872	\$372.62	\$38,750.40
Marketing (Jessica Ouwerkerk)	\$11.84	0.5	52	\$5.92	\$615.68
Project Support (Melissa Baum-Haley)	\$9.68	7	728	\$67.76	\$7,047.04
Project Support (Sergio Ramirez)	\$6.85	5	520	\$34.25	\$3,562.00
Total	\$16.17	32	3,328	\$517.49	\$53,818.96

Table 7. Project's Totals for both Salaries and Fringe Benefits

<u>MWDOC Staff</u>	<u>Hourly Rate</u>	<u>Weekly Hours</u>	<u>104 - Week Hours</u>	<u>Salaries Weekly Total</u>	<u>Project Total (Salaries & Benefits)</u>
Project Administrator (Joe Berg)	\$99.30	1.5	156	\$148.95	\$15,490.80
Project Manager (Steve Hedges)	\$79.83	18	1,872	\$1,436.94	\$149,441.76
Marketing (Jessica Ouwerkerk)	\$50.06	0.5	52	\$25.03	\$2,603.12
Project Support (Melissa Baum-Haley)	\$45.65	7	728	\$319.55	\$33,233.20
Project Support (Sergio Ramirez)	\$30.85	5	520	\$154.25	\$16,042.00
Total	\$65.15	32	3,328	\$2,084.72	\$216,810.88

Travel

There will be no travel costs associated with this Project.

Equipment Costs

There will be no equipment costs associated with this Project.

Materials and Supplies

To promote the Project MWDOC will, using its own funds (\$26,250), develop, print, and distribute 500,000 marketing materials and other supplies necessary to perform 1,000 residential water-use audits, and have 576 smart timers and 23,400 rotating nozzles installed. MWDOC has found, through 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 sign up for a water-use audit, or replace ineffective irrigation equipment with 'smart' technology Project information will be through their water bill inserts.

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 4 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. Through this effort, MWDOC established pricing for bill inserts at \$.04 each or a total for the Project of \$20,000 (500,000 inserts x \$.04). Once produced, MWDOC will use Orange County's 28 retail water agencies to distribute the promotional material.

Additionally, MWDOC will also develop specific water-use audit material for use in the Project. This material will consist of the following:

- An Auditor Site Inspection Training Manual along with associated Audit documentation
- Program guidelines
- Home Site Certification plaque
- Description of audit criteria
- Description of qualification points list
- Lists of recommendations for water efficiency both inside and outside the residence
- An in-field Program identification including a Program badge and logo embroidered shirt
- Audit check lists
- Qualification points lists
- Rebate application brochures, leave behinds for water-saving recommendations
- Certification follow-up post-cards

Together, the cost to produce these supporting materials will be \$6,250, and are listed in Table 8 below.

Table 8. Project Materials and Supplies Costs

<u>Audit Supplies</u>	<u>Quantity</u>	<u>Price</u>	<u>Project Total</u>
Training Manual	35	\$41.50	\$1,452.50
Program guidelines	150	\$0.02	\$3.00
Certification Plaque	250	\$15.39	\$3,847.50
Audit criteria	750	\$0.02	\$15.00
Lists of recommendations	1,000	\$0.02	\$20.00
Employee badge	40	\$1.75	\$70.00
Audit check lists	1,250	\$0.02	\$25.00
Logo embroidered shirt	35	\$22.00	\$770.00
Rebate brochures	1,250	\$0.02	\$25.00
Follow-up post-cards	1,100	\$0.02	\$22.00
Total	5,860		\$6,250.00

Task 1 - Marketing and Promotion

Project Schedule Develop, print, and distribute 500,000 bill inserts and Audit Supplies

Non-Federal Funding MWDOC Direct Funds - \$26,250

In-kind staff time: Hours - 207; In-kind Staff Funds - \$11,873.27.

Federal Funding \$0

Construction

MWDOC considers Task 2 and 3 the construction component to the Project. In these tasks up to 1,000 residential audits (Task 2) will be performed, as well as, up to 576 smart timers, 23,400 rotating nozzles will be installed, and 160 device installation verifications performed (Task 3). Costs for these two tasks are expected as listed in Table 9.

Table 9. Project Construction Costs

<u>Task Description</u>	<u>MWDOC</u>	<u>Reclamation</u>	<u>Project Total</u>
Task 2- Water Use Audits	\$0	\$87,500	\$87,500
Task 3 – Smart Timer Installations	\$157,248	\$129,600	\$286,848
Task 3 – Rotating Nozzle Installations	\$105,300	\$23,400	\$128,700
Task 3 – Site Verifications	\$0	\$16,750	\$16,750
Total	\$262,548	\$257,250	\$519,798

Water Use Audits

Through MWDOC's own experience as well as in the report titled, "A guide to: Customer incentives for water conservation" Prepared for the California Urban Water Agencies and

California Urban Water Conservation Council (CUWCC)⁹ and in connection with a single and multi-family audit program currently being conducted by the Santa Clara Valley Water District (SCVWD), it has been determined a residential water audit will take on average 2.5 hours to perform and cost between \$40 (CUWCC) and \$95 (SCVWD). MWDOC has also established a salary wage of \$35 per hour for a 2.5 hour residential water-use audit. MWDOC plans on paying the trained and certified auditors \$88 per audit. Across 1,000 water-use audits at 2.5 hours each x \$35 per hour, this equates to \$87,500, and is the amount requested of Reclamation.

Task 2 - Site Audits

Project Schedule	Train and certify Auditors and conduct Site Audits at 1,000 residential sites.
Non-Federal Funding	MWDOC in-kind staff time: Hours – 1,000; In-kind Funds - \$66,822.65; MWDOC Direct Funds - \$0,
Federal Funding	\$87,500

Smart Timer Device Rebates

MWDOC proposes, through the implementation of a smart timer rebate program, to entice residential site owners who currently own a conventional irrigation timer to replace it with a project smart timer. Site owners will be encouraged as either a result of the water-use audit (Task 2) or through other project promotional pieces to install up to 576 smart timers in residential homes over the term of the Project.

MWDOC has over 7 years similar smart timer rebate program experience and data from over 6,000 installed residential smart timers that shows an average smart timer cost with installation to be \$498 – due to smart timers have coming down in price, this average is taken from the last two years of data (1,500+ timers). MWDOC plans on providing an average rebate of \$380 (maximum \$425) to cover the site owner’s timer and installation costs. Of the \$380 average rebate, MWDOC will provide \$155 (\$89,280 total; 576 timers x \$155) and requests of Reclamation the remaining \$225 (\$129,600 total; 576 timers x \$225) per smart timer rebate. The site owner will also contribute funds to the Project. This funding is listed as a Match and their commitment mechanism is their signed rebate application. With an average rebate of \$380, and an average smart timer cost of \$498, this leaves $\$498 - \$380 = \$118 \times 576$ timers, for a total participant match contribution of \$67,968. Together with MWDOC’s contribution of \$89,280, the total Match for smart timer device rebates equals \$157,248.

Rotating Nozzle Device Rebate

MWDOC proposes, through the implementation of a rotating nozzle rebate program, to enticed residential site owners who currently own a conventional irrigation spray heads with high precipitation rates to replace them with low precipitation rate nozzles resulting in a lower volume use of water. Site owners will be encouraged as either a result of the water-use audit

⁹ Fiske, G. S. and Weiner, R. A. (1994). "A guide to: Customer incentives for water conservation". Prepared for the California Urban Water Agencies, California Urban Water Conservation Council, and United States Environmental Protection Agency. Barakat & Chamberlin, Inc.

(Task 2) or through other project promotional pieces to install up to 23,400 rotating nozzles in residential homes over the term of the Project.

MWDOC has over 4 years similar rotating nozzle rebate program experience and data from over 42,000 installed residential rotating nozzles that shows an average nozzle cost with installation to be \$5.50 – due to nozzles have coming down in price, this average is taken from the last two years of data (25,000+ nozzles). MWDOC plans on providing an average rebate of \$4.00 to cover the site owner’s nozzle and installation costs. Of the \$4 average rebate, MWDOC will provide \$3 (\$70,200 total; 23,400 nozzles x \$3) and requests of Reclamation the remaining \$1 (\$23,400 total; 23,400 nozzles x \$1) per rotating nozzle rebate. The site owner will also contribute funds to the Project. This funding is listed as a Match and their commitment mechanism is their signed rebate application. With an average rebate of \$4, and an average rotating nozzle cost of \$5.50, this leaves $\$5.50 - \$4 = \$1.50 \times 23,400$ rotating nozzle, for a total participant match contribution of \$35,100. Together with MWDOC’s contribution of \$70,200, the total Match for the rotating nozzle device rebate equals \$105,300.

Device Installation Verification

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.

Over the term of the agreement, MWDOC will direct Mission to perform 160 residential device installation verification inspections where both smart timers and rotating nozzles have been installed. In the MWDOC/Mission agreement, Mission charges MWDOC \$89 per site plus \$16 administration fee, totaling \$105 for each site.

The Project calls for 23,400 rotating nozzle and 576 smart timers to be installed. At an average of 48 rotating nozzles per site, this equates to 487 sites where rotating nozzles will be installed, and with the sites receiving one (1) smart timer, 576 smart timer sites will also be included. The majority of these sites will have both smart timers and rotating nozzles installed at the same location. MWDOC calculates approximately 640 sites and plans on inspecting 160 of them, or 25 %. And at \$105 per location, this totals \$16,750 (160 x \$105).

Task 3 - Rebate Incentive for Smart Irrigation Devices and Installation Verification Inspections

Project Schedule	Provide rebates for up to 576 residential smart timers and 23,400 rotating nozzles. Perform up to 160 residential smart timer and rotating nozzle post installation verification inspections
Non-Federal Funding	MWDOC in-kind staff time: Hours – 1,047; In-kind Funds - \$73,517.86; MWDOC Direct Funds - \$262,548
Federal Funding	\$169,750

Contractual

Project Evaluation Statistical Consultant

Following the District’s administrative code, MWDOC will develop a Request for Proposal and submit it to a minimum of twelve (12) qualified consultants. From the submittals, MWDOC will select a qualified consultant who will perform both a quantitative and qualitative evaluation on the water saved as a result of the actions taken in this Project.

Estimated costs associated with this task are as follows in Table 10 and are derived from similar water savings evaluations currently being conducted by a statistical water savings evaluation consultant under contract with MWDOC.

Table 10. Project Evaluation Statistical Consultant Costs

	<u>Hours</u>	<u>Rate</u>	<u>Match</u>	<u>Grant</u>	<u>Project Total</u>
Consultant Principal	140	\$220	\$15,400	\$15,400	\$30,800
Information Technician	165	\$110	\$9,075	\$9,075	\$18,150
Associate Technician	75	\$50	\$1,875	\$1,875	\$3,750
Total	380	\$137	\$26,350	\$26,350	\$52,700

It is estimated the statistical water savings evaluation for this project would take 380 hours spread across three consultant personnel and cost a total of \$52,700. It is proposed Reclamation and MWDOC share this expense equally.

Task 5 - Project Evaluation

Project Schedule

Develop a statistical evaluation RFP to hire a qualified consultant. From Project data, perform the evaluation starting.

Non-Federal Funding

MWDOC in-kind staff time: Hours – 438; In-kind Funds - \$23,529.45; MWDOC Direct Funds - \$26,350.00,

Federal Funding

\$26,350.00

Database Modification Consultant

A second contractual obligation associated with the Project would be to modify MWDOC’s existing Landscape Programs Database. This database is the warehouse for all landscape related programs and their data. MWDOC currently has under contract the consultant who developed the database and he estimates it would take 50 hours to complete the modifications. MWDOC proposes the full amount of \$6,250 be provided by Reclamation (Table 11).

Table 11. Project Database Modification Consultant Costs

	<u>Hours</u>	<u>Rate</u>	<u>MWDOC</u>	<u>Reclamation</u>	<u>Project Total</u>
Consultant	50	\$125	\$0	\$6,250	\$6,250
Total	50	\$125	\$0	\$6,250	\$6,250

Task 6 - Database Enhancement

Project Schedule	Modify the existing Database, update throughout the Project
Non-Federal Funding	MWDOC in-kind staff time: Hours – 536; In-kind Funds - \$34,040.00; MWDOC Direct Funds - \$0,
Federal Funding	\$6,250.00

Environmental and Regulatory Compliance Costs

There will be no travel costs associated with this Project.

Reporting

Following the reporting schedule set forth in the agreement, MWDOC will submit quarterly and final reports that will include all required SF-424 forms, a written Project progress narrative, tabular data tables, and all required back up to support the requested reimbursement.

Costs for this deliverable (Task 4) is estimated to be \$17,027.65 with MWDOC providing in-kind funding at \$7,027 and it is requested Reclamation provide \$10,000. Costs are for staff time only.

Task 4 - Quarterly and Final Reporting

Project Schedule	Report in a timely manner all Project results. Following Quarter 8 provide a final report
Non-Federal Funding	MWDOC in-kind staff time: Hours – 100; In-kind Funds - \$7,027.65; MWDOC Direct Funds - \$0,
Federal Funding	\$10,000

Other

There will be no other costs associated with this Project.

Indirect Costs

There will be no indirect costs associated with this Project.

Contingency Costs

There will be no contingency costs associated with this Project.

Total Costs

Table 12 highlights the both MWDOC's and Reclamation's proposed contributions in each of the stated categories. Reporting is listed as \$0, due to its cost being solely In-kind MWDOC staff time and is included as part of the Salaries and Benefit totals.

Table 12. Proposed Contribution by Project Budget Category

	<u>MWDOC</u>	<u>Reclamation</u>	<u>Total</u>
Salaries and Benefits	\$206,811	\$10,000	\$216,811
Materials and Supplies			
Task 1 - Marketing Promotions	\$26,250	\$0	\$26,250
Construction			
Task 2 - Water Use Audits	\$0	\$87,500	\$87,500
Task 3 - Rebate Incentives & Verification	\$262,548	\$169,750	\$432,298
Contractual			
Task 5 - Project Evaluation	\$26,350	\$26,350	\$52,700
Task 6 - Database Modifications	\$0	\$6,250	\$6,250
Reporting			
Task 4 - Reporting	\$0	\$0	\$0
Total	\$521,959	\$299,850	\$821,809
	64%	36%	100%



DIRECTORS

Richard E. Barrett
Richard B. Bell
Douglas M. Chapman
John Dulebohn
William Vanderwerff

Lisa Ohlund
General Manager

January 11, 2012

Bureau of Reclamation
Financial Assistance Services
Attn: Michelle Maher
Mail Code: 84:27810
P.O. Box 25007
Denver, CO. 80225

Subject: Letter of Support for MWDOC's 2012 WaterSMART Grant Application Titled "Water Efficient Site Certification and Smart Irrigation Rebate Program"

Dear Ms. Maher:

The East Orange County Water District (EOCWD) supports the Municipal Water District of Orange County's 2012 WaterSMART: Water and Energy Efficiency Grant application titled "Water Efficient Site Certification and Smart Irrigation Rebate Program." The proposed program seeks to provide residential water audits aimed at identifying water savings opportunities that exist in individual homes. Recommendations will include both indoor and outdoor water efficient devices and appliances, such as smart timers, rotating nozzles, and high efficiency clothes washers. When a home follows the audit recommendations, it will become eligible for a "Water Smart" certification and be presented with a certifying plaque highlighting the home as "water efficient."

Water audits are a successful, cost effective method for realizing dramatic water savings both inside and outside homes, and the residential audit approach has been effectively utilized in Southern California as a water efficiency program. Statistical evaluations have shown that audit programs result in water savings ranging from 25 to 40 gallons per day (gpd) per household.

The Municipal Water District of Orange County has an exceptional track record of developing, implementing, evaluating, and completing a broad variety of regional water use efficiency programs on behalf of water agencies throughout the county. EOCWD supports this grant application and the continued service provided by the Municipal Water District of Orange County.

185 N. McPherson Road
Orange, CA 92869-3720

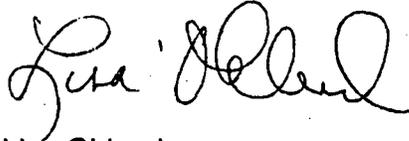
www.eocwd.com

Phone 714.538.5815
Fax 714.538.0334

January 11, 2012

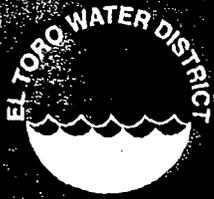
EOCWD strongly encourages the United States Bureau of Reclamation to award the requested funding to this leading-edge program as it will provide local and statewide benefits and can be a model to replicate similar programs throughout California and the nation.

Sincerely,

A handwritten signature in black ink, appearing to read "Lisa Ohlund". The signature is fluid and cursive, with the first name "Lisa" written in a larger, more prominent script than the last name "Ohlund".

Lisa Ohlund
General Manager

Copies to: Beth Pfahl, MWDOC (via email)



El Toro Water District

"A District of Distinction"

Serving the Public - Respecting the Environment

January 12, 2012

Board of Directors

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William H. Kahn
Jerard B. Werner

General Manager

Robert R. Hill

Bureau of Reclamation
Financial Assistance Services
Attn: Michelle Maher
Mail Code: 84:27810
P.O. Box 25007
Denver, CO. 80225

Subject: Letter of Support for MWDOC's 2012 WaterSMART Grant Application Titled
"Water Efficient Site Certification and Smart Irrigation Rebate Program"

Dear Ms. Maher:

The El Toro Water District supports the Municipal Water District of Orange County's 2012 WaterSMART: Water and Energy Efficiency Grant application titled "Water Efficient Site Certification and Smart Irrigation Rebate Program." The proposed program seeks to provide residential water audits aimed at identifying water savings opportunities that exist in individual homes. Recommendations will include both indoor and outdoor water efficient devices and appliances, such as smart timers, rotating nozzles, and high efficiency clothes washers. When a home follows the audit recommendations, it will become eligible for a "Water Smart" certification and be presented with a certifying plaque highlighting the home as "water efficient."

Water audits are a successful, cost effective method for realizing dramatic water savings both inside and outside homes, and the residential audit approach has been effectively utilized in Southern California as a water efficiency program. Statistical evaluations have shown that audit programs result in water savings ranging from 25 to 40 gallons per day (gpd) per household.

The Municipal Water District of Orange County has an exceptional track record of developing, implementing, evaluating, and completing a broad variety of regional water use efficiency programs on behalf of water agencies throughout the county. El Toro Water District supports this grant application and the continued service provided by the Municipal Water District of Orange County.

El Toro Water District strongly encourages the United States Bureau of Reclamation to award the requested funding to this leading-edge program as it will provide local and statewide benefits and can be a model to replicate similar programs throughout California and the nation.

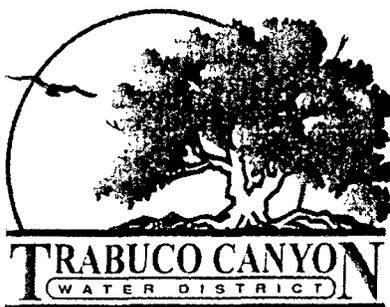
Sincerely,

EL TORO WATER DISTRICT


Robert R. Hill
General Manager

STAFF MEMBERS

Don Chadd, General Manager
Hector Ruiz, District Engineer
Teresa Teichman, District Secretary
Cindy Navaroli, District Treasurer



BOARD OF DIRECTORS

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Michael Safranski, Director
Glenn Acosta, Director
Matthew Disston, Director

January 11, 2012

Bureau of Reclamation
Financial Assistance Services
Attn: Michelle Maher
Mail Code: 84:27810
P.O. Box 25007
Denver, CO. 80225

**Subject: Letter of Support for MWDOC's 2012 WaterSMART Grant Application Titled
"Water Efficient Site Certification and Smart Irrigation Rebate Program"**

Dear Ms. Maher:

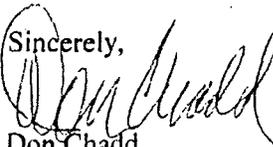
The Trabuco Canyon Water District supports the Municipal Water District of Orange County's 2012 WaterSMART: Water and Energy Efficiency Grant application titled "Water Efficient Site Certification and Smart Irrigation Rebate Program." The proposed program seeks to provide residential water audits aimed at identifying water savings opportunities that exist in individual homes. Recommendations will include both indoor and outdoor water efficient devices and appliances, such as smart timers, rotating nozzles, and high efficiency clothes washers. When a home follows the audit recommendations, it will become eligible for a "Water Smart" certification and be presented with a certifying plaque highlighting the home as "water efficient."

Water audits are a successful, cost effective method for realizing dramatic water savings both inside and outside homes, and the residential audit approach has been effectively utilized in Southern California as a water efficiency program. Statistical evaluations have shown that audit programs result in water savings ranging from 25 to 40 gallons per day (gpd) per household.

The Municipal Water District of Orange County has an exceptional track record of developing, implementing, evaluating, and completing a broad variety of regional water use efficiency programs on behalf of water agencies throughout the county. Trabuco Canyon Water District supports this, grant application and the continued service provided by the Municipal Water District of Orange County.

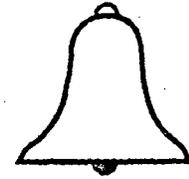
Trabuco Canyon Water District strongly encourages the United States Bureau of Reclamation to award the requested funding to this leading-edge program as it will provide local and statewide benefits and can be a model to replicate similar programs throughout California and the nation.

Sincerely,


Don Chadd

General Manager

BOARD OF DIRECTORS
BETTY H. OLSON, PH.D
SAUNDRA F. JACOBS
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BILL LAWSON
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GENERAL MANAGER



Santa Margarita Water District

January 17, 2012

Bureau of Reclamation
Financial Assistance Services
Attn: Michelle Maher
Mail Code: 84:27810
P.O. Box 25007
Denver, CO 80225

Subject: Letter of Support for MWDOC's 2012 WaterSMART Grant Application Titled
"Water Efficient Site Certification and Smart Irrigation Rebate Program"

Dear Ms. Maher:

Santa Margarita Water District supports the Municipal Water District of Orange County's 2012 WaterSMART: Water and Energy Efficiency Grant application titled "Water Efficient Site Certification and Smart Irrigation Rebate Program." The proposed program seeks to provide residential water audits aimed at identifying water savings opportunities that exist in individual homes. Recommendations will include both indoor and outdoor water efficient devices and appliances, such as smart timers, rotating nozzles, and high efficiency clothes washers. When a home follows the audit recommendations, it will become eligible for a "Water Smart" certification with an accompanying plaque highlighting the home as "water efficient."

Water audits are a successful, cost effective method for realizing dramatic water savings both inside and outside homes, and agencies in Southern California effectively utilize the residential audit approach as a water efficiency program. Statistical evaluations have shown that audit programs result in water savings ranging from 25 to 40 gallons per day (gpd) per household.

The Municipal Water District of Orange County and its member agencies have an exceptional track record of developing, implementing, evaluating, and completing a broad variety of regional water use efficiency programs throughout the county. Santa Margarita Water District supports this grant application and continued water efficiency coordination with the Municipal Water District of Orange County.

Ms. Michelle Maher
January 17, 2012
Page 2

Santa Margarita Water District strongly encourages the United States Bureau of Reclamation to award the requested funding to this innovative program providing local and statewide benefits that can serve as a model for similar programs throughout California and the nation.

Sincerely,

SANTA MARGARITA WATER DISTRICT



Daniel R. Ferons
Chief Engineer

SOUTH COAST



WATER DISTRICT

January 16, 2012

Board of Directors

Wayne Rayfield
President

Ingrid McGuire
Vice President

Bob Moore
Director

Richard Gardner
Director

Richard Runge
Director

Ms. Michelle Maher
Bureau of Reclamation
Financial Assistance Services
Mail Code: 84:27810
P.O. Box 25007
Denver, CO 80225

Subject: Letter of Support for MWDOC's 2012 WaterSMART Grant Application
Titled "Water Efficient Site Certification and Smart Irrigation Rebate
Program"

Dear Ms. Maher:

The South Coast Water District supports the Municipal Water District of Orange County's 2012 WaterSMART: Water and Energy Efficiency Grant application titled "Water Efficient Site Certification and Smart Irrigation Rebate Program." The proposed program seeks to provide residential water audits aimed at identifying water savings opportunities that exist in individual homes. Recommendations will include both indoor and outdoor water efficient devices and appliances, such as smart timers, rotating nozzles, and high efficiency clothes washers. When a home follows the audit recommendations, it will become eligible for a "Water Smart" certification and be presented with a certifying plaque highlighting the home as "water efficient."

Water audits are a successful, cost effective method for realizing dramatic water savings both inside and outside homes, and the residential audit approach has been effectively utilized in Southern California as a water efficiency program. Statistical evaluations have shown that audit programs result in water savings ranging from 25 to 40 gallons per day (gpd) per household.

The Municipal Water District of Orange County has an exceptional track record of developing, implementing, evaluating, and completing a broad variety of regional water use efficiency programs on behalf of water agencies throughout the county. South Coast Water District supports this grant application and the continued service provided by the Municipal Water District of Orange County.

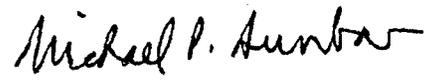
South Coast Water District strongly encourages the United States Bureau of Reclamation to award the requested funding to this leading-edge program as it will provide local and statewide benefits and can be a model to replicate similar programs throughout California and the nation.

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

Very truly yours,

A handwritten signature in black ink that reads "Michael P. Dunbar". The signature is written in a cursive style with a horizontal line at the end.

Michael P. Dunbar
General Manager

MPD:jb



City of San Clemente Sewer/Sanitation

Daniel Dyer, Pre-Treatment Compliance Insp
Phone: (949) 361-6153 Fax: (949) 361-8309
dyerd@san-clemente.org

January 17, 2012

Bureau of Reclamation
Financial Assistance Services
Attn: Michelle Maher
Mail Code: 84:27810
P.O. Box 25007
Denver, CO. 80225

Subject: Letter of Support for MWDOC's 2012 WaterSMART Grant Application
Titled "Water Efficient Site Certification and Smart Irrigation Rebate Program"

Dear Ms. Maher:

The City of San Clemente supports the Municipal Water District of Orange County's 2012 WaterSMART: Water and Energy Efficiency Grant application titled "Water Efficient Site Certification and Smart Irrigation Rebate Program." The proposed program seeks to provide residential water audits aimed at identifying water savings opportunities that exist in individual homes. Recommendations will include both indoor and outdoor water efficient devices and appliances, such as smart timers, rotating nozzles, and high efficiency clothes washers. When a home follows the audit recommendations, it will become eligible for a "Water Smart" certification and be presented with a certifying plaque highlighting the home as "water efficient."

Water audits are a successful, cost effective method for realizing dramatic water savings both inside and outside homes, and the residential audit approach has been effectively utilized in Southern California as a water efficiency program. Statistical evaluations have shown that audit programs result in water savings ranging from 25 to 40 gallons per day (gpd) per household.

The Municipal Water District of Orange County has an exceptional track record of developing, implementing, evaluating, and completing a broad variety of regional water use efficiency programs on behalf of water agencies throughout the county. The City of San Clemente supports this grant application and the continued service provided by the Municipal Water District of Orange County.

The City of San Clemente strongly encourages the United States Bureau of Reclamation to award the requested funding to this leading-edge program as it will provide local and statewide benefits and can be a model to replicate similar programs throughout California and the nation.

Sincerely,

Daniel Dyer
Pretreatment Compliance Inspector



CITY OF NEWPORT BEACH

PUBLIC WORKS DEPARTMENT

Stephen G. Badum, Director

January 12, 2012

Bureau of Reclamation
Financial Assistance Services
Attn: Michelle Maher
Mail Code: 84:27810
P.O. Box 25007
Denver, CO. 80225

Subject: Letter of Support for MWDOC's 2012 WaterSMART Grant Application Titled
"Water Efficient Site Certification and Smart Irrigation Rebate Program"

Dear Ms. Maher:

The City of Newport Beach supports the Municipal Water District of Orange County's 2012 WaterSMART: Water and Energy Efficiency Grant application titled "Water Efficient Site Certification and Smart Irrigation Rebate Program." The proposed program seeks to provide residential water audits aimed at identifying water savings opportunities that exist in individual homes. Recommendations will include both indoor and outdoor water efficient devices and appliances, such as smart timers, rotating nozzles, and high efficiency clothes washers. When a home follows the audit recommendations, it will become eligible for a "Water Smart" certification and be presented with a certifying plaque highlighting the home as "water efficient."

Water audits are a successful, cost effective method for realizing dramatic water savings both inside and outside homes, and the residential audit approach has been effectively utilized in Southern California as a water efficiency program. Statistical evaluations have shown that audit programs result in water savings ranging from 25 to 40 gallons per day (gpd) per household.

The Municipal Water District of Orange County has an exceptional track record of developing, implementing, evaluating, and completing a broad variety of regional water use efficiency programs on behalf of water agencies throughout the county. The City of Newport Beach supports this grant application and the continued service provided by the Municipal Water District of Orange County.

City of Newport Beach strongly encourages the United States Bureau of Reclamation to award the requested funding to this leading-edge program as it will provide local and statewide benefits and can be a model to replicate similar programs throughout California and the nation.

Sincerely,

Shane Burekle
Water Conservation Coordinator



January 12, 2012

DPW 12-001

Bureau of Reclamation
Financial Assistance Services
Attn: Michelle Maher
Mail Code: 84:27810
P.O. Box 25007
Denver, CO. 80225

Subject: Letter of Support for MWDOC's 2012 WaterSMART Grant Application Titled
"Water Efficient Site Certification and Smart Irrigation Rebate Program"

Dear Ms. Maher:

The City of La Palma supports the Municipal Water District of Orange County's 2012 WaterSMART: Water and Energy Efficiency Grant application titled "Water Efficient Site Certification and Smart Irrigation Rebate Program." The proposed program seeks to provide residential water audits aimed at identifying water savings opportunities that exist in individual homes. Recommendations will include both indoor and outdoor water efficient devices and appliances, such as smart timers, rotating nozzles, and high efficiency clothes washers. When a home follows the audit recommendations, it will become eligible for a "Water Smart" certification and be presented with a certifying plaque highlighting the home as "water efficient."

Water audits are a successful, cost effective method for realizing dramatic water savings both inside and outside homes, and the residential audit approach has been effectively utilized in Southern California as a water efficiency program. Statistical evaluations have shown that audit programs result in water savings ranging from 25 to 40 gallons per day (gpd) per household. This is extremely important due to the aging infrastructure and residents currently not aware of the potential savings in water consumption that could occur by conducting these audits.

The Municipal Water District of Orange County has an exceptional track record of developing, implementing, evaluating, and completing a broad variety of regional water use efficiency programs on behalf of water agencies throughout the county. The City of La Palma supports this grant application and the continued service provided by the Municipal Water District of Orange County.

The City of La Palma strongly encourages the United States Bureau of Reclamation to award the requested funding to this leading-edge program as it will provide local and statewide benefits and can be a model to replicate similar programs throughout California and the nation.

Sincerely,

Jeff C. Moneda, P.E.
Public Works Director/City Engineer

www.cityoflapalma.org

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La Palma, CA 90623-1771

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RESOLUTION NO. 1921
RESOLUTION OF THE BOARD OF DIRECTORS OF MUNICIPAL WATER DISTRICT OF
ORANGE COUNTY SUPPORTING A BUREAU OF RECLAMATION 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 Orange County Water Smart Landscape Project 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 meet the Governor's call for a 20% reduction in urban water use by 2020.

NOW, THEREFORE, BE IT RESOLVED, that the Municipal Water District of Orange County Board of Directors designates Kevin P. Hunt, 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.

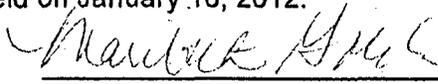
NOW, THEREFORE, BE IT FURTHER RESOLVED, that the Municipal Water District of Orange County Board of Directors assures its capability to provide the amount of funding and in-kind contributions specified in the funding plan.

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 and comply with all applicable auditing requirements.

Said Resolution was adopted on January 18, 2012, by the following roll call vote:

AYES:	Directors Barbre, Clark, Dick, Finnegan, Hinman, Royce & Thomas
NOES:	None
ABSENT:	None
ABSTAIN:	None

I HEREBY CERTIFY the foregoing is a full, true, and correct copy of Resolution No. 1921 adopted by the Board of Directors of Municipal Water District of Orange County at its meeting held on January 18, 2012.



Maribeth Goldsby, Secretary
Municipal Water District of Orange County

Congressional District in Orange County California

CD 40 – Ed Royce

CD 42 – Gary Miller

CD 44 – Ken Calvert

CD 46 – Dana Rohrabacher

CD 47 – Loretta Sanchez

CD 48 – John Campbell