

Landscape Water Use Efficiency Research Project

Final Project Report

Agreement # R11AP35322
The Metropolitan Water District of Southern California
700 N. Alameda Street
Los Angeles, CA 90012-3352
October 31, 2013

1. Recipient Information:	
Recipient Name: (Name, contact person, address and phone number)	The Metropolitan Water District of Southern California Mr. Mark Graham 700 North Alameda Street, Los Angeles 90012-3352 Phone: 213-217-5793; email: mgraham@mwdh2o.com
Project Name:	Landscape Water Use Efficiency Research Project
Assistance Agreement	R11AP35322
Date of Award: (Month, Year)	September 28, 2011
Estimated Completion Date	October 31, 2013
Actual Completion Date: (Month, Year)	October 31, 2013
2. Final Funding Information	
	Funding Amount
Non-Federal Entities	
1. Metropolitan Water District of Southern California	\$53,300
2.	
3.	
<i>Non-Federal Subtotal:</i>	\$53,300
Other Federal Entities	
1.	
2.	
3.	
<i>Other Federal Subtotal:</i>	
<i>Requested Reclamation Funding:</i>	\$50,000
<i>Total Project Funding:</i>	\$103,300

1. One Paragraph Project Summary:

The Landscape Water Use Efficiency Applied Research Project conducted field research and analyses to encourage the development of innovative outdoor water management technologies and practices. The Metropolitan Water District of Southern California (Metropolitan) leveraged its research funding by cost sharing with the United States Bureau of Reclamation (Reclamation) to (1) conduct water savings analysis for smart controllers that have been installed for more than four years using regional data, and (2) identify water savings opportunities by surveying conditions for landscape water use behaviors and use of irrigation devices within Metropolitan's service area.

2. **Final Project Description:** *Briefly describe components of the project and the work completed, including each element of the scope of work and the work completed at each stage of the project. Please include maps, sketches, and/or drawing of the features of the completed project, as appropriate. In addition, please describe any changes in the project scope.*

Smart Controller Water Savings Analysis: A pilot program was undertaken to assess residential and commercial water savings from the replacement of standard programmable irrigation controllers with Weather-Based Irrigation Controllers (WBICs) in Southern California. These smart devices use real time or historical information about climate along with plant type and soil condition inputs to regulate irrigation. The results of the pilot study indicate that these devices do result in statistically significant reductions in the amount of water used while shifting both the timing and level of peak usage.

After some preliminary data collection on WBIC installations, A & N Technical Services (A&N) was hired through a Request for Proposals (RFP) process to determine the amount of water savings attributable to these devices. Before undertaking this analysis, A&N was required to: (1) assemble a control group for assessing water savings among program participants and (2) gather additional meter read data, consumption and weather data.

For purposes of the impact analysis, data on household consumption was gathered for a period of at least three years prior to implementation of the WBIC (the pre-implementation-period) and three years afterwards (the post-implementation period) from two participating agencies: the Long Beach Water Department and the Los Angeles Department of Water and Power. A control group was constructed by randomly drawing a panel of non-program-participating households from the files of each agency. Using this information, a regression model was developed to estimate pre-post average net water savings after controlling for the confounding factors of water and seasonality.

The study's findings were summarized in a draft report along with the project data and analyses that Metropolitan and Reclamation reviewed. Comments were incorporated into the final report which was sent to Reclamation upon completion. Metropolitan made a presentation on the findings of this project to its member agencies and also at the WaterSmart conference in Las Vegas in 2013.

Landscape Conservation Market Study: Thornhill Associates was selected by Metropolitan to conduct a Water Conservation Market Study in residential landscape. The purpose of this study was to better understand today's attitudes and awareness of single family residential customers on the topic of landscape irrigation.

Through both quantitative and qualitative research components, Thornhill Associates conducted a comprehensive study exploring water conservation habits and knowledge, experiences with landscape watering systems and especially sprinkler controllers, reactions to specific water savings concepts/tools, as well as motivators and barriers to landscape water savings. Based on an analysis of the findings from this research, a pilot incentive program concept was developed along with methods for testing this program.

Phase 1: Quantitative Research – Residential Customer Online Survey

A residential customer survey was conducted with single-family homeowners within Metropolitan's service area to explore homeowner understanding and the use of sprinkler controllers as well as general water conservation knowledge and habits. Surveyed residents within Metropolitan's service area who own a single family detached home, with a lot size of less than an acre, and with an in-ground sprinkler system were selected for this project. In order to gather feedback from homeowners, an online survey was conducted. The survey started with a set of screening questions to determine whether or not a resident qualified to participate in the survey. Once it was determined they owned a single family detached home located within a Metropolitan zip code with a lot size of less than an acre and an in-ground sprinkler system, they were able to complete the survey.

Phase 2: Qualitative Research – Industry Best Practices and Homeowner Focus Groups

To investigate and learn from industry best practices, Thornhill Associates conducted 12 telephone interviews with knowledgeable representatives from one irrigation distributor (Ewing) and 12 water agencies – five within Metropolitan's service area and seven external to Metropolitan. Following an analysis of these discussions, a potential pilot program direction was identified. Innovative qualitative research with homeowners was then designed and customized to test theories, ensuring a customer-driven pilot concept. These interviews provided an important foundation for insights on which to distill out the most compelling landscape water saving opportunities.

Topics covered in the discussions included:

- Programs/activities being pursued in the area of outdoor water savings
- Programs that were successful, unsuccessful and general lessons learned
- Opportunities being considered for the future
- Specific reactions/experiences with drip irrigation, big box stores, apps, other water saving devices
- What should Metropolitan consider doing (Metropolitan member agencies only)

Following an analysis of the telephone discussions held with water industry professionals, the goal was to then to conduct research with homeowners to identify motivators and barriers to landscape water savings and to understand reactions to specific incentive options. Three concepts were chosen to be explored with homeowners to determine their viability for an incentive program.

Specific objectives included understanding:

- Homeowner engagement level, attitudes, and issues with landscape watering systems and especially sprinkler controllers
- Opportunities to make landscape water savings easier for homeowners
- Reactions to specific water saving concepts/tools
 - WaterDex™
 - Sprinkler Times App (www.sprinklertimes.com)

- Smart Controller - Voucher Program

Thornhill Associates designed and conducted a comprehensive focus group research study consisting of two focus groups and an online pre-task activity. The research was conducted with a mix of male and female single-family homeowners that met similar criteria as the online survey group including:

- Less than one acre of property
- In-ground sprinklers that turn on/off with a controller
- Some comfort level with the internet

The online pre-activity was conducted on an online discussion board over several days prior to the focus groups. Participants answered questions and uploaded photos and videos of their yard, sprinkler systems and controllers providing rich context for the ensuing focus group discussions.

Focus groups were held at the offices of Los Angeles Department of Water and Power (LADWP) and City of Riverside Public Utilities.

Phase 3: Pilot Program Design and Testing Method

Following an analysis of the findings from both the quantitative and qualitative research a pilot program and testing method was developed. The goal of this pilot program idea was to provide a means of communication to the interested homeowner. The most important aspect would be a program website that simply and logically walks the customer through the steps required to achieve a maximum level of cost-effective water efficiency and plant health for their landscaped areas.

Customers would be provided with a number of resources to aid them with their water efficiency decision making all accessed through the program website. By using an easy-to-use Return on Investment (ROI) calculator, they can find out whether it makes economic sense to replace their existing controller with a smart controller.

If they elect to replace their controller, qualifying customers can offset about half the cost of the device by applying, through the website, for a voucher, printing it at home and taking it to their local irrigation supplier. After they have redeemed their voucher, they would be sent an email that contains a link to a YouTube-type video from the controller manufacturer to aid in the installation and programming of that device. There would also be program and manufacturer hotlines plus additional resources to make the customer's efforts a success.

Customers who would not realize enough water savings to justify the costs of a new smart controller would be provided with another option. They would have access to a "web application" that easily walks the customer through the process of creating their own customized watering schedules. The pilot program is designed to support the customer beyond the initial controller programming stage. Customers would receive email reminders to change their watering schedules and also a website location to seek help if there was any confusion along the way.

3. **Accomplishment of Project Goals:** *Describe the goals and objectives of the project and whether each of these was met. Where appropriate, state the reasons why goals and objectives were not met, and describe any problems or delays encountered in completing the project. Please include whether or not the project was completed within cost.*

Smart Controller Water Savings Analysis: The goal of this part of the project was to statistically assess residential and commercial water savings from the replacement of standard programmable irrigation controllers with Weather-Based Irrigation Controllers (WBICs) in Southern California. This goal was met by analyzing water use data for sites within Metropolitan's service area that were included in the 2009 study, *Evaluation of California Weather-Based "Smart" Irrigation Controller Programs*. The original data was used to determine short term water savings and updated data from program participants was used to determine longer-term water savings achieved through the installation of smart controllers.

Of particular interest is the fact that pre-post net water savings in the participant group was 103 gallons greater than those of the program control group. This represents a statistically significant 14.9% reduction in use among residential program participants.

Savings for 250 commercial water users who participated in the WBIC Program were also considered.¹ Statistical results involving tests for program participants versus non-participants are not presented, however, due to the lack of a necessary control group. Considered solely in terms of pre-post savings among participants, commercial program participants are estimated to have saved an average of 455.3 gallons per day (a 16% reduction from weather-normalized pre-intervention levels).

Additional analysis of pre-post program participants reveals not only a reduction in use, but a shift in the timing of water use. Specifically, the WBICs reduced pre-post consumption by an average of 103 gallons per day per day overall. Furthermore, a shift in peak water use from late July-early August to late-September-early October also occurred. A similar pattern was found among commercial users as well.

Landscape Conservation Market Study:

Phase 1: Quantitative Research – Residential Customer Online Survey

Single family detached home owners, with a lot size of less than an acre and an in-ground sprinkler system living in Metropolitan's service area, were the subjects of this research study. It is estimated that these homeowners represent about 30% of the residents living in this service area.

The majority of residents surveyed (73%) have a sprinkler system that turns on and off with a controller, while the remaining 27% control their system manually. Those with

Any customer using more than 1,250 gallons per day was considered to be a commercial customer.¹

sprinkler controllers report they are located either in their garage (62%) or mounted on the wall outside their home (31%).

Landscapers or gardeners are not the ones setting the sprinkler controllers. Although sixty-eight percent of residents report having a landscaper or gardener, most residents set the sprinkler controller themselves (67%) or have a family member do it (22%). Additionally, residents noted that their landscaper/gardener has access to their sprinkler controller less than half the time.

About half of the residents surveyed (47%) water their yard three to four days a week. Those same residents were significantly more likely to know how to program their controller. Those who said they would consider purchasing a smart controller are significantly more likely to indicate they adjust their sprinkler controller when the grass turns brown than those who would not.

Sixty-nine percent of residents with a sprinkler controller noted their sprinkler controller has some type of added feature. The top features mentioned include: a water budget setting (26%), a rain sensor (25%), a percent adjust setting (21%) and a smart controller (21%). The willingness to purchase a smart controller appeared to have no bearing on whether or not a resident had features on their current sprinkler controller.

Big box stores were the top destination for learning about and purchasing smart controllers. When asked where they would go to learn more about a smart controller 76% of residents indicated they would go to a big box store, while 43% would search the Internet and 33% would consult their gardener or landscaper. Those looking for information on the Internet would use Google (53%) or go directly to Homedepot.com (13%) or Lowes.com (9%). Residents who wanted to purchase a new smart controller advised in open-ended responses that they would go to Home Depot (69%) or Lowes (38%).

On average, residents think a smart controller would cost on average about \$122, however, they were only willing to pay up to \$100 for a smart controller. Overall, 32% of residents did not know what a smart controller costs. When the respondents were broken down into groups, about a third were willing to pay the same or more than what they thought the cost of the smart controller would be. Another third would pay less than what they think the controller costs and the final third were not sure about the cost.

The \$100 price point is again confirmed when 50% of those asked if they would purchase a smart controller if it cost \$100 said that they would be likely or very likely to do so.

As a future smart controller program is being designed, keep in mind that residents indicated they would need assistance with:

- 54% Recommendations on which smart controller to purchase
- 45% Installation of the smart controller
- 41% Rebate/incentive toward the purchase of a smart controller
- 35% Suggestions on where to purchase a smart controller
- 33% Assistance with programming the smart controller

Rebates or incentives to purchase a smart controller are appealing to 41% of respondents. Those who indicated they would like to receive a rebate or incentive were asked how much. About half of the residents would like a rebate of \$50 or less, while the other half would like \$51 or more.

To test communication points, residents were provided a list of reasons that might motivate them to purchase a smart controller. Knowing that a smart controller can do the following was motivating to residents:

- 74% - Knowing that a smart controller could reduce my water use by 20%
- 56% - Knowing that smart controllers are very convenient (watering automatically, turning off when it rains, etc.)
- 56% - Knowing that I would get some type of rebate upon purchase
- 55% - Knowing that a smart controller would reduce the over watering and runoff on my property

The majority of residents (83%) who do not currently have a smart controller would consider purchasing one. These interested residents were significantly more likely to know how to program their current sprinkler controller. When asked why they would be interested, 31% said it would save money on their water bill, while 27% said they would conserve water and 20% appreciated the fact they would not have to adjust their system for the weather conditions.

From a list of statements, residents were then asked which would help them water their yard more efficiently. Not surprisingly, saving money on their water bill (62%) was the top response. A rebate/incentive on the purchase of a new smart controller was also appealing (49%).

As another means of measuring current water conservation habits residents were asked four questions to determine how often they engage in each of these behaviors:

- Water your yard before 8am
- Check for leaks inside your home
- Check for leaks in your sprinkler system
- Adjust your outdoor water use

Residents who “always” do these things were categorized as “tuned in” to water conservation (13%). Those who said “never” to any of the four statements were categorized as “tuned out” (20%). Over the past few years local water utilities have observed a drop in the amount of water being used by households. In order to understand this change, we asked residents about their water usage. Nearly six in ten (59%) report they are trying to conserve water. Half of the residents, report that they are trying to save money (51%) and a third (31%) are trying to comply with the local watering restrictions.

Fifty-four percent of residents believe their city does not have mandatory watering restrictions, while 35% believe their city does have such restrictions.

The survey was conducted among 500 residents. There were no set quotas based on a respondent's demographic information. In order for a respondent to participate they must live in Metropolitan's service area (determined by zip code), own a single family detached home with a lot size of less than an acre, and have an in-ground sprinkler system.

The average resident surveyed was 47 years of age and a college graduate who earned \$84,600 before taxes in 2010. Over half of the respondents were women (56%), however men (44%) are significantly more likely than women to know how to program and set their sprinkler controller.

This project was completed within cost.

4. **Discussion of Amount of Water Conserved, Marketed or Better Managed: In responding to the questions set forth below, Recipients should rely on the best data or information available. Actual field measurements should be used whenever possible** (e.g., baseline data or post-project data derived from measuring devices, diversion records, seepage tests, etc.) Where actual field measurements are not available, water savings (or amounts marketed or better managed) may be estimated based on studies, other similar improvement projects, or anecdotal evidence.

- A Recipient's total water supply (average, annual, available water supply in acre-feet per year):

Metropolitan has two sources of water supply: Colorado River, delivered through the Colorado River Aqueduct, and the Bay-Delta, delivered through the State Water Project. Deliveries from each source for the 2006-2010 are shown below. Supply numbers for 2010-2013 are not yet available.

Year	Colorado River Aqueduct (AF)	State Water Project (AF)	Total (AF)
2012*	735,000	1,252,000	1,987,000
2011	699,000	1,374,000	2,073,000
2010	837,000	1,129,000	1,966,000
2009	1,043,000	908,000	1,951,000
2008	896,000	1,037,000	1,933,000
Total	4,210,000	5,700,000	9,910,000
Average Annual Supply (Total / 5 yrs)			1,982,000

- B. Amount of water conserved, marketed or better managed as a result of the project

Since this project consisted of two research studies, no water was saved from this project. The results from this study will help Metropolitan, its member agencies, and other water agencies with smart controller programs achieve more landscape water savings in the future.

C. Describe how the amounts stated in response to 6.B were calculated or estimated: In responding to this question, please address (1) – (3) below.

1. Describe the information/data being relied on to calculate/estimate the project benefits. State how that data/information was obtained, if appropriate. Provide any other information necessary to explain how the final calculation/estimate of project benefits was made.

Smart Controller Water Savings Analysis:

The original consumption data did not contain a formal control group of nonparticipants. If there is no empirical measure of ongoing conservation, then straightforward conclusion cannot be drawn on the “net” water saving-the amount of water savings that the WBIC program produced in addition to the amount of water savings that would have occurred. This deficiency was addressed by follow-up request for consumption data for a control group of nonparticipants. The City of Long Beach and the Los Angeles Department of Water and Power were able to provide data for a control group. (It would have been preferable to test if the ongoing conservation amongst nonparticipating customers in the City of Upland differed than ongoing conservation in Long Beach and Los Angeles; since this data was not available, control groups from Long Beach and Los Angeles were established as a proxy for ongoing conservation in Upland.)

Second, the date of meter read for each observed consumption value was not contained in the originally provided data. No meaningful effect of weather can be statistically estimated if one does not know which 30 or 61 days of rainfall to associate with a specific consumption read. Lacking a reliable estimate of the effect of weather, one cannot obtain a reliable estimate of gross water savings (among participants alone) much less net water savings (the difference between participation and nonparticipation). Metropolitan obtained contact information from each participating retail agency and conducted follow up to obtain actual or estimated meter read dates for each measured consumption meter read.

Metropolitan requested consistent consumption data from its following agencies that agreed to participate.

- Eastern MWD
- Long Beach Water Department
- Los Angeles Department of Water and Power
- City of Upland within IEUA’s service area

Metropolitan issued a data request to participating retail agencies with “data structure” for the water consumption data on participants transmitted for this analysis. The research team worked closely with the retailers to assist in translating easily formatted water consumption data dumps into this data structure.

The available consumption data was compiled, at least three years of pre-intervention consumption and three to five years of post-participation data. While it would have been preferred to analyze a longer post-installation water consumption data history—the cost of the analysis turns more on the number of originating billings systems than the length of history—the available data was sufficient to form the basis for defensible and credible estimates of the initial net water savings attributable to the Weather Based Irrigation Controllers and efficient landscape practices.

The quantity of data required is driven by a key finding of earlier research². Prior impact evaluations found that water savings varies through the year. The Residential Runoff Reduction study³ showed that the water savings were lowest in the spring growing season and greatest in the late summer and fall season. Our impact evaluation plan, the tasks of which are described below, avoided this problem through modeling to control for potential biases.

Historical account level water use records and multiple climatic measures were used to develop climate-adjusted estimates of water savings using panel data (time series cross section) regression methods. A “control group” of nonparticipants was developed to permit an assessment of net conservation.

Landscape Conservation Market Study:

In order to gather feedback from homeowners, an online survey was conducted. The survey started with a set of screening questions to determine whether or not a resident qualified to participate in the survey. Once it was determined they owned a single family detached home located within a Metropolitan zip code with a lot size of less than an acre and an in-ground sprinkler system, they were able to complete the survey.

Invitations were only sent to residents living in Metropolitan’s service area. A list of 553 zip codes was used and provided by Metropolitan to determine that the customers were within the service area. With that list, Thornhill Associates was able to purchase access to email addresses for residents living in those zip codes. Quotas were incorporated into the data collection process to ensure that completed interviews came from a wide range of zip codes rather than from just a few.

Nearly 54,500 online survey panel members were sent an invitation to participate in this survey. Panel members opted to receive periodic emails

² *Evaluation of the Landscape Performance Certification Program*, A report for the Municipal Water District of Orange County and the Metropolitan Water District of Southern California, December 2003. *The Residential Runoff Reduction Study*, Municipal Water District of Orange County, Irvine Ranch Water District, July 2004. *Smart Landscape Programs Comprehensive Evaluation*, San Diego County Water Authority, 2011. MWDOC Smart Timer Rebate Program Evaluation, Municipal Water District of Orange County, 2011.

³ *The Residential Runoff Reduction Study*, opt cit..

when a survey is available to complete. The email invitation used by this panel company is typically generic. For this survey, the subject line read “New Survey Opportunity” and the survey topic was listed as “Consumer.” Of the 54,495 emails sent, 1,834 people chose to click on the link and take the survey. Of those, only 500 qualified and chose to complete the survey.

Based on an infinite population, conducting 500 surveys will provide results of $\pm 4.38\%$ at the 95% confidence level. This means that in 95 out of 100 repetitions of the survey, the results will not vary more than $\pm 4.38\%$.

2. As appropriate, please include an explanation of any concerns or factors affecting the reliability of the data/information relied on.

For the Smart Controller Water Savings Analysis, due to the data inadequacies found in the data review, subsequent analysis was focused only on four retail agencies that agreed to provide additional data: the City of Long Beach, the City of Los Angeles, the City of Upland, and Eastern MWD. Additionally, statistical results involving tests for commercial program participants versus non-participants were not presented, due to the lack of a necessary control group.

3. Attach any relevant data, reports or other support relied on in the calculation/estimate of project benefits, if available. Please briefly describe the data/information attached, if any.

Not applicable. Both final project reports have been previously sent to Reclamation.

- D. Use of Conserved Water: *Please explain where the water saved, better managed, or marketed as a result of the project is going (e.g. used by the recipient, in stream flows, available to junior water users, etc.*

For water conserved in the future due to the findings of these studies could support existing water markets for Colorado River, State Water Project, and Central Valley Project contractors. This region is dependent on imported water to meet their municipal and industrial demand. In addition, reduced demand will provide flexibility for participating in water markets when transfer and storage opportunities are advantageous to the region and improve the management of water across the state.

- E. Future tracking of project benefits: *Please state whether and how the recipient plans to track the benefits of the project (water saved, marketed or better managed) in the future.*

Metropolitan will constantly review new future landscape water savings studies and compare their findings to the ones garnered from the two studies in this project.

5. **Discussion of Amount of Renewable Energy Added:** *If your project included the installation of a renewable component, please describe the amount of energy the system is generating annually. Please provide any data/reports in support of this calculation.*

This Program did not include the installation of a renewable component.

6. **Describe how the project demonstrates collaboration, stakeholder involvement or the formation of partnerships, if applicable:** *Please describe the collaboration involved in the project, and the role of any cost-share or other types of partners. If there were any additional entities that provide support*

The success of both studies was highly dependent on the collaboration of the participating member agencies and outside water agencies. The agencies provided customer use data, participated in focus group discussions, and provided the use of their facilities for focus group meetings. Both studies' findings were documented in reports that were submitted to Reclamation and Metropolitan's member agencies. Additionally, the results from both studies were presented to Metropolitan's member agencies. Metropolitan also presented the findings from the Smart Controller Water Savings Analysis at the 2013 WaterSmart conference in Las Vegas.

7. **Describe any other pertinent issues regarding the project:**

Metropolitan has reviewed the water savings pilot program proposal developed in the Landscape Conservation Market Study to see if the concept can be implemented into Metropolitan's rebate program. Unsuccessful attempts have been made to partner with another entity to develop a website tool, so this proposal has been put on hold for now. Based on one of the project's recommendations, Metropolitan is pursuing a voucher type pilot program with a landscape manufacturer to determine how effective it is compared to its standard rebate program.

Programmatic note – This agreement has a minimum funding requirement of \$60,000 from both Reclamation and Metropolitan. The \$60,000 funding requirement for both agencies is broken down into \$50,000 cash and \$10,000 in in-kind labor. Both agencies have documented that they achieved their \$10,000 in-kind labor requirement. Appendix A, documents Metropolitan's labor costs for this project.

Metropolitan's in-kind labor tasks included generating RFPs for studies, managing consultants, reviewing consultant reports, and semiannual reporting to Reclamation. Reclamation's in-kind labor included thorough review of the studies' reports and analysis along with the management of the program.

8. **Feedback to Reclamation regarding the WaterSMART Program:** *Please let us know if there is anything we can do to improve the WaterSMART program in general, including the process for applying for or completing a WaterSMART project. Your feedback is important to us.*

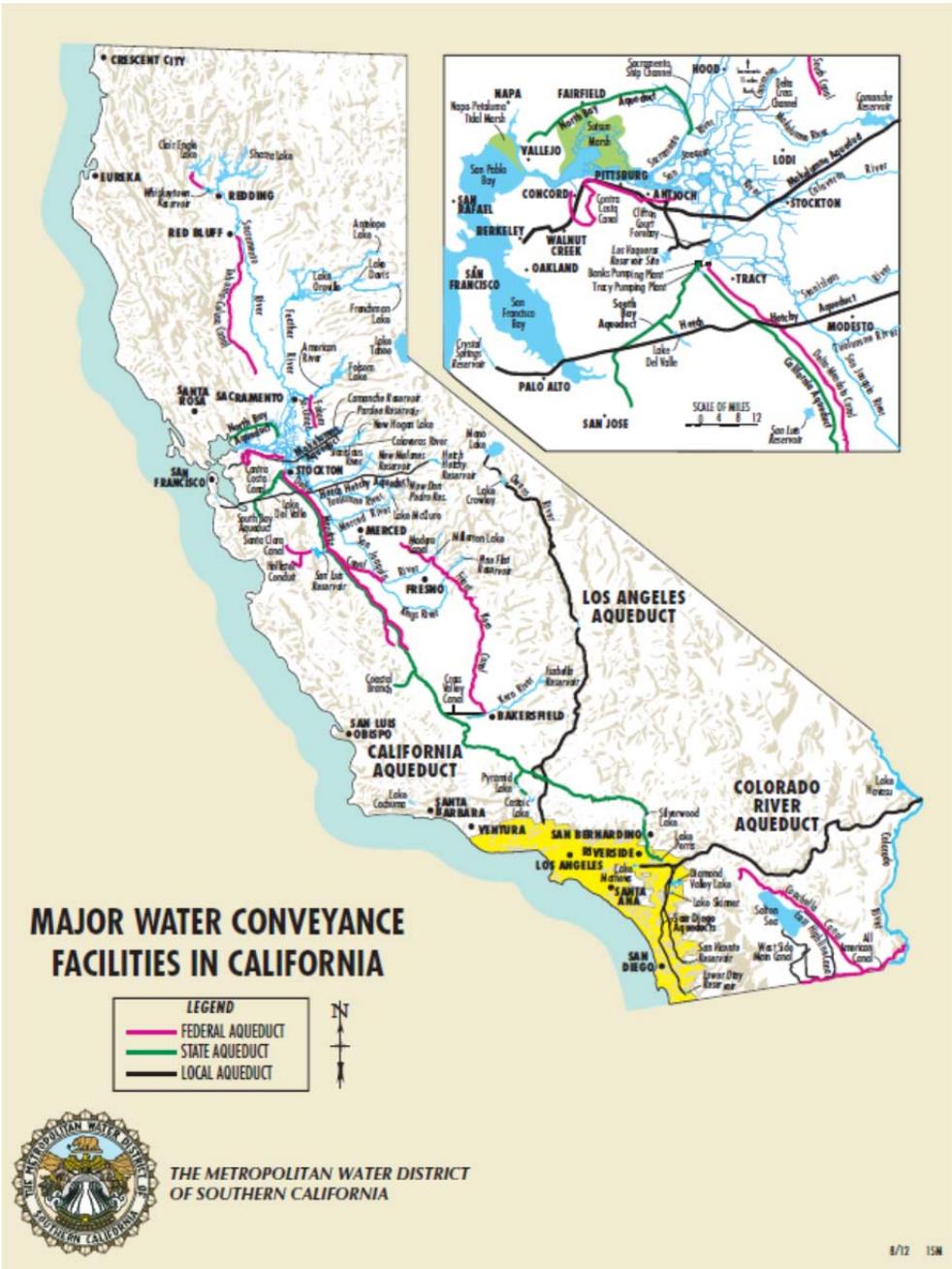
Metropolitan does not have any recommendations regarding the WaterSMART Program at this time.

9. **Attachments:** *Please attach the following*

a. Any available data or information relied on in responding to paragraph 7, above;

Not applicable

- b. A map or illustration showing the location of the recipient's facilities (see paragraph 4, above);



- c. Maps, sketches, and/or drawings of the features of the completed project, as appropriate (see paragraph 5, above);

Not applicable

- d. Representative before and after photographs, if available

Not applicable

- e. A table showing the total expenditures for the completed project (please see Sample Final Project Costs Table, below).

Deliverable per Agreement	Due Date	% Complete	Funds Expended to Date		
			Federal Grant	Local Share	Total
Task 1 Issue Request for Proposals (RFPs) for consultant services for (1) Smart Controller Water Savings Analysis and (2) Landscape Conservation Market Study	12/31/2011	100%			
Task 2 Select consultants for Water Savings Analysis and Landscape Conservation Market Study; execute agreements	3/31/2012	100%			
Task 3 Collect additional water use data for participating smart controller sites	3/31/2012	100%	\$10,000	\$10,000	\$20,000
Task 4 Review and comment on draft water savings analysis and draft market study	11/30/2012	100%	\$30,000	\$15,000	\$45,000
Task 5 Review and comment on final draft water savings analysis and final draft market study	3/31/2013	100%	\$10,000	\$28,300	\$35,000
Task 6 Present findings to Metropolitan's member and retail agencies	5/31/2013	100%			
Task 7 Prepare semiannual financial and program performance reports	Every 6 months	100%			
Task 8 Final report	7/31/2013	100%			
TOTAL			\$50,000	\$53,300	\$100,000
Cost Share %			48%	52%	100%
Min. Cost Share %				50%	100%