Upper San Gabriel Valley Municipal Water District

Large Landscape Survey and Retrofit Program

UPPER SAN GABRIEL VALLEY
MUNICIPAL WATER DISTRICT
www.upperdistrict.org

Upper San Gabriel Valley Municipal Water District 602
E. Huntington Drive, Suite B
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Applicant Information:

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Submittal Date January 23, 2015

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Technical Proposal and Evaluation Criteria

The technical proposal and evaluation criteria (50 pages maximum) includes: (1) the Executive Summary, (2) Background Data, (3) Technical Project Description, (4) Evaluation Criteria and (5) Performance Measures. To ensure accurate and complete scoring of your application, your proposal should address each subcriterion in the order presented here.

Executive Summary

The executive summary should include:

- **The date, applicant name, city, county, and state.**

January 23, 2015
Mr. Shane Chapman, General Manager
Upper San Gabriel Valley Municipal Water District Monrovia, County of Los Angeles, California

- **A one paragraph project summary that specifies the work proposed, including how project funds will be used to accomplish specific project activities and briefly identifies how the proposed project contributes to accomplishing the goals of this FOA (see Section III.B, "Eligible Projects").**

Upper San Gabriel Valley Municipal Water District (Upper District) is pleased to submit the Upper District's Large Landscape Survey and Retrofit Program (Program) grant application for consideration by the United States Bureau of Reclamation (Reclamation)'s WaterSMART: Water And Energy Efficiency Grants for FY 2015. The proposed Project will provide quantifiable water savings by reducing outdoor water usage through enhanced landscape irrigation measures. The 3-phased Program evaluates landscape efficiency and retrofits landscape sites that currently use high water consuming devices, with high efficiency ones. Devices identified for retrofits include Smart irrigation controllers and high efficiency sprinkler nozzles. The Program is 3-phased; Phase 1 of the Project included surveying potential sites and has been completed, while Phase 2 is currently underway and will be completed by March 2015. A total of 70 sites will be improved upon completion of Phase 2 with a total water savings of 300 acre-feet per year (AFY). The funding request in this grant application is for Phase 3 (Project). Phase 3 is estimated to have an average annual water savings of approximately 763 AFY, with an estimated lifespan of 10 years. Total water savings over the lifespan of the Project is 7,630 AF. Upper District relies heavily on imported water from the Metropolitan Water District of Southern California (MWD). Average energy consumption for imported water is 5,007 kWh/AF and the water conserved through this Program is estimated to reduce average annual energy consumption by 3,820,341 kW/h. This Project targets parks and schools, the highest water users within the commercial, industrial and institutional classification, that are located within Upper District's service area over a 3 year period.

- **State the length of time and estimated completion date for the project.**

Following the September 30, 2015 Funding Award, the Project will be completed by September 30, 2018. Upper District has provided a schedule indicating that the project will span a total estimated duration of 3 years following the funding award.

- **Whether or not the project is located on a Federal facility.**

This project is not located on a federal facility.

Background Data

Provide a map of the area showing the geographic location (include the State, county, and direction

from nearest town).

Upper District is located within San Gabriel Valley in Los Angeles County and overlies the Main San Gabriel Groundwater Basin. The boundaries of Upper District are shown on Figure 1. Upper District's service area is about 144 square miles and includes all or portions of the Cities of Arcadia, Azusa, Baldwin Park, Bradbury, Covina, Duarte, El Monte, Glendora, Industry, Irwindale, La Puente, Monrovia, Rosemead, San Gabriel, South El Monte, South Pasadena, Temple City, and West Covina.

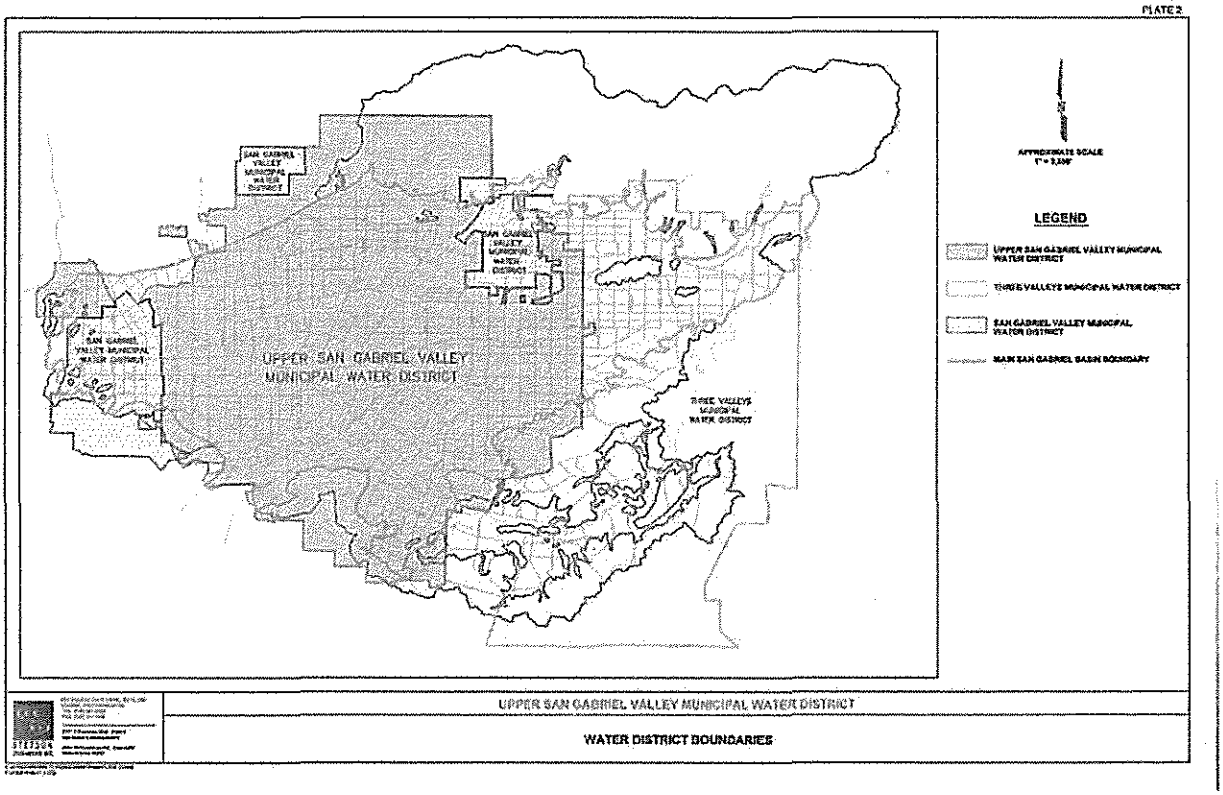


Figure 1. Upper District Service Area Map

The Upper District is a wholesale water agency and was incorporated on January 7, 1960 under the Municipal Water District Act. The Municipal Water District Act provides for, "The people of any county or counties, or any portions thereof, whether such portions include unincorporated territory only or incorporated territory of any city or cities, or both such incorporated and unincorporated territories…." to organize municipal water districts. With respect to water supply, the Municipal Water District Act allows such a district to "… acquire, control, distribute, store, spread, sink, treat, purify, reclaim, recapture, and salvage any water, including sewage and storm waters, for the beneficial use of users of the District, it inhabitants, or the owners of rights to water in the District." Upper District is covered by a five member Board of Directors and is broken down into five divisions, which are shown on Figure 2. Upper District employs a general manager, assistant general manager/chief engineer, conservation director, chief financial officer, public outreach/governmental liaison, office staff and retains an attorney and consulting engineer who is Upper District's Engineer.

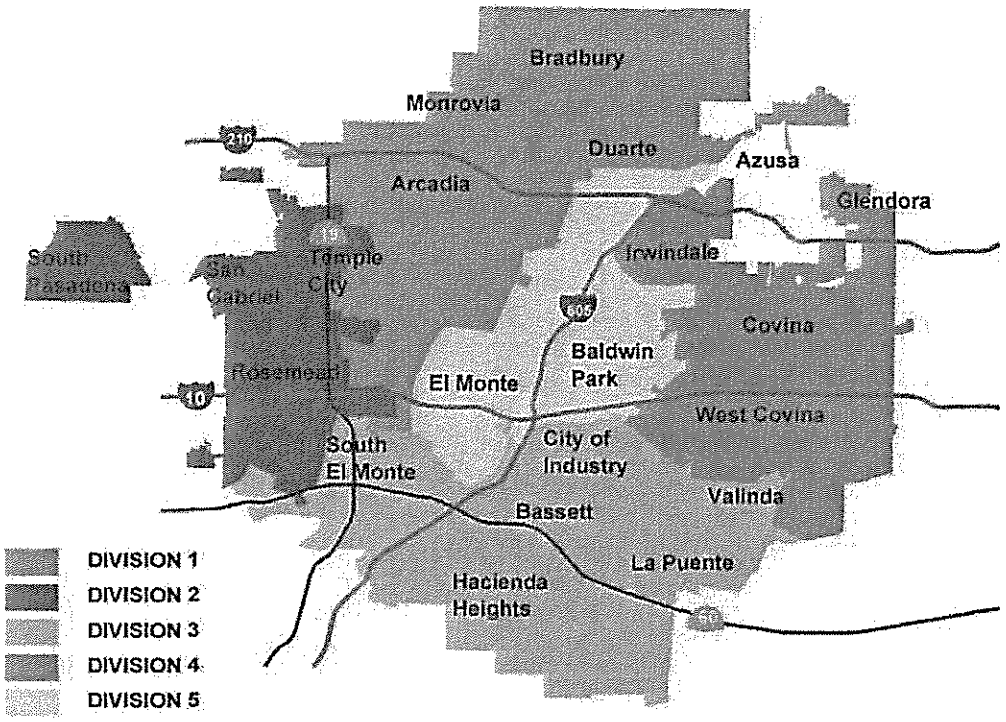


Figure 2. Upper District Board of Directors Divisions

As applicable, describe the source of water supply, the water rights involved, current water uses (i.e., agricultural, municipal, domestic, or industrial), the number of water users served, and the current and projected water demand. Also, identify potential shortfalls in water supply. If water is primarily used for irrigation, describe major crops and total acres served.

As a wholesaler, Upper District supplies supplemental imported water from the Metropolitan Water District of Southern California (MWD), and recycled water to its sub-agencies. Upper District is 100 percent reliant on imported water supplies. MWD supplies imported water to Upper District, which in turn supplies that imported water to its sub-agencies. The service area of Upper District is largely urbanized consisting of mainly residential, light industrial and commercial uses. Upper District does not have water rights involved in its water supplies. Current water uses include direct use and replenishment. Treated imported water is delivered by Upper District to its sub-agencies for direct use from Upper District service connections on the MWD distribution system. Untreated imported water is delivered to the Main Basin to satisfy its Replacement Water obligations required under the Main Basin Judgment. Upper District serves 29 local water agencies recycled water for direct uses, which is obtained from the Los Angeles County Sanitation District (LACSD). Direct use of recycled water reduces groundwater production, and consequently, the need for an equivalent amount of imported water in many cases. Furthermore, Upper District is looking into recycled water groundwater replenishment in the Main Basin which USBR has been involved with via their Title XVI program since March 1999 via the Water Quality Authority. The current drought and anticipated future drought conditions make imported water supplies unreliable with looming shortfalls in imported water supply. Therefore, Upper District works with its 29 retail water customers to conserve outdoor water use and enhance water use efficiency.

Table 1 shows Upper District's water supply sources, current and projected water demand, under normal conditions as identified in the Upper District 2010 Urban Water Management Plan. Note that Upper

District sub-agencies' water supplies are not included in the table and that Upper District does not possess groundwater rights, produce groundwater, capture surface water, or produce recycled water. Upper District's average annual supply of imported water is 21,400 AFY (7,900 AFY from MWD Weymouth Treatment Plant and 13,500 AFY from MWD Replenishment water).

Table 1: Projected Water Supplies (AFY)*

Water Supply Sources	2008-2009	2010-2011	2015-2016	2020-2021	2025-2026	2030-2031
Purchased Imported Water from MWD	5,420	5,700	3,000	3,000	3,000	3,000
Untreated Imported Water from MWD	24,900	21,000	25,000	16,000	19,000	23,000
Recycled Water for Direct Use	5,700	6,000	7,500	10,000	12,500	15,000
Potential Recycled Water for Groundwater Recharge	-	-	-	5,000	5,000	10,000
Total	36,020	32,700	35,500	29,000	34,500	41,000

*Source: Table 6 of Upper District's 2010 Urban Water Management Plan.

In addition, describe the applicant's water delivery system as appropriate. For agricultural systems, please include the miles of canals, miles of laterals, and existing irrigation improvements (i.e., type, miles, and acres). For municipal systems, please include the number of connections and/or number of water users served and any other relevant information describing the system.

While Upper District is a water wholesaler with no retail customers of its own, Upper District's sub-agencies provide water to their retail customers. As a wholesaler, Upper District provides imported water service to sub-agencies through MWD's distribution system and recycled water service through a local distribution system. The majority of the imported water delivered from Upper District to its 29 sub-agencies is used for groundwater recharge and delivered through service connection USG-3.

Upper District supplies treated imported water from MWD through the following service connections:

USG-1:	Golden State Water Company	USG-6:	City of Arcadia
USG-2:	City of South Pasadena	USG-7:	City of Monrovia
USG-4:	Suburban Water System	USG-8:	City of Azusa
USG-5:	City of Alhambra	USG-9:	Valley County Water District

If the application includes renewable energy or energy efficiency elements, describe existing energy sources and current energy uses.

Upper District's Program does not have any renewable energy or energy efficiency elements, however, the Smart and Central controllers are energy efficient elements due to their updated technology. In addition, the next generation sprinklers and nozzles in the Program utilize water more efficiently which in turn decrease potable water use which decrease the energy utilized by MWD to supply Upper District with imported water. Phase 3 is estimated to have an average annual water savings of approximately 763 AFY, with an estimated lifespan of 10 years. Total water savings over the lifespan of the Project is 7,630 AF. Upper District relies heavily on imported water from the Metropolitan Water District of Southern California (MWD). Average energy consumption for imported water is 5,007 kWh/AF and the water conserved through this Program is estimated to reduce average annual energy consumption by 3,820,341 kW/h.

Identify any past working relationships with Reclamation. This should include the date(s), description of prior relationships with Reclamation, and a description of the projects(s).

Upper District received funding from Reclamation for the following three (3) programs that have been completed:

1. **Title XVI – San Gabriel Valley Water Recharge Project**
   a. Duration: March 24, 1999 – June 30, 2013
   b. Relationship with Reclamation: Grant closed.
   c. Description: The San Gabriel Valley Water Recharge Project was to provide approximately 30,000 to 50,000 acre-feet per year of recycle water from the Los Angeles County Sanitation District San Jose Creek Water Reclamation Facility and discharge below the Santa Fe Dam approximately 6 miles to the north. Through this program significant information regarding groundwater recharge with recycled water was developed and assisted several other MWD agencies develop programs for groundwater recharge as well as seawater barriers.
   d. This program including the completing 4 significant research projects, preliminary and final design of a 54-inch 6 mile pipeline and pump station and draft documentation for advance treatment.
   e. Funded $5,369,211.59 through the Water Quality Authority

2. **ARRA – City of Industry Project and Rosemead Extension Project**
   a. Duration:
      (1) December 31, 2009 through June 30, 2013
      (2) December 11, 2009 through July 31, 2010
   b. Relationship with Reclamation: Grant closed and all payments received.
   c. Description: The City of Industry and Rosemead Extension Projects were a part of an overall San Gabriel Valley Reclamation Program to assist to convert potential irrigation and industrial customers from potable water to recycled water for those specific purposes. The ARRA funding assisting in the conversion of potential customers (schools, parks, landfills, industry headquarters, city medians) to utilize recycled water for irrigation purposes. Without Reclamation assistance Upper District would not have been successful in converting 45 customers allowing approximately 1,000 acre-feet to be removed from groundwater or imported water supplies.
   d. This program included the completion of 45 customer's convers with a conversion of approximately 1,000 acre feet to recycled water.
   e. Funding: (1) $4,956,827.57 and (2) $481,000

3. **Title XVI WaterSMART - Indirect Reuse Groundwater Replenishment Project**
   a. Duration: September 24, 2012 through September 30, 2013
   b. Relationship with Reclamation: Active Grant with submitted final invoice.
   c. Description: Upper District prepared an indirect reuse groundwater replenishment feasibility report to determine the permitting, environmental, engineering constrains to develop an indirect reuse groundwater replenishment project with a different treatment technologies.
   d. Funding: $150,000

4. **Water Use Efficiency Plan**
   a. Duration: July 1, 2011 through September 30, 2012
   b. Relationship with Reclamation: Closed with no outstanding payments.
   c. Description: Upper District with the assistance with Reclamation developed a local water

conservation plan. The Plan included the projected amount of water to be conserved through implementation of each program and the associated cost savings. This project benefited Reclamation because it reduced imported water supplies from the Colorado River and northern California. When aggregating all local plans and Upper District's plan, the projected water savings were estimated at over 12,000 AF of active and passive water savings over a five-year period.

d. Funding: $150,000

Technical Project Description

The technical project description should describe the work in detail, including specific activities that will be accomplished as a result of this project. This description shall have sufficient detail to permit a comprehensive evaluation of the proposal.

Upper District's Large Landscape Survey and Retrofit Program is a 3-phased program. Upper District completed Phase 1 of the Large Landscape Survey and Retrofit Program in Fall 2012. Phase 2 is underway. This grant application is for funding to extend the program to Phase 3.

Phase 1 offered free irrigation assessments to forty nine (49) large landscaped Commercial, Industrial and Institutional (CII) sites in the Upper District's service area. The assessment examined a site's existing irrigation system including irrigation controllers, valves, sprinkler heads, and vegetation. Participating sites received a summary report of their irrigation system that included:

- Descriptions of the make, model, and condition of irrigation equipment with GPS coordinate.
- Pictures of all equipment and vegetation at the site.
- Plot plans of controllers, valves, sprinkler heads, and irrigation zones.
- Site maps (in PDF) of all irrigation zones and broken equipment.
- Calculation of expected watering requirements based on existing vegetation and a water budget.
- Compliance strategies for the State's Water Efficient Landscape Ordinance (*which went into effect on January 1, 2010*).
- Recommended improvements and their estimated cost.

In addition to the summary report, participating sites received a CD-ROM with data regarding all site irrigation equipment and site maps.

Upper District is currently conducting Phase 2 of the Program. Phase 2 includes the retrofitting of the previously surveyed large landscape customers within Upper District's service area and supplied by Upper District sub-agencies with imported water from Metropolitan. A total of approximately 70 sites will be completed (a portion of the sites will include both retrofits and surveys). Anticipated water savings is 300 AFY as a result of Phase 2 completion.

The following identifies the tasks for the proposed Phase 3 of the Program, which will save up to 763 AFY of potable water:

Phase 3 Scope of Work

Task 1: Project Administration and Reporting

This task includes management of the grant agreement in compliance with grant requirements, and preparation and submission of supporting documents and coordination with the USBR. Specific work items include:

- Execute grant agreement

- Progress reporting (semi-annual reports and final report)
- Invoicing
- USBR Reporting and Data Management

Task 2: Landscape Site Evaluations and Program Management

This task includes ongoing project evaluation and program management to identify participating large landscape sites and oversee project implementation. Specific work items include:

a) Identify participating large landscape sites.
b) Observe survey and retrofit site visits periodically.
c) Review and comment on survey reports.
d) Issue notices to proceed.
e) Track scheduled work.
f) Follow-up on participant inquiries and/or concerns.
g) Determine water and energy savings of installed and/or repaired devices.

Task 3: Monitoring

Project monitoring will consist of an inventory of installed/retrofitted devices and review/analysis of water consumption data sites (*based on available data*). The success of the project is determined by the number of sites retrofitted and the amount of water conserved. Specific work items include:

- Collect and analyze pre- and post-retrofit water consumption data for a segment of participating sites to determine volumetric changes in water usage and overall water savings.

Task 4: Surveys and Retrofits

Surveys and retrofits of large landscape irrigation systems will be conducted at sites identified in Task 2. The project consultant(s) will schedule and conduct surveys with the customers, collect data, develop water use reports and recommendations, review finalized reports with participating site contact(s), provide retrofit cost estimates to Upper District, repair and/or install irrigation devices as approved by Upper District, and follow up with designated site contact(s). Specific work items include:

a) Process Request for Survey
Consultant receives request and contacts customer to discuss the program and provide basic information regarding the survey. The survey estimate is then submitted to Upper District for approval for scheduling. Consultant contacts customer again to confirm survey schedule *(within 48 hours of receipt of authorization (notice to proceed).*

b) Survey Field Data Collection
Contractor's Certified Water Auditor (CLIA) or team of auditors, depending on the size of the site, meets on site with customer's representative for introduction and assistance with controller locations *(starts within 5 days of approval, contingent on customer's response and schedule).* Field data collection is conducted by the consultant and includes data on all of the parameters as specified by the Upper District. Field Data is uploaded to consultant's server and report is written and edited by consultant's auditing and report writing team, including the field auditor(s) *(within 48 hours of completion of field data collection*).

c) Survey Report Submission and Follow-up
Consultant's survey report is sent to Upper District for approval (*within 2 weeks of receipt of data from field*). After Upper District staff review, the report is distributed to the customer for review and comments. The report will contain a list of system deficiencies and recommendations for water efficient repairs and retrofits.

d) Retrofit Cost Estimate
The consultant will provide Upper District with an estimated cost for performing system repairs and/or device retrofits/installations. An estimated number of days for the completion of the work will be included in the cost estimate report. Upon written approval (notice to proceed) by Upper District of the consultant's project estimate for the above work, consultant(s) will notify the customer and schedule the work (*within 5 days*).

e) Irrigation System Installation/Retrofit
The consultant will install and/or retrofit irrigation system components detailed in the survey recommendations and authorized by the Upper District. Improvements may include: digging out and replacing broken pipes, broken sprinkler heads, valve adjustments, and minor leak repairs. Installations/retrofits may include: weather based irrigation controllers (WBICs), moisture sensor systems, and retrofit of spray nozzles with higher efficiency nozzles. Devices will include products that qualify as EPA WaterSense certified.

f) Consultant Follow-up
Upon completion of the work, the consultant will conduct a job walk with the customer and an Upper District representative as needed to verify completion of the work and provide an orientation for the customer's maintenance/irrigation manager that will include:
- Review of repairs and/or installations.
- Instruction on the proper maintenance of installed/repaired irrigation devices/ system.
- Irrigation zone maps for each irrigation controller.
- Follow-up site visit to ensure system is functioning properly (*approximately 3 weeks after completion of repairs and/or installations*).

Tables 2, 4 and 5 below in Subcriterion No. A.1 identify the total number of chosen sites for Phase 3.

Evaluation Criteria

The evaluation criteria portion of your application should thoroughly address each of the following criterion and subcriterion in the order presented to assist in the complete and accurate evaluation of your proposal. (Note: it is suggested that applicants copy and paste the below criteria and subcriteria into their applications to ensure that all necessary information is adequately addressed). **Applications will be evaluated against the evaluation criteria (listed below), which comprise 100 points of the total evaluation weight.** Please note that projects may be prioritized to ensure balance among the program Task Areas and to ensure that the projects address the goals of the WaterSMART program.

Evaluation Criterion A: Water Conservation (28 points)

Subcriterion No. A.1—Quantifiable Water Savings

Describe the amount of water saved. For projects that conserve water, please state the estimated amount of water expected to be conserved (in acre-feet per year) as a direct result of this project. Please provide sufficient detail supporting how the estimate was determined, including all supporting calculations. Please be sure to consider the questions associated with your project type (listed below) when determining the estimated water savings, along with the necessary support needed for a full review of your proposal (please note, the following is not an exclusive list of eligible project types. If your proposed project does not align with any of the projects listed below, please be sure to provide support for the estimated project benefits, including all supporting calculations and assumptions made).

Annual Water Savings:
Approximately 763 AF (or 248,624,638 gallons) of water will be saved per year. The savings is anticipated for the life of the project, which is 10 years based on the industry accepted useful life of high efficiency nozzles and high efficiency sprinklers and smart controllers. The total water savings over 10 years would be 7,630 AFY.

Table 2 below shows the total project sites and savings estimated for Phase 3. Rather than quantity the actual number of devices that would be used for retrofits, Upper District evaluated data from completed phases of the program and calculated an average for schools and parks. The average water savings was used and applied to the proposed total number of schools and parks. Refer to item (6) Landscape Irrigation Measures Section (i) below for a detailed explanation of calculations.

Table 2 Total Project Sites and Savings

	USBR 2015 WaterSMART Grant - Funding Group II		
	Schools	Parks	Total
Total Projects	134	38	172
Water Savings (acre-ft)	531	232	763

In addition, all applicants should be sure to address the following:

- **What is the applicant's average annual acre-feet of water supply?**

Upper District's average annual supply of imported water is 21,400 AFY (7,900 AFY from MWD Weymouth Treatment Plant and 13,500 AFY from MWD Replenishment water). Within Upper District's service area, sub-agency water demands are met through a combination of local groundwater supplies, surface water, recycled water, and imported supplies from MWD. Upper District is dependent upon MWD for 100 percent of its water supply, with over 70 percent of their total imported water demand used for irrigation. Reliance on Upper District as a wholesaler is expected to continue and the development of a local, alternative water supply for Upper District to offer to its sub-agencies is of paramount importance. Should a disruption in service from MWD occur, Upper District's sub-agencies will be severely threatened and mandatory water rationing will occur. Implementation of the Large Landscape Survey and Retrofit Program is needed to provide 763 AFY of water savings to the community to offset the use of imported water supplies.

- **Where is that water currently going (i.e., back to the stream, spilled at the end of the ditch, seeping into the ground, etc.)?**

Irrigation water from the identified sites is ineffectively discharged (i.e. old controllers) and lost from the inefficient devices (i.e. nozzles, and sprinklers). The water from these fixtures leaks into the landscaped areas and percolates into the ground, as well as creates urban runoff which is then discharged into the local storm drain system that makes its way into either the Rio Hondo or San Gabriel Rivers.

The total of 763 AFY of saved water will offset Upper District importing potable water from MWD for those sub-agencies with large landscaping sites that participate in the Program, as outlined in Tables 2-4. In addition, this offset will lower the energy usage of Upper District and decrease greenhouse gases as less energy will be required due to the reduced amount of imported water.

- **Where will the conserved water go?**

The conserved water will reduce the amount of imported water from the Colorado River and the Bay-Delta system. Therefore, it will remain in the Colorado River and Bay-Delta system.

Please address the following questions according to the type of project you propose for funding.

(6) Landscape Irrigation Measures: Landscape irrigation measures can provide water savings by reducing outdoor water usage. These measures include turf removal, Smart irrigation controllers (e.g., weather or soil-moisture based) and hi-efficiency nozzles (e.g., sprinkler heads). Applicants proposing Smart irrigation controllers and high-efficiency nozzles applications should address the following:

- **(i) How have average annual water savings estimates been determined? Please provide all relevant calculations, assumptions, and supporting data.**

The Project will conserve up to 763 AFY of water. The total Project cost and water savings were calculated based on data from Phases 1 and 2 of the program completed to date, which was then averaged and applied to the proposed Phase 3 project sites. The following provides a step by step explanation of these calculations:

Step 1: Upper District divided all of the existing, and future proposed, projects into five categories: Parks, Elementary Schools, High Schools, Middle Schools, and Other (community centers, larger sites, etc.).

Step 2: For calculating the water savings, the following was completed:

A) Upper District documented the actual number of nozzles and controllers (stations) installed at each site.

B) The anticipated savings was calculated per MWD numbers, as shown in Table 3. Average annual water savings was also based on manufacturer data. The two categories were "Large Rotary Nozzles" with a savings of 0.018 AFY and "Weather Based Smart Controllers" with a savings of 0.0129 AFY. Therefore, the total savings was calculated as follows:

Total Savings = 0.018*(# of Nozzles) + 0.0129*(# of Stations).

Note that this calculation does not take into account water savings for repairing broken lines or adjustments for overspray or watering times. However, it does assume that the nozzles are "large rotary," with lower water savings than smart controllers, which is not always the case and therefore is a conservative estimate.

C) From these numbers the average was calculated and applied to the proposed sites and summed up. The total average water savings for Parks equaled 6.05 AFY and for schools it varied from approximately 3.5-7.8 AFY.

The following table shows the water savings per commercial device. The table was developed by Metropolitan Water District of Southern California (MWD). Tables 4 and 5 show the total targeted park and school project sites, as well as cost and anticipated average water savings in AFY per site.

Table 3 MWD's SoCal WaterSmart Water Savings

Commercial			
Devices	**Annual Savings (acre-feet/year)**	**Device Lifetime (years)**	**Lifetime Savings (acre-feet)**
High Efficiency Toilet (Melded Rate)	0.0246	20	0.492
Zero/Ultra Low Water Urinal	0.1227	20	2.454
Connectionless Food Steamer (per Compartment)	0.2501	10	2.501
Air-cooled Ice Making Machine	0.154	10	1.54
Dry Vaccuum Pump (per 1/2 hp)	0.092	7	0.644
Cooling Tower Conductivity Controller	0.644	5	3.22
pH Cooling Tower Controller	1.944	5	9.72
Weather Based Irrigation Controller (per Station)	0.0129	10	0.129
Central Computer Irrigation Controller (per Station)	0.0129	10	0.129
Rotary Multi-Stream Nozzle	0.0044	5	0.022
Large Rotary Nozzle	0.018	10	0.18
Turf Removal (per square foot)	0.00013	10	0.0013
Laminar Flow Restrictor	0.023	5	0.115
In-Stem Flow Regulator	0.003	5	0.015

- **(ii) Was historical water consumption data evaluated to estimate the percent reduction in water demand per unit area of irrigated landscape? If so, did the evaluation include a weather adjustment component?**

Yes, Upper District and the Consultants reviewed the historical water consumption data at each large landscape site surveyed. The evaluation took into account a weather adjustment component, which is reflected in the actual consumption data.

- **(iii) What types (manufacturer and model) of devices will be installed and what quantity of each.**

As described above, the two categories of devices are the "Large Rotary Nozzles" with a savings of 0.018 AFY and "Weather Based Smart Controllers" with a savings of 0.0129 AFY. The quantity of each device will be determined on a case by case basis as the project site surveys are completed. Rather than estimate the total quantity of each device to be installed, Upper District's approach includes a site assessment whereby devices may be installed, broken lines may be fixed, or adjustments for overspray or in watering times may be implemented. A sampling of MWD's device list, including manufacturer and model, are included in Exhibit A. Upper District will select devices from these lists. Examples include the 1) Smart Controller - CalSense ET2000e C Series controller and the 2) Sprinkler - Underhill Int R91-G, T630-3415 Large Rotary Spray Nozzle.

- **(iv) Will the devices be installed through rebate or direct-install programs?**

The devices will be installed through a direct- install program as outlined in the Scope of Work.

Table 4 Park Project Sites and Average Water Savings

Site Name	Site Address	Division	Water Provider	School District / Private	Park Cost	Average Water Savings Park
Eisenhower Memorial	2nd Avenue and Colorado Boulevard	1	City of Arcadia	Arcadia City Park	$ 16,500.00	6.10
Fairview Park	542 Fairview Avenue, Arcadia CA 91007	1	City of Arcadia	Arcadia City Park	$ 16,500.00	6.10
Grand Avenue Park	340 N. Grand Ave. Monrovia	1	City of Monrovia	City of Monrovia Park	$ 16,500.00	6.10
Highland Oaks Park	10 W. Viginia Road Arcadia CA 91006	1	City of Arcadia	Arcadia City Park	$ 16,500.00	6.10
Holly Avenue Park	360 W. Duarte Road Arcadia CA 91007	1	City of Arcadia	Arcadia City Park	$ 16,500.00	6.10
Hugo Reid Park	Michillinda Avenue and Hugo Reid Drive Arcadia CA	1	City of Arcadia	Arcadia City Park	$ 16,500.00	6.10
Lucinda Garcia Park	502 West Olive Ave. Monrovia, CA 91016	1	City of Monrovia	City of Monrovia Park	$ 16,500.00	6.10
Newcastle Park	143 W. Colorado Boulevard Arcadia CA 917007	1	City of Arcadia	Arcadia City Park	$ 16,500.00	6.10
Tierra Verde Park	2nd Avenue and Camino Real Avenue Arcadia CA 91006	1	City of Arcadia	Arcadia City Park	$ 16,500.00	6.10
Tripolis Friendship Park	Goldenwest Avenue and Fairview Avenue	1	City of Arcadia	Arcadia City Park	$ 16,500.00	6.10
Jess Gonzalez Sports Complex	8471 Klingerman St Rosemead CA 91770	2	San Gabriel Valley Water Company	Rosemead	$ 16,500.00	6.10
Klingerman Park	8800 Kindergarden Avenue Rosemead CA 91770	2	San Gabriel County Water District	Rosemead City Park	$ 16,500.00	6.10
Lashbrook Park	3199 Lashbrook Ave., El Monte, CA 91733	2	City of El Monte	City of El Monte Park	$ 16,500.00	6.10
Rosemead Triangle Park	San Gabriel & Walnut Grove Ave Rosemead CA 91770	2	San Gabriel Valley Water Company	Rosemead	$ 16,500.00	6.10
Rossevelt Park	5410 Delta Street Rosemead CA 91770	2	San Gabriel County Water District	San Gabriel City Park	$ 16,500.00	6.10
San Gabriel City Hall	425 S Mission Dr, San Gabriel, CA 91776	2	San Gabriel County Water District	City Hall	$ 16,500.00	6.10
South Pasadena City Hall	1414 Mission St, South Pasadena, CA 91030	2	City of South Pasadena	City Hall	$ 16,500.00	6.10
Vicent Lugo Park	Corner of Wells and Ramona Street	2	San Gabriel County Water District	San Gabriel City Park	$ 16,500.00	6.10
Zapopan Park	3018 N. Charlotte Avenue Rosemead CA 91770	2	Southern California Water Company	Rosemead City Park	$ 16,500.00	6.10
Allen J Martin Park	14830 E. Giordano St. La Puente, CA 91744	3	Suburban Water Systems	La Puente City Parks	$ 16,500.00	6.10
Avenue Park	553 S. 4th Avenue La Puente, CA 9746	3	City of Industry	La Puente City Parks	$ 16,500.00	6.10
Avocado Heights Park	14105 Don Julian Road La Puente, CA 91746	3	City of Industry	La Puente City Parks	$ 16,500.00	6.10
Thomas S. Burton Park	16490 E. Santa Bianca Drive Hacienda Heights , CA 91746	3	Suburban Water Systems	Hacienda Heights	$ 16,500.00	6.10
William Steinmetz Park	1545 S. Sitmson Avenue Hacienda Heights, CA 91745	3	Suburban Water Systems	Hacienda Heights	$ 16,500.00	6.10
Aroma Parkette	2201 Aroma Drive West Covina	4	Suburban Water Systems	West Covina City Park	$ 16,500.00	6.10
California Parkette	815 S. California Ave. West Covina	4	Suburban Water Systems	West Covina City Park	$ 16,500.00	6.10
Del Norte Park	1500 W. Rowland Ave. West Covina	4	City of Azusa	West Covina City Park	$ 14,000.00	6.10
Edna Park	220 W. Edna Pl Covina CA 91723	4	City of Covina	Covina	$ 14,000.00	6.10
Galster Park	1620 Aroma Drive West Covina	4	Valencia Heights Water Company	West Covina City Park	$ 16,500.00	6.10
Kelby Park	815 N Barranca Ave Covina, CA 91723	4	City of Covina	Covina	$ 14,000.00	6.10
Barnes Park	3251 Patritti Ave. Baldwin Park	5	San Gabriel Valley Water Company	Baldwin Park City Park	$ 16,500.00	6.10
Duarte Park	1344 Bloomdale St. Duarte, CA 91010	5	California American Water Company	City of Duarte Park	$ 16,500.00	6.10
Hacienda Park	2695 Hacienda Drive Duarte, CA 91010	5	California American Water Company	City of Duarte Park	$ 16,500.00	6.10
Hilda L. Solis Park	15010 Badillo St. Baldwin Park	5	Valley County Water District	Baldwin Park City Park	$ 16,500.00	6.10
Lambert Park	11431 McGirk St, El Monte, CA 91732	5	San Gabriel Valley Water Company	City of El Monte Park	$ 16,500.00	6.10
Lena Valenzuela Park	2120 Mountain Ave. Duarte, CA 91010	5	California American Water Company	City of Duarte Park	$ 16,500.00	6.10
Mountain View Park	12127 Elliott Ave, El Monte, CA 91732	5	San Gabriel Valley Water Company	City of El Monte Park	$ 16,500.00	6.10
Northview Park	1433 Hihgland Ave. Duarte, CA 91010	5	California American Water Company	City of Duarte Park	$ 16,500.00	6.10
				Total (38 Parks)	$ 619,500.00	231.80

Table 5 School Project Sites and Average Water Savings

Site Name	Site Address	Division	Water Purveyor	School District / Private	Total Cost	Total Average Water Savings (AFY)
Maxwell Elementary School	733 Euclid Ave., Duarte, CA 91010	1	California American W C	Duarte Unified School District	9500	3.45878
Royal Oaks Elementary School	2499 Royal Oaks Dr., Duarte, CA 91010	1	California American W C	Duarte Unified School District	9500	3.45878
Valley View Elementary School	237 Melcanyon Rd., Duarte, CA 91010	1	California American W C	Duarte Unified School District	9500	3.45878
Quest Academy	1831 Santa Fe Place Pl., Monrovia, CA 91016	1	California American W C	Monrovia Unified School District	17500	4.45284
Savannah Elementary School	3720 N Rio Hondo Ave., Rosemead, CA 91770	1	California American W C	Rosemead School District	9500	3.45878
Cloverly Elementary School	5476 Cloverly Ave, Temple City, CA 91780	1	California American W C	Temple City Unified School District	9500	3.45878
Willard Frances Elementary School	301 S Sierra Madre St., Pasadena, CA 91104	1	California American W C	Pasadena Unified School District	9500	3.45878
Baldwin Stocker Elementary	422 W Lemon Ave., Arcadia, CA 91006	1	City of Arcadia	Arcadia School District	9500	3.45878
Camino Grove Elementary	700 Camino Grove Ave., Arcadia, CA 91006	1	City of Arcadia	Arcadia School District	9500	3.45878
Highland Oaks Elementary	10 Virginia Dr., Arcadia, CA 91006	1	City of Arcadia	Arcadia School District	9500	3.45878
Holly Avenue Elementary	360 W Duarte Rd.,	1	City of Arcadia	Arcadia School District	9500	3.45878
Hugo Reid Elementary	1000 Hugo Reid Rd., Arcadia, CA 91006	1	City of Arcadia	Arcadia School District	9500	3.45878
Longley Way Elementary	2601 Longley Way Wy., Arcadia, CA 91006	1	City of Arcadia	Arcadia School District	9500	3.45878
Canyon Early Learning Center	1000 S Canyon Blvd., Monrovia, CA 91016	1	City of Monrovia	Monrovia Unified School District	14000	7.7699625
Bradoaks Elementary School	930 E Lemon Ave., Monrovia, CA 91016	1	City of Monrovia	Monrovia Unified School District	9500	3.45878
Mayflower Elementary School	210 N Mayflower Ave., Monrovia, CA 91016	1	City of Monrovia	Monrovia Unified School District	9500	3.45878
Monroe Elementary School	402 W Colorado Blvd., Monrovia, CA 91016	1	City of Monrovia	Monrovia Unified School District	9500	3.45878
Wild Rose Elementary School	232 Jasmine Ave., Monrovia, CA 91016	1	City of Monrovia	Monrovia Unified School District	9500	3.45878
Clifton Middle School	226 S Ivy Ave., Monrovia, CA 91016	1	City of Monrovia	Monrovia Unified School District	17500	4.45284
Santa Fe Middle School	148 W Duarte Rd., Monrovia, CA 91016	1	City of Monrovia	Monrovia Unified School District	17500	4.45284
Monrovia High School	845 W Colorado Blvd., Monrovia, CA 91016	1	City of Monrovia	Monrovia Unified School District	21500	4.45284
Mountain Park School	950 S Mountain Ave.,	1	City of Monrovia	Monrovia Unified School District	21500	4.45284
Canyon Oaks High School	930 Royal Oaks Dr., Monrovia, CA 91016	1	City of Monrovia	Monrovia Unified School District	21500	4.45284
Monrovia Community Adult School	920 S Mountain Ave., Monrovia, CA 91016	1	City of Monrovia	Monrovia Unified School District	14000	7.7699625
Longden Elementary School	9505 Wendon St., Temple City, CA 91780	1	East Pasadena Water Company	Temple City Unified School District	9500	3.45878
Arroyo High School	4921 N Cedar Ave., El Monte, CA 91732	1	San Gabriel Valley W C	El Monte Union High School District	21500	4.45284
Plymount Elementary School	1300 Boley St., Monrovia, CA 91016	1	Southern California W C	Monrovia Unified School District	9500	3.45878
Temple City Alternative	5210 Encinita Ave,	1	Southern California W C	Temple City Unified School	21500	4.45284
Dr. Doug Sears Learning Center	9229 Pentland St., Temple City, CA 91780	1	Southern California W C	Temple City Unified School District	14000	7.7699625
Oak Avenue Junior High	6623 Oak Ave, Temple City, CA 91780	1	Sunny Slope W C	Temple City Unified School District	17500	4.45284
Frances E. Willard Elementary School	3162 N. Willard Ave., Rosemead, CA 91770	2	Amarillo M W C	Garvey School District	9500	3.45878
Rosemead High School	9063 E Mission Dr., El Monte, CA 91770	2	California American W C	El Monte Union High School District	21500	4.45284
Encinita Elementary School	4515 N Encinita Ave., Rosemead, CA 91770	2	California American W C	Rosemead School District	9500	3.45878
Muscatel Middle School	4201 N Ivar Ave., Rosemead, CA 91770	2	California American W C	Rosemead School District	17500	4.45284
Arroyo Vista Elementary School	335 El Centro St., South Pasadena, CA 91030	2	City of South Pasadena	South Pasadena Unified School District	9500	3.45878
Marengo Elementary School	1400 Marengo Ave., South Pasadena, CA 91030	2	City of South Pasadena	South Pasadena Unified School District	9500	3.45878

Table 5 School Project Sites and Average Water Savings

Site Name	Site Address	Division	Water Purveyor	School District / Private	Total Cost	Total Average Water Savings (AFY)
Grazide Elementary School	2850 Leopold Ave., Hacienda Heights, CA 91745	3	San Gabriel Valley W C	Hacienda La Puente Unified School District	9500	3.45878
Kwis Elementary School	1925 S Kwis Ave., Hacienda Heights, CA 91745	3	San Gabriel Valley W C	Hacienda La Puente Unified School District	9500	3.45878
Sunset Elementary School	800 N Tonopah Ave., La Puente, CA 91744	3	San Gabriel Valley W C	Hacienda La Puente Unified School District	9500	3.45878
Orange Grove Middle School	14505 Orange Grove Ave., Hacienda Heights, CA 91745	3	San Gabriel Valley W C	Hacienda La Puente Unified School District	17500	4.45284
Los Altos High School	15325 E. Los Robles	3	San Gabriel Valley W C	Hacienda La Puente Unified	21500	4.45284
Puente Hills High School	15430 Shadybend Dr., Hacienda Heights, CA 91745	3	San Gabriel Valley W C	Hacienda La Puente Unified School District	17500	4.45284
Valley Alternative High School	15430 Shadybend Dr., Hacienda Heights, CA 91745	3	San Gabriel Valley W C	Hacienda La Puente Unified School District	21500	4.45284
Bixby Elementary School	16446 Wedgeworth Dr., Hacienda Heights, CA 91745	3	Suburban Water Systems	Hacienda La Puente Unified School District	9500	3.45878
California Elementary School	1111 California Ave., La Puente, CA 91744	3	Suburban Water Systems	Hacienda La Puente Unified School District	9500	3.45878
Del Valle Elementary School	801 N Del Valle St., La Puente, CA 91744	3	Suburban Water Systems	Hacienda La Puente Unified School District	9500	3.45878
Nelson Elementary School	330 N California Ave., La Puente, CA 91744	3	Suburban Water Systems	Hacienda La Puente Unified School District	9500	3.45878
Sparks Elementary School	15151 E. Temple Ave., La	3	Suburban Water Systems	Hacienda La Puente Unified	9500	3.45878
Temple Academy School	635 California Ave., La Puente, CA 91744	3	Suburban Water Systems	Hacienda La Puente Unified School District	9500	3.45878
Wing Lane Elementary School	16605 Wing Ln., Valinda, CA 91744	3	Suburban Water Systems	Hacienda La Puente Unified School District	9500	3.45878
Cedarlane Academy School	16333 Cedarlane Dr.,	3	Suburban Water Systems	Hacienda La Puente Unified	9500	3.45878
Fairgrove Academy School	15540 Fairgrove Ave., La Puente, CA 91744	3	Suburban Water Systems	Hacienda La Puente Unified School District	9500	3.45878
Ellington Alice M. Elementary School	5034 N. Clydebank Ave., Covina, CA 91722	4	Azusa Light and Water	Azusa Unified School District	9500	3.45878
Murray Elementary School	505 E Renwick Rd., Azusa, CA 91702	4	Azusa Light and Water	Azusa Unified School District	9500	3.45878
Valleydale Elementary School	700 S Lark Ellen Ave., Azusa, CA 91702	4	Azusa Light and Water	Azusa Unified School District	9500	3.45878
Center Middle School	5500 N Cerritos Ave., Azusa, CA 91702	4	Azusa Light and Water	Azusa Unified School District	17500	4.45284
Gladstone High School	1340 N Enid Ave., Covina, CA 91722	4	Azusa Light and Water	Azusa Unified School District	21500	4.45284
Cypress Elementary School	351 W Cypress Ave., Covina, CA 91723	4	Azusa Light and Water	Covina-Valley Unified School District	9500	3.45878
Workman Avenue Elementary School	1941 E Workman Ave., West Covina, CA 91791	4	Azusa Light and Water	Covina-Valley Unified School District	9500	3.45878
Vincent Children's Center	1024 W Workman Ave., West Covina, CA 91790	4	Azusa Light and Water	Covina-Valley Unified School District	9500	7.7699625
Monte Vista Elementary School	1615 W. Eldred Ave., West Covina, CA 91790	4	Azusa Light and Water	West Covina Unified School District	9500	3.45878
West Covina Christian Elementary School	763 N. Sunset Ave., West Covina, CA 91790	4	Azusa Light and Water	Private	6500	3.45878
Barranca Elementary School	727 S Barranca Ave., Covina, CA 91723	4	City of Covina	Covina-Valley Unified School District	6500	3.45878
Ben Lomond Elementary School	621 E Covina Blvd., Covina, CA 91722	4	City of Covina	Covina-Valley Unified School District	6500	3.45878
Sierra Vista Middle School	777 E Puente Ave., Covina, CA 91723	4	City of Covina	Covina-Valley Unified School District	17500	4.45284
Sierra High School	1134 S Barranca Ave., Glendora, CA 91740	4	Suburban Water Systems	Azusa Unified School District	21500	4.45284
Mesa Elementary School	409 S Barranca Ave., West Covina, CA 91791	4	Suburban Water Systems	Covina-Valley Unified School District	9500	3.45878
Rowland Elementary School	1355 E Rowland Ave., West Covina, CA 91790	4	Suburban Water Systems	Covina-Valley Unified School District	9500	3.45878
Traweek Middle School	1941 E. Rowland Ave., West Covina, CA 91791	4	Suburban Water Systems	Covina-Valley Unified School District	17500	4.45284
California Elementary School - W. Covina	1125 Bainbridge Ave., West Covina, CA 91790	4	Suburban Water Systems	West Covina Unified School District	9500	3.45878

Table 5 School Project Sites and Average Water Savings

Site Name	Site Address	Division	Water Purveyor	School District / Private	Total Cost	Total Average Water Savings (AFY)
Merlinda Elementary School	1120 S. Valinda Ave., West Covina, CA 91791	4	Suburban Water Systems	West Covina Unified School District	9500	3.45878
Orangewood Elementary School	1440 S. Orange Ave.,	4	Suburban Water Systems	West Covina Unified School	9500	3.45878
Wescove Elementary School	1010 W. Vine Ave., West Covina, CA 91790	4	Suburban Water Systems	West Covina Unified School District	9500	3.45878
San Jose Edison Academy	2021 W. Alwood St., West Covina, CA 91790	4	Suburban Water Systems	West Covina Unified School District	9500	3.45878
Edgewood Middle School	1625 W. Durness St., West Covina, CA 91790	4	Suburban Water Systems	West Covina Unified School District	17500	4.45284
Andres Duarte Elementary School	1433 Crestfield Dr., Duarte, CA 91010	5	California American W C	Duarte Unified School District	9500	3.45878
Beardslee Elementary School	1212 E Kelliwil Way , Duarte, CA 91010	5	California American W C	Duarte Unified School District	9500	3.45878
Northview Intermediate Middle School	1401 Highland Ave., Duarte, CA 91010	5	California American W C	Duarte Unified School District	17500	4.45284
Duarte High School	1565 E. Central Ave,	5	California American W C	Duarte Unified School District	21500	4.45284
Opportunities for Learning Duarte	1008 Huntington Dr.,	5	California American W C	Duarte Unified School District	17500	4.45284
Mt. Olive High School	1400 Mt. Olive Dr.,	5	California American W C	Duarte Unified School District	21500	4.45284
Le Gore Elementary School	11121 E Bryant Rd., El Monte, CA 91731	5	City of El Monte	EL Monte City School District	9500	3.45878
Columbia Elementary School	3400 N California Ave.,	5	City of El Monte	EL Monte City School District	9500	3.45878
El Monte High School	3048 N Tyler Ave., El Monte, CA 91732	5	City of El Monte	El Monte Union High School District	21500	4.45284
De Anza Elementary School	12820 E Bess Ave., Baldwin Park, CA 91706	5	San Gabriel Valley W C	Baldwin Park School District	9500	3.45878
Elvin Elementary School	13010 E Waco St., Baldwin Park, CA 91706	5	San Gabriel Valley W C	Baldwin Park School District	9500	3.45878
Tracy Elementary School	13350 Tracy Ave., Baldwin Park, CA 91706	5	San Gabriel Valley W C	Baldwin Park School District	9500	3.45878
Cortada Elementary School	3111 N. Potrero , El Monte, CA 91733	5	San Gabriel Valley W C	EL Monte City School District	9500	3.45878
Durfee Elementary School	12233 Star St., El Monte, CA 91732	5	San Gabriel Valley W C	EL Monte City School District	9500	3.45878
Thompson, Byron Elementary School	4544 Maxson Rd., El Monte, CA 91732	5	San Gabriel Valley W C	EL Monte City School District	9500	3.45878
Mountain View High School	2900 Parkway Dr., El Monte, CA 91732	5	San Gabriel Valley W C	El Monte Union High School District	21500	4.45284
Fernando R. Ledesma High School	12374 Ramona Blvd., El Monte, CA 91732	5	San Gabriel Valley W C	El Monte Union High School District	21500	4.45284
Baker, Jenny Tucker Elementary School	12043 E. Exline St., El Monte, CA 91732	5	San Gabriel Valley W C	Mountain View School District	9500	3.45878
Cogswell, P.F. Elementary School	11050 E. Fineview St., El Monte, CA 91733	5	San Gabriel Valley W C	Mountain View School District	9500	3.45878
La Primaria Elementary School	4220 Gilman Rd., El Monte, CA 91732	5	San Gabriel Valley W C	Mountain View School District	9500	3.45878
Maxson, B.F Elementary School	12380 E. Felipe St., El Monte, CA 91732	5	San Gabriel Valley W C	Mountain View School District	9500	3.45878
Parkview Elementary School	12044 E. Elliott Ave., El Monte, CA 91732	5	San Gabriel Valley W C	Mountain View School District	9500	3.45878
Payne, Willard F. Elementary School	2850 N. Mountain View Rd., El Monte, CA 91732	5	San Gabriel Valley W C	Mountain View School District	9500	3.45878
Central Elementary School	14741 Central Ave., Baldwin Park, CA 91706	5	Valley County W Dist	Baldwin Park School District	9500	3.45878
Foster Elementary School	13900 Foster Ave., Baldwin Park, CA 91706	5	Valley County W Dist	Baldwin Park School District	9500	3.45878
Emerst R. Geddes Elementary School	14600 Cavette Pl., Baldwin Park, CA 91706	5	Valley County W Dist	Baldwin Park School District	9500	3.45878
Margaret Heath Elementary School	14321 E School St., Baldwin Park, CA 91706	5	Valley County W Dist	Baldwin Park School District	9500	3.45878
Kenmore Elementary School	3823 Kenmore Ave., Baldwin Park, CA 91706	5	Valley County W Dist	Baldwin Park School District	9500	3.45878
Pleasant View Elementary School	14900 Nubia St., Baldwin Park, CA 91706	5	Valley County W Dist	Baldwin Park School District	9500	3.45878
Santa Fe Elementary School	4650 Baldwin Park Blvd., Baldwin Park, CA 91706	5	Valley County W Dist	Baldwin Park School District	9500	3.45878
Vineland Elementary School	3609 N Vineland Ave., Baldwin Park, CA 91706	5	Valley County W Dist	Baldwin Park School District	9500	3.45878

Table 5 School Project Sites and Average Water Savings

Site Name	Site Address	Division	Water Purveyor	School District / Private	Total Cost	Total Average Water Savings (AFY)
Monterey Hills Elementary School	1624 Via Del Rey , South Pasadena, CA 91030	2	City of South Pasadena	South Pasadena Unified School District	9500	3.45878
South Pasadena Middle School	1500 Fair Oaks Ave, South Pasadena, CA 91030	2	City of South Pasadena	South Pasadena Unified School District	17500	4.45284
South Pasadena High School	1401 Fremont Ave, South Pasadena, CA 91030	2	City of South Pasadena	South Pasadena Unified School District	21500	4.45284
Temple City High School	9501 Lemon Ave, Temple City, CA 91780	2	East Pasadena Water Company	Temple City Unified School District	21500	4.45284
Emma W. Shuey Elementary School	8472 E. Wells St., Rosemead, CA 91770	2	San Gabriel County W D	Rosemead School District	9500	3.45878
San Gabriel High School	801 Ramona St., San Gabriel, CA 91776	2	San Gabriel County W D	Alhambra Unified	21500	4.45284
Mildred B. Janson Elementary School	8628 E Marshall St., Rosemead, CA 91770	2	San Gabriel Valley W C	Rosemead School District	9500	3.45878
Eldridge Rice Elementary School	2150 N. Angelus Ave., Rosemead, CA 91770	2	San Gabriel Valley W C	Garvey School District	9500	3.45878
Dewey Avenue Elementary School	525 E. Dewey Ave., San Gabriel, CA 91776	2	San Gabriel Valley W D	Garvey School District	9500	3.45878
La Rosa Elementary School	9301 La Rosa Dr., Temple City, CA 91780	2	Southern California W C	Temple City Unified School District	9500	3.45878
Arlene Bitely Elementary School	7501 E. Fern Ave., Rosemead, CA 91770	2	Southern California W C	Garvey School District	9500	3.45878
Emerson Ralph Waldo Elementary School	7544 E. Emerson Pl., Rosemead, CA 91770	2	Southern California W C	Garvey School District	9500	3.45878
Garvey Richard Intermediate School	2720 N. Jackson Ave., Rosemead, CA 91770	2	Southern California W C	Garvey School District	17500	4.45284
George Sanchez Elementary School	8470 E. Fern Ave., Rosemead, CA 91770	2	Southern California W C	Garvey School District	9500	3.45878
Roger W. Temple Intermediate School	8510 E. Fern Ave., Rosemead, CA 91770	2	Southern California W C	Garvey School District	17500	4.45284
Emperor Elementary School	6415 Muscatel Ave, San Gabriel, CA 91775	2	Sunny Slope W C	Temple City Unified School District	9500	3.45878
Garvey School District	2730 N. Del Mar Ave., Rosemead 91770	2	Southern California Water Company	School District	9500	7.7699625
Rosemead School District	3907 Rosemead Blvd., Rosemead 91770	2	California American Water Company	School District	9500	7.7699625
South Pasadena Unified School District	1020 El Centro St., South Pasadena 91030-3189	2	City of South Pasadena	School District	9500	7.7699625
Don Julian Elementary School	13855 Don Julian Rd., La Puente, CA 91746	3	City of Industry	Bassett Unified School District	9500	3.45878
Andrews Wallen Elementary	1010 S. Caraway Dr.,	3	City of Industry	Whittier City School District	9500	3.45878
Sunkist Elementary School	935 Maryland Ave., La Puente, CA 91746	3	San Gabriel Valley W C	Bassett Unified School District	9500	3.45878
Van Wig, J.E. Elementary School	1151 N. Van Wig Ave., La Puente, CA 91746	3	San Gabriel Valley W C	Bassett Unified School District	9500	3.45878
Edgewood Academy	14135 Fairgrove Ave., La	3	San Gabriel Valley W C	Bassett Unified School District	9500	3.45878
Torch Middle School	751 N Vineland Ave.,	3	San Gabriel Valley W C	Bassett Unified School District	17500	4.45284
Bassett High School	755 Ardilla Ave., La	3	San Gabriel Valley W C	Bassett Unified School District	21500	4.45284
Nueva Vista High School	904 N Willow Ave., La Puente, CA 91746	3	San Gabriel Valley W C	Bassett Unified School District	21500	4.45284
South El Monte High School	1001 Durfee Ave., El Monte, CA 91733	3	San Gabriel Valley W C	El Monte Union High School District	21500	4.45284

Total Water Savings 531 AFY
Total Project Cost $1,665,500

- **(v) Will site audits be performed before and after installation?**

Yes, site audits will be performed before and after installation. Site audits have been completed during earlier phases of the program. During construction Upper District will perform periodic site construction audits. Upper District will also perform a final post-retrofit site audit in order to confirm the Contractor has completed the full scope of work as outlined in Phase 3 Scope of Work included in the Technical Project Description.

- **(vi) How will actual water savings be verified upon completion of the project?**

Water savings will be verified by identifying the type of inefficient nozzle, sprinkler, and/or controller that is removed and applying an assumed irrigation cycle. After each completed retrofit, Upper District and its Contractor will develop a report showing the estimated water savings. Using this information and the irrigation cycle assumption, an estimation of water savings will be calculated to verify the actual water savings upon completion of the project.

Subcriterion No. A.2—Percentage of Total Supply:
Provide the percentage of total water supply conserved: State the applicant's total average annual water supply in acre-feet. Please use the following formula:

Upper District's average annual water supply is 21,400 AFY (7,900 AFY from MWD Weymouth Treatment Plant and 13,500 AFY from MWD Replenishment water). Implementation of Phase 3 will result in 763 AFY of water better managed, or 3.5% of the average annual water supply.
The supporting calculations are as follows:

$$\frac{\text{Estimated Amount of Water Conserved}}{\text{Average Annual Water Supply}} = \frac{763}{21{,}400} = 3.5\%$$

Evaluation Criterion B: Energy-Water Nexus (16 points)
For projects that include construction or installation of renewable energy components, please respond to Subcriterion No. B.1— Implementing Renewable Energy Projects Related to Water Management and Delivery. If the project does not implement a renewable energy project but will increase energy efficiency, please respond to Subcriterion No. B.2— Increasing Energy Efficiency in Water Management. If the project has separate components that will result in both implementing a renewable energy project and increasing energy efficiency, an applicant may respond to both. However, an applicant may receive no more than 16 points total under both Subcriteria No. B.1 and B.2.

Subcriterion No. B.1— Implementing Renewable Energy Projects Related to Water Management and Delivery
Up to 16 points may be awarded for projects that include construction or installation of renewable energy components (e.g., hydroelectric units, solar-electric facilities, wind energy systems, or facilities that otherwise enable the use of renewable energy). Projects such as small-scale solar resulting in minimal energy savings or production will be considered under Subcriterion No. B.2 below.

This project does not include renewable energy components.

AND/OR

Subcriterion No. B.2—Increasing Energy Efficiency in Water Management
Describe any energy efficiencies that are expected to result from implementation of the water conservation or water management project (e.g., reduced pumping).

- **Please provide sufficient detail supporting the calculation of any energy savings expected to result from water conservation improvements. If quantifiable energy savings are expected to result from water conservation improvements, please provide sufficient details and supporting**

calculations. If quantifying energy savings, please state the estimated amount in kilowatt hours per year.

This Program increases energy efficiency by conserving water, which reduces the demand of imported water and thereby decreases the energy required to transport imported water from the Colorado River and State Water Project to Upper District's service areas. Upper District's sub-agencies receive its water supply through eight (8) turnouts from Upper District. Water is conveyed through a series of distribution lines, pump stations and storage tanks via Upper District's sub-agencies distribution systems. Approximately 4,432 kilowatt-hours per AF (kWh/AF) is required for conveyance and pumping of SWP and CRA imported water the District receives from MWD's Pearblossom Pumping Station. The SWP value is based on off-Aqueduct Power Facility Costs (DWR Bulletin B-132-10, 2013) and the CRA value is from the CPUC Study 1, page 64. Imported water pumped from the San Gabriel Main Basin for distribution is an additional 575 kWh/AF based on actual energy usage provided by Upper District staff. Therefore, a total of 5,007 kWh/AF of energy is used to deliver imported water to Upper District. The table below provides the energy savings of the Program.

Table 6 Energy Savings

Program	Conserved (AFY) (a)	Imported & Replenishment (kWh/AF)	Savings (kWh/yr) (c)
Large Landscape Survey and Retrofit Program	763	5,007	3,820,341

(a) Approximate conserved imported water with the implementation of the Program.
(b) It takes approximately 5,007 kWh/AF of energy to transport imported water to Upper District's service area, based on internal energy usage calculations and usage provided by MWD.
(c) Water conservation retrofit measures will save 763 AFY of imported water, resulting in the total amount of energy required to transport and deliver imported water to Upper District, or 3,820,341 kWh/yr, to be saved.

- **Please describe the current pumping requirements and the types of pumps (e.g., size) currently being used. How would the proposed project impact the current pumping requirements?**

The proposed Project is a water conservation project that does not include pumps. The current pumping requirements for Upper District are related to imported water delivery from SWP and CRA through MWD and groundwater pumping from the Main Basin. The types of pumps used are imported water and groundwater pumps. The proposed Project would positively impact the current pumping requirements by reducing the need to pump 763 AFY of imported water. Since the imported water is purchased to replenish the groundwater basin, this would also reduce the need to pump 763 AFY of groundwater. This results in an avoided purchase cost and energy for conveyance for imported water. Conserving 763 AFY of imported water allows 3,820,341 kilowatt-hours per year of energy to remain unused. Conserving energy results in reducing greenhouse gas (carbon) emissions. Carbon emission estimates are 0.61 lbs. of CO2/kWh based on the United States Environmental Protection Agency's 9th edition of eGrid, "Year 2010 eGRID Subregion Emissions - Greenhouse Gases". By offsetting 763 AFY of imported water, the Project will avoid GHG emissions of approximately 2,330,408 pounds of CO2 per year. Over the 10-year lifespan of the Project, this totals approximately 23,304,080 pounds of avoided carbon emissions. The Project will reduce imported pumping requirements by offsetting importation of 763 AFY of water for irrigation.

- **Please indicate whether your energy savings estimate originates from the point of diversion, or whether the estimate is based upon an alternate site of origin.**

Not Applicable.

- **Does the calculation include the energy required to treat the water?**
  No, the energy for Pear Blossom Pump Station and replenishment water does not include the energy required to treat the water.

- **Will the project result in reduced vehicle miles driven, in turn reducing carbon emissions? Please provide supporting details and calculations.**
  Not Applicable.

- **Describe any renewable energy components that will result in minimal energy savings/production (e.g., installing small-scale solar as part of a SCADA system).**

Not Applicable.

Evaluation Criterion C: Benefits to Endangered Species (12 points)

Up to 12 points may be awarded for projects that will benefit federally-recognized candidate species or up to 12 points may be awarded for projects expected to accelerate the recovery of threatened or endangered species, or addressing designated critical habitat.

For projects that will directly benefit *federally-recognized candidate species*, please include the following elements:

- **What is the relationship of the species to water supply?**

Upper District's water supply consists solely of imported water obtained from Metropolitan Water District of Southern California (MWD). MWD typically blends supplies from its Colorado River Aqueduct with water allocated from the State Water Project (SWP) before delivery to Upper District. As this project seeks to offset imported water deliveries to Upper District, benefits also include alleviating stress on the Bay-Delta habitat. Rationing water supplies received from the Bay-Delta helps limit the ecological impact of importing water. Twenty-nine known species of fish once populated the estuary and currently twelve of those species are considered gone or threatened by extinction. The Bay-Delta is also home to the Delta Smelt, which is a protected species through a 2007 court order. With a reduction in this imported water demand, the impact on the Delta Smelt, Salmon and other species currently impacted by water pumping activities, will be alleviated to the extent of this program.

- **What is the extent to which the proposed project would reduce the likelihood of listing or would otherwise improve the status of the species?**

The Project improves the status of the listed species by making more water available in the Bay-Delta to support the species and their habitats. Approximately 21,400 AFY of water is moved from the northern California Bay-Delta area through the SWP to meet this area's demand for water. With a reduction in this imported water demand, the impact on the Delta Smelt, Salmon, and other species currently impacted by water pumping activities will be alleviated to the extent of this program. Any reduction in water use from the SWP for this region has a positive impact on the species in and around the Bay-Delta area.

For projects that will directly accelerate the recovery of *threatened or endangered species or address designated critical habitats*, please include the following elements:
(1) How is the species adversely affected by a Reclamation project?

Listed threatened or endangered species or designated critical habitat located in the Bay-Delta are adversely affected by the SWP and imported water. When water is delivered from the Bay-Delta there is less available to support its habitats. There is a negative ecological impact on the Bay-Delta region as a result of importing water from the region. An example of this is the negative impact on the Delta Smelt which, due to its one-year life cycle and relatively low reproductive rate, is highly susceptible to changes in the environmental conditions of its native habitat. The Delta Smelt has been considered a 'canary in the coal mine' since reductions in its population are an indicator of deterioration conditions throughout the entire Delta ecosystem. It has been observed that the Delta Smelt population does better when outflow is allowed to flow downstream and create a nursery habitat for Delta smelt in Suisun Bay. The species' habitat, life cycle, and reproduction rates are adversely affected by water imported via the SWP.

(2) Is the species subject to a recovery plan or conservation plan under the ESA?

Yes, the species is subject to a recovery plan under the ESA. The Delta Smelt was included in the Recovery Plan for the Sacramento-San Joaquin Delta Native Fishes initially approved in November 1996. The Delta Smelt was also designated as a protected species through a 2007 court order.

(3) What is the extent to which the proposed project would reduce the likelihood of listing or would otherwise improve the status of the species?

Upper District's water supply consists solely of imported water obtained from MWD. MWD typically blends supplies from its Colorado River Aqueduct with water allocated from the State Water Project before delivery to Upper District. As this project seeks to offset imported water deliveries to Upper District, benefits include alleviating stress on the Bay-Delta Habitat. Decreasing water supplies received from the Bay-Delta help reduce negative ecological impacts triggered by water exportation from the area.

Since 100% of Upper District's water supply is imported water from the Colorado River and SWP, the proposed project will greatly improve the status of the species in the Bay-Delta by generating more local supply through conservation measures. Twenty-nine known species of fish once populated the estuary and currently twelve of those species are considered gone or threatened by extinction. Therefore, reductions in imported water mitigate negative environmental impacts on the California Bay-Delta.

Evaluation Criterion D: Water Marketing (12 points)

Up to 12 points may be awarded for projects that propose water marketing elements, with maximum points for projects that establish a new water market.

(1) Estimated amount of water to be marketed

As a result of this Project, approximately 763 AFY will be conserved by retail customers of the participating sub-agencies. Those sub-agencies (water provider/purveyor) and their participating retail customers are outlined in Table 4 and 5 in Subcriterion No. A.1.

(2) A detailed description of the mechanism through which water will be marketed (e.g., individual sale, contribution to an existing market, the creation of a new water market, or construction of a recharge facility)

Upper District's supply is currently 100% imported water from MWD. The implementation of the Program will make available up to 7,630 AF over the life of the Project. As a wholesale water supplier to the area, Upper District works closely with the Main San Gabriel Basin Watermaster to manage pumping

from the San Gabriel Basin in relation to the existing safe yield of the basin and tracking of water supplies that become available through continued expansion of regional water sources. Any additional water supply that becomes available results in reduced dependence on imported water and creates a market for the water producers within the Upper District to buy, sell, and/or transfer the additional yield.

The Upper District water market is assured since the pricing of SWP and other imported water supplies stimulates increased usage of local markets. Also, projected demographic growth within the Upper District's service area will increase water demands as well as volumetric increases in the recycled water supply.

(3) Number of users, types of water use, etc. in the water market

There are 29 water retailers within the Upper District service area that purchase, transfer, and/or utilize treated and untreated potable water as well as recycled water. These water producers sell water to more than 950,000 residents as well as businesses throughout 144 square miles of area that include all or parts of 17 cities and portions of unincorporated Los Angeles County.

(4) A description of any legal issues pertaining to water marketing (e.g., restrictions under reclamation law or contracts, individual project authorities, or State water laws)

There are no legal issues pertaining to the marketing of conserved water supplies through this Project.

(5) Estimated duration of the water market

Upper District anticipates a 10-year life span for the irrigation equipment installed via the retrofit process of this Project which will provide approximately 7,630 AF of saved water within the Upper District's service area that will be available for the water market.

Evaluation Criterion E: Other Contributions to Water Supply Sustainability (14 points)
Up to 14 points may be awarded for projects that contribute to a more sustainable water supply. *This criterion is intended to provide an opportunity for the applicant to explain how the project relates to a* ***WaterSMART Basin Study,*** *how the project could expedite future* ***on-farm improvements,*** *and/or how the project will provide* ***other benefits to water supply sustainability*** *within the basin. An applicant may receive the maximum 14 points under this criterion based on discussion of one or more of the numbered sections below.*

Subcriterion E.1 Addressing Adaptation Strategies in a WaterSMART Basin Study.
Proposals that provide a detailed description of how a project is addressing an adaptation strategy specifically identified in a completed Basin Study (i.e., a strategy to mitigate the impacts of water shortages resulting from climate change, drought, increased demands, or other causes) may receive maximum points under this criterion. Applicants should provide as much detail as possible about the relationship of the proposed project to the adaptation strategy identified in the Basin Study, including, but not limited to, the following:

- **Identify the specific WaterSMART Basin Study where this adaptation strategy was developed. Describe in detail the adaptation strategy that will be implemented through this WaterSMART Grant project, and how the proposed WaterSMART Grant project would help implement the adaptation strategy.**

A WaterSMART Basin Study is underway by the Los Angeles Basin Stormwater Conservation Study, Bureau of Reclamation, the Los Angeles County Flood Control District (LACFCD), and several local agencies. It is funded with $1 million from the Bureau of Reclamation's WaterSMART program, $1.36 million from the Los Angeles County Flood Control District, and $60,000 from other local partners. The purpose of the LA Basin Study is to study long-term water conservation and flood control impacts from projected climate conditions and population changes in the Los Angeles Basin. Since the WaterSMART Basin Study is underway, the adaptation strategies are not finalized, yet the strategies include water conservation to help resolve water supply issues. The Study area covers approximately 1,900 square miles and is home to approximately 10 million people, or about one-quarter of California's population. The LA Basin Study will recommend potential changes that could help resolve future water supply and flood control issues. The recommendations will be developed through identifying alternatives and conducting trade-off analyses. The Los Angeles Basin Study area includes the San Gabriel River Watershed, where Upper District's service area is located.

LACFCD captures over 95% of all precipitation that falls within the San Gabriel River Watershed to recharge the local groundwater basins. Los Angeles County accounts for the largest water demand of any urbanized county in California. The Basin study will recommend potential changes to the operation of stormwater capture systems, modifications to existing facilities, and development of new facilities that could help resolve future flood control and water supply issues. The recommendations will be developed through identifying alternatives and conducting trade-off analyses. Work began on the $2.4 million Study in December 2012, and is expected to be complete by December 2015. Adaptation strategies will be finalized in the completed Study.

The Upper District is located in Los Angeles County and obtains recycled water supply from the Los Angeles County Sanitation Districts (LACSD). Upper District provides 29 local water agencies recycled water for direct uses from the LACSD. The Project will support the strategies and goals of the Los Angeles Basin Stormwater Conservation Study by implementing water conservation measures. Upper District's legal boundaries are within the San Gabriel Valley and overlie the Main Basin. Upper District does not produce groundwater from the Main Basin; however its sub-agencies do. Groundwater in the San Gabriel Watershed is captured and managed by LACFCD. Upper District's water conservation efforts directly impact the availability of water within the Los Angeles region and LACFCD's WaterSMART Basin Study area. The Project will help implement the strategy by retrofitting several sites with water saving devices and assist in reducing water demand for the region.

Describe how the adaptation strategy and proposed WaterSMART Grant project will address the imbalance between water supply and demand identified by the Basin Study.

The Los Angeles Basin Study's adaptation strategy for increasing water conservation to help resolve water supply issues and implementation of the proposed WaterSMART Grant Project will address the imbalance between water supply and demand identified in the Basin Study. Imported water supplies for Los Angeles County are uncertain due to periodic droughts in northern California and the Colorado River Basin, court decisions related to Bay Delta endangered species, implementation of the terms of the Quantification Settlement Agreement for Colorado River water, and environmental concerns affecting delivery of Owens Valley water. Changing demographics and climate variability present additional long-term challenges to an adequate water supply. Various Los Angeles area water management agencies, such as the LACFCD and Upper District, are actively pursuing strategies for developing local water resources. The Project will implement significant water conservation measures to assist with water savings for the region. The Program contributes to a sustainable water supply within Upper District's service area for their sub-agencies and provides an overarching benefit to the Los Angeles Basin.

- **Identify the applicant's level of involvement in the Basin Study (e.g., cost-share partner, participating stakeholder, etc.).**

Upper District is a stakeholder in the Basin Study since the Study covers the District's service area within the San Gabriel Watershed. Los Angeles County Flood Control District (LACFCD) captures over 95% of all precipitation that falls within the San Gabriel River Watershed to recharge the local groundwater basins. Upper District's legal boundaries are within the San Gabriel Valley and overlie the San Gabriel Main Basin. Upper District does not produce groundwater from the Main Basin however, its sub-agencies do. Groundwater in the San Gabriel Watershed is captured and managed by LACFCD. Upper District purchases imported water to replenish the Main Basin.

- **Describe whether the project will result in further collaboration among Basin Study partners.**

The Project may result in further collaboration among Basin Study partners because the Basin Study Partners include LACFCD and Bureau of Reclamation. As discussed above, LACFCD manages the San Gabriel River Watershed, where Upper District's service area is located. Coordination on a regional level occurs between LACFCD and Upper District to manage water supply. Upper District has collaborated with Reclamation on various projects in the past, as listed in the Background Data section of this proposal. If this Project is awarded, further collaboration with Reclamation will occur.

Subcriterion E.2: Expediting Future On-Farm Irrigation Improvements
Points may be awarded projects that describe in detail how they will directly expedite future on-farm irrigation improvements for, including future on-farm improvements that may be eligible for NRCS funding. Please address the following:

Not Applicable.

Subcriterion E.3: Building Drought Resiliency
Up to 14 points may be awarded for projects that will build long-term drought resilience in an area affected by drought.

If the proposed project will make water available to alleviate water supply shortages resulting from drought, please address the following:

- **Explain in detail the existing or recent drought conditions in the project area. Describe the severity and duration of drought conditions in the project area. Describe how the water source that is the focus of this project (river, aquifer, or other source of supply) is impacted by drought.**

The existing and recent drought conditions have been severe in the Project area. Governor Brown's declaration of a drought emergency on January 17, 2014, resulted in the Upper District immediately issuing news releases and notices to their service area customers to reduce water use up to 20%. Nearly 50% of the Los Angeles Region's water demand comes from outdoor use and irrigation, while up to 70% of Upper District's water demand comes from outdoor use and irrigation. Imported water supply accounts for 100% of Upper District's potable water supply which is obtained through MWD. Upper District is located in the San Gabriel Valley Watershed, within the Los Angeles Basin. California's historic drought has caused rainfall in the San Gabriel Valley to reach historic lows, causing substantial decreases to local

surface supplies available for direct use and for replenishment of the Main San Gabriel Basin. In May 2012, only 30% of the storage capacity in the San Gabriel Canyon reservoirs was utilized which further decreased to 21% during May 2014. The combined lack of both local surface and imported replenishment water supply has caused groundwater levels in the Main San Gabriel Basin to reach historic lows. In an effort to meet demands with dwindling supplies, as of 2014, the Basin has been over-pumped to 60,000 AFY over safe yield. It is recognized that the continued over-pumping of the Basin is not sustainable in the near-term and is detrimental to the overall health and ability to restore basin levels over the long-term. If MWD reduces imported water allocations further in early 2015, there is concern that supplies will not be sufficient to meet demands. In response, local purveyors and the Upper District have actively sought to expand conservation programs, including the proposed Project, and are also looking to better leverage recycled water as a local supply to offset potable demands.

MWD supplies imported water to Upper District, which in turn supplies that imported water to its sub-agencies. The service area of Upper District is largely urbanized consisting of mainly residential, light industrial and commercial uses. Current water uses include direct use and replenishment. Untreated imported water is delivered to the Main Basin to satisfy its Replacement Water obligations required under the Main Basin Judgment. Upper District serves 29 local water agencies recycled water for direct uses, which is obtained from the LACSD.

The water source for Upper District's proposed Project, as well its entire service area, comes from imported water, as described above. The 763 AFY of water savings, totaling an estimated 7,630 AF of lifetime water savings, will reduce imported water needs. As a wholesaler, Upper District supplies supplemental imported water from MWD and recycled water to its sub-agencies. Upper District is currently 100 percent reliant on imported water supplies and therefore Upper District's entire water supply is threatened by current drought conditions. This Project is needed to address the dire situation of limited imported water supplies.

The current drought and anticipated future drought conditions make imported water supplies unreliable with looming shortfalls in imported water supply. On October 22, 2014 Upper District issued a news release titled, *"Water Supply Emergency Declared in Main San Gabriel Basin as drought conditions push basin levels to record lows"*. The Upper District Board of Directors proclaimed a water supply emergency following three consecutive dry years, with the winter of 2013/14 being a record dry year. Groundwater levels in the Main San Gabriel Basin are at record low levels and will continue to drop if the winter does not provide above-average rainfall and significant amounts of water are imported for replenishing depleted groundwater supplies. The resolution adopts water conservation actions as mandated by the State Water Resources Control Board's Emergency Regulation for Water Conservation. Upper District works with its 29 retail water customers to conserve outdoor water use and enhance water use efficiency. This Program will implement much needed water conservation measures to reduce imported water demand. Integrating system wide water conservation measures is critical for meeting water supply demands. The Project is also needed to ensure Disadvantaged Communities (DACs) have a reliable potable water supply. 75 % of the LLSR program sites are located within DACs, as shown in Figure 3 and as discussed in Subcriterion E.4. Also refer to Exhibit B for a comprehensive list of the Project sites that are located within DACs.

- **Describe the impacts that are occurring now or are expected to occur as a result of drought conditions. Provide a detailed explanation of how the proposed WaterSMART Grant project will improve the reliability of water supplies during times of drought. For example, will the proposed project prevent the loss of permanent crops and/or minimize economic losses from drought conditions? Will the project improve the reliability of water supplies for people, agriculture, and/or the environment during times of drought? In accordance with those**

requirements, project proposals requesting compensation for economic losses resulting from drought, and proposals for the purchase of water are not eligible for funding under this program.

Upper District has experienced significant negative impacts as a result of drought conditions and has declared a drought emergency. Upper District is located in the Los Angeles County Basin Region (Region), which experienced significant cutbacks to imported supply in 2008-2010 as a result of both a protracted drought and newly instated environmental restrictions limiting State Water Project (SWP) supplies from the Bay-Delta. The results of these still-recent drought conditions can be seen throughout the Region through the increased implementation of local supply development projects and conservation measures and ordinances. With only one wet year in 2011, the Region is in the middle of yet another multiple-year drought. Many of the strategic reliability measures implemented by MWD and the local water purveyors have helped to protect the region from rationing or other severe conservation measures thus far. However, as the drought continues through the summer of 2014 and with SWP allocations held at only 5%, local and imported supply stores are being depleted. For example, MWD is expecting to lose one third (or 1 million AF) of regional imported storage by the end of 2014. It is expected that if dry-weather conditions persist this winter, MWD could implement its Water Supply Allocation Plan which will most likely require local purveyors to implement mandatory rationing by as early as spring 2015. As a result, MWD has invested over $1 billion in water conservation, recycled water and groundwater (Regional Progress Report, February 2014) and member agencies and local water agencies have invested a like amount or more.

Water shortages have massive impacts with few solutions that can be immediately implemented to mitigate them. This has increased the immediacy of local resource development and increasingly aggressive water conservation projects and programs in Upper District's service area. MWD and Upper District have been at the forefront of both the development and implementation of programs and projects aimed at increasing the reliability of these imported supplies. Upper District has continuously participated in MWD water use efficiency programs, providing rebates to customers for replacement of water efficient equipment and encouraging participation through public outreach efforts. In support of 2014 drought preparedness, Upper District is proposing this Project, which is an expansion of their Large Landscape Survey and Retrofit project. The Project includes conducting large landscape surveys with the customers and retrofitting their irrigation systems as needed to realize water savings.

The Project will improve reliability for the Upper District's service area, which includes DACs, as described above in the first question of this Section. The proposed Project will improve the reliability of water supplies during times of drought by conserving 763 AFY for an estimated 7,630 AF of lifetime water savings and thereby reducing imported water demand by that same amount. Since Upper District's water supply is 100% imported water from the SWP and Colorado River Aqueduct (CRA) systems. Water conserved results in less imported water transported from the SWP and CRA which allows more water to be available for the habitats within those resources. In addition, the associated costs and energy required to deliver 763 AFY of imported water to Upper District is saved, which results in less financial impact to Upper District and less environmental impact from greenhouse gases. The Project will reduce imported water demands in the long term.

Subcriterion E.4: Other Water Supply Sustainability Benefits

Projects that do not address a need/adaptation strategy identified in a Basin Study or do not help expedite future on-farm irrigation improvements, may receive maximum points under this criterion by thoroughly explaining additional project benefits. Please provide sufficient explanation of the additional expected project benefits and their significance. Additional project benefits may include,

but are not limited to, the following:

- **Will the project make water available to address a specific concern? For example:**

o **Will the project directly address a heightened competition for finite water supplies and over-allocation (e.g., population growth)?**

The Project will directly address a heightened competition for finite water supplies and over-allocation of imported water within MWD's service area. Upper District is 100% reliant on imported water from MWD. With nearly 19 million people in MWD's service area, Southern California is heavily reliant on imported water supplies to meet demands. Strategies to reduce this reliance are sought in various ways through local supply development and conservation. The proposed Program will help reduce dependence on imported water supplies that are more expensive and more energy intensive. In addition, imported water represents a supply that is constrained by climatic variability and heightened competition for its finite supply. The Program will result in measurable water conservation that reduces Upper District's dependency on imported supply.

The Project increases local water supply reliability by reducing the need for potable groundwater to meet irrigation demands and thereby putting existing potable water supplies to greater beneficial use. The San Gabriel Valley is heavily dependent on groundwater from the Main Basin to meet local demands – pumping over 200,000 AFY to meet local demands. Recent years of drought have limited replenishment supplies – resulting in the lowest groundwater levels on record for the Main Basin. Further implementation of water conservation measures to meet non-potable demands is a critical component to improving Basin health and water supply reliability.

o **Describe how the water source that is the focus of this project (river, aquifer, or other source of supply) is impacted by climate variation.**

The source of water for this Project is imported water that would be conserved through landscape retrofits. Imported water is impacted by climate variation by being greatly limited during the current and projected drought conditions. Climate variation presents unpredictable weather patterns and unreliable supplies of water. Therefore, the reliability of imported water availability has been significantly reduced. Due to the recent drought, local natural recharge of the Main Basin has decreased dramatically which has increased dependence upon imported water to meet replenishment needs. As the drought continues and with SWP allocations held at only 5%, local and imported supply stores are being depleted. MWD has indicated that if current drought conditions continue they may need to implement their Water Supply Allocation Plan as early as spring 2015 which would mean decreases in the amount of imported supplies available for recharging the Basin. This may result in the need for local supply agencies to implement mandatory rationing to limit potable demands. Reducing the demand on potable supplies decreases the stress on the Main Basin and reduces the dependency on imported supplies.

o **Will the project help to address an issue that could potentially result in an interruption to the water supply if unresolved?**

The Project will help to address the issue of Main San Gabriel Basin's overdraft condition by conserving up to 763 AFY and 7,630 AF over the 10 year lifespan. If unresolved, the overdraft condition will lead to an interruption in the water supply for Upper District's service area. This Project provides immediate regional drought preparedness by decreasing the amount of Main San Gabriel Basin (Main Basin) groundwater that is pumped and then treated to meet irrigation demands. The decreased need for

groundwater pumping also then decreases the amount of imported water that is needed to replenish the Basin to meet pumping demands. The Main Basin relies upon water imported from the SWP and CRA systems by MWD for replenishing water pumped to meet local demands that are in excess of the Main Basin's safe yield. The recent drought has caused local natural recharge of the Main Basin to decrease dramatically, which has increased dependence upon imported water to meet replenishment needs. As discussed above, MWD has indicated that if current drought conditions continue they may need to implement their Water Supply Allocation Plan as early as spring 2015 which would mean decreases in the amount of imported supplies available for recharging the Basin. This may result in the need for local supply agencies to implement mandatory rationing to limit potable demands. Reducing the demand on potable supplies decreases the stress on the Main Basin and reduces the dependency on imported supplies.

- **Will the project make additional water available for Indian tribes?**

No, the Project will not make additional water available for Indian tribes.

- **Will the project make water available for rural or economically disadvantaged communities?**

Yes, the Project will make water available for economically disadvantaged communities. The Project will conserve 763 AFY for an estimated 7,630 AF of lifetime water savings of potable water thereby making that same amount of potable water available to serve Disadvantaged Communities (DACs) within Upper District's service area. The Project is needed to ensure DACs have a reliable potable water supply. 75 percent of the LLSR program sites are located within DACs, as shown in Figure 3 and as discussed in Section E.4. Targeted project sites were confirmed to be within DAC census tracts derived from the CalEnviroScreen 2.0 Tool score of 81 percent or higher. A map below shows the location of the project sites, benefit area, and DAC census tracts derived from the CalEnviroScreen 2.0 Tool. Refer to Exhibit B for a comprehensive list of the Project sites that are located in DACs. This Project will provide many direct, meaningful, and assured benefits to numerous sites within DACs. Improvements, repairs, and replacement of irrigation infrastructure will take place at all of the targeted sites that include DACs. Measurable benefits for these targeted LLSR sites include:

- Increased water supply reliability.
- Reduced water consumption.
- Reduced water bills that will assist schools and parks already working with reduced budgets and reduced staffing.
- Improved irrigation system infrastructure that will reduce maintenance costs and free up landscape staff resources to focus on other tasks.
- Improved irrigation uniformity will improve landscape appearance.
- Upgraded devices (such as controllers) that will also be more energy efficient for the participating locations which are primarily public sites (schools and parks).
- Improved landscape system operations.
- Decreased energy needed for supplying and transporting water.

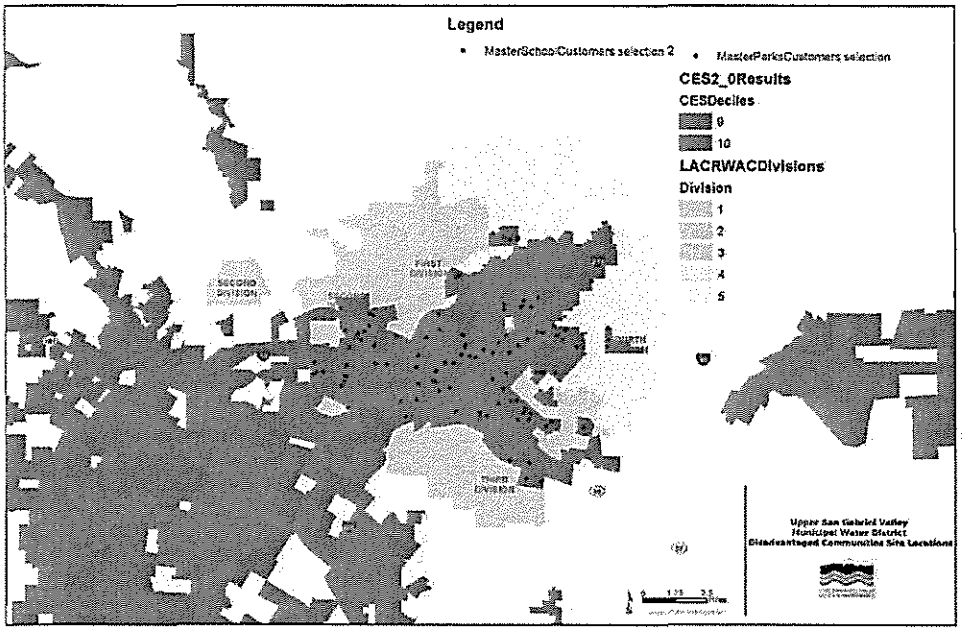


Figure 3. Upper District's Disadvantaged Communities

- **Does the project promote and encourage collaboration among parties?**

  - **Is there widespread support for the project?**

Yes, the Program is built upon collaboration with the regional water agency (Metropolitan Water District of Southern California) and Upper District sub-agencies (29 total). Upper District's Board of Directors has committed to providing financial contributions toward this project. This funding is vital to the success of this program. MWD is committed to contributing funding for all the cities that overlay the basin. A letter of support was provided by Robert Kelley, Vice President, Regulatory Affairs, from Suburban Water Systems and by Robert S. Joe, Mayor, City of South Pasadena, which are included in Exhibit D. This Project is supported by MWD and Upper District's customers as it enhances MWD's existing landscape retrofit rebate program and provides cost savings through reduced water usage. The support is demonstrated by Upper District's Master Agreement No. 66662 for the Regionwide Commercial, Industrial, and Institutional (CII) Rebate Program with MWD, an abbreviated version is included in Exhibit D. The agreement allows Upper District access to MWD's Program to provide financial incentives within individual member agencies' service areas, thereby benefitting water providers and purveyors within Upper District's service area.

  - **What is the significance of the collaboration/support?**

The significance of the increased collaboration between the Upper District and its sub- agencies is that the sub-agencies' customers will gain an increased awareness of water conservation efforts and Upper District's conservation programs. Support of this Program by sub-agencies is also significant as it demonstrates acknowledgement of Upper District's progressive approach to increasing conservation through improved water management. Also, the collaboration between MWD and Upper District signifies greater regional water conservation efforts throughout Southern California.

- **Will the project help to prevent a water-related crisis or conflict?**

There is a water-related conflict within the Bay-Delta (over limited water supplies) from which Upper District receives over half of its imported water. This Project will help to reduce the amount of water needed for import to southern California through the MWD system. In addition, this Program may serve as a model to other agencies or large landscape customers that are looking for ways to meet current emergency drought reductions and as well as meet the requirements of SBx7-7, California state legislation that requires 20% reduction in urban potable use by 2020.

- **Is there frequently tension or litigation over water in the basin?**

The groundwater pumpers are very active in the Main San Gabriel Groundwater Basin and meet on a monthly basis through the Main San Gabriel Water Association. Upper District does not have groundwater rights and is not directly involved in any litigation related to the groundwater basin.

- **Is the possibility of future water conservation improvements by other water users enhanced by completion of this project?**

Yes, there is the potential for future water conservation improvements by other water users. Water conservation will be enhanced by the completion of this project. The Large Landscape Program is market transformative and could become mainstream. Similar to that which occurred in the early 1990s, non-efficient devices such as nozzles and sprinklers are not available on the market anymore. This is the type of market transformation that can occur with the new technology, thereby enhancing the possibility of future water conservation improvements by other water users.

- **Will the project increase awareness of water and/or energy conservation and efficiency efforts?**

- **Will the project serve as an example of water and/or energy conservation and efficiency within a community?**

Yes, the Upper District's Large Landscape Survey and Retrofit Program will increase awareness of water conservation and efficiency efforts. The Program enables large landscape customers to have control of their water use and empowers them to change habits that will result in reduced water use and conserved water while maintaining a healthy and aesthetically pleasing landscape. This Program provides a widespread example of water and energy conservation and efficiency within the community.

- **Will the project increase the capability of future water conservation or energy efficiency efforts for use by others?**

Yes, the Program will increase the capability of future water conservation efforts for use by others by retrofitting devices that will remain in place for approximately 10 years. Implementation of the devices will ensure irrigation users at the schools and sites will conserve water upon operation. Upper District's Program will serve as a model to other agencies and will inspire non-participating sub-agencies to participate with their large landscape customers.

- **Does the project integrate water and energy components?**

The Upper District's Large Landscape Survey and Retrofit Program is a water savings project and includes a reduced energy demand component. With reduced potable water demand, there will be less

water required for pumping within Upper District sub-agencies distribution systems resulting in less energy demand for pumping. The decrease in pumping will result in less energy usage within the Upper District's service area, saving 3,820,341 kwh/year of energy.

Evaluation Criterion F: Implementation and Results (10 points)

Up to 10 points may be awarded for the following:

Subcriterion No. F.1—Project Planning

Points may be awarded for proposals with planning efforts that provide support for the proposed project.

Does the project have a Water Conservation Plan, System Optimization Review (SOR), and/or district or geographic area drought contingency plans in place? Does the project relate/have a nexus to an adaptation strategy developed as part of a WaterSMART Basin Study)? Please self-certify, or provide copies of these plans where appropriate, to verify that such a plan is in place.

Provide the following information regarding project planning:

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

Upper District currently has a 2012-2016 Water Use Efficiency Master Plan that includes a list of water use efficiency programs to be implemented over the next 5 years. As a long-time member of the CUWCC, Upper District signed a Memorandum of Understanding (MOU) in 1991 pledging to implement "Best Management Practices", which are cost-effective conservation efforts. The BMP's for Upper District are equivalent to Demand Management Measures (DMM) which are an integral part of the Upper District's Urban Water Management Plan. One of the BMPs is directly related to landscape water use efficiency.

As a wholesaler striving to meet its BMPs and DMMs, the Upper District strives to increase water use efficiency and also provide quality programs and technical assistance, when feasible, to support its retailers in meeting their BMPs and DMMs. This Program works towards those efforts as well as the goal of achieving a reduction of 20% in water usage by the year 2020 as mandated by SBX7-7.

As described in Section E.1, a WaterSMART Basin Study is underway by the Los Angeles Basin Stormwater Conservation Study, Bureau of Reclamation, LACFCD, and several local agencies. The purpose of the LA Basin Study is to study long-term water conservation and flood control impacts from projected climate conditions and population changes in the Los Angeles Basin. The Study area covers approximately 1,900 square miles and is home to approximately 10 million people, or about one-quarter of California's population. The LA Basin Study will recommend potential changes that could help resolve future water supply and flood control issues. The recommendations will be developed through identifying alternatives and conducting trade-off analyses. The Los Angeles Basin Study area includes the San Gabriel River Watershed, where Upper District's service area is located. The proposed Project supports water conservation measures discussed in the Study.

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

This program helps meet the State's AB 32 goals by reducing greenhouse gas emissions as a result of the

reduction in water treatment and delivery from imported water supplies. The Project will avoid GHG emission by conserving 2,330,408 lbs of CO2/year. This program also helps to meet Upper District's regional 2010 Urban Water Management Plan, the Urban Water Use Efficiency goals stated in the California Water Plan, Update 2009, the Greater Los Angeles County Integrated Regional Water Management Plan, (IRWMP) and Metropolitan Water District's 2010 Integrated Resources Plan (IRP). Water use efficiency and energy efficiency are two of the main goals in all of these plans that will enable the region to manage water supplies and resources for future generations. This Program implements water conservation measures for the Upper District's largest irrigation users – schools and parks.

Upper District is included in the MWD's Regional Water Management Plan and is a member of the CUWCC. As a member of the CUWCC, this Program will help to meet the CUWCC conservation goals. This Program also supports the Upper District's sub- agencies efforts to achieve their DMMs and BMPs as well as the statewide goals of 20% reduction in urban water use by 2020 as mandated by SBX7-7.

The Los Angeles Basin study will recommend potential changes to the operation of stormwater capture systems, modifications to existing facilities, and development of new facilities that could help resolve future flood control and water supply issues. LACFCD captures over 95% of all precipitation that falls within the San Gabriel River Watershed, where the Project is located, to recharge the local groundwater basins. Los Angeles County accounts for the largest water demand of any urbanized county in California. The Upper District obtains water supply from LACSD. Upper District serves 29 local water agencies recycled water for direct uses from the LACSD. The Project will support the Los Angeles Basin Stormwater Conservation Study by implementing water conservation measures, including retrofitting several sites with water saving devices to assist in reducing water demand by 763 AFY for the region.

Subcriterion No. F.2—Readiness to Proceed
Points may be awarded based upon the extent to which the proposed project is capable of proceeding upon entering into a financial assistance agreement.

Describe the implementation plan of the proposed project. Please include an estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates. ***(Please note, under no circumstances may an applicant begin any ground-disturbing activities—including grading, clearing, and other preliminary activities— on a project before environmental compliance is complete and Reclamation explicitly authorizes work to proceed)***

The implementation plan for the project includes the tasks described in the **Technical Proposal: Technical Project Description.**

Estimated Program Schedule–Figure 4 shows the program schedule with a grant award date of September 30, 2015, and completion of the Project within 3 years.

Please explain any permits that will be required, along with the process for obtaining such permits.

This Program does not require any permits. The Program entails the replacement of existing irrigation devices with similar devices identified as more efficient and effective.

Large Landscape Survey and Retrofit Program

Large Landscape Survey and Retrofit Program Schedule	FY 2015 - 2016												FY 2016 - 2017												FY 2017 - 2018											
	2015						2016												2017												2018							
	Q1			Q2			Q3			Q4			Q1			Q2			Q3			Q4			Q1			Q2			Q3			Q4			Q1		
	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.
Funding Award																																						
Task 1. Project Administration and Reporting																																						
Task 2. Landscape Site Evaluations and Program Management																																						
Task 3. Monitoring																																						
Task 4. Surveys and Retrofits																																						

Figure 4. Project Schedule

Subcriterion No. F.3—Performance Measures
Points may be awarded based on the description and development of performance measures to quantify actual project benefits upon completion of the project.

Provide a brief summary describing the performance measure that will be used to quantify actual benefits upon completion of the project (e.g., water saved, marketed, or better managed, or energy saved). For more information calculating performance measure, see Section VIII.A.1 "FY2015 WaterSMART Water and Energy Efficiency Grants: Performance Measures."

The performance measures that will be used to quantify actual benefits upon completion of the Project include number of installed/retrofitted devices and water use monitoring. Water use monitoring includes review/analysis of water consumption data sites (based on available data) against the anticipated total water savings of 763 AFY. Upper District will collect and analyze pre- and post-retrofit water consumption data for a segment of participating sites to determine volumetric reductions in water usage. This program has been designed to examine participants' water use for three years prior to survey/retrofit and one to three years post retrofit.

Water use monitoring will be provided to USBR throughout the reporting period and also included in the final report. Water use monitoring will continue beyond that timeframe to be able to make a fair assessment of the actual water savings from this program. This program will serve as a platform in determining a long-term analysis. The actual water savings generated by the program will be measurable, as it is measured as part of Task 3. Monitoring. The number of surveys and retrofits that are completed will also serve as a measure of success. The goal is to make this program a long-term viable option and serve as another tool in the conservation portfolio and in meeting the Water Conservation Act of 2009- 20% per capita reduction in water use by 2020, as well as the drought emergency water conservation measures. If we achieve 80% of the sites retrofitted and the water savings remains at the site, the program will be considered very successful and provide for the potential to be used as another means in which high water savings can be achieved in the commercial sector.

Subcriterion No. F.4—Reasonableness of Costs:
Please include information related to the total project cost, annual acre-feet conserved (or better managed), and the expected life of the improvement.

As explained in Subcriterion No. A.1, the total Project cost and water savings were calculated based on data from Phases 1 and 2 of the program completed to date, which was then averaged and applied to the proposed Phase 3 project sites. The following provides a step by step explanation of these calculations:

Step 1: Upper District divided all the existing (and future proposed) projects into 5 categories: Parks, Elementary Schools, High Schools, Middle Schools, and Other (community centers, larger sites, etc.)

Step 2: For calculating the costs of each site, the following was completed:

A) Calculated the average actual cost for each category of site (survey and retrofit).
B) Added a surcharge to include soil moisture sensors to about 10% of the sites. Note that Upper District is currently conducting a study into the overall performance of these sensors. If the results are favorable, then Upper District will look to include them at a portion of the sites where it makes the most sense. The purpose of these sensors is to help deal with micro-climate issues that arise at some sites where the weather based information is not representative of the actual site.

The MWD reimbursement was calculated based on completed projects and has averaged about 26% overall. The best performing categories are Elementary Schools and Parks. The proposed site mix includes schools and parks and it is therefore anticipated that it may be higher than 26%. The total average cost of parks amounted to $16,500 per site, while the average cost of schools varied from $9,500 to $21,500.

Refer to Tables 4 and 5 in Subcriterion No. A.1 for the total park and school project sites, their cost, and anticipated average water savings in AFY. Table 7 below summarizes the cost estimate per project site. Table 8 shows the total Project Cost per task.

Table 7 Cost Estimate per Project Site

Cost Summary				
	Average of Survey and Retrofit from Existing Work	Cost Add to Include Full Soil Moisture Sensing	Assume Moisture Sensors for 1/6th of Sites	Total Site Cost Estimate
Elementary Schools	$ 6,500.00	$ 18,500.00	$ 3,000.00	$ 9,500.00
Middle Schools	$ 11,500.00	$ 36,000.00	$ 6,000.00	$ 17,500.00
High Schools	$ 11,500.00	$ 60,000.00	$ 10,000.00	$ 21,500.00
Parks	$ 12,500.00	$ 18,500.00	$ 4,000.00	$ 16,500.00
Other Sites	$ 9,500.00	$ 25,000.00	$ 4,500.00	$ 14,000.00

In the cost estimate above, the first column of costs is based on the average of existing projects Upper District has completed. Upper District is currently investigating using more soil moisture sensing equipment to help maximize and automate savings. There are four test sites that are currently being evaluated. If the results are positive, Upper District plans to use more soil moisture sensing equipment. Column two above shows soil moisture sensors may add significant cost. Therefore, Upper District is assuming that moisture sensors will be used at approximately 1/6 of the sites. The total is shown in the final column. Note that if the results are favorable, then Upper District will consider using the soil moisture sensing equipment in more sites.

Total Project Cost (Approximate) = $2,627,750 (shown in Table 8)

Acre-Feet Conserved = 763 AFY (average Large Landscape conserved over 10 years projected; data provided in Tables 2 through Table 5)

Improvement Life (years)* = 10 (*Expected useful life of the nozzles, smart controllers, and sprinklers.)

Energy Savings= 763 AFY * 5,007 kWh/AF = 3,820,341 kWh/yr
This Program will increase energy efficiency by conserving water, which reduces the demand of imported water and thereby decreases the energy (and associated costs) required to transport imported water from the Colorado River and State Water Project to Upper District's service areas. Approximately 4,432 kilowatt-hours per AF (kWh/AF) is required for conveyance and pumping of SWP and CRA imported water the District receives from MWD's Pearblossom treatment plant. The SWP value is based on off-Aqueduct Power Facility Costs (DWR Bulletin B-132-10, 2013) and the CRA value from CPUC Study 1, page 64. In addition, to pump the imported water from the basin for distribution is an additional 575 kWh/AF based on actual energy usage provided by Upper District staff. Therefore, a total of 5,007 kWh/AF of energy is used to deliver imported water to Upper District. The Project will reduce the need to import 763 AFY.

Calculation:
$2,627,750/ (763 x 10) = $344/AF

Result:
The estimated cost over the 10-year life of the Program is $344 per AF. It is anticipated that Phase 3 will provide 763 AFY of imported water savings.

Table 8 Project Cost

	USBR 2015 WaterSMART Grant - Funding Group II		
	Schools	Parks	Total
Total Projects	134	38	172
Total Project Cost	$ 1,665,500	$ 619,500	$ 2,285,000
Water Savings (acre-ft)	531	232	763
Task 1. Project Administration and Reporting	5%		$ 114,250
Task 2: Landscape Site Evaluations and Program Management	5%		$ 114,250
Task 3: Monitoring	5%		$ 114,250
Task 4: Surveys and Retrofits			$ 2,285,000
		Total Project	**$ 2,627,750**
MWD MAA Funding	25%		$ 571,250

For all projects involving physical improvements, specify the expected life of the improvement in number of years and provide support for the expectation (e.g., manufacturer's guarantee, industry accepted life-expectancy, description of corrosion mitigation for ferrous pipe and fittings, etc.). Failure to provide this information may result in a reduced score for this section.

The average useful life of the retrofit devices, including nozzles and sprinklers, is 10 years. The useful life

was provided by MWD and is based on manufacturer's guarantee. These are also industry accepted life-expectancies. Refer to Table 3 in Subcriterion No. A.1. for the list of MWD's devices and useful life. A sampling of MWD's device list, including manufacturer and model, are included in Exhibit A.

Evaluation Criterion G: Additional Non-Federal Funding (4 points)
*Up to **4 points** may be awarded to proposals that provide non-Federal funding in excess of 50 percent of the project costs. State the percentage of non-Federal funding provided.*

The Upper District's cost cost-share is 61.7% to be provided through cash contributions.

$$\frac{\$\ 1{,}621{,}250}{\$\ 2{,}627{,}750} = 61.7\%$$

Evaluation Criterion H: Connection to Reclamation Project Activities (4 points)
*Up to **4 points** may be awarded if the proposed project is in a basin with connections to Reclamation project activities. No points will be awarded for proposals without connection to a Reclamation project or Reclamation activity.*

(1) How is the proposed project connected to Reclamation project activities?

Reclamation manages the Colorado River system from which MWD imports water. Upper District purchases 100% of its supply from MWD. Approximately half of the water imported is from the Colorado River and blended with the other half imported from northern California. Water savings associated with this program translate to more water remaining in these two fragile systems. The proposed project directly supports Reclamation's current efforts to further advance efficiencies in the landscape and Commercial, Industrial and Institutional sectors. In addition, the Upper District's water conservation efforts directly impact the availability of water within the Los Angeles region and LACFCD's WaterSMART Basin Study. Since the study is underway, the adaptation strategies are not finalized; however, the strategies include water conservation to help resolve water supply issues. The Project will help implement the strategy by retrofitting a number of sites with water saving devices that will assist in reducing water demand for the region. In addition, the proposed Project is included in the Upper District's Water Use Efficiency Master Plan which was developed with the assistance of Reclamation. The Plan included the projected amount of water to be conserved through implementation of each program and the associated cost savings. This project benefits Reclamation because it reduces imported water supplies from the Colorado River and northern California.

(2) Does the applicant receive Reclamation project water?

Yes, Upper District receives a mixture of Colorado River water and State Water Project water through MWD.

(3) Is the project on Reclamation project lands or involving Reclamation facilities?

No, the project is neither on Reclamation lands nor involves Reclamation facilities.

(4) Is the project in the same basin as a Reclamation project or activity?

Yes, the Program is in the same basin (Main San Gabriel Basin) as a project previously funded by Reclamation. As earlier described, Upper District has received funds from the Bureau of Reclamation's

Title XVI program for its Recycled Water Program. In addition, LACFCD's WaterSMART Basin Study is in partnership with Reclamation and covers the Los Angeles Basin. The Los Angeles Basin Study area includes the San Gabriel River Watershed, where Upper District's service area is located.

(5) Will the proposed work contribute water to a basin where a Reclamation project is located?

The water savings attained will be the result of reduced imports from the Bay- Delta and the Colorado River. By reducing the amount of water imported, this water in effect remains in the basin from which it originates, or is made available to meet demands in other areas of the State. In addition, LACFCD's WaterSMART Basin Study is in partnership with Reclamation and covers the Los Angeles Basin. The Los Angeles Basin Study area includes the Main San Gabriel Basin within the San Gabriel River Watershed, where Upper District's service area is located. The WaterSMART Basin Study focuses on water conservation measures. The Project will conserve local water supplies in the Main San Gabriel Basin and the greater Los Angeles Basin.

(6) Will the project help Reclamation meet trust responsibilities to Tribes?

No, this Project will not help Reclamation meet trust responsibility to Tribes as there is no direct impact on tribes in the Project area.

Performance Measures (included under Subcriterion No. F.3—Performance Measures)

Environmental and Cultural Resources Compliance

To allow Reclamation to assess the probable environmental and cultural resources impacts and costs associated with each application, all applicants must respond to the following list of questions focusing on the NEPA, ESA, and NHPA requirements. Please answer the following questions to the best of your knowledge. If any question is not applicable to the project, please explain why. Additional information about environmental compliance is provided in Section IV.D.4. "Project Budget," under the discussion of "Environmental and Regulatory Compliance Costs," and in Section VIII.B., "Overview of Environmental and Cultural Resources Compliance Requirements."

Note: applicants proposing a Funding Group II project must address the environmental and cultural resources compliance questions for their entire project, not just the first 1-year phase.

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

The Program involves replacement of existing irrigation controllers, inefficient nozzles and sprinkler heads. There will be no impact to the surrounding environment as a result of the Program. There is no earth-disturbing work involved in this Program.

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

No, Upper District is not aware of any species listed or proposed to be listed as a Federal threatened or endangered species, or designated critical habitat in the project area. There are no anticipated endangered

or threatened species that will be affected by activities associated with the Program.

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

This Program involves replacement of existing irrigation controllers, broken/damaged nozzles and sprinkler heads in developed and existing large landscaped areas. There are no wetlands or surface waters inside the project boundaries that potentially fall under Federal Clean Water Act jurisdiction as "waters of the United States."

(4) When was the water delivery system constructed?

The Upper District's delivery system was originally constructed in 1960 and is comprised of nine (9) points of connections from MWD's Upper Feeder supply system to Upper District's sub-agencies. Few additions, rehabilitation of pipe, or other system appurtenances have occurred since its original construction. Upper District purchases treated water, by way of the MWD Weymouth Treatment Plant, to distribute to its member agencies as well as purchases un-treated water, by way of MWD, to distribute to the Main San Gabriel Watermaster. During the early years of Upper District's formation, imported water met less than 20% of its demands. Imported water is now required to meet 100% of its demands. Since the Upper District's facilities were originally constructed more than 50 years ago, less demand on the system will alleviate the impacts of shutdowns to rehabilitate the system.

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

This Program will result only in modifications to inefficient large landscape irrigation devices, such as nozzles and sprinkler heads, at identified sites as well as replacing inefficient controllers with new Smart irrigation controllers. None of the modifications will be extensive in nature and everything removed will be replaced with "in-kind" devices.

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

Upper District does not anticipate any effects to buildings, structures, or features listed on the National Register of Historical Places.

(7) Are there any known archeological sites in the proposed project area?

There are no known archeological sites in the proposed Program area. No archeological sites are anticipated to be encountered during the course of this Program as it does not involve excavation or construction.

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

This Program will not have a disproportionately high and adverse effect on low income or minority populations. The Program has the potential to provide positive monetary benefits to low income and minority populations by identifying water inefficiencies for large landscape sites within their community which, after installation of high efficient nozzles, sprinklers, and Smart irrigation controllers, will potentially decrease the costs to that population. Disadvantaged communities reside in Upper District's service would benefit from reduced water usage and cost savings as a result of the Project. Refer to Section E.4 for more discussion on the project's benefits to DACs.

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

This Program will not limit access to and ceremonial use of Indian sacred sites or result in other impacts on tribal lands.

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

No, this Program will not contribute to the introduction, continued existence, or spread of noxious weeds or non-native species known to occur in the area. This Program involves retrofitting existing inefficient irrigation devices with efficient irrigation devices. Such retrofits help to direct the appropriate amount of water to where it is needed and may actually help limit the spread of noxious weeds or non-native invasive species.

Required Permits or Approvals

Applicants must state in the application whether any permits or approvals are required and explain the plan for obtaining such permits or approvals.

No such permits are required for this program.

Letters of Project Support

A letter of support was provided by Robert Kelley, Vice President, Regulatory Affairs, from Suburban Water Systems and by Robert S. Joe, Mayor, City of South Pasadena, which are included in Exhibit D. This Project is supported by MWD and Upper District's customers as it enhances MWD's existing landscape retrofit rebate program and provides cost savings through reduced water usage. The support is demonstrated by Upper District's Master Agreement No. 66662 for the Regionwide Commercial, Industrial, and Institutional (CII) Rebate Program with MWD, an abbreviated version is included in Exhibit D. The agreement allows Upper District access to MWD's Program to provide financial incentives within individual member agencies' service areas, thereby benefitting water providers and purveyors within Upper District's service area.

Official Resolution

Include an official resolution adopted by the applicant's board of directors or governing body, or for state government entities, an official authorized to commit the applicant to the financial and legal obligations associated with receipt of WaterSMART Grant financial assistance, verifying:

- The identity of the official with legal authority to enter into agreement.
- The board of directors, governing body, or appropriate official who has reviewed and supports the application submitted.

- The capability of the applicant to provide the amount of funding and/or in-kind contributions specified in the funding plan.
- That the applicant will work with Reclamation to meet established deadlines for entering into a cooperative agreement.

An official resolution meeting the requirements set forth above is mandatory.
If the applicant is unable to submit the official resolution by the application deadline because of the timing of board meetings or other justifiable reasons, the official resolution may be submitted up to 30 days after the application deadline.

Upper District's Board Resolution is included in Exhibit C.

Project Budget

The project budget includes: (1) Funding Plan and Letters of Commitment, (2) Budget Proposal, (3) Budget Narrative and (4) Budget Form.

Funding Plan and Letters of Commitment

Describe how the non-Reclamation share of project costs will be obtained. Reclamation will use this information in making a determination of financial capability.

Upper District partners with various water retailers (sub-agencies) and cities as a way to increase the size of programs, leverage funding, and help meet water conservation goals. Upper District collaborates to increase the cost-effectiveness of programs. This strategy combined with its partnerships is included in Upper District's 2012-2015 Water Use Efficiency (WUE) Master Plan. By collaborating closely with other agencies, Upper District has implemented many successful programs.

For this Program, Upper District's share will come from the publically approved standby-charge of $8 per parcel within the Upper District service area.

Upper District is a member agency of the MWD and has a Regionwide Commercial, Industrial and Institutional (CII) rebate program (No. 66662), whereby Upper District is able to receive funding from MWD for various conservation devices. For this project, Upper District will be able to access some co-funding for the devices installed. For example, MWD currently offers funding incentives in the amount of $35 per station for a smart irrigation controller installed, $13 per large rotary nozzle set, and $4 per rotating nozzles for pop-up spray heads that are installed. Upper District will be using this incentive as part of its cost-share for the project yet retrofits will be required to be completed and new devices installed before Upper District will be able to obtain MWD co-funding as shown in the MWD Pre-Approval Request shown in Exhibit D along with the original Agreement. Upper District has provided an abbreviated version of the Funding Agreement in Exhibit D with specific Addendums.

Project funding provided by a source other than the applicant shall be supported with letters of commitment from these additional sources. This is a mandatory requirement. Letters of commitment shall identify the following elements:

(1) The amount of funding commitment

The amount of funding commitment is all cash contribution in the amount of $455,875.

(2) The date the funds will be available to the applicant

Part of the cash contribution from Upper District will be available starting in July 2015 and July 2016, which is the start date of Upper District's fiscal years. The funding will be allocated in FY 2015/16. Any contributions from MWD will be on a fiscal year basis (i.e. by June 30th) and would be available beginning in FY 2014/15.

(3) Any time constraints on the availability of funds

There is no time constraint on the availability of funding from Upper District for the amount that will be budgeted in each fiscal year. Funding from MWD will be available in the respective fiscal year time frames and be budgeted for accordingly.

(4) Any other contingencies associated with the funding commitment

There are no other known contingencies with the funding commitments.

Commitment letters from third party funding sources should be submitted with your project application. Cost share funding from sources outside the applicant's organization (e.g., loans or state grants), should be secured and available to the applicant prior to award.

The funding plan must include all project costs, as follows:

(1) How you will make your contribution to the cost share requirement, such as monetary and/or in-kind contributions and source funds contributed by the applicant (e.g., reserve account, tax revenue, and/or assessments).

Upper District will provide its cost share in monetary (cash) contributions. Upper District currently has a contract with the MWD, whereby Upper District receives $35 per station for a smart irrigation controller, $13 per large rotary nozzle set, and $4 per rotating nozzles for pop-up spray heads installed through its MWD-Member Agency Allocation. Please refer to Exhibit D. Upper District will be using this funding as part of its cost share.

(2) Describe any in-kind costs incurred before the anticipated project start date that you seek to include as project costs. Include:

(3) What project expenses have been incurred

None.

(a) How they benefitted the project

Not Applicable.

(b) The amount of the expense

Not Applicable.

(c) The date of cost incurrence

Not Applicable.

(4) Provide the identity and amount of funding to be provided by funding partners, as well as the

required letters of commitment.

Local Cost Share - Funding Partners	Type of Cost Share	Total
Upper District (cash contribution)	Project/Construction Management and Conservation Budget	$1,050,000
Metropolitan Water District (cash)	Co-funding	$571,250*
Total		*$ 1,621,250*

* In lieu of a letter of commitment from MWD, the long-term funding agreement between Upper District and MWD is included in Exhibit D.

(5) Describe any funding requested or received from other Federal partners. Note: Other sources of Federal funding may not be counted towards your 50 percent cost share unless otherwise allowed by statute.

No other funding has been received or is anticipated to be received from other federal agencies.

(6) Describe any pending funding requests that have not yet been approved, and explain how the project will be affected if such funding is denied.

There are no pending funding requests for this project.

Please include the following chart (table 1) to summarize your non-Federal and other Federal funding sources. Denote in-kind contributions with an asterisk (*). Please ensure that the total Federal funding (Reclamation and all other Federal sources) does not exceed 50 percent of the total estimated project cost.

Table 1. Summary of non-Federal and Federal funding sources.

Funding Sources	Funding Amount
Non-Federal Entities	
1. Upper District Municipal Water District	**$1,050,000 (cash)**
2. Metropolitan Water District	**$571,250 (co-funding reimbursed)**
Non-Federal Subtotal:	**$1,621,250**
Other Federal Entities	**$0**
1. None	**$0**
Other Federal Subtotal:	**$0**
Requested Reclamation Funding:	**$1,006,500**
Total Project Funding:	**$2,627,750**

For applicants submitting a proposal under Funding Group II, please include the following chart (table 2) to summarize your Federal funding request by year.

Table 2.—Funding Group II funding request

Funding Group II request			
	Year 1 (FY 2015)	Year 2 (FY 2016)	Year 3 (FY 2017)
Funding requested	$335,500	$335,500	$335,500

Budget Proposal

The project budget shall include detailed information on the categories listed below and must clearly identify all project costs. Unit costs shall be provided for all budget items including the cost of work to be provided by contractors. Additionally, applicants shall include a narrative description of the items included in the project budget, including the value of in-kind contributions of goods and services provided to complete the project. It is strongly advised that applicants use the budget proposal format shown below on tables 3 and 4 or a similar format that provides this information.

Table 3.—Funding sources

Funding sources	Percent of total project cost	Total cost by source
Recipient funding	**61.7%**	**$ 1,621,250**
Reclamation funding	**38.3%**	**$ 1,006,500**
Other Federal funding	**0%**	**$ 0**
Totals	**100%**	**$ 2,627,750**

Table 4.—Sample budget proposal format

BUDGET WORKSHEET

BUDGET ITEM DESCRIPTION	COMPUTATION		Quantity Type (hours/days)	TOTAL COST
	$/Unit	Quantity		
SALARIES AND WAGES				
N/A				
FRINGE BENEFITS				
N/A				
TRAVEL				
*Included under contractual budget narrative as mileage.				
EQUIPMENT*				
*Included under contractual budget narrative.				
SUPPLIES/MATERIALS				
N/A				
CONTRACTUAL/ CONSTRUCTION				
Project Engineer	$105/hour	1790	Hours	$187,950
			Mileage	$1,125
Junior Engineer	$75/hour	1770	Hours	$132,750

			Mileage	$1,425
Contractor 1	$13,285	86	Sites	$1,142,500
Contractor 2	$13,285	86	Sites	$1,142,500
			(Subtotal)	$2,608,250
OTHER				
Project Reporting				
Project Engineer	$105/hour	100	Hours	$10,500
Junior Engineer	$75/hour	120	Hours	$9,000
			(Subtotal)	$19,500
TOTAL DIRECT COSTS				**$2,627,750**
TOTAL ACTIVITY/PROJECT COSTS				**$2,627,750**

Budget Narrative

Submission of a budget narrative is mandatory. An award will not be made to any applicant who fails to fully disclose this information. The budget narrative provides a discussion of, or explanation for, items included in the budget proposal. Include the value of in-kind contributions of goods and services and sources of funds provided to complete the project. The types of information to describe in the narrative include, but are not limited, to those listed in the following subsections.

Salaries and Wages

Budget is not included for this category. The Program Manager and other key personnel are included under contractual/construction category.

Clearly identify any proposed salary increases and the effective date.
Not applicable.

Fringe Benefits

Not applicable because fringe benefits hours from Upper District's employee will not be charged.

Travel

Include purpose of trip, destination, number of persons traveling, length of stay, and all travel costs including airfare (basis for rate used), per diem, lodging, and miscellaneous travel expenses. For local travel, include mileage and rate of compensation.
Mileage is included under the contractual budget narrative below.

Equipment

Equipment expenses are included in the contractual estimates per project site, discussed under the contractual budget narrative.

Materials and Supplies

No materials are needed for this phase of the program.

Contractual

Identify all work that will be accomplished by subrecipients, consultants, or contractors, including a

breakdown of all tasks to be completed, and a detailed budget estimate of time, rates, supplies, and materials that will be required for each task. If a subrecipient, consultant, or contractor is proposed and approved at time of award, no other approvals will be required. Any changes or additions will require a request for approval. Identify how the budgeted costs for subrecipients, consultants, or contractors were determined to be fair and reasonable.

A breakdown of all tasks to be completed and a detailed budget estimate is shown in Table 5. The Total Project Cost is $2,627,750. As explained in Subcriterion No. A.1 (i) and Subcriterion No. F.4, the Project budget was calculated based on data from Phases 1 and 2 of the program completed to date, which was then averaged and applied to the proposed Phase 3 project sites. The following provides a step by step explanation of these calculations:

Step 1: We divided all the existing (and future proposed) projects into 5 categories: Parks, Elementary Schools, High Schools, Middle Schools, and Others (community centers, larger sites, etc.)

Table 5 Project Budget by Task

	Rate ($/Hr)	Hours	Total Labor	Mileage	Total
Task 1. Project Administration and Reporting					
Project Engineer	105	530	$55,650	$ 375	$56,025
Junior Engineer	75	510	$38,250	$ 475	$38,725
Reporting					
Project Engineer	105	100	$10,500		$10,500
Junior Engineer	75	120	$9,000		$9,000
			$113,400	$ 850	**$114,250**
Task 2. Landscape Site and Evaluations and Program Management					
Project Engineer	105	630	$66,150	$ 375	$66,525
Junior Engineer	75	630	$47,250	$ 475	$47,725
			$113,400	$ 850	**$114,250**
Task 3. Monitoring					
Project Engineer	105	630	$66,150	$ 375	$66,525
Junior Engineer	75	630	$47,250	$ 475	$47,725
			$113,400	$ 850	**$114,250**
Task 4. Surveys and Retrofits			**#of Sites**	**Cost per Site**	
Contractor 1			86	$13,285	$1,142,500
Contractor 2			86	$13,285	$1,142,500
					$2,285,000
			Total Project Cost		**$2,627,750**

Step 2: For calculating the costs of each site, the following was completed:

A) Calculated the average actual cost for each category of site (survey and retrofit).
B) Added a surcharge to include soil moisture sensors to about 10% of the sites. Note that Upper District is currently conducting a study into the overall performance of these sensors. If the results are favorable,

then we would look to include them at a portion of the sites where it makes the most sense. The purpose of these sensors is to help deal with micro-climate issues that arise at some sites where the weather based information is not representative of the actual site.

Mileage is based on actual expenses incurred during Phase 1 and 2 of the program. However, only actual mileage will be invoiced. A federal rate of $0.50/mileage will be used.

Equipment is included in the average actual cost for each category. Equipment incudes spray nozzles, controllers, and materials needed to repair irrigation pipe. Costs for equipment are site specific and therefore it is difficult to predict the type and number of devices with associated costs without having done the surveys first. Based on previous projects completed, we have provided estimates. However, actual numbers and detail on final equipment selected will be provided in consultant invoices. Actual devices installed is based on the surveys and may end up requiring less devices and cost. This is demonstrated in the example invoice below. Therefore, the costs are determined fair and reasonable because only the actual costs for equipment and labor hours will be charged.

Example Invoice

UPPER SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT AQUASAVE INC. G27 - # 931314
IRRIGATION DEFICIENCY CORRECTION WORKSHEET
PROJECT BUDGET

Irrigation System Deficiency Correction Estimate					7/16/2014
Project Name:	New Lexington School 3540 N. Lexington Ave, El Monte 91731				AquaSave Survey: 3/31/114
System Deficiency Correction Costs					
Item	Description	Model	Qty	Unit Price[1]	Extension	Notes:
1	"Smart" Weather Based Controller(s)	Calsense	2	$ 345.00	$ 690.00	Upgrade 2 -RB to LxME & ET Cart
	7 + 8 + 12 Valves = 27	& 2-RB ESP 8 ext.	2	$ 405.00	$ 810.00	Calsense is ET Sensing
2	Water Saving Nozzle Upgrade	RB Rotary	198	$ 12.00	$ 2,352.00	198 Champion Brass pop-ups
		Rotor nozzle	55	$ -	$ -	55 Hunter I-40 & 20 mix
3	Incorrect / Damaged Nozzle /	RB Rotary	0	$ 11.00	$ -	Changing all
4	Broken / Leaking head (Rotor)	Hunter I-40	3	$ 65.00	$ 195.00	3 noted
5	Broken / Leaking head (Spray)	RB 1800	196	$ 15.00	$ 2,940.00	Replace all brass with RB 1804 PU
		Swing assem.	196	$ 10.00	$ 1,960.00	need swing joints added
6	Incorrect / Damaged Nozzle (replace)	RB Rotary	0	$ 11.00	$ -	
7	Adjust head: too low, too high or straighten	N/A	39	$ -	$ -	Will be fixed with replaced heads
8	Broken Lateral pipe[2]	N/A	5	$ 35.00	$ 175.00	
9	Broken Mainline pipe[2]	N/A	0	$ 75.00	$ -	
10	Flow/ Pressure problem on valve (too high, too low, no flow control)	Adjust valve & check	37	$ 10.00	$ 370.00	
11	Low Head Drainage (Add ADV)	KBI / Hunter	1	$ 15.00	$ 15.00	
12	Mixed Hydro zone (separate)	TBD	0	$ -	$ -	
13	Mixed exposure zone (separate)	TBD	0	$ -	$ -	
14	Excessive Run-off (change nozzle or add "Little valve") [4]	TBD	0	$ -	$ -	
15	Overspray onto hardscape (Change nozzle or add "Little valve)	RB Rotary	36	$ 9.00	$ 324.00	
16	Spacing problems (Move / Add to improve coverage)		0	$ -	$ -	
17	Valves not working from controller [3] (not included / requires investigation)	0		N.I.C.	$ -	
18	Valves leaking, weeping or stuck. [3]			N.I.C.	$ -	
19	Heads blocked by shrubs or obstruction	N/A	0	$ 10.00	$ -	
20	Other: Add Central Control & Flow Sensing		0	$ 1,950.00	$ -	
21	Other: Add Rain Sensor	RB	3	$ 100.00	$ 300.00	
	Totals				$ 10,131.00	

Notes:	Qualifications and Exclusions:
[1] Includes material, labor, supervision, excludes flow sensing	Estimate is based on repoce from Generation Water
[2] Excludes repair of pipe under paving	No site survey has been done to verify conditions
[3] Excludes repair & replacement of valves & wires not working.	Excludes repair & replacement of valves not working,
[4] May require aerating, and program change not included	bad wires and solenoids.
N.I.C = Not included in contract	Excludes drip irrigation conversions noted in reports.

This deficiency list is derived from the CLCA's Certified Water Manager Program.

The MWD reimbursement was calculated based on completed projects and has averaged about 26% overall. Note that the best performing categories are Elementary Schools and Parks; therefore, the proposed site mix includes schools and parks. The MWD reimbursement is anticipated the reimbursement rate may be higher than 26% because of the higher efficiency at these locations. The total average cost of parks amounted to $16,500 per site, while the average cost of schools varied from $9,500 to $21,500.

Refer to Tables 4 and 5 in Subcriterion No. A.1 (i) for the total park and school project sites and their cost. Also refer to Tables 7 and 8 in Subcriterion No. F.4—Reasonableness of Costs, where Table 7 summarizes the cost per project site and Table 8 shows the total Project Cost per task.

The following describes the consultants or contractors, their role, and budget per task. For a complete description of each task, please refer to the Phase 3 Scope of Work included in the Technical Project Description Section. Current rates are 2014 rates and Upper District will go out for Request for Qualifications along with competitive bid in 2015. Thus, the rates shown are examples and the actual 2015 rates will be included following competitive bid. Note that equipment expenses are included in the Contractual estimates per project site, as described above.

(1) Project Engineer/Construction Manager

Through a competitive bid process, a qualified Project Engineer/Construction Manager will be retained for program implementation services. Curt Roth is an independent consultant working for Upper District who will be the Project Engineer/Construction Manager responsible for managing and coordinating this project in conjunction with an intern. The table above summarizes the Rate per hour, total hours, mileage, and total cost. Based on Phase 2 efforts, costs are estimated at $105/hour at 1,890 hours over 3 years. $105/hour x 1,890 hours = $198,450. Mileage is shown in Table 5 and is based on actual usage from previous phases, and covers travel to the project sites located throughout Upper District's service area. The federal rate of $0.50/mile was used. Mileage is estimated at 750 miles *$.50/mile=$375.00 for all three tasks.

Tasks to be completed include:

- Task 1 Project Administration and Reporting - $56,025:

This task includes management of the grant agreement in compliance with grant requirements, and preparation and submission of supporting documents and coordination with the USBR.

- Execute grant agreement
- Progress reporting
- Invoicing
- USBR Reporting and Data Management

- Task 2 Landscape Site Evaluations and Program Management - $66,525:

This task includes ongoing project evaluation and program management to identify participating large landscape sites and oversee project implementation.

- Identify participating large landscape sites.
- Observe survey and retrofit site visits periodically
- Review and comment on survey reports
- Issue notices to proceed
- Track scheduled work
- Follow-up on participant inquiries and/or concerns, and
- Determine water and energy savings of installed and/or repaired devices.

- Task 3 Monitoring - $66,525:

This task includes an inventory of installed/retrofitted devices and review/analysis of water consumption data sites (based on available data). The success of the project is determined by the number of sites retrofitted and the amount of water conserved. This task includes:

- Collect and analyze pre- and post-retrofit water consumption data for a segment of participating sites to determine volumetric changes in water usage and overall water savings.

(2) Junior Engineer

Through a competitive bid process, a qualified Junior Engineer will be hired to provide support to the Project Engineer throughout this program. The table above summarizes the Rate per hour, total hours, mileage, and total cost. Based on Phase 2 efforts it was estimated at $75/hour at 1,890 hours over 3 years. $75/hour x 1,890 hours = $141,750. Mileage is shown in Table 5 and is based on actual usage from previous phases, and covers travel to the project sites located throughout Upper District's service area. The federal rate of $0.50/mile was used. Mileage is estimated at 950 miles *$.50/mile=$475.00 for all three tasks.

Tasks to be completed are the same as those listed for the Project Engineer above, but include the following budgets:

- Task 1 Project Administration and Reporting - $38,725.
- Task 2 Landscape Site Evaluations and Program Management - $47,725
- Task 3 Monitoring - $47,725

(3) Contractor 1 & 2

Through a competitive bid process, two qualified Contractors will be selected to conduct the site retrofits. Upper District has determined an approximate average cost per site, as described above. Surveys and retrofits of large landscape irrigation systems will be conducted at sites identified in Task 2. The project consultants will schedule and conduct surveys with the customers, collect data, develop water use reports and recommendations, review finalized reports with participating site contact(s), provide retrofit cost estimates to Upper District, repair and/or install irrigation devices as approved by Upper District, and follow up with designated site contact(s). Total budget is $1,142,500 per Contractor for a total of 86 sites each. This budget is based on average actual costs per site from Phase 1 and 2 of the program.

These costs are included under:

- Task 4 Surveys and Retrofits - $2,285,000

Environmental and Regulatory Compliance Costs

- **The cost incurred by Reclamation to determine the level of environmental compliance required for the project.**

Not Applicable.

- **The cost incurred by Reclamation, the recipient, or a consultant to prepare any necessary environmental compliance documents or reports.**

Not Applicable.

- **The cost incurred by Reclamation to review any environmental compliance documents prepared by a consultant.**

Not Applicable.

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

Not Applicable.

Reporting

Recipients are required to report on the status of their project on a regular basis. Failure to comply with reporting requirements may result in the recipient being removed from consideration for funding under future funding opportunities. Include a line item for reporting costs (including final project and evaluation costs). Please see Section VI.C for information on types and frequency of reports required.

All reporting requirements will be performed by the Project Engineer and Junior Engineer. Progress reporting includes semi-annual reports and final report.

(1) Project Engineer/Construction Manager

Costs are estimated at $105/hour at 100 hours over 3 years = $105/hour x 100 hours = $10,500.

(2) Junior Engineer

Costs are estimated at $75/hour at 120 hours over 3 years = $75/hour x 120 hours = $9,000.

The total cost for reporting is $19,500. These costs are included under:

- Task 1. Project Administration and Reporting - $114,250

Other Expenses

Not Applicable

Indirect Costs

No indirect costs will be charged or associated with this program.

Total Costs

Indicate total amount of project costs, including the Federal and non-Federal cost-share amounts.

The Program's total cost is $2,627,750. The Federal cost share amount requested is $1,006,500 (38.3%) and the non-federal cost share amount is $1,621,250 (61.7%).

Budget Form

SF 424 A is submitted electronically.

Exhibits A-D

Exhibit A

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Large Rotary Nozzles

Qualifying Products List as of August 25, 2014

BRAND	MODEL	BRAND	MODEL
Underhill Int	R51-1411.5	Underhill Int	R51-1611.5
Underhill Int	R51-1811.5	Underhill Int	R51-2011.5
Underhill Int	R51-2213	Underhill Int	R51-2413
Underhill Int	R70028-RG	Underhill Int	R70032-RG
Underhill Int	R7003640-GG	Underhill Int	R900-M
Underhill Int	R91-G	Underhill Int	T630-3415
Underhill Int	T655-WP	Underhill Int	T670-BY
Underhill Int	T690-G	Underhill Int	T730-3313
Underhill Int	T730-3413	Underhill Int	T730-3515
Underhill Int	T730-3515L	Underhill Int	T730-3615
Underhill Int	T730-3617	Underhill Int	T750-5617
Underhill Int	T750-5717	Underhill Int	T760-830-GY
Underhill Int	T760-GY	Underhill Int	T780-BY
Underhill Int	T830-GY	Underhill Int	T834-GY
Underhill Int	T835S-WP	Underhill Int	T855S-PP
Underhill Int	T860-GY		

Symbols (* + #) indicate that one or more coding variables may be used in place of the symbol to indicate a color or feature that does not affect washer efficiency.

For more information, call **888-376-3314** or visit **www.bewaterwise.com**

Exhibit A

SoCal WaterSmart

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Rotating Spray Nozzles

Qualifying Products List as of August 25, 2014

BRAND	MODEL	BRAND	MODEL
Hunter	MP1000210	Hunter	MP1000360
Hunter	MP100090	Hunter	MP1000HT360
Hunter	MP1000HT90	Hunter	MP2000210
Hunter	MP2000360	Hunter	MP200090
Hunter	MP2000HT210	Hunter	MP2000HT360
Hunter	MP2000HT90	Hunter	MP3000210
Hunter	MP3000360	Hunter	MP300090
Hunter	MP3000HT210	Hunter	MP3000HT360
Hunter	MP3000HT90	Hunter	MP3500-90
Hunter	MPCORNER	Hunter	MPCORNERHT
Hunter	MPLCS515	Hunter	MPLCSHT515
Hunter	MPRCS515	Hunter	MPRCSHT515
Hunter	MPSS530	Hunter	MPSSHT530
K-Rain	RN100-ADJ	K-Rain	RN200-ADJ
K-Rain	RN300-ADJ	Orbit	ES1000A
Orbit	ES1000F	Orbit	ES2000A
Orbit	ES2000F	Rain Bird	12SAF
Rain Bird	12SAH	Rain Bird	12SAQ
Rain Bird	18RNF	Rain Bird	18RNH
Rain Bird	18RNQ	Rain Bird	22SAF
Rain Bird	22SAH	Rain Bird	22SAQ
Rain Bird	24RNF	Rain Bird	24RNH
Rain Bird	24RNQ	Rain Bird	HE-VAN-08
Rain Bird	HE-VAN-10	Rain Bird	HE-VAN-12
Rain Bird	HE-VAN-15	Rain Bird	R-VAN 1318
Rain Bird	R-VAN 1724	Rain Bird	R13-18F
Rain Bird	R13-18H	Rain Bird	R13-18Q
Rain Bird	R13-18T	Rain Bird	R13-18TQ
Rain Bird	R13-18TT	Rain Bird	R17-24F
Rain Bird	R17-24H	Rain Bird	R17-24Q
Rain Bird	R17-24T	Rain Bird	R17-24TQ
Rain Bird	R17-24TT	Rain Bird	U10F
Rain Bird	U10H	Rain Bird	U10Q
Rain Bird	U10T	Rain Bird	U12F
Rain Bird	U12H	Rain Bird	U12Q
Rain Bird	U12T	Rain Bird	U12TQ
Rain Bird	U12TT	Rain Bird	U15F
Rain Bird	U15H	Rain Bird	U15Q
Rain Bird	U15T	Rain Bird	U15TQ
Rain Bird	U15TT	Rain Bird	U8F
Rain Bird	U8H	Rain Bird	U8Q
Rain Bird	U8T	Toro	O-T-15-T
Toro	O-T-5-HP	Toro	O-10-150
Toro	O-10-210	Toro	O-10-60
Toro	O-10-F	Toro	O-10-FP
Toro	O-10-H	Toro	O-10-HP
Toro	O-10-Q	Toro	O-10-QP
Toro	O-10-T	Toro	O-10-TP
Toro	O-10-TQ	Toro	O-10-TQP
Toro	O-10-TT	Toro	O-10-TTP
Toro	O-12-150	Toro	O-12-210

Exhibit A

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Weather Based Irrigation Controllers

Qualifying Products List as of Dec 08, 2014

Only WBICs that are on EPA WaterSense certified qualify for SoCal Water$mart rebates.

For more information about EPA WaterSense certified WBICs, visit: http://www.epa.gov/WaterSense/products/controltech.html

Please note: EPA WaterSense Certified add-on devices are available for rebates, provided that the model is compatible with the existing controller. Please call 1-888-376-3314 for more information.

BRAND	MODEL	BRAND	MODEL
Cyber-Rain	01XCIPA08	Cyber-Rain	01XCIPA16
Cyber-Rain	01XCIPC08	Cyber-Rain	01XCIPC08-G
Cyber-Rain	01XCIPC16	Cyber-Rain	01XCIPC16-G
Cyber-Rain	01XCIPO08-1W	Cyber-Rain	01XCIPO08-24
Cyber-Rain	01XCIPO16-1W	Cyber-Rain	01XCIPO16-24
Cyber-Rain	01XCIPO24-1W	Cyber-Rain	01XCIPO24-24
Cyber-Rain	01XCIPS08-24	Cyber-Rain	01XCIPS08-900
Cyber-Rain	01XCIPS16-24	Cyber-Rain	01XCIPS16-900
Cyber-Rain	01XCIPS24-24	Cyber-Rain	01XCIPS24-900
Cyber-Rain	01XCISC08-G	Cyber-Rain	01XCISC16-G
Et Water	105	Et Water	204
Et Water	205	Hunter	ACC-1200-*-SOLARSYNC
Hunter	ACC-1200-*-WSSEN	Hunter	IC-600-*-SOLARSYNC
Hunter	IC-600-*-WSSEN	Hunter	PC-300-SOLARSYNC
Hunter	PC-300-WSS	Hunter	PC-300i-SOLARSYNC
Hunter	PC-300i-WSS	Hunter	PC-400-SOLARSYNC
Hunter	PC-400i-SOLARSYNC	Hunter	PCC-x00-SOLARSYNCSEN
Hunter	PCC-x00-WSS	Hunter	PCC-x00i-SOLARSYNCSEN
Hunter	PCC-x00i-WSS	Hunter	XC-x00-SOLARSYNCSEN
Hunter	XC-x00-WSS	Hunter	XC-x00i-SOLARSYNCSEN
Hunter	XC-x00i-WSS	Hydropoint	WTLC-C-X-PL
Hydropoint	WTLC-C-X-PL-F	Hydropoint	WTPRO2S-B-X-CH1
Hydropoint	WTPRO2S-B-X-CH2	Hydropoint	WTPRO2S-B-X-CH4
Hydropoint	WTPRO2S-B-X-CH5	Hydropoint	WTPRO2S-B-X-CH7
Hydropoint	WTPRO2S-B-X-CWM	Hydropoint	WTPRO2S-B-X-SPH
Hydropoint	WTPRO2S-B-X-SPS	Hydropoint	WTPRO2S-B-X-SPT
Hydropoint	WTPRO2S-B-X-SWM	Hydropoint	WTPRO2S-C-X-CH1
Hydropoint	WTPRO2S-C-X-CH2	Hydropoint	WTPRO2S-C-X-CH4
Hydropoint	WTPRO2S-C-X-CH5	Hydropoint	WTPRO2S-C-X-CH7
Hydropoint	WTPRO2S-C-X-CWM	Hydropoint	WTPRO2S-C-X-SPH
Hydropoint	WTPRO2S-C-X-SPS	Hydropoint	WTPRO2S-C-X-SPT
Hydropoint	WTPRO2S-C-X-SWM	Hydropoint	WTPRO3-C-X-CH1-*
Hydropoint	WTPRO3-C-X-CH2-*	Hydropoint	WTPRO3-C-X-CH4-*
Hydropoint	WTPRO3-C-X-CH5-*	Hydropoint	WTPRO3-C-X-CH7-*
Hydropoint	WTPRO3-C-X-CWM-*	Hydropoint	WTPRO3-C-X-SPH-*
Hydropoint	WTPRO3-C-X-SPS-*	Hydropoint	WTPRO3-C-X-SPT-*
Hydropoint	WTPRO3-C-X-SWM-*	Hydropoint	WTSY-C-X-PL
Hydropoint	WTSY-C-X-PL-F	Irritrol	KDX-*
Irritrol	MC-XE	Irritrol	RDX00-*-R
Irritrol	RME-X-i-*	Irritrol	RMEXEGi-*

Exhibit B

Upper District Disadvantaged Communities

LLSR Project Sites

	A	B	C
1	**DAC Site Name**	**Site Address**	**School District / Park Management**
2	Allen J Martin Park	14830 E. Giordano St. La Puente, CA 91744	La Puente City Parks
3	Andrews Wallen Elementary School	1010 S. Caraway Dr., Whitter, CA 90601	Whittier City School District
4	Arlene Bitely Elementary School	7501 E. Fern Ave., Rosemead, CA 91770	Garvey School District
5	Arroyo High School	4921 N Cedar Ave., El Monte, CA 91732	El Monte Union High School District
6	Avenue Park	553 S. 4th Avenue La Puente, CA 9746	La Puente City Parks
7	Avocado Heights Park	14105 Don Julian Road La Puente, CA 91746	La Puente City Parks
8	Baker, Jenny Tucker Elementary School	12043 E. Exline St., El Monte, CA 91732	Mountain View School District
9	Baldwin Park High School	3900 N Puente Ave., Baldwin Park, CA 91706	Baldwin Park School District
10	Barnes Park	3251 Patritti Ave. Baldwin Park	Baldwin Park City Park
11	Bassett High School	755 Ardilla Ave., La Puente, CA 91746	Bassett Unified School District
12	Bassett Park	510 N. Vineland Avenue La Puente, CA 91746	La Puente City Parks
13	Beardslee Elementary School	1212 E Kellwil Way , Duarte, CA 91010	Duarte Unified School District
14	Bursch Elementary School	4245 N Merced Ave., Baldwin Park, CA 91706	Baldwin Park School District
15	California Parkette	815 S. California Ave. West Covina	West Covina City Park
16	Canyon Early Learning Center	1000 S Canyon Blvd., Monrovia, CA 91016	Monrovia Unified School District
17	Cedarlane Academy School	16333 Cedarlane Dr., Hacienda Heights, CA 917	Hacienda La Puente Unified School District
18	Central Elementary School	14741 Central Ave., Baldwin Park, CA 91706	Baldwin Park School District
19	Charles Jones Junior High School	14250 E Merced Ave., Baldwin Park, CA 91706	Baldwin Park School District
20	Cogswell, P.F. Elementary School	11050 E. Fineview St., El Monte, CA 91733	Mountain View School District
21	Columbia Elementary School	3400 N California Ave., El Monte, CA 91731	EL Monte City School District
22	Cortada Elementary School	3111 N. Potrero , El Monte, CA 91733	EL Monte City School District
23	De Anza Elementary School	12820 E Bess Ave., Baldwin Park, CA 91706	Baldwin Park School District
24	Del Norte Park	1500 W. Rowland Ave. West Covina	West Covina City Park
25	Del Valle Elementary School	801 N Del Valle St., La Puente, CA 91744	Hacienda La Puente Unified School District
26	Don Julian Elementary School	13855 Don Julian Rd., La Puente, CA 91746	Bassett Unified School District
27	Dr. Doug Sears Learning Center	9229 Pentland St., Temple City, CA 91780	Temple City Unified School District
28	Duarte High School	1565 E. Central Ave, Duarte, CA 91010	Duarte Unified School District
29	Duarte Park	1344 Bloomdale St. Duarte, CA 91010	City of Duarte Park
30	Durfee Elementary School	12233 Star St., El Monte, CA 91732	EL Monte City School District
31	Edgewood Academy	14135 Fairgrove Ave., La Puente, CA 91746	Bassett Unified School District
32	Edgewood High School	1301 S. Trojan Way St., West Covina, CA 91790	West Covina Unified School District
33	Edgewood Middle School	1625 W. Durness St., West Covina, CA 91790	West Covina Unified School District
34	Edna Park	220 W. Edna Pl Covina CA 91723	Covina
35	El Monte High School	3048 N Tyler Ave., El Monte, CA 91732	El Monte Union High School District
36	Eldridge Rice Elementary School	2150 N. Angelus Ave., Rosemead, CA 91770	Garvey School District
37	Elwin Elementary School	13010 E Waco St., Baldwin Park, CA 91706	Baldwin Park School District
38	Emerson Ralph Waldo Elementary School	7544 E. Emerson Pl., Rosemead, CA 91770	Garvey School District

Exhibit B

Upper District Disadvantaged Communities

LLSR Project Sites

	A	B	C
1	**DAC Site Name**	**Site Address**	**School District / Park Management**
39	Emma W. Shuey Elementary School	8472 E. Wells St., Rosemead, CA 91770	Rosemead School District
40	Encinita Elementary School	4515 N Encinita Ave., Rosemead, CA 91770	Rosemead School District
41	Ernerst R. Geddes Elementary School	14600 Cavette Pl., Baldwin Park, CA 91706	Baldwin Park School District
42	Fairgrove Academy School	15540 Fairgrove Ave., La Puente, CA 91744	Hacienda La Puente Unified School District
43	Fernando R. Ledesma High School	12374 Ramona Blvd., El Monte, CA 91732	El Monte Union High School District
44	Foster Elementary School	13900 Foster Ave., Baldwin Park, CA 91706	Baldwin Park School District
45	Frances E. Willard Elementary School	3162 N. Willard Ave., Rosemead, CA 91770	Garvey School District
46	Garvey Richard Intermediate School	2720 N. Jackson Ave., Rosemead, CA 91770	Garvey School District
47	Garvey School District	2730 N. Del Mar Ave., Rosemead, CA 91770	School District
48	George Sanchez Elementary School	8470 E. Fern Ave., Rosemead, CA 91770	Garvey School District
49	Gibson Mariposa Park	4140 Gibson Road El Monte, CA 91731	City of El Monte Park
50	Grandview College Preparatoty	795 N Grandview Ln., Valinda, CA 91744	Hacienda La Puente Unified School District
51	Hacienda La Puente Adult Education	14101 E. Nelson Ave., La Puente, CA 91746	Hacienda La Puente USD
52	Hacienda La Puente Community Day School	15430 Shadybend Dr., Hacienda Heights, CA 91	Hacienda La Puente USD
53	Hacienda La Puente Unified School Distr	15959 E. Gale Ave., Hacienda Heights, 91745	School District
54	Heritage Park	1800 W Badillo St, West Covina, CA 91790	West Covina
55	Jerry Holland Middle School	4733 Landis Ave., Baldwin Park, CA 91706	Baldwin Park School District
56	Jess Gonzalez Sports Complex	8471 Klingerman St Rosemead CA 91770	Rosemead
57	Julian Fisher Park	915 South California Ave. Monrovia CA 91016	City of Monrovia Park
58	Kenmore Elementary School	3823 Kenmore Ave., Baldwin Park, CA 91706	Baldwin Park School District
59	Klingerman Park	8800 Kindergarden Avenue Rosemead CA 9177	Rosemead City Park
60	La Primaria Elementary School	4220 Gilman Rd., El Monte, CA 91732	Mountain View School District
61	La Rosa Elementary School	9301 La Rosa Dr., Temple City, CA 91780	Temple City Unified School District
62	Lambert Park	11431 McGirk St, El Monte, CA 91732	City of El Monte Park
63	Lashbrook Park	3199 Lashbrook Ave., El Monte, CA 91733	City of El Monte Park
64	Lassalette School	14333 Lassalette St., La Puente, CA 91744	Hacienda La Puente Unified School District
65	Le Gore Elementary School	11121 E Bryant Rd., El Monte, CA 9173I	EL Monte City School District
66	Lena Valenzuela Park	2120 Mountain Ave. Duarte, CA 91010	City of Duarte Park
67	Longden Ave. Park	1179 E. Longden Avenue, irwandale CA 91006	Arcadia City Park
68	Margaret Heath Elementary School	14321 E School St., Baldwin Park, CA 91706	Baldwin Park School District
69	Maxson, B.F Elementary School	12380 E. Felipe St., El Monte, CA 91732	Mountain View School District
70	Maxwell Elementary School	733 Euclid Ave., Duarte, CA 91010	Duarte Unified School District
71	Mildred B. Janson Elementary School	8628 E Marshall St., Rosemead, CA 91770	Rosemead School District
72	Monte Vista Elementary School	11111 Thienes Ave., So. El Monte, CA 91733	Mountain View School District
73	Monte Vista Elementary School	1615 W. Eldred Ave., West Covina, CA 91790	West Covina Unified School District
74	Mountain View High School	2900 Parkway Dr., El Monte, CA 91732	El Monte Union High School District
75	Mountain View Park	12127 Elliott Ave, El Monte, CA 91732	City of El Monte Park
76	Murray Elementary School	505 E Renwick Rd., Azusa, CA 91702	Azusa Unified School District
77	Muscatel Middle School	4201 N Ivar Ave., Rosemead, CA 91770	Rosemead School District
78	Nelson Elementary School	330 N California Ave., La Puente, CA 91744	Hacienda La Puente Unified School District
79	Northview Intermediate Middle School	1401 Highland Ave., Duarte, CA 91010	Duarte Unified School District
80	Northview Park	1433 Hihgland Ave. Duarte, CA 91010	City of Duarte Park
81	Olive Middle School	13701 E Olive . Baldwin Park, CA 91706	Baldwin Park School District
82	Opportunities for Learning Duarte	1008 Huntington Dr., Duarte, CA 91010	Duarte Unified School District
83	Orangewood Elementary School	1440 S. Orange Ave., West Covina, CA 91790	West Covina Unified School District
84	Pamela Park	2236 Goodall Avenue Duarte, CA 91010	City of Duarte Park

Exhibit B

Upper District Disadvantaged Communities

LLSR Project Sites

	A	B	C
1	DAC Site Name	Site Address	School District / Park Management
85	Parkview Elementary School	12044 E. Elliott Ave., El Monte, CA 91732	Mountain View School District
86	Payne, Willard F. Elementary School	2850 N. Mountain View Rd., El Monte, CA 9173	Mountain View School District
87	Pleasant View Elementary School	14900 Nubia St., Baldwin Park, CA 91706	Baldwin Park School District
88	Plymouth Elementary School	1300 Boley St., Monrovia, CA 91016	Monrovia Unified School District
89	Quest Academy	1831 Santa Fe Place Pl., Monrovia, CA 91016	Monrovia Unified School District
90	Roger W. Temple Intermediate School	8510 E. Fern Ave., Rosemead, CA 91770	Garvey School District
91	Rosemead City Hall	8838 Valley Blvd, Rosemead, CA 91770	City Hall
92	Rosemead High School	9063 E Mission Dr., El Monte, CA 91770	El Monte Union High School District
93	Rosemead School District	3907 Rosemead Blvd., Rosemead, CA 91770	School District
94	Rosemead Triangle Park	San Gabriel & Walnut Grove Ave., Rosemead, C	Rosemead
95	Rossevelt Park	5410 Delta Street Rosemead CA 91770	San Gabriel City Park
96	Santa Fe Elementary School	4650 Baldwin Park Blvd., Baldwin Park, CA 91	Baldwin Park School District
97	Santa Fe Middle School	148 W Duarte Rd., Monrovia, CA 91016	Monrovia Unified School District
98	Savannah Elementary School	3720 N Rio Hondo Ave., Rosemead, CA 91770	Rosemead School District
99	Sierra Vista Middle School	777 E Puente Ave., Covina, CA 91723	Covina-Valley Unified School District
100	Sierra Vista Middle School	15801 Sierra Vista Ct., La Puente, CA 91744	Hacienda La Puente USD
101	South El Monte City Hall	1415 Santa Anita Ave, South El Monte, CA 9173	City Hall
102	South El Monte High School	1001 Durfee Ave., El Monte, CA 91733	El Monte Union High School District
103	Sparks Elementary School	15151 E. Temple Ave., La Puente, CA 91744	Hacienda La Puente Unified School District
104	Sparks Middle School	15100 Giordano St., La Puente, CA 91744	Hacienda La Puente Unified School District
105	Sports Park	1401 Central Ave. Duarte, CA 91010	City of Duarte Park
106	Stimson Learning Center	1655 Stimson Ave., Hacienda Heights, CA 9174	Hacienda La Puente Unified School District
107	Sunkist Elementary School	935 Maryland Ave., La Puente, CA 91746	Bassett Unified School District
108	Sunset Elementary School	800 N Tonopah Ave., La Puente, CA 91744	Hacienda La Puente USD
109	Syhre Park	1209 Vineland Ave. Baldwin Park, CA	Baldwin Park City Park
110	Temple Academy School	635 California Ave., La Puente, CA 91744	Hacienda La Puente Unified School District
111	Temple City Alternative	5210 Encinita Ave, Temple City, CA 91780	Temple City Unified School District
112	Thompson, Byron Elementary School	4544 Maxson Rd., El Monte, CA 91732	EL Monte City School District
113	Torch Middle School	751 N Vineland Ave., City of Industry, CA 9174	Bassett Unified School District
114	Tracy Elementary School	13350 Tracy Ave., Baldwin Park, CA 91706	Baldwin Park School District
115	Traweek Middle School	1941 E. Rowland Ave., West Covina, CA 91791	Covina-Valley Unified School District
116	Twin Lakes Elementary School	3900 Gilman Rd., El Monte, CA 91732	Mountain View School District
117	Valleydale Elementary School	700 S Lark Ellen Ave., Azusa, CA 91702	Azusa Unified School District
118	Van Wig, J.E. Elementary School	1151 N. Van Wig Ave., La Puente, CA 91746	Bassett Unified School District
119	Vincent Children's Center	1024 W Workman Ave., West Covina, CA 91790	Covina-Valley Unified School District
120	Vincent Lugo Park	Corner of Wells and Ramona Street	San Gabriel City Park
121	Vineland Elementary School	3609 N Vineland Ave., Baldwin Park, CA 91706	Baldwin Park School District
122	Voorhis J. Elementary School	3501 Durfee Ave., El Monte, CA 91732	Mountain View School District
123	Walnut Elementary School	4701 N Walnut St., Baldwin Park, CA 91706	Baldwin Park School District
124	Wescove Elementary School	1010 W. Vine Ave., West Covina, CA 91790	West Covina Unified School District
125	West Covina Christian Elementary School	763 N. Sunset Ave., West Covina, CA 91790	Private
126	Willard Frances Elementary School	301 S Sierra Madre St., Pasadena, CA 91104	Pasadena Unified School District
127	William Steinmetz Park	1545 S. Sitmson Avenue Hacienda Heights, CA 9	Hacienda Heights
128	Wing Lane Elementary School	16605 Wing Ln., Valinda, CA 91744	Hacienda La Puente Unified School District
129	Workman Avenue Elementary School	1941 E Workman Ave., West Covina, CA 91791	Covina-Valley Unified School District
130	Zapopan Park	3018 N. Charlotte Avenue Rosemead CA 91770	Rosemead City Park

Exhibit C

RESOLUTION NO. 12-14-546

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE UPPER SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT ENDORSING WATERSMART: WATER AND ENERGY EFFICIENCY GRANT FOR 2015

WHEREAS, the United States Bureau of Reclamation is currently offering grant opportunities through the WaterSMART: Water and Energy Efficiency Grants for Fiscal Year ("FY") 2015 and

WHEREAS, said WaterSMART: Water and Energy Efficiency Grants for FY 2015 is a cost-shared program emphasizing water and energy efficiency; and

WHEREAS, the Board of Directors of Upper San Gabriel Valley Municipal Water District ("Board") supports the submission by the Upper San Gabriel Valley Municipal Water District ("Upper District") of a grant application, prepared and approved by the Upper District, to the WaterSMART: Water and Energy Efficiency Grants for FY 2015; and

WHEREAS, Upper District is capable of providing the amount of matching funds of up to $1,621,250 in cash and/or in-kind contributions required in the grant application process; and

WHEREAS, if selected for a WaterSMART: Water and Energy Efficiency Grants for FY 2015, Upper District will work with the United States Bureau of Reclamation to meet established deadlines for entering into a cooperative agreement;

BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE UPPER SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT as follows:

Section 1. The Board approves the submission of the application for the WaterSMART: Water and Energy Efficiency Grants for FY 2015 by Upper District for fiscal year 2014-15, fiscal year 2015-16, and fiscal year 2016-17.

Section 2. In the event grant funding is provided by the United States Bureau of Reclamation, the Board authorizes the General Manager of Upper District or his designee to accept the grant and sign any contract for administration of the grant funds and delegate the Chief Financial Officer to act as a fiscal agent for any grant funding received.

Section 3. This resolution shall take effect immediately.

Section 4. The Secretary shall certify to the adoption of this resolution and henceforth and thereafter the same shall be in full force and effect.

PASSED, APPROVED, AND ADOPTED on December 16, 2014.

Anthony R. Fellow, President

ATTEST:

Michael Touhey, Secretary/Treasurer

(SEAL)

APPROVED AS TO FORM:

Steven P. O'Neill, District Counsel

Exhibit D

MWD
METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Executive Office

March 2, 2005

Ms. Elena Layugan
Upper San Gabriel Valley Municipal Water District
11310 East Valley Boulevard
El Monte, CA 91731

Dear Ms. Layugan:

Transmittal of the City of Upper San Gabriel's Master Agreement No. 66662
for the Regionwide Commercial, Industrial and Institutional (CII) Rebate Program

Enclosed is the Upper San Gabriel Valley Municipal Water District's (Upper San Gabriel) signed original Master Agreement No. 66662 between the Metropolitan Water District of Southern California and Upper San Gabriel for the Regionwide CII Rebate Program (Program). Under this Program, Metropolitan has established fixed-rate incentives for a number of water-conservation devices implemented by CII users of municipal water supplies within Metropolitan's service area. This Agreement allows access to Metropolitan's Program to provide these financial incentives within individual member agencies' service areas.

Thank you for participating in this mutually beneficial program. If you have any questions or comments regarding this Agreement, please contact Ms. Christiana Gruber at (213) 213-5795, or via e-mail at cgruber@mwdh2o.com.

Very truly yours,

Stephen N. Arakawa
Manager, Water Resource Management

CG:adminwrm
o:\a\s\contract\AGREE\cii\CII Amends, ltrs & contracts\CG_66662 Transmittal Letter Master

Enclosures

Exhibit D

AGREEMENT NO. 66662

FY 2005-15

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA'S
COMMERCIAL/INDUSTRIAL/INSTITUTIONAL WATER CONSERVATION ITEM
FUNDING AGREEMENT

BETWEEN

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

AND

UPPER SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT

IN WITNESS WHEREOF, the Parties hereto have executed this Agreement.

APPROVED AS TO FORM:

Jeffery Kightlinger
General Counsel
By: _____
Senior Deputy
General Counsel

Date: 3/4/05

THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA
Gilbert F. Ivey
Interim Chief Executive Officer
By: _____
Stephen N. Arakawa, Manager
Water Resource Management

Date: 3/15/05

APPROVED AS TO FORM:
By: _____
E. Clarke Moseley,
District Counsel

Date: January 27, 2005

By: _____
Timothy C. Jochem,
General Manager

Date: 2/1/05

In Duplicate

O:\M\S\Contract\AGREE\CII/Master/USGVMWD/USGVMWD CII Master Agreement

Exhibit D

Addendum 15 – May 2014 Commercial/Industrial/Institutional Program

Member Agency Supplemental Funding Authorization (Pg. 1 of 3)

Regional Incentive Program	Metropolitan Incentive	Member Agency Incentive	Retail Agency Incentive	Total Incentive
Plumbing Flow Control Valve	$ 5 each	$ ---	$ ---	$ 5 each
Laminar Flow Restrictors	$ 10 per Restrictor	$ ---	$ ---	$ 10
Commercial HET – Tank Type	$ 100	$ ---	$ ---	$ 100
Commercial HET – Flushometer	$ 100	$ ---	$ ---	$ 100
Multi-Family HET	$ 100	$ ---	$ ---	$ 100
Multi-Family HET (4-Liter)	$ 145	$ ---	$ ---	$ 145
Zero Water Urinals (ZWU)	$ 200	$ ---	$ ---	$ 200
Ultra Low Water Urinal (ULWU)	$ 200	$ ---	$ ---	$ 200
Weather-Based Irrigation Controller (WBIC)	$ 35 per Station	$ ---	$ ---	$ 35 per station
Central Computer Irrigation Controller (CCIC)	$ 35 per Station	$ ---	$ ---	$ 35 per station
Soil Moisture Sensor System (SMSS)	$ 35 per Station	$ ---	$ ---	$ 35 per station
Large Rotary Nozzles	$ 13 per Set	$ ---	$ ---	$ 13 per set
Rotating Nozzles for Pop-up Spray Heads Retrofits[1]	$ 4 per Nozzle	$ ---	$ ---	$ 4 per nozzle
In-Stem Flow Regulator	$ 1 per Regulator	$ ---	$ ---	$ 1 per regulator
Turf Removal	$ 2 per sq.ft.	$ ---	$ ---	$ 2 per sq. ft.
pH-Cooling Tower Controller (pH-CTC)	$1,750	$ ---	$ ---	$ 1,750
Cooling Tower Conductivity Controller (CTCC)	$ 625	$ ---	$ ---	$ 625
Dry Vacuum Pump	$ 125 per 0.5 HP	$ ---	$ ---	$ 125 per 0.5 HP
Connectionless Food Steamers	$ 485 per compartment	$ ---	$ ---	$ 485 /compartment
Ice-Making Machines	$1,000	$ ---	$ ---	$ 1,000

Exhibit D

Addendum 15 – May 2014 **Commercial/Industrial/Institutional Program**

Member Agency Administered Project Pre-Approval Request

MWD-Funded/Member Agency Administered Incentive Program

Member Agency must obtain Metropolitan's written pre-approval for all projects. **This form must be received by Metropolitan by September 30, 2014.**

Project Type: ☑ Device-based ☐ Customized	
Member Agency Upper San Gabriel Valley Municipal Water District	Agreement Number 66662
Retail Agency ----------	Contact Name Elena Layugan
Project Title Large Landscape Irrigation Surveys and Retrofits	Contact E-Mail Address Elena@usgvmwd.org
Project Start Date July 1, 2013	Contact Phone Number 626-443-2297
Project End Date June 30, 2015	Estimated Portion of Funding for this Project $ 241,100

☑ **This project is a continuation of a previous Metropolitan-approved project.**

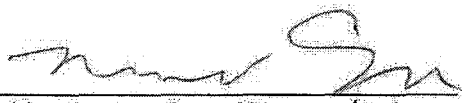
If checked, project detail description fields below need not be filled out.

Project Description *(e.g., Direct Install or Distribution, etc.)*

Water use surveys of large CII landscape sites will be conducted. Participating survey sites will receive a full survey report and irrigation zone map(s). When feasible and permitted, the following services will be implemented at participating survey sites that have been provided large landscape surveys: a) physical installation and programming of WBICs or Central Computer Irrigation Controllers (CCICs); b) repair of broken basic irrigation equipment; c) replacement of nozzles with water efficient nozzles; and /or d) installation of soil moisture sensors.

For Customized Projects please attach supporting documentation for the water savings estimate.

I certify that the information provided in this request is accurate and in accordance with guidelines provided in this Agreement, and understand that Metropolitan must approve this request prior to Member Agency seeking reimbursement from Metropolitan for this project.
By signing, Member Agency agrees to these terms.



Authorizing Signature General Manager /Designee

September 18, 2014
Date

Metropolitan Use Only: **Comments:**	Date received: _____ Approved by _____

Exhibit D

Suburban Water Systems
A SouthWest Water Company

Robert L. Kelly
1325 N. Grand Ave.
Suite 100
Covina, CA 91724-4044
Phone 626.543.2500
Fax 626.331.4848
www.swwc.com

January 7, 2015

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

Re: Support for Upper District's Large Landscape Survey and Retrofit Program grant application for FOA R15ASFS00002, WaterSMART: Water and Energy Efficiency Grants for 2015

Dear Mr. Wilken:

Suburban Water Systems (Suburban) is a water supplier that services customers located within the boundaries of the Upper San Gabriel Valley Municipal Water District (Upper District).

As part of its efforts to provide reliable, sustainable, and affordable water supplies to the San Gabriel Valley, the Upper District implements water use efficiency programs such as its innovative Large Landscape Survey and Retrofit (LLSR) Program. The objective of the LLSR Program is to take a proactive approach to improving large landscape irrigation efficiency while reducing water usage and runoff at Commercial, Industrial, and Institutional (CII) sites.

Suburban fully supports the Large Landscape Survey and Retrofit Program grant application submitted by the Upper District for R15ASFS00002, WaterSMART: Water and Energy Efficiency Grants for 2015.

The LLSR Program is a collaborative effort that supplements our local water use efficiency measures, assisting us in providing our customers with water saving devices and techniques. The Upper District works closely in cooperation with its water suppliers throughout the program. Collaboration includes identifying potential sites that would benefit from participation, ensuring accurate pre- and post-retrofit water usage data is available for analysis, and sharing of survey results and retrofit information for participating sites within our service area.

The LLSR Program assists our customers with saving water, which in turn benefits the entire San Gabriel Valley as it strives to become self-reliant and sustainable in managing its water supplies. We look forward to continuing our support of the Upper District's LLSR Program.

Suburban urges the grant selection panel to consider the many benefits of the LLSR Program and to award grant funding for the Upper District's Large Landscape Survey and Retrofit Program.

If you have any questions or need additional information regarding our support of this project, please do not hesitate to contact me by email at bkelly@swwc.com or via telephone at (626) 543-2590.

Sincerely,

Robert Kelly
Vice President Regulatory Affairs

CITY OF SOUTH PASADENA

1414 MISSION STREET, SOUTH PASADENA, CA 91030
TEL: 626.403.7210 ▪ FAX: 626.403-7211
WWW.SOUTHPASADENACA.GOV

January 7, 2015

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

Re: Support for Upper District's Large Landscape Survey and Retrofit Program grant application for FOA R15ASFS00002, WaterSMART: Water and Energy Efficiency Grants for 2015

Dear Mr. Wilken:

The City of South Pasadena is a water supplier that services customers located within the boundaries of the Upper San Gabriel Valley Municipal Water District (Upper District).

As part of its efforts to provide reliable, sustainable, and affordable water supplies to the San Gabriel Valley, the Upper District implements water use efficiency programs such as its innovative Large Landscape Survey and Retrofit (LLSR) Program. The objective of the LLSR Program is to take a proactive approach to improving large landscape irrigation efficiency while reducing water usage and runoff at Commercial, Industrial, and Institutional (CII) sites.

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The LLSR Program assists our customers with saving water, which in turn benefits the entire San Gabriel Valley as it strives to become self-reliant and sustainable in managing its water supplies. We look forward to continuing our support of the Upper District's LLSR Program.

The City of South Pasadena urges the grant selection panel to consider the many benefits of the LLSR Program and to award grant funding for the Upper District's Large Landscape Survey and Retrofit Program.

If you have any questions or need additional information regarding the City of South Pasadena's support of this project, please do not hesitate to contact the City's water conservation expert, Debby Figoni at dfigoni@southpasadenaca.gov or 626-403-7311.

Sincerely,

Robert S. Joe
Mayor

Cc: South Pasadena City Council
Sergio Gonzalez, City Manager