WaterSMART Grants:
Small-Scale Water Efficiency Projects
Fiscal Year 2018

Residential Irrigation Efficiency Project
Riverside County, California

Eastern Municipal Water District
2270 Trumble Road
P.O. Box 8300
Perris, California 92572-8300

Project Manager: Sara Quintero
Water Resources Specialist
2270 Trumble Road
P.O. Box 8300
Perris, California 92572-8300
quinters@EMWD.org
(951) 928-3777 ext. 4424

July 30, 2018
# Table of Contents

Contents

**TECHNICAL PROPOSAL AND EVALUATION CRITERIA** ............................................................... 3

1.0 Executive Summary ........................................................................................................ 3

2.0 Background Data ........................................................................................................... 3

2.1 5-Year Average Annual Water Supply ........................................................................ 4

2.2 Water Use ..................................................................................................................... 5

2.3 Past and Present Working Relationships with Reclamation ....................................... 6

2.4 Project Location ........................................................................................................... 6

3.0 Technical Project Description .......................................................................................... 7

3.1 Evaluation Criteria ....................................................................................................... 10

4.0 Project Budget Narrative .................................................................................................. 13

5.0 Environmental and Cultural Resources Compliance ....................................................... 14

Appendix A – Official Resolution .......................................................................................... 16

Appendix B – Unique Entity Identifier and System of Award Management Registration ...... 17
1.0 Executive Summary
The Residential Landscape Efficiency Project (Project) will provide 50 single family EMWD customers with no-cost direct installation of high-efficiency irrigation equipment and professional irrigation management for one year. The objectives of the proposed Project are prioritized in the EMWD 2015 Water Efficiency Master Plan, the District’s water budget-based rate system and state legislation mandating increased water conservation targets. The Project is expected to be completed in less than two years, beginning September 2018 and ending November 2020. Funds will be used to hire a qualified landscape consultant to perform irrigation evaluations, retrofit inefficient irrigation equipment and manage irrigation runtimes over a one year period for a cost of approximately $2,400 per home. EMWD staff will perform overall project management, including tracking water use, coordinating consultant site visits and providing direct customer support as needed. The completed Project is estimated to save 10 acre-feet each year, with a total project savings of 100 acre-feet over ten years. The conserved water resulting from this Project will help meet the goals of this funding opportunity announcement by assisting EMWD to make more efficient use of water supplies, thereby reducing demand for limited local and imported supplies and associated future water conflict. The proposed Project is not located on a Federal facility.

Estimated Water Savings Calculation

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity (square feet)</th>
<th>Water Savings (Gallons per square foot per year)</th>
<th>Water Savings (Acre-feet per square foot per year)</th>
<th>Project Savings (Acre-feet per year)</th>
<th>10-Year Project Savings (Acre-feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Landscape Area</td>
<td>125,000</td>
<td>27</td>
<td>0.00008</td>
<td>10</td>
<td>100</td>
</tr>
</tbody>
</table>

2.0 Background Data
EMWD has 2,441 miles of pipeline delivering water to 141,000 retail connections and seven wholesale customers. EMWD’s system ties together its imported and local potable water sources
to feed the entire District: Groundwater is the major local supply of water in the District for the cities of Hemet and San Jacinto as well as surrounding unincorporated areas; two desalination plants serve the middle portion of the District; a micro filtration plant in Perris currently serves imported water from Metropolitan Water District of Southern California (MWD) to the City of Perris and surrounding areas; the Hemet Micro Filtration Plant supplements supply to the Hemet/San Jacinto area with imported water from MWD; MWD’s Mills Filtration Plant serves Moreno Valley South; and the Skinner Filtration Plant in the southeast serves the Murrieta/Temecula area. The limits of services for each source of supply vary due to demand level and operational procedures and constraints. EMWD’s potable water demand, water sources and the communities served are summarized in the tables below.

### Current and Projected Potable Water Demand for EMWD

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
<th>2035</th>
<th>2040</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retail Potable Water Sales</td>
<td>69,865</td>
<td>92,400</td>
<td>102,600</td>
<td>113,100</td>
<td>123,300</td>
<td>133,000</td>
</tr>
<tr>
<td>Water Sales to Sub-Agencies</td>
<td>5,749</td>
<td>9,400</td>
<td>11,400</td>
<td>13,300</td>
<td>15,100</td>
<td>17,100</td>
</tr>
<tr>
<td>Other Water Uses / Losses</td>
<td>67,395</td>
<td>59,845</td>
<td>63,734</td>
<td>66,317</td>
<td>69,000</td>
<td>71,300</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>143,009</td>
<td>161,645</td>
<td>177,734</td>
<td>192,717</td>
<td>207,400</td>
<td>221,400</td>
</tr>
</tbody>
</table>

### Retail Water Distribution to Communities

<table>
<thead>
<tr>
<th>Sources</th>
<th>Communities</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 80 MGD connection to Mills WTP - Imported</td>
<td>Moreno Valley, Perris, Good Hope, Homeland, Juniper Flats, Lakeview, Mead Valley, Menifee, Nuevo, North Canyon Lake, Quail Valley, Romoland, Sun City</td>
</tr>
<tr>
<td>• 24 MGD Perris WFP - Imported – Local Treated</td>
<td></td>
</tr>
<tr>
<td>• 6 MGD Menifee Desalter - Desalination</td>
<td></td>
</tr>
<tr>
<td>• 5 MGD from 5 wells - Ground Water</td>
<td></td>
</tr>
<tr>
<td>• 28 MGD from 14 wells - Ground Water</td>
<td>Hemet, San Jacinto, Winchester, Green Acres, Eden Hot Springs, Soboba Hot Springs, Gilman Hot Springs, Valle Vista, Diamond Valley</td>
</tr>
<tr>
<td>• 12 MGD Hemet WFP - Imported – Local Treated</td>
<td></td>
</tr>
<tr>
<td>• 87 MGD connection to Skinner WTP - Imported</td>
<td>Temecula, Murrieta, Murrieta Hot Springs, French Valley, Domenigoni Valley</td>
</tr>
</tbody>
</table>

### 2.1 5-Year Average Annual Water Supply

EMWD has four sources of water supply: Imported water purchased from MWD, local potable groundwater, local desalinated groundwater and recycled water. Total water supply for EMWD is made up of 57 percent imported water, 12 percent local potable groundwater, 5 percent desalted groundwater and 26 percent recycled water. MWD delivers water from two sources: the State Water Project and the Colorado River Aqueduct. The table below lists the past retail supply quantities by source.
2.2 Water Use

Located in Southwest Riverside County, EMWD’s service area experienced one of the fastest growth rates in the nation in the early 2000’s. Although currently experiencing a dramatic slowdown in the development market, EMWD is less than 50 percent built out and expects demand to grow as the economy recovers. According to the Riverside County Center for Demographic Research 2010 projection, 58,000 new homes in EMWD’s retail service area are proposed by 2020. To prepare for new economic opportunities and the water demand that will accompany them, EMWD is developing aggressive water use efficiency standards and practices for new development to implement.

**EMWD Projected Population Growth**

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>2015</th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
<th>2035</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>690,594</td>
<td>779,857</td>
<td>870,603</td>
<td>960,053</td>
<td>1,043,818</td>
<td>1,111,729</td>
</tr>
</tbody>
</table>

EMWD’s service area is made up of mostly single family residential homes with a small amount of commercial and industrial development. Only a small portion of EMWD’s agricultural customers are served with potable water; the majority of agricultural demand and a portion of

---

**Table: EMWD Retail Water Supply (AFY) 2013 – 2017**

<table>
<thead>
<tr>
<th>Type</th>
<th>Source</th>
<th>Percent</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Imported – Treated</td>
<td>MWD</td>
<td>32%</td>
<td>48,796</td>
<td>49,597</td>
<td>35,221</td>
<td>38,204</td>
<td>47,526</td>
</tr>
<tr>
<td>Imported – Locally Treated</td>
<td>MWD</td>
<td>13%</td>
<td>18,154</td>
<td>21,616</td>
<td>18,628</td>
<td>15,546</td>
<td>12,860</td>
</tr>
<tr>
<td>Imported – Raw</td>
<td>MWD</td>
<td>6%</td>
<td>8,461</td>
<td>768</td>
<td>941</td>
<td>13,353</td>
<td>20,094</td>
</tr>
<tr>
<td>Ground Water</td>
<td>WSJMA²</td>
<td>11%</td>
<td>18,824</td>
<td>12,786</td>
<td>14,570</td>
<td>14,864</td>
<td>13,270</td>
</tr>
<tr>
<td>Desalination</td>
<td>WSJMA²</td>
<td>5%</td>
<td>4,800</td>
<td>6,776</td>
<td>7,288</td>
<td>6,454</td>
<td>6,342</td>
</tr>
<tr>
<td>Recycled</td>
<td>EMWD’s RWRF³</td>
<td>33%</td>
<td>43,905</td>
<td>45,848</td>
<td>45,385</td>
<td>43,594</td>
<td>42,918</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>100%</td>
<td>142,940</td>
<td>137,391</td>
<td>122,032</td>
<td>132,016</td>
<td>143,009</td>
</tr>
</tbody>
</table>

¹Includes recharge water, ²West San Jacinto Management Area (WSJMA), ³Regional Water Reclamation Facilities (RWRF)
landscape and industrial demand are met with recycled water. The percentage of EMWD’s current potable water supply used by retail customer type is shown in the tables below.

**Current Potable Water Uses for EMWD’s Retail Customers**

<table>
<thead>
<tr>
<th>Water Use</th>
<th>Single Family</th>
<th>Multi-Family</th>
<th>Commercial</th>
<th>Industrial</th>
<th>Institutional</th>
<th>Landscape</th>
<th>Agriculture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potable Supply</td>
<td>67.0%</td>
<td>8.6%</td>
<td>6.8%</td>
<td>0.4%</td>
<td>3.1%</td>
<td>11.3%</td>
<td>2.8%</td>
</tr>
</tbody>
</table>

2.3 Past and Present Working Relationships with Reclamation

<table>
<thead>
<tr>
<th>Project Title</th>
<th>Reclamation Program</th>
<th>Funding Type</th>
<th>Award Date</th>
<th>Award Amount</th>
<th>Project Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural Irrigation Systems Optimization Review</td>
<td>Water Conservation Field Services Program</td>
<td>Grant</td>
<td>9/19/2017</td>
<td>$70,000</td>
<td>ACTIVE</td>
</tr>
<tr>
<td>Automated Metering Infrastructure Replacement</td>
<td>WaterSMART Water and Energy</td>
<td>Grant</td>
<td>9/22/2017</td>
<td>$1,000,000</td>
<td>ACTIVE</td>
</tr>
<tr>
<td>CA Friendly Large Landscape Irrigation Rebate Program</td>
<td>Water Conservation Field Services Program</td>
<td>Grant</td>
<td>6/5/2006</td>
<td>$50,000</td>
<td>COMPLETE</td>
</tr>
<tr>
<td>High Efficiency Clothes Washer Direct Install</td>
<td>WaterSmart Water &amp; Energy Efficiency grant</td>
<td>Grant</td>
<td>11/24/2010</td>
<td>$299,500</td>
<td>COMPLETE</td>
</tr>
<tr>
<td>Landscape Information Database</td>
<td>Water Conservation Field Services</td>
<td>Grant</td>
<td>8/27/2009</td>
<td>$10,000</td>
<td>COMPLETE</td>
</tr>
<tr>
<td>Landscape Irrigation Rebate Program (LIRP)</td>
<td>USBR</td>
<td>Grant</td>
<td>4/13/2009</td>
<td>$50,000</td>
<td>COMPLETE</td>
</tr>
<tr>
<td>Outdoor School Water Management Program</td>
<td>CALFED Water Use Efficiency Grant</td>
<td>Grant</td>
<td>9/3/2015</td>
<td>$438,640</td>
<td>ACTIVE</td>
</tr>
</tbody>
</table>

2.4 Project Location

EMWD’s service area encompasses 555 square miles in a semi-arid region in southwest Riverside County along Interstate 215. It is bounded on the west by Western Municipal Water District and Elsinore Valley Municipal Water District, on the north by the San Bernardino County Line, and on the south by the San Diego County Line. The Project will include EMWD customers throughout the service area located southeast from the city of Riverside at latitude 33° 48' N and longitude 117° 12' W. A vicinity map is included below.
3.0 Technical Project Description

The persistent problem this Project aims to resolve is the water waste resulting from poor landscape water management at single family properties. Runoff from overwatered landscapes flows in the gutters every morning. This problem is typical in almost every urban neighborhood and results from homeowner’s lack of knowledge about plant water requirements and how to operate an irrigation system. EMWD and water agencies across the southwest are implementing many types of programs in an attempt to reduce landscape water waste, including incentives for turf replacement, weather based irrigation controllers, rain sensors, financial penalties, design criteria and public information outreach. While these programs have reduced water waste to
varying degrees and at high cost, the fact remains that most homeowners simply do not have
either the time or interest to consistently manage the water being applied to their landscapes.
At EMWD, water budgets are subject to a four-tiered rate structure where the cost of water
significantly increases when the customer exceeds 100% of their water budget (Tier 2), and
increases again when they exceed 150% of their budget (Tier 3) as shown in the illustration below.
Even with these financial disincentives in place, more than 5 percent of all residential water use
(3,000 acre-feet) exceeded assigned water budgets in 2017.

**EMWD’s Current Residential Water Budget & Tiered Rate System**

The proposed Project intends to establish a new benchmark for efficient landscape irrigation
management at single family homes using proven irrigation technology and scientific water
management practices to eliminate water waste, cut outdoor water use in half and improve
landscape health. The Project will utilize EMWD’s Automated Meter Infrastructure (AMI) system,
remote controlled web-based irrigation controllers and flow meters, professional water
management and monitoring of daily water use at 50 participating homes. An additional control
group of 50 selected homes will be remotely monitored with AMI meters. The control group’s
water use will be compared to participating homes in order to identify any significant patterns of
variation between the two groups.

**Project Activities**

**Phase 1: Participant Selection**

- EMWD will issue a Request for Proposals to select a professional water management
  consultant using a competitive process
- EMWD will specify proven irrigation technology solutions to be used in the Project (web-
  based irrigation controllers with flow meters, high-efficiency nozzles, pressure regulators,
  drip irrigation equipment)
- EMWD will select a treatment group of 50 single family homes each using the following
  customer selection criteria –
  - Water use exceeded water budget by at least 120 percent for 6 months in 2017
  - Landscape area is 2,500 square feet (+/- 10%)
  - Existing automated irrigation system in working condition
  - Existing remote read water meter (AMI)
  - Established landscape plants
  - Landscape plants are similar (+/- 1,000 square feet turf, 1,500 square feet shrubs,
    trees, groundcover)
  - Similar climate zone (ETo water demand)
  - Customer agrees to allow the professional irrigation consultant to upgrade their
    irrigation system (at no cost to the customer), remotely manage the amount of

Page 8 of 17
irrigation water applied to their landscape for one year, visually inspect their landscape once per month, and customers will repair any broken irrigation equipment in a timely manner

- EMWD will select a control group of 50 single family homes that will not actively participate in the Project. Staff will select the control group using criteria similar to the treatment group (e.g. water use, landscape area, AMI meters, established landscape, type of plants and climate zone)

**Phase 2: Site Work**

- EMWD will facilitate site meetings with selected program participants and consultant to review program guidelines and complete project documentation
- EMWD will photograph each landscape at the beginning of the project to document the condition of the irrigation system and landscape plants
- Consultant will complete a comprehensive irrigation system pre-inspection at each participating home, that will include:
  - Measuring static and dynamic water pressure
  - Evaluating sprinkler spacing and measuring distribution uniformity
  - Identifying damaged, missing or inefficient equipment needing replacement
  - Recommending equipment upgrades for improved system efficiency
- Consultant will submit a written report to EMWD detailing the results of pre-inspections at each participating home
- EMWD will review pre-inspection reports and authorize consultant to proceed with approved irrigation system equipment upgrades and repairs
- Consultant will complete approved irrigation system retrofits and repairs
- EMWD will verify that irrigation systems are functioning in optimal condition at each participating home and reimburse consultant for approved services

**Phase 3: Monitor and Report**

- EMWD will track water use at each home in the treatment and control groups using AMI data and compare it to actual weather demand on a weekly basis
- Consultant will monitor water use at all project sites on a daily basis using web-based software applications provided by the irrigation controller manufacturer that totalize water use, and send text alerts in the case of malfunctions and excessive use
- EMWD will coordinate quarterly site inspections with consultant and respond to customer requests
- EMWD will provide participating customers with electronic monthly “Customer Scorecards” that compare actual water use to water budgets and offer assistance for both indoor and outdoor conservation programs
- Consultant will provide training on all efficient irrigation systems installed at project completion to ensure customer can maintain the new irrigation system properly
- EMWD will submit progress and final project reports to USBR as required
3.1 Evaluation Criteria

A. Project Benefits

**Conserved Water:** 10 acre-feet of conserved water is estimated to be made available each year to offset additional demands of developing residential communities. EMWD will conduct an extensive public outreach campaign to highlight the benefits of this project and encourage all District customers to incorporate the advanced water management practices used by the homes participating in this project. The landscapes at residential sites are irrigated using imported potable water and are typically irrigated using highly inefficient irrigation systems. The result is a net waste of approximately 30% of the applied water due to irrigation system inefficiency. Potable water supply shortfalls are a recurring reality in the southwestern U.S. due to cyclical droughts and competing environmental and development interests. Multiple benefits will result from the implementation of the proposed Project including the reduction of non-point source runoff containing topsoil, chemical fertilizer and bacteria into impacted water bodies.

**Water Quality:** The proposed project will directly benefit the Upper Santa Margarita and Santa Ana River watersheds by reducing the discharge of nutrients and sediment associated with over watering turf grass and other ornamental landscape plants. Currently, water bodies in both watersheds are adversely impacted by excessive nutrients, including nitrogen and phosphorous that are associated with runoff from urban landscape irrigation, and Total Maximum Daily Loads (TMDLs) for these nutrients have been established and are monitored by regulators. As a consequence of excessive nutrients, algae blooms and reduced dissolved oxygen have resulted in fish kills in Canyon Lake and Lake Elsinore.

**Water Supply Reliability:** The proposed project will increase water supply reliability by reducing non-essential water demand on 125,000 square feet of ornamental landscape from 50 residential properties by approximately 10 acre-feet per year. The long term goal of this project is to create a landscape water management system that can be widely adopted at EMWD's 135,000 residential customer properties.

**Habitat Protection:** The project will indirectly benefit endangered and threatened aquatic species and habitat by reducing the amount of water removed and imported to Southern California from the Sacramento River Delta and the Colorado River. The Sacramento River Delta provides habitat for the Delta Smelt, Chinook Salmon, Steelhead Salmon, and Green Sturgeon. The Colorado River provides habitat for the Humpback Chub, Squawfish, and Bonytail.

**Collaboration and Information Sharing:** EMWD actively collaborates on water resource management projects and shares information with the other water managers in the region including retail and wholesale water agencies, the Santa Ana Watershed Project Authority, California Department of Water Resources, Santa Ana Regional Water Quality Control Board and Lake Elsinore and San Jacinto Watersheds Authority. Each of these partner agencies have direct interests in solving the problem of urban runoff and water waste caused by excessive landscape irrigation. The results of this project will be shared with water purveyors at conferences, online trade publications, and in public testimony given to legislators.
B. Planning Efforts Supporting the Project

Achieving greater levels of water efficiency for landscape irrigation is recognized by water purveyors as a critically important method for meeting sustainable water supply reliability goals. The fact that approximately fifty percent of all potable water consumption in the region is used to irrigate ornamental landscapes, and that thirty percent or more of that water is wasted due to inefficient application methods, makes the selection of this Project a priority. EMWD has prepared and adopted several regional resource management plans that support the goals of the proposed Project.

- Water Shortage Contingency Plan, adopted May 2013
- Water Use Efficiency Master Plan, adopted December 2015
- MWD Integrated Water Resources Plan, January 2016

**Water Shortage Contingency Plan:** On May 15, 2013, EMWD adopted a Water Shortage Contingency Plan (WSCP) in accordance with Water Code 10632 requirements. The WSCP regulated the delivery and consumption of water use during water shortages; in detail, the plan laid out which appropriate water conserving actions EMWD would take, based on current water conditions. As the most recent drought grew in severity, EMWD’s response to the state emergency varied from Stage 1A, which suggested a voluntary reduction of up to 10% on an individual customer level, up to Stage 4C, a mandatory 100% reduction in outdoor water use. In response to EMWD’s water stages and other mitigating factors, customer water demands decreased during the drought, in effect reducing the amount of water EMWD needed to import from MWD.

**2015 Urban Water Management Plan:** The Urban Water Management Plan Act (UWMP Act), adopted in 1983, requires every urban water supplier that provides water for municipal purposes to more than 3,000 connections or supplies more than 3,000 acre-feet of water annually to adopt and submit an Urban Water Management Plan (UWMP) to the California Department of Water Resources (DWR) every five years. The main purpose of developing and updating an UWMP is to forecast water demands and supplies under normal, single-dry, and multiple-dry year conditions; assess supply reliability; and describe methods of reducing demands under potential water shortages.

**Water Use Efficiency Master Plan:** EMWD completed an update to its conservation plan in December 2015 with funds awarded by USBR under the Water Conservation Field Services Grant Program, in 2014. The EMWD Water Use Efficiency Master Plan is a comprehensive evaluation of all water use categories, and identifies outdoor water use as the primary area for potential water savings. The proposed Project directly addresses the need to identify and implement the most effective methods to increase water conservation.

**MWD Integrated Water Resources Plan:** EMWD is one of 26 member agencies to MWD, and imports up to 54% of its potable water supply through MWD’s Colorado River Aqueduct and State Water Project. MWD prepares for future water management with an evolving long-term water strategy known as the Integrated Water Resources Plan, or IRP. Southern California uses less imported water than it did a generation ago even though the
population has grown by five million people. The fundamental goal of the IRP is for Southern California to continue to have a reliable water system, given our future challenges.

C. Project Implementation

**Estimated Project Schedule**

<table>
<thead>
<tr>
<th>Project Stage</th>
<th>Duration</th>
<th>Major Tasks</th>
<th>Milestones</th>
<th>Start Date</th>
<th>Completion Date</th>
</tr>
</thead>
</table>
| Funding Award                        | 4-8 Weeks| Execute USBR Agreement           | • Receive award letter  
• Respond to requests for information  
• Final signatures               | 9/18       | 11/18                        |
| Phase 1: Participant Selection       | 12-16 Weeks| Customer selection           | • Analyze water records  
• Verify landscape areas  
• Mail invitation letters  
• Complete pre-project site inspections  
• Finalize group selections      | 11/18     | 3/19                         |
| Phase 2: Site Work                   | 4-8 Weeks| Customer/Consultant meetings     | • Publish Request for Proposals  
• Review submittals  
• Interview and select consultant  
• Issue contract                 | 11/18     | 1/19                         |
| Site Work                            | 2-4 Weeks| Site Inventory                   | • Complete detailed site inspections  
• Review consultant recommendations and authorize site work | 2/19       | 3/19                        |
| Irrigation System Upgrades           | 4-8 Weeks| Irrigation System Upgrades       | • Complete upgrades  
• Inspect and verify work  
• Process invoices               | 3/19       | 5/19                         |
| Phase 3: Monitor and Report          |          | Track Water Use                  | • Record AMI readings  
• Record irrigation system runtime and total flow data | 5/19       | 9/20                        |
|                                      |          | Conduct monthly site inspections | • Photo document  
• Assess landscape condition  
• Respond to customer requests    | 5/19       | 9/20                        |
|                                      |          | Submit Reports                   | • Progress  
• Final                           | 3/19       | 11/20                       |

**Required Permits:** No permits are expected to be required for the implementation of the proposed Project. The work performed by the consultant will be performed on existing
private residential properties and will be limited to the retrofit of existing irrigation equipment.

**Engineering or Design Work:** No engineering or design work will be performed to support the proposed Project. The work performed by the selected consultant will consist of repair and retrofit of existing residential irrigation systems using pre-selected equipment.

**Policies or Administrative Actions:** No new policies or administrative actions are required to implement the proposed Project. EMWD will implement the proposed Project following established policies and administrative procedures.

**Environmental Compliance:** EMWD has consulted with the District’s responsible environmental officer. In the opinion of EMWD the proposed Project does not have the potential to cause a significant effect on the environment, or a reasonably foreseeable indirect physical change in the environment, and is therefore, not subject to the California Environmental Quality Act (CEQA), as defined by CEQA Guidelines Section 15378.

**D. Nexus to Reclamation**

MWD diverts water from the Colorado River at Lake Havasu and conveys it through the Colorado River Aqueduct to its terminus at Lake Mathews in Riverside County. EMWD purchases 54% of its water supply from MWD through connections to the Colorado Water Aqueduct and State Water Project. The proposed Project will not contribute water to the watershed basin, however it will reduce the amount of water removed from the basin where Reclamation facilities are located. All EMWD customers, including members of Indian Tribes and economically disadvantaged communities are eligible to participate in the proposed project.

**E. Department of the Interior Priorities**

The proposed Project utilizes crop science and advanced water technologies to identify best management practices that manage land and water resources. It will also promote regional and statewide collaboration of water conservation efforts that benefit the environment in the California and Colorado watersheds. The results of this project will be shared with water purveyors across this region at conferences, online trade publications, and in public testimony given to legislators.

**4.0 Project Budget Narrative**

The non-federal share of project costs will be provided entirely by EMWD with funds from the District’s FY 2019-20 budget; no donations or in-kind costs will be incurred or claimed before or after the anticipated project start date. EMWD’s cost-share requirement will be met entirely with monetary contributions. No funding from any other Federal source has been requested or received for the costs of the proposed Project and there are no pending funding requests. The materials and supplies listed in the estimate project budget will be purchased by EMWD at the lowest wholesale price available and provided to the contractor for retrofit at the selected homes. EMWD will enter into a contractual agreement with a licensed landscape contractor to perform all necessary tasks related to the evaluation, coordination, equipment retrofit, and
water management at each of the 50 selected homes for one year after the equipment retrofits are completed.

### Summary of Non-Federal and Federal Funding Sources

<table>
<thead>
<tr>
<th>FUNDING SOURCES</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Non Federal Entities</strong></td>
<td></td>
</tr>
<tr>
<td>1. EMWD Cash Contributions</td>
<td>$60,000</td>
</tr>
<tr>
<td><strong>Other Federal Entities</strong></td>
<td></td>
</tr>
<tr>
<td>1. None</td>
<td>$0</td>
</tr>
<tr>
<td><strong>REQUESTED RECLAMATION FUNDING</strong></td>
<td>$60,000</td>
</tr>
</tbody>
</table>

### Estimated Project Budget

<table>
<thead>
<tr>
<th>Budget and Item Description</th>
<th>Computation</th>
<th>EMWD Funding 50%</th>
<th>USBR Funding 50%</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Salaries and Wages</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None Claimed</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td><strong>Fringe Benefits</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None Claimed</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td><strong>Materials and Supplies</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Irrigation Equipment: Controllers with flow meters</td>
<td>$300</td>
<td>Per Site 50</td>
<td>$7,500</td>
<td>$15,000</td>
</tr>
<tr>
<td>Drip Irrigation</td>
<td>$125</td>
<td>Per Site 50</td>
<td>$3,125</td>
<td>$6,250</td>
</tr>
<tr>
<td>High efficiency rotors</td>
<td>$234</td>
<td>Per Site 50</td>
<td>$5,850</td>
<td>$11,700</td>
</tr>
<tr>
<td><strong>Contractual</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water management</td>
<td>$1,200</td>
<td>Per Site 50</td>
<td>$30,000</td>
<td>$60,000</td>
</tr>
<tr>
<td>Irrigation Equipment Retrofit</td>
<td>$541</td>
<td>Per Site 50</td>
<td>$13,525</td>
<td>$27,050</td>
</tr>
<tr>
<td>Environmental Compliance Costs</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td><strong>TOTAL DIRECT COSTS</strong></td>
<td></td>
<td></td>
<td></td>
<td>$120,000</td>
</tr>
<tr>
<td><strong>TOTAL INDIRECT COSTS</strong></td>
<td></td>
<td></td>
<td></td>
<td>$0</td>
</tr>
<tr>
<td><strong>TOTAL ESTIMATED PROJECT COSTS</strong></td>
<td></td>
<td></td>
<td></td>
<td>$120,000</td>
</tr>
</tbody>
</table>

### 5.0 Environmental and Cultural Resources Compliance

EMWD has consulted with the District’s responsible environmental officer. In the opinion of EMWD the proposed Project does not have the potential to cause a significant effect on the environment, or a reasonably foreseeable indirect physical change in the environment, and is therefore, not subject to the California Environmental Quality Act (CEQA), as defined by CEQA Guidelines Section 15378. No costs for environmental or cultural resources compliance are anticipated for this proposed Project.

- Will the proposed work impact the surrounding environment?  No
- 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?  No
<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are there wetlands in the project area?</td>
<td>No</td>
</tr>
<tr>
<td>When was the water delivery system constructed?</td>
<td>N/A</td>
</tr>
<tr>
<td>Will the project effect individual features of the irrigation system?</td>
<td>No</td>
</tr>
<tr>
<td>Are any buildings, structures, or features in the irrigation District listed or eligible for listing on the National Register of Historic Places?</td>
<td>No</td>
</tr>
<tr>
<td>Are there any known archeological sites in the proposed project area?</td>
<td>No</td>
</tr>
<tr>
<td>Will the project have a disproportionately high and adverse effect on low income or minority populations?</td>
<td>No</td>
</tr>
<tr>
<td>Will the project limit access to and ceremonial use of Indian sacred sites or result in other impacts on tribal lands?</td>
<td>No</td>
</tr>
<tr>
<td>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?</td>
<td>No</td>
</tr>
<tr>
<td>Environmental compliance costs have not been included in the budget. Only existing landscapes will be eligible for this program. No environmental or regulatory compliance is required and no costs are anticipated for EMWD.</td>
<td></td>
</tr>
</tbody>
</table>
SUBJECT:
Approve and Authorize Agreements and a Resolution for Turf Removal and Conservation Program Support Services, and Appropriation of $100,000

BACKGROUND:
Over the past five years customers have replaced over 6 million square feet of non-functional turf grass with water efficient landscapes and participated in a wide range of Eastern Municipal Water District (EMWD) sponsored conservation incentive and educational programs. This item will present the results of recent program activities and discuss challenges, opportunities, and recommendations for next steps. Two specific projects are recommended for Board approval:

Public Landscape Services Program
To assist customers new to budget-based tiered rates and meet long term conservation goals, staff is proposing a Public Landscape Services Program. This program will provide no-cost support services including landscape design, water efficiency surveys, and irrigation management training to public agencies including cities and schools. After a competitive process of evaluating and ranking qualification of six proposals received, staff selected two firms to be recommended for contract award. Staff recommends that landscape design and survey services be awarded to Van Dyke Landscape Architects, Incorporated, and irrigation management training services be awarded to Blue Watchdog.

The funds for this proposed project are identified in the budget under Special Projects and Studies, Conservation Program Projects. A total of $100,000 is available for this project over a two year period. The estimated cost of water saved by this project ranges from $109-$453 per-acre-foot, assuming a three year payback period.

Residential Irrigation Efficiency Project
The United States Bureau of Reclamation’s (USBR) WaterSMART Grants: Small-Scale Water Efficiency Projects, offers cost share funding for water use efficiency activities that result in water savings, improve water management and energy efficiency, and directly support projects prioritized in an existing water management and conservation plan. Staff has identified the Residential Irrigation Efficiency Project (Project) as one that meets the objectives of this USBR funding opportunity.

The proposed project will upgrade the existing irrigation systems at 50 single family homes with high efficiency irrigation equipment and manage the watering schedules for a one year period. The equipment installation and watering management would be conducted by a qualified contractor. Staff will monitor water consumption via the District’s automated meter.
infrastructure system, and the homeowners would agree to keep their irrigation system in good working order for the duration of the project. A control group of 50 similar homes will be tracked and compared with the project participants to determine if there are significant differences in water use and landscape quality.

The Project has an estimated implementation cost of $120,000. The requested grant amount to USBR is $60,000. It is estimated that $60,000 will be funded from EMWD’s Special Projects and Studies, Conservation Program Projects. An official Resolution is required as part of the USBR’s WaterSMART Grants: Small-Scale Water Efficiency Projects application submittal.

**FINANCIAL IMPACT:**

Funding for the proposed programs has been identified in the 2018-19 Special Projects and Studies, Conservation Program Projects budget.

**STRATEGIC PLANNING GOAL/OBJECTIVE:**

Water Use Efficiency: Promote efficient use of water resources through the implementation of industry-leading programs and practices combined with customer education and awareness.

**ENVIRONMENTAL IMPACT:**

This item is not a project as defined in the California Environmental Quality Act Code of Regulations, Title 14, Chapter 3, Section 15378.

**RECOMMENDATION:**

Approve and authorize the following:

1. Execution by the General Manager, or his designee, of the District’s standard form of contract with Van Dyke Landscape Architects, Incorporated, for up to $75,000;

2. Execution by the General Manager, or his designee, of the District’s standard form of contract with Blue Watchdog for up to $25,000;

3. Appropriation of $100,000 from the Special Projects and Studies, Conservation Program Projects budget for the Public Landscape Services Program;

4. Approve and adopt a Resolution in support of the District’s application for the United States Bureau of Reclamation’s (USBR) Small-Scale Water Efficiency Projects for the Residential Irrigation Efficiency Project; and

5. Designate the General Manager, or his designee, as an authorized representative, on behalf of Eastern Municipal Water District (EMWD), to sign the funding application.
SUBMITTED BY:

[Signatures]

Paul B. Jones II, P.E., General Manager 7/6/2018
Joy Mousawad, Assistant General Manager 6/29/2018

Attachment(s):
Exhibit A - Resolution
Presentation

History:
07/12/18 Board Planning Committee RECOMMENDED FOR APPROVAL
07/18/18 Board Meeting

Staff Contact: Elizabeth Lovsted
RESOLUTION NO. 2018-100

A RESOLUTION OF THE BOARD OF DIRECTORS OF EASTERN MUNICIPAL WATER DISTRICT TO SUPPORT THE SUBMITTAL OF AN APPLICATION TO THE U.S. BUREAU OF RECLAMATION'S SMALL-SCALE WATER EFFICIENCY PROJECTS GRANT: FOR THE RESIDENTIAL IRRIGATION EFFICIENCY PROJECT, AND DESIGNATE AN AUTHORIZED REPRESENTATIVE.

WHEREAS, Eastern Municipal Water District (the “District”) desires to finance a portion of the costs of the United States Bureau of Reclamation's (USBR) Small-Scale Water Efficiency Projects for the Residential Irrigation Efficiency Project (the “Project”); and

WHEREAS, the District intends to finance the cost of the Project or portions of the Project with monies provided by the U.S. Bureau of Reclamation (“Reclamation”).

NOW, THEREFORE, THE BOARD OF DIRECTORS OF EASTERN MUNICIPAL WATER DISTRICT DOES HEREBY RESOLVE, DETERMINE AND ORDER AS FOLLOWS:

1. The General Manager (the “Authorized Representative”) or his designee is hereby authorized and directed to sign and file, for and on behalf of the District, a Small-Scale Water Efficiency Projects Grant application for financing the implementation of the Project;

2. The Board of Directors has reviewed and supports the application submitted;

3. The District has the capacity to provide funding and/or in-kind contributions specified in the funding plan;

4. The District will work with Reclamation to meet established deadlines for entering into a cooperative agreement; and

5. This Resolution shall be effective upon its adoption.
STATE OF CALIFORNIA)
 )ss.
COUNTY OF RIVERSIDE)

I, TAMI MARTINEZ, Deputy Secretary to the Board of Directors of Eastern Municipal Water District, do hereby certify that the foregoing Resolution was duly adopted by the Board of Directors of said District at the Regular Meeting of said Board held on the 18th day of July 2018, and that it was so adopted by the following vote:

AYES: Directors, Paule, Kuebler, Slawson, Sullivan and Record
NOES: None
ABSTAIN: None
ABSENT: None

Tami Martinez, Deputy Secretary to the Board of Directors of the Eastern Municipal Water District and to the Board of Directors thereof

DATE: July 18, 2018

Tami Martinez, Deputy Secretary to the Board of Directors of the Eastern Municipal Water District and to the Board of Directors thereof

(SEAL)
DATED: July 18, 2018

/s/David J. Slawson

David J. Slawson, President

I hereby certify that the foregoing is a full, true and correct copy of the Resolution adopted by the Board of Directors of the Eastern Municipal Water District at its meeting held on July 18, 2018.

ATTEST:

/s/Sheila Zelaya

Sheila Zelaya, Board Secretary

(SEAL)
Appendix B – Unique Entity Identifier and System of Award Management Registration
Recipient Name: EASTERN MUNICIPAL WATER DISTRICT

DUNS: 047789870  
EIN: 95-6004429  
ASAP ID: 0629056

Federal Agency: BUREAU OF RECLAMATION  
ALC/Region: 14060905  
Status: Active 02/14/2013

<table>
<thead>
<tr>
<th>Enrollment Task</th>
<th>Business Days Remaining</th>
<th>Status</th>
<th>Date Completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>EI Initiates RO and POC</td>
<td></td>
<td>Completed</td>
<td>01/08/2013</td>
</tr>
<tr>
<td>Point of Contact Names Organization Officials</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Head Of Organization Approves Officials</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Authorizing Official Defines Recipient Profile</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Authorizing Official Defines Recipient Organization Users</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial Official Defines Banking Information</td>
<td></td>
<td>Completed</td>
<td>02/13/2013</td>
</tr>
<tr>
<td>Name</td>
<td>EASTERN MUNICIPAL WATER DISTRICT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------------------</td>
<td>----------------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recipient ID</td>
<td>0629056</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organization Type</td>
<td>Local Government</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EIN</td>
<td>956004429</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DUNS Number</td>
<td>047789870</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organization Short Name</td>
<td>EMWD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mailing Address</td>
<td>PO Box 8300, Perris, CA 92572-8300</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is this Profile active?</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Email from Wright, Bonnie to Fabozzi, Lisa dated Tuesday, January 02, 2018 3:09 PM

Subject: CONFIRMATION: Registration Submitted for EASTERN MUNICIPAL WATER DISTRICT / 047789870 / 49S99 in the U.S. Government's System for Award Management (SAM)

Dear Bonnie Wright,

You successfully submitted the entity registration for EASTERN MUNICIPAL WATER DISTRICT / 047789870 / 49S99 in the U.S. Government's System for Award Management (SAM). This registration record will remain in Submitted status until all external validations are complete. What happens next?

1. If you provided a Taxpayer Identification Number (TIN), the Internal Revenue Service (IRS) will conduct a validation of your TIN and Taxpayer Name. This step can take two business days. You will get an email from @sam.gov when that review is complete.

2. Your registration will then be sent to the Defense Logistics Agency (DLA) Commercial and Government Entity (CAGE) Code system for assignment or validation of your CAGE Code. This step averages two business days, but the DLA CAGE team can take up to ten business days, or longer, in peak periods. You will get an email from @sam.gov when that review is complete.

3. If the DLA CAGE team has any questions, they will contact the individual you listed as the Government Business Point of Contact (POC) via email. The email will come from an @dla.mil address. Please tell your Government Business POC to respond right away to any requests from an @dla.mil email. If a timely response is not received, your registration will be returned to SAM and your registration status changed to Work in Progress. You will have to resubmit and provide the requested information to DLA CAGE to continue.

4. You will get an email from @sam.gov when your registration passes these external validations and becomes Active. While you are waiting, use the Check Status tab in the SAM main navigation bar to see where your registration is in the review process.

Remember, this process is entirely FREE to you. It is FREE to register and maintain your registration in SAM. It is FREE to get help with your registration. Contact our supporting Federal Service Desk at www.fsd.gov, or