HIGH EFFICIENCY URINAL FLUSH-VALVE UPGRADE PROGRAM

WaterSMART: Water and Energy Efficiency Grant for FY 2013

Western Municipal Water District
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List of Acronyms

AF	Acre – Feet
AFY	Acre – Feet per Year
ANSI	American National Standards Institute
BMP	Best Management Practices
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CII	Commercial, Industrial, Institutional
CPI	Consumer Price Index
CUWCC	California Urban Water Conservation Council
IRP	Integrated Resource Plan
Metropolitan	Metropolitan Water District of Southern California
MOU	Memorandum of Understanding
NAICS	North American Industry Classification System
SCE	Southern California Edison
SWP	State Water Project
Western	Western Municipal Water District

Appendices

Section 1: Technical Proposal and Evaluation Criteria

1.1 Executive Summary

Date: January 17, 2013

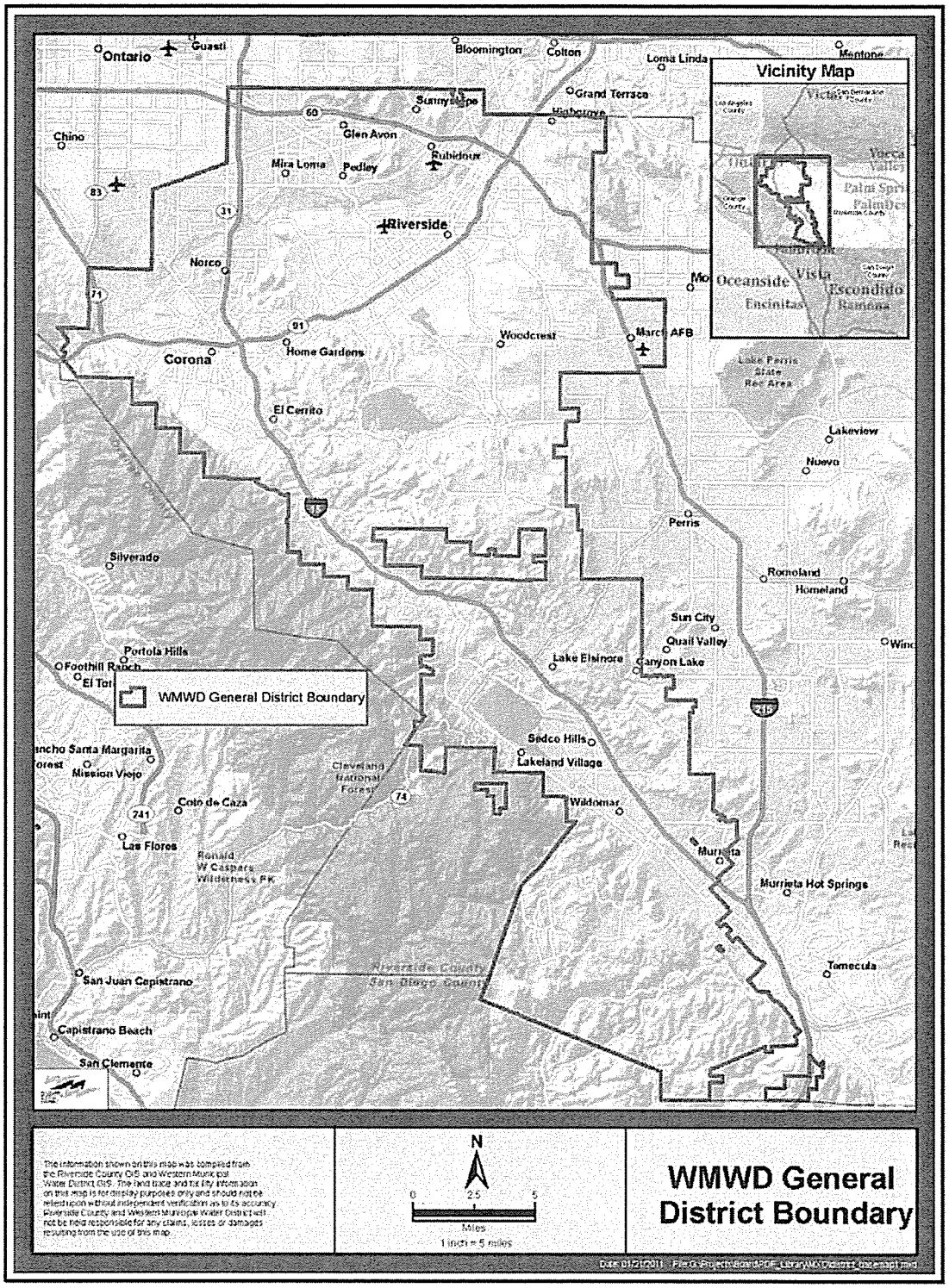
Applicant: Western Municipal Water District

Applicant City, County, State: City of Riverside, County of Riverside, California

Project Name: High Efficiency Urinal Flush-Valve Upgrade Program

Western Municipal Water District (Western), and the retail water agencies to which it delivers imported water, have embraced indoor water use efficiency in the residential sector for over two decades. The water use efficiency plans and conservation business plans developed by these agencies show that the Commercial, Industrial, and Institutional (CII) water sector in our area may yield a high volume of water savings if the right mix of programs were implemented. Western has developed the High Efficiency Urinal Flush-Valve Upgrade project to help decrease water use in the commercial sector, and seeks a WaterSMART grant for $209,157 to fund approximately 36% of the program over two years. This turn-key, direct-install program will upgrade qualified non-conserving flush-valves in existing commercial sector urinals for more efficient flush-valves, without having to replace the entire porcelain fixture. This simple upgrade reduces project costs and avoids installation issues yet still gets the water savings. Western is seeking this grant funding to install 2,000 high efficiency flush-valves over a two year period. This will reduce water use by 2,460 acre-feet (AF) over the 20 year lifetime of the high efficiency flush valves. The project is consistent with Reclamation's goal of achieving water savings by reducing indoor water use. Furthermore, this project could help the local retail water agencies within Western's general service area comply with California's legislative mandate to reduce urban water use in the commercial sector by 10 percent (SBx7-7). With an implementation cost of $237 per AF of water saved, the High Efficiency Urinal Flush-Valve Upgrade project is highly cost effective and ready to proceed.

Figure 1: Project Location



1.2 Background Data

Description of Applicant

Western supplies retail and wholesale water supplies to a 527 square-mile service area in western Riverside County, encompassing a population of over 860,000. Western is the supplemental wholesale water supplier for 13 water purveyors: Box Springs Mutual Water Company, City of Corona, Eagle Valley Mutual Water Company, Elsinore Valley Municipal Water District, Home Gardens County Water District, Jurupa Community Services District, Lee Lake Water District, City of Norco, Rancho California Water District, City of Riverside, Riverside Highland Water Company, Rubidoux Community Services District, and the Santa Ana River Water Company. Western also serves water directly to approximately 23,000 domestic and 130 irrigation connections in its retail service area.

Since 1995, total water demand within Western's retail service area has been increasing, with demands nearly tripling between 1995 and 2010. As of 2011, total water demand, for retail and wholesale areas, was at approximately 85,000 AFY, with retail making up approximately 30 percent. By year 2035, demand is forecasted to increase by approximately 90 percent and by buildout, estimated to be around 2040, total demands of retail and wholesale together are projected to double the current demands, at approximately 164,000 AFY. Retail water usage includes residential, commercial, industrial and agricultural.

Water Delivery System

The water system encompasses 623 miles of pipeline ranging in diameter from 4 to 60 inches. Western operated 122 pumps with a total connected horsepower of approximately 18,455. The water system also includes 38 water storage tanks with a capacity of over 87 million gallons. Western has 10 wells for pumping groundwater; five in Murrieta and five that feed the Arlington Desalter.

Past Working Relationship with Reclamation

Western has enjoyed a long and successful working relationship with the Bureau of Reclamation. Western received Challenge Grant Funding for its Water Conservation Demonstration Project. This grant was awarded June 6, 2007. This grant consisted of two projects aimed at reducing outdoor water demand. One project focused on reducing commercial/institutional/industrial outdoor water use by upgrading high water users identified in Western's Murrieta retail area with high efficiency sprinkler nozzles and weather-based irrigation controllers. The other project resulted in the creation of "Gardening for the Inland Empire," a user-friendly CD-ROM for residential customers. Western has subsequently licensed the CD content and posted the information to the

District website, making the information more accessible to Western customers expanding the benefits of the Reclamation grant funding beyond the original concept.

Western is also working with Reclamation as part of its Riverside-Corona Feeder Project. In March 2009, President Barack Obama signed a bill authorizing the Bureau of Reclamation to participate in the design and construction of the Riverside-Corona Feeder. This project is intended to provide new groundwater pumping capacity and new delivery pipeline capacity. The new pumping and delivery capacity will enable new water supplies from local runoff and excess imported water to be stored safely in local groundwater basins by providing the means to control water tables. When pumped, the water will be delivered to communities in western Riverside County.

In 2011 and 2012, Western, in association with Inland Empire Utilities Agency, received WaterSMART grants under the Title XVI Water Reclamation and Reuse Program Construction Funding program for components of the Lower Chino Dairy Area Desalination and Reclamation Project. In 2011, WaterSMART grant funds were awarded for the Chino Creek Wellfield Development Project. This project consists of drilling and equipping three wells in the Chino Groundwater Basin to allow for increased collection of brackish groundwater with subsequent treatment at the Chino I Desalter. This project will result in the reclamation of 2,900 AFY of currently unusable brackish groundwater.

The 2012 WaterSMART grant was awarded to fund the construction of a pump station and associated treated water pipeline. Together, these facilities will enable delivery of 7,067 AFY treated water to Chino Basin Desalter member agencies.

1.3 Technical Project Description

Why focus on such a simple, often overlooked, commercial device?

Western Municipal Water District, and the retail water agencies to which it delivers imported water, have embraced indoor water use efficiency in the residential sector for over two decades. High levels of participation in residential fixture rebates and direct installation programs, coupled with significant residential construction in the late 1990s and early 2000s under updated plumbing codes, have resulted in high levels of water efficient fixture saturation in the single family residential sector. Early adoption of water-wise landscape design requirements; marketing of design workshops and irrigation seminars as well as demonstration gardens featuring climate-appropriate plants; development of on-bill financing programs for installation of smart irrigation technologies; and the creation of a wildly successful high efficiency sprinkler nozzle distribution program (FreeSprinklerNozzles.com) have collectively driven outdoor water use to record levels of efficiency. The water use efficiency analyses and conservation

business plans recently prepared by multiple local agencies clearly illustrate that the CII water sector has tremendous potential for water savings. The past participation numbers reveal a trend of CII customer reluctance to participate in our long-running regional rebate programs, even though participation would yield a high volume of water and financial savings. If only we could get the attention of the decision makers, sustainability officers or facility managers in these organizations with a simple, cost-effective program!

> *The Marketing Message: Attention decision makers, sustainability officers, and facility managers! The Bureau of Reclamation and your local water provider want to help you save water and MONEY!*

How will this program make a difference, save water – and MONEY?

Urinal replacements have the potential to save a significant quantity of water – tens of thousands of gallons annually for each device. **In fact, a single urinal replacement can result in enough water saved to support a single individual's indoor water need for an entire year!** However, because of several, often-times compounding, factors associated with plumbing, commercial construction, or code, a urinal retrofit project is typically only performed when a unit breaks. In most businesses, capital replacement is reserved for items related to business function, not the bathroom. Urinal upgrades can be expensive for the business customer and are frequently considered cost-prohibitive by the property manager, if they are considered at all. The majority of expense for a new urinal is the porcelain fixture itself, which can be a least twice the cost of the flush-valve – the component responsible for the volume of water used and the device to be considered in this proposal. Professional installation, required to abide by commercial code, can be a costly component of the retrofit. Installation is sometimes tricky, requiring significant wall or floor repairs in the instance of dissimilar fixture footprints, alignments, or sizes. Moreover, existing regional rebate programs are not delivering a sufficient customer response and thus not delivering potential water savings. Despite a rebate value of $200 per fixture, rebates have produced low participation numbers. The combination of these challenging issues has severely reduced the number of water efficient urinal retrofits over the years.

> *Western's proposal, will overcome long-standing challenges that have severely limited participation in an underserved water use sector.*

Traditional urinals, installed prior to the plumbing code change in 1992 consume 1.5 to 5.0 gallons per flush. High efficiency urinals consume 0.5 gallons with each flush. According to studies and reports posted on the California Urban Water Conservation Council (CUWCC) web site (www.cuwcc.org) and the Alliance for Water Efficiency web

site (www.allianceforwaterefficiency.org), as well as data cited by the Metropolitan Water District of Southern California (Metropolitan) (Board Letter 8-8, December 13, 2005 Attachment 2), replacing a traditional urinal flushing more than 1.5 gallons per flush with a high efficiency urinal, 20,000 gallons of water can be saved annually in a well-targeted, high-traffic business setting.

Typically, replacing a traditional urinal with a high efficiency model costs the customer $700 to $1,000 or more including the cost of installation. This high price tag is disconcerting for a great number of eligible customers and can result lost opportunity for water savings.

There are several reasons for the high replacement cost:

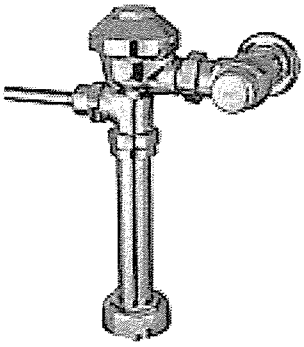
- The product itself is expensive and a major portion of that price is the porcelain.
- Professional installation, by a licensed plumbing contractor in Southern California, can range from $400 to $600 for a standard installation, *with no remodeling or code compliance issues.*
- Third, additional work is required when the physical "footprint" of the new urinals does not match that of the old urinal or there are other construction issues. This occurs in many installation locations and requires additional labor to remedy, thus increasing the overall installation cost.

Today, there are high efficiency urinal flush valves that use 0.5 gallons with each flush that can be installed to replace existing valves. This more effective, lower-cost alternative utilizes the existing porcelain and avoids potentially significant peripheral expenses. This novel alternative reduces project costs and avoids installation issues. Recognizing the significant number of underserved business customers and the potential for a lower cost solution, this is the option selected for Western's High Efficiency Urinal Flush-Valve Upgrade program.

Additionally, disappointingly-low, past participation in the regional rebate program, which has offered $200 per rebate for more than 7 years, suggests that a more direct customer marketing and outreach, as well as a turnkey, direct-install program approach, will be necessary to establish a base of interested customers, facilitate conversions within Western's service area, and increase the efficient use of water in commercial restrooms.

> ***Western's elegantly designed program will deliver more cost-effective installations, drive up customer response, and save more water!***

Program Specifics – The Nuts and Bolts of a Urinal Flush Valve Upgrade



The High Efficiency Urinal Flush Valve Upgrade Program is a turn-key program designed to replace only the flush valve in qualifying high traffic locations. The customer will be offered ***free product*** and ***free installation***. Only fixtures flushing 1.5 gallons per flush or more will be eligible for replacement.

Product Selection

High efficiency urinals are defined as fixtures that flush 0.5 gallons per flush or less, a threshold that is 50% less than the current U.S. national standard mandated by the U.S. Energy Policy Act in 1992, which became effective in 1994. The flushometer valve is the mechanism for flushing. The high efficiency urinal functions identically to traditional urinals, but it uses a smaller orifice in the diaphragm of the flush valve along with higher pressure and velocity to reduce the water usage.

Currently there are several viable products available. Western would solicit competitive bids for the product. The products must meet all manufacturing standards and testing protocols. Products to be considered would include the following mandates:

- Flush rate of 0.5 gallons per flush or less
- Certified by the American National Standards Institute (ANSI)
- EPA WaterSense labeled

This project requires the removal of the existing non-conserving flush valve and the installation of a new high efficiency valve. The finished installation looks virtually the same as a traditional urinal but uses less water per flush.

Plumbing Contractor Selection – Licensed of course!

Western will solicit competitive bids for the installation of the flush valves. Through a formal request for bid process, Western would hire a licensed and experienced commercial plumbing contractor to perform the following tasks:

- Enlist targeted business customers in the program;
- Assess individual site conditions and qualification;
- Inventory sites and quantify the potential savings; and,
- Conduct the installations and perform follow up support as necessary.

The selected contractor must be licensed in the State of California and show a documentable history of commercial installations and have past customer comments regarding quality performance.

Market Potential – Who would we target for participation?

The commercial, industrial and institutional sector is the most diverse collection of water users in the urban environment. This customer category includes retail stores, supermarkets, restaurants, office buildings, hotels and motels, schools, universities, car washes, manufacturing, and many other types of customers. Each business may use water in a different way; however all of them use water for sanitation. In Western's general service area approximately 12 percent of all water delivered is used in businesses that provide jobs and services to the area. The following table includes the four largest water purveyors in Western's general service area.

Table 1: Largest Water Purveyors

Agency	*CII Accounts**	*CII Water Use* (acre-feet)*	*Percent of Total Urban Water Use*
City of Corona Department of Water and Power	2,307	5,106	14.9%
Rancho California Water District	2,522	3,377	8.9%
City of Riverside Public Utilities	4,537	9,563	16.8%
Western MWD, retail area	710	2,088	9.3%
Total	**10,888**	**17,253**	

*DWR Public Water System Statistics for Calendar Year 2011

According to the AWWARF Commercial and Institutional End Uses of Water study published in 2000, indoor toilet/urinal water use as a percent of total indoor water use is substantial. The table below shows the percent of toilet/urinal water use as a percent of the total indoor water use in select categories of the commercial sector.

Table 2: Commercial Sector Urinal Water Use vs. Total Indoor Water Use

Category	Low End of Range	High End of Range
Office Building	56%	69%
Restaurant	10%	16%
Supermarket	14%	26%

This program will target sites with large numbers of urinals including public sector facilities (schools, cities, counties and state facilities) as well as restaurants, bars, office buildings, sporting and entertainment venues, gasoline stations and other high-traffic/ high use locations.

Marketing water use efficiency to these sites will be more proactive and targeted than with traditional rebate programs. The public sector sites and office buildings would be contacted via business-to-business phone calls with follow-up, in-person meetings as necessary. Restaurants and bars would, for the most part, be targeted through door-to-door canvassing.

While great strides have been made to decrease water use in the residential sector over the last two decades, specifically with efficient toilet fixtures, implementing similar measures in the CII market have not been nearly as successful in our service area. Despite this fact, nearly every type of business can save water by installing water efficient urinals. **There is no shortage of potential program participants.** The table below is a snapshot of select high traffic targets in the Western service area.

Table 3: High Traffic Targets

Business Type	Number of Businesses
Restaurants and Bars	30,926
Amusement and Recreation Facilities	3,918
Gasoline Stations	2,028

Quantifying non-conserving urinals

Using a CUWCC CII study from 2010, Southern California area business directories arranged by zip code, and North American Industry Classification System (NAICS) data, Western's water use efficiency team has disaggregated the businesses within its 530 square mile service territory. A review of the data reveals that there is a great opportunity for water savings if the Department of the Interior, Bureau of Reclamation were to award a WaterSMART grant for this project.

The following table, taken from the CUWCC's BMP 9 Handbook, tabulates the number of toilets in the CII sector by the size of the employer.

Table 4: Toilets per Site by Employment Size

Num. Employees	1 to 9	10 to 19	20 to 49	50 to 99	100 +
Industrial	2.0	2.6	4.8	8.0	18.0
Retail/Wholesale	2.0	2.4	5.3	9.0	13.1
Eating and Drinking	2.0	2.5	4.3	7.7	11.6
Office	2.0	3.4	8.1	18.1	32.6
Health Care	2.2	6.3	15.0	32.4	65.2
Church	3.1	9.1	21.6	21.6	21.6
Government	2.0	2.9	7.0	15.3	25.9
Other	2.0	2.3	5.7	12.7	19.4

According to the CUWCC's PBMP report on High Efficiency Toilets and Urinals, urinals comprise approximately 25 to 30 percent of the total number of all toilet fixtures (men and women). Therefore using the quantity of toilets per site by employment size chart from the CUWCC CII study, Western's project team has calculated an estimated total number of urinals in targeted businesses throughout the service area at nearly 16,000. When considering the plumbing code change of 1992 and the rate of commercial sector growth in southwestern Riverside County since the code went into effect, we have purposefully understated the remaining potential for participation in this program by reducing the total by 50 percent. The potential water savings in the remaining 8,000 units is nearly 10,000 acre feet, if all were replaced. Recognizing the reality that not all commercial customers will be enticed to participate – even with a free product – **Western is seeking a WaterSMART grant to assist in the replacement of just 25 percent of the potential targets through this project or a total of 2,000 urinals over a two year timeframe.**

Estimated Urinals in Western Territory	15,935
% of Urinals Already at 1.0 gpf or Less	50%
Remaining Potential Available for Upgrade	7,967
Savings Potential if All Remaining Fixtures were Upgraded	9,779 acre-feet

Program Cross Pollination – Another Water / Energy Partnership

There is an economic benefit to both customer and agency to cross-market viable water conservation measures in the Western region. Western has an excellent relationship with the regional energy utilities and will create a water/energy program synergy; leveraging customer site visits being visited under other programs.

Riverside Public Utilities as well as Southern California Edison (SCE) currently have direct install programs that offer free product and installation of energy conservation measures. The programs are run through subcontractors. Western will work with the City of Riverside and SCE as well as their subcontractors in their respective energy service areas to produce leads for the program.

The energy efficiency subcontractors will collect data on the flush volume and amount of urinals at the site, as well as general interest in the program. Western's subcontractors will then contact the interested business owners or managers to enlist them in the urinal flush valve upgrade program.

How Does the Project Stack Up?

Installation numbers and water savings under Western's High Efficiency Urinal Program are projected to be the following:

Number of devices to be installed annually	1,000 flush valves
Total number of devices installed	2,000 flush valves
Annual savings per device retrofitted	20,000 gallons/yr
Lifetime savings per device (20 yr life)	400,000 gallons/life or 1.23 AF
Annual water savings for program	123 acre-feet
Lifetime water savings for program	2,455 acre-feet
Total cost per acre-foot saved	$237

Clearly this unique programmatic approach to reach a reticent yet cost-conscience customer group is cost-effective. Western's established relationships with the wholesale and retail customers it serves, coupled with the very conservative calculations of the market potential, will ensure the projected water savings goals are met.

1.4 Evaluation Criteria

Brief narratives describing how the proposed project meets grant criteria are provided in the following subsections. The evaluation criteria, as described in the Funding Opportunity Announcement, are presented in an abbreviated format in *italics*, followed by specific information on the proposed project.

1.4.1 Evaluation Criterion A: Water Conservation

1.4.1.1 Subcriterion No. A.1 (a) – Quantifiable Water Savings

Describe the amount of water saved. Applicants proposing high efficiency indoor appliances and fixtures should address the following:

- *How have average annual water savings estimates been determined? Please provide all relevant calculations, assumptions, and supporting data.*
- *What types (toilets, clothes washers, shower heads, etc.) of appliances and fixtures will be installed and what quantity of each?*
- *Have studies been conducted to verify the existence of non-efficient appliances and fixtures? Provide published water savings rates for each of these devices and reference the source for each of the device savings rates.*
- *Will the devices be installed through rebate or direct-install programs?*
- *How will actual water savings be verified upon completion of the project?*

This High Efficiency Urinal Flush-Valve Upgrade project is a turn-key program designed to directly-install only the flush valve in urinals in qualifying high traffic locations. The customer will be offered free production and free installation. This project requires the removal of the existing non-conserving flush valve and the installation of a new high efficiency valve. The finished installation looks virtually the same as a traditional urinal.

The proposed project will directly-install 2,000 flush-valves over a two year period decreasing water usage by an estimated 123 AFY. There are currently several viable flush-valves available on the market. Western will solicit competitive bids for the product. The valves must meet all manufacturing standards and testing protocols. Products to be considered would include the following mandates:

- Flush rate of 0.5 gallons per flush or less
- Certified by the American National Standards Institute (ANSI)
- EPA WaterSense labeled

The expected life of the valves is 20 years. As a result, the project is estimated to save a total of 2,455 AF over the life of the valves. In 2011, Western's annual water supply was approximately 85,000 AF. Water saved through the High Efficiency Urinal Flush-

Valve Upgrade project will reduce indoor water demand in the commercial sector, making potable water available for other uses.

Annual water savings potentials for the program were calculated using Metropolitan's estimate of the amount of water saved through the installation of high efficiency urinals. This information can be found in Metropolitan Water District Board letter 8-8 reviewed in 2005 and uses to establish the regional rebate value for the entire Metropolitan service area.

The annual water savings associated with the proposed project was calculated using the following equation:

2,000 flush-valves installed x 20,000 gallons per year of water saved

= 123 AFY of total annual project water savings

Industry estimates cite the average lifespan of a urinal at 20 years. The total life time savings water calculated with the following equation:

123 AFY x 20 years = 2,460 acre feet

As explained in greater detail in the Performance Measures section of this application (Section 2), the above water savings estimation will be verified through by installing a USB port in 10% of the urinals retrofitted. This will allow Western to monitor the water use and reduction of the program.

1.4.1.2 Subcriterion No. A.2 – Percentage of Total Supply

Provide the percentage of total water supply conserved: State the total average annual water supply in acre-feet. Please use the following formula:

$$\frac{Estimated\ Amount\ of\ Water\ Conserved}{Average\ Annual\ Water\ Supply}$$

Western is planning to install 2,000 high efficiency flush-valves in its general service area. The proposed project will conserve 0.14 percent annually of Western's total annual supply over the 20 year life of the valves, as calculated using the following equation.

$$\frac{123\ \text{AF of annual savings}}{85{,}000\ \text{AF (2011 supply delivered)}} = 0.14\%$$

1.4.1.3 Subcriterion No. A.3 – Reasonableness of Cost

Please include information related to the total project cost, annual acre-feet conserved (or better managed), and the expected life of the improvement. Use the following calculation:

$$\frac{Total\ Project\ Cost}{(Acre-Feet\ Conserved\ or\ Better\ Managed * Improvement\ Life)}$$

The High Efficiency Urinal Flush-Valve Upgrade project is a highly cost-effective indoor plumbing program because it leverages large volumes of water savings with minimal resources and low staff time approach to implementation. The per AF cost to conserve water under this program is $237, as determined using the following calculation, which includes the industry accepted life-expectance for high efficiency urinal flush-valves, twenty years:

$$\frac{\$584{,}157}{123\ AFY\ conserved\ x\ 20\ year\ valve\ lifetime} = \$237$$

1.4.2 Evaluation Criterion B: Energy-Water Nexus

1.4.2.1 Subcriterion No. B.1 – Implementing Renewable Energy Projects Related to Water Management and Delivery

The proposed project does not include implementation of renewable energy components, but will increase energy efficiency. Please see Subcriterion No. B.2.

1.4.2.2 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.

Energy is used in all stages of the water use cycle. Energy is used to divert or pump water, to transport water, to treat water, and to distribute it to homes and businesses. Southern California relies heavily on water imports from the Colorado River and from the State Water Project (Northern California). Water travels hundreds of miles and must be pumped over mountain ranges prior to treatment and delivery. The California Energy Commission estimates that it requires 3,324 kWh per AF of water conveyed, treated and delivered in Southern California.

Water conservation decreases the amount of water diverted, pumped and treated and therefore directly and proportionally decreases the amount of energy utilized. Based on

past performance of this program, the High Efficiency Urinal Flush-Valve Upgrade Program is anticipated to result in water conservation of 123 AFY. Implementation of this program results in an annual reduction of 408,852 kWh.

123 AFY x 3,324 kwh/AF = 408,852 kWh saved annually

Based on calculations using $5.883x10^{-4}$ metric tons of carbon dioxide per year per kWh, approximately 241 metric tons of carbon dioxide release will be avoided annually.

408,852 kWh x $5.883x10^{-4}$ t CO2/year/kWh = 241 t CO2 avoided annually

1.4.3 Evaluation Criterion C: Benefits to Endangered Species

The High Efficiency Urinal Flush-Valve Upgrade Project will benefit endangered species by reducing demand for imported water from the State Water Project, the Colorado River, as well as reducing demand for water from local Southern California streams. This program is one part of a broader effort to reduce water diversions and improve in stream flows. Efforts to improve the status of endangered species include:

1. The Bay-Delta Conservation Plan (State Water Project). There are more than seven fish species listed under the Federal Endangered Species Act that occur in the Delta. In addition there are more than 53 plant species, nine mammal species, 10 bird species, and 23 amphibian, reptile, and invertebrate species considered to be sensitive species in the Delta (Calfed Bay-Delta Program calwater.ca.gov/delta/species/index.html). The Bay Delta Conservation Plan seeks to improve the health of the Delta as a whole (rather than on a species by species basis). The Bay-Delta Conservation Plan contemplates a suite of activities designed to improve the health of natural communities. Primary plan activities include habitat restoration actions, water conservation, and modifying the placement and operation of major water pumping and diversion facilities.

2. The Lower Colorado River Multi-Species Habitat Conservation Plan. The Lower Colorado River Multi-Species Conservation Program is a plan that contains general and species-specific conservation measures for twenty-six covered species and five evaluation species. Covered species are species included under the Endangered Species Act incidental take authorization and are either currently listed or proposed for listing as threatened or endangered under Federal Endangered Species Act or are protected under Arizona, California, or Nevada law; or may become listed during the 50 year plan term. Species covered under the Lower Colorado River Multi-Species Habitat Conservation Plan include four fish, twelve birds, four mammals, two reptiles, one amphibian, one insect, and two plants

The proposed project is consistent with the efforts described above.

1.4.4 Evaluation Criterion D: Water Marketing

Briefly describe any water marketing elements included in the proposed project.

1. *Estimated amount of water to be marketed*
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)*
3. *Number of users, types of water use, etc. in the water market*
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)*
5. *Estimated duration of the water market*

Within the Metropolitan service area, any decreased use in imported water by one member agency can be made available for marketing to another member agency.

1.4.5 Evaluation Criterion E: Other Contributions to Supply Sustainability

Explain any additional benefits of the proposed project to a WaterSMART Basin Study, how the project could expedite future on-farm improvements, or how the project will provide other benefits to water supply sustainability within the basin.

1. *Points may be awarded for projects that address an adaptation strategy identified in a WaterSMART Basin Study.*
2. *Points may be awarded for projects that will help to expedite future on-farm irrigation improvements, including future on far improvements that may be eligible for NRCS funding.*
3. *Points may be awarded for projects that include other benefits to water supply sustainability.*

The proposed project will make water available to support existing and future water demands in Southern California and is consistent with and recognizes the recommendations and findings of the recently released WaterSMART Colorado River Basin Study. The study found that demands for water in the Colorado River Basin will increase over the next 50 years, while the frequency and severity of water shortages will increase as well. Water use efficiency projects in the Colorado River Basin (and in the Basin states dependent on basin water supplies) will fast become much more valuable in stretching supplies during drought and shortage years.

By year 2035 Western's forecasted demand will increase by approximately 91% as population increases and agricultural lands are converted for municipal/industrial uses (Western 2010). At buildout (estimated sometime after year 2040), total demands on

Western water supplies are projected to be almost double the current demands. Western obtains approximately ninety percent of its total supply through imported water sources from Metropolitan. About one-quarter of the water Western purchases from Metropolitan comes from the Colorado River Aqueduct and about three-quarters from the State Water Project (SWP), which transports water from Northern California via the California Aqueduct.

As demands increase within both Western and Metropolitan's service areas, environmental pressures and overall demand as a result of increasing population are also increasing on both the State Water Project and the Colorado River Aqueduct, threatening the reliability of imported water supplies throughout California and the western United States. In recent years, SWP deliveries have been reduced in order to protect several endangered species, and in the Colorado River system the available water has been over-apportioned.

By relying more heavily on water conservation to meet future water demands, Western can reduce its demand on imported water from Metropolitan and Metropolitan can, in turn, store more imported water locally to buffer against droughts and other unexpected water supply shortages.

1. *Does the program promote and encourage collaboration among parties?*

Western will offer this program in its general service area which encompasses 527 square miles in western Riverside County. All 13 water purveyors within the District with commercial customers may participate in the program. All agencies will benefit from a consistent region-wide conservation message and program. Offering the program within a contiguous geographical area reduces confusion among water customers served water by participating and non-participating agencies, in turn, increasing program acceptance and success.

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

Offering the High Efficiency Urinal Flush-Valve Upgrade project to the Western service area significantly increases the program's overall potential for water savings by leveraging economies of scale and unified regional messaging over a large geographical area while providing the opportunity for any retail agency within Western's boundaries to expand their landscape water conservation efforts.

The project will also include signage above each upgraded urinal to increase public awareness of water conservation. If awarded funding through this grant program, the sign will state that the upgrade was funded by Western and the Bureau of Reclamation.

While the High Efficiency Urinal Flush-Valve Upgrade project does not directly promote energy efficiency, the reduction of potable water demand reduces the amount of energy required to pump and treat that water prior to delivery to the customer. As described in section 1.4.2, based on estimates by the California Energy Commission, reductions in water use of 2,460 AF will have an energy savings of approximately 408,852 kWh saved annually.

1.4.6 Evaluation Criterion F: Implementation and Results

1.4.6.1 Subcriterion No. F.1 – 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 in relation to other potential projects.*

This project is consistent with the Colorado River Basin Study and Western's Integrated Regional Water Management Plan and its Urban Water Management Plan. Additionally, Western's Board proactively adopted a Water Use Efficiency Master Plan in 2008. This project is consistent with the goals outlined in the plan.

Western is a signatory of the CUWCC and is implementing the BMPs as stated in the CUWCC MOU. The High Efficiency Urinal Flush-Valve Upgrade project is consistent with the requirements of the MOU.

The High Efficiency Urinal Flush-Valve Upgrade program is also supported by regional water supply planning undertaken by Metropolitan. In August 2011 Metropolitan adopted a Long Term Conservation Plan, which outlines the strategies it will implement to achieve the water savings targets contained in its Integrated Water Resources Plan 2010 Update (IRP). IRP targets reflect a 20 percent reduction in regional per capita water use by 2020 through increased conservation and water recycling. The potential for significant water savings and the ability to reach a large number of customers means this program supports all three of the goals outlines in the Long Term Conservation Plan:

1. Achieve the 2010 IRP Update conservation target. New conservation and recycled water projects are needed to meet the water savings target.
2. Pursue innovation that will advance water conservation.
3. Transform the public's perception of the value of water within this region. A higher value on water could further develop a conservation ethic that leads to permanent change in water use behavior, earlier adoption of new technologies, and transition towards climate-appropriate landscapes.

2. *Identify and describe any engineering or design work performed specifically in support of the proposed project.*

The High Efficiency Urinal Flush-Valve Upgrade project is not a traditional engineering or design project.

3. *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).*

At the local and regional level the High Efficiency Urinal Flush-Valve Upgrade program will aid both Western and Metropolitan in their efforts to meet the water conservation goals contained in their respective Water Use Efficiency Master Plan and Long Term Conservation Plan, as described above.

At the State-wide level, the High Efficiency Urinal Flush-Valve Upgrade project directly supports the goals of California's 20X2020 Water Conservation Plan (2010) and the associated legislation SBx7-7 (2009), which aims to achieve a 20 percent reduction in urban per capita water use in California by 2020. As SBx7-7 is written, urban water suppliers are required to set water use reduction targets and demonstrate associated water use savings in a cooperative effort to reduce the State's overall water use by 20 percent. This program is one of the programs Western has chosen to implement to meet water savings targets in support of the State's efforts to reduce its total water use.

1.4.6.2 Subcriterion No. F.2 – Readiness to Proceed

Describe the implementation plan of the proposed project. Include an estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates.

The overall project schedule is provided in Figure 2. The proposed project could proceed immediately upon entering into a financial assistance agreement. No permits are required to implement the proposed project.

1.4.6.3 Subcriterion No. F.3 – Performance Measures

Provide a brief summary describing the performance measures.

The program performance will be measured by installing flush valves with a USB port in ten percent of the upgraded urinals. This USB port will track the number of flushes per device and allows for data retrieval. Data will be retrieved from each fixture four times over a one year period. Based on existing flush rates, savings will be calculated. Aggregate savings will then be computed and a final report will be generated.

Please see Section 2 for a detailed description of these performance measures.

Figure 2: Project Schedule

Task Description	2013			2014												2015										
	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11
Contract Award and Execution																										
Draft Final Project Scope of Work																										
Execute Contract with DWR																										
Product Procurement and Installation Contractor Selection																										
Build List of Potential Installation Contractors																										
Draft RFP for Urinal Valve Purchase and Installation																										
Evaluation Bid Responses for Urinal Product and Installation and Select Winning Vendor																										
Generate Purchase Order and Agreement with Installation Contractor																										
Information Systems and Reporting																										
Define Required Data Points																										
Create Weekly, Monthly, Quarterly and Annual Reports																										
Submit Reports																										
Produce and Submit Final Report																										
Marketing Outreach																										
Generate Customer Target List																										
Create Program Identity and Theme																										
Design and Print Program Collateral Materials																										
Conduct Telesales Campaign to Public Sector, Office Buildings, Entertainment Venues																										
Conduct Door-to-Door Sales to Gas Stations, Restaurants, and Bars																										
Installation and Data Collection																										
Draft Installation Work Order																										
Perform Urinal Installation																										
Collect Fixture Information and Complete Program Paperwork																										
Data Entry: Customer Information and Installation Data																										
Measurement and Verification																										
Meet with Engineering Firm																										
Finalize Measurement and Verification Plan																										
Select Monitoring Sites Based Upon Target Business Types and Size																										
Obtain Agreement from Monitoring Sites to Install USB Port Model and Revisit Sites																										
Install USB Port Model at Selected Sites																										
Conduct Site Visits to Collect Flush Counts																										
Generate Program Savings Results																										
Produce and Submit Final M&V Report																										

1.4.7 Evaluation Criterion G: Additional Non-Federal Funding

State the percentage of non-Federal funding provided.

$$\frac{Non - Federal\ Funding}{Total\ Project\ Cost}$$

Western's share of the project is $375,000, or 64% of the total project costs.

$$\frac{\$375{,}000}{\$584{,}157} = 64\%$$

1.4.8 Evaluation Criterion H: Connection to Reclamation Project Activities

1. *How is the proposed project connected to Reclamation project activities?*

The proposed project will be implemented within southern California which is within the area that receives water from the Lower Colorado River/Boulder Canyon Project. Retail agencies in the Western service area will be targeted for the High Efficiency Urinal Flush-Valve Upgrade project and Colorado River water makes up approximately 25 percent of Western's current and future supply. Western also relies on water from the State Water Project diverted in the California Bay Delta, diversions which can impact the operation of Reclamation's Central Valley Project.

2. *Does the applicant receive Reclamation project water?*

As mentioned above, approximately 25 percent of Western's imported water purchases come from the Colorado River via the Colorado River Aqueduct.

3. *Is the project on Reclamation project lands or involving Reclamation facilities?*

The High Efficiency Urinal Flush-Valve Upgrade project will target commercial property owners to improve indoor water use efficiency. The project would not directly involve Reclamation project lands or involve Reclamation facilities.

4. *Is the project in the same basin as a Reclamation project or activity?*

The proposed program will target water agencies in the Western general service area which is within Reclamation's Lower Colorado Region.

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

The proposed project will reduce demands for water in southern California. This in turn will reduce demands for both Colorado River Water (Reclamation's Boulder Canyon Project) and Sacramento-San Joaquin Delta water (Reclamation's Central Valley Project).

Section 2: Performance Measures

Western understands the need for a robust measurement and evaluation plan for any new program concept. To this end, Western has developed performance measures and an evaluation process that provides the means for ample data collection to be used to determine product and program effectiveness.

Below are program performance goals:

Table 5: Program Performance Goals

Performance Goal	Year 1	Year 2	Product Lifetime
High Efficiency Urinal Valve Installations	1,000	1,000	2,000
Water Savings (AF)	123	123	2,460
Wastewater Savings (AF)	123	123	2,460
Energy Savings (kWh/year)	408,852	408,852	8.0 M
Program Costs ($)	292,078	292,079	584,157
Applicant Funds ($)	187,000	187,000	375,000
Requested USBR Grant Funds ($)	104,578	104,579	209,157
Cost per Acre-foot – Total Costs ($)			237
Cost per Acre-foot – Applicant ($)			152
Cost per Acre-foot – USBR ($)			**85**

In conducting the measurement and evaluation of water use efficiency programs there are three major areas to study:

1. Impact Evaluation (savings measurement and installation verification)
2. Program Evaluation (process evaluation and implementation effectiveness)
3. Market Assessment (potential opportunity and measure saturation)

The impact evaluation will estimate the net changes in water usage by installing the high efficiency urinal valves, and it will estimate the rate of installation.

The program evaluation will assess the effectiveness and efficiency of the delivery mechanism in terms of level of customer participation, implementation effectiveness, and cost.

The market assessment will estimate the potential savings opportunity for installation of high efficiency urinals, the device saturation, and savings potential. The assessment should include not only technical savings potential, but also a measure of feasible and cost-effective level savings.

Impact Evaluation

New 0.5 gallons per flush valves will be installed for fixtures operating at 1.5 gallons per flush or higher. For every installation the contractor will log the existing gallons per flush of each fixture. Ten percent of the newly installed flush valves will contain a USB port access point to a data logger that tracks the number of flushes per device.

The product to be used for the evaluation is called the Zurn HydroVantage. The valve has a USB data retrieval port that logs the number of flushes. It is designed with self-generating power through a self-sustaining hydro generator. The hydro generator creates electrical energy with each flush and stores information in a rechargeable energy cell. The valve also has a sensor technology that continually monitors ambient light levels and traffic patterns to eliminate false flushing.

Program staff will return to the 10% of fixtures with installed Zurn HydroVantages in order to retrieve the number of flushes through the USB port. A representative sample of sites will be selected from each business type (i.e. office building, restaurant, bar) as well as size (small, medium, large). Data will be retrieved from each fixture four times over a one year period; in month one, month six, month nine, and month twelve of each program year.

Based upon the existing flush rates collected for each fixture and flush counts collected through the 10% of fixtures installed with the USB port, savings will be calculated.

Savings will be stratified in accordance with the business type and size. Aggregate savings will then be computed and a final report will be generated.

In addition to tracking the number of flushes, program staff will also conduct installation verification inspections. The purpose of the installation verification is to confirm the number of urinals installed vs. reported through the program data as to make inferences to the larger population of participants. Program staff will inspect a minimum of 3-5% of urinal installations. The sites will be selected from the participant pool of customers. The site verification and survey will include the verification of installations as well survey and verify other site characteristics as needed.

Program Evaluation

In addition to the impact analysis program staff will evaluate program operations and customer service. Program staff will routinely monitor production to goal. The current goal is to conduct approximately 111 high efficiency urinal valve installations per month. Staff will report actual installations on a weekly and monthly basis. Staff will also conduct electronic surveys to assess customer satisfaction with the program process as well as the new high efficiency urinal valves. We expect that as implementation proceeds and the customers and contractor provide feedback, fine-tuning of program processes may be required. This includes a possible re-focusing of marketing and outreach efforts into sites more likely to have high flow fixtures.

Market Assessment

Western has taken the initial steps to assess the urinal market in its territory as documented in Section 1. Technical Project Description. As the program proceeds Western will re-visit and validate its initial assumptions. We have modestly projected the "penetration" of the ultra-low volume urinal market at approximately 50% of the market which indicates that much remains to be done; however, as the program successes are communicated to others, interest in the program may expand rapidly, thus expanding the water conservation benefits derived from the valve replacement program.

Section 3: Environmental and Cultural Resources Compliance

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 impact.*

The project involves replacement of the flush-valve in commercial urinals. No earth disturbing work would be required and the potential for ground disturbance is minimal. Because the project will decrease urban runoff and associated pollutants (fertilizers, pesticides, gasoline, trash) it will incrementally improve water quality. Under the National Environmental Policy Act "maintenance, rehabilitation, and replacement of existing facilities which may involve a minor change in size, location and/or operation", such as that which would occur under the proposed project, qualify for a Categorical Exclusion. Similarly, the project is exempt from the California Environmental Quality Act (CEQA). Under section 15304 of the CEQA Guidelines minor alterations to land, including activities such as "gardening and landscaping" are exempt from CEQA.

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?*

The project involves replacement of the flush-valve in commercial urinals. It is not likely to adversely affect a species listed under the Federal Endangered Species Act. However, this service area is highly dependent on water from the State Water Project and any savings from this program will translate into reduced diversions from the Delta region which is inhabited with the endangered Delta Smelt.

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.*

The project involves replacement of the flush-valve in commercial urinals. It is unlikely that the project would affect wetlands or other surface waters that are considered "waters of the United States" under the Clean Water Act. Nor is the project likely to adversely impact water quality.

4. *When was the water delivery system constructed?*

The water delivery system was originally constructed in 1954 and has been continually improved.

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.*

The project involves replacement of the flush-valve in commercial urinals. These changes will occur indoors on commercial lots. The project will not result in

modifications to the broader irrigation system owned or operated by a retail water provider or irrigation district.

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.*

In order to qualify for the National Register of Historic Places a property must:

- Be associated with events that have made a significant contribution to the broad patterns of history;
- Be associated with the lives of persons significant in the past;
- Embody the distinctive characteristics of a type, period, or method of construction, represents the work of a master, possesses high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction; or
- Have yielded, or may be likely to yield, information important in prehistory or history.

There are no known buildings, structures, or features listed on the National Register of Historic Places that would be affected by the proposed project.

7. *Are there any known archeological sites in the proposed area?*

There are no known archeological sites that would be affected by the proposed project.

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

This project is not anticipated to have any adverse effects on low income or minority populations.

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

Upgrades of urinal flush-valves on commercial properties will not limit access to, or ceremonial use of, Indian sacred sites or 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?*

This upgrade of urinal flush-valves will not contribute to the introduction, continued existence, or spread of, noxious weeks or non-native invasive species.

Section 4: Required Permits or Approvals

No permits or approvals are needed to implement the proposed project.

The proposed project does not include a renewable energy component subject to FERC permitting or a Reclamation Lease of Power Privilege.

Section 5: Official Resolution

The Board of Directors for the Western Municipal Water District will review a resolution on February 6th, 2013 to give the General Manager authority to execute a Cooperative Agreement with Reclamation for implementation of the proposed project. The resolution agrees to use the funds identified in this funding plan for the proposed project. The official resolution will be submitted following the February 6th Board Meeting. A draft resolution is provided in Appendix A.

Section 6: Project Budget

6.1 Funding Plan and Letter of Commitment

The estimated project cost for the proposed project is $584,157. With this application, Western is requesting approximately 36 percent of the total project costs, $209,157. Western proposes to fund the proposed project using Reclamation funding and its own funding from wholesale water use efficiency funds as approved through Western's regular budget process.

Activities in this proposal (and budget) will occur after the project start date. All costs will be incurred after this date.

There are no other funding partners for this program. Western will fund the full amount needed that is not provided by Reclamation.

Table 6: Summary of Non-Federal and Federal Funding Sources

Funding Sources	Funding Amount
Non-Federal Entities:	
1. Western Municipal Water District	$375,000
Non-Federal Subtotal:	$375,000
Other Federal Entities:	N/A
Requested Reclamation Funding:	$209,157
Total Project Funding	$584,157

*In-kind services.

The proposed project falls under Funding Group I.

6.2 Budget Proposal

Table 7: Funding Sources

Funding Sources	Percent of Total Project Cost	Total Cost by Source
Recipient Funding	64%	$375,000
Reclamation Funding	36%	$209,157
Other Federal Funding	0%	$0
Totals:	100%	

The budget for the proposed project is provided in Table 8.

6.2.1 Salaries and Wages

There is one Western staff person included in the proposed project budget. Tim Barr will serve as the project manager. This will include all communication with consultants and participating agencies within Western's general service area, invoice processing, and program administration. All staff time in the proposed budget will contribute to Western's in-kind contribution to project funding.

Salary increases for Western staff may occur at two different times:

1. July for annual cost of living increases based on the consumer price index (CPI). Cost of living increases, if any, must be approved by the Board of Directors. The annual change in CPI has varied greatly over recent years and cannot be reasonably estimated for upcoming years.

2. July for merit (or "step") increases. Merit increases, if any, must be approved by the employee's supervisor and the General Manager. The salaries included in the proposed budget represent the mid-range for the positions listed. During the course of the grant, Western will assign the tasks included in the budget only to staff in the middle of the salary range so merit increases will not affect the budget.

Due to the fact that Western salary costs are a very small portion of the overall project cost, it is not anticipated that future increases in salary will have a significant impact on the project cost and estimates and those increases are not reflected in the budget table.

6.2.2 Fringe Benefits

Western staff hourly unit rates, described in Section 6.3.1 of this application, are based on unburdened rates. Fringe benefits and any indirect costs have not been included in either staff hourly rates or the overall project budget.

6.2.3 Travel

Travel is not required for the High Efficiency Urinal Flush-Valve Upgrade project.

6.2.4 Equipment

No equipment is required to implement the High Efficiency Urinal Flush-Valve Upgrade program.

6.2.5 Materials and Supplies

Flush Valves

The proposed project includes the installation of 2,000 urinal flush-valves. Two types of flush valves will be installed on the project. Western will hire a licensed commercial plumbing contractor through a formal bid process to purchase and install the valves. The bid will specify the type of valves to be purchased. Utilizing the contractor to purchase the valves provides the cost advantage of the contractor's purchasing economies of scale.

1. Standard piston activated 0.5 gallons per flush valve - The standard valve will be required to be WaterSense labeled using no more than 0.5 gallons per flush and complying with existing standards for flushing urinals. The valves costs $120.00 each and Western proposes to install the standard valve in 90% of the installations (1,800 urinals) for materials cost of $216,000.
2. Hydro generator powered 0.5 gallons per flush valve with sensor technology and a USB port reader – Western has selected the Zurn HydroVantage flush valve for

the project because it is currently the only product on the market that has the hydrogenerated power, sensor technology and USB port reader. The valves costs $500.00 each and Western proposes to install the HydroVantage valves in 10% of the installations (200 urinals) for materials cost of $100,000.

Project Signs

The program will install signs above each upgraded urinal. If awarded funding through this program, the sign will state that the upgrade was funded by Western and the Bureau of Reclamation. The signs cost $2.00 each and Western proposes to install them above 100% of the installations (2,000) for a materials cost of $4,000.

6.2.6 Contractual

Maureen Erbeznik & Associates – Management, Administration, and Reporting

Maureen Erbeznik & Associates will be responsible for management and administration of the High Efficiency Urinal Flush-Valve Upgrade project. Maureen Erbeznik & Associates was hired by Western in 2008 to implement components of the approved Water Use Efficiency Master Plan. As part of this scope, Maureen Erbeznik & Associates provides program management support for several of Western's programs. Maureen Erbeznik & Associates will be responsible for the successful implementation of all program operations including:

- Program administration
- Production monitoring
- Contractor supervision
- Marketing materials development and strategy implementation
- Direct customer outreach
- Customer service support
- Quality control
- Reporting required to manage project and comply with this funding opportunity.

Costs for Maureen Erbeznik & Associates are based on a proposal provided by the consultant.

Installation and Monitoring Contractor
Through a formal bid process, Western will hire a licensed commercial plumbing contractor to purchase and install the flush-valves. Costs for the purchase and

installation of the valves were estimated utilizing initial quotes from local plumbing contractors and product vendors.

In accordance with the California Public Contract Code and the requirements for federal funding, all contractors and subcontractors will be required to pay the higher for the state of federal prevailing wage on this project.

6.2.7 Environmental and Regulatory Compliance Costs

The project involves installation of high efficiency urinal flush valves. No earth disturbing work would be required and the potential for ground disturbance is minimal. Under the National Environmental Policy Act "maintenance, rehabilitation, and replacement of existing facilities which may involve a minor change in size, location and/or operation", such as that which would occur under the proposed project, qualify for a Categorical Exclusion. Similarly, the project is exempt from the California Environmental Quality Act (CEQA). For this reason no costs related to environmental or regulatory compliance have been budgeted.

6.2.8 Reporting

Reporting documents will be prepared by Western's project administrator for review by Western's project manager, Tim Barr. These costs are included under "Contractual".

6.2.9 Other Expenses

No other costs are expected or included in the proposed budget.

6.2.10 Indirect Costs

Indirect costs and any fringe benefits have not been included in either staff hourly unit rates or the overall project budget.

6.2.11 Total Cost

The total cost of the proposed project is $584,157. Western is requesting $209,157 in funding from the Bureau of Reclamation to fund the purchase and installation of 2,000 urinal flush-valves. This represents 36% of the total project costs. No other Federal funding has been requested or received for this program.

Table 8: Project Budget

Budget Item Description	Computation $/Unit	Computation Quantity	Quantity Type (hours/days)	Total Cost
Salaries and Wages				
Tim Barr, WUE Manager	$ 61.96	80	hours / project	$ 4,957
Fringe Benefits				
Full-Time Employees			N/A	$ -
Part-Time Employees			N/A	$ -
Travel				
Trip 1			N/A	$ -
Trip 2			N/A	$ -
Trip 3			N/A	$ -
Equipment				
Item A			N/A	$ -
Item B			N/A	$ -
Item C			N/A	$ -
Supplies/Materials				
Standard Flush-Valve	$ 120.00	1800	valves	$ 216,000
Zurn HydroVantage Flush-Valve	$ 500.00	200	monitoring valves	$ 100,000
Signage above urinal	$ 2.00	2000	units	$ 4,000
Contractual/Construction				
Flush-Valve Installation	$ 100.00	2000	valves	$ 200,000
Performance Monitoring	$ 56.00	200	site	$ 11,200
Maureen Erbeznik & Associates - Program Administration & Management	$ 24.00	2000	valves	$ 48,000
Other				
Reporting			N/A	$ -
Total Direct Costs				$ 584,157
Indirect Costs (%)			N/A	$ -
Total Project Costs				$ 584,157

Section 7: Funding Restrictions

The High Efficiency Urinal Flush-Valve Upgrade project has not incurred any costs prior to July 1, 2012.

Section 8: References

Alliance for Water Use Efficiency (Alliance). 2008. *A Water-Use Efficiency Plan-Review Guide for New Businesses.* www.allianceforwaterefficiency.org/WaterSmart_Guidebook_for_Businesses.aspx

California Energy Commission (CEC). 2005. *California's Water – Energy Relationship.* www.energy.ca.gov/2005publications/CEC-700-2005-011/CEC-700-2005-011-SF.pdf

California Urban Water Conservation Council (CUWCC). 2006. *Potential Best Management Practices – Annual Report – Year 2.* www.cuwcc.org/WorkArea/showcontent.aspx?id=7976

Metropolitan Water District of Southern California (MWD). 2005. Board Letter 8-8, December 13, 2005 Attachment 2.

Western Municipal Water District (Western). 2008. *Updated Integrated Regional Water Management Plan Report.* http://www.wmwd.com/DocumentView.aspx?DID=350. May.

Western. 2011. *2010 Urban Water Management Plan Update.* June.

Appendix A

Resolution to Execute Cooperative Agreement with the United State Bureau of Reclamation (Draft)

Attachment 1

RESOLUTION 2807

RESOLUTION OF THE BOARD OF DIRECTORS OF WESTERN MUNICIPAL WATER DISTRICT OF RIVERSIDE COUNTY AUTHORIZING THE DISTRICT'S APPLICATION FOR THE BUREAU OF RECLAMATION WATERSMART GRANT FOR FINANCIAL INCENTIVES FOR HIGH EFFICIENCY URINAL FLUSH VALVE RETROFIT PROJECT

WHEREAS, Western Municipal Water District (Western) of Riverside County ("Western") is a municipal water district established pursuant to Section 71000 et seq. of the California Water Code; and,

WHEREAS, Western, by way of Board adoption of the District's Water Use Efficiency Master Plan and Implementation Strategy in December of 2008 has affirmed the importance of efficient water use; and,

WHEREAS, Western seeks to match local efficiency funds with federal grant funding provided by the United States Department of the Interior, Bureau of Reclamation to increase efficient use of water, reduce commercial water demands in compliance with SBx7-7 (20% by 2020), implement smart/green technologies; and,

WHEREAS, the Board of Directors of the Western Municipal Water District approves of the application for the Department of the Interior Policy and Administration, Bureau of Reclamation WaterSMART Grant Program: Water and Energy Efficiency Grants Fiscal Year (FY) 2013-2014, Funding Opportunity Announcement #R13SF80003; and

WHEREAS, Western agrees to the administration and cost sharing requirements of the WaterSMART Grant criteria.

NOW, THEREFORE, be it resolved by the Board of Directors of the Western Municipal Water District of Riverside County as follows:

Section 1. The District is hereby authorized to receive, if awarded, the WaterSMART Grant Program: Water and Energy Efficiency Grant funding in the amount up to $375,000 and to enter into an agreement with the Bureau of Reclamation for the receipt and administration of said grant funds.

Section 2. The General Manager, John V. Rossi, or his designee, is hereby authorized to take any and all action which may be necessary for the completion and execution of the project agreement and to take any and all other action which may be necessary for the receipt and administration of the grant funding in accordance with the requirements of the Bureau of Reclamation in connection with the Financial Incentives Program through offering financial incentives for landscape retrofitting.

Section 3. This resolution officially becomes a component part of Western's grant application.

Section 4. If any section, subsection, clause or phrase in this Resolution is for any reason held invalid, the validity of the remainder of this Resolution shall not be affected thereby. The Board hereby declares that it would have passed this Resolution and each section, subsection, sentence, clause, or phrase thereof, irrespective of the fact that one or more sections, subsections, sentences, clauses or phrases or the application thereof be held invalid.

Section 5. This Resolution shall be effective as of the date of adoption.

ADOPTED this 6th day of February, 2013.

THOMAS P. EVANS
President

February 6, 2013

I HEREBY CERTIFY that the foregoing is a full, true and correct copy of Resolution 2807 adopted by the Board of Directors of Western Municipal Water District of Riverside County at its Regular Meeting held February 6, 2013.

_____

BRENDA DENNSTEDT
Secretary-Treasurer