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*West Basin Municipal Water District*

Proposal for

**Restroom Retrofit Project**

**Proposition 50**  
**Urban Water Use Efficiency Implementation Grant**  
California Department of Water Resources

January 11, 2005

Prepared by

**CH2MHILL**

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Suite 3550  
Los Angeles, CA 90071

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**APPENDIXES**

Appendix A Map of West Basin Communities with Median Household Income  
Below \$38,000 Per Year

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# Project Information Form

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Applying for:

1. (Section A) Urban or Agricultural Water Use Efficiency Implementation Project

Urban  Agricultural

- (a) implementation of Urban Best Management Practice, # ix, xi
- (b) implementation of Agricultural Efficient Water Management Practice, # \_\_\_\_\_
- (c) implementation of other projects to meet California Bay-Delta Program objectives, Targeted Benefit # or Quantifiable Objective #, if applicable \_\_\_\_\_
- (d) Specify other: \_\_\_\_\_
- (e) research and development, feasibility studies, pilot, or demonstration projects
- (f) training, education or public information programs with statewide application
- (g) technical assistance
- (h) other

2. (Section B) Urban or Agricultural Research and Development; Feasibility Studies, Pilot, or Demonstration Projects; Training, Education or Public Information; Technical Assistance

3. Principal applicant (Organization or affiliation):

West Basin Municipal Water District

4. Project Title:

West Basin Municipal Water District Restroom Retrofit Project

5. Person authorized to sign and submit proposal and contract:

Name, title	Art Aguilar, Co-General Manager Rich Nagel, Co-General Manager
Mailing address	17140 S. Avalon Blvd., Ste. 210 Carson, CA 90746
Telephone	310-217-2411
Fax.	310-217-2414
E-mail	<a href="mailto:arta@wcbwater.org">arta@wcbwater.org</a> <a href="mailto:richardn@wcbwater.org">richardn@wcbwater.org</a>

6. Contact person (if different):

Name, title	Gus Meza, Conservation Coordinator
Mailing address	17140 S. Avalon Blvd., Ste. 210 Carson, CA 90746
Telephone	310-660-6209
Fax.	310-217-2414
E-mail	<a href="mailto:gusm@wcbwater.org">gusm@wcbwater.org</a>

7. Grant funds requested (dollar amount): \$ 884,500  
(from Table C-1, column VI)
8. Applicant funds pledged (dollar amount): \$ 889,100
9. Total project costs (dollar amount): \$ 1,773,600  
(from Table C-1, column IV, row n)
10. Percent of State share requested (%): 50%  
(from Table C-1)
11. Percent of local share as match (%): 50%  
(from Table C-1)
12. Is your project locally cost effective?  
*Locally cost effective means that the benefits to an entity (in dollar terms) of implementing a program exceed the costs of that program within the boundaries of that entity.*  (a) yes  
*(If yes, provide information that the project in addition to Bay-Delta benefit meets one of the following conditions: broad transferable benefits, overcome implementation barriers, or accelerate implementation.)*  (b) no
13. Is your project required by regulation, law or contract?  
If no, your project is eligible.  (a) yes  
If yes, your project may be eligible only if there will be accelerated implementation to fulfill a future requirement and is not currently required.  (b) no  
*Provide a description of the regulation, law or contract and an explanation of why the project is not currently required.*

14. Duration of project (month/year to month/year): Dec 2005 - Nov. 2006  
(1 year)
15. State Assembly District where the project is to be conducted:
- |                |       |
|----------------|-------|
| Paul Koretz    | AD 42 |
| Karen Bass     | AD 47 |
| Jerome Horton  | AD 51 |
| Mervyn Dymally | AD 52 |
| Mike Gordon    | AD 53 |
| Betty Karnette | AD 54 |
| Jenny Oropeza  | AD 55 |

16. State Senate District where the project is to be conducted: Sheila Kuehl SD 23  
Edward Vincent SD 25  
Kevin Murray SD 26  
Debra Bowen SD 28
17. Congressional district(s) where the project is to be conducted: Henry Waxman USC 30  
Diane Watson USC 33  
Maxine Waters USC 35  
Jane Harman USC 36  
Juanita Millender-  
McDonald USC 37  
Dana Rohrabacher  
USC 46
18. County where the project is to be conducted: Los Angeles
19. Location of project (longitude and latitude): 118W17 and 33N50
20. How many service connections in your service area (urban)? 42 MWD connections  
174,092 Residential  
Connections
21. How many acre-feet of water per year does your agency  
serve? Total – 222,000
22. Type of applicant (select one):
- (a) City
  - (b) County
  - (c) City and County
  - (d) Joint Powers Authority
  - (e) Public Water District
  - (f) Tribe
  - (g) Non Profit Organization
  - (h) University, College
  - (i) State Agency
  - (j) Federal Agency
  - (k) Other
    - (i) Investor-Owned Utility
    - (ii) Incorporated Mutual Water Co.
    - (iii) Specify \_\_\_\_\_
23. Is applicant a disadvantaged community? If 'yes' include annual median household income.  
(Provide supporting documentation.)
- (a) yes, \_\_\_\_\_ median household income
  - (b) No. *However, there are several cities, including Hawthorne, Inglewood, Lennox, and West Athens, within the WBMWD service area, that are disadvantaged communities. Please see map in Appendix A.*

# Statement of Work

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## Section One: Relevance and Importance

### Introduction

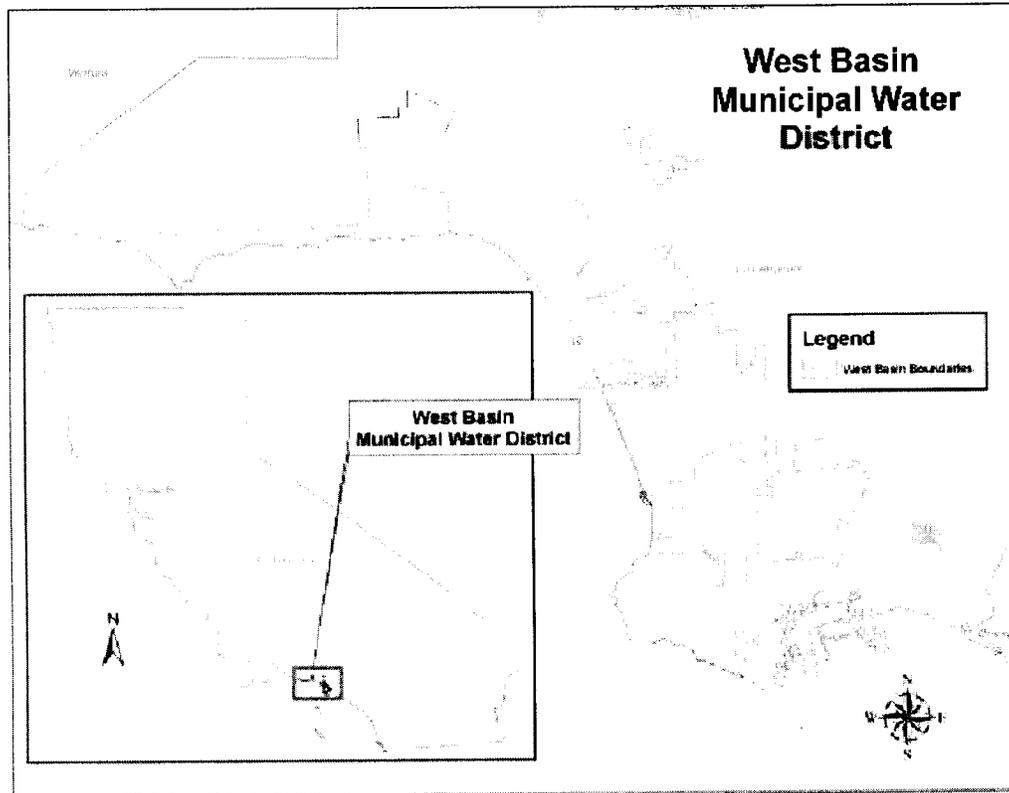
West Basin Municipal Water District (WBMWD) is requesting grant funding for the implementation of the Restroom Retrofit Project (Project). The Project will replace older inefficient, water closets, urinals, and faucets with efficient, water saving fixtures (0.8 gallons per flush [gpf] pressure assist toilets or 1.6 gpf flushometers, waterfree urinals, and battery or solar powered self-closing IR sensor faucets). The fixtures will be replaced on a bathroom wide scale in select commercial and municipal restrooms.

While prior projects have used combinations of some of these fixtures, this project is unique because it proposes a complete water-efficient restroom retrofit to be applied in the commercial and municipal sector. The restroom retrofits will be installed in restaurants, schools, parks, and municipal office buildings. WBMWD has a unique opportunity to market and implement this program due to the prevalence of commercial and municipal uses in its highly populated service area in the southeastern portion of Los Angeles County, as well as its reputation for water conservation projects.

Approximately 850 restrooms will be targeted in 17 cities (50 restrooms per city). In total, the Project will install 1,600 water use efficient toilets, 1,600 infra-red (IR) sensor controlled self-closing faucets, and 1,000 zero water use urinals in the WBMWD service area. Initial estimates are \$2,370 for a complete restroom installation, assuming six fixtures (two toilets, two urinals, and two faucets) per restroom.

Accelerating installation of complete restroom retrofits in the southern California region can lead to widespread application throughout the state, because implementation of this project will have verifiable, substantial financial benefits. Adoption of widespread restroom retrofits across the state would be particularly beneficial to the CALFED solution area because older, water-inefficient restrooms would be replaced before the end of their useful life. For a total cost of \$1,773,600 (annual value \$154,658 at 6 percent interest for twenty years), the Project will conserve 274 acre-feet per year. The annual value of the Projects water savings is \$146,590 per year. The Project total lifetime conservation will be over 5,400 acre-feet of purchased water with an avoided present value of \$1,681,376. This water savings will indirectly contribute to the Bay-Delta Program goals of increasing water supply reliability, improving water quality, and restoring the Bay-Delta ecosystem. Besides water savings, the fixtures will greatly reduce the wastewater treatment and energy

costs by conserving the energy needed to treat, transport, and treat the avoided wastewater.



### Goals and Objectives

There are multiple goals and objectives for the WBMWD Project.

Several goals of the Project indirectly benefit the Bay-Delta region and include the following:

1. Reducing dependency of the Southern California region on the Bay-Delta system; thereby, contributing to the California Bay-Delta Program's water supply reliability, water quality, and ecosystem restoration goals.
2. Increasing water supply reliability in the southern California region.
3. Improving water use efficiency in the WBMWD service area.
4. Meeting the objectives of the California Urban Water Conservation Council (CUWCC)'s Memorandum of Understanding (MOU) by implementing Urban

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Best Management Practice (BMP) 9 (Conservation Programs for Commercial, Industrial, Institutional [CII] Accounts) through this project.

The objectives of the Project benefit both the southern California and the Bay-Delta regions and include the following:

1. Installing complete restroom retrofits in the WBMWD service area to increase water conservation savings.
2. Demonstrating the water use and cost savings of installing complete restroom fixture systems in commercial and municipal settings.
3. Increasing public acceptance for complete restroom retrofits as a simple and cost-effective water savings technique for the WBMWD service area, the southern California region, and the State.

### **Need for Project**

As the Southern California population continues to grow, there will be increased pressure on imported water supplies from the Bay-Delta region. Southern California faces other pressures on its water supply including loss of local groundwater due to contamination and a five-year drought that has reduced imported water from the Colorado River basin. WBMWD provides approximately 222,000 acre-feet per year of imported water to its customers. Without implementation of conservation programs such as the Project, the region's need for additional imported water is expected to increase.

The need for additional imported water can be ameliorated by the application of the use of water efficient fixtures. The region already has a strong commitment to implementing water use efficiency projects as enumerated in CUWCC's MOU. Grant funding for this project will help overcome resistance to new technologies among commercial and municipal customers and lead to the widespread installation of complete restroom retrofits in the region. In turn, the regional success of this project will have an amplifying effect throughout the state, leading to the installation of complete restroom retrofits in other market sectors, including new construction.

WBMWD's service area in the southwestern portion of Los Angeles County is densely populated and offers the perfect laboratory to achieve significant water use efficiency savings. WBMWD has had a water conservation program since 1989, and has replaced nearly 50,000 toilets in Ultra Low Flush Toilet (ULFT) distribution programs to residential customers. However, it is anticipated that future water savings will come from the commercial and municipal sectors, as the residential sector has begun to achieve market saturation due to success of the aforementioned programs, as well as natural replacement.

Over the years, the WBMWD has distinguished itself with one of the nation's largest

recycled water programs, the West Basin Recycled Water Project. Non-potable application of recycled water includes irrigation, commercial and municipal use, and industrial processes. This proposed grant application gives the WBMWD an opportunity to provide a proven conservation approach to this same CII customer base. The District will use this knowledge to continue conducting and improving future CII programs in its region.

The Project will accrue significant water use and cost savings. A complete restroom retrofit will save more than twice the amount of water when compared to the installation of a single zero water consumption urinal. The Project proposes to install 1000 zero water consumption urinals, 1600 faucets, and 1600 toilets. This will save approximately 274 acre-feet per year versus the 107 acre-feet per year saved if only the urinals were installed. The Project will save \$146,590 per year, for a present value of \$1,681,376 over the life of the Project in avoided water purchase costs.

This project has been designed to meet the needs and concerns of various communities, organizations, and environmental groups that are concerned about water conservation. The following are some of the needs it satisfies:

- Application of numerous BMPs of the CUWCC. The Districts have been signatories to the MOU since 1991. This program falls under CUWCC's BMP 9 (CII Conservation).
- Reduction of water demands by the year 2020 by 12 percent, as stated in the WBMWD Urban Water Management Plan (UWMP). These reductions will be accomplished by implementing various water conservation programs to meet the needs of our sub-agencies and residents.
- Decrease sewage outflow and infrastructure degradation by applying conservation programs to indoor commercial and municipal water use.
- Drop in the regions dependence on imported water from the Colorado River, eastern Sierra, Bay Delta system, and local groundwater.

### **Consistency with Local or Regional Water Management Plans**

The primary objective of this project, expanding the use of water use efficient restroom urinals, toilets, and faucets, is consistent with local, regional, and state water management plans. The Project is consistent with the local WBMWD and Central Basin Municipal Water District (CBMWD) UWMP and the regional MWD Integrated Resource Plan (IRP). Central Basin is the sister agency of WBMWD. Both of these plans are aligned with CALFED's objectives to reduce demand on Bay-Delta water and increase water supply reliability and WBMWD's mission to provide a safe and reliable water supply at a reasonable cost.

The WBMWD and CBMWD UWMP, adopted November 2000, explains how the Districts anticipate meeting the water needs of their customers through resource management approaches. The UWMP calls for the implementation of water conservation measures to offset growth in water demand among other actions. The UWMP sets the goal of conserving water and requires aggressive implementation of all applicable BMPs of the CUWCC MOU. This complete restroom retrofit project is an important component of the stated water conservation goals of the UWMP and is consistent with BMP 9 of the MOU.

WBMWD is a member agency of the southern California regional water wholesaler, the Metropolitan Water District of Southern California (MWD). In 2003, MWD updated its 1996 IRP. The results of the IRP Update analysis demonstrate that the resource targets of the 1996 IRP, factored in with changed conditions—the most significant being higher projected local supplies and greater conservation savings—provide for reliability through 2025. The IRP identified changed conditions for water resource development and updated resource targets through 2025. Water conservation is a critical element in the IRP regional strategy.

### **Implementation of Water Demand Management Activities from Plans**

Demand management is essentially reducing water demand at the point where it is put to use. This means providing the education and tools necessary to help the homeowner, apartment owner, business owner, and the public reduce the amount of water used on their property. When this style of water management is broadly applied throughout a given region, water use demand is expected to decline, thus increasing water supply reliability and indirectly benefiting the CALFED Bay-Delta region.

The water demand management activities that have been implemented by WBMWD include the following:

- Aggressive implementation of CUWCC BMPs.
- Initiation of the WBMWD water conservation program in 1989. Since then, the program has replaced nearly 50,000 toilets in ULFT distribution programs to residential customers. It is estimated that a family of four saves about 28 gallons per day (gpd) by using an ULFT as their primary toilet, while the savings are greater at 48 gpd at multi-family properties (apartments).
- Implementation of large landscape conservation to large turf areas requiring year-round irrigation including city and county parks, golf courses, schools, cemeteries, street medians, etc. WBMWD has reduced demand for imported water for irrigation by providing recycled water to these areas.
- Initiation of several public information and education programs including: 1) the annual "Water Harvest Festival" during which WBMWD and CBMWD invite

children and their parents to the West Basin Water Recycling Facility in El Segundo to participate in games and obtain information on recycling and the Districts; 2) California Water Awareness Campaign; 3) "May is Water Awareness Month" during which time water conservation messages are communicated to the commercial, industrial, municipal and public sectors; 4) providing local news media with conservation information through press releases and meet with editorial boards; and 5) regular visits by school children to the West Basin Water Recycling Plant.

- Participation in MWDs economic and financial incentives to encourage efficient use of water in its service area.

### **How the Project will Further Implement Existing Water Management Activities or Initiate New Ones**

The Project builds upon WBMWD's very successful residential ULFT rebate and distribution program begun in 1989 and the Waterfree Urinal Program initiated in 2003. In 2003, WBMWD's sister agency, CBMWD (which is supported by the same highly-motivated staff as WBMWD), was awarded a Proposition 13 grant for a Water Use Efficiency Program. CBMWD and its program vendor are currently implementing an effective direct install Waterfree Urinal Program, as well as marketing the program throughout CBMWD's service area. The Project goal is to install 2,600 urinals that will save over 300 acre-feet per year. Within the first quarter of the Project timeline, over 300 devices have been installed and another 200 are scheduled for installation. The installed devices are already saving 35 acre-feet per year.

With the Waterfree Urinal Program well underway, the next logical step is to implement the complete restroom retrofit that will more than double the water savings from the installation of a single waterfree urinal.

## **SECTION TWO: Technical/Scientific Merit, Feasibility**

### **Describe Methods, Procedures, Equipment, and Facilities**

This project will decrease water use in public restrooms by replacing inefficient restroom fixtures with fixtures that are designed to conserve water. Older, inefficient toilets, urinals, and faucets will be replaced with efficient, water saving technologies. These proven technologies include: 0.8-1.6 gpf pressure assist toilets, waterfree urinals, and IR-controlled self-closing faucets. Water savings estimates are based on historical monitoring data for installations of these devices from the CUWCC Guidebook, and will be confirmed by tracking water consumption for 10 percent of the installations.

These particular fixtures have been selected based on their success in the field. The managers of this program are already working on a similar program in the CBMWD that installs the same urinals that are the subject of this implementation project. In the experience of these conservation managers, the fixtures selected for this program are proven, readily available, and more efficient.

### Procedures

WBMWD will begin the program by conducting public outreach to potential partners, obtaining commitment letters from willing participants. Pre-site surveys will be conducted to determine baseline water consumption at 10 percent of the locations as described in Section Three below. WBMWD will obtain the water saving fixtures through standard purchasing procedures, complete any required bathroom design, and issue a Request for Proposal (RFP) to locate and select qualified, contracted plumbers to perform installation according to the standard methods for installation of existing facilities. Following installation, a post-site survey will be conducted, and water consumption will be monitored and compared against historical water usage to determine savings at each site.

### Task List/Project Plan

Design Individual Restrooms	Individual Restroom Plans and Specifications	Jan 2006- Sep 2006	\$15,000.00
Purchase and Install Restroom Fixtures	Fixtures; Retrofitted Restrooms; Completed work orders; Paid Invoices	Dec 2005- Sep 2006	\$1,650,000.00
Post site-evaluation; Conduct Data Analysis for One Year	Updated Participant Database; Reports	June 2006- Dec 2007	\$25,600.00
Provide Program Results to DWR	Quarterly/Annual Reports to DWR	Mar 2006- Dec 2012	\$30,000.00
Project Management	Meetings, Site Visits, Overall Management of Program	Dec 2005- Nov 2012	\$11,000.00
<b>Total Cost</b>			<b>\$ 1,773,600.00</b>

The estimated costs associated with implementation of this plan can be found in Appendix C, Table C-1. Note that construction costs are included with the purchase price of the fixtures, as the vendor sells the fixtures installed. Projected operations and maintenance costs are also zero because it is the responsibility of the facility owners to operate and maintain their restrooms.

This project is intended to be a one year project. The applicant understands that there are reporting requirements that go beyond the one year period. Applicants will reevaluate project cost/benefit analysis as part of the final report. Applicant will also submit annual reports of benefits and costs for five years after the completion of the Project.

### **Environmental Documentation**

WBMWD conducted a preliminary screening and determined that the Project was an action that did not qualify as a "project" as defined in the CEQA Guidelines. A "project" is defined by CEQA in the California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15378.

The WBMWD Project does not have the potential to result in either a direct physical change in the environment or a reasonably foreseeable indirect physical change in the environment. Therefore, CEQA requirements do not apply.

### **Compliance with Local, County, State, and Federal Permitting Requirements**

Licensed plumbers will perform all installations. Plumbing fees will include obtaining any local or county permits required to replace restroom fixtures. There are no permits required for the Project from state or federal authorities.

## **SECTION THREE: Monitoring and Assessment**

### **Description of Pre-project Assessment, Basic Assumptions, and Anticipated Data Accuracy**

A qualified auditor will perform water use surveys for 10 percent of the sites that receive efficient, water-saving fixtures from the proposed program. Pre-surveys will determine baseline average water use per day from the existing, high consumption fixtures at selected sites by reviewing past water bills, and averaging monthly use over the last two years. Post-site evaluations will determine average water savings from the new fixtures by comparing baseline data to current billing data, as well as verify proper installation of fixtures.

The monitoring of the program will be administered by the Agency's Conservation Coordinator, who will be responsible for preparing the reports required under this grant program. Because this program will be an integral part of

the CUWCC evaluation of conservation programs, the data collected for the program will follow the guidelines of BMP 9 of the CUWCC MOU and will include:

- The number of accounts and amount of water used at each location, participant information (account number, name, address and type of facility), and number of fixtures being replaced.
- The number of water-efficient fixtures replaced or distributed per year.
- The total program costs per year, including labor, materials, marketing, and overhead services.
- The total program budget per year.
- Program funding sources per year, including intra-agency funding mechanisms, interagency cost sharing, and state and federal financial assistance sources.
- Descriptions of the program design and implementation, such as marketing and advertising method and levels, customer targeting methods, customer contact methods, use of outside services, and participation tracking/follow-up.
- A description of the program acceptance/resistance by customers, obstacles to implementation, and other issues affecting the program implementation or effectiveness.

This program will target the replacement of fixtures in 850 restrooms. Since water savings are dependant on the specific types of high consumption fixtures replaced with water efficient fixtures, a conservative average savings estimate of 35,000 gallons per year (gpy) per urinal, 12,000 gpy per faucet, and 22,000 gpy per toilet is being used. After implementation, the annual water savings is estimated to be 274 acre-feet per year. The cumulative lifetime water savings for all installations is 5,400 acre-feet over the 20-year useful life of the fixtures.

### **Assumptions**

The basic assumption is that other water uses will remain consistent so that changes in total water use can be attributed solely to the low water use fixtures. Significant changes in usage will be investigated to determine if it can be properly attributed to the restroom retrofit or another factor. Participants in the program will be asked to notify WBMWD if there are significant changes in their water use patterns.

### **Anticipated Accuracy of the Data to be Produced**

The data collected will rely on water use patterns taken from user water bills. These are anticipated to accurately measure actual and past water use as logistically possible. Areas of error include unrecognized changes in water use being attributed to restroom fixture changes, alterations in traffic patterns in the restrooms, and

failure to recognize if other water efficient practices are implemented at the installation locations.

### **Accounting for External Factors**

External factors such as Changes in Weather do not generally affect restroom use, however certain Social Conditions will affect usage. The closing of a facility, adjustments in hours of operation, change in total number of employees, gender composition of employees, and the occurrence of major water leaks and changes in foot traffic patterns will affect water usage for individual restrooms. WBMWD will take all reasonable steps to ensure that measured changes in water consumption can be properly attributed to the retrofitted facilities, rather than external factors.

Participants who receive fixtures through the program will be asked to notify WBMWD of any changes that may substantially increase or decrease the use of a retrofitted restroom. In addition, significant changes in water usage will be investigated to determine if the change can be properly attributed to the restroom retrofit or another factor. If a major disaster occurs in WBMWD, data will be collected to determine the number of restrooms that are either no longer in use or facing other significant changes in usage.

### **Data Handling, Storage and Reporting**

Data will be collected as described above. Water use history and water use patterns after installation will be recorded from water billing records. Individual water records will be kept private by WBMWD. The cumulative data will also be made available to the public through WBMWD's website. The data will be compiled into quarterly reports for submission to DWR under the rules of this grant program. WBMWD will re-evaluate the Project cost/benefit analysis as part of the final report and will submit annual reports of benefits and costs for five years after the completion of this project.

# Qualifications of the Applicants and Cooperators

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## Resumes of Project Managers

See Appendix B for resumes.

## Role of External Cooperators

External cooperators will include:

- Commercial and municipal water users in the WBMWD, as willing participants, will provide access to the facilities for the purpose of pre-site surveys, installation, and post-site evaluations. Participants will also provide plans of existing restroom facilities as required.
- Water retailers providing water to the participants will cooperate by providing billing and water usage data to determine water conservation.
- A qualified contractor will perform pre and post implementation surveys at all sites receiving facilities from the Project.
- A program vendor will supply plumbing fixtures including toilets, faucets, and urinals. The Project Vendor will be selected based upon success in similar programs.
- Qualified, private contractors selected through an RFP process will complete the restroom retrofits.

## Previous Water Use Efficiency Grant Projects

In 2003, WBMWD's sister agency, CBMWD, was awarded a Proposition 13 grant for a Water Use Efficiency Program entitled "Enhanced Rebates for CII Water Saving Devices." The project goal is to install 2,600 urinals over three years that will save over 274 acre-feet per year. WBMWD and CBMWD share the same, highly-motivated management and staff, and WBMWD will use the same program vendor. Therefore, CBMWD's success can be used as an indicator of WBMWD's future performance.

In the first year of implementation, this project is on target. CBMWD and its program vendor are currently implementing an effective direct install Waterfree Urinal Program, as well as marketing the program throughout CBMWD's service area. Within the first quarter of the Project timeline, over 300 devices have been installed and another 200 are scheduled for installation. The installed devices are

already saving 35 acre-feet per year. This is a great example of how Proposition 13 funding is being effectively utilized to conserve water from the Bay-Delta area.

The marketing campaign for the CBMWD program also has been effective. In July 2003, CBMWD hosted a "kick-off" luncheon, promoting the program to local mayors, water directors and business leaders. CBMWD also hosted a plumber's workshop to invite local plumbers to participate in the installation of the devices. The program continues to be marketed to the CII sector. WBMWD plans to apply similar marketing approaches to its Proposition 50 projects.

# Outreach, Community Involvement, and Acceptance

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WBMWD has developed its conservation program with the 17 cities that serve as the water retailers for its service area. The conservation program is strongly supported and accepted by the member agencies. The member agencies have agreed to help promote the Project and provide staff support as necessary.

Outreach efforts will include a press conference announcing the availability of the program, advertising through member agency and municipal newsletters and publications, local cable television spots, and publicity through local papers. Program advertising will feature dual messages: the value of conserving water to commercial and municipal customers within the WBMWD service area and the environmental and economic benefits of the program. The WBMWD outreach approach for this project will be based on the successful CBMWD partnership that provides CII customers with free zero water consumption urinals and installation.

WBMWD and cities will market the program to their business community via the internet, newsletter, flyers, bill stuffers, door hangers, and other local community means. This program meets the goals of the related cities, sanitation districts, water quality control boards, water agencies, and environmental groups, which is to conserve water and to reduce wastewater volume.

# Innovation

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Prior restroom retrofit programs have focused on the installation of single zero water use urinals. The Project is innovative because it integrates multiple elements of low water use restroom design - the zero water use urinal, ULFTs, and IR controlled self-closing faucets.

Additional innovation is incorporated because the Project expands water use efficiency to women's restrooms in municipal office buildings, schools, parks, and other public recreational facilities. Prior projects have focused on men's restroom urinals. The application to women's restrooms is not only innovative but greatly expands the water saving potential from installation of these water use efficient fixtures.

The Project moves proven technologies, the zero water consumption urinal, ULFTs, and IR controlled low flow faucets, into the municipal and commercial markets. Because WBMWD has a varied mix of cities in the densely populated southwestern portion of Los Angeles County, there will be ample opportunity for implementation of this project and expansion in the future. The approach of a complete restroom retrofit using proven technologies will have broad application throughout the region and the State.

# Benefits/Costs

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For documentary evidence of this project's benefits and costs, please refer to the following tables which can be found in Appendix C:

- C-1 Project Costs (Budget)
- C-2 Annual Operations and Maintenance Costs
- C-3 Total Annual Project Costs
- C-5 Project Annual Physical Benefits (Qualitative/Quantitative)
- C-6 Project Annual Local Monetary Benefits, Water Rates Chart
- C-7 Project Local Monetary Benefits and Project Costs
- C-8 Applicant's Cost Share and Description

**Applicant: West Basin Municipal Water District**

THE TABLES ARE FORMATTED WITH FORMULAS: FILL IN THE SHADED AREAS ONLY  
 Section A projects must complete Life of investment, column VII and Capital Recovery Factor Column VIII. Do not use 0.

**Table C-1: Project Costs (Budget) in Dollars**

Category	Project Costs \$ (II)	Contingency % (ex. 5 or 10) (III)	Project Cost + Contingency \$ (IV)	Applicant Share \$ (V)	State Share Grant \$ (VI)	Life of investment (years) (VII)	Capital Recovery Factor (VIII)	Annualized Costs \$ (IX)
Administration <sup>1</sup>								
Salaries, wages	\$10,000	5	\$10,500	\$10,500	\$0	20	0.0872	\$916
Fringe benefits	\$0	0	\$0	\$0	\$0	20	0.0872	\$0
Supplies	\$5,000	5	\$5,250	\$5,250	\$0	20	0.0872	\$458
Equipment	\$2,000	5	\$2,100	\$600	\$1,500	20	0.0872	\$183
Consulting services	\$15,000	5	\$15,750	\$15,750	\$0	20	0.0872	\$1,373
Travel	\$10,000	5	\$10,500	\$10,500	\$0	20	0.0872	\$916
Other	\$0	0	\$0	\$0	\$0	20	0.0872	\$0
Total Administration Costs	\$42,000		\$44,100	\$44,100	\$0			\$3,846
Planning/Design/Engineering	\$15,000	10	\$16,500	\$7,000	\$9,500	20	0.0872	\$1,439
Equipment								
Purchases/Rentals/Rebates/Vouchers	\$1,650,000	0	\$1,650,000	\$775,000	\$875,000	20	0.0872	\$143,880
Materials/Installation/Implementation	\$0	0	\$0	\$0	\$0	20	0.0872	\$0
Implementation Verification	\$20,000	5	\$21,000	\$21,000	\$0	20	0.0872	\$1,831
Project Legal/License Fees	\$0	0	\$0	\$0	\$0	20	0.0872	\$0
Structures	\$0	0	\$0	\$0	\$0	20	0.0872	\$0
Land Purchase/Easement	\$0	0	\$0	\$0	\$0	20	0.0872	\$0
Environmental								
Compliance/Mitigation/Enhancement	\$0	0	\$0	\$0	\$0	20	0.0872	\$0
Construction	\$0	0	\$0	\$0	\$0	20	0.0872	\$0
Other (Specify)	\$0	0	\$0	\$0	\$0	20	0.0872	\$0
Monitoring and Assessment	\$25,000	5	\$26,250	\$26,250	\$0	20	0.0872	\$2,289
Report Preparation	\$15,000	5	\$15,750	\$15,750	\$0	20	0.0872	\$1,373
<b>TOTAL</b>	<b>\$1,767,000</b>		<b>\$1,773,600</b>	<b>\$889,100</b>	<b>\$884,500</b>			<b>\$154,658</b>
Cost Share -Percentage				50	50			

<sup>1</sup>- excludes administration O&M.

Applicant:

**West Basin Municipal Water District**

THE TABLES ARE FORMATTED WITH FORMULAS: FILL IN THE SHADED AREAS ONLY

**Table C-2: Annual Operations and Maintenance Costs**

Operations (1) (I)	Maintenance (II)	Other (III)	Total (IV) (I + II + III)
\$0	\$0	\$0	\$0

(1) Include annual O & M administration costs here.

**Table C-3: Total Annual Project Costs**

Annual Project Costs (1) (I)	Annual O&M Costs (2) (II)	Total Annual Project Costs (III) (I + II)
\$154,658	\$0	\$154,658

(1) From Table C-1, row ( n ) column (IX)

(2) From Table C-2, column ( IV )

Applicant:

West Basin Municipal Water District

THE TABLES ARE FORMATTED WITH FORMULAS: FILL IN THE SHADED AREAS ONLY

Table C-5 Project Annual Physical Benefits (Quantitative and Qualitative Description of Benefits)

	Qualitative Description - Required of all applicants <sup>1</sup>			State Why Project Bay Delta benefit is Direct <sup>3</sup> Indirect <sup>4</sup> or Both	Quantitative Benefits - where data are available <sup>2</sup>
	Description of physical benefits (in-stream flow and timing, water quantity and water quality) for:	Time pattern and Location of Benefit	Project Life: Duration of Benefits		
Bay Delta	Decreased		20 years		Please see attached narrative.
Local			20 years	Not applicable.	This project will conserve 5,480 acre-feet of water over its lifetime.

<sup>1</sup> The qualitative benefits should be provided in a narrative description. Use additional sheet.

<sup>2</sup> Direct benefits are project outcomes that contribute to a CALFED objective within the Bay-Delta system during the life of the project.

<sup>3</sup> Indirect benefits are project outcomes that help to reduce dependency on the Bay-Delta system. Indirect benefits may be realized over time.

<sup>4</sup> The project benefits that can be quantified (i.e. volume of water saved or mass of constituents reduced) should be provided.

## Table C-5

### **Project Annual Physical Benefits - Quantitative and Qualitative Description**

The Project will retrofit approximately 850 restrooms with water use efficient toilets, IR sensor controlled self-closing faucets, and zero water use urinals to provide both quantitative and qualitative benefits.

Water quantity benefits will accrue both to the Bay-Delta and local regions. The Project will reduce water demand in the WBMWD service area by 274 acre-feet per year affording an indirect benefit to the Bay-Delta region. An estimate of the reduction in the amount of Bay-Delta water use can be calculated by understanding the mix of water provided to WBMWD from MWD. MWD estimates that the supply mix of wholesale water served to WBMWD consists of 35 percent from local sources, 40 percent from the SWP, and 25 percent from the Colorado River. Therefore, approximately 110 acre-feet per year of SWP water will be conserved. During times of drought, more SWP water supply can remain in the Bay-Delta area for beneficial uses such as supporting populations of aquatic, plant, and animal species in the Bay-Delta.

Southern California faces increasing water demands due to the pressures of population growth. In addition, the region faces the reduction in imported and local supplies due to the 5-year Colorado River drought and contamination of local groundwater sources. This Project will benefit the local region by reducing demand by 274 acre-feet per year in the WBMWD service area, the MWD service area, and the southern California region as a whole. Reduced demand will increase regional reliability, provide flexibility in managing supplies, and reduce demand on imported water supplies.

Savings will begin immediately with the installation of the first restroom retrofit. As installations are completed over the one-year life of the project, savings will grow proportionately. The Project will enable the permanent savings of 274 acre-feet per year that will benefit the local and Bay-Delta regions.

**West Basin Municipal Water District**

Applicant:

THE TABLES ARE FORMATTED WITH FORMULAS: FILL IN THE SHADED AREAS ONLY

**Table C-6 Project Annual Local Monetary Benefits**

ANNUAL LOCAL BENEFITS	ANNUAL QUANTITY	MEASUREMENT	UNIT OF	ANNUAL MONETARY BENEFITS
(a) Avoided Water Supply Costs (Current or Future Source)	274		Acre-feet	\$146,590
(b) Avoided Energy Costs	0			\$0
(c) Avoided Waste Water Treatment Costs	0			\$0
(d) Avoided Labor Costs	0			\$0
(e) Other (describe)	0			\$0
(f) Total [(a) + (b) + (c) + (d) + (e)]				\$146,590

**Table C-7 Project Local Monetary Benefits and Project Costs**

(a) Total Annual Monetary Benefits [(Table C-6, row (f))]	\$146,590
(b) Total Annual Project Costs (Table C-3, column III)	\$154,658

**Table C-8 Applicant's Cost Share and Description**

Applicant's cost share %: (from Table C-1, row o, column V)	50
Describe how the cost share (based on relative balance between Bay-Delta and Local Benefits) is derived. (See Section A-7 for description.)	
Provide Description in a narrative form.	

## Table C-8

### Applicant's Cost Share and Description

The WBMWD is willing to provide a 50 percent cost share for this Project and requests the same from the Department of Water Resources (DWR). The cost share has been estimated based on merit, need, and distribution of benefits. WBMWD believes that the benefits will be equally distributed between the local and the Bay-Delta regions.

This Project applies proven water saving technology with permanent water and cost savings. The Project is being proposed by WBMWD, an agency that has earned a statewide reputation for successfully implementing water use efficiency projects. The Project, by itself, will save a notable amount of water benefiting both the Bay Delta and WBMWD. In addition, the adoption of the complete restroom retrofit approach throughout the State will address the need to expand the implementation of conservation projects.

One of the long-term goals of the Project is to expand complete restroom retrofits throughout the state. State bond funding will help this water conservation approach gain stature and credibility in the eyes of statewide municipal and commercial entities. These entities must be convinced that the inconvenience of replacing all restroom fixtures will be worth it economically and environmentally in the long run. WBMWD's strong relationship with its retail customers lays a strong foundation for acceptance. The receipt of grant funding and WBMWD's commitment of DWR funding will lend the financial strength and demonstrate the wisdom of the approach. In turn, it will pave the way for widespread adoption of the approach in the southern California region and throughout the state. This will confer the benefits of increased system reliability, water management flexibility, and regional self-sufficiency.