
**Central Basin Municipal Water District,
Long Beach Water District, and
The City of Signal Hill**

**Proposal for
Proposition 13
Urban Water Conservation Program Grant Funds**

February 28, 2002

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**Consolidated Water Use Efficiency 2002 PSP
Proposal Part One:
A. Project Information Page**

To be inserted

ApplicationNum	148	Specify from cho	Capital Outlay Water conservation Project
Application for (Specify from (k)	
Principle Applic	Central Basin Municipal Water District	Does Proposal in	<input type="checkbox"/>
Project Title	CBMWD, LBWD, Signal Hill Recycled Wate		
First Name-Aut	Darryl G.		
Last Name (AA)	Miller		
Title	General Manager		
Street Address	1740 South Avalon Boulevard, Suite 210		
PO Box			
City	Carson		
State	CA		
Zip Code	90746		
Telephone Num	(310) 217-22		
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E-mail Address	darrylmiller@westcentralbasin.com		
First Name-Con	Mark		
Last Name-CP	Tettermer		
Contact-Title	Recycled Water Project Manager		
Contact-Street	1740 South Avalon Boulevard, Suite 210		
Contact-PO Box			
Contact-City	Carson		
Contact-State	CA		
Contact-Zip Cod	90746		
Contact-Phone	(310) 660-62		
Contact-Fax Nu	(310) 217-24		
Contact-E-Mail	marktettermer@westcentralbasin.com		
Funds Requeste	\$2,475,810.00		
Applicant Funds	\$2,761,638.00		
Total Project Co	\$6,125,280.00		
Estimated Total			
Percentage of Be			
Percentage of Be			
Estimated Annu	634		
Estimated Total	15850		

Most recent Urb

Type Applicant-

DWR WUE Proje

Project Focus

Project Type

Quantifiable Ob

**Consolidated Water use Efficiency 2002 PSP
Proposal Part One
B. Signature Page**

By signing below, the official declares the following:

The truthfulness of all representations in the proposal;

The individual signing the form is authorized to submit the proposal on behalf of the applicant;
and

The individual signing the form read and understood the conflict of interest and confidentiality section and waives any and all rights to privacy and confidentiality of the proposal on behalf of the applicant.

<hr/>	<hr/>	<hr/>
Signature	Name and Title	Date

PROPOSAL PART TWO

Project Summary

The Central Basin Municipal Water District (CBMWD), headquartered in Carson, California, is a public agency that wholesales imported and recycled water to retail water agencies within its 227 square mile service area. Currently, CBMWD provides a total of 70,000 acre-feet per year (AFY) of imported water purchased from Metropolitan Water District of Southern California (MWD) and 3,500 AFY of recycled water purchased from the County Sanitation District of Los Angeles County.

The City of Signal Hill (Signal Hill), which is in CBMWD's service area, has requested recycled water service to serve landscape irrigation needs in its service area. Currently, approximately seven-percent (7%) of Signal Hill's water supply is from CBMWD's imported supply. Signal Hill is surrounded by the City of Long Beach (Long Beach) and is approximately 3.3-miles from the nearest CBMWD recycled water distribution pipeline. Based solely on the projected recycled water consumption in Signal Hill, it is not economically viable for CBMWD to extend its recycled water distribution system solely to serve Signal Hill.

The Long Beach Water Department's (LBWD) recycled water distribution system is immediately adjacent to Signal Hill, and has capacity to meet Signal Hill's recycled water needs. Long Beach's City Charter does not allow the LBWD to sell recycled water outside its service area. However Long Beach's City Charter does allow LBWD to exchange water with other entities such as CBMWD. Based upon these conditions, the proposed project will encompass LBWD providing recycled water to CBMWD/Signal Hill. In exchange, CBMWD will provide a like amount of recycled water to LBWD to serve its customers in the north Long Beach area that currently does not have recycled water service. LBWD, CBMWD and Signal Hill have met and agreed to jointly pursue with this project. In summary:

- Signal Hill will construct a recycled water distribution system in its service area and utilize 317 AFY of LBWD's recycled water for landscape irrigation purposes;
- CBMWD will extend its recycled water distribution system to the northern service boundary of LBWD;
- LBWD will construct its recycled water distribution system in north Long Beach to serve 317 acre-feet per year of recycled water to customers in its service area;
- CBMWD will invoice Signal Hill for the use of recycled water provided by LBWD; and
- Long Beach will invoice customers in LBWD that use recycled water provided by CBMWD.

A. Scope of Work: Relevance and Importance

1. Nature, Scope, and Objectives.

Nature of Work:

The project will deliver 634 AFY of recycled water to several parks, school yards, a golf range, landscape areas, street medians, and a cemetery by expanding LBWD and CBMWD recycled water distribution systems.

Scope of Work:

CBMWD: Construction of approximately 7,200 linear feet of 16-inch diameter polyvinyl chloride (PVC) recycled water distribution system and related appurtenances

LBWD: Construction of approximately 21,945 linear feet of 16-inch diameter PVC recycled water distribution system and related appurtenances

Signal Hill: Construction of approximately 20,200 linear feet of 6-inch diameter recycled water distribution system, booster pumps and related appurtenances

Total Project: Construction of approximately 49,345 linear feet of 16-inch to 6-inch diameter PVC recycled water pipeline, booster pumps and related appurtenances

Objectives:

There are several objectives of this project that include:

1. Providing 634 AFY of disinfected tertiary recycled (Title 22) water for approved non-potable applications;
2. Reducing the amount of imported water helping the State to achieve its federally mandated goal under the “4.4 Plan;”
3. Reducing the amount of imported water from the Bay-Delta, potentially making additional supplies of water available for environmental purposes;
4. Providing a cost effective, drought proof supply of non-potable water to encourage its use;
5. Reducing the discharge of treated wastewater into receiving waters; and
6. Creating a unique cooperative project between multiple agencies that is consistent with the objectives of the *Southern California Comprehensive*

Water Reclamation and Reuse Study that is being lead by the United States Bureau of Reclamation.

2. Statement of Critical Local Water Issues

Southern California relies heavily on “imported” water from the State Water Project and the Colorado River. To provide adequate water for potable needs (residential and industrial), continued use of potable water for non-potable purposes such as landscape irrigation. The 4.4 Plan, federal mandate, states that cities must find ways to reduce their reliance on imported water. Recycled water is one key part of the collective strategy to achieve that goal. The importance of recycled water in reducing the regions reliance on imported water is demonstrated by the funding made available by federal, state and local agencies. The United States Bureau of Reclamation has provided federal funding to construct a portion of CBMWD’s recycled water distribution system. MWD, through its Local Resources Program will provide CBMWD with up to \$250 per acre-foot of recycled water sold to help defray costs, thus encouraging the programs expansion.

When fully implemented, this project will reduce the need to import 634 acre-feet per year (AFY) of recycled water. That is 317 AFY of recycled water will be delivered to Signal Hill through LBWD, and 317 AFY of recycled water will be delivered to LBWD through the CBMWD service system. Additionally, 634 AFY of treated wastewater that would have been discharged to the ocean will be reused.

B. Scope of Work: Technical/Scientific Merit, Feasibility, Monitoring and Assessment

1. Methods, Procedures, and Facilities

CBMWD and LBWD collectively have over 20 years of experience in the design and construction of recycled water distribution systems. Through the years, each have successfully developed proven methods and procedures to expand its recycled water customer base and recycled water systems to meet those needs. Presently CBMWD has approximately 50-miles of recycled water distribution pipelines and three pump stations that now serve more than 160 recycled water use sites with over 3,500 AFY of recycled water. LBWD currently has approximately 31-miles of recycled water distribution system, 6 million gallons of storage and one pump station that serve 26 recycled water use sites with over 5,000 AFY.

CBMWD’s knowledge and experience in planning and design has been incorporated into the *West Basin and Central Basin Municipal Water District: Design Criteria, Supplemental Standard Specifications, and*

Standard Drawings for Reclaimed Water Facilities; and in its Recycled Water Irrigation User's Guide. These two manuals will be used as guides through the entire design, construction and retrofit process. LBWD also has established standards for design and construction of its recycled water systems.

Other complementary standards that may be consulted to ensure the quality of this project will be:

- *American Water Works Association specifications;*
- *City of Signal Hill standards; and*
- *State of California Department of Health Services guidelines.*

CBMWD and its sister agency West Basin Municipal Water District have three full time staff members dedicated to recycled water customer development. Beyond the 160 sites CBMWD, WBMWD serves 168 recycled water use sites. Collectively 98-percent of the recycled water use sites are landscape irrigation demonstrating the experience available to make the recycled water conversion successful for all parties including the end users. Additionally, CBMWD provides retrofit financing for recycled water customers in its service area that removes the need for end users to have the capital funds available.

CBMWD, LBWD and Signal Hill have all expressed support for the project and will work closely to coordinate projects. CBMWD will aid Signal Hill during its customer development process to insure the conversion is properly done and in compliance with the Regional Water Quality Control Board permit as well as State of California and Los Angeles County Department of Health Services requirements.

As soon as the project is economically viable for all parties, all parties will negotiate and execute an agreement to define the roles and responsibilities for each party as well as the funding aspects of the project.

2. Task List and Schedule

Since the early stages of any project, CBMWD lists the main tasks and sub-tasks of any project, tasks expected for this project are:

Planning

- Project management and coordination meetings between CBMWD, City of Long Beach, Signal Hill
- Recycled water use site visits to assess retrofit issues
- Community outreach, obtain letters of support
- Execute agreement between CBMWD, LBWD and Signal Hill to memorialize the roles and responsibilities for each entity

- Obtain commitments/contracts with recycled water customers

Design

- Pre-design study to determine the optimum pipeline alignment while considering location of customers, ease of construction and existing utility configuration
- Selection of an engineering consultant through a competitive qualification and proposal process
- Project management and administration meetings
- Progress meetings with consultants
- Meetings with recycled water customers
- Site evaluations
- Potholing
- Aerial and topographic survey
- Refined alignment and economic analysis
- Preliminary design criteria
- Easement / right-of-way issues
- As-built research
- Utility location
- Geotechnical-corrosion analysis
- Final design of the recycled water distribution systems
- Permit applications
- Preparation of final as-built plans
- Incorporation of City/County standards
- Preparation of traffic control plans

Environmental Compliance

- Preparation of environmental documents to comply with the National Environmental Protection Act (NEPA) and California Environmental Quality Act (CEQA)

Regulatory Compliance

- Development and submittal of retrofit drawings that convey the physical changes at the recycled water use sites to comply with State of California and Los Angeles County Department of Health Services (DHS) guidelines/regulations

Construction

- Selection of construction manager
- Preparation of construction bid documents
- Site walk with prospective constructors / pre-construction meetings
- Selection of contractor through a competitive bid process
- Review of contractor requirements
- Project management meetings
- Review of submittals

- Cross-connection testing
- Construction of improvements
- Review of change orders
- Preparation of as-builts

Following is the project schedule including start dates, duration, end dates and estimated costs by tasks.

ID	Task Name	Start	Finish	0	2001		2002		2003		2004		2005		200
				H2	H1										
1	CBMWD	Fri 2/1/02	Fri 2/1/02				◆								
2	Planning \$73,229	Fri 6/8/01	Fri 6/8/01												
3	Agency - Coordination Meetings	Fri 2/1/02	Fri 2/1/02				◆								
4	Preliminary Alignment Studies	Mon 2/4/02	Thu 2/28/02				◆								
5	Community Outreach - Letters of Support	Mon 2/4/02	Thu 3/14/02				◆								
6	Final Engineering Design \$95,871	Fri 2/1/02	Fri 2/1/02				◆								
7	Request For Proposal - Distribution	Tue 4/9/02	Tue 4/9/02				◆								
8	RFP Due	Tue 4/30/02	Tue 4/30/02				◆								
9	Consultant Selection	Wed 5/1/02	Wed 5/1/02				◆								
10	WBMWD Board Approval	Mon 5/27/02	Mon 5/27/02				◆								
11	Final Design Package	Tue 5/28/02	Mon 12/9/02												
12	Construction Manager Aboard	Tue 11/26/02	Thu 9/18/03												
13	Environmental Assessment \$5,900	Fri 2/1/02	Fri 8/2/02												
14	CEQA	Fri 5/17/02	Fri 11/15/02												
15	NEPA	Fri 5/17/02	Fri 11/15/02												
16	DHS Review	Fri 5/17/02	Fri 11/15/02												
17	Construction Phase \$735,974	Fri 2/1/02	Fri 2/1/02												
18	Bids	Tue 12/10/02	Mon 12/30/02												
19	Constructor Selection Board Approval	Thu 1/2/03	Thu 1/2/03												
20	Construction	Fri 1/17/03	Thu 9/18/03												
21	Permits \$22,000	Fri 2/1/02	Fri 2/1/02				◆								
22															
23	Signal Hill	Fri 2/1/02	Fri 2/1/02												
24	Planning \$16,350	Fri 6/8/01	Fri 6/8/01												
25	Final Engineering Design \$147,150	Wed 5/1/02	Fri 2/28/03												
26	Environmental Assessment \$5,900	Mon 6/3/02	Tue 12/31/02												
27	Construction Phase \$1,635,000	Mon 1/6/03	Fri 5/21/04												
28	Permits \$32,700	Fri 1/3/03	Fri 1/3/03												
29															
30	LBWD	Fri 2/1/02	Fri 2/1/02												
31	Planning \$35,153	Fri 6/8/01	Fri 6/8/01												
32	Final Engineering Design \$316,372	Wed 5/1/02	Fri 3/28/03												
33	Environmental Assessment \$13,000	Mon 6/3/02	Tue 12/31/02												
34	Construction Phase \$2,602,025	Mon 3/3/03	Fri 9/10/04												
35	Permits \$40,000	Fri 2/28/03	Fri 2/28/03												

3. Monitoring and Assessment

There are several major milestones associated with the project. Once funding for the project is secured and the agreement executed, CBMWD, LBWD and Signal Hill will arrange to meet with prospective recycled water customers to introduce recycled water, recycled water rates, water quality, retrofit procedures, regulatory review and operation & maintenance issues. With that, customers will be asked to sign letters of commitment or other comparable documents to confirm the economic viability of the project. Additionally, customers in Signal Hill will be required to sign CBMWD's "Conditions for the Introduction and Use of Recycled Water" that describes the on-site supervisors responsibilities. Once customer commitments are secured, design can be initiated. The agencies will likely hire consultant(s) to complete the design per the appropriate standards. During this time, retrofit schematics will be

developed for each site that will be submitted to State of California and Los Angeles County Department of Health Services' for review and approval. With customer commitments, retrofit approval and design complete, construction of the distribution system can be initiated.

Once construction is complete, retrofits can begin. During the retrofits, inspection will occur to insure compliance with State and County DHS regulations. When the retrofit is complete at a site, County DHS representatives will perform a final cross-connection test and inspection leading to the initiation of recycled water service.

As required by Title 22 of the California Code of Regulations, annual visual inspections (AVI) and periodic cross-connection tests (PCCT) will occur at recycled water use sites to check to see a cross-connection has not occurred and check for proper water system identification. The AVI and PCCT will happen in perpetuity.

Reports of all inspections and progress work will be kept by the inspector of CBMWD and turned in to CBMWD. Copies of test results will kept at CBMWD's offices in Carson, California.

4. Preliminary Plans and Specifications and Certification Statements

This project is the compilation of three separate projects by three separate public agencies. **Exhibit A** is a map of CBMWD and LBWD's service areas and the existing recycled water systems shown as purple dashed lines. Within the City of Long Beach is Signal Hill. Also included on Exhibit A are map indexes showing the three project areas. **Exhibits B, C and D** are maps showing the CBMWD, LBWD and Signal Hill project areas including projected pipeline alignments, lengths and diameters.

Insert
Exhibit A

Map of CBMWD and LBWD's service areas and adjacent areas

Insert
Exhibit B

Map of CBMWD's project area

Insert
Exhibit C

Map of LBWD's project area

Insert
Exhibit D

Map of Signal Hill's project area

C. **Qualifications of Applicants and Cooperators**

CBMWD will provide overall management of the project. The project team will be a compilation CBMWD, LBWD and Signal Hill with experience on these types of projects. The following identifies the team members and a brief description of the function that team member will perform. Also attached as **Appendix A** are the resumes for each individual.

CBMWD

- *Paul Cook, Manager of Engineering*
Mr. Cook will lead the design and construction of CBMWD's system expansion in the City of Paramount. This includes representing CBMWD on selection of design consultants, contractor and construction managers and updating CBMWD's Board of Directors on project progress.
- *Lucy McGovern, Senior Project Manager Environmental Compliance*
Will lead the preparation of environmental documents related to the project (CEQA, NEPA, DHS Compliance). Ms. McGovern will assist Mr. Tetterer in coordinating meetings with the regulatory environmental agencies involved in this project.
- *Mark Tetterer, Recycled Water Project Manager*
Mr. Tetterer has led the negotiations between CBMWD, LBWD and Signal Hill and will negotiate the agreement between the agencies. Mr. Tetterer will also work with Signal Hill on identifying recycled water retrofit needs and regulatory compliance by State of California and Los Angeles County Department of Health Services approvals. Mr. Tetterer will update the CBMWD Board of Directors on matters regarding recycled water customer development.

LBWD

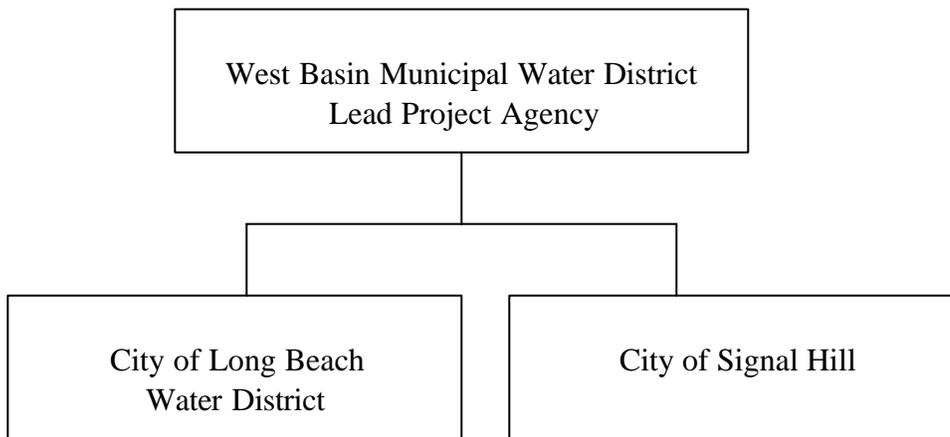
- *Diem Vuong, Deputy Manager of Operations*
Mr. Vuong will be the LBWD representative on the project. He and his staff will oversee design, construction, construction management and recycled water customer development for LBWD's portion of the project.

Signal Hill

- *Ed Schroder, Director of Public Works*
Mr. Schroder will oversee design and construction of the recycled water distribution system in Signal Hill. Mr. Schroder will also work with Mr. Tetterer and the prospective recycled water customers in Signal Hill to facilitate the effort to answer issues raised by prospective recycled water customers culminating in agreements with the customers.

- *Fred Sims, Superintendent*
Mr. Sims will represent Signal Hill during meetings with prospective recycled water customers in Signal Hill. Mr. Sims will also work with the design team to insure compliance with Signal Hill’s standards.

The following organization chart illustrates how the agencies will relate to each other with CBMWD as the lead agency.



D. Benefits and Costs

1. Budget Breakdown and Justification

Item	Budget		
	CBMWD	LBWD	Signal Hill
Land Purchase/Easement	\$0	\$0	\$0
Planning/Design/Engineering	\$169,100	\$351,525	\$163,500
Materials/Installation	\$0	\$0	\$0
Structures	\$0	\$0	\$0
Equipment Purchases/Rentals	\$0	\$0	\$0
Environmental Mitigation/Enhancement	\$5,900	\$13,000	\$5,900
Construction/Administration/Overhead	\$735,974	\$2,602,025	\$1,635,000
Project/Legal/License Fees	\$22,000	\$40,000	\$32,700
Contingency	\$124,946	\$0	\$183,710
Other	\$0	\$40,000	\$0
Totals	\$1,057,920	\$3,046,550	\$2,020,810

Section B.1 lists all the aspects that will be covered on the items presented on the budget description.

2. Cost Sharing

There are currently three discrete sources of cost sharing for the project, local, regional and federal. All three of the local agencies have contributed planning funds for the first phase of the project. With regards to federal funding, LBWD has an agreement with United States Bureau of Reclamation (USBR) to be reimbursed for twenty-five percent (25%) of the capital expended for their segment of the project. Additionally, both LBWD and CBMWD will receive funds from MWD through its Local Resources Program. In the case of LBWD, it receives up to \$154 per acre-foot until June 30, 2011 for each acre-foot of recycled water sold. CBMWD receives up to \$250 per acre-foot until June 30, 2017 for each acre-foot of recycled water sold. In the case of the MWD funds, the present worth of those future funds was calculated and shown as a deduction to the capital cost of the project on Figure 1. Calculations for the present value of the MWD funds are shown on Figures 2 and Figure 3.

Other Funding	CBMWD	LBWD	Signal Hill
Project Total Costs	\$1,057,920	\$3,046,550	\$2,020,810
Local Contributions	\$0	(\$1,000,000)	(\$1,000,000)
USBR	\$0	(\$761,638)	\$0
MWD's LRP	(\$593,327)	(\$293,505)	\$0
Net project Costs	\$464,593	\$991,407	\$1,020,810
Total Proposition 13 Grant Funds Requested			\$2,476,810

Figure 1

3. Benefit Summary and Breakdown

a. Quantifiable Project Outcomes and Benefits

The proposed project will replace 634 AFY of potable water with an equal amount of recycled water. The project will supply 634 AFY of drought proof local irrigation supply to Signal Hill and portions of Long Beach.

b. Qualitative Project Outcomes and Benefits

By using recycled water as the source water for irrigation purposes, water that would otherwise be sent to the ocean is used again. As imported water supplies are replaced by locally recycled water, the impacts of diversion from the Bay-Delta and Colorado River are reduced. The use of recycled water allows purveyors and water agencies to save the potable water being pumped from local wells for more important uses such as domestic purposes or future emergencies during dry years.

3. Assessment of Costs and Benefits

Present Value Calculation – Long Beach Water Department	
Estimated Recycled Water Consumption	317 acre feet/year
MWD’s Local resources Program Funds	\$154 Per acre-foot
Estimated Annual LRP Contribution	\$48,818
Assumed “On-line” Date for Project	January 1, 2004
MWD’s LRP Expiration	June 30, 2011
Time Remaining on LRP	7.5 years
Total LRP Funds to be Received	\$366,068
Assumed Annual Rate of return	5.5%
Present Value of Total LRP Funds to be Received	\$293,505

Figure 1

Present Value Calculation – Central Basin Municipal Water District	
Estimated Recycled Water Consumption	317 acre-feet per year
MWD’s Local resources Program Funds	\$200 Per acre-foot
Estimated Annual LRP Contribution	\$63,400
Assumed “On-line” Date for Project	January 1, 2004
MWD’s LRP Expiration	June 30, 2017
Time Remaining on LRP	13.5 years
Total LRP Funds to be Received	\$856,161
Assumed Annual Rate of return	5.5%
Present Value of Total LRP Funds to be Received	\$593,327

Figure 2

E. Outreach, Community Involvement and Acceptance

Attached in **Appendix B** is:

- A Resolution by the City of Signal Hill expressing its support for this application and for the project,
- A letter of support from the General Manager of the LBWD, Mr. Kevin Wattier, for this project.

Others entities that support this project include the Mono Lake Committee, and Heal the Bay.

Regarding the number of organizations that are expected to receive benefits from this project, there are the cities and businesses that will be able to utilize recycled water for landscape irrigation while reducing operational expenses due to the reduced cost for recycled water.

The proposed project is strongly supported by the Cities of Long Beach and Signal Hill. Please find letters of support attached as Appendix B. We are unaware of any opposition to the project.

CBMWD will train each recycled water user's key personnel within the City of Signal Hill on the safe and effective use of recycled water. City of Signal Hill personnel will also receive this training. Long Beach will train its own personnel as it currently does.

Appendix A

Appendix B

Appendix C