

**Consolidated Water Use Efficiency 2002 PSP
Proposal Part One:**

A. Project Information Form

1. Applying for (select one):	<input checked="" type="checkbox"/> (a) Prop 13 Urban Water Conservation Capital Outlay Grant <input type="checkbox"/> (b) Prop 13 Agricultural Water Conservation Capital Outlay Feasibility Study Grant <input type="checkbox"/> (c) DWR Water Use Efficiency Project										
2. Principal applicant (Organization or affiliation):	<u>Victor Valley Water District</u>										
3. Project Title:	<u>Residential ULFT Replacement Project</u>										
4. Person authorized to sign and submit proposal:	<table border="0"> <tr> <td style="padding-right: 20px;">Name, title</td> <td><u>Richard Zack, AE/Grant Writer</u></td> </tr> <tr> <td>Mailing address</td> <td><u>17185 Yuma St., Victorville,</u></td> </tr> <tr> <td>Telephone</td> <td><u>760-245-6424</u></td> </tr> <tr> <td>Fax</td> <td><u>760-245-9219</u></td> </tr> <tr> <td>E-mail</td> <td><u>rzack@vwwater.org</u></td> </tr> </table>	Name, title	<u>Richard Zack, AE/Grant Writer</u>	Mailing address	<u>17185 Yuma St., Victorville,</u>	Telephone	<u>760-245-6424</u>	Fax	<u>760-245-9219</u>	E-mail	<u>rzack@vwwater.org</u>
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Name, title.	<u> </u>										
Mailing address.	<u> </u>										
Telephone	<u> </u>										
Fax	<u> </u>										
E-mail	<u> </u>										
6. Funds requested (dollar amount):	<u>\$70,000</u>										
7. Applicant funds pledged (dollar amount):	<u>\$70,000</u>										
8. Total project costs (dollar amount):	<u>\$140,000</u>										
9. Estimated total quantifiable project benefits (dollar amount):	<u>\$622,000 savings</u>										
Percentage of benefit to be accrued by applicant:	<u>65%</u>										
Percentage of benefit to be accrued by CALFED or others:	<u>35%</u>										

**Consolidated Water Use Efficiency 2002 PSP
 Proposal Part One:
 A. Project Information Form (continued)**

10. Estimated annual amount of water to be saved (acre-feet): 79.9
- Estimated total amount of water to be saved (acre-feet): 799 @ 10 years
- Over 20 years 1,598
- Estimated benefits to be realized in terms of water quality, instream flow, other: **Benefit/Cost Ratio per VVWD spreadsheet - Attached** 2.18
11. Duration of project (month/year to month/year): 6/2002 to 12/2003
12. State Assembly District where the project is to be conducted: 34th District
13. State Senate District where the project is to be conducted: 17th District
14. Congressional district(s) where the project is to be conducted: 40th District
15. County where the project is to be conducted: San Bernardino
16. Date most recent Urban Water Management Plan submitted to the Department of Water Resources: 2001

7. Type of applicant (select one):
- Prop 13 Urban Grants and Prop 13 Agricultural Feasibility Study Grants:
- (a) city
 - (b) county
 - (c) city and county
 - (d) joint power authority
 - (e) other political subdivision of the State, including public water district
 - (f) incorporated mutual water company
- DWR WUE Projects: the above entities (a) through (f) or:
- (g) investor-owned utility
 - (h) non-profit organization
 - (i) tribe
 - (j) university
 - (k) state agency
 - (l) federal agency

18. Project focus: (a) agricultural
 (b) urban

**Consolidated Water Use Efficiency 2002 PSP
 Proposal Part One:
 A. Project Information Form (continued)**

19. Project type (select one):
 Prop 13 Urban Grant or Prop 13
 Agricultural Feasibility Study Grant
 capital outlay project related to:
- (a) implementation of Urban Best Management Practices
- (b) implementation of Agricultural Efficient Water Management Practices
- (c) implementation of Quantifiable Objectives (include QO number(s))
-
- (d) other (specify)
-

- DWR WUE Project related to:
- (e) implementation of Urban Best Management Practices
- (f) implementation of Agricultural Efficient Water Management Practices
- (g) implementation of Quantifiable Objectives (include QO number(s))
- (h) innovative projects (initial investigation of new technologies, methodologies, approaches, or institutional frameworks)
- (i) research or pilot projects
- (j) education or public information programs
- (k) other (specify)
-

- 20 Do the actions in this proposal involve physical changes in land use, or potential future changes in land use?
- (a) yes
- (b) no

If yes, the applicant must complete the CALFED PSP Land Use Checklist found at http://calfed.water.ca.gov/environmental_docs.html and submit it with the proposal.

**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 the behalf of the applicant.

Signature

Richard Zack,
Associate Engineer/Grant Writer
Name and Title

Date

PROPOSAL PART TWO

Project Summary

The project proposed herein is the replacement of 2,250 standard residential toilets with ultra-low flush toilets (ULFT) within the service area of Victor Valley Water District. Victor Valley Water District will be advertising the toilet replacement opportunity through its website and billing stuffers, offering customers a one time credit of \$60 towards their water bill or a rebate check for the same amount. The target area within the City of Victorville is an older area of town with known high water usages.

The conservatively estimated water savings using ULFT over standard water use toilets is over 115,000 gallons per retrofitted toilet over ten years. (See the attached spreadsheet.) The spreadsheet also shows a benefit-to-cost ratio of 2.18.

It should be noted that on November 6, 2001 the Victor Valley Board of Directors authorized the use of \$70,000 from the District's general fund to retrofit approximately 1,100 high water use toilets. It is anticipated that this retrofit will begin in the early summer of 2002.

A. Scope of Work: Relevance and Importance

1. The amount of water available to any High Desert city is extremely limited. By using water conservation, Victor Valley Water District is, in effect, creating a new supply within an existing source. Since the installation of a ULFT permanently lowers water use, the installation will automatically and continuously conserve water.
2. The installation of ULFT is a known water conservation measure. The City of Los Angeles during the mid-1990's did a study with ULFT's and discovered that the City saved 31.7 gallons of water per day per ultra-low flush toilet. By changing the daily use patterns of the District's water customers, Victor Valley Water District will be able to provide water to a growing customer base without drilling new wells and without being forced to use its allotment of State Water Project water from the California Aqueduct. **The replacement of high water use toilets with ULFT's is a listed Urban Best Management Practice; therefore, Victor Valley Water District's proposal is totally in compliance with the CALFED ROD.**

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

1. Most residential toilets manufactured prior to 1994 used at least 3.5 gallons per flush. After 1994 new residential toilets were limited to 1.6 gallons per flush resulting in a 1.9-gallon water savings per flush. Even though the first ULFTs marketed had glitches, the problems associated with low water velocities (e.g., double flushes) and more frequent cleaning have been solved. In 1999 a study completed in Seattle in which older toilets were replaced with ULFTs, 69% of the customers said they liked the ULFT better than their old toilet and 69% also said that the ULFT required the same or less cleaning than older toilets.
2. After reading of the success of ULFT rebates in Los Angeles mid-1990's, Victor Valley Water District appropriated money for a toilet retrofit program. To advertise the \$60 toilet rebate or billing credit for replacing a high water use toilet with an ULFT, Victor Valley Water District will add "billing stuffers", a lobby display at the District's office, and a notice on our website explaining the program and how to apply for the rebate. To reserve a rebate, the customers will contact the District at its website, at its customer service windows, or through a phone call to receive an application. Upon receipt of a completed application, the District will verify the applicant is a District customer and subsequently, will mail the applicant a rebate reservation form, which will expire in thirty days. The customer will then send the reservation form along with the original receipt to the District after the purchase of the toilet to receive the rebate. The Administrative staff will keep detailed records of all applications, rebate-reservation forms, and accompanying documents; the Accounting staff will process the rebate checks for issuance to our customers or apply a credit on their water accounts. To spread the financial savings among as many customers as possible, Victor Valley Water District is limiting its rebate to one toilet per customer.
3. Since \$70,000 of Victor Valley Water District general fund money has already been earmarked for this project, the ULFT rebate program will go forward even if the State only partially funds the request. Due to the socio-economics of the Victorville area, it is anticipated that the desire to save money by switching to ULFTs will far exceed our limited funding. It is impossible to predict how many ULFT rebate applications will be received by Victor Valley Water District once the rebate announcements are made; however, both the Administrative and Accounting staff personnel are ready for the extra work load.

C. Qualifications of the Applicants and the Cooperators

1. Please review the attached resumes. Ms. Amy Lyn De Zwart will manage the toilet rebate project and Mr. Richard Zack will provide engineering and technical assistance.

Victor Valley Water District currently employees customer service representatives that will receive and forward the rebate applications as

part of their duties. The accounting and administration departments at Victor Valley Water District will disburse all rebates and keep records of same. Ms. De Zwart will be available for incidental questions and to clarify any procedural questions. Mr. Zack will evaluate and answer questions of a technical nature.

2. Approximately \$5,000 is budgeted for advertising, lobby displays, and printed materials related to the toilet replacement rebate program. **There are no outside cooperators or consultants involved in the proposed toilet rebate program.**

D. Benefits and Costs

1. The month-to-month number of ULFT installation rebates that will be issued is impossible to predict; therefore, a true budget breakdown and line item justification is not possible.
2. Since Victor Valley Water District is only providing a rebate or a billing credit against plumber's bill or a home improvement store receipt in the case of the do-it-yourselfer, an actual budget breakdown is not applicable. Regardless of the size of the accepted bill, Victor Valley Water District will only rebate \$60 per toilet per address. It should be noted that the applicant gets largest percentage of his/her retrofit bill reimbursed when the ULFT installed is the least expensive model available; it is not known how many of the more expensive designer ULFTs will be installed.
3. Please review the attached cost-to-benefit ratio page. This page shows the best and worst case "paybacks" as well the theoretical water savings per ULFT. As previously noted, the benefit-to-cost ratio is 2.18.

The actual financial benefit to each customer will vary considerably with the customer's own situation. A small family or a single individual will derive some savings by switching from a conventional toilet to a ULFT. A large family will gain more savings with a ULFT, especially if the ULFT is placed in the main bathroom rather than in, say, the master bedroom's bathroom or in a three-quarter bathroom off of the garage.

There will be a direct relationship between the financial savings reflected on the customer's bill and the water conserved by Victor Valley Water District. Again, the customer's ULFT use habits will determine the actual water saved but studies in Los Angeles and Seattle indicate the savings to be in the order of 30+ gallons per ULFT per day; water conservation in excess of 115,000 gallons over the minimum ten-year life of the ULFT are project.

Interestingly, the personnel at Victor Valley Water District think that the public awareness and education campaign explaining the benefits of ULFTs will cause additional ULFT installations. Even though the rebate

proposed by Victor Valley Water District is for the installation of only one ULFT, many homeowners will install multiple ULFTs once the financial benefits of ULFTs are explained.

E. Outreach, Community Involvement and Acceptance

1. Victor Valley Water District is the primary provider of water for the City of Victorville. (There are still a few incidental single-family wells within our service area, etc.) The proposed ULFT rebate program is limited to ULFT replacement within the District so all public education and awareness campaigns will be limited to the confines of the District.
2. A ULFT installation target area has already been established within the City of Victorville. One of the largest tasks confronting Victor Valley Water District will be trying to keep all of the ULFT installation rebates in the target area. Even though all rebate applications will be honored if the applicant is located within the District, applicants will be dissuaded from forwarding the rebate applications to friends or relatives outside of the target area.
3. All of the customers within Victor Valley Water District will reap benefits from the proposed ULFT installation rebate program. By conserving water with ULFTs and through other means, Victor Valley Water District will not have to use as much electricity nor will the District need to develop new water sources in the near future.

HUMAN RESOURCES/PUBLIC RELATIONS DIRECTOR
Amy Lyn De Zwart

Current Duties:

Has performed a wide variety of human resources and public relations functions in support of the District, Board of Directors, and General Manager; developed and implemented public relations campaigns and public and employee educational programs; generated materials, brochures, and other literature for public distribution; acted as District and board representative as assigned by the General Manager for committees, public events, ceremonies, conferences, service organizations, seminars, media, commissions, and task forces; and other related work as required.

Current Scope of Responsibilities:

- Participates with the General Manager, Treasurer, Operations Manager and District Supervisors to provide analysis and to establish goals and objectives for short-range and long-range planning.
- Conducts educational programs for schools and other community groups regarding ongoing water conservation awareness.
- Assists in the development of basic policies and procedures governing public relations and human resources.
- Works independently to manage, develop, and coordinate public relations, human resources, and public information programs.
- Monitors compliance with federal and state employment and labor relations practices.
- Prepares and maintains necessary records and reports.
- Develops and coordinates all special events, displays, informational materials, and brochures.
- Assists in the development and preparation of budget items related to Human Resources/Public Relations.
- Represents the District to outside organizations to include city, county, state, civic, and other related groups, as assigned.
- Acts as District spokesperson to the media and public.
- Prepares news items, newsletters, press releases, articles, and letters and responds to inquiries as directed.
- Gathers, disseminates, and maintains factual data, literature, reference materials, directories, and educational information from affiliated organizations and associations.
- Conducts polls and surveys as requested to determine public opinions on a variety of subjects.
- Recommends, organizes, and plans cultural, social, and recreational trips or activities for District employees.
- Acts as affirmative-action coordinator for the District.

- Adheres to District safety standards as described in the District *Safety Manual*.

Current Qualifications:

Knowledge of:

- State and Federal laws related to Human Resources/Public Relations duties.
- Practices and procedures of public relations, management, supervision, and human resources.
- Techniques, methods, and principles of disseminating accurate information to the public.
- Effective oral and written communication skills.
- Public oratory techniques and methods.
- District's mission, philosophy, and the public's expectations.
- Journalism practices, editing, prose, and research techniques.
- Personal computer word processing, desktop publishing, and current software programs.
- Operation of general office machines and equipment.
- Writes and prepares publications, reports, graphs, brochures and other materials.

Education and Experience:

- A four-year college degree with a major in American Studies from California State University, Long Beach.
- Seventeen years of progressively responsible administrative experience in a combination of public relations and human resources positions.

ASSOCIATE ENGINEER/GRANT WRITER
Richard Zack

Current Duties:

Under general direction of the District Engineer, assists with the District's engineering activities and services; identifies and investigates sources of grants and prepares grant proposals and applications; prepares studies and programs related to water facilities; prepares contract documents for water facilities to support water distribution activities; and provides support to the District Engineer. Performs other job-related duties as assigned.

Current Responsibilities:

- Inspects District projects
- Designs, manages, and oversees engineering services
- Prepares policies and procedures
- Prepares updated water model (H2O Net) of District's system
- Prepares District engineering standards and details
- Responds to inquiries on new developments; assists developers to understand District standards and policies and provides rapid turn around on development-related activities
- Assists with RFPs
- Monitors pending legislation relative to grants
- Identifies and investigates sources of grants for District projects
- Prepares grant proposals and applications
- Researches and prepares backup information and data required for grant submission
- Performs studies and prepares reports relative to various grant activities
- Monitors compliance of grants with District policies and rules, regulations, guidelines and policies of fundors
- Coordinates with consultants and reviews designs
- Conducts research and analyzes data; prepares reports and recommendations.
- Assists in the development of the engineering-services annual budget
- Enforces District policies and regulations; reviews written citations; reports at Board meetings as necessary
- Compiles and reviews engineering-related data; collaborates and confers with customers
- Designs facilities for water distribution; lays out and inspects construction activities; recommends modifications as appropriate
- Provides responsible staff assistance to the District Engineer
- Prepares staff reports and other necessary correspondence
- Responds to and resolves difficult and sensitive engineering-related citizen inquiries

- Adheres to District safety standards as prescribed in the *District Safety Manual*

QUALIFICATIONS

Knowledge of

- Principles and practices of engineering as they relate to water systems and water science engineering
- Public and private grant programs and procedures
- Current federal, state, and private grant requirements and reporting
- Basic methods of financial and statistical record keeping
- Principles of water systems management
- Bioengineering principles as they relate to water distribution operations
- Concrete design and construction planning methods and techniques
- Modern telemetry and SCADA systems
- Hydraulic network modeling
- Recent developments, current literature, and sources of information regarding water science engineering
- Principles and practices of project management
- Principles and practices of budget preparation and administration
- Pertinent federal, state, and local laws, codes, and regulations

Experience

Fourteen years of increasingly responsible professional water science engineering experience and experience writing and administering grants.

Education

A four-year degree in Civil Engineering from California State University, Fresno.

Licenses

- California Registered Civil Engineer – 56310
- California Water Treatment Operator - 24216
- Mississippi Registered Civil Engineer - 13340



Beneficial Cost Analysis of Toilet Rebate Program

Toilet Rebate

60 \$ rebate per toilet (one time payment)

Water Conserved (per toilet)	B/C Ratio
31.7 gpd	Interest rate assumed (I) 6.0%
11,571 gallons per year	Period (n) - years 10
0.0355 acre-feet per year	$(1+I)^n$ 1.7908
10.0 year life assumed	Benefits
115,705 gallons saved over useful life	Imported water cost (\$/AF) 500
0.3552 acre-feet saved over useful life	Imported water savings (\$/yr) \$ 17.76
	Present worth of series (B) \$ 130.72
	Costs
	Present Value of Cost (C) \$ 60
	B/C 2.18
Water Supply Costs Compared	
<i>Toilet Program</i>	
169 \$/AF toilet rebate program	
<i>Imported Water</i>	
431 \$/AF MWD cost of treated water	
503 \$/AF Feasibility study cost estimate for High Desert treated water	

Sensitivity Analysis at 431\$/AF (best case)

Breakeven point is 3.9 years
 Rebate could go as high as \$153 @ 31.7 gpd to breakeven
 Conservation could be as low as 12.4 gpd with \$60 rebate to breakeven

Sensitivity Analysis at 503\$/AF (likely case)

Breakeven point is 3.4 years
 Rebate could go as high as \$178 @ 31.7 gpd to breakeven
 Conservation could be as low as 10.6 gpd with \$60 rebate to breakeven

PROJECT INFORMATION DATA

Toilet Rebate: \$60/toilet

Useful Life: 10 years (Conservative)

Water Savings Over 10 Years Per Toilet:

0.3552 AF or 0.03552 AF/10-Years – Toilet

Available Funding for Toilet Rebate:

\$ 70,000	Victor Valley Water District
<u>\$ 70,000</u>	Consolidated Water Use Efficiency Grant Program
\$140,000	

Advertising & Marketing for Rebate Opportunity: \$5000 Estimated Costs

Number of Toilets Available for Rebates:

$$\frac{\$140,000 - \$5000}{\$60/\text{Toilet}} = 2,250 \text{ Toilets}$$

Annual Water Savings with Ultra Low Flow Toilets:

$$\frac{0.03552 \text{ AF}}{\text{Year} - \text{Toilet}} (2,250 \text{ Toilets}) = 79.92 \text{ AF/Year}$$

Assumed 10 Year – Life Dollar Savings:

(10 Years) (79.9 AF/Year) = 799 AF
(799 AF) (\$503/AF of High Desert Treated Water) = \$401,897
Approximately \$402,000

Assumed 20-Year Life Savings:

(1598 AF) (\$503/AF of High Desert Treated Water) = \$803,794
Approximately \$804,000

Customers' Cost Savings:

(2250 Toilets)	(31.7 Gal	365	1 FT ³	\$0.63	(10 Years)	=\$219,267
	Day-Toilets)	Year	7.48 Gal	Current Ave 100 FT ³		

Total of 2,250 Customers' Savings: \$219,267
 Approximately \$220,000

Total Savings:

VVWD Savings	\$402,000
Customer Savings	<u>\$220,000</u>
	\$622,000

Percent of Savings Realized by Victor Valley Water District:

$$\frac{\$402,000}{\$622,000} = 0.65 \rightarrow \mathbf{65\%}$$

Percent of Savings By Customers:

$$\frac{\$220,000}{622,000} = 0.35 \rightarrow \mathbf{35\%}$$