APPENDIX D

BMP Activity Reports and BMP Coverage Reports, 2003-2004

Reported as of 2/14/06

Water Supply & Reuse

Reporting Unit: **City of Davis, Public Works**

Year: **2003**

Water Supply Source Information

Supply Source Name	Quantity (AF) Supplied	Supply Type
Sacramento Valley GW Basin	14547	Groundwater

Total AF: 14547

Reported as of 2/14/06

Reported as of 2/14/06

BMP 01: Water Survey Programs for Single-Family and Multi-Family Residential Customers

Reporting Unit:	BMP Form Status:	Year:
City of Davis, Public Works	**100% Complete**	**2003**

A. Implementation

1. Based on your signed MOU date, 08/05/1994, your Agency STRATEGY DUE DATE is:	08/04/1996
2. Has your agency developed and implemented a targeting/ marketing strategy for SINGLE-FAMILY residential water use surveys?	yes
a. If YES, when was it implemented?	01/01/1995
3. Has your agency developed and implemented a targeting/ marketing strategy for MULTI-FAMILY residential water use surveys?	yes
a. If YES, when was it implemented?	01/01/1995

B. Water Survey Data

Survey Counts:	Single Family Accounts	Multi-Family Units
1. Number of surveys offered:	14232	507
2. Number of surveys completed:	253	1
Indoor Survey:		
3. Check for leaks, including toilets, faucets and meter checks	yes	yes
4. Check showerhead flow rates, aerator flow rates, and offer to replace or recommend replacement, if necessary	yes	yes
5. Check toilet flow rates and offer to install or recommend installation of displacement device or direct customer to ULFT replacement program, as neccesary; replace leaking toilet flapper, as necessary	yes	yes
Outdoor Survey:		
6. Check irrigation system and timers	yes	yes
7. Review or develop customer irrigation schedule	yes	yes
8. Measure landscaped area (Recommended but not required for surveys)	yes	yes
9. Measure total irrigable area (Recommended but not required for surveys)	yes	yes
10. Which measurement method is typically used (Recommended but not required for surveys)	Measuring Tape	
11. Were customers provided with information packets that included evaluation results and water savings recommendations?	yes	yes
12. Have the number of surveys offered and completed, survey results, and survey costs been tracked?	yes	yes
a. If yes, in what form are surveys tracked?	database	

b. Describe how your agency tracks this information.

The City of Davis uses a work order recording system.

C. Water Survey Program Expenditures

	This Year	Next Year

1. Budgeted Expenditures	25000	25000
2. Actual Expenditures	23900	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

Reported as of 2/14/06

BMP 02: Residential Plumbing Retrofit

Reporting Unit:	BMP Form Status:	Year:
City of Davis, Public Works	**100% Complete**	**2003**

A. Implementation

1. Is there an enforceable ordinance in effect in your service area requiring replacement of high-flow showerheads and other water use fixtures with their low-flow counterparts? no

   a. If YES, list local jurisdictions in your service area and code or ordinance in each:

2. Has your agency satisfied the 75% saturation requirement for single-family housing units? no
3. Estimated percent of single-family households with low-flow showerheads: %
4. Has your agency satisfied the 75% saturation requirement for multi-family housing units? no
5. Estimated percent of multi-family households with low-flow showerheads: %
6. If YES to 2 OR 4 above, please describe how saturation was determined, including the dates and results of any survey research.

B. Low-Flow Device Distribution Information

1. Has your agency developed a targeting/ marketing strategy for distributing low-flow devices? no

   a. If YES, when did your agency begin implementing this strategy?

   b. Describe your targeting/ marketing strategy.

Low-Flow Devices Distributed/ Installed	SF Accounts	MF Units
2. Number of low-flow showerheads distributed:	0	0
3. Number of toilet-displacement devices distributed:	0	0
4. Number of toilet flappers distributed:	0	0
5. Number of faucet aerators distributed:	0	0

6. Does your agency track the distribution and cost of low-flow devices? no

   a. If YES, in what format are low-flow devices tracked?

   b. If yes, describe your tracking and distribution system :

C. Low-Flow Device Distribution Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

   a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

The City provides leak dye tablets to its water customers as part of the water audit, leak check and customer assistance outreach service (see BMP 1). The City regularly publicizes its appliance rebate programs and availability of water conservation assistance. Showerheads and aerators are regulated by the National Energy Efficiency Standards, and are very affordable for customers to purchase and install independently. The city feels funding these activities would largely be a ÏfreeÓ program since the market has been transformed and regulates the use of efficient showerheads and aerators in the marketplace.

Reported as of 2/14/06

BMP 03: System Water Audits, Leak Detection and Repair

Reporting Unit:	BMP Form Status:	Year:
City of Davis, Public Works	**100% Complete**	**2003**

A. Implementation

1. Has your agency completed a pre-screening system audit for this reporting year?	no
2. If YES, enter the values (AF/Year) used to calculate verifiable use as a percent of total production:	
a. Determine metered sales (AF)	1219
b. Determine other system verifiable uses (AF)	325
c. Determine total supply into the system (AF)	1590
d. Using the numbers above, if (Metered Sales + Other Verifiable Uses) / Total Supply is < 0.9 then a full-scale system audit is required.	0.97
3. Does your agency keep necessary data on file to verify the values used to calculate verifiable uses as a percent of total production?	yes
4. Did your agency complete a full-scale audit during this report year?	no
5. Does your agency maintain in-house records of audit results or the completed AWWA audit worksheets for the completed audit?	yes
6. Does your agency operate a system leak detection program?	yes

a. If yes, describe the leak detection program:

The City operates their leak detection program on an "as-necessary" basis. When there's a leak, the City fixes it. Staff regularly reviews the water supply and demand data records and maintenance records, to confirm the unaccounted-for water losses system-side stay at or under 4 percent.

B. Survey Data

1. Total number of miles of distribution system line.	174.7
2. Number of miles of distribution system line surveyed.	0

C. System Audit / Leak Detection Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures		
2. Actual Expenditures		

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	yes

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

The City operates their leak detection program on an "as-necessary" basis. When there's a leak, the City fixes it. Staff regularly review the water supply and demand datarecords, and maintenance records, to confirm that the unaccounted for water losses system-wide stay at or under the 4-5% range.

E. Comments

Reported as of 2/14/06

BMP 04: Metering with Commodity Rates for all New Connections and Retrofit of Existing

Reporting Unit:	BMP Form Status:	Year:
City of Davis, Public Works	**100% Complete**	**2003**

A. Implementation

1. Does your agency require meters for all new connections and bill by volume-of-use?	yes
2. Does your agency have a program for retrofitting existing unmetered connections and bill by volume-of-use?	yes
a. If YES, when was the plan to retrofit and bill by volume-of-use existing unmetered connections completed?	01/01/1990

b. Describe the program:

The City is fully metered for all customer sectors. A meter retrofitproject was implemented during the 1990-97 period. Separate meters were installed for SFR homes. Afew retrofits for commercial, large landscapes, and institutional and governmental accounts were requiredto complete the project. Metered rates for all customers classes were adopted and effective for fy1998-99. All customer classes, except SFR, are on a two-tier inclining rate structure. SFR customers pay forwater based on a single tier rate structure. All customers pay a base rate charge based on meter size.

3. Number of previously unmetered accounts fitted with meters during report year.	427

B. Feasibility Study

1. Has your agency conducted a feasibility study to assess the merits of a program to provide incentives to switch mixed-use accounts to dedicated landscape meters?	no
a. If YES, when was the feasibility study conducted? (mm/dd/yy)	

b. Describe the feasibility study:

2. Number of CII accounts with mixed-use meters.	0
3. Number of CII accounts with mixed-use meters retrofitted with dedicated irrigation meters during reporting period.	0

C. Meter Retrofit Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	yes

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

This BMP is complete.

E. Comments

This BMP is complete.

Reported as of 2/14/06

BMP 05: Large Landscape Conservation Programs and Incentives

Reporting Unit:	BMP Form Status:	Year:
City of Davis, Public Works	**100% Complete**	**2003**

A. Water Use Budgets

1. Number of Dedicated Irrigation Meter Accounts:	530
2. Number of Dedicated Irrigation Meter Accounts with Water Budgets:	23
3. Budgeted Use for Irrigation Meter Accounts with Water Budgets (AF):	1
4. Actual Use for Irrigation Meter Accounts with Water Budgets (AF):	1
5. Does your agency provide water use notices to accounts with budgets each billing cycle?	yes

B. Landscape Surveys

1. Has your agency developed a marketing / targeting strategy for landscape surveys?	yes
a. If YES, when did your agency begin implementing this strategy?	01/01/1990

b. Description of marketing / targeting strategy:

There is mutual collaberation between Public Works and Parks Department.

2. Number of Surveys Offered.	530
3. Number of Surveys Completed.	7
4. Indicate which of the following Landscape Elements are part of your survey:	
a. Irrigation System Check	yes
b. Distribution Uniformity Analysis	yes
c. Review / Develop Irrigation Schedules	yes
d. Measure Landscape Area	yes
e. Measure Total Irrigable Area	yes
f. Provide Customer Report / Information	yes
5. Do you track survey offers and results?	yes
6. Does your agency provide follow-up surveys for previously completed surveys?	yes

a. If YES, describe below:

The Parks department re-audits areas.

C. Other BMP 5 Actions

1. An agency can provide mixed-use accounts with ETo-based landscape budgets in lieu of a large landscape survey program. Does your agency provide mixed-use accounts with landscape budgets?	no
2. Number of CII mixed-use accounts with landscape budgets.	0
3. Do you offer landscape irrigation training?	yes
4. Does your agency offer financial incentives to improve landscape water use efficiency?	no

Type of Financial Incentive:	Budget (Dollars/	Number Awarded to Customers	Total Amount Awarded

	Year)		
a. Rebates	0	0	0
b. Loans	0	0	0
c. Grants	0	0	0

5. Do you provide landscape water use efficiency information to new customers and customers changing services? yes

a. If YES, describe below:

All new accounts must have a meter. All new Parks accounts are connected to the a central irrigation controller.

6. Do you have irrigated landscaping at your facilities? yes

a. If yes, is it water-efficient? yes

b. If yes, does it have dedicated irrigation metering? yes

7. Do you provide customer notices at the start of the irrigation season? yes

8. Do you provide customer notices at the end of the irrigation season? yes

D. Landscape Conservation Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

E. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? yes

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

The City's primary irrigation meter accounts include its own Parks department, which manages its own budget. See comments below.

F. Comments

(1) The City has water budget accounts for its own parks. (2) The City assumes water budgets apply to accounts that are effectively ET controlled via a central irrigation control station, such that budgeted use equals actual use. (3) It is assumed accounts with water budgets use approximately 15% less water than non-budgeted accounts. Therefore, irrigation meter accounts with water budgets use approximately is 85% of the proportion of budgeted irrigation meter accounts to total irrigation meter accounts.

Reported as of 2/14/06

BMP 06: High-Efficiency Washing Machine Rebate Programs

Reporting Unit:	BMP Form Status:	Year:
City of Davis, Public Works	**100% Complete**	**2003**

A. Implementation

1. Do any energy service providers or waste water utilities in your service area offer rebates for high-efficiency washers?	no
a. If YES, describe the offerings and incentives as well as who the energy/waste water utility provider is.	
2. Does your agency offer rebates for high-efficiency washers?	yes
3. What is the level of the rebate?	188
4. Number of rebates awarded.	562

B. Rebate Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	54000	54000
2. Actual Expenditures	117414	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	no
a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."	

D. Comments

(1) Rebates amounts of both $150 and $225 are offered. (2) The discrepancy between what the City budgets and actually pays is due to an expected DWR 75$ match (as of 2002.)

Reported as of 2/14/06

BMP 07: Public Information Programs

Reporting Unit:	BMP Form Status:	Year:
City of Davis, Public Works	**100% Complete**	**2003**

A. Implementation

1. Does your agency maintain an active public information program to promote and educate customers about water conservation? yes

a. If YES, describe the program and how it's organized.

The city promotes water conservation and other resource efficiencies in coordination with other city departments, local agencies and organizations (e.g. Chamber of Commerce). The city regularly provides conservation messages on the bi-monthly utility bill, distributes water related information to the community through community-wide newsletters and makes information available on the city*s web site. The citys utility bill was redesigned to show gallons used per day for the last billing period compared to the same period the previous year (previously, the bill only indicated total billing period usage in billing units (one hundred cubit feet of water, which is 748 gallons). There is also a one-year water use history on the bill for water use tracking purposes by the customer.

2. Indicate which and how many of the following activities are included in your public information program.

Public Information Program Activity	Yes/No	Number of Events
a. Paid Advertising	no	0
b. Public Service Announcement	no	0
c. Bill Inserts / Newsletters / Brochures	yes	2
d. Bill showing water usage in comparison to previous year's usage	yes	
e. Demonstration Gardens	no	0
f. Special Events, Media Events	no	0
g. Speaker's Bureau	no	0
h. Program to coordinate with other government agencies, industry and public interest groups and media	yes	

B. Conservation Information Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	20000	20000
2. Actual Expenditures	20000	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Reported as of 2/14/06

BMP 08: School Education Programs

Reporting Unit:	BMP Form Status:	Year:
City of Davis, Public Works	**100% Complete**	**2003**

A. Implementation

1.Has your agency implemented a school information program to promote water conservation? yes

2. Please provide information on your school programs (by grade level):

Grade	Are grade-appropriate materials distributed?	No. of class presentations	No. of students reached	No. of teachers' workshops
Grades K-3rd	no	0	0	0
Grades 4th-6th	no	0	0	0
Grades 7th-8th	no	0	0	0
High School	no	0	0	0

3. Did your Agency's materials meet state education framework requirements? yes

4. When did your Agency begin implementing this program? 01/01/1996

B. School Education Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	5000	5000
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

In the past the City has provided lots of information to schools, but has receieved little interested feedback from teachers and administrators.

Reported as of 2/14/06

BMP 09: Conservation Programs for CII Accounts

Reporting Unit:	BMP Form Status:	Year:
City of Davis, Public Works	**100% Complete**	**2003**

A. Implementation

1. Has your agency identified and ranked COMMERCIAL customers according to use?	no
2. Has your agency identified and ranked INDUSTRIAL customers according to use?	no
3. Has your agency identified and ranked INSTITUTIONAL customers according to use?	no

Option A: CII Water Use Survey and Customer Incentives Program

4. Is your agency operating a CII water use survey and customer incentives program for the purpose of complying with BMP 9 under this option?	no

CII Surveys	Commercial Accounts	Industrial Accounts	Institutional Accounts
a. Number of New Surveys Offered	639	0	0
b. Number of New Surveys Completed	0	0	0
c. Number of Site Follow-ups of Previous Surveys (within 1 yr)	0	0	0
d. Number of Phone Follow-ups of Previous Surveys (within 1 yr)	0	0	0

CII Survey Components	Commercial Accounts	Industrial Accounts	Institutional Accounts
e. Site Visit	yes	no	no
f. Evaluation of all water-using apparatus and processes	no	no	no
g. Customer report identifying recommended efficiency measures, paybacks and agency incentives	no	no	no

Agency CII Customer Incentives	Budget ($/Year)	No. Awarded to Customers	Total $ Amount Awarded
h. Rebates	4750	3	1200
i. Loans	0	0	0
j. Grants	0	0	0
k. Others	0	0	0

Option B: CII Conservation Program Targets

5. Does your agency track CII program interventions and water savings for the purpose of complying with BMP 9 under this	yes

option?	
6. Does your agency document and maintain records on how savings were realized and the method of calculation for estimated savings?	yes
7. Estimated annual savings (AF/yr) from site-verified actions taken by agency since 1991.	0
8. Estimated annual savings (AF/yr) from non-site-verified actions taken by agency since 1991.	.064

B. Conservation Program Expenditures for CII Accounts

	This Year	Next Year
1. Budgeted Expenditures	10000	10000
2. Actual Expenditures	1200	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	yes

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

The City does not initiate audits or surveys to CII customers since many of the businesses in Davis are billed based on a two tier rate structure and many of the customers have relatively low water use. The City would provide an audit or survey for a CII customer upon request. Instead, the City participates in the LightWash high-efficiency washer rebate program. Furthermore, the City has no industrial accounts, and their institutional accounts consist primarily of unbilled City accounts.

D. Comments

This BMP is addressed with rebates for high-efficiency washing machines.

Reported as of 2/14/06

BMP 09a: CII ULFT Water Savings

Reporting Unit: **City of Davis, Public Works**

BMP Form Status: **100% Complete**

Year: **2003**

1. Did your agency implement a CII ULFT replacement program in the reporting year? If No, please explain why on Line B. 10. — No

A. Targeting and Marketing

1. What basis does your agency use to target customers for participation in this program? Check all that apply.

a. Describe which method you found to be the most effective overall, and which was the most effective per dollar expended.

2. How does your agency advertise this program? Check all that apply.

a. Describe which method you found to be the most effective overall, and which was the most effective per dollar expended.

B. Implementation

1. Does your agency keep and maintain customer participant information? (Read the Help information for a complete list of all the information for this BMP.) — no

2. Would your agency be willing to share this information if the CUWCC did a study to evaluate the program on behalf of your agency? — No

3. What is the total number of customer accounts participating in the program during the last year ? — 0

CII Subsector	Number of Toilets Replaced				
4.	Standard Gravity Tank	Air Assisted	Valve Floor Mount	Valve Wall Mount	Type Not Specified
a. Offices	0	0	0	0	0
b. Retail / Wholesale	0	0	0	0	0
c. Hotels	0	0	0	0	0
d. Health	0	0	0	0	0
e. Industrial	0	0	0	0	0
f. Schools: K to 12	0	0	0	0	0
g. Eating	0	0	0	0	0
h. Govern-	0	0	0	0	0

ment					
i. Churches	0	0	0	0	0
j. Other	0	0	0	0	0

5. Program design. Rebate or voucher

6. Does your agency use outside services to implement this program? No

a. If yes, check all that apply.

7. Participant tracking and follow-up. No follow-up

8. Based on your program experience, please rank on a scale of 1 to 5, with 1 being the least frequent cause and 5 being the most frequent cause, the following reasons why customers refused to participate in the program.

a. Disruption to business	4
b. Inadequate payback	5
c. Inadequate ULFT performance	2
d. Lack of funding	3
e. American's with Disabilities Act	0
f. Permitting	1
g. Other. Please describe in B. 9.	0

9. Please describe general program acceptance/resistance by customers, obstacles to implementation, and other isues affecting program implementation or effectiveness.

The city had offered the toilet rebate program to all users during the 1992-2001 period, but very few CII customers had taken advantage of this program.

10. Please provide a general assessment of the program for this reporting year. Did your program achieve its objectives? Were your targeting and marketing approaches effective? Were program costs in line with expectations and budgeting?

N/A

C. Conservation Program Expenditures for CII ULFT

1. CII ULFT Program: Annual Budget & Expenditure Data

	Budgeted	Actual Expenditure
a. Labor	0	0
b. Materials	0	0
c. Marketing & Advertising	0	0
d. Administration & Overhead	0	0
e. Outside Services	0	0
f. Total	0	0

2. CII ULFT Program: Annual Cost Sharing

a. Wholesale agency contribution	0
b. State agency contribution	0

c. Federal agency contribution	0
d. Other contribution	0
e. Total	0

D. Comments

The city has offered the toilet rebate program to all users during the1992-2001 period. Very few CII customers have taken advantage of this program.

Reported as of 2/14/06

BMP 11: Conservation Pricing

Reporting Unit:	BMP Form Status:	Year:
City of Davis, Public Works	**100% Complete**	**2003**

A. Implementation

Rate Structure Data Volumetric Rates for Water Service by Customer Class

1. Residential

a. Water Rate Structure	Increasing Block
b. Sewer Rate Structure	Non-volumetric Flat Rate
c. Total Revenue from Volumetric Rates	$0
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$0

2. Commercial

a. Water Rate Structure	Increasing Block
b. Sewer Rate Structure	Uniform
c. Total Revenue from Volumetric Rates	$0
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$0

3. Industrial

a. Water Rate Structure	Service Not Provided
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	$0
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$0

4. Institutional / Government

a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Uniform
c. Total Revenue from Volumetric Rates	$0
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$0

5. Irrigation

a. Water Rate Structure	Increasing Block
b. Sewer Rate Structure	Uniform
c. Total Revenue from Volumetric Rates	$0
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$0

6. Other

a. Water Rate Structure	Service Not Provided
b. Sewer Rate Structure	Service Not Provided

c. Total Revenue from Volumetric

Rates	$0
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$0

B. Conservation Pricing Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? yes

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

The City contracts a rate study approximately every three years to analyze the effectiveness of its rate structure, and evaluate additional system considerations, while developing a new rate scheme. These analyses do include calculating the componenets requested above, however, accomplish the same goal.

D. Comments

Based on the City's billing system, the residential category includes both single family and multi-family users. The city also provides "city" (institutional/ government) service, but does not charge itself for use, so there is no revenue generated.

Reported as of 2/14/06

BMP 12: Conservation Coordinator

Reporting Unit:	BMP Form Status:	Year:
City of Davis, Public Works	**100% Complete**	**2003**

A. Implementation

1. Does your Agency have a conservation coordinator?	yes
2. Is this a full-time position?	no
3. If no, is the coordinator supplied by another agency with which you cooperate in a regional conservation program ?	no
4. Partner agency's name:	N/A
5. If your agency supplies the conservation coordinator:	
a. What percent is this conservation coordinator's position?	30%
b. Coordinator's Name	Jacques Debra
c. Coordinator's Title	Senior Utility Resource Specialist
d. Coordinator's Experience and Number of Years	Utility and demand management, +15 years
e. Date Coordinator's position was created (mm/dd/yyyy)	01/01/1990
6. Number of conservation staff, including Conservation Coordinator.	3

B. Conservation Staff Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	83262	83833
2. Actual Expenditures	83262	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	no

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Reported as of 2/14/06

BMP 13: Water Waste Prohibition

Reporting Unit:	BMP Form Status:	Year:
City of Davis, Public Works	**100% Complete**	**2003**

A. Requirements for Documenting BMP Implementation

1. Is a water waste prohibition ordinance in effect in your service area? yes

a. If YES, describe the ordinance:

No person shall use or cause to be used any city water for the purpose of sprinkling streets or alleys, except such person as may be authorized by the director of public works, nor allow any water to run to waste in any gutter or otherwise, nor shall any city water be used for irrigation except as provided in this chapter. No person other than employees of the water department shall open any fire hydrant or attach any hose thereto for any purpose, without first obtaining written permission from the chief of the fire department or the director of public works. (Code 1964, *8-2.404.)

2. Is a copy of the most current ordinance(s) on file with CUWCC? yes

a. List local jurisdictions in your service area in the first text box and water waste ordinance citations in each jurisdiction in the second text box:

Willowbank, El Macero, City of Davis	See B.2 below

B. Implementation

1. Indicate which of the water uses listed below are prohibited by your agency or service area.

a. Gutter flooding	yes
b. Single-pass cooling systems for new connections	no
c. Non-recirculating systems in all new conveyor or car wash systems	no
d. Non-recirculating systems in all new commercial laundry systems	no
e. Non-recirculating systems in all new decorative fountains	no
f. Other, please name	no

2. Describe measures that prohibit water uses listed above:

The city established a No-Waste ordinance in 1990, which is actively enforced. Enforcement includes following up on gutter flooding complaints, educating customers on efficient practices, and if necessary, issue warnings and citations for violations. During the last drought, the city hired bike water cops to circulate throughout the service area and prevent and/or curtailgross water waste situations. Enforcement occurred when each customer had incurred three waste-of-water violations.

Water Softeners:

3. Indicate which of the following measures your agency has supported in developing state law:

a. Allow the sale of more efficient, demand-initiated regenerating DIR models.	yes
b. Develop minimum appliance efficiency standards that:	
i.) Increase the regeneration efficiency standard to at least 3,350 grains of hardness removed per pound of common salt used.	yes
ii.) Implement an identified maximum number of gallons discharged per gallon of soft water produced.	yes

c. Allow local agencies, including municipalities and special districts, to set more stringent standards and/or to ban on-site regeneration of water softeners if it is demonstrated and found by the agency governing board that there is an adverse effect on the reclaimed water or groundwater supply. yes

4. Does your agency include water softener checks in home water audit programs? no

5. Does your agency include information about DIR and exchange-type water softeners in educational efforts to encourage replacement of less efficient timer models? no

C. Water Waste Prohibition Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

Though the City has the mechanics in place for issuing water waste oridinance citations, the notification process used, in addition to an existing general water conciousness among citizens, has made it so that no citations have been recorded to date.

Reported as of 2/14/06

BMP 14: Residential ULFT Replacement Programs

Reporting Unit:	BMP Form Status:	Year:
City of Davis, Public Works	**100% Complete**	**2003**

A. Implementation

	Single-Family Accounts	Multi-Family Units
1. Does your Agency have program(s) for replacing high-water-using toilets with ultra-low flush toilets?	no	no

Number of Toilets Replaced by Agency Program During Report Year

Replacement Method	SF Accounts	MF Units
2. Rebate	0	0
3. Direct Install	0	0
4. CBO Distribution	0	0
5. Other	0	0
Total	**0**	**0**

6. Describe your agency's ULFT program for single-family residences.

The city had a toilet rebate program from 1992 to 2001. The initial toilet rebate effort in 1992 was a joint program with PG&E whereby customers received a rebate from both the city and PG&E totaling $75. From 1993-99 the program evolved to a city only rebate for $50. Over the last few years the rebate amount was increased to $100 with the infusion of outside funding (Wildhorse Project). About 1,000 rebates were issued to Davis water customers during the program implementation period. Participants were primarily SFR customers. The rebate amount ranged from $50-100 during the program duration. The rebates were issued to customers as a credit on their utility bill.

7. Describe your agency's ULFT program for multi-family residences.

None currently. Too much free-ridership

8. Is a toilet retrofit on resale ordinance in effect for your service area? no

9. List local jurisdictions in your service area in the left box and ordinance citations in each jurisdiction in the right box:

B. Residential ULFT Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	15000	15000
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? yes

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

About 35 percent of the SFR inventory has been retrofitted with 1.6 gallon models through the residential rebate program and new construction requirements. As the city grows, the percentage of retrofitted accounts will grow accordingly. The City will not continue to

pursue this BMP due to increased evidence of free-ridership.

D. Comments

Reported as of 2/14/06

Water Supply & Reuse

Reporting Unit: **City of Davis, Public Works**

Year: **2004**

Water Supply Source Information

Supply Source Name	Quantity (AF) Supplied	Supply Type
Sacramento Valley GW Basin	15096	Groundwater

Total AF: 15096

Reported as of 2/14/06

Reported as of 2/14/06

BMP 01: Water Survey Programs for Single-Family and Multi-Family Residential Customers

Reporting Unit:	BMP Form Status:	Year:
City of Davis, Public Works	**100% Complete**	**2004**

A. Implementation

1. Based on your signed MOU date, 08/05/1994, your Agency STRATEGY DUE DATE is:	08/04/1996
2. Has your agency developed and implemented a targeting/ marketing strategy for SINGLE-FAMILY residential water use surveys?	yes
a. If YES, when was it implemented?	01/01/1995
3. Has your agency developed and implemented a targeting/ marketing strategy for MULTI-FAMILY residential water use surveys?	yes
a. If YES, when was it implemented?	01/01/1995

B. Water Survey Data

Survey Counts:	**Single Family Accounts**	**Multi-Family Units**
1. Number of surveys offered:	14588	462
2. Number of surveys completed:	197	0
Indoor Survey:		
3. Check for leaks, including toilets, faucets and meter checks	yes	yes
4. Check showerhead flow rates, aerator flow rates, and offer to replace or recommend replacement, if necessary	yes	yes
5. Check toilet flow rates and offer to install or recommend installation of displacement device or direct customer to ULFT replacement program, as neccesary; replace leaking toilet flapper, as necessary	yes	yes
Outdoor Survey:		
6. Check irrigation system and timers	yes	yes
7. Review or develop customer irrigation schedule	yes	yes
8. Measure landscaped area (Recommended but not required for surveys)	yes	yes
9. Measure total irrigable area (Recommended but not required for surveys)	yes	yes
10. Which measurement method is typically used (Recommended but not required for surveys)	Measuring Tape	
11. Were customers provided with information packets that included evaluation results and water savings recommendations?	yes	yes
12. Have the number of surveys offered and completed, survey results, and survey costs been tracked?	yes	yes
a. If yes, in what form are surveys tracked?	database	

b. Describe how your agency tracks this information.

The City of Davis has a work order recording system.

C. Water Survey Program Expenditures

	This Year	**Next Year**

1. Budgeted Expenditures	25000	25000
2. Actual Expenditures	18850	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

.

Reported as of 2/14/06

BMP 02: Residential Plumbing Retrofit

Reporting Unit:	BMP Form Status:	Year:
City of Davis, Public Works	**100% Complete**	**2004**

A. Implementation

1. Is there an enforceable ordinance in effect in your service area requiring replacement of high-flow showerheads and other water use fixtures with their low-flow counterparts? no

   a. If YES, list local jurisdictions in your service area and code or ordinance in each:

2. Has your agency satisfied the 75% saturation requirement for single-family housing units? no
3. Estimated percent of single-family households with low-flow showerheads: %
4. Has your agency satisfied the 75% saturation requirement for multi-family housing units? no
5. Estimated percent of multi-family households with low-flow showerheads: %
6. If YES to 2 OR 4 above, please describe how saturation was determined, including the dates and results of any survey research.

B. Low-Flow Device Distribution Information

1. Has your agency developed a targeting/ marketing strategy for distributing low-flow devices? no

   a. If YES, when did your agency begin implementing this strategy?

   b. Describe your targeting/ marketing strategy.

Low-Flow Devices Distributed/ Installed	SF Accounts	MF Units
2. Number of low-flow showerheads distributed:	0	0
3. Number of toilet-displacement devices distributed:	0	0
4. Number of toilet flappers distributed:	0	0
5. Number of faucet aerators distributed:	0	0

6. Does your agency track the distribution and cost of low-flow devices? no

   a. If YES, in what format are low-flow devices tracked?

   b. If yes, describe your tracking and distribution system :

C. Low-Flow Device Distribution Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

   a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

The City provides leak dye tablets to its water customers as part of the water audit, leak check and customer assistance outreach service (see BMP 1). The City regularly publicizes its appliance rebate programs and availability of water conservation assistance. Showerheads and aerators are regulated by the National Energy Efficiency Standards, and are very affordable for customers to purchase and install independently. The city feels funding these activities would largely be a ìfree-riderî program since the market has been transformed and regulates the use of efficient showerheads and aerators in the marketplace.

Reported as of 2/14/06

BMP 03: System Water Audits, Leak Detection and Repair

Reporting Unit:	BMP Form Status:	Year:
City of Davis, Public Works	**100% Complete**	**2004**

A. Implementation

1. Has your agency completed a pre-screening system audit for this reporting year?	no
2. If YES, enter the values (AF/Year) used to calculate verifiable use as a percent of total production:	
a. Determine metered sales (AF)	1279
b. Determine other system verifiable uses (AF)	323
c. Determine total supply into the system (AF)	1651
d. Using the numbers above, if (Metered Sales + Other Verifiable Uses) / Total Supply is < 0.9 then a full-scale system audit is required.	0.97
3. Does your agency keep necessary data on file to verify the values used to calculate verifiable uses as a percent of total production?	yes
4. Did your agency complete a full-scale audit during this report year?	no
5. Does your agency maintain in-house records of audit results or the completed AWWA audit worksheets for the completed audit?	yes
6. Does your agency operate a system leak detection program?	yes

a. If yes, describe the leak detection program:

The City operates their leak detection program on an "as-necessary" basis. When there's a leak, the City fixes it. Staff regularly reviews the water supply and demand data records and maintenance records, to confirm the unaccounted-for water losses system-side stay at or under 4 percent.

B. Survey Data

1. Total number of miles of distribution system line.	175.7
2. Number of miles of distribution system line surveyed.	0

C. System Audit / Leak Detection Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures		
2. Actual Expenditures		

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	yes

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

The City operates their leak detection program on an "as-necessary" basis. When there's a leak, the City fixes it. Staff regularly reviews the water supply and demand data records and maintenance records, to confirm the unaccounted-for water losses system-side stay at or under 4 percent.

E. Comments

Reported as of 2/14/06

BMP 04: Metering with Commodity Rates for all New Connections and Retrofit of Existing

Reporting Unit:	BMP Form Status:	Year:
City of Davis, Public Works	**100% Complete**	**2004**

A. Implementation

1. Does your agency require meters for all new connections and bill by volume-of-use?	yes
2. Does your agency have a program for retrofitting existing unmetered connections and bill by volume-of-use?	yes
a. If YES, when was the plan to retrofit and bill by volume-of-use existing unmetered connections completed?	01/01/1990

b. Describe the program:

The City is fully metered for all customer sectors. A meter retrofit project was implemented during the 1990-97 period. Separate meters were installed for SFR homes. A few retrofits for commercial, large landscapes, and institutional and governmental accounts were requiredto complete the project. Metered rates for all customers classes were adopted and effective for fy1998-99. All customer classes, except SFR, are on a two-tier inclining rate structure. SFR customers pay forwater based on a single tier rate structure. All customers pay a base rate charge based on meter size.

3. Number of previously unmetered accounts fitted with meters during report year.	0

B. Feasibility Study

1. Has your agency conducted a feasibility study to assess the merits of a program to provide incentives to switch mixed-use accounts to dedicated landscape meters?	no
a. If YES, when was the feasibility study conducted? (mm/dd/yy)	

b. Describe the feasibility study:

2. Number of CII accounts with mixed-use meters.	0
3. Number of CII accounts with mixed-use meters retrofitted with dedicated irrigation meters during reporting period.	0

C. Meter Retrofit Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	yes

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

This BMP is complete.

E. Comments

This BMP is complete.

Reported as of 2/14/06

BMP 05: Large Landscape Conservation Programs and Incentives

Reporting Unit:	BMP Form Status:	Year:
City of Davis, Public Works	**100% Complete**	**2004**

A. Water Use Budgets

1. Number of Dedicated Irrigation Meter Accounts:	406
2. Number of Dedicated Irrigation Meter Accounts with Water Budgets:	13
3. Budgeted Use for Irrigation Meter Accounts with Water Budgets (AF):	1
4. Actual Use for Irrigation Meter Accounts with Water Budgets (AF):	1
5. Does your agency provide water use notices to accounts with budgets each billing cycle?	yes

B. Landscape Surveys

1. Has your agency developed a marketing / targeting strategy for landscape surveys?	yes
a. If YES, when did your agency begin implementing this strategy?	01/01/1990

b. Description of marketing / targeting strategy:

There is mutual collaberation between Public Works and Parks Department.

2. Number of Surveys Offered.	406
3. Number of Surveys Completed.	7
4. Indicate which of the following Landscape Elements are part of your survey:	
a. Irrigation System Check	yes
b. Distribution Uniformity Analysis	yes
c. Review / Develop Irrigation Schedules	yes
d. Measure Landscape Area	yes
e. Measure Total Irrigable Area	yes
f. Provide Customer Report / Information	yes
5. Do you track survey offers and results?	yes
6. Does your agency provide follow-up surveys for previously completed surveys?	yes

a. If YES, describe below:

The Parks department re-audits areas.

C. Other BMP 5 Actions

1. An agency can provide mixed-use accounts with ETo-based landscape budgets in lieu of a large landscape survey program. Does your agency provide mixed-use accounts with landscape budgets?	no
2. Number of CII mixed-use accounts with landscape budgets.	0
3. Do you offer landscape irrigation training?	yes
4. Does your agency offer financial incentives to improve landscape water use efficiency?	no

Type of Financial Incentive:	Budget (Dollars/	Number Awarded to Customers	Total Amount Awarded

	Year)		
a. Rebates	0	0	0
b. Loans	0	0	0
c. Grants	0	0	0

5. Do you provide landscape water use efficiency information to new customers and customers changing services? yes

a. If YES, describe below:

All new accounts must have a meter. All new Parks accounts are connected to the a central irrigation controller.

6. Do you have irrigated landscaping at your facilities? yes

a. If yes, is it water-efficient? yes

b. If yes, does it have dedicated irrigation metering? yes

7. Do you provide customer notices at the start of the irrigation season? yes

8. Do you provide customer notices at the end of the irrigation season? yes

D. Landscape Conservation Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

E. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? yes

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

The City's primary irrigation meter accounts include its own Parks department, which manages its own budget. See comments below.

F. Comments

(1) The City has water budget accounts for its own parks. (2) The City assumes water budgets apply to accounts that are effectively ET controlled via a central irrigation control station, such that budgeted use equals actual use. (3) It is assumed accounts with water budgets use approximately 15% less water than non-budgeted accounts. Therefore, irrigation meter accounts with water budgets use approximately is 85% of the proportion of budgeted irrigation meter accounts to total irrigation meter accounts.

Reported as of 2/14/06

BMP 06: High-Efficiency Washing Machine Rebate Programs

Reporting Unit:	BMP Form Status:	Year:
City of Davis, Public Works	**100% Complete**	**2004**

A. Implementation

1. Do any energy service providers or waste water utilities in your service area offer rebates for high-efficiency washers?	no
a. If YES, describe the offerings and incentives as well as who the energy/waste water utility provider is.	
2. Does your agency offer rebates for high-efficiency washers?	yes
3. What is the level of the rebate?	125
4. Number of rebates awarded.	349

B. Rebate Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	54000	54000
2. Actual Expenditures	56335	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	no
a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."	

D. Comments

(1) Rebates amounts of both $100 and $150 are offered. (2) The discrepancy between what the City budgets and actually pays is due to an expected DWR 75$ match (as of 2002.)

Reported as of 2/14/06

BMP 07: Public Information Programs

Reporting Unit:	BMP Form Status:	Year:
City of Davis, Public Works	**100% Complete**	**2004**

A. Implementation

1. Does your agency maintain an active public information program to promote and educate customers about water conservation? yes

a. If YES, describe the program and how it's organized.

The city promotes water conservation and other resource efficiencies in coordination with other city departments, local agencies and organizations (e.g. Chamber of Commerce). The city regularly provides conservation messages on the bi-monthly utility bill, distributes water related information to the community through community-wide newsletters and makes information available on the cityÌs web site. The citys utility bill was redesigned to show gallons used per day for the last billing period compared to the same period the previous year (previously, the bill only indicated total billing period usage in billing units (one hundred cubit feet of water, which is 748 gallons). There is also a one-year water use history on the bill for water use tracking purposes by the customer.

2. Indicate which and how many of the following activities are included in your public information program.

Public Information Program Activity	Yes/No	Number of Events
a. Paid Advertising	no	
b. Public Service Announcement	no	
c. Bill Inserts / Newsletters / Brochures	yes	2
d. Bill showing water usage in comparison to previous year's usage	yes	
e. Demonstration Gardens	no	
f. Special Events, Media Events	no	
g. Speaker's Bureau	no	
h. Program to coordinate with other government agencies, industry and public interest groups and media	yes	

B. Conservation Information Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	20000	20000
2. Actual Expenditures	20000	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Reported as of 2/14/06

BMP 08: School Education Programs

Reporting Unit:	BMP Form Status:	Year:
City of Davis, Public Works	**100% Complete**	**2004**

A. Implementation

1.Has your agency implemented a school information program to promote water conservation? yes

2. Please provide information on your school programs (by grade level):

Grade	Are grade-appropriate materials distributed?	No. of class presentations	No. of students reached	No. of teachers' workshops
Grades K-3rd	no	0	0	0
Grades 4th-6th	no	0	0	0
Grades 7th-8th	no	0	0	0
High School	no	0	0	0

3. Did your Agency's materials meet state education framework requirements? yes

4. When did your Agency begin implementing this program? 01/01/1996

B. School Education Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	5000	5000
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

In the past the City has provided lots of information to schools, but has receieved little interested feedback from teachers and administrators.

Reported as of 2/14/06

BMP 09: Conservation Programs for CII Accounts

Reporting Unit:	BMP Form Status:	Year:
City of Davis, Public Works	**100% Complete**	**2004**

A. Implementation

1. Has your agency identified and ranked COMMERCIAL customers according to use?	no
2. Has your agency identified and ranked INDUSTRIAL customers according to use?	no
3. Has your agency identified and ranked INSTITUTIONAL customers according to use?	no

Option A: CII Water Use Survey and Customer Incentives Program

4. Is your agency operating a CII water use survey and customer incentives program for the purpose of complying with BMP 9 under this option?	no

CII Surveys	Commercial Accounts	Industrial Accounts	Institutional Accounts
a. Number of New Surveys Offered	563	0	266
b. Number of New Surveys Completed	0	0	0
c. Number of Site Follow-ups of Previous Surveys (within 1 yr)	0	0	0
d. Number of Phone Follow-ups of Previous Surveys (within 1 yr)	0	0	0

CII Survey Components	Commercial Accounts	Industrial Accounts	Institutional Accounts
e. Site Visit	yes	no	no
f. Evaluation of all water-using apparatus and processes	no	no	no
g. Customer report identifying recommended efficiency measures, paybacks and agency incentives	no	no	no

Agency CII Customer Incentives	Budget ($/Year)	No. Awarded to Customers	Total $ Amount Awarded
h. Rebates	10000	6	2700
i. Loans	0	0	0
j. Grants	0	0	0
k. Others	0	0	0

Option B: CII Conservation Program Targets

5. Does your agency track CII program interventions and water savings for the purpose of complying with BMP 9 under this	yes

option?	
6. Does your agency document and maintain records on how savings were realized and the method of calculation for estimated savings?	yes
7. Estimated annual savings (AF/yr) from site-verified actions taken by agency since 1991.	0
8. Estimated annual savings (AF/yr) from non-site-verified actions taken by agency since 1991.	.064

B. Conservation Program Expenditures for CII Accounts

	This Year	Next Year
1. Budgeted Expenditures	10000	10000
2. Actual Expenditures	2700	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	yes

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

The city does not initiate audits or surveys to CII customers since many of the businesses in Davis are billed based on a two tier rate structure and many of the customers have relatively low water use. The City would provide an audit or survey for a CII customer upon request. Instead, the City participates in the LightWash high-efficiency washer rebate program. Furthermore, the City has no industrial accounts, and their institutional accounts consist primarily of unbilled City accounts.

D. Comments

This BMP is addressed with rebates for high-efficiency washing machines.

Reported as of 2/14/06

BMP 09a: CII ULFT Water Savings

Reporting Unit: **City of Davis, Public Works**

BMP Form Status: **100% Complete**

Year: **2004**

1. Did your agency implement a CII ULFT replacement program in the reporting year? If No, please explain why on Line B. 10. — No

A. Targeting and Marketing

1. What basis does your agency use to target customers for participation in this program? Check all that apply.

a. Describe which method you found to be the most effective overall, and which was the most effective per dollar expended.

2. How does your agency advertise this program? Check all that apply.

a. Describe which method you found to be the most effective overall, and which was the most effective per dollar expended.

B. Implementation

1. Does your agency keep and maintain customer participant information? (Read the Help information for a complete list of all the information for this BMP.) — no

2. Would your agency be willing to share this information if the CUWCC did a study to evaluate the program on behalf of your agency? — No

3. What is the total number of customer accounts participating in the program during the last year ? — 0

CII Subsector	Number of Toilets Replaced				
4.	Standard Gravity Tank	Air Assisted	Valve Floor Mount	Valve Wall Mount	Type Not Specified
a. Offices	0	0	0	0	0
b. Retail / Wholesale	0	0	0	0	0
c. Hotels	0	0	0	0	0
d. Health	0	0	0	0	0
e. Industrial	0	0	0	0	0
f. Schools: K to 12	0	0	0	0	0
g. Eating	0	0	0	0	0
h. Govern-	0	0	0	0	0

ment					
i. Churches	0	0	0	0	0
j. Other	0	0	0	0	0

5. Program design.

6. Does your agency use outside services to implement this program? No

a. If yes, check all that apply.

7. Participant tracking and follow-up. No follow-up

8. Based on your program experience, please rank on a scale of 1 to 5, with 1 being the least frequent cause and 5 being the most frequent cause, the following reasons why customers refused to participate in the program.

a. Disruption to business	4
b. Inadequate payback	5
c. Inadequate ULFT performance	2
d. Lack of funding	3
e. American's with Disabilities Act	0
f. Permitting	1
g. Other. Please describe in B. 9.	0

9. Please describe general program acceptance/resistance by customers, obstacles to implementation, and other isues affecting program implementation or effectiveness.

The city had offered the toilet rebate program to all users during the 1992-2001 period, but very few CII customers had taken advantage of this program.

10. Please provide a general assessment of the program for this reporting year. Did your program achieve its objectives? Were your targeting and marketing approaches effective? Were program costs in line with expectations and budgeting?

N/A

C. Conservation Program Expenditures for CII ULFT

1. CII ULFT Program: Annual Budget & Expenditure Data

	Budgeted	Actual Expenditure
a. Labor	0	0
b. Materials	0	0
c. Marketing & Advertising	0	0
d. Administration & Overhead	0	0
e. Outside Services	0	0
f. Total	0	0

2. CII ULFT Program: Annual Cost Sharing

a. Wholesale agency contribution	0
b. State agency contribution	0

c. Federal agency contribution	0
d. Other contribution	0
e. Total	0

D. Comments

The city had offered the toilet rebate program to all users during the 1992-2001 period, but very few CII customers had taken advantage of this program.

Reported as of 2/14/06

BMP 11: Conservation Pricing

Reporting Unit:	BMP Form Status:	Year:
City of Davis, Public Works	**100% Complete**	**2004**

A. Implementation

Rate Structure Data Volumetric Rates for Water Service by Customer Class

1. Residential

a. Water Rate Structure	Increasing Block
b. Sewer Rate Structure	Non-volumetric Flat Rate
c. Total Revenue from Volumetric Rates	$3676581
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$1522413

2. Commercial

a. Water Rate Structure	Increasing Block
b. Sewer Rate Structure	Uniform
c. Total Revenue from Volumetric Rates	$589389
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$117843

3. Industrial

a. Water Rate Structure	Service Not Provided
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	$0
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$0

4. Institutional / Government

a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Uniform
c. Total Revenue from Volumetric Rates	$0
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$0

5. Irrigation

a. Water Rate Structure	Increasing Block
b. Sewer Rate Structure	Uniform
c. Total Revenue from Volumetric Rates	$120382
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$67601

6. Other

a. Water Rate Structure	Service Not Provided
b. Sewer Rate Structure	Service Not Provided

c. Total Revenue from Volumetric

Rates	$0
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$0

B. Conservation Pricing Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	25000
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

The City contracts a rate study approximately every three years to analyze the effectiveness of its rate structure, and evaluate additional system considerations, while developing a new rate scheme. These analyses do include calculating the componenets requested above, however, accomplish the same goal.

D. Comments

Based on the City's billing system, the residential category includes both single family and multi-family users. The city also provides "city" (institutional/ government) service, but does not charge itself for use, so there is no revenue generated.

Reported as of 2/14/06

BMP 12: Conservation Coordinator

Reporting Unit:	BMP Form Status:	Year:
City of Davis, Public Works	**100% Complete**	**2004**

A. Implementation

1. Does your Agency have a conservation coordinator?	yes
2. Is this a full-time position?	no
3. If no, is the coordinator supplied by another agency with which you cooperate in a regional conservation program ?	no
4. Partner agency's name:	N/A
5. If your agency supplies the conservation coordinator:	
a. What percent is this conservation coordinator's position?	30%
b. Coordinator's Name	Jacques DebBra
c. Coordinator's Title	Senior Utility Resource Specialist
d. Coordinator's Experience and Number of Years	Utility and demand management, +15 years
e. Date Coordinator's position was created (mm/dd/yyyy)	01/01/1990
6. Number of conservation staff, including Conservation Coordinator.	3

B. Conservation Staff Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	83833	85000
2. Actual Expenditures	83833	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	no

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Reported as of 2/14/06

BMP 13: Water Waste Prohibition

Reporting Unit:	BMP Form Status:	Year:
City of Davis, Public Works	**100% Complete**	**2004**

A. Requirements for Documenting BMP Implementation

1. Is a water waste prohibition ordinance in effect in your service area? yes

a. If YES, describe the ordinance:

No person shall use or cause to be used any city water for the purpose of sprinkling streets or alleys, except such person as may be authorized by the director of public works, nor allow any water to run to waste in any gutter or otherwise, nor shall any city water be used for irrigation except as provided in this chapter. No person other than employees of the water department shall open any fire hydrant or attach any hose thereto for any purpose, without first obtaining written permission from the chief of the fire department or the director of public works. (Code 1964, *8-2.404.)

2. Is a copy of the most current ordinance(s) on file with CUWCC? yes

a. List local jurisdictions in your service area in the first text box and water waste ordinance citations in each jurisdiction in the second text box:

Willowbank, El Macero, City of Davis	See B.2 below

B. Implementation

1. Indicate which of the water uses listed below are prohibited by your agency or service area.

a. Gutter flooding	yes
b. Single-pass cooling systems for new connections	no
c. Non-recirculating systems in all new conveyor or car wash systems	no
d. Non-recirculating systems in all new commercial laundry systems	no
e. Non-recirculating systems in all new decorative fountains	no
f. Other, please name	no

2. Describe measures that prohibit water uses listed above:

The city established a No-Waste ordinance in 1990, which is actively enforced. Enforcement includes following up on gutter flooding complaints, educating customers on efficient practices, and if necessary, issue warnings and citations for violations. During the last drought, the city hired bike water cops to circulate throughout the service area and prevent and/or curtailgross water waste situations. Enforcement occurred when each customer had incurred three waste-of-water violations.

Water Softeners:

3. Indicate which of the following measures your agency has supported in developing state law:

a. Allow the sale of more efficient, demand-initiated regenerating DIR models.	yes
b. Develop minimum appliance efficiency standards that:	
i.) Increase the regeneration efficiency standard to at least 3,350 grains of hardness removed per pound of common salt used.	yes
ii.) Implement an identified maximum number of gallons discharged per gallon of soft water produced.	yes

c. Allow local agencies, including municipalities and special districts, to set more stringent standards and/or to ban on-site regeneration of water softeners if it is demonstrated and found by the agency governing board that there is an adverse effect on the reclaimed water or groundwater supply. yes

4. Does your agency include water softener checks in home water audit programs? no

5. Does your agency include information about DIR and exchange-type water softeners in educational efforts to encourage replacement of less efficient timer models? no

C. Water Waste Prohibition Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

Though the City has the mechanics in place for issuing water waste oridinance citations, the notification process used, in addition to an existing general water conciousness among citizens, has made it so that no citations have been recorded to date.

Reported as of 2/14/06

BMP 14: Residential ULFT Replacement Programs

Reporting Unit:	BMP Form Status:	Year:
City of Davis, Public Works	**100% Complete**	**2004**

A. Implementation

	Single-Family Accounts	Multi-Family Units
1. Does your Agency have program(s) for replacing high-water-using toilets with ultra-low flush toilets?	no	no

Number of Toilets Replaced by Agency Program During Report Year

Replacement Method	SF Accounts	MF Units
2. Rebate	0	0
3. Direct Install	0	0
4. CBO Distribution	0	0
5. Other	0	0
Total	**0**	**0**

6. Describe your agency's ULFT program for single-family residences.

The city had a toilet rebate program from 1992 to 2001. The initial toilet rebate effort in 1992 was a joint program with PG&E whereby customers received a rebate from both the city and PG&E totaling $75. From 1993-99 the program evolved to a city only rebate for $50. Over the last few years the rebate amount was increased to $100 with the infusion of outside funding (Wildhorse Project). About 1,000 rebates were issued to Davis water customers during the program implementation period. Participants were primarily SFR customers. The rebate amount ranged from $50-100 during the program duration. The rebates were issued to customers as a credit on their utility bill.

7. Describe your agency's ULFT program for multi-family residences.

None currently. Too much free-ridership

8. Is a toilet retrofit on resale ordinance in effect for your service area? no

9. List local jurisdictions in your service area in the left box and ordinance citations in each jurisdiction in the right box:

B. Residential ULFT Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	15000	15000
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? yes

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

About 35 percent of the SFR inventory has been retrofitted with 1.6 gallon models through the residential rebate program and new construction requirements. As the city grows, the percentage of retrofitted accounts will grow accordingly. The City will not continue to

pursue this BMP due to increased evidence of free-ridership.

D. Comments

APPENDIX E

Economic Analysis of Exempted BMPs

BMP 02 Simple Cost-Effectiveness Tool

Version 3, Beta

User Warning: This spreadsheet model is still under development. It is currently being tested by members of the R&E committee. This model has not been officially adopted by the CUWCC for benefit-cost analysis of BMP 02.

This spreadsheet tool provides a simple model for evaluating the cost-effectiveness of BMP 02. The model is organized into five data entry steps and one analysis review step, as follows:

Step 1 - Annual Costs: in this step you enter information to calculate the expected annual costs to implement BMP 02.

Step 2 - Customer Water Savings: in this step you enter information to calculate the expected water savings over time from implementation of BMP 02.

Step 3 - Agency Benefits: in this step you enter information to calculate the benefits to your agency from the water savings estimated in Step 2.

Step 4 - Other Benefits and Costs: in this step you enter information to calculate benefits and costs that may accrue to parties other than your agency from implementation of BMP 02.

Step 5 - Discounting Information: in this step you provide discount and cost escalation rates needed for the present value analysis.

Step 6 - Review Results: in this step you review the model results. These results are based on the information you provided in the first five steps.

Cell Color Key

Green Cells are cells that require data from the user.

White Cells are cells that contain formulas used by the model. If you overwrite the formulas in White Cells the model will cease to work properly. Only enter data in Green Cells.

Knowledge Requirements

This model calculates the present value benefits and costs associated with BMP 02. To use this model you should be familiar with the requirements of BMP 02 and basic methods of benefit-cost analysis and present value analysis. BMP 02 is fully described in Exhibit 1 of the MOU. Methods of benefit-cost analysis used by this model are described in the Council's "Guidelines for Preparing Cost-Effectiveness Analyses of Urban Water Conservation Best Management Practices." Both of these documents are available from the Council (www.cuwcc.org). Additionally, Appendix A of the Council's "BMP Costs & Savings Study" provides further review and examples of benefit-cost calculations.

The structure and organization of this model is based on similar worksheets provided in "Water Conservation Guidebook for Small and Medium-Sized Utilities," AWWA Pacific Northwest Section, 1993. This guidebook is available through the CUWCC lending library or may be purchased directly from AWWA.

Data Requirements

This model requires a variety of data, including:

* Implementation costs, including staffing, materials, outside consultants, and marketing costs.

* Estimates of water savings from residential plumbing retrofits, including initial savings and rates of decay.

* Agency water production costs, including source of supply costs, capacity expansion costs, energy costs, and chemical costs.

* Environmental benefits of water saved. In many instances users will not have this information. In these cases the model can be used to conduct "what-if" analysis to determine the effect of environmental benefits on BMP 02 cost-effectiveness.

* Discount rates, both for your agency and for the society.

Much of the date required to implement this model is available in the Council's "BMP Costs & Savings Study." This document provides best available estimates of water savings and program costs for most of the BMPs for which water savings have been quantified.

Variable Units

Model variables represent specific quantities denoted in particular units. These units must be used or the model will provide incorrect results. The called for unit is always indicated for each variable for which you are providing a value. In most cases this will be obvious. Water volumes are mostly denoted in acre-feet (af). In some cases they are denoted in gallons-per-day (gpd). At the bottom of several worksheets a unit conversion calculator for converting water volume into acre-feet is provided.

Scenarios

You can save model scenarios. A scenario consists of all the values you entered for the model variables plus the benefit-cost results for those values. Scenarios are saved on the worksheet "Saved Scenarios." These scenarios can also be loaded back into the model at a later time using the "Load a saved scenario" button located

BMP 02 Residential Plumbing Retrofit - Annual Program Cost Worksheet

Instructions: Fill in all green cells.

Administration Costs

1. Staff hours to administer the retrofit program	500 hrs/yr	
2. Staff hourly rate, including overhead	$ 75.00 /hr	
3. Administration costs (Line 1 x Line 2)	$ 37,500 /yr	

Field Labor Costs	Single Family Plumbing Retrofits	Multi Family Plumbing Retrofits
4. Field labor hours (e.g. kit distribution, direct installation)	3,500 hrs/yr	2,000 hrs/yr
5. Field labor hourly rate, including overhead	$ 35.00 /hr	$ 35.00 /hr
6. Field labor cost (Line 4 x Line 5)	$ 122,500 /yr	$ 70,000 /yr

Materials Costs	Single Family Plumbing Retrofits	Multi Family Plumbing Retrofits	
7. Unit cost of materials (e.g., plumbing retrofit kits, nozzles, etc.)	$ 2.00 /unit	$ 2.00 /unit	note: CUWCC says, typical is $2/kit
8. Number of kits distributed	7,000 /yr	4,000 /yr	note: distributed to approximately all accounts
9. Total materials cost (Line 7 x Line 8)	$ 14,000 /yr	$ 8,000 /yr	

Publicity Costs

10. Marketing collateral cost (e.g., brochure design, printing, web services)	$ 15,000 /yr
11. Advertising cost (i.e. newspaper, radio, TV, web)	$ 15,000 /yr
12. Total publicity costs (Line 10 + Line 11)	$ 30,000 /yr

Evaluation and Followup Costs

13. Labor & Consultant costs	$ 30,000 /yr
14. **Total Costs** (Line 3 + Line 6 + Line 9 + Line 12 + Line 13)	$ 312,000 /yr

Program Cost Sharing

15. Cost Share from Others (e.g., other agencies, grants, in-kind contrib.)	$ - /yr
16. **Net Agency Cost** (Line 14 - Line 15)	$ 312,000 /yr

BMP 02 Residential Plumbing Retrofit - Water Savings Worksheet

Instructions: Fill in all green cells.

	Single Family Plumbing Retrofits		Multi Family Plumbing Retrofits	
1. Reduction in Avg. Use (gallons per day per residential unit)	6.14	gpd	6.14	gpd
2. Savings Decay	50	%/yr	50	%/yr
3. Number of Kits Distributed (from STEP 1 Line 8)	7,000		4,000	
4. Percent of Kits Installed	45	%/yr	45	%/yr
5. Lifetime Savings	**43.32**	**AF**	**24.76**	**AF**

note:
assumes kits have showerheads (5.2-5.8 gpd savings) and leak tabs (.64 gpd overall)

BMP 02 Residential Plumbing Retrofit - Agency Benefits Worksheet

Instructions: Fill in all green cells that apply.

Avoided Supply Acquisition Costs (include future avoided capital costs as appropriate)

1. Marginal Source of Suppy (List name)	groundwater		
2. Avoidable Supply Acquisition Cost	$ 350	/AF	note: b/c gw only source in next 10 years

Avoided Water Treatment & Distribution Capacity Costs

3. Avoided capacity expansion costs (dollars per AF of water saved by conservation)	$ 0	/AF	note: Expansion policy states that newe development is responsible for their own incremental capacity

Avoided Wastewater Capacity Costs (*if service provided by agency*)

4. Avoided capacity expansion costs (dollars per AF of water saved by conservation)	$ 0	/AF	note: Expansion policy states that newe development is responsible for their own incremental capacity

Avoided Treatment & Distribution Variable Costs *(include wastewater services if provided by agency)*

Avoided water and wastewater treatment chemical costs

5. Total annual chemical costs	$ 23,000.00	/yr	
6. Annual fixed costs for chemicals	$ -	/yr	note: N/A the City of Davis purchases chlorine on volume
7. Annual chemical costs not related to water production	$ 2,944.00	/yr	N/A
8. Avoidable chemical costs (Line 5 - Line 6 - Line 7)	$ 20,056.00	/yr	
9. Average annual treated water use	15,500	AF	note: Source: 2005 UWMP
10. Unit Cost of Chemicals (Line 8 ÷ Line 9)	$ 1.29	/AF	

Avoided water and wastewater treatement energy costs

11. Annual energy costs	$ 107,000.00	/yr
12. Annual fixed costs	$ 10,700.00	/yr
13. Annual energy costs not related to water production (e.g., lighting, heating/cooling)	$ 30,000.00	/yr
14. Avoidable energy costs (Line 11 - Line 12 - Line 13)	$ 66,300.00	/yr
15. Average annual water use (from Line 9 above)	15,500.00	AF
16. Unit Cost of Energy (Line 14 ÷ Line 15)	$ 4.28	/AF
17. Avoided Treatment & Distribution Variab (Line 10 + Line 16)	$ 5.57	/AF
18. Total Supply & Wastewater Benefits (Line 2 + Line 3 + Line 4 + Line 17)	$ 355.57	/AF

Environmental Benefits

19. Environmental benefit per AF saved (e.g. value of instream flow, improved water quality, avoided environmental mitigation for supply development or wastewater disposal)	$ 0	/AF	note: Assume zero balance between minimized influent and increased wetland effluent concentration

BMP 02 Residential Plumbing Retrofit - Other Benefits and Costs Worksheet

Instructions: Fill in all green cells.

OTHER BENEFITS

Avoided Customer Energy Costs	Single Family Plumbing Retrofits	Multi Family Plumbing Retrofits	
1. Hot water use as a percent of total plumbing device water savings	25 %	35 %	note: source: PG&E call, 2 Dec 2005
2. Percent of residential hot water heated with gas (can get estimate from local utility or CEC)	45 %	60 %	note: source: PG&E call, 2 Dec 2005
3. Marginal cost per therm	$ 1.25 /therm		note: source: PG&E call, 2 Dec 2005 -- $1.70/therm winter, $.80/therm summe
4. Marginal cost per KWh	$ 0.12 /KWh		note: source: PG&E call, 2 Dec 2005
5. Customer Energy Benefit	$ 764.99 /AF	$ 950.54 /AF	note: Based on energy savings estimates listed in Table 6-3 of Water Conservation Guidebook for Small and Medium-Sized Utilities.

	therms/gal	kWh/gal
Showerheads	0.004414	0.104642
	70% effic.	98% effic.

Avoided Wastewater Utility Variable Costs (IMPORTANT: do not include those listed in STEP 3 Agency Benefits)

6. Avoided energy & chemical costs $ 358,542.40 /AF of conserved water

Avoided Wastewater Utility Capacity Costs (IMPORTANT: do not include those listed in STEP 3 Agency Benefits)

7. Avoided wastewater capacity expans $ 0 /AF of conserved water

OTHER COSTS

Customer participation costs	Single Family Plumbing Retrofits	Multi Family Plumbing Retrofits
8. Average customer expenditures per kit installed (e.g., change landscaping, appliances, etc)	$ 5 /kit	5 /kit
9. Number of kits distributed (from Line 8 of STEP 1)	7,000 /yr	4,000 /yr
10. Percent of Kits Installed (from Line 4 of STEP 2)	45 %/yr	45 %/yr
11. Total customer costs (Line 8 x Line 9 x Line 10)	$ 15,750 /yr	$ 9,000 /yr

BMP 02 Residential Plumbing Retrofit - Discounting Information

Instructions: Fill in all green cells.

Discount Rates (required)

1. Agency Discount Rate	1.5	%
2. Social Discount Rate	6.0	%

Annual Escalation Rates (optional)

3. Avoided cost of water and wastewater	-	%/yr
4. Environmental benefits	-	%/yr
5. Energy cost	-	%/yr

BMP 02 Residential Plumbing Retrofit - Summary of Costs & Benefits

Program Present Value Costs	**Agency Perspective**		**Society Perspective**	
1. Total devices distributed	11,000		11,000	
2. Total water savings	68.1	AF	68.1	AF
3. Agency program costs	$312,000		$312,000	
4. Customer program costs	NA		$24,750	
5. Cost share	$0		NA	
6. Net Program Cost	$312,000		$336,750	
Program Present Value Benefits				
7. Agency supply & wastewater benefits	$23,854		$22,910	
8. Environmental benefits	$0		$0	
9. Customer program benefits	NA		$53,637	
10. Other utility benefits	NA		$23,101,513	
11. Total benefits	$23,854		$23,178,061	
12. Net Present Value (Line 11 - Line 6)	**($288,146)**		**$22,841,311**	
13. Benefit-Cost Ratio (Line 11 ÷ Line 6)	0.08		68.83	
14. Simple Unit Supply Cost (Line 6 ÷ Line 2)	$4,583	/AF	$4,946	/AF
15. Discounted Unit Supply Cost (Line 6 ÷ discounted water savings)	$4,651	/AF	$5,226	/AF

This BMP is not cost-effective to implement from the Agency Perspective
This BMP is cost-effective to implement from the Society Perspective

Agency Perspective

	Water Savings			Undiscounted Agency Benefits			Discounted Agency Benefits			
	Single Family	Multi Family	Total	Supply & Wastewater	Environmental	Total	Supply & Wastewater	Environmental	Total	Discounted Supply
Year	AF	AF	AF	$	$	$				AF
0	21.7	12.4	34.0	12,103	-	12,103	12,103	-	12,103	34.0
1	10.8	6.2	17.0	6,052	-	6,052	5,962	-	5,962	16.8
2	5.4	3.1	8.5	3,026	-	3,026	2,937	-	2,937	8.3
3	2.7	1.5	4.3	1,513	-	1,513	1,447	-	1,447	4.1
4	1.4	0.8	2.1	756	-	756	713	-	713	2.0
5	0.7	0.4	1.1	378	-	378	351	-	351	1.0
6	0.3	0.2	0.5	189	-	189	173	-	173	0.5
7	0.2	0.1	0.3	95	-	95	85	-	85	0.2
8	0.1	0.0	0.1	47	-	47	42	-	42	0.1
9	0.0	0.0	0.1	24	-	24	21	-	21	0.1
10	0.0	0.0	0.0	12	-	12	10	-	10	0.0
11	0.0	0.0	0.0	6	-	6	5	-	5	0.0
12	0.0	0.0	0.0	3	-	3	2	-	2	0.0
13	0.0	0.0	0.0	1	-	1	1	-	1	0.0
14	0.0	0.0	0.0	1	-	1	1	-	1	0.0
15	0.0	0.0	0.0	0	-	0	0	-	0	0.0
16	0.0	0.0	0.0	0	-	0	0	-	0	0.0
17	0.0	0.0	0.0	0	-	0	0	-	0	0.0
18	0.0	0.0	0.0	0	-	0	0	-	0	0.0
19	0.0	0.0	0.0	0	-	0	0	-	0	0.0
20	0.0	0.0	0.0	0	-	0	0	-	0	0.0
21	0.0	0.0	0.0	0	-	0	0	-	0	0.0
22	0.0	0.0	0.0	0	-	0	0	-	0	0.0
23	0.0	0.0	0.0	0	-	0	0	-	0	0.0
24	0.0	0.0	0.0	0	-	0	0	-	0	0.0
Total:	43.3	24.8	68.1	24,207	-	24,207	23,854	-	23,854	67.1

Society Perspective

	Water Savings			Undiscounted Program Benefits				Undiscounted Program Benefits				
	Single Family	Multi Family	Total	Supply & Wastewater	Environmental	Customer Energy Benefits	Wastewater Utility Benefits	Supply & Wastewater	Environmental	Customer Energy Benefits	Wastewater Utility Benefits	Discounted Supply
Year	AF	AF	AF	$	$	$	$					AF
0	21.7	12.4	34.0	12,103	-	28,337	12,204,573	12,103	-	28,337	12,204,573	34.0
1	10.8	6.2	17.0	6,052	-	14,168	6,102,287	5,709	-	13,366	5,756,874	16.1
2	5.4	3.1	8.5	3,026	-	7,084	3,051,143	2,693	-	6,305	2,715,507	7.6
3	2.7	1.5	4.3	1,513	-	3,542	1,525,572	1,270	-	2,974	1,280,899	3.6
4	1.4	0.8	2.1	756	-	1,771	762,786	599	-	1,403	604,198	1.7
5	0.7	0.4	1.1	378	-	886	381,393	283	-	662	284,999	0.8
6	0.3	0.2	0.5	189	-	443	190,696	133	-	312	134,433	0.4
7	0.2	0.1	0.3	95	-	221	95,348	63	-	147	63,412	0.2
8	0.1	0.0	0.1	47	-	111	47,674	30	-	69	29,911	0.1
9	0.0	0.0	0.1	24	-	55	23,837	14	-	33	14,109	0.0
10	0.0	0.0	0.0	12	-	28	11,919	7	-	15	6,655	0.0
11	0.0	0.0	0.0	6	-	14	5,959	3	-	7	3,139	0.0
12	0.0	0.0	0.0	3	-	7	2,980	1	-	3	1,481	0.0
13	0.0	0.0	0.0	1	-	3	1,490	1	-	2	698	0.0
14	0.0	0.0	0.0	1	-	2	745	0	-	1	329	0.0
15	0.0	0.0	0.0	0	-	1	372	0	-	0	155	0.0
16	0.0	0.0	0.0	0	-	0	186	0	-	0	73	0.0
17	0.0	0.0	0.0	0	-	0	93	0	-	0	35	0.0
18	0.0	0.0	0.0	0	-	0	47	0	-	0	16	0.0
19	0.0	0.0	0.0	0	-	0	23	0	-	0	8	0.0
20	0.0	0.0	0.0	0	-	0	12	0	-	0	4	0.0
21	0.0	0.0	0.0	0	-	0	6	0	-	0	2	0.0
22	0.0	0.0	0.0	0	-	0	3	0	-	0	1	0.0
23	0.0	0.0	0.0	0	-	0	1	0	-	0	0	0.0
24	0.0	0.0	0.0	0	-	0	1	0	-	0	0	0.0
Total:	43.3	24.8	68.1	24,207	-	56,673	24,409,146	22,910	-	53,637	23,101,513	64.4

BMP 14 Simple Cost-Effectiveness Tool

Version 3, Beta

User Warning: This spreadsheet model is still under development. It is currently being tested by members of the R&E committee. This model has not been officially adopted by the CUWCC for benefit-cost analysis of BMP 14.

This spreadsheet tool provides a simple model for evaluating the cost-effectiveness of BMP 14. The model is organized into five data entry steps and one analysis review step, as follows:

Step 1 - Annual Costs: in this step you enter information to calculate the expected annual costs to implement BMP 14.

Step 2 - Customer Water Savings: in this step you enter information to calculate the expected water savings over time from implementation of BMP 14.

Step 3 - Agency Benefits: in this step you enter information to calculate the benefits to your agency from the water savings estimated in Step 2.

Step 4 - Other Benefits and Costs: in this step you enter information to calculate benefits and costs that may accrue to parties other than your agency from implementation of BMP 14.

Step 5 - Discounting Information: in this step you provide discount and cost escalation rates needed for the present value analysis.

Step 6 - Review Results: in this step you review the model results. These results are based on the information you provided in the first five steps.

Cell Color Key

Green Cells are cells that require data from the user.

White Cells are cells that contain formulas used by the model. If you overwrite the formulas in White Cells the model will cease to work properly. Only enter data in Green Cells.

Knowledge Requirements

This model calculates the present value benefits and costs associated with BMP 14. To use this model you should be familiar with the requirements of BMP 14 and basic methods of benefit-cost analysis and present value analysis. BMP 14 is fully described in Exhibit 1 of the MOU. Methods of benefit-cost analysis used by this model are described in the Council's "Guidelines for Preparing Cost-Effectiveness Analyses of Urban Water Conservation Best Management Practices." Both of these documents are available from the Council (www.cuwcc.org). Additionally, Appendix A of the Council's "BMP Costs & Savings Study" provides further review and examples of benefit-cost calculations.

The structure and organization of this model is based on similar worksheets provided in "Water Conservation Guidebook for Small and Medium-Sized Utilities," AWWA Pacific Northwest Section, 1993. This guidebook is available through the CUWCC lending library or may be purchased directly from AWWA.

Data Requirements

This model requires a variety of data, including:

* Implementation costs, including staffing, materials, outside consultants, and marketing costs.

* Estimates of water savings from residential toilet replacements including initial savings and rates of decay.

* Agency water production costs, including source of supply costs, capacity expansion costs, energy costs, and chemical costs.

* Environmental benefits of water saved. In many instances users will not have this information. In these cases the model can be used to conduct "what-if" analysis to determine the effect of environmental benefits on BMP 14 cost-effectiveness.

* Discount rates, both for your agency and for the society.

Much of the date required to implement this model is available in the Council's "BMP Costs & Savings Study." This document provides best available estimates of water savings and program costs for most of the BMPs for which water savings have been quantified.

Variable Units

Model variables represent specific quantities denoted in particular units. These units must be used or the model will provide incorrect results. The called for unit is always indicated for each variable for which you are providing a value. In most cases this will be obvious. Water volumes are mostly denoted in acre-feet (af). In some cases they are denoted in gallons-per-day (gpd). At the bottom of several worksheets a unit conversion calculator for converting water volume into acre-feet is provided.

Scenarios

You can save model scenarios. A scenario consists of all the values you entered for the model variables plus the benefit-cost results for those values. Scenarios are saved on the worksheet "Saved Scenarios." These scenarios can also be loaded back into the model at a later time using the "Load a saved scenario" button located on the

BMP 14 ULFT Replacement Programs - Annual Program Cost Worksheet

Instructions: Fill in all green cells.

Administration Costs

1. Staff hours to administer the rebate program	200 hrs/yr	
2. Staff hourly rate, including overhead	$ 75.00 /hr	
3. Administration costs (Line 1 x Line 2)	$ 15,000 /yr	

ULFT Costs	Single-Family	Multi-Family
4. ULFT Cost (or incentive cost)	$ 100 /ULFT	$ 100 /ULFT
5. Number of ULFTs (or incentives) distributed	50 /yr	20 /yr
6. Total ULFT replacement cost (Line 4 x Line 5)	$ 5,000 /yr	$ 2,000 /yr

Incentive Processing Costs

7. Average rebate processing cost (if not included in Admin. Costs)	$ 250 /ULFT
8. Total rebate processing cost (Line 5 x Line 7)	$ 17,500 /yr

Publicity Costs

9. Marketing collateral cost (e.g., brochure design, printing, web services)	$ 1,500 /yr
10. Advertising cost (i.e. newspaper, radio, TV, web)	$ 4,000 /yr
11. Total publicity costs (Line 9 + Line 10)	$ 5,500 /yr

Evaluation and Followup Costs

12. Labor & Consultant costs	$ 5,000 /yr
13. **Total Costs** (Line 3 + Line 6 + Line 8 + Line 11 + Line 12)	$ 50,000 /yr

Program Cost Sharing

14. Cost Share from Others (e.g., other agencies, grants, in-kind contrib.)	$ - /yr
15. **Net Agency Cost** (Line 13 - Line 14)	$ 50,000 /yr

BMP 14 ULFT Replacement Programs - Water Savings Worksheet

Instructions: Fill in all green cells.

	Single-Family	Multi-Family	
1. Avg. Persons Per Household	2.6	2.4	note: Source: 2000 Census
2. Avg. Savings per ULFT (gallons per day per ULFT)	21.7 gpd	42.7 gpd	◉ Use CUWCC Reliable Savings Estimate ○ Use Own Estimate
3. Toilet Natural Replacement Rate	4.0 %/yr	4.0 %/yr	
4. Number of ULFTs Distributed (from STEP 1 Line 5)	50	50	
5. Percent Free-riders	90 %	90 %	note: Historic evidence exhibits very high free-ridership with less a lower rabte response rate than natural toilet
6. 25-Year Savings	**1.9 AF**	**1.5 AF**	

BMP 14 ULFT Replacement Programs - Agency Benefits Worksheet

Instructions: Fill in all green cells that apply.

Avoided Supply Acquisition Costs (include future avoided capital costs as appropriate)

1. Marginal Source of Suppy (List name)	Groundwater		
2. Avoidable Supply Acquisition Cost	$ 350	/AF	note: b/c gw only source in next 10 years

Avoided Treatment & Distribution Capacity Costs

3. Avoided capacity expansion costs (dollars per AF of water saved by conservation)	$ 0	/AF	note: Expansion policy states that newe development is responsible for their own incremental capacity

Avoided Wastewater Capacity Costs (*if service provided by agency*)

4. Avoided capacity expansion costs (dollars per AF of water saved by conservation)	$ 0	/AF	note: Expansion policy states that newe development is responsible for their own incremental capacity

Avoided Treatment & Distribution Variable Costs *(include wastewater services if provided by agency)*

Avoided chemical costs

5. Total annual chemical costs	$ 23,000.00	/yr	
6. Annual fixed costs for chemicals	$ -	/yr	note: N/A the City of Davis purchases chlorine on volume
7. Annual chemical costs not related to water production	$ 2,944.00	/yr	N/A
8. Avoidable chemical costs (Line 5 - Line 6 - Line 7)	$ 20,056.00	/yr	
9. Average annual treated water use	15,500	AF	note: Source: 2005 UWMP
10. Unit Cost of Chemicals (Line 8 ÷ Line 9)	$ 1.29	/AF	

Avoided energy costs

11. Annual energy costs	$ 1,007,000.00	/yr
12. Annual fixed costs	$ 100,700.00	/yr
13. Annual energy costs not related to water production (e.g., lighting, heating/cooling)	$ 30,000.00	/yr
14. Avoidable energy costs (Line 11 - Line 12 - Line 13)	$ 876,300.00	/yr
15. Average annual water use (from Line 9 above)	15,500.00	AF
16. Unit Cost of Energy (Line 14 ÷ Line 15)	$ 56.54	/AF
17. Avoided Treatment & Distribution Variabl (Line 10 + Line 16)	$ 57.83	/AF
18. Total Supply & Wastewater Benefits (Line 2 + Line 3 + Line 4 + Line 17)	$ 407.83	/AF

Environmental Benefits

19. Environmental benefit per AF saved (e.g. value of instream flow, improved water quality, avoided environmental mitigation for supply development or wastewater disposal)	$ 0	/AF	note: Assume zero balance between minimized influent and increased wetland effluent concentration

BMP 14 ULFT Replacement Programs - Other Benefits and Costs Worksheet

Instructions: Fill in all green cells.

OTHER BENEFITS

Avoided Wastewater Utility Costs (IMPORTANT: do not include those listed in STEP 3 Agency Benefits)

1. Avoided energy & chemical costs	$ 358,542.40	/AF of conserved water
2. Avoided wastewater capacity expansion	$ 0	/AF of conserved water
3. Total avoided wastewater utility costs (Line 6 + Line 7)	$ 358,542.40	/AF of conserved water

OTHER COSTS

Customer Participation Costs	Single Family ULFTs	Multi Family ULFTs
4. Average customer expenditures per ULFT (e.g., installation, disposal of old toilet)	$ 125 /ULFT	$ 110 /ULFT
5. Number of ULFTs distributed (from Line 5 of STEP 1)	50	20
6. Percent of Freeriders (from Line 5 of STEP 2)	90 %	90 %
7. Total customer costs (Line 4 x Line 5 x (1 - Line 6))	$ 625.00	$ 220.00

BMP 14 ULFT Replacement Programs - Discounting Information

Instructions: Fill in all green cells.

Discount Rates (required)

1. Agency Discount Rate	1.5	%
2. Social Discount Rate	6.0	%

Annual Escalation Rates (optional)

3. Avoided cost of water and wastewater	-	%/yr
4. Environmental benefits	-	%/yr
5. Energy cost	-	%/yr

BMP 14 ULFT Replacement Programs - Summary of Costs & Benefits

Program Present Value Costs	**Agency Perspective**		**Society Perspective**	
1. Total ULFTs distributed	70		70	
2. Total water savings	3.5	AF	3.5	AF
3. Agency program costs	$50,000		$50,000	
4. Customer program costs	NA		$845	
5. Cost share	$0		NA	
6. Net Program Cost	$50,000		$50,845	
Program Present Value Benefits				
7. Agency supply & wastewater benefits	$1,209		$810	
8. Environmental benefits	$0		$0	
9. Other utility benefits	NA		$712,252	
10. Total benefits	$1,209		$713,062	
11. Net Present Value (Line 10 - Line 6)	**($48,791)**		**$662,217**	
12. Benefit-Cost Ratio (Line 10 ÷ Line 6)	0.02		14.02	
13. Simple Unit Supply Cost (Line 6 ÷ Line 2)	$14,419	/AF	$14,663	/AF
14. Discounted Unit Supply Cost (Line 6 ÷ discounted water savings)	$16,872	/AF	$25,595	/AF

This BMP is not cost-effective to implement from the Agency Perspective
This BMP is cost-effective to implement from the Society Perspective

Present Value Benefits - Agency Perspective

	Water Savings			Undiscounted Agency Benefits			Discounted Agency Benefits			
	Single Family	Multi Family	Total Water Savings	Supply & Wastewater	Environmental	Total	Supply & Wastewater	Environmental	Total	Discounted Supply
Year	AF	AF	AF	$	$	$				AF
0										
1	0.1	0.1	0.2	88	-	88	87	-	87	0.2
2	0.1	0.1	0.2	85	-	85	82	-	82	0.2
3	0.1	0.1	0.2	82	-	82	78	-	78	0.2
4	0.1	0.1	0.2	78	-	78	74	-	74	0.2
5	0.1	0.1	0.2	75	-	75	70	-	70	0.2
6	0.1	0.1	0.2	72	-	72	66	-	66	0.2
7	0.1	0.1	0.2	69	-	69	62	-	62	0.2
8	0.1	0.1	0.2	66	-	66	59	-	59	0.1
9	0.1	0.1	0.2	64	-	64	56	-	56	0.1
10	0.1	0.1	0.2	61	-	61	53	-	53	0.1
11	0.1	0.1	0.1	59	-	59	50	-	50	0.1
12	0.1	0.1	0.1	56	-	56	47	-	47	0.1
13	0.1	0.1	0.1	54	-	54	45	-	45	0.1
14	0.1	0.1	0.1	52	-	52	42	-	42	0.1
15	0.1	0.1	0.1	50	-	50	40	-	40	0.1
16	0.1	0.1	0.1	48	-	48	38	-	38	0.1
17	0.1	0.0	0.1	46	-	46	36	-	36	0.1
18	0.1	0.0	0.1	44	-	44	34	-	34	0.1
19	0.1	0.0	0.1	42	-	42	32	-	32	0.1
20	0.1	0.0	0.1	41	-	41	30	-	30	0.1
21	0.1	0.0	0.1	39	-	39	29	-	29	0.1
22	0.1	0.0	0.1	38	-	38	27	-	27	0.1
23	0.0	0.0	0.1	36	-	36	26	-	26	0.1
24	0.0	0.0	0.1	35	-	35	24	-	24	0.1
25	0.0	0.0	0.1	33	-	33	23	-	23	0.1
Total:	1.9	1.5	3.5	1,414	-	1,414	1,209	-	1,209	3.0

Present Value Benefits - Society Perspective

	Water Savings			Undiscounted Program Benefits				Discounted Program Benefits				
	Single Family	Multi Family	Total Water Savings	Supply & Wastewater	Environmental	Wastewater Utility Benefits	Total	Supply & Wastewater	Environmental	Wastewater Utility Benefits	Total	Discounted Supply
Year	AF	AF	AF	$	$	$	$	$	$	$	$	AF
0												
1	0.1	0.1	0.2	88	-	77,754	77,843	83	-	73,353	73,437	0.2
2	0.1	0.1	0.2	85	-	74,644	74,729	76	-	66,433	66,509	0.2
3	0.1	0.1	0.2	82	-	71,658	71,740	68	-	60,166	60,234	0.2
4	0.1	0.1	0.2	78	-	68,792	68,870	62	-	54,490	54,552	0.2
5	0.1	0.1	0.2	75	-	66,040	66,116	56	-	49,349	49,405	0.1
6	0.1	0.1	0.2	72	-	63,399	63,471	51	-	44,694	44,744	0.1
7	0.1	0.1	0.2	69	-	60,863	60,932	46	-	40,477	40,523	0.1
8	0.1	0.1	0.2	66	-	58,428	58,495	42	-	36,659	36,700	0.1
9	0.1	0.1	0.2	64	-	56,091	56,155	38	-	33,200	33,238	0.1
10	0.1	0.1	0.2	61	-	53,848	53,909	34	-	30,068	30,102	0.1
11	0.1	0.1	0.1	59	-	51,694	51,752	31	-	27,232	27,263	0.1
12	0.1	0.1	0.1	56	-	49,626	49,682	28	-	24,663	24,691	0.1
13	0.1	0.1	0.1	54	-	47,641	47,695	25	-	22,336	22,361	0.1
14	0.1	0.1	0.1	52	-	45,735	45,787	23	-	20,229	20,252	0.1
15	0.1	0.1	0.1	50	-	43,906	43,956	21	-	18,320	18,341	0.1
16	0.1	0.1	0.1	48	-	42,150	42,198	19	-	16,592	16,611	0.0
17	0.1	0.0	0.1	46	-	40,464	40,510	17	-	15,027	15,044	0.0
18	0.1	0.0	0.1	44	-	38,845	38,889	15	-	13,609	13,625	0.0
19	0.1	0.0	0.1	42	-	37,291	37,334	14	-	12,325	12,339	0.0
20	0.1	0.0	0.1	41	-	35,800	35,840	13	-	11,162	11,175	0.0
21	0.1	0.0	0.1	39	-	34,368	34,407	11	-	10,109	10,121	0.0
22	0.1	0.0	0.1	38	-	32,993	33,030	10	-	9,156	9,166	0.0
23	0.0	0.0	0.1	36	-	31,673	31,709	9	-	8,292	8,301	0.0
24	0.0	0.0	0.1	35	-	30,406	30,441	9	-	7,510	7,518	0.0
25	0.0	0.0	0.1	33	-	29,190	29,223	8	-	6,801	6,809	0.0
Total:	1.9	1.5	3.5	1,414	-	1,243,299	1,244,713	810	-	712,252	713,062	2.0

APPENDIX F

Summary of 2006-2010 Water Conservation Efforts

City of Davis
Summary of 2006-2010 Water Conservation Efforts

Regional Clothes Washer Rebate Program

The City will continue participation in this regional program with other water agencies in the Bay Area. The program offers customers rebates for installing water and energy efficient clothes washers during the program period. Rebates are paid for with Prop. 50 DWR Water Use Efficiency Program grant funds. This program is expected to continue the program for two years, during FYs 2006-07 and 2007-08, or until agency rebate funds are expended. The program rebates will be issued through EGIA, the current rebate issuance entity.

Regional ET Controller Pilot Program

The City will participate in this regional program which intends to install and evaluate the merits of installing ET irrigation controllers that can be programmed to reflect local climate factors and result in more efficient outdoor water use patterns. Each participating agency will identify higher water using customers in both the SFR and commercial sectors to participate in the program who tend to have higher than typical irrigation usage patterns. Once the ET controllers are installed, water use will be evaluated to determine the effectiveness of the pilot effort. This program will be implemented during calendar years 2006 and 2007.

California SFR Water Use Efficiency Study

The City will participate in this state-wide study with a total of 10 water agencies. Each participating agency will have at least 60 randomly selected accounts and their indoor and outdoor household water use patterns derived from dataloggers. This will show the household use by end uses and the efficiency levels of the fixtures present in the home. Outdoor use will be characterized by the volume of water applied to the landscape compared to the theoretical requirements determined from the landscape analysis. Potential savings from use of the California Friendly Landscape Program will be estimated. Each agency will receive an individual report for its customers in the study. Statistical models will be prepared and a report generated for the project as a whole as described in the proposal document. This project is funded through both Prop. 50 Water Use Efficiency Program grant funds and participating agency contributions. This study will be conducted and completed in calendar years 2006 and 2007.

Pre-Rinse Spray Valve Program

The City will participate in this program through the CUWCC's regional effort. This will ensure a high participation rate in this successful restaurant conservation measure in the City of Davis service area. The program will be offered until high saturation of the restaurant sector is achieved.

Water System Leak Detection Survey
The City will conduct a water system leak detection survey once every five year period for each update of its UWMP. The survey will be conducted during the 2007-2009 period and will focus on older portions of the water system and/or locations within the water system believed to be a risk for leak losses.

Parks Water Budget Program
A water budget will be developed for the parks and open space areas maintained by the city for recreational benefits to its customers. First, historical water use will be evaluated to develop a water budget. Then efficiency improvements will be identified that could improve water budgets at those sites ailing from poor distribution uniformity and other conditions that may result in higher than normal water use patterns. Finally, a water budget will be identified and actual water use monitored and tracked on a seasonal basis. This program will be developed in the 2007/2008 time frame.

Landscape Water Conservation Ordinance Update
The City will update its Landscape Water Conservation Ordinance per recommendations from the California Urban Conservation Council (CUWCC) AB 2717 Landscape Task Force. This ordinance will be updated in the 2008/2009 time frame.

Drought Plan Update
The City's water shortage policies will be reviewed and updated in the 2008-2010 period.