

Task 1 – CALFED Certification Support

Description: Provide certification support. BMP Certification will involve certifying: 1) that a water supplier has implemented all locally cost-effective BMPs pursuant to the MOU; or 2) that a water supplier has provided the appropriate information to corroborate that it is justifiably exempt from implementing a BMP, based on cost effectiveness, legal barriers, or budgetary restrictions, pursuant to the MOU. The Council assisted in the development of a process for the BMP Certification Program.

Summary: Work under this task supported the Council's active participation in the CALFED Bay-Delta Authority's Water Use Efficiency Urban Water Conservation Certification Ad Hoc Workgroup and the Water Use Efficiency Urban Water Measurement Ad Hoc Workgroup through April 2003. Additionally, the Council provided technical support on WUE and other urban measurement issues. The following summarizes major technical support tasks:

- Support of the Urban Measurement Technical Team
- Proposition 13 Grant Review and development of the Proposal Solicitation Package Database

The outcome of the Urban Certification Workgroup efforts was the *Staff Proposal for Urban Water Conservation Certification (A Conceptual Framework for Water Supplier Compliance with the Terms of the Urban Memorandum of Understanding)*.

The (administrative draft) *At Least As Effective As* Report puts forth the Council's criteria for determining "at least as effective as" (ALAEA) variances for implementation of the urban water conservation BMPs. As such, the purpose of this report is to provide the Council's interpretation of the MOU as it relates to ALAEA implementation of BMPs.

The (administrative draft) *Exemption Protocol* puts forth the Council's criteria and methodology for a water supplier to use when submitting an exemption from implementation of a specific BMP. As such, the purpose of the protocol is to provide the Council's interpretation of the MOU as it relates to an exemption from implementation of a BMP.

The (administrative draft) *Proposed Budget and Financing Options Report* presents an estimated budget and financing options for the proposed Water Use Efficiency Urban Best Management Practices Certification Program.

Year 1 Accomplishments

- The Council held a Strategic Planning Retreat that led to the development of its updated Strategic Plan for 2003-2005; the main topic of this retreat was the urban water supplier certification process proposed in the CALFED Record of Decision and implementing the deliverables from this Cooperative Agreement. Highlights of the 2003-2005 Strategic Plan include:
 - ◆ Delivering the Leading Edge in Technical Assistance
 - ◆ Fostering Good Science: Ensuring that Conservation Remains Credible
 - ◆ Promoting the Value of Urban Water Conservation Statewide
 - ◆ Preparing for a Stable, Sustainable and Financially Secure Future
- The Council assisted the CALFED Bay-Delta Authority (CBDA) in the development of a *Staff Proposal for Urban Water Conservation Certification* outlining the major components of the certification process.

Year 2 Accomplishments

- The administrative draft *ALAEA Protocol* was developed.
- The administrative draft *Exemption Protocol* was developed.
- To improve wholesale agency assistance efforts relating to the proposed urban certification framework, the Council revised BMP 10 relating support by wholesalers for conservation programs of retail water suppliers.

Year 3 Accomplishments

- The administrative draft *ALAEA Protocol*, the administrative draft *Exemption Protocol*, and the administrative draft of the *Financing Options Report* were delivered at the CBDA Water Use Efficiency Subcommittee in January 2005 for review and consideration.

Attachments

1. *California Urban Water Conservation Council Strategic Plan, 2003-2005.*
2. *Revised Staff Proposal for Urban Water Conservation Certification*, Memorandum dated August 1, 2002 from Tom Gohring, Program Manager, Water Use Efficiency Program to the Water Use Efficiency Subcommittee that was developed with support from this Cooperative Agreement.
3. *Initial Thoughts on BMP 10 Revision*, Memorandum dated June 4, 2003 from David Mitchell to Mary Ann Dickinson.
4. BMP 10 Revision Language.
5. *Criteria for Determining "At Least As Effective As" Implementation of Urban Water Conservation Best Management Practices*, (administrative draft) Final Report, May 2004.
6. *CALFED Protocol for Exemption from Implementation of Urban Water Conservation Best Management Practices*, (administrative) Final Draft, November 8, 2004.
7. *Proposed Budget and Financing Option for Water Use Efficiency Urban Best Management Practices Certification Program*, prepared for CALFED Water Use Efficiency Program, August 9, 2004 and accompanying presentation.

Task 2 – BMP Certification Technical Assistance

Description: Provide technical assistance to water agencies before launching the BMP certification program.

Year 1 Accomplishments

- Technical assistance to urban water suppliers was provided in preparation for launching the BMP Certification Program.
- Presentations on Water Use Efficiency, CALFED and Certification to the Association of Bay Area Governments, Sonoma County Water Agency, the Regional Water Authority in Sacramento, Santa Barbara County, the Association of Groundwater Agency, and numerous other interested parties throughout the State.

Year 2 Accomplishments

- Technical assistance to urban water suppliers was provided in preparation for launching the BMP Certification Program.

Year 3 Accomplishments

- No funding was provided for this task in Year 3.

Attachments

All technical assistance provided pursuant to this task is included in the attached technical assistance logs. The following is a sampling of the presentations to local agencies on BMP Certification that are attached:

1. Association of Bay Area Governments, July 29, 2002, *Water Use Efficiency, CALFED and the California Urban Water Conservation Council.*
2. Sonoma County Water Agency, September 9, 2002, *The Proposed Water Use Efficiency Certification Program and The Role of the California Urban Water Conservation Council.*
3. Regional Water Authority, September 12, 2002, *The Proposed Water Use Efficiency Certification Program and The Role of the California Urban Water Conservation Council.*
4. Santa Barbary County, January 8, 2003, *The Proposed Water Use Efficiency Certification Program and What It Means for Santa Barbara County*
5. Association of Groundwater Agencies, April 9, 2003, *The Next Phase of Water Conservation Part of the 4.4 Plan Solution.*

Task 3 - BMP Reporting Database

Description: Provide technical assistance for the Council's BMP Reporting Database and seek to achieve 100% reporting by water agencies. Provide access to the Department of Water Resources (DWR) and the U.S. Bureau of Reclamation, Lower Colorado Region (USBR).

Background: Since 2001, the USBR has required its contractors to utilize the Council's Best Management Practices (BMP) Reporting Database to report their annual urban water conservation activities. Signatories to the Council's Memorandum of Understanding regarding urban water conservation also agree to report their progress on implementation of the 14 urban water conservation BMPs using the on-line BMP Reporting Database. To assist USBR and Council signatories in improving both reporting and implementation of the BMPs, a number of technical assistance activities were included in this task. These activities included BMP Reporting Training Workshops, on-call technical assistance, and regular communication with Council members and USBR contractors.

Year 1 Accomplishments

- As of the 2002 reporting cycle which ended February 2003, password access to DWR and to USBR "Urban Guest Account" access has been provided by the Council.
- BMP Reporting Database technical assistance was provided by Beth Ernsberger and other staff and is included in the Technical Assistance Logs for Year 1; 314 requests were fielded during this period.
- BMP Reporting Database Workshops were held throughout the state.
- A Training Manual was developed to assist water suppliers in the use of the BMP Database entitled: *Best Management Practices Reporting Workshop 2002*.
- 100% of Group 1 Signatories and USBR Contractors were contacted at least once per reporting cycle by email with follow-up phone calls as needed.

Year 2 Accomplishments

- BMP Reporting Database technical assistance was provided by Beth Ernsberger and other staff and is included in the Technical Assistance Logs for Year 2; 121 requests were fielded during this period.

Year 3 Accomplishments

- BMP Reporting Database technical assistance was provided by Beth Ernsberger and other staff and is included in the Technical Assistance Logs for Year 3; 203 requests were fielded during this period.
- BMP Reporting Database Workshops were held throughout the state.
- The Training Manual was updated to reflect changes to the Memorandum of Understanding and updates to the BMP Reporting Database.
- 100% of Group 1 Signatories and USBR Contractors were contacted at least once per reporting cycle by email with follow-up phone calls as needed.
- There has been a marked improvement in reporting by USBR contractors from the 2001/2002 reporting period to the 2003/2004 reporting period.

Attachments

1. Summary of BMP Reporting Database Workshops, Memo, September 6, 2002.
2. Best Management Practices Reporting Workshop 2002 (User's Manual).
3. Best Management Practices Reporting Workshop 2004 (User's Manual).
4. Summary of BMP Reporting Database Workshops, Memo, September 30, 2002.
5. Workshop Flyers: 2002 and 2004 BMP Reporting Workshops.
6. List of USBR Contractors, Percent and Number Reporting, by Reporting Period.
7. BMP Reporting Submittal by Reporting Unit, 1999 - 2004.
8. BMP Reporting Compliance by BMP, 1999 - 2004.
9. List of Signatories Contacted and Sample Emails.
10. BMP Technical Assistance Logs (see Volume II).

Task 4 – BMP Savings Software

Description: Develop a software program to estimate water savings of BMP activity reported to the Council database. Provide water savings and cost analysis of BMP activity conducted to date. Update annually.

Summary: The Council developed a draft BMP Water Savings Calculation Model in 2002 and refined the model and its assumptions through 2004. To provide two distinct approaches to estimating and planning water savings, the Council also began field testing of the Decision Support System (DSS) Water Savings model. The assumptions used in both models were evaluated by the Research and Evaluation Committee.

BMP Water Savings Calculation Model

The model may be used in two distinct ways: By the Council and by member water suppliers. Using the model's default assumptions and parameters, the Council may use data from the BMP Reporting Database to:

- a) calculate statewide, aggregate water savings and coverage; and
- b) calculate an individual water supplier's water savings and coverage.

A water supplier may download the model and use the BMP Savings Model to:

- a) calculate their own water savings and coverage using the default assumptions and parameters; and
- b) calculate their own water savings and coverage requirements using revised assumptions and parameters.

The BMP Water Savings Calculation Model is available for use by our members and is available at: <http://bmp.cuwcc.org/bmp/summaries/public/bmpsavings.lasso>

DSS Model

The DSS model estimates the potential for future water savings and calculates associated costs and benefits of the measures and programs through the following key steps:

- Calculate the water savings for each year that the conservation measure is implemented using the end-use estimates from the water demand forecasting, additional service area characteristics, the unit water savings and the projected market penetration associated with each measure.
- Calculate the cost of the measure for each year the measure is implemented based on the unit costs and the number of participating accounts.
- Compute the benefits to the wholesale customer based on the water savings for each year the measure is implemented. The benefits calculated for this study include avoided cost of water and reduced hot water use.

Year 1 Accomplishments

- The draft BMP Water Savings Calculation Model was presented to the Research and Evaluation Committee for review and field testing.

Year 2 Accomplishments

- A presentation on the BMP Water Savings Model entitled, *Counting the Savings: A Water Savings Calculation Model for California's BMPs*, was made at the American Water Works Association's Water Sources Conference in Austin Texas.

Year 3 Accomplishments

- The aggregate, gross acre feet of water savings by Council members was calculated to be \$1.3 million acre feet as of June 30, 2004.
- The Council signed an agreement that allows the Council's Group 1 water suppliers to use the DSS Model at no charge and provides discounted technical service/support from the model developer.
- The BMP Water Savings Model's assumptions were evaluated for consistency with the recent findings on toilet flappers; the assumptions were determined to be appropriate and current.

Attachments

1. BMP Reporting Database Water Savings Calculations, memorandum from David Mitchell to the Research & Evaluation Committee, April 28, 2003.
2. *Evaluating Water Conservation Cost-Effectiveness with an End-Use Model*, William O. Maddaus and Michelle L. Maddaus, Proceedings of the 2004 Water Sources Conference, AWWA, Austin, Texas, January 12-14, 2004.
3. BMP Water Savings Calculation Model, Recommendation for Adoption and Policy Considerations, memorandum from Tim Blair to the Steering Committee, September 30, 2004.
4. Decisions by the Steering Committee on the BMP Water Savings Calculation Model, November 8, 2004.
5. *Counting the Savings: A Water Savings Calculation Model for California's BMPs*, (Paper and Presentation) by Mary Ann Dickinson and David Mitchell, Proceedings of the 2004 Water Sources Conference, AWWA, Austin, Texas, January 12-14, 2004.
6. DSS Model User Group Experience and Next Steps, memorandum by Bill Maddaus to Katie Shulte Joung, June 24, 2004.
7. BMP Water Savings Model, memorandum from David Mitchell to the Research and Evaluation/Steering Committees, September 27, 2004.
8. *Defining the Conservation Potential for San Francisco's 28 Wholesale Customers*, by Ellen Levin, Michael Carlin, and Bill Maddaus, Proceedings of the 2005 Annual Conference and Exposition, AWWA, San Francisco, California, June 12-16, 2005.
9. Demand Side Management Least Cost Planning and Decision Support System, User's Manual, Version 12.5 (February 2005) and Model (see attached CD).
10. BMP Water Savings Calculation Model: Update on Evaluation Process, memorandum by Tim Blair to the Steering Committee, April 28, 2005.

11. BMP Water Savings, Total Acre Feet, 1991 - 2004 (as of 10/3/05); the BMP Water Savings Calculation Model produces a number of reports with useful urban water conservation data; these reports are available at:
<http://bmp.cuwcc.org/bmp/summaries/public/bmpsavings.lasso>

Task 5 – Maintain BMP Reporting Website

Description: Maintain the BMP Reporting Database website and build successive reporting year forms for BMP reporting.

Year 1 Accomplishments

- New BMP reporting forms were developed and changes to reporting requirements relating to BMP revisions were implemented.
- Software upgrades and other maintenance activities were conducted to ensure the BMP Reporting database was operative and current during the reporting cycle.
- A Maintenance Protocol, including security parameters and regular backups, was developed to ensure the BMP Reporting Database was operative during business hours, 7-days a week, 365-days a year.

Year 2 Accomplishments

- Software upgrades and other maintenance activities were conducted to ensure the BMP Reporting Database was operative and current during the reporting cycle.

Year 3 Accomplishments

- New BMP reporting forms for wholesalers and retailers were developed.
- Software upgrades and other maintenance activities were conducted to ensure the BMP Reporting Database was operative and current during the reporting cycle.
- Research was conducted to provide guidance to the Council in revising BMP 3 (system water audits and leak detection) and related BMP Reporting Database changes.

Attachments

1. Additions and Upgrades to the BMP Reporting Website, 5/1/02 - 4/30/03.
2. *California Urban Water Conservation Council, Best Management Practices (BMP) Reporting Database Maintenance Protocol (2003).*
3. Additions and Upgrades to the BMP Reporting Website, 5/1/03 - 4/30/04.
4. Additions and Upgrades to the BMP Reporting Website, 5/1/04 - 4/30/05.
5. Wholesale and Retail Reporting Forms as of 4/30/05.
6. *California - Best Management Practice BMP 3: System Water Audits and Leak Detection - Review and Recommendations for Change (Draft),* by Thornton International, April 2005.

Task 6 – Cost Effectiveness Technical Assistance

Description: Provide technical assistance to water agencies to determine BMP cost-effectiveness, using Council spreadsheet tools.

Background: The Council's MOU sets forth BMPs that signatories believe are cost-effective to implement for the majority of water agencies statewide. However, there may be cases where a specific BMP may not actually be cost-effective for an agency. As an example, BMP 9, the Commercial, Industrial and Institutional (CII) Water Conservation BMP, may not be cost-effective for a water agency with primarily residential customers and very few CII customers. Determining the cost-effective level of implementation requires an analysis.

To help with this analysis, the MOU sets forth in Exhibit 3 specific principles to guide the preparation of a cost-effectiveness analysis. These principles were further discussed in the Council's publication, "Guidelines for Preparing Cost-Effectiveness Analyses of Urban Water Conservation Best Management Practices."

In an effort to make these analyses easier for water agencies that do not have extensive planning departments or consulting assistance, the Council was tasked to create a set of spreadsheets for those BMPs that were quantifiable as to water savings. These simple spreadsheets help calculate the costs and benefits of BMP program implementation, and are a companion to the BMP Target Calculator, also available on the Council's website.

Year 1 Accomplishments

- Draft cost-effectiveness models (spreadsheet tools) were developed and distributed for field testing to Council members.
- Four cost-effectiveness workshops were held throughout the State and included extensive instruction on the use of the cost-effectiveness models.
- Technical Assistance on cost-effectiveness analysis was provided by Council staff and consultants including phone calls, emails, meetings, speeches, conferences, and memoranda prepared for Council members.

Year 2 Accomplishments

- Technical Assistance on cost-effectiveness analysis was by provided Council staff and consultants, including phone calls, emails, meetings, speeches, conferences, and copies of and memoranda prepared for Council members.

Year 3 Accomplishments

- Four cost-effectiveness workshops were held throughout the State and included extensive instruction on the use of the cost-effectiveness models.
- Technical Assistance on cost-effectiveness analysis was provided by Council staff and consultants, including phone calls, emails, meetings, speeches, conferences, and copies of and memoranda prepared for Council members.

Attachments

1. BMP Cost-Effectiveness Workshop Presentation and Handouts, 2002.
2. BMP Cost-Effectiveness Workshop Summary, 2002.
3. BMP Cost-Effectiveness Workshop Agenda, Flyer, Presentation and Handouts, 2004.
4. BMP Cost-Effectiveness Workshop Summary, 2004.
5. BMP Cost-Effectiveness Spreadsheets are included in the attached CD Rom and are also available at: http://www.cuwcc.org/ce_spreadsheets.lasso

Task 7 – Research Potential Best Management Practices (PBMPs)

Description: Evaluate and research Potential Best Management Practices (PBMPs).

Background: The PBMPs are contained in Exhibit 1 of the Council's MOU. Under the terms of the MOU, the Council is responsible for maintaining a dynamic BMP/PBMP assessment process, which includes the following commitments:

- The assumptions of reliable savings for BMPs and PBMPs will be updated at least every 3 years.
- The economic reasonableness of a BMP or PBMP will be assessed by the Council using the economic principles in Sections 3 and 4 of Exhibit 3 of the MOU (see attached Exhibit 3).
- A PBMP will be moved to the BMP list and assigned a schedule of implementation if, after review of data developed during research and/or demonstration projects, the Council determines that the PBMP is economically reasonable and otherwise conforms to the definition of BMPs in Section 1.1.

Prior to this Cooperative Agreement, the PBMP list had not been updated since it was adopted in 1991. For each research year of this project, the Council evaluated both new and existing PBMPs--including programs, appliances, technologies and other practices--to determine which ones would yield the most relevant and comprehensive information. Each year's work plan addressed a minimum of 4 to 5 new and/or existing PBMP technologies or practices. Each year's list was developed by a consultant in consultation with the Council's Research and Evaluation Committee. The evaluation of each PBMP identified for study by the work plan addressed the following elements:

- a) Full description of PBMP, including underlying technologies, practices, and institutional requirements.
- b) Summary of existing applications and case studies of the proposed measure.
- c) Summary of any evaluative studies of the proposed measure.

The evaluation also provided a summary analysis of potential savings and costs. Research included, but was not limited to, estimates of each PBMP's technical and practical feasibility, whether it is economically reasonable, and whether it would produce reliable savings if implemented.

Year 1 Accomplishments

- The Council convened a Project Advisory Committee (PAC) to guide the development of this project and oversee all deliverables.
- After a competitive Request for Proposals (RFP) process, the PAC evaluated all responses, selected three candidates to interview, and selected Koeller & Company to perform work over the term of this grant.
- The study structure ("Evaluation Elements") was finalized.
- The Council released a survey to the Council's Group 1 member water suppliers regarding the existing PBMP list and whether or not to retain, remove or re-evaluate the existing PBMPs contained in Exhibit 1 of the Council's MOU.

Year 2 Accomplishments

- All existing PBMPs were evaluated by the PAC to determine the most appropriate candidates for research in the first phase (“Year One”) of this project.
- The following PBMPs were selected for research in Year One:
 - a) Weather Based Irrigation Controllers
 - b) Pre-Rinse Spray Valves for the Food Service Industry
 - c) X-ray Film and Photo Processors
 - d) Steam Sterilizers for the Medical Industry
- Draft evaluations of the Year One PBMPs were presented to the PAC in February and March of 2004.
- All existing PBMPs were evaluated by the PAC to determine the most appropriate candidates for research in the second phase (“Year Two”) of this project. A preliminary list of candidates was developed for review by the PAC and the Research and Evaluation Committee.

Year 3 Accomplishments

- The Year One Report was published and posted to the Council's website in August 2004.
- The following PBMPs were selected for research in Year Two:
 - a) High Efficiency Toilets (1.3 gpf or less)
 - b) High-Efficiency Urinals (0.5 gpf or less)
 - c) Building Cooling Systems
 - d) Commercial Laundry Facilities
 - e) Submetering for Multi-Family Housing.
- The Council began discussion of revising the MOU in the following manner: a) remove the PBMP list from Exhibit 1; b) retain a general description of the PBMPs; and c) develop a “tiered” process for reviewing, evaluating, promoting and demoting new and existing PBMPs in the MOU Compliance Policies.
- The MOU Compliance Policies were adopted by the Steering Committee on November 9, 2005 based on discussions at the May 11, 2005 meeting; the proposed revisions to Exhibit 1 will be presented to the Plenary Session upon mutual consent of Group 1 and Group 2 members of the Steering Committee.
- A presentation on *Four New Urban Water Conservation Technologies: A Quick Overview* was prepared for the Spring Conference of the American Water Works Association held in San Francisco in June 2005 and provided information on Year One research.
- A draft of the Submetering Systems and the Commercial Laundry Facilities evaluations were presented to the Research and Evaluation Committee in March 2005.

Project Advisory Committee

All deliverables for this task were guided and reviewed by a PAC. The following individuals participated on the PAC for the Year One Report:

- Hossein Ashktorab, Santa Clara Valley Water District
- Dick Bennett, East Bay Municipal Utility District
- Kirk Brewer, Southern California Water Company
- Mary Lou Cotton, Castaic Lake Water Agency
- Vickie Driver, San Diego County Water Authority
- Chris Dundon, Contra Costa Water District
- Kevin Galvin, Santa Clara Valley Water District
- Dana Haasz, Pacific Institute
- William Miller, North of the River Municipal Water District
- Jon Sweeten, Metropolitan Water District of Southern California

During development of the Year Two Report, work on this task was reassigned to the Council's Research and Evaluation Committee.

Attachments

1. PBMP Evaluation Elements and Study Structure (Years 1 - 3).
2. Potential Best Management Practice Survey Results, February 24, 2003.
3. Rating First Year PBMP Research Candidates, May 30, 2003.
4. Draft PBMP Reports for Year 1: Steam Sterilizers, Pre-Rinse Spray Valves, Residential and Small Commercial ET Controllers, and X-Ray Film Processor Retrofits.
5. *Rating Second Year PBMP Candidates*, February 27, 2004.
6. *New & Existing Potential Best Management Practices (PBMP) - Year 2 Priorities for Research*, Memorandum to the Research and Evaluation Committee from Katie Shulte Joung, California Urban Water Conservation Council, June 25, 2004.
7. *A Report on Potential Best Management Practices, Annual Report, Year One, August 2004*, prepared for California Urban Water Conservation Council by Koeller and Company.
8. *New and Existing Potential Best Management Practices (PBMPs) - Year 2 Study Structure*, Memo to File prepared by Katie Shulte Joung, August 30, 2004.
9. *Technical Recommendations on Placement of Potential Best Management Practices in the Proposed Tiers*, memorandum to the Steering Committee from Tim Blair, Chair, Research and Evaluation Committee, April 28, 2005 (including Proposed Changes to Exhibit 1 of the Memorandum of Understanding and MOU Compliance Policies).
10. *Four New Urban Water Conservation Technologies: A Quick Overview*, by Mary Ann Dickinson, Proceedings of the 2005 Annual Conference and Exposition, AWWA, San Francisco, California, June 12-16, 2005.
11. Submetering Systems, Draft PBMP Year 2 Report, March 30, 2005.
12. Commercial Laundry Facilities, Draft PBMP Year 2 Report, March 30, 2005.

Task 8 – Update Costs and Savings Study

Description: Prepare publication updates to BMP Costs and Savings Report adding new research on BMPs and PBMPs.

Background: Signatory water suppliers to the MOU agree to make good faith efforts to implement 14 urban water conservation BMPs. Under the terms of the MOU, a signatory water supplier may exempt itself from implementing one or more BMPs if it can substantiate that: (1) the BMP is uneconomic; or (2) adequate funds for implementation are not and cannot reasonably be made available; or (3) implementation is not within its legal authority.

The estimation of BMP program related costs and benefits is an integral part of the MOU process. In September 1996, the Council issued its *Guidelines for Preparing Cost-Effectiveness Analyses of Urban Water Conservation Best Management Practices (Guidelines)*. These Guidelines provide the basic analytic framework for benefit-cost analysis of BMPs by signatory water suppliers.

In July 2000, the Council published its *BMP Costs & Savings Study: A Guide to the Data and Methods for Cost Effectiveness Analysis of Urban Water Conservation Best Management Practices (Costs & Savings Study)*. This document:

- Supplements the Council's Guidelines by linking conservation program costs and savings information to the MOU's 14 BMPs.
- Summarizes current information about program costs and device-specific water savings.
- Assesses the reliability and applicability of information currently available for quantifying and valuing conservation activity and for preparing benefit-cost analyses of BMP programs.
- Identifies limitations of existing knowledge, gaps in data, and other data deficiencies in cost and water savings estimates needed to evaluate BMP program water savings and costs.

Although the BMP Costs & Savings Study was published in 2000, most of the research was completed in 1998. The information presented was now four years old and in need of updating.

Year 1 Accomplishments

- The Council convened a PAC to guide the project.
- A consultant was selected after a competitive RFP and interview process.
- The Scope of Work (Study Structure) and Schedule were finalized.

Year 2 Accomplishments

- The first, partial revision was posted to the Council's website and distributed to interested members; this revision included a new section on Program Cost Accounting to guide Conservation Coordinators in development of BMP program budgets and cost-effectively planning programs.

Year 3 Accomplishments

- The Work Plan for the second revision was developed.
- The second, partial revision was completed; the Council will update the Water Loss and Leak Detection section with new information from research by the American Water Works Association Research Foundation; this research should be complete by the end of 2006. At that time, the final revision prepared pursuant to this Cooperative Agreement will be available.

Project Advisory Committee

All deliverables for this task were guided and reviewed by the following members of the PAC:

- Mary Lou Cotton, Castaic Lake Water Agency
- Dick Bennett, East Bay Municipal Utility District
- Mike Hollis, Metropolitan Water District of Southern California
- Conner Everts, P.O.W.E.R.

Attachments

1. Costs and Savings Update: Work Plan for Revision 1, Memo from A&N Technical Services to the Costs and Savings PAC, March 17, 2003.
2. *BMP Costs & Savings Study: First Partial Revision*, December 2003.
3. Costs and Savings Update: Work Plan for Revision 2, prepared by A&N Technical Services, June 28, 2004.
4. BMP Costs and Savings Update: Work Plan for Revision 2 (Clarifications), summary of discussion January 12, 2005.
5. *BMP Costs & Savings Study: Draft Revision 2*, March 2005.

Task 9 – CUWCC Website

Task Description: Continue development of the Council's website with additional technical content on BMP implementation.

Background: In 2000, the Council developed the www.cuwcc.org website to serve as an information resource for Council member agencies and the general public interested in urban water use and water conservation. This website is dynamic and database-driven and serves as the primary communication tool between the Council, its members and the general public. Currently, the website is partitioned into ten different areas, all linked from the Home page. These sections include:

1. Hot News: The latest water conservation industry headlines and announcements;
2. Calendar: Current events and meeting dates and locations;
3. Memorandum: An electronic version of the Council's Memorandum of Understanding;
4. Committees & Minutes: Lists of Council committee members and agendas, minutes, materials and presentations from committee meetings;
5. About Us: Information on the Council, including a list of staff and officers, copies of annual reports and strategic plans, current policies, and funding sources;
6. Product News: Descriptions of the latest water-efficient technology and links to conservation program and product information. The Council's WaterLogue Newsletter is in this section of the web site;
7. Publications: Studies and conservation manuals available for download and online purchase;
8. Technical Resources: A broad range of resources for the conservation professional, including articles, guidebooks, studies, spreadsheets, information on conservation workshops, and internet links;
9. BMP Reporting Database: Link to the Council's reporting website (not part of this website evaluation);
10. Membership: Lists Council members by Group, with links to their web sites. Log-in area for Member Area of Council website.

Year 1 Accomplishments

- The Council's website was hosted and maintained.
- Upgrades were made to the Home Page and the structure of "Committee and Minutes."
- Technical Content was added regularly, including the WaterLogue newsletter.
- Weekly Additions were made to the Calendar and Committee pages.
- Monthly updates were added to the Product News Section

Year 2 Accomplishments

- The Council's website was hosted and maintained.
- Technical Content was added regularly, including the WaterLogue newsletter.
- Weekly Additions were made to the Calendar and Committee pages.
- Monthly updates were added to the Product News Section.

Year 3 Accomplishments

- The Council's website was hosted and maintained.
- Technical Content was added regularly, including the WaterLogue newsletter.
- Weekly Additions were made to the Calendar and Committee pages.
- Monthly updates were added to the Product News Section.
- The Council commissioned a review and analysis of the website to guide us in charting the course for future website upgrades and restructuring; this review will be used to develop a Scope of Work and Request for Proposals once the Council has sufficient funds to upgrade the entire site.

Attachments

1. Additions and Upgrades to the Council Website (www.cuwcc.org), 5/1/02 - 4/30/03.
2. Additions and Upgrades to the Council Website (www.cuwcc.org), 5/1/03 - 4/30/04.
3. Additions and Upgrades to the Council Website (www.cuwcc.org), 5/1/04 - 4/30/05.
4. *Review and Analysis of the CUWCC Web Site*, prepared by Blast Design Studio, Inc., 10/6/05.
5. *Web Site Review and Analysis*, Presentation to Steering Committee by Blast Design Studio, August 2005.

Task 10 – BMP 5 (Technical Assistance)

Description: Provide technical assistance and training on BMP 5, Large-Landscape conservation and implementation, including providing expert assistance in the field for water agencies developing programs.

Year 1 Accomplishments

- Distributed Survey to Group 1 signatory water agencies and to USBR contractors requesting information on BMP 5 Implementation and offered a chance to win \$3,000 in BMP 5 technical assistance relating to the Pilot Program.

Year 2 Accomplishments

- Results of the BMP 5 Survey were summarized and distributed to the Council's Landscape Committee and other interested parties.
- BMP 5 Pilot Program was revised to reflect findings from the BMP 5 Survey.

Year 3 Accomplishments

- The Council selected Elsinore Valley Municipal Water District through a random, in-house drawing to be the recipient of \$3,000 in technical assistance on October 28, 2004.
- Working with USBR, the Council identified the following agencies to participate in the Pilot Program: El Dorado Irrigation District, Lake Arrowhead Community Service District, Elsinore Valley Municipal Water District, Goleta Water District, and Montecito Water District.

Attachments

1. BMP 5 - Implementation of Large-Landscape Conservation Programs, Survey 2003.
2. BMP 5 Preliminary Needs Survey - Summary, 2003.
3. Pilot Program to Assist CUWCC Member Agencies with BMP 5 Reporting Process (Draft), May 12, 2003.
4. Pilot Program to Assist CUWCC Member Agencies with BMP 5 Reporting Process (Revised Draft), 2004.
5. Technical assistance to pilot program agencies and to Council members on BMP 5 is included in the technical assistance logs.

Task 11 – Environmental Impacts of BMPs

Description: Develop and refine protocol for estimating the environmental benefits of implementing BMPs.

Background: Signatory water suppliers are expected to implement an applicable BMP only when it is cost-effective to do so. For purposes of the MOU, cost-effective BMP implementation means that the present value of expected benefits (including water and wastewater utility avoided costs and environmental benefits or avoided environmental costs) from implementation equal or exceed the present value of expected implementation costs. Exhibit 3 of the MOU provides the governing language for determining whether a BMP is cost-effective to implement.

Exhibit 3 of the MOU also gives the Council the task of “developing guidelines that will be used by all water suppliers in computing BMP benefits and costs.” In 1996, the Council adopted its “Guidelines for Preparing Cost-Effectiveness Analyses of Urban Water Conservation Best Management Practices.” These guidelines provide a general analytic framework from which to assess BMP benefits and costs, guidance on analysis time horizons, use of discounting and selection of discount rates, perspectives of analysis, use of sensitivity analysis, and a cursory treatment of certain avoided costs.

The guidelines developed in 1996 do not address utility avoided cost calculations in detail or provide water suppliers with the theoretical underpinnings and practical methods for making such calculations; likewise for environmental benefits and costs. Through this project, the Council endeavored to provide the tools and methodology to assist agencies in making the environmental benefits calculation. The cost of a BMP was screened against the aggregate range of avoided costs and environmental benefits for the relevant range of the resource portfolio as reported by the integrated model. The decision criteria incorporated into the model used the following logic:

- If the cost of the BMP is less than the lower bound of the avoided costs (AC_L) without considering the added environmental benefits, then the BMP must be implemented: $BMP < AC_L$
- If the cost of the BMP minus the lower bound of the environmental benefits for the BMP (EB_L) is less than the lower bound of the avoided costs (AC_L), then the BMP must be implemented: $BMP - EB_L < AC_L$
- If the cost of the BMP minus the upper bound of the environmental benefits for the BMP (EB_H) is greater than the upper bound of the avoided costs (AC_H), then the BMP is not required to be implemented: $BMP - EB_H > AC_H$
- If the cost of the BMP minus the range of environmental benefits falls within the range of the avoided costs, then model shall identify the amount of overlap of the two ranges to assist the analyst and stakeholders in determining what action to take.

For this final criterion, the model calculated the value of added information to the utility system of narrowing the range of uncertainty about avoided costs and/or environmental benefits, and this value of added information would be used to determine if further study could cost-effectively narrow that range. The BMP would be selected for implementation or rejection based on the decision criteria specified in the MOU.

Year 1 Accomplishments

- The Research and Evaluation Committee decided to delay commencement of this project until completion of the avoided costs literature review; the literature review informed the development of the Environmental Benefits Model. The Council concurrently developed the water utility avoided costs and environmental benefits of water use efficiency models and methodologies.

Year 2 Accomplishments

- A PAC consisting of environmental organizations and urban water suppliers, both wholesale and retail, was convened to oversee and provide guidance on this project.
- A Request for Qualifications (RFQ) was released in November 2003; the PAC undertook an extensive evaluation and scoring process to select candidates for interviews; initial interviews were conducted in February 2004.

Year 3 Accomplishments

- The PAC developed a *Framework for Analysis* that would guide development of the project deliverables and define the foundation of the methodology for the Environmental Benefits Project.
- A second series of interviews in was conducted Spring 2004; Lawrence Berkeley National Laboratories (LBNL) was selected to develop the Environmental Benefits project.
- The Scope of Work was agreed upon between the PAC and LBNL after considerable discussion about the relationship of this project to the Council's Memorandum of Understanding.
- The first two Project Update Memoranda were distributed.
- A preliminary draft report and model were completed.
- Due to restructuring at the CBDA, the Council was unable to present its findings to the Science Board for review; once the Science Board convenes, the Council will endeavor to obtain their feedback. In the interim, the Council presented the preliminary project findings at the American Water Works Association Annual Conference and Exposition in San Francisco in June 2005.
- In March 2005, the Council was awarded a \$100,000 grant from the U.S. Environmental Protection Agency (EPA) to supplement the work done under this project and facilitate development of a more robust model.

Project Advisory Committee

All deliverables for this task were guided and reviewed by a PAC who contributed materially to this project, for which we are appreciative. PAC members included:

- Dick Bennett, East Bay Municipal Utility District
- Lucille Billingsley, U.S. Bureau of Reclamation
- Tim Blair, Metropolitan Water District
- Roberta Borgonovo, League of Women Voters of California
- Mary Lou Cotton, Castaic Lake Water Agency
- Chris Dundon, Contra Costa Water District
- Thomas Gackstetter, Los Angeles Department of Water and Power
- Ann Hayden, Environmental Defense
- Mike Hollis, Metropolitan Water District
- Meena Westford, U.S. Bureau of Reclamation
- Gary Wolff, Pacific Institute

California Urban Water Conservation Council support: Policy level direction provided by Mary Ann Dickinson, Executive Director; project management and PAC facilitation provided by Katie Shulte Joung, Program Director; and technical review provided by Richard McCann of M. Cubed.

Attachments

1. *Framework for Analysis* developed by the PAC.
2. Project Update Memorandum #1.
3. Project Update Memorandum #2.
4. Draft Methodology: *Development of and Environmental Benefits Evaluation Methodology for the California Urban Water Conservation Council*, December 3, 2004, prepared by Lawrence Berkeley National Laboratory and University of California, Berkeley.

Task 12 – Avoided Costs

Description: Conduct detailed analysis of avoided cost of water calculation options and refine definitions of avoided cost.

Background: Signatory water suppliers are expected to implement an applicable BMP only when it is cost-effective to do so. For purposes of the MOU, cost-effective BMP implementation means that the present value of expected benefits (including water and wastewater utility avoided costs and environmental benefits or avoided environmental costs) from implementation equal or exceed the present value of expected implementation costs. Exhibit 3 of the MOU provides the governing language for determining whether a BMP is cost-effective to implement.

Exhibit 3 of the MOU also gives the Council the task of “developing guidelines that will be used by all water suppliers in computing BMP benefits and costs.” In 1996, the Council adopted its “Guidelines for Preparing Cost-Effectiveness Analyses of Urban Water Conservation Best Management Practices.” These guidelines provide a general analytic framework from which to assess BMP benefits and costs, guidance on analysis time horizons, use of discounting and selection of discount rates, perspectives of analysis, use of sensitivity analysis, and a cursory treatment of certain avoided costs.

The guidelines developed in 1996 do not address utility avoided cost calculations in detail or provide water suppliers with the theoretical underpinnings and practical methods for making such calculations. Through this project, the Council developed a model and methodology for calculating direct utility avoided costs in an integrated resources management approach.

The BMP avoided cost analysis focuses on identifying when a BMP is NOT cost-effective to implement since the “default” action is to implement the BMP. If a utility can demonstrate a BMP is not cost-effective as specified in the MOU, then the utility is not required to implement that BMP. A common accounting framework—based upon prior Council experience and precedence—will be provided to assist utilities in identifying the data sources that are available to them, both internally and externally. This common accounting framework will be broad and will include the perspectives required by the Council. These include:

- Societal or total resource cost;
- Utility or agency cost with and without cost-sharing as defined in Section 4.5(a) of the MOU; and
- Consumer costs.

The first perspective determines the social desirability of BMP implementation. The utility perspective determines the level of rational utility investment. The customer perspective informs design of incentives to encourage customer BMP adoption. The positive difference between any of the first and the latter two represent excess societal value that is available to subsidize utility investment or consumer adoption decisions.

Year 1 Accomplishments

- The Avoided Costs Literature Review was completed in April 2003; this literature review informed the development of the water utility avoided cost model and methodology. The Council concurrently developed the water utility avoided costs and environmental benefits of water use efficiency models and methodologies.

Year 2 Accomplishments

- A PAC consisting of environmental organizations and urban water suppliers, both wholesale and retail, was convened to oversee and provide guidance on this project.
- A RFQ was released in November 2003; the PAC undertook an extensive evaluation and scoring process to select candidates for interviews; and initial interviews were conducted in February 2004.

Year 3 Accomplishments

- The PAC developed a *Framework for Analysis* that would guide development of the project deliverables and define the foundation of the methodology for the Avoided Costs Project.
- A second series of interviews was conducted Spring 2004; the PAC selected A&N Technical Services to selected to develop the Avoided Costs project
- The Scope of Work was agreed upon by the PAC and A&N Technical Services after considerable discussion about the relationship of this project to the Council's memorandum of understanding.
- The first two Project Update Memoranda were distributed.
- A preliminary draft report and model were presented to the PAC for review and comment.
- Due to restructuring at the CBDA, the Council was unable to present its findings to the Science Board for review; once the Science Board convenes, the Council will endeavor to obtain their feedback. In the interim, the Council presented the preliminary project findings at the American Water Works Association Annual Conference and Exposition in San Francisco in June 2005.
- In March 2005, the Council was awarded a \$100,000 grant from the EPA to supplement the work done under this project and facilitate development of a more robust model.
- In early 2005, the Council signed a partnership agreement with the American Water Works Association Research Foundation to combine their work on Integrated Resource Planning and Cost-Benefit Analysis with the Avoided Costs project to better communicate the linkages among these analyses.

Project Advisory Committee

All deliverables for this task were guided and reviewed by a PAC who contributed materially to this project, for which we are appreciative. PAC members included:

- Dick Bennett, East Bay Municipal Utility District
- Lucille Billingsley, U.S. Bureau of Reclamation
- Tim Blair, Metropolitan Water District
- Roberta Borgonovo, League of Women Voters of California
- Mary Lou Cotton, Castaic Lake Water Agency
- Chris Dundon, Contra Costa Water District
- Thomas Gackstetter, Los Angeles Department of Water and Power
- Ann Hayden, Environmental Defense
- Mike Hollis, Metropolitan Water District
- Meena Westford, U.S. Bureau of Reclamation
- Gary Wolff, Pacific Institute

California Urban Water Conservation Council support: Policy level direction provided by Mary Ann Dickinson, Executive Director; project management and PAC facilitation provided by Katie Shulte Joung, Program Director; and technical review provided by Richard McCann of M. Cubed.

Attachments

1. *Avoided Cost Literature Review (2003).*
2. *Framework for Analysis* developed by the Project Advisory Committee.
3. Preliminary Draft Report sections: *Direct Utility Avoided Costs Methodology--Concepts and Theory*, and Draft Method for Estimating Direct Utility Avoided Costs.
4. Project Update Memorandum #1.
5. Report submitted to American Water Works Association Annual Conference and Exposition in San Francisco in June 2005: *Avoided Cost Analysis in Integrated Planning for Water Efficiency: Methodology, Concepts and Theory*, by Thomas W. Chesnutt, Gary Fiske, Janice A. Beecher, and David M. Pekelney (10/31/04).
6. Project Update Memorandum #2.
7. Presentation at American Water Works Association Annual Conference and Exposition in San Francisco in June 2005: *Avoided Cost Estimation for Integrated Water Management*, by Thomas Chesnutt, A&N Technical Services, Inc.; Gary Fiske, Gary Fiske and Associates; and Janice Beecher, Beecher Policy Research.

Task 13 – Revenue Impacts of Conservation

Task Description: Review existing studies conducted to date on estimating the revenue impacts of conservation and provide guidance to water agencies on how to manage these impacts.

Background: California water agencies face new challenges that include a rapidly increasing population, the impact of climate change on water supplies, and stringent drinking water quality standards that are increasing the cost of providing drinking water. New sources of supply are difficult and costly to obtain. Additionally, current methods of setting water rates sometimes fail to recover the actual cost of service, and may send misleading price signals about the value of the resource. How do water and wastewater utilities use conservation rates and charges to meet these challenges, and how do they assess the potential revenue impacts on their ability to accomplish their mission of providing dependable, potable water to customers? Through this project, the Council prepared a literature review and conducted workshops that provided the following information:

- ◆ Managing revenue stability through rate design
- ◆ The effect of pricing on water consumption and conservation
- ◆ Incorporating future capital investment in rate structure design
- ◆ Adaptive pricing benefits for drought management
- ◆ Equity versus efficiency
- ◆ Benefits to wastewater utilities in adopting a conservation oriented rate structure

Year 1 Accomplishments

- The review of existing studies was completed and published for the Council as a White Paper: *Revenue Effects of Conservation Programs: The Case of Lost Revenue*, by Thomas W. Chesnutt and Janice A. Beecher.

Year 2 Accomplishments

- Draft presentation on the *Revenue Effects of Conservation Programs* was developed for review and comment.
- Technical assistance provided pursuant to this task also included support of the American Water Works Association Research Foundation's research project: *Water Budgets and Rate Structures: Innovative Management Tools*; this work is on-going and the final report will be forwarded upon completion.

Year 3 Accomplishments

- The Council hosted two workshops on the *Revenue Impacts of Conservation*.
- Workshop participants were asked to complete a survey on rates and rate structure changes to inform the Council and its members of general water utility practices and concerns.

Attachments

1. *Revenue Effects of Conservation Programs: The Case of Lost Revenue*, prepared for the California Urban Water Conservation Council by Thomas W. Chesnutt and Janice A. Beecher, October 2004.
2. Revenue Impacts of Conservation - Workshop Materials and Presentations:
 - a) Workshop Flyer;
 - b) Agenda and Participation Summary for workshop at Los Angeles Department of Water & Power, Los Angeles California, Friday, October 15, 2004;
 - c) Agenda and Participation Summary for workshop at East Bay Municipal Utility District, Oakland, California, Friday, October 22, 2004;
 - d) Workshop Presentations/Detailed Training Modules.
3. *Revenue Effects of Conservation Workshops: Rate Implementation Survey Results*, 12/7/04, prepared by California Urban Water Conservation Council.
4. Additional information on Technical Assistance relating to BMP 11 (conservation rate structures) and rate structure development may be found in the Technical Assistance Log.

Task 14 – UWMP Support – Conservation

Description: Provide support to water agencies in preparing urban water management plans to assist them in integrating water efficiency into overall water supply planning.

Background: Senate Bill 221 (Kuehl) and Senate Bill 610 (Costa) were signed in 2002 to advance water supply planning efforts in the State of California that provide an important and necessary foundation for developing comprehensive water policies to prepare California to meet our future water needs. The informational and planning requirements of this legislation evidenced a clear need for assistance to local governments and urban water suppliers to assist them in effectively implementing the changes to the California Environmental Quality Act, the Subdivision Map Act, and the Urban Water Management Planning Act.

This task enabled the Council to assist DWR in conducting workshops and related activities for DWR's *Draft Guidebook for Implementation of SB 221 and SB 610* to foster coordinated planning between water agencies and local planning agencies in the development of their planning documents (e.g. UWMPs and General Plans). This task also supported statewide workshops on the development of Urban Water Management Plans in a manner consistent with recent legislative changes.

Year 1 Accomplishments

- The Council facilitated and coordinated four workshops on implementing SB 221/SB 610 with DWR utilizing the *(Draft) Guidebook for Implementation of Senate Bill 610 and Senate Bill 221 of 2001: to assist water suppliers, cities, and counties in integrating water and land use planning*.
- A mini-workshop on SB 221 and SB 610 and the linkages between water supply planning and land-use planning was held at the County Planning Directors Association on Friday, February 7, 2003 with approximately 20-30 attendees. Additional seminars were conducted for the Legacy Project within the California Resources Agency on January 7, 2003 and with the Local Government Commission meeting hosted by the Governor's Office of Planning and Research's hosted on January 16, 2003.
- The Council presented information on SB 221 and SB 610, the Draft Guidebook, and feedback from the workshops to its Plenary Session in March 2003.

Year 2 Accomplishments

- The Council facilitated and coordinated four workshops on implementing SB 221/SB 610 with DWR utilizing the *Guidebook for Implementation of Senate Bill 610 and Senate Bill 221 of 2001: to assist water suppliers, cities, and counties in integrating water and land use planning*.
- Provided technical support to DWR in completing the *(Draft) Guidebook for Implementation of Senate Bill 610 and Senate Bill 221 of 2001*.

Year 3 Accomplishments

- The Council facilitated, coordinated, and hosted ten workshops throughout California to assist Water Suppliers in understanding both new and existing requirements for the preparation of an Urban Water Management Plan. At these workshops, the *Guidebook to Assist Water Suppliers in the Preparation of a 2005 Urban Water Management Plan* was the primary resource presented along with detailed information on using the Council's BMP Reporting Database to satisfy reporting requirements for Demand Management Measures. Additionally, the Council provided information on the upcoming Integrated Regional Water Management Plan Grant Program (Proposition 50) to promote coordinated and integrated planning among regional organizations.
- Presentation at the Association of Environmental Professionals Spring Conference in Sacramento on May 21, 2005: *Conservation of Water Resources*.
- Provided technical support to the DWR in the development, dissemination and review of Urban Water Management Plan technical documents including the review checklists and the *Guidebook to Assist Water Suppliers in the Preparation of a 2005 Urban Water Management Plan*.

Attachments

1. Workshop Presentations: 2002 Workshops on the Integration of Water Supply and Land Use Planning (SB 610 and SB 221).
2. SB 610/SB 221 Workshop Summary 2002 for four workshops held in the Fall of 2002 in Fresno, Perris, Sacramento, and Oakland.
3. Memorandum to Council Plenary: *SB 221 and SB 610 - Background and Activities*, March 20, 2003.
4. Workshop Presentations, Sample Agenda and Flyer: 2004 Workshops on the Integration of Water Supply and Land Use Planning (SB 610 and SB 221).
5. SB 610/SB 221 Workshop Summary 2004 for five workshops held in the Spring of 2002 in San Diego, Santa Rosa, Sacramento, San Jose and Fountain Valley.
6. Workshop Presentations, Sample Agenda and Flyer: 2005 Urban Water Management Plan Workshops.
7. Memorandum to David Todd, Office of Water Use Efficiency: *2005 Urban Water Management Plan Workshop Summary, March 29, 2005* for the ten workshops held in Santa Rosa, Granite Bay, Santa Clarita, Carson, San Diego, San Jose, Redding, Fresno, Rancho Cucamonga, and Santa Ana.
8. Presentation to the Association of Environmental Professionals, *Conservation of Water Resources*, Spring Conference, Sacramento (May 2005).
9. Technical Assistance on Water Supply Planning and BMP Reporting relating to the Urban Water Management Planning Act and on implementing SB 221/SB 610 (Water Supply Planning) is included in the Technical Assistance Logs.

Task 15 – BMP Exemption Assistance

Description: Provide technical assistance to water agencies for the implemented BMP exemption process.

Background: BMPs are defined in Exhibit 1 of the MOU which contains the implementation definition, implementation schedule, coverage requirements, reporting requirements, and water savings assumptions for each BMP. The MOU further states that a water supplier will be exempt from implementation of specific BMPS during each reporting period for which the supplier substantiates one or more of the following conditions (Section 4.5 of the MOU):

- (a) A full cost-benefit analysis, performed in accordance with the principles set forth in Exhibit 3, demonstrates that either the program (i) would not be cost-effective overall when total program benefits and costs are considered; OR (ii) would not be cost-effective to the individual water supplier even after the water supplier has made a good faith effort to share costs with other program beneficiaries.
- (b) Adequate funds are not and cannot reasonably be made available from sources accessible to the water supplier including funds from other entities. However, this exemption cannot be used if a new, less cost-effective water management option would be implemented instead of the BMP for which the water supplier is seeking this exemption.
- (c) Implementation of the BMP is (i) not within the legal authority of the water supplier; and (ii) the water supplier has made a good faith effort to work with other entities that have the legal authority to carry out the BMP; and (iii) the water supplier has made a good faith effort to work with other relevant entities to encourage the removal of institutional barriers to the implementation of BMPs within its service area.

Essentially, the MOU sets up a series of tests against which the water supplier's compliance could be evaluated. Through this task, the Council provided technical assistance to agencies in understanding the exemption process and the tools available to perform the recommended analyses.

Years 1 & 2 Accomplishments

- No funding was provided for this task in the first two years of the Cooperative Agreement.

Year 3 Accomplishments

- The Administrative Draft *CALFED Protocol for Exemption from Implementation of Urban Water Conservation Best Management Practices* that was presented to the Water Use Efficiency Subcommittee of the California Bay Delta Authority was used to form the basis for guidance presented as part of the four Cost-Effectiveness Workshops hosted by the Council in the Fall of 2004.
- Technical Assistance on Exemptions was provided by Council staff to the Steering Committee during policy discussions as well as to members and the general public on request.

Attachments

1. BMP Cost-Effectiveness Workshops (2004) Materials: Agenda, Syllabus, Workshop Presentations, Exemption Submittal Check List, and Workshop Flyer
2. *Cost-Effectiveness Workshop Summary*, October 2004
3. Additional information on technical assistance provided pursuant to this task may be found in the Technical Assistance Log.

Task 16 – Conservation Training with Amy Vickers

Description: Provide conservation training for DWR staff, USBR staff, and water agency staff based on the *Handbook of Water Use and Conservation*, to include a minimum of 5 days of instruction with the author.

Background: New technologies and practices are constantly being developed in the water use efficiency arena and it is important to keep the water industry informed of these developments. Furthermore, there was no existing training program providing comprehensive information on individual appliances, technologies, programs and devices as well as conservation program planning. The Conservation Training Workshop was intended to fulfill this training need.

Year 1 Accomplishments

- A workshop outline was developed and workshop dates were mutually agreed upon by the Council, DWR, and Amy Vickers.

Year 2 Accomplishments

- A training workshop for water conservation and planning professionals was held in Sacramento from September 22-25, 2004.
- A supplemental seminar for water policy and planning leaders was held at DWR on September 26, 2006 with facilitated discussion led by Amy Vickers.

Years 3 Accomplishments

- No funding was provided in Year 3 of the Cooperative Agreement.

Attachments

1. Workshop Flyer and Training Materials.

Task 17 - Year 4 Report for CALFED WUE

Description: The California Urban Water Conservation Council will assist DWR's Office of Water Use Efficiency and CALFED in the preparation of a Year 4 Comprehensive Report for the CALFEFD Water Use Efficiency Program.

Background: The Council's BMP Reporting Database is a major source for water use efficiency and water supply planning information for the State of California. Furthermore, the Council is uniquely positioned to analyze and evaluate water conservation program planning and forecasting. As such, the Council will gather data by hydrologic region and for the State from the Council's BMP Database and other Council resources that contribute toward the evaluation of present water use efficiency efforts in California and a projection of the potential for future expanded water use efficiency efforts.

Year 1 Accomplishments

- This task was not funded in Year 1 of the Cooperative Agreement.

Year 2 Accomplishments

- Identified the number of devices installed (toilets, washers, etc.) and estimate the present level of market penetration.
- Developed a model to that assisted with the following tasks:
 - a) Describe annual and cumulative urban water use and savings for each of the quantifiable BMP's: BMP 1 Residential Surveys, BMP 2 Retrofits, BMP 3 Audits, BMP 4 Metering, BMP 5 Landscape, BMP 6 Clothes Washers, BMP 9 CII, BMP 11 Rates, BMP 13 Waste Prohibitions, and BMP 14, Ultra Low Flush Toilets;
 - b) Estimate total potential water savings anticipated through implementation of BMP's;
 - c) Quantify the average cost of water saved for the annual and cumulative savings;
 - d) Extract and analyzed information from the Best Management Practices database on annual and cumulative urban water use by customer category;
 - e) Extract and analyze information from the Best Management Practices database on the costs associated with implementation of BMPs including staff resources by BMP, capital expenditures by BMP, and regional programs;
 - f) Extract and analyze information from the Best Management Practices database on annual and cumulative urban water supply by source;
 - g) Extract and analyze information from the Best Management Practices database for single and multi-family, commercial, industrial, institutional, and landscape connections.
- Employed data from DWR's Demand Management Measures and Urban Water Management Plan report database to extrapolate information derived from Council signatories for non-MOU signatory urban water suppliers.

Year 3 Accomplishments

- Work continued at CALFED to analyze the information and develop recommendations for the Year 4 Report.

Attachments

1. *SB 23 - Grant Report: Review of Grant Program Implementation Summaries, CALFED Water Use Efficiency Program, Year 4 Report*, prepared for State of California, Department of Water Resources, Office of Water use Efficiency (October 2003), prepared by Kevin Rumon, California Urban Water Conservation Council.
2. *Urban Water Management Plan Data Analysis Summary*, Memorandum from Larry Farwell consultant to the California Urban Water Conservation Council, April 30, 2004.
3. *Description of Analysis of Conservation Economic Potential*, Memorandum from Gary Fiske, May 13, 2004.
4. CALFED Water Use Efficiency Projection Model (on CD).
5. *August 3, 2004 Workshop Materials, (Draft)* Memorandum from David Mitchell and Gary Fiske to the Urban Stakeholders, Water Use Efficiency Comprehensive Review, July 26, 2004.
6. *CALFED Water Use Efficiency Program Year 4 Comprehensive Report*, Memorandum to the Council Plenary, August 24, 2005.
7. *WUE Comprehensive Review - Urban Conservation Projections*, presentation to the Council Plenary on September 7, 2005.