

Best Management Practices (BMPs) for Municipal Water Providers
BEST MANAGEMENT PRACTICES LISTING AND DESCRIPTIONS

CATEGORY 1: PUBLIC AWARENESS/PUBLIC RELATIONS

Programs to provide water users information on the need for and importance of water conservation, as well as information on the conservation services available to them. Programs can include, but are not limited to:

LOCAL AND/OR REGIONAL MESSAGING PROGRAM

Water provider actively participates in water conservation campaign with local or regional advertising. The campaign should promote ways for citizens to save water. Methods to promote a campaign may include media such as television and radio commercials, web sites, and utilization of promotional materials such as brochures (Spanish and English), vehicle signs (busses, garbage trucks, etc.), bookmarks, and magnets, etc.

SPECIAL EVENTS/PROGRAMS AND COMMUNITY PRESENTATIONS

An educational or promotional event where conservation information is displayed and available and/or presentations are given. Events may include home and garden shows, art shows, community celebrations, environmental shows, etc. To receive full credit for this BMP a provider must attend and staff at least three events per year.

MARKET SURVEYS TO IDENTIFY INFORMATION NEEDS/ASSESS SUCCESS OF MESSAGES

Water provider surveys customers to gather information regarding information needs, program preferences and/or response to conservation messages. Prior to survey design, the provider will set objectives for the survey and identify systematic methods for data collection and analysis, as well as for communication of results. Survey results will be used to improve current water conservation activities and/or to plan future activities. This BMP will be effective for only one year. In subsequent years, the provider must replace this measure with another to continue to meet its BMP requirements.

CATEGORY 2: CONSERVATION EDUCATION AND TRAINING

Programs to assist users in better understanding how to conserve water by providing written information and/or training in water conservation tools and techniques. Programs can include, but are not limited to:

ADULT EDUCATION AND TRAINING PROGRAMS

Programs include a combination of efforts to provide adults within a provider's service area with hands-on information. This may include but is not limited to regularly scheduled workshops for homeowners, a speaker's bureau, and/or training programs for landscape professionals. Programs can be targeted toward homeowners, landscape professionals, and/or non-residential users. A provider that implements multiple adult programs/efforts may be eligible to receive credit for more than one BMP if the

programs/efforts can be shown to be separate and distinct from one another (i.e., a provider that maintains an active speakers bureau and offers a workshop series is eligible to receive credit for two BMPs).

YOUTH CONSERVATION EDUCATION PROGRAM

Work with schools in the water provider's service area to increase understanding of water resources and promote water conservation. Program may include but is not limited to a combination of providing instructional assistance, education materials, teacher education, classroom presentations, and field trips to water related facilities. A provider that implements multiple youth programs may be eligible to receive credit for more than one BMP if the programs can be shown to be separate and distinct from one another (i.e., a provider that offers free water conservation school assemblies with accompanying printed materials for elementary school students and also distributes a middle school student activity book and teacher guide is eligible to receive credit for two BMPs).

NEW HOMEOWNER LANDSCAPE INFORMATION

The water provider must make low water use landscape information packets available to all new owners of newly constructed homes, either through direct distribution (mail or delivery) or through delivery by the home builder. The provider must notify new owners of existing homes (resale) that information on low water use landscape is available and must provide such information on request. The number of notifications sent and packets mailed must be recorded.

XERISCAPE DEMONSTRATION GARDEN

The water provider installs and maintains a water efficient demonstration garden. The garden would be available to the public and would provide interpretive signage and/or literature about low water use plants and/or water efficient landscape techniques.

DISTRIBUTION PLAN FOR WATER CONSERVATION MATERIALS

Develop, maintain, and utilize a written distribution plan for marketing water conservation materials and programs. The plan should include what marketing channels are available to promote water conservation programs and how those channels will be used. Communication modes used to promote water conservation programs may include water bill inserts, city cable, on-hold messages, e-mail messages, public events, water conservation workshops, water conservation web sites, and local publications. Distribution outlets for water conservation materials should also be noted and may consist of partnerships with libraries, businesses (i.e., landscape architects, nurseries, realtors) or other related organizations (i.e., Master Gardeners). The plan should contain: (1) goals and objectives for distribution of materials over a two-year period, beginning the year following plan development, (2) a timetable for distribution and (3) a mechanism for tracking distribution of materials. This BMP will be effective for only one year. In subsequent years, the provider must replace this measure with another to continue to meet its BMP requirements.

CATEGORY 3: OUTREACH SERVICES

Programs to provide users with consultations, audits and/or retrofit information designed to improve water use efficiency. Programs can include, but are not limited to:

RESIDENTIAL AUDIT PROGRAM

Audit can be self-audit (provider offers self-audit kits) or conducted by provider or its designated representative. Audits may include indoor and/or outdoor components, but must include a meter check. An audit may include but would not be limited to irrigation system, pool, water feature, toilets, faucets, and shower checks. The audit program is to be offered to all homes within a provider's service area.

LANDSCAPE CONSULTATIONS (RESIDENTIAL AND/OR NON-RESIDENTIAL)

Consultation services would be offered by the provider or a designated representative. The provider implementing this BMP would focus on those portions of its service area with the greatest potential for savings. Services would include evaluation of irrigation system, controller programming/irrigation scheduling, and plant selection/turf conversion possibilities. A meter check also could be included. The individual providing the consultation would provide either on-site written suggestions or on-site verbal suggestions with written follow-up. Other related programs (i.e., rebates for turf removal/converting to Xeriscape) could be offered during the consultation.

WATER BUDGETING PROGRAM

The provider offers to one or more non-residential water user groups (such as homeowner associations, industry, commercial properties, government facilities or parks) assistance in developing monthly and/or annual water use target amounts for outdoor and/or indoor water use that reflect highly water efficient water use/application rates. These rates should meet or exceed water use efficiencies required for similar uses in the Department's Third Management Plan. If they are not addressed in the plan, water use rates should be commensurate with state of the art water efficiency standards found elsewhere in the body of water conservation literature.

RESIDENTIAL INTERIOR RETROFIT PROGRAMS

Provide free or low cost plumbing fixtures and/or fixture retrofits such as faucets, faucet aerators, low flow showerheads, toilets, and toilet dams to residential customers living in homes built prior to adoption of the 1990 Uniform Plumbing Code requiring low flow plumbing fixtures. Providers will offer the fixtures/fixture retrofits to all residential customers meeting the above criteria unless the provider can demonstrate that targeting certain portions of their water service area is likely to yield the highest participation and/or potential water savings. (original language added back in). Providers will select appropriate communication channels to advertise the program.

NON-RESIDENTIAL INTERIOR RETROFIT PROGRAMS

Provide free or low cost plumbing fixtures and/or fixture retrofits such as faucets, faucet aerators, low flow showerheads, toilets, urinals, and toilet dams to non-residential customers with facilities built prior to adoption of the 1990 Uniform Plumbing Code requiring low flow plumbing fixtures. Providers will offer the fixtures/fixture retrofits to all non-residential customers meeting the above criteria unless the provider can demonstrate that targeting certain portions of their water service area is likely to yield the highest participation and/or potential water savings. (original language added back in). Providers will select appropriate communication channels to advertise the program.

CUSTOMER HIGH WATER USE INQUIRY RESOLUTION

Assign a designee(s) to assist citizens with their high water-use complaints. This would include a site inspection to discover the cause of an increase in the water bill. To receive credit for this BMP, a provider must follow up in some way on every customer inquiry and keep a record of inquiries and follow-up activities.

CUSTOMER HIGH WATER USE NOTIFICATION

Monitor customers for high water use. To receive credit for this BMP, a provider must contact the high water use customers via telephone, by email, by mail, or in person. The notification must include information on provider services that could benefit the customer such as audit programs, publications, and rebate programs. The type of notification and the criteria used for determining who gets the notification must be recorded.

WATER WASTE INVESTIGATIONS AND INFORMATION

Assign a designee(s) to assist citizens with water waste complaints. A complaint investigation would typically include a site inspection and some type of follow-up action, such as education of customers to prevent water waste or a letter of enforcement if applicable. To receive credit for this BMP, a provider must follow up in some way on every water waste complaint and keep a record of complaints and follow-up activities.

CATEGORY 4: PHYSICAL SYSTEM EVALUATION AND IMPROVEMENT

Programs to ensure that the water system is running at optimal efficiency (maintenance) or to improve water use efficiency in the physical water system by making one or more physical system improvements. Programs can include, but are not limited to:

LEAK DETECTION PROGRAM

Provider implements a systematic evaluation of its water distribution system to identify and fix leaks. Provider will implement this program throughout its service area unless the provider can demonstrate that targeting certain portions of their water service area is likely to yield the highest potential water savings.

METER REPAIR AND/OR REPLACEMENT PROGRAM

Provider implements a systematic assessment of the meters in its water service area to identify under-registering meters and to repair or replace them.

COMPREHENSIVE WATER SYSTEM AUDIT PROGRAM

Provider conducts a systematic audit of its water distribution system, systems control equipment, and water records to identify and quantify water losses. The audit will include an analysis of results that includes plans for corrective measures and can be a precursor to a leak detection and/or meter repair/replacement program. This BMP will be effective for only one year (unless the provider can offer justification for an ongoing or multi-year program). In subsequent years, the provider must replace this measure with another to continue to meet its BMP requirements.

CATEGORY 5: ORDINANCES / CONDITIONS OF SERVICE / TARIFFS

Programs to reduce water use within the service area and/or increase water use efficiency by limiting or reducing water used for specific purposes. Ordinances would apply to cities and towns and tariffs would apply to ACC regulated municipal providers (private water companies). Water providers not directly part of a municipality can get credit if they work with local or county jurisdictions to implement a new ordinance. Each ordinance/tariff/condition of service selected from the list below will be counted as one BMP.

Programs can include, but are not limited to:

- Low water use landscaping requirements for residential, multi-family, non-residential, and/or common areas
- Water tampering / water waste ordinances
- Plumbing Code requirements, if they are more restrictive than the 1990 Uniform Plumbing Code or its equivalent.
- Limitations on water features and/or water intensive landscaping and turf.
- Ordinance for model homes in new residential developments - Landscaping at model homes in new residential developments is required to be water efficient. Water-intensive landscaping is limited to functional areas and/or limited in size.
- Graywater ordinances, required onsite graywater/water harvesting features at residences and/or businesses
- Requirements for car wash water recycling
- Landscape watering restrictions (time of day, etc.)
- Requirements for hot water recirculation devices for residential, multi-family, and/or non-residential sectors
- Retrofit on resale - As an ordinance or as a condition of service, the owner of a single-family home, a multi-family home complex, and/or a non-residential facility shall replace all plumbing fixtures inside the housing unit/commercial unit that do not conform to current low water using standards. This could be done by the seller prior to sale or by the buyer subsequent to the sale. Retrofits would include replacement of toilets, showerheads, and faucets.
- Irrigation efficiency standards for non-residential users
- Conservation tariff (private water companies)
- A water use plan shall be submitted for all new commercial, industrial, and institutional users with a projected annual water use requirement of

ten acre-feet or more per year. The water use plan shall identify all water uses anticipated by the user, and the water efficiency measures associated with the uses. The water use plan also shall include at least three of the following:

1. Statement of water efficiency policy.
2. Water conservation education/training for employees.
3. Identification of on-site recycling and reuse strategies.
4. Total cooling capacity and operating TDS or conductivity for cooling towers.
5. Identification of best available technologies used for process, cooling, and domestic water uses.
6. Irrigation system distribution uniformity and landscape water budget.
7. Total annual water budget for the facility.

CATEGORY 6: REBATES/INCENTIVES

Program to provide users with an incentive for implementing a water conservation practice. Program can include rebates or incentives such as fee reductions and/or waivers. Programs can include, but are not limited to:

INCENTIVES (INDOORS)

TOILET REBATE PROGRAM

Offered to all homes and apartment units in a service area that were constructed prior to adoption of the 1990 Uniform Plumbing Code. Program includes rebate or incentive to residential and/or multi-family owners to replace high use toilet with a ULF toilet.

HIGH EFFICIENCY FLUSH TOILET REBATE PROGRAM

Offering a financial rebate or incentive to residential and/or multi-family owners to replace high use toilet with an HEF toilet.

TOILET REPLACEMENT PROGRAM

Program involves the provider replacing for residential and/or multi-family owners a high use toilet with a ULF or HEF toilet.

INDOOR WATER FIXTURE REPLACEMENT/REBATE/INCENTIVE PROGRAM

Offered to all homes and apartment units in a service area constructed prior to adoption of the 1990 Uniform Plumbing Code. Program includes the retrofit of showerheads, aerators, and toilet flappers.

REBATE FOR HOT WATER RECIRCULATING SYSTEMS/INSTANT HOT WATER SYSTEMS

Offering a financial rebate or incentive to residential, multi-family, and/or non-residential users to install hot water recirculation devices or devices that provide instant hot water at the point of use.

WATER EFFICIENT APPLIANCE REBATE/INCENTIVE PROGRAM

Offering to customers a financial rebate or incentive to promote the acquisition of water efficient appliances.

INCENTIVES (OUTDOOR)

GRAYWATER RETROFIT REBATE/INCENTIVE

Offering to customers a financial rebate or incentive for the retrofit of an onsite graywater feature, along with education on how to retrofit and the benefits of using graywater onsite.

WATER HARVESTING RETROFIT REBATE/INCENTIVE

Offering to customers a financial rebate or incentive for the installation of water harvesting features that may include gutters, downspouts, landscape designs, and containers, along with information about water harvesting techniques.

LANDSCAPE CONVERSION REBATE/INCENTIVE

Offering to customers a financial rebate or incentive for the conversion of the landscape to reduce the overall outdoor water usage. This would most likely involve replacing turf with a xeriscape landscape. Information about landscape conversions would be provided to customers.

REBATE/INCENTIVE FOR INSTALLING XERISCAPES IN NEW LANDSCAPES

Offering to customers with new landscapes a financial rebate or incentive for installing xeriscape landscapes.

NON-RESIDENTIAL

COMMERCIAL AND INDUSTRIAL PROGRAM

Program includes identifying commercial and industrial customers and targeting those with the highest conservation potential. Program may include toilet rebate or replacements, audits, incentives, grants.

LARGE LANDSCAPE CONSERVATION PROGRAM

Program to provide non-residential customers with support and incentives to improve their landscape water use efficiency.

NO/LOW INTEREST LOANS FOR IMPLEMENTING WATER CONSERVATION MEASURES

Offering assistance to customers wishing to invest in projects intended to reduce existing water use or bring new uses in at high rates of efficiency.

CATEGORY 7: RESEARCH/INNOVATION PROGRAM

A program to encourage water providers to conduct systematic evaluations of conservation measures already implemented, to implement state of the art water conservation technologies and techniques, and/or to develop and/or try new technologies and techniques. Programs can include, but are not limited to:

- Implementation of an emerging technology. To receive credit for this activity, a provider must submit documentation that includes a description of the technology, any available information on water savings, a description of how the technology was implemented within the provider's service area and a description of the results. This documentation would be made available for public distribution.
- Initiating applied research to enhance program decision making or providing financial support or in-kind services for such projects. To receive credit for this activity, a provider must describe its involvement/participation and method(s) of support. Upon completion of the research, provider will submit documentation of the analysis and results. This documentation would be made available for public distribution.
- Evaluating new and emerging technologies and practices. To receive credit for this activity, a provider must submit documentation stating the objectives of the evaluation, methods used to conduct the evaluation, and results of the investigation. This documentation would be made available for public distribution.
- Conducting a quantitative analysis of a conservation measure that yields results regarding actual water savings. To receive credit for this activity, a provider must submit documentation stating the methods used to conduct the analysis and the results of the investigation. This documentation would be made available for public distribution.
- Implementation of smart irrigation technology. To receive credit for this activity, a provider must briefly describe the project location, implementation methods, and estimates of irrigation efficiency or water savings, if and when available.
- Development of industry partnerships to encourage and implement collaborative efforts and activities designed to save water. To receive credit for this activity, a provider must describe the partnership, its objectives, its ongoing efforts, and any efforts planned for the future.
- Providing financial support or in-kind services for development of new conservation technologies and products. To receive credit for this activity, a provider must describe its involvement/participation and method(s) of support. Upon completion of the research, provider will submit documentation of the analysis and results.
- Piloting a new initiative, project or program (e.g., Water on the WEB- Community Water, Landscape Watering Reminder List Serve- Mesa). To receive credit for this activity, a provider must submit documentation that includes a description of the project/program, a description of how the project/program was implemented within the provider's service area, and a description of the results.

| | | | |
|----|---|----|---|
| 1 | Local/regional messaging program | 27 | Landscape watering restrictions |
| 2 | Special events/programs and community presentations | 28 | Requirements for hot water recirculation devices |
| 3 | Market surveys to identify information needs/assess success of messages | 29 | Retrofit on resale |
| 4 | Adult education and training programs | 30 | Irrigation efficiency standards for non-residential users |
| 5 | Youth conservation education programs | 31 | Water use plan for new large non-residential users |
| 6 | Distribution plan for water conservation materials | 32 | Conservation tariff (private water companies) |
| 7 | New homeowner landscape information | 33 | Toilet rebate program |
| 8 | Xeriscape demonstration gardens | 34 | High efficiency flush toilet rebate program |
| 9 | Residential audit program | 35 | Toilet replacement program |
| 10 | Landscape consultations | 36 | Indoor water fixture replacement/rebate/incentive program |
| 11 | Residential interior retrofit program | 37 | Water efficient appliance rebate/incentive program |
| 12 | Non-residential interior retrofit program | 38 | Graywater retrofit rebate/incentive |
| 13 | Customer high water use inquiry resolution | 39 | Water harvesting retrofit rebate/incentive |
| 14 | Customer high water use notification | 40 | Landscape conversion rebate/incentive |
| 15 | Water waste investigations and information | 41 | Rebate/incentive for installing Xeriscapes in new landscapes |
| 16 | Water budgeting program | 42 | Commercial and industrial program |
| 17 | Leak detection program | 43 | Large landscape conservation program |
| 18 | Meter repair and/or replacement program | 44 | No/low interest loans for implementing water conservation measures |
| 19 | Comprehensive water system audit program | 45 | Implementation of an emerging technology |
| 20 | Low water use landscaping requirements for residential, multi-family, non-residential and/or common areas | 46 | Initiating applied research to enhance program decision making or provide support or in-kind services for such projects |
| 21 | Water tampering/water waste ordinances | 47 | Evaluating new and emerging technologies and practices |
| 22 | Plumbing Code requirements (more restrictive than current code) | 48 | Conducting a quantitative analysis of a conservation measure that yields regarding actual water savings |
| 23 | Limitations on water intensive landscaping and turf | 49 | Implementation of smart irrigation technology |
| 24 | Graywater/water harvesting ordinances | 50 | Development of industry partnerships to encourage and implement collaborative efforts and activities designed to save water |
| 25 | Ordinance for model homes in new residential developments | 51 | Providing financial support or in-kind services for development of new conservation technologies and products |
| 26 | Requirements for car wash water recycling | 52 | Piloting a new initiative project or program |

To aid in the economic choices of deciding if a particular practice would be applicable to your organization go to:

<http://www.allianceforwaterefficiency.org/MaP/index.html>

<http://www.irrigation.org/SWAT/Industry/water-purveyors/>

http://www.ccme.ca/assets/pdf/ei_marbek_final_rpt_e.pdf