

Water Conservation Best Management Practices

Best Management Practices for Wholesale Water Providers

Table of Contents

1.0	Introduction.....	1
2.0	Conservation Planning	
	2.1 Customer Contract Requirement to Develop and Implement Water Conservation Plans and Drought Contingency Plans	5
	2.2 Technical Assistance and Outreach	10
3.0	Resource Sharing	
	3.1 Cost-Share Program	13
	3.2 Wholesale Water Provider’s Collective Purchase and Direct Distribution of Water Conservation Equipment	16

1.0 Introduction

This section is for best management practices for wholesale water providers supplying potable water to their wholesale utility customers. Best management practices are **voluntary efficiency measures** that are intended to save a quantifiable amount of water, either directly or indirectly, and can be implemented within a specified timeframe. They are not exclusive of other meaningful conservation techniques that an entity might use in formulating a state-required water conservation plan.

Best management practices may be implemented individually, in whole, or in part or be combined with other best management practices or other water conservation techniques to form a comprehensive water conservation program. Adoptions are entirely voluntary, although it is recognized that once adopted as part of a water conservation program, the entire water conservation program including certain best management practice elements may have some regulatory aspects to them (e.g. implementation of a local city ordinance). Upon review, a wholesale water provider may find that it is already implementing one or more of these elements and may want to adopt additional elements outlined below. Once a wholesale water provider decides to adopt all or part of a best management practice as part of a water conservation program, it should follow the water conservation program closely in order to achieve the maximum benefit.

Wholesale water provider program measures are designed to assist its customers who purchase water and provide retail water service. Under the Technical Assistance and Outreach best management practice, the wholesale water provider will provide financial and/or technical support to wholesale purchasers to advance water conservation efforts both for the wholesale customer and its retail water customers. Financial support consisting of incentives or equivalent resources that target retail water customers should be supported when they can be shown to be cost-effective in terms of avoided cost of water from the Wholesale agency's perspective.

Financing for water conservation programs can be built into the wholesale water provider's rate structure as a dedicated fund. Where allowed by law or contract mechanism, the wholesale water provider can offer its water conservation programs both to the wholesale customer or directly to its retail customers and should provide technical assistance to implement them. When mutually agreeable and beneficial, the wholesale water provider may operate all or any part of the conservation-related activities for one or more of its retail customers.

Wholesale water providers should work in cooperation with their wholesale customers to identify and remove potential disincentives to conservation that are created by water management policies, including water rate structures. Wholesale rate structures should be designed upon the basic principal of increased cost for increased usage. Incentives to conserve can be built into the base rate/volumetric rate ratio with greater emphasis on volumetric rates or with a seasonal increment.

Implementation

Wholesale water providers are encouraged to consider stakeholder group information meetings, especially for those affected by water conservation programs. Working with stakeholder groups is important to achieving “buy in” from the stakeholders. Implementing water conservation programs may exceed the requirements of §Texas Administrative Code 288.5, Water Conservation Plans for Wholesale Water Suppliers. To implement a water conservation program, the following elements and strategies should be included:

1. Wholesale water provider baseline profile: A description of the wholesale water provider’s service area, including population and customer data, water use data, water supply system data, and wastewater data
2. Wholesale water provider goals: Specification of quantified 5- and 10-year targets for water savings including, where appropriate, target goals for municipal use in gallons per capita per day (Total “GPCD”) for the wholesale water provider’s service area, maximum acceptable water loss, and the basis for the development of these goals
3. Wholesale water system accounting and measurement:
 - a. A description as to which practice(s) and/or device(s) will be utilized to measure and account for the amount of water diverted from the source(s) of supply;
 - b. A monitoring and record management program for determining water deliveries, sales, and losses;
 - c. A program of metering and leak detection and repair for the wholesale water provider’s water storage, delivery, and distribution system
4. A requirement in every wholesale water supply contract that each successive wholesale customer develops and implements a water conservation plan that meets Texas Administrative Code 288 rule requirements for public water suppliers. Because enforcement of this requirement is difficult for the wholesale water provider to enforce, the wholesale water provider should consider developing and adopting penalties for non-compliance of this requirement.
5. Conservation-oriented water rates. During the process of contracting for water service, either new or renewed, the wholesale water provider should implement wholesale water rate structures that provide incentives to conserve.
6. Wholesale customer assistance. A program to assist customers, which could include, but not be limited to, the following:
 - a. Technical assistance with the development of plans and program implementation;
 - b. Development of consistent methodologies for accounting and tracking water loss and gallons per capita per day;
 - c. Development of procedures for calculating program savings, costs and benefits;

- d. Coordination of conservation incentive activities. Examples of pooling funds and providing grants; offering bulk purchase of equipment such as Ultra Low Flow toilets;
 - e. Implementation of wholesale service area-wide education and outreach programs, such as school education programs, public information programs, etc. (See best management practice for school education and public information); and
 - f. Cost-sharing, including joint management of retrofit and education programs and partial funding of rebates for specific conservation measures.
7. A program for reuse and/or recycling of wastewater and/or gray water.
 8. Any other water conservation practice, method, or technique which the wholesaler shows to be appropriate for achieving the stated goal or goals of the water conservation plan.
 9. A means for implementing a water conservation program, which will be evidenced by official adoption of the wholesale water provider's best management practice initiatives by the wholesale customers.

Program participants should begin implementing best management practices within 12 months of official adoption.

Determination of Water Savings and Cost Effectiveness

To track the progress of a water conservation program, the wholesale water provider should gather the following documentation:

1. Copy of wholesale water provider's assistance best management practice enacted in the service area;
2. Copy of conservation plan pursuant to §TAC 288.5;
3. Copy of any annual reports or implementation reports of measures accomplished; and
4. Copies of progress reports of conservation program implemented by wholesale customers that are in conjunction with the wholesale water provider or which are cost-shared in the water conservation program.

Using historical records as appropriate, the wholesale water provider calculates water savings due to implemented water conservation programs, such as water loss programs or programs delivered to retail customers. Calculated savings should be based upon equipment changes, quantified efficiency measures, or alternative water sources as appropriate.

The labor costs for technical services to retail customers are dependent upon the type of conservation program which the wholesale water provider decides to implement. Wholesale water providers should evaluate each of the water conservation program elements to determine the appropriate costs associated with technical assistance. Cost-share costs also depend upon the program elements and the percentage of implementation the wholesale water provider determines is appropriate. It is recommended that the wholesale water

provider determine the net present value of avoided costs for new supply projects to determine the appropriate level of financial support to offer retailers for cost-share programs.

References for Additional Information

- 1) A Water Conservation Guide for Public Utilities, New Mexico Office of the State Engineer, March 2001.
- 2) Pulling Utilities Together: Water-Energy Partnerships, Home Energy Magazine Online July/August 1993. <http://hem.dis.anl.gov/eehem/93/930709.html>
- 3) Memorandum of Understanding, California Urban Water Conservation Council, 1999.

2.1 Customer Contract Requirement to Develop and Implement Water Conservation Plans and Drought Contingency Plans

Applicability

This best management practice is intended for a wholesale water provider supplying raw or treated water to wholesale municipal customers, such as cities or other utilities. Rules of the Texas Commission on Environmental Quality, contained in Title 30, Texas Water Administrative Code, Chapter 288, require wholesale water providers to develop water conservation plans and drought contingency plans. The rules also require that in every water supply contract entered into or renewed after the adoption of the water conservation plan, including contract extensions, that successive wholesale customers develop and implement water conservation and drought contingency plans consistent with Chapter 288.

Description

Implementing water conservation measures at the retail level can be a barrier for wholesale water providers because their wholesale municipal customers have direct relationships with the water end-users. These retail providers set water rates, bill, and provide various customer services that can have direct impacts to their customer's water use.

Wholesale water providers can have some success with implementing conservation incentive programs and conducting education and outreach water awareness and conservation campaigns. Wholesale water providers can be more successful by requiring its customers to develop and implement water conservation plans in order to share the responsibility of implementing water conservation measures and programs.

The wholesale water provider should require that as a condition of contract approval, the potential customer must develop and submit to the wholesale water provider a water conservation and drought contingency plan that meets, at a minimum, the requirements of Chapter 288, including the designation of a water conservation and drought management coordinator.

The wholesale water provider should also include the requirement that the customer's drought contingency plan be consistent with the stages and water use reduction targets provided in the wholesale water provider's drought contingency plan. The wholesale water provider should use the plan in assessing the need for the requested amount of water for the proposed use before the contract is awarded. The wholesale water provider may provide assistance to customers when developing their plans, and, if the contract is approved, would track the implementation of those plans through regular customer reporting requirements. The wholesale water provider's water conservation plan and drought contingency plan rule requirements should also include a provision to allow the wholesale water provider to update these rules periodically to reflect changing conditions and require its customers to subsequently update their plans.

Implementation

Depending on the size of its customer base, the wholesale water provider should have dedicated staff resources or other qualified contracted resources to review water conservation plans and drought contingency plans for the requirements of Chapter 288 rules and wholesale water provider rule sufficiency, and to provide technical assistance on water conservation and drought contingency plan development, as needed. Adequate wholesale water provider staff and other resources should also be available to track implementation of the plans. A wholesale customer water conservation and drought management coordinator is suggested to establish consistent, reliable communication with retail providers over time.

The wholesale water provider should also develop rules for wholesale customer water conservation plans and drought contingency plans that:

1. Determine customer applicability requirements. For example, customers that use less than 10 acre-feet or temporary contracts may not need to develop specific plans. However, a condition in the water contract should include that water used under the contract shall be beneficially used for the authorized purpose without waste. Although required only through the contracting process, the wholesale water provider should encourage the development of water conservation plans and drought contingency plans by current customers.
2. Contain specific criteria for the determination of what constitutes an emergency water shortage, the process for customer notification, and procedures for the implementation of the pro rata reduction of water supply to wholesale water customers. In accordance with Texas Water Code §11.039 the wholesale water provider develops the draft rules, based on the Texas Commission on Environmental Quality's Chapter 288 rules, researches for what is cost effective and acceptable to the customers, and if the wholesale water provider can legally adopt a specific measure included in the rule.
3. Consider adding additional requirements for contracts with either a volume or number of connections above a certain threshold level.
4. Consider including additional measures not in Chapter 288 rules, such as requiring limits on daytime irrigation and day of week watering, and adoption of state landscape irrigation standards.
5. Require customers to identify a conservation coordinator that is responsible for plan implementation and reporting to the wholesale water provider on progress. This individual is a point of contact responsible for plan implementation and reporting, not necessarily a dedicated staff person for conservation.
6. Require customers to provide yearly updates on plan implementation progress.
7. Consider including additional measures not in the 288 rules, such as setting a landscape water limit to no more than twice per week under the first stage of mandatory restrictions. More severe restrictions may be appropriate depending on local conditions.
8. Require triggers and response measures for reduction in water supply (not just water

treatment capacity). Water supply triggers should be consistent between the wholesale water provider and the customer for the water supply that is managed by the wholesale water provider. Triggers for alternative water supplies should be addressed separately as additional requirements for initiation of drought response.

9. Require that the customer's quantified water use reduction targets are consistent with the wholesale water provider's drought contingency plan.
10. Consider development of sample drought contingency plans that can be adopted by customers.
 - a. Require both plans to be approved by the wholesale water provider before a customer's contract is signed.
 - b. Consider developing and adopting penalties for non-compliance.
 - c. Review rules for consistency with other wholesale water provider policies, plans/or rules such as other water resource, contracting, and customer service and legal policies.
11. Gather customer input:
 - a. The rules are provided to the wholesale water provider customers and a mechanism is established to receive customer feedback.
 - b. At a minimum, the draft rules should be provided to the customers (via mail, email, or some other media) and a meeting scheduled to discuss and receive input on the draft rules.
 - c. Wholesale water provider considers customer feedback when the developing the final version of the rules.
12. Adopt rules and implement:
 - a. Rules approved by wholesale water provider official governing body (Board/Council).
 - b. Notify customers of new rules.
 - c. Consider developing sample plans that can be considered and modified by customers.
 - d. Begin implementation with new or amended water contracts within time period identified by rules or governing body.
 - e. Develop a tracking tool that includes customer plan summaries and plan implementation. The tracking tool could compliment the state's reporting tool, providing additional information that is not required by the state for those customers that must also report to the state.
 - f. Wholesale water provider staff begins process of reviewing and approving plans prior to contract approval.
 - g. Through staff technical assistance, promote adoption of additional water conservation measures such as: fixture replacement programs, ordinance or deed restrictions requiring landscape irrigation standards, and soil depth requirements.

Scope and Schedule

Development and adoption of this best management practice should be completed in a six-month period. Implementation of the practice should begin within an additional six-month period. Once implementation begins, the practice should be reviewed and modified a minimum of every five years. The suggested timeline for this practice includes:

1. Develop draft rules. (two months)
2. Gather customer input. (two months)
3. Revise rules based on customer input. Wholesale water provider official governing body (Board/Council) approves rules. (two months)
4. Begin implementation with new or amended water contracts. (three to six months after official adoption)
5. Implementation reporting of conservation plans should be required annually. Alternately, they can be required every five years submitted in the year before the wholesale water provider is required to submit an updated water conservation plan and drought contingency plan to the Texas Water Development Board.
6. Best management practice is considered complete with or without penalties for non-compliance.

Measuring Implementation and Determining Water Savings

Measurements for best management practices implementation can be developed through creating a tracking database that includes specific plan elements. Customers are surveyed yearly to determine if plans are being implemented.

Cost–benefit tracking tools such as the Alliance for Water Efficiency tracking tool can be used to determine water savings, if reliable savings estimates are available for a particular measure. The measures can be organized in the water savings tracking tool by wholesale water provider customer, so that the savings can also be provided to the customer for their own reporting of water savings.

Cost-Effectiveness Considerations

The direct cost of implementing this best management practice is primarily associated with the staff time for customer meetings to provide technical assistance with development and review of each plan. The total amount of staff time will depend on the number of customers requesting new or amended contracts. Additional labor costs include time spent tracking and reporting on implementing the customer’s plans.

This best management practice can complement other practices implemented by the wholesale water provider (such as cost-share or outreach programs) as well as customer programs (many of those practices are included in the municipal best management practice section).

Determination of the Impact on Other Resources

By requiring its customers to develop and implement water conservation plans, the wholesale water provider is able to share the responsibility of conserving water for the wholesale water provider’s water basin service area, meet demand reduction goals during a drought, and ensure compliance with its water supply contracts. The data gathered and tracked can be used to project yearly and future conservation savings to the state and to the wholesale water provider governing body. Customers with drought contingency plans are also more effectively and

quickly able to respond to the wholesale water provider's request to implement water restrictions during droughts.

References for Additional Information

- Texas Administrative Code, Title 30, Chapter 288
- Texas Water Development Board Best Management Practices Guide
- Lower Colorado River Authority, Administrative Rules for Water Sales Contracts
- Alliance for Water Efficiency
- California Urban Water Conservation Council

Acknowledgments

- Lower Colorado River Authority
- Texas Commission on Environmental Quality
- Texas Water Development Board

2.2 Technical Assistance and Outreach

Applicability

This best management practice is intended for wholesale water providers that want to partner with their customers to jointly implement conservation programs to meet their water conservation plan goals and that want to take an active role in assisting their customers and community with water conservation.

Description

Wholesale water provider could provide technical assistance in one or all of the following ways:

1. Develop model water conservation plans and drought contingency plans that could be adopted by customers
2. Assist customers to develop their own water conservation plans and drought contingency plans
3. Develop water conservation outreach materials such as brochures, handouts, and bill inserts, seasonal reminders, and newsletter articles
4. Research and provide advice on how to implement specific conservation programs or measures
5. Bulk purchasing
6. Train customer employees to implement conservation programs such as irrigation evaluations, water audits, or other measures.
7. Develop metrics for conservation programs (such as customer Gallons Per Capita per Day, savings per measure)
8. Assist customer in determining cost-benefit and cost-effectiveness of a best management practice

Wholesale water provider would provide outreach in the following ways:

1. Host workshops on specific conservation topics or issues
2. Provide presentations and/or hosting booths at customers community events such as spring festivals, garden clubs, civic clubs, home and garden shows, school events
3. Conduct a region-wide media campaign

Implementation

Implementation should include having a dedicated water conservation staff person or other contract-based resources with appropriate expertise available to coordinate with water customers. Dedicated staff can establish consistent, reliable communication with retail providers.

1. Have staff or other resources available with specific knowledge sets (i.e. licensed irrigator, planning and evaluation) to provide technical assistance offered to customers.
2. Consider hosting customer meetings two or three times per year to maintain contact and discuss current and future possibilities.

3. Maintain an up-to-date website with water conservation information, a calendar of events, and other timely information that customers can link to and utilize for their own conservation programs.
4. Consider developing a regional stakeholder group, or groups, to address different issues and challenges of developing water conservation programs that are fair, equitable, and beneficial to all the customers.
5. Develop conservation materials to present at customer board meetings, citizen advisory committees, homeowner associations, and other interest groups regarding water conservation programs, benefits, and strategies.
6. Develop water conservation partnerships with customers to implement programs, media campaigns, or other outreach activities.

Scope and Schedule

1. Conduct a customer input process to determine the best mix of services. Process could include customer meetings or development of a customer task force.
2. Include services in wholesale supplier conservation plan and link to water savings.
3. Have plan adopted by wholesale water provider's board to ensure management approval of services.
4. Develop strategic work plan for how services are implemented, focusing on where there is either a need or customer request.

Measuring Implementation and Determining Water Savings

1. Develop a tracking system for technical assistance and outreach activities
2. Wholesale water provider conducts yearly water conservation plan implementation surveys to monitor progress of individual customer plan implementation and to quantify water savings from implementation of customer programs where possible.

Cost-Effectiveness Considerations

1. Number of staff needed depending on number of customers, size of service area, and level of implementation of water conservation programs.
2. Purchase of water conservation materials for distribution; devices for promotional giveaways, and costs of hosting workshops, customer meetings, or other regional meetings.

Determination of the Impact on Other Resources

1. This best management practice complements other practices that wholesale water provider customers could implement.
2. Wholesale water providers cannot generally save water by themselves and must save water through collaboration with customers and other water users.

References for Additional Information

- Tarrant Regional Water District Strategic Water Conservation Plan
- Lower Colorado River Authority 2008 Water Conservation Task Force

- City of Austin Water Conservation Advisory Council
- San Antonio Water System
- Dallas Water Utilities

Acknowledgments

- Tarrant Regional Water District
- Lower Colorado River Authority

3.1 Cost-Share Program

Applicability

This best management practice is intended for wholesale water providers with customers that would like to implement a conservation measure, but need additional funding to make it cost-effective.

Description

A wholesale cost-share program provides matching funds to water users (wholesale customers or end-users) in order to help offset the cost of water efficiency projects and programs. Cost-share programs allow end-users and/or wholesale customers to identify conservation options specifically tailored to their needs and receive assistance for implementation. Cost-share programs typically receive and approve proposals on a periodic basis (annually or bi-annually) for water efficiency measures that result in concrete water savings.

Examples of areas where a cost-share program could provide funding include, but are not limited to the following:

1. Water loss reduction efforts
2. Recycling and water reuse projects that replace potable or raw water use with condensate or reclaimed water
3. Demand-side conservation programs with proven water savings
4. Encouraging the retrofit of existing landscape irrigation systems to more efficient systems using soil moisture sensors or other technologies

All projects need to be approved prior to commencement and a goal amount of water saved would be required.

Implementation

When establishing the program, the following items should be considered:

1. Timeframe
 - a. How often will proposals be reviewed and awarded?
 - b. When will funds be awarded? (up-front, at project completion, on an annual basis)
2. Program funding
 - a. Will there be a cap on the dollar amount of funding awarded per proposal?
 - b. Will there be a cap on the percentage of funding awarded (i.e. no more than 50 percent of the proposal cost)?
 - c. Will there be a dollar value awarded per acre-foot of water saved?
3. Project approval
 - a. Who will review the proposals?
 - b. Who will have final approval on which proposals are awarded?

4. Tracking
 - a. How often will progress reports be required (at project completion, quarterly, etc.)?
 - b. Will there be any additional reporting requirements at or after project completion?

Once the basic program elements have been developed, the information will be incorporated into an application that can be made available to potential participants.

The wholesale water provider will need to develop a set of evaluation criteria to score the project proposals. Proposals would typically be awarded based on a combination of factors that could include the following:

1. Project goals and objectives
2. Cost-effectiveness
3. Life expectancy of water savings
4. Ancillary benefits such as environmental, community, regional impacts
5. Amount of funding requested
6. Quality and detail of project planning
7. Past performance and/or previous participation
8. Innovation

To facilitate the evaluation of proposals, the majority of the scoring elements should be reflected in the application requirements.

Scope and Schedule

1. Wholesale water provider develops program (sets funding amount, timeline, requirements), application, scoring criteria, and other necessary items.
2. Wholesale water provider markets the program to its customers and other potential participants.
3. Wholesale water provider collects and reviews proposals and recommends awards.

Measuring Implementation and Determining Water Savings

Water savings will vary between projects.

Cost-Effectiveness Considerations

1. Depending on the frequency and amount of proposals received, 0.25 full time equivalent staff needed for a mid-large size wholesale water provider.
2. The majority of the cost for the program will be the actual cost-share funding awarded.
3. Consider setting a limit on the cost-per-acre-foot match of funding (i.e. will not provide funding for a 50 percent cost share or \$200 per acre-foot saved over the lifetime of the project, the less of the two)

Determination of the Impact on Other Resources

This best management practice could incorporate additional criteria that targets or encourages developing projects with an energy savings, water quality, or other resource benefit.

References for Additional Information

- Edwards Aquifer Authority Conservation Grant Program
- South Florida Water Management District Water Savings Incentive Program

Acknowledgments

- Edwards Aquifer Authority
- Sabine River Authority
- South Florida Water Management District
- Lower Colorado River Authority

3.2 Wholesale Water Provider's Collective Purchase and Direct Distribution of Water Conservation Equipment

Applicability

Wholesale water providers in Texas serve a variety of municipal water customers including small, medium, and large municipalities in addition to municipal utility districts, water supply corporations, water control and improvement districts, and others. These municipal customers have the greatest potential to benefit from a wholesale program of collective purchase and direct distribution of conservation equipment.

Description

The goal of collective purchase and direct distribution is to cost-effectively accelerate the installation and adoption of water efficient devices among communities. By representing its customers, the wholesale water provider is able to leverage the purchase of bulk conservation equipment such as toilets, showerheads, pre-rinse spray valves, or other water-saving equipment. The wholesale water provider and its customers benefit financially from the advantage of collective purchasing power by achieving a lower cost per acre-foot or gallon of water saved.

By eliminating the need for customers to individually execute contracts and set up program procedures and other necessary items to successfully launch a program, the administrative cost for the conservation measure is reduced. The customers implementing the program will need to develop implementation guidelines such as how and when applications are received and processed. The wholesale water provider could assist with developing guidelines or provide sample guidelines to help the customers get started.

A collective purchase and direct distribution program requires the wholesale water provider to partner with its customers to effectively implement the conservation program. Without a direct connection to the retail end-user, the wholesale water provider must rely on the customer to implement the program in its service area. The customer is generally responsible for application screening, verification, and marketing. The wholesale water provider is typically responsible for contract establishment and management, program development, support, and tracking.

Implementation

The first step in implementing any type of program is to first identify which conservation measures would be the most effective given the service area. Surveys, one-on-one customer meetings, and annual reports can help provide key pieces of information from customers including:

1. number of connections served;
2. estimated number of connections built prior to a certain year (example would be 1992 toilets, as that is when the federal standard changed from 3.5 to 1.6 gallons per flush);

3. breakdown of customers by commercial, single-family residential, multi-family residential, and industrial;
4. estimated number of automatic irrigation systems or a peak to average day water use ratio; and
5. customer interest.

This information will help steer program decisions on outdoor versus indoor and residential versus commercial conservation measures. Once the opportunities are identified, the wholesale water provider can directly bulk purchase the equipment and distribute it to its customers or set up a voucher program for customers to offer to their end-users.

An example of bulk purchase with direct distribution would be a high-efficiency showerhead program where the wholesale water provider executes a contract for a bulk purchase of showerheads and distributes them to their end-users. The number of showerheads distributed would be reported to the wholesale water provider for tracking purposes.

An example of a voucher program would be a high-efficiency toilet program where the wholesale water provider executes a contract for a bulk purchase of these toilet models. The participating customer partners with the wholesale water provider to distribute the toilets through a voucher process. The customer collects and verifies applications from end-users and issues vouchers for the end-user to pick up toilets from the plumbing store under contract. The wholesale water provider would be billed by the contracted plumbing store and tracks the program.

Prior to beginning the program, a legal agreement needs to be signed by the customer and the wholesale water provider. This agreement establishes the roles and responsibilities and defines the grounds for termination and other necessary information.

The wholesale water provider can also assume the role of developing program procedures and guidelines. This helps eliminate duplication of efforts and reduces the overall administrative requirements for the program. Once standard templates are created for program applications, marketing materials, and other relevant documents, individual municipal customers can make slight modifications to the documents to effectively roll out the program in their service areas.

Developing a web site that allows a customer to input information from an external location, while allowing the wholesale water provider to track equipment distributed, provides an easy and effective way to monitor the distribution.

When a web site is unavailable, the customer could also track the equipment distributed in a spreadsheet or other database and provide the information to the wholesale water provider through periodic updates.

Scope and Schedule

Once collective purchasing opportunities have been identified, the following steps will need to occur:

1. A contract or other bulk purchase of equipment by the wholesale water provider.
2. A customer agreement between the customer and wholesale water provider, defining the roles and responsibility of each agency, needs to be drafted and signed by both parties.
3. These agreements typically go before a board or council so time is needed to allow for management approval.
4. A method of tracking needs to be developed. This could be an external web site that both the customer and wholesale water provider can access simultaneously or a stand-alone database that the customer maintains and periodically delivers to the wholesale water provider.
5. Program procedures and templates for the application, marketing pieces, frequently asked question documents, and other materials that are necessary for the program to function effectively.

Measuring Implementation and Determining Water Savings

To track the progress of a collective purchasing program, the number of equipment items distributed should be carefully monitored to estimate water savings and track program costs.

Cost-Effectiveness Considerations

The majority of the cost will be determined by the type of equipment offered. Program administration costs varies between customers and depends on the level and type of marketing the customer uses to advertise the program.

Determination on the Impact of Other Resources

Depending on the specific program being implemented, some of the wholesale water provider's customer entities may not have the financial or staff resources to participate. This would result in unequal promotion of the water conservation activity within the wholesale water provider's service area. In addition, some of the customer entities might agree to participate in a new cooperative program, but would have to reduce or eliminate some existing conservation efforts due to budget constraints.

References for Additional Information

- Lower Colorado River Authority
- Seattle Water Utility

References for Acknowledgments

- None