

KENT COUNTY WATER AUTHORITY

WATER CONSERVATION ACTION PLAN



OCTOBER 2007

(Approved October 18, 2007)

*1072 Main Street
P.O. Box 192
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KCWA Water Conservation Action Plan

1.0 Introduction

This action plan is intended to outline opportunities for the future development of a comprehensive water conservation program to reduce demand and the inefficient use of water throughout our system. The intent is to utilize existing techniques and technologies that are cost effective and readily available for customer implementation. A second element of the plan is a Public Awareness Program that will educate and encourage wise use of water supplies within our service area. Support from the cities and towns we serve is an instrumental component to the success of this endeavor.

Several potential conservation programs are presented in this plan. Some of them are designed to encourage conservation on a year round basis while others focus on the high demand period (summer). KCWA will conduct some initial research in order to better define the overall water conservation goals. This is necessary to select and implement those programs that would best allow KCWA to meet envisioned goals.

2.0 Goals

Water is a finite natural resource that must be protected and used wisely. KCWA Regulations encourage conservation. KCWA must develop quantifiable goals for this program (i.e. water use reduction). These goals will be based on consumption along with the research and analyses. One of the primary areas of focus will be the reduction of outdoor water use to reduce overall twofold seasonal demand experienced each summer. This influence is particularly important as overall demand is projected to increase significantly due to economic, residential growth and changes in usage patterns.

3.0 Water-Use Profile

An annual water use profile will be developed by analyzing water use by customer category (residential, commercial/industrial, government). Based on historical water billing records, approximately 69% of water use is residential, 26.5% is commercial/industrial, and 3.5% is governmental.

Seasonal production records demonstrate that outdoor water usage has the most impact on overall demand. A preliminary examination of seasonal demands over the past several years indicates that an estimated 3-5 Million Gallons per Day (MGD) is used for outdoor water use on a typical summer day. On days of maximum demand, the estimated outdoor water use increases to 6–9 MGD. Therefore, it is clear that a program(s) that results in outdoor water use reduction will reduce maximum day demands.

4.0 Research

KCWA will review State Guide Plans and Conservation Programs that other water suppliers have implemented for guidance and examples of successful and unsuccessful programs. This will allow us to focus our efforts in areas that have the greatest potential for success.

Cohesive implementation of a Conservation Plan with state and local officials is key to overall success.

5.0 Existing Programs

KCWA currently has several water saving initiatives including ongoing leak detection, a residential retrofit program and a year round odd/even outdoor water use policy. These programs will be reviewed as part of this action plan.

Leak Detection – Currently KCWA conducts leak detection on one quarter of the system annually using in-house forces. We will review what type of program progress has historically been accomplished and measure the successes that can be quantified. Based on these efforts and a review of unaccounted-for water use, we will develop a plan for future efforts.

Residential Retrofit Program – Complete system mailing of conservation kits was done in 1999. Kits are still available and provided upon request of any customer. Review of newer technology to further our conservation goals will be undertaken.

Odd/Even Outdoor Water Use Program – To the extent possible, review water use patterns before and after this program was implemented to determine if there was any impact on water usage. Consider modifying with more effective program if required. It is anticipated that KCWA will follow the state's lead regarding outdoor watering. At this time, the state does not have any guidance documents or policies in place.

6.0 Proposed Programs

Several water conservation programs will be considered in this plan. The programs are designed to reduce both indoor water usage (year round) and outdoor water usage (high demand season). Some programs may have the potential for greater water use reduction than others. In addition, the time to implement each program varies. Public participation is a key element to any successful program.

Primary Water Conservation Programs

1. *Water Conserving Plumbing Devices* – Upon review of current technology, develop strategy to implement plumbing device retrofit program. Essentially, KCWA would be encouraging customers to make the same type of improvements that are part of the Residential Retrofit Program. These retrofits include:
 - a) Low-flow Shower Heads
 - b) Low-flow Toilets
 - c) Low-flow Faucet Aerators
 - d) Pressure Reducers for High Pressure Areas-KCWA to identify areas and send letter suggesting installation of device.
2. *Outdoor Water User Restriction Program* – As discussed above, the effectiveness of the current Odd/Even program will be assessed. We will also review other outdoor

water use restriction programs to determine if there is one that may be more effective. It is anticipated that KCWA will follow the state's lead regarding outdoor water use restrictions. Once a program is selected, it will be promoted through press releases and information printed on bills. An enforcement strategy must be available as a part of this program.

3. *Outdoor Water Use Devices* – Devices exist that have been shown to reduce outdoor water use. KCWA will review the availability of these devices and if desirable encourage their use. Current technology is as follows:
 - a) Automatic shutoff nozzle on hand-held hose.
 - b) Shutoff device activated by rainfall on automatic irrigation systems –*required on new irrigation systems.*
 - c) Soil moisture probes and sensors used to adjust irrigation schedules on automatic irrigation systems – *required on new irrigation systems.*
 - d) “SMART” controllers (i.e. ET Controllers)
 - e) Rain Gauge
4. *Major Appliances* – Encourage KCWA customers to install energy-wise appliances (i.e. clothes washer, dishwasher, water heaters) when they replace existing appliances. KCWA will provide some general guidance regarding available technologies via a public awareness program.
5. *Rainwater Harvesting* – KCWA will review the viability of this technology to encouraging natural rainfall reuse. Initially KCWA will provide general guidance regarding these technologies via a public awareness program.
6. *Landscaping/Plants* – KCWA to promote the use of drought tolerant native low water-use plantings. In addition, encourage customers and town planning officials to restrict turf areas, enhance soil and replace with landscaping that does not require as much water (i.e. Xeriscape, native plantings).

These changes represent a departure from current landscaping practice and thus a change in philosophy. Assistance from the state and educational institutions will also be sought.

7. *Customer Self Audit* – KCWA to promote a self water audit. Program components to include:
 - a) Meter Check – Customer to check meter to determine if there may be a household leak.
 - b) Leak Detection – Provide simple approach for customers to check toilets for leaks (i.e. toilet leak tablets).
 - c) Audit List – KCWA has developed a Household Water Audit Guide and will distribute to customers for their use.
8. *Water Rates* – Implementation of conservation water rates is a measure that can lead to more efficient use of water. We will review available rate structures to determine if

KCWA could potentially reduce water demand. Currently, the state legislature is considering legislation that will require the RIPUC and water suppliers to make modifications to billing frequency and water rates.

A summary of the proposed water conservation programs under consideration is presented in the table below. A preliminary assessment of the conservation potential has been made.

Conservation Programs to be Reviewed

Program	Conservation Potential	Target Conservation Period
Water Conserving Plumbing Devices	Major	Year Round
Outdoor Water Restrictions	Major	High Demand Season
Outdoor Water Use Devices	Major	High Demand Season
Major Appliance Replacement	Difficult to quantify	Year Round
Rainwater Harvesting	Minor	High Demand Season
Landscaping/Plants	Major	High Demand Season
Customer Self Audit	Minor	Year round
Water Rate Structure Change	Major	High Demand Season

Program Support Elements

1.) *Public Education/Awareness* – The success of any program is largely dependent on customers understanding the need and value. Therefore, it is imperative that public education/awareness efforts be included. These efforts will include some or all of the following:

- Web Page – Keep KCWA web page maintained and up-to-date and provide water conservation tips and demand management strategies. KCWA recently began publishing E-News on a bimonthly basis and posting on our website. E-news provides various water-related articles and will include water conservation articles.
- Brochures
 1. KCWA recently developed and distributed our own water conservation brochure. It is also posted on our website.
 2. KCWA recently developed and distributed a customer water audit brochure and distributed to all customers.

3. Speaker's Bureau – Representatives of KCWA and potentially other volunteers could speak at public events, neighborhood groups, etc.
- 2.) *Revision of KCWA Regulations* – Elements of KCWA's Rules and Regulations will need to be reviewed and revised to address the potential of permitted outdoor water use and the need for moratorium protocols:
- 3.) *Local Government Involvement* – Coordinate with local government support of KCWA initiatives regarding outdoor water use. Support from local governments will be important.
- 4.) *State/Legislative Action* – KCWA has written to the Rhode Island Water Resources Board indicating a need for new or amended legislation and/or policies regarding water conservation. The objective would be to have certain water conservation programs required on a statewide basis.

KCWA could lead by example and use of our programs as a statewide model may encourage their acceptance.

7.0 Analyze Benefits & Costs

To the extent possible, estimate the short-term and long-term water savings that can be achieved by each program function under consideration. Estimate conservation benefits, as well as program costs such as administration, marketing, education, revenue reductions, etc.

8.0 Prioritize Programs

Prioritize the various water conservation programs. Identify programs that are anticipated to be more beneficial in helping us reach our goals. Consider the time to implement programs and their ranked priority. Identify any legal issues that must be addressed prior to implementing a particular measure.

9.0 Develop a Program Schedule

Develop a Program schedule for implementation.

10.0 Funding

Identify potential funding sources for this plan.

11.0 Create Partnerships

KCWA should explore the possibility of developing partnerships in our efforts. These partnerships could help us in promoting our programs and demonstrating the impacts of conservation, as well as showing that KCWA policies are consistent with and/or supported by others in the state and the industry.

12.0 Enforcement

Enforcement is a significant issue related to outdoor water use restrictions. KCWA will need to be creative in this area. Enforcement would likely be easier if statewide restrictions were in place, thus eliminating differences between different communities and water suppliers.