Chapter 9

Reclaimed Water and Water Conservation

RWSP water reuse policies call for King County to pursue the use of reclaimed water and to develop a water reuse program. Water reuse is also a component of the RWSP treatment plant policies. These policies call for the county to continue water reuse at existing facilities, to explore opportunities for expanded reuse at existing facilities, and to explore reuse opportunities at all new treatment facilities. In addition, RWSP policies recognize the importance of supporting water conservation efforts.

This chapter provides information on the activities of the county's Reclaimed Water and Water Conservation Programs in 2005 and their anticipated activities for 2006.

9.1 Reclaimed Water Program[1]

9.1.1 Accomplishments in 2005

The Wastewater Treatment Division (WTD) has been safely using reclaimed water since 1997 at the South and West Point plants. These plants use about 266 million gallons per year of reclaimed water for landscape irrigation, internal plant reuse, and other non-drinking purposes. The South Plant, which produces approximately 70 million gallons per year of Class A reclaimed water, distributes some of this water offsite to the King Conservation District Wetland Nursery and Fort Dent Park for irrigation during the summer months.[2]

As reported in the *2004 RWSP Annual Report*, development of the Sammamish Valley Reclaimed Water Production Facility was cancelled in favor of developing capabilities of the Brightwater System to produce and distribute reclaimed water, now known as the Brightwater reclaimed water backbone. The Washington State Public Works Board awarded a $1 million low-interest loan in spring 2006 to King County to help with the costs of building the reclaimed water system. The funding will go towards design and preconstruction activities. More information on the Brightwater reclaimed water backbone is provided in Chapter 2 of this report.

[1] The Reclaimed Water Program was formerly called the Water Reuse Program.

[2] "Class A Reclaimed Water" is reclaimed water that, at a minimum, is at all times an oxidized, coagulated, filtered, and disinfected wastewater. Allowed end uses of Class A reclaimed water are irrigation of food and non-food crops and irrigation of open access areas, such as parks. The water could also be used for industrial cooling and process water and other non-drinking-water (non-potable) uses.

Reclaimed water is a component of the Regional Water Supply Planning process, which was initiated in 2005. Multiple agencies and organizations are voluntarily participating in this process for the purpose of identifying, compiling information on, and discussing many of the key issues that relate to or may affect water resources of the region. The goal is to develop the best available data, information, and pragmatic tools that the participants may use, at their discretion, to assist in the management of their respective water systems and resources, and in their water supply planning activities. The work of this planning process is expected to produce information and recommendations in seven topic areas: water demand forecast, water supply assessment, climate change impacts, reclaimed water, tributary stream flows, source exchange strategies, and small water systems. A reclaimed water technical committee associated with this effort has formed to assess the use, cost, and benefit of reclaimed water as a feasible source of supply for non-potable purposes. More information on the Regional Water Supply Planning process is available on the Web: http://www.govlink.org/regional-water-planning/index.htm

9.1.2 Schedule for 2006

Final design of the reclaimed water backbone component in the Brightwater East and West Tunnels was completed in spring 2006. The construction schedule of this portion of the reclaimed water pipeline is included in and coincides with the East and West tunnel construction schedules (see Chapter 2). Work will continue in 2006 to identify potential reclaimed water customers.

WTD's reclaimed water program staff will continue to participate on the Reclaimed Water Technical Committee that is a part of the Regional Water Supply Planning process. WTD will continue to work with individual water districts and potential customers to provide information about the availability of reclaimed water and to respond to their questions or concerns.

In preparation for operations at the Carnation and Brightwater treatment plants, WTD staff will pilot test the Xenon membrane bioreactor technology at South Plant.

Visit the Reclaimed Water Program Web site for more information:
http://dnr.metrokc.gov/wtd/reuse/

9.2 Water Conservation Program

In accordance with RWSP policies, the Metropolitan King County Council decided to implement a water conservation program to provide a holistic approach in water resource management and to reduce impacts to the wastewater system. Specifically, the RWSP policy calls for the county to "support regional water supply agencies and water purveyors in their public education campaign on the need and ways to conserve water through pilot projects that support homeowner water conservation, emphasizing strategies and technologies that reduce wastewater."

Water conservation minimizes the loss of potable water into the wastewater stream, thus decreasing the demand for this valuable resource from fish-bearing streams and decreasing the base flow of wastewater to treatment plants. Water conservation projects are being implemented

as a form of "demand management" under the RWSP. The program committed $300,000 per year for a five-year program through 2005. While no additional funding was allocated in the 2006 budget, the program was extended by one year to complete several projects that got under way in 2005 and are scheduled to be completed in 2006. The main focuses of the program are water conservation retrofits and public education.

9.2.1 Accomplishments in 2005

In 2005, King County installed water conserving fixtures at the following facilities:

- **Harborview Medical Center.** Eleven new water-saving autoclaves were installed. These autoclaves, which are used for sterilizing medical instruments, run 24 hours a day. Replacement is expected to save 5 million gallons of water and more than $60,000 a year in water and sewer bills.

- **Weyerhaeuser King County Aquatic Center.** The final phase of retrofits was completed in 2005 and included installation of 14 low-flow showers. These showers are the last of 83 water-saving fixtures installed since 2003. More than 500,000 people use this facility annually. The retrofits will save 2.25 million gallons of water per year.

- **King County Correctional Facility.** In partnership with Seattle Public Utilities, more than half of the old shower valves were replaced with low-flow valves. This facility houses an average of 2,300 people a day who use about 33 million gallons of water per year in showers alone. The installation of low-flow shower valves will save more than 4.5 million gallons of water per year and over $55,000 a year in water and sewer bills.

In 2005, the water conservation program again contributed to the Water Conservation Coalition of Puget Sound's Regional Public Awareness Campaign. Staff presentations, fact sheets, and Bert the Salmon water conservation baseball cards were distributed at a variety of events and venues.

9.2.2 Schedule for 2006

Water conservation retrofits of the King County Correctional Facility that began in 2005 and retrofits of the White Center and Renton public health facilities will be completed in 2006. Audits and implementation of projects at WTD facilities are also being completed in 2006. The Web page, fact sheet, and other public education tools continue to be available. Although 2006 marks the last year of this program, water conservation remains a vital tool in water resource management.

Visit the Water Conservation Program Web site for more information:
http://dnr.metrokc.gov/WTD/waterconservation/