



## King County

### Kurt Triplett

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KING COUNTY COUNCIL

The Honorable Dow Constantine  
Chair, King County Council  
Room 1200  
COURTHOUSE

October 26, 2009

Dear Councilmember Constantine:

I am pleased to provide you with the 2008 Regional Wastewater Services Plan (RWSP) Annual Report. This report, prepared by the Wastewater Treatment Division (WTD), of the Department of Natural Resources and Parks, meets the RWSP reporting policies outlined in Ordinance 15384 and King County Code 28.86.165.

WTD continues to make progress on implementing the RWSP. Implementation of the RWSP confirms King County's long-term commitment to provide high-quality and effective wastewater treatment; to protect public health, water quality, and the environment; and to be accountable to our ratepayers.

The enclosed report describes the progress made in 2008 on RWSP projects in design or construction, and on implementing major RWSP programs. The contents follow the guidelines outlined in the RWSP reporting policies. Because implementation of the RWSP is a dynamic process, this report serves as a snapshot in time and does not reflect adjustments or additional progress made since the end of 2008.

A summary of the major highlights of RWSP implementation in 2008 follows:

#### Brightwater Treatment System

Substantial progress was made in 2008 on constructing the Brightwater Treatment System. At the treatment plant site, major work completed includes (1) site excavation and earthwork for the tank and gallery foundations, (2) the concrete foundation bottom slabs needed for the grit, headworks, primary clarifiers, aeration basins, and galleries, and (3) the foundations for the digesters and energy and solids building. In addition, underground utilities, piping for processes, and conduit for electrical and instrumentation control wiring were also installed. Substantial progress was also made on the Brightwater conveyance system. Excavation of the East Tunnel was completed, and the tunnel boring machine for the West Tunnel was launched. Progress on the Central Tunnel went more slowly than anticipated due to tunneling conditions; about 56 percent of the eastbound portion and 26 percent of the westbound portion were

completed in 2008. A major accomplishment was completing construction of the marine outfall—construction began in spring and was finished in December.

#### Conveyance System Improvements

Two RWSP conveyance projects were in design, and four were in construction during 2008. Construction has been completed on two of these projects—Hidden Lake Pump Station and Sewer Improvement project in Shoreline, and the Juanita Bay Pump Station Replacement project in Kirkland. Both projects addressed critical capacity needs, and their completion ensures safe and reliable operations for the future.

#### Reducing Infiltration and Inflow

Progress continued on implementing the infiltration and inflow (I/I) initial projects. A primary goal of these projects is to determine whether and under what conditions it is possible to cost-effectively remove enough I/I from the collection system to delay, reduce, or eliminate some otherwise needed regional conveyance system improvement projects. WTD continues to work closely with the Metropolitan Water Pollution Abatement Advisory Committee (MWPAAC) to implement these projects. In consultation with MWPAAC, two projects were selected as the initial I/I reduction projects for final design and construction—a combined Bellevue and Issaquah project, and a Skyway project.

#### Protecting Water Quality and Complying with Regulations

Protecting water quality and complying with regulations are important elements of the RWSP. Implementing the county's combined sewer overflow (CSO) program, water quality monitoring and source control programs, and operating and maintaining our existing treatment facilities to meet or exceed permit limitations, are some of the measures outlined in the RWSP to help protect our region's water quality.

The following list highlights achievements in this area in 2008:

- West Point Treatment Plant and the South Treatment Plant earned the National Association of Clean Water Agencies Gold Peak Performance Award for achieving 100 percent compliance with their National Pollution Discharge Elimination Service permits for an entire calendar year. These two plants also received the Platinum Peak Performance Award for multiple years of consecutive gold performance.
- The King County Industrial Waste Program continued its important source control work. In 2008, 133 permits and 319 industrial waste discharge approvals were in effect, 435 inspections were conducted, and 112 Notices of Violation were issued.
- Predesign on four CSO control projects, collectively called the Puget Sound Beach projects, was initiated.
- Progress continued on a pilot program to assess CSO treatment technologies for future CSO control projects. Pilot-scale testing of two technologies began at the West Point Treatment Plant in late 2008.
- Work on four projects in the sediment management plan is under way—cleanup of the Denny Way, Hanford/Lander, and Chelan CSOs, including completing a dredging

project at Denny Way, and development of a model to better predict sediment contamination from CSO discharges.

- The draft remedial investigation for the Lower Duwamish Waterway Superfund site was completed in 2008.

#### Creating Resources from Wastewater

The RWSP encourages the county to beneficially use the byproducts from wastewater treatment—biosolids and digester gas from the solids treatment process and reclaimed water from the liquids process. Achievements made in 2008 to create resources from wastewater are listed below:

- *Biosolids Recycling and Energy Recovery*

In 2008, approximately 116,000 wet tons of biosolids were produced, all of which was recycled as fertilizer and soil amendment for forestry and agricultural applications, and to make compost. WTD continued to use digester gas at the West Point Treatment Plant and the South Treatment Plant to produce power and heat for plant processes and buildings. In addition, the remainder of the gas produced at the South Treatment Plant, about 2.1 million therms (enough to serve more than 2,500 homes), was “scrubbed” and sold to Puget Sound Energy.

- *Reclaimed Water*

A major achievement in 2008 was the startup of the Carnation Treatment Plant. This facility, which uses membrane bioreactor technology and is designed to treat all the wastewater to Class A reclaimed water standards, began operating in May 2008. In August 2008, the Carnation Treatment Plant earned the WateReuse Association’s Small Project of the Year Award in recognition of the facility’s innovative use of reclaimed water to enhance wetlands and preserve local habitat at Chinook Bend Natural Area.

The South Treatment Plant produced approximately 93 million gallons of Class A reclaimed water in 2008. The majority of the water was used at the plant for process water and irrigation. Some of the water was sold to the City of Tukwila for irrigation and city public works uses, such as street sweeping and sewer flushing. The West Point Treatment Plant produced and used 183 million gallons of reclaimed water for process water and onsite irrigation. Construction of the South Segment of the Brightwater reclaimed water system continued in 2008.

#### Odor Control Program and RWSP Cost Estimates

The RWSP reporting policies call for including in annual reports a status report on the county’s odor control program and an update on anticipated costs to implement RWSP programs and projects through 2030. A summary on each of these items follows:

- *Odor Control Program*

Progress continues to be made to meet the RWSP’s goals to prevent and control nuisance odors. Efforts in 2008 focused on evaluating results of odor improvements

made in 2007 at the West Point Treatment Plant and the South Treatment Plant. Thirteen projects have been identified to improve odor control in the county's conveyance system. Two projects were completed in 2008: installation of carbon bed odor scrubbers and chemical injection systems at the Hidden Lake and Juanita Bay Pump Stations.

- *RWSP Cost Estimates*

In accordance with the RWSP reporting policies, updated cost estimates are included in the 2008 RWSP Annual Report. The 2008 cost estimate for implementing the projects and programs associated with the RWSP through 2030 is approximately \$3.35 billion, an increase of about \$24 million, or 0.69 percent, from the 2007 RWSP cost estimate. The majority of this difference is attributed to unanticipated construction delays, refinements in project scope, inflation, and unpredictability in the construction bid market.

If you have any questions about the 2008 RWSP Annual Report, or would like a briefing on its contents, please feel free to contact Christie True, Director of the Wastewater Treatment Division, of the Department of Natural Resources and Parks, at 206-684-1236.

Thank you for your review of this report.

Sincerely,



Kurt Triplett  
King County Executive

Enclosure

cc: King County Councilmembers

ATTN: Tom Bristow, Interim Chief of Staff

Anne Noris, Clerk of the Council

Frank Abe, Communications Director

Regional Water Quality Committee Members

Beth Goldberg, Deputy Director, Office of Management and Budget

Theresa Jennings, Director, Department of Natural Resources and Parks (DNRP)

Christie True, Director, Wastewater Treatment Division, DNRP