

# Odor Control Program

The RWSP includes policies to guide King County in achieving its goal of preventing and controlling nuisance odor occurrences at all wastewater treatment plants and associated conveyance facilities. To achieve this goal, the policies provide direction on implementing an odor prevention program that goes beyond traditional odor control. RWSP reporting policies call for including in the annual reports a status of the odor prevention program and a summary of odor complaints.

This chapter presents a status report as of December 2008 on the implementation of odor control improvements at the West Point and South Treatment Plants, the odor control improvements planned for conveyance system facilities, and the odor control design planned for the Brightwater System. The discussions include plans for odor control activities in 2009. Appendix A provides a summary of odor complaints received in 2008.

More information on WTD's odor control program is available on the Web:  
<http://www.kingcounty.gov/environment/wtd/Response/OdorControl/GoodNeighbor.aspx>.

## 6.1 Phased Retrofit of the West Point and South Plants

The RWSP odor control policies require that odor control retrofits be phased at the West Point and South Treatment Plants, implementing those that generate the greatest improvements first. To that end, the Wastewater Treatment Division (WTD) has undertaken projects at each plant to identify and implement changes to existing odor control systems and to install new systems.

At the West Point plant, efforts in 2008 focused on evaluating the odor control improvements that were completed in 2007 (covering the division channel and modifying the odor scrubber system). The evaluation found that the odor intensity from these areas was reduced by 79 percent (target reduction was 81 percent) and that odor frequency was reduced by 81 percent (target reduction was 90 percent). To improve these results, the following operational activities were implemented in 2008:

- Increasing odor monitoring at the fence line
- Cleaning process tanks more frequently
- Optimizing chlorination of plant influent
- Providing additional treatment of secondary sedimentation tank mixed liquor lines
- Monitoring influent for dissolved sulfide.

Results of these activities will be evaluated in 2009 and 2010.

At South plant, efforts in 2008 focused on evaluating the odor control improvements that were completed in 2007 (installation of the covers for each first pass of the four aeration basins and of covers for the return activated sludge channel). Preliminary modeling results indicate that the intensity of maximum odor impact was reduced by 91 percent (target reduction was 99 percent) and that the frequency of impacts was reduced by 76 percent (target reduction was 96 percent). Operational activities to help improve these results, such as more frequent inspections of the odor scrubber system and additional monitoring at the fence line, were implemented in 2008.

Additional improvements are planned for South plant to help meet the odor reduction targets. These include covering and treating foul air from the mixed liquor channel, the remaining three passes of each aeration basin, and the primary sedimentation tanks. WTD is working closely with the City of Renton to implement these improvements. WTD expects to procure a design consultant in 2009 and begin design of these improvements in 2010.

## 6.2 Conveyance System Upgrades

RWSP policy calls for retrofitting conveyance facilities that pose nuisance odor problems with odor prevention systems as soon as such odors occur, subject to technical and financial feasibility. Table 6-1 lists projects to improve odor control in the conveyance system. The table includes the type of odor control technology planned and the anticipated completion date for each project. 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.

**Table 6-1. Current and Planned Odor Control Projects in Existing Conveyance System**

<b>Facility</b>	<b>Odor Control Technology</b>	<b>Anticipated Completion Date</b>
Hidden Lake Pump Station	Carbon bed odor scrubber & chemical injection	Completed in 2008 as part of the Hidden Lake Pump Station Replacement and Sewer Improvement project
Juanita Bay Pump Station	Carbon bed odor scrubber & chemical injection	Completed in 2008 as part of the Juanita Bay Pump Station Replacement project
Lake City Regulator Station	Replacement of phoenix/carbon scrubber with carbon bed odor scrubber	2nd quarter 2009
King Street Regulator Station	Carbon bed odor scrubber	3rd quarter 2009
Eastside Interceptor	Chemical injection	4th quarter 2009
53rd Avenue Pump Station	Carbon bed odor scrubber	4th quarter 2009
Sweyolocken Force Main Discharge	Replacement of phoenix/carbon scrubber with bioscrubber	4th quarter 2009
University Regulator Station	Carbon bed odor scrubber	4th quarter 2010
Bellevue Pump Station	Carbon bed odor scrubber & chemical injection	4th quarter 2011
Kirkland Pump Station	Carbon bed odor scrubber	1st quarter 2012
Kenmore Lakeline	Carbon bed odor scrubber & chemical injection	4th quarter 2013
Interbay Pump Station	Carbon bed odor scrubber	4th quarter 2013
Soos Creek Pump Station & Pipeline	Carbon bed odor scrubber & chemical injection	4th quarter 2020

### 6.3 Brightwater Odor Control System

RWSP policy directs the county to construct odor control systems for new regional treatment plants that meet the “best in the country for new facilities” level. Brightwater’s odor control system was designed to meet this level and ensure there are no detectable odors at the property line for the Brightwater Treatment Plant. During the permitting for Brightwater, the county committed to meeting the “no odor at the fence line” requirement and also agreed to form an Air and Odor Advisory Panel to monitor the performance of the project in meeting that goal during startup and operation. RWSP policy also includes guidance on incorporating odor control systems into the design of associated new regional conveyance systems.

To remove odors from the Brightwater plant, air will be collected from treatment process units, enclosed buildings, and loading areas and then routed to odor control systems. All treatment process units will be covered, and buildings that house the headworks and solids handling equipment will be fully enclosed.<sup>1</sup> Odors from these facilities will be absorbed and neutralized

<sup>1</sup> The headworks is the first step in wastewater treatment. Large solids and grit are removed from the wastewater before it moves to the next step of treatment.

through a multistage treatment process that includes the use of biological, chemical, and carbon odor scrubbers. Concrete work on the odor facilities began in 2008 and is expected to be complete by the end of 2009. Equipment will be installed and tested in late 2009 and 2010 in preparation for startup in 2011.

Carbon scrubbers and bioscrubbers will be used to remove odors from the Brightwater conveyance system. Odor control facilities are being constructed at the Ballinger Way portal area, North Kenmore portal area, Influent Pump Station at the North Creek portal area, and the existing North Creek Pump Station.