

Regional Wastewater Services Plan

Annual Report

December 2003



King County

Department of
Natural Resources and Parks

Wastewater Treatment Division

**This information is available in
alternative formats upon request
by calling 206-684-1280 (voice)
or Relay Service 711 (TTY).**

Contents

Introduction	1
Background	1
Accomplishments	1
Treatment Plant Siting	1
Conveyance Planning	2
Infiltration and Inflow	2
Combined Sewer Overflows	2
Biosolids	2
Water Reuse and Conservation	2
Treatment Improvements	3
Brightwater Siting Process Summary	3
Background	3
Regional Wastewater Services Plan	5
King County Develops Brightwater Proposal	5
Brightwater Environmental Review	6
Brightwater System Decision Process	8
Implementing the Executive's Decision	9
Odor Control	11
West Point and South Treatment Plants	11
Schedule for 2004	11
Conveyance Improvements	13
Conveyance Planning	13
North Lake Sammamish	14
South Lake Sammamish	14
North Lake Washington	14
Northwest Lake Washington	16
Northeast Lake Washington	16
South Lake Washington	16
Southeast Lake Washington	17
North Green River	17
South Green River	17
Hidden Lake	18
Seismic Vulnerability Study	19
Projects in Design	19
Bellevue Pump Station	21
Pacific Pump Station	21
Juanita Bay Pump Station	21
Hidden Lake Pump Station and Boeing Creek Trunk	21
Tukwila Interceptor and Freeway Crossing	22
Soos Creek Pump Station D	22
Projects in Construction/Underway	22
Kenmore Interceptor Flapgate Sensors	22
Projects Completed	23
North Creek Storage	23
East Side Interceptor	23

Infiltration and Inflow.....	25
Pilot Projects	26
Pilot Project Assessment Monitoring	27
Conveyance System Modeling.....	28
Standards, Procedures, and Policies	28
Training Workshops	29
Schedule for 2004	29
Pilot Basins/Projects	29
Conveyance System Modeling	29
Standards, Procedures, and Policies.....	30
Local Agency Workshops	30
Combined Sewer Overflows	31
CSO Control and Improvement.....	31
Year 2005 CSO Plan Update and Program Review	31
New Permit Limits for West Point	32
Lower Duwamish Superfund Site.....	33
Sediment Management Program	33
Schedule for 2004	34
Biosolids	35
Schedule for 2004	35
Water Reuse & Conservation.....	37
Water Reuse Technology Demonstration Project	37
Sammamish Valley Reclaimed Water Production Facility	37
Water Conservation Program.....	38
Water Audits and Retrofits.....	38
Public Education and Outreach	38
Schedule for 2004	39
RWSP Project Information	41
Project Number	42
2003 Appropriation and Percent Spent	42
Project Scope & Milestones	42
Schedule	42
Project Cost.....	42
Contract Information.....	43

Please visit the RWSP Web site at <http://dnr.metrokc.gov/wtd/rwsp/rwsp.htm>

Introduction

This report describes progress made in implementing the Regional Wastewater Services Plan (RWSP) for the period January through December 2003. The report is organized according to the major elements of the RWSP, including treatment, conveyance, infiltration and inflow, combined sewer overflows, biosolids, and water reuse. The activities under each element are summarized along with a schedule for the upcoming year. In addition, the final section of the report—RWSP Project Information—provides specific budget, schedule, milestones, labor, and contract status for active RWSP capital projects through December 2003.

Background

In December 1999, the King County Council adopted Ordinance 13680, which comprehensively updated King County's Comprehensive Water Pollution Abatement plan. This update, termed the Regional Wastewater Services Plan, is a 30-year capital improvement program designed to provide wastewater capacity for this region's rapidly growing population and protect its aquatic resources.

Ordinance 13680 requires the King County Executive to report in June and December to the King County Council and King County Regional Water Quality Committee about progress in siting and constructing new wastewater facilities. This annual report, in conjunction with the June semi-annual report, satisfies this requirement.

Accomplishments

A significant amount of work was completed on the Regional Wastewater Services Plan in 2003. The highlights for RWSP implementation are presented below.

Treatment Plant Siting

King County released the *Brightwater Final Environmental Impact Statement* (Final EIS) on November 19, 2003. The Brightwater Final EIS analyzed the characteristics, impacts, and mitigation measures for three Brightwater alternatives: the Route 9–195th Street System, the Route 9–228th Street System, and the Unocal System. On December 1, 2003, the King County Executive selected the Route 9–195th Street System as the final Brightwater system. A summary of the siting process that led to this decision is provided in the Treatment Improvements section of this report.

Conveyance Planning

King County concluded the regional conveyance planning effort in 2003, completing planning for all 10 planning areas. In addition, six major conveyance projects were under design and two projects were constructed: the North Creek Storage Facility and the East Side Interceptor Section 1.

Infiltration and Inflow

The Infiltration and Inflow (I/I) program completed construction of 12 pilot projects in 2003 using a variety of repair and rehabilitation technologies to control I/I in the local conveyance systems. Post-construction flow monitoring is underway to assess the effectiveness of the pilot projects.

Combined Sewer Overflows

King County continues work to develop the 2005 CSO Control Plan Update, and has selected a consultant to support the development of the CSO program review—a precursor to the Update. The CSO program continued work to remediate contaminated sediments in the nearshore area adjacent to the Denny Way CSO.

Biosolids

King County produced approximately 135,000 wet tons of biosolids in 2003, all of which was recycled for use in compost, forestry, and agricultural applications.

Water Reuse and Conservation

King County continued its partnership with Seattle and other agencies, installing water-saving fixtures in several King County park, pool, public health, district court, animal shelter, and sheriff precinct facilities. These fixtures are projected to save over 4 million gallons per year and will pay for themselves in less than two years.

Treatment Improvements

The Regional Wastewater Services Plan identified the need for a 36 million gallon per day (mgd) treatment plant in the north service area by the year 2010. Since January 2000, King County's Department of Natural Resources and Parks (DNRP) has conducted a multi-year process to find a site for the new treatment plant and its associated conveyance facilities and marine outfall. Collectively these facilities are termed Brightwater. This section summarizes the four-year, three-phase Brightwater siting process that led to the Executive's recent decision to select the Route 9–195th Street System, shown in Figure 1.¹

Brightwater Siting Process Summary

On December 1, 2003, after four years of careful analysis and public review, the King County Executive selected the Route 9–195th Street System as the final Brightwater alternative. This system, which includes a new regional treatment plant, deep-tunnel conveyance facilities, and an outfall to Puget Sound, will provide needed wastewater capacity for the rapidly growing north service area for the next 30 years and beyond.

Background

One of the milestone decisions in the Puget Sound region in the 1950s was the formation of the Municipality of Metropolitan Seattle (Metro). One of Metro's principal tasks was to address the serious water quality and pollution problems in Lake Washington and the Puget Sound caused by untreated wastewater discharges. In subsequent years, Metro became a regional government under state law and put in place a centralized, regional wastewater system which dramatically improved water quality in the multi-county Puget Sound region. The regional system, representing an investment of over \$3 billion, protected public health and water resources in this region for over 40 years. But by the 1990s, rapid population growth began eclipsing the capabilities of the system, resulting in an increasing number of sewer overflows and backups, particularly during large storms. An updated comprehensive plan was needed to meet this region's wastewater needs for the next 40 years and beyond.

1. Details of the Brightwater siting process can be found in the "Treatment Improvements" sections of previous annual and semi-annual Regional Wastewater Services Plan reports, which can be accessed on the RWSP Web site at <http://dnr.metrokc.gov/wtd/rwsp/library.htm>. Additional information about the siting process can be found at <http://dnr.metrokc.gov/wtd/brightwater/library.htm>.

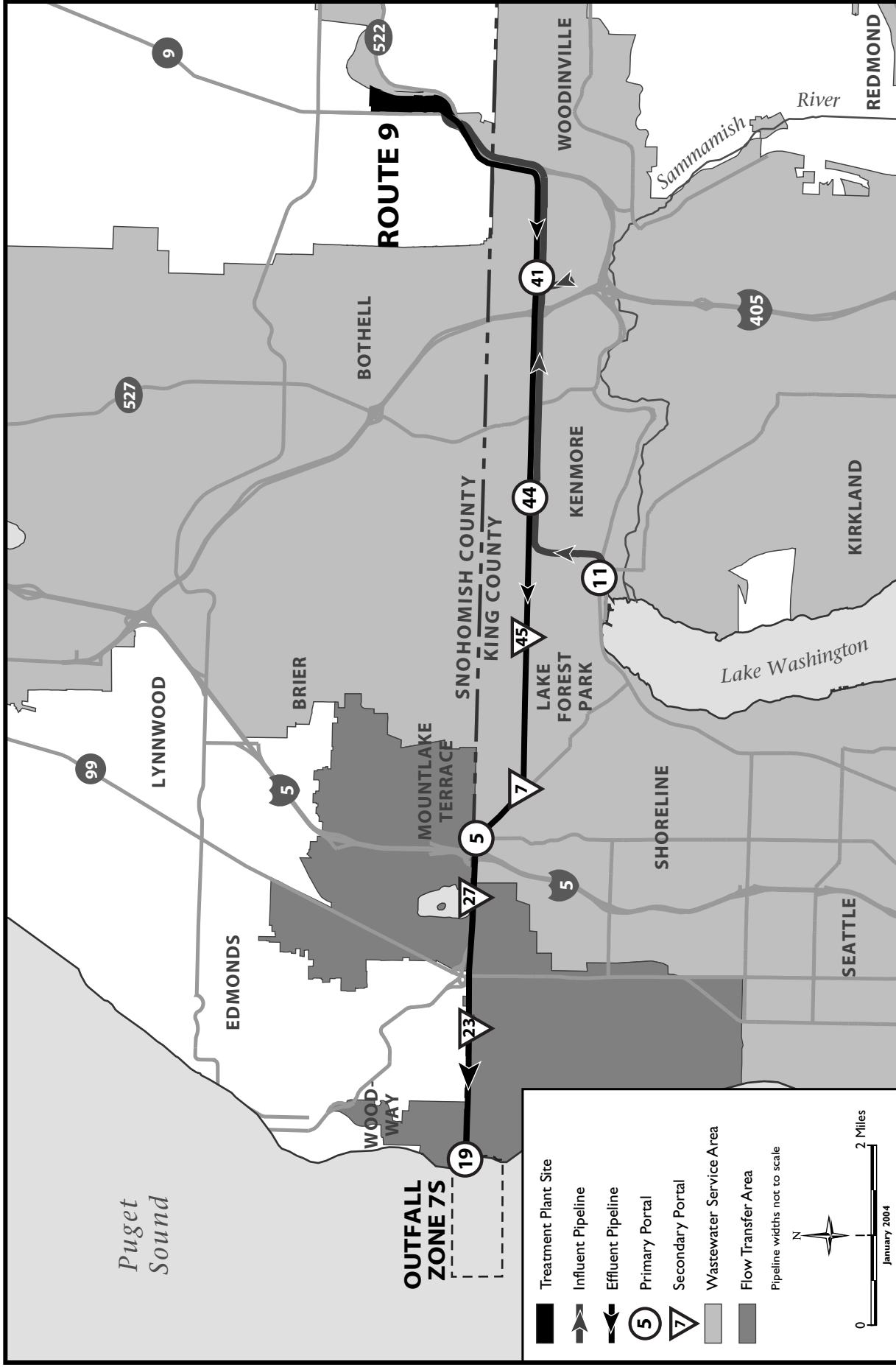


Figure 1
Executive Selected Brightwater System
Route 9-195th Street

The information included on this map has been compiled from a variety of sources and is subject to change without notice. King County makes no representations or warranties, express or implied, regarding the accuracy, completeness, or reliability of the information. King County shall not be liable for any general, special, indirect, incidental, or consequential damages including, but not limited to, lost revenues or lost profits resulting from the use or misuse of the information contained on this map. Any sale of this map or information on this map is prohibited except by written permission of King County.

Data Sources: King County datasets, wgb
File Name: 0401bSELECTEDsystemal
Prepared by: King County WLR GIS and Visual Communications & Web Unit

King County
 Department of
 Natural Resources and Parks
Wastewater Treatment
 Division

Regional Wastewater Services Plan

In the mid-1990s, under state law, the regional responsibilities of Metro were transferred to King County, which now acts as the regional government with the statutory responsibility for planning, siting, and building regional wastewater facilities. In 1992, King County began a comprehensive evaluation and public outreach process throughout the region on the issue of future projected wastewater needs and capacity. This effort culminated in 1999 with the council-adopted Regional Wastewater Services Plan, which amended King County's wastewater comprehensive plan. The RWSP established the regional need and policy basis for a number of capital projects and programs, including the need for a new treatment plant located in the north service area. The new plant was to have a capacity of 36 million gallons per day (mgd) by 2010 and 54 mgd by the year 2040.

King County Develops Brightwater Proposal

Based on the broad general mandate outlined in the RWSP, King County commenced efforts in January 2000 to develop a specific proposal for the regional wastewater treatment plant, a marine outfall, and associated conveyance pipes, portals, and pumps. Collectively, these facilities were termed "Brightwater." Beginning in January 2000, King County DNRP conducted a multi-year process to find a site for Brightwater facilities.

King County began identifying sites for the Brightwater facilities using a three-phase approach. The goal of Phase 1 was to use the King County Council-adopted policy siting criteria to identify a small group of potential treatment plant sites from a pool of 95 potential sites. Phase 1 started with the identification of policy criteria that would help shape the specific Brightwater system proposal. Regional committees were assembled to develop these policy criteria, with input from representatives from cities, elected officials, and stakeholders from across the regional service area. The initial policy siting criteria were recommended to the King County Council and, following appropriate environmental review, adopted in December 2000.

The County completed Phase 1 in May 2001, having identified six candidate plant sites that best satisfied the policy siting criteria. Eight candidate outfall zones in Puget Sound were also identified. On May 14, 2001, the King County Council adopted the candidate sites and outfall zones for further evaluation, as well as a set of refined policy criteria for use in further narrowing the number of sites under Phase 2.

Phase 2 of the Brightwater siting process took place in the summer and fall of 2001 and considered complete "candidate systems" for each of the six candidate sites. Each candidate system included a conceptual treatment plant layout and two construction options for the conveyance pipes serving the plant. One construction option involved burying the pipes at relatively shallow depths using surface trenching, and the other option involved tunneling the pipes deep underground. Each candidate system also included two options for where the marine outfall would be

located. Developing these six candidate systems allowed DNRP to compare them consistently and fairly, especially related to cost and potential impacts.

On September 17, 2001, the King County Executive, after consulting with the Snohomish County Executive, transmitted a recommendation to the King County Council to advance two candidate systems to Phase 3 for detailed environmental review under the State Environmental Policy Act (SEPA). One was the **Unocal** system in Edmonds and the other was the **Route 9** system north of Woodinville. On December 10, 2001, the Council approved these three action alternatives for advancement to Phase 3, along with a “No Action” alternative.

1. Route 9 site with a 195th Street Conveyance System and Zone 7S Marine Outfall
2. Route 9 site with a 228th Street Conveyance System and Zone 7S Marine Outfall
3. Unocal site with System and Zone 6 Marine Outfall

The King County Executive subsequently identified the first alternative as his preferred alternative because of the relative efficiencies and flexibility it would provide. For example, the Route 9 site is twice the size of the Unocal site, making it easier to engineer and build the plant, as well as providing more room for a landscaped buffer. In addition, the design of the Route 9 conveyance system and the manner in which it would connect to the existing King County system could provide more long-term flexibility for providing reclaimed water to users near the plant and along the effluent pipeline, which carries treated effluent to an outfall in Puget Sound.

By limiting the environmental review to three action alternatives, King County was able to provide a detailed evaluation of probable significant adverse environmental impacts, as well as an initial list of reasonable mitigation measures.

Brightwater Environmental Review

King County began Phase 3 of the siting process in January 2002. The primary activity under this phase was to conduct an environmental review of the Brightwater action alternatives under the SEPA guidelines, which require draft and final environmental impact statements.

Draft Environmental Impact Statement

In the first half of 2002, the County focused on developing the scope of the Brightwater Draft Environmental Impact Statement (Draft EIS). As part of the scoping process, King County identified a range of conveyance corridors for each plant site, including tunnel portals and pump stations along the corridors. These conveyance alternatives were described in a scoping notice mailed to approximately 60,000 people in May 2002, including regulatory agencies, jurisdictions, tribes, environmental groups, and households and businesses located in or near the

conveyance corridors, portal areas, or pump station areas. The comments from the scoping notice helped to focus the environmental analysis and the content of the Draft EIS.

The County then refined the conveyance corridors for each of these alternatives so that they met engineering objectives and minimized environmental and community impacts. In the process, the County considered engineering, environmental, community, and land-related factors. For example, engineering considerations included the volume of wastewater to be conveyed, the need to connect to existing pipelines and conveyance facilities, the total length of pipelines, the number and depth of tunnel portals used for pipeline construction, and the number of pump stations that would be required. Environmental considerations included the number of wetlands and streams that would be affected and the impact that construction would have on roadways and traffic circulation. To minimize impacts on the community, the County tried to identify corridors that would maximize the use of existing rights-of-way and minimize the need to purchase private property.

Following nearly a year of development, including the extensive public process, King County issued the Brightwater Draft EIS on November 6, 2002.

Public Comment on the Draft EIS

Following issuance of the Draft EIS, King County received over 500 letters from individuals, organizations, and regulatory agencies comprising approximately 5,000 specific comments related to the issues, impacts, and mitigation measures presented in the Draft EIS. These comments included suggestions for innovative ways to site Brightwater facilities and mitigate their impacts, as well as many questions related to the methodology and assumptions used in the impact analysis in the Draft EIS. The comments also provided valuable technical information.

King County supported the efforts of jurisdictions in the Brightwater service area to analyze the Draft EIS and contribute ideas. For example, King County provided Snohomish County nearly \$700,000 to facilitate its participation in the siting process and to retain qualified technical experts to independently evaluate and comment on the Draft EIS. King County also provided funding to Woodinville, Lake Forest Park, Shoreline, Kenmore, Woodway, the Port of Edmonds, the Suquamish Tribe, and two Water and Sewer districts: Cross Valley and Olympic View. The independent analyses conducted by these jurisdictions enhanced the EIS and provided, as part of the Draft EIS comments, further information on where and how to mitigate Brightwater impacts. For example, the additional studies and comments helped reduce the number of portals required to construct and operate Brightwater.

Based on the comments and technical data received, King County committed to taking an additional step of preparing and circulating a series of in-depth technical reports, which were built upon the comments and information received on the Draft EIS, as well as the additional detailed information developed in the course of designing the Brightwater System. The technical reports covered a range of topics, including potential adverse impacts to regional aquifers, impacts and geotechnical

constraints on tunnel construction and operations, and air quality/odor impacts at the treatment plant sites. Measures to prevent those impacts were also addressed. The reports were prepared in consultation with Snohomish County to ensure that the assumptions and scope of each report addressed issues that had been raised through the Draft EIS comment process. The reports were circulated widely and followed by a series of technical briefings held throughout north King County and south Snohomish County. The briefings allowed King County to share the information contained in the reports and receive comments from the public, agencies, and jurisdictions.

Final Environmental Impact Statement

On November 19, 2003, after nearly a year of reviewing public responses, conducting additional studies, preparing technical reports and reviewing comments received on those reports, King County issued the *Brightwater Final Environmental Impact Statement* (Final EIS). The Final EIS responded to the comments submitted on the Draft EIS and incorporated comprehensive technical analysis on a wide range of potential impacts, including impacts not anticipated to be significant or those that could be adequately mitigated by existing applicable local, state, and federal regulations. In addition to an updated evaluation of impacts and list of mitigation measures, the Final EIS included, in response to comment requests, all of the final technical reports on key project impacts and mitigation measures, as well as the public comments received in response to those reports.

Brightwater System Decision Process

As part of his decision making process, the King County Executive considered a wide range of information before selecting the final Brightwater System, including:

- Information presented in the Draft EIS and comments and responses on the Draft EIS
- Information presented in the technical reports and comments submitted by the public and regulatory agencies on the reports
- Information presented in the Final EIS, including the impacts and proposed mitigation measures for the three action alternatives, as well as the planning and environment documents incorporated into or referenced in the Final EIS
- Information relating to the No Action alternative
- The analysis and conclusions relating to unavoidable significant adverse impacts of the three action alternatives.
- Policy considerations such as local and regional economic partnership opportunities, benefits associated with the various action alternatives, and cost
- Public input and technical information gathered from outside the EIS process

- The importance of having a Brightwater system constructed and operating by 2010 to both public health and successful implementation of the adopted Growth Management Act plans of King County and the jurisdictions in the service area

Executive's Decision

After taking into account all the available sources of information, the King County Executive selected the Route 9–195th Street System described in the Final EIS. This system, depicted in Figure 1, includes the following components.

- A treatment plant located at the Route 9 site
- An outfall located in Zone 7S
- An influent conveyance route that begins at Portal 11 and generally follows 68th Avenue NE to NE 195th Street, then turns east on NE 195th Street to Portal 44. The alignment then runs east along NE 195th Street through the North Creek Business Park (Portal 41) to SR-522, and then north along SR-522 to the Route 9 site
- An effluent conveyance route that begins at the Route 9 site and runs south along SR-522 and west along NE 195th Street to Ballinger Way NE (SR-104), then turning northwest along Ballinger Way NE, intersecting with Portal 5 at the King/Snohomish County boundary. The corridor then runs west along NE 205th Street until reaching Puget Sound at Point Wells (Portal 19)
- Five primary portals and four secondary portals

Figure 2 shows the service area associated with the Brightwater Treatment Plant, a significant portion of which includes Snohomish County. By the year 2010, over 60 percent of flows treated at the Brightwater plant will come from Snohomish County.

Implementing the Executive's Decision

Now that the siting decision has been made, King County will collaborate with host jurisdictions and neighboring communities to identify and implement those actions necessary to accommodate the Brightwater facilities. In all jurisdictions, County staff will work with local officials to identify additional information that may be needed to process development permits and agency approvals. King County will use interagency agreements to expedite work with state and federal agencies to secure needed permits and approvals. As the details of the proposal are refined in response to interaction with regulatory agencies and continued design and engineering work, the County may adjust the overall location, size, and shape of individual Brightwater facilities to mitigate Brightwater and keep the project cost effective.

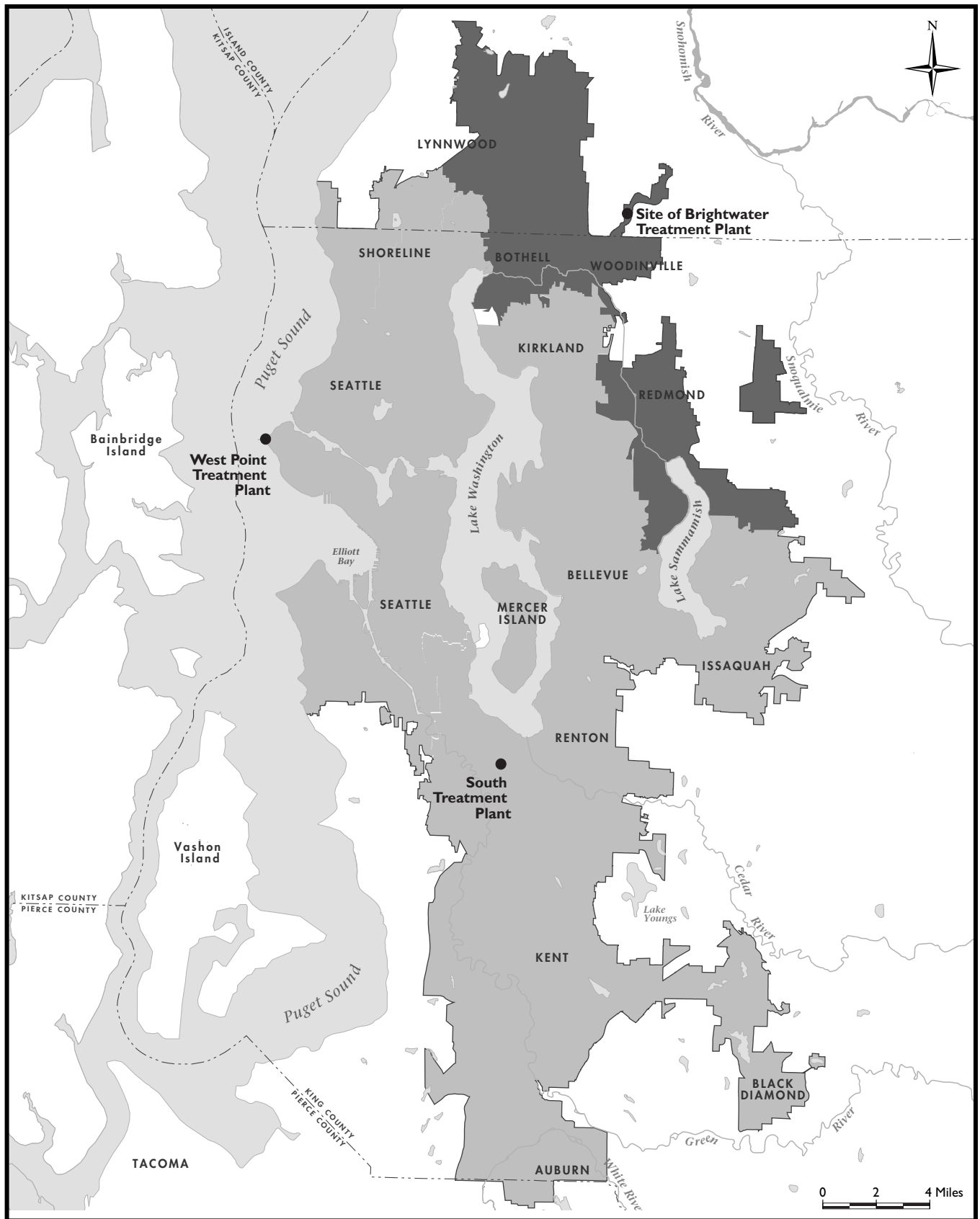


Figure 2
Brightwater Service Area

- Brightwater Service Area
- Wastewater Service Area
- Wastewater Treatment Plant

 **King County**
Department of Natural Resources and Parks
Wastewater Treatment Division

The information included on this map has been compiled from a variety of sources and is subject to change without notice. King County makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. King County shall not be liable for any general, special, indirect, incidental, or consequential damages including, but not limited to, lost revenues or lost profits resulting from the use or misuse of the information contained on this map. Any sale of this map or information on this map is prohibited except by written permission of King County.

Data: King County WTD Databases
File name: 0401bwSERVarea.ai wgab

Odor Control

Ordinance 13680 of the Regional Wastewater Services Plan requires King County to establish odor control goals at all treatment plants, to design and operate odor control facilities to meet the goals, and to investigate potential odor control technologies and costs. The ordinance also required DNRP to recommend odor control policies to the King County Council for inclusion in the RWSP. New odor control policies were adopted by the Council in July 2003 under Ordinance 14712. The new policies establish a broad program of odor prevention that goes beyond conventional odor control. Implementation of the policies and recommendations will bring the Wastewater Treatment Division to the forefront of wastewater utilities in its approach to dealing with odors for both new and existing facilities.

West Point and South Treatment Plants

Although the RWSP did not identify any upgrades for West Point, and the South Plant was not expected to be upgraded until 2029, recent population and flow analyses indicate that improvements to these facilities may be needed. For example, the solids process at West Point may already be at capacity and certain liquids processes at the South Plant may be at capacity sooner than 2010. The Wastewater Treatment Division is investigating these issues further and may need to upgrade some components of both facilities to ensure the availability of adequate treatment capacity until Brightwater comes on line.

Schedule for 2004

The primary activity for 2004 will be final design and permitting for the Brightwater Treatment Plant, conveyance facilities, and marine outfall. These activities are expected to continue through mid-2006. As part of final design there will be additional opportunities for public participation in early 2004, including a set of design workshops on plant facilities and public input on proposed mitigation. There will also be neighborhood meetings around portal locations and public comment on permit applications. Other activities will include pump testing to confirm groundwater conditions, property acquisition and relocation, and value engineering—a process to identify cost savings and efficiencies in constructing Brightwater.

Conveyance Improvements

Planning, design, and construction work continued on a number of conveyance projects outlined in the Regional Wastewater Services Plan. The accomplishments of the Conveyance System Improvement Program are described first, followed by an overview of conveyance projects in design, construction, and those that were completed in 2003. Schedule information for 2004 is summarized under each project description. For additional project schedule information, please refer to the RWSP Project Information section of this report.

Conveyance Planning

Initial wastewater basin planning is now complete in the county's regional basins as part of the Conveyance System Improvement (CSI) Program. The focus of the CSI Program was to upgrade and improve the level of service of the regional conveyance system for the 33 local sewer agencies in King and Snohomish Counties. The CSI Program integrated with the RWSP and other programs such as asset repair and replacement to provide consistency in conveyance planning system-wide and to take advantage of opportunities to address common issues, leverage resources, and minimize customer disruption.²

Beginning in 1999, the CSI program identified and prioritized ten planning areas in the wastewater service area, including North Lake Sammamish, South Lake Sammamish, North Lake Washington, Northwest Lake Washington, Northeast Lake Washington, South Lake Washington, Southeast Lake Washington, North Green River, South Green River, and Hidden Lake (Figure 3). Starting in the highest priority areas, teams of county staff and consultants began a comprehensive planning process to evaluate the conveyance needs for each planning area. The teams then identified ranges of flow management alternatives, specified working alternative as needed, and evaluated project phasing, cost reduction and infiltration and inflow (I/I) control options. King County will continually reevaluate capacity issues in the planning areas as updated information on population, employment, and I/I program monitoring is available; either at the predesign stage or as a subsequent look at the working alternatives identified in this completed study. The results of the planning work and the infrastructure recommendations for each planning area are summarized as follows.³

2. Visit the CSI Web site at <http://dnr.metrokc.gov/wtd/csi/index.htm> for more information on this program.

3. Reports for all planning areas are available at <http://dnr.metrokc.gov/wtd/csi>.

North Lake Sammamish

The North Lake Sammamish planning area includes Redmond and the north end of Lake Sammamish. Flow management planning in this area was accelerated to coordinate with the Brightwater Treatment Plant siting process because wastewater from this area will ultimately be sent to the new plant. While there are no significant capacity problems in this high growth basin, condition of the facilities needs to be assessed to ensure that the County facilities can adequately convey basin flows over the next 20–50 years. This includes a formal condition assessment with sewer inspection and flow monitoring.

South Lake Sammamish

The South Lake Sammamish planning area is located in central King County around the southern half of Lake Sammamish. Regional wastewater facilities in the basin collect flows from the Sammamish Plateau Water and Sewer District on the east side of Lake Sammamish, the City of Issaquah at the south end of the lake, and parts of the City of Bellevue to the west of the lake. The primary problem in this area is the more than 20,000 feet of large-diameter pipe that will reach capacity within this decade, in some cases causing storm-related overflows as well as operations and maintenance issues related to two aging county pump stations. This is also a high growth area. Proposed improvements for this basin include conveyance upgrades, diversions, and projects to attenuate peak flows, such as storage and I/I control. Planning was completed in the South Lake Sammamish planning area in 2002.

North Lake Washington

Planning is complete in the North Lake Washington planning area, which encompasses the Brightwater service area and 16 sewer service basins that are upstream of the Kenmore Interceptor (Lake Line), the York Pump Station, and the Hollywood Pump Station. In addition, nine cities and local sewer districts operate and maintain conveyance pipes and pump stations within this area. Problems in this planning area include overflows caused by heavy rains or by failures resulting from power loss. While improvements have been made to minimize overflows until Brightwater is on line (for example, the 6 million gallon North Creek Storage Facility), the county must pay particular attention to its existing regional wastewater facilities in this high population growth area. The planning study identified needed improvements to the regional conveyance system (pipes and pumps) to ensure that it can accommodate projected flows in the local systems as well as continue to provide the emergency, seasonal, and maintenance-related flow transfers between West Point, the South Plant, and the Brightwater Plant. This planning effort also described the local system configurations in the Brightwater service area.

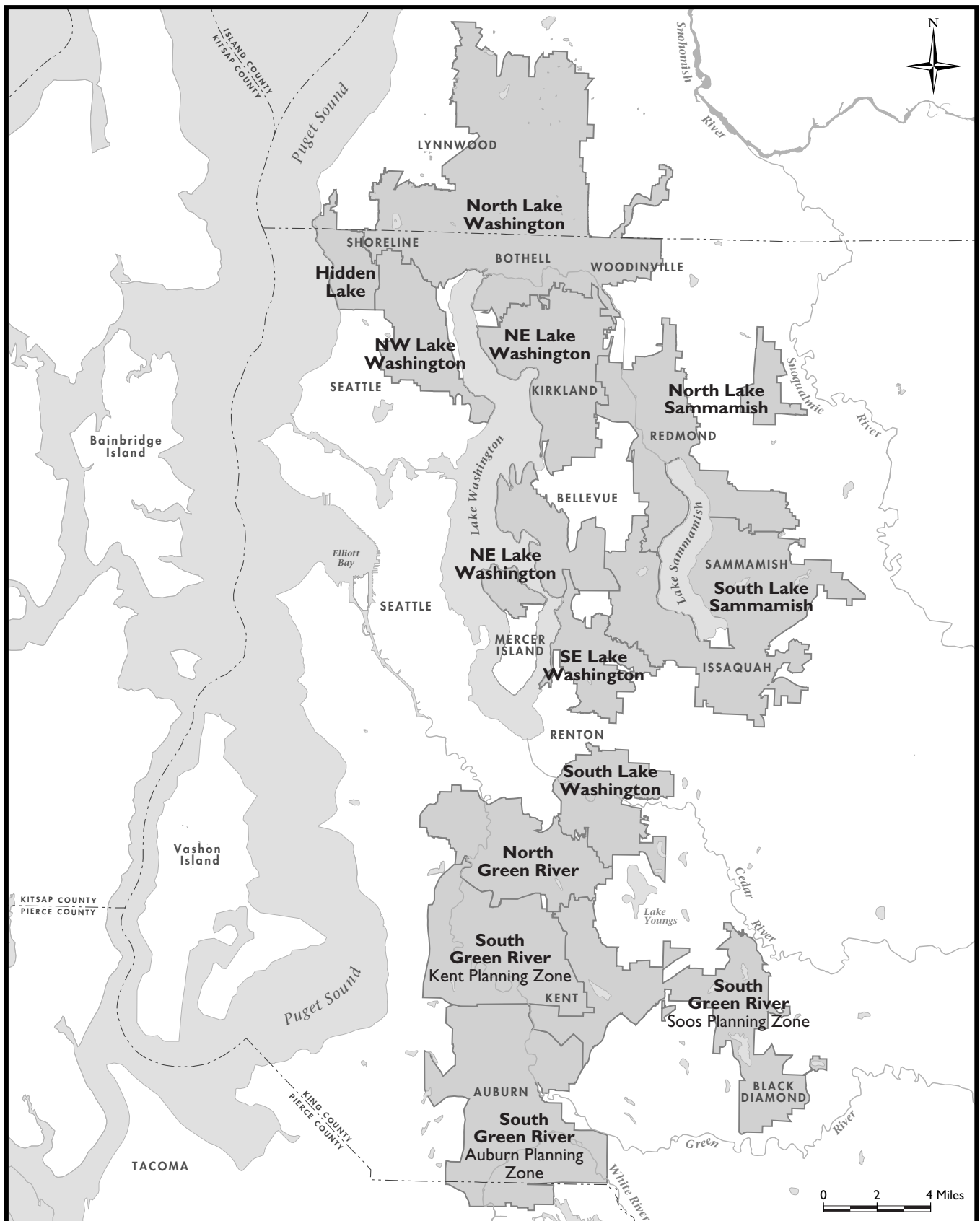


Figure 3
Conveyance Planning Basins

Conveyance Planning Basin

 **King County**
 Department of Natural Resources and Parks
 Wastewater Treatment Division

The information included on this map has been compiled from a variety of sources and is subject to change without notice. King County makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. King County shall not be liable for any general, special, indirect, incidental, or consequential damages including, but not limited to, lost revenues or lost profits resulting from the use or misuse of the information contained on this map. Any sale of this map or information on this map is prohibited except by written permission of King County.

Data: King County WTD Databases
 File name: 0401conveyPLANbasins.ai wgab

Northwest Lake Washington

The Northwest Lake Washington planning area includes the Thornton Creek and Matthews Park drainage basin, including the north and west Lake City Trunks. The issues in this basin include capacity limitations in portions of the Thornton Creek Interceptor immediately upstream of the Matthews Park Pump Station. According to the planning study, approximately two-thirds of the Thornton Creek Interceptor cannot convey the current peak 20-year flow without surcharging or overflowing. The North and West Lake City Trunk Sewers have sufficient capacity to convey the peak 20-year flow through 2050. The next stages of project development are anticipated to include:

- Verify the capacity analysis using hydraulic modeling
- Compare the challenges of routing the parallel sewer along the current right-of-way across private property versus building a potentially longer route with deeper sewers entirely within the public street right-of-way
- Evaluate the working alternative routes to avoid congested utility easements

Northeast Lake Washington

Planning for the Northeast Lake Washington planning area helped develop advanced project specifications for three pump stations that are under capacity: the Bellevue Pump Station, the Juanita Bay Pump Station, and the Kirkland Pump Station. This work was completed in 2000. Design is underway on the Juanita Bay and Bellevue Pump Stations. The Juanita Bay Pump Station project will replace the existing aging facility, and the Bellevue Pump Station project will divert excess flows from the Swayolocken Pump Station by upgrading the existing station and constructing a new force main from the station to the Eastside Interceptor. Final design work for both projects is targeted for completion in 2004. Both of these facilities are described in more detail later in this section.

South Lake Washington

The South Lake Washington planning area incorporates the Madsen Creek area of the Cedar River basin. This area includes part of the City of Renton, Soos Creek Water and Sewer District, and the Cedar River Water and Sewer District (WSD). The County owns and operates one interceptor, one siphon, and one trunk sewer in this area. Both the City of Renton and Cedar River WSD plan improvements in this area. This planning effort concluded that there are no major improvements in the County system needed at this time.

Southeast Lake Washington

The Southeast Lake Washington planning area incorporates the Hazelwood and Coal Creek area southeast of Lake Washington. The county's system was extended in the areas with the recent acquisition of 6,200 feet of large diameter pipe upstream of the existing Coal Creek Trunk. This planning effort concluded that if limited surcharging is allowed, the regional system can accommodate the 20-year storm for the next 25 years, though continued monitoring is necessary to verify current growth assumptions.

North Green River

Planning was completed in the North Green River planning area to address capacity issues related to growth in the Southcenter area of Tukwila. The principle project in this basin is to upgrade portions of the Tukwila Interceptor and Tukwila Freeway Crossing under the I-5/I-405 freeway near Tukwila. The working alternative will initially parallel or replace portions of these two facilities, but before the project is ready for predesign King County will assess the impacts of the Port of Seattle SeaTac airport industrial waste discharges and development proposals in Southcenter. This project will likely begin predesign in 2005.

South Green River

The South Green River planning area includes the King County wastewater service area south of the Kent-Cross Valley. This area is divided into three planning zones covering basically the City of Kent, the City of Auburn (including the City of Pacific), and the southern part of the Soos Creek Water and Sewer District service area (which includes Black Diamond).

Planning was completed for this area early in 2001 and the County continues to coordinate with local sewer agencies in south King County to detail needed conveyance improvements in both the regional and local conveyance systems. This plan optimizes the use of both King County and local wastewater facilities.

The following commitments with the Soos Creek Water and Sewer District achieve King County's goals for sewer improvements in the **Soos Planning Zone** and ensure that the improvements benefit the widest possible area and the greatest number of ratepayers.

- Design, construct, and operate three new pumping stations and approximately 10 miles of sewer pipeline in the Soos Planning Zone
- Design, construct, and operate an interceptor running from the existing Black Diamond trunk sewer near SR-516 to a new pump station

- Cooperate with the District in developing and operating existing and planned regional facilities
- Eventually convey Black Diamond flows entirely through King County facilities

The current working alternative for the **Kent and Auburn Planning Zones** calls for a separate pipeline near the West Valley Highway called the Southwest Interceptor. This pipe would divert flow from south Auburn around the Auburn Interceptor and relieve the capacity problems in the existing line. A number of minor connection/diversion projects are planned to bring wastewater flow to the Southwest Interceptor. These working alternatives were reviewed based on the latest population and employment data and the recently calibrated infiltration and inflow models. The Wastewater Division is looking into alternatives to reduce the cost of these upgrades by phasing the needed improvements. For example, all modeling and sizing calculations for CSI planning work are based on the assumption that surcharge⁴ at County manholes is not acceptable. Allowing limited amounts of surcharging may enable the County to postpone or eliminate some elements of the working alternative for the Kent and Auburn portions of the South Green River planning area. The systems in this area currently surcharge during significant storm events. Limited surcharging may be a viable system operating condition during storm events in the future.

Hidden Lake

The Hidden Lake Service Area includes all sewerage areas that drain to the Hidden Lake Pump Station and all downstream neighborhoods that drain to the Boeing Creek Trunk and Richmond Beach Pump Station located in the western part of the City of Shoreline. Over the past 40 years, the service area's population has grown to 20,000—almost all of which is served by sanitary sewers. A number of wastewater conveyance concerns have arisen as the sewerage population has increased and the sewer infrastructure has aged.

- The pumping capacity of the Hidden Lake Pump Station and the hydraulic capacity of the Boeing Creek Trunk are insufficient to convey peak wet weather flows to the County's sanitary sewer standard of one overflow per 20 years
- Sulfide-related corrosion and odors have been a problem at the Hidden Lake Pump Station and in the downstream piping
- There have been backups into the local system from the Boeing Creek Trunk

Planning was completed in the Hidden Lake basin in 2000. The Service Area is largely developed and the future growth rate is expected to continue at a modest rate of less than one percent annually. Future growth will occur as vacant lots are filled in and neighborhoods adjacent to commercial corridors are rezoned to allow for higher density, multi-family housing. Wastewater planning for the Service Area is

4. Surcharging is when wastewater enters the risers that connect a sewer pipe to a manhole

driven more by the need to address the immediate concerns of alleviating the operational difficulties at the Hidden Lake Pump Station, managing peak wet weather flows while anticipating the effects of future sewer deterioration, and controlling odor, rather than accommodating future growth. Any wastewater service improvement plan must also include enough flexibility to work with the Brightwater project and the King County regional infiltration and inflow study.

These projects will help refine the projected peak design flow, the costs and feasibility of I/I reduction, and the most efficient means of wastewater routing. Working alternatives for this basin include constructing a new Hidden Lake Pump Station with an upstream storage facility and pipeline replacement along the Boeing Creek Trunk and targeting infiltration and inflow reduction as part of the District and the County's Regional I/I Reduction Program. Predesign for this project was completed in February 2003 and final design should be completed in spring 2004. This project is described in more detail later in this section.

Seismic Vulnerability Study

In 1999, the King County Council directed and authorized a seismic vulnerability study to evaluate all the county's major underwater conveyance pipelines. A comprehensive task list was developed to assess the vulnerability of these pipelines to earthquake damage and to recommend short- and long-term protective action if warranted. The study, which began in May 2000, assessed pipes under Lake Washington, Lake Sammamish, the Ship Canal, sloughs, rivers, and creeks. The first report, completed in April 2002, assessed the seismic vulnerability of the Kenmore Interceptor and identified a range of working alternatives to strengthen certain pipeline joints based on various costs and risks to public health. The second report, completed in August 2002, assessed the seismic vulnerability of six other submerged lake lines and three Ship Canal siphons. The third report, completed in late 2003, evaluated 30 additional pipes in submerged or liquifiable soils. The summary report will assist DNRP management in determining how to proceed with possible retrofits or actions in conjunction with planned asset management programs and projects.

Projects in Design

After a working alternative for a particular conveyance project is identified during the planning process, the project starts predesign and is assigned a project number and project manager. Following predesign, which takes a project through approximately 30 percent of the design process, the project starts final design, where detailed drawings and specifications for construction are developed. There are six RWSP projects currently in design, as shown in Figure 4.

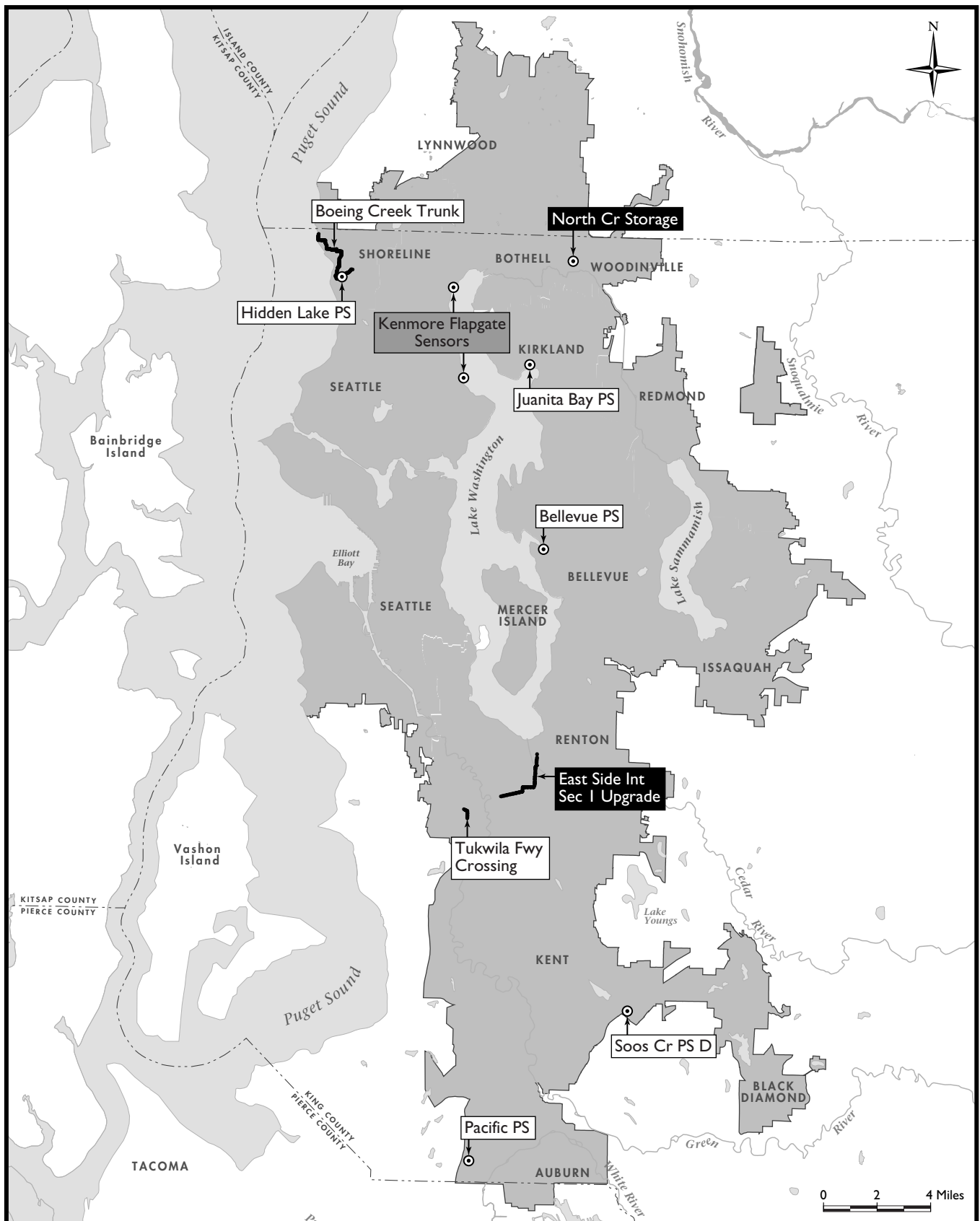


Figure 4
2003 RWSP Conveyance Projects

○/— Project Location
 ■ KCWTD Service Area

○/— Project in Design Phase
 ■ Project under Construction
 ■ Completed Project

King County
 Department of Natural Resources and Parks
 Wastewater Treatment Division

The information included on this map has been compiled from a variety of sources and is subject to change without notice. King County makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. King County shall not be liable for any general, special, indirect, incidental, or consequential damages including, but not limited to, lost revenues or lost profits resulting from the use or misuse of the information contained on this map. Any sale of this map or information on this map is prohibited except by written permission of King County.

Data: King County WTD Databases
 File name: 0401RWSPconvey.ai wgab

Bellevue Pump Station

A preferred alternative was selected to divert excess flows from the Sweyolocken Pump Station by upgrading the Bellevue Pump Station and constructing a new 5,500 linear foot, 24-inch diameter force main from the pump station to the East Side Interceptor. This project provides needed capacity to prevent sewage overflows at the Sweyolocken Pump Station. Planning for this project was completed in 2000 and a contract with the design consultant is currently being negotiated. King County expects to complete 90 percent design by the end of 2004.

Pacific Pump Station

The existing 1.6 mgd Pacific Pump Station, located in City of Pacific right-of-way, has insufficient capacity to convey existing and estimated future peak flows. This project will construct a new 3.3 mgd pump station in an industrial zoned site suggested by the City two blocks to the west of the existing station, which will then be abandoned. The new pump station will have features that the existing pump station does not, such as standby power, odor control, improved access, and equipment lifting devices. A new forcemain will not be required, as recommended by the earlier planning study, since the flow projections have been revised. Predesign for the project was completed in June 2002 and the 90 percent design was completed in April 2003. Construction bids will be advertised in January 2004. Construction Notice to Proceed (NTP) is projected for spring 2004.

Juanita Bay Pump Station

The Juanita Bay Pump Station is an aging facility that is experiencing significant operational difficulties in conveying existing flows and has insufficient capacity to convey future flows. A new pump station is being designed to replace the existing 14.2 mgd pump station. A site for the new pump station was purchased across the street from the existing station. Final design is targeted for completion in 2004. The environmental review and construction permit applications are being prepared. Technical issues identified during last year's preliminary design work are being addressed, including designing a pumping system that will address this basin's challenging hydraulic requirements and designing a building structure on a site with complex soil and groundwater conditions.

Hidden Lake Pump Station and Boeing Creek Trunk

The 40-year old Hidden Lake Pump station does not have capacity to handle existing or future peak storm flows, nor does it meet current design standards of odor control, instrumentation, space, and equipment handling. Further, the pump station discharges to the Boeing Creek Trunk, which has a history of capacity, odor, and corrosion problems. This project will address these problems through phased system improvements to control overflows and increase the capacity of the Boeing Creek Trunk to handle the 20-year storm. The capacity increases include a new Hidden Lake Pump station with a capacity of 5.5 mgd and a future peak capacity of 6.8 mgd

built on the existing site; a 0.5 million gallon storage facility constructed upstream of the pump station; and approximately 12,000 linear feet of pipeline replacement. Future needs in the area will depend on whether a reduction of inflow and infiltration will enable us to reduce the size or need for additional facilities. Predesign was completed in February 2003 and final design will be completed in spring 2004.

Tukwila Interceptor and Freeway Crossing

King County DNRP is evaluating alternatives to upgrade portions of the Tukwila Interceptor and Tukwila Freeway Crossing under the I-5/I-405 freeway near Tukwila. The working alternative will initially parallel or replace portions of the Tukwila Freeway Crossing, but before the project is ready for predesign we will assess the impacts of the Port of Seattle SeaTac airport industrial waste discharges and development proposals in the Southcenter area of Tukwila. This project will likely begin in 2005.

Soos Creek Pump Station D

The Soos Creek Pump Station D project will provide needed conveyance capacity in the South Green River planning area. The project includes a new 19 mgd pump station and conveyance (16,200 feet of forcemain and 5,400 feet of gravity sewer) connected to the South 277th Interceptor. Predesign for the project is underway and will be completed in October 2004; final design will continue through August 2005. Other activities in 2004 include acquisition of the pump station site and conveyance easements. Construction is expected to begin in January 2006.

Projects in Construction/Underway

Kenmore Interceptor Flapgate Sensors

The Kenmore Interceptor, also known as the Lake Line, is a gravity sewer in Lake Washington that conveys sewage from the Kenmore pump station and Log Boom Regulator into the Matthews Beach Pump Station (Figure 4). The Lake Line has a series of seven flap gates that open automatically if the line becomes filled during extreme high flows, protecting the Matthews Beach Pump Station from flooding or shutting down. This only happens on rare occasions but, until recently, it was difficult to confirm whether the flap gates had opened and discharged sewage into the Lake. To address this issue, DNRP committed to a system that can monitor the flap gates so we can alert residents of potential health hazards if the gates open and discharge sewage. The county completed the design of the flap gate monitors and the

components were installed in July 2001. We then began testing the sensors and developing a response sequence for use by Wastewater Operations and Maintenance staff, who are working with the City of Lake Forest Park and the nearby community on ways to keep them informed in the event the flap gates open. Testing continued through 2003 and full operation is anticipated in mid-2004.

Projects Completed

Two large capital projects were completed in 2003, the North Creek Storage facility and Section 1 of the East Side Interceptor. These projects are shown on Figure 4.

North Creek Storage

Construction has been underway since November 2001 on the 6-million-gallon North Creek Storage facility. This underground facility, located at the site of the North Creek Pump Station, will store sewage flows from the Bothell-Woodinville and North Creek Interceptors during large storms, providing protection against sanitary sewer overflows into Lake Washington upstream of the Kenmore Interceptor. After the storm, the stored wastewater will be pumped back into the interceptors. The six million gallons of storage was completed and online in December 2003.

East Side Interceptor

The East Side Interceptor (ESI) is the primary conveyance for wastewater from the eastside communities to the South Treatment Plant. In 1965, Section 1 of the ESI was damaged during an earthquake. The repair of the damage reduced the capacity of the pipe. This project restores the East Side Interceptor to its original design capacity of 224 mgd by constructing 1,800 feet of 72-inch pipeline around the earthquake-damaged section. The construction used a tunnel-boring machine, placing the new pipe approximately 30 feet underground. Construction began in November 2001 and was completed in February 2003. Final close-out and commissioning will be done in early 2004.

Infiltration and Inflow

The Regional Infiltration and Inflow Control program is a comprehensive six-year study to identify sources of infiltration in inflow (I/I) to the regional system, establish the cost effectiveness of removing I/I, and recommend actions to control I/I in the future. The study runs through 2004, after which a long-term program will be implemented based on the recommendations of this program. The primary goal of the study is to determine if improvements to reduce I/I are more cost effective than building new conveyance facilities to convey the extra flow.⁵

The I/I program is based on a cooperative partnership between King County and the 33 local agencies that provide wastewater collection services within the wastewater service area, including portions of Snohomish County. The core components of the I/I program include:

- Flow monitoring and system modeling to assess and forecast levels of I/I throughout the service area
- Construction of pilot projects to demonstrate the effectiveness of I/I controls
- Local agency workshops held by King County to build consensus in developing the regional I/I program
- Development of standards, procedures, and policies for new construction, rehabilitation of existing sewer systems, and sewer system maintenance
- Public education to raise public awareness of I/I impacts

In 2002, King County completed flow and rainfall monitoring over two wet seasons⁶ in the separated portion of the service area (the portion with no combined sewers) and began calibrating a hydraulic model using the flow monitoring information to predict 20-year peak design flows⁷ in the separated system and determine downstream impacts from possible reductions in I/I.

Work in 2003 included completing the engineering, design, and construction of 12 I/I pilot rehabilitation projects and initiating pre-construction flow monitoring to assess the effectiveness of the pilot projects. The County also completed calibration of the I/I model for 146 basins throughout the King County service area and set up the hydraulic model to simulate 20-year flow volumes throughout the entire conveyance system. These and other activities are described in more detail below.

5. To learn more about infiltration and inflow, please visit the Web site at <http://dnr.metrokc.gov/wtd/i-i/index.htm>

6. Monitoring was originally scheduled to occur only during the 2000–2001 wet season; however, that winter was one of the driest on record. This circumstance, coupled with the fact that soils were not saturated at normal levels because of a dry fall, necessitated another round of monitoring during the 2001–2002 wet season.

7. 20-year peak flow is the amount of base flow and I/I expected to enter the wastewater system during a storm of an intensity that occurs once every 20 years on average

Pilot Projects

In May 2003 the list of selected pilot projects was presented to the King County Council's Regional Water Quality Committee. These pilot projects are spread throughout the wastewater service area, representing a variety of I/I improvements from repairing only mainlines or side laterals to rehabilitating the entire system through a variety of techniques. When construction and post-flow monitoring is completed, the I/I team will prepare an Alternatives Options Report highlighting the controls used and the cost-effectiveness of rehabilitating local systems.

Each of the pilot projects is summarized below.

City of Auburn: This project took place in the southeastern portion of the Auburn service area adjacent to Auburn Way South. It is primarily residential and included the Auburn Adventist Academy. Work included pipe bursting of about 2,200 linear feet of main and 1,800 linear feet of side sewers, replacing about 9 manholes and installing about 24 cleanouts.

City of Brier: This pilot project involved rehabilitation of a neighborhood system with a cured-in-place lining of the 12-inch and 8-inch mainline sewer and chemical grouting of 36 manholes.

Coal Creek Utility District: This project involved the repair and rehabilitation of eighty-four manholes through chemical grouting of leaks, adjusting frames and covers to prevent water infiltration, or coating of the manhole chimneys to eliminate leaks.

City of Kent: This project, located in a residential neighborhood, is focused on rehabilitating approximately 150 side sewers and laterals. The original project scope specified a cured-in-place lining system for rehabilitation; however, conditions found in the field and actual alignments of the side sewers precluded the use of the specified product. The project scope was amended to allow pipe bursting to ensure completion of the project in time to meet the flow monitoring schedule. Construction will be complete by mid-January 2004.

City of Kirkland: The Kirkland pilot project replaced manholes, sewer mains, and sewer laterals within the right-of-way through a combination of pipe bursting and open cut methods. Work included replacement of approximately 4,100 feet of main and 1,450 feet of laterals.

City of Lake Forest Park: This project made repairs within the entire pilot project basin. The mains, manholes, and service connections showing significant defects were repaired using a cured-in-place lining of 8-inch and 12-inch mainline sewers, coating or epoxy injection of 42 manholes, and trenchless rehabilitation of 128 service connections.

City of Mercer Island: Main sewer lines were rehabilitated in this residential area using a cured-in-place liner. Top Hat, a trenchless rehabilitation method was used to reconnect local service to the mainline.

Northshore Utility District: This project involved the repair and rehabilitation of 116 manholes through chemical grouting of leaks, adjusting frames and covers to prevent water infiltration, or coating of the manhole chimneys to eliminate leaks.

City of Redmond: The Redmond project repaired manholes, sewer mains, service connections, and sewer laterals through lining and grouting techniques. Work included lining of approximately 6000 feet of main, 300 feet of laterals, and 16 service connections. Only portions of the sewer system located within the right-of-way were rehabilitated.

Ronald Wastewater District: Ronald is one of two local agencies that contracted for its own I/I rehabilitation project, adding up to \$900,000 of local money to the pilot project. The project included pipe bursting about 60 side sewers from the mainline tee, about 150 side sewers from the property line, installing about 225 cleanouts and repairing eight mainline faults with a trenchless spot repair method.

Skyway Water and Sewer District: Skyway also contracted for its own construction and added \$900,000 to this I/I reduction pilot project located within an area referred to as West Hill and Bryn-Mawr in unincorporated King County. The project involved the complete replacement of 9,600 linear feet of mains, 15,000 linear feet of laterals and side sewers, and 38 manholes. This pilot project was the first one completed and crews were able to install meters to collect flow information. Data from the record rains in October 2003 showed the area achieved a 90 percent reduction in I/I entering the system.

Val Vue Sewer District: This project involved the repair and rehabilitation of 30 manholes through chemical grouting of leaks, adjusting frames and covers to prevent water infiltration, or coating of the manhole chimneys to eliminate leaks.

Pilot Project Assessment Monitoring

King County completed the pre-rehabilitation monitoring of the pilot projects from November 2002 through January 2003. Post-rehabilitation monitoring is currently being conducted and is scheduled to be completed at the end of January 2004. Both Pilot and Control basins are being monitored. I/I reduction effectiveness will be evaluated using the flow data and modeling results.

Conveyance System Modeling

The conveyance system modeling effort uses both hydrologic and hydraulic modeling. Generally speaking, hydrologic modeling uses inputs from rainfall and ground surface characteristics of local system basins to assess the amount of I/I coming from the local systems, while hydraulic modeling simulates flows in the regional system (the pipes and pumps) as the different basin flows combine and are routed to the treatment plants.

To set up the hydrologic model, King County measured rainfall and flows from 146 local system basins during the 2000–2001 and 2001–2002 wet seasons. Long-term hydrologic simulations were run to estimate peak hourly 20-year I/I and peak hourly 20-year flows in all model basins. The peak flows from the long-term simulation were run through the hydraulic model to determine downstream impacts to the conveyance systems.

The results from this modeling will be finalized during the first half of 2004. King County will use this information to target which basins would most benefit from I/I controls. The modeling will also be used to estimate the size and timing (and ultimately cost) of wastewater facilities needed to handle the projected I/I flows in the future, both with and without I/I controls in place. These facility lists will be compared to determine if and where it is cost effective to control inflow and infiltration.

Standards, Procedures, and Policies

King County DNRP and the local agencies are developing a set of regional I/I control standards, procedures, and policies for new construction, rehabilitation of existing sewer systems, and sewer system maintenance for local agencies.

In 2002, a subcommittee of the Metropolitan Water Pollution Abatement Advisory Committee (MWPAAC) met to refine regional design standards, procedures, and policies for new construction, rehabilitation of existing sewer systems, and sewer system maintenance. The subcommittee presented its recommendations to full MWPAAC membership in September 2002. MWPAAC recommended that these draft standards, procedures, and policies be used during the pilot projects where possible. They were forwarded to the King County Executive and the King County Council in October 2002. They were also presented to the King County Regional Water Quality Committee in December 2002.

In 2003, the MWPAAC Engineering & Planning (E&P) Committee took the place of the RWSP Subcommittee to review and finalize the draft standards, procedures, and policies for recommendation to the Executive for inclusion in the long-term infiltration and inflow control program. The E&P Committee worked with King

County staff and consultants to outline the Alternatives Options Report that will be prepared in 2004 for the King County Executive. The Executive will present his recommendation to the Council by December 31, 2004, per I/I Policy 2.3. The E&P Committee will meet twice a month between January and June 2004, to work with staff and consultants on the Alternatives report.

Training Workshops

In response to requests by local agency representatives that King County provide increased opportunities for training and/or sharing of information related to control of infiltration and inflow (I/I), King County sponsored a Trenchless Technology Inspection Training Workshop in May 2003. This workshop provided training in construction inspection guidelines specific to trenchless technology methods and technologies to be used for I/I Pilot Project construction. King County also hosted a closed-circuit television (CCTV) Certification and Reviewers Course in October 2003. This course provided a uniform basis of instruction, allowing each of the local agencies to work from the same pipe condition benchmarks (defect coding) and providing a consistent standard assessing the condition of the sewer system.

Schedule for 2004

Pilot Basins/Projects

Representatives from King Count and the local agencies will hold a roundtable to discuss lessons learned from implementing the pilot projects. This review will include analyses of technologies used and their effectiveness. Monitoring of flows and rainfall will also be completed for each of the pilot basins and projects to compare pre- and post-construction conditions, information that can help determine the cost-effectiveness of removing I/I within the system. The findings from this work will be included in the Alternative Options Report, submitted to the King County Executive in December 2004.

Conveyance System Modeling

King County will estimate peak flows throughout the wastewater service area for several decades in the future and identify facilities that are projected to have capacity limitations. Facilities to address those limitations will be proposed. These facilities, and their associated costs, will form a baseline of conveyance facilities required through 2050. Then, alternatives to reduce I/I will be proposed and modeled. The resulting facilities and associated costs will be compared with the baseline facilities and costs to determine which alternatives are most cost effective.

Standards, Procedures, and Policies

The E&P Committee will review the draft Standards, Procedures, and Policies following their use in the pilot projects and then modify them to better reflect actual working conditions. These Standards, Procedures and Policies will be included in the Alternative Options Report going to the King County Executive in December 2004.

Local Agency Workshops

Local Agency Workshop Number 10 is tentatively scheduled for April 2004. The purpose of this workshop will be a presentation of the pilot project results and the Cost-Benefit Analysis Criteria that were developed by the E&P Committee.

Combined Sewer Overflows

The primary work effort for the Combined Sewer Overflow (CSO) Control program in 2003 has been to lay the groundwork for future combined sewer overflow control projects and to complete consultant selection for the 2005 CSO Update. This work includes coordinating with the City of Seattle on their CSO Plan and continuing our response to the Environmental Protection Agency's Superfund listing of the Lower Duwamish Waterway. We are also moving forward with our sediment management plan. Each of these activities is described in more detail below.⁸

CSO Control and Improvement

This project will implement 21 combined sewer overflow projects identified in the Council-approved Regional Wastewater Services Plan between the years 2005 and 2030. Combined sewer overflows are discharges of dilute wastewater to receiving waters that occur primarily during large storms when excess rainfall exceeds the capacity of the pipelines. These discharges can contribute pathogens, organic material, sediments, and chemicals to local waterbodies. The County owns 38 CSO outfalls which are located along Lake Washington, the Ship Canal, the Duwamish River, Elliott Bay, and Puget Sound.

This project currently provides preliminary support services, such as coordination and modeling for the City of Seattle CSO control program, coordination with the Washington Department of Transportation Viaduct Project, and coordination with the Washington Department of Natural Resources to standardize lease/lien approaches and facilitate project reviews.

Year 2005 CSO Plan Update and Program Review

This project will review the CSO Control Program and adjust the program as needed to meet on-going regulatory requirements and county business needs. The review will provide formal opportunities to assess the impact of new regulations and initiatives impacting the CSO Plan such as Total Maximum Daily Loads (TMDLs), Endangered Species Act (ESA), and proposed Superfund listings. The 5-year CSO Update is required by the Department of Ecology and the NPDES permit for West Point. The Update will assess progress to date, status of current projects, and description & schedule for CSO projects scheduled for completion in the next five years. These projects include the Murray CSO storage tank, the Barton pump station, the South Magnolia CSO storage tank, and the North Beach CSO storage tank and pump station. King County is committed to complete these projects as part of an enforceable compliance schedule included in the NPDES permit.

8. To learn more about CSOs, please visit the Web site at <http://dnr.metrokc.gov/wtd/cso/index.htm>

As part of the 2005 Update process, King County is required to conduct a program review, which has several objectives.

- Maximize use of existing CSO control facilities
- Identify the public and environmental health benefits of continuing the CSO control program
- Ensure projects are in compliance with new regulatory requirements and objectives such as the ESA and the Wastewater Habitat Conservation Plan
- Analyze rate impacts to ensure that the program review will honor and be consistent with long-standing commitments
- Assess public opinion
- Integrate the CSO control program with other water/sediment quality improvement programs for the region

Any program changes recommended by the Executive, Regional Water Quality Committee, and the King County Council will be addressed in the Plan Update that follows the program review. Final planning for the first CSO control projects under the RWSP will begin in 2005 following completion of the program review and 2005 Plan Update process.

New Permit Limits for West Point

Proposed new permit requirements for the CSO operations in the West Point Treatment Plant NPDES permit include 80 percent removals for Total Suspended Solids (TSS) and Biological Oxygen Demand (BOD) during the wet months, where formerly there was no limit during those months.⁹ The Carkeek CSO Plant annual volume and frequency limits have been increased to 46 million gallons per year (mgy) (from 14 mgy) and 10 events per year (from 8 events per year) in acknowledgement of the greater flows going to the plant than had been identified in design. Ecology also reverted TSS limits from a surrogate concentration limit to the former 50 percent removal as specified in regulation and added limits for fecal coliform and chlorine residual. Because of the difficulty managing disinfection for the variable flows of these plants, Ecology has allowed two years of testing and start-up before the limits take effect. These new performance-based permit limits may change in the future as new CSO control projects that transfer flows to West Point are brought on line.

9. 85 percent removal is the standard for secondary treatment during the months when the plant is not receiving CSO for primary treatment and blending.

Lower Duwamish Superfund Site

King County DNRP is partnering with the City of Seattle, the Port of Seattle, and Boeing—in coordination with EPA and Ecology—under a consent agreement to prepare a remedial investigation and feasibility study (RI/FS) for the Lower Duwamish Waterway Superfund Site.¹⁰ The agreement gave DNRP the opportunity to shape the process and to implement any clean ups earlier than would occur under a traditional Superfund approach. King County DNRP is continuing to meet the consent agreement, negotiating the Phase 2 work plan and starting the field studies needed to complete the remedial investigation. The partnership has committed to moving forward on four of the early action sites which will get those portions of the waterway cleaned up years earlier. We are also participating in two of those early action sites at Diagonal/Duwamish CSO and Slip 4. Work at Diagonal/Duwamish will be completed in 2004 while studies at Slip 4 are beginning. In addition, DNRP worked with the City of Seattle and Port of Seattle to secured a state grant for the portion of this work done in the 2003–2005 biennium.

Sediment Management Program

King County is responsible for cleaning up sediment contamination related to combined sewer overflows under the federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the state Model Toxics Control Act (MTCA). King County's plan is to comply with these regulations and meet the following objectives:

- Remediate sediments in a timely, efficient, and economical manner
- Prevent harm to public health
- Limit future liability

King County has begun the first of the cleanup sites in front of the old Denny Way outfall structure. This 3-year project will clean up the remaining contaminated sediment in the nearshore area adjacent to the Denny outfall. DNRP is also coordinating cleanup work at Hanford and Lander CSOs with Port of Seattle dredging in East Waterway.

10. This listing could impact the priorities for CSO control that were identified in the Regional Wastewater Services Plan. The 2005 Plan Update will assess this impact.

Schedule for 2004

The major focus of the CSO Control Program in 2004 will be the completion of the Henderson/Martin Luther King and Denny Way/Lake Union CSO Control Projects. Denny will control the largest CSO in the County's system, decreasing annual overflow volumes nearly 500 million gallons per year—a third of the remaining CSOs. Henderson will be the last CSO control project in Lake Washington. Efforts to increase collaboration and coordination with the City of Seattle on CSO control will continue, including recommendations for the Alaskan Way Viaduct Replacement Project stormwater management and other joint project opportunities. These opportunities will be incorporated in the amendment of the CSO Control Plan during 2004, with the report to be completed in 2005.

Biosolids

King County continued its ongoing effort of produce Class B biosolids at the regional treatment plants. On average, King County produces approximately 135,000 wet tons of biosolids each year, all of which is recycled for use in compost, forestry and agricultural applications.¹¹

Schedule for 2004

King County DNRP will continue producing Class B biosolids at its regional treatment facilities. Staff will continue to investigate cost-effective means to achieve Class A biosolids at these facilities. Design work will be initiated on the West Point Digestion System Improvements project. This 3-year project is intended to increase the stability of the digestion system and decrease the potential for digester upsets.

11. Please visit <http://dnr.metrokc.gov/WTB/biosolids/> for more information on biosolids recycling

Water Reuse & Conservation

The goal of the county's Water Reuse program is to use reclaimed water to meet the water resource needs of this region's residents and environment. King County DNRP transmitted a five-year Water Reuse Work Plan to the King County Council in December 2000, and two primary implementation efforts are underway: the Technology Demonstration Project¹² and the Sammamish Valley Reclaimed Water Production Facility. This section also describes the efforts to date under King County's five-year water conservation program.

Water Reuse Technology Demonstration Project

King County DNRP began operating a water reuse technology demonstration facility at the West Point Treatment Plant in June 2001. The nine-month project evaluated the effectiveness, operability, and cost of seven wastewater treatment technologies. The demonstration facility combined several treatment technologies into small-scale operational process systems to assess their ability to meet process objectives. One promising technology was the membrane bioreactor (MBR), which uses microporous membranes to filter very fine particulate matter from wastewater—even as small as bacteria. The result is treated wastewater that is seven to ten times cleaner than typical secondary-treated wastewater, which already meets current environmental requirements for discharges into Puget Sound.

In late 2003, King County completed tests on a pilot MBR to identify how the unit handled peak flows under a variety of conditions. A final report outlining the findings of the testing is expected in February 2004. Further testing will take place in 2004 on alternative membrane bioreactor configurations to help facilitate the design of the Brightwater and Carnation treatment plants.

This project received the 2002 Environmental Achievement Award in Research and Technology from the Association of Metropolitan Sewerage Agencies.

Sammamish Valley Reclaimed Water Production Facility

The Sammamish Valley Reclaimed Water Production Facility was put on hold during the predesign phase due to questions about the original project. A proviso in the 2004 capital budget requires the Wastewater Treatment Division to submit a report to council by April 15, 2004, that accounts for the life-to-date expenditures for the facility and outlines a revised scope and budget for an interim satellite reclaimed water production facility. The report must also identify how the interim facility will integrate with the

12. Please see the new section of the reuse program Web site for more information on treatment alternatives for water reuse project at <http://dnr.metrokc.gov/wtd/reuse/index.htm>

reclaimed water production expected from the Brightwater Treatment Plant, as well as demonstrate how the approach for developing the interim facility will be consistent with the adopted goals and policies in the Regional Wastewater Services Plan. The King County Council must approve the report by motion before the Division can proceed with the project.

Water Conservation Program

Under the Regional Wastewater Services Plan, the 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.¹³ Specifically, the RWSP policy calls for King 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.” King County DNRP has \$300,000 per year for a five-year program. The program has two areas, public education and implementation of water conservation retrofits that result in substantial water conservation savings.

Water Audits and Retrofits

In 2003, King County park, pool, public health, district court, animal shelter and sheriff precinct facilities are being audited and water conserving fixtures, including toilets, urinals, faucets, faucet aerators, and timed showers are being installed. The fixtures are projected to save over 4,000,000 gallons per year, which will amount to a considerable savings in water and sewer charges to these facilities. These facilities also offer an excellent venue for water conservation-related informational signage because of their high public use.

Public Education and Outreach

King County launched a water conservation Web site¹⁴ this year and also contributed to the Water Conservation Coalition of Puget Sound’s Regional Public Awareness Campaign, Water: Use It Wisely. Bert the Salmon water conservation baseball cards were handed out at a variety of events and venues.

13. For more information about King County’s Water Conservation Program, call (206) 296-8361.

14. The water conservation Web site can be accessed at <http://dnr.metrokc.gov/wtd/waterconservation/>

Schedule for 2004

Technology Demonstration Program: King County will conduct additional pilot testing in 2004 on alternative membrane bioreactor configurations to help facilitate the design of the Brightwater and Carnation treatment plants.

Sammamish Valley Reclaimed Water Production Facility: Project will be developed by April 15, 2004, and design will be initiated.

Water/Wastewater Conservation Program: Public education and water conservation retrofits will continue in 2004. Highlights of the 2004 program are the completion of water conserving retrofits at King County Park facilities, King County's animal shelters and installation of water conserving washing machines for several non-profit organizations serving low-income and homeless citizens, the Millionaire Club, and the Compass Center.

RWSP Project Information

This section provides additional information for each RWSP capital project as required by Ordinance 14018 in the 2001 Budget Proviso; namely, the year-to-date budget and staffing status. The projects are organized in the following tabs as shown in the Table 1.

Table 1. RWSP Capital Improvement Projects

Project	Project Number
Tab 1 - Treatment Improvements	
Brightwater Treatment Plant	423484
Brightwater Conveyance	423575
Brightwater Marine Outfall	423457
Tab 2 - Conveyance Improvements	
RWSP Conveyance System Improvements	423373
East Side Interceptor Section 1 Repair	423420
North Creek Storage	423519
Tukwila Interceptor/Freeway Crossing	423520
Hidden Lake/Boeing Trunk Upgrade Improvement	423365
Juanita Bay Pump Station Modifications	423406
Pacific Pump Station	423518
Bellevue Pump Station	423521
Tab 3 – Infiltration & Inflow	
RSWP Local System I/I Control	423297
Tab 4 - Combined Sewer Overflow	
CSO Plan Update	423441
Sediment Management Program	423368
Tab 5 - Water Reuse	
Sammamish Valley Reclaimed Water Production Facility	423528
Water/Wastewater Conservation Program	423523

Table 1 shows that there are 16 RWSP capital projects in various stages of design and construction. An example of the information provided for each project is depicted in Figure 5, including the project's scope, milestones, schedule, budget, and contract status. Each of these fields are described in more detail below and are consistent with the reporting requirements for Regional Wastewater Services Plan projects per Ordinance 13680 and by proviso in Ordinance 14018.

Project Number

Each wastewater capital project is assigned a six-digit number such as 423413. The first two numbers (42) identify this as a wastewater project (as opposed to a transit project or roads project). The third number (3) identifies the project as a capital project (as opposed to operating) and the last three numbers are sequential numbers reflecting the order the projects were assigned in a particular year.

2003 Appropriation and Percent Spent

The 2003 appropriation is the project budget for the year 2003; that is, the amount of money the King County Council authorized to be spent on the project that year. The “Percent Spent” number reflects how much of the budget has been spent as of the reporting period (December 2003). However, projects in construction have their entire construction contract amount appropriated in the first year of construction, even if it’s a multi-year construction project. As such, the percent spent value for these projects will be very low early in the project life.

Project Scope & Milestones

The project scope gives a brief overview of the project as described by the project manager. In general, the narrative describes the project and its purpose. The project milestones identify timeframes for important achievements in the project lifecycle. The milestones listed for projects in this document are primarily for the year 2003.

Schedule

The project schedule information includes a start date and an end date for the project phases that are appropriate for that project. There are six phases for construction projects: planning, predesign, final design, implementation, closeout, and land acquisition.

Project Cost

Project costs are provided for contracts, staffing, and permits & right-of-way (ROW) expenditures. The costs come from the IBIS financial reporting system and are reported both year-to-date and life-to-date for the month indicated.

Contract Information

There are generally four types of contracts associated with wastewater capital projects as identified by the first letter in the contract number: 'P' denotes a professional services contract, 'E' denotes an engineering & architectural services contract, 'T' denotes a technical consultant services contract, and 'C' denotes a construction services contract. The information provided for each contract is the total paid by project as of the report date and the contract amount. In some cases, a contract may support several projects, such as on call services, so the project may use only a portion of the contract amount.

Figure 5. Project Information Sheet

Project No. and Title 423519 North Creek Storage Facility		Council District: 01	
2003 Budget: \$9,255,000		Project Manager: Dittmar, David	
Percent Spent: 103%		Appropriation: A20420 Conveyance Pipelines and Storage - New Facilities & Improvements	
Phase: Construction (CM Support)			
Project Scope This project will construct a 6 million gallon underground wastewater storage facility adjacent to the North Creek Pump Station. This project will help prevent sewage backups and overflows in the north Lake Washington area by providing additional wastewater capacity until the Brightwater Treatment Plant is constructed in 2010. The storage facility will also include an odor control facility, above ground electrical building, access stair ways, and miscellaneous piping. The project will be constructed by excavating a large hole, constructing the storage facility, then burying the facility. The storage facility will take sewage flows from the Bothell-Woodinville and North Creek Interceptors during large storm events and store the flow until the storm event is over. The stored flow will then be pumped back into the Interceptors. This project is a part of the Regional Wastewater Services Plan.			
2003 Milestones Provide 2 million gallons of storage capacity by 2/12/03. Substantially Complete by 12/31/03.			
Phase	Schedule	Start	Finish
1 Planning			
2 Pre-design			
3 Final Design	1/2/2001	9/30/2001	
4 Implementation	10/1/2001	12/31/2003	
5 Closeout	1/1/2004	7/1/2004	
6 Land Acquisition			
Project Cost		Year to Date	Life to Date
Type of Project Cost		DEC-03	DEC-03
STAFF LABOR LTD Hours 17,599			
CONSTRUCTION CONTRACT:		\$5,554,557	\$19,146,729
ENGINEERING CONTRACTS		\$649,260	\$3,595,229
OTHER COSTS		\$22,132	\$2,405,893
PERMITS & ROW		\$0	\$202,730
STAFF LABOR COSTS		\$349,525	\$1,018,225
Total Project Cost:		\$6,555,995	\$26,571,910
Current Contract Information		Total Paid by Project	Contract Amt
Contract Number and Title			
C13008C/NORTH CREEK STORAGE FACILITY PROJECT		\$17,553,327	\$1,571,513
E06017E NORTH CREEK STORAGE FACILITY PROJECT		\$2,259,115	\$2,501,717
P03013P/CM SVCS FOR THE NORTH CREEK STORAGE FACILITY PROJECT		\$971,910	\$1,902,519
P93013P ON-CALL MANAGEMENT, PROFESSIONAL AND TECHNICAL SERVICES FOR CIP		\$675,986	\$1,500,000

Project No. and Title

423484 Brightwater Treatment Plant

Council District: N/A**Project Manager:** Popiwny, Michael**2003 Budget:** \$46,952,000**Phase:** Planning**Appropriation:****Percent Spent:** 91%

Predesign 30%

A20220 Brightwater Treatment Plant- New
Facilities & Improvements

Consultant Selection

Project Scope

This project will site, design, and construct a new 36-mgd wastewater treatment facility as described in the 1999 Council-adopted Regional Wastewater Services Plan. The new treatment plant is a key element of the County's strategy to provide necessary capacity to meet wastewater demand and comply with federal and state regulations in the years ahead. If this facility is not constructed, the county's sewer customers would face wastewater capacity problems by approximately 2010. Project scope includes: 2000 - 2003: Siting work, including technical screening, environmental analysis, mitigation analysis, community outreach, intergovernmental coordination, right-of-way analysis, engineering analysis, and general coordination; 2002, 2003: Land acquisition; 2002-2004: Pre-design, including environmental review, mitigation analysis, community outreach, engineering and general coordination; 2004-2006: Design, including environmental review, mitigation analysis, community outreach, engineering, and general coordination; and 2005-2010: Construction and closeout

2003 Milestones

11/2003 -- Issue Final EIS

12/2003 -- Executive selects the final site, conveyance route, and marine outfall location

12/2003 -- Design and permitting begins

Phase	<u>Schedule</u>	Start	Finish	<u>Project Cost</u>	Year to Date	Life to Date
				Type of Project Cost	DEC-03	DEC-03
1 Planning		1/1/2001	6/30/2003	STAFF LABOR LTD Hours 132,162		
2 Predesign		1/1/2002	6/1/2003	CONSTRUCTION	\$12,026	\$24,054
3 Final Design		6/1/2003	12/30/2006	ENGINEERING CONTRACTS	\$12,210,199	\$23,289,405
4 Implementation		6/30/2005	12/30/2009	OTHER COSTS	\$1,444,473	\$3,059,030
5 Closeout		1/1/2010	12/30/2011	PERMITS & ROW	\$26,588,889	\$26,615,462
6 Land Aquisition		1/1/2002	12/31/2004	STAFF LABOR COSTS	\$2,391,419	\$7,389,235
				Total Project Cost:	\$42,647,006	\$60,377,185

Current Contract Information**Contract Number and Title****Total Paid** **Contract Amt**
by Project

2002-01/SNOHOMISH COUNTY - BRIGHTWATER PROJECT	\$504,577	\$664,265
COK12902/BRIGHTWATER ENVIRONMENTAL IMPACT STATEMENT	\$3,111	\$20,000
COLFP112902/BRIGHTWATER ENVIRONMENTAL IMPACT STATEMENT	\$20,000	\$20,000
COS112102/BRIGHTWATER ENVIRONMENTAL IMPACT STATEMENT	\$20,000	\$20,000
E03030E/WO BASED MULTIDISCIPLINARY ENVIRONMENTAL SERVICES	\$88,726	\$250,000
E13035E/ENGRG. SVCS FOR BRIGHTWATER TREATMENT PLANT	\$5,665,366	\$9,719,364
E23002E/ARCHITECTURAL, LANDSCAPE ARCH & INTERIOR DESIGN	\$2,296,330	\$4,440,618
E23007E/GEOTECHNICAL SERVICES FOR THE BRIGHTWATER CONVEYANCE SYS	\$5,412,833	\$1,168,455
OVWSD12502/BRIGHTWATER ENVIRONMENTAL IMPACT STATEMENT	\$20,000	\$20,000
P03012P/RWSP PROGRAM MANAGEMENT SERVICES DEVELOPMENT	\$4,587,338	\$9,512,780
P93006P PHASED HABITAT CONSERVATION PLAN FOR KC	\$1,969,869	\$1,981,679
P93012P SITE SELECTION AND MITIGATION FOR NEW REGIONAL WASTEWATER	\$9,610,806	\$1,192,323
P93013P ON-CALL MANAGEMENT, PROFESSIONAL AND TECHNICAL SERVICES FOR	\$678,986	\$1,600,000
POE081302/BRIGHTWATER ENVIRONMENTAL IMPACT STATEMENT	\$20,000	\$20,000
SUQUAMISH AGREEMENT/BRIGHTWATER DEIS	\$8,619	\$39,887
T01129T/LEGAL SUPPORT SERVICES FOR NTF	\$863,189	\$1,150,000
T01130T/LEGAL SUPPORT SERVICES FOR NTF SITING	\$704,738	\$1,150,000
T01145T/REAL ESTATE BROKER SUPPORT SVCS FOR NORTH TREATMENT FAC.		\$24,000
T01352T/WRITING & EDITING SERVICES ON A WO BASIS	\$78,791	\$240,000

Project No. and Title

423457 Brightwater Marine Outfall

Council District: N/A**Project Manager:** Simmonds, Jim**2003 Budget:** \$1,403,000**Phase:** Planning**Appropriation:**A20220 Brightwater Treatment Plant- New
Facilities & Improvements**Percent Spent:** 67%**Project Scope**

This project is a technical study to obtain the environmental information needed to understand the flow of water in Puget Sound in the project area, the water and sediment quality conditions in the project area, and the biological resources and human uses in the area. This project, part of the Regional Wastewater Services Plan, is needed to provide basic scientific information on Puget Sound to support the siting of the outfall for the new Brightwater Treatment Plant and information needed for the permitting and predesign process for the new outfall.

2003 Milestones

11/2003 Final EIS

12/2003 Selection of preferred alternative

Phase	<u>Schedule</u>	Start	Finish	<u>Project Cost</u>	Year to Date	Life to Date
1 Planning		1/1/2000	12/1/2003	Type of Project Cost	DEC-03	DEC-03
2 Predesign				STAFF LABOR LTD Hours 63,963		
3 Final Design		1/4/2004	12/31/2006	CONSTRUCTION	\$0	\$66,419
4 Implementation				ENGINEERING CONTRACTS	\$606,812	\$5,389,106
5 Closeout				OTHER COSTS	\$33,434	\$485,079
6 Land Aquisition				PERMITS & ROW	\$250	\$883
				STAFF LABOR COSTS	\$291,291	\$2,268,835
				Total Project Cost:	\$931,787	\$8,210,321

Current Contract Information**Contract Number and Title****Total Paid** **Contract Amt**
by Project

E23006E/ENGRG SVCS FOR THE BRIGHTWATER CONVEYANCE SYSTEM

\$3,861,994

\$1,121,737

E23007E/GEOTECHNICAL SERVICES FOR THE BRIGHTWATER CONVEYANCE SYS

\$5,412,833

\$1,168,455

P93001P PUGET SOUND OCEANOGRAPHIC SUPPORT STUDIES

\$1,363,111

\$1,363,247

P93009P - NORTH TREATMENT FACILITY - MARINE OUTFALL SITING STUDY

\$2,792,104

\$3,030,047

Project No. and Title

423373 CONVEYANCE SYSTEM IMPROVEMENTS

Council District: All**Project Manager:** Peterson, Bob**2003 Budget:** \$10,762,000**Phase:** Planning**Appropriation:****Percent Spent:** 145%A20420 Conveyance Pipelines and
Storage - New Facilities & Improvements**Project Scope**

The Conveyance System Improvement (CSI) project develops planning-level scopes, schedules, and budgets for all new conveyance projects. Beginning in 1999, the CSI program identified and prioritized ten planning areas in the wastewater service area. Starting in the highest priority areas, teams of county staff and consultants evaluate the area's conveyance needs, identify a range of alternatives, and specify a working alternative to address the needs. Planning is underway this year in five planning areas: North Lake Sammamish, North Lake Washington, South Lake Washington, Southeast Lake Washington, and Northwest Lake Washington. The CIS program is also planning for projects to safeguard the north end against sewer backups and overflows such as those that occurred during the winter storms of 1996-97. Once the project-level planning level work is completed, a new project is created with its own project budget. The CSI project is part of the Regional Wastewater Services Plan.

2003 Milestones

Year 2003 Milestones

Seasonal Newsletters

2nd, 3rd, 4th Q 2003

Conveyance Planning Schedule updated for years 2004-2007 1st Quarter 2003

North Green River Planning complete

1st Quarter 2003

South East Lake Washington planning complete

2nd Quarter 2003

South Lake Washington planning completed

2nd Quarter 2003

North West Lake Washington, SLS and NLS planning completed

2nd Quarter 2003

NLW and SLS projects to Predesign

3rd Quarter 2003

North Green River (Tukwila Freeway Crossing and Interceptor to Predesign) deferred to 2004

Final CSI project Summary

3rd Quarter 2003

CSI Planning contract close out

4th Quarter 2003

Conveyance Planning Schedule years 2004-2007 approved

4th Quarter 2003

Phase	Schedule	Start	Finish	Project Cost	Year to Date	Life to Date
1 Planning		1/1/2001	12/31/2007	Type of Project Cost	DEC-03	DEC-03
2 Predesign		1/30/2002	12/31/2007	STAFF LABOR LTD Hours 73,852		
3 Final Design		1/1/2002	12/31/2007	CONSTRUCTION	\$6,333	\$798,486
4 Implementation		1/1/2004	12/31/2007	ENGINEERING CONTRACTS	\$1,508,679	\$8,326,826
5 Closeout		10/1/2007	12/31/2007	OTHER COSTS	\$13,151,204	\$33,121,420
6 Land Aquisition		1/1/2003	2/27/2007	PERMITS & ROW	\$325	\$3,128
				STAFF LABOR COSTS	\$912,812	\$4,384,337
				Total Project Cost:	\$15,579,353	\$46,634,197

Current Contract Information**Contract Number and Title****Total Paid
by Project****Contract Amt**

AGREEMENT #1/TECH SUPPORT FOR THE DEVELOPMENT OF REGIONAL	\$74,908	\$75,000
AGREEMENT #2/DEVELOP GEOLOGIC DATABASE & GEOLOGIC INTERPRETATIONS	\$673,254	\$745,843
C03009C/WEST DIV. CORROSION REPAIRS 2000-2001	\$366,267	\$400,000
C03051C/WEST DIVISION MECHANICAL CONSTRUCTION 2000-2001	\$444,168	\$458,000
C03114C/DIVING INSPECTION AND REPAIRS	\$115,405	\$300,000
C13004C/SEWER REPAIR - 2001-2002	\$12,767	\$100,000
C13123C/EAST & WEST MECHANICAL CONSTRUCTION	\$475,391	\$500,000
C83075C DIVING INSPECTION AND REPAIR	\$34,560	\$250,000
C83161C/MISCELLANEOUS PIPE REPAIRS	\$363,406	\$750,000
C93180C WEST DIVISION - CIP - ELECTRICAL 2000	\$251,425	\$400,000
C93200C WEST DIVISION CIVIL/STRUCTURAL CONSTRUCTION 2000	\$369,724	\$400,000
E23033E/SOOS CREEK AREA PUMP STATION D AND PIPELINE 3	\$9,028	\$1,810,263
E83004E CONVEYANCE SYSTEM IMPROVEMENT PROJECT, PROJ MANAG AND	\$4,681,614	\$5,024,612
E93018E CIP ELECTRICAL & ELECTRONICS EMGINEERING SUPPORT SERVICES	\$255,160	\$475,000

Project No. and Title

423420 ESI SECTION 1 CAPACITY RESTORATION

Council District: 06**Project Manager:** Dittmar, David**2003 Budget:** \$1,206,000**Phase:** Construction (CM Support)**Appropriation:**

A20420 Conveyance Pipelines and Storage - New Facilities & Improvements

Project Scope

The East Side Interceptor (ESI) is the primary conveyance for wastewater from the eastside communities to the South Treatment Plant. In 1965, a section of the ESI was damaged during an earthquake. The repair of the damage reduced the capacity of the pipe. This project restores the East Side Interceptor to its original design capacity of 224 mgd by constructing 1,800 feet of 72-inch pipeline around the earthquake-damaged section (Section 1). The construction used a tunnel-boring machine, placing the new pipe approximately 30 feet underground.

2003 Milestones

Construction was completed in February 2003.
Project will be closed-out in 2003.

<u>Schedule</u>				<u>Project Cost</u>		<u>Year to Date</u>	<u>Life to Date</u>
Phase	Start	Finish		Type of Project Cost		DEC-03	DEC-03
1 Planning	1/1/1998	2/28/1998		STAFF LABOR LTD Hours	12,578		
2 Predesign	3/1/1998	2/28/1999		CONSTRUCTION		\$670,698	\$5,418,555
3 Final Design	3/1/1999	9/30/2001		ENGINEERING CONTRACTS		\$110,768	\$1,607,954
4 Implementation	10/1/2001	3/31/2003		OTHER COSTS		\$2,143	\$582,008
5 Closeout	4/1/2003	12/31/2003		PERMITS & ROW		\$0	\$114,392
6 Land Aquisition	3/1/1999	9/30/2001		STAFF LABOR COSTS		\$110,220	\$682,323
				Total Project Cost:		\$893,828	\$8,405,232

Current Contract Information**Contract Number and Title**

	<u>Total Paid</u>	<u>Contract Amt</u>
	<u>by Project</u>	
C03070C/EASTSIDE INTERCEPTOR SECTION 1-CAPACITY RESTORATION PROJECT	\$5,557,367	\$5,486,886
E83010E EASTSIDE INTERCEPTOR, SEC.#1, UPGRADE PREDESIGN	\$1,055,961	\$1,118,151
P03008P/CM SVCS FOR EASTSIDE INTERCEPTOR SECT 1 CAPACITY RESTORATION	\$563,940	\$862,288
P93013P ON-CALL MANAGEMENT, PROFESSIONAL AND TECHNICAL SERVICES FOR	\$678,986	\$1,600,000
T01006T DRAFTING SERVICES - DNR -KC	\$56,969	\$150,000

Project No. and Title

423519 North Creek Storage Facility

Council District: 01**Project Manager:** Dittmar, David**2003 Budget:** \$9,288,000**Phase:** Construction (CM Support)**Appropriation:**A20420 Conveyance Pipelines and
Storage - New Facilities & Improvements**Percent Spent:** 103%**Project Scope**

This project will construct a 6 million gallon underground wastewater storage facility adjacent to the North Creek Pump Station. This project will help prevent sewage backups and overflows in the north Lake Washington area by providing additional wastewater capacity until the Brightwater Treatment Plant is constructed in 2010. The storage facility will also include an odor control facility, above ground electrical building, access stair ways, and miscellaneous piping. The project will be constructed by excavating a large hole, constructing the storage facility, then burying the facility. The storage facility will take sewage flows from the Bothell-Woodinville and North Creek Interceptors during large storm events and store the flow until the storm event is over. The stored flow will then be pumped back into the Interceptors. This project is a part of the Regional Wastewater Services Plan.

2003 Milestones

Provide 2 million gallons of storage capacity by 2/12/03.

Substantially Complete by 12/31/03.

Phase	<u>Schedule</u>	Start	Finish	<u>Project Cost</u>	Year to Date DEC-03	Life to Date DEC-03
1 Planning				Type of Project Cost		
2 Predesign				STAFF LABOR LTD Hours 17,699		
3 Final Design	1/2/2001	9/30/2001		CONSTRUCTION	\$8,564,657	\$19,146,729
4 Implementation	10/1/2001	12/31/2003		ENGINEERING CONTRACTS	\$649,380	\$3,898,229
5 Closeout	1/1/2004	7/1/2004		OTHER COSTS	\$22,132	\$2,405,993
6 Land Aquisition				PERMITS & ROW	\$0	\$202,730
				STAFF LABOR COSTS	\$349,826	\$1,018,228
				Total Project Cost:	\$9,585,995	\$26,671,910

Current Contract Information**Contract Number and Title****Total Paid
by Project** **Contract Amt**

C13008C/NORTH CREEK STORAGE FACILITY PROJECT	\$17,883,327	\$1,871,513
E06017E NORTH CREEK STORAGE FACILITY PROJECT	\$2,289,115	\$2,501,717
P03013P/CM SVCS FOR THE NORTH CREEK STORAGE FACILITY PROJECT	\$971,910	\$1,902,819
P93013P ON-CALL MANAGEMENT, PROFESSIONAL AND TECHNICAL SERVICES FOR	\$678,986	\$1,600,000

Project No. and Title

423520 Tukwila Interceptor/Freeway Crossing

Council District: 05**Project Manager:** Peterson, Bob**2003 Budget:****Phase:** Planning**Appropriation:**A20420 Conveyance Pipelines and
Storage - New Facilities & Improvements**Percent Spent:****Project Scope**

This project, part of the Conveyance System Improvement (CSI) Program, is evaluating alternatives to upgrade portions of the Tukwila Interceptor and Tukwila Freeway Crossing under the I-5/I-405 freeway near Tukwila. The working alternative will initially parallel or replace portions of the Tukwila Freeway Crossing, but before the project is ready for predesign we will assess the impacts of the Port of Seattle SeaTac airport industrial waste discharges and development proposals in the Southcenter area of Tukwila.

2003 Milestones

This project will likely begin in 2005.

Phase	<u>Schedule</u>	Start	Finish	<u>Project Cost</u>	Year to Date	Life to Date
1 Planning				Type of Project Cost	DEC-03	DEC-03
2 Predesign	6/30/2004	3/31/2005		STAFF LABOR LTD Hours 972		
3 Final Design	4/15/2005	12/31/2005		OTHER COSTS	\$0	\$4,096
4 Implementation	1/1/2006	3/31/2007		STAFF LABOR COSTS	\$0	\$55,315
5 Closeout	9/30/2007	12/31/2007				
6 Land Aquisition	1/1/2005	12/31/2006		Total Project Cost:	\$0	\$59,411

Current Contract Information**Contract Number and Title****Total Paid
by Project****Contract Amt**

Project No. and Title

423365 HIDDEN LAKE PS/BOEING CREEK TRUNK

Council District: 01**Project Manager:** Thibert, Mann-Ling**2003 Budget:** \$1,532,000**Phase:** Predesign 30%**Appropriation:****Percent Spent:** 92%A20520 Conveyance Pump Station - New
Facilities & Improvements**Project Scope**

The 40-year old Hidden Lake Pump station does not have capacity to handle existing or future peak storm flows, nor does it meet current design standards of odor control, instrumentation, space, and equipment handling. Further, the pump station discharges to the Boeing Creek Trunk, which has a history of capacity, odor, and corrosion problems. This project will address these problems through system improvements. The system improvements will control overflows and increase the capacity of the Boeing Creek Trunk to handle the 20-year storm. The capacity increases include a new Hidden Lake Pump station with a firm capacity of 5.5 mgd and a future peak capacity of 6.8 mgd built on the existing site; a .5 MG storage facility constructed upstream of the pump station; and approximately 12,000 linear feet of pipeline replacement. Future needs in the area will depend on whether I/I reduction will enable us to reduce the size or need for additional facilities. The length of pipe to be replaced will be determined based on the amount of I/I reduction achieved.

2003 Milestones

2/2003 Complete predesign.

5/2004 Complete final design

Phase	<u>Schedule</u>	Start	Finish	<u>Project Cost</u>	Year to Date DEC-03	Life to Date DEC-03
1 Planning		6/1/1998	6/13/2000	Type of Project Cost		
				STAFF LABOR LTD Hours 4,953		
2 Predesign		9/26/2001	6/1/2002	CONSTRUCTION	\$45,169	\$49,069
3 Final Design		6/1/2002	9/1/2003	ENGINEERING CONTRACTS	\$1,235,943	\$1,973,566
4 Implementation		11/1/2004	4/1/2006	OTHER COSTS	\$4,090	\$91,771
5 Closeout		6/1/2005	12/1/2006	PERMITS & ROW	\$2,057	\$2,057
6 Land Aquisition		8/1/2003	9/1/2003	STAFF LABOR COSTS	\$119,940	\$333,543
				Total Project Cost:	\$1,407,198	\$2,450,007

Current Contract Information**Contract Number and Title**

C33060C/WW MISC. PIPE REPAIR AND RESTORATION

C83161C/MISCELLANEOUS PIPE REPAIRS

E03036E/HIDDEN LAKE PUMP STATION

**Total Paid
by Project**

\$101,225 \$500,000

\$363,406 \$750,000

\$1,972,469 \$2,944,625

Project No. and Title

423406 JUANITA BAY PS - MODIFICATIONS

Council District: 11**Project Manager:** Okuda, Chris**2003 Budget:** \$3,190,000**Phase:** Final Design 60%**Appropriation:****Percent Spent:** 90%A20520 Conveyance Pump Station - New
Facilities & Improvements**Project Scope**

The Juanita Bay Pump Station is an aging facility that is experiencing significant operational difficulties in conveying existing flows and has insufficient capacity to convey future flows. A new pump station is being designed to replace the existing 14.2-mgd pump station. A site for the new pump station was purchased across the street from the existing station. The SEPA environmental review document and construction permit applications are being prepared. Technical issues identified during last year's preliminary design work are being addressed, including designing a pumping system that will address this basin's challenging hydraulic requirements and designing a building structure on a site with complex soil and groundwater conditions.

2003 Milestones

Predesign in progress in 2003, including permit acquisition.
Final design work is targeted for completion in 2004.

Schedule				Project Cost		Year to Date	Life to Date
Phase	Start	Finish		Type of Project Cost		DEC-03	DEC-03
1 Planning	1/1/1999	1/3/2000		STAFF LABOR LTD Hours	11,023		
2 Predesign	1/1/2001	8/31/2002		CONSTRUCTION		\$0	\$6,073
3 Final Design	9/1/2002	12/31/2004		ENGINEERING CONTRACTS		\$1,051,658	\$2,656,331
4 Implementation	1/1/2005	12/31/2006		OTHER COSTS		\$20,514	\$63,915
5 Closeout	1/1/2007	12/31/2007		PERMITS & ROW		\$1,500,950	\$1,500,950
6 Land Aquisition	3/1/2002	12/31/2004		STAFF LABOR COSTS		\$161,787	\$627,422
				Total Project Cost:		\$2,734,908	\$4,854,692

Current Contract Information**Contract Number and Title**

	Total Paid by Project	Contract Amt
--	----------------------------------	---------------------

E03037E/JUANITA BAY PUMP STATION AND FORCE MAINS UPGRADE	\$2,597,867	\$6,575,152
E83040E PROFESSIONAL SERVICES FOR CORROSION ENGINEERING	\$39,648	\$300,000
P83003P AGREEMENT FOR PROFESSIONAL CONSULTANT SERVICES	\$29,282	\$100,000
P93013P ON-CALL MANAGEMENT, PROFESSIONAL AND TECHNICAL SERVICES FOR	\$678,986	\$1,600,000

Project No. and Title

423518 Pacific Pump Station

Council District: 07**Project Manager:** Locke, Calvin**2003 Budget:** \$350,000**Phase:** Predesign 30%**Appropriation:****Percent Spent:** 136%A20520 Conveyance Pump Station - New
Facilities & Improvements**Project Scope**

The existing 1.6-mgd Pacific Pump Station, located in City of Pacific street right-of-way, has insufficient capacity to convey existing and estimated future peak flows. This project will construct a new 3.3-mgd pump station in an industrial zoned site suggested by the City of Pacific two blocks to the west of the existing station, which will be abandoned. The new pump station will have features that the existing pump station does not, such as standby power, odor control, improved access and equipment lifting devices. A new forcemain will not be required, as recommended by the planning study, since the flow projections have been revised.

2003 Milestones

4/03 90% design submittal. Submitt plans for building permit

11/03 Receive building permit and any other required permits.

1/04 Advertise for construction

5/04 Construction Notice to Proceed (NTP) is projected for spring 2004.

Phase	Schedule	Start	Finish	Project Cost	Year to Date	Life to Date
1 Planning				Type of Project Cost	DEC-03	DEC-03
2 Predesign	4/29/2001	5/1/2002		STAFF LABOR LTD Hours 3,829		
3 Final Design	5/1/2002	5/1/2003		ENGINEERING CONTRACTS	\$379,912	\$1,182,794
4 Implementation	5/1/2004	12/1/2005		OTHER COSTS	\$4,728	\$7,438
5 Closeout	9/1/2005	12/1/2006		PERMITS & ROW	\$32,742	\$33,192
6 Land Aquisition	12/1/2005	1/1/2005		STAFF LABOR COSTS	\$57,947	\$282,750
				Total Project Cost:	\$475,329	\$1,506,173

Current Contract Information**Contract Number and Title**

E03006E/ENGINEERING SERVICES FOR PACIFIC PUMP STATION

E83040E PROFESSIONAL SERVICES FOR CORROSION ENGINEERING

Total Paid **Contract Amt**
by Project

\$1,134,121 \$1,351,537

\$39,648 \$300,000

Project No. and Title

423521 Bellevue Pump Station

Council District: 06**Project Manager:** Namini, Shahrzad**2003 Budget:** \$461,000**Phase:** Planning**Appropriation:****Percent Spent:** 13%A20520 Conveyance Pump Station - New
Facilities & Improvements**Project Scope**

This project will upgrade the hydraulic capacity, electrical systems, and control systems for the Bellevue Pump Station. It will also construct a new 5,500 ft long, 24-inch diameter forcemain from the Bellevue Pump Station to the Eastside Interceptor (ESI), thereby reducing the hydraulic load on the Sweyolocken Pump Station. The new forcemain will require a new discharge structure at the ESI just upstream of the Wilburton Siphon inlet structure. The project provides needed capacity to avoid raw sewage overflows downstream at the Sweyolocken Pump Station. A planning assessment of the alternatives to "off-load" flow from Sweyolocken was conducted during 2000. Seven possible alternatives were evaluated; two alternatives were carried forward for further evaluation. A preferred alternative was selected to divert excess flows from the Sweyolocken Pump Station by upgrading the Bellevue Pump Station and constructing a new 5,500 foot-long, 24-inch diameter force main from the pump station to the East Side Interceptor. This project is part of the Council-approved Regional Wastewater Services Plan.

2003 Milestones

2000 Planning completed

12/2004 Complete 90 percent design

Phase	<u>Schedule</u>	Start	Finish	<u>Project Cost</u>	Year to Date DEC-03	Life to Date DEC-03
1 Planning				Type of Project Cost		
				STAFF LABOR LTD Hours 1,953		
2 Predesign	4/2/2001	12/1/2002		ENGINEERING CONTRACTS	\$181	\$181
3 Final Design	1/1/2001	2/1/2004		OTHER COSTS	\$13	\$1,440
4 Implementation	2/1/2004	12/1/2006		STAFF LABOR COSTS	\$60,889	\$147,822
5 Closeout	1/1/2007	6/1/2007				
6 Land Aquisition	6/1/2003	6/1/2003		Total Project Cost:	\$61,083	\$149,443

Current Contract Information**Contract Number and Title****Total Paid
by Project****Contract Amt**

Project No. and Title

423297 RWSP Local System I/I Control

Council District: All**Project Manager:** Sturgill, Dan**2003 Budget:** \$14,391,000**Phase:** Construction Bid &
Award**Appropriation:**

A20700 Inflow & Infiltration

Percent Spent: 59%

Procurement Bid &

Project Scope

This project is a five-year regional program to reduce infiltration and inflow (I/I) into the County's wastewater system from local component agency sewers. This program, part of the Council-approved Regional Wastewater Services Plan, is based on a cooperative partnership between King County and its 33 local component agencies. The program is designed to (1) meter and identify I/I sources in local sewer systems; (2) conduct pilot I/I rehabilitation projects in order to identify cost effective I/I removal techniques for this region; (3) regionally evaluate control solutions and their benefit; and (4) ultimately design a long-term enforceable control program to reduce I/I coming from local sewer systems. King County's wastewater system is running out of capacity not only because of new flows generated from population growth, but also because of excessive infiltration and inflow. I/I is the water that enters the sewer system during storms from sources such as leaky sewer pipes, roof drain connections, storm drains and leaking manholes.

2003 Milestones

2/03 - Workshop # 10 Hydraulic model results and overview

3/03 - Award I/I Control Pilot Projects .

5/03 - Begin construction of I/I PP.

6/03 - Program Cost estimating

11/03- Begin post monitoring of PP.

Phase	<u>Schedule</u>	Start	Finish	<u>Project Cost</u>	Year to Date	Life to Date
1 Planning		1/1/2000	12/31/2005	Type of Project Cost	DEC-03	DEC-03
2 Predesign		4/1/2002	10/1/2002	STAFF LABOR LTD Hours 57,548		
3 Final Design		10/1/2002	4/1/2003	CONSTRUCTION	\$3,704,679	\$3,704,679
4 Implementation		4/1/2003	11/1/2003	ENGINEERING CONTRACTS	\$2,042,665	\$20,375,052
5 Closeout		1/1/2006	12/1/2006	OTHER COSTS	\$1,882,158	\$2,561,361
6 Land Aquisition				PERMITS & ROW	\$1,122	\$1,518
				STAFF LABOR COSTS	\$830,328	\$2,892,668
				Total Project Cost:	\$8,460,952	\$29,535,276

Current Contract Information**Contract Number and Title**

	Total Paid by Project	Contract Amt
--	----------------------------------	---------------------

C33042C/AUBURN I/I PILOT PROJECT	\$298,356	\$351,818
C33043C/BRIER I/I PILOT PROJECT	\$284,905	\$425,359
C33044C/KENT I/I PILOT PROJECT	\$267,433	\$1,099,544
C33045C/KIRKLAND I/I PROJECT	\$775,382	\$781,775
C33046C/LAKE FOREST PARK I/IPILOT PROJECT	\$517,629	\$801,893
C33047C/I/I PILOT PROJECT	\$712,896	\$736,654
C33048C/REDMOND I/I PILOT PROJECT	\$550,938	\$899,117
C33120C/MANHOLE I/I PILOT PROJECT	\$104,228	\$220,990
E83043E ENG'N SUPPORT FOR REGIONAL I/I CONTROL PROGRAM	\$149,935	\$149,935
E93051E REGIONAL INFILTRATION / INFLOW CONTROL PROJECT	\$20,180,929	\$2,785,607
P32001P/AUDIT SERVICES FOR KC CONTRACT E93051E	\$24,582	\$25,000

Project No. and Title

423441 Year 2000 - CSO Update

Council District: 4,5,8,10**Project Manager:** Houck, Doug**2003 Budget:** \$248,000**Phase:** Planning**Appropriation:****Percent Spent:** 104%A20620 Combined Sewer Overflow
Control - New Facilities & Improvements**Project Scope**

This project will review the CSO Control Program and adjust the program as needed through the 2005 Plan Update process. The objective of this council-mandated review process is to meet on-going regulatory requirements and county business needs in performing a review & update of the county's CSO Control Plan. The review will provide formal opportunities to assess the impact of new regulations & initiatives impacting the Plan such as TMDLs, ESA and proposed Superfund listings. The 5-year CSO Update is required by the Department of Ecology and the NPDES permit for West Point. This Update assesses progress to date, status of current projects, and description & schedule for future projects. Enforceable commitment to complete the projects listed for the next permit period are made, and they are made an enforceable compliance schedule in the NPDES permit. This project is part of the Council-approved Regional Wastewater Services Plan.

2003 Milestones

12/2003 Complete consultant selection process

Phase	<u>Schedule</u>	Start	Finish	<u>Project Cost</u>	Year to Date	Life to Date
1 Planning		1/1/2001	12/31/2005	Type of Project Cost	DEC-03	DEC-03
2 Predesign				STAFF LABOR LTD Hours 18,515		
3 Final Design				CONSTRUCTION	\$9,333	\$9,333
4 Implementation				ENGINEERING CONTRACTS	\$60,078	\$558,155
5 Closeout				OTHER COSTS	\$4,745	\$37,550
6 Land Aquisition				STAFF LABOR COSTS	\$181,260	\$896,948
				Total Project Cost:	\$255,417	\$1,501,986

Current Contract Information**Contract Number and Title**13320-1937-0180 LAKE WASHINGTON CHINOOK RESEARCH
E83034E YEAR 2000 CSO PLAN UPDATE**Total Paid** **Contract Amt**
by Project\$366,335 \$371,335
\$661,630 \$963,350

Project No. and Title

423515 CSO Control & Improvement

Council District: 4,5,8,10**Project Manager:** Huber, Karen**2003 Budget:** \$0**Phase:** Planning**Appropriation:**A20620 Combined Sewer Overflow
Control - New Facilities & Improvements**Percent Spent:****Project Scope**

This project will implement 21 combined sewer overflow projects identified in the Council-approved Regional Wastewater Services Plan between the years 2004 and 2031. Combined Sewer Overflows (CSO) are pressure relief points in the conveyance lines in areas where both sewage and storm water are conveyed in a single pipe. Overflows of dilute wastewater occurs from these points to local waterbodies during bigger storms. The County owns 37 such overflows which are located along Lake Washington, the Ship Canal, the Duwamish River, Elliott Bay, and Puget Sound. CSO can contribute pathogens, organic material, sediments and chemicals to local waterbodies. Between now and 2008, work will occur on the following CSO control projects: Murray and Magnolia will complete design and be in construction; Barton and North Beach will complete predesign; If the County agrees to accelerate Ballard as a joint project with the City of Seattle, the project will complete predesign in 2008. This project is part of the Council-approved Regional Wastewater Services Plan.

2003 Milestones

All Planning Phase: Coordinate with the City of Seattle CSO Control Plan, County 2005 Update, HCP, sediment Management Plan and Green Water Quality Assessment projects on-going through 12/2002

Phase	<u>Schedule</u>	Start	Finish	<u>Project Cost</u>	Year to Date DEC-03	Life to Date DEC-03
1 Planning		1/1/2001	12/31/2007	Type of Project Cost		
				STAFF LABOR LTD Hours	4,122	
2 Predesign		1/1/2006	12/31/2007	OTHER COSTS	\$7,436	\$9,653
3 Final Design		1/1/2007	12/31/2007	PERMITS & ROW	\$1,500	\$1,500
4 Implementation				STAFF LABOR COSTS	\$81,620	\$201,511
5 Closeout						
6 Land Aquisition				Total Project Cost:	\$90,556	\$212,664

Current Contract Information**Contract Number and Title****Total Paid
by Project****Contract Amt**

Project No. and Title

423368 Sediment Management Plan

Council District: 4,5,8,10**Project Manager:** Stern, Jeff**2003 Budget:** \$2,082,000**Phase:** Planning**Appropriation:****Percent Spent:** 34%A20650 Combined Sewer Overflow
Control - Remediation**Project Scope**

This project addresses sediment contamination cleanups required under federal CERCLA and state MTCA regulations. The overall objectives of the SMP are to repair potential environmental damage in a timely, efficient and economical process, to prevent harm to public health, and to limit future liability. This project will implement the County's participation in the Lower Duwamish Waterway site MOA and Administrative Order on Consent and clean up the other contaminated sites under MTCA voluntary cleanup authority.

2003 Milestones

Tier 2

Nearfield model: phase 2 complete 8/03; agency approval 12/03

Lower Duwamish Waterway: negotiate phase 2 Scope of Work 3/03; start early action cleanup studies 6/03; Fill data gaps 10/03

Tier 3

Complete planning for Denny A&B, Hanford and Lander sites mid 2003

Complete 30% design reports for Denny A &B, Hanford and Lander sites in late 2003

Phase	<u>Schedule</u>	Start	Finish	<u>Project Cost</u>	Year to Date	Life to Date
				Type of Project Cost	DEC-03	DEC-03
1 Planning		12/19/2000	12/31/2007	STAFF LABOR LTD Hours 17,657		
2 Predesign		6/1/2002	12/31/2007	CONSTRUCTION	\$0	\$5,412
3 Final Design		1/1/2003	12/31/2006	ENGINEERING CONTRACTS	(\$36,432)	\$1,183,298
4 Implementation		3/1/2004	1/31/2007	OTHER COSTS	\$466,751	\$706,313
5 Closeout		1/1/2005	12/31/2006	STAFF LABOR COSTS	\$280,225	\$1,001,980
6 Land Aquisition				Total Project Cost:	\$710,544	\$2,897,003

Current Contract Information**Contract Number and Title**

	Total Paid by Project	Contract Amt
33090009 LAKE WASH STUDIES RESEARCH AGREEMENT	\$1,549,735	\$1,549,735
D27460D LAKE WASHINGTON ECOSYSTEM RESTORATION AND FLOOD DAMAGE	\$103,000	\$103,000
E83034E YEAR 2000 CSO PLAN UPDATE	\$661,630	\$963,350
MOA/TEACH ASSISTANCE FOR LOWER DUWAMISH WATERWAY REMEDIAL	\$5,000	\$5,000
MOA/TECH ASSIST./LOWER DUWAMISH WATERWAY REMEDIAL		\$5,000
P03014P/DISCHARGE MODELING FOR CONTAMINATED SEDIMENT CLEANUP	\$63,383	\$63,828
P23009P/SEDIMENT MANAGEMENT TECHNICAL SERVICES	\$61,050	

Project No. and Title

423528 Water Reuse Satellite Facility

Council District: 03**Project Manager:** Hsu, Terry**2003 Budget:** \$2,125,000**Phase:** Predesign 30%**Appropriation:****Percent Spent:** 115%

A20920 Water Reuse - New Facilities

Project Scope

The Sammamish Valley Reclaimed Water Production Facility will produce reclaimed water for irrigation in the Sammamish Valley. The facility will draw untreated wastewater from the North Sammamish interceptor, treat it to Class A standards, and deliver it to uses through a new water distribution system. The facility will be sized to meet irrigation demands in the valley and is initially intended to operate only during the irrigation season. Initial production capacity is anticipated to be 1 to 3 mgd. The capacity of the facility will be determined in predesign based on negotiations with potential users and may be constructed in phases. Solids will be returned to the sewer for processing at one of the regional treatment plants. Design of the facility will respond to the ultimate siting of the Brightwater Treatment Plant.

King County began predesign on the facility in December 2001; however, there were questions about the suitability of the original site raised by the local jurisdiction so new predesign efforts are underway for alternative sites and configuration. The schedule for the project will be revised after confirming a new site for the facility. The current thinking is to design and construct a temporary satellite treatment system in the Sammamish Valley and to ultimately deliver up to 10 million gallons per day of reclaimed water from the Brightwater Facility.

2003 Milestones

4/2004 Develop project plans

<u>Project Cost</u>				<u>Year to Date</u>	<u>Life to Date</u>
<u>Phase</u>	<u>Schedule</u>	<u>Start</u>	<u>Finish</u>	<u>DEC-03</u>	<u>DEC-03</u>
1 Planning		1/1/2002	3/31/2002		
2 Predesign		4/1/2002	11/28/2002		
3 Final Design		9/1/2002	8/1/2003		
4 Implementation		8/3/2003	6/1/2004		
5 Closeout		6/1/2004	12/31/2005		
6 Land Aquisition		9/30/2002	3/31/2003		
<u>Type of Project Cost</u>					
STAFF LABOR LTD Hours 6,444					
CONSTRUCTION				\$1,067	\$50,692
ENGINEERING CONTRACTS				\$2,107,709	\$3,588,414
OTHER COSTS				\$94,113	\$181,801
PERMITS & ROW				\$20,393	\$36,541
STAFF LABOR COSTS				\$213,352	\$457,164
Total Project Cost:				\$2,436,634	\$4,314,612

Current Contract Information**Contract Number and Title**

Total Paid **Contract Amt**
by Project

C03067C/EAST DIVISION MECHANICAL CONSTRUCTION 2000-2001	\$378,830	\$400,000
E03016E/ON-CALL ENGINEERING SUPPORT FOR THE WASTEWATER TREATMENT	\$322,350	\$500,000
E13030E/ENGRG SVCS FOR SAMMAMISH VALLEY RECLAIMED WATER PRODUCTION	\$3,538,512	\$5,014,814
P83003P AGREEMENT FOR PROFESSIONAL CONSULTANT SERVICES	\$29,282	\$100,000

Project No. and Title

423523 RWSP Water/Wastewater Conservation Program

Council District: All**Project Manager:** Sullivan, Jo**2003 Budget:** \$300,000**Phase:** Planning**Appropriation:****Percent Spent:** 217%

A20920 Water Reuse - New Facilities

Project Scope

Under the Regional Wastewater Services Plan (RWSP), the King County Council implemented a water conservation program in 2001 to provide a holistic approach in water resource management and to reduce impacts to the wastewater system. \$300,000 per year was earmarked to fund the program for five years, beginning in 2001. The current components of the program include a partnership with the King County Housing Authority to maximize water conservation in low-income residences by retrofitting their laundry facilities with water conserving washing machines and retrofitting approximately 400 multi-family units with low-flow toilets. A second partnership has been established with the King County Department of Health and Human Services Housing Rehabilitation Program to retrofit approximately 60 of their qualified homes undergoing rehabilitation with low-flow toilets. This will save water and establish an interagency cooperative agreement. Program staff are also participating in the Water Conservation Coalition of Puget Sound in order to bring King County into the regional water conservation community and network with water districts that are interested in partnerships.

2003 Milestones

Phase	<u>Schedule</u>	Start	Finish	<u>Project Cost</u>	Year to Date	Life to Date
1 Planning		1/1/2001	12-31-2005	Type of Project Cost	DEC-03	DEC-03
2 Predesign				STAFF LABOR LTD Hours 34		
3 Final Design				CONSTRUCTION	\$20,562	\$20,562
4 Implementation				ENGINEERING CONTRACTS	\$216,132	\$231,132
5 Closeout				OTHER COSTS	\$448,273	\$724,283
6 Land Aquisition				PERMITS & ROW	\$0	\$0
				STAFF LABOR COSTS	(\$33,311)	(\$32,672)
				Total Project Cost:	\$651,656	\$943,305

Current Contract Information**Contract Number and Title****Total Paid
by Project****Contract Amt**