

Regional Wastewater Services Plan

Annual Report

December 2002



King County

Department of
Natural Resources and Parks

Wastewater Treatment Division

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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 for the period January through December 2002. 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 November 2002.

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 2002. The highlights for RWSP implementation in 2002 are presented below.

Treatment Plant Siting

The Brightwater siting program released a Draft Environmental Impact Statement (Draft EIS) on November 6 that analyzed the characteristics, impacts, and mitigation measures for three Brightwater alternatives. Two of the alternatives are based on the Route 9 treatment plant site located in unincorporated Snohomish County north of Woodinville; the other alternative is based on the Unocal treatment plant site located in the City of Edmonds. A "No Action" alternative was also evaluated. Releasing the Draft EIS marked the beginning of a 75-day comment period, during which King County hosted four public hearings to provide additional information about the Brightwater alternatives and receive public comment.

Conveyance

Regional conveyance planning continues in conjunction with the Brightwater siting process and planning was completed on two basins this year—South Lake Sammamish and South Green River. In the latter basin, King County and the Soos Creek Water and Sewer District agreed on a local and regional plan to identify and implement trunk sewer system improvements necessary for wastewater services to Soos Creek and Black Diamond. This plan optimizes the use of both King County and Soos Creek wastewater facilities. In addition, five capital conveyance projects are in design and three are in construction or underway.

Infiltration and Inflow

The I/I program completed flow monitoring in January and is beginning to model the conveyance system using the flow information. The program is also moving forward with 10 pilot projects for I/I rehabilitation and is developing standards and policies for local agencies regarding new construction, rehabilitation of existing systems, and system maintenance.

Combined Sewer Overflows

The CSO program began work to remediate contaminated sediments in the nearshore area adjacent to the Denny Way CSO. The program also developed a request for proposals to seek consultant support for developing the CSO program review—a precursor to CSO Control Plan Update due in 2005.

Biosolids

The biosolids program completed its evaluation of four biosolids technologies in 2002. Additional testing of the Vertad® thermophilic digestion process will begin in 2003.

Water Reuse and Conservation

The Water Reuse program had many accomplishments in 2002. The Technology Demonstration Project was completed in March 2002, evaluating seven wastewater treatment technologies for their ability to cost effectively produce reclaimed water. The Sammamish Valley Reclamation Facility is finishing predesign and beginning design work; the facility will produce 1–2 million gallons per day of reclaimed water for irrigation in the Sammamish Valley. In addition, King County partnered with Seattle and other agencies to replace washing machines with water-efficient models in low-income residential communities, saving an estimated 11 million gallons of water each year.

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 describes the activities in 2002 to site the Brightwater facilities, beginning with an overview of the Phase I and II Brightwater siting activities in 2000–2001.¹

Brightwater Siting Process–Phase I & II

King County began identifying sites for the Brightwater facilities in January 2000 using a three-phase approach. The goal of Phase I was to use King County Council-adopted policy siting criteria to identify a small group of potential sites for the treatment plant from a pool of over 100 potential sites. The County completed Phase I in May 2001, having identified six candidate sites and eight candidate outfall zones in Puget Sound. On May 14, 2001, the King County Council accepted the candidate sites and outfall zones for further evaluation, as well as a set of refined policy criteria for use in narrowing the number of sites under Phase II.

Phase II 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, in consultation with the Snohomish County Executive, transmitted a recommendation to the King County Council to advance two candidate systems to Phase III for environmental review under the State Environmental Policy Act (SEPA). One is the **Unocal** system in Edmonds and the other is the **Route 9** system north of Woodinville (Figure 1). On December 10, 2001, the Council approved these systems for advancement to Phase III.

1. For an overview of the Phase I and II of the Brightwater siting process, please see pages 5–10 of the *Regional Wastewater Services Plan 2001 Annual Report*, released in December 2001. This document can be accessed on the RWSP Web site at <http://dnr.metrokc.gov/wtd/rwsp/library.htm>. More information about the siting process can be found at <http://dnr.metrokc.gov/wtd/brightwater/library.htm>.

Figure 1
Treatment Plant Sites Evaluated in the Draft EIS



Brightwater Siting Process – Phase III

King County DNRP began Phase III of the siting process in January 2002. The primary activity under this phase is to conduct an environmental review of the Brightwater facilities under the SEPA guidelines. In the first half of 2002, DNRP focused on developing the scope of the Brightwater Draft Environmental Impact Statement (Draft EIS). The scope identified alternatives for the Brightwater project, including the development of several conveyance corridors for each treatment plant site and the possible location of pump stations and tunnel portals along those corridors. These alternatives were described in a scoping notice mailed to approximately 60,000 people in May 2002.² Recipients included 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, DNRP 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.

² The scoping notice can be viewed on-line at <http://dnr.metrokc.gov/wtd/brightwater/library.htm>

Draft EIS Alternatives

Three alternatives were identified for evaluation in the Draft EIS as a result of the scoping process.

1. A treatment plant at the Route 9 site with conveyance pipelines in deep tunnels primarily under 195th and 205th Streets and a marine outfall off Point Wells to Outfall Zone 7S (Preferred Alternative)
2. A treatment plant at the Route 9 site with conveyance pipelines in deep tunnels primarily under 228th Street SE and a marine outfall off Point Wells to Outfall Zone 7S
3. A treatment plant at the Unocal site with an influent pipeline to carry untreated wastewater from King County's existing pipelines near SR-405 in Bothell through Kenmore and Lake Forest Park to Edmonds. A marine outfall would be located off Pt. Edwards in Outfall Zone 6

The King County Executive 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, and it would provide 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 would provide more 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. However, being the Executive's Preferred Alternative does not mean that it will ultimately be selected. The final decision will be based on the results of the Draft EIS; comments from the public, government agencies, tribal governments, and elected officials; and other factors such as cost and regional policies. The King County Executive will make a final decision after completion of the Final EIS in mid-2003.

Each of the three action alternatives being evaluated in the Draft EIS are depicted in Table 1 and summarized below to provide a broad overview of the treatment, conveyance, and outfall characteristics of each alternative. A "No Action" Alternative is also described.

Table 1
Comparing Key Features of the Brightwater Alternatives

| Features | Route 9 195th Street System | Route 9 228th Street System | Unocal South System |
|---------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Affected jurisdictions | <ul style="list-style-type: none"> ▪ Cities of Woodinville, Bothell, Kenmore, Lake Forest Park, Shoreline, Mountlake Terrace, and Edmonds ▪ Town of Woodway ▪ Unincorporated King and Snohomish Counties | <ul style="list-style-type: none"> ▪ Cities of Bothell, Brier, Mountlake Terrace, Edmonds, Shoreline, Woodinville, Kenmore, and Lake Forest Park ▪ Town of Woodway ▪ Unincorporated King and Snohomish Counties | <ul style="list-style-type: none"> ▪ Cities of Edmonds, Mountlake Terrace, Shoreline, Lake Forest Park, Kenmore, and Bothell ▪ Town of Woodway ▪ Unincorporated King and Snohomish Counties |
| Treatment plant capacity | <ul style="list-style-type: none"> ▪ 36 mgd in 2010 ▪ 54 mgd in 2040 | <ul style="list-style-type: none"> ▪ 36 mgd in 2010 ▪ 54 mgd in 2040 | <ul style="list-style-type: none"> ▪ 36 mgd in 2010 ▪ 54 mgd in 2040 ▪ 72 mgd in 2040 (if Edmonds and Lynnwood contribute flow) |
| Total conveyance corridor lengths | <ul style="list-style-type: none"> ▪ 7.8 miles – influent ▪ 12.5 miles - effluent | <ul style="list-style-type: none"> ▪ 7.8 miles – influent ▪ 12.9 miles - effluent | <ul style="list-style-type: none"> ▪ 11.6 miles – influent |
| New pump stations along conveyance route | None | None | One at Portal 11 (if the gravity-forcemain option is selected) |
| Pump stations at treatment plant | One influent One effluent (if the gravity-forcemain option is selected) | One influent One effluent (if the gravity-forcemain option is selected) | One influent One effluent |
| Total portal siting areas along conveyance route | 11 | 12 | 7 (8 if the forcemain-only option is selected) |
| Outfall Zone | Zone 7S | Zone 7S | Zone 6 |
| Estimated Cost (2002 dollars) | \$1.3 billion | \$1.3 billion | \$1.1 – 1.2 billion |

Route 9-195th Street System (Preferred Alternative)

The Route 9-195th Street System would consist of a treatment plant built at the Route 9 site in unincorporated Snohomish County, a conveyance corridor that includes both an influent pipeline extending from existing pipelines in Lake Forest Park to the treatment plant site, and an effluent pipeline from the treatment plant site to an outfall in Puget Sound. The effluent pipeline would follow a corridor that extends from the treatment plant site to NE 195th Street in King County, turns northwest to NE 205th Street in King County, and ends in Outfall Zone 7S west of Shoreline.

Treatment Plant Location and Layout

The Route 9 site is located in unincorporated Snohomish County east of SR-9, just north of the intersection of SR-9 and SR-522 and the City of Woodinville. It consists of parcels owned by various individuals, businesses, and organizations. The site is 106 acres in area. It is roughly rectangular. The northern portion of the site, which is outside the urban growth boundary, is largely undeveloped and partially forested with wetland areas. The central and southern portions of the site are developed for commercial and industrial land uses. Street access to the site would be at the intersection of Route 9 and 228th Street.

The footprint for a 36-mgd treatment plant, with room for future expansion to 54 mgd, would occupy approximately 47 acres. These facilities would include process facilities, administrative and maintenance buildings, roads, and stormwater detention and treatment ponds. Additional area would be used for buffers between treatment facilities and the property line.

Conveyance Features

Figure 2 shows the conveyance features of the Route 9 Preferred Alternative. The influent portion of the corridor (which will carry raw wastewater to the plant) is 7.8 miles long; the effluent portion of the corridor (which will carry treated wastewater to an outfall in Puget Sound) is 12.5 miles long. Eleven portal siting areas for use in building the conveyance tunnels are located along both corridors.³ No new pump stations are proposed for the Route 9 conveyance corridors, though an effluent pump station may be needed at the treatment plant site.

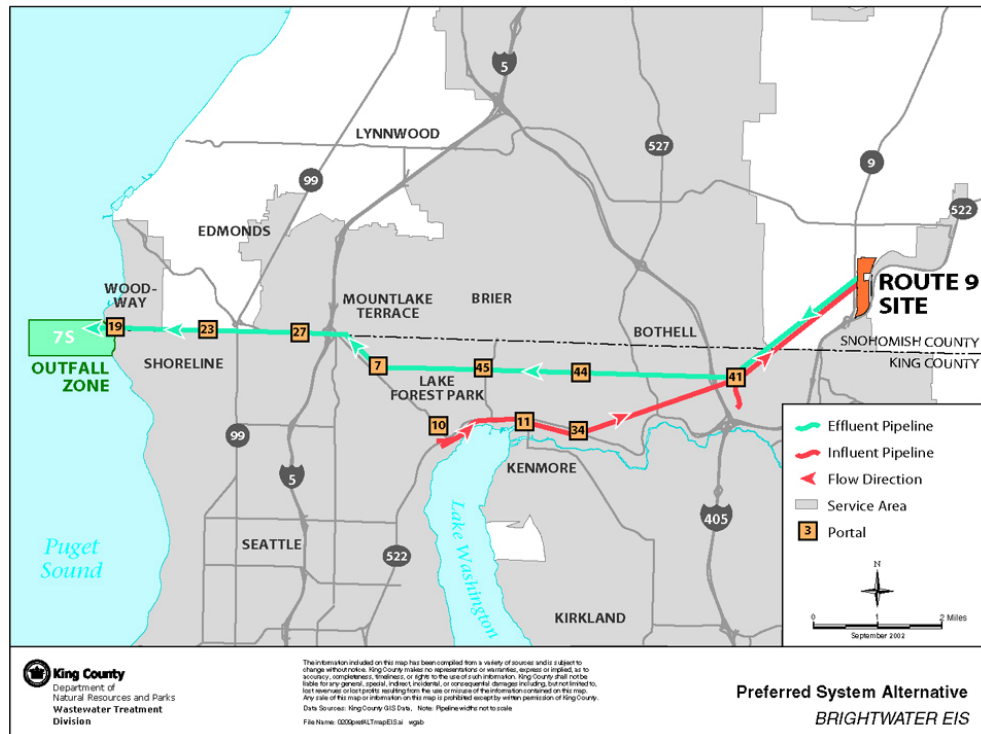
The influent portion of the corridor would begin near 44th Avenue NE and NE 178th Street in Lake Forest Park, travel east to approximately 80th Avenue NE and NE Bothell Way, turn northeast to NE 195th Street and 120th Avenue NE, and terminate at an influent pump station on the Route 9 site at 228th Street SE. The effluent portion of the corridor would travel from the Route 9 site southwest to NE 195th Street in King County, then westward to Ballinger Way NE/SR-104. From there, the corridor would turn northwest to the county line at 15th Avenue NE and then travel west along the county line to an outfall in Zone 7S at Point Wells.

Marine Outfall

The outfall pipe and diffuser for the Route 9 system would be placed within Outfall Zone 7S, which is located at Point Wells. This zone extends out to between 3,000 and 7,500 feet offshore into water depths of between 500 and 700 feet, where significant mixing of treated wastewater with surrounding marine waters would occur.

³ Portal siting areas are areas within which deep shafts (portals) are excavated to serve as access points for constructing the conveyance tunnels.

Figure 2
Preferred Alternative – Route 9 Site with 195th Street Effluent Corridor



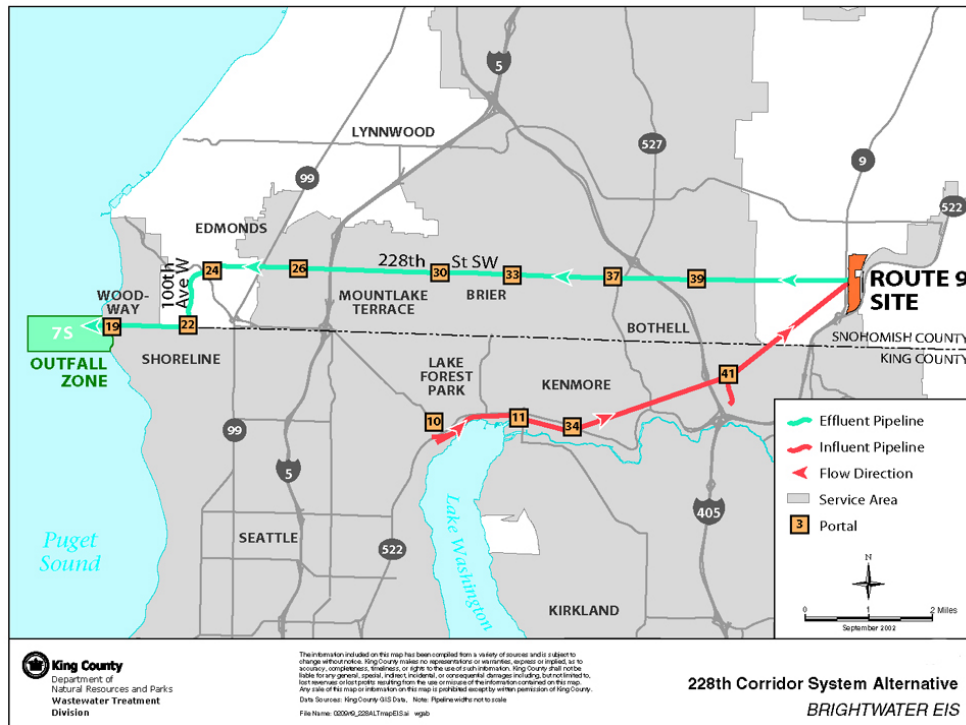
Route 9-228th Street System

The Route 9-228th Street System would include the same treatment plant site, influent corridor, and outfall zone as the 195th Street System. However, the effluent corridor would follow a different alignment (generally along 228th Street in Snohomish County), and it would have a different set of effluent corridor portal siting areas.

Conveyance Features

Figure 3 shows the conveyance features of the Route 9-228th Street System. The effluent portion of the Route 9-228th Street Corridor initially follows the 228th Street SE/228th Street SW right-of-way from the Route 9 site to a point near the intersection of 228th Street SW and 95th Place W. Here, the corridor turns south and generally follows 100th Avenue W until intersecting NW 205th Street and turning west to connect to the Zone 7S outfall at Point Wells near Richmond Beach Drive NW. The 12.9-mile corridor, which generally follows public rights-of-way, includes 8 portal siting areas for use in constructing the effluent tunnel.

Figure 3
Route 9 Site with 228th Street Effluent Corridor



Unocal System Alternative

The Unocal System Alternative features a treatment plant located at the Unocal site in the City of Edmonds, an influent pipeline to carry untreated wastewater from King County's existing pipelines near SR-405 in Bothell through Kenmore and Lake Forest Park to Edmonds, and a marine outfall located off the Edmonds shoreline in Zone 6. Because the treatment plant would be located near Puget Sound, the Unocal alternative does not need an effluent corridor.

Treatment Plant Location and Layout

The Unocal site is located in the City of Edmonds and is owned by the Unocal Corporation—an international oil and natural gas exploration and production company. The company formerly used the site to store petroleum products, though they have subsequently removed the storage tanks. The 53-acre property is bounded by wetlands and a creek to the northeast, residences to the south and southeast, and a railroad, marsh, marina, and beach to the west and northwest. The site slopes up from the wetland and beach areas. The site would be terraced in order to provide sufficient level grade for the treatment facilities. Street access to the site would be from State Route-104.

The footprint of the treatment plant (including facilities, buildings, and roads) would likely cover approximately 30 acres of the site when the 36-mgd plant is completed in 2010 and approximately 32 acres when the 54-mgd plant is completed in 2040.

This site also provides room for buffers, though they would be relatively narrow compared to those at the Route 9 site.

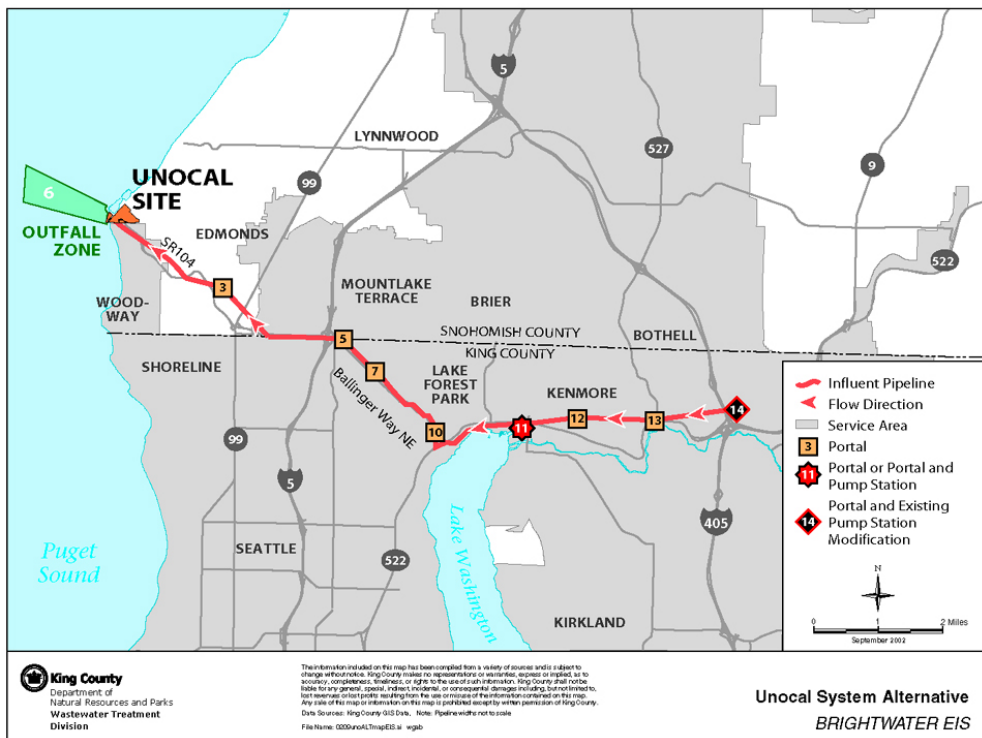
Conveyance Features

Figure 4 shows the conveyance features of the Unocal System. The system includes an influent corridor beginning in the vicinity of the existing North Creek Pump Station and generally following a straight path to the Kenmore Pump Station. From there, the corridor would generally follow Bothell Way NE (SR-522), Ballinger Way NE (SR-104), N and NW 205th Street, Edmonds Way (SR-104), and Pine Street to influent pump station on the Unocal site. The conveyance corridor will require seven to eight portal siting areas and possibly one new off-site pump station. The approximate length of the influent corridor is 11.6 miles.

Marine Outfall

Outfall Zone 6, located at Point Edwards near the Unocal treatment plant site, extends out between 3,000 and 7,500 feet offshore into water depths of between 500 and 700 feet. There is a marine sanctuary at the north end of the zone and a major structure in the water (the former Union Oil pier). As with Outfall Zone 7S, the discharged wastewater effluent would be thoroughly mixed with surrounding marine waters.

Figure 4
Unocal System



No Action Alternative

Under the No Action Alternative, King County would not implement the part of the Regional Wastewater Services Plan (RWSP) that calls for construction of a third wastewater treatment plant. However, King County would continue to implement other RWSP programs and projects such as expanding the South Plant in Renton in 2029, reducing the volume of combined sewer overflows, and reducing the amount of infiltration and inflow (groundwater and stormwater) that enters the conveyance pipelines. The County would also continue to implement the Industrial Waste and Household Hazardous Waste programs to improve the quality of wastewater and biosolids and look for opportunities to recycle and reuse reclaimed water.

While these programs will help to maintain the wastewater system and provide additional environmental protection in some areas, they will not eliminate the need to construct additional treatment capacity for increasing wastewater flows. Significant degradation of the environment and the potential for public health impacts could begin in 2010 as a result of untreated wastewater overflows. This impact may be limited if the Washington State Department of Ecology imposes a moratorium on building throughout the King County Service Area. Further details on the impacts of the No Action Alternative on the environment, such as the impacts to water quality and fish habitat, are described in Chapter 3 and subsequent chapters of the *Brightwater Draft Environmental Impact Statement*.⁴

Public Involvement

King County DNRP continues to place a high priority on involving stakeholders and members of the public in the Brightwater siting process. Many new activities were initiated in 2002, such as the initiation of community task forces and community design workshops, in addition to the continuation of ongoing activities such as quarterly newsletters, speakers' bureau, and the Web site. These and other activities are summarized below.

Public Meetings and Hearings: Public scoping meetings offered in June 2002 provided the public with an opportunity to comment on the environmental and community issues they believe should be addressed in the environmental impact statement. Public hearings were also held in December 2002 to offer the public the opportunity to comment on the Brightwater Draft Environmental Impact Statement.

Community Task Forces: A Unocal site Community Task Force and a Route 9 site Community Task Force were formed as a way to involve community members who live near and around each potential treatment plant site in the Brightwater siting process. The task forces have assisted in planning informational seminars and events designed to involve the public in their area and assisted in the planning of the community design workshops.

⁴ The entire Brightwater Draft EIS is available on-line at <http://dnr.metrokc.gov/wtd/brightwater/env/>

Community Design Guidelines Workshops: A series of two workshops took place in summer 2002 in both the communities of the Route 9 and Unocal sites. They offered the public the opportunity to become actively engaged in how the Brightwater plant is designed.

Conveyance Community Outreach: A number of briefings and five informational meetings occurred in summer and early fall 2002 to inform and involve communities that may be affected by potential conveyance corridors, pump stations, or portal locations.

Executive Advisory Committee: In June 2000, King County Executive Ron Sims and Snohomish County Executive Bob Drewel jointly appointed regional leaders to this committee to advise the two county executives on site selection criteria and a variety of regional policy issues and concerns. In 2002 the Committee helped develop policy questions for the executives to consider during their deliberations on technological, environmental, financial, and regional considerations. The committee reviewed issues such as reclaimed water, technology considerations, and the Draft EIS.

Educators Workgroup: In fall 2002, a group of educators began meeting to discuss educational needs and opportunities associated with Brightwater.

Fairs and Festivals: Informational booths on the Brightwater project were held at a number of fairs and festivals at various locations throughout the siting area in spring and summer 2002. Staff answered questions and discussed issues with the public.

Speakers' Bureau, Meetings, and Briefings: Brightwater project staff are available to talk with and respond to concerns of groups or organizations at any time. Since January 2000, over 350 meetings, briefings and speakers' bureau activities have taken place.

Newsletters and Mailings: A project newsletter is distributed by mail at quarterly intervals and is available at a number of locations in the siting area. The public can send in their comments or questions through the use of the newsletter's postage-paid comment form. Postcards and flyers announcing activities and special events are also distributed by mail and posted on the project web site. In 2002, the project team mailed approximately 60,000 scoping notices and approximately 60,000 summaries of the DEIS to residents, businesses and land owners in the areas potentially affected by the project. Both documents included postage paid comment forms.

Project Web site: A project Web site that is regularly updated serves to both inform the public and invite their participation in the Brightwater siting process. The site receives approximately 1,000 visitors each month, allowing them to make comments, ask questions, and receive information. In November 2002, the Web site received approximately 2000 visitors. It can be accessed at <http://www.dnr.metrokc.gov/wtd/brightwater>

December Public Hearings

About 320 people attend four public hearings on the Brightwater Draft EIS in December 2002. The meetings took place in Woodinville, Bothell, Edmonds and Kenmore. Participants learned more about the how the Draft EIS analyzes the proposed treatment plant sites, conveyance system, and outfall. Attendees were invited to make formal comments either verbally or in writing. Approximately 50 people gave testimony at the meetings to a court reporter. King County will respond to every comment, written or verbal, in the Final EIS. Public comment on the two treatment plant sites, the conveyance system, and the Draft EIS are summarized as follows.

Proposed Route 9 Treatment Plant Site

Participants pointed out that the Route 9 location requires more miles of pipeline than the Unocal site and therefore has greater potential for impacts. Some suggested that the site is too far from a major water body. They emphasized the need to protect the Cross Valley Aquifer from possible contamination from spills and to avoid dewatering local wells. Participants wondered whether there were adequate emergency services in the area if a spill should occur and what would happen during power outages. There was concern that the valley setting of the site would “trap” potential odors and cause them to linger in the area, as they currently do from other industries. There were concerns about traffic congestion. People expressed frustration that the treatment plant would not serve Route 9 neighbors who are on septic systems and are outside of the Urban Growth Area.

Proposed Unocal Treatment Plant Site

Participants noted that the Unocal site would require significantly more soil excavation resulting in more trucks and more wear and tear on the roads. They asked for more information about slope stabilization, particularly with respect to earthquakes. They expressed concern about impacts, including potential spills, to a popular waterfront area that includes a dog park, walking areas, and play equipment. People asked for more information about traffic impacts, including construction worker parking. They pointed out that Edmonds has a “regional” treatment plant that serves a number of local sewer districts.

Conveyance system

Some participants said they were just beginning to learn more about the conveyance system. People expressed concern about odors from conveyance facilities. There were questions about how specific sites for conveyance facilities would be selected.

Comments on the Draft Environmental Impact Statement

Participants had a number of comments on the Draft EIS and SEPA process. People said there was too much information on some issues and not enough on others. Some people asked for more technical information about traffic, aquifers, air quality, and

economic impacts. Participants suggested additional geotechnical information be gathered on the Route 9 site since there was so much existing data on the Unocal site. People suggested that the air quality analysis include site-specific data on air currents. Some people suggested that the Draft EIS comment period be extended.

Consultant Selection

King County DNRP has negotiated several contracts during 2002 for engineering, architectural, and geotechnical services for the Brightwater treatment plant and conveyance system. The consultant contract information is shown in Table 2.

Table 2
Brightwater Consultant Contracts

| Consultant | Responsibility | Notice to Proceed | Major Milestones in 2003 |
|---------------------------|-------------------------------------------------------------------|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| CH2M Hill | Engineering services for the treatment plant | May 2002 | <ul style="list-style-type: none"> • Prepare Facilities Plan • Begin predesign; complete by winter 2003/2004 |
| HDR Engineering, Inc. | Engineering services for the conveyance system and marine outfall | November 2002 | <ul style="list-style-type: none"> • Engineering and Environmental Support for Final EIS • Complete predesign report |
| Mithun/Hargraves/Streeter | Architectural design for the treatment plant | December 2002 | <ul style="list-style-type: none"> • Complete conceptual design and preliminary design for plant site |
| CDM | Geotechnical services for the conveyance system | December 2002 | <ul style="list-style-type: none"> • Complete soil borings on conveyance alignments |

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 requires DNRP to recommend odor control policies to the King County Council for inclusion in the RWSP.

King County DNRP has nearly completed a comprehensive set of policy recommendations for preventing nuisance odors in and around King County's wastewater facilities and significantly decrease the odor impacts on communities near the County's wastewater facilities. The recommendations are intended to create a broad program of odor prevention that goes beyond conventional odor control. The recommendations will bring the Wastewater Treatment Division to the forefront of wastewater utilities in its approach to dealing with odor issues. We expect to bring the odor control recommendations before the King County Council early in 2003.

Schedule for 2003

The focus in the first half of 2003 will be to respond to comments on the Brightwater Draft EIS and issue the Final EIS in mid-year. Other important efforts include engineering, architectural, and geotechnical support the Brightwater treatment plant and conveyance system and a continuation of our public involvement activities. The major milestones for work in 2003 are summarized below.

- Issue the Final EIS in mid-2003
- Develop detailed site information, wetland delineation, tree survey, soils testing, surface and ground water investigations and geotechnical research required to advance the design and permitting process
- Develop a draft and final facility plan for the Department of Ecology's for review and approval
- Complete land acquisitions (for willing sellers; if condemnation is required the process will extend into 2004)
- Continue public involvement efforts, responding to questions and concerns from the public, educating the public, and sharing project-related information
 - ✓ Form a treatment plant site committee of community members to advise us and assist in developing a final design concept for Brightwater plant and help identify mitigation opportunities for the community
 - ✓ Continue briefings and meetings with interest groups and leaders to ensure that affected parties have their concerns represented
 - ✓ Hold a series of design guidelines workshops involve community members in discussions on how the Brightwater plant could be designed
 - ✓ Continue informational mailings, meetings, and briefings to inform and involve residents, businesses, landowners, and local jurisdictions who may be affected by potential conveyance corridors

Conveyance Improvements

Planning, design, and construction work continues on a number of conveyance projects outlined in the Regional Wastewater Services Plan. Conveyance improvements are outlined under three sections, beginning with planning activities carried out as part of the Conveyance System Improvement program. The second section describes projects in design, and the third section describes projects in construction. Schedule information is presented for each planning area and each project. For additional schedule information on the RWSP conveyance projects in design or construction, please refer the final section in this report: RWSP Project Information.

Conveyance Planning

Wastewater basin planning is underway in several of the county's regional basins as part of the Conveyance System Improvement (CSI) program. The focus of the CSI program is to upgrade and improve the level of service of the regional conveyance system for the 34 local sewer agencies in King and Snohomish Counties. The CSI program integrates 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.⁵

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 began a comprehensive planning process to evaluate the area's conveyance needs. The teams also identified a range of flow management alternatives and specified working alternative to address the needs. Planning is underway this year in four planning areas: south Lake Sammamish, north Lake Sammamish, north Lake Washington, and south Green River (Figure 5).

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

Figure 5
Current Conveyance Planning Areas

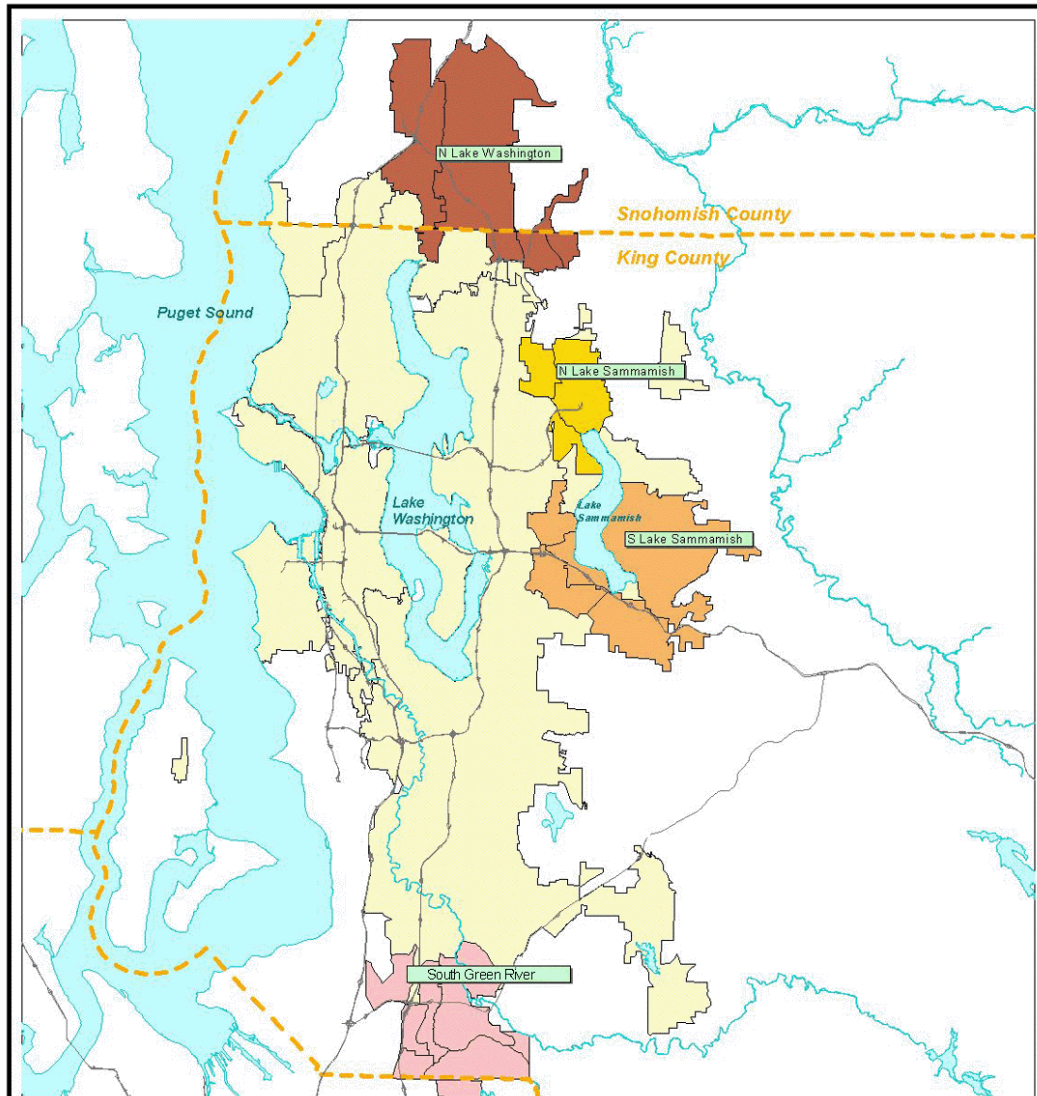
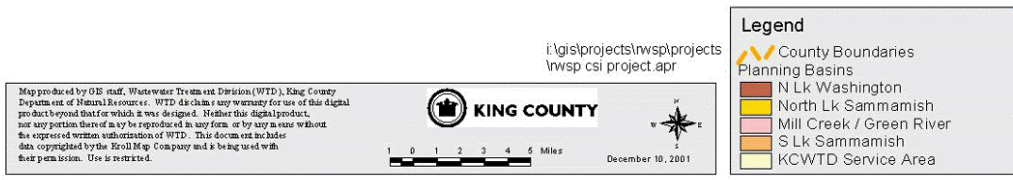


Figure 5: Current Conveyance Planning Areas



South Green River Planning Area

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—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 (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. For example, in early 2002 King County and the Soos Creek Water and Sewer District (WSD) agreed on a local and regional plan⁶ to identify and implement trunk sewer system improvements necessary for wastewater services to Soos Creek and Black Diamond. This plan optimizes the use of both King County and Soos Creek wastewater facilities. King County made several commitments as part of the plan.

- 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 Soos Creek WSD in developing and operating existing and planned regional facilities
- Eventually convey Black Diamond flows entirely through King County facilities

These commitments achieve King County's goals for sewer improvements in the Soos Planning Area and ensure that the improvements benefit the widest possible area and the greatest number of ratepayers.

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. A final decision on the alternative will be made in 2003.

South Lake Sammamish Planning Area

The South Sammamish Basin 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 Lake Sammamish. The primary problem in this area is the

⁶ The plan is detailed in a report titled "Mill Creek/Green River Subregional Planning Area Final Task 250 Supplemental Report, Working Alternative 3A Soos Planning Zone." The report is available on-line at <http://dnr.metrokc.gov/wtd/csi/csi-docs/phase2/grn250-soos.pdf>

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.

King County completed basin planning in the South Sammamish Basin in the third quarter of 2002, developing working alternatives for conveyance upgrades, diversions, and projects to attenuate peak flows, such as storage and I/I control.

North Lake Sammamish Planning Area

Planning is nearly complete in the North Lake Sammamish Planning Area, which includes Redmond and the north end of Lake Sammamish. While there are no significant problems in this high growth basin, flow management planning was accelerated to coordinate with the Brightwater Treatment Plant siting process because wastewater from this area will ultimately be sent to the new plant.

North Lake Washington Planning Area

The North Lake Washington Planning Area includes the areas north and east of the Kenmore Interceptor in King and southern Snohomish Counties. Problems in this basin include overflows from heavy rains and failures resulting from power loss. This is also an area of high population growth. Construction has begun on the North Creek Storage Facility, and we have installed backup generators at the Kenmore Pump Station.

North Lake Interceptor

The North Lake Interceptor (NLI) is being integrated into the North Lake Washington basin planning and development of the Brightwater conveyance system. The section of the proposed Brightwater conveyance systems identified as the NLI will convey flow eastward from the McAleer/Lyon Trunks to the Kenmore Pump Station and then on to either the Route 9 Treatment Plant or northward to the Unocal treatment plant site depending on which is selected. This conveyance will enable us to send flow to the Brightwater Treatment Plant (Unocal or Route 9) or to the West Point Treatment Plant during emergencies. Integrating this section of pipe into the Brightwater conveyance system will ensure that the county can, in the long run, convey most flow away from the Lake Line, except for local flow sent directly to the Lake Line. Because the North Lake Interceptor is integrated into the Brightwater conveyance system, it will no longer be described separately.

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 final consultant 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 based on various costs and risks to public health. The second report, completed in August, assessed the seismic vulnerability of six other submerged lake lines and three Ship Canal siphons. The third report, due in early 2003, will evaluate 30 additional pipes in submerged or liquifiable soils. We are currently evaluating the recommendations made in the first two reports and expect to decide how to proceed with possible retrofits or other actions by the second quarter of 2003.

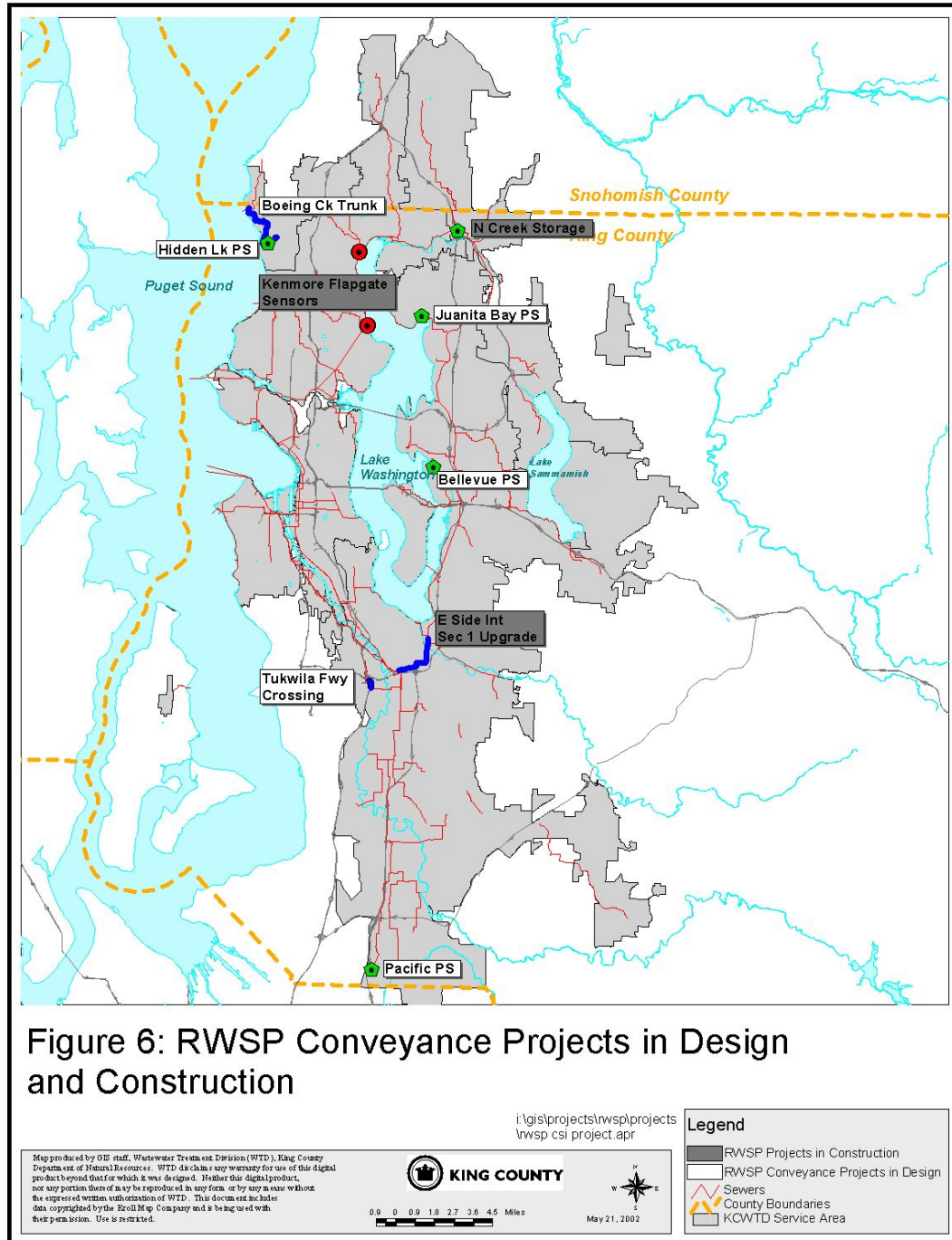
Projects in Design

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 five RWSP projects currently in design. The projects are shown in Figure 6.

Bellevue Pump Station

A preferred alternative was selected to divert excess flows from the Swayolocken Pump Station toward the East Side Interceptor. The proposed alternative is to upgrade the Bellevue Pump Station and construct a new 5,500 foot-long, 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 Swayolocken Pump Station. Planning for this project was completed in 2000, and consultant selection for the design consultant is currently underway. Final design is expected to be completed in 2004.

Figure 6
RWSP Conveyance Projects in Design and Construction



Pacific Pump Station

The existing 1.6-mgd Pacific Pump Station is located in City of Pacific street right-of-way in a residential area. It has insufficient capacity to convey the existing and future peak flows. This project will construct a new 3.3-mgd pump station at 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 reduced. Predesign for the project was completed in June 2002. Final design is scheduled for completion in June 2003.

Juanita Bay Pump Station

The Juanita Bay Pump Station is an aging facility that is experiencing significant operational difficulties in conveying current flows and has insufficient capacity to convey future flows. The working alternative recommended by the planning study was to replace the existing 14.2-mgd pump station with a new pump station. The draft predesign report, completed in June 2002, proposed a conceptual design for the new 27-mgd pump station. The report also determined that at least one of the two Juanita Force Mains would need to be upgraded in capacity by the year 2010. A site for the new pump station was identified and purchased. As of the end of 2002, technical issues for the conceptual design are being worked out as the predesign phase concludes and planning for the final design phase begins.

Hidden Lake Pump Station and Boeing Creek Trunk

The 40-year old Hidden Lake Pump station does not have capacity to handle the 20-year design storm, 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 and reduction of infiltration and inflow. The system improvements will occur in two phases: phase I will control overflows for the five-year storm and increase the capacity of the Boeing Creek Trunk to handle the two-year storm. The capacity increases include a new Hidden Lake Pump station with a firm capacity of 4.1 mgd and a future peak capacity of 5.5 mgd built on the existing site; a 1.25 MG storage facility constructed upstream of the pump station; and approximately 7,500 linear feet of pipeline replacement. Phase 2 will consist of additional pipeline replacement. The project is being built in phases to determine whether or not I/I reduction will enable us to reduce the size of planned facilities. The length of pipe to be replaced will be determined based on the amount of I/I reduction achieved. Predesign was completed in November 2002 and final design should be completed in fall 2003.

Tukwila 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 must receive additional information from the Port of Seattle regarding their predicted industrial waste discharges and sanitary flow into our system. In addition, we must complete basin planning for the north Green River basin, which is anticipated to begin early in 2003. Predesign for this project will likely begin in the year 2004.

Projects in Construction/Underway

Two large capital projects began construction late last year, the North Creek Storage facility and the repairs to a damaged section of the East Side Interceptor. In addition, we are now testing the flapgate sensors on the Kenmore Interceptor. Construction projects are shown on Figure 6 (page 22).

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 flow will be pumped back into the interceptors. The anticipated end of construction is December 2004.

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, a section of the ESI was damaged during an earthquake. The repair of the damage reduced the capacity of the pipe. This project will restore 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 will use a tunnel-boring machine, placing the new pipe approximately 30 feet underground. Construction, which began in February 2002 for the access pits, was completed in December 2002.

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. The Lake Line has a series of seven flap gates that open automatically if the line becomes surcharged 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 has completed the design of the flap gate monitors and the components were installed in July 2001. King County DNRP began testing the sensors and developing a response sequence for use by Wastewater Operations and Maintenance staff. We are working with the with the Ronald Sewer District (owner of the local sewer lines), the City of Lake Forest Park, and the nearby community on ways to keep them informed in the event the flap gates open. Testing will continue into 2003.

Infiltration and Inflow

The Regional Infiltration and Inflow Control program is a comprehensive six-year study to identify sources of infiltration and inflow (I/I) into local sewer systems. The study is based on a cooperative partnership between King County and the 33 local component agencies serving King County and portions of Snohomish County. The primary goal of the program is to define current levels of I/I within each local agency, determine how much I/I is cost effective to remove, and develop a plan for the long-term control of increased I/I into the service area and regional system.⁷

A considerable amount of work was accomplished during 2002, including hydraulic modeling using the flow monitoring data; developing regional I/I control standards, procedures, and policies; and conducting sewer system evaluation surveys, including smoke testing and remote inspection of sewer lines using closed circuit television for selected pilot rehabilitation projects.

Flow Monitoring

A key component of the 2001–02 work effort was completing the flow monitoring to identify sources of infiltration and inflow in the local agency sewer systems. This monitoring was a continuation of the program we started during the very dry winter of 2000–01.⁸ Fortunately, the winter of 2001–02 was much wetter, with 12–15 inches of rain falling in the service area between November 1, 2001, and January 15, 2002. During that time we collected flows and rainfall information from ten individual storms. The results of the flow monitoring program were outlined in a report titled *2001/2001 Wet Weather Flow Monitoring*. The report, issued in May 2002, includes an executive summary and two compact disks with data from the flow monitors and rain gauges as well as the findings from our analysis. The local agencies and MWPAAC (Metropolitan Water Pollution Abatement Advisory Committee) utilized the analyzed data in conjunction with previously approved selection criteria to pick a series of pilot projects from throughout the region, as described later in this section.

Conveyance System Hydraulic Modeling

Having completed the flow monitoring over two wet seasons in the separated portion of the service area (the portion with no combined sewers), DNRP is now calibrating the modeling basins using the flow monitoring information. The modeling will allow

⁷. To learn more about infiltration and inflow, please visit the Web site at <http://dnr.metrokc.gov/wtd/i-i/index.htm>

⁸. While 2000–2001 conditions were less than ideal to measure peak I/I levels, they were excellent for recording baseline dry flow conditions. We now have a comprehensive dry weather flow database from which to assess the quantities of I/I that find their way into the local agency sanitary sewers and ultimately into King County's conveyance and treatment system.

us to predict our 20-year peak design flows⁹ in our separated system and determine downstream impacts from possible reductions in infiltration and inflow. The hydraulic model will also be updated to simulate flows in the conveyance system throughout the service area. New population projections from the Puget Sound Regional Council will be used in conjunction with the new I/I data to develop new estimates for peak flows throughout DNRP's service area for several decades in the future. Hydraulic modeling for the Brightwater system will also take place during upcoming months.

Developing Standards, Procedures, and Policies

King County DNRP facilitated the development of regional I/I control standards, procedures, and policies for new construction, rehabilitation of existing sewer systems, and sewer system maintenance for local agencies. These standards are based upon existing local agency standards and practices as well as national industry practices. They are being developed to provide a uniform and effective methodology to locally control I/I levels, including I/I sources on private property.

The RWSP subcommittee met through September 2002 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 the full MWPAAC membership at its September 2002 meeting. 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 on October 30, 2002, per RWSP I/I Policy 2.2. They were also presented to the RWQC on December 11, 2002. Following completion of the program's pilot projects, the MWPAAC Subcommittee will resume its review of the draft standards, procedures, and policies for their final completion and inclusion in the Executive's recommended long-term measures to control infiltration and inflow, per RWSP Policy 2.4.

Pilot Projects

One important component of the first phase of the I/I program is to implement pilot rehabilitation projects in the local sewer systems to demonstrate the effectiveness of I/I controls. To begin this process, local agencies submitted 66 projects for consideration as candidate pilot projects. The candidates came from the north, east and south regions of the wastewater collection system. Local agency representatives from each region met to review the candidate projects and forwarded up to 10 projects for final consideration at Workshop 8. Two regions submitted 10 projects and one region (east) submitted 9 projects. These 29 pilot candidates were presented

⁹ 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

to the King County Regional Water Quality Committee and Utilities Committee, and both committees passed motions in favor of the projects. The list of pilot projects was approved by Council on April 29, 2002. This action satisfies RWSP Policy 2.1 for submittal and approval of pilot projects prior to July 31, 2002.

The pool of 29 approved pilot projects was subsequently reduced to 24 when three of the manhole rehabilitation projects were combined into one regional project and three other pilots were withdrawn by local agencies. At Workshop 8 on April 30, MWPAAC selected 10 of these pilot projects from the pool of 29 for implementation: three each from the north, east, and south regions plus the regional manhole rehabilitation project. The selected pilots include a mix of public and private projects located both within cities and local sewer districts. On May 8, 2002, program staff briefed the RWQC on the 10 selected pilot projects and provided background on the next steps for sewer system evaluations.

During the second half of 2002, the consultant team completed sewer system evaluation surveys (SSES) and the design team met with the selected component agencies to define the repairs that are needed within each pilot basin/project area. During the SSES period, crews surveyed manholes, sewer mains, laterals and side sewers (to homes and businesses) to identify where I/I enters the system. SSES methods to locate I/I access points include direct visual inspection, remote cameras, smoke testing, and dye tracing. Environmental review documents were issued in fall 2002 for the pilot projects. The local agencies and DNRP began their joint public outreach effort as part of SSES to inform citizens about I/I. One area hosted a general public meeting to discuss the project.

Final pilot project design is scheduled for completion by the end of March 2003. Construction on the pilot projects would begin in spring of 2003. For winter 2002–03, DNRP will conduct pre-construction flow monitoring within seven of the 12 pilot basins. For winter 2003–04, DNRP will conduct post-construction flow monitoring at all 12 pilot basins to evaluate the I/I removal effectiveness of the pilot projects.

Pilot Project Assessment Monitoring

To better assess the level of I/I reduction associated with some of the pilot projects, King County will monitor flow before and after the rehabilitation work. To accomplish this, seven mini basins have been sub-divided into rehabilitation sub-basins and a control sub-basin. Beginning in November 2002 and continuing through January 2003, flow in these sub-basins will be monitored prior to any rehabilitation work. The basins will be monitored again after the rehabilitation work is complete from November 2003 through January 2004.

Schedule for 2003

Pilot Basins/Projects

In the first half of 2003, pilot project design and construction contract bidding will take place. All construction needs to be completed by October 1, 2003, so that flow meters can be installed in the system to capture data for the winter months. The post-construction flow-monitoring period—November 1, 2003, through January 15, 2004—will coincide with the study periods done between 2000 and 2002. The results of the post-construction monitoring will be used to measure the affect the rehabilitation work had on reducing I/I within the basin.

Conveyance System Hydraulic Modeling

King County DNRP will continue to calibrate the modeling basins to meet the scheduled completion time of early 2003.

Standards, Procedures, and Policies

There will be no additional work on the standards, procedures & policies during 2003; work will continue after the results of the post-flow monitoring period are received in early 2004.

Workshops

Workshop 9 is schedule for January 14, 2003. The workshop will present information on what was found during the sewer system evaluations and provide detail on the planned rehabilitation work scheduled for each pilot project area.

Combined Sewer Overflows

The primary work effort for the CSO Control program in 2002 to date has been to lay the groundwork for future combined sewer overflow control projects and for the 2005 CSO Update. This work includes coordinating with the City of Seattle on their CSO Plan Update and continuing 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.¹⁰

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 2004 and 2031. Combined sewer overflows (CSOs) 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 37 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

The scope of work for consultant services for the Program Review is presently in development and we expect to issue a request for proposals by the end of December 2002. The program review, which was mandated by the King County Council in their adoption of the RWSP, will address 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

¹⁰. To learn more about CSOs, please visit the Web site at <http://dnr.metrokc.gov/wtd/cso/index.htm>

- Analyze rate impacts; ensuring that the program review will honor and be consistent with long-standing existing 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 Council will be addressed in the Plan Update that follows. 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.

Lower Duwamish Superfund Site

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.¹¹ 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. DNRP is continuing to meet the consent agreement, completing the Phase 1 remedial investigation and the identification of candidate sites for early action cleanup. 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. In addition, DNRP worked with the City of Seattle and Port of Seattle to secure a state grant for the portion of all this work done in the 2001-2003 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 way
- Prevent harm to public health
- Limit future liability

¹¹. 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.

In 2002, DNRP began development of a sediment recontamination model needed for state approval of cleanup actions. We selected Anchor Environmental as our contractor to perform individual site studies for the cleanups identified in the plan. Work has begun on 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.

Schedule for 2003

A consultant will be hired in the second quarter of 2003 to work on the CSO Control program review, which will be used to develop the 2005 CSO Plan Update.

King County DNRP will continue its support of the RI/FS process for the Lower Duwamish Consent Order and will develop scope, schedule, and budget for remediation of candidate early action clean up sites, as well as memorandums of understanding (MOAs) with our partners. We also expect to move ahead on the sediment management program in 2003–08 with contaminated sediment cleanups at three locations: Denny Way CSO, Diagonal/Duwamish CSO (as an Elliott Bay/Duwamish Restoration Panel project) and Slip 4 (as a Lower Duwamish early action). In addition, we will begin the cleanup process at three more CSO locations, including Hanford, Lander, and King Street. King County DNRP will continue to work cooperatively with the Port of Seattle, the City of Seattle, and Washington Departments of Natural Resources and Ecology to further cleanup efforts and share implementation costs. The timing of these cooperative opportunities could lead to proposed changes to the sediment management plan schedule.

Biosolids

Two efforts were underway the biosolids program in 2002. One is the ongoing effort to continue producing Class B biosolids at all treatment plants. On average, King County produces approximately 135,000 wet tons of biosolids produced each year, all of which is recycled for use in forestry and agricultural applications.¹² The other effort is to evaluate new technologies to reduce costs and/or improve biosolids quality.

Evaluating Class A Biosolids Technologies

King County DNRP continues to assess biosolids processing technologies that have the potential to improve biosolids quality, increase the efficiency of existing digesters, reduce truck traffic, and otherwise minimize the potential impacts of solids processing at our wastewater treatment facilities. In 2001 and early 2002, we completed evaluation of four biosolids processing technologies, including Centridry[®], Vertad[®], microwave gasification, and thermophilic/mesophilic digestion.¹³ Final reports for all four projects have been completed. King County DNRP continues to have interest in the Centridry, Vertad, and thermophilic/mesophilic digestion technologies for consideration in future biosolids processing evaluations. Additional testing of the Vertad process is currently planned for 2003/2004.

Vertad[®]

This technology utilizes a 400-foot-deep vertical shaft and air injection to create high pressure, aerobic conditions suitable for thermophilic aerobic digestion. This would combine the small footprint and heat treatment provided by Vertad[®] with the solids destruction, gas production, and stabilization provided by standard anaerobic digestion. This process would have the potential to produce a Class A biosolids product.

Schedule for 2003

We will conduct pilot-scale testing of the Vertad[®] aerobic thermophilic digestion process in combination with anaerobic mesophilic digestion.

¹². Learn more about the biosolids program at <http://dnr.metrokc.gov/WTB/biosolids/index.htm>

¹³. These processes were summarized on pages 27–28 of the *Regional Wastewater Services Plan 2001 Annual Report*, released in December 2001

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. The five-year Water Reuse Work Plan was transmitted to council in December 2000 and two primary implementation efforts are underway: the Technology Demonstration Project¹⁴ and the Sammamish Valley Reclaimed Water Production Facility.

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 goal of this program was to identify technologies that could:

- Minimize the size of a satellite treatment facility
- Reduce the costs and potential impacts of producing "Class A" reclaimed water at small, upstream "satellite" plants for commercial and irrigation uses
- Cost-effectively remove nutrients, pathogens, organics, and other contaminants from wastewater as may be necessary to make reclaimed water suitable for discharge to freshwater to supplement surface water supplies

The demonstration facility combined several treatment technologies into small-scale operational process systems to assess their ability to meet process objectives. For example, one of the first technologies operated was a "Fuzzy Filter," which is a column containing tightly packed compressible filter media typically used for tertiary treatment. We are also evaluating this technology for its ability to provide primary treatment by decompressing the media and reducing flow through the column. Another technology tested was a membrane bioreactor. This technology combines a biological process to provide secondary treatment with membrane filters that screen particles larger than one-tenth of a micron from the aerated bioreactor to produce Class A quality effluent. This technology has the potential to eliminate the need for a primary treatment process, secondary clarification, and tertiary filtration. Operation of the facility was completed in March 2002. Final reports assessing the performance of each of the technologies are available. This project received the 2002 Environmental Achievement Award in Research and Technology from the Association of Metropolitan Sewerage Agencies.

¹⁴. 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>

Sammamish Valley Reclaimed Water Production Facility

In 1997, the Water Reuse Policy Development Task Force adopted a needs statement suggesting that “recycling and reusing highly treated wastewater effluent should be investigated as a significant new source of water.” As part of the RWSP, DNRP is striving to meet the intent of this statement in part by evaluating this region’s need for a satellite treatment facility and its ability to support it. We worked with a Stakeholder Task Force to solicit and rank nominations from public and private parties interested in partnering to implement water reuse demonstration projects. In all, we received 11 nominations representing 13 projects.

Each of these projects was ranked based on a set of criteria developed jointly with the Stakeholder Task Force. The criteria evaluated factors such as cost per unit of reclaimed water, regulatory issues, community impacts and support, and integration with other county projects. The Sammamish Valley Reclaimed Water Production Facility, which will produce between one and two million gallons per day of water for irrigation, ranked favorably on all the criteria and therefore received the highest overall ranking. Accordingly, this project was selected for implementation. We began predesign on the facility in December 2001, which will likely be completed in January 2003. We have also started some design work on the project, notably the membrane bioreactor; the remainder of the design work will commence in January. The facility should be operational in the summer of 2004. The project is being coordinated with the Brightwater siting 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.¹⁵ 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 2001 effort involved partnering with the King County Housing Authority and the Department of Community and Human Services to replace washing machines, toilets, and shower heads at low income housing, and public involvement activities. The 2002 effort included water audits and retrofits of county buildings.

¹⁵ For more information about King County's Water Conservation Program, call (206) 296-8361.

Water Audits and Retrofits

With 2001 funding, the partnership between King County and the City of Seattle helped save an estimated 11 million gallons a year with a program to replace washing machines with water-efficient models in all the King Housing Authority's residential communities. With support from 25 local water utilities, the Saving Water Partnership provided funding and rebates for the water-efficient washing machines, helping low-income residents save water. In addition, King County and the Housing Authority joined with the Sisters of Mercy Housing Association to support installation of low-flow toilets, showerheads and faucet aerators at Appian Way, a nonprofit apartment complex in Kent. That effort saved an additional one million gallons of water each year. These retrofits will save water, reduce flow to the County's regional wastewater treatment plants in Seattle and Renton, and provide an opportunity to educate the public about water conservation.

King County assistance in buying water-efficient appliances is not limited to large organizations like the Housing Authority. Rebates are available for efficient washing machines installed in the service area of all local water utilities that are part of the Saving Water Partnership. More information is available by calling (206) 684-SAVE or by checking the Web site at www.savingwater.org. Rebates are also available for commercial customers.

With 2002 funding, King County partnered with Seattle Public Utilities and conducted water audits of its major facilities. Based on the audit findings, conservation retrofit projects were prioritized, designed, and implemented. Single-pass cooling systems in the Courthouse and Administration buildings were replaced with looped systems, saving approximately 12,000,000 gallons of water per year and \$120,000 per year in water and sewer costs. Restroom retrofits were also conducted at the Courthouse, Administration, and Yesler buildings. Replacement of toilets, urinals, and faucet aerators in the buildings saved approximately 5 million gallons of water per year and \$50,000 per year in water and sewer costs.

Public Education and Outreach

King County DNRP will continue development of educational materials that urge customers to keep trash out of the wastewater stream and remain active in the Water Conservation Coalition of Puget Sound.

Schedule for 2003

Technology Demonstration Program: In 2003, the program will stress test a pilot-scale membrane bioreactor (MBR) unit to identify the impacts of short and long-term peak flows. The program will also test alternative MBR operating and control strategies with the potential to treat more wastewater to the same high quality without increasing the number of membranes. Results of this work could be reflected in the design and operation of the Sammamish Valley Reclaimed Water Production Facility and other future MBR-based treatment facilities.

Sammamish Valley Reclaimed Water Production Facility: Design and permitting of the Sammamish Valley Reclaimed Water Production Facility is scheduled to be completed in the second quarter of 2003. Construction is scheduled to start in the third quarter.

Water/Wastewater Conservation Program: Water audits and retrofits for county buildings will continue in 2003, as will support of regional water conservation outreach and education programs.

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 Table 3.

Table 3
RWSP Capital Improvement Projects

| Project | Project Number |
|------------------------------------------------------|-----------------------|
| Tab 1 - Treatment Improvements | |
| Brightwater Treatment Plant | 423484 |
| Marine Outfall Siting Study | 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 - Combined Sewer Overflow Controls | |
| CSO Plan Update | 423441 |
| CSO Control & Improvement | 423515 |
| Sediment Management Program | 423368 |
| Tab 4 - Inflow & Infiltration Reduction | |
| RSWP Local System I/I Control | 423297 |
| Tab 5 - Water Reuse | |
| Water Reuse Technology Demonstration | 423483 |
| Sammamish Valley Reclaimed Water Production Facility | 423528 |
| Water/Wastewater Conservation Program | 423523 |

Table 3 shows that there are 17 RWSP capital projects in various stages of design and construction. Figure 7 shows the information provided for each project, 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.

2002 Appropriation and Percent Spent

The 2002 appropriation is the project budget for the year 2002; 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 (November 30, 2002, for this report). 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 2002.

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 7
Project information sheet

| | | | | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------------|------------------------------|---------------------------------------------------------------|---------------------|
| Project No. and Title 423457 Marine Outfall Study | | | | Council District: All | |
| 2001 Appropriation: \$2,463,746 | | | | Project Manager: Shuman, Randy | |
| Percent Spent: 82% | | | | Appropriation: A20220 Brightwater Treatment Plant- New | |
| 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. | | | | | |
| Milestones KC Council approval of sites-May 2001 KC Council approval of system packages-Fall 2001 | | | | | |
| Schedule | | | Project Cost | | |
| Phase | Start | Finish | Type of Project Cost | Year to Date NOV-01 | Life to Date NOV-01 |
| 1 Planning | 1/1/2000 | 12/1/2003 | CONSTRUCTION | \$0 | \$66,419 |
| 2 Predesign | | | ENGINEERING CONTRACTS | \$1,363,009 | \$2,780,223 |
| 3 Final Design | 1/4/2004 | 12/31/2006 | OTHER COSTS | \$116,593 | \$330,574 |
| 4 Implementation | | | PERMITS & ROW | \$633 | \$633 |
| 5 Closeout | | | STAFF LABOR COSTS | \$530,555 | \$1,609,028 |
| 6 Land Aquisition | | | STAFF LABOR LTD Hours 48,263 | | |
| | | | Total Project Cost: | \$2,010,790 | \$4,786,876 |
| Current Contract Information | | | | Total Paid by Project | Contract Amt |
| Contract Number and Title P93001P PUGET SOUND OCEANOGRAPHIC SUPPORT STUDIES | | | | \$1,144,429 | \$1,363,247 |
| P93009P - NORTH TREATMENT FACILITY - MARINE OUTFALL SITING STUDY | | | | \$850,937 | \$1,534,999 |

Project No. and Title

423484 North Treatment Plant

Council District: All**Project Manager:** Popiwny, Michael**2002 Appropriation:** \$17,107,783**Phase:** Planning**Appropriation:****Percent Spent:** 42%

Predesign 30%

A20220 Brightwater Treatment Plant- New
Facilities & Improvements**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 - early 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; 2003-2006: Design, including environmental review, mitigation analysis, community outreach,

2002 Milestones

Year 2002 Project Milestones:

1/2002 -- Environmental Analysis begins on 2 approved systems

5/2002 -- Draft project scope developed and public scoping hearings

7/2002 -- Series of Community Design Workshops begin

10/2002 -- Draft EIS Issued

10/2002 -- Public Hearings for Draft EIS

12/2002 -- Comment period Closes on Draft EIS

1-12/2002 -- Intergovernmental coordination

1-12/2002 -- Series of leadership meetings and speakers bureau presentations

1-2002 -- Begin predesign contract to assist in support of the environmental impact statement

2002 -- Ongoing Siting Advisory Committee and Technical Advisory Committee meetings

| Phase | <u>Schedule</u> | Start | Finish | <u>Project Cost</u> | Year to Date | Life to Date |
|--------------------------|------------------------|--------------|---------------|------------------------------|---------------------|---------------------|
| | | | | Type of Project Cost | NOV-02 | NOV-02 |
| 1 Planning | | 1/1/2001 | 6/30/2003 | CONSTRUCTION | \$0 | \$12,028 |
| 2 Predesign | | 1/1/2002 | 6/1/2003 | ENGINEERING CONTRACTS | \$4,272,549 | \$8,923,946 |
| 3 Final Design | | 6/1/2003 | 12/30/2006 | OTHER COSTS | \$957,604 | \$1,575,032 |
| 4 Implementation | | 6/30/2005 | 12/30/2009 | PERMITS & ROW | \$13,556 | \$24,706 |
| 5 Closeout | | 1/1/2010 | 12/30/2011 | STAFF LABOR COSTS | \$2,011,699 | \$4,774,959 |
| 6 Land Aquisition | | 1/1/2002 | 12/31/2004 | STAFF LABOR LTD Hours 85,940 | | |
| | | | | Total Project Cost: | \$7,255,408 | \$15,310,671 |

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

| | | |
|---------------------------------------------------------------------|-------------|-------------|
| E03030E/WO BASED MULTIDISCIPLINARY ENVIRONMENTAL SERVICES | \$72,384 | \$250,000 |
| E13035E/ENGRG. SVCS FOR BRIGHTWATER TREATMENT PLANT | \$758,773 | \$9,719,364 |
| P03012P/RWSP PROGRAM MANAGEMENT SERVICES DEVELOPMENT | \$2,934,303 | \$8,449,043 |
| P93012P SITE SELECTION AND MITIGATION FOR NEW REGIONAL WASTEWATER | \$6,554,303 | \$9,812,491 |
| P93013P ON-CALL MANAGEMENT, PROFESSIONAL AND TECHNICAL SERVICES FOR | \$546,872 | \$1,600,000 |
| T01129T/LEGAL SUPPORT SERVICES FOR NTF | \$393,306 | \$1,150,000 |
| T01130T/LEGAL SUPPORT SERVICES FOR NTF SITING | \$277,666 | \$1,150,000 |
| T01145T/REAL ESTATE BROKER SUPPORT SVCS FOR NORTH TREATMENT FAC. | | \$24,000 |
| T01352T/WRITING & EDITING SERVICES ON A WO BASIS | \$24,249 | \$240,000 |
| T01430T/PUBLIC RELATIONS FOR BRIGHTWATER TREATMENT PLANT | \$24,954 | \$24,998 |

Project No. and Title

423457 Marine Outfall Study

Council District: All**Project Manager:** Shuman, Randy**2002 Appropriation:** \$1,863,941**Phase:** Planning**Appropriation:**A20220 Brightwater Treatment Plant- New
Facilities & Improvements**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.

2002 Milestones

2nd Q 2002 - EIS scoping-

4th Q 2002 - Draft EIS

| 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 | NOV-02 | NOV-02 |
| 2 Predesign | | | | CONSTRUCTION | \$0 | \$66,419 |
| 3 Final Design | | 1/4/2004 | 12/31/2006 | ENGINEERING CONTRACTS | \$1,103,388 | \$4,547,914 |
| 4 Implementation | | | | OTHER COSTS | \$101,218 | \$449,453 |
| 5 Closeout | | | | PERMITS & ROW | \$0 | \$633 |
| 6 Land Aquisition | | | | STAFF LABOR COSTS | \$306,516 | \$1,962,547 |
| | | | | STAFF LABOR LTD Hours 57,652 | | |
| | | | | Total Project Cost: | \$1,511,122 | \$7,026,965 |

Current Contract Information**Contract Number and Title**

P93001P PUGET SOUND OCEANOGRAPHIC SUPPORT STUDIES

P93009P - NORTH TREATMENT FACILITY - MARINE OUTFALL SITING STUDY

**Total Paid
by Project**

\$1,362,464

\$2,233,133

Contract Amt

\$1,363,247

\$3,030,047

Project No. and Title

423373 RWSP Conveyance System Improvements

Council District: All**Project Manager:** Peterson, Bob**2002 Appropriation:** \$14,409,101**Phase:** Planning**Appropriation:****Percent Spent:** 96%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 four planning areas: South Green River, South Lake Sammamish, North Lake Sammamish, and North 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.

2002 Milestones

1st Q 2002 - Planning Cost database and model final

3rd, 4th Q 2002 - Seasonal Newsletters

Spring 2003 - North Lake Washington and Brightwater conveyance engineering support for BW EIS effort:

3/02 - scoping description; Fall 2002 - Draft EIS

3rd Q 2002 - Sheridan Beach Reliability design Parts 2 (Manhole) & 3 Luray Odor Control completed

2nd Quarter 2002 - Carnation Comprehensive Plan Amendment

3rd Quarter 2002 - Duvall TP plant review

3rd Quarter 2002 - South Green River (Soos PS D)

| Phase | Schedule | Start | Finish | Project Cost | Year to Date | Life to Date |
|--------------------------|-----------------|--------------|---------------|------------------------------|---------------------|---------------------|
| 1 Planning | | 1/1/2001 | 12/31/2007 | Type of Project Cost | NOV-02 | NOV-02 |
| 2 Predesign | | 1/30/2002 | 12/31/2007 | CONSTRUCTION | \$62,466 | \$817,612 |
| 3 Final Design | | 1/1/2002 | 12/31/2007 | ENGINEERING CONTRACTS | \$2,518,406 | \$6,210,357 |
| 4 Implementation | | 1/1/2004 | 12/31/2007 | OTHER COSTS | \$9,850,254 | \$19,952,285 |
| 5 Closeout | | 10/1/2007 | 12/31/2007 | PERMITS & ROW | \$631 | \$899 |
| 6 Land Aquisition | | 1/1/2003 | 2/27/2007 | STAFF LABOR COSTS | \$1,408,246 | \$3,344,741 |
| | | | | STAFF LABOR LTD Hours 58,299 | | |
| | | | | Total Project Cost: | \$13,840,004 | \$30,325,894 |

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

| | | |
|-------------------------------------------------------------------|-------------|-------------|
| AGREEMENT #1/TECH SUPPORT FOR THE DEVELOPMENT OF REGIONAL | \$74,908 | \$75,000 |
| AGREEMENT #2/DEVELOP GEOLOGIC DATABASE & GEOLOGIC INTERPRETATIONS | \$373,557 | \$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 | \$78,964 | \$300,000 |
| C13004C/SEWER REPAIR - 2001-2002 | \$66,888 | \$100,000 |
| 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 |
| E83004E CONVEYANCE SYSTEM IMPROVEMENT PROJECT, PROJ MANAG AND | \$3,931,088 | \$5,024,613 |
| E93018E CIP ELECTRICAL & ELECTRONICS EMGINEERING SUPPORT SERVICES | \$257,778 | \$475,000 |
| P03012P/RWSP PROGRAM MANAGEMENT SERVICES DEVELOPMENT | \$2,934,303 | \$8,449,043 |
| P820042P PROFESSIONAL CONSULTANT SERVICES | \$22,484 | \$25,000 |

Project No. and Title

423420 ESI SECTION 1 CAPACITY RESTORATION

Council District: 11**Project Manager:** Dittmar, David**2002 Appropriation:** \$5,233,464**Phase:** Construction (CM Support)**Appropriation:**

A20420 Conveyance Pipelines and Storage - New Facilities & Improvements

Project Scope

This Project will construct a bypass pipeline around an earthquake-damaged section of the Eastside Interceptor to restore capacity lost during the repair of the interceptor. The Project will install 1,800 feet of 72-inch diameter pipe by tunneling methods. The project also includes a bifurcation structure and junction structure. This pipeline will bypass the flow around the damaged section of the Eastside Interceptor Section 1 and return this portion of the Eastside Interceptor to its original flow capacity. This project is part of the Regional Wastewater Services Plan.

2002 Milestones

12/31/2002 - Construction substantially complete

| Phase | <u>Schedule</u> | Start | Finish | <u>Project Cost</u> | Year to Date | Life to Date |
|--------------------------|------------------------|--------------|---------------|------------------------------|---------------------|---------------------|
| | | | | Type of Project Cost | NOV-02 | NOV-02 |
| 1 Planning | | 1/1/1998 | 2/28/1998 | CONSTRUCTION | \$3,908,403 | \$4,296,079 |
| 2 Predesign | | 3/1/1998 | 2/28/1999 | ENGINEERING CONTRACTS | \$464,411 | \$1,413,038 |
| 3 Final Design | | 3/1/1999 | 9/30/2001 | OTHER COSTS | \$14,930 | \$579,561 |
| 4 Implementation | | 10/1/2001 | 3/31/2003 | PERMITS & ROW | \$0 | \$114,392 |
| 5 Closeout | | 4/1/2003 | 12/31/2003 | STAFF LABOR COSTS | \$244,704 | \$560,889 |
| 6 Land Aquisition | | 3/1/1999 | 9/30/2001 | STAFF LABOR LTD Hours 10,114 | | |
| | | | | Total Project Cost: | \$4,632,448 | \$6,963,959 |

Current Contract Information**Contract Number and Title**

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

| | | |
|----------------------------------------------------------------------|-------------|-------------|
| C03070C/EASTSIDE INTERCEPTOR SECTION 1-CAPACITY RESTORATION PROJECT | \$3,948,602 | \$4,554,469 |
| E83010E EASTSIDE INTERCEPTOR, SEC.#1, UPGRADE PREDESIGN | \$1,020,453 | \$1,118,152 |
| P03008P/CM SVCS FOR EASTSIDE INTERCEPTOR SECT 1 CAPACITY RESTORATION | \$413,933 | \$862,289 |
| P93013P ON-CALL MANAGEMENT, PROFESSIONAL AND TECHNICAL SERVICES FOR | \$546,872 | \$1,600,000 |

Project No. and Title

423519 North Creek Storage Facility

Council District: 01**Project Manager:** Dittmar, David**2002 Appropriation:** \$12,537,698**Phase:** Construction (CM Support)**Appropriation:**

A20420 Conveyance Pipelines and Storage - New Facilities & Improvements

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.

2002 Milestones

12/31/03 - Construction substantially complete

| Phase | <u>Schedule</u> | Start | Finish | <u>Project Cost</u> | Year to Date | Life to Date |
|--------------------------|------------------------|--------------|---------------|------------------------------|---------------------|---------------------|
| 1 Planning | | | | Type of Project Cost | NOV-02 | NOV-02 |
| 2 Predesign | | | | CONSTRUCTION | \$8,854,920 | \$8,854,920 |
| 3 Final Design | | 1/2/2001 | 9/30/2001 | ENGINEERING CONTRACTS | \$603,516 | \$3,036,027 |
| 4 Implementation | | 10/1/2001 | 12/31/2003 | OTHER COSTS | \$2,476,177 | \$2,549,011 |
| 5 Closeout | | 1/1/2004 | 7/1/2004 | PERMITS & ROW | (\$8,401) | \$202,730 |
| 6 Land Aquisition | | | | STAFF LABOR COSTS | \$344,017 | \$640,602 |
| | | | | STAFF LABOR LTD Hours 10,502 | | |
| | | | | Total Project Cost: | \$12,270,230 | \$15,283,289 |

Current Contract Information**Contract Number and Title**

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

| | | |
|---------------------------------------------------------------------|-------------|--------------|
| C13008C/NORTH CREEK STORAGE FACILITY PROJECT | \$8,138,713 | \$18,232,000 |
| E06017E NORTH CREEK STORAGE FACILITY PROJECT | \$2,024,291 | \$2,501,718 |
| P03013P/CM SVCS FOR THE NORTH CREEK STORAGE FACILITY PROJECT | \$470,203 | \$1,902,819 |
| P93013P ON-CALL MANAGEMENT, PROFESSIONAL AND TECHNICAL SERVICES FOR | \$546,872 | \$1,600,000 |

Project No. and Title

423520 Tukwila Interceptor/Freeway Crossing

Council District: 05**Project Manager:** Peterson, Bob**2002 Appropriation:** \$0**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 must receive additional information from the Port of Seattle regarding their predicted industrial waste discharges and sanitary flow into our system. In addition, we must complete basin planning for the north Green River basin, which is anticipated to begin early in 2003. Predesign for this project will likely begin in the year 2004. This project is part of the Council-approved Regional Wastewater Services Plan.

2002 Milestones

Ongoing 2002: Continued meetings with North Green River planning team and the Port of Seattle on possible industrial waste and sanitary flows from the Seatac airport

| Phase | <u>Schedule</u> | Start | Finish | <u>Project Cost</u> | Year to Date | Life to Date |
|--------------------------|------------------------|--------------|---------------|-----------------------------|---------------------|---------------------|
| 1 Planning | | | | Type of Project Cost | NOV-02 | NOV-02 |
| 2 Predesign | 6/30/2004 | 3/31/2005 | | OTHER COSTS | \$0 | \$4,096 |
| 3 Final Design | 4/15/2005 | 12/31/2005 | | STAFF LABOR COSTS | \$498 | \$55,315 |
| 4 Implementation | 1/1/2006 | 3/31/2007 | | STAFF LABOR LTD Hours | 972 | |
| 5 Closeout | 9/30/2007 | 12/31/2007 | | | | |
| 6 Land Aquisition | 1/1/2005 | 12/31/2006 | | Total Project Cost: | \$498 | \$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:** Locke, Calvin**2002 Appropriation:** \$900,000**Phase:** Predesign 30%**Appropriation:****Percent Spent:** 87%A20520 Conveyance Pump Station - New
Facilities & Improvements**Project Scope**

The 40-year old Hidden Lake Pump station does not have capacity to handle the 20-year design storm, 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 and reduction of infiltration and inflow. The system improvements will occur in two phases: phase I will control overflows for the five-year storm and increase the capacity of the Boeing Creek Trunk to handle the two-year storm. The capacity increases include a new Hidden Lake Pump station with a firm capacity of 4.1 mgd and a future peak capacity of 5.5 mgd built on the existing site; a 1.25 MG storage facility constructed upstream of the pump station; and approximately 7,500 linear feet of pipeline replacement. Phase 2 will consist of additional pipeline replacement. The project is being built in phases to determine whether or not I/I reduction will enable us to reduce the size of planned facilities. The length of pipe to be replaced will be determined based on the amount of I/I reduction achieved.

2002 Milestones

11/2002 - Complete predesign. Identify preferred storage site and storage volume. Determine length of pipe replacement. Determine whether or not pump station will be remodeled or a new pump station will be constructed.

12/2002 - Begin Final design

| <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>Type of Project Cost</u> | <u>NOV-02</u> | <u>NOV-02</u> |
| 1 Planning | | 6/1/1998 | 6/13/2000 | CONSTRUCTION | \$3,901 | \$3,901 |
| 2 Predesign | | 9/26/2001 | 6/1/2002 | ENGINEERING CONTRACTS | \$717,732 | \$718,152 |
| 3 Final Design | | 6/1/2002 | 9/1/2003 | OTHER COSTS | \$3,213 | \$87,682 |
| 4 Implementation | | 11/1/2004 | 4/1/2006 | STAFF LABOR COSTS | \$62,178 | \$206,337 |
| 5 Closeout | | 6/1/2005 | 12/1/2006 | STAFF LABOR LTD Hours 2,884 | | |
| 6 Land Aquisition | | 8/1/2003 | 9/1/2003 | Total Project Cost: | \$787,023 | \$1,016,071 |

Current Contract Information**Contract Number and Title**

C83161C/MISCELLANEOUS PIPE REPAIRS
E03036E/HIDDEN LAKE PUMP STATION

| <u>Total Paid by Project</u> | <u>Contract Amt</u> |
|-----------------------------------------|----------------------------|
| \$363,406 | \$750,000 |
| \$717,732 | \$2,699,191 |

Project No. and Title

423406 JUANITA BAY PS - MODIFICATIONS

Council District: 11**Project Manager:** Okuda, Chris**2002 Appropriation:** \$2,860,000**Phase:** Predesign 30%**Appropriation:**A20520 Conveyance Pump Station - New
Facilities & Improvements**Percent Spent:** 39%**Project Scope**

The Juanita Bay Pump Station is an aging facility that is experiencing significant operational difficulties in conveying current flows and has insufficient capacity to convey future flows. The working alternative recommended by the planning study was to replace the existing 14.2-mgd pump station with a new pump station. The draft predesign report, completed in June 2002, proposed a conceptual design for the new 27-mgd pump station. The report also determined that at least one of the two Juanita Force Mains would need to be upgraded in capacity by the year 2010. A site for the new pump station was identified and purchased. As of the end of 2002, technical issues for the conceptual design are being worked out as the predesign phase concludes and planning for the final design phase begins. This project is part of the Council-approved Regional Wastewater Services Plan.

2002 Milestones

8/2002 - Complete predesign

| Schedule | | | | Project Cost | | |
|--------------------------|--------------|---------------|--|-----------------------------|--------------------------------|--------------------------------|
| Phase | Start | Finish | | Type of Project Cost | Year to Date NOV-02 | Life to Date NOV-02 |
| 1 Planning | 1/1/1999 | 1/3/2000 | | CONSTRUCTION | \$0 | \$6,073 |
| 2 Predesign | 1/1/2001 | 8/31/2002 | | ENGINEERING CONTRACTS | \$964,329 | \$1,457,893 |
| 3 Final Design | 9/1/2002 | 12/31/2004 | | OTHER COSTS | \$4,257 | \$43,387 |
| 4 Implementation | 1/1/2005 | 12/31/2006 | | STAFF LABOR COSTS | \$160,673 | \$451,626 |
| 5 Closeout | 1/1/2007 | 12/31/2007 | | STAFF LABOR LTD Hours 7,903 | | |
| 6 Land Aquisition | 3/1/2002 | 12/31/2004 | | Total Project Cost: | \$1,129,260 | \$1,958,978 |

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

| | | |
|---------------------------------------------------------------------|-------------|-------------|
| E03037E/JUANITA BAY PUMP STATION AND FORCE MAINS UPGRADE | \$1,408,608 | \$1,849,354 |
| E83040E PROFESSIONAL SERVICES FOR CORROSION ENGINEERING | \$39,648 | \$300,000 |
| P93013P ON-CALL MANAGEMENT, PROFESSIONAL AND TECHNICAL SERVICES FOR | \$546,872 | \$1,600,000 |

Project No. and Title

423518 Pacific Pump Station

Council District: 07**Project Manager:** Locke, Calvin**2002 Appropriation:** \$530,562**Phase:** Predesign 30%**Appropriation:**A20520 Conveyance Pump Station - New
Facilities & Improvements**Percent Spent:** 93%**Project Scope**

The existing 1.6-mgd Pacific Pump Station, located in City of Pacific street right-of-way in a residential area, has insufficient capacity to convey the existing and future peak flows. This project will construct a new 3.3-mgd pump station at 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 reduced. This project is part of the Council-approved Regional Wastewater Services Plan.

2002 Milestones

5/2002 - Complete predesign and begin final design. Determine whether or not forcemain will be required. Begin negotiations for permit to construct pump station on street right of way. Begin easement negotiations with PSE for pipe crossing.

12/2002 - 60% design submittal

| Phase | Schedule | Start | Finish | Project Cost | Year to Date | Life to Date |
|--------------------------|-----------------|--------------|---------------|-----------------------------|---------------------|---------------------|
| 1 Planning | | | | Type of Project Cost | NOV-02 | NOV-02 |
| 2 Predesign | 4/29/2001 | 5/1/2002 | | ENGINEERING CONTRACTS | \$430,101 | \$523,973 |
| 3 Final Design | 5/1/2002 | 5/1/2003 | | OTHER COSTS | \$938 | \$2,710 |
| 4 Implementation | 5/1/2004 | 12/1/2005 | | PERMITS & ROW | \$0 | \$450 |
| 5 Closeout | 9/1/2005 | 12/1/2006 | | STAFF LABOR COSTS | \$64,071 | \$215,458 |
| 6 Land Aquisition | 12/1/2005 | 1/1/2005 | | STAFF LABOR LTD Hours 2,750 | | |
| | | | | Total Project Cost: | \$495,110 | \$742,591 |

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

\$586,864 \$1,351,537
\$39,648 \$300,000

Project No. and Title

423521 Bellevue Pump Station

Council District: 06**Project Manager:** Madden, Ken**2002 Appropriation:** \$270,000**Phase:** Planning**Appropriation:**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 Swayolocken 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 Swayolocken Pump Station. A planning assessment of the alternatives to "off-load" flow from Swayolocken was conducted during 2000. Seven possible alternatives were evaluated; two alternatives were carried forward for further evaluation; alternative 4 (this project) was ultimately selected. This project is part of the Council-approved Regional Wastewater Services Plan.

2002 Milestones

6/2002- Complete RFP and advertise for design consultant

| Phase | <u>Schedule</u> | Start | Finish | <u>Project Cost</u> | Year to Date | Life to Date |
|--------------------------|------------------------|--------------|---------------|-----------------------------|---------------------|---------------------|
| 1 Planning | | | | Type of Project Cost | NOV-02 | NOV-02 |
| 2 Predesign | 4/2/2001 | 12/1/2002 | | OTHER COSTS | \$1,427 | \$1,427 |
| 3 Final Design | 1/1/2001 | 2/1/2004 | | STAFF LABOR COSTS | \$58,712 | \$79,224 |
| 4 Implementation | 2/1/2004 | 12/1/2006 | | STAFF LABOR LTD Hours | 936 | |
| 5 Closeout | 1/1/2007 | 6/1/2007 | | | | |
| 6 Land Aquisition | 6/1/2003 | 6/1/2003 | | Total Project Cost: | \$60,139 | \$80,651 |

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

Project No. and Title

423441 Year 2000 - CSO Update

Council District: 4,5,8,10**Project Manager:** Houck, Doug**2002 Appropriation:** \$390,306**Phase:** Planning**Appropriation:****Percent Spent:** 43%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.

2002 Milestones

6/2002 - Year 2005 Plan Update & Program Review Consultant NTP

12/2002 - Stakeholder Interviews completed for Program Review

| 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 | NOV-02 | NOV-02 |
| 2 Predesign | | | | ENGINEERING CONTRACTS | \$15,809 | \$492,924 |
| 3 Final Design | | | | OTHER COSTS | \$348 | \$32,804 |
| 4 Implementation | | | | STAFF LABOR COSTS | \$153,512 | \$699,985 |
| 5 Closeout | | | | STAFF LABOR LTD Hours 15,752 | | |
| 6 Land Aquisition | | | | Total Project Cost: | \$169,668 | \$1,225,713 |

Current Contract Information**Contract Number and Title**

E83034E YEAR 2000 CSO PLAN UPDATE

Total Paid **Contract Amt**
by Project

\$634,861 \$963,351

Project No. and Title

423515 CSO Control & Improvement

Council District: 4,5,8,10**Project Manager:** Huber, Karen**2002 Appropriation:** \$144,674**Phase:** Planning**Appropriation:****Percent Spent:** 41%A20620 Combined Sewer Overflow
Control - New Facilities & Improvements**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. This project is part of the Council-approved Regional Wastewater Services Plan.

2002 Milestones

On-going 2002:

Coordinate with the City of Seattle CSO Control Plan

County 2005 Update,

HCP

Sediment Management Plan

Green Water Quality Assessment projects

| Phase | <u>Schedule</u> | Start | Finish | <u>Project Cost</u> | Year to Date | Life to Date |
|--------------------------|------------------------|--------------|---------------|-----------------------------|---------------------|---------------------|
| 1 Planning | | 1/1/2001 | 12/31/2007 | Type of Project Cost | NOV-02 | NOV-02 |
| 2 Predesign | | 1/1/2006 | 12/31/2007 | OTHER COSTS | \$203 | \$1,796 |
| 3 Final Design | | 1/1/2007 | 12/31/2007 | STAFF LABOR COSTS | \$59,312 | \$112,614 |
| 4 Implementation | | | | STAFF LABOR LTD Hours 2,290 | | |
| 5 Closeout | | | | | | |
| 6 Land Aquisition | | | | Total Project Cost: | \$59,515 | \$114,410 |

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**2002 Appropriation:** \$1,840,338**Phase:** Planning**Appropriation:****Percent Spent:** 21%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. This project is part of the Council-approved Regional Wastewater Services Plan.

2002 Milestones

Tier 2

Nearfield model: contract awarded 6/01; phase 1 complete 8/02; phase 2 complete 8/03

Sediment TMDL: approved 2002

Lower Duwamish Waterway: AOC signed 12/00; phase 1 RI complete 12/02; recommended early action cleanups 11/02; Fill data gaps 10/03

Tier 3

Initiate planning for Denny A&B, Hanford and Lander sites in late 2002

Initiate predesign for Denny A & B in late 2002

| Phase | <u>Schedule</u> | Start | Finish | <u>Project Cost</u> | <u>Year to Date</u> | <u>Life to Date</u> |
|--------------------------|------------------------|--------------|---------------|------------------------------|----------------------------|----------------------------|
| 1 Planning | | 12/19/2000 | 12/31/2007 | Type of Project Cost | NOV-02 | NOV-02 |
| 2 Predesign | | 6/1/2002 | 12/31/2007 | CONSTRUCTION | \$750 | \$5,412 |
| 3 Final Design | | 1/1/2003 | 12/31/2006 | ENGINEERING CONTRACTS | (\$17,128) | \$1,004,070 |
| 4 Implementation | | 3/1/2004 | 1/31/2007 | OTHER COSTS | \$154,346 | \$230,254 |
| 5 Closeout | | 1/1/2005 | 12/31/2006 | STAFF LABOR COSTS | \$241,986 | \$684,075 |
| 6 Land Aquisition | | | | STAFF LABOR LTD Hours 12,375 | | |
| | | | | Total Project Cost: | \$379,953 | \$1,923,811 |

Current Contract Information**Contract Number and Title**

| | <u>Total Paid</u> | <u>Contract Amt</u> |
|----------------------------------------------------------------|--------------------------|----------------------------|
| | <u>by Project</u> | |
| 33090009 LAKE WASH STUDIES RESEARCH AGREEMENT | \$1,357,961 | \$1,549,735 |
| D27460D LAKE WASHINGTON ECOSYSTEM RESTORATION AND FLOOD DAMAGE | \$103,000 | \$103,000 |
| E83034E YEAR 2000 CSO PLAN UPDATE | \$634,861 | \$963,351 |
| 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 | \$48,496 | \$63,828 |

Project No. and Title

423297 RWSP Local System I/I Control

Council District: All**Project Manager:** Sturgill, Dan**2002 Appropriation:** \$6,984,888**Phase:** Predesign 30%**Appropriation:****Percent Spent:** 61%

A20700 Inflow & Infiltration

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 34 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.

2002 Milestones

- 1/02 - Conduct Regional I/I Workshop #7 finalizing regional design standards and identifying issues surrounding private side sewer repair and replacement.
- 2/02 - Begin work with MWPAAC RWSP subcommittee to review SPP's (standards, procedures & policies)
- 3/02 - Begin calibration of hydraulic model (MOUSE)
- 4/02 - Workshop #8 Finalize Pilot Projects for I/I Control (\$9 Mill).
- 5/02 - Submit pilot projects to Exec for submittal to KC Council

- 8/02 - Finalize pilot project design standards
- 11/02- Workshop #9
- 10/02 - Submit standards, procedures & policies to Executive
- 12/02 - Executive submits standards, procedures & policies to KC Council
- 12/02 - Advertise pilot project contracts

| 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 | NOV-02 | NOV-02 |
| 2 Predesign | | 4/1/2002 | 10/1/2002 | ENGINEERING CONTRACTS | \$3,621,564 | \$16,478,154 |
| 3 Final Design | | 10/1/2002 | 4/1/2003 | OTHER COSTS | \$54,629 | \$672,361 |
| 4 Implementation | | 4/1/2003 | 11/1/2003 | PERMITS & ROW | \$0 | \$120 |
| 5 Closeout | | 1/1/2006 | 12/1/2006 | STAFF LABOR COSTS | \$557,780 | \$1,977,737 |
| 6 Land Aquisition | | | | STAFF LABOR LTD Hours 40,064 | | |
| | | | | Total Project Cost: | \$4,233,973 | \$19,128,371 |

Current Contract Information**Contract Number and Title**

E83043E ENG'N SUPPORT FOR REGIONAL I/I CONTROL PROGRAM
E93051E REGIONAL INFILTRATION / INFLOW CONTROL PROJECT

Total Paid **Contract Amt**
by Project

\$149,935 \$149,935
\$16,718,249 \$19,410,131

Project No. and Title

423483 Water Reuse Technology Demonstration

Council District: 04**Project Manager:** Smyth, John**2002 Appropriation:** \$240,000**Phase:** Complete**Appropriation:****Percent Spent:** 179%

A20920 Water Reuse - New Facilities

Project Scope

This project is designed to test and demonstrate technologies that have the potential to allow satellite water reclamation facilities to be constructed and operated more cost-effectively and with fewer potential impacts. Results will be incorporated into the design of the Sammamash Valley Reclaimed Water Production Facility and other reuse projects. The project identified and screened available and emerging technologies with the potential to reduce the cost and impacts of construction and operation of satellite reclaimed water production facilities. Nine different units will be tested including alternatives to primary sedimentation, alternatives to standard secondary treatment, alternatives to standard (Class A) filtration and alternatives to advanced treatment (nutrient removal, dissolved organics removal). The technologies will be operated in series and in parallel so that full treatment

Note: This project shows up as overspent because another project's billings were charged against it by mistake. The end-of-year expenditures will be correct.

2002 Milestones

1Q/2002 - Complete test facility operation.

2Q/2002 - Complete project reports.

| Phase | <u>Schedule</u> | Start | Finish | <u>Project Cost</u> | Year to Date | Life to Date |
|--------------------------|------------------------|--------------|---------------|-----------------------------|---------------------|---------------------|
| 1 Planning | | | | Type of Project Cost | NOV-02 | NOV-02 |
| 2 Predesign | | | | CONSTRUCTION | \$63,533 | \$154,518 |
| 3 Final Design | | | | ENGINEERING CONTRACTS | \$121,939 | \$710,805 |
| 4 Implementation | 12/2/2001 | 12/31/2001 | | OTHER COSTS | \$91,393 | \$117,066 |
| 5 Closeout | 6/1/2002 | 12/15/2002 | | STAFF LABOR COSTS | \$152,706 | \$391,633 |
| 6 Land Aquisition | | | | STAFF LABOR LTD Hours 9,320 | | |
| | | | | Total Project Cost: | \$429,571 | \$1,374,022 |

Current Contract Information**Contract Number and Title**

C03093C/WATER REUSE TECHNOLOGY DEMONSTRATION PROJECT
E83076E WATER REUSE TECHNOLOGY DEMONSTRATION PROJECT

| Total Paid by Project | Contract Amt |
|----------------------------------|---------------------|
| \$572,967 | \$575,284 |
| \$710,805 | \$710,805 |

Project No. and Title

423528 Water Reuse Satellite Facility

Council District: 03**Project Manager:** Fox, Thomas**2002 Appropriation:** \$2,565,000**Phase:** Predesign 30%**Appropriation:****Percent Spent:** 38%

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. An evaluation will be conducted to determine if the Brightwater facility can more cost-effectively serve the Sammamish Valley. If so, the Sammamish Valley Reclaimed Water Production Facility will be designed and constructed so that the equipment can be relocated after the water demands are met by the Brightwater Facility (after 2010). The reclaimed water will substitute for Sammamish River water and adjacent groundwater currently used for irrigation. This will increase the flow of water in the Sammamish River by reducing withdrawals. Increased flow is expected to have a beneficial impact on Salmon in the River. This project is part of the Council-approved Regional Wastewater Services Plan.

2002 Milestones

4/02 - Start predesign

11/02 - Complete Predesign

7/02 - Start Contract amendment to include design services so that contract will either be amended by 9/02 or new consultant procurement can be initiated

| <u>Schedule</u> | | | <u>Project Cost</u> | | |
|--------------------------|--------------|---------------|-----------------------------|--------------------------------|--------------------------------|
| Phase | Start | Finish | Type of Project Cost | Year to Date NOV-02 | Life to Date NOV-02 |
| 1 Planning | 1/1/2002 | 3/31/2002 | CONSTRUCTION | \$0 | \$49,625 |
| 2 Predesign | 4/1/2002 | 11/28/2002 | ENGINEERING CONTRACTS | \$799,525 | \$832,656 |
| 3 Final Design | 9/1/2002 | 8/1/2003 | OTHER COSTS | \$65,399 | \$70,680 |
| 4 Implementation | 8/3/2003 | 6/1/2004 | PERMITS & ROW | \$1,013 | \$1,013 |
| 5 Closeout | 6/1/2004 | 12/31/2005 | STAFF LABOR COSTS | \$114,998 | \$213,767 |
| 6 Land Aquisition | 9/30/2002 | 3/31/2003 | STAFF LABOR LTD Hours 3,140 | | |
| | | | Total Project Cost: | \$980,935 | \$1,167,740 |

Current Contract Information**Contract Number and Title**

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

C03067C/EAST DIVISION MECHANICAL CONSTRUCTION 2000-2001

\$365,042

\$400,000

E03016E/ON-CALL ENGINEERING SUPPORT FOR THE WASTEWATER TREATMENT

\$299,018

\$500,000

E13030E/ENGRG SVCS FOR SAMMAMISH VALLEY RECLAIMED WATER PRODUCTION

\$794,051

\$1,746,814

Project No. and Title

423523 RWSP Water/Wastewater Conservation Program

Council District: All**Project Manager:** Sullivan, Jo**2002 Appropriation:** \$300,000**Phase:** Planning**Appropriation:****Percent Spent:** 95%

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.

2002 Milestones

| Phase | <u>Schedule</u> | Start | Finish | <u>Project Cost</u> | Year to Date | Life to Date |
|-------------------|------------------------|--------------|---------------|-----------------------------|---------------------|---------------------|
| | | | | Type of Project Cost | NOV-02 | NOV-02 |
| 1 Planning | | 1/1/2001 | 12-31-2005 | ENGINEERING CONTRACTS | \$9,690 | \$15,000 |
| 2 Predesign | | | | OTHER COSTS | \$275,050 | \$276,010 |
| 3 Final Design | | | | STAFF LABOR COSTS | \$0 | \$639 |
| 4 Implementation | | | | STAFF LABOR LTD Hours | 20 | |
| 5 Closeout | | | | | | |
| 6 Land Aquisition | | | | Total Project Cost: | \$284,740 | \$291,649 |

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