

**SPU -  
DRAINAGE AND  
WASTEWATER**

# Seattle Public Utilities Drainage and Wastewater Division Major 2003-2004 Projects\*

Linden Ave N / N 143rd St Drainage Enhancement

Thornton / Jackson Park Detention Phase 2

3rd Ave NW / NW 107th St Natural Ditch System

35th Ave W / Elmore Trestle Replacement

CSO Facility #21

CSO Facility #19

CSO Facility #27

E Boston Tr Drainage Project

Westlake Ave Storm Drain Rehab

- Wastewater Project
- ◆ Drainage Project

Liberty Bay

Spokane St Bridge Salmon Habitat

CSO Facility #11

CSO Facility #111D

CSO Facility #10

Adas Pl / SW Juneau Landslide Mitigation

SW Juneau St Storm Drain Project

\* Represents 15 Highly Visible Projects



## Overview of Facilities and Programs

Seattle Public Utilities (SPU) is responsible for sewer and drainage collection throughout the City of Seattle. Major public system components include about 1,475 miles of sanitary, partially separated, and combined sewers, 69 sewer pump stations, 43 combined sewer overflow control structures, approximately 450 miles of piped storm sewers, 143 miles of storm culverts and 69 miles of ditches.

Three different types of systems collect the sewage and control stormwater. In combined sewer areas, stormwater and sewage is collected in a single pipe connecting to the King County interceptor line. For the partially-separated areas, the stormwater from the streets is collected in one pipe that goes directly to a creek, lake or marine water and the sewage and downspouts from private property are collected in another pipe connecting to a King County interceptor line. The sewage pipes in both combined and partially separated areas are designed with overflow points known as combined sewer overflows (CSOs), that are used when rains cause volumes which exceed the pipe capacities. The third type of system is used in areas that have sewer pipes that are not intended to convey any stormwater. In these areas, the stormwater is transported through a more natural system of ditches and culverts to the city's creeks, lakes and Puget Sound. The City has 105 CSOs and about 210 piped stormwater outfall points.

Treatment of the sewage from the City's system is transported through King County pipes primarily to the West Point treatment plant. A small amount is treated at the Renton plant. Both treatment plants provide secondary treatment and have deep-water outfall pipes that discharge the effluent from those plants into Puget Sound.

The federal Clean Water Act, administered by the Environmental Protection Agency (EPA) and delegated to the Washington State Department of Ecology (Ecology), requires that the City have plans for controlling CSOs and protecting the quality of receiving waters from stormwater outfalls. The CSO Plan and recently-adopted Plan Amendment and the Comprehensive Drainage Plan, currently under revision, are the major planning documents required for regulatory compliance with the National Pollutant Discharge Elimination System (NPDES) permit requirements administered by Ecology. These permits include planning, capital improvements, monitoring, regulation, public education/notification, maintenance, and operations requirements.

## Highlights

- **Combined Sewer Overflow (CSOs):** Approximately \$39 million is included in the 2003-2008 CIP for the Combined Sewer Overflow Program. The Denny Way/Lake Union project, coordinated and jointly funded by the City and County, is to be completed in 2004. The 2001 CSO Plan amendment outlines new projects to begin in 2003 which include adding more storage for the Lake Washington overflow locations in Windermere and at S. Genesee and S. Henderson Streets.
- **Proposed Sanitary Sewer Overflow (SSO) Rule:** EPA expects to propose a new rule in 2003 to require NPDES permits for sanitary sewer systems. The Drainage and Wastewater CIP includes a project to assess the "gaps" between current management, maintenance and operations practices and procedures and those expected to be required by the proposed rule. Additionally, SPU is starting a comprehensive assessment of sewer system capacity.
- **Sewer System Rehabilitation Program:** The Department continues a major program for repairing and replacing failed sewers and rehabilitating sewage pump stations. Approximately \$67 million is spent on this program in 2003-2008.
- **Duwamish Superfund:** The City of Seattle is named as a potentially responsible party (PRP) for the Duwamish River Superfund Site because of alleged contamination of sediments in the river from CSO and storm drain discharges. The City continues to work with Ecology, King County, and other PRPs on an assessment of contaminants and sources.

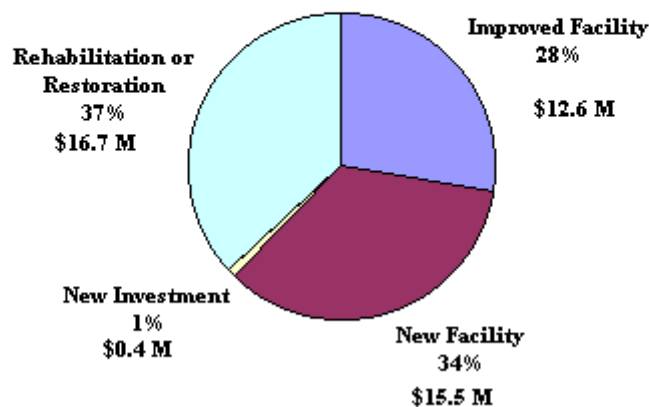
# Seattle Public Utilities – Drainage and Wastewater

- **Comprehensive Drainage Plan:** The City’s Comprehensive Drainage Plan, which was originally written in 1988, is to be updated to address flooding and water quality needs in a systematic manner citywide and to establish a long-term schedule of both capital improvements and operating programs. This work is also intended to comply with the requirements of the pending renewal of Seattle’s Federal Stormwater Permit.
- **Natural System Projects:** In areas without full street improvements, SPU is beginning to install “Natural System” drainage projects to reduce runoff and improve water quality. Located along road edges in residential areas, these projects consist of vegetated swales and wetlands that slow the street runoff, promote infiltration into amended soils, and filter out sediments that would otherwise be washed into creeks and lakes.

## Project Selection Process

The following chart shows how Drainage and Wastewater allocates new funding in 2003 to four types of projects: improved facilities, new facilities, new investment, and rehabilitation of existing facilities.

**Drainage & Wastewater 2003 Adopted CIP by Project Type  
(not including Technology CIP projects)**



The 2003-2008 Drainage and Wastewater CIP was developed using a comprehensive team approach. The Department used the existing CIP management organizational structure to develop the program. The process included the following steps:

**Project Identification:** From September through November 2001, the Integrated Cost/Scheduling (ICS) teams identified and developed the specific projects and made changes to existing projects. The two ICS teams, one for drainage and one for wastewater, consist of program managers from the Resource Planning Division, design and project management support staff from the Drainage, Wastewater, and Solid Waste Engineering Division, finance staff from the Budget Division, and neighborhood liaison staff from Community Services. The general criteria used in selecting projects were the Department’s strategic objectives of services, assets, and infrastructure management, customer service, financial and organizational performance, environmental stewardship, strategic technology implementation, neighborhood benefits, partnerships and meeting growing demands. A detailed list of new and existing projects was then compiled, together with projected schedules and cash flow estimates for each one.

**Project Screening, Prioritization, and Selection:** The ICS teams reviewed the compiled project list and compared the total cost to the expected available funding based on estimated likely rate increases. The projects

# Seattle Public Utilities – Drainage and Wastewater

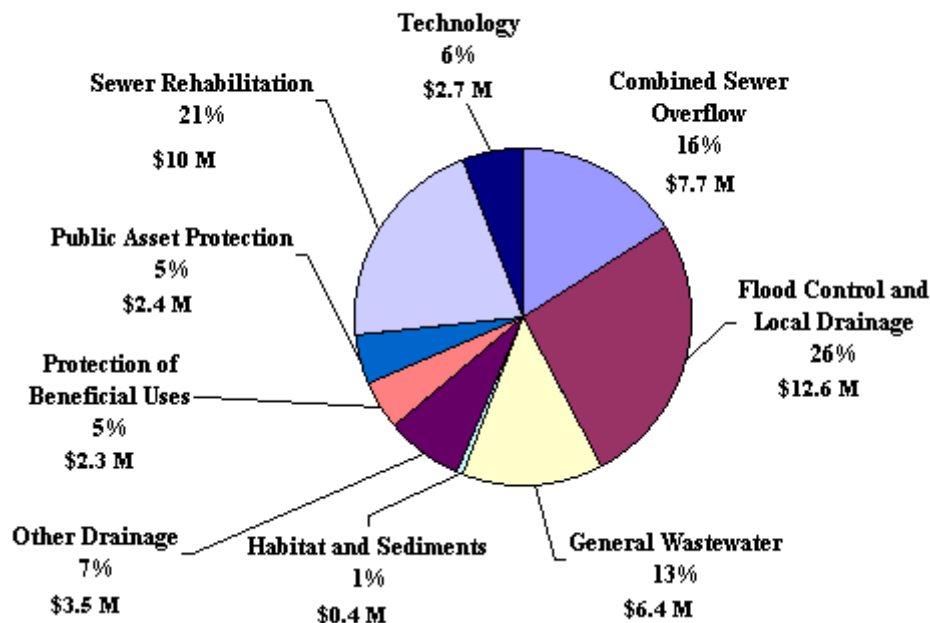
were then reviewed again for risks, benefits and chances of success for completion during the budget period. Schedules were adjusted to fit within the funding available and account for constraints such as permit and property acquisition. The program was then reviewed by the Drainage and Wastewater CIP Subcommittee in early December and then by the Department's Executive Team in late January. The draft program was forwarded to resource managers to evaluate for implementation requirements and for inclusion of those requirements in their budget development.

**Project Budget and Workload Scheduling:** As a final step, the project managers prepared detailed budget and workload estimates for the selected projects. The resource managers reviewed these estimates and compared them to their available staff resources.

## Program Category Summaries

The Drainage and Wastewater CIP allocates \$93 million during the next biennium (including Technology projects funded by the Drainage and Wastewater Fund), including approximately \$48 million in 2003. It is comprised of nine program categories as displayed in the following chart and summarized below. A detailed listing of all programs for the Drainage and Wastewater Capital Improvement Program follows this overview. Drainage and Wastewater-supported technology projects are shown grouped with other technology projects following the Department's three CIP sections.

**Drainage & Wastewater 2003 Proposed CIP by Program Category**



**Technology:** This program makes use of recent technological advances to increase the Department's efficiency and productivity. Drainage and Wastewater-supported technology projects are shown grouped with other technology projects following the Department's three CIP sections.

**Combined Sewer Overflow (CSO):** This program contains projects to plan, design, construct, and monitor facilities to control overflows from the combined and partially separated sewer system areas. Of the current 105 identified CSO points, control technologies have been applied to 99. Monitoring of the effectiveness of these controls has initiated additional work at a number of locations as noted in the adopted CSO Plan amendment. The adopted CSO Plan amendment also discusses the plan for control of those CSO locations that have not yet been worked on.

## Seattle Public Utilities – Drainage and Wastewater

**Flood Control and Local Drainage:** This program makes improvements to the City's drainage system to address flooding and provide neighborhood drainage systems. The program continues SPU's expanded role in addressing flooding and installing Natural System drainage projects to reduce runoff and improve water quality in areas without full street improvements. The program provides funds for the completion of major drainage projects in 2003-2004, including the Westlake Avenue Storm Drain Rehabilitation project and the Jackson Park Detention Phase II project. The program also funds projects identified in the City's neighborhood plans, such as flood control projects in the Thornton Creek and Densmore Drainage Basins.

**Protection of Beneficial Uses:** This program makes improvements to the City's drainage system to reduce the harmful effects of stormwater runoff on creeks and receiving water by improving water quality and protecting or enhancing habitat. The program includes projects to improve water quality, protect creeks, meet regulatory requirements and use best available science to meet community expectations for habitat.

**Public Asset Protection:** This program makes improvements to the City's drainage system to reduce the risk to City infrastructure (such as roads and utilities) from landslides. The program includes funds for projects such as the Marine View Drive – 47<sup>th</sup> SW Landslide Mitigation project.

**Other Drainage:** This program makes improvements to the City's drainage system through partnerships with other agencies. The program also includes funding for other capital costs such as heavy equipment and for projects that improve the efficiency of the overall drainage program. In 2003-2004, the program provides funds for additional drainage and sewer designers to work on Seattle Department of Transportation (SDOT) design functions, for improvements to the Drainage and Wastewater Operations Control Center to accommodate additional office and field staff, and for work on major transportation projects including the Alaskan Way Viaduct & Seawall, Sound Transit light rail and a new monorail.

**General Wastewater:** This program funds significant improvements or major changes to the wastewater system.

**Habitat and Sediments:** This program restores or rehabilitates natural resources in or along Seattle's waterways. The program includes projects to address a portion of the City's response to the Endangered Species Act listing of Chinook salmon. It also includes funds for sediment and habitat projects that the City is completing as an agent for the Elliott Bay/Duwamish Restoration Program Panel.

**Sewer Rehabilitation:** This program repairs the City's collection system of sewer pipes and pump stations. The Department establishes priorities for the program primarily based on the results of closed circuit television (CCTV) inspections. The program funds replacement of sewer line segments, point repairs, full and partial lining of pipes, and complete and partial rehabilitation of sewer pump stations, as well as costs for emergency repairs.

### Anticipated Operating Expenses Associated with Capital Facilities Projects

For most projects in the drainage and wastewater capital program, the Department has identified new 2003-2004 operations and maintenance costs of zero, or has not calculated a number (N/C). In these cases, the cost impacts of the project are either insignificant or are offset by cost savings realized by other projects. It should be noted that construction of new CSO facilities in 2005-2008 might require additional maintenance staff once these facilities are complete.

### City Council CIP Changes

The City Council adopted a budget proviso specifying that no money appropriated in 2003 for Seattle Transportation can be spent for drainage design for transportation projects until the City Council approves a Memorandum of Agreement (MOA) executed by Seattle Transportation and SPU regarding the usage of the funds to be provided by SPU to Seattle Transportation for drainage design for transportation projects.

For 2003, the City Council reduced proposed funding for SPU's drainage and wastewater-related capital improvement programs by \$2.5 million. Projects impacted by this reduction include funding for new drainage

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designers within SDOT, water reuse (stormwater and wastewater) projects, and various other flood control, landslide mitigation and drainage projects.

The City Council also reduced the overall proposed SPU Technology CIP by a total of \$2.2 million. The Drainage & Wastewater Fund's share of this reduction is \$910,000. As part of this reduction, the Seattle Department of Transportation Mobility Project (an information technology project) will receive additional analysis of scope, costs and benefits before the project is proposed for implementation.

To provide improved budget control, the Drainage and Wastewater 2003-2008 Adopted CIP includes four new CIP programs. The new programs, which replace the Drainage Improvements program and are described in more detail above, are Flood Control and Local Drainage, Protection of Beneficial Uses, Public Asset Protection, and Other Drainage.

# SPU - Drainage & Wastewater

## Project Summary

<b>Program/Project</b>	<b>Project ID</b>	<b>LTD</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>Total</b>
<b>Combined Sewer Overflow</b>										
Ballard Combined Sewer Overflow Storage	C33NW101	0	0	50	50	500	500	1,000	1,500	<b>3,600</b>
Combined Sewer Overflow Control Facility Retrofit	C33NW102	0	0	990	691	0	0	0	0	<b>1,681</b>
CSO Modeling and Assessment	C399101	885	275	54	440	451	58	100	50	<b>2,313</b>
CSO Monitoring Installation	C3AA108	1,384	200	194	33	0	0	0	0	<b>1,811</b>
CSO Plan Implementation	C302101	0	500	394	830	644	2,105	2,590	3,090	<b>10,153</b>
CSO Plan Update	C3AA103	1,283	16	107	385	395	463	100	100	<b>2,849</b>
Fremont-Wallingford Combined Sewer Overflow (CSO)	C33NW103	0	0	50	50	500	800	1,360	1,540	<b>4,300</b>
S. Henderson Combined Sewer Overflow Storage & Conveyance	C33NW105	0	0	0	200	400	400	800	500	<b>2,300</b>
South Genesee Combined Sewer Overflow Storage	C33NW104	0	0	100	200	700	800	500	500	<b>2,800</b>
South Lake Union Combined Sewer Overflow - King Co. Payments	C3AA104	9,166	2,482	3,000	1,700	200	0	0	0	<b>16,548</b>
South Lake Union Combined Sewer Overflow Phase II	C3AA106	920	280	2,357	1,789	0	0	0	0	<b>5,346</b>
Windermere Combined Sewer Overflow Storage	C33NW106	0	0	375	498	1,807	92	0	0	<b>2,772</b>
<b>Combined Sewer Overflow Total</b>		<b>13,638</b>	<b>3,753</b>	<b>7,671</b>	<b>6,866</b>	<b>5,597</b>	<b>5,218</b>	<b>6,450</b>	<b>7,280</b>	<b>56,473</b>

*\*Amounts in thousands of dollars*



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<b>Flood Control and Local Drainage</b>										
12552 22nd Ave. NE Storm Drainage Improvements	C301323	6	42	137	0	0	0	0	0	<b>185</b>
20th Avenue NE Local Drainage	C301317	10	66	170	125	0	0	0	0	<b>371</b>
39th Ave NE & NE 105th St. Drainage	C301315	187	439	400	0	0	0	0	0	<b>1,026</b>
3rd Av NW & NW 107 St. Natural System	C300329	47	100	3,251	264	0	0	0	0	<b>3,662</b>
3rd NW & N. 110th Natural System	C301320	40	781	36	0	0	0	0	0	<b>857</b>
7th Ave S. & Duwamish River Drainage	C33NW330	0	25	50	100	200	500	2,726	2,000	<b>5,601</b>
Comprehensive Ditch and Culvert Inventory	C3AA307	815	240	180	180	0	0	0	0	<b>1,415</b>
Comprehensive Drainage Plan Update	C302301	0	350	650	28	0	0	0	0	<b>1,028</b>
Drainage Spot Improvements	C300303	4,669	363	151	153	150	150	150	150	<b>5,936</b>
Fairview Ave N. Drainage Assessment	C300321	65	74	224	28	0	0	0	0	<b>391</b>
Georgetown Drainage Basin Study	C302NW1	0	160	50	0	0	0	0	0	<b>210</b>
Harbor Island - Storm Drain Repair	C33NW316	0	20	66	150	437	0	0	0	<b>673</b>
Jackson Park Detention Phase 2	C399305	1,410	3,020	3,121	1,616	0	0	0	0	<b>9,167</b>
Linden Ave N. & N. 143rd Drainage Enhancement	C301321	12	140	406	0	0	0	0	0	<b>558</b>
Linden Avenue Swale	C3AA318	160	1	0	0	400	0	0	0	<b>561</b>
Local Basin Plan Implementation Program	C300325	286	0	0	0	1,000	3,500	6,000	8,000	<b>18,786</b>
MLK Way/Norfolk St. Subbasin Storm Improvements	C32NW302	0	25	319	593	300	1,000	1,800	0	<b>4,037</b>
N. 125th St & Aurora Ave N. Storm Drain	C33NW309	0	10	25	53	0	0	0	0	<b>88</b>
N. 135th Street & Stone Ave N. Detention	C33NW307	0	0	10	100	40	200	500	2,850	<b>3,700</b>

*\*Amounts in thousands of dollars*

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## Project Summary

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<b>Flood Control and Local Drainage</b>										
N. 137th Street & Meridian Ave N. Storm Drain	C33NW310	0	30	25	100	885	1,000	515	0	<b>2,555</b>
N. 137th Street & Stone Ave N. Conveyance	C33NW308	0	19	10	63	572	0	0	0	<b>664</b>
Natural System Study	C33NW319	0	0	150	151	0	0	0	0	<b>301</b>
Norfolk St. & Boeing Access Road Storm Improvements	C32NW304	0	0	0	100	0	0	0	0	<b>100</b>
NW 90th Street & 12th Ave NW Drainage	C301314	136	375	806	0	0	0	0	0	<b>1,317</b>
Outfall Inspection - Drainage	C33NW324	0	150	210	210	210	210	210	0	<b>1,200</b>
Pipers Creek - Detention	C399326	13	98	160	185	50	900	50	0	<b>1,456</b>
Pipers Creek - Natural Drainage System	C33NW320	0	0	92	558	650	650	650	620	<b>3,220</b>
Salmon Bay Drainage Improvements	C300327	50	247	0	709	112	0	0	0	<b>1,118</b>
SW Juneau Storm Drain	C302NW2	162	1,167	584	0	0	0	0	0	<b>1,913</b>
Trunk Drainage Implementation	C300330	0	0	0	869	1,252	2,602	3,352	4,500	<b>12,575</b>
Westlake Drainage	C3AA328	1,060	4,162	1,318	0	0	0	0	0	<b>6,540</b>
<b>Flood Control and Local Drainage Total</b>		<b>9,128</b>	<b>12,104</b>	<b>12,601</b>	<b>6,335</b>	<b>6,258</b>	<b>10,712</b>	<b>15,953</b>	<b>18,120</b>	<b>91,211</b>

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## Project Summary

Program/Project	Project ID	LTD	2002	2003	2004	2005	2006	2007	2008	Total
<b>General Wastewater</b>										
Alaskan Way Viaduct & Seawall - Wastewater	C33NW201	0	170	126	97	170	170	43	0	776
Civic Projects - Wastewater	C33NW212	0	10	254	0	0	0	0	0	264
DWW Operations Control Center Upgrade - Wastewater	C33NW213	0	0	505	249	0	0	0	0	754
DWW Operations Planning Tool	C33NW202	0	38	38	63	0	0	0	0	139
Elevated Transportation Company - Wastewater	C33NW210	0	50	64	39	148	148	148	0	597
Force Main/Pump Stations Plan and Improvements	C302204	0	200	600	500	500	500	500	500	3,300
Forced Side Sewer Repairs	C3AA201	208	90	10	10	10	10	10	10	358
Future Sewer Improvements	C33NW204	0	0	322	330	338	347	0	0	1,337
Heavy Equipment Purchases - Wastewater	C300499	1,254	580	1,330	300	360	230	470	470	4,994
Meter Replacement - Direct Service	C520000	1,300	692	692	692	1,536	1,582	1,630	1,678	9,802
Outfall Inspection - Wastewater	C33NW206	0	100	140	140	140	140	140	0	800
Project Manager Guidebook - Wastewater	C301701W	81	50	74	22	0	0	0	0	227
Sanitary Sewer Overflow Capacity Study/Implementation	C302205	0	0	687	752	300	300	0	0	2,039
SDOT 4% Program - Wastewater	C32T101	32	1,595	803	813	946	606	995	1,046	6,836
Sewage System Modeling	C3AA206	494	100	107	110	113	116	100	100	1,240
Sound Transit Light Rail - Wastewater	C33NW209	0	90	129	164	172	156	50	50	811
South Lake Washington Sewer Main Assessment	C33NW207	0	0	100	500	300	0	0	0	900
South Park Sewer Extension	C33NW382	0	0	152	2,051	0	0	0	0	2,203
Water Reuse - Wastewater	C301203	9	400	280	600	0	0	0	0	1,289
<b>General Wastewater Total</b>		<b>3,378</b>	<b>4,165</b>	<b>6,413</b>	<b>7,432</b>	<b>5,033</b>	<b>4,305</b>	<b>4,086</b>	<b>3,854</b>	<b>38,666</b>

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## Project Summary

Program/Project	Project ID	LTD	2002	2003	2004	2005	2006	2007	2008	Total
<b>Habitat and Sediments</b>										
Duwamish Sediment Remediation	C300412	91	284	359	469	954	872	0	0	3,029
<b>Habitat and Sediments Total</b>		<b>91</b>	<b>284</b>	<b>359</b>	<b>469</b>	<b>954</b>	<b>872</b>	<b>0</b>	<b>0</b>	<b>3,029</b>
<b>Other Drainage</b>										
Alaskan Way Viaduct & Seawall - Drainage	C33NW301	0	80	555	416	165	165	41	0	1,422
Ballard Town Center Assessment	C33NW305	0	50	75	0	0	0	0	0	125
Civic Projects - Drainage	C33NW336	0	0	300	0	0	0	0	0	300
DWW Operations Control Center Upgrade - Drainage	C33NW321	0	0	506	249	0	0	0	0	755
Elevated Transportation Company - Drainage	C33NW331	0	75	64	39	148	148	148	0	622
Heavy Equipment Purchases - Drainage	C300399	1,276	246	300	880	177	520	350	350	4,099
Mobility Improvement	C33NW383	0	0	300	300	0	0	0	0	600
Project Manager Guidebook - Drainage	C301701D	122	243	112	33	0	0	0	0	510
SDOT 4% Program - Drainage	C33T101	46	1,185	782	782	610	677	792	819	5,693
Sound Transit Light Rail - Drainage	C33NW328	0	90	270	157	172	156	50	25	920
SR-519 - Drainage Review	C33NW332	0	50	50	50	0	0	0	0	150
Water Reuse - Stormwater	C301302	0	400	192	400	0	0	0	0	992
<b>Other Drainage Total</b>		<b>1,444</b>	<b>2,419</b>	<b>3,506</b>	<b>3,306</b>	<b>1,272</b>	<b>1,666</b>	<b>1,381</b>	<b>1,194</b>	<b>16,188</b>

\*Amounts in thousands of dollars

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<b>Protection of Beneficial Uses</b>										
1st Avenue South Salmon Habitat	C33NW302	0	0	63	100	1,000	950	0	0	<b>2,113</b>
Beer Sheva Habitat Improvement	C301319	6	90	0	150	0	0	0	0	<b>246</b>
Bitter Lake/N. 137th Stormwater	C301322	7	5	0	257	0	0	0	0	<b>269</b>
Comprehensive Retrofit/BMP Program	C300316	29	50	0	226	0	0	0	0	<b>305</b>
Creeks CIP Monitoring & Repair Program	C300309	219	260	184	248	250	250	250	250	<b>1,911</b>
Creeks Emerging Issues Program	C305NW1	0	0	0	98	0	0	0	0	<b>98</b>
Creekside Erosion Control	C300311	145	0	30	139	0	0	0	0	<b>314</b>
Delridge Basin Phase II Channel Improvements	C3AA319	2,515	1,074	339	0	0	0	0	0	<b>3,928</b>
Densmore Basin Water Quality Investigation	C33NW311	0	50	282	0	0	0	0	0	<b>332</b>
Fauntleroy Creek Sediment Control	C33NW312	0	0	40	40	0	0	0	0	<b>80</b>
Georgetown Pump Station Salmon Habitat	C33NW315	0	0	59	87	700	700	0	0	<b>1,546</b>
Lake Washington/Lower Duwamish Habitat Protection	C300342	12	100	0	0	902	925	950	950	<b>3,839</b>
Longfellow Creek - SW Brandon to Juneau	C302NW4	6	50	0	0	0	0	0	0	<b>56</b>
Longfellow Creek - Yancy Street Phase 3	C302NW5	0	300	566	28	0	0	0	0	<b>894</b>
Norfolk Drainage Basin Water Quality Improvements	C32NW303	0	25	158	159	1,100	0	0	0	<b>1,442</b>
Property Acquisition	C3AA302	2,349	350	0	500	0	0	0	0	<b>3,199</b>
Schmitz Creek Sediment Control	C33NW326	0	0	0	30	30	0	0	0	<b>60</b>
Spokane St. Bridge Salmon Habitat	C33NW381	0	0	116	156	0	0	0	0	<b>272</b>
Taylor Creek - Phase 3 Restoration	C300313	36	80	16	0	0	0	0	0	<b>132</b>
Taylor Creek Culverts Phase 2	C399315	303	140	24	0	1,090	0	0	0	<b>1,557</b>

*\*Amounts in thousands of dollars*

# SPU - Drainage & Wastewater

## Project Summary

<b>Program/Project</b>	<b>Project ID</b>	<b>LTD</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>Total</b>
<b>Protection of Beneficial Uses</b>										
Thornton - Lake City Way & NE 100th St Culvert	C301331	73	458	19	0	0	0	0	0	<b>550</b>
Thornton - Park 6 Instream Improvements	C301333	23	69	51	50	50	0	0	0	<b>243</b>
Thornton Creek - Lake City Detention Ph 4	C301301	728	75	150	15	600	0	0	0	<b>1,568</b>
Thornton Creek - Ravenna Ave NE Habitat Restoration	C301339	0	47	29	101	0	0	0	0	<b>177</b>
West Seattle Golf Course - Detention	C399307	317	180	127	14	50	1,500	0	0	<b>2,188</b>
<b>Protection of Beneficial Uses Total</b>		<b>6,768</b>	<b>3,403</b>	<b>2,253</b>	<b>2,398</b>	<b>5,772</b>	<b>4,325</b>	<b>1,200</b>	<b>1,200</b>	<b>27,319</b>

*\*Amounts in thousands of dollars*

Project Summary

Program/Project	Project ID	LTD	2002	2003	2004	2005	2006	2007	2008	Total
<b>Public Asset Protection</b>										
Atlas Pl. SW & SW Juneau Landslide Mitigation	C300344	106	572	109	960	240	0	0	0	1,987
Burke Gilman/NE 144th Landslide Mitigation	C301355	89	192	2	201	650	650	1,000	0	2,784
East Boston Terrace Project	C300320	139	145	795	200	0	0	0	0	1,279
Lake Dell/33 E Landslide Mitigation	C301352	9	111	20	90	300	0	0	0	530
Landslide-Prone Area Program	C300302	1,852	649	287	702	500	500	900	500	5,890
Marine View Drive - 47th SW Landslide	C302352	0	178	610	430	0	0	0	0	1,218
Marine View Drive Landslide Mitigation - North	C399321	323	387	1	0	0	0	0	0	711
Perkins Lane W./W. Ruffner Street Drainage Improvement	C301354	151	286	80	1,838	960	100	0	0	3,415
Rainier Beach/S Perry Landslide	C302353	0	0	0	0	80	180	490	550	1,300
SW Jacobsen & Alaska Ave. SW Landslide Mitigation	C301353	8	107	232	216	0	0	0	0	563
SW Prescott/Admiral Way Landslide Mitigation	C33NW303	0	50	100	198	250	200	0	0	798
Vactor Dump Station - Catch Basin Solids Decant	C399328	41	30	0	0	0	0	0	0	71
WPA Drains Study & Repair Program	C300338	151	249	151	151	100	100	100	100	1,102
<b>Public Asset Protection Total</b>		<b>2,869</b>	<b>2,956</b>	<b>2,387</b>	<b>4,986</b>	<b>3,080</b>	<b>1,730</b>	<b>2,490</b>	<b>1,150</b>	<b>21,648</b>

\*Amounts in thousands of dollars

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## Project Summary

<b>Program/Project</b>	<b>Project ID</b>	<b>LTD</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>Total</b>
<b>Sewer Rehabilitation</b>										
"No Dig" Pipe and Maintenance Hole Rehabilitation	C3AA403	8,452	808	1,064	1,186	1,543	1,552	1,605	1,991	<b>18,201</b>
3511 S. Dearborn Street - Sewer Rehabilitation	C301412	43	35	22	0	0	0	0	0	<b>100</b>
Point Sewer Pipe Repairs	C300401	4,732	3,410	2,770	4,398	3,624	3,644	3,768	3,881	<b>30,227</b>
Pump Station Rehabilitation	C3AA406	1,097	1,516	1,318	1,333	1,746	1,755	1,808	1,994	<b>12,567</b>
Sewer Emergency Repairs	C3AA404	1,301	300	413	400	450	450	450	461	<b>4,225</b>
Sewer Full Line Replacements	C300488	0	7,472	4,309	3,799	3,222	3,239	3,350	5,000	<b>30,391</b>
Wastewater Rehabilitation Project Evaluation	C3AA401	674	105	86	88	91	94	94	97	<b>1,329</b>
<b>Sewer Rehabilitation Total</b>		<b>16,299</b>	<b>13,646</b>	<b>9,982</b>	<b>11,204</b>	<b>10,676</b>	<b>10,734</b>	<b>11,075</b>	<b>13,424</b>	<b>97,040</b>
<b>Department Total</b>		<b>53,615</b>	<b>42,730</b>	<b>45,172</b>	<b>42,996</b>	<b>38,642</b>	<b>39,562</b>	<b>42,635</b>	<b>46,222</b>	<b>351,574</b>

*\*Amounts in thousands of dollars*



**Fund Source Summary**

<b>Funding Source</b>	<b>LTD</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>Total</b>
SPU Drainage and Wastewater Fund	53,615	42,730	45,172	42,996	38,642	39,562	42,635	46,222	<b>351,574</b>
<b>Department Total</b>	<b>53,615</b>	<b>42,730</b>	<b>45,172</b>	<b>42,996</b>	<b>38,642</b>	<b>39,562</b>	<b>42,635</b>	<b>46,222</b>	<b>351,574</b>

*\*Amounts in thousands of dollars*

# SPU - Drainage & Wastewater

## "No Dig" Pipe and Maintenance Hole Rehabilitation

**Program:** Sewer Rehabilitation **Start Date:** Ongoing  
**Type:** Rehabilitation or Restoration **End Date:** Ongoing  
**Project ID:** C3AA403

**Location:** Citywide

**Neighborhood District:** In more than one district **Neighborhood Plan:** Not in a Neighborhood Plan

This ongoing program rehabilitates sewer pipes prior to complete failure. "No Dig" technology avoids surface use disruption and costly surface repairs.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	8,452	808	1,064	1,186	1,543	1,552	1,605	1,991	18,201
<i>O&amp;M Costs (Savings)</i>			0	0	0	0	0	0	0

## 12552 22nd Ave. NE Storm Drainage Improvements

**Program:** Flood Control and Local Drainage **Start Date:** 4th Quarter 2001  
**Type:** New Facility **End Date:** 4th Quarter 2003  
**Project ID:** C301323

**Location:** 22ND AV NE

This project constructs a new piped storm drainage system draining to the east through City-owned right-of-way and private property (12558 22nd Avenue N.E. and 2212 N.E. 125th St.) to a newly constructed outfall emptying into the north branch of Thornton Creek.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	6	42	137	0	0	0	0	0	185
<i>O&amp;M Costs (Savings)</i>			0	0	1	1	1	1	4

## 1st Avenue South Salmon Habitat

**Program:** Protection of Beneficial Uses **Start Date:** 1st Quarter 2003  
**Type:** New Facility **End Date:** 4th Quarter 2006  
**Project ID:** C33NW302

**Location:** 1ST AV S and HIGHLAND PARK WY SW

**Neighborhood District:** Greater Duwamish **Neighborhood Plan:** Not in a Neighborhood Plan

This project regrades a currently unpaved site to provide more shallow water habitat during upper and middle tidal elevations. The project may become a partnership with the Washington State Department of Transportation, which has an adjacent restoration site. The project site is near the Duwamish bike trail and currently has a bench and a small amount of landscaping established by the Port of Seattle as a public access site. The Port intends to maintain these amenities as the habitat plan is developed by the City.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	0	0	63	100	1,000	950	0	0	2,113
<i>O&amp;M Costs (Savings)</i>			N/C	N/C	N/C	N/C	N/C	11	11

\*Amounts in thousands of dollars

# SPU - Drainage & Wastewater

## 20th Avenue NE Local Drainage

**Program:** Flood Control and Local Drainage **Start Date:** 3rd Quarter 2001  
**Type:** Improved Facility **End Date:** 4th Quarter 2004  
**Project ID:** C301317  
**Location:** 20th AV NE and NE 137TH ST  
**Neighborhood District:** North **Neighborhood Plan:** Broadview-Bitter Lake-Haller Lake

This project develops a plan and makes improvements to solve spot drainage problems and issues related to a ditch along 20th Avenue NE. High velocity flows in the ditch have caused undercutting of the banks near residential properties. Reshaping the ditch makes it safer while also decreasing water velocity.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	10	66	170	125	0	0	0	0	371
<i>O&amp;M Costs (Savings)</i>			0	0	0	3	3	3	9

## 3511 S. Dearborn Street - Sewer Rehabilitation

**Program:** Sewer Rehabilitation **Start Date:** 1st Quarter 2001  
**Type:** Rehabilitation or Restoration **End Date:** 3rd Quarter 2003  
**Project ID:** C301412  
**Location:** 3511 S DEARBORN ST  
**Neighborhood District:** Central **Neighborhood Plan:** Not in a Neighborhood Plan

This project restores two deteriorated side sewer connections at S. Dearborn Street between 12th Avenue and 14th Avenue with 12-inch ductile iron pipe.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	43	35	22	0	0	0	0	0	100
<i>O&amp;M Costs (Savings)</i>			0	0	0	0	0	0	0

## 39th Ave NE & NE 105th St. Drainage

**Program:** Flood Control and Local Drainage **Start Date:** 1st Quarter 2001  
**Type:** New Facility **End Date:** 4th Quarter 2003  
**Project ID:** C301315  
**Location:** 39TH AV NE and NE 105TH ST  
**Neighborhood District:** North **Neighborhood Plan:** North District/Lake City Way

This project reduces flooding between 39th Avenue NE and 40th Avenue NE immediately south of NE 105th Street by routing stormwater via a new system within the public right-of-way. Flooding and chronically saturated soil conditions occur because this area lies at the base of a 35-acre drainage basin which drains from steep slopes in the southwest toward Thornton Creek. A 48-inch diameter pipe is constructed within the NE 105th Street right-of-way to lower the hydraulic grade line of stormwater within the system. In addition, the existing storm drain catch basins are connected to alleviate flooding. The project scope includes planning, design, construction, and closeout for the recommended alternative.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	187	439	400	0	0	0	0	0	1,026
<i>O&amp;M Costs (Savings)</i>			0	0	5	5	5	5	20

\*Amounts in thousands of dollars

# SPU - Drainage & Wastewater

## 3rd Av NW & NW 107 St. Natural System

**Program:** Flood Control and Local Drainage **Start Date:** 4th Quarter 2000  
**Type:** Improved Facility **End Date:** 4th Quarter 2004  
**Project ID:** C300329  
**Location:** NW 107TH ST and 3RD AV NW  
**Neighborhood District:** Northwest **Neighborhood Plan:** Broadview-Bitter Lake-Haller Lake

This project addresses stormwater management using a "natural system" approach that promotes sustainable drainage design. The project minimizes the use of standard engineered stormwater infrastructure, using the unimproved right-of-way as a starting point for design. The project includes various elements: construction of an engineered system of stepped pools along the north side of NW 107th that detains runoff, filters pollutants and allows maximum opportunity for infiltration; use of vegetation as a stormwater management element and for aesthetic appeal; construction of a porous pathway on the south side of NW 107th to provide safe pedestrian access to a nearby elementary school; creation of a stormwater management feature within the right-of-way along NW 107th to solve the localized drainage problem and provide educational outreach.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	47	100	3,251	264	0	0	0	0	3,662
<i>O&amp;M Costs (Savings)</i>			0	0	4	4	4	4	16

## 3rd NW & N. 110th Natural System

**Program:** Flood Control and Local Drainage **Start Date:** 2nd Quarter 2001  
**Type:** Improved Facility **End Date:** 4th Quarter 2003  
**Project ID:** C301320  
**Location:** 3RD AV NW  
**Neighborhood District:** Northwest **Neighborhood Plan:** Broadview-Bitter Lake-Haller Lake

This project addresses stormwater management using a "natural system" approach that promotes sustainable drainage design. The project minimizes the use of standard engineered stormwater infrastructure, instead using the unimproved right-of-way such as the existing ditch system. The project redesigns and configures the current asphalt-lined drainage ditch and culvert system to meet water quality and quantity objectives.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	40	781	36	0	0	0	0	0	857
<i>O&amp;M Costs (Savings)</i>			0	0	8	8	8	8	32

\*Amounts in thousands of dollars

# SPU - Drainage & Wastewater

## 7th Ave S. & Duwamish River Drainage

**Program:** Flood Control and Local Drainage **Start Date:** 3rd Quarter 2002  
**Type:** New Facility **End Date:** 4th Quarter 2008  
**Project ID:** C33NW330

**Location:** 7TH AV S between SR99 & Duwamish River

**Neighborhood District:** Greater Duwamish **Neighborhood Plan:** South Park

This project constructs a 12-inch to 24-inch collection system, including inlets and catch basins to collect stormwater runoff that floods roadways throughout the South Park lower basin. The project solves flooding problems on public and private property, encourages the economic viability of businesses in the area, and allows streets to be improved. Most of the pipes are installed on east-west streets and connected to the 72-inch trunk running north through the basin. The project evaluates the adequacy of the 72-inch trunk for conveying the collected flow to the Duwamish River. Alternatives for providing adequate downstream conveyance capacity are addressed in the preliminary engineering phase of the project.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	0	25	50	100	200	500	2,726	2,000	5,601
<i>O&amp;M Costs (Savings)</i>			N/C	N/C	N/C	N/C	N/C	N/C	0

## Alaskan Way Viaduct & Seawall - Drainage

**Program:** Other Drainage **Start Date:** 4th Quarter 2001  
**Type:** New Facility **End Date:** 4th Quarter 2007  
**Project ID:** C33NW301

**Location:** ALASKA WAY VIADUCT

**Neighborhood District:** Downtown **Neighborhood Plan:** Commercial Core

This project funds planning, preliminary engineering, and design costs associated with replacing the Alaskan Way Viaduct and seawall with a new transportation facility. The Washington State Department of Transportation, in conjunction with the Seattle Department of Transportation (project TC366050), is conducting a plan and study for demolition and replacement of the existing facility. At this early stage, a number of options are being evaluated. This project provides general estimates of the costs of those improvements, which are to be refined as the project scope is further developed. This scope and funding amounts for this project are subject to change in early 2003.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	0	80	555	416	165	165	41	0	1,422
<i>O&amp;M Costs (Savings)</i>			N/C	N/C	N/C	N/C	N/C	N/C	0

\*Amounts in thousands of dollars

# SPU - Drainage & Wastewater

## Alaskan Way Viaduct & Seawall - Wastewater

**Program:** General Wastewater **Start Date:** 4th Quarter 2001  
**Type:** New Facility **End Date:** 4th Quarter 2007  
**Project ID:** C33NW201

**Location:** ALASKAN WAY VIADUCT

**Neighborhood District:** Downtown **Neighborhood Plan:** Commercial Core

This project funds planning, preliminary engineering, and design costs associated with replacing the Alaskan Way Viaduct and seawall with a new transportation facility. The Washington State Department of Transportation, in conjunction with the Seattle Transportation Department (project TC366050), is conducting a plan and study for demolition and replacement of the existing facility. At this early stage, a number of options are being evaluated. This project provides general estimates of the costs of those improvements, which are to be refined as the project scope is further developed.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	0	170	126	97	170	170	43	0	776
<i>O&amp;M Costs (Savings)</i>			N/C	N/C	N/C	N/C	N/C	N/C	0

## Atlas Pl. SW & SW Juneau Landslide Mitigation

**Program:** Public Asset Protection **Start Date:** 3rd Quarter 2001  
**Type:** New Facility **End Date:** 4th Quarter 2005  
**Project ID:** C300344

**Location:** Atlas Pl SW and SW JUNEAU ST

**Neighborhood District:** Southwest **Neighborhood Plan:** Not in a Neighborhood Plan

This project constructs a drainage system in a landslide-prone area to convey the storm water down the hill to an appropriate discharge point. The drainage system reduces the likelihood and damage of future landslides and protects several SPU facilities in the project area.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	106	572	109	960	240	0	0	0	1,987
<i>O&amp;M Costs (Savings)</i>			0	0	0	0	9	9	18

\*Amounts in thousands of dollars

# SPU - Drainage & Wastewater

## Ballard Combined Sewer Overflow Storage

**Program:** Combined Sewer Overflow **Start Date:** 1st Quarter 2002  
**Type:** New Facility **End Date:** 4th Quarter 2010  
**Project ID:** C33NW101

**Location:** TBD

**Neighborhood District:** Ballard **Neighborhood Plan:** Not in a Neighborhood Plan

This project constructs Combined Sewer Overflow (CSO) storage facilities in the Ballard area, Basins 150/151 and 152, which discharge to Salmon Bay. Major work includes flow monitoring and system modeling to analyze CSO reduction alternatives, selection of sites for the storage facility, design, permits, and construction. The Ballard CSO project was proposed in the 1988 CSO Control Plan as a joint project with King County. SPU is assuming that King County is rescheduling their Ballard CSO Project in their 2005 CSO Plan update so that the joint project may proceed.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	0	0	50	50	500	500	1,000	1,500	3,600
<i>O&amp;M Costs (Savings)</i>			N/C	N/C	N/C	N/C	N/C	N/C	0

## Ballard Town Center Assessment

**Program:** Other Drainage **Start Date:** 3rd Quarter 2002  
**Type:** Improved Facility **End Date:** 4th Quarter 2003  
**Project ID:** C33NW305

**Location:** 20TH AV NW & 25TH AV NW

**Neighborhood District:** Ballard **Neighborhood Plan:** Crown Hill/Ballard

This project develops an inventory and assessment of Level-of-Service demands for a drainage collection system (both combined and separated storm drain) currently serving a four-by-four block area. Level-of-service is determined based on factors including: historical flooding and back-up records; planned public and private improvements for Ballard Municipal Center; integrated Combined Sewer Overflow (CSO) and storm outfall management goals for selected downstream points; and Salmon Bay Waterway habitat management goals. The assessment also examines various alternatives for improving the efficiency of piped conveyance and relieving flow impacts at downstream overflows/outfalls. Alternatives may include shared detention, on-site storage methods, maintenance improvements, pipe network upgrades and re-routing.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	0	50	75	0	0	0	0	0	125
<i>O&amp;M Costs (Savings)</i>			N/C	N/C	N/C	N/C	N/C	N/C	0

\*Amounts in thousands of dollars

# SPU - Drainage & Wastewater

## Beer Sheva Habitat Improvement

**Program:** Protection of Beneficial Uses **Start Date:** 4th Quarter 2001  
**Type:** New Facility **End Date:** 4th Quarter 2004  
**Project ID:** C301319

**Location:** SEWARD PARK AV S and S HENDERSON ST

**Neighborhood District:** Southeast **Neighborhood Plan:** Rainier Beach

This project creates high-quality fish refuge and rearing habitat at the mouth of Mapes Creek and a natural creek channel in the lower portion of the creek by making several improvements. The project includes creating a natural creek mouth by placing the creek in an open, meandering creek channel in Beer Sheva Park, and relocating its discharge point into Lake Washington at the edge of the shoreline rather than offshore in deeper water. The middle portion of the creek is re-piped to separate its flow from storm water and Combined Sewer Overflow (CSO) discharges and to improve downstream water quality.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	6	90	0	150	0	0	0	0	246
O&M Costs (Savings)			0	0	0	3	3	3	9

## Bitter Lake/N. 137th Stormwater

**Program:** Protection of Beneficial Uses **Start Date:** 2nd Quarter 2001  
**Type:** New Facility **End Date:** TBD  
**Project ID:** C301322

**Location:** GREENWOOD AV N and N 145TH ST

**Neighborhood District:** Northwest **Neighborhood Plan:** Broadview-Bitter Lake-Haller Lake

This project funds the design and construction of selected alternatives for improving the quality of stormwater before it enters Bitter Lake. A preliminary engineering report has been completed by a Seattle University civil engineering senior design team to evaluate options. Treatment options included wet vaults and media filters with swirl concentrators for pretreatment. Additional work designs and implements appropriate treatment systems for improving stormwater runoff quality from the Greenwood Avenue N. storm drain before discharge to Bitter Lake. Although funding has been allocated for the project in 2003-2004, the project is temporarily postponed pending completion of the Drainage Comprehensive Plan, to enable this project and other proposed stormwater quality projects to be evaluated and prioritized Citywide.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	7	5	0	257	0	0	0	0	269
O&M Costs (Savings)			N/C	N/C	N/C	2	2	2	6

\*Amounts in thousands of dollars



# SPU - Drainage & Wastewater

## Burke Gilman/NE 144th Landslide Mitigation

**Program:** Public Asset Protection **Start Date:** 1st Quarter 2001  
**Type:** Improved Facility **End Date:** 4th Quarter 2007  
**Project ID:** C301355

**Location:** NE 145TH ST and 38TH AV NE

**Neighborhood District:** North **Neighborhood Plan:** Not in a Neighborhood Plan

This project investigates and develops a long-range plan to address flooding and slope instability problems in northeast Seattle. The plan includes researching historical information, drilling soil samples, identifying and implementing solutions to problem areas, and developing planning-level cost estimates.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	89	192	2	201	650	650	1,000	0	2,784
<i>O&amp;M Costs (Savings)</i>			0	0	0	0	0	0	0

## Civic Projects - Drainage

**Program:** Other Drainage **Start Date:** 1st Quarter 2003  
**Type:** New Facility **End Date:** 4th Quarter 2003  
**Project ID:** C33NW336

**Location:** Rainier Vista and High Point

**Neighborhood District:** Southeast **Neighborhood Plan:** Rainier Beach

This project funds construction of drainage infrastructure for housing development or redevelopment projects for very low-income households. In 2003, funding is provided for the Seattle Housing Authority's NewHolly Phase 3 housing project. Funding is recovered in future years through increased water, wastewater, and drainage charges applied against the redevelopment project. See also project C33NW212 and project WFNEW390 in the Department's Water CIP.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	0	0	300	0	0	0	0	0	300
<i>O&amp;M Costs (Savings)</i>			N/C	N/C	N/C	N/C	N/C	N/C	0

## Civic Projects - Wastewater

**Program:** General Wastewater **Start Date:** 2nd Quarter 2002  
**Type:** New Facility **End Date:** 4th Quarter 2006  
**Project ID:** C33NW212

**Location:** Various

This project funds construction of drainage infrastructure for housing development or redevelopment projects for very low-income households. In 2003-2004, funding is provided for the Seattle Housing Authority's NewHolly Phase 3 housing project. Funding is recovered in future years through increased water, wastewater, and drainage charges applied against the redevelopment project. See also project C33NW336 and project WFNEW390 in the Department's Water CIP.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	0	10	254	0	0	0	0	0	264
<i>O&amp;M Costs (Savings)</i>			N/C	N/C	N/C	N/C	N/C	N/C	0

\*Amounts in thousands of dollars

# SPU - Drainage & Wastewater

## Combined Sewer Overflow Control Facility Retrofit

**Program:** Combined Sewer Overflow **Start Date:** 1st Quarter 2003  
**Type:** Rehabilitation or Restoration **End Date:** 4th Quarter 2004  
**Project ID:** C33NW102

**Location:** Various locations

**Neighborhood District:** In more than one district **Neighborhood Plan:** Not in a Neighborhood Plan

This project includes retrofit, upgrade, and modifications of existing Combined Sewer Overflow (CSO) reduction facilities, including hydrobrake, overflow weirs, and storage tanks. These CSO facilities are located in Windermere, Magnolia, Genesee, Henderson and Delridge areas. This project was evaluated during the development of the 2001 CSO Reduction Plan Amendment, and represents the most cost-effective alternative to complying with CSO regulations in this area.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	0	0	990	691	0	0	0	0	1,681
<i>O&amp;M Costs (Savings)</i>			N/C	N/C	N/C	N/C	N/C	N/C	0

## Comprehensive Ditch and Culvert Inventory

**Program:** Flood Control and Local Drainage **Start Date:** 2nd Quarter 1998  
**Type:** Rehabilitation or Restoration **End Date:** 4th Quarter 2004  
**Project ID:** C3AA307

**Location:** Citywide

**Neighborhood District:** In more than one district **Neighborhood Plan:** Not in a Neighborhood Plan

This data collection, analysis, and management program completes the inventory of ditches around the City for input into the City's Geographic Information System. Work to date has involved the use of a Global Positioning System (GPS) to map locations and selected attributes of the surface drainage system. More than 1,000 miles of City right-of-way have been mapped.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	815	240	180	180	0	0	0	0	1,415
<i>O&amp;M Costs (Savings)</i>			0	0	0	0	0	0	0

\*Amounts in thousands of dollars

# SPU - Drainage & Wastewater

## Comprehensive Drainage Plan Update

**Program:** Flood Control and Local Drainage **Start Date:** 1st Quarter 2002  
**Type:** Improved Facility **End Date:** 4th Quarter 2004  
**Project ID:** C302301  
**Location:** Citywide

This project revises and updates the City's Comprehensive Drainage Plan, which was originally written in 1988. The revised plan addresses drainage and water quality problems Citywide. It includes a status report on the work accomplished since 1988 and provides a 20-year plan for capital improvements in accordance with the Drainage Policy Study adopted by the City Council in 1999. The plan also includes recommendations for water quality monitoring and education programs in compliance with the City's National Pollutant Discharge Elimination System (NPDES) permit and Endangered Species Act (ESA) regulations as well as a long-term maintenance plan and funding analysis. Development of the plan includes a public input process and environmental review.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	0	350	650	28	0	0	0	0	1,028
O&M Costs (Savings)			0	0	0	0	0	0	0

## Comprehensive Retrofit/BMP Program

**Program:** Protection of Beneficial Uses **Start Date:** 2nd Quarter 2000  
**Type:** New Facility **End Date:** 4th Quarter 2004  
**Project ID:** C300316  
**Location:** Citywide

**Neighborhood District:** In more than one district **Neighborhood Plan:** Not in a Neighborhood Plan

This program identifies, develops, and implements a Best Management Practices (BMP) program. The program identifies appropriate sites and types of structural BMPs to be installed at various locations. The BMPs are installed to improve water quality entering the surrounding receiving waters (e.g. streams or lakes).

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	29	50	0	226	0	0	0	0	305
O&M Costs (Savings)			0	0	0	0	0	0	0

## Creeks CIP Monitoring & Repair Program

**Program:** Protection of Beneficial Uses **Start Date:** Ongoing  
**Type:** Rehabilitation or Restoration **End Date:** Ongoing  
**Project ID:** C300309  
**Location:** Citywide

**Neighborhood District:** In more than one district **Neighborhood Plan:** Not in a Neighborhood Plan

This program monitors the success of instream restoration and improvement projects and collects baseline data before construction. This program also adjusts existing instream projects, repairs minor erosion problems, supports streamside reforestation and assists stewardship.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	219	260	184	248	250	250	250	250	1,911
O&M Costs (Savings)			0	0	0	0	0	0	0

\*Amounts in thousands of dollars

# SPU - Drainage & Wastewater

## Creeks Emerging Issues Program

**Program:** Protection of Beneficial Uses **Start Date:** 1st Quarter 2004  
**Type:** Improved Facility **End Date:** 4th Quarter 2004  
**Project ID:** C305NW1

**Location:** Citywide

**Neighborhood District:** In more than one district **Neighborhood Plan:** Not in a Neighborhood Plan

This program identifies, designs, and constructs stream-related projects. These projects are related to fish passage, erosion control on public property, enhancement of riparian corridor, and habitat improvements. This project also addresses emerging issues which are not foreseeable in the budget process.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	0	0	0	98	0	0	0	0	98
<i>O&amp;M Costs (Savings)</i>			0	0	0	0	0	0	0

## Creekside Erosion Control

**Program:** Protection of Beneficial Uses **Start Date:** 1st Quarter 2001  
**Type:** Improved Facility **End Date:** 4th Quarter 2004  
**Project ID:** C300311

**Location:** Citywide

**Neighborhood District:** In more than one district **Neighborhood Plan:** Not in a Neighborhood Plan

This project addresses minor areas of erosion adjacent to creeks. Erosion is a natural process, but many urban activities accelerate erosive rates. Localized erosion problems may be caused by landslides, poorly designed storm drain outfalls, or sharp bends in a stream. This program addresses some minor erosion sites that do not require a major restoration effort.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	145	0	30	139	0	0	0	0	314
<i>O&amp;M Costs (Savings)</i>			0	0	0	1	1	1	3

## CSO Modeling and Assessment

**Program:** Combined Sewer Overflow **Start Date:** 1st Quarter 1999  
**Type:** Rehabilitation or Restoration **End Date:** Ongoing  
**Project ID:** C399101

**Location:** Citywide

**Neighborhood District:** In more than one district **Neighborhood Plan:** Not in a Neighborhood Plan

This project establishes and calibrates models of the City's combined sewer system, in order to support Combined Sewer Overflow (CSO) reduction planning and evaluate alternative strategies for reducing CSOs. These models are also used to assist in the design and operation of CSO reduction facilities.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	885	275	54	440	451	58	100	50	2,313
<i>O&amp;M Costs (Savings)</i>			0	0	0	0	0	0	0

\*Amounts in thousands of dollars

# SPU - Drainage & Wastewater

## CSO Monitoring Installation

**Program:** Combined Sewer Overflow **Start Date:** 1st Quarter 1999  
**Type:** Improved Facility **End Date:** 3rd Quarter 2004  
**Project ID:** C3AA108

**Location:** Citywide

**Neighborhood District:** In more than one district **Neighborhood Plan:** Not in a Neighborhood Plan

The City's Combined Sewer Overflow (CSO) National Pollutant Discharge Elimination System permit requires that monitoring devices be installed in all CSO outfalls. Since this installation was completed in 2002, funds are used to monitor special locations to assess problem overflows, and for in-system monitoring as required to support the development of reduction alternatives for the CSO plan.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	1,384	200	194	33	0	0	0	0	1,811
<i>O&amp;M Costs (Savings)</i>			0	0	315	315	315	315	1,260

## CSO Plan Implementation

**Program:** Combined Sewer Overflow **Start Date:** 1st Quarter 2002  
**Type:** Improved Facility **End Date:** Ongoing  
**Project ID:** C302101

**Location:** Citywide

**Neighborhood District:** In more than one district **Neighborhood Plan:** Not in a Neighborhood Plan

This program funds Combined Sewer Overflow (CSO) projects to control overflows into Salmon Bay, the Ship Canal, Lake Washington and other water bodies. Projects are identified through the CSO plan.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	0	500	394	830	644	2,105	2,590	3,090	10,153
<i>O&amp;M Costs (Savings)</i>			0	0	0	0	0	0	0

## CSO Plan Update

**Program:** Combined Sewer Overflow **Start Date:** 1st Quarter 1999  
**Type:** Improved Facility **End Date:** Ongoing  
**Project ID:** C3AA103

**Location:** Citywide

**Neighborhood District:** In more than one district **Neighborhood Plan:** Not in a Neighborhood Plan

Combined Sewer Overflow (CSO) reduction plans are required by the Department of Ecology every five years. The next plan is due in 2006. This project funds preparation of the plan, Environmental Impact Statements, and public participation activities.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	1,283	16	107	385	395	463	100	100	2,849
<i>O&amp;M Costs (Savings)</i>			0	0	0	0	0	0	0

\*Amounts in thousands of dollars

# SPU - Drainage & Wastewater

## Delridge Basin Phase II Channel Improvements

**Program:** Protection of Beneficial Uses **Start Date:** 2nd Quarter 1993  
**Type:** Improved Facility **End Date:** 4th Quarter 2003  
**Project ID:** C3AA319  
**Location:** 26th AV SW/SW Myrtle St  
**Neighborhood District:** Delridge **Neighborhood Plan:** Delridge

This project makes improvements to the Longfellow Creek stream channel between SW Myrtle Street and SW Juneau Street. These improvements increase the creek's capacity by widening the channel and stabilizing the stream banks. Culverts at street crossings are enlarged to remove flow restrictions and to allow fish passage.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	2,515	1,074	339	0	0	0	0	0	3,928
<i>O&amp;M Costs (Savings)</i>			0	0	82	82	82	82	328

## Densmore Basin Water Quality Investigation

**Program:** Protection of Beneficial Uses **Start Date:** 3rd Quarter 2002  
**Type:** New Facility **End Date:** 4th Quarter 2003  
**Project ID:** C33NW311  
**Location:** N 143RD ST and 1ST AV NW

A drainage improvement study has been completed for the Densmore drainage basin. This project evaluates potential impacts on water quality in the basin, which includes Green Lake, from the proposed drainage improvements. The project also identifies and evaluates both structural and non-structural options to improve stormwater quality in the basin and mitigate impacts on Green Lake.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	0	50	282	0	0	0	0	0	332
<i>O&amp;M Costs (Savings)</i>			0	0	0	0	0	0	0

## Drainage Spot Improvements

**Program:** Flood Control and Local Drainage **Start Date:** 2nd Quarter 1998  
**Type:** Rehabilitation or Restoration **End Date:** Ongoing  
**Project ID:** C300303  
**Location:** Citywide  
**Neighborhood District:** In more than one district **Neighborhood Plan:** Not in a Neighborhood Plan

This program makes a number of spot improvements to drainage systems and creeks throughout the City. Projects increase the capacity of the drainage systems, prevent flooding, and restore fish habitat. Typical improvements include installation of inlets and catch basins, construction of ditches and grassed swales, installation of culverts, plantings to reduce erosion, and the construction of check dams.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	4,669	363	151	153	150	150	150	150	5,936
<i>O&amp;M Costs (Savings)</i>			0	0	0	0	0	0	0

\*Amounts in thousands of dollars

# SPU - Drainage & Wastewater

## Duwamish Sediment Remediation

**Program:** Habitat and Sediments **Start Date:** 4th Quarter 2000  
**Type:** Rehabilitation or Restoration **End Date:** 4th Quarter 2006  
**Project ID:** C300412

**Location:** Lower Duwamish Waterway.

**Neighborhood District:** Greater Duwamish **Neighborhood Plan:** Not in a Neighborhood Plan

This project funds a three-year evaluation of the Lower Duwamish River to determine the extent and degree of contamination and the risk it poses to human health and the environment. The primary goal of the project's first phase is to summarize existing information concerning the nature and extent of contamination, and to identify priority sites for early action. This work is a partnership with Seattle City Light, the Port of Seattle, King County, and Boeing. Work is being done under a formal Administrative Order of Consent (AOC) with the US Environmental Protection Agency, and the Washington Department of Ecology. This study serves as a Remedial Investigation and Feasibility Study for the Lower Duwamish.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	91	284	359	469	954	872	0	0	3,029
<i>O&amp;M Costs (Savings)</i>			N/C	N/C	N/C	N/C	N/C	N/C	0

## DWW Operations Control Center Upgrade - Drainage

**Program:** Other Drainage **Start Date:** 1st Quarter 2003  
**Type:** Improved Facility **End Date:** 4th Quarter 2004  
**Project ID:** C33NW321

**Location:** AIRPORT WY S

This project upgrades the existing SPU Operations Control Center on Airport Way. The upgraded center accommodates Drainage and Wastewater Operations office staff from the Dexter Horton Building in downtown Seattle, as well as the pump station crews from SPU's Charles Street facility. Moving these staff to the Operations Control Center promotes better coordination with the rest of the Operations Branch.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	0	0	506	249	0	0	0	0	755
<i>O&amp;M Costs (Savings)</i>			N/C	N/C	4	4	4	4	16

## DWW Operations Control Center Upgrade - Wastewater

**Program:** General Wastewater **Start Date:** 1st Quarter 2003  
**Type:** Improved Facility **End Date:** 4th Quarter 2004  
**Project ID:** C33NW213

**Location:** AIRPORT WY S

This project upgrades the existing SPU Operations Control Center on Airport Way. The upgraded center accommodates Drainage and Wastewater Operations office staff from the Dexter Horton Building in downtown Seattle, as well as the pump station crews from SPU's Charles Street facility. Moving these staff to the Operations Control Center promotes better coordination with the rest of the Operations Branch.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	0	0	505	249	0	0	0	0	754
<i>O&amp;M Costs (Savings)</i>			N/C	N/C	4	4	4	4	16

\*Amounts in thousands of dollars

# SPU - Drainage & Wastewater

## DWW Operations Planning Tool

**Program:** General Wastewater  
**Type:** New Investment  
**Project ID:** C33NW202  
**Location:** N/A

**Start Date:** 4th Quarter 2002  
**End Date:** 4th Quarter 2004

This project develops an online reference tool that consolidates and describes information on City code requirements related to drainage and wastewater and the current condition of the City's drainage and wastewater system, to provide a resource for operations, permitting, planning, programming, and regulatory compliance. Drainage and wastewater permitting, planning, and operations decisions are based on both current system conditions and requirements expressed in the Stormwater Code, Side Sewer Code, associated Director's Rules and other relevant policies. No tool currently exists that represents these policies and requirements as they apply across the current conditions of the jurisdiction.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	0	38	38	63	0	0	0	0	139
<i>O&amp;M Costs (Savings)</i>			N/C	N/C	N/C	N/C	N/C	N/C	0

## East Boston Terrace Project

**Program:** Public Asset Protection  
**Type:** New Facility  
**Project ID:** C300320  
**Location:** 1617 East Boston Terrace

**Start Date:** 1st Quarter 2001  
**End Date:** 4th Quarter 2004

**Neighborhood District:** East District

**Neighborhood Plan:** Not in a Neighborhood Plan

This project provides drainage system improvements at East Boston Terrace and removes City stormwater runoff from a private side sewer, a portion of which is a deteriorated old wood stave line. The project intercepts stormwater runoff on a landslide-prone area and drains it to a City-owned system.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	139	145	795	200	0	0	0	0	1,279
<i>O&amp;M Costs (Savings)</i>			0	0	0	6	6	6	18

\*Amounts in thousands of dollars



# SPU - Drainage & Wastewater

## Elevated Transportation Company - Drainage

**Program:** Other Drainage **Start Date:** 3rd Quarter 2002  
**Type:** New Facility **End Date:** 4th Quarter 2007  
**Project ID:** C33NW331

**Location:** West Seattle, SW Morgan St & Ballard, NW 85th St

**Neighborhood District:** In more than one district **Neighborhood Plan:** Not in a Neighborhood Plan

This project funds planning and design of SPU utility relocations and improvements associated with implementation of a new monorail. The project does not include funding for any SPU construction-related costs. The Elevated Transportation Company (ETC) is planning an initial 14-mile monorail route between Ballard and West Seattle that would travel through downtown Seattle. A preferred alignment and financing plan were approved by Seattle voters in November, 2002. To date, there is no agreement between the ETC and the City for reimbursement of costs incurred by City departments. See also project C33NW210.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	0	75	64	39	148	148	148	0	622
<i>O&amp;M Costs (Savings)</i>			N/C	N/C	N/C	N/C	N/C	N/C	0

## Elevated Transportation Company - Wastewater

**Program:** General Wastewater **Start Date:** 1st Quarter 2002  
**Type:** New Facility **End Date:** 4th Quarter 2007  
**Project ID:** C33NW210

**Location:** W SEATTLE, SW MORGAN ST & BALLARD, NW 85TH ST

**Neighborhood District:** In more than one district **Neighborhood Plan:** Not in a Neighborhood Plan

This project funds planning and design of SPU utility relocations and improvements associated with implementation of a new monorail. The project does not include funding for any SPU construction-related costs. The Elevated Transportation Company (ETC) is planning an initial 14-mile monorail route between Ballard and West Seattle that would travel through downtown Seattle. A preferred alignment and financing plan were approved by Seattle voters in November, 2002. To date, there is no agreement between the ETC and the City for reimbursement of costs incurred by City departments.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	0	50	64	39	148	148	148	0	597
<i>O&amp;M Costs (Savings)</i>			N/C	N/C	N/C	N/C	N/C	N/C	0

\*Amounts in thousands of dollars

# SPU - Drainage & Wastewater

## Fairview Ave N. Drainage Assessment

**Program:** Flood Control and Local Drainage **Start Date:** 3rd Quarter 2001  
**Type:** Improved Facility **End Date:** 2nd Quarter 2004  
**Project ID:** C300321

**Location:** FAIRVIEW AV E and E GARFIELD ST

**Neighborhood District:** Lake Union **Neighborhood Plan:** Not in a Neighborhood Plan

This project provides storm drain extensions on Fairview Avenue E. from the E. Garfield outfall to Fairview Avenue N. and from the E. Boston St. outfall to E. Newton St. A storm drain extension reduces the number of outfalls and provides a drainage system that is easy to maintain, in what is currently a high maintenance area. The drainage improvements support two neighborhood-requested projects, one of which has neighborhood matching funds and the second which has funding from the Seattle Department of Transportation.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	65	74	224	28	0	0	0	0	391
<i>O&amp;M Costs (Savings)</i>			0	0	0	1	1	1	3

## Fauntleroy Creek Sediment Control

**Program:** Protection of Beneficial Uses **Start Date:** 2nd Quarter 2003  
**Type:** Rehabilitation or Restoration **End Date:** 4th Quarter 2004  
**Project ID:** C33NW312

**Location:** CALIFORNIA AV SW and SW BARTON ST

**Neighborhood District:** Southwest **Neighborhood Plan:** Not in a Neighborhood Plan

This project designs and constructs improvements in Fauntleroy Park to control sediments and reduce erosion, consistent with the Fauntleroy Watershed Plan. The project also improves stream habitat in Fauntleroy Creek, which supports coho salmon. The scope of the project is still being defined, and the costs shown here (including construction costs) are estimated.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	0	0	40	40	0	0	0	0	80
<i>O&amp;M Costs (Savings)</i>			N/C	N/C	N/C	N/C	N/C	N/C	0

## Force Main/Pump Stations Plan and Improvements

**Program:** General Wastewater **Start Date:** 3rd Quarter 2002  
**Type:** Improved Facility **End Date:** Ongoing  
**Project ID:** C302204

**Location:** Citywide

Through 2004, this program develops a long-term strategy for prioritizing improvements in the City's wastewater force mains and pump stations based on criteria such as average life expectancy, system capacity projections, and physical inventory data. The program allows SPU to make better capital replacement and repair decisions regarding pump stations and force mains, helping to optimize operations and maintenance efforts and costs associated with these assets over a longer-term planning horizon. Starting in 2005, funds budgeted in this program are used to implement the strategy and replace defective critical components.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	0	200	600	500	500	500	500	500	3,300
<i>O&amp;M Costs (Savings)</i>			N/C	N/C	N/C	N/C	N/C	N/C	0

\*Amounts in thousands of dollars

# SPU - Drainage & Wastewater

## Forced Side Sewer Repairs

**Program:** General Wastewater **Start Date:** 1st Quarter 1994  
**Type:** Rehabilitation or Restoration **End Date:** Ongoing  
**Project ID:** C3AA201

**Location:** Citywide

**Neighborhood District:** In more than one district **Neighborhood Plan:** Not in a Neighborhood Plan

This program funds repairs to side sewers when failure to a side sewer affects the public health and the owner is unable to make the repair. SPU makes the repair and places a lien on the property.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	208	90	10	10	10	10	10	10	358
<i>O&amp;M Costs (Savings)</i>			0	0	0	0	0	0	0

## Fremont-Wallingford Combined Sewer Overflow (CSO)

**Program:** Combined Sewer Overflow **Start Date:** 1st Quarter 2003  
**Type:** Improved Facility **End Date:** 4th Quarter 2010  
**Project ID:** C33NW103

**Location:** TBD

This project constructs Combined Sewer Overflow (CSO) storage, weir modification, and partial separation of stormwater and wastewater to reduce overflows in the Fremont/Wallingford area. The City is conducting flow monitoring and system modeling to further analyze project alternatives and cost estimates. Major work includes selection of sites for the storage facility, design, permits, and construction. The project was proposed in the 1988 CSO Control Plan, to comply with CSO regulations.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	0	0	50	50	500	800	1,360	1,540	4,300
<i>O&amp;M Costs (Savings)</i>			N/C	N/C	N/C	N/C	N/C	N/C	0

## Future Sewer Improvements

**Program:** General Wastewater **Start Date:** 1st Quarter 2003  
**Type:** Improved Facility **End Date:** 4th Quarter 2006  
**Project ID:** C33NW204

**Location:** City Wide

This project makes a number of spot improvements to small-capacity sewer systems throughout the City. Typical improvements include rerouting of a sewer line and relocation of a maintenance hole.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	0	0	322	330	338	347	0	0	1,337
<i>O&amp;M Costs (Savings)</i>			N/C	N/C	N/C	N/C	N/C	N/C	0

\*Amounts in thousands of dollars

# SPU - Drainage & Wastewater

## Georgetown Drainage Basin Study

**Program:** Flood Control and Local Drainage **Start Date:** 2nd Quarter 2002  
**Type:** Improved Facility **End Date:** 4th Quarter 2003  
**Project ID:** C302NW1  
**Location:** Area of Georgetown  
**Neighborhood District:** Greater Duwamish **Neighborhood Plan:** Georgetown

This project funds a planning-level analysis of drainage demands in the Georgetown neighborhood. Information previously developed by City and County Combined Sewer Overflow (CSO) studies and past drainage studies is used. This project is coordinated with the Norfolk Basin Plan, the City's new CSO Plan, and other initiatives in the area.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	0	160	50	0	0	0	0	0	210
O&M Costs (Savings)			0	0	0	0	0	0	0

## Georgetown Pump Station Salmon Habitat

**Program:** Protection of Beneficial Uses **Start Date:** 1st Quarter 2003  
**Type:** New Facility **End Date:** 4th Quarter 2006  
**Project ID:** C33NW315  
**Location:** 7303 8TH AV S & Duwamish Waterway  
**Neighborhood District:** Greater Duwamish **Neighborhood Plan:** Not in a Neighborhood Plan

This project restores off-channel salmon habitat at the Georgetown Pump Station by regrading the area around the pump station to intertidal elevations. The project may include making improvements to the adjacent street end and creating other public amenities. Habitat created provides rearing opportunities for outmigrating juvenile salmonids and is part of the City's Endangered Species Act response for the Duwamish Waterway. Costs for operations and maintenance of the completed project include vegetation maintenance and debris removal.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	0	0	59	87	700	700	0	0	1,546
O&M Costs (Savings)			N/C	N/C	N/C	N/C	N/C	8	8

\*Amounts in thousands of dollars

# SPU - Drainage & Wastewater

## Harbor Island - Storm Drain Repair

**Program:** Flood Control and Local Drainage **Start Date:** 3rd Quarter 2002  
**Type:** Rehabilitation or Restoration **End Date:** 4th Quarter 2005  
**Project ID:** C33NW316

**Location:** All of Harbor Island

**Neighborhood District:** Greater Duwamish **Neighborhood Plan:** Not in a Neighborhood Plan

This project repairs cracks and leaks in City-owned storm drains on Harbor Island to reduce the amount of contaminants discharged to the surrounding waterways through infiltration of contaminated groundwater. SPU has determined that oil is flowing into the SW Florida Avenue drain via cracks and leaks in the system. Portions of that drain have been video-inspected as part of work being conducted for the Terminal 18 redevelopment project, and SPU is currently contracting to have the remainder of the SW Florida Avenue system cleaned and inspected. Other drains on Harbor Island may also be experiencing infiltration problems. In 2002, the remaining storm drains on Harbor Island were video inspected to evaluate their condition and identify areas that require repair. This project completes those repairs.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	0	20	66	150	437	0	0	0	673
<i>O&amp;M Costs (Savings)</i>			N/C	N/C	N/C	N/C	3	3	6

## Heavy Equipment Purchases - Drainage

**Program:** Other Drainage **Start Date:** Ongoing  
**Type:** Rehabilitation or Restoration **End Date:** Ongoing  
**Project ID:** C300399

**Location:** N/A

This project replaces existing heavy equipment (such as vactors, loaders, and bulldozers) used by SPU field crews. These pieces of equipment have reached the end of their useful lives.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	1,276	246	300	880	177	520	350	350	4,099
<i>O&amp;M Costs (Savings)</i>			0	0	0	0	0	0	0

## Heavy Equipment Purchases - Wastewater

**Program:** General Wastewater **Start Date:** Ongoing  
**Type:** Rehabilitation or Restoration **End Date:** Ongoing  
**Project ID:** C300499

**Location:** N/A

This project replaces existing heavy equipment (such as vactors, loaders, and bulldozers) used by SPU field crews. These pieces of equipment have reached the end of their useful lives.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	1,254	580	1,330	300	360	230	470	470	4,994
<i>O&amp;M Costs (Savings)</i>			0	0	0	0	0	0	0

\*Amounts in thousands of dollars

# SPU - Drainage & Wastewater

## Jackson Park Detention Phase 2

**Program:** Flood Control and Local Drainage **Start Date:** 2nd Quarter 1999  
**Type:** New Facility **End Date:** 4th Quarter 2004  
**Project ID:** C399305  
**Location:** Jackson Park Golf Course  
**Neighborhood District:** North **Neighborhood Plan:** Broadview-Bitter Lake-Haller Lake

This project constructs three detention ponds in the Jackson Park golf course, including overflow structures for transferring flow between the creek and the ponds. The project reroutes 1,600 feet of Thornton Creek channel within the golf course to accommodate the proposed detention ponds as well as improve habitat for fish and wildlife. The project removes 500 feet of culvert within the golf course and replaces it with open channel.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	1,410	3,020	3,121	1,616	0	0	0	0	9,167
<i>O&amp;M Costs (Savings)</i>			0	0	0	45	45	45	135

## Lake Dell/33 E Landslide Mitigation

**Program:** Public Asset Protection **Start Date:** 3rd Quarter 2001  
**Type:** New Facility **End Date:** 4th Quarter 2005  
**Project ID:** C301352  
**Location:** LAKE DELL AV and 32ND AV  
**Neighborhood District:** Central **Neighborhood Plan:** Not in a Neighborhood Plan

This project reduces the likelihood and damage of future landslides by funding preliminary engineering, design, and construction of a drainage system to convey storm water down the hill to an appropriate discharge point.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	9	111	20	90	300	0	0	0	530
<i>O&amp;M Costs (Savings)</i>			0	0	0	0	3	3	6

## Lake Washington/Lower Duwamish Habitat Protection

**Program:** Protection of Beneficial Uses **Start Date:** 4th Quarter 2001  
**Type:** Improved Facility **End Date:** Ongoing  
**Project ID:** C300342  
**Location:** Lower Duwamish River  
**Neighborhood District:** Greater Duwamish **Neighborhood Plan:** Not in a Neighborhood Plan

This program acquires and/or develops habitat or other salmon-beneficial projects in the Green/Duwamish River system. The projects or programs may be done in cooperation with the Port of Seattle, King County, affected Tribes, or other agencies and organizations.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	12	100	0	0	902	925	950	950	3,839
<i>O&amp;M Costs (Savings)</i>			0	0	0	0	0	0	0

\*Amounts in thousands of dollars

# SPU - Drainage & Wastewater

## Landslide-Prone Area Program

**Program:** Public Asset Protection **Start Date:** 1st Quarter 1999  
**Type:** Improved Facility **End Date:** Ongoing  
**Project ID:** C300302

**Location:** Citywide

**Neighborhood District:** In more than one district **Neighborhood Plan:** Not in a Neighborhood Plan

This program improves surface and subsurface drainage in landslide-prone areas around the City by constructing new facilities and rehabilitating or improving existing facilities. This program was endorsed by the City Council as part of the Landslide Policies in 1998. Operations and maintenance costs indicated below are included in the Department's 2003-2004 budget.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	1,852	649	287	702	500	500	900	500	5,890
<i>O&amp;M Costs (Savings)</i>			3	6	8	8	8	8	41

## Linden Ave N. & N. 143rd Drainage Enhancement

**Program:** Flood Control and Local Drainage **Start Date:** 3rd Quarter 2001  
**Type:** New Facility **End Date:** 4th Quarter 2003  
**Project ID:** C301321

**Location:** N 143RD ST to N 138TH ST

**Neighborhood District:** Northwest **Neighborhood Plan:** Broadview-Bitter Lake-Haller Lake

This project constructs inlets and catch basins to collect stormwater runoff that floods the roadway at the intersection of Linden Avenue N. and N. 143rd Street. The project includes constructing connecting pipes to convey the flow to the southwest corner of the intersection, and planting vegetation in the drainage ditch and around the detention facility. Alternatives for carrying the water south from this intersection are evaluated during preliminary engineering, and surveying is conducted to determine the feasibility of each alternative.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	12	140	406	0	0	0	0	0	558
<i>O&amp;M Costs (Savings)</i>			N/C	N/C	3	3	3	3	12

\*Amounts in thousands of dollars

# SPU - Drainage & Wastewater

## Linden Avenue Swale

**Program:** Flood Control and Local Drainage **Start Date:** 4th Quarter 2000  
**Type:** Improved Facility **End Date:** 4th Quarter 2005  
**Project ID:** C3AA318  
**Location:** N. Park Ave to Linden Ave N. from 130th St. to N.127th St.  
**Neighborhood District:** Northwest **Neighborhood Plan:** Broadview-Bitter Lake-Haller Lake

This project addresses drainage and flooding problems in an area between N. 130th Street and N. 125th Street. Drainage from Bitter Lake currently flows through a ditch and culvert system from N. 130th Street down North Park Avenue to N. 128th Street and along N. 128th Street to Linden Avenue N. where it crosses the road to enter the Seattle City Light transmission corridor. The ditch and culvert system is replaced with approximately 924 linear feet of 24-inch pipe on the same alignment from N. 130th Street discharging into the existing ditch on the City Light property.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	160	1	0	0	400	0	0	0	561
<i>O&amp;M Costs (Savings)</i>			0	0	0	0	3	3	6

## Local Basin Plan Implementation Program

**Program:** Flood Control and Local Drainage **Start Date:** 1st Quarter 2000  
**Type:** Improved Facility **End Date:** Ongoing  
**Project ID:** C300325  
**Location:** Citywide

This program is a placeholder for work that is designed and constructed from 2005 through 2008. Specific projects are identified following the Comprehensive Drainage Plan Update (project C302301) that is to be completed at the end of 2003. Much planning work has already been done on three drainage basin plans and one flow control study is being incorporated into the Comprehensive Drainage Plan. This new work addresses localized flooding and water quality problems. Much of it involves the use of natural drainage systems to slow, filter, and infiltrate stormwater runoff and thus protect downstream property owners and creeks.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	286	0	0	0	1,000	3,500	6,000	8,000	18,786
<i>O&amp;M Costs (Savings)</i>			0	0	0	0	0	0	0

\*Amounts in thousands of dollars



# SPU - Drainage & Wastewater

## Longfellow Creek - SW Brandon to Juneau

**Program:** Protection of Beneficial Uses **Start Date:** 4th Quarter 2001  
**Type:** Improved Facility **End Date:** 4th Quarter 2003  
**Project ID:** C302NW4

**Location:** 2519 SW JUNEAU ST

**Neighborhood District:** Delridge **Neighborhood Plan:** Delridge

This project constructs habitat improvements on Longfellow Creek, including wetlands, water quality improvements, native plants, and/or interpretive elements. This project is coordinated with the West Seattle Golf Course Detention project (C399307).

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	6	50	0	0	0	0	0	0	56
O&M Costs (Savings)			0	0	0	0	0	0	0

## Longfellow Creek - Yancy Street Phase 3

**Program:** Protection of Beneficial Uses **Start Date:** 1st Quarter 2003  
**Type:** Improved Facility **End Date:** 2nd Quarter 2004  
**Project ID:** C302NW5

**Location:** SW YANCY ST and 30TH AV SW

**Neighborhood District:** Southwest **Neighborhood Plan:** Delridge

This project continues habitat improvements at the Yancy Street site along Longfellow Creek. Work includes additional bank stabilization, landscaping, and wetland enhancements. The project also addresses other repairs as necessary.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	0	300	566	28	0	0	0	0	894
O&M Costs (Savings)			0	0	0	10	10	10	30

## Marine View Drive - 47th SW Landslide

**Program:** Public Asset Protection **Start Date:** 2nd Quarter 2002  
**Type:** Improved Facility **End Date:** 4th Quarter 2004  
**Project ID:** C302352

**Location:** 47TH AV SW and SW BRACE POINT DR

**Neighborhood District:** Southwest **Neighborhood Plan:** Not in a Neighborhood Plan

This project installs catch basins, thickened pavement edges, and concrete gutters, to reduce the amount of runoff that currently flows into landslide-prone areas below the street. The project also includes upsizing the storm drain piping from SW 98th Street to the Brace Point outfall, to reduce flooding.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	0	178	610	430	0	0	0	0	1,218
O&M Costs (Savings)			N/C	N/C	N/C	6	6	6	18

\*Amounts in thousands of dollars

# SPU - Drainage & Wastewater

## Marine View Drive Landslide Mitigation - North

**Program:** Public Asset Protection **Start Date:** 3rd Quarter 1999  
**Type:** Improved Facility **End Date:** 2nd Quarter 2003  
**Project ID:** C399321  
**Location:** Various

This project designs and constructs a down-slope drainage system to connect property on a bluff along Marine View Drive. The project is designed to reduce erosion caused by runoff discharging onto the steep hillside and mitigate landslide hazards. Funds in 2003 represent minor closeout costs.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	323	387	1	0	0	0	0	0	711
<i>O&amp;M Costs (Savings)</i>			0	0	2	2	2	2	8

## Meter Replacement - Direct Service

**Program:** General Wastewater **Start Date:** Ongoing  
**Type:** Rehabilitation or Restoration **End Date:** Ongoing  
**Project ID:** C520000  
**Location:** Citywide

**Neighborhood District:** In more than one district **Neighborhood Plan:** Not in a Neighborhood Plan

This program replaces customer meters that are not performing within the American Water Works Association's standard of accuracy due to obsolescence or incorrect application. It is currently more cost-effective to replace two-inch and smaller meters than it is to repair them. Three-inch and larger meters are to be repaired, if possible.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	1,300	692	692	692	1,536	1,582	1,630	1,678	9,802
<i>O&amp;M Costs (Savings)</i>			0	0	0	0	0	0	0

## MLK Way/Norfolk St. Subbasin Storm Improvements

**Program:** Flood Control and Local Drainage **Start Date:** 3rd Quarter 2002  
**Type:** New Facility **End Date:** 4th Quarter 2007  
**Project ID:** C32NW302  
**Location:** Norfolk D. Basin E. of I-5

**Neighborhood District:** Greater Duwamish **Neighborhood Plan:** Not in a Neighborhood Plan

This project replaces undersized pipes along Martin Luther King (MLK) Way as well as the pipes connecting MLK Way to the existing drainage ditch along the eastern side of Interstate 5. The Norfolk Basin Draft Comprehensive Plan recommends these improvements in order to reduce flooding of structures and arterial streets. Assuming that SPU works in partnership with Sound Transit, this project also includes a parallel pipe design along Martin Luther King Way. Improvements within the Norfolk St. subbasin but not along the Martin Luther King Way corridor would be identical to those mentioned above.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	0	25	319	593	300	1,000	1,800	0	4,037
<i>O&amp;M Costs (Savings)</i>			N/C	N/C	N/C	N/C	N/C	N/C	0

\*Amounts in thousands of dollars

# SPU - Drainage & Wastewater

## Mobility Improvement

**Program:** Other Drainage **Start Date:** 1st Quarter 2003  
**Type:** Improved Facility **End Date:** 4th Quarter 2004  
**Project ID:** C33NW383  
**Location:** Citywide

This program funds new drainage and sewer designers to work on Seattle Department of Transportation (SDOT) design functions and assist with cost estimates for transportation capital project grant applications, in order to improve drainage in concert with transportation capital projects.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	0	0	300	300	0	0	0	0	600
<i>O&amp;M Costs (Savings)</i>			N/C	N/C	N/C	N/C	N/C	N/C	0

## N. 125th St & Aurora Ave N. Storm Drain

**Program:** Flood Control and Local Drainage **Start Date:** 3rd Quarter 2002  
**Type:** New Facility **End Date:** 4th Quarter 2004  
**Project ID:** C33NW309  
**Location:** N 125TH ST and AURORA AV N  
**Neighborhood District:** Northwest **Neighborhood Plan:** Broadview-Bitter Lake-Haller Lake

This project funds preliminary study for the construction of approximately 2,550 linear feet of new pipe combined with catch basins and connecting pipes along N. 125th St. and Aurora Ave. N., and the upgrade of approximately 2,400 linear feet of existing pipe along Aurora Ave. N., in order to reduce street and property flooding. Project design and construction costs are not yet funded. The project is consistent with SPU's Densmore Drainage Basin Study, and is coordinated with the Washington State Department of Transportation, which is expected to resurface the same portion of Highway 99 (Aurora Ave. N.) in the near future. The project is also coordinated with downstream improvements that SPU is making to move stormwater out of the Densmore Basin to Lake Union, and with the Water Quality Study planned for the Densmore Basin, which evaluates alternatives for improving water quality in the basin.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	0	10	25	53	0	0	0	0	88
<i>O&amp;M Costs (Savings)</i>			N/C	N/C	N/C	1	1	1	3

\*Amounts in thousands of dollars

# SPU - Drainage & Wastewater

## N. 135th Street & Stone Ave N. Detention

**Program:** Flood Control and Local Drainage **Start Date:** 1st Quarter 2003  
**Type:** New Facility **End Date:** 4th Quarter 2008  
**Project ID:** C33NW307  
**Location:** STONE AV N and N 135TH ST to N 130TH ST  
**Neighborhood District:** Northwest **Neighborhood Plan:** Broadview-Bitter Lake-Haller Lake

This project minimizes flooding by installing detention capacity and flow control along a section of commercial/industrial park just east and south of Aurora Ave N. & N. 135th Street, within the Densmore Basin. Chronic flooding occurs within the roadway and abutting private property at the intersection of N. 130th Street and Stone Ave N., as well as near the mid-block of Stone Ave N., between N. 130th and N. 135th Streets. The project includes installing a water quality treatment structure for research and public demonstration/education purposes.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	0	0	10	100	40	200	500	2,850	3,700
<i>O&amp;M Costs (Savings)</i>			N/C	N/C	N/C	N/C	N/C	N/C	0

## N. 137th Street & Meridian Ave N. Storm Drain

**Program:** Flood Control and Local Drainage **Start Date:** 3rd Quarter 2002  
**Type:** New Facility **End Date:** 3rd Quarter 2007  
**Project ID:** C33NW310  
**Location:** MERIDIAN AV N and N 137TH ST to N 130TH ST  
**Neighborhood District:** Northwest **Neighborhood Plan:** Broadview-Bitter Lake-Haller Lake

This project reduces flooding by cleaning and improving an existing culvert system that crosses many properties in a series of easements or by constructing a new storm drain system in the public right-of-way. The project initially investigates the feasibility of providing an adequate level of service by improving the existing system. A decision will then be made regarding construction of a new system.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	0	30	25	100	885	1,000	515	0	2,555
<i>O&amp;M Costs (Savings)</i>			N/C	N/C	N/C	N/C	N/C	N/C	0

\*Amounts in thousands of dollars

# SPU - Drainage & Wastewater

## N. 137th Street & Stone Ave N. Conveyance

**Program:** Flood Control and Local Drainage **Start Date:** 3rd Quarter 2002  
**Type:** New Facility **End Date:** 4th Quarter 2005  
**Project ID:** C33NW308  
**Location:** STONE AV N and N 137TH ST to N 140TH ST  
**Neighborhood District:** Northwest **Neighborhood Plan:** Broadview-Bitter Lake-Haller Lake

This project minimizes flooding by constructing a bypass line, and/or upgrading existing informal drainage structures. In either scenario, captured flows are directed to existing downstream improvements, and the Department works closely with project neighbors in arriving at an optimal solution.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	0	19	10	63	572	0	0	0	664
<i>O&amp;M Costs (Savings)</i>			N/C	N/C	N/C	N/C	4	4	8

## Natural System Study

**Program:** Flood Control and Local Drainage **Start Date:** 1st Quarter 2003  
**Type:** New Investment **End Date:** 1st Quarter 2004  
**Project ID:** C33NW319  
**Location:** Not Applicable

This project assesses the unimproved right-of-ways within the City and identifies areas suitable for enhancing existing ditch drainage systems. In addition to identifying “natural system” drainage areas based on surface water management goals, the project assesses neighborhood, land use, and transportation objectives for unimproved right-of-ways. The project produces a suitability map for “natural system” surface water management in the right-of-way. The project also identifies a menu of options for natural system enhancement based on local condition criteria and drainage basin performance goals relative to conveyance, detention or treatment. Each menu option is developed for consideration in the City's Street Improvement Manual update, and includes right-of-way elements, configuration and dimensions. For each menu option, associated standard plans are developed for consideration in the Standard Plans update, to assist SPU in prioritizing drainage improvements as well as to prescribe how drainage is to be improved by other public and private developers.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	0	0	150	151	0	0	0	0	301
<i>O&amp;M Costs (Savings)</i>			N/C	N/C	N/C	16	16	16	48

\*Amounts in thousands of dollars

# SPU - Drainage & Wastewater

## Norfolk Drainage Basin Water Quality Improvements

**Program:** Protection of Beneficial Uses **Start Date:** 3rd Quarter 2002  
**Type:** New Facility **End Date:** 4th Quarter 2005  
**Project ID:** C32NW303

**Location:** Between I5 & BNRR/SFRR at Seattle/Tukwilla Border

**Neighborhood District:** Greater Duwamish **Neighborhood Plan:** Not in a Neighborhood Plan

This project makes water quality treatment improvements to the Norfolk Basin as outlined and recommended in the Norfolk Basin Comprehensive Plan. Improvements consist of the construction of a wet pond adjacent to existing Washington State Department of Transportation wet ponds and an existing natural wetland. The proposed wet pond is located between Interstate 5 and the Burlington Northern and Santa Fe Railway tracks and straddles the City limits separating the City of Seattle and the City of Tukwila. The pond provides water quality enhancement and stormwater detention for the lower portion of the Norfolk Basin. Water quality improvement is achieved mainly by trapping pollutants conveyed from upstream sections of the storm drainage network along Martin Luther King Way. The project reduces pollutants entering the Duwamish River, which has recently been designated by National Marine Fisheries Service as a critical habitat for Chinook salmon.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	0	25	158	159	1,100	0	0	0	1,442
<i>O&amp;M Costs (Savings)</i>			N/C	N/C	N/C	N/C	7	7	14

## Norfolk St. & Boeing Access Road Storm Improvements

**Program:** Flood Control and Local Drainage **Start Date:** 1st Quarter 2004  
**Type:** New Facility **End Date:** 4th Quarter 2004  
**Project ID:** C32NW304

**Location:** S NORFOLK ST and AIRPORT WY S to E MARGINAL WY S

**Neighborhood District:** Greater Duwamish **Neighborhood Plan:** Not in a Neighborhood Plan

This project makes drainage improvements to the western portion of the Norfolk Basin in order to reduce flooding, as outlined in the Norfolk Basin Comprehensive Plan. Improvements include a new piped storm drainage conveyance system (approximately 17,000 linear feet of pipe ranging from one to six feet in diameter) along Airport Way South, Norfolk St., E. Marginal Way, and the Boeing Access Road in addition to construction of a new outfall into the Duwamish River. The improvements included in this project are key downstream components that increase conveyance and discharge capacity for virtually all future upstream improvements in the Norfolk Basin.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	0	0	0	100	0	0	0	0	100
<i>O&amp;M Costs (Savings)</i>			0	0	0	0	0	0	0

\*Amounts in thousands of dollars

# SPU - Drainage & Wastewater

## NW 90th Street & 12th Ave NW Drainage

**Program:** Flood Control and Local Drainage  
**Type:** Improved Facility  
**Project ID:** C301314

**Start Date:** 1st Quarter 2001  
**End Date:** 4th Quarter 2003

**Location:** NW 90th ST and 12TH AV NW

**Neighborhood District:** Ballard

**Neighborhood Plan:** Not in a Neighborhood Plan

This project develops a drainage infrastructure (such as catch basins and pipes) to move water to a trunk line running along 7th Ave NW, to reduce flooding in the street right-of-way and improve local neighborhood drainage. This project includes street regrading to facilitate conveyance of stormwater.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	136	375	806	0	0	0	0	0	1,317
<i>O&amp;M Costs (Savings)</i>			0	0	4	4	4	4	16

## Outfall Inspection - Drainage

**Program:** Flood Control and Local Drainage  
**Type:** Rehabilitation or Restoration  
**Project ID:** C33NW324

**Start Date:** 1st Quarter 2002  
**End Date:** 4th Quarter 2007

**Location:** Citywide

**Neighborhood District:** In more than one district

**Neighborhood Plan:** Not in a Neighborhood Plan

This project inspects and documents the condition of the City's 350 stormwater and wastewater outfalls. Attributes of these outfalls such as size, length, and material are identified, and the information is used to update SPU's Geographic Information Systems (GIS) database. The project sets criteria for identifying necessary inspections and for establishing priorities and a schedule for inspections. The project may include conducting a market survey on current outfall inspection technologies, standards and procedures, and the environmental impacts associated with each. Mapping, development of criteria and schedules, and market surveying are expected to be complete in 2003, at an estimated cost of \$250,000, with inspections occurring 2003- 2007. If inspections indicate that repairs are necessary for some outfalls, separate CIP projects may be developed in subsequent years to fund those repairs.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	0	150	210	210	210	210	210	0	1,200
<i>O&amp;M Costs (Savings)</i>			N/C	N/C	N/C	N/C	N/C	N/C	0

\*Amounts in thousands of dollars

# SPU - Drainage & Wastewater

## Outfall Inspection - Wastewater

**Program:** General Wastewater **Start Date:** 1st Quarter 2002  
**Type:** Rehabilitation or Restoration **End Date:** 4th Quarter 2007  
**Project ID:** C33NW206  
**Location:** Citywide

This project inspects and documents the condition of the City's 350 stormwater and wastewater outfalls. Attributes of these outfalls such as size, length, and material are identified, and the information is used to update SPU's Geographic Information Systems (GIS) database. The project sets criteria for identifying necessary inspections and for establishing priorities and a schedule for inspections. The project may include conducting a market survey on current outfall inspection technologies, standards and procedures, and the environmental impacts associated with each. Mapping, development of criteria and schedules, and market surveying are expected to be complete in 2003, at an estimated cost of \$240,000, with inspections occurring 2003-2007. If inspections indicate that repairs are necessary for some outfalls, separate CIP projects may be developed in subsequent years to fund those repairs.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	0	100	140	140	140	140	140	0	800
O&M Costs (Savings)			N/C	N/C	N/C	N/C	N/C	N/C	0

## Perkins Lane W./W. Ruffner Street Drainage Improvement

**Program:** Public Asset Protection **Start Date:** 1st Quarter 2001  
**Type:** Rehabilitation or Restoration **End Date:** 3rd Quarter 2006  
**Project ID:** C301354  
**Location:** PERKINS LN W and W RUFFNER ST

This project replaces the existing ditch system with a grate-covered concrete drainage channel. The concrete channel reduces the surface water that is currently infiltrating through the deteriorated existing asphalt-lined and unlined ditches. The drainage channel is designed with intermittent sumps so that sediment in the channel can be cleaned easier by jet-vactor crews. In addition, the channels are designed to be self-cleaning during larger winter storm events.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	151	286	80	1,838	960	100	0	0	3,415
O&M Costs (Savings)			N/C	N/C	N/C	N/C	N/C	9	9

\*Amounts in thousands of dollars



# SPU - Drainage & Wastewater

## Pipers Creek - Detention

**Program:** Flood Control and Local Drainage  
**Type:** Improved Facility  
**Project ID:** C399326

**Start Date:** 3rd Quarter 1999  
**End Date:** 2nd Quarter 2007

**Location:** NW CARKEEK PARK RD

**Neighborhood District:** Northwest

**Neighborhood Plan:** Broadview-Bitter Lake-Haller Lake

The Pipers Creek drainage system experiences flooding, erosion, and sedimentation problems during significant storm events. This project enlarges an existing detention pond at 777 NW Carkeek Park Road and detains stormwater before it reaches Piper's Creek. The existing pond is loaded with sediment and has little detention capacity in its current condition and requires substantial improvements before it can serve as a detention facility.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	13	98	160	185	50	900	50	0	1,456
<i>O&amp;M Costs (Savings)</i>			0	0	0	0	0	0	0

## Pipers Creek - Natural Drainage System

**Program:** Flood Control and Local Drainage  
**Type:** Improved Facility  
**Project ID:** C33NW320

**Start Date:** 1st Quarter 2003  
**End Date:** 4th Quarter 2008

**Location:** Various and 3RD AV NW

**Neighborhood District:** Northwest

**Neighborhood Plan:** Broadview-Bitter Lake-Haller Lake

This project enhances an existing ditch and culvert system that drains to Pipers Creek. The project creates water quantity control to minimize adverse hydraulic impacts to the creek. The project also promotes water quality treatment to remove road runoff pollutants before reaching the receiving waters (Pipers Creek and Puget Sound). The project design focuses on the "natural system" approach to stormwater management, which utilizes environmentally-friendly techniques such as swales, infiltration, and landscaping to achieve watershed goals and objectives.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	0	0	92	558	650	650	650	620	3,220
<i>O&amp;M Costs (Savings)</i>			N/C	N/C	32	32	32	32	128

\*Amounts in thousands of dollars

# SPU - Drainage & Wastewater

## Point Sewer Pipe Repairs

**Program:** Sewer Rehabilitation **Start Date:** Ongoing  
**Type:** Rehabilitation or Restoration **End Date:** Ongoing  
**Project ID:** C300401

**Location:** Citywide

**Neighborhood District:** In more than one district **Neighborhood Plan:** Not in a Neighborhood Plan

This program repairs and replaces failing and misaligned sewer pipes throughout the City. An ongoing closed circuit television (CCTV) program identifies pipes to be replaced. The purpose of this program is to prevent catastrophic consequences of complete pipe collapse by providing small repairs to numerous sites throughout the City. The intent is to avoid more costly full line failures or repairs.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	4,732	3,410	2,770	4,398	3,624	3,644	3,768	3,881	30,227
<i>O&amp;M Costs (Savings)</i>			0	0	0	0	0	0	0

## Project Manager Guidebook - Drainage

**Program:** Other Drainage **Start Date:** 1st Quarter 2001  
**Type:** New Investment **End Date:** 3rd Quarter 2004  
**Project ID:** C301701D

**Location:** N/A

This project develops a project manager manual designed to support CIP and project management to meet the Department's objective of having well-informed employees who understand how their jobs contribute to the Department's vision and goals.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	122	243	112	33	0	0	0	0	510
<i>O&amp;M Costs (Savings)</i>			N/C	N/C	N/C	N/C	N/C	N/C	0

## Project Manager Guidebook - Wastewater

**Program:** General Wastewater **Start Date:** 1st Quarter 2001  
**Type:** New Investment **End Date:** 3rd Quarter 2004  
**Project ID:** C301701W

**Location:** Not Applicable

This project develops a project manager manual designed to support CIP and project management to meet the Department's objective of having well-informed employees who understand how their jobs contribute to the Department's vision and goals.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	81	50	74	22	0	0	0	0	227
<i>O&amp;M Costs (Savings)</i>			N/C	N/C	N/C	N/C	N/C	N/C	0

\*Amounts in thousands of dollars

# SPU - Drainage & Wastewater

## Property Acquisition

**Program:** Protection of Beneficial Uses **Start Date:** Ongoing  
**Type:** New Facility **End Date:** Ongoing  
**Project ID:** C3AA302  
**Location:** Citywide

This program funds acquisition of property to implement the various projects identified in the 2003-2008 Drainage Capital Improvement Program. Using criteria established by SPU, properties are purchased as they become available or as specific project sites are identified. Although the project is expected to continue after 2005, future funding levels have not been identified.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	2,349	350	0	500	0	0	0	0	3,199
<i>O&amp;M Costs (Savings)</i>			0	0	0	0	0	0	0

## Pump Station Rehabilitation

**Program:** Sewer Rehabilitation **Start Date:** Ongoing  
**Type:** Rehabilitation or Restoration **End Date:** Ongoing  
**Project ID:** C3AA406  
**Location:** BINMIC (BallardInterbayMftg.&Ind.Ctr), Eastlake

This annual capital program provides for wastewater pump station repairs and rehabilitation, including design and installation of emergency generators, material, and labor costs for equipment replacement (pumps and valves), and equipment for the remote monitoring system (SCADA). This project implements the pump station asset plan.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	1,097	1,516	1,318	1,333	1,746	1,755	1,808	1,994	12,567
<i>O&amp;M Costs (Savings)</i>			0	0	0	0	0	0	0

## Rainier Beach/S Perry Landslide

**Program:** Public Asset Protection **Start Date:** 1st Quarter 2005  
**Type:** Improved Facility **End Date:** 4th Quarter 2008  
**Project ID:** C302353

**Location:** S PERRY ST and WATERS AV S

**Neighborhood District:** Southeast

**Neighborhood Plan:** Not in a Neighborhood Plan

This project analyzes the drainage problems in this landslide-prone area and recommends solutions. The project funds preliminary engineering and construction for improvements to help stabilize the area and to protect SPU facilities.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	0	0	0	0	80	180	490	550	1,300
<i>O&amp;M Costs (Savings)</i>			0	0	0	0	0	0	0

\*Amounts in thousands of dollars

# SPU - Drainage & Wastewater

## S. Henderson Combined Sewer Overflow Storage & Conveyance

**Program:** Combined Sewer Overflow **Start Date:** 1st Quarter 2004  
**Type:** New Facility **End Date:** 4th Quarter 2014  
**Project ID:** C33NW105

**Location:** TBD

**Neighborhood District:** Southeast

**Neighborhood Plan:** Not in a Neighborhood Plan

This project constructs five storage facilities for Combined Sewer Overflow (CSO) reduction in the South Henderson/Rainier area. It also includes a pipe line upgrade south of S. Henderson St. along Rainier Ave S. Major work includes selection of storage facility sites, additional flow monitoring and modeling, design, permits, and construction. If deemed necessary, pre-design, value engineering, facility plan, environmental review, and post-construction site improvement are also part of this project. The total cost of the project through 2012 is estimated to be \$25 million.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	0	0	0	200	400	400	800	500	2,300
<i>O&amp;M Costs (Savings)</i>			N/C	N/C	N/C	N/C	N/C	N/C	0

## Salmon Bay Drainage Improvements

**Program:** Flood Control and Local Drainage **Start Date:** 4th Quarter 2000  
**Type:** Improved Facility **End Date:** 3rd Quarter 2005  
**Project ID:** C300327

**Location:** NW 54TH ST

**Neighborhood District:** Ballard

**Neighborhood Plan:** BINMIC (Ballard Interbay Northend)

This project investigates ponding in an industrial area south of NW Market Street between 24th and 28th Avenues NW. It is coordinated with operation of an existing railroad bed that is still active under a franchise agreement with Burlington Northern Railroad and with potential improvements in the area being considered by Seattle Department of Transportation. The corridor serves as the primary method of access for Salmon Bay waterfront properties and a secondary access for the properties fronting NW Market Street. Water collects in low areas and drains onto and ponds upon the waterfront properties adjacent to and below the railroad right-of-way. The project scope has been reduced to attempt to find a low cost solution that will address the drainage concerns of the neighboring properties.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	50	247	0	709	112	0	0	0	1,118
<i>O&amp;M Costs (Savings)</i>			0	0	0	0	7	7	14

\*Amounts in thousands of dollars

# SPU - Drainage & Wastewater

## Sanitary Sewer Overflow Capacity Study/Implementation

**Program:** General Wastewater **Start Date:** 2nd Quarter 2003  
**Type:** Improved Facility **End Date:** 4th Quarter 2006  
**Project ID:** C302205  
**Location:** N/A

This project develops a guidance document and self-audit tool for SPU to apply to its wastewater collection system programs and practices, as part of complying with a proposed federal ruling on Sanitary Sewer Overflows (SSOs). The project creates an inventory of the components of the wastewater collection system, and helps to ensure that SPU's reporting and recordkeeping practices reflect federal Capacity, Management, Operations & Maintenance (CMOM) program standards. The project identifies gaps in regulatory compliance, and generates recommendations for improving preventive maintenance of the wastewater system and complying with proposed SSO regulations.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	0	0	687	752	300	300	0	0	2,039
<i>O&amp;M Costs (Savings)</i>			N/C	N/C	N/C	N/C	N/C	N/C	0

## Schmitz Creek Sediment Control

**Program:** Protection of Beneficial Uses **Start Date:** 1st Quarter 2004  
**Type:** Rehabilitation or Restoration **End Date:** 4th Quarter 2005  
**Project ID:** C33NW326  
**Location:** Schmitz Park  
**Neighborhood District:** Southwest **Neighborhood Plan:** Not in a Neighborhood Plan

This project designs and constructs improvements in Schmitz Park to control sediments and reduce erosion. In addition, the project adds stream habitat improvements. The scope of the project and the costs are not known at this time. The project implements recommendations for Schmitz Creek as developed in SPU's Urban Creeks Watershed Analysis, which is expected to be completed in June 2003.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	0	0	0	30	30	0	0	0	60
<i>O&amp;M Costs (Savings)</i>			N/C	N/C	N/C	N/C	N/C	N/C	0

## SDOT 4% Program - Drainage

**Program:** Other Drainage **Start Date:** Ongoing  
**Type:** Rehabilitation or Restoration **End Date:** Ongoing  
**Project ID:** C33T101  
**Location:** Citywide

Based on a 1999 interdepartmental agreement and subsequent negotiations, SPU is jointly funding drainage code compliance on certain Seattle Department of Transportation capital improvement projects. Per the negotiations, the amount of funding is limited to 4% of the drainage and wastewater CIP in each year.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	46	1,185	782	782	610	677	792	819	5,693
<i>O&amp;M Costs (Savings)</i>			0	0	0	0	0	0	0

\*Amounts in thousands of dollars

# SPU - Drainage & Wastewater

## SDOT 4% Program - Wastewater

**Program:** General Wastewater **Start Date:** Ongoing  
**Type:** Rehabilitation or Restoration **End Date:** Ongoing  
**Project ID:** C32T101  
**Location:** City wide

Based on a 1999 interdepartmental agreement and subsequent negotiations, SPU is jointly funding drainage code compliance on certain Seattle Department of Transportation capital improvement projects. Per the negotiations, the amount of funding is limited to 4% of the drainage and wastewater CIP in each year.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	32	1,595	803	813	946	606	995	1,046	6,836
<i>O&amp;M Costs (Savings)</i>			0	0	0	0	0	0	0

## Sewage System Modeling

**Program:** General Wastewater **Start Date:** 3rd Quarter 1998  
**Type:** Rehabilitation or Restoration **End Date:** Ongoing  
**Project ID:** C3AA206  
**Location:** Citywide

**Neighborhood District:** In more than one district **Neighborhood Plan:** Not in a Neighborhood Plan

This project facilitates sewer capacity assessment and development of computer models and other methodologies for sewer system evaluation including data collection.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	494	100	107	110	113	116	100	100	1,240
<i>O&amp;M Costs (Savings)</i>			0	0	0	0	0	0	0

## Sewer Emergency Repairs

**Program:** Sewer Rehabilitation **Start Date:** Ongoing  
**Type:** Rehabilitation or Restoration **End Date:** Ongoing  
**Project ID:** C3AA404  
**Location:** Citywide

**Neighborhood District:** In more than one district **Neighborhood Plan:** Not in a Neighborhood Plan

This program makes repairs on an emergency basis to sewer lines that collapse, cause surface problems, or otherwise endanger the health or welfare of the public.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	1,301	300	413	400	450	450	450	461	4,225
<i>O&amp;M Costs (Savings)</i>			0	0	0	0	0	0	0

\*Amounts in thousands of dollars

# SPU - Drainage & Wastewater

## Sewer Full Line Replacements

**Program:** Sewer Rehabilitation **Start Date:** Ongoing  
**Type:** Rehabilitation or Restoration **End Date:** Ongoing  
**Project ID:** C300488

**Location:** Citywide

**Neighborhood District:** In more than one district **Neighborhood Plan:** Not in a Neighborhood Plan

This program replaces and repairs sewer lines. Continuous closed circuit television (CCTV) inspections identify defects in sewer mainlines. Each mainline defect is catalogued in the Department's database and assigned a priority number which designates the urgency of repair under this program.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	0	7,472	4,309	3,799	3,222	3,239	3,350	5,000	30,391
<i>O&amp;M Costs (Savings)</i>			0	0	0	0	0	0	0

## Sound Transit Light Rail - Drainage

**Program:** Other Drainage **Start Date:** 4th Quarter 2002  
**Type:** New Facility **End Date:** Ongoing  
**Project ID:** C33NW328

**Location:** M L KING JR WY S and S WALDEN ST to S NORFOLK ST

**Neighborhood District:** Southeast **Neighborhood Plan:** Martin Luther King, Jr. @ Holly Street

This project funds SPU's costs related to planning, design and construction by Sound Transit of the Central Link Light Rail system. Sound Transit proposes to construct and operate this electrical light rail transit system, which includes over 24 miles of alignment. The first phase of Sound Transit's project constructs a light rail segment from the Convention Place Station to S. 154 Street near Seattle/Tacoma Airport. The City of Seattle, including SPU, has an ongoing agreement for reimbursement from Sound Transit. See also project C33NW209 and project C1NW005 in the Department's Water CIP.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	0	90	270	157	172	156	50	25	920
<i>O&amp;M Costs (Savings)</i>			N/C	N/C	N/C	N/C	N/C	N/C	0

\*Amounts in thousands of dollars

# SPU - Drainage & Wastewater

## Sound Transit Light Rail - Wastewater

**Program:** General Wastewater **Start Date:** 1st Quarter 2002  
**Type:** New Facility **End Date:** TBD  
**Project ID:** C33NW209  
**Location:** M L KING JR WY S and S WALDEN ST to S NORFOLK ST  
**Neighborhood District:** Southeast **Neighborhood Plan:** Martin Luther King, Jr. @ Holly Street

This project funds SPU's costs related to planning, design and construction by Sound Transit of the Central Link Light Rail system. Sound Transit proposes to construct and operate this electrical light rail transit system, which includes over 24 miles of alignment. The first phase of Sound Transit's project constructs a light rail segment from the Convention Place Station to S. 154 Street near Seattle/Tacoma Airport. The City of Seattle, including SPU, has an ongoing agreement for reimbursement from Sound Transit. See also project C33NW328 and project C1NW005 in the Department's Water CIP.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	0	90	129	164	172	156	50	50	811
<i>O&amp;M Costs (Savings)</i>			N/C	N/C	N/C	N/C	N/C	N/C	0

## South Genesee Combined Sewer Overflow Storage

**Program:** Combined Sewer Overflow **Start Date:** 1st Quarter 2003  
**Type:** New Facility **End Date:** 4th Quarter 2012  
**Project ID:** C33NW104  
**Location:** TBD  
**Neighborhood District:** Southeast **Neighborhood Plan:** Not in a Neighborhood Plan

This project constructs four storage facilities for Combined Sewer Overflow (CSO) reduction in the South Genesee area. Major work includes selection of storage facility sites, additional flow monitoring and modeling, design, permits, and construction. If deemed necessary, pre-design, value engineering, facility plan, environmental review, and post-construction site improvement are part of the project. The total cost of the project through 2012 is estimated to be \$11 million.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	0	0	100	200	700	800	500	500	2,800
<i>O&amp;M Costs (Savings)</i>			N/C	N/C	N/C	N/C	N/C	N/C	0

\*Amounts in thousands of dollars



# SPU - Drainage & Wastewater

## South Lake Union Combined Sewer Overflow - King Co. Payments

**Program:** Combined Sewer Overflow **Start Date:** 4th Quarter 1996  
**Type:** New Facility **End Date:** 4th Quarter 2005  
**Project ID:** C3AA104

**Location:** Denny WY/Alaskan WY

**Neighborhood District:** Lake Union **Neighborhood Plan:** Not in a Neighborhood Plan

This is a joint City of Seattle/King County project to provide combined sewer overflow control near Denny Way and Lake Union. The project is managed by King County. Seattle's share of the project costs is 17 percent.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	9,166	2,482	3,000	1,700	200	0	0	0	16,548
O&M Costs (Savings)			0	0	0	0	0	0	0

## South Lake Union Combined Sewer Overflow Phase II

**Program:** Combined Sewer Overflow **Start Date:** 1st Quarter 1995  
**Type:** New Facility **End Date:** 4th Quarter 2004  
**Project ID:** C3AA106

**Location:** Valley ST/Western AV N

**Neighborhood District:** Lake Union **Neighborhood Plan:** Not in a Neighborhood Plan

This project connects the City's new Combined Sewer Overflow project (Phase I), an upsized transport system along the east side of Lake Union, to King County's projects (Phases III and IV), which are storage, conveyance, and primary treatment projects.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	920	280	2,357	1,789	0	0	0	0	5,346
O&M Costs (Savings)			0	0	0	80	80	80	240

## South Lake Washington Sewer Main Assessment

**Program:** General Wastewater **Start Date:** 1st Quarter 2003  
**Type:** Rehabilitation or Restoration **End Date:** 4th Quarter 2005  
**Project ID:** C33NW207

**Location:** Various locations

**Neighborhood District:** Southeast **Neighborhood Plan:** Not in a Neighborhood Plan

This project provides a comprehensive assessment of the condition of a combined sewer main. The assessment includes a closed circuit television (CCTV) investigation and sewer line cleaning. The assessment results in recommendations for repairs necessary for the normal functioning of the sewer line.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	0	0	100	500	300	0	0	0	900
O&M Costs (Savings)			N/C	N/C	N/C	N/C	N/C	N/C	0

\*Amounts in thousands of dollars

# SPU - Drainage & Wastewater

## South Park Sewer Extension

**Program:** General Wastewater  
**Type:** New Facility  
**Project ID:** C33NW382  
**Location:** So Park

**Start Date:** 1st Quarter 2003  
**End Date:** 4th Quarter 2004

This project brings sewer services to 43 residential properties in a low-income neighborhood located south of Seattle, along the Duwamish River. These properties currently have old septic systems, few of which meet current standards for drain fields. Extending sewer service to this neighborhood produces multiple social and environmental benefits, including preventing future septic system failures, protecting public health and avoiding water quality degradation in the Duwamish River. The total project cost is estimated to be \$2.2 million and the City of Seattle is requesting the full amount in federal support to finance this project. If federal funds cannot be obtained, then the Department does not intend to pursue other funding sources and the project will not be completed at this time.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	0	0	152	2,051	0	0	0	0	2,203
<i>O&amp;M Costs (Savings)</i>			N/C	N/C	N/C	N/C	N/C	N/C	0

## Spokane St. Bridge Salmon Habitat

**Program:** Protection of Beneficial Uses  
**Type:** Improved Facility  
**Project ID:** C33NW381

**Start Date:** 1st Quarter 2003  
**End Date:** 4th Quarter 2004

**Location:** W MARGINAL WY S & SPOKANE ST

**Neighborhood District:** Southwest

**Neighborhood Plan:** Not in a Neighborhood Plan

This project regrades the bank of an existing public access site to provide juvenile salmonids with greater access to shallow water habitat during upper and middle tidal elevations. The project is part of the City's Endangered Species Act (ESA) response to improve habitat in the Duwamish Waterway. The upland portion of this parcel is owned by the Seattle Department of Transportation (SDOT) and is being developed by the Port of Seattle, SDOT, and King County Metro, as a public access site to be maintained by SDOT.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	0	0	116	156	0	0	0	0	272
<i>O&amp;M Costs (Savings)</i>			0	0	0	1	1	1	3

\*Amounts in thousands of dollars

# SPU - Drainage & Wastewater

## SR-519 - Drainage Review

**Program:** Other Drainage  
**Type:** New Facility  
**Project ID:** C33NW332  
**Location:** TBD

**Start Date:** 4th Quarter 2002  
**End Date:** 4th Quarter 2004

This project funds the Department's review of the SR-519 transportation project, which is likely to affect the drainage system in this area. SPU design staff ensure that the new drainage facilities constructed under this project, which is turned over to the Department for maintenance, are designed and constructed to Department standards. Design staff also determine whether there is an opportunity to upgrade existing City drainage facilities at this location in conjunction with the SR-519 project. See also project TC365020 in the Seattle Department of Transportation CIP.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	0	50	50	50	0	0	0	0	150
O&M Costs (Savings)			N/C	N/C	N/C	N/C	N/C	N/C	0

## SW Jacobsen & Alaska Ave. SW Landslide Mitigation

**Program:** Public Asset Protection  
**Type:** New Facility  
**Project ID:** C301353

**Start Date:** 3rd Quarter 2001  
**End Date:** 4th Quarter 2004

**Location:** SW JACOBSEN RD and SW HUDSON ST

**Neighborhood District:** Southwest

**Neighborhood Plan:** Not in a Neighborhood Plan

This project funds preliminary engineering and construction of a drainage system in a landslide-prone area to convey storm water down the hill to an appropriate discharge point. The project reduces the likelihood and damage of future landslides. The system is to be designed after a more detailed scope and budget are established.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	8	107	232	216	0	0	0	0	563
O&M Costs (Savings)			0	0	0	3	3	3	9

## SW Juneau Storm Drain

**Program:** Flood Control and Local Drainage  
**Type:** New Facility  
**Project ID:** C302NW2

**Start Date:** 3rd Quarter 2001  
**End Date:** 4th Quarter 2003

**Location:** SW JUNEAU ST and 30TH AV SW to 34TH AV SW

**Neighborhood District:** Delridge

**Neighborhood Plan:** Delridge

This project provides a completed stormwater drainage system in the area of 30th Avenue SW to 34th Avenue SW from Juneau Street to Brandon Street. This is a slide hazard area and this project provides drainage for stormwater from the hillside to reduce infiltration, decrease groundwater, and increase slope stability of the hillside. Stormwater is drained quickly from the hillside and detained at a level area prior to release into Longfellow Creek, in order to limit peak stormwater flows to the creek.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	162	1,167	584	0	0	0	0	0	1,913
O&M Costs (Savings)			0	0	9	9	9	9	36

\*Amounts in thousands of dollars

# SPU - Drainage & Wastewater

## SW Prescott/Admiral Way Landslide Mitigation

**Program:** Public Asset Protection **Start Date:** 3rd Quarter 2002  
**Type:** New Facility **End Date:** 4th Quarter 2006  
**Project ID:** C33NW303

**Location:** SW ADMIRAL WY and SW SPOKANE ST

**Neighborhood District:** Not applicable **Neighborhood Plan:** Admiral

This project studies drainage and slope stability problems in the general vicinity south of SW Prescott St., up and downslope of SW Admiral Way. The project defines and prioritizes solutions to the problem flooding and stability areas that put SPU facilities at risk or that pose risks to other properties because of the lack of adequate drainage facilities. Following completion of the study, the project also funds the design and implementation of the priority projects.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	0	50	100	198	250	200	0	0	798
<i>O&amp;M Costs (Savings)</i>			N/C	N/C	N/C	N/C	N/C	4	4

## Taylor Creek - Phase 3 Restoration

**Program:** Protection of Beneficial Uses **Start Date:** 1st Quarter 2000  
**Type:** Improved Facility **End Date:** 4th Quarter 2003  
**Project ID:** C300313

**Location:** LAKE RIDGE DR S

**Neighborhood District:** Southeast **Neighborhood Plan:** Not in a Neighborhood Plan

This project addresses upstream habitat restoration in Taylor Creek. Work includes erosion control projects, riparian planting, and instream improvements.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	36	80	16	0	0	0	0	0	132
<i>O&amp;M Costs (Savings)</i>			0	0	1	1	1	1	4

## Taylor Creek Culverts Phase 2

**Program:** Protection of Beneficial Uses **Start Date:** 4th Quarter 1999  
**Type:** New Facility **End Date:** 4th Quarter 2005  
**Project ID:** C399315

**Location:** Taylor Creek/Rainier Ave S

**Neighborhood District:** Greater Duwamish **Neighborhood Plan:** Not in a Neighborhood Plan

This project designs and constructs fish passage improvements at the culvert that conveys Taylor Creek under Rainier Avenue South.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	303	140	24	0	1,090	0	0	0	1,557
<i>O&amp;M Costs (Savings)</i>			0	0	0	0	6	6	12

\*Amounts in thousands of dollars

# SPU - Drainage & Wastewater

## Thornton - Lake City Way & NE 100th St Culvert

**Program:** Protection of Beneficial Uses **Start Date:** 1st Quarter 2001  
**Type:** Improved Facility **End Date:** 2nd Quarter 2003  
**Project ID:** C301331

**Location:** LAKE CITY WY NE and NE 100TH ST

**Neighborhood District:** North **Neighborhood Plan:** North District/Lake City Way

This project supports community-based stewardship projects designed to restore riparian corridors and wetlands located along public land adjacent to Thornton Creek.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	73	458	19	0	0	0	0	0	550
<i>O&amp;M Costs (Savings)</i>			0	0	6	6	6	6	24

## Thornton - Park 6 Instream Improvements

**Program:** Protection of Beneficial Uses **Start Date:** 2nd Quarter 2001  
**Type:** Improved Facility **End Date:** 4th Quarter 2005  
**Project ID:** C301333

**Location:** 5TH AV NE and NE 104TH ST

**Neighborhood District:** North **Neighborhood Plan:** Northgate

This project addresses erosion and habitat problems at sections of Thornton Creek along Park 6. Erosion causes sediment to wash downstream and impact habitat, and can undermine road integrity. Urban streams typically lack habitat diversity in terms of wetlands, floodplains, vegetation, and instream structure. This project addresses these issues in Thornton Creek Park 6, a City-owned natural area along Thornton Creek near Northgate Mall. This project includes a strong stewardship component. Local citizens and various non-profit groups are to provide design advice and implement the bulk of the project.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	23	69	51	50	50	0	0	0	243
<i>O&amp;M Costs (Savings)</i>			0	0	0	0	1	1	2

## Thornton Creek - Lake City Detention Ph 4

**Program:** Protection of Beneficial Uses **Start Date:** 1st Quarter 2001  
**Type:** New Facility **End Date:** 4th Quarter 2005  
**Project ID:** C301301

**Location:** 35TH AV NE and NE 110TH ST

**Neighborhood District:** North **Neighborhood Plan:** North District/Lake City Way

This project constructs a facility at the junction of the two main branches of Thornton Creek to remove floating trash and collect sediment carried by the creek. The facility allows easy access for removal and handling of sediment to reduce maintenance costs, and facilitates removal of floating debris before it reaches the Meadowbrook Pond site downstream. The project prevents litter and sediment from reaching the pond so that it can better perform its detention, habitat, and water quality functions, and have improved aesthetic appeal as a public access site.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	728	75	150	15	600	0	0	0	1,568
<i>O&amp;M Costs (Savings)</i>			0	0	0	0	4	4	8

*\*Amounts in thousands of dollars*

# SPU - Drainage & Wastewater

## Thornton Creek - Ravenna Ave NE Habitat Restoration

**Program:** Protection of Beneficial Uses **Start Date:** 3rd Quarter 2002  
**Type:** Improved Facility **End Date:** 4th Quarter 2004  
**Project ID:** C301339

**Location:** RAVENNA AV NE

**Neighborhood District:** North **Neighborhood Plan:** North District/Lake City Way

Urban streams typically lack habitat diversity in terms of wetlands, floodplains, vegetation, and instream structure. This project addresses these habitat issues in Ravenna-Bleindheim, a City-owned natural area along Thornton Creek located downstream of Lake City Way.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	0	47	29	101	0	0	0	0	177
<i>O&amp;M Costs (Savings)</i>			0	0	0	1	1	1	3

## Trunk Drainage Implementation

**Program:** Flood Control and Local Drainage **Start Date:** Ongoing  
**Type:** Improved Facility **End Date:** Ongoing  
**Project ID:** C300330

**Location:** Various Locations

**Neighborhood District:** In more than one district **Neighborhood Plan:** Not in a Neighborhood Plan

This program provides funding for trunk drainage projects throughout the City. Projects are specified via recommendations forwarded from pending basin studies. Following the completion of basin studies and public involvement, SPU initiates preliminary engineering studies to develop detailed scopes of work with schedules and budgets for projects to solve flooding, erosion, water quality, and habitat issues within the various watersheds. Potential projects include storm drains, detention facilities, and creek channel improvements. Appropriate sites are selected and purchased by the projects as necessary.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	0	0	0	869	1,252	2,602	3,352	4,500	12,575
<i>O&amp;M Costs (Savings)</i>			0	0	0	0	0	0	0

## Vector Dump Station - Catch Basin Solids Decant

**Program:** Public Asset Protection **Start Date:** 2nd Quarter 1999  
**Type:** Improved Facility **End Date:** 4th Quarter 2002  
**Project ID:** C399328

**Location:** 24TH ST NW

**Neighborhood District:** Lake Union **Neighborhood Plan:** Not in a Neighborhood Plan

This project manages vector waste from stormwater facilities. Efficient and appropriate management of vector waste reduces operations and maintenance costs and helps protect water quality. The project includes investigation of various alternatives, a cost-benefit analysis, and selection of a preferred alternative for implementation.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	41	30	0	0	0	0	0	0	71
<i>O&amp;M Costs (Savings)</i>			0	0	0	0	0	0	0

\*Amounts in thousands of dollars

# SPU - Drainage & Wastewater

## Wastewater Rehabilitation Project Evaluation

**Program:** Sewer Rehabilitation **Start Date:** Ongoing  
**Type:** Rehabilitation or Restoration **End Date:** Ongoing  
**Project ID:** C3AA401

**Location:** Citywide

**Neighborhood District:** In more than one district **Neighborhood Plan:** Not in a Neighborhood Plan

This program evaluates future wastewater rehabilitation projects by investigating existing records, reports, and plans, obtaining field data from TV inspection and gauging of flows, developing alternatives and cost estimates, and making recommendations.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	674	105	86	88	91	94	94	97	1,329
<i>O&amp;M Costs (Savings)</i>			0	0	0	0	0	0	0

## Water Reuse - Stormwater

**Program:** Other Drainage **Start Date:** 1st Quarter 2002  
**Type:** New Facility **End Date:** 4th Quarter 2004  
**Project ID:** C301302

**Location:** TO BE DETERMINED

This project funds one or more stormwater reuse projects, selected upon completion of an SPU-sponsored water reuse research study. Funds are used for rainwater reclamation projects in partnership with other entities (including the Seattle Department of Parks and Recreation and King County), or projects funded only by SPU.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	0	400	192	400	0	0	0	0	992
<i>O&amp;M Costs (Savings)</i>			N/C	N/C	N/C	N/C	N/C	N/C	0

## Water Reuse - Wastewater

**Program:** General Wastewater **Start Date:** 4th Quarter 2001  
**Type:** New Facility **End Date:** 4th Quarter 2004  
**Project ID:** C301203

**Location:** TBD

This project funds one or more wastewater reuse projects, selected upon completion of an SPU-sponsored water reuse research study. Funds are used for projects in partnership with other entities (including the Seattle Department of Parks and Recreation and King County), or projects funded only by SPU.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	9	400	280	600	0	0	0	0	1,289
<i>O&amp;M Costs (Savings)</i>			N/C	N/C	N/C	N/C	N/C	N/C	0

\*Amounts in thousands of dollars

# SPU - Drainage & Wastewater

## West Seattle Golf Course - Detention

**Program:** Protection of Beneficial Uses **Start Date:** 1st Quarter 1999  
**Type:** New Facility **End Date:** 4th Quarter 2006  
**Project ID:** C399307  
**Location:** SW GENESEE ST  
**Neighborhood District:** Delridge **Neighborhood Plan:** Delridge

This project constructs fish passage and habitat improvements along Longfellow Creek through the West Seattle Golf Course. Improvements include replacing culverts and construction of a fish ladder at a rockery dam that spans the creek. This project is coordinated with the Longfellow Creek - SW Brandon to Juneau project (C302NW4).

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	317	180	127	14	50	1,500	0	0	2,188
<i>O&amp;M Costs (Savings)</i>			0	0	0	0	0	3	3

## Westlake Drainage

**Program:** Flood Control and Local Drainage **Start Date:** 2nd Quarter 1995  
**Type:** Improved Facility **End Date:** 4th Quarter 2003  
**Project ID:** C3AA328  
**Location:** WESTLAKE AV N/ Blaine  
**Neighborhood District:** Lake Union **Neighborhood Plan:** Queen Anne

This project installs a complete drainage system along Westlake Avenue N., north of Blaine Street to Aurora Avenue N., and rehabilitates the existing drainage system south of Blaine Street to Galer Street. In coordination with construction of a pedestrian/bicycle path, the drainage project also improves surface drainage pickup in adjacent parking areas.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	1,060	4,162	1,318	0	0	0	0	0	6,540
<i>O&amp;M Costs (Savings)</i>			0	0	31	31	31	31	124

## Windermere Combined Sewer Overflow Storage

**Program:** Combined Sewer Overflow **Start Date:** 1st Quarter 2003  
**Type:** New Facility **End Date:** 4th Quarter 2006  
**Project ID:** C33NW106  
**Location:** TBD

This project constructs two storage facilities for Combined Sewer Overflow (CSO) reduction in the Windermere area. Major work includes selection of storage facility sites, additional flow monitoring and modeling, design, permitting, and construction. If deemed necessary, pre-design, facility planning, environmental review, and post-construction site improvement are included as part of the project.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	0	0	375	498	1,807	92	0	0	2,772
<i>O&amp;M Costs (Savings)</i>			N/C	N/C	N/C	N/C	N/C	N/C	0

\*Amounts in thousands of dollars



# SPU - Drainage & Wastewater

## WPA Drains Study & Repair Program

**Program:** Public Asset Protection **Start Date:** 3rd Quarter 2000  
**Type:** Rehabilitation or Restoration **End Date:** Ongoing  
**Project ID:** C300338

**Location:** Various locations

**Neighborhood District:** In more than one district **Neighborhood Plan:** Not in a Neighborhood Plan

This program prioritizes and makes necessary repairs on drains installed as a result of extensive landslide damage during the winter of 1933-34. The Works Progress Administration sponsored the construction of landslide mitigation projects at 29 sites around the City between 1935-41. This project was one of the recommended activities from the Landslide Policy Paper adopted by the City Council in 1998.

	LTD	2002	2003	2004	2005	2006	2007	2008	Total
SPU Drainage and Wastewater Fund	151	249	151	151	100	100	100	100	1,102
<i>O&amp;M Costs (Savings)</i>			0	0	0	0	0	0	0

*\*Amounts in thousands of dollars*

