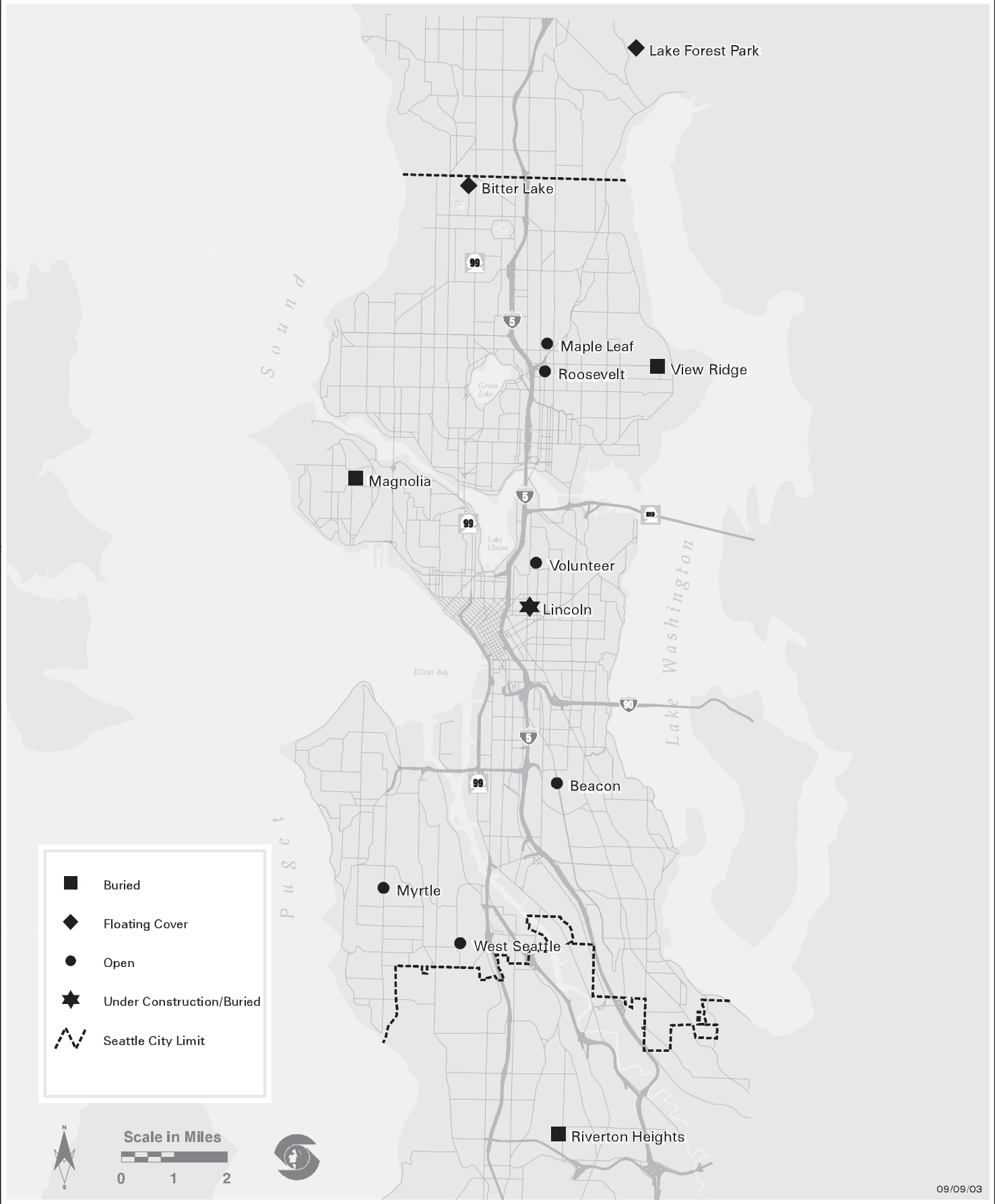


SPU - WATER

Seattle Public Utilities Water Division Reservoir Program



Overview of Facilities and Programs

Seattle Public Utilities (SPU) operates the City-owned water system serving a population of approximately 1.3 million people in a 450 square mile area. The system extends from Edmonds to Des Moines and from Puget Sound to Lake Joy near Duvall. SPU sells water directly in Seattle and immediately adjacent areas, and sells wholesale to nearly 30 suburban water utilities for distribution of water to their customers. The water system is supplied by three sources (the Cedar and Tolt Rivers and the Highline Wellfield) which in total provide an average annual yield of 171 million gallons per day (MGD) of drinking water.

Seattle Public Utilities Capital Improvement Program (CIP) is the vehicle for upgrading and expanding Water infrastructure as well as constructing projects that protect, conserve, and enhance our region's environmental resources. The overriding goal of the CIP is to assure that the water system is properly upgraded and expanded to reliably deliver high-quality, safe drinking water to customers, protect the environment, and comply with regulations.

The Utility's financial policies call for cash contributions to the CIP at an average of 20% of total CIP costs over a six-year period. The remaining portion of the CIP is bond-funded. Overhead costs for the CIP are budgeted in the operating fund and are reimbursed as CIP expenditures are incurred.

Highlights

- ◆ **Cedar Treatment Facility:** This facility, which is to be the largest such treatment facility in the world, uses ozonation and ultraviolet light (UV) disinfectant to improve drinking water quality and taste, and to ensure continued compliance with increasingly stringent federal and state water quality requirements. The total project cost is approximately \$98 million and final completion is expected in the Fall of 2004.
- ◆ **Open Distribution System Reservoirs:** To comply with water quality regulations and enhance security, the City plans to cover all of its drinking water reservoirs over the next decade. Approximately \$128 million is included in the 2004-2009 Proposed CIP for reservoir covering and undergrounding projects. Replacing existing reservoirs with new underground reservoirs, as opposed to simply covering the existing reservoirs with floating covers, creates additional open space in Seattle while protecting water quality and enhancing security. The total cost to cover or bury the reservoirs is estimated at approximately \$173 million, with the remaining funds to be provided in years after 2009.
- ◆ **Cedar River Watershed Habitat Conservation Plan (HCP):** In 2000, after seven years of intensive study and negotiation with state, federal, and tribal authorities, the City entered into a 50-year habitat conservation plan on the Cedar River Watershed. This agreement commits the City to certain projects and management practices to mitigate the environmental impact of drinking water diversions. Approximately \$34 million is included in the 2004-2009 Proposed CIP for these projects.
- ◆ **Endangered Species Act (ESA):** Seattle Public Utilities is developing projects as part of the City's overall response to the listing of Chinook salmon under the Endangered Species Act. In some instances, SPU is performing this work in partnership with Seattle City Light. Approximately \$5.2 million is included in the 2004-2009 Proposed CIP for these projects.

Project Selection Process

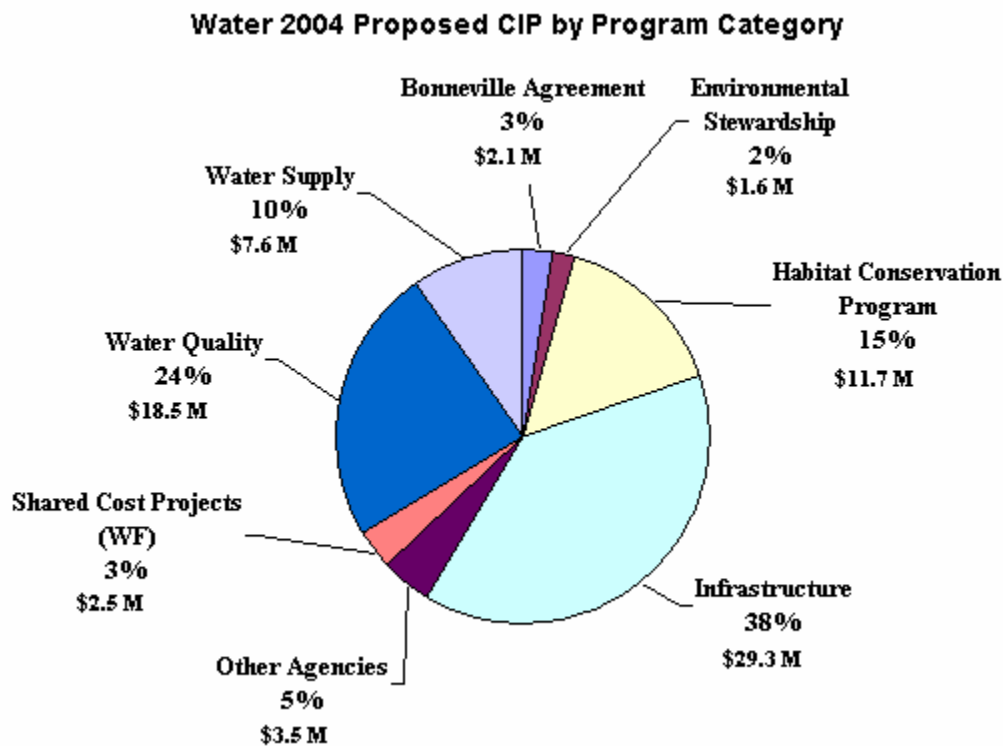
Seattle Public Utilities recently adopted an Asset Management approach for selecting which projects to build. This is an essentially econometric, end-result focused approach in which only projects that provide greater customer benefit (based on adopted service levels) than their respective costs are allowed to proceed. The approach also provides an elaborate analytical and modeling framework to find the most economical balance between capital investments and operation and maintenance expenditures so as to minimize life cycle costs of any facility.

SPU – Water

A committee of senior SPU executives (Asset Management Committee) was created to guide the Utility into fully adopting Asset Management, and to assure that only projects that meet the benefit criteria move forward. Existing projects already under construction were allowed to proceed, but all remaining projects were subjected to “business case” review. Several projects have since been dropped as their costs were higher than their benefits. Several cost effective master planning efforts were approved to create up-to-date improvement and upgrade plans for several groups of assets. The 2004 proposed Water CIP is more than \$7 million lower than the 2004 endorsed Water CIP primarily as a result of the Asset Management initiative and SPU’s efforts to deliver capital improvements at lower cost.

Program Category Summaries

The proposed Water CIP allocates \$77 million in 2004 (including Technology projects funded by the Water Fund). The CIP is comprised of nine program categories, also called Budget Control Levels, which are summarized below. The following chart shows how Seattle Public Utilities’ proposed Water CIP allocates funding to these program categories in 2004:



Bonneville Agreement: This new program in the 2004-2009 Proposed CIP includes projects to fund the implementation of Ordinance 121212 related to construction by the Bonneville Power Administration of an electric power transmission line project through the Cedar River Watershed.

Environmental Stewardship: Projects and programs in this program category provide protection, sustain the environment, and enhance environmental quality, both locally and regionally. Several of the projects are implemented in response to the listing of the Chinook salmon as a threatened species under the Endangered Species Act.

Habitat Conservation Program: This program category includes projects and programs directly related to implementation of the Cedar River Watershed Habitat Conservation Plan. Projects are grouped into eight areas of focus: road improvements and decommissioning; stream and riparian restoration; upland forest restoration;

Landsburg fish passage improvements; Cedar sockeye hatchery; Ballard Locks improvements; downstream fish habitat; and Cedar permanent dead storage (projects in this area of focus are complete).

Infrastructure: This program category repairs and upgrades the City's water lines, pump stations, and other facilities. Included in this program are projects for seismic upgrades to water tanks and pump stations, water main replacements, road and bridge improvements in the watersheds, and service renewals.

Other Agencies: This program category designs and constructs capital improvements for other agencies, or in response to other agencies' projects, often on a reimbursement basis.

Shared Costs Projects: This new program in the 2004-2009 Proposed CIP includes capital improvement projects that receive funding from multiple SPU funds. In 2004, the program includes \$2.5 million for existing projects including Alaskan Way Viaduct & Seawall, Seattle Monorail Project, and Sound Transit Light Rail. These projects have been moved into this program from other Water Fund capital programs.

Technology: This program category makes use of recent technology advances to increase efficiency and productivity. Included in this program is an upgrade to the Supervisory Control and Data Acquisition (SCADA) system that is used to monitor and control the City's water system. Water-supported technology projects are shown grouped with technology projects supported by SPU's other fund sources.

Water Quality: This program category designs and constructs water treatment facilities, performs repairs, and upgrades water reservoirs. This program includes development of the Cedar Treatment Facility project and undergrounding of the City's open water reservoirs.

Water Supply: This program category repairs and upgrades water transmission pipelines and promotes residential and commercial water conservation. Included in this program are substantial improvements to the Tolt II Pipeline. Also included are conservation programs designed to reduce water demand.

Anticipated Operating Expenses Associated with Capital Facilities Projects

Total new operations and maintenance costs reflected in the 2004 Proposed Water CIP are \$2.5 million (primarily for operation and maintenance of the Cedar Treatment Facility), and are reflected in the Department's operating budget. For most projects in the Water CIP, there are no new 2004 operations and maintenance costs, or they have not been calculated (N/C). In these cases, the cost impacts of the project are either insignificant or are offset by cost savings realized by other projects.

SPU - Water

Project Summary

Program/Project	Project ID	LTD	2003	2004	2005	2006	2007	2008	2009	Total
Bonneville Agreement										
BPA - Aquatic & Riparian Restoration	WFnewBPA 3	0	0	649	457	160	26	0	0	1,292
BPA - Road Decommissioning/Improvements	WFnewBPA 2	0	0	546	1,233	82	50	0	0	1,911
BPA - Security Measures	WFnewBPA 1	0	0	585	200	150	0	0	0	935
BPA - Upland Forest Restoration	WFnewBPA 4	0	0	334	495	293	55	50	0	1,227
Bonneville Agreement Total		0	0	2,114	2,385	685	131	50	0	5,365
Environmental Stewardship										
Cedar River Watershed Education Center Exhibits	C103001	0	340	308	0	0	0	0	0	648
Endangered Species Act - Chinook Research & Monitoring	C101048	257	301	350	317	326	230	236	240	2,257
Endangered Species Act - Snohomish River Basin	C101003	14	360	370	413	437	461	488	502	3,045
Rock Creek Fishway	C101008	20	52	350	0	0	0	0	0	422
Tolt Fisheries Mitigation	WFNEW385	0	0	210	0	0	0	0	0	210
Environmental Stewardship Total		291	1,053	1,588	730	763	691	724	742	6,582

*Amounts in thousands of dollars

Project Summary

Program/Project	Project ID	LTD	2003	2004	2005	2006	2007	2008	2009	Total
Habitat Conservation Program										
Ballard Locks Improvements	WFHCP6	382	93	153	156	154	159	1,046	1,077	3,220
Bull Trout Passage Assistance	C100053	0	0	0	20	100	0	0	0	120
Cedar Dead Storage Engineering Feasibility	C100052	0	0	0	0	76	207	212	218	713
Cedar Sockeye Hatchery	WFHCP5	1,572	1,252	4,585	5,036	21	0	0	0	12,466
Common Loon Nesting Habitat	C100056	0	0	0	0	50	0	0	0	50
Delta Plant Community Studies	C100055	0	18	33	32	0	0	0	0	83
Delta Sediment Analysis & Modeling	WFHCP9	0	31	194	34	0	0	0	0	259
Downstream Fish Habitat and Restoration	WFHCP7	1,243	44	4,267	1,441	15	319	11	0	7,340
Landsburg Fish Passage Improvements	WFHCP4	5,157	5,605	174	0	0	0	0	0	10,936
Pygmy Whitefish & Rainbow Trout	C100054	0	0	0	170	170	0	0	0	340
Road Improvements/Decommissioning	WFHCP1	1,661	851	871	888	876	907	939	967	7,960
Stream and Riparian Restoration	WFHCP2	1,478	671	726	740	731	756	784	808	6,694
Upland Forest Restoration	WFHCP3	1,292	670	688	699	691	714	740	762	6,256
Habitat Conservation Program Total		12,785	9,235	11,691	9,216	2,884	3,062	3,732	3,832	56,437

**Amounts in thousands of dollars*

Project Summary

Program/Project	Project ID	LTD	2003	2004	2005	2006	2007	2008	2009	Total
Infrastructure										
Asset Management	WNFEW655	123	550	3,500	9,000	12,000	12,000	12,000	12,000	61,173
Bellevue Eastgate MTR Upgrade	C102056	1	30	0	0	0	0	0	0	31
Burien Feeder Upgrade	CFP1	0	0	0	0	0	0	301	2,062	2,363
Cathodic Protection - Phase V	C100063	127	241	992	0	0	0	0	0	1,360
Cathodic Protection - Phase VI	WFNEW112	0	0	154	634	0	0	0	0	788
Cathodic Protection - Phase VII	WFNEW120	0	0	51	159	652	0	0	0	862
Cathodic Protection Master Plan	C103025	0	70	10	0	0	0	0	0	80
Cedar Bridge Replacement - Cedar 50 RD and NF Taylor	WFNEW024	0	0	0	0	52	434	0	0	486
Cedar Bridge Replacement - Cedar 600 RD	C102017	0	0	356	0	0	0	0	0	356
Cedar Bridge Replacement - MF Taylor 60 RD	C199067	6	0	41	296	0	0	0	0	343
Cedar Bridge Replacement - NF Cedar 560 RD and Taylor Creek	WFNEW027	0	0	0	51	422	0	0	0	473
Cedar Bridge Replacement - Pine Creek	C102051	450	7	400	0	0	0	0	0	857
Cedar Bridge Replacement - Rex 300 RD/Tinkham 560 RD	WFNEW023	0	0	0	51	391	0	0	0	442
Cedar Bridge Replacement - Upper and Lower Cedar RR Bridges	WFNEW026	0	0	0	0	0	357	367	0	724
Cedar Moraine Improvements	C197009	416	522	372	264	246	34	35	41	1,930
Cedar River Watershed - Comprehensive Bridge Plan	C103022	0	235	5	0	0	0	0	0	240
Cedar River Watershed - Headquarters Major Maintenance	C100051	1,451	86	88	91	93	96	57	60	2,022

**Amounts in thousands of dollars*

Project Summary

Program/Project	Project ID	LTD	2003	2004	2005	2006	2007	2008	2009	Total
Infrastructure										
Cedar River Watershed - Non-HCP Road Improvements	C191001	4,290	650	786	829	873	871	895	969	10,163
Chamber Ring and Cover Replacements	C103002	0	200	103	106	109	112	115	118	863
Control Works Upgrade	CFP2	0	0	0	0	0	0	627	645	1,272
CRPL #2 Replace Portion	CNW1409	0	0	0	264	272	5,587	0	0	6,123
Distribution System Fireflow & Pressure Improvements	C1NW125	0	0	528	2,114	3,865	6,372	6,981	7,279	27,139
Distribution System In-Line Gate Valves Replacement	C199012	282	70	72	74	76	78	80	83	815
Duvall Shop Facility Improvements	C103023	0	50	200	0	0	0	0	0	250
Earthquake Repair - Hanford St. Watermain	C101E14	71	218	226	0	0	0	0	0	515
Heavy Equipment Purchases- Water	C199068	6,244	2,106	2,364	2,114	2,173	2,234	2,296	2,360	21,891
Hydrant Program - New Installations	C154000	94	12	12	13	13	13	14	14	185
Hydrant Program - Replacement & Relocation	C1110	1,826	200	206	211	217	223	230	236	3,349
Lake Youngs - Outlet Dam Rehabilitation	C102013	0	180	300	0	0	0	0	0	480
Lake Youngs - Outlet Dam Warning System	C101006	148	55	745	34	30	10	0	0	1,022
Lake Youngs - Tunnel Sinkhole	C101068	97	17	13	0	0	0	0	0	127
Landsburg Dam - Emergency Spillway Improvement	WFNEW013	0	75	411	528	4,780	0	0	0	5,794
Landsburg Improvements - Non-HCP	C199073	1,725	1,271	80	0	0	0	0	0	3,076
Maple Leaf Gatehouse Pipe Refurbishing	C195001	11	20	740	5	0	0	0	0	776
Metering - Purveyor Meter Program	C1107	584	427	439	486	0	0	0	0	1,936

*Amounts in thousands of dollars

SPU - Water

Project Summary

Program/Project	Project ID	LTD	2003	2004	2005	2006	2007	2008	2009	Total
Infrastructure										
Painting Program - Myrtle Tank	WFNEW110	0	0	0	133	869	0	0	0	1,002
Painting Program - Richmond Highland I and II	WFNEW115	0	8	177	2,206	0	0	0	0	2,391
Pump Station - Maple Leaf #2	C1AA003	173	0	0	528	2,716	0	0	0	3,417
Pump Station - Phinney Ridge	C1AA004	886	111	435	140	0	0	0	0	1,572
Pump Station - Queen Anne	C1AA005	1,042	15	144	3,170	554	0	0	0	4,925
Pump Station Improvements - Install Station Motors	C199052	245	65	62	63	65	73	80	83	736
Replace Air Valve Chambers	C199060	206	60	62	63	65	67	69	72	664
Seismic Upgrade - Cedar River Pipeline at Ginger Creek	C197032	152	450	48	0	0	0	0	0	650
Seismic Upgrade - Lake Youngs Upgrade Package 6D	C194014	0	0	36	169	0	0	0	0	205
Seismic Upgrade - Landsburg Tank	C194005	65	0	0	0	109	218	6	0	398
Seismic Upgrade - Myrtle Tanks #1 and #2	C194006	874	2,195	77	0	0	0	0	0	3,146
Seismic Upgrade - Pipeline Backbone System	C101038	59	190	200	0	0	0	0	0	449
Seismic Upgrade - Queen Anne Replacement #1 and #2	C194004	583	140	1,069	2,404	5	0	0	0	4,201
Seismic Upgrade - Tolt Screenhouse	C194013	48	0	0	79	364	73	0	0	564
Seismic Upgrade - West Seattle Pipeline	C197034	154	265	0	0	0	0	0	0	419
Service Renewals - Customer- Requested Renewals	C121004	224	60	62	63	65	67	69	71	681
Service Renewals and Retirements Program	C1109	32,326	4,178	4,112	4,227	4,345	4,467	4,592	4,721	62,968

**Amounts in thousands of dollars*

Project Summary

Program/Project	Project ID	LTD	2003	2004	2005	2006	2007	2008	2009	Total
Infrastructure										
System Dewatering Program	C1105	862	322	772	1,945	1,427	1,467	1,508	1,550	9,853
Tank Site Remediation Program	C1114	992	442	454	467	480	494	507	0	3,836
Taps Program - New (Installation)	C1113	21,353	4,250	4,369	4,491	4,617	4,746	4,879	5,016	53,721
Tolt Bridge Replacement - Chuck Judd Creek	WFNEW480	0	0	0	32	280	0	0	0	312
Tolt Bridge Replacement - Dorothy Creek	C103018	0	28	247	0	0	0	0	0	275
Tolt Bridge Replacement - Siwash Creek	C197029	54	0	49	338	0	0	0	0	441
Tolt Eastside Supply Line Upgrade, Phase I	CFP4	0	0	0	0	0	0	1,098	1,932	3,030
Tolt Instrument and Warning System Upgrade	C1AA012	1,850	15	0	26	27	28	29	30	2,005
Tolt River Watershed Road Improvement Program	C196007	1,548	210	175	180	185	190	195	211	2,894
Transmission Pipeline Analysis	C101043	104	125	115	0	0	0	0	0	344
Water Design Standards & Guidelines Program	C102028	4	120	206	211	217	279	287	295	1,619
Watermain Extension Program	C153000	1,550	752	773	793	815	838	861	885	7,267
Watermain Rehabilitation Program	WFNEW455	0	0	2,053	4,978	4,920	5,058	5,200	5,345	27,554
Watermain Replacement Program	C1104	1,441	2,759	450	0	0	0	0	0	4,650
West Seattle Gatehouse - Valve & Inlet Pipe Rehabilitation	C197016	242	338	5	0	0	0	0	0	585
Infrastructure Total		84,983	24,390	29,346	44,030	48,389	46,486	43,378	46,078	367,080

**Amounts in thousands of dollars*

SPU - Water

Project Summary

Program/Project	Project ID	LTD	2003	2004	2005	2006	2007	2008	2009	Total
Other Agencies										
Cedar Eastside Supply Line Improvements - East Creek	C145007	216	133	585	0	0	0	0	0	934
Denny Combined Sewer Overflow	C145002	171	11	2	0	0	0	0	0	184
Henderson Combined Sewer Overflow	C199069	114	29	31	0	0	0	0	0	174
Holgate/Amtrak Water Relocation	C101009	26	48	10	0	0	0	0	0	84
Marine View/Des Moines Creek Transmission Line Relocation	C197021	184	5	397	0	0	0	0	0	586
Other Agency - Multiple Utility Relocation Program	C1201	6,491	803	802	702	781	833	881	900	12,193
Renton Franchise/Line Valve along Cedar River Pipeline	C102023	222	399	1,312	1,791	0	0	0	0	3,724
SeaTac Third Runway Pipeline Relocation	C199075	227	10	10	11	12	67	482	0	819
Seattle Monorail Project - Water	C1NW011	0	73	327	296	296	296	0	0	1,288
Snoqualmie River Bank Stabilization	WFNEW019	0	20	58	455	0	0	0	0	533
University Way NE - The Ave	C101037	364	770	8	0	0	0	0	0	1,142
Other Agencies Total		8,015	2,301	3,542	3,255	1,089	1,196	1,363	900	21,661
Shared Cost Projects (WF)										
Alaskan Way Viaduct & Seawall - Water	C502001	0	52	66	165	165	41	0	0	489
Civic Projects - Water	WFNEW390	0	250	0	0	0	0	0	0	250
Facility Improvements (Water Fund)	C502010	0	432	450	0	0	0	0	0	882
Metering - Direct Service Meter Replacement	C1108	6,348	707	727	748	769	790	812	835	11,736
Sound Transit Light Rail - Water	C1NW005	0	100	1,260	3,680	3,030	720	100	0	8,890
Shared Cost Projects (WF) Total		6,348	1,541	2,503	4,593	3,964	1,551	912	835	22,247

*Amounts in thousands of dollars

Project Summary

Program/Project	Project ID	LTD	2003	2004	2005	2006	2007	2008	2009	Total
Water Quality										
Cedar Falls - Railroad Hazardous Material Remediation	C100078	77	54	134	0	0	0	0	0	265
Cedar River Watershed - Boundary Land Acquisition	C198008	2,167	100	147	106	109	112	115	118	2,974
Cedar Treatment Facility	C196015	55,751	40,339	2,139	0	0	0	0	0	98,229
Lake Youngs - Management/Protection Plan	C102030	8	230	5	0	0	0	0	0	243
Landsburg Treatment Building	WFNEW270	0	0	0	0	112	0	0	0	112
Reservoir Covering - Beacon	C101060	300	450	1,028	7,397	19,826	3,350	0	0	32,351
Reservoir Covering - Bitter Lake	C196010	3,855	5	0	0	0	0	0	0	3,860
Reservoir Covering - Lake Forest Park	C196011	7,256	260	0	0	0	0	0	0	7,516
Reservoir Covering - Lincoln	C196012	6,592	8,500	4,862	0	0	0	0	0	19,954
Reservoir Covering - Maple Leaf	C101078	147	0	1,049	211	217	12,396	20,665	1,573	36,258
Reservoir Covering - Myrtle	C101076	180	0	1,049	3,170	5,215	1,117	0	0	10,731
Reservoir Covering - Roosevelt	C101077	135	0	0	0	272	838	574	3,086	4,905
Reservoir Covering - Volunteer	C101059	75	0	0	0	272	1,117	574	4,485	6,523
Reservoir Covering - West Seattle	C101075	155	0	1,049	211	217	11,280	19,517	1,564	33,993
Reservoir Remote Outlet Valve - Myrtle	C101014	21	0	0	191	0	0	0	0	212
Supervisory Control And Data Acquisition Upgrades (Water)	C195008	3,288	2,885	4,843	4,084	2,069	2,126	0	0	19,295
Tolt Treatment Decommissioning	WFNEW345	0	0	0	184	0	0	0	0	184
Water System Security Improvements	C102015	691	3,047	2,179	285	0	0	0	0	6,202
Water Quality Total		80,698	55,870	18,484	15,839	28,309	32,336	41,445	10,826	283,807

**Amounts in thousands of dollars*

SPU - Water

Project Summary

Program/Project	Project ID	LTD	2003	2004	2005	2006	2007	2008	2009	Total
Water Supply										
Cedar River Pipeline #4 Upgrade	CFP3	0	0	0	0	0	0	151	200	351
Comprehensive Water System Plan	C199022	1,070	41	140	505	615	51	0	0	2,422
Morse Lake Pump Plant - Pipeline Number One Corrosion	WFNEW265	0	0	0	93	0	0	0	0	93
Regional Water Conservation Program	C199032	8,981	3,700	4,320	4,592	5,096	5,898	6,504	6,686	45,777
Seattle Direct Service Additional Conservation	C102010	524	700	1,000	1,057	1,086	1,117	1,148	1,180	7,812
Tolt Pipeline I - Phase III-B	C199003	346	269	1,840	2,774	5	0	0	0	5,234
Tolt Pipeline II - Phase II and Phase III	C101083	62,775	96	83	42	22	11	0	0	63,029
Tolt Pipeline II - Phase IV	C194029	28	220	82	0	0	0	0	0	330
Tolt Pipeline II - Phase VI-B	WFNEW118	0	0	103	528	608	0	0	0	1,239
Water Supply Total		73,724	5,026	7,568	9,591	7,432	7,077	7,803	8,066	126,287
Department Total		266,844	99,416	76,836	89,639	93,515	92,530	99,407	71,279	889,466

Note: Additional allocations for the SPU Water Fund are shown in the SPU - Technology section of this document.

**Amounts in thousands of dollars*

Fund Source Summary

Funding Source	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	266,844	99,416	76,836	89,639	93,515	92,530	99,407	71,279	889,466
Department Total	266,844	99,416	76,836	89,639	93,515	92,530	99,407	71,279	889,466

Note: Additional allocations for the SPU Water Fund are shown in the SPU - Technology section of this document.

**Amounts in thousands of dollars*

SPU - Water

Alaskan Way Viaduct & Seawall - Water

Program: Shared Cost Projects (WF) **Start Date:** 1st Quarter 2003
Type: New Facility **End Date:** 4th Quarter 2007
Project ID: C502001
Location: ALASKAN WY VI NB
Neighborhood District: Downtown **Neighborhood Plan:** DUCPG (Downtown Urban Center Planning Group)

This project funds planning, preliminary engineering, and design costs associated with replacing the Alaskan Way Viaduct and Seawall with a new transportation facility. The Alaskan Way Viaduct is part of State Route 99, which carries one-quarter of the north-south traffic through downtown Seattle and is a major truck route serving the City's industrial areas. The seawall supports the soils under Alaskan Way and the Viaduct. Both facilities were damaged in the February 28, 2001 Nisqually Earthquake. The Washington State Department of Transportation (WSDOT) and the City of Seattle are co-leads for the project.

WSDOT, in conjunction with the Seattle Department of Transportation, 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. See also the Drainage and Wastewater CIP (projects C33NW301 and C33NW201), as well as projects in the Seattle Department of Transportation (project TC366050) and Seattle City Light (project 8307) CIPs.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	0	52	66	165	165	41	0	0	489
<i>O&M Costs (Savings)</i>			N/C	N/C	N/C	N/C	N/C	N/C	0

Asset Management

Program: Infrastructure **Start Date:** 4th Quarter 2002
Type: Rehabilitation or Restoration **End Date:** Ongoing
Project ID: WNFEW655
Location: Citywide

The Asset Management Program provides additional funding for replacement, rehabilitation, and improvement of the City's water system. The program also develops an innovative approach to addressing the backlog of infrastructure renewal in a way that maximizes customer benefit while minimizing life cycle costs. The program formally establishes a broad array of measurable customer and environmental service levels, and develops decision-making models to prioritize infrastructure projects based on sound economic principles. These models are used to determine a priority list for watermain replacement and rehabilitation, as well as to develop and expand programs to replace or improve other types of water system assets, including service meters and service lines, isolation valves, and larger pipelines. Funding is allocated from the Asset Management Program to these various programs once they are clearly defined. The program also includes evaluating SPU's current operating and maintenance practices and processes, and comparing them to other large water utilities in order to identify opportunities for efficiency improvements.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	123	550	3,500	9,000	12,000	12,000	12,000	12,000	61,173
<i>O&M Costs (Savings)</i>			N/C	N/C	N/C	N/C	N/C	N/C	0

*Amounts in thousands of dollars

Ballard Locks Improvements

Program: Habitat Conservation Program **Start Date:** 1st Quarter 2000
Type: Improved Facility **End Date:** Ongoing
Project ID: WFHCP6
Location: 3015 NW 54TH ST
Neighborhood District: Ballard **Neighborhood Plan:** Crown Hill/Ballard

This project is a sub-element of the Cedar River Habitat Conservation Plan and associated Cedar River Instream Flow Agreement. Improvements include the planning, design, and construction of freshwater conservation and smolt passage facilities at the Ballard Locks to improve fish passage and survival at the Locks. This project is part of a comprehensive instream flow management program for the Cedar River that protects the City's continued ability to divert adequate amounts of high quality water for regional use while protecting instream resources and the U.S. Army Corps of Engineers' ability to provide adequate flows for operating the Locks.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	382	93	153	156	154	159	1,046	1,077	3,220
O&M Costs (Savings)			0	0	0	0	0	0	0

Bellevue Eastgate MTR Upgrade

Program: Infrastructure **Start Date:** 1st Quarter 2002
Type: Rehabilitation or Restoration **End Date:** 4th Quarter 2003
Project ID: C102056

This project replaces obsolete pipes that are not performing within the American Water Works Association's standards of accuracy.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	1	30	0	0	0	0	0	0	31
O&M Costs (Savings)			N/C	N/C	N/C	N/C	N/C	N/C	0

BPA - Aquatic & Riparian Restoration

Program: Bonneville Agreement **Start Date:** 1st Quarter 2004
Type: Improved Facility **End Date:** 4th Quarter 2007
Project ID: WFnewBPA3
Location: Cedar River Watershed

This project provides funds to plan and implement projects within the Cedar River Municipal Watershed that enhance and accelerate the City's Watershed Riparian and Aquatic Restoration Programs and that compensate for the Bonneville Power Administration's (BPA's) project impacts to riparian, stream and wetland habitats in the Watershed.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	0	0	649	457	160	26	0	0	1,292
O&M Costs (Savings)			N/C	N/C	N/C	N/C	N/C	N/C	0

*Amounts in thousands of dollars

SPU - Water

BPA - Road Decommissioning/Improvements

Program: Bonneville Agreement **Start Date:** 1st Quarter 2004
Type: Improved Facility **End Date:** 4th Quarter 2007
Project ID: WFnewBPA2
Location: Cedar River Watershed

This project provides funds to plan and implement projects within the Cedar River Municipal Watershed that enhance and accelerate the City's Road Improvement and Abandonment Programs in the Watershed and that compensate for the effects of the additional road length added to the Watershed as a result of BPA's project.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	0	0	546	1,233	82	50	0	0	1,911
O&M Costs (Savings)			N/C	N/C	N/C	N/C	N/C	N/C	0

BPA - Security Measures

Program: Bonneville Agreement **Start Date:** 1st Quarter 2004
Type: New Facility **End Date:** 4th Quarter 2006
Project ID: WFnewBPA1
Location: Cedar River Watershed

This project provides funds to plan, purchase and install watershed security improvements within the Cedar River Municipal Watershed to protect Watershed resources and restrict Watershed access.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	0	0	585	200	150	0	0	0	935
O&M Costs (Savings)			N/C	N/C	N/C	N/C	N/C	N/C	0

BPA - Upland Forest Restoration

Program: Bonneville Agreement **Start Date:** 1st Quarter 2004
Type: Improved Facility **End Date:** 4th Quarter 2008
Project ID: WFnewBPA4
Location: Cedar River Watershed

This project provides funds to plan and implement projects within the Cedar River Municipal Watershed that enhance and accelerate the City's Upland Forest Restoration Program in the Watershed and that compensate for BPA's project impacts to older second-growth forest habitats in the Watershed.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	0	0	334	495	293	55	50	0	1,227
O&M Costs (Savings)			N/C	N/C	N/C	N/C	N/C	N/C	0

*Amounts in thousands of dollars

Bull Trout Passage Assistance

Program: Habitat Conservation Program **Start Date:** 1st Quarter 2005
Type: Improved Facility **End Date:** 4th Quarter 2006
Project ID: C100053
Location: Chester Morse Lake

This project develops a plan to restore fish passage in the event that the water level in the City's Chester Morse Lake reservoir decreases to an extent (approx. 1,530-1,535 feet) that passage of bull trout from the main body of the lake to spawning reaches in major tributary streams is impeded. Bull trout are designated as a threatened species. Fish passage could be impeded when water levels drop substantially below the break point of steep-faced delta fans at the mouths of rivers where they enter Chester Morse Lake.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	0	0	0	20	100	0	0	0	120
O&M Costs (Savings)			N/C	N/C	N/C	N/C	N/C	N/C	0

Burien Feeder Upgrade

Program: Infrastructure **Start Date:** 1st Quarter 2008
Type: Rehabilitation or Restoration **End Date:** 4th Quarter 2015
Project ID: CFP1
Location: S 146 St, between 24 Ave S and 8 Ave S

This project includes re-lining, joint repairs, sliplining, and cathodic protection to prolong the life span of the Burien Feeder. The feeder pipeline provides water for drinking, sanitation and fighting fires in the Burien area.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	0	0	0	0	0	0	301	2,062	2,363
O&M Costs (Savings)			N/C	N/C	N/C	N/C	N/C	N/C	0

Cathodic Protection - Phase V

Program: Infrastructure **Start Date:** 1st Quarter 2000
Type: Improved Facility **End Date:** 4th Quarter 2004
Project ID: C100063
Location: Regional

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

This project funds the planning, study, design and construction of new cathodic protection systems on pipelines 30 inches or larger. This project makes the pipeline electrically continuous and installs cathodic protection, which shifts the electric potential of the pipeline so that the normal corrosion processes of the steel cylinder and reinforcing rod are inhibited. Cathodic protection systems protect new pipelines and help rehabilitate existing pipelines.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	127	241	992	0	0	0	0	0	1,360
O&M Costs (Savings)			N/C	N/C	N/C	N/C	N/C	N/C	0

*Amounts in thousands of dollars

SPU - Water

Cathodic Protection - Phase VI

Program: Infrastructure **Start Date:** 1st Quarter 2004
Type: Improved Facility **End Date:** 4th Quarter 2005
Project ID: WFNEW112
Location: Regional

This project focuses on the portion of existing Tolt Pipeline I in the area around the Lake Forest Reservoir. This project makes the pipeline electrically continuous and installs cathodic protection, which shifts the electric potential of the pipeline so that the normal corrosion processes of the steel cylinder and reinforcing rod are inhibited. This work slows normal corrosion processes until pipeline rehabilitation or replacement is studied and recommendations are made in the years following completion of the parallel Tolt Pipeline II Phase IV (project C194029).

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	0	0	154	634	0	0	0	0	788
O&M Costs (Savings)			N/C	N/C	N/C	N/C	N/C	N/C	0

Cathodic Protection - Phase VII

Program: Infrastructure **Start Date:** 2nd Quarter 2004
Type: Improved Facility **End Date:** 4th Quarter 2006
Project ID: WFNEW120
Location: Landsburg Dam and Lake Youngs

This project focuses on installation of cathodic protection for the existing Lake Youngs Supply Lines 4 and 5 (LYSL 4,5). The work was identified when LYSL 4 was replaced in 1992, and corrosive soils were encountered along the pipe alignment. This project makes the LYSL 5 pipeline electrically continuous and installs cathodic protection which shifts the electric potential of both pipelines so that normal corrosion processes of the steel cylinder and reinforcing rod are inhibited. Depending upon the coverage results of the installed system, additional anode bed installations may be handled in future phases of this project. This work provides additional life expectancy for both pipelines.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	0	0	51	159	652	0	0	0	862
O&M Costs (Savings)			N/C	N/C	N/C	N/C	N/C	N/C	0

*Amounts in thousands of dollars

Cathodic Protection Master Plan

Program: Infrastructure **Start Date:** 1st Quarter 2003
Type: Improved Facility **End Date:** 1st Quarter 2004
Project ID: C103025

Cathodic protection systems are a relatively low cost method of extending the life of buried pipelines and submerged surfaces of water storage tanks. They can be used to protect ductile iron, steel, and concrete cylinder pipe. Unprotected, these types of pipe corrode through an electrochemical process; cathodic protection attempts to slow down or even stop this electrochemical process by providing electrical current to the pipe. To date, SPU has installed over 60 cathodic protection systems.

The purpose of the Cathodic Protection Master Plan is to identify and prioritize SPU's current and future cathodic protection capital and operation and maintenance demands, to be efficient in operating, maintaining, and repairing existing cathodic protection systems.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	0	70	10	0	0	0	0	0	80
O&M Costs (Savings)			N/C	N/C	N/C	N/C	N/C	N/C	0

Cedar Bridge Replacement - Cedar 50 RD and NF Taylor

Program: Infrastructure **Start Date:** 2nd Quarter 2006
Type: Rehabilitation or Restoration **End Date:** 4th Quarter 2007
Project ID: WFNEW024
Location: Cedar Watershed

This project replaces the Cedar 50 Road bridge and Taylor Creek 51 Road bridge with permanent concrete structures.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	0	0	0	0	52	434	0	0	486
O&M Costs (Savings)			0	0	0	0	0	0	0

Cedar Bridge Replacement - Cedar 600 RD

Program: Infrastructure **Start Date:** 1st Quarter 2004
Type: Rehabilitation or Restoration **End Date:** 4th Quarter 2004
Project ID: C102017
Location: Cedar River Watershed

This project replaces the Cedar River 600 Road bridge with permanent concrete structures. This bridge provides the only access to remote areas of the Cedar River Watershed. This project was originally scheduled to start in 2001 or earlier. Design has been completed; the construction date is to be set following completion of the Cedar Watershed Comprehensive Bridge Plan.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	0	0	356	0	0	0	0	0	356
O&M Costs (Savings)			N/C	N/C	N/C	N/C	N/C	N/C	0

*Amounts in thousands of dollars

SPU - Water

Cedar Bridge Replacement - MF Taylor 60 RD

Program: Infrastructure **Start Date:** 1st Quarter 1999
Type: Rehabilitation or Restoration **End Date:** 4th Quarter 2005
Project ID: C199067
Location: Cedar Watershed

This project replaces the Middle Fork Taylor Creek 60 Road bridge with a permanent concrete structure. Design for this project is scheduled to begin in 2004.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	6	0	41	296	0	0	0	0	343
O&M Costs (Savings)			0	0	0	0	0	0	0

Cedar Bridge Replacement - NF Cedar 560 RD and Taylor Creek

Program: Infrastructure **Start Date:** 1st Quarter 2005
Type: Rehabilitation or Restoration **End Date:** 4th Quarter 2006
Project ID: WFNEW027
Location: Cedar River Watershed

This project replaces the North Fork Cedar Creek 560 Road and the Taylor 51 Road bridges with permanent concrete structures. These bridges provide the only access to remote areas of the Cedar River Watershed.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	0	0	0	51	422	0	0	0	473
O&M Costs (Savings)			N/C	N/C	N/C	N/C	N/C	N/C	0

Cedar Bridge Replacement - Pine Creek

Program: Infrastructure **Start Date:** 1st Quarter 1999
Type: Rehabilitation or Restoration **End Date:** 4th Quarter 2004
Project ID: C102051
Location: Cedar River Watershed

This project replaces a wood bridge at Pine Creek on the 700 Road with a concrete structure. This project will be completed following completion of the Cedar River Watershed Comprehensive Bridge Plan.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	450	7	400	0	0	0	0	0	857
O&M Costs (Savings)			N/C	600	600	600	600	600	3,000

*Amounts in thousands of dollars

Cedar Bridge Replacement - Rex 300 RD/Tinkham 560 RD

Program: Infrastructure **Start Date:** 3rd Quarter 2005
Type: Rehabilitation or Restoration **End Date:** 4th Quarter 2006
Project ID: WFNEW023
Location: Cedar Watershed

This project replaces the Rex 300 Road and Tinkham Creek bridges with permanent concrete structures.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	0	0	0	51	391	0	0	0	442
O&M Costs (Savings)			0	0	0	0	0	0	0

Cedar Bridge Replacement - Upper and Lower Cedar RR Bridges

Program: Infrastructure **Start Date:** 1st Quarter 2007
Type: Rehabilitation or Restoration **End Date:** 4th Quarter 2008
Project ID: WFNEW026
Location: Cedar Watershed

This project cleans and paints two metal railroad bridges over the lower Cedar River.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	0	0	0	0	0	357	367	0	724
O&M Costs (Savings)			0	0	0	0	0	0	0

Cedar Dead Storage Engineering Feasibility

Program: Habitat Conservation Program **Start Date:** 1st Quarter 2006
Type: Improved Facility **End Date:** 4th Quarter 2010
Project ID: C100052
Location: Chester Morse Lake

This project, a component of the Cedar River Habitat Conservation Plan, evaluates alternatives to develop permanent access to the dead storage below the natural outlet in Chester Morse Lake. Currently, water can only be accessed by operating the Morse Lake temporary pumping plants, and is permitted only during water shortage emergencies. Project elements include environmental studies, engineering and water rights evaluations, cost estimates, yield analyses, negotiations over instream flow augmentation, and other studies.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	0	0	0	0	76	207	212	218	713
O&M Costs (Savings)			N/C	N/C	N/C	N/C	N/C	N/C	0

*Amounts in thousands of dollars

SPU - Water

Cedar Eastside Supply Line Improvements - East Creek

Program: Other Agencies **Start Date:** 2nd Quarter 2001
Type: Improved Facility **End Date:** 3rd Quarter 2004
Project ID: C145007

Location: East Creek and Kamber Road

Neighborhood District: East District

Neighborhood Plan: Not in a Neighborhood Plan

This project is in response to improvements initiated by the City of Bellevue to the Kamber Road crossing of East Creek in the Factoria area. The Cedar Eastside Supply Line, located in the Kamber Road roadway, is lowered and encased in concrete to accommodate the creek crossing improvements.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	216	133	585	0	0	0	0	0	934
O&M Costs (Savings)			N/C	N/C	N/C	N/C	N/C	N/C	0

Cedar Falls - Railroad Hazardous Material Remediation

Program: Water Quality **Start Date:** 3rd Quarter 2000
Type: Rehabilitation or Restoration **End Date:** 4th Quarter 2004
Project ID: C100078

Location: Cedar Falls

Phase I of this project assesses all possible impacts to the Cedar River resulting from railroad ties discarded by Burlington Northern Santa Fe Railroad (BNSF) along 12 miles of right-of-way near Landsburg. At the end of the study, the City is seeking a quit claim deed from BNSF. Phase II is an environmental management and assessment of possible contamination of City property adjacent to the Cedar Falls railroad switch yard and depot site. (An earlier environmental assessment detected significant soil contamination of the railroad property). Future actions are determined once the assessments are completed. The funds shown below are City funding only; further phases of this project may be funded by grants from the Department of Ecology or other funding sources.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	77	54	134	0	0	0	0	0	265
O&M Costs (Savings)			0	0	0	0	0	0	0

*Amounts in thousands of dollars

Cedar Moraine Improvements

Program: Infrastructure **Start Date:** 1st Quarter 1997
Type: Improved Facility **End Date:** Ongoing
Project ID: C197009
Location: Cedar Watershed

Cedar Moraine is a porous, glacial deposit abutting Chester Morse Lake. In December 1918, during the initial filling of the reservoir, a massive landslide occurred as a result of high groundwater. Subsequently, a network of observation wells was installed so that the level of groundwater could be recorded. Over time, some of the wells became blocked. This project began in 1997 to evaluate the conditions of the network, provide rehabilitation, and recommend further improvements. Based on a 1999 dam safety study, the project focus is shifting slightly to improve monitoring capabilities along the northwest slopes of the moraine, and to drill additional wells.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	416	522	372	264	246	34	35	41	1,930
O&M Costs (Savings)			0	0	0	0	0	0	0

Cedar River Pipeline #4 Upgrade

Program: Water Supply **Start Date:** 1st Quarter 2008
Type: Improved Facility **End Date:** TBD
Project ID: CFP3
Location: Cedar River Pipeline

This project replaces a 2,300-foot section of pre-stressed concrete cylinder pipe of Cedar River Pipeline No. 4 in the Duwamish River valley. Replacing the pipe section reduces the risk of flood damage and disruption to water supply in southwest Seattle.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	0	0	0	0	0	0	151	200	351
O&M Costs (Savings)			N/C	N/C	N/C	N/C	N/C	N/C	0

Cedar River Watershed - Boundary Land Acquisition

Program: Water Quality **Start Date:** 1st Quarter 1998
Type: New Facility **End Date:** Ongoing
Project ID: C198008
Location: Cedar River Watershed

This project involves efforts to protect water quality and valuable habitat at or near the boundary of the Cedar River Watershed, as necessary. This program may involve land exchanges as well as land purchases at or near the boundary.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	2,167	100	147	106	109	112	115	118	2,974
O&M Costs (Savings)			0	0	0	0	0	0	0

*Amounts in thousands of dollars

SPU - Water

Cedar River Watershed - Comprehensive Bridge Plan

Program: Infrastructure **Start Date:** 2nd Quarter 2003
Type: Rehabilitation or Restoration **End Date:** 1st Quarter 2004
Project ID: C103022
Location: Cedar River Watershed

The Cedar River Watershed has 36 bridges. Most were built decades ago and now have limited load-bearing capacity. This project is part of SPU's ongoing bridge replacement program. This project inspects remaining deteriorated bridges and develops a prioritized bridge replacement plan and schedule. A consultant helps with inspections, analysis and replacement scheduling. Replacement or removal prioritizing and scheduling are based on bridge condition and capacity, estimation of useful life, access and environmental impacts from bridges that adversely affect streams. This project also purchases a portable bridge for temporary replacement of a failing bridge to allow necessary access while long-term access is evaluated.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	0	235	5	0	0	0	0	0	240
<i>O&M Costs (Savings)</i>			N/C	N/C	N/C	N/C	N/C	N/C	0

Cedar River Watershed - Headquarters Major Maintenance

Program: Infrastructure **Start Date:** 2nd Quarter 2000
Type: Rehabilitation or Restoration **End Date:** Ongoing
Project ID: C100051
Location: Cedar Watershed

This project replaces leaky roofs, repairs plumbing, and paints existing facilities at Cedar Falls.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	1,451	86	88	91	93	96	57	60	2,022
<i>O&M Costs (Savings)</i>			0	0	0	0	0	0	0

Cedar River Watershed - Non-HCP Road Improvements

Program: Infrastructure **Start Date:** Ongoing
Type: Improved Facility **End Date:** Ongoing
Project ID: C191001
Location: Cedar Watershed

The Cedar River Watershed contains over 615 miles of forest roads. This project funds major improvements (beyond routine maintenance) on roads designated as having long-term purpose for forest fire suppression, fish and wildlife management, forest management, security, and public education. Roads not deemed to be of long-term necessity are "deconstructed" by removing potentially unstable sidecast and fill material, constructing frequent waterbars, and re-establishing stream crossings. This work is designed to provide long-term stability, to approximate the drainage flows that existed prior to management activities, and to be complementary to road improvement and decommissioning projects included in the Habitat Conservation Plan (HCP). The City's commitment to the HCP assumes that these projects are completed.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	4,290	650	786	829	873	871	895	969	10,163
<i>O&M Costs (Savings)</i>			0	0	0	0	0	0	0

*Amounts in thousands of dollars

Cedar River Watershed Education Center Exhibits

Program: Environmental Stewardship **Start Date:** 2nd Quarter 2003
Type: Improved Facility **End Date:** 2nd Quarter 2004
Project ID: C103001
Location: CRW Education Center North Bend

This project funds fabrication and installation of interpretive exhibits (already designed) in the empty Interpretive Hall, to complete the Cedar River Watershed Education Center. These exhibits will enhance the experience and understanding gained by the facility's 30,000-40,000 visitors per year. Regular maintenance of exhibits will be done by existing staff.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	0	340	308	0	0	0	0	0	648
O&M Costs (Savings)			2	2	2	2	2	2	12

Cedar Sockeye Hatchery

Program: Habitat Conservation Program **Start Date:** 1st Quarter 2000
Type: New Facility **End Date:** 1st Quarter 2006
Project ID: WFHCP5
Location: Cedar River

This project, a component of the Cedar River Habitat Conservation Plan, implements measures to mitigate impacts on sockeye salmon caused by the migration barrier formed by the Landsburg Diversion Dam. The project consists of constructing a spring water supply, broodstock holding facilities, an incubation facility capable of producing 34 million "swim-up" fry, housing for the on-site hatchery manager, a broodstock collection trap in the lower river, and a fry acclimation facility. The project is expected to be an essential component of mid-Puget Sound salmon recovery efforts that are being developed in response to current and future inclusion of various salmonid fish species under the federal Endangered Species Act.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	1,572	1,252	4,585	5,036	21	0	0	0	12,466
O&M Costs (Savings)			0	379	387	391	N/C	N/C	1,157

**Amounts in thousands of dollars*

SPU - Water

Cedar Treatment Facility

Program: Water Quality **Start Date:** 1st Quarter 1996
Type: New Facility **End Date:** 4th Quarter 2004
Project ID: C196015
Location: Lake Youngs Reservoir

This project develops and implements water treatment improvements to the Cedar River water supply to improve water quality, ensure compliance with drinking water regulations, and mitigate the periodic taste and odor problems that occur on the Cedar source. Under this project, new ozone disinfecting facilities (compatible with filtration) are planned, designed, and constructed near the Lake Youngs Reservoir. SPU is utilizing a design-build-operate contracting method for this project, similar to that used for the new Tolt Water Treatment Facility. Starting in 2004, funding to operate and maintain the new facilities is included in SPU's budget.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	55,751	40,339	2,139	0	0	0	0	0	98,229
<i>O&M Costs (Savings)</i>			2,430	3,110	3,980	5,100	6,520	6,520	27,660

Chamber Ring and Cover Replacements

Program: Infrastructure **Start Date:** 1st Quarter 2003
Type: Rehabilitation or Restoration **End Date:** Ongoing
Project ID: C103002

This program allows SPU to meet current Occupational Safety and Health Administration (OSHA) and Washington State Health Administration (WSHA) standards for confined space entry by replacing the chamber rings and covers to below-grade chambers throughout the City's water system.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	0	200	103	106	109	112	115	118	863
<i>O&M Costs (Savings)</i>			N/C	N/C	N/C	N/C	N/C	N/C	0

Civic Projects - Water

Program: Shared Cost Projects (WF) **Start Date:** 1st Quarter 2001
Type: New Facility **End Date:** 4th Quarter 2004
Project ID: WFNEW390
Location: Citywide
Neighborhood District: In more than one district **Neighborhood Plan:** Martin Luther King, Jr. @ Holly Street

This program provides a standard watermain to serve various low-income housing communities in Seattle.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	0	250	0	0	0	0	0	0	250
<i>O&M Costs (Savings)</i>			0	0	0	0	0	0	0

*Amounts in thousands of dollars

Common Loon Nesting Habitat

Program: Habitat Conservation Program **Start Date:** 1st Quarter 2006
Type: Improved Facility **End Date:** 4th Quarter 2006
Project ID: C100056
Location: Chester Morse Lake

This project evaluates the potential for impacts to common loon nesting habitat in the areas of delta plant communities adjacent to Chester Morse Lake Reservoir and Masonry Pool, including certain floodplains. The project includes funding to ensure that appropriate aerial photography or other compatible sources of imagery are procured regularly and across a wide range of lake elevations. This documentation and data allows the Department to accurately monitor changes in the vegetation communities over the long-term and in various environmental conditions.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	0	0	0	0	50	0	0	0	50
O&M Costs (Savings)			N/C	N/C	N/C	N/C	N/C	N/C	0

Comprehensive Water System Plan

Program: Water Supply **Start Date:** 1st Quarter 1999
Type: Rehabilitation or Restoration **End Date:** 3rd Quarter 2007
Project ID: C199022
Location: Regional
Neighborhood District: In more than one district **Neighborhood Plan:** Not in a Neighborhood Plan

State regulations require water utilities to submit a new comprehensive water system plan every six years as a condition of state utility operating permit renewal. This project results in an environmental review and updated Comprehensive Water System Plan; the next Plan is due in 2007. Work is performed by City staff with assistance from a consultant as necessary. This project is ongoing; the Department intends to add funds to later years to support the update that is due in 2013.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	1,070	41	140	505	615	51	0	0	2,422
O&M Costs (Savings)			0	0	0	0	0	0	0

Control Works Upgrade

Program: Infrastructure **Start Date:** 1st Quarter 2008
Type: Improved Facility **End Date:** 1st Quarter 2015
Project ID: CFP2
Location: Lake Youngs Reservoir

This project improves the seismic reliability of the Lake Youngs Control Works Facility, a large diameter piping interchange, by constructing duplicate connections at another location nearby.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	0	0	0	0	0	0	627	645	1,272
O&M Costs (Savings)			N/C	N/C	N/C	N/C	N/C	N/C	0

*Amounts in thousands of dollars

SPU - Water

CRPL #2 Replace Portion

Program: Infrastructure **Start Date:** 1st Quarter 2005
Type: Rehabilitation or Restoration **End Date:** 4th Quarter 2007
Project ID: CNW1409

Location: 7TH AV NE and NE 47TH ST

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

This project rehabilitates an 88-year-old 42-inch riveted steel feeder main that is corroded in some locations. The pipeline extends from Volunteer Park to the Maple Leaf neighborhood and crosses the Ship Canal in a tunnel. It is part of the planned seismically-hardened backbone of the Seattle distribution system; timely rehabilitation results in less disruption to water service after a major earthquake, and eliminates the risk of property damage associated with a major leak or pipeline failure. The parameters of the replacement are determined during the planning phase of the project. This project was included in earlier CIPs under the name "430 Pipeline Rehabilitation".

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	0	0	0	264	272	5,587	0	0	6,123
O&M Costs (Savings)			0	0	0	0	0	0	0

Delta Plant Community Studies

Program: Habitat Conservation Program **Start Date:** 1st Quarter 2003
Type: Improved Facility **End Date:** 4th Quarter 2005
Project ID: C100055

Location: Chester Morse Lake

This project re-evaluates the results of an existing long-term delta vegetation monitoring project to determine how reservoir elevations impact delta plant communities adjacent to the Chester Morse Lake and Masonry Pool, including the floodplains. Contingency plans are developed and activated whenever the reservoir water surface reaches particularly low levels, e.g., less than 1,540 feet, and substrates not commonly exposed are accessible.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	0	18	33	32	0	0	0	0	83
O&M Costs (Savings)			N/C	N/C	N/C	N/C	N/C	N/C	0

Delta Sediment Analysis & Modeling

Program: Habitat Conservation Program **Start Date:** 1st Quarter 2003
Type: Rehabilitation or Restoration **End Date:** 4th Quarter 2005
Project ID: WFHCP9

Location: Cedar River Watershed

This project analyzes the Cedar and Rex River sub-basin hydrology and delta fan topography as it relates to access to reservoir dead storage. Reservoir dead storage generally results in lower water surface elevations, which could alter the deltaic deposits and potentially create excess turbidity and greater challenges to fish passage.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	0	31	194	34	0	0	0	0	259
O&M Costs (Savings)			N/C	N/C	N/C	N/C	N/C	N/C	0

*Amounts in thousands of dollars

Denny Combined Sewer Overflow

Program: Other Agencies **Start Date:** 1st Quarter 1998
Type: Rehabilitation or Restoration **End Date:** 3rd Quarter 2004
Project ID: C145002
Location: Various

The project relocates watermains in conjunction with construction of Combined Sewer Overflow (CSO) facilities near Myrtle Edwards Park. The City and King County are constructing CSOs in order to meet federal and state requirements for control of the combined sewer discharges into Lake Union and Elliott Bay. Watermains are being relocated because of location and construction conflicts.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	171	11	2	0	0	0	0	0	184
O&M Costs (Savings)			0	0	0	0	0	0	0

Distribution System Fireflow & Pressure Improvements

Program: Infrastructure **Start Date:** 1st Quarter 2004
Type: Improved Facility **End Date:** Ongoing
Project ID: C1NW125
Location: Citywide

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

This project improves fire flow delivery to portions of the distribution system that are currently serviced inadequately due to undersized or old, deteriorated water lines, or development that requires more fire flow capacity than the existing water system delivers. The improvements include installation of new feeders and watermains, the replacement of undersized or deteriorated existing water lines, and possible construction of facilities for additional supply to problem areas during fire fighting from higher pressure zones. The specific scope and location of the improvements is currently being defined by the System Deficiencies Analysis project (C100038).

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	0	0	528	2,114	3,865	6,372	6,981	7,279	27,139
O&M Costs (Savings)			0	0	0	0	0	0	0

Distribution System In-Line Gate Valves Replacement

Program: Infrastructure **Start Date:** Ongoing
Type: Rehabilitation or Restoration **End Date:** Ongoing
Project ID: C199012
Location: Citywide

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

This project replaces aging in-line gate valves throughout the water distribution system. Many of these valves are more than 50 years old and are obsolete. Spare parts are difficult, and in some cases impossible, to obtain.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	282	70	72	74	76	78	80	83	815
O&M Costs (Savings)			0	0	0	0	0	0	0

*Amounts in thousands of dollars

SPU - Water

Downstream Fish Habitat and Restoration

Program: Habitat Conservation Program **Start Date:** 1st Quarter 2001
Type: Rehabilitation or Restoration **End Date:** 4th Quarter 2008
Project ID: WFHCP7
Location: Cedar River

This project is a component of the Cedar River Habitat Conservation Plan (HCP). The purpose of this project is to plan, design, and implement downstream habitat protection and restoration measures in the lower 22 miles of the mainstem Cedar River. This partially mitigates the effects of the City's water supply facilities and operations on aquatic resources in the Cedar River. A broad range of mitigation alternatives were examined during the development of the HCP. The exact listing of activities within this project is determined during the first year of the HCP, including restoration work at Walsh Lake.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	1,243	44	4,267	1,441	15	319	11	0	7,340
O&M Costs (Savings)			0	0	0	0	0	0	0

Duvall Shop Facility Improvements

Program: Infrastructure **Start Date:** 1st Quarter 2003
Type: Improved Facility **End Date:** 4th Quarter 2004
Project ID: C103023
Location: Tolt River Watershed

This project provides building code improvements to the Operations Office in Duvall. The work includes providing a women's bathroom, showers, locker room facilities, and repairing the septic system.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	0	50	200	0	0	0	0	0	250
O&M Costs (Savings)			N/C	N/C	N/C	N/C	N/C	N/C	0

Earthquake Repair - Hanford St. Watermain

Program: Infrastructure **Start Date:** 2nd Quarter 2002
Type: Rehabilitation or Restoration **End Date:** 2nd Quarter 2004
Project ID: C101E14
Location: Citywide

This project replaces a temporary watermain with 16-inch ductile iron pipe, and installs a valve vault chamber. The February 28, 2001 Nisqually earthquake damaged a 24-inch cast iron watermain. The damaged watermain was in the vicinity where this watermain crosses a 150- by 100-inch pile-supported sewer truckline. When the soils liquefied and the ground settled, the sewer did not. The settling watermain fractured due to rigidity and brittle cast iron properties. Temporary repairs were completed after the event to restore water service to the area. The Department expects funds from the Federal Emergency Management Agency to cover a significant portion of the project cost.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	71	218	226	0	0	0	0	0	515
O&M Costs (Savings)			N/C	N/C	N/C	N/C	N/C	N/C	0

*Amounts in thousands of dollars

Endangered Species Act - Chinook Research & Monitoring

Program: Environmental Stewardship **Start Date:** Ongoing
Type: Rehabilitation or Restoration **End Date:** Ongoing
Project ID: C101048
Location: Snohomish River system

This program provides funding for research and monitoring of the health of the region's salmon population. This program is part of the City's responsibilities related to the listing of Chinook salmon as a threatened species under the Endangered Species Act.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	257	301	350	317	326	230	236	240	2,257
O&M Costs (Savings)			0	0	0	0	0	0	0

Endangered Species Act - Snohomish River Basin

Program: Environmental Stewardship **Start Date:** 2nd Quarter 2000
Type: Rehabilitation or Restoration **End Date:** Ongoing
Project ID: C101003
Location: Snohomish River Basin

This program develops habitat for salmon-beneficial projects in the Snohomish River system. Projects may occur in cooperation with King County, affected tribes, or other local, state, or federal agencies.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	14	360	370	413	437	461	488	502	3,045
O&M Costs (Savings)			0	0	0	0	0	0	0

Facility Improvements (Water Fund)

Program: Shared Cost Projects (WF) **Start Date:** 1st Quarter 2003
Type: Improved Facility **End Date:** 4th Quarter 2004
Project ID: C502010
Location: 700 5TH AV

This project funds logistical support services for SPU, including tenant improvements, office buildouts, and furniture. Additional funding is provided by Project C502010 in the Drainage & Wastewater CIP and Project C502010 in the Solid Waste CIP. The total estimated cost of the project is \$1.96 million.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	0	432	450	0	0	0	0	0	882
O&M Costs (Savings)			N/C	N/C	N/C	N/C	N/C	N/C	0

*Amounts in thousands of dollars

SPU - Water

Heavy Equipment Purchases- Water

Program: Infrastructure **Start Date:** 1st Quarter 1999
Type: Rehabilitation or Restoration **End Date:** Ongoing
Project ID: C199068
Location: Various

This program replaces existing heavy equipment (such as loaders and bulldozers) used at Water Utility facilities. These pieces of equipment have reached the end of their useful lives.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	6,244	2,106	2,364	2,114	2,173	2,234	2,296	2,360	21,891
O&M Costs (Savings)			0	0	0	0	0	0	0

Henderson Combined Sewer Overflow

Program: Other Agencies **Start Date:** 4th Quarter 1998
Type: Rehabilitation or Restoration **End Date:** 4th Quarter 2004
Project ID: C199069
Location: SEWARD PARK AV S and S HENDERSON ST
Neighborhood District: Southeast **Neighborhood Plan:** Rainier Beach

King County is constructing a combined sewer pipeline from Seward Park Ave. and Henderson St. to E Marginal Way and S Norfolk St. This project includes relocation of watermains and services to make way for the proposed pipeline, monitoring of pipelines in areas where the pipeline is tunneled, watermain connections, and service work to support King County's project. King County is fully reimbursing the City's expenditures.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	114	29	31	0	0	0	0	0	174
O&M Costs (Savings)			0	0	0	0	0	0	0

Holgate/Amtrak Water Relocation

Program: Other Agencies **Start Date:** 4th Quarter 1998
Type: Rehabilitation or Restoration **End Date:** 4th Quarter 2004
Project ID: C101009
Location: S HOLGATE ST and 4TH AV S to 1ST AV S
Neighborhood District: Greater Duwamish **Neighborhood Plan:** Duwamish

This project is necessitated by Amtrak's redevelopment of rail yard facilities at S Holgate St. between 3rd Ave. S and 4th Ave. S. As part of this redevelopment, the grade of S Holgate St. is lowered, reducing the cover over the existing 20-inch feeder main in S Holgate St. This project replaces the main at a lower depth (at Amtrak's expense) and extends the watermain replacement from 3rd Ave. S to 1st Ave. S (at SPU's expense). Additionally, SPU supports Amtrak's project by performing shutdowns, water service relocations and installation of new services.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	26	48	10	0	0	0	0	0	84
O&M Costs (Savings)			0	0	0	0	0	0	0

*Amounts in thousands of dollars

Hydrant Program - New Installations

Program: Infrastructure **Start Date:** Ongoing
Type: New Facility **End Date:** Ongoing
Project ID: C154000

Location: Citywide

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

This program provides new fire hydrants to neighborhoods Citywide in order to ensure a reliable and adequate supply of water for fire protection. The number of hydrants installed each year varies; from 2000-2002 the Department installed up to three hydrants each year.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	94	12	12	13	13	13	14	14	185
O&M Costs (Savings)			N/C	N/C	N/C	N/C	N/C	N/C	0

Hydrant Program - Replacement & Relocation

Program: Infrastructure **Start Date:** Ongoing
Type: Rehabilitation or Restoration **End Date:** Ongoing
Project ID: C1110

Location: Citywide

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

This program replaces older and damaged hydrants to ensure a reliable and adequate supply of water for fire protection. The Seattle Fire Department provides SPU with information on hydrants that are found to be malfunctioning. Other repairs or replacements occur when hydrants are damaged by vehicles. From 2000-2003 the Department repaired or replaced between 7 and 25 hydrants per year.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	1,826	200	206	211	217	223	230	236	3,349
O&M Costs (Savings)			0	0	0	0	0	0	0

Lake Youngs - Management/Protection Plan

Program: Water Quality **Start Date:** 1st Quarter 2002
Type: Rehabilitation or Restoration **End Date:** 4th Quarter 2004
Project ID: C102030

Location: Lake Youngs Reservoir

This project develops a long range management and protection program for the Lake Youngs Reservoir, including a resource assessment and inventory. Forest conditions are evaluated and aquatic and terrestrial habitats are inventoried and classified.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	8	230	5	0	0	0	0	0	243
O&M Costs (Savings)			0	0	0	0	0	0	0

*Amounts in thousands of dollars

SPU - Water

Lake Youngs - Outlet Dam Rehabilitation

Program: Infrastructure **Start Date:** 2nd Quarter 2003
Type: Rehabilitation or Restoration **End Date:** 4th Quarter 2004
Project ID: C102013
Location: Lake Youngs Reservoir

This project raises the west portion of the south dam of Lake Youngs to comply with state dam safety requirements. In its current configuration, part of the south dam is structural fill that meets current standards whereas part of it is semi-structural fill that may fail in an earthquake and release water within the top 6 feet of the lake into the Kent valley. This project improves the portion that does not meet current structural requirements.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	0	180	300	0	0	0	0	0	480
O&M Costs (Savings)			0	0	0	0	0	0	0

Lake Youngs - Outlet Dam Warning System

Program: Infrastructure **Start Date:** 1st Quarter 2001
Type: Improved Facility **End Date:** 4th Quarter 2007
Project ID: C101006
Location: South of Lake Youngs Reservoir

This project improves the warning system at the Lake Youngs Outlet Dam. Operations and maintenance costs listed below are included in the Department's 2004 operating budget.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	148	55	745	34	30	10	0	0	1,022
O&M Costs (Savings)			9	11	15	19	24	24	102

Lake Youngs - Tunnel Sinkhole

Program: Infrastructure **Start Date:** 3rd Quarter 2001
Type: Improved Facility **End Date:** 4th Quarter 2004
Project ID: C101068
Location: Lake Youngs Reservoir

This project remedies a sinkhole around one of the air vents of the Lake Youngs tunnel and further strengthens the pipeline's air vents. The sinkhole was identified by recent pipeline inspections. The pipeline, which is a lifeline facility, conveys 70% of the City of Seattle's water from Lake Youngs to Control Works, a distance of approximately two miles.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	97	17	13	0	0	0	0	0	127
O&M Costs (Savings)			N/C	N/C	N/C	N/C	N/C	N/C	0

*Amounts in thousands of dollars

Landsburg Dam - Emergency Spillway Improvement

Program: Infrastructure **Start Date:** 1st Quarter 2003
Type: Improved Facility **End Date:** 4th Quarter 2006
Project ID: WFNEW013
Location: Landsburg Dam

This project increases the flood passage capacity of the Landsburg Dam through construction of a new 40 foot-wide emergency spillway on the south side of the dam.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	0	75	411	528	4,780	0	0	0	5,794
O&M Costs (Savings)			0	0	0	8	10	10	28

Landsburg Fish Passage Improvements

Program: Habitat Conservation Program **Start Date:** 2nd Quarter 1999
Type: Improved Facility **End Date:** 4th Quarter 2004
Project ID: WFHCP4
Location: Cedar River

This project plans, designs, and constructs the following improvements for fish passage: Landsburg Fish Screens, to prevent entrapment of salmon in the water supply system; an upstream fish ladder, to provide upstream passage of steelhead trout, coho and Chinook salmon; a downstream fish passage, to allow safe passage of migrating juvenile steelhead trout, coho and Chinook salmon; and pipeline fish passage, to minimize the effects of migration blockage from the aqueduct crossing. Operations and maintenance costs listed below are included in the Department's 2004 operating budget.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	5,157	5,605	174	0	0	0	0	0	10,936
O&M Costs (Savings)			9	12	15	19	24	24	103

Landsburg Improvements - Non-HCP

Program: Infrastructure **Start Date:** 1st Quarter 1999
Type: Improved Facility **End Date:** 1st Quarter 2004
Project ID: C199073
Location: Lake Youngs

This project encompasses the "non-Habitat Conservation Plan" components of the Landsburg Fish Passage Improvements project (WFHCP4). The project scope includes the design, permitting, and construction of stability improvements to the Landsburg Dam (and the Lake Youngs aqueduct crossing), and improvements to Landsburg Park related to mitigation for the construction of a fish ladder in the existing Lake Youngs aqueduct crossing/park area.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	1,725	1,271	80	0	0	0	0	0	3,076
O&M Costs (Savings)			0	0	0	0	0	0	0

*Amounts in thousands of dollars

SPU - Water

Landsburg Treatment Building

Program: Water Quality **Start Date:** 1st Quarter 2006
Type: Improved Facility **End Date:** 4th Quarter 2006
Project ID: WFNEW270
Location: Landsburg Dam

This project provides modifications to the Landsburg Treatment Facility consistent with its new role after ozone facilities are built at Lake Youngs. Possible changes include enclosure of the chlorine storage area, ventilation improvements, the addition of a chlorine scrubber, installation of fire sprinklers and a new emergency generator, and improvements to local instrumentation and control.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	0	0	0	0	112	0	0	0	112
O&M Costs (Savings)			0	0	0	0	0	0	0

Maple Leaf Gatehouse Pipe Refurbishing

Program: Infrastructure **Start Date:** 2nd Quarter 1995
Type: Improved Facility **End Date:** 2nd Quarter 2005
Project ID: C195001
Location: NE 83RD ST and 12TH AV NE
Neighborhood District: Northeast **Neighborhood Plan:** Not in a Neighborhood Plan

This project refurbishes valves and piping to allow water to be pushed from the Tolt water system to areas south of the Lake Washington Ship Canal. The project improves circulation in the Maple Leaf Reservoir.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	11	20	740	5	0	0	0	0	776
O&M Costs (Savings)			0	0	0	0	0	0	0

Marine View/Des Moines Creek Transmission Line Relocation

Program: Other Agencies **Start Date:** 3rd Quarter 1997
Type: Rehabilitation or Restoration **End Date:** 1st Quarter 2004
Project ID: C197021
Location: MARINE VIEW DR

This project relocates approximately 200 linear feet of 24-inch water transmission line at SR 509 (Marine View Drive) where it crosses Des Moines Creek. This work is in response to a City of Des Moines project to replace an existing box culvert and embankment with a bridge. The transmission line currently passes through the existing embankment and is to be relocated to the new bridge.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	184	5	397	0	0	0	0	0	586
O&M Costs (Savings)			0	0	0	0	0	0	0

*Amounts in thousands of dollars

Metering - Direct Service Meter Replacement

Program: Shared Cost Projects (WF) **Start Date:** Ongoing
Type: Rehabilitation or Restoration **End Date:** Ongoing
Project ID: C1108

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 standards of accuracy due to obsolescence, incorrect application, or inability to repair. 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 repaired, if possible.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	6,348	707	727	748	769	790	812	835	11,736
O&M Costs (Savings)			0	0	0	0	0	0	0

Metering - Purveyor Meter Program

Program: Infrastructure **Start Date:** Ongoing
Type: Rehabilitation or Restoration **End Date:** Ongoing
Project ID: C1107

Location: Various

This project replaces obsolete, incorrectly applied, or irreparable purveyor meters that are not performing within the American Water Works Association's standards of accuracy. The Department intends to continue the program beyond 2005, depending on the completion date of current projects and available funds.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	584	427	439	486	0	0	0	0	1,936
O&M Costs (Savings)			0	0	0	0	0	0	0

Morse Lake Pump Plant - Pipeline Number One Corrosion

Program: Water Supply **Start Date:** 1st Quarter 2005
Type: Improved Facility **End Date:** 3rd Quarter 2005
Project ID: WFNEW265

Location: Cedar River Watershed

This project installs anodes on Pipeline Number One to prevent further corrosion. The pipeline is an essential component of the pumping plant facilities at Chester Morse Lake, which provides the City's emergency back-up water supply during periods of water shortage.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	0	0	0	93	0	0	0	0	93
O&M Costs (Savings)			0	0	0	0	0	0	0

*Amounts in thousands of dollars

SPU - Water

Other Agency - Multiple Utility Relocation Program

Program: Other Agencies **Start Date:** Ongoing
Type: Rehabilitation or Restoration **End Date:** Ongoing
Project ID: C1201
Location: Citywide

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

This program enables SPU to respond to large projects that are conducted by other agencies and that impact Seattle's water system. Impacts include utility conflicts that require relocations, construction impacts, and coordination to minimize impacts to SPU's customers and supply. Often, these agencies reimburse SPU for some or all of the costs incurred.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	6,491	803	802	702	781	833	881	900	12,193
<i>O&M Costs (Savings)</i>			0	0	0	0	0	0	0

Painting Program - Myrtle Tank

Program: Infrastructure **Start Date:** 1st Quarter 2005
Type: Rehabilitation or Restoration **End Date:** 4th Quarter 2006
Project ID: WFNEW110

Location: 3600 SW MYRTLE ST

Neighborhood District: Southwest **Neighborhood Plan:** Morgan Junction (MOCA)

The Tank Painting program involves interior and exterior surface preparation and painting, minor structural repairs, and safety modifications on a regular maintenance cycle at the City's various tank sites. Myrtle I and II tank exteriors are spot cleaned and receive an overcoat. The lining of Myrtle II is completely removed and replaced. Minor safety and operational modifications are made to both tanks.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	0	0	0	133	869	0	0	0	1,002
<i>O&M Costs (Savings)</i>			0	0	0	0	0	0	0

Painting Program - Richmond Highland I and II

Program: Infrastructure **Start Date:** 1st Quarter 2003
Type: Rehabilitation or Restoration **End Date:** 4th Quarter 2005
Project ID: WFNEW115

Location: N 195TH ST and FREMONT AV N

The City of Seattle is negotiating an agreement to transfer ownership of the tank to the City of Shoreline. This project is on hold.

The Tank Painting program involves interior and exterior surface preparation and painting, minor structural repairs, and safety modifications on a regular maintenance cycle at the City's various tank sites. The Richmond Highland project cleans and overcoats the tank exterior. The lining is completely removed and replaced. Minor safety and operational modifications are made and cathodic protection installed.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	0	8	177	2,206	0	0	0	0	2,391
<i>O&M Costs (Savings)</i>			0	0	0	0	0	0	0

*Amounts in thousands of dollars

Pump Station - Maple Leaf #2

Program: Infrastructure **Start Date:** 2nd Quarter 2005
Type: Improved Facility **End Date:** 4th Quarter 2006
Project ID: C1AA003

Location: NE 82ND ST and ROOSEVELT WY NE

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

This project modifies and upgrades the existing Roosevelt Way Pump Station with a booster pump station, to accommodate future capacity increases and additional pumps. Distribution system improvements and modifications are made to isolate the low pressure area from the rest of the Maple Leaf distribution system, and to boost the water pressure with the pump station.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	173	0	0	528	2,716	0	0	0	3,417
O&M Costs (Savings)			0	0	0	13	16	16	45

Pump Station - Phinney Ridge

Program: Infrastructure **Start Date:** 1st Quarter 1998
Type: Improved Facility **End Date:** 3rd Quarter 2005
Project ID: C1AA004

Location: PHINNEY AV N and N 54TH ST

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

This project builds a reinforced concrete underground structure with four booster pumps and approximately 15,000 feet of watermain to improve water pressure for 125 acres in the Phinney Ridge neighborhood.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	886	111	435	140	0	0	0	0	1,572
O&M Costs (Savings)			6	7	10	13	16	16	68

Pump Station - Queen Anne

Program: Infrastructure **Start Date:** 1st Quarter 1996
Type: Improved Facility **End Date:** 4th Quarter 2006
Project ID: C1AA005

Location: 110 LEE ST

Neighborhood District: Magnolia/Queen Anne **Neighborhood Plan:** Not in a Neighborhood Plan

This project includes installation of a concrete underground booster pump station at Queen Anne and improvements and modifications to the distribution system. The distribution system improvements and modifications are made to isolate the area of low water pressure so that the water pressure can be boosted using the pump station.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	1,042	15	144	3,170	554	0	0	0	4,925
O&M Costs (Savings)			0	0	10	13	16	16	55

*Amounts in thousands of dollars

SPU - Water

Pump Station Improvements - Install Station Motors

Program: Infrastructure **Start Date:** 4th Quarter 1999
Type: Rehabilitation or Restoration **End Date:** Ongoing
Project ID: C199052

Location: Citywide

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

This program replaces aging pump station motors throughout the water distribution system with new, more efficient motors. Some of the existing motors were installed 30 or more years ago and are now obsolete, with no replacement parts available.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	245	65	62	63	65	73	80	83	736
O&M Costs (Savings)			0	0	0	0	0	0	0

Pygmy Whitefish & Rainbow Trout

Program: Habitat Conservation Program **Start Date:** 1st Quarter 2005
Type: Rehabilitation or Restoration **End Date:** 4th Quarter 2006
Project ID: C100054

Location: Cedar River Watershed

This project is intended to identify potential changes in the biology and ecology (numbers, distribution, age, condition) of the populations of pygmy whitefish and rainbow trout present in Chester Morse Lake that might be affected by operational changes associated with the future use of Cedar permanent dead storage in Chester Morse Lake reservoir. This project involves the monitoring and documentation of changes to pygmy whitefish and rainbow trout populations potentially and actually affected; information derived from this study will inform future decisions regarding development of Cedar permanent dead storage.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	0	0	0	170	170	0	0	0	340
O&M Costs (Savings)			N/C	N/C	N/C	N/C	N/C	N/C	0

*Amounts in thousands of dollars

Regional Water Conservation Program

Program: Water Supply **Start Date:** 1st Quarter 1999
Type: Improved Facility **End Date:** Ongoing
Project ID: C199032

Location: Citywide

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

The Regional Water Conservation Program is a cooperative regional project between SPU and 24 of Seattle's wholesale water supply utilities. Fifty percent of the project is paid for from wholesale rates as part of current contract requirements. The project has the goal of reducing personal and commercial water consumption by 1% per year, which is approximately equal to the projected level of growth in regional water demand over the period 2000 to 2010 (18 million gallons per day). The project is required by SPU's water system plan, wholesale contracts, and by City Council resolution and ordinance. Implementation of this regional project is ongoing until year 2010, or until the permanent (non-curtailment) savings goal is obtained. The project is tracked and evaluated annually, and the results are presented to the Mayor and City Council.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	8,981	3,700	4,320	4,592	5,096	5,898	6,504	6,686	45,777
<i>O&M Costs (Savings)</i>			0	0	0	0	0	0	0

Renton Franchise/Line Valve along Cedar River Pipeline

Program: Other Agencies **Start Date:** 1st Quarter 2002
Type: Rehabilitation or Restoration **End Date:** 4th Quarter 2005
Project ID: C102023

Location: Cedar River Pipeline

In 1998, the Cities of Seattle and Renton signed an agreement which addresses Renton's request that SPU add line valves east of downtown Renton to reduce flooding in the event of a pipeline failure. This project responds to that agreement. Project components include improvement or relocation of pipeline blowoffs, improvement or relocation of meters to the Boeing Company, and other miscellaneous work. Beginning in 2004, the Augusta Gatehouse Rehabilitation project (C197004) is absorbed into this project and the funding displayed for this project is adjusted accordingly.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	222	399	1,312	1,791	0	0	0	0	3,724
<i>O&M Costs (Savings)</i>			0	17	21	27	35	35	135

Replace Air Valve Chambers

Program: Infrastructure **Start Date:** Ongoing
Type: Rehabilitation or Restoration **End Date:** Ongoing
Project ID: C199060

Location: Regional

This program replaces existing air valve chamber tops and access chimneys with larger diameter tops and chimneys. The project provides SPU staff safer access to valves, and complies with industry safety standards.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	206	60	62	63	65	67	69	72	664
<i>O&M Costs (Savings)</i>			0	0	0	0	0	0	0

**Amounts in thousands of dollars*

SPU - Water

Reservoir Covering - Beacon

Program: Water Quality **Start Date:** 1st Quarter 2001
Type: Improved Facility **End Date:** 4th Quarter 2007
Project ID: C101060

Location: S SPOKANE ST and BEACON AV S

Neighborhood District: Greater Duwamish **Neighborhood Plan:** North Beacon Hill

This project abandons the North Reservoir. The project also replaces the existing 49-million gallon Beacon South Reservoir with an underground reservoir, and installs piping and valving appurtenances. The project helps to protect Seattle's water supply from vandalism and contamination, and improves the quality of life in the surrounding neighborhood by creating approximately eight acres of open space and avoiding the unsightly appearance of other reservoir covering options.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	300	450	1,028	7,397	19,826	3,350	0	0	32,351
O&M Costs (Savings)			0	0	0	0	76	76	152

Reservoir Covering - Bitter Lake

Program: Water Quality **Start Date:** 1st Quarter 1997
Type: Improved Facility **End Date:** 1st Quarter 2003
Project ID: C196010

Location: N 143RD ST and LINDEN AV N

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

This project installs a tension-floating geomembrane cover system for the Bitter Lake Reservoir, lines the existing reservoir with a geomembrane material to eliminate leakage and improve embankment stability, converts the existing disinfecting system from an outlet gas chlorinating system to a re-circulation/re-chlorinating system using sodium hypochlorite, and replaces existing reservoir infrastructure (e.g., valves and meters) as required. This project is substantially complete, with minor closeout costs in 2003.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	3,855	5	0	0	0	0	0	0	3,860
O&M Costs (Savings)			34	43	55	71	91	91	385

*Amounts in thousands of dollars

Reservoir Covering - Lake Forest Park

Program: Water Quality **Start Date:** 1st Quarter 1997
Type: Improved Facility **End Date:** 1st Quarter 2003
Project ID: C196011
Location: 4510 4510 NE 195th

This project installs a tension-floating geomembrane cover system for the Lake Forest Park reservoir, lines the existing reservoir with geomembrane material to eliminate leakage and improve embankment stability, converts the existing disinfecting system from an outlet gas chlorinating system to a re-circulation/ re-chlorinating system using sodium hypochlorite, and replaces existing reservoir infrastructure (e.g., valves and meters) as required. This project was substantially completed in 2003.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	7,256	260	0	0	0	0	0	0	7,516
<i>O&M Costs (Savings)</i>			28	36	46	59	76	76	321

Reservoir Covering - Lincoln

Program: Water Quality **Start Date:** 4th Quarter 1996
Type: Improved Facility **End Date:** 4th Quarter 2004
Project ID: C196012
Location: NAGLE PL and E DENNY WY to E PINE ST
Neighborhood District: East District **Neighborhood Plan:** Capitol Hill

This project demolishes and replaces the existing 21-million gallon Lincoln reservoir with a new concrete cast-in-place 15.5-million gallon reservoir. It also changes out the existing gas chlorinating system to a sodium hypochlorite system, replaces piping valves and appurtenances, and restores elements of the park site. The project helps to protect drinking water quality, and creates approximately two acres of open space. The Seattle Parks Department is conducting related work under the Cal Anderson (Lincoln) Park - Development - 2000 Parks Levy project (K733132).

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	6,592	8,500	4,862	0	0	0	0	0	19,954
<i>O&M Costs (Savings)</i>			0	43	55	71	91	91	351

*Amounts in thousands of dollars

SPU - Water

Reservoir Covering - Maple Leaf

Program: Water Quality **Start Date:** 4th Quarter 2001
Type: Improved Facility **End Date:** 3rd Quarter 2009
Project ID: C101078

Location: NE 86TH ST and ROOSEVELT WY NE

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

This project replaces the existing Maple Leaf Reservoir with an underground reservoir, and rehabilitates pipelines leading into and out of the reservoir. The project helps to protect Seattle's water supply from vandalism and contamination, and improves the quality of life in the surrounding neighborhood by creating open space and avoiding the unsightly appearance of other reservoir covering options. The total cost of the project is estimated to be approximately \$36 million.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	147	0	1,049	211	217	12,396	20,665	1,573	36,258
O&M Costs (Savings)			20	26	33	54	69	69	271

Reservoir Covering - Myrtle

Program: Water Quality **Start Date:** 4th Quarter 2001
Type: Improved Facility **End Date:** 3rd Quarter 2007
Project ID: C101076

Location: 35TH AV SW

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

This project replaces the existing Myrtle Reservoir with an underground reservoir, and rehabilitates pipelines leading into and out of the reservoir. The project helps to protect Seattle's water supply from vandalism and contamination, and improves the quality of life in the surrounding neighborhood by creating open space and avoiding the unsightly appearance of other reservoir covering options. The total cost of the project is estimated to be approximately \$11 million.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	180	0	1,049	3,170	5,215	1,117	0	0	10,731
O&M Costs (Savings)			0	0	0	0	8	9	17

*Amounts in thousands of dollars

Reservoir Covering - Roosevelt

Program: Water Quality **Start Date:** 4th Quarter 2001
Type: Improved Facility **End Date:** 1st Quarter 2011
Project ID: C101077

Location: SW WILLOW ST and 36TH AV SW

Neighborhood District: Southwest **Neighborhood Plan:** Georgetown

This project replaces the existing Roosevelt Reservoir with an underground reservoir, and rehabilitates pipelines leading into and out of the reservoir. The project helps to protect Seattle's water supply from vandalism and contamination, and improves the quality of life in the surrounding neighborhood by creating open space and avoiding the unsightly appearance of other reservoir covering options. The total cost of the project is estimated to be \$12 million.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	135	0	0	0	272	838	574	3,086	4,905
O&M Costs (Savings)			N/C	N/C	N/C	N/C	N/C	N/C	0

Reservoir Covering - Volunteer

Program: Water Quality **Start Date:** 1st Quarter 2001
Type: Improved Facility **End Date:** 2nd Quarter 2011
Project ID: C101059

Location: 12TH AV E and E PROSPECT ST

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

This project demolishes the existing 21-million gallon Volunteer Park reservoir and replaces it with a new concrete underground reservoir. The chlorine gas disinfection system is replaced with hypochlorite system and piping and valving is replaced as required. Per City Council direction in Ordinance 120899, the project costs shown here do not include funds for design and construction of a water feature over the undergrounded reservoir, or for planning, design or construction of park facilities over the undergrounded reservoir beyond providing for passive open space. SPU estimates the cost of a water feature to be \$1.4 million for design, and \$5.9 million for construction.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	75	0	0	0	272	1,117	574	4,485	6,523
O&M Costs (Savings)			0	0	0	0	76	76	152

*Amounts in thousands of dollars

SPU - Water

Reservoir Covering - West Seattle

Program: Water Quality **Start Date:** 4th Quarter 2001
Type: Improved Facility **End Date:** 2nd Quarter 2009
Project ID: C101075

Location: 8th Ave SW/SW Henderson

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

This project replaces the existing West Seattle Reservoir with an underground reservoir, and rehabilitates pipelines leading into and out of the reservoir. The project helps to protect Seattle's water supply from vandalism and contamination, and improves the quality of life in the surrounding neighborhood by creating open space and avoiding the unsightly appearance of other reservoir covering options. The total cost of the project is estimated to be \$34 million.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	155	0	1,049	211	217	11,280	19,517	1,564	33,993
O&M Costs (Savings)			0	0	0	0	16	17	33

Reservoir Remote Outlet Valve - Myrtle

Program: Water Quality **Start Date:** 1st Quarter 2002
Type: Improved Facility **End Date:** 2nd Quarter 2005
Project ID: C101014

Location: SW WILLOW ST and 36TH AV SW

Neighborhood District: Southwest **Neighborhood Plan:** Georgetown

This project installs a remote controlled valve on the Myrtle Reservoir outlet pipeline. The valve is installed in a below-grade, precast chamber. A conduit is installed for power and telemetry/control wiring.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	21	0	0	191	0	0	0	0	212
O&M Costs (Savings)			N/C	N/C	N/C	N/C	N/C	N/C	0

Road Improvements/Decommissioning

Program: Habitat Conservation Program **Start Date:** 1st Quarter 2001
Type: Rehabilitation or Restoration **End Date:** Ongoing
Project ID: WFHCP1

Location: Cedar River

Road improvements and decommissioning are identified as part of the Cedar River Habitat Conservation Plan (HCP) measures to protect stream and riparian habitats and forest ecosystems. These projects are based on analyses and designs for the control of water flowing on, under, or adjacent to forest roads, and the removal of unstable soils within the road prism. Control of water and unstable soils minimizes sediment delivery to streams from roads, and improves drainage patterns. This project makes ongoing repairs to existing roads and decommissions seven of the ten miles per year required under the HCP.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	1,661	851	871	888	876	907	939	967	7,960
O&M Costs (Savings)			0	0	0	0	0	0	0

*Amounts in thousands of dollars

Rock Creek Fishway

Program: Environmental Stewardship **Start Date:** 1st Quarter 2001
Type: Improved Facility **End Date:** 4th Quarter 2004
Project ID: C101008

In 2000, SPU received notification from the Washington Department of Fish and Wildlife that the culvert crossing under the Lake Youngs Aqueduct on Rock Creek, approximately 3.5 miles north of Landsburg, does not comply with existing fish passage requirements. This project provides the following: an independent consultant assessment of the nature and magnitude of fish passage impairment at the current structure; conceptual development of a range of improvement options for the facility; and design, permitting, and construction of the selected improvement option.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	20	52	350	0	0	0	0	0	422
O&M Costs (Savings)			N/C	N/C	N/C	N/C	N/C	N/C	0

SeaTac Third Runway Pipeline Relocation

Program: Other Agencies **Start Date:** 4th Quarter 1999
Type: Rehabilitation or Restoration **End Date:** 1st Quarter 2008
Project ID: C199075
Location: S 156TH WY and 24TH AV S

This project provides design, design review, and construction support for the relocation of the Bow Lake Pipeline during the SeaTac Third Runway project.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	227	10	10	11	12	67	482	0	819
O&M Costs (Savings)			0	0	0	3	3	3	9

Seattle Direct Service Additional Conservation

Program: Water Supply **Start Date:** Ongoing
Type: Improved Facility **End Date:** Ongoing
Project ID: C102010
Location: Regional

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

This program provides additional funding for measures to reduce personal and commercial water consumption in SPU's Direct Service Area for water supply. The program implements Ordinance 120532, adopted in 2001, and supplements funding provided under SPU's Regional Water Conservation Program (C199032).

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	524	700	1,000	1,057	1,086	1,117	1,148	1,180	7,812
O&M Costs (Savings)			N/C	N/C	N/C	N/C	N/C	N/C	0

*Amounts in thousands of dollars

SPU - Water

Seattle Monorail Project - Water

Program: Other Agencies **Start Date:** 3rd Quarter 2002
Type: New Facility **End Date:** 4th Quarter 2007
Project ID: C1NW011

Location: Citywide

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 Seattle Popular Monorail Authority, also called the Seattle Monorail Project (SMP) and formerly the Elevated Transportation Company, is planning an initial 14-mile monorail route between Ballard and West Seattle that would travel through downtown Seattle. The 14-mile monorail route and financing plan were approved by Seattle voters in November 2002. An agreement between the SMP and the City for reimbursement of the eligible costs incurred by City departments has been negotiated. See also projects C33NW331 and C33NW210.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	0	73	327	296	296	296	0	0	1,288
O&M Costs (Savings)			N/C	N/C	N/C	N/C	N/C	N/C	0

Seismic Upgrade - Cedar River Pipeline at Ginger Creek

Program: Infrastructure **Start Date:** 1st Quarter 1999
Type: Improved Facility **End Date:** 4th Quarter 2004
Project ID: C197032

Location: Lake Youngs Way SE and Kirkland Way SE (Renton)

In order to improve security and address seismic deficiencies, Cedar River Pipelines 1, 2, and 3 are buried where they daylight near Tiffany Park in southeast Renton. These pipelines are a critical link in the Seattle water system.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	152	450	48	0	0	0	0	0	650
O&M Costs (Savings)			0	0	0	0	0	0	0

Seismic Upgrade - Lake Youngs Upgrade Package 6D

Program: Infrastructure **Start Date:** 1st Quarter 2004
Type: Improved Facility **End Date:** 4th Quarter 2005
Project ID: C194014

This project makes seismic improvements to keep the Lake Youngs Corrosion Building, Lake Youngs Office and Landsburg Gatehouse operational after a major earthquake. This project was initiated after a consultant's seismic reliability study of the water system predicted that the facilities would suffer damage and could become inoperable in case of a major earthquake.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	0	0	36	169	0	0	0	0	205
O&M Costs (Savings)			N/C	N/C	N/C	N/C	N/C	N/C	0

*Amounts in thousands of dollars

Seismic Upgrade - Landsburg Tank

Program: Infrastructure **Start Date:** 4th Quarter 1994
Type: Improved Facility **End Date:** 4th Quarter 2008
Project ID: C194005
Location: 253rd AV SE at Landsburg Road SE

This project makes seismic improvements to the Landsburg water storage tank to keep the tank operational after a major earthquake. The tank is critical for providing drinking water and sanitation, and fighting fires after earthquakes. This project is on hold until 2006.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	65	0	0	0	109	218	6	0	398
O&M Costs (Savings)			0	0	0	0	0	0	0

Seismic Upgrade - Myrtle Tanks #1 and #2

Program: Infrastructure **Start Date:** 4th Quarter 1994
Type: Improved Facility **End Date:** 4th Quarter 2004
Project ID: C194006
Location: 35TH AV SW and SW MYRTLE ST

Neighborhood District: Southwest **Neighborhood Plan:** Morgan Junction (MOCA)

This project makes seismic improvements to keep the Myrtle elevated water storage tanks operational after a major earthquake. These tanks are critical for drinking water, sanitation, and fighting fires after earthquakes. Additional work includes improving drain lines that do not meet current codes and improving a circulation system to enhance water quality.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	874	2,195	77	0	0	0	0	0	3,146
O&M Costs (Savings)			0	0	0	0	0	0	0

Seismic Upgrade - Pipeline Backbone System

Program: Infrastructure **Start Date:** 1st Quarter 2001
Type: Improved Facility **End Date:** 4th Quarter 2004
Project ID: C101038
Location: Citywide

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

This program makes seismic improvements to keep the essential components of the Pipeline Backbone System's transmission and feeder system operational during and after a major earthquake. These components are critical for drinking water, sanitation, and fighting fires. The project includes the evaluation, design, and upgrade/replacement of transmission and major distribution system feeders that are vulnerable to earthquake damage.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	59	190	200	0	0	0	0	0	449
O&M Costs (Savings)			0	0	0	0	0	0	0

*Amounts in thousands of dollars

SPU - Water

Seismic Upgrade - Queen Anne Replacement #1 and #2

Program: Infrastructure **Start Date:** 4th Quarter 1994
Type: New Facility **End Date:** 4th Quarter 2006
Project ID: C194004

Location: WARREN AV N and LEE ST

Neighborhood District: Magnolia/Queen Anne **Neighborhood Plan:** Not in a Neighborhood Plan

This project replaces the existing aging Queen Anne Standpipes with a larger tank in order to improve seismic reliability, increase water storage, provide for worker safety, and improve water quality. The new tank connects to the Queen Anne Pump Station, currently being designed, which improves the water pressure in the higher elevation areas of the Queen Anne neighborhood.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	583	140	1,069	2,404	5	0	0	0	4,201
O&M Costs (Savings)			0	0	0	0	0	0	0

Seismic Upgrade - Tolt Screenhouse

Program: Infrastructure **Start Date:** 1st Quarter 2002
Type: Improved Facility **End Date:** 4th Quarter 2007
Project ID: C194013

Location: 12910 Kelly Road NE, Tolt Reservoir

This project makes seismic improvements to keep the Tolt Screenhouse operational after a major earthquake. The enhancements are required to support operation of the Tolt Filtration Plant. Design of this project is expected to begin in 2005.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	48	0	0	79	364	73	0	0	564
O&M Costs (Savings)			N/C	N/C	N/C	N/C	N/C	N/C	0

Seismic Upgrade - West Seattle Pipeline

Program: Infrastructure **Start Date:** 4th Quarter 1997
Type: Improved Facility **End Date:** 4th Quarter 2003
Project ID: C197034

Location: 2ND AV SW and SW 102ND ST

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

This project surrounds the 48-inch West Seattle Pipeline with steel and concrete to prevent collapse in a seismic event. This project improves the seismic reliability of pipelines so that they remain operational after a major earthquake.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	154	265	0	0	0	0	0	0	419
O&M Costs (Savings)			0	0	0	0	0	0	0

*Amounts in thousands of dollars

Service Renewals - Customer- Requested Renewals

Program: Infrastructure **Start Date:** 1st Quarter 1999
Type: Rehabilitation or Restoration **End Date:** Ongoing
Project ID: C121004
Location: Citywide

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

This program replaces service lines from the City main to the customer at either the same time or after the customer replaces his/her portion of the service line. The goal is to reduce a 10-year backlog of requests caused by a shortage of staff and resources at Water Operations.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	224	60	62	63	65	67	69	71	681
O&M Costs (Savings)			0	0	0	0	0	0	0

Service Renewals and Retirements Program

Program: Infrastructure **Start Date:** Ongoing
Type: Rehabilitation or Restoration **End Date:** Ongoing
Project ID: C1109

Location: Citywide

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

This program replaces water service lines that are substandard, leaking, or have outlived their useful life, and disconnects service lines that are no longer required.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	32,326	4,178	4,112	4,227	4,345	4,467	4,592	4,721	62,968
O&M Costs (Savings)			0	0	0	0	0	0	0

Snoqualmie River Bank Stabilization

Program: Other Agencies **Start Date:** 4th Quarter 2002
Type: Rehabilitation or Restoration **End Date:** 4th Quarter 2005
Project ID: WFNEW019

Location: Snoqualmie River near Tolt Pipeline crossing

This project stabilizes the north bank of the Snoqualmie River, near river-mile 13.5, to minimize further erosion. Work takes place on private property. The King County Water and Land Resource Division of the Department of Natural Resources plans to design and construct the project with funding support from SPU.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	0	20	58	455	0	0	0	0	533
O&M Costs (Savings)			0	0	0	0	0	0	0

*Amounts in thousands of dollars

SPU - Water

Sound Transit Light Rail - Water

Program: Shared Cost Projects (WF) **Start Date:** 1st Quarter 2000
Type: New Facility **End Date:** 4th Quarter 2008
Project ID: C1NW005

Location: Regional

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

This project funds costs related to relocation or replacement of watermains, hydrants, water services, transmission lines, and other facilities made necessary by Sound Transit's construction of the Central Link Light Rail system. The project also funds cathodic protection of many parts of the water system that are impacted by light rail. Depending on the routes and construction method, modifications of private plumbing systems and building electrical grounding systems are also required. Sound Transit proposes to construct and operate an electrical light rail transit system which includes more than 14 miles of alignment, and which has a wide-ranging impact on the Seattle water system, both in Seattle City limits and in King County. The City of Seattle, including SPU, has an ongoing agreement for reimbursement from Sound Transit. See also Sound Transit projects in the Drainage and Wastewater, City Light, and SDOT CIPs.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	0	100	1,260	3,680	3,030	720	100	0	8,890
O&M Costs (Savings)			0	0	0	0	0	0	0

Stream and Riparian Restoration

Program: Habitat Conservation Program **Start Date:** 2nd Quarter 2000
Type: Rehabilitation or Restoration **End Date:** Ongoing
Project ID: WFHCP2

Location: Cedar River

Stream and Riparian Restoration is a category of projects within the Cedar River Watershed Habitat Conservation Plan (HCP) that involves mitigation related to streams and forests adjacent to streams and other aquatic habitats. Projects include streambank stabilization, streamside revegetation, large woody debris placement, conifer under-planting, restoration thinning, ecological thinning, stream-crossing projects to improve flow patterns, and stream-crossing improvements to re-establish fish passage.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	1,478	671	726	740	731	756	784	808	6,694
O&M Costs (Savings)			0	0	0	0	0	0	0

*Amounts in thousands of dollars

Supervisory Control And Data Acquisition Upgrades (Water)

Program: Water Quality **Start Date:** 1st Quarter 2002
Type: New Investment **End Date:** 4th Quarter 2007
Project ID: C195008
Location: N/A

This project upgrades the Supervisory Control and Data Acquisition (SCADA) system. Water system operators currently use SCADA equipment to acquire and monitor data, such as flow or pressure from remote sensors, and to remotely operate pumps or valves. Phase I of this project converts the current control room to a PC workstation-based software system, and creates new Intranet-based operations and maintenance manuals for water system operations. Phase II upgrades the field equipment, including installation of new sensors, and improves the communications system to allow for a completely redundant control room. Phase III integrates SCADA with other information systems, and develops a hydraulic network model that could be used for training and simulation of the water system.

This project was formerly displayed in the SPU Technology CIP as project C195008, but was moved to the Water CIP due to the project's strong link to water system security and water quality.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	3,288	2,885	4,843	4,084	2,069	2,126	0	0	19,295
O&M Costs (Savings)			N/C	N/C	N/C	N/C	N/C	N/C	0

System Dewatering Program

Program: Infrastructure **Start Date:** Ongoing
Type: Rehabilitation or Restoration **End Date:** Ongoing
Project ID: C1105
Location: Regional

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

This program improves the configuration and operation of approximately 200 blowoffs. Blowoffs are valves located at low points in water pipelines and are used to drain or flush the line for emergency or maintenance operations. The System Dewatering Program goals include: minimizing flooding damage to downstream private development due to blowoff operations; addressing the discharge of water into sensitive streams; requiring monitoring and treatment for impacts due to chlorine, pH, and turbidity; eliminating possible cross-connections to non-potable water that impact water quality; and addressing improvements to water courses to reduce erosion or other damage caused by blowoff operations.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	862	322	772	1,945	1,427	1,467	1,508	1,550	9,853
O&M Costs (Savings)			0	0	0	0	0	0	0

*Amounts in thousands of dollars

SPU - Water

Tank Site Remediation Program

Program: Infrastructure **Start Date:** 4th Quarter 1995
Type: Rehabilitation or Restoration **End Date:** 4th Quarter 2008
Project ID: C1114

Location: Regional

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

This program cleans up soil and other contamination at Seattle Public Utilities' steel water tank sites and some adjacent private properties. The contamination is typically due to lead-based paint and arsenic used in prior sand blasting operations.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	992	442	454	467	480	494	507	0	3,836
O&M Costs (Savings)			0	0	0	0	0	0	0

Taps Program - New (Installation)

Program: Infrastructure **Start Date:** Ongoing
Type: New Facility **End Date:** Ongoing
Project ID: C1113

Location: Citywide

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

This program installs new water service lines (taps) from the City watermain to customers' property lines. Taps are usually installed within an average of six weeks following a customer's request.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	21,353	4,250	4,369	4,491	4,617	4,746	4,879	5,016	53,721
O&M Costs (Savings)			0	0	0	0	0	0	0

Tolt Bridge Replacement - Chuck Judd Creek

Program: Infrastructure **Start Date:** 1st Quarter 2005
Type: New Facility **End Date:** 4th Quarter 2006
Project ID: WFNEW480

This project replaces the old bridge over Chuck Judd Creek in the South Fork Tolt River Watershed with a new concrete bridge.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	0	0	0	32	280	0	0	0	312
O&M Costs (Savings)			N/C	N/C	N/C	N/C	N/C	N/C	0

*Amounts in thousands of dollars

Tolt Bridge Replacement - Dorothy Creek

Program: Infrastructure **Start Date:** 2nd Quarter 2003
Type: New Facility **End Date:** 4th Quarter 2004
Project ID: C103018
Location: Tolt River Watershed

This project replaces the wood bridge at Dorothy Creek - 50 Crossing in the South Fork Tolt River Watershed with a concrete bridge designed to allow a six-foot clearance for debris to pass.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	0	28	247	0	0	0	0	0	275
O&M Costs (Savings)			0	0	0	0	0	0	0

Tolt Bridge Replacement - Siwash Creek

Program: Infrastructure **Start Date:** 3rd Quarter 2001
Type: New Facility **End Date:** 4th Quarter 2005
Project ID: C197029
Location: Tolt River Watershed

This project replaces the old bridge over Siwash Creek in the South Fork Tolt River Watershed with a new concrete bridge.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	54	0	49	338	0	0	0	0	441
O&M Costs (Savings)			0	0	0	0	0	0	0

Tolt Eastside Supply Line Upgrade, Phase I

Program: Infrastructure **Start Date:** 1st Quarter 2008
Type: Rehabilitation or Restoration **End Date:** 4th Quarter 2015
Project ID: CFP4
Location: Various

This project is part of a long-term plan to rehabilitate the Tolt Eastside Supply Line. The project replaces 19,495 linear feet of old 48-inch pipe along the Tolt with new 48-inch steel pipe, and replaces an additional 699 linear feet of existing 42-inch pipe with new 48-inch steel pipe. Two sections remain to be rehabilitated in the long-term plan for this pipeline.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	0	0	0	0	0	0	1,098	1,932	3,030
O&M Costs (Savings)			N/C	N/C	N/C	N/C	N/C	N/C	0

*Amounts in thousands of dollars

SPU - Water

Tolt Fisheries Mitigation

Program: Environmental Stewardship **Start Date:** 1st Quarter 2004
Type: Improved Facility **End Date:** 4th Quarter 2004
Project ID: WFNEW385
Location: South Fork Tolt River

This project funds fish habitat conservation efforts on the South Fork Tolt River based on an agreement between the Tolt Fisheries Advisory Groups and the City of Seattle.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	0	0	210	0	0	0	0	0	210
O&M Costs (Savings)			0	0	0	0	0	0	0

Tolt Instrument and Warning System Upgrade

Program: Infrastructure **Start Date:** 1st Quarter 1999
Type: Improved Facility **End Date:** Ongoing
Project ID: C1AA012
Location: Tolt Dam

This project replaces outmoded equipment and improves the reliability of the required Tolt Instrument and Warning System.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	1,850	15	0	26	27	28	29	30	2,005
O&M Costs (Savings)			0	0	0	0	0	0	0

Tolt Pipeline I - Phase III-B

Program: Water Supply **Start Date:** 1st Quarter 1999
Type: Rehabilitation or Restoration **End Date:** 2nd Quarter 2006
Project ID: C199003
Location: Tolt Pipeline

This project is part of a long-term plan to rehabilitate or replace the Tolt Pipeline I. Four sections of the pipeline (approximately 12 miles) have been sliplined or replaced to date. Another four sections (approximately 11 miles) remain in the long-term plan. This project rehabilitates one of the remaining four sections, which is about one mile long and crosses the Snoqualmie River Valley.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	346	269	1,840	2,774	5	0	0	0	5,234
O&M Costs (Savings)			4	5	6	8	10	10	43

*Amounts in thousands of dollars

Tolt Pipeline II - Phase II and Phase III

Program: Water Supply **Start Date:** 3rd Quarter 1987
Type: Improved Facility **End Date:** 4th Quarter 2007
Project ID: C101083
Location: Tolt Pipeline--160th Ave NE

Tolt Pipeline II is a 25-mile second regional supply pipeline for the Tolt System, ranging in diameter from 54 to 87 inches. This new pipeline improves the reliability of the Tolt system, allows rehabilitation of remaining portions of Tolt Pipeline I, enhances operational flexibility, increases reliability of the system during a major flood, landslide, or earthquake, and provides increased capacity. Phases II and III include installation of eight miles of 60-, 75- and 81-inch diameter steel-welded joint pipeline. Funding to operate and maintain the pipeline is included in the Department's 2004 operating budget.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	62,775	96	83	42	22	11	0	0	63,029
O&M Costs (Savings)			10	13	17	21	27	27	115

Tolt Pipeline II - Phase IV

Program: Water Supply **Start Date:** 1st Quarter 1995
Type: Improved Facility **End Date:** 4th Quarter 2004
Project ID: C194029
Location: Tolt Pipeline Right of Way

This project is complete.

Tolt Pipeline II is a 25-mile second regional supply pipeline for the Tolt System, ranging in diameter from 54 to 87 inches. This pipeline improves the reliability of the Tolt system, allows rehabilitation of remaining portions of Tolt Pipeline I, enhances operational flexibility, and provides increased capacity. Phase IV of this project includes installation of 32,000 feet of pipeline from the Tolt East Side Supply Junction to the Lake Forest Park Reservoir, and installation of a line valve station at 88th Ave. NE.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	28	220	82	0	0	0	0	0	330
O&M Costs (Savings)			9	11	15	19	24	24	102

*Amounts in thousands of dollars

SPU - Water

Tolt Pipeline II - Phase VI-B

Program: Water Supply **Start Date:** 1st Quarter 2004
Type: Improved Facility **End Date:** 1st Quarter 2006
Project ID: WFNEW118
Location: Tolt Pipeline on Kelly Road

This project replaces or installs pipe parallel to Tolt Pipeline I from the Filtration Plant to the end of the previous Tolt Pipeline I Replacement near Kelly Road. The size and placement are determined during the planning, permitting, and design phase, which began in 2003. Sudden failure of the existing Tolt Pipeline I could interrupt supply and result in a failure to meet purveyor contract requirements during peak demand periods.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	0	0	103	528	608	0	0	0	1,239
O&M Costs (Savings)			0	0	0	0	0	0	0

Tolt River Watershed Road Improvement Program

Program: Infrastructure **Start Date:** Ongoing
Type: Improved Facility **End Date:** Ongoing
Project ID: C196007
Location: Tolt Watershed

This project provides drainage and other road improvements on portions of the 70 miles of forest roads in the South Fork Tolt River Watershed.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	1,548	210	175	180	185	190	195	211	2,894
O&M Costs (Savings)			0	0	0	0	0	0	0

Tolt Treatment Decommissioning

Program: Water Quality **Start Date:** 1st Quarter 2005
Type: Rehabilitation or Restoration **End Date:** 4th Quarter 2005
Project ID: WFNEW345
Location: Tolt Watershed

This project funds salvage of some equipment and material at the 40-year-old Tolt Treatment Facility, demolition of the old structure, and restoration of the site to match the surrounding area. SPU transferred chemical treatment of water in the Tolt System from the old facility to the newly-built Tolt Treatment Facility in December 2000.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	0	0	0	184	0	0	0	0	184
O&M Costs (Savings)			0	0	0	0	0	0	0

*Amounts in thousands of dollars

Transmission Pipeline Analysis

Program: Infrastructure **Start Date:** 1st Quarter 2001
Type: Rehabilitation or Restoration **End Date:** 4th Quarter 2004
Project ID: C101043

Location: Citywide

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

This project assesses the condition of transmission pipelines, the environment surrounding them, and the total cost of repair, rehabilitation, and maintenance. This project enables pipeline replacement and rehabilitation decisions to be based on improved estimates of the condition and service life of pipelines. Condition data along with other parameters are modeled to allow for longer-term prioritization of pipeline replacements.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	104	125	115	0	0	0	0	0	344
O&M Costs (Savings)			0	0	0	0	0	0	0

University Way NE - The Ave

Program: Other Agencies **Start Date:** 2nd Quarter 2001
Type: Rehabilitation or Restoration **End Date:** 2nd Quarter 2004
Project ID: C101037

Location: UNIVERSITY WY NE and NE CAMPUS PY to NE 45TH ST

Neighborhood District: Northeast **Neighborhood Plan:** University

The Seattle Department of Transportation (SDOT) has reconstructed University Way NE from NE Campus Pkwy to NE 50th. The work included new sidewalks, new street surfaces and grades, new trees, street furniture, light poles, and bus zones. SPU's project replaces the watermain, hydrants, and services to avoid utility conflicts, maintain service, reduce damage and claims, and reduce the necessity to perform future maintenance that could require pavement opening. This project is coordinated with the neighborhood, Sound Transit, SDOT (project TC365420), the University of Washington, and other utilities.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	364	770	8	0	0	0	0	0	1,142
O&M Costs (Savings)			0	0	0	0	0	0	0

*Amounts in thousands of dollars

SPU - Water

Upland Forest Restoration

Program: Habitat Conservation Program **Start Date:** 2nd Quarter 2000
Type: Rehabilitation or Restoration **End Date:** Ongoing
Project ID: WFHCP3
Location: Cedar River

The Upland Forest Restoration program within the Cedar River Habitat Conservation Plan mitigates upland forest which is not directly associated with aquatic habitats. Projects include restoration planting and restoration and ecological thinning within previously harvested upland forests. Restoration planting is done in selected areas of forest to promote the development of more natural and diverse ecological communities of vegetation. Restoration thinning reduces the density of trees to encourage tree growth. Ecological thinning accelerates the development of characteristics of mature forests.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	1,292	670	688	699	691	714	740	762	6,256
<i>O&M Costs (Savings)</i>			0	0	0	0	0	0	0

Water Design Standards & Guidelines Program

Program: Infrastructure **Start Date:** 2nd Quarter 2002
Type: Rehabilitation or Restoration **End Date:** Ongoing
Project ID: C102028
Location: Citywide

The project creates detailed design standards for various types of water facilities, to streamline future design efforts, reduce costs, and increase the quality of future new facilities.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	4	120	206	211	217	279	287	295	1,619
<i>O&M Costs (Savings)</i>			N/C	N/C	N/C	N/C	N/C	N/C	0

Water System Security Improvements

Program: Water Quality **Start Date:** 1st Quarter 2002
Type: Improved Facility **End Date:** 4th Quarter 2005
Project ID: C102015
Location: Citywide

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

This project responds to a demand for increased security and water quality protection at SPU facilities. The project includes key card installation at all pump stations, water treatment facilities and facility gates, and improving communications systems at various facilities.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	691	3,047	2,179	285	0	0	0	0	6,202
<i>O&M Costs (Savings)</i>			N/C	N/C	N/C	N/C	N/C	N/C	0

*Amounts in thousands of dollars

Watermain Extension Program

Program: Infrastructure **Start Date:** Ongoing
Type: New Facility **End Date:** Ongoing
Project ID: C153000

Location: Citywide

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

The Watermain Extension Program provides standard watermains and fire hydrants to properties now served by private service lines or non-abutting watermains. Work is partially reimbursed by Seattle Public Utilities' customers.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	1,550	752	773	793	815	838	861	885	7,267
O&M Costs (Savings)			0	0	0	0	0	0	0

Watermain Rehabilitation Program

Program: Infrastructure **Start Date:** 1st Quarter 2003
Type: Rehabilitation or Restoration **End Date:** Ongoing
Project ID: WFNEW455

Location: Regional

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

This program takes over the scope of the Watermain Replacement Program (see Project C1104), under which older water distribution pipes are systematically replaced to reduce leakage and watermain breaks and improve water quality and fire protection. This new Watermain Rehabilitation Program considers methods other than straight replacement for improving watermains cost effectively, as well as replacement where other methods would not work. Such alternative methods include cleaning and re-lining pipes, and inserting a new smaller pipe in the old one. The Watermain Rehabilitation Program's priorities are guided by the following efforts: the Watermain Rehabilitation Planning and Inspection project (ending in 2003), which collects data about the condition of pipes throughout the distribution system; the System Deficiencies Analysis project (also ending in 2003) which identifies all fire flow deficiencies in the City's water distribution system; and the Asset Management Program starting in 2003, which provides decision-making tools to prioritize rehabilitation and improvement projects based on lowest life cycle costs that meet defined service levels.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	0	0	2,053	4,978	4,920	5,058	5,200	5,345	27,554
O&M Costs (Savings)			0	0	0	0	0	0	0
Cash Flow		750	803	192	0	0	0	5,345	

*Amounts in thousands of dollars

SPU - Water

Watermain Replacement Program

Program: Infrastructure **Start Date:** 1st Quarter 2001
Type: Rehabilitation or Restoration **End Date:** 4th Quarter 2004
Project ID: C1104

Location: Citywide

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

This program systematically replaces older water distribution pipes to reduce leakage and watermain breaks, and improve water quality and fire protection. Targeted watermains are prioritized and scheduled for replacement in groups to maintain a steady volume of work and to facilitate quality design and construction management. This program typically only considers replacement of the pipes as the way to improve their performance, and ends in its current form in 2003. The Watermain Rehabilitation Program (WFNEW455), which begins in 2004, takes over the scope of the Watermain Replacement Program and implements a broader range of methods for improving pipe performance, including cleaning and re-lining pipes. The Seaview Ave. Watermain replacement project, in conjunction with the Burke Gilman Trail construction, has been delayed until 2004; spending in 2004 reflects work on that project.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	1,441	2,759	450	0	0	0	0	0	4,650
O&M Costs (Savings)			0	0	0	0	0	0	0

West Seattle Gatehouse - Valve & Inlet Pipe Rehabilitation

Program: Infrastructure **Start Date:** 2nd Quarter 1997
Type: Rehabilitation or Restoration **End Date:** 2nd Quarter 2004
Project ID: C197016

Location: 8TH AV SW and SW TRENTON ST

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

This project rehabilitates the large valves in the West Seattle Gate House (WSGH). The WSGH inlet piping and valves leading into the reservoir are repaired to allow remote control of the water flowing into the reservoir. The reservoir bypass valve is replaced with a remote-controlled ball valve to allow for backing off the reservoir and controlling pressure to the West Seattle turbine house. An additional ball valve is installed at the turbine house near Trenton Tanks.

	LTD	2003	2004	2005	2006	2007	2008	2009	Total
SPU Water Fund	242	338	5	0	0	0	0	0	585
O&M Costs (Savings)			0	1	2	2	3	3	11

*Amounts in thousands of dollars