Overview of Facilities and Programs

Seattle Public Utilities (SPU) operates the City-owned water system serving a population of approximately 1.45 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 retails water in Seattle and adjacent areas, and sells wholesale to 21 suburban water utilities and two interlocal associations for distribution of water to their customers. SPU's Capital Improvement Program (CIP) is the vehicle for upgrading and expanding water infrastructure as well as constructing projects that protect, conserve, and enhance the region's environmental resources. The overarching 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 Water Fund's (WF's) financial policies, adopted in 2005, require cash contributions averaging 20 percent of total CIP costs over any given rate period. The remaining portion of the Water Fund CIP is bond funded. Overhead costs for the CIP are budgeted in the SPU operating fund and are reimbursed as CIP expenditures are incurred.

Highlights

- **Open Distribution System Reservoirs:** Consistent with Ordinance 120899, Seattle Public Utilities (SPU) is replacing its open finished drinking water reservoirs with underground structures that will improve the quality and security of the water system. The City finished underground replacement work on Magnolia Reservoir in 1995, Lincoln Reservoir in 2004, and Beacon and Myrtle Reservoirs in 2009. Construction of a new buried reservoir to replace West Seattle Reservoir began in 2008 and is targeted for completion by the end of 2010. Construction on Maple Leaf Reservoir's replacement is scheduled to begin in the third quarter of 2009 and end in late 2011 or early 2012. SPU plans to decommission Roosevelt Reservoir, and further evaluate the possibility of decommissioning Volunteer Reservoir; however, permanent actions at these two reservoirs are not expected to occur until after Maple Leaf Reservoir is completed and the City has had an opportunity to take them off line for a period of time to observe the water system's performance without them.

- **Morse Lake Pump Plant (MLPP):** This project aims to improve the reliability of water supply and in-stream flows in the Cedar River during drought conditions and to address requirements of the Habitat Conservation Plan. The electrical portion, expected to begin construction in fall 2009, will provide permanent power service to the pump station with standby power generators at the Masonry Dam site. This phase will reduce mobilization costs during periodic droughts and avoid risks associated with bringing diesel fuel into the protected watershed. Asset Management Committee review of the full project is also expected in late 2009. Pending final business case approval, further project elements may include:
    - A land-based pump station on the shore of Chester Morse Lake with a design capacity of 240 million gallons per day (MGD);
    - A gravity intake tunnel in the lake connected to a shaft on the lake shore; and
    - A pipeline to convey the water from the pump station following existing roads to discharge the water into the Masonry Pool.

  Only the electrical work in 2010 is being budgeted in the Proposed CIP. Further phases will be considered when the business case review is complete.

- **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 for the Cedar River Watershed. This agreement commits the City to certain projects and management practices to mitigate the environmental impacts of drinking water diversions. Major HCP components include investments in fisheries enhancement projects such as the Landsburg Fish Passage Improvements, which was completed in 2004. The remaining large fisheries enhancement projects within the Cedar River HCP Program are the Cedar Sockeye Hatchery, and acquisition of fish habitat lands in the lower Cedar River. Other HCP projects within the municipal watershed include culvert improvements and other stream restoration work, removal of logging roads, and forest restoration. Research and monitoring are also being

conducted in association with many of these projects. Approximately $30.0 million is included in the 2010-2015 Proposed CIP for these projects.

Project Selection Process

SPU has adopted an asset management methodology for selecting projects to build. This triple bottom line approach includes an in-depth analysis of the project's economic, social, and environmental benefits, and the ability to meet customer service levels. Using this approach, SPU has established a consistent analytical and modeling framework to achieve the most economical balance between capital investments and operation and maintenance expenditures to minimize the life cycle costs of any capital asset.

The Asset Management Committee (AMC), a committee of senior SPU executives, reviews each project above a certain cost threshold – recently increased to $1 million from $250,000 – to insure that only projects that minimize lifecycle costs and meet triple-bottom-line criteria move forward. As a result of this analysis, several projects have been dropped when costs far exceed the benefits. Several cost-effective master planning efforts were approved to create up-to-date improvement and/or upgrade plans for several groups of assets. Other projects have been expanded or expedited because the benefits exceed the costs.

Program Category Summaries

The 2010-2015 Proposed Water CIP totals approximately $98.5 million in 2010 (including Technology projects funded by the Water Fund, displayed in a separate section of this CIP), or $12.6 million less than the 2010 Endorsed Budget.

In the Distribution Budget Control Level (BCL), the 2010 Proposed CIP is $1.3 million higher than the prior CIP. This is largely due to increasing the Multiple Utility Relocation project to accommodate the second phase of the Aurora Avenue project (north of 165th Street). Service Renewals is increased based on the prior two years' historical results, and similarly New Taps was decreased to reflect slowdown in the real estate industry. Watermain Extensions is increased in anticipation of an expanded and prioritized work program, and Tank Improvements projects were delayed.

In the Habitat Conservation Program BCL, the 2010 Proposed CIP is somewhat higher by $0.6 million relative to the prior CIP. This is due to resumption of projects that had been delayed from late 2008 and 2009. These include the Cedar Sockeye Hatchery, and the Landsburg Fish Passage.

In the Shared Cost Projects BCL, the 2010 Proposed CIP is slightly lower by $0.4 million compared to the prior CIP. This is largely due to deferring Operational Facilities projects to 2012 and 2013 while accelerating the Regional Facility program into 2010. Transportation projects also increased with the addition of First Hill Streetcar work.

In the Transmission BCL, the 2010 Proposed CIP is largely unchanged from the prior CIP. Within that, the Transmission Pipeline Rehabilitation project was accelerated and the Cathodic Protection was delayed.

In the Water Quality and Treatment BCL, the 2010 Proposed CIP is $17.0 million lower than the prior CIP. The Reservoir Covering Maple Leaf Project was significantly reduced because construction bids were lower than the Engineer's estimate. The Reservoir Covering West Seattle project was lowered reflecting current contractor's cash flow estimates. The Reservoir Covering Beacon project was increased in anticipation of final construction closeout costs. Two new projects are proposed to start for 2010: Cedar Fluoridation Relocation and Roosevelt Reservoir Bypass.

In the Water Resources BCL, the 2010 Proposed CIP is $1.5 million higher than the prior CIP, largely related to electrical work on the Morse Lake Pump Plant project.

In the Watershed Stewardship BCL, the 2010 Proposed CIP is $0.3 million higher than the prior CIP due to increases in the Endangered Species Act (ESA) Tolt Levee Modifications project, which restores approximately 50 acres of natural salmon habitat at the mouth of the Tolt River in Carnation, Washington. The Cedar River-Boundary Non-HCP Road Improvements and Cedar River Watershed Cultural Resource Information Management System projects were increased in order to resume deferred 2009 work programs.

The Water CIP is comprised of eight program categories, which are summarized below.

Distribution: Projects and programs in this program category relate to repairs and upgrades to the City's water lines, pump stations, and other facilities that are part of the distribution system (serving only retail customers).

Habitat Conservation Plan: This program category includes projects and programs directly related to implementation of the Cedar River Watershed Habitat Conservation Plan. Projects are grouped into eight categories: road improvements and decommissioning, stream and riparian restoration, upland forest restoration, Landsburg fish passage, Cedar River sockeye hatchery, improvements to the Ballard Locks for fish passage and water conservation, fish habitat protection and restoration in the lower Cedar River below the municipal watershed boundary, and evaluation of Cedar permanent dead storage in Chester Morse Lake.

Shared Cost Projects: This program includes individual capital improvement projects which typically benefit multiple Lines of Business (e.g., the water line of business and the drainage and wastewater line of business) and whose costs are "shared," or paid for, by more than one of SPU's utility funds. In 2010, Water funded projects include water infrastructure relocations related to the Alaskan Way Viaduct & Seawall Replacement, "Bridging the Gap," and Sound Transit projects, as well as fleet and heavy equipment purchases, improvements to SPU operational facilities, and security and infrastructure control systems.

Technology: This program category makes use of recent technology advances to increase efficiency and productivity. Water-supported technology projects are shown grouped with technology projects supported by SPU’s other fund sources.

Transmission: The purpose of this program category is to repair and upgrade the City's large transmission pipelines that bring untreated water to the treatment facilities, and convey water from the treatment facilities to Seattle and its suburban wholesale customers’ distribution systems.

Water Quality & Treatment: The purpose of this program category is to design, construct, and repair water treatment facilities, and remaining open water reservoirs. This program also manages the delivery of drinking water quality and treatment services to meet customer and environmental service levels and to comply with state and federal drinking water regulations.

Water Resources: The purpose of this program category is to manage and produce untreated water to meet anticipated demands at our supply reliability standard and instream flow requirement, and promote residential and commercial water conservation.

Watershed Stewardship: Projects and programs in this program category provide habitat protection and restoration, sustain the environment, and enhance environmental quality, both locally and regionally. Most of the projects in this program category are located within the Cedar and Tolt River municipal watersheds. Three of these projects are being carried out in response to the listing of the Chinook salmon as a threatened species under the Endangered Species Act.

Anticipated Operating Expenses Associated with Capital Facilities Projects

When appropriate, the projects in the Water Fund CIP include operations and maintenance cost estimates. These estimates will be refined after project completion and will be included as part of SPU's future budget submittals.