

# Seattle Public Utilities – Drainage & Wastewater

## Overview of Facilities and Programs

The Seattle Public Utilities (SPU) is responsible for maintaining the network of sewer and drainage systems throughout the City of Seattle. The system includes approximately:

- 448 miles of sanitary sewers;
- 460 miles of storm drains;
- 968 miles of combined sewers;
- 68 pump stations;
- 92 permitted combined sewer overflow outfalls;
- 170 storm drain outfalls; and
- 38 combined sewer overflow control detention tanks/pipes.

The Seattle Public Utilities' Capital Improvement Program (CIP) is the vehicle for maintaining, upgrading, and expanding this infrastructure, as well as constructing projects that protect, conserve, and enhance our region's environmental resources. The overriding goal of the CIP is to ensure facilities are properly constructed and maintained, and regulatory requirements are met. Projects in the CIP are also guided by various federal regulations, City policies, long-term plan documents, and the SPU Asset Management Committee (AMC) benefit criteria. Many Drainage and Wastewater (DWF) CIP projects are outlined in the Wastewater System Plan, Combined Sewer Overflow Reduction Plan, and the Comprehensive Drainage Plan.

Historically, the DWF CIP has been funded primarily by revenue bonds. However, DWF financial policies adopted in 2003 gradually increase cash contributions from the Utility to fund the CIP. Now, 25% of total CIP costs were funded by a cash contribution, with the remaining capital needs being debt financed. Overhead costs for the CIP are budgeted in the SPU operating fund and are reimbursed as CIP expenditures are incurred.

## Highlights

- **Reorganization and Reduction:** The DWF CIP has been significantly reduced for 2010 to operate within current rates and re-focus the capital program on regulatory mandates. More than 30 projects have been reduced, delayed, or eliminated entirely. Consequently, the CIP BCL structure has been re-organized to reflect the remaining work priorities, and the number of BCLs has been reduced from nine to seven.
- **Combined Sewer Overflow (CSO) Program:** Approximately \$24.2 million is included in the 2010-2015 Proposed CIP for the combined sewer overflow program. In many parts of Seattle, sewage and stormwater flow together in pipes through a Combined Sewer System. Heavy rains may cause these pipes to fill, causing overflows through outfalls into Lake Union, Lake Washington, or Puget Sound. Projects in the 2010-2015 Proposed CIP respond to federal and state regulations requiring the City to monitor and reduce CSOs. These include development of a Long Term Control Plan (LTCP) as well as CSO reduction projects in the Windermere, Genesee, and Henderson basins.
- **Flooding, Sewer Back-up and Landslides:** The 2010-2015 Proposed CIP includes \$24.1 million to address the prevention and alleviation of flooding and sewer back-ups in the City of Seattle. The main focus of the 2010 program will be on the construction phases of the Madison Valley Long Term Solution and South Park Pump Station projects.
- **Sediments:** The City of Seattle is named as a potentially responsible party (PRP) for the Duwamish River Superfund Site because of alleged contamination of sediments in the river from CSO and storm drain discharges. The City continues to work with the Washington State Department of Ecology, King County, and other PRPs on an assessment of contaminants and sources.

### 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 Drainage and Wastewater CIP totals approximately \$73.9 million in 2010 (including Technology projects funded by the Drainage and Wastewater Fund, displayed in a separate section of this CIP), which is a \$15.3 million lower than the Endorsed 2010 CIP.

In the new Combined Sewer Overflows (CSOs) BCL, the 2010 Proposed CIP is \$24.2 million. Several projects now housed in this BCL have seen significant increases over the prior CIP. The reorganization and increases reflect a decision to focus efforts on the CSO program, including the Long Term Control Plan (LTCP) project, which is required by the Environmental Protection Agency (EPA). This BCL also has funding to simultaneously complete the Windermere, Genesee, and Henderson CSO reduction projects on an aggressive schedule.

In the Protection of Beneficial Uses BCL, the 2010-2015 Proposed CIP is \$252,000 in 2010, which is \$1.3 million lower than the 2010 planned funding level in the 2009-2014 Adopted CIP. This change is a result of the elimination of several projects due to financial constraints and reprioritization.

In the Shared Costs Projects BCL, the 2010 Proposed CIP is \$16.2 million in 2010, which is \$4.5 million lower than the 2010 planned funding level in the 2009-2014 Adopted CIP largely due to lower estimates for the Alaskan Way Viaduct/Seawall Replacement project and reductions to the Bridging the Gap program due to financial constraints.

In the new Flooding, Sewer Back-up and Landslides BCL, the 2010-2015 Proposed CIP is \$24.1 million in 2010. Several projects now in this BCL have seen savings, including the Madison Valley Long Term Solution project, following refinement of the project estimate given the chosen alternative. Additionally, the Sanitary Sewer Overflow Capacity and Inflow/Infiltration projects have been delayed until 2012 order to meet financial constraints and reprioritization made necessary by the zero percent rate increase, and the Localized Flood Control Program has been similarly reduced. These reductions are partially offset by an increase for the South Park Pump Station, caused by construction shifting from 2009 to 2010.

In the new Rehabilitation BCL, the 2010-2015 Proposed CIP is \$2.5 million in 2010. Several projects in this new BCL have reduced planned spending due to financial constraints, including Point Sewer Pipe Rehab-Crews, No-Dig Pipe & Maintenance, and Pump Station Improvements.

For 2010, the BCLs comprising the Drainage and Wastewater CIP have been revised to better reflect the management structure of the CIP, and will be composed of seven program categories, which are summarized below.

**Protection of Beneficial Uses:** This program makes improvements to the City's drainage system to reduce the harmful effects of stormwater runoff on creeks and receiving water bodies by improving water quality and

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protecting or enhancing habitat. The program includes projects to improve water quality, protect creeks, meet regulatory requirements, and use best available science to meet community expectations for habitat.

**Sediments:** This program provides funding for preliminary studies and analysis of cleanup of contaminated sediment sites in which the City is a participant, for actual cleanup of contaminated sites, for preliminary engineering, for future cleanup efforts, and for liability allocation negotiations. Funding is used to develop studies and analyses required by regulatory agencies for determining the boundaries and cleanup requirements for specific action sites. The study phase of sediment remediation projects often requires multiple years before specific cleanup actions are defined. As regulatory agency cleanup requirements become clear, additional individual cleanup projects are included in subsequent CIP proposals.

**Combined Sewer Overflows:** This program consists of projects that are mandated by State and Federal regulations to control CSOs into the City's receiving waters. Projects include large infrastructure projects (e.g., storage structures, pipes, tunnels, wet weather treatment plants, stormwater separation, pump stations, etc.), smaller retrofits, construction of green infrastructure for CSO control, and development of regulatory-required plans such as the Long-Term Control Plan.

**Rehabilitation:** This program consists of projects to rehabilitate or replace existing drainage and wastewater (DWW) assets in-kind to maintain the current functionality level of the system. Projects include pump station structures, major mechanical & electrical components, and force mains; DWW control structures and appurtenances; and pipes and culverts.

**Flooding, Sewer Back-ups and Landslides:** This program is responsible for preventing and alleviating flooding and sewer backups in the City of Seattle, with a primary focus on the protection of public health, safety, and property. The program area is focused on planning, design, and construction of channels, pipes, roadside ditches, culverts, detention ponds, and natural drainage systems that control and/or convey storm runoff to receiving bodies. This program also involves protecting SPU drainage and wastewater infrastructure from landslides and providing drainage improvements where surface water generated from the city right-of-way is contributing to landslides.

**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 paid by more than one of SPU's utility funds. In 2010, the Drainage and Wastewater program includes funding for the Alaskan Way Viaduct & Seawall Replacement, Integrated Control Monitoring Program, Mercer Corridor Projects, Heavy Equipment Purchases, and Emergency Storms.

**Technology:** (Projects that are funded by the Drainage and Wastewater Fund, displayed in a separate section of this CIP.) This program makes use of recent technological advances to increase the Department's efficiency and productivity. Drainage and Wastewater-supported technology projects are shown grouped with other technology projects following the Department's three CIP sections.

### Anticipated Operating Expenses Associated with Capital Facilities Projects

When appropriate, the projects in the Drainage and Wastewater 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 O&M Proposed Budget submittals.

