Seattle Public Utilities

Protecting Seattle's Waterways

## Volume 4

# Addendum Final Programmatic Environmental Impact Statement

**December 4, 2014**

**City of Seattle**
Seattle Public Utilities

December 4, 2014

Dear Affected Agencies, Tribes, Organizations and Interested Parties:

Enclosed is the Final Environmental Impact Statement (Final EIS) for the proposed Plan to Protect Seattle's Waterways.

The City of Seattle (City) is preparing a comprehensive strategy, called the Plan to Protect Seattle's Waterways (Plan), to reduce overflows and the discharge of pollutants from combined sewers and stormwater runoff. The City must correct this problem to protect public health and the environment, and comply with the federal Clean Water Act, state regulations, and a Consent Decree with the Washington State Department of Ecology, the U.S. Environmental Protection Agency, and the U.S. Department of Justice. This Final EIS is one of four volumes included in the Plan. The Executive Summary is Volume 1, the Long Term Control Plan (LTCP) is Volume 2, the Integrated Plan is Volume 3, and the Final EIS is Volume 4.

This programmatic Final EIS discloses the potential construction and operational impacts associated with implementation of each Plan alternative:

- The No Action Alternative – completes only the combined sewer overflow (CSO) reduction projects currently planned or underway by the City, leaving 22 CSO outfalls uncontrolled;
- The Long Term Control Plan Alternative – completes CSO reduction projects needed to control the remaining 22 CSO outfalls,
- The Integrated Plan Alternative – completes CSO reduction projects needed to control the remaining 22 CSO outfalls and also implements additional projects to reduce stormwater pollution.

The Long Term Control Plan Alternative includes four options, any of which would control the remaining 22 CSO outfalls and meet regulatory requirements:

- Neighborhood Storage Option – All storage projects would be completed independently by the City, with one variation providing storage in tanks/pipes, and the other a combination of a tunnel and tanks/pipes.
- Shared West Ship Canal Tunnel Option – Where feasible, storage projects would be completed jointly by the City and King County. This option includes storage tanks/pipes and a shared City/King County tunnel for storage of flows from four of the largest CSO areas.
- Shared Ship Canal Tunnel Option – This option includes a large shared City/King County tunnel for storage from seven of the largest CSO areas, as well as storage tanks and pipes.
- Shared Storage Option – the City and King County would complete shared storage projects in the Ship Canal, Portage Bay and Lake Washington areas.

Ray Hoffman, Director
Seattle Public Utilities
700 5th Avenue, Suite 4900
PO Box 34018
Seattle, WA 98124-4018

Tel (206) 684-5851
Fax (206) 684-4631
TDD (206) 233-7241
ray.hoffman@seattle.gov
http://www.seattle.gov/util

Any shared projects between the City and King County would be implemented in accordance with joint project agreements between the two agencies.

Impacts are evaluated at a programmatic level, to provide a comprehensive evaluation of potential impacts and mitigation associated with implementation of the Plan. Site-specific project evaluations will be conducted at a later date, when additional information is available.

Environmental elements covered in the EIS include Earth and Groundwater, Air Quality and Odors, Surface Water, Biological Resources, Energy and Climate Change, and Environmental Health. Noise and Vibration, Land Use and Visual Quality, Recreation, Historic and Cultural Resources, Transportation, Utilities, and Socioeconomics and Environmental Justice are also evaluated.

Key issues associated with the alternatives and options include potential construction-related impacts, particularly traffic, noise, and other community impacts during construction periods that could range from roughly one year to as much as seven years, depending upon the size of the project. Possible long term impacts include a potential for odor and noise at storage facilities, and potential operational implications for the region's wastewater system. Appropriate design and mitigation, along with coordination with potentially affected agencies and organizations, will reduce the potential for significant impacts.

The Final EIS responds to comments received on the Draft EIS, describes changes to the alternatives that have occurred since the issuance of the Draft EIS, and includes modification and revisions to the analysis provided in the Draft EIS as appropriate. Changes to the Draft EIS in response to the comments received are minor. Consistent with WAC 197-11-560(5) and SMC 25.05.560.E, the City has prepared an addendum to the Draft EIS that includes the comments, responses, changes to the document since release of the Draft EIS, and an updated fact sheet. This Final EIS is intended to be used as a companion document to the Draft EIS and avoids repetition of the detailed material provided in the Draft EIS.

The appeal period associated with this Final EIS is December 4, 2014 through December 19, 2014.

Thank you for your interest in the Plan to Protect Seattle's Waterways.

Sincerely,

Betty Meyer
SEPA Responsible Official

# Fact Sheet

## Name of Proposal

Plan to Protect Seattle's Waterways (the Plan)

## Proponent

City of Seattle (City): Seattle Public Utilities (SPU)

## Location

Projects included in the Plan would be located throughout the City of Seattle in the following areas:

- Ship Canal Neighborhoods
- Lake Washington Neighborhoods
- Longfellow Creek/ Duwamish Neighborhoods
- Elliott Bay/ Lake Union Neighborhoods
- Piper's Creek Neighborhoods
- Thornton Creek Neighborhoods

## Purpose

The objective of this proposal is to adopt a Plan to reduce overflows and the discharge of pollutants from combined sewers and stormwater runoff, in order to protect public health and the environment and to comply with federal and state regulations. When implemented, the Plan would bring Seattle into compliance with state and federal combined sewer overflow (CSO) regulations and a Consent Decree with the Washington State Department of Ecology, the U.S. Environmental Protection Agency, and the U.S. Department of Justice. The Plan would define projects to control this significant source of contamination and when implemented, the Plan would bring the City into compliance with the State and Federal requirements for CSO discharges. Specifically, the Plan would:

- Identify areas of Seattle where projects are needed to reduce combined sewer overflows.
- Evaluate alternatives for reducing combined sewer overflows in these areas.
- Identify additional areas where projects to reduce stormwater pollution would improve water quality.
- Recommend a schedule for designing and constructing projects.
- Estimate program costs and associated impacts on SPU customer bills.
- Consider regulatory, public and stakeholder input.

## Proposed Alternatives

SPU identified the following alternatives for evaluation in this EIS:

- Long Term Control Plan Alternative
- Integrated Plan Alternative
- No Action Alternative

**Long Term Control Plan Alternative:** The Long Term Control Plan (LTCP) Alternative is focused solely on controlling all remaining uncontrolled CSO outfalls. As a planning-level document, the LTCP presents a comprehensive strategy to reduce the remaining uncontrolled CSO discharges in the city. The City must address these CSOs to protect public health and the environment, and comply with the Clean Water Act and state regulations. The City would implement the projects identified in the LTCP Alternative from 2016 through 2025.

There are four potential combinations of storage facilities, referred to as "options" under the LTCP that are evaluated in this EIS. Any of these four options would meet the Plan objectives. The options were developed under one of two basic concepts: the City meets its Consent Decree-mandated CSO control requirements through implementation of independent (City only) control projects, or the City participates in one or more shared projects with King County to take advantage of potential cost /impact reduction opportunities. The options vary in terms of the number, size, and potential location of storage facilities considered. The four LTCP options are:

- Neighborhood Storage Option (independent, City only implementation)
  - Neighborhood Tanks/Pipes, or
  - Neighborhood West Ship Canal Tunnel plus Tanks/Pipes
- Shared West Ship Canal Tunnel Option (Shared King County / City implementation)
- Shared Ship Canal Tunnel Option (Shared King County /City implementation)
- Shared Storage Option (Shared King County / City implementation)

**Integrated Plan Alternative:** The Integrated Plan Alternative includes control of all remaining uncontrolled CSO outfalls and reduction of stormwater pollution. Stormwater that enters the City's separate stormwater system is a major contributor to surface water quality issues. The objective of the Integrated Plan is to implement stormwater pollution management projects that would provide greater benefits to surface water quality than those provided by the LTCP CSO reduction strategies alone. The Integrated Plan represents a more comprehensive approach to water quality management by integrating stormwater pollution management with CSO reduction strategies.

Under the Integrated Plan Alternative, the City would still build the CSO reduction projects included in one of the four LTCP options outlined above. However, the City would delay the completion of some of the CSO control projects until after 2025, to allow earlier completion of high-benefit stormwater treatment technology projects. Six projects to control CSO discharges into the lower Duwamish, Portage Bay and Ship Canal waterways would be delayed until after 2025.

Under the Integrated Plan Alternative, the City would implement three programs/projects in Seattle neighborhoods to reduce pollution from stormwater runoff in areas that are not part of the combined sewer system, using a combination of stormwater treatment technologies. These programs/projects include:

- Natural Drainage System (NDS) Partnering
- Arterial Street Sweeping Expansion
- South Park Water Quality Facility

**No Action Alternative:** Under the No Action Alternative, the City would not implement the Plan. Progress would be made in reducing the number and volume of CSOs through implementation of previously planned CSO control projects, some of which are identified in the City's National Pollutant Discharge Elimination System (NPDES) Waste Discharge Permit and others of which are identified in the 2010-2015 Implementation Plan for the *2010 CSO Reduction Plan Amendment* (2010 Plan Amendment). These projects are currently scheduled for implementation, and they will occur regardless of whether the Plan is implemented. The City would also continue to implement a portion of two of its CSO reduction strategies: combined sewer system improvements and Natural Drainage Systems (called 'Green Infrastructure' in the LTCP). However, the City would not implement any additional projects to further reduce CSOs or reduce stormwater pollution. Under the No Action Alternative, the City would not be in compliance with the Consent Decree. SEPA requires that the No Action Alternative be included, and it serves as a baseline for comparison with the action alternatives.

## Implementation and Next Steps

Foremost in the development of the Plan is the need to comply with the Consent Decree and meet federal and state regulatory requirements. In order to comply with the Consent Decree, the City must select and implement an LTCP option. All City LTCP options have elements that may impact King County's wastewater system. Interagency coordination will be conducted in accordance with the SPU and King County Wastewater Division Coordination Plan, in which the two entities agreed upon specific factors to be considered in evaluating and recommending which CSO projects would be undertaken jointly or independently by either SPU or King County. It is possible that the selected LTCP option may include a combination of options or facilities presented in the EIS. An Integrated Plan is an optional approach that is not required by EPA or Ecology, but can be used to satisfy the Consent Decree.

The Draft Plan for Protecting Seattle's Waterways, which consists of the following four volumes, was submitted to EPA and Ecology for review and comment on May 29, 2014:

- Volume 1: Executive Summary
- Volume 2: CSO Long Term Control Plan
- Volume 3: Integrated Plan
- Volume 4: Programmatic EIS

Ecology submitted comments on the draft LTCP and Integrated Plan on August 21, 2014, and EPA submitted comments on the draft Plan on October 31, 2014. The City will work with EPA and Ecology to ensure their comments are addressed in the Final Plan.

Following the release of the Final EIS, the City will identify a recommended LTCP option and recommended Plan Alternative. The City also will continue to implement a public process and outreach to solicit input from the public and other stakeholders during the Plan adoption process. Throughout the spring of 2015, the City Council will

review and hold Council hearings and meetings (open to the public) to discuss the Plan. After Plan adoption in May 2015, the Final Plan will be submitted to EPA and Ecology for approval. The Final Plan is anticipated to be approved by EPA and Ecology in late summer 2015, and Plan implementation would commence in late 2015 or early 2016.

## Timing of Additional Environmental Review

The analysis presented in this EIS is programmatic in nature. The EIS has been prepared to disclose probable significant adverse impacts associated with the Plan to Protect Seattle's Waterways. As individual projects are identified and designed, project-specific environmental review will be conducted prior to implementation. Depending on the selected alternative and the amount of time needed to obtain regulatory approval of the Plan, some projects and actions would be ready for project-specific environmental review starting in 2016.

## Required Approvals or Permits

Because a preferred alternative has not been selected, it is not possible to present a complete list of approvals and permits that would be required for future projects. It is possible to identify the most common types of approvals and permits that would generally be required for the types of projects presented in this document. These approvals and permits are listed below by jurisdictional agency.

- Federal
    - Section 10/404 permit--U.S. Army Corps of Engineers
    - Endangered Species Act consultation--National Marine Fisheries Service and/or U.S. Fish and Wildlife Service
- State
    - National Pollutant Discharge Elimination System (NPDES) construction stormwater general permit--Ecology
    - Section 401 water quality certification--Ecology
    - Shoreline conditional use permit, or variance--Ecology
    - Hydraulic project approval--Washington Department of Fish and Wildlife (WDFW)
    - Section 106 National Historic Preservation Act or Executive Order 05-05 consultation--Department of Archaeology and Historic Preservation
- County
    - Applicable project approval under King County Code (KCC) 28.84.050
    - Shared Project Agreement
    - Operational Agreement
- City
    - Environmentally critical areas approval--Department of Planning and Development (DPD) or Seattle Public Utilities
    - Master Use Permit--DPD, Seattle City Council, as appropriate

- Floodplain development permit---DPD
- Shoreline Management Program permit--DPD
- Building and related permits--DPD
- Clearing and grading permit--DPD
- State Environmental Policy Act (SEPA) compliance--Seattle Public Utilities
- Initiative 42 approval (park lands conversion)--Seattle City Council
- Street use permit--Seattle Department of Transportation

## Authors and Principal Contributors to this EIS

This Final EIS has been prepared under the direction of Seattle Public Utilities. The following consulting firms provided research and analysis associated with this EIS:

- **ESA** - lead EIS consultant, document preparing; writing of all EIS sections
- **CH2M Hill** - engineering support
- **Brown and Caldwell** - engineering support
- **Herrera Environmental Consultants** – analysis of water resources
- **Heffron Transportation, Inc.** – transportation analysis
- **PRR** – public outreach

## Project Proponent and Lead Agency

City of Seattle
Seattle Public Utilities
700 5th Avenue, Suite 4900
P.O. Box 34018
Seattle, WA 98124-4018

## Project Information / Background Data Contact Person

Ed Mirabella
Long Term Control Plan Manager
Phone: (206) 684-5959
Email: J.Edward.Mirabella@seatttle.gov

## Date of Issuance of this Final EIS

December 4, 2014

## SPU SEPA Responsible Official

Betty Meyer, SPU SEPA Responsible Official
Seattle Public Utilities
Seattle Municipal Tower, Suite 4900
P.O. Box 34018
Seattle, WA 98124-4018
betty.meyer@seattle.gov

## Availability of the Final EIS and Background Materials

The Final EIS is available for viewing at the following locations:

- Seattle Public Utilities, Director's Office Main Reception Area, Seattle Municipal Tower, Suite 4900, 700 Fifth Avenue, Seattle, Washington
- Seattle Central Library, General Reference Section
- Online at www.seattle.gov/CSO

The Final EIS can be downloaded for free from the City's website www.seattle.gov/CSO or purchased on CD for $10 or in paper form for $170. Purchased copies will be mailed upon receipt of a check made payable to Seattle Public Utilities.

Additional background materials can be viewed on the City's website: www.seattle.gov/CSO.

They may also be viewed in paper form by arranging a time with Ed Mirabella at the number or email listed above.

## Appeal of the Final EIS

Appeals of the Final EIS must be accompanied by a $85.00 filing fee and must be filed by 5:00 p.m. on December 19, 2014. Delivery of appeals filed by any form of USPS mail service may be delayed by several days. Allow extra time if mailing an appeal.

Written appeals must be sent to:

City of Seattle Hearing Examiner
700 5th Avenue Suite 4000
P.O. Box 94729
Seattle, WA 98124-4729

Appeals can be filed electronically. Details on electronic filing procedures are available under "e-File" at the Office of the Hearing Examiner's web site: http://www.seattle.gov/examiner/

Filing fees must be paid by the appeal deadline and can be paid via check (made payable to the City of Seattle) or credit/debit card (Visa and MasterCard only). Credit/debit card payments can be made in-person or over-the-phone.

You should be prepared to make specific factual objections. Please refer to the Hearing Examiner Rules of Practice and Procedure for rules that govern appeals, which are available on the Hearing Examiner's website at www.seattle.gov/examiner/rules-toc.htm or by calling 206-684-0521.

# Table of Contents

# List of Figures



# List of Tables

# List of Abbreviations

| Term | Definition |
|---|---|
| BMP | best management practice |
| BTRC | Ballard Terminal Railroad Company |
| CESF | chitosan-enhanced sand filtration |
| CFR | Code of Federal Regulations |
| City | City of Seattle |
| CSO | Combined Sewer Overflow |
| CSS | Combined Sewer System |
| CWA | Clean Water Act |
| CY | cubic yards |
| DAHP | Washington Department of Archaeology and Historic Preservation |
| DNRP | King County Department of Natural Resources and Parks |
| DPD | Seattle Department of Planning and Development |
| Ecology | Washington State Department of Ecology |
| EIS | Environmental Impact Statement |
| EPA | U.S. Environmental Protection Agency |
| GHG | greenhouse gas |
| I-5 | Interstate 5 |
| I-90 | Interstate 90 |
| LTCP | Long Term Control Plan |
| MG | million gallons |
| MS4 | municipal separate storm sewer system |
| NDS | Natural Drainage System |
| NPDES | National Pollutant Discharge Elimination System |
| O&M | Operations and Maintenance |
| PBDE | polybrominated diphenyl ether |
| PCB | polychlorinated biphenyl |
| PHS | Priority Habitat and Species |
| The Plan | The Plan to Protect Seattle's Waterways |
| RCW | Revised Code of Washington |
| ROW | right-of-way |
| SDOT | Seattle Department of Transportation |
| SEPA | State Environmental Policy Act |
| SF | square feet |
| SMC | Seattle Municipal Code |
| SODO | South of Downtown neighborhood |
| SPU | Seattle Public Utilities |
| SR | State Route |
| TBM | tunnel boring machine |
| TMDL | Total Maximum Daily Load |
| WAC | Washington Administrative Code |
| WDNR | Washington Department of Natural Resources |
| WSDOT | Washington State Department of Transportation Glossary |

# Glossary

| Term | Definition |
|---|---|
| Alternative | There are 3 alternatives for the Plan to Protect Seattle's Waterways:<br>1. The LTCP Alternative is focused solely on reducing CSOs under an approved Long-term Control Plan (LTCP),<br>2. The Integrated Plan Alternative includes reduction of both CSOs and stormwater pollution,<br>3. The No Action Alternative, which provides a baseline for comparison of potential effects of the Plan alternatives, as required by the State Environmental Policy Act (SEPA). |
| Anadromous Fish | Fish species, such as salmon, which are born in fresh water, spend most of their lives in salt water, and return to fresh water to spawn. |
| Best Management Practice (BMP) | A method, activity, or procedure for reducing the amount of pollution entering a water body. |
| Carbon Monoxide | A colorless and odorless toxic gas. |
| CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act. |
| CFS | Flow rate in Cubic Feet per Second. |
| Code of Federal Regulations (CFR) | A compilation of federal laws. |
| Combined Sewers | Conveyance systems designed to carry both wastewater and stormwater. |
| Combined Sewer Overflow(CSO) | During rainfall events, the volume of the stormwater entering a combined sewer system often is far greater than the capacity of the conveyance system and, as a result, the untreated sewage and stormwater mixture empties directly into receiving waters through designated overflow points. |
| Combined Sewer System (CSS) | The wastewater collection and conveyance system owned or operated by the City, including all pipes, force mains, gravity sewer segments, pump stations, lift stations, interceptors, diversion structures, maintenance holes, and appurtenances thereto, designated to collect and convey municipal sewage, including residential, commercial, and industrial wastewaters, and stormwater, through a single-pipe system to King County's wastewater treatment plants, King County's CSO treatment plants, or to permitted CSO outfalls. |
| Consent Decree | A written agreement entered in United States District Court for Western District of Washington on July 3, 2013, between the City of Seattle, Washington State Department of Ecology, the EPA, and the United States Department of Justice that describes the actions that The City must take to address violations of the Clean Water Act caused by Combined Sewer Overflows. |
| Control Measure | A project, action, or other activity set forth in the City's Long-Term Control Plan or any |

| | |
|---|---|
| | Supplemental Compliance Plan, provided for in Section V.B. of the Consent Decree that controls CSO outfall. |
| Control Status | Whether an outfall meets the Consent Decree's definition of "greatest reasonable reduction" of CSOs; an average of no more than one overflow occurrence per outfall per year determined on a 20 year moving average. |
| Control Volume | The amount of combined sewage that would need to be stored in order for a basin to achieve control status |
| Controlled | The control of a CSO outfall in accordance with WAC 173-245-020(22). |
| Critical Habitat | Habitat which is essential for the conservation of a threatened or endangered species. |
| CSO area | A logical grouping of one or more outfalls based on hydraulic relationships, receiving waters, neighborhoods, or other readily recognizable features. |
| CSO outfall | The outfall structure from which a CSO is discharged. |
| CWA | Clean Water Act; passed by Congress in 1972, meant to restore and maintain the integrity of the nation's waters. |
| Designated Receiving Water | Waters determined by SPU as having sufficient capacity to receive discharges of drainage water such that a site discharging to the designated receiving water is not required to implement flow control. Includes the Duwamish River, Puget Sound, Lake Washington, Lake Union, Elliott Bay, Portage Bay, Union Bay, and the Lake Washington Ship Canal. |
| Drop shaft | The vertical excavation used to get from the ground surface down to tunnel grade. |
| Early Action Projects | The Consent Decree mandates that the City shall implement all CSO control measures necessary to reduce discharges from CSO outfalls in North and South Henderson CSO Areas in accordance with Section V.A. of the Consent Decree. |
| Ecology | The State of Washington Department of Ecology. |
| Environmental Impact Statement (EIS) | A document that discloses the probable significant adverse environmental impacts of a proposed project or planning, discusses reasonable mitigation of identified impacts, and evaluates alternatives to the project and/or proposal. EISs are required under certain circumstances by the Washington State Environmental Policy Act (SEPA). |
| Environmental Justice | The fair treatment of people of all races and incomes with respect to actions affecting the environment. Fair treatment implies that there is equity of the distribution of benefits and risks associated with a proposed project and that one group does not suffer disproportionate adverse effects. |
| Erosion | The wearing away of land surfaces by wind or water. Erosion can be intensified by land clearing processes. Sediment is a product of stream erosion. |
| Fecal Coliform | A group of bacteria that are passed through the fecal excrement of humans, livestock, and wildlife. |
| Green (Stormwater) | Systems and practices that use or mimic natural processes to infiltrate, evapotranspire, |

| | |
|---|---|
| Infrastructure | and/or harvest stormwater on or near the site where it is generated. Green infrastructure may include, but is not limited to, green roofs, downspout disconnection, trees and tree boxes, rain gardens, vegetated swales, pocket wetlands, infiltration planters, vegetated median strips, permeable pavements, reforestation, and protection and enhancement of riparian buffers and floodplains. |
| Groundwater | Water that infiltrates into the earth and is stored in the soil and rock within the zone of saturation below the earth's surface. Groundwater is created by rain, which soaks into the ground and flows down until it is collected at a point where the ground is not permeable. Groundwater then usually flows laterally toward a river, lake, or ocean. It is often used for supplying wells and springs. |
| Independent CSO Control Measure | A CSO control measure that is implemented by the City only or King County only. When implemented by the City only, also referred to as a Neighborhood Solution. |
| Launching Portal | A primary portal used to insert a tunnel boring machine for excavation of tunnels. Lining and ventilation operations would also occur at these portals. |
| Long Term Control Plan (LTCP) | The Long Term Control Plan under development by the City in accordance with Section V.B. of the CD, as well as any additional remedial measures for eliminating or reducing the City's CSOs included in any Supplemental Compliance Plan developed and implemented in accordance with Section V.B. of the CD. |
| LTCP Option | An overall CSO Control Strategy which ultimately will resolve all SPU uncontrolled outfalls; the four possible Options are: Neighborhood Storage, Shared Storage, Shared West Ship Canal Tunnel, Shared Ship Canal Tunnel. |
| Natural Drainage System | A method that uses soil to absorb stormwater and slow the rate that it enters the sewer system. Examples include rain gardens, porous pavement, and cisterns. |
| Neighborhood | A term used in this EIS to characterize the potential affected areas. (Note: this term is not used in Volume 2, LTCP.) |
| Nitrogen Dioxide | A highly reactive gas formed from the emissions of motor vehicles, power plants, and off-road equipment. Nitrogen dioxide contributes to ground-level ozone and fine particle pollution and has adverse effects on the respiratory system. |
| Open Cut | See "trenching". |
| Ozone | An atmospheric pollutant created by chemical reactions of other pollutants in the air when exposed to sunlight. |
| Partially Separated Stormwater System | Street drainage system that routes runoff to separate storm sewers and conveys the remaining drainage in a combined sewer. |
| The Plan | The Plan to Protect Seattle's Waterways, includes 4 Volumes: Executive Summary, Long Term Control Plan, Integrated Plan, and Environmental Impact Statement. |

| | |
|---|---|
| Priority Habitats and Species | The Priority Habitats and Species list is a catalog of habitats and species considered to be priorities for conservation and management. The list is published by the Washington Department of Fish and Wildlife. |
| Pump Station | A structure that houses pumps and other equipment for lifting stormwater or wastewater in pipes to higher elevations so that it can continue to flow by gravity |
| Rain Garden | Small vegetated depressions with designed soil mixes that retain runoff for subsequent infiltration or delayed release to the combined sewer system. |
| Receiving Water | Any body of water which receives CSO and stormwater discharges. |
| Recovery Portal | A primary portal used to remove tunnel boring machines during construction of tunnels. |
| Regulator | A structure that controls the flow of wastewater from two or more input pipes to a single output. Regulators can be used to restrict or halt flow, thus causing wastewater to be stored in the conveyance system until it can be handled by the treatment plant (as in King County 3rd Avenue West 11th Avenue West, Montlake, and University Regulators) |
| Salmonids | The common name for several species of fish of the family Salmonidae. The family includes salmon, trout, and char. |
| Sanitary Sewer System | The portion of the wastewater collection system designed to convey only sewage, and not stormwater, from residences, commercial buildings, industrial plants, and institutions for treatment at a wastewater treatment plant. |
| Sensitive Receptors | Noise-sensitive locations including residences, schools, hospitals, and nursing homes. |
| Shared | A CSO reduction strategy that is implemented by the City and King County Department of Natural Resources and Parks (DNRP). |
| Source control | An action to prevent pollution where it originates. |
| State Environmental Policy Act (SEPA) | A Washington State law (Chapter 43.21C RCW) that requires state agencies and local governments to consider environmental impacts when making decisions regarding certain activities, such as development proposals over a certain size, and comprehensive plans. As part of this process, environmental impacts are documented and opportunities for public comment are provided. |
| Storm Drain | A system of gutters, pipes, or ditches used to carry stormwater from surrounding lands to streams, lakes, or other receiving water. Also refers to the end of the pipe where the stormwater is discharged. |
| Storm Sewer | A pipe (separated from sanitary sewers) that carries only stormwater runoff from buildings and land surfaces. |

| | |
|---|---|
| Stormwater Runoff | Stormwater is rain and melting snow that runs off surfaces that cannot readily absorb water, such as streets, rooftops, and parking lots. As stormwater runs across these hard surfaces, it picks up pollutants such as oil, grease, and metals, carrying them through the City's storm drain system to our lakes, streams, rivers, and Puget Sound. It also flows into the combined sewer system and causes overflows of raw sewage and polluted stormwater into Seattle waterways. |
| Sulfur Dioxide | A highly reactive gas emitted by fossil fuel combustion at power plants and industrial facilities. Sulfur dioxide has adverse effects on the respiratory system. |
| Surface Water | Any water, including fresh water and salt water, on the surface of the earth. |
| Trenching | A method for installing pipe near the surface, also called "open cut." The trenching method consists of three stages: digging a trench and stockpiling excavated materials; installing pipe in the trench; and backfilling the trench and restoring the surface. |
| Truck Trip | A trip made by a truck hauling materials or workers for construction projects. |
| Tunneling | Method used for excavating a tunnel within the earth and installing pipes. A tunnel boring machine (TBM) is inserted through a launching portal and retrieved from a recovery portal. |
| Uncontrolled outfall | A CSO outfall which experiences more than an average of one untreated CSO discharge event annually on a twenty year moving average. |

CHAPTER 1

# Plan Description and Final EIS Addendum

## 1.1 Introduction

The City is preparing a comprehensive strategy, called the **Plan to Protect Seattle's Waterways** (the Plan), to reduce overflows and the discharge of pollutants from combined sewers and stormwater runoff. The City must correct this problem to protect public health and the environment, and comply with the federal Clean Water Act, state regulations and a Consent Decree with the Washington Department of Ecology, the U.S. Environmental Protection Agency, and the U.S. Department of Justice.

On May 29, 2014, the City of Seattle issued a Draft Environmental Impact Statement (EIS) for the Plan. The issuance of the Draft EIS was followed by a 30 day public review period which ended on June 30, 2014. During the review period, the City conducted one public hearing on June 24, 2014. Comments were received from 12 different parties, including four agencies, two organizations and six individuals.

Changes to the Draft EIS in response to the comments received are minor. Consistent with WAC 197-11-560(5) and SMC 25.05.560.E, the City has prepared an addendum to the Draft EIS that includes the comments, responses, changes to the document since release of the Draft EIS, and an updated fact sheet. This Final EIS is intended to be used as a companion document to the Draft EIS and avoids repetition of the detailed material provided in the Draft EIS.

Since the release of the Draft EIS, the City has made changes to one option under the LTCP (Long Term Control Plan) Alternative and has updated the project description for one project included under the No Action Alternative. These changes are described below under "*Plan Alternatives and Updates*", and the impacts associated with these changes are discussed in "*Impacts and Mitigation*."

This Final EIS contains:

Section 1.1 *Introduction* introduces the approach and contents of the Final EIS.

Section 1.2 *Background* summarizes key background information from the Draft EIS, including an introduction to the Plan, its objectives, and an introduction to the Plan alternatives.

Section 1.3 *Plan Alternatives and Updates* describes the Plan alternatives, including changes and updates to the Plan alternatives since the issuance of the Draft EIS.

Section 1.4 *Impacts and Mitigation* summarizes the potential construction and operational impacts, as well as measures that the City would take to help reduce or minimize potential impacts associated with the Plan alternatives.

Section 1.5 *Public and Agency Review* describes the public and agency review process for the Draft EIS and summarizes comments received and City responses. A summary of public involvement activities is included in Appendix A, and a complete list of Draft EIS comments and City responses is included in Appendix B.

## 1.2 Background

### 1.2.1 What is the Plan to Protect Seattle's Waterways and why is it needed?

Sewers in the City of Seattle carry raw sewage and other wastewater away from neighborhoods for treatment at King County's West Point Treatment Plant before discharge to Puget Sound. When it rains, some of these same sewers also carry untreated stormwater from neighborhood roofs, foundation drains, and some streets. During heavy rains, if the amount of raw sewage and untreated stormwater exceeds the sewer system capacity, the excess flow discharges into local waterways. These "combined sewer overflows," or CSOs, are a public health and environmental concern. In addition, stormwater runoff from streets, parking lots, and buildings contributes a wide range of pollutants to the city's waters.

The objective of this proposal is to adopt a Plan to reduce overflows and the discharge of pollutants from combined sewers and stormwater runoff, in order to protect public health and the environment and to comply with federal and state regulations.

### 1.2.2 What Alternatives does this EIS Consider?

The EIS is a programmatic or plan-level evaluation, assessing the broad, comprehensive implications and impacts associated with adoption and implementation of the Plan. Additional project-level evaluations will be conducted in accordance with the City's Environmental Policies and Procedures (SMC 25.05) when additional project details are available, and as such this EIS is part of a phased SEPA review process.

The EIS evaluates two Plan alternatives and a No Action Alternative. The two Plan alternatives represent different ways of achieving the objectives of the Plan. The Plan Alternatives are described in detail in Chapter 3 of the Draft EIS. A preferred alternative has not been identified at this time.

The **LTCP Alternative** is focused solely on reducing CSOs under an approved Long Term Control Plan (LTCP). As a planning-level document, the LTCP presents a comprehensive strategy to reduce the remaining uncontrolled CSO discharges in the city. The City must address these CSOs to protect public health and the environment, and comply with the Clean Water Act and state regulations. The City would implement the projects identified in the LTCP Alternative from 2016 through 2025, to comply with federal requirements, including a federal Consent Decree.

The **Integrated Plan Alternative** includes reduction of CSOs and stormwater pollution. Stormwater that enters the City's separate stormwater system is a major contributor to surface water quality issues. The objective of the Integrated Plan is to implement stormwater pollution management projects that would provide greater benefits to surface water quality than those provided by the LTCP CSO reduction strategies alone. The Integrated Plan represents a more comprehensive approach to water quality management by integrating stormwater pollution management with CSO reduction strategies.

**What is the Consent Decree?**

The Consent Decree is a written agreement between the City of Seattle, Washington State Department of Ecology, U.S. Environmental Protection Agency, and the U.S. Department of Justice that describes the actions that the City of Seattle must take to address violations of the Clean Water Act.

Previously, the City implemented CSO control measures and stormwater management as separate and distinct programs. Recognizing that polluted runoff has a big impact on surface water quality, the Consent Decree allows the City to prepare a plan that integrates CSO control projects with stormwater control projects. Under the Consent Decree, the City may submit an Integrated Plan that proposes stormwater control projects and defers certain CSO control projects, provided that the stormwater projects will result in significant benefits to surface water quality beyond those that would be achieved by implementation of CSO controls alone. The CSO control projects deferred would be delayed until after 2025.

The **No Action Alternative** provides a baseline for comparison of potential effects of the Plan alternatives, as required by SEPA. Under the No Action Alternative, progress will be made in controlling CSOs through implementation of previously planned CSO control projects identified in the City's National Pollutant Discharge Elimination System (NPDES) Waste Discharge Permit (WA0031682) and projects included in the 2010-2015 Implementation Plan for the *2010 CSO Reduction Plan Amendment* (2010 Plan Amendment). These projects are scheduled for implementation, and they will occur regardless of whether the Plan is implemented.

The City would also continue to implement a portion of two of its CSO reduction strategies, combined sewer system improvements and Natural Drainage Systems (called 'Green Infrastructure' in the LTCP). However, the City would not implement any additional CSO reduction or stormwater control projects beyond those that are currently slated for implementation. Under the No Action Alternative, untreated sewage and stormwater in excess of current regulations would continue to discharge into Lake Washington, the Lake Washington Ship Canal (Ship Canal), the Duwamish River, and Puget Sound when the capacity of the existing systems is exceeded. Under the No Action Alternative, the City would not be in compliance with the Consent Decree.

### 1.2.3 Implementation and Next Steps

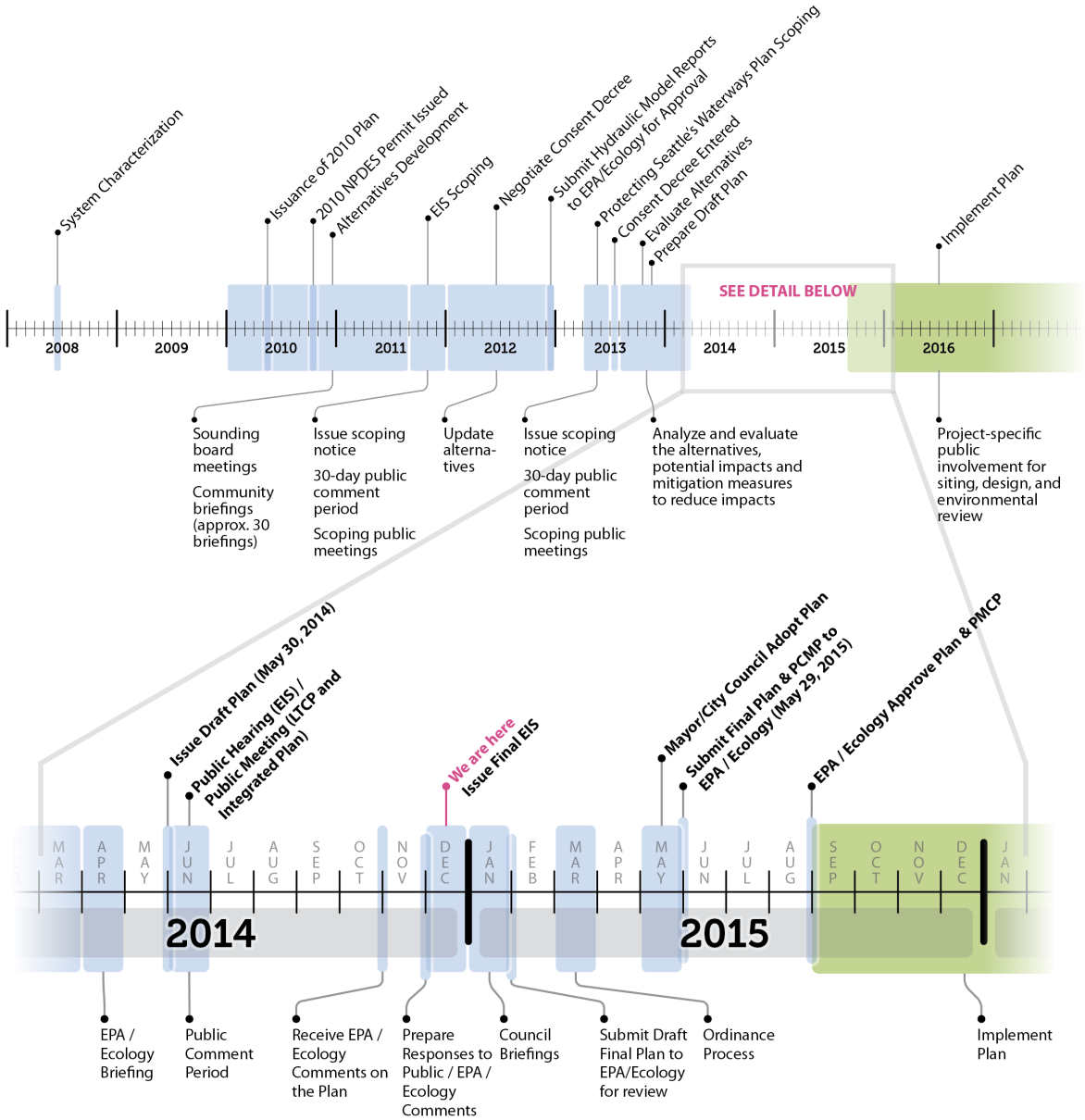
Foremost in the development of the Plan is the need to comply with the Consent Decree and meet federal and state regulatory requirements. In order to comply with the Consent Decree, the City must select and implement an LTCP option. All City LTCP options have elements that may impact King County's wastewater system. Interagency coordination will be conducted in accordance with the SPU and King County Wastewater Division Coordination Plan, in which the two entities agreed upon specific factors to be considered in evaluating and recommending which CSO projects would be undertaken jointly or independently by either SPU or King County. It is possible that the selected LTCP option may include a combination of options or facilities presented in the EIS. An Integrated Plan is an optional approach that is not required by EPA or Ecology, but can be used to satisfy the Consent Decree.

The Draft Plan for Protecting Seattle's Waterways, which consists of the following four volumes, was submitted to EPA and Ecology for review and comment on May 29, 2014:

- Volume 1: Executive Summary (SPU, 2014a)
- Volume 2: CSO Long Term Control Plan (SPU, 2014b)
- Volume 3: Integrated Plan (SPU, 2014c)
- Volume 4: Draft Programmatic EIS (SPU, 2014d)

Ecology submitted comments on the draft LTCP and Integrated Plan on August 21, 2014, and EPA submitted comments on the draft Plan on October 31, 2014. The City will work with EPA and Ecology to ensure their comments are addressed in the Final Plan.

Following the release of the Final EIS, the City will identify a recommended LTCP option and recommended Plan Alternative. The City also will continue to implement a public process and outreach to solicit input from the public and other stakeholders during the Plan adoption process. Throughout the spring of 2015, the City Council will review and hold Council hearings and meetings (open to the public) to discuss the Plan. After Plan adoption in May 2015, the Final Plan will be submitted to EPA and Ecology for approval. The Final Plan is anticipated to be approved by EPA and Ecology in late summer 2015, and Plan implementation would commence in late 2015 or early 2016.



## 1.3 Plan Alternatives and Updates

### 1.3.1 What changes have occurred since release of the Draft EIS?

Since the release of the Draft EIS, the City has been actively engaged in developing refinements to the planning, early design, and scheduling of the LTCP, and has continued to collaborate with King County on shared LTCP options under the LTCP Alternative. As a result of continued collaboration, one of the options under the LTCP Alternative – the Shared West Ship Canal Tunnel Option – has been modified to include flows from an additional King County CSO area (11th Avenue Northwest). In order to accommodate these additional flows, the diameter of the potential Shared West Ship Canal Tunnel has increased from 13 feet to 14 feet, but could increase to a range of 15 to 18 feet depending on future project design. A diameter of 14 feet was used as the basis for analysis in the Draft and Final EIS, however, a larger diameter tunnel (15 to 18 feet) would have the same type and similar magnitude of impacts as described in the Final EIS.

These changes would allow both the City and King County to be more cost-effective, produce better community outcomes, and minimize disruption to communities from implementing each agency's CSO control projects. Other changes since the Draft EIS are a result of continued modeling. These include a potential new flow diversion line from King County's 3rd3rd Avenue West CSO area on the south side of the Ship Canal to the tunnel on the north side of the Ship Canal (under the Shared West Ship Canal Tunnel Option) and updates to a project included under the No Action Alternative (Henderson 49). These changes are further described in Section 1.1.6, and potential impacts of these changes are incorporated in the impacts summary discussions in Section 1.4 and Tables 1-3 and 1-4. These changes to the projects result in changes to impacts in transportation and land use.

As part of continued planning and feasibility studies, measures for reducing construction truck trips have been further defined in Ship Canal Neighborhoods, including options for barge and/or rail transport of equipment and materials. Information on these potential measures is included in Table 1-3, under Transportation.

Otherwise, all other aspects of the affected environment and potential impacts associated with implementing the Plan are as addressed in the Draft EIS. Some sections of the Draft EIS are included in this chapter, to provide context for the changes that have been made.

### 1.3.2 What is included in the LTCP Alternative?

Section 3.2 of the Draft EIS includes a detailed description of the LTCP Alternative, which is summarized below. The LTCP Alternative uses a combination of traditional storage facilities and sewer system improvements to reduce CSOs in 11 CSO areas throughout Seattle. For the purpose of this EIS, CSO areas within the City's service area have been grouped into what are referred to as "neighborhoods". In *Volume 2, LTCP* these are referred to as CSO areas only. Figure 1-1 illustrates the neighborhoods relative to designated CSO areas and outfalls. The LTCP also explores opportunities to partner with King County on collaborative projects to control both agencies' CSOs. These Plan area neighborhoods include:

- **Ship Canal Neighborhoods**—Ballard, Fremont/Wallingford, Magnolia;
- **Lake Washington Neighborhoods**—North Union Bay, Portage Bay, Montlake, and Leschi
- **Longfellow Creek/Duwamish Neighborhoods**—Delridge, Duwamish, and East Waterway; and
- **Elliott Bay/Lake Union Neighborhoods**—Central Waterfront.

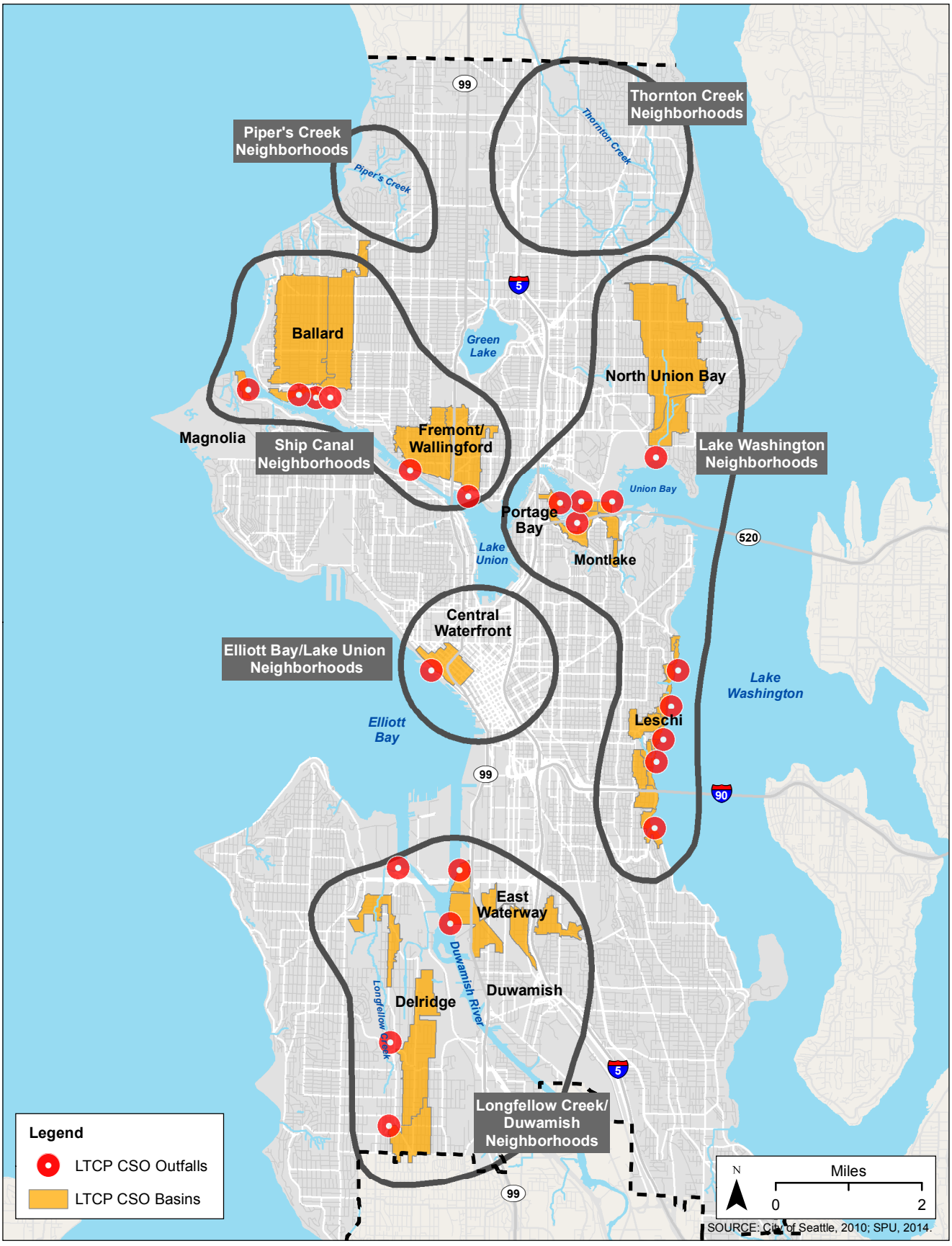



*Figure 1-1 Plan Area Neighborhoods*

### 1.3.3 What are the options for implementing the LTCP Alternative?

As described in Chapter 3 of the Draft EIS, there are four potential combinations of storage facilities, referred to as "options," that could meet U.S. Environmental Protection Agency (EPA) requirements for an LTCP that are evaluated in this EIS. These options were developed under one of two basic concepts: the City meets its Consent Decree-mandated control requirements through implementation of independent (City only) control projects, or the City participates in one or more shared projects with King County to take advantage of potential cost/impact reduction opportunities. These options vary in terms of the number, size, and potential location of storage facilities considered. The four LTCP options are:

- Neighborhood Storage Option (City only implementation)
  - Neighborhood Tanks/Pipes
  - Neighborhood West Ship Canal Tunnel
- Shared Storage Option (Shared City/King County implementation)
- Shared West Ship Canal Tunnel Option (Shared City/King County implementation)
- Shared Ship Canal Tunnel Option (Shared City/King County implementation)

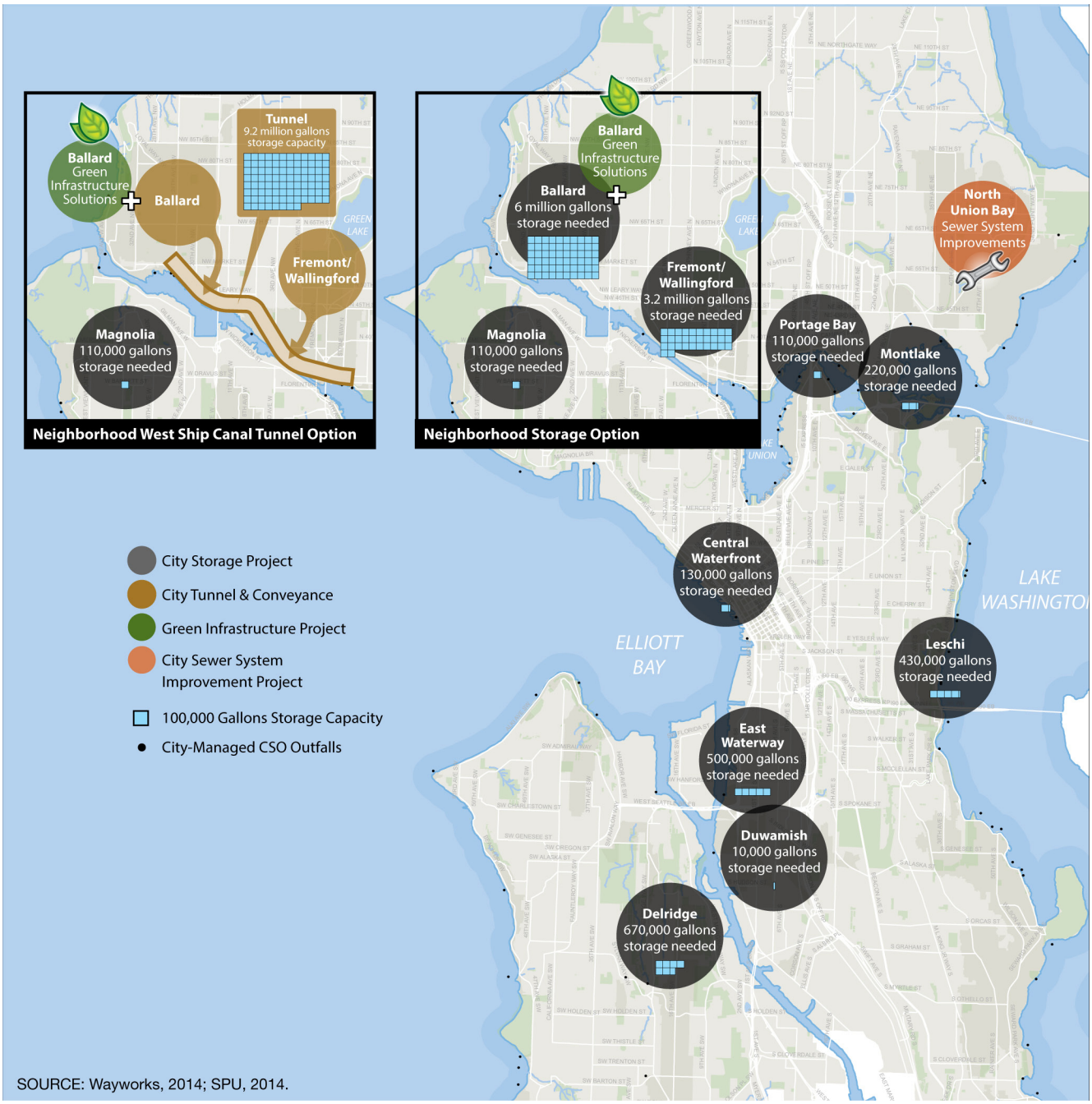


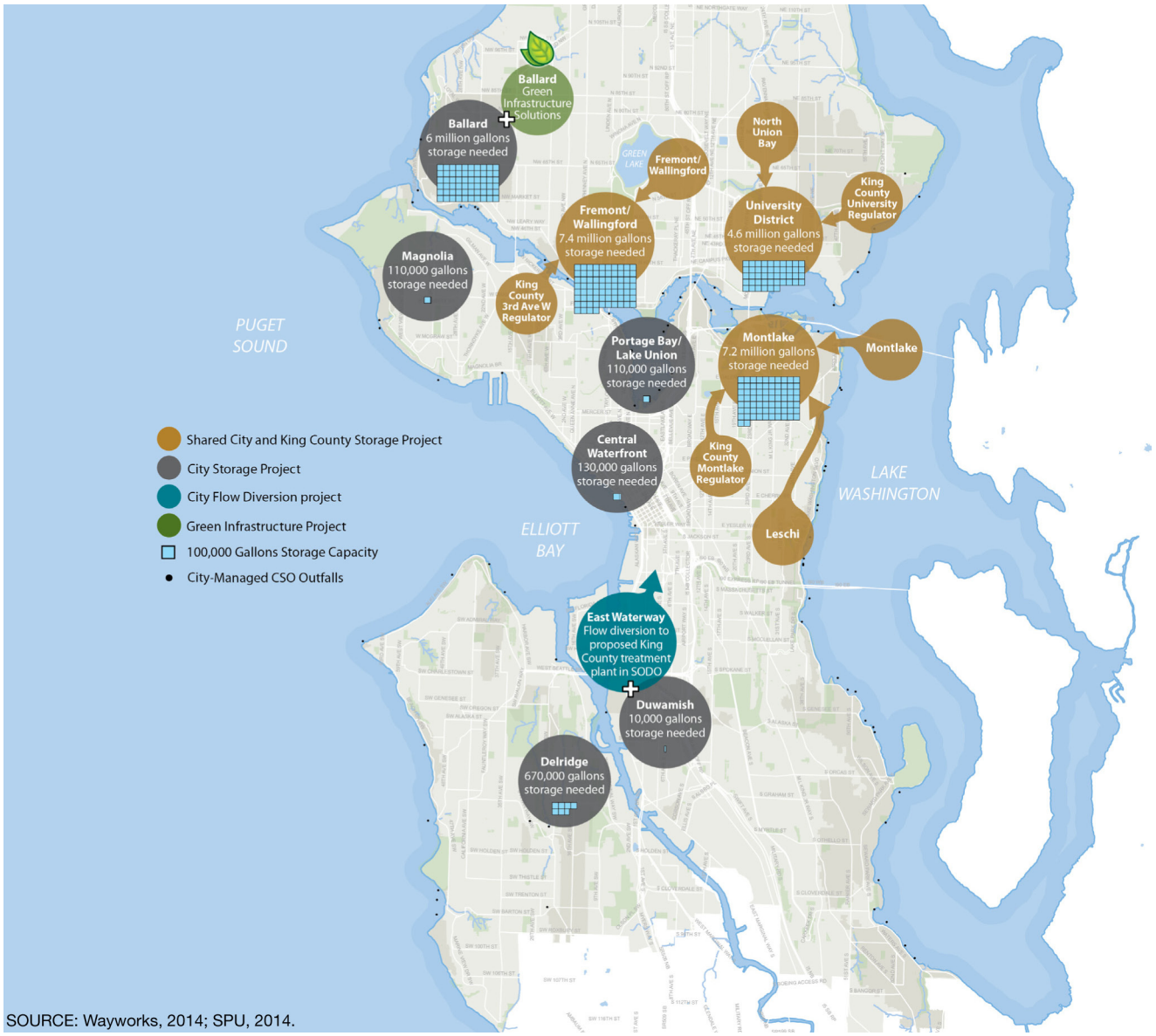

***Figure 1-2. Neighborhood Storage Option***

Under the **Neighborhood Storage Option**, the City would build underground storage facilities in Ballard, Fremont/Wallingford, Magnolia, Portage Bay, Montlake, Leschi, Central Waterfront, Duwamish, Delridge, and East Waterway CSO areas, and sewer system improvements in the North Union Bay CSO area. This option involves building the largest number of storage facilities throughout the city.

There are two variations in the Neighborhood Storage Option: one would provide storage in tanks/pipes only, and the other would include a tunnel (Neighborhood West Ship Canal Tunnel) in combination with tanks and pipes. The storage tank/pipe option involves the greatest number of affected locations. The Neighborhood West Ship Canal

Tunnel Option was developed because the two CSO areas with the largest storage volumes (Ballard and Fremont/Wallingford) are relatively close to one another. The Neighborhood West Ship Canal Tunnel Option likely reduces the number of facilities and neighborhood impacts.

Implementation of the North Union Bay sewer system improvements will require City coordination with King County because additional flows will be transferred to the King County system. Specifically, the City and King County will need to analyze the impacts of the proposed project on the downstream system and agree on an approach to address those impacts.




SOURCE: Wayworks, 2014; SPU, 2014.

***Figure 1-3. Shared Storage Option***

Under the **Shared Storage Option**, the City and King County would jointly build larger but fewer storage tanks in three CSO areas: Fremont/Wallingford/King County 3rd Avenue West; North Union Bay/King County University Regulator; and Montlake/Leschi/King County Montlake Regulator. These three shared storage projects were recommended in the approved 2012 King County CSO plan. In the Duwamish CSO area, the City would divert flows to a treatment facility proposed by King County. All other CSO areas would have the same storage facilities as proposed under the Neighborhood Storage Option.

Prior to implementing any shared projects between the City and King County, a shared project agreement would need to be signed between the two agencies. Specifically, the City and King County would need to analyze the impacts of the proposed project on the downstream system and agree on an approach to address those impacts.

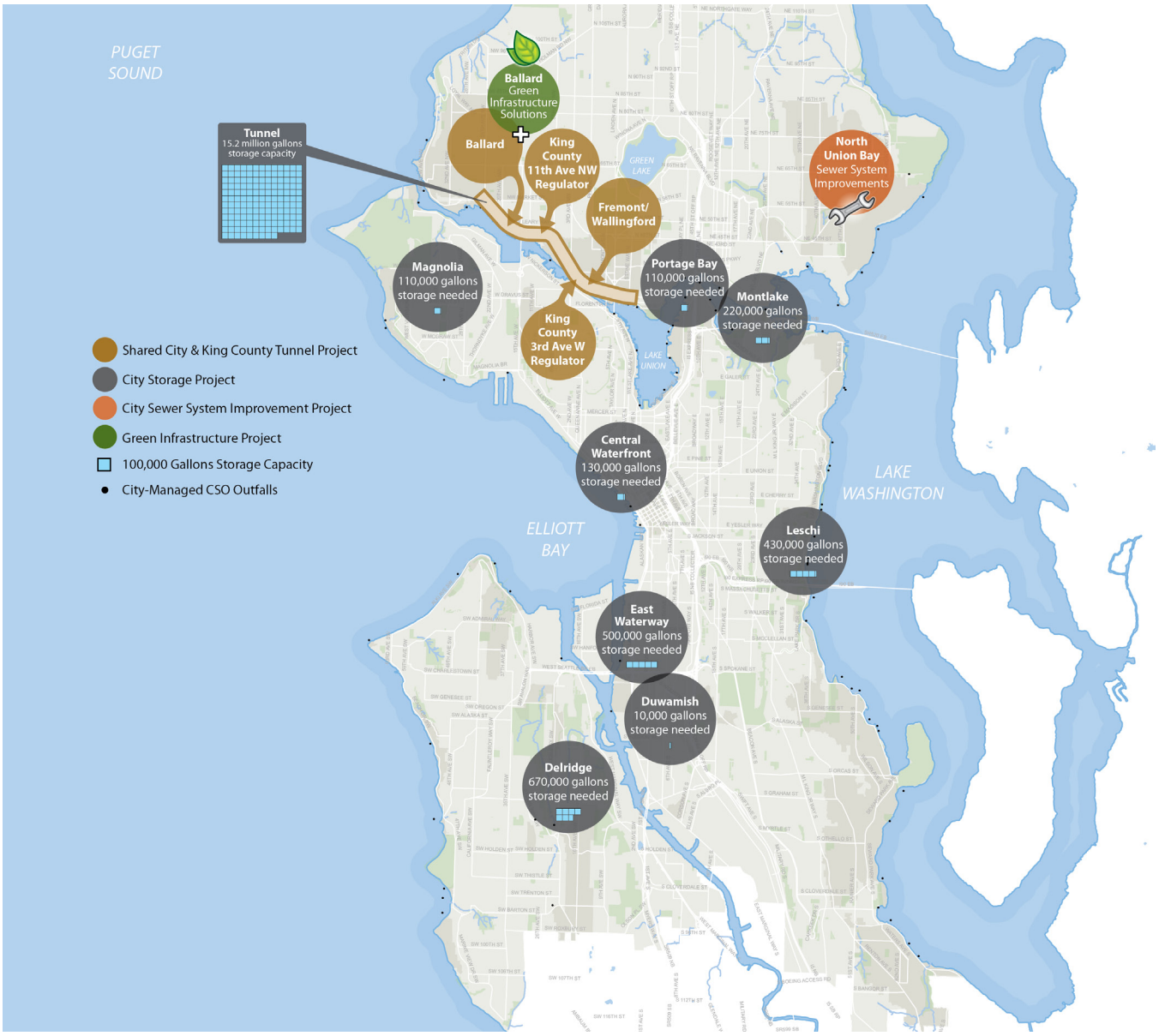
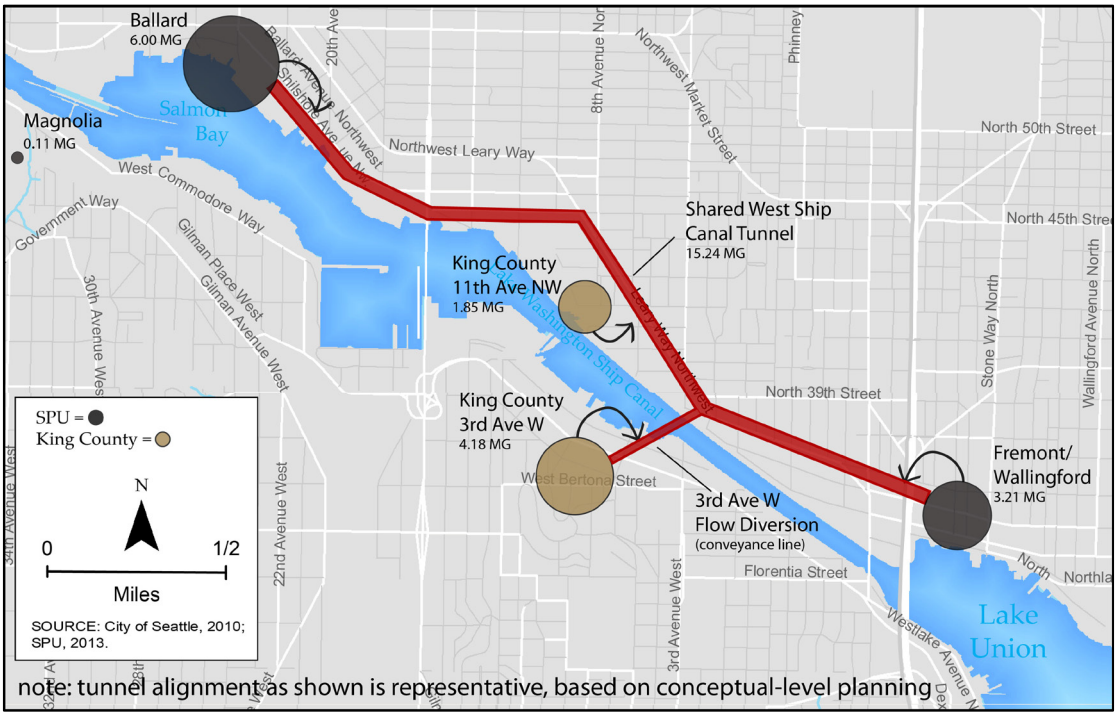



***Figure 1-4. Shared West Ship Canal Tunnel Option***

The **Shared West Ship Canal Tunnel Option** combines four of the largest CSO areas into a single deep tunnel. The West Ship Canal Tunnel is proposed as a shared option because the four CSO areas (two from the City and two from King County) with the largest control volumes are relatively close to one another. The tunnel would extend from Fremont/Wallingford to Ballard and would provide the storage needed to address sewage overflows in Ballard, Fremont/Wallingford, and King County's 3rd Avenue West and 11th Avenue Northwest CSO areas. The tunnel would replace the need for separate King County CSO projects at outfalls near 3rd Avenue West and 11th Avenue Northwest. Prior to implementing any shared projects between the City and King County, a shared project agreement would need to be signed between the two agencies as noted above. Within this option, the remaining CSO areas would be controlled by their respective neighborhood control measures.

**What has changed since the Draft EIS?**

Since the Draft EIS, the **Shared West Ship Canal Tunnel Option** has been modified to include flows from King County's 11th Avenue Northwest CSO area. These flows would be in addition to flows from King County's 3rd Avenue West CSO area, described in the Draft EIS. While the conceptual tunnel alignment described in the Draft EIS does not change with the addition of the 11th Avenue Northwest CSO area, a slightly larger diameter tunnel would be required to accommodate the additional flows (14 feet instead of 13 feet). The diameter could increase to a range of 15 to 18 feet, depending on final project design. Additional conveyance and connection components also would be required to accommodate the flows from both King County's 3rd Avenue West and 11th Avenue Northwest CSO areas. Conveyance to divert flow from near the 3rd Avenue West CSO site to the Shared West Ship Canal Tunnel would include a trenchless installation of a flow diversion line (conveyance line) from the south side of the Ship Canal to the tunnel on the north side of the Ship Canal. In addition, drop shafts would be needed to transfer flow from the 3rd Avenue West and 11th Avenue Northwest CSO areas to the tunnel. These two drop shafts would be in addition to the two drop shafts described in the Draft EIS for transferring Ballard and Fremont/Wallingford flows to the tunnel (to be located at the west and east tunnel portals). The 3rd Avenue West and 11th Avenue Northwest drop shafts would likely be offset from the tunnel to enable the structures to be constructed out of the road right-of-way to minimize impacts.




note: tunnel alignment as shown is representative, based on conceptual-level planning

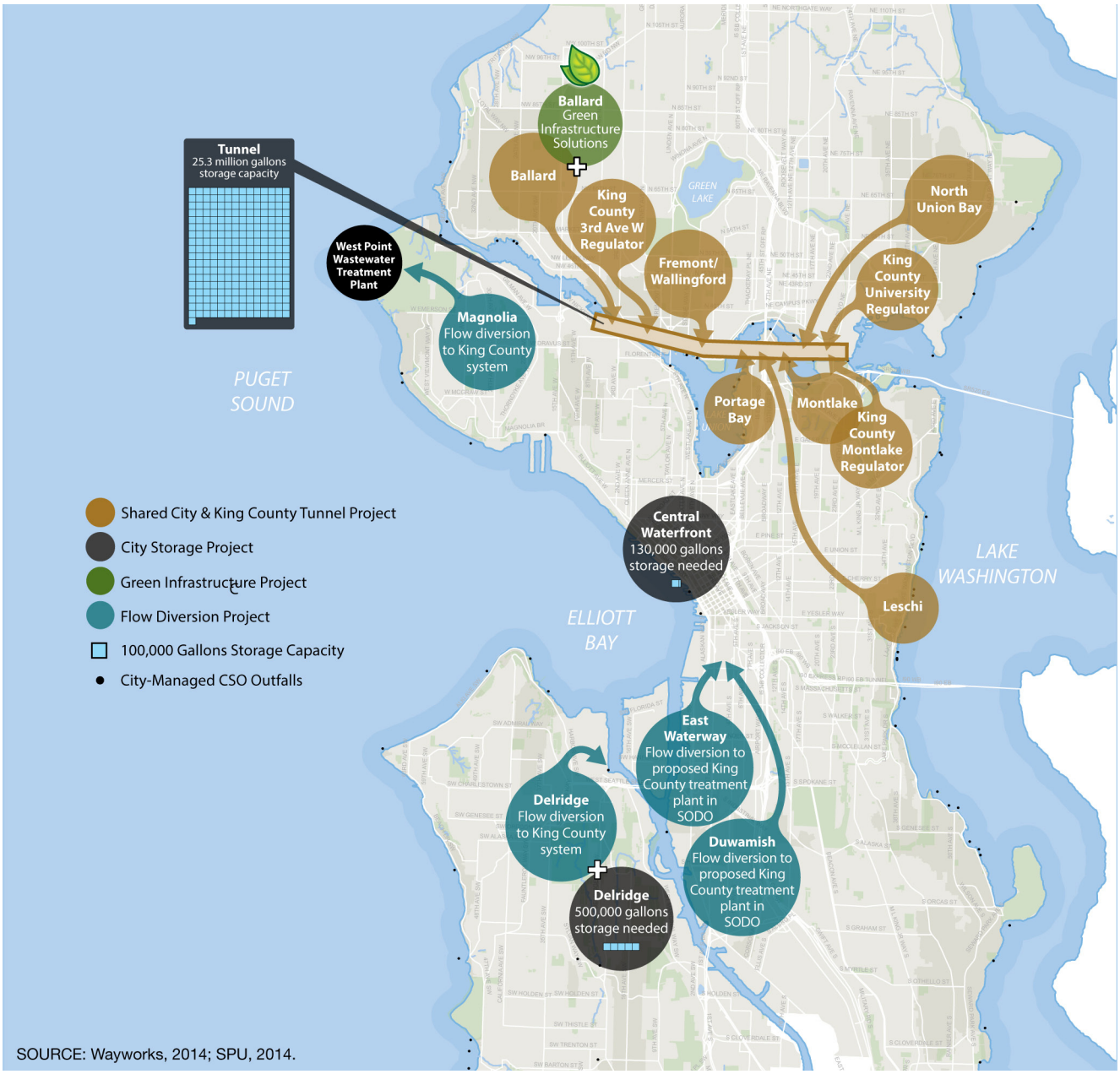



***Figure 1-5. Shared Ship Canal Tunnel Option***

The **Shared Ship Canal Tunnel Option** combines the control volumes from six City CSO areas along the Ship Canal and Lake Washington, and three of the largest King County CSO areas along the Ship Canal in a deep tunnel extending from the University District to Fremont/Wallingford. The tunnel would provide the storage needed to address sewage overflows in the City's CSO areas of Ballard, Fremont/Wallingford, Portage Bay, Montlake, North Union Bay, and Leschi. The tunnel would also replace the need for three separate King County CSO projects at outfalls near Pacific Street (University Regulator), Montlake Avenue (Montlake Regulator), and 3rd Avenue West.

The remaining City CSO areas (Magnolia, Duwamish, East Waterway, and the northernmost Delridge CSO basin) would be diverted to King County under the assumption that flow diversions could be incorporated into mutual

interagency agreements. Prior to implementing any shared projects between the City and King County, a shared project agreement would need to be signed between the two agencies as noted above. The Central Waterfront and the southern Delridge CSO neighborhoods would continue to be served by their respective neighborhood control measures.

Table 1-1 illustrates the total number of CSO storage facilities that would be constructed under the four LTCP options, either by City-only, King County-only, or as shared facilities. As shown in the table, the opportunity to construct shared facilities reduces the total number of facilities constructed by both the City and King County and reduces impacts to the neighborhoods slated for several major storage facilities. More detailed information can be found in *Volume 2, LTCP.*

***Table 1-1. CSO Storage Facilities Constructed under LTCP Options***

| | Neighborhood Storage | | Shared West Ship Canal Tunnel | Shared Ship Canal Tunnel | Shared Storage |
|---|---|---|---|---|---|
| | Neighborhood Tanks/Pipes | Neighborhood West Ship Canal Tunnel | | | |
| City-only CSO Facilities | 18 | 16 | 14 | 3 | 9 |
| King County-only CSO Facilities[1] | 9 | 9 | 7 | 6 | 6 |
| Shared Facilities | | | 1 | 1 | 3 |
| **TOTAL** | **27** | **25** | **22** | **10** | **18** |

[1]King County-only CSO facilities are part of King County's LTCP, and not the City's LTCP

## 1.3.4 How will the City and King County coordinate on CSO projects?

The City recognizes the importance of strong coordination with King County in controlling CSOs in the City. All of the proposed LTCP options have elements which may have an impact on King County's downstream wastewater system. Three of the proposed LTCP options include shared City/King County projects along the Ship Canal. Several of the proposed LTCP options include sewer system improvements which will convey additional wastewater volume to the downstream King County system. Regardless of which LTCP option is selected, coordination between the City and King County is critical to successfully designing, constructing, and eventually operating the proposed CSO control projects in the City.

The City and King County are continuing to work together closely to analyze and recommend LTCP options that are more cost-effective, produce better community outcomes, and minimize disruptions. King County must also reach its own independent conclusions about the benefits of a shared project to the regional system, and the implications of such as project to its own Long Term Control Plan and Consent Decree. Selection of a shared City/King County project will be dependent on the City's and County's analytical results as well as a number of joint factors mutually agreed upon in a City/County Coordination Plan. These factors include such things as which agency will be responsible for the design/construction/operations of the shared facility, each agency's project cost-share, operational and implementation roles and responsibilities, the process for dispute resolution, and the ability to fulfil regulatory and contractual obligations. If the City and King County choose to implement a shared

City/King County project, then a shared project agreement between the two agencies will be necessary prior to designing and constructing the project. In addition, the City and King County will analyze the impacts of any recommended project on the downstream King County system and agree on an approach to addressing those impacts prior to constructing the project.

### 1.3.5 What is included in the Integrated Plan Alternative?

Under the Integrated Plan Alternative, the City would implement three stormwater control programs/projects in Seattle neighborhoods to address stormwater runoff in areas that are not part of the combined sewer system, using a combination of stormwater treatment technologies. These programs/projects include:

- Natural Drainage System (NDS) Partnering
- Arterial Street Sweeping Expansion
- South Park Water Quality Facility

These three programs/projects would collectively reduce stormwater pollutant loads discharging into the following waterways: Duwamish Waterway, Lake Washington, Piper's Creek, Thornton Creek, Longfellow Creek, and Lake Union/Ship Canal. The City is focusing stormwater control projects in these areas to meet the Integrated Plan objectives established by the Consent Decree.

Under the Integrated Plan Alternative, the City would still build CSO reduction projects using one of the four LTCP options outlined above. However, the City would delay the completion of some of the CSO control projects until after 2025, to allow earlier completion of high-benefit stormwater treatment technology projects. Six CSO projects to control discharges into the lower Duwamish, Portage Bay and Ship Canal waterways would be delayed until after 2025. In keeping with the Consent Decree, the three stormwater control programs/projects would provide significant benefits to water quality beyond those that would be achieved by implementing the CSO control projects alone. Figure 1-6 shows the proposed stormwater control programs/project locations and the CSO control projects that would be deferred under this alternative.

The stormwater control programs/projects are summarized below. Comments from EPA and Ecology will be addressed in the final Integrated Plan, which will be submitted to EPA and Ecology following adoption by the City Council.

#### 1.3.5.1 NDS Partnering

Natural Drainage System (NDS) Partnering, a flow control and stormwater treatment best management practice (BMP), involves using natural drainage systems, such as engineered rain gardens within various basins that drain to Piper's, Thornton, and Longfellow Creeks. Piper's Creek ultimately discharges to Puget Sound; Thornton Creek discharges to Lake Washington; and Longfellow Creek discharges to the Duwamish River and then into Puget Sound.

Projects implemented under this program would involve reconstructing City rights-of-way to manage flow and provide water quality treatment for polluted urban runoff, primarily using bioretention facilities such as engineered rain gardens. Project locations would be identified by site factors and a community-nomination process. Projects would be designed to infiltrate into native soil where appropriate. Where complete reliance on infiltration is not technically feasible, systems would be augmented with underdrains.

Project locations would be prioritized based on stormwater management goals; however, community partnering goals (mobility, traffic calming, and beautification) would also be accomplished as a secondary benefit. As a first step to NDS Partnering, the City would develop a program for encouraging residents or community groups to nominate their block(s) as a candidate for NDS. Candidate blocks must be among the blocks identified by the City as potentially feasible for bioretention; the majority of these blocks are part of informal drainage systems (i.e., lacking curbs and gutters). If the Integrated Plan Alternative is selected, NDS Partnering would be implemented in multiple phases.

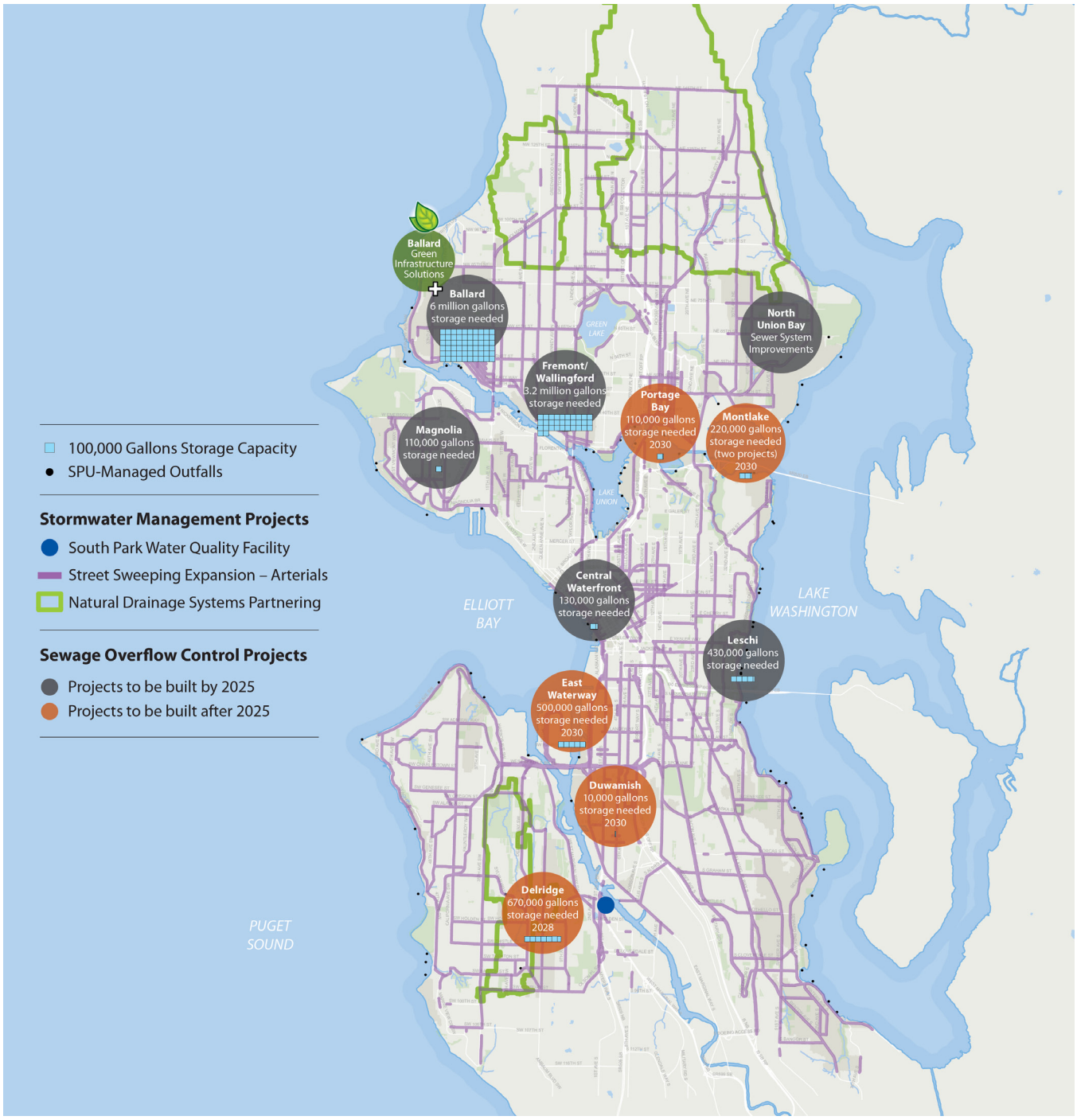



***Figure 1-6. Integrated Plan Alternative***

#### 1.3.5.2 Arterial Street Sweeping Expansion (Weekly Arterial Sweeping)

Street sweeping, a source control BMP, removes pollutants from roadways before they wash off into sewers and local waterways.

The City would expand its existing arterial street sweeping programs by adding new routes, increasing the frequency of sweeps, and employing new technologies. The arterial sweeping project would be expandable and adaptable to meet future needs.

The proposed program expansion would:

- Increase the route coverage from 83 to approximately 85 percent of curbed arterials (for a total 10,600 annual curb-miles), by adding one route, for a total of 25 routes.
- Increase the sweeping season from 40 to 48 weeks per year.
- Increase the sweeping frequency from biweekly to weekly for some routes: 21 routes will be swept on a weekly basis and four routes will be swept on a biweekly basis.

Because most existing development and roadways in the city were constructed before stormwater controls were required, runoff from many areas discharges directly to receiving waters without treatment. Retrofitting these existing systems to improve stormwater quality is often difficult and in many cases, retrofitting is not feasible due to physical site constraints (e.g., utility conflicts, grade restrictions, and tidal influence). Street sweeping can provide effective pollutant load reductions in areas where retrofitting is impractical.

#### 1.3.5.3 South Park Water Quality Facility

The South Park Water Quality Facility would treat stormwater prior to discharge into the Duwamish Waterway. The end-of-pipe facility would treat approximately 89 million gallons (MG) of stormwater runoff from the 7$^{th}$ Avenue South drainage system, which encompasses approximately 250 acres. The City identified the South Park location as a high priority for stormwater pollutant reduction because of the sensitivity of the Duwamish Waterway. The facility would be built in the same location as a new stormwater pump station the City plans to build to reduce flooding in this same area, creating an opportunity to leverage water quality and flood control projects.

Stormwater would be routed through a basic, active treatment system, such as chitosan-enhanced sand filtration (CESF), prior to discharge to the Lower Duwamish Waterway through an existing outfall.

### 1.3.6 What is included in the No Action Alternative?

Under the No Action Alternative, substantial progress will be made in controlling CSOs through implementation of previously planned CSO control projects. These projects include those identified in the City's wastewater NPDES Permit (WA0031682), those identified in the 2010-2015 Implementation Plan for the *2010 CSO Reduction Plan Amendment* (2010 Plan Amendment), and 'Early Action' projects identified by Consent Decree in the Henderson CSO basin. These projects are scheduled for implementation, and they will occur regardless of whether the Plan is implemented. Many of these projects have already undergone project-level evaluations in accordance with the City's Environmental Policies and Procedures (SMC 25.05). Others will undergo project-level evaluations as planning progresses.

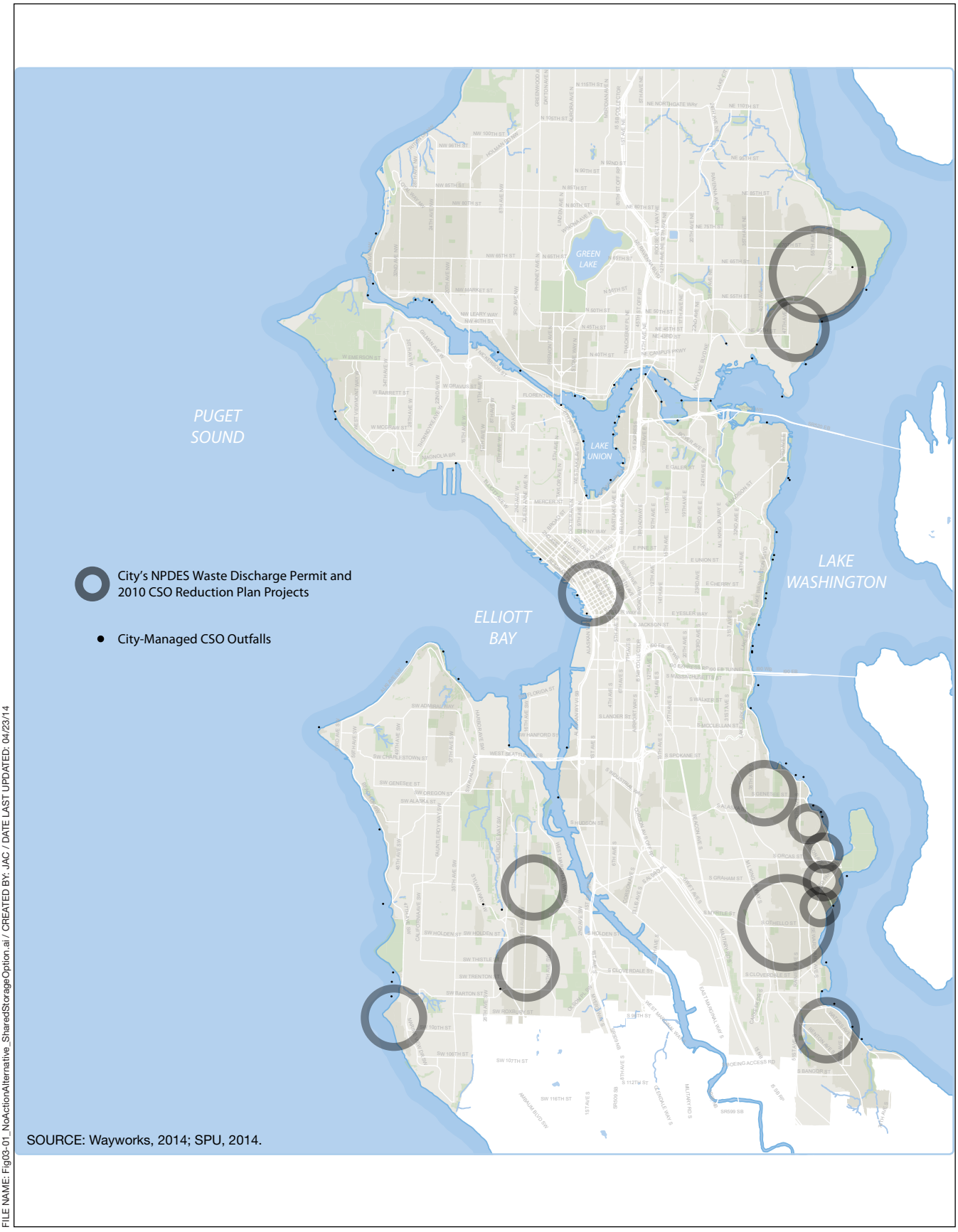
The City would also continue to implement a portion of two of its CSO reduction strategies, combined sewer system improvements and natural drainage systems (referred to as green infrastructure in the LTCP). However,

the City would not implement any additional CSO reduction or stormwater control projects beyond those that are currently slated for implementation.

Combined sewer system improvements and natural drainage systems alone will not be sufficient to reduce the volume and frequency of CSOs to meet federal and state regulations. If the City does not make additional improvements in the remaining uncontrolled basins addressed by the Plan, untreated sewage and stormwater in excess of current regulations would continue to be illegally discharged into Lake Washington, the Lake Washington Ship Canal, the Duwamish River, and Puget Sound when the capacity of the existing combined sewer systems is exceeded. Under the No Action Alternative, the City would not be in compliance with the Consent Decree.

Previously, a flow diversion project was planned for Henderson South CSO Basin 49 (Henderson 49). Based upon the results of additional modeling, the estimated total control volume to control Henderson 49 is significantly higher than modeling previously estimated. As a result, a storage project has now been identified for Henderson 49. The project includes a storage facility with a volume of up to 0.83 million gallons, which is planned for a City-owned property on Rainier Avenue at the site of an abandoned City wastewater facility. CSO flow stored in the storage facility will be conveyed to an adjacent King County interceptor after a CSO event. This project is now considered as part of the 2010 Plan Amendment Projects and not an 'Early Action' project as described in the Draft EIS. The schedule for completion has also changed from what was described in the Draft EIS. Construction of the storage project is now anticipated to be complete in 2023 instead of 2018 as described in the Draft EIS.

The current and ongoing combined sewer system improvements, natural drainage, and storage projects included in the No Action Alternative are described in more detail in Section 3.1 of the Draft EIS. Locations of No Action projects are shown on Figure 1-7.




FILE NAME: Fig03-01_NoActionAlternative_SharedStorageOption.ai / CREATED BY: JAC / DATE LAST UPDATED: 04/23/14

***Figure 1-7. No Action Alternative Project Locations.***

| *Table 1-2. No Action Alternative Storage Projects* | | |
|---|---|---|
| **CSO Basin/ Basin #** | **Project Description** | **Estimated Completion Date** |
| **Windermere** | | |
| 13 | Storage tank in Magnusson Park | 2015 |
| **Genesee** | | |
| 40/41 | Storage tank at 49th Avenue South and Lake Washington Boulevard | 2015 |
| 43 | Storage tank at 53rd Avenue South and Lake Washington Boulevard | 2015 |
| **Central Waterfront** | | |
| 70, 71, 72 | Increased conveyance to King County Elliott Bay Interceptor and storage | 2018-2020 |
| **Henderson North** | | |
| 44, 45 | Storage tank in Seward Park | 2018 |
| **Henderson South** | | |
| 46, 47, 171<br>49 | Flow diversion project | 2015<br>2025 |

## 1.4 Impacts and Mitigation

This section provides a summary of impacts and the measures the City would take to help reduce or minimize potential impacts associated with the LTCP, Integrated Plan, and No Action Alternatives. These impacts and measures are described in detail in the Draft EIS, which also describes the basis for analysis of impacts. Additional discussion of impacts is provided in the Final EIS for changes that have occurred since the Draft EIS issuance (see Section 1.3.1, "*What changes have occurred since release of the Draft EIS?").*

The LTCP options include projects that would be implemented by the City independently, as well as projects that would be implemented jointly with King County. In addition to these options, King County is considering projects that would be implemented independently from the City. This EIS identifies those independent King County projects, but does not analyze them. As described below under "*How do cumulative impacts compare among alternatives*?", constructing independent King County projects would add to overall cumulative impacts associated with the LTCP and Integrated Plan Alternatives.

This EIS programmatically addresses the impacts from independent City and shared City/King County projects. King County will address its independent projects separately, in accordance with its SEPA requirements. All projects implemented by both the City and King County will receive the appropriate project-level evaluation under SEPA.

### 1.4.1 What are the potential construction impacts?

Table 1-3 summarizes the identified potential construction impacts, as well as measures that the City would take to help reduce or minimize potential impacts associated with the LTCP, Integrated Plan, and No Action Alternatives. Those components that do not involve construction, such as street sweeping, are not included in the discussion.

The identified potential construction impacts remain largely unchanged from what was described in the Draft EIS. The changes described for the Shared West Ship Canal Tunnel Option and the updates to the No Action Alternative do not modify the primary characteristics of the Plan alternatives evaluated in the Draft EIS. Impacts of the revised Shared West Ship Canal Tunnel Option are of similar magnitude to the impacts identified in the Draft EIS and are within the range of impacts of other alternatives evaluated in the Draft EIS; none result in different conclusions with regard to significance of the impacts. The updates to the No Action Alternative modify the characteristics of one CSO control project, but do not modify the primary characteristics and impacts of this alternative. The changes would not change the analysis of impacts presented in the Draft EIS.

### 1.4.2 What are the potential long term effects?

Table 1-4 summarizes the identified potential long term, operational impacts associated with the LTCP, Integrated Plan, and No Action Alternatives, as well as measures that the City would take to help reduce or minimize potential impacts.

As described above, this EIS addresses the impacts from City projects constructed independently or jointly with King County. Independent King County projects will be addressed by the County, in accordance with their SEPA requirements.

The identified potential operational impacts remain largely unchanged from what was described in the Draft EIS. Impacts resulting from the revised Shared West Ship Canal Tunnel Option and the updated No Action Alternative are of the same or similar magnitude to the impacts identified in the Draft EIS; none result in different conclusions with regard to significance of the impacts. The changes would not change the analysis of impacts presented in the Draft EIS.

### 1.4.3 Are there significant impacts that cannot be mitigated?

Implementation of the Plan would involve a wide range of short term impacts associated with the construction of numerous large infrastructure projects. Depending upon the size, location, and type of project, these impacts would include potentially substantial traffic impacts, including temporary road closures and traffic detours. Other construction-related impacts of potential significance include increases in noise and dust that could last from approximately one to seven years and potential disruptions of access to business, residential, or recreational facilities. These impacts, however, are expected to be reduced by compliance with all applicable regulations and permit requirements and as such would not be considered significant impacts under SEPA.

There are no significant long term or operational impacts associated with implementation of the Plan alternatives that cannot be mitigated. Implementation of the No Action Alternative would result in potentially significant long term adverse impacts to water quality and aquatic habitat in the Plan area, as well as non-compliance with the Consent Decree.

### 1.4.4 Are there areas of controversy?

As with all major infrastructure projects, there are difficult decisions associated with implementation of the Plan. Compliance with the federal Consent Decree (between the City, U.S. Department of Justice, EPA, and Ecology) will require a significant commitment of funding to construct major water quality control projects and programs. There may be concern that the commitment of funding for these projects would limit the City's ability to fund other water and non-water quality projects. The Consent Decree includes a date of 2025 for completion of the LTCP, which limits the City's flexibility in compliance with this legal requirement. However, there are likely to be questions from stakeholders about the LTCP and the Integrated Plan regarding prioritization of projects, tradeoffs, and coordination with other CSO and/or water quality managers in the region, particularly King County. The timing of project implementation is a potential concern, and a wide range of viewpoints can be expected. Deferral of six CSO control projects in the Duwamish, Portage Bay, and Ship Canal waterways may be controversial with some stakeholders.

Construction of storage projects in a highly developed city where limited undeveloped land is available will result in difficult siting decisions that could require short term or permanent impacts to existing land uses, including the potential for impacts to parks or recreational facilities, private properties, or community facilities. Construction-related traffic impacts will be of considerable concern to affected residents, business owners, travelers, and commuters. Depending upon the alternative implemented, some neighborhoods that have been the locations for previous major construction projects would experience construction-related impacts. The City will follow its policies regarding the siting of underground storage facilities, which gives preference for City-owned or other public property and rights of way, but there will likely be controversy as individual sites are identified.

### 1.4.5 How do cumulative impacts compare among the alternatives?

Cumulative impacts are those that could result from the combination of individual effects of multiple actions (projects) over time. Plan elements could be constructed in areas that may have recently been subject to large-scale construction projects or will be subject to construction of future planned projects. In addition, there is a potential for construction resulting from Plan implementation to coincide with the construction of other projects.

Other projects that could occur in the same neighborhoods or coincide with implementation of the LTCP include CSO control projects being constructed by the City and King County. King County's 2012 CSO Control Plan identifies several CSO control projects that would be located within LTCP neighborhoods, including one each in the North Union Bay, Montlake, and Fremont/Wallingford neighborhoods and five in the Longfellow Creek/Duwamish Neighborhoods. Other major construction projects that could be under construction simultaneously with LTCP CSO control projects include the Sound Transit U-Link Extension (to be completed in 2016), Lynnwood Link Extension (construction in 2018-2023), East Link Extension (construction in 2015-2021), Waterfront Project (Elliott Bay Seawall and Waterfront Seattle Core projects), the Alaskan Way Viaduct Replacement Project, WSDOT's SR-509 and SR-167 project, Colman Ferry Dock Replacement, Denny Way Substation and other new or expanded Seattle City Light substations throughout the City, City of Seattle capital projects, and roadway and transit improvements. These projects, in addition to numerous large-scale private developments located throughout the Plan area, will likely result in cumulative impacts to traffic, noise and dust that will present inconveniences and varying levels of annoyance to the local population.

In terms of the LTCP options, the **Neighborhood Storage Option** has the potential for construction-related cumulative impacts that would affect the broadest area, because it involves construction of the largest number of storage tanks and storage pipes in neighborhoods throughout the city. While many of these projects would be

constructed within public rights-of-way, there would be construction-related traffic, road closures and/or traffic constraints, dust, odor, and other short term impacts that would last between one and five years. Many of these neighborhoods have been the location of major construction projects such as the SR 520 bridge, major roadway renovations, and large scale residential/commercial building, creating a high level of "construction fatigue". In addition to the projects constructed by the City, King County would construct additional storage tanks and storage pipes in the Fremont/Wallingford, Montlake, and North Union Bay neighborhoods, adding to the construction-related impacts in those neighborhoods, including potential impacts to earth, air, noise, surface water, biological resources, land use, and transportation. This option would result in the highest potential for cumulative impacts resulting from construction of City and King County CSO projects.

The **Shared Storage Option** would affect fewer neighborhoods than the Neighborhood Storage Option because certain CSO control projects would be shared by the City and King County. The potential for cumulative impacts would be the same as under the Neighborhood Storage Option for the Longfellow Creek/Duwamish and Elliott Bay/Lake Union neighborhoods, but would be lower for the Fremont/Wallingford and Lake Washington neighborhoods because of the overall lower number of projects between the City and King County in those neighborhoods.

The **Shared West Ship Canal Tunnel Option** would have a lower potential for construction-related cumulative impacts than both the Neighborhood Storage Option and the Shared Storage Option in terms of neighborhoods affected by storage facility construction. This option would replace two independent City CSO control projects in the Ballard and Fremont/Wallingford areas, and two independent King County CSO control projects at 3rd Avenue West in the Queen Anne area and 11th Avenue Northwest in Fremont with a single, large tunnel. It would reduce impacts to these neighborhoods associated with construction of separate CSO storage facilities, but it would require a longer duration construction period (3.5 years or more) and would create potentially more intense impacts at the tunnel launch portal, likely located along the Ship Canal in Ballard. Impacts would be experienced to a lesser extent at the recovery portal and drop shafts for King County 3rd Avenue West and 11th Avenue Northwest CSO areas, which would likely be located in or near the Fremont neighborhood. In addition, a new flow diversion (conveyance line) would introduce construction impacts near the 3rd Avenue West CSO area on the south side of the Ship Canal. As under the Neighborhood Storage Option, both the City and King County would be pursuing multiple storage projects in the Longfellow Creek/Duwamish neighborhoods.

The **Shared Ship Canal Tunnel Option** would have the lowest potential for construction-related cumulative impacts in terms of neighborhoods affected, because it would substantially reduce the number of storage facilities located throughout the city constructed by the City and King County. However, impacts would be concentrated for up to seven years at the portals. The tunnel launch portal would likely be located on the south side of the Ship Canal and the recovery portal would likely be located in the North Union Bay neighborhood. These neighborhoods have had, or will have, several large-scale projects constructed in recent years, including the renovation of Husky Stadium, Sound Transit U-Link Extension, and the SR 520 project, and have expressed concerns about additional large scale construction in their neighborhoods.

Implementing the **Integrated Plan Alternative** would not represent a substantive increase in cumulative impacts. The expansion of street sweeping on City arterials would not affect overnight parking and NDS Partnering would have minimal short-term construction-related and long-term impacts. Construction of the South Park Water Quality Facility would not result in extensive construction-related impacts. The facility is expected to be sited in an area with compatible land use, with a low potential to cause long term changes in use. Under the Integrated Plan Alternative, construction of LTCP projects would be delayed in some neighborhoods, potentially resulting in reduced or increased cumulative impacts depending on the neighborhood and project schedules.

The City would coordinate construction sequencing with other major planned projects to minimize the potential for cumulative impacts, but it is likely that some level of cumulative impact is unavoidable. Given the number of proposed projects throughout the City, it will be difficult to avoid overlapping with other construction projects in some areas. Close coordination with King County will be particularly key for all options to coordinate construction schedules. In addition, it will be important to coordinate with Seattle Department of Transportation (SDOT), Washington Department of Transportation (WSDOT), and other major utilities in the area.

Impacts of independent King County CSO control projects will be evaluated separately by King County in accordance with their SEPA requirements.

Tables 1-3 and 1-4 respectively summarize the construction and operation impacts associated with the LTCP, Integrated Plan, and No Action Alternatives. Impacts are summarized for City projects or projects shared by the City and King County; King County will evaluate impacts associated with their proposed facility in accordance with SEPA, as appropriate. These impacts and the basis for conclusions are described in detail in the Draft EIS.

| *Table 1-3. Summary of Construction Impacts* | | |
|---|---|---|
| **Earth and Groundwater** | | |
| Long Term Control Plan Alternative | Key Findings | Construction activities and equipment have the potential to cause temporary impacts to earth and groundwater during construction of major projects involving substantial excavation, trenching, or tunneling and removal of large quantities of soil. Any areas that are disturbed during construction would be subject to increased erosion, and control measures would be required. Ground settlement from dewatering could cause settlement of nearby structures, roadways, and utilities. Vibration associated with tunneling operations could result in soil settlement along tunneling alignments.<br><br>The primary differences in potential effects of the LTCP options are related to the amount of surface disturbance and excavation potentially required. |
| | Neighborhood Storage Option | *Neighborhood (Tanks/Pipes):* Overall, this option has the second highest amount of surface disturbance for construction. Any areas that are disturbed during construction would be subject to increased erosion, and control measures would be required. Storage tanks constructed in the Ballard, Fremont/Wallingford, and East Waterway neighborhoods would require the most surface disturbance. Storage pipes in the Leschi and Delridge neighborhoods might be constructed near steep slopes and known or potential landslide-prone areas. Projects near these zones would be at heightened risk for erosion and slope instability<br><br>Ground settlement from dewatering could cause settlement of nearby structures, roadways, and utilities. Most projects would require significant dewatering.<br><br>Impacts would be most dispersed under this option, which would result in the highest number of storage facilities constructed independently by the City.<br><br>*Neighborhood West Ship Canal Tunnel:* (See Shared West Ship Canal Tunnel Option below – impacts would be similar) |
| | Shared Storage Option | This option would have the highest amount of surface disturbance for construction and second highest amount of excavation. However, the shared tanks would reduce the number of City and King County independently constructed CSO control facilities.<br><br>Impacts would be similar to the Neighborhood Storage Option but would be concentrated in fewer locations. Larger shared storage facilities in Fremont/Wallingford, North Union Bay, and Montlake would require greater amounts of excavation and soil disposal. Construction of the shared storage tank in North Union Bay has increased potential to encounter organic or liquefiable soils, and dewatering has the potential to encounter contaminated groundwater or result in settlement of nearby structures due to the presence of historic landfill deposits and natural organic deposits. |
| | Shared West Ship Canal Tunnel Option | Construction of tunnel portals and movement of the tunnel boring machine could result in vibration and settling. The location of the portals, drop shafts, conveyance lines, and tunnel near liquefiable soils in Fremont, Ballard, and the south side of the Ship Canal could result in soil settling. Geotechnical exploration and testing would be conducted during future project design to identify potential hazards along the tunnel alignment. Impacts from projects in the Lake Washington, Longfellow Creek/Duwamish, and Elliott Bay Neighborhoods would be similar to the Neighborhood Storage Option. Overall impacts would be reduced under this option compared to the Neighborhood Storage Option because the shared tunnel would reduce the number of City and King County independently constructed CSO control facilities. |

| Table 1-3. Summary of Construction Impacts | | |
|---|---|---|
| | Shared Ship Canal Tunnel Option | This option would have the highest amount of excavation and earthwork. The longer tunnel would require additional geotechnical exploration and testing during future project design, and has a greater potential to encounter earth hazards and to result in vibration and settling than the Shared West Ship Canal Tunnel because of its greater length. Impacts from projects in the Longfellow Creek/Duwamish and Elliott Bay Neighborhoods would be similar to the Neighborhood Storage Option. The geographic extent of impacts would be reduced the most under this option because the shared tunnel would result in the fewest number of City and King County independently constructed CSO control facilities. |
| Integrated Plan Alternative | | Construction of storage pipes, tanks, and tunnels under the Integrated Plan Alternative would have the same impacts as under the LTCP Alternative, but construction would be delayed in some neighborhoods. In addition, minor construction-related impacts associated with construction of the South Park Water Quality Facility and its proximity to the Duwamish River would be a potential concern during construction. Depending on the specific site location, the soils at the site location may be susceptible to liquefaction and compaction. The City would take appropriate engineering measures to account for these hazards. Street sweeping does not involve construction, and would therefore not result in any short-term impacts.<br><br>Impacts associated with NDS Partnering would be localized and of short duration, with limited footprint and depth. Individual NDS Partnering projects would be evaluated with respect to geological hazards, would be relatively small in size, and would be conducted with appropriate erosion control measures in place. |
| No Action Alternative | | Projects constructed under ongoing sewer system improvement and NDS programs would generally have a limited footprint and depth, and are unlikely to result in substantial erosion or dewatering. Impacts associated with storage facilities associated with currently planned projects are evaluated in their respective site-specific SEPA evaluations. |
| Measures to reduce or minimize potential impacts | | The City would:<br>• Avoid construction on steep slopes, known and potential landslide zones, and areas with organic or liquefiable soils, where feasible.<br>• Use appropriate shoring during construction.<br>• Use erosion and runoff control measures, including retention of vegetation, replanting, ground cover, etc.<br>• Comply with relevant federal, state, and local critical areas and groundwater requirements.<br>• Dispose of soils at approved disposal sites.<br>• Monitor settlement during dewatering and tunnel construction as appropriate. |

| *Table 1-3. Summary of Construction Impacts* | | |
|---|---|---|
| **Air Quality** | | |
| Long Term Control Plan Alternative | Key Findings | Construction would not have a significant effect on air quality in the Seattle area, but may result in moderate localized impacts during the construction periods, largely related to vehicle emissions and dust.<br><br>The primary differences in potential air quality and odor effects of the LTCP options are related to the length of construction period and estimated number of truck trips. |
| | Neighborhood Storage Option | *Neighborhood (Tanks/Pipes):* This option has the most individual project locations. As a result, this option would have dispersed short term construction-related air and odor impacts in numerous neighborhoods throughout the city, with impacts likely to be most noticeable in residential areas. Storage tank construction in the largely residential Ballard and Fremont/Wallingford neighborhoods could last up to five years (Ballard) and 3.5 years (Fremont/Wallingford). Multiple storage pipes/tanks would be constructed in residential areas of Leschi.<br><br>*Neighborhood West Ship Canal Tunnel:* (See Shared West Ship Canal Tunnel Option below – impacts would be similar) |
| | Shared Storage Option | Air quality impacts would occur at fewer sites than under the Neighborhood Storage Option. However, construction-related air quality impacts (largely vehicle emissions and dust) would occur for longer construction durations at the shared storage facility locations in Fremont/Wallingford, North Union Bay, and Montlake. Overall impacts would be reduced under this option because the shared tanks reduce the number of City and King County independently constructed CSO control facilities. |
| | Shared West Ship Canal Tunnel Option | Construction-related air quality impacts would occur at fewer sites than under the Neighborhood Storage and Shared Storage Options. However, impacts would be concentrated in fewer areas (Ship Canal Neighborhoods). Construction of the tunnel would require a substantially higher number of truck trips and associated emissions than smaller, independently constructed CSO control facilities in Ballard and Fremont/Wallingford, resulting in more concentrated and longer duration impacts at the tunnel portal sites in these neighborhoods. Overall impacts would be reduced under this option because the shared tunnel would replace a number of City and King County independently constructed CSO control facilities with a single, large tunnel. |
| | Shared Ship Canal Tunnel Option | Compared to all other options, the Ship Canal Tunnel Option would have the fewest City and King County independently constructed CSO storage facilities, and therefore the fewest areas that would experience air quality and odor impacts. Construction of the tunnel would require a substantially higher number of truck trips and associated emissions in Ballard, Fremont/Wallingford, and the Lake Washington neighborhoods than would occur for storage facilities, resulting in the potential for noticeable impacts in these areas for several years. |

| *Table 1-3. Summary of Construction Impacts* | | |
|---|---|---|
| Integrated Plan Alternative | | Construction of CSO storage pipes, tanks, and tunnels under the Integrated Plan Alternative would have the same air emissions as under the LTCP Alternative, but construction would be delayed in some neighborhoods. The South Park Water Quality Facility would involve a small construction footprint, which would result in short-term, localized emissions. The facility would be located in an industrial area and any air emissions would not impact residential properties or other sensitive receptors.<br><br>Temporary air quality and odor emissions associated with NDS Partnering projects would also be minor. |
| No Action Alternative | | Construction activity associated with ongoing sewer system improvements and NDS projects would produce dust and exhaust emissions that would be minimal, localized, and temporary. |
| Measures to reduce or minimize potential impacts | | Measures would include:<br>• Using measures to control dust, such as watering of construction surfaces, using temporary ground covers, sprinkling the site with approved dust palliatives, or using other temporary stabilization practices upon completion of grading.<br>• Incorporating specifications into construction contracts that encourage use of well maintained construction vehicles to reduce vehicle emissions.<br>• Encouraging contractors to offer carpooling options for employees.<br>• When possible, using local building materials to reduce transport distances. |
| **Surface Water** | | |
| Long Term Control Plan Alternative | Key Findings | Construction effects on surface water could include increased pollutants and sediments from site runoff and would require control measures. Construction of pipes, tanks, and portals could occur in proximity of sensitive receiving water bodies, including Lake Washington, the Ship Canal, and the Duwamish River. Discharges of dewatering water could introduce contaminants and sediments into local water bodies if not properly managed.<br><br>The primary differences in potential effects of the LTCP options are related to the amount of surface disturbance and the amount of excavation potentially required. |
| | Neighborhood Storage Option | *Neighborhood (Tanks/Pipes):* Construction effects on surface water could include increased pollutants and sediments from site runoff and would require control measures. Short term construction-related impacts to Salmon Bay, the Ship Canal, Portage Bay, North Union Bay, Lake Union, Lake Washington, the Duwamish River/East Waterway, and Elliott Bay could occur if site runoff controls do not function effectively. Overall, construction related impacts are expected to be minor because all construction would be required to comply with applicable regulations and permit conditions.<br><br>Discharges of dewatering water could introduce contaminants and sediments into local water bodies if not properly managed. The highest risk from dewatering is likely to be associated with the Ballard and Fremont/Wallingford storage tanks, because the larger facilities require deeper excavations, which could be more likely to encounter groundwater.<br><br>*Neighborhood West Ship Canal Tunnel:* (See Shared West Ship Canal Tunnel Option below – impacts would be similar) |

| Table 1-3. Summary of Construction Impacts | | |
|---|---|---|
| | Shared Storage Option | Impacts would be similar to the Neighborhood Storage Option but would occur in fewer locations in the Ship Canal and Lake Washington neighborhoods. This option reduces the overall number of facilities, but results in larger facilities with a greater potential for site runoff and dewatering impacts because of longer duration of construction and larger construction sites. |
| | Shared West Ship Canal Tunnel Option | This option involves construction of a deep tunnel shared with King County. Deep tunnels have less surface disruption than storage tanks and pipes, but would likely have dewatering impacts. The shared tunnel would have reduced potential for impacts associated with increased pollutants in site runoff compared to independently constructed City (Ballard and Fremont/Wallingford) and King County CSO control facilities (3rd Ave W and 11th Ave NW regulators). Construction of tunnel drop shafts and the conveyance line from King County's 3rd Avenue West CSO area would introduce potential surface water quality impacts in these areas. Portal locations, due to their larger construction footprint, would be the focal point for potential surface water runoff impacts. Tunnel portal locations are not yet known but could include areas near Portage Bay and Salmon Bay. |
| | Shared Ship Canal Tunnel Option | The shared tunnel would have reduced impacts to surface waters compared to construction of independently constructed City (Ballard, Fremont/Wallingford, Portage Bay, Montlake, and Leschi), and King County CSO storage facilities (3rd Ave W, Montlake, and University Regulators) because fewer, large construction sites would be required. Portal locations would be the focal point for potential surface water runoff impacts because of the duration of construction and larger construction area. While portal locations have not been determined, areas near the shorelines of Portage Bay, Union Bay, and Salmon Bay could be affected. |
| Integrated Plan Alternative | | In addition to the impacts described for the LTCP Alternative, construction of the South Park Water Quality Facility could include increased potential for runoff into the Duwamish River and would require construction control measures. As noted above, the potential for impacts is low because the projects would be required to comply with applicable regulations and permit conditions. |
| No Action Alternative | | Construction activity associated with ongoing sewer system improvements and NDS projects is not expected to result in surface water impacts due to the limited construction areas. |
| Measures to reduce or minimize potential impacts | | Compliance with the requirements of the Construction Stormwater General Permit issued by Ecology and the City of Seattle's stormwater code and manual would minimize potential surface water runoff and sedimentation. Dewatering impacts would be minimized by compliance with King County Wastewater Discharge Permit requirements. Additional measures to minimize surface water runoff, dewatering, and spills include the following:<br>• Limiting the area of construction disturbances.<br>• Implementing stormwater best management practices identified in the City of Seattle's Stormwater Code (SMC 22.800 – 22.808), Director's Rule: 2009-004 SPU/16-2009 DPD, and Volume 2 Construction Stormwater Control Technical Requirements Manual to control erosion and sediment transport from the project sites. Typical measures include silt fencing, plastic sheeting, and straw wattles to prevent sediment discharge and wheel washing stations to prevent sediment from entering nearby roadways.<br>• Providing water quality treatment as necessary to improve the quality of intercepted stormwater flows from adjacent impervious surfaces.<br>• Developing and implementing a Construction Stormwater and Erosion Control Plan, including a Stormwater Pollution Prevention Plan and Spill Prevention and |

| *Table 1-3. Summary of Construction Impacts* | | |
|---|---|---|
| | | Countermeasures Plan, to reduce the potential for sediment, waste materials, construction-related leaks, and spills to contaminate surface water, groundwater, and stormwater runoff. |
| **Biological Resources** | | |
| Long Term Control Plan Alternative | Key Findings | No direct impacts to aquatic habitats, plants, and invertebrates would occur, and no indirect impacts to fish, including federally listed salmonids, are anticipated because none of the alternatives would involve in-water construction or work within sensitive areas. The potential for direct losses of terrestrial habitat associated with facility construction would be minimal under both Plan alternatives, because the facilities are likely to be located in developed areas with low habitat value. Indirect impacts to wildlife would be associated with increased level of noise and human activity during construction.<br><br>The primary differences in potential effects of the LTCP options are related to amount of construction activity (surface disturbance) and proximity to mapped priority habitats or species. |
| | Neighborhood Storage Option | *Neighborhood (Tanks/Pipes):* CSO control projects would be constructed in urbanized areas. The potential for direct losses of terrestrial habitat associated with facility construction would be minimal.<br><br>Indirect impacts to wildlife would be associated with increased level of noise and human activity during construction. Construction would occur in areas adjacent to mapped priority habitats in the Magnolia, Leschi, and Delridge neighborhoods.<br><br>The total amount of surface disturbance and potential for direct impacts to habitat is second highest of all the storage options. This storage option has the most individual project locations compared to the other options, dispersed through a number of neighborhoods.<br><br>*Neighborhood West Ship Canal Tunnel*: (See Shared West Ship Canal Tunnel Option below – impacts would be similar) |
| | Shared Storage Option | The total amount of surface disturbance that would occur is the highest of all options, which suggests a higher potential for habitat impacts. However, this option has the second to least number of individual project locations, and therefore, a lower potential to cause indirect impacts to wildlife through construction-related noise and activity. Impacts to priority species would potentially be higher under this option due to construction activity in proximity to priority habitats along the Lake Washington shoreline and Union Bay Natural Areas; however, impacts are not expected because all construction would be required to comply with applicable permit requirements to protect habitat. |
| | Shared West Ship Canal Tunnel Option | In general, impacts would potentially be lower under this option due to the concentration of construction in the Ship Canal Neighborhoods at fewer locations and the lower amount of surface disturbance than other options. Construction associated with the new flow diversion (conveyance line) near the 3rd Avenue West CSO area (on the south side of the Ship Canal) would introduce minor and temporary disturbance impacts in this area. |

| *Table 1-3. Summary of Construction Impacts* | | |
|---|---|---|
| | Shared Ship Canal Tunnel Option | Overall disturbance would potentially be lower compared to all other options because this option replaces the greatest number of City and King County independently constructed CSO storage facilities with a single, large tunnel. However, impacts to priority species could potentially be higher due to construction activity lasting up to seven years in proximity to priority habitats along the Lake Washington shoreline and Union Bay Natural Area. It may be difficult to avoid siting portals in areas with high habitat value. |
| Integrated Plan Alternative | | Impacts would primarily be related to the LTCP option selected for implementation. Additional impacts associated with the Integrated Plan Alternative would be minimal. Most NDS partnering projects would likely occur in paved or developed rights-of-way in residential areas and would not affect wildlife habitat. The potential for direct losses of terrestrial habitat associated with NDS Partnering projects and South Park Water Quality Facility construction would be minimal. Indirect impacts to wildlife would be associated with short-term increased level of noise and human activity during construction, and are not expected to be significant. |
| No Action Alternative | | Construction activities associated with ongoing sewer system improvements would temporarily cause elevated levels of noise and human activity that could disturb wildlife, if present, near the project.<br>Natural Drainage System program projects and roadside rain gardens have minimal direct impact on wildlife and habitat due to their small footprint and location within public rights-of-way or private property, both of which are typically developed or landscaped. |
| Measures to reduce or minimize potential impacts | | The City would undertake the following measures:<br>• Site projects away from mapped priority habitats and species locations where possible.<br>• Follow federal, state, and local permit conditions for managing construction site runoff and protecting habitats for federally listed species.<br>• Retain site vegetation as much as possible.<br>• Provide prompt revegetation with native species after construction is complete.<br>• Adhere to development conditions within City of Seattle's Director Rule 5-2007 for construction within Great Blue Heron Management Areas and Colony Nesting Areas. |
| **Energy and Climate Change** | | |
| Long Term Control Plan Alternative | Key Findings | None of the LTCP options would have a significant impact on energy resources in the Seattle area.<br>The primary difference in energy consumption and greenhouse gas (GHG) emissions between the options relates to the type of storage facility (e.g., tank or tunnel) and whether it is part of the Neighborhood Storage Option or one of the shared options. While the shared options would have higher energy consumption and GHG emissions per facility, there would be fewer new storage facilities built by the City and King County. Therefore, overall emissions would likely be lower. |
| | Neighborhood Storage Option | *Neighborhood (Tanks/Pipes):* Construction-related energy consumption and GHG emissions would be lower than those estimated for the Shared Storage or Shared Ship Canal Tunnel Options. |

| *Table 1-3. Summary of Construction Impacts* | | |
|---|---|---|
| | | *Neighborhood West Ship Canal Tunnel:* Energy consumption would be similar, but GHG emissions would be slightly higher than those estimated for the Shared West Ship Canal Tunnel Option. |
| | Shared Storage Option | Construction-related energy consumption and GHG emissions would be higher than those estimated for the Neighborhood Storage Option. However, overall impacts would be reduced under this option because the shared tanks replace a number of City and King County independently constructed CSO control facilities. |
| | Shared West Ship Canal Tunnel Option | Construction-related energy consumption and GHG emissions would be lower than those estimated for the Shared Storage or Shared Ship Canal Tunnel Options. Overall impacts would be reduced under this option because the shared tunnel replaces a number of City and King County independently constructed CSO control facilities. |
| | Shared Ship Canal Tunnel Option | Construction-related energy consumption and GHG emissions associated with this option would be higher than those estimated for the Neighborhood Storage and Shared West Ship Canal Tunnel Options. However, overall impacts from both the City and King County projects would be the most reduced under this option because the shared tunnel replaces the greatest number of City and King County independently constructed CSO control facilities. |
| Integrated Plan Alternative | | Construction of CSO storage pipes, tanks, and tunnels under the Integrated Plan Alternative would have the same energy use and GHG emissions as under the LTCP Alternative, but construction would be delayed in some neighborhoods. Construction of NDS Partnering projects and the South Park Water Quality Facility would add incrementally to the overall energy required for construction of the Plan. |
| No Action Alternative | | Project construction under ongoing programs to implement sewer system improvements and NDS projects would have minor energy consumption and GHG emissions. |
| Measures to reduce or minimize potential impacts | | The City would undertake the following measures to minimize energy and GHG impacts:<br>• Incorporating specifications into construction contracts that encourage the use of fuel-efficient construction equipment.<br>• Minimizing engine idling during construction. |
| **Environmental Health and Public Safety** | | |
| Long Term Control Plan Alternative | Key Findings | Ground excavations and dewatering have the potential to encounter contaminated materials, and may require special handling methods depending on the site and type of materials encountered. Discharges of dewatering water could introduce contaminants and sediments into local waterways if not properly managed. In general, environmental health risks associated with construction under the LTCP options are low, and the potential for the public to encounter contaminated soils or groundwater is also low.<br>Larger projects, such as storage tanks and tunnels, have a greater potential for environmental health and public safety impacts than smaller projects constructed in the right-of-way, such as storage pipes and flow diversions. |
| | Neighborhood Storage Option | *Neighborhood (Tanks/Pipes):* Under this option, there is a higher potential for impacts in Ballard, Fremont/Wallingford, and the Duwamish/East Waterway neighborhoods from large excavations and dewatering outside of the right-of-way in potentially contaminated areas (typically industrial lands). Risks would be greatest for construction workers, and would |

| Table 1-3. Summary of Construction Impacts | | |
|---|---|---|
| | | generally be low for the public. Pre-design studies would be conducted to determine the extent of contamination and appropriate measures to minimize health risks.<br><br>*Neighborhood West Ship Canal Tunnel:* (See Shared West Ship Canal Tunnel Option below – impacts would be similar) |
| | Shared Storage Option | The larger, shared storage facilities under this option in Fremont/Wallingford, North Union Bay, and Montlake would require higher volumes of excavation compared to the Neighborhood Storage Option. However, the geographic extent of the impact is limited because fewer facilities would be constructed. Construction required to implement flow diversion projects under this option would have a very low potential to cause environmental health and public safety impacts because excavation volumes would be minimal and dewatering would not be significant. |
| | Shared West Ship Canal Tunnel Option | Potential construction-related impacts in the Ship Canal Neighborhoods would be concentrated at the tunnel portals in the Fremont/Wallingford and Ballard neighborhoods. Potential impacts in other neighborhoods would be similar to those described for the Neighborhood Storage Option. |
| | Shared Ship Canal Tunnel Option | Potential impacts would be concentrated at the tunnel portals potentially located on the south side of the Ship Canal and in the North Union Bay neighborhood, areas that do not have known high levels of contamination. Potential impacts in other neighborhoods would be similar to those described for the Neighborhood Storage Option. |
| Integrated Plan Alternative | | Construction of CSO storage pipes, tanks, and tunnels under the Integrated Plan Alternative would have the same potential for environmental health impacts as under the LTCP Alternative. In addition to the impacts outlined for the LTCP Alternatives, ground excavation and dewatering for the South Park Water Quality Facility would have the potential to encounter contaminated materials, with accompanying environmental health considerations, based on the history of industrial land uses in the Duwamish basin. Pre-design investigations would determine the potential for contamination at the construction site. Overall, potential public health impacts are expected to be low. |
| No Action Alternative | | Construction activity associated with ongoing sewer system improvements and NDS programs is not expected to result in environmental health or safety impacts. The locations of sewer system improvement projects have largely been previously excavated; therefore, the risk of encountering contaminated soil is minimal.<br><br>Excavation for rain gardens is unlikely to encounter contaminated material, but spills from construction equipment are possible. Overall, potential public health impacts are low. |
| Measures to reduce or minimize potential impacts | | Measures would include:<br>• Site-specific investigations and clean-up or pollution prevention plans.<br>• Plans for sediment and groundwater handling, testing, and disposal.<br>• Spill prevention and control plans. |

| *Table 1-3. Summary of Construction Impacts* | | |
|---|---|---|
| **Noise and Vibration** | | |
| Long Term Control Plan Alternative | Key Findings | Construction of projects under the Plan alternatives would result in short-term moderate to substantial increases in noise, lasting from one to as much as seven years, depending upon the option selected.<br><br>The primary differences in potential noise and vibration effects of the LTCP options are related to the amount of noise-generating earthwork and the length of construction period. In general, storage pipes/tanks would result in shorter duration, but more geographically distributed impacts, while the tunnels would result in longer duration impacts in relatively smaller areas. |
| | Neighborhood Storage Option | *Neighborhood (Tanks/Pipes):* Construction of projects would result in short-term moderate to substantial increases in noise. This option would have the most dispersed noise and vibration impacts throughout the Plan area. Construction would occur in every CSO neighborhood, but would last longest in Ballard, Fremont/Wallingford, and East Waterway, where construction durations would range from one to five years.<br><br>*Neighborhood West Ship Canal Tunnel:* (See Shared West Ship Canal Tunnel Option below – impacts would be similar) |
| | Shared Storage Option | Impacts would be similar to the Neighborhood Storage Option, but potentially higher intensity noise would be concentrated at fewer locations in Fremont/Wallingford, North Union Bay, and Montlake, for construction durations from three to 4.5 years. |
| | Shared West Ship Canal Tunnel Option | Potential construction-related impacts in the Ship Canal Neighborhoods would largely be concentrated at the tunnel portals in the Ballard and Fremont/Wallingford neighborhoods. After initial tunnel portal site construction, most work would occur underground, which would not produce noticeable street-level noise or vibration other than from trucks hauling tunnel spoils on roadways. The duration of these impacts would be 3.5 years. Potential for vibration impacts along the tunnel routes is likely to be a concern to property owners. Potential impacts in other neighborhoods, including those associated with construction of the new flow diversion (conveyance line) near the 3rd Avenue West CSO area on the south side of the Ship Canal, would be similar to those described for the Neighborhood Storage Option. |
| | Shared Ship Canal Tunnel Option | Noise-generating construction sites in the Ship Canal and Lake Washington neighborhoods would largely be consolidated at the two tunnel portals, and would last for as long as seven years. Most activities would occur at the launch portal along the south side of the Ship Canal (near the Fremont Cut). Noise impacts could be experienced in the vicinity of the portal locations, particularly during night time construction. Potential for vibration impacts along the tunnel routes would likely be a concern to property owners. |
| Integrated Plan Alternative | | Construction of CSO storage pipes, tanks, and tunnels under the Integrated Plan Alternative would have the same noise impacts as under the LTCP Alternative, but construction would be delayed in some neighborhoods. Noise and vibration impacts from the stormwater projects specific to the Integrated Plan Alternative would be minor. Construction of NDS Partnering projects is not likely to require high-impact noise equipment and construction noise would be of short duration. The South Park Water Quality Facility would generate typical construction noise similar to projects implemented under the LTCP Alternative. |

| *Table 1-3. Summary of Construction Impacts* | | |
|---|---|---|
| No Action Alternative | | Construction activity associated with ongoing sewer system improvements and NDS programs is not likely to require high-impact noise equipment, and construction noise would be of short duration. |
| Measures to reduce or minimize potential impacts | | Measures would include:<br>• Identify potentially impacted receptors and buildings and determine whether noise and vibration levels at those sites would exceed permitted levels.<br>• Encourage noise-reducing measures, such as using sound-control devices on equipment, prohibiting equipment with unmuffled exhaust, minimizing idling time of equipment and vehicles, and installing acoustic barriers around stationary sources of construction noise.<br>• Conduct on-site noise monitoring to ensure compliance with SMC provisions, if necessary.<br>• Coordinate with Seattle City Light to ensure electrical power is available to construction sites during construction dewatering (to avoid using diesel powered generators).<br>Measures to reduce vibration impacts would be determined on a site-by-site basis depending on impacts. Measures could include shoring of impacted buildings, coordination of vibration-causing construction with sensitive activities in impacted buildings, or onsite vibration-minimizing practices. |
| **Land Use and Visual Quality** | | |
| Long Term Control Plan Alternative | Key Findings | CSO control projects included under the LTCP range from those that would be located in the public right-of-way or streets and cause little or no land use or visual impact to major infrastructure projects that could require acquisition of property or easements over the course of construction, which would range from approximately one to seven years, depending upon the project. The acquisitions/easements could be temporary to accommodate access to a site or a location for project staging, or they could be permanent for locating storage tanks or tunnels. Impacts to visual quality during construction would be minor under all LTCP options.<br>The primary differences in potential effects of the LTCP options are related to the types of projects and their potential location and the length of construction. |
| | Neighborhood Storage Option | *Neighborhood (Tanks/Pipes):* Due to the largest number of distributed CSO storage facilities, this option has the greatest number of areas that would experience temporary land use impacts. Construction could intermittently disrupt access to residences, businesses, and institutions, including (potentially) the University of Washington during the multi-year construction duration. Access disruption could affect businesses. Staging areas would prevent other uses during construction; however, uses could be restored following construction completion. Temporary easements would be needed from some private landowners, depending on the project. Acquisition-related impacts would potentially be greatest under this option because it would require the greatest number of project locations.<br>*Neighborhood West Ship Canal Tunnel:* (See Shared West Ship Canal Tunnel Option below – impacts would be similar) |

| Table 1-3. Summary of Construction Impacts | | |
|---|---|---|
| | Shared Storage Option | Impacts would be similar to the Neighborhood Storage Option, but construction-related land use and visual quality impacts would be concentrated at fewer, larger project sites in the Ship Canal and Lake Washington neighborhoods of Fremont/Wallingford, North Union Bay, and Montlake. Construction could intermittently disrupt access to residences, businesses, and institutions, including (potentially) the University of Washington during the up to four years or longer construction duration. |
| | Shared West Ship Canal Tunnel Option | This option would reduce the number of areas affected by construction, but would concentrate construction-related land use impacts at fewer, larger project sites in Ballard and Fremont/Wallingford. The tunnel is estimated to require 3.5 years to construct and up to four acres for construction staging. Much of this area could be sold back to private ownership following construction. In addition to land use and visual quality impacts from tunnel portal activity, dispersed impacts and disrupted access from construction of drop shafts and microtunnels, and from open-cut construction in roadways throughout the Ship Canal Neighborhoods would occur. In addition, the new flow diversion (conveyance line) would introduce minor and temporary land use and visual quality impacts to the 3rd Avenue West area on the south side of the Ship Canal. |
| | Shared Ship Canal Tunnel Option | Compared to the other options, the number of large storage facility construction sites would be reduced because this option would replace the greatest number of City and King County independently constructed CSO storage facilities with a single, large tunnel. Overall, the need for property acquisition and the amount of interference with access to residences and businesses would be reduced. However, construction-related land use impacts would potentially be higher in the Ship Canal and Lake Washington Neighborhoods under this option because most of the construction activity during the up to seven-year construction period would be consolidated to the two tunnel portal sites located on the south side of the Ship Canal and in the North Union Bay neighborhood. As much as 6 acres could be required for construction staging, which would preclude other uses during the construction period. Much of this area could be sold back to private ownership following construction. In addition to land use and visual quality impacts from tunnel portal activity, dispersed impacts and disrupted access from construction of drop shafts and microtunnels, and from open-cut construction in roadways throughout the Lake Washington and Ship Canal Neighborhoods would occur. |
| Integrated Plan Alternative | | Construction impacts associated with certain CSO control facilities in the Delridge, East Waterway, Duwamish, Portage Bay, and Montlake neighborhoods would occur later under the Integrated Plan Alternative. As a result, these neighborhoods would experience fewer near-term land use and visual quality-related construction impacts. Additional impacts specific to stormwater projects associated with the Integrated Plan Alternative are not expected. Most NDS Partnering projects are expected to occur within the Single Family zone, but could occur in other zones. Prior to installation of rain gardens, the City would need to apply for and obtain applicable land use permits and approvals. Depending on the site, easements could be required on a temporary basis to accommodate access to a site or a location for project staging. The South Park Water Quality Facility is expected to be located on City-owned property in an industrial-zoned area. Therefore, it is anticipated that a suitable site is available that would result in minimal land use and visual quality impacts during construction. |

| *Table 1-3. Summary of Construction Impacts* | | |
|---|---|---|
| No Action Alternative | | Construction activity would be limited to ongoing sewer system improvements and NDS programs. Construction related impacts to land use and visual resources are not anticipated from these ongoing programs. |
| Measures to reduce or minimize potential impacts | | Measures would include:<br>• Prioritizing project locations on public property and in public rights-of-way;<br>• Complying with federal, state, and local regulations regarding property acquisition and relocation assistance;<br>• Following conditions of the Master Use Permit; and<br>• Providing access to property and businesses during construction. |
| **Recreation** | | |
| Long Term Control Plan Alternative | Key Findings | For all LTCP options, temporary impacts to recreation could occur if a facility is sited within a park, although the City would attempt to avoid siting facilities in parks. If construction or staging areas are located adjacent or nearby to a park, recreational use of the park could be disrupted by restricted access, noise, dust, and truck trips during peak construction periods.<br>The primary differences in potential effects of the LTCP options are related to the types of projects and their potential location, amount of construction disturbance, and the length of construction. |
| | Neighborhood Storage Option | *Neighborhood (Tanks/Pipes):* Temporary loss of recreational opportunities could occur if the CSO facility is located within the park. If construction or staging areas are located adjacent or nearby to a park, recreational use of the park could be disrupted by restricted access, noise, dust, and truck trips during peak construction periods. Because this option has the highest number of projects located throughout the city, it has a higher likelihood of having projects located adjacent to a park or recreational facility. This option would include construction of multiple storage pipes/tanks in the Lake Washington Neighborhoods, which have a higher concentration of parks than other neighborhoods.<br>*Neighborhood West Ship Canal Tunnel:* (See Shared West Ship Canal Tunnel Option below – impacts would be similar) |
| | Shared Storage Option | Potential construction-related impacts to recreation would be lower than the Neighborhood Storage Option because fewer project sites would be required. Due to the larger area required for larger tanks, however, shared storage tanks could have a greater potential to impact recreation if located within or near parks. However, the use of shared storage tanks would reduce the overall number of parks that could potentially be affected by construction in the Ship Canal and Lake Washington Neighborhoods. In other neighborhoods, storage would be provided by flow diversion projects, which would have less potential to impact parks but could still impact informal recreation such as walking and biking. |
| | Shared West Ship Canal Tunnel Option | Impacts to recreation from construction would be similar to the Neighborhood Storage Option for most neighborhoods, but impacts in the Ballard and Fremont/Wallingford neighborhoods would be concentrated at portal locations, and construction durations would be up to 3.5 years. If located in or adjacent to a park or recreational facility, impacts from tunnel portal construction on recreation would be substantial and truck trips could disrupt access to the park. If located in a park, multiple acres of the park could be closed to recreation for several years. A substantially higher number of truck trips would be required |

| *Table 1-3. Summary of Construction Impacts* | | |
|---|---|---|
| | | as compared to storage tanks, which would have a greater likelihood of disrupting access to nearby parks and informal recreation opportunities. In addition, the new flow diversion (conveyance line) would introduce impacts to the 3rd Avenue West area on the south side of the Ship Canal, which could temporarily affect recreation areas if located in or adjacent to a park or recreational facility. |
| | Shared Ship Canal Tunnel Option | This option requires the fewest number of large construction sites, but the sites would be impacted during a relatively longer construction period, estimated at seven years. Tunnel portals have the potential to affect parks or athletic fields, particularly on the south side of the Ship Canal and in North Union Bay (University District). Potential impacts to parks or recreation facilities would be as described above for the Shared West Ship Canal Tunnel. |
| Integrated Plan Alternative | | Construction impacts associated with certain CSO control facilities in the Delridge, East Waterway, Duwamish, Portage Bay, and Montlake neighborhoods would occur later under the Integrated Plan Alternative. As a result, these neighborhoods would potentially experience fewer near-term recreation impacts. Construction related impacts to recreation specific to stormwater projects under the Integrated Plan are expected to be minimal. NDS Partnering projects would be constructed within public rights-of-way, primarily along or in roadways, and could temporarily interfere with informal recreation such as walking and biking due to restricted access. The South Park Water Quality Facility is expected to be located in an industrial area on City-owned property, with no public access or recreational opportunities. |
| No Action Alternative | | Recreation impacts from construction of ongoing programs under the No Action Alternative would be minor. Construction in the right-of-way for both sewer system improvements and for right-of-way rain garden projects could temporarily interfere with informal recreation due to restricted access. |
| Measures to reduce or minimize potential impacts | | If a CSO facility were located in a park, impacts to recreation would be unavoidable. The City would attempt to avoid siting projects in parks. If locating outside of a park is not possible, impacts to recreational facilities could be minimized through coordination with Seattle Parks, including coordinating construction timing with special events at the park; construction staging methods and siting; scheduling to avoid overlap with the construction of other projects in the vicinity; and advance public notice and signage. Parks and recreation features would be restored to the extent possible. |
| **Historic, Cultural, and Archaeological Resources** | | |
| Long Term Control Plan Alternative | Key Findings | Construction under any of the LTCP options could have a potential adverse effect on historic, cultural, or archaeological resources in the Plan area. The primary difference in impacts relates to the amount of excavation in geological layers and their potential to encounter cultural resources. All options include similar, minimal potential for impacts on aboveground historic resources. |
| | Neighborhood Storage Option | *Neighborhood (Tanks/Pipes):* Construction could have a potential adverse effect on historic, cultural or archaeological resources in the Plan area. This option would have a greater amount of excavation in geological layers with greater potential to encounter cultural resources than the tunnel options.<br>Only a minimal potential for impacts to aboveground resources is anticipated.<br>*Neighborhood West Ship Canal Tunnel:* (See Shared West Ship Canal Tunnel Option below – impacts would be similar) |

| Table 1-3. Summary of Construction Impacts | | |
|---|---|---|
| | Shared Storage Option | Potential for construction impacts to belowground historic and cultural resources would be similar to those described for the Neighborhood Storage Option. The Montlake neighborhood (where a shared storage tank would be constructed) contains known precontact and historic archaeological sites in proximity to the waterfront. Unknown belowground resources may also exist, and impacts resulting from tank construction would be permanent and irreversible if resources are encountered during construction.<br>Impacts to aboveground resources would be the same as for the Neighborhood Storage Option. |
| | Shared West Ship Canal Tunnel Option | Because excavation for the tunnel portals would be deeper and therefore in geological layers with lower potential for encountering cultural resources, the tunnel options would have less potential to encounter cultural resources than the Neighborhood Storage Option or the Shared Storage Option. This option has the potential for temporary impacts to historic properties along the proposed tunnel alignment (vibration, dust, noise, and visual integrity). Historic structures may be more susceptible to damage from vibration. |
| | Shared Ship Canal Tunnel Option | This option has a similar potential for construction impacts on historic properties as the Shared West Ship Canal Tunnel Option. |
| Integrated Plan Alternative | | Impacts are primarily associated with the LTCP option selected for implementation as described above. Additional impacts associated with the Integrated Plan alternative are minimal. Construction of the NDS Partnering projects would occur within previously disturbed public rights of way, and would not be likely to impact cultural or historic resources. For construction of the South Park Water Quality Facility, there is a potential to affect cultural resources. Site specific studies would be conducted as necessary to determine the potential for this impact. |
| No Action Alternative | | Ongoing programs for sewer system improvements have the potential for construction impacts to historic properties depending on the locations of the improvements. Sewer system improvements and NDS projects generally would be anticipated to have very low potential to impact belowground resources because they would generally be constructed in previously disturbed areas. |
| Measures to reduce or minimize potential impacts | | The City would conduct project-level cultural resource surveys prior to construction and consult with stakeholders to avoid, minimize, and mitigate potential impacts to identified resources. |

| *Table 1-3. Summary of Construction Impacts* | | |
|---|---|---|
| **Transportation** | | |
| Long Term Control Plan Alternative | Key Findings | Construction of projects under the LTCP options would result in moderate to substantial adverse transportation impacts for temporary periods ranging from one to seven years. Potential construction-related transportation impacts would be highly visible and are of concern to local residents, business owners, and commuters. Transportation impacts would include increases in traffic volumes due to construction-generated truck trips and commute trips of construction workers, and roadway lane and sidewalk closures where construction activities take place.<br><br>The primary differences in potential transportation impacts of the LTCP options are related to the length of construction period, estimated number of truck trips, and the road network in the affected neighborhood. |
| | Neighborhood Storage Option | *Neighborhood (Tanks/Pipes):* Potential construction-related transportation impacts would be highly visible and would be of concern to local residents, business owners, and commuters in affected neighborhoods. Transportation impacts would include increases in traffic volumes due to construction-generated truck trips and commute trips of construction workers, and roadway lane and sidewalk closures where construction activities take place. Neighborhoods with limited number of route alternatives could experience adverse impacts from lane or road closures.<br><br>The Neighborhood Storage Option would have the most dispersed transportation impacts because it would require roadway lane and sidewalk closures at a number of locations throughout the city to accommodate storage pipe and tank construction from City (and King County) independently constructed CSO storage facilities.<br><br>Localized impacts would occur in certain areas (including Leschi, Montlake, and Magnolia) where the ability to accommodate lane closures for storage pipe construction is highly constrained due to a limited number of route alternatives.<br><br>*Neighborhood West Ship Canal Tunnel:* (See Shared West Ship Canal Tunnel Option below – impacts would be similar) |
| | Shared Storage Option | Impacts would be similar to the Neighborhood Storage Option but concentrated at fewer locations. This option would eliminate or reduce transportation impacts in the Leschi neighborhood but would have increased transportation impacts in Fremont/Wallingford, North Union Bay, and Montlake. Arterials in the Montlake area are limited, so existing congestion levels would be exacerbated by lane closures and truck trips. |
| | Shared West Ship Canal Tunnel Option | Impacts in the Ship Canal Neighborhoods would be concentrated at two tunnel portal locations in Ballard and Fremont/Wallingford. Elements of the West Ship Canal Tunnel construction that would generate truck trips include tunnel excavation as well as construction of supporting pipelines, pump stations, micro-tunnels, drop shafts, and flow diversions. Total truck trips for tunnel construction are expected to be over 34,000 truck round trips for the West Ship Canal Tunnel Option, generated primarily in Ballard. Additional truck trips would be generated by construction of conveyance and connection elements (e.g., drops shafts, conveyance lines). Overall, this option would result in substantially more truck trips over a longer period in Ballard compared to the Neighborhood Storage and Shared Storage Options. With expected construction duration of 3.5 years, trucks generated by the tunneling are expected to average 33 per day. This option would eliminate construction truck trips associated with a separate King County 3rd Avenue West CSO control project in the Queen |

| Table 1-3. Summary of Construction Impacts | | |
|---|---|---|
| | | Anne area (average of 14 trips per day), and a separate, independent King County 11th Avenue Northwest CSO control project between Ballard and Fremont/Wallingford areas (average 4 to 8 round trips per day). These truck trips are estimated based upon the relative capacities and construction duration of other similar-sized storage facilities presented in the Draft EIS. In addition, this option would avoid the need for substantial in-road construction of a potential King County 11th Avenue Northwest storage pipe project, which could result in traffic disruptions in this area. While construction truck trips and traffic disruptions from separate, independent CSO control projects would be avoided under this option, conveyance and connection elements needed to deliver 3rd Avenue West and 11th Avenue Northwest flows to the tunnel (drop shafts and a conveyance line) would bring some additional construction truck trips and traffic disruptions to these areas during construction of the tunnel. However, these truck trips and traffic disruptions would be less than what would likely be experienced under independent CSO control projects. Anticipated increase in truck traffic during tunnel construction is relatively low compared to typical background traffic on city arterials and is not expected to adversely affect roadway operations. However, at peak construction times, the truck trips could be noticeable to drivers.<br><br>Localized impacts in other neighborhoods would be the same or similar to those described for the Neighborhood Storage Option. |
| | Shared Ship Canal Tunnel Option | Total construction trips are expected to be over 100,000* truck round trips for the Shared Ship Canal Tunnel Option, generated primarily on the south side of the Ship Canal at the launch portal. With estimated construction duration of seven years, truck trips generated by the tunneling are expected to average 70 per day. Anticipated increase in truck traffic is relatively low compared to typical background traffic on city arterials and is not expected to adversely affect roadway operations. However, at peak construction times, the truck trips could be noticeable to drivers. Overall, this option would result in substantially more truck trips over a longer period south of the Ship Canal, where the launch portal would likely be located, compared to the other options.<br><br>Impacts would be similar to the Neighborhood Storage Option for the Longfellow Creek/Duwamish and Elliott Bay Neighborhoods.<br><br>* Truck trip estimates provided at the programmatic level are high-level planning estimates that are intended to be conservative; more detailed project-level estimates could result in lower trip projections. |
| Integrated Plan Alternative | | Construction impacts associated with certain CSO control facilities in the Delridge, East Waterway, Duwamish, Portage Bay, and Montlake neighborhoods would occur later under the Integrated Plan Alternative. As a result, these neighborhoods would experience fewer near-term transportation impacts.<br><br>There would be localized impacts to the neighborhoods implementing NDS Partnering. These would include neighborhoods in the Piper's Creek, Thornton Creek, and Longfellow Creek areas. Neighborhoods would voluntarily sign up for the project, and impacts would be short-lived and localized, including generation of a small number of construction vehicle trips, and lane or sidewalk narrowings or closures adjacent to construction activities. The South Park Water Quality Facility is expected to be constructed on City-owned property in an industrially zoned neighborhood with adequate access. Construction related impacts should be minimal. |

| *Table 1-3. Summary of Construction Impacts* | |
|---|---|
| No Action Alternative | Project construction under ongoing programs to implement sewer system improvements and NDS projects requires only a small number of truck trips for each project. No impacts to transportation are anticipated under the No Action Alternative. |
| Measures to reduce or minimize potential impacts | Measures would depend on the exact type and size of the proposed improvement, but could include the following.<br>• Develop a Traffic Control Plan for any work within the public right-of-way that affects vehicular, transit, bicycle, or pedestrian traffic.<br>• Avoid creating additional delay at congested intersections either by choosing construction truck routes that avoid these locations, or constructing during nonpeak times of day.<br>• Maintain access for driveways and private roads.<br>• Provide adequate off-street parking areas at designated staging areas for construction-related vehicles.<br>• Provide onsite loading areas for removal and delivery of material.<br>• Provide plan for construction workers to commute via alternative modes or ridesharing, to minimize added vehicle trips and parking demand at the site.<br>• Maintain pedestrian and bicycle access and circulation during project construction. If construction encroaches on a sidewalk, provide a safe detour for pedestrians at the nearest crosswalk. If construction encroaches on a bike lane, post warning signs that indicate bicycles and vehicles are sharing the roadway.<br>• Provide traffic controls such as flaggers as appropriate.<br>• Maintain access to transit services and coordinate with transit agencies (King County Metro, Sound Transit, Community Transit) if transit stop closures or route detours are needed.<br>• Coordinate with the Seattle School District to ensure that access to school buses is maintained.<br>• Post standard construction warning signs in advance of the construction area and at any intersection that provides access to the construction area.<br>• Provide access for emergency vehicles at all times.<br>• Provide written notification to contractors regarding appropriate routes to and from construction sites and weight and speed limits for local roads used to access construction sites.<br>• Coordinate with the local neighborhoods to ensure that access to residences and businesses is adequately maintained, and that any additional potential issues unique to the neighborhood are identified and addressed.<br>• Repair or restore the roadway right-of-way to its original condition or better upon completion of the work.<br>• Comply with Seattle Department of Transportation requirements to schedule work on arterial streets and sidewalks outside of peak traffic hours unless otherwise authorized by the City Traffic Engineer.<br>• Follow the Holiday Moratorium for construction, which indicates that no work shall |

| Table 1-3. Summary of Construction Impacts | | |
|---|---|---|
| | | be scheduled on streets or sidewalks within the Central Retail District and Pioneer Square from Thanksgiving Day through New Year's Day.<br><br>Barge or Rail Transport of Materials for Tunnel Options (and for Ballard Storage Tank under Neighborhood Storage Option): For the Shared West Ship Canal Tunnel Option and the Shared Ship Canal Tunnel Option, if the tunnel portals are located near Lake Washington, Elliott Bay, or the waterway that connects them, it could be possible to transport some equipment and materials by barge rather than by truck. If the tunnel portals are located near the Ballard Terminal Rail Company (BTRC) rail line (located along the north side of the waterway between Ballard and Fremont), it could be possible to transport some materials and equipment by rail instead of truck. Feasibility analysis completed for the Shared West Ship Canal found that the use of barge transport could eliminate up to 29% of the total estimated 34,000 construction truck round trips; the use of rail transport could eliminate up to 90% of truck round trips (SPU, 2014e). Although detailed analysis was not completed for the Shared Ship Canal Tunnel Option, it is expected that similar proportions of truck trip reductions could be achieved by use of barge or rail transport. Detailed analysis of the Ballard Storage Tank element of the Neighborhood Storage Option found that use of barge transport could potentially eliminate up to 44% of the total estimated 12,000 construction truck trips; use of rail transport could eliminate up to 78% of truck round trips. Using barge or rail transport would require additional evaluations at the project level to determine feasibility of constructing ancillary facilities, including a conveyor system and a dock to support the barge, or equipment to facilitate rail loading/unloading and increased train trips at crossings, and to assess agency permit/approval feasibility. Additional evaluation would also be needed to determine if barge transport could present potential impacts to surface water quality and biological resources, and to identify measures to avoid or minimize potential impacts to these resources. |
| **Utilities** | | |
| Long Term Control Plan Alternative | Key Findings | Construction of storage tanks, pipes, tunnels, pump stations, and appurtenant facilities would occur in areas highly constrained by existing underground and overhead utilities and would require extensive coordination with existing utilities to avoid conflicts. The primary difference in impacts between the options relates to the number of new storage facilities constructed and the amount of new conveyance (pipelines) required to transport flows to the new storage facilities. Several of the options include flow diversions to King County facilities, which would necessitate coordination with King County to ensure that there are minimal impacts to King County facilities during construction. It would also be important to coordinate with the City's drinking water line of business to ensure that construction impacts to major water mains are avoided. |
| | Neighborhood Storage Option | *Neighborhood (Tanks/Pipes):* This option has the greatest potential for construction-related impacts to utilities due to the number of new storage tanks to be constructed and the amount of conveyance required to transport flows to storage facilities. The storage facilities and associated conveyance lines would be located in areas and at underground elevations with existing utilities. The Ballard, Fremont, East Waterway, and Delridge neighborhoods have the largest number of proposed facilities, but all proposed facilities are located in areas with existing underground utilities. Coordination with all potentially affected facilities would be required.<br><br>*Neighborhood West Ship Canal Tunnel:* (See Shared West Ship Canal Tunnel Option below – impacts would be similar). |

| Table 1-3. Summary of Construction Impacts | | |
|---|---|---|
| | Shared Storage Option | Large storage facilities would be constructed in neighborhoods with existing utilities, resulting in potential conflicts during construction. This option would include three shared storage facilities with King County as well as a proposed flow diversion to a King County facility, which would require close coordination to ensure that there are minimal impacts to King County facilities during construction. |
| | Shared West Ship Canal Tunnel Option | This option involves the City and King County sharing a deep tunnel. This option requires a high level of coordination with King County to avoid potential construction-related impacts. Deep tunnels tend to be constructed below many underground utilities, reducing the potential for utility conflicts. However, temporary electrical substations to power the tunnel boring machine and construction of tunnel portals and other associated facilities would require utility coordination and reconfiguration. This option would also include two flow diversions to King County facilities, necessitating close coordination with King County to ensure that there are minimal impacts to King County facilities during construction. |
| | Shared Ship Canal Tunnel Option | This option involves the City and King County sharing a deep tunnel, and includes four flow diversions to King County facilities. This option requires the highest level of coordination with King County, to avoid potential construction-related impacts. |
| Integrated Plan Alternative | | Impacts to public utilities would be associated with localized below ground utilities potentially affected by conveyance line construction for the South Park Water Quality Alternative. There may be minor utility conflicts associated with NDS Partnering projects. |
| No Action Alternative | | Construction-related impacts to utilities would occur under ongoing programs; however, impacts are expected to be lower than those expected to occur under the LTCP or Integrated Plan Alternatives. |
| Measures to reduce or minimize potential impacts | | Impacts to utilities would be reduced by early and ongoing coordination with all potentially affected utilities. The measures would include, but are not limited to, those listed below:<br>• Coordinate with other utilities and transportation departments to plan for shared construction to avoid consecutive construction projects (CSO control projects, road construction, other underground utilities).<br>• Provide advance notice and coordinate with affected utilities to minimize disruption of services.<br>• Adhere to the City's design criteria for the clearance of water mains and other utilities as outlined in Section 1-07.17 of the City of Seattle's Standard Specifications for Road, Bridge and Municipal Construction.<br>• For all LTCP options, the City would work together with King County to analyze and address downstream operational and capital impacts to the King County System. If downstream impacts cannot be successfully reduced, then there is the potential that the County will be required to build new or larger downstream capital facilities to accommodate the LTCP options. Even with measures to reduce impacts, there would likely be an increase in the County's operations and maintenance (O&M) costs to account for the additional flows from the City's system. |

| *Table 1-3. Summary of Construction Impacts* | | |
|---|---|---|
| **Socioeconomics and Environmental Justice** | | |
| Long Term Control Plan Alternative | Key Findings | Construction of the LTCP options could cause construction disturbance and modified access to community resources and businesses, resulting in temporary reduction in neighborhood cohesion. Temporary disruptions may be a particular hardship for some residents – particularly transit-dependent persons – due to disruptions to access and public transportation in project areas.<br><br>There could be short-term impacts on existing economic conditions in the construction areas due to construction disturbance and temporary changes in the use of the land during construction. In some cases, these changes would be permanent, while in other cases, economic activity would largely be restored following construction.<br><br>Although construction effects may be substantial, none of the LTCP options would cause disproportionately high and adverse effects on minority and low-income populations. |
| | Neighborhood Storage Option | *Neighborhood (Tanks/Pipes):* Construction may cause construction disturbance and modified access to community resources and businesses, resulting in temporary reduction in neighborhood cohesion.<br><br>The Neighborhood Storage Option has the greatest number of City and King County independently constructed CSO storage facilities, and therefore the greatest number of areas that would experience construction disturbance and modified access to community resources and businesses during the construction period. The neighborhoods that would be most affected include the Ballard, Fremont/Wallingford, Leschi, and Longfellow Creek/Duwamish neighborhoods.<br><br>Although construction activity may be substantial, no potential disproportionately high and adverse effects on minority and low-income populations have been identified.<br>*Neighborhood West Ship Canal Tunnel: (*See Shared West Ship Canal Tunnel Option below – impacts would be similar). |
| | Shared Storage Option | The Shared Storage Option would reduce the total number of new storage facilities required in the city (by both the City and King County) and would reduce the number of storage facilities that would be constructed as compared to the Neighborhood Storage Option. Fewer areas would experience construction disturbance and modified access to community resources or businesses, and there would be fewer areas where property acquisition is required. However, it would concentrate impacts at shared tank locations. The neighborhoods that have the highest potential to be affected include Fremont/Wallingford, North Union Bay, and Montlake. Disproportionate impacts to minority or low income populations are not expected. |
| | Shared West Ship Canal Tunnel Option | The Shared West Ship Canal Tunnel would replace City (and King County) independently constructed storage facilities in the Ship Canal Neighborhoods with a single, large tunnel, and therefore fewer areas would experience construction disturbance and modified access to community resources or businesses. However, it would concentrate impacts at fewer locations in the Ship Canal Neighborhoods. The neighborhoods that have the highest potential to be affected include Ballard and Fremont/Wallingford. Disproportionate impacts to minority or low income populations are not expected. |

| *Table 1-3. Summary of Construction Impacts* | | |
|---|---|---|
| | Shared Ship Canal Tunnel Option | The Ship Canal Tunnel Option would affect the fewest neighborhoods throughout the city, but it would also concentrate impacts in the Ship Canal and Lake Washington Neighborhoods. Overall, the potential to impact businesses and local economic activity would be reduced city-wide. Disproportionate impacts to minority or low income populations are not expected. |
| Integrated Plan Alternative | | Construction impacts associated with certain CSO control facilities in the Delridge, East Waterway, Duwamish, Portage Bay, and Montlake neighborhoods would occur later under the Integrated Plan Alternative. As a result, these neighborhoods would experience fewer near-term socioeconomic impacts.<br><br>Construction associated with NDS Partnering would cause minor and temporary impacts to the communities in which they're located, and could alter access to community resources. Project construction associated with the South Park Water Quality Facility could also alter access to community resources and result in short-term noise and other impacts in affected neighborhoods. However, the potential for impacts is minimal as the project is anticipated to be located in an industrial area. |
| No Action Alternative | | Project construction under ongoing programs to implement sewer system improvements and NDS projects could alter access to community resources and result in short-term noise and other impacts in affected neighborhoods. However, these impacts would be very short term and would not affect the integrity of the neighborhoods. The No Action Alternative would require fewer disruptions in industrial and commercial areas, and fewer property acquisitions and displacements than would the LTCP or Integrated Plan Alternatives. |
| Measures to reduce or minimize potential impacts | | The City would undertake the following measures to reduce socioeconomic impacts:<br>• Prioritizing project locations on public property and in public rights-of-way,<br>• Complying with federal, state, and local regulations regarding property acquisition and relocation assistance,<br>• Providing advance notification of construction activities, including any sidewalk and street lane closures, to nearby residents, and<br>• Preparing a traffic control plan including measures to address residential access, emergency vehicle access, road closures and detours, and temporary bus route changes.<br><br>Additional measures to minimize impacts to environmental justice populations and organizations and businesses that serve them would include communicating information and obtaining feedback about construction activities, impacts, and measures to reduce or minimize potential impacts at low-income housing sites and through social service providers. The project would also focus outreach to populations with limited English proficiency and to other populations susceptible to construction-related impacts. |

Table 1-4 summarizes operational impacts associated with the LTCP, Integrated Plan, and No Action Alternatives. As previously described, impacts are described for those projects and programs proposed by the City independently or working jointly with King County. Independent King County projects are identified but not discussed in this document. Impacts will be assessed by King County in accordance with their SEPA requirements.

| *Table 1-4. Summary of Operational Impacts* | | |
|---|---|---|
| **Earth and Groundwater** | | |
| Long Term Control Plan Alternative | Key Findings | Overall, the operational effects from the LTCP Alternative are expected to be minor. With the implementation of site-appropriate design, potential adverse impacts would be avoided and minimized. |
| | Neighborhood Storage Option | *Neighborhood (Tanks/Pipes):* This option would have the most tanks and pipes located throughout the Plan area potentially at risk during a seismic event. However, storage facilities would be designed in accordance with seismic design standards, which are intended to minimize the long-term risks to the system.<br>*Neighborhood West Ship Canal Tunnel:* (See Shared West Ship Canal Tunnel Option below – impacts would be similar). |
| | Shared Storage Option | Impacts would be similar to the Neighborhood Storage Option but there would be fewer storage tanks and pipes potentially at risk during a seismic event. |
| | Shared West Ship Canal Tunnel Option | Impacts would be similar to the Neighborhood Storage Option but there would be fewer storage tanks and pipes potentially at risk during a seismic event. Tunnels are generally designed to avoid other underground developments and take advantage of stable glacial till layers. Operational effects are anticipated to be minor. |
| | Shared Ship Canal Tunnel Option | This option would have similar potential for impacts as the Shared West Ship Canal Tunnel Option. Additional flow diversions under this option would further reduce the number of storage facilities at potential risk. |
| Integrated Plan Alternative | | In addition to the operational impacts of the selected LTCP option, the operational impacts of the stormwater projects specific to the Integrated Plan Alternative are anticipated to be minor. Depending on location selected, the South Park Water Quality Facility could be at risk for liquefaction in saturated soils; however, the facility would be constructed to meet seismic design standards. NDS Partnering projects could cause slope instability or groundwater contamination if not properly sited and designed, and erosion if not properly maintained. Street sweeping operations would not be expected to affect earth or groundwater. |
| No Action Alternative | | Projects completed as part of the ongoing Natural Drainage System program and roadside rain garden programs could cause erosion if they are not properly maintained.<br>Projects included in the City's NPDES Waste Discharge Permit and the 2010 Plan Amendment will meet seismic design standards. |
| Measures to reduce or minimize potential impacts | | The City would undertake the following measures:<br>• All sites would be maintained to prevent erosion.<br>• Projects would be sited and designed to minimize seismic risk and potential for earth subsidence.<br>• NDS Partnering projects (under the Integrated Plan Alternative) would be sited and designed to avoid potential impacts on slope stability and/or groundwater quality. |

| *Table 1-4. Summary of Operational Impacts* | | |
|---|---|---|
| **Air Quality** | | |
| Long Term Control Plan Alternative | Key Findings | The net operational effects of the LTCP Alternative on air quality and odors would be minor in the Plan area. All facilities would be designed and maintained to minimize emissions of odorous compounds and would include odor control components as necessary. |
| | Neighborhood Storage Option | *Neighborhood (Tanks/Pipes):* This option would have the highest number of potential odor-producing tanks and pipes located throughout the Plan area, including in or near residential areas in the Ship Canal, Lake Washington, and Longfellow Creek/Duwamish Neighborhoods. All facilities would be designed and maintained to minimize emissions of odorous compounds. Therefore, operational effects of the CSO control facilities on air quality and odors would be minor in the Plan area.<br>*Neighborhood West Ship Canal Tunnel:* (See Shared West Ship Canal Tunnel Option below – impacts would be similar). |
| | Shared Storage Option | Impacts would be similar to the Neighborhood Storage Option but there would be fewer potential odor-producing tanks and pipes in the Ship Canal Neighborhoods. |
| | Shared West Ship Canal Tunnel Option | The large tunnel would replace the need for a number of potential odor-producing storage facilities in the Ballard and Fremont/Wallingford neighborhoods. The large tunnel would have the greatest potential for odors at the downstream tunnel portal (likely located along the Ship Canal in the vicinity of Ballard), which would be controlled by an odor control facility. In neighborhoods where flow diversions would replace storage tanks/pipes, there would be less potential for odor impacts. |
| | Shared Ship Canal Tunnel Option | This option would have similar potential for impacts to the Shared West Ship Canal Tunnel Option, except that the shared tunnel would replace the need for additional independently constructed storage facilities with odor-producing potential in the Lake Washington Neighborhoods of Montlake, Portage Bay, and Leschi. The large tunnel would have the greatest potential for odors at the downstream tunnel portal (likely located along the south side of the Ship Canal), which would be controlled by an odor control facility. Additional flow diversions in Duwamish and Delridge would further reduce the number of potentially odor-producing storage facilities in those neighborhoods. |
| Integrated Plan Alternative | | In addition to the operational impacts of the selected LTCP option, the air quality impacts of the stormwater projects specific to the Integrated Plan Alternative are anticipated to be minor. Similar to CSO storage facilities, the South Park Water Quality Facility has the potential to generate odors. However, this impact is expected to be minimal because stormwater has fewer odor generating compounds than wastewater or combined sewer overflows. Street sweeping has the potential to temporarily increase localized dust and emissions, but increases would be minimal and occurring at night. There are no operational air-related impacts associated with NDS Partnering. |
| No Action Alternative | | No air quality impacts or increased odors are anticipated from the ongoing sewer system improvements and NDS programs. |

| *Table 1-4. Summary of Operational Impacts* | |
|---|---|
| Measures to reduce or minimize potential impacts | The City would undertake the following measures:<br>• All storage facilities and downshafts (for tunnels) would be designed with state-of-the-art odor control systems.<br>• The City would operate storage facilities to minimize the potential for odors by limiting how long combined sewage is stored in the facilities, maintaining air space at slightly negative pressures, and scheduling maintenance of odor control systems during cold temperatures and periods of low flow. |
| **Surface Water** | |
| Long Term Control Plan Alternative | The LTCP Alternative would result in substantial pollutant loading reduction from existing uncontrolled CSO outfalls when compared with the No Action Alternative. Pollutant loadings from control of 22 currently uncontrolled CSOs would be substantively reduced and would come into compliance with the Clean Water Act and the requirements of the Consent Decree. The Ship Canal/Lake Union, Lake Washington, Duwamish River, Longfellow Creek, Elliott Bay and Puget Sound would receive reduced discharges from CSOs. The Integrated Plan Alternative would result in greater pollutant loading reductions than the LTCP Alternative. |
| Integrated Plan Alternative | Reduced pollutant loadings would be greater than those achieved by the LTCP alone because of the additional reductions achieved by stormwater projects. The Integrated Plan would provide greater reductions in a number of pollutants, including total suspended solids, PCBs, PBDEs, total copper, total zinc, total phosphorus, fecal coliform, and oil and grease. Relative reductions would be highest for the Duwamish Waterway, which was identified as the highest priority water body by the Integrated Plan team based on the criteria described in the Consent Decree within those water bodies. Deferral of six CSO projects would result in delayed reduction of pollutant loads that constitute less than 10 percent of the total CSO volume currently being discharged. These CSOs were identified for deferral primarily because they are already close to being controlled and have relatively low average annual discharge volumes. Discharges from the deferred CSOs into Portage Bay and the Duwamish Waterway would continue until the projects are constructed (after 2025). |
| No Action Alternative | Under the No Action Alternative, pollutant loadings to receiving water bodies would not be reduced beyond levels provided from construction of projects included in the 2010 CSO Control Plan and currently planned NDS projects. This alternative does not comply with the Consent Decree, and it would result in significant fines for the City. This alternative is not consistent with the City's Plan to Protect Seattle's Waterways. |
| Measures to reduce or minimize potential impacts | The Plan Alternatives are intended to reduce surface water impacts and comply with the Clean Water Act and the Consent Decree. Additional water quality benefits will be achieved through ongoing watershed management efforts, stormwater management programs, and other cooperative efforts with watershed managers throughout the region. |

| *Table 1-4. Summary of Operational Impacts* | | |
|---|---|---|
| **Biological Resources** | | |
| Long Term Control Plan Alternative | | The LTCP Alternative would result in negligible to minor impacts from operation of the storage facilities in the Plan area. There would be long-term beneficial effects on fish and aquatic life from reducing CSOs. Implementation of the LTCP would reduce the volume of untreated sewage and stormwater runoff, thereby reducing the potential for related impacts on aquatic life. Implementation of the LTCP would comply with the Consent Decree as well as other federal and state requirements. |
| Integrated Plan Alternative | | In addition to the benefits associated with the LTCP CSO control facilities, there would be additional pollutant reductions to the Duwamish waterway, Thornton Creek, Piper's Creek, and Longfellow Creek. The expanded Street Sweeping program would also benefit Lake Union/Ship Canal, Elliott Bay and Puget Sound. Reductions in pollutant loading would benefit aquatic resources in these waterways. NDS Partnering would help reduce high flow pulses that can adversely affect aquatic life in the creeks. |
| No Action Alternative | | The No Action Alternative would result in no additional improvements to CSO reductions in the Plan area, which could have long term adverse effects on fish and aquatic life including listed species. |
| Measures to reduce or minimize potential impacts | | Because none of the Plan alternatives are expected to cause adverse impacts to biological resources, no measures are proposed. |
| **Energy and Climate Change** | | |
| Long Term Control Plan Alternative | Key Findings | The LTCP would have minor operational effects on energy use in the city. The greenhouse gas (GHG) emissions produced by operating and maintaining CSO facilities are not expected to cause appreciable climate change impacts. The City has incorporated climate change modeling in its development of Plan alternatives and would incorporate additional modeling in the design of individual CSO facilities to minimize risks from anticipated changes in precipitation and sea level rise. |
| | Neighborhood Storage Option | *Neighborhood (Tanks/Pipes):* The CSO control facilities would have minor operational effects on energy use as a result of pumping and electrical equipment requirements. Although operating the CSO equipment can be energy intensive, most of the equipment operates infrequently, only during storm events. Therefore, the CSO equipment is expected to have a minor impact on energy use or demand in the Plan area. The GHG emissions produced by operating and maintaining CSO control facilities are expected to be minor.<br><br>The City has incorporated climate change modeling in its development of Plan alternatives and would incorporate additional modeling in the design of individual CSO control facilities to minimize risks from anticipated changes in precipitation and sea level rise.<br><br>*Neighborhood West Ship Canal Tunnel:* (See Shared West Ship Canal Tunnel Option below – impacts would be similar). |

| *Table 1-4. Summary of Operational Impacts* | | |
|---|---|---|
| | Shared Storage Option | The CSO facilities included in the Shared Storage Option would have somewhat higher electrical requirements than the City independent CSO facilities included in the Neighborhood Storage Option because of the greater energy requirements of the larger shared storage tanks. However, overall energy use would be expected to be lower because the shared tanks replace the need for 10 City and 3 King County independently constructed CSO facilities. |
| | Shared West Ship Canal Tunnel Option | The Shared West Ship Canal Tunnel Option would potentially have a higher electrical requirement than the City neighborhood CSO facilities included in the Neighborhood Storage Option and the shared storage tanks included in the Shared Storage Option because of the electricity needed to pump the deeply stored water. However, overall energy use would still be minor and would be expected to be further reduced as this option replaces the need for 4 City and 2 King County independently constructed CSO facilities. |
| | Shared Ship Canal Tunnel Option | The Shared Ship Canal Tunnel Option would have slightly higher than the West Ship Canal Tunnel because of the electrical energy requirements of the larger tunnel. However, overall energy use would be expected to be the most reduced under this option compared to the Neighborhood Storage Option because it replaces the need for 15 City and 3 King County independently constructed CSO facilities, the most of all the options. |
| Integrated Plan Alternative | | In addition to the CSO control facilities under the LTCP, the South Park Water Quality Facility would use energy on an intermittent basis. |
| No Action Alternative | | Energy requirements from operation of projects implemented under ongoing programs are minimal. |
| Measures to reduce or minimize potential impacts | | The City would undertake the following measures to reduce the impacts of CSO control facilities on energy and to protect the new facilities from the risks of climate change:<br>• Comply with state and city requirements related to energy efficiency of the new CSO control facilities.<br>• Include evaluations of GHG emissions as required by the City in project-level SEPA analyses.<br>• Incorporate climate change modeling into design of CSO control facilities.<br>• Utilize the adaptation planning pathways incorporated in the City's *Sea Level Rise Planning Guidance for Capital Projects* (City of Seattle, 2011d) to design and locate CSO control facilities. |

| *Table 1-4. Summary of Operational Impacts* | | |
|---|---|---|
| **Environmental Health and Public Safety** | | |
| Long Term Control Plan Alternative | | Overall, the LTCP Alternative is expected to reduce environmental health risks associated with CSOs by reducing untreated discharges. Reductions of CSO discharges to water bodies where water contact recreation occurs, including Lake Union, the Ship Canal, Lake Washington, and the Duwamish Waterway, would reduce the potential for CSO-related environmental health risks in those water bodies. |
| Integrated Plan Alternative | | In general, reduction in environmental health risks would be greatest under the Integrated Plan Alternative. Pollutant load and human exposure evaluations conducted as part of the Integrated Plan indicated that pathogens and toxic organic and inorganic constituents would be reduced to a greater level under the Integrated Plan Alternative than the LTCP Alternative. Once the deferred CSO projects are implemented, they will add to the long term loading reduction achieved by the Integrated Plan Alternative.<br><br>Residents have expressed concerns about health risks associated with rain gardens, including safety risks associated with ponded water, and potential for mosquito breeding. With proper siting, design and maintenance, these issues are not expected to occur. |
| No Action Alternative | | Under the No Action Alternative, water quality in surface waters throughout the Plan area would continue to be negatively impacted by CSO releases from uncontrolled outfalls. Contaminated water could continue to affect swimming beaches and fishing areas, causing environmental health impacts. The No Action Alternative is not compliant with the Consent Decree, and is not consistent with the City's Plan for Protecting Seattle's Waterways. |
| Measures to reduce or minimize potential impacts | | As part of ongoing programs, the City undertakes the following measures to minimize impacts of NDS projects:<br>• The City maintains roadside rain gardens to prevent standing water and reduce the potential for mosquito breeding.<br>• The City provides education and incentives to encourage property owners to maintain rain gardens. |
| **Noise and Vibration** | | |
| Long Term Control Plan Alternative | Key Findings | The net operational effects of the LTCP Alternative would be minor in the Plan area. Noise would be intermittently generated under all options by pump stations and odor control facilities. All facilities would be designed and maintained to reduce noise to permissible levels. |
| | Neighborhood Storage Option | *Neighborhoods (Tanks/Pipes):* Because the Neighborhood Storage and Shared Storage Options would have the most pump stations and other facilities, they would have a higher potential for noise impacts. Some pump stations and mechanical facilities could be located in residential areas, particularly in the Lake Washington, Longfellow Creek/Duwamish, and Ship Canal Neighborhoods.<br><br>*Neighborhood West Ship Canal Tunnel:* (See Shared West Ship Canal Tunnel Option below – impacts would be similar). |
| | Shared Storage Option | Impacts would be similar to the Neighborhood Storage Option but there would be additional noise-generating pump stations and mechanical facilities. |

| *Table 1-4. Summary of Operational Impacts* | | |
|---|---|---|
| | Shared West Ship Canal Tunnel Option | Because the Shared West Ship Canal Tunnel Option and the Shared Ship Canal Tunnel Option would have fewer pump stations and mechanical facilities than the Neighborhood and Shared Storage Options, they would have a lower potential for noise impacts. |
| | Shared Ship Canal Tunnel Option | Because the Shared West Ship Canal Tunnel Option and the Shared Ship Canal Tunnel Option would have fewer pump stations and mechanical facilities than the Neighborhood and Shared Storage Options, they would have a lower potential for noise impacts. |
| Integrated Plan Alternative | | CSO storage pipes, tanks, and tunnels constructed under the Integrated Plan Alternative would have the same operational noise impacts as under the LTCP Alternative, but implementation would be delayed in some neighborhoods. Operation of the elements specific to the Integrated Plan Alternative would have minimal noise impacts. Natural drainage systems would not generate noise. Street sweeping, which would occur at night, would only occur on arterial streets and would not generate noise in excess of typical vehicle noise. The South Park Water Quality Facility could generate some operational noise from ventilation fans and maintenance activities. However, the facility would be located in an industrial area and operational noise would not impact residences or other sensitive receptors. |
| No Action Alternative | | Operation of sewer system improvements and NDS projects implemented under ongoing programs would not generate noise. |
| Measures to reduce or minimize potential impacts | | A noise analysis for each project would be performed during final design. Information on sensitive noise receiving properties and site-specific characteristics will be used to determine location-specific measures. Potential measures could include:<br>• Pump station and odor control facility designs would include attenuation measures for fan noise and pump and motor noise as needed to comply with noise levels specified by the City of Seattle and to address location-specific factors as determined during project design.<br>• Facility vault access hatches would be designed to be relatively thick and to have seals at the perimeters to contain noise within the vault.<br>• Pumps, standby generators, and odor control equipment would be located in below ground structures. |
| **Land Use and Visual Quality** | | |
| Long Term Control Plan Alternative | Key Findings | Potential land use impacts associated with CSO control projects include conversion of land in residential, commercial, or industrial areas to public utility uses. These impacts differ between the options because of different property requirements of tanks as compared to tunnels. The completed facilities would primarily be constructed below ground; aboveground facilities would have minimal visual impacts with the use of site appropriate design and screening. |
| | Neighborhood Storage Option | *Neighborhood (Tanks/Pipes):* This option would have the most storage tanks located throughout the Plan area with the potential to cause permanent land use changes. Private property or permanent easements could be acquired for any of the LTCP options, but would likely be greatest under the Neighborhood Storage (and Shared Storage Options). Current land uses would be permanently changed to become storage facilities, however, the tanks and associated equipment would primarily be underground. The presence of underground |

| Table 1-4. Summary of Operational Impacts | | |
|---|---|---|
| | | storage tanks would restrict certain future uses on top of the facility. While there is the potential to redevelop the surface area into certain beneficial uses, the previous land use at the site could be permanently altered. Typical uses for the tops of storage tanks include passive recreation, athletic fields and parking facilities. More area would be retained in ownership or by permanent easement by the City for a storage tank than for a tunnel.<br><br>Ballard would have the largest storage tank (occupying an estimated 60,000 square feet (SF)). The completed facilities would be designed to visually blend with the surroundings, but it is likely that they would have a different appearance from pre-construction conditions. Storage pipes would be constructed in street rights-of-way, and would have less potential for land use changes.<br><br>*Neighborhood West Ship Canal Tunnel:* (See Shared West Ship Canal Tunnel Option below – impacts would be similar). |
| | Shared Storage Option | The impacts would be similar to the Neighborhood Storage Option. While fewer sites in the Ship Canal Neighborhoods would be used for storage tanks, and no tank would be sited in the East Waterway area, potential land use impacts from siting larger shared tanks could occur in the Lake Washington Neighborhoods. These tanks would occupy an estimated 35,000 SF (North Union Bay) and 40,000 SF (Montlake). There is a greater potential for conversion of residential lands for storage tanks in the Lake Washington Neighborhoods under this option. As noted above, more area would be retained in ownership or by permanent easement by the City for a storage tank than for a tunnel, and the presence of an underground tank restricts certain future uses of the site. |
| | Shared West Ship Canal Tunnel Option | This option would have less potential for long-term land use impacts than both the Neighborhood Storage and Shared Storage Options since the tunnel would replace the need to site several storage tanks in the Ship Canal Neighborhoods (Ballard and Fremont/Wallingford), and less property would need to be retained following construction. In contrast to storage tanks, the City would be able to sell or lease approximately 75 percent of the tunnel launch portal lands in Ballard required for construction back to private ownership where it could be developed for zoned uses (e.g., industrial, commercial). Approximately 0.5 acre of the launch portal would be retained by the City to house the pump station, odor control, and permanent shaft for access and maintenance. All of the area used for the smaller, recovery end of the tunnel in Fremont/Wallingford would be retained by the City. Some additional areas would be retained for permanent drop shafts as required to accept flows from each contributing City and King County CSO area. |
| | Shared Ship Canal Tunnel Option | Similar to the Shared West Ship Canal Tunnel, less property would need to be retained following construction of the tunnel compared to the Neighborhood and Shared Storage Options. The City would be able to sell or lease approximately 75 percent of the tunnel launch portal lands on the south side of the Ship Canal required for construction back to private ownership where it could be developed for zoned uses (e.g., industrial, commercial). Approximately 0.5 acre would be retained by the City to house the pump station, odor control, and permanent drop shaft for access and maintenance. All of the area used for the smaller, recovery end of the tunnel in North Union Bay would be retained by the City. Additional areas would be retained for permanent drop shafts as required to accept flows from each contributing City and King County CSO area. Compared to the Shared West Ship Canal Tunnel Option, the Ship Canal Tunnel would result in less potential for land use impacts in Ballard and more potential for land use impacts on the south side of the Ship Canal and in North Union Bay. |

| *Table 1-4. Summary of Operational Impacts* | | |
|---|---|---|
| Integrated Plan Alternative | | Stormwater projects constructed under the Integrated Plan are not expected to cause major long term impacts to land use. Long term land use impacts from NDS Partnering would be minimal, because the projects would be implemented in neighborhoods on a voluntary basis, and would be installed to blend with neighborhood character. The South Park Water Quality Facility would likely be sited in an industrial-zoned area, surrounded by industrial and commercial land uses. The visual impact of the facility is expected to be minimal. |
| No Action Alternative | | Operation of sewer system improvements and NDS projects implemented under ongoing programs is not expected to result in land use or visual quality impacts. The planned CSO projects included in the City's NPDES Waste Discharge Permit and the 2010 Plan Amendment would have minor land use impacts. Visual quality impacts would be limited to the aboveground support facilities needed for the CSO projects and are also expected to be minor. |
| Measures to reduce or minimize potential impacts | | The City would undertake the following measures to minimize land use and visual quality impacts for all proposed projects:<br>• Minimize the size of permanent aboveground facilities and design them to blend with the surroundings.<br>• Locate and aim any artificial lighting away from adjacent roadways, residential areas, and water bodies. Use the minimum wattage necessary to provide the necessary illumination.<br>• Sell or lease portal land in excess of what is needed back to private ownership. |
| **Recreation** | | |
| Long Term Control Plan Alternative | Key Findings | Overall, the operational effects from the LTCP Alternative on recreational activities are expected to be minor. Reductions in pollutant loading would benefit long term water quality and help maintain beneficial uses at area beaches. Water contact recreation in area water bodies would be enhanced by improved water quality in Lake Washington, Portage Bay, the Duwamish River, and Lake Union, in particular. Locating storage facilities in a park would constrain certain future uses of that area for park purposes. However, there is a potential to provide recreational facilities on top of storage tanks following construction. |
| | Neighborhood Storage Option | *Neighborhood (Tanks/Pipes):* The Neighborhood Storage and Shared Storage Options would have the highest potential to cause park and recreation impacts because these options have the most tank facilities. Locating storage facilities in a park or its associated uses (such as parking) would constrain certain future uses of that area for park purposes. However, there is a potential to provide recreational facilities on top of storage tanks following construction.<br>*Neighborhood West Ship Canal Tunnel:* (See Shared West Ship Canal Tunnel Option below – impacts would be similar). |

| *Table 1-4. Summary of Operational Impacts* | | |
|---|---|---|
| | Shared Storage Option | The impacts would be similar to the Neighborhood Storage Option. While fewer sites in the Ship Canal Neighborhoods would be used for storage tanks, potential recreation impacts from siting larger shared tanks could occur in the North Union Bay and Montlake neighborhoods if a tank is located in a park. The Montlake neighborhood, because of the relatively higher amount of parkland, including Montlake Boulevard (an Olmsted Park), has a greater potential to be affected under this option. The storage tank in North Union Bay would be located in proximity to the University of Washington Athletic Complex (including fields, a golf course, a ballpark, and an outdoor track) and the Union Bay Natural Area. |
| | Shared West Ship Canal Tunnel Option | This option would have less potential for long-term impacts to recreation than both the Neighborhood Storage and Shared Storage Options since the tunnel would replace the need to site several storage tanks in the Ship Canal Neighborhoods (Ballard and Fremont/Wallingford), with less potential for recreation impacts. |
| | Shared Ship Canal Tunnel Option | Compared to the Shared West Ship Canal Tunnel Option, the Ship Canal Tunnel would result in less potential for recreation impacts in Ballard and more potential for impacts on the south side of the Ship Canal and in North Union Bay if the tunnel portals are sited in a park or recreation area. Parks and recreation areas in these areas include athletic fields owned and operated by Seattle Pacific University and the University of Washington, as well as the Burke Gilman Trail, and numerous neighborhood parks. |
| Integrated Plan Alternative | | Storage pipes, tanks, and tunnels constructed under the Integrated Plan Alternative would have the same recreation impacts as under the LTCP Alternative, but implementation would be delayed in some neighborhoods. Operation of the stormwater projects specific to the Integrated Plan Alternative is not expected to result in any additional adverse recreation impacts. The additional pollutant load reductions would indirectly benefit water-based recreation activities in the Plan area. |
| No Action Alternative | | The No Action Alternative would result in no additional improvements to water quality in the Plan area water bodies, with ongoing potential for adverse indirect effects on recreation at swimming beaches. |
| Measures to reduce or minimize potential impacts | | The City would comply with the conditions of Initiative 42 (Ordinance No. 118477) related to siting public facilities in parks. Additional site-specific measures, including measures for project-related impacts, would be identified during project design. |
| **Historic, Cultural, and Archaeological Resources** | | |
| Long Term Control Plan Alternative | | Operation of projects implemented under the LTCP Alternative is anticipated to have no effect on historic, cultural, and archaeological resources within the Plan area. |
| Integrated Plan Alternative | | No additional effects on historic, cultural, and archaeological resources within the Plan area are anticipated under the Integrated Plan Alternative. |
| No Action Alternative | | Operation of projects implemented under ongoing programs is anticipated to have no effect on historic, cultural, and archaeological resources within the Plan area. |
| Measures to reduce or minimize potential impacts | | No measures would be required. |

| *Table 1-4. Summary of Operational Impacts* | | |
|---|---|---|
| **Transportation** | | |
| Long Term Control Plan Alternative | | Overall, the operational effects from vehicle trips generated by facility maintenance under the LTCP Alternative are expected to be minor. |
| Integrated Plan Alternative | | Operation of the additional projects implemented under the Integrated Plan Alternative would have minimal transportation impacts. The South Park Water Quality Facility could generate occasional vehicle trips with minimal effect on roadway operations. Street sweeping would primarily occur at night when traffic volumes are low, and would not affect roadway operations or parking. |
| No Action Alternative | | Completed projects under the No Action Alternative are not expected to cause transportation impacts. |
| Measures to reduce or minimize potential impacts | | Because there would be no impacts to transportation, no measures are proposed. |
| **Utilities** | | |
| Long Term Control Plan Alternative | Key Findings | Implementation of the LTCP will require close coordination with numerous utilities, in particular, wastewater and stormwater utilities within the service area. Because the City's collection system network sends wastewater to King County for treatment, coordination with King County will be particularly important. King County's West Point Treatment Plant would receive additional sewage flows as a result of Plan implementation. The high variability in flow rates within the sewer system associated with heavy storms could be challenging to manage at the King County West Point Treatment Plant. Based on City modeling, these additional flows will have little effect on the peak loading to King County's West Point Treatment Plant and may potentially reduce peak loading. However, annual average flows will increase, resulting in greater operational and maintenance costs. Seattle and King County will address the incremental cost of these flows in their sewage disposal agreement. The potential implications to King County's combined sewer system vary depending upon the option implemented, as described below. In general the operational implications associated with shared options will require greater coordination with King County than the Neighborhood Storage Option. |
| | Neighborhood Storage Option | *Neighborhood (Tanks/Pipes):* This option would generally have minimal operational impacts to utilities once construction is complete. However, this option would require the greatest length of sewer pipe construction, with accompanying maintenance requirements. Sewer system improvements in North Union Bay could have operational implications to King County, which would be resolved according to agreements negotiated with King County. Selection of this option would necessitate the need for King County to construct the largest number of independent storage facilities to meet regulatory requirements.<br><br>*Neighborhood West Ship Canal Tunnel:* Impacts would be the same as described above. |
| | Shared Storage Option | Impacts would be similar to those described for the Neighborhood Storage Option. However, flow diversion projects in cooperation with King County would result in potential operational considerations for both King County and the City. Potential operational implications would be coordinated with King County to ensure than detrimental impacts do not occur. |

| *Table 1-4. Summary of Operational Impacts* | | |
|---|---|---|
| | Shared West Ship Canal Tunnel Option | As described above, shared storage projects have operational implications to King County and the City. A large shared tunnel would be implemented in accordance with operational agreements between the City and King County. The Shared West Ship Canal Tunnel Option may reduce the operational complexity of controlling neighborhood storage tanks or shared storage tanks, as it provides one large storage facility for all flows to be managed through a single pump station discharging to King County's West Point Treatment Plant. Close coordination with King County would be needed to optimize operational benefits. |
| | Shared Ship Canal Tunnel Option | This option involves the City and King County sharing a deep tunnel, and includes four flow diversions to King County facilities. This option requires the highest level of coordination with King County, to reduce the potential for impacts. Extensive coordination between the City and King County would be conducted to develop operational agreements that are workable and efficient for both entities. |
| Integrated Plan Alternative | | Impacts to public utilities would primarily be related to implementation of CSO control measures under the selected LTCP option. No additional impacts are expected to occur related to the implementation of Integrated Plan stormwater projects. |
| No Action Alternative | | Implementation of the No Action Alternative would not comply with the Consent Decree, and could potentially result in significant fines for the City, with potential impacts to City ratepayers. |
| Measures to reduce or minimize potential impacts | | For all LTCP options, the City would work together with King County to analyze and address downstream operational and capital impacts to the King County System. If downstream impacts cannot be successfully minimized, then there is the potential that the County will be required to build new or larger downstream capital facilities to accommodate the LTCP options. Even with measures to reduce impacts, there would likely be an increase in the County's operations & maintenance (O&M) costs to account for the additional flows from the City's system. |
| **Socioeconomics and Environmental Justice** | | |
| Long Term Control Plan Alternative | | The operational effects of the LTCP Alternative would be minor to moderately beneficial associated with improved water quality in area receiving waters, and there would be no adverse operational effects that would be predominantly borne by minority or low-income populations and underserved communities. |
| Integrated Plan Alternative | | The operational effects of the additional Integrated Plan stormwater projects would be minor to moderately beneficial, and there would be no adverse operational effects that would be predominantly borne by minority or low-income populations and underserved communities. |
| No Action Alternative | | CSO discharges would not be reduced beyond levels outlined in the City's NPDES Waste Discharge Permit and 2010 CSO Control Plan, so no further improvements in current environmental health risks would occur. These health risks are predominantly borne by low-income, tribal, and subsistence fishing communities.<br>Sewer system improvements and NDS programs included in the No Action Alternative are not expected to cause socioeconomic or environmental justice impacts. |
| Measures to reduce or minimize potential impacts | | The City would continue public participation efforts as projects are advanced consistent with the City's social and racial justice initiative. |

## 1.5 Public and Agency Review

This section provides an overview of the public and agency review of the Draft EIS, the issues identified during the public comment period, and the City's responses to those comments. Appendix B of this Final EIS includes all comments received during the public review period and the City's response to each.

### 1.5.1 How were the public and agencies involved in the process?

SPU issued a Notice of Availability of the Draft EIS on May 29, 2014 (SPU, 2014f). The Notice of Availability described the purpose of the Plan and the three alternatives that were considered in the Draft EIS (LTCP Alternative, Integrated Plan Alternative, and No Action Alternative). The Notice of Availability invited agencies, affected tribes, and members of the public to comment on the Draft EIS; provided the date, time, and location of the Draft EIS public hearing; provided the name, address, email address, and phone number of the project manager and the SEPA Responsible Official; and directed people to respond with their comments via email or in writing by June 30, 2014 to the SEPA Responsible Official. Additional SEPA required public notification included the following:

1. The Notice of Availability was posted on the Seattle Department of Planning and Development's Land Use Bulletin on May 29, 2014.
2. The Notice of Availability was posted on the Washington Department of Ecology's SEPA Register on May 29, 2014.
3. The Notice of Availability was published in the Daily Journal of Commerce on May 29, 2014
4. The Notice of Availability was published in the Seattle Times on May 29, 2014.
5. The Notice and Draft EIS were mailed to agencies with jurisdiction, organizations and individuals who requested copies, and organizations and individuals who commented during the scoping process.
6. The Draft EIS was available for public review at SPU's main office on the 49$^{th}$ floor of the Seattle Municipal Tower, the Seattle Central Library, and online at www.seattle.gov/cso.

SPU conducted an extensive public involvement program throughout the development of the LTCP and Integrated Plan, as summarized in Appendix A, Public Involvement Summary Report. This outreach began with EIS scoping in 2011, when SPU conducted 30 briefings of stakeholder groups throughout the city, as well as holding four in-person scoping and one online scoping meeting. The City continued outreach through 2013 and 2014, include briefings and meetings to discuss the Integrated Plan and the LTCP throughout the City, including the South Park and Georgetown communities. Briefings in May and June, 2014 included Sustainable West Seattle, Lake City Neighborhood Alliance, Friends of Gasworks Park, Ballard District Council, Fremont Neighborhood Council, Groundswell NW, Puget Soundkeeper Alliance, NW District County, North Seattle Industrial Association, Leschi Community Council, South Park Neighborhood Association, Delridge Neighborhoods Council, and Thornton Creek Alliance. Briefings were offered to an additional 13 organizations, but were not scheduled, including the Duwamish River Cleanup Coalition, the Georgetown Community Council, and the Greater Duwamish District Council. In addition to the public meeting/hearing, comments could be provided through email or letter. SPU conducted a comprehensive effort to obtain input from all potentially affected neighborhoods and incorporate that input into the development of the LTCP and Integrated Plan Alternatives.

### 1.5.2 What comments were received on the Draft EIS?

During the Draft EIS comment period, a total of 37 comments were received from the public and agencies. Comments were received from 12 different parties, including four agencies, two organizations, and six individuals. The public hearing was attended by 12 individuals. Comments received were varied, and addressed the following issues or concerns:

- Water quality: protection of natural resources; protection of public health; maximizing water quality benefits
- Implications of the Plan on the regional wastewater system;
- Concerns of siting facilities in parks;
- Concerns about feasibility of GSI in the Ballard neighborhood;
- Relationship of the Plan to source control efforts in the Duwamish River; outreach and coordination with the South Park and Georgetown neighborhoods;
- Specific concerns related to Thornton Creek and Piper's Creek;
- Support for the Integrated Plan Alternative.

A complete list of the comments and the City's responses is included in Appendix B.

# References

King County. 2012. *2012 King County Long-term Combined Sewer Overflow Control Plan.* Wastewater Treatment Division. October 2012.

SPU (Seattle Public Utilities). 2010. *Combined Sewer Overflow Program 2010 CSO Reduction Plan Amendment*, May 2010.

SPU (Seattle Public Utilities). 2013. *2012 Annual Report Combined Sewer Overflow (CSO) Reduction Program.* March 30, 2013.

SPU (Seattle Public Utilities). 2014a. *The Plan to Protect Seattle's Waterways Volume 1: Executive Summary.* 2014. Available online at www.seattle.gov/cso.

SPU (Seattle Public Utilities). 2014b. *The Plan to Protect Seattle's Waterways Volume 2: Long-Term Control Plan.* 2014. Available online at www.seattle.gov/cso.

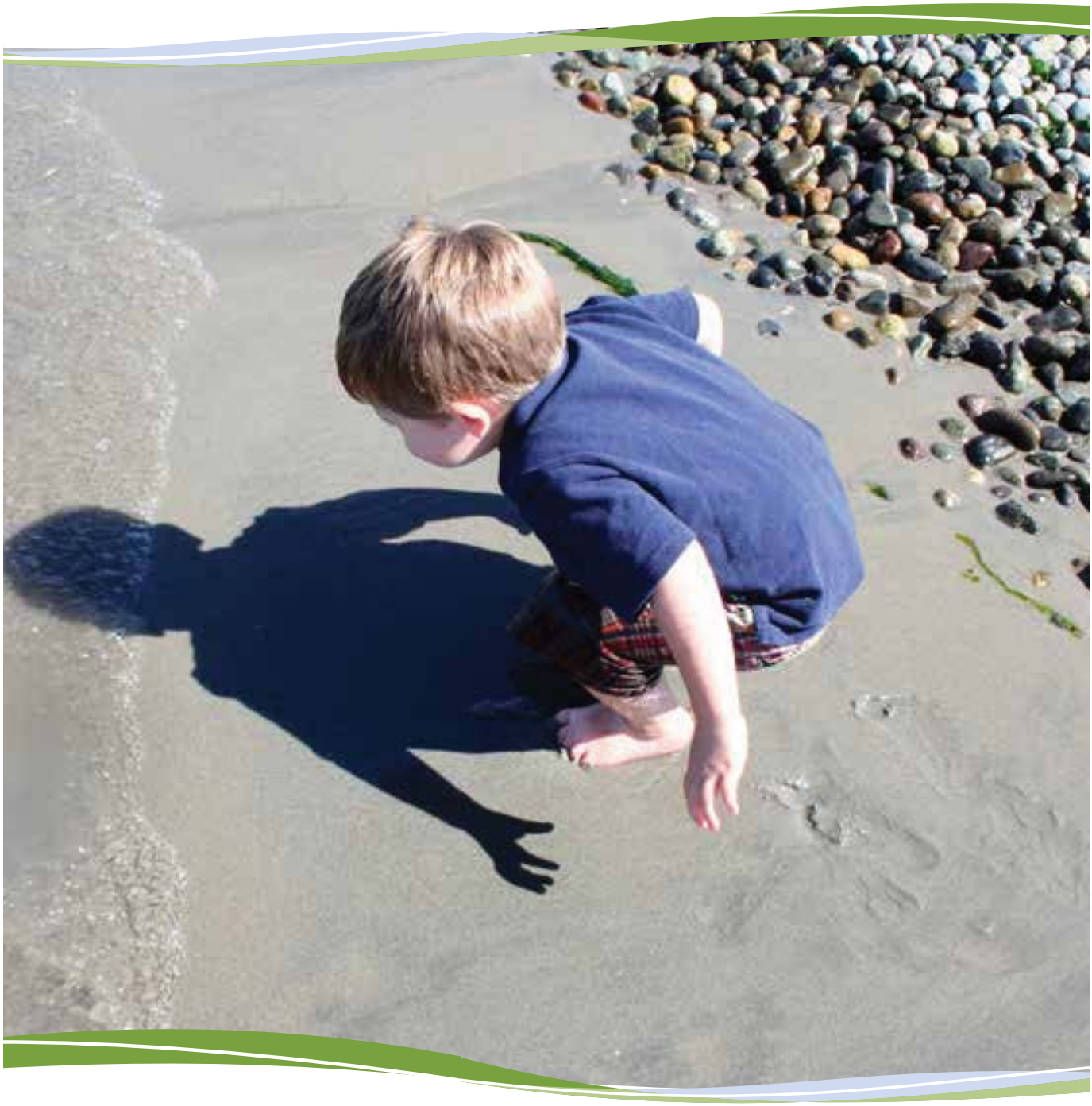
SPU (Seattle Public Utilities). 2014c. *The Plan to Protect Seattle's Waterways Volume 3: Integrated Plan.* 2014. Available online at www.seattle.gov/cso.

SPU (Seattle Public Utilities). 2014d. *The Plan to Protect Seattle's Waterways Volume 4: Draft Programmatic Environmental Impact Statement. May 29, 2014.* Available online at www.seattle.gov/cso.

SPU (Seattle Public Utilities). 2014e. *Long-Term Control Plan: Final – Transportation Alternatives Analysis for Ballard Construction Operations.* October 2014.

SPU (Seattle Public Utilities). 2014f. *The Plan to Protect Seattle's Waterways – Notice of Availability of Draft Environmental Impact Statement. 2014.* Available online at www.seattle.gov/cso.

# Appendix A: Public Involvement Summary Report



Plan to Protect Seattle's Waterways

# Public Involvement Summary 2010-2014

Seattle Public Utilities

Since 2010, Seattle Public Utilities has provided multiple opportunities for community members to get information, talk with staff, and provide input as it develops the Plan to Protect Seattle's Waterways, its long-range strategy to keep raw sewage and polluted runoff out of Seattle's lakes, creeks, and Puget Sound. Community input will help Seattle Public Utilities and City Council as it makes decisions that will protect Seattle's waterways. This report summarizes these public involvement activities.

## Public Involvement Objectives

# Inform

**Seattle Public Utilities shared information with the city neighborhoods about the following topics:**

- The nature, seriousness, and scale of the combined sewer overflow (CSO) and stormwater runoff problems
- Strategies for controlling and treating sewage overflows and stormwater runoff
- Process and schedule for public participation
- Public meetings and public comment periods
- Availability of project documents
- Project information and updates at key milestones

# Involve

**Seattle Public Utilities engaged community members by:**

- Maintaining consistent communications contact and easy access to Seattle Public Utilities' staff
- Providing opportunities to weigh in at key milestones before decisions are finalized
- Working with community leaders to identify outreach strategies to engage low-income, minority, and limited-English proficient populations in neighborhoods affected by the Plan
- Holding meetings in accessible facilities and making materials available in multiple formats

# Consider

**After gathering public input, Seattle Public Utilities has:**

- Taken community feedback into consideration at all stages of planning, environmental review, and decision-making
- Considered, answered, and accounted for public questions and ideas in the decision-making process

# Public Involvement History

## 2010 – 2011


Signs posted near CSO outfalls notify the public about possible sewage overflows during and following heavy rain

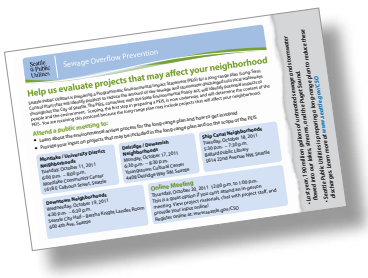
### Early Planning

**Outreach Purpose:** Understand Settle Public Utilities residential customers' awareness, understanding, and attitudes about combined sewer overflows (CSOs). Solicit input to guide early planning decisions for the Long-Term Control Plan (LTCP).

**Activities:**
- Conducted statistically valid telephone survey of Seattle Public Utilities residential customers. The survey was offered in English, Chinese, and Spanish.
- Conducted four focus groups
- Formed the Sounding Board, comprised of residents, environmental advocates, and representatives of the business and development communities and convened eight meetings
- Conducted interviews with leaders from five community organizations serving low-income, minority, and limited-English proficient community members to develop culturally appropriate public involvement strategies
- Established a real-time reporting website to alert the public when CSOs occur

**Outcomes:**
- Identified key messages and appropriate outreach strategies
- Sounding Board members:
  - Developed an understanding of the data and rationale for Long-Term Control Plan projects
  - Assisted in developing and applying criteria to make decisions about Plan alternatives
  - Provided guidance on public involvement activities and communications

## Fall 2011




Seattle Public Utilities mailed postcards to over 63,000 residences and businesses and published a Determination of Significance to inform the community it was preparing an EIS.

### Long-Term Control Plan Scoping

**Outreach Purpose:** Inform Seattle residents about Seattle Public Utilities plans to prepare a programmatic Environmental Impact Statement (EIS) for the Long-Term Control Plan and provide opportunities to share preferences about the scope of issues to study in the EIS.

**Activities:**
- Conducted briefings with 30 community organizations and stakeholder groups
- Prepared the Community Guide to the Long-Term Control Plan to describe the Plan purpose, alternatives, and environmental review process
- Hosted four public scoping meetings, one online scoping meeting, and one agency scoping meeting and received 34 comments during the 30-day public comment period

**Outcomes:**
- Reviewed comments and identified potentially significant issues and refined the public involvement program
- Summarized and shared the EIS Scoping Summary Report, available on the Seattle Public Utilities CSO website

## 2012

### Reevaluate Alternatives

**Outreach Purpose:** Inform the community about the purpose and benefits of the Consent Decree the City of Seattle negotiated with the Washington Department of Ecology (Ecology), the U.S. Environmental Protection Agency (EPA), and the U.S. Department of Justice.

**Activities:**
- Updated website with information about the Consent Decree and why Seattle Public Utilities negotiated it
- Conducted media outreach to announce the Consent Decree and provide information about its purpose and benefits
- Refined the public involvement process to support the development and environmental review of the Plan to Protect Seattle's Waterways

**Outcomes:**
- Identified new stakeholders interested in and potentially affected by the new Integrated Plan alternative
- Community members who participated in past public outreach activities for the Long-Term Control Plan learned about the new opportunities Seattle Public Utilities is exploring to control and treat both CSOs and polluted stormwater runoff

### Plan to Protect Seattle's Waterways Scoping

**Outreach Purpose:**
Inform Seattle residents about Seattle Public Utilities intent to prepare a Programmatic EIS for the Plan to Protect Seattle's Waterways and provide opportunities to share preferences about the scope of issues to study in the EIS.

**Activities:**
- Conducted briefings with 13 community organizations and stakeholder groups
- Prepared the Community Guide to the Plan to Protect Seattle's Waterways to provide an overview of the Plan purpose and alternatives and how to comment during scoping
- Developed a six-minute video about the Plan and environmental review process
- Published Determination of Significance (DS) and SEPA Scoping Notice and advertised scoping meetings through mail to approximately 330,000 Seattle residents, email, posters, and advertisements in local newspapers and community blogs
- Hosted one public scoping meeting and one agency scoping meeting and received 30 comment forms, letters, and emails during the 30-day comment period

**Outcomes:**
- Reviewed comments and determined the range of alternatives, identified potentially significant issues and refined the public involvement program
- Summarized and shared the EIS Scoping Summary Report, available on the Seattle Public Utilities CSO website

### Evaluate Alternatives

**Outreach Purpose:** Provide the public and stakeholders with more detailed information about Plan alternatives, with an emphasis on the Integrated Plan alternative.

**Activities:**
- Prepared the Community Guide to the Integrated Plan to provide an overview of the three stormwater control projects Seattle Public Utilities is evaluating for the Integrated Plan Alternative
- Established the West Ship Canal Stakeholder Advisory Group to obtain focused input from stakeholders in Ballard, Fremont, and Wallingford and convened six meetings

**Outcomes:**
- Identified the West Ship Canal Advisory Groups' seven priorities for Seattle Public Utilities to consider as it evaluates the Plan to Protect Seattle's Waterways:
  - Protect waterfront/industrial businesses
  - Minimize impacts to freight mobility
  - Protect habitat
  - Avoid impacts to private property
  - Minimize economic impacts
  - Maintain flow of traffic
  - Benefit the community

### Issue Draft Environmental Impact Statement

**Outreach Purpose:** Provide information to and collect comments from the public and agencies about the environmental impacts associated with adopting and implementing either of the two Plan alternatives.

**Activities:**
- Published legal notice of the Draft EIS release and received 37 comments during the 30-day comment period
- Advertised the availability of the Draft EIS and public hearing through mail to approximately 330,000 Seattle residents and website notices
- Hosted the Draft EIS public hearing and Long-Term Control Plan public meeting on June 24, 2014
- Conducted briefings with 13 community organizations and stakeholder groups

**Outcomes:**
- Considered the Draft EIS findings and public comments to identify a preferred alternative
- Summarized public comments and published the Draft EIS Public and Agency Comment Summary, available on the project website

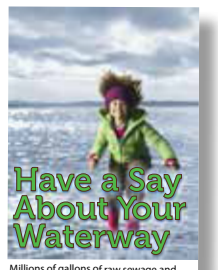
## Spring 2013


Approximately 120 people viewed the Plan to Protect Seattle's Waterways information video and 26 people completed the online survey imbedded in the video

## Fall 2013 – Winter 2014


The Community Guide to the Integrated Plan introduces three projects to address stormwater runoff in areas that are not part of the combined sewer system

## Spring 2014




Millions of gallons of raw sewage and polluted runoff overflow into Seattle waterways every year. Seattle Public Utilities is working to protect our lakes, creeks, bays, and the Duwamish River by preventing these overflows.

The draft Plan to Protect Seattle's Waterways is ready for your review. Find out more at **www.seattle.gov/cso** or come to an open house and public hearing on the draft plan.

**WHEN:** Tuesday, June 24 at 6 p.m.

**WHERE:** Lake Washington Rowing Club, 910 N. Northlake Way, Seattle.

Seattle Public Utilities encourages the public, interested agencies, and tribal governments to review and comment on the plan, proposed alternatives, and potential impacts.

Thank you for helping to protect our waters.

Seattle Public Utilities advertised the Draft EIS public hearing in its Curb Waste newsletter, which is mailed to approximately 330,000 Seattle residents

## Next Steps

**Late 2014**
- Publish the Final EIS
- Announce the Preferred Alternative

**Spring 2015**
- Mayor and Seattle City Council Adopt Plan
- Submit for approval by the Washington Department of Ecology and U.S. Environmental Protection Agency by May 30, 2015

**2016**
- Project-specific public involvement for siting, design and environmental review for individual combined sewer overflow reduction projects and stormwater control projects

## Sounding Board Members

**City Residents**

Anindita Mitra, *Greenwood resident*
Dusty Hoerler, *Maple Leaf resident*
Bruno Lambert, *Pike/Pine resident*
Julio Moran, Jr., *Columbia City resident*
Mary Junttila, *Rainier Beach resident*
Robin McKennon Thaler, *West Seattle resident*

**Stakeholders**

Rachel Ben-Shmuel, *Vulcan*
Kathy Fletcher, *People for Puget Sound*
Henry McGee Jr., Professor of Law, *Seattle University*
Joan Rosenstock, *Floating Home Owners/Floating Homes Association*
Tom von Schrader, *SvR Design Company*
J. Tayloe Washburn, *Greater Seattle Chamber of Commerce*

**West Ship Canal Stakeholder Advisory Group**

Barry Hawley, *Ballard real estate/business communities*
Catherine Weatbrook, Chair, *Ballard District Council, Crown Hill Business Association*
Elizabeth Dunigan, *Threading the Needle Park*
Jessica Vets, *Fremont Chamber of Commerce*
Kim McDonald, *Ballard Stormwater Consortium*
Larry Ward, *Waterfront/industrial businesses*
Rachel Koller *Ballard District Council*
Robert Drucker, *Ballard District Council*
Stephen Fickenscher, *Wallingford Chamber of Commerce*

For more information:
Call: **206-733-9195**
E-mail: **CSO_LTCP@seattle.gov**
Visit our website: **www.seattle.gov/CSO**

# Appendix B: Draft EIS Comments and Responses

DEPARTMENT OF
ARCHAEOLOGY &
HISTORIC PRESERVATION
Protect the Past, Shape the Future

Allyson Brooks Ph.D., Director
State Historic Preservation Officer

June 30, 2014

Mr. Betty Meyer
SEPA Responsible Official
Seattle Public Utilities
Seattle Municipal Tower
PO Box 34018
Seattle, WA 34018

In future correspondence please refer to:
Log: 063014-32-ECY
Property: Plan to Protect Seattle's Waterways
**Re: Archaeology-Review Comments**

Dear Mr. Meyer:

1-1 Thank you for contacting the Washington State Department of Archaeology and Historic Preservation (DAHP). The above referenced project has been reviewed on behalf of the State Historic Preservation Officer. DAHP will need to review all cultural resources reports for any ground disturbing activities at least 60 days in advance. As you are aware, Seattle contains many archaeological sites which are protected under state laws. Archaeological resources do not seem to have been addressed as part of the current EIS but will need to be identified and addressed prior to project implementation.

Thank you for the opportunity to review and comment.

Sincerely,

Gretchen Kaehler
Local Governments Archaeologist
(360) 586-3088
gretchen.kaehler@dahp.wa.gov

cc. Richard Young, Cultural Resources, Tulalip Tribe
Laura Murphy, Archaeologist, Muckleshoot Tribe
Dennis Lewarch, THPO, Suquamish Tribe
Steve Moses-Mullen, THPO, Snoqualmie Tribe
Tara Duff, Cultural Resources Directory, Stillaguamish Tribe
Kerry Lyste, Cultural Resources, Stillaguamish Tribe

**Response to Comment 1-1**

The Draft EIS acknowledges that additional project-specific SEPA evaluations will be required once project sites are identified and prior to project implementation. As described in Section 5.11.5, the City would also consult with agencies and other stakeholders, including DAHP, in accordance with SEPA or other regulatory triggers (i.e., Section 106).

WASHINGTON STATE DEPARTMENT OF
**Natural Resources**
**Peter Goldmark** - Commissioner of Public Lands

Caring for
your natural resources
... now and forever

June 30, 2014

Electronic submittal: betty.meyer@seattle.gov

Ms. Betty Meyer
SPU SEPA Responsible Official
Seattle Public Utilities
Seattle Municipal Tower, Suite 4900
PO Box 34018
Seattle, WA 98124-4018

Subject: Response to public comment period on the Plan to Protect Seattle's Waterways

2-1 Please accept these comments from the Washington State Department of Natural Resources (DNR) regarding the Plan to Protect Seattle's Waterways (Plan). DNR understands that the Plan includes Volume 1 Executive Summary, Volume 2 Long Term Control Plan (LTCP), Volume 3 Integrated Plan, and Volume 4 Environmental Impact Statement (EIS). Seattle Public Utilities (SPU) prepared an Environmental Impact Statement (EIS) under the State Environmental Policy Act (SEPA) to identify how the Plan could impact people and the environment. DNR has the constitutional responsibility to manage state-owned aquatic lands as a public trust. We strive to provide a balance of benefits to people and the environment including: ensuring environmental protection, providing opportunities for using renewable resources such as shellfish, fostering water dependent uses and facilitating public access. DNR is committed to sustainably managing the state's resources, relying on sound science, and making transparent decisions in the public's interest throughout the environmental review process.

Please accept the following comments on Volume 4 Draft Programmatic Environmental Impact Statement.

2-2 DNR appreciates the actions that the City has taken over the years to reduce the number and frequency of sewerage overflows from the City's combined sewer overflow (CSO) system. In 2013, 38 million gallons of untreated sewage and stormwater discharged at CSOs managed by the City. CSOs from the City's combined sewer system currently discharge into Puget Sound, Elliott Bay, Lake Washington, Longfellow Creek, Lower Duwamish Waterway, East Waterway, and Lake Union/Ship Canal. Although state citizens appreciate the steps that the City is taking to reduce the CSO events and volume, these discharges are impacting state-owned aquatic lands and natural resources.

2-3 Due the length of the document and short-time frame that was given for review, DNR will not be providing specific comments on the document. Instead, DNR would like SPU and the City to know that we look forward to working with both entities on upcoming projects and work that will be on, or affecting, state-owned aquatic lands. We encourage the City and SPU to work with DNR early to ensure that changes to outfalls, permits, and upland activities affecting state-owned aquatic lands will meet DNR's goals with regard to protecting habitats and species in the aquatic environment. Working with DNR early can help ensure that time, money, and effort is not wasted. Underlying our habitat goals is our foundational goal: to provide sustainable stewardship of the lands in our care; DNR is required by statute (RCW 79.105.030) to ensure environmental protection when managing state-owned aquatic lands.

2-4 DNR is concerned with the range of public health and environmental concerns that pollutants conveyed in CSOs can create, such as human health risks from contact with water, consumption of fish/shellfish from areas of recent CSO discharge, and impacts to aquatic life. DNR is anticipating the final result of this Plan will eliminate these discharges and substantially reduce releases of microbial pathogens, suspended solids, toxics, and nutrients. We believe it is important for the City to implement the Consent Decree to provide increased protection for several impaired water bodies, including Puget Sound, Lake Washington, and the Duwamish River. Due to magnitude and complexity of the CSO problem it would be ideal for the City and King County to work together to find solutions to the problems with CSOs.

Thank you for the opportunity to comment and we look forward to working with SPU and the City of Seattle on this important issue.

Michal Rechner
Washington Department of Natural Resources
Aquatic Resources Assistant Division Manager

**Response to Comment 2-1**

Comment noted.

**Response to Comment 2-2**

Comment noted. The Draft EIS acknowledges the importance of reducing CSO discharges in order to protect public health and the environment.

**Response to Comment 2-3**

Comment noted. As described in the Draft EIS, additional project- and site-specific SEPA evaluations will be required once project sites are identified and prior to project implementation. The City is committed to working with DNR early in this process to address the impacts of any proposed work on DNR lands.

**Response to Comment 2-4**

The Draft EIS acknowledges the importance of reducing CSO discharges in order to protect public health and the environment. These public health and environmental concerns are discussed in EIS Sections 2.2, 2.3, and 4.6, and in Chapter 2 of the Long Term Control Plan. The City is committed to complying with federal and state regulations, and meeting its Consent Decree requirements. As described in Section 2.4.4, CSOs will not be completely eliminated, but will be controlled in accordance with Consent Decree requirements. Section 6.4 discusses the reductions of pathogens and loading reductions, which are further described in the Long Term Control Plan and in Section 8 of the Integrated Plan. The response to Comment Letter No. 3 (King County WTD) describes the City's commitment to working with King County on meeting CSO reduction goals.

King County

**Wastewater Treatment Division**
Department of Natural Resources and Parks
King Street Center
201 South Jackson Street
Seattle, WA 98104-3855

June 30, 2014

Nancy Ahern, Deputy Director
Utility Systems Management Branch
Seattle Public Utilities
700 5th Avenue, Suite 4900
Seattle, WA 98124-4018

Dear Ms. Ahern,

Thank you for the opportunity to review and comment on Seattle Public Utilities' (SPU) Draft Plan to Protect Seattle's Waterways. Staff at the King County Wastewater Treatment Division (WTD) reviewed all four volumes; the Executive Summary, Long-Term Control Plan (LTCP), Integrated Plan, and Draft Environmental Impact Statement (DEIS). WTD's comments are as follows.

3-1 The LTCP (Volume 2) recognizes that all of the proposed options have elements that may have an impact on King County's downstream wastewater system, and that strong coordination between the City and County is needed. We look forward to continuing to coordinate with the City as it designs and constructs its CSO control facilities.

3-2 The LTCP includes three shared options for controlling CSOs that would involve both SPU and WTD working together to control our respective CSOs along the Lake Washington Ship Canal. WTD concurs with statements made throughout the LTCP regarding City/County coordination. We are committed to working with SPU to analyze and recommend LTCP options that are more cost effective, produce better environmental outcomes, and minimize disruption to communities. As described in the LTCP, King County will need to reach its own independent conclusions about the benefits of any shared project to our regional wastewater system as well as the implications of a shared project to the County's LTCP and Consent Decree. In addition, as described in the LTCP, prior to implementing any shared projects between the County and the City, joint project agreements will need to be signed between the two agencies.

3-3 WTD has reviewed the Integrated Plan (Volume 3). We recognize that the Integrated Plan is additive to the LTCP and is intended to provide the City with additional tools for addressing water quality concerns. We have no additional comments.

3-4

The Draft EIS (Volume 4) acknowledges the importance of strong coordination with King County as part of controlling the City's CSOs for both shared and City-only projects. Section 1.5 addresses how the City and King County will coordinate and the need for shared project agreements prior to implementing any shared projects between the City and King County. Both parties would need to be involved analyzing the impacts of the proposed projects on the downstream system and agree on an approach to address those impacts. The shared project agreements would need to be negotiated and signed between the two agencies. Coordination is also necessary on City projects that are not shared, such as retrofits, where increased flow will be transferred to King County and have the potential to cause downstream impacts. The nature of those impacts will need to be analyzed and appropriate compensation to the County to negotiated, where applicable.

The Draft EIS describes the commitment the City has to work with King County to analyze and recommended LTCP options that produce better environmental outcomes and minimize disruption to communities. The construction and operational elements also recognize the important need for close coordination and shared agreements.

3-5

Please note that Table 1-1 of the Draft EIS illustrates the total number of CSO storage facilities that would be constructed under the four SPU LTCP options, either by the City-only, King County-only or as shared City/County facilities. It is not clear that the King County-only facilities are elements in King County's own LTCP and not part of the City's LTCP. Please clarify this detail.

Thank you again for the opportunity to review and comment on Seattle Public Utilities' (SPU) Draft plan to Protect Seattle's Waterways. We look forward to continuing to work with SPU as our two agencies work to implement our respective CSO Long-Term Control Plans. If you have questions or require additional information regarding our review of SPU's Draft Plan, please contact Mark Buscher, Comprehensive Planning Supervisor at (206) 477-5553.

Sincerely,

Pam Elardo, P.E.
Director

**Response to Comment 3-1**

SPU will continue to coordinate with King County regarding the optimal shared approach to CSO control.

**Response to Comment 3-2**

SPU is committed to continued coordination with King County. The need to develop a joint project agreement prior to implementing any project in association with King County is acknowledged in Sections 1.4, 1.5, 2.7.1. 3.2.2, and 6.13.1 of the Draft EIS.

**Response to Comment 3-3**

Comment noted.

**Response to Comment 3-4**

As noted in the Draft EIS and in the response to Comment 3-2, SPU is committed to continued coordination with King County. All interagency coordination will be conducted in accordance with commitments included in the SPU and King County Wastewater Treatment Division Coordination Plan, signed by SPU and King County on April 4, 2014. Agreements between the City and King County will be made in accordance with the Guiding Principles and final Term Sheet agreed upon by the City and King County in November, 2013. As noted in that memorandum, the City and the County have agreed to move together on two fronts: 1) coordination on implementation of the agencies' respective CSO reduction projects and Long Term Control Plans; and 2) negotiations toward a new sewage disposal agreement.

**Response to Comment 3-5**

Additional text has been added to Table 1-1 to clarify that King County-only facilities are part of King County's LTCP, and not SPU's LTCP.

**City of Seattle**
Seattle Parks and Recreation

June 24, 2014

Betty Meyer, SEPA Responsible Official
Seattle Public Utilities
Seattle Municipal Tower, Suite 4900
Seattle, WA 98124-4018

Sent via e-mail: betty.meyer@seattle.gov

Re: Draft Environmental Impact Statement for the Plan to Protect Seattle's Waterways

4-1 Seattle Parks and Recreation (Parks) appreciates the opportunity to provide comments on the Seattle Public Utilities' Draft Environmental Impact Statement for the Plan to Protect Seattle's Waterways issued on May 29, 2014. Parks also appreciates SPU's stated commitment that they will "[a]ttempt to avoid siting projects in parks." Parks' concerns are the potential impacts associated with the construction and long term operation of CSO facilities within and/or adjacent to parks within the City of Seattle.

4-2 Parks' concern is that the placement of a CSO facility within a park forever constrains the use of this area, regardless of whether or not it is under paved and/or un-programmed areas. Parks will be forever precluded from changing the use of the site to provide a different park amenity and/or recreational opportunity due to the underlying utility facility. Should stormwater regulations become more stringent in the future and SPU needs to expand a facility within a park, even more property could be needed. Parks looks forward to a full and complete analysis of all alternatives and their potential impacts on the public's opportunities for recreation within the city, including both the short term construction and long term operational impacts of siting a utility facility within a recreational and/or natural resource area. Note also that Initiative 42 (Ordinance No. 118477) discourages the conversion of park lands within the City of Seattle to non-park usage.

4-3 Parks also looks forward to working cooperatively with Seattle Public Utilities throughout the process to ensure that CSOs can be addressed and that impacts on parks and park visitors are minimized. Thank you for your consideration of these comments as you begin the process of selecting sites and designing facilities. If you have any questions regarding these comments, please contact me at 206.684.7048 or david.graves@seattle.gov.

Regards,

David Graves, AICP
Senior Planner
Planning & Development Division
Seattle Parks & Recreation

Cc: Michael Shiosaki, Planning & Development Division Director

**Response to Comment 4-1**

Comment noted. SPU acknowledges that if a facility is located in a park, impacts to recreation would occur. Construction-related and long-term impacts to recreation, and measures to reduce short- and long-term impacts, are described in Sections 5.10 and 6.10, respectively.

As described in Section 5.10.5 of the Draft EIS, SPU would attempt to avoid siting facilities in parks. If a facility were to be located in a park, SPU would coordinate closely with Parks during the facility siting process to incorporate Parks' considerations. SPU is committed to working with Parks to develop facilities that fulfill the City's legal obligations for the reduction of sewage discharges while addressing short- and long-term recreational impacts. If a facility were to be located in a park, mitigation would be identified at the project level, either as part of the City Council process to address Initiative 42 and the City's land use codes or during the process to obtain a Revocable Use Permit.

**Response to Comment 4-2**

Parks' concerns and priorities are a significant consideration during the project-level siting process of CSO reduction facilities. It is acknowledged that the presence of an underground storage facility in a park limits some types of potential park uses. If a CSO reduction facility were to be located in a park, SPU would work closely with Parks to design and install a facility that provides long-term flexibility for Parks while meeting SPU's mandated water quality requirements.

**Response to Comment 4-3**

SPU is committed to working with Parks throughout the process. The Draft EIS describes this commitment in Sections 5.10.5 and 6.10.4, respectively.

SHELTERWOOD CONSULTING
7716 -32nd Ave NW, Seattle, Washington 98117
206.571-4249

Ms. Betty Meyer
SPU SEPA Responsible Official
Seattle Public Utilities
Seattle Municipal Tower, Suite 4900
PO Box 34018
Seattle, Washington 98124-4018

Re: DEIS on Plan to Protect Seattle's Waterways

Dear Ms. Meyer:

Thank you for the opportunity to comment on the DEIS referenced above.

I represent the Ballard Stormwater Consortium and a variety of Ballard residents located in the Combined Sewer Overflow areas. As stakeholders in the discussions over solutions and compliance with the Consent Decree, my clients wish to comment on the DEIS as it impacts the Ballard combined sewer overflows.

5-1 Ballard residents are uniquely located. Many residents have views of Puget Sound, boats moored in the Shilshole Marina, take family outings through "the Locks," and bicycle along Salmon Bay. Ballard residents are very aware of the consequences of storm water runoff and the potential for combined sewer overflows at the outtake pipes located in Salmon Bay. Water quality is a vital issue to Ballard residents.

5-2 Because of their concerns, many Ballard residents believe that the solutions to the CSO issues in the Ballard and Fremont neighborhoods should focus on maximizing detention and "pulsing" of storm water at the greatest volumes (including those volumes projected to increase because of climate change). Additionally, Ballard residents believe that delaying any CSO projects in order to attempt to facilitate so-called green storm water infrastructure (GSI), simply increases the amounts of untreated sewage into Salmon Bay and Puget Sound.

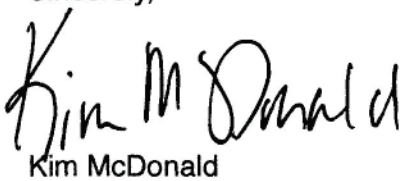
5-3 Ballard, like much of Seattle, has a native soil composition found throughout the Puget Sound region. The soils are not conducive to infiltration. The first phase of the Ballard Rain Garden project, completed in 2009, was a failure because of the soils. The reliance, in both the Long Term Control Plan Alternative and the Integrated Plan Alternative, of rain gardens to capture a

5-3 small amount of storm water (compared to the ability to capture greater volumes in the proposed tanks underneath the Ship Canal) is not cost effective per gallon of stormwater contained. Plus, there remains a likelihood the rain gardens will, again, not be successful.
Page Two

5-4 Ballard Stormwater Consortium strongly endorses the Long-Term Control Plan Alternative, with a strong emphasis on storage for storm water. We believe that any use of GSI should be minimal because of lack of effectiveness. If the goal is to prevent combined sewer overflows into Seattle's waterways, finding the most cost effective and efficient system is vital.

Thank you for your consideration.

Sincerely,



Kim McDonald
Principal
Shelterwood Consulting
kim@shelterwoodconsulting.com

**Response to Comment 5-1**

Comment noted.

**Response to Comment 5-2**

Comment noted. The City's Consent Decree requires that the Long Term Control Plan provide 100% of the necessary control volume using "gray infrastructure" solutions. However, the Consent Decree allows the City to use Green Infrastructure as appropriate to reduce or replace certain CSO control measures included in the LTCP once the City has demonstrated those facilities' effectiveness, as long as the combined "green" and "gray" measures provide substantially the same or greater levels of control than the traditional "gray" CSO control measures alone. SPU will continue to evaluate the potential applicability of Green Infrastructure, which could reduce the volume requirements for the storage facilities. In the Integrated Plan Alternative, the proposed deferred CSO reduction facilities are in relatively small volume CSO basins that do not discharge directly to Salmon Bay or Puget Sound. Refer to the Summary included in the Integrated Plan for a figure illustrating deferred CSO reduction facilities, and the overall pollutant reduction associated with implementation of the Integrated Plan.

**Response to Comment 5-3**

Comment noted. Refer to Section 4.1.5 for a discussion of soils and surface geology and the potential to affect infiltration potential; Figure 4-2 illustrates infiltration potential in Seattle Plan Area neighborhoods, including Ballard. Additional site specific evaluations will be conducted for all proposed rain garden facilities, to ensure that conditions are appropriate for their long term feasibility. The City will monitor the effectiveness of facilities as part of post-construction monitoring required under the Consent Decree.

**Response to Comment 5-4**

Comment noted. The City has evaluated the potential cost-effectiveness for all LTCP options, and has factored this information into the evaluation of alternatives. The City is committed to providing a cost-effective approach to CSO control, and as part of this commitment, developed the Integrated Plan Alternative that extends beyond the Consent Decree compliance date, but can be potentially more cost effective and lower impact to communities.

DUWAMISH RIVER CLEANUP COALITION

**Technical Advisory Group**

*Community Advisory Board:*

Community Coalition for Environmental Justice

The Duwamish Tribe

Environmental Coalition Of South Seattle

Georgetown Community Council

IM-A-PAL Foundation

People For Puget Sound

Puget Soundkeeper Alliance

South Park Neighborhood Association

Washington Toxics Coalition

Waste Action Project

*Working to ensure a Duwamish River cleanup that is accepted by and benefits the community and protects fish, wildlife and human health.*

210 S. Hudson, Suite #332
Seattle, WA 98134
206.954.0218
www.duwamishcleanup.org
contact@duwamishcleanup.org

TO

Betty Meyer

SEPA Responsible Official

Seattle Public Utilities700 5th Ave, Suite 4900PO Box 34018Seattle, WA 98124-4018

(206) 386-1999

Betty.Meyer@Seattle.Gov

Ms. Meyer

The Duwamish River Cleanup Coalition/Technical Advisory Group (DRCC/TAG) was founded in 2005 by the member organizations of the Duwamish River Cleanup Coalition (DRCC), the Environmental Protection Agency's (EPA) Community Advisory Group (CAG) for the Lower Duwamish Waterway Superfund Site (the Site). DRCC/TAG provides technical support and public education, outreach and involvement services to the DRCC member organizations, the communities affected by the Superfund site, other Duwamish River stakeholders, and the general public.

DRCC/TAG has reviewed the Draft Environmental Impact Statement for the Plan to Protect Seattle's Waterways and has the following comments.

6-1 Most of our comments will be on SPU outreach that was done for the draft EIS. Even though it is stated in the plan that public comment is valued the plan fails to directly approach the source control plan for the Duwamish River Superfund Site. There has

6-2 been no outreach done on the Plan to Protect Seattle's Waterways to the effected communities of South Park or Georgetown that have been designated as Environmental Justice Communities by USEPA. With only one public meeting that was also combined with a public hearing plus only designated outreach done in Ballard, Wallingford and Fremont it seems that SPU has made the decision those are the only communities that have a stake in your

plan.

6-3 I would refer you to the City of Seattle's Race and Social Justice Initiative that clearly states that "city departments work together on common areas like: Inclusive outreach and public engagement" Goal 2 of the "Moving Forward" section of the RSJ plan "Strengthen the way the city engages the community and provides services" No matter how good you think your plan is if you do not engage communities that are directly affected you really don't have an effective plan.

6-4 The communities of South Park and Georgetown have been very actively engaged in the Superfund process and the fact that your plan does not even attempt to directly address it should suggest there is a big problem. Several of our stake holders have expressed concern that this plan fails to address impacts to the Duwamish River. DRCC/TAG is the Community Advisory Group to EPA on the Duwamish River Superfund Site and it is our job to point out these inequities.

6-5 The consent decree with Ecology and EPA is not the only pressing issue SPU has. Source control in the Duwamish River should be elevated to at least a section of focus in your EIS.

James Rasmussen

Coordinator DRCC/TAG

**Response to Comment 6-1**

Comment noted. In conducting public outreach for the development of the LTCP and the Integrated Plan, SPU did not explicitly ask for input on the Duwamish source control plan because (a) it was not the focus of the LTCP or the Integrated Plan and (b) it was being developed as part of an inter-agency effort to clean up the Duwamish River.

**Response to Comment 6-2**

SPU conducted an extensive public outreach program throughout the development of the LTCP and Integrated Plan, as summarized in Appendix A, DEIS Public Hearing and LTCP Public Meeting Summary Report. SPU sought input throughout the Draft EIS process, including during Draft EIS scoping as well as during the Draft EIS comment period.

From April through October 2011, SPU conducted 30 briefings associated with the Draft EIS Scoping, including briefings with the Environmental Coalition of South Seattle (ECOSS), Greater Duwamish District Council, Southeast District Council, and the SPU Creeks Drainage and Wastewater Advisory Committee. Additional briefings were conducted from April to June of 2103 that included the Georgetown Community County, Delridge District Council, and the Greater Duwamish District Council, among others. SPU hosted four in-person EIS scoping meetings, and one on-line scoping meeting in 2011, which were sparsely attended. As a result, when the Draft EIS "re-scoping" process was conducted in 2013 to include the Integrated Plan Alternative, one centrally-located scoping meeting was held.

Following scoping and during the Draft EIS comment period, SPU conducted additional briefings and meetings throughout the City, including in the South Park and Georgetown communities. Briefings in May and June, 2014 included Sustainable West Seattle, Lake City Neighborhood Alliance, Friends of Gasworks Park, Ballard District Council, Fremont Neighborhood Council, Groundswell NW, Puget Soundkeeper Alliance, NW District Council, North Seattle Industrial Association, Leschi Community Council, South Park Neighborhood Association, Delridge Neighborhoods Council, and Thornton Creek Alliance. Comments received are included in Appendix A, Briefing Summary. Briefings were offered to an additional 13 organizations, but were not accepted, including the Duwamish River Cleanup Coalition, the Georgetown Community Council, and the Greater Duwamish District Council. SPU conducted a comprehensive effort to obtain input from all potentially affected neighborhoods, and incorporate that input into the development of the LTCP and Integrated Plan Alternatives.

**Response to Comment 6-3**

SPU has incorporated the goals of the City's Race and Social Justice Initiative into its public outreach plan, working actively toward inclusive outreach and public engagement since the early stages of the planning process The project team conducted interviews with leaders from community organizations that serve low-income, minority, and limited-English proficient community members, to develop outreach strategies for the program. The following organizations participated in interviews: El Centro de la Raza, Neighborhood House, Southwest Youth and Family Services, Vietnamese Friendship Association, and Solid Ground. Given feedback, SPU conducted outreach through briefings with organizations/dovetailing on existing meetings, as the CSO long-range plan was not a very compelling topic for a standalone meeting. In addition, SPU conducted a citywide survey in 2011 to gauge awareness and to determine effective outreach strategies. The survey was offered in English, Chinese, and Spanish.

At the project level, SPU is working closely with communities using many of the strategies discussed in the interviews, such as hiring community members to conduct project outreach. These efforts would likely be employed during implementation of the Plan/project development phase as appropriate.

SPU is committed to continuing to work closely with all potentially affected communities, including the South Park and Georgetown communities.

**Response to Comment 6-4**

SPU is aware of the active engagement of the South Park and Georgetown neighborhoods in the Superfund process. The Duwamish River is summarized as a Superfund site in Section 4.3.3.4 of the Draft EIS, and in Section 2.1 of the Integrated Plan. The DEIS notes that stormwater runoff is the leading pollution threat to surface waters within the Plan area, along with CSOs. The sensitivity of the Lower Duwamish Waterway led to its prioritization for a stormwater project as part of the Integrated Plan Alternative. Implementation of the South Park Water Quality Facility would result in significant pollutant load reductions to the Lower Duwamish River, which support water quality improvement objectives for the Lower Duwamish. As described in Section 8.4.1.2 of the Integrated Plan, the South Park Water Quality Facility would treat runoff from approximately 254 acres in the 7$^{th}$ Ave. South drainage system, and would reduce loads of total PCBs, metals, bacteria, and other pollutants to the Duwamish Waterway.

SPU will continue to support Superfund cleanup efforts through the LTCP and/or Integrated Plan Alternative, and will coordinate as appropriate with lead agencies responsible for implementing the cleanup plan, as well as the potentially affected communities.

**Response to Comment 6-5**

SPU acknowledges that there are many pressing issues to be considered, including source control in the Duwamish River. As part of its efforts to comply with the Consent Decree, SPU is taking a significant step toward reducing pollutant loading to the Duwamish River.

**From:** Frank I Backus [mailto:frankbackus1@gmail.com]
**Sent:** Monday, June 30, 2014 11:09 PM
**To:** Meyer, Betty
**Subject:** Integrated Stormwater Plan

7-1 I have lived on Thornton Creek for 44 years. I would like to thank SPU for its efforts over the years to improve the Thornton Creek Watershed. I know that it has done a lot. But we are still the most polluted of the streams in the city.

7-2 I have seen severe problems with pollution including seeing the result of the North Fork actually having been on fire. I have seen severe flooding that in previous decades did not occur. I have seen dead fish from pollution. I have called uncounted times to report pollution in the stream. I have seen the results of coliform testing that show that Thornton Creek is the most polluted stream in the City of Seattle. I have partnered with SPU to put large woody debris in the creek on my property at great expense to me (Salmon Grant). I have volunteered many hundreds of hours in stewarding parks and private property; and I have invested thousands of dollars in plantings, formation of rain gardens, stream rehabilitation, weeding, and working with King County weed specialists. I have counted fish for the Salmon in the Streams research program. I have helped look for and document presence of salamanders. I have walked to help count "pre-spawn mortality" (though in Piper's Creek). I have spent countless hours with the Thornton Creek Alliance and have been on the Thornton Creek Watershed Oversight Council.

I support the Integrated Stormwater Plan, but have some added comments:

The Integrated Stormwater Plan is a more comprehensive and effective way to address water pollution in the city; and it addresses the most significant Combined Sewer Overflow locations in the city.

Please include more than the current very meager 4% of the Natural Drainage System appropriate sites in the efforts to improve the watershed.

7-3 SPU should increase its efforts to partner with private land owners.

7-4 VACUUM sweeping of the streets is much more effective in removing pollution and fine particles (which in turn often hold additional pollutants) than simply sweeping. In addition, the fine particles are pollutents in themselves, as they are bad for fish spawning.

Thank you for considering my comments.

Frank I. Backus, MD
450 NE 100th Street
Seattle, WA 98125-4028

**Response to Comment 7-1**

Comment noted. SPU acknowledges that Thornton Creek has a number of persistent water quality challenges. This is why Thornton Creek is one of three drainage basins targeted in the Integrated Plan for candidate stormwater projects, including Natural Drainage Systems (NDS) Partnering as described in the EIS.

**Response to Comment 7-2**

Potential blocks for NDS Partnering were identified by the City based on their potential feasibility for bioretention. The initial estimate of 4 percent was identified as areas that were determined to be feasible for implementation within the time frame of the Integrated Plan. This percentage is approximate; SPU will continue to look for expanded opportunities for partnership on NDS projects.

The site selection approach will involve information exchange with neighborhood groups and other public agencies about the program, and selection of project sites based on input from these groups. The project locations would be prioritized based primarily on stormwater management goals, but factors such as community support and overlapping City priorities would be considered.

**Response to Comment 7-3**

SPU has found that the most successful NDS projects are those that have neighborhood support. SPU will continue to conduct outreach with neighborhood groups in the potentially feasible residential areas. SPU is currently developing the framework for enhanced partnering efforts as part of NDS projects, and will continue to coordinate with potential partners.

**Response to Comment 7-4**

Comment noted. All City street sweepers used for this program are regenerative air vacuum sweepers.

-----Original Message-----
From: Estell Berteig [mailto:estell.berteig@gmail.com]
Sent: Monday, June 30, 2014 10:44 PM
To: Meyer, Betty
Cc: Estell Berteig; Chuck Dolan
Subject: The Integrated Stormwater Plan

8-1 I do strongly support the integrated watershed plan and urge the City to include more of the NDS appropriate sites of the Thornton Creek Watershed. We have lived on a tributary (in 2 different houses) since 1970 and treasure our little wooded neighborhood. We would consider partnering with SPU but would insist on no entry to our private property without proper notice.

8-2 Here is an example that I know about that illustrates why partnering with property owners is important. They know what happening around them. Our neighborhood was aware that sometimes a lot of "suds " came down the creek. In about 1994 a drain from a laundry room was found hidden in a stump. That water is now pumped into the the house drain. While this may not be a common source of pollution, soap would surely be harmful to fish. We think that there should be an increased effort in partnering with private owners.

Estell and Irv Berteig
9025 42nd Ave NE
Seattle Wa. 98115

**Response to Comment 8-1**

Comment noted. The Thornton Creek basin is included in the proposed NDS Partnering projects associated with the Integrated Plan Alternative. As noted in the response to Comment 7-3, SPU is developing a framework for enhanced partnering, which will include protocols for homeowner notification and property access.

**Response to Comment 8-2**

See response to Comment 7-3.

**From:** Selena Carsiotis [mailto:scarsiotis@gmail.com]
**Sent:** Saturday, June 21, 2014 10:40 PM
**To:** Meyer, Betty
**Subject:** Comment on DEIS

9-1 The Draft Environmental Impact Statement omits the Piper's Creek Flow Control Study and the "References" section. There should be equal numbers of data-based studies for each of the three options. The Piper's Creek Flow Control Study includes hydrologic modeling data that is pertinent to the Draft EIS. For example,

Plan 1: Flow and Rainfall Monitoring
Quality Assurance Project Plan
Laura Reed, Seattle Public Utilities

9-2 This draft EIS twice cites a public comment from someone who was upset about the potential for mosquitoes breeding in standing water but makes no mention of the body of academic research that exists in response to the public's growing concern for the pollution in urban creeks. For example,

Master's Thesis @ University of Washington
Characterizing Water Quality of Urban Stormwater Runoff: Interactions of Heavy Metals and Solids in Seattle Residential Catchments.

9-3 The Integrated Plan is the only realistic solution. The Plan should include natural "spot drainage" solutions throughout Upper Piper Creek and incorporate green stormwater traffic calming infrastructure along residential streets in Crown Hill to absorb water surface water.

Thank you,
Selena Carsiotis
Crown Hill Neighborhood Association, Ballard District Council

**Response to Comment 9-1**

Chapter 3, Affected Environment, is focused on characterizing existing conditions as they relate to impacts from the Plan. As such, it does not include a comprehensive literature review of scientific studies that have been conducted on Plan area waterbodies. The Integrated Plan includes more detailed information on Plan area waterbodies, including Piper's Creek.

**Response to Comment 9-2**

Both the Draft EIS and Integrated Plan acknowledge that water quality in urban creeks and streams is a concern. The objective of Plan is to reduce overflows and the discharge of pollutants from combined sewers and stormwater runoff. The focus of the EIS is on addressing impacts of the Plan – including potential concerns received as part of scoping and outreach that relate to alternatives. It is not the purpose of the EIS to provide an exhaustive study of water pollution in urban creeks; however this issue is acknowledged in the EIS and in the Integrated Plan. The purpose of an EIS is to describe the potential impact of the future actions resulting from implementing the Plan. In that regard, the focus is on the impacts of the Plan.

**Response to Comment 9-3**

Comment noted.

**From:** Gordon Dass Adams [mailto:gordondass@yahoo.com]
**Sent:** Sunday, June 29, 2014 7:24 AM
**To:** Meyer, Betty
**Subject:** Comment on Integrated Plan for Stormwater

- .

As a resident of the Thornton Creek watershed since 2009 I have been involved with citizen efforts to improve the water quality of the creek. Currently I am first vice-president of Thornton Creek Alliance, and chair of the Friends of Licorice Fern Natural Area. In these roles I both learn about government involvement with the watershed, and have direct experience with the creek and its riparian areas by directing volunteer workparties, planting native plants, clearing invasive plants, and enjoying the creek environment.

10-1 I'm aware that bacterial pollution of the creek may be reduced by technical changes to the piping systems for sewage and stormwater. But the general situation with runoff from contaminated impervious surfaced (road, etc) cannot be improved with pipe changes. And so I strongly support the Integrated Plan and its inclusion of Natural Drainage Systems and direct cleaning of streets.

Thank you for your efforts to improve water quality in Thornton Creek and Seattle.

Gordon Dass Adams
Box 15268
Seattle WA 98115

---

**Gordon Dass Adams** gordondass@yahoo.com
Seattle 206-227-3864

**Response to Comment 10-1**

Comment noted.

From: Chuck Dolan

Regarding the Integrated Stormwater Plan (ISP)

11-1 As a resident in the Thornton Creek Watershed, the city's largest and home to over 70,000 residents and several species of salmon including the protected chinook, I am strongly supportive the holistic approach that is represent by the Integrated Stormwater Plan.

Specifically, the ISP is:

- 11-2 A more comprehensive and effective way to address water pollution in more of the city and addresses the most signification Combined Sewer Overflow locations in the city.
- 11-2 Woefully inadaquate in only seeking to apply Natural Drainage System to 4% of appropriate sites! How can this be effective or equatable?
- 11-3 The ISP misses a vital opportunity engage with private property owners to reduce stormwater runoff BEFORE it reaches public right-of-ways
- 11-4 The street sweeping is the excellent step to capturing fine sediments that carry much of the most damaging toxics to the creek. But it MUST employ vacuum sweepers or in will be ineffective and a waste of money and time.

**Response to Comment 11-1**

Comment noted.

**Response to Comment 11-2**

See response to Comment 7-2.

**Response to Comment 11-3**

See response to Comment 7-3.

**Response to Comment 11-4**

See response to Comment 7-4.

Seattle Public Utilities

# Plan to Protect Seattle's Waterways
# Draft EIS Comment Form

*Please return comments by June 30, 2014*

Your comments on the Draft EIS will help Seattle Public Utilities identify a preferred alternative later this year. Seattle Public Utilities will respond to all comments in the Final EIS, which is scheduled to be released in late 2014. The comment deadline is June 30, 2014.

**In what neighborhood do you live? Please specify** North Greenwood **. What organization do you represent? Please specify (if applicable)** citizen **.**

**Please share your comments in the space provided.**

12-1 I support the integrated plan (I think) and any movements to address improving overall water quality in Puget Sound. Population growth only makes this more difficult to address the longer we delay.

Seattle Public Utilities is required to mail a notice to each person that submits a comment on the Draft EIS to announce when the Final EIS is available. Please help us meet this requirement by providing your name and mailing address:

Name Heather Grube
Mailing Address 9559 Palatine Ave N
City, State, Zip Seattle WA 98103

**Response to Comment 12-1**

Comment noted.

# Appendix C: Distribution List

**The Plan to Protect Seattle's Waterways**
**Final Environmental Impact Statement Distribution List**

| Notice of FEIS | Notice of FEIS + Compact Disc | Notice + FEIS + Compact Disc | Agency or Name | Name or Address1 | Name or Address2 | Address3 | City | State | Zip |
|---|---|---|---|---|---|---|---|---|---|
| | | ✓ | Washington State Dept of Ecology | SEPA Unit | P.O. Box 47703 | | Olympia | WA | 98504-7703 |
| | ✓ | | Allyson Brooks, PhD | | WA State Dept of Archaeology and Historic Preservation | P.O. Box 48343 | Olympia | WA | 98504-8343 |
| | ✓ | | Larry Fisher | WDFW Area Habitat Biologist | 1775 12th Ave NW | Suite 201 | Issaquah | WA | 98027 |
| | ✓ | | SEPA Coordinator | Habitat Management Division | WA State Dept of Fish. | P.O. Box 43155 | Olympia | WA | 98504 |
| | ✓ | | | SEPA Center | WA State Dept of Natural Res. | P.O. Box 47015 | Olympia | WA | 98504-7015 |
| | ✓ | | | SEPA Review | WA State Dept of Public Health | P.O. Box 47820 | Olympia | WA | 98504-7820 |
| | ✓ | | Kelly Cooper | Environmental Health Div. | WA State Dept of Health | P.O. Box 47820 | Olympia | WA | 98504-7820 |
| | ✓ | | Ramin Pazooki | WSDOT NW Region | 15700 Dayton Avenue N | | Seattle | WA | 98133 |
| | ✓ | | | Planning Division | WA State Dept of Transportation | P.O. Box 330310 | Seattle | WA | 98133-9710 |
| | ✓ | | Advisory Council on Historic Preservation | 401 F St NW Ste 308 | | | Washington | DC | 20001-2637 |
| | ✓ | | | WA Division Area Engineer | Federal Highway Administration | 711 Capitol Way, Suite 501 | Olympia | WA | 98501-0943 |
| | ✓ | | | Transportation Program Specialist | Federal Transit Administration | 915 2nd Ave. Suite 3142 | Seattle | WA | 98174-1002 |
| | ✓ | | | SEPA Review | National Marine Fisheries Services | 510 Desmond Drive SE | Lacey | WA | 98503 |
| | ✓ | | | Regulatory | US Army Corps of Engineers | P.O. Box C-3755 | Seattle | WA | 98124-3755 |
| | ✓ | | Alisa Ralph | Seattle District | US Army Corps of Engineers | 4735 E. Marginal Way S. | Seattle | WA | 98134-2384 |
| | ✓ | | NEPA Review Unit | US Environmental Protection Agency | 1200 Sixth Avenue | ETPA 088 | Seattle | WA | 98101 |
| | ✓ | | | Washington Fish & Wildlife Office | US Fish & Wildlife Service | 510 Desmond Dr. SE Suite 102 | Lacey | WA | 98503-1263 |
| | ✓ | | Jim Muck | USFWS & NOAA | US Fish & Wildlife Service | 7600 Sandpoint Way | Seattle | WA | 98115 |
| ✓ | | | | Cascade Water Alliance | 520 112th Ave NE | Suite 400 | Bellevue | WA | 98004 |
| ✓ | | | Paul Meyer | Manager, Environmental Permitting | Port of Seattle | P.O. Box 1209 | Seattle | WA | 98111 |
| ✓ | | | | SEPA Review | Puget Sound Clean Air Agency | 1904 Third Ave Suite 105 | Seattle | WA | 98101-3417 |
| ✓ | | | Rhonda Kaetzel | Environmental Health Svcs | Public Health - Seattle KC | 401 5th Avenue, 11th Floor | Seattle | WA | 98104-1818 |
| ✓ | | | | Roads & Engineering | KC Dept of Transportation | 201 S Jackson St - MS KCS 0313 | Seattle | WA | 98104 |
| ✓ | | | Environmental Planning-OAP | Wastewater Treatment Div. | KC Dept of Natural Resources | 201 S Jackson St - MS KCS NR 0505 | Seattle | WA | 98104 |
| ✓ | | | | Parks Environmental Review | KC Dept of Natural Resources | 201 S. Jackson St | Seattle | WA | 98104-3856 |
| ✓ | | | | Land Use Services Division | KC Department of Permitting and Environmental Review | 35030 SE Douglas St. Ste 210 | Snoqualmie | WA | 98065-9266 |
| ✓ | | | Gary Kriedt | Environmental Planning | KC Dept of Transportation | 201 S. Jackson St - MS KSC TR 0431 | Seattle | WA | 98104-3856 |
| ✓ | | | Charlie Sundberg | Preservation Planner | KC Historic Preservation | 201 S. Jackson St. KSC-NR-0700 | Seattle | WA | 98104 |
| ✓ | | | | | KC Regional Water Quality Committee | 201 S Jackson St | Seattle | WA | 98104 |
| | ✓ | | | | Suquamish Tribe | P.O. Box 498 | Suquamish | WA | 98392 |
| | ✓ | | | SEPA Review | Tulalip Tribes of WA | 6406 Marine Drive | Tulalip | WA | 98271 |
| | ✓ | | | | United Indians of All Tribes | P.O. Box 99100 | Seattle | WA | 98199 |
| | ✓ | | The Honorable Cecile Hansen | Chair | Duwamish Tribe | 4705 W. Marginal Way SW | Seattle | WA | 98106 |
| | ✓ | | Karen Walter | Fisheries Division Habitat Program | Muckleshoot Tribe | 39015 172nd Ave SE | Auburn | WA | 98092 |
| | ✓ | | Laura Murphy | Tribe Preservation Program | Muckleshoot Tribe | 39015 172nd Ave SE | Auburn | WA | 98092 |
| | ✓ | | The Honorable Virgina Cross | Chair, Muckleshoot Tribal Council | Muckleshoot Tribe | 39015 172nd Ave SE | Auburn | WA | 98092 |
| | ✓ | | The Honorable Mike Evans | Chair, Snohomish Tribe | 9792 Edmonds Way SW #267 | | Edmonds | WA | 98020 |
| | ✓ | | Steven Mullen-Moses | Director of Archaeology & Historic Preservation | Snoqualmie Tribe | P.O. Box 969 | Snoqualmie | WA | 98065 |

**The Plan to Protect Seattle's Waterways**
**Final Environmental Impact Statement Distribution List**

| Notice of FEIS | Notice of FEIS + Compact Disc | Notice + FEIS + Compact Disc | Agency or Name | Name or Address1 | Name or Address2 | Address3 | City | State | Zip |
|---|---|---|---|---|---|---|---|---|---|
| | ✓ | | | SEPA Review | Snoqualmie Tribe | P.O. Box 969 | Snoqualmie | WA | 98065 |
| | ✓ | | | Chair, Snoqualmie Tribe of Indians | Snoqualmie Tribe | P.O. Box 969 | Snoqualmie | WA | 98065 |
| | ✓ | | Earngy Sandstrom | Chair | Snoqualmoo Tribe | 2613 Pacific St | Bellingham | WA | 98226 |
| | ✓ | | Shawn Yanity | Chair | Stillaguamish Tribe | 4126 172nd St | Arlington | WA | 98223 |
| | ✓ | | | SEPA Review | Suquamish Tribe | 18490 Suquamish Way | Suquamish | WA | 98392 |
| | ✓ | | The Honorable Leonard Forsman | Chair, Suquamish Tribal Council | Suquamish Tribe | P.O. Box 498 | Suquamish | WA | 98392 |
| | ✓ | | The Honorable Herman Williams | Chair, Tulalip Board of Directors | Tulalip Tribes of WA | 6406 Marine Drive | Tulalip | WA | 98271 |
| | ✓ | | | Governmental Publications | UW Library | P.O. Box 353900 | Seattle | WA | 98195-2900 |
| ✓ | | | Cass Mabbott | Ballard Branch | Seattle Public Library | 5614 22nd Ave NW | Seattle | WA | 98107-3119 |
| ✓ | | | Wei Cai | Beacon Hill Branch | Seattle Public Library | 2821 Beacon Ave S | Seattle | WA | 98144-5813 |
| ✓ | | | Rekha Kuver | Broadview Branch | Seattle Public Library | 12755 Greenwood Ave N | Seattle | WA | 98133-7901 |
| ✓ | | | Dave Valencia | Capitol Hill Branch | Seattle Public Library | 425 Harvard East | Seattle | WA | 98102-4908 |
| ✓ | | | Steve Del Vecchio | Columbia Branch | Seattle Public Library | 4721 Rainier Ave S | Seattle | WA | 98118-1657 |
| ✓ | | | Steve Del Vecchio | Delridge Branch | Seattle Public Library | 5423 Delridge Way S | Seattle | WA | 98106-1479 |
| ✓ | | | Valerie Garrett-Turner | Douglass-Truth Branch | Seattle Public Library | 2300 E Yesler Way | Seattle | WA | 98122-6061 |
| ✓ | | | Cass Mabbott | Fremont Branch | Seattle Public Library | 731 N 35th St | Seattle | WA | 98103-8802 |
| ✓ | | | Francesca Wainwright | Green Lake Branch | Seattle Public Library | 7364 E Green Lake Drive N | Seattle | WA | 98115-5352 |
| ✓ | | | Francesca Wainwright | Greenwood Branch | Seattle Public Library | 8016 Greenwood Av N | Seattle | WA | 98103-4229 |
| ✓ | | | Sibyl de Haan | High Point Branch | Seattle Public Library | 3411 SW Raymond St | Seattle | WA | 98126-2953 |
| ✓ | | | Wei Cai | Int. District/Chinatown Branch | Seattle Public Library | 713 Eighth Avenue S | Seattle | WA | 98104-3060 |
| ✓ | | | Andy Bates | Lake City Branch | Seattle Public Library | 12501 28th Ave NE | Seattle | WA | 98125-4319 |
| ✓ | | | Dave Valencia | Madrona-Sally Goodmark Branch | Seattle Public Library | 1134 33rd Avenue | Seattle | WA | 98122-5120 |
| ✓ | | | Lisa Scharnhorst | Magnolia Branch | Seattle Public Library | 2801 34th Ave W | Seattle | WA | 98199-2602 |
| ✓ | | | Valerie Garrett-Turner | Montlake Branch | Seattle Public Library | 2401 24th Ave E | Seattle | WA | 98112-2642 |
| ✓ | | | Daria Cal | New Holly Branch | Seattle Public Library | 7058 32nd Ave S | Seattle | WA | 98118-6401 |
| ✓ | | | Marion Scichilone | Northeast Branch | Seattle Public Library | 6801 35th Ave NE | Seattle | WA | 98115-7333 |
| ✓ | | | Rekha Kuver | Northgate Branch Library | Seattle Public Library | 10548 Fifth Avenue NE | Seattle | WA | 98125 |
| ✓ | | | Lisa Scharnhorst | Queen Anne Branch | Seattle Public Library | 400 W. Garfield | Seattle | WA | 98119-3038 |
| ✓ | | | Daria Cal | Rainier Beach Branch | Seattle Public Library | 9125 Rainier Ave S | Seattle | WA | 98118-5026 |
| ✓ | | | Jane Appling | South Park Branch | Seattle Public Library | 8604 Eighth Ave S | Seattle | WA | 98108-4713 |
| ✓ | | | Jane Appling | Southwest Branch | Seattle Public Library | 9010 35th Ave SW | Seattle | WA | 98126-3821 |
| ✓ | | | Andy Bates | University Branch | Seattle Public Library | 5009 Roosevelt Way NE | Seattle | WA | 98105-3610 |
| ✓ | | | Marion Scichilone | Wallingford Branch | Seattle Public Library | 1501 North 45th Street | Seattle | WA | 98103-6708 |
| ✓ | | | Sibyl de Haan | West Seattle Branch | Seattle Public Library | 2306 42nd Ave. S.W. | Seattle | WA | 98116-2535 |
| | ✓ | | Steve Cohn | | Ballard Dist Council | 5604 22nd Ave NW | Seattle | WA | 98107 |
| ✓ | | | David Folweiler | President | Groundswell Northwest | 1725 NW 64th St | Seattle | WA | 98107 |
| | ✓ | | | Annie Davis | Ballard Chamber of Commerce | 2208 NW Market St. Suite 100 | Seattle | WA | 98107 |
| | ✓ | | | Caryle Teel, President | Ballard Rotary | P.O. Box 70472 | Seattle | WA | 98107 |
| | ✓ | | Jenny Heins | Sustainable Ballard | 2442 NW Market St. | PMB 286 | Seattle | WA | 98107 |
| | ✓ | | Lois Spiegel | President | Sunset Hill Community Association | 3003 NW 66th St. | Seattle | WA | 98117 |
| ✓ | | | | | Central District Council | 2301 S. Jackson St #208 | Seattle | WA | 98144 |
| ✓ | | | Rob Martin | | Columbia City Business Assoc | 3827A So Edmunds St. | Seattle | WA | 98118 |
| ✓ | | | Pablo Lambinicio | | DNDA, Westwood Neighborhood | 8820 31st Ave SW | Seattle | WA | 98126 |
| ✓ | | | Catherine Stanford | | Downtown Dist Council | 1904 3rd Ave Suite 828 | Seattle | WA | 98101 |
| | ✓ | | Paul Storms | | East District Council | 1834 Parkside Drive E | Seattle | WA | 98112 |

**The Plan to Protect Seattle's Waterways**
**Final Environmental Impact Statement Distribution List**

| Notice of FEIS | Notice of FEIS + Compact Disc | Notice + FEIS + Compact Disc | Agency or Name | Name or Address1 | Name or Address2 | Address3 | City | State | Zip |
|---|---|---|---|---|---|---|---|---|---|
| | ✓ | | Suzie Burke | | Lk Union Dist Council | 3401 Evanston Ave N. Suite A | Seattle | WA | 98103 |
| | ✓ | | | | Leschi Community Council | 3450 E. Alder St | Seattle | WA | 98122 |
| | ✓ | | Janis Traven | | Magnolia/Queen Ann Dist Council | 3247 Magnolia Blvd | Seattle | WA | 98199 |
| ✓ | | | Phil Shack | | North Dist Council | 12509 42nd Ave NE | Seattle | WA | 98125 |
| ✓ | | | Irene Wall | | North Dist Council | 207 N. 60th St | Seattle | WA | 98103 |
| ✓ | | | Jerry Owens | | Northwest Dist Council | 8546 Burke Ave N | Seattle | WA | 98103 |
| ✓ | | | Jill Arnow | Executive Director | Queen Anne Chamber | 2212 Queen Anne Ave N. | Seattle | WA | 98109 |
| ✓ | | | Erica Karlovits | | SW Dist Council | 4538-C 41st SW | Seattle | WA | 98116 |
| ✓ | | | Charles Redmond | | SW District Council | 3903 SW Monroe St | Seattle | WA | 98136 |
| ✓ | | | Nancy Bolin | | View Ridge Community Council | 4241 NE 75th St | Seattle | WA | 98115 |
| ✓ | | | Lynn Ferguson | | Windemere N. Community Council | 6422 NE 60th Street | Seattle | WA | 98115 |
| | ✓ | | | Thornton Creek Alliance | P.O. Box 25690 | | Seattle | WA | 98165-1190 |
| | ✓ | | Thornton Creek Watershed | Oversight Council | ATT: Cheryl Klinker | 12036 35th Ave NE | Seattle | WA | 98125 |
| | ✓ | | Jennifer Ott | Friends of Seattle's Olmsted Parks | P.O. Box 9884 | | Seattle | WA | 98109-0884 |
| | ✓ | | Thatcher Bailey | Seattle Parks Foundation | 105 S. Main St. #235 | | Seattle | WA | 98104 |
| | ✓ | | John Barber, Chairman | Friends of Street Ends | 3421 E. Superior St. | | Seattle | WA | 98122-6557 |
| ✓ | | | Bill Peloza | Councilmember | City of Auburn | 25 West Main St. | Auburn | WA | 98001 |
| ✓ | | | Claudia Balducci | Mayor | City of Bellevue | 450 110th Ave NE, PO Box 90012 | Bellevue | WA | 98009 |
| ✓ | | | Paul Bucich | Assistant Director of Engineering | City of Bellevue | 450 110th Ave NE, PO Box 90012 | Bellevue | WA | 98009 |
| ✓ | | | Nav Otal | Utilities Director | City of Bellevue | 450 110th Ave NE, PO Box 90012 | Bellevue | WA | 98009 |
| ✓ | | | Douglas Jacobsen | | Dawson Building | 9654 NE 182nd St | Bothell | WA | 98011 |
| ✓ | | | Erin J. Leonhart | Public Works Director | Dawson Building | 9654 NE 182nd St | Bothell | WA | 98011 |
| ✓ | | | Christopher Hagedorn | Public Works Director | City of Carnation | 4621 Tolt Avenue, PO Box 1238 | Carnation | WA | 98014 |
| ✓ | | | Walt Canter | Commissioner | Cedar River Water and Sewer District | 18421 SE Petrovitsky Road | Renton | WA | 98058 |
| ✓ | | | Richard Anderson | Commissioner | Coal Creek Utility District | 6801 132nd Place SE | Newcastle | WA | 98059 |
| ✓ | | | Mark Cassell | Commissioner | Cross Valley Water District | 8802 180th St SE | Snohomish | WA | 98296 |
| ✓ | | | Sheldon Lynne | Deputy Director of Public Works | City Shop | 670 1st Avenue NE, PO Box 1307 | Issaquah | WA | 98027 |
| ✓ | | | Greg Reed | Utilities Superintendent | City of Kent | 5821 S 240th St | Kent | WA | 98032 |
| ✓ | | | Bobbi Wallace | Surface and Wastewater Manager | City of Kirkland | 123 Fifth Avenue | Kirkland | WA | 98033 |
| ✓ | | | Neil Jensen | City Engineer | City of Lake Forest Park | 17425 Ballinger Way NE | Lake Forest Park | WA | 98155 |
| ✓ | | | Ron Nowicki | Commissioner | Lakehaven Utility District | 31627 1st Avenue S, PO Box 4249 | Federal Way | Wa | 98063 |
| ✓ | | | Patrick Yamashita | City Engineer | City of Mercer Island | 9611 SE 36th St | Mercer Island | WA | 98040 |
| ✓ | | | Vince Koester | Commissioner | Midway Sewer District | PO Box 3487 | Kent | WA | 98089 |
| ✓ | | | Paul Sentena, Commissioner | NE Sammamish Sewer & Water District | 3600 Sahalee Way NE | | Sammamish | WA | 98074 |
| ✓ | | | Margaret Wiggins | Commissioner | Northshore Utility District | 6830 NE 185th St | Kenmore | WA | 98028 |
| ✓ | | | Lora Petso, Commissioner | Olympic View Water & Sewer | 8128 228th Street SW | | Edmonds | WA | 98026 |
| ✓ | | | Scott Thomasson | Utility Engineering Manager | City of Redmond | PO Box 97010 | Redmond | WA | 98073 |
| ✓ | | | Linda De Boldt | Public Works Director | City of Redmond | PO Box 97010 | Redmond | WA | 98073 |
| ✓ | | | Dave Christensen | Utility Engineering Supervisor | City of Renton | 1055 S. Grady Way | Renton | WA | 98057 |
| ✓ | | | Art Wadekamper | Commissioner | Ronald Wastewater District | 17505 Linden Ave N | Shoreline | WA | 98113 |
| ✓ | | | Mary Shustov, Commissioner | Sammamish Plateau Water & Sewer | 1510 228th Avenue SE | | Sammamish | WA | 98075 |
| ✓ | | | Don Henry | Commissioner | Skyway Water and Sewer District | 6723 S 124th St. | Seattle | WA | 98178 |
| ✓ | | | Gary O. Cline | Commissioner | Soos Creek Water and Sewer District | PO Box 58039 | Renton | WA | 98058 |
| ✓ | | | Bill Tracy | Commissioner | Southwest Suburban Sewer District | 431 Ambaum Blvd | Burien | WA | 98166 |

**The Plan to Protect Seattle's Waterways**
**Final Environmental Impact Statement Distribution List**

| Notice of FEIS | Notice of FEIS + Compact Disc | Notice + FEIS + Compact Disc | Agency or Name | Name or Address1 | Name or Address2 | Address3 | City | State | Zip |
|---|---|---|---|---|---|---|---|---|---|
| ✓ | | | Pat Brodin | Operations Manager | City of Tukwila | 6200 Southcenter Blvd | Tukwila | WA | 98188 |
| ✓ | | | Pam Carter | Commissioner | Valley View Sewer District | 3460 S 148th, Suite 100 | Seattle | WA | 98168 |
| ✓ | | | Karen Steeb | Commissioner | Woodinville Water District | 17238 NE Woodinville-Duvall Road | Woodinville | WA | 98072 |
| ✓ | | | Ed Cebron | Rates & Finance Subcommittee Chair | Woodinville Water District | 17238 NE Woodinville-Duvall Road | Woodinville | WA | 98072 |
| ✓ | | | Ron Speer, Sewage Disposal Advisory | Agreement Sub-Committee Chair | Soos Creek Water and Sewer District | PO Box 58039 | Renton | WA | 98058 |
| ✓ | | | Anindita Mitra | | 7813 8th Ave. NW | | Seattle | WA | 98117 |
| ✓ | | | Dusty Hoerler | | 8929 5th Ave NE | | Seattle | WA | 98115 |
| ✓ | | | Bruno Lambert | 1510 Melrose Ave | | | Seattle | WA | 98122-3608 |
| ✓ | | | Julio Moran, Jr. | | 4401 S. Dawson St. | | Seattle | WA | 98118 |
| ✓ | | | Mary Junttila | | 6021 S. Ryan St. | | Seattle | WA | 98178 |
| ✓ | | | Robin McKennon Thaler | | 5042 49th Ave. SW | | Seattle | WA | 98136 |
| ✓ | | | Joan Rosenstock | Floating Home Association | 1822 4th Ave N. | | Seattle | WA | 98109 |
| ✓ | | | Henry McGee, SU School of Law | Sullivan Hall, Room 437 | 901 12th Ave., P.O Box 222000 | | Seattle | WA | 98122-1090 |
| ✓ | | | Tayloe Washburn | Greater Seattle Chamber of Commerce | Foster Pepper PLLC 1111 3rd Ave, Ste 3400 | | Seattle | WA | 98101-3299 |
| ✓ | | | Tom von Schrader | SvR Design Company | 1205 Second Avenue, Suite 200 Seattle, WA | | Seattle | WA | 98101 |
| | | ✓ | Mark Henley | Permit Manager | Department of Ecology, Northwest Regional Office | 3190 160th Ave. SE | Bellevue | WA | 98008 |
| | | ✓ | Robert Grandinetti | USEPA Region 10 | 309 Bradley Blvd, Suite 115 | Mail Code HPO | Richland | WA | 99352 |
| | | ✓ | Edward J. Kowalski | Office of Compliance and Enforcement | US Environmental Protection Agency | 1200 Sixth Avenue, Suite 900 | Seattle | WA | 98101 |
| | | ✓ | Alison Evans | Permit Manager | Department of Ecology, Northwest Regional Office | 3190 160th Ave. SE | Bellevue | WA | 98008 |
| | | ✓ | Rachel McCrea | Municipal Stormwater Specialist | Department of Ecology, Northwest Regional Office | 3190 160th Ave. SE | Bellevue | WA | 98008 |
| | | ✓ | Dino Marchalonis | Stormwater Technical Coordinator | US Environmental Protection Agency | 1200 Sixth Avenue, Suite 900 | Seattle | WA | 98101 |
| | ✓ | | Chief, Environmental Enforcement Section | Environmental and Natural Resources Division, Environmental and Natural Resources Division | US Department of Justice | PO Box 7611 | Washington | DC | 20044-7611 |
| | ✓ | | Director, Water Enforcement Division | Office of Civil Enforcement | US Environmental Protection Agency | 1200 Pennsylvania Ave., NW, Mail Code: 2243-A | Washington | DC | 20460 |
| | ✓ | | Director, Office of Compliance and Enforcement | US Environmental Protection Agency, Region 10 | 1200 6th Ave, Suite 900 | | Seattle | WA | 98101 |
| | ✓ | | Attorney General of Washington | Ecology Division | P.O. Box 40117 | | Olympia | WA | 98504 |
| | | 2 | Laura Wharton | Project Resource Unit Manager | Department of Natural Resources and Parks/Wastewater Treatment Division | 201 Jackson St, Rm 512 | Seattle | WA | 98104 |
| ✓ | | | Dave Boyd | | 6105 36th Ave NW | | Seattle | WA | 98107 |
| ✓ | | | Margaret Kitchell | | 1410 E Pine St Unit 312 | | Seattle | WA | 98122-8500 |
| ✓ | | | John Peterson | Victory Heights Community Council | 1914 NE 100th St | | Seattle | WA | 98125 |
| ✓ | | | Jonathan Whiting | | 9242 Ashworth Ave N. #A202 | | Seattle | WA | 98103 |
| ✓ | | | Nate Cormier | | 4135 21st Ave SW | | Seattle | WA | 98106 |

**The Plan to Protect Seattle's Waterways**
**Final Environmental Impact Statement Distribution List**

| Notice of FEIS | Notice of FEIS + Compact Disc | Notice + FEIS + Compact Disc | Agency or Name | Name or Address1 | Name or Address2 | Address3 | City | State | Zip |
|---|---|---|---|---|---|---|---|---|---|
| ✓ | | | Jamie Rowe | Enviroissues | 101 Stewart St Suite 1200 | | Seattle | WA | 98101 |
| ✓ | | | Scott Coomes | | 7932 31st Ave SW | | Seattle | WA | 98126 |
| ✓ | | | David Wiktorski | | 11226 Phinney Avenue North | | Seattle | WA | 98133 |
| ✓ | | | Kathleen Dellplain | FCA | 10273 Maplewood PL SW | | Seattle | WA | 98146 |
| ✓ | | | Amber Knox | | 6951 23rd Ave SW | | Seattle | WA | 98106 |
| ✓ | | | Marie McKinsey | | 2434 55th Ave. SW #2 | | Seattle | WA | 98116 |
| ✓ | | | Robert Hinrix | Beacon Hill Merchants Assoc | 2821 Beacon Av S | | Seattle | WA | 98144 |
| | ✓ | | Robert Drucker | | 3226 NW 69th St | | Seattle | WA | 98117 |
| | ✓ | | Catherine Weatbrook | | 8926 23rd Ave NW | | Seattle | WA | 98117 |
| | ✓ | | Larry Ward | | 7703 19th Ave NW | | Seattle | WA | 98117 |
| | ✓ | | Kim McDonald | | 7716 32nd Ave NW | | Seattle | WA | 98117 |
| | ✓ | | Jessica Vets | Fremont Chamber | PO Box 31139 | | Seattle | WA | 98103 |
| | ✓ | | Rachel Koller | | 7355 23rd Ave NW | | Seattle | WA | 98117 |
| | ✓ | | Stephen Fickenscher | | 4515 Meridian Ave, Suite B | | Seattle | WA | 98117 |
| | ✓ | | Barry Hawley | Hawley Realty | 5600 14th Ave NW, Suite 3 | | Seattle | WA | 98107 |
| | ✓ | | Elizabeth Dunigan | | 6508 32nd Ave NW | | Seattle | WA | 98117 |
| | ✓ | | Gretchen Kaehler | Department of Archaeology & Historic Preservation | P.O. Box 48343 | | Olympia | WA | 98504 |
| | ✓ | | Michal Rechner | Washington Department of Natural Resources | 1111 Washington St SE | MSS 47000 | Olympia | WA | 98504 |
| | ✓ | | Pam Elardo | Department of Natural Resources and Parks | King Street Center | 201 South Jackson Street | Seattle | WA | 98104 |
| | ✓ | | Kim McDonald | Shelterwood Consulting | 7716 32nd Ave NW | | Seattle | WA | 98117 |
| | ✓ | | James Rasmussen | Duwamish River Cleanup Coalition | 210 S. Hudson, Suite 332 | | Seattle | WA | 98134 |
| | ✓ | | Frank I Backus | 450 NE 100th Street | | | Seattle | WA | 98125 |
| | ✓ | | Estell and Irv Berteig | 9025 42nd Ave NE | | | Seattle | WA | 98115 |
| | ✓ | | Selena Carsiotis | Ballard District Council | 5604 22nd Ave NW | | Seattle | WA | 98107 |
| | ✓ | | Gordon Dass Adams | | P.O. Box 15268 | | Seattle | WA | 98115 |
| | ✓ | | Chuck Dolan | Thornton Creek Alliance | mailto:chucklesd2@hotmail.com | | | | |
| | | ✓ | Betty Galarosa | SEPA PIC | City of Seattle | Dept of Planning & Development | SMT-18-62 | | |
| | | ✓ | Public Review Documents | Quick Information Center | Seattle Public Library | | LB-03-01 | | |
| ✓ | | | Cliff Portman | | City of Seattle | Planning & Development | SMT-18-00 | | |
| ✓ | | | Sue Putnam | | City of Seattle | Planning & Development | SMT-18-00 | | |
| | ✓ | | Andy Lunde | | City of Seattle | Planning & Development | SMT-18-00 | | |
| | ✓ | | Jerry Suder | | City of Seattle | Planning & Development | SMT-18-00 | | |
| | ✓ | | Laurie Olson | | City of Seattle | Office of Housing | SMT-57-00 | | |
| ✓ | | | Kyle Joyce | | City of Seattle | Finance & Admin Svcs | SMT-52-01 | | |
| ✓ | | | Mark Jaeger | | City of Seattle | Seattle Public Utilities | SMT-49-00 | | |
| ✓ | | | Tim Ramsaur | | City of Seattle | Seattle Public Utilities | SMT-49-00 | | |
| ✓ | | | Paul Fleming | | City of Seattle | Seattle Public Utilities | SMT-49-00 | | |
| ✓ | | | Miles Mayhew | | City of Seattle | Seattle Public Utilities | SMT-49-00 | | |
| ✓ | | | Jen Trout | | City of Seattle | City Light | SMT 00-28-22 | | |
| ✓ | | | Bill Davis | | City of Seattle | City Light | SMT 00-28-22 | | |
| ✓ | | | Margaret Duncan | | City of Seattle | City Light | SMT 00-28-22 | | |
| | ✓ | | Michael Shiosaki | Planning & Development Division | City of Seattle | Dept of Parks and Recreation | PK-01-01 | | |
| | ✓ | | David Graves | Planning & Development Division | City of Seattle | Dept of Parks and Recreation | PK-01-01 | | |

**The Plan to Protect Seattle's Waterways**
**Final Environmental Impact Statement Distribution List**

| Notice of FEIS | Notice of FEIS + Compact Disc | Notice + FEIS + Compact Disc | Agency or Name | Name or Address1 | Name or Address2 | Address3 | City | State | Zip |
|---|---|---|---|---|---|---|---|---|---|
| | ✓ | | Maureen Meehan | Street Use Division | City of Seattle | Dept of Transportation | SMT 00-39-00 | | |
| | ✓ | | Luke Korpi | Street Use Division | City of Seattle | Dept of Transportation | SMT 00-30-00 | | |
| ✓ | | | Ron Borowski | Policy and Planning | City of Seattle | Dept of Transportation | SMT-00-39-00 | | |
| ✓ | | | Jill Macik | Capital Projects & Roadway Str. | City of Seattle | Dept of Transportation | SMT-00-39-00 | | |
| ✓ | | | Dongho Chang | Traffic Operation | City of Seattle | Dept of Transportation | SMT-00-39-00 | | |
| ✓ | | | Cristina VanValkenburgh | Mobility Programs | City of Seattle | Dept of Transportation | SMT-00-39-00 | | |
| ✓ | | | Sarah Sodt | Landmarks Preservation Board | City of Seattle | DON/HISTORICAL PROG. | SMT 00-17-00 | | |
| ✓ | | | Tina Vlasaty | | City of Seattle | Economic Development | SMT-57-52 | | |
| ✓ | | | Gregory Dean, Fire Chief | Office of the Chief | City of Seattle | Fire Department | FD-44-04 | | |
| | ✓ | | | City Council | City of Seattle | Legislative Dept | CH 02-10-00 | | |
| | ✓ | | The Honorable Sally Bagshaw | Councilmember | City of Seattle | Legislative Dept | CH 02-10-00 | | |
| | ✓ | | The Honorable Tim Burgess | Councilmember | City of Seattle | Legislative Dept | CH 02-10-00 | | |
| | ✓ | | The Honorable Sally Clark | Councilmember | City of Seattle | Legislative Dept | CH 02-10-00 | | |
| | ✓ | | The Honorable Kshama Sawant | Councilmember | City of Seattle | Legislative Dept | CH 02-10-00 | | |
| | ✓ | | The Honorable Jean Godden | Councilmember | City of Seattle | Legislative Dept | CH 02-10-00 | | |
| | ✓ | | The Honorable Bruce Harrell | Councilmember | City of Seattle | Legislative Dept | CH 02-10-00 | | |
| | ✓ | | The Honorable Nick Licata | Councilmember | City of Seattle | Legislative Dept | CH 02-10-00 | | |
| | ✓ | | The Honorable Mike O'Brien | Councilmember | City of Seattle | Legislative Dept | CH 02-10-00 | | |
| | ✓ | | The Honorable Tom Rasmussen | Councilmember | City of Seattle | Legislative Dept | CH 02-10-00 | | |
| | ✓ | | The Honorable Ed Murray | Mayor | City of Seattle | Office of the Mayor | CH-00-07-01 | | |
| | ✓ | | Bob Tobin | Assistant City Attorney | City of Seattle | Office of the City Attorney | CH 00-04-01 | | |
| | ✓ | | Jeff Weber | Senior Assistant City Attorney | City of Seattle | Office of the City Attorney | CH 00-04-01 | | |
| | | | | | | | | | |
| | | | **Inhouse/Consultant** | | | | | | |
| | | 1 | Nancy Ahern | | | | | | |
| | | 1 | Rick Scott | | | | | | |
| | | 1 | Betty Meyer | | | | | | |
| | | 1 | Susan Stoltzfus | | | | | | |
| | | 1 | Ben Marre | | | | | | |
| | | 1 | Tracy Tackett | | | | | | |
| | | 1 | Kevin Buckley | | | | | | |
| | | 1 | Ed Mirabella | | | | | | |
| | | 2 | Archive | | | | | | |
| | | 10 | Extra | | | | | | |
| | | 2 | BFW Team | | | | | | |
| | | 2 | CH2M Hill | | | | | | |
| | | 2 | B&C | | | | | | |
| | | 2 | ESA | | | | | | |