SEATTLE PUBLIC UTILITIES
SEPA ENVIRONMENTAL CHECKLIST

This SEPA environmental review of Seattle Public Utilities' Delridge Combined Sewer Overflow Retrofit Project has been conducted in accord with the Washington State Environmental Policy Act (SEPA) (RCW 43.21C), State SEPA regulations [Washington Administrative Code (WAC) Chapter 197-11], and the City of Seattle SEPA ordinance [Seattle Municipal Code (SMC) Chapter 25.05].

A. BACKGROUND

A1. Name of proposed project:

Delridge Combined Sewer Overflow (CSO) Retrofit Project

A2. Name of applicant:

Seattle Public Utilities

A3. Address and phone number of applicant and contact person:

Tara Wong-Esteban, Project Manager
Seattle Public Utilities
Project Delivery Branch
Seattle Municipal Tower, Suite 4900
P.O. Box 34018
Seattle, WA 98124-4018
(206) 684-5903

A4. Date checklist prepared:

September 5, 2013

A5. Agency requesting checklist:

Seattle Public Utilities

A6. Proposed timing or schedule (including phasing, if applicable):

Construction is expected to occur between June 2014 and December 2014 and last up to 7 months. Heavy equipment construction will last approximately 100 work days and electrical and instrumentation work will last approximately 40 work days. Commissioning and final inspection are expected to occur between December 2014 and April 2015.

A7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

No actions are currently planned that are directly related to the proposal. SPU is preparing a CSO Long Term Control Plan (LTCP) that may include a storage project within the Delridge Basin if additional combined sewer system capacity is needed in the Delridge Basin. If needed, that project would be implemented sometime after 2015.

A public art component will be installed at each site at a later date, with design details to be determined.

A8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

- Delridge CSO Subsurface Soil Sampling Data Summary (Phase I Environmental Site Assessment), prepared by Environmental International Ltd, dated June 26, 2013.
- Delridge CSO 168 Limited Phase 1 ESA Report, prepared by Environmental International Ltd, date April 10, 2013
- Delridge CSO 169 Limited Phase 1 ESA Report, prepared by Environmental International Ltd, date April 10, 2013
- Equinox Research and Consulting International (ERCI), 2013. Archeological Monitoring Delridge CSO Retrofit Project NPDES 168 letter report, dated August 22, 2013. This document includes a Monitoring Plan and Unanticipated Discoveries Plan. Portions of this document are exempt from public disclosure.
- King County Historic Preservation Program Cultural Resources Review, Delridge CSO 168/169 Retrofit Project, dated March 29, 2013. Portions of this document are exempt from public disclosure.
- U.S. Fish and Wildlife Service, 2010. Distribution and Habitat Use of Fish in Seattle's Streams Final Report 2005-2006.
- City of Seattle, 2011. Seattle Biological Evaluation, prepared for Seattle Public Utilities. seattle.gov/util/groups/public/@spu/@conservation/documents/webcontent/01_024847.pdf
- U.S. Geological Survey, 2005. Geologic Map of Seattle, U.S. Geological Survey Open File Report 2005-1252.
- Preliminary Geotechnical Evaluation by Seattle Public Utilities Geotechnical Engineering (to be prepared prior to construction)
- Construction Stormwater and Erosion Control Plan (to be prepared prior to construction)
- Spill Prevention Control and Countermeasures Plan (to be prepared prior to construction)
- Traffic Control Plan (to be prepared prior to construction)
- Unanticipated Discoveries Protocol for Cultural Resources (to be prepared prior to construction)

A9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

None are known.

A10. List any government approvals or permits that will be needed for your proposal, if known.

Seattle Department of Planning and Development

- Master Use Permit (MUP) Type II
- Grading Permit
- Building Permit
- Electrical Permit
- Plumbing Permit
- Mechanical Permit
- Tree Protection provisions compliance
- Environmentally Critical Areas provisions compliance

Seattle Department of Transportation (SDOT)

- Street Use Permit
- Street Improvement Permit

King County Wastewater Discharge Permit(for disposal of water collected during dewatering)

A11. Give a brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)

Sewers in the project area convey raw sewage to King County's West Point treatment plant for treatment prior to discharge to Puget Sound. When it rains, large volumes of stormwater flow into the same pipes that carry raw sewage. During heavy rain events, the system capacity is exceeded and an overflow of raw sewage and stormwater is discharged into Longfellow Creek. These events are called "combined sewer overflows" (CSO) and they present obvious public health and environmental concerns.

SPU manages two existing CSO control and storage facilities in the Delridge area known as CSO Control Facility 2 and CSO Control Facility 3. These facilities are located within and help reduce combined sewage overflows from CSO basins 168 and 169, respectively. These CSO control facilities were constructed in 1982 and were among the first and largest CSO storage facilities built by the City at that time. Similar in design, each facility provides 1.6 million gallons of off-line storage to prevent or reduce CSOs. However, despite being sized to store the combined sewage from a 10-year rain event, the facilities do not operate as intended and each facility overflows to Longfellow Creek more than once per year on average. Equipment intended to passively regulate flows from each facility (HydroBrakes) does not perform as intended, which results in inefficient use of the existing storage. The automated cleaning systems at both facilities are inadequate and no longer used. The facilities require monthly maintenance as well as frequent unscheduled maintenance due to random clogging.

SPU proposes to retrofit these two existing CSO control facilities. The main goal of the retrofit project is to reduce the frequency and volume of CSOs to Longfellow Creek, a tributary of the Duwamish Waterway. A secondary goal is to reduce facility maintenance requirements. The retrofit would replace the existing HydroBrakes with new and/or improved upstream diversion structures, actively controlled valves, and a downstream flow monitoring system.

Proposed improvements at each facility are described in the following paragraphs.

<u>CSO Control Facility 2 (CSO Basin 168):</u>
The HydroBrake located within the existing control chamber vault would be replaced with a control valve. The top of the control chamber would be reconfigured to add functionality. Specifically, the control chamber would be extended upward approximately 2.25 feet and the chamber would be widened on two sides, by approximately 3.75 feet and 5 feet, to remove existing flow constrictions.

Tank supply fans for improved confined space ventilation would be installed on the cover of the existing concrete storage tank. The existing chain link fencing would be replaced with steel fencing and reconfigured to form a larger enclosure. An existing covered shelter that houses washdown system control valves (approximate dimensions: 120 square feet and 8 feet high), would be modified but not expanded, so that it also provides secure storage for tank cleaning equipment. Construction staging for CSO Control Facility 2 would be located on the CSO Control Facility 2 parcel.

Diversion Structure - CSO Control Facility 2 (CSO Basin 168):
A new structure would be installed upstream of CSO Control Facility 2 (within the Orchard Street right-of-way) to allow normal sewage flows to continue downstream and to divert excess (wet weather) flows into the storage facility. The diversion structure would be housed within a 14 foot by 34 foot underground vault. In addition, approximately 350 feet of new 10-inch pipe would be installed to carry normal sewage flows past CSO Control Facility 2 and approximately 100 feet of new 30-inch pipe would be installed to convey excess (wet weather) flows to CSO Control Facility 2. All new pipe would be installed within the Orchard Street right-of-way.

Maintenance hole (MH) work in the street right-of-way would include:

- Installation of six new combined sewer maintenance holes within the right-of-way along SW Orchard Street between Dumar Way SW and Delridge Way SW
- Replacement of existing MH covers and frames along SW Orchard Street
- Installation of a vent pipe connecting the retrofitted MHs to a standpipe

Other work in the street right-of-way would include installation of a new catch basin with stormwater filtration/bioretention features on the west end of Orchard Street, near the intersection with Delridge Way. After the proposed flow control improvements and monitoring system improvements are constructed, pavement and sidewalk would be restored. Construction staging for the CSO Control Facility 2 diversion structure would be located in the right-of-way along the north side of SW Orchard Street.

Downstream Monitoring for CSO Control Facility 2 (CSO Basin 168):
A roadside control cabinet and electrical conduit would be installed within the right-of-way of Myrtle Street near the intersection with 24th Avenue SW for the downstream flow monitoring system. Construction staging for CSO Control Facility 2 downstream monitoring would be located in the intersection's right-of-way.

CSO Control Facility 3 (CSO Basin 169):
The HydroBrake located within the existing control chamber vault would be replaced with a control valve. The cover of the control chamber would be replaced. Tank supply fans for improved confined space ventilation would be installed on the cover of the existing concrete storage tank. Construction staging would be located on CSO Control Facility 3 property.

Diversion Structure - CSO Control Facility 3 (CSO Basin 169):
A new diversion structure (similar to the diversion structure for CSO Control Facility 2) would be installed within unimproved right-of-way north of Barton Street between 22nd and 23rd Avenue SW and would replace an existing weir structure. The diversion structure would allow normal sewage flows to continue downstream past CSO Control Facility 3 and would divert excess (wet weather) flows into the storage facility. The diversion structure would be housed within a 14

foot by 34 foot underground vault. In addition, approximately 25 feet of new 8-inch pipe would be installed to divert normal sewage flows past CSO Control Facility 3 and approximately 50 feet of new 30-inch pipe would be installed to convey wet weather (excess) flows to CSO Control Facility 3.

After the proposed flow control improvements and monitoring system improvements are constructed, pavement would be restored and CSO Control Facility 3access would be improved by installing driveway improvements, including pervious pavement, bollards and landscaping. Construction staging for CSO Control Facility 3 would be located in the street right-of-way west of 22nd Ave SW between SW Barton Place and SW Barton Street.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

The project locations are within Delridge neighborhood of southwest Seattle.

CSO Control Facility 2 is located at the southeast corner of the intersection of SW Orchard Street and Delridge Way SW. The street address is 7200 Delridge Way SW, King County parcel #7985400500, SE Quartersection, Section 25, Township 24, Range 3.

Diversion Structure for CSO Control Facility 2 would be located in the right-of-way on the north side of SW Orchard Street just east of CSO Control Facility 2.

Downstream flow monitoring system for CSO Control Facility 2 would be located within the right-of-way at the intersection of 24th Avenue SW and SW Myrtle Street, northwest of CSO Control Facility 2.

CSO Control Facility 3 is located between SW Henderson Street and SW Barton Place, west of 22nd Avenue SW. The street address is 2201 SW Henderson Street, King County parcel #4365700505; SE Quartersection, Section 36, Township 24, Range 3.

Diversion Structure for CSO Control Facility 3 would be located within the right-of-way at the intersection of SW Barton Street and 22nd Avenue SW, southeast of CSO Control Facility 3.

A vicinity map is included in Attachment A. Attachment B shows the location of each site. Attachment C contains photographs of each site.

B. ENVIRONMENTAL ELEMENTS

B1. Earth

a. General description of the site: *[Check the applicable boxes]*

☐ Flat ☐ Rolling ☒ Hilly ☐ Steep Slopes ☐ Mountainous
☐ Other: (identify)

The topography of each CSO control site property is generally flat.

CSO Control Facility 2 is surrounded by wooded areas on two sides which generally slope towards the northwest. The diversion structure site is relatively level with a gentle slope from east to west. There is a wooded area to the north which slopes steeply towards the south. The downstream monitoring location is on a level site in a small valley formed by Longfellow Creek.

CSO Control Facility 3 is located between SW Barton Way and SW Henderson Street west of 22nd Avenue SW. The storage tank is built into the side of the hill with the wall on the south side of the tank creating a 16 foot grade separation. The landscaped portions of the parcel slope gently to the northwest towards Henderson Street. The diversion structure site is located in a moderately rolling right-of-way generally sloping to the north. The slopes to the east and west fall steeply towards the west.

b. What is the steepest slope on the site (approximate percent slope)?

The steepest slope throughout the project sites is 35% and is at CSO Control Facility 3. The steepest slope at CSO Control Facility 2 is 20%.

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any prime farmland.

Soils at the project sites consist of Vashon till materials, and consist of sand, silt, gravel, and clay overlaid with fill and organic materials in the near-surface areas (Environment International, Ltd, 2013). The U.S. Geological Survey map for Seattle indicates that this area consists of younger glacial deposits of the Vashon slade, with recessional outwash deposits of sand, gravel, and silt.

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe:

There are no surface indications of unstable soils in the immediate vicinity of the proposed project. There are steep slope areas identified on City of Seattle environmentally critical areas maps adjacent to both CSO Control Facilities 2 and 3. Potential slide areas and known slide areas are also identified just west of the downstream monitoring location near 24th Avenue SW and SW Myrtle Street.

e. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate the source of fill.

Excavation, filling and grading would occur as part of construction activity associated with pipe installation, replacement of diversion structures, street improvements, and landscaping. Up to 2800 cubic yards of soil would be excavated and removed. Up to 2500 cubic yards of select imported fill would be used to backfill after construction. If it is necessary to remove excavated materials from the construction sites, these soils would be disposed of at an approved offsite disposal site or used as fill at a permitted site for such use. Unknown quantities of this fill material may be acquired from on-site excavation (if suitable to the purpose) but would otherwise be imported. All imported material would be provided by a State-licensed and SPU-approved purveyor of such material.

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe:

Temporary erosion could occur during construction activities such as grading, filling, stockpiling, and excavating.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

Project construction would result in a net decrease of approximately 700 square feet of impervious surface, including the narrowing of pavement and the widening of sidewalk along SW Orchard Street, the expansion of the CSO Control Facility 2 control chamber and the installation of impervious pavement at slopes greater than 5% at the CSO Control Facility 3 diversion structure. Currently, approximately 60% of CSO Control Facility 2 and approximately 40% of CSO Control Facility 3 are covered with impervious surface. After construction, approximately 55% of CSO Control Facility 2 and approximately 45% of CSO Control Facility 3 would be covered with impervious surface.

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:

Construction work would comply with the City of Seattle's development standards for steep slope areas (SMC 25.09.180). Temporary erosion and sediment controls would be used during construction to ensure that excavated and stockpiled materials are not deposited on city streets or eroded into streams or city conveyance piping. Controls on stormwater during construction would include:

- The project would implement a Construction Stormwater and Erosion Control Plan (CSECP) that contains standard operating procedures (SOPs) and best management practices (BMPs) appropriate to the site, conditions, and proposed activities. Construction work would be monitored, maintained, and adjusted as necessary to meet changing conditions.
- The project would prepare and implement a stormwater pollution prevention plan and spill prevention plan to meet the requirements of SMC 22.800, as well as the City of Seattle Standard Plans and Specifications for Municipal Construction.
- Construction equipment would be staged outside of sensitive or critical areas.
- Erodible material stockpiles would be covered with impervious barriers for protection from rain.

B2. Air

a. What types of emissions to the air would result from the proposal [*e.g.*, dust, automobile, odors, industrial wood smoke, greenhouse gases (GHG)] during construction and when the project is completed? If any, generally describe and give approximate quantities if known.

Construction activities have the potential to create temporary fugitive dust emissions from demolition, materials handling, and earth-moving activities. Also, mobile and stationary equipment would be used to construct the proposed project, generating usual exhaust emissions (that is, carbon monoxide, sulfur, and particulates) due to the combustion of gasoline and diesel fuels. These dust and exhaust emissions are expected to be minimal, localized, and temporary.

This project would also generate greenhouse gas (GHG) emissions in two ways: concrete, asphalt, and other materials usage (embodied); and construction activity. Total GHG emissions for the project are estimated to be 852.012 metric tons of carbon dioxide emission (MTCO2e). The GHG emission calculations are shown in Attachment D. One metric ton is equal to approximately 2,204.6 pounds. GHG emissions generated by new operation and maintenance activities are not expected to be substantially altered from existing operation or maintenance activities in terms of their current GHG or other air emissions.

This project would generate approximately 670 MTCO2e of GHG emissions by adding approximately 8,700 square feet of new asphalt, 4,700 square feet of concrete pad, and approximately 4 tons of new steel pipe. In addition, the project would generate approximately 182 MTCO2e of GHG emissions during the estimated 100 work days through the operation of diesel- and gasoline-powered equipment and the transporting of materials, equipment, and workers to and from the project location. Because project construction methods were not completely known at the time this checklist was prepared, the estimates provided here are based on daily vehicle operation times for the entire estimated project duration and assume work occurs over 100 active construction work days; actual times may be less.

Summary of Greenhouse Gas (GHG) Emissions

Activity/Emission Type	GHG Emissions (pounds of CO_2e)[1]	GHS Emissions (metric tons of CO_2e)[1]
Buildings (Steel pipe only)		0.012
Paving (Concrete and asphalt)		670
Construction Activities (Diesel)	234,432	103
Construction Activities (Gasoline)	175,899	79
Total GHG Emissions		852.012

[1] Note: 1 metric ton = 2,204.6 pounds of CO_2e. 1,000 pounds = 0.45 metric tons of CO_2e

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

There are no known off-site sources of emissions or odor that would affect this proposal.

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

During construction, dust impacts would be controlled by best management practices and implementation of the CSECP. Impacts to air quality could be reduced by implementation of standard federal, state, and local emission control criteria for vehicles and equipment.

The Puget Sound Clean Air Agency (PSCAA) is responsible for enforcing federal, state, and local air pollution standards and governing air pollutant emissions from new sources in King, Snohomish, Pierce, and Kitsap Counties. As required by PSCAA regulations, emissions would be controlled by using reasonably available control technologies (PSCAA

2008) and City of Seattle SOPs and BMPs for construction. These would include requiring contractors to use best available control technologies, proper vehicle maintenance, and minimizing vehicle and equipment idling.

B3. Water

a. Surface:

(1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If so, describe type and provide names. If appropriate, state what stream or river or water body it flows into.

No surface water bodies are present in the immediate vicinity. The proposed downstream monitoring station northwest of CSO Control Facility 2 is approximately 100 feet from Longfellow Creek.

(**2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If so, please describe, and attach available plans.**

The project would not require any work over, in, or adjacent to surface water bodies.

(3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands, and indicate the area of the site that would be affected. Indicate the source of fill material.

The project would not dredge or fill surface waters or wetlands.

(4) Will the proposal require surface water withdrawals or diversions? If so, give general description, purpose, and approximate quantities if known.

The project would not require surface water withdrawals or diversions.

(5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

The project does not lie within a 100-year floodplain.

(6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

The project would not produce or discharge waste materials to surface waters.

b. Ground:

(1) Will ground water be withdrawn, or will water be discharged to ground water? If so, give general description, purpose, and approximate quantities if known.

Groundwater is known to occur at CSO Control Facility 2 at 9 to 18 feet below ground surface (between elevations 198 to 202) and at the downstream flow monitoring system at 7 feet below ground surface (elevation 164). At CSO Control Facility 3, groundwater was not encountered at a boring depth of 26.5 feet, corresponding to an elevation of 322.5. If dewatering of excavated trenches is necessary during construction, the collected water would be managed according to the CSECP. Quantities of water potentially collected by dewatering are unknown. No other ground water withdrawals or discharges are anticipated.

(2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (*e.g.*, domestic sewage; industrial, containing the following chemicals…; agricultural, *etc.*). Describe the general size of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

No waste material would be discharged to groundwater on this project. Any turbidity generated by construction would be contained on the project location or discharged to the sanitary sewer with the proper approvals. To manage the spill prevention of hazardous and waste materials during construction, the project would implement a spill prevention plan and CSECP with SOPs and BMPs appropriate to the site, conditions, and activities. Construction work would be monitored, maintained, and adjusted as necessary to meet changing conditions.

c. Water Runoff (including storm water):

(1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

Stormwater currently drains from the impervious areas at each site into a catch basin which is connected to the adjacent on-street storm drain system. No changes to the existing storm drain infrastructure or drainage patterns are proposed.

At CSO Control Facility 2, the on-site catch basin is located just west of the existing maintenance building in the existing asphalt paved driveway. This catch basin drains to the existing storm drain system in SW Orchard Street.

At CSO Control Facility 3, the on-site catch basin is located just south of the existing control chamber. This catch basin drains to the existing storm drain system in SW Henderson Street.

Stormwater run-on and run-off would be controlled during construction according to the CSECP. Best management practices in compliance with the City of Seattle Stormwater Code (SMC 22.800 et seq.) and related Department of Planning and Development (DPD) Director's rules would be implemented to control stormwater. Runoff would be collected, treated if required, and discharged to the existing storm drain systems adjacent to each CSO Control facility.

(2) Could waste materials enter ground or surface waters? If so, generally describe.

This project would not generate waste materials that could enter groundwater or surface waters. Turbidity generated by construction would be contained on the project location or (with the proper approvals) discharged to a nearby King County sanitary sewer mainline.

d. Proposed measures to reduce or control surface, ground, and runoff water impacts, if any:

The project would reduce the frequency and volume of CSO events from the CSO 168 and 169 basins and would result in improved water quality in Longfellow Creek. No new adverse surface, ground, or runoff water impacts are anticipated. To minimize the

erosion potential of stormwater runoff during construction, temporary erosion control measures, such as a silt fences or straw wattles, would be deployed as needed and according to the project's CSECP. Construction work would be monitored, maintained, and adjusted as necessary to meet changing conditions.

B4. Plants

a. Types of vegetation found on the site: *[check the applicable boxes]*

☒ Deciduous trees:	☒ Alder	☒ Maple	☐ Aspen	☐ Other: (identify)
☒ Evergreen trees:	☒ Fir	☒ Cedar	☐ Pine	☐ Other: (identify)
☒ Shrubs				
☒ Grass				
☐ Pasture				
☐ Crop or grain				
☐ Wet soil plants:	☐ Cattail	☐ Buttercup	☐ Bulrush	☐ Skunk cabbage
☐ Other: (identify)				
☐ Water plants**:**	☐ water lily	☐ eelgrass	☐ milfoil	☐ Other: (identify)
☒ Other types of vegetation: (identify*)* English Ivy; Himalayan blackberry				

b. What kind and amount of vegetation will be removed or altered?

<u>CSO Control Facility 2:</u>
Existing vegetation at the CSO Control Facility 2 consists of ornamental shrubs, grasses, groundcover, and approximately twelve mid-sized (6-12 inch diameter) maple, cedar, fir, and alder trees. None of these trees would be considered Exceptional Trees. Exceptional Trees have significant value due to their size and species (as defined in DPD's Director's Rule 16-2008) and have unique historical, ecological, or aesthetic value. Existing low level shrubs and ground covers at the site would be cleared and replaced with new low shrubs, groundcovers, and accent plantings. Up to two approximately 9 inch diameter cedar trees on the property parcel may be removed as part of the site improvements. Neither of these trees would be considered Exceptional Trees.

<u>CSO Control Facility 3:</u>
Existing vegetation at CSO Control Facility 3 consists of ornamental shrubs, grasses, groundcover, four larger big-leaf maple and alder trees (14-20 inch diameter) and one large cedar (approximately 20 inches diameter) on or adjacent to the site. None of these trees would be considered Exceptional Trees. Existing low level shrubs and ground covers at the site would be cleared and replaced with new low shrubs, groundcovers, and accent plantings. Up to three approximately 8 inch diameter cedar trees on the property parcel and one 14 inch maple may be removed as part of site improvements. None of these trees would be considered Exceptional Trees.

c. List threatened or endangered species known to be on or near the site.

According to a review of the Washington Department of Natural Resources (WDNR) Natural Heritage Program document called "Sections that Contain Natural Heritage Features, Current as of March 1, 2013" (accessed at www.dnr.wa.gov), there are no documented occurrences of sensitive, threatened, or endangered plant species in this Section. No federally-listed endangered or threatened plant species or State-listed

sensitive plant species are known to occur within the municipal limits of the City of Seattle. The project location has been intensively disturbed by development and redevelopment over the last 80 years. Portions of the site have been excavated, filled, paved, or occupied by built structures. There is no habitat for threatened or endangered plants.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

The project would limit plant removal, pruning, and other disturbance to that required for project construction. Construction limits would be clearly and physically delineated by protective construction fencing to prevent unauthorized trespass and collateral damage to nearby vegetation. Following completion of construction at each site, disturbed areas would be replanted with a combination of drought tolerant, native shrubs, grass, and groundcover.

Because up to 6 trees are expected to be removed, replacement trees may be required by City of Seattle Tree Protection provisions, including Executive Order 03-05 (2005; Clerk File #307611) directing City departments to replace every tree removed from City property with two new trees.

B5. Animals

a. Birds and animals that have been observed on or near the site or are known to be on or near the site: *[check the applicable boxes]*

Birds:	☒ Hawk	☐ Heron	☒ Eagle	☒ Songbirds
☐ Other: (identify)				
Mammals:	☐ Deer	☐ Bear	☐ Elk	☐ Beaver
☐ Other:(identify)				
Fish:	☐ Bass	☒ Salmon	☒ Trout	☐ Herring
☐ Shellfish	☐ Other: (identify)			

Cutthroat trout and Coho salmon have been observed in the lower reaches of Longfellow Creek more than a mile away, but are not present near the project locations (U.S. Fish and Wildlife Service, 2010; City of Seattle, 2011).

b. List any threatened or endangered species known to be on or near the site:

There are no known threatened or endangered species on or near either retrofit site. According to a comprehensive survey of Seattle's streams and fish distribution conducted by the U.S. Fish and Wildlife Service in 2005 and 2006, Chinook salmon were not observed in the Longfellow Creek watershed (U.S. Fish and Wildlife Service, 2010).

c. Is the site part of a migration route? If so, explain.

While the project location is not part of a specific known migration route, Seattle is located within the migratory route of many bird species and is part of the Pacific Flyway, a major north-south route of travel for migratory birds in the Americas extending from Alaska to Patagonia. The project location is more than one and a half miles southwest of the West Duwamish Waterway, another important migration route for many animal species.

d. Proposed measures to preserve or enhance wildlife, if any:

During construction, the contractor would prepare and implement a CSECP to reduce the potential for erosion, sedimentation, and construction-related leaks or spills into surface and groundwater. The project would reduce the frequency and volume of CSO discharges into Longfellow Creek, with substantial potential benefits to water quality, aquatic species, and local wildlife.

B6 Energy and Natural Resources

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, *etc.*

The completed project would require electrical energy to operate controls, pumps, lights, ventilation units, and instrumentation at each site.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

The project would not affect the potential use of solar energy by adjacent properties.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

Facility design and construction would meet the current energy code requirements of the City of Seattle.

B7. Environmental Health

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe:

A Phase I Environmental Site Assessment of both sites was conducted for SPU in May 2013 (Environmental International, Ltd., 2013). Soils samples were tested for volatile organic compounds, total petroleum hydrocarbons, and metals. These potential contaminants were not present in the subsurface soils at concentrations exceeding cleanup levels determined by the state Model Toxics Control Act. It is unlikely that soil removed from the project area would require special handling or disposal.

Materials likely to be present during construction would include gasoline and diesel fuels, hydraulic fluids, oils, lubricants, and other chemical products. A spill of one of these chemicals could potentially occur during construction as a result of either equipment failure or worker error. A spill prevention plan and CSECP would be prepared and implemented during construction. The completed project would not result in any environmental health hazards.

(1) Describe special emergency services that might be required.

Possible fire or medic services could be required during project construction, as well as possibly during maintenance and operation of the completed project. However, the

completed project would not demand higher levels of special emergency services than already exist at the project locations. Typical emergency services required for medical emergencies are provided by the Seattle Fire Department. Typical public safety services are provided by the Seattle Police Department, and typical project site and construction security services are provided by SPU and SPU's contractors.

(2) Proposed measures to reduce or control environmental health hazards, if any:

The project would reduce the frequency and volume of CSO discharges into Longfellow Creek, with substantial potential benefits to environmental and public health.

A CSECP would be developed to control and manage spills during construction. Any soils contaminated by spills would be excavated and disposed of in a manner consistent with the level of contamination, in accordance with federal, state, and local regulatory requirements, by a qualified contractor(s) and/or City staff. During construction, SPU or its Contractor would use SOPS and BMPs, as 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 reduce or control environmental health hazards. Equipment would be inspected for leaking hoses, mechanical joints, and hydraulic pistons. Temporary control measures for both erosion and hazardous material spills would be installed to minimize access pathways to Longfellow Creek in the event of a spill or leak. Hazardous material spill response materials would be available on the construction site for the duration of the construction work.

As required by the Washington Department of Labor and Industries (WAC 296-843), a Health and Safety Plan would be prepared by SPU for SPU construction staff and by SPU's construction contractor for its staff before work commences. The plan would address proper employee training, use of protective equipment, contingency planning, and secondary containment of hazardous material. It would identify measures to ensure construction worker safety, outline emergency medical procedures, and reporting requirements. Public access to the work areas would be restricted.

b. Noise

(1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

Existing noise in the project area is low, consisting of vehicle traffic and other noise typical of urban residential and commercial areas. Existing noise would not affect construction or operation of the CSO control facilities.

(2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.

Noise and vibration levels in the vicinity of construction would temporarily increase during construction. Noise and medium vibration are expected to result from operation of heavy trucks, excavators, and front end loaders and track hoe-mounted pavement breakers. Noise and low vibration are expected to result from hand-operated compaction equipment such as jumping jacks or plate compactors, large [greater than 3 inch] diesel-powered pumps for dewatering, concrete trucks and concrete pumper trucks, concrete vibratory stingers, and jackhammers.

Short-term noise from construction equipment would be limited to the allowable maximum levels of City of Seattle's Noise Control Ordinance [Seattle Municipal Code (SMC) Chapter 25.08]. Per SMC 25.08, elevated noise from construction equipment would be allowed only between the hours of 7 am and 10 pm weekdays, and between 9 am and 10 pm on weekends and legal holidays. The completed project would not contribute noise or vibration beyond that which already exists related to existing site maintenance.

(3) Proposed measures to reduce or control noise impacts, if any:

Construction equipment would be muffled in accordance with the applicable laws. SMC Chapter 25.08 (which prescribes limits to noise and construction activities) would be enforced while the project is being constructed and during operations, except for emergencies. In addition, the project would:

- Locate access ways and construction activity as far from sensitive receptors and structures as possible;
- Inspect adjacent foundations and infrastructure before and after construction, documenting those features with photos;
- Pothole to identify exact horizontal and vertical locations of buried utilities prior to construction to evaluate potential conflicts;
- Limit equipment operation to that needed to construct;
- Minimize equipment idling;
- Ensure all equipment using backup alarms use ambient-sensing alarms that broadcast a warning sound loud enough to be heard over background noise but without having to use a preset, maximum volume;
- Evaluate soils and water conditions to determine if saturated soils conditions exist and consider site dewatering if the geotechnical engineer recommends this as a way to dampen vibrations where likelihood of damage to adjacent structures exists;
- Throttle pumps to minimum speeds needed to bypass flow around the CSO Control Facilities ; and
- Limit compaction to that needed to achieve structure and/or soil stability of proposed project.

B8. Land and Shoreline Use

a. What is the current use of the site and adjacent properties?

The work would occur on two sites that are currently used as CSO control facilities and within nearby public street rights-of-way. Adjacent properties to both CSO control facilities and the diversion structure and flow monitoring system locations are residential (single family housing and apartments), commercial (service stations and storage units) and public street rights-of-way.

b. Has the site been used for agriculture? If so, describe.

No, the site has not been used for agriculture.

c. Describe any structures on the site.

CSO Control Facility 2 includes a 1.6 million gallon concrete storage structure, a hydraulic control structure, a maintenance building with electrical systems and controls, fencing, a driveway, and maintenance vehicle parking.

CSO Control Facility 3 also consists of a 1.6 million gallon concrete storage structure, a hydraulic control structure, a maintenance building with electrical systems and controls, fencing, a driveway, and maintenance vehicle parking.

d. Will any structures be demolished? If so, what?

The tops of the concrete control chambers will be demolished and rebuilt at each site.

e. What is the current zoning classification of the site?

CSO Control Facility 2 is in a commercial zone that has a 40 foot height limit (C1-40). CSO Control Facility 3 is in a Single Family Residential zone that has a 7,200 square foot minimum lot size (SF7200).

f. What is the current comprehensive plan designation of the site?

CSO Control Facility 2 is on a site designated Commercial/Mixed Use and CSO Control Facility 3 is on a site designated Single Family Residential.

g. If applicable, what is the current shoreline master program designation of the site?

Neither site is located in a Shoreline management district.

h. Has any part of the site been classified as an "environmentally sensitive" area? If so, specify.

Both facilities are adjacent to areas identified as containing steep slopes and known and potential landslide areas in the City environmentally critical area (ECA) ordinance. The installation of the new downstream monitoring station is in street right-of-way that is within the riparian corridor surrounding Longfellow Creek. The ECA ordinance applies only to activities located on parcels (as opposed to rights-of-way) (SMC 25.09.015). However, project construction would comply with development standards in the ECA ordinance.

i. Approximately how many people would reside or work in the completed project?

No people would reside or work in the completed project other than occasional maintenance crews.

j. Approximately how many people would the completed project displace?

No people would be displaced by the completed project.

k. Proposed measures to avoid or reduce displacement impacts, if any:

No displacement impacts are anticipated and no mitigation measures are proposed.

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

The proposed project is subject to land use and building construction permitting by the City of Seattle Department of Planning and Development (DPD).

CSO Control Facility 2 is on a site that is zoned C1-40. The proposed project elements, including the proposed expansion of the control chamber in area and height, are compatible with land use and development regulations. The existing utility service use is permitted outright. No changes in use are proposed.

CSO Control Facility 3 is on a site that is zoned SF7200. The existing control chamber and maintenance building structures are within the setbacks established for this zone. No material expansion (area or height) is allowed outright, and expansion within the setback would be considered a "major expansion" under the zoning code. "Public utility services" are allowed only as a council conditional use approval with a waiver of development standards for the underlying SF zone. If the only exterior modification is the addition of a storage tank air supply ventilation unit or shelter for the tank cleaning equipment (outside of the setback), DPD may consider this to be a "minor expansion" under the zoning code, in which case a Type II MUP would apply. The proposal does not constitute a change in use at either of the project sites and would result in substantial public and environmental benefit through the elimination of CSO events into Longfellow Creek.

B9. Housing

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

No housing units are proposed.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

No housing units are proposed to be eliminated.

c. Proposed measures to reduce or control housing impacts, if any:

No housing impacts are anticipated and no mitigation measures are proposed.

B10. Aesthetics

a. What is the tallest height of any proposed structure(s), not including antennas? What is the principal exterior building material(s) proposed?

The tallest heights of any proposed structures are the storage tank air supply fans and the new fence at CSO Control Facility 2. At both sites, the fans would have a 5.5 foot by 5.5 foot footprint and would be about 4 to 5 feet higher, and the fence would be about 8 feet higher than the tops of the existing storage tank. The top of the storage tank at CSO Control Facility 2 is approximately one foot above the existing grade. The top of the storage tank at CSO Control Facility 3 is approximately one foot above the existing grade on the east side and approximately 16 feet above the existing grade on the west side.

No modifications to existing exterior building materials are proposed.

b. What views in the immediate vicinity would be altered or obstructed?

No views would be altered or obstructed by the completed project.

c. Proposed measures to reduce or control aesthetic impacts, if any:

None are proposed other than landscaping and project completion work described in Section B.4.d.

B11. Light and Glare

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

No new lighting is proposed. Construction is expected to occur during daylight hours and would not require special lighting.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

Light and glare from the finished project would not be a safety hazard or interfere with views.

c. What existing off-site sources of light or glare may affect your proposal?

There are no known existing off-site sources of light or glare that would affect the proposal.

d. Proposed measures to reduce or control light and glare impacts, if any:

No light and glare impacts are anticipated and no mitigation measures are proposed.

B12. Recreation

a. What designated and informal recreational opportunities are in the immediate vicinity?

CSO Control Facility 2 is approximately ½ mile from the High Point Community Center and Walt Hundley Playfield to the west and Riverview Playfield to the east. CSO Control Facility 3 is approximately ½ mile east of Roxhill Park, and approximately ½ mile west of Westcrest Park. The Seattle Department of Parks and Recreation owns and manages these parks for a variety of active and passive uses. Pedestrian, joggers, and bicyclists may use the public streets and sidewalks in the project area.

The proposed flow monitoring station within the right-of-way of 24th Avenue SW north of SW Myrtle Street is approximately 120 feet west of a segment of the Longfellow Creek Legacy Trail.

b. Would the proposed project displace any existing recreational uses? If so, describe.

The completed project would not displace existing recreational uses in the project area. During construction, there may be a temporary reduction of available street parking and intermittent street closures in the active area of construction (see Section B.14).

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

Temporary closures or detours affecting vehicle and pedestrian routes/access would be required. The project would attempt to make those closures and detours as brief as possible. Informal street parking would be permanently eliminated along the north side of SW Orchard Street. There are no long term impacts on recreation or recreational opportunities, and no additional mitigation measures are proposed.

B13. Historic and Cultural Preservation

a. Are there any places or objects listed on, or proposed for, national, state, or local preservation registers known to be on or next to the site? If so, generally describe.

There are no places or objects listed on, or proposed for, national, state, or local preservation registers known to be on or next to the site. To determine if National Register or Washington Heritage properties are located in or adjacent to the project area, the project location was checked against the following registers on July 9, 2013.

• City of Seattle Landmarks
http://www.cityofseattle.net/neighborhoods/preservation/landmarks_listing.htm

• Washington Heritage Register and National Register of Historic Places
http://www.dahp.wa.gov/historic-register (general site on historic registers), http://www.dahp.wa.gov/washington-heritage-register (a site specific to the Washington Heritage Register) and the WISAARD database http://www.dahp.wa.gov/learn-and-research/find-a-historic-place

The WISAARD database does not indicate the presence of any historic properties near the project locations. None of these registers recorded any places or objects formally listed on, or proposed for, national, state, or local preservation registers on or next to the project locations. No structures would be demolished other than the concrete covers of the control chambers at each site.

b. Generally describe any landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the site.

Based on a review of previously recorded cultural resources on file at the Department of Archaeology and Historic Preservation (DAHP), there are no landmarks or evidence of historic, archeological, scientific, or cultural resources known to be on or next to the sites.

Based on the cultural resources review performed by King County, pre-project archeological monitoring was performed during geotechnical sampling in June of 2013 at CSO Control Facility 2. The King County review indicated that archeological monitoring work was not necessary at CSO Control Facility 3 and sampling was not performed at that site. No buried historic properties or other cultural resources were encountered in any of the test cores during this monitoring at CSO Control Facility 2 (ERCI, 2013).

c. Proposed measures to reduce or control impacts, if any:

The following measures are proposed to reduce or control potential impacts to historical and cultural resources:

- A project-specific Monitoring Plan and Unanticipated Discoveries Plan (UDP) will be prepared and will remain on site during all construction activities.
- Onsite training will be provided by a professional archaeologist prior to initiation of the project.

B14. Transportation

a. Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any.

CSO Control Facility 2 is served by SW Orchard Street and Delridge Way SW. During construction of improvements at CSO Control Facility 2, SW Orchard Street is expected to be closed to vehicle traffic for two consecutive days and restricted to single lane closures with alternating traffic for 40 consecutive days. The sidewalk will be closed for 40 consecutive days along the north side of the street and 10 consecutive days along the south side. At least one sidewalk will remain open at all times.

CSO Control Facility 3 is located between SW Henderson Street and SW Barton Place, south of 22nd Avenue SW. During construction of improvements at CSO Control Facility 3, both SW Henderson Street and SW Barton Street are each expected to be closed to vehicle traffic for four consecutive days, although not concurrently. The sidewalk furthest from construction will remain open during these road closures.

b. Is the site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?

Yes, both control facility sites are well served by King County Metro transit.

CSO Control Facility 2 is served by Metro routes 120 and 128. There is a stop for eastbound Route 128 directly in front of the facility on SW Orchard Street, and a stop for westbound Route 138 directly across SW Orchard Street from the facility. Route 120 serves the site along Delridge SW, and the nearest stops, both northbound and southbound, are approximately 0.1 mile north of the facility on Delridge Way SW.

CSO Control Facility 3 is served by east and westbound Route 125, with transit stops approximately 0.1 mile west of the facility on each side of SW Barton Way. There is also a transit stop for eastbound Routes 60, 120, 125 on the south side of SW Barton Way directly across from the facility.

c. How many parking spaces would be unavailable during project construction? How many spaces would the completed project have? How many would the project eliminate?

CSO Control Facility 2:
The project anticipates staging construction vehicles and equipment in the right-of-way along the north side of SW Orchard Street and on the CSO control facility parcel. Up to 12

informal on-street parking spaces along SW Orchard Street would be displaced and permanently eliminated by the project. However, on-street parking at this site is plentiful and rarely used.

CSO Control Facility 3:
Construction staging for CSO Control Facility 3 work would be located in the right-of-way west of 22nd Avenue SW between SW Barton Place and SW Barton Street, and on the CSO Control Facility 3 parcel. On-street parking would not be affected at this site.

Each control facility site contains parking for one or two city maintenance vehicles. No permanent changes to facility parking are proposed other than the conversion of a gravel parking area to paved vehicle parking at CSO Control Facility 3.

d. Will the proposal require any new roads or streets, or improvements to existing roads or streets, not including driveways? If so, generally describe (indicate whether public or private).

No new roads or streets are required. No additional parking is proposed. At CSO Control Facility 2, street improvements would include sidewalks, curbs, and a catch basin within the rights-of-way of SW Orchard Street. At CSO Control Facility 3, the existing gravel parking area would be converted to a paved surface.

e. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

The proposed project would not use or occur in the immediate vicinity of water, rail, or air transportation.

f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.

Project construction would require a total of approximately 2920 round-trips due to workers and materials being transported to and from the project location during the 7 month construction period (see Attachment D). Trips would occur between the hours of 7 am and 10 pm weekdays, and 9 am and 10 pm weekends and legal holidays. Specific timing of peak volumes is not known.

The completed project is not expected to substantially alter operation or maintenance activities. As a result, the completed project is not expected to either increase or decrease the number of vehicle trips related to operation and maintenance of the existing facilities.

g. Proposed measures to reduce or control transportation impacts, if any:

There are no proposed measures to reduce or control transportation impacts because, with the exception of the loss of up to 12 informal on-street parking spaces, the proposed project would have relatively brief and localized temporary impacts. On-street parking at the site is plentiful and rarely used. Details regarding temporary closure of sidewalks, on-street parking spaces, and traffic lanes would be controlled by the Street Improvement Permits issued by SDOT. No bus routes would be permanently impacted.

Project construction would comply with SDOT policies and the conditions of a project-specific street use permit from SDOT regarding possible lane closures. The contractor would be required to prepare and submit a traffic control plan detailing haul routes, construction traffic changes, and traffic control measures, including:

- Phasing construction to maintain emergency services and local access to homes, parks and businesses and limit lane and road closures.
- Using flaggers and other methods to manage traffic queuing and vehicles entering and exiting the construction site.
- Providing advance public notice and signage of temporary closures or road restrictions.
- Posting warning signs and flaggers for bus, pedestrian, and bicycle traffic during construction.

B15. Public Services

a. Would the project result in an increased need for public services (for example: fire protection, police protection, health care, schools, other)? If so, generally describe.

The proposed project would not create an increased need for public services.

b. Proposed measures to reduce or control direct impacts on public services, if any.

The project would formally notify King County Metro and the Seattle Police and Fire Departments of the impending timing and duration of this project and related street closures on SW Orchard Street and SW Barton Street.

B16. Utilities

a. Check utilities available at the site, if any: *[check the applicable boxes]*

☐ None
☒ Electricity ☒ Natural gas ☒ Water ☐ Refuse service
☒ Telephone ☒ Sanitary sewer ☐ Septic system
☐ Other (identify)

CSO Control Facility 2: At CSO Control Facility 2 and along SW Orchard Street the electrical, telephone and cable TV lines are above ground. Underground utilities include 30-inch, 16-inch and 12-inch sanitary sewer lines, a 30-inch combined sewer line, an 8-inch water line, a 36-inch storm drain line and a 2-inch natural gas line.

At the downstream monitoring station at SW Myrtle Street and 24th Avenue SW the electrical, telephone and cable TV lines are above ground. Underground utilities include a 2-inch natural gas line, 15-inch and 18-inch sanitary sewer lines, an 8-inch water line and a 48-inch storm drain line.

CSO Control Facility 3: At CSO Control Facility 3, the electrical, telephone and cable TV lines are above ground. Underground utilities in the 22nd Avenue SW street right-of-way include a 2-inch natural gas line, an 8-inch sanitary sewer line, a 30-inch combined sewer line, an 8-inch water line and an underground telephone cable. Underground utilities at CSO Control Facility 3 include a 12-inch sanitary sewer line, a 30-inch combined sewer line and a 3.5-inch underground electrical conduit.

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

☐ **None**

CSO Control Facility 2: The project would install approximately 500 linear feet of new sanitary sewer pipeline near CSO Control Facility 2

CSO Control Facility 3: The project would install approximately 190 linear feet of new sanitary sewer pipeline near CSO Control Facility 3.

Construction of new dry weather flow (also called low flow) combined sewer lines would be scheduled first. Combined sewage would be routed through this new line to bypass the CSO control facilities. The control chamber ball valve and piping would be installed next, converting the control chambers into dry wells. If a large storm event is forecast, the contractor would withdraw all personnel and equipment from the tanks. If a storm causes combined sewage to enter the tanks, they would have to be cleaned prior to the resumption of construction.

Utility relocations would be conducted according to agency regulations and permits, utility provider and emergency response provider requirements, and best management practices. Any utility interruptions would be planned in advance and coordinated with utility providers. The project anticipates minimal interruptions in service during those utility relocations. However, if more than a short service disruption would occur during relocation, then temporary connections to businesses and residences would be provided.

Inadvertent damage to underground utilities could also occur during construction. While these incidents do not occur frequently, they could temporarily affect services to customers served by the affected utility while emergency repairs are made.

C. SIGNATURE

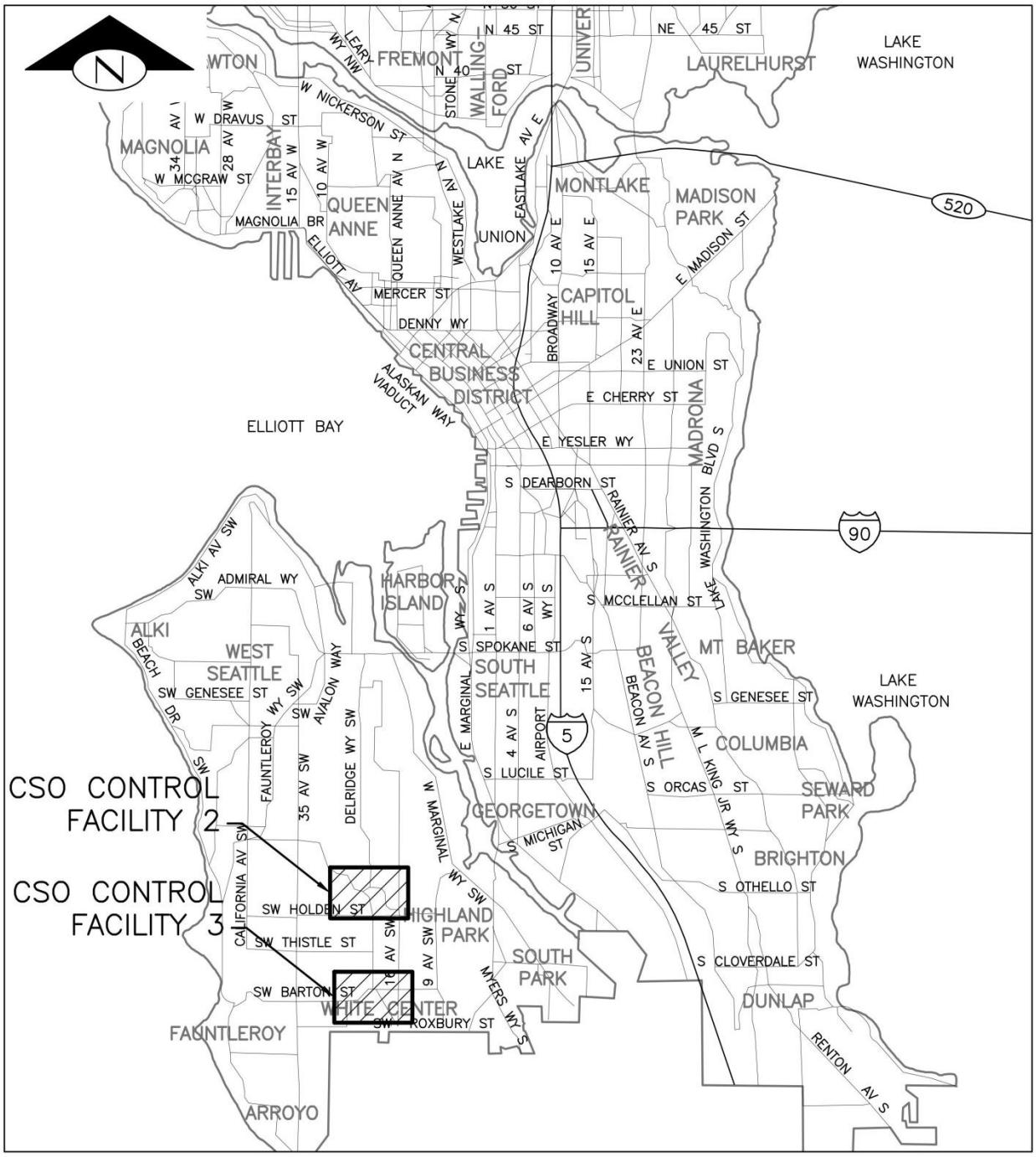
The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature: Tara Wong Esteban Date: 9-10-13

Tara Wong-Esteban
Project Manager

Attachment A – Vicinity Map
Attachment B – Site Maps
Attachment C – Photographs
Attachment D – Greenhouse Gas Emissions Worksheet

Attachment A – Vicinity Map

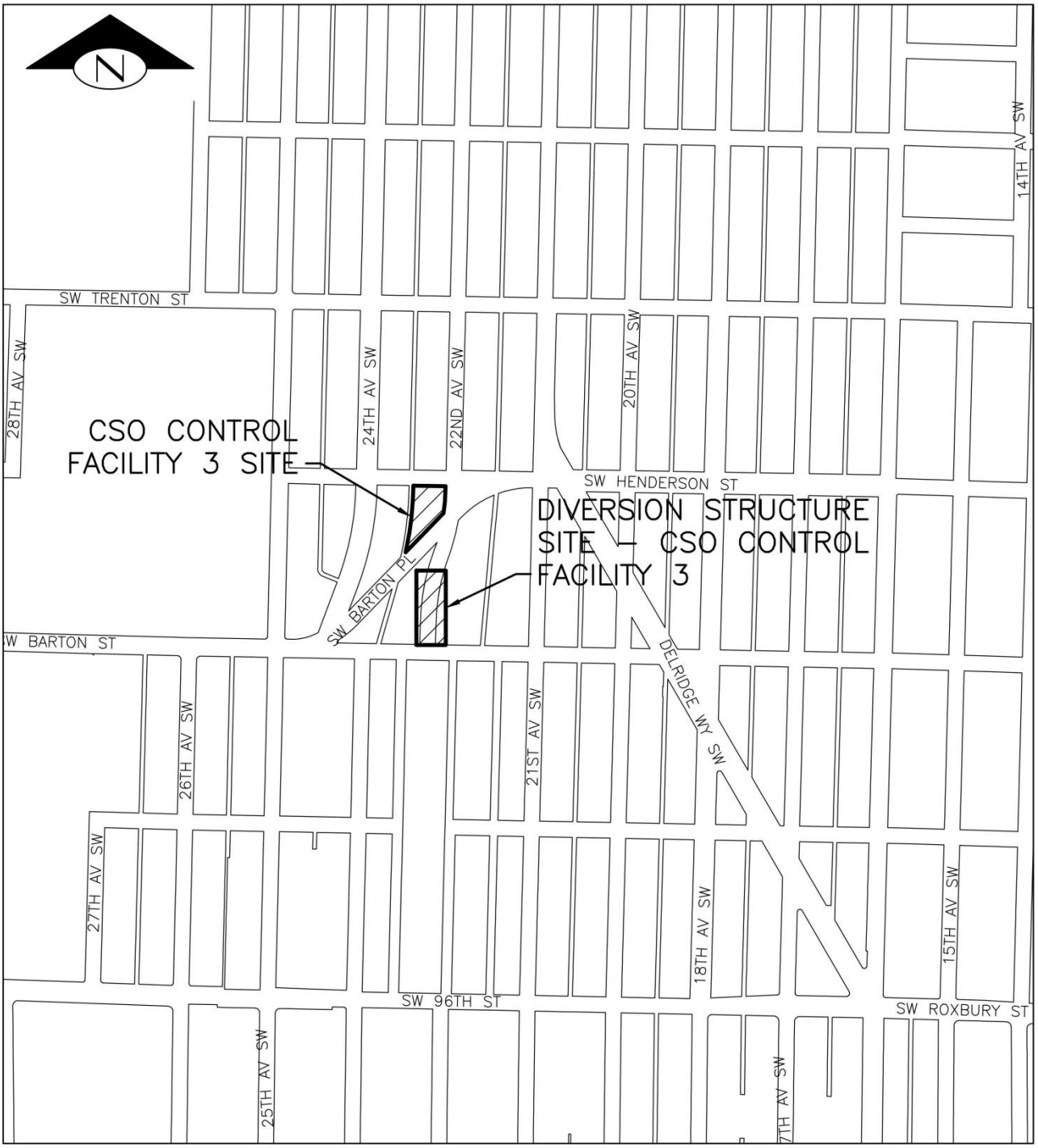


VICINITY MAP

Attachment B – Site Maps

CSO CONTROL FACILITY 2 LOCATION MAP

Attachment B – Site Maps, continued



CSO CONTROL FACILITY 3 LOCATION MAP

Attachment C – Photographs

CSO Control Facility 2

CSO Control Facility 3

CSO Control Facility 2 Diversion Structure Location

CSO Control Facility 3 Diversion Structure Location

Downstream Flow Monitoring System Location

Attachment D – Greenhouse Gas Emissions Worksheet

Section I: Buildings						
			Emissions Per Unit or Per Thousand Square Feet ($MTCO_2e$)			
Type (Residential) or Principal Activity (Commercial)	# Units	Square Feet (in thousands of square feet)	Embodied	Energy	Transportation	Lifespan Emissions ($MTCO_2e$)
Single-Family Home	0		98	672	792	0
Multi-Family Unit in Large Building	0		33	357	766	0
Multi-Family Unit in Small Building	0		54	681	766	0
Mobile Home	0		41	475	709	0
Education		0.0	39	646	361	0
Food Sales		0.0	39	1,541	282	0
Food Service		0.0	39	1,994	561	0
Health Care Inpatient		0.0	39	1,938	582	0
Health Care Outpatient		0.0	39	737	571	0
Lodging		0.0	39	777	117	0
Retail (Other than Mall)		0.0	39	577	247	0
Office		0.0	39	723	588	0
Public Assembly		0.0	39	733	150	0
Public Order and Safety		0.0	39	899	374	0
Religious Worship		0.0	39	339	129	0
Service		0.0	39	599	266	0
Warehouse and Storage		0.0	39	352	181	0
Other (Steel Pipe – see Note 1)	3.96 tons	0.0	See Note 1			0.012
Vacant		0.0	39	162	47	0
					TOTAL Section I Buildings	0.012

Section II: Pavement						
						Emissions ($MTCO_2e$)
Pavement (sidewalk, asphalt patch)	8.7		50			435
Concrete Pad (50 $MTCO_2e$/1,000 sq. ft. of pavement at a depth of 6 inches)	4.7		50			235
					TOTAL Section II Pavement	670

Section III: Construction	
(See detailed calculations below)	Emissions ($MTCO_2e$)
TOTAL Section III Construction	182

Section IV: Operations and Maintenance	
(See detailed calculations below)- See Note 2	Emissions ($MTCO_2e$)
TOTAL Section IV Operations and Maintenance	

TOTAL GREENHOUSE GAS (GHG) EMISSIONS FOR PROJECT ($MTCO_2e$)	852.012

Attachment D – Greenhouse Gas Emissions Worksheet, continued

Section III Construction Details		
Construction: Diesel		
Equipment	**Diesel (gallons)**	**Assumptions**
Excavator	4640	100 days x 8 hr/day x 5.8 gal/hr
Dump Truck/Concrete Truck/Flatbeds	1724	100 days x 2 round trips/day x 50 mi/round trip ÷ 5.8 mi/gal
Front end loader, 165HP	3920	100 days x 8 hr/day x 4.9 gal/hr
Subtotal Diesel Gallons	10,284	
GHG Emissions in lbs CO_2e	228,305	22.2 lbs CO_2e per gallon of diesel
GHG Emissions in metric tons CO_2e	103 MT	1,000 lbs = 0.45359237 metric tons

Construction: Gasoline		
Equipment	**Gasoline (gallons)**	**Assumptions**
Pick-up Trucks or Crew Vans	1067	40 days x 8 round trips/day x 50 mi/round trip ÷15 mi/gal
Construction worker personal vehicles	8000	100 days x 24round trips/day x 50 mi/round trip ÷15 mi/gal
Subtotal Gasoline Gallons	9067	
GHG Emissions in lbs CO_2e	175,899	19.4 lbs CO_2e per gallon of gasoline
GHG Emissions in metric tons CO_2e	79MT	1,000 lbs = 0.45359237 metric tons

Construction Summary		
Activity	**CO_2e in pounds**	**CO_2e in metric tons**
Diesel	204, 839	103
Gasoline	175,899	79
Total for Construction	380,738	**182**

Section IV Long-Term Operations and Maintenance Details (Not calculated – see Note 2)		
Operations and Maintenance: Diesel		
Equipment	**Diesel (gallons)**	**Assumptions**
Emergency Operation		
Maintenance Operation		
Fueling truck/repair truck		
Subtotal Diesel Gallons		
GHG Emissions in lbs CO_2e		
GHG Emissions in metric tons CO_2e		

Operations and Maintenance: Gasoline		
Equipment	**Gasoline (gallons)**	**Assumptions**
O&M Crew personal vehicles		
Subtotal Gasoline Gallons		
GHG Emissions in lbs CO_2e		
GHG Emissions in metric tons CO_2e		

Operations and Maintenance Summary		
Activity	**CO_2e in pounds**	**CO_2e in metric tons**
Diesel		
Gasoline		
Total Operations and Maintenance		

*Note 1: Embodied emissions of ductile iron are based on a per ton shipped weight of steel pipe. The project would use approximately 270 feet of 8-inch steel pipe. 8-inch steel weighs 24 pounds per foot of pipe x 270 feet of pipe= 6,480 lbs or 3.25 tons; 12 feet of 30-inch pipe weighs 95 pounds per foot x 12 feet of pipe = 1140 lbs or 0.57 ton, and 8 feet of 12-inch pipe weighs 37 pounds x 8 feet of pipe = 296 pounds or 0.14 ton. (US).Given the amount of C02 per ton of steel (0.0035 tons (US) per ton of steel) the pipe material would contribute 0.014 tons (US) or 0.012metric tons of C02 to the project.
http://www.epa.gov/climateleadership/documents/resources/ironsteel.pdf*

*Note 2: The proposed project will not change the operations and maintenance activities at either site; these emissions were not calculated.