

SEATTLE PUBLIC UTILITIES
SEPA ENVIRONMENTAL CHECKLIST

This SEPA environmental review of Seattle Public Utilities' Pump Station 20 Improvements and Portage Bay NPDES 138 CSO 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

1. Name of proposed project:

Portage Bay Gate Retrofit and Pump Station 20 Improvements Project

2. Name of applicant:

Seattle Public Utilities (SPU)

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

Josh Campbell, Project Manager
Seattle Public Utilities
Project Delivery and Engineering Branch
Seattle Municipal Tower, Suite 4900
P.O. Box 34018
Seattle, WA 98124-4018
206-684-5257
Josh.Campbell@seattle.gov

4. Date checklist prepared:

April 24, 2019

5. Agency requesting checklist:

Seattle Public Utilities (SPU)

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

Project construction is scheduled to begin during the second quarter of 2020 and conclude by the end of fourth quarter of 2020. The project is anticipated to require approximately 130 working days.

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

SPU currently has no plans for future additions or expansions related to the proposed project. However, one of the goals of the currently proposed project is to reduce Portage Bay (Basin 138) combined sewer overflows (CSOs) to meet the State CSO regulatory standard. Once the current project is constructed, if flow monitoring and hydraulic modeling show that the goal was not met and an additional project is needed to control Basin 138 CSOs, that project would be evaluated in a future SEPA document.

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

No environmental information has been prepared that is related to this proposal.

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

SPU is not aware of pending government approvals of other proposals that directly affect the area covered by this proposal.

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

Implementation of this project may require some or all of the following permits and approvals:

- Utility Major Permit (type 51, major projects), City of Seattle, Department of Transportation (SDOT) (includes traffic control plans)
- Construction Street Use Permit, SDOT
- Traffic Control Permit, SDOT
- Shoreline Exemption, City of Seattle Department of Construction and Inspections (SDCI)
- Electrical Permit Application, SDCI

11. 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.

Project Overview

In some areas of the City of Seattle, sewage and stormwater runoff are collected in the same pipes, known as combined sewers. During storm events, sometimes the flow in these pipes exceeds the sewer system capacity. When this occurs, the system overflows at an outfall structure designed for this purpose. There are currently 84 outfalls in the City of Seattle where combined sewer overflows (CSOs) can occur.

To comply with State and Federal requirements, SPU must limit the number of CSOs at each of these outfalls to an average of no more than one per year based on a 20-year moving average. Combined sewer Basin 138 in the Portage Bay area currently exceeds this performance standard, averaging 1.9 CSOs per year. The goal of this project is to reduce the frequency of Basin 138 CSOs to meet the performance standard.

Basin 138 is located on the west side of Portage Bay, primarily north of State Route 520. Combined sewage from the majority of the basin flows by gravity to Pump Station (PS) 20, located at 1205 East Shelby Street in the street right-of-way. In addition, a gravity sewer along the shoreline collects sewage from houseboats and discharges it to PS 67, which lifts the flows to PS 20 via a 4-inch diameter force main. PS 20 lifts Basin 138 flows northward via an 8-inch diameter force main toward combined sewer Basin 135, which already meets the CSO performance standard. See Attachments A and B for figures showing the project vicinity and location, respectively.

Upstream of PS 20, combined sewage from Basin 138 currently flows through a flow control structure called a HydroBrake. The purpose of the HydroBrake is to keep PS 20 and other downstream infrastructure from being inundated. During wet weather, flows back up behind the HydroBrake. If the flows are high enough, the backup eventually overflows into two offline storage pipes. If the flows are high enough to exceed the capacity of these offline storage pipes, a CSO occurs: the excess sewage spills over a series of weirs and flows through CSO Outfall 138 into Portage Bay. When flows diminish, the storage pipes drain.

Proposed Project

The proposed project would replace the HydroBrake with an adjustable slide gate to better manage flows to PS 20. The project would also modify the existing weir systems to enable faster draining of the storage pipes. The project would remove an existing roadside electrical cabinet and install electrical and supervisory control and data acquisition (SCADA) infrastructure for automated gate operation, flow control, and storage monitoring. The new SCADA panel would be installed within the PS 20 dry well.

The project would increase peak pumping capacity at PS 20 by retrofitting existing pumps with larger impellers and motors. Additional improvements at the pump station would include installation of a fire and electrical code compliant ventilation system, installation of a flow meter, replacement of dry well grating decks, installation of dry and wet well access hatches, sealing existing openings providing physical separation between the wet well and dry well, and installation of new electrical/communication conduits, wiring, and instrumentation in the SPU sewer system and PS 20 wet well.

While these upgrades are performed, the PS 20 mechanical systems and some of the associated pipes and weirs would be removed from service. A temporary bypass system would divert combined sewer flows upstream of the existing flow control structure directly to the PS 20 wet well. Bypassed flows, along with normal flows from the adjacent PS 67, would be pumped into the PS 20 force main using a temporary pumping system and the existing bypass connection in the wet well. The temporary bypass system would be designed to maintain performance similar to or better than the existing facility, with regard to anticipated CSO frequency.

- 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 is in street right-of-way for East Shelby Street, a Shoreline Street End, in the City of Seattle's Portage Bay neighborhood (zip code 98102), immediately east of the intersection with Boyer Avenue East (see Attachment B). The project is at 1205 East Shelby Street. The project location is in the southeast quarter of Section 17, Township 25N, Range 4E and within the Cedar-Sammamish Water Resource Inventory Area (WRIA 8).

B. ENVIRONMENTAL ELEMENTS

1. Earth

a. General description of the site:

Flat Rolling Hilly Steep Slopes Mountainous Other:

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

The slope leading down from the end of the improved portion of East Shelby Street is approximately 33 percent according to measurements made on King County iMap. After the steep drop, an approximately 15-foot-wide flat bench area (<1 percent) is located directly adjacent to the shoreline.

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 agricultural land of long-term commercial significance and whether the proposal results in removing these soils.

Soils near the shoreline are a compact silt loam with bits of fill material.

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

There is no indication or history of unstable soils in the immediate vicinity.

e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate the source of fill.

Approximately 25 cubic yards of material would be excavated and filled during pavement and sub-surface removal, utility trench work in the right-of-way, and subgrade and pavement restoration. The total area to be excavated is approximately 950 square feet.

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

Erosion could occur after pavement is stripped and bare soil is exposed within public rights of way, including the driving lane, parking area, curb and gutter, sidewalk, and driveway apron. All areas of disturbance would be restored prior to project completion.

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

No new impervious surface areas are proposed. Approximately 850 square feet of existing impervious surface would be removed and replaced.

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

A Construction Stormwater and Erosion Control Plan (CSECP) would be prepared and implemented. Best Management Practices (BMP) as identified in the City of Seattle's Stormwater Code SMC Title 22, Subtitle VIII, City of Seattle Director's Rule SDCI 17-2017/SPU DWW-200, SDOT Right of Way Opening and Restoration Rules (ROWORR) Director's Rule 01-2017, and Volume 2 Construction Stormwater Control Manual would be used to manage stormwater runoff, construction disturbance, and erosion during construction.

2. 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, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.**

Mobile and stationary equipment would be used to construct the proposed project, thus generating emissions due to the combustion of gasoline and diesel fuels (such as oxides of nitrogen, carbon monoxide, particulate matter and smoke, un-combusted hydrocarbons, hydrogen sulfide, carbon dioxide, and water vapor). Emissions during construction would also include normal amounts of dust from ground-disturbing activities and exhaust (that is, carbon monoxide, sulfur, and particulates) from construction equipment and are expected to be minimal, localized, and temporary.

Construction

Estimates of direct greenhouse gas emissions related to construction of the project are presented as total metric tons of carbon dioxide (MTCO_{2e}) in Table 1 below, which is supported by the greenhouse gas emissions worksheet found in Appendix D. Total greenhouse gas emissions for the project are estimated to be about 55.1 metric tons of carbon dioxide emission (MTCO_{2e}), where one metric ton is equal to 2,205 pounds.

Construction of the project would include the replacement of demolished and damaged concrete and asphalt surfaces/structures. The estimated volume of replacement asphalt and concrete is 16 cubic yards (850 square feet at an average of six inches thick), which is estimated to embody 42.5 MTCO_{2e}. Construction of the project would also generate greenhouse gas emissions during the estimated 130 total working-day construction period through the operation of diesel- and gasoline-powered equipment and to transport materials, equipment, and workers to and from the site. 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 estimated project duration (130 working days); actual times may be less. Construction activities would generate an estimated 12.6 MTCO_{2e}. Please refer to Attachment C for more detailed calculations.

Operation

Wastewater in the wet well does have some exposure to the atmosphere inside the wet well. The wet well ventilation improvements would not increase the rate and volume of air exhausted from the wet well (10 air changes per hour, 300 cubic feet per minute constant airflow rate). The generation and transmission of odor producing molecules in outdoor air is determined by many factors, including environmental and atmospheric conditions, physical landscape, and in the case of wastewater pump stations, the chemical composition of the wastewater and the piping configuration and velocity of the wastewater through the pump station. By maintaining the existing air flow rate through the wet well, SPU does not anticipate increased perception of odors external to the pump station.

The project would increase the air flow rate through the dry well side of the wastewater pump station. The dry well does not contain sewage and other odor generating constituents or equipment. Therefore, it is not anticipated that there would be an increase in perceptible odors external to the pump station from this portion of the ventilation system upgrade.

Given that there would be no increase in air flow rate through the wet well and that there would be no ventilation system installation at the CSO storage facility, SPU does not anticipate an increase in greenhouse gas emissions as a result of the operation of this project.

Maintenance

Long-term maintenance of the project improvements would not result in increases in greenhouse gas emissions above current levels. The project would be constructed at an existing, operational wastewater pump station, and would not result in increases to the frequency or duration of pump station and CSO facility maintenance visits and activities.

Table 1. Summary of Greenhouse Gas (GHG) Emissions

Activity/Emission Type	GHG Emissions (pounds of CO ₂ e) ¹	GHS Emissions (metric tons of CO ₂ e) ¹
Buildings	0	0
Paving	93,695.5	42.5
Construction Activities (Diesel)	15,134	6.86
Construction Activities (Gasoline)	12,636	5.73
Long-term Maintenance (Diesel)	0	0
Long-term Maintenance (Gasoline)	0	0
Total GHG Emissions	121,465.5	55.11

¹Note: 1 metric ton = 2,204.6 pounds of CO₂e. 1,000 pounds = 0.45 metric tons of CO₂e

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 that may affect this proposal.

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

During construction, impacts to air quality would be reduced and controlled through implementation of standard federal, state, and local emission control criteria and City of Seattle construction practices. These would include requiring contractors to use best available control technologies, proper vehicle maintenance, and minimizing vehicle and equipment idling.

The project includes sealing electrical conduits, access openings, and other penetrations to create a gas-tight seal between the pump station wet well and the dry well, which would prevent wet well air and any associated odors from directly entering the dry well and then being exhausted from the dry well to the outside air during pump station operation.

3. 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 it flows into.**

The project site is on the shoreline of Portage Bay, which is a body of water connected to Lake Washington, and is protected by an existing rip-rap bulkhead. There is a small, personal-craft, boat launch on the northern end of the site with a concrete ramp that is approximately 5 feet wide and 10 feet long. The substrate along the shoreline consists of small pockets of sandy gravel amongst small angular rock piles with abundant detritus and filamentous green algae. An underwater CSO outfall is positioned perpendicular to the shoreline.

The adjacent shoreline (within the landscaped East Shelby Shoreline Street End) is sparsely vegetated with shrubs including red flowering currant (*Ribes sanguineum*) and red-osier dogwood (*Cornus sericea*). There are a few overhanging ornamental shrubs on the southern end and small patches of English ivy (*Hedera helix*) and Himalayan blackberry (*Rubus armeniacus*) along the entire shoreline. Upland from the shoreline consists of a park setting with areas of lawn and cement stairs and walkways. No wetlands or streams were observed within upland areas within or adjacent to the project site.

- (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.**

All proposed activities, as described in the response for A.11, are to occur within 200 feet of the Portage Bay shoreline.

- (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.**

No material would be placed in or removed from surface water or wetlands.

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

Proposed activities are to occur within an area of existing utility infrastructure, including areas of pavement, concrete, and occasional vegetation. Existing runoff patterns are to be maintained and no surface water withdrawals or diversions are proposed. Following construction, the completed project would not change the volume or timing of stormwater runoff that is directed to the combined sewer system.

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

No portion of the project lies 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 proposed project would not produce or discharge waste materials to surface waters. The completed project would reduce the volume and frequency of combined sewage overflows to Portage Bay.

b. Ground:

- (1) Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known.**

Groundwater conditions in the project area are bounded by Portage Bay to the east and northeast and by upsloping areas to the west and south. Near Portage Bay, groundwater levels are typically in hydraulic continuity with the water level of the Bay. In areas further from the Bay, perched groundwater conditions can occur in more permeable sandy layers underlain by relatively impermeable geologic units such as Vashon subglacial till and Lawton clay.

Limited (and shallow) excavations may be necessary to construct the proposed project, primarily for conduit trenching. However, groundwater is not expected to be encountered and thus, the project would not otherwise withdraw, discharge, or surcharge groundwater.

- (2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: domestic sewage; industrial, containing the following chemicals...; agricultural, etc.). Describe the general size of the system, the number 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 for this project.

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.**

Project area stormwater runoff from paved surfaces is collected via existing stormwater catch basins and directed into SPU's combined sewer system. Under normal conditions, PS 20 conveys flow northward via an 8-inch diameter force main toward Basin 135 to the northwest. When Basin 138 flows exceed the capacity of the combined sewer system, excess combined sewage overflows to Portage Bay through Outfall 138.

The purpose of the project is to decrease the volume and frequency of CSOs by improving conveyance to PS 20 and increasing the peak pumping capacity of PS 20 from 0.9 million gallons per day (MGD) to 1.5 MGD. This would result in a decrease in the volume and frequency of CSO discharges to Portage Bay and a commensurate increase in flow volumes to the King County regional wastewater system. SPU has coordinated with the King County Wastewater Treatment Division (WTD) in developing and designing the project, and WTD has provided their concurrence that operation of the proposed project improvements is not anticipated to impact the operation of, or require modifications to, the West Point Treatment Plant.

During project construction, stormwater runoff may need to be managed to prevent sediment from entering and leaving the construction site. Precipitation that lands on the construction site would be directed to the existing stormwater collection and distribution system or contained on-site and allowed to infiltrate. Barriers such as sand bags and catch basin inserts would be used to prevent sediments from entering and leaving the construction area. Once construction is complete, temporary erosion control measures would be removed.

Following installation of improvements, disturbed areas of pavement and concrete would be restored. Generally, the completed project would not create a need to manage additional stormwater runoff beyond currently existing conditions. Stormwater runoff on and adjacent to the project site would follow pre-construction drainage pathways.

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

No part of the proposed work involves any discharges of waste materials to ground waters. A CSO may occur during the project's construction if rainfall is intense enough to fill the storage tanks to capacity and overwhelm the temporary bypass pumping system. The bypass pumping system will be sized to match the existing system's hydraulic capacity such that the risk of CSO is no larger during construction than it would be during today's normal operation.

Several construction activities such as sawcutting, concrete/pavement pouring and handling, etc., would generate pollutants that could potentially enter local combined sewage conveyance systems. Non-sediment pollutants that may be present during construction include:

- Petroleum products including fuel, lubricants, hydraulic fluids, and form oils
- Paints, glues, solvents, and adhesives
- Concrete and concrete washwater
- Chemicals associated with portable toilets.

Procedures to prevent and control pollutants, including hazardous materials such as hydrocarbons and pH-modifying substances, would be described in a spill prevention, control, and countermeasures plan that would be prepared for the project and approved by the City of Seattle prior to the start of project construction activities.

The completed project would reduce the volume and frequency of combined sewage overflows to Portage Bay.

(3) Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.

The completed project would restore disturbed areas to near-original condition (primarily asphalt pavement) and would not create a need to manage additional stormwater runoff beyond currently existing conditions. Stormwater would follow pre-construction drainage pathways. See Section B.3.c.1 for additional discussion regarding how the project would affect the drainage path for stormwater after it has been collected and directed to the combined sewer system.

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

No adverse impacts to surface, ground, or runoff water are anticipated. BMPs, as identified in the City of Seattle’s Stormwater Code SMC Title 22, Subtitle VIII, City of Seattle Director’s Rule SDCI 17-2017/SPU DWW-200, and Volume 2 Construction Stormwater Control Manual, would be used as needed to control erosion and sediment transport from and to the project site during construction.

4. Plants

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

<input checked="" type="checkbox"/> Deciduous trees:	<input type="checkbox"/> Alder	<input type="checkbox"/> Maple	<input type="checkbox"/> Aspen	<input checked="" type="checkbox"/> Other: dogwood
<input checked="" type="checkbox"/> Evergreen trees:	<input type="checkbox"/> Fir	<input checked="" type="checkbox"/> Cedar	<input type="checkbox"/> Pine	<input type="checkbox"/> Other: juniper
<input checked="" type="checkbox"/> Shrubs				
<input checked="" type="checkbox"/> Grass				
<input type="checkbox"/> Pasture				
<input type="checkbox"/> Crop or grain				
<input type="checkbox"/> Orchards, vineyards, or other permanent crops				
<input type="checkbox"/> Wet soil plants:	<input type="checkbox"/> Cattail	<input type="checkbox"/> Buttercup	<input type="checkbox"/> Bulrush	<input type="checkbox"/> Skunk cabbage
<input type="checkbox"/> Other:				
<input type="checkbox"/> Water plants:	<input type="checkbox"/> water lily	<input type="checkbox"/> eelgrass	<input type="checkbox"/> milfoil	<input type="checkbox"/> Other:
<input type="checkbox"/> Other types of vegetation:				

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

Proposed work is not anticipated to significantly impact vegetation – some grass removal and replacement is required for conduit trenching near PS 20, but no tree or shrub removal is proposed. Existing vegetation can be found directly adjacent to the primary work area, but will be protected through standard best management practices. Proposed work in paved areas would affect surfaces outside of tree canopy drip-lines. Additional work would occur within the existing pump station and other infrastructure. All staging and vehicle parking would also occur outside of areas of existing vegetation.

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’s document called “Sections that Contain Natural Heritage Features, Current as of February 6, 2017” (accessed at www.dnr.wa.gov), there are no documented occurrences of sensitive, threatened, or endangered plant species at or near the project site. No federally-listed endangered or threatened plant species or State-listed sensitive plant species are known to occur within Seattle’s municipal limits. The project site has been intensively disturbed by development of the street end park or occupied by street, utility, and other constructed features. 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:

Trees adjacent to the guardrail at the end of East Shelby Street would be flagged for protection prior to commencing proposed work. As described, no vegetation is expected to be impacted. If impacts do occur, in-kind restoration will occur following installation of all improvements.

e. List all noxious weeds and invasive species known to be on or near the site.

A review of information maintained by the King County Noxious Weed Program (available at King County iMap interactive online mapping program, <http://gismaps.kingcounty.gov/iMap/>) did not identify documented occurrence of any noxious weeds within 200 feet of the project site. However, a site visit in March 2019 revealed that there are small patches of English ivy (*Hedera helix*) and Himalayan blackberry (*Rubus armeniacus*) along the shoreline and adjacent to the bulkhead.

5. Animals

a. List any birds and other 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:	<input checked="" type="checkbox"/> Hawk	<input checked="" type="checkbox"/> Heron	<input checked="" type="checkbox"/> Eagle	<input checked="" type="checkbox"/> Songbirds
	<input checked="" type="checkbox"/> Other: crow, pigeon, gull			
Mammals:	<input type="checkbox"/> Deer	<input type="checkbox"/> Bear	<input type="checkbox"/> Elk	<input checked="" type="checkbox"/> Beaver
	<input type="checkbox"/> Other: possum, raccoon, squirrel			
Fish:	<input type="checkbox"/> Bass	<input checked="" type="checkbox"/> Salmon	<input checked="" type="checkbox"/> Trout	<input type="checkbox"/> Herring
	<input type="checkbox"/> Shellfish	<input type="checkbox"/> Other:		

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

The project is located adjacent to the shoreline of Portage Bay. Endangered Species Act listed species known to use Portage Bay, Lake Washington, and the Lake Washington Ship Canal are Chinook salmon (*Oncorhynchus tshawytscha*, Threatened Puget Sound), steelhead trout (*O. mykiss*, Threatened Puget Sound), and bull trout (*Salvelinus confluentus*, Threatened Puget Sound). A check of the Washington Department of Fish and Wildlife’s “Priority Habitat Species on the Web” database on March 18, 2019 revealed no additional information. However, Portage Bay is known to provide habitat for coho salmon (*O. kisutch*), Dolly Varden/Bull Trout (*Salvelinus malama*), sockeye salmon (*O. nerka*), and resident coastal cutthroat trout (*O. clarki*). Coastal cutthroat trout and coho salmon are State priority species.

The project site is also known to be (but not mapped as being) within the habitat of bald eagle (*Haliaeetus leucocephalus*), peregrine falcon (*Falco peregrinus*), purple martin (*Progne subis*), and great blue heron (*Ardea herodias*)—priority species in Washington.

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

Seattle is located within the migratory route of many birds and other animal 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, South America. Also, Puget Sound, Lake Washington, the Lake Washington Ship Canal, and the Duwamish Waterway are important water migration routes for many animal species. Many of the salmonid species (Chinook, coho, steelhead, and cutthroat trout) use the Salmon Bay, Union Bay, and Portage Bay waterways as traveling routes between Puget Sound, Lake Washington, and its tributaries both as juveniles and adults.

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

The proposed project involves no in-water or over-water work in Portage Bay or other waterbodies. No vegetation disturbance is proposed and no increase in impervious surfaces will occur. If incidental vegetation disturbance takes place, in-kind restoration will occur following installation of all improvements.

e. List any invasive animal species known to be on or near the site.

King County lists the European starling, house sparrow, Eastern gray squirrel, and fox squirrel as potential terrestrial invasive species for this area (<http://www.kingcounty.gov/services/environment/animals-and-plants/biodiversity/threats/Invasives.aspx>). King County also lists New Zealand mudsnail, nutria, brook trout, and American bullfrog as freshwater invasive species that could potentially be near the project site.

6. 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 project would improve an existing wastewater pump station that currently utilizes electrical energy during normal operation and a portable diesel motor driven generator to provide electrical energy for emergency operation in the event of a power outage affecting the local electrical grid. New equipment installed as part of the project will also be electrically powered.

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

Proposed project components are to be installed underground or just above the ground surface. Existing features that are taller in height, including trees, power poles, and adjacent houses, will remain. Thus, the project is not expected to 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:**

The project will meet the applicable requirements of the Washington State and City of Seattle Energy Codes. A Variable Frequency Drive will be installed in PS 20 to operate the pumps at variable speed relative to the inflow to the pump station. This allows the pumps to consume less energy during periods of low flows, reducing electrical consumption overall. No additional energy conservation measures are proposed.

7. 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:**

Small amounts of materials likely to be present during construction include gasoline and diesel fuels, hydraulic fluids, oils, lubricants, solvents, paints, and other chemical products. A spill of one of these chemicals could potentially occur during construction due to equipment failure or worker error. Though unlikely, contaminated soils, sediments, or groundwater could also be exposed during excavation. If disturbed, contaminated substances could expose construction workers and potentially other individuals in the vicinity through blowing dust, stormwater runoff, or vapors.

The substances present in combined sewage could pose a potential environmental health hazard during construction and operation of the project improvements. Combined sewage typically consists of a mixture of substances such as human waste, food scraps, oils, soaps, and chemicals. The decomposition of organic household or industrial wastes present in wastewater can produce gases including hydrogen sulfide, ammonia, methane, carbon monoxide, sulfur dioxide, and nitrogen oxides. Many of these gases are heavier than air and tend to settle in low areas. The chemicals potentially

present in the wastewater, and the gases they produce, are toxic to humans, and could pose a health risk to workers if exposed during project construction or during routine pump station operation and maintenance activities after construction has been completed. In high enough concentrations, the presence of gases produced by the substances in wastewater can also be flammable, creating a risk of fire or explosion if ignited.

(1) Describe any known or possible contamination at the site from present or past uses.

The project site is not known to have had industrial or commercial land uses that may have resulted in contamination of soil materials. However, it is possible that contamination of soil or groundwater associated with past uses or activities on or near the site may be present.

(2) Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.

There are no known hazardous chemicals or conditions that might affect project development and design.

(3) Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.

Construction activities such as sawcutting, concrete pouring and handling, etc., would generate pollutants that could potentially enter local drainage conveyance systems. Non-sediment pollutants that may be present during construction include:

- Petroleum products, including fuel, lubricants, hydraulic fluids, and form oils
- Paints, glues, solvents, and adhesives
- Concrete and concrete washwater
- Chemicals associated with portable toilets.

During normal operation of the project improvements, no toxic or hazardous chemicals would be stored at any time at the project site, however SPU workers may use small quantities of the above items as part of routine operation and maintenance activities.

During project construction, wastewater flows will be temporarily bypassed around the pump station as required to accomplish project work. The completed project would not affect the composition of combined sewage passing through the pump station. The potential for hazardous chemicals to be produced by or associated with substances present in, or chemical processes occurring in, the combined sewage being conveyed through the pump station, would be the same as prior to construction.

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

No special emergency services would be required during construction or operation of the project. Possible fire or medic services could be required during project construction, as well as possibly during operation of the completed project.

However, the completed project would not demand higher levels of special emergency services than already exist at the project location.

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

The construction contractor would be required to develop and implement a Spill Plan to control and manage spills during construction. During construction, the contractor would use standard operating procedures and BMPs identified in the City of Seattle's Stormwater Code SMC Title 22, Subtitle VIII, City of Seattle Director's Rule SDCI 17-2017/SPU DWW-200, and Volume 2 Construction Stormwater Control Manual to reduce or control any possible environmental health hazards. In addition, a spill response kit will be maintained at the site during construction work, and all project site workers will be trained in spill prevention and containment consistent with the City of Seattle's Standard Specifications for Road, Bridge, and Municipal Construction.

Any soil discovered to be contaminated by previous land uses or by spills during construction would be excavated and disposed of in a manner consistent with the level and type of contamination, in accordance with federal, state and local regulations, by qualified contractor(s) and/or City staff.

In recognition of the potential fire and explosion hazards associated with wastewater facility environments, the National Fire Protection Association (NFPA) has published NFPA 820, a standard for Fire Protection in Wastewater Treatment and Collection Facilities. In part, one component of the proposed project is to achieve ventilation system performance that is consistent with NFPA 820.

To ensure workers are not exposed to harmful substances that can be present in wastewater or unsafe concentrations of wastewater gases or vapors during project construction, wastewater flows will be bypassed around the pump station as needed to facilitate project work in, on, and around the pump station structure. Additionally, workers will be required to follow the Washington State safety standards for entry and work in confined spaces (Chapter 296-809 of the Washington Administrative Code), which includes requirements for atmospheric testing in a confined space structure prior to entry and work within the structure. Following the completion of construction, SPU workers performing routine pump station operation and maintenance activities will be required to follow the requirements of SPU's Confined Space Safety Program, which implements the requirements of WAC 296-809.

b. Noise

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

Noise that exists in the area (traffic, pedestrians, normal residential uses) would not affect the project.

- (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 levels would temporarily increase during construction. However, short-term noise from construction equipment would be limited to the allowable maximum levels of applicable laws, including the City of Seattle's Noise Control Ordinance [SMC Chapter 25.08.425—Construction and Equipment Operations]. Within the allowable maximum levels, SMC 25.08 permits noise from construction equipment between the hours of 7 a.m. and 7 p.m. weekdays, and 9 a.m. and 7 p.m. weekends and legal holidays. It is expected that construction would take approximately 130 working days to complete.

Operation and maintenance of the completed project would also generate additional noise over current conditions. Improvements that can create additional noise include installation of larger impellers and motors on the pumps as well as the upgraded ventilation system. The noise generating equipment will all be located within the concrete walled pump station, which provides significant noise attenuation. SPU will monitor the project site following construction to ensure that the project is compliant with the City of Seattle's noise code. Should noise measurements indicate the project exceeds the noise code limits, SPU will take remedial measures to ensure conformance with the code.

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

Construction equipment would be muffled in accordance with 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. Operation of the project improvements would comply with applicable City of Seattle Noise Ordinance (SMC 25.08) and Washington State Maximum Environmental Noise Levels (Chapter 173-60 WAC).

8. Land and Shoreline Use

- a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe.**

The proposed project is in improved public rights-of-way used for vehicle and pedestrian travel, and parking. Adjacent property uses are single family residential, including houseboats on Portage Bay.

- b. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use?**

There is no documented history of the site having ever been used for agricultural purposes.

- (1) Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how?**

There are no working farm or forest land business operations at or near the project site.

- c. Describe any structures on the site.**

The proposed work is associated with an existing wastewater facility located in an improved public right-of-way used for vehicle and pedestrian travel and parking. Structures include sidewalk, curb and gutter, driveway aprons, guardrail, maintenance holes, above-ground cabinets, below ground storage pipes, underground utilities, below ground temporary bypass pump, pump stations and a flow control structure. The temporary bypass pump will divert flow to the north while proposed work occurs (see Section A.11 for a description of the temporary bypass system). Adjacent property uses are residential (some of which may include space for home-based occupations) and park/open space.

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

The project would demolish and replace or relocate two existing above-ground electrical cabinets.

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

Residential Single Family 5000.

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

Single family residential.

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

The project site is in the City's Shoreline Management district (Urban Residential).

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

The project is adjacent to an SDCI mapped steep slope—an Environmentally Critical Area, according to the City of Seattle Steep Slope ECA web map, accessed on the City's map gallery page: <https://seattlecitygis.maps.arcgis.com/home/index.html>. No other critical areas have been mapped within the project area.

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

No people would reside or work in the completed project.

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

The project would not displace any people.

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

There would be no displacement impacts.

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

The project would be compatible with existing and projected land uses and plans.

m. Proposed measures to reduce or control impacts to agricultural and forest lands of long-term commercial significance, if any:

There are no nearby agricultural and forest lands of long-term commercial significance.

9. Housing

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

The proposed project would not construct any housing units.

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

The proposed project would not eliminate any housing units.

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

No measures are proposed because there would be no housing impacts.

10. Aesthetics

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

Proposed project components are to be installed underground or just above the ground surface, with the tallest new component likely less than four feet in height (utility cabinet). Such features will likely be constructed of concrete and/or metal components. In addition, all areas of pavement or concrete removal will be restored in-place. Existing features that are taller in height, including trees, power poles, and adjacent houses, will remain.

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

Views are not expected to be altered as a result of the proposed project. Only minor new project elements will be visible above-ground (less than four feet in height). These elements will occur within an area that includes trees and shrubs and will thus not further alter or obstruct views.

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

No additional measures are proposed.

11. Light and Glare

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

The constructed project would not produce light or glare. No new street lights are proposed or required. During construction, if an emergency situation calls for after-dark work, the construction contractor may deploy portable lights that temporarily produce light and glare.

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

The completed project would not create light or glare.

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

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

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

No measures are needed to reduce or control light and glare impacts because no impacts would occur. If an emergency requires after-dark work during construction, portable lighting would be adjusted as feasible to minimize glare.

12. Recreation

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

The proposed project is located in an improved street end right-of-way used for informal recreational activities such as dog-walking, wildlife viewing, and shoreline access. It is designated as Shoreline Street End 72 by the City of Seattle. These areas are portions of public rights-of-way that serve as community assets providing citizens and visitors with opportunities to experience and enjoy Seattle's shorelines as defined in Seattle Municipal Code 23.60A.578. SDOT manages the City's Shoreline Street Ends Program to improve public access, protect unique views, enhance habitat, support maritime industry, and foster stewardship to create long-lasting community assets. Additional shoreline street ends are nearby, including to the south at East Hamlin Street and East Edgar Street. Roanoke Park is located approximately .25 mile to the southwest and Montlake Park is located to the southeast, on the opposite side of State Route 520.

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

The proposed work would not permanently displace any existing recreational uses. Project construction activities would result in short-term temporary lane closure and detour impacts to the use of the affected streets, and potentially the adjacent sidewalks, by walkers, runners, and bicyclists. Following construction, the existing shoreline street end would function as it currently does.

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 may be required. The project would attempt to make those closures and detours as brief as possible. Project notifications through website updates, emails, and mailings would provide affected residents with advance notice regarding temporary closures and detours.

In addition, SPU will take the following measures to avoid or reduce projects impacts on recreation facilities and activities:

- Coordinate all project work affecting streets and sidewalks, including the designated Street End Shoreline location, in advance with the Seattle Department of Transportation (SDOT);
- Comply with required SDOT Street Use Permits issued for the project;
- Ensure that safe pedestrian and bicycle routes are maintained at all times consistent with approved street use permits and traffic control plans; and
- Place temporary project signs along affected streets and sidewalks prior to project construction to provide local residents with advance notice regarding temporary street and sidewalk closures and detours.

13. Historic and Cultural Preservation

a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers? If so, specifically describe.

The project proposes to construct improvements at PS 20, which was constructed in 1949. There are numerous residential buildings over 45 years old located in the vicinity of the site as well, none of which have presumably been evaluated for cultural/historic significance. However, aside from the project pump station improvements, no buildings or structures would be disturbed by the project.

The project was checked against the registers listed in Item B.13.c below. None of these registers recorded any places or objects listed on, or proposed for, national, state, or local preservation registers located on or adjacent to the site of the proposed pump station improvement project.

b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.

According to the information sources listed in Item B.13.c below, there are no such cultural resources at or near the project site. All ground disturbance and excavation would occur in existing street right-of-way and developed areas that have been disturbed previously by installation of underground utility infrastructure, roads, and residential structures.

- c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the Department of Archaeology and Historic Preservation, archaeological surveys, historic maps, GIS data, etc.**

To determine if National Register or Washington Heritage properties are in or adjacent to the project site, the project location was checked against the following registers on March 22, 2019:

Washington Information System for Architectural & Archaeological Research Data (WISAARD), maintained by the Washington State Department of Archaeology & Historic Preservation (found at <https://fortress.wa.gov/dahp/wisaardp3/>)

Landmark List, and Map of Designated Landmarks, maintained by the City of Seattle, Department of Neighborhoods (found at <http://www.seattle.gov/neighborhoods/programs-and-services/historic-preservation/landmarks>)

- d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.**

The proposed project would not affect buildings or known cultural resources. Only portions of SPU's municipal utility system would be affected. None of those objects are considered historically or culturally important. Also, the proposed work is located on previously disturbed and filled upland areas. The work's location on previously disturbed and filled ground significantly reduces the chance of encountering contextually significant archaeological materials. Work crews would be trained to recognize archaeological materials should they be discovered. Should evidence of cultural artifacts or human remains, either historic or prehistoric, be encountered during excavation, work in that immediate area would be suspended and the find would be examined and documented by a professional archaeologist. Decisions regarding appropriate mitigation and further action would be made at that time.

14. Transportation

- a. Identify public streets and highways serving the site or affected geographic area, and describe proposed access to the existing street system. Show on site plans, if any.**

The project would occur in the existing, improved public right-of-way for East Shelby Street. Construction of the proposed project would use Fuhrman Avenue East, Boyer Avenue East, and East Shelby Street to access the work site.

- b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop?**

The proposed project is not expected to impact public transit service. The site of improvements is not directly served by public transit; the nearest bus stop and route is King County Metro Route 49 and is located on Eastlake Avenue East, approximately 1,300 feet west of the project location.

c. How many additional parking spaces would the completed project or nonproject proposal have? How many would the project or proposal eliminate?

Because the proposed work involves demolishing paved surfaces in the street right-of-way, construction would require temporary closures of parking as well as travel lanes. Parking is currently on-street, free parking managed by the City of Seattle. During construction, there would be restricted parking and vehicle access along the north side of East Shelby Street (east of Boyer Avenue East). Project construction would temporarily eliminate approximately five parking spaces in this area to accommodate contractor vehicles, mobilization, construction, and local and through access. Generally, however, there is ample on-street parking available elsewhere in the vicinity and most nearby residences have their own off-street parking. Sidewalk access along the north side of the street would be maintained. Along the south side of East Shelby Street, parking would also be temporarily eliminated (approximately 5 spaces), though vehicular access for residents would be maintained, with the contractor flagging vehicle access, as needed, into and out of the Fuhrman Avenue East alley as needed. The specific timing and duration of parking and lane closures are not known at this time, but such closures would comply with relevant policies administered by SDOT as part of its street use permitting process. Aside from temporary impacts during construction, the completed project would neither create nor permanently eliminate any parking spaces.

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

The project would restore all demolished and damaged asphalt, concrete, street panels, curbs, sidewalks, and traffic aprons to pre-construction conditions or better, as required by SDOT. No new permanent roads or streets would be constructed as part of the project.

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

The proposed project would not use water, rail, or air transportation. The project, however, will occur directly adjacent to Portage Bay, a waterbody linking Lake Washington and Lake Union and utilized by a variety of water transportation vessels. However, no in-water work is proposed, and thus no impacts to water transportation will occur.

f. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates?

Project construction would generate approximately 130 daily vehicle trips due to workers and materials being transported to and from the site during the estimated total 130-working-day construction period based on normal Northwest weather conditions. Most of those trips would occur during business hours (between 7 a.m. and 6 p.m.) on weekdays (Mondays through Fridays) but trips may occur at other times including

weekend days. The completed project would not generate any additional vehicle trips beyond that which would normally occur for the on-going and routine operation, maintenance, and monitoring of the municipal combined sewer system in this area.

g. Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.

The proposal would not interfere with, affect, or be affected by the movement of agricultural and forest products on roads or streets in the area.

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

The following measures would be used to reduce or control transportation impacts:

- SPU would require the construction contractor to submit a traffic control plan for approval and enforcement by SPU and SDOT.
- SPU would conduct public outreach before and during project construction to notify residents, local agencies, Metro, and other stakeholders of work progress and expected disruptions or changes in traffic flow.
- Access for emergency-response personnel would be maintained at all times.
- Through access and vehicle access to private properties may not be available at all times during construction, but temporary closures would be minimized, and detour routes would be properly and clearly signed. Contractor support will be offered to residents that need help with access, solid waste pickups, deliveries etc.
- Alternative routes for pedestrians, bicyclists, and those with disabilities would be identified and clearly signed, as needed. Through access and vehicle access to private properties may not be available at all times during construction, but temporary closures would be minimized, and detour routes would be properly and clearly signed.

15. Public Services

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

The proposed project is not expected to create an increased need for public services. During construction, the project would be required at all times to accommodate emergency access for adjacent residences accessed via the affected streets, including East Shelby Street, Boyer Avenue East, and Fuhrman Avenue East. Emergency access would comply with relevant policies administered by SDOT as part of the Street Use permitting process. In the unlikely event that an accident (spill, fire, other exposure) occurs involving toxic chemicals or hazardous wastes, the local Fire Department's Hazardous Materials Team would respond. And if necessary, local medical services might also be required. However, the full range of safety and accident response supplies would be on-site to treat any emergency during construction. Upon project completion, no public services, beyond those required for the existing project site, would be needed.

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

During construction, the project would be required at all times to accommodate emergency access for residences accessed via East Shelby Street, Boyer Avenue East, and Fuhrman Avenue East. The project would include measures to avoid impacting known buried and overhead utilities, which include overhead electrical and communications utilities and buried gas, water and sewers. The full range of safety and accident response supplies would be on-site to treat any emergency during construction. No additional measures are proposed.

16. Utilities

a. Check utilities available at the site, if any:

- None
 Electricity Natural gas Water Refuse service
 Telephone Sanitary sewer Septic system
 Other: cable, fiber optics

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.

Upon completion of the project, PS 20 would continue to be operated by SPU and powered with electricity provided by Seattle City Light. As part of the project, motor, electrical, and venting upgrades will be made to PS 20, while flow restriction modifications will occur to the CSO facility. While work is performed to complete these upgrades, a temporary bypass will be installed between PS 20 and the existing flow control structure from two manholes (MH 023-418 to MH 022-191) to allow for the CSO modifications. The bypass would ensure continued flow of wastewater during construction. Utility services to adjacent residences are not expected to be impacted.

C. SIGNATURE

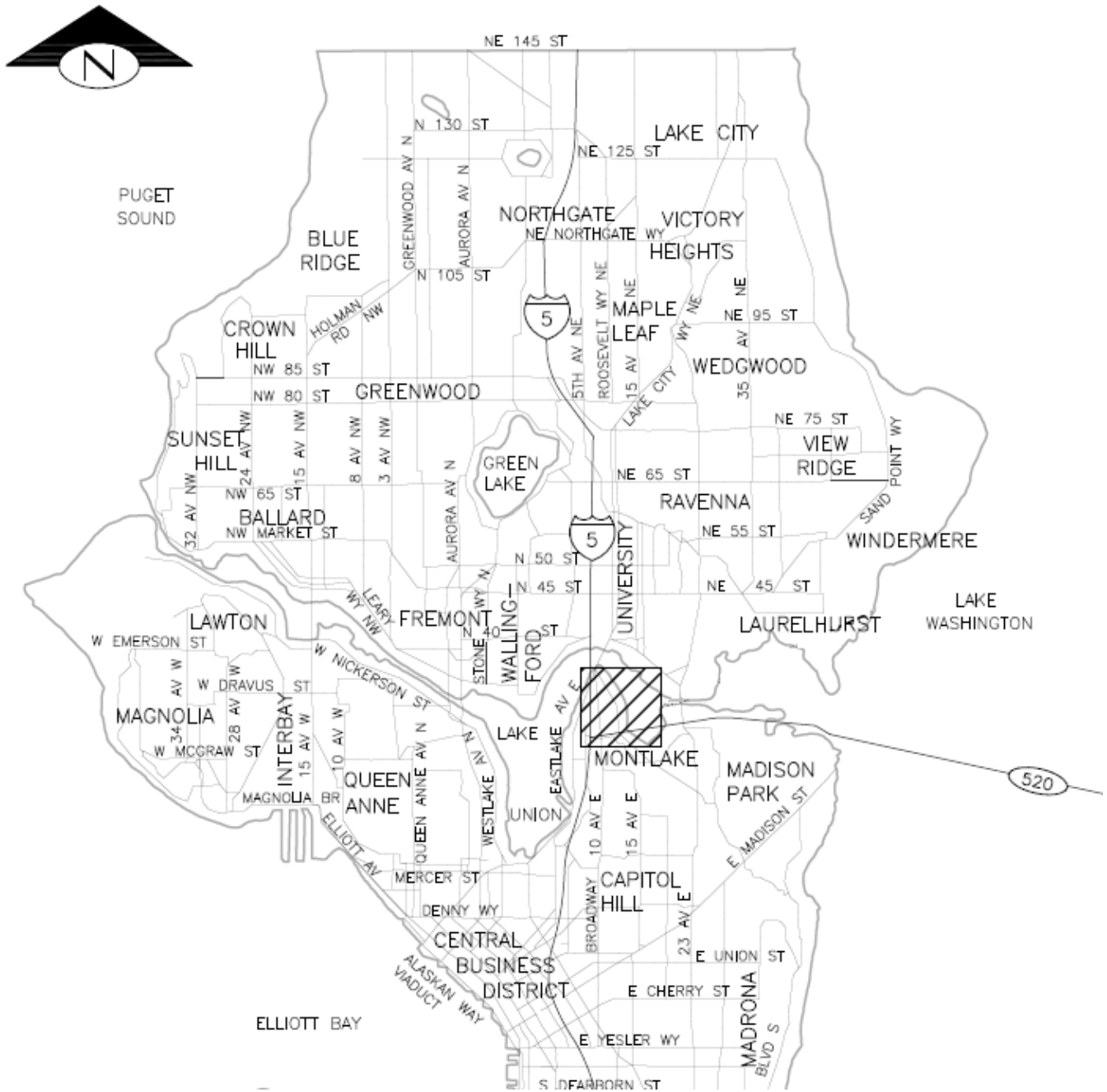
The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature: Josh Campbell
Josh Campbell
Project Manager

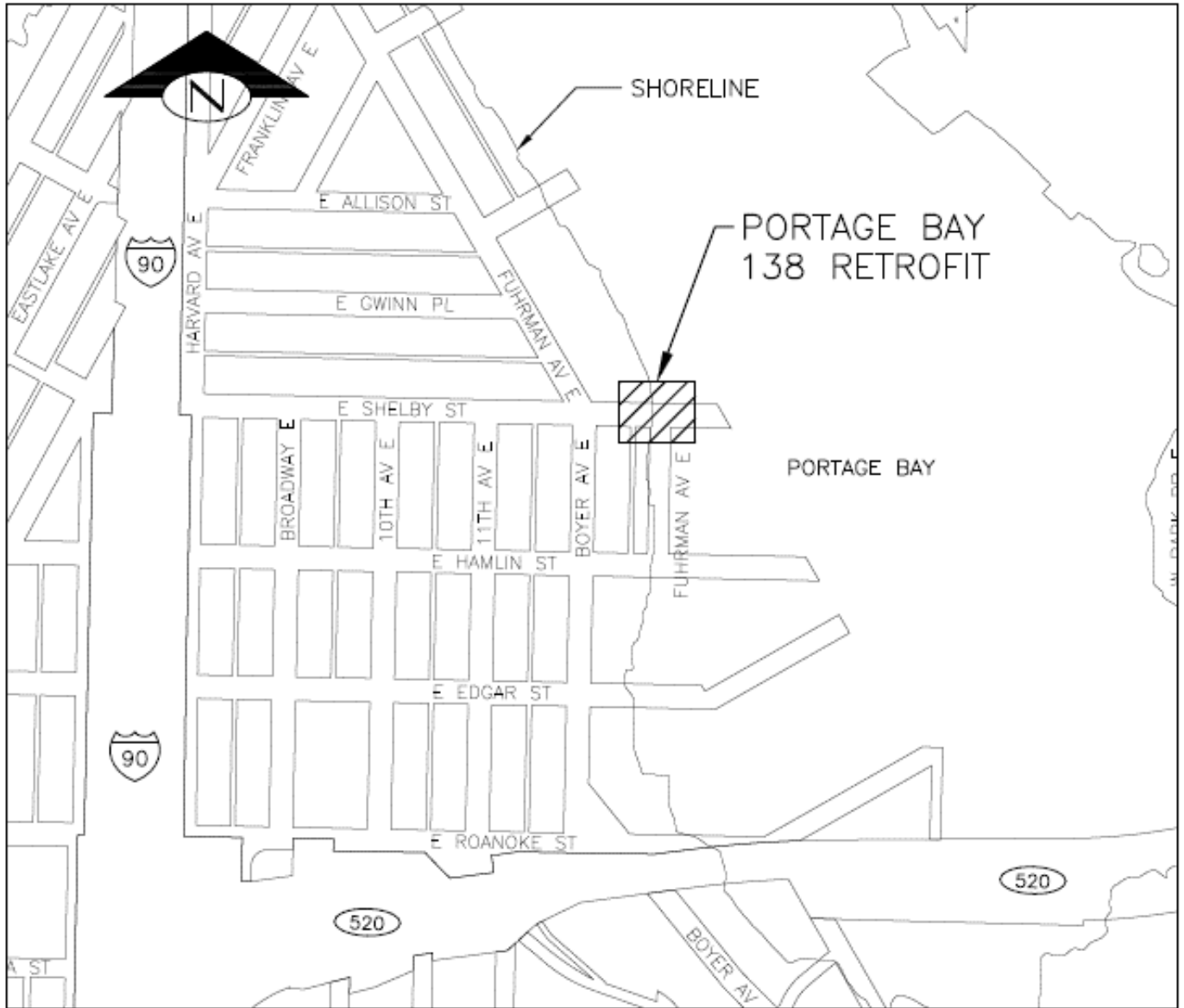
Date: 4/24/2019

- Attachment A – Vicinity Map
Attachment B – Site Map
Attachment C – Greenhouse Gas Emissions Worksheet

Attachment A – Vicinity Map



Attachment B – Site Map



**Portage Bay Gate Retrofit and Pump Station 20 Improvements Project
SEPA Environmental Checklist**

Attachment C – Greenhouse Gas Emissions Worksheet

Section I: Buildings						
Type (Residential) or Principal Activity (Commercial)	# Units	Square Feet (in thousands of square feet)	Emissions Per Unit or Per Thousand Square Feet (MTCO ₂ e)			Lifespan Emissions (MTCO ₂ e)
			Embodied	Energy	Transportation	
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		0.0	39	1,278	257	0
Vacant		0.0	39	162	47	0
TOTAL Section I Buildings						0

Section II: Pavement						
						Emissions (MTCO ₂ e)
Pavement (sidewalk, asphalt patch)		(850 sq ft 0.5 feet thick)				42.5
Concrete Pad (50 MTCO ₂ e/1,000 sq ft of pavement at a depth of 6 inches or 18.5 CY)						
TOTAL Section II Pavement						

Section III: Construction						
						Emissions (MTCO ₂ e)
(See detailed calculations below)						
TOTAL Section III Construction						12.6

Section IV: Operations and Maintenance						
						Emissions (MTCO ₂ e)
(See detailed calculations below)						
TOTAL Section IV Operations and Maintenance						0

TOTAL GREENHOUSE GAS (GHG) EMISSIONS FOR PROJECT (MTCO₂e)						55.1
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Attachment C – Greenhouse Gas Emissions Worksheet, continued

Section III Construction Details		
Construction: Diesel		
Equipment	Diesel (gallons)	Assumptions
Front-end Loader	210	30 x 7 gallons/hour (345 hp engine)
Dump Truck	120	10 round trips x 60 miles/round trip ÷ 5 mpg
Flat-bed Truck	120	10 round trips x 60 miles/round trip ÷ 5 mpg
Concrete Truck (10 CY capacity)	120	10 round trips x 60 miles/round trip ÷ 5 mpg
Subtotal Diesel Gallons	570	
GHG Emissions in lbs CO₂e	15,134	26.55 lbs CO ₂ e per gallon of diesel
GHG Emissions in metric tons CO₂e	6.86	1,000 lbs = 0.45359237 metric tons

Construction: Gasoline		
Equipment	Gasoline (gallons)	Assumptions
Pick-up Trucks or Crew Vans	520	130 working days x 2 trucks x 2 round-trip/day x 20 miles/ round trip ÷ 20 mpg
Subtotal Gasoline Gallons	520	
GHG Emissions in lbs CO₂e	12,636	24.3 lbs CO ₂ e per gallon of gasoline
GHG Emissions in metric tons CO₂e	5.73	1,000 lbs = 0.45359237 metric tons

Construction Summary		
Activity	CO ₂ e in pounds	CO ₂ e in metric tons
Diesel	15,134	6.86
Gasoline	12,636	5.73
Total for Construction	27,770	12.6

Section IV Long-Term Operations and Maintenance Details		
Operations and Maintenance: Diesel		
Equipment	Diesel (gallons)	Assumptions
Subtotal Diesel Gallons	0	
GHG Emissions in lbs CO₂e	0	26.55 lbs CO ₂ e per gallon of diesel
GHG Emissions in metric tons CO₂e	0	1,000 lbs = 0.45359237 metric tons

Operations and Maintenance: Gasoline		
Equipment	Gasoline (gallons)	Assumptions
Subtotal Gasoline Gallons	0	
GHG Emissions in lbs CO₂e	0	24.3 lbs CO ₂ e per gallon of gasoline
GHG Emissions in metric tons CO₂e	0	1,000 lbs = 0.45359237 metric tons

Operations and Maintenance Summary		
Activity	CO ₂ e in pounds	CO ₂ e in metric tons
Diesel	0	0
Gasoline	0	0
Total Operations and Maintenance	0	0