

**SEATTLE PUBLIC UTILITIES
SEPA ENVIRONMENTAL CHECKLIST**

This SEPA environmental review of Seattle Public Utilities' South Park Pump Station 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:

South Park Pump Station

2. Name of applicant:

Seattle Public Utilities (SPU)

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

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4. Date checklist prepared:

February 4, 2019

5. Agency requesting checklist:

Seattle Public Utilities

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

SPU expects to begin construction in the first quarter of 2020 and complete construction in the second quarter of 2021.

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

SPU plans to construct a new lateral storm drain collection system upstream of the South Park Pump Station. The future storm drain collection system would help address chronic flooding in the basin and would increase flows to the Lower Duwamish Waterway. The future storm drain collection system also would increase flows through the pump station. The future collection system would not function as intended until this project's pump station is operational. However, the reverse is not true, the proposed South Park Pump Station project is not dependent on this collection system improvement project. This collection system

improvement project is not included in this current evaluation because the project is currently being scoped and therefore, we cannot yet identify the potential impacts. The collection system project is planned to begin construction late 2020 or early 2021.

SPU plans to eventually build a water quality facility downstream of the pump station to treat the stormwater prior to discharge into the Lower Duwamish Waterway. The pump station would have empty bays for this future water quality facility project so that stormwater may be pumped to the water quality facility. Planning for this project is underway, specifically the siting analysis effort is underway. This project is not included in this current evaluation because we do not know the proposed location, treatment technology, facility size, and many other key factors necessary to identify potential impacts. The currently proposed project is not dependent on the future water quality facility project.

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

A Final Geotechnical Report for the South Park Pump Station Project was completed in November 2008 by the SPU Materials Laboratory. This report summarizes mapped geology and findings of subsurface exploration and provides recommendations for design and construction of the drainage improvements.

In April 2009, SPU conducted a Cultural Resources Survey for 636 and 640 South Riverside Drive as well as the 7th Avenue Street street end. At that time it was planned that the pump station would be located in the street end and the water quality facility located on the two parcels. This is no longer the case; the pump station facility would be located on the two parcels and the water quality facility would be located elsewhere. The Cultural Resources Report is called *Cultural Resources Survey for the 7th Avenue South Pump Station and Water Quality Project, Seattle, WA* [Entrix, Inc. 2009 (April). Final Cultural Resources Technical Report, 7th Avenue South Park Pump Station and Water Quality Project. Prepared for SPU.]

In 2012, SPU conducted an independent Model Toxics Control Act (MTCA) cleanup of 636 and 640 South Riverside Drive. Work involved removing and disposing of 353 cubic yards of lead- and cPAH-contaminated soil and 680 cubic yards of soil contaminated with solvents (tetrachloroethene). The cleanup work is recorded in the following documents:

- *Groundwater Investigation: 7th Avenue South and South Riverside Drive* [Pacific Groundwater Group, 2008 (February). Prepared for SPU.]
- *Soil/Groundwater Characterization: South Park Pump Station and Water Quality Facility, Seattle, Washington* [Pacific Groundwater Group, 2009 (July). Prepared for SPU.]
- *Focused Feasibility Study and Disproportionate Cost Analysis: South Park Pump Station and Water Quality Facility, Seattle Washington* [Pacific Groundwater Group, 2009 (October). Prepared for SPU.] This was completed as part of the MTCA cleanup process.
- *Interim Action Plan: South Park Pump Station and Water Quality Facility, Seattle, Washington* [Pacific Groundwater Group, 2010 (September). Prepared for SPU.] This was completed as part of the MTCA cleanup process and describes what cleanup was needed based on all the site investigation results.

- *South Park Pump Station Soil Remediation* [Brown and Caldwell, 2011 (May). Prepared for SPU.] These are the site cleanup construction contract drawings showing the extent of the cleanup.
- *Treatment by Generator Report* (2012) for the dangerous waste lead that was stabilized and removed during construction.

SPU has conducted post-cleanup groundwater sampling since 2015. Four rounds of sampling were conducted in 2015 followed by two rounds in 2016 and 2017. A single round of sampling was conducted in 2018. The groundwater monitoring data was collected for SPU by Pacific Groundwater Group.

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.

We are unaware of other proposals or government approvals related to the subject properties.

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

- Seattle Department of Transportation (SDOT) Street Improvement Permit
- SDOT Street Use Permit
- Seattle Department of Construction and Inspections (SDCI) Master Use Permit (shoreline and flood zone development)
- SDCI Building Permit
- Washington Department of Fish and Wildlife (WDFW) Hydraulic Project Approval (for removal of existing pier)
- U.S. Army Corps of Engineers Clean Water Act (CWA) Section 404/Rivers and Harbors Act (RHA) Section 10 Nationwide Permit
- Washington State Department of Ecology (Ecology) CWA Section 401 Water Quality Certification [linked to CWA Section 404/RHA Section 10 permit]
- Ecology Coastal Zone Management Act (CZMA) Consistency Certification [linked to CWA Section 404/RHA Section 10 permit]
- Washington State Department of Archaeological and Historic Preservation (DAHP) National Historic and Preservation Act Section 106 compliance [linked to CWA Section 404/RHA Section 10 permit]
- U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) Endangered Species Act (ESA) compliance [linked to CWA Section 404/RHA Section 10 permit]
- NMFS Magnuson-Stevens Fishery Conservation and Management Act compliance [linked to CWA Section 404/RHA Section 10 permit]
- Department of Ecology discharge permit (for construction water discharge to downstream storm drain), or
- King County Industrial waste discharge permit (required to discharge construction water to a nearby combined sewer)

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.

The proposed project includes construction of a new stormwater pump station on SPU-owned property (636 and 640 South Riverside Drive). The project is intended to enable the existing stormwater collection system and outfall to function during all tidal conditions in the Lower Duwamish Waterway. The pump station would allow future expansion of the basin's stormwater collection system to occur without increasing flooding in the low-lying, downstream end of the basin.

Specific elements of the proposed pump station facility are as follows:

- A below-grade stormwater wet well where the pumps are housed, approximately 40 feet by 25 feet in area and approximately 25 feet deep. This wet well extends 4 feet above existing grade.
- A headbox, where the stormwater is pumped to, approximately 40 feet by 15 feet in area. The headbox would extend approximately 12 feet below existing grade and 11 feet above existing grade.
- An above-grade electrical room and emergency backup generator area, approximately 46 feet by 36 feet in area. Within this area, the electrical room would be the tallest structure and would be approximately 14 feet by 26 feet in area and approximately 20 feet above existing grade.
- Two new, below-grade structures intercepting the existing 72-inch diameter outfall pipe: one to divert water to the pump station and one at the discharge point from the headbox back to the outfall pipe.
- A security fence around the new facility.
- Open space to meet the shoreline district requirement for a 10-foot wide access from the street to the shoreline on SPU's property.
- Open space in the 7th Avenue South shoreline street end to align with SDOT's shoreline street end revitalization program.
- Removal of the existing pier at the project site. The pier is approximately 50 feet by 20 feet and is supported by seven piles that are 2 feet in diameter.
- On-site parking area for one boom truck or up to four regular crew vehicles. Boom truck is only anticipated on site once per year; parking will mostly be used for crew vehicles.

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 proposed project is located in the South Park neighborhood of the City of Seattle, King County, Washington in the southwest quarter of Section 29, Township 24N, Range 4E. The project location is at the intersection of 7th Avenue South and South Riverside Drive. The project site includes two parcels owned by City of Seattle (Seattle Public Utilities) located at 636 and 640 South Riverside Drive.

B. ENVIRONMENTAL ELEMENTS

1. Earth

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

- Flat
 Rolling
 Hilly
 Steep Slopes
 Mountainous
 Other: (identify)

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

The two parcels are relatively flat. The steepest existing slope on the site is a 30-foot long driveway and boat launch along the northwest property line. (The boat ramp extends from the subject property into neighboring property near the shoreline.) This launch area has an approximate slope of 15% into the Lower Duwamish Waterway.

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 any of these soils.

Based on the subsurface exploration conducted in 2006 and 2007, the site soils generally consist of 2.5 feet to 5 feet of fill atop alluvium. Groundwater was reported to generally range from 4 feet to 10 feet below ground surface. However, there have been observations where the groundwater reached a high of approximately 2.5 feet below ground surface during the large storm events.

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

There is no surface indication or apparent history of unstable soils in the immediate vicinity of the proposed project; however, the geotechnical engineers at SPU's Materials Laboratory have identified soils that are susceptible to liquefaction during earthquakes, generally in the project area.

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.

Excavation for the project would include excavation associated with the below-grade pump station, headbox, diversion structure and discharge structure, associated influent and effluent pipes, and over excavation for the foundation of the above-grade electrical room and generator pad. The total estimated excavation volume is 2,000 cubic yards.

SPU plans to fill the remaining site (the area that is not the pump station facility) approximately 2 feet. Final site grade would be on average 2 feet above the existing grade. The purpose for this is to protect the site from overland flooding from the Lower Duwamish Waterway at high tide due to sea level rise. The total estimated fill volume is 370 cubic yards.

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

During excavation, filling, and compaction, disturbed areas of the site could be susceptible to erosion. However, best management practices (BMPs) would be implemented during construction to minimize erosion. Erosion from the completed project, once site paving and landscaping is complete, should be minimal.

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

The parcels at 636 and 640 South Riverside Drive are currently covered with compacted gravel. Following construction, these parcels would be approximately 50% impervious area for the pump station facility (including wet well, electrical room, generator area and headbox), driveway, and pedestrian paths through the open space area and 50% pervious with open space landscaping including grass, ground cover, shrubs, and trees.

The 7th Avenue Street shoreline street end is nearly 100% impervious and covered with compacted gravel and asphalt. The project is coordinating with SDOT's Shoreline Street Ends Program and plans to make 50% of the street end pervious with open space landscaping including grass, ground cover, shrubs, and trees.

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

Best Management Practices (BMPs) would be implemented to contain erodible materials during construction. The contractor would be required to submit and follow a Temporary Erosion and Sediment Control (TESC) Plan.

The contractor also would be required to develop a Spill Prevention and Counter Measures and Control Plan (SPCC), including procedures for safe refueling of construction vehicles.

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.

SPU's current practice in preparing Environmental Checklists is to include a GHG Worksheet that summarizes estimated GHG emissions during the construction, operation, and maintenance of a proposed project. A GHG Worksheet for construction, operation, and maintenance of the Pump Station is included as Attachment D. The project would produce GHG in three ways: embodied in materials to be installed or used on the project; through construction activity; and during regular operation, maintenance, and monitoring activities throughout the anticipated 80-year lifespan of the facility.

Total GHG emissions for the project as described above (pump station construction, operation, and maintenance) are estimated to be 953.1 metric tons of carbon dioxide emission (MTCO_{2e}). The GHG emissions calculations are shown in Attachment D and summarized in Table 1. One metric ton is equivalent to 2,205 pounds.

The project would construct a new reinforced concrete pump station. Construction equipment would include hand-held power tools, gasoline and diesel-powered compressors and generators, and gasoline and diesel-powered vehicles. These tools generate GHG emissions due to the combustion of gasoline and diesel fuels and the GHG emissions include compounds such as oxides of nitrogen, carbon monoxide, particulate matter and smoke, uncombusted hydrocarbons, hydrogen sulfide, carbon dioxide, and water vapor. Other emissions during construction could include dust and exhaust from construction vehicles. These effects are expected to be localized, temporary, and minimized.

The project would generate GHG emissions during the construction period (estimated to be 360 working days) through the operation of diesel- and gasoline-powered equipment, and in the transportation of materials, equipment, and workers to and from the site. The estimates provided are based on assumptions for typical numbers of vehicles to execute the work; see Attachment D for more information. Construction activities would generate an estimated 698.7 MTCO_{2e} of GHG emissions.

The project would also generate GHG emissions through the operation, maintenance, and monitoring of the project. The estimated emissions are based on an assumed life expectancy of 80 years. The estimated average annual GHG emissions generated from operations, maintenance, and monitoring is 76.9 MTCO_{2e}.

Table 1. Summary of Greenhouse Gas (GHG) Emissions for Pump Station Construction, Operation, and Maintenance

Activity/Emission Type	GHG Emissions (pounds of CO_{2e})¹	GHS Emissions (metric tons of CO_{2e})¹
Paving	391,317	177.5
Construction Activities (Diesel)	1,462,374	663.3
Construction Activities (Gasoline)	78,003	35.4
Long-term Maintenance (Diesel)	131,688	54.0
Long-term Maintenance (Gasoline)	50,544	22.9
Total GHG Emissions	2,113,991	953.1

¹Note: 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, impacts to air quality would be reduced and controlled through implementation of standard federal, state and local emission control criteria and Seattle construction practices. These could include: spraying areas of exposed soil with water for dust control, regular street cleaning, prompt covering of disturbed soils, and reducing exhaust emissions by minimizing vehicle and equipment idling.

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 located on the south shore of the Lower Duwamish Waterway, a freshwater river that flows into Puget Sound.

(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 work proposed in this project would take place within 200 feet of the mean higher high water level of the Lower Duwamish Waterway. Almost no work would be performed below the mean higher high water level.

The pier removal would require above water work to remove the 1,000 square foot deck and work below the mean higher high-water level to cut down seven 24-inch diameter piles to the sediment surface. (Cutting the piles down to the sediment surface was requested by the Department of Ecology due to the project being in the vicinity of the Lower Duwamish Waterway Superfund site and the desire not to disturb the contaminated sediment. The piles would be removed by others during the Superfund cleanup process.) No plan sheet is available at this time.

(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 filling or dredging activities are proposed within any surface water body. This project would reuse an existing stormwater outfall to the Lower Duwamish Waterway.

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

No surface water withdrawals or diversions are proposed with this project. The pump station would only pump stormwater runoff to the river that is currently discharged to the river, and the stormwater would continue to be discharged through the existing stormwater outfall. The pump station would allow stormwater runoff to be discharged to the river at high tide; whereas under the existing condition water “backs up” in the pipe during high tide and then drains at low tide.

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

According to FEMA’s Flood Insurance Rate Maps, the project site is within the 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.

As previously stated, only stormwater runoff would be discharged to the river. The project would not produce or discharge waste materials to surface waters. The pump station would not increase or change the source or volume of stormwater runoff that is discharged to the river.

SPU anticipates that construction dewatering water pumped from excavations would be discharged to an approved combined sewer in South Riverside Drive (by permit through King County), or to the downstream storm drain system (by permit through Department of Ecology).

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.**

Based on high groundwater levels found during sub-surface explorations, it is anticipated that construction dewatering of the trenches/excavations would be necessary. This dewatering would be temporary during construction; and the extent would be determined during construction. SPU anticipates that water pumped from excavations would be discharged to an approved combined sewer in South Riverside Drive (by permit through King County), or to the downstream storm drain system (by permit through Department of Ecology).

- (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.**

The project would not discharge waste materials from septic tanks or other sources into the ground.

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.**

The source of runoff during construction would be from any rainfall that may occur during construction, which would be collected in the contractor's collection system and either discharged to the combined sewer (by permit through King County) or treated and discharged into the downstream storm drain system which flows to the Duwamish Waterway (by permit through Ecology).

After the project is completed, stormwater runoff on site would be collected in catch basins and conveyed to the Lower Duwamish Waterway via the new pump station. The pump station would allow SPU to discharge stormwater runoff to the river at high tide; whereas under the existing condition water "backs up" in the pipe during high tide and then drains at low tide.

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

The typical industrial area waste materials that get washed into drainage systems or the ground, such as soap from car washing, motor oil leaks, exhaust residue, process water, etc., would not be substantially increased or decreased by this project.

The project site is currently compacted gravel. Following construction, the pervious areas on site would be barricaded with bollards such that vehicles (aside from SPU operations staff and emergency vehicles) would not be permitted beyond the

bollards. This would significantly reduce the possibility for waste materials to enter the groundwater and surface waters. Other areas would be paved, minimizing the potential for wastes to enter groundwater.

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

No, the proposed project would not alter drainage patterns in the vicinity of the site, with the exception of the project site which would have less impervious cover.

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

The primary goal of this project is to allow the existing storm drainage system to function under high tide conditions, thereby reducing flooding and allowing the upstream storm drain system to be expanded to further reduce flooding. The project would help to control the impacts of stormwater runoff (specifically flooding and erosion events).

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 checked="" type="checkbox"/> Maple	<input type="checkbox"/> Aspen	<input checked="" type="checkbox"/> Other: Lombardy Poplar
<input type="checkbox"/> Evergreen trees:	<input type="checkbox"/> Fir	<input type="checkbox"/> Cedar	<input type="checkbox"/> Pine	<input type="checkbox"/> Other:
<input 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 checked="" type="checkbox"/> Other: NOTE: wet soil plants are located in wetland adjacent to 7 th Avenue South street end, which is adjacent to project area				
<input type="checkbox"/> Water plants:	<input type="checkbox"/> water lily	<input type="checkbox"/> eelgrass	<input type="checkbox"/> milfoil	<input type="checkbox"/> Other: (identify)
<input checked="" type="checkbox"/> Other types of vegetation: shrubs are planted along the west side of 636 South Riverside Drive for privacy purposes, species unknown				

The project site is currently mostly covered with gravel.

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

The project site is currently mostly covered with gravel and has a small amount of ruderal vegetation (grasses, blackberries and some butterfly bush), which would be removed. The ruderal vegetation along the shoreline would be removed and replaced with native plants in alignment with the Seattle Shoreline District Code (in alignment with the Master Use Permit requirements).

Adjacent to the property on the north side, the neighboring property has several poplar trees that line the property boundary. Due to their proximity to the property boundary, it's likely their root system would be damaged during construction and they may need to be removed or altered.

In the South Riverside Drive SDOT street right-of-way there is a silver maple tree. The silver maple street tree is very close to the property boundary. Removal and replacements would be as approved by SDOT's Urban Forestry Division under the SDOT Street Improvement Permit process.

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

The Washington Natural Heritage Program's Natural Heritage Information System does not contain information on significant natural features in the project area. It contains no records for rare plants or high-quality native ecosystems in the vicinity of the project.

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

The SPU-owned parcels (636 and 640 South Riverside Drive) total 10,000 square feet. At the end of construction approximately half the site would be the pump station facility, driveways and walkways, and the remaining half would be vegetated. The vegetation planned would be mostly grass with some low-lying vegetation along the shoreline and approximately 10-15 trees spread across the site. All plants would be native species.

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

On the project parcels of 636 and 640 South Riverside Drive, all vegetation are ruderal species. (A ruderal species is a plant species that is first to colonize disturbed lands. The disturbance may be natural or a consequence of human activity, such as site contamination cleanup.) The ruderal vegetation are grasses, blackberries and some butterfly bush.

Adjacent to the property on the north side, the neighboring property has several poplar trees that line the property boundary. They have a 20-inch caliper and therefore, are not Exceptional Trees (per SMC 25.11 and SDCI Director's Rule 16-2008) and do not meet the 2-foot diameter threshold that requires tree replacement (per SMC 25.11.090). Due to their proximity to the property boundary, it's likely their root system would be damaged during construction.

In the South Riverside Drive SDOT street right-of-way there is a silver maple street tree. The silver maple street tree is very close to the property boundary. Removal and replacements would be as approved by SDOT's Urban Forestry Division under the SDOT Street Improvement Permit process.

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: ducks, geese
Mammals:	<input type="checkbox"/> Deer	<input type="checkbox"/> Bear	<input type="checkbox"/> Elk	<input type="checkbox"/> Beaver	<input type="checkbox"/> Other: (identify)
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: (identify)			

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

The project is located adjacent to and in the nearshore area of the Lower Duwamish Waterway. Endangered Species Act (ESA)-listed aquatic species known to use the waterway are listed below with their ESA listing status:

- Chinook salmon (*Oncorhynchus tshawytscha*), Threatened
- Steelhead trout (*Oncorhynchus mykiss*), Threatened
- Bull trout (*Salvelinus confluentus*), Threatened

The Duwamish Waterway is also designated critical habitat for bull trout, Chinook salmon, and steelhead trout.

The WDFW Priority Habitats and Species Map shows that the upland portion of the project site does not contain any "Priority Habitats/Species." The adjacent Duwamish Waterway is mapped as an estuarine zone containing habitat for Chinook salmon, sockeye salmon (*O. nerka*), coho salmon (*O. kisutch*), pink salmon (*O. gorbuscha*), chum salmon (*O. keta*), steelhead trout, cutthroat trout (*O. clarki*) and bull trout.

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 area is located in and along the Lower Duwamish Waterway, another important migration route for many fish and wildlife species.

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

The following measures would be applied:

- The project would minimize disturbance areas associated with excavation.
- The existing outfall has a valve that prevents fish from entering the storm drain pipe and this valve would remain in place during and after construction.
- The timing of in- and over-water construction work would be restricted to an authorized in-water work period or "fish window" that would be protective of fish life and would minimize potential impacts to the biological activities of fish such as migration, spawning, and rearing, as determined by WDFW, and for ESA-listed species, NMFS and USFWS.
- This project would also use BMPs identified in the City of Seattle's Stormwater Code (SMC 22.800 through 22.808 and Director's Rule DWW-200 SPU/17-2017 SDCl) and Construction Stormwater Control (Volume 2) to generally protect fish and wildlife and manage turbidity. For example, equipment to be used for construction activity would be cleaned and inspected by the contractor before it arrives at the project site to avoid and minimize potential for fuel or lubricant leaks.
- The project would prepare and implement a CSECP to meet the requirements of SMC 22.800, and would also apply City of Seattle Standard Plans and Specifications for Municipal Construction.
- All excavated soils from the project would be temporarily impounded within impervious lined, bermed stockpiles covered with impervious barriers for protection from rain.

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

There are no known invasive animal species on or near the 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.

Electricity provided by the existing distribution system would provide the energy required to operate the pump station and security lighting at the site. The on-site emergency backup generator would be used when there are power outages in the electrical distribution system and would be powered by diesel.

The only enclosed building at the site (the electrical room) would not require heating, so there is no energy requirement for heat.

Gasoline and diesel-powered vehicles would be required to construct and maintain the facilities at the site.

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

The project does not involve building tall structures or planting vegetation that would block access to the sun for 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 major energy use at the site would be the pumps in the pump station. These pumps would be selected to be as energy efficient as possible to minimize energy usage and cost.

The only other energy use at the site would be security lighting, which would be used only during nighttime hours to save energy and costs. Energy efficient bulbs would be used.

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 as a result of either equipment failure or worker error.

Contaminated soils and/or groundwater are not expected to be exposed in large amounts during excavation because contaminated soils and groundwater on the properties were previously removed. However, there may be some contamination in the

right-of-way, where new pipes between the existing outfall and the pump station would be installed. When disturbed, contaminated substances could expose construction workers and potentially other individuals in the vicinity through blowing dust, stormwater runoff or vapors. Any contaminated soils that are excavated would be treated and/or disposed of in an approved facility. Any contaminated groundwater that is encountered during dewatering would be treated and disposed of in accordance with either King County or Ecology permit requirements, depending on where the water is discharged.

A permanent emergency generator would be located at the site. Diesel fuel is required and there is potential for a spill when refilling the generator fuel tank. Standard fueling procedures would be followed to minimize the risk of a spill and a spill containment curb would be located around the fuel tank.

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

The City acquired 636 and 640 South Riverside Drive in 2008. In 2012, SPU conducted an independent cleanup of the parcels. Work involved removing and disposing of 353 cubic yards of lead- and cPAH-contaminated soil and 680 cubic yards of soil contaminated with solvents (tetrachloroethene).

For this project it is not expected there would be additional existing contamination on site.

(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 existing hazardous chemicals or conditions within the project area or vicinity 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.

Small amounts of materials likely to be present during construction and periodically brought to site for repairs during the life of the pump station include gasoline and diesel fuels, hydraulic fluids, oils, lubricants, solvents, paints and other chemical products.

Diesel fuel would be kept onsite in the fuel tank of the emergency generator. Refueling would occur periodically during the life of the facility.

(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.

In the case of a pump station failure (e.g. no pumps operational), the system would revert to its current operation of draining to the Lower Duwamish Waterway via gravity when the tide is low. This may cause upstream flooding in the event of high tide and a significant rain event, similar to the current (“pre-pump station”) drainage system.

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

A Health and Safety Plan would be submitted by the contractor before work commences. The construction workers would be required to have had 40-hour Occupational Safety and Health Administration (OSHA) Training for working in potentially contaminated areas.

A spill control plan would be developed to control spills on site. Any contaminated soils 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.

b. Noise

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

Noises that exist in the area 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 in the vicinity of construction would temporarily increase during construction activities. Short-term noise from construction equipment would be limited to the allowable maximum levels of City of Seattle's Noise Control Ordinance (SMC Chapter 25.08).

Per City Code, noise from construction equipment may occur between the hours of 7 a.m. and 10 p.m. weekdays, and with special permission from 9 a.m. to 10 p.m. on weekends during construction. This may be further restricted during the City permitting process based upon community needs. Additional restrictions are not anticipated because the project area is located in an industrially zoned area.

Long term operational noises associated with the facility would be minimal. It is doubtful that any noise would be audible outside of the fenced facility when the pumps turn on.

There would be occasional vehicle noises from equipment used infrequently for routine maintenance and repair by SPU staff. The primary noise associated with maintenance of the pump station would be a vactor truck removing sediment and debris from within the buried wet well structure. It is believed that this activity would be accomplished within one, 8-hour work day and occur less than 5 times per

year. Based on limited research, vector trucks produce noise that may be as high as 115 decibels at the equipment. Noise levels decrease as distance from the equipment increases.

The project would include an emergency stand-by generator. The generator would be maintained by running it for 30 minutes every 7 days at 100 percent load during weekday business hours only (between 9:00 AM and 5:00 PM). The generator requires such periodic “exercising” to avoid fuel degradation, prevent carbon accumulation, lubricate generator parts, and eliminate moisture within the generator. Otherwise, the generator would start automatically if there is an actual power outage. For purposes of describing these noise levels, the project estimates that the generator would be exercised for 26 hours annually, operate under power outage conditions for 10 hours annually, and that the lifespan of this generator is 15 years. When operating at 100 percent load, the installed generator creates sound pressure levels of 68 to 70 decibels [(dB(A))] at 23 feet of distance. For comparison, a passing bus or truck at 10 feet of distance generates sound pressure levels of about 90 dB(A).

(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 fully enforced while the project is under construction.

No special provisions are proposed to reduce operational noise because these noises are expected to be minimal.

As stated above, maintenance noises would occur infrequently during normal business hours and no special noise reduction measures are proposed because they are not expected to be burdensome, and because the facility would be located in a noisy industrial area.

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 project site is comprised of two private parcels (636 and 640 South Riverside Drive) that the City of Seattle (SPU) owns. These parcels were acquired in 2008. Prior to 2008, the two private parcels consisted of a commercial metal fabrication shop and storage yard on one parcel (640 South Riverside Drive), and a single-family residence on the second parcel (636 South Riverside Drive). Currently these two parcels are used by SPU’s operations staff for storage and routine pipe cleaning maintenance work.

On the south side of these two private parcels is the 7th Avenue South shoreline street end right-of-way, which is a dead end at the Lower Duwamish Waterway. Currently the north half of the street end right-of-way is fenced off with the SPU site and used as a temporary site by SPU operations staff. The south half of the street end right-of-way is currently used by the neighboring property to the south for parking.

Properties adjacent to the project site on the north and on the south side of the 7th Avenue street end are owned by a private construction contractor. The property adjacent to the southeast of the 7th Avenue South right-of-way is the contractor's office. The property adjacent to the north of 636 South Riverside Drive is the contractor's storage yard.

- 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?**

No, the site has not been used for agriculture in recent history.

- (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?**

No, there is no working farm or forest land in the vicinity of the project.

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

There are no existing permanent structures on site. The site was cleared by SPU in 2009, after acquiring the properties (636 and 640 South Riverside Drive).

There is an existing pier on the east side of the property in the Lower Duwamish Waterway. The pier is approximately 50 feet by 20 feet and is supported by seven piles that are 2 feet in diameter.

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

The pier would be demolished and the piles that support the pier would be cut down to the sediment surface. In the project vicinity, the Lower Duwamish Waterway is a Superfund Site and the Department of Ecology requested that we not disturb the sediment by removing the piles. The Department of Ecology would rather the piles be cut down.

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

The zoning of both 636 and 640 South Riverside Drive is General Industrial 1 (IG1).

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

Seattle's Adopted Comprehensive Plan (2017) designates the project site is within the "Manufacturing/Industrial Center" on the Future Land Use Map.

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

The current designation of the area under SMC 23.60, Shoreline District, is Urban Industrial.

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

The site of the proposed improvements is located in or adjacent to Liquefaction Prone and Flood Prone areas—Environmentally Critical Areas (ECA) as identified and mapped by SDCI (City of Seattle SDCI GIS Mapping website).

The pier removal portion of the project is located in the Lower Duwamish Waterway, which is mapped as a Wildlife Habitat ECA.

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?

No one would be displaced by the proposed pump station project.

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

There are no displacement impacts and therefore no proposed measures to avoid or reduce displacement impacts.

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

The pump station would be designed to fit in with the surrounding industrial and warehouse area. The Seattle Design Commission would review the design for compatibility with the surrounding land uses as well.

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

This project would not impact agricultural or forest lands.

9. Housing

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

This project does not involve the construction of any housing units.

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

No housing units would be eliminated as part of the proposed project.

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

There are no housing impacts, and therefore there are no proposed measures to mitigate or control 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?

The main above grade structure would be the electrical room, which is expected to be a maximum of 20 feet above existing grade. The electrical room exterior is expected to be ground face concrete masonry units in grey and sandstone tones. The other prominent structures, the headbox and above grade portion of the wet well, would be reinforced concrete with an aesthetic finish for the exterior.

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

The southern portion of the site would be open space for the public in alignment with the Shoreline District Code – this would also open up views to the Waterway.

The view for the industrial facility on the south side of South Riverside Drive would be marginally improved. The pump station facility layout on the site has been shifted as far north as possible so that the electrical room obstructs as few views as possible for the industrial facility on the south side of South Riverside Drive.

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

Prominent structures would have an aesthetic finish on their exterior.

The site would be 50% open space available for public access. The open space would have landscaping and pedestrian pathways. The project would also coordinate with SDOT's Shoreline Street End Program to create some open space in the 7th Avenue South shoreline street end, immediately adjacent to the open space on site.

Security fencing would be installed but limited to the facility portion of the site. Fencing would not be installed around the driveway so that views from South Riverside Drive and open space available to the public are maximized.

Seattle Public Utilities also is considering placing an artwork sculpture on this site.

11. Light and Glare

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

Security lighting would be provided for the site. Lighting would likely be overhead flood lights which would turn on at night and be directed toward the facility and open space.

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

It is not believed that lighting would interfere with views. It is also not believed that lighting at night would be a safety hazard in an industrial area.

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

Existing lighting/glare in the area is not expected to affect the proposed project. Existing lighting may reduce the amount of lighting necessary for this project.

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

Security lighting would be turned on at nighttime only and lighting would be designed to direct the light intensity within site, minimizing off-site impacts.

12. Recreation

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

There are no formal recreational opportunities nearby the project site as the surrounding streets and buildings are industrial in nature. The Lower Duwamish Waterway, which neighbors the site, is also an industrial river (and a Superfund cleanup site) and does not offer formal recreational opportunities. However, recreational kayakers and boaters occasionally do use the Waterway.

The nearest recreational access opportunities are the 8th Avenue South Park and the Duwamish Trail. The 8th Avenue South Park is located at the end of 8th Avenue South, adjacent to the Lower Duwamish Waterway and is the product of a Port of Seattle shoreline improvement project. The Duwamish Trail is an SDOT multi-use trail and at its closest point is located one block from the project site at the intersection of 7th Avenue South and South Portland Street. The Trail connects the West Seattle and South Park neighborhoods. The 8th Avenue South Park and the Duwamish Trail would be unaffected by the proposed project.

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

No, this project would not displace existing recreational uses.

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

No measures are planned to control impacts on recreation as the proposed project would not affect any recreational opportunities.

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.

No listed or known eligible historic resources are present in the project area.

To determine if National Register or Washington Heritage properties are on or near to the project site, the project location was checked against the following registers on January 30, 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, Map of Designated Landmarks, and Historic Districts List, maintained by the City of Seattle, Department of Neighborhoods (found at <http://www.seattle.gov/neighborhoods/programs-and-services/historic-preservation/landmarks>)

- 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.**

The Burke and ethnographic databases show six ethnographically recorded native named features within 0.5 miles of the project. Four of these are geographic features, one is a village site, and one is a mythological place. A burial was found 0.4 miles from the project area in 1925.

In 2009, SPU conducted a cultural resources survey. No archaeological or historical resources were discovered. However, large portions of the subsurface area of potential effect were inaccessible due to structures and paving. Known archaeological sites on the banks of the Lower Duwamish Waterway have been found at depths exceeding 1 meter. The likelihood of archaeological deposits in un-surveyed areas is moderate to high.

- 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.**

In 2009, professional archaeologists and historians conducted a surface (pedestrian) survey, a subsurface (shovel probe and augering) survey, and a historic property inventory. Prior to the surveys and inventory, researchers reviewed previous historical information from the King County cultural resources GIS database. Researchers also obtained information about previously prepared archaeological and historic sites in the project vicinity from records on file at DAHP in Olympia, Washington. Additional information about historic development of the area was obtained through resources at the University of Washington Special Collections and Map Collections and at the Seattle Public Library Seattle Room and Map Collection.

- 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 likelihood of archaeological deposits in un-surveyed areas is moderate to high. Therefore, the Project may affect as yet undiscovered archaeological resources. The Project would conduct cultural resource monitoring for ground-disturbing activities in native soils and native sediments during construction. That monitoring by a professional archaeologist would be conducted under provisions of a Monitoring and Unanticipated Discovery Plan that would outline steps to be taken and the parties to be consulted in the event archaeological resources are discovered during Project activities. The Plan would also incorporate information from the April 2009 updated cultural resources survey and any new information developed since the 2009 survey. The Plan would be developed ahead of construction.

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.**

Generally, the project area is located in the South Park neighborhood of Seattle, State Route 509 and State Route 99 are located to the west of the project. Both of these highways can provide access to and from the site via South Holden Street.

Access to the project streets after construction would be unchanged from the existing street access.

- 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 nearest public transit is Metro King County bus route 132, with a stop on 5th Avenue South and South Holden Street, one block west of the project site. The use of that bus stop would not be affected by this project during construction or following project completion.

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

The completed project would not change the available public parking in the right-of-way or on nearby streets. Several parking spots (4 maximum) would be provided on the project site for SPU employees. Construction parking would be accommodated on-site or the Contractor would be responsible for locating additional parking during construction (either in the right-of-way or by renting property).

- 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).**

No improvements would be required to existing roads, streets, pedestrian, bicycle, or state transportation facilities.

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

The project site is located adjacent to the Lower Duwamish Waterway, but is not expected to use water transportation for construction or for any long-term operations need. The project would not use rail or air transportation.

- 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?**

In the long term, vehicle trips to/from the project site would be reduced from the prior condition. The only vehicle access to the site would be for maintenance which is expected to occur weekly, which is less than the daily trips generated by the previous residence and industrial business and fewer daily trips than the current temporary SPU use for maintenance and storage.

Increased traffic from construction-related vehicles would be temporary and would occur during the work hours described in Item B.7.b(2). These trips would be well within the traffic volume capacity of surrounding streets and comparable to existing traffic in the vicinity of the site.

- 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.**

No, it is not anticipated that the project would affect the movement of agricultural or forest products during construction or long term.

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

The contractor would be required to mitigate traffic impacts during construction as required by SDOT. The contractor would be required to develop a traffic control plan for SDOT approval during the Street Use Permit process – a process led by the contractor. The contractor would be required to implement the traffic control plan and comply with all Street Use Permit and Street Improvement Permit requirements set by SDOT.

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 project is creating open space for the public and this could result in an increased incidence for the need of police presence and protection, as well as solid waste collection for illegal dumping and cleaning graffiti.

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

SPU would closely monitor the site for a 1 to 2-year period after construction is completed and the open space portion of the site is open to the public. If the strain on the public services is too great, SPU would fence in a greater portion of the site, minimizing the open space to simply meet the 10-foot minimum access requirement of the Shoreline District Code. In addition, the project will be designed using crime prevention through environmental design (CPTED) principles.

16. Utilities

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

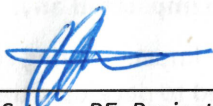
- None
 Electricity Natural gas Water Refuse service
 Telephone Sanitary sewer Septic system
 Other (identify)

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.

The completed project site would require domestic water service for washdown of the facilities. The site also would have a stormwater collection system which would route stormwater to the site's pump station. Finally, the site would be equipped with electrical power to power the pump station, site lighting, and security system. Construction activities required for these utilities would involve trenching to install water service and stormwater collection pipes.

C. SIGNATURE

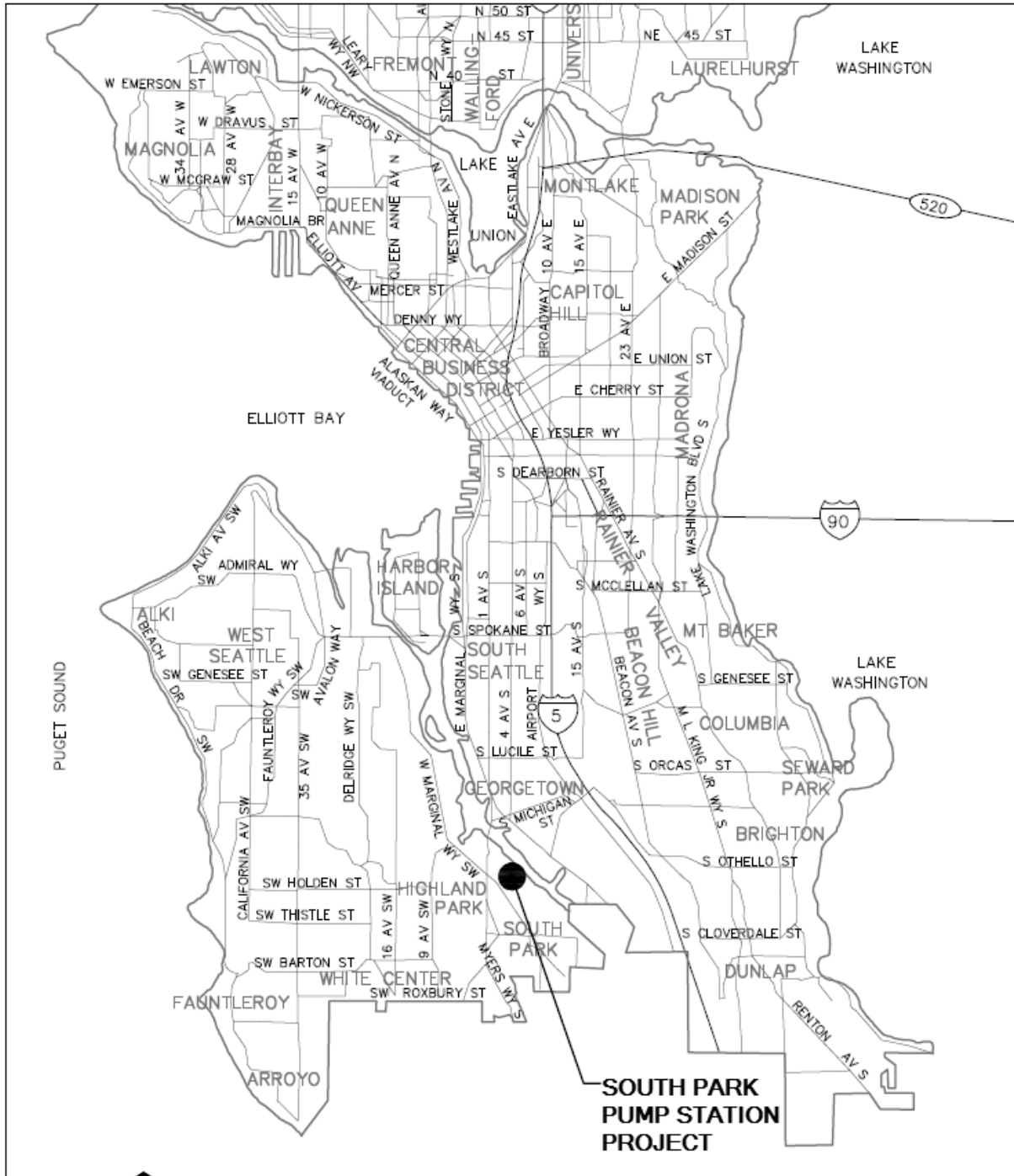
The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature:  _____
Shailee Szttern, PE, Project Manager

Date: 2/4/19

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

Attachment A – Vicinity Map



VICINITY MAP



SCALE: 1" = 1 MILE

Attachment B – Site Map



Attachment C – Photographs



Looking Across the Site to the Northwest (showing temporary current use for SPU Pipe Cleaning Operations)



Looking Across the Site to the Southeast

Attachment D – Greenhouse Gas Emissions Worksheet

Section I: Buildings		Emissions Per Unit or Per Thousand Square Feet (MTCO₂e)			Lifespan Emissions (MTCO₂e)	
Type (Residential) or Principal Activity (Commercial)	# Units	Square Feet (in thousands of square feet)	Embodied	Energy	Transportation	
Single-Family Home			98	672	792	
Multi-Family Unit in Large Building			33	357	766	
Multi-Family Unit in Small Building			54	681	766	
Mobile Home			41	475	709	
Education			39	646	361	
Food Sales			39	1541	282	
Food Service			39	1994	561	
Health Care Inpatient			39	1938	582	
Health Care Outpatient			39	737	571	
Lodging			39	777	117	
Retail (Other than Mall)			39	577	247	
Office			39	723	588	
Public Assembly			39	733	150	
Public Order and Safety			39	899	374	
Religious Worship			39	339	129	
Service			39	599	266	
Warehouse and Storage			39	352	181	
Other			39	1278	257	
Vacant			39	162	47	
TOTAL Section I Buildings						

Section II: Pavement		Emissions (MTCO₂e)
Pavement (street, sidewalk, asphalt patch) or concrete pad, in thousands of square feet (50 MTCO ₂ e/1,000 sq ft of pavement at a depth of 6 inches)	3.550	177.5
Gravel aggregate, in cubic yards (none)		0.0
TOTAL Section II Pavement		177.5

Section III: Construction		Emissions (MTCO₂e)
(See detailed calculations below)		
TOTAL Section III Construction		698.70

Section IV: Operations and Maintenance		Emissions (MTCO₂e)
(See detailed calculations below)		
TOTAL Section IV Operations and Maintenance		76.88

TOTAL GREENHOUSE GAS (GHG) EMISSIONS FOR PROJECT (MTCO₂e)	953.08
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Section III: Construction Details		
Construction: Diesel		
Equipment	Diesel (gallons)	Assumptions
Excavator	40,000	2,000 hours x 20 gallons/hour (345hp engine)
Front End Loader	14,000	2,000 hours x 7 gallons/hour (345hp engine)
Vibratory/Static Roller	120	150 hours x 0.8 gallons/hour (185hp engine)
Two Flatbed Trucks	960	60 round trips x 40 miles/round trip x 2 ÷ 5 mpg
Subtotal Diesel Gallons	55,080	
GHG Emissions in lbs CO₂e	1,462,374	26.55 lbs CO ₂ e per gallon of diesel
GHG Emissions in metric tons CO₂e	663.32	1,000 lbs = 0.45359237 metric tons

Construction: Gasoline		
Equipment	Gasoline (gallons)	Assumptions
Pick-up Trucks or Crew Vans	1,800	360 workdays x 5 trucks x 1 round-trip/day x 20 miles/round trip ÷ 20 mpg
Miscellaneous Hand Equipment	1,080	360 workdays x 5 hours x 2 pieces of equipment x 0.3 gal/hour
Dump Truck w/ Pup (28 cubic yard capacity)	300	75 round trips x 20 miles/round trip ÷ 5 mpg
Concrete Truck (8 cubic yard capacity)	30	25 round trips x 6 miles/round trip ÷ 5 mpg
Subtotal Gasoline Gallons	3,210	
GHG Emissions in lbs CO₂e	78,003	24.3 lbs CO ₂ e per gallon of gasoline
GHG Emissions in metric tons CO₂e	35.38	1,000 lbs = 0.45 metric tons

Construction Summary			
Activity		CO ₂ e in pounds	CO ₂ e in metric tons
	Diesel	1,462,374	663.32
	Gasoline	78,003	35.38
Total for Construction		1,540,377	698.70

Section IV: Long-Term Operations and Maintenance Details		
Operations and Maintenance: Diesel		
Equipment	Diesel (gallons)	Assumptions
Emergency Operation	320	(4 times per years for 80 years) x 1 round-trip/event x 5 miles/round-trip ÷ 5 mpg
Maintenance Operation (including Truck Fueling/Repair)	4,160	4,160: (once weekly for 80 years) x 5 miles/round-trip x 1 round-trip/event ÷ 5 mpg PLUS 480: (6 times per years for 80 years) x 1 round-trip/event x 5 miles/round-trip ÷ 5 mpg
Subtotal Diesel Gallons	4,480	
GHG Emissions in lbs CO₂e	118,944	26.55 lbs CO ₂ e per gallon of diesel
GHG Emissions in metric tons CO₂e	53.95	1,000 lbs = 0.45 metric tons

Operations and Maintenance: Gasoline		
Equipment	Gasoline (gallons)	Assumptions
Pick-up Trucks or Crew Vans	2,080	two crews x (once weekly for 80 years) x 1 round-trip/event x 5 miles/round-trip ÷ 20 mpg
Subtotal Gasoline Gallons	2,080	
GHG Emissions in lbs CO₂e	50,544	24.3 lbs CO ₂ e per gallon of gasoline
GHG Emissions in metric tons CO₂e	22.93	1,000 lbs = 0.45 metric tons

Operations and Maintenance Summary			
Activity		CO ₂ e in pounds	CO ₂ e in metric tons
Diesel		118,944	53.95
Gasoline		50,544	22.93
Total for Operations and Maintenance		169,488	76.88