

**SEATTLE PUBLIC UTILITIES  
SEPA ENVIRONMENTAL CHECKLIST**

This SEPA environmental review of Seattle Public Utilities' Stormwater Outfall Repair Near 2900 Fairview Ave E 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:**

Stormwater Outfall Repair Near 2900 Fairview Ave E

**2. Name of applicant:**

Seattle Public Utilities

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

Izzy Schwartz, Project Manager  
Seattle Public Utilities  
P.O. Box 34018  
Seattle, WA 98124-4018  
206-684-7313; [Isabella.Schwartz@seattle.gov](mailto:Isabella.Schwartz@seattle.gov)

**4. Date checklist prepared:**

November 23, 2021

**5. Agency requesting checklist:**

Seattle Public Utilities (SPU)

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

Project construction is scheduled for early 2022 and is anticipated to require up to 10 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.**

There are no future additions planned related to this proposal.

**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 or will be prepared.

**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.**

There are no known pending applications or proposals related to the affected properties.

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

- Seattle Department of Transportation (SDOT) Street Use Permit
- Seattle Department of Construction and Inspections (SDCI) Exemption from the Shoreline Substantial Development Permit
- Washington Department of Fish and Wildlife (WDFW) Hydraulic Project Approval
- U.S. Army Corps of Engineers, Rivers and Harbors Act Nationwide Permit authorization.

**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.**

In January 2020, SPU discovered a roadway embankment failure near 2900 Fairview Ave E on the shoreline of Lake Union immediately south of the Fairview Park launch float (Attachment A). The failure is undermining the roadway edge. SPU determined the stormwater drainage system on the west side of Fairview Ave E was plugged with debris, allowing stormwater to flow onto the top of the embankment. Upon cleaning the drainage system and inspecting the associated drainage pipes, SPU discovered pipe sections in an existing 8-inch diameter concrete outfall at this location have separated, which allows water to flow out of the pipe and onto the embankment and an associated rockery.

Those flows have destabilized the embankment and caused the rockery to fail. The outfall is no longer supported by that rockery and now discharges behind rocks on either side, which is further destabilizing the rockery and embankment. The rockery was constructed entirely above the ordinary high water mark (OHWM) of Lake Union. Discharge from the failed outfall pipe and/or wave action appear to have destabilized the toe of the rockery, allowing portions to collapse into the lake.

SPU has identified a partnership project (C343402) with SDOT to repair and improve the stormwater drainage outfall and repair the rockery and roadway embankment. SPU would replace the existing 8-inch diameter concrete pipe with 10.3 linear feet of 8-inch diameter ductile iron pipe and set the new outfall invert at an elevation such that stormwater discharges onto rocks below. SDOT would reconstruct the rockery and embankment supporting the roadway by disassembling parts of the existing rockery near the new outfall and then rebuilding the rockery after SPU has installed the new outfall. (Attachment B)

To reconstruct the rockery, SDOT would excavate a trench 12 inches deep by 3 feet wide by 6 feet long at the bottom of the embankment below OHWM. Woven geotextile fabric would then be placed and staked in the trench. The trench would then be backfilled with clean quarry spall (2 to 4 inches in diameter). Two 5-man rocks would be set on that rock to establish a competent base. Excavation on the embankment would be limited to just that required to install the outfall. Sloughing soils would be removed and then geotextile placed on the exposed soils. A 6-inch thick layer of 2 to 4-inch quarry spall would then be placed on the geotextile fabric and 3-man rock placed on the competent base and up the slope above and on either side of the outfall to reach the roadway grade. SDOT would also improve the embankment and roadway where the road has failed. The work would over-excavate 2 feet

below the roadway footprint and then build a small Mechanically Stabilized Earth (MSE) retaining wall consisting of alternating layers of compacted backfill and soil reinforcement elements (3 layers of geotextile fabric) to support the roadway where it has failed (approximately 90 linear feet).

- 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.**

There is no street address for this project. The project is in street right-of-way west of 2900 Fairview Ave E (Fairview Park) at the unimproved street right-of-way for E Shelby St in the Eastlake neighborhood of the City of Seattle, King County, Washington (Attachment A).

**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)?**

Steep slopes of more than 40 percent are found in Fairview Park east of the project site. The subject rockery/embankment is a short steep slope exceeding 40 percent.

**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.**

The general geologic condition of the Puget Sound region is a result of glacial and non-glacial activity that occurred over the course of millions of years. Review of the geologic map covering the project location (Troost *et al.* 2005; <http://pubs.usgs.gov/of/2005/1252/>) indicates the project area is underlain primarily by pre-Olympia-aged deposits of interbedded silts, sands, and gravel. However, urban development in this part of the City and on and around the project site over the last 100 years has resulted in a predominance of disturbed native soils/sediments, cut slopes, and placements of fill material throughout the project site and immediately surrounding area. Surficial soils consist of placements of fill material.

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

The subject rockery and embankment at the project site have failed. The project site is in a Liquefaction Environmentally Critical Area (ECA) and immediately west of a Known Slide ECA as mapped by SDCI

(<https://seattlecitygis.maps.arcgis.com/apps/webappviewer/index.html?id=f822b2c6498c4163b0cf908e2241e9c2>). There are no surface indications of instability at this site.

**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.**

Construction would include excavation, grading, and filling necessary to replace the outfall and repair the embankment and rockery. Total volume of excavation is estimated to be no more than 10 cubic yards; total volume of filling is estimated to be no more than 11 cubic yards. Fill materials would include quarry spall, large rock, and native soil. Total area of disturbed ground is estimated to be no more than 1050 square feet: 900 square feet asphalt restoration and 150 square feet for embankment rockery restoration. Types of materials to be placed and their volumes and areal footprints are summarized in in Table 1.

**Table 1. Materials to be used, their placement locations relative to the OHWM of Lake Union, and their areal footprint (in square feet [SF]) and volumes (in cubic yards [CY]).**

	BELOW OHWM			ABOVE OHWM		
	Area (ft <sup>2</sup> )	Width (ft)	Vol (CY)	Area (ft <sup>2</sup> )	Width (ft)	Vol (CY)
base trench with quarry spall	7.13	6.24	1.65	4.7	6.24	1.09
5-man rocks	-	-	2.81	-	-	2.25
3-man rocks (6)	-	-	-	-	-	2.43
outfall trench	-	-	-	15.75	3.33	1.94
<b>TOTALS</b>			<b>4.46</b>			<b>7.71</b>

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

The proposed work would restore all surfaces in-kind and use erosion control on all disturbed ground not intended to be repaved. This would include placing native soil back over disturbed areas and placing jute fabric for erosion control. Temporary erosion and sediment control best management practices (BMPs) would be deployed, inspected, and maintained as needed.

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

The proposed work is in existing paved areas, in an existing rockery, and in roadside areas vegetated with invasive perennial plants. Paved surfaces damaged by construction would be replaced. There would be no new impervious surfaces.

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

BMPs would be used to protect the existing stormwater drainage systems and to minimize erosion and sedimentation. BMPs (as identified in the City of Seattle’s Stormwater Code SMC 22.800 through 22.808, Director’s Rule DWW-210, and Volume 2 Construction Stormwater Control Technical Requirements Manual) would be used to manage stormwater runoff, construction disturbance, and erosion as needed 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.**

During construction, emissions would occur from vehicles and mobile and stationary equipment that combust gasoline and diesel fuels, such as crew vehicles, trucks, and construction equipment. Those emissions would include oxides of nitrogen, carbon monoxide, particulate matter and smoke, uncombusted hydrocarbons, hydrogen sulfide, carbon dioxide, and water vapor. Emissions during construction could also include fugitive dust related to ground-disturbing activities.

Greenhouse gas emissions are characterized as ‘direct’ (emissions from sources owned or controlled by the reporting entity) and ‘indirect’ (emissions from sources that are a consequence of the reporting entity, but which occur at sources owned or controlled by another entity [e.g., electricity purchased to operate facilities and equipment and embodied emissions associated with the manufacture of purchased materials]). This Checklist provides information regarding potential for new or increased direct greenhouse gas emissions resulting from construction and operation of the project, including indirect construction-related (embodied) emissions associated with replacement of demolished and damaged concrete/asphalt surfaces and structures. Embodied greenhouse gas emissions in other materials such as aggregate and pipe materials to be used in this project have not been estimated as part of this environmental review due to the difficulty of accurately calculating those emissions.

Construction would generate greenhouse gas emissions during the estimated 10 working-days via the operation of diesel- and gasoline-powered equipment and the transport of materials, equipment, and workers to and from the site. Because project construction methods were not completely known at the time this Checklist was prepared, estimates provided here are based on daily vehicle operation times for the estimated working-day duration; actual times may be less. The project’s direct greenhouse gas emissions related to construction are presented as total metric tons of carbon dioxide (MTCO<sub>2e</sub>), calculated in Attachment C, and summarized in Table 2. Total greenhouse gas emissions for the project are estimated to be about 46.4 metric tons of carbon dioxide emission (MTCO<sub>2e</sub>), where one metric ton is equal to 2,205 pounds. Long-term maintenance of the project improvements would not result in increases in greenhouse gas emissions above current levels. The completed project would not generate additional air emissions beyond those required by the existing drainage asset.

**Table 2. Summary Of Greenhouse Gas (GHG) Emissions**

Activity/Emission Type	GHG Emissions (pounds of CO <sub>2</sub> e) <sup>1</sup>	GHS Emissions (metric tons of CO <sub>2</sub> e) <sup>1</sup>
Buildings	0	0
Paving	99,225	45
Construction Activities (Diesel)	1,545	.7
Construction Activities (Gasoline)	1,458	.7
Long-term Maintenance (Diesel)	0	0
Long-term Maintenance (Gasoline)	0	0
<b>Total GHG Emissions</b>	<b>102,228</b>	<b>46.4</b>

<sup>1</sup>Note: 1 metric ton = 2,204.6 pounds of CO<sub>2</sub>e. 1,000 pounds = 0.45 metric tons of CO<sub>2</sub>e

**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, ensure proper vehicle maintenance, and minimize vehicle and equipment idling. The completed project would not generate odors or generate additional air emissions beyond those required by the existing drainage asset.

**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 drainage asset subject of this proposal conveys stormwater collected from impervious street surfaces and adjacent publicly and privately owned impervious surfaces. There are no un-piped watercourses or waterbodies near the project location, but stormwater discharged from this drainage asset is discharged to Lake Union. Portions of the proposed project would occur below the OHWM of Lake Union. Construction would occur during a period when Lake Union is drawn down (October 1 through April 15).

**(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.**

Portions of the proposed project would occur below the OHWM of Lake Union.

- (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.**

Types of materials to be placed and their volumes and areal footprints are summarized in in Table 1. Less than 3 cubic yards of clean quarry spall and other rock are expected to be placed below the OWHM of Lake Union.

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

Stormwater runoff from the project area is collected via existing stormwater catch basins and directed into the subject drainage system. The completed project would not change the volume or timing of stormwater runoff discharged to Lake Union.

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

Portions of the proposed project would occur below the OHWM of Lake Union.

- (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 not affect volumes or destinations of stormwater conveyed through this drainage system.

**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.**

Excavations are not expected to require dewatering during construction. 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 within the street rights-of-way and from roof and yard drains from adjacent public and private properties is collected via existing stormwater catchbasins and directed into SPU's drainage system. During project construction, stormwater runoff may need to be managed to prevent sediment from entering and leaving the construction site. Precipitation that lands on construction site would be directed to the existing stormwater collection and conveyance system or contained on-site and allowed to infiltrate. Barriers such as sandbags, wattles, and catchbasin 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.

Disturbed areas would be restored to their near-original conditions and disturbed ground not covered by pavement or other impervious surfaces would be vegetated and protected from erosion. Generally, the completed project would be re-covered with concrete and/or asphalt or revegetated with native plant species and would not create additional impervious surfaces or 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.

During construction, BMPs would be used to protect the existing stormwater drainage system and to minimize erosion and sedimentation. BMPs (as identified in the City of Seattle's Stormwater Code SMC 22.800 through 22.808, Director's Rule DWW-210, and Volume 2 Construction Stormwater Control Technical Requirements Manual) would be used to manage stormwater runoff, construction disturbance, and erosion as needed during construction.

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

This project would be constructed below and adjacent to the OHWM of Lake Union. No part of the proposed work involves discharging waste materials to surface or ground waters. However, construction activities would require materials or could 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
- Chemicals associated with portable toilets.

- (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 concrete and/or asphalt) and would not create a need to manage additional stormwater runoff beyond currently existing conditions. Stormwater would follow pre-construction drainage pathways.



**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 DWW-210, 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. Construction would occur during a period when Lake Union is drawn down (October 1 through April 15).

**4. Plants**

**a. Types of vegetation found on the site:**

<input checked="" type="checkbox"/> Deciduous trees:	<input type="checkbox"/> Alder	<input type="checkbox"/> Maple	<input type="checkbox"/> Aspen	<input checked="" type="checkbox"/> Other: black cottonwood, ornamental crabapple, ornamental willow
<input type="checkbox"/> Evergreen trees:	<input type="checkbox"/> Fir	<input type="checkbox"/> Cedar	<input type="checkbox"/> Pine	<input type="checkbox"/> Other:
<input checked="" type="checkbox"/> Shrubs				
<input checked="" type="checkbox"/> Grass (turf)				
<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?**

Vegetated areas on the shoreline embankment are dominated by the invasive plant species, Japanese knotweed (*Fallopia japonica*). Adjacent public parkland is vegetated with lawn and ornamental plantings featuring a wide variety of ornamental trees, shrubs, and perennials. Construction would not remove any trees or shrubs but would disturb small areas vegetated with Japanese knotweed.

**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 July 15, 2021” (accessed at [www.dnr.wa.gov](http://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 and redevelopment over the last 100 years and has been extensively excavated, filled, paved, 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:**

All street trees would be protected during construction and no trees or shrubs would be removed. Some herbaceous vegetation would be disturbed by excavation. All disturbed ground not intended to be re-paved in street rights-of-way would be amended with suitable soil-improving materials (e.g. compost) and revegetated with native plant species as directed by SDOT.

**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, <http://gismaps.kingcounty.gov/iMap/>) identifies documented occurrences of giant hogweed (*Heracleum mantegazzianum*, a regulated Class A noxious weed in King County) within 200 feet of the project site. The project site is also known to have Japanese knotweed, a non-regulated Class B noxious weed in King County.

**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:**

<b>Birds:</b>	<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			
<hr/>				
<b>Mammals:</b>	<input type="checkbox"/> Deer	<input type="checkbox"/> Bear	<input type="checkbox"/> Elk	<input type="checkbox"/> Beaver
	<input checked="" type="checkbox"/> Other: possum, raccoon, squirrel			
<hr/>				
<b>Fish:</b>	<input type="checkbox"/> Bass	<input type="checkbox"/> Salmon	<input type="checkbox"/> Trout	<input type="checkbox"/> Herring
	<input type="checkbox"/> Shellfish	<input type="checkbox"/> Other:		
<hr/>				

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

The project site is adjacent to Lake Union. Endangered Species Act listed species for Lake Union, the adjacent Lake Washington Ship Canal, and Puget Sound (PS) are Chinook salmon (*Oncorhynchus tshawytscha*, Threatened PS), steelhead (*O. mykiss*, Threatened PS), and bull trout (*Salvelinus confluentus*, Threatened PS). In addition to these federally listed animal species, the WDFW Habitat and Species map (October 2021) indicates Lake Union and the adjacent Lake Washington Ship Canal support resident coastal cutthroat trout (*O. clarki*), coho salmon (*O. kisutch*), and sockeye salmon (*O. nerka*). Because the project is proposing in-water work during WDFW's approved in-water construction window, the project is expected to have no adverse effect on any fish or shellfish species.

The project site is also near a known historic occurrence of western pond turtle (*Actinemys marmorata*), a State-listed endangered species. Extant populations of western pond turtle are known from only a handful of locations in Washington, none of which are in or close to the City of Seattle. The site is also known to be (but not mapped as being) within the habitat of bald eagle (*Haliaeetus leucocephalus*) and great blue heron (*Ardea herodias*)—priority species in Washington. There are no known nests for these species near the project.

**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. Puget Sound, Lake Union, the Lake Washington Ship Canal, and Lake Washington are important water migration routes for many animal species.

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

The proposed work would limit plant removal, pruning, and other disturbance to that required for project construction. Project construction would not remove any trees or shrubs but would disturb small areas vegetated with the invasive Japanese knotweed. All disturbed vegetation would be restored as directed by SDOT.

This project would use BMPs and conservation measures, as identified in the City of Seattle's Stormwater Code SMC 22.800 – 22.808, Director's Rule DWW-210, and Volume 2 Construction Stormwater Control Technical Requirements Manual, to generally protect fish and wildlife. For example, equipment to be used for construction activity would be cleaned and inspected before it arrives at the project site to avoid and minimize the potential for fuel or lubricant leaks.

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

King County lists European starling, house sparrow, Eastern gray squirrel, and fox squirrel as terrestrial invasive species for this area (<http://www.kingcounty.gov/services/environment/animals-and-plants/biodiversity/threats/Invasives.aspx>).

**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 completed project would not require electricity.

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

The completed project would not affect the potential use of solar energy by adjacent properties. No elements of the project would cast shade on 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:**

There are no conservation features or proposed measures to reduce or control energy impacts because there would be no such impacts.

**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.

**(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 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 would use materials or generate pollutants that could potentially enter local drainage conveyance systems or Lake Union. Non-sediment pollutants that may be present during construction include:

- Petroleum products, including fuel, lubricants, hydraulic fluids, and form oils
- Chemicals associated with portable toilets.

During project construction, stormwater flows would be temporarily bypassed around the work area as required to accomplish project work. The completed project would not affect the volume or composition of conveyed stormwater. Potential for hazardous chemicals associated with substances present in the conveyed stormwater would be the same as prior to construction. During normal operation of the completed project, no toxic or hazardous chemicals would be stored at any time at the project site.

**(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 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:**

This project would use BMPs and conservation measures, as identified in the City of Seattle's Stormwater Code SMC 22.800 – 22.808, Director's Rule DWW-210, and Volume 2 Construction Stormwater Control Technical Requirements Manual, to generally protect fish and wildlife. For example, equipment to be used for construction activity would be cleaned and inspected before it arrives at the project site to avoid and minimize the potential for fuel or lubricant leaks. In addition, a spill response kit would be maintained during construction and all workers would be trained in spill prevention and containment consistent with the City of Seattle's Standard Specifications for Road, Bridge, and Municipal Construction. 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.

**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 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 near project construction would temporarily increase during construction. 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. Construction is estimated to require approximately 10 working days. The completed project would not generate noise.

**(2) 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) and Washington State Maximum Environmental Noise Levels (WAC Chapter 173-60) would be enforced while the project is being constructed and operated (except for emergencies).

**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.**

Proposed improvements are in improved street rights-of-way used for vehicle and pedestrian travel and vehicle parking. Adjacent land use is multi-family residential and public parkland and open space.

- 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 non-forest use?**

The project site has not been recently 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?**

The proposed work would neither be affected by nor affect surrounding working farm or forest land normal business operations because there are no such operations at or near the project site.

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

The proposed work is associated with existing surface mounted and buried drainage culverts located in public street rights-of-way. Adjacent property uses are multi-family residential (some of which may include space for home-based occupations) and public parkland and open space. Utilities are located in street rights-of-way.

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

The project would reconstruct a failed rockery but would not demolish any aboveground structures.

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

- Commercial (C2-40): a Mixed-Use zone where both residential and commercial development are allowed
- Neighborhood Commercial (NC2-55): a Mixed-Use zone where both residential and commercial development are allowed
- Low-rise Residential (LR2 RC): a Multi-family Residential zone where residential development such as townhouses, rowhouses, and apartments are allowed

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

Eastlake Residential Urban Village

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

The project is in the Urban Conservancy Environment of the City of Seattle's Shoreline Management District.

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

The project site is in a Liquefaction Environmentally Critical Area (ECA) and immediately west of a Known Slide ECA as mapped by SDCI (<https://seattlecitygis.maps.arcgis.com/apps/webappviewer/index.html?id=f822b2c6498c4163b0cf908e2241e9c2>).

**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?**

The replaced outfall would be buried. The existing rockery would be reconstructed and visible from the waterward side of the shoreline.

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

No views would be altered or obstructed.

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

No such measures are proposed because there would be no aesthetic impacts.

**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 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?**

Fairview Park is located at 2900 Fairview Ave E, across the street from the project site. The proposed work is in street right-of-way for Fairview Ave E used for informal recreational activities such as dog-walking, walking, jogging, and bicycling.

- 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 could result in short-term, temporary impacts to access and use of open space areas and street access locations. Project construction activities would result in short-term temporary lane closure and detour impacts to the use of the affected streets by walkers, runners, and bicyclists.



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

Construction would require temporary lane closures. Such closures would comply with relevant policies administered by SDOT as part of their Street Use permitting process. There are numerous route alternatives for pedestrians, joggers, and bicyclists. 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 would take the following measures to avoid or reduce projects impacts on recreation activities:

- Coordinate all project work affecting streets in advance with 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 prior to project construction to provide residents with advance notice regarding temporary street 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.**

There are numerous residential and commercial buildings over 45 years old located in the vicinity of the project site, most of which have not been evaluated for cultural/historic significance. 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 project site. However, aside from the stormwater drainage assets affected by this project, no buildings or structures would be disturbed by the project. These drainage assets may be older than 45 years but have not been evaluated for eligibility for listing in national, state, or local preservation registers.

**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. According to the Washington State Department of Archaeology and Historic Preservation's Landscape Predictive Model, the project site is in an area of High Risk for discovery of cultural resources. However, all ground disturbance and excavation would occur in existing street right-of-way and developed areas disturbed previously in recent times by installation of underground utility infrastructure, roads, and residential structures. The project site is located within

a designated National Maritime Heritage Area. National Heritage Areas are special places recognized by the U.S. Congress as having nationally important heritage resources and operated locally to benefit local communities and support local heritage organizations.

**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 locations were checked against the following registers on October 26, 2021:

- Washington Information System for Architectural & Archaeological Research Data (WISAARD) maintained by the Washington State Department of Archaeology and Historic Preservation <https://wisaard.dahp.wa.gov/>
- King County and City Landmarks List maintained by the King County Historic Preservation Program, [https://www.kingcounty.gov/~media/services/home-property/historic-preservation/documents/resources/T06\\_KCLandmarkList.ashx?la=en](https://www.kingcounty.gov/~media/services/home-property/historic-preservation/documents/resources/T06_KCLandmarkList.ashx?la=en)
- Landmark List, and Map of Designated Landmarks, maintained by the City of Seattle, Department of Neighborhoods, accessed May 6, 2021 <http://www.seattle.gov/neighborhoods/programs-and-services/historic-preservation/landmarks/landmarks-map>

**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.**

Proposed work would not affect buildings or known cultural resources; only portions of SPU's municipal stormwater drainage system would be affected. None of those objects are considered historically or culturally important. Also, proposed work is in previously disturbed and filled upland areas, which significantly reduces the chance of encountering contextually significant archaeological materials. However, an inadvertent discovery plan would be in effect and on-site during all ground-disturbing activity. Work crews would be trained on inadvertent discovery protocols should archaeological material be discovered. If 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 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 use existing street rights-of-way for Fairview Ave E and E Shelby St.

- 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 would not affect public transportation. The nearest bus stop (Metro Route 70) is on Eastlake Ave E, more than 400 feet east of the project location.

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

Because the proposed project requires work in street rights-of-way, construction would require temporary closures of parking as well as travel lanes. Parking associated with street rights-of-way is currently on-street, free parking managed by the City of Seattle. There is no on-street parking at the project site, but on-street parking exists to the north and to the south. Project construction would temporarily eliminate up to approximately 10 on-street public parking spaces near the construction zone to accommodate construction vehicles, mobilization, construction, staging, and local and through access. Generally, however, there is ample on-street and off-street parking available elsewhere near this project site and most adjacent and nearby residences have their own off-street parking. 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. The completed project would neither create nor eliminate 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 street surfaces 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 or occur near water, 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 non-passenger vehicles). What data or transportation models were used to make these estimates?**

Project construction would generate up to 70 daily vehicle trips due to workers and materials being transported to and from the site during the estimated total 10 working-day construction period based on normal Northwest weather conditions. Those trips would occur during business hours (between 7 a.m. and 6 p.m.) on weekdays (Mondays through Fridays) and on 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 drainage assets 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 conduct public outreach before and during project construction to notify residents, local agencies, and other stakeholders of work progress and expected disruptions or changes in traffic flow.
- Access for emergency-response vehicles 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.
- Alternative routes for pedestrians, bicyclists, and those with disabilities would be identified and clearly signed, as needed.

**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.

**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 structures accessed via affected street rights-of-way. Emergency access would comply with relevant policies administered by SDOT as part of its permitting process. The project would avoid impacting known buried and overhead utilities, which include overhead electrical and communications utilities and buried gas, water, and sewers. No mitigation is being proposed because the project would have no adverse impacts on public services.

**16. Utilities**

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

- None
- Electricity     Natural gas     Water     Refuse service
- Telephone     Sanitary sewer     Septic system
- Other: stormwater drainage, 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.**

During construction, this proposed work is not expected to interrupt or reconstruct other utilities. However, inadvertent damage to underground utilities could occur during

construction. While such incidents do not occur frequently, they could temporarily affect services to customers served by the affected utility while emergency repairs are made. No other interruptions to regular utility services are expected during construction. The completed project would enhance life and serviceability of critical drainage facilities and would continue to be owned, operated, and maintained by SPU.

**C. SIGNATURE**

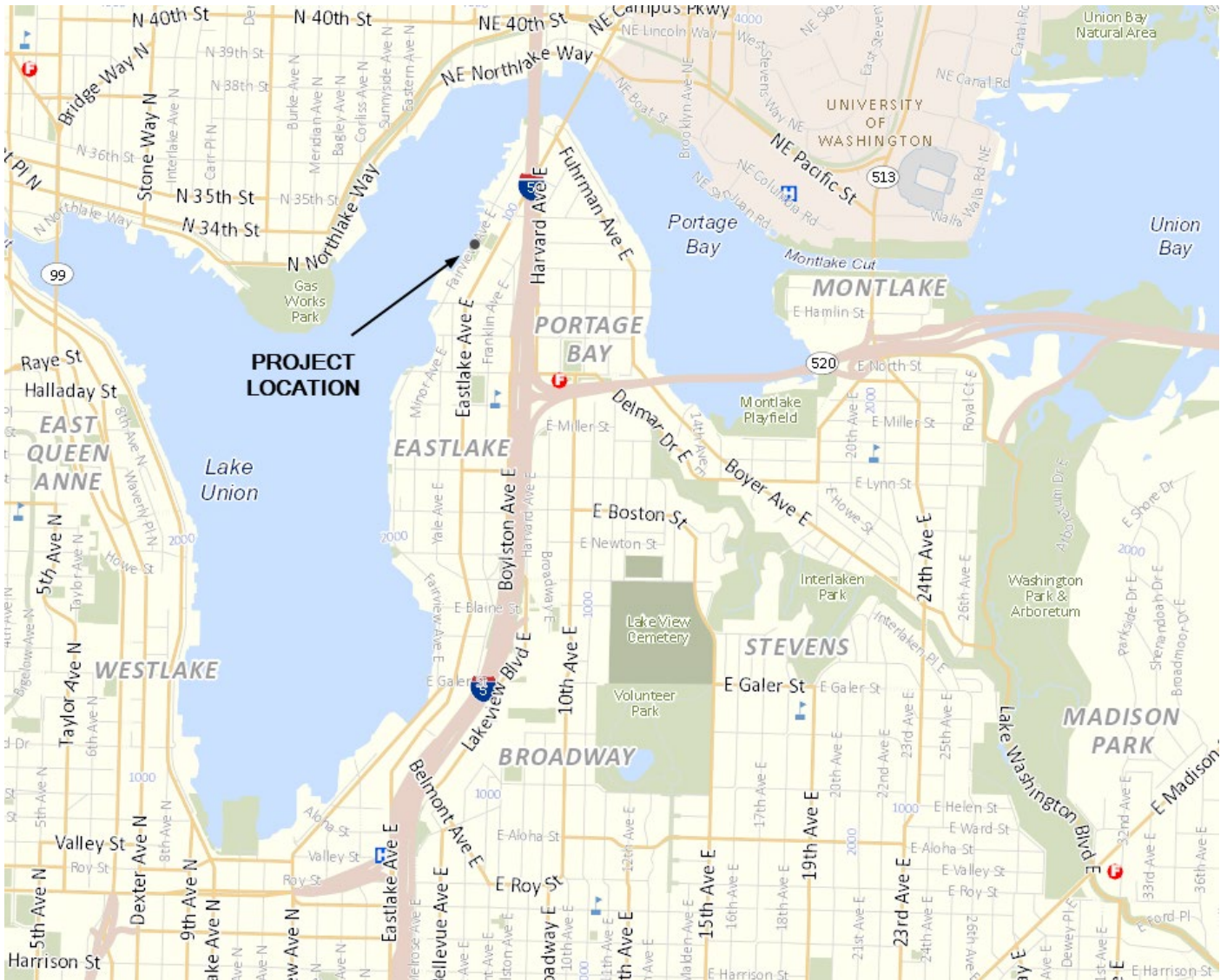
The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature: \_\_\_\_\_  
*Izzy Schwartz, Project Manager*

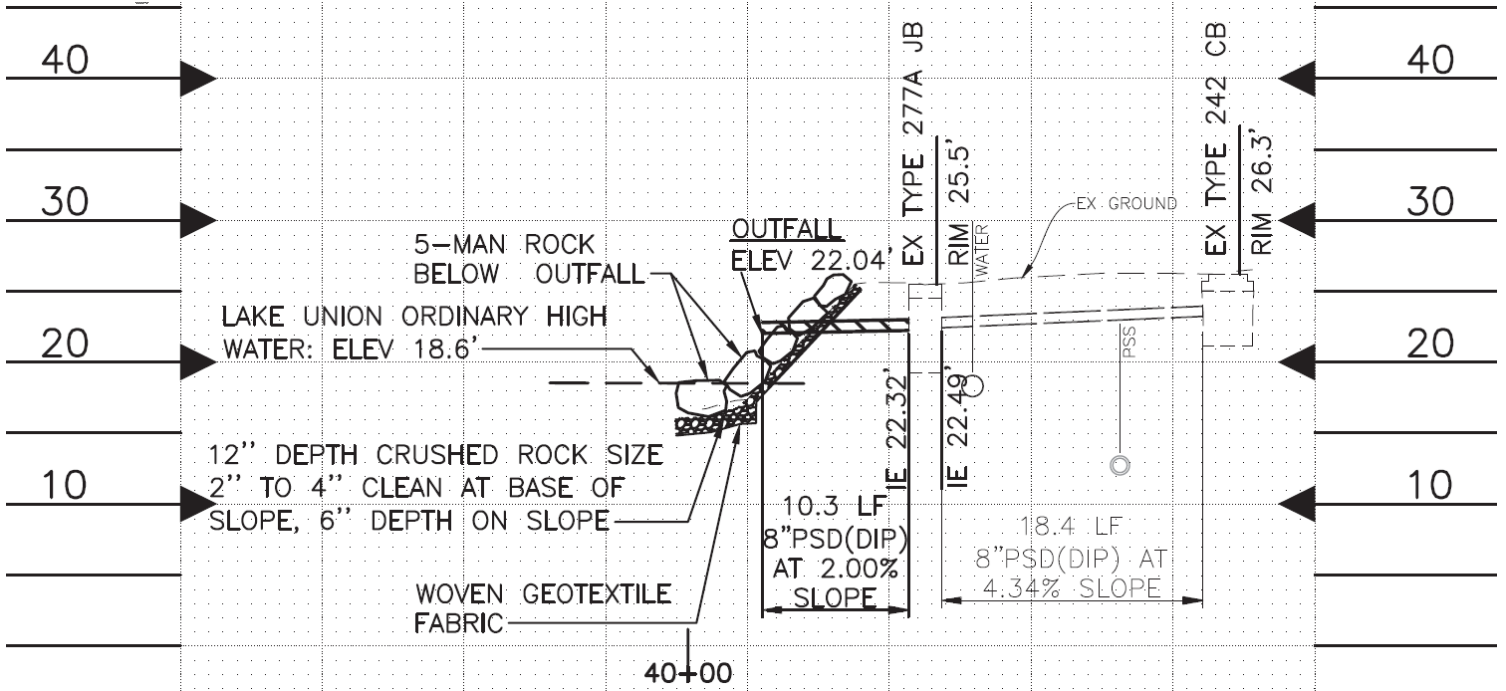
- Attachment A: Vicinity Map
- Attachment B: Section View of Proposed Project
- Attachment C: Greenhouse Gas Emissions Worksheet

Stormwater Outfall Repair Near 2900 Fairview Ave E  
SEPA Environmental Checklist

Attachment A: Vicinity Map



Attachment B: Section View of Proposed Project



**Stormwater Outfall Repair Near 2900 Fairview Ave E**  
**SEPA Environmental Checklist**

**Attachment C: Greenhouse Gas Emissions Worksheet**

<b>Section I: Buildings</b>						
			Emissions <b>Per Unit</b> or <b>Per Thousand Square Feet</b> (MTCO <sub>2e</sub> )			
Type (Residential) or Principal Activity (Commercial)	# Units	Square Feet (in thousands of square feet)	Embodied	Energy	Transportation	Lifespan Emissions (MTCO <sub>2e</sub> )
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
<b>TOTAL Section I Buildings</b>						<b>0</b>

<b>Section II: Pavement</b>						
						Emissions (MTCO <sub>2e</sub> )
Pavement (sidewalk, asphalt patch)						
Concrete Pad (50 MTCO <sub>2e</sub> /1,000 sq. ft. of pavement at a depth of 6 inches)		900 sq ft, 6 inches thick				45
<b>TOTAL Section II Pavement</b>						<b>45</b>

<b>Section III: Construction</b>						
						Emissions (MTCO <sub>2e</sub> )
(See detailed calculations below)						
<b>TOTAL Section III Construction</b>						<b>1.4</b>

<b>Section IV: Operations and Maintenance</b>						
						Emissions (MTCO <sub>2e</sub> )
(See detailed calculations below)						
<b>TOTAL Section IV Operations and Maintenance</b>						<b>0</b>

<b>TOTAL GREENHOUSE GAS (GHG) EMISSIONS FOR PROJECT (MTCO<sub>2e</sub>)</b>						<b>46.4</b>
---	--	--	--	--	--	-------------



**Stormwater Outfall Repair Near 2900 Fairview Ave E**  
**SEPA Environmental Checklist**

**Attachment C – Greenhouse Gas Emissions Worksheet, continued**

Section III Construction Details		
Construction: Diesel		
Equipment	Diesel (gallons)	Assumptions
Front-end Loaders/Excavators (1)	168	24 hours x 7 gallons/hour (345 hp engine)
Dump Truck (10 CY capacity)	4	2 round trips x 10 miles/round trip ÷ 5 mpg
Flat-bed Truck	12	3 round trips x 20 miles/round trip ÷ 5 mpg
Drum Compactor	2	4 hours x 0.5 gallons per hour
Asphalt/Concrete Truck (10 CY capacity)	4	1 round trip x 20 miles/round trip ÷ 5 mpg
<b>Subtotal Diesel Gallons</b>	<b>190</b>	
<b>GHG Emissions in lbs CO<sub>2</sub>e</b>	<b>1,545</b>	26.55 lbs CO <sub>2</sub> e per gallon of diesel
<b>GHG Emissions in metric tons CO<sub>2</sub>e</b>	<b>.7</b>	1,000 lbs = 0.45359237 metric tons

Construction: Gasoline		
Equipment	Gasoline (gallons)	Assumptions
Pick-up Trucks or Crew Vans	60	10 working days x 3 trucks x 2 round-trip/day x 20 miles/ round trip ÷ 20 mpg
<b>Subtotal Gasoline Gallons</b>	<b>60</b>	
<b>GHG Emissions in lbs CO<sub>2</sub>e</b>	<b>1,458</b>	24.3 lbs CO <sub>2</sub> e per gallon of gasoline
<b>GHG Emissions in metric tons CO<sub>2</sub>e</b>	<b>.7</b>	1,000 lbs = 0.45359237 metric tons

Construction Summary		
Activity	CO <sub>2</sub> e in pounds	CO <sub>2</sub> e in metric tons
Diesel	1,545	.7
Gasoline	1,458	.7
<b>Total for Construction</b>	<b>3,003</b>	<b>1.4</b>

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

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

Operations and Maintenance Summary		
Activity	CO <sub>2</sub> e in pounds	CO <sub>2</sub> e in metric tons
Diesel	0	0
Gasoline	0	0
<b>Total Operations and Maintenance</b>	<b>0</b>	<b>0</b>