

**SEATTLE PUBLIC UTILITIES
SEPA ENVIRONMENTAL CHECKLIST**

This SEPA environmental review of Seattle Public Utilities’ West Armory Way Water Main Reline Project has been conducted in accordance 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:

West Armory Way Water Main Reline (C600971)

2. Name of applicant:

Seattle Public Utilities (SPU)

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

Kevin Sahara, Project Manager
Seattle Public Utilities
P.O. Box 34018
Seattle, WA 98124-4018
206-665-2670 | kevin.sahara@seattle.gov

4. Date checklist prepared:

May 16th, 2023

5. Agency requesting checklist:

Seattle Public Utilities (SPU)

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

Construction is scheduled to begin in July 2024 and conclude in September 2024. For purposes of this Checklist, the project is presumed to require up to 60 working days.

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

SPU plans to soon rehabilitate its Magnolia Elevated Water Tank at 3801 W Prosper St. To minimize risk of interrupting water supply to this portion of the service area, the W Armory Way Water Main Reline Project is being completed prior to taking the Magnolia Tank out of service for that project; however, the two projects are independent of each other.

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

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

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

King County plans to construct an access road at the terminus of the W Armory Way spur road. Their plans would install a culvert directly over an existing valve and the existing water main. King County appears to be able to phase their construction to occur in 2025, after SPU's reline project is substantially complete. SPU is not aware of other pending government approvals of other proposals directly affecting the property or rights-of-way covered by this proposal.

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

Implementation of the proposed work at some or all sites would require these permits or approvals:

- Seattle Department of Transportation (SDOT): Minor Utility Permit, Street Use Permit, and Approved Traffic Control Plan
- Burlington Northern Santa Fe (BNSF): pipeline permit where the relining occurs on BNSF property

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.

This Checklist describes the proposed relining of 1,836 feet of SPU's 12-inch and 16-inch diameter 530 feeder main that provides the south route of drinking water supply to the City of Seattle's Magnolia neighborhood. The water main runs underneath W Armory Way in the Interbay neighborhood and has experienced numerous pipe/joint leaks in recent years where the main crosses under BNSF railroad tracks and BNSF's Balmer rail yard. The situation has become a maintenance challenge and creates significant risk that a future leak or break could damage and/or shutdown the railroad.

In this case, the preferred flexible high-pressure pipe liner is a proprietary German product installed using excavated entry and exit pits. The west pit would be near the west end of SPU's existing Vactor Decanting Facility in the W Halladay St street right-of-way. The east pit would be in the W Armory Way street right-of-way west of 15th Ave W. Site preparation and temporary erosion sediment control measures would be installed. During excavation, applicable shoring would be installed to allow safe worker access. Once the pits are shored, the existing main would be taken out of service and cut to allow for inspection, cleaning, and preparation for the liner. The pits would be used to install and test the liner. Physical construction would be complete once both pits are backfilled and the sites are restored. The project would also install new 12-inch gate valves; valve connections would be buried, so no new vaults are anticipated.

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 exit and entry pits are wholly in City of Seattle street rights-of-way. See Attachment A for a vicinity map. The main to be lined is in street rights-of-way for W Armory Way and W Halladay St and under BNSF-owned parcels 2325039016, 2325039019, and 7666201441.

B. ENVIRONMENTAL ELEMENTS

1. Earth

a. **General description of the site:**

Flat Rolling Hilly Steep Slopes Mountainous Other:

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

The work area is flat.

c. **What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any agricultural land of long-term commercial significance and whether the proposal results in removing these soils.**

Geologic conditions of the Puget Sound region are a result of glacial and non-glacial activity occurring over the course of millions of years and are described in the Washington Department of Natural Resources' Washington Geologic Information Portal (<https://geologyportal.dnr.wa.gov/>). However, urban development over the last 100 years has resulted in predominance of disturbed native soils/sediments, cut slopes, and placements of fill material. This project site and the immediate surrounding areas were formerly part of the Smith Cove estuary, which has been completely filled, developed, and disturbed in this way. The project does not propose substantial ground disturbance. There are no agricultural lands of long-term commercial significance designated in the project area.

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

The City of Seattle designates geologically hazardous areas as Environmentally Critical Area (ECA) based on historic and current geologic conditions, including topography and underlying soils. According to City of Seattle ECA maps (<http://seattlecitygis.maps.arcgis.com/apps/webappviewer/index.html?id=f822b2c6498c4163b0cf908e2241e9c2>). The project site is in improved street rights-of-way and under developed railroad-owned properties and does not show surface features of unstable soils. However, the project area is in a Liquefaction-prone ECA due to the presence of fill materials in the former Smith Cove estuarine wetland complex.

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.

This project proposes to excavate, backfill, and restore ground surfaces for one entry pit and one exit pit. Excavation volumes are not expected to exceed 75 cubic yards. Suitable native material or Type 17 would be used to backfill those excavations.

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

Erosion is expected to be minimal because limited excavation is proposed, sedimentation and erosion controls would be deployed, and work areas are flat. Excavation would occur in improved street rights-of-way and within developed roadway prisms. Construction staging and access would be on existing paved surfaces.

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

No new impervious surfaces are proposed. Ground disturbance would occur in existing paved areas or on compacted graveled roadway surfaces. Existing paved and graveled surfaces damaged by construction would be repaired as required by SDOT. Proposed work would not result in an increase or decrease in impervious surfaces.

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

Wherever possible, construction staging and access would be located on existing paved surfaces. Risk of erosion and sedimentation is low because the project proposes minimal excavation in flat work areas. Temporary erosion and sediment control best management practices would be deployed, inspected, and maintained as needed per the City of Seattle's Stormwater Code SMC Title 22, Subtitle VIII, relevant City of Seattle Director's Rules, and Volume 2 Construction Stormwater Control Manual. Disturbed vegetated areas, if any, would be revegetated in-kind or as directed by SDOT.

2. Air

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

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

This project would generate greenhouse gas (GHG) emissions through construction activity only. GHG emission calculations are shown in Attachment C and summarized in Table 1. One metric ton metric ton of carbon dioxide emission (MTCO_{2e}) is equal to

2,205 pounds. Though not calculated here, SPU anticipates the proposed lining method emits fewer GHGs compared to traditional open cut and backfill pipe replacement methods.

This project would generate GHG emissions during the estimated 60 working days (on average) required per site through the operation of diesel- and gasoline-powered equipment and to transport materials, equipment, and workers to and from the project sites. Estimates are also based on typical transportation and construction equipment used for this type of work. Embodied energy in lining materials used in this project has not been estimated as part of this SEPA environmental review due to the difficulty and inaccuracy of calculating such estimates.

During project operation, the project is not expected to result in increased GHG emissions as compared with pre-project levels because the pipe rehabilitated using this liner installation are not expected to require maintenance or replacement for approximately 50 years.

Table 1. Summary of Greenhouse Gas (GHG) Emissions.

Activity/Emission Type	GHG Emissions (pounds of CO ₂ e) ¹	GHS Emissions (metric tons of CO ₂ e) ¹
Buildings	0	0
Paving	55,115	25
Construction Activities (Diesel)	77,822	35.3
Construction Activities (Gasoline)	11,684	5.3
Long-term Maintenance (Diesel)	0	0
Long-term Maintenance (Gasoline)	0	0
Total GHG Emissions	144,621	65.6

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

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

There are no known off-site sources of emissions that 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 City of Seattle construction practices. These would include requiring contractors to use best available control technologies, proper vehicle maintenance, and minimizing vehicle and equipment idling.

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 proposal's west pit is within 200 feet of a small intertidal wetland that is a remnant of the original Smith Cove estuary landform.

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

The proposal's west pit is within 200 feet of a small intertidal wetland that is a remnant of the original Smith Cove estuary landform.

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

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

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

The proposed work would not require surface water withdrawals or diversions.

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

No portion of the project lies within a 100-year floodplain.

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

The proposed project would not discharge waste materials to surface waters.

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.

The proposed project would not 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.

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 completed project would not alter existing stormwater drainage patterns.

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

There would be no waste materials from this project that could enter ground or surface waters.

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

No, the proposal would not alter drainage patterns. Any disturbed vegetated areas would be restored in-kind or as directed by SDOT.

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. Best management practices, as identified in the City of Seattle’s Stormwater Code SMC Title 22, Subtitle VIII, relevant City of Seattle Director’s Rules, and Volume 2 Construction Stormwater Control Manual, would be used as needed to control erosion and sediment transport from and to the project site during construction.

4. Plants

a. Types of vegetation found on the site:

<input checked="" type="checkbox"/> Deciduous trees:	<input type="checkbox"/> Alder	<input type="checkbox"/> Maple	<input type="checkbox"/> Aspen	<input type="checkbox"/> Other:
<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 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 checked="" type="checkbox"/> Other types of vegetation:	weeds			

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

Generally, the project is in developed street rights-of-way and railroad properties that have no or weedy vegetation. No vegetation is proposed for permanent removal. Should construction, staging, or access activities damage vegetation, including lawn, etc.,

such vegetation would be restored to pre-project conditions following project completion.

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

No federally listed endangered or threatened plant species or State-listed sensitive plant species are known to occur within the City of Seattle municipal limits. The project site has been disturbed by development and redevelopment over the last 100 years and has been extensively excavated, filled, paved, or occupied by street, utility, railroad, and other constructed features.

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

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. All damaged vegetation would be restored to pre-project conditions following project completion.

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

Both pit locations are in unvegetated paved street rights-of-way, including sidewalks. The King County Noxious Weed Program (available at King County iMap interactive online mapping program, <http://gismaps.kingcounty.gov/iMap/>) identifies no noxious weeds in the project location.

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:

Birds: Hawk Heron Eagle Songbirds

Other: The project is within the Pacific Flyway migratory corridor and the project area is known to host a wide variety of transient, resident, and migratory waterfowl, songbirds, and raptors. In addition to boxes checked, some commonly observed species include transient geese, ducks, crows, pigeons, and gulls.

Mammals: Deer Bear Elk Beaver

Other: The geographic extent of the project encompasses presence and habitats for a variety of animal species commonly found in urban areas. Commonly observed species include opossums, rabbits, raccoon, skunk, squirrel, rats, mice, and bats.

Fish: Bass Salmon Trout Herring

Shellfish Other: These and other fish species are present in the Duwamish Waterway, Puget Sound, and Lake Washington. However, the project location is more than 2,200 feet from Elliott Bay, the nearest fish-bearing water.

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

Based on a check of the Washington Department of Fish and Wildlife’s “Priority Habitat Species on the Web” database on February 7, 2023, no federal Endangered Species Act-listed species -identified priority species are known from or near the project site.

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

Seattle is within the migratory route of many birds and other animal species and is part of the Pacific Flyway, a major north-south route of travel for migratory birds in the Americas extending from Alaska to Patagonia, South America.

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 may temporarily damage lawn or landscaped areas. All damaged vegetation would be restored to pre-project conditions following project completion. No in-water work is proposed.

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

King County lists the European starling, house sparrow, Eastern gray squirrel, and fox squirrel as 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.

No additional energy would be required to meet the constructed project’s energy needs, beyond the energy already utilized for the existing sewer and storm systems.

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

The proposed project does not involve building 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:

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, mainly to support vehicle and construction equipment, include gasoline and diesel fuels, hydraulic fluids, oils, lubricants, but also may include 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 environmental contamination. However, it is possible that contamination of soil or groundwater associated with past uses or activities on or near a site may be present.

- (a) 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.

- (b) 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.**

Chemicals and pollutants that may be present during construction include:

- Petroleum products associated with vehicular and equipment use, including fuel, lubricants, hydraulic fluids, and form-release oils
- Paints, glues, solvents, and adhesives
- Chemicals associated with portable toilets.

No toxic or hazardous chemicals would be stored, used, or produced at any time during the operating life of the constructed project.

- (c) Describe special emergency services that might be required.**

No special emergency services such as confined space rescue 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.

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

SPU's construction contractor would be required to develop and implement a Spill Plan to control and manage spills during construction. In addition, a spill response kit would be maintained at each site during construction work at that site, and all project site workers would be trained in spill prevention and containment consistent with the City of Seattle's Standard Specifications for Road, Bridge, and Municipal Construction. During construction, the contractor would use standard operating procedures and best management practices identified in the City of Seattle's Stormwater Code SMC Title 22, Subtitle VIII, relevant City of Seattle Director's Rules, and Volume 2 Construction Stormwater Control Manual to reduce or control any possible environmental health hazards. Soils contaminated 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. Additionally, both pits would be required to be shored for worker safety.

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 in the vicinity of 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. The completed project would generate no additional noise from equipment used for operation or maintenance.

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

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

The project location is in City-owned street rights-of-way and on BNSF-owned parcels. Pits would be excavated only in street rights-of-way. Adjacent land uses are industrial (railroad) and commercial businesses. The work would not change land uses on nearby or adjacent properties. However, the proposed work could result in short-term, temporary street/bike lane and sidewalk closures, and/or route detours for streets or sidewalks that would be experienced by individuals who live, work, or visit destinations on or near the project location.

- 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 or forestry. The project would not result in land use conversion.

- (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 any of the project sites.

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

Nearby structures include railroad infrastructure, commercial buildings, and utility and transportation structures such as light poles and street signs. Nearby structures are not associated with the project and would not be affected.

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

The project would not demolish any aboveground structures.

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

The project site is currently zoned IG1 U/45 (General Industrial 1), which is designed to protect marine and rail-related industrial areas from inappropriate levels of unrelated retail and commercial uses by limiting these uses to a density or size limit lower than allowed for industrial uses.

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

The project site is designated Industrial.

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

The site is not in a Shoreline Management district.

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

As mapped by the City of Seattle

(<http://seattlecitygis.maps.arcgis.com/apps/webappviewer/index.html?id=f822b2c6498c4163b0cf908e2241e9c2>) the project site is within a Liquefaction-prone and Historical Landfill ECAs.

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 not change existing land uses. No measures are required to ensure the proposal is 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. No measures are required to reduce or control impacts to 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?**

No above-ground utility structures would be added or modified.

- 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 streetlights are proposed or required. During construction, if an emergency requires after-dark work, the construction contractor may deploy portable lights that temporarily produce light and glare.

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

The completed project would not create light or glare.

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

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

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

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

12. Recreation

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

The project is in street rights-of-way in industrial areas and on BNSF properties actively used for rail transport purposes, so recreational use of the project location and adjacent areas is limited. However, SDOT's Elliott Bay Trail is close to the west pit location. This paved trail is used for bicycle commuting and informal recreational activities such as dog-walking, walking, jogging, and bicycling. Access to this Trail is at the 21st Ave W and W Halladay St street ends, adjacent to the project's west pit location.

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

The proposed work would not permanently displace existing recreational uses. Access to streets and parking areas affected by project construction would be more challenging during construction, but SPU would require the project contractor to maintain safe pedestrian and vehicle access at all times.

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

Temporary lane closures and detours affecting vehicle and pedestrian routes/access may be required during construction. The work may be required to submit, obtain approval for, and implement Traffic Control Plans that maintain pedestrian and bicycle access through or around the project sites during construction. The project would attempt to make detours as brief as possible.

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 no buildings, structures, or sites on or near the project location site that are over 45 years old and listed in or determined to be eligible for listing in national, state, or local preservation registers. However, there are buildings and structures older than 45 years near the project location, including the subject pipe sections.

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.

No landmarks, features, or other evidence of Indian or historic use or occupation are known to be on or adjacent to the project location. However, according to the Washington Information System for Architectural and Archaeological Records Data (WISAARD) predictive model based on environmental factors, the project location is in an area with a Very High Risk rating for detecting archaeological resources. No cultural resource surveys were conducted for the proposed project. No known archaeological materials or cemeteries have been found in or near the project site.

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 Register eligible properties are in or adjacent to the project, the project sites were checked against the following resources on February 7, 2023:

Seattle Department of Neighborhoods Landmark Map:

<http://www.seattle.gov/neighborhoods/programs-and-services/historic-preservation/landmarks/landmarks-map>

Seattle Department of Neighborhoods Historic Resources Survey Database:
<http://www.seattle.gov/neighborhoods/programs-and-services/historic-preservation/historic-resources-survey> #historicresourcesurveydatabase

King County Historic Preservation Viewer:
<https://kingcounty.maps.arcgis.com/apps/View/index.html?appid=08c6e1fe041b4f7a8912e21b55219de1>

Washington Heritage Register and National Register of Historic Places:
<http://www.dahp.wa.gov/historic-register>

Washington Information System for Architectural and Archaeological Records Data database: <https://wisaard.dahp.wa.gov/>

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

The proposed work would minimally disturb previously disturbed and filled upland areas. The proposed work would not affect buildings or known cultural resources; none of this portion of SPU's existing drinking water system is considered historically or culturally important. The work's location on previously disturbed and filled ground and general confinement to the interior of existing pipes importantly reduces the chance of encountering contextually significant archaeological materials. However, given the Very High ratings for potentially encountering archaeological materials, the project will have an approved inadvertent discovery plan onsite and in effect during all construction and ground-disturbing activities.

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 location is in City-owned street rights-of-way and under BNSF properties developed and used for rail transportation purposes. Staging areas would be on existing paved surfaces in street rights-of-way.

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 project location is not served directly by public transit. Public bus transit service near the project location is provided by King County Metro. On the east end of the project location, routes 15X, 17X, 18X, 29, and D use 15th Ave W. At the west end of the project location, routes 31 and 33 use 22nd Ave W and Thorndyke W. Generally, public transit stops are within 600 feet of the project location, but not close to either pit location.

- c. 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 any damaged street panels, curbs, traffic aprons, or other transportation infrastructure to pre-construction conditions or better and consistent with SDOT requirements. The proposal would not require any new or improved public or private transportation infrastructure.

- d. 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 of water, rail, or air transportation, but occurs in the immediate vicinity of BNSF rail transportation facilities.

- e. 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 work would be conducted at existing drinking water pipe locations. These sites currently require infrequent, periodic trips to transport SPU crews, contractors, and equipment to perform visual inspections, maintenance, and repairs when needed. No long-term additional traffic would result from the completed project. Transport of materials and equipment during construction would generate an estimated 525 round trips. The completed project is not anticipated to require any maintenance and would not generate any round trips.

- f. 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 movement of agricultural and forest products on roads or streets in the area.

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

The proposed work does not have any transportation-related permanent impacts. Temporary lane closures or detours affecting vehicle and pedestrian routes/access may be required. The work may be required to submit, obtain approval for, and implement Traffic Control Plans that maintain pedestrian and bicycle access through or around the project sites during construction. The following measures would be used to reduce or control transportation impacts:

- SPU would require the contractor to submit a traffic control plan for approval and enforcement by SPU and SDOT.

- SPU would conduct public outreach before and during the project to notify residents, local agencies, Metro, 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 may not be available at all times during project, temporary closures would be minimized and detour routes would be properly and clearly signed. Vehicle access to private properties would be maintained, subject to temporary traffic control measures such as signage and flagging.
- 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. The project would be required at all times to accommodate emergency access for buildings accessed via affected streets. Emergency access would comply with relevant policies administered by SDOT as part of its street use permitting process.

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. No mitigation is being proposed because the project would not increase impacts on public services.

16. Utilities

a. Check utilities available at the site:

- | | | | |
|--|--|---|--|
| <input type="checkbox"/> None | | | |
| <input checked="" type="checkbox"/> Electricity | <input checked="" type="checkbox"/> Natural gas | <input checked="" type="checkbox"/> Water | <input checked="" type="checkbox"/> Refuse service |
| <input checked="" type="checkbox"/> Telephone | <input checked="" type="checkbox"/> Sanitary sewer | <input type="checkbox"/> Septic system | |
| <input checked="" type="checkbox"/> Other: cable, fiber optics | | | |

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

During liner installation, water service would not be interrupted within the affected service area. No interruptions of other utilities or services are anticipated during project construction. No new utilities are being proposed. The effect of this proposal would extend the life of an existing drinking water asset and minimize risk of its failure.

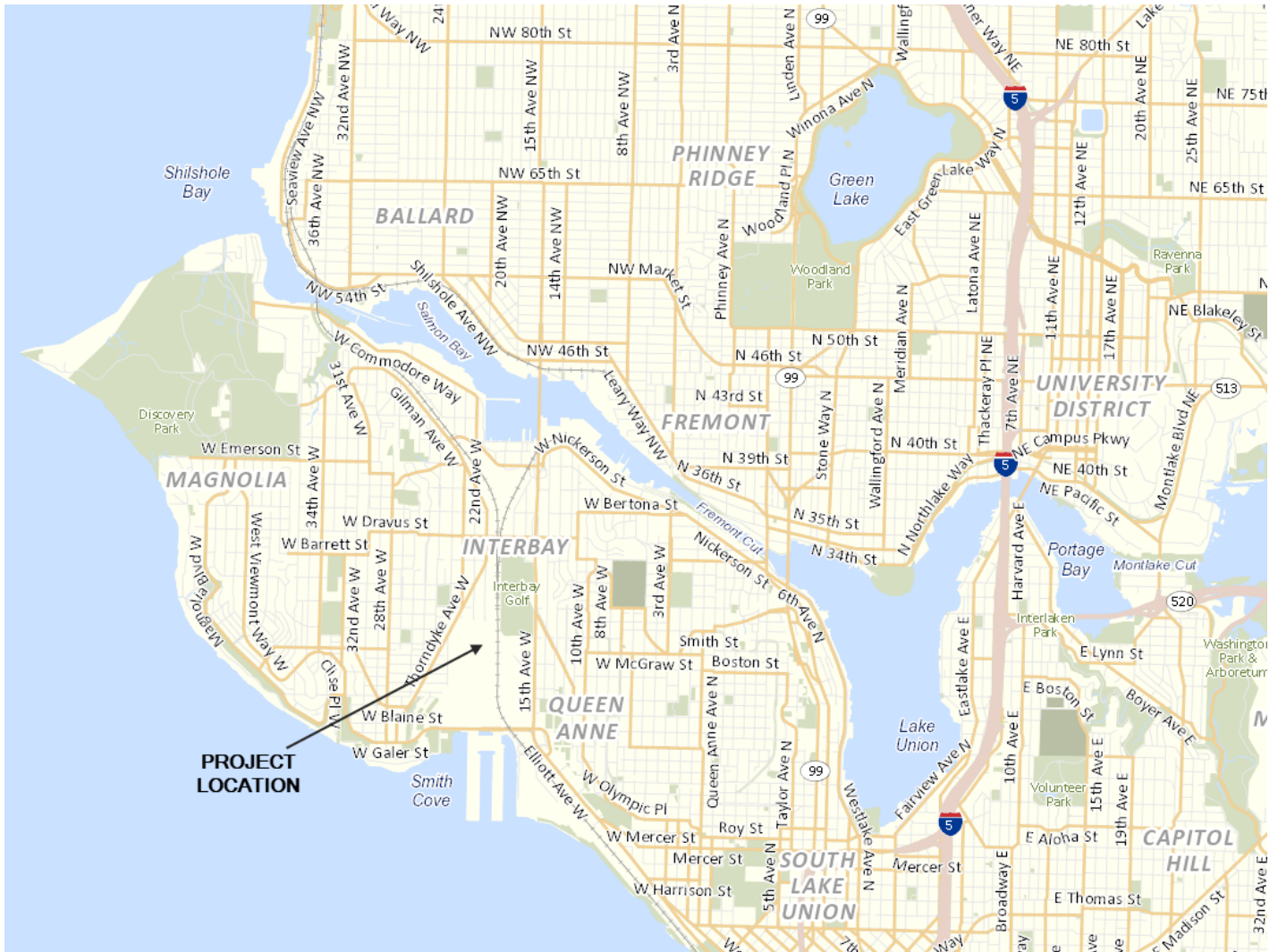
C. SIGNATURE

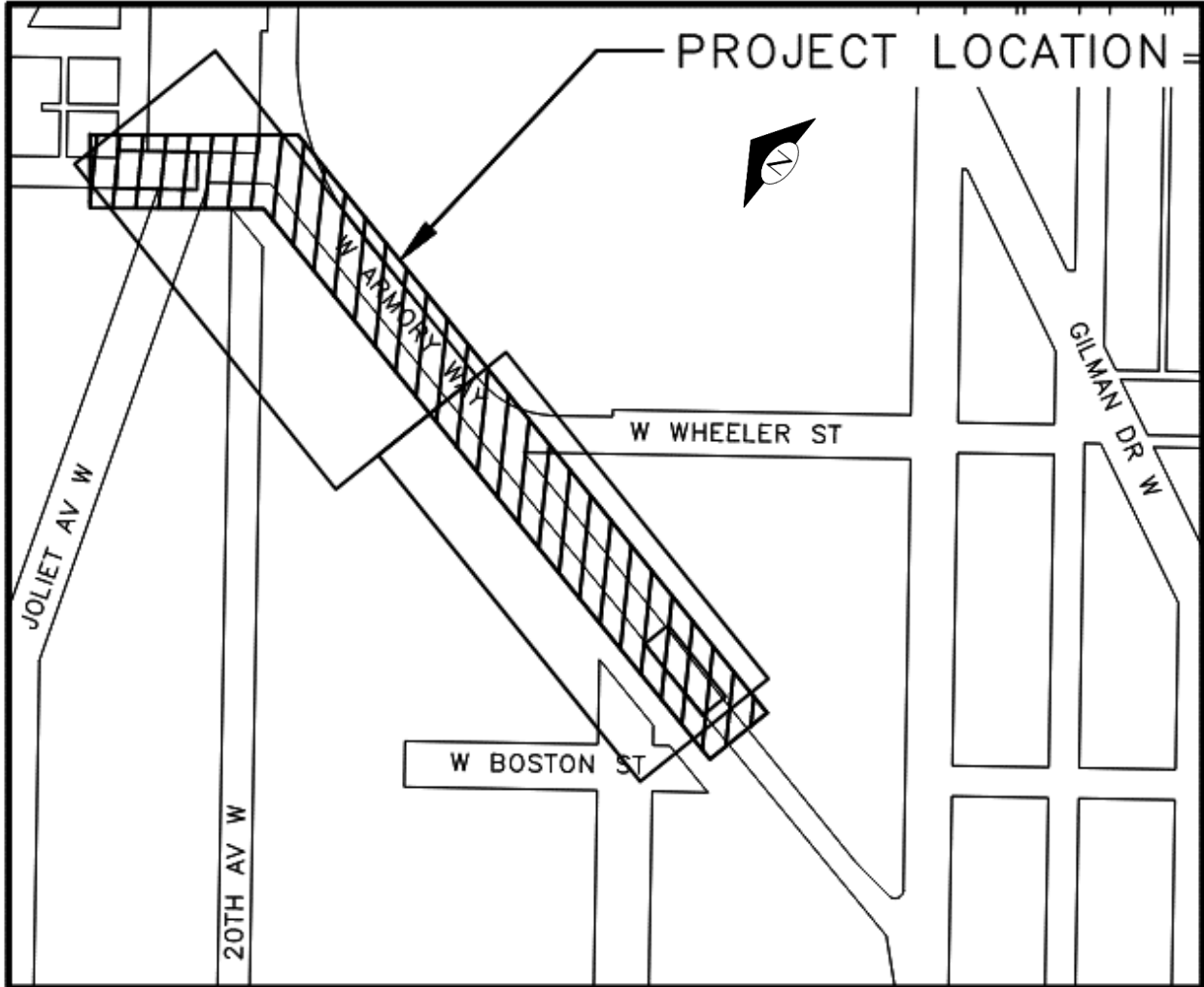
The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature: _____
Kevin Sahara, Project Manager

- Attachment A: Location Map
- Attachment B: Vicinity Map
- Attachment C: Greenhouse Gas Emissions Worksheet

Attachment A: Location Map





Attachment C: Greenhouse Gas Emissions Worksheet

Section I: Buildings						
			Emissions Per Unit or Per Thousand Square Feet (MTCO ₂ e)			
Type (Residential) or Principal Activity (Commercial)	# Units	Square Feet (in thousands of square feet)	Embodied	Energy	Transportation	Lifespan Emissions (MTCO ₂ e)
Single-Family Home	0		98	672	792	0
Multi-Family Unit in Large Building	0		33	357	766	0
Multi-Family Unit in Small Building	0		54	681	766	0
Mobile Home	0		41	475	709	0
Education		0.0	39	646	361	0
Food Sales		0.0	39	1,541	282	0
Food Service		0.0	39	1,994	561	0
Health Care Inpatient		0.0	39	1,938	582	0
Health Care Outpatient		0.0	39	737	571	0
Lodging		0.0	39	777	117	0
Retail (Other than Mall)		0.0	39	577	247	0
Office		0.0	39	723	588	0
Public Assembly		0.0	39	733	150	0
Public Order and Safety		0.0	39	899	374	0
Religious Worship		0.0	39	339	129	0
Service		0.0	39	599	266	0
Warehouse and Storage		0.0	39	352	181	0
Other		0.0	39	1,278	257	0
Vacant		0.0	39	162	47	0
TOTAL Section I Buildings						0

Section II: Pavement						
						Emissions (MTCO ₂ e)
Pavement (sidewalk, asphalt patch)		0.0	50			0
Concrete or Asphalt Pad (50 MTCO ₂ e per 1,000 sq ft of pavement 6 inches deep)		0.5	50			25
TOTAL Section II Pavement						

Section III: Construction						
						Emissions (MTCO ₂ e)
(See detailed calculations below)						
TOTAL Section III Construction						40.6

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

TOTAL GREENHOUSE GAS (GHG) EMISSIONS FOR PROJECT (MTCO₂e)						65.6
---	--	--	--	--	--	-------------

Attachment C: Greenhouse Gas Emissions Worksheet, continued

Section III Construction Details		
Construction: Diesel		
Equipment	Diesel (gallons)	Assumptions
jetter/vactor truck (for pre-cleaning pipe)	88	16 hours/segment x 5.5 gallons/hour (270 hp engine)
excavator	840	120 hours x 7 gallons/hour (345 hp engine)
installation truck	1,100	10 hours/day (2 hours travel + 8 hours working) x 20 working days) x 5.5 gallons/hour (270 hp engine)
front-end loader	840	120 hours x 7 gallons/hour (345 hp engine)
support box truck with hydraulic lift	67	20 working days x 1 round trip/day x 20 miles/round trip ÷ 6 mpg
Subtotal Diesel Gallons	2,935	
GHG Emissions in lbs CO₂e	77,924	26.55 lbs CO ₂ e per gallon of diesel
GHG Emissions in metric tons CO₂e	35.3	1,000 lbs = 0.45359237 metric tons

Construction: Gasoline		
Equipment	Gasoline (gallons)	Assumptions
Pick-up Trucks or Crew Vans	480	60 working days x 4 vehicles x 2 round-trip/day x 20 miles/round trip ÷ 20 mpg
Subtotal Gasoline Gallons	480	
GHG Emissions in lbs CO₂e	11,664	24.3 lbs CO ₂ e per gallon of gasoline
GHG Emissions in metric tons CO₂e	5.3	1,000 lbs = 0.45359237 metric tons

Construction Summary		
Activity	CO ₂ e in pounds	CO ₂ e in metric tons
Diesel	77,924	35.3
Gasoline	11,664	5.3
Total for Construction	89,588	40.6

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

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

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