

SEATTLE PUBLIC UTILITIES
SEPA ENVIRONMENTAL CHECKLIST

This SEPA environmental review of Seattle Public Utilities' On-Call Sewer Lining Contract 21-3 (C600704) 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:

On-Call Sewer Lining Contract 21-3 (C600704)

2. Name of applicant:

Seattle Public Utilities (SPU)

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

Katie Wilson, Project Manager
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206-492-4812; Katie.Wilson@seattle.gov

4. Date checklist prepared:

January 27, 2022

5. Agency requesting checklist:

Seattle Public Utilities

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

Construction is scheduled to start early 2023 conclude by late 2023.

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

SPU currently has no plans for future additions or expansions related to the proposed project.

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.

There are no known pending applications or proposals related to the facilities or properties covered by this proposal.

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

The following permits or approvals would be required for work at various project sites covered under this SEPA checklist, depending on their locations:

- Seattle Parks and Recreation Revocable Use Permit
- SDOT Street Use Permit and/or Minor Utility Permit
- Washington State Department of Transportation (WSDOT) Utility Accommodation Permit
- Shoreline Exemption Approval

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.

Seattle Public Utilities (SPU) is rehabilitating several deteriorated sewer pipes and associated structures through its Sewer Lining Program. These pipes are located in City-owned street rights-of-way or in City easements on private property. This project involves Cured-In-Place-Pipe (CIPP) lining done entirely from the ground surface. There will be no excavation as part of this work. The CIPP process involves accessing the sewer mains at existing upstream and downstream maintenance holes (MHs) and inserting (inverting) a felt and resin pipe liner that is inflated to fit the shape of the existing pipe at the MH access points. The liner is hardened (cured) using ultraviolet (UV) light or steam/water and pipe connections are reinstated using a robotic tool. To complete this project, workers will need to access each MH.

Work typically includes (but is not limited to) traffic control, bypass pumping, cleaning and pre-construction closed circuit television (CCTV) video inspection of sewer pipe, removal of debris, removal of intruding lateral piping and other obstructions, installing pre-liners, installing and molding cured-in-place pipe (CIPP) liners to host pipes, reinstatement of laterals, and post-construction CCTV inspection. Generally, CIPP lining is a "no-dig" operation usually requiring no excavation. However, minor vegetation removal and excavation may be required to locate and access buried MHs and to stage equipment.

Each site includes one to multiple segments of mainline sanitary sewer, combined sewer, or storm drain. For each mainline segment, a CIPP liner would be installed along the entire segment between upstream and downstream MHs. Existing MHs will be used for access during CIPP installation and associated work. This project would rehabilitate a total of 23,000 to 25,000 linear feet of mainline pipe.

Attachment A depicts the general location of these sites. These sites all involve pipe sections that are greater than 12 inches in diameter manufactured of asbestos cement, concrete, reinforced concrete, vitrified clay, or cast iron.

- 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.**

This project will involve multiple sewer sites at the following locations (also shown in Attachment A):

Location No.	Site	Segment	Upstream Endpoint ID	Downstream Endpoint ID	Site Address
1	3	A	050-061	050-060	1729 Alaskan Way S
2	4	A	D050-111	D050-112	2247 East Marginal Way S
3	14	A	058-221	058-222	3025 S Estelle St
4	20	A	058-232	058-233	4421 28th Ave S
5	30	A	064-005	064-315	4975 3rd Ave S
	30	B	064-315	064-002	4800 Denver Ave S
6	31	A	064-036	064-035	416 S Brandon St
7	32	A	063-080	063-079	78 S Lucile St
8	48	A	081-011	080-471	5119 S Rose St
9	50	K	081-064	081-062	8314 Island Dr S
10	56	A	080-358	080-357	9102 50th Ave S

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 project area encompasses multiple sites in the City of Seattle, many of which are within the vicinity of steep slope areas, which may be accessed by project work due to proximity. However, no sites covered by this checklist are located on or directly adjacent to Steep Slope Areas.

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 locations (Troost *et al.* 2005, available at <http://pubs.usgs.gov/of/2005/1252/>) indicates the project sites are underlain primarily by Vashon till and recessional outwash deposits. No soils are expected to be removed as part of the project.

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

The Seattle Department of Construction and Inspections (SDCI) GIS map (<https://seattlecitygis.maps.arcgis.com/apps/webappviewer/index.html?id=f822b2c6498c4163b0cf908e2241e9c2>) indicates that none of the project sites covered by this checklist are adjacent to Steep Slope or Steep Slope Buffer Environmentally Critical Areas (ECA). There are no project sites within 100 feet of Potential Slide Area ECAs.

All the sites except Site 20A are located within or immediately adjacent to Liquefaction Prone Area ECAs. However, as the sewer lining repair process involves work internal to existing facilities, construction would not negatively impact or be affected by liquefiable soils.

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.

The project would not require filling, excavation, or grading.

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

Some erosion could occur as a result of construction staging and access. However, access to the vegetated areas would be by foot traffic and vegetation clearing would be done by hand-carried equipment. Therefore, the project would have minimal surficial ground-disturbance impact across the sites. Minimal erosion and sedimentation may occur across the sites as a result of this minor ground disturbance.

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

The proposed work would not result in an increase in impervious surfaces. Any disturbance to roadway, shoulder, or property caused by the staging of vehicles and equipment would be restored to their original condition or better.

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 areas. The risk of erosion and sedimentation is low because minimal clearing and disturbance is proposed. Best Management Practices (BMPs) consistent with the City of Seattle's stormwater management regulations and construction standard requirements would be used to manage construction disturbance and stormwater runoff to minimize erosion and sedimentation. All project construction work would be performed in accordance with an approved temporary erosion and sedimentation control (TESC) plan. Any disturbed vegetated areas would be revegetated.

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.

In certain CIPP applications, installation generates fumes from curing of resin (mainly styrene, but possibly including minor amounts of acetone; benzene; chloroform; isopropylbenzene; methylene chloride; methyl ethyl ketone; N-propylbenzene; 1,2,4-trimethylbenzene [TMB]; 1,3,5-TMB); and other substances (see also Section B7, Environmental Health). Workers would be trained on proper material handling practices and responses in the event of exposure for these materials. Workers would wear appropriate personal protective equipment (PPE) during construction.

Construction would generate greenhouse gas emissions 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 total duration of 40 working-days for the 10 sites; actual times may be less. The project’s direct greenhouse gas emissions related to construction are presented as total metric tons of carbon dioxide equivalent (MTCO_{2e}), calculated in Attachment B, and summarized in Table 1. Total greenhouse gas emissions for the project are estimated to be about 6.70 MTCO_{2e} per site, where 1 metric ton is equal to approximately 2,205 pounds. The total for all 10 sites covered by this checklist would be approximately 67.0 MTCO_{2e}. The completed project would have no GHG or other air emissions.

Activity/Emission Type	GHG Emissions (pounds of CO_{2e})¹	GHS Emissions (metric tons of CO_{2e})¹
Buildings	0	0
Paving	0	0
Construction Activities (Diesel)	12,637.8	5.73
Construction Activities (Gasoline)	2,138.4	.97
Long-term Operation/ Maintenance (Diesel)	0	0
Long-term Operation/Maintenance (Gasoline)	0	0
Total GHG Emissions per site	14,776.2	1
Total GHG Emissions (10 sites)	147,762	67.0

¹Note: 1 metric ton = 2,204.6 pounds of CO_{2e}. 1,000 pounds = 0.45 metric tons of CO_{2e}

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

No off-site sources of emissions or odors that would affect the project are known.

- 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, develop an odor control plan, ensure proper vehicle maintenance, and minimize 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.**

Lake Washington is within the immediate vicinity of Site 50K. Lake Washington flows through the Lake Washington Ship Canal, including Union Bay and Lake Union, to Shilshole Bay in Puget Sound.

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

Site 50K is located within 200 feet of Lake Washington. Work will be internal to the sewer pipe as described in Question A.11 above and will not require any in water or over water work.

- (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.**

The project site is not in a 100-year floodplain.

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

The project would not 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.**

No groundwater withdrawals are planned.

- (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.**

This project would not discharge waste material from septic tanks or other sources into 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.**

No site disturbance is anticipated. Runoff is not anticipated to be altered due to the scope of work. Stormwater runoff may need to be managed during construction to prevent sediment from entering and leaving the construction site. Any precipitation that lands on the construction site would be contained on-site and allowed to infiltrate. Barriers such as sandbags would be used to prevent runoff from entering the construction zone. Once construction is complete, temporary erosion control measures would be removed. The completed project would not create a need to manage additional stormwater runoff beyond current conditions. Stormwater would follow pre-construction pathways. The current volume, timing, and duration of these stormwater flows are not known.

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

No part of the proposed work involves any discharges of waste materials to surface or ground waters. However, non-sediment pollutants that may be present during construction include petroleum products such as fuel, lubricants, hydraulic fluids, and oils from construction vehicles and equipment. These waste materials could enter surface waters for those sites near waterbodies in the event of a spill. Procedures to prevent spills and control pollutants such as these would be described in the Spill Plan.

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

There is no site disturbance anticipated. The proposed work would not alter or otherwise affect drainage patterns.

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

No adverse impacts to surface water, groundwater, runoff water, or drainage are anticipated. The project would not create any new impervious surfaces that would create stormwater runoff. BMPs consistent with the City of Seattle’s stormwater management regulations and construction standard specifications would be used to protect the existing stormwater drainage system, manage construction disturbance and stormwater runoff, and minimize erosion and sedimentation.

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: Japanese Zelkova
<input checked="" 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: (identify)
<input type="checkbox"/> Other types of vegetation:				

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

The project anticipates surficial ground-disturbance to remove or cut back vegetation covering MHs in previously disturbed transportation rights-of-way and properties for the sites listed in the table for question A.12. Disturbed vegetation would be restored to pre-project conditions. Existing trees would be protected.

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

According to the Washington Department of Natural Resources (WDNR) (accessed at www.dnr.wa.gov), no federally listed endangered or threatened plant species or State-listed sensitive plant species are known to occur within the municipal limits of the City of Seattle.

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

The proposed work would limit plant removal, pruning, and other vegetation disturbance to the minimum required to access MHs. Most of the proposed work is in transportation rights-of-way and would affect paved surfaces outside of street tree canopy driplines. 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.

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

The King County Noxious Weed Program (available at King County iMap interactive online mapping program, <http://gismaps.kingcounty.gov/iMap/>) identifies Dalmatian toadflax near site 3A (1729 Alaskan Way S) of the project and lesser celandine near site 50K (8314 Island Drive S). Both species are Class B noxious weed species 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:

Birds: Hawk Heron Eagle Songbirds
 Other: Expected birds include those typical of urbanized portions of the greater Seattle area, including songbirds and crows.

Mammals: Deer Bear Elk Beaver
 Other: Expected mammals include those typical of urbanized portions of the greater Seattle area, including raccoons, squirrels, and rodents.

Fish: Bass Salmon Trout Herring
 Shellfish Other: Freshwater species in Lake Washington such as perch, stickleback, and sunfish.

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

The Washington Department of Fish and Wildlife Habitat and Species map (October 2021) does not indicate the presence of any known threatened or endangered species on or near the project sites.

While there are threatened and endangered species within the marine and freshwater waterbodies within Seattle, including Puget Sound steelhead, Puget Sound Chinook salmon, and bull trout, projects within the shoreline zone are not anticipated to adversely impact any in-water species.

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

The Seattle area is in the migratory route of many birds and other animal species and is part of the Pacific Flyway, a major north-south route of travel for migratory birds in the Americas extending from Alaska to Patagonia, South America. Also, Puget Sound 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 and other vegetation disturbance to the minimum required to access MHs as needed on project sites. Construction limits would be clearly and physically delineated to prevent unauthorized trespass and collateral damage to nearby vegetation or environmentally sensitive habitats. All removed turf and shrubs would be restored as required. Project work would be performed in accordance with applicable City of Seattle water quality regulations and construction BMPs.

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 the county (<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 energy beyond energy already utilized for the existing sewer system.

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:

As the project would not impact energy or natural resources, there are no conservation features or proposed measures to reduce or control energy 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. No disturbance of contaminated soils is anticipated at any project sites. The pipes affected would be sealed from the inside such that no excavation of soils is anticipated.

CIPPs are manufactured using either thermal curing (hot water or steam) or photo curing (ultraviolet [UV] light) methods. The proposed CIPP work at all sites would use UV light to cure the resin. The photo curing installation process uses liners impregnated with a mixture of unsaturated polyester resins and other compounds that cures upon exposure to UV light. Once the liner has been exposed to UV light, the liner hardens inside the existing deteriorated pipe to create a new pipe-within-a-pipe.

Because UV curing CIPP technology is relatively new, limited research has been conducted regarding its potential chemical emissions into the air or water during installation or released into water after installation. Because the chemical emissions

resulting from use of this technology are poorly known, the environmental effects related to Environmental Health are difficult to evaluate. However, chemical emissions into the environment by both thermal and UV curing CIPP technologies have been identified as concerns for worker safety, public safety, and the environment. During installation and post-installation, UV-cured CIPP installations release a variety of organic compounds such as carcinogens, endocrine-disrupting compounds, and hazardous air pollutants—including phenol, styrene, dibutyl phthalate, and possibly ozone¹.

Except for styrene, the total maximum exposures for these and other hazardous or potentially hazardous compounds released into the environment by the proposed work are unknown and have not been evaluated for purposes of this SEPA environmental review. For styrene, photo-curing methods are generally acknowledged to result in lower styrene emissions than thermal curing methods. Styrene has been determined by the federal government to be “a reasonably anticipated carcinogen.” SPU anticipates that total maximum exposures resulting from the UV-curing process would be on the order of a few ppm at each site, at most, during a period of several hours. This exposure is well below the Occupational Safety and Health Administration’s (OSHA’s) established regulatory styrene exposure limit (Permissible Exposure Limit [PEL]) of 100 ppm for healthy adult workers in the workplace (8 hours per day, 5 days per week). OSHA’s air regulatory exposure limit for styrene is not protective of infants, children, or immunocompromised individuals who would be more susceptible to chemical toxicity. Based on risk assessments by the United States and the Netherlands, the International Toxicity Estimates for Risk (ITER) values for styrene for these susceptible populations range from 20 to 25 ppm.

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

No known contamination of soil or groundwater has been identified. However, it is possible that contamination of soil or groundwater associated with past uses or activities on or near a site may be present. The project does not involve excavation.

(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.

Non-sediment pollutants that may be present during construction include:

- Petroleum products including fuel, lubricants, hydraulic fluids, and form oils
- Paints, glues, solvents, and adhesives
- 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.

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

Workers would conduct the proposed work by entering the maintenance holes at the various project sites. Workers would be required to follow State of Washington safety standards for entry and work in confined spaces (WAC Chapter 296-809), which includes requirements for atmospheric testing in a confined space structure prior to entry and work in the structure. A standby emergency responder crew would be notified prior to entering the pipe and proper safety equipment would be used. Prior to conducting the work, the Contractor would be required to submit a health and safety plan that includes confined space entry and work procedures.

The completed project would not require higher levels of special emergency services than already exist throughout the site locations.

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

The construction contractor would be required to develop and implement a Spill Plan to control and manage spills during construction. During construction, the contractor would use standard operating procedures and BMPs identified in the City of Seattle's stormwater management regulations and construction standard requirements to reduce or control any possible environmental health hazards. In addition, a spill response kit will 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.

Additionally, workers would be required to follow State of Washington safety standards for entry and work in confined spaces (WAC Chapter 296-809), which includes requirements for atmospheric testing in a confined space structure prior to entry and work in the structure. SPU workers operating and maintaining the completed project would be required to follow requirements of SPU's Confined Space Safety Program, which implements requirements of WAC Chapter 296-809. To ensure workers are not exposed to unsafe concentrations of gases or vapors or harmful substances that can be present in sewer lines, flows would be bypassed around the work area as needed to facilitate construction. Workers would wear appropriate personal protective equipment (PPE) during construction.

b. Noise

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

Noises that exist in the affected sites 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 all project construction sites 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 of the project would comply with requirements of applicable noise control laws and regulations addressing maximum noise levels and the days/hours during which noise-generating construction work is allowed, including the City of Seattle Noise Control regulations (SMC Chapter 25.08), and/or other applicable noise ordinances and regulations.

SPU and its contractors are required to comply with the Washington Industrial Safety and Health Act of 1973 (Chapter 49.17 RCW) and implement Hearing Loss Prevention regulations adopted by the Washington Department of Labor and Industries (Chapter 296-817 WAC) to limit construction worker noise exposure. Actions taken to achieve this, while used primarily to limit construction worker noise exposure, may also help reduce or mitigate overall noise levels emanating from the project sites and may include pre-planning site work to minimize magnitude and duration of on-site construction operations; selecting the quietest/smallest equipment able to do the job; installing noise mufflers on engines and high pressure air exhausts; using temporary barriers and equipment covers; and ensuring construction equipment is properly maintained by changing seals, lubricating machinery contact surfaces, and replacing worn parts.

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 involves a variety of sites which encompasses a variety of land uses, including but not limited to residential, commercial, and industrial. The project will not affect current land uses on nearby or adjacent properties.

- 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 sites have not recently been used as working farmlands or forest lands.

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

The project sites do not have surrounding farm or forest lands.

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

Project work across most sites would be in improved public transportation rights-of-way. There are no existing structures in areas directly affected by project construction. However, there are numerous structures located near the project sites.

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

The project would not demolish above-ground structures.

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

The project involves a variety of sites, which encompass a variety of zoning classifications and properties. Zoning for project sites includes single family residential zones, high density multi-family zones, downtown zones, commercial zones, neighborhood commercial zones, and industrial zones.

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

The project encompasses a wide variety of sites; most sites are located in Manufacturing Industrial Center areas; however, sites also include Urban Center, Hub Urban Village, Residential Urban Village, Commercial / Mixed Use Areas, and Neighborhood Residential Areas.

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

Site 50K is within the Conservation Recreation Shoreline Zone of Lake Washington. The remaining sites are outside the Shoreline Zone.

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

The Seattle Department of Construction and Inspections (SDCI) GIS map (<https://seattlecitygis.maps.arcgis.com/apps/webappviewer/index.html?id=f822b2c6498c4163b0cf908e2241e9c2>) indicates that all the sites except Site 20A are located within or immediately adjacent to Liquefaction Prone Area ECAs. In addition, Site 56A is adjacent to a Category 2 Peat Settlement Prone Area ECA. However, as the sewer lining repair process involves work internal to existing facilities, construction would not negatively impact or be affected by liquefiable soils or peat settlement prone areas. There are no other ECAs present on or adjacent to the project sites.

- 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 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:

No measures are proposed because there are no agricultural or forest lands of long-term commercial significance on or near the project.

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?

Most project work would occur at or below ground level. No new above-ground structures would be constructed.

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:

If disturbed, parking strip vegetation and vegetation in other areas would be restored as required.

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. If the construction contractor elects to work after dark, the contractor or SPU may deploy portable lights that temporarily produce light and glare at the discretion and approval of SDOT Inspectors.

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 the contractor elects to work after-dark, portable lighting would be adjusted as feasible to minimize glare. Lighting plan will be at the discretion and approval of SDOT Inspectors.

12. Recreation

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

The project encompasses various sites, and sidewalks and streets near the sites allow for informal recreation such as walking, jogging, and cycling. Site 50K is located on the far northeast corner of Pritchard Island Beach Park; however, the area is heavily vegetated and does not provide recreational opportunity.

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

The proposed work at all project sites would not permanently displace existing recreational uses. Project construction activities could result in short-term, temporary access restrictions or detours affecting vehicle, bike, and pedestrian routes/access.

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

The project may have short-term, temporary impacts to parking, vehicle access, and recreational activity due to temporary travel lane and/or street closures or detours at various project sites. Project notifications 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 public streets, sidewalks, parks, and trails in advance with the SDOT
- Comply with required SDOT Street Use Permits issued for the project

- Ensure safe pedestrian and bicycle routes are maintained at all times consistent with approved street use permits, and traffic control plans; and
- Place temporary project signs along affected streets and sidewalks prior to project construction to provide residents with advance notice regarding temporary street, sidewalk, and trail closures and detours.
- For some sites additional coordination will be done with property owners who will be more affected by sewer bypass and pumping.

13. Historic and Cultural Preservation

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

The project will affect sites in various locations, none of the sites included on this checklist are listed in a national, state, or local preservation registers. Additionally, the project will not disturb any buildings or structures.

- 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 sites. The Washington State Department of Archaeology and Historic Preservation's Landscape Predictive Model indicates that project sites are in an area which ranges from Moderate to Very High Risk for discovery of cultural resources.

- 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 the project is on or near properties listed, or documented to be eligible for listing, on federal, state, or local cultural/historical registers, the project location was checked against these registers on October 21, 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)
- Landmark List, and Map of Designated Landmarks, maintained by the City of Seattle Department of Neighborhoods

<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.**

As project construction activities would take place within existing sewer lines and would not involve any ground disturbance, proposed work would not affect historic properties or known (or unknown) cultural resources. The project sites are in areas that have been previously disturbed to construct the existing sewer infrastructure and other unrelated developments along utility or public transportation rights-of-way, which minimizes chances of encountering contextually significant archaeological materials.

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 sites are located on a variety of roadways, including non-arterial roadways, principal arterials, and transit routes. Temporary street closures and detours may need to occur on roadways as project work is being done to allow access to maintenance holes.

- 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 sites are served by multiple public transit agencies/services, including King County Metro bus service and Sound Transit bus service. The project may require that bus stops be temporarily closed or moved during work on those specific sites.

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

The completed project would neither create nor eliminate any parking spaces, although there may be temporary parking closures depending on site location. The specific timing and duration of parking closures are not known at this time, but such closures would comply with relevant policies and requirements administered by SDOT.

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

No streetscape work is planned because no site disturbance is anticipated.

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

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

- f. How many vehicular trips per day would be generated by the completed project 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 approximately 18-22 vehicle round trips per day, per project site. Most of those trips would occur during business hours (between 7 a.m. and 6 p.m.) on weekdays (Mondays through Fridays). The completed project would not generate additional vehicle round trips beyond what would normally be generated by the operation and maintenance of this asset.

- 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 is not expected to 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 submit a traffic control plan for each site for approval and enforcement by SPU and SDOT.
- SPU would conduct public outreach before and during project construction to notify residents, local agencies, Metro, and other stakeholders of work progress and expected disruptions or changes in traffic flow.
- Access for emergency-response vehicles would be maintained at all times.
- Through access may not be available at all times during construction, but temporary closures would be minimized and detour routes would be properly and clearly signed.
- 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 project would not create an increased need for public services.

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

No impacts on public services are anticipated and no mitigation measures are proposed.

16. Utilities

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

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

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

The proposed project is anticipated to enhance the life and serviceability of critical sewer line assets and would continue to be owned, operated, and maintained by SPU. During CIPP installation, sewer service would be interrupted for brief periods to install and then disconnect a bypass around the affected mainline. SPU would notify affected residents and businesses by issuing Service Disruption Notices (in the form of door hangers) at least 48 hours before those outages occur.

Proposed construction activities are not expected to interrupt, relocate, 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. In addition, some residents may need to place their curbside garbage and recycling containers in front of an adjacent neighbor's house on garbage pick-up days. No other interruptions to regular utility services are expected during construction.

C. SIGNATURE

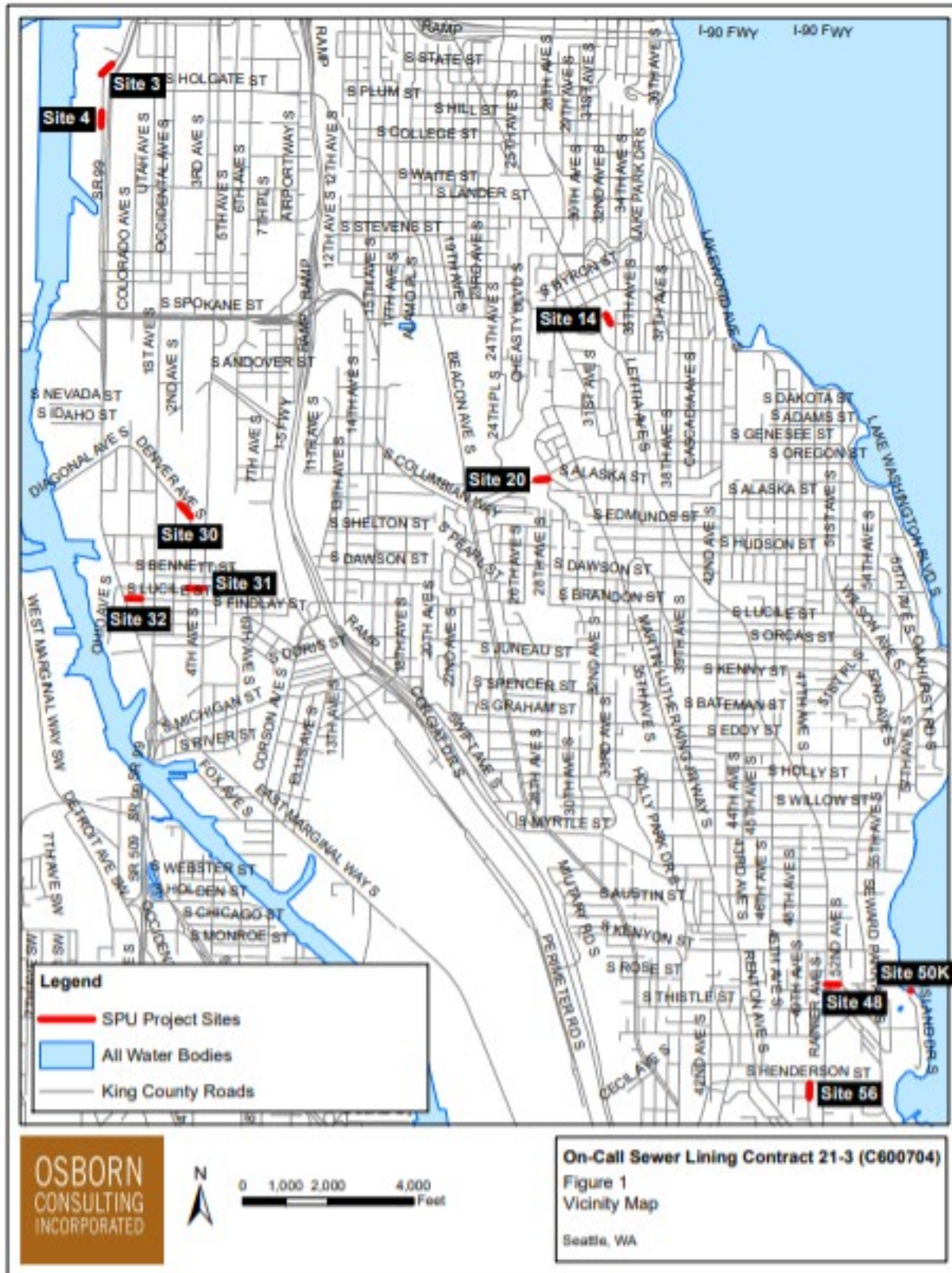
The above answers are true and complete to the best of my knowledge. I understand the lead agency is relying on them to make its decision.

Signature: _____
Katie Wilson, Project Manager

Attachment A: Vicinity Map

Attachment B: Greenhouse Gas Emissions Worksheet

Attachment A: Vicinity Map



Attachment B: Greenhouse Gas Emissions Worksheet

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

Section II: Pavement						
						Emissions (MTCO_{2e})
Pavement (sidewalk, panels, asphalt patch)		0				0
Concrete Pad (50 MTCO _{2e} /1,000 sq. ft. of pavement at a depth of 6 inches)		0				0
TOTAL Section II Pavement						0

Section III: Construction	
(See detailed calculations below)	Emissions (MTCO_{2e})
TOTAL Section III Construction (per site)	6.70

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

TOTAL GREENHOUSE GAS (GHG) EMISSIONS FOR EACH PROJECT SITE (MTCO_{2e})	6.70
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Attachment B: Greenhouse Gas Emissions Worksheet (continued)

Section III Construction Details (per site)		
Construction: Diesel		
Equipment	Diesel (gallons)	Assumptions
1 large Vactor Truck	112	4 working days x 7 round-trips x 1 vehicle x 20 miles/round-trip ÷ 5 mpg
1 refrigeration truck	112	4 working days x 7 round-trips x 1 vehicle x 20 miles/round-trip ÷ 5 mpg
1 installation rig w/ compressor and bypass pump	112	4 working days x 7 round-trips x 1 vehicle x 20 miles/round-trip ÷ 5 mpg
1 supporting installation box truck	140	4 working days x 7 round trips x 25 miles/round trip ÷ 5 mpg
Subtotal Diesel Gallons	476	
GHG Emissions in lbs CO₂e	12,637.8	26.55 lbs CO ₂ e per gallon of diesel
GHG Emissions in metric tons CO₂e	5.73	1,000 lbs = 0.45359237 metric tons

Construction: Gasoline		
Equipment	Gasoline (gallons)	Assumptions
Pick-up trucks or crew vans (2)	48	4 working days x 2 vehicles x 3 round-trip/day x 40 miles/round-trip ÷ 20 mpg
Misc. hand equipment (2)	40	4 working days x 10 hours x 2 pieces of equipment x 0.5 gal/hour
Subtotal Gasoline Gallons	88	
GHG Emissions in lbs CO₂e	2,138.4	24.3 lbs CO ₂ e per gallon of gasoline
GHG Emissions in metric tons CO₂e	.97	1,000 lbs = 0.45359237 metric tons

Construction Summary		
Activity	CO₂e in pounds	CO₂e in metric tons
Diesel	12,637.8	5.73
Gasoline	2,138.4	.97
Total for Construction per Site	14,776.2	6.70

Section IV Long-Term Operations and Maintenance Details		
Operations and Maintenance: Diesel		
Equipment	Diesel (gallons)	Assumptions
Maintenance Operation (truck)	0	
Subtotal Diesel Gallons	0	
GHG Emissions in lbs CO₂e	0	
GHG Emissions in metric tons CO₂e	0	

Operations and Maintenance Summary		
Activity	CO₂e in pounds	CO₂e in metric tons
Diesel	0	0
Gasoline	0	0
Total Operations and Maintenance	0	0