SEATTLE PUBLIC UTILITIES
SEPA ENVIRONMENTAL CHECKLIST

This SEPA environmental review of Seattle Public Utilities' Broadview 12th Ave NW Drainage Improvements 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:

Broadview 12th Ave NW Drainage Improvements Project

2. Name of applicant:

Seattle Public Utilities (SPU)

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

Grace Manzano, Project Manager
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Project Delivery and Engineering Branch
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4. Date checklist prepared:

September 10, 2020

5. Agency requesting checklist:

Seattle Public Utilities (SPU)

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

Construction is scheduled to begin in June 2021, with mobilization to both project locations in August 2021. Construction in both locations would occur concurrently. The project is anticipated to be substantially complete by March 2022. Project commissioning and plant establishment would then occur through April 2023.

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

The Broadview 12th Ave NW Drainage Improvements Project (hereafter, 'project' or 'proposal') is part of SPU's Broadview Sewer and Drainage Improvement Program, which has an overall goal of improving the level of service in the City of Seattle's Broadview neighborhood by reducing sanitary sewer backups, sanitary sewer overflows, and surface water flooding. The Broadview Sewer and Drainage Improvement Program includes phased

sewer and drainage improvement projects in the 12th Ave NW sewer basin and the Dayton Ave N sewer basin. The Program contemplates future capital construction projects that have not yet been identified.

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

Publicly Available Documents

Brown and Caldwell. 2020. Draft Basis of Design Report, 12th Ave NW Drainage Improvements (Revision 1). July .

Herrera Environmental Consultants. 2020. Environmentally Critical Areas Report, Broadview 12th Ave NW Drainage Improvements Project. August.

Shannon and Wilson. 2014. Broadview Sewer and Drainage Improvements Project Data and Preliminary Interpretation Report 12th Ave NW Drainage Studies. May.

SPU. 2019. Draft Geotechnical Report, Broadview Sewer and Drainage Improvements 12th Ave Basin. March.

SPU. 2016. Broadview Groundwater Conveyance Reconnaissance Drainage Investigation Fact Sheet. December.

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.

No applications are known to be pending for governmental approvals of other proposals directly affecting the property covered by this proposal.

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

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

City of Seattle Departments of Transportation (SDOT)

- Construction Use Permit (type 31 for construction in street rights-of-way [ROW])
- Street Improvement Permit (SIP) for non-combined sewer overflow projects

City of Seattle Department of Construction and Inspections (SDCI):

- Variance from the City of Seattle noise ordinance if construction outside of authorized hours is necessary

SPU

- Side Sewer Permit/Side Sewer Permit for Temporary Dewatering
- Stormwater Code Compliance

King County

- Puget Sound Air Pollution Control Agency Notice of Construction
- Industrial Waste Discharge Permit

Washington State Department of Archaeological and Historic Preservation

- National Historic and Preservation Act Section 106 compliance (linked to Clean Water Act [CWA] Section 404 permit)

Washington State Department of Ecology (Ecology)

- National Pollutant Discharge Elimination System (NPDES) Construction Stormwater General Permit
- CWA Section 401 Water Quality Certification (linked to CWA Section 404 Permit)

Washington Department of Fish and Wildlife (WDFW)

- Hydraulic Project Approval (HPA)

US Army Corps of Engineers (Corps)

- CWA Section 404 Nationwide Permit authorization

US Fish and Wildlife Service and/or National Marine Fisheries Service

- Endangered Species Act (ESA) compliance (linked to CWA Section 404 Permit)
- Magnuson-Stevens Fishery Conservation and Management Act compliance (Essential Fish Habitat) (linked to CWA Section 404 Permit)

11. Give a brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page.

The Broadview neighborhood of the City of Seattle is currently served by an informal drainage network involving ditches, culverts, and sandboxes as opposed to a formalized drainage network involving pipes, catch basins, junction boxes, and inlets. Sandboxes are wooden-lidded boxes filled with sand or gravel; they drain directly into the ground or to a culvert as part of the informal ditch and culvert network. Stormwater is collected, conveyed, and eventually discharged to Mohlendorph Creek, a tributary to the Puget Sound tributary Pipers Creek.

Portions of the Broadview neighborhood experience localized flooding when the informal drainage system overtops during certain storm events. During more intense storm events, storm flows leave the public ROW and enter private property, sometimes flooding private structures. The 12th Ave NW Drainage Improvements Project would address localized flooding in the West Fork Mohlendorph Creek watershed and water quality in Mohlendorph Creek by improving the drainage system.

The West Fork Mohlendorph Creek watershed starts near NW 135th Pl and drains southwest, encompassing a large area west of 8th Ave NW and south of 125th Ave NW. The creek receives most of the stormwater runoff from the area south of NW 132nd St. Based on modeling, storm flows from this area are currently expected to overtop ditches and culverts and enter adjacent roadways more than once annually (on average) and enter some private parcels once every 1 to 7 years (on average).

The project would build two main types of new storm system improvements: natural drainage systems (bioretention swales) to detain flows and provide water quality treatment, and a

combination of conveyance pipes and large underground storage pipes (grey infrastructure) to hold water and help protect against flooding during storms. These improvements would be built under the same construction contract

The new piped system and natural drainage systems would be designed to meet a 25-year level of service. This means based on historical rainfall data that the system should only be overwhelmed by a significant storm event about once every 25 years on average. When this happens, flooding would occur in similar patterns as experienced now.

All proposed natural drainage facilities would be in street ROWs between the roadway edge of pavement and parcel property lines. Bioretention swales would include three inches of mulch atop 18 inches of bioretention soil media and a 6-inch diameter underdrain pipe connected to existing drainage infrastructure. The crown of the underdrain pipe would be separated from the bioretention media with a minimum 6 inches of a polishing medium that removes certain chemicals, hydrocarbons, and odors. Ponding depth would range between two and six inches with four to six inches of freeboard. The project would include the following natural drainage system improvements:

a. Install bioretention cells and associated infrastructure on the north side of NW 130th St between 3rd Ave NW and 1st Ave NW, including conveyance improvements at the intersections of 1st Ave NW, 2nd Ave NW, and 3rd Ave NW;
b. Install bioretention cells and associated infrastructure on the south side of NW 127th St between 3rd Ave NW and 1st Ave NW including conveyance improvements at the intersections of 1st Ave NW, 2nd Ave NW, and 3rd Ave NW;
c. Install curb bulbs with bioretention, including associated infrastructure at the northeast corner of NW 130th St and 1st Ave NW and replacing a portion of existing curb and gutter sidewalk;
d. Widen NW 127th St to provide an extra 2.5 to 3.5 feet to the through lane and add a new asphalt-thickened edge (one foot) to formalize roadway drainage;
e. Adjust existing utilities (including gas mains and services) as required to install proposed improvements;
f. Remove existing pavement to allow construction of proposed improvements;
g. Install new Americans with Disabilities Act (ADA)-compliant curb ramps at intersections with vertical curbs, where required by SDOT;
h. Install new ADA-compliant detectable warning plates at curbless intersections, where required by SDOT; and
i. Restore pavement.

The proposed conveyance and storage improvements would be connected with and designed to work with existing stormwater drainage infrastructure. Asphalt-thickened edges or berms would be installed, as needed, to prevent stormwater runoff from the street from flowing

onto private property and direct flow to an inlet to the upsized conveyance system. Once collected, flows would be conveyed to an existing outfall to West Fork Mohlendorph Creek. The project would include the following stormwater conveyance and storage improvements:

a. Install new conveyance infrastructure along segments of NW 125th St, 10th Ave NW, NW 122nd St, and 11th Ave NW

b. Install new large-diameter detention pipes on 10th Ave NW (between NW 122nd and NW 125th streets) and 11th Ave NW (south of NW 122nd St)

c. Install new asphalt-thickened edge on NW 125th St, 10th Ave NW, and 11th Ave NW would allow surface runoff to be conveyed to downstream drainage structures

d. Install storm drain collection structures and associated infrastructure

e. Adjust existing utilities (including gas mains and services) as required to install the proposed improvements

f. Remove existing pavement to allow construction of proposed improvements

g. Restore pavement, and

h. Restore planting strips.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

The project would be constructed in the Broadview neighborhood of the City of Seattle, King County, Washington (Sections 24 and 25, Township 26 North, Range 03 East). There is no specific address for this project. Natural drainage improvements would be constructed in these street ROWs:

- NW 130th St between 3rd Ave NW and Greenwood Ave N
- NW 127th St between 3rd Ave NW and 1st Ave NW

Stormwater conveyance and storage improvements would be constructed in these street ROWs:

- NW 125th St from 6th Ave NW to 10th Ave NW
- 10th Ave NW from NW 125th St to NW 122nd St
- NW 122nd St from 10th Ave NW to 11th Ave NW
- 11th Ave NW to NW 120th Street

See Attachments A and B for a Vicinity Map and Site Plan of the project locations, respectively.

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 sites where natural drainage systems would be constructed gradually slope to the west, and typical work areas are flat or have moderate slopes (less than 10 percent).

The sites where stormwater conveyance and storage improvements would be constructed slopes to the west and south. The corridor along NW 125th Ave has moderate slopes (less than 10 percent) that decrease where the project intersects 10th Ave NW. The south end of the project area on 11th Ave NW descends gently to the west and ends near the top of a steep slope above West Fork Mohlendorph Creek. An existing stormwater outfall pipe is surface-mounted on that steep slope (approximately 50 percent) and discharges to the creek.

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.

General geologic conditions of the Puget Sound region are a result of glacial and non-glacial activity that occurred over the course of millions of years. The geotechnical report (SPU 2019) indicates surficial geologic conditions below the top layer (fill/topsoil/pavement) in the project locations consist of Vashon Recessional Lacustrine deposits, Vashon Recessional Outwash deposits, and Vashon Glacial Till deposits. Fine silts and clays associated with recessional lacustrine deposits underlay a layer of fill material approximately 4.5 feet deep in the project area. Urban development in this area over the last 100 years has resulted in a predominance of disturbed native soils/sediments, cut slopes, and large placements of surficial fill material. Except for some areas of steep slopes, most of the project location and immediately surrounding area have been completely developed and disturbed in this way.

Lacustrine deposits are approximately 5.5 feet deep and are above or imbedded with recessional outwash deposits that are a few inches to 20 feet deep. Recessional outwash deposits consist predominately of moderately to well-sorted sands with varying amounts of gravel interbedded with cobbles.

Vashon subglacial till underlies recessional deposits throughout most of the project area. The till layer is unusually thick and extends to depths between 30 and 50 feet below the recessional outwash. Vashon till consists of medium dense to very dense sand with varying amounts of silt and gravel (“hardpan”) with various amounts of sub-rounded to well-rounded gravel and cobbles.

Vashon advanced outwash underlies Vashon subglacial till in a narrow area extending north to south between 10th Ave NW and 8th Ave NW. Advanced outwash deposits consist predominately of silty sand with various amounts of sandy gravel interbedded with poorly to well-sorted cobbles and boulders.

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

The project locations are on a bluff landform that rises about 250 feet above Puget Sound at steep to precipitous inclinations. The BNSF Railway Company (BNSF) mainline is on an embankment about 20 feet above Puget Sound at the toe of the bluff. This is a chronic landslide area where BNSF has completed major remedial construction projects to reduce landslope instability. Steep Slope, Steep Slope Buffer, and Potential Slide Environmentally Critical Areas (ECAs) are associated with this bluff and with West Fork Mohlendorph Creek, as mapped by the City of Seattle (http://seattlecitygis.maps.arcgis.com/apps/webappviewer/index.html?id=f822b2c6498c4163b0cf908e2241e9c2). Known Slide ECAs are also mapped along the BNSF mainline and adjacent to 12004 10th Ave NW.

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 have the following areas and volumes of filling, excavation, and grading:

Filling, Excavation, and Grading	Natural Drainage Systems	Conveyance	Total
Excavation and grading area (SF)	38,500	27,250	65,750
Excavation and grading volume (CY)	1,100	8,200	9,300
Bioretention Soil volume (CY)	300	0	300
Soil and trench backfill volume (CY)	780	7,000	7,780

Excavation and backfill is required to excavate the trench for the new pipes, install pipe bedding, trench backfill, excavate the bioretention cells, install bioretention media, and landscaping media. Imported fill materials would be obtained from a commercial purveyor of such materials, licensed and permitted by the State of Washington. Exported excavated soil materials would be either reused on other projects or disposed of in an SPU-approved upland disposal per construction contract requirements.

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

As is common to all construction projects, erosion could occur due to trenching, ditch reshaping, stockpiling, and other ground-disturbing activities. Potential for erosion would be minimized by deployment of best management practices (BMPs). All proposed construction would be required to comply with an SPU-approved construction erosion and sedimentation control (CESC) plan and meet NPDES construction stormwater permit requirements, as applicable.

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

Pre- and post-construction surfaces are summarized in the table below. Project construction would decrease impervious surfaces in street ROW by 1,923 SF (0.44 acres), a decrease of one percent in the project area.

Surfaces	Pre-Construction (SF)	Post-Construction (SF)
Impervious (roadways, driveways, including paved and compacted gravel surfaces)	179,344 (68%)	177,227 (67%)
Impervious (sidewalk/paved footpath)	4,298 (2%)	4,492 (2%)
Pervious (grass, landscape, bioretention)	79,301 (30%)	79,301 (31%)
Total Impervious (all in ROW)	**183,642 (70%)**	**181,719 (69%)**

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

Proposed construction would commence after a CESC Plan and BMPs identified in the City of Seattle's Stormwater Code and Manual are installed. Specific BMPs would be used to protect ECAs at the top of the slope above West Fork Mohlendorph Creek. All proposed construction would be required to comply with the SPU-approved CESC plan and meet applicable NPDES construction stormwater permit requirements. During construction, work would be monitored, maintained, and adjusted as necessary to meet changing conditions and to meet requirements of the NPDES construction stormwater permit. Upon completion of construction, disturbed areas would be permanently stabilized through plantings and paving to protect soil from erosion. On slopes with a 2.5:1 slope ratio or steeper, biodegradable geotextile fabric would be placed to stabilize soils and protect plantings.

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.

Construction equipment would include handheld power tools, gasoline and diesel-powered compressors and generators, and gasoline and diesel-powered vehicles to remove existing roadway and utility infrastructure and construct new roadway and utility improvements. These tools generate greenhouse gas emissions (GHG) due to the combustion of gasoline and diesel fuels, including oxides of nitrogen, oxides of carbon, particulate matter and smoke, uncombusted hydrocarbons, hydrogen sulfide, and water vapor. Other emissions during construction could include dust and exhaust from construction vehicles. These effects are expected to be localized, temporary, and minimized. The completed project is not expected to generate odors.

The project would produce GHGs in three ways: embodied in materials to be installed on the project; through construction activity (as described above); and by regular operation,

maintenance, and monitoring activities throughout the life of the completed project. Emissions generated during manufacturing of materials used in this project are not estimated or otherwise considered in this environmental review due to the difficulty and inaccuracy inherent in calculating such estimates. New bioretention cells and street trees are expected to capture and accumulate biomass (organic matter). However, the mass of carbon sequestered by the bioretention cells during their anticipated lifespan is not estimated or otherwise considered in this environmental analysis due to the difficulty and inaccuracy inherent in calculating such estimates.

The project would generate GHG emissions during construction by operating diesel- and gasoline-powered equipment, and transporting materials, equipment, and workers to and from the site. The completed project would generate GHG emissions through the routine and emergency operation, maintenance, and monitoring of the project through an assumed life expectancy of 100 years. Air emissions released during operation and maintenance of the completed project are expected to be similar to existing conditions.

Total GHG emissions for the project are estimated to be 3,885 metric tons of carbon dioxide emission (MTCO2e). One metric ton is equivalent to 2,205 pounds. The GHG emissions calculations are shown in Attachment C and summarized in the table below. Estimates provided are based on assumptions for typical numbers of vehicle operations to execute the work. Emissions were estimated according to the Procedures Document for National Emissions Inventory, Criteria Air Pollutants, 1985–1999 (US EPA 2001).

Summary of Greenhouse Gas (GHG) Emissions		
Activity/Emission Type	**GHG Emissions (pounds of CO_2e)[a]**	**GHS Emissions (metric tons of CO_2e)[a]**
Buildings	n/a	n/a
Paving	6,615,000	3,000
Construction Activities (Diesel)	1,829,295	829.8
Construction Activities (Gasoline)	60,264	27.3
Long-term Maintenance (Diesel)	42,480	19.3
Long-term Maintenance (Gasoline)	19,440	8.8
Total GHG Emissions	**8,566,479**	**3,885**

[a]Note: 1 metric ton = 2,204.6 pounds of CO_2e. 1,000 pounds = 0.45 metric tons of CO_2e.

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

There are no offsite sources of emissions or odors that would affect the project. The neighborhood and parcels adjacent to the project are fully developed primarily as single- and multi-family residential.

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 federal, state, and local emission control criteria and City of Seattle required construction practices. These would include requiring contractors to use BMPs

for construction methods, 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 project is in the vicinity of the East and West Forks of Mohlendorph Creek. East Fork Mohlendorph Creek originates near the intersection of NW 120th St and 10th Ave NW; the headwaters of West Fork Mohlendorph Creek lay between NW 120th and 121st streets and 11th Ave NW and 12th Ave NW. The East and West Forks confluence approximately 750 feet downstream of the project area and drain south to a confluence with Venema Creek. Venema Creek is a tributary to Pipers Creek, which flows through City of Seattle's Carkeek Park and eventually confluences with Puget Sound.

The National Wetland Inventory (https://www.fws.gov/wetlands/data/Mapper.html) indicates one palustrine forested wetland approximately 60 feet west of the study area and one palustrine forested/shrub wetland approximately 90 feet west of the project area. Both wetlands are in the riparian area adjacent to West Fork Mohlendorph Creek.

The project area includes an unnamed, non-fish-bearing, seasonal stream (referred to as Watercourse A in this Checklist). The watercourse is presumed—but not verified—to be supported by groundwater discharges. The watercourse appears near the northeast corner of 9th Ave NW and NW 122nd St and flows through the project area along the east side of 11th Ave NW. The watercourse discharges into West Fork Mohlendorph Creek through a 15-inch diameter HDPE culvert under 11th Ave NW.

(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 project would connect the existing ditch and culvert system at 10th Ave NW and NW 122nd Street to the proposed upsized conveyance system. This new connection would divert water from the watercourse at its current discharge location (the corner of 11th Ave NW and NW 122nd St) and dewater approximately 600 lineal feet of ditch and culvert system that conveys Watercourse A along the west side of 11th Ave NW. Flows from the watercourse would continue to be conveyed to and then discharged to West Fork Mohlendorph Creek. The existing culvert and discharge location for Watercourse A at this location would be plugged with concrete. The dewatered section of the ditch and culvert system on the east side of 11th Ave NW would remain—functioning for stormwater conveyance.

The project would require work on the existing outfall pipe located within 200 feet of West Fork Mohlendorph Creek in and above the creek ravine. From the top of the ravine, SPU would extend chains or cables down slope to temporarily support in-place the existing surface-mounted 15-inch HDPE outfall pipe. The pipe would be

excavated and cut where it comes out of the ground at the top of the ravine. A trench would then be excavated to accommodate a new 36-inch pipe that would be fused to the existing 15-inch pipe.

(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 fill or dredged material would be placed in or removed from surface waters or wetlands.

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

As described above, the project would connect the existing ditch and culvert system at 10th Ave NW and NW 122nd Street to the proposed upsized conveyance system. This new connection would divert water from its current discharge location at the corner of 11th Ave NW and NW 122nd St, resulting in the dewatering of approximately 600 lineal feet of ditch and culvert system that conveys Watercourse A along the west side of 11th Ave NW. Flows from the watercourse would continue to be conveyed to and then discharged to West Fork Mohlendorph Creek.

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

The project 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.

Sources of stormwater runoff include upstream neighborhood streets, sidewalks, driveways, and impervious areas from privately owned rooftops and paved areas. Contaminants found in residential stormwater runoff would continue to be delivered to West Fork Mohlendorph Creek. Contaminants commonly found in urban stormwater include metals (including copper, zinc, and lead), herbicides and pesticides, and microbes (including pathogens such as *Giardia*, *Cryptosporidium*, *Campylocbacter*, Vibrio, *Salmonella*, *Escherichia*, and *Pseudomonas*). Primary sources of such contaminants are residential activity (including lawn and garden care), vehicles, pollution from the air, and animal feces.

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.

Geotechnical investigations for this project noted some areas in the Conveyance Improvement Corridor have a shallow seasonal high groundwater table (measured within two feet of ground surface). Project construction would occur during the dry summer months when the volume of groundwater is diminished such that the project does not anticipate having to dewater excavations. However, if dewatering is required, standard collection and pumping methods would be used. The volume of such collected water is not known. The completed project would not withdraw, discharge, or surcharge groundwater.

As described above, the project would connect the existing ditch and culvert system at 10th Ave NW and NW 122nd Street to the proposed upsized conveyance system. This new connection would divert water from its current discharge location at the corner of 11th Ave NW and NW 122nd St, resulting in the dewatering of approximately 600 lineal feet of ditch and culvert system that conveys Watercourse A along the west side of 11th Ave NW. Flows from the watercourse would continue to be conveyed to and then discharged to West Fork Mohlendorph Creek. The reach of Watercourse A to be dewatered may have functioned to recharge shallow groundwater tables, but that has not been verified. Also, the completed project is anticipated to reduce localized flooding, which has the potential to permanently reduce the amount of stormwater infiltrating to shallow groundwater. The volume or magnitude of that reduction is not known.

(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 into the ground.

c. Water Runoff (including stormwater):

(1) Describe the source of runoff (including stormwater) 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.

Sources of stormwater runoff include upstream neighborhood streets, sidewalks, driveways, and impervious areas on residential parcels (such as rooftops from homes, driveways, pathways). The project would include minor increases in paved surfaces adjacent to new stormwater management facilities including new curb and gutter and/or asphalt-thickened edge to convey stormwater along the road edge to new stormwater facilities. Stormwater from catch basins and curb cuts would be conveyed to an existing outfall to West Fork Mohlendorph Creek. Peak flows and durations would be controlled through installation of detention pipes as part of the conveyance improvements.

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

During construction, it is possible, but unlikely, that erosion could occur. A TESC plan using appropriate BMPs would be implemented to avoid or minimize this risk. Work would be monitored, maintained, and adjusted as necessary to meet changing on-site conditions and to ensure water quality standards are met.

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

SPU owns and maintains an informal ditch-and-culvert stormwater drainage network in the street ROW. When it rains, ditches in the neighborhood collect and convey stormwater that flows from adjacent roadways and properties. During large storm events, the ditch-and-culvert system is overwhelmed and ROW runoff flows onto certain private properties, flooding yards and structures. This project is intended to reduce localized flooding in the 12th Ave NW sewer basin and alter overall surface drainage patterns by routing stormwater runoff to new inline detention pipes more quickly.

In the area where SPU proposes conveyance system improvements, the existing ditch-and-culvert system would be retained or replaced in-kind so that it would continue to provide conveyance for localized (on-block) runoff. However, at the end of each block, collected water would discharge into a new upsized conveyance system, be routed through detention pipes to attenuate flows for creek protection, and then be safely transported to the existing outfall to West Fork Mohlendorph Creek. The project would be subject to creek protection and stormwater code mandated flow requirements (SMC 22.805.080.B.3) that require post-development flows and durations to match existing conditions. Performance standards would be required to ensure the West Fork is protected from increased flows and flow durations.

Natural drainage system improvements are intended to collect surface-generated stormwater to provide water quality treatment. Incidental new impervious surfaces (e.g., roadway widening to standard width and the addition of a thickened roadway edge) in the area of the natural drainage system improvements may contribute additional runoff volume. During storm events, runoff would be rerouted to pass through a proposed bioretention cell with an underdrain. A flow splitter in the catch basin would reroute low flows so that runoff can pass through a bioretention cell for water quality treatment. Once treated, stormwater that is not infiltrated would be discharged back into the existing public drainage system, through the proposed conveyance improvement corridor and detention pipes, and conveyed to the existing outfall at West Fork Mohlendorph Creek where stormwater is currently discharged.

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

Typical construction methods are anticipated, and no adverse impacts to surface or groundwaters are expected. BMPs, as identified in the City of Seattle's Stormwater Code SMC 22.800–22.808 and in Director's Rule: SDCI's 17-2017/SPU's DWW-700, Volume 2 Construction Stormwater Control, would be used to control erosion and sedimentation during construction. The proposed natural drainage system improvements are intended to provide water quality treatment for surface-generated stormwater runoff that flows to West Fork Mohlendorph Creek. Runoff is generated in a highly developed, urbanized basin where no flow control or water quality treatment is provided prior to the runoff entering the public storm drain system and discharging to West Fork Mohlendorph Creek. The project would also provide flow attenuation for surface runoff via detention pipes installed as part of the conveyance system improvements.

4. Plants

a. Types of vegetation found on the site:

- [x] Deciduous trees: [ ] Alder [ ] Maple [ ] Aspen [x] Other: Spruce
- [x] Evergreen trees: [ ] Fir [x] Cedar [x] Pine [x] Other: Douglas-fir
- [x] Shrubs
- [x] Grass
- [ ] Pasture
- [ ] Crop or grain
- [ ] Orchards, vineyards, or other permanent crops
- [x] Wet soil plants: [ ] Cattail [x] Buttercup [ ] Bulrush [ ] Skunk cabbage
- [x] Other: Watercress
- [ ] Water plants: [ ] Water lily [ ] Eelgrass [ ] Milfoil [ ] Other:
- [ ] Other types of vegetation: ornamental landscaping and turf

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

The ROW consists mostly of impervious surfaces, including asphalt road with shoulders and limited lengths of curb and gutter, ditches and culverts, and driveway aprons. The remaining area consists of sparsely vegetated areas dominated by weedy species such as common velvet grass (*Holcus lanatus*), bluegrasses (*Poa* spp.), dandelion (*Taraxacum officinale*), hairy cat's-ear (*Hypochaeris radicata*), and/or ornamental landscape plantings and turf. Adjacent private parcels have impervious surfaces from structures and paving; pervious areas include lawn and a wide variety of ornamental landscape plantings. Publicly and privately planted street trees are in the ROW.

Existing grass, vegetation, and plantings in street ROW that conflict with proposed improvements would be removed to allow for construction. Most of the vegetation to be removed is grass or other weedy vegetation, but vegetation also includes shrubs and a variety of mostly non-native ornamental shrubs and herbaceous plants.

Some proposed improvements may conflict with existing street trees, none of which meet the definition of an Exceptional Tree as defined by SMC Chapter 25.11 and SDCI Director's Rule 16-2008. In cases where there would be a conflict, trees may be removed and would be replaced with two new street trees for every tree that is removed.

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

According to a review of the Washington Department of Natural Resources (WDNR) Natural Heritage Program document called "Sections that Contain Natural Heritage Features, Current as of November 18, 2019" (accessed at www.dnr.wa.gov), there are no documented occurrences of sensitive, threatened, or endangered plant species in the project vicinity. 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. The project area has been intensively disturbed by development and redevelopment over the last 100 years. The project area has been extensively excavated, filled, paved, or occupied by street and other built structures. There is no habitat for threatened or endangered plants.

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

The project would limit plant removal, pruning, and other vegetation disturbance to the minimum required for construction and would be guided by an SPU-approved Tree, Vegetation, and Soil Protection Plan. Construction limits would be physically delineated by protective construction fencing to prevent unauthorized construction trespass and collateral damage to adjacent vegetation.

Bioretention cells would contain a variety of low-growing grasses, shrubs, bulbs, and perennials as well as small trees to perform the bioretention and water quality treatment functions. Landscape plant selections for bioretention cells would be made using plants from the *SPU Green Stormwater Infrastructure Manual for Capital Improvement Projects, Volume III: Design; Bioretention Plant List and Bioretention Street Tree list* (http://www.seattle.gov/Documents/Departments/SPU/Engineering/8C%20-%20GSI%20Manual.pdf). SDOT would prior-approve all plant selections.

Landscape disturbed during construction of conveyance improvements would be replaced with in-kind landscape improvements. Planting layouts would be context-sensitive and respond to adjacent land uses and planting styles. Plant selections would be made based on diversity, availability, longevity, disease resistance, habitat value, and aesthetics. To enhance stability of the slope above West Fork Mohlendorph Creek and to improve riparian conditions, the project would place biodegradable geotextile fabrics on slopes having a 2.5:1 horizontal to vertical slope ratio or steeper. Steep slope plantings would use site-appropriate native evergreen and deciduous species that provide slope stability and improve habitat and riparian functions.

Up to 17 street trees may need to be removed as part of the natural drainage system construction, and up to 7 trees would be removed as part of the conveyance system construction. However, twice that number of replacement trees would be planted as required by City of Seattle Tree Protection provisions, including Executive Order 03-05 directing City departments to replace every tree removed from City property (including ROW) with two new trees. In addition, new street trees would be planted where there are none currently, thereby increasing the overall number of street trees in the project area.

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

The project area features ROWs that are curbless, without sidewalks or planting strips. Project work would occur in unvegetated paved street ROW, including gravel or asphalt road shoulders. According to the "Noxious Weed" data layer in King County's iMap (https://gismaps.kingcounty.gov/iMap/), giant hogweed (*Heracleum mantegazzianum*) and garlic mustard (*Alliaria petiolate*, both Class A noxious weeds in King County, are known to be near the project area.

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: crow, pigeon, waterfowl, barred owl

Mammals: ☒ Deer ☐ Bear ☐ Elk ☐ Beaver
☒ Other: possum, raccoon, squirrel, rodents, bat

Fish: ☐ Bass ☐ Salmon ☐ Trout ☐ Herring
☐ Shellfish ☐ Other:

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

Based on a review of the Washington Department of Fish and Wildlife's SalmonScape website and Priority Habitat Species map (https://wdfw.wa.gov/species-habitats/at-risk/phs/maps), Pipers Creek is used by fall Chinook (*Oncorhynchus tshawytscha*), which is a federally listed threatened species (USFWS 2020). WDFW PHS database also maps steep slopes associated with West Fork Mohlendorph Creek as a Biodiversity Area and Corridor that extends south into Carkeek Park. No other listed species are known to be on or near the site.

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

Seattle 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. The project is more than 1,500 feet east of Puget Sound, another important water migration route for many animal species.

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

The project would increase the number, diversity, and character of plantings in the street ROW in bioretention cells. Additional plantings of native and non-native low-growing plants, shrubs, small trees, and public street trees, as well as native plantings on slopes above West Fork Mohlendorph Creek, are anticipated to increase resting, feeding, refuge, and nesting habitat for wildlife.

The project would minimize ground disturbance and deploy BMPs identified in the City of Seattle's Stormwater Code (SMC 22.800 through 22.808 and Director's Rule SPU's DWW-700 /SDCI's 17-2017) and Construction Stormwater Control Technical Requirements Manual (Volume 2) to generally protect fish and wildlife and manage stormwater. For example, equipment to be used for construction activity would be cleaned and inspected before it arrives at the project locations to avoid and minimize potential for fuel or lubricant leaks.

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.

The completed project will not require any energy sources.

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

The project would not construct structures or plant 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 measure 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:

Construction activities would require the use of hazardous materials on site, including gasoline, diesel, motor oil, transmission fluid, hydraulic oil, radiator coolant, brake fluid, and metal used in tires. Accidental leaks and spills of hazardous materials could occur where construction equipment is parked, used, fueled, or maintained, and where hazardous materials are stored. Though highly unlikely and not expected at this location, 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. These risks are no greater than with other comparable construction projects and are not expected to pose significant risks to human health. Typical roadway contaminants found in runoff are expected to accumulate within bioretention soils, although SPU's review of recent scientific studies confirms that many contaminants bind (chelate) with organic matter in the amended bioretention soil media and plant material and/or undergo transformation. While contaminants or their concentrations are not expected to be significant health hazards, bioretention cells are designed to discourage recreational use.

Completed bioretention cells would not increase mosquitoes, water-loving insects, or waterfowl because: 1) cells are designed to have flowing water, which does not support mosquito breeding; and 2) after storm events, the bioretention cells are designed to drain within 24 hours—a substantially shorter duration than the 72 hours required for development of mosquito larvae.

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

There are no known contamination issues in the project area based on review of available information.

(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/conditions. Affected street ROWs includes buried Puget Sound Energy natural gas mains servicing adjacent private properties. SPU would coordinate with all utility purveyors during design to confirm the design does not impact existing gas mains or other utilities and would plan for locational adjustments to gas mains or other utilities prior to project construction.

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

Construction activities would require use of hazardous materials on site, including gasoline, diesel, motor oil, transmission fluid, hydraulic oil, radiator coolant, brake fluid, and metals used in tires. Such materials would be stored and handled in accordance with City of Seattle standard specifications and requirements.

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

As with any construction activity, there is a chance that emergency services may need to respond to a workplace accident or injury or an inadvertent spill or release of hazardous material. All work would be conducted in accord with site-specific health and safety plans required in the construction contract specifications.

The completed project would not require emergency services unless related to an unusual incident with City staff or hired contractor staff involved in inspection or maintenance. Typical emergency services required for medical emergencies are provided by the Seattle Fire Department. Typical security services are provided by the Seattle Police Department and SPU's contractor during project construction.

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

All construction activities would be performed in compliance with Washington Industrial Safety and Health Act (WISHA) requirements. As required by the Washington Department of Labor and Industries (WAC 296-843), a Health and Safety Plan would be prepared by SPU or SPU's contractor prior to work commencing.

Prior to beginning work, the contractor would be required to prepare and implement a spill prevention, control, and countermeasures (SPCC) plan to mitigate impacts on soil, surface water, and groundwater in the event of a spill of hazardous substances during construction. SPCC plans address spill prevention and containment; spill response procedures, equipment, and reporting requirements; and chain of responsibility.

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

b. Noise

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

Automobile traffic on adjacent roadways is the dominant existing source of noise in the project area. Such noises would not affect the project.

(2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.

Noise levels in the vicinity of construction would temporarily increase during construction. Short-term noise from construction equipment would be limited to the allowable maximum levels of City of Seattle's Noise Control Ordinance (SMC Chapter 25.08). Within the allowable maximum levels in the Single Family Residential Zone, SMC 25.08 permits noise from construction equipment between the hours of 7 a.m. and 10 p.m. weekdays, and 9 a.m. and 10 p.m. weekends and legal holidays. SPU expects most construction activity would occur from 7 a.m. to 6 p.m. on weekdays. However, there may be a need for construction to implement a 7-day/week and 12+ hour/day work schedule. These longer days and/or work hours may be necessary to reduce the duration of work that negatively impacts local businesses, residences, or traffic mobility. The decision to allow longer days and/or hours would be based on minimizing such impacts to affected parties. Should anticipated effects of a decision to allow longer days and/or hours exceed the Noise Control Ordinance's allowable provisions governing the quality, nature, duration, or extent of discharge of noise, then the project would first seek a variance from SDCI. After project completion, occasional noise from equipment used for operation, maintenance, and monitoring would occur periodically, but would be limited to hours allowed by the Noise Control Ordinance.

(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 prescribes limits to noise and construction activities and would be enforced while the project is being constructed and during operations, except for emergencies.

8. Land and Shoreline Use

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

The proposal would affect street ROWs used for utilities, vehicle and pedestrian travel, and parking. Adjacent property uses are single-family residential, some of which may contain home-based businesses or occupations. The project would not affect current land uses on adjacent parcels.

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

Project locations have not been used recently for working farm or forest lands.

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

There is no surrounding working farm or forest land.

c. Describe any structures on the site.

The proposal would affect street ROWs used for utilities and vehicle and pedestrian travel and parking. Adjacent property uses are primarily single-family residential (some of which may include home-based business or occupations).

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

No aboveground structures would be demolished during construction. Some existing buried stormwater infrastructure would be removed and replaced.

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

The area where natural drainage systems would be constructed is primarily zoned single family residential (SF 7200) with some areas along Greenwood Ave N zoned low-rise multifamily 2 and 3 (LR2 and LR3). The area where conveyance improvements would be constructed is zoned single family residential (SF 7200).

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

The current comprehensive plan designation for the project area is single-family residential. Greenwood Ave N between NW 130th Ave and NW 127th Ave is in a Mandatory Housing Affordability Zone overlay.

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

The project is not in the City's Shoreline Management District.

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

Portions of the project area near West Fork Mohlendorph Creek are mapped as having riparian, wildlife, steep slope, and steep slope buffer ECAs, as mapped by the City of Seattle (http://seattlecitygis.maps.arcgis.com/apps/webappviewer/index.html?id=f822b2c6498c4163b0cf908e2241e9c2). Known Slide ECAs are also mapped along the BNSF mainline and adjacent to 12004 10th Ave NW.

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

No people would reside in the project. City maintenance crews would work periodically in the ROW to maintain vegetation, drainage, and other City infrastructural assets.

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

No people would be displaced.

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

There would be no displacements.

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

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

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

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

9. Housing

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

The 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 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 new buildings are proposed.

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

No views in the immediate vicinity would be altered or obstructed. Street trees planted in the ROW could partially obscure neighborhood and territorial views when they attain full height and maturity.

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

The project is developing a context-sensitive design for both locations to respond to adjacent land uses and how people use and access and use street ROWs. The design intent is to limit impacts to private parcels, locate street improvements in response to existing site conditions (e.g., trees, ECAs) and constraints (topography), and execute a communication outreach plan that includes video conference calls and one-on-one meetings with adjacent property owners. Outreach began during preliminary design and

will continue through final design to inform residents of the project purpose, present the current design at each project milestone, and offer opportunity for feedback that could meaningfully inform design.

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 situation calls for after-dark work, the construction contractor may deploy portable lights that temporarily produce light and glare.

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

The project would not create light or glare.

c. What existing offsite sources of light or glare may affect your proposal?

There are no offsite sources of light or 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?

There are no parks or other designated recreational opportunities in the immediate vicinity. However, the project is in street ROWs used for informal recreational activities such as dog walking, walking, jogging, and bicycling.

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

The project would not displace existing recreational uses. Construction would temporarily disturb or detour walking and biking along existing city streets but the contractor would be required 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 closures or detours affecting vehicle and pedestrian routes/access may be required during construction. The contractor would be required to submit, obtain approval for, and implement a Temporary Traffic Control Plan that maintains pedestrian and bicycle access through or around the project locations.

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 proposed work would not affect any qualifying buildings, structures, or known cultural resources. The project would affect only City of Seattle existing roadway assets and stormwater systems. None of those objects are considered historically or culturally significant.

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.

There are no known landmarks, features, or other evidence of Indian or historic use or occupation, including human burials or old cemeteries. No historic-period or pre-contact material evidence, artifacts, or areas of cultural importance were identified on or near the project. According to the Washington Information System for Architectural and Archaeological Records Data (WISSARD) landscape Predictive Model based on environmental factors, the project locations are in areas with High to Very High Risk of inadvertent discovery of archaeological resources. However, the proposed work would disturb upland areas that have been previously disturbed and filled by construction of roadway and utilities. The work's location on previously disturbed and filled ground reduces the chance of encountering contextually significant archaeological materials.

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, State of Washington Heritage, or City of Seattle Landmark properties are in or adjacent to the project, both project locations were checked against these registers on June 22, 2020:

- 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 (WISSARD) database: https://dahp.wa.gov/project-review/wisaard-system
- City of Seattle Landmarks Map: 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.

The proposed work would not affect buildings or known cultural resources. The project would affect only City of Seattle existing roadway assets and stormwater systems. None of those objects are considered historically or culturally significant. Based on the

Washington State Department of Archaeological and Historic Preservation's landscape Predictive Model, the project is in areas with High to Very High Risk of inadvertent discovery of archaeological resources. However, the proposal would disturb upland areas that have been previously disturbed and filled by construction of roadways and utilities. The work's location on previously disturbed and filled ground reduces the chance of encountering contextually significant archaeological materials. Work at both project locations would be conducted under an Inadvertent Discovery Plan for cultural and 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 would occur entirely in existing, improved street ROWs owned and managed by the City of Seattle. Street types vary across the two locations as follows:

- Natural drainage system improvements: NW 130th St (neighborhood corridor) and NW 127th St (neighborhood yield street). Nearest arterials are NW 125th St, 3rd Ave NW, and Greenwood Ave N.
- Conveyance improvements: along segments of NW 125th St, 10th Ave NW, NW 122nd St, and 11th Ave NW and large-diameter detention pipes on 10th Ave NW (between NW 122nd and NW 125th streets) and 11th Ave NW (south of NW 122nd St). The street-end of 11th Avenue Northwest is a cul-de-sac accessed from NW 122nd St. NW 125th St is a designated arterial between Greenwood Ave N and 8th Ave NW. Other streets in this location are residential. Connections and access to existing streets would not change.

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?

King County Metro Route 28 serves the conveyance improvements area and travels on 3rd Ave NW, NW 125th Ave, and 8th Ave NW. A bus stop adjacent to the eastbound lane of NW 125th Ave, approximately 110 feet east of 8th Ave NW, would be temporarily impacted during construction and the original stop location would be restored at the end of construction. Metro Routes 345 and 355 serve the natural drainage system improvements area and travel on Greenwood Ave N. Those routes and their stops would not be impacted by project construction or the completed project.

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

Parking associated with street ROWs in the project location is currently on-street, free parking managed by SDOT. Residents currently park off-pavement on existing gravel or lawn areas on the curbless streets. Because the project involves work in the street ROW, construction would require temporary closures of parking as well as travel lanes on affected streets. During construction, there may be no or restricted parking on one or both sides of affected streets. The specific timing and duration of parking and lane closures are not known at this time, but such closures would comply with relevant policies administered by SDOT as part of their Street Use permitting process. Also, ample

on-street parking is available elsewhere in the project vicinity along affected or adjacent streets and most adjacent residences have their own off-street parking.

The completed project would neither create nor permanently eliminate legal parking spaces. Parking on affected streets would remain essentially the same as it is now. However, improvements in the natural drainage system area would formalize the existing parallel on-street parking spaces in the street ROW. Curb bulbs proposed at the northeast corner of 3rd Ave NW and NW 130th St would be in the no-parking zone at the intersection and would not reduce the number of legal parking spaces. While residents would not be able to park in the location of the bioretention facilities sited in the planting strip, the planting strip on affected blocks is currently not available for parking due to existing ditches and vegetation. Planned conveyance improvements would not change parking configurations.

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

The project would restore all demolished and damaged street pavement, curbs, and traffic aprons to preconstruction condition or better. No new roads or streets would be constructed as part of the project.

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

The project would not use 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 nonpassenger vehicles). What data or transportation models were used to make these estimates?

Project construction would require approximately 1,230 round trips (see Attachment C) due to workers and materials being transported to and from the project locations during the anticipated 100 working-day construction period. Generally, trips would occur between 7 a.m. and 7 p.m. weekdays, and 9 a.m. and 7 p.m. weekends and legal holidays. Specific timing of peak volumes is not known.

The completed project is expected to generate approximately 400 new round trips over its anticipated 100-year life span to support the ongoing emergency and routine operation, maintenance, and monitoring. Peak traffic volumes are not expected to change because of the completed project.

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

The proposal would not affect movement of products on roads or streets.

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

During construction, the contractor would be required to deploy a traffic control plan approved by SDOT. Project construction would comply with SDOT policies regarding temporary lane and sidewalk closures. SPU and SDOT would encourage the construction contractor to use carpooling for its employees. 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.

Proposed infrastructure would be placed either outside limits of pavement or on the edge to facilitate traffic control during future maintenance activities. Pedestrian safety and traffic calming would be achieved with the addition of street trees, one curb bulb, and improved corner curb ramps with truncated domes at affected intersections. Bioretention facilities would require periodic maintenance by SPU. Lower-maintenance plants would be selected to minimize maintenance.

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 mitigation is being proposed because there would be no impacts on public services.

16. Utilities

a. Check utilities available at the site:

☐ None
☒ Electricity ☒ Natural gas ☒ Water ☒ Refuse service
☒ Telephone ☒ Sanitary sewer ☐ Septic system
☒ Other: fiber optic, cable TV

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 that might be needed.

The completed project would increase the capacity of the Broadview neighborhood's stormwater conveyance system and would be owned, operated, and maintained by SPU. Construction of the natural drainage system improvements may require water and sewer services. There is one location (NW 130th St) where new stormwater conveyance pipe would be installed above and crossing a 6-inch diameter water main and numerous water services.

Some existing utilities may need to be adjusted or relocated to allow construction of the conveyance improvements. One Puget Sound Energy natural gas main and numerous services along 10th Ave NW and 11th Ave NW would need to be relocated, including approximately 520 feet of 2-inch diameter gas main on 10th Ave NW and 475 feet of a 2-inch dimeter gas main on 11th Ave NW. Approximately 40 feet of an

8-inch diameter sanitary sewer on NW 122nd St would be reconstructed at a reduced slope (0.5 percent), so that a new 30-inch diameter stormwater conveyance pipe can cross underneath it. At the intersection of 12th Ave NW and 10th Ave NW, two water services and a dual water meter would require relocation or replacement.

SPU anticipates minimal interruption in service during utility adjustments and relocations. However, if more than a short service disruption would occur during relocation, then temporary connections would be provided. Inadvertent damage to underground utilities could also occur during construction. While such incidents occur infrequently, 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 pick-up days. No other interruptions to regular utility services are expected during construction.

C. SIGNATURE

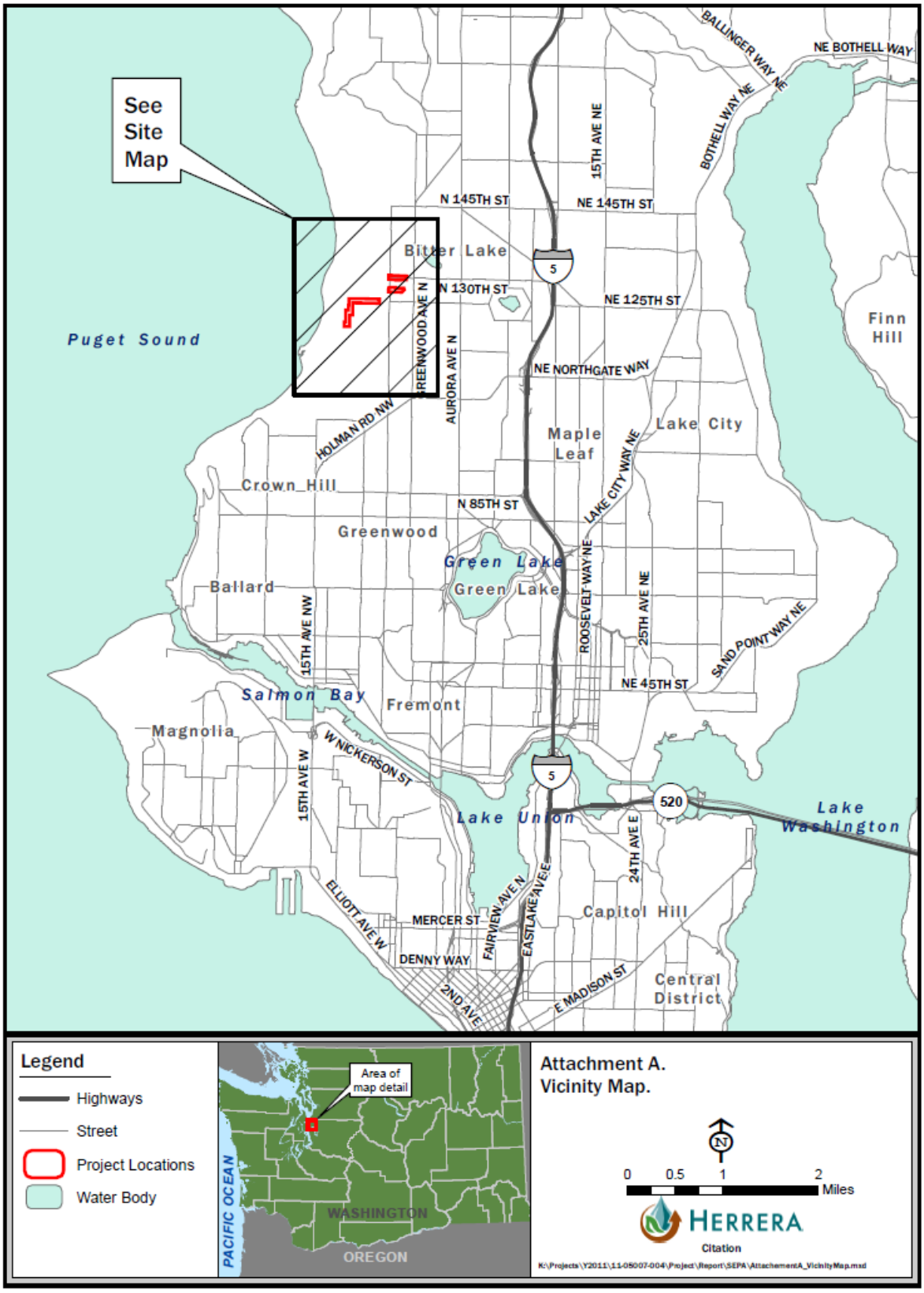
The above answers are true and complete to the best of my knowledge. I understand the lead agency is relying on them to make its decision.

Signature: Grace Manzano Digitally signed by Grace Manzano Date: 2020.09.10 11:26:38 -07'00'

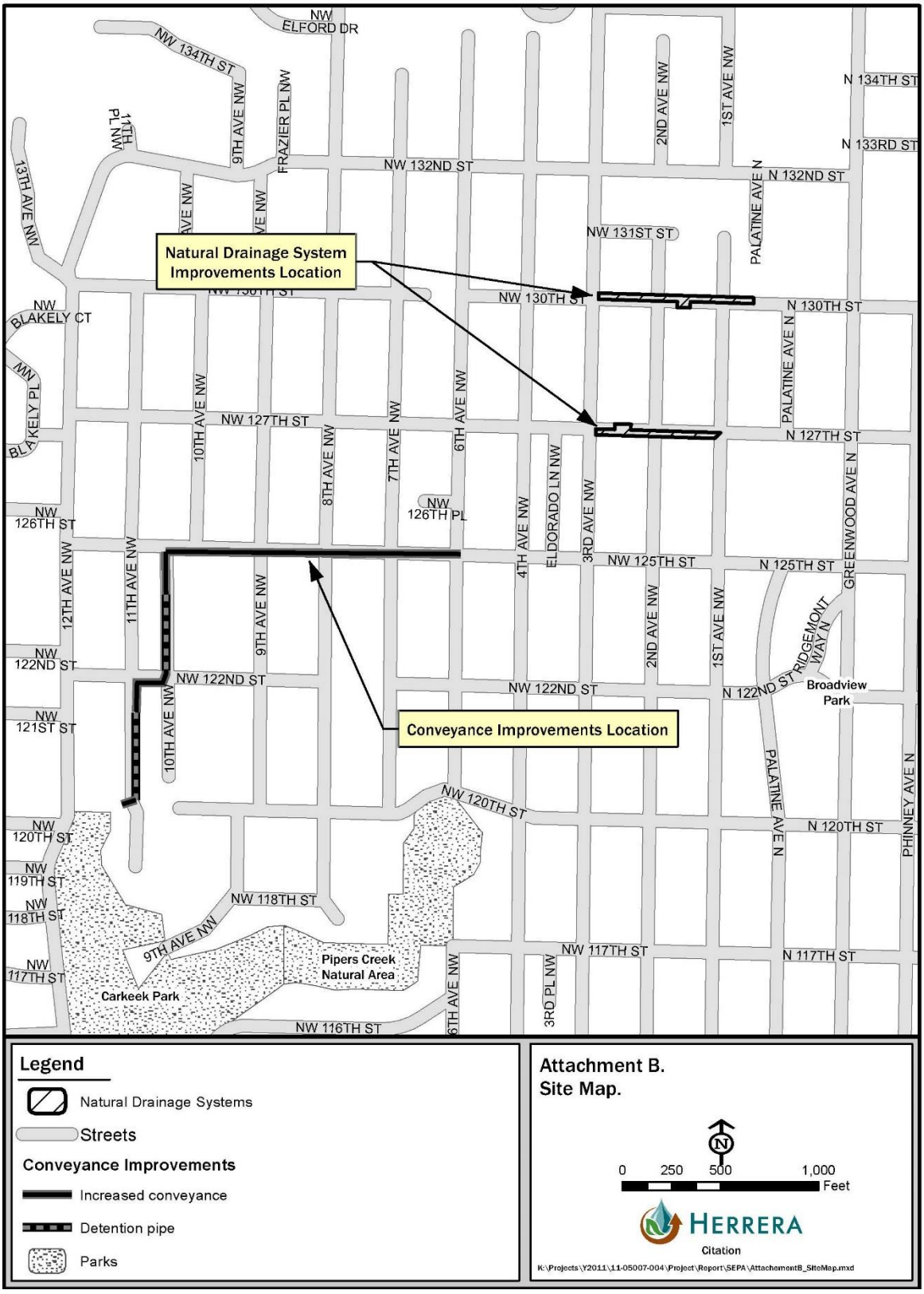
Grace Manzano, Project Manager

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

Attachment A – Vicinity Map



Attachment B – Site Map



Attachment C – 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 ($MTCO_2e$)
Asphalt Pavement (sidewalk, street, berms)		60,000 SF				3,000
Concrete Pad (50 $MTCO_2e$/1,000 sq ft of pavement at a depth of 6 inches)		6 inches thick (60 cu yd)				
					TOTAL Section II Pavement	**3,000**

Section III: Construction

	Emissions ($MTCO_2e$)
(See detailed calculations below)	
TOTAL Section III Construction	**857.1**

Section IV: Operations and Maintenance

	Emissions ($MTCO_2e$)
(See detailed calculations below)	
TOTAL Section IV Operations and Maintenance	**28.1**

TOTAL GREENHOUSE GAS (GHG) EMISSIONS FOR PROJECT ($MTCO_2e$)	**3,885**

ATTACHMENT C: Greenhouse Gas Emissions Worksheet, continued

Section III Construction Details		
Construction: Diesel		
Equipment	**Diesel (gallons)**	**Assumptions**
Excavator x 2	32,000	1,600 hrs x 20 gal/hr (345 hp engine)
Front end loader x 2	32,000	1,600 hrs x 20 gal/hr (345 hp engine)
Vibratory / Static Roller	400	500 hrs x 0.8 gal/hr (185 hp engine)
Asphalt paver	360	80 hrs x 4.5 gal/hr (80 hp engine)
Asphalt truck	1,120	160 hrs x 7 gal/hr (345 hp engine)
Two flatbed truck	1,500	100 round trips x 75 mi/round trip ÷ 5 mpg
One dump truck and pup (17 CY/load)	1,200	100 round trips x 60 miles/round trip ÷ 5 mpg
Street sweeper	320	400 hrs x 0.8 gal/hr (185 hp engine)
Subtotal Diesel Gallons	68,900	
GHG Emissions in lbs CO_2e	1,829,295	26.55 lbs CO_2e per gallon of diesel
GHG Emissions in metric tons CO_2e	829.8	1,000 lbs = 0.45359237 metric tons

Construction: Gasoline		
Equipment	**Gasoline (gallons)**	**Assumptions**
Pick-up trucks or crew vans	2,000	100 workdays x 10 trucks x 1 round-trip/day x 40 miles/round-trip ÷ 20 mpg
Misc. hand equipment	480	100 workdays x 8 hours x 2 pieces of equipment x 0.3 gal/hour
Subtotal Gasoline Gallons	2,480	
GHG Emissions in lbs CO_2e	60,264	24.3 lbs CO_2e per gallon of gasoline
GHG Emissions in metric tons CO_2e	27.3	1,000 lbs = 0.45359237 metric tons

Construction Summary		
Activity	**CO_2e in pounds**	**CO_2e in metric tons**
Diesel	1,829,295	829.8
Gasoline	60,264	27.3
Total for Construction	1,889,559	**857.1**

Section IV Long-Term Operations and Maintenance Details		
Operations and Maintenance: Diesel		
Equipment	**Diesel (gallons)**	**Assumptions**
Emergency Operation	800	(1x/location/yr for 100 years) x (2 locations) x 1 roundtrip/ event x 20 miles/round-trip ÷ 5 mpg
Maintenance Operation (truck)	800	(1x per site annually for 100 years) x 2 locations x 1 round-trip/event x 20 miles/round-trip ÷ 5 mpg
Subtotal Diesel Gallons	1,600	
GHG Emissions in lbs CO_2e	42,480	26.55 lbs CO_2e per gallon of diesel
GHG Emissions in metric tons CO_2e	19.3	1,000 lbs = 0.45359237 metric tons

Attachment C: Greenhouse Gas Emissions Worksheet, continued

Operations and Maintenance: Gasoline		
Equipment	**Gasoline (gallons)**	**Assumptions**
Pick-up Trucks or Crew Vans	800	(1x per site annually for 100 years) x 2 locations x 1 round-trip/event x 20 miles/round-trip ÷ 5 mpg
Subtotal Gasoline Gallons	800	
GHG Emissions in lbs CO_2e	19,440	24.3 lbs CO_2e per gallon of gasoline
GHG Emissions in metric tons CO_2e	8.8	1,000 lbs = 0.45359237 metric tons

Operations and Maintenance Summary		
Activity	**CO_2e in pounds**	**CO_2e in metric tons**
Diesel	42,480	19.3
Gasoline	19,440	8.8
Total Operations and Maintenance	61,920	**28.1**