

**SEATTLE PUBLIC UTILITIES  
SEPA ENVIRONMENTAL CHECKLIST**

This SEPA environmental review of Seattle Public Utilities' (SPU) Longfellow Natural Drainage System (NDS) 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:**

Longfellow Creek Natural Drainage System (NDS)

**2. Name of applicant:**

Seattle Public Utilities (SPU)

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

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**4. Date checklist prepared:**

December 17, 2019

**5. Agency requesting checklist:**

Seattle Public Utilities (SPU)

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

Construction is scheduled to begin in the 3rd or 4th quarter of 2020, with substantial completion of construction anticipated by the end of the 2021. Project commissioning and plant establishment would then occur through 2022. SPU intends to construct the three Project sites concurrently. However, SPU may decide to phase the work adjacent to Longfellow Creek, which would extend the Project's substantial completion into 2022 and commissioning and plant establishment through 2023. The Project is expected to require 240 working days.

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

This project is part of SPU's Natural Drainage System (NDS) Partnering program, which has an overall goal of constructing approximately 4 miles of bioretention facilities in the street rights of way within the Longfellow Creek, Thornton Creek, and Piper's Creek basins. As part of the NDS Partnering Program, additional projects may be identified in the future in the Longfellow Creek basin.

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

- SPU Geotechnical Engineering. 2018 (November). Geotechnical Report, Longfellow NDS Project Bioretention facility Feasibility Study.
- SPU Geotechnical Engineering. 2018 (June 8). Geotechnical Addendum, Longfellow NDS Bioretention Liner Evaluation.
- SPU Geotechnical Engineering. 2017 (March 28). Geotechnical Memorandum, Longfellow NDS (SW Orchard St and Sylvan Way SW) Infiltrating Bioretention With Underdrain Feasibility Study.
- SPU Geotechnical Engineering. 2017 (March 28). Geotechnical Memorandum, Longfellow NDS (24th Avenue SW) Infiltrating Bioretention With Underdrain Feasibility Study.
- MIG|SvR. 2018 (November). NDS Partnering Longfellow Creek Basin Project Report (Technical and Project Management) for Options Analysis.
- The Watershed Company. 2019 (September 16). Critical Area Assessment Report: SPU Longfellow NDS (C316056): Longfellow Creek at Southwest Kenyon Street End at 24th Avenue SW.

**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.**

The following permits and approvals may be required:

City of Seattle Departments of Transportation (SDOT)

- Construction Use Permit [for construction in street rights-of-way (ROW)]
- Utility Permit

SPU

Side Sewer Permit

King County

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

Washington State Department of Ecology (Ecology)

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

Washington Department of Fish and Wildlife (WDFW)

Hydraulic Project Approval (HPA)

Washington State Department of Archaeological and Historic Preservation

National Historic and Preservation Act Section 106 compliance (linked to CWA Section 404)

U.S. Army Corps of Engineers (Corps)

Clean Water Act (CWA), Section 404 Nationwide Permit authorization

U.S. 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 (Salmon 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 Longfellow Creek Natural Drainage System (NDS) Project (hereafter, “Project” or “proposal”) is located along multiple blocks in three sites in the lower half of the Longfellow Creek watershed in southwest Seattle. The watershed starts around SW Barton Street to the south and drains northward. Longfellow Creek confluences with Puget Sound north of SW Spokane Street. The Project would provide water quality treatment for stormwater runoff from streets that drain to Longfellow Creek by retrofitting these roadways with a NDS (also referred to as bioretention cells) while partnering with SDOT to deliver new sidewalks and pathways in street ROW. Partnering allows SPU and SDOT to share costs while providing multiple, shared benefits.

The Project would retrofit the ROW with roadside bioretention cells either in the planting strip adjacent to travel or parking lanes or in non-linear areas of the ROW. Bioretention cells would provide water quality treatment for untreated stormwater runoff that currently discharges to Longfellow Creek. After stormwater runoff has filtered through the plants and soil media in bioretention cells that water would infiltrate into native soil. In areas where conditions are unsuitable for infiltration into native soil, bioretention cells would be lined to prevent infiltration and treated water would collect in underdrains and discharge to the piped stormwater conveyance system. Where sites overlap with SDOT mobility goals, sidewalk or pathways would be provided. Also, after construction, facilities at all three sites would have regular operation, monitoring, and maintenance activity such as vegetation management and sediment removal from storm drain structures.

The three Project sites include:

1. 24th Avenue SW Corridor: A four-block corridor along 24th Avenue SW from SW Barton Place to SW Thistle Street
2. Kenyon Site: SW Kenyon Street starting from approximately 200 feet west of the intersection with 24th Avenue SW, across Longfellow Creek, to the SW Kenyon Street street-end on the east side of Longfellow Creek
3. Sylvan Site: The Sylvan Way SW and SW Orchard Street intersection and adjacent right-of-way areas

The Project includes the following major work elements:

1. 24th Avenue SW Corridor Site
  - a. New curb, sidewalk, and planting strip with street trees along the west side of the corridor (approximately 2,400 lineal feet)
  - b. Road widening to provide a 25- to 26-foot paved width accommodating on-street parking and one travel lane; a new asphalt thickened edge on the east side of the road would allow surface runoff to be conveyed to downstream drainage structures
  - c. Bioretention cells on either side of the corridor (specific locations would be based on existing topography and site constraints)

- d. Public storm drain main extension to connect new bioretention cells to the existing public storm drain system
- e. Storm drain collection structures and associated infrastructure
- f. Adjustments to existing utilities (including gas mains and services to residences) as required to install the proposed improvements
- g. Removal of existing pavement to allow construction of proposed improvements
- h. New ADA-compliant curb ramps at intersections, per SDOT requirements
- i. Adjustments to existing street elements (such as traffic signs and mailboxes) as required to install proposed improvements
- j. Pavement restoration and formalization of driveway curb cuts in areas with bioretention and sidewalks.

2. Kenyon Site

- a. A new pedestrian pathway that would be a combination of paved path and boardwalk (to minimize impacts to environmentally critical areas [ECA]) between 24th Avenue SW and the existing SW Kenyon Street street-end on the east side of Longfellow Creek (approximately 300 linear feet)
- b. Demolition of the existing pedestrian bridge over Longfellow Creek, modification of existing bridge abutments, and installation of a new pedestrian bridge on those modified abutments
- c. Adjustments to curb at the SW Kenyon Street and 24th Avenue SW intersection to formalize that 'L' intersection
- d. Bioretention cells at the 24th Avenue SW intersection and one larger bioretention cell at the SW Kenyon Street street-end west of Longfellow Creek
- e. A new flow splitter and public storm drain to daylight flows from the existing public storm drain to the bioretention cell at the SW Kenyon Street street-end on the west side of Longfellow Creek
- f. Modifications to the existing storm drain outfall in Longfellow Creek, reducing the length of the existing pipe
- g. Approximately 100 linear feet of a 24-inch diameter steel feeder main (drinking water) may be relocated to provide additional room for the bioretention cells. Work would include excavating the existing pipe (approximately 4 to 5 feet deep); cutting the existing pipe; excavating a trench approximately 3 feet deep; and then placing bedding, laying new pipe, and backfilling the trench
- h. Removal of and restoration of pavement to allow construction of the proposed improvements
- i. New ADA-compliant curb ramps at intersections, per SDOT requirements
- j. Adjustments of existing utilities to accommodate the proposed improvements
- k. Proposed mitigation for wetland and watercourse impacts would be conducted in existing wetlands adjacent to Longfellow Creek near 24th Avenue SW and SW Kenyon Street and would require no less than five years of plant establishment and monitoring as a part of Project permitting.

3. Sylvan Site

- a. One or two bioretention cells and associated drainage pipes, structures and street improvements. The exact number and placement will be determined during design.

- 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 is in the South Delridge and Westwood neighborhoods of the City of Seattle, King County, Washington and is located entirely in the following street ROWs:

- 24th Avenue SW from SW Barton Place to SW Thistle Street
- SW Kenyon Street from 200 feet west of the intersection 24th Avenue SW to the existing street-end on the east side of Longfellow Creek
- The Sylvan Way SW and SW Orchard Street intersection and adjacent right-of-way areas.

The Project is in Section 36, Township 24N, Range 3E. See Attachments A and B for a Vicinity Map and Site Plan of the Project sites, 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 typical work areas are generally flat but may have moderate slopes (less than 10 percent). Adjacent slopes may have steeper slopes (up to 20 percent).

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

24th Avenue SW Corridor Site: Surficial geologic conditions are primarily fill overlying Vashon recessional outwash deposit. Fill materials extend to depths between about 4.5 and 11 feet below the ground surface (bgs). Fill generally consists of medium dense, silty sand and soft to hard silt with sand, sandy silt, and silt with varying amounts of gravel and trace amounts of organics. Recessional outwash deposits consist of very dense sand with silt, silty sand, gravel with silt and sand, and silty gravel. Most of this site has developed into moderate- to high-density residential neighborhoods. As a result, much of this site has been disturbed by cut and fill operations for development and by weathering process.

Kenyon Site: Surficial geologic conditions below the top layer (topsoil/pavement) and fill are mapped as Vashon recessional outwash and Vashon recessional lacustrine deposits. Recessional outwash deposits here consist predominately of silty sand with varying amounts of gravel interbedded with poorly to well sorted sand, gravel, silt, and clay. Most of this site has been disturbed by cut and fill operations for development.

Sylvan Site: Surficial geologic conditions are dominated by alluvium and Vashon recessional outwash deposits. Fill materials extend to three feet bgs and generally consist of loose to medium dense silty sand with varying amounts of gravel and scattered debris. Alluvium deposits underlying fill extended to between 7.3 feet and 8 feet bgs. These deposits consist of very loose to medium dense sand with silt and silty sand with varying amounts of gravel. Alluvium is underlain by recessional outwash consisting of dense sand with silt and silty sand with varying amounts of gravel. Interbedded horizontal seams and layers of silt and fine sand are occasional below 15 feet bgs. Most of this site has been disturbed by cut and fill operations for development.

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

Based on mapping by the Seattle Department of Construction and Inspections (SDCI), the Kenyon Site is in riparian corridor, wetland, and wetland buffer ECAs. The north end of the 24th Avenue SW Corridor is in a liquefaction-prone ECA.

**e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate the source of fill.**

This Project would collectively disturb approximately three acres as a result of excavation, grading, and filling during clearing, pavement removal, and construction of underground utilities, roadway improvements, and bioretention cells. Approximately 5,500 cubic yards (CY) of material would be excavated for roadway and utility improvements. Approximately 9,500 CY of mineral aggregate, landscape soil, borrow material, bioretention soil, and backfill for utilities would be imported as fill material. Fill material would be obtained from a commercial licensed and permitted (by the State of Washington) purveyor of such materials. Excavated materials would be reused on-site where feasible or exported off-site and disposed of in an approved disposal location per construction contract requirements.

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

Erosion could occur as a result of the land-disturbing activity, although the risk is low because areas to be disturbed are relatively flat and proposed construction would begin only after best management practices (BMPs) to limit erosion potential are installed. For work in wetlands and near Longfellow Creek, BMPs would be used to protect these ECAs. All proposed construction would be required to comply with a SPU-approved construction erosion and sedimentation control (CESC) plan, meet NPDES construction stormwater permit requirements, and comply with conditions of the Project's HPA and CWA authorizations.

**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. Construction of this Project would increase impervious surfaces in the street ROW by 18,295 square feet (SF) (0.42 acres), an increase of seven percent in the six-acre Project area.

| SURFACES  | PRE-CONSTRUCTION<br>(SF) | POST-<br>CONSTRUCTION (SF) |
|---|--------------------------|----------------------------|
| Impervious (roadways, driveways, incl. paved and compacted gravel surfaces) | 104, 544 (40%)           | 104,544 (40%)              |
| Impervious (sidewalk/paved footpath)  | 2,614 (1%)               | 20,909 (8%)                |
| Pervious (grass, landscape, bioretention)                                   | 154,202 (59%)            | 135,907 (52%)              |
| <b>TOTAL IMPERVIOUS (in ROW)</b>  | <b>107,158 (41%)</b>     | <b>125,453 (48%)</b>       |

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

The Project would be required to implement a CESC plan with BMPs appropriate to the site, conditions, and activities. 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.

**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 could include hand-held 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 would generate greenhouse gas emissions (GHG) due to the combustion of gasoline and diesel fuels, and include oxides of nitrogen, carbon monoxide, particulate matter and smoke, uncombusted hydrocarbons, hydrogen sulfide, carbon dioxide, and water vapor. Other emissions during construction could include dust and exhaust from construction vehicles. These effects are expected to be localized, temporary, and minimized.

Total GHG emissions for the Project are summarized in the table below; calculations are provided in Attachment C. The Project would produce GHGs in three ways: embodied in materials to be installed on the Project; through construction activity (especially as described above); and by regular operation, maintenance, and monitoring activities throughout the life of the completed Project. Emissions generated during the manufacture of materials used in this Project are not estimated or otherwise considered in this environmental analysis 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 50-year 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 through the operation of diesel- and gasoline-powered equipment, and in the transportation of materials,

equipment and workers to and from the site. The estimates provided are based on assumptions for typical numbers of vehicle operations to execute the work (Attachment C). 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 50 years.

**SUMMARY OF GREENHOUSE GAS (GHG) EMISSIONS**

| Activity/Emission Type             | GHG Emissions<br>(pounds of CO <sub>2</sub> e) <sup>1</sup> | GHS Emissions<br>(metric tons of CO <sub>2</sub> e) <sup>1</sup> |
|------------------------------------|---|--|
| Buildings                          | n/a   | n/a  |
| Paving                             | 6,904,807   | 3,132  |
| Construction Activities (Diesel)   | 1,817,746   | 825  |
| Construction Activities (Gasoline) | 106,385   | 48   |
| Long-term Maintenance (Diesel)     | 63,720  | 29   |
| Long-term Maintenance (Gasoline)   | 43,740  | 20   |
| <b>Total GHG Emissions</b>         | <b>8,936,398</b>  | <b>4,054</b>   |

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

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

There are no off-site sources of emissions or odors that would affect the Project. The neighborhood and parcels adjacent to the 24th Avenue SW Corridor and Kenyon sites are fully developed primarily as single and multi-family residential. The Sylvan Site is adjacent to commercial businesses.

**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.**

Longfellow Creek flows through the Kenyon Site. This Site also has wetlands on both sides of Longfellow Creek.

**(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.**

Most of the proposed work at the Kenyon site is within 200 feet of Longfellow Creek (see the description of the proposed work provided in Section A11). The Project would remove a portion of an existing stormwater outfall in Longfellow Creek. The existing pipe would be shortened to allow stormwater to enter the watercourse above its summer baseflow elevation. The work would remove the existing hand-

formed concrete flume at the outfall in the bed, remove approximately five feet of storm drain pipe, and remove the drainage structure located just outside of the bed. Earth surrounding the shortened stormwater outfall would be graded to accommodate the shortened pipe. An energy dissipation pad would be installed at the new outfall to prevent erosion and scour.

The existing pedestrian bridge spanning Longfellow Creek would be replaced. The design would re-use, but structurally modify, the existing bridge abutments and foundations to support the replacement bridge structure. The bridge length and clear pedestrian width would approximately match the existing condition so that the existing bridge abutments can be re-used after modification. However, the width of the proposed bridge would be slightly wider than the existing bridge width due to outriggers supporting the rails.

A boardwalk on pin piles would be installed in the wetland on the east side of Longfellow Creek. On the east side, a limited amount of fill would also be placed in the wetland to provide an at-grade trail. As an alternative to boardwalk, a paved path with limited amount of fill may be used. The proposed bridge and boardwalk may include pedestrian-level lighting that would be installed on foundations on fill placed in the wetland and/or attached to the bridge/boardwalk to illuminate the pedestrian path.

- (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.**

Up to approximately 25 CY of fill could be placed in the wetland on the east side of Longfellow Creek to accommodate an at-grade trail connection to the existing public sidewalk; the fill would be located within 75 feet of the existing sidewalk in the street cul-de-sac. Up to approximately 25 CY of fill could be removed to accommodate the shortening of the existing storm drain outfall with an additional 8 CY of riprap placed to provide erosion and scour protection at that location. The source of fill for the at-grade trail and riprap would be obtained from a commercial purveyor of such materials, licensed and permitted by the State of Washington.

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

The Project would not permanently withdraw or divert surface water. However, because the existing stormwater outfall extends approximately five feet below the Ordinary High Water Mark, the Project may need to temporarily redirect the flow of Longfellow Creek to isolate that work area and the work areas around the two bridge abutments/foundations. Redirection of flow would likely be accomplished using sandbags and/or inflatable bladders.

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

A portion of the Kenyon Site lies in the 100-year floodplain of Longfellow Creek.

- (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.**

This Project would not discharge waste material to surface water.

**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.**

This Project would not withdraw groundwater.

- (2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: domestic sewage; industrial, containing the following chemicals...; agricultural, etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.**

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 includes new curb and gutter and/or asphalt thickened edge to convey stormwater along the road edge to new stormwater facilities, including catch basins, flow splitters on public storm drain mains, inlets and curb cuts into bioretention cells. Stormwater from catch basins/flow splitters and curb cuts would be directed to bioretention cells or the public storm drain system. Bioretention cells would be designed to infiltrate stormwater runoff that passes through the bioretention soil media and/or discharge stormwater via an underdrain to the public storm drain piped system. Runoff that enters the public storm drain piped system would be discharged to Longfellow Creek.

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

During construction, it is possible that erosion from the construction site could enter surface waters. However, a CESC 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 meet requirements of the construction stormwater NPDES permit.

Runoff that passes through the bioretention cells and infiltrates into the ground will have passed through bioretention soil media (18 inches deep) that provides water quality treatment in accordance with City and Ecology stormwater requirements.

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

The Project is intended to collect surface-generated stormwater to provide water quality treatment and increased infiltration but would not alter overall surface

drainage patterns. During rain events low flows entering a catch basin on SW Barton Place (from a drainage area approximately 0.34 acres) 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 storm drain piped system that discharges to Longfellow Creek.

Along 24th Avenue SW, new bioretention cells with an underdrain would intercept road runoff and reduce sheet flows across the roadway and nuisance ponding along road edge now occurring during rain events at some locations. Water that does not infiltrate and flows into the underdrain below the bioretention would continue to be conveyed to the public storm drain piped system and discharge into Longfellow Creek where such stormwater is currently discharged.

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

This Project is intended to provide water quality treatment for surface-generated stormwater runoff that flows to Longfellow Creek. Runoff from the Project area is generated within 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 Longfellow Creek. The Project would provide some flow attenuation for surface runoff via bioretention cells and provide water quality treatment for runoff from pollution generating impervious surfaces.

The Project would use typical construction methods; no adverse impacts to surface or ground waters 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.

**4. Plants**

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

|   |   |   |  |                                 |
|---|---|---|--|---------------------------------|
| <input checked="" type="checkbox"/> Deciduous trees:                            | <input checked="" type="checkbox"/> Alder     | <input checked="" type="checkbox"/> Maple | <input type="checkbox"/> Aspen           | <input type="checkbox"/> Other: |
| <input checked="" type="checkbox"/> Evergreen trees:                            | <input checked="" type="checkbox"/> Fir       | <input checked="" type="checkbox"/> Cedar | <input checked="" type="checkbox"/> Pine | <input type="checkbox"/> Other: |
| <input checked="" type="checkbox"/> Shrubs                                      |   |   |  |                                 |
| <input checked="" type="checkbox"/> Grass                                       |   |   |  |                                 |
| <input type="checkbox"/> Pasture  |   |   |  |                                 |
| <input type="checkbox"/> Crop or grain  |   |   |  |                                 |
| <input type="checkbox"/> Orchards, vineyards, or other permanent crops          |   |   |  |                                 |
| <input checked="" type="checkbox"/> Wet soil plants (for the Kenyon Site only): |   |   |  |                                 |
| <input type="checkbox"/> Cattail  | <input checked="" type="checkbox"/> Buttercup | <input type="checkbox"/> Bulrush          | <input type="checkbox"/> Skunk cabbage   |                                 |
| <input checked="" type="checkbox"/> Other: Horsetail ( <i>Equisetum</i> spp.)   |   |   |  |                                 |
| <input type="checkbox"/> Water plants:  | <input type="checkbox"/> water lily           | <input type="checkbox"/> eelgrass         | <input type="checkbox"/> milfoil         | <input type="checkbox"/> Other: |
| <input type="checkbox"/> Other types of vegetation:                             |   |   |  |                                 |

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

Existing grass, vegetation, and plantings in street ROW that conflict with proposed improvements would be removed to allow for grading, construction of the new sidewalk and planting strip, widened roadway, bioretention cells, and underground storm drainage infrastructure. Most of the vegetation to be removed is grass, but vegetation also includes shrubs, Himalayan blackberry (*Rubus bifrons*), English Ivy (*Hedera helix*), and a variety of non-native ornamental shrubs and herbaceous plants.

Some 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, smaller trees (defined as smaller than three inches in diameter at breast height or smaller) may be transplanted by the adjacent parcel owner or 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's document called "Sections that Contain Natural Heritage Features, Current as of March 1, 2013" (accessed at [www.dnr.wa.gov](http://www.dnr.wa.gov)), there are no documented occurrences of sensitive, threatened, or endangered plant species in this Section. 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 location 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 disturbance to the minimum required for construction of improvements. Construction limits would be physically delineated by protective construction fencing to prevent unauthorized trespass and collateral damage to adjacent vegetation. The Project would also replant bioretention cells and planting strips in the ROW and would restore other ground-disturbed areas. In general, the planting areas are:

- 24th Avenue SW Corridor: Planting strip between SW Barton Place and SW Cloverdale Street and bioretention cells
- Kenyon Site: Bioretention cells in the planting strip and at the street-end, and restoration planting for temporarily disturbed ECAs
- Sylvan Site: Bioretention cell in the existing grass area. Additional bioretention opportunities are being evaluated that would be constructed in an existing paved roadway shoulder.

An estimated 10 to 15 street trees and tree shrubs may need to be removed or may not survive if transplanted. 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, thusly increasing the overall the number of street trees in the Project area.

Bioretention cells may 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 both 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. All plant selections would be approved for use by SDOT.

Areas outside of bioretention cells including the new planting strip would have soil amendments and generally be revegetated with seeded lawn along with new street trees in accordance with SDOT requirements.

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

Most sites are in unvegetated paved street ROW, including sidewalks. However, numerous weeds are present in adjacent vegetated areas. Himalayan blackberry, English ivy, and reed canarygrass (*Phalaris arundinacea*) are present in upland, wetland, and riparian habitats in the Project area. According to the 'Noxious Weed' data layer in King County's iMap website, giant hogweed (*Heracleum mantegazzianum*; a Class A noxious weed in King County) and tansy ragwort (*Senecio jacobaea*; a Class B Designate noxious weed 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:**

|                 |  |  |   |   |
|-----------------|--|--|---|---|
| <b>Birds:</b>   | <input checked="" type="checkbox"/> Hawk                             | <input type="checkbox"/> Heron                     | <input checked="" type="checkbox"/> Eagle | <input checked="" type="checkbox"/> Songbirds |
|                 | <input checked="" type="checkbox"/> Other: crow, pigeon              |  |   |   |
| <b>Mammals:</b> | <input type="checkbox"/> Deer  | <input type="checkbox"/> Bear                      | <input type="checkbox"/> Elk              | <input checked="" type="checkbox"/> Beaver    |
|                 | <input checked="" type="checkbox"/> Other: possum, raccoon, squirrel |  |   |   |
| <b>Fish:</b>    | <input type="checkbox"/> Bass  | <input type="checkbox"/> Salmon                    | <input checked="" type="checkbox"/> Trout | <input type="checkbox"/> Herring              |
|                 | <input type="checkbox"/> Shellfish                                   | <input checked="" type="checkbox"/> Other: sculpin |   |   |

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

Based on a check of the WDFW's "Priority Habitat Species on the Web" database on October 11, 2019, the Kenyon Site is mapped as being within a known occurrence of western pond turtle (*Actinemys marmorata*), a State-listed endangered species. However, there are currently no known populations of western pond turtle in the City of Seattle. There are no other threatened or endangered species in the vicinity of the Project.

**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 7,500 feet east of Puget Sound, another important water migration route for many animal species. Portions of the Kenyon Site are in the riparian management area of Longfellow Creek.

**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 in wetland and riparian mitigation areas, are anticipated to increase resting, feeding, refuge, and nesting habitat for wildlife.

The Project would also 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 location 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.**

An electrical service would be provided to provide power to new pedestrian lighting along the new pathway at the Kenyon Site.

**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:**

Pedestrian lighting along the new pathway through the Kenyon Site would use LED lights to minimize the use of electricity and in accordance with City of Seattle standards.

**7. Environmental Health**

**a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe:**

Small amounts of materials likely to be present during construction include gasoline and diesel fuels, hydraulic fluids, oils, lubricants, solvents, paints, and other chemical

products. A spill of one of these chemicals could potentially occur during construction as a result of either equipment failure or worker error. 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.

The Project's bioretention cells would provide water quality treatment for urban stormwater runoff. 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. Additionally, for operations and maintenance budgeting purposes, SPU assumes some bioretention soil media/plants would be removed and replaced in 20 to 50 years depending upon monitoring results.

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, substantially less 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 at the Project sites 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. Existing ROW includes buried Puget Sound Energy natural gas mains that provide natural gas to adjacent private properties. The gas main at the 24th Avenue SW Corridor is 2-inches in diameter; the gas main at the Sylvan Site is 6-inches in diameter. The Project 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 any 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.**

Traffic-striping paint may be stored during construction prior to its use. Material would be stored and handled in accordance with City of Seattle standard specifications and requirements.

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

Fire and/or medic services could be required during Project construction, as well as possibly during maintenance of the completed Project. However, the completed Project would not demand higher levels of special emergency services than already exist at Project sites. 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:**

No such measures are proposed because there would be no environmental health hazards.

**b. Noise**

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

Noises that exist in the area would not affect the Project.

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

Noise levels in the vicinity of construction would temporarily increase during construction activities. Short-term noise from construction equipment would be limited to the allowable maximum levels of City of Seattle's Noise Control Ordinance (SMC Chapter 25.08). Within the allowable maximum levels, SMC 25.08 permits noise from construction equipment between the hours of 7 am and 7 pm weekdays, and 9 am and 7 pm weekends and legal holidays; however, it is expected that most construction activity would occur from 7 am to 6 pm on weekdays. 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 City of Seattle's Noise Control Ordinance (SMC 25.08).

**(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.

**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 is in street ROWs used for vehicle and/or pedestrian travel, and/or parking. The Kenyon Site is undeveloped between the street-ends where the ROW crosses Longfellow Creek. Adjacent property uses are single-family residential adjacent to the 24th Avenue SW Corridor Site (except for multi-family units on the southern block); multi-family and riparian corridor adjacent to the Kenyon Site, and commercial adjacent to the Sylvan Site. 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 sites have not been recently used 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 farm or forest land.

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

The only structure in the Project area is a shed at 2201 SW Holden Street that encroaches into the SW Kenyon Street ROW. The owner of that property is expected to remove or relocate the shed out of the City street ROW prior to the start of Project construction. If the property owner fails to do so, the Project would demolish the shed during construction.

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

The shed encroaching in the City ROW would either be removed or relocated by the adjacent private property owner prior to the start of Project construction or would be demolished by Project construction.

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

The Project is located entirely in street ROW. Adjacent properties include a variety of zoning classifications depending on the site. Adjacent zoning for each of the sites includes:

- 24th Avenue SW Corridor Site: Low-rise 2 and 3 (LR2 and LR3); Residential Small Lot (RSL)
- Kenyon Site: Low-rise 1 (LR1)
- Sylvan Site: Commercial (C1-55)

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

All three Project sites are in Seattle's Mandatory Housing Affordability Zone. The 24th Avenue SW Corridor Site is in Seattle's Residential Urban Village. For parcel development zoning, see response to the previous question.

- 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 are in environmentally critical areas (ECAs), as mapped by SDCl:

- 24th Avenue SW Corridor Site: liquefaction-prone areas and steep slopes (40% average) and their buffers

- Kenyon Site: wetlands, wetland buffers, flood-prone zones, liquefaction-prone, riparian management area, and steep slopes (40% average) and steep slope buffers.
- Sylvan Site: adjacent parcel has steep slopes (40% average) and steep slope buffers

**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. An art structure/entry way may be included at the Kenyon Site. Incorporation of art would be approved by the City of Seattle.

**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 each of the three sites to respond to adjacent land uses and how people use and access the ROW at each. Design is intended to limit impacts to private parcels; lay-out street and sidewalk improvements to respond to existing site conditions (e.g. trees, ECAs) and constraints (topography); and execute a communication outreach plan that includes on-site open houses and one-on-one meetings with adjacent property owners. The outreach began during preliminary design and will continue through final design to inform residents of the purpose of the Project, 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?**

New lighting would be proposed only at the Kenyon Site along the reconstructed pedestrian pathway to allow safe pedestrian and bicycle use. The lights would be installed on approximately 15-foot tall poles and would be spaced to provide a consistent lighting level along the pathway. Directional handrail lighting may also be installed on the new pedestrian bridge directed at the deck of the pedestrian bridge to minimize glare into Longfellow Creek. Existing street-light poles that conflict with improvements would be relocated to nearby ROW locations in accordance with City standards for street lighting. The lights would be on from dusk to sunrise.

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

Pedestrian lighting would improve visibility and safety through the Kenyon Site pathway and would not interfere with views.

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

No off-site sources of light or glare would affect the proposal.

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

Lighting on and adjacent to pedestrian bridge at Kenyon Site would be directed onto the pedestrian path to avoid glare into the creek. Measures would be taken to design lighting to minimize impacts to adjacent wetlands. New lighting at this site would be on only from dusk to dawn.

**12. Recreation**

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

The Longfellow Legacy Trail is an urban recreational trail that connects adjacent neighborhoods to Longfellow Creek and educates the community on adjacent greenbelts

and the Longfellow Creek watershed. The new pathway through the Kenyon Site would be on this route and provide improved access and accessibility to Longfellow Creek.

The playground at Denny International Middle School is one block west of the Kenyon Site and has turf areas and a sports court. The Southwest Athletic Complex is two blocks west of the 24th Avenue SW Corridor along SW Thistle Street. This complex has a track, ballfields, tennis courts, and open space. Roxhill City Park is also two blocks west of the 24th Avenue SW Corridor site along SW Barton Street and has a playground, trails, and open lawn areas that can be programmed for sports.

The existing public roadway infrastructure provides facilities for people walking and biking along existing city streets.

**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.

**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 would improve recreation opportunities in the neighborhood by providing new accessible sidewalks and pathways in the ROW where none currently exist. These improvements would improve access to nearby recreation opportunities.

The selected contractor will be required to submit, obtain approval for, and implement a Temporary Traffic Control Plan to maintain pedestrian and bicycle access through or around the project sites.

**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. This 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 precontact 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 sites are in areas with Moderate to High Risk of inadvertent discovery of archaeological resources. Most of the proposed work would be disturbing 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, the three Project sites were checked against the following registers on October 11, 2019:

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

Washington Information System for Architectural and Archaeological Records Data database: <https://fortress.wa.gov/dahp/wisaardp3/>

City of Seattle Landmarks Map: <http://www.seattle.gov/neighborhoods/programs-and-services/historic-preservation/landmarks/landmarks-map>

Archaeological monitoring was completed in October 2019.

- 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. This 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 sites are in areas with Moderate to High Risk of inadvertent discovery of archaeological resources. Most of the proposed work would be disturbing 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. However, because the Kenyon Site has wetland areas and is known to have a Moderate to High Risk related to inadvertent discovery of pre-contact cultural resources, construction disturbance of native soils and sediment deposits at this site would be monitored by a professional archaeologist according to an approved archaeological Monitoring Plan. Work at all three Project sites would be conducted under a DAHP-approved 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 within existing improved City-owned street ROW. Street types vary across the three sites areas as follows:

- 24th Avenue SW Corridor Site: a local/neighborhood street with an existing 19 to 22-foot wide paved street that is curb-less with intermittent adjacent gravel parking areas and no sidewalk. Connections and access to the existing street system would not change.
- Kenyon Site: bound by SW Kenyon Street street-ends on both sides of Longfellow Creek. On the west side, the street-end is adjacent to an intersection with 24th Avenue SW and on the east side the street-end is a cul-de-sac accessed from Delridge Way SW, an arterial street. SW Kenyon Street and 24th Avenue SW are local streets that allow parking on both sides. Connections and access to existing streets would not change.
- Sylvan Site: on the south corner of the Sylvan Way SW and SW Orchard Street arterial street intersection. There are no sidewalks or on-street parking. The Delridge Way SW arterial is one block west. There would be no change to existing conditions for access to the existing street system.

**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?**

Project sites are served by King County Metro public transit:

- 24th Avenue SW Corridor Site: The Corridor has no public transit service. There are public transit stops on SW Barton Place, SW Trenton Street, and SW Thistle Street within 300 feet of the Corridor.
- Kenyon Site: Transit stops are on Delridge Way SW with a stop at SW Kenyon Street approximately 400 feet east of the site.
- Sylvan Site: Transit runs along Sylvan Way SW with a stop approximately 100 feet west of the site. Transit also runs on Delridge Way SW with stops approximately 600 feet east of the site.

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

The Project would not create additional parking spaces. However, improvements at the 24th Avenue SW Corridor Site would formalize the existing parallel on-street parking spaces in the ROW. Residents currently park off-pavement on existing gravel or lawn areas on this curb-less street.

At the Kenyon Site, four parking spaces in the existing SW Kenyon St street-end would be permanently eliminated to allow formalization of this “L”-shaped street intersection and to improve traffic safety. Curb bulbs proposed at the northwest corner of SW Kenyon Street at 24th Avenue SW would be in the no-parking zone near crosswalks and would not reduce the number of legal parking spaces.

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

These street and sidewalk improvements would be provided at the 24th Avenue SW Corridor and Kenyon sites:

- 24th Avenue SW Corridor Site: existing roadway would be widened to standard street width and include a new curb or thickened edge intended to define the road edge, and a new public sidewalk and curb ramps on the west side of the roadway.
- Kenyon Site: the existing intersection at SW Kenyon Street and 24th Avenue SW would be improved to formalize the “L” intersection. Improvements would clarify turning movements, connect existing sidewalks, and provide a new accessible curb ramp. A replaced pedestrian bridge and path across Longfellow Creek would improve the existing pedestrian and bicycle connection between the SW Kenyon Street street-ends at Longfellow Creek.

**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 3,050 round-trips (estimated using Attachment C) due to workers and materials being transported to and from the Project location during the anticipated 240 working-day construction period. Generally, trips would occur between 7 am and 7 pm weekdays, and 9 am and 7 pm weekends and legal holidays. Specific timing of peak volumes is not known.

The completed Project is expected to generate approximately 1,050 new round trips over its anticipated 50-year life span to support the on-going 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.

The completed Project at the 24th Avenue SW Corridor and Kenyon sites would feature new delineation of street edges, new curb and gutter or asphalt thickened edges, curb bulbs, landscaped planting strips with street trees, and planted bioretention cells. These features are expected to assist in traffic calming—especially for non-local access traffic attempting to use residential streets as cut-through routes to arterials.

**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.**

Improvements planned for the Kenyon Site are being designed using a CPTED (Crime Prevention Through Environmental Design) approach to improve sightlines and visibility to help people moving through the site feel a greater sense of security.

**16. Utilities**

- a. Check utilities available at the site:**

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

- 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.**

New storm drain piping and storm collection structures would be installed at all three sites and would be maintained by SPU. The completed Project would extend SPU's public storm drain conveyance system along portions of the 24th Avenue SW Corridor to collect and convey stormwater runoff; the 24th Avenue SW Corridor is not currently served by public storm drains. Stormwater runoff drains to intersecting streets or ponds along that roadway. New electrical service provided by Seattle City Light (SCL) would be provided for pedestrian path lighting at the Kenyon Site.

Some existing utilities may need to be adjusted or relocated to allow construction of the proposed improvements, including Puget Sound Energy natural gas main and services along 24th Avenue SW; SPU water services along 24th Avenue SW; a SPU feeder water main and CenturyLink and Comcast underground fiber optic and communication lines at the Kenyon Site; SCL street-light poles and service poles; and SPU-owned portions of sanitary side sewers.

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**

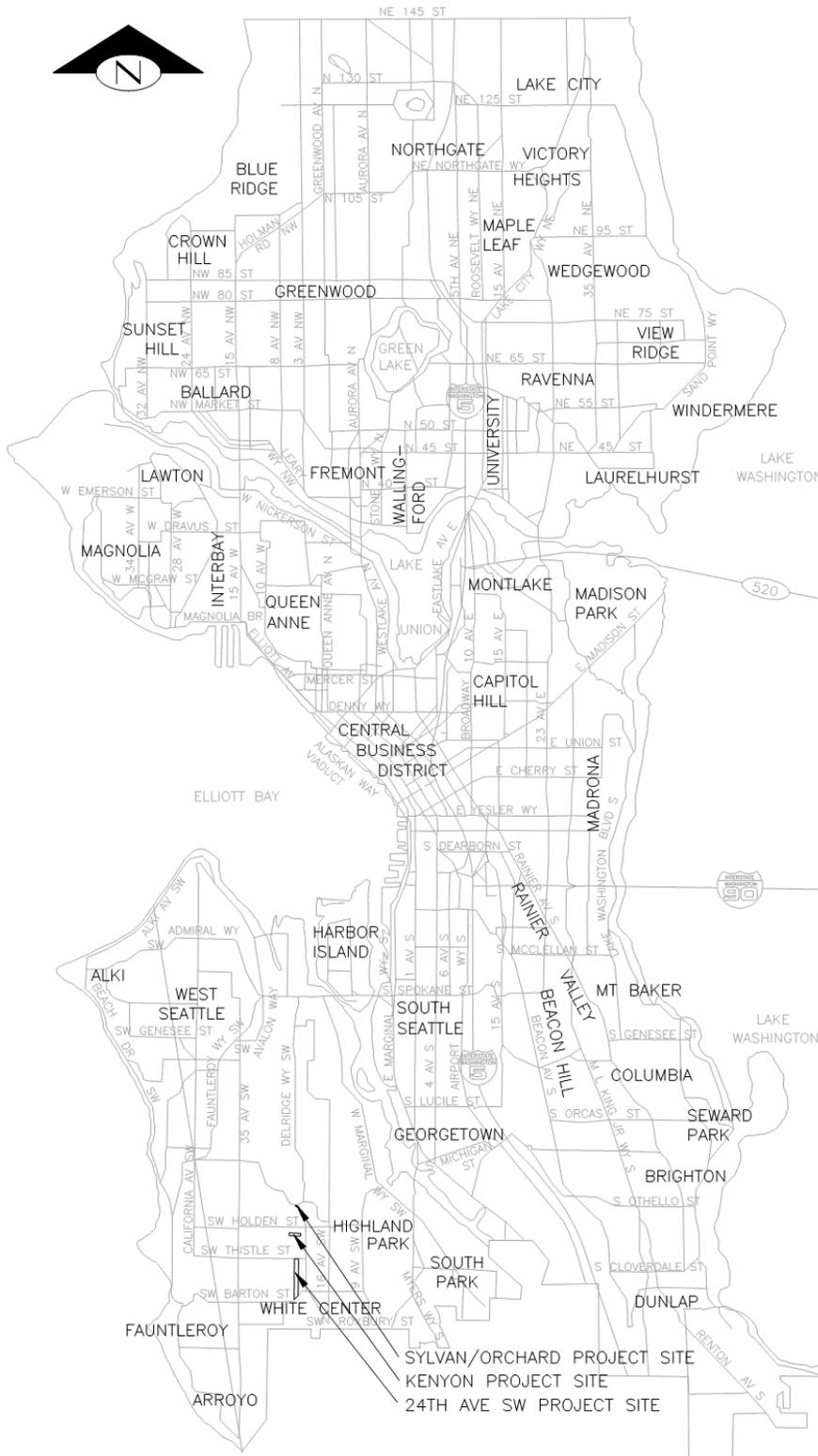
The above answers are true and complete to the best of my knowledge. I understand the lead agency is relying on them to make its decision.

Signature:   
Jonathan Brown, Project Manager

Date: 12/17/2019

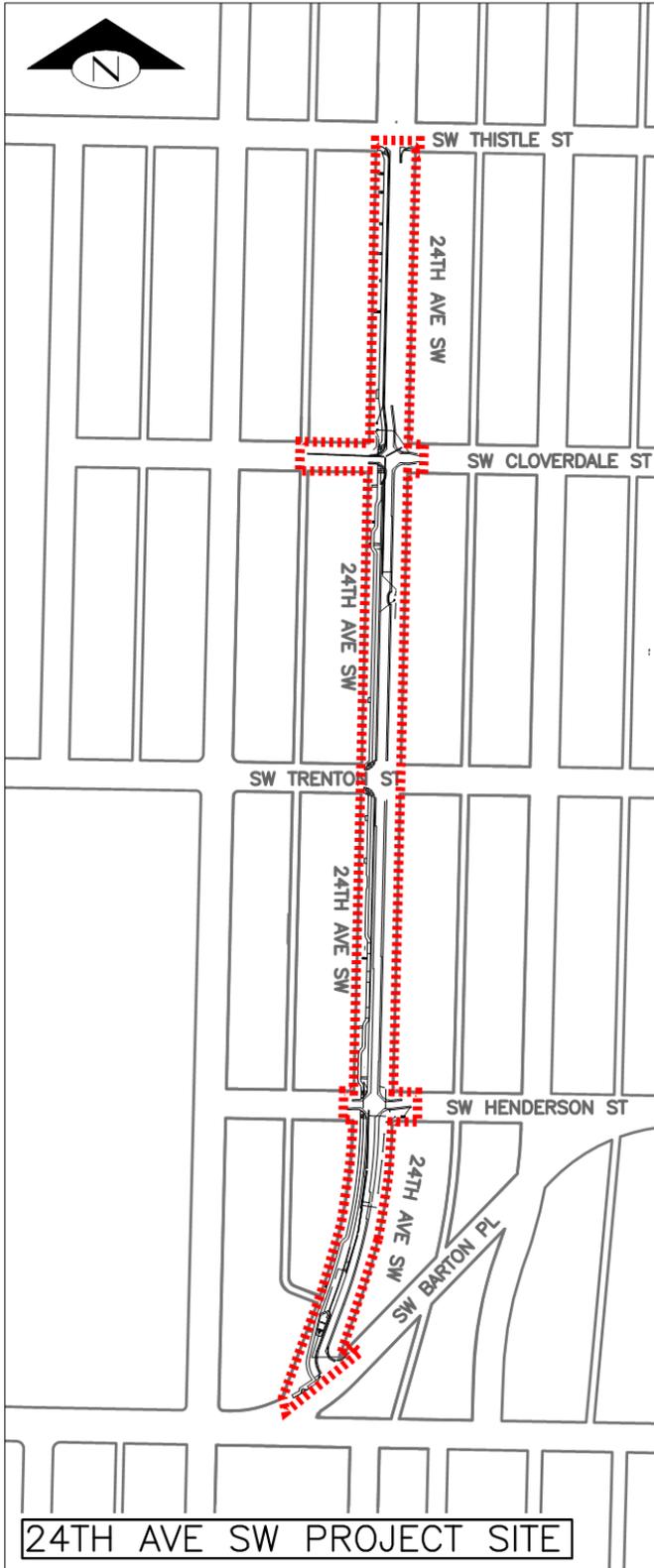
- Attachment A – Vicinity Map
- Attachment B – Site Map
- Attachment C – Greenhouse Gas Emissions Worksheet

Attachment A – Vicinity Map



**VICINITY MAP**  
(NTS)

Attachment B – Site Map



**Attachment C – Greenhouse Gas Emissions Worksheet**

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

| <b>Section II: Pavement</b>   |  |           |  |  |  |                                 |
|---|--|-----------|--|--|--|---------------------------------|
|   |  |           |  |  |  | Emissions (MTCO <sub>2</sub> e) |
| Asphalt Pavement (50 MTCO <sub>2</sub> /1000 sq ft)   |  | 37,800 SF |  |  |  | 1,890                           |
| Concrete Pad (50 MTCO <sub>2</sub> e/1,000 sq ft of pavement at a depth of 6 inches; cy *2.7 to convert to MTCO <sub>2</sub> e) |  | 460 cy    |  |  |  | 1,242                           |
| <b>TOTAL Section II Pavement</b>  |  |           |  |  |  | <b>3,132</b>                    |

| <b>Section III: Construction</b>      |  |  |  |  |  |                                 |
|---------------------------------------|--|--|--|--|--|---------------------------------|
|                                       |  |  |  |  |  | Emissions (MTCO <sub>2</sub> e) |
| (See detailed calculations below)     |  |  |  |  |  |                                 |
| <b>TOTAL Section III Construction</b> |  |  |  |  |  | <b>873</b>                      |

| <b>Section IV: Operations and Maintenance</b>      |  |  |  |  |  |                                 |
|--|--|--|--|--|--|---------------------------------|
|  |  |  |  |  |  | Emissions (MTCO <sub>2</sub> e) |
| (See detailed calculations below)                  |  |  |  |  |  |                                 |
| <b>TOTAL Section IV Operations and Maintenance</b> |  |  |  |  |  | <b>49</b>                       |

|   |  |  |  |  |  |              |
|---|--|--|--|--|--|--------------|
| <b>TOTAL GREENHOUSE GAS (GHG) EMISSIONS FOR PROJECT (MTCO<sub>2</sub>e)</b> |  |  |  |  |  | <b>4,054</b> |
|---|--|--|--|--|--|--------------|

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

| <b>Section III: Construction Details</b>            |                  |  |
|---|------------------|--|
| <b>Construction: Diesel</b>                         |                  |  |
| Equipment   | Diesel (gallons) | Assumptions                                      |
| Backhoe/Excavator x 2                               | 34,000           | 1700 hrs x 20 gal/hr (345 hp engine)             |
| Front-end Loader x 2                                | 18,000           | 900 hrs x 20 gal/hr (345 hp engine)              |
| Vibratory Roller                                    | 400              | 500 hrs x 0.8 gal/hr (185 hp engine)             |
| Asphalt Paver                                       | 1,035            | 230 hrs x 4.5 gal/hr (80 hp engine)              |
| Asphalt Truck                                       | 1,540            | 220 hrs x 7 gal/hr (345 hp engine)               |
| Flat-bed Truck                                      | 4,050            | 270 round trips x 75 mi/round trip ÷ 5 mpg       |
| Dump Truck and Pup (17 cubic yard/load)             | 8,640            | 720 round trips x 60 mi/round trip ÷ 5mpg        |
| Concrete truck (10 cubic yard capacity)             | 400              | 50 round trips x 40 mi/round trip ÷ 5mpg         |
| Street Sweeper                                      | 400              | 500 hrs x 0.8 gal/hr (185 hp engine)             |
| <b>Subtotal Diesel Gallons</b>                      | <b>68,465</b>    |  |
| <b>GHG Emissions in lbs CO<sub>2</sub>e</b>         | <b>1,817,746</b> | 26.55 lbs CO <sub>2</sub> e per gallon of diesel |
| <b>GHG Emissions in metric tons CO<sub>2</sub>e</b> | <b>825</b>       | 1,000 lbs = 0.45359237 metric tons               |

| <b>Construction: Gasoline</b>                       |                    |  |
|---|--------------------|--|
| Equipment   | Gasoline (gallons) | Assumptions  |
| Pick-up Trucks or Crew Vans                         | 4,000              | 200 workdays x 10 trucks x 1 round-trip/day x 40 miles/round-trip ÷ 20 mpg |
| Misc Hand equipment                                 | 378                | 210 workdays x 2 hours x 3 pieces of equipment x 0.3 gal/hour              |
| <b>Subtotal Gasoline Gallons</b>                    | <b>4,378</b>       |  |
| <b>GHG Emissions in lbs CO<sub>2</sub>e</b>         | <b>106,385</b>     | 24.3 lbs CO <sub>2</sub> e per gallon of gasoline                          |
| <b>GHG Emissions in metric tons CO<sub>2</sub>e</b> | <b>48</b>          | 1,000 lbs = 0.45359237 metric tons   |

| <b>Construction Summary</b>   |                             |                                  |
|-------------------------------|-----------------------------|----------------------------------|
| Activity                      | CO <sub>2</sub> e in pounds | CO <sub>2</sub> e in metric tons |
| Diesel                        | 1,817,746                   | 825                              |
| Gasoline                      | 106,385                     | 48                               |
| <b>Total for Construction</b> | <b>1,924,131</b>            | <b>873</b>                       |

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

| <b>Section IV: Long-Term Operations and Maintenance Details</b> |                         |   |
|---|-------------------------|---|
| <b>Operations and Maintenance: Diesel</b>                       |                         |   |
| <b>Equipment</b>  | <b>Diesel (gallons)</b> | <b>Assumptions</b>  |
| Emergency Operation   | 600                     | (1x/site/yr for 50 years) x (3 sites) x 1 round-trip/event x 20 miles/round-trip ÷ 5 mpg        |
| Maintenance Operation   | 1,800                   | (3x per site annually for 50 years) x 3sites x 1 round-trip/event x 20 miles/round-trip ÷ 5 mpg |
| <b>Subtotal Diesel Gallons</b>                                  | <b>2,400</b>            |   |
| <b>GHG Emissions in lbs CO<sub>2</sub>e</b>                     | <b>63,720</b>           | 26.55 lbs CO <sub>2</sub> e per gallon of diesel  |
| <b>GHG Emissions in metric tons CO<sub>2</sub>e</b>             | <b>29</b>               | 1,000 lbs = 0.45359237 metric tons  |

| <b>Operations and Maintenance: Gasoline</b>         |                           |  |
|---|---------------------------|--|
| <b>Equipment</b>                                    | <b>Gasoline (gallons)</b> | <b>Assumptions</b>   |
| Pick-up Trucks or Crew Vans                         | 1,800                     | (3x per site annually for 50 years) x 3 sites x 1 round-trip/event x 20 miles/round-trip ÷ 5 mpg |
| <b>Subtotal Gasoline Gallons</b>                    | <b>1,800</b>              |  |
| <b>GHG Emissions in lbs CO<sub>2</sub>e</b>         | <b>43,740</b>             | 24.3 lbs CO <sub>2</sub> e per gallon of gasoline  |
| <b>GHG Emissions in metric tons CO<sub>2</sub>e</b> | <b>20</b>                 | 1,000 lbs = 0.45359237 metric tons   |

| <b>Operations and Maintenance Summary</b>   |                                  |                                       |
|---|----------------------------------|---------------------------------------|
| <b>Activity</b>                             | <b>CO<sub>2</sub>e in pounds</b> | <b>CO<sub>2</sub>e in metric tons</b> |
| Diesel                                      | 63,720                           | 29                                    |
| Gasoline                                    | 43,740                           | 20                                    |
| <b>Total for Operations and Maintenance</b> | <b>107,460</b>                   | <b>49</b>                             |