

SEATTLE PUBLIC UTILITIES
SEPA ENVIRONMENTAL CHECKLIST

This SEPA environmental review of the S Pearl Street Drainage and Wastewater Improvement Project has been conducted in accordance with the Washington State Environmental Policy Act (SEPA) (RCW 43.21C), State SEPA regulations (Washington Administrative Code [WAC] Chapter 197-11, and the City of Seattle SEPA ordinance (Seattle Municipal Code [SMC] Chapter 25.05).

A. BACKGROUND

1. Name of proposed project:

S Pearl Street Drainage and Wastewater Improvement Project

2. Name of applicant:

Seattle Public Utilities

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

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4. Date checklist prepared:

April 10, 2019

5. Agency requesting checklist:

Seattle Public Utilities

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

Construction is expected to occur over a period of approximately 14 months, between approximately April 2020 and June 2021. Construction in any one area should take no longer than approximately 6 months, with the exception that the underground storage tank and work in S Dawson Street is expected to require approximately 7 to 8 months. Heavy equipment construction will last approximately 300 work days, and electrical and instrumentation work will last approximately 140 work days. To reduce impacts on traffic near Maple Elementary School, construction of the pipelines in Corson Avenue S is planned during the off season of the school year.

Installation of backflow prevention devices on up to 23 private properties is anticipated to take up to 3 days at each affected private property (see Section A.11 for description).

Commissioning and final inspection are expected to occur between December 2020 and June 2021.

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

No future additions or expansions are planned.

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

Archaeological Investigation Report: Pearl Street Drainage Improvement. September 14, 2018. Equinox Research and Consulting International. Mt. Vernon, WA.

Basis of Design Report: Pearl St Drainage and Wastewater Improvement Project. July 2018 draft. Davido Consulting Group and Subconsultant Team Members. Seattle, WA.

Geotechnical Report: Pearl Street Drainage and Wastewater Improvement Project. January 2019 draft. SPU Geotechnical Engineering. Seattle, WA.

Technical Report - Options Analysis Phase: Pearl Street Drainage and Wastewater Improvement Project. August 2017. Davido Consulting Group and Subconsultant Team Members. Seattle, WA.

Value Engineering Study Report: Pearl Street Drainage and Wastewater Improvement. September 2018. Sazan Environmental Services. Seattle, WA.

Sewer Backup Investigation Report. 2012. Seattle Public Utilities. Seattle, WA.

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

There are no known applications pending for government approvals of other proposals directly affecting the property within the proposed project area.

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

Construction of this project will require the following permits and approvals:

Permit/Approval Required	Issuing Agency	Authorization Required
State Environmental Policy Act (SEPA) compliance	Seattle Public Utilities (SPU)	Environmental review in compliance with RCW 43.21C and Seattle Municipal Code (SMC) Chapter 25.05
Limited Access Variance Permit	Washington Department of Transportation (WSDOT)	For work within the I-5 right-of-way: tree removal and relocation of existing chain link fencing

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NEPA Categorical Exclusion	WSDOT	Required for approval of the Limited Access Variance Permit
WSDOT General Permit and Franchise Agreement	WSDOT	Easement needed for construction of the Facility Structure and for replacing an existing pipeline within the WSDOT I-5 right-of-way
Wastewater Treatment Industrial Waste Discharge Permit	King County Department of Natural Resources and Parks, Wastewater Treatment Division	For temporary construction dewatering
Plumbing Permits	Seattle/King County Public Health	For installation of backwater valves to protect private property within the building envelope
Side Sewer Permits	SDCI	For installation of backwater valves to protect private property on private property outside of the building envelope
Land Use Variance	SDCI	To establish utility use of the triangular parcel adjacent to the intersection of Corson Avenue S/S Dawson Street
Building Review	SDCI	For Facility Structure
Street Improvement Permit (SIP)	Seattle Department of Transportation (SDOT)	Full pavement restoration will be required where open-cut excavation is used
NPDES Construction Stormwater General Permit	Washington Department of Ecology	Coverage under Ecology's General Permit for construction disturbance on more than one acre
Construction Stormwater and Temporary Erosion/Sedimentation Control Plan	SPU	To be prepared by contractor, reviewed by engineering consultant (DCG), and approved by SPU prior to ground-disturbing construction
Spill Prevention Control and Countermeasures Plan	SPU	To be prepared by contractor, reviewed by engineering consultant (DCG), and approved by SPU prior to ground-disturbing construction
Service Application	Seattle City Light (SCL)	To provide electrical service to the Facility Structure and underground storage tank

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

In some areas of the City of Seattle, sewage and stormwater runoff are collected in the same pipes, known as combined sewers. During storm events, sometimes the flow in these pipes exceeds the sewer system capacity. When this occurs, the system overflows. Within the project area, sewer overflows frequently occur in some locations, including residences on Corson Avenue S, S Pearl Street, and S Dawson Street.

In addition, significant stormwater flooding has occurred near Maple Elementary School and the Maple Wood Playfield (a Seattle Department of Parks and Recreation [SPR] facility), located in the upper portion of the S Pearl Street basin (see Attachment A.2). According to SPU's 2012 *Sewer Backup Investigation Report*, high groundwater in the area has also contributed to sewer system capacity issues.

The goal of the S Pearl Street Drainage and Wastewater Improvement Project is to reduce the number of sewer backups in the project area and reduce the risk of surface flooding at the elementary school and playfield. SPU expects to meet this goal by providing additional sewage conveyance and storage. To further reduce the risk of sewer backups on private properties, the project may provide sewer backflow prevention devices (for example, backwater valves) on the privately-owned side sewers of up to 23 private properties. SPU anticipates providing technical support to help property owners install the backwater valves and reimbursing those who opt to participate. SPU will coordinate with the affected private property owners before undertaking this element of the project. Backflow prevention device installation will not be part of the conveyance and storage construction contract.

Proposed Project Elements

The proposed project includes a new 12-inch diameter high-flow sewer mainline to be installed parallel to an existing 8-inch diameter mainline in Corson Avenue S. The new 12-inch diameter sewer will extend approximately 1,100 linear feet (LF) from maintenance hole (MH) 064-208, near the intersection of Corson Ave S and S Ferdinand St. The existing sewer and the new high-flow sewer will come together in a proposed new below-grade diversion structure at MH 064-197 (at the intersection of S Dawson Street with Corson Avenue S). This diversion structure will be a 12-foot diameter standard pre-cast maintenance hole with a cast-in-place interior weir wall. It will link to a new below-grade storage tank in S Dawson Street (see Attachment B). The existing 8-inch diameter mainline that continues for 300 LF from MH 064-197 to MH 064-196 within the WSDOT right-of-way (ROW) will be replaced with a 12-inch diameter pipe, using pipe-bursting. The total length of the new sewers is approximately 0.25 mile.

The below-grade storage tank will be approximately 200,000 to 265,000 gallons in size, approximately 135 feet long by 20 feet wide, extending up to 26 feet below ground. It will be constructed of cast-in-place reinforced concrete slabs and walls to resist soil forces and traffic loads. Following storm events, the tank will be drained using sump pumps, and a tipping bucket flushing assembly will be used to flush solids and debris from the tank. This will minimize the amount of solids accumulation.

An above-grade facility structure will be constructed within WSDOT ROW adjacent to the intersection of Corson Avenue S and S Dawson Street, near the south end of the project (see Attachment B). The facility structure will be a single-story concrete masonry unit (CMU) building housing mechanical, electrical, and odor control equipment. An adjacent small triangular parcel acquired by SPU (Tax Parcel No. 274060-0055-02) will be temporarily used for staging during project construction. Once the project is complete, the triangular parcel will be used as needed for SPU maintenance crew parking.

One above-grade electrical cabinet will be needed for this project. This small, rectangular cabinet (approximately 4 feet wide by 4 feet high by 2 feet deep) will be constructed on a concrete slab at ground level, adjacent to the diversion structure. Electrical service will be provided by Seattle City Light.

Side sewer connections in Corson Avenue S, between S Ferdinand Street and S Dawson Street, will be protected in-place. East of the Corson Avenue S and S Dawson Street intersection, existing residential side sewers will be reconnected to the re-routed sewer main using new "T" angles at a minimum slope of 2 percent and a maximum slope of 100 percent.

Sewer backflow prevention devices may be installed on the privately-owned side sewers of up to 23 private properties identified through hydraulic modeling. The devices are typically installed near the point where the side sewer penetrates the footprint or foundation of a building. The devices can be installed inside buildings or exterior to buildings, depending on specific site conditions. Depending on the devices installed, an electrical supply and connection may also need to be installed. SPU will coordinate with the affected private property owners before this element of the project proceeds.

An unimproved alley between S Dawson Street and S Bennett Street will be improved by grading to level the surface and applying gravel to facilitate use by vehicles.

Construction access and staging areas will be identified, evaluated, and determined as the design progresses. It will be the responsibility of the contractor to develop a work plan.

Construction Methods

Construction methods must take into consideration the constraints of close proximity to Interstate 5 (I-5) ROW and Maple Elementary School. Trenchless installation will be used to replace the existing 8-inch diameter between MH 064-615 to MH 064-616 with a 12-inch

diameter line close to and within the I-5 ROW. Work within the ROW will require authorization from WSDOT.

Open-cut excavation will be used to install the storage tank, maintenance holes, and pipelines using a combination of soldier pile and trench box shoring. Open-cut excavation will impact traffic to/from Maple Elementary; therefore, construction of the combined drainage and wastewater system (pipelines) in Corson Avenue S is scheduled to occur during the off season of the school year (see the response to SEPA Checklist Question B.14.h). Utilities in conflict with open-cut excavation will be demolished or relocated, as needed, following SPU design standards.

Backflow prevention device installation typically includes excavating a trench (usually about 5 feet wide by 6 feet long by 5 feet deep) above each privately-owned side sewer, installing the device, backfilling the excavation, and then restoring disturbed soils and landscaping.

- 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 S Pearl Street Drainage and Wastewater Improvement Project area is bounded by 12th Avenue S to the east, Corson Avenue S to the northwest, I-5 to the southwest, S Angeline Street to the north, and S Lucile Street to the south (see Attachment A.2).

A general legal description for the project area is as follows:

Portions of:

- Blocks 4-8 inclusive, Germania Addition Division No 2, Vol 17, pg 34;
- Blocks 2 and 3, Germania Addition Division No 1, Vol 16, pg 50; and
- Adjacent I-5 corridor east of the traffic lanes.

The project area is in the east one-half of Section 20, Township 24N, Range 04E.

B. ENVIRONMENTAL ELEMENTS

1. Earth

a. General description of the site: *[Check the applicable boxes]*

- Flat Rolling Hilly Steep Slopes Mountainous
 Other: Moderately sloping

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

The steepest slope within the project area is approximately 8.6 percent (an 8-ft change in elevation across a distance of 93 feet) within the WSDOT ROW south of the Corson Avenue S/S Dawson Street intersection.

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

The geotechnical interpretation of subsurface conditions is based on published geologic maps, information obtained from new and historical subsurface explorations, and laboratory tests on select soil samples (SPU Geotechnical Engineering 2018). None of the soil types encountered are agricultural soils of commercial significance.

The project site is underlain by Vashon glacial till and Blakely Formation bedrock. These geologic units, as well as artificial fill, recessional lacustrine deposits, and advance outwash deposits, were encountered during the subsurface exploration program performed for the project. Boring locations are described in the table below and illustrated on Figure 1 in the *Geotechnical Report* prepared for the project.

Boring Number	Boring Location
B-101	S Ferdinand Street, east of Corson Avenue S
B-102	S Shelton Street, east of Corson Avenue S
B-103	Corson Avenue S in the vicinity of the play equipment on the Maple Elementary School site
B-104	S Pearl Street, west of Corson Avenue S
B-105	At the intersection of Corson Avenue S/S Dawson Street
B-106	S Dawson Street, east of 12th Avenue S
B-107	West end of S Bennett Street

Fill. Deposits interpreted to be fill were encountered in borings B-106 and B-102 (the latter outside the area where project excavations will occur). The depth of these fill deposits ranged from the ground surface to 4 to 7 feet below ground surface (bgs). The fill generally consists of medium dense silty sand with varying amounts of gravel, and stiff to very stiff silt with sand. Debris encountered in the fill included brick fragments, organics, and wood.

Glacial Till. Deposits interpreted to be glacial till were encountered in borings B-101, B-103, and B-104 from the ground surface to between 4 and 12 feet bgs. A 6-foot thick layer of glacial till was also encountered between 7 and 18 feet bgs in borings B-101, B-102, and B-103. The glacial till deposits generally consist of dense to very dense silty sand with varying amounts of gravel and very stiff to hard silt and clay with varying amounts of sand and gravel. Seams and layers of sand and silty sand were observed in the glacial till.

Recessional Lacustrine Deposits. Deposits interpreted to be recessional lacustrine deposits were encountered underlying fill in boring B-102 and underlying the upper layer of glacial till in borings B-101 and B-103. These deposits varied in thickness from 1 to 5 feet, and generally consisted of very stiff silt, clay, and clay with sand. Seams and layers of sand, silty sand, and gravel were observed in the recessional lacustrine deposits.

Advance Outwash. Deposits interpreted to be advance outwash were encountered underlying the lower layer of glacial till in boring B-102. This boring terminated in this deposit 21.5 feet bgs. The advance outwash deposits generally consist of very dense sand with trace amounts of silt.

Blakeley Formation. Siltstone bedrock was encountered below the glacial till to the full depth explored in borings B-101, B-103, and B-104; below the fill to the full depth explored in boring B-106; and from the ground surface to the full depth explored in borings B-105 and B-107. This bedrock was interpreted as the Blakeley Formation. In general, the siltstone was found to be slightly weathered to highly weathered and extremely weak to very weak.

A 4 to 8-foot thick layer of highly weathered siltstone was encountered below the glacial till in boring B-104, below fill in boring B-106, and from the ground surface to a depth of 8 feet bgs in borings B-105 and B-107. The highly weathered siltstone generally consists of very stiff to hard silt with trace amounts of sand.

Slightly to moderately weathered siltstone was encountered below the glacial till in borings B-101 and B-103, and below highly weathered siltstone in borings B-104, B-105, B-106, and B-107.

Based on SPU's interpretation of subsurface conditions, site excavations less than approximately 15 feet deep will be made in fill, weathered glacial till, or Lawton clay. Debris should be expected within the fill, and cobbles and boulders should be expected within the glacial till. Excavations greater than 10 ft deep are more likely to encounter the Blakeley Formation in a weathered or non-weathered condition. Excavation in this siltstone formation may be difficult due to the density of this soil unit.

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

No, there are no surface indications or history of unstable soils in the immediate vicinity.

The site is located in a seismically-active area. Characterization of the soil profile type by the geotechnical consultant determined that site soils are generally Site Class C for the purpose of determining seismic design parameters. Seismic design parameters for the project are provided in the *Geotechnical Report* (SPU Geotechnical Engineering 2018).

Liquefaction is the momentary loss of some portion of soil shear strength during a seismic event. Because site soils generally consist of over-consolidated very stiff to hard

silts and clays, it is the opinion of the geotechnical consultant that the risk of liquefaction is low and does not need to be considered for design of the S Pearl Street Drainage and Wastewater Improvement Project.

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.

Overall, minimal grading will be required to implement the project. Primarily, this grading will occur in the alley south of S Dawson Street and north of S Bennett Street (see Attachment C, Photo 5), to smooth existing slopes and install gravel to provide temporary vehicular access to the rear of residential lots that will be affected by construction in street rights-of-way.

Deep excavations will be required in open-cut excavation areas to replace existing drainage and wastewater system components. Estimates of excavation and fill quantities are very approximate at the time of this writing, as the grading plan has not yet been fully developed.

Project Element	Approximate Quantity of Excavation (in cubic yards)	Approximate Quantity of Fill (in cubic yards)
Underground storage tank and other below-grade structures (multiple maintenance holes and a diversion structure)	4,500 CY	1,000 CY
High-flow bypass line and accompanying manholes	1,770 CY	995 CY
Alley south of S Dawson Street and north of S Bennett Street	300 CY	25 CY
Facility Structure site	200 CY	25 CY
Totals:	6,770 CY	2,045 CY

Fill material will be imported Type 17 mineral aggregate for the underground storage tank and diversion structure; Type 9 mineral aggregate bedding (3/8-inch washed rock) for pipes and manholes; and Type 2 mineral aggregate bedding (1¼-inch minus crushed surfacing base course) for asphalt pavement, all to be obtained from a permitted quarry. All pipe installation via open-cut trenching will use Class D bedding, which is select native material. It is assumed that existing soil at the elevations of proposed pipes consists primarily of hard/stiff silt and clay or siltstone, which is not suitable for reuse as bedding. Other soil types may be encountered at higher elevations, but their classification as select native material and suitability as a bedding will not be known until construction begins. There is no bedding material requirement for concrete pavement, sidewalk, or curb restoration, or for reconnection of existing side sewers.

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

Erosion and turbidity in site runoff could occur as a result of construction activities, although this risk is low because the project site is moderately sloping and the majority of the proposed work will be done within existing impervious (paved areas) or within the existing right-of-way adjacent to residential properties. Ground disturbance and vegetation removal will be limited to construction staging and construction access areas. These will be located in existing paved areas where possible. Temporary erosion and sediment control best management practices (BMPs) would be deployed, inspected, and maintained in accordance with a project-specific Construction Stormwater and Erosion Control Plan (CESCP).

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

Approximately 75 percent of the project site will be covered with impervious surfaces following project construction.

The majority of the project will be constructed within the boundaries of Corson Avenue S and S Dawson Street. There is approximately 53,000 square feet (SF) of existing impervious surface within this project area, of which 29,000 SF will be demolished and replaced. In order to accommodate construction of the Facility Structure and surface an alleyway with gravel, approximately 8,300 SF of previously pervious surfaces outside of the Corson Avenue S and S Dawson Street roadways will be converted to impervious surface.

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

Temporary Erosion Sedimentation Control BMPs will be used to protect existing stormwater drainage systems, and to minimize erosion and turbidity within the construction area. The BMPs will be installed and managed per the City of Seattle Director's Rule SDCI 17-2017/SPU DWW-200, Volume 2 *Construction Stormwater Control Manual*. A project-specific Construction Stormwater and Erosion Control Plan (CSECP) will be prepared and implemented to meet the requirements of SMC 22.800.

Erodible material stockpiles will be covered with impervious barriers for protection from rain. Disturbed areas will be restored similar to original conditions.

The contractor will be responsible for determining equipment suitability for excavation of the varying soil types described in the *Geotechnical Report*, as well as for other soil strata that may be encountered.

Temporary excavations and shoring will be implemented in accordance with Section 2-04 and 2-07 of the 2017 City of Seattle *Standard Specifications for Road Bridge and Municipal Construction* (Standard Specifications). The contractor will be responsible for the means and methods of shoring temporary excavations. Recommendations are included in the Geotechnical Report for the contractor's consideration.

Project design will comply with Seattle Building Code requirements for structures to be designed for inertial forces induced by earthquake motions in accordance with American Society of Civil Engineers (ASCE) 7.

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 activities have the potential to create temporary fugitive dust emissions during demolition of existing improvements, materials handling, and earthwork. Mobile and stationary equipment used to construct the project, including worker trips to the construction site, would also generate emissions from the combustion of diesel fuel and gasoline. These sources are expected to be minimal, localized, and temporary.

Greenhouse Gas (GHG) Emissions

Estimates of direct greenhouse gas emissions related to construction of the project, presented as total metric tons of carbon dioxide (MTCO₂e), are shown in the table below. GHG Emissions Worksheets that show how these quantities were calculated are provided in Attachment D.

Operation and long-term maintenance of project improvements would not result in increases in GHG emissions above current levels. The project will repair and increase the capacity of an existing system, and will likely reduce the frequency and duration of reactive maintenance visits/activities.

Summary of Greenhouse Gas (GHG) Emissions

Activity/Emission Type	Units	GHG Emissions (MTCO ₂ e) ¹
Paving	31,180 square ft	1,559
Road aggregate	577 cubic yards	2.7
Construction Activities (Diesel)	8,035 gallons	97
Construction Activities (Gasoline)	4,760 gallons	52.5
Long-term Maintenance (Diesel)	N/A	N/A
Long-term Maintenance (Gasoline)	N/A	N/A
Total GHG Emissions		1,711

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

Numerous compounds can result in nuisance odors in wastewater systems. Experience with combined drainage and sanitary sewer systems suggests that hydrogen sulfide (H₂S) will be the dominant odor-producing compound generated by the S Pearl Street Drainage & Wastewater Improvement Project, and that this compound could exceed the human detection threshold. A carbon media-based odor control system will be provided to mitigate nuisance odors from the below-grade storage tank.

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

There are no known off-site sources of emissions or odor that may affect this proposal.

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

During construction, impacts to air quality would be minimized by implementing standard local, State and Federal emission control criteria, and by complying with City of Seattle construction practices. These measures include requiring contractors to use best available technologies for emissions control, to properly maintain their vehicles and equipment, and to minimize vehicle and equipment idling time within the project area.

The *Basis of Design Report* prepared for the project includes odor control measures that will be implemented in accordance with the recommendations of a professional engineer who specializes in designing such systems. The odor control system will consist of a fan, mist/grease eliminator, odor control vessel, ductwork, and appurtenances. The design airflow will manage air drag, air displacement, and negative pressurization to prevent fugitive odor emissions from escaping out of system voids at access hatches and maintenance holes.

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.

There are no surface water bodies on or in the immediate vicinity of the project site.

A historical topographic survey indicates that prior to development of the existing neighborhood (50 to 100 years ago), there was a stream east of Corson Avenue S, generally along the alignment of 12th Avenue S. It is likely that groundwater still concentrates in the historical stream basin (SPU Geotechnical Engineering 2018).

(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.

No. The project will not require any work over, in, or adjacent to a surface water body.

- (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 dredge material will be placed in or removed from surface water or wetlands.

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

The project will not require surface water withdrawals or diversions.

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

No. The project area is not within a 100-year floodplain.

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

The proposed project would upgrade and increase the capacity of the existing drainage and wastewater system in the S Pearl Street basin that discharges untreated sewage and stormwater flows to the King County South Michigan Street Regulator Structure and eventually to the West Point Treatment Plant. The project is expected to reduce the volume and frequency of sewage overflow events, and, will not produce or discharge waste materials to surface waters.

b. Ground:

- (1) Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known.**

At the time when subsurface borings were drilled to obtain geotechnical information (August 2017), wet layers and/or groundwater seepage were found in borings B-101, B-102, B-105 and B-106. (See the response to SEPA Checklist Question B.1.c for the location of these borings.) Groundwater measurements in boring B-101 found groundwater within 1 inch of the ground surface. The wet layers in borings B-102, B-105, and B-106 generally occurred between 10 and 25 feet bgs. Groundwater measurements in borings B-103, B-106, and B-107 indicated that groundwater at these locations occurs between 7 and 12 feet bgs (SPU Geotechnical Engineering 2018).

Groundwater monitoring wells were installed in borings B-101, B-103, B-106 and B-107 in order to obtain on-going groundwater measurements, since groundwater levels can be expected to fluctuate throughout the year (highest during late winter and spring seasons, lowest during late summer and early fall seasons).

It is expected that temporary dewatering of groundwater will be required in open-cut excavations more than 10 feet deep. Clearing groundwater from deep excavations will be accomplished using temporary dewatering wells or sumps. A King County Discharge Permit will be obtained to allow temporary discharge of groundwater to the sewer.

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

No waste material will be discharged to groundwater during construction or operation of this project.

c. Water Runoff (including storm water):

- (1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.**

Stormwater runoff will enter existing and replaced catch basins within the project area along Corson Avenue S and S Dawson Street. Stormwater runoff from new impervious gravel surface placed in the alley south of S Dawson Street will enter a series of new catch basins that will tie into the existing sewer system in this area.

In the event that a sewer overflow event were to occur in the completed condition of the project, this water would bubble up out of the underground diversion structure at the intersection of Corson Avenue S/S Dawson Street and run along the street in approximately the same path it follows under current overflow events: south past residences on S Dawson Street toward S Bennett Street.

The proposed underground storage tank will detain drainage and wastewater while the downstream system is at capacity and release it back to the system when the peak of storm has passed, resulting in less frequent overflow events. The sewer system will continue to flow to the King County South Michigan Street Regulator Structure, and from there to the West Point Treatment Plant.

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

No part of the proposed work involves any discharges of waste materials to surface or ground waters. However, several construction activities such as sawcutting, concrete pouring and handling, etc., would generate pollutants that could potentially enter local drainage conveyance systems. Non-sediment pollutants that may be present during construction include:

- Petroleum products including fuel, lubricants, hydraulic fluids, and form oils
- Paints, glues, solvents, and adhesives
- Concrete and concrete washwater
- Chemicals associated with portable toilets.

Procedures to prevent and control pollutants, including hazardous materials such as hydrocarbons and pH-modifying substances, will be described in a *Spill Prevention Plan* to be prepared for the project and approved by the City of Seattle prior to the start of construction activities.

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

The proposed project will increase the capacity of the drainage collection and conveyance system within the S Pearl Street basin, but will not alter existing drainage patterns.

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

In the completed condition of the project, there will be a long-term reduction in the frequency and volume of sewer overflow events within the S Pearl Street drainage basin as a result of detaining combined drainage and wastewater in the proposed underground storage tank at the intersection of S Dawson Street/Corson Avenue S.

Construction stormwater will be controlled through the application of BMPs identified in the City of Seattle *Stormwater Code* (SMC Title 22, Subtitle VIII), Director's Rule DWW-200 SPU/17-2017 SDCl, and *Construction Stormwater Control* (Volume 2). Stormwater management requirements are based on the classification of project. It is assumed that the S Pearl Street Drainage and Wastewater Improvement Project will be classified as a Roadway Project. In addition to meeting all the minimum requirements listed in SMC Section 22.805.020 (Minimum Requirements for all projects), Roadway Projects must also satisfy the minimum requirements for soil amendment (SMC Section 22.805.060.A), on-site stormwater management (SMC Section 22.805.060.B), and flow control (SMC Section 22.805.060.C). This project discharges to a public combined sewer, and therefore does not need to satisfy minimum requirements for water quality treatment (SMC Section 22.805.060.D). Stormwater code compliance will be documented in a stand-alone *Drainage Report*.

Project-specific temporary measures to be implemented during construction include the use of a bypass system and excavation dewatering, as required. The existing 8-inch diameter mainline between MH 064-208 and 064-199 will be kept in service throughout construction. A bypass structure (vault, maintenance hole or similar) and bypass line will be installed inline on the mainline, between MH 064-199 to 064-196. The flow will be diverted from MH 064-199 by the temporary bypass structure. The purpose of the bypass structure will be to maintain critical flows while sewer lines are out of service, by diverting flow from an upstream structure directly into the trunk line downstream side of MH 064-196, bypassing the construction zone for the storage tank and diversion structure. Bypassing will be required temporarily during construction and then as needed for future maintenance or repair activities.

It is anticipated that dewatering will be needed to maintain groundwater at a minimum of 2 feet below excavation depths during installation of the proposed structures and conveyance pipes. The contractor will be responsible for dewatering excavations in accordance with Section 2-08 of the 2017 City of Seattle *Standard Specifications for Road Bridges and Municipal Construction*.

4. Plants

a. Types of vegetation found on the site: [check the applicable boxes]

<input checked="" type="checkbox"/> Deciduous trees:	<input checked="" type="checkbox"/> Maple	<input checked="" type="checkbox"/> Other: Ornamental cherry and misc. ornamentals
<input checked="" type="checkbox"/> Evergreen trees:	<input checked="" type="checkbox"/> Grand Fir	<input checked="" type="checkbox"/> Deodar (Himalayan) Cedar <input type="checkbox"/> Other: (identify)
<input checked="" type="checkbox"/> Shrubs: Photinia (in the WSDOT ROW where vegetation removal/demolition is proposed)		
<input checked="" type="checkbox"/> Grass		
<input type="checkbox"/> Pasture	<input type="checkbox"/> Crop or grain	<input type="checkbox"/> Orchards, vineyards, or other permanent crops
<input type="checkbox"/> Wet soil plants:	<input type="checkbox"/> Cattail	<input type="checkbox"/> Buttercup <input type="checkbox"/> Bulrush <input type="checkbox"/> Skunk cabbage
<input type="checkbox"/> Other: (identify)		
<input type="checkbox"/> Water plants:	<input type="checkbox"/> water lily	<input type="checkbox"/> eelgrass <input type="checkbox"/> milfoil <input type="checkbox"/> Other: (identify)
<input checked="" type="checkbox"/> Other types of vegetation: Himalayan blackberry, English ivy, Scot's broom		

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

Approximately twelve existing trees will be removed from the WSDOT ROW south of the S Dawson Street/Corson Avenue S intersection to build the Facility Structure, as shown on the Demolition Plan drawing (Attachment E). This area is approximately 2,600 SF in size. The trees range in size from 6-inch to 20-inch diameter at breast-height (dbh), and include conifers, English holly, and big leaf maple. Ten of the trees are less than 12 inches dbh. Understory vegetation that includes predominantly invasive species (Himalayan blackberry, English ivy, and Scot's broom) will also be removed from this area (see Attachment C, Photos 3 and 4).

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

No Federally-listed threatened or endangered 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 disturbed by development and redevelopment over the past 100 years. Portions of the project location have been excavated, filled, and paved. There is no suitable habitat for threatened or endangered plants within the proposed area of disturbance.

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

Street trees within road rights-of-way on Corson Avenue S, S Dawson Street, and S Bennett Street will be protected in-place during construction. Where it is not possible to protect or preserve trees, they will be replaced per SDOT requirements.

All landscape areas impacted by project construction and proposed infrastructure will be restored to existing or improved conditions per City of Seattle standards, or if within the WSDOT I-5 right-of-way, to WSDOT standards. The SDOT standard for replacing street trees is at a ratio of two new trees for every one tree removed.

Planting strips impacted by construction will be restored. The majority of planting strips along Corson Ave S, S Dawson Street, and S Bennett Street currently are lawn, which is proposed to be replaced in-kind.

Any private property landscaping impacted by construction will require replacement in-kind or improved landscape character. Landscape improvements will be responsive to the existing neighborhood character and stakeholder requests.

The facility structure site, and the area of conveyance south of Dawson Street, will involve more site restoration as this area is heavily vegetated (see Attachment C, Photo 3). Where space allows due to offset requirements between utility lines and trees, removed trees would be replaced with trees with higher ecological value, meaning native or adapted trees that provide habitat value or other attributes determined to be important to area stakeholders.

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

Himalayan blackberry and English ivy are Class C noxious weeds on the Washington State Noxious Weed List. Scot's broom is Class B. These occur in the heavily vegetated triangular area south of the Corson Avenue S/S Dawson Street intersection. Most of these plants would be removed as a result of clearing and grubbing in this area during construction of the Facility Structure, per the Demolition Plan (Attachment E).

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: [check the applicable boxes]

Birds: Hawk Eagle Songbirds
 Other: crow, robins

Mammals: Deer Other: Raccoon, opossum, rats (likely)

Fish: Salmon Trout Herring
 Shellfish Other:

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

There are no listed threatened or endangered animal species known to occur on or near the site. Databases reviewed to make this determination include the official USFWS ESA Section 7(c) species list (December 18, 2018), and the WDFW Priority Habitats and Species website (January 11, 2019).

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

The project location is not part of a specific known migration route. However, Seattle is within the migratory route of many bird species known as the Pacific Flyway, a major north-south route of travel for migratory birds in the Americas extending from Alaska to Patagonia.

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

No significant impacts to wildlife are anticipated; therefore, no measures to minimize or avoid impacts to wildlife are proposed.

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

The only observed invasive non-native animal species observed on the site during a December 18, 2018 site visit was a domestic cat. It is assumed that eastern gray squirrels (*Sciurus carolinensis*), first introduced to Seattle in 1925, utilize the project area, as well as European starling (*Sturnus vulgaris*) and house sparrows (*Passer domesticus*).

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.

Electrical energy to be supplied by Seattle City Light will be used to operate the new storage tank and associated electrical, mechanical, and odor control systems within the Facility Structure.

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

No. The project does not involve building structures or planting vegetation that would block access to the sun for adjacent properties to any greater extent than existing south of the Corson Avenue S/S Dawson Street intersection. Elsewhere within the project area, all facilities will be subsurface.

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:

New motors will meet Seattle Energy Code requirements (C405.8, C503.6.5) for motor efficiency.

Lighting design will use LED wet location listed light fixtures for the electrical room, LED Hazardous location (Class 1 Div. 2 Grp C & D) light fixtures for the mechanical room, and LED explosion proof (Class 1 Div. 1 Grp C & D) light fixtures for the storage tank.

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:**

Materials likely to be present in the project area during construction, operation, and maintenance of the combined drainage and wastewater system include gasoline and diesel fuels, hydraulic fluids, oils, lubricants, and other chemical products. See the response to SEPA Checklist Question B.3.c.(2), above. A spill of one of these chemicals could potentially occur during construction, operation, and/or maintenance as a result of either equipment failure or worker error.

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

The Washington Department of Ecology, Toxics Cleanup Program website was checked to identify the proximity of known contaminated sites within a 1-mile radius of the S Pearl Street Drainage and Wastewater Improvement Project. The closest site was the former Sons of Italy Chevron Station property on S Dawson Street east of 15th Avenue S (5118 15th Avenue S). A Leaking Underground Storage Tank (LUST) was identified at this location in 1995. An Independent Remedial Action Program (IRAP) was implemented, and the site is now listed on Ecology's Toxics Cleanup Program website as requiring No Further Action (NFA).

- (2) Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.**

There are no known hazardous chemicals or conditions that would affect construction of the S Pearl Street Drainage and Wastewater Improvement Project.

- (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.**

No toxic or hazardous chemicals would be stored, used, or produced during construction, operation or maintenance of the project, other than those described above in the response to SEPA Checklist Question B.7.a.

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

Possible fire protection and/or emergency medical services could be required during construction. The completed condition of the combined drainage and wastewater system should exert no higher demand for emergency services than the existing system. Typical emergency services required for medical emergencies are provided by the Seattle Fire Department.

SPU and/or the contractor would be responsible for site security during construction. The Seattle Police Department would respond to criminal or nuisance activity both during construction and in the completed condition of the project.

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

A Spill Plan will be developed to control and manage accidental spills during construction. Any soils contaminated by spills would be excavated and disposed by a qualified contractor in a manner consistent with the level of contamination, in accordance with Federal, State, and local regulatory requirements.

Open-cut excavation areas for this project will likely exceed 4 feet below ground surface. For this reason, temporary excavation support (e.g., shoring) is expected. The contractor will be required to comply with the 2017 City of Seattle *Standard Specifications for Road Bridges and Municipal Construction*, Section 2-07.3(1), which states that where excavations are deeper than 4 feet, a safety system shall be constructed and maintained to comply with the requirements of the Washington Industrial Safety and Health Act (RCW Chapter 49.17), including compliance with WAC Chapter 296-155.

During construction, workers will be required to follow applicable requirements of the Washington State safety standards for entry and work in confined spaces (Chapter 296-809 of the Washington Administrative Code [WAC]).

In the completed condition of the project, SPU workers performing routine operation and maintenance activities will be required to follow the requirements of SPU's Confined Space Safety Program that implements the requirements of WAC 296-809. In addition, whenever the storage tank hatches are open, the odor control fan will run to maintain negative pressure within the storage tank to mitigate the escape of fugitive odors and to provide ventilation for maintenance personnel.

b. Noise

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

Existing sources of noise in the project vicinity include vehicles traveling on I-5, aircraft fly-overs, and playground noise. None of these sources would affect the project during construction or in the completed condition.

(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.

There would be a temporary increase in noise and vibration levels in the vicinity of project construction. Noise and vibration are expected to result from excavators, track hoes, dump trucks, discharges of materials from dump trucks onto staging areas, and track hoe-mounted pavement breakers. Noise and vibration are expected

to result from compaction equipment such as rammers or sheepsfoot roller (if needed) and fuel-powered pumps for dewatering (if needed).

Short-term noise from construction equipment would be limited to the allowable maximum levels by the City of Seattle Noise Control Ordinance (SMC Chapter 25.08). Elevated noise from construction equipment would be allowed only between the hours of 7:00 AM and 7:00 PM on weekdays, and between 9:00 AM and 7:00 PM on weekends and legal holidays. For the S Pearl Street Drainage and Wastewater Improvement Project, construction typically would take place between 7:00 AM and 6:00 PM on weekdays, except for emergencies that may occur before or after those hours.

Dewatering is expected to occur 24 hours per day during deep open-cut excavation. This will require the use of dewatering pumps. Dewatering pumps may use generators or an alternative power source. Dewatering activities would be required to comply with the City's Noise Control Ordinance, and, may require the use of a sound proof (or sound-reduction) enclosure.

Noise sources in the completed condition of the project would include mechanical/electrical equipment fitted with silencers and housed within the Facility Structure. Given the predominant freeway traffic noise in the project vicinity, it is considered unlikely that these sources would be audible in the neighborhood.

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

Construction equipment would be muffled, and generators may require noise barriers to maintain compliance with the City of Seattle Noise Control Ordinance. Applicable provisions of SMC Chapter 25.08 would be enforced during construction, operation and maintenance of the combined drainage and wastewater system, with the possible exception of during emergency conditions.

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 site (road right-of-way) is currently used for subsurface elements of the existing S Pearl Street basin combined drainage and wastewater system. Adjacent properties are developed with single-family detached homes, an elementary school, and a Seattle Parks Department playfield (see Attachments A and C). The project will cause temporary noise, parking, and circulation impacts to adjacent properties during construction.

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

No. The site has not been used as working farmland or working forest land. Existing homes in the neighborhood were built 50 to 100 years ago.

(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?

No. The project will not affect or be affected by the normal business operations of a working farm or working forest land.

c. Describe any structures on the site.

There are no existing structures, per se, on the project site. There is WSDOT right-of-way fencing and guard rail, and there is an unoccupied trailer (recreational vehicle) in the triangular parcel south of the Corson Avenue S/S Dawson Street intersection (see Attachment C, Photo 3).

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

The unoccupied recreational vehicle and approximately 100 lineal feet of chain-link fencing will be removed in the triangular parcel south of the Corson Avenue S/S Dawson Street intersection to construct the Facility Structure, as shown on the Demolition Plan (Attachment E). Several below-grade concrete maintenance holes will be removed and replaced.

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

Single Family Residential

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

Single Family Residential

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

Not applicable. The site is not within a shoreline environment.

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

No part of the site is classified as an Environmentally Critical Area, as mapped by the City of Seattle (SPU Geotechnical Engineering 2018).

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

None. There will be no people residing or working on the site in the completed condition of the project. SPU employees will periodically visit the combined drainage and wastewater system underground tank and Facility Structure to perform maintenance activities.

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

None. The project will not displace any people.

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

There will be no displacement impacts; therefore, no measures are proposed to avoid or reduce such impacts.

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

The proposal will upgrade the existing underground sewer system that was constructed in 1914 (S Dawson Street) and 1930 (S Pearl Street and Corson Avenue S). A major purpose of these improvements is to reduce sewer overflows and surface flooding in the S Pearl Street basin.

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

There will be no impacts to agricultural or forest lands of long-term commercial significance; therefore, no measures are proposed to reduce or control such impacts.

9. Housing

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

No housing units will be provided as part of the S Pearl Street Drainage and Wastewater Improvement Project.

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

No housing units will be eliminated.

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

There will be no housing impacts; therefore, no measures are proposed to reduce or control such impacts.

10. Aesthetics

a. What is the tallest height of any proposed structure(s), not including antennas? What is the principal exterior building material(s) proposed?

The Facility Structure will be the tallest above-ground project element. It will be 15 feet tall, constructed of concrete masonry.

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

The appearance of the triangular parcel of land south of the intersection of Corson Avenue S/S Dawson Street will be altered by removal of existing overgrown vegetation and the unoccupied recreational vehicle that appears to have been abandoned in this

area for several years (see Attachment C, Photo 3). Large evergreen trees and the 10 to 12-ft tall wooden fence along the east side of the WSDOT I-5 right-of-way will remain. Therefore, views across the site from east to west will not be obstructed by construction of the Facility Structure in this area.

The unimproved alley south of S Dawson Street and north of S Bennett Street will be cleared and graded, and a gravel surface will be applied to improve conditions for vehicular access to the rear of homes that will be affected by the loss of on-street parking during construction (see Attachment C, Photo 5).

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

The above-grade Facility Structure will have an architectural finish designed to enhance/complement aesthetics in the neighborhood.

Proposed landscape restoration and improvements are described in the response to SEPA Checklist Question B.4.d. As the design team and SPU coordinate with stakeholders, additional landscape or pedestrian improvements may be included as part of the project to satisfy urban design requirements. Urban design improvements will be site-specific responses to the immediate context of their location. Stakeholders for the landscape design include area residents, SDOT, SPR, WSDOT, Seattle School District, and those attending Maple Elementary School and St George Parish School and Church.

11. Light and Glare

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

Wall-mounted light fixtures will be placed over the two exterior entryways to the Facility Structure approximately 9 feet above grade. Lights in these fixtures will provide nighttime security lighting between dusk and dawn.

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

No. Security lighting associated with the Facility Structure will not cause a safety hazard or interfere with views in the completed condition of the project.

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

Off-site sources of light in the neighborhood include interior and exterior residential lighting, security lighting around the elementary school, and street lighting. None of these sources would affect the proposed S Pearl Street Drainage and Wastewater Improvement Project during construction or in its completed condition.

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

Exterior light sources on the Facility Structure will be directed downward over entries and will utilize timing sensors to turn on at dusk and off at dawn.

12. Recreation

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

Maple Wood Playfield at 4801 Corson Avenue S is the nearest neighborhood park, adjacent to the north end of the project area, west of Corson Avenue S and 12th Avenue S (see Attachment A.2). Amenities include natural turf fields for baseball and soccer, a play area with slides and climbing features, swings, a whirl, a large open green space, an asphalt-paved perimeter walkway, a concession stand and restrooms. There is also a grass playfield and children’s play equipment at the south end of Maple Elementary School within the project area, at 4925 Corson Avenue S. The street right-of-way provides opportunities 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 will not displace existing park and playfield recreational uses. The northern limit of the construction area is just south of the S Ferdinand Street right-of-way. The entrance driveway to the Maple Wood Playfield parking lot will not be obstructed by this work. Pedestrian access to the playfield at the south end of the elementary school may be temporarily impacted during open-cut excavation and construction in the Corson Avenue S right-of-way. Temporary closures or detours in the street right-of-way may affect informal recreational opportunities.

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

Construction will be phased during the off season of the school year (e.g., during summer months and during extended holidays such as December/January) in order to avoid conflicts during peak traffic volumes in the vicinity of Maple Elementary School. The project would attempt to make street right-of-way closures and detours as brief as possible. Project notifications through website updates, emails, and mailings would provide affected residents with limited advance notice regarding temporary street and sidewalk closures and detours.

13. Historic and Cultural Preservation

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

There are numerous homes adjacent to the project site that are more than 45 years old. It is not known whether any of these have been evaluated for cultural/historic significance. However, no buildings or structures would be disturbed by the project.

The project site was reviewed in a professionally-prepared archaeological investigation. No protected cultural resources or historic properties were identified on or near the parcels where construction is proposed (ERCI 2018).

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.

Equinox Research and Consulting International (ERCI, Mt. Vernon, Washington) conducted a research overview and excavated 30 subsurface shovel tests to look for buried material traces of past human activity within the project area. ERCI researchers:

- Reviewed site forms and reports of previous archaeology on file at the Department of Archaeology and Historic Preservation (DAHP) in Olympia, Washington.
- Reviewed other archaeological reports and related documents on file at ERCI offices.
- Reviewed published information on the precontact, traditional Native American and historic land use in the area of potential effect or project area, and the Salish Sea, including central Puget Sound.
- Reviewed King County Assessor’s records.
- Reviewed General Land Office, Anderson, Baist Real Estate, Kroll and other historic maps.
- Carried out an archaeological investigation of the project area on July 12, 2018. Fieldwork entailed a pedestrian surface survey and subsurface shovel testing.
- Reviewed the results of geological testing (bore hole logs).

No material evidence, artifacts, or areas of cultural importance were identified on or near the site.

c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the Department of Archaeology and Historic Preservation, archaeological surveys, historic maps, GIS data, etc.

See the response to SEPA Checklist Question B.13.b above.

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 management recommendations of the professional archaeologist are as follows (ERCI 2018):

- The proposed project proceeds as planned with a copy of the Unanticipated Discoveries Protocol (UDP) to be on-site at all times. The UDP is provided in Appendix 3 of the *Archaeological Investigation Report* prepared for the project.
- In the event that any ground-disturbing activities or other project activities related to this development or in any future development uncover protected cultural material (e.g., bones, shell, stone or antler tools), all work in the immediate vicinity should stop, the area should be secured, and any equipment moved to a safe distance away from the location. The on-site superintendent should then follow the steps specified in the UDP.
- In the event that any ground-disturbing activities or other project activities related to this development or in any future development uncover human remains, all work in the immediate vicinity should stop, the area should be secured, and any equipment moved to a safe distance away from the location. The on-site superintendent should then follow the steps specified in the UDP.

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 two City streets in which most construction will occur are Corson Avenue S and S Dawson Street. Both are described as “Neighborhood Yield Streets” in the *Basis of Design Report*. The concrete-paved road section of these streets is two lanes wide (not striped) with parking on both sides; sidewalks on both sides; discontinuous sections of curb and gutter; street lighting; and STOP-sign controlled intersections on the approaches to these streets. Parking strip vegetation includes lawn in most areas, and some private residential landscaping. Street trees along the west side of Corson Avenue S are uniformly deciduous maple trees. There are fewer, more diverse species of street trees along the east side of Corson Avenue S. The latter is also true of the S Dawson Street right-of-way. There are three street trees to be preserved in the S Dawson Street right-of-way within the project area.

Several neighborhood streets access the project area between 12th Avenue S and Corson Avenue S. These include S Ferdinand Street, S Shelton Street, S Hudson Street, S Pearl Street, and S Bennett Street. All have similar two-lane asphalt road sections with parking and sidewalks on both sides, discontinuous curb and gutter improvements, and street lighting (see Attachment C, Photo 1).

Primary access to the project area is from 15th Avenue S (see Attachment A.2). This roadway was constructed as a four-lane minor arterial with curb, gutter and sidewalk on both sides; grass (no street trees) in the parking strip in the project vicinity; signal-controlled intersections; and a posted speed limit of 30 mph. The concrete roadway is now re-striped for two lanes of traffic, a bicycle lane, and parking on the east side only.

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?

Metro Transit Routes 60 and 107 provide public transit service to the project vicinity with stops on 15th Avenue S. The approximate distance to the nearest transit stop is 1,000 feet.

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

There are no formal (striped) parking spaces to count within the project area; however, the amount of on-street parking on Corson Avenue S, S Dawson Street, and S Bennett Street will be temporarily reduced during construction. No on-street parking spaces will be added or eliminated in the completed condition of the project. One off-street parking space will be provided in the small triangular parcel owned by SPU adjacent to the Corson Avenue S/S Dawson Street intersection, for use by SPU personnel who will visit the Facility Structure and underground tank for maintenance activities.

- 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 will not require any new or improvements to existing roads, streets, pedestrian or State transportation facilities. Grading and gravel surfacing are proposed to improve the alley south of S Dawson Street and north of S Bennett Street for access and parking to homes that will be affected by the temporary loss of on-street parking during construction (see Attachment C, Photo 5).

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

No. The project will not use and does not occur in the immediate vicinity of water, rail or air transportation.

- f. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and non-passenger vehicles). What data or transportation models were used to make these estimates?**

Maintenance crews will visit the facilities for routine inspection and maintenance annually and after each tank usage, expected 10 times per year on average. These trips will offset site visits by maintenance crews in response to flooding reports.

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

No. The project will not interfere with, affect or be affected by the movement of agricultural or forest products on roads or streets in the area as few, if any, such products are transported through this portion of the City.

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

The following measures would be used to reduce or control transportation impacts:

- SPU would require the construction contractor to submit a traffic control plan for approval and enforcement by SPU and SDOT.
- SPU would conduct public outreach before and during project construction to notify residents, local agencies, Seattle School District, Metro, and other stakeholders of work progress and expected disruptions or changes in traffic flow.
- Access for emergency-response vehicles would be maintained at all times.
- Through access and vehicle access to private properties may not be available at all times during construction, but temporary closures would be minimized, and detour routes would be properly and clearly signed.

- The three properties on the southwest side of S Dawson Street that will be impacted by construction will be provided with temporary vehicular access via the alley between S Dawson Street and S Bennett Street. This alley will be improved by grading and installing a drivable (gravel) surface to allow residents to access their homes directly throughout project construction (see Attachment C, Photo 5).
- Construction on Corson Avenue S fronting the school will be phased during the off season of the school year (e.g., during summer months and during extended holidays such as December/January) in order to avoid conflicts during peak traffic volumes.
- Alternative routes for pedestrians, bicyclists, and those with disabilities would be identified and clearly signed, as needed.

15. Public Services

- a. Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe.**

The site is within the service area of the Seattle Fire Department, Seattle Police Department, Metro Transit, the Seattle/King County Emergency Medical Services System, and Seattle Public Schools. During construction, there may be increased risk of need for emergency medical services. In the completed condition of the project, there would be no anticipated increase in demand for public services from these entities.

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

See proposed measures to control transportation impacts described in the response to SEPA Checklist Question B.14.h, above.

16. Utilities

- a. Check utilities available at the site, if any: [check the applicable boxes]**

- None
 Electricity Natural gas Water Refuse collection service
 Telephone Sanitary sewer Stormwater management system
 Other: Combined drainage and wastewater sewer system, discharging to the King County South Michigan Street Regulator Structure and ultimately to the West Point Wastewater Treatment Plant.

- 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.**

Seattle Public Utilities proposes to upgrade the S Pearl Street basin combined drainage and wastewater system by installing new, larger diameter collection system lines and a larger underground wet weather flow detention tank, as described in SEPA Checklist Section A.11.

Electrical service will be provided by Seattle City Light. The service voltage will be 480 volts, but the service type will be determined with input from both SPU and SCL. The service feeder will consist of a down-riser at the service pole on 12th Avenue S, and a buried feeder to the Pearl Street above-grade service cabinet (utility meter located here) and then to the below-grade electrical room.

Standby power will be provided by a portable generator brought to the site as needed and plugged into a new above-grade service cabinet with a manual transfer switch.

SPU will coordinate and schedule the detailed design, ordering and supply, installation, and configuration of CenturyLink's multiprotocol label switching (MPLS) communications system components, equipment, services, fees, and costs, and will work with the contractor to test and commission site communications with its existing supervisory control and data acquisition (SCADA) system. Local manual control stations will be near each motor, actuator, or system skid (if applicable) and will allow an operator to take immediate control (stopping, starting, opening, or closing) of the associated equipment as required.

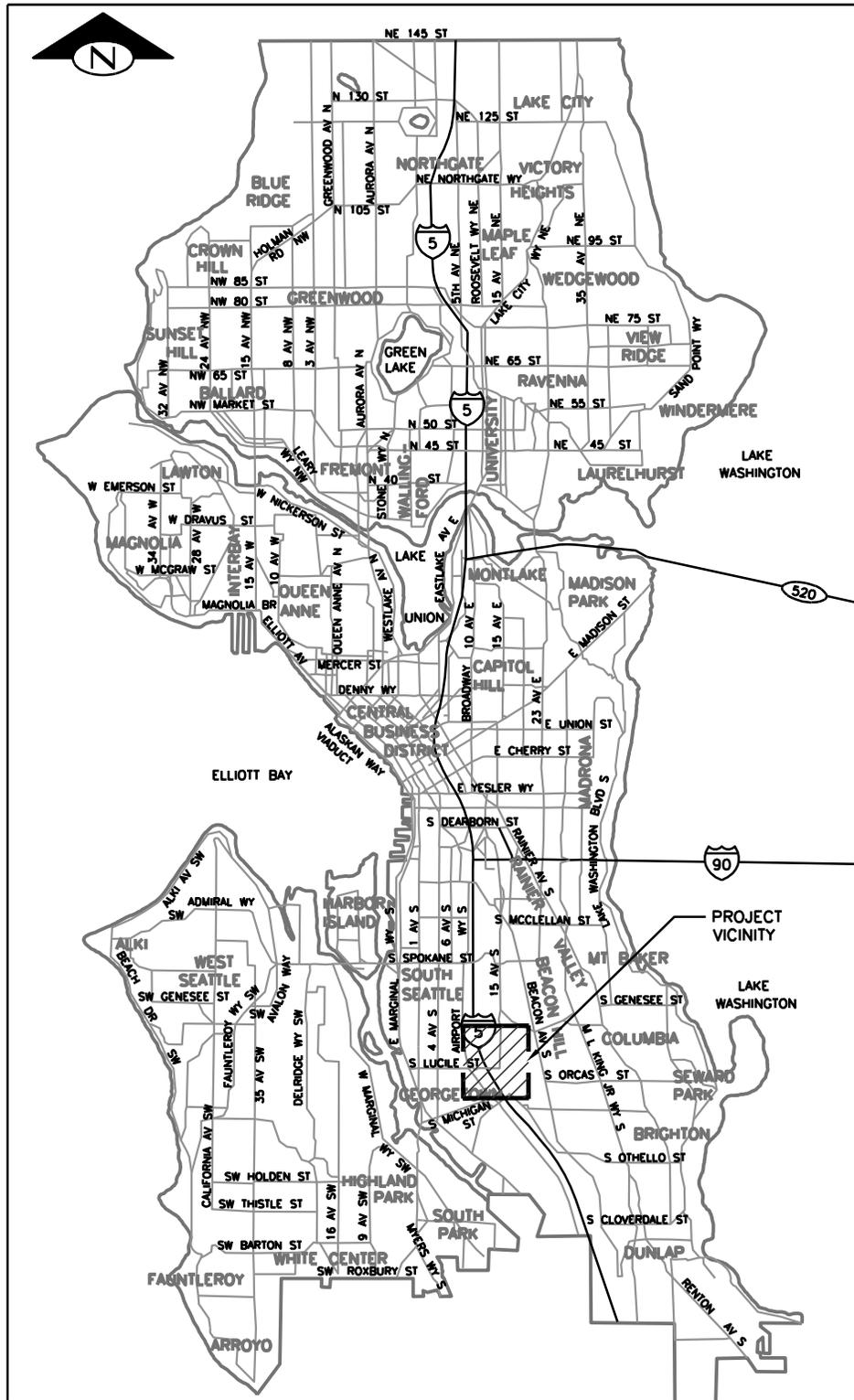
C. SIGNATURE

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

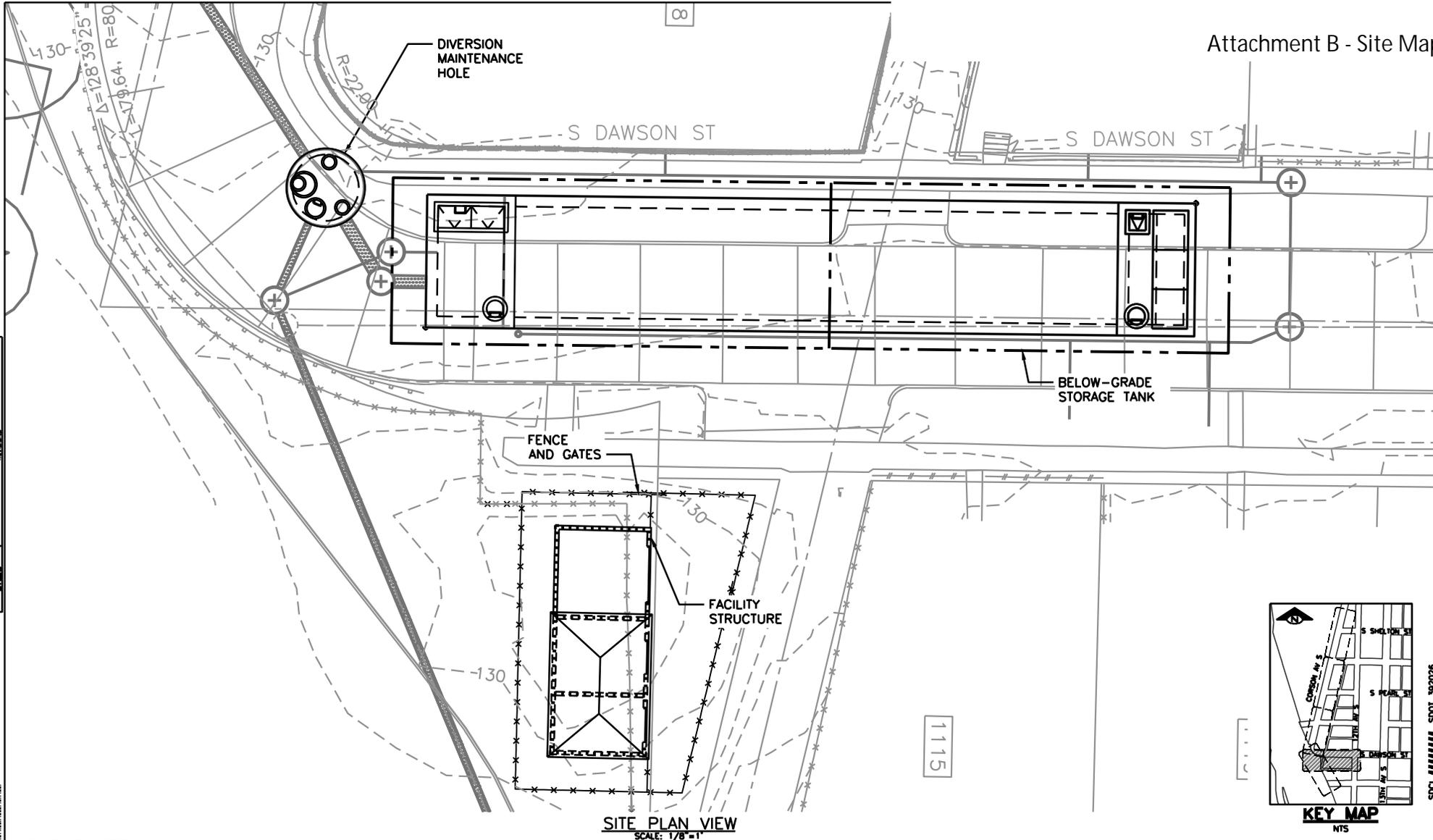
Signature: 
Luis Ramirez, Project Manager

Date: 4-10-19

- Attachment A – Vicinity Map and Location Map
- Attachment B – Site Map
- Attachment C – Photographs
- Attachment D – Greenhouse Gas Emissions Worksheet
- Attachment E – Demolition Plan



SCALE: 1"=2 MILES



SITE PLAN VIEW
SCALE: 1/8" = 1'

KEY MAP
NTS

90% SUBMITTAL

DCG
civil structural

9706 4TH AVE NE
SUITE 300
SEATTLE, WA 98115

P: 206.523.0024
WWW.DCGENGR.COM

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CHECKED BY		REVIEWED AS BUILT	

ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE CITY OF SEATTLE STANDARD PLANS AND SPECIFICATIONS AND OTHER RELEVANT CODES FOR ALL SEWER, WATER, AND OTHER UTILITIES.



Seattle Department of Transportation

GRANT NO. _____
PB NO. _____
SCALE: AS NOTED

PEARL ST DRAINAGE & WASTEWATER IMPROVEMENT PROJECT

SITE PLAN

PC	C312051
CD	C312051
SP	790-832
S-003	
SHEET 78 of 175	

SOC 1111111. S001 392026

DATE	DESCRIPTION

P:\Projects\City\Seattle\Pearl St - Design\Auto\Drawings\DWG - 3111111\Drawings\1111 - 1111 - 1111.dwg - 1111.dwg
Apr-15-19 2:14pm

***Pearl Street Drainage & Wastewater Improvement Project
SEPA Environmental Checklist***

Attachment C – Photographs



Photo 1 – Corson Avenue S Project Area

***Pearl Street Drainage & Wastewater Improvement Project
SEPA Environmental Checklist***



**Photo 2 – Underground Storage Tank Site:
Corson Avenue S/S Dawson Street Intersection**



**Photo 3 – Existing Condition of the Triangular Parcel at the
Corson Avenue S/S Dawson Street Intersection
Where Demolition and Vegetation Removal is Proposed**



Photo 4 – Alley Right-of-Way Looking South from S Dawson Street



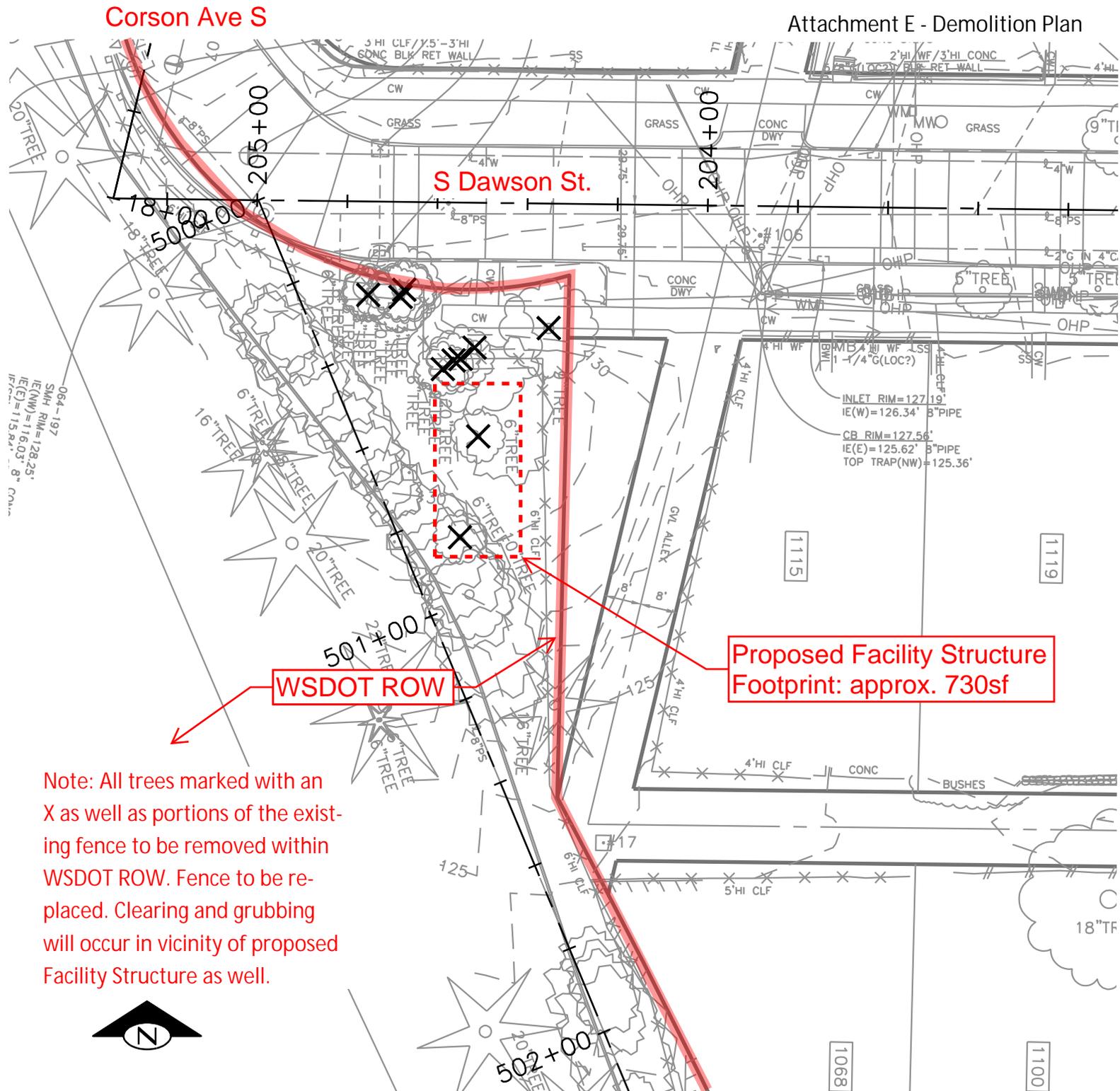
**Photo 5 – Alley Right-of-Way Looking East in the Area between
S Dawson Street and S Bennett Street**

Attachment D -- Greenhouse Gas Emissions Worksheet

Section I: Buildings						
Type (Residential) or Principal Activity (Commercial)	# Units	Square Feet (in thousands of square feet)	Emissions Per Unit or Per Thousand Square Feet (MTCO ₂ e)			Lifespan Emissions (MTCO ₂ e)
			Embodied	Energy	Transportation	
Single-Family Home			98	672	792	
Multi-Family Unit in Large Building			33	357	766	
Multi-Family Unit in Small Building			54	681	766	
Mobile Home			41	475	709	
Education			39	646	361	
Food Sales			39	1541	282	
Food Service			39	1994	561	
Health Care Inpatient			39	1938	582	
Health Care Outpatient			39	737	571	
Lodging			39	777	117	
Retail (Other than Mall)			39	577	247	
Office			39	723	588	
Public Assembly			39	733	150	
Public Order and Safety			39	899	374	
Religious Worship			39	339	129	
Service			39	599	266	
Warehouse and Storage			39	352	181	
Other			39	1278	257	
Vacant			39	162	47	
TOTAL Section I Buildings						
Section II: Pavement						
						Emissions (MTCO ₂ e)
Pavement (sidewalk, asphalt patch), or concrete pad, in thousands of square feet		31.18				1559
Road aggregate, in cubic yards		577				2.7
TOTAL Section II Pavement						1561.748
Section III: Construction						
(See detailed calculations below)						Emissions (MTCO ₂ e)
TOTAL Section III Construction						149.24
Section IV: Operations and Maintenance						
(See detailed calculations below)						Emissions (MTCO ₂ e)
TOTAL Section IV Operations and Maintenance						0.00
TOTAL GREENHOUSE GAS (GHG) EMISSIONS FOR PROJECT (MTCO₂e)						1,710.99

Section III: Construction Details			
Construction: Diesel			
Equipment	Diesel (gallons)	Assumptions	
Excavator	6,833	50 gal/day for (2/3rds) duration of tank & conveyence construcion	
Dump Truck	792	Travels 20 miles round trip per load, 14 cubic yard capacity, 5 mpg	
Concrete Truck	410	Travels 20 miles round trip between plant and site, 10 cubic yard capacity, 5 mpg	
Subtotal Diesel Gallons	8,035		
GHG Emissions in lbs CO₂e	213,342	26.55 lbs CO ₂ e per gallon of diesel	
GHG Emissions in metric tons CO₂e	96.77	1,000 lbs = 0.45359237 metric tons	
Construction: Gasoline			
Equipment	Gasoline (gallons)	Assumptions	
Pick-up Trucks or Crew Vans	2,720	8 trucks/vans trips a day for duration of construction, travels 20 miles roundtrip, 15 mpg	
Loader	2,040	2 loader trips a day for duration of construction, travels 20 miles roundtrip, 5 mpg	
Subtotal Gasoline Gallons	4,760		
GHG Emissions in lbs CO₂e	115,668	24.3 lbs CO ₂ e per gallon of gasoline	
GHG Emissions in metric tons CO₂e	52.47	1,000 lbs = 0.45 metric tons	
Construction Summary			
Activity	CO ₂ e in pounds	CO ₂ e in metric tons	
Diesel	213,342	96.77	
Gasoline	115,668	52.47	
Total for Construction	329,010	149.24	
Section IV: Long-Term Operations and Maintenance Details			
Operations and Maintenance: Diesel			
Equipment	Diesel (gallons)	Assumptions	
Emergency Operation			
Maintenance Operation			
Fueling truck/repair truck			
Subtotal Diesel Gallons	0		
GHG Emissions in lbs CO₂e	0	26.55 lbs CO ₂ e per gallon of diesel	
GHG Emissions in metric tons CO₂e	0.00	1,000 lbs = 0.45 metric tons	
Operations and Maintenance: Gasoline			
Equipment	Gasoline (gallons)	Assumptions	
Pick-up Trucks or Crew Vans			
Loader			
Dump Trucks			
Concrete Trucks			
Subtotal Gasoline Gallons	0		
GHG Emissions in lbs CO₂e	0	24.3 lbs CO ₂ e per gallon of gasoline	
GHG Emissions in metric tons CO₂e	0.00	1,000 lbs = 0.45 metric tons	
Operations and Maintenance Summary			
Activity	CO ₂ e in pounds	CO ₂ e in metric tons	
Diesel	0	0.00	
Gasoline	0	0.00	
Total for Operations and Maintenance	0	0.00	

Attachment E - Demolition Plan



Note: All trees marked with an X as well as portions of the existing fence to be removed within WSDOT ROW. Fence to be replaced. Clearing and grubbing will occur in vicinity of proposed Facility Structure as well.