King County

Department of Natural Resources and Parks • Wastewater Treatment Division
Community Services and Environmental Planning • 201 South Jackson Street, MS KSC-NR-0505, Seattle, WA 98104-3855 • FAX 206-684-1278

DETERMINATION OF NONSIGNIFICANCE (DNS)

TITLE OF PROPOSAL: Georgetown Wet Weather Treatment Station Project

DESCRIPTION OF PROPOSAL: The King County Wastewater Treatment Division (WTD) proposes to construct a new combined sewer overflow (CSO) wet weather treatment facility referred to as the Georgetown Wet Weather Treatment Station, associated conveyance improvements, and an outfall structure in the Lower Duwamish Waterway (LDW). The purpose of the project is to reduce the volume and frequency of untreated discharges of combined sewage (sanitary sewage and stormwater) to the LDW. After the project is completed, WTD's existing Brandon Street and South Michigan Street CSO outfalls will be controlled to a long-term average of no more than one untreated discharge per year per outfall. In addition, treated discharges from the new Georgetown Wet Weather Treatment Station will comply with water quality and sediment management standards.

LOCATION OF PROPOSAL, INCLUDING STREET ADDRESS, IF ANY: The proposed project is located in the City of Seattle's Georgetown neighborhood in King County, Washington. The project site is located in Sections 19, 20, 29, and 30 of Township 24 North and Range 4 East. The approximately 2.8-acre treatment station site is comprised of four parcels that are bordered by 4th Avenue South, South Michigan Street, and East Marginal Way South. The outfall structure will be located in the Lower Duwamish Waterway next to the First Avenue South Bridge.

Responsible Official: Pam Elardo, P.E.

Position/Title: Director, King County Wastewater Treatment Division

Address: 201 South Jackson Street, MS KSC-NR-0501
Seattle, WA 98104-3855

Date: 4 March 2016 **Signature:**

Proponent and Lead Agency: King County Department of Natural Resources and Parks
Wastewater Treatment Division

Contact Person: Jim Sussex, Water Quality Planner
King County Wastewater Treatment Division
201 South Jackson Street, MS KSC-NR-0505
Seattle, WA 98104
phone: 206-477-3556; e-mail: jim.sussex@kingcounty.gov

Issue Date: March 11, 2016

The State Environmental Policy Act (SEPA) lead agency for this proposal has determined that it does not have a probable significant adverse impact on the environment. An environmental impact statement (EIS) is not required under RCW 43.21C.030(2)(c). This decision was made after review of a completed environmental checklist and other information on file with the lead agency. This information is available to the public on request.

☒ This Determination of Nonsignificance is issued under WAC 197-11-340 (2); the lead agency will not act on this proposal for 17 days from the issue date. **Comments must be submitted by March 28, 2016.** Submit comments to Katherine Fischer, Supervisor, Community Services and Environmental Planning, King County Wastewater Treatment Division, 201 South Jackson Street, MS KSC-NR-0505, Seattle, WA 98104-3855. Comments may be emailed to wtdwebs@kingcounty.gov.

☒ The King County Wastewater Treatment Division has submitted applications to the City of Seattle for land use permits, thus there is no administrative appeal of this DNS pursuant to RCW 43.21C.075, WAC 197-11-680, KCC 20.44.120 and King County Public Rule 7-4-1. The public rule may be viewed at http://www.kingcounty.gov/operations/policies/rules/utilities/put741pr.aspx, or contact Jim Sussex at 206-477-3556 or jim.sussex@kingcounty.gov to obtain a copy of the rule.

[Statutory authority: RCW 43.21C.110. 84-05-020 (Order DE 83-39), §197-11-970, filed 2/10/84, effective 4/4/84.]

King County
Department of Natural Resources and Parks
Wastewater Treatment Division
King Street Center, KSC-NR-0505
201 South Jackson Street
Seattle, WA 98104

Environmental Checklist

for the

King County Wastewater Treatment Division Georgetown Wet Weather Treatment Station Project

March 2, 2016

Prepared in compliance with the State Environmental Policy Act (SEPA) (RCW 43.21C), the SEPA Rules (WAC 197-11), and Chapter 20.44 King County Code, implementing SEPA in King County procedures.

ENVIRONMENTAL CHECKLIST

A. BACKGROUND

1. Name of proposed project, if applicable:

Georgetown Wet Weather Treatment Station Project

2. Name of applicant:

King County Wastewater Treatment Division, Department of Natural Resources and Parks

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

King County Wastewater Treatment Division
201 South Jackson Street, MS: KSC-NR-0505
Seattle, WA 98104-3855

CONTACT:
Jim Sussex, Water Quality Planner
Telephone: 206-477-3556
Email: jim.sussex@kingcounty.gov

4. Date checklist prepared:

March 2, 2016

5. Agency requesting checklist:

King County Department of Natural Resources and Parks, Wastewater Treatment Division

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

Construction of the proposed project is expected to begin at the end of 2017 and take approximately five years to complete. It is possible that construction would be phased so that site preparation, demolition of existing structures, and soil remediation begin on the treatment station site in early 2017.

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

No

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

See Appendix A.

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.

A land use permit application was submitted to the City of Seattle by a private developer in December 2014 for development of the parcel located adjacent to, and immediately west of the treatment station site. The parcel is currently undeveloped. Proposed development includes construction of two, three-story warehouse structures (approximately 300,000 and 400,000 square feet [SF] in size) and parking for 542 vehicles.

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

A list of the government approvals and permits anticipated to be needed for the proposed project is provided in Appendix B.

11. Give 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 King County Wastewater Treatment Division (WTD) proposes to construct a new combined sewer overflow (CSO) wet weather treatment facility referred to as the Georgetown Wet Weather Treatment Station (Georgetown WWTS) in the City of Seattle's Georgetown neighborhood. The proposed project would reduce the volume and frequency of untreated discharges of combined sewage (sanitary sewage and stormwater) to the Lower Duwamish Waterway (LDW) from the existing CSO outfalls associated with WTD's Brandon Street and South Michigan Street wastewater basins. The locations of these basins are shown on Figure 1 (Appendix C).

Under normal operating conditions, combined sewage collected in the Brandon Street and South Michigan Street wastewater basins is conveyed to WTD's Elliott Bay Interceptor (EBI) and then transported via a conveyance system of pump stations, regulator stations, and pipes to King County's West Point Treatment Plant in Seattle's Magnolia neighborhood. After being treated and disinfected at the treatment plant, flows are conveyed to Puget Sound via an existing offshore outfall. When heavy rains cause flows in the Brandon Street and South Michigan Street basins to exceed the capacity of the wastewater conveyance system, untreated combined sewage is discharged to the LDW as a "combined sewer overflow" ("CSO") through the Brandon Street outfall and/or the South Michigan Street outfall. The Brandon Street

and South Michigan Street outfalls discharge on the east side of the LDW at river miles 1.1 and 1.9, approximately 12 and 7 times per year, respectively.

The Georgetown WWTS project is one of nine CSO control projects included in the *2012 King County Long-Term Combined Sewer Overflow Control Plan Amendment* (LTCP), which was adopted by the King County Council in 2012. It is also one of nine CSO control projects included in a Consent Decree that King County entered with the Washington State Department of Ecology (Ecology), the United States Environmental Protection Agency (EPA), and the Department of Justice in 2013 to achieve CSO control by 2030. The primary objective of the Georgetown WWTS project is to control the existing Brandon Street and South Michigan Street CSOs to a long-term average of no more than one untreated discharge per year per outfall. In addition, treated discharges from the new WWTS would comply with water quality and sediment management standards.

The Georgetown WWTS project includes a wet weather treatment station; conveyance system improvements including approximately 3,000 linear feet of conveyance pipelines, a regulator station, and other conveyance system modifications; and an outfall structure located near WTD's existing South Michigan Street outfall. These facilities are described below and shown in Figures 2 and 3 (Appendix C). No work is proposed on WTD's existing Brandon Street or South Michigan Street outfalls.

Wet Weather Treatment Station

The Georgetown WWTS would be located next to the intersection of South Michigan Street and East Marginal Way South in the City of Seattle's Georgetown neighborhood. The treatment station would include the following major elements:

- Wastewater screening facilities
- Flow equalization basin/influent pump station
- High-rate clarification, using ballasted sedimentation
- Solids holding tanks
- Ultra-violet (UV) disinfection
- Ancillary facilities, including an operation and maintenance support building, electrical buildings, odor control, chemical storage, a generator to provide standby power for essential services, and a meeting space.

Combined sewage flows would enter the treatment station primarily during wet-weather events. They would also occasionally enter the treatment station during dry weather for testing and maintenance activities. Flows would undergo screening, and then enter an equalization basin that would attenuate peak flows from the conveyance system. Flows would then be pumped for treatment by ballasted sedimentation and UV disinfection. The ballasted sedimentation process uses microsand-enhanced flocculation and lamellar plate settling to achieve high solids removal within a small footprint. Solids removed from the ballasted sedimentation process would be stored on-site and discharged to WTD's existing EBI after a wet-weather event to ensure that they would not overload the downstream conveyance system. The treatment station

would be equipped with an odor control system which would provide foul air exhaust ventilation and treatment for multiple onsite facilities, including the Georgetown Regulator Station (described below under "Conveyance System Improvements"), equalization basin, screening building, truck loadout, and solids storage. It is expected that the treatment station would discharge treated effluent approximately 20 times per year.

Generally, treated flows would be conveyed to an outfall structure in the LDW via an effluent pipeline. These elements are described below. During start-up, testing, and periodic maintenance, the plant may operate during drier weather and discharge to WTD's existing conveyance system.

The treatment station will include a training room that could be used by King County to host school group tours, staff trainings, meetings, or other County partner related functions. Guided tours of facility functions may be offered.

The treatment station would include approximately 30,000 SF of building space. An architectural rendering of the Georgetown WWTS is shown in Figure 4 (Appendix C).

Conveyance System Improvements

Conveyance system improvements would be made to divert flows from existing WTD pipelines to the Georgetown WWTS and to convey treated effluent from the treatment station to an outfall structure in the LDW. Proposed conveyance system improvements include the following elements:

- South Michigan Street Trunk diversion manhole
- EBI diversion manhole
- influent pipelines
- Georgetown Regulator Station
- effluent pipeline
- Brandon Street Regulator Station diversion pipeline and manhole
- modifications to the existing South Michigan Street and Brandon Street Regulator Stations

Two new diversion manholes would be constructed to divert flows of combined sewage from WTD's existing South Michigan Street Trunk and EBI to two new influent pipelines that would convey flows to the new Georgetown Regulator Station. The South Michigan Street Trunk diversion manhole would be located in South Michigan Street, to the east of and adjacent to East Marginal Way South. The EBI diversion manhole would be located in a currently vegetated triangle of right-of-way between East Marginal Way South and the onramp for the First Avenue South Bridge.

The new influent line between the EBI and the Georgetown Regulator Station would be approximately 260 feet long and the new influent line between the South Michigan Street Trunk and the Georgetown Regulator Station would be approximately 140 feet long. The influent pipelines would range from 60 to 96 inches in diameter.

Modifications would be made to the existing EBI and South Michigan Street Trunk to accommodate the new influent pipelines.

The Georgetown Regulator Station would be constructed just north of the intersection of East Marginal Way South and South Michigan Street. The building would be primarily underground, but would include a small above-ground structure to house electrical and mechanical equipment. The Georgetown Regulator Station would control flows from the EBI and the South Michigan Street Trunk in all conditions, and would divert flows to the new treatment station when necessary. Provisions for future odor control, if deemed necessary, will be included at the Regulator.

The existing Brandon Street Regulator Station would be modified so that its diversion pipe and gate to the EBI would provide adequate capacity to convey flows from the Brandon Street basin to the EBI. This would involve replacement of an existing gate and construction of a new approximately 100-foot-long diversion pipe that would connect to the EBI via a new manhole. Additionally, approximately 50 feet of new conduit would be installed underground in public right-of-way along East Marginal Way between the existing Brandon Regulator and the Brandon Control Building, which houses electrical and mechanical equipment for controlling the regulator station equipment. Modifications would be made to both the Brandon Street and South Michigan Street Regulator Stations to accommodate the proposed new operational strategy.

An effluent pipeline would be constructed to convey flow from the treatment station to the outfall structure. The effluent pipeline would be approximately 2,500 feet long and range from 36 to 60 inches in diameter. It may consist of two parallel pipelines.

Outfall Structure

Treated and disinfected effluent from the Georgetown WWTS would travel through the effluent pipeline to an outfall structure and discharge to the LDW. The outfall structure would be located within the Washington State Department of Transportation (WSDOT) right-of-way area of the State Route (SR) 99/SR 509 bridge, also referred to as the First Avenue South Bridge, and on property owned by the Port of Seattle and City of Seattle. The preliminary outfall structure configuration is shown in Figure 5 (Appendix C).

An air management feature with an air vent would be installed upland of the outfall structure. Much of the structure would be below ground; however, the top of the structure and the vent pipe would extend above grade. Approximately three additional air vents would be installed between this feature and the treatment station.

If necessary, a small pump station would be constructed on the proposed new effluent line near the existing South Michigan Street Trunk. The pump station would be located below grade and include an approximately six- to eight-inch-diameter pipe, an approximately eight- to 12-inch diameter casing, a well pump that would be placed

inside of the casing, and an electrical panel with an approximately two-square-foot footprint.

The partially buried outfall structure would begin at the bank line, extend water ward to a multiport diffuser, and terminate at the face of a fender structure on the bridge. It would be held in place with concrete anchors. The approximately 250-foot long outfall structure pipeline would be high-density polyethylene with an approximately 54-inch outside diameter. Effluent would be discharged through a diffuser with multiple ports at the end of the outfall structure pipe. The diffuser would lie on the surface of the sediment. No part of the structure would extend into the maintained LDW navigation channel.

Areas disturbed by outfall structure construction would be restored and additional mitigation, such as shoreline habitat improvements and/or removal of in-water structures, could be implemented to mitigate for impacts to the LDW.

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 proposed project is located in the City of Seattle's Georgetown neighborhood in King County, Washington. The project site is located in Sections 19, 20, 29, and 30 of Township 24 North and Range 4 East. The location of the proposed project is shown on Figures 1, 2, and 3.

The approximately 2.8-acre treatment station site is comprised of four parcels that are bordered by 4th Avenue South, South Michigan Street, and East Marginal Way South. Some facilities (e.g., conveyance pipelines) would be located underground on an adjacent parcel located to the west of the treatment station site.

The existing South Michigan Street Regulator Station is located next to the intersection of South Michigan Street and East Marginal Way. The existing Brandon Street Regulator Station is located on the west side of East Marginal Way approximately 0.75 mile northeast of the treatment station site. The new conveyance system would be located primarily along public rights-of-way, with portions on and along the treatment station property and other publicly and privately-owned properties. The South Michigan Street and EBI diversion manholes and most of the associated influent pipelines would be located in and/or near South Michigan Street and East Marginal Way next to the treatment station site. The new Georgetown Regulator Station would be located on one of the four treatment station parcels. The effluent pipeline would be located on the treatment station site and in and along right-of-way

and private property between the treatment station site and the outfall structure site in the LDW.

The outfall structure would be located on the east side of the LDW within the WSDOT right-of-way area of the First Avenue South Bridge and property owned by the Port of Seattle. The outfall structure would originate next to the First Avenue South Bridge on a parcel owned by the Seattle Department of Transportation (SDOT). The in-water portion of the outfall structure would extend into the LDW to the edge of the dredged navigation channel. The outfall structure would not extend into the dredged navigation channel.

If feasible, on-site, mitigation would be provided to offset temporary and permanent impacts from outfall structure construction activities. It is possible that offsite mitigation may be provided via a fee in lieu program if it is not practicable to sufficiently mitigate onsite. The location of this mitigation, if required, would be determined during the project permitting process.

Offsite staging areas would generally be identified by the construction contractor.

B. ENVIRONMENTAL ELEMENTS

1. Earth

a. General description of the site

(circle one): Flat, rolling, hilly, steep slopes, mountainous, other _____.

The treatment station site and conveyance routes are located on relatively level ground. The outfall structure site includes the steep bank of the LDW and a relatively gently sloped intertidal and subtidal area.

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

The steepest slope on the site is the bank of the LDW at the site of the outfall structure. It is an approximately 55 percent slope.

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 project site is located in the Duwamish River valley, a broad, glacially carved trough bounded by upland areas to the east and west. The valley is filled with a complex sequence of glacial and non-glacial sediments that overlie bedrock.

In general, the treatment station site is underlain by roughly 200 feet of soft to medium density alluvial sediments, with some zones of dense material. Most of these sediments range between silt and sand. The upper 5 to 10 feet is commonly fill which is typically a loose silty sand to sandy silt, but can include organic-rich material, clay, gravel, bricks, timbers, broken concrete, and other debris. The material below approximately 200 to 220 feet is hard to very dense, glacially over-consolidated, and ranges from a clay with traces of sand and gravel to coarse poorly graded gravel.

The conveyance route has a subsurface profile that is similar to the treatment station site, except that historical borings suggest that the depth to glacially over-consolidated soil decreases slightly, and there are zones within the possible trench excavation depth that contain significant depths of very soft to soft lean to fat clay, sometimes with significant organics. The organics are typically wood fibers indicating logs or buried man-made wooden debris, but also include more decomposed and peat-like materials.

Stratigraphy similar to that described above for the treatment station site is anticipated at the outfall structure site. Borings from the early 1990s for construction of the First Avenue South Bridge suggest that the fill unit is no longer encountered some distance from shore and the upper very soft to soft silt and clay is 15 to 20 feet thick.

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

The project site is identified by the City of Seattle as a geologic hazard area because it is located in a liquefaction-prone area and a seismic hazard area.

Liquefaction has been observed within the project site in the past (e.g., 2001 Nisqually earthquake) and is likely to occur in the future. In addition to being liquefaction-prone, soils at the project site are weak, compressible, and saturated. These characteristics make the soils prone to settlement.

The Seattle Fault appears as surface expressions in fault strands located approximately two miles north and two miles south of the site. According to the Washington Department of Natural Resources, no active lineaments have been mapped within the project site by researchers. The Seattle Fault is a crustal earthquake source. Crustal sources are shallow (less than 20 miles) and can result in fault rupture at the ground surface. Earthquakes generated by known crustal sources such as the Seattle Fault occur infrequently (perhaps every 3,000 to 4,000 years).

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

During construction of the treatment station, a total of approximately 25,000 CY of soil would be excavated, as described below. A total of approximately 5,000 CY of fill material would be imported for use on the treatment station site.

Nearly the entire 2.8-acre treatment station site is currently paved or covered by existing buildings. To prepare the site for construction of the treatment station and elements of the conveyance system located on the treatment station site, pavement, buildings, and underground storage tanks would be removed and the site graded. Soil remediation would also be completed, as necessary.

During demolition of the six buildings on the treatment station site, approximately 800 cubic yards (CY) of soil and 25,000 CY of building materials (e.g., concrete, wood) would be exported from the site. The site would be graded and temporary erosion control and stabilization best management practices (BMPs) may be implemented (e.g., seeding or hay bales) until construction activities begin.

Temporary excavations would be required for construction of buried pipes and structures at the treatment station site and along the conveyance routes. Temporary shoring would be needed to maintain stable slopes in most excavations. Shoring is the process of bracing excavation walls in order to prevent their collapse. It can also help minimize the potential for settlement of nearby structures.

Construction of the treatment station's approximately 90-foot-diameter and 40-foot-deep equalization basin (finished interior dimensions) would involve the use of a permanent secant pile shoring system. Secant piles are adjoining columns that would be installed in the shape of a circle to form a nearly watertight wall around the perimeter of the equalization basin. They would extend to a depth of approximately 80 feet. The secant piles would serve as shoring for excavation inside of the ring of piles. Once the secant pile exterior shaft wall is in place, soil inside the shaft would be excavated through groundwater to a depth approximately five feet above the bottom of the secant piles. Concrete would be placed by tremie in the water-filled excavation to form an unreinforced base seal approximately 25 feet thick. After the tremie concrete has gained sufficient strength, the groundwater would be pumped from the excavation and a roughly 10-foot-thick reinforced concrete base slab and 1.5- to 2.5-foot-thick interior liner walls would be constructed in relatively dry conditions. The interior liner concrete would be structurally connected to the secant piles and tremie seal so that they could contribute to the long-term resistance of the structure to floating.

Near-surface soils at the treatment station site are weak and compressible. Therefore, the heavy above grade structures would be supported on deep foundations to limit the potential for settlement under static loading (non-

seismic) conditions. The preferred deep foundation system appears to be unreinforced rigid concrete inclusions combined with a geogrid reinforced load distribution platform and an approximately three-foot-thick reinforced building slab. The lighter structures in the Operations complex would be supported on shallow reinforced concrete mats. The manholes at the conveyance connections and the Georgetown Regulator Station would not require deep foundations.

A total of approximately 10,600 CY of soil would be excavated to construct the conveyance system improvements, as described below. A total of approximately 8,100 CY of fill material would be imported for use at the conveyance system improvement sites.

Trenches excavated to install influent, effluent, and diversion pipelines would be approximately 6 to 13 feet wide and approximately 7 to 16 feet deep.

Construction of the Georgetown Regulator Station would require excavation of an approximately 1,400-square-foot area to an average depth of approximately 18 feet. Construction of the South Michigan Street diversion manhole would require excavation of an approximately 550-square-foot area to a depth of approximately 14 feet. Construction of the EBI diversion manhole would require excavation of an approximately 300-square-foot area to a depth of approximately 16 feet. Construction of the Brandon Street Regulator Station diversion manhole would require excavation of an approximately 300-square foot area to a depth of approximately 20 feet.

All or most of the proposed conveyance system pipelines would be installed using a cut and cover construction method. Trenches would be excavated and shored with either trench boxes or sheet piles. Trenchless methods may be considered for use where pipelines cross East Marginal Way or to avoid large utilities. However, the high probability of encountering buried obstructions, high groundwater, and soft soils are challenges to the use of trenchless construction methods.

If the native materials were suitable, excavation spoils would be stockpiled and used for backfill. Excavated soils not used as backfill would be legally disposed of off-site at a location determined by the contractor. If the excavated soils were not of the appropriate quality for backfill, other material would be brought to the site and used as backfill. The source of imported material would be determined by the contractor and meet all pertinent project and legal requirements. It is anticipated that soil excavated from the project area would generally be unsuitable for reuse onsite because of its low strength, poor drainage, and high moisture and organic content.

Filling and excavation associated with construction of the outfall structure are described in Section B.3.a.3 (Surface Water).

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

The potential for erosion due to clearing or construction associated with the treatment station and conveyance system is minimal. The area in which the treatment station site and conveyance route are located is flat. Erosion could occur during construction of the outfall structure, which would require excavation of the onshore, intertidal, and subtidal area.

The discharge of treated effluent from the outfall structure has the potential to cause erosion of subtidal sediments in the LDW when the treatment station is operating (which is expected to be approximately 20 times per year). The outfall structure would be designed to minimize this potential.

The potential for erosion would be minimized by the use of BMPs such as those described in Section 1.h, below.

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

Nearly the entire 2.8-acre treatment station site is currently covered with impervious surfaces. The completed project is expected to result in an approximately 0.5-acre reduction of impervious surfaces on the treatment station site due to landscaping and stormwater management elements that would be included in project design. These could include bioretention (i.e., non-infiltrating raingardens, see Section B.3.d [Water]) and pervious pavement. After project completion, approximately 80 percent of the site would be covered with impervious surfaces.

Construction of the EBI diversion manhole would result in approximately 16 SF of new impervious surface. Construction of an air management system or manhole upland and adjacent to the LDW bank line would result in approximately 170 to 500 SF of new impervious surface, although this would be located beneath the existing bridge span. The rest of the proposed conveyance system is not expected to alter current locations or amounts of impervious surfaces which will generally be restored to their existing condition.

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

Temporary erosion and sedimentation control measures would be implemented as required by the City of Seattle. An Erosion and Sedimentation Control Plan would be developed, implemented and maintained to address temporary erosion and sediment control during construction of the project. Potential measures to be included in the plan include:

- Install a sedimentation barrier along the downstream edges of the project to intercept and detain sediment under sheet flow conditions.
- Provide inlet protection on area drains and catch basins within and adjacent to the project site to limit sediment entering the off-site system.
- Remove construction debris promptly from the site to minimize demolition and construction impacts on the site.
- Install silt fences.
- Cover bare soil and stockpiles whenever necessary.

The following measures would be implemented to reduce or control erosion during construction of the outfall structure, and all work would comply with applicable local, state, and federal permit requirements for in-water work (see Appendix B):

- The outfall structure would be constructed inside of sheet piling where feasible.
- Equipment used to construct the outfall structure would be operated from a work trestle or barges to minimize impacts to the shoreline.
- Floating turbidity curtains would be used for in-water excavation and backfilling activities to control turbidity.
- Operational controls such as slower rate of dredge and timing with tidal elevations would be used to reduce potential turbidity.

Poor soil conditions in the project area would require design and construction measures that limit the potential for settlement caused by static (non-seismic) loading and construction activities. Measures that would be incorporated into the project design to minimize settlement include:

- Use of deep foundations to support treatment station structures located in weak and compressible near-surface soils.
- Design of the equalization basin to resist inward pressure of soil and water, and also the uplift pressures from surrounding water.
- Use of performance requirements to limit long-term leakage of groundwater into the equalization basin in order to minimize the risk of lowering the groundwater table which could result in settlement.
- Place restrictions on backfill material to be used around pipelines and buried structures to materials that are natural filters with the surrounding soils, thereby limiting the risk of movement of the adjacent soils into the void spaces in the backfill which could cause settlement.
- Where there is minimal depth of soil cover, add weight or anchorage to buried pipes to prevent floating when the pipes are empty and the groundwater table is high.

Measures that may be implemented during construction to minimize settlement include:

- Place limitations on dewatering in order to protect adjacent structures, pavements, and utilities from settlement.

- Where excavations are close to settlement-sensitive facilities or structures, include requirements to install vertical shoring members to retain soil prior to beginning excavation.
- Place restrictions on the types of construction equipment used in order to limit vibrations that could damage sensitive structures or induce settlement of soils beneath sensitive facilities. These restrictions could take the form of a construction performance specification that limits vibrations at the property line to a specified value.
- Require settlement and vibration monitoring.

Seismically-induced liquefaction could cause several inches of settlement across the treatment station site and conveyance route. Seismic liquefaction could also make buried structures more susceptible to uplift (floating). The proposed project would comply with applicable seismic design standards specified by the International Building Code.

The outfall structure will be designed to minimize the potential for erosion of subtidal sediments in the LDW where the outfall pipeline and diffuser are above the riverbed. A scour analysis was completed to assist this effort.

After the project is completed, the number of CSOs at the existing Brandon Street and South Michigan Street outfalls would be reduced to one per year, on average, at each outfall. This would reduce the potential for erosion at those existing outfall locations.

2. Air

a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.

During construction, mobile equipment would generate exhaust emissions and fugitive dust from excavation and other earthmoving activities. Mobile source emissions (NOx, VOC, CO, PM_{10}, $PM_{2.5}$) would be generated from the use of construction equipment such as excavators, bulldozers, wheeled loaders, and cranes. The exhaust emissions would be intermittent and spread across the project area. They are not expected to affect attainment of air quality standards in the project area.

A modest workforce would be needed for construction, but the vehicle-related emissions from these workers travelling to the job site daily would not be a significant portion of metro-wide commuting emissions. After the project is completed, the treatment station would operate intermittently (approximately 20 times per year and during testing and maintenance activities). During such events, approximately two to four staff would be needed for operations at the facility. In between such events, operations and maintenance staff would likely

visit the facility on a weekly basis. Use of the treatment station for educational purposes for the community and King County staff is expected to occur up to approximately one to three times per week, on average. This would involve school buses and/or vehicles entering the site.

Sewer odors may be temporarily emitted where existing sewer pipes or facilities are opened during construction.

A 500-kilowatt (kW) diesel-fired generator would be used to provide standby power for life safety equipment at the treatment station, such as safety lighting and fire alarms. The generator is expected to operate only up to 500 hours per year, considering both maintenance and testing use (probably an hour or two per month) and emergency use. Estimated emissions are far below major source thresholds for criteria air pollutants (i.e., 250 tons/year) and are not expected to significantly impact air quality locally or regionally.

The completed treatment station would treat wastewater during and after rain events that cause CSO conditions, so there is a potential for odorous pollutant emissions, such as hydrogen sulfide, to emanate from the water/sludge storage and treatment processes. The air management features that would be located upland of the outfall structure would not release odorous emissions because the effluent conveyance pipe would carry treated and disinfected flows.

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

No

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

During construction, best management practices (BMPs) would be implemented to control dust. Types of BMPs that may be used included street sweeping, watering exposed soil surfaces, and covering soil stockpiles to help minimize the amount of fugitive dust and particulate pollution to surrounding areas.

Construction equipment-related emissions would be reduced by requiring proper maintenance of equipment, using electrically powered equipment where practical, and avoiding prolonged idling of vehicles and equipment.

During operation, exhaust from the diesel generator would be observed during periodic testing. If there was visible smoke after the unit had warmed up, repairs would be initiated as needed.

The treatment station would include an odor control system that provides the necessary ventilation and treatment of wastewater odors to (1) prevent nuisance odors in the surrounding neighborhood, (2) provide a safe working environment

for WTD staff, and (3) protect equipment and infrastructure from corrosion. The facility would be designed so that additional emission control devices (e.g., covers) can be added if any open-air processes are found to cause odors that migrate off-site. Dispersion modeling will be done to confirm any potential odor impacts the facility may create at the fence line.

A King County Greenhouse Gas Emissions Worksheet is attached (Appendix D).

3. Water

a. Surface Water:

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, or wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

Yes. The outfall structure site is located in the Lower Duwamish Waterway (LDW) and the conveyance system is located in the vicinity of the LDW.

The LDW is a salt-wedge type estuary, with brackish water overlying a deeper saltwater layer. It was created between 1913 and 1920 when the Duwamish River was rechanneled. Currently, the waterway consists of a straightened river channel with narrow intertidal mud flats extending to steep middle and upper intertidal shorelines. The LDW connects the Duwamish River to the East and West waterways and eventually to Elliott Bay. Flow in the LDW is regulated by the operation of the Howard Hanson Dam in the headwaters of the Green River, which flows into the Duwamish River.

A portion of the LDW is regularly dredged by the United States Army Corps of Engineers (USACE) to maintain a navigation channel. The outfall structure would be constructed outside of the area that is dredged by the USACE.

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

Yes. The outfall structure would be constructed in the intertidal and subtidal zones of the LDW and approximately 200 feet of the proposed conveyance system would be constructed adjacent to the LDW (see Figure 5).

As part of the conveyance pipeline, an air management structure and vents would be installed upland of the outfall structure, between East Marginal Way South and the bank line. The partially buried outfall structure would begin at the bank line at the mean higher high water line and extend out to a diffuser that would terminate at the face of a fender structure on the bridge. Approximately 250 linear feet of the outfall structure pipeline would extend water ward of mean higher high water (MHHW). The pipe would be high-density polyethylene with an approximately 54-inch outside diameter. Approximately 150 linear feet of the outfall structure pipe extending water ward from MHHW would be buried up to approximately 20 feet below the existing riverbed and riverbank. The remaining approximately 100 feet of outfall structure pipe would transition from buried pipe to a terminal pipe (diffuser) section that is above the midline. No part of the structure would extend into the dredged navigation channel.

The construction of the outfall structure in the LDW would require in-water work, which would likely include: (1) construction of a temporary over-water structure (work trestle) in the river that would be used as a work platform for excavation/dredging equipment, and/or (2) conducting work and operating equipment from a barge. Work activities would include installation of approximately 140 linear feet of sheet pile isolation walls on each side of the in-water excavation area to install the outfall structure pipe. Trench excavation would occur predominantly within the sheet piles. Limited excavation to depths less than three feet would be required in the area of the diffuser between the bridge pier and fender pier where sheet pile containment is not feasible. Pipe bedding material, the outfall structure pipe, the diffuser, pipe cover material, and pipe anchors would be installed using cranes based on the temporary work trestle, shoreline, and/or barges. The pipe would be anchored using concrete pipe collars.

Depending on the construction method used, one or two existing boathouses directly adjacent to the outfall structure alignment may be moved or demolished in whole or in part, and the affected utilities would be either temporarily or permanently relocated. On-site construction and demolition activities are expected to occur over approximately four to five months.

The conveyance pipe that connects to the outfall structure would likely need to cross an existing WSDOT swale that is perpendicular and connected hydraulically to the LDW. At the upland end of the swale is an existing 42-inch-diameter Seattle Public Utilities stormwater pipe that was installed in the late 1990s. The purpose of the swale was likely to provide detention for stormwater coming out of the pipe. The swale area would be restored following installation of the outfall structure as part of the project.

There is a history of contaminated sediments at the outfall structure site. This is described in Section B.7.a (Environmental Health), along with measures that would be implemented to reduce or control related environmental health hazards.

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.

Construction of the outfall structure would involve dredging and excavation of approximately 1,300 cubic yards (CY) of sediment from the LDW. The majority of excavation would take place inside of the approximately 1,300 square-foot shored trench (approximately 16 feet by 80 feet). Approximately 100 CY of sediment would be removed outside of the shored trench using hydraulic suction dredge equipment. The removal of additional sediments may be required if contaminated sediments are present.

Several structures may be removed from the LDW. These include an approximately 300 square-foot sunken dock, approximately 12 creosote pilings, and possibly one or two boathouses and associated dock sections located on or near the outfall structure site. The boathouses that may be removed are each approximately 1,400 SF in size.

Temporary fill would be placed in the LDW. It may include an approximately 2,900 square-foot temporary trestle that would be integrated with the outfall structure trench shoring system. Alternatively, barges would be used for in-water construction. Sheet piles and a sandbag or ecology block cofferdam would be temporarily placed in the LDW to keep stormwater flow from the adjacent stormwater drainage swale/channel out of the nearshore in-water construction area. This diversion is described in more detail in Section B.3.a.4, below.

Fill that would be permanently placed in the LDW to construct the outfall structure includes the following:

- Approximately 190 feet of buried high-density polyethylene pipe with an approximately 54-inch outside diameter.
- An approximately 60-foot-long diffuser placed on the surface of the river bed.
- Precast concrete anchors placed on the exposed section of outfall structure pipe and the diffuser at approximately 11-foot intervals to keep the outfall structure pipe in place.
- Gravel bedding rock and gravel to be used for pipe bedding and cover, respectively.

- Clean aggregate material meeting applicable aquatic habitat specifications (i.e., "fish habitat mix") to be placed within approximately one to two feet of the finished grade.

The source of the imported materials listed above would be determined by the contractor and meet all pertinent project, permitting, and legal requirements.

If additional excavation is required to remove contaminated sediments under or adjacent to the outfall structure, additional backfill material would be required. When complete, the total area of pipeline, concrete anchors and bedding exposed on the bottom of the LDW would be approximately 1,200 SF.

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

During construction, stormwater that enters the LDW from the existing stormwater swale located next to the outfall structure site would be temporarily bypassed in order to keep the downstream work area dry. Either a gravity or pumped bypass system would be temporarily installed at the outlet of the existing 42-inch-diameter stormwater pipe at the upstream end of the stormwater swale. This would be achieved by the installation of a sandbag or ecology block cofferdam to contain stormwater from the pipe, which would then be piped past the work area and discharged into the LDW. Erosion/scour protection would be installed at the pipe outlet to eliminate potential sedimentation or erosion within the LDW. The bypass would be used for the duration of the in-water construction work.

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

The is no 100-year floodplain area beyond the banks of the LDW in the project area (FEMA Flood Insurance Rate Map Number 53033C0640G), although the outfall structure would be constructed within the LDW.

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.

No. All discharges that would occur during construction would comply with applicable permit requirements.

CSOs would continue to discharge from the existing Brandon Street and South Michigan Street outfalls. However, at project completion CSOs from these two outfalls would be controlled to a long-term average of no more than one untreated discharge per year per outfall. The volume of untreated stormwater and sanitary sewage discharged to the LDW from the Brandon Street and South Michigan Street CSO basins would be reduced by approximately 95 percent.

b. Ground Water:

1) Will ground water 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 ground water? Give general description, purpose, and approximate quantities if known.

Yes. Dewatering would be required to construct the project. Where excavations required for construction of buried pipes and structures extend below the existing groundwater table, shoring and/or dewatering would be needed to maintain the stability of the excavations. Discharge of dewatering water to groundwater is not anticipated.

The water table at the treatment station site is expected to occur between approximately six and 10 feet below the ground surface during the dry season. Groundwater would likely be near the ground surface during rainy periods in late fall and winter. Near the site where proposed conveyance lines would cross East Marginal Way, water has been measured between approximately six and nine feet below grade and the level fluctuates approximately one foot over a day with the tidal fluctuation in the LDW. Groundwater at the proposed location for the outfall structure's onshore manhole has been measured between eight and 15 feet below ground, with daily fluctuations in response to tides of up to six feet.

At the treatment station site, deep excavation for construction of the equalization basin would involve construction of secant piles and a concrete base seal without dewatering. The weight of the base seal would maintain base stability and after curing, would allow construction of the remainder of the equalization basin with minimal impacts on groundwater. When the equalization basin tremie seal is poured, approximately 1.2 million gallons of displaced water would need to be removed over a one- to two-day period. When the basin is drained after curing of the tremie seal, an additional approximately 2.5 million gallons of water would be removed, over a period of one day if possible. After the equalization basin is dewatered, some groundwater leakage into the shaft would occur. Localized dewatering would also be needed to construct connecting piping and the load distribution platform at the Treatment Building. Groundwater

pumping at a maximum rate between 50 and 500 gallons per minute (GPM) would be needed for a duration of approximately 20 weeks. All dewatering water associated with construction of the equalization basin and all other project construction activities requiring dewatering would be captured and treated according to permitting requirements, then discharged to the King County sewer system or the local storm system (which discharges to the LDW).

Most conveyance pipelines would be installed using shored trenches with dewatering. Dewatering would most likely be performed from sumps within the trenches, utilizing a drainage layer beneath the pipe bedding. Dewatering with wells is possible, but they would need to be installed and used in a manner that would prevent dewatering of a larger area than is necessary. For the trenched excavations, it is expected that dewatering would be required at a rate of approximately 10 to 500 GPM to create dry work areas over a period of up to one year. The larger flow rates are only anticipated if multiple trenching operations occurred simultaneously and would be for shorter durations.

While dewatering would be necessary to construct the project, limitations would be placed on dewatering in order to protect adjacent structures, pavements, and utilities from settlement. Dewatering may also be limited to minimize the risk of moving plumes of existing contaminated groundwater in new directions. Potential limitations are described below in Section B.3.d.

Permanent dewatering would not be an operational requirement of the project and impacts to groundwater from operation of the facility are not expected. Some groundwater could flow into the equalization basin structure after the project is constructed and operational, but the equalization basin would be designed to minimize the potential for groundwater leakage and there would also be construction performance and quality control requirements to minimize the leakage.

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.

None

c. Water Runoff (including storm water):

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

The source of runoff on the project site is rainfall.

Following construction of the project, runoff from the treatment station site would be directed to the combined sewer. Runoff from the right-of-way areas where the subsurface conveyance pipes would be constructed southwest of East Marginal Way would continue to drain to the LDW, which eventually flows into Elliott Bay. Runoff from the right-of-way east of East Marginal Way and East Marginal Way itself would continue to drain to the combined sewer.

Runoff that is directed to the combined sewer would flow through King County's wastewater conveyance system to the West Point Treatment Plant, where it would receive secondary treatment and then be disinfected and discharged to Puget Sound. During wet weather events, runoff that enters the combined sewer may be directed to the GWWTS for treatment and discharge to the LDW.

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

Yes. Runoff from construction sites has the potential to contain small amounts of motor oil, diesel fuel, hydraulic fluid, and other equipment-related materials, as well as contaminated and non-contaminated sediment. Spills of fuel and other construction-related pollutants could also occur during construction. These substances could enter ground or surface waters. See Sections B.3.d and B.7.a.5 for measures that could be implemented to minimize the potential for waste materials to enter ground or surface waters.

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

It is anticipated that the completed project would reduce the total impervious surface area on the treatment station site and reduce the volume of stormwater runoff from the site.

Stormwater along the conveyance routes and near the outfall structure would continue to be collected by the existing storm drain system. Work on the proposed conveyance system may require adjustment of existing stormwater pipes and the addition of catch basins for pipe access;

however, these adjustments would not affect the existing management or volume of stormwater in the project vicinity.

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

The following measures are proposed to reduce or control surface, ground, and runoff water and drainage pattern impacts during construction:

The project would be constructed in accordance with applicable local, state, and federal permits and government approvals, which would specify a range of measures designed to reduce or control potential surface, ground, and runoff water, and drainage pattern impacts.

During construction of the outfall structure in the LDW, the following measures would be implemented in order to reduce the potential release of turbid water and contaminated sediments:

- Silt curtains would be used to minimize the potential for local turbidity plumes, which would primarily occur during sheet pile placement and excavation of the trench for the outfall structure pipe and diffuser structure.
- Prior to in-water excavation activities, sheet piles would be placed along both sides of the trench that would be excavated in the LDW to install the outfall structure.
- A crane mounted clamshell or excavator stationed on a temporary work trestle or barge would be used to excavate the outfall structure trench within the confines of the sheet piles. Approximately 100 CY of sediment would be removed outside of the shored trench using hydraulic suction dredge equipment.
- An enclosed bucket would be used to minimize leakage and entry of potentially contaminated water or sediment back into the LDW.
- Containment would be used to limit waste material entering the LDW. Material excavated from the LDW would be loaded into either lined dump trucks (if work trestle based excavation) or on lined containers (if barge based excavation).
- No excavated materials from below the ordinary high water mark of the LDW would be re-used as fill material for the project.
- Limited excavation to depths of less than approximately three feet would be required in the area of the diffuser between the bridge pier and fender pier. Sheet pile containment would not be feasible in this area due to the tight working area and proximity to the piers. In this zone, a hydraulic suction dredge would be used to pump all sediments in to the upland or barge-mounted lined vessels for treatment and disposal upland. The suction dredge would prevent release of sediment contaminants to the waterway.

An Erosion and Sedimentation Control Plan would be developed, implemented, and maintained to address temporary erosion and sediment control (TESC) during construction of the project. Potential measures to be included in the plan are described in Section B.1.h.

A Stormwater Pollution Prevention Plan would be developed, implemented, and maintained to minimize erosion and sediments from rainfall runoff at construction sites, and to prevent any discharge of stormwater from the project area that does not meet applicable water quality standards.

A Spill Prevention, Control, and Countermeasures Plan would be developed and implemented during construction. The plan would include or address, at a minimum, the following components:

- Site information and project description
- Spill prevention and containment
- Spill response
- Standby, on-site material and equipment requirements
- Reporting information
- Program management
- Plans to contain pre-existing contamination (if necessary)
- Equipment to be used for work below the ordinary high water line
- Attachments, including a site plan and Spill and Incident Report Forms

At the beginning of construction, the Contractor would provide stormwater quality treatment, if required. This may include wet vaults, and/or other treatment and control measures, such as chemical treatment, filtration, electromagnetic coagulation, a multi-staged settlement pond system or Baker Tanks (if water volumes exceed capacity for temporary storage and/or adequate treatment). These measures would prevent contaminated water exceeding state water quality standards from being discharged into the LDW.

Because there is potential to encounter contaminated groundwater during construction, dewatering water would be captured and treated, if necessary, prior to discharge in accordance with applicable National Pollutant Discharge Elimination System (NPDES) construction stormwater general permit requirements or King County Industrial Waste sewer discharge authorization conditions.

Construction contract provisions in accordance with Department of Ecology requirements that may be implemented in applicable locations to minimize temporary construction dewatering and its potential impacts include:

- Requirements for tight sheeting for excavations below the water table in critical locations.
- Limitations on the water withdrawal rate in any given location.
- Limitations on the duration of dewatering pumping.

- Requirements for ground surface settlement monitoring and groundwater elevation monitoring outside of excavations to verify minimization of dewatering impacts.
- Requirements for testing, and treatment if necessary, of groundwater prior to discharge.

The equalization basin on the treatment station site is designed to include secant pile shoring and a concrete base slab. This will reduce the amount of dewatering that is required.

The following measures are proposed to reduce or control surface, ground, and runoff water and drainage pattern impacts during operation of the proposed project:

The project would be designed to comply with all applicable federal, state and local regulations.

Discharges from the outfall structure would be subject to requirements specified in a NPDES permit that would be issued by the Washington State Department of Ecology. WTD's Brandon Street and South Michigan Street CSO outfalls are currently permitted within King County's West Point Treatment Plant NPDES permit since the County has a Long Term Control Plan that commits to their control. The Georgetown WWTS is expected to be eventually included within this NPDES permit by amendment.

The principal NDPES permit performance measure for the Brandon Street and South Michigan Street CSO outfalls would be that no more than one untreated discharge per year would occur from each outfall, based on a 20-year moving average. For the Georgetown WWTS, the NPDES permit would also include technology-based effluent limits, water quality-based effluent limits (as required), definitions of acute and chronic mixing zone boundaries, effluent monitoring requirements, special conditions and studies (if needed), and general permit conditions. No untreated CSO events would be allowed from the outfall structure.

The discharge from the Georgetown WWTS would be developed to meet state acute and chronic water quality standards to protect aquatic life and human health, as well as applicable state Sediment Management Standards and anti-degradation criteria.

Stormwater at the treatment station site would be managed according to the City of Seattle stormwater code, and Ecology's Western Washington Hydrology Model would be used to design peak flow control and stormwater treatment elements, as required.

Green stormwater infrastructure (GSI) would be implemented at the treatment station site to the maximum extent feasible in order to meet stormwater code requirements and comply with best management practices. GSI would be designed to disperse, and retain drainage water on-site during operation without causing flooding, landslide, or erosion impacts. GSI best management practices that may be used for this project include permeable pavement such as open-grid grass pavers, bioretention, vegetated roofs, and detention cisterns. Stormwater would not be infiltrated on the project site due to high groundwater and potential contamination issues, so any infiltrating GSI techniques such as bioretention or permeable pavement would include underdrains.

If it is determined that GSI facilities would not be sufficient to mitigate flows to the peak flow control standard, as would be required by the City of Seattle, flow-control tanks or vaults (also known as detention tanks) would be used.

The outfall structure design would contain the following elements to minimize potential impacts to the LDW:

- The outfall structure pipe would be buried through the intertidal zone to protect it from exposure to hazards.
- Pipeline restraint features would be placed on the exposed section of the outfall structure pipe to protect it from damage by currents, debris, and vessel traffic.
- The outfall structure diffuser would contain multiple ports consisting of flanged risers from the outfall structure pipeline fitted with duckbill valves. These types of valves provide a desirable steady range of port velocities over the range of effluent flows, which help reduce the potential for erosion and maximize effluent mixing with receiving waters.

The completed project would reduce the volume of untreated combined stormwater and sanitary sewage that is currently discharged to the LDW from King County's Brandon Street and South Michigan Street CSO basins by approximately 95 percent. Consequently, the project would benefit water quality in the LDW.

4. Plants

a. Check or circle types of vegetation found on the site:

__X__ deciduous tree: alder, maple, aspen, other
__X__ evergreen tree: fir, cedar, pine, other
__X__ shrubs
__X__ grass
_____ pasture
_____ crop or grain
_____ Orchards, vineyards, or other permanent crops
_____ wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other

_____ water plants: water lily, eelgrass, milfoil, other
_____ other types of vegetation

Vegetation at the project site is limited and includes a combination of introduced landscape shrubs and street trees, nonnative invasive species, and small open turf-planted areas. The outfall structure site also contains some small grassy patches.

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

Construction of the proposed treatment station would require the removal of approximately 6,200 SF of existing vegetation on the treatment station parcels, primarily consisting of weeds and other volunteer species. This may include small areas of introduced landscape shrubs.

Construction of the conveyance lines would require the removal of limited areas of existing vegetation along the conveyance route, primarily roadside grasses, shrubs, and weedy areas. Construction of the EBI diversion manhole would require the disturbance and removal of approximately 1,200 SF of roadside grass and shrubs, and approximately two trees.

Construction of the outfall structure would require the removal of limited areas of existing riparian vegetation (mostly nonnative species).

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

None

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

Proposed landscaping at the treatment station site would include approximately 39,000 SF of new landscaped area consisting of approximately 15-20 trees, shrubs, grasses, and a green roof. Approximately 10,000 SF of the total would be reinforced turf permeable pavement. Approximately 20 street trees would be planted in the right-of-way.

Any vegetated areas along the conveyance route that were disturbed during construction would be re-vegetated, with the exception of approximately 16 SF of new impervious surface associated with the new EBI diversion manhole.

As part of post construction mitigation, the riparian area along the outfall structure would be enhanced. This would include removing shoreline debris (rubble, shotcrete, etc.) and nonnative vegetation, replanting the area with native species, and adding river bank protection measures that enhance habitat conditions (e.g., soft bank armoring).

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

Himalayan blackberry is present at the outfall structure site.

5. Animals

a. List any birds and other animals which have been observed on or near the site or are known to be on or near the site.

The upland areas of the project site do not include significant habitat for birds or mammals, although small mammals and some urban bird species are expected to occur in the general area and occasionally at the site. These include American crow, pigeon, and starling, as well as various gull and songbird species.

The LDW provides suitable habitat for a number of freshwater and saltwater fish and other aquatic species, including flatfish, herring, trout, salmonids, and crab. Marine mammals expected to occur in the waterway or the associated riparian corridor includes otters, harbor seals, and California sea lions.

The Muckleshoot Indian Tribe has treaty fishing rights within the LDW. The outfall structure site is located within the Muckleshoot Indian Tribe's usual and accustomed fishing and harvesting area. The outfall structure is situated on the northwest side of the First Avenue South Bridge in order to minimize potential impacts to boat ramp access and Tribal fishing. However, in-water work associated with construction of the outfall structure may temporarily preclude use of the immediate area of the outfall structure for Tribal fishing. King County would work with affected Tribes to minimize impacts to Tribal fishing. Tribal concerns regarding potential impacts to tribal fishing would be addressed during the USACE permitting process. The outfall structure would be designed to minimize its potential to snag fishing nets.

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

The following fish species are expected to occur in the LDW, near the outfall structure:

Common Name	**Scientific Name**	**ESA Status**	**Jurisdiction**
Puget Sound ESU Chinook Salmon	*Oncorhynchus tshawytscha*	T, CH	NMFS
Puget Sound DPS Steelhead	*Oncorhynchus mykiss*	T, CH*	NMFS
Coastal-Puget Sound DPS Bull Trout	*Salvelinus confluentus*	T, CH	USFWS

ESU = Evolutionarily Significant Unit
DPS = Distinct Population Segment
T = Threatened
CH = Critical Habitat
CH* = Proposed Critical Habitat
NMFS = National Marine Fisheries Service
USFWS = United States Fish and Wildlife Service

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

Yes. The LDW is part of a migration corridor used by anadromous salmonid species. It serves as a connection between Elliott Bay and the upper Green/Duwamish watershed.

The project site is within the Pacific Flyway for migrating waterfowl, so during the migratory season, the project area could be used by migrating waterfowl.

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

The project would adhere to conditions of applicable permits and government approvals, including but not limited to consultation under Section 7 of the Endangered Species Act with the National Marine Fisheries Service and United States Fish and Wildlife Service; Section 10 and Section 404 Permits from the USACE; a Hydraulic Project Approval from the Washington Department of Fish and Wildlife; and, a Shoreline Substantial Development Permit from the City of Seattle. Through these conditions, applicable regulations would require mitigation of impacts to fish and wildlife resources, including threatened and endangered species.

Measures identified in Sections B.1.h (Earth), B.3.d (Water), and B.7.a.5 (Environmental Health) would help preserve and enhance wildlife.

An approximately 300 square-foot sunken dock, approximately 12 pilings, and possibly one or two of the existing boathouses moored immediately downstream (west) of the outfall structure may be removed to facilitate in-water construction access and provide aquatic habitat mitigation. The boathouses that may be temporarily or permanently removed are each approximately 1,400 SF in size. It is possible that offsite mitigation may be provided via a fee in lieu program if it is determined that impacts cannot be sufficiently mitigated onsite.

The purpose of the proposed project is to reduce the number and duration of CSO events occurring in the LDW. As a result, the project would benefit aquatic habitat conditions in the area.

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

None known

6. Energy and Natural Resources

a. What kinds of energy (electric, natural gas, oil, woodstove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

In the completed project, electricity would be used for lighting and to operate equipment in the conveyance and treatment facilities (including the regulator stations, influent pump station, treatment station, and ancillary facilities).

An approximately 500 kW diesel-fired generator would be used to provide standby power for life safety equipment at the treatment station, such as safety lighting and fire alarms.

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

No

c. What kind of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

The project design will include the following energy conservation features:

- Minimized heating, ventilating, and air conditioning (HVAC) requirements (processes/equipment will be located outdoors as much as possible in order to minimize the need for conditioned space).
- Energy efficient lighting (light-emitting diodes [LEDs]), and lighting controls.
- Facility design to minimize the need for odor/corrosion control fans.
- Variable frequency drives on all variable motors.
- Right-sized processes and systems for maximum efficiency.

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.

Yes. The potential environmental health hazards associated with the project are described below.

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

The treatment station site contains four parcels with different historical uses and potential for soil and groundwater contamination. The parcel located in the southeast corner of the site (Tayag's Auto Repair) is included on Ecology's cleanup lists, related to its use for automotive repair and as a gas station. Furthermore, older buildings on the site that would be demolished as part of the proposed project likely contain lead-based paint, asbestos, and polychlorinated biphenyls (PCBs). Removal of soil from one area that housed several underground storage tanks was completed in 2007; however, Ecology has documented that residual contaminated soil and groundwater remain at this location near and under the buildings.

The other three treatment station parcels do not have known soil or groundwater impacts documented by Ecology. However, additional soil and groundwater sampling was conducted in 2015 for two of these three parcels and various contaminants were detected in several locations. Sampling was not conducted at the northern-most of these three parcels, but given the current and past heavy industrial use of the area and Ecology's documented, area-wide groundwater plumes to the north of the proposed treatment station parcels, that property may also have contaminated soils and/or groundwater. Localized areas of soil contamination will likely be encountered during excavation activities for the project.

There is documented contaminated soil within the right-of-way of East Marginal Way South near the proposed Georgetown Regulator Station site. The parcel on which the regulator station would be constructed has not been documented on any cleanup list.

The conveyance system would pass through the southwest corner of the parcel adjacent to the Georgetown Regulator Station site. This parcel, which is currently owned by Prologis, Inc., is listed on numerous contaminated site lists for petroleum-related products.

Ecology has documented area-wide contaminated groundwater plumes to the north of the treatment station site. Chemicals of concern include chlorinated solvents and 1,4-dioxane. Shallow groundwater sampling conducted in 2015 for the project at three of the four parcels identified various contaminants at several locations. Dewatering anticipated during construction (particularly for deeper excavation activities) will therefore require treatment of dewatering fluids to meet applicable discharge requirements (e.g., authorization for discharge to the local sanitary sewer from the King County Industrial Waste program).

The LDW was listed on the National Priorities List as a Superfund site in 2001 and the Washington Hazardous Sites List in 2002 due to

contamination of the waterway sediments associated with the long-term industrial use of the area. The four main contaminants of concern identified by EPA for human health in the LDW sediments are polychlorinated biphenyls, dioxins/furans, carcinogenic polycyclic aromatic hydrocarbons, and arsenic.

WTD's existing South Michigan Street CSO outfall is located next to the outfall structure site. Untreated sewage and stormwater is discharged to the LDW from this outfall during CSO events.

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.

Contaminated soils, groundwater, and sediments could be encountered during excavation work that would be required to construct the proposed project. Additionally, construction of the project would require work on existing sewer pipelines and the relocation of existing utilities, including gas transmission lines.

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.

The treatment station would store and use sodium hypochlorite, caustic soda (sodium hydroxide), bioxide, aluminum chlorohydrate, polymer and/or defoamer as chemical additives to support the water treatment process. These are classified as hazardous substances.

Small amounts of fuels and other similar materials would also be used and stored at the treatment station site.

4) Describe special emergency services that might be required.

No special emergency services would be required.

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

The project itself is a measure to reduce environmental health hazards associated with periodic CSO events. CSOs are a public health concern since they carry pollutants, primarily in the form of untreated sewage and stormwater, into water bodies. The proposed project would reduce the frequency of CSOs at the Brandon Street and South Michigan Street CSO outfalls to an average of one untreated discharge per year per outfall.

Disinfection of the discharged effluent would occur with the use of ultraviolet light, minimizing the use of hazardous substances in the treatment process.

The equalization basin would be constructed using secant piles. This would minimize the need for dewatering within the equalization basin, thereby minimizing the potential for the project to impact groundwater, including contaminated groundwater plumes, in the project vicinity.

The measures identified in Sections B.1.h and B.3.d would be implemented to reduce or control environmental health hazards. Additional measures are identified below.

Containment measures and protective equipment would be used when handling contaminated soil or groundwater to minimize the risk for exposure. For example, contaminated soil would be direct loaded to trucks for offsite disposal as it is excavated or stockpiles would be covered with visqueen or a similar material to prevent dispersion from rain or wind prior to transport to a permitted disposal facility. Contaminated soils would be stored within the boundaries of the construction zone and would not be easily accessible to the public.

Excavated soil and river sediment would be screened for contamination. The screening could include pre-excavation sampling and testing, real-time construction monitoring by visual inspection and instrumentation such as air sampling (e.g., photo-ionization detector or organic vapor analyzer) or X-ray diffraction, and stockpiling and sampling. Depending on the results of the screening, appropriate offsite permitted disposal facilities (or potentially recycling facilities as appropriate) would be identified for the soil and sediment generated during construction.

All construction and/or demolition activities would be reviewed for consistency with the Comprehensive Environmental Response, Compensation, and Liability Act Record of Decision for the LDW Superfund site and Ecology's Model Toxics Control Act and Sediment Management Standards. The EPA would be consulted during project permitting to ensure that the project does not preclude future Superfund-related cleanup efforts on or adjacent to the outfall structure site.

The buildings to be demolished on the treatment station site would be inspected for the presence of materials that could present health hazards, such as lead-based paint and asbestos, prior to demolition. If such materials were present, they would be properly handled and disposed of when the building is demolished or before the building is demolished. For example, a contractor certified to remove and properly dispose of

identified asbestos-containing debris would be used for abatement during demolition of the buildings.

King County would provide contamination-related information in the construction contracts identifying locations and types of known impacted soil or groundwater.

The construction contractors would be required to prepare and implement Hazardous Materials and Contaminated Media Management Plans that establish specific approaches to addressing anticipated and unanticipated contaminated soil, groundwater, and surface water during construction.

The construction contractors would be required to prepare Health and Safety Plans that address the specific construction tasks that involve working with contaminated sediment, soil, and water, and the demolition/removal of hazardous materials.

Access to chemicals stored and used at the treatment station during startup and operation would be controlled to ensure safety. Appropriate secondary containment for treatment chemicals would be provided as required by the National Fire Protection Association standards and King County requirements and standards of practice.

b. Noise

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

Noise in the project area would not affect the proposed 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.

Typical construction noises would be created from engine-powered construction equipment such as dump trucks, excavators, concrete mixers, and flatbed trucks. Other noise sources would include impact tools, which should be limited to hoe-rams (concrete breakers mounted on heavy equipment) and jackhammers (human-operated) at the proposed treatment station, and potentially an impact pile driver for construction of the outfall structure.

At a distance of 50 feet, the noise level generated by construction activities would range from approximately 80 “A-weighted” decibels

(dBA) to 90 dBA. Potential use of a pile driver could result in noise levels at 95 dBA (measured at 50 feet from the site of pile driving for the outfall structure). These represent anticipated levels without implementation of any noise control and reduction strategies.

Construction noise would be intermittent, occurring at different times and at various locations in the treatment station site and along the conveyance/outfall structure corridor during the approximately five-year construction period. Construction of the proposed project would result in a short-term increase in noise. All construction activities would occur in an existing loud to very loud noise environment. While proposed construction would generate noise, the existing noise environment would reduce the perceived impact of construction noise.

Almost all noise generating construction activity would typically occur between 7 a.m. and 7 p.m. In order to minimize impacts to traffic along roadways, nighttime construction would be required for installation of the South Michigan Street diversion manhole and possibly other portions of the conveyance pipelines or large, continuous concrete pours at the treatment station. Nighttime construction associated with installation of the South Michigan Street diversion manhole would last for approximately four months. Nighttime construction would occur during the shortest possible period in order to minimize both noise and traffic impacts. A noise variance would need to be obtained from the City of Seattle for nighttime construction. Hours of nighttime construction would be determined by the selected contractor and by any limitations imposed under the noise variance.

Operation of the proposed treatment station would produce minor levels of noise, localized to the treatment station site. The completed project would result in an overall reduction in noise currently produced on the site. The treatment station would be operated intermittently, only approximately 20 times per year and during testing and maintenance activities. During operation, noise generated by the treatment station is not anticipated to approach or exceed maximum permissible environmental noise levels of 70 dBA for the surrounding industrial district.

Noise from vehicular traffic created by operation and maintenance of the treatment station would be incidental in relation to the existing traffic use of surrounding arterial roadways.

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

Demolition, construction, and operation activities would be performed consistent with the City of Seattle's Noise Control Ordinance.

Construction BMPs would be used to minimize demolition and construction noise. Examples of BMPs that could be used include:

- Construction equipment engines would not be allowed to idle for longer than five minutes at the construction site.
- Residents and businesses near the project area would be notified of upcoming noisy demolition and construction activities.
- A 24-hour construction hotline would be created to facilitate prompt responses to questions and complaints.

Nighttime construction would be necessary for construction of the South Michigan Street diversion manhole, and possibly other work in the conveyance corridor. All technically and reasonably feasible noise control measures would be implemented during nighttime construction activities to minimize impacts to nearby residences, including the Martin Court Apartments located on Fourth Avenue South (see Section 8.a [Land and Shoreline Use]).

During construction of the outfall structure, sheet piles would be installed with a vibratory hammer as the primary installation method. However, the piles/sheeting may require proofing with an impact hammer, depending on site soil conditions. If proofing were necessary, noise measurements would be taken during work activities to ensure underwater sound levels are kept within acceptable ranges as required by local, state, and federal authorities.

The treatment station would be designed so that all regularly operated noise generating equipment would be housed within structures. The backup generator would be housed in a noise-attenuation enclosure as well.

Odor control system fans would be located outside, so either sound-attenuating wraps or a prefabricated walk-in enclosure would be used to mitigate noise from the fans. Noise levels would be mitigated to a level that meets site conditions required by the City of Seattle. In addition, silencers would be included on each treated air discharge to mitigate noise at the exhaust outlet.

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 treatment station site is currently in commercial use. Uses of the four parcels that comprise the site include fast food restaurants, a coffee stand, retail, office, studio, storage, auto repair, and luggage repair. The adjacent properties

are in industrial or commercial use, with the exception of the Martin Court Apartments, which is subsidized transitional housing with 41 units located on the northwest corner of Fourth Avenue South and South Michigan Street.

The outfall structure site is located in the LDW, outside of the dredged navigation channel. It is adjacent to properties in commercial, industrial, and recreational use.

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?

No

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

c. Describe any structures on the site.

There are six structures on the treatment station site. These include two fast food restaurants, one large furniture warehouse, an auto repair shop, a small retail building, and a drive-through coffee stand.

The upland portion of the outfall structure would be constructed next to a utilidor shaft structure owned by Seattle Public Utilities. The terminus of the outfall structure would be located next to a First Avenue South Bridge pier and fender structure. There are several boathouses moored immediately downstream of the outfall structure site.

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

The six existing structures on the treatment station site, described above, would be demolished and one or two of the boathouses next to the outfall structure site may be removed.

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

The proposed treatment station site is zoned General Industrial 2 (IG 2 U/85) and is part of the Greater Duwamish Manufacturing and Industrial Center. The

proposed conveyance system would be located in areas zoned as General Industrial 2 or General Industrial 1. The outfall structure site is zoned General Industrial 1.

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

The properties proposed to be used for the treatment station, conveyance system, and outfall structure are designated as Industrial in the City of Seattle's Comprehensive Plan.

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

The outfall structure and approximately 200 feet of the conveyance system would be located within the shoreline and an area designated Urban Industrial according to the City of Seattle Shoreline Master Program.

h. Has any part of the site been classified as a critical area by the city or county? If so, specify.

The City of Seattle classifies the entire project area as a geologic hazard area and the LDW as a fish and wildlife habitat conservation area.

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

No people are anticipated to reside in the completed project. It is estimated that the completed treatment station would be visited by King County staff on a weekly basis for normal operation and maintenance purposes. The proposed conveyance system and outfall structure would be visited by King County staff less frequently.

Educational uses of the site could require 2 staff on site during regular programming.

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

The completed project would permanently displace twelve businesses—one personal property storage tenant, two landlord businesses, and nine tenant commercial businesses on the treatment station site. The tenant commercial businesses include Taco Time, Ducky's Office Furniture, Tayag's Auto Repair, Baristas Coffee, Southside Allstars, Omni Luggage Repair, Muy Macho Taqueria, Stalk Market, and McDonald's. The twelve businesses employ approximately 100 people.

In order to facilitate in-water work on the outfall structure and mitigate for impacts associated with in-water work, King County may acquire one or two boathouses that are located next to the outfall structure.

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

King County would follow applicable federal, state, and local requirements for property acquisition, compensation, and relocation.

Property owners, residents, or businesses displaced by the proposed project would receive relocation assistance from King County, if eligible for relocation benefits, in accordance with the provisions of the King County Wastewater Treatment Division Real Property Acquisition and Relocation Policy, Procedures, and Guidelines.

King County would acquire necessary property at fair market value and provide relocation assistance to qualified property owners and qualified tenants. The County would follow Washington State law covering property acquisition (Chapter 8.26 Revised Code of Washington, Title 468-100 Washington Administrative Code) to provide consistent treatment, to minimize hardship of persons displaced as a direct result of the proposed project, and to seek cooperative settlements of property acquisitions and relocation claims.

The parcel on which Taco Time is currently located (parcel 5367200300) would likely be resold after construction is complete; however, there would be constraints on the property (such as easements) due to the location of conveyance facilities (below grade) and the Georgetown Regulator Station (above grade).

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

Construction of the proposed project would not conflict with existing land use plans and policies for the properties or surrounding area; however, a number of permits and approvals would be required (see Appendix A). The City of Seattle is being consulted to ensure that the proposed project is compatible with existing and proposed land uses and plans.

The proposed use of the treatment station site would differ from the commercial and residential uses surrounding the site. However, the treatment station would not preclude or impair continued operation of existing adjacent uses (commercial, residential, or industrial). Likewise, it would not preclude the development or redevelopment of currently underdeveloped properties in the area.

The proposed conveyance system would not change existing land uses. Most of the conveyance system would be underground.

Construction of the conveyance system and outfall structure would occur in the shoreline district and would require compliance with the City of Seattle Shoreline Master Program and a Shoreline Substantial Development Permit.

The outfall structure would be located in the LDW and end at the navigation channel administered by the USACE. The USACE would require that the outfall structure not interfere with navigation or impair maintenance of the navigation channel. The Port of Seattle (Port), which owns the aquatic lands within the LDW, would require a lease or easement. The Port would likely require one of the following: (1) the outfall structure and diffuser must not disrupt any existing or potential navigational or water-dependent uses in the waterway, or (2) such impacts must be adequately mitigated. The outfall structure would also be located within and adjacent to the WSDOT right-of-way of the First Avenue South Bridge and require a franchise agreement from WSDOT. A permanent easement from SDOT (approximately 20 linear feet wide and 150 feet long) would be required for the outfall structure along the LDW.

m. Proposed measures to ensure the proposal is compatible with nearby agricultural and forest lands of long-term commercial significance, if any:

None proposed

9. Housing

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

None

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

None

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

None proposed

10. Aesthetics

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

The tallest proposed structure would be on the treatment station site. It would be approximately 46 feet tall. The principal exterior building materials would be wood, concrete, masonry, metal, glass, and translucent polycarbonate screens.

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

The visual quality of the immediate project area would be altered for approximately five years—from the time of demolition through construction. Temporary visual impacts during demolition and construction would include the presence of construction equipment, work crews, dust/exhaust, materials, signage temporary fencing, and traffic congestion along haul routes.

The existing buildings would be replaced with the treatment station and the Georgetown Regulator Station. New buildings would be designed to be compatible with and enhance the existing visual character of the neighborhood. Most of the other proposed new facilities would be located below ground. The treatment station site would contain security fencing, bioretention facilities, a green roof, and other landscaping.

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

WTD is working with a community design advisory group that was created for the project to gain community input on treatment station architectural and landscape design and provide opportunities for review and comment during the design process.

The design process for the treatment station would follow City of Seattle policies and guidelines for incorporating aesthetic considerations into design.

11. Light and Glare

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

During construction, temporary lighting may be used at the beginning and end of workdays when daylight hours are short.

In order to minimize impacts to traffic along roadways, nighttime construction would be required for installation of portions of the conveyance lines and activities such as long, continuous concrete placement. Temporary lighting would be required during any nighttime construction.

The completed treatment station would include exterior security lighting that would be used during nighttime hours. As an art component of the project, lighting would be used at the treatment station to indicate when the facility is

operating. This would occur approximately 20 times per year. The completed project is not expected to produce glare.

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

No

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

None

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

Lighting fixtures used for temporary construction lighting and exterior security lighting would be configured so as to minimize the potential for glare.

12. Recreation

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

The project site is located in an industrial area with heavy traffic. Recreational opportunities in the immediate vicinity of the project site are limited. A portion of the multi-use, regional Duwamish Trail crosses the LDW on the First Avenue South Bridge and connects to the surface street system just south of the treatment station site and East Marginal Way. This portion of the trail connects the Georgetown and South Park neighborhoods.

The LDW is used for recreational boating and fishing. The outfall structure is located approximately 500 feet from a boat launch.

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

In-water work area associated with construction of the outfall structure would not be accessible to recreational boats for approximately four months.

A portion of the Duwamish Trail pedestrian ramp near East Marginal Way South and the First Avenue South Bridge would be temporarily rerouted for approximately 45 days during construction of the effluent conveyance pipeline.

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

During construction of the outfall structure and conveyance pipeline near the LDW, access to the adjacent boat ramp would be maintained.

A portion of the Duwamish Trail near East Marginal Way South and the First Avenue South Bridge would be temporarily rerouted. Safe access would be maintained at all times.

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 located on or near the site? If so, specifically describe.

No buildings or structures over 45 years old that are listed in or have been determined to be eligible for listing in a historic register are located within approximately one mile of the proposed treatment station, conveyance system, and outfall structure locations. Multiple commercial buildings built between 1924 and 1970 located in the project vicinity meet the minimum age threshold for consideration for listing in a historic register, but none have been formally evaluated. The proposed project would not alter any of these structures.

No archaeological sites or historic landmarks have been recorded on the proposed project site, including the treatment station site, conveyance routes, and outfall structure site. Eleven archaeological sites have been recorded within a one-mile radius of the project site. These 11 archaeological sites fall into three main categories: precontact shell middens; cemeteries; and historic debris concentrations and isolates. The closest archaeological site is located 0.2 mile from the project site.

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.

As described above, 11 archaeological sites have been recorded within a one-mile radius of the project site.

Historic and ethnographic records show that Native Americans used the project area as a place for seasonal small settlements and resource gathering. Five ethnographic places are recorded within one mile of the project site. The closest of these ethnographic places is located 0.5 mile from the project site.

Archaeological monitoring of geotechnical bores advanced as part of the proposed project identified intact paleosols (ancient buried soils) both within the

footprint of the proposed treatment station and in the proposed path of the influent and effluent conveyance lines. These stable buried surfaces have the potential to preserve intact precontact and historic period cultural resources.

The Washington State Department of Archaeology and Historic Preservation's (DAHP's) statewide archaeological predictive model characterizes the entire project area as "Very High Risk" for precontact cultural resources.

No previous cultural resources studies have been conducted on the project site.

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

Environmental Science Associates (ESA) conducted a review of existing literature for cultural resources within approximately one mile of the proposed treatment station, conveyance system, and outfall structure locations. Information reviewed included previous archaeological survey reports, ethnographic studies, historic maps, government landowner records, regional histories, geological maps, soils surveys, and environmental reports. These records were reviewed in order to determine the presence of potentially significant cultural resources, including Traditional Cultural Properties (TCPs), within the project area. Relevant documents were examined at DAHP, online, and ESA's research library.

In addition to this archival research, ESA monitored 27 of 31 geotechnical investigations conducted for the project between November 2014 and April 2015. The subsurface investigations included mud rotary borings, cone penetrometer tests, and direct push borings. The locations were chosen based on geotechnical concerns, and are located along the path of possible influent and effluent lines and at the outfall structure location.

In February 2016, during the first of two phases of investigation, four sonic cores were advanced on the treatment station site for the purpose of determining the presence or likelihood of encountering archaeological resources on the site. No cultural resources were identified during the first phase investigation.

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 project would comply with requirements of the National Historic Preservation Act, including requirements for consultation under Section 106 of the Act. An archaeological monitoring and inadvertent discovery plan would be prepared and implemented for the project.

Measures that would be implemented to minimize the potential for settlement of structures (including any historic structures) that could occur as a result of the project are described in Section B.1.h.

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.

Public streets and highways serving the proposed treatment station, conveyance and outfall structure sites include:

East Marginal Way South
First Avenue South
Fourth Avenue South
Corson Avenue South
South Front Street
South Michigan Street
South River Street
Interstate 5
State Route 99
State Route 509

After the Georgetown WWTS is constructed, vehicles would access the treatment station from Fourth Avenue South (see Figure 4).

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?

Yes. King County Metro operates seven bus transit routes through the project area. These routes include two all-day routes (131 and 132) and five peak-period-only routes (113, 121, 122, 123, and 154). All but one of these routes (the 154) use the First Avenue South Bridge to cross the Duwamish Waterway. There are three bus stops either adjacent to or across the street from the proposed treatment station site.

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

The Georgetown WWTS would have approximately 12 off-street parking spaces for treatment station staff and visitors. Approximately 110 parking spaces on private property parking lots that would be acquired by King County for construction of the Georgetown WWTS would be eliminated. No on-street parking is expected to be eliminated by the project.

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).

Right-of-way improvements would be made along Fourth Avenue South, South Michigan Street, and East Marginal Way South to comply with City of Seattle Department of Transportation (SDOT) requirements. Existing sidewalks would be rebuilt, utilities would be moved to meet SDOT clearance requirements, existing driveways would be reconstructed, and planter strips would be added in areas with sufficient right-of-way. An existing bus stop along South Michigan Street would be rebuilt on the sidewalk.

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

The outfall structure would be constructed in the LDW, outside of the maintained navigation channel. Construction barges would be required for part of the construction period for the offshore portion of the outfall structure. The use of two barges is anticipated, one for a floating crane and another for materials. A smaller barge may be used for commercial diving. Various other small craft would also be needed.

The duration of the barge-supported construction is anticipated to be approximately two months. The crane barge would be relatively stationary during this period, and the materials barge would be moved to and from onshore transfer points elsewhere in the LDW on a daily or weekly basis. The barges would be positioned outside the authorized navigation boundary as much as practical, but would also temporarily occupy part of the navigable waterway. No blocking of navigation is expected.

The outfall structure site is approximately 500 feet from the boat ramp located on the south side of River Street just east of the First Avenue South Bridge. This boat ramp is an important water access point for seasonal fishing activities conducted by the Muckleshoot Indian Tribe and the general public.

The effluent pipeline would pass under a Union Pacific Railroad industrial spur track that is located along First Avenue South and River Street. Field observation indicates that volume on this track averages approximately one train per day of approximately 20 cars.

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?

The completed project would not generate any everyday vehicular traffic unless there was a treatment event (estimated to occur approximately 20 times per year and during testing and maintenance activities). However, the parking, storage,

and small office facilities could result in single-digit numbers of trips on a sporadic basis. Use of the training room for educational purposes, tours, and meetings could generate single-digit school bus or private vehicle trips one to three times per week, on average.

The land uses removed from the treatment station site as a result of the proposed project generate a substantial amount of traffic, and the proposed project would remove much of that traffic from the surrounding street system.

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

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

A Transportation Impact Study was prepared for the proposed project (HDR Engineering, Inc., 2016) to identify potential transportation impacts and associated mitigation measures. Temporary traffic impacts are anticipated for most of the construction period. Temporary traffic impacts in the project area would include street closures, lane closures, traffic and parking restrictions, and restricted access to businesses. These impacts and the measures that could be implemented to reduce or control them are described generally below.

Most of the traffic impacts associated with the proposed project would result from construction of the South Michigan Street diversion, which would take place in South Michigan Street just east of East Marginal Way South. This is expected to involve a temporary approximately 20- by 25-foot excavation just east of the intersection. This activity is likely to require some combination of lane closures, diversions, detours, and evening and weekend work for approximately four months. Most or all of this work would occur at night to minimize associated traffic impacts. Construction work for the South Michigan Street diversion would be coordinated with businesses located within the triangle formed by South Michigan Street, East Marginal Way South, and Fourth Avenue South in order to maintain access and minimize delays for their customers and deliveries.

Construction of the EBI diversion would require temporary use of one lane of the First Avenue Bridge on-ramp. This work may be done at night and/or on weekends in order to minimize traffic impacts.

Construction of the new 60-inch-diameter effluent pipe under East Marginal Way South a few hundred feet north of South Michigan Street would likely require temporary lane closures in East Marginal Way South. It is anticipated that the contractor would be able to keep one lane in each direction open at all

times. Evening and/or weekend construction would be considered to avoid peak-period impacts.

The existing Metro stop on the north side of South Michigan Street just east of East Marginal Way South may need to be relocated temporarily, depending on the nature of nearby construction activities.

Construction of the outfall structure just west of the First Avenue South Bridge is not expected to have any impact on water-side access to the boat ramp just east of the bridge, but staging and parking for construction activities could constrain maneuverability on land and potentially reduce available parking nearby. King County will continue to coordinate with the Muckleshoot Indian Tribe to determine the necessary and appropriate measures to avoid or minimize impacts to the Tribe's fishing and fish processing activities. Construction scheduling would be coordinated and a traffic control plan would be implemented to maintain access to the Tribe's boat yards and fish processing facility, and the boat ramp east of the First Avenue South Bridge. Additional mitigation measures could include routing construction vehicles to minimize impacts and/or restricting construction staging locations.

Outfall structure construction is expected to have a very minor effect on navigation in the LDW when waterborne construction equipment is moving to and from the outfall structure site. Appropriate notice to mariners and other postings would be given to minimize the impact to vessel traffic.

Mitigation measures would be required to reduce the transportation impacts described above. Measures that would be implemented include:

- Development of a traffic control plan describing detour routes, lane closures, sidewalk closures, signage, flagging, hauling routes, etc. for approval by the City of Seattle prior to construction.
- Use of flaggers and other traffic control methods specified in the traffic control plan would be designed to minimize travel delays.
- To the extent practicable, scheduling of construction traffic to avoid peak commute hours and efforts to minimize weekday truck traffic during rush hours.
- Installation of standard signage along detour routes to guide the traveling public.
- Coordination of construction with utility projects in the vicinity.
- Implementation of detour routes and adjustment of construction hours to minimize travel delays and avoid peak-hour disruptions.

Sections of streets in which pavement is removed to construct the proposed project would be repaved and restored in accordance with City of Seattle requirements.

All on-street parking spaces that are temporarily eliminated during construction would be restored following construction.

No long-term mitigation would be required for any traffic-related aspect of the long-term operation of the project.

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.

No

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

None

16. Utilities

a. Circle utilities currently available at the site:
electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other: cable

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

The proposed project is a utility project that would primarily involve modifications and additions to WTD's existing conveyance system. The new treatment station, conveyance system and outfall structure would be owned and operated by WTD.

The project would be constructed in an area that is heavily developed, with a full range of underlying utilities including electrical, cable, natural gas, sewer, stormwater, and water. Impacts to utilities would be avoided to the extent possible during project design and construction. However, some utility relocation would be required. King County and/or its construction contractor would coordinate closely with service providers to minimize any temporary interruptions in service.

The project includes a dual electrical power feed to the treatment station. This minimizes the potential impacts of power outages on the ability of the treatment station to operate when necessary.

Utilities proposed for the project and utilities providing the services include:

Electricity – Seattle City Light
Natural Gas – Puget Sound Energy
Water – Seattle Public Utilities
Refuse Service – Seattle Public Utilities
Telephone – Century Link
Sanitary sewer – King County WTD
Cable – to be determined

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: Katherine Fischer

Katherine Fischer, Supervisor
Community Services and Environmental Planning, King County WTD

Date Submitted: 3/2/16

Appendix A. Environmental Information Prepared for Proposed Project

The following environmental documents have been prepared for the proposed project:

CH2M HILL, Inc. *Earth and Groundwater*. Technical Memorandum for the Georgetown Wet Weather Treatment Station Project. Prepared for King County, Department of Natural Resources and Parks, Wastewater Treatment Division, Seattle, Washington. October 8, 2015.

CH2M HILL, Inc. *Existing Subsurface Information*. Final Technical Memorandum for the Georgetown Wet Weather Treatment Station Project. Prepared for King County, Department of Natural Resources and Parks, Wastewater Treatment Division, Seattle, Washington. June 5, 2014.

CH2M HILL, Inc. *Phase I Environmental Site Assessment*. Assessment for the Georgetown Wet Weather Treatment Station Project. Prepared for King County, Department of Natural Resources and Parks, Wastewater Treatment Division, Seattle, Washington. February, 2015.

CH2M HILL, Inc. *Draft Phase II Environmental Site Assessment*. Assessment for the Georgetown Wet Weather Treatment Station Project. Prepared for King County, Department of Natural Resources and Parks, Wastewater Treatment Division, Seattle, Washington. December, 22, 2015.

CH2M HILL, Inc. *Surface Water*. Technical Memorandum for the Georgetown Wet Weather Treatment Station Project. Prepared for King County, Department of Natural Resources and Parks, Wastewater Treatment Division, Seattle, Washington. October 8, 2015.

CH2M HILL, Inc. *Treatment Station Site P13-L—Environmental Documents Review*. Technical Memorandum for the Georgetown Wet Weather Treatment Station Project. Prepared for King County, Department of Natural Resources and Parks, Wastewater Treatment Division, Seattle, Washington. 2015.

CH2M HILL, Inc. *Preliminary Geotechnical Assessment.* Draft Assessment for the Georgetown Wet Weather Treatment Station Project. Prepared for King County, Department of Natural Resources and Parks, Wastewater Treatment Division, Seattle, Washington. May 26, 2015.

Environmental Science Associates. *Biological Assessment and Essential Fish Habitat Assessment*. Assessment for the Georgetown Wet Weather Treatment Station Project. Prepared for King County, Department of Natural Resources and Parks, Wastewater Treatment Division, Seattle, Washington. December 2015.

Environmental Science Associates. *Cultural Resources*. Technical Memorandum for the Georgetown Wet Weather Treatment Station Project. Prepared for King County, Department of Natural Resources and Parks, Wastewater Treatment Division, Seattle, Washington. October 8, 2015.

Environmental Science Associates. *Draft Cultural Resources Assessment*. Report for the Georgetown Wet Weather Treatment Station Project. Prepared for King County, Department of Natural Resources and Parks, Wastewater Treatment Division, Seattle, Washington. December 2015.

Environmental Science Associates. *Environmental Health*. Memorandum for the Georgetown Wet Weather Treatment Station Project. Prepared for King County, Department of Natural Resources and Parks, Wastewater Treatment Division, Seattle, Washington. March 2016.

Environmental Science Associates. *Environmental Justice*. Memorandum for the Georgetown Wet Weather Treatment Station Project. Prepared for King County, Department of Natural Resources and Parks, Wastewater Treatment Division, Seattle, Washington. March 2016.

Environmental Science Associates. *Land and Shoreline Use*. Memorandum for the Georgetown Wet Weather Treatment Station Project. Prepared for King County, Department of Natural Resources and Parks, Wastewater Treatment Division, Seattle, Washington. October 8, 2015.

Environmental Science Associates. *Plants and Animals.* Technical Memorandum for the Georgetown Wet Weather Treatment Station Project. Prepared for King County, Department of Natural Resources and Parks, Wastewater Treatment Division, Seattle, Washington. October 8, 2015.

HDR Engineering, Inc. *Air Quality and Odors*. Technical Memorandum for the Georgetown Wet Weather Treatment Station Project. Prepared for King County, Department of Natural Resources and Parks, Wastewater Treatment Division, Seattle, Washington. October 8, 2015.

HDR Engineering, Inc. *Odor Control*. Final Technical Memorandum for the Georgetown Wet Weather Treatment Station Project. Prepared for King County, Department of Natural Resources and Parks, Wastewater Treatment Division, Seattle, Washington. January 19, 2015.

HDR Engineering, Inc. *Traffic and Transportation*. Memorandum for the Georgetown Wet Weather Treatment Station Project. Prepared for King County, Department of Natural Resources and Parks, Wastewater Treatment Division, Seattle, Washington. October 8, 2015.

HDR Engineering, Inc. *Transportation Impact Study*. Assessment for the Georgetown Wet Weather Treatment Station Project. Prepared for King County, Department of Natural Resources and Parks, Wastewater Treatment Division, Seattle, Washington. February 2016.

King County. *Assessment of Wastewater Treatment and Outfall Discharge Regulatory Requirements—Subtask 200.02*. Technical Memorandum for the Georgetown Wet Weather Treatment Station Project. Prepared for King County Department of Natural Resources and Parks, Wastewater Treatment Division. Seattle, Washington. 2015.

King County. *Reasonable Potential Analysis and Assessment of Potential Dilution Requirements for Outfall Structure*. King County Department of Natural Resources and Parks, Wastewater Treatment Division. Seattle, Washington. October 26, 2015.

King County. *King County Wastewater Treatment Division Long-term Combined Sewer Overflow Control Plan Amendment SEPA Programmatic Environmental Checklist*. King County Department of Natural Resources and Parks, Wastewater Treatment Division. June 26, 2012.

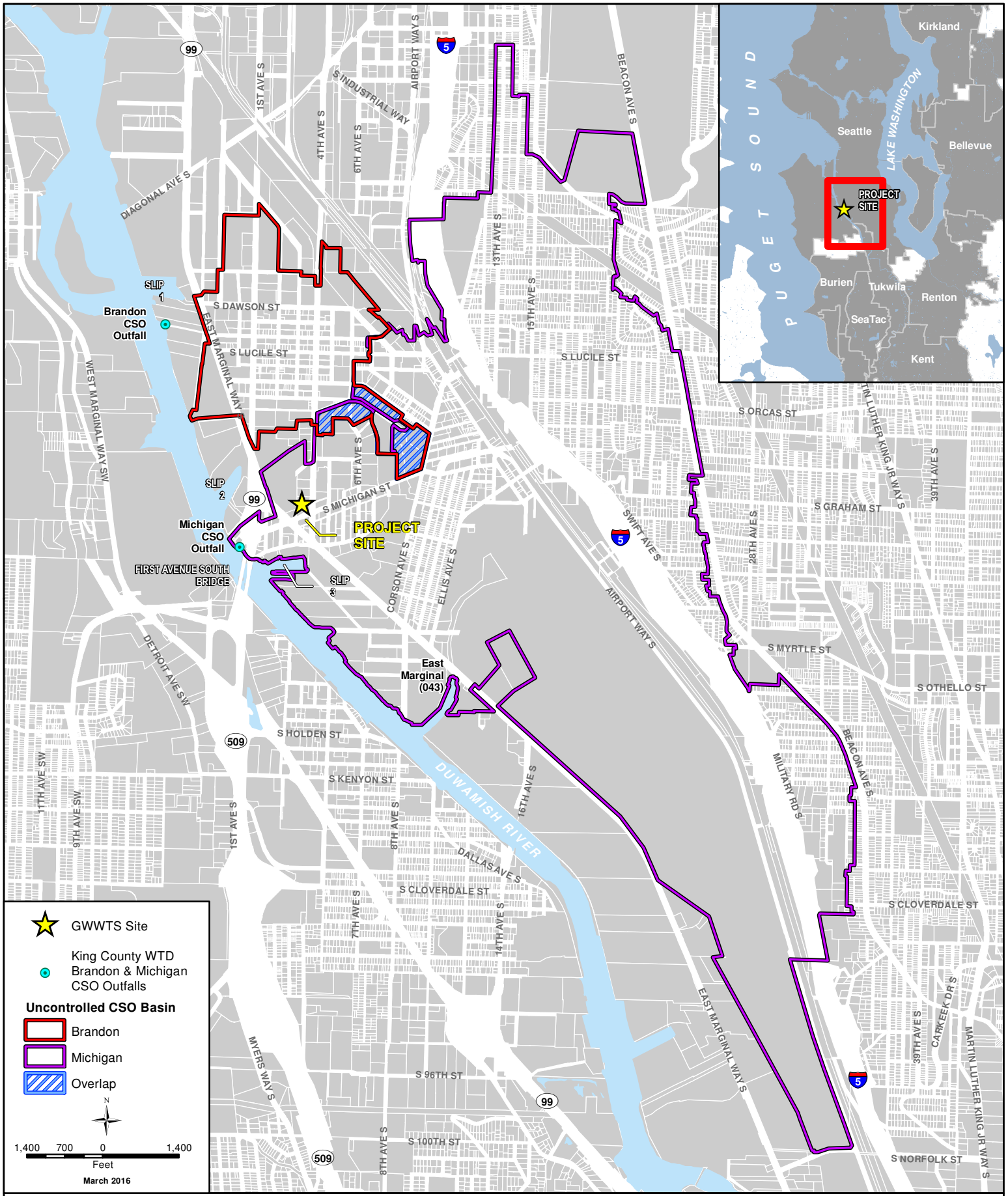
King County. *Sediment and Water Quality Conditions Assessment for the Brandon/Michigan CSO Control Project*. Prepared by Bruce Nairn, Wastewater Treatment Division, and Scott Mickelson, Water and Land Resources Division. King County Department of Natural Resources and Parks, Wastewater Treatment Division and Water and Land Resources Division, Seattle, Washington. January 2015.

Appendix B. List of Anticipated Government Approvals and Permits

Agency/Jurisdiction	Permit/Approval
U.S. Army Corps of Engineers	Section 404 Permit Section 10 Permit Section 408 Authorization or exemption
U.S. Fish and Wildlife Service and the National Marine Fisheries Service	Section 7 Endangered Species Act Consultation
Washington Department of Fish and Wildlife	Hydraulic Project Approval
Washington Department of Ecology	Section 401 Water Quality Certification Coastal Zone Management Act Consistency Determination NPDES Construction Stormwater General Permit State Environmental Review Process Compliance Federal Cross Cutting Authorities Compliance NPDES Waste Discharge Permit amendment of WA0029181 Underground Storage Tank Permit
Washington Department of Archaeology and Historic Preservation	Section 106 National Historic Preservation Act Consultation
Washington State Department of Transportation	Franchise (SR 509)
City of Seattle Department of Construction and Inspections	Type IV Council Conditional Use Master Use Permit–SEPA Conditioning Shoreline Substantial Development/Conditional Use Permit Construction (Building/Clear and Grade) Permit Demolition Permit Plumbing Permit Mechanical Permit Electrical Permit
City of Seattle Department of Transportation	Street Use Permit Street Improvement Permit Council-Approved Term Permit (if required)
City of Seattle Fire Department	Day Tank Permit Combustible and Flammable Liquids Permit
Seattle Public Utilities	Utility Permit Water Availability Certificate Water Service Agreement
Seattle and King County Public Health Department	Health Permit (Air Gap) Plumbing Permit
King County Wastewater Treatment Division	State Environmental Policy Act Documentation and Determination
King County Facilities Management Division	Special Use Permit
King County Industrial Waste Program	Industrial Waste Permit (Minor Discharge Authorization)

NPDES = National Pollutant Discharge Elimination System

Appendix C. Figures



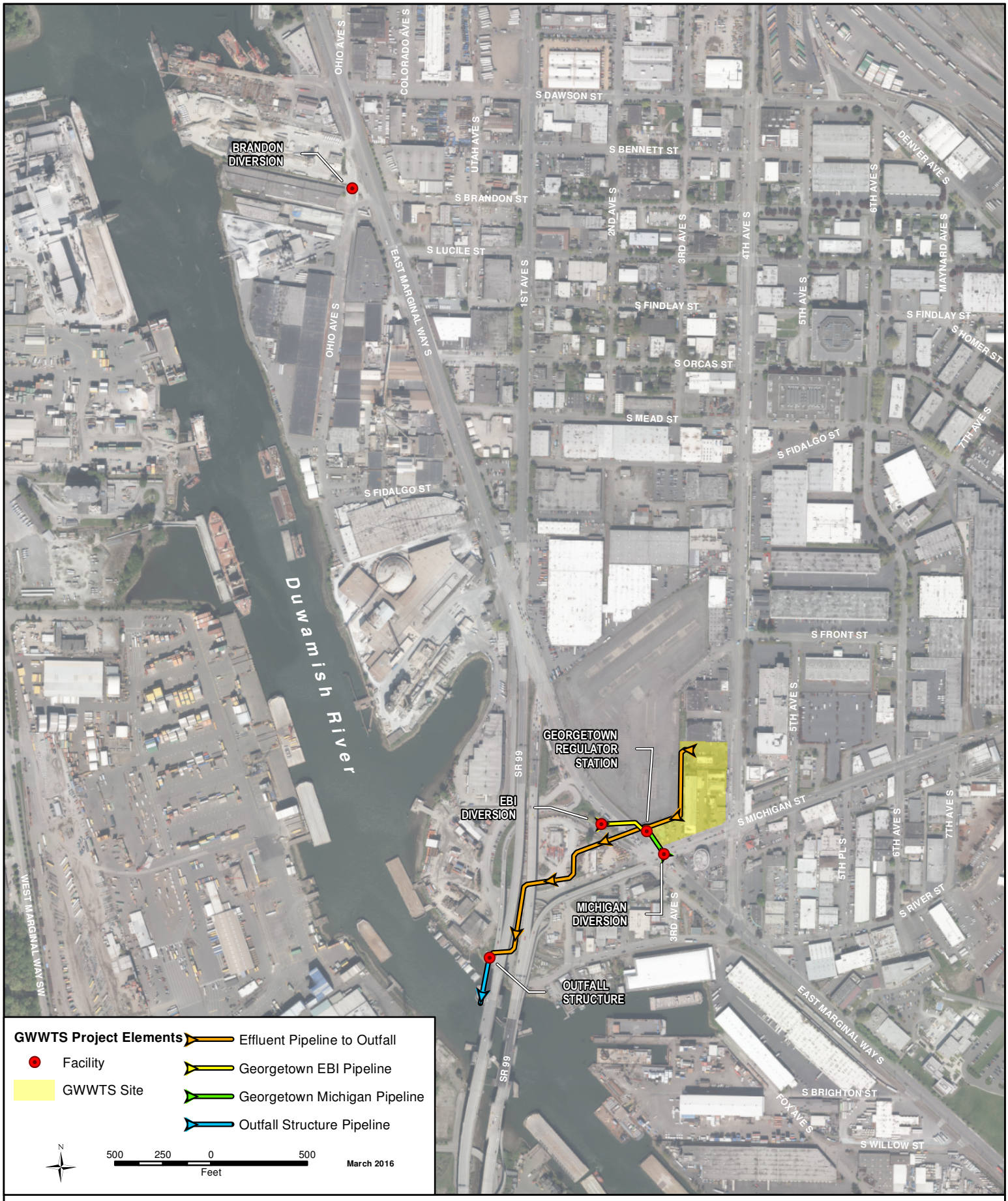
King County
Department of Natural Resources and Parks
Wastewater Treatment Division

File Name: Q:\\WTD\Projects\Brandon-Michigan\projects\Vicinity_SEPA.mxd - Shari Cross

Figure 1

Site/Vicinity Map

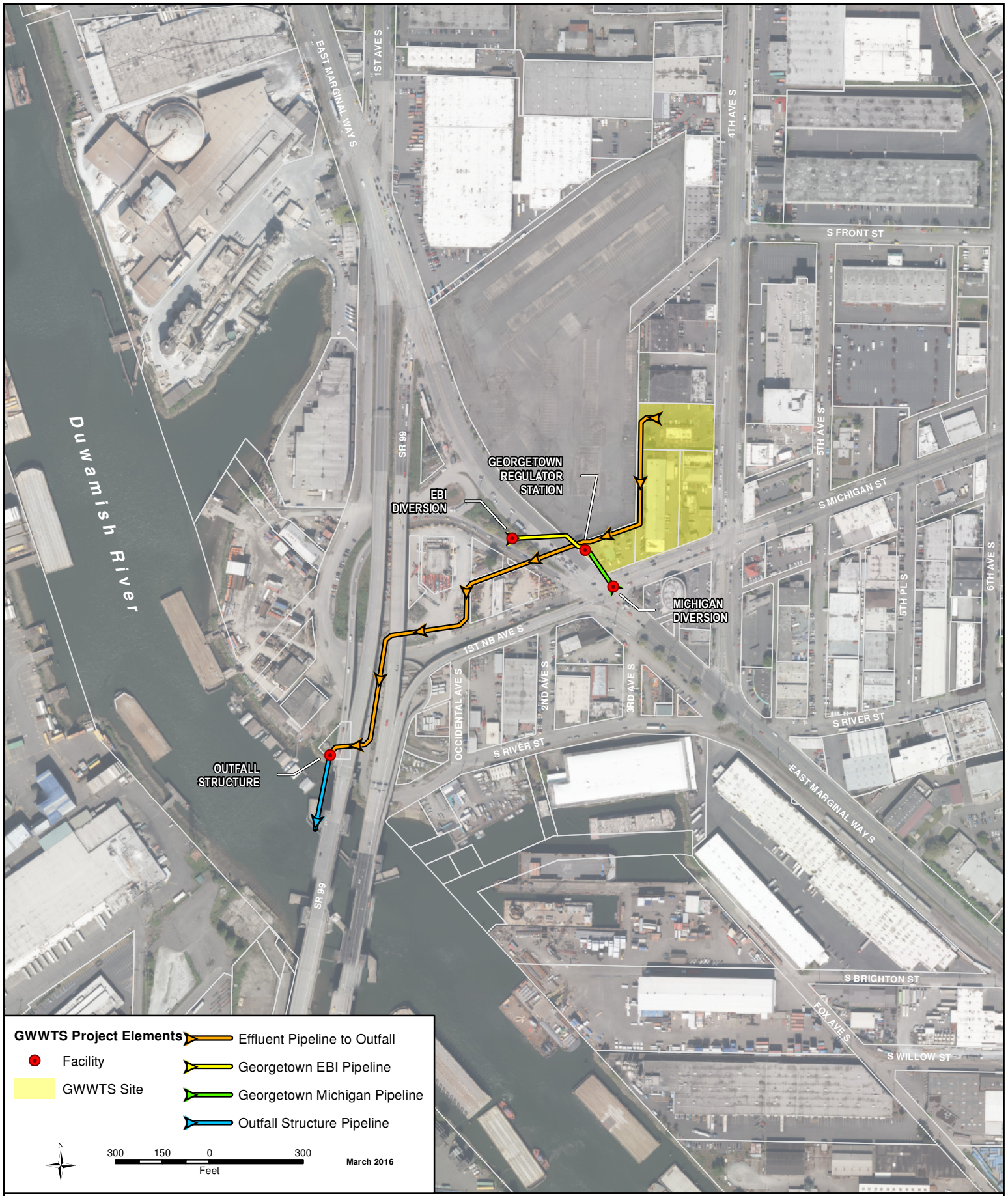
Georgetown Wet Weather Treatment Station



King County
Department of Natural Resources and Parks
Wastewater Treatment Division

File Name: Q:\\WTD\Projects\Brandon-Michigan\projects\2_ProjectSite.mxd - Shari Cross

Figure 2
Project Site - Including Brandon Diversion
Georgetown Wet Weather Treatment Station



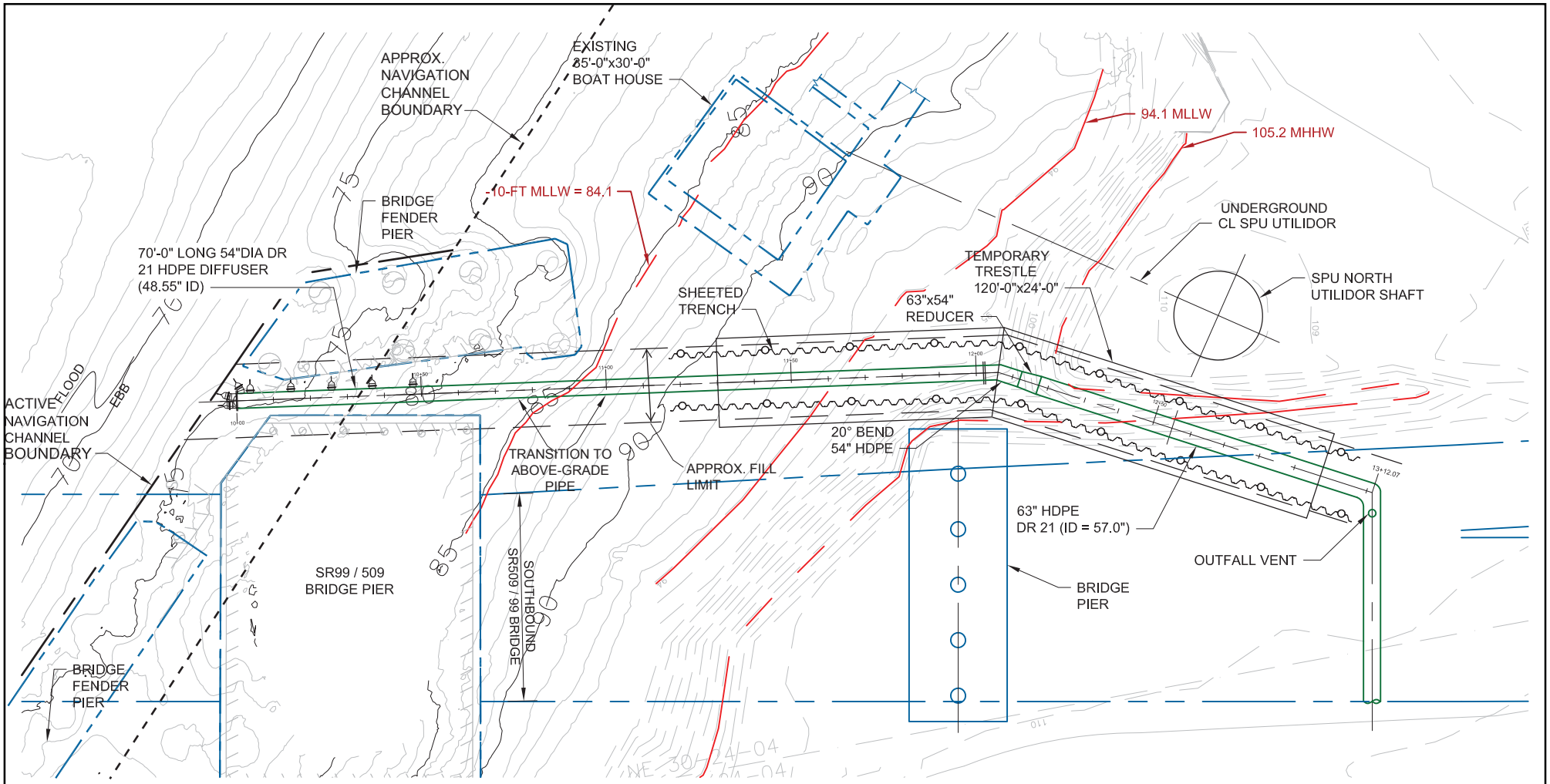
King County
Department of Natural Resources and Parks
Wastewater Treatment Division

File Name: Q:\\WTD\Projects\Brandon-Michigan\projects\2_ProjectSite.mxd - Shari Cross

Figure 3
Project Site - Excluding Brandon Diversion
Georgetown Wet Weather Treatment Station

Figure 4

Architectural Rendering
Georgetown Wet Weather Treatment Station



NOTE:
0.0 MLLW = 94.1 KING COUNTY METRO DATUM

ACTIVE NAVIGATION CHANNEL BOUNDARY EXTENDS PAST NAVIGATION CHANNEL BOUNDARY BUT NOT BEYOND FENDER FOR ACTUAL NAVIGABLE WATERWAY.

OUTFALL
OVERALL PLAN

APPLICANT:
King County
Department of Natural Resources and Parks
Wastewater Treatment Division

Georgetown Wet Weather Treatment Station

LOCATION:
Lower Duwamish Waterway (River Mile 2.5) near First Avenue South Bridge (SR 509) Crossing

Lat/Long: 47.543450/-122.334770

DATUM: King County Metro Datum

MLLW = 94.1 Metro
MHHW = 11.1 MLLW = 105.2 Metro

Figure 5. Outfall Structure Plan View

IN: Lower Duwamish Waterway

NEAR/AT: Seattle

COUNTY: King STATE: WA

DATE: **December 2015**

Document Path: G:\Projects\Washington\King_County_000019\Georgetown_WWTS_216892\Map_Docs\JARPA\JARPA_Outfall_Planview.mxd

Appendix D. Greenhouse Gas Checklist

King County Greenhouse Gas Emissions Worksheet—Georgetown Wet Weather Treatment Station Project

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 (MTCO2e)			**Lifespan Emissions (MTCO2e)**
			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 (Georgetown WWTS)		30.1	39	1,278	257	**47307**
Vacant		0.0	39	162	47	**0**

Section II: Pavement

Pavement (where not previously paved)		0.50				**25**

Total Project Emissions: **47332**