



DETERMINATION OF NONSIGNIFICANCE

TITLE OF PROPOSAL: South Plant Biogas and Heating Systems Improvements

DESCRIPTION OF PROPOSAL: The King County Wastewater Treatment Division (KCWTD) proposes to replace the existing biogas upgrading system (BUS) and heating systems at KCWTD's South Treatment Plant (STP) in Renton, WA. The project will improve the plant's ability to produce biomethane gas, which can be used as fuel, from the wastewater treatment process. The project will also improve the plant's heating systems to more reliably meet process and space heating demands. The project includes construction of the Heat and Energy Recovery Building (HERB), a new thermal oxidizer, heating system improvements within the existing Digester Equipment Building, stormwater management facilities, and utility connections. Project construction is scheduled to begin in mid-2019, and the new biogas and heating system is scheduled to be operational by the end of 2021.

LOCATION OF PROPOSAL, INCLUDING STREET ADDRESS, IF ANY: The proposed project is located in Renton WA, at 1200 Monster Road SW. The project will occupy King County Parcel Numbers 2423049097 and 2423049006, which are located in NE Quarter-Section, Section 24, Township 23 North, Range 9 East.

SEPA Responsible Official:

Mark Isaacson

Position/Title:

Director, King County Wastewater Treatment Division

Address:

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

Date:

3/5/18

Signature:

Proponent and Lead Agency:

King County Department of Natural Resources and Parks
Wastewater Treatment Division

Contact Person:

Jacob Sheppard, Water Quality Planner
King County Wastewater Treatment Division
201 South Jackson Street, MS KSC-NR-0505
Seattle, WA 98104
phone: (206) 477-5395; e-mail: jacob.sheppard@kingcounty.gov

Issue Date:

March 9, 2018

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 is not required under RCW 43.21C.030(2)(c). This decision was made after review of a completed environmental checklist, the environmental reports listed in Section A.8 of the environmental checklist, and other information on file with the lead agency. This information is available to the public on request.

☒ This Determination of Nonsignificance (DNS) is issued under WAC 197-11-340 (2); the lead agency will not act on this proposal for 14 days from the issue date. **Comments must be submitted by March 23, 2018.** Submit comments to Katherine Fischer, Supervisor, Environmental Services, King County Wastewater Treatment Division, 201 South Jackson Street, MS KSC-NR-0505, Seattle, WA 98104-3855. Contact Jacob Sheppard, Water Quality Planner, at (206) 477-5395 or jacob.sheppard@kingcounty.gov for questions or information on how to submit comments electronically.

☒ The King County Wastewater Treatment Division recently submitted a conditional use permit application for this project to the City of Renton. Therefore, 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/about/policies/rules/utilities/put741pr.aspx> or contact Jacob Sheppard, Water Quality Planner, at (206) 477-5395 or jacob.sheppard@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

South Plant Biogas and Heating Systems Improvements

February 9, 2018

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.

This information is available in accessible formats upon request at
(206) 477-5371 (voice) or 711 (TTY).

ENVIRONMENTAL CHECKLIST

A. BACKGROUND

1. Name of proposed project, if applicable:

South Plant Biogas and Heating Systems Improvements

2. Name of applicant:

King County Department of Natural Resources and Parks
Wastewater Treatment Division

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

King County Department of Natural Resources and Parks
Wastewater Treatment Division
Environmental Services Unit
KSC-NR-0505
201 S. Jackson Street
Seattle, WA 98104

CONTACT: Jacob Sheppard, Environmental Planner
Phone: (206) 477-5395
Email: jacob.sheppard@kingcounty.gov

4. Date checklist prepared:

February 9, 2018

5. Agency requesting checklist:

King County Department of Natural Resources and Parks
Wastewater Treatment Division

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

Project construction is scheduled to begin in mid-2019. The new biogas and heating system is scheduled to be operational by the end of 2021. A minor element of the project, the installation of a third heating boiler, will occur in a future construction contract with a schedule yet to be determined.

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.

Brown and Caldwell. South Plant Biogas and Heat Systems Improvements Project Trip Generation Memo. November, 2017.

Brown and Caldwell. Phase I Environmental Site Assessment. March, 2017.

Davido Consulting Group. Technical Information Report (Full Drainage Review). King County South Treatment Plant – Biogas and Heat Systems Improvements. January, 2018.

Environmental Science Associates. South Treatment Plant Biogas and Heat Systems Improvements Project: Wetland Assessment Report. January, 2018.

Environmental Science Associates. Cultural Resources Background Investigation. March, 2017.

Russell and Lambert. Tree Report: King County South Treatment Plant Biogas and Heat Systems Improvements. December, 2017.

Shannon and Wilson, Inc. Revised Geotechnical Report, King County South Treatment Plant Biogas and Heat Systems Improvements, Renton, Washington. January, 2017.

Shannon and Wilson, Inc. Addendum to Geotechnical Report, King County South Treatment Plant Biogas and Heat Systems Improvements, Renton, Washington. March, 2017.

Shannon and Wilson, Inc. Geotechnical Report Addendum, Biogas and Heat Systems Improvements Projects, King County South Treatment Plant, Renton, Washington. December, 2017.

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.

None known

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

City of Renton

- Land Use Permits, including:
 - Conditional Use Permit
 - Site Plan Review
 - Critical Areas Review
 - Street Frontage Improvements Waiver
 - Shoreline Exemption
- Building Permits, including:
 - Building Permit
 - Civil Construction Permit
 - Drainage Review and Approval

Puget Sound Clear Air Agency (PSCAA)

- Notice of Construction

Washington Department of Ecology (Ecology)

- National Pollutant Discharge Elimination System (NPDES) Construction Stormwater General Permit

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.

King County proposes to replace the existing biogas upgrading system (BUS) and heating systems at King County Wastewater Treatment Division's South Treatment Plant (STP) in Renton, WA. The project will improve the plant's ability to produce biomethane gas, which can be used as fuel, from the wastewater treatment process. The project will also improve the plant's heating systems to more reliably meet process and space heating demands. The project includes construction of the Heat and Energy Recovery Building (HERB), a new thermal oxidizer, heating system improvements within the existing Digester Equipment Building, stormwater management facilities, and utility connections. Each of these project elements are described in further detail below.

Heat and Energy Recovery Building (HERB). The project includes the construction of a new building west of the existing Solids Motor Control Center (MCC) Building, in the northern part of the plant property, to house the BUS and new boilers for the plant's heating system. The approximately 9,782 square foot building will be located within an unused area, previously designated for plant expansion, currently comprised of lawn overtopping a mound formed by previously-placed construction fill. The site slopes gradually to the east towards the existing Solids MCC Building and is maintained as lawn grass over the mounded spoils. Previously placed spoils will be

removed and the existing slope will be re-graded as part of building construction. The building will be primarily reinforced concrete, with an architectural finish similar to existing buildings at the plant. Spaces in the HERB will include gas compression rooms, a boiler room, a control room, an electrical room, a bathroom, a gas analyzer room, and space for heating, ventilation, and air conditioning (HVAC) equipment. The County currently plans to install two new boilers in the HERB in the initial construction contract for this project, and one additional boiler in the HERB in a future contract. Some equipment will be located outside, along the west exterior of the HERB. The new facility will include up to 10 parking stalls on the north side of the building.

Existing utility tunnels that run under the nearby Digester Equipment Building will be extended to provide utilities to the new building. New low pressure sludge gas (LSG), waste gas, and high-pressure sludge gas (HSSG) pipes will be routed underground along the plant's driveway (Road N) between the existing waste gas burners and the current BUS. All utilities in the road will be installed using open-cut construction methods. New electrical equipment will be installed in the Solids MCC Building and the new building.

Thermal Oxidizer. The project will include installation of new thermal oxidizer equipment located outside on a new concrete pad (approximately 2,437 square feet) immediately south of the existing waste gas burners. The thermal oxidizer will combust waste gas from the BUS. The primary feature of the thermal oxidizer is an elevated stack alongside a horizontal oxidation chamber.

Other Heating System Improvements. New effluent-source heat pumps (referred to as heat extractors [HXTs]) will replace the plant's existing HXTs and will be located in the lower floor of the existing Digester Equipment Building. Heating system upgrades will not require construction outside of the building. Heating system improvements will include the replacement of existing hot water and effluent water pumps.

The existing BUS, HXTs, and hot water boiler will be removed as part of the project.

See Figure 2 for a site plan of the project.

- 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 Renton WA, at 1200 Monster Road SW. The project will occupy King County Parcel Numbers 2423049097 and 2423049006, which are located in NE Quarter-Section, Section 24, Township 23 North, Range 9 East.

See Figure 1 for a vicinity map of the project.

B. ENVIRONMENTAL ELEMENTS

1. Earth

a. General description of the site

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

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

The steepest slopes on the site are approximately 25%.

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.

In general, the site overlies previous fill consisting of silty sand with gravel to a depth of approximately 25 feet. The fill layer is underlain by native sand, silt, and gravel to a depth of approximately 80 feet.

Neither the project site nor its surroundings contain agricultural land of long-term commercial significance.

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

No.

- 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.**

Approximately 2.4 acres of the approximately 50-acre STP property will be cut and graded in order to re-grade the existing slope at the new building site, install the concrete foundation for the building, pave the exterior equipment areas adjacent to the building, install the concrete pad for the thermal oxidizer, and create storm water treatment and detention facilities. In addition, trenches will be cut and filled in order to install utility lines on the site.

Approximately 17,000 cubic yards of soil will be excavated, all of which will be used onsite. The spoils will be placed on an approximately one-acre area south of the digesters located within an open lawn area in the center of the STP property. Spoils will be compacted and seeded to match existing grades and vegetation type.

For all excavation activities, subsequent backfill will consist of native soil to the greatest extent possible, supplemented by clean fill when required by permit conditions or engineering specifications.

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

Some localized erosion could occur during clearing and construction. However, erosion control measures will be used to minimize the potential for this to occur. See Section B.1.h below for typical Best Management Practices (BMPs) and other measures that could be utilized to minimize the potential for erosion. Erosion is not expected to occur as a result of the completed facility.

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

Approximately 4% of the project's 2.4-acre area of disturbance is covered with impervious surfaces. After project construction, approximately 18% of the site will be covered with impervious surfaces, including approximately 0.22 acre of buildings and approximately 1.29 acres of new and replaced concrete and asphalt surfaces.

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

Temporary erosion and sedimentation control measures will be employed throughout project construction, including prior to all clearing, excavation, filling, grading, and other soil-disturbing activities in the project area. These control measures will be identified in the project plans and construction

specifications and will be implemented as required by the City of Renton, Ecology, and other permitting agencies.

Typical measures that may be used include installing filter fabric fences and other sediment barriers, placing silt traps in storm drain inlets, covering soil stockpiles and exposed soils, and using settling facilities to prevent sediment from leaving the site.

Additional best management practices (BMPs) and other measures could include the following:

- Designation of personnel to inspect and maintain temporary erosion and sediment control measures
- Use of appropriate means such as stabilized entrances and wheel washes to minimize tracking of sediment onto roadways by construction vehicles
- Regular street cleaning for mud and dust control
- Disposing of excess excavated soil at an approved disposal site as soon as practical
- Restoration of disturbed areas by repaving or replanting as soon as practical after construction is completed

Spoils placed onsite will be compacted, seeded, and temporarily covered with plastic or blankets where needed in order to prevent erosion.

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.**

Project construction will involve temporary, mobile source air emissions (NO_x, VOC, CO, PM₁₀, PM_{2.5}), including diesel exhaust from construction equipment and dust generated by earth-moving activities. The exhaust emissions will be intermittent and spread across the project area. They are not expected to affect attainment of air quality standards in the project area.

The BUS will convert biogas (a byproduct of the wastewater treatment process) into pipeline-quality, renewable natural gas (biomethane) by separating the carbon dioxide and other constituents from the methane in the biogas. This process results in a waste gas stream (composed mostly of carbon dioxide) that will be combusted in the thermal oxidizer. Combustion of the waste gas, as well as the combustion of biogas to fuel the completed facility's boilers, can result in the conversion of certain compounds into air pollutants.

Air pollutants will be controlled through the use of hydrogen sulfide removal systems and ultra-low NO_x burners on the boilers. The thermal oxidizer will result in a destruction removal efficiency of 99% of the methane in the waste gas

stream. Destruction removal efficiency is the percentage that represents the number of molecules of a compound removed or destroyed in an incinerator relative to the number of molecules that entered the system.

The project will initially install two boilers. The County plans to install one additional boiler at STP in a future contract. The expected air emissions from the two new boilers and the thermal oxidizer, and the future state of three boilers and thermal oxidizer, are as follows (using maximum values for the project's design year):

Air Emissions	Emission Values	
	<i>2 Boilers + Thermal Oxidizer</i>	<i>3 Boilers + Thermal Oxidizer (future state)</i>
Sulfur dioxide (SO ₂)	9.22 tpy	9.76 tpy
Nitrogen oxides (NO _x)	2.21 tpy	2.61 tpy
Carbon monoxide (CO)	4.04 tpy	5.42 tpy
Dioxide (O ₂)	3% by volume wet	3% by volume wet

Notes: tpy = tons per year

The County is currently operating a gas-fired boiler at STP, which will be decommissioned once the project is operational. Decommissioning this boiler will eliminate the following emissions: SO₂ (-0.95 tpy); NO_x (-3.13 tpy); and CO (-2.38 tpy). As a result, net emissions will be lower than those presented in the table above.

A Notice of Construction (NOC) application will be submitted to PSCAA for the project. The NOC application will demonstrate the use of best available control technology (BACT) on the new equipment and project compliance with the National Ambient Air Quality Standards (NAAQS) and any other applicable state and local ambient air quality standards for these pollutants. Project emissions are not expected to significantly impact air quality locally or regionally.

See Attachment 1 for a King County Greenhouse Gas Emissions Worksheet prepared for the project.

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

There are no known off-site sources of air emissions or odors that may affect the project.

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

During construction, BMPs will be implemented to control dust. Types of BMPs that will be used may include street sweeping, watering exposed soil surfaces, and covering soil stockpiles to help minimize the amount of fugitive dust and particulate pollution to the surrounding areas.

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

To reduce or control emission during operation of the completed facility, hydrogen sulfide removal systems, ultra-low NO_x burners, and a thermal oxidizer will be installed. Additionally, the completed facility will be set back a sufficient distance from surrounding properties and public rights of way to make detectable odors unlikely.

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.**

Springbrook Creek, a Type S water (shoreline of the state), is located east of STP, approximately 450 feet from the proposed HERB, and approximately 250 feet from the proposed spoils placement site. One wetland (Wetland A), a 1,248 square-foot Category IV wetland, has been identified in the immediate vicinity of the project. No other surface water is present on or in the immediate vicinity of the site.

Waterworks Gardens, located north of the project site across an access road, is a complex of connected wetponds and a Category II wetland that provides stormwater detention and treatment for much of the STP property.

- 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.**

The proposed project has been located and designed to avoid impacts to wetland areas and associated buffers. The project site is effectively disconnected from the offsite Waterworks Gardens wetland by a

permanent road (Road "N") and other developed surfaces. No impacts are proposed to wetlands or wetland buffers as a result of this project. No fill will be placed in wetlands or other waters of the U.S.

Spoils placement will require the construction of a temporary construction entrance that will be within 200 feet of Springbrook Creek. The work will not affect the creek.

- 3) **Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.**

No fill or dredge material will be placed in or removed from surface waters or wetlands.

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

No.

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

A portion of the temporary construction entrance for spoils placement will be within the 100-year floodplain (as shown in Figure 2). The construction entrance will be removed and restored to previous grade at project completion.

- 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.

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.**

Temporary dewatering of excavated areas may be required during construction. If dewatering is required, the quantity of groundwater withdrawn may vary widely depending on seasonal and local geological

factors. Based on geotechnical information collected for this project and other projects in the vicinity, the County does not anticipate that substantial dewatering will be required.

No water will be discharged directly to groundwater as a result of the project.

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

No waste material related to the project will be discharged into the ground from septic tanks or other sources.

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.**

At present, the surface water in the project area flows into STP's stormwater conveyance and treatment system, which includes multiple biofiltration swales, catch basins, pipes, a large pump station, and a series of wetponds and wetlands in Waterworks Gardens.

During construction, the primary source of water runoff onto and off of work areas will be stormwater. Stormwater drainage patterns may be altered during construction due to vegetation clearing and surface compaction. Stormwater runoff during construction will be managed to prevent runoff from leaving the site using storm water BMPs such as those described below in Section B.3.d.

When the project is completed, stormwater will run off from the building roof and other impervious areas such as pavement, and will be collected and routed to a new detention vault before being discharged to STP's existing stormwater system. The existing stormwater system routes water runoff to a series of wetponds and wetlands, where the water is cleaned and returned to local waterbodies including Springbrook Creek.

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

During construction, the County will implement BMPs to prevent introduction of contaminants into ground and surface waters, which could include:

- Storing fuels and other potential contaminants in secured containment areas
- Containing equipment, materials, and wash water associated with construction
- Conducting regular inspections, maintenance, and repairs of fuel hoses, hydraulically operated equipment, lubrication equipment, and chemical/petroleum storage containers
- Maintaining spill containment and clean up material at construction sites
- Establishing a communication protocol for handling spills

After the facility is completed, runoff from new parking areas has the potential to contain small amounts of motor oil, diesel fuel, hydraulic fluid, or other materials typical of parking areas and roadways. The completed facility's stormwater management system, in combination with STP's existing stormwater system, will effectively prevent pollution from entering local water bodies.

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

Drainage patterns on the site itself will be altered from the addition of impervious surfaces and conveyance of stormwater runoff. The completed facility's stormwater detention system will have sufficient capacity to capture and restrict the rate of flow of stormwater into STP's existing stormwater system. As a result of STP's on-site stormwater management, the proposed project will not affect drainage patterns in the vicinity of the site.

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

Stormwater management during and after construction will comply with all applicable permits and government approvals, including requirements and guidelines from the City of Renton, King County, and Ecology. In particular, King County will meet performance standards included within the 2017 City of Renton Surface Water Manual and City Amendments. Stormwater management BMPs will be used during construction to control stormwater runoff. Examples of typical BMPs that could be used during construction are presented in Section B.1.h above.

The completed facility will include a detention system that will capture stormwater runoff from the parking and other pollution-generating surface areas of the site.

4. Plants

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

deciduous tree: ☒ alder, ☒ maple, aspen, ☒ other: ash, sweet gum, crabapple, pear, cottonwood

evergreen tree: ☒ fir, ☒ cedar, ☒ pine, ☒ other: Norway spruce

☒ shrubs: salal, Oregon grape

☒ grass

pasture

crop or grain

orchards, vineyards, or other permanent crops

wet soil plants: cattail, ☒ buttercup, bulrush, skunk cabbage, ☒ other

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

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

Approximately 2.4 acres of vegetated land will be cleared to build the proposed facility. The majority of vegetation to be removed consists of maintained lawn. Of the 180 assessed trees located near the project site, 28 trees with a diameter at breast height (DBH) greater than six inches are proposed for removal. Of these, 26 trees will be removed due to impacts of construction and two trees will be removed due to the poor condition of the trees which makes their location near the project a high risk. The City of Renton requires that approximately 10% of significant trees surveyed on the project site be retained. The project proposes to retain 84% of the existing significant trees on site.

With the exception of the 9,782 square-foot area which will contain the footprint of the new building, the 2,437 square-foot area which will contain the footprint of the thermal oxidizer pad, and the 22,398 square feet of other new or replaced concrete and asphalt surface areas for the building driveway, parking, walkways, and concrete equipment pads, all vegetated areas throughout the project will be replanted.

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

There are no threatened or endangered plants known to be on or near the site.

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

The proposed landscape design includes plantings adjacent to the new building and new paved areas and in stormwater treatment and detention facilities. It responds to grading of the eastern portion of the hill in the center of the project site to provide a level area for the new building. The regraded hill will be stabilized with a selection of drought-tolerant shrubs and groundcovers. Other areas of disturbance will be restored with a grass and herbaceous plant seed mix similar to the existing groundcover found on the site. Landscape plantings will be a combination of native Pacific Northwest species and drought-resistant ornamentals. Plants will be selected for adaptation to the different growing conditions present across the project site, including shaded areas within and adjacent to existing stands of mature trees, sunny areas within new landscape buffers and plantings adjacent to paved areas, and seasonally wet areas within the storm water treatment areas.

The number of trees requiring removal is within the City of Renton's tree retention threshold for industrial zones.

Construction activities will follow vegetation protection BMPs including:

- Minimizing clearing to the extent necessary to complete the project
- Clearly marking the extent of clearing before construction begins
- Installing and maintaining tree protection fencing to protect the critical root zone of all trees to be retained.
- Replanting vegetated areas as soon as practicable after construction activities are complete

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

No noxious weeds are known to be located on the site. However, tansy ragwort and spotted knapweed are documented as being located on neighboring parcels (within 400 and 1,150 feet, respectively) (King County, 2016). Invasives on the project site are limited to sporadic, herbaceous species.

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 project site does not include significant habitat for birds or mammals, although small mammals and some urban-adapted bird species are expected to occur in the general area and at the site. Washington Department of Fish and Wildlife's Priority Habitats and Species list does not list priority species on the site. However, the Black River Riparian Forest contains the largest document great blue heron rookery in the Puget Sound Region. The Black River wetlands

and Springbrook Creek also provide habitat numerous other waterfowl species, as well as a variety of fish species (Chinook, coho, resident coastal cutthroat, steelhead, and winter steelhead).

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

Chinook and steelhead are federally-listed, threatened species that occur in the Springbrook Creek segment of the Black River, which is also federally-designated as critical habitat.

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

The project site is within the Pacific Flyway avian migration route.

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

Impacts to wildlife are not anticipated as a result of this proposal; therefore, no special measures to preserve wildlife are proposed.

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.

The completed facility will use electricity and natural gas. The facility will require energy for heating, lighting, and the operation of equipment.

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

The completed facility will not affect the potential use of solar energy by adjacent properties.

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:

Because biogas is produced from raw materials (in this case, municipal waste) it is a source of renewable energy. Biogas is used for energy onsite, as well as sold through the Puget Sound Energy natural gas utility infrastructure for use as renewable natural gas. Some of the overarching goals for the new biogas

upgrading system are to minimize the amount of electricity used to produce biomethane while producing a gas that meets PSE gas quality requirements.

In addition, new mechanical systems will meet or exceed the minimum efficiency requirements identified in the Washington Non-residential Energy Code. The following energy efficiency measures, required by the Washington Non-residential Energy Code or recommended to achieve the highest degree of energy efficiency for systems, will be implemented where appropriate:

- Mechanical equipment that meets the minimum efficiency requirements of the Washington Non-residential Energy Code
- Motors that meet the minimum efficiency requirements of the Washington Non-residential Energy Code (with premium-efficiency motors contingent on availability)
- Mechanical cooling equipment that uses economizers or free air cooling
- Deadband, setback, shutoff, and optimum start controls on HVAC systems
- Duct sealing and insulation
- Additional commissioning for HVAC systems designed to measure and track energy usage and 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.**

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

A Phase I Environmental Site Assessment (ESA) was conducted for the project site in March 2017. The Phase I ESA revealed no evidence of contamination on the project site. The site was developed in 1965 as a wastewater treatment facility, and prior, was undeveloped land. There are five leaking underground storage tanks (LUSTs) located within the vicinity of the project site, but none are located in the project area and there is no confirmed groundwater contamination associated with the LUSTs.

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

There are no hazardous chemicals or conditions in the vicinity that might affect project development or design.

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

Construction-related materials such as fuel and hydraulic fluid will be stored and used on site during construction. BMPs will be implemented during construction to minimize the potential for spills or mechanical failures to occur, and to minimize the potential for adverse effects from hazardous chemicals to workers or nearby residents.

The completed facility will process and convey biogas, which is flammable and may be hazardous to human health. The facility and conveyance system will be sealed and designed to minimize the risk of ignition of or human exposure to biogas.

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

None

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

As described in items B.1.h and B.3.d. above, BMPs and other measures will be used to avoid or contain and control any accidental spills or releases of hazardous materials during project construction. Project plans and construction specifications include measures to safely handle and dispose of contaminated materials. No sources of contaminated materials are known to be on the project site. However, if unexpectedly encountered during construction, contaminated materials will be removed from the work area and transported to a permitted disposal site. If groundwater is encountered during construction, it may be assessed for petroleum contamination associated with LUSTs located in proximity to the project site.

The contractor will prepare a health and safety plan as a deliverable for the proposed project prior to the start of construction. This plan will comply with all applicable health regulations and will detail measures to control environmental health hazards.

Once operational, facility staff will adhere to environmental safety requirements and guidelines as prescribed by King County. These requirements and guidelines include BMPs for the proper storage, handling, disposal, and clean-up of hazardous materials.

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 will not affect the project.

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

Construction noise will likely exceed existing background noise levels. Noise levels will vary depending on the specific equipment used for particular activities. Based on previous construction projects, typical noise levels can be expected to range from about 70 to 90 dBA measured at a distance of 50 feet from the source. Throughout project construction, short-term, intermittent construction related noise may include engine and mechanical equipment noises associated with the use of heavy equipment such as bulldozers, excavators, cranes, haul trucks, generators, chainsaws, and air compressors.

Construction-related noises will be limited to construction hours allowable by the City of Renton's noise control code. If work outside of daytime working hours is required, an application for a variance will be submitted to the City of Renton.

In the completed facility, mechanical equipment will generate noise during the day and night. None of the noises generated on the completed facility will exceed the City of Renton's maximum permissible sound level for the site's zoning or that of nearby receiving sites.

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

All construction and facility operation activities will be consistent with the City of Renton noise control code. All impacts from noise generated by construction will be short-term and temporary in nature. Construction BMPs will be used to minimize construction noise and could include:

- Using effective vehicle mufflers, engine intake silencers, and engine enclosures, and shutting off equipment when not in use
- Using temporary noise barriers around stationary equipment
- Positioning noise-generating equipment in the project area so that it is as far away as possible from sensitive receptors
- Notifying residents and businesses near the project site of upcoming noisy construction activities

- 24-hour construction hotline to promptly respond to questions and complaints

Sound generated by facility operations will be attenuated and muffled by vegetation and distance. Because the maximum predicted acoustical level of noise at the property line of adjacent properties is below code limits, no additional mitigation is proposed.

8. Land and Shoreline Use

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

The site is currently occupied by King County's South Treatment Plant. Adjacent properties include commercial and industrial sites. The proposed project will not affect current land uses on adjacent or nearby properties.

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

Historic aerial photographs suggest the project area was part of a farm between the late 1930s and late 1950s. The site has not been used as agricultural land since that time, and is not designated as agricultural land of long-term commercial significance. The project will not result in conversion of farm or forest land to a nonfarm or nonforest use.

- 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.**

The area of STP that contains the project site currently includes numerous industrial buildings associated with wastewater treatment, administrative buildings, and access roads.

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

No.

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

Industrial Heavy (IH)

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

The site is located within the designated Employment Area (EA).

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

The proposed project will occur outside of the shoreline. However, a temporary construction entrance will be installed to provide access to the spoils site. This temporary construction entrance will occur within a portion of the shoreline for Springbrook Creek, designated as Shoreline High Intensity.

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

One Category IV wetland (Wetland A) is located on the site. Wetland A is a small (1,248 square-foot) depressional wetland located within a swale at the south end of the grassy slope where the proposed HERB will be located. In addition, an off-site wetland is mapped north of the project area within Waterworks Gardens. No work will occur within either wetland or their regulated buffers.

A flood hazard area associated with Springbrook Creek is mapped on a portion of the project site. A portion of the temporary construction entrance will be located within this area, but no permanent facilities or fill will be located within the mapped floodplain. See item B.3.a above for a summary of surface waters.

The project site also contains two geologic hazard areas: a moderate Coal Mine Hazard Area and a high Seismic Hazard Area.

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

Approximately 140 people currently work at STP. The new system will not result in additional staff being employed.

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

None

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

None

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

Construction of the project will not conflict with existing land use plans and policies; however, a number of permits or approvals will be required. Site Plan Review is required for all development in the EA designation, and sewage disposal and treatment plants also require a Conditional Use Permit in the IH zone. The City of Renton is being consulted to ensure that the project is compatible with existing and projected land uses and plans. King County will prepare a Critical Area Report in accordance with City of Renton submittal requirements in order to protect the onsite wetland and to address coal mine and seismic hazard areas.

The City of Renton anticipates that the surrounding area will continue to be used for commercial and light industrial uses. Therefore, the completed facility is not expected to be incompatible with existing or future land use plans for the area.

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

None

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

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 anticipated maximum building height for the HERB is approximately 30 feet; the thermal oxidizer will consist primarily of an exhaust stack approximately 32 feet tall. The new building will consist of cast-in-place concrete exterior walls and a steel-joist-supported roof. The exterior walls will have a pattern of joints and textures that match the nearby cogeneration facility, as well as other buildings at the site. Doors, frames, windows, and louvers will be aluminum. A canopy roof will be provided to shelter the outdoor equipment.

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

Views of the site will remain generally the same. The size of the overall Plant will not change and character of the site will continue to be that of an industrial operation.

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

Modifications or additions to existing structures will be designed to blend with the existing architecture character by using similar massing and materials. Where possible, the color of building materials will be integral to the material or provided with a factory finish to minimize painted surfaces.

11. Light and Glare

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

Project construction will take place largely during daylight hours. Temporary site lighting may be used at the beginning and end of work days during construction when daylight hours are short.

The completed project will require sufficient light for safety and security. Outside areas that are currently lit at night include entry and exit driveways, truck staging and parking areas, and building entrances. As part of the completed project, the entrances to the HERB will be lit similar to existing site lighting.

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

No. The site is surrounded by buildings to the west, east, and south with similar exterior lighting.

- 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:**

All exterior lights will be focused or shielded as necessary to cast light only in areas that require it and to minimize light spilling onto neighboring properties.

12. Recreation

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

Waterworks Gardens is a King County-owned eight-acre park located north of the project area. The main feature of the gardens are wetlands established to provide storm water treatment for STP.

Other recreational opportunities in the general vicinity include Springbrook Trail, a 2.3-mile trail that parallels the eastern boundary of the 50-acre STP site until it crosses Oakesdale Ave SW and enters the Black River Riparian Forest and Wetland. The Black River Riparian Forest is a 93-acre refuge that is popular for birdwatching.

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

No.

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

None

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, structures, or sites that are listed in or eligible for listing in preservation registers have been identified on the project site, or within 0.5 miles of the project site.

Two unevaluated historic properties are within or adjacent to the project site. The first is South Treatment Plant itself, described as “Renton Sewage Treatment Plant” in the Washington Department of Archaeology and Historic Preservation (DAHP) database, which was constructed 1965, and is therefore over 45 years old. South Treatment Plant was recorded on a DAHP Historic Property Inventory form in 2010, but no determination has been made regarding eligibility for listing in the National Register of Historic Places (NRHP). An update to this inventory form may be required by DAHP. The second unevaluated historic property is the Graphic Packaging International factory, located adjacent to STP at 601 Monster Road SW. The building, constructed in 1956, was recorded in the Historic Property Inventory as part of an import of county assessor data, but no recommendation has been made regarding its eligibility for listing in the NRHP. However, the building is outside of the viewshed of the project, and no impact is anticipated.

- 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.**

No landmarks, features, or other evidence of Indian or historic use have been identified on the project site; however, there are several nearby sites, including precontact- and historic-era sites. Historic resources are railroad grades and historic debris scatters. Precontact resources are village sites, including sites where human burials have been identified. Three of the village sites have been determined eligible for listing on the NRHP. Environmental Science Associates completed a Cultural Resources Background Investigation for the project site. Based on proximity of the project site to recorded archaeological sites, its location above the former Black River channel and near the confluence with the Green (White) River, and the presence of ethnographic sites within the vicinity, it is likely that people used the landforms contained within the project area during the precontact and ethnographic periods. However, due to the previous development of STP, which involved large-scale earth work, the likelihood for intact archaeological sites is diminished.

- 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.**

The project was screened by the King County Historic Preservation Program for the presence of cultural and historic resources within the project area and the probability of an inadvertent discovery of cultural resources during project construction. This screening included a review of historic registers, databases including the DAHP records database (“WISAARD”), historic maps and reports, and predictive GIS modeling. Environmental Science Associates also conducted an in-depth review of existing cultural resources reports and databases.

- 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.**

King County will prepare an inadvertent discovery plan (IDP) for project construction. The IDP will provide guidance to contractors for identifying potential cultural resources, and establish procedures to follow in the event of the unanticipated discovery of potential cultural resources in order to protect the discovery until it can be assessed by a professional archaeologist.

14. **Transportation**

- a. **Identify public streets and highways serving the site or affected geographic area, and describe proposed access to the existing street system. Show on site plans, if any.**

The site is bordered by SW Grady Way and I-405 to the south, Oakesdale Avenue SW to the east and north, and Monster Road SW to the west. The primary access to the northern portion of STP, where the project will be developed, is via SW 7th Street. However, there are additional driveways located off of Monster Road SW, Longacres Drive SW, and SW Grady Way.

- b. **Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop?**

The 50-acre STP site is served by public transit. King County Metro stops for the 161 and 280 are located on SW Grady Way and the Tukwila Station for Amtrak and the Sounder Train are located a mile to the south of STP.

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

The new facility will include up to 10 parking stalls on the north side of the building. The project will not eliminate any existing parking spaces.

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

No such improvements are included as part of this proposal.

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

No.

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

Project construction will require approximately 750 truck trips over approximately two years, in order to deliver materials including concrete, asphalt, and other building materials. No vehicular trips will be generated by the completed project because the project will not result in additional employment or an increased need for plant employees to enter or exit the site beyond existing conditions.

- 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:**

Long-term transportation impacts are not anticipated; therefore, mitigation measures have not been developed.

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 _____

- 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 project will primarily involve extensions of the existing utilities located on site. Existing utility tunnels that run under the Digester Equipment Building will be extended to provide utilities to the new HERB. New low pressure sludge gas (LSG), waste gas, and high-pressure sludge gas (HSSG) pipes will be routed underground along the plant's driveway (Road N) between the existing waste gas burners and the current BUS. All utilities in the driveway will be installed using open-cut construction methods. New electrical equipment will be installed in the Solids MCC Building and new HERB. Electric and natural gas service on the site is provided by Puget Sound Energy, water and refuse service is provided by City of Renton, and wastewater service is provided by King County.

C. SIGNATURE

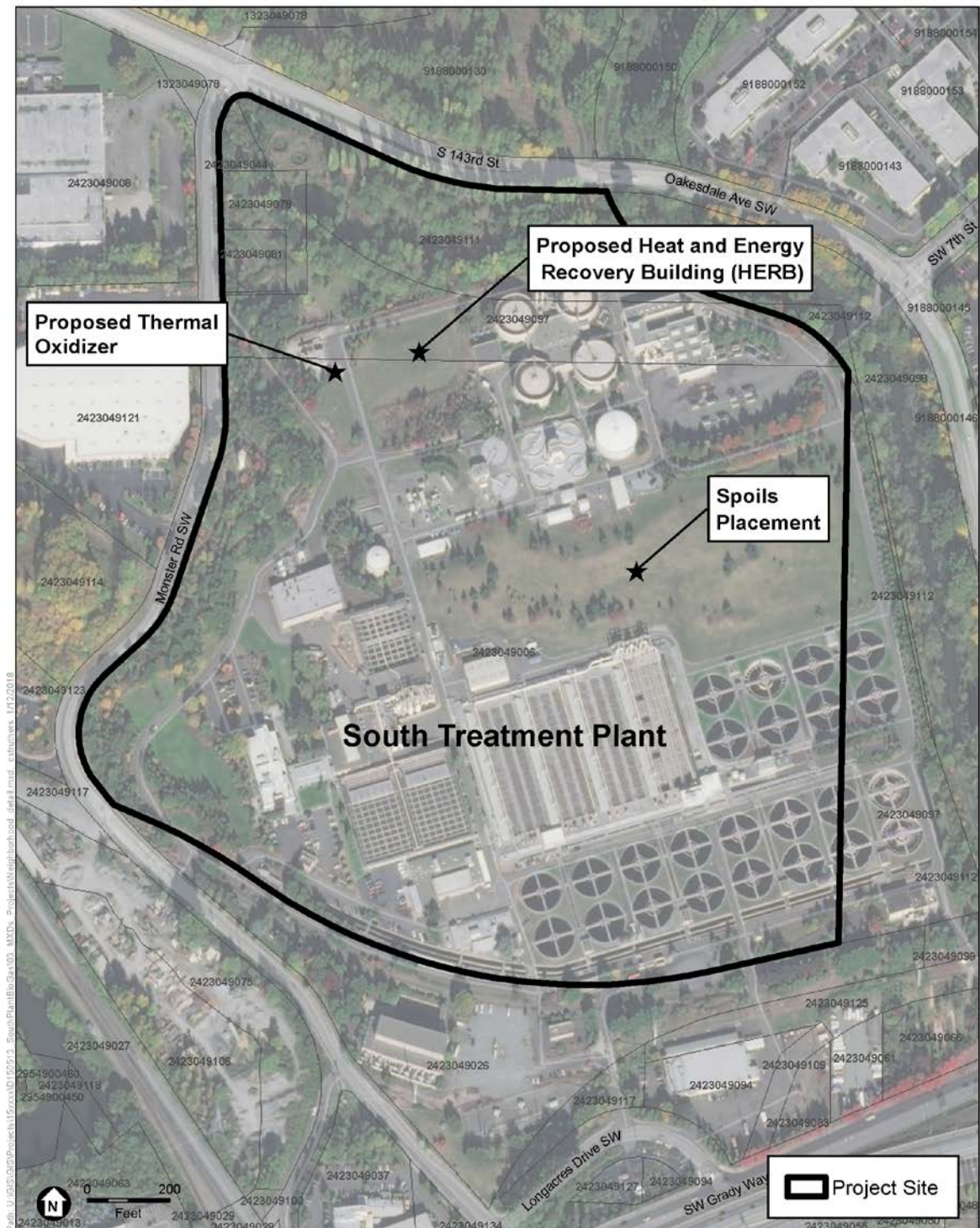
The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature: Katherine Fischer

Katherine Fischer, Environmental Programs Managing Supervisor
King County WTD

Date Submitted: 2/21/18

Figure 1. Vicinity map



SOURCE: OSM 2015; ESA 2017; ESRI 2017.

South Plant Biogas and Heat Systems Improvements



Figure 2. Site plan



Attachment 1. King County greenhouse gas emissions worksheet**King County Greenhouse Gas Emissions Worksheet—South Plant Biogas and Heating Systems Improvements 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 (MTCO ₂ e)			Lifespan Emissions (MTCO ₂ e)
			Embodied	Energy	Transportation	
Single-Family Home.....	0		98	672	792	0
Multi-Family Unit in Large Building	0		33	357	766	0
Multi-Family Unit in Small Building	0		54	681	766	0
Mobile Home.....	0		41	475	709	0
Education		0.0	39	646	361	0
Food Sales		0.0	39	1,541	282	0
Food Service		0.0	39	1,994	561	0
Health Care Inpatient		0.0	39	1,938	582	0
Health Care Outpatient		0.0	39	737	571	0
Lodging		0.0	39	777	117	0
Retail (Other Than Mall).....		0.0	39	577	247	0
Office		0.0	39	723	588	0
Public Assembly		0.0	39	733	150	0
Public Order and Safety		0.0	39	899	374	0
Religious Worship		0.0	39	339	129	0
Service		0.0	39	599	266	0
Warehouse and Storage		0.0	39	352	181	0
Other		9.8	39	1,278	257	15427
Vacant		0.0	39	162	47	0

Section II: Pavement.....

Pavement.....		56.19				2810
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Total Project Emissions:**18236**

Note: King County calculated CO₂ emissions for this project based on the following general project parameters (for the Building Type "Other"): "Buildings that are industrial or agricultural with some retail space; buildings having several different commercial activities that, together, comprise 50 percent or more of the floorspace, but whose largest single activity is agricultural, industrial / manufacturing, or residential; and all other miscellaneous buildings that do not fit into any other category."

You can find more details on how CO₂ emissions were calculated at

<http://www.kingcounty.gov/depts/permitting-environmental-review/info/SiteSpecific/ClimateChange.aspx>