

# SEPA Environmental Checklist Cedar Hills Regional Landfill Landfill Gas Conveyance Pipeline

## A. Background

1. Name of proposed project, if applicable:

*Cedar Hills Regional Landfill  
Landfill Gas Pipeline Upgrade*

2. Name of applicant:

*King County Solid Waste Division (KCSWD)*

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

*Lynde Eller  
Capital Project Manager  
King County Solid Waste Division  
201 S. Jackson Street, #701  
Seattle, WA 98104  
206-477-2622*

4. Date checklist prepared:

*January 4, 2016*

5. Agency requesting checklist:

*King County Department of Natural Resources and Parks  
Solid Waste Division*

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

*Construction is expected to take place from approximately May 2016 through December 2016.*

*The pipeline portion of the project should be constructed from May 2016 to October 2016. The booster blower (vacuum) equipment (near the existing BioEnergy Washington facility) will be completed by December 2016.*

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

*There is no planned addition or expansion specific to the landfill gas system, beyond the scope of this project at this time. However, part of the Landfill Gas Pipeline Upgrade project is geographically within the same area of the landfill property as the Cedar Hills Regional Landfill Area 8 Development, Facilities Relocation Project ("Area 8 project").*

*The scope of the Area 8 project is to relocate existing Stormwater and Contaminated Surface Water (CSW) ponds from their current location, to an area outside of the future waste disposal area in Area 8. This Area 8 project and the Landfill Gas Pipeline Upgrade project are independent in utility and function, however, the project space for each site overlaps at the southeast corner of the active landfill property.*

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

*In 2010, the King County Solid Waste Division (KCSWD) developed a Site Development Plan for the Cedar Hills Regional Landfill. KCSWD prepared and issued an Environmental Impact Statement (EIS) for the Site Development Plan.*

*While that EIS contains descriptions of existing conditions and operations along the proposed pipeline route and elsewhere on and surrounding the landfill property, the EIS does not specifically address the Landfill Gas Pipeline Upgrade project. At the time the EIS and Site Development Plan were prepared, the Landfill Gas Pipeline Upgrade project had not been planned.*

*The EIS does address the land that the Landfill Gas Pipeline would be constructed on, and evaluates landfill development alternatives that would expand the capacity and life of the landfill, and their impacts to earth; air and odor, surface water; groundwater; upland vegetation; wetlands and wildlife; noise and vibration; human health; land use; scenic resources; cultural resources; transportation; public services and utilities; and greenhouse gases.*

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

*There are no known applications pending for governmental approvals of other proposals that directly affect the landfill property covered by this proposal.*

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

*The following government approvals will be needed for the Landfill Gas Pipeline Upgrade project:*

- *Modification to Municipal Solid Waste Handling Permit (Plan of Operations Update) – Department of Public Health - Seattle - King County*
- *Construction stormwater permit - Washington Department of Ecology – The Landfill Gas Pipeline project and the Area 8 Facilities Relocation project have overlapping boundaries, therefore approval will be requested under the same permit application.*

*These two projects are independent in utility and function. Neither project has been submitted for government approval.*

- *Approval for Right of Way construction – Bonneville Power Administration (BPA). A portion of the pipeline will be installed in an existing BPA right of way.*
- **NOTES:**
  - o *Puget Sound Clean Air Agency (PSCAA) – PSCAA Compliance Manager confirmed that no separate permit is required from PSCAA, as this project will not result in additional air emissions.*

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. (Lead agencies may modify this form to include additional specific information on project description.)

#### **General Statement**

*In the following description and in the remainder of the checklist the term **landfill property** is used to describe the overall Cedar Hills landfill property, which includes both the interior of the landfill property where disposal and related operations occur as well as the 1,000-foot wide buffer that rings the outer edge of the landfill property. The term **project site** means the **pipeline corridor**, which is the construction corridor that will be subject to grading, excavation, and/or filling. The project site will include approximately 6.1 acres of land.*

#### **Project Background**

*In 2008, King County Solid Waste Division (KCSWD) contracted with renewable energy company BioEnergy (Washington) LLC (BEW) to generate renewable energy from landfill gas produced by decomposing organic material at the Cedar Hills Regional Landfill, and thus reduce greenhouse gas emissions.*

*Landfill gas is captured through a network of pipes and is currently delivered to BEW's landfill gas-to-energy plant through a 24-inch diameter conveyance pipeline. The pipeline carries collected landfill gas from the North Flare Station, located at the north end of the landfill property, to the BEW gas-to-energy plant, located at the south end of the landfill property, for processing.*

*Prior to construction of the BEW gas-to-energy plant, all collected landfill gas was disposed of by burning through flares at the North Flare Station. When the BEW gas-to-energy plant was opened, the use of the North Flare Station was reduced. The flares remain in good operating condition to handle gas flaring during any time landfill gas is not being conveyed to the BEW plant, such as when the plant shuts down, or the landfill gas conveyance pipeline requires maintenance.*

*The BEW gas-to energy plant separates methane from the other components of the landfill gas and then compresses the separated methane gas and conveys it into a commercial natural gas pipeline as pipeline-quality gas.*

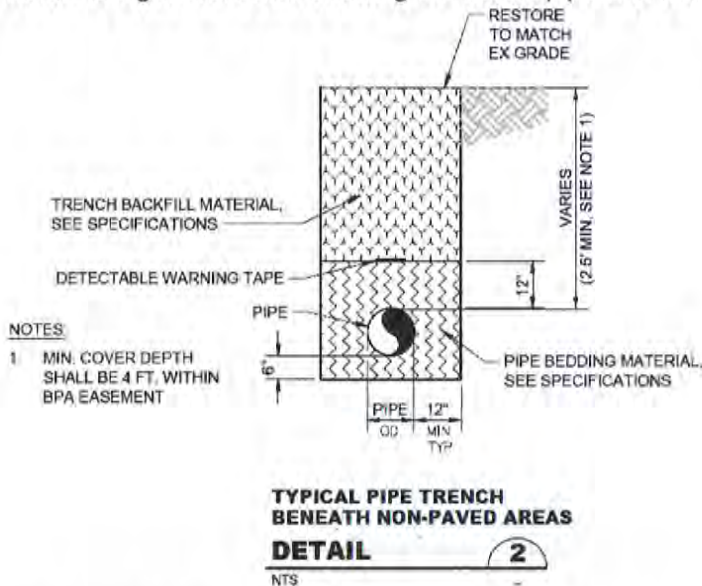
#### **Project Description**

*KCSWD is proposing to install a second conveyance pipeline to carry landfill gas to BEW's plant that would provide redundancy in this infrastructure; allowing a continuous supply of landfill gas to be produced into renewable energy. The new pipeline will be used as the primary pipeline for carrying landfill gas to the BEW gas-to-energy plant for processing. The existing pipeline will be used in a*

back-up capacity. This will allow maintenance and testing to occur at the same time, and still allow landfill gas to be delivered for processing into renewable energy. Thus, less landfill gas will be disposed through the existing flare system.

The new pipeline features will include the following features:

- Constructed of 30-inch diameter high density polyethylene (HDPE) pipe.
- The pipe will be buried underground with between approximately two and four feet of soil cover. Below is a general detail showing the buried pipe and backfilled soil cover.



- Short pipe sections will be installed aboveground where the new pipeline connects to the existing pipeline system at the North Flare Station and the BEW gas-to-energy plant. Aboveground runs of pipeline will be assessed by design engineers to confirm that expansion and contraction can occur without impacts to the stability and function of the pipeline.
- Pipe sections will be heat-bonded together so that no chemicals will be used to bond the pipeline.
- The pipeline will be approximately 10,700 feet in length.
- Pipeline Vacuum System
  - This existing conveyance pipeline operates under a vacuum over the entire length. This is achieved by utilizing booster blowers (fans) that pull the landfill gas from the North Flare Station to the BEW gas-to-energy plant. This system creates the vacuum that ensures that landfill gas will not leak from the conveyance pipeline.
  - This project will include new booster blower equipment that will pull landfill gas through the existing and new landfill gas conveyance pipelines. The equipment will ensure that when in operation, the pipelines will operate under a vacuum over their entire length.
  - Though it is unlikely to occur, if a small impact or puncture (i.e., small hole) to the conveyance pipeline occurred (above or below ground) during regular operation, both conveyance pipelines would continue to operate under a constant vacuum to convey the landfill gas to the booster blower station at the BEW gas-to-energy plant. This vacuum would actually draw atmospheric air into the pipeline and prevent landfill gas from exiting the pipeline and entering into the soils, or into the atmosphere.
  - Though it is expected to be highly unlikely to occur, should a large break in the pipe occur (i.e., joint separation, etc) in the underground pipeline, the pipeline itself would be contained underground. The booster blower (vacuum) system at the BEW gas-to-energy plant would continue to pull landfill gas to the plant until the pressure loss was detected

by the control system. When the pressure loss is detected, the pipeline's automatic isolation valve at the North Flare Station would close and prevent gas from entering the pipeline. The landfill gas that remained in the pipeline between the location of the break and the booster blowers at the BEW gas-to-energy plant, would be pulled to the booster blowers at the BEW gas-to-energy plant due to the system's vacuum. Some portion of the landfill gas that remained in the pipeline between the break and the North Flare Station could migrate into the soil surrounding the pipe. This landfill gas would be absorbed by the soil material. The Landfill Gas Plan of Operations, part of the Municipal Solid Waste Handling Permit will provide steps that are required for remediation of any landfill gas that is released into the soil.

- The new booster blower equipment will function for both the new landfill gas pipeline and the existing landfill gas pipeline, and both pipelines will be operated under vacuum.
- The system will contain electronic controls, a failsafe, that will detect a loss of landfill gas pressure. If a loss of pressure is detected, it will cause the valves that control the flow of landfill gas through the pipeline to close, and route the landfill gas to the North Flare Station for burning.
- The pipeline will be constructed with access and inspection points along the pipeline trench that will allow landfill gas operations staff to locate the source of any leaks in the buried pipeline. The pipeline's access and inspection points will allow cleaning, if necessary.
- The pipeline will be installed within the landfill property's active footprint and not impact the landfill property buffer. Reference attached Pipeline Route Map 2015, attached as Figure 2.
- The pipeline will be routed along the edges of existing roads and developed areas located in the the west and south portions of the landfill property as shown on the Pipeline Route Map in Figure 2.
- New electrical panels and control panels will be installed to operate the equipment of the pipeline and booster blower (vacuum equipment) system.

### **Quality Assurance & Testing**

- The HDPE pipe and fittings will be installed in accordance with applicable requirements from:
  - American National Standards Institute (ANSI)
  - American Water Works Association (AWWA)
  - American Society for Testing and Materials (ASTM)
  - Plastic Pipe Institute (PPI)
- The booster blower equipment (vacuum equipment) will be installed in accordance with applicable requirements from:
  - National Fire Protection Association (NFPA)
- The project design drawings and specifications will implement a quality assurance and quality control program that will include inspection of heat bonding (joining of the sections of the pipe).
- The KCSWD will employ the services of an independent construction management firm that will confirm that the installers are complying with the quality assurance/quality control plans for the project.
- The new pipeline will undergo a pressure test, prior to being put into service, that will demonstrate that the pipe, fittings, joints (welds) and valves are completely sealed and functioning.
- The new booster blower (vacuum) system, will undergo a commissioning (testing and confirmation) procedure that will test all required safety and operational functions of the system to confirm compliance with the design drawings and specifications.

### **Construction & Installation**

Construction is expected to occur primarily during the 2016 construction season from May to October.

- The pipeline is expected to be the first portion of the project that is installed. It would be installed in sections, and should start at the north end of the landfill property in May and work towards the south end, finishing in October.

*Towards the end of the pipeline installation, the booster blower equipment (vacuum system) will be installed.*

- *This should begin around September and be complete in November.*
- *After the booster blowers are installed there will be a commissioning process where the system is tested and verification procedures are completed.*
- *The system should be fully functional by December 2016.*
- *Functionality of the system would be verified prior to putting the landfill gas pipeline into service.*

### **Operation and Maintenance**

- *As a part of this project, the Cedar Hills Regional Landfill's Sitewide Plan of Operations and Landfill Gas Plan of Operations (procedures) would be updated and approved by Public Health Seattle King County (PH-SKC). This document will provide updated maintenance and operational requirements of the landfill gas system. This document is a part of the Municipal Solid Waste permit issued by PH-SKC for the landfill.*
- *The updated Landfill Gas Plan of Operations will include all of the inspections and testing required for the landfill gas system.*
- *The landfill gas conveyance pipeline will be operated and maintained by onsite KCSWD staff trained in the operation of the landfill gas system.*

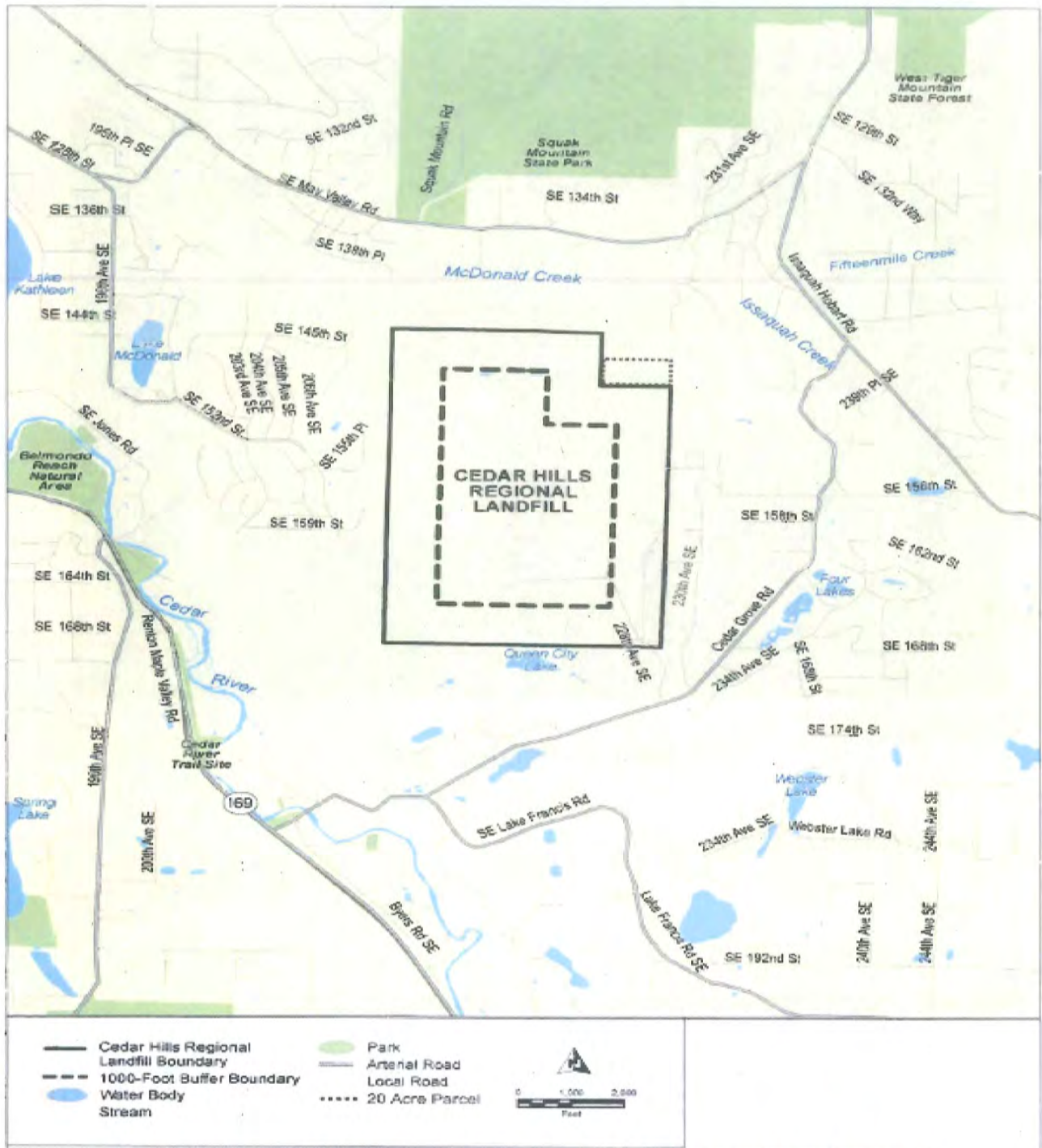
12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s).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

*The project would take place at the Cedar Hills Regional Landfill. The Cedar Hills Regional Landfill is located on a 920-acre property in unincorporated King County at:*

*16645 228th Avenue SE  
Maple Valley, WA 98038*

*This site is approximately 4 miles south of Issaquah and 6 miles east of Renton. The property is accessed from Cedar Grove Road and consists of the north one-half of Section 28 and Section 21 (except the northeast quarter of the northeast quarter); Township 23 North, Range 6 East, Willamette Meridian. Figure 1 shows the landfill property and its vicinity. Figure 2 shows the project site.*

*As shown in Figure 2, the project site includes the pipeline route beginning at the North Flare Station (north end of the landfill property), and extending due west towards the West Perimeter Road. The pipeline then runs due south, the length of the West Perimeter Road before it turns east, just south of the new Stormwater Ponds being constructed under the Area 8 Development – Facilities Relocation project. From here, the pipeline travels east towards the BEW gas-to-energy plant. The pipeline will connect to the booster blower equipment that will be installed on the north side of the BEW gas-to-energy plant.*



**FIGURE 1 – VICINITY OF CEDAR HILLS REGIONAL LANDFILL**



\*BEW - BIO ENERGY WASHINGTON  
 \*BBS - BOOSTER BLOWER STATION

**FIGURE 2 - PROJECT SITE**

## **B. ENVIRONMENTAL ELEMENTS**

### **1. Earth**

a. General description of the site:

(circle one): Flat rolling, hilly, steep slopes, mountainous, other \_\_\_\_\_

*The Cedar Hills Regional Landfill is located at the top of Cedar Mountain. Approximately one-half mile south of the site, an east-west trending valley (the Cedar Grove Channel) connects the Cedar River and Issaquah Creek valleys. The May Creek Valley lies approximately one-half mile north of the landfill site.*

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

*The steepest slope on the Landfill Gas Pipeline project site is 10%.  
 The steepest slope on the landfill property (outside of the Landfill Gas Pipeline project boundaries) is 33%.*



- 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.

*Topsoil and fill materials cover the areas surrounding the landfill. The topsoil is typically a dark brown to brown, loose and soft, silty sand and silt with organics and occasional small, rounded gravel and trace cobbles. Fill includes materials placed for roads and facilities. In general, away from the solid waste areas, these surficial soils are less than 10 feet thick.*

*Vashon till, varying in thickness from near zero in the north portion of the landfill property to over 100 feet in the south, underlies these surficial soils and fill materials (KCSWD EIS, 2010).*

*The 2010 EIS indicates that the west perimeter road, along which the pipeline would be installed, is placed primarily on earthen fill.*

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

*No, the project site is a developed municipal solid waste landfill, and there are no known surface indications or history of unstable soils in the immediate vicinity of the project.*

- 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.

*The purpose of excavation is for trenching, installation of pipe, and then backfilling.*

- *When the pipeline is installed under a roadway, the backfill material will be the material excavated during trenching.*
- *New asphalt and subbase material will be installed for any roadways required to be reconstructed.*
- *New asphalt and subbase material under asphalt would come from offsite sources.*
- *In accordance with the King County Council's sustainability initiative, the project will use local resources where available.*
- *Any excess excavated material will be stockpiled on the project site.*
- *The total disturbed area will be approximately 6.1 acres.*
- *The estimated excavated volume will be approximately 17,100 cubic yards.*
- *Most of that excavated material will be used as backfill with the remainder used on-site for other purposes (i.e. landfill cover, etc.)*
- *KCSWD does not expect that soils will need to be hauled off-site.*
- *Within the project site, all surface areas that are disturbed during construction will be restored to their pre-construction conditions.*
- *Where aboveground construction is required at the booster blowers (vacuum system), surface conditions will be restored to conditions similar to pre-construction conditions (concrete or asphalt).*
- *At the completion of the project there will be no change to the amount of asphalt or concrete (impervious) surfaces on the project site.*

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

### **During Construction**

*Yes. Soils excavated and exposed during pipeline installation or stockpiled for use as backfill could be eroded by wind and water.*

*As required by the Washington Department of Ecology's Construction Stormwater Permit, a Stormwater Pollution Prevention Plan (SWPPP) will be implemented for the project. This plan will implement sediment, erosion and pollution prevention control measures, known as best management practices (BMPs). Examples of BMPs are installation of silt fencing, protecting drain inlets, covering stockpiles, damping down uncovered soils, etc.*

### **During Operation & Maintenance**

*No erosion or other impacts to earth are anticipated after construction is complete, specific to the scope of this project. The landfill property is covered under an Industrial Stormwater General Permit administered by State of Washington Department of Ecology.*

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

*Currently 65-70% of the project site is covered with impervious surfaces.*

*At pipeline locations, all surface areas will be restored to their pre-construction conditions. Where aboveground construction is required at the booster blowers (vacuum system), surface conditions will be restored to conditions similar to pre-construction conditions (concrete or asphalt).*

*At the completion of the project there will be no change to the amount of asphalt or concrete (impervious) surfaces on the project site.*

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

### **During Construction**

*A Stormwater Pollution Prevention Plan (SWPPP) will be implemented for the project. This plan will require regular inspections of the project site. The plan will implement sediment, erosion and pollution prevention control measures, known as best management practices (BMPs). Examples of BMPs are installation of silt fencing, installing baffles to protect drain inlets, covering stockpiles, damping down uncovered soils, etc.*

### **During Operation & Maintenance**

*No erosion or other impacts to earth are anticipated after construction completion, as a result of this project. The landfill property is covered under an Industrial Stormwater General Permit administered by the State of Washington Department of Ecology. Under this permit the KCSWD maintains a Stormwater Pollution Prevention Plan for the landfill that includes inspections, use of best management practices and stormwater sampling.*

## **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***

*During the initial phase of construction, when the pipeline is installed, the primary air emissions would result from the exhaust systems of the construction equipment used for excavation and installation of pipe. These emissions will consist primarily of carbon monoxide, VOCs, sulfur and nitrogen oxides, and particulates, and are anticipated to be minimal. While the total quantity is not known, the contractor will be required to maintain all construction equipment in working order, including exhaust system equipment.*

*The excavation of soil material for trenching would result in airborne dust, or particulate matter. Specific quantities are unknown, however the quantities are expected to be minimal due to the implementation of best management practices described in Section B.1.h. above. These best management practices will be included in the project's Stormwater Pollution Prevention Plan.*

*Near the end of construction, when the new pipeline is connected to the existing landfill gas system, the existing line will be cut into for the final connection purposes. During this work activity there is an unlikely possibility that landfill gas would be released to the air. In order to reduce this possibility the Contractor will be required to develop a work plan to minimize the potential for such a release. The plan would be required to include steps to remove landfill gas from the pipeline using the existing booster blower equipment (vacuum) to the greatest extent possible. These steps would be performed prior to cutting into the existing pipeline. The landfill gas that is being removed would be conveyed in the existing pipeline to the BEW gas-to-energy plant for processing. This would eliminate landfill gas from being exposed to air. While the final connection is being made, the landfill gas being collected from the landfill would be burned at the North Flare Station.*

### ***During Operation & Maintenance***

*After the new pipeline is put into service, emissions from the operation and maintenance of the proposed pipeline would be minimal, as the pipeline is continuously operated under a vacuum over its entire length. This means that, similar to the existing conveyance pipeline, all landfill gas that enters the new pipeline at the North Flare Station, is drawn to the BEW gas-to-energy plant for processing. The landfill gas conveyed would be entirely contained within the pipeline.*

*Annual testing of the pipeline will be completed utilizing procedures identified in the Landfill Gas Plan of Operations, a part of the Municipal Solid Waste Permit. This process will require purging of landfill gas from the pipeline. Possible emissions will be controlled in the same manner described under "During Construction" in this section.*

*Though unlikely, it is possible for a small or large separation in the HDPE pipeline to occur. Measures incorporated into the design and operation of the LFG pipeline system to minimize potential adverse impacts of such a separation are described under the "Pipeline Vacuum System" heading within the Project Description section above, A.11.*

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

### ***During Construction and Operation & Maintenance***

*No. Offsite odor emissions would not affect the Landfill Gas Pipeline Upgrade project.*

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

### **During Construction**

- *Particulate matter emissions to the air would be confined to the construction period and, although specific amounts are unknown, should be limited in quantity. The Contractor would employ best management practices (i.e. dampening exposed soils and stockpiles) that would be identified in a Stormwater Pollution Prevention Plan required by the Washington Department of Ecology's Construction Stormwater Permit.*
- *Emissions from construction equipment would be confined to the construction period and should be limited in quantity. The contractor will be required to maintain all construction equipment in working order, including exhaust system equipment.*
- *Landfill gas*
  - *Landfill gas emissions would be minimized during pipeline connecting activities by the use of an approved work plan. The Contractor will be required to develop a work plan specific to this activity, and implementation will not take place until the work plan is reviewed by KCSWD. The plan would include steps to evacuate landfill gas using the existing booster blower equipment (vacuum) to the greatest extent possible. This plan would deliver landfill gas in the existing pipeline to the BEW gas-to-energy plant for processing. This would eliminate landfill gas from being exposed to air.*
  - *During the purging process it is possible, though unlikely, for a small quantity of landfill gas to escape from the existing piping system at the point of connection. Maintenance of vacuum conditions through the use of the existing booster blower equipment (vacuum system), will minimize to the greatest extent possible any release of gas. Any gas escaping would be of limited volume, and due to dispersion, concentrations of gas escaping the landfill property in this unlikely event would be de minimis. This is further described in B.2.a.*
  - *While potential emissions associated with this project are not expected to be noticeable offsite of the landfill property, any emissions that KC SWD are notified of will be investigated by the KC SWD Operations rapid response team. This procedure requires KC SWD Operations staff to investigate every complaint or concern of which KC SWD is notified.*

### **During Operation & Maintenance**

*After the new pipeline is put into service, emissions from the operation and maintenance of the proposed pipeline would be minimal, as the pipeline is continuously operated under a vacuum over its entire length.*

- *This means that, similar to the existing conveyance pipeline, all landfill gas that enters the new pipeline at the North Flare Station, is drawn to the BEW gas-to-energy plant for processing. The landfill gas conveyed would be entirely contained within the pipeline.*
- *The landfill gas booster blower equipment (vacuum system) includes electronic control panels that respond to a loss of flow or pressure within the conveyance pipeline. When a pressure or flow loss is indicated, the electronic controls automatically shut off the pipeline valves, and cause landfill gas to be conveyed to the North Flare Station for burning.*
- *KCSWD continuously monitors landfill gas flow, through the pipeline conveyance system, using a Supervisory Control and Data Acquisition (SCADA) system that records key operational parameters. This system alarms the KCSWD landfill gas system operators of a loss of flow, which could potentially indicate a release of landfill gas into the air.*

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

#### **Project Site**

*No streams, lakes, or natural ponds exist within the project site (the proposed pipeline corridor).*

#### **Landfill Property**

*The landfill property is located within the Issaquah Creek and Cedar River drainage basins. Small unnamed tributaries to McDonald Creek (a tributary to Issaquah Creek), Issaquah Creek, and the Cedar River exist outside of the project site. The upper reaches of several of these tributaries are located within the landfill's 1,000-foot buffer and flow radially away from the landfill property.*

*The stormwater management system on the landfill property includes stormwater ponds that provide detention and sediment removal of uncontaminated stormwater runoff.*

*Four wetlands, the largest of which is less than 1/2-acre in area, exist within the landfill property's 1,000-foot buffer adjacent to the west perimeter road. These wetlands are seasonally flooded or saturated isolated depressions probably created as a result of the construction of the west perimeter road and its associated ditches. In the southwest corner of the landfill property, where the west perimeter road takes a 90-degree bend, a roadside ditch flows southwest into a small stream that feeds a wetland located in the landfill's 1,000-foot buffer. This wetland, which is more than 5 acres in area, contains forested and emergent vegetation as well as open water.*

- 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.

#### **During Construction**

Yes

- *The project would involve trenching and excavation activities within 200 feet of the wetlands located in the landfill property's 1,000-foot buffer adjacent to the west perimeter road.*
- *Trenching and excavation would also occur within 200 feet of the roadside ditch that flows southwest into a small stream feeding a wetland located within the buffer. This ditch is located near the southern 90-degree bend in the West Perimeter Road.*

*Best management practices (BMPs) will be used to minimize the potential for erosion to occur and reduce the potential effects of sediment transport and discharge. BMPs will be managed through the Stormwater Pollution Prevention Plan required by the Washington Department of Ecology's Construction Stormwater Permit.*

**During Operation & Maintenance**

*After construction, pipeline cleanouts would be located within 200 feet of the waters described above. Pipeline design does not require the installed pipeline to undergo regular cleaning or access. If cleaning of obstructions becomes necessary, there should be no impact to the described waters.*

- 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.

**During Construction and Operation & Maintenance**

*No fill or dredge material would be placed in or removed from surface water or wetlands. All work associated with the Landfill Gas Pipeline Upgrade project involves work outside of surface water and wetland areas. The Stormwater Pollution Prevention Plan implemented for the Washington Department of Ecology Construction Stormwater Permit should prevent any sediment or other materials from reaching bodies of water or wetlands.*

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

**During Construction and Operation & Maintenance**

*The proposal would not require surface water withdrawals or diversions. All water utilized for the project (i.e wetting of soils for erosion control and compaction purposes) will be obtained from the municipal water supply.*

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

*The proposal does not lie within a 100-year floodplain.*

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

**During Construction and Operation & Maintenance**

*The proposal does not involve any deliberate discharges of waste materials to surface waters. In an effort to prevent waste from being inadvertently discharged into surface waters, a Stormwater Pollution Prevention Plan (SWPPP) will be implemented for the project. This plan will require regular inspections of the project site. The plan will implement sediment, erosion and pollution prevention control measures, known as best management practices (BMPs). Examples of BMPs are installation of silt fencing, installing baffles to protect drain inlets, covering stockpiles, damping down uncovered soils, etc. Volumes of construction runoff is not known, however, the implementation of BMPs is expected to minimize this runoff.*

b. Ground Water:

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

**During Construction and Operation & Maintenance**

*There are no plans to withdraw water from any well for drinking or other purposes. All water would be obtained from the municipal water supply system. There are no plans to discharge water to groundwater.*

*Depending on groundwater levels during excavation, groundwater that seeps into excavations may be removed and discharged to the stormwater ponds onsite. This water would be discharged in accordance with the Washington Department of Ecology Construction Stormwater Permit.*

- 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.

**During Construction and Operation & Maintenance**

*There are no plans to discharge waste material into the ground from septic tanks or other sources (including sewage, industrial chemicals, etc.).*

*Depending on groundwater levels during excavation, groundwater that seeps into excavations may be removed and discharged to the stormwater ponds onsite. This water would be discharged in accordance with the Washington Department of Ecology Construction Stormwater Permit.*

*Groundwater that seeps into excavations has the potential for coming into contact with construction materials (i.e. equipment fluids, etc), however the use of Best Management Practices for material storage would keep chemicals away from water sources and would minimize the potential for occurrence. Reference section B.7.a.5 for additional information.*

c. Water runoff (including stormwater):

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

**During Construction and Operation & Maintenance**

*Runoff would be collected in the existing stormwater management system on the project site, which would control runoff quantity and quality, and the treated runoff would be discharged to drainages in the landfill property's 1,000 foot buffer and offsite.*

*Runoff in the north part of the project area would be conveyed into drainages that flow into McDonald Creek, a tributary to Issaquah Creek. Runoff from the south portion of the project area would be conveyed into drainages that flow toward the Cedar River or into ponds south of the landfill property that have no observable outlet. Most or all of the runoff from the south portion of the project site area that flows towards the Cedar River infiltrates in roadside ditches along Cedar Grove Road south of the landfill property.*

*Runoff created during construction would be managed under the Washington Department of Ecology's Construction Stormwater Permit. Runoff that occurs after*

construction completion will be managed under the Washington Department of Ecology's Industrial Stormwater General Permit for the landfill property.

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

**During Construction**

Groundwater that seeps into excavations and construction runoff has the potential for coming into contact with construction materials, however the use of Best Management Practices to keep chemicals away from water sources should minimize the potential for occurrence. Reference section B.7.a.5 for additional information. This will be managed under the Stormwater Pollution Prevention Plan for the Landfill Gas Pipeline Upgrade project.

**During Operation & Maintenance**

Post-construction runoff could enter ground or surface waters, although implementation of best management practices, managed under the Industrial Stormwater General Permit for the landfill property, would minimize the volume.

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

The proposal would not alter or affect drainage patterns on or in the vicinity of the landfill property/site.

- o At pipeline locations, all surface areas will be restored to their original conditions.
- o Where aboveground construction is required at the booster blowers (vacuum system), surface conditions will be restored to conditions similar to pre-construction conditions (concrete or asphalt).
- o At the completion of the project there will be no change in the amount of asphalt or concrete (impervious) surfaces on the project site.

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

**During Construction**

A Stormwater Pollution Prevention Plan (SWPPP) will be implemented for the project. This plan will require regular inspections of the project site. The plan will implement pollution prevention control measures, known as best management practices (BMPs), to control surface, ground, runoff water. Examples of BMPs are installation of silt fencing, installing baffles to protect drain inlets, covering stockpiles, damping down uncovered soils, etc. Ground disturbing construction activities are planned to take place during dry months of the year – May to October 2016.

**During Operation & Maintenance**

No impacts to surface, ground, or runoff water are anticipated after construction completion, specific to the scope of this project. The landfill property is covered under an Industrial Stormwater General Permit administered by State of Washington Department of Ecology. Under this permit the landfill maintains a Stormwater Pollution Prevention Plan that includes inspections, use of best management practices and stormwater sampling.



#### 4. Plants

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

- *The project site (pipeline corridor) contains little or no vegetation.*
- *The active areas of the landfill property contain limited vegetation.*
- *The buffer surrounding the landfill's active area is heavily vegetated primarily with deciduous and mixed deciduous-coniferous forest along with small areas of shrub/grass and wetlands.*

deciduous tree: alder, maple, aspen, other

evergreen tree: fir, cedar, pine, other

shrubs

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

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

*The pipeline would be installed within or adjoining the west perimeter road, and minimal amounts of vegetation (i.e. grasses and shrubs), would be removed. No trees are expected to be removed or altered to complete this project.*

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

*There are no known threatened or endangered plant species known to be on or near the project site or the landfill property.*

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

*The project would remove minimal amounts of existing vegetation, therefore the project does not include any proposed landscaping. Disturbed areas will be returned to their existing conditions upon completion of construction.*

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

*Weeds and invasive species occur within disturbed areas of the landfill property that have revegetated. For example, vegetation within the Bonneville Power Administration transmission line corridor that extends east-west through the south portion of the landfill property includes Scotch broom, Himalayan blackberry, and common tansy.*

**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.

Examples include:

birds: hawk, heron, eagle, songbirds, other: gulls  
mammals: deer, bear, elk, beaver, other: coyote  
fish: bass, salmon, trout, herring, shellfish, other \_\_\_\_\_

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

*There are no threatened or endangered animal species known to occur on or near the project site or the landfill property. Coho salmon have been observed at a culvert located adjacent to the West Perimeter Road in the northwest portion of the landfill property. Coho are a federal species of concern, but are not listed as threatened or endangered.*

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

*The landfill property is located on the east edge of the Puget Sound lowlands, flanked by the Olympic and Cascade mountains. The lowlands are an important migration route for birds and other migratory animals.*

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

*The observation of coho salmon in a drainage adjacent to the West Perimeter Road in the northwest portion of the landfill property suggests that coho spawning may occur in the upper reaches of the McDonald Creek drainage. Erosion and sedimentation from disturbed areas during pipeline installation could adversely impact habitat in drainages occupied by coho. To mitigate this potential impact, as described in B.3.d. above, a Stormwater Pollution Prevention Plan will be implemented for the project. The plan will implement best management practices (BMPs) to control surface, ground, and runoff water, and will require regular inspections of the project site during construction to assure that BMPs are functioning correctly. Examples of BMPs that may be employed are installing silt fencing, installing baffles to protect drain inlets, covering stockpiles, damping down uncovered soils, etc. In addition, ground disturbing construction activities are planned to take place during dry months of the year – May to October 2016, which should limit the potential for erosion of soils exposed during construction.*

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

*There are no known invasive animal species known to be on or near the project site or the landfill property.*

**6. Energy and Natural Resources**

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

*The completed project would use electricity to power the booster blower equipment (vacuum equipment) used to convey gas through the proposed pipeline or, in the event that the proposed pipeline is offline, through the existing pipeline.*

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

*No. The project will largely be buried underground. The project would not affect the potential use of solar energy by adjacent properties.*

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

*In accordance with King County's sustainability goals, the project will utilize strategies to maximize energy conservation. This includes the selection of efficient booster blower equipment (vacuum system) which will allow more landfill gas to be conveyed from the North Flare Station to the BEW gas-to-energy plant for processing. Although the pipeline system is being upgraded through this project, there should not be an increase in energy consumption as a result. The overall gas conveyance system will be equally or more energy efficient as compared to the existing system.*

*During pipeline installation, construction equipment would be maintained in good working condition to limit to the extent possible the amount of energy used during construction.*

## **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.

### ***During Construction***

*Pipeline installation may result in a slight increase in the potential for spills of petroleum products used in construction equipment. There is no expected increased risk of exposure to toxic chemicals, fire and explosion that would occur as a result of this proposal.*

### ***During Operation & Maintenance***

*Though it is very unlikely, a small or large break in the pipeline could occur. The potential for this to occur is not increased by this project, as the new pipeline is being installed for the purpose of redundancy and not to expand the landfill gas conveyance system. Measures incorporated into the design and operation of the LFG pipeline system to minimize potential adverse impacts of a pipeline break are described under the "Pipeline Vacuum System" heading within the Project Description section above, A.11.*

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

*There is no known or possible contamination at the landfill property outside of the active area of the landfill. The landfill does not accept, and takes steps to actively preclude, the disposal of dangerous wastes as defined in state regulations (WAC 173-303). The landfill does accept special wastes, such as asbestos-containing waste and biomedical waste, that require special handling to be safely managed.*

- 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.
- *Wastewater and electric utility lines exist within the West Perimeter Road (the route of the proposed pipeline), but should not adversely affect project design or construction.*
  - *The pipeline will cross through the Bonneville Power Association's (BPA) transmission right of way. BPA would provide minimum requirements for safe separation between the transmission lines and support features and the new landfill gas pipeline.*
  - *The pipeline will also cross the Williams' Pipeline (Puget Sound Energy) output gas transmission pipeline near the BEW gas-to-energy facility. Puget Sound Energy is expected to provide minimum requirements for safe separation between pipelines.*
- 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.

**During Construction**

*During pipeline installation, petroleum products may be stored in the construction zone. Hazardous material storage will be managed under the project's Stormwater Pollution Prevention Plan as a requirement of the Construction Stormwater Permit.*

**During Operation & Maintenance**

*Landfill gas, which is composed primarily of methane and carbon dioxide, will be conveyed through the new pipeline. This project does not produce landfill gas.*

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

**During Construction and Operation & Maintenance**

*No special emergency services would be required during pipeline installation or operation. The County has developed an Emergency Response Plan for activities at the landfill, and that plan would be followed during pipeline installation and operation. Fire and emergency protection services (Eastside Fire & Rescue – part of King County Fire District #10) will be informed of the expected dates of pipeline installation and of the subsequent operation of the pipeline.*

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

*Known potential environmental health hazards will be reduced or controlled by:*

**During Construction**

- *Petroleum spills – Petroleum products used during construction will be managed through the Stormwater Pollution Prevention Plan. This plan will implement best management practices for proper material storage, spill prevention, spill cleanup and notification (if required).*
- *Underground hazardous pipelines – Known underground hazardous materials carried in pipelines have been identified to the project designers and will be identified to the construction contractors to avoid contact during construction. Preventative measures such as physical utility separation, would be utilized to prevent environmental health hazards from occurring.*
- *Air emissions, identified under Section 2, Air, will be mitigated as described in that section.*

- No other environmental health hazards are known, however, the local Fire & Emergency Protection Services will be informed of construction dates.

**During Operation & Maintenance**

- Landfill gas exposure – Upon completion of the project, landfill gas will be conveyed through the new landfill gas pipeline. Landfill gas would be entirely contained within the pipeline, and is very unlikely to be released during the regular operation or maintenance of the pipeline.
- Although very unlikely, a break in the pipeline could occur. In the event of a break in the pipeline, the booster blower (vacuum) system would reduce and control the potential for environmental health hazards, as described in the “Pipeline Vacuum System” heading within the Project Description Section above, A.11. No other environmental health hazards are known, however, the local Fire & Emergency Protection Services will be informed when operation begins.

b. Noise

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

**During Construction and Operation & Maintenance**

There are no types of noise that will affect this project. Other activities at the landfill occurring during construction and operation of the gas pipeline, such as the Area 8 facility relocation and continued disposal operations, will generate noise. The pipeline project site is located on an active landfill property which generates low level noise through its landfilling operations, refuse trucks, regular traffic within the landfill, regular cell construction and closure work, operational equipment like bulldozers, compactors, excavators etc. and the flare station. These operations are predominantly located more than 1,000 feet from the project site. None of this noise will affect the construction or operation of the proposed gas pipeline.

- 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.

**During Construction**

Construction operations will be limited to regular landfill property working hours of  
 7:00AM to 6:00PM weekdays  
 9:00AM to 7:00PM on weekends

An analysis of expected noise levels during pipeline construction was conducted (Ramboll Environ 2015a) in support of this checklist. Existing ambient conditions used in the analysis were based on a noise study conducted in 2015 (Ramboll Environ 2015b).

In addition to evaluating construction noise resulting from installation of the landfill gas pipeline, the analysis also evaluated construction noise from excavation of Area 8 – a new landfill area that would be located in the south portion of the landfill, and a new stormwater pond that would be located in the southwest portion of the landfill property. Although it is unlikely that all three construction activities would occur simultaneously, the analysis makes the conservative assumption that the three activities would occur at the same time. In addition, the analysis makes the further conservative assumption that

*all construction equipment used in all three construction activities would operate simultaneously and in a small area, whereas, it is highly unlikely that all construction equipment would be operating simultaneously, and it is likely equipment would move around so that during most of the construction period, some equipment would operate farther from impacted residences west of the landfill.*

*The analysis modeled expected noise levels at the residence nearest to the pipeline construction corridor and nearest to Area 8 and the new stormwater pond. This residence, located west of the southern portion of the landfill, would be expected to experience the highest noise levels during pipeline construction of any residential location surrounding the landfill. The analysis predicted that hourly noise levels (energy-average sound level – Leq – over a one-hour interval) during pipeline construction at this residence would be up to 6 dBA over the ambient noise level of 45 dBA, or a maximum of 51 dBA. This maximum increase in noise level of 6 dBA, and the resultant absolute maximum level of 51 dBA, would be temporary – up to several weeks duration – and would be limited to the period when pipeline installation is occurring in the portion of the pipeline corridor directly east of the evaluated residence. During most of the construction period, pipeline construction activity would occur at greater distances from the evaluated residence than the minimum distance evaluated in the analysis, and noise levels at that location would be correspondingly lower. Maximum noise levels at other residences west of the landfill are expected to be lower than maximum noise levels at the evaluated residence.*

*A temporary increase of 6 dBA over ambient noise levels with a maximum noise level of 51 dBA would not be a significant impact. Daytime construction noise is exempt from King County noise regulations. In addition, overall, because the analysis included the conservative assumptions described above, actual maximum noise levels are likely to be lower than 51 dBA.*

#### ***During Operation & Maintenance***

*The landfill gas pipeline corridor should not produce noise as a part of every day operations. As a part of pipeline maintenance, KCSWD staff will need to access various points along the pipeline to utilize pipeline cleanouts and valves. Noise associated with these activities should be limited to vehicular and more infrequently, vacuum truck equipment. All maintenance activities should be conducted during normal landfill working hours, unless KCSWD staff are responding to or investigating a complaint.*

*The booster blower system (vacuum equipment) located at the existing North Flare Station and the BEW gas-to-energy facility does produce noise. The equipment being installed as a part of this project is replacement of existing equipment at the BEW gas-to-energy facility. Replacement of the booster blower equipment would not result in a net increase of noise offsite of the landfill property. No changes in noise are anticipated at the North Flare Station.*

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

#### ***During Construction***

- *Construction Equipment - Noise impacts are not expected to be significant. Nonetheless, the contractor will be required to implement standard noise reduction measures, including maintaining construction equipment in good working order, installing correctly functioning mufflers on all construction vehicles and equipment, and limiting equipment and vehicle idling to the*

minimum necessary. In addition, construction equipment requiring back-up alarm systems will be equipped with ambient back-up alarms that sample ambient noise levels and adjust the intensity of the back-up alarm so that unnecessarily high alarm noise levels are avoided.

- The County would require the contractor to limit construction hours to the normal working hours described in the preceding section. The contractor would also be required to have in place during construction a noise response plan. This plan would integrate with the landfill's overall noise response protocol. The landfill has staff on-board 24 hours that can receive noise complaints and take action to address those complaints.

#### **During Operation & Maintenance**

- Vehicular & Vacuum Truck Access - All maintenance activities should be conducted during normal landfill working hours, unless KCSWD staff are responding to or investigating a complaint.
- Booster Blower Equipment – There is no net change expected for the booster blower system (vacuum equipment) at the North Flare Station or the BEW gas-to-energy facility.
- The landfill has staff on-board 24 hours a day that can receive noise complaints and take action to address those complaints. This is included in the Site Wide Plan of Operations, a part of the Municipal Solid Waste Permit.

### **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 a municipal waste landfill. Surrounding properties on the east, north, and west are primarily residential. Non-residential uses southwest and south of the site include a hazardous waste remediation site, a composting facility, and a surface mining operation. The proposal would not affect current nearby or adjacent land uses.*

- 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?

*The project site has not been used as working farmlands or forest lands since the early 1960's when the landfill began operation. No farmland or forest land of long-term commercial significance or land having farmland or forest land tax status will be converted as a result of this proposal.*

- 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, this proposal will not affect or be affected by surrounding working farm or forest land normal business operations.*

- c. Describe any structures on the site.

*The North Flare Station (NFS) is located at the north end of the proposed pipeline. The NFS controls landfill gas emissions by combusting any landfill gas not being delivered to the BEW gas-to-energy facility.*

*The BEW gas-to-energy facility is located at the south end of the proposed pipeline. The BEW gas-to-energy facility serves to turn the methane-containing landfill gas collected on-site into a usable form of natural gas to be used as part of the regional natural gas supply network. The natural gas produced is conveyed to the Williams Northwest Gas Pipeline that extends along the south portion of the landfill property.*

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

*No structures will be demolished. Blowers at the BEW facility located at the terminus of the proposed pipeline will be replaced as part of this project.*

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

*The landfill property is zoned RA-10. The landfill is an allowed use under the terms of a Special Use permit approved in 1960.*

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

*The landfill property is designated Rural Residential on the current King County Comprehensive Plan land use map, and is shown as being in the King County Open Space System.*

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

*Not applicable – the site is not under shoreline jurisdiction.*

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

*There are no critical areas within the project corridor. Portions of the landfill property do contain wetlands and drainages, described in Part B, Section 3.a.1) above, that are classified as critical areas by King County. These critical areas are located within the landfill property's 1,000-foot buffer.*

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

*No people would reside or work directly in the completed project. The operation of the pipeline will not add additional staff. The proposed pipeline will convey gas from a broad area of the landfill property, and the landfill as a whole as a staff of 70.*

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

*The completed project would not displace any people.*



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

*No displacement impacts would occur, therefore no measures are proposed.*

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

*The proposed project is consistent with the landfill property's Special Use Permit, and, separated from the nearest off-site property by the landfill property's 1,000-foot buffer, is compatible with residential land uses adjacent to the landfill property. Therefore, the proposed project is compatible with existing land uses and plans, and no measures are proposed.*

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

*There are no nearby agricultural or forest lands of long-term commercial significance, therefore no measures are proposed.*

## 9. Housing

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

*The project would not provide any housing units.*

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

*The project would not eliminate any housing units.*

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

*The project would not result in any housing impacts, therefore no measures are proposed.*

## 10. Aesthetics

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

*The proposed pipeline would be buried, and no new above-ground structures would be constructed as part of this project.*

- b. What views in the immediate vicinity would be altered or obstructed? No views from surrounding properties would be permanently altered as a result of this project.

*Construction activity is unlikely to be visually evident from nearby properties because a 1,000-foot wide buffer that is mostly vegetated surrounds the landfill property, and would screen construction activity from adjacent properties.*

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

*Aesthetic impacts would be minimal because the pipeline will be below ground, and the project would not result in changes to the NFS or BEW facility that would cause view or aesthetic impacts visible off-site. Therefore, no measures are proposed.*

## 11. Light and Glare

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

*Pipeline installation may produce some glare associated primarily with construction equipment. Some light may be produced from construction equipment primarily during the beginning and end of workdays if construction occurs in spring and fall. Upgrading of the booster blower system may extend into the winter months, and light and glare from that activity is likely to occur at the beginning and for several hours at the end of working days.*

*During operation, the pipeline, which will be below ground, will not produce any light or glare impacts. Some light and glare could be associated with the operation of the NFS and the BEW facility, however, these facilities exist currently, so that any light and glare coming from the NFS or BEW facility would not be the direct result of this project.*

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

*The finished project would not produce any light or glare.*

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

*There are no existing off-site sources of light or glare that would affect this proposal.*

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

*Although the project may produce some light and glare, light and glare impacts are likely to be minimal because of the buffer surrounding the landfill. Therefore, no measures are proposed.*

## 12. Recreation

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

*There are no designated or informal public recreational opportunities within ½ mile of the project.*

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

*No, the project would not displace any existing recreational uses.*

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

*The project would not impact recreation, therefore no measures are proposed.*

### 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, there are no buildings, structures, or sites, located on or near the landfill property 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. The nearest recorded site is the Cedar Mountain Bridge and Ramp located 0.9 miles west of the landfill property.*

- 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, there are no landmarks, features, or other evidence of Indian or historic use or occupation, and there are no material evidence, artifacts, or areas of cultural importance on or near the landfill property. A cultural resources evaluation was conducted in 2009 in conjunction with preparation of the Cedar Hills Regional Landfill 2010 Site Development Plan. That study concluded that the landfill property including the 1,000-foot landfill buffer "has a low probability for the presence of archaeological resources, historic buildings, or traditional cultural properties", and that past human use of the area "has been minimal". The study identified 23 cultural resource surveys that had been conducted within 2 miles of the landfill property.*

- 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.

*A cultural resources evaluation was conducted in 2009 for the Cedar Hills Regional Landfill 2010 Site Development Plan.*

- 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 likelihood of encountering cultural resources during pipeline installation is low because of the probable lack of resources in the project area and the previously disturbed character of the pipeline route. Therefore, no measures are proposed.*

### 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 landfill property is accessed on the south side of the site from 228<sup>th</sup> Avenue SE, which enters the landfill from Cedar Grove Road. The road network in the vicinity of the landfill property is shown on Figure 1.*

- 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 landfill property is not served by public transit. The nearest transit stops are located more than 1 mile from the landfill property along the Maple Valley Highway, which is served by King County Metro bus route 143. King County Metro's ADA Paratransit Program provides next-day, shared rides on Access Transportation within 3/4 of a mile on either side of non-commuter fixed route bus service during the times and on the days those routes are operating.*

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

*The completed project would not include any additional staff parking spaces, and the project would not eliminate any existing staff 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).

*The proposal will not require any new public or private transportation facilities or improvements to any existing public or private transportation facilities. The proposed pipeline will be installed in the west perimeter road, a road internal to the landfill. The west perimeter road will be restored following pipeline installation.*

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

*The project will not use or occur in the immediate vicinity of water, rail, or air transportation.*

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

*The completed project would not generate any additional vehicular trips on roadways off of the landfill property.*

- 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.

*The proposal will not interfere, affect, or be affected by the movement of agricultural and forest products.*

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

*The project would not result in transportation impacts, therefore no measures are proposed.*

## 15. Public Services

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

The project is unlikely to result in a noticeable increase in the need for public services. The potential for on-site accidents will marginally increase during the project construction period, therefore a slight, but likely minimal, increase in the need for emergency services may occur during pipeline installation. Fire and emergency protection services (Eastside Fire & Rescue – part of King County Fire District #10) will be informed of the expected start and finish dates of pipeline installation, and of the pipeline route.

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

Impacts on public services are expected to be minimal, therefore no measures are proposed.

#### 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 would use electricity, which currently exists at the landfill property. A pad mounted transformer may need to be upgraded as part of this project.

#### 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: \_\_\_\_\_

Name of signee \_\_\_\_\_

Position and Agency/Organization \_\_\_\_\_

Date Submitted: \_\_\_\_\_

#### References

King County. 2010. Final Environmental Impact Statement, Cedar Hills Regional Landfill 2010 Site Development Plan.

Ramboll Environ. 2015a. Cedar Hills Regional Landfill – Construction Noise Study. Prepared for King County Solid Waste Division. December 28, 2015.

Ramboll Environ. 2015b. Noise Modeling Assessment Cedar Hills Regional Landfill. Prepared for King County Solid Waste Division. October, 2015.

