

**SEATTLE PUBLIC UTILITIES
SEPA ENVIRONMENTAL CHECKLIST**

This SEPA environmental review of Seattle Public Utilities’ South Recycling & Disposal Station Redevelopment Project (also referred to as South Transfer Station Phase II) Interim Remedial Action has been conducted in accord with the Washington State Environmental Policy Act (SEPA) (RCW 43.21C), State SEPA regulations [Washington Administrative Code (WAC) Chapter 197-11], and the City of Seattle SEPA ordinance [Seattle Municipal Code (SMC) Chapter 25.05].

The SRDS Redevelopment Project consists of two phases. The first phase is the Interim Remedial Action phase to conduct interim remedial action environmental cleanup at the SRDS property under a Model Toxics Control Act (MTCA) Agreed Order, and the second phase will be the future redevelopment of the SRDS property for SPU uses. WAC 197-11-268 requires a SEPA determination for any interim action conducted as part of a remedial action by a potentially liable person under an agreed order. This SEPA Checklist only covers the Interim Remedial Action phase. Future redevelopment will be covered in subsequent project-specific SEPA environmental review and documentation.

The South Park Landfill MTCA site, which includes the SRDS property, will still undergo a final cleanup following MTCA process and, as required in WAC 197-11-259, will have a SEPA determination for the final site cleanup no later than the draft Cleanup Action Plan stage. The proposed interim remedial action for the SRDS property may constitute part of the final cleanup action for the site, and if Ecology determines that is appropriate, this decision will be documented in the Cleanup Action Plan following MTCA requirements.

A. BACKGROUND

1. Name of proposed project:

South Recycling & Disposal Station Redevelopment Project (SRDS) Interim Remedial Action

2. Name of applicant:

Seattle Public Utilities (SPU)

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

Kay Yesuwan, Project Manager
Seattle Public Utilities
Project Delivery Branch
Seattle Municipal Tower, Suite 4900
P.O. Box 34018
Seattle, WA 98124-4018
(206) 615-1612

Jerome Cruz, Site Manager
Washington State Department of Ecology
Toxics Cleanup Program,
Northwest Regional Office
3190 – 160th SE
Bellevue, WA 98008
(425) 649-7094

4. Date checklist prepared:

October 12, 2015

5. Agency requesting checklist:

SPU and Washington State Department of Ecology (Ecology)

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

Redevelopment of the South Recycling and Disposal Station (SRDS), located at 8100 2nd Avenue South, Seattle, WA, will occur in phases, as described in Section A7. This section (A6) describes the steps and schedule for approving and implementing the proposed Interim Remedial Action phase, which is the Model Toxic Control Act (MTCA) interim environmental cleanup at this property.

SRDS is located at the site of the former South Park Landfill. Remedial investigation work under MTCA Agreed Order No. 6706 (Agreed Order) began at the property in 2009 and is ongoing. An amendment to the Agreed Order is being proposed in order to perform Interim Remedial Action phase work at the property. Ecology will publish the Agreed Order Amendment and Interim Action Work Plan (IAWP) for public comment at the same time this checklist is issued for public comment. Next, Ecology will review and consider any comments on the Interim Remedial Action received during their 30-day comment period and will make changes to the IAWP if appropriate. Finally, the Interim Remedial Action Amendment will be executed by the City of Seattle and Ecology and will become an enforceable component of the Agreed Order.

The Interim Remedial Action will commence shortly thereafter. Construction associated with the Interim Remedial Action is currently anticipated from late 2016 to 2018. The redevelopment of the SRDS (STS Phase II) will occur concurrently with the Interim Remedial Action and is currently anticipated from late 2016 to 2018.

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

The South Recycling and Disposal Station (SRDS) Redevelopment Project consists of two phases. The first phase is the Interim Remedial Action phase, and the second phase will be the future redevelopment of the SRDS property for SPU uses. This SEPA Checklist only covers the Interim Remedial Action phase. Future redevelopment will be covered in subsequent project-specific SEPA environmental review and documentation.

South Park Property Development, LLC (SPPD) owns the adjacent property, also situated on a portion of the South Park Landfill (Landfill), and is currently addressing contamination issues in an independent but coordinated effort, under their own Interim Remedial Action Work Plan.

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

Environmental documents prepared for the proposal include:

- South Park Custodial Landfill Geotechnical Evaluation Memorandum (Associated Earth Sciences, Inc. 1999)
- SEPA Environmental Checklist and supporting documentation for the Re-Construction of the South Recycling and Disposal Station Project (SPU 2008)
- South Park Landfill Draft Remedial Investigation/Feasibility Study (Aspect et.al. 2014)
- Interim Action Work Plan (HDR et.al. 2015)
- Interim Action Compliance Monitoring Plan (HDR et.al. 2015)

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 directly affecting the property covered by this proposal.

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

The following government approvals or permits are anticipated for the Interim Remedial Action:

Ecology

- Combined National Pollutant Discharge Elimination System (NPDES) Permit and State Waste Discharge Permit

King County

- Industrial Waste Discharge Permit

Puget Sound Clean Air Agency

- Notice of Construction and Application for Approval

Seattle Department of Planning and Development (DPD)

- Master Use Permit, SEPA Conditioning
- Demolition Permit
- Grading Permit
- Side Sewer Permit for Temporary Dewatering of Construction Sites

Seattle Department of Transportation

- Street Use Permit

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

The proposed project is an Interim Remedial Action under MTCA, to be conducted at the former South Recycling and Disposal Station (SRDS), located at 8100 2nd Avenue South, Seattle, WA, and situated on a portion of the former South Park Landfill (Attachments A, B, and C). An "Interim Remedial Action" is any remedial action that partially addresses the cleanup of a contaminated site (Chapter 173-340-430 WAC). The 10.3-acre former SRDS included a solid waste transfer station operated by the City of Seattle. The SRDS also included a recycling area, a household hazardous waste (HHW) facility, a vehicle maintenance facility, fueling facilities, and an intermodal and yard waste transfer containers storage area. A new solid waste transfer station has been constructed off-site immediately to the north at 130 South Kenyon Street, Seattle, WA, and this Interim Remedial Action applies only to the former SRDS property.

The Landfill is a former municipal solid waste landfill located in the South Park neighborhood of Seattle, Washington (Attachment B). The Landfill received solid waste from the 1930s until 1966, when it was closed under existing landfill closure laws. In February 2007, the Landfill

was added to Washington State’s Hazardous Sites List, based on concerns related to groundwater contamination and the presence of potentially flammable landfill gas (LFG). Groundwater, surface water, soil, and LFG investigations began in the late 1980s and are continuing.

A Remedial Investigation/Feasibility Study (RI/FS) of the entire Landfill is presently being conducted under MTCA Agreed Order No. 6706 (Agreed Order) with Ecology to determine the nature and extent of contamination and to evaluate remedial actions necessary for the property.

The proposed Interim Remedial Action addresses the SRDS property and contiguous areas where solid waste extends beneath 5th Avenue South (Attachment C). The Interim Remedial Action is necessary to reduce threats to human health and the environment by eliminating or substantially reducing hazardous substance exposure pathways. Demolition, grading, landfill capping, and LFG control would be conducted as part of the Interim Remedial Action; see below for more information.

Demolition and Grading

The entire SRDS property would be cleared of aboveground features (except for the HHW facility and any trees SPU can retain), exposing both refuse and any soil and gravel base course cover that was applied prior to previous paving. New work would consist primarily of raising the grade by adding new fill. The property is prone to settle under new fill loads, due to the presence of compressible refuse and silt overbank deposits in the subsurface. Estimated settlements range from 2 to 6 inches for areas with new fill placed. Settlement could result in pavement distress, foundation settlement, and damage to utilities.

To minimize the risk of settlement, preloading and surcharging could be used in areas where new fill is expected. Preloading entails placement of fill soils for many weeks to months ahead of final grading to allow settlement to occur. Used in combination with preloading, surcharging is the placement of a larger volume or height of fill above the final grading plan to accelerate the settlement process.

Clearing and Grubbing: Clearing and grubbing would be performed to prepare the project area for minor re-grading of refuse, building foundation preparation, and filling to raise the grade of the property. Limited clearing and grubbing is necessary, due to extensive existing build out.

Asphalt and Concrete Removal: Existing asphalt and concrete would be salvaged and processed as building materials to the extent practicable, and stockpiled for future reuse. Asphalt can be tilled with paving machines and stockpiled on-site to be mixed into the new asphalt cap material. Concrete from roadway surfaces and structures can be hammered out and stockpiled for crushing. All rebar in concrete must be removed prior to crushing. Crushed concrete would be used as aggregate material in the asphalt cap subbase and potentially as aggregate in LFG collection trenches.

Structure Removal: The entire SRDS property would be cleared of aboveground structures, except for the HHW facility. Existing structures with deep foundation support systems (grade beams and piles) would be demolished a minimum of 5 feet below cap subgrade.

Utilities: Removal or abandonment of existing utilities and underground structures would be necessary during activities associated with the Interim Remedial Action. The decision to remove versus abandon existing utilities will be based on utility size, proximity to grading activities associated with placement of the cap and/or LFG collection system, and conflicts with planned future utility layout. Any abandoned utilities would be capped and trenches would be filled with impermeable materials to eliminate potential migration pathways for LFG.

Landfill Capping and LFG Control System Installation

Landfill cover would include five capping designs, described as follows:

- 1) Asphaltic Concrete Cap over the majority of the SRDS property;
- 2) Geo-Membrane and Soil Cover Cap around the boundary of the SRDS property in landscaped areas;
- 3) Geo-Membrane and Concrete Cap beneath the pedestrian path and sidewalk;
- 4) Low-permeability Membrane Cap (Barrier) in areas where future redevelopment may occur to function as the building methane mitigation system and landfill cap; and
- 5) Soil cap in existing landscaped areas or where large trees would remain.

Impervious surfaces, such as landfill caps, would affect LFG by reducing discharge to the atmosphere, reducing infiltration of stormwater, and increasing runoff that would require installation of surface water controls. The landfill cap must accommodate future redevelopment, as well as maintain integrity of the drainage system as settlement occurs. Surface water controls will be included in the cap design to prevent potential exposure and mobilization of contaminants associated with solid waste.

The LFG control system includes gas collection, conveyance, and venting components.

- 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 SRDS property is located on Parcels 7328400005 and 732840TRCT in the Duwamish-South Park industrial area of Seattle (Attachment A). The property is bordered by 5th Avenue South to the east, South Kenyon Street to the north, Kenyon Industrial Park to the west, and SPPD to the south and partially to the west (Attachments B and C). The address of the property is 8100 2nd Avenue South, Seattle, WA 98108. The property is within the NW ¼, Section 32, Township 24 North, Range 04 East.

An abbreviated legal description from the King County Department of Assessments for Parcel 7328400005 is provided below:

RIVER PARK 1ST ADD TO ALL OF BLK 6 & THOSE PORS OF BLKS 7 17 & 18 LY WLY OF PSH #
1 TGW VAC STS ADJ

A legal description from the King County Department of Assessments for 732840TRCT is not available. From the title reports, it is shown as:

“EASEMENT FOR SEWER PURPOSES
PER ORD 105330
EXCEPTION PER ORD 121306”

B. ENVIRONMENTAL ELEMENTS

1. Earth

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

- Flat Rolling Hilly Steep Slopes Mountainous
 Other: (identify)

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

The steepest slope on the property is an approximately 24 percent fill slope on the east side of the former transfer station building.

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

The Landfill was developed on alluvial sediments divided into an upper section of silt overbank flood deposits and a lower underlying section of fine, silty sands. In general, there is a layer of solid waste approximately 20 feet thick across the property; however, the thickness ranges from less than 2 feet to 30 feet in some areas. The refuse is overlain by pavement and gravel base rock, on top of the deeper alluvial sediments.

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

Per Seattle DPD online mapping¹, the entire property (and surrounding area) is designated as an Environmentally Critical Area – liquefaction area (2015). Liquefaction-prone areas are areas underlain by cohesionless soils or fill of low density usually in association with a shallow groundwater table, which lose substantial strength during earthquakes.

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

Because the project area is underlain by a closed landfill, limited excavation and below-ground work is proposed. Pavement and asphalt would be reused as fill, as feasible, on-site. Below-ground utilities would be removed or abandoned in place. Approximately

¹ <http://web6.seattle.gov/DPD/Maps/dpdgis.aspx>

20,000 cubic yards of material would be excavated, and approximately 30,000 cubic yards of material (gravel and soil) would be backfilled on and around the property. If necessary, import materials would come from approved borrow sources.

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

Demolition, pavement removal, and excavations could result in an increase in temporary erosion and sediment transport off-site. However, an approved stormwater pollution prevention plan (SWPPP) would be implemented as a condition of the project NPDES Permit, thereby minimizing risks of erosion during construction. The project also would be required to comply with the temporary erosion and sedimentation control (TESC) requirements of Seattle's Stormwater, Grading, and Drainage Control Code (Seattle Municipal Code (SMC) Chapter 22.802), which would require preparation of a Drainage Control Plan and a Construction Stormwater Control Plan.

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

Up to 90 percent of the property would be covered with impervious surfaces after project completion; there would be landscaping around the perimeter of the property. This would be similar to existing impervious surface amounts.

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

Best management practices (BMPs) for erosion and sedimentation control would be implemented in accordance with Seattle's Stormwater, Grading, and Drainage Code and Construction Stormwater Control Technical Requirements Manual (Director's Rule 16-2000). Standard erosion control BMPs would be employed to control erosion during construction and use.

2. Air

a. What types of emissions to the air would result from the proposal [e.g., dust, automobile, odors, industrial wood smoke, greenhouse gases (GHG)] during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.

The construction phases of the proposed Interim Remedial Action would include numerous tasks, each generating a variety of pollutants. Construction activities, including demolishing existing buildings, removing concrete, regrading the property, and trenching for new utilities would result in emissions of carbon monoxide (CO), fine particulate matter (PM₁₀), very fine particulate matter (PM_{2.5}), nitrogen oxides (NO_x), sulfur (SO), fugitive dust, and mobile source air toxics (MSATs). Repaving roads and work surfaces would result in emissions of all of the above as well as odorous compounds. Landscaping would involve adding topsoil and mulch which could result in emission of fugitive dust.

During operations, once the LFG control system is installed, methane, oxygen, CO, hydrogen sulfide, oxygen, temperature, percent of LFG, and pressure would be measured at each vent to determine conditions across the property.

Greenhouse Gases

The primary sources of greenhouse gases (GHGs) at the property from the Interim Remedial Action are methane (from the natural decomposition of organic matter) and CO₂ and NO_x (from the burning of fossil fuels in internal combustion engines during construction). A summary of GHG Emissions for the Interim Remedial Action is provided on the following page; more details are provided in Attachment D.

Summary of Greenhouse Gas (GHG) Emissions

Activity/Emission Type	GHG Emissions (pounds of CO ₂ e) ¹	GHS Emissions (metric tons of CO ₂ e) ¹
Buildings	N/A ²	
Paving	44,518,950	20,190
Construction Activities (Diesel)	829,422	376
Construction Activities (Gasoline)	11,470	5.2
Long-term Maintenance (Diesel)	0	0
Long-term Maintenance (Gasoline)	13,122	5.95
Total GHG Emissions	45,372,964	20,572.2

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

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

The SRDS property is located in the Duwamish Industrial area, historically an area of high PM₁₀ levels. This area was designated as a non-attainment area until 1998 when it was designated a PM₁₀ Maintenance area. A PM₁₀ Maintenance area is any geographic region of the U.S. previously designated nonattainment pursuant to the Clean Air Act amendments of 1990 and subsequently redesignated to attainment, subject to the requirement to develop an air quality maintenance plan.

There is currently both a PM₁₀ and a PM_{2.5} monitoring station near the property (at 4762 East Marginal Way South). This monitoring location is representative of the conditions at the property. New daily and annual standards for very fine particulate, known as PM_{2.5} went into effect in 1997 and monitoring data indicates the region meets these standards.

These conditions define the general ambient conditions surrounding the property. Emissions and odors generated off-site from vehicles, industrial businesses, and fugitive dust, among others, may influence overall air quality conditions on the property. However, these emissions sources would not adversely affect the proposed Interim Remedial Action.

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

Construction would adhere to applicable regulations and construction practices to reduce air quality impacts. The Puget Sound Clean Air Agency has specific regulations pertaining to fugitive dust (contained in Sections 9.11, 9.15 and 9.20 of their Regulation 1) which require the use of best available control technology to control fugitive dust emissions. Because these practices would be adopted by SPU as part of the project, construction of the proposed project would not result in significant adverse impacts to air quality.

These techniques may include:

- Spraying water over the debris during demolition of buildings, as necessary to minimize dust;
- Keeping the soil damp during excavation and grading operations, as necessary to minimize dust;
- Providing paved or rip-rap exit aprons for haul trucks;
- Cleaning vehicle undercarriages and tires before they exit onto public streets;
- Covering truck loads of soil, or spraying them with water, to prevent wind-blown dust;
- Maintaining all construction machinery in good working order and operating equipment within load limits and engine RPM levels to minimize exhaust smoke; and
- Sweeping the segments of 5th Avenue South, South Kenyon Street, and Cloverdale (between 12th Avenue South and State Route [SR] 509) that have curbs, and adjacent streets, monthly or whenever soil from excavation and grading is visible.

3. Water

a. Surface:

- (1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If so, describe type and provide names. If appropriate, state what stream or river it flows into.**

The Duwamish Waterway is located approximately 0.5-mile northeast of the property.

National Wetland Inventory maps² appear to show one wetland approximately 200 feet south and west of the property. This feature is an excavated swale paralleling Occidental Avenue SW and curving onto the closed South Park Landfill (nearby SPPD property). A previous wetland investigation determined that this feature is, in fact, not a wetland (Jeff Neuner, pers. communication). This swale does not appear to be connected via surface flow to the Duwamish Waterway.

² <http://www.fws.gov/wetlands/data/mapper.HTML>

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

The project would not require work over, in, or adjacent to (within 200 feet) of the Duwamish Waterway or the excavated swale located on the nearby SPPD property.

- (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 material would be placed in, or removed from, surface waters.

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

The project would not require surface water withdrawals or diversions.

- (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.**

The proposal would not produce or discharge waste materials to surface waters.

b. Ground:

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

No groundwater would be withdrawn, and no water would be discharged to groundwater by this 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 materials would be discharged into the ground from septic tanks or other sources.

c. Water Runoff (including storm water):

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

The source of water to the property is rainfall occurring as stormwater runoff. Surface runoff drains to several catch basins located on-site. Catch basins near the interior of the property and near existing buildings drain to the sanitary sewer system, while runoff from the remainder of the property is treated and conveyed to the local stormwater system. This system would be removed and replaced as part of the Interim Remedial Action.

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

Waste material could enter surface water due to operation of heavy equipment during construction which would require fueling and engine maintenance activities that involve oil, grease, solvents, and other toxic engine fluids. These materials could be carried in stormwater runoff from spills resulting from improper handling of liquids, miscellaneous accidents, drips from the undercarriages of vehicles, water used to clean equipment and control dust, and improper disposal of waste liquids. Soils that become contaminated by spills, drips, leaks, equipment washwater, and miscellaneous accidents could carry the adsorbed contaminants off-site if eroded by wind or runoff or transported by vehicles.

Removal of existing structures, pavement, and asphalt could result in short-term impacts from dust and debris associated with demolition activities. Water quality impacts typically associated with demolition activities include increased debris loadings to stormwater conveyance systems and increased particulate loadings in runoff entering receiving waters. Excessive debris loadings to off-site drainage systems may clog drainpipes and decrease the flow conveyance capacity, and reduce the ability of catch basins to trap other pollutants.

- (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 otherwise affect drainage patterns in the vicinity of the property.

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

An approved TESC plan would be in place before construction begins, to minimize impacts from surface water runoff during construction. An approved Spill Prevention Control and Countermeasures (SPCC) Plan would also be in place prior to the start of construction.

The Interim Remedial Action would use a similar network of stormwater inlets and

conveyance pipes that connect to the same municipal trunk lines at the northwest corner of the property. Additional storm drain piping beneath the property would be minimized by using surface sheet flow to the maximum extent practicable. On-site stormwater controls for treatment and flow control would be finalized once future redevelopment plans are developed. Stormwater controls would be designed in accordance with requirements of Stormwater, Drainage, and Erosion Control regulations (Chapter 22.802 of the Seattle Municipal Code).

4. Plants

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

<input checked="" type="checkbox"/> Deciduous trees:	<input type="checkbox"/> Alder	<input type="checkbox"/> Maple	<input type="checkbox"/> Aspen	<input checked="" type="checkbox"/> Other: sycamore, oak, birch
<input checked="" type="checkbox"/> Evergreen trees:	<input type="checkbox"/> Fir	<input checked="" type="checkbox"/> Cedar	<input checked="" type="checkbox"/> Pine	<input type="checkbox"/> Other:
<input checked="" type="checkbox"/> Shrubs				
<input checked="" type="checkbox"/> Grass				
<input type="checkbox"/> Pasture				
<input type="checkbox"/> Crop or grain				
<input type="checkbox"/> Orchards, vineyards, or other permanent crops				
<input type="checkbox"/> Wet soil plants:	<input type="checkbox"/> Cattail	<input type="checkbox"/> Buttercup	<input type="checkbox"/> Bulrush	<input type="checkbox"/> Skunk cabbage
<input type="checkbox"/> Other:				
<input type="checkbox"/> Water plants:	<input type="checkbox"/> water lily	<input type="checkbox"/> eelgrass	<input type="checkbox"/> milfoil	<input type="checkbox"/> Other:
<input type="checkbox"/> Other types of vegetation:				

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

Most landscaped areas on-site, including grass, shrubs, and trees, would be removed during demolition and grading. There are approximately 100 trees on the property, and it is anticipated that between 60 and 77 trees would be removed for this project. Most of the trees to be removed are 10 inches or less in diameter.

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

Per the Washington Natural Heritage Program³, the Township/Range/Section containing the project area (Section 32, Township 24 North, Range 04 East) does not contain identified natural heritage features, including rare plants or high quality native ecosystems (2014).

³ <http://www1.dnr.wa.gov/nhp/>

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

To comply with regulations associated with the property, proposed landscaping includes use of landscaped buffers, planter islands, shallow-rooted vegetation, and retention of large, established trees to the extent feasible.

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

The property contains some Himalayan blackberry, mostly along 5th Avenue South.

5. Animals

a. List any birds and other animals that have been observed on or near the site or are known to be on or near the site: [check the applicable boxes]

Birds:	<input type="checkbox"/> Hawk	<input type="checkbox"/> Heron	<input type="checkbox"/> Eagle	<input checked="" type="checkbox"/> Songbirds
	<input checked="" type="checkbox"/> Other: Pigeons			
<hr style="border-top: 1px dotted #000;"/>				
Mammals:	<input type="checkbox"/> Deer	<input type="checkbox"/> Bear	<input type="checkbox"/> Elk	<input type="checkbox"/> Beaver
	<input checked="" type="checkbox"/> Other: Small rodents typical of urban areas such as squirrels and mice.			
<hr style="border-top: 1px dotted #000;"/>				
Fish:	<input type="checkbox"/> Bass	<input type="checkbox"/> Salmon	<input type="checkbox"/> Trout	<input type="checkbox"/> Herring
	<input type="checkbox"/> Shellfish	<input type="checkbox"/> Other:		
<hr style="border-top: 1px dotted #000;"/>				

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

There are no threatened or endangered species known to be on the property.

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

Various waterfowl and birds migrate through the Puget Sound basin, which is part of the Pacific Flyway.

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

As impacts to wildlife are not anticipated, measures to preserve or enhance wildlife are not proposed.

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

Per King County⁴, potential invasive animal species that occur within Seattle's urban areas include European starling, Eastern gray squirrel, and fox squirrel (2010).

⁴ <http://www.kingcounty.gov/environment/animalsAndPlants/biodiversity/threats/Invasives.aspx>

6. Energy and Natural Resources

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

Diesel fuel would be used during the Interim Remedial Action for motorized equipment such as bulldozers, excavators, wheel loaders, and trucks.

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

The Interim Remedial Action 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:**

Energy conservation features are not proposed for the Interim Remedial Action.

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:**

Soil borings completed at the property identified refuse from the Landfill approximately 20 feet thick, however the thickness ranges from less than 2 feet to approximately 30 feet thick in some areas. Methane gas generated by the former Landfill is monitored at a series of existing wells. Elevated concentrations of VOCs and metals have been detected in groundwater, exceeding Washington's MTCA method C cleanup criteria.

During construction, small amounts of materials may be stored on-site for construction purposes including gasoline and diesel fuels, hydraulic fluids, oils, lubricants, solvents, and other chemical products. A spill of one of these chemicals could potentially occur during construction as a result of either equipment failure or worker error. Contaminated soils, sediments, or groundwater could also be exposed during excavation. If disturbed, contaminated substances could expose construction workers and other individuals in the vicinity through blowing dust, stormwater runoff or vapors.

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

A RI/FS of the entire Landfill is presently being conducted under the Washington State MTCA Agreed Order with Ecology to determine the nature and extent of contamination and to evaluate remedial actions necessary for the property.

The contaminants of potential concern for soil, groundwater and air at the site include:

Soil

- Arsenic and lead
- Diesel and oil range petroleum hydrocarbons

Groundwater

- Arsenic, iron, and manganese
- Vinyl chloride
- Benzene and cis-1,2-dichloroethene

Air

- Landfill Gas (LFG) (methane and carbon dioxide)
- Volatile organic compounds (benzene and xylene) in air

(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.

More than 36 LFG probes have been installed within and along the perimeter of the Landfill. Recent LFG monitoring performed for the RI/FS defines baseline conditions, with methane concentrations have ranged from 0.0 to 85.1 percent at locations on and immediately adjacent to the SRDS property. The lower explosive limit for methane is 5 percent by volume. On the SRDS property, LFG monitoring was performed at two piezometers located on the Landfill (near the north property boundary, and in the center of the property) and six perimeter probes, located off-site to the northeast and north.

More than 80 percent of the property is paved, which traps methane generated by the solid waste. There are currently no measures to control potential migration of LFG gas at the property. No methane was detected at the north property boundary, but a concentration of 21 percent was detected at the central piezometer. Methane concentrations have been negligible in the perimeter probes, ranging from 0.0 to 0.2 percent. Two of the northern perimeter probes are located at the new transfer station and are no longer accessible; these will be replaced during the Interim Remedial Action. LFG samples were collected from the on-site piezometers in September 2011 and analyzed for VOCs. None of the VOCs exceeded MTCA Soil Gas Industrial Screening Levels.

There are no underground hazardous liquid and gas transmission pipelines within the project area or in the immediate vicinity of the property⁵.

(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.

Toxic or hazardous chemicals are not anticipated to be stored, used, or produced during construction activities associated with the Interim Remedial Action.

⁵ <http://www.utc.wa.gov/regulateIndustries/transportation/pipeline/Pages/pipelineMaps.aspx>

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

Fire or medic services could be required during construction of the Interim Remedial Action if an accident were to occur.

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

A SPCC plan would be developed to control spills on-site. Any contaminated soils would be excavated and disposed of in a manner consistent with the level of contamination, in accordance with state regulatory requirements, by qualified contractor(s) and/or City staff. State regulations concerning contaminated soil include MTCA (Chapter 173-340 WAC) and the State Dangerous Waste Regulations (Chapter 173-303 WAC).

The potential for exposure to hazardous materials during construction would be minimized by limiting the amount of excavation below the ground surface. A detailed site map of historic and current conditions would be created for use during construction to delineate areas of residual soil and ground water contamination. Proposed construction plans would be compared to these maps and remediation would be performed prior to construction, if necessary. In addition, a formalized plan for removal, treatment, or other management of contaminated soil and ground water would be developed prior to construction. Public health and safety measures, including dust control, would be implemented during construction to minimize exposure through both airborne and direct contact routes. Increased setbacks, additional barriers to public access, and expeditious removal of contaminated materials may be required to limit contact by the public. The health and safety plan would also identify measures to ensure construction worker safety, outline emergency medical procedures, and specify reporting requirements.

The contaminated soil and water management plan for construction would specify methods and procedures for stockpiling, transporting, disposing, and treating contaminated soil, and for removing, storing, treating, discharging (to sewer), transporting, and disposing of contaminated ground water. Most encounters with hazardous materials are expected to involve petroleum products that can be managed using relatively standardized approaches.

The design documents would include specifications for control of contractor activities associated with use of hazardous materials, such as fuels, lubricants, and solvents that may be used on the property. Management of these items and the activities associated with them would be prescribed in required plans and actions reviewed by inspectors in the field.

Throughout the construction process, encounters with hazardous materials would be documented and reported appropriately in accordance with Dangerous Waste Regulations. Project planning would accommodate regulatory agency requirements as well as disposal or treatment facility requirements.

A Health and Safety Plan would be submitted by the contractor as required by the Department of Labor and Industries (Chapter 296-843 WAC).

b. Noise

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

The areas surrounding the property are subject to noise from a variety of sources, with traffic noises being predominant. The property is adjacent to two major arterials (SR 99 and SR 509) and lies under the flight paths of aircraft using King County International Airport (Boeing Field) and Sea-Tac International Airport. However, these noises would not affect this 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 would generate a wide range of noise levels, depending upon the specific activities, with the demolition of the existing concrete tipping buildings being the loudest. Short-term noise from construction equipment would be limited to the allowable maximum levels of the City of Seattle's Noise Control Ordinance (SMC Chapter 25.08). Noise from construction equipment may occur between the hours of 7 am and 9 pm weekdays, and 9 am to 9 pm weekends during construction. A variance would be sought if exceedances of the City's Maximum Permissible Sound Levels are expected or nighttime work is necessary.

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

Construction equipment would be muffled in accordance with all applicable noise regulations. SMC Chapter 25.08, which prescribes limits to noise and construction activities, would be fully enforced while the project is under construction.

In addition, the following practices would be employed:

- Maintain heavy equipment and mufflers in good condition; and
- Buffer stationary generators or compressors (if used) with portable sound barriers if necessary to keep noise levels within regulatory limits.

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 SRDS property is presently used by SPU for the following:

- Yard waste transfer;
- Household Hazardous Waste (HHW) collection;
- Dewatering facility for material removed from sewer pipelines; and
- Transfer trailer and truck parking, fueling, and vehicle washing.

Adjacent properties include the SPU South Transfer Station to the north, Kenyon Industrial Park to the west, SPPD to the south and partially to the west, and commercial and light industrial uses to the east, across SR 99.

The Interim Remedial Action would not affect current land uses on nearby or adjacent 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?**

The property has not been used as working farmlands or working forest lands. Conversion of agricultural or forest land of long-term commercial significance would not occur. Resource lands have not been designated on or near the property.

- (1) Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how?**

There are no working farms or forest lands near the property.

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

Structures on the property include the HHW facility, solid waste transfer building, fueling area, and temporary office trailers.

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

All of the on-site structures, except for the HHW facility, would be demolished.

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

Per the City of Seattle⁶, the property is currently zoned General Industrial 2 (IG2 U/65). The property is also within the Greater Duwamish (Manufacturing Industrial) Overlay district and the Airport Height Overlay district.

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

The property is designated Industrial (in a Manufacturing/Industrial Center) per the City of Seattle Comprehensive Plan Future Land Use Map⁷ (May 2014).

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

The property is not within a designated shoreline.

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

The property is mapped as a liquefaction area due to deep alluvium, with soil characteristics and shallow groundwater table that result in loss of soil cohesion and strength during earthquake-generated ground shaking. The property also contains a gas-generating closed landfill.

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

No one would reside on-site as a result of the completed Interim Remedial Action.

⁶ <http://web6.seattle.gov/DPD/Maps/dpdgis.aspx>

⁷ http://www.seattle.gov/dpd/cs/groups/pan/@pan/documents/web_informational/dpdd016652.pdf

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

No one would be displaced by the Interim Remedial Action.

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

As displacement would not occur, mitigation measures are not proposed.

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

The Interim Remedial Action is consistent with existing and projected land use plans and designations for the property.

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

As there are no nearby agricultural and forest lands of long-term commercial significance, mitigation measures are not proposed.

9. Housing

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

The Interim Remedial Action does not involve the construction of any housing units.

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

The Interim Remedial Action does not involve the elimination of any housing units.

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

As housing impacts would not occur, mitigation measures are not 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 Interim Remedial Action does not propose any above-ground structures except for LFG venting and valve boxes, which would be no more than 12 inches above grade.

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

Views in the immediate vicinity would not be altered or obstructed by the Interim Remedial Action.

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

As aesthetic impacts would not occur, mitigation measures are not proposed for the Interim Remedial Action.

11. Light and Glare

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

Light and glare are not significant issues currently at the property due to the distance from residences and recreationists. The property is illuminated for security with light poles. Additional wall-mounted fixtures also light the property. The surrounding area is similarly lit and the lighting at the property does not exceed background baseline levels. New lighting would be consistent with existing conditions and likely would be an improvement due to requirements to shield lighting and direct it toward the interior of the property.

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

Light and glare from the Interim Remedial Action would not affect safety or interfere with views.

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

There are no 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:

Exterior lighting would be shielded and directed away from adjacent properties and roadways.

12. Recreation

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

The South Park Playground is located east of SR 99, on South Sullivan Street, approximately 0.20-mile from the southeast corner of the property.

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

The Interim Remedial Action 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:

As impacts on recreation are not anticipated, mitigation measures are not 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.

The project location was checked in 2015 for properties listed on the Washington Heritage Register and the National Register of Historic Place, using the Washington Department of Archaeology and Historical Preservation website⁸. The project location

⁸ <https://fortress.wa.gov/dahp/wisaard/>

was also checked using the Seattle DPD website⁹ for City of Seattle landmarks in 2015. No listed or known eligible historic resources are present on the 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.**

According to a review completed by SPU in 2008 for the Re-Construction of the South Transfer Station Project, no landmarks or evidence of historic, archaeological, scientific, or cultural importance are known to be on the property. However, the project is located in an area of the Duwamish River valley that was used by native people over time, as indicated by numerous ethnographically recorded geographic locations with native place names, many within 0.5 mile of the project, and a village site within 1 mile of the project.

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

Databases from the Washington Department of Archaeology and Historical Preservation, City of Seattle, and King County were reviewed. Previous documentation from the SEPA process for SPU's Re-Construction of the SRDS Project was also reviewed.

- 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.**

Should evidence of cultural remains, either historic or prehistoric, be encountered during excavation, work in the immediate area would be suspended, and the find would be examined and documented by a professional archaeologist. Decisions regarding appropriate mitigation and further action would be made at that time.

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 property is located on 5th Avenue South, south of the junction of SR 99 and SR 509 in Seattle (Attachments A, B, and C). Access to the property from the north is provided by an off-ramp from SR 99 to South Kenyon Street. From the south, access is provided by 5th Avenue South, which intersects South Cloverdale Street less than 0.25 mile south of the property.

- 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?**

There are Metro¹⁰ transit stops for Route 60 located approximately 0.25-mile south of the property on South Cloverdale Street, just east of 5th Avenue South. Metro transit stops for Route 132 are located approximately 0.22-mile north of the property on South Holden Street, just west of 2nd Avenue South.

The Interim Remedial Action project would not affect public transit service in the area.

⁹ <http://www.seattle.gov/neighborhoods/historic-preservation/landmarks/landmarks-map>

¹⁰ <http://tripplanner.kingcounty.gov/>

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

All of the existing parking spaces on-site would be eliminated with the proposed project, as the property would be cleared and structures demolished. Those parking spaces are accessible only to City staff and City contractors, and are not available to the public. Construction parking would likely be accommodated on-site and would not affect surrounding streets or properties.

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).

SPU would provide new sidewalks and a new 8-foot-wide pedestrian path around the property (outside the perimeter fencing). The path would include landscaping and has the potential for added wayfinding and/or educational signage. The path would require a crosswalk across South Kenyon Street, assumed to be near 2nd Avenue South, and would connect to the new sidewalk on the bus yard property south of the SRDS property. No new roads or other improvements to existing roads, streets, pedestrian, bicycle, or state transportation facilities are anticipated.

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

The project would not use water, rail, or air transportation. The property is approximately 0.5 mile west of the Duwamish Waterway (a shipping route), and 1 mile west of Boeing Field/King County International Airport.

Because the property is within 5 miles of Boeing Field/King County International Airport, the Federal Aviation Administration (FAA) requires that SPU demonstrate that the property and facilities are designed and operated such that they do not pose a bird hazard to aircraft (40 CFR 258.10).

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?

There will be quarterly visits to monitor Landfill gas and groundwater, with a total of approximately 6 trips per monitoring event. There would also be annual monitoring events with a total of approximately 6 trips per monitoring event.

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 would not interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area.

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

As transportation impacts are not anticipated as a result of the Interim Remedial Action, mitigation measures are not 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 Interim Remedial Action would have no effect on the need for public services.

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

As impacts on public services are not anticipated from the Interim Remedial Action, mitigation measures are not proposed.

16. Utilities

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

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

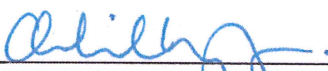
b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

None

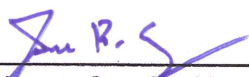
Utilities to be provided on-site as part of the Interim Remedial Action include water supply (SPU), sanitary sewer (King County), storm drainage (SPU), electricity (Seattle City Light), telephone (contractor), and high-speed internet (contractor).

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: 
Kay Yesuwan, Project Manager, SPU

Date: 10/12/2015

Signature: 
Jerome Cruz, Site Manager, Ecology

Date: 10-12-2015

List of Attachments

Attachment A – Site Vicinity Map

Attachment B – Site Plan

Attachment C – Interim Remedial Action Area

Attachment D – Greenhouse Gas Emissions Worksheet

Attachment C – Interim Remedial Action Area



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Legend

— STSII Site

Attachment C.

Interim Remedial Action Area, South Transfer Station Phase II, Seattle, Washington.



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HR Aspect

ESRI, Aerial (2014)
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**South Recycling & Disposal Station Redevelopment Project Interim Remedial Action
SEPA Environmental Checklist**

Attachment D – Greenhouse Gas Emissions Worksheet

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

Section II: Pavement						
						Emissions (MTCO ₂ e)
Pavement (sidewalk, asphalt patch)						0
Concrete Pad (50 MTCO ₂ e/1,000 sq. ft. of pavement at a depth of 6 inches)		403,800				20,190
TOTAL Section II Pavement						20,190

Section III: Construction	
(See detailed calculations below)	Emissions (MTCO ₂ e)
TOTAL Section III Construction	
	381

Section IV: Operations and Maintenance	
(See detailed calculations below)	Emissions (MTCO ₂ e)
TOTAL Section IV Operations and Maintenance	
	3.3

TOTAL GREENHOUSE GAS (GHG) EMISSIONS FOR PROJECT (MTCO₂e)	20,574.3
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**South Recycling & Disposal Station Redevelopment Project Interim Remedial Action
SEPA Environmental Checklist**

Attachment D – Greenhouse Gas Emissions Worksheet, continued

Section III Construction Details		
Construction: Diesel		
Equipment	Diesel (gallons)	Assumptions ¹¹
Excavator	4,260	Excavator needed for 710 total hrs, at 6 gallons/hr
Dump Truck	21,300	Dump Truck needed for 4,260 total hrs, at 5 gallons/hr
Concrete Truck	5,680	Concrete Truck/Loader needed for 710 total hrs, at 8 gallons/hr
Subtotal Diesel Gallons	31,240	
GHG Emissions in lbs CO₂e	829,422	26.55 lbs CO ₂ e per gallon of diesel
GHG Emissions in metric tons CO₂e	376	1,000 lbs = 0.45359237 metric tons

Construction: Gasoline		
Equipment	Gasoline (gallons)	Assumptions ¹¹
Pick-up Trucks or Crew Vans	472	Crew Trucks/Pick-up Trucks needed for 236 total hrs, at 2 gallons/hr
Subtotal Gasoline Gallons	472	
GHG Emissions in lbs CO₂e	11,470	24.3 lbs CO ₂ e per gallon of gasoline
GHG Emissions in metric tons CO₂e	5.2	1,000 lbs = 0.45359237 metric tons

Construction Summary		
Activity	CO ₂ e in pounds	CO ₂ e in metric tons
Diesel	829,422	376
Gasoline	11,470	5.2
Total for Construction	840,892	381

Section IV Long-Term Operations and Maintenance Details		
Operations and Maintenance: Diesel		
Equipment	Diesel (gallons)	Assumptions
Emergency Operation	0	
Maintenance Operation	0	
Fueling truck/repair truck	0	
Subtotal Diesel Gallons	0	
GHG Emissions in lbs CO₂e	0	26.55 lbs CO ₂ e per gallon of diesel
GHG Emissions in metric tons CO₂e	0	1,000 lbs = 0.45359237 metric tons

Operations and Maintenance: Gasoline		
Equipment	Gasoline (gallons)	Assumptions
	540	6 truck trips per event; 20 years of quarterly monitoring events (24 trips per year); 10 years of annual monitoring events (6 trips per year); 1 gallon of gas per truck trip.
Subtotal Gasoline Gallons	540	
GHG Emissions in lbs CO₂e	13,122	24.3 lbs CO ₂ e per gallon of gasoline
GHG Emissions in metric tons CO₂e	5.95	1,000 lbs = 0.45359237 metric tons

Operations and Maintenance Summary		
Activity	CO ₂ e in pounds	CO ₂ e in metric tons
Diesel	0	0
Gasoline	13,122	5.95
Total Operations and Maintenance	13,122	5.95

¹¹ Source for all fuel consumption rates: http://www.ictf-jpa.org/document_library/application_development_project_approval/App%20B.pdf