Reprogramming Technical Memorandum

South Transfer Station Phase II

Seattle, Washington
May 7, 2021

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This document has been prepared under the supervision of a registered professional engineer.
It is a living document and the content will change as the design process develops.

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Contents

Figures

Acronyms and Abbreviations

E-Team	Executive Management Team
Ecology	Washington State Department of Ecology
HHW	household hazardous waste
LFG	landfill gas
OPCC	Opinion of Probable Construction Cost
SCL	Seattle City Light
SDOT	Seattle Department of Transportation
SPU	Seattle Public Utilities
SRDS	South Recycling and Disposal Station
STS2	South Transfer Station project

1 Introduction

Seattle Public Utilities (SPU) is conducting a project to demolish the existing South Recycling and Disposal Station (SRDS) and develop the site for future beneficial use for SPU and the City of Seattle. The demolish and redevelopment efforts are referred to as the South Transfer Statin Phase 2 (STS2) project throughout this document. HDR was initially hired by SPU in 2015 to conduct an options analysis process to evaluate the feasibility of locating 11 facilities on the existing SRDS site. A preferred option was selected and the project was carried through detailed design to produce bid-ready construction documents, which were completed in July 2020. At that time, SPU decided to re-evaluate the project site for future use, and the project was not put out to bid. While SPU evaluates how the site will be utilized in the future, they are moving forward with demolishing the existing SRDS and site improvements to meet the landfill closure requirements set forth by the Washington State Department of Ecology (Ecology),meet SPU's current operational requirements and needs, and maintain as much flexibility in future redevelopment of the site.

A reprogramming meeting with the SPU Executive Management Team (E-Team) was held on March 11, 2021 where the SPU project team presented proposed required project elements of the STS2 project. At the meeting, the E-Team provided approval for the reprogrammed STS2 project to proceed into detailed design.

The purpose of this technical memo is to summarize and document the agreed-on site reprogramming approved by the E-Team. The document includes the decision-making process, final site layout, and actions/elements determined for future phases of the project. This document will be used as a guideline to direct further development of the project scope as the project moves into detailed design and construction.

2 Project Background

The SRDS was constructed in 1966 on top of the closed South Park Landfill and includes the main waste transfer building, a household hazardous waste (HHW) collection facility, a small maintenance and wash facility, a scale house with two scales, two vehicle fueling systems, and several additional small buildings used for offices and operations support. The HHW building and the crew facility will remain on the site; all other buildings and equipment will be either demolished or relocated off-site. Required project elements are discussed in Section 3.

2.1 Site Background

The existing SRDS (Figure 1) is located on an approximate 10.3-acre parcel at 8100 2nd Avenue South in Seattle, Washington. The facility is paved, except for some perimeter landscaping and small areas in the property's interior. Two narrow right-of-way parcels were added to the west and south sides of the parcel in 2003 through a City ordinance and are included in the 10.3-acre parcel.

The site is relatively flat with a slight downward slope to the northeast toward the Duwamish Waterway. Groundwater is shallow, in some locations only approximately 6 feet below ground surface, which limits the feasibility for significant excavation at the site. The parcel is zoned by the City as “Industrial General 2 Unlimited/65,” allowing for development up to 65 feet above the ground surface.

Figure 1. Existing SRDS Site Plan

2.2 Solid Waste Facility

The SRDS site is located across South Kenyon Street from the existing South Transfer Station (STS) and will provide support facilities for solid waste operations. Current onsite structures and operations, including light vehicle and equipment maintenance, wash facility, former SRDS, scale house, fueling station, and small support buildings and structures, will be phased for allowing limited ongoing operations during construction prior to demolition.

SPU has been providing HHW services for many years at the SRDS site. Volumes of materials or significant changes in operations are not anticipated that could impact the

current site or future space needs. The HHW facility was determined to remain as-is, including areas for material collection, processing, and storage, as desired by SPU.

2.3 Landfill Closure

SPU is working with the Washington State Department of Ecology, (Ecology) and had previously developed an Interim Action Work Plan to conduct closure activities on the South Park Landfill on which the SRDS site is located. Now the Interim Action Workplan will be closed as completed to date and the Landfill Closure project will be completed under the 2019 South Park Landfill Consent Decree and Cleanup Action Plan.

The South Park Landfill consists of several parcels situated in the South Park neighborhood of south Seattle. It covers approximately 39 acres and is roughly bounded to the north by South Kenyon Street, to the east by State Route 99 and 5th Avenue South, to the south by South Sullivan Street, and to the west by Occidental Avenue South. The landfill was operated by the City until it closed in 1966; it included disposal and burning of municipal, commercial, and industrial waste. Since that time, the landfill has undergone filling and grading activities and has been redeveloped.

The South Park Landfill is a former municipal solid waste landfill. It 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 continue to the present.

Components of the landfill closure required under the Consent Decreed include:

- Landfill Capping
- Institutional controls to supplement engineering controls such as fencing
- Stormwater collection and conveyance
- Landfill Gas control system
- Methane detection alarms on all occupied structures
- Landfill cap monitoring and maintenance
- Landfill gas collection and monitoring

2.4 Landfill Cap

Washington Administrative Code 173-340-710(4)(f) allows for variances or waiver provisions included in other applicable regulations to be accessible as part of the Model Toxics Control Act process. Based on this provision, a variance was granted by Ecology for development at the STS2 site. This was based on the conditions under which the landfill was originally closed and how contiguous parcels were planned for development.

Five cap design sections will be used at the site, described as follows:

- Asphaltic concrete or concrete paving will be used over the majority of STSI where development plans call for large vehicle access, parking, and construction of a variety of building types to accommodate multiple SPU activities.
- Geomembrane and soil cover caps will be placed around the boundary of STSI in landscaped areas.
- Geomembrane and asphalt or concrete cap will be used for the pedestrian path.
- Geomembrane will be placed under building foundations to function as a building methane mitigation system and landfill cap.
- Soil caps will be placed in existing landscape areas that will remain as-is, or where large trees will remain, as well as where trees are to be planted in landscape areas along 5th Avenue South. These areas will include a permeable cautionary barrier below surface to prevent inadvertent digging into any refuse.

Impervious surfaces, such as landfill caps, will affect LFG by reducing discharge to the atmosphere, reducing infiltration of stormwater, and increasing runoff that will require installation of surface water controls. The landfill cap will accommodate future actions, as well as maintain the integrity of the drainage system as differential settlement occurs.

2.4.1 Landfill Gas Collection and Monitoring

The STS2 LFG control system is a passive collection and venting system that includes additional manifold piping and valve stations to allow conversion of discrete sections or converts the entire system to an active collection system, providing system contingency and increased system flexibility and control.

Along the STS2 east and northwest property boundaries, a deep perimeter collection trench will be installed. The perimeter trench will function as a preferential pathway for collection and venting of LFG. Along the south and southwest property boundaries (adjacent to the property with an active LFG system) the perimeter collection trench will be offset from the property boundary approximately 60 feet to the interior and will be directly vented to vents located on light poles. Along the west property boundary, the perimeter collection trench will be installed under the pedestrian walkway located west of the property boundary.

2.5 Seattle Public Utilities Reprogramming

In July 2020, SPU formally notified the Department of Ecology that SPU leadership decided to decouple the construction of the Recycling and Reuse Center from fulfilling the minimum requirements under the South Park Consent Decree, minimum operations requirements, commitments to the City Council and the community regarding site perimeter improvements associated with the Street Vacation granted for STS and City Code requirements. This decision will allow for a holistic planning review of needs and opportunities in south Seattle prior to making further site development decisions.

SPU has committed to working with Ecology to move forward with all of the design elements required under the 2019 Consent Decree and Clean Up Action Plan. Both of

these documents are under revision to reflect the new project scope and schedule. The design elements being carried forward will provide improved protection of the citizens and environment.

SPU has engaged with their design team to itemize the current requirements of SPU and the Consent Decree. A new design package will be developed and progressed to final design and construction. Further evaluation of the site for a greater beneficial use will be conducted in the subsequent months and a project will be developed and presented to Ecology separate of the Consent Decree and Clean Up Action plan requirements that will be met under the current project.

3 Facility Reprogramming Requirements

HDR and their subconsultants compiled and reviewed documents generated as part of the previous design effort, including documents reviewed and approved by Ecology. Previously designed STS2 project elements were used as a guide to meet the Ecology requirements as well as determine SPU's current operational requirements and needs at the SRDS site. The following lists shows the identified reprogramming requirements based on document review and SPU team meetings.

Other Agency Requirements

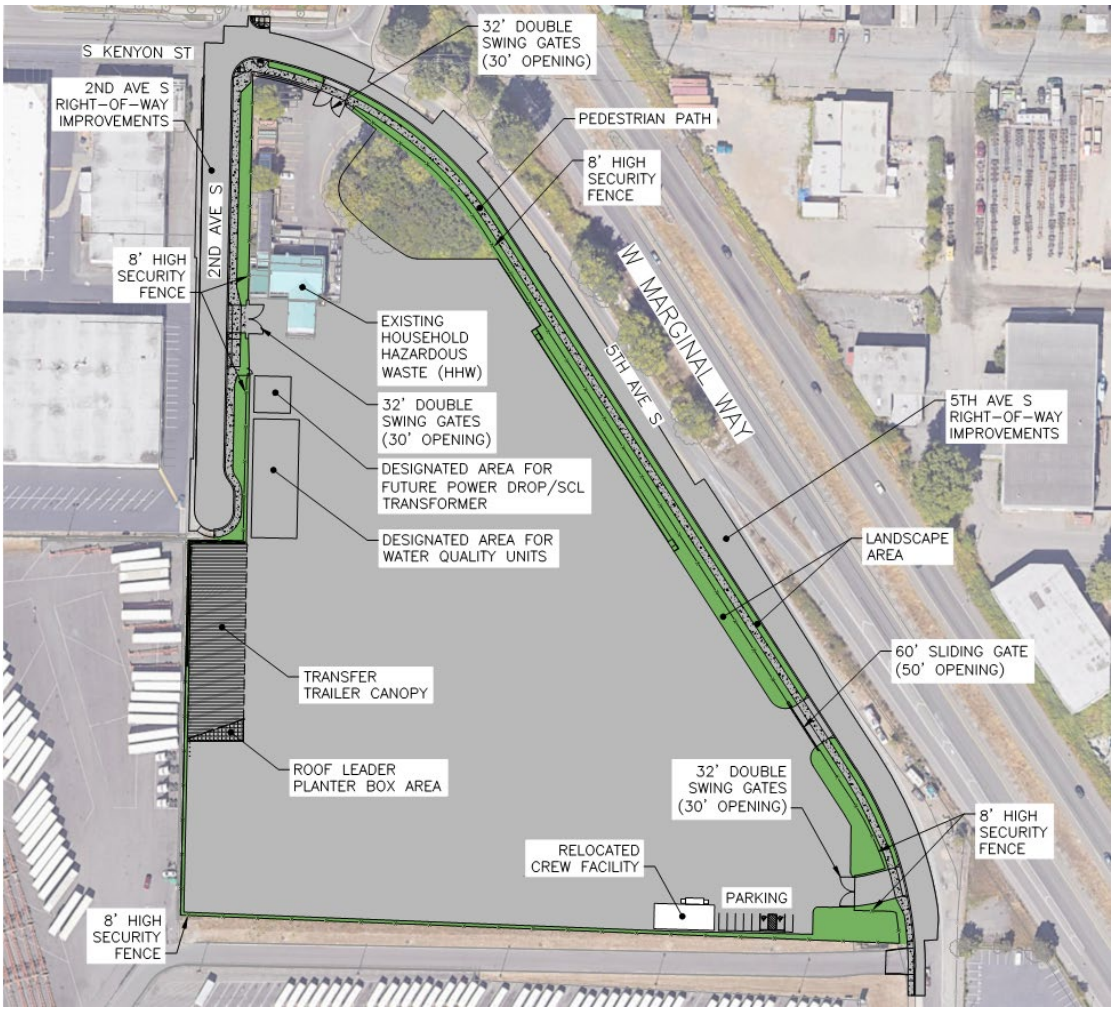
- 2nd Avenue South and 5th Avenue South Street Improvements
- Pedestrian path, sidewalk, and curb/gutter
- 2nd Avenue South Seattle City Light (SCL) utility pole relocation
- Site storm drainage water quality treatment
- Landscape
- Trailer parking canopy

SPU Operational Requirements and Needs

- Maintain HHW facilities
- Site striping
- Security fencing/cameras
- Site lighting
- Access gates
- Relocated crew facility

The reprogramming requirements list was used to create a reprogramming site plan (Figure 2), which was presented to and approved by the E-Team.

Figure 2. Reprogramming Site Plan



3.2 Site Reprogramming Project Elements

Site reprogramming project elements are further discussed in the following sections. Reprogramming requirements that were not included in the previous STS2 design are only identified and will be further defined during detailed design.

3.2.1 Other Agency Requirements

The following project elements were previously established from the Seattle Department of Transportation (SDOT) street vacate ordinance and Street Improvement Permit, Seattle Department of Construction and Inspection building permits, and community requests for the STS2 project. These project elements will remain as part of the STS2 project moving forward.

3.2.1.1 2nd Avenue South and 5th Avenue South Street Improvements

The street improvement permit requires street improvements along 5th Avenue South and 2nd Avenue South. The extent of pavement replacement varies between one lane and full roadway width depending on the extent of the proposed installation of utilities.

The pavement improvements will match what was included in the previous design of the STS2 project.

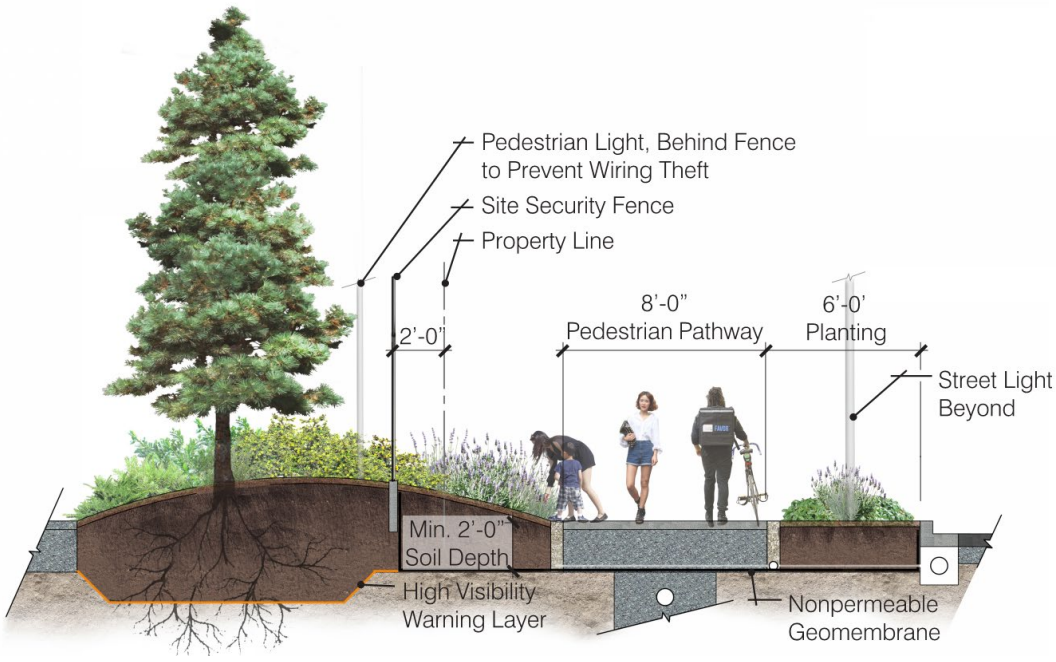
3.2.1.2 Pedestrian Path, Sidewalk, and Curb/Gutter

The City of Seattle code requires a 6-foot-wide sidewalk along 5th Avenue South. An 8-foot pedestrian path (Figure 3) is being provided that extends the entire length of the site frontage along 5th Avenue South. This responds to the community comments regarding a desire for a pedestrian connection along 5th Avenue South. SDOT required a street vacation to allow for this increase in width. Modifications to 5th Avenue South asphalt paving include providing curb and gutter to allow for the placement of the pedestrian path and associated landscaping in the right-of-way east of the SRDS site.

The pedestrian pathway connects to sidewalks along South Kenyon Street and 2nd Avenue South, and to the sidewalk to the south. The pedestrian path occurs outside of the site perimeter security fence. The existing light fixtures will be removed and new pedestrian light fixtures along 5th Avenue South will be added. These will be located inside the security fence to protect the fixtures from vandalism. New streetlights will be provided in the planting strip adjacent to 5th Avenue South per SDOT direction.

The pedestrian pathway will match what was included in the previous design of the STS2 project. However, the previously designed art wall located in the 6-foot planting strip will be removed from the project.

Figure 3. 5th Avenue South Pedestrian Pathway Cross Section



3.2.1.3 2nd Avenue South SCL Utility Pole Relocation

Electrical service will come from 2nd Avenue South and will require pole relocations as part of the street improvements. Electrical service will be provided for the required facilities as well as site lighting parking.

3.2.1.4 Site Storm Drainage and Water Quality Treatment

New storm drain infrastructure will be installed as part of the required landfill capping. The proposed project improvements are within the City of Seattle's jurisdiction and therefore are subject to the following stormwater codes and requirements:

- City of Seattle Stormwater Code (2016)
- City of Seattle Stormwater Manual (August 2017)
- SPU Client Assistance Memorandum 1180 (July 2017)

Per the Seattle Stormwater Manual, the parcel portion of the site will require basic water quality treatment.

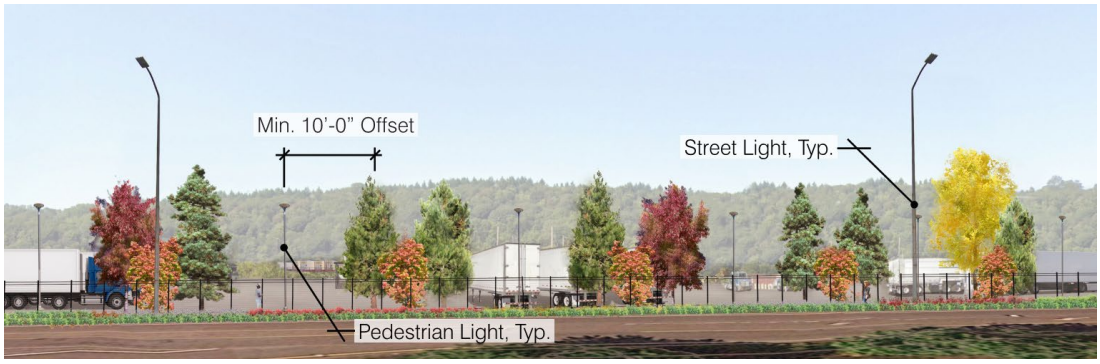
The site currently operates under a King County Industrial Stormwater General Permit Number WAR000737. To meet the industrial stormwater quality benchmarks, an enhanced water quality treatment system is proposed to be provided via an above-ground pumped system that includes a pretreatment chamber and multimedia filter bed.

3.2.1.5 Landscape

The majority of the site is paved to accommodate the site program and for large vehicle parking, operations, and maneuvering requirements. The landscape in the remaining space responds to site constraints while providing for tree replacement requirements and offering amenities to the community. Existing landscape at the north of the site will not be disturbed: along 2nd Avenue South, around the existing HHW building, and the majority of trees that form a large grove.

The planting incorporates the principles of an "Interception Tree Row" along 5th Avenue South. With subsurface drainage and primary winds directed toward 5th Avenue South, the tree row is an additional tool that can "intercept" air particles or potential substances in the groundwater, providing an extra buffer between the solid waste landfill and downstream properties. This also allows the project to provide replacement trees that are required by the removal of existing trees in the site's interior.

Figure 4. 5th Avenue South Landscaping



3.2.1.6 Trailer Parking Canopy

A designated area on the western portion of the site will be provided for full trailers that are parked on site overnight. The drainage from this area will be connected to the sanitary sewer system for collection and treatment of any of the liquids that drain from

the trailers. The cover over the parking areas is a SDCI permit requirement to limit the stormwater that is introduced to the sanitary sewer system. A coalescing plate oil/water separator is proposed as the oil treatment Best Management Practice for collecting fats/oils/greases prior to entering the sanitary sewer system.

3.2.2 SPU Operational Requirements and Needs

The following project elements were established during the SPU One-Team and solid waste operations team meetings. These are current SPU operational needs and requirements of the SRDS site.

3.2.2.1 Maintain Hazardous Household Waste Facilities

The existing HHW must remain fully operational during construction. The HHW building is open to the public 3 days per week (Thursday, Friday, and Saturday) so it is anticipated that impacts to the facility during construction (i.e., power, communications, paving) can be minimized.

3.2.2.2 Site Striping

Striping for trailer parking within the SRDS site and other directional/wayfinding signage will be provided as part of this initial effort.

3.2.2.3 Security Fencing and Cameras

The entire perimeter of the project site will be secured with security features composed of fencing, gates, and cameras. Two types of fencing will be provided along the perimeter:

- Fence along public-facing property boundaries, including the pedestrian path on the eastern side of the site and along 2nd Avenue South on the west side of the site. These will be black 8-foot tall, climb deterrent, cut-resistant fences with vertical pickets. This fence type was selected for transparency and clean lines of site for safety and crime deterrence, and input by the project community stakeholder group, public, and City security group.
- Interior property boundaries adjacent to the private property to the south and southwest will be delineated by a 7-foot chain link fence topped with three-strand barbed wire (total height of 8 feet). The chain link will be 5/8-inch mesh to reduce the potential for climbing.

3.2.2.4 Site Lighting

Site lighting will be provided within the SRDS site for safety and operation. Criteria for the site lighting design includes the following:

- The project will comply with Seattle's Capital GREEN Toolkit.
- Site lighting will be developed in accordance with NFPA 70, National Electrical Code.
- ASHREA/IESNA standard 90.1-2007 requirements will be used for site and exterior lighting control.

- LED site lighting fixtures will be mounted on 25-foot poles with a 30-inch pole base.
- Site and exterior fixtures will be controlled by a wireless time schedule and occupancy sensors located on each light fixture. The light will turn on 100 percent then dim down to 50 percent after 15 minutes. The occupancy sensor will control groups of light fixtures, and will turn these groups from 50 percent lumens to 100 percent lumens.
- No illumination will spill off the property line, except over the pedestrian pathway.

Separate street lighting will be installed per SCL and SDOT requirements.

3.2.2.5 Access Gates

Gates will be automated double swing gates opening to the facility interior or sliding gates. The southernmost SPU operations gate off 5th Avenue South include a setback into the site so as not to require vehicles to queue in the street.

3.2.2.6 Relocated Crew Facility

An existing 24-foot x 50-foot double-wide trailer that is located on the southwest portion of the site is currently being used for a crew facility. This building will be relocated and repurposed in the southeast corner of the SRDS site. The existing trailer provides a large meeting area as well as locker rooms and bathrooms for SPU operations staff. It is assumed that no building improvements are required for repurposing this trailer; however, utility connections and a gravel building pad with a geomembrane vapor barrier will be required for the new location on site.

4 Next Steps

E-Team approval of the reprogramming of the SRDS site provides authorization for the STS2 project to move toward detailed design and construction. HDR and their subconsultants are in the process of finalizing preliminary design documents, including: a 10 percent design drawing package to eliminate unnecessary project information from the previous STS2 drawing set, an Engineering Design Report that will act as the Basis of Design Report, and the Interim Action Work Plan Update and Interim Action Work Plan with Ecology. Detail design is anticipated to begin in the summer of 2021.