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¹Available on electronic flash drive and the project website at <http://www.soundtransit.org/system-expansion/operations-maintenance-facility-south/documents>. Printed versions are available for the cost of reproduction.

INTRODUCTION

In March 2021, the Central Puget Sound Regional Transit Authority (Sound Transit) published a Draft Environmental Impact Statement (EIS) under the State Environmental Policy Act (SEPA) for the Operations and Maintenance Facility South (OMF South) Project. After considering the 2021 SEPA Draft EIS and the comments received, the Sound Transit Board of Directors (Board) identified the South 336th Street Alternative as the Preferred Alternative for study in the Final EIS, along with the other alternatives (Motion M2021-81, December 2021). Subsequently, the design for the Preferred Alternative was advanced and modified in response to comments received during the 2021 SEPA Draft EIS comment period. To meet additional operational needs, a test track was added to the Preferred and South 344th Street alternatives. These changes are described in Section 2.2.8, Design Updates.

In January 2023, the Federal Transit Administration (FTA) and Sound Transit determined that compliance under the National Environmental Policy Act (NEPA) was necessary to support federal approvals and funding.

To reduce duplication of process, FTA and Sound Transit prepared a Draft EIS as a combined NEPA/SEPA document. Since a Draft EIS under SEPA was already published, the document served as a Draft EIS under NEPA and a Supplemental Draft EIS under SEPA, referred to simply as the Draft EIS herein. This document has been prepared under both NEPA and SEPA and is the Final EIS. FTA is the lead federal agency under NEPA, and Sound Transit is the lead agency under SEPA. The Final EIS evaluates a Preferred Alternative, two other build alternatives, and a No-Build Alternative. The No-Build Alternative represents the transportation system and environment as they would exist without the construction and operation of OMF South.

1 PURPOSE AND NEED FOR THE PROJECT

Sound Transit proposes to construct OMF South, an operations and maintenance facility (OMF) in the South Corridor to support Sound Transit’s Link light rail system expansion. This expansion and the related increase in the light rail vehicle (LRV) fleet and daily operations is identified in Sound Transit 3: The Regional Transit System Plan for Central Puget Sound (Sound Transit 3). Sound Transit’s goal is to preserve and promote a healthy and sustainable environment by minimizing adverse impacts to people and the natural and built environments.

1.1 Sound Transit 3: The Regional Transit System Plan for Central Puget Sound

Under Sound Transit 3, the light rail system in central Puget Sound would grow to 116 miles with over 80 stations. Figure 1.1-1 shows the full system planned for operation in 2042 under the target schedule. It includes light rail expansion north to Everett, south to Federal Way and Tacoma, east to Redmond, south Kirkland and Issaquah, and west to West Seattle and Ballard. In addition to the two existing operation and maintenance facilities — OMF Central, in Seattle, and OMF East, in Bellevue — new operation and maintenance facilities would be needed in the North and South Corridors to support the system expansion.

North Corridor

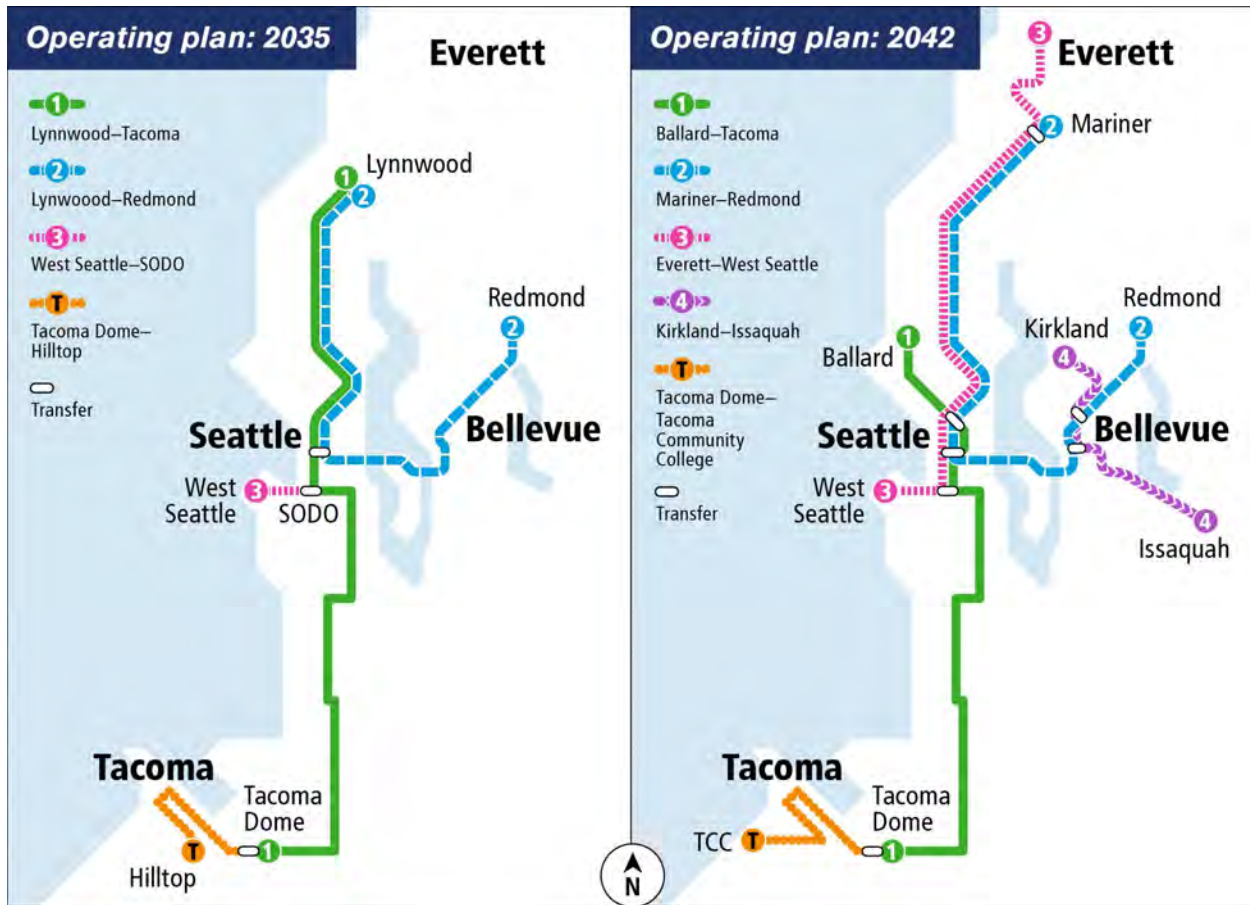
Sound Transit 3 includes extending light rail north from the Lynnwood Transit Center to downtown Everett via the Southwest Everett Industrial Center. The forecasted in-service date for this line is 2037 under the target schedule and includes six stations serving the areas of West Alderwood Mall, Ash Way, Mariner, Southwest Everett Industrial Center, State Route (SR) 526 near Evergreen Way, and the area at the existing Everett Station. Additional parking would be provided at the Mariner and Everett stations. A light rail OMF would be in the North Corridor to maintain and store a portion of the LRV fleet for the Everett to Alaska Junction and Mariner Way to Downtown Redmond services.

Affordable and Target Schedules

Due to steeply rising real estate prices and other construction expenses, Sound Transit projects currently in early planning and design, including OMF South, are seeing cost estimate increases. To ensure that funding remains available to complete all voter-approved projects, the Sound Transit Board conducted a “realignment” process that established the following two schedules:

Affordable Schedule: a schedule that is affordable, using current financial projections and cost estimates to set the general order in which projects will advance. This “affordable” schedule established an approach to prioritize, fund, and manage program work over time (Resolution 2021- 05).

Target Schedule: schedule for priority projects, as close to Sound Transit 3 Plan schedules as possible, reliant upon reductions in the affordability gap through cost savings and additional revenue.



Note: The 2042 operating plan is the target schedule.

Figure 1.1-1 Link Light Rail System Expansion

Central Corridor

Sound Transit 3 includes two light rail extensions within Seattle. The first extension would add 4.7 miles of light rail service from Seattle to West Seattle’s Alaska Junction neighborhood with four stations between South of Downtown (known as SODO) and Alaska Junction with service anticipated to begin in 2032. The second extension would add 7.1 miles of light rail service from downtown Seattle to Ballard, which includes a 3.3-mile light rail-only tunnel through downtown Seattle and South Lake Union and has a forecasted in-service date of 2039. This extension would have nine new stations between International District/Chinatown and Market Street in Ballard. In addition, three infill stations would be added serving NE 130th Street, S Graham Street, and S Boeing Access Road near Interstate 5 (I-5), with parking provided at the S Boeing Access Road station. Infill stations are new stations built on existing light rail lines. Connections to the existing OMF Central would be built to service vehicles operating in this corridor. OMF Central will maintain and store a portion of the LRV fleet for multiple lines.

East Corridor

Sound Transit 3 includes extending light rail on the Eastside, connecting Redmond, Bellevue, south Kirkland, and Issaquah to each other and to the rest of the regional system. Eastside investments include two stations serving southeast Redmond and downtown Redmond along with a new light rail line from south Kirkland to Issaquah via Bellevue, with a forecasted in-service date of 2041 under the target schedule. Four stations would be included in the latter

light rail extension serving south Kirkland, the Richards Road area, Eastgate near Bellevue College, and central Issaquah. Additional parking would be provided at the southeast Redmond, south Kirkland, and central Issaquah stations. OMF East was constructed in 2021 in the East Corridor to maintain and store a portion of the LRV fleet for the Mariner Way to Downtown Redmond and South Kirkland to Issaquah services.

South Corridor

Sound Transit 3 includes funding to complete the light rail extension south from Kent/Des Moines to Federal Way, with stations at S 272nd Street (Star Lake Station) and the Federal Way Transit Center (which has since been renamed the Federal Way Downtown Station). This light rail extension is under construction, with a forecasted in-service date of 2026.

Sound Transit 3 plans to extend light rail from the Federal Way Downtown Station south to Tacoma. The forecasted in-service date is 2035. New stations would be in South Federal Way, Fife, and Tacoma, where the station would provide a multimodal connection to the existing Tacoma Link, Sounder commuter rail, Sound Transit Express Bus, and Amtrak. Parking would be added at the South Federal Way and Fife stations. OMF South (the proposed project) would be built in the South Corridor to maintain and store a portion of the LRV fleet for the Everett to West Seattle and Ballard to Tacoma Dome service as well as to receive, test, commission, store, maintain, and deploy new LRVs for the entire system.

Sound Transit 3 also includes an expansion of Tacoma Link to Tacoma Community College, with six stations. This is a separate fleet served by the Tacoma Link Operations and Maintenance Facility.

1.2 Purpose of the Project

The purpose of OMF South is to:

- Provide a facility with the capacity to receive, test, commission, store, maintain, and deploy vehicles to support the intended level of service for the system-wide light rail system expansion.
- Support efficient and reliable light rail service that minimizes system operating costs.
- Support and connect efficiently to the regional system and be technically and financially feasible to build, operate, and maintain, consistent with the Sound Transit 3 Plan and Sound Transit's Regional Transit Long-Range Plan.

1.3 Need for the Project

The project is needed because:

- The current regional system lacks a facility with sufficient capacity and suitable location to support the efficient and reliable long-term operations for system-wide light rail expansion, including the next phase of expansion in King and Pierce counties.
- New light rail maintenance and storage capacity needs to be available with sufficient time to accept delivery of and commission new vehicles to meet the expansion needs outlined in Sound Transit 3 and to store existing vehicles while the new vehicles are tested and prepared.

The OMF South project is necessary to support the addition of approximately 144 LRVs as part of the Sound Transit 3 system expansion. The facility includes functions that support the entire Link light rail system, such as receiving, testing, and commissioning new LRVs. In addition, OMF South would include Maintenance of Way (MOW) facilities and a Link System-Wide Storage building to receive and store vehicle parts and components, tracks and components, and station parts and components.

2 ALTERNATIVES CONSIDERED

2.1 Background and Project Development

Sound Transit was created to build a regional mass transit system connecting the urban centers of King, Pierce, and Snohomish counties. Figure 2.1-1 shows the regional light rail system with planned extensions and the locations of existing and planned OMFs. In 1996, the first phase of investment in the mass transit system began with Sound Move, which included regional express buses, commuter rail, and light rail (Sound Transit 1996). Sound Transit began operating the first phase of the Link light rail system, Central Link, with the line from downtown Seattle south to SeaTac in 2009.

OMF Central was built in Seattle as part of the first phase of Central Link construction. OMF Central is used to clean, store, maintain, and deploy 104 LRVs for daily service. It provides facilities for vehicle storage, inspections, heavy maintenance and repair, interior vehicle cleaning, and exterior vehicle washing. Additionally, new LRVs are currently received, tested (while stationary and at low speed), and commissioned at this facility. Higher speed testing of new LRVs is currently conducted on the mainline tracks in Tukwila during off-peak hours and at night when the light rail system is closed.

OMF Central also accommodates administrative and operational functions, such as serving as a report base for LRV operators, as well as the Link Control Center. Included is a MOW building for maintenance and storage of spare parts for tracks, vehicle propulsion equipment, train signals, stations and other infrastructure. Other facility elements include employee and visitor parking, operations staff offices, maintenance staff offices, dispatcher workstations, security offices, training rooms, and areas with lockers, showers, and restrooms for both operators and maintenance personnel.

The second phase of investment in the region's mass transit system began with Sound Transit 2 in 2008 (Sound Transit 2008). Sound Transit 2 includes regional express bus and commuter rail services and 36 additional miles of light rail to form a 55-mile regional system. Sound Transit 2 extends light rail south to Kent/Des Moines and Federal Way (fully funded in Sound Transit 3), east to Redmond, and north to Lynnwood, and includes OMF East in Bellevue.

Sound Transit completed construction of OMF East in 2021 and began clearance testing for East Link in 2022. East Link will have a staggered opening; East Link Starter Line opened in spring 2024. When the East Link full line opens (forecasted in-service date of 2025), OMF East will be used to support up to 96 LRVs for daily service. It has facilities for vehicle storage, inspections, light maintenance and repair, interior vehicle cleaning, and exterior vehicle washing. It will also accommodate administrative and operational functions, such as serving as a report base for LRV operators. Included is a MOW building for maintenance and storage of spare parts for tracks, vehicle propulsion equipment, train signals, stations, and other infrastructure. Other facility elements include employee and visitor parking, operations staff offices, maintenance staff offices, dispatcher workstations, and areas with lockers, showers, and restrooms for both operators and maintenance personnel.

The third phase of investment began in 2016, with Sound Transit 3 (Sound Transit 2016a). In addition to bus, bus rapid transit, and commuter rail service expansion, Sound Transit 3 includes 62 new miles of light rail for a regional system reaching 116 miles. Sound Transit 3 extends light rail to Tacoma, Everett, south Kirkland, Issaquah, downtown Redmond, and the Seattle neighborhoods of West Seattle and Ballard.



Figure 2.1-1 Link System Future Expansion and OMF Site Locations

Sound Transit 3 calls for a total fleet (existing plus new) of approximately 460 LRVs. To meet Sound Transit 3's system expansion goals, Sound Transit needs two additional operations and maintenance facilities: one in both the North and South Corridors. The proposed OMF South project will satisfy the need for an OMF in the South Corridor and LRV testing to support system expansion.

2.1.1 OMF South Components

OMF sites are necessary throughout Sound Transit's light rail network to clean, store, maintain, and deploy LRVs (Figure 2.1-2).

OMF South is designed to accommodate three LRV types:

- Kinkisharyo: 62 LRVs are in the existing fleet. Each LRV is 95 feet long with 74 seats.
- Siemens S70: 152 LRVs are in the process of being delivered and tested. Each LRV is 95 feet long with 74 seats.
- New higher-capacity LRV: The new higher-capacity LRVs are anticipated to provide more seating and standing space and will carry about 5 to 10 percent more people (Sound Transit is in the process of selecting the new LRV model; no decision has been made at this time).

Sound Transit's light rail system runs on electricity supplied by a wire structure called the overhead catenary system; the dog-legged-shaped component that extends from the roof of the LRV to the overhead catenary system is called the pantograph. When contact is established, direct-current electricity from the wire is converted to alternating current for train propulsion.



Figure 2.1-2 Link Light Rail Vehicle

The OMF South project includes the following components:

- Runaround tracks
- Storage tracks sized for approximately 144 LRVs
- Lead tracks connecting the site to the mainline tracks
- Maintenance building with service lanes for vehicle maintenance, repair, carwash, cleaning, painting, spare parts storage, operations, and administration
- Yard area for outside storage
- MOW building for maintenance and storage of spare parts for tracks, vehicle propulsion equipment, train signals, and other infrastructure
- Training track that includes all the track installation configurations found in the Link system
- Link System-Wide Storage building for receiving and storing all parts of the Link light rail system, including LRV parts and components, MOW track and components, and Facilities station parts and components

- Traction power substations (TPSS) to boost the power to the overhead catenary system that powers the LRVs
- Offices, locker rooms, lunchrooms, and other spaces for employees, including meeting rooms that could serve multiple purposes, such as classroom space
- Auto/truck access points
- Employee and visitor parking
- Sound Transit nonrevenue vehicle parking

Depending on the alternative selected, the OMF South project could also include a test track to prepare new vehicles for service.

The proposed dimensions and configuration of the OMF are primarily driven by the space required for the runaround track. This track allows LRVs to enter and move around within the site. Vehicles can either go directly to the storage area or continue to the maintenance and/or wash bays for service and then return to the storage area directly without the operator changing ends of the train. The OMF size is also driven by the size of the operations and maintenance building, the number of tracks needed to store the LRVs, and the desire to locate the MOW building and the Link System-Wide Storage building outside the OMF track loops to allow for more storage capacity and easier access.

An OMF connects to the light rail system mainline tracks via lead tracks. The lead tracks allow LRVs to deploy from the OMF to the mainline tracks for daily operation and travel back to the facility nightly for vehicle maintenance. The length of these lead tracks depends on the distance from the OMF to the operating mainline tracks and will vary by alternative. Because two of the alternatives would be the southern terminus of the existing Link system until construction of the proposed Tacoma Dome Link Extension (TDLE), the site configurations would also include tail tracks, which are simply an extension of the mainline past the OMF South site to allow trains to access the Link system from the south if the northern lead tracks are out of service. Figure 2.1-3 shows the different types of tracks found in a typical OMF.

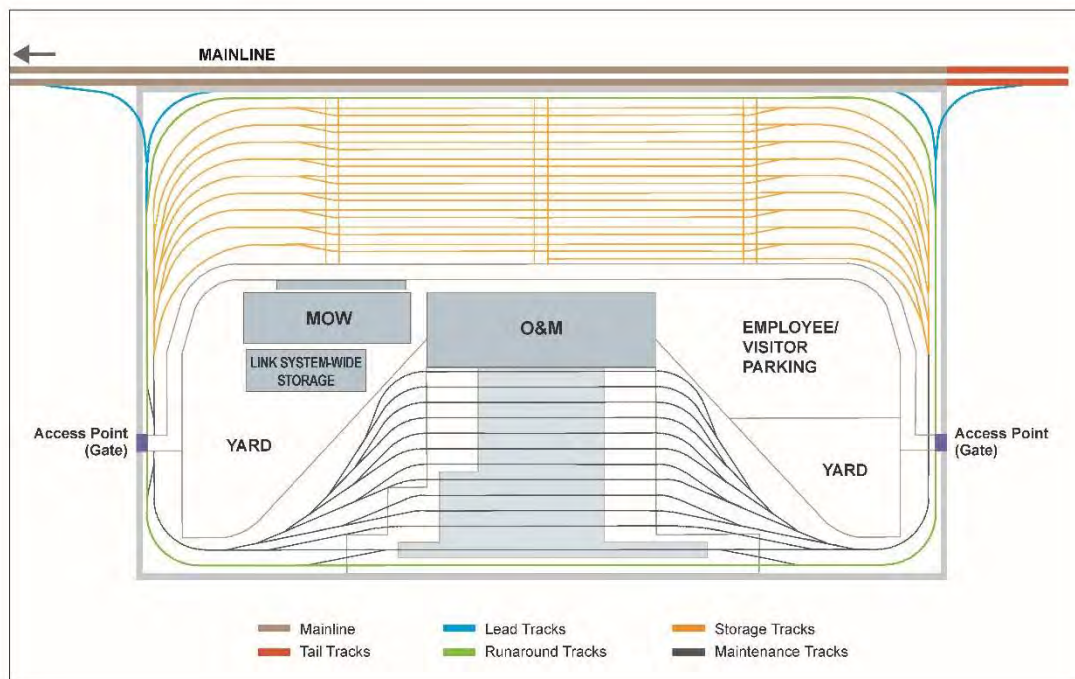


Figure 2.1-3 Typical OMF Schematic

2.1.2 OMF South Operations

The OMF South site operational program and functions do not vary between the build alternatives. The following describes how the proposed project would operate. There are three separate functions proposed for OMF South:

1. OMF building and yard for activities associated with the LRVs;
2. MOW and Facilities storage, workshop, and administration space; and
3. Link System-Wide Storage, an area dedicated to storage needs for the entire Link light rail system.

Some system-wide functions are planned at OMF South. Having these functions at OMF South would allow them to be in close proximity to the vehicle overhaul locations while also meeting existing system needs.

2.1.2.1 Hours

OMF South would operate 24 hours a day, 7 days a week. Approximately 610 staff would be distributed throughout the day at the site, but the largest concentration would be during the day shift, from 3:30 a.m. to 4 p.m. Employee arrival times would stagger throughout each shift. Table 2.2-1 lists staff calculations for all the functions at the site.

Trains receive cleaning and servicing between 1 a.m. and 5 a.m. Mainline tracks are also inspected during this time when no trains are on the tracks. This downtime is called the “nightly maintenance window.”

Table 2.2-1 OMF South Building/Yard, MOW, and Link System-Wide Storage Staff Calculations

	Day	Swing	Graveyard	Total
	3:30 a.m. – 4 p.m.	11 a.m. – 11:30 p.m.	6:30 p.m. – 7:30 a.m.	
Staff Totals	250	195	165	610

2.1.2.2 Light Rail Vehicle Operations and Maintenance

OMF South would be used to receive, test, commission, store, maintain, and deploy approximately 144 vehicles for daily service. The final number of LRVs maintained at this location will be determined in the Rail Fleet Management Plan update, currently underway by South Transit. OMF South would provide facilities for vehicle storage, inspections, maintenance and repair, interior vehicle cleaning, and exterior vehicle washing. Additionally, the facility would receive, test, and commission new LRVs for the entire light rail system.

Because new LRVs require testing at a variety of operating conditions, including running at top speed and testing acceleration and braking functions, depending on the alternative, OMF South would include a dedicated test track. During testing, up to eight one-car LRVs could make one roundtrip per hour for 4 hours during the daytime and 6 hours during the nighttime. Sound Transit currently uses the mainline revenue track to test vehicles at higher speeds at night, after service has ended (after midnight or 1 a.m.) and outside of maintenance and inspection times.

2.1.2.3 Maintenance of Way

MOW is defined as the upkeep and repair of a railroad's fixed property (such as track and bridges). While the OMF focuses on the LRVs, the MOW's focus is on the track and its corresponding electrical system, including signals and traction power (the electricity that powers the trains).

The MOW area within OMF South would include a large warehouse for equipment and supply storage, shop space, offices, and staff support areas. To train staff on track maintenance, the area would also include a training track, which would be at least 400 feet long and include all the possible track types and configurations found on Sound Transit's rail lines.

Various crews and superintendents (including Track, Right-of-Way, Signal, and Traction Power) would be stationed at OMF South.

2.1.2.4 Link System-Wide Storage

The Link System-Wide Storage building would include areas for storing, shipping, receiving, and supplying all parts for the Link light rail system, including LRV parts and components, MOW track and components, and Facilities station parts and components. There would be a dedicated staging and packaging area for items to be placed before storing or sending out to a Link light rail facility. There would also be office and administrative space.

2.1.2.5 Light Rail Vehicle Fleet Headways and Service Times

Table 2.2-2 includes information on headways by time of day taken from the draft Link light rail system operating plan for 2042. Headway is the amount of time between LRV arrivals at a stop. The draft operating plan assumes 5- to 6-minute peak headways for weekdays and 10- to 15-minute headways on Saturday and Sunday, once the planned light rail extensions under Sound Transit 3 are complete. This draft plan is subject to change.

Table 2.2-2 Draft Operating Plan for Link Light Rail

Service Period	Hours	Headway
Weekday Service		
Early Morning	5:00 a.m. to 6:00 a.m.	12 minutes
Morning Peak	6:00 a.m. to 8:30 a.m.	5–6 minutes
Midday	8:30 a.m. to 3:00 p.m.	10 minutes
Afternoon Peak	3:00 p.m. to 6:30 p.m.	5–6 minutes
Evening	6:30 p.m. to 10:00 p.m.	10 minutes
Late Night	10:00 p.m. to 1:00 a.m.	15 minutes
Saturday		
Early	5:00 a.m. to 8:00 a.m.	12 minutes
Base	8:00 a.m. to 10:00 p.m.	10 minutes
Late	10:00 p.m. to 1:00 a.m.	15 minutes
Sunday		
Early	6:00 a.m. to 8:00 a.m.	12 minutes
Base	8:00 a.m. to 10:00 p.m.	10 minutes
Late	10:00 p.m. to 12:00 a.m. (midnight)	15 minutes

2.2 Alternative Development and Scoping

OMF South alternatives underwent an extensive evaluation process prior to their identification for study in the 2021 SEPA Draft EIS. Beginning in early 2018, Sound Transit conducted early scoping followed by alternative development, including site identification, prescreening, and alternatives evaluation. In early 2019 several alternatives were presented to the public during SEPA scoping, and in May 2019 the Board identified three project alternatives for evaluation in the 2021 SEPA Draft EIS. The SEPA Draft EIS was published in March 2021, and Tribal, public, and agency comments were received. Based on the 2021 SEPA Draft EIS and comments received, the Board identified the South 336th Street Alternative as the Preferred Alternative for evaluation in this Final EIS, along with other alternatives, in December 2021 (Motion M2021-81). Please see Section 2.2.7 for additional detail on the environmental review process.

2.2.1 Early Scoping

In March 2018, Sound Transit published the Tacoma Dome Link Extension and Operations and Maintenance Facility South Early Scoping Information Report (Sound Transit 2018a). Early SEPA scoping was intended to initiate the public conversation before the start of environmental studies and was conducted for both the TDLE and OMF South projects concurrently. The public comment period for early scoping was from April 2 to May 3, 2018, during which Sound Transit asked for Tribal, public, and agency comments on the project's Purpose and Need statement, the TDLE "representative project alignment" and other alternative alignments, and alternative locations for an OMF in the South Corridor. Sound Transit received approximately 50 comments regarding the potential OMF South location, including suggestions for sites in Kent, Federal Way, Milton, Fife, and Tacoma.

Additional information regarding public outreach during the early scoping period is available in Appendix B, Public Involvement and Agency Coordination.

2.2.1.1 OMF South and Tacoma Dome Link Extension Relationship

TDLE has overlapping project elements with the OMF South Preferred and South 344th Street alternatives, which consists of about 1.4 to 1.8 miles of mainline track. However, the projects are independent of each other.

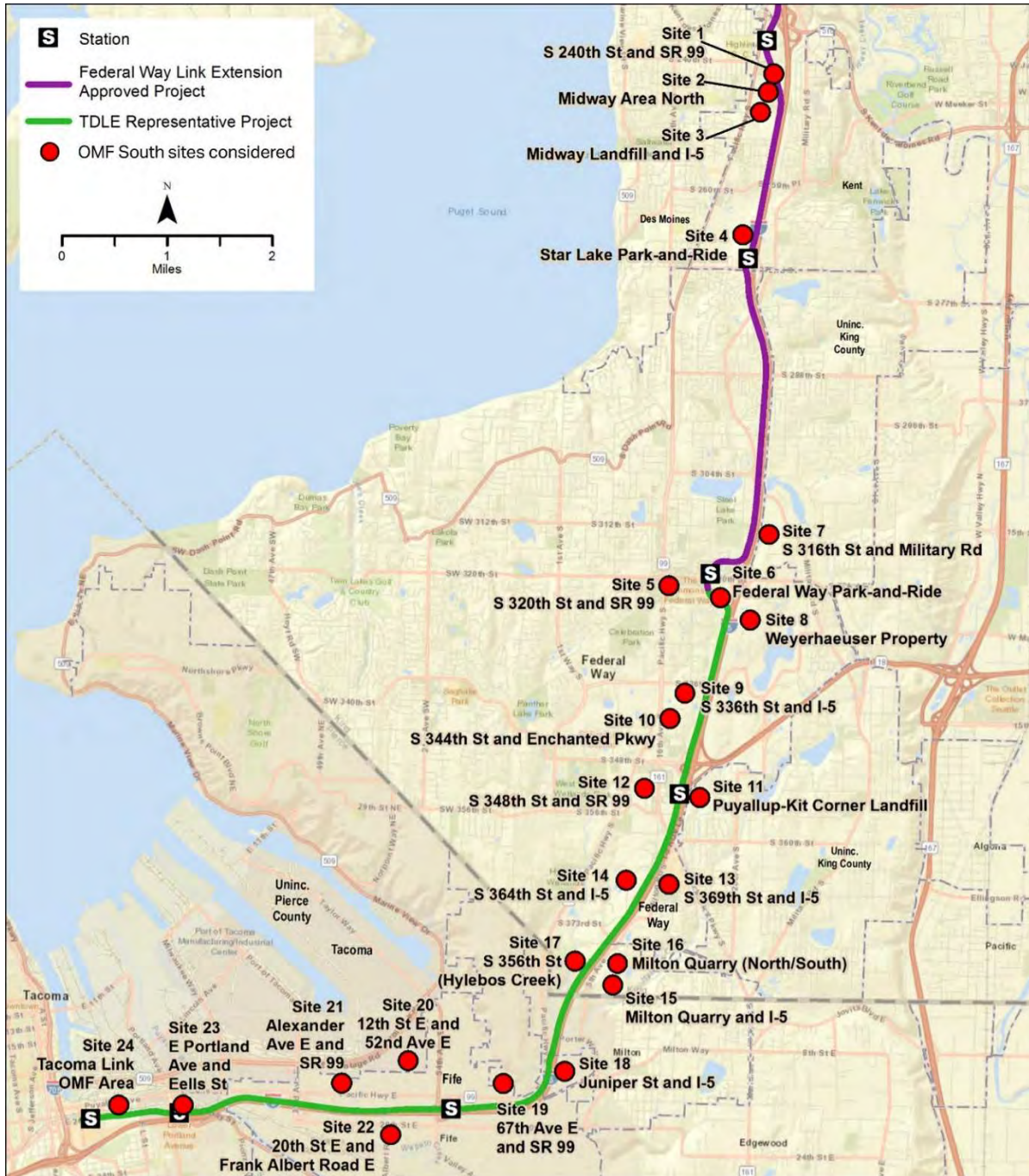
As described in Chapter 1, Purpose and Need for the Project, OMF South is needed to support Sound Transit's Link light rail system expansion identified in Sound Transit 3. OMFs do not exclusively serve individual light rail alignments. They are necessary and work together to operate the entire Link System. If TDLE were not constructed, OMF South would still be necessary to support other extensions of Link light rail planned under Sound Transit 3. It would provide additional operation and maintenance capacity, allowing Sound Transit to shift trains within the system to minimize overall operating costs. It would also provide greater efficiency and flexibility in overnight storage and maintenance of light rail vehicles and deployment of vehicles at the start of service each day.

TDLE is a major Link light rail service extension and could be built without OMF South. Without OMF South, TDLE could be designed to include facilities for overnight storage and limited maintenance functions. Further, Sound Transit could adjust service levels to adapt to a smaller fleet. FTA and Sound Transit are preparing a separate environmental impact statement to assess TDLE impacts.

2.2.2 Identifying Potential OMF South Sites

2.2.2.1 Site Identification

After early SEPA scoping, Sound Transit initiated the alternative development process, evaluating a total of 24 sites (Figure 2.2-1). These sites were identified through a series of internal workshops with Sound Transit staff and the consultant team and by the public during early SEPA scoping.



Source: Sound Transit 2018c

Figure 2.2-1 OMF South Sites Included in the Development of SEPA Alternatives

Sound Transit determined that OMF South should be designed to support the future extensions of the light rail system, including the extension to Tacoma, as envisioned in the agency’s Regional Transit Long-Range Plan (Sound Transit 2014) and should be sized to accommodate approximately 144 LRVs.

2.2.2.2 Prescreening

The prescreening evaluation used three criteria to evaluate the 24 sites identified during early SEPA scoping. Sound Transit developed the evaluation criteria based on the OMF South Purpose and Need statement.

- **Meets minimum size and shape.** This criterion evaluated each site’s ability to store and maintain at least 144 LRVs and accommodate a 5-acre storage site.
- **Roadway improvements.** This criterion considered whether selection of the site would preclude funded roadway improvements.
- **Regulatory constraints.** This criterion evaluated the potential for severe impacts to known cultural resources, wetlands, and other sensitive areas.

The evaluation criteria were applied to each site using a pass or fail method. If a site failed one criterion, it was not advanced to the next stage in the alternative development process. As a result, six sites were eliminated and two configuration options were added for each Midway Landfill site, for a total of 20 potential sites. The complete results of the pre-screening evaluation are summarized in the OMF South Pre-Screening Technical Memorandum (Sound Transit 2018c).

2.2.2.3 Alternatives Evaluation

The alternatives evaluation used a total of 21 criteria (Table 2.2-3), including environmental factors, operational and cost factors, and plan consistency, to evaluate the 20 sites that moved forward from prescreening to SEPA alternatives evaluation (Figure 2.2-1).

Table 2.2-3 Evaluation Criteria, Measures, and Methods

Criteria	Measures	Methods
Environmental Factors		
Current and Proposed Zoning	Suitability of current and proposed zoning/land use for use as an OMF.	Identify current and proposed zoning on the site using existing city and county land use and zoning maps, and proposed development plans adjacent to adopted land use plans.
Economic	Site located on properties with major economic activity generators.	Assessment of potential property impacts that have a major economic activity generator.
Property Impacts	Estimated level of property impacts (residential, commercial).	Assessment of potential property impacts from OMF South by property type.
Streets/Roads	Auto and truck access to the site from existing highway/arterial system.	Prepare site layouts that show the auto and truck access route to the OMF South site.
Neighborhood/Community	Impacts to major neighborhood/community cohesion and whether impacts will be equitably distributed.	Identify potential impacts to neighborhood/community cohesion.
Topography	Amount of grading required to accommodate facility.	Prepare site layouts that assess the relative amount of grading required for the OMF South site.

Table 2.2-3 Evaluation Criteria, Measures, and Methods (continued)

Criteria	Measures	Methods
Wetlands and Streams	Disruption to wetland and stream resources or priority habitat areas on or adjacent to the site.	Identify the disruptions to sensitive areas, including wetlands and streams, buffers, steep slopes, or sensitive species or habitat, using geographic information system (GIS) mapping and visual reconnaissance.
Floodplains and Critical Areas	Impacts to floodplains or other critical areas.	Identify floodplains and other critical areas using GIS mapping.
Parks, Trails, and Open Space	Impacts to parks, trails, or open space.	Identify potential impacts to parks, trails, or open space on or adjacent to the OMF South site using GIS mapping.
Historic/Archaeological	Impacts to historic, archaeological resources on or adjacent to the site.	Identify the impacts to National Register of Historic Places eligible historic and archaeological resources on or adjacent to the OMF South site using records search and general reconnaissance.
Hazardous Materials/Brownfields	Potential to impact sites with hazardous materials.	Identify potential for impacts to sites with hazardous materials releases.
Noise	Potential for impacts to noise-sensitive properties.	Number of noise-sensitive property types within Federal Transit Administration (FTA) noise impact screening distance of 350 feet for unobstructed noise generating areas of the site or connecting tracks.
Operational and Cost Factors		
Size/Configuration	A minimum site size of 33 acres able to store and maintain approximately 144 vehicles, plus an additional 5-acre storage area that includes a 30,000-square-foot building on or adjacent to the site.	Prepare conceptual site layouts that include building footprints, storage tracks, auto/truck access, employee and support vehicle parking, and a 5-acre storage area that includes a 30,000 square foot building on or adjacent to the site.
Maintenance Window	Impact on the nightly maintenance window of 1 a.m. to 5 a.m.	Estimate the impact in minutes on the maintenance window for the OMF South site based on information generated from the Operations Analysis.
LRV Site Access	LRV access to the site related to the complexity of the connection and the distance from the FWLE or TDLE representative alignment.	Identify the complexity and length of the yard lead and track connection to the OMF South sites.
Schedule Risk (Other than LRV Access)	Will the facility be able to receive and commission LRVs per ST3 Operations Analysis?	Identify potential site constraints such as property availability, access, or other logistical, physical, or regulatory factors that would affect the schedule for the facility to be ready to receive and commission LRVs per the ST3 Operations Analysis.
Operability	When the facility (OMF South) opens, will the site be connected to an activated line to allow vehicles to move around the system?	Identify the length of track required to connect the site to an activated line.
Operating Estimates	Order of magnitude operating estimates.	Assess the relative order of magnitude operating estimate for each site.
Capital Estimates	Order of magnitude preliminary capital estimates for the site footprint, 5-acre storage site, and lead track.	Develop order of magnitude preliminary capital estimates for each site, 5-acre storage site, and lead track to the representative alignment.
Property Value	Assessed value plus escalation factors for each property affected by the project footprint of the facility.	Current county property values plus escalation factors for parcels that need to be acquired in order to construct the facility.

Table 2.2-3 Evaluation Criteria, Measures, and Methods (continued)

Criteria	Measures	Methods
Plan Consistency		
Sound Transit Regional Transit Long-Range/ST3 Plan	Consistent with the Sound Transit Regional Transit Long-Range Plan and ST3 Plan.	Compare site with Sound Transit Regional Transit Long-Range Plan and ST3 Plan for consistency and evaluate whether the site is technically and financially feasible to build, operate, and maintain.

Source: Sound Transit 2018c

As a result of the alternatives evaluation, Sound Transit identified six sites to carry forward to the SEPA scoping process. The nine southernmost sites, including all of those in Pierce County, were eliminated because they were not close enough to an operating light rail mainline track. Sound Transit also found that potential sites farther than 1.5 miles south of the Federal Way Link Extension (FWLE) terminus in Federal Way would not be able to efficiently connect to an operating light rail mainline track when the OMF South opens. Another five sites were eliminated because they performed poorly in other criteria. The complete results of the alternatives evaluation are summarized in the OMF South Alternatives Evaluation Technical Memorandum (Sound Transit 2019c).

2.2.3 SEPA Scoping

Sound Transit published the scoping notice for the EIS in the SEPA Register on February 19, 2019. The SEPA Register is a statewide searchable database where anyone can search and download NEPA and SEPA documents submitted to Ecology to allow easy access to the public, project proponents, local governments, and other agencies. The purpose of scoping is to narrow the focus of the SEPA EIS to significant environmental issues, to eliminate insignificant impacts from detailed study, and to identify a reasonable range of alternatives (Ecology 2003). Sound Transit also asked for comments regarding the project’s Purpose and Need statement.

Sound Transit also published the OMF South Scoping Information Report (Sound Transit 2019d) to share information about the project and potential alternatives with Tribes, agencies, and the public. The Information Report described the six sites considered during the SEPA scoping process (Figure 2.2-2):

- S 240th Street and SR 99
- Midway Landfill and I-5
- Midway Landfill and SR 99
- S 316th Street and Military Road
- S 336th Street and I-5
- S 344th Street and I-5

During the public comment period (February 19 to April 1, 2019), Sound Transit accepted comments from Tribes, agencies, and the public and conducted two public scoping meetings, an agency scoping meeting, and an online open house (see Appendix B, Public Involvement and Agency Coordination). The OMF South Scoping Summary Report summarizes the comments received during the SEPA scoping process and identified the next steps for the project (Sound Transit 2019e).

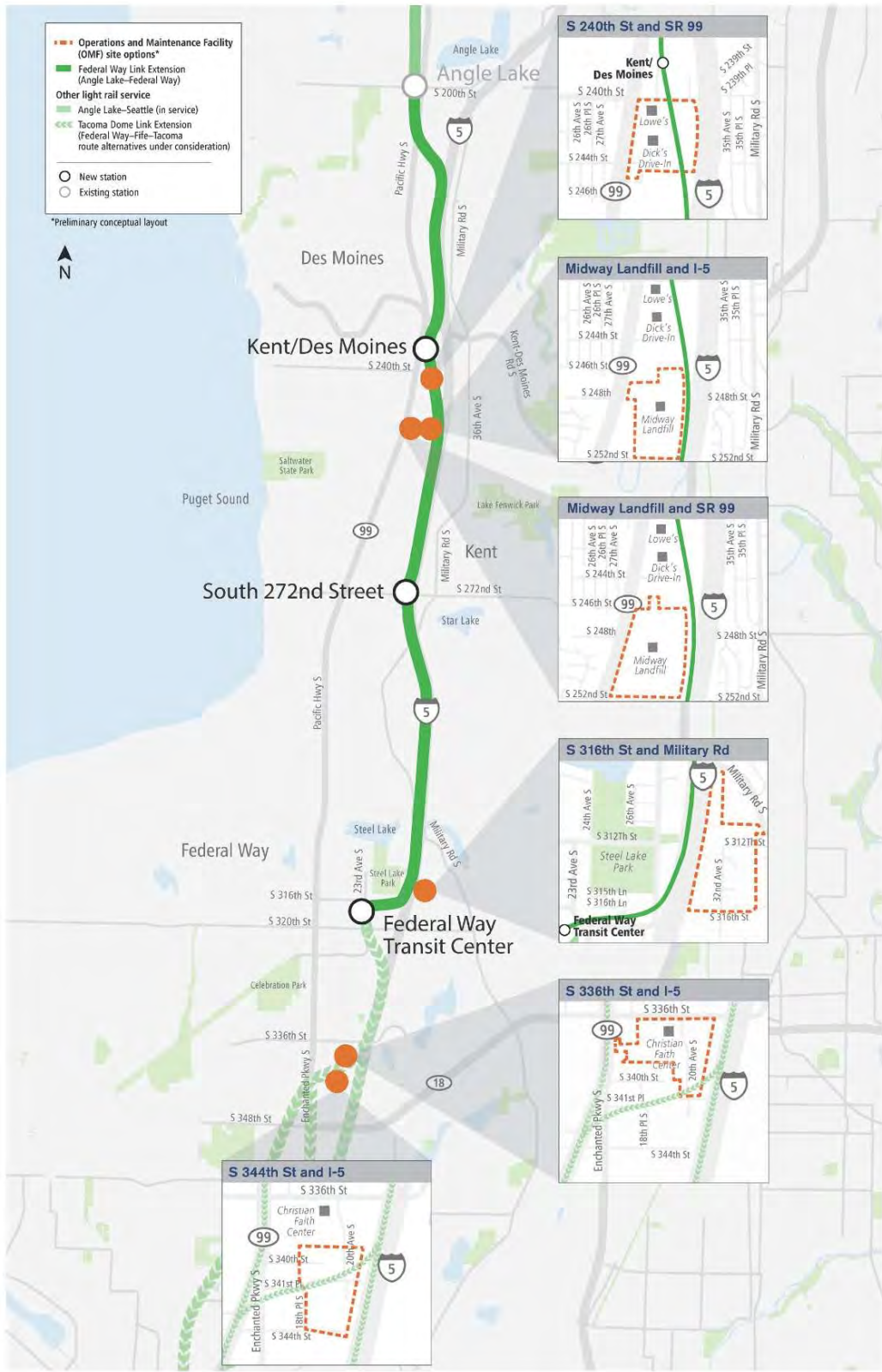


Figure 2.2-2 SEPA Scoping Alternatives

Most public comments concerned the S 240th Street and SR 99 site, which became known as the Dick's Drive-In alternative (this alternative would have displaced the business). Many of those commenters preferred one, both, or either of the Midway Landfill sites and asked Sound Transit to remove the S 240th Street and SR 99 site from further consideration.

2.2.3.1 Alternatives Proposed During Scoping but Not Carried Forward

During the SEPA scoping process, some commenters suggested specific additional sites be considered. A total of nine sites were mentioned:

- SeaTac – North of the Angle Lake Station, west of 28th Avenue S between S 200th Street/ S 190th Street
- Kent/Des Moines area – Area along I-5 in Des Moines that is the current location of the Silverwood Park Apartments
- Kent Highlands Landfill
- Kent – Vacant parcel on SR 99 across from Fred Meyer in Kent
- Kent/Federal Way – Area between I-5/SR 99 and S 260th Street/S 272nd Street
- Kent Valley near S 272nd Street
- Auburn Yard adjacent to the Sounder tracks
- The Commons at Federal Way on S 320th Street
- South Federal Way – Wetland between Todd Beamer High School and SR 99 in Federal Way

Sound Transit conducted an internal review of the suggested sites using the criteria listed in Table 2.3-1 to determine whether any were viable alternatives. Sound Transit determined that none were viable due to a number of reasons, including size, potential impacts to current light rail operations, and potentially severe impacts to sensitive areas.

2.2.4 Board Identification of Site Alternatives

In May 2019, the Board adopted Motion M2019-50, which identified three site alternatives to study in the OMF South 2021 SEPA Draft EIS: Midway Landfill and I-5, S 336th Street and I-5, and S 344th Street and I-5. These alternatives were renamed Midway Landfill Alternative, South 336th Street Alternative, and South 344th Street Alternative, respectively, and are described in more detail below in Section 2.3, Project Alternatives. The remaining three sites — S 240th Street and SR 99, Midway Landfill and SR 99, and S 316th Street and Military Road — were not carried forward. The Board's action was based on the project's Purpose and Need statement, OMF site requirements and screening criteria during the alternative development process, and comments received during the scoping period. In July 2019, the Board adopted Motion M2019-75 for TDLE, identifying a preferred alternative that narrowed the location of the mainline tracks to an alignment that parallels I-5 in the area south of the Federal Way Downtown Station to the South 336th Street and South 344th Street alternative sites.

2.2.5 Refinement of Alternatives for the 2021 SEPA Draft EIS

At the beginning of the site identification process, Sound Transit developed a generic 1,550-foot by 930-foot OMF layout template that it used to test-fit potential sites. After including setbacks, landscaping, environmentally critical areas, roadways, lead track connections to the mainline tracks, and the 5-acre Link System-Wide Storage facility, it appeared that a site of 40 to

50 acres would be large enough to meet the needs of OMF South. However, as project development continued, and the programming requirements of OMF South were more fully refined to develop the 2021 SEPA Draft EIS alternatives, it became apparent that larger sites were necessary. For example, additional spaces for LRV repair and cleaning were added to the initial design based on lessons learned at OMF Central and from the design of OMF East. Sound Transit also sought to minimize impacts to surrounding neighborhoods by maximizing setbacks to create buffers between the sites and adjacent properties.

During August and September 2019, Sound Transit confirmed that these additional requirements should be incorporated. The increased program requirements meant larger sites; the three sites studied in the 2021 SEPA Draft EIS ranged from 59 to 68 acres.

2.2.6 2021 SEPA Draft EIS Publication and Board Identification of Preferred Alternative

The SEPA Draft EIS was published in March 2021 with a public comment period extending from March 5 to April 19, 2021. After considering the 2021 SEPA Draft EIS and the comments received, the Board identified the South 336th Street Alternative as the Preferred Alternative for evaluation in the Final EIS (Motion M2021-81, December 2021). The Preferred Alternative is evaluated along with the two other alternatives in this Final EIS.

2.2.7 Federal Environmental Review Process

After publication of the 2021 SEPA Draft EIS, Sound Transit identified potential funding opportunities with FTA. Subsequently, FTA issued a notice of intent to prepare an EIS in the Federal Register on July 19, 2023. This was followed by a 30-day comment period.

To reduce duplication of process, FTA and Sound Transit prepared a Draft EIS as a combined NEPA/SEPA document. Since a Draft EIS under SEPA was already published, the document served as a Draft EIS under NEPA and a Supplemental Draft EIS under SEPA. This document has been prepared under both SEPA and NEPA and is the Final EIS.

2.2.8 Design Updates

After publication of the 2021 SEPA Draft EIS and the December 2021 Board action, Sound Transit advanced the design for OMF South. Design updates were primarily driven by operational needs, comments received during the 2021 SEPA Draft EIS comment period, and coordination with the city of Federal Way.

One design update that Sound Transit identified is the need for a test track to allow LRVs to be tested without using the mainline tracks. Sound Transit currently relies on accessing the mainline revenue track at night to test vehicles at higher speeds after service has ended and outside of maintenance and inspection times. As the existing track, structures, and systems infrastructure grows and ages, the need for night-time maintenance will likely increase, reducing the available windows for vehicle testing and commissioning. A dedicated test track would allow Sound Transit to test trains both during the day and overnight, reducing the amount of time it takes to test vehicles and improving employee safety by keeping testing off the mainline.

For the Preferred and South 344th Street alternatives, the test track would run east of and parallel to the mainline tracks from S 324th Street to just south of S 336th Street. This widens the permanent footprint of the mainline tracks from the 2021 SEPA Draft EIS by approximately 15 feet where the tracks are parallel and slightly wider at the ends of the test track. There would also be an access road that would parallel the mainline track and test track alignment through

Belmor Mobile Home Park (Belmor), along with a test track facility separate from the OMF South site. This 1,000-square-foot building would include a breakroom and facilities for employees working at the test track.

In addition to the test track, Sound Transit revised the site configuration for the Preferred Alternative to address Federal Way street vacation requirements (a street vacation relinquishes the public's right to use a street and returns it to private property) and local design standards as well as to address other developmental and operational needs. The design updates for the Preferred Alternative included the following:

- The main site entrance was moved from SR 99 to S 341st Place, which slightly changes the expected traffic circulation patterns.
- 18th Place S was extended approximately 1,450 feet to connect S 340th Street and S 336th Street as a replacement for the removal of 20th Avenue S. The extended street would include a bike/pedestrian trail to provide public amenities.
- 21st Avenue S was extended approximately 650 feet to connect to S 344th Street to avoid creating a nonconforming cul-de-sac.
- Frontage improvements (including road widening) were added on the south side of S 336th Street to meet city requirements.
- The OMF South site was expanded to the southwest to provide more space for buildings and yard area.
- The OMF South site and internal track configuration were modified to a parallelogram shape to allow for a wider stream and wetland corridor on the east side of the OMF between the site and I-5.
- Existing culverts that carry the West Fork Hylebos Creek Tributary under S 336th Street and the East Fork Hylebos Creek Tributary under S 344th Street would be replaced.

Design of the Preferred Alternative is likely to continue to evolve as Sound Transit works to minimize and mitigate environmental impacts. No revisions have been made to the site designs for the South 344th Street or Midway Landfill alternatives since the 2021 SEPA Draft EIS.

2.3 Project Alternatives

2.3.1 No-Build Alternative

The No-Build Alternative represents the transportation system and environment as they would exist without the proposed project and provides a benchmark against which the build alternatives can be compared.

The No-Build Alternative assumes other planned projects would be built. This includes public and private projects as well as the other Link light rail system improvements listed in Sound Transit 3, such as extensions to West Seattle, Ballard, Everett, downtown Redmond, Issaquah, and Tacoma. The No-Build Alternative also assumes that the proposed North Corridor OMF would be constructed. Under the target schedule for Sound Transit's System Expansion Plan, each of these projects would be constructed and operating by 2042.

The Sound Transit 3 Plan assumed 460 LRVs would be needed to operate the system at the planned service levels. After the opening of University Link, this number increased to 496 LRVs to account for higher than anticipated ridership and additional capacity for a future extension of the light rail spine to Tacoma Mall. Under the No-Build Alternative, operations and maintenance functions for the entire system would be at the existing OMF Central, the existing OMF East in

Bellevue, and the proposed OMF in the North Corridor. The three facilities would have a combined capacity to support and store 352 LRVs, which is 144 fewer than the number needed to operate the system at the planned service levels.

Under the No-Build Alternative, impacts from the Sound Transit 3 projects listed above would still occur. As the FWLE and TDLE projects are within the study areas for the OMF South project alternatives, there are impacts that may be similar or that overlap with those of OMF South. FWLE is under construction with a forecasted in-service date of 2026. The impacts of FWLE have been addressed in the Federal Way Link Extension Final Environmental Impact Statement (Sound Transit 2016b). TDLE is currently undergoing environmental review under NEPA and SEPA by FTA and Sound Transit. The Tacoma Dome Link Extension Draft Environmental Impact Statement is expected to be published in mid-2024, with a forecasted in-service date of 2035.

As described in Section 2.2.4, Board Identification of Site Alternatives, the Board identified a preferred alternative that narrowed the location of the TDLE mainline tracks to an alignment that parallels I-5 south of the Federal Way Downtown Station. As a result, the mainline track alignment for the OMF South Preferred and South 344th Street alternatives south of the Federal Way Downtown Station are the same as the mainline track alignment proposed for TDLE. Thus, impacts from the mainline tracks would be primarily the same between the two projects.

For the purposes of this Final EIS, the analysis of the No-Build Alternative is generally based on the expected conditions in 2042, which is the future design year for the project. The year 2042 represents the first year after completion for many of the Sound Transit 3 projects. Due to the realigned capital program (Resolution R2021-05, August 2021) completion of some Sound Transit 3 projects may be delayed past 2042; however, 2042 provides a common future analysis year for forecasting ridership and determining potential impacts to air, noise, transportation, and other environmental elements from Sound Transit 3 projects.

The environmental impacts associated with FWLE and TDLE are considered part of the No-Build Alternative, along with other planned projects in the OMF South study areas. The Final EIS assumes that one of the TDLE build alternatives would be constructed with mainline tracks in the same location as described for the Preferred and South 344th Street alternatives. Under the No-Build Alternative, the mainline track could be constructed later in time.

2.3.2 Build Alternatives

Build alternatives evaluated in this Final EIS include the South 336th Street Alternative (the Preferred Alternative), the South 344th Street Alternative, and the Midway Landfill Alternative (Figure 2.3-1). Appendix C, Conceptual Design Drawings and Engineering Information, includes preliminary engineering design drawings of each of the alternatives. Since publication of the 2021 SEPA Draft EIS, the design of the Preferred Alternative has been advanced to between the 10 and 30 percent design level.

The Preferred Alternative would require the construction of approximately 1.4 miles of mainline tracks, and the South 344th Street Alternative would require approximately 1.8 miles of mainline tracks to connect the FWLE terminus to the OMF South facility (Figure 2.3-2). The Midway Landfill Alternative is adjacent to FWLE and would connect by lead tracks directly to the FWLE mainline tracks. For the Preferred and South 344th Street alternatives, the mainline tracks connecting those sites to the FWLE terminus would later also be used as TDLE mainline tracks if a proposed TDLE build alternative opens for service. The connecting section of mainline tracks would be constructed for the OMF South project as this facility would open several years before TDLE begins to serve the regional system.

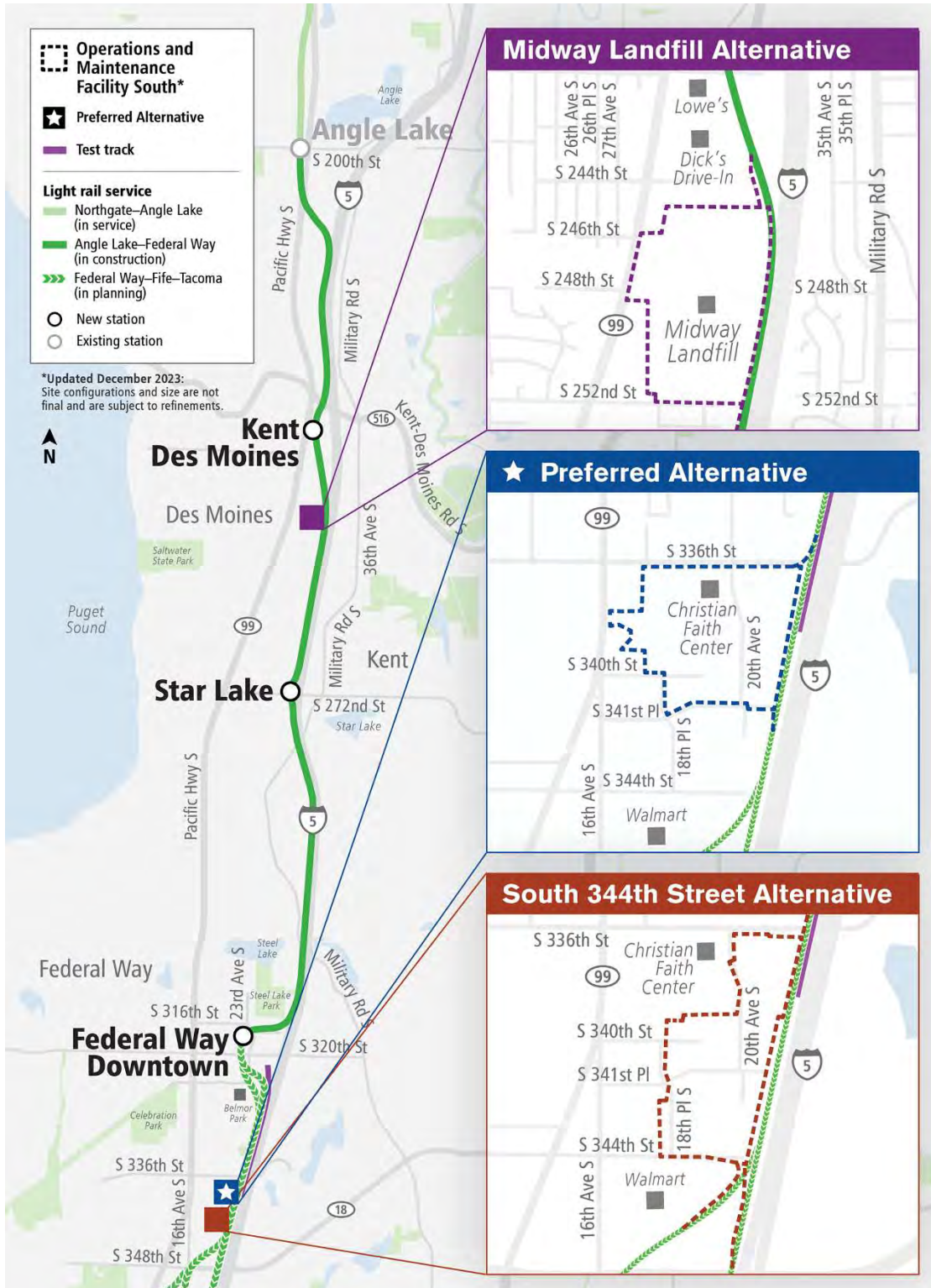
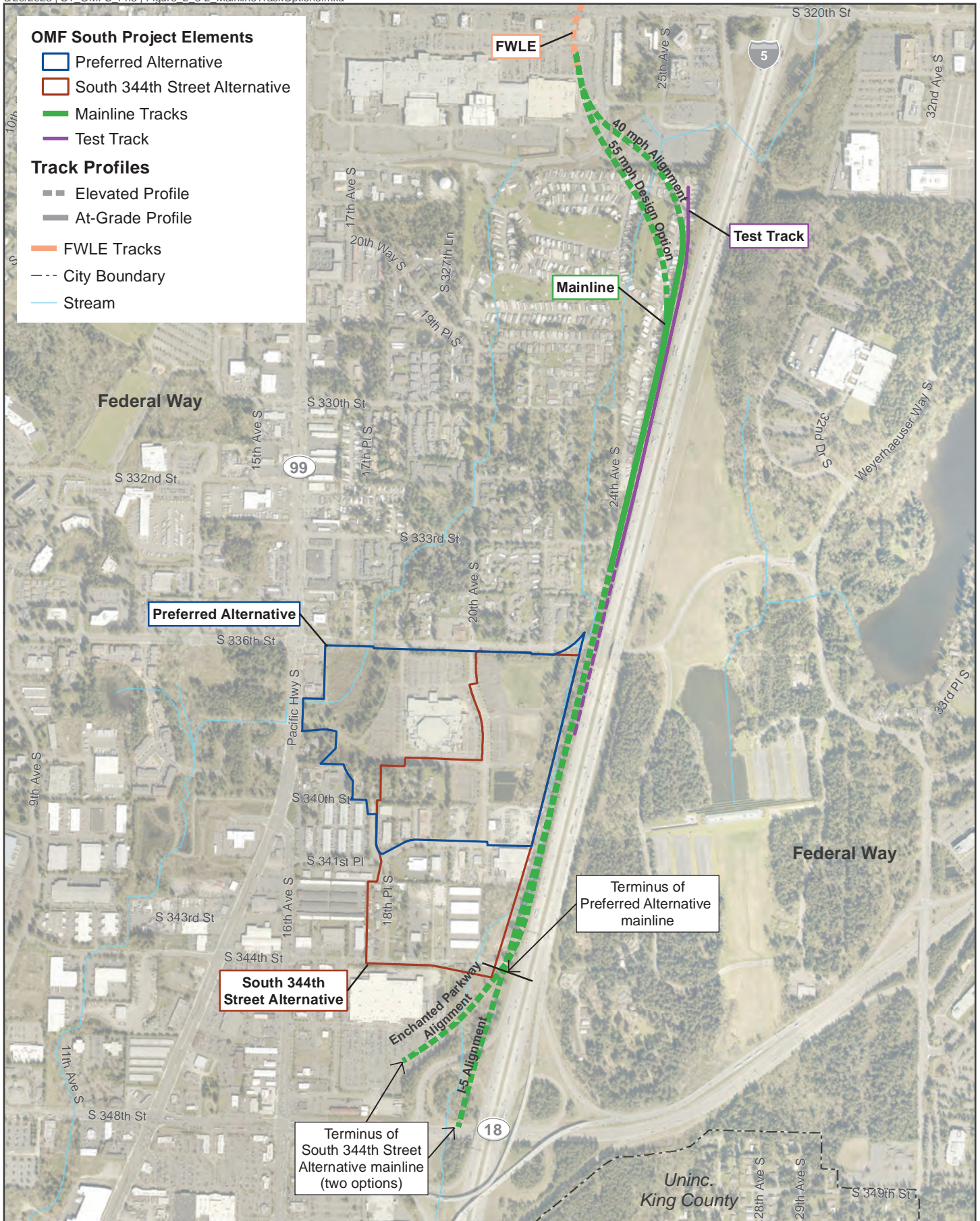
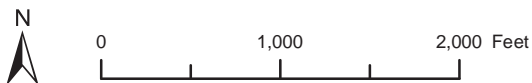


Figure 2.3-1 Project Alternatives



Data Sources: King County; Cities of Des Moines, Federal Way, Kent (2019).

FIGURE 2.3-2
Mainline Track Options
Preferred and South 344th Street Alternatives



The Preferred and South 344th Street alternatives would also include a test track adjacent to the mainline tracks. A test track adjacent to the Midway Landfill alternative would not be feasible because of the varying grades of the existing mainline tracks. Thus, under the Midway Landfill alternative, the analysis assumes LRV testing would continue on the mainline tracks.

2.3.2.1 South 336th Street Alternative (Preferred Alternative)

The Preferred Alternative is in Federal Way mainly between S 336th Street and S 341st Place and between I-5 and SR 99.

Mainline Tracks

The Preferred Alternative requires approximately 1.4 miles of connecting mainline tracks from the Federal Way Downtown Station to the site, including a tail track. These tracks would serve as revenue mainline tracks if TDLE is constructed as proposed.

There are two alignments for the connecting mainline tracks that have different design speeds for the curve near S 324th Street: the 40 mph Alignment and the 55 mph Design Option (Figure 2.3-2). The Preferred Alternative includes the 40 mph Alignment (Figure 2.3-3). Both the Preferred Alternative and Design Option have elevated tracks from the Federal Way Downtown Station to near S 328th Street and south of S 330th Street to the OMF South facility. The tracks would be at-grade between S 328th Street and S 330th Street. Also included as part of the mainline track structure would be TPSS, signal/communication bungalows, and end-of-track protection.

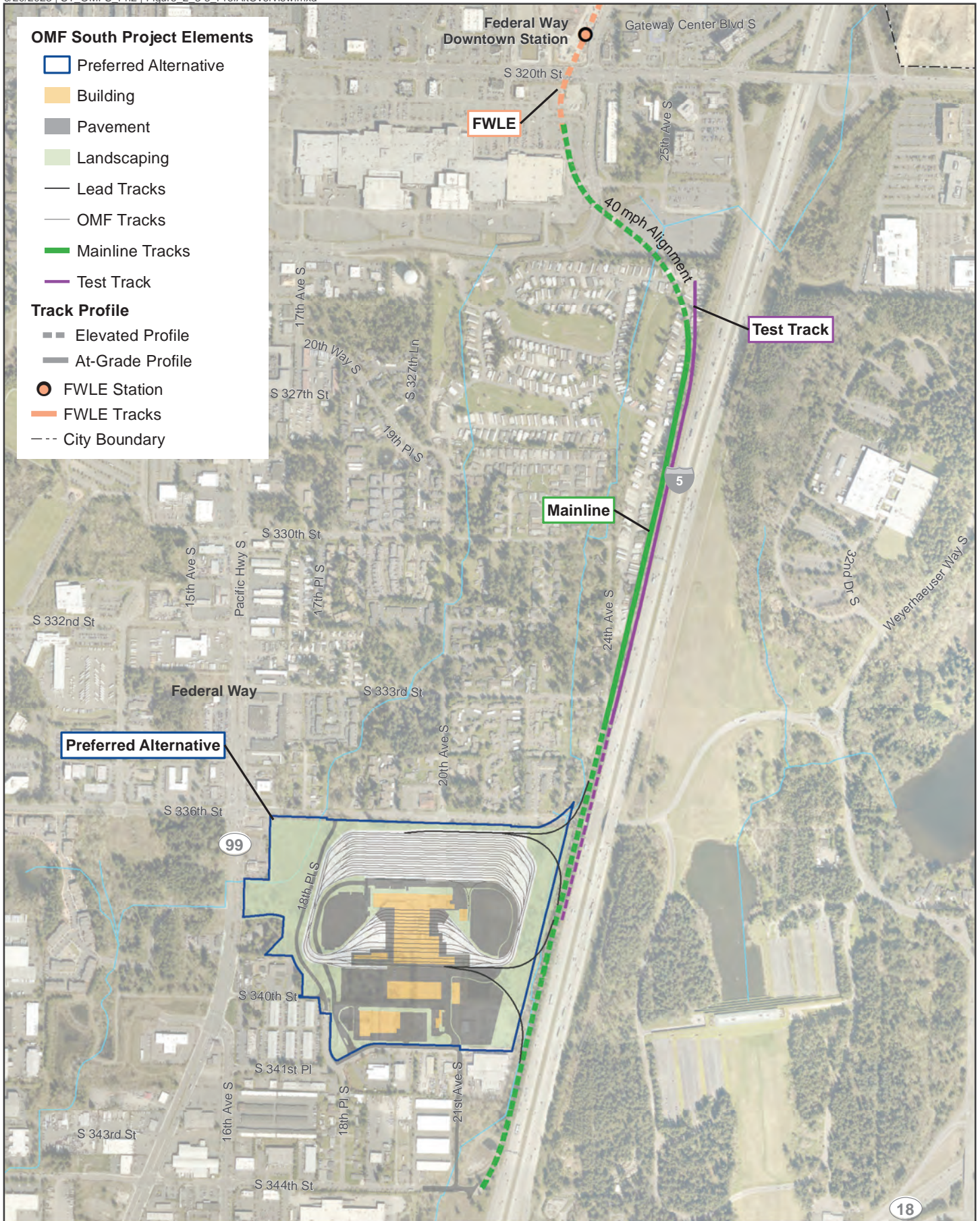
Tail tracks would extend approximately 1,000 feet past the southeast corner of the OMF South site. The tail tracks would allow trains to access the Link system from the south if the northern lead tracks were out of service. Train speeds would be less than 5 mph because the trains would be coming to a stop to allow them to reverse direction and head north.

In addition to the mainline and tail tracks, a 0.9-mile test track would run parallel to the east side of the mainline tracks from S 324th Street to just south of S 336th Street. The test track would be at the same elevation as the mainline tracks, except for the north end of the track near S 324th Street, where the test track would be at grade and the mainline tracks would be elevated. A small (1,000-square-foot) building near the test track would include a breakroom and facilities for employees.

OMF South Site

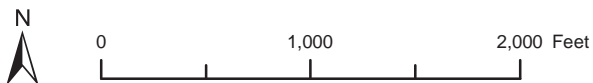
The Preferred Alternative site is approximately 66 acres. It includes the OMF building, the MOW building, the Link System-Wide Storage building, storage tracks, parking, training tracks, and yard areas. There would be approximately 480 parking spaces, including spaces for employees, visitors, accessible parking, and nonrevenue Sound Transit vehicles. The yard area would be approximately 6.7 acres. Figure 2.3-4 shows a conceptual layout (note that storage tracks are labeled OMF Tracks in the figure).

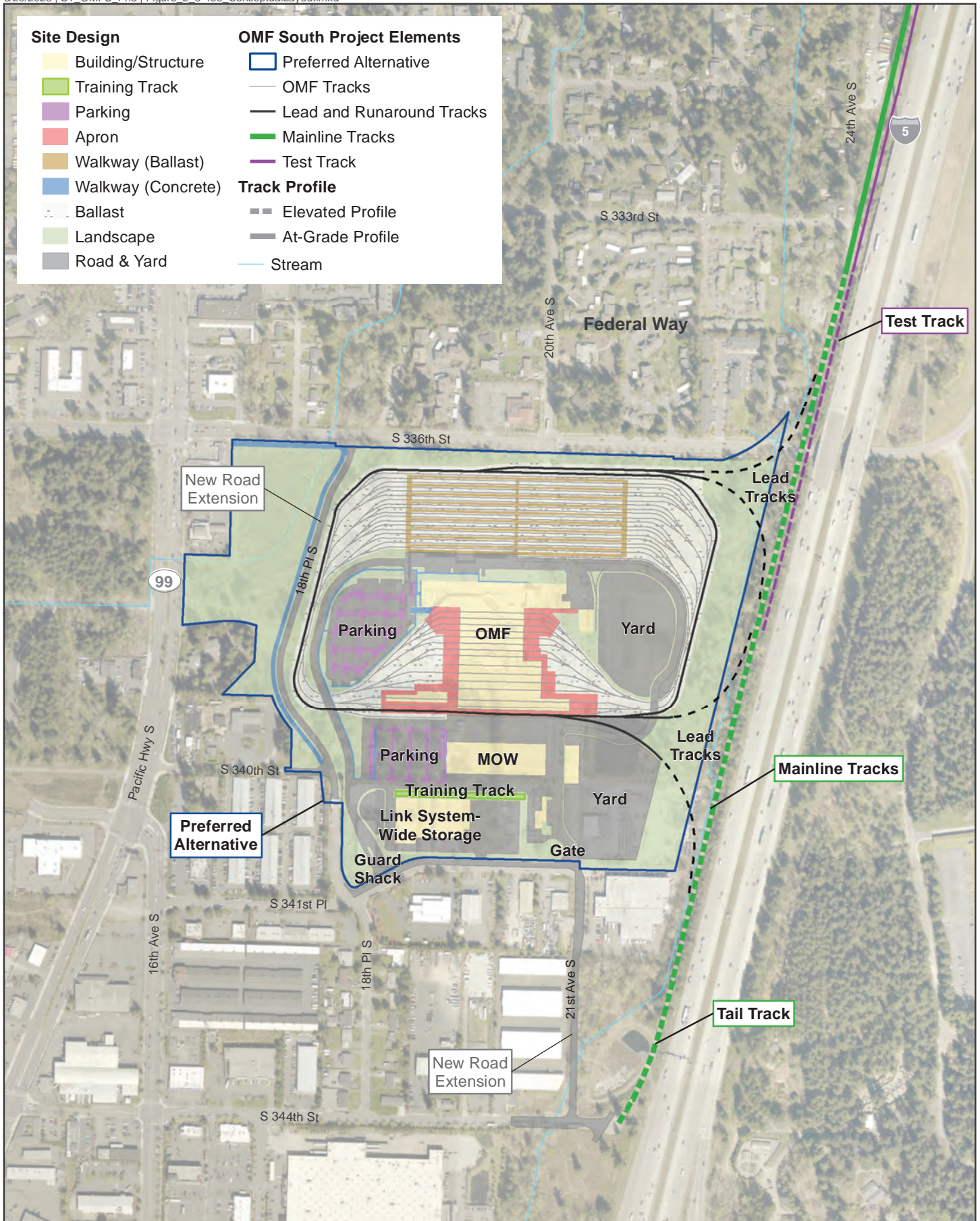
Lead tracks would allow LRVs to access the mainline tracks. Two elevated lead tracks would extend from the northeast corner of the site to the mainline tracks and would each be approximately 800 feet long. Similarly, two elevated lead tracks, each approximately 1,000 feet long, would extend from the southeast corner of the site connecting to the tail tracks.



Data Sources: King County; Cities of Des Moines, Federal Way, Kent (2019).

FIGURE 2.3-3
Preferred Alternative Site and
Connecting Mainline Track





Data Sources: King County; Cities of Des Moines, Federal Way, Kent (2019).

FIGURE 2.3-4
 Conceptual Layout
 Preferred Alternative
 OMF South



The Preferred Alternative would include a replacement for 20th Avenue S along the west side of the site that would extend 18th Place S from S 336th Street to S 340th Street. Additionally, 21st Avenue S would be extended south to a new intersection with S 344th Street. The cul-de-sac at the eastern end of S 344th Street would move west to avoid the new tail tracks. If the Preferred Alternative is selected to be built, Sound Transit would continue to explore site designs to minimize ecosystem impacts, which could include modifying the locations of buildings, track, and 18th Place South within the site boundaries. Appendix K contains a discussion of a potential Preferred Alternative design refinements that could reduce ecosystem impacts.

2.3.2.2 South 344th Street Alternative

The South 344th Street Alternative is in Federal Way between S 336th Street and S 344th Street and between I-5 and 18th Place S.

Mainline Tracks

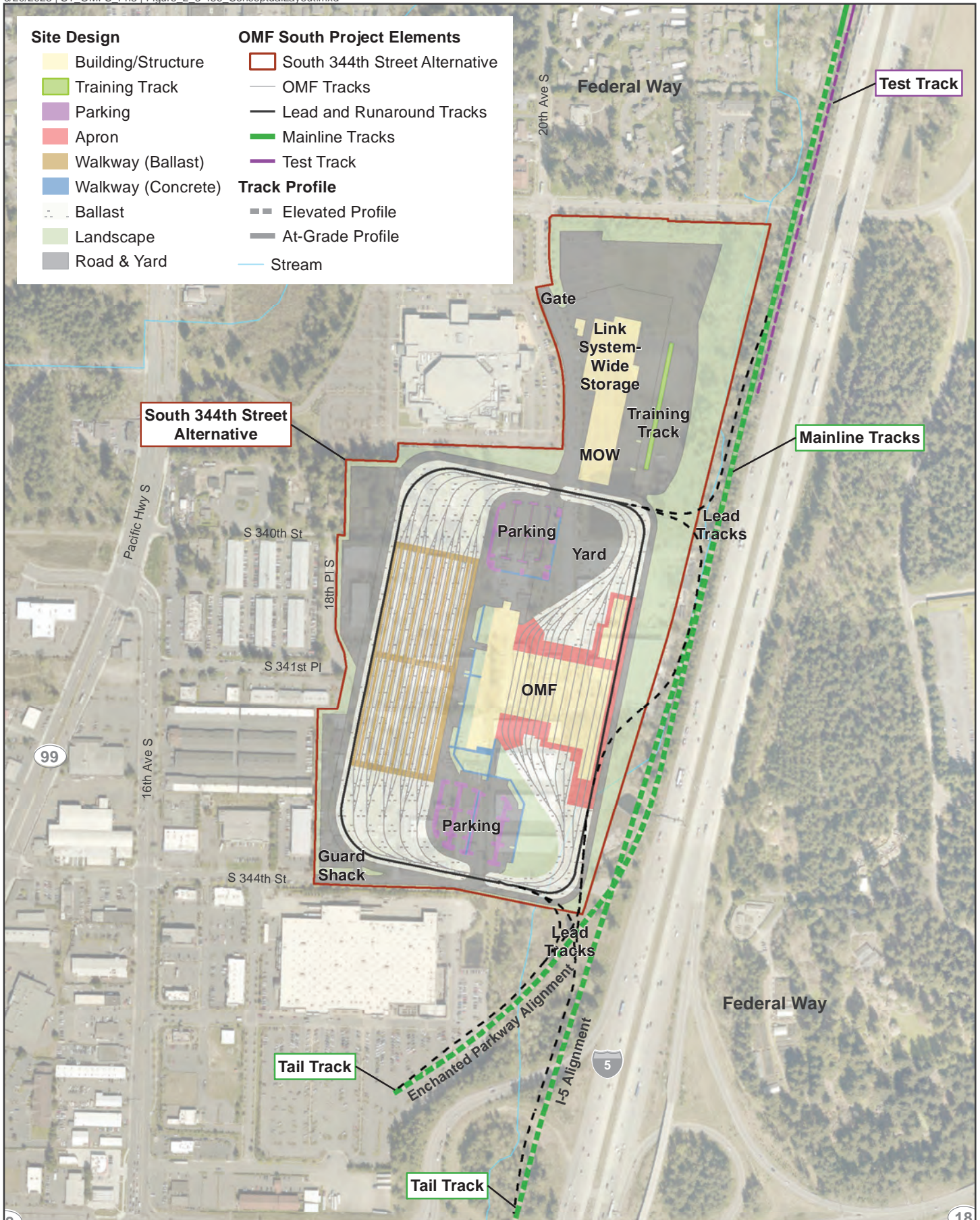
The South 344th Street Alternative requires approximately 1.8 miles of connecting mainline tracks from the Federal Way Downtown Station to the site, including a tail track. As with the Preferred Alternative, these tracks would also serve as revenue mainline tracks if TDLE is constructed as proposed. The 40 mph Alignment (Preferred) and the 55 mph Design Option are the same as described for the Preferred Alternative. The South 344th Street Alternative also includes a test track and a test track facility that would be the same as described for the Preferred Alternative.

As with the Preferred Alternative, tracks would extend past the southeast corner of the site to serve as tail tracks. These tail tracks would allow trains to access the Link system from the south if the northern lead tracks were out of service. Train speeds would be less than 5 mph because the trains would be coming to a stop to allow them to reverse direction and head north. There are two options for the South 344th Street Alternative tail tracks that correspond with design alternatives for TDLE: the Enchanted Parkway alignment and the I-5 alignment. Both options are completely elevated, with the Enchanted Parkway alignment extending approximately 1,100 feet south of the site and the I-5 alignment extending approximately 1,400 feet south of the site.

OMF South Site

The South 344th Street Alternative site is approximately 64 acres. It includes the OMF building, the MOW building, the Link System-Wide Storage building, storage tracks, training tracks, parking, and yard areas. There would be approximately 480 parking spaces, including spaces for employees, visitors, accessible parking, and spaces for nonrevenue Sound Transit vehicles. The yard area would be approximately 8.2 acres. Figure 2.3-5 shows a conceptual layout.

The site would also require lead tracks for vehicles to access the mainline tracks. The elevated lead tracks would leave the northeast corner of the site and be approximately 1,100 feet long. Similarly, approximately 1,600 feet of elevated lead tracks would leave the southeast corner of the site to connect to the mainline tail tracks for the Enchanted Parkway alignment; approximately 1,300 feet of elevated lead tracks would be needed to connect the site to the mainline tail tracks for the I-5 alignment.



Data Sources: King County; Cities of Des Moines, Federal Way, Kent (2019).

FIGURE 2.3-5
 Conceptual Layout
 South 344th Street Alternative
 OMF South



2.3.2.3 Midway Landfill Alternative

The Midway Landfill Alternative is in Kent between S 246th Street and S 252nd Street and between I-5 and SR 99.

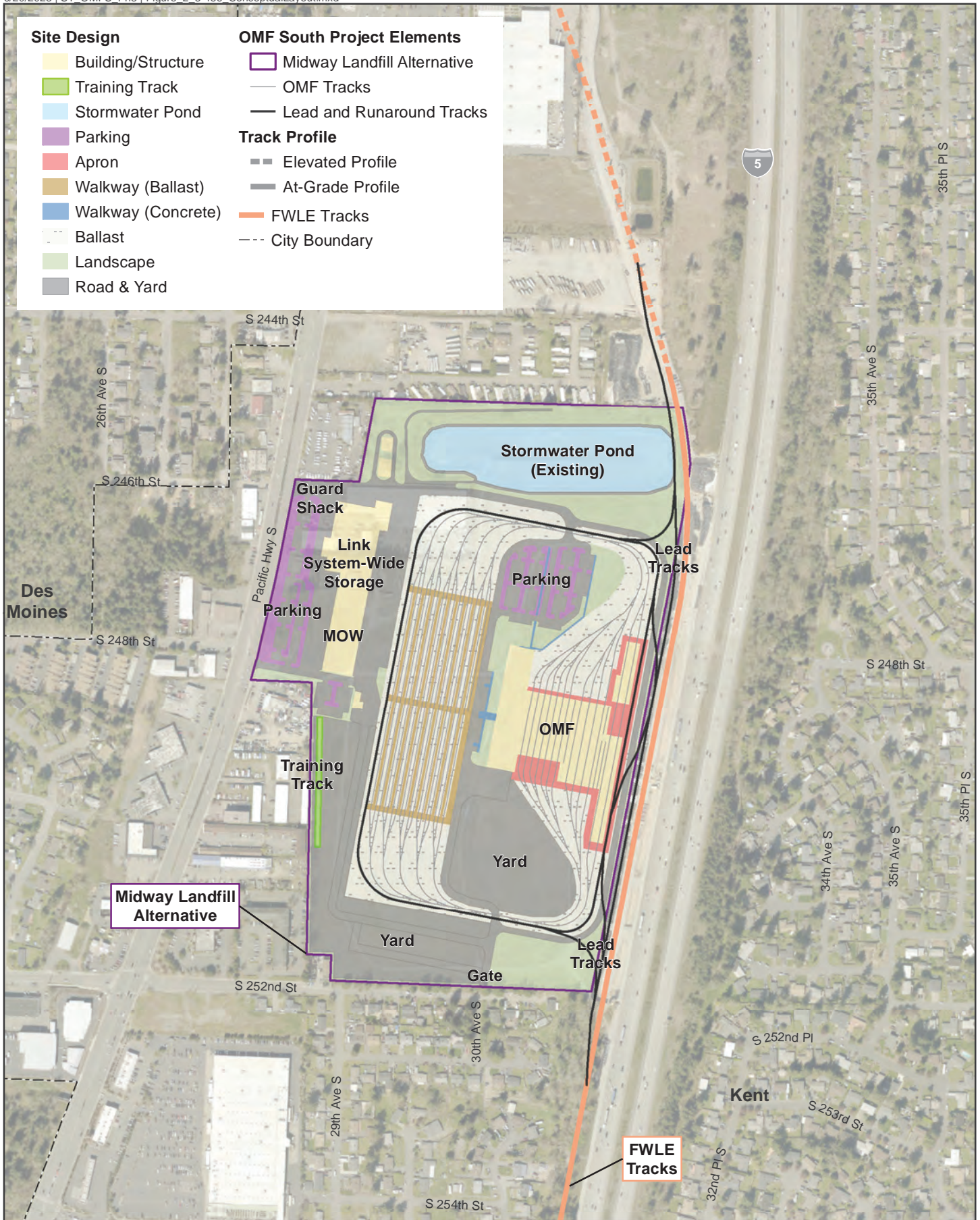
Mainline Tracks

Because the site would be adjacent to FWLE, which is scheduled to open as an active light rail line prior to the opening of OMF South, there would be no need to build additional mainline tracks. Unlike the Preferred and South 344th Street alternatives, the Midway Landfill Alternative would not include a test track because of the varying grades of the existing mainline tracks. Instead, it is anticipated that LRV testing would continue to occur on the mainline tracks.

OMF South Site

The programmed site area of the Midway Landfill Alternative is approximately 68 acres. It includes the OMF building, the MOW building, the Link System-Wide Storage building, storage tracks, training tracks, parking, and yard areas. There would be approximately 480 parking spaces, including spaces for employees, visitors, accessible parking, and nonrevenue Sound Transit vehicles. The yard area encompasses approximately 8.3 acres. Figure 2.3-6 shows a conceptual site layout. There are three subsurface construction design options for the Midway Landfill Alternative, discussed further in Section 2.3.5, Midway Landfill Site Subsurface Construction Design Options.

The Midway Landfill Alternative would connect to the mainline tracks via a series of lead tracks between the Kent/Des Moines and South 272nd Street stations. An approximately 3,200-foot-long lead track would run parallel to the FWLE mainline tracks, and five shorter (approximately 400 foot-long) lead tracks would connect it to the site. The lead track parallel to FWLE would be elevated for approximately 35 percent of its length; the shorter lead tracks would be primarily at grade.



- Site Design**
- Building/Structure
 - Training Track
 - Stormwater Pond
 - Parking
 - Apron
 - Walkway (Ballast)
 - Walkway (Concrete)
 - Ballast
 - Landscape
 - Road & Yard

- OMF South Project Elements**
- Midway Landfill Alternative
 - OMF Tracks
 - Lead and Runaround Tracks
- Track Profile**
- Elevated Profile
 - At-Grade Profile
 - FWLE Tracks
 - City Boundary

Data Sources: King County; Cities of Des Moines, Federal Way, Kent (2019).

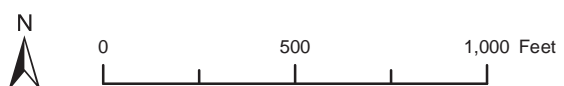


FIGURE 2.3-6
 Conceptual Layout
 Midway Landfill Alternative
 OMF South

2.3.3 Overview of Construction Approach

This section provides an overview of potential construction activities and timing that would apply to each build alternative. Activities include civil construction (which includes site preparation, primary construction, and finish construction), systems installation, testing, and startup activities.

Major civil construction activities are:

- Demolition (buildings, pavement)
- Clearing and vegetation removal
- Installing erosion/siltation controls
- Site grading, fill, compaction, and excavation
- Hauling debris and excavated material
- Importing fill, building materials, and equipment
- Utility extensions, relocations, or disruptions
- Stormwater drainage system improvements
- Construction activity in or near water bodies or sensitive areas
- Contaminated soil and water management
- Elevated structure construction
- Retaining wall construction
- Pile driving or drilling shafts
- Temporary partial or full roadway and lane closures and detour routes
- Temporary partial or limited access to properties
- Building construction
- Track and overhead catenary system (trolley wire) construction
- Constructing temporary roadways for access to and through the construction site
- Constructing new and improving existing roadways
- Landscaping

2.3.4 Construction Methods, Sequence, and Activities

Sound Transit would develop a construction plan during project design to establish the various construction phases and contracts, their estimated schedule and duration, and appropriate sequencing. Sound Transit is currently planning to use a design-build delivery method. Under design-build, one firm completes final design and construction of the project.

While all alternatives would require utility relocation, a noteworthy relocation required for the Preferred and South 344th Street alternatives involves the Bonneville Power Administration (BPA) towers near S 324th Street. The proposed mainline track alignment crosses under the transmission lines just east of the 23rd Avenue S and S 324th Street intersection. The BPA lines would need to be raised to provide the necessary clearance between the top of the mainline track rail to the lowest sag of the transmission line. BPA determined that the existing towers could not be modified, and four new towers would be needed to raise the lines.

Typical construction would occur on a 5- to 6-day workweek schedule, primarily during daytime hours. In some situations (such as when street detours are involved or when daytime construction periods need to be shortened to reduce impacts), additional shifts, all-week, nighttime, or 24-hour construction activities could be necessary. Table 2.3-1 shows the anticipated durations of the site preparation and facility construction phases for each alternative. These phases would overlap to varying degrees depending on the alternative.

Table 2.3-1 Estimated OMF South Construction Durations

Alternative	Site Preparation	Facility Construction	Total ¹
Preferred Alternative	1 year, 5 months	2 years, 3 months	3 years, 4 months
South 344th Street	1 year, 6 months	2 years, 4 months	3 years, 5 months
Midway Landfill – Platform	4 years, 1 month	2 years, 3 months	6 years, 2 months
Midway Landfill – Hybrid	5 years, 7 months	3 years, 1 month	8 years, 8 months
Midway Landfill – Full Excavation	4 years, 4 months	2 years, 9 months	7 years, 1 month

Note:

(1) Duration totals reflect the overlap of some site preparation and facility construction activities and rounding of months.

Grading and excavation would reuse suitable excavated soils as on-site embankment when feasible. Excess excavated material would be removed and hauled to a permitted disposal site. Truck hauling would require a loading area, staging space for trucks awaiting loading, and provisions to prevent tracking soil on public streets. Truck haul routes would require coordination with local jurisdictions and potentially the Washington State Department of Transportation (WSDOT). This would allow surface hauling activities to be concentrated during daytime periods to minimize potential impacts from noise on sensitive receptors such as residences, or to avoid peak traffic periods. Truck haul routes are summarized in Section 3.2, Transportation, and are discussed in detail in Appendix G1, Transportation Technical Report. Section 3.12, Geology and Soils, discusses the estimated excavation and fill volumes for each build alternative.

2.3.5 Midway Landfill Site Subsurface Construction Design Options

Public interest in pursuing the Midway Landfill as a potential OMF South site was raised early in the scoping process. The site has several favorable attributes: it's a mostly vacant site in an appropriate location within the Link system (South Corridor and adjacent to mainline tracks that will be operational when the facility opens); it's publicly owned and operated by Seattle Public Utilities (SPU); and it would provide an opportunity to put a U.S. Environmental Protection Agency (EPA)-designated Superfund cleanup site back into productive use.

There are also risks involved with the site. It is a former landfill. There is a cap to control hazardous emissions and reduce surface water infiltration, and there is an active methane gas extraction system. As time passes, decomposition of waste in the landfill is causing settling at different rates, which creates engineering challenges as well as concerns for safety during construction and long-term operation and maintenance. Finally, as a Superfund site, the Midway Landfill is under active monitoring and reporting to ensure that the cleanup measures continue to function as planned. See Section 3.13, Hazardous Materials, for more discussion of the history of the landfill and the cleanup efforts.

SPU submitted comments during the Scoping period for the 2021 SEPA Draft EIS, indicating an interest in exploring options to develop the site for the proposed OMF South. Kent and Federal Way expressed similar interest.

In 2019, Sound Transit conducted two workshops with representatives from SPU, WSDOT, Kent, Federal Way, and Seattle to discuss how to identify potential design options to address differential settlement on the landfill in anticipation of its potential use as an OMF. Based on the workshops Sound Transit developed five potential subsurface construction design options for building an OMF on the landfill, all of which would be compatible with the current FWLE design. These options are documented in the Midway Landfill Site Engineering Optimization Report (Appendix D1). After further analysis — including consideration of compatibility for the connection to the FWLE mainline tracks and a strong preference for tracks to be built on a slab at grade to provide long-term stability — Sound Transit narrowed the number of potential subsurface construction design options to three. These three subsurface construction design options, designated as Platform, Hybrid, and Full Excavation, are discussed in more detail in Appendix D3, Conceptual Landfill Site Reuse Plan. Sound Transit did not identify a recommended subsurface construction design option.

Table 2.3-2 lists the site preparation requirements for each subsurface construction design option.

Table 2.3-2 Midway Landfill Preparation Material Requirements

Subsurface Construction Design Option	Excavation (cubic yds)	Material Removed from Site (cubic yds)	Total Fill Required (cubic yds)	On Site Material Available for Reuse as Fill (cubic yds)	New Fill Material Required (cubic yds)	Concrete Import (cubic yds)
Platform	1,010,000	670,000	340,000	340,000	0	531,000
Hybrid	4,270,000	2,560,000	2,950,000	1,710,000	1,240,000	165,000
Full Excavation	4,870,000	2,920,000	3,560,000	1,950,000	1,610,000	0

Platform

Under this subsurface construction design option, OMF South would be built on a 3.5-foot-thick concrete platform supported on approximately 700 drilled shafts. The platform would be approximately 35 acres. The concrete-filled drilled shafts would be approximately 10 feet in diameter, distributed on an approximately 35-foot by 70-foot grid under the buildings, track and drainage vault area. Average shaft lengths would range from 120 feet to 180 feet below finished grade. Due to the number of drilled shafts, this subsurface construction design option would require removing the entire soil and geomembrane cap system that overlays the landfill and replacing it after the shafts have been installed. The platform would then be constructed on top of the new cap, which would be designed to meet the regulatory requirements for the remedial controls to contain the landfill waste and hazardous emissions and to prevent precipitation from reaching the buried refuse where it could contaminate groundwater. Depending on the final elevation of the platform, lead tracks from the site may need to be elevated to connect to the FWLE mainline.

Pits, approximately 6 feet deep, would be built within the concrete platform to access the underside of the LRVs. These pits would be necessary for each of the subsurface construction design options. Conduits under the concrete platform would run utility lines for maintenance access. Figure 2.3-7 is a cross section of the Platform subsurface construction design option.

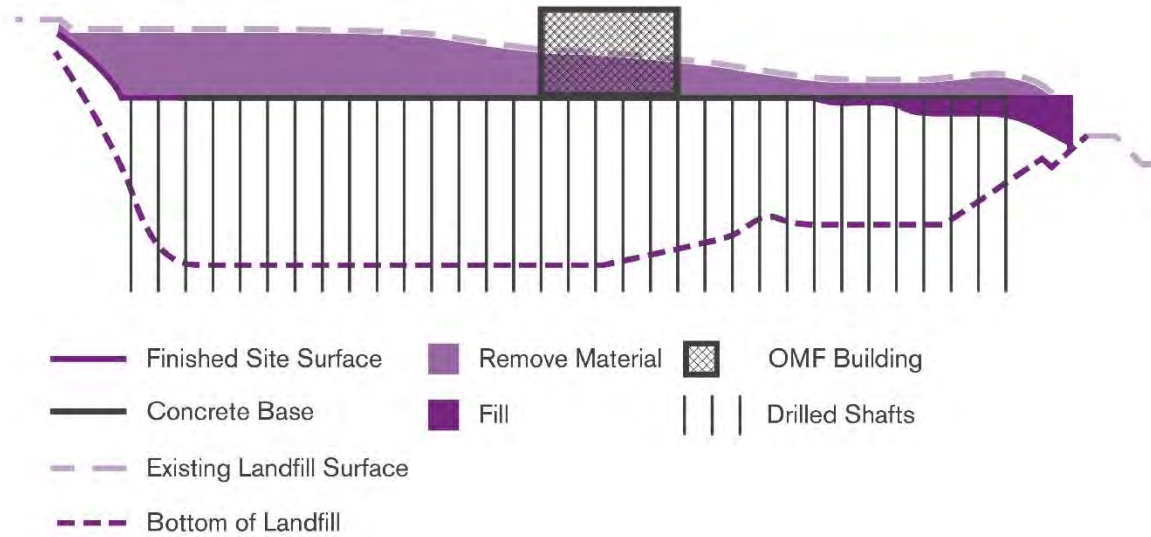


Figure 2.3-7 Platform Subsurface Construction Design Option Cross Section

Hybrid

Under this subsurface construction design option, the entire landfill cap system would be removed and replaced. Approximately 4.3 million cubic yards of loose landfill material would be excavated, and a ground improvement process called deep dynamic compaction would be used to prepare the site for construction. Excavated material would be screened to determine if it is suitable for reuse. If the material passes the screening, it would be kept on site. Unsuitable material would be exported for approved offsite disposal.

The Hybrid subsurface construction design option includes a 1-foot-thick concrete slab over a 3-foot-thick beam system built to support facilities sensitive to settlement, including tracks, parking, and roads. This slab and beam system would be about 30 acres. Approximately 110 concrete-filled drilled shafts would provide additional building support where needed. Approximately 1.2 million cubic yards of loose material would be brought to the site. Figure 2.3-8 is a cross section of the Hybrid subsurface construction design option.

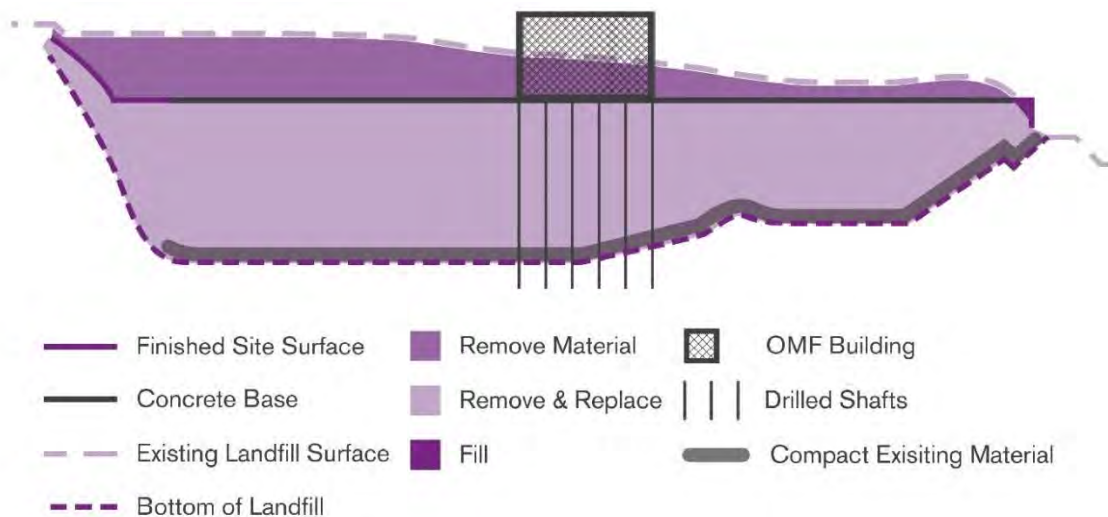


Figure 2.3-8 Hybrid Subsurface Construction Design Option Cross Section

Full Excavation

This subsurface construction design option was designed to completely excavate the landfill and backfill it with soil that the OMF would be built on. Excavation of the landfill would produce roughly 4.9 million cubic yards of loose material, 3.0 million cubic yards of which would be hauled to an approved disposal site. Approximately 1.6 million cubic yards of suitable soil would be imported. Figure 2.3-9 is a cross section of the Full Excavation subsurface construction design option.

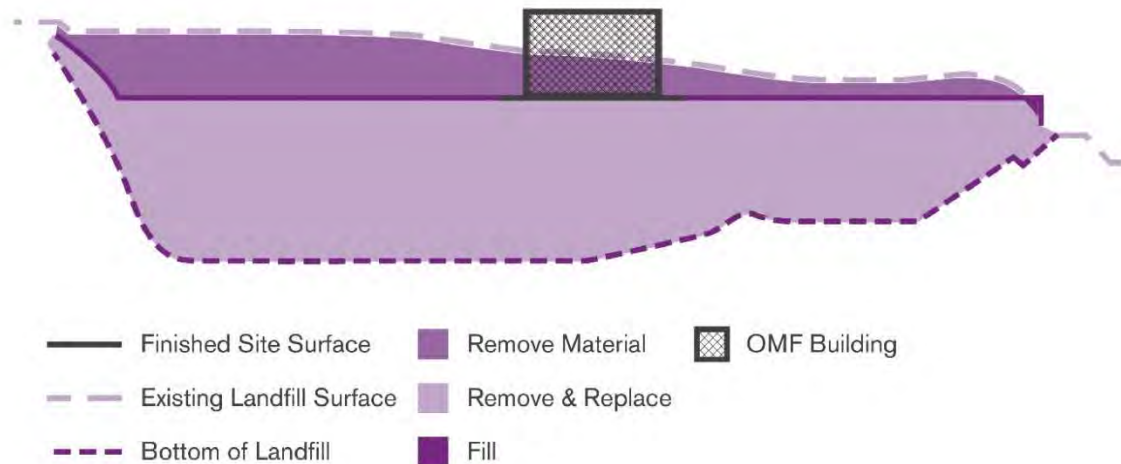


Figure 2.3-9 Full Excavation Subsurface Construction Design Option Cross Section

2.3.6 Staging Areas and Construction Easements

Construction activities would primarily be within the limits of the property being acquired for the project. Temporary construction easements would be necessary in limited locations along the boundaries of some of the alternative sites, mainline, and lead tracks.

2.4 Environmental Commitments and Sustainability

Sound Transit views environmental stewardship as a responsibility of all employees, contractors, and consultants. To that end, the agency integrates environmental ethics and sustainable business practices into its planning, design, construction, and operations.

The agency goes beyond regulation in its commitment to environmental stewardship and sustainability. Sound Transit's Environmental Policy states that the agency will satisfy all applicable laws and regulations and mitigate environmental impacts consistent with Sound Transit's policies, as well as strive to exceed compliance, restore the environment, avoid environmental degradation, and prevent pollution and conserve resources (Sound Transit 2004). Sound Transit's 2007 Sustainability Initiative builds on this and identifies sustainability objectives as also addressing social and economic development issues.

Sound Transit implements these commitments through a certified ISO 14001 Environmental and Sustainability Management System. The Board-approved long- and short-term goals for the management system's environmental and sustainability objectives are found in Sound Transit's 2015 and 2019 Sustainability Plan updates (Sound Transit 2019f). Examples of environmental or best management practices that are integrated into the project design and implementation include measures to minimize project impacts, such as stormwater control, appropriate

compensation for affected properties, due diligence work to address hazardous materials, and construction plans that keep the community informed. As part of the preliminary engineering for the OMF South project, Sound Transit is continuing to investigate project-specific opportunities to contribute towards Sound Transit's goal of being carbon neutral by 2050.

In order to design the project for climate change resilience, in 2022 Sound Transit updated its 2013 Puget Sound Climate Change Science white paper to reflect the most recent scientific data available for the region. Sound Transit is also assessing how flood risk may affect resilience of the proposed design and design standards for the project alternatives. By assessing climate-related changes and vulnerabilities in the project planning stages, Sound Transit can include adaptation measures to support resilient infrastructure operations. Examples of potential adaptations include sizing culverts to accommodate future stream flows; installing sensors to monitor track temperatures, including air conditioning or shading around signal boxes; and raising ground-level infrastructure in areas of localized flooding.

In addition to meeting environmental commitments for its projects, Sound Transit seeks to avoid and minimize impacts where possible. To this end, Sound Transit will continue to explore design options for the Preferred Alternative, with a goal of further reducing environmental impacts. Where adverse impacts cannot be avoided, Sound Transit identifies potential measures to mitigate the adverse impacts to the extent feasible.

2.5 Funding and Opinion of Probable Cost

The opinion of probable cost is presented in ranges in Table 2.5-1. Cost estimates at this early phase of project development (approximately 10 percent design) are for comparative purposes only using a "Unit Cost Library" assembly methodology for cost estimating and do not represent the project budget. Sound Transit has developed high-level conceptual cost estimates for all alternatives evaluated in the Final EIS. Sound Transit establishes a project budget when design has advanced and a project's baseline budget and schedule is established prior to the start of construction.

The current level of project design includes uncertainties regarding the project scope, engineering data, mitigation requirements, schedule, and project delivery methods. To account for these uncertainties, the Opinion of Probable Cost is provided in a range. These conceptual estimates focus on the project elements that are defined consistently across alternatives, that capture the essential physical features of alternatives, and that help distinguish alternatives from one another.

In addition to the "Unit Cost Library" cost estimate, Sound Transit completed a more detailed estimate, applying a "bottoms up" cost methodology for the Preferred Alternative. Preliminary information from this methodology indicates cost growth of 33 percent attributable to the change in estimating methodology, inflation factors, market conditions, design development, and scoping changes. Sound Transit anticipates that the South 344th Street and Midway Landfill alternatives would have a similar increase if a "bottoms up" cost methodology was applied to those alternatives.

Capital projects across the Puget Sound region are experiencing the effects of inflationary factors including increases in the cost of materials and labor. Sound Transit employs Value Management evaluations and procurement strategies to establish final project budgets, supporting prudent expenditure of public funds. Each project estimate throughout the various design phases will therefore need to be evaluated and adjusted specifically considering current

market conditions. This market conditions adjustment is independent of escalation and will fluctuate with economics and the value of any given project considered by the marketplace.

Table 2.5-1 Opinion of Probable Cost for Preliminary Engineering Design of the Build Alternatives

Alternative	Real Estate and Relocation ¹	Final Design and Construction ²	Total Capital Preliminary Estimate	Annual Operating Estimate
Preferred Alternative				
Mainline Track	\$19 M to \$22 M	\$338 M to \$427 M	\$356 M to \$449 M	\$1.2 M
OMF Site	\$155 M to \$186 M	\$1.3 B to \$1.7 B	\$1.5 B to \$1.8 B	\$12 M
South 344th Street Alternative				
Mainline Track	\$25 M to \$59 M	\$503 M to \$636 M	\$528 M to \$695 M	\$1.5 M
OMF Site	\$147 M to \$176 M	\$1.3 B to \$1.7 B	\$1.5 B to \$1.9 B	\$12 M
Midway Landfill Alternative³				
Platform	\$44 M to \$52 M	\$2.8 B to \$3.5 B	\$2.8 B to \$3.5 B	\$13 M
Hybrid	\$44 M to \$52 M	\$2.2 B to \$2.8 B	\$2.3 B to \$2.9 B	\$13 M
Full Excavation	\$44 M to \$52 M	\$2.1 B to \$2.6 B	\$2.1 B to \$2.7 B	\$13 M

Notes:

- (1) All cost estimates are reported in 2023 dollars. They do not account for future escalation of construction or operational costs. This estimating methodology and accuracy is consistent with AACE International, Inc. for projects at the 10 percent level of design.
- (2) Design and construction costs based on Sound Transit’s Unit Cost Library values.
- (3) The Midway Landfill Alternative does not include a test track.

The opinion of probable cost includes the following elements:

- Construction, including demolition and work to prepare the site (e.g., earthwork); trackway/mainline; train control electrical, signal, and communication systems; maintenance and administrative facilities; and associated improvements.
- Property acquisition, including relocation assistance.
- Design, permitting, agency administration, and program management.

In addition, estimates for construction change orders and an unallocated contingency were made as a percentage of the above estimates. Estimates for annual operating costs include long-term expenses to maintain the property, buildings, and other facilities as well as operating costs for the trains to deploy each morning before passenger service begins and return to the OMF each night after passenger service has shut down. Annual maintenance expenses for the mainline tracks for the Preferred and South 344th Street alternatives would apply until TDLE is completed. The annual operating cost estimates for the Midway Landfill Alternative are higher than those for the Preferred or South 344th Street alternatives because it would likely require additional annual expenses to mitigate for potential risks posed by settlement and methane gas over the lifespan of the facility. In addition, the Midway Landfill Alternative would have higher operating costs for the trains to deploy each morning before passenger service begins and return to the OMF each night after passenger service has shut down because it would be farther from the proposed southern terminus of TDLE compared to the Preferred and South 344th Street alternatives.

2.6 Next Steps and Schedule

FTA and Sound Transit prepared this Final EIS that documents and responds to substantive comments received on the 2021 SEPA Draft EIS and the 2023 NEPA Draft/SEPA Supplemental Draft EIS. The Board will next consider the alternatives evaluated in the Final EIS and select the project to be built.

FTA is also anticipated to publish a Record of Decision (ROD) for the project, which will document its findings as to whether the project has met the requirements of NEPA and related environmental regulations. The ROD will describe FTA's environmental determination on the project, the alternatives considered, the basis for the decision to approve the project, and the required mitigation measures. Issuance of the ROD completes FTA's NEPA process and is a prerequisite for federal funding or approvals.

Because SEPA requires that the Board's final decision on the project be informed by the Final EIS, the Final EIS must be issued independently of the ROD so that Sound Transit's decision can later be incorporated into the ROD. As a result of these regulatory requirements under SEPA, it will not be practical to issue a combined Final EIS and ROD, and they will be issued as separate documents.

After the Board selects the project to be built and FTA issues a ROD, Sound Transit will initiate the final design process, proceed with property acquisition, conduct construction planning, and apply for other permits and approvals. During final design, project elements will be further defined, including, but not limited to, the site orientation, number of buildings, mainline height, stormwater facilities, utility relocations, and staging areas.

All build alternatives would need approval from the Federal Highway Administration (FHWA) to construct and operate lead or mainline tracks within the interstate right-of-way. If the Board selects to build the Preferred Alternative or the South 344th Street Alternative, BPA would require environmental review for the relocation of their facilities in Federal Way. Regulatory agencies and local jurisdictions issuing permits for the project may use and rely on this environmental review to satisfy their NEPA and SEPA requirements.

2.6.1 Project Schedule

The project schedule is shown in Table 2.7-1. The current schedule is to begin final design and construction in 2024. The forecasted in-service date is 2032 for the Preferred Alternative, but Sound Transit is also pursuing measures to advance the opening earlier (potentially 2030). The Final EIS analysis evaluates the potential environmental impacts of OMF South at full buildout.

Table 2.7-1 Project Schedule

Preliminary Design and Environmental Review	Time Period
Early Scoping and Public Outreach	Spring to Fall 2018
Environmental Scoping	Spring 2019
Sound Transit Board Identifies SEPA Draft EIS Alternatives	May 2019
2021 SEPA Draft EIS Published	March 2021
2021 SEPA Draft EIS Comment Period	March 5 to April 19, 2021
Sound Transit Board Identifies Preferred Alternative	December 16, 2021
FTA Assumes Federal Lead Agency Status under NEPA	March 2023
NEPA Draft/SEPA Supplemental Draft EIS Published	September 22, 2023
Final EIS Published	June 7, 2024
Sound Transit Board Selects Project to Be Built	2024
FTA Issues Record of Decision	2024
Final Design, Construction, and Operation Targets ¹	
Final Design, Permitting, and Construction	2024 to 2037
OMF South Forecasted In-Service Date	2032 to 2037

Notes:

(1) The dates are presented in a range to reflect the schedule for all build alternatives.

2.6.2 Benefits and Disadvantages of Delaying Project Implementation

As required by SEPA, this section discusses the benefits and disadvantages of delaying the proposed project instead of approving it now.

Delaying the project would postpone impacts associated with project construction but would also postpone realizing a major component of the region’s long-range plans for managing growth and transportation and the opportunity to link neighborhoods to Puget Sound regional employment centers.

There are several disadvantages of delaying implementation of the proposed project:

- A delay would compromise Sound Transit’s ability to receive, test, and commission additional LRVs and therefore could delay the opening of light rail extensions under Sound Transit 3, including extensions to Tacoma and West Seattle.
- Delaying OMF South would require Sound Transit to operate the expanded system at a lower level of service than planned and/or delay some or all of the planned Sound Transit 3 light rail extensions until additional operations and maintenance capacity is developed. Degraded levels of service could include increased headways (less frequent trains serving stations) and decreased passenger capacity (operating three-car rather than four-car trains).
- Lower service levels and less light rail passenger capacity could result in fewer commuters using transit and secondary impacts on bus transit service in those corridors planned to be served by Link light rail. Those commuters may continue using automobiles instead, resulting in greater vehicular and greenhouse gas emissions.
- A delay in the proposed project would delay construction expenditures within the local and regional economy and the benefits that flow from such spending.
- Delaying the proposed project would likely result in higher construction costs due to inflation.