1 PURPOSE AND NEED FOR THE PROJECT

1.1 Purpose of the Project

The purpose of the Central Puget Sound Regional Transit Authority (Sound Transit) Operations and Maintenance Facility South (OMF South) project is to construct 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).

OMF South would:

- 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.
- Preserve and promote a healthy and sustainable environment by minimizing adverse impacts to people and the natural and built environments.

1.1.1 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. Light rail would expand north to Everett, south to Federal Way and Tacoma, east to Redmond, south Kirkland and Issaquah, and west to West Seattle and Ballard, as shown in Figure 1.1-1[1]. New operation and maintenance facilities would be needed in the North and South Corridors to support the system expansion. Please see Section 2.2 for a description of existing OMF capacity.

North Corridor

Sound Transit 3 would extend light rail north from the Lynnwood Transit Center to downtown Everett via the Southwest Everett Industrial Center. The line is scheduled to open in 2036 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 located 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.

[1] Through a process called realignment, the Sound Transit Board of Directors is working to determine which plans and timelines for Sound Transit 3 projects will need to change. The Board decisions on realignment, influenced by COVID-19 and increased project cost estimates, may have an impact on the future project schedule.

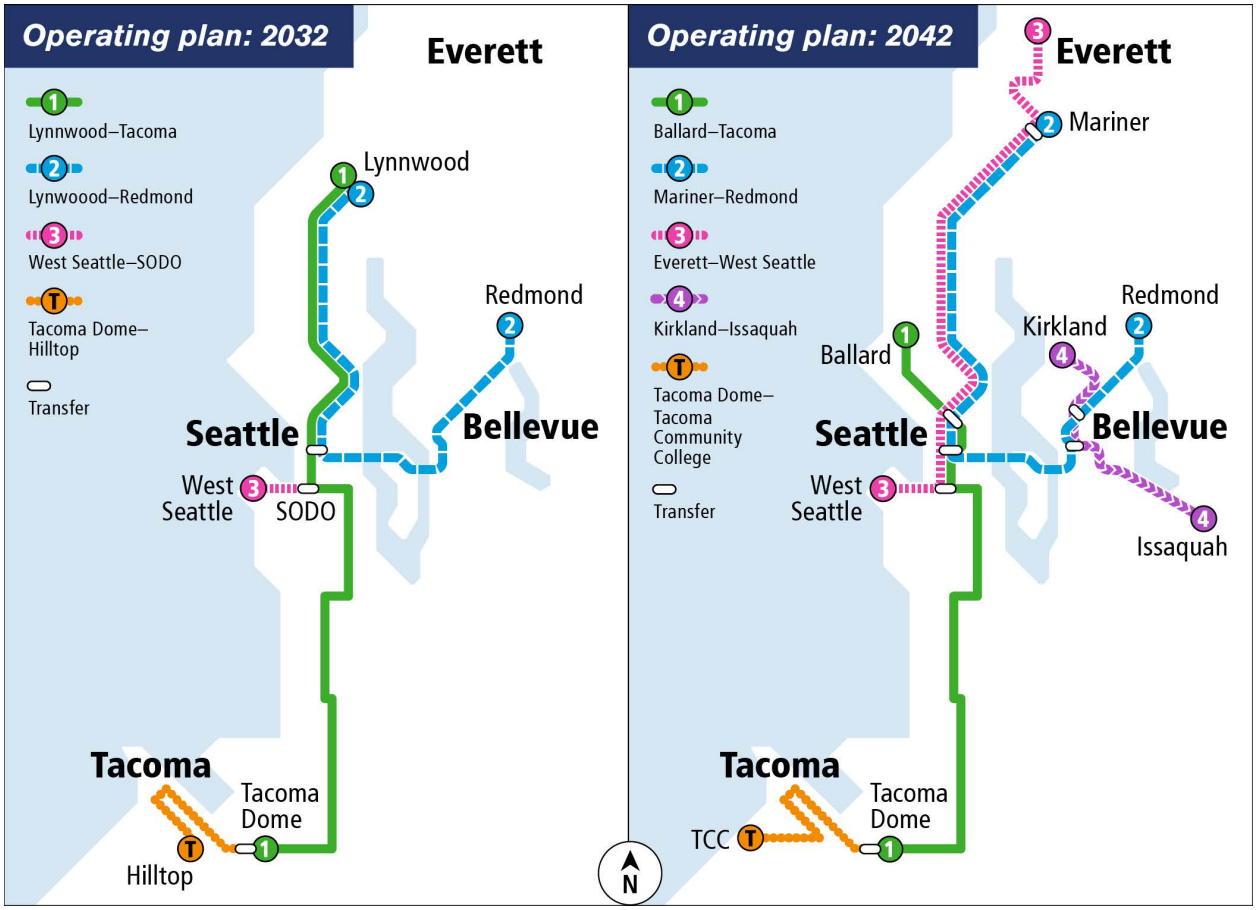


Figure 1.1-1 Link Light Rail System Expansion

Central Corridor

Sound Transit 3 would add two light rail extensions within the city of Seattle. The first extension would add 4.7 miles of light rail service from downtown Seattle to West Seattle's Alaska Junction neighborhood and the next four stations between South of Downtown (known as SODO) and Alaska Junction. In addition, light rail would extend to Ballard with 7.1 miles of light rail service from downtown Seattle to Ballard, as well as a new subway through downtown Seattle and South Lake Union with 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. 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 would extend 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. Four stations would be included on 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. An OMF is being

constructed 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 would extend light rail south from Kent/Des Moines to Federal Way, with stations serving S 272nd Street and the Federal Way Transit Center. From there, light rail would continue south into Pierce County. New stations would be located in South Federal Way, Fife, and Tacoma, where it 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 S 272nd Street, Federal Way Transit Center, South Federal Way, and Fife stations. Sound Transit 3 also includes an expansion of Tacoma Link to Tacoma Community College, with six 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 West Seattle/Ballard to Tacoma Dome service as well as to receive, test, commission, store, maintain, and deploy new LRVs for the entire system.

1.2 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 fleet expansion needs and to store existing vehicles while the new vehicles are tested and prepared.

The OMF South project is necessary to support the addition of about 144 LRVs as part of the Sound Transit 3 system expansion, even if construction of light rail extensions throughout the system is phased or delayed. The facility program 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 Introduction

This chapter describes the alternatives for the proposed project, including the No-Build Alternative. It also discusses how Sound Transit identified potential site alternatives and the process used to eliminate some alternatives from further consideration.

The Draft Environmental Impact Statement evaluates three build alternatives, one in Kent and two in Federal Way, in addition to the 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. A preferred alternative is expected to be identified by the Sound Transit Board of Directors after the Draft Environmental Impact Statement is issued and public, agency, and tribal comments are received and considered.

2.2 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. In 1996, the first phase of investment in the mass transit system began with Sound Move, which includes 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. Figure 2.2-1 shows the regional light rail system with planned extensions and the locations of existing and planned OMFs.

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, and commissioned at this facility.

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 work stations, 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 Federal Way, east to Redmond, and north to Lynnwood, and includes OMF East in Bellevue.

Once operational in 2021, OMF East will be used to clean, store, maintain, and deploy 96 LRVs for daily service. It will provide 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 work stations, and areas with lockers, showers, and restrooms for both operators and maintenance personnel.

Figure 2.2-1 Link System Future Expansion and OMF Site Locations

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.

Sound Transit 3 calls for a total fleet (existing plus new) of approximately 460 LRVs. In order 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 project, OMF South, will satisfy the need for an OMF in the South Corridor.

2.2.1 OMF South Site Components

OMF sites are necessary throughout Sound Transit's light rail network to clean, store, maintain, and deploy LRVs (Figure 2.2-2).

OMF South will need to accommodate three LRV types:

- Kinkisharyo: 62 LRVs 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 than the current LRVs 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. OMF South was designed to accommodate the higher capacity LRVs.

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.

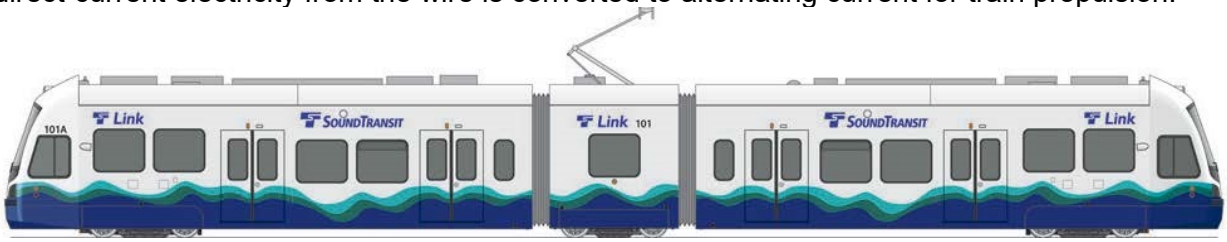


Figure 2.2-2 Link Light Rail Vehicle

The OMF South program includes the following components:

- Runaround tracks
- Storage tracks sized for about 144 vehicles
- 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
- Offices, locker rooms, lunchrooms, and other spaces for employees
- Auto/truck access points
- Employee and visitor parking
- Sound Transit vehicle (nonrevenue vehicle) parking

The proposed dimensions and configuration 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 via lead tracks. The length of these lead tracks depends on the distance from the OMF to an operating mainline and will vary by alternative. The lead tracks allow the LRVs to deploy from the OMF to the mainline for daily operation and travel back to the facility nightly for vehicle maintenance. Because two of the alternatives would be the southern terminus of the existing Link system, the site configurations would need to include tail tracks. These tail tracks would allow trains to access the Link system if the northeast lead tracks are out of service. Figure 2.2-3 shows the different types of tracks found in a typical OMF.

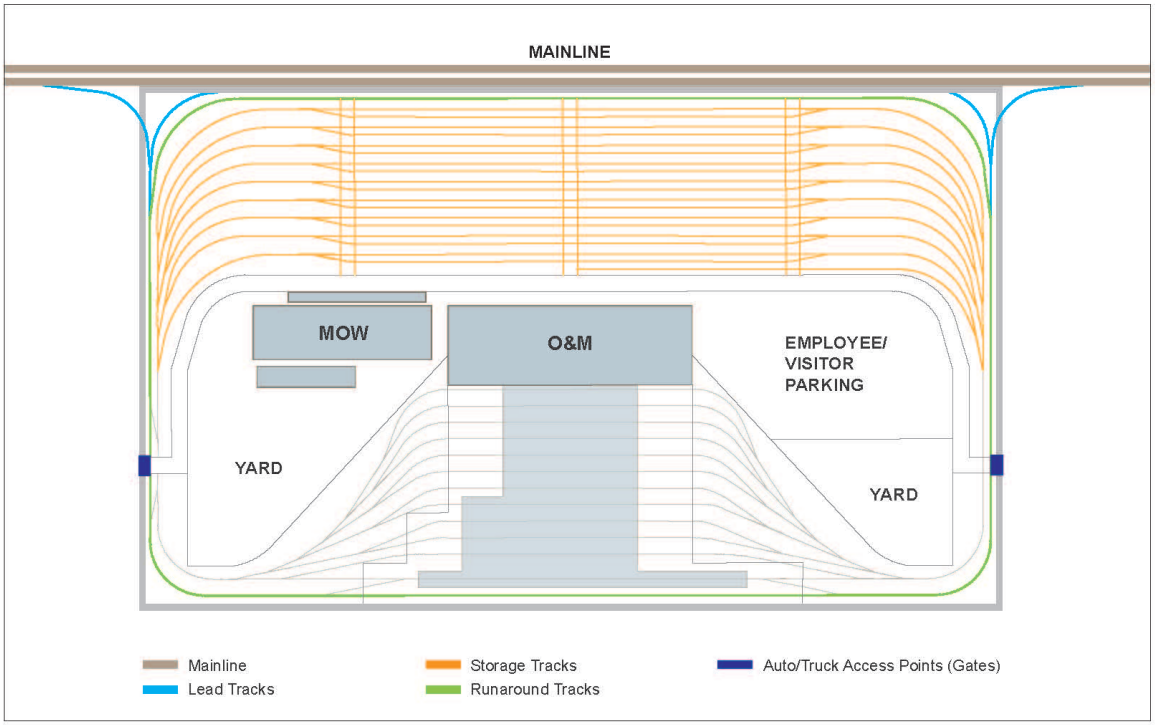


Figure 2.2-3 Track Types in Typical OMF Layout

At two stories tall, the operations and maintenance building would be the tallest building at the site. This building height is necessary to allow for overhead equipment necessary to perform work on all sides of an LRV, including the top. The operations and maintenance building would also have the largest square footage of buildings on the site. It would house the LRV maintenance shops, but it would also be attached to office space that would be used by operators, dispatchers, and administrative staff. OMF South would be fenced for security purposes and access to the facility would be controlled by keycard access at the main entrance gate and at all building entrances. The fencing would be selected to aesthetically fit with OMF South and its surrounding environment consistent with code requirements of the local jurisdiction. Landscaping would also be incorporated into perimeter fence line areas and parking areas as appropriate to diversify the visual landscape of OMF South. Overhead lighting would be provided across OMF South for security purposes and allow for nighttime operations, since much of the LRV maintenance would occur at night. Lighting would be appropriately directed downward and onto the site to avoid overspill into neighboring properties.

2.2.2 OMF South Site Operations

The OMF South 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.

2.2.2.1 Hours

OMF South would operate 24 hours a day, 7 days a week. Approximately 476 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 arrivals would be staggered throughout each shift. Table 2.2-1 lists staff calculations for all the functions at the site. The majority of staff (approximately 300) would be working in the OMF South building.

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	193	146	137	476

2.2.2.2 Light Rail Vehicle Operations and Maintenance

OMF South would be used to receive, test, commission, store, maintain, and deploy about 144 LRVs for daily service. It 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.

OMF South would also be used to 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, and other infrastructure, in addition to storage facilities for the entire Link light rail system. Other facility elements would include employee and visitor parking, operations staff offices, maintenance staff offices, dispatcher work stations, an employee report room, and areas with lockers, showers, and restrooms for both operators and maintenance personnel.

2.2.2.3 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. In order 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.

2.2.2.4 Link System-Wide Storage

The Link System-Wide Storage building within OMF South 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.

2.2.2.5 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. It assumes 5- to 6-minute peak headways for weekdays and 10- to 15-minute headways on Saturday and Sunday. This draft plan assumes that all light rail extensions planned as part of Sound Transit 3 are complete. Please note, 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

2.3 Alternative Development and Scoping

OMF South alternatives underwent an extensive evaluation process prior to their selection for study in this Draft Environmental Impact Statement. 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 State Environmental Policy Act (SEPA) scoping, and in May 2019 the Board identified three project alternatives for evaluation in the Draft Environmental Impact Statement. A preferred alternative has not yet been identified.

2.3.1 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 scoping was intended to initiate the public conversation before the start of environmental studies

and was conducted for both projects concurrently. The public comment period for early scoping was from April 2 to May 3, 2018, during which Sound Transit asked for public, tribal, and agency comments on the project's Purpose and Need statement, the Tacoma Dome Link Extension (TDLE) "representative project alignment" and other alternative alignments, and alternative locations for an OMF in the South Corridor.

In June 2018, Sound Transit published the Tacoma Dome Link Extension and Operations and Maintenance Facility South Early Scoping Summary Report (Sound Transit 2018b). 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.

2.3.2 Identifying Potential OMF South Sites

2.3.2.1 Site Identification

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

As the project evolved, Sound Transit determined that OMF South should be designed to support the potential future extension of the light rail system to the Tacoma Mall area, as envisioned in the agency's Regional Transit Long-Range Plan (Sound Transit 2014), and therefore should be sized to accommodate about 144 LRVs.

2.3.2.2 Prescreening

The prescreening evaluation used three criteria (described below) to evaluate the 24 sites identified during early 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).

2.3.2.3 Alternatives Evaluation

The alternatives evaluation used a total of 21 criteria (Table 2.3-1), including environmental factors, operational and cost factors, and plan consistency, to evaluate the 20 sites that moved forward from prescreening (Figure 2.3-1).

Table 2.3-1 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.
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.

Table 2.3-1 Evaluation Criteria, Measures, and Methods (continued)

Criteria	Measures	Methods
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.
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.

Figure 2.3-1 OMF South Sites Included in the Alternatives Evaluation

As a result of the alternatives evaluation, Sound Transit identified six sites to carry forward to the SEPA Environmental Impact Statement scoping process. The nine southernmost sites, including all of those located in Pierce County, were eliminated because they were not close enough to an operating light rail mainline. Sound Transit also found that potential sites located farther than 1.5 miles south of the FWLE terminus in Federal Way would not be able to efficiently connect to an operating light rail mainline 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 2019a).

2.3.3 SEPA Scoping

Sound Transit published the scoping notice for the Environmental Impact Statement in the SEPA Register on February 19, 2019. The purpose of scoping is to narrow the focus of the Environmental Impact Statement to significant environmental issues, to eliminate insignificant impacts from detailed study, and to identify alternatives to be analyzed in the Environmental Impact Statement (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 2019b) to share information about the project and potential alternatives with agencies, tribes and the public. The Information Report described the six sites considered during the SEPA scoping process (Figure 2.3-2):

- 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 agencies, tribes, and the public and conducted two public scoping meetings, an agency scoping meeting, and an online open house. Additional information regarding public outreach during the SEPA scoping period is available in Appendix B, Public Involvement and Agency Coordination.

In May 2019, Sound Transit published the OMF South Scoping Summary Report which summarized the comments received during the SEPA scoping process and identified next steps for the project (Sound Transit 2019c).

A majority of 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.

2.3.3.1 Alternatives Proposed During Scoping but Not Carried Forward

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 – Large wetland complex 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 of the suggested sites were viable alternatives. After the evaluation, Sound Transit determined that none of the suggested sites were viable due to a number of reasons, including inadequate size, potential impacts to current light rail operations, and potentially severe impacts to sensitive areas.

2.3.4 Board Identification of Alternatives

In May 2019, the Board adopted Motion M2019-50, which identified three site alternatives to study in the OMF South Draft Environmental Impact Statement: 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 2.4, 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 decision was based on the project's Purpose and Need statement, OMF site requirements and screening criteria during the alternative development process, and input from agencies, tribes, and the public during the scoping period.

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, 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, 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 this Draft Environmental Impact Statement range from 59 to 68 acres.

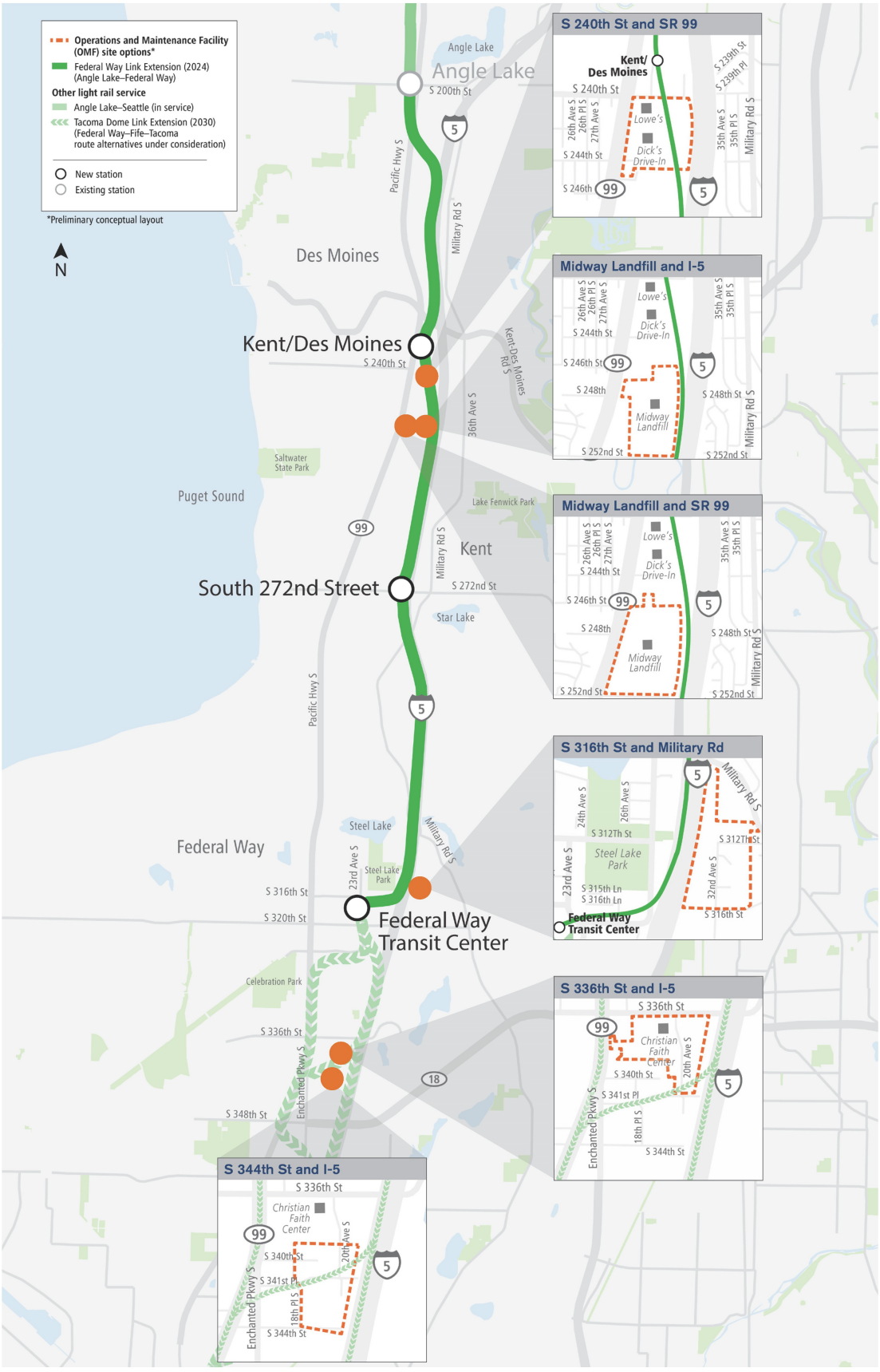


Figure 2.3-2 Scoping Alternatives

2.4 Project Alternatives

2.4.1 No-Build Alternative

Analysis of a No-Build Alternative is required under SEPA. 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 project alternatives can be compared.

The No-Build Alternative assumes the other Link light rail system improvements listed in Sound Transit 3 would be built, including extensions from downtown Seattle to West Seattle and Ballard, Lynnwood to Everett, Redmond Technology Center to downtown Redmond, south Kirkland to Issaquah, Kent/Des Moines to Federal Way Transit Center, and Federal Way Transit Center to Tacoma Dome. The No-Build Alternative also assumes that the new North Corridor OMF would be constructed. Under Sound Transit's System Expansion Plan, each of these projects would be constructed and operating by 2042.

Operations and maintenance functions would be located at the existing OMF Central (104-LRV capacity), the new OMF East in Bellevue (96-LRV capacity), and the proposed OMF in the North Corridor (152-LRV capacity). The three facilities would have a combined capacity to support and store 352 LRVs. Therefore, the No-Build Alternative assumes a maximum light rail fleet size of 352 LRVs, which is fewer than the approximately 460 needed to operate the system at the planned service levels of Sound Transit 3.

Under the No-Build Alternative, impacts resulting 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 and is planned to open for service in 2024. The impacts of FWLE have been addressed in the Federal Way Link Extension Final Environmental Impact Statement (Sound Transit 2016b). Under the Sound Transit 3 Plan, TDLE was planned to open in 2030 (after the expected opening of OMF South). The COVID-19 pandemic has impacted the TDLE project schedule, and the project can no longer achieve this opening date. The TDLE and OMF South schedules are also subject to the outcome of realignment. TDLE is currently undergoing environmental review under both NEPA and SEPA by the Federal Transit Administration (FTA) and Sound Transit. The Tacoma Dome Link Extension Draft Environmental Impact Statement is expected to be published in 2022.

As described below in Section 2.4.2, Build Alternatives, the TDLE mainline south of FWLE may serve as part of the connecting track to OMF South, depending on which build alternative is chosen. In those instances, impacts from the mainline tracks would be primarily the same under both the No-Build and build alternatives, although the timing of those impacts would be different.

For the purposes of this Draft Environmental Impact Statement, 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 of all the Sound Transit 3 projects. This provides a common future analysis year for forecasting ridership and determining potential impacts to air, noise, transportation, and other environmental elements from all Sound Transit 3 projects.

Environmental impacts associated with FWLE are considered part of the No-Build Alternative. However, because TDLE will open after OMF South and has not completed environmental review, impacts associated with the TDLE mainline tracks connecting to the OMF South alternatives are not described as part of the No-Build Alternative and are addressed in the discussion of the build alternatives. TDLE impacts beyond those associated with the mainline tracks are part of the 2042 No-Build condition and are addressed in Chapter 4, Cumulative

Impact Analysis, and will be further detailed in the separate Tacoma Dome Link Extension Environmental Impact Statement.

2.4.2 Build Alternatives

Build alternatives evaluated in this Draft Environmental Impact Statement include the Midway Landfill Alternative, the South 336th Street Alternative, and the South 344th Street Alternative (Figure 2.4-1). Appendix C, Conceptual Design Drawings and Engineering Information, includes preliminary engineering design drawings of each of the alternatives.

The Midway Landfill Alternative is located adjacent to FWLE and would connect by lead tracks directly to the FWLE mainline. The South 336th Street and South 344th Street alternatives would require the construction of between approximately 1.4 and 1.8 miles of mainline tracks from the FWLE terminus (Figure 2.4-2).

If either the South 336th Street or South 344th Street alternatives were constructed, the mainline track connecting those sites to the FWLE terminus would be used as TDLE mainline track when TDLE opens for service. Because both the OMF South and TDLE projects would potentially require the construction of this length of mainline independently from each other, the alignment options are being evaluated in this Draft Environmental Impact Statement as well as the Tacoma Dome Link Extension Draft Environmental Impact Statement, which is expected to be published in 2022.

Project realignment, influenced by COVID-19 and increased project cost estimates, may have an impact on the future project schedule. This could result in a delayed opening or the construction of OMF South in phases to reach full operational capacity over time. For the purposes of this Draft Environmental Impact Statement, the analysis evaluates the potential environmental impacts of OMF South at full buildout.

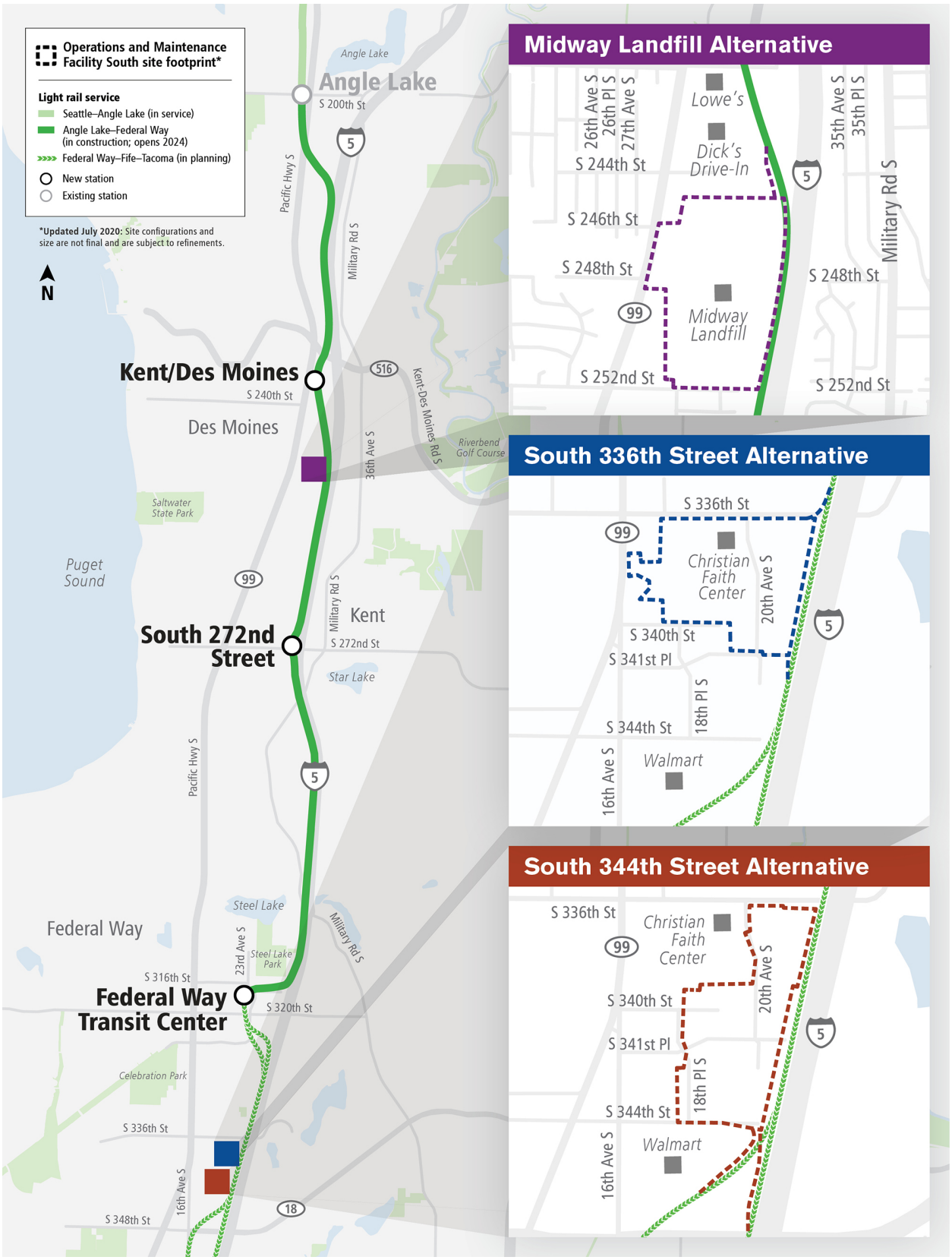
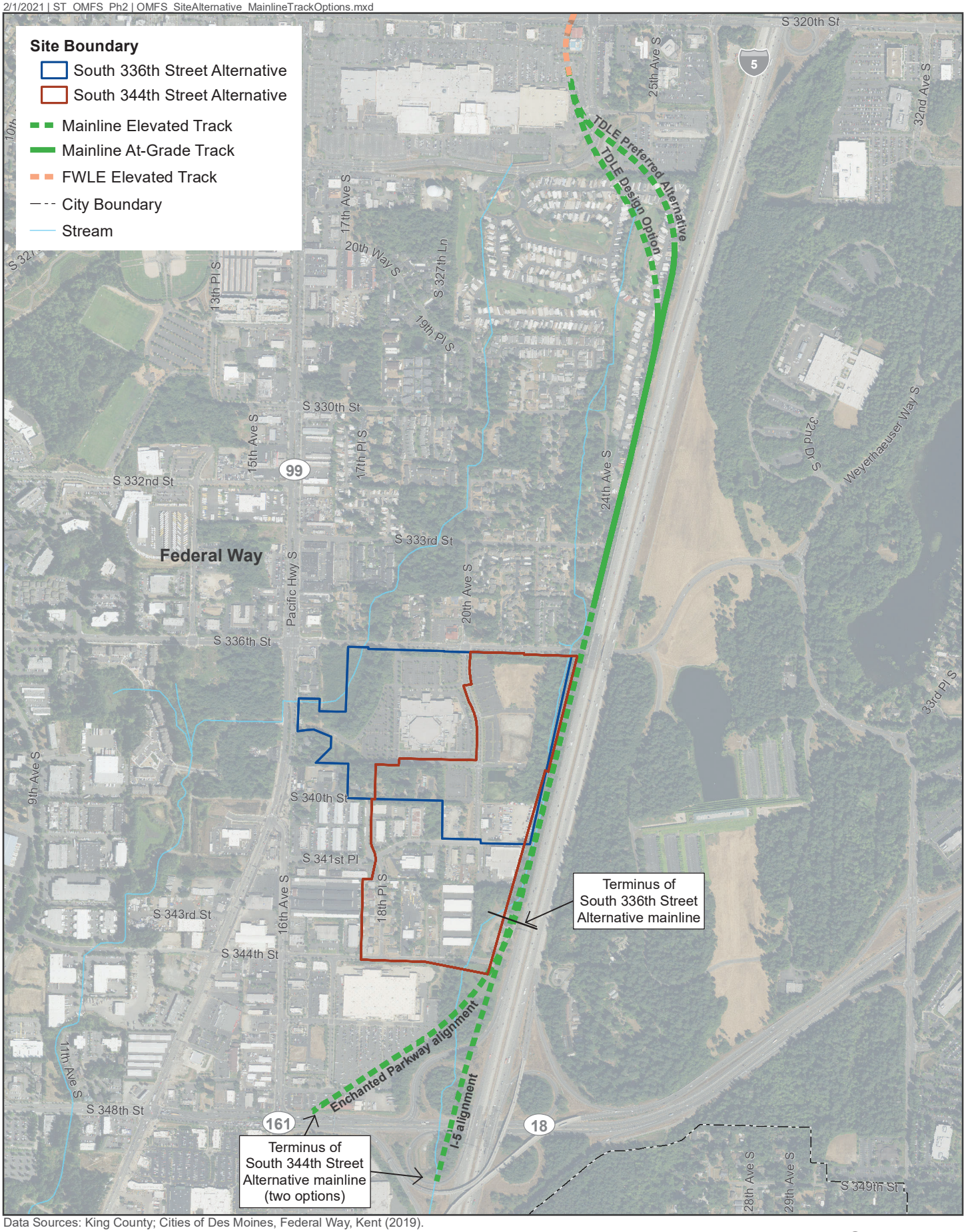


Figure 2.4-1 Project Alternatives



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

N

0 1,000 2,000 Feet

FIGURE 2.4-2
Mainline Track Options
South 336th and South 344th Street Alternatives

OMF South

2.4.2.1 Midway Landfill Alternative

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

Mainline

Because the site would be located adjacent to FWLE, which is scheduled to open as an active light rail line in 2024, there would be no need to build additional mainline.

OMF South Site

The programmed site area (development footprint) of the Midway Landfill Alternative is approximately 68 acres, which includes the 2-story OMF building, the 1-story MOW building, the 1-story Link System-Wide Storage building, storage tracks, training tracks, parking, and yard areas. (Building heights do not vary between site alternatives.) There would be approximately 450 parking spaces, including spaces for employees, visitors, accessible parking, and nonrevenue Sound Transit vehicles. The yard area encompasses approximately 8.5 acres. Figure 2.4-3 is an aerial view with a conceptual site layout.

The Midway Landfill Alternative includes connections to the mainline via lead tracks between the Kent/Des Moines and South 272nd Street stations. An approximately 3,780-foot-long lead connector track would run parallel to FWLE to connect the OMF South lead tracks. About 35 percent of the lead connector tracks would be elevated. Five lead tracks would connect the lead connector track to the OMF South yard to allow trains to enter and exit the site. Each of these lead tracks would be approximately 450 feet long and mostly built at-grade.

2.4.2.2 South 336th Street Alternative

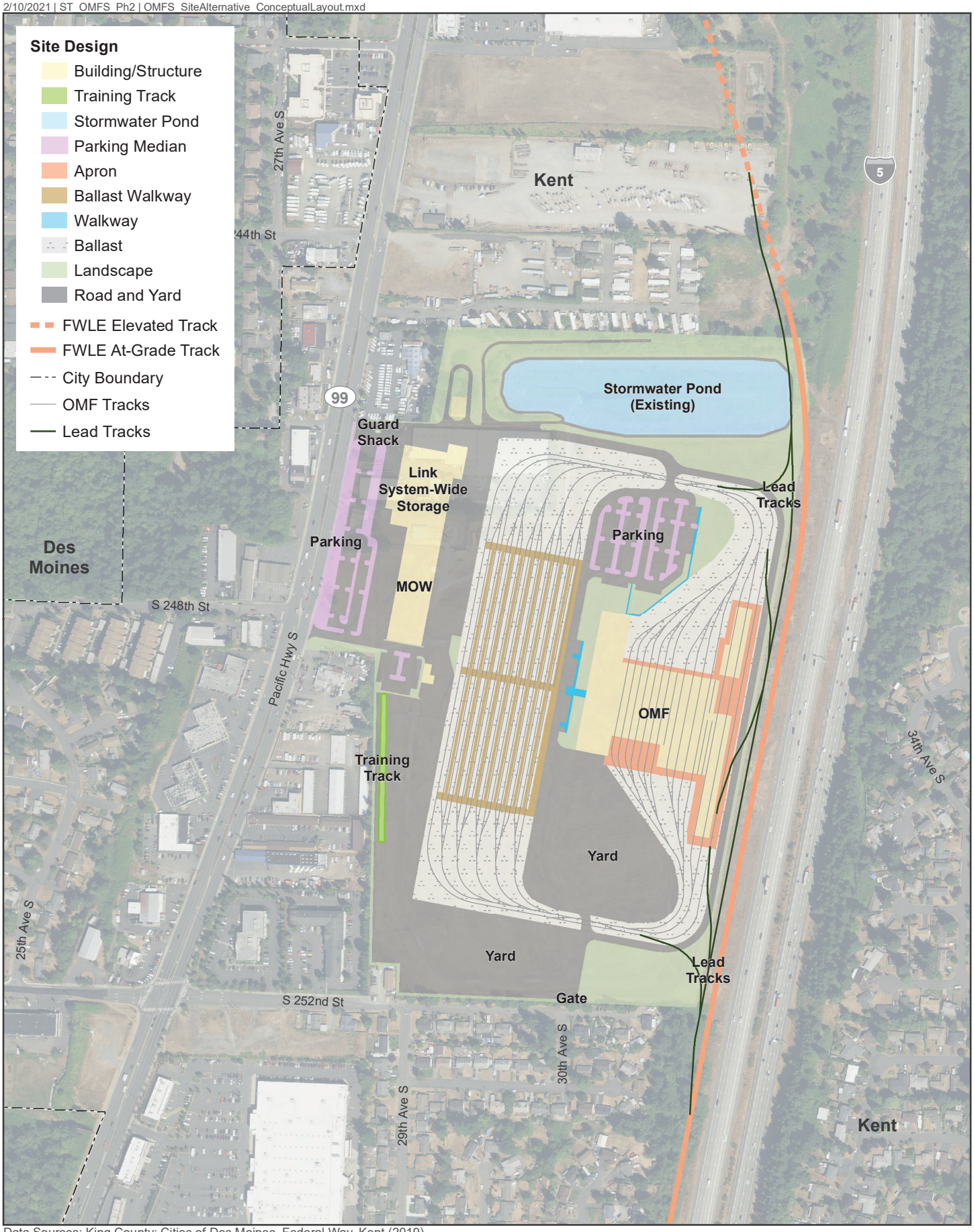
The South 336th Street Alternative is located in Federal Way between S 336th Street and S 341st Place and between I-5 and SR 99.

Mainline

The South 336th Street Alternative requires approximately 1.4 miles of connecting mainline track from the terminus of the FWLE project at the Federal Way Transit Center to the site, including the proposed mainline tail track. If TDLE is constructed as planned, this track would become part of the TDLE mainline.

There are two alternative alignments for this length of mainline: the TDLE Preferred Alternative, designed for 40 mph, and the TDLE Design Option, designed for 55 mph. Both mainline alignments would be elevated, with north-bound and south-bound tracks.

The mainline would extend south approximately 600 feet past the southeast corner of the site to serve as tail tracks. Until the TDLE mainline is extended to the south, these elevated tracks would be used to allow trains to access the Link system if the northeast 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.



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

N

0 500 1,000 Feet

FIGURE 2.4-3
Conceptual Layout
Midway Landfill Alternative

OMF South

OMF South Site

The South 336th Street Alternative site footprint is approximately 59 acres, which 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 435 parking spaces, including spaces for employees, visitors, accessible parking, and nonrevenue Sound Transit vehicles. The yard area would be approximately 7.2 acres. Figure 2.4-4 is an aerial view with a conceptual layout.

In addition to the mainline extension, the site would also require lead tracks to access the rail system via the mainline. Elevated lead tracks would leave the northeast corner of the site and be approximately 600 feet long. Similarly, approximately 1,030 feet of elevated tracks would leave the southeast corner of the site to access the mainline tail tracks.

2.4.2.3 South 344th Street Alternative

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

Mainline

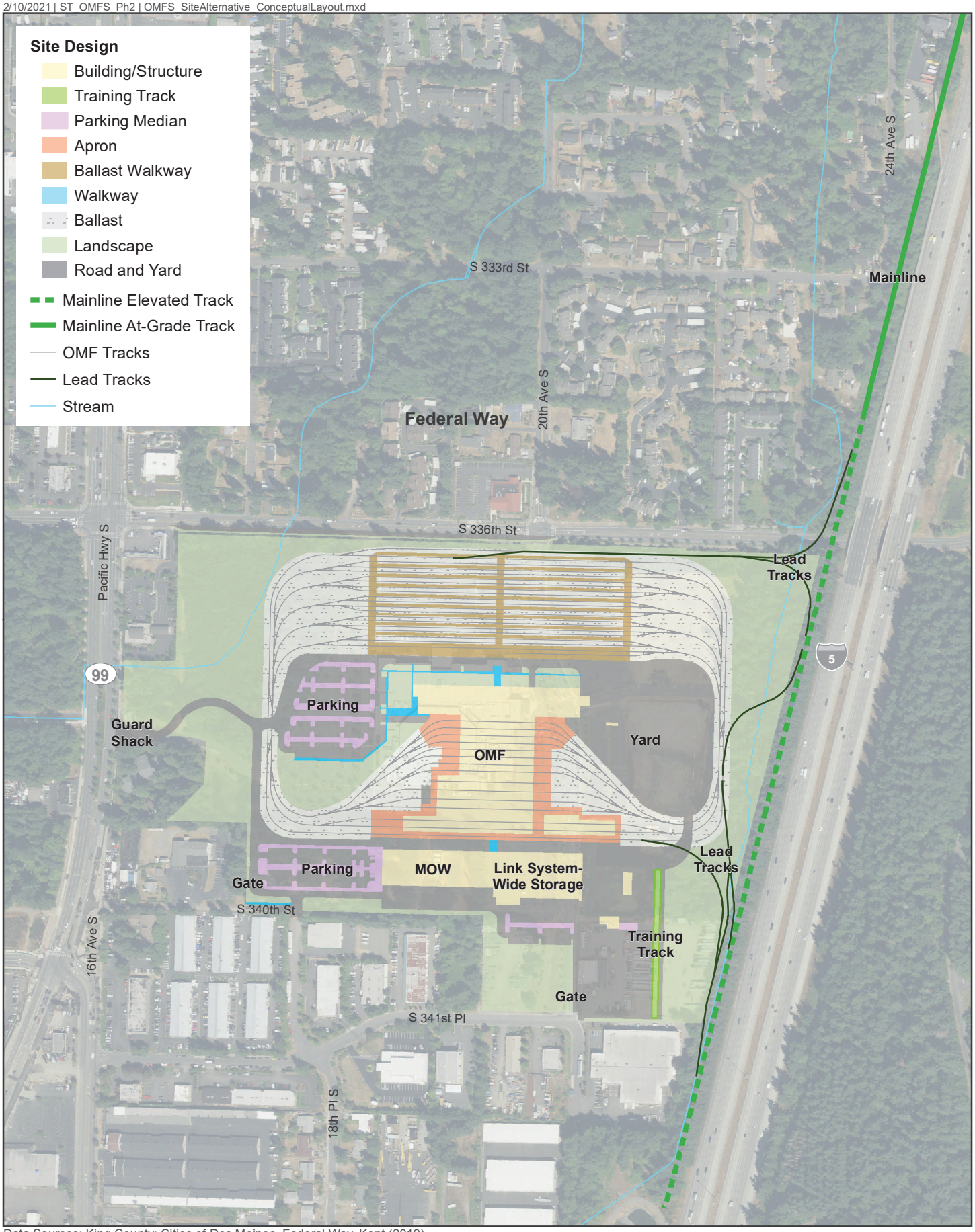
The South 344th Street Alternative requires approximately 1.8 miles of connecting mainline track from the terminus of the FWLE project at the Federal Way Transit Center to the site, including the proposed mainline tail track. As with the South 336th Street Alternative, these tracks would serve as future mainline tracks for TDLE and would follow the same alignment. The mainline alternative alignment options are the same as those described for the South 336th Street Alternative.

As with the South 336th Street Alternative, the mainline would extend past the southeast corner of the site to serve as tail tracks. Until the TDLE mainline is extended to the south, these tail tracks would be used to allow trains to access the Link system if the northeast lead tracks are 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 follow the 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 1,500 feet south the site and the I-5 alignment extending approximately 1,800 feet south of the site.

OMF South Site

The South 344th Street Alternative site footprint is approximately 65 acres, which 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 435 parking spaces, including spaces for employees, visitors, people with disabilities, and spaces for nonrevenue Sound Transit vehicles. The yard area would be approximately 11.2 acres. Figure 2.4-5 is an aerial view with a conceptual layout.

In addition to the mainline extension, the site would also require lead tracks to access the rail system via the mainline. The elevated tracks would leave the northeast corner of the site and be approximately 1,070 feet long. Similarly, approximately 1,100 feet of elevated 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 tracks would be needed to connect the site to the mainline tail tracks for the I-5 alignment.



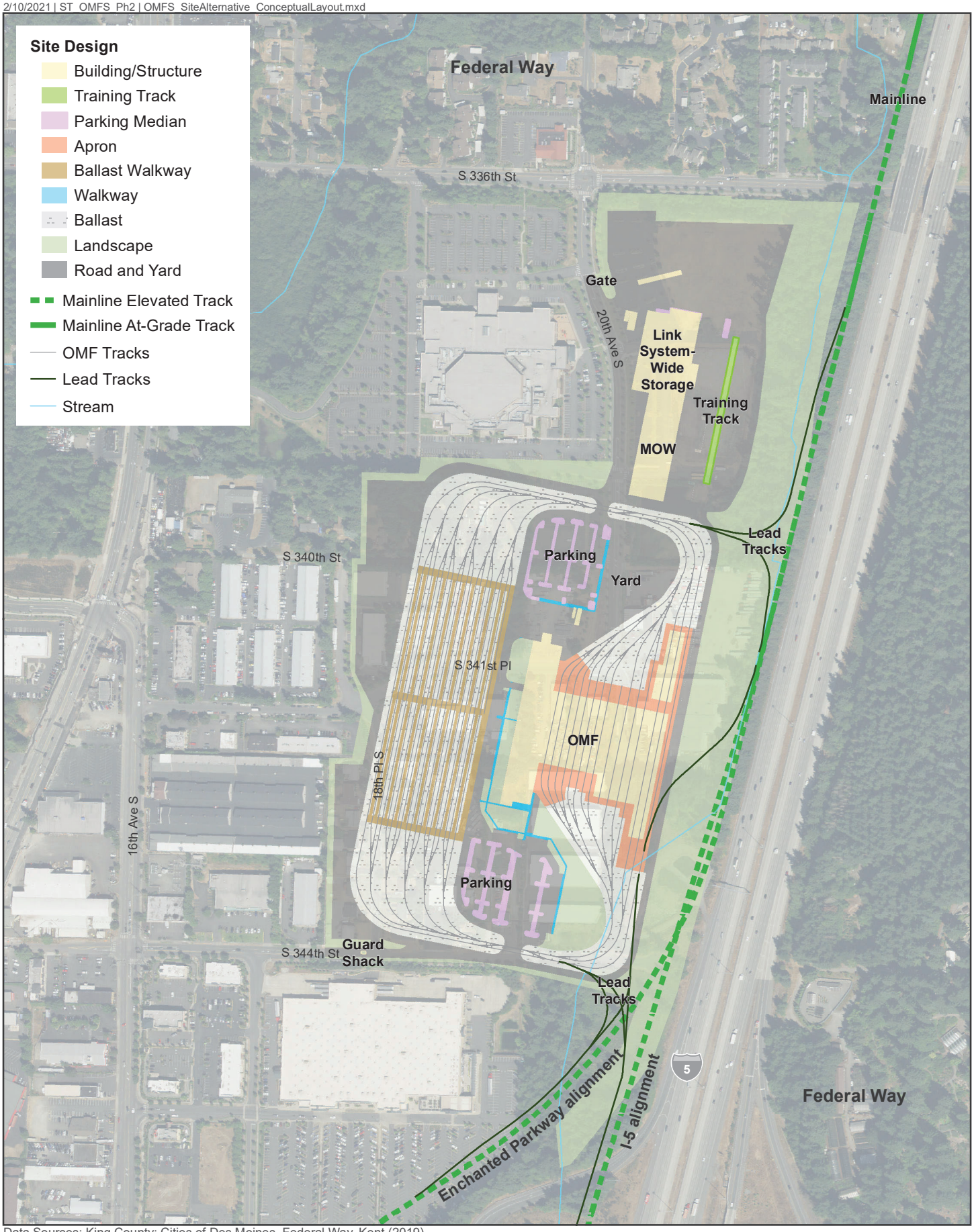
Data Sources: King County; Cities of Des Moines, Federal Way, Kent (2019).

N

0 500 1,000 Feet

FIGURE 2.4-4
Conceptual Layout
South 336th Street Alternative

OMF South



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

N

0 500 1,000 Feet

FIGURE 2.4-5
Conceptual Layout
South 344th Street Alternative

OMF South

2.4.3 Overview of Construction Approach

This section provides an overview of potential construction activities and timing. Activities include civil construction, systems installation, testing, and startup actions. Site preparation, primary construction, and finish construction would happen during the civil construction phase.

Major civil construction activities are:

- Demolition (buildings, pavement).
- Clearing and vegetation removal.
- Installing erosion/siltation controls.
- Site grading, fill, compaction, and excavation.
- Utility extensions, relocations, or disruptions.
- Stormwater drainage system improvements.
- Construction activity in or near a water body or sensitive area.
- Contaminated water treatment.
- Elevated structure construction.
- Retaining wall construction.
- Pile driving or drilling shafts.
- Temporary partial road or lane closures and detour routes.
- Temporary, partial, or limited access to properties.
- Materials and equipment delivery.
- Building construction.
- Track and overhead catenary system (trolley wire) construction.
- Landscaping.

2.4.4 Construction Methods, Sequence, and Activities

A construction plan will be developed during project design to establish the various construction phases and construction contracts, their estimated schedule and duration, and appropriate sequencing. The actual sequencing could vary depending on whether the project is contracted using a Design Build contract (meaning one firm does final design and construction) or a Design Bid Build (meaning one firm does final design, the project is put out for bid, and a second firm does the actual construction). The current preferred approach is to use the Design Build method, which is the contracting method being used for FWLE and OMF East. Major construction activities would demolish existing buildings, relocate utilities, clear trees and vegetation, and grade and excavate the site, which may include the construction of retaining walls. The next phase of construction would include installing track work and electrical systems (overhead catenary system power lines, etc.) and constructing OMF South buildings.

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 2.4-1 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 2.4-1 Estimated OMF South Construction Durations

Alternative	Site Preparation	Facility Construction	Total[1]
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
South 336th Street	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

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 approval by 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 Chapter 3.2, Transportation, and are discussed in detail in Appendix G1, Transportation Technical Report.

2.4.5 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 a mainline 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 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 this Draft Environmental Impact Statement, indicating an interest in exploring options to develop the site for the proposed OMF South. The cities of Kent and Federal Way also expressed interest in the suggestion.

In 2019, Sound Transit conducted two workshops with representatives from SPU, WSDOT, and the cities of 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 of an at-grade mainline. 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 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.

Table 2.4-2 lists the site preparation requirements for each subsurface construction design option.

Table 2.4-2 Midway Landfill Preparation Material Requirements

Subsurface Construction Design Option	Excavation (cubic yds)	Excavation (tons)	Material Removed from Site (tons)	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	1,023,000	678,000	340,000	340,000	0	531,000
Hybrid	4,270,000	4,323,000	2,592,000	2,950,000	1,710,000	1,240,000	165,000
Full Excavation	4,870,000	4,931,000	2,956,500	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 10 feet in diameter, distributed on a 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.

There would be a need for roughly 6-foot-deep pits 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 be used to run utility lines for maintenance access. Figure 2.4-6 is a cross section of the Platform subsurface construction design option.

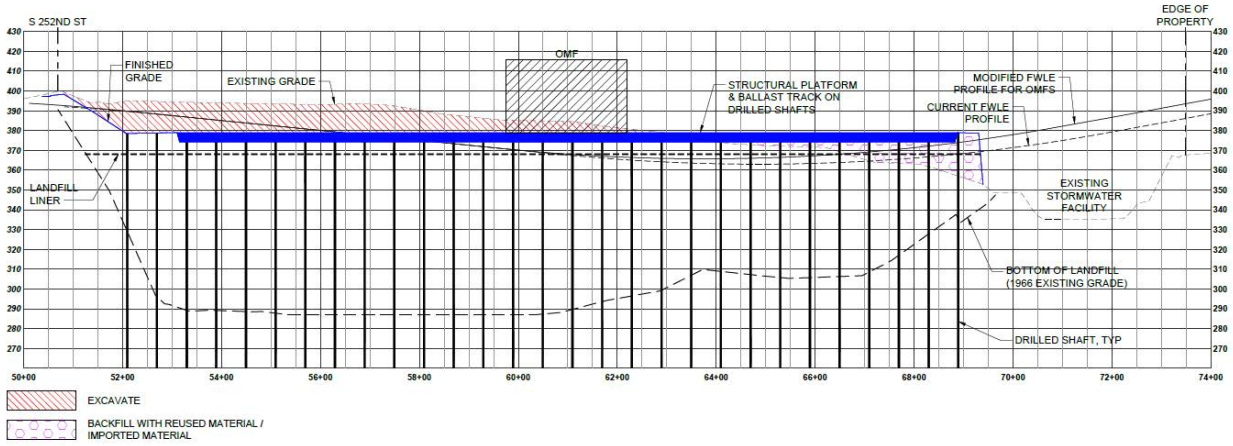


Figure 2.4-6 Platform Subsurface Construction Design Option Cross Section

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 was 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 in size. Concrete-filled drilled shafts would provide additional support where needed to support buildings. Approximately 110 of these shafts would be needed. Approximately 1.2 million cubic yards of loose material would need to be brought to the site. Figure 2.4-7 is a cross section of the Hybrid subsurface construction design option.

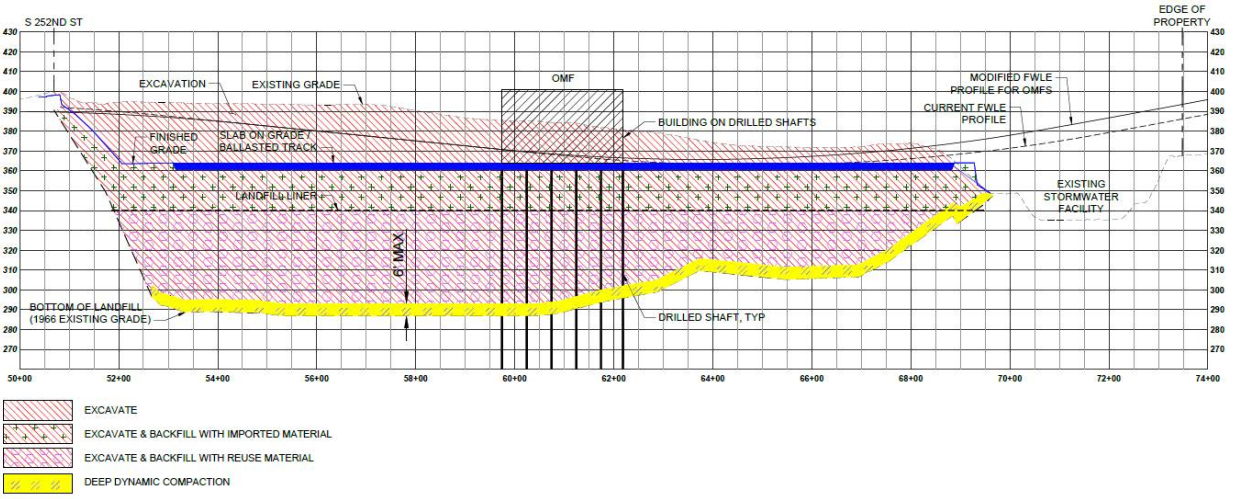


Figure 2.4-7 Hybrid Subsurface Construction Design Option Cross Section

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 off site. Approximately 1.6 million cubic yards of suitable soil would be imported. Figure 2.4-8 is a cross section of the Full Excavation subsurface construction design option.

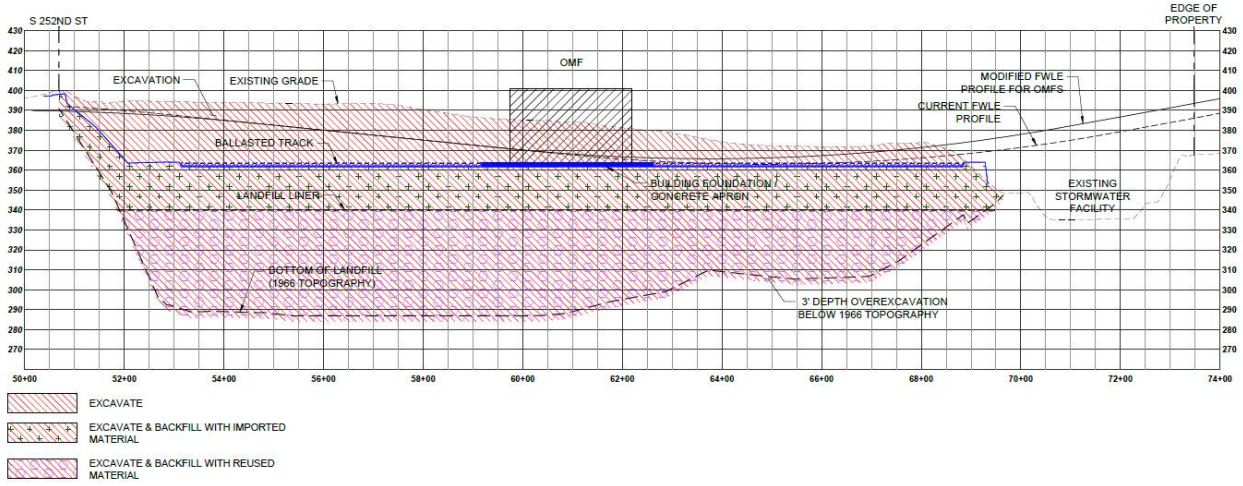


Figure 2.4-8 Full Excavation Subsurface Construction Design Option Cross Section

2.4.6 Staging Areas and Construction Easements

No off-site staging areas would be required to construct OMF South for any of the project alternatives. Construction is anticipated to take place within the footprint of the property being acquired for the proposed project. Construction of the mainline track could use off-site staging, focusing on using parcels that would already be acquired for other mainline-related facilities (for instance, emergency access). Temporary construction easements could be necessary in limited locations along the boundaries of some of the alternative sites, mainline and lead tracks.

2.5 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 all 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 2019d). 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.

In addition to meeting environmental commitments for its projects, Sound Transit seeks to avoid and minimize impacts where possible. Where adverse impacts cannot be avoided, Sound Transit identifies potential measures to mitigate the adverse impacts to the extent feasible.

2.6 Funding and Conceptual Cost Estimates

The current conceptual cost estimates for the three subsurface construction design options at the Midway Landfill Alternative are approximately $2.4 billion for the Platform option, approximately $1.9 billion for the Hybrid option, and approximately $1.8 billion for the Full Excavation option. The capital cost estimates for the South 336th Street and South 344th Street alternatives are the same, at approximately $1.2 billion. The capital cost estimates are represented in ranges in Table 2.6-1 to reflect the conceptual nature of the cost estimate at this phase of project development and the level of engineering (10 percent design) that informs the cost estimates. This cost-estimate range was established based on industry cost-estimating accuracy identified by the Association for Advancement of Cost Engineering International for projects at the 10 percent level of design as well as on Sound Transit experience.

Table 2.6-1 Conceptual Capital and Operating Cost Estimates for OMF South Build Alternatives

Alternative	Real Estate and Relocation	Final Design and Construction	Total Capital Preliminary Estimate	Annual Operating Estimate
Midway Landfill Alternative				
Platform	$34 – 43 M	$2.2 – 2.8 B	$2.2 – 2.8 B	$11 M
Hybrid	$34 – 43 M	$1.8 – 2.2 B	$1.8 – 2.3 B	$11 M
Full Excavation	$34 – 43 M	$1.6 – 2.1 B	$1.7 – 2.1 B	$11 M
South 336th Street Alternative				
Mainline	$14 – 18 M	$216 – 272 M	$230 – 290 M	$1.0 M
OMF Site	$104 – 131 M	$1.0 – 1.3 B	$1.1 – 1.4 B	$10 M
South 344th Street Alternative				
Mainline	$20 – 48 M	$292 – 445 M	$330 – 470 M	$1.2 M
OMF Site	$114 – 144 M	$1.0 – 1.3 B	$1.1 – 1.4 B	$10 M

Note: Capital and operating cost estimates are based on 2019 dollars. They do not account for future increases due to inflation.

The current level of project design includes uncertainties regarding the project scope, engineering data, mitigation requirements, schedule, and project delivery methods. Therefore, 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.

The conceptual capital estimates include 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 for the South 336th Street and South 344th Street alternatives would apply until TDLE is completed.

Sound Transit has initiated an independent third-party review of conceptual capital cost estimates and trends for the OMF South and TDLE projects, among others. This review will include programmatic review and analysis of cost-estimating methodology for Sound Transit 3 construction and real estate costs for these projects.

2.7 Next Steps and Schedule

Following issuance of the Draft Environmental Impact Statement, there will be an extended 45-day public comment period (30 days is required under SEPA) during which agencies, tribes, and the public can make comments. Comments will be accepted in several different formats, as outlined in the Fact Sheet. At the end of the comment period, the Sound Transit Board will consider the comments received, information in the Draft Environmental Impact Statement, and any other relevant information, and will identify a preferred alternative for evaluation in the Final Environmental Impact Statement along with the other alternatives.

After the Final Environmental Impact Statement is issued, the Board will decide which project alternative to build.

2.7.1 Project Schedule

The project schedule is shown in Table 2.7-1. The current schedule is to begin construction by about 2024; Sound Transit expects the facility could be open for operations between 2029 and 2034, depending on the alternative selected to be built. This schedule could change, resulting in a delayed opening or the construction of OMF South in phases to reach full operational capacity over time. For the purposes of this Draft Environmental Impact Statement, the 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[1]
Early Scoping and Public Outreach	Spring to Fall 2018
Environmental Scoping	Spring 2019
Sound Transit Board Identifies Draft EIS Alternatives	May 2019
Draft EIS Published	March 2021
Draft EIS Comment Period	45 days
Sound Transit Board Identifies Preferred Alternative for Final EIS	Summer to Fall 2021
Final EIS Published	Mid 2022
Sound Transit Board Selects Project to Build	Mid to late 2022
NEPA Environmental Review (if necessary)	Late 2022 to early 2023
Final Design, Construction, and Operation Targets	
Final Design and Permitting	Mid to late 2022 through 2023
Construction	2024 to 2029 or later, depending on alternative selected
OMF South Opens	2029 to 2034, depending on alternative selected

Notes:

EIS = Environmental Impact Statement

NEPA = National Environmental Policy Act

(1) Sound Transit Board decisions on realignment, influenced by COVID-19 and increased project cost estimates, may have an impact on the future project schedule

2.7.2 Benefits and Disadvantages of Delaying Project Implementation

This section discusses the benefits and disadvantages of reserving implementation of the proposed project for some future time compared with possible approval at this time. The primary benefit of delaying the proposed project would be to postpone the costs and impacts associated with project construction.

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 to Tacoma Dome 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.
- Delaying the proposed project would likely result in higher construction costs due to inflation.

1 PURPOSE AND NEED FOR THE PROJECT

1.1 Purpose of the Project

The purpose of the Central Puget Sound Regional Transit Authority (Sound Transit) Operations and Maintenance Facility South (OMF South) project is to construct 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).

OMF South would:

- 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.
- Preserve and promote a healthy and sustainable environment by minimizing adverse impacts to people and the natural and built environments.

1.1.1 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. Light rail would expand north to Everett, south to Federal Way and Tacoma, east to Redmond, south Kirkland and Issaquah, and west to West Seattle and Ballard, as shown in Figure 1.1-1[1]. New operation and maintenance facilities would be needed in the North and South Corridors to support the system expansion. Please see Section 2.2 for a description of existing OMF capacity.

North Corridor

Sound Transit 3 would extend light rail north from the Lynnwood Transit Center to downtown Everett via the Southwest Everett Industrial Center. The line is scheduled to open in 2036 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 located 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.

[1] Through a process called realignment, the Sound Transit Board of Directors is working to determine which plans and timelines for Sound Transit 3 projects will need to change. The Board decisions on realignment, influenced by COVID-19 and increased project cost estimates, may have an impact on the future project schedule.

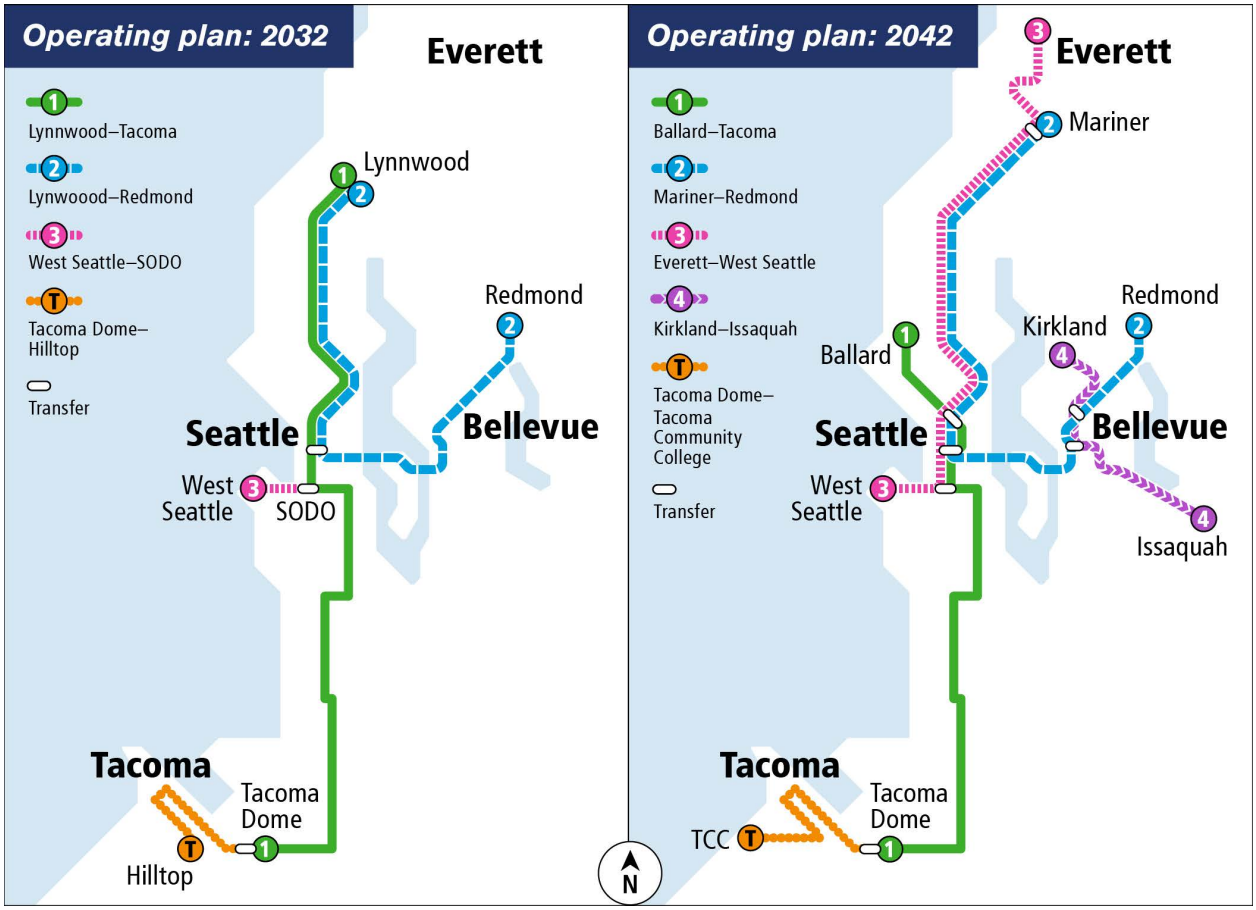


Figure 1.1-1 Link Light Rail System Expansion

Central Corridor

Sound Transit 3 would add two light rail extensions within the city of Seattle. The first extension would add 4.7 miles of light rail service from downtown Seattle to West Seattle's Alaska Junction neighborhood and the next four stations between South of Downtown (known as SODO) and Alaska Junction. In addition, light rail would extend to Ballard with 7.1 miles of light rail service from downtown Seattle to Ballard, as well as a new subway through downtown Seattle and South Lake Union with 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. 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 would extend 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. Four stations would be included on 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. An OMF is being

constructed 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 would extend light rail south from Kent/Des Moines to Federal Way, with stations serving S 272nd Street and the Federal Way Transit Center. From there, light rail would continue south into Pierce County. New stations would be located in South Federal Way, Fife, and Tacoma, where it 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 S 272nd Street, Federal Way Transit Center, South Federal Way, and Fife stations. Sound Transit 3 also includes an expansion of Tacoma Link to Tacoma Community College, with six 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 West Seattle/Ballard to Tacoma Dome service as well as to receive, test, commission, store, maintain, and deploy new LRVs for the entire system.

1.2 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 fleet expansion needs and to store existing vehicles while the new vehicles are tested and prepared.

The OMF South project is necessary to support the addition of about 144 LRVs as part of the Sound Transit 3 system expansion, even if construction of light rail extensions throughout the system is phased or delayed. The facility program 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 Introduction

This chapter describes the alternatives for the proposed project, including the No-Build Alternative. It also discusses how Sound Transit identified potential site alternatives and the process used to eliminate some alternatives from further consideration.

The Draft Environmental Impact Statement evaluates three build alternatives, one in Kent and two in Federal Way, in addition to the 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. A preferred alternative is expected to be identified by the Sound Transit Board of Directors after the Draft Environmental Impact Statement is issued and public, agency, and tribal comments are received and considered.

2.2 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. In 1996, the first phase of investment in the mass transit system began with Sound Move, which includes 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. Figure 2.2-1 shows the regional light rail system with planned extensions and the locations of existing and planned OMFs.

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, and commissioned at this facility.

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 work stations, 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 Federal Way, east to Redmond, and north to Lynnwood, and includes OMF East in Bellevue.

Once operational in 2021, OMF East will be used to clean, store, maintain, and deploy 96 LRVs for daily service. It will provide 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 work stations, and areas with lockers, showers, and restrooms for both operators and maintenance personnel.

Figure 2.2-1 Link System Future Expansion and OMF Site Locations

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.

Sound Transit 3 calls for a total fleet (existing plus new) of approximately 460 LRVs. In order 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 project, OMF South, will satisfy the need for an OMF in the South Corridor.

2.2.1 OMF South Site Components

OMF sites are necessary throughout Sound Transit's light rail network to clean, store, maintain, and deploy LRVs (Figure 2.2-2).

OMF South will need to accommodate three LRV types:

- Kinkisharyo: 62 LRVs 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 than the current LRVs 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. OMF South was designed to accommodate the higher capacity LRVs.

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.

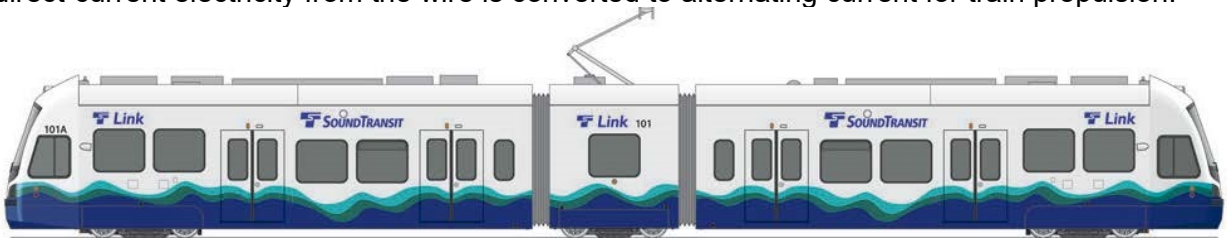


Figure 2.2-2 Link Light Rail Vehicle

The OMF South program includes the following components:

- Runaround tracks
- Storage tracks sized for about 144 vehicles
- 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
- Offices, locker rooms, lunchrooms, and other spaces for employees
- Auto/truck access points
- Employee and visitor parking
- Sound Transit vehicle (nonrevenue vehicle) parking

The proposed dimensions and configuration 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 via lead tracks. The length of these lead tracks depends on the distance from the OMF to an operating mainline and will vary by alternative. The lead tracks allow the LRVs to deploy from the OMF to the mainline for daily operation and travel back to the facility nightly for vehicle maintenance. Because two of the alternatives would be the southern terminus of the existing Link system, the site configurations would need to include tail tracks. These tail tracks would allow trains to access the Link system if the northeast lead tracks are out of service. Figure 2.2-3 shows the different types of tracks found in a typical OMF.

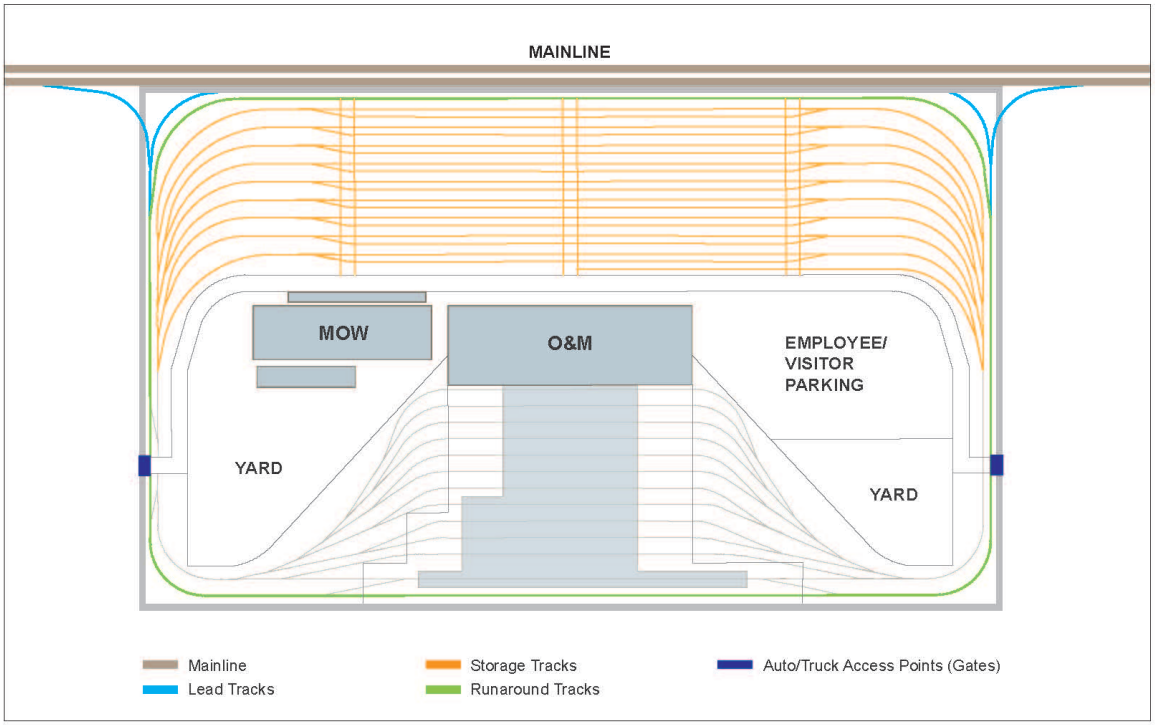


Figure 2.2-3 Track Types in Typical OMF Layout

At two stories tall, the operations and maintenance building would be the tallest building at the site. This building height is necessary to allow for overhead equipment necessary to perform work on all sides of an LRV, including the top. The operations and maintenance building would also have the largest square footage of buildings on the site. It would house the LRV maintenance shops, but it would also be attached to office space that would be used by operators, dispatchers, and administrative staff. OMF South would be fenced for security purposes and access to the facility would be controlled by keycard access at the main entrance gate and at all building entrances. The fencing would be selected to aesthetically fit with OMF South and its surrounding environment consistent with code requirements of the local jurisdiction. Landscaping would also be incorporated into perimeter fence line areas and parking areas as appropriate to diversify the visual landscape of OMF South. Overhead lighting would be provided across OMF South for security purposes and allow for nighttime operations, since much of the LRV maintenance would occur at night. Lighting would be appropriately directed downward and onto the site to avoid overspill into neighboring properties.

2.2.2 OMF South Site Operations

The OMF South 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.

2.2.2.1 Hours

OMF South would operate 24 hours a day, 7 days a week. Approximately 476 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 arrivals would be staggered throughout each shift. Table 2.2-1 lists staff calculations for all the functions at the site. The majority of staff (approximately 300) would be working in the OMF South building.

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	193	146	137	476

2.2.2.2 Light Rail Vehicle Operations and Maintenance

OMF South would be used to receive, test, commission, store, maintain, and deploy about 144 LRVs for daily service. It 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.

OMF South would also be used to 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, and other infrastructure, in addition to storage facilities for the entire Link light rail system. Other facility elements would include employee and visitor parking, operations staff offices, maintenance staff offices, dispatcher work stations, an employee report room, and areas with lockers, showers, and restrooms for both operators and maintenance personnel.

2.2.2.3 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. In order 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.

2.2.2.4 Link System-Wide Storage

The Link System-Wide Storage building within OMF South 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.

2.2.2.5 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. It assumes 5- to 6-minute peak headways for weekdays and 10- to 15-minute headways on Saturday and Sunday. This draft plan assumes that all light rail extensions planned as part of Sound Transit 3 are complete. Please note, 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

2.3 Alternative Development and Scoping

OMF South alternatives underwent an extensive evaluation process prior to their selection for study in this Draft Environmental Impact Statement. 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 State Environmental Policy Act (SEPA) scoping, and in May 2019 the Board identified three project alternatives for evaluation in the Draft Environmental Impact Statement. A preferred alternative has not yet been identified.

2.3.1 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 scoping was intended to initiate the public conversation before the start of environmental studies

and was conducted for both projects concurrently. The public comment period for early scoping was from April 2 to May 3, 2018, during which Sound Transit asked for public, tribal, and agency comments on the project's Purpose and Need statement, the Tacoma Dome Link Extension (TDLE) "representative project alignment" and other alternative alignments, and alternative locations for an OMF in the South Corridor.

In June 2018, Sound Transit published the Tacoma Dome Link Extension and Operations and Maintenance Facility South Early Scoping Summary Report (Sound Transit 2018b). 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.

2.3.2 Identifying Potential OMF South Sites

2.3.2.1 Site Identification

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

As the project evolved, Sound Transit determined that OMF South should be designed to support the potential future extension of the light rail system to the Tacoma Mall area, as envisioned in the agency's Regional Transit Long-Range Plan (Sound Transit 2014), and therefore should be sized to accommodate about 144 LRVs.

2.3.2.2 Prescreening

The prescreening evaluation used three criteria (described below) to evaluate the 24 sites identified during early 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).

2.3.2.3 Alternatives Evaluation

The alternatives evaluation used a total of 21 criteria (Table 2.3-1), including environmental factors, operational and cost factors, and plan consistency, to evaluate the 20 sites that moved forward from prescreening (Figure 2.3-1).

Table 2.3-1 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.
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.

Table 2.3-1 Evaluation Criteria, Measures, and Methods (continued)

Criteria	Measures	Methods
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.
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.

Figure 2.3-1 OMF South Sites Included in the Alternatives Evaluation

As a result of the alternatives evaluation, Sound Transit identified six sites to carry forward to the SEPA Environmental Impact Statement scoping process. The nine southernmost sites, including all of those located in Pierce County, were eliminated because they were not close enough to an operating light rail mainline. Sound Transit also found that potential sites located farther than 1.5 miles south of the FWLE terminus in Federal Way would not be able to efficiently connect to an operating light rail mainline 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 2019a).

2.3.3 SEPA Scoping

Sound Transit published the scoping notice for the Environmental Impact Statement in the SEPA Register on February 19, 2019. The purpose of scoping is to narrow the focus of the Environmental Impact Statement to significant environmental issues, to eliminate insignificant impacts from detailed study, and to identify alternatives to be analyzed in the Environmental Impact Statement (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 2019b) to share information about the project and potential alternatives with agencies, tribes and the public. The Information Report described the six sites considered during the SEPA scoping process (Figure 2.3-2):

- 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 agencies, tribes, and the public and conducted two public scoping meetings, an agency scoping meeting, and an online open house. Additional information regarding public outreach during the SEPA scoping period is available in Appendix B, Public Involvement and Agency Coordination.

In May 2019, Sound Transit published the OMF South Scoping Summary Report which summarized the comments received during the SEPA scoping process and identified next steps for the project (Sound Transit 2019c).

A majority of 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.

2.3.3.1 Alternatives Proposed During Scoping but Not Carried Forward

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 – Large wetland complex 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 of the suggested sites were viable alternatives. After the evaluation, Sound Transit determined that none of the suggested sites were viable due to a number of reasons, including inadequate size, potential impacts to current light rail operations, and potentially severe impacts to sensitive areas.

2.3.4 Board Identification of Alternatives

In May 2019, the Board adopted Motion M2019-50, which identified three site alternatives to study in the OMF South Draft Environmental Impact Statement: 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 2.4, 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 decision was based on the project's Purpose and Need statement, OMF site requirements and screening criteria during the alternative development process, and input from agencies, tribes, and the public during the scoping period.

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, 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, 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 this Draft Environmental Impact Statement range from 59 to 68 acres.

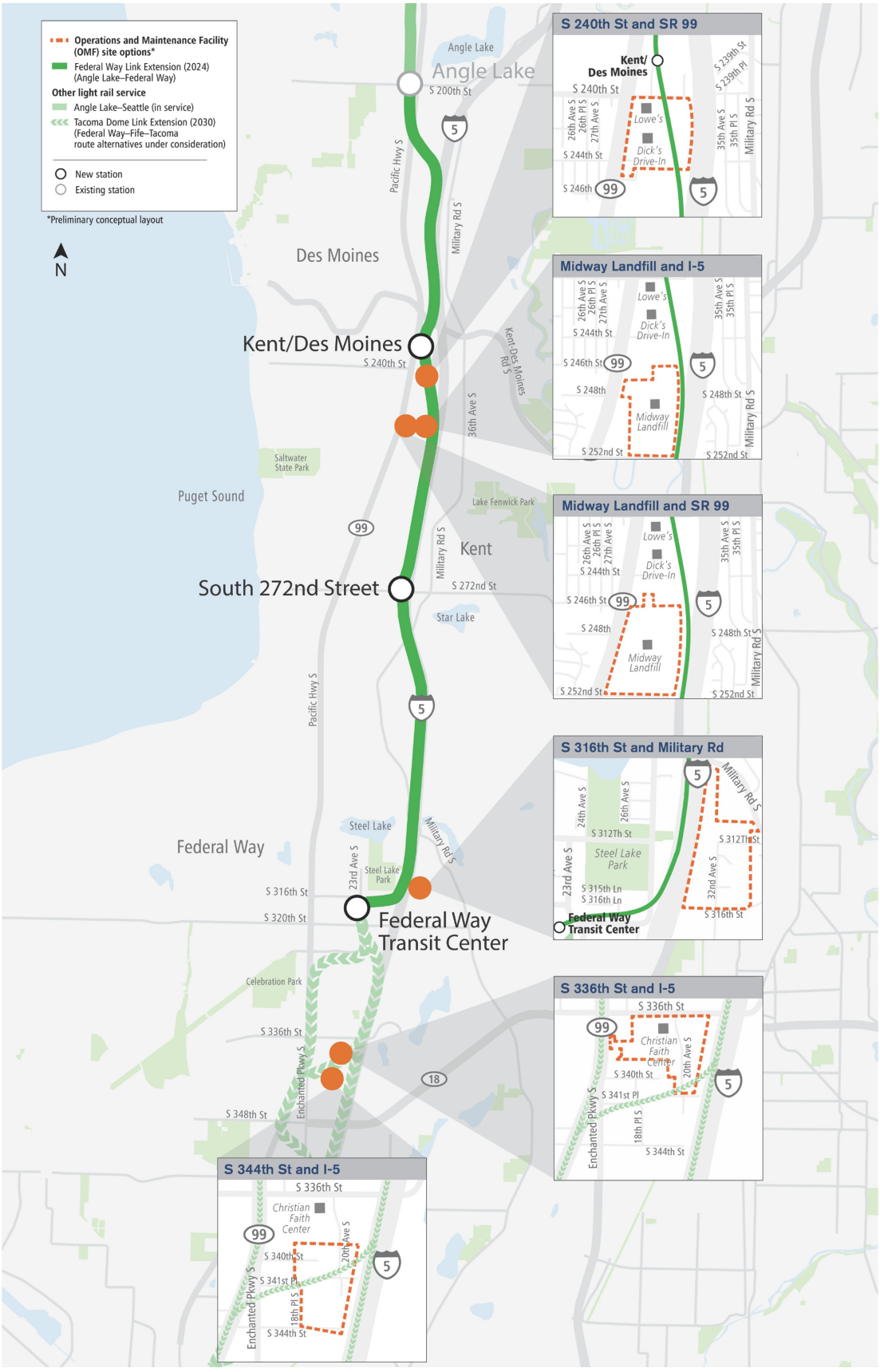


Figure 2.3-2 Scoping Alternatives

2.4 Project Alternatives

2.4.1 No-Build Alternative

Analysis of a No-Build Alternative is required under SEPA. 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 project alternatives can be compared.

The No-Build Alternative assumes the other Link light rail system improvements listed in Sound Transit 3 would be built, including extensions from downtown Seattle to West Seattle and Ballard, Lynnwood to Everett, Redmond Technology Center to downtown Redmond, south Kirkland to Issaquah, Kent/Des Moines to Federal Way Transit Center, and Federal Way Transit Center to Tacoma Dome. The No-Build Alternative also assumes that the new North Corridor OMF would be constructed. Under Sound Transit's System Expansion Plan, each of these projects would be constructed and operating by 2042.

Operations and maintenance functions would be located at the existing OMF Central (104-LRV capacity), the new OMF East in Bellevue (96-LRV capacity), and the proposed OMF in the North Corridor (152-LRV capacity). The three facilities would have a combined capacity to support and store 352 LRVs. Therefore, the No-Build Alternative assumes a maximum light rail fleet size of 352 LRVs, which is fewer than the approximately 460 needed to operate the system at the planned service levels of Sound Transit 3.

Under the No-Build Alternative, impacts resulting 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 and is planned to open for service in 2024. The impacts of FWLE have been addressed in the Federal Way Link Extension Final Environmental Impact Statement (Sound Transit 2016b). Under the Sound Transit 3 Plan, TDLE was planned to open in 2030 (after the expected opening of OMF South). The COVID-19 pandemic has impacted the TDLE project schedule, and the project can no longer achieve this opening date. The TDLE and OMF South schedules are also subject to the outcome of realignment. TDLE is currently undergoing environmental review under both NEPA and SEPA by the Federal Transit Administration (FTA) and Sound Transit. The Tacoma Dome Link Extension Draft Environmental Impact Statement is expected to be published in 2022.

As described below in Section 2.4.2, Build Alternatives, the TDLE mainline south of FWLE may serve as part of the connecting track to OMF South, depending on which build alternative is chosen. In those instances, impacts from the mainline tracks would be primarily the same under both the No-Build and build alternatives, although the timing of those impacts would be different.

For the purposes of this Draft Environmental Impact Statement, 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 of all the Sound Transit 3 projects. This provides a common future analysis year for forecasting ridership and determining potential impacts to air, noise, transportation, and other environmental elements from all Sound Transit 3 projects.

Environmental impacts associated with FWLE are considered part of the No-Build Alternative. However, because TDLE will open after OMF South and has not completed environmental review, impacts associated with the TDLE mainline tracks connecting to the OMF South alternatives are not described as part of the No-Build Alternative and are addressed in the discussion of the build alternatives. TDLE impacts beyond those associated with the mainline tracks are part of the 2042 No-Build condition and are addressed in Chapter 4, Cumulative

Impact Analysis, and will be further detailed in the separate Tacoma Dome Link Extension Environmental Impact Statement.

2.4.2 Build Alternatives

Build alternatives evaluated in this Draft Environmental Impact Statement include the Midway Landfill Alternative, the South 336th Street Alternative, and the South 344th Street Alternative (Figure 2.4-1). Appendix C, Conceptual Design Drawings and Engineering Information, includes preliminary engineering design drawings of each of the alternatives.

The Midway Landfill Alternative is located adjacent to FWLE and would connect by lead tracks directly to the FWLE mainline. The South 336th Street and South 344th Street alternatives would require the construction of between approximately 1.4 and 1.8 miles of mainline tracks from the FWLE terminus (Figure 2.4-2).

If either the South 336th Street or South 344th Street alternatives were constructed, the mainline track connecting those sites to the FWLE terminus would be used as TDLE mainline track when TDLE opens for service. Because both the OMF South and TDLE projects would potentially require the construction of this length of mainline independently from each other, the alignment options are being evaluated in this Draft Environmental Impact Statement as well as the Tacoma Dome Link Extension Draft Environmental Impact Statement, which is expected to be published in 2022.

Project realignment, influenced by COVID-19 and increased project cost estimates, may have an impact on the future project schedule. This could result in a delayed opening or the construction of OMF South in phases to reach full operational capacity over time. For the purposes of this Draft Environmental Impact Statement, the analysis evaluates the potential environmental impacts of OMF South at full buildout.

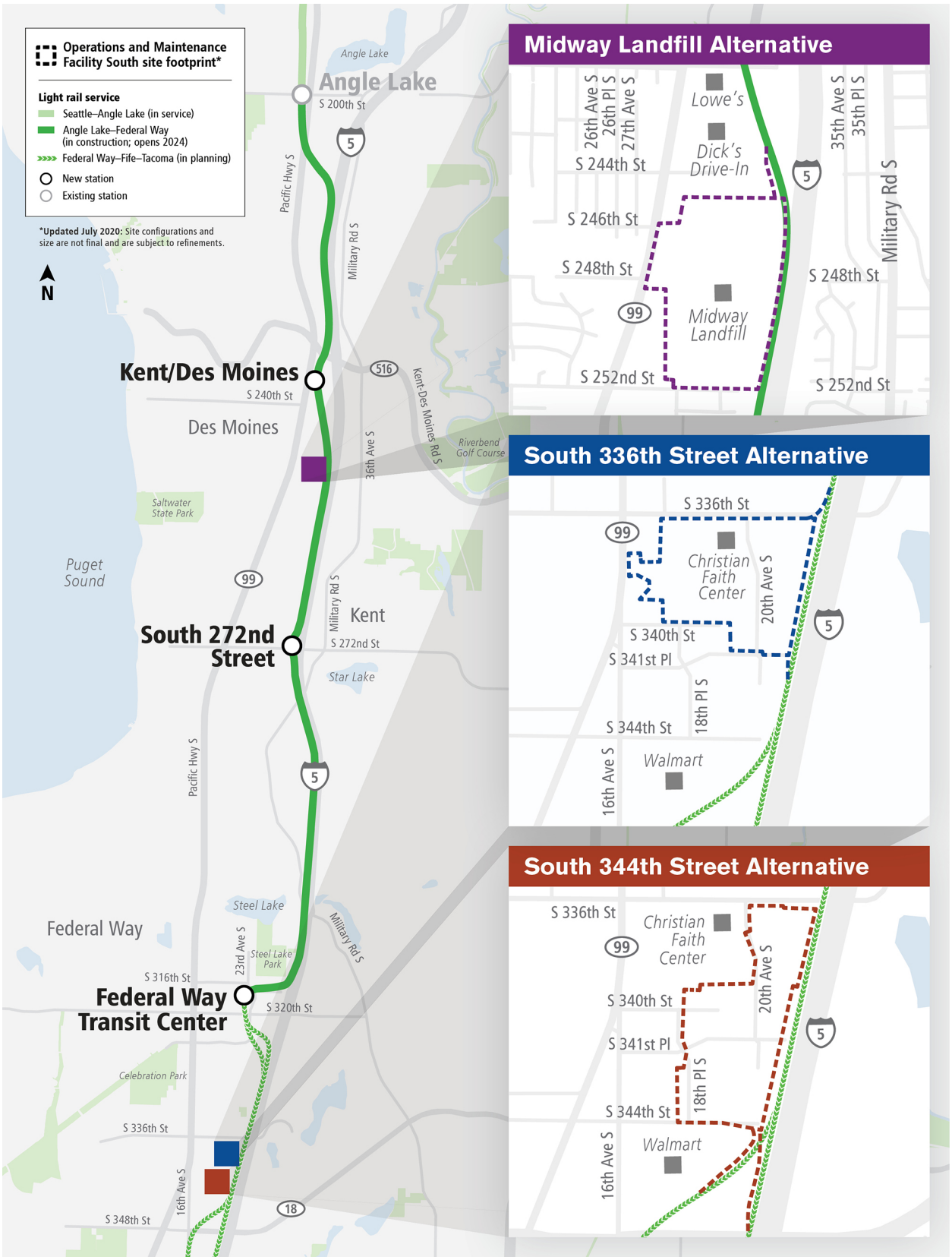
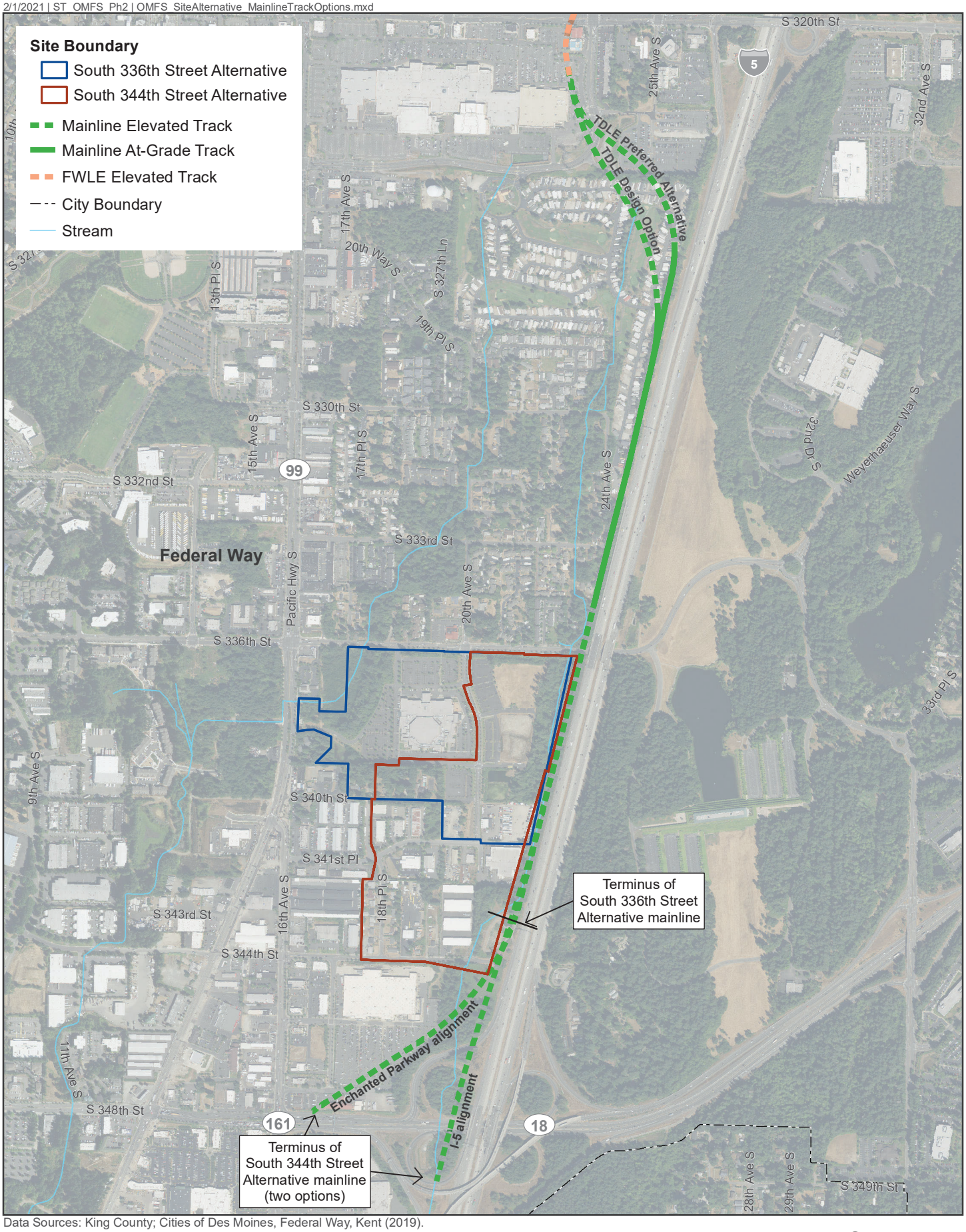


Figure 2.4-1 Project Alternatives



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

N

0 1,000 2,000 Feet

FIGURE 2.4-2
Mainline Track Options
South 336th and South 344th Street Alternatives

OMF South

2.4.2.1 Midway Landfill Alternative

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

Mainline

Because the site would be located adjacent to FWLE, which is scheduled to open as an active light rail line in 2024, there would be no need to build additional mainline.

OMF South Site

The programmed site area (development footprint) of the Midway Landfill Alternative is approximately 68 acres, which includes the 2-story OMF building, the 1-story MOW building, the 1-story Link System-Wide Storage building, storage tracks, training tracks, parking, and yard areas. (Building heights do not vary between site alternatives.) There would be approximately 450 parking spaces, including spaces for employees, visitors, accessible parking, and nonrevenue Sound Transit vehicles. The yard area encompasses approximately 8.5 acres. Figure 2.4-3 is an aerial view with a conceptual site layout.

The Midway Landfill Alternative includes connections to the mainline via lead tracks between the Kent/Des Moines and South 272nd Street stations. An approximately 3,780-foot-long lead connector track would run parallel to FWLE to connect the OMF South lead tracks. About 35 percent of the lead connector tracks would be elevated. Five lead tracks would connect the lead connector track to the OMF South yard to allow trains to enter and exit the site. Each of these lead tracks would be approximately 450 feet long and mostly built at-grade.

2.4.2.2 South 336th Street Alternative

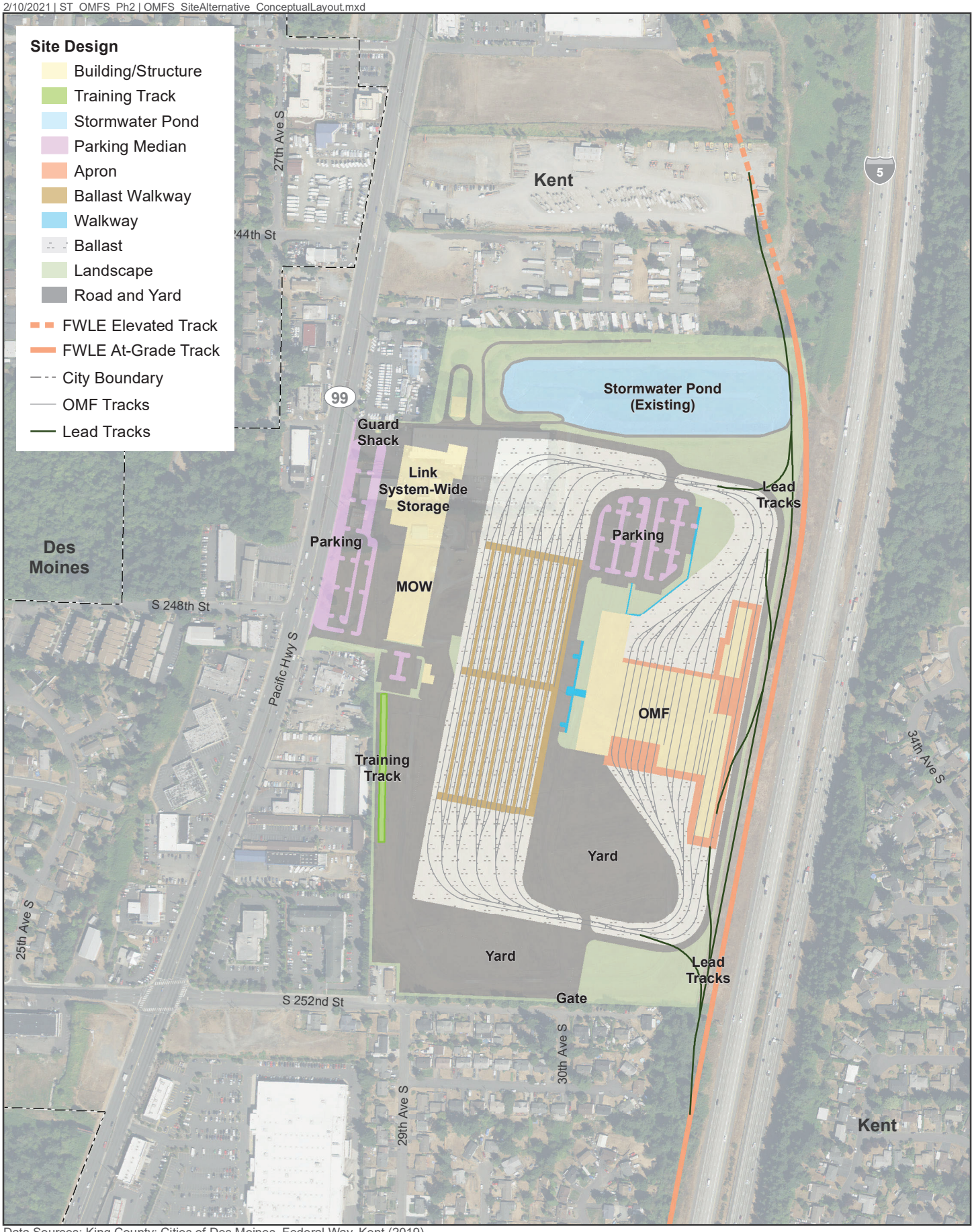
The South 336th Street Alternative is located in Federal Way between S 336th Street and S 341st Place and between I-5 and SR 99.

Mainline

The South 336th Street Alternative requires approximately 1.4 miles of connecting mainline track from the terminus of the FWLE project at the Federal Way Transit Center to the site, including the proposed mainline tail track. If TDLE is constructed as planned, this track would become part of the TDLE mainline.

There are two alternative alignments for this length of mainline: the TDLE Preferred Alternative, designed for 40 mph, and the TDLE Design Option, designed for 55 mph. Both mainline alignments would be elevated, with north-bound and south-bound tracks.

The mainline would extend south approximately 600 feet past the southeast corner of the site to serve as tail tracks. Until the TDLE mainline is extended to the south, these elevated tracks would be used to allow trains to access the Link system if the northeast 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.



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

N

0 500 1,000 Feet

FIGURE 2.4-3
Conceptual Layout
Midway Landfill Alternative

OMF South

OMF South Site

The South 336th Street Alternative site footprint is approximately 59 acres, which 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 435 parking spaces, including spaces for employees, visitors, accessible parking, and nonrevenue Sound Transit vehicles. The yard area would be approximately 7.2 acres. Figure 2.4-4 is an aerial view with a conceptual layout.

In addition to the mainline extension, the site would also require lead tracks to access the rail system via the mainline. Elevated lead tracks would leave the northeast corner of the site and be approximately 600 feet long. Similarly, approximately 1,030 feet of elevated tracks would leave the southeast corner of the site to access the mainline tail tracks.

2.4.2.3 South 344th Street Alternative

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

Mainline

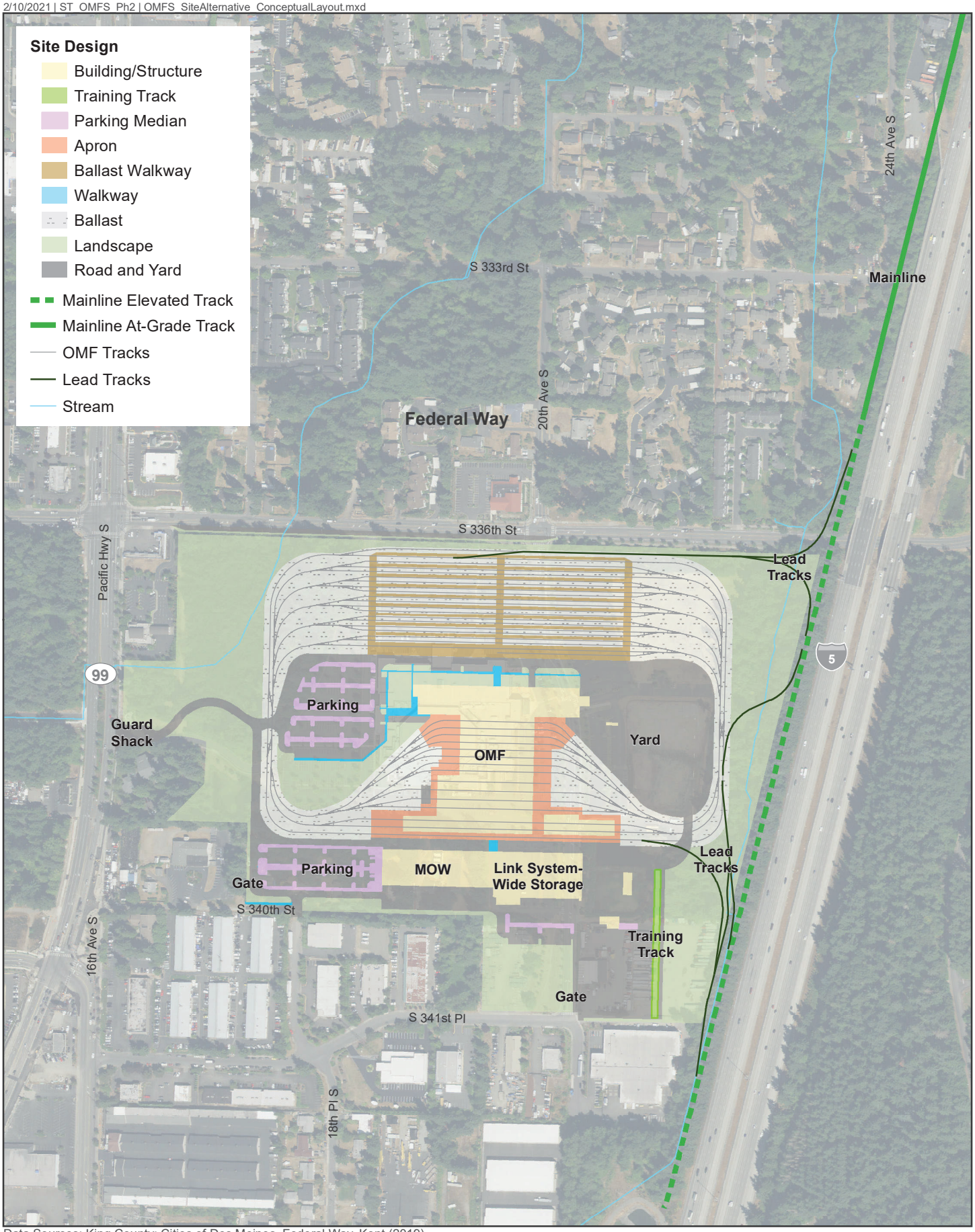
The South 344th Street Alternative requires approximately 1.8 miles of connecting mainline track from the terminus of the FWLE project at the Federal Way Transit Center to the site, including the proposed mainline tail track. As with the South 336th Street Alternative, these tracks would serve as future mainline tracks for TDLE and would follow the same alignment. The mainline alternative alignment options are the same as those described for the South 336th Street Alternative.

As with the South 336th Street Alternative, the mainline would extend past the southeast corner of the site to serve as tail tracks. Until the TDLE mainline is extended to the south, these tail tracks would be used to allow trains to access the Link system if the northeast lead tracks are 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 follow the 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 1,500 feet south the site and the I-5 alignment extending approximately 1,800 feet south of the site.

OMF South Site

The South 344th Street Alternative site footprint is approximately 65 acres, which 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 435 parking spaces, including spaces for employees, visitors, people with disabilities, and spaces for nonrevenue Sound Transit vehicles. The yard area would be approximately 11.2 acres. Figure 2.4-5 is an aerial view with a conceptual layout.

In addition to the mainline extension, the site would also require lead tracks to access the rail system via the mainline. The elevated tracks would leave the northeast corner of the site and be approximately 1,070 feet long. Similarly, approximately 1,100 feet of elevated 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 tracks would be needed to connect the site to the mainline tail tracks for the I-5 alignment.



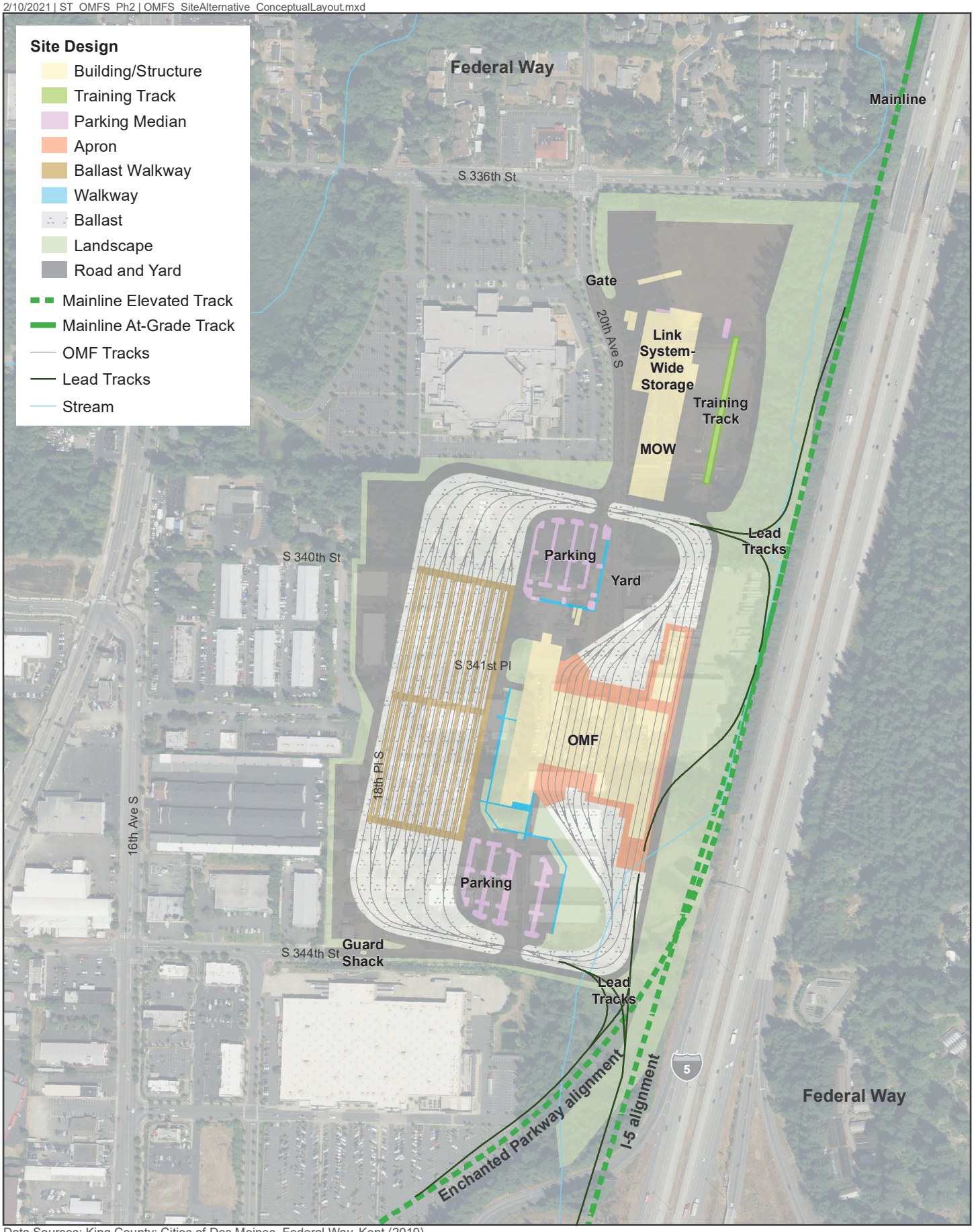
Data Sources: King County; Cities of Des Moines, Federal Way, Kent (2019).

N

0 500 1,000 Feet

FIGURE 2.4-4
Conceptual Layout
South 336th Street Alternative

OMF South



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

N

0 500 1,000 Feet

FIGURE 2.4-5
Conceptual Layout
South 344th Street Alternative

OMF South

2.4.3 Overview of Construction Approach

This section provides an overview of potential construction activities and timing. Activities include civil construction, systems installation, testing, and startup actions. Site preparation, primary construction, and finish construction would happen during the civil construction phase.

Major civil construction activities are:

- Demolition (buildings, pavement).
- Clearing and vegetation removal.
- Installing erosion/siltation controls.
- Site grading, fill, compaction, and excavation.
- Utility extensions, relocations, or disruptions.
- Stormwater drainage system improvements.
- Construction activity in or near a water body or sensitive area.
- Contaminated water treatment.
- Elevated structure construction.
- Retaining wall construction.
- Pile driving or drilling shafts.
- Temporary partial road or lane closures and detour routes.
- Temporary, partial, or limited access to properties.
- Materials and equipment delivery.
- Building construction.
- Track and overhead catenary system (trolley wire) construction.
- Landscaping.

2.4.4 Construction Methods, Sequence, and Activities

A construction plan will be developed during project design to establish the various construction phases and construction contracts, their estimated schedule and duration, and appropriate sequencing. The actual sequencing could vary depending on whether the project is contracted using a Design Build contract (meaning one firm does final design and construction) or a Design Bid Build (meaning one firm does final design, the project is put out for bid, and a second firm does the actual construction). The current preferred approach is to use the Design Build method, which is the contracting method being used for FWLE and OMF East. Major construction activities would demolish existing buildings, relocate utilities, clear trees and vegetation, and grade and excavate the site, which may include the construction of retaining walls. The next phase of construction would include installing track work and electrical systems (overhead catenary system power lines, etc.) and constructing OMF South buildings.

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 2.4-1 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 2.4-1 Estimated OMF South Construction Durations

Alternative	Site Preparation	Facility Construction	Total[1]
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
South 336th Street	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

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 approval by 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 Chapter 3.2, Transportation, and are discussed in detail in Appendix G1, Transportation Technical Report.

2.4.5 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 a mainline 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 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 this Draft Environmental Impact Statement, indicating an interest in exploring options to develop the site for the proposed OMF South. The cities of Kent and Federal Way also expressed interest in the suggestion.

In 2019, Sound Transit conducted two workshops with representatives from SPU, WSDOT, and the cities of 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 of an at-grade mainline. 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 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.

Table 2.4-2 lists the site preparation requirements for each subsurface construction design option.

Table 2.4-2 Midway Landfill Preparation Material Requirements

Subsurface Construction Design Option	Excavation (cubic yds)	Excavation (tons)	Material Removed from Site (tons)	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	1,023,000	678,000	340,000	340,000	0	531,000
Hybrid	4,270,000	4,323,000	2,592,000	2,950,000	1,710,000	1,240,000	165,000
Full Excavation	4,870,000	4,931,000	2,956,500	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 10 feet in diameter, distributed on a 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.

There would be a need for roughly 6-foot-deep pits 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 be used to run utility lines for maintenance access. Figure 2.4-6 is a cross section of the Platform subsurface construction design option.

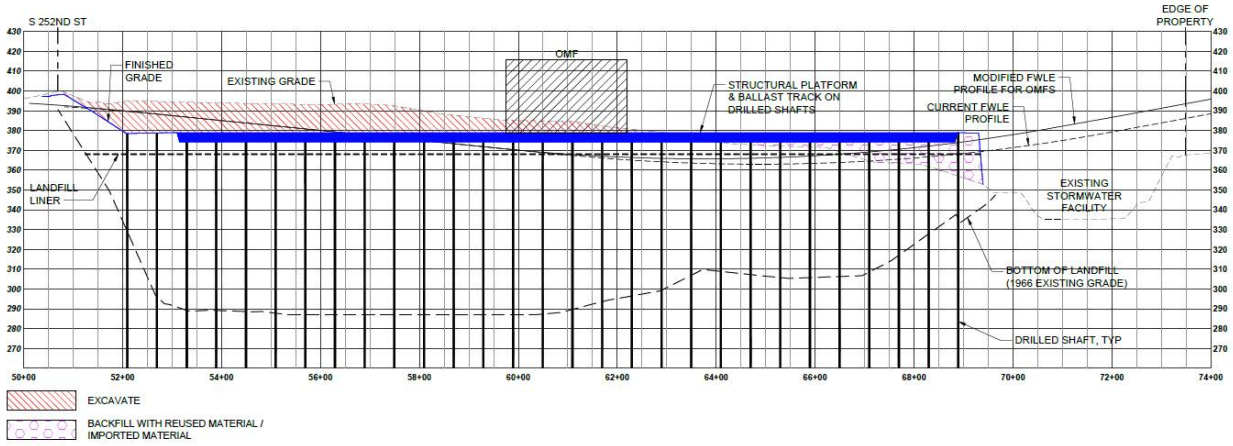


Figure 2.4-6 Platform Subsurface Construction Design Option Cross Section

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 was 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 in size. Concrete-filled drilled shafts would provide additional support where needed to support buildings. Approximately 110 of these shafts would be needed. Approximately 1.2 million cubic yards of loose material would need to be brought to the site. Figure 2.4-7 is a cross section of the Hybrid subsurface construction design option.

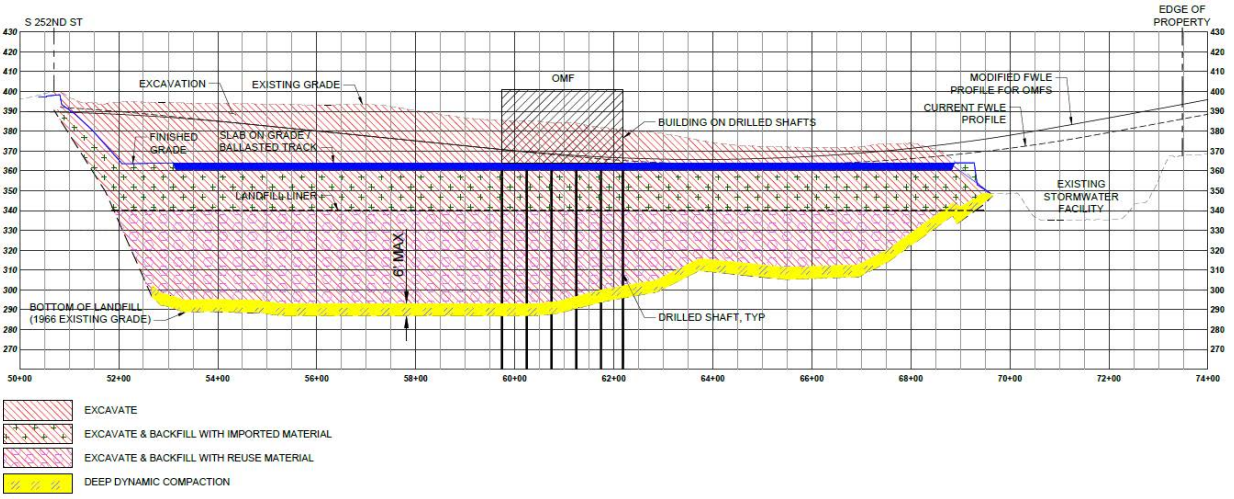


Figure 2.4-7 Hybrid Subsurface Construction Design Option Cross Section

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 off site. Approximately 1.6 million cubic yards of suitable soil would be imported. Figure 2.4-8 is a cross section of the Full Excavation subsurface construction design option.

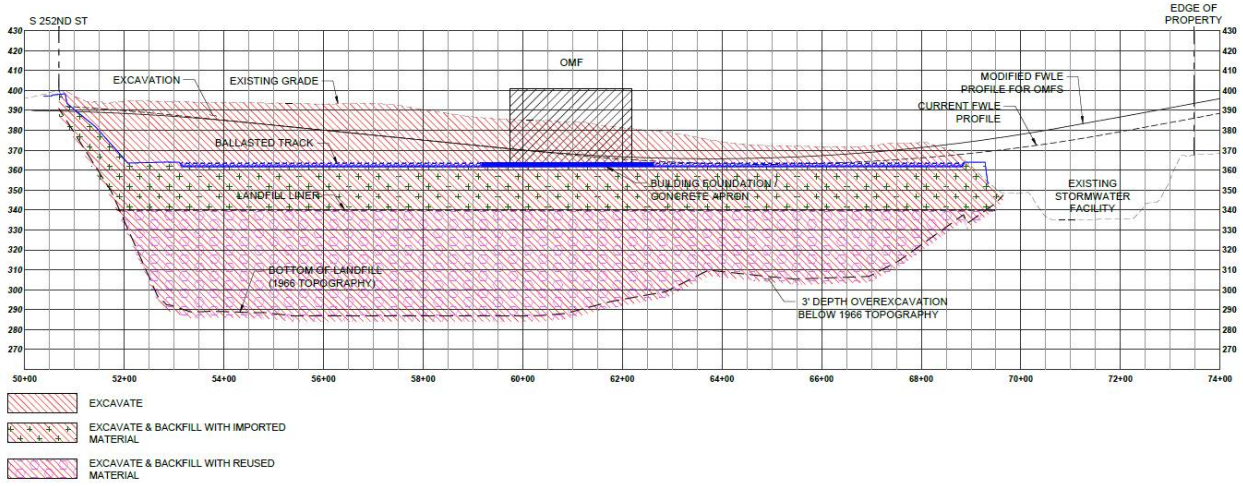


Figure 2.4-8 Full Excavation Subsurface Construction Design Option Cross Section

2.4.6 Staging Areas and Construction Easements

No off-site staging areas would be required to construct OMF South for any of the project alternatives. Construction is anticipated to take place within the footprint of the property being acquired for the proposed project. Construction of the mainline track could use off-site staging, focusing on using parcels that would already be acquired for other mainline-related facilities (for instance, emergency access). Temporary construction easements could be necessary in limited locations along the boundaries of some of the alternative sites, mainline and lead tracks.

2.5 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 all 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 2019d). 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.

In addition to meeting environmental commitments for its projects, Sound Transit seeks to avoid and minimize impacts where possible. Where adverse impacts cannot be avoided, Sound Transit identifies potential measures to mitigate the adverse impacts to the extent feasible.

2.6 Funding and Conceptual Cost Estimates

The current conceptual cost estimates for the three subsurface construction design options at the Midway Landfill Alternative are approximately $2.4 billion for the Platform option, approximately $1.9 billion for the Hybrid option, and approximately $1.8 billion for the Full Excavation option. The capital cost estimates for the South 336th Street and South 344th Street alternatives are the same, at approximately $1.2 billion. The capital cost estimates are represented in ranges in Table 2.6-1 to reflect the conceptual nature of the cost estimate at this phase of project development and the level of engineering (10 percent design) that informs the cost estimates. This cost-estimate range was established based on industry cost-estimating accuracy identified by the Association for Advancement of Cost Engineering International for projects at the 10 percent level of design as well as on Sound Transit experience.

Table 2.6-1 Conceptual Capital and Operating Cost Estimates for OMF South Build Alternatives

Alternative	Real Estate and Relocation	Final Design and Construction	Total Capital Preliminary Estimate	Annual Operating Estimate
Midway Landfill Alternative				
Platform	$34 – 43 M	$2.2 – 2.8 B	$2.2 – 2.8 B	$11 M
Hybrid	$34 – 43 M	$1.8 – 2.2 B	$1.8 – 2.3 B	$11 M
Full Excavation	$34 – 43 M	$1.6 – 2.1 B	$1.7 – 2.1 B	$11 M
South 336th Street Alternative				
Mainline	$14 – 18 M	$216 – 272 M	$230 – 290 M	$1.0 M
OMF Site	$104 – 131 M	$1.0 – 1.3 B	$1.1 – 1.4 B	$10 M
South 344th Street Alternative				
Mainline	$20 – 48 M	$292 – 445 M	$330 – 470 M	$1.2 M
OMF Site	$114 – 144 M	$1.0 – 1.3 B	$1.1 – 1.4 B	$10 M

Note: Capital and operating cost estimates are based on 2019 dollars. They do not account for future increases due to inflation.

The current level of project design includes uncertainties regarding the project scope, engineering data, mitigation requirements, schedule, and project delivery methods. Therefore, 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.

The conceptual capital estimates include 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 for the South 336th Street and South 344th Street alternatives would apply until TDLE is completed.

Sound Transit has initiated an independent third-party review of conceptual capital cost estimates and trends for the OMF South and TDLE projects, among others. This review will include programmatic review and analysis of cost-estimating methodology for Sound Transit 3 construction and real estate costs for these projects.

2.7 Next Steps and Schedule

Following issuance of the Draft Environmental Impact Statement, there will be an extended 45-day public comment period (30 days is required under SEPA) during which agencies, tribes, and the public can make comments. Comments will be accepted in several different formats, as outlined in the Fact Sheet. At the end of the comment period, the Sound Transit Board will consider the comments received, information in the Draft Environmental Impact Statement, and any other relevant information, and will identify a preferred alternative for evaluation in the Final Environmental Impact Statement along with the other alternatives.

After the Final Environmental Impact Statement is issued, the Board will decide which project alternative to build.

2.7.1 Project Schedule

The project schedule is shown in Table 2.7-1. The current schedule is to begin construction by about 2024; Sound Transit expects the facility could be open for operations between 2029 and 2034, depending on the alternative selected to be built. This schedule could change, resulting in a delayed opening or the construction of OMF South in phases to reach full operational capacity over time. For the purposes of this Draft Environmental Impact Statement, the 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[1]
Early Scoping and Public Outreach	Spring to Fall 2018
Environmental Scoping	Spring 2019
Sound Transit Board Identifies Draft EIS Alternatives	May 2019
Draft EIS Published	March 2021
Draft EIS Comment Period	45 days
Sound Transit Board Identifies Preferred Alternative for Final EIS	Summer to Fall 2021
Final EIS Published	Mid 2022
Sound Transit Board Selects Project to Build	Mid to late 2022
NEPA Environmental Review (if necessary)	Late 2022 to early 2023
Final Design, Construction, and Operation Targets	
Final Design and Permitting	Mid to late 2022 through 2023
Construction	2024 to 2029 or later, depending on alternative selected
OMF South Opens	2029 to 2034, depending on alternative selected

Notes:

EIS = Environmental Impact Statement

NEPA = National Environmental Policy Act

(1) Sound Transit Board decisions on realignment, influenced by COVID-19 and increased project cost estimates, may have an impact on the future project schedule

2.7.2 Benefits and Disadvantages of Delaying Project Implementation

This section discusses the benefits and disadvantages of reserving implementation of the proposed project for some future time compared with possible approval at this time. The primary benefit of delaying the proposed project would be to postpone the costs and impacts associated with project construction.

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 to Tacoma Dome 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.
- Delaying the proposed project would likely result in higher construction costs due to inflation.