

# LINK LIGHT RAIL OPERATIONS AND MAINTENANCE SATELLITE FACILITY

DRAFT ENVIRONMENTAL IMPACT STATEMENT



MAY 2014



CENTRAL PUGET SOUND  
REGIONAL TRANSIT AUTHORITY







May 9, 2014

Dear Recipient:

The U.S. Department of Transportation Federal Transit Administration (FTA) and Sound Transit (the Central Puget Sound Regional Transit Authority) have prepared this Draft Environmental Impact Statement (Draft EIS) on the proposed Link Light Rail Operations and Maintenance Satellite Facility. Sound Transit is the project proponent.

The Draft EIS has been prepared pursuant to the National Environmental Policy Act (42 U.S.C. 4321 to 4370e) and the State Environmental Policy Act (Ch. 43.21C RCW). It has been prepared to inform the public, agencies and decision makers about the environmental consequences of building and operating the Link light rail Operations and Maintenance Satellite Facility in the cities of Lynnwood and Bellevue. The Draft EIS examines the project alternatives identified by the Sound Transit Board in December 2012.

The major choices for the project involve the location of a light rail operations and maintenance satellite facility. The Sound Transit Board will consider the Draft EIS, public and agency comments, and other information before identifying a preferred facility location. FTA and Sound Transit will prepare a Final EIS which will respond to comments on the Draft EIS and include an evaluation of impacts and mitigation for the preferred alternative and other alternatives considered. After completion of the Final EIS the Sound Transit Board will select the project to be built. FTA will also issue a Record of Decision, which will state FTA's decision on the project and list Sound Transit's mitigation commitments to reduce or avoid impacts.

The Draft EIS includes appendices and technical reports on the enclosed CD. Please see the Fact Sheet of this Draft EIS regarding document availability and who to contact for further information about the Draft EIS.

Sincerely,

Kent Hale  
Environmental Affairs and Sustainability

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**LINK LIGHT RAIL OPERATIONS AND MAINTENANCE SATELLITE FACILITY  
KING AND SNOHOMISH COUNTIES, WASHINGTON  
DRAFT ENVIRONMENTAL IMPACT STATEMENT**

Submitted pursuant to  
the National Environmental Policy Act (NEPA) (42 USC 4322(2)(c))  
and the State Environmental Policy Act (SEPA) (Ch. 43.21C RCW)

by the

**U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL TRANSIT ADMINISTRATION**

and

**CENTRAL PUGET SOUND REGIONAL TRANSIT AUTHORITY  
(Sound Transit)**

In cooperation with

CITY OF BELLEVUE  
CITY OF LYNNWOOD  
KING COUNTY  
SNOHOMISH COUNTY

U.S. ARMY CORPS OF ENGINEERS

4/15/14

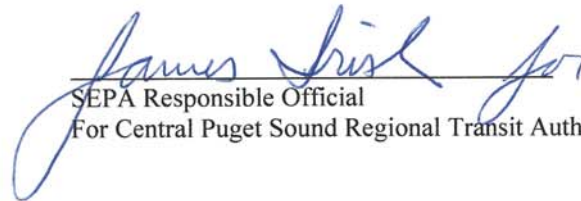
Date of Approval



Regional Administrator  
For Federal Transit Administration, Region 10

4/15/14

Date of Approval



SEPA Responsible Official  
For Central Puget Sound Regional Transit Authority

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# State Environmental Policy Act (SEPA) Fact Sheet

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## Project Title

Link Light Rail Operations and Maintenance Satellite Facility

## Proposed Action

The Link Light Rail Operations and Maintenance Satellite Facility (OMSF) project (proposed project) proposes to construct and operate an OMSF to meet the needs of the expanded fleet of light rail vehicles (LRVs) identified in *Sound Transit 2: A Mass Transit Guide, The Regional Transit System Plan for Central Puget Sound (ST2)*. The OMSF would be used to store, maintain, and dispatch LRVs for daily service by providing vehicle storage, preventative maintenance inspections, light maintenance, emergency maintenance, interior vehicle cleaning, and exterior vehicle washing. The facility would also be used to accommodate administrative and operational functions, such as serving as a report base for LRV operators. Additional facility elements would include employee 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. Four build alternative sites for the proposed project are evaluated: one in Lynnwood and three in Bellevue, Washington.

## Project Proponent and State Environmental Policy Act Lead Agency

Sound Transit  
Union Station  
401 South Jackson Street  
Seattle, Washington 98104  
[www.soundtransit.org](http://www.soundtransit.org)

## Dates of Construction and Opening

Sound Transit plans to begin construction of the proposed project by 2017, and expects it to be ready for operations in 2020.

## National Environmental Policy Act Lead Agency

Federal Transit Administration (FTA)  
915 Second Avenue, Suite 3142  
Seattle, Washington 98174

## **State Environmental Policy Act Responsible Official**

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## **Contacts**

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## Potential Permits and Approvals

The list below pertains to permits that may be required based on the range of alternatives in this Draft Environmental Impact Statement (Draft EIS).

| Permit or Approval  | Issuing Agency   |
|---|--|
| <b>Federal</b>  |  |
| Section 106 Review  | Federal Transit Administration   |
| Section 4(f) Review   | Federal Transit Administration   |
| Clean Water Act, Section 404  | U.S. Army Corps of Engineers   |
| Federal Endangered Species Act Review                                       | U.S. Fish and Wildlife Service and National Oceanic and Atmospheric Administration Fisheries Service |
| <b>State and County</b>   |  |
| Hydraulic Project Approval  | Washington Department of Fish and Wildlife   |
| Public Utility Commission Permits   | Washington Public Utility Commission   |
| Section 106 Review  | Washington State Department of Archaeology and Historic Preservation                                 |
| National Pollution Discharge Elimination System Stormwater Discharge Permit | Washington State Department of Ecology   |
| Temporary Modification of Water Quality Criteria                            | Washington State Department of Ecology   |
| Underground Storage Tank Notification Requirement                           | Washington State Department of Ecology   |
| Water Quality Certification: Section 401                                    | Washington State Department of Ecology   |
| <b>Cities</b>   |  |
| Street Use Permits  | Cities of Bellevue and Lynnwood  |
| Construction Permits  | Cities of Bellevue and Lynnwood  |
| Right-of-Way Permits or Franchise for Use of City Right-of-Way              | Cities of Bellevue and Lynnwood  |
| Environmental Critical Areas/Sensitive Areas Review                         | Cities of Bellevue and Lynnwood  |
| Development Permits   | Cities of Bellevue and Lynnwood  |
| Noise Variance  | Cities of Bellevue and Lynnwood  |
| Street Vacations  | Cities of Bellevue and Lynnwood  |
| Certificates of Approval  | Cities of Bellevue and Lynnwood  |
| <b>Other</b>  |  |
| Various Approvals: Planning, Design Review, and Arts Commissions            | Cities of Bellevue and Lynnwood  |
| Notification of Intent to Perform Demolition or Asbestos Removal            | Puget Sound Clean Air Agency   |
| Pipeline and Utility Crossing Permits                                       | Utility Providers  |
| Utility Approvals: Easements and Use Agreements                             | Utility Providers  |

## Principal Contributors

This Draft EIS was prepared by consultants at the following firms: ICF International, Huitt-Zollars, Heffron Transportation, Inc., Hart Crowser, and Michael Minor and Associates. See Appendix A, *Document Support Information*, Section A.2, for a detailed list of preparers and the nature of their contributions.

## Date Draft Environmental Impact Statement Issued

May 9, 2014

## Commenting on the Draft Environmental Impact Statement

A comment period of 45 days will begin May 9, 2014. Comments on the Draft EIS can be made in writing, by email, or at the public hearings. All comments are due by close of business on June 23, 2014. Please send written comments to the following address:

Attention: Sound Transit Link Light Rail OMSF Draft EIS Comments  
Sound Transit  
Union Station  
401 South Jackson Street  
Seattle, Washington 98104

Email comments should be sent to [OMSF@soundtransit.org](mailto:OMSF@soundtransit.org). Both written and email comments should include an addressee and return address.

Or please attend one of the following public hearings with open house events and offer your comments at the hearing.

### **June 3, 2014—Lynnwood**

5:00 p.m. to 7:30 p.m.  
Lynnwood Convention Center  
3711 196th Street SW  
Lynnwood, WA 98036

### **June 5, 2014—Bellevue**

5:00 p.m. to 7:30 p.m.  
Coast Bellevue Hotel  
625 116th Avenue NE  
Bellevue, WA 98004

## Next Actions

Following publication of the Draft EIS, public hearings will be held and comments will be taken on the proposed project. A Final EIS will be published in mid to late 2015, identifying a preferred alternative and responding to public and agency comments received. Following publication of the Final EIS, the Sound Transit Board of Directors will make a final decision on the OMSF alternative to be built. After publication of the Final EIS, FTA is expected to issue a Record of Decision (ROD) on the proposed project.

## Related Documents

### Environmental Documents

*East Link Project Final Environmental Impact Statement (Sound Transit 2011)*

*Lynnwood Link Extension Draft Environmental Impact Statement (Sound Transit 2013)*

*Final Supplemental Environmental Impact Statement on the Regional Transit Long-Range Plan (Sound Transit 2005)*

### Other Documents

*Sound Transit 2: A Mass Transit Guide, The Regional Transit System Plan for Central Puget Sound (Sound Transit 2008).*

## Cost and Availability of Draft Environmental Impact Statement

This Draft EIS is available for public review in a variety of formats and locations. The Draft EIS is available on the Sound Transit website (<http://www.soundtransit.org/omsf>); the document is also available on CD at no cost from Sound Transit. Paper copies of the Draft EIS are available for the cost listed below.

- Executive Summary-FREE
- Draft EIS - \$25.00
- Technical Background Reports - \$11.00–\$15.00 each

Copies of the Draft EIS and related documents listed above are available for review or purchase at the office of Sound Transit, Union Station, 401 South Jackson Street, Seattle, Washington 98104. To request any of the documents, please contact Erin Green at (206) 398-5464. To review these documents, please call the Sound Transit librarian at (206) 398-5344 during normal business hours (weekdays from 8:00 a.m. to 5:00 p.m.) to arrange an appointment.

Paper copies of the Draft EIS documents are also available for review at the following public places:

- Bellevue Regional Library
- Lynnwood Library
- Washington State Library

## Preface

Sound Transit plans, builds, and operates the regional mass transit system for the central Puget Sound region. The system includes light rail, heavy rail commuter trains, and express buses. In 2005, Sound Transit updated the *Sound Transit Regional Transit Long-Range Plan* (Long-Range Plan) using public input to refine the long-term vision of mass transit for the region. The Long Range Plan informed the development of the ST2 program, which provides the foundation for expanding the regional transit system. Since voter financing approval in 2008, Sound Transit has been integrating the new ST2 program with the ongoing light rail, commuter rail, and regional express bus service operations. In addition to added commuter rail and bus service, implementation of ST2 will add approximately 36 miles to the light rail system and increase the existing LRV fleet to approximately 180 vehicles.

Currently, the Link light rail system includes the Forest Street Operations and Maintenance Facility (Forest Street OMF), located at 3407 Airport Way South in the City of Seattle. The Forest Street OMF is configured to serve a maximum of 104 LRVs. The new OMSF is proposed to accommodate the added vehicles required by the ST2 light rail expansion.

Sound Transit, together with FTA, has prepared this Draft EIS for the proposed project in compliance with the National Environmental Policy Act (NEPA) and the Washington State Environmental Policy Act (SEPA). This Draft EIS achieves the following:

- Provides environmental information to assist decision makers in selecting the project alternative to be built.
- Describes the alternatives and their potential environmental impacts.
- Identifies measures to avoid and minimize impacts and, when necessary, mitigate for adverse impact.
- Considers cumulative impacts as part of the environmental review process.
- Provides information for other environmental processes, including compliance with
  - The Endangered Species Act
  - Section 106 of the National Historic Preservation Act of 1966
  - Section 4(f) of the Department of Transportation Act of 1966, 49 United States Code (U.S.C.) 303
  - Section 6(f) of the Land and Water Conservation Funds Act
  - Executive Order 12898 – Environmental Justice

The scope of environmental review and range of alternatives evaluated in this Draft EIS respond to public and agency comments received during the public scoping process that began in September 2012. Two public scoping meetings and one agency meeting were held during the scoping period.

To comply with NEPA and SEPA and to enhance readability, this Draft EIS focuses on the most relevant information regarding project definition, potential adverse impacts, and trade-offs among the alternatives. The study area for this Draft EIS varies by resource and is described within each resource section of the document, as appropriate.

The Draft EIS is organized as follows.

The **Executive Summary** is a separately bound, condensed version of the overall document. It briefly describes the purpose and need for the proposed project, the proposed project's goals and objectives, and the alternatives being considered. It presents the impacts for each alternative and potential mitigation, and briefly evaluates and compares the different alternatives. The Executive Summary concludes by identifying areas of uncertainty and the proposed project's next steps.

**Chapter 1. Purpose and Need for the Project**, describes the proposed project's purpose and need, provides a brief background of the proposed project, and outlines the proposed project's goals and objectives.

**Chapter 2. Alternatives Considered**, describes the alternatives evaluated and how they were identified and developed for study in this Draft EIS. A No Build Alternative is also evaluated to serve as a baseline for comparing the potential effects of the build alternatives. This chapter also provides an overview of the construction approach and a comparison of cost estimates by alternative. It concludes by explaining the proposed project's planning and decision-making context, including the major steps in the environmental evaluation and project development process.

**Chapter 3. Affected Environment and Environmental Consequences**, describes the built and natural environment in the study areas, explains the impacts from construction and operation of the proposed project alternatives, and describes potential avoidance and minimization measures. In the case that adverse impacts cannot be avoided, compensatory mitigation is identified, as appropriate. This chapter includes the following environmental topics.

- 3.1 Transportation
- 3.2 Acquisitions, Displacements, and Relocations
- 3.3 Land Use
- 3.4 Economics
- 3.5 Social Impacts, Community Facilities, and Neighborhoods
- 3.6 Visual and Aesthetic Resources
- 3.7 Air Quality and Greenhouse Gases
- 3.8 Noise and Vibration

- 3.9 Ecosystems
- 3.10 Water Resources
- 3.11 Energy
- 3.12 Geology and Soils
- 3.13 Hazardous Materials
- 3.14 Electromagnetic Fields
- 3.15 Public Services
- 3.16 Utilities
- 3.17 Historic and Archaeological Resources
- 3.18 Parklands and Open Space

**Chapter 4. Alternatives Analysis**, compares the project alternatives in terms of affected environment and how effectively they meet the project’s goals and objectives.

**Appendices A through G** provide additional details on the project and Draft EIS process. Appendix A includes document support information (references, lists of preparers and recipients, and acronyms), Appendix B provides a summary of public involvement and agency coordination and a list of regulatory information used to prepare this Draft EIS. Appendices C and D provide federally required reports on environmental justice and Section 4(f) and 6(f) resources (park and recreation areas, wildlife refuges, and any facilities that have received Land and Water Conservation Act funding). Appendix E contains the detailed technical reports prepared for the Transportation, Noise and Vibration, Historic and Archaeological Resources, and Ecosystems sections of Chapter 3, Affected Environment and Environmental Consequences. Appendix F contains additional technical data that support the resource analysis sections of Chapter 3. Appendix G provides conceptual plans of the proposed project.

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## Chapter 1

# Purpose and Need for the Project

---

### 1.1 Purpose of the Project

The purpose of the Sound Transit Link Light Rail Operations and Maintenance Satellite Facility (OMSF) project (proposed project) is to enable Sound Transit to meet the maintenance and storage needs of the expanded fleet of light rail vehicles (LRVs) identified in *Sound Transit 2: A Mass Transit Guide, The Regional Transit System Plan for Central Puget Sound (ST2)*. ST2, financing for which was approved by voters in November 2008, includes expansion of Sound Transit's Link light rail transit system, which will require additional operations and maintenance facility capacity to support the added LRVs.

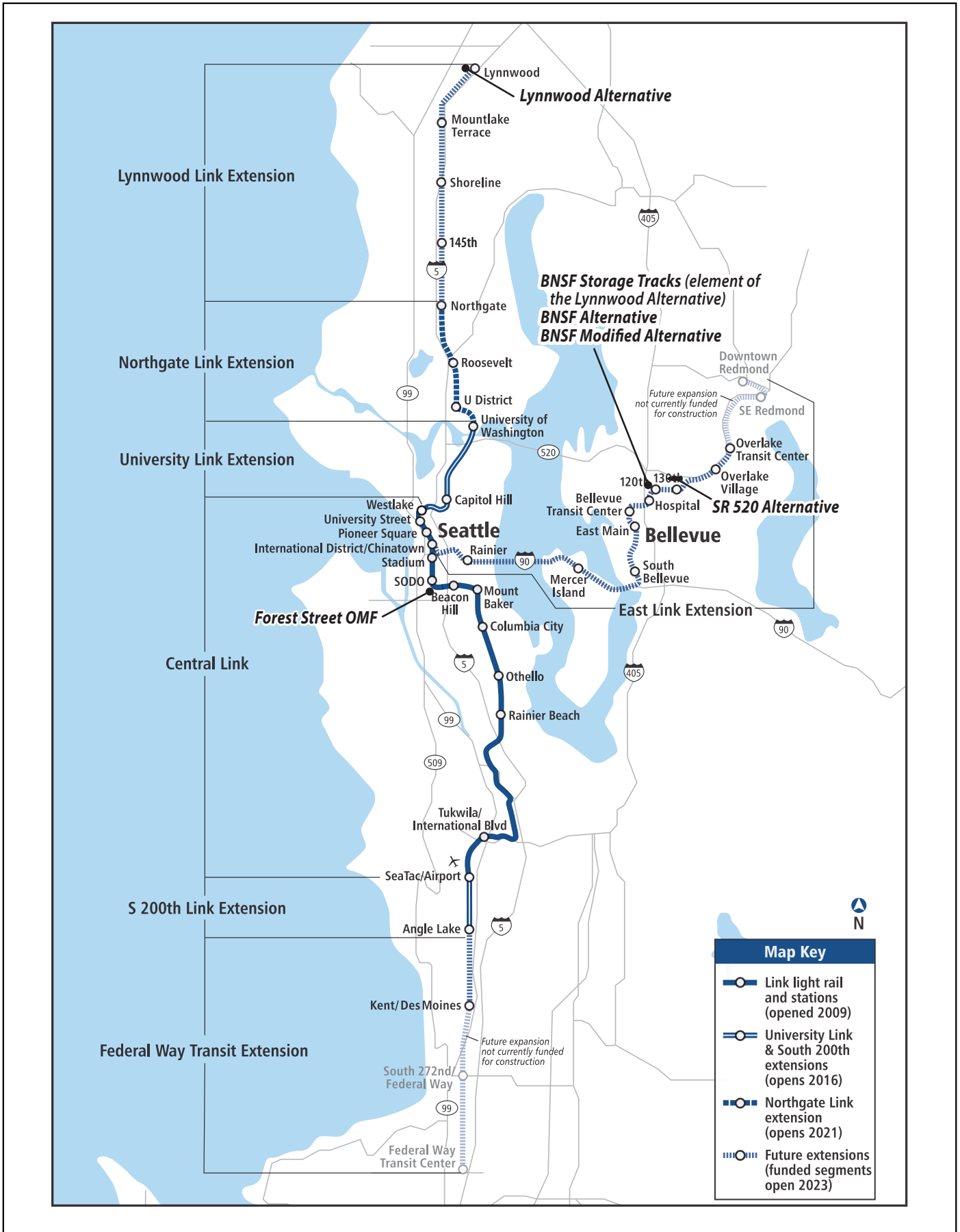
Implementation of the proposed project would do the following.

- Support the intended level of service for expansion of the Link light rail system to the Lynnwood Transit Center, Overlake Transit Center and Kent/Des Moines Transit Center.
- Minimize system annual operating costs and support efficient and reliable light rail service.
- Support regional long-range plans, including the Puget Sound Regional Council's *VISION 2040* and *Transportation 2040* plans, and the *Sound Transit Regional Transit Long-Range Plan* (Long-Range Plan).

The OMSF is expected to provide service and inspection functions to a minimum of 80 LRVs with the assumption that the existing Forest Street Operations and Maintenance Facility (Forest Street OMF) would continue to provide inspection services as well as heavy repair and overhauls. The OMSF would be used to store, maintain, and dispatch vehicles for daily service.

#### 1.1.1 Project Vicinity

Link light rail extensions of ST2 are planned in King and Snohomish Counties in the metropolitan Puget Sound region. Currently, planned light rail extensions with ST2 funding include the City of Lynnwood in the north; the Cities of Kent and Des Moines in the south; and the Cities of Bellevue and Redmond in the east. The OMSF would be located proximate to either the north or east line to serve the system. The project vicinity and regional setting is shown in Figure 1-1.



**Figure 1-1: Regional Setting for the Build Alternatives**  
Sound Transit Link Light Rail OMSF Draft EIS

## 1.2 Need for Project

The Forest Street OMF is located in the industrial area of downtown Seattle and can serve up to 104 LRVs. To implement the ST2 expansion, Sound Transit needs to increase its LRV fleet to approximately 180 vehicles by 2023, which requires the proposed OMSF to be ready for operations in 2020 to accept delivery of new LRVs and support break-in procedures for those LRVs. The need for the proposed project exists since the Forest Street OMF cannot store, maintain, or deploy the vehicles associated with the expanded service called for in ST2. Sound Transit would not be able to provide the system-wide level of service called for by ST2 without adequate maintenance facility capacity. Therefore, to implement ST2, the light rail system would require more storage area and greater capacity for necessary service, maintenance, and inspection functions. Moreover, the OMSF must be sited to support efficient and reliable operations and deployment of LRVs to serve the entire Link light rail system.

## 1.3 Project Goals and Objectives

Based on the project purpose, Sound Transit developed evaluation criteria consisting of the goals and objectives listed below. Sound Transit applied these goals and objectives to evaluate potential OMSF alternatives. These criteria uphold Sound Transit's responsibility to meet public transportation and mobility needs for high-capacity transit infrastructure while also being a responsible steward of the environment and being considerate of affected jurisdictions and the public while planning a fiscally responsible project.

- **Transportation Goal.** Facilitate operation of the expanded regional Link light rail system.
  - Locate a facility to provide efficient and reliable light rail service.
- **Environment Goal.** Preserve environmental quality.
  - Minimize potential adverse impacts on the natural and built environment.
- **Financial Goal.** Achieve financial feasibility.
  - Build, operate, and maintain a facility that minimizes capital, construction, and annual system operating costs.





## Alternatives Considered

---

### 2.1 Introduction

This chapter describes the alternatives evaluated and how they were identified and developed for study in this Draft Environmental Impact Statement (Draft EIS). The alternatives include those reviewed but eliminated from further consideration as well as those that meet the purpose and need for the Sound Transit Link Light Rail Operations and Maintenance Satellite Facility (OMSF) project (proposed project). Four build alternatives are evaluated in this Draft EIS: one alternative in Lynnwood and three alternatives in Bellevue, Washington. A No Build Alternative is also evaluated to serve as a baseline for comparing the potential effects of the build alternatives. This Draft EIS is consistent with guidelines of the National Environmental Policy Act (NEPA) and the Washington State Environmental Policy Act (SEPA).

Sound Transit's existing Forest Street Operations and Maintenance Facility (Forest Street OMF), located at 3407 Airport Way S in the City of Seattle, includes a four-story, 162,000-square-foot building that contains component repair shops, an electronics repair shop, a signals and communications lab, and a communications maintenance shop. This facility can store and maintain up to 104 light rail vehicles (LRVs). Figure 2-1 shows a typical LRV. The Forest Street OMF also houses the backup Link Control Center, training rooms, sheriff offices, and staff offices for maintenance and operations management and administrative personnel.

**Figure 2-1. Typical Link Light Rail Vehicle (LRV)**



The proposed project would enable Sound Transit to provide service and inspection functions for supporting a minimum fleet of 80 additional LRVs with the assumption that the Forest Street OMF would continue to provide inspection, heavy repair, and overhaul services. The OMSF would be used to store, maintain, and dispatch vehicles for daily service. Activities at the OMSF would include preventative maintenance inspections, light maintenance, emergency maintenance, interior vehicle cleaning, and exterior vehicle washing. The facility would need to accommodate administrative and operations functions and would be used as a report base for LRV operators. Space would be needed for employee 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 Background and Project Development

In 2011, Sound Transit conducted a system-wide operations analysis for the implementation of *Sound Transit 2: A Mass Transit Guide, The Regional Transit System Plan for Central Puget Sound (ST2)*. The results of this analysis were the *ST2 Operations Plan* (June 2011) and the *ST2 Link Light Rail Fleet Management Plan* (June 2011). Both plans assumed a Sound Transit light rail system that extended north to Lynnwood, south to Kent/Des Moines and east to the Overlake Transit Center in Redmond. The operations plan assumed two lines for the extended light rail system: a north-south line from Lynnwood to Kent/Des Moines and an east-north line that extends from the Overlake Transit Center to Lynnwood. Both lines would travel on the same tracks through the Downtown Seattle Transit Tunnel (DSTT) to Lynnwood. To meet future demand (2035), the plan assumes each line would have four-car trains operating every 8 minutes in the peak periods (10 minutes in the off-peak and evenings). This results in a combined frequency of 4 minutes in the segment through the DSTT to Lynnwood (5 minutes in the off-peak periods).

Beginning in 2012, Sound Transit conducted a three-part study to identify potential alternatives for the proposed project.

1. **Core Light Rail System Expansion Plan Review.** The Core Light Rail System Expansion Plan review looked beyond the operations and facilities needs for ST2 to future expansion of the light rail system to Everett, Tacoma, and downtown Redmond consistent with the *Sound Transit Regional Transit Long-Range Plan* (Long-Range Plan).
2. **Link OMSF Corridor Analysis.** The Link OMSF Corridor analysis identified the constraints, benefits, and trade-offs of locating the OMSF in the north, south, and east corridors.
3. **Identifying Potential OMSF Sites.** Potential OMSF sites were identified in each of the operable light rail expansion corridors and data were collected for each site illustrating land use and environmental and physical site characteristics.

### 2.2.1 Core Light Rail System Expansion

The Sound Transit Core Light Rail System expansion reviewed extending light rail to Everett, Tacoma, and downtown Redmond. The Core Light Rail System Expansion is a component of the Long-Range Plan, adopted by the Sound Transit Board in 2005, and it has also been adopted as part of the Puget Sound Regional Council (PSRC) *VISION 2040* and *Transportation 2040* regional plans. A review and analysis of the operations plan and the operations and maintenance (O&M) facility needs associated with the Core Light Rail System Expansion concluded that a total of three O&M facilities will eventually be needed. These include the Forest Street OMF, a second OMF, and one satellite O&M facility (i.e., an OMSF). A “satellite” OMSF would not provide the functions or equipment for heavy repairs such as light rail vehicle overhauls, frame straightening, or vehicle painting that a full OMF provides. In addition to the Forest Street OMF south of downtown Seattle, one OMF (or OMSF) will eventually be needed along the north operating line and one along the east operating line (Sound Transit 2012a). However, the ‘third’ OMF will not be required until the light rail system is expanded beyond the light rail extensions identified in ST2.

### 2.2.2 Link OMSF Corridor Analysis

The Link OMSF Corridor Analysis identified constraints, benefits, and trade-offs of locating an OMSF in the north, south, and east corridors to serve the ST2 expansion, primarily using the operational requirement described below as criteria to determine which corridors would meet the operating needs of the system.

- **Operating Cost.** Located within a transit corridor that minimizes the system operating costs.
- **Reliability.** The transition of light rail vehicles between the OMSF and the revenue line should not negatively affect revenue operations or the available nightly maintenance window for the light rail guideway and systems (1:00 a.m. to 5:00 a.m.).
- **Efficiency.** Site characteristics and location will minimize excessive vehicle maneuvering to position the trains for morning deployment.

The application of the operational requirements found that sites located in the north and east corridors would meet the operational needs. It was also determined that locating an OMSF south of the junction where the north-south line and the north-east line meet at the International District Station (including expansion of the Forest Street OMF) would not be operationally feasible for the following reasons (Sound Transit 2012b).

- The time allotted to deploy trains serving the 6:00 a.m. to 10:00 a.m. morning peak period would be exceeded.
- The 4-hour nightly inspection and maintenance window (1:00 a.m. to 5:00 a.m.), when all trains must be off the system, could not be maintained.
- Expansion of the Forest Street OMF would not provide capacity (e.g., number of vehicle bays, operator report facility, parts storage and component repair) to meet the daily and weekly maintenance and inspection needs for the entire fleet of 180 vehicles.
- There is insufficient property to expand the Forest Street OMF to provide these needs without vacating or closing 6th Avenue S and/or Airport Way, which provide for freight mobility in the SODO industrial area.
- If all 180 vehicles were stored on a single site, a system failure during the morning deployment could result in the entire fleet being trapped and unable to begin service.

### 2.2.3 OMSF Features

The proposed project would involve construction and operation of the following site features.

- An enclosed LRV maintenance building containing service bays for maintaining LRVs that would include the following activities and equipment.
  - Exterior LRV washing area
  - Interior LRV cleaning area
  - General service, inspection, and repair bays

- Wheel truing
- Equipment and parts storage
- Shipping and receiving
- Electronics shop
- Welding and fabrication shop
- Brake and coupler shop
- Office space attached to the shop building containing the following areas.
  - Individual offices and workspaces
  - Conference rooms
  - Training room
  - Fitness room
  - Lunch/break room
  - Lockers
  - Restrooms
- Track, switches, overhead catenary power lines, a traction power substation, and signals to support movement of LRVs to and from the mainline and around the facility through the LRV maintenance building and LRV storage area.
- Lead track to provide access between the OMSF and light rail system mainline.
- Maintenance of way shops to support maintenance of the infrastructure of the light rail system beyond the LRVs such as track, signals, and power system that would include an attached truck wash.
- Maintenance of way office space attached to the maintenance of way shops that would include office space, conference and training rooms, a lunch/break room, and restrooms.
- Outdoor covered and uncovered storage areas.
- Parking for automobiles and two points of road access to the facility with one to be used as a primary access point for most traffic, and the second to serve as an access point for emergency response vehicles and special deliveries or maintenance activities only.

At approximately 32 feet tall, the LRV 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 LRV maintenance building would also be the largest building 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.

The OMSF 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 type of fencing used

along portions of the perimeter would be highly visible outside the facility. The fencing would be selected to aesthetically fit with the OMSF and its surrounding environment and may serve as a partial visual screen obscuring portions of the OMSF from external viewpoints.

Landscaping would also be incorporated into perimeter fence line areas and parking areas as appropriate to diversify the visual landscape of the OMSF. Landscaping would likely include small trees and shrubs as well as lower-profile herbaceous vegetation.

Overhead lighting would be provided across the OMSF for security purposes and allow for nighttime operations, since much of the LRV maintenance would occur at night. Lighting would be directed downward and onto the site to the extent reasonably possible.

## 2.3 Identifying Potential Alternatives

The identification and evaluation of potential OMSF sites for consideration in the Draft EIS included technical work by Sound Transit as well as suggestions from agencies and the public during the environmental scoping period. The technical work involved development of a site identification and evaluation study (described below) that built on the background studies described above. Twenty-one different locations were considered in total. Screening criteria were developed to evaluate all potential alternatives. The screening criteria were based on the OMSF physical and operational requirements, site and environmental constraints, consistency with regional transportation plans, and the proposed project's purpose and need (see Chapter 1, Purpose and Need). Alternatives that performed poorly against the screening criteria were eliminated from further consideration. The screening criteria include the following.

A build alternative would meet the physical needs of the proposed project by adhering to the following.

- Being proximate to an existing or future light rail segment.
- Being able to accommodate a minimum of 80 LRVs.
- Having 20 to 25 acres of usable land.
- Being generally rectangular in shape.

A build alternative would meet the operational needs of the proposed project by adhering to the following.

- Being located within a transit corridor that minimizes overall system operating costs.
- Preserving the available nightly maintenance window (1:00 a.m. to 5:00 a.m.).
- Minimizing excessive vehicle maneuvering to position the trains for morning deployment.
- Being consistent with adopted regional transportation plans, including Sound Transit's Long-Range Plan, PSRC Vision 2040, and the key strategies of the PSRC Transportation 2040 plan.

Additional details on potential alternatives identified and considered are included in the following documents, which are available on the Sound Transit project website.

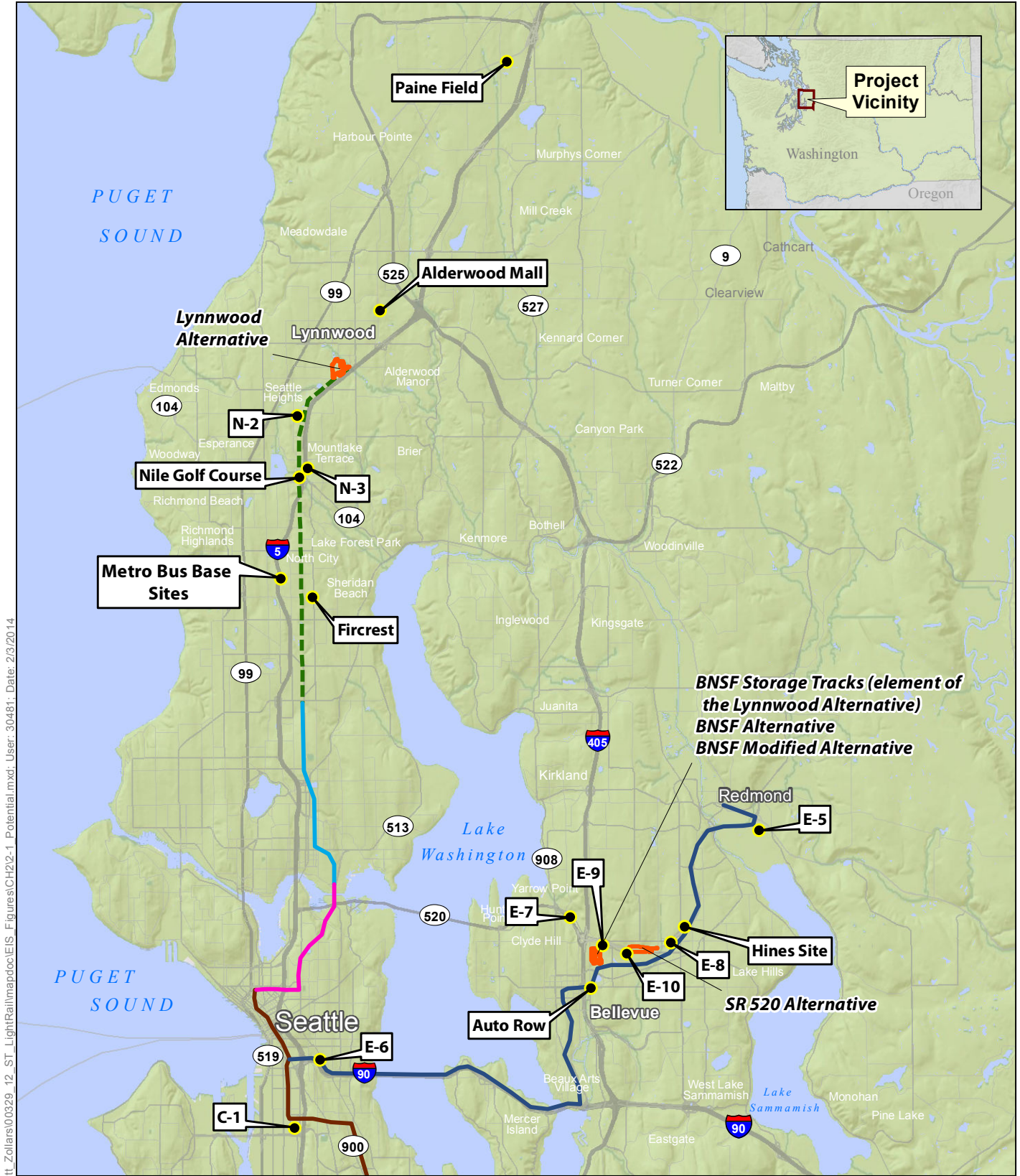
- **Link OMSF Sites Memo (September 2012).** This report identifies potential site alternatives and associated information related to the land use, environmental, and physical site characteristics. It also evaluates each potential site with respect to system and facility operations (e.g., operating costs, efficiency, and reliability).
- **Link OMSF Environmental Scoping Information Report (September 2012).** This report describes the environmental scoping process and the potential site alternatives presented during the environmental scoping period.
- **Sound Transit Board Memo OMSF Site Evaluation and Environmental Scoping Summary Report (November 2012).** This report summarizes the environmental scoping process and public and agency comments received, including suggestions for site alternatives.

All sites identified as potential alternatives are shown in Figure 2-2. As illustrated in the figure, sites indicated with an N, C, or E are described in the *Link OMSF Sites Memo* (Sound Transit 2012c). Other sites were suggested during the environmental scoping period.

### 2.3.1 OMSF Storage Requirements

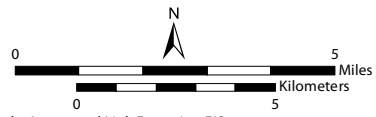
Sound Transit's current fleet is 62 LRVs, which are required to serve the extensions to the University of Washington and S 200th Street planned to open in 2016. ST2 light rail expansion to Lynnwood and the Eastside will require a fleet of approximately 180 LRVs. The Forest Street OMF in Seattle has a storage capacity of 104 LRVs. The storage tracks are configured so that each row accommodates two 4-car trains (13 rows with eight cars per row equals 104 vehicles). The future OMSF would need to accommodate a minimum of 80 vehicles (180 needed for ST2, minus the existing capacity [104 LRVs] plus 4 vehicles as contingency). For planning purposes, a contingency of one 4-car train has been assumed. In addition, the Record of Decision (ROD) for East Link includes a future extension from the Overlake Transit Center to downtown Redmond. A condition of the East Link ROD is that before the line can be extended to downtown Redmond, maintenance facility capacity must be identified. It is estimated that 10 additional LRVs will be required to provide service to downtown Redmond. Therefore, the need for a minimum of 90 storage spaces has been assumed for the future OMSF, regardless of its location (76 vehicles plus 4 spares plus 10 for Redmond equals 90 storage spaces).

The dimensions and configuration of a typical light rail operations and maintenance facility is primarily driven by the space required for a runaround track. The runaround track allows vehicles to enter the site and 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 size is also driven by the size of the maintenance building and the number of storage tracks needed to accommodate the fleet. As stated previously, the Forest Street OMF has 13 rows with eight cars per row. Assuming the OMSF will need to store and maintain 90 cars, a minimum of 11 rows of eight cars is required. However, 11 rows of eight cars each allow space to store 88 cars.



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- Link Light Rail**
- Lynnwood Link Extension\*
  - East Link
  - Northgate Link Extension
  - Central Link
  - University Link
- Build Alternative**
- Eliminated Alternative** ●



Source: Site plans, Huit Zollars 2013; Link light rail and eliminated alternatives, Sound Transit, 2013 \*Alternative alignments are still being studied in the Lynnwood Link Extension EIS  
 Note: A scoping comment received requested an additional location of an OMSF site in Pierce County; however, no specific location was provided

**Figure 2-2: Potential OMSF Sites**  
 Sound Transit Link Light Rail OMSF Draft EIS

To accommodate 90 cars, 12 rows are needed, and as a result, all OMSF sites assume 12 rows. Adding a twelfth row provides the opportunity to store up to 96 cars. The ability to accommodate 12 rows (or 96 cars) is also important for the future fleet and associated service requirements (see Section 2.2.1 Core Light Rail System Expansion).

The following potential alternatives were evaluated against the screening criteria and eliminated from further consideration in this Draft EIS for the reasons stated. Additional detail on the potential alternatives described in Table 2-1 is included in the *Link OMSF Sites Memo* (Sound Transit 2012c). In addition, some comments received during the environmental scoping process suggested that alternative sites be considered for the proposed project. The alternatives suggested during scoping are also described in Table 2-1, but none of these alternatives meet the OMSF siting criteria applied during the corridor analysis and site identification process.

**Table 2-1. Potential and Suggested Alternatives**

| Potential Alternative              | Reason Not Advanced   |
|------------------------------------|---|
| C-1: Forest Street OMF             | Expanding the Forest Street OMF by 10.86 acres could accommodate the additional tracks required for storing an additional minimum of 80 LRVs, but it would not provide the necessary space for maintenance functions. The entire fleet of 180 LRVs planned for in ST2 cannot be reliably or efficiently deployed from an expanded Forest Street OMF because of the limited capacity of accessing the main line and deploying service to the Eastside. Finally, by consolidating the entire fleet at a single site, a system failure during the morning deployment could result in the entire fleet being trapped and unable to begin service. |
| N-2: 220th St SW and I-5           | This potential OMSF site is 17.5 acres, which does not meet the minimum acreage needed for developing the OMSF. Opportunities for acquiring adjacent land are limited because the site is constrained on three sides by public arterial roads and Interstate 5 (I-5) on the east. The site assumes vacating 64th Avenue W between 200th Street SW and 224th Street SW. The site would require extensive grading and retaining walls to achieve topography suitable for the development of an OMSF.  |
| N-3: 236th St SW and I-5           | This potential site is 17.8 acres, which does not meet the minimum acreage needed for developing the OMSF. Opportunities for acquiring adjacent land are limited because the site is constrained by I-5 on the west and a public street on the north (overpass to I-5). The site is also constrained by critical areas to the south (wetlands and stream). The irregular shape of this site also constrains development of an OMSF.   |
| E-5: Redmond                       | The E-5 site is located 4 miles from the main East Link terminus at Overlake Transit Center that will be built during ST2. Developing this site would require building 4 miles of additional guideway with substantial capital and operating costs.   |
| E-6: Dearborn St and Rainier Ave S | Site E-6 is approximately 9.95 acres, which does not meet the minimum acreage needed for developing an OMSF.  |



|                                      |  |
|--------------------------------------|--|
| E-7: SR 520 & I-405                  | The E-7 site contains critical areas associated with Yarrow Creek, and steep slopes require extensive grading and recontouring. Access would require a long lead track (approximately 6,900 linear feet, 3,450 feet of track for each direction) that would affect efficiency of operations at this potential OMSF site and would increase capital costs. In addition, developing this site would require relocating and reconfiguring Northup Way.  |
| E-8: 148th Ave NE and 20th Ave NE    | Site E-8 is a large, square site, but contains areas of steep slopes and erosion hazard areas. The topography would require substantial earthwork. The site is composed of 11 land parcels in existing commercial retail and office uses, including a large anchor retail store (Fred Meyer) and several other restaurants and retail businesses. Development of this site would require substantial acquisition and relocation efforts. This site had the highest assessed value of all sites identified and evaluated.   |
| E-9: Metro Bus Facility 120th Ave NE | Site E-9 does not have 20 to 25 acres of usable land for development. The site is approximately 22.65 acres; however, a creek (west tributary of Kelsey Creek) meanders through the middle of the site and avoiding this area decreases the usable land by approximately 3.5 acres, which is below the minimum size required for it to be a viable alternative.  |
| E-10: Northup Way and 130th Ave NE   | Site E-10 contains some steep slopes, the southwest corner of the site is immediately adjacent to a wetland and stream (west tributary of Kelsey Creek), and substantial grading efforts would be required to facilitate the development of an OMSF. This site is located immediately adjacent to the planned East Link 130th Avenue Station. The portion of the site adjacent to the East Link 130th Avenue Station is zoned for Residential Commercial Node 1, which represents the center of the Bel-Red Subarea, and is zoned for the highest density of transit-oriented mixed-use development. As such, development of the OMSF at this location has the greatest potential for incompatibility with the Bel-Red Subarea redevelopment goals and policies. |

| Suggested Alternative  | Reason Not Advanced  |
|--|--|
| <p><b>Auto Row:</b> An approximately 22-acre site located along 116th Ave NE, south of NE 8th St in the City of Bellevue. The site is proximate to the East Link line.</p> | <p>Although this site is proximate to the East Link revenue line in Bellevue, it is narrow at both ends, making it difficult to accommodate all required OMSF facilities and track work on the site. In addition, the City of Bellevue has secured funding and is advancing work on the NE 4th Street Extension Project, between 116th Avenue NE and 120th Avenue NE. This roadway extension project is part of the City's 2005–2015 Capital Investment Program (#PW-R-160). The project has completed environmental review under SEPA and is currently in final design. Because the roadway extension begins at grade at 116th Avenue NE and will be built on retained fill up to the existing grade at 120th Avenue NE, the roadway will bisect the suggested site into two separate, approximately 10-acre sites, making development of the OMSF at this location infeasible. Therefore, this site was eliminated from further consideration.</p> |
| <p><b>Near Alderwood Mall:</b> This site is located north of I-5, south of 184th St SW, and east of 33rd Ave W in the City of Lynnwood.</p>                                | <p>This site is not proximate to the light rail line (the Alderwood Mall is approximately 1.5 miles or about 8,000 feet north of the Lynnwood Transit Center) and there is no funded light rail line extending north of Lynnwood Transit Center as part of ST2.</p>  |

|  |  |
|--|--|
| <b>Near Paine Field:</b> This site is located west of the Everett Mall in the City of Everett.   | This site is not proximate to the light rail line and there is no funded light rail line serving the Paine Field area or other areas of Everett (north of Lynnwood Transit Center) as part of ST2.   |
| <b>Location of an OMSF Site in Pierce County:</b> This site was suggested for somewhere in Pierce County, but specifics on location were not provided. | There is no location in Pierce County that is proximate to the light rail line as part of ST2. There is no funded light rail line in ST2 serving Pierce County other than Tacoma Link, which will not be connected to the greater light rail system as part of ST2.  |
| <b>Hines Site:</b> This site is located northwest of SR 520 and east of 148th St in the City of Redmond.   | The Hines Site is located northwest of State Route (SR) 520 on the Microsoft Campus, along East Link between the Overlake Village and Overlake Transit Center. The East Link alignment in this location runs in a retained cut on the southeast side of SR 520. The retained cut passes under the existing NE 31st/NE 36th Street bridge, which passes over SR 520 and provides access to this part of the Microsoft Campus. A connection to this site from the East Link line would necessitate substantial design revisions to the East Link main line guideway profile, such as spanning or tunneling under SR 520 to access this site. A connection to this site from East Link would have high capital costs and would create operational inefficiencies. |
| <b>Fircrest Residential Habilitation Center for the Developmentally Disabled:</b> This site is located along 15th Ave NE in the City of Shoreline.     | This site is located along 15th Avenue NE in Shoreline, approximately 1.5 miles from the Lynnwood Link Extension alignment alternatives, all of which are located along the I-5 corridor. To access the site a lead track would need to be constructed through single-family neighborhoods to the east of the Lynnwood Link Extension alternatives located in the I-5 corridor. A connection to this site from the Lynnwood Link Extension would have high capital costs, create operational inefficiencies, and result in impacts on residential neighborhoods.   |
| <b>Shoreline Metro Bus Base:</b> An approximately 17-acre site located on the west side of I-5 at N 163rd St in the City of Shoreline.                 | This site is approximately 17 acres, which does not meet the minimum site size requirements. It is located on the west side of I-5 and all of the Lynnwood Link Extension alignment alternatives in this vicinity are located on the east side of I-5. Access to the site would involve lead track spanning over or tunneling under I-5 travel lanes.  |
| <b>Nile Golf Course:</b> This site is located on the west side of I-5 at the Snohomish/King County boundary in the City of Mountlake.                  | This site is located in the City of Mountlake Terrace on the west side of I-5 and all of the Lynnwood Link Extension alignment alternatives in this vicinity are located on the east side of I-5. Access to the site would involve lead track spanning over or tunneling under I-5 travel lanes, which would have high capital costs and create operational inefficiencies.  |
| Sources: Sound Transit 2012c; 2012d.   |  |

Additionally, another alternative suggested during the environmental scoping period involved separating operations and maintenance functions on two smaller sites along each light rail extension north and east (i.e., a two-site OMSF option). Specific locations for two smaller facilities were not suggested. Although this suggestion was not identified for detailed evaluation in this Draft EIS by the Sound Transit Board of Directors, Sound Transit analyzed this suggestion in response to inquiries from partner jurisdictions. The results of this analysis are included in Appendix F.1, *Additional Detail on the Two Site OMSF Option*, of this Draft EIS.

The white paper concludes that the two-site option would require or accomplish the following.

- Require more land in total than the individual site alternatives being studied in this Draft EIS (approximately 34 acres total compared to 22 to 25 acres). This option would have associated increases in property acquisition costs.
- Increase annual operating costs by more than \$5 million, due to the need for increased operations and maintenance staff to run the two facilities.
- Necessitate the purchase and maintenance of additional specialized equipment and facility features that become redundant and contribute to the increased annual operating and facilities maintenance costs.
- Increase capital costs for the OMSF by roughly \$70 to \$110 million.

As a result, the two-site option was not carried forward for review in the Draft EIS.

## 2.4 No Build Alternative

This EIS evaluates a No Build Alternative, as required under NEPA and SEPA, to represent the transportation system and the environment as they would exist without the proposed project. The No Build Alternative also provides a baseline against which the other alternatives can be compared. The No Build Alternative includes projects and proposals that are reasonably certain to be built by 2035. For transportation improvements, this includes projects identified in regional and local transportation improvement programs with identified funding for implementation. Local land use or site development proposals are considered part of the No Build Alternative by virtue of completed project-level environmental review and land use or building permit approvals.

The No Build Alternative includes light rail transit improvements included in the ST2 Program, including light rail extensions to Lynnwood, Overlake Transit Center, and Kent/Des Moines, but an OMSF would not be built. The operations and maintenance support needs for the existing and currently planned and funded Link light rail system would be served exclusively by the Forest Street OMF south of downtown Seattle, which has the capacity to maintain up to 104 LRVs. Overnight storage of up to 16 LRVs would be built along the Eastside Rail Corridor as currently designed in East Link. The East Link facility would provide for overnight storage and vehicle operator parking, but would not provide LRV maintenance functions. The No Build Alternative assumes a maximum light rail fleet size of 104 LRVs, because this is the design capacity for vehicle maintenance at the Forest Street OMF. The No Build Alternative LRV fleet is approximately 76 fewer vehicles than the

minimum number of LRVs (approximately 180) needed to operate the system at planned service levels under the ST2 Program. The No Build Alternative assumes that all LRVs would be deployed from the Forest Street OMF at the beginning of service each day, with the exception of the 16 LRVs deployed directly from the East Link storage track along the Eastside Rail Corridor.

## 2.5 Build Alternatives

The Sound Transit Board of Directors considered the proposed project's purpose and need, the physical and operational requirements of the OMSF and associated site screening criteria, and scoping comments and suggestions provided by agencies and the public. In December 2012, the Board adopted Motion M2012-82, which identified four different build alternatives for detailed evaluation in this Draft EIS. The Draft EIS discusses the potential environmental impacts that may result from construction and operation of the proposed project under each of these build alternatives. Chapter 4, Alternatives Analysis, also discusses how each alternative meets the goals and objectives developed for the proposed project. The locations of the four build alternative sites are shown in Figure 2-3. In addition, the potential environmental impacts that may result from the No Build Alternative, the conditions that would exist if the proposed project were not implemented, are also discussed to provide a baseline for comparing the potential impacts of the build alternatives.

Three of the four build alternatives would include high-capacity transit improvements to the Eastside Rail Corridor south of SR 520 and north of NE 12th Street in the City of Bellevue. The Eastside Rail Corridor is "railbanked," which permits interim trail use (and other compatible uses) of the corridor, while keeping it available for reactivation of freight rail service in the future. Sound Transit now owns this portion of the Eastside Rail Corridor subject to King County's trail easement and reactivation rights. Potential high-capacity transit uses in the corridor evaluated in this Draft EIS are consistent with the shared uses allowed under the corridor's easement provisions and envisioned by the Eastside Rail Corridor Regional Advisory Council (2013).

### 2.5.1 Lynnwood Alternative

Under the Lynnwood Alternative, Sound Transit would construct the OMSF north of I-5 and east of 52nd Avenue/ W Cedar Valley Road in the City of Lynnwood. The OMSF footprint for the Lynnwood Alternative would require approximately 24 acres of land for all three design options. Approximately 37 to 41 acres would need to be acquired, given existing parcel boundaries, leaving approximately 9 to 13 acres for redevelopment. The proposed Lynnwood Link Extension alignment alternatives being evaluated in the *Lynnwood Link Extension Draft EIS* are located along the Lynnwood Alternative site for the OMSF. A decision on what is to be built for the Lynnwood Link Extension has not yet been made. Therefore, the Lynnwood Alternative for the OMSF includes three design options, each connecting to one of the three build alternatives being evaluated in the *Lynnwood Link Extension Draft EIS* (Sound Transit 2013). Design Option C1 would include lead track connecting to Lynnwood Link Extension Alternative C1, Design Option C2 would include lead track connecting to Lynnwood Link Extension Alternative C2, and Design Option C3 would include lead track connecting to Lynnwood Link Extension Alternative C3. The Lynnwood Alternative for the OMSF also includes LRV storage,

operator report facilities, and interior cleaning functions for up to 32 LRVs at a separate location (referred to as the BNSF Storage Tracks, a component of the Lynnwood Alternative). The BNSF Storage Tracks would be located north of NE 12th Street and south of SR 520 in the City of Bellevue, within the Sound Transit-owned portion of the Eastside Rail Corridor and on an adjacent property located immediately east of the Eastside Rail Corridor to provide morning service to the Eastside. The design acknowledges the railbanked status of the Eastside Rail Corridor by allowing sufficient width to accommodate a future trail and future freight or passenger rail use of the corridor. Conceptual layouts of the three design options and a bird's eye view of the Lynnwood Alternative site (Design Option C3) and the BNSF Storage Tracks are shown in Figures 2-4a through 2-4e.

### **2.5.2 BNSF Alternative**

Under the BNSF Alternative, Sound Transit would construct the OMSF on property located between the Eastside Rail Corridor on the west and 120th Avenue NE on the east, south of SR 520 and north of NE 12th Street in the City of Bellevue. This site is approximately 27 acres, including 2 acres of Eastside Rail Corridor now under Sound Transit ownership, and is located along the adopted East Link revenue line northwest of the 120th Avenue NE station. The OMSF development footprint on the site is approximately 23 acres leaving approximately 4 acres for redevelopment. Infrastructure for the proposed project would occupy most of the site leaving the southern portion available for other development. A conceptual layout of this site is shown in Figure 2-5a and a bird's eye view is shown in Figure 2-5b.

### **2.5.3 BNSF Modified Alternative**

Under the BNSF Modified Alternative, Sound Transit would construct the OMSF on both sides of the Eastside Rail Corridor west of 120th Avenue NE on the east, south of SR 520 and north of NE 12th Street in the City of Bellevue. This site is located along the adopted East Link revenue line and is approximately 34 acres, including 2 acres of Eastside Rail Corridor now under Sound Transit ownership. The OMSF development footprint on the site is approximately 24 acres leaving approximately 8 acres for future redevelopment. The storage tracks would be located on the western portion of the site, west of the rail corridor. Other OMSF facilities would be located adjacent to the east side of the rail corridor, leaving the frontage area along 120th Avenue NE available for other development. The design acknowledges the railbanked status of the Eastside Rail Corridor by allowing sufficient width and vertical clearances to accommodate a future trail and future freight or passenger rail use of the corridor. A conceptual layout of this site is shown in Figure 2-6a and a bird's eye view is shown in Figure 2-6b.

### **2.5.4 SR 520 Alternative**

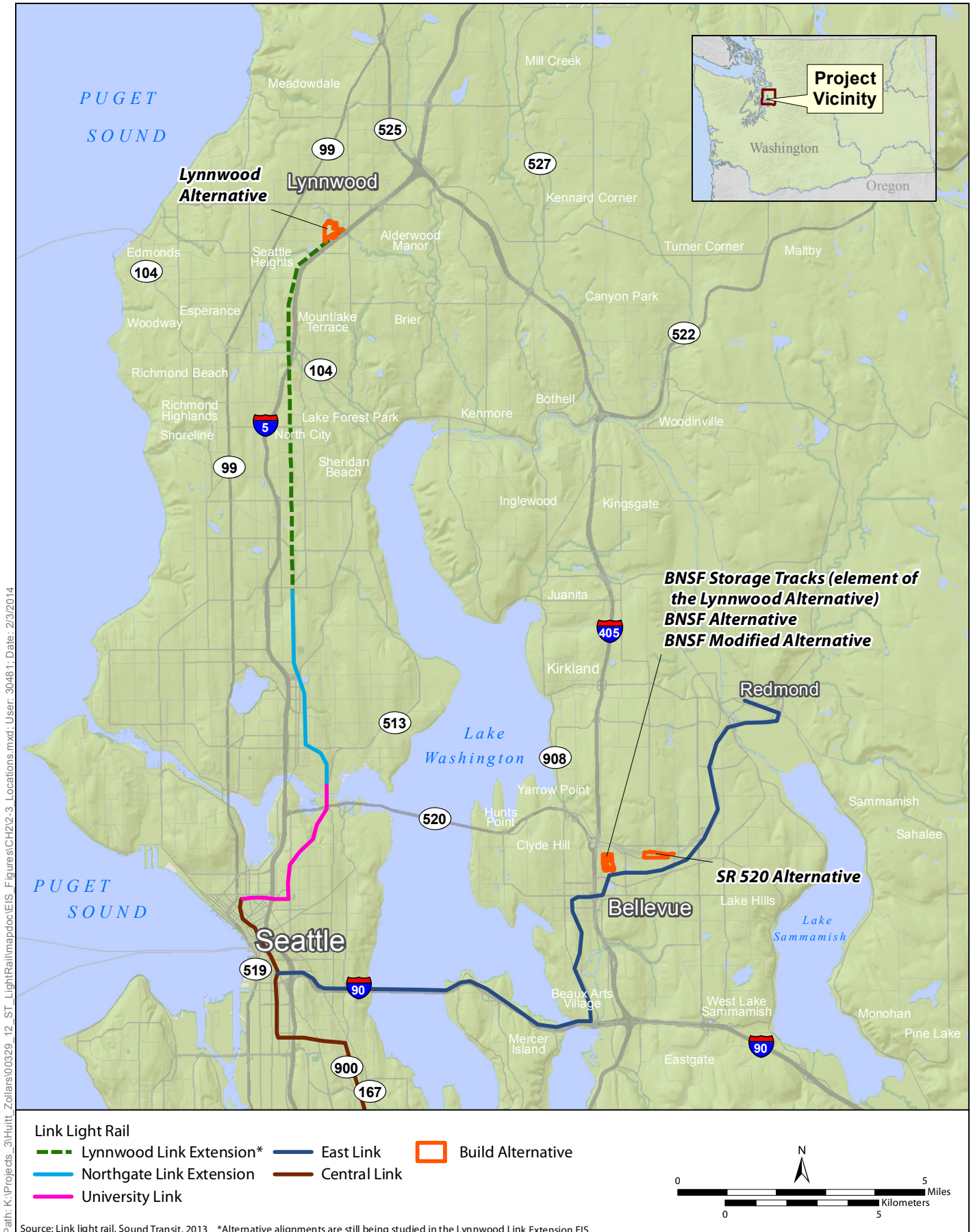
Under the SR 520 Alternative, Sound Transit would construct the OMSF south of SR 520 and north of Northup Way/NE 20th Street, east of 130th Avenue NE and west of 140th Avenue NE in the City of Bellevue. This site is located along the adopted East Link revenue line and is approximately 25 acres. The OMSF development footprint encompasses the entire site, leaving no substantial area for redevelopment. A conceptual layout of this site is shown in Figure 2-7a. Primary access to the site

would be directly off of NE 20th Street west of 136th Place NE. The configuration of buildings under this alternative would vary from the other alternatives in that the operations offices would be in a separate building to the west of the LRV maintenance shops, and the LRV covered wash and service bay would be in a separate building east of the LRV maintenance shops as shown in Figure 2-7a. A bird's eye view is shown in Figure 2-7b.

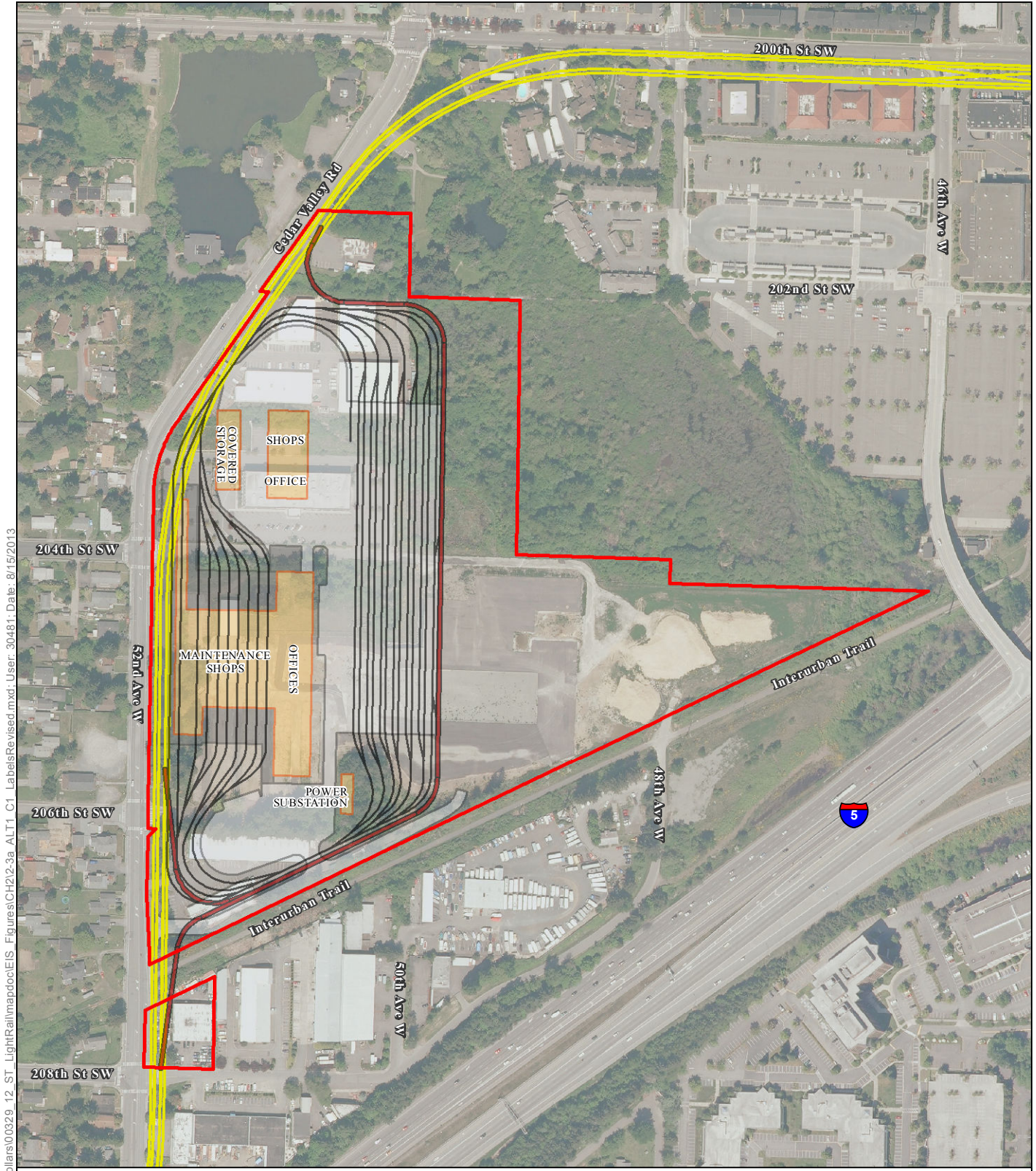
## 2.6 Overview of Construction Approach

This section provides an overview of potential construction activities and timing. Construction activities would include civil construction, systems installation, testing, and startup activities. Site preparation, primary construction, and finish construction would take place during the civil construction phase. Major construction activities are as follows.

- Demolition (buildings, pavement)
- Clearing and vegetation removal
- Installing erosion siltation control best management practices (BMPs)
- Fill and excavation
- Utility extensions, relocations, or disruptions
- Drainage changes
- Construction activity in or near a water body or sensitive area
- Elevated structure construction
- Retaining wall construction
- Pile driving or auguring piles
- Temporary partial road or lane closures and detour routes
- Temporary, partial, or limited access
- Delivery of materials and equipment



**Figure 2-3: Locations of the Build Alternatives Sound Transit Link Light Rail OMSF Draft EIS**



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|                    |                |   |
|--------------------|----------------|---|
| <b>Site Design</b> |                |   |
| Building           | Track          | Affected Parcels                                  |
| Concrete           | Elevated Track | Lynnwood Link Extension Alternative C1 (Elevated) |
| Pavement           |                |   |

0 100 500  
Meters

Sources: Site plans, Huit Zollars, 2013; Aerial imagery, Sound Transit, 2010

**Figure 2-4a:** Lynnwood Alternative, Design Option C1  
Sound Transit Link Light Rail OMSF Draft EIS

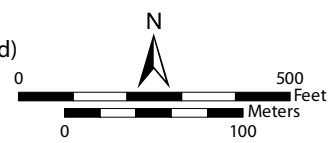


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**Site Design**

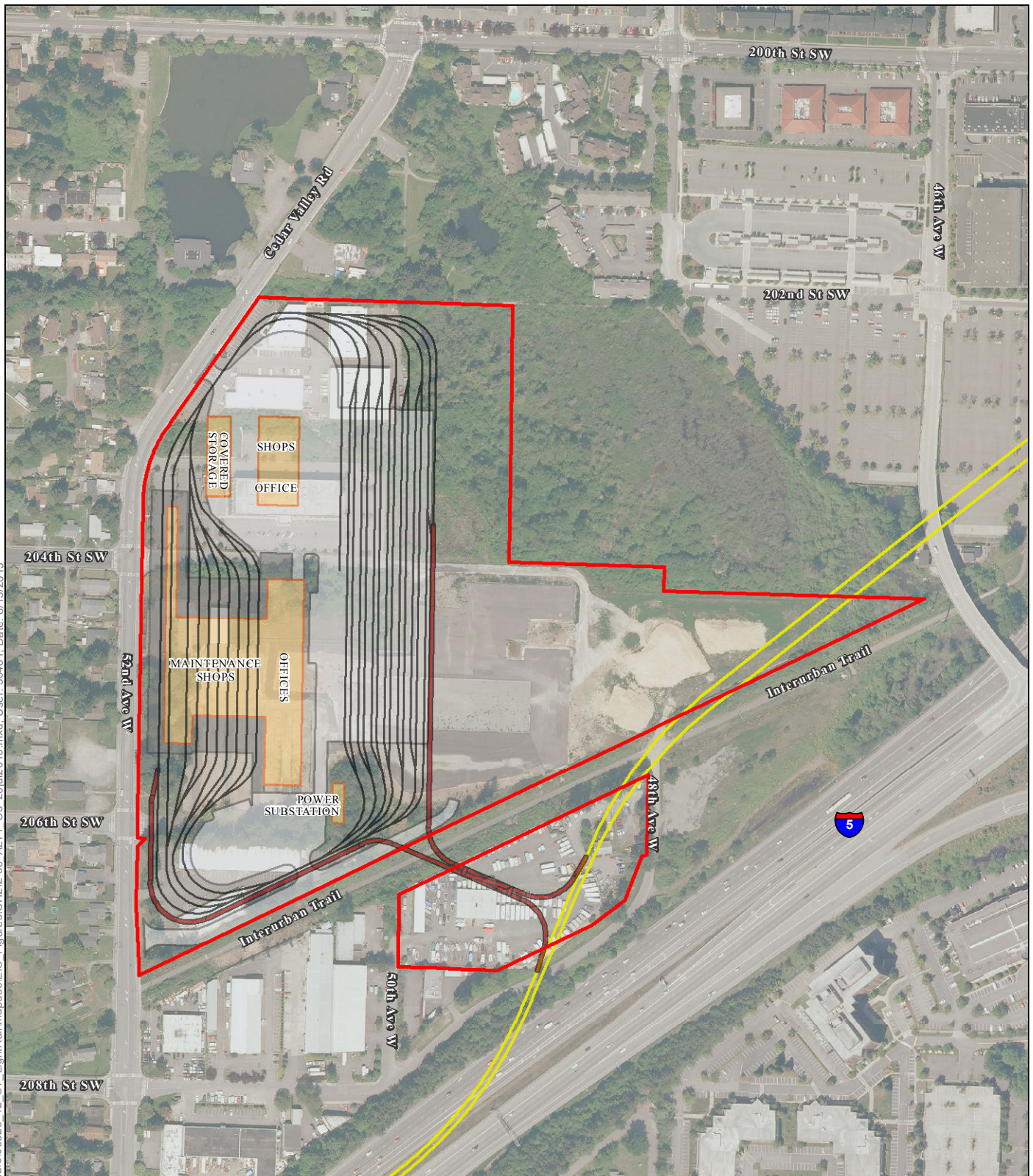
- Building
- Concrete
- Pavement
- Track
- Elevated Track
- Affected Parcels
- Lynnwood Link Extension Alternative C2 (Elevated)



Sources: Site plans, Huilt Zollars, 2013; Aerial imagery, Sound Transit, 2010

**Figure 2-4b:** Lynnwood Alternative, Design Option C2  
Sound Transit Link Light Rail OMSF Draft EIS

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- |                    |                |   |
|--------------------|----------------|---|
| <b>Site Design</b> |                |   |
| Building           | Track          | Affected Parcels                                  |
| Concrete           | Elevated Track | Lynnwood Link Extension Alternative C3 (Elevated) |
| Pavement           |                |   |

Sources: Site plans, Huit Zollars, 2013; Aerial imagery, Sound Transit, 2010

**Figure 2-4c:** Lynnwood Alternative, Design Option C3  
Sound Transit Link Light Rail OMSF Draft EIS



**Figure 2-4d:** Lynnwood Alternative, Design Option C3—Bird's Eye View  
Sound Transit Link Light Rail OMSF Draft EIS



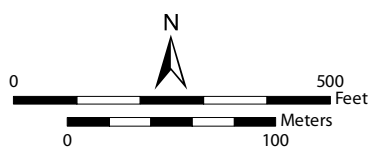
**Figure 2-4e:** Lynnwood Alternative, BNSF Storage Tracks\*  
 Sound Transit Link Light Rail OMSF Draft EIS  
 \*The BNSF Storage Tracks are located in Bellevue



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Sources: Site plans, Huit Zollars, 2013; Aerial imagery, City of Bellevue, 2013

- |  |   |
|--|---|
| Site Design  | <span style="border: 2px solid red; display: inline-block; width: 15px; height: 10px;"></span> Affected Parcels |
| <span style="background-color: orange; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Building    | <span style="color: yellow; font-weight: bold;">—</span> East Link Extension                                    |
| <span style="background-color: grey; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Concrete      |   |
| <span style="background-color: lightgrey; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Pavement |   |
| <span style="border-bottom: 2px solid black; display: inline-block; width: 15px;"></span> Track  |   |



**Figure 2-5a:** BNSF Alternative Sound Transit Link Light Rail OMSF Draft EIS



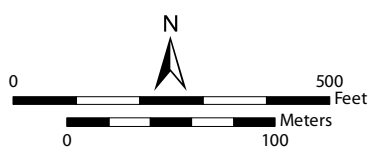
N  
Not to Scale

**Figure 2-5b:** BNSF Alternative—Bird's Eye View  
Sound Transit Link Light Rail OMSF Draft EIS



Path: K:\Projects\_3\Huit Zollars\00329\_12\_ST\_LightRailmapdoc\EIS\_Figures\CH2\2-6a\_ALT3.mxd; User: 30481; Date: 3/21/2014

- Site Design**
- Building
  - Pavement
  - Track
  - Affected Parcels
  - East Link Extension



Sources: Site plans, Huit Zollars, 2013; Aerial imagery, City of Bellevue, 2013

**Figure 2-6a:** BNSF Modified Alternative Sound Transit Link Light Rail OMSF Draft EIS

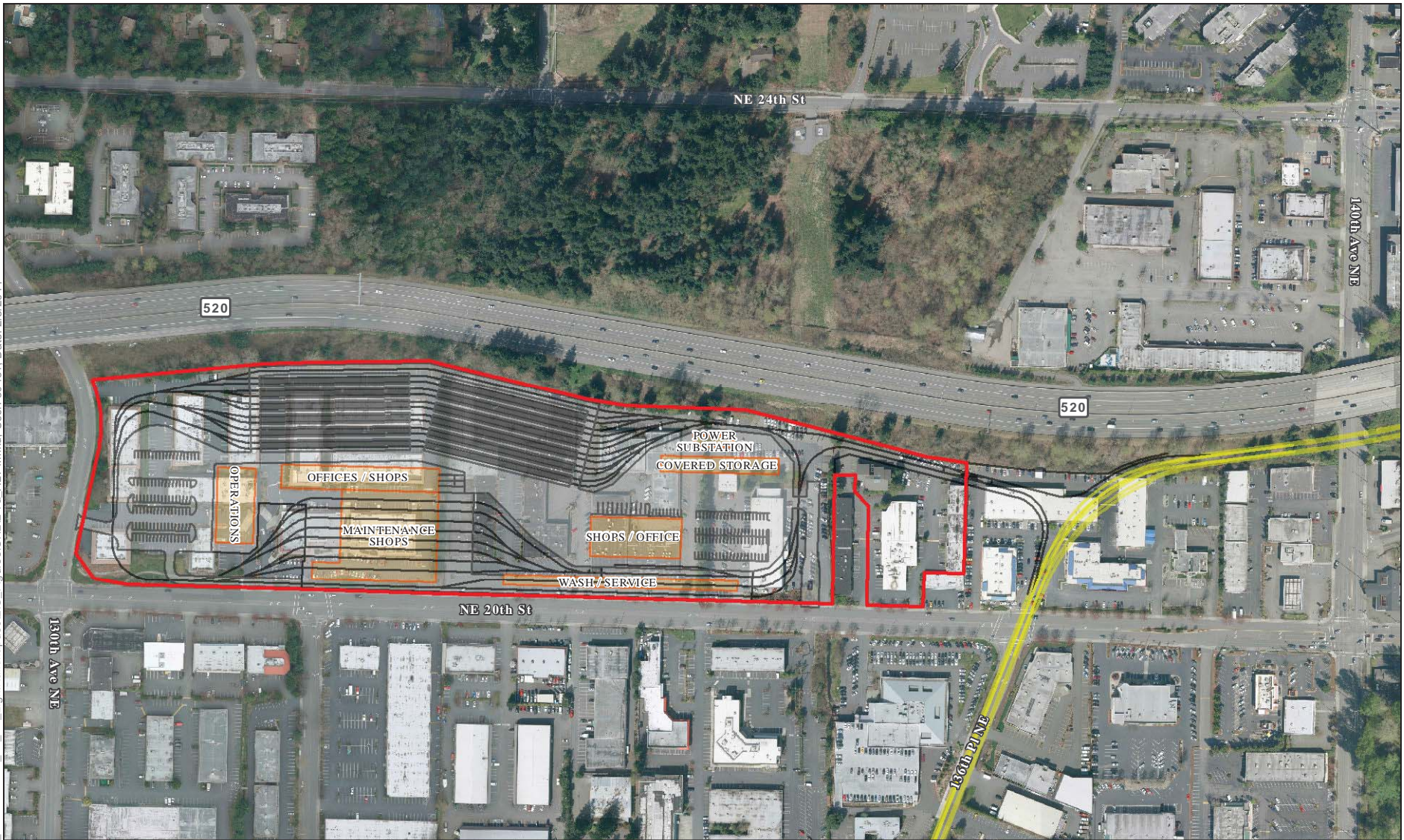


N  
Not to Scale

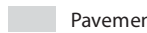
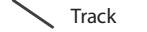
**Figure 2-6b:** BNSF Modified Alternative—Bird's Eye View  
Sound Transit Link Light Rail OMSF Draft EIS

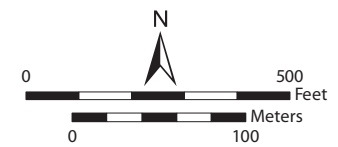


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Site Design

-  Building
-  Affected Parcels
-  Pavement
-  East Link Extension
-  Track



Sources: Site plans, Huit Zollars, 2013; Aerial imagery, City of Bellevue, 2013

**Figure 2-7a:** SR 520 Alternative Sound Transit Link Light Rail OMSF Draft EIS



**Figure 2-7b:** SR 520 Alternative—Bird’s Eye View  
Sound Transit Link Light Rail OMSF Draft EIS

### 2.6.1 Construction Sequence and Activities

A construction plan may be developed at the end of the preliminary engineering phase of the project to establish the various construction phases and construction contracts, their estimated schedule and duration, and appropriate sequencing.

Typical construction would occur on a 5- to 6-day work week schedule and would occur primarily between the hours of 7:00 a.m. and 10:00 p.m. In some situations (such as when street detours are involved or when daytime construction periods need to be abbreviated to reduce impacts), additional shifts, all-week, nighttime, or 24-hour construction activities could be necessary.

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. This would allow surface hauling activities to occur in off-peak periods if necessary, to be concentrated during daytime periods to minimize potential impacts from noise on sensitive receptors such as residences, or to avoid peak traffic periods.

Following excavation and completion of structures, the next phase of construction would include installing track work and electrical systems (overhead catenary system power lines, etc.).

### 2.6.2 Staging Areas and Construction Easements

No offsite staging areas or construction easements would be required to construct the OMSF for the BNSF Alternative or the BNSF Modified Alternative. Construction of these alternatives is anticipated to take place within the footprint of the property being acquired for the proposed project. The Lynnwood Alternative would require additional staging areas in the form of easements for access, construction work, and placement of support columns, associated footings, and elevated guideway across the Interurban Trail that would provide light rail access between the OMSF and the Lynnwood Link Extension revenue service line. Temporary construction easements from WSDOT may be required for the SR 520 Alternative.

## 2.7 Consideration of Other Relevant Sound Transit Projects

### 2.7.1 Lynnwood Link Extension

As part of ST2, Sound Transit is extending the light rail from Northgate to Lynnwood. This 8.5-mile light rail extension, the Lynnwood Link Extension, is currently undergoing environmental review. The *Lynnwood Link Extension Draft EIS* was published and provided to the public for review in July 2013. In November 2013, the Sound Transit Board of Directors adopted Motion No. M2013-96, which identifies the light rail routes and station locations for study in the *Lynnwood Link Extension Final EIS*. The preferred alternative identified in the City of Lynnwood is Alternative C3 with adjustments to better connect to the Lynnwood Transit Center, preserve more redevelopable area, and minimize wetland and stream impacts to the extent feasible. The *Lynnwood Link Extension Final EIS* will evaluate the preferred alternative and all other Lynnwood Link alternatives studied in the Draft EIS.

Preliminary engineering design review is anticipated to occur between 2013 and 2015, with a Final EIS being issued in 2014. Following issuance of the Final EIS, the Sound Transit Board will make a decision on the project to be built. A Federal Transit Administration (FTA) ROD is expected by 2014 or 2015. Final design of the extension is anticipated for 2015 to 2018 and construction is expected from 2018 to 2023. The start of light rail service for this extension is targeted for 2023, and the proposed project for the OMSF would need to be completed prior to the target opening date for the entire system to support the planned levels of light rail service. In addition, for purposes of this Draft EIS and due to Lynnwood Link Extension's geographical location in relation to the proposed OMSF, the environmental impacts determined for the Lynnwood Link Extension are included in the cumulative impact analysis of this Draft EIS. Cumulative impacts are discussed throughout Chapter 3, Affected Environment and Environmental Consequences.

### **2.7.2 East Link**

As part of ST2, East Link will expand light rail from downtown Seattle to the Eastside with stations serving Mercer Island, south Bellevue, downtown Bellevue, Bel-Red, and Redmond's Overlake area. This expansion will connect to the existing Link light rail system between downtown Seattle and Sea-Tac Airport. It will provide storage for up to 16 LRVs in the Eastside Rail Corridor north of NE 12th Street in Bellevue, at the same location identified as the BNSF Storage Tracks under the Lynnwood Alternative site and adjacent to the BNSF Alternative and BNSF Modified Alternative sites for the proposed project. The Final EIS and associated FTA and Federal Highway Administration (FHWA) ROD documents for East Link were issued in 2011, and the project has entered final design. Construction of this extension is planned for 2015 to 2021. For this extension of light rail to deliver its planned level of service, the OMSF would provide the needed LRV maintenance and storage necessary to support the system. Therefore, the proposed OMSF would need to be operational by the end of 2020 to accept delivery of new LRVs and support break-in and testing procedures for those LRVs. Additionally, for purposes of this Draft EIS and due to East Link's geographical location in relation to the proposed OMSF, the environmental impacts that have been determined for East Link will be included in the cumulative impact analysis of this Draft EIS, which is provided throughout Chapter 3, Affected Environment and Environmental Consequences.

## **2.8 Environmental Commitments and Sustainability**

As an agency that has built and operated light rail, commuter rail, and regional express bus service in multiple Puget Sound communities, Sound Transit has established programs, best practices, and policies that are assumed as part of the OMSF. These include the agency's environmental and sustainability program and a commitment to satisfying all applicable laws and regulations and mitigating significant adverse environmental impacts responsibly and reasonably, consistent with Sound Transit's policies.

The key goal of Sound Transit's sustainability and environmental management programs is to protect the environment and create a healthy community and economy. The agency's core mission of moving people on transit is the most important action the agency can take to improve the local

environment, connect communities, reduce sprawl, and enable citizens to thrive within their means by saving dollars on transportation. As the agency delivers transit projects and services, it is also working to conserve resources and incorporate sustainability into everyday operations.

In 2004, the Sound Transit Board adopted an environmental policy for the agency that applies to all activities, from planning and design to construction and operations. The policy commits Sound Transit to protecting the environment for present and future generations by doing the following.

- Be in full compliance with all environmental laws and regulations and strive to exceed compliance by the continual improvement of our environmental performance through cost-effective innovation and self-assessment.
- Restore the environment by providing mitigation and corrective action, and monitor to ensure environmental commitments are implemented.
- Improve our ability to manage and account for environmental risk.
- Avoid environmental degradation by minimizing releases to air, water, and land. Prevent pollution and conserve resources by reducing waste, reusing materials, recycling, and preferentially purchasing materials with recycled content.
- Continue to educate the public about the environmental benefits of our transit system and build relationships with our contractors, vendors, consultants, and transit partners during planning, design, construction, and operation to protect and enhance the environment.

In 2007, the Sound Transit Board approved a sustainability initiative directing the agency's Chief Executive Officer to integrate sustainable practices and strategies throughout the entire agency. In addition to setting yearly targets for sustainability, in 2011, Sound Transit adopted a sustainability plan establishing long-term and short-term priorities. The plan's environmentally focused targets and performance measures include areas such as energy use, water use, stormwater management, wetland mitigation, air quality improvements including greenhouse gas emissions, toxic materials, materials consumption, and solid waste. These areas are to be considered in all of the agency's activities, including planning, design, operation, and maintenance of investments such as the OMSF.

One aspect of Sound Transit's sustainability program is its incorporation of guidelines from the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) certification system into the agency's design and operation standards. The agency's design criteria include a checklist of required and voluntary measures with specific, measurable standards to help maximize sustainability opportunities for the project during design, construction, and operation. While some of these sustainability opportunities may also support permit requirements or help mitigate environmental impacts, others can help maximize and extend the environmental and public benefits of the project.

The sustainability plan is implemented through the agency's internationally certified Environmental and Sustainability Management System (ESMS). Since 2007, Sound Transit has been one of a select number of transit agencies nationwide to achieve certification in the international ISO 14001 standard. This system holds the agency accountable for identifying and controlling environmental

impacts, setting and achieving objectives and targets, and demonstrating continual improvements in performance.

In addition to meeting environmental commitments, Sound Transit will continue to avoid and minimize impacts where possible. Where adverse impacts cannot be avoided at this stage of design, this Draft EIS identifies many potential measures to mitigate the adverse impacts of the proposed project. Sound Transit will integrate some measures into the proposed project; other potential measures are noted that might further reduce or eliminate impacts.

## 2.9 Funding and Estimated Project Costs

Funding for the proposed project would be provided by ST2 tax revenue. The proposed project would also remain eligible for grant funding through FTA's New Starts Program, as authorized under the Moving Ahead for Progress in the 21st Century Act (MAP-21) or other federal grants. The estimated capital costs for developing each of the build alternatives and the estimated annual cost to operate each alternative are listed in Table 2-2.

The current level of project design includes uncertainties regarding the project scope, engineering data, mitigation requirements, schedule, and project delivery methods. Therefore, the project cost estimates at this stage are conceptual costs. These 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 project capital cost estimates include the following elements.

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

In addition, costs for construction change orders and an unallocated contingency were estimated as a percentage of the above estimates.

The estimated annual cost to operate the OMSF alternatives reflects facility maintenance staff, utility and mechanical staff, rail operations staff, systems maintenance staff (power and signals), and administrative staff labor costs.

**Table 2-2. Estimated Capital and Operating Costs of OMSF Build Alternatives**

| <b>Alternative</b>        | <b>Real Estate and Relocation (million dollars)<sup>a</sup></b> | <b>Final Design and Construction (million dollars)<sup>a,b</sup></b> | <b>Total Capital Cost (million dollars)<sup>a</sup></b> | <b>Annual Operating Cost (million dollars)<sup>c</sup></b> |
|---------------------------|---|--|---|--|
| Lynnwood Alternative      |   |  |   |  |
| Design Option C1          | \$45  | \$305  | \$350   | \$66   |
| Design Option C2          | \$40  | \$310  | \$350   | \$66   |
| Design Option C3          | \$50  | \$305  | \$355   | \$66   |
| BNSF Alternative          | \$80  | \$265  | \$345   | \$63   |
| BNSF Modified Alternative | \$100   | \$315  | \$415   | \$63   |
| SR 520 Alternative        | \$95  | \$290  | \$385   | \$63   |

<sup>a</sup> 2013 dollars.  
<sup>b</sup> Includes professional services and unallocated contingency.  
<sup>c</sup> Annual labor cost in constant dollars to operate the facility

The annual cost to operate the OMSF is driven primarily by labor costs. Table 2.3 illustrates the facility staffing requirements for each build alternative. The Lynnwood Alternative would require off-site storage tracks in Bellevue, duplicating some of the functions such as LRV cleaning and operator reporting. Due to this, the Lynnwood Alternative requires more operations and maintenance staff than the BNSF Alternative, BNSF Modified Alternative, and SR 520 Alternative.

**Table 2-3. Staffing Requirements of the Build Alternatives**

| <b>Alternative</b>        | <b>Staffing Requirement</b>  |                       |                            |                          |                   | <b>Total Employees</b> |
|---------------------------|------------------------------|-----------------------|----------------------------|--------------------------|-------------------|------------------------|
|                           | <b>Onsite Administration</b> | <b>Rail Operation</b> | <b>Vehicle Maintenance</b> | <b>Material Handling</b> | <b>Facilities</b> |                        |
| Lynnwood Alternative      | 7                            | 73                    | 81                         | 4                        | 40                | 205                    |
| BNSF Storage Tracks       | 0                            | 31                    | 15                         | 1                        | 6                 | 53                     |
| BNSF Alternative          | 7                            | 98                    | 81                         | 4                        | 40                | 230                    |
| BNSF Modified Alternative | 7                            | 98                    | 81                         | 4                        | 40                | 230                    |
| SR 520 Alternative        | 7                            | 98                    | 81                         | 4                        | 40                | 230                    |

## 2.10 Next Steps and Schedule

Following the publication of this Draft EIS, there will be a 45-day public comment period. The Draft EIS will be available at Sound Transit offices, public libraries, and community centers. Additionally, public hearings will be held during the comment period to receive verbal testimony. Comments received from the public, government agencies, and tribal nations will be considered and addressed in a Final EIS. The Final EIS will also include a preferred alternative as identified by the Sound Transit Board along with the other alternatives evaluated in the Draft EIS.

Following publication of the Final EIS, the Sound Transit Board of Directors will make a decision on the OMSF location to be built. FTA is then expected to issue a ROD on the proposed project, which documents the findings by FTA that the proposed project has met the requirements of NEPA and related environmental regulations. The ROD describes the proposed project to be built, alternatives considered, public opportunity to comment, public comments and responses, basis for the decision to approve the proposed project, and mitigation measures required. If one of the build alternatives is selected, property acquisition, final design, permitting, and ultimately construction would begin following the issuance of the ROD.

### 2.10.1 Project Schedule

The current project schedule is shown in Table 2-4.

**Table 2-4. Current Project Schedule**

| <b>Preliminary Design and Environmental Review</b>       | <b>Time Period</b> |
|--|--------------------|
| Environmental Scoping                                    | Fall 2012          |
| Sound Transit Board Identifies Draft EIS Alternatives    | December 2012      |
| Draft EIS Published                                      | Spring 2014        |
| Draft EIS Comment Period                                 | 45 days            |
| Sound Transit Board Identifies Preferred Alternative     | Summer 2014        |
| Final EIS Published                                      | Summer 2015        |
| Sound Transit Board Selects Project to Build             | Fall 2015          |
| Federal Record of Decision                               | Fall 2015          |
| <b>Final Design, Construction, and Operation Targets</b> | <b>Time Period</b> |
| Final Design and Permitting                              | 2015–2017          |
| Construction   | 2017–2020          |
| Ready for Operations                                     | 2020               |

### 2.10.2 Benefits and Disadvantages of Delaying Project Implementation

As required by SEPA (Washington Administrative Code [WAC] 197-11-440(5)(c)), this section discusses the benefits and disadvantages of reserving implementation of the proposed project for some future time, compared to 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 purchase, test, and commission additional LRVs in advance of opening light rail extensions to Lynnwood, Overlake Transit Center in Redmond, and Kent/Des Moines approved under ST2.
- Delaying the OMSF would require Sound Transit to operate the expanded system at a lower level of service than planned, or delay some or all of the planned ST2 light rail extensions until it developed additional operations and maintenance capacity.



- Delaying the proposed project could result in opening service on these extensions with a fleet size constrained to 104 vehicles, which is the storage, service, and maintenance capacity of the Forest Street OMF in Seattle. Operating the ST2 light rail system from the Forest Street OMF with only 104 vehicles for some period of time until the OMSF is built would result in degraded levels of light rail transit service. This 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, including LRV 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 disadvantage of delaying construction would be the delay in construction expenditures within the local and regional economy.
- The potential funding implications associated with delaying the proposed project could result in delays in project construction, which could result in higher construction costs due to inflation in future years. Delays would likely increase overall proposed project costs.

