September 2026

Everett Link Extension

Draft Environmental Impact Statement

AIR QUALITY TECHNICAL REPORT

Appendix G.7

SOUNDTRANSIT

U.S. Department of Transportation
Federal Transit Administration

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Acronyms

AADT	annual average daily traffic
AIR	SR 99/Airport Road
ALD	West Alderwood
ASH	Ash Way
BI	Broadway/I-5
BMPs	best management practices
CAA	Clean Air Act
CFR	Code of Federal Regulations
CO	carbon monoxide
CO_2	carbon dioxide
DPM	diesel particulate matter
EGN	SR 526/Evergreen
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
EVLE	Everett Link Extension
EVT	Everett Station
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
MSAT	mobile source air toxic
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NO_2	nitrogen dioxide
NO_X	nitrogen oxide
O_3	ozone
MAR	Mariner
OMF	operations and maintenance facility
Pb	lead

PM	particulate matter
$PM_{2.5}$	particulate matter less than 2.5 micrometers in diameter
PM_{10}	particulate matter less than 10 micrometers in diameter
PSCAA	Puget Sound Clean Air Agency
PSRC	Puget Sound Regional Council
RCW	Revised Code of Washington
ROG	reactive organic gas
SIP	State Implementation Plan
SO_2	sulfur dioxide
SR	State Route
ST3	Sound Transit 3
SWI	SW Everett Industrial Center
TIP	Transportation Improvement Program
USC	United States Code
VMT	vehicle miles traveled
VOCs	volatile organic compounds
WAC	Washington Administrative Code
WSDOT	Washington State Department of Transportation

1 INTRODUCTION

1.1 Overview

The Central Puget Sound Regional Transit Authority (Sound Transit) is proposing to expand Link light rail transit service northward from the Lynnwood City Center Station to the Everett Station area in Snohomish County, Washington (Figure 1-1). The Everett Link Extension (EVLE) Project would provide fast, reliable light rail service to regional residential and job centers in Snohomish County's growing urban areas. The proposed project is part of the Sound Transit 3 (ST3) Plan of regional transit system investments, funding for which was approved by voters in the region in 2016.

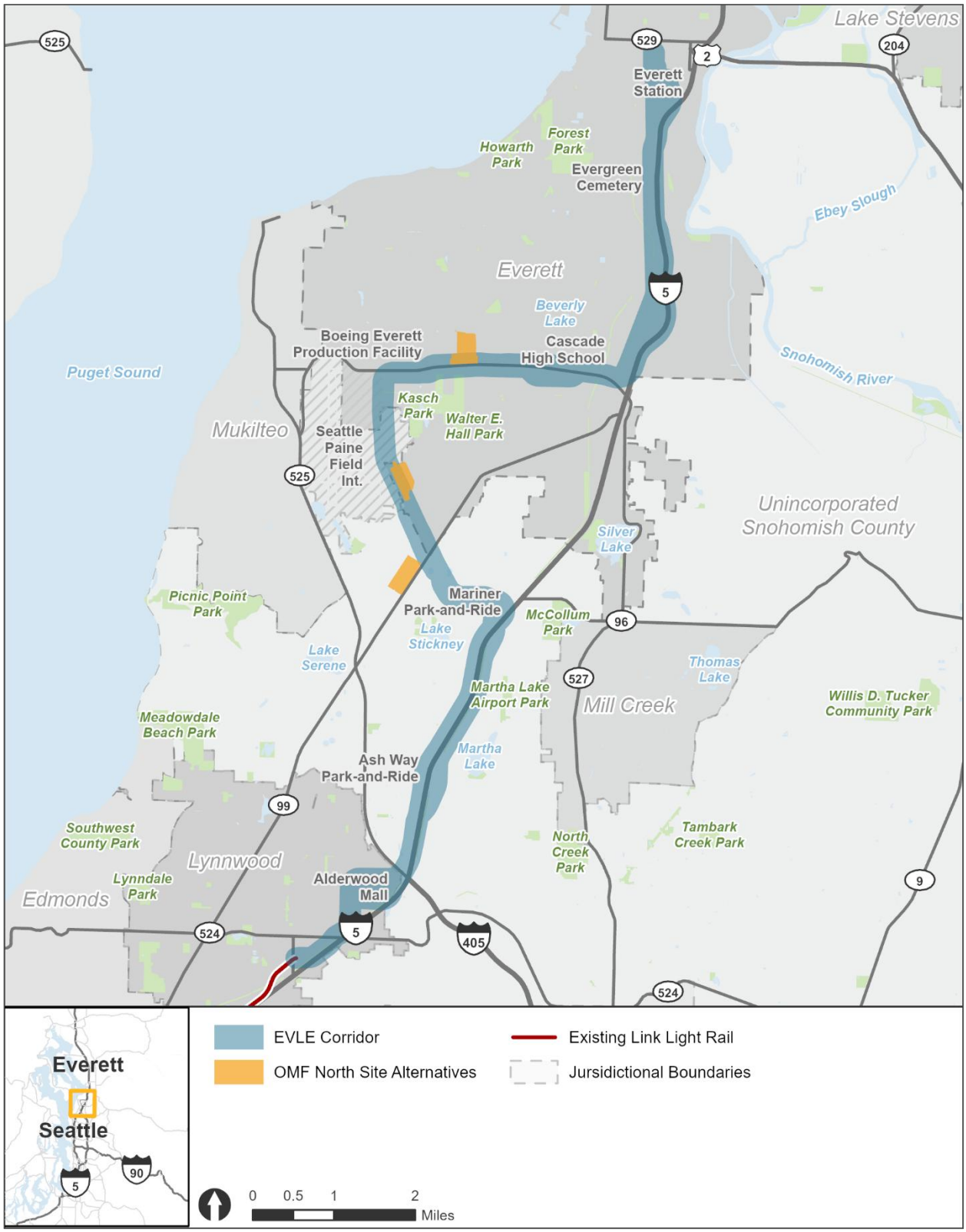
For this analysis, the EVLE Project consists of approximately 16 miles of light rail guideway, seven light rail stations, two parking facilities, and an operations and maintenance facility (OMF North). Sound Transit proposes to begin construction of the project in 2030. The current schedule for opening light rail service from the Lynnwood City Center Station to Everett Station is 2041. A shorter route connecting Lynnwood City Center to the SW Everett Industrial Center Station would open first in 2037 as the initial phase. OMF North would open by 2034, prior to opening of the light rail extension, as the facility is necessary for storing rail cars and supporting service for not only the extension to Everett, but also other parts of the regional system.[1] Parking facilities at the Mariner and Everett Stations would open by 2046.

One station, State Route (SR) 99/Airport Road Station, is currently considered provisional since planning, preliminary engineering, and environmental review are funded, but final design and construction are not. However, for purposes of this evaluation, all seven stations are assumed to be funded and open according to the schedule described above to capture all locations where impacts could occur. The station would be fully constructed and open for service when additional funding is identified.

This document includes analysis of the complete project as well as the initial phase as described further in Section 2.3.

[1] Construction of light rail projects is typically divided into sections, and construction would occur across different parts of the corridor between 2030 and 2046. For more information on the construction approach, see Draft EIS Appendix B.

Figure 1-1 EVLE Project Corridor



For planning and engineering purposes, the project is organized into eight geographic segments, discussed in this document from south to north. Within those segments, a total of 17 alignment alternatives and 18 station location alternatives are under consideration. These alignment and station alternatives are combined into Build Alternatives for analysis as shown in Table 1-1 and Figure 1-2.

Table 1-1 describes the alignment and station alternatives as follows:

- **Segments:** The eight alignment segments and corresponding abbreviations are:
  - West Alderwood (ALD).
  - Ash Way (ASH).
  - Mariner (MAR).
  - SR 99/Airport Road (AIR).
  - SW Everett Industrial Center (SWI).
  - SR 526/Evergreen (EGN).
  - Broadway/I-5 (BI).
  - Everett Station (EVT).
- **Alignment alternatives:** Alignment alternatives in each segment are identified with numbers (e.g., ALD-1).
- **Station alternatives:** Station alternatives in each segment are identified with letters (e.g., ALD-B).[2]
- **Build Alternatives:** Alignments and stations are combined to create the Build Alternative name (e.g., Station ALD-B is located on Alignment ALD-1, so this pairing is referred to as Alternative ALD-1B). If a preferred Build Alternative has been identified by the Sound Transit Board of Directors, it is indicated with an asterisk.
- **Design options:** A design option is an alternate design for a portion of a Build Alternative. It could be a different route or profile along a portion of an alignment, a different station configuration, or a different parking location. For example, in the West Alderwood Segment the Alderwood Mall Boulevard Design Option is being considered for all three Build Alternatives.

[2] Letters identifying station alternatives are non-sequential in some segments; missing letters denote alternatives that did not perform as well as alternatives considered in the Draft EIS. For more information on the Alternatives Development process, see Draft EIS Chapter 2.

Table 1-1 Alignment and Station Build Alternatives by Segment

Segment	Alignment Alternatives	Station Alternatives	Build Alternatives (Combined Alignment and Station)	Build Alternative Design Options Also Considered
West Alderwood	ALD-1	ALD-B	ALD-1B	Alderwood Mall Boulevard
	ALD-2	ALD-D	ALD-2D*	Alderwood Mall Boulevard
		ALD-F	ALD-2F	Alderwood Mall Boulevard
Ash Way	ASH-1	ASH-A	ASH-1A	None
	ASH-2	ASH-D	ASH-2D	None
Mariner	MAR-1	MAR-B	MAR-1B	Surface Parking
	MAR-2	MAR-D	MAR-2D	Surface Parking
SR 99/ Airport Road	AIR-1	AIR-A	AIR-1A	None
	AIR-2	AIR-B	AIR-2B	None
SW Everett Industrial Center	SWI-1	SWI-A	SWI-1A*	Lower
		SWI-B	SWI-1B	None
		SWI-C	SWI-1C	None
SR 526/ Evergreen	EGN-1	EGN-A	EGN-1A	None
	EGN-2	EGN-B	EGN-2B	North Side of SR 526
	EGN-3	EGN-E	EGN-3E	North Side of SR 526
Broadway/I-5	BI-1	None	BI-1*	None
	BI-2	None	BI-2	None
Everett Station	EVT-1	EVT-A	EVT-1A	None
	EVT-2	EVT-C	EVT-2C*	None
	EVT-3	EVT-D	EVT-3D*	None

* Denotes preferred alternative

There are also three OMF North site alternatives under consideration as shown in Table 1-2 and Figure 1-2.

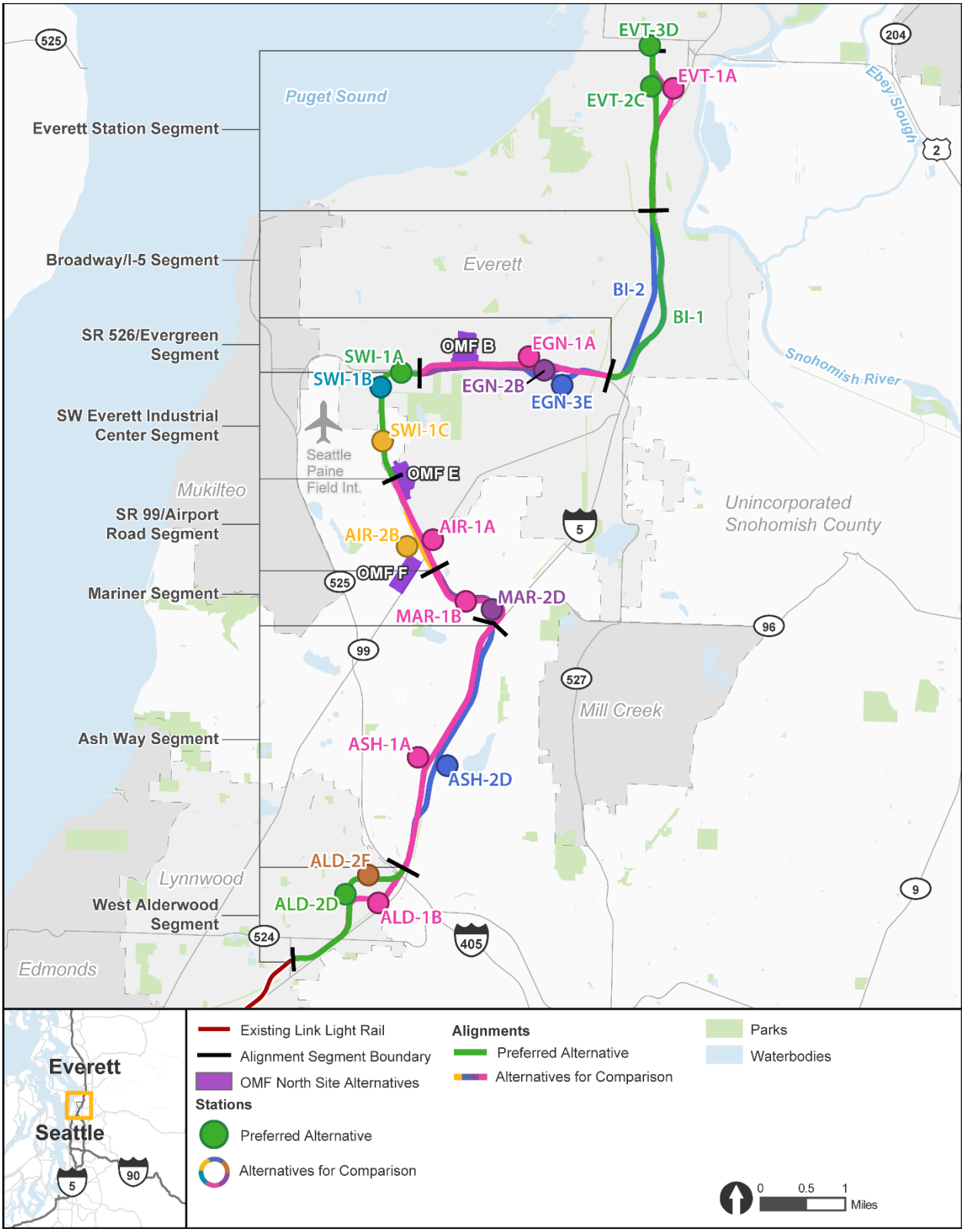
Table 1-2 OMF North Site Alternatives

Build Alternative	Build Alternative Design Options Also Considered
OMF Site F	Lead Tracks to West Side of Airport Road
OMF Site E	None
OMF Site B	Lead Tracks to South Side of SR 526

Analysis of the Build Alternatives was based on the conceptual design drawings included in Draft Environmental Impact Statement (EIS) Appendix F.

The No Build Alternative describes the environment, including the transportation system, as it would exist in 2046 without the proposed project. The No Build Alternative uses 2046 as the year of analysis to align with the target date for completion of all EVLE Project components and the full buildout of the light rail capital projects included in the ST3 Plan.

Figure 1-2 EVLE Project Alternatives



1.2 Potential Design Refinements

In addition to the alternatives described above, the Draft EIS provides a qualitative evaluation of potential design refinements that could reduce overall project cost if applied to the alignment and station alternatives (for more information, see Draft EIS Chapter 2). The potential design refinements identified to date that could be considered in each segment, along with potential changes in impacts, are described in Draft EIS Chapter 4. Sound Transit has not identified any change in air quality impacts as a result of the potential design refinements (see quantitative analysis methodology in Draft EIS Appendix I). If Sound Transit decides to include these refinements as part of the project prior to the Final EIS, they would be reflected in the conceptual design plans and evaluated in the Final EIS.

1.3 Purpose of Report

Under the National Environmental Policy Act (NEPA), this report provides a qualitative analysis of air quality emissions for the EVLE Project. The objective of this analysis is to address compliance with applicable regulatory requirements, identify potential air quality impacts, and present potential mitigation measures for impacts, if needed.

2 REGULATORY CONTEXT AND METHODOLOGY

2.1 Introduction to Air Quality

2.1.1 Criteria Pollutants

The 1970 Clean Air Act (CAA) identified six “criteria air pollutants” of concern: carbon monoxide (CO), nitrogen dioxide (NO_2), particulate matter (PM), sulfur dioxide (SO_2), ozone (O_3), and lead (Pb). PM is further subdivided for regulatory purposes into PM with aerodynamic diameter equal to or smaller than 2.5 micrometers ($PM_{2.5}$) and PM with aerodynamic diameter equal to or smaller than 10 micrometers (PM_{10}). Ozone is unique among the criteria pollutants. It is not emitted directly from a source but rather formed through chemical and photochemical reactions in the atmosphere. Nitrogen oxides (NO_X) and volatile organic compounds (VOCs) are precursors that form ozone.

2.1.2 Mobile Source Air Toxics

Mobile source air toxics (MSATs) are hazardous air pollutants emitted from on- and off-road vehicles that can be carcinogenic and cause noncancer health risks. Air toxics include compounds such as benzene; 1,3-butadiene; formaldehyde; acetaldehyde; acrolein; naphthalene; and other hydrocarbons. New transportation projects can affect regional or local air toxic concentrations due to MSAT emissions from vehicles. Nationwide MSAT emissions are expected to decrease in future years as a result of United States Environmental Protection Agency (EPA) emissions control programs and fuel economy standards. Estimated emissions using the EPA MOVES3 model indicate that even if vehicle miles traveled increased by 31% from 2020 to 2060 as forecast, a combined reduction of 76% in the total annual emissions for the priority MSATs is projected for the same time period. Diesel particulate matter (DPM) is the

dominant component of MSAT emissions, making up 36% to 56% of all priority MSATs by mass, depending on calendar year (FHWA 2023).

2.2 Applicable Laws, Regulations, and Guidelines

This analysis has considered the following federal, state, and local laws, regulations, guidance, and policies specific to the air quality analysis for this project:

- Clean Air Act (42 United States Code [USC] 7401).
- Code of Federal Regulations (CFR) Title 40, Part 50 (40 CFR 50), National Primary and Secondary Ambient Air Quality Standards.
- 40 CFR 86, Control of Emissions from New and In-Use Highway Vehicles and Engines.
- 40 CFR 93, Determining Conformity of Federal Actions to State or Federal Implementation Plans.
- Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents (FHWA 2023).
- Washington Clean Air Act (Revised Code of Washington [RCW] 70.94).
- WAC 173-420, Conformity of Transportation Activities to Air Quality Implementation Plans.
- Puget Sound Clean Air Agency (PSCAA) Regulation I, Article 9, Section 15, Fugitive Dust Control Measures.

2.2.1 Ambient Air Quality Standards

Ambient air quality and potential emission sources are regulated by the PSCAA, Washington State Department of Ecology (Ecology), and EPA collectively in the project area. The EPA developed the National Ambient Air Quality Standards (NAAQS), which set thresholds for attainment for the criteria air pollutants described in Section 2.1.1. Depending on whether the standards are met or exceeded, the local air basin is classified as in “attainment” or “nonattainment,” respectively. Some areas are unclassified, which means no monitoring data are available. Unclassified areas are considered to be in attainment. Proposed projects in or near nonattainment areas could be subject to more stringent air-permitting requirements such as conformity analysis. These standards are summarized in Table 3-1.

2.3 Methodology

NEPA regulations require that an EIS disclose impacts (i.e., effects) of a proposed action on the environment. NEPA requires an EIS to evaluate and disclose the “reasonably foreseeable environmental effects of the proposed agency action” (42 USC Section 4332). Reasonably foreseeable environmental effects are those that are sufficiently likely to occur during operation (long-term) or construction (short-term). Reasonably foreseeable environmental effects do not include effects that are speculative in nature or remote in time or place, or that are the result of a lengthy causal chain. For this analysis, reasonably foreseeable effects include all effects that are considered likely to result from the project over its operational lifetime within the study area of each resource.

To ensure that only impacts that were reasonably foreseeable were addressed, as required under NEPA, the air quality analysis evaluated emission impacts of the No Build and Build Alternatives within the Puget Sound region, consistent with the study area used in the EVLE Project transportation analysis. The air quality analysis relied in part on data produced by that transportation analysis (see the Transportation Technical Report in Draft EIS Appendix G.1).

Air quality impacts would consist of long-term impacts from project operations (operational impacts) and short-term impacts from project construction (construction impacts). This analysis used transportation data for the baseline year (2023 for the existing year as a point of comparison), 2037 (the year the initial phase to the SW Everett Industrial Center Station would be open), and 2046 (the 'horizon year' when all components of the project would be open. The initial phase opening year of 2037 also captures the opening of OMF North in 2034. The horizon year (2046) is consistent with Sound-Transit's long-range planning, assuming full buildout of Sound Transit's ST3 system, with service to Everett Station in 2041, and opening of the EVLE Project's station parking facilities in 2046.

The transportation data used to produce emission estimates was an average of daily VMT within the central Puget Sound region (King, Kitsap, Pierce, and Snohomish Counties), which was generated using the Puget Sound Regional Council (PSRC) Regional Travel Model. Transportation data was modeled for the years 2040 and 2050 and interpolated to project VMT estimates for the 2037 and 2046 analysis years.

Based on FHWA guidance (FHWA 2023), MSAT emissions from traffic in the study area were considered based on project characteristics and transportation data. FHWA's guidance did not establish criteria specific to transit projects, but it does provide a recommended approach to evaluating MSAT impacts. FHWA identified projects that serve to improve operations of highway, transit, or freight without adding substantial new capacity or without creating a facility that is likely to meaningfully increase MSAT emissions as projects with low potential MSAT effects.

Areas that are in nonattainment or maintenance for one of the criteria pollutants (Section 2.1.1) are subject to conformity requirements. The Central Puget Sound region was designated nonattainment for CO and classified as moderate upon enactment of CAA Amendments in 1990. The CAA established an attainment date of December 31, 1995, for all moderate CO areas, and air monitoring data showed attainment for CO in the region starting in 1991 (61 FR 29515). In 1996 Washington submitted a CO maintenance plan in response, which was approved by the EPA (EPA 2023). The EPA confirmed in 2016 that a 20-year maintenance period had concluded, the area was redesignated as in attainment, and transportation air quality conformity requirements no longer applied to the region and, therefore, the project area (see Attachment A). A transportation conformity analysis was not required for this project.

3 AFFECTED ENVIRONMENT

The project area is within the Puget Sound region and was recently under maintenance for CO. The EPA has confirmed that the maintenance period expired in 2016 (see Attachment A). The project area is in attainment for all six criteria pollutants: CO, NO_2, $PM_{2.5}$, PM_{10}, SO_2, O_3, and Pb.

PSCAA, Ecology, and the EPA monitor criteria air pollutants at several locations near the project area. The closest EPA monitoring stations are Seattle-10th and Weller, Seattle-Beacon

Hill, and Marysville-7th Avenue. Ambient air quality data from the study area is included in Table 3-1.

Table 3-1 Air Monitoring Data from the Study Area

Parameter[a,b,c]	National Ambient Air Quality Standard	2021	2022	2023
Carbon monoxide maximum 1-hour concentration (ppm)	35	1.373	1.744	1.568
Carbon monoxide maximum 8-hour concentration (ppm)	9	1.0	1.5	1.0
Ozone fourth-highest 8-hour concentration (ppm)	0.070	0.052	0.047	0.049
Nitrogen dioxide 98th percentile 1-hour concentration (ppm)	0.100	0.049	0.054	0.050
Nitrogen dioxide annual mean (ppm)	0.053	0.016	0.016	0.015
PM_{10} maximum 24-hour concentration ($\mu g/m^3$)	150	25	17	23
$PM_{2.5}$ 98th percentile 24-hour concentration ($\mu g/m^3$)	35	22.1	38.1	25.5
$PM_{2.5}$ annual mean ($\mu g/m^3$)	9	7.01	9.14	8.42
Sulfur dioxide 99th percentile 1-hour concentration ($\mu g/m^3$)	0.075	0.003	0.003	0.003

SOURCES: EPA (2024a and 2024b).

NOTES:

a) If the same pollutant was monitored at more than one of the three closest monitoring stations closest to the project, the highest monitored concentration among the stations is presented.

b) The following EPA Air Quality Monitor Stations were used: Seattle-10th and Weller (AQS 53-033-0030), Seattle-Beacon Hill (AQS 53-033-0080), and Marysville-7th Ave (AQS 53-061-1007).

c) ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter

4 ENVIRONMENTAL IMPACTS

4.1 Build Alternatives

4.1.1 Operational Impacts

4.1.1.1 Impacts Common to All Build Alternatives

All Build Alternatives for alignments and stations would be of similar length and ridership, so potential air quality impacts from each would be similar. The air emissions from each of the OMF North site alternatives would also be similar since they are of similar size and scale and would serve the same function.

Regional Emissions

Criteria Pollutants

For this project and other transit improvement projects, regional criteria emissions are typically analyzed using regional VMT. The analysis considered long-term changes in VMT expected to

occur with the Build Alternatives (including OMF North operations) when compared to the No Build scenario (see the Transportation Technical Report in Draft EIS Appendix G.1 for further discussion of VMT).

Existing regional traffic volumes and volumes anticipated in 2037 and 2046 are listed by mode in Table 4-1. Because the greatest criteria pollutant emission source affected by the project is fuel consumption by motor vehicles, regional traffic volumes serve as a direct way to compare the criteria pollutant emissions that would result if the project were built or not. Therefore, lower VMT levels would directly correspond with lower criteria pollutant emissions. With the extension of light rail north into Everett, regional VMT is expected to be approximately 900,000 miles lower on a typical day compared to the No Build Alternative by 2046. Reductions in total daily VMT can be caused by shorter or more infrequent motor vehicle trips or fewer people opting to use motor vehicles, and these reductions result in fewer motor vehicles being on the road at any given time. In the case of the EVLE Project, this lower VMT would be due to an expected shift of some regional passenger vehicle trips to light rail.

Table 4-1 Regional Daily Vehicle Miles Traveled

Mode	2023[a] Base	2037[a] No Build	2037[a] Build	2046[a] No Build	2046[a] Build
Cars and Light Trucks[b]	87,704,300	95,516,400	94,732,300	100,906,200	99,941,900
Heavy Trucks[c]	2,868,900	3,421,100	3,420,400	3,760,000	3,759,100
Transit Buses[d]	197,300	240,400	258,500	249,700	286,600
Total	**90,770,500**	**99,177,900**	**98,411,200**	**104,915,900**	**103,987,600**

SOURCE: PSRC (2018).

NOTES:

a) The PSRC model's base year is 2018, and is reported at ten-year intervals. This data was interpolated to estimate the current year and the opening year numbers.

b) Cars and Light Trucks includes the following vehicle classes: standard occupancy vehicle, high occupancy vehicle, transportation network company, medium truck.

c) Heavy Trucks includes the following vehicle class: heavy truck.

d) Transit buses include the following vehicle class: bus.

With lower VMT in the Build Alternatives than the No Build Alternative, criteria pollutant emissions from operation of the light rail and stations would be lower with any Build Alternative than with the No Build Alternative.

Mobile Source Air Toxics

The EVLE Project light rail operations would be powered by electricity and, therefore, would not directly emit MSATs. The EVLE Project is expected to decrease regional VMT, especially for diesel vehicles which contribute significantly to DPM emissions. Under the Build Alternatives, there may be localized areas where VMT would increase, and other areas where VMT would decrease. Therefore, it is possible that localized increases and decreases in MSAT emissions may occur. The localized increases in MSAT emissions would likely be most pronounced near new stations. However, even if these increases do occur, they would be substantially reduced in the future due to implementation of EPA's vehicle and fuel regulations, as discussed in Section 2.1.2.

The amount of MSATs emitted as a result of the EVLE Project would be proportional to VMT, assuming that other variables such as fleet mix do not change. Because the VMT estimated for the No Build Alternative is higher than for the Build Alternatives, as shown in Table 4-1, higher levels of MSATs are not expected from any of the Build Alternatives compared to the No Build.

In addition, because there would be no appreciable difference in the estimated VMT under the Build Alternatives, it is expected that there would be no appreciable difference in overall MSAT emissions among the various alternatives. Regardless of the alternative chosen, emissions would likely be lower than present levels in the design year as a result of EPA national emissions control programs that are projected to reduce annual MSAT emissions by over 76% from 2020 to 2060 (FHWA 2023).[3] Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the EPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future in virtually all locations.

4.1.2 Construction Impacts

4.1.2.1 Impacts Common to All Build Alternatives

All station and alignment alternatives would be of similar length and require similar construction techniques and duration. Similarly, all buildings on the OMF North site alternatives would be of similar size and require similar construction techniques and duration. As such, construction impacts would be similar for all the Build Alternatives. Project construction is anticipated to commence in 2030 and be completed by 2046. As described in Section 1.1, OMF North would open in 2034. Service to the SW Everett Industrial Center Station and Everett Station would begin in 2037 and 2041, respectively. Additionally, parking at Mariner and Everett Station would open in 2046.

Regional Emissions

The Build Alternatives would result in short-term criteria pollutant emissions from construction of facilities, including OMF North, between 2030 and 2046.

Short-term degradation of air quality may occur due to particulate emissions from excavation, grinding, hauling, and other construction activities. Emissions from construction equipment, including from fuel usage, are also expected and would include CO, NO_X, SO_2, volatile organic compounds (VOCs), PM_{10}, and $PM_{2.5}$.

Site preparation and construction would include clearing, cut-and-fill, grading, and building activities. Project construction impacts on air quality would be greatest during site preparation as most engine emissions result from the excavation, handling, and transport of soil onsite. Sources of fugitive dust would include disturbed soil onsite and soil loads in transport. Without proper control, vehicles leaving the construction site could deposit dirt and mud on local streets, an additional potential source of airborne dust after drying. PM_{10} emissions would vary day-to-day, depending on the type and intensity of construction activity as well as local weather conditions. PM_{10} emissions would also depend on soil moisture and silt content, wind speed, and quantity of operating equipment. Larger particles would likely settle near the site, while finer particles would be dispersed over greater distances from the source.

[3] FHWA's current MSAT guidance (January 2023) relies on national MSAT emission trends developed using MOVES3, which projected a reduction of more than 76% in total MSAT emissions between 2020 and 2060. FHWA has not issued updated national MSAT trend projections that incorporate the 2025-2026 federal policy changes or the more recent MOVES4/MOVES5 modeling framework.

Water and other soil stabilizers can be used for dust control, resulting in emission reductions. With implementation of standard construction techniques, such as frequent watering of dust and soil (e.g., at least twice per day), fugitive dust emissions from construction would not result in adverse air quality impacts.

In addition to dust-related PM_{10} emissions, diesel and gasoline exhaust from heavy trucks and other construction equipment would generate CO, SO_2, NO_X, VOCs, and some soot particulates (including $PM_{2.5}$ and PM_{10}). To minimize emissions from construction equipment, Sound Transit requires that 85% of the equipment prime contractors use on projects meet EPA Tier 3 or Tier 4 standards.[4]

If construction activity were to increase traffic congestion in the surrounding area, similar exhaust emissions from traffic would increase slightly during delays. These emissions would be both temporary and limited to the immediate area around the site of construction.

As mentioned above in Section 3, the project area is in attainment for all criteria pollutants and, as shown in Table 3-1, the most recent monitoring data (2023) near the study area shows criteria pollutant levels below the NAAQS. Construction-related emissions would be temporary in nature and are not expected to cause any county-level increases to nonattainment, including in conjunction with other projects in the region. With implementation of required controls for various stages of construction and consistent application of best management practices (BMPs) to minimize construction emissions, construction of the proposed project would not be expected to substantially impact air quality in the region.

4.2 No Build Alternative

Under the No Build Alternative, VMT for cars and light trucks would be expected to increase over existing conditions by approximately 18% by 2046 (see Table 4-1). However, pollutant emissions for all criteria pollutants associated with VMT would likely be lower than existing levels as a result of the 2020 Motor Vehicle Emissions Standards Law (RCW 70.A.30.010), which requires increasingly cleaner automobiles. There would be no light rail construction-related emissions as the project would not be constructed.

5 POTENTIAL MITIGATION MEASURES

Sound Transit is committed to complying with all applicable federal, state, and local environmental regulations, following best management practices (BMPs), and designing the EVLE Project in a way that mitigates adverse impacts. As a result, mitigation measures are reflected in the design of Build Alternatives. This section presents additional potential mitigation measures that would further reduce or eliminate adverse effects. Final mitigation measures will be based on advanced design and will be included in the Final EIS and in FTA's Record of Decision as environmental commitments for the project.

Sound Transit would implement construction BMPs to avoid or minimize impacts from construction-related emissions and nuisance dust. In addition to compliance with WAC 173-400-

[4] Small Business Enterprise (SBE) and Disadvantaged Business Enterprise (DBE) firms are exempt from these requirements.

040 (general standards for maximum emissions), BMPs such as, but not limited to, the following could be included to reduce construction impacts:

- Compliance with applicable dust control policies and plans, including the following:
  - PSCAA Regulation I, Article 9, Section 15 (Fugitive Dust Control Measures).
- Reduction in idling equipment when not actively in use.
- Use of BMPs discussed in the Geology and Soils Technical Report (included in Draft EIS Appendix G.12) such as application of water onto dry soil to reduce dust.
- Use of temporary ground covers to avoid leaving cleared areas exposed to the elements.
- Planning construction areas to minimize soil exposure for extended periods.
- Covered dirt and gravel piles.
- Rock construction entrances and/or wheel wash stations at exits from active construction sites.
- Regularly sweeping paved roadways to reduce mud and dust.
- Replanting exposed areas after construction as soon as is feasible.

Diesel equipment could also potentially incorporate the use of renewable diesel, which has the potential to reduce both carbon dioxide (CO_2) and NO_X emissions from those associated with petroleum diesel (U.S. Department of Energy n.d.).

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ATTACHMENT A

EPA Carbon Monoxide Maintenance Letter

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue, Suite 900
Seattle, WA 98101-3140

OFFICE OF
AIR AND WASTE

DEC 16 2016

Puget Sound Transportation Conformity Air Quality Consultation Partners
c/o Mr. Josh Brown, Executive Director
Puget Sound Regional Council
1011 Western Avenue, Suite 500
Seattle, Washington 98104-1035

Dear Puget Sound Transportation Conformity Air Quality Consultation Partners:

Congratulations on reaching the end of the 20-year maintenance period for carbon monoxide!

The U.S. Environmental Protection Agency (EPA) is providing this letter in its consultative role to document that the transportation conformity requirements, under Clean Air Act (CAA) section 176(c), for the Seattle-Tacoma carbon monoxide (CO) area ended on October 11, 2016. This date marks 20 years from the effective date of redesignation of the area to attainment for the CO National Ambient Air Quality Standard (NAAQS). See 61 FR 53323 (October 11, 1996).

Under 40 CFR 93.102(b)(4) of the EPA's regulations, transportation conformity applies to maintenance areas through the 20-year maintenance planning period, unless the maintenance plan specifies that the transportation conformity requirements apply for a longer time period. Pursuant to CAA section 176(c)(5) and as explained in the preamble of the 1993 final rule, conformity applies to transportation related pollutants and their precursors for which an area is designated nonattainment or is subject to a maintenance plan approved under CAA section 175A for areas redesignated to attainment. The section 175A maintenance planning period is 20 years, unless the applicable implementation plan specifies a longer maintenance period, see 58 FR 62188, 62206 (November 24, 1993). The EPA further clarified this conformity provision in its January 24, 2008 final rule (73 FR 4434-5).

This letter documents that, because the approved maintenance plan for the Seattle-Tacoma CO area did not extend the maintenance period beyond 20 years from redesignation, transportation conformity requirements for CO ceased to apply after October 11, 2016 (i.e., 20 years after the effective date of the EPA's approval of the first 10-year maintenance plan and redesignation of the area to attainment for the CO NAAQS). As a result, the Puget Sound Regional Council may reference this letter to indicate that the transportation conformity requirements of 40 CFR Part 93 no longer apply for the CO NAAQS. In addition, project sponsors can reference this letter to indicate that as of October 11, 2016, transportation conformity requirements also no longer apply for the CO NAAQS for FHWA/FTA projects as defined in 40 CFR 93.101. Even though the conformity obligation for CO has ended, the terms of the maintenance plan remain in effect and all measures and requirements contained in the plan must be complied with until the state submits, and the EPA approves, a revision to the state plan, see *GM Corp.* v. *United States,* 496 U.S. 530 (June 14, 1990). Such a State Implementation Plan revision

would have to comply with the anti-backsliding requirements of CAA section 110(1), and if applicable, CAA section 193, if the intent of the revision is to remove a control measure or to reduce its stringency.

The EPA notes that there is an approved limited maintenance plan in place for the Seattle-Tacoma PM_{10} area, see 79 FR 49239 (August 20, 2014). Although regional emissions analyses are not required for PM_{10} under the limited maintenance plan provisions in 40 CFR 93.109(e), conformity determinations for the PM_{10} NAAQS continue to be required for transportation improvement programs, and non-exempt FHWA/FTA projects, and all other transportation conformity requirements apply, see 79 FR 49239 (August 20, 2014). Similarly, the EPA notes that there is an approved maintenance plan in place for the Tacoma $PM_{2.5}$ area, see 80 FR 7347(February 10, 2015). Transportation conformity determinations for the $PM_{2.5}$ NAAQS continue to be required in this area, see 80 FR 7347 (February 10, 2015).

If you have questions about the transportation conformity requirements in the Seattle-Tacoma area, please contact Karl Pepple, of my staff, at (206) 553-1778 or pepple.karl@epa.gov.

Sincerely,

Tim Hamlin

Timothy B. Hamlin
Director

cc: Mr. Craig Kenworthy
Puget Sound Clean Air Agency

Mr. Stu Clark
Washington State Department of Ecology

Mr. Mike Boyer
Washington State Department of Ecology

Ms. Karin Landsberg
Washington State Department of Transportation

Mr. Cliff Hall
Washington State Department of Transportation

Ms. Sharleen Bakeman
Federal Highway Administration

Mr. Ned Conroy
Federal Transit Administration

ATTACHMENT B

Limitations of the MSAT Analysis

The mobile source air toxics (MSAT) analysis includes a qualitative analysis of the likely MSAT emission impacts of the EVLE Project. Due to the limitations of information and methodology of the analysis, the following discussion is included. The discussion regarding the limitations of the MSAT analysis is prototype language taken from Appendix C of the Federal Highway Administration (FHWA) *Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA [National Environmental Policy Act] Documents* (FHWA 2023).

Information is incomplete or unavailable to credibly predict the project-specific health impacts due to changes in MSAT emissions associated with a proposed set of alternatives. The outcome of such an assessment, adverse or not, would be influenced more by the uncertainty introduced into the process through assumption and speculation rather than any genuine insight into the actual health impacts directly attributable to MSAT exposure associated with a proposed action.

The Environmental Protection Agency (EPA) is responsible for protecting the public health and welfare from any known or anticipated effect of an air pollutant. They are the lead authority for administering the Clean Air Act and its amendments and have specific statutory obligations with respect to hazardous air pollutants and MSAT. The EPA is in the continual process of assessing human health effects, exposures, and risks posed by air pollutants. They maintain the Integrated Risk Information System (IRIS), which is "a compilation of electronic reports on specific substances found in the environment and their potential to cause human health effects" (EPA 2026). Each report contains assessments of non-cancerous and cancerous effects for individual compounds and quantitative estimates of risk levels from lifetime oral and inhalation exposures with uncertainty spanning perhaps an order of magnitude.

Other organizations are also active in the research and analyses of the human health effects of MSAT, including the Health Effects Institute (HEI). A number of HEI studies are summarized in Appendix D of FHWA's *Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents*. Among the adverse health effects linked to MSAT compounds at high exposures are cancer in humans in occupational settings; cancer in animals; and irritation to the respiratory tract, including the exacerbation of asthma. Less obvious is the adverse human health effects of MSAT compounds at current environmental concentrations or in the future as vehicle emissions substantially decrease (HEI 2007).

The methodologies for forecasting health impacts include emissions modeling; dispersion modeling; exposure modeling; and then final determination of health impacts – each step in the process building on the model predictions obtained in the previous step. All are encumbered by technical shortcomings or uncertain science that prevents a more complete differentiation of the MSAT health impacts among a set of project alternatives. These difficulties are magnified for lifetime (i.e., 70-year) assessments, particularly because unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over that timeframe, since such information is unavailable.

It is particularly difficult to reliably forecast 70-year lifetime MSAT concentrations and exposure near roadways; to determine the portion of time that people are actually exposed at a specific location; and to establish the extent attributable to a proposed action, especially given that some of the information needed is unavailable.

There are considerable uncertainties associated with the existing estimates of toxicity of the various MSAT because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population, a concern expressed by HEI (HEI 2007). As a result, there is no national consensus on air dose-response values assumed to protect the

public health and welfare for MSAT compounds, and in particular for diesel PM. The EPA states that with respect to diesel engine exhaust, "[t]he absence of adequate data to develop a sufficiently confident dose-response relationship from the epidemiologic studies has prevented the estimation of inhalation carcinogenic risk." (EPA 2003).

There is also the lack of a national consensus on an acceptable level of risk. The current context is the process used by the EPA as provided by the Clean Air Act to determine whether more stringent controls are required in order to provide an ample margin of safety to protect public health or to prevent an adverse environmental effect for industrial sources subject to the maximum achievable control technology standards, such as benzene emissions from refineries. The decision framework is a two-step process. The first step requires EPA to determine an "acceptable" level of risk due to emissions from a source, which is generally that the theoretical chance of a person living near the source would develop cancer in their lifetime is no greater than approximately 100 in a million. Additional factors are considered in the second step, the goal of which is to maximize the number of people with risks less than 1 in a million due to emissions from a source. The results of this statutory two-step process do not guarantee that cancer risks from exposure to air toxics are less than 1 in a million; in some cases, the residual risk determination could result in maximum individual cancer risks that are as high as approximately 100 in a million. In a June 2008 decision, the U.S. Court of Appeals for the District of Columbia Circuit upheld EPA's approach to addressing risk in its two-step decision framework. Information is incomplete or unavailable to establish that even the largest of highway projects would result in levels of risk greater than deemed acceptable (U.S. Court of Appeals for the District of Columbia Circuit 2008).

Because of the limitations in the methodologies for forecasting health impacts described, any predicted difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with predicting the impacts. Consequently, the results of such assessments would not be useful to decision makers, who would need to weigh this information against project benefits, such as reducing traffic congestion, accident rates, and fatalities plus improved access for emergency response, that are better suited for quantitative analysis.

REFERENCES

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