Allentown Truck Reroute Project

State Environmental Policy Act Final Supplemental Environmental Impact Statement

Tukwila, Washington

December 3, 2025

Cover Letter

City of Tukwila

December 3, 2025

Dear interested parties, jurisdictions, and agencies,

The City of Tukwila (City) is issuing this Final Supplemental Environmental Impact Statement (FSEIS) for the Proposed Allentown Truck Reroute Project (Proposed Project). The City is proposing to reroute the freight truck traffic that uses streets in Allentown, a residential neighborhood in Tukwila, to access BNSF Railway's South Seattle Intermodal Facility (BNSF facility). The purpose of this FSEIS is to assist the City in proposing alternatives that would improve safety and the quality of life in Allentown without compromising the operations of the BNSF facility.

The FSEIS has been prepared to satisfy the requirements of the Washington State Environmental Policy Act (SEPA). The FSEIS evaluates the probable significant environmental impacts from the construction and operation of alternatives and their contribution to cumulative environmental impacts. The Proposed Project alternatives evaluated in the FSEIS are the No-Action Alternative (NAA) and Alternative 6. After considering the results of this FSEIS, the City will determine whether to select a Preferred Alternative.

The following resource areas are evaluated in the FSEIS:

- Water resources (wetlands and streams)
- Air quality and greenhouse gases (GHGs)
- Transportation
- Noise

The FSEIS proposes mitigation to address adverse environmental impacts of the Proposed Project alternatives identified in the review. In some cases, the mitigation measures would reduce, but not completely eliminate, potential adverse effects of alternatives, and could, if selected, have the potential to result in significant unavoidable impacts. For example, Alternative 6 could result in congestion at intersections within the study area. Mitigation measures to alleviate congestion and improve traffic flow could include implementing signal timing adjustments. However, as there is no Preferred Alternative at this time, these adverse impacts could be avoided by selecting a different alternative. The purpose of this Supplemental Environmental Impact Statement is to assist the community of Allentown to select a Preferred Alternative to the current operating conditions of the traffic related to the BNSF facility.

Comments received on the DSEIS during the comment period were compiled and reviewed. Substantive comments were considered by the City in the preparation of an FSEIS. This FSEIS may be used by agencies to inform permit decisions for the Proposed Project.

Sincerely,

Mark Hafs
Project Director
City of Tukwila

Fact Sheet

Proposed Project Title

Allentown Truck Reroute Project

Description of Proposed Project Alternatives

The Applicant's Proposed Project is to develop an alternative route to the BNSF South Seattle Intermodal Facility (BNSF facility) in Allentown to improve livability and safety in Allentown without compromising the operations of the intermodal facility. On March 11, 2025, the Final Environmental Impact Statement (FEIS) was published and distributed; however, during the preparation of the FEIS, an additional alternative came to light that may be feasible. This Supplemental Environmental Impact Statement (SEIS) analyzes one reasonable alternative that was not included in the FEIS in addition to the No-Action Alternative (NAA).

Location

Alternative 6 is in portions of the cities of Tukwila and Renton and in King County, Washington.

Applicant (Proponent)

City of Tukwila, Washington

Proposed Date of Implementation

To be determined

Lead Agency

City of Tukwila, Washington

Responsible Official

Nora Gierloff
Director, Department of Community Development
City of Tukwila

Lead Agency Contact Person

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Required Permits, Licenses, and Approvals

To be determined

Authors and Principal Contributors

This document has been prepared under the direction of the City of Tukwila. All sections and appendices have been prepared for and approved by the City of Tukwila. Key authors and principal contributors to the analyses are listed below.

Key authors and principal contributors	Topic(s)
HDR Engineering, Inc. 600 University Street, Suite 500 Seattle, WA 98101	Water resources (wetlands and streams); air quality and greenhouse gases (GHGs); transportation; cultural resources; noise; cumulative impacts

Date of FSEIS Issuance

December 3, 2025

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Abbreviations

°F	degree(s) Fahrenheit
µg	microgram(s)
AADT	annual average daily traffic
ANSI	American National Standards Institute
ASA	Acoustical Society of America
BNSF	BNSF Railway
Boeing	Boeing Airplane Company
CES	Clean Economy Strategy
CFR	Code of Federal Regulations
CH_4	methane
City	City of Tukwila
CM&PS	Chicago, Milwaukee & Puget Sound Railway
CO	carbon monoxide
CO_2	carbon dioxide
CO_2-e	carbon dioxide equivalent
CWA	Clean Water Act
DAHP	(Washington State) Department of Archaeology and Historic Preservation
dB	decibel(s)
dBA	A-weighted decibel(s)
DEIS	Draft Environmental Impact Statement
DNR	(Washington State) Department of Natural Resources
DPM	diesel particulate matter
DSEIS	Draft Supplemental Environmental Impact Statement
Ecology	Washington State Department of Ecology
EDNA	environmental designation for noise abatement
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
FEIS	Final Environmental Impact Statement
FGDC	Federal Geographic Data Committee
FHWA	Federal Highway Administration
FRA	Federal Railroad Administration
FSEIS	Final Supplemental Environmental Impact Statement
ft^2	square foot/feet
FTA	Federal Transportation Administration
FWHCA	fish and wildlife habitat conservation area
g	gram(s)
GHG	greenhouse gas
GMA	Growth Management Act
HAP	hazardous air pollutant
HDR	HDR Engineering, Inc.
HFC	hydrofluorocarbon
HGM	hydrogeomorphic
I-	interstate

ICE	Infrastructure Carbon Estimator
ID	identifier
KCC	King County Code
KCHPP	King County Historic Preservation Program
KCHRI	King County Historic Resources Inventory
KCLR	King County Landmarks Register
Leq	equivalent average sound level
Lmax	maximum sound level
LOS	level of service
LRTP	long-range transportation plan
LWB	Lake Washington Beltline
m^3	cubic meter(s)
MLK	Martin Luther King
MOVES	Motor Vehicle Emissions Simulator
MPCA	Minnesota Pollution Control Agency
mph	mile(s) per hour
MPO	metropolitan planning organization
MSAT	Mobile Source Air Toxics
MVEB	motor vehicle emissions budget
N_2O	nitrous oxide
NA	not applicable
NAA	No-Action Alternative
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NETR	National Environmental Title Research
NFIP	National Flood Insurance Program
NO_2	nitrogen dioxide
NP	Northern Pacific Railway
NRHP	National Register of Historic Places
O_3	ozone
PAB	palustrine aquatic bed
Pb	lead
PCI	Pavement Condition Index
PEM	palustrine emergent
PFC	perfluorocarbon
PFO	palustrine forested
PM	particulate matter
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
PM_{10}	particulate matter less than 10 microns in diameter
ppb	part(s) per billion
ppm	part(s) per million
Proposed Project	Proposed Allentown Truck Reroute Project
PSCAA	Puget Sound Clean Air Agency
PSRC	Puget Sound Regional Council

PSS	palustrine scrub/shrub
PSSR	Puget Sound Shore Railroad
RCW	Revised Code of Washington
RMC	Renton Municipal Code
ROW	right-of-way
S&WW	Seattle & Walla Walla Railroad
SEIS	Supplemental Environmental Impact Statement
SEPA	State Environmental Policy Act
SF_6	sulfur hexafluoride
SHPO	(Washington) State Historic Preservation Office
SIP	State Implementation Plan
SLS&E	Seattle, Lake Shore and Eastern Railway
SO_2	sulfur dioxide
SR	State Route
TIP	transportation improvement program
TMC	Tukwila Municipal Code
tpy	ton(s) per year
USACE	United States Army Corps of Engineers
USC	United States Code
VMT	vehicle mile(s) traveled
VOC	volatile organic compound
WAC	Washington Administrative Code
WDFW	Washington Department of Fish and Wildlife
WHR	Washington Heritage Register
WISAARD	Washington Information System for Architectural and Archeological Records
WOTUS	Waters of the United States
WSDOT	Washington State Department of Transportation

1 Summary

This section presents a summary of the Proposed Allentown Truck Reroute Project (Proposed Project), including a brief introductory section; information about the Proposed Project applicant, objective, and description; a public involvement/scoping summary; a summary of environmental impacts and mitigation measures, and unavoidable significant adverse impacts.

1.1 Introduction

The BNSF Railway's (BNSF's) South Seattle Intermodal Facility in the Allentown neighborhood of Tukwila, Washington, is an important economic link to the Puget Sound region. It serves as an inland port, providing domestic intermodal transloading between truck and rail. Currently incoming freight trucks access the BNSF facility from the S 129th Street bridge to S 50th Place. Outgoing trucks can either use the S 129th Street bridge or take S 124th Street to the 42nd Avenue S bridge. After the planned replacement of the 42nd Avenue S bridge, truck traffic will also be able to access the BNSF facility by traveling north on the 42nd Avenue S bridge and reaching the facility via S 124th Street. To improve livability and safety in Allentown while supporting the operations of the facility, the City of Tukwila (City) evaluated potential alternative truck access routes to the BNSF facility through the Proposed Allentown Truck Reroute Project State Environmental Policy Act Final Environmental Impact Statement (FEIS) (City 2025).

The City is the lead agency for the Environmental Impact Statement (EIS) and is overseeing the preparation of this Supplemental Environmental Impact Statement (SEIS) for the Proposed Project under the State Environmental Policy Act (SEPA). One proposed truck route alternative (Alternative 6) and the long-term route that has been used for several decades (the No-Action Alternative [NAA]) is analyzed in the Supplemental Environmental Impact Statement (SEIS) to determine their potential impacts on the built and natural environments. Alternative 6, which was developed through additional public comment, is intended to reduce the impacts of truck traffic in residential and recreational areas. This SEIS analyzes Alternative 6 and the NAA (see Figure 1-1).

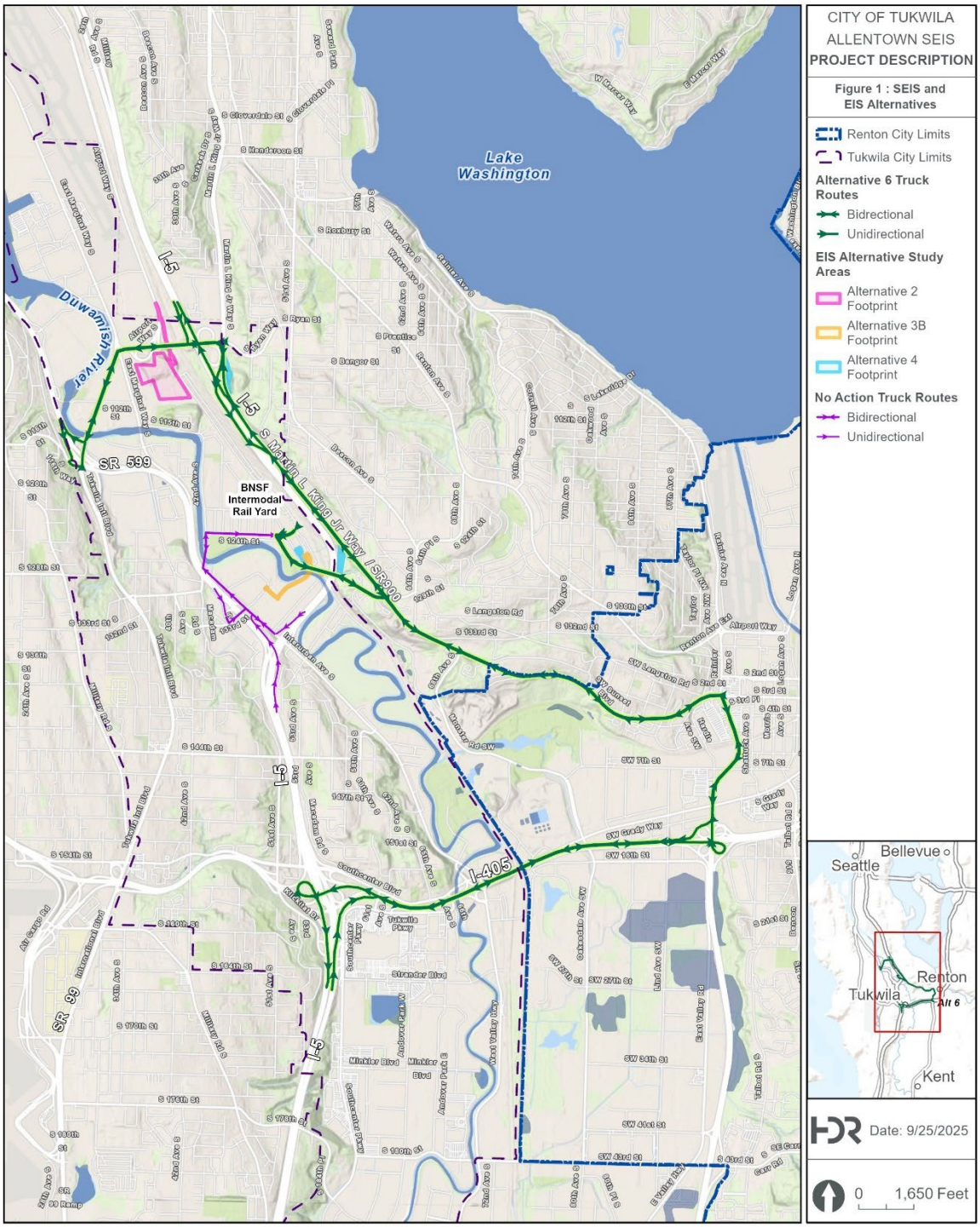

Figure 1-1 SEIS and EIS alternatives

1.2 Proposed Project Applicant

The City is the lead agency overseeing the preparation of an SEIS under SEPA for the Proposed Project.

1.3 Proposed Project Objective

The purpose and need for the Proposed Project is to develop an alternative freight truck route to the BNSF facility that will bypass Tukwila's Allentown community, improving livability and safety in Allentown while continuing to support the operations of the intermodal facility.

1.4 Proposed Project Description

The NAA as described in the FEIS (City 2025) and one proposed alternative (Alternative 6) will be analyzed in the SEIS to determine their potential impacts on the built and natural environments.

1.4.1 Proposed Project Location

The Proposed Project is located in the cities of Tukwila and Renton and in King County, Washington.

1.4.1.1 City of Tukwila

In Tukwila, portions of the Proposed Project are in the Allentown neighborhood, located in the northeast portion of the city of Tukwila. Allentown's boundaries are formed by the right-of-way (ROW) for a Seattle City Light transmission corridor to the north, Interstate (I-) 5 and the BNSF facility to the east, and the Duwamish River to the south and west.

1.4.1.2 City of Renton

Portions of the Proposed Project are in Renton adjacent to where the I-405 and I-5 connect.

1.4.1.3 King County

Portions of the Proposed Project are in unincorporated King County where the I-5 continuing to S Martin L King Jr Way/SR 900.

1.4.2 No-Action Alternative Description

Under the NAA, the development of an alternative route for freight trucks accessing the BNSF facility would not be considered. The truck route would not be modified or improved.

1.4.3 Alternative 6 Description

Alternative 6 would use 50th Place S and S 129th Street; both inbound and outbound truck traffic would follow this route. Trucks would not use S 124th Street, nor would they use the 42nd Avenue S bridge to cross the Duwamish River.

Northbound trucks departing from the BNSF facility would use a short portion of S 124th Street to access 50th Place S, continue east on S 129th Street, and then travel north on State Route (SR) 900. Trucks needing to use SR 99 northbound would exit northbound SR 900 at S Boeing Access Road, travel west to Tukwila International Boulevard, cross over the Duwamish River using the Tukwila International Boulevard bridge, and continue west to the SR 99 northbound on-ramp. Trucks arriving from the north would follow the same route in reverse order.

Southbound trucks departing from the BNSF facility would also use a short portion of S 124th Street to access 50th Place S, continue to S 129th Street, and then travel south on SR 900. In the city of Renton, SR 900 is referred to as "SW Sunset Boulevard" but is still a state route. Truck traffic from the BNSF facility would follow SW Sunset Boulevard eastward to where it intersects with Rainier Avenue S, and

travel along SR 167/Rainier Avenue S to the interchange with I-405. From I-405, the truck traffic originating from the BNSF facility would then reach the SR 167 or I-5 interchange where the trucks would exit to go south. Trucks arriving from the south would follow the same route but in reverse order.

The key feature of Alternative 6 is that it proposes reducing the volumes of freight truck traffic that use Allentown's residential streets to access BNSF's facility by using state routes and freight truck–compatible roads to connect with nearby interstate highways.

1.3.5. Alternative Considered but Eliminated from Further Analysis

This section presents alternatives considered but eliminated from further analysis, including the current operating condition.

1.4.3.1 Current Operating Condition Alternative

In 2021, the 42nd Avenue S bridge was damaged by an oversized truck striking a bridge span. The resulting reduction in the bridge's load capacity led the City to restrict the bridge's use to one-way southbound traffic (Lindblom 2021). Under current conditions, outbound truck traffic travels west along S 124th Street, and south across the 42nd Avenue S bridge, continuing on Interurban Avenue S to I-5 or SR 599. Outbound truck traffic can also travel east along 50th Place S to S 129th Street, intersecting with SR 900, which provides access to both I-5 and I-405. Inbound truck traffic arrives from SR 900, turns west onto S 129th Street, follows 50th Place S, and uses a short section of S 124th Street to access the entrance of the BNSF facility. This route is a temporary detour to accommodate the bridge's capacity to carry only one-way traffic. Once the bridge repairs or replacement is finalized, two-way traffic will resume across the bridge. Either freight truck traffic would revert to the route of the NAA, or a new route would be selected from the alternatives presented in the FEIS or the SEIS.

1.5 Public Involvement/Scoping Summary

Public involvement and scoping occurred under the EIS process.

The DSEIS was available for public and agency review for 30 days to comment. Notice of review and comment period was published on the city website. A public hearing was held to inform the public of Alternative 6, answer questions, and provide information regarding how to comment. Public comments received during the public comment period for the Draft SEIS were reviewed, compiled, and responded to. Responses to these comments are provided as Appendix D to this Final SEIS.

1.6 Summary of Environmental Impacts and Mitigation Measures

The SEIS considers two alternatives for the truck reroute design: Alternative 6 and the NAA. Alternative 6 was developed through additional public comment and is intended to reduce the impacts of truck traffic in residential and recreational areas. The NAA is the route that has been used for several decades. Table 1-1 below presents a summary of the potential impacts on the built and natural environments for each alternative.

Table 1-1 Potential impacts and proposed mitigation measures for each alternative

Alternative	Affected resource	Potential environmental impact	Proposed mitigation measures
Alternative 6	Air Quality and Greenhouse Gases	There would be an increase in regional VMT as compared to the NAA, which would cause an	Mitigation measures would be determined after a full traffic study/analysis is completed and a quantitative air quality and GHG analysis is

Alternative	Affected resource	Potential environmental impact	Proposed mitigation measures
		increase in adverse regional air quality and GHG impacts.	completed, that determination will be made and documented.
	Cultural Resources	No impacts on historic properties are anticipated.	No mitigation measures are identified.
	Noise	Truck traffic could cause an increase near homes immediately adjacent to the section of S 124th Street between 50th Place S and the intermodal facility; and along 50th Place S and S 129th Street, as well as to Codiga Farm Park.	Decreasing the speed limits for trucks is one method of decreasing noise associated with truck traffic, and a 15 mph speed limit on truck traffic near homes in this area could minimize an increase in noise that cold occur.
	Water Resources	No impacts identified.	No mitigation is proposed.
	Transportation	The LOS and delay measures indicate that intersection 6 (MLK Jr. Way S and S 129th Street) and intersection 12 (SW Grady Way and Rainier Avenue S) will experience significant congestion and operate at LOS F, respectively, according to future traffic projections for 2045.	Long-term mitigation measures could include implementing signal timing adjustments to mitigate the traffic impact at these intersections to alleviate congestion and improve traffic flow.
		The crash analysis indicates that the intersections along Alternative 6 routes have a higher number of crashes than other alternatives. One fatality crash occurred at intersection 11 (SW Sunset Boulevard and Rainier Avenue S)	Improvements, such as added signage, pavement markings, and dedicated turn lanes, could be applied as a countermeasure to reduce crash potential and frequency at intersections that experience crashes and fatalities.
		Pavement conditions at intersections 11 and 12 in Renton, the City of Renton has proposed various pavement treatment types in the Renton 10-Year Pavement Preservation Plan, which includes (City of Renton 2023).	• Spot repairs, such as crack sealing, completed by the City's maintenance crews twice per year. • Full pavement repairs for when a specific area of a street is in poor condition. • Seal projects, which includes placing a thin layer of protective material on the surface of the street. The seal provides additional surface that can be worn down instead of the original pavement. • Grind and overlay, where asphalt is placed on the top of the existing road surface.
NAA	Air Quality and Greenhouse Gases	Fewer impacts than Alternative 6 due to the increase in VMT associated with Alternative 6.	No mitigation measures are identified.
	Cultural Resources	No impacts on historic properties are anticipated.	No mitigation measures are identified.
	Noise	Trucks would continue to travel along S 124th Street, causing significant noise impacts because of a disruptive increase in noise levels for residents on that street as well as for the Tukwila Community Center.	A significant unavoidable adverse impact for noise would be an area where new heavy truck traffic occurs at a location immediately adjacent to a noise-sensitive area, where factors prevent the construction of a noise wall or other similar mitigation. If a reduced speed limit for trucks near homes along 50th Place S and S 129th Street is possible, no significant unavoidable adverse impacts for noise are expected as part of this Proposed Project.

Alternative	Affected resource	Potential environmental impact	Proposed mitigation measures
	Water Resources	No impacts identified	No mitigation is proposed.
	Transportation	No impacts identified.	No mitigation is proposed.

1.7 Unavoidable Significant Adverse Impacts

The impacts analyzed for each resource section that were determined to be significant would be avoidable by selecting another alternative. As there is no Preferred Alternative for this Proposed Project, the impacts must be weighed against each other equally rather than in relation to a "standard." The alternatives presented in this SEIS have tradeoffs; they affect the resources in different ways and to different degrees. The purpose of this SEIS is to determine potential impacts on the built and natural environments.

2 Summary of the Environmental Review Process

This section presents a summary of the environmental review process, including the DSEIS comment process and SEIS document organization.

2.1 SEIS Scoping Process

The City held a comment period for the DEIS October 13 through November 13, 2025. The City held a public meeting October 28, 2025 during which it presented Alternative 6. Legal notices for the comment period were published in the Seattle Times and Washington State SEPA Register. Notices of the DSEIS and comment period were also distributed to select agencies and businesses who might have an interest in the project. The issues relevant to the SEIS analysis are identified in Table 2-1 with the section where each issue is discussed in the SEIS. Public comments and public comment responses are provided in Appendix D.

Table 2-1 Issues identified

Issues identified during scoping	Sections where issues are addressed
Air quality/greenhouse gases (GHGs)	
Potential air quality/ghg increases.	4.1
Cultural resources	
Potential for cultural resources present.	4.2
Noise	
Potential noise increases.	4.3
Water resources (wetlands and streams)	

Issues identified during scoping	Sections where issues are addressed
Potential for water resources present.	4.4
Transportation	
Potential for transportation network impacts.	4.5

2.2 Document Organization

This SEIS is organized into four main components. Sections 1 and 2 present a summary, introduction, and overview of the purpose, objective, issues, and potential impacts of the Proposed Project and alternatives.

Section 3 describes the two alternatives for the Proposed Project. Illustrations and descriptions of Alternative 6 and the NAA are provided first. According to the State of Washington SEPA requirements, EISs need to analyze only the reasonable alternatives (Washington Administrative Code [WAC] Section 197-11-402). In the development of the alternatives for this Proposed Project, several potential alternatives were presented for, or were generated through, the scoping process and addressed in the FEIS. The alternatives that were removed from further consideration are also provided in the FEIS, along with a rationale as to why these alternatives were rejected. This SEIS analyzes alternatives that were provided outside of the formal scoping process of the FEIS but were determined to be of such value to the community that they would need to be fully analyzed alongside the alternatives in the FEIS.

Section 4 is the largest section of the SEIS. This section presents the environmental analysis of the affected resources that were identified as present and important for consideration for this Proposed Project. Analysis is performed by resource, with a comparison of impacts as it pertains to each alternative. Along with an evaluation of the impacts on each resource per alternative, proposed mitigation measures are also provided. Section 4 of the SEIS also describes the significant unavoidable adverse impacts that each alternative may have on each resource.

3 Proposed Project Objective, Proposed Project Alternatives, and No-Action Alternative

The City has worked with the residents of Allentown for more than 20 years to find a truck access route for the BNSF facility. The existing access route to the facility is along the southern edge of the community and truck traffic increases commensurate with rail traffic increases.

3.1 Applicant's Proposed Project Objective

The objective of the Proposed Project is to reroute existing truck traffic accessing the BNSF facility in the Allentown neighborhood of Tukwila.

3.2 Description of the No-Action Alternative

The NAA as described in the FEIS (City 2025) and one proposed route alternative (Alternative 6) are analyzed in the SEIS to determine their potential impacts on the built and natural environments. Under the NAA, the development of an alternative route for freight trucks accessing the BNSF facility would not be considered. The truck route would not be modified or improved.

3.2.1 Alternative 6 Description

Alternative 6 would use 50th Place S and S 129th Street; both inbound and outbound truck traffic would follow this route. Trucks would not travel west on S 124th Street, nor would they use the 42nd Avenue S bridge to cross the Duwamish River.

Northbound trucks departing from the BNSF facility would use a short portion of S 124th Street to access 50th Place S, continue east on S 129th Street, and then travel north on SR 900. Stretches of SR 900 are also referred to as Martin Luther King (MLK) Jr. Way S locally. Trucks needing to use SR 99 northbound would exit northbound SR 900 at S Boeing Access Road, travel west to Tukwila International Boulevard, cross over the Duwamish River using the Tukwila International Boulevard bridge, and continue west to the SR 99 northbound on-ramp. Trucks arriving from the north would follow the same route in reverse order.

Southbound trucks departing from the BNSF facility would also use a short portion of S 124th Street to access 50th Place S, continue to S 129th Street, and then travel south on SR 900. In the City of Renton, SR 900 is mapped as MLK Jr. Way S, switching to "SW Sunset Boulevard" where it aligns in an east–west direction. Truck traffic from the BNSF facility would follow SW Sunset Boulevard eastward to where it intersects with SR 167/Rainier Avenue S, and travel along SR 167/Rainier Avenue S to the interchange with I-405. From I-405, the truck traffic originating from the BNSF facility would then reach the SR 167 or I-5 interchange, where the trucks would exit to go south. Trucks arriving from the south would follow the same route but in reverse order.

The key feature of Alternative 6 is that it proposes reducing the volumes of freight truck traffic that use Allentown's residential streets to access BNSF's facility by using state routes and freight truck–compatible roads to connect with nearby interstate highways.

4 Environmental Analysis

This section presents an environmental analysis, including water resources (wetlands and streams), air quality and GHGs, transportation, cultural resources, and noise.

4.1 Air Quality and Greenhouse Gases

This section presents an environmental analysis of the NAA and Alternative 6 as they relate to air quality and GHGs, including the affected environment; relevant plans, policies, and regulations; methodology; impacts analysis; mitigation measures; and significant unavoidable adverse impacts.

4.1.1 Affected Environment

Ambient "air quality" refers to the condition of the outdoor air within our environment. Good ambient air quality pertains to the degree to which the air is clean, clear, and free from pollutants such as smoke, dust, and gaseous impurities. Air quality is determined by the concentration of various pollutants in the atmosphere. The main pollutants of concern are called criteria pollutants and toxic air pollutants. The criteria pollutants that are regulated nationwide via National Ambient Air Quality Standards (NAAQS) consist of carbon dioxide (CO_2), ozone (O_3), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), lead (Pb), and particulate matter (PM) including particulate matter less than 10 microns in diameter (PM_{10}) and less than 2.5 microns in diameter ($PM_{2.5}$). The regulated toxic pollutants are from a list of 187 chemical compounds designated by the U.S. Environmental Protection Agency (EPA) and more than 400 toxic pollutants designated by the state and local air quality agency as posing cancer or other human-health risks. EPA identified nine compounds with significant contributions from mobile sources that are among the national- and regional-scale cancer risk drivers or contributors and non-cancer hazard contributors from the 2011 National Air Toxics Assessment. These priority air toxics are 1,3-butadiene, acetaldehyde, acrolein, benzene, diesel particulate matter (DPM), ethylbenzene, formaldehyde, naphthalene, and polycyclic organic matter, which are a subset within what is called Mobile Source Air Toxics (MSAT). While the Federal Highway Administration (FHWA) considers these the priority MSAT, the list is subject to change and may be adjusted in consideration of future EPA rules.

4.1.1.1 Study Area

The study area for evaluating impacts on air quality is within and near the Proposed Project site. The Proposed Project site is in the cities of Tukwila and Renton and King County, Washington.

For the evaluation of climate and greenhouse gases (GHGs), the study area is discussed in terms of regional air quality, as changes in climate are realized more broadly. Properties immediately adjacent to the BNSF facility are a sliver of undeveloped land and I-5 to the east; rail lines, overpass roads, and undeveloped land to the north; the Seattle Police Athletic Association and residential and commercial properties to the west; and rail lines, overpass roads, and the Duwamish River to the south and west.

The closest secondary schools to the Alternative 6 truck routes are located within approximately 0.25 to 0.75 mile of I-5, MLK Jr. Way, Rainier Avenue S, and I-405, typically to the north-northeast of these truck routes. These schools include Rainier View Elementary, Campbell Hill Elementary, Albert Talley High School, Renton High School, St. Anthony Elementary, and Tukwila Elementary. There is also one school, Hilltop Elementary, approximately 0.4 mile southeast of the intersection of Tukwila International Boulevard and S 116th Way.

At the time of drafting this SEIS, no Preferred Alternative was selected. As a result, the travel demand model for the Preferred Alternative, which provides essential inputs for the quantitative Motor Vehicle Emissions Simulator (MOVES) assessment, is not yet available. Therefore, this section discusses relevant federal and state regulations and outlines how the Proposed Project should proceed once that information becomes available.

4.1.1.1.1 Air Quality Environment

Air quality in and around the study area, i.e., King County, has generally been good for approximately 70 percent of the year, with some moderate air quality for approximately 29 percent of the year and approximately 1 percent with unhealthy air for sensitive groups or others (PSCAA 2024). Air quality in this area is regulated and enforced by EPA, the Washington State Department of Ecology (Ecology), and the Puget Sound Clean Air Agency (PSCAA).

One of the ambient air monitors located in King County, and considered representative of air quality at the Allentown site, is located at 11675 44th Avenue S, Tukwila, Washington. This monitoring station monitors for $PM_{2.5}$ concentrations. The $PM_{2.5}$ design value, i.e., annual arithmetic mean concentration averaged over 3 years for demonstrating compliance, from this monitoring station for the period of 2022 to 2024, has been 7.5 micrograms per cubic meter ($\mu g/m^3$) compared to the current standard of 9.0 $\mu g/m^3$. This value is approximately 83 percent of the current standard and 62.5 percent of the previous standard of 12 $\mu g/m^3$. The 24-hour $PM_{2.5}$ design value, i.e., 98th percentile value of the 24-hour concentration averaged over 3 years for demonstrating compliance, from this station for the period of 2022 to 2024 was 24 $\mu g/m^3$, which is approximately 69 percent of the ambient standard (35 $\mu g/m^3$) (EPA 2025a).

4.1.1.1.2 Climate and Greenhouse Gases Environment

"Climate" is the average weather conditions over time for a particular region, usually taken over a period of 30 years or more. While the topic of climate can be global in nature, changes in climate for this SEIS are discussed with respect to potential impacts on regional air quality in Washington for the Proposed Project. Atmospheric warming associated with climate change has the potential to increase ground-level ozone in many regions, which may present challenges for compliance with the ozone standards in the future. The impact of climate change on other air pollutants, such as particulate matter, is less certain, but research is underway to address these uncertainties.

The region around the Proposed Project site experiences a maritime climate with winters that are cool and very wet with high temperatures averaging in the mid- to upper 40s (degrees Fahrenheit [°F]) and lows near freezing. Snow is not very common, with occurrences typically only on a few days each year. Spring has less rain and milder temperatures, with highs regularly in the mid-50s to around 60°F. Summers are warm and dry with highs in the 70s on most days, with some days reaching the 80s and occasionally the 90s. Summer thunderstorms occur occasionally but are mostly isolated and rarely severe. These storms typically originate from the Cascade Mountains and are from warm, moist air from monsoonal flow in the southwestern United States. By fall, temperatures start to drop, and precipitation increases. The average rainfall in the months of October to March is 4.7 to 7.8 inches per month, with the lowest rainfall between May and September averaging between 0.7 inch and 2.3 inches per month. The wind direction is most often from the north between early July and early September and most often from the south between early September and early July. The average of the mean hourly wind speed

does not vary significantly throughout the year and varies between 3.0 and 5.2 miles per hour (mph) (Weather Spark 2025).

Gases that trap heat in the atmosphere are referred to as greenhouse gases because they capture heat radiated from the earth that would otherwise be lost to space. While the physical mechanism of this heat capture is different from that for a greenhouse, it has the same effect of keeping surface temperatures warmer, so these gases are referred to as GHGs. The accumulation of GHGs contributes to temperature increases and global climate change. Regulated GHGs include CO_2, methane (CH_4), nitrous oxide (N_2O), sulfur hexafluoride (SF_6), perfluorocarbons (PFCs), and hydrofluorocarbons (HFCs). CO_2, CH_4, and N_2O are commonly emitted from sources of fuel combustion (e.g., stationary boilers, heaters, engines, and mobile sources such as construction equipment and on-road vehicles). CH_4 is also commonly emitted from agricultural practices such as livestock and crop farming. PFCs and HFCs can be found contained within industrial processes, electrical equipment, and building cooling systems as coolants/refrigerants, although these systems sometimes leak into the atmosphere. GHGs have long atmospheric lifetimes that vary from one year to thousands of years and have significantly varying potentials to trap heat that are described as their global-warming potential. According to EPA's GHG emission factors hub, on a 100-year time horizon, CH_4 is estimated to be 28 times as potent as CO_2 at trapping heat, N_2O is estimated to be 265 times as potent as CO_2, while SF_6 is 23,500 times more potent than CO_2. GHG emissions are typically reported as carbon dioxide equivalents (CO_2-e), which convert the quantities of non-CO_2 emissions into an equivalent amount of CO_2 to report emissions as a single quantity, usually in metric tons.[1]

In 2021, the state of Washington produced approximately 96 million gross metric tons of CO_2-e. The transportation industry is the largest source, at 40 percent of the state's GHG emissions, followed by industrial, residential, and commercial energy use at 19, 6, and 5 percent, respectively, and electricity consumption (both in state and out of state) at 19 percent. The sources of the remaining 10 percent of emissions are agriculture and waste management processes (Ecology 2025).

Some of the effects of climate change over the last 50 to more than 100 years in Washington State include the following, as presented in a special report issued by the Intergovernmental Panel on Climate Change (PSI 2020):

- Average snowpack has declined by approximately 30 percent from 1955 to 2016.
- The total area occupied by glaciers in the North Cascades has declined by more than 56 percent since 1900.
- Sea level has risen in the northern Puget Sound by as much as 4 inches, with other increases elsewhere.
- Peak stream flow is occurring earlier in the year by as much as 20 days when comparing 1948 data to 2002 data for the most snow-covered areas near Puget Sound.
- Coastal waters have warmed between 0.9°F and 1.8°F between 1990 and 2012, with the Pacific Ocean and Puget Sound shifting to slightly less alkaline conditions.

[1] Criteria pollutants and toxic pollutants are typically reported in units of short tons (English units).

4.1.2 Relevant Plans, Policies, and Regulations

The relevant federal, state, and local laws, regulations, Executive Orders, plans, and policies that establish the regulatory framework regarding air quality and GHGs are provided below in Table 4-5.

Table 4-1 Summary of relevant air quality and GHG laws, regulations, plans, and policies

Laws, regulations, plans, and policies	Description
Federal level	
Clean Air Act and amendments	Enacted in 1970, as amended in 1977 and 1990, requires EPA to develop and enforce regulations to protect the public from air pollutants and their health impacts.
National Ambient Air Quality Standards (NAAQS) (EPA 2025c)	Established by EPA. Specifies the maximum acceptable ambient air concentrations for seven criteria air pollutants: carbon monoxide (CO), ozone (O_3), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), Pb, and particulate matter ($PM_{2.5}$ and PM_{10}). Primary NAAQS set limits to protect public health, and secondary NAAQS set limits to protect public welfare. Geographic areas where concentrations of a given criterion pollutant violate the NAAQS are classified as nonattainment areas for that pollutant; maintenance areas have reduced pollution to achieve standards but have long-term requirements to ensure that they maintain attainment.
Transportation Conformity (40 CFR 93, Subpart A)	Required under the Clean Air Act, transportation conformity ensures that federally supported highway and transit projects are consistent with a state's air quality goals. It applies to areas that do not meet or previously did not meet the NAAQS for O_3, CO, or PM. Conformity determinations are required for transportation plans, programs, and projects to ensure that they do not worsen air quality.
Updated Interim Guidance on Mobile Source Air Toxics (MSAT) Analysis in National Environmental Policy Act (NEPA) Documents (FHWA 2023)	EPA identified nine compounds with significant contributions from mobile sources that are among the national- and regional-scale cancer risk drivers or contributors and non-cancer hazard contributors from the 2011 National Air Toxics Assessment. These are 1,3-butadiene, acetaldehyde, acrolein, benzene, DPM, ethylbenzene, formaldehyde, naphthalene, and polycyclic organic matter. FHWA established the framework to evaluate MSAT impacts in NEPA documents using a tiered approach: (1) no analysis for projects with no meaningful MSAT effects, such as categorical exclusions; (2) qualitative analysis for projects with low potential effects, like minor widenings or new interchanges with annual average daily traffic (AADT) below 140,000–150,000; and (3) quantitative analysis for projects with higher potential effects, such as major freight facilities or highways exceeding 140,000–150,000 AADT. For applicable projects, all nine priority MSATs are considered, and mitigation strategies are explored if emissions differences among alternatives are significant.
GHG Reporting Program Rule (40 CFR 98)	The GHG Reporting Program requires reporting of GHG data and other relevant information from large GHG stationary emission sources, fuel and industrial gas suppliers, and CO_2 injection sites in the United States. The numeric reporting threshold is 25,000 metric tons per year of GHGs in terms of CO_2-e emissions.
GHG Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles (numerous parts under 40 CFR and 49 CFR)	EPA and the U.S. Department of Transportation's National Highway Traffic Safety Administration jointly finalized standards for medium- and heavy-duty vehicles that would improve fuel efficiency and cut carbon pollution to reduce the impacts of climate change.
State level	
Washington State General Regulations for Air Pollution Sources (WAC 173-400);	Establishes the rules and procedures to control or prevent the emissions of air pollutants; provides the regulatory authority to control emissions from stationary sources, reporting requirements, emissions standards, permitting programs, and the control of air toxic emissions.

Laws, regulations, plans, and policies	Description
Washington State Clean Air Act (RCW 70.94)	
Washington State Department of Transportation (WSDOT) air quality, energy, and greenhouse gas emissions guidance	Outlines requirements for evaluating air quality, MSATs, GHG emissions, and energy impacts in WSDOT projects. Ensures compliance with NEPA, SEPA, and federal and state conformity regulations. Provides a tiered analysis framework, decision trees, and mitigation strategies for transportation projects, including the use of MOVES and Infrastructure Carbon Estimator (ICE) for emissions inventory modeling.
Washington State Ambient Air Quality Standards (WAC 173-476)	Establishes maximum acceptable levels in the ambient air for PM, Pb, SO_2, NO_2, O_3, and CO; Washington adopts current federal NAAQS in state regulations.
Washington State Greenhouse Gas Reporting Regulation (WAC 173-441)	Requires specific emissions source categories or other facilities to annually report their GHG emissions; 10,000 metric tons per year is the numeric threshold.
Washington State Controls for New Sources of Toxic Air Pollutants (WAC 173-460)	Establishes controls for new and modified sources of toxic air pollutants.
Limiting Greenhouse Gas Emissions (RCW 70.235)	Requires state to reduce overall GHG emissions as compared to a 1990 baseline and to report emissions to the governor biannually.
Local level	
PSCAA regulations (Regulations I through III, activated by RCW 70.94)	Regulate stationary sources of air pollution in Pierce, King, Snohomish, and Kitsap Counties. Include emissions standards and permitting, evaluating toxic air contaminant impacts, and SEPA requirements.
King County Comprehensive Plan	The King County Comprehensive Plan (King County 2024) outlines strategies and policies for environmental protection, conservation, restoration, and sustainability, which include improving air quality and reducing GHG emissions with reduction goals for 2020 through 2050, and preparing for climate-change effects.

City of Tukwila Comprehensive Plan	The City of Tukwila Comprehensive Plan 2024 Update (City 2024) outlines strategies and policies for protecting clean air and the climate for present and future generations through reduction of GHG emissions and promotion of efficient and effective solutions for transportation, clean industries, and development.
	Policies/goals with direct impact to this Proposed Project include:
	• Policy T-1.4: Work with BNSF to mitigate impacts associated with rail and intermodal yard operations within Tukwila's residential neighborhoods
	• Goal T-5: Environment—Plan, design, and construct transportation projects that reduce GHG emissions, improve community health, and protect the natural environment
	• Policy T-5.1: Collaborate with King County, the Port of Seattle, and BNSF to ensure that King County International Airport, Seattle-Tacoma International Airport, and BNSF Railway operations and development:
	  ○ Enhance Tukwila goals and policies
	  ○ Incorporate Tukwila land use plans and regulation
	  ○ Minimize adverse impacts to Tukwila residents
	  ○ Are not encroached upon by incompatible land uses

City of Renton Clean Economy Strategy 2.0	The City of Renton Clean Economy Strategy (CES) 2.0 is designed to serve as a road map to reduce GHG emissions, enhance environmental sustainability, and prepare for climate change while maintaining and building a strong economy. It provides a framework designed to move toward the goal of net-zero emissions and community resilience in the face of climate impacts.

4.1.2.1 Descriptions of Federal, State, and Local Standards

The 1970 federal Clean Air Act and subsequent amendments required EPA to establish regulations for controlling the nation's air quality. These regulations set criteria for the NAAQS. The primary NAAQS are protective of public health. The secondary NAAQS are protective of public welfare and the environment. Both primary and secondary standards specify ambient air concentration limits, with a safety margin, for pollutants to avoid adverse health and environmental effects. These standards are designed to protect the most susceptible public populations such as those with respiratory illnesses, the very young, the elderly, and those engaging in strenuous work or exercise.

EPA identified seven pervasive criteria air pollutants and established health-based ambient air quality standards for them. O_3, CO, PM, NO_2, SO_2, and Pb were the initial criteria pollutants followed by PM_{10} and $PM_{2.5}$, which are subsets of particulate matter and more commonly regulated. Ozone is a pollutant that is not typically directly emitted, but it forms in the lower atmosphere from direct emissions of NO_x and volatile organic compounds (VOCs) and their photochemical reactions with sunlight.

Geographic areas of the United States that do not meet the NAAQS for any one or more of the criteria pollutants are designated by EPA as nonattainment areas. Areas that were once designated nonattainment but are now achieving the NAAQS are termed maintenance areas. Areas that have pollutant levels below the NAAQS are termed attainment areas. In nonattainment areas, states must develop plans to reduce emissions and bring the area back into attainment with NAAQS. Maintenance areas have requirements that last for at least 20 years to ensure that they stay in attainment. The Proposed Project area is in King County, Washington, which is classified as in attainment with the NAAQS for all criteria pollutants.

As of May 14, 2021, King County went from maintenance status to attainment status for PM_{10} as the 20-year maintenance period lapsed on that date. As of October 11 and November 25, 2016, King County went from maintenance status to attainment status for CO and 1-hour O_3 as the 20-year maintenance period lapsed on those dates, respectively (EPA 2025b). As such, there will be no requirement for quantitative CO or PM hot-spot analysis for transportation conformity purposes for this Proposed Project. The metropolitan planning organization (MPO), the Puget Sound Regional Council (PSRC), is responsible for demonstrating the regional conformity via long-range transportation plans (LRTPs) and/or transportation improvement programs (TIPs) by showing that projected emissions remain within the State Implementation Plan (SIP) motor vehicle emissions budgets (MVEBs). Proposed Project–level hot-spot analysis is not required for O_3, but non-exempt projects must be included in a conforming TIP and LRTP. Conformity must be redetermined at least every 4 years or when significant changes occur, with interagency consultation involving EPA, FHWA, Federal Transportation Administration (FTA), state air agencies, and MPOs.

Table 4-5 identifies the primary and secondary NAAQS for the criteria pollutants under federal and Washington State law. Washington has adopted the federal primary and secondary standards.

Table 4-2 Federal and state ambient air quality standards

Pollutant	Averaging time	Primary standard	Secondary standards	Form
Ozone (O_3)	8 hours	0.070 ppm [a]	0.070 ppm	Annual 4th-highest daily maximum 8-hour concentration, averaged over 3 years
Carbon monoxide (CO)	1 hour	35 ppm	No applicable standard	Not to be exceeded more than once/year
	8 hours	9 ppm	No applicable standard	
Nitrogen dioxide (NO_2)	1 hour	0.100 ppm (100 ppb)	No applicable standard	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
	Annually	0.053 ppm (53 ppb)	0.053 ppm (53 ppb)	Annual mean
Sulfur dioxide (SO_2)	1 hour	0.075 ppm	No applicable standard	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
	3 hours	0.5 ppm for state, no applicable standard for federal	0.5 ppm	Not to be exceeded more than once/year
	Annually	0.02 ppm for state, no applicable standard for federal	No applicable standard	Not to be exceeded
	24 hours	0.14 ppm for state, no applicable standard for federal [b]	No applicable standard	Not to be exceeded more than once/year
Particulate matter (PM_{10})	24 hours	150 µg/m^3 [c]	150 µg/m^3	Not to be exceeded more than once/year on average over 3 years
Fine particulate matter ($PM_{2.5}$)	24 hours	35 µg/m^3 [d]	35 µg/m^3	98th percentile, averaged over 3 years
	Annually	9 µg/m^3 [e]	15 µg/m^3	Annual mean, averaged over 3 years
Lead (Pb)	Rolling 3-month average	0.15 µg/m^3	0.15 µg/m^3	Not to be exceeded

Sources: EPA 2025c; WAC Chapter 173-476.

[a] This 2015 NAAQS is the most stringent NAAQS still in effect for O_3. A 2008 8-hour O_3 standard of 0.075 ppm also remains in effect. The 2015 8-hour O_3 standard is attained when the 3-year average of the fourth-highest daily concentration is 0.070 ppm or less.

[b] The 24-hour average concentration for sulfur oxides in the ambient air must not exceed 0.14 ppm by volume more than once per calendar year (WAC 173-476-130).

[c] The 24-hour PM_{10} standard is attained when the 3-year average of the 99th percentile of monitored concentrations is less than the standard.

[d] The 24-hour $PM_{2.5}$ standard is attained when the 3-year average of the 98th percentile is less than the standard.

[e] On March 6, 2024, EPA promulgated a final rule that changed this standard to 9 µg/m^3, effective on May 5, 2024. While there may be activity in 2025 by the Trump Administration to attempt to revert back to the previous 12 µg/m^3 standard, that would require legal court decisions and regulatory changes that have not been reached and completed at this time.

µg/m^3: micrograms per cubic meter; ppb = parts per billion; ppm: parts per million.

The EPA General Conformity Rule (40 CFR 51 and 93, Subpart B) applies to federal actions or federally funded actions (non-transportation agency actions) occurring in nonattainment or maintenance areas

when the total direct and indirect emissions of nonattainment pollutants (or their precursors) exceed specified thresholds. The emissions thresholds that trigger requirements for a conformity analysis are called *de minimis* levels. *De minimis* levels (in tons per year [tpy]) vary by pollutant and depend on the severity of the nonattainment status for the air quality management area in question. These *de minimis* levels represent the quantity of emissions above which the need for a conformity assessment with the SIP is required. The SIP is the state's plan for meeting and maintaining the NAAQS, which must be approved by EPA, including revisions. The EPA General Conformity Rule does not apply in King County; therefore, it does not apply to the Proposed Project.

The EPA Transportation Conformity Rule (40 CFR 93, Subpart A) applies to federal actions or federally funded actions (transportation agency actions) occurring in nonattainment or maintenance areas. King County is not part of a nonattainment or maintenance area. However, PSRC, which is the MPO responsible for demonstrating regional conformity in the area that includes King County, is still issuing a TIP because of the maintenance status of Pierce County. Therefore, transportation conformity demonstration is still in place for projects inside King County. The Proposed Project must also follow WSDOT guidance for compliance with the Regional Transportation Improvement Plan, which is discussed below in Section 4.2.3.

The Clean Air Act identifies 187 compounds that are known to cause cancer or serious health effects. This group of compounds is called air toxics or hazardous air pollutants (HAPs). EPA has identified 21 HAPs emitted from mobile sources, referred to as MSAT, within a few final rules: Control of Emissions of Hazardous Air Pollutants from Mobile Sources (40 CFR 80, 85, 86). These rules mainly regulate fuel and vehicle manufacturers. EPA designated nine priority MSAT because of their potential for causing cancer and serious health effects when exposures are long enough and at sufficient concentrations: acetaldehyde, acrolein, benzene, ethylbenzene, formaldehyde, DPM/diesel exhaust organic gases, naphthalene, polycyclic organic matter, and 1,3-butadiene. These priority MSAT are analyzed in this SEIS regarding operational emissions from truck hauling to and from the BNSF facility. Per the Washington State Department of Transportation's (WSDOT's) and FHWA's MSAT guidance, this Proposed Project would be changing the traffic pattern near the BNSF facility, which has the potential to concentrate high levels of DPM in a single location. Additionally, the guidance indicates a project involving a large number of diesel vehicles as a new project or accommodating a large increase in the number of diesel vehicles for an expansion project near a populated area, is considered a project with Higher Potential MSAT Effects per FHWA guidelines. A quantitative MSAT analysis is required for this type of project (FHWA 2023).

Ecology provides protection of public health and the environment by establishing and enforcing rules to prevent and reduce air pollution and approve emissions with limitations. Enforcement of most of the Clean Air Act requirements has been delegated by EPA to Ecology and seven clean air agencies with local authority in the state. Ecology works to improve air quality throughout the state by overseeing the development and conformity of the SIP. Ecology oversees the statewide air monitoring network and ensures that the monitoring data meet the federal requirements of 40 CFR 58. Ecology also requires facilities that have applicable emissions source categories (e.g., stationary fuel combustion, electricity

generation, specific types of manufacturers, petroleum industry sources) and emit at least 10,000 metric tons of CO_2-e annually to report their GHG emissions annually (WAC 173-441).

PSCAA regulates air quality within Pierce, King, Snohomish, and Kitsap Counties. PSCAA has local authority for setting regulations and permitting of stationary emissions sources and construction emissions.

4.1.3 Methodology

This SEIS provides only a qualitative analysis for air quality, MSAT, and GHG emissions for Alternative 6 and the NAA. The qualitative analysis for operational activities indicates a potential for air quality and GHG impacts; however, if a Preferred Alternative is chosen and a full traffic study/analysis is completed, it will support a quantitative analysis of operational activities to confirm expected air quality, GHG, and climate-change impacts. The evaluation of potential impacts on air quality and GHG from a quantitative analysis will consist of conducting the following tasks:

- Select the appropriate study area for the travel demand model that includes the baseline and horizon year for both the No-Action condition and the Preferred Alternative.
- Develop the travel demand model for the No-Action condition and the Preferred Alternative, if selected — over the design year. The study will assess heavy vehicle traffic within the designated roadway network, including truck movements entering and exiting the BNSF facility and routes to/from the nearest highway.
- Using the results of the full traffic study/analysis, develop a quantitative assessment of the levels of direct and indirect criteria pollutants, MSAT, and GHG emissions from the Proposed Project operational activities for the No-Action condition and the Preferred Alternative.
- Per FHWA's MSAT guidance, within the study area, the appropriate roadway links will be selected based on the following criteria between the No-Action condition and the Preferred Alternative (FHWA 2023):
    - ± 5 percent or more in annual average daily traffic (AADT) on congested highway links of level of service (LOS) D or worse
    - ± 10 percent or more in AADT on uncongested highway links of LOS C or better
- The county-level MOVES analysis will be based on the results of the travel demand model that include vehicle classification, road type vehicle miles traveled (VMT) distribution, fuel mix, alternative vehicle fuel type, speed distribution, and vehicle population data along with traffic route information and county-level information to generate emission factors (in grams [g]/VMT) in the EPA MOVES5 model. The criteria air pollutant, MSAT, and GHG emission factors will be multiplied by the network VMT for heavy vehicle traffic under the No-Action condition and the Preferred Alternative to calculate the annual emissions burden.

4.1.3.1.1 Characterization of Air Quality Impacts

The Proposed Project is located in an area designated as attainment for all criteria air pollutants under the NAAQS. Given the attainment status and the lapsed maintenance period for all criteria air pollutants, this Proposed Project does not require a quantitative hot-spot analysis for CO or PM under transportation conformity regulations per WSDOT air quality, energy, and greenhouse gas emissions

guidance (WSDOT 2025). As a result, the Proposed Project is not anticipated to contribute to or exacerbate any violations of the NAAQS, and no significant impacts to criteria air pollutants are expected. However, to be consistent with transportation conformity, the emissions induced by this Proposed Project will need to be reflected in PSRC's latest Regional Transportation Improvement Plan.

4.1.3.1.2 Characterization of MSAT Impacts

The Proposed Project site is located in the Allentown neighborhood of Tukwila near major transportation corridors, including I-5, SR 99, SR 599, and the BNSF facility, which contribute to elevated emissions of DPM and other MSAT. The proximity of residential areas, schools, parks, and natural habitats to the Proposed Project site increases the potential for human exposure to air toxics.

Per FHWA and WSDOT MSAT guidance, this Proposed Project involves changes in traffic patterns near the BNSF facility and has the potential to concentrate high levels of DPM because of the significant presence of diesel vehicles. Given the Proposed Project's characteristics and its location near a populated area, it qualifies as a Project with Higher Potential MSAT Effects. The quantitative MSAT analysis to assess operational emissions will be conducted if a Preferred Alternative is chosen.

4.1.3.1.3 Characterization of GHG Impacts

GHG emissions from transportation projects are typically assessed using the MOVES model for operational emissions estimate, as recommended in the WSDOT air quality, energy, and greenhouse gas emissions guidance (WSDOT 2025).

At the time this SEIS was prepared, no Preferred Alternative was selected. As a result, the travel demand model required to quantify Proposed Project–specific VMT, speed distribution, and other key inputs for the MOVES-based GHG analysis is not yet available. WSDOT guidance indicates that a quantitative GHG analysis should be conducted using the MOVES modeling. Given the absence of essential traffic data, a quantitative GHG emissions analysis could not be performed at this time.

If a Preferred Alternative is identified, the analysis should incorporate the latest planning assumptions, methodologies consistent with WSDOT and federal guidance, and an evaluation of operational-phase emissions. Per WSDOT guidance, the MOVES model should be used to estimate tailpipe emissions.

4.1.4 Impacts Analysis

This section presents an air quality and GHGs impacts analysis, including construction and operations impacts.

4.1.4.1.1 Construction Impacts

Alternative 6 and the NAA do not involve construction activities; therefore, there are no construction impacts for this SEIS.

4.1.4.1.2 Operations Impacts

The qualitative analysis for operational activities indicates a potential for adverse air quality and GHG impacts, including MSAT impacts; however, if a Preferred Alternative is chosen and a full traffic study/analysis is completed, it will support a quantitative analysis of operational activities to determine the expected air quality, GHG, and climate-change impacts. Although Alternative 6 reduces safety and environmental concerns to the Allentown residential area, it would result in an increase in regional VMT as compared to the NAA, which would cause an increase in adverse regional air quality and GHG impacts.

4.1.5 Mitigation Measures

The determination of whether a significant air quality or GHG impact from Proposed Project operations emissions is expected has not been made at this time; therefore, the need for mitigation measures is also not determined at this time. After a full traffic study/analysis is completed and a quantitative air quality and GHG analysis is completed, that determination will be made and documented.

4.1.6 Significant Unavoidable Adverse Impacts

The determination of whether a significant air quality or GHG impact from Proposed Project operations emissions is expected has not been made at this time; therefore, this section will not be completed unless a Preferred Alternative is chosen, a full traffic study/analysis is completed, and a quantitative air quality and GHG analysis is completed.

4.2 Cultural Resources

This section describes the affected environment in the context of historic built-environment resources, provides analysis of the alternatives' potential impacts to those resources, and discusses potential mitigation measures. The term "historic built-environment resources" refers to the broad range of resources that represent or convey a place's heritage or help tell the story of a region's past. Historic built-environment resources include human-made objects, buildings, structures, sites, and districts that are more than 45 years in age and not in ruin.

4.2.1 Affected Environment

The affected environment for historic built-environment resources consists of the footprint for Alternative 6 and adjacent parcels that would be affected by operation of the proposed action (study area). Information about the affected environment was obtained from the technical report, Cultural Resources Inventory Report for BNSF Allentown Truck Re-Route Project EIS (Allen et al. 2024) and from the technical memorandum, Historic Built-Environment Resources Desktop Review for the Allentown Truck Reroute Project Supplemental Environmental Impact Statement (attached hereto as Appendix C).

4.2.1.1 Historic Context

Historic built-environment resources identified within and adjacent to Alternative 6 are located in the cities of Renton and Tukwila (Allentown neighborhood and region), and the Bryn Mawr-Skyway neighborhood of unincorporated King County. See the FEIS (City 2025) for a historical context of the Allentown region.

4.2.1.1.1 Renton

Renton is located at the south end of Lake Washington, bordered on the northwest by Bryn Mawr-Skyway (an unincorporated community in King County) and on the southwest by Tukwila. The Cedar River runs south from Lake Washington through downtown Renton, and the Duwamish River runs north–south just outside Renton's western boundary. The first non-Native settlers arrived in the area in the early 1850s. Henry Tobin established a sawmill in 1853, and Dr. R. H. Bigelow opened the Duwamish Coal Company next door in the same year. In 1855, tensions between the non-Native settlers and the Natives resulted in a brief war during which Tobin's mill was burned (Stein and Boba 2024). When fighting ceased, Natives were forcibly removed from the area, and many were assigned to reservations under the Treaty of Point Elliott (Richards 2005). Both businesses were closed by 1856, but Bigelow's operation is significant as the first coal mine in King County (Stein and Boba 2024).

In 1873, Tobin's widow Diana, who held the patent on Tobin's land, married a landowning settler, Erasmus Smithers. Together they owned nearly 500 acres of land. Smithers and other settlers rediscovered coal in the area and needed funds to set up a new mining operation circa 1875. They called on Captain William Renton, a wealthy lumber and shipping merchant, who provided capital in exchange for the naming of both the mining operation and the town after him. Smithers filed the first 28-block plat of the Town of Renton on September 5, 1875. Because of its proximity to Lake Washington and the Cedar, Green, and Duwamish Rivers, Renton became the local coal industry hub in the late nineteenth and early twentieth centuries, attracting white and black settlers, Chinese immigrants, and Native Americans to work in the mines.

Along with its lake and river connections, Renton benefited from its proximity to multiple rail lines. In 1877, the Seattle & Walla Walla Railroad (S&WW) (property identifier [ID] 708606) was the first steam railroad to arrive, connecting Seattle to Renton through Tukwila's Black River Junction (Stein and Boba 2024). Beginning in 1896, the electric Seattle, Renton & Southern Railway ran from Seattle to Renton on the western shore of Lake Washington, following the current Rainier Avenue S through Bryn Mawr (Crowley 1999). In 1907, the Northern Pacific Railway (NP) completed the Lake Washington Beltline (LWB) (property ID 88798), which followed the eastern shore of Lake Washington, connecting the NP main line in Renton to the Seattle, Lake Shore and Eastern Railway in Woodinville (Allen and O'Brien 2007). In 1909, the Milwaukee Road completed its subsidiary—the Chicago, Milwaukee & Puget Sound Railway (CM&PS; property ID 734040)—through Renton. The CM&PS began in Tacoma, stopped in Seattle, then passed through Renton before continuing east to Chicago and Milwaukee (Luttrell 2003).

Renton's rail connections spurred the town's early growth. The Seattle Car Manufacturing Co. (now PACCAR) opened a factory in 1908, and by 1910, Renton was known as the commercial center of the area with its many lumber mills and factories producing bricks, briquettes, tile, cigars, glass, twine, and pasta. In contrast, land in the nearby Duwamish and White River valleys, including Allentown, was used primarily for agricultural production (Stein and Boba 2024).

One of the biggest influences in Renton's development was the introduction of the Boeing Airplane Company (Boeing). In 1941, the U.S. Navy opened a facility on the south shore of Lake Washington in Renton to manufacture bombers for use in World War II (1941–1944). In 1943, the U.S. Air Force acquired the factory and built the adjacent Renton airfield to build Boeing B-29 Superfortress bombers. In 1949, Boeing began developing jet transportation at its Renton plant, including the 367-80 (aka Dash 80) and the first commercial jet, the 707. Boeing Renton has been the site of 737 jet assembly since 1967 (Boeing 2025; Stein and Boba 2024).

4.2.1.1.2 Bryn Mawr-Skyway

Sandwiched between Tukwila and Renton, Bryn Mawr was first platted in 1890 by Lillie R. Parker and her husband, William. Welsh for "windy hill," the Parkers named it after a place of the same name in their hometown of Pennsylvania (Meany 1923:29). Located four blocks west of the Interurban line, parcels in Bryn Mawr were initially advertised as an ideal location for summer homes or fruit and vegetable farms, and the area was used primarily for camping and picnicking through 1902, when it was sold to a development company (*Seattle Times* 1903a). In 1903, Bryn Mawr was replatted with streets and parks, and by 1906, it had a hotel with a Lake Washington view (*Seattle Times* 1907). It developed incrementally but remained sparsely developed with large agricultural parcels through the 1930s (NETR 2024; *Seattle Times* 1903b). Skyway Park (later Skyway) developed after World War II as affordable

housing for returning veterans. The first blocks of homes were built in Skyway in 1943, and in September 1944, 500 Federal Housing Authority–approved homes were put on the market (*Seattle Times* 1944; Wilson 1992). The remaining parcels in Bryn Mawr were developed during the Skyway boom. Primarily a residential neighborhood with a few supporting businesses, the Bryn Mawr-Skyway neighborhood was fully developed by 1968 (NETR 2024).

4.2.2 Relevant Plans, Policies, and Regulations

The Proposed Project is within King County and must comply with the King County Code (KCC), as well as the Revised Code of Washington.

KCC Chapter 20.62 outlines procedures and regulations for the identification and protection of historic and archaeological resources significant to the history of King County. Historic or archaeological resources that are of significance to King County are defined under KCC 20.62.040, and the procedures for nomination of locally significant resources to the King County Landmarks Register (KCLR) are defined under KCC 20.62.050. In accordance with KCC 20.62.150, any resources identified in the King County Historic Resources Inventory (KCHRI) shall not be altered, demolished, or relocated as a consequence of any development proposal without prior review from the appointed King County Landmarks Commission.

The Revised Code of Washington, which governs cultural resources in the state, is organized into several key chapters, including RCW 27.44 (Indian Graves and Records Act), RCW 27.53 (Archaeological Sites and Resources Act), and RCW 68.60 (Abandoned and Historic Cemeteries and Historic Graves).

The SEPA review process, as outlined in RCW 43.21c, seeks to provide information that will inform agency decision makers, applicants, and the public to understand how a project would affect the environment. Under SEPA, cultural resources on the subject or adjacent parcels, including historic built-environment resources, should be evaluated for their eligibility to local, state, and/or national registers. SEPA applicants assess potential project impacts to such resources and document their findings in the SEPA checklist.

4.2.3 Methodology

The City's consultant, HDR, performed a historic built-environment desktop review for areas within, and immediately adjacent to, the Alternative 6 study area (Appendix C). The historic built-environment resources desktop review was performed using two databases: (1) Washington Information System for Architectural and Archeological Records Data (WISAARD), managed by the Washington State Department of Archaeology and Historic Preservation (DAHP); and (2) KCHRI, managed by the King County Historic Preservation Program (KCHPP). The Alternative 6 study area comprises the road ROW. A desktop review was not undertaken for the NAA because no change to its current use is proposed. The NAA under the SEIS is the same as the NAA analyzed under the FEIS.

Adverse impacts to historic built-environment resources occur when a project action diminishes the characteristics of a historic built-environment resource that qualify it for listing in the National Register of Historic Places (NRHP), Washington Heritage Register (WHR), and/or KCLR. The integrity of a historic built-environment resource is assessed through the characteristics that define its location, design, setting, materials, workmanship, feeling, and association. Most of the characteristics of these seven qualities must be present for a resource to convey its significance. Project effects are based on the

potential for significant impacts to a historic built-environment resource's integrity and divided into the following three categories:

- **No effect**: no change to the integrity of a resource
- **Less-than-significant**: temporary or reversible impacts that may diminish a resource's integrity, but the resource retains the characteristics that qualify it for listing in the NRHP, WHR, and KCLR, and do not diminish the recourse's ability to convey its significance
- **Significant**: permanent direct or indirect effects that diminish the characteristics that qualify it for listing in the NRHP, WHR, and KCLR and its integrity such that it is no longer able to convey its significance

Impacts to historic built-environment resources could occur during both construction and operation. These impacts are defined by their effect on a resources' integrity:

- **No impact**: No change to the integrity of a resource.
- **Minor impact**: Changes to a resource caused by temporary project-related construction and operation activities such as increase in noise and vibration, increased dust, increased traffic or traffic congestion, temporary changes to access, and the presence of construction equipment. These impacts are temporary and minimal and do not permanently diminish the integrity of a resource.
- **Moderate impact**: Changes to a resource that result in diminished integrity and may or may not diminish the resource's ability to convey its significance and its eligibility for the NRHP, WHR, and KCLR. These could include alterations to a resource that diminish its integrity such that it may no longer be individually eligible for the NRHP, WHR, and KCLR, but retains enough integrity to contribute to a historic district.
- **Significant impact**: Changes to a resource that may include destruction, damage to, or alteration of a resource; removal of a resource from its original location; changes to the use or physical features of a resource; and the introduction of permanent visual, atmospheric, or audible elements that permanently diminish the integrity of the resource such that it is no longer able to convey its significance.

4.2.4 Impacts Analysis

Based on the desktop review (Desimone and Ferris 2025), no previously recorded historic built-environment resources are located within or adjacent to Alternative 6 that are listed in the NRHP, WHR, or KCLR.

A total of 74 previously recorded historic built-environment resources are located within or adjacent to Alternative 6. Of these, two were previously determined eligible for listing in the NRHP by the Washington State Historic Preservation Office (SHPO), and thus are considered significant for the purposes of this SEIS (property IDs 88798 and 708606) (Table 4-17). These two NRHP-eligible resources are both rail lines. The S&WW/Puget Sound Shore Railroad (PSSR)/Seattle, Lake Shore and Eastern Railway (SLSL&E)/NP rail line runs concurrent with the existing BNSF alignment, bisecting Alternative 6 within the BNSF facility where it crosses beneath both the S Boeing Access Road Bridge and the S 129th Street bridge. The NP-LWB alignment bisects Alternative 6 where it crosses Rainier Avenue S approximately 100 feet north of its intersection with SW Grady Way. However, aerial imagery indicates

that the railroad tracks have been removed from this segment of the NP-LWB alignment, and no physical indication of the alignment remains within the Alternative 6 study area (NETR 2024).

Of the remaining 72 previously recorded historic built-environment resources, 8 were determined not eligible for listing in the NRHP by SHPO, and 64 are unevaluated for listing in the NRHP.

Table 4-17 lists the previously recorded NRHP-eligible historic built-environment resources documented in the Alternative 6 study area, and an analysis of the potential for Proposed Project impacts to those resources under Alternative 6.

Table 4-3 Impacts analysis for previously recorded NRHP eligible historic built-environment resources within the Alternative 6 study area

Present NRHP-eligible historic built-environment resources	DAHP property ID	Proximity to study area	Impacts analysis
NP: LWB	88798	Within (rail has been removed since its documentation)	No impact
Seattle & Walla Walla Railroad/Puget Sound Shore Railroad/Seattle, Lake Shore and Eastern Railway/Northern Pacific Railway Black River Junction to the Lake Washington Ship Canal (S&WW/PSSR/SLS&E/NP)	708606	Within	No impact

4.2.4.1 No-Action Alternative

No Impact. The NAA under the SEIS is the same as the NAA analyzed under the FEIS. Under the NAA, the truck traffic traveling to and from the BNSF facility would continue using the long-term route that has been used for several decades. No changes to existing historic properties would occur as a result of Proposed Project activities, and no additional impacts would occur with the continued operation of this alternative.

4.2.4.2 Alternative 6

This section presents a cultural-resources impacts analysis for Alternative 6, including construction and operations impacts.

4.2.4.2.1 Construction Impacts

No Impact. No construction would occur as part of Alternative 6. Therefore, Alternative 6 would not result in construction impacts to the two NRHP-eligible historic built-environment resources within its study area.

4.2.4.2.2 Operations Impacts

No Impact. Operation impacts (both short- and long-term) associated with Alternative 6 include more truck traffic and traffic congestion, and a negligible increase in noise and vibration in the setting of the two NRHP-eligible historic built-environment resources. However, neither of these resources would be impacted by operations. Alternative 6 would be conveyed across the S&WW/PSSR/LSL&E/NP alignment via two bridges that are approximately 15 feet above the rail line. Therefore, operations would not physically impact the S&WW/PSSR/LSL&E/NP rail line. Alternative 6 would bisect the original alignment

of the NP-LWB rail line at a road-level crossing; however, the rail line has been removed at this location. Therefore, operational activities would not impact this NRHP-eligible resource.

Operational activities associated with Alternative 6 would not cause physical destruction, damage, or alteration to the resources. No part of the S&WW/PSSR/LSL&E/NP rail line would be removed from its current location, and no changes would occur to the character of the resources' use or to physical features within the resources' setting that contribute to its historic significance. The NP-LWB railroad tracks were previously removed where it crosses the Alternative 6 study area. Therefore, operations would not result in impacts to these resources.

No visual, atmospheric, or audible elements would be introduced that would diminish the integrity of the resources' significant historic features. No neglect would occur to the resources, and the resources' ownership would not be impacted. None of the operational activities associated with Alternative 6 would have the potential to impact the character-defining features of the two railroad alignments. Therefore, Alternative 6 would have no impact on historic properties.

4.2.5 Mitigation Measures

No impacts on historic properties are anticipated and, thus, no mitigation measures are identified.

4.2.6 Significant Unavoidable Adverse Impacts

No significant unavoidable adverse impacts to historic properties are anticipated.

4.3 Noise

This section presents an environmental analysis of the NAA and Alternative 6 as they relate to noise, including the affected environment; relevant plans, policies, and regulations; impacts analysis; mitigation measures; and significant unavoidable adverse impacts.

4.3.1 Affected Environment

This section presents an environmental analysis of the Proposed Project's noise impacts on the affected environment, including characteristics of noise, the noise study area, and the existing noise environment.

4.3.1.1 Characteristics of Noise

Sound is made up of tiny fluctuations in air pressure and is characterized by its amplitude (how loud it is), frequency (or pitch), and duration. Within the range of human hearing, sound can vary in amplitude by more than 1 million units. Therefore, a logarithmic scale, known as the decibel (dB) scale, is used to quantify sound intensity and to compress the scale to a more manageable range. Noise is simply defined as unwanted sound; the terms "noise" and "sound" are often used interchangeably. Noise of sufficient strength might pose health concerns such as hearing loss or sleep disturbances. Noise impacts are somewhat variable and often depend on land uses. For example, areas where people sleep tend to be more sensitive to noise compared with places where people congregate during the day, such as parks or schools. This section describes basic acoustical concepts; how noise is regulated at the municipal, county, and state levels; and existing noise levels in the study area. This section also includes estimates of noise associated with the Proposed Project alternatives and a discussion of appropriate mitigation to reduce noise impacts.

The human ear does not hear all frequencies equally. In fact, the human hearing organs of the inner ear de-emphasize low and very high frequencies. The A-weighting scale is the most common weighting scale used to reflect this selective sensitivity of human hearing. It puts more emphasis or "weight" on the frequencies we hear efficiently, and less weight on frequencies we do not hear efficiently. A-weighted decibels are noted using the abbreviation dBA. Table 4-18 lists noise levels for typical sources.

Table 4-4 Typical source noise levels

Sound pressure level, dBA	Typical sources
100	Jet flyover at 1,000 feet
90	Gas lawnmower at 3 feet
85	Food blender at 5 feet
75	Shouting at 3 feet
70	Vacuum cleaner at 10 feet
60	Conversational speech
50	Quiet urban daytime
40	Quiet urban nighttime
35	Quiet suburban nighttime
30	Quiet bedroom at night
20	Quiet rural nighttime
0	Approximate threshold of hearing

Source: MPCA 2015, adapted.

Most sounds are made up of a wide range of frequencies and are termed broadband sounds. Sounds that are focused within a particular frequency range are tonal sounds. Sound sources can be constant or time-varying. Environmental sound levels are often expressed over periods of time, thereby allowing time-varying signals to be represented by sound levels averaged over intervals (for example, a 1-hour period). One metric used to describe environmental sound is the equivalent average sound level (Leq), which represents a constant sound that, over the specified period, has the same acoustic energy as the time-varying signal. It is a mean average noise level over a 1-hour period.

4.3.1.2 Noise Study Area

Noise related to operation of the Proposed Project will originate from trucks operating along the selected route. The distribution of truck operations within the existing facility may change because of the Proposed Project; however, the quantity of trucks operating within the facility will not change as a result of the Proposed Project.

The noise study area for construction and operational noise is an area extending 500 feet from the NAA truck route and Alternative 6. This corresponds to the typical study area extents of an FHWA traffic noise study.

4.3.1.3 Existing Noise Environment

The dominant features of the soundscape in the study area are noises from transportation corridors, including the flight paths associated with the King County International Airport (Boeing Field), close to

the area. All Proposed Project alternatives are near I-5, an eight-lane highway. The NAA truck route is near SR 599, a four-lane divided highway. The existing BNSF facility and the railway adjacent to it are also sources of noise in the area.

Noise-sensitive land uses along the NAA truck route include residences along S 124th Street and the Tukwila Community Center. Trucks accessing the BNSF facility along this route compose a large proportion of the truck traffic in this area and thus represent a large proportion of the noise that residents near the route are exposed to.

Noise-sensitive land uses near Alternative 6 include residences along 50th Place S/S 129th Street, Codiga Farm Park, and residences along MLK Jr. Way S/SW Sunset Boulevard.

Table 4-19 contains typical A-weighted noise levels for residential areas.

Table 4-5 Typical residential noise levels

Residential land use category	Daytime sound pressure level, dBA	Nighttime sound pressure level, dBA
Very noisy urban	66	58
Noisy urban	61	54
Urban and noisy suburban	55	49
Quiet urban and normal suburban	50	44
Quiet suburban	45	39
Very quiet suburban and rural	40	34

Source: ANSI/ASA 2013.

4.3.2 Relevant Plans, Policies, and Regulations

Noise is addressed in the City of Tukwila, City of Renton, and King County noise ordinances, and the Washington Administrative Code. Construction noise limits and ordinances are not detailed in the following summaries because construction is not proposed as part of the NAA or Alternative 6.

4.3.2.1 Washington Administrative Code: Chapter 173-60

The State of Washington has a robust environmental noise control program. It regulates maximum allowable noise levels using different limits for receiving lands of differing noise sensitivity. WAC Section 173-60-040 establishes different noise limits, depending upon the environmental designation for noise abatement (EDNA) or area or zone (environment) of the property from which the noise originates and the property where the noise is received.

EDNA Class A represents lands where people reside and sleep. Typically, Class A EDNA includes the following types of property used for human habitation: residential, multiple-family living accommodations, recreational and entertainment (such as camps, parks, camping facilities, and resorts), and community service (such as orphanages, homes for the aged, hospitals, and health and correctional facilities).

EDNA Class B represents lands with uses requiring protection against noise interference with speech. Typically Class B EDNA includes the following types of property: commercial living accommodations, commercial dining establishments, motor vehicle services, retail services, banks and office buildings,

miscellaneous commercial services properties not used for human habitation, recreation and entertainment property not used for human habitation (such as theaters, stadiums, fairgrounds, and amusement parks), and community services property not used for human habitation (such as educational, religious, governmental, cultural, and recreational facilities).

EDNA Class C represents lands with economic activities of such a nature that higher noise levels than experienced in other areas is normally anticipated. People working in these areas are normally covered by noise control regulations of the Washington State Department of Labor & Industries. Uses typical of Class A EDNA are generally not permitted within such areas. Typically, Class C EDNA includes the following types of property: storage, warehouse, and distribution facilities; industrial property used for the production and fabrication of durable and nondurable human-made goods; and agricultural and silvicultural property used to produce crops, wood products, or livestock.

Under the Washington Administrative Code, no person may cause or permit noise that exceeds the maximum permissible noise levels listed in Table 4-20 to intrude into the property of another person. Between 10 p.m. and 7 a.m., the noise limitations presented in Table 4-20 are reduced by 10 dBA for receiving property within Class A EDNAs. At any hour of the day or night, those noise limitations may be exceeded for any receiving property by no more than any of the following limitations:

- 5 dBA for a total of 15 minutes in any 1-hour period
- 10 dBA for a total of 5 minutes in any 1-hour period
- 15 dBA for a total of 1.5 minutes in any 1-hour period

Table 4-6 Washington Administrative Code noise limits

EDNA class of noise source	EDNA of receiving property (dBA)		
	Class A	Class B	Class C
A	55	57	60
B	57	60	65
C	60	65	70

Source: WAC 173-60-040.

Noise emissions from motor vehicles on public highways are exempt[2]. Therefore, only noise from vehicles using non-public sections of the proposed roadways would be subject to these noise limits. The assessment of potential Proposed Project impacts on noise considers the study area to be an industrial land use (EDNA Class C), and surrounding noise-sensitive land uses are primarily residential neighborhoods (EDNA Class A). Therefore, the maximum allowable operational noise level at residences surrounding the study area is 50 dBA during the night and 60 dBA during the day. That limit can be exceeded for brief durations as explained above.

[2] WAC 173-62-020 defines "public highway" as the entire width between the boundary lines of every way publicly maintained by the department of highways or any county or city when any part thereof is generally open to the use of the public for purposes of vehicular travel as a matter of right.

4.3.2.2 King County Code: Chapter 12.86 Noise

KCC Chapter 12.86 regulates maximum allowable noise levels using different limits for receiving lands of differing noise sensitivities. These limits are shown in Table 4-21. Between 10 p.m. and 7 a.m. on weekdays and between 10 p.m. and 9 a.m. on weekends, the noise limitations presented in Table 4-21 are reduced by 10 dBA for rural and residential receiving properties. These limits are based on the Leq during a specified measurement interval. The maximum sound level (Lmax) during this interval may not exceed the specified limits by more than 15 dBA.

Table 4-7 King County Code noise limits

Sound source district	Receiving property district			
	Rural	Residential	Commercial	Industrial
Rural	49 dBA	52 dBA	55 dBA	57 dBA
Residential	52 dBA	55 dBA	57 dBA	60 dBA
Commercial	55 dBA	57 dBA	60 dBA	65 dBA
Industrial	57 dBA	60 dBA	65 dBA	70 dBA

Source: KCC 12.86.110.

Noise emissions from motor vehicles on public highways are exempt.[3] Therefore, only noise from vehicles using non-public sections of the proposed roadways would be subject to these limits. The assessment of potential Proposed Project impacts on noise considers the study area to be an industrial land use, with nearby residential areas. Therefore, the maximum allowable operational noise level at residences surrounding the study area is 50 dBA during the night and 60 dBA during the day. The maximum allowable Lmax from individual vehicles on the non-public routes would be 65 dBA during the night and 75 dBA during the day.

4.3.2.3 City of Tukwila Municipal Code: Chapter 8.22

The City regulates environmental noise using the limits shown in Table 4-22. These are essentially the same as the limits in WAC 173-60-040. The same specifications as in the Washington Administrative Code apply regarding durations of exceedances. Daytime is defined as 7 a.m. to 10 p.m. Monday through Friday, and 8 a.m. to 10 p.m. on Saturday, Sunday, and State-recognized holidays.

[3] KCC 12.86.030 (P) defines "public highway" as the entire width between the boundary lines of every way publicly maintained by WSDOT or any county or city when any part thereof is generally open to the use of the public for purposes of vehicular travel as a matter of right.

Table 4-8 City of Tukwila Municipal Code noise limits

Sound source district	Receiving property district			
	Residential, daytime	Residential, nighttime	Commercial	Industrial
Residential	55 dBA	45 dBA	57 dBA	60 dBA
Commercial	57 dBA	47 dBA	60 dBA	65 dBA
Industrial	60 dBA	50 dBA	65 dBA	70 dBA

Source: TMC 8.22.050.

The TMC also specifies that no sound is permitted that is plainly audible on a receiving property in a residential district at a distance of at least 50 feet from the sound-producing source, including sounds created by any motor vehicle operated off public highways[4]. Noise from motor vehicles on public highways is exempt from the above limits.

The operation of equipment or facilities of surface carriers engaged in commerce by railroad is exempt.

4.3.2.4 City of Renton Municipal Code: Chapter 8-7

The City of Renton has adopted relevant sections of the Washington Administrative Code to regulate motor vehicle noise performance standards and maximum environmental noise levels. According to the adopted WAC Section 173-62-020, noise emissions from motor vehicles on public highways are exempt.

4.3.3 Impacts

This section presents a noise impacts analysis, including the methodology applied, the analysis, mitigation measures, and significant unavoidable adverse impacts.

4.3.3.1 Methodology

Noise impacts are evaluated using the definitions listed in Table 4-23.

Table 4-9 Impact magnitude and description

Magnitude of impact	Description
No impact	The Proposed Project would not cause an exceedance of applicable noise limits and would not result in an increase in noise levels at any noise-sensitive area.
Minor	The Proposed Project would cause a temporary increase in noise levels at noise-sensitive areas but would not exceed applicable noise limits.
Moderate	The Proposed Project would temporarily exceed applicable noise limits and/or would cause a long-term increase in noise levels at noise-sensitive areas.
Significant	The Proposed Project would exceed applicable noise limits and/or would cause a disruptive increase in existing noise levels; these exceedances/increases would be long-term and unable to be mitigated.

[4] TMC Section 8.22.020 defines "public highway" as the entire width between the boundary lines of every way publicly maintained by WSDOT or any county or city, when any part thereof is generally for the use of the public for vehicular travel or a matter of right.

Noise impacts are defined primarily as exceedances of regulatory thresholds identified in Section 4.5.2 at the locations where those limits apply. Noise from trucks on publicly accessible roadways used by Alternative 6 and the NAA would be exempt from regulatory limits. Noise from trucks on the BNSF facility site would be subject to the limits; however, the Proposed Project will not result in an increase in truck volumes on the site and, therefore, will not result in an increase in overall noise levels from the site. Alternative 6 would also not affect the distribution of noise within the site because it would use the same site entrance as the NAA. Because operational noise from the Proposed Project either would be exempt from regulatory limits or would not pose a change to existing noise levels, a quantitative noise analysis was not performed. However, a qualitative discussion of potential noise effects is undertaken.

4.3.3.1.1 Construction Impacts

Both the NAA and Alternative 6 would use existing roadways. Because no construction would occur as part of these alternatives, no noise impacts caused by construction would occur for either alternative.

4.3.3.1.2 Operations Impacts

Truck traffic along publicly accessible sections of roadway would be exempt from noise limits. However, noise from trucks associated with the Proposed Project may still cause annoyance if increases in noise are experienced in noise-sensitive areas.

In the NAA, trucks would continue to travel along S 124th Street, causing significant noise impacts because of a disruptive increase in noise levels for residents on that street as well as for the Tukwila Community Center.

In Alternative 6, truck traffic would continue to travel along the section of S 124th Street between 50th Place S and the intermodal facility. Truck traffic would newly travel along 50th Place S and S 129th Street. Significant noise impacts caused by a disruptive increase in noise levels would be expected for the residents in homes immediately adjacent to those streets, as well as to Codiga Farm Park. In remaining areas of the Alternative 6 routes, truck traffic along the new routes would compose a small proportion of overall traffic on preexisting roadways and thus would provide only a minimal increase in noise.

4.3.4 Mitigation Measures

No significant adverse impacts are expected during construction of the Proposed Project because construction would not occur for the NAA or Alternative 6.

For operational noise impacts under Alternative 6, a noise wall would not be feasible along 50th Place S and S 129th Street because access to homes would have to be maintained. Decreasing the speed limits for trucks is one method of decreasing noise associated with truck traffic, and a 15 mph speed limit on truck traffic near homes in this area could minimize an increase in noise that might occur as a result of Alternative 6.

4.3.5 Significant Unavoidable Adverse Impacts

A significant unavoidable adverse impact for noise would be an area where new heavy truck traffic occurs at a location immediately adjacent to a noise-sensitive area, where factors prevent the construction of a noise wall or other similar mitigation. If a reduced speed limit for trucks near homes along 50th Place S and S 129th Street is possible, no significant unavoidable adverse impacts for noise are expected as part of this Proposed Project.

4.4 Water Resources (Wetlands and Streams)

Water is a beneficial resource essential to agriculture, industry, recreation, and human and ecological health. Water resources are typically subdivided into two types: surface water and groundwater. Surface-water resources are essential to maintaining human health, fish and wildlife habitat, and vegetation. Groundwater resources serve as the underground storage of fresh water that can be used for drinking, irrigation, recharge areas, and general water supply.

The objective of the Proposed Project is to develop an alternative route to the BNSF facility in the Allentown neighborhood located in Tukwila, Washington. The Proposed Project will improve livability and safety in Allentown while continuing to support the operations of the intermodal facility. The NAA and Alternative 6 are analyzed in this section to determine potential impacts on wetlands and streams. Additional details regarding the Proposed Project description and proposed alternatives are provided in Sections 1 and 2.

4.4.1 Affected Environment

This section describes the existing water resources in the study areas of the NAA and Alternative 6. Water resources include surface waters (wetlands and streams).

4.4.1.1 Surface Waters

According to Tukwila Municipal Code (TMC) Chapter 14.30, surface waters are "the portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow channels, or pipes into a natural drainage system, a surface water conveyance system, or into a constructed surface water facility." Tukwila's wetlands have been defined using the Washington State definition (Revised Code of Washington [RCW] 36.70A.030(48)) and Tukwila's watercourse classifications are consistent with the Washington State Department of Natural Resources' (DNR's) stream typing system.

Surface waters generally include wetlands, streams, rivers, lakes, and ponds. Forty-two wetlands (Table 41) and 11 streams (Table 42) are found within the Alternative 6 study area (Figure 41. HDR Engineering, Inc. (HDR) prepared a technical memorandum, *Wetlands and Streams Technical Memorandum for Alternative 6* (Appendix A), that identified and documented existing wetlands and streams along and near the NAA and Alternative 6. The wetland and stream study objectives, study area, methods, regulatory requirements, and findings are included in this technical memorandum. The following section discusses the hydrologic and hydraulic features of wetlands and streams.

4.4.1.2 Wetlands

The Alternative 6 study area for wetlands and streams encompasses the area within 300 feet of the edges of the Alternative 6 footprint, which is defined as the physical footprint of the truck access route that could result in permanent impacts on wetlands. This distance was selected to match the typical largest applicable potential buffer width for wetlands within the cities of Tukwila, Seattle, and Renton and unincorporated King County. Wetlands evaluated in this technical memorandum include wetlands that are wholly or partly within the Alternative 6 study area. Streams evaluated in this technical memorandum include streams that intersect the Alternative 6 study area.

The NAA study area is the existing physical footprint and did not include additional study areas.

Table 4-10 Summary of wetlands in the Alternative 6 study area

Wetland name	Total size (acres)	Hydrogeomorphic classification[a]	Cowardin classification[b]	Jurisdiction
13	4.36	Depressional	PEM, PFO	Seattle, Tukwila
14	0.29	Depressional	PEM	Tukwila
15a	0.74	Depressional	PSS	Seattle
15b	0.21	Depressional	PSS	Seattle
15c	0.40	Depressional	PEM, PSS	Seattle
16	1.43	Riverine	PEM, PSS, PFO	Tukwila
17	0.07	Riverine	PEM	Tukwila
18	0.73	Depressional	PEM	Tukwila
19	0.08	Depressional	PFO	Tukwila
20	1.33	Depressional	PEM, PFO	Tukwila
21	3.92	Depressional	PEM, PFO	Tukwila
22	0.23	Depressional	PEM	Tukwila
23	0.02	Depressional	PEM	Tukwila
24	0.02	Depressional	PSS	Tukwila
25	0.06	Depressional	PEM	Tukwila
26	0.24	Depressional	PSS	King County
27	0.31	Depressional	PSS	King County
28a	0.13	Depressional	PEM	King County
28b	0.14	Depressional	PEM	King County
29a	0.03	Depressional	PEM	Renton
29b	0.04	Depressional	PEM	Renton
29c	0.13	Depressional	PEM	Renton
29d	0.06	Depressional	PEM	Renton
30	0.15	Depressional	PEM	Renton
31	6.44	Slope/Riverine	PEM, PSS	Renton
32	0.01	Depressional	PEM	Renton
33	0.11	Depressional	PEM, PSS	Renton
34	24.9	Riverine	PEM, PSS, PFO	Renton
35	0.11	Depressional	PEM	Renton
36	0.70	Depressional	PSS, PFO	Tukwila
37	0.03	Depressional	PEM	Tukwila
38	0.28	Depressional	PSS	Tukwila
39a	0.99	Slope	PSS	Tukwila
39b	0.55	Slope	PEM, PSS	Tukwila
40	0.13	Depressional	PEM	Tukwila
41a	0.32	Depressional	PEM	Tukwila
41b	0.17	Depressional	PEM	Tukwila
41c	0.13	Depressional	PEM	Tukwila
42	0.18	Depressional	PEM	Tukwila
43a	0.09	Depressional	PFO	Tukwila
43b	0.11	Depressional	PAB, PEM	Tukwila
44	1.27	Depressional	PFO	Tukwila

[a] Hydrogeomorphic (HGM) classifications are based on *A Hydrogeomorphic Classification of Wetlands* (Brinson 1993).

[b] *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979, FGDC 2013). PAB = palustrine aquatic bed, PEM = palustrine emergent, PSS = palustrine scrub/shrub, PFO = palustrine forested.

Forty-two wetlands (Wetlands 13 through 44) were identified within the Alternative 6 study area, which was not previously reviewed in the FEIS. These wetlands are summarized above in Table 4-1 and are shown in Figure 4-2.

Wetlands 1, 2, 3, 4a, 4b, 5, 8, 9, 10, 11, and 12b intersect the Alternative 6 study area but were previously described in the FEIS (City 2025) and, therefore, are not included in Table 4-1 above. Please refer to the FEIS for a summary of these wetlands.

Wetlands in the Alternative 6 study area include riverine wetlands along the Duwamish River and other streams. Other depressional wetlands are interspersed throughout the Alternative 6 study area within developed areas or in fragmented habitats surrounded by development. The findings above represent the results of the desktop review of wetland databases.

4.4.1.3 Streams

Streams are referred to as water bodies and aquatic areas by the City of Tukwila and unincorporated King County, and as fish and wildlife habitat conservation areas (FWHCAs) by the City of Seattle. The Alternative 6 study area of streams encompasses the area within 300 feet of the edges of the long-term Proposed Project footprint. This distance was selected to match the largest applicable potential buffer width for wetlands within the city of Seattle and unincorporated King County and to match the buffer for shorelines and streams within the cities of Tukwila and Renton. Streams evaluated in this SEIS include streams that are wholly or partly within the Alternative 6 study area.

A stream is defined by the United States Army Corps of Engineers (USACE) as a "body of water flowing in a definite natural or manmade course that has the potential to flood. The term 'stream' refers to rivers, streams, creeks, brooks, etc., and includes intermittent streams that are subject to flooding."

Eleven streams have been identified within the Alternative 6 study area. These streams are summarized below in Table 4-2 and shown in Figure 4-2. Stream 1 and the Duwamish River are located within the Alternative 6 study area and were previously described in the FEIS (City 2025).

Streams in the Alternative 6 study area include larger water bodies, such as the Duwamish and Green Rivers, medium-sized tributaries such as Springbrook and Riverton Creeks, and several smaller streams that flow either directly to the Duwamish or Green River or to their tributaries. The findings below represent the results of a desktop review of streams mapped within the Alternative 6 study area and available online information. Some streams may be piped via culverts through the Alternative 6 study area. The presence or absence of streams within the Alternative 6 study area, and the stream typing, would need to be confirmed with a field investigation.

Table 4-11 Summary of streams in the Alternative 6 study area

Water body	Tributary to	Water type[a]	Jurisdiction within the study area
Duwamish River	Puget Sound	S	Tukwila
Stream 2	Duwamish River	Undetermined	Tukwila
Riverton Creek	Duwamish River	F	Tukwila
Stream 3	Duwamish River	F	Tukwila, King County
Stream 4	Duwamish River	Undetermined	Tukwila
Stream 5	Black River	Undetermined	Renton
Stream 6	Black River	F	Renton
Rolling Hills Creek	Black River	F	Renton
Springbrook Creek	Black River	S	Renton
Green River	Duwamish River	S	Tukwila
Gilliam Creek	Green River	F	Tukwila

[a] Stream typing is based on available online resources (King County 2025 and DNR 2025). The stream typings presented in this table are preliminary findings based on a desktop review of existing information. Field investigation of these streams would be needed to confirm stream types.

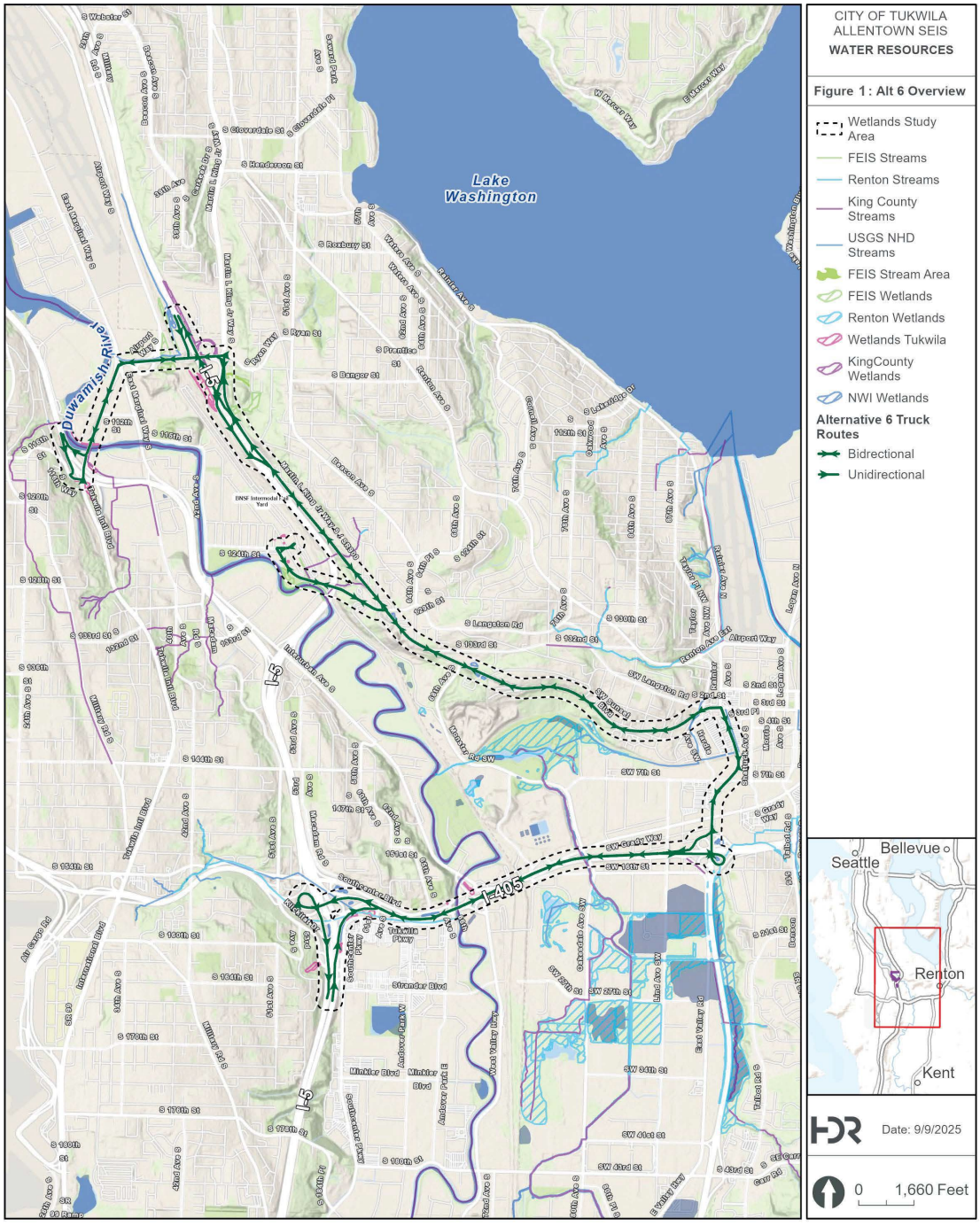

Figure 4-1 Alternative 6 water-resources study area

4.4.2 Relevant Plans, Policies, and Regulations

The relevant plans, policies, regulations, and guidance consulted when analyzing the potential impacts of the proposed Alternatives are described in Table 4-3.

Table 4-12 Relevant plans, policies, and regulations

Law/regulation	Description
Federal	
Sections 10, 303, 401, 404, and 408 of the Clean Water Act (CWA)	Required for projects proposing in-water work related to fill and/or water quality impacts in Waters of the United States (WOTUS)
Flood Control Management Act of 1935, RCW 86.16	Established statewide authority for floodplain management.
The National Flood Insurance Act of 1968	Led to creation of the NFIP, which aims to share the risk of flood losses through insurance and reduce flood damages by restricting floodplain development.
State	
Growth Management Act (GMA)	Requires all cities and counties in Washington to adopt development regulations that protect critical areas.
Shoreline Management Act of 1971 Chapter 90.58 RCW	Permitted uses in the shorelines of the state shall be designed and conducted in a manner to minimize, insofar as practical, any resultant damage to the ecology and environment of the shoreline area and any interference with the public's use of the water.
Section 401 of the CWA	The U.S. Environmental Protection Agency (EPA) delegated authority to the Washington State Department of Ecology (Ecology) to review and certify Section 401 permits for projects with in-water work in WOTUS.
Water Quality Standards for Surface Waters for the State of Washington, WAC Chapter 173-201A	Establishes water quality standards for surface waters of the state of Washington.
RCW Chapter 77.55, Construction Projects in State Waters	Requires any hydraulic project in state waters to adequately protect fish and their aquatic habitats.
RCW Chapter 90.44, Regulation of Public Groundwaters	Regulates and controls groundwaters of the state.
RCW Chapter 90.48, Water Pollution Control	Prevents and controls the pollution of the waters of the state. Ecology has been designated as the state water pollution control agency.
RCW Chapter 90.54, Water Resources Act of 1971	Protects water resources of the state, while ensuring that they are fully utilized.
Washington Department of Fish and Wildlife (WDFW) Hydraulic Project Approval	Ensures that construction in or near state waters is done in such a way as to protect fish and their aquatic habitats.
Local	
King County Critical Areas Ordinance (King County Code [KCC] 21A.24)	This ordinance was developed under the directives of the GMA to designate and protect critical areas and to assist in conserving the value of property, safeguarding the public welfare, and providing protection for these areas.
King County Public Water System Rules and Regulations, Chapter 12 (12.24.010): King County	Provides drinking-water source protection including protecting drinking water from possible contaminants.
Surface Water Runoff Policy in Chapter 9.04: King County	Stormwater runoff and surface water and erosion control.
City of Tukwila Environmentally Critical Areas, TMC 18.45	The purpose of TMC Chapter 18.45 is to protect the environment, human life, and property; to designate and classify ecologically critical areas including but not limited to regulated wetlands and watercourses and geologically hazardous areas, and to protect these critical areas and their functions while also allowing for reasonable use of public and private property. These regulations are prepared to comply with the GMA.

City of Tukwila Surface Water Management, TMC 14.30	The purpose of TMC Chapter 14.30 is to regulate development activities that could affect stormwater and non-stormwater discharges to the stormwater drainage system to the maximum extent practicable as required by federal and state law.
City of Renton Critical Areas Regulations, Renton Municipal Code (RMC) 4-3-050	Regulates and protects critical areas including wetlands, streams, lakes, steep slopes, fish and wildlife habitat zones, and flood zones in the city of Renton.

4.4.3 Methodology

Proposed Project impacts are discussed as direct or indirect impacts that occur during construction or operation of the Proposed Project. Direct impacts are caused by the Proposed Project and occur at the same time and place as the Proposed Project. Indirect impacts are caused by the Proposed Project and occur later in time or are farther removed in distance from the Proposed Project but are still reasonably foreseeable (Code of Federal Regulations [CFR] Title 40 Section 1508.8). Construction impacts occur during the construction or building of the Proposed Project, while operation impacts result from the operations or utilization and maintenance of the Proposed Project, post-construction.

The potential impacts of construction and operation of each alternative on wetlands and streams were evaluated based on the applicable federal, state, and local regulatory requirements. Potential impacts on streams and wetlands were evaluated within their respective study areas. Potential impacts were determined by the location of the footprint of the alternative as well as impacts that extend beyond the area of the Proposed Project footprint (e.g., stormwater pollution).

Where information is available, potential impacts on wetlands and streams are discussed quantitatively (e.g., area of impervious surfaces created) and are otherwise discussed qualitatively. Impacts to the NAA were determined based on the existing infrastructure's location to water resources. The potential impacts to wetlands and streams are evaluated by using the definitions in Table 4-4.

Table 4-13 Impact magnitude and description

Magnitude of impact	Description
No impact	The Proposed Project would be fully consistent with the intent of applicable plans and policies for streams and wetlands.
Minor	The Proposed Project would result in short-term temporary impacts, or minimal long-term impacts, to streams and wetlands.
Moderate	The Proposed Project would result in long-term or permanent impacts to streams and wetlands, but mitigation can be applied to reduce the impact to be less than significant.
Significant	The Proposed Project would cause long-term, permanent, or irreversible inconsistencies with applicable plans and policies or the zoning codes pertaining to streams and wetlands.

4.4.4 Impacts Analysis

This section presents an environmental impacts analysis for the NAA and Alternative 6.

4.4.4.1 No-Action Alternative

As shown in Figure 4-2 no wetlands were identified within the NAA, and one watercourse, the Duwamish River, was identified within the NAA.

4.4.4.1.1 Construction Impacts Associated with the No-Action Alternative

Not Applicable. The NAA requires no construction; the truck route would remain along its current course. There would be no impacts on wetlands or streams as a result of construction activities.

4.4.4.1.2 Operations Impacts Associated with the No-Action Alternative

This section presents operations impacts associated with the NAA on wetlands and streams.

4.4.4.1.2.1 Wetlands

No Impact. A buffer was not considered for the NAA because there is no new construction. Current operating impacts would apply. As such, there would be no new impacts to wetlands because of the NAA.

4.4.4.1.2.2 Streams

No Impact. The current course of the NAA routes trucks over the Duwamish River via the S 42nd Street bridge and would not create any additional impact on the waterway that differs from current operational conditions.

4.4.4.2 Alternative 6

There are 42 wetlands identified within the Alternative 6 study area, which includes riverine and depressional wetlands. Eleven streams were identified in the Alternative 6 study area, including the Duwamish and Green Rivers, medium-sized tributaries such as Springbrook and Riverton Creeks, and several smaller streams.

4.4.4.2.1 Construction Impacts Associated with Alternative 6

No Impact. Alternative 6 would use existing roadways and would not include construction. Because Alternative 6 would not include any alteration to the existing roadways or stormwater facilities, no direct impacts on wetlands and streams are anticipated.

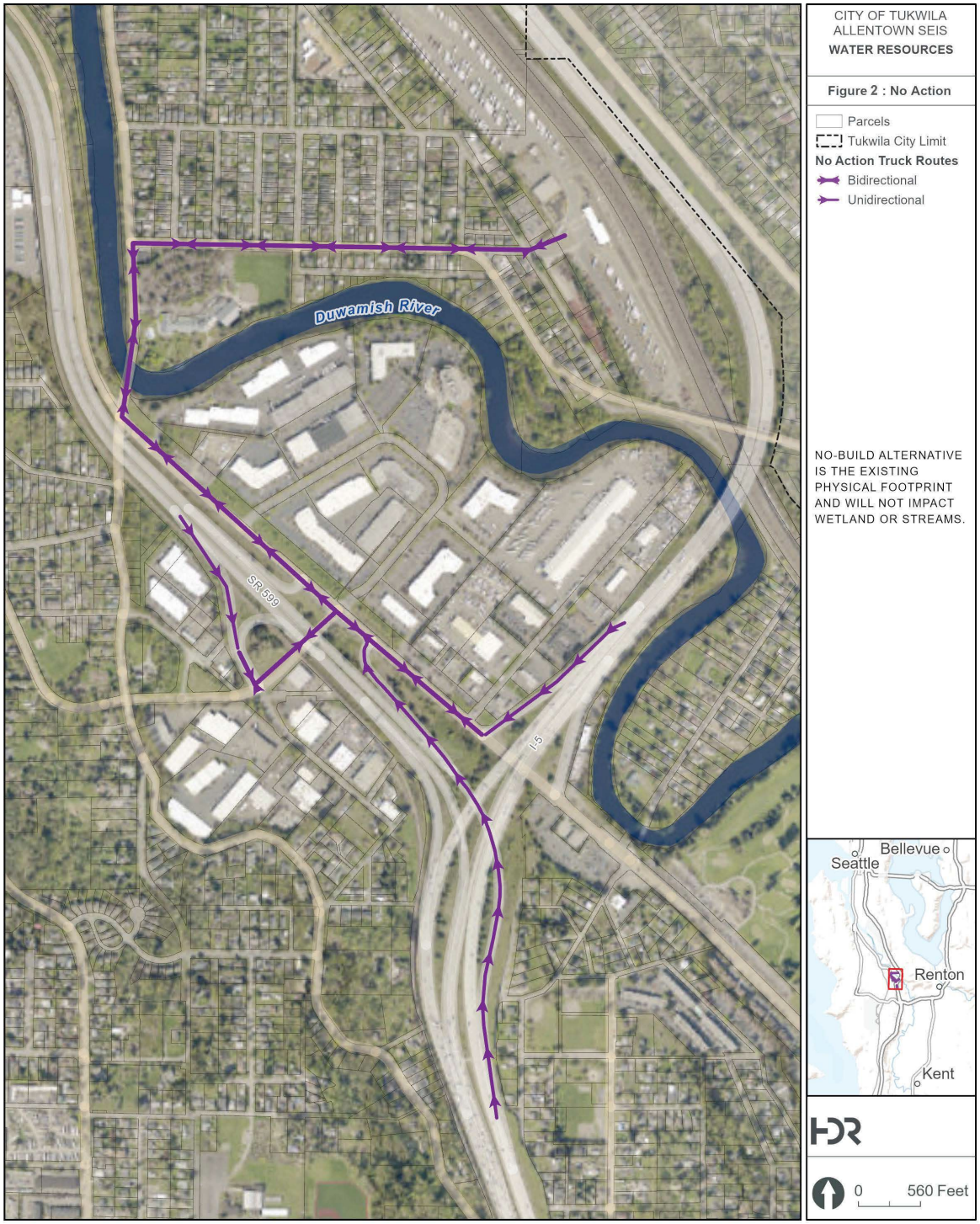

Figure 4-2 Overview of the No-Action Alternative route

4.4.4.2.2 Operations Impacts Associated with Alternative 6

No Impact. Alternative 6 would use existing roadways and would not include alterations to footprints of existing roads or stormwater facilities. Because Alternative 6 would not include any alteration to the existing roadways or stormwater facilities, no direct impacts on wetlands and streams are anticipated. As such, there would be no new impacts on wetlands and streams as a result of Alternative 6.

4.4.5 Mitigation Measures

Significant unavoidable adverse impacts are not anticipated from the alternatives, as neither alternative would include construction or alteration to existing roadways or stormwater facilities and would therefore not impact wetlands and streams in their respective study areas. Therefore, mitigation measures are not suggested for the alternatives.

4.4.6 Significant Unavoidable Adverse Impacts

The construction and operation of the Proposed Project would not result in any unavoidable adverse impacts on wetlands and streams.

4.5 Transportation

This section provides an analysis of the potential impacts of proposed truck route alternatives on the existing transportation network.

4.5.1 Affected Environment

The study area encompasses routes with key roadways and intersections that connect local roadway networks in the cities of Tukwila and Renton to the BNSF facility. Proposed alternatives in this SEIS include Alternative 6 and the NAA. This section is a supplemental analysis to the FEIS document (City 2025). Alternative 6 and the NAA truck routes are shown in Figure 4-3.

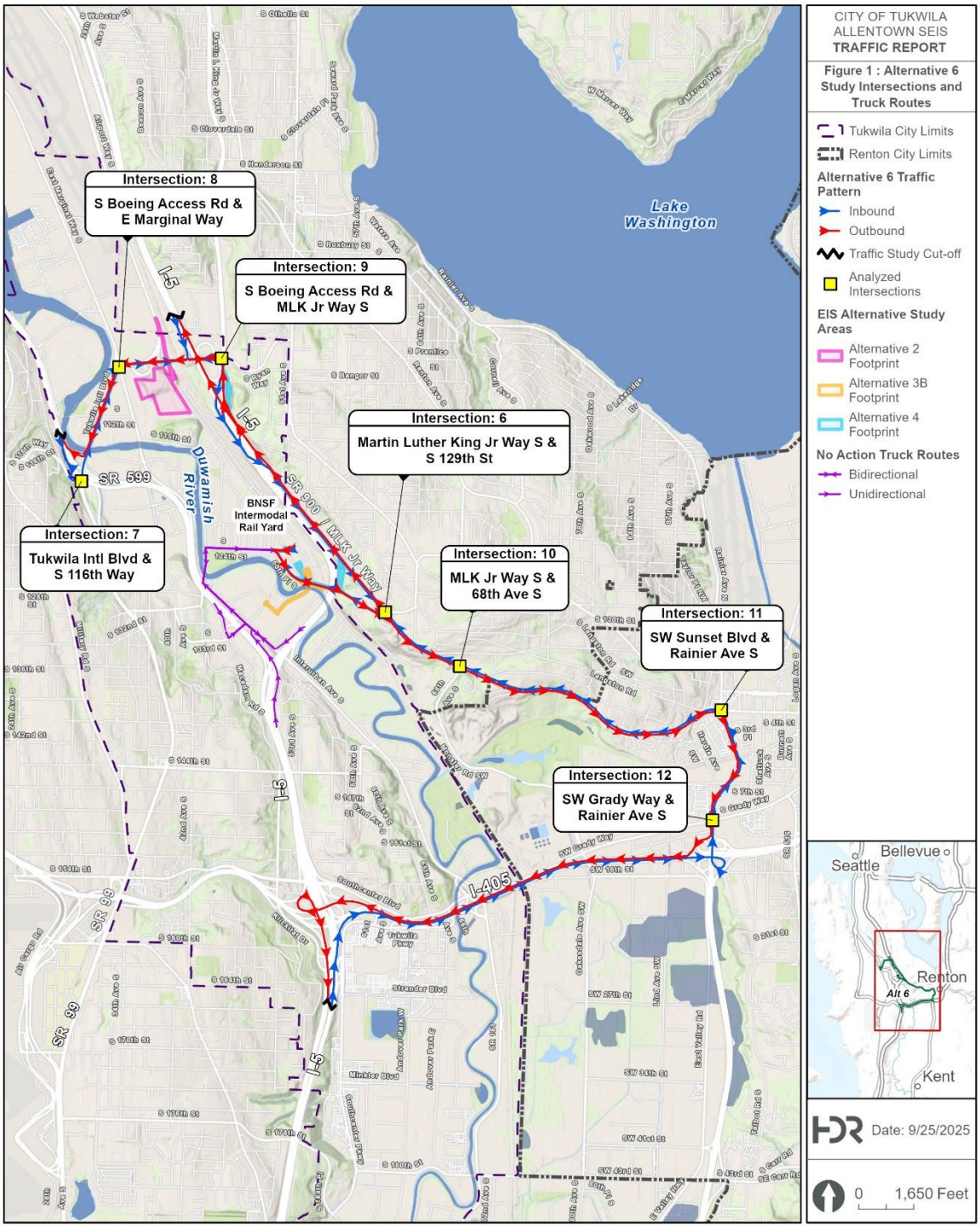

Figure 4-3 Alternative 6 and NAA truck routes

Seven study intersections that overlap with Alternative 6 were evaluated through a traffic study conducted for the Proposed Project. All analyses in this section are presented by study intersections instead of truck routes, except VMT and pavement conditions data. VMT and pavement conditions data are both analyzed by roadways that overlap with truck travel routes instead of study intersections.

The list of seven study intersections and their identifiers are as follows.

- **Intersection 6:** MLK Jr. Way S and S 129th Street
- **Intersection 7:** Tukwila International Boulevard and S 116th Way
- **Intersection 8:** S Boeing Access Road and East Marginal Way
- **Intersection 9:** S Boeing Access Road and MLK Jr. Way S
- **Intersection 10:** MLK Jr. Way S and 68th Avenue S
- **Intersection 11:** SW Sunset Boulevard and Rainier Avenue S
- **Intersection 12:** SW Grady Way and Rainier Avenue S

Intersections 6 through 8 are within the city of Tukwila, intersections 9 and 10 are in unincorporated King County, and intersections 11 and 12 are in the city of Renton. Intersections 7, 9, 10, 11 and 12 are also WSDOT intersections.

4.5.2 Relevant Plans, Policies, and Regulations

Relevant policies and regulations related to transportation and the Proposed Project are summarized in Table 4-7.

Table 4-14 Regulations and policies for transportation

Laws and regulations	Description
Federal	
Highways: Highway Safety Programs (United States Code [USC] Title 23 Section 402)	Provides federal regulations that govern safety on highways to reduce traffic accidents and the resulting deaths, injuries, and property damage.
Federal Railroad Safety Authorization Act of 1994	Provides the Federal Railroad Administration (FRA) with regulatory jurisdiction over safety at federal highway/rail grade crossings.
Manual on Uniform Traffic Control Devices (23 USC 109(d))	Provides standards and guidelines for traffic control devices.
State	
Transportation System Policy Goals (RCW 47.04.280)	Establishes the following goals for the transportation system in Washington State: economic vitality, preservation, safety, mobility, environment, and stewardship.
Motor vehicles: Rules of the Road (RCW 46.61)	Establishes rules of the road for vehicle and rail crossings.
City Streets as Part of State Highways (RCW 47.24)	Regulates the maintenance and jurisdictional control for city streets that are part of state highways.
Local	
Vehicles and Traffic Regulations (TMC Title 9)	Establishes regulations for vehicle traffic in the city of Tukwila.
City of Tukwila Comprehensive Plan: Transportation Element	The Transportation Element (Element 13) of the Tukwila Comprehensive Plan establishes Tukwila's transportation goals and policies for the 20-year planning period.
City of Tukwila Infrastructure Design and Construction Standards	Establishes design and construction requirements, criteria, and specifications for construction projects in the city of Tukwila.
Traffic Code (RMC Title X, Chapter 12)	Establishes regulations for vehicle traffic in the city of Renton.

Laws and regulations	Description
City of Renton Comprehensive Plan: Transportation Element	The Transportation Element of the City of Renton Comprehensive Plan establishes transportation goals and policies for the 20-year planning period.

4.5.3 Methodology

The Allentown EIS Intersection Study—Alternative 6 Addendum (Appendix B) conducted for this Proposed Project involved the collection and analysis of various transportation variables at seven study intersections. This supplemental analysis for Alternative 6 follows the same methodology used in the FEIS (see Section 4.6.3 of the FEIS document) and includes the following measures: afternoon peak LOS and delay using Synchro, VMT, and crash analysis (City 2025).

Pavement Conditions Index (PCI) data are from the 2024 Asphalt and Roadway Inventory by the City of Tukwila Department of Public Works and from the 2022 Pavement Management Inventory by the City of Renton Department of Public Works. Both cities use the standard PCI system to evaluate existing pavement conditions, which is a numerical rating of the pavement condition based on the type and severity of distresses observed on the pavement surface (City 2025; City of Renton 2023). The numerical index and associated descriptive terms for PCI data are outlined in the FEIS (City 2025).

4.5.4 Impacts Analysis

Similar to the FEIS, impacts are evaluated using the impact magnitude definitions listed in Table 4-8, and comparisons are made between the proposed alternatives (City 2025).

Table 4-15 Impact magnitude and description

Magnitude of impact	Description
Little or no impact	The Proposed Project's truck routes would not adversely impact existing and future projected roadway and intersection conditions.
Minor	There may be short-term or minor adverse impacts to existing and future projected roadway and intersection conditions.
Moderate	There may be long-term or permanent adverse impacts to existing and future projected roadway and intersections.
Significant	The Proposed Project would cause long-term and adverse impacts to existing and future projected roadways and intersections.

4.5.4.1 Level-of-Service and Delay Results

Table 4-9, Table 4-10, and Table 4-11 show the 2024 existing scenario, 2045 NAA, and 2045 Alternative 6 LOS and delay results, respectively. Intersections with an LOS of A are generally the least congested, and intersections with an LOS of F are generally the most congested.

Table 4-16 2024 existing scenario with bridge closure Synchro LOS and delay results: afternoon peak

Study intersection LOS/delay (s/veh)	Southbound	Northbound	Eastbound	Westbound	Overall
6: MLK Jr. Way S and S 129th St.	F/87.0	B/13.3	A/9.4	B/10.2	D/51.5
7: Tukwila International Blvd. and S 116th Way	B/16.1	C/28.9	C/31.2	NA	C/21.1
8: S Boeing Access Rd. and E Marginal Way	C/33.9	E/57.0[a]	D/48.9	D/40.1	D/40.2
9: S Boeing Access Rd. and MLK Jr Way S	D/46.5	D/44.4	D/44.6	E/58.6[a]	D/46.5

Study intersection LOS/delay (s/veh)	Southbound	Northbound	Eastbound	Westbound	Overall
10: MLK Jr. Way S and 68th Ave. S	NA	E/70.0	C/21.4	B/15.6	C/27.5
11: SW Sunset Blvd. and Rainier Ave. S	D/38.6	D/49.8	D/49.6	NA	D/44.9
12: SW Grady Way and Rainier Ave. S	E/59.9	F/109.5 [b]	F/82.9 [b]	E/63.0	F/82.3 [b]

[a] LOS/delay shown in red exceeds the King County standard of acceptability for intersection LOS (E or better).

[b] LOS/delay shown in red for intersections 11 and 12 exceeds the City of Renton's standard of acceptability for intersection LOS along Rainier Avenue (E or better) (City of Renton 2024).

As shown in Table 4-10, existing traffic conditions are generally acceptable at most study intersections and operating at the cities of Tukwila and Renton's standard of acceptability for intersection LOS (E or better). The only intersection experiencing significant delays on all approaches is intersection 12 in the City of Renton, which operates at an LOS of F.

Table 4-17 2045 No-Action alternative Synchro LOS and delay results: afternoon peak

Study intersection LOS/delay (s/veh)	Southbound	Northbound	Eastbound	Westbound	Overall
6: MLK Jr. Way S and S 129th St.	F/186.0 [a]	B/15.5	A/9.4	B/10.2	F/107.2 [a]
7: Tukwila International Blvd. and S 116th Way	C/24.5	D/47.8	D/40.5	NA	C/31.4
8: S Boeing Access Rd. and E Marginal Way	D/53.3	E/69.3	E/57.2	D/49.4	D/53.9
9: S Boeing Access Rd. and MLK Jr. Way S	E/56.6	D/46.0	D/51.1	E/77.9	D/54.7
10: MLK Jr. Way S and 68th Ave. S	NA	E/72.5	D/37.1	B/19.7	D/38.7
11: SW Sunset Blvd. and Rainier Ave. S	E/79.9	D/52.0	D/47.3	NA	E/62.9
12: SW Grady Way and Rainier Ave. S	F/112.4 [b]	F/191.2 [b]	F/82.9 [b]	E/64.4 [b]	F/126.9 [b]

[a] LOS/delay shown in red exceeds the King County standard of acceptability for intersection LOS (E or better).

[b] LOS/delay shown in red for intersections 11 and 12 exceeds the City of Renton's standard of acceptability for intersection LOS along Rainier Avenue (E or better) (City of Renton 2024).

As shown in Table 4-11, the projected 2045 traffic conditions for the NAA are generally acceptable at most study intersections and would be operating at the cities of Tukwila and Renton's and King County's standards of acceptability for intersection LOS (E or better). Two intersections experiencing significant delays on all approaches are intersections 9 and 12, which both would operate at an LOS of F.

Table 4-18 2045 Alternative 6 Synchro LOS and delay results: afternoon peak

Study intersection LOS/delay (s/veh)	Southbound	Northbound	Eastbound	Westbound	Overall
6: MLK Jr. Way S and S 129th St.	F/194.9 [a]	B/16.3	A/9.5	B/10.3	F/108.9 [a]
7: Tukwila International Blvd. and S 116th Way	C/24.8	D/48.5	D/40.6	NA	C/31.7
8: S Boeing Access Rd. and E Marginal Way	D/53.5	E/69.3	E/57.4	D/49.9	D/54.3
9: S Boeing Access Rd. and MLK Jr. Way S	E/56.8	D/46.1	D/51.3	E/78.1	D/54.9
10: MLK Jr. Way S and 68th Ave. S	NA	E/72.5	D/37.6	B/19.7	D/38.9
11: SW Sunset Blvd. and Rainier Ave. S	F/83.9 [b]	D/51.9	D/47.4	NA	E/64.5
12: SW Grady Way and Rainier Ave. S	F/115.2 [b]	F/190.9 [b]	F/82.9 [b]	E/64.4	F/127.7 [b]

[a] LOS/delay shown in red exceeds the King County standard of acceptability for intersection LOS (E or better).

[b] LOS/delay shown in red for intersections 11 and 12 exceeds the City of Renton's standard of acceptability for intersection LOS along Rainier Avenue (E or better) (City of Renton 2024).

As shown in Table 4-11, the projected 2045 traffic conditions for Alternative 6 are generally the same as those for the NAA with minor increases in delay at intersections 9, 11, and 12. Based on the projected 2045 data, the implementation of Alternative 6 would not significantly degrade the LOS and delay conditions at the intersections. Even though the 2045 projected intersection LOS ratings for a few intersections in Alternative 6 do not meet the standards of acceptability (LOS E or better), the implementation of Alternative 6 would increase delays by an average of only 1 percent across all intersections compared to the projected 2045 NAA. Therefore, impacts from the implementation of Alternative 6 are anticipated to be **minor**.

4.5.4.2 Vehicle Miles Traveled Results

Truck VMT was calculated by multiplying the vehicle AADT, truck percentage, segment length for each alternative, and total days in a year. Table 4-12 summarizes the annual truck VMT for each alternative. All alternatives use different truck travel routes and have varying VMTs. A higher VMT could indicate increased traffic congestion and increased collision potential, could result in greater vehicle emissions and adverse air quality impacts, and could signify an increase in roadway maintenance needs. Because Alternative 6 includes a longer truck travel route via I-405, the truck traffic study boundary was extended 1.59 miles south on I-5 (City 2025). To maintain consistency across all alternatives, the truck VMT calculations for alternatives previously analyzed in the FEIS (Alternative 2, 3B and 4) have been updated to account for the additional travel distance on I-5. See the traffic memorandum included in Appendix B for more details.

Table 4-19 Results of annual vehicle miles traveled for alternatives

Alternative scenario	Length (miles)	Site truck AADT (veh/day)	VMT (annual)	Percent change from NAA
Truck VMT for NAA travel route	17.4	900	5,716,000	0% (no change)
Truck VMT for travel route Alternative 6	19.7	900	6,472,000	13% increase

Alternative 6 is anticipated to have an annual VMT of approximately 6.5 million, which is higher than the NAA travel route. As an overall comparison with the NAA travel route, Alternative 6 is anticipated to have **moderate impacts** on roadway conditions (City 2025).

4.5.4.3 Crash Analysis Results

Crash data for seven study intersections were requested through the WSDOT Public Disclosure Request Center. Data for 2019 to 2023 are shown in Table 4-13 and Table 4-14.

Table 4-20 Crash data summary for seven study intersections: 2019–2023

Intersection	2019	2020	2021	2022	2023	Total
6: MLK Jr. Way S and S 129th St.	13	15	13	12	9	**62**
7: Tukwila International Blvd. and S 116th Way	4	7	5	3	5	**24**
8: S Boeing Access Rd. and E Marginal Way	12	5	10	20	13	**60**
9: S Boeing Access Rd. and MLK Jr. Way S	14	8	13	11	16	**62**
10: MLK Jr. Way S and 68th Ave. S	9	8	4	2	2	**25**
11: SW Sunset Blvd. and Rainier Ave. S	13	9	12	7	12	**53**
12: SW Grady Way and Rainier Ave. S	17	11	14	14	21	**77**

Table 4-21 Crash data summary for seven study intersections by severity: 2019–2023

Intersection	Crash rate [a]	Fatal	Serious injury	Minor injury	Possible injury	No injury	Total
6: MLK Jr. Way S and S 129th St.	0.72	0	0	7	17	38	**62**
7: Tukwila International Blvd. and S 116th Way	0.47	0	0	3	6	15	**24**
8: S Boeing Access Rd. and E Marginal Way	0.82	0	0	4	5	51	**60**
9: S Boeing Access Rd. and MLK Jr. Way S	1.06	0	0	11	19	32	**62**
10: MLK Jr. Way S and 68th Ave. S	0.48	0	0	0	10	15	**25**
11: SW Sunset Blvd. and Rainier Ave. S	0.72	1	1	5	13	33	**53**
12: SW Grady Way and Rainier Ave. S	0.76	0	1	8	16	52	**77**

[a] Total crashes in 5 years during peak hour.

The data show that intersection 12 has the highest number of recorded crashes over the 5-year period at 77 total recorded crashes, compared to the other intersections. One fatality was recorded for intersection 11. Intersections 11 and 12 also had one count of crashes respectively that resulted in "serious injury."

The intersection with the lowest recorded total crashes is intersection 7, at 24 total recorded crashes, over the 5-year period; this intersection overlaps with the NAA. These two crashes are also classified as "possible injury" or "no injury," which are the least severe types of crashes.

Crash rates are defined as the frequency of crashes reported by law enforcement agencies, specifically through police reports. Reportable crashes must meet criteria of (1) having property damage of at least $1,000 or injury of an individual, (2) being on a public roadway, (3) involving at least one motorized vehicle, and (4) not involving an intentional act or legal intervention or being medically caused. The overall calculated crash rate for all study intersections ranges between 0.5 to 1.0, which is lower than the Washington State average of 1.0 to 1.5. This indicates that the crash rates for most study intersections range from lower than to equal to Washington State averages.

4.5.4.4 Pavement Analysis Results

PCI data, truck VMT, and roadway area for the alternatives' truck routes were gathered from the Cities of Tukwila and Renton Public Works Departments, shown in Table 4-15. Note that data for the portion of the alternatives that are on state highways are in the boundaries of King County but would be under the jurisdiction of WSDOT to manage pavement.

The PCI along each truck route varies for each alternative and is shown to provide a baseline for existing pavement conditions. Truck VMT and the total roadway area for each alternative are presented as a metric for comparison. Alternatives with higher truck VMTs paired with larger roadway areas would have greater impacts on the existing roadway conditions, as there could be an increase in pavement degradation.

Table 4-22 Comparison of PCI between alternatives

Alternative	Lowest and highest PCI rating	Truck VMT (annual)	Roadway area (ft^2)
6	Lowest PCI rating: 36.2 (poor) Highest PCI rating: 95 (excellent)	6,472,000	1,763,994
NAA	Lowest PCI rating: 41.2 (marginal) Highest PCI rating: 89.3 (excellent)	5,716,000	2,808,120

Alternative 6 is anticipated to have an annual VMT of approximately 6.5 million, and approximately 1.7 million total square feet (ft^2) of pavement. The NAA is anticipated to have an annual VMT of approximately 5.7 million, and roadway area of approximately 2.8 million ft^2.

Alternative 6's VMT is higher compared to the NAA travel route. Alternative 6's higher truck VMT could be attributed to the longer length of truck routes, but a smaller roadway area because of a smaller number of roadway lanes. Given the higher VMT, Alternative 6's impacts to pavement are considered to be **moderate** compared to the NAA travel route**.** A higher VMT is correlated with higher traffic, which indicates increased pavement degradation compared to roadways with lower VMT.

Figure 4-2 shows the PCI for all roadway segments in the cities of Tukwila and Renton, and the NAA and Alternative 6 truck routes.

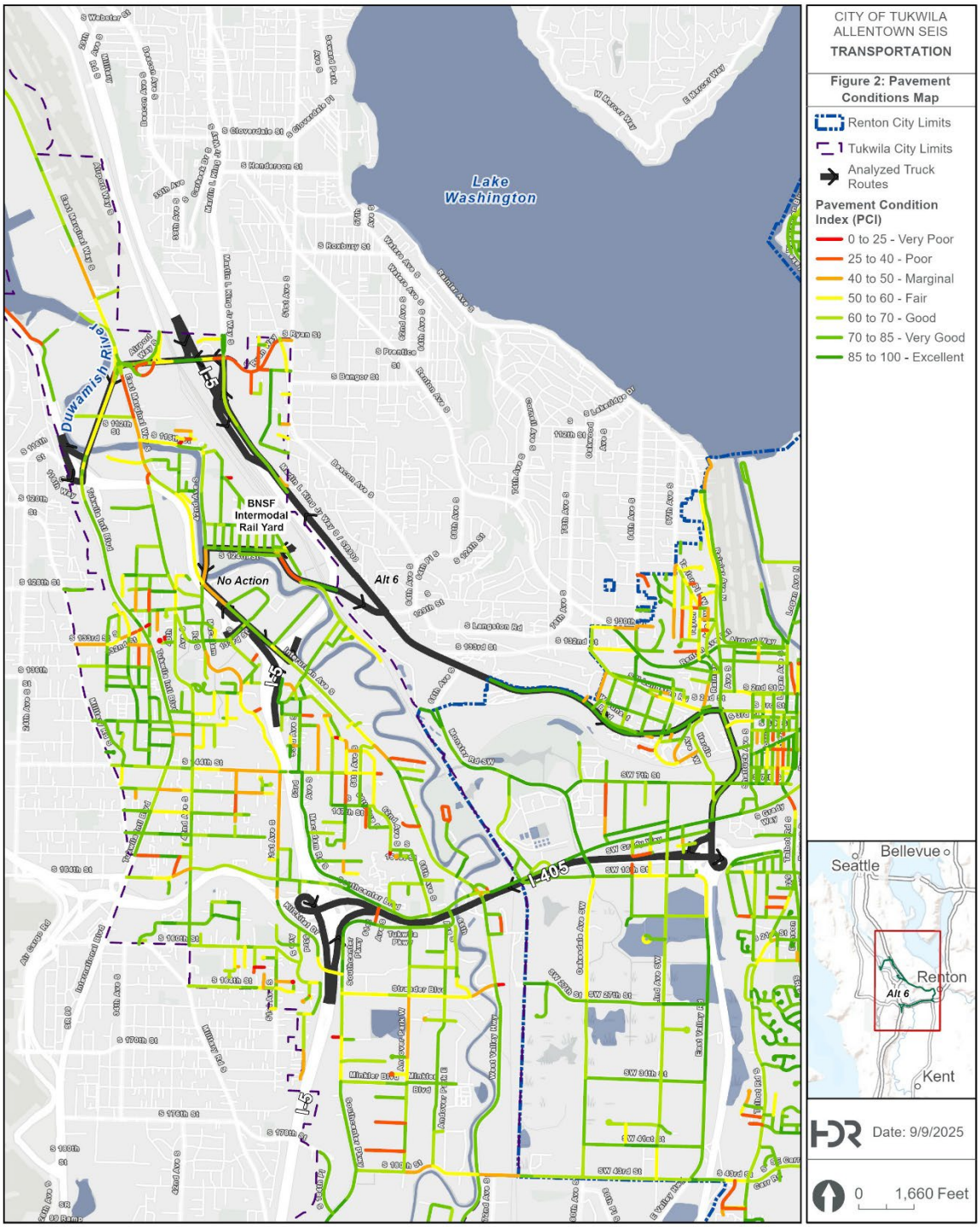

Figure 4-2 Pavement Conditions Index of the cities of Tukwila and Renton

1.1.1.1 Summary of Impacts by Alternative

A summary of the impacts for the variables considered including LOS, VMT, and PCI data for the NAA and Alternative 6 are presented in Table 4-16. The summary of impacts for the other alternatives (Alternative 2, Alternative 3B and Alternative 4) are in the FEIS (City 2025).

Table 4-23 Impact summary

Alternative	Magnitude of impacts for variables in the transportation analysis [a]		
	LOS	VMT	Pavement conditions
6	Minor	Moderate	Moderate
NAA	Minor	Minor	Minor

[a] If a resource has more than one magnitude of impact (i.e., a range of impacts), the highest level is used in this chart for conservative comparison.

4.5.5 Mitigation Measures

General mitigation measures applicable across all alternatives are detailed in the FEIS (City 2025). General mitigation measures for Alternative 6 are detailed below.

For Alternative 6, the LOS and delay measures indicate that intersection 6 (MLK Jr. Way S and S 129th Street) and intersection 12 (SW Grady Way and Rainier Avenue S) will experience significant congestion and operate at LOS F, respectively, according to future traffic projections for 2045. Long-term mitigation measures could include implementing signal timing adjustments to mitigate the traffic impact at these intersections to alleviate congestion and improve traffic flow.

The crash analysis also indicates that the intersections along Alternative 6 routes have a higher number of crashes than other alternatives. One fatality crash occurred at intersection 11 (SW Sunset Boulevard and Rainier Avenue S). Improvements, such as added signage, pavement markings, and dedicated turn lanes, could be applied as a countermeasure to reduce crash potential and frequency at intersections that experience crashes and fatalities.

Mitigation measures for pavement conditions in the city of Tukwila are detailed in the FEIS (City 2025). For intersections 11 and 12 in Renton, the City of Renton has proposed various pavement treatment types in the Renton 10-Year Pavement Preservation Plan, which includes (City of Renton 2023):

- **Spot repairs,** such as crack sealing, completed by the City's maintenance crews twice per year.
- **Full pavement repairs** for when a specific area of a street is in poor condition.
- **Seal projects,** which includes placing a thin layer of protective material on the surface of the street. The seal provides additional surface that can be worn down instead of the original pavement.
- **Grind and overlay,** where asphalt is placed on the top of the existing road surface.

Other specific mitigation strategies related to the Proposed Project would have to be proposed by the City of Renton, if needed.

4.5.6 Significant unavoidable adverse impacts

No significant unavoidable adverse impacts are anticipated.

5 Cumulative Impacts

This section analyzes potential impacts from past, present, and reasonably foreseeable future actions (RFFAs) combined with Alternative 6. A Preferred Alternative has not yet been selected for the Allentown Truck Re-route Project, and as a result, the level of engineering design for the alternatives reflects a conceptual stage. Thus, cumulative impacts to most resources are discussed qualitatively.

5.1 Methodology

The same past, present, and RFFAs that were identified for the FEIS as projects that could potentially interact or have a close causal relationship are the same for Alternative 6. Cumulative impacts for the NAA are identified in the FEIS.

5.2 Cumulative Impact Analysis

5.2.1 Waters

Under Alternative 6, there would not be significant impacts to water resources. Because there would be no construction or new disturbance of wetlands, groundwater, or surface water, cumulative impacts to water resources under Alternative 6 would be less than those under the other alternatives.

5.2.2 Air Quality and Greenhouse Gases

If a Preferred Alternative is selected, and the project design is formalized, additional studies will be required to determine quantitatively, not just qualitatively, the magnitude of impacts the Preferred Alternative would have on air quality resources.

Therefore, cumulative impacts to the air quality study area from the past, present, and RFFAs, cannot be fully assessed at this conceptual level of project design. Qualitative analysis indicates that there is a potential for adverse effects to air quality resources, however, until a full traffic study is completed the cumulative effects cannot be appropriately quantified.

5.2.3 Transportation

Under Alternative 6, there would be impacts to level of service, a higher incidence of crashes, and pavement condition during the operational phase. As the area continues to grow, cumulative impacts to the transportation study area from the past, present, and RFFAs, combined with Alternative 6, could be minor (LOS) and moderate (VMT, PCI), long-term and localized.

5.2.4 Noise

Under Alternative 6, there would be impacts from noise on neighboring residential and commercial areas. Cumulative impacts from the past, present, and RFFAs, combined with the actions proposed for Alternative 6, are anticipated to be moderate, long-term, and localized.

5.2.5 Cultural Resources

The study area for cultural resources is highly developed from past and present actions. The RFFAs within this study area have been determined to not have any significant environmental impacts to these resources. Because there would be no construction or new disturbance of land, there are no anticipated cumulative impacts to this study area from past, present, and RFFAs.

6 References

Allen, Zachary, Anna Robison-Mathes, Sarah Desimone, Lance Wollwage, and Jennifer Ferris.
2024 Cultural Resources Inventory Report BNSF Allentown Truck Re-Route Project. Prepared for the City of Tukwila, King County, Washington. On file, HDR Engineering, Inc., Bellevue, Washington.

Allen, Jason and Elizabeth O'Brien
2007 Historic Property Inventory Form for Property ID: 88798. July 10. On file, Washington Department of Archaeology and Historic Preservation, Olympia.

ANSI (American National Standards Institute)/ASA (Acoustical Society of America)
2013 Quantities and Procedures for Description and Measurement of Environmental Sound – Part 3: Short-term Measurements with an Observer Present. S12.9-2013/Part 3.

Boeing (The Boeing Company)
2025 Renton Production Facility. Boeing company website. Electronic document, https://www.boeing.com/company/about-bca/renton-production-facility#anchor1. Accessed August 2025.

Brinson, M.M.
1993 *A Hydrogeomorphic Classification of Wetlands*. Technical Report WRP-DE-4, prepared for the U.S. Army Engineer Waterways Experiment Station. Vicksburg, Mississippi.

City (City of Tukwila)
2024 City of Tukwila Comprehensive Plan Elements. December 16. Update (adopted but in draft form). Accessed on August 29, 2025. Available online at : http://records.tukwilawa.gov/weblink/1/edoc/417023/Reg%202024-12-16%20Item%206A%20-%20EXHIBIT%20A%20Comprehensive%20Plan%20Elements.pdf

2024a City of Tukwila iMap. Available online: https://www.arcgis.com/apps/webappviewer/index.html?id=7ca122cdae08429e974f57c148ad887e&query=KingCo_PropertyInfo_6931_2%2CPIN%2C3365900830. Accessed August 29, 2025.
2025 Final Environmental Impact Statement for the Allentown Truck Reroute Project. Prepared by HDR Engineering, Inc. June 9.

City of Renton
2023 Renton 10-Year Pavement Preservation Plan. https://storymaps.arcgis.com/stories/489b8813a90b4f20bfc124052c2c2712
2024 Renton Comprehensive Plan—Transportation Element (p. 29–31). https://edocs.rentonwa.gov/Documents/DocView.aspx?id=11481003&dbid=0&repo=CityofRenton

Cowardin, , L.M., V. Carter, F.C. Golet, and E.T. LaRoe
1979 *Classification of Wetlands and Deepwater Habitats of the United States*. Government Printing Office, Washington, D.C.

Crowley, Walt
1999 Seattle Renton & Southern Railway—King County's First True Interurban. HistoryLink.org Essay 1756. Electronic document, https://www.historylink.org/File/1756. Accessed August 2025.DNR (Washington State Department of Natural Resources)
2025 Forest Practices Application Mapping Tool. https://fpamt.dnr.wa.gov/default.aspx. Accessed August 2025.

Ecology (Washington State Department of Ecology)
2025 Washington State Department of Ecology. Greenhouse Gas Emissions Inventory: 1990–2021. By Greenhouse Gas Inventory Unit, For the Climate Pollution Reduction Program. Publication 24-14-077. January. Accessed on August 29, 2025, at: https://apps.ecology.wa.gov/publications/documents/2414077.pdf

EPA (U.S. Environmental Protection Agency)
2024 Evolution of the Clean Air Act. Updated November 12, 2024. Accessed on August 29, 2025, at: https://www.epa.gov/clean-air-act-overview/evolution-clean-air-act
2025a Green Book. Washington Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants. Updated July 31, 2025. Accessed August 29, 2025, at: https://www3.epa.gov/airquality/greenbook/anayo_wa.html
2025b Project-Level Conformity and Hot-Spot Analyses. Updated August 22, 2025. Accessed on August 29, 2025, at: https://www.epa.gov/state-and-local-transportation/project-level-conformity-and-hot-spot-analyses
2025c NAAQS Table. Updated on July 31, 2025. Accessed on August 29, 2025, at: https://www.epa.gov/criteria-air-pollutants/naaqs-table

FGDC (Federal Geographic Data Committee)
2013 *Classification of Wetlands and Deepwater Habitats of the United States.* Adapted from Cowardin, Carter, Golet, and LaRoe (1997). FGDC-STD-004-2013. Second Edition. Wetlands Subcommittee, Federal Geographic Data Committee and U.S. Fish and Wildlife Service, Washington, D.C. https://www.fgdc.gov/standards/projects/wetlands/nwcs-2013 Accessed May 2024.

FHWA (Federal Highway Administration)
2023 Updated Interim Guidance on Mobile Source Air Toxic (MSAT) Analysis in National Environmental Policy Act (NEPA) Documents. U.S. Department of Transportation; Office of Planning, Environment, and Realty (HEP). Updated on January 30, 2023. Accessed on August 29, 2025, at: https://www.fhwa.dot.gov/ENVIRONMENT/air_quality/air_toxics/policy_and_guidance/msat/

King County
2024 2016 King County Comprehensive Plan, Adopted December 10, 2024. Office of Performance, Strategy and Budget. December 10. Accessed on August 29, 2025, at:

https://cdn.kingcounty.gov/-/media/king-county/depts/council/comprehensive-plan/2024/202304403attachmenta12102024.pdf?rev=f6c83925c9924d9c9bb2e89038fd438f&hash=13E1835EE31291875C428D832F9A0C87

2025 King County iMap Interactive mapping tool. iMap (kingcounty.gov). Accessed August 2025.

Lindblom, Mike

2021 "Tukwila bridge closed indefinitely for inspection after damage from fallen cargo." *The Seattle Times*, December 15, 2021. https://www.seattletimes.com/seattle-news/transportation/fallen-cargo-blocks-damages-busy-tukwila-bridge/

Luttrell, Charles T.

2003 Historic Property Inventory Form for Property ID: 734040. May 21. On file, Washington Department of Archaeology and Historic Preservation, Olympia.

Meany, Edmond R.

1923 Origin of Washington Geographic Names. University of Washington Press, Seattle.

MPCA Minnesota Pollution Control Agency

2015 A Guide to Noise Control in Minnesota.

NETR (National Environmental Title Research) Online

2024 "Historic Aerials Viewer." Last updated 2024. https://www.netronline.com/. Accessed June 2024.

PSCAA (Puget Sound Clean Air Agency)

2024 Air Quality Data Summary for 2024. Accessed on August 29,2025, at: https://pscleanair.gov/615/Data-Summary

PSI (Puget Sound Institute)

2020 New Report Describes Anticipated Climate Change Effects in Washington State. Christopher Dunagan. February 6. Accessed August 29, 2025, at: https://www.pugetsoundinstitute.org/new-report-describes-anticipated-climate-change-effects-in-washington-state

Richards, K.

2005 The Stevens Treaties of 1854–1855: an Introduction. *Oregon Historical Quarterly* 106(3):342–351.

Seattle Times, The

1903a "Real Estate Review." February 1, p.36.

1903b "Bryn Mawr Land Co." Advertisement. June 17, p.4.

1907 Advertisement for furnished rooms at Bryn Mawr hotel. April 4, p.19.

1944 "500 New Homes in Skyway Park Open to Public." September 24, p.11.

Stein, Alan J. and Eleanor Boba

2024 Renton—Thumbnail History. HistoryLink.org Essay 688. Electronic document, https://www.historylink.org/File/688. Accessed August 2025.

WeatherSpark
2025 Climate and Average Weather Year-Round in Tukwila, Washington, United States. Accessed August 29, 2025, at: https://weatherspark.com/y/927/Average-Weather-in-Tukwila-Washington-United-States-Year-Round

Wilson, Gordie
1992 At the End of the Rainbow—Skyway: A Community of Color, Conflict and Cooperation. *The Seattle Times,* February 20. Electronic document, https://archive.seattletimes.com/archive/19920220/1476753/at-the-end-of-the-rainbow----skyway-a-community-of-color-conflict-and-cooperation. Accessed August 2025.

WSDOT (Washington State Department of Transportation).
2025 Air quality, energy, and greenhouse gas emissions. Accessed on August 29, 2025, at: https://wsdot.wa.gov/engineering-standards/environmental-guidance/air-quality-energy-greenhouse-gas-emissions

7 Appendices

Appendix A – Wetlands and Streams Technical Memorandum for Alternative 6

Final Wetlands and Streams Technical Memorandum for Alternative 6

City of Tukwila Allentown Truck Reroute Supplemental Environmental Impact Statement

City of Tukwila, Washington

December 2, 2025

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Contents

Tables

Figures

Abbreviations

BNSF	BNSF Railway
City	City of Tukwila
DEIS	Draft Environmental Impact Statement
DNR	(Washington State) Department of Natural Resources
DSEIS	Draft Supplemental Environmental Impact Statement
EIS	Environmental Impact Statement
FEIS	Final Environmental Impact Statement
FGDC	Federal Geographic Data Committee
GIS	geographic information system
HDR	HDR Engineering, Inc.
HGM	hydrogeomorphic
NAA	No-Action Alternative
NWI	National Wetlands Inventory
PAB	palustrine aquatic bed
PEM	palustrine emergent
PFO	palustrine forested
Proposed Project	Proposed Allentown Truck Reroute Project
PSS	palustrine scrub/shrub
SEIS	Supplemental Environmental Impact Statement
SEPA	State Environmental Policy Act
SWIFD	Statewide Washington Integrated Fish Distribution
USFWS	United States Fish and Wildlife Service
WDFW	Washington Department of Fish and Wildlife

1.0 Introduction

The BNSF Railway's (BNSF's) South Seattle Intermodal Facility (BNSF facility) in the Allentown neighborhood of Tukwila, Washington, is an important economic link to the Puget Sound region. It serves as an inland port, providing domestic intermodal transloading between truck and rail. Currently incoming freight trucks access the BNSF facility from the S 129th Street bridge to S 50th Place. Outgoing trucks can either use the S 129th Street bridge or take S 124th Street to the 42nd Avenue S bridge. After the planned replacement of the 42nd Avenue S bridge, truck traffic will also be able to access the BNSF facility by traveling north on the 42nd Avenue S bridge and reaching the facility via S 124th Street. To improve livability and safety in Allentown while supporting the operations of the facility, the City of Tukwila (City) evaluated potential alternative truck access routes to the BNSF facility through the Allentown Truck Reroute Project State Environmental Policy Act Final Environmental Impact Statement (FEIS) (City 2025a).

After the scoping period for the Draft Environmental Impact Statement (DEIS), and during the time the FEIS was being prepared, an additional alternative (Alternative 6) to the current BNSF facility truck route was determined. The resulting Draft Supplemental Environmental Impact Statement (DSEIS) analyzes two alternatives: the No-Action Alternative (NAA) as described in the FEIS (Figure 1) and Alternative 6 (the Rainier Avenue S alternative (Figure 2).

The City is the lead agency for the Environmental Impact Statement (EIS) and is overseeing the preparation of the DSEIS for the Proposed Allentown Truck Reroute Project (Proposed Project) under the State Environmental Policy Act (SEPA). One proposed truck route alternative (Alternative 6) and the long-term route that has been used for several decades (the NAA) will be analyzed in the Supplemental Environmental Impact Statement (SEIS) to determine their potential impacts on the built and natural environments. Alternative 6, which was developed through additional public comment, is intended to reduce the impacts of truck traffic in residential and recreational areas.

This Wetlands and Streams technical memorandum identifies existing wetlands and streams in the Proposed Project vicinity and documents the wetland and stream components along and near the NAA and one proposed route alternative for the Proposed Project.

1.1 Proposed Project Location

The Proposed Project would be located in the cities of Tukwila and Renton and in unincorporated King County, Washington. The Proposed Project is in the Duwamish/Green River watershed, Washington Water Resource Inventory Area 9 in Sections 3, 4, 9, 10, 11, 13, 14, 18, 19, 23, 24, and 26, Township 23N, Range 4E, Willamette Meridian.

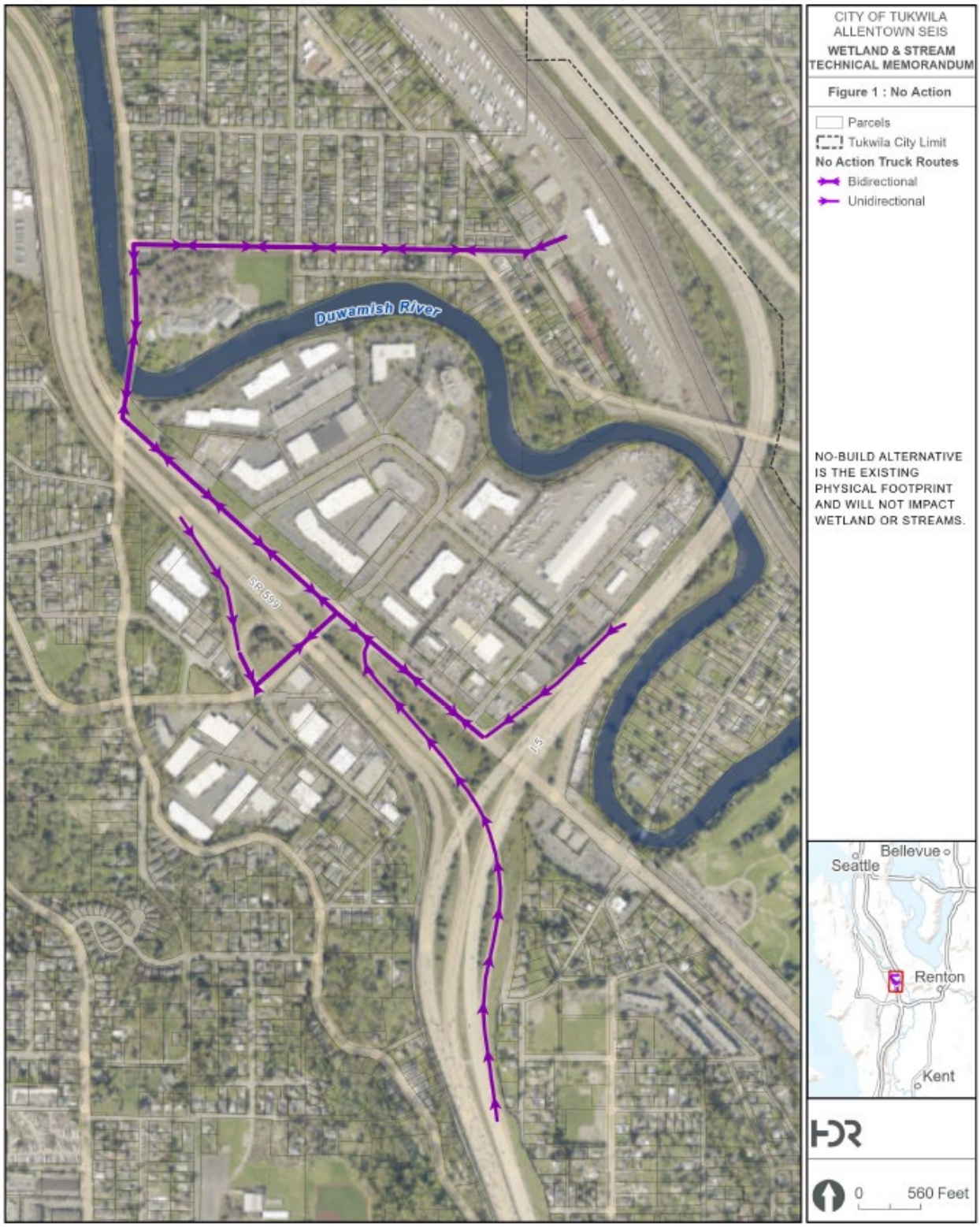

Figure 1. No-Action alternative Proposed Project location

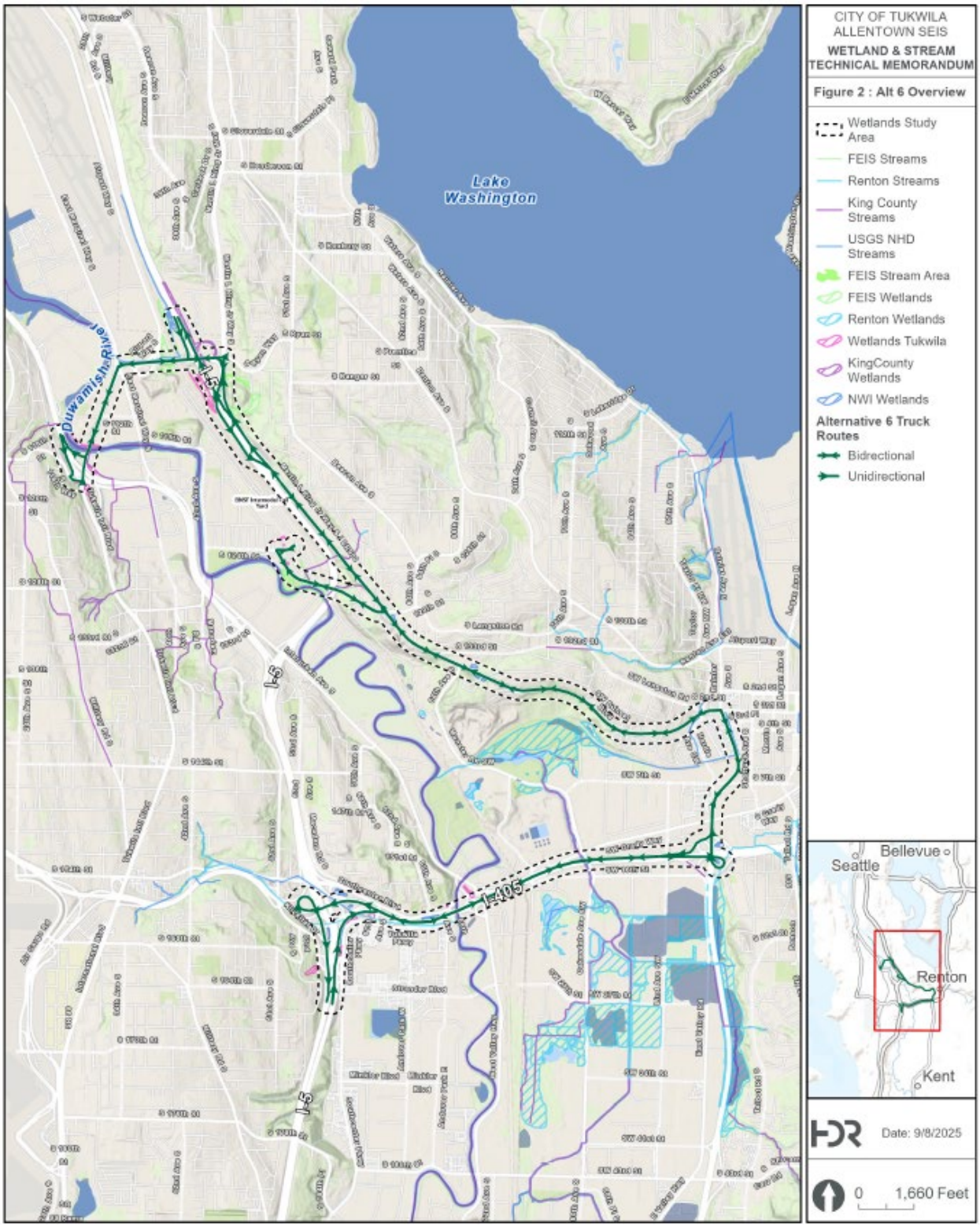

Figure 2. Alternative 6 Proposed Project location

1.2 Data Gathered

HDR Engineering, Inc. (HDR) conducted a literature and data review to identify and characterize potentially affected wetlands and streams in and near the Alternative 6 study area. Existing wetland and stream information was gathered from local, state, and federal agencies. This information included published reports, maps, websites, and aerial photographs. The data sources are listed in the following sections and in Section 4.0.

1.3 Study Area

The NAA study area is the existing physical footprint and did not include additional study areas. The wetlands and streams study area for Alternative 6 is described below, henceforth referred to as the "Alternative 6 study area."

1.3.1 Wetlands and Streams

The Alternative 6 study area for wetlands and streams encompasses the area within 300 feet of the edges of the Alternative 6 footprint, which is defined as the physical footprint of the truck access route that could result in permanent impacts on wetlands. This distance was selected to match the typical largest applicable potential buffer width for wetlands within the cities of Tukwila, Seattle, and Renton and unincorporated King County. Wetlands evaluated in this technical memorandum include wetlands that are wholly or partly within the Alternative 6 study area. Streams evaluated in this technical memorandum include streams that intersect the Alternative 6 study area.

2.0 Study Methods

This section describes the objectives and methods used to study wetlands and streams. HDR biologists reviewed the existing resources listed in Section 2.1. HDR identified and characterized wetlands and streams that intersect the Alternative 6 study area.

2.1 Review of Existing Information

HDR biologists reviewed the following databases to determine the presence of wetlands and streams in the Alternative 6 study area:

- Washington State Department of Natural Resources (DNR) Forest Practices Application Mapping Tool (DNR 2025)
- Statewide Washington Integrated Fish Distribution (SWIFD) (WDFW 2025a) data portal
- WDFW SalmonScape (WDFW 2025b)
- City of Seattle Department of Construction & Inspections geographic information system (GIS) (City of Seattle 2024)
- City of Tukwila iMap (City 2025b)
- King County iMap (King County 2025)

- City of Renton's "COR Maps" (City of Renton 2025)
- United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) website (USFWS 2024)

These databases provided information on the hydrology, wetlands, and streams in the Alternative 6 study area. No field reconnaissance was conducted as part of the SEIS.

The wetland and stream findings presented in Section 2.3 reflect existing available wetland and stream databases; the presence or absence of wetlands was not confirmed through field reconnaissance. Only wetlands and streams that are currently mapped in the above databases were included; no new wetlands or streams were identified or mapped for the purposes of this technical memorandum.

In some cases, multiple databases have mapped a wetland or stream in the same location, with slight variations to the geographical boundaries. In areas where this occurs, the wetland or stream geographical boundary was selected from the database that most closely matched aerial signatures, vegetation, or topography indicative of wetland or stream conditions. The database sources of the wetland polygons and stream lines are included in Figure 3 through Figure 13.

2.2 No-Action Alternative

No wetlands were identified for the NAA (see FEIS [City 2025a]).

2.3 Alternative 6

Wetlands within the Alternative 6 study area are described in Section 2.3.1. The stream identified within the Alternative 6 study area is described in Section 2.3.2. These findings are depicted in Figure 3 through Figure 13.

Alternative 6 is an additional alternative to the current BNSF facility truck route that was determined while the FEIS was being prepared. Alternative 6, which was developed through additional public comment, is intended to reduce the impacts of truck traffic in residential and recreational areas. Alternative 6 does not propose development of new roads or stormwater facilities.

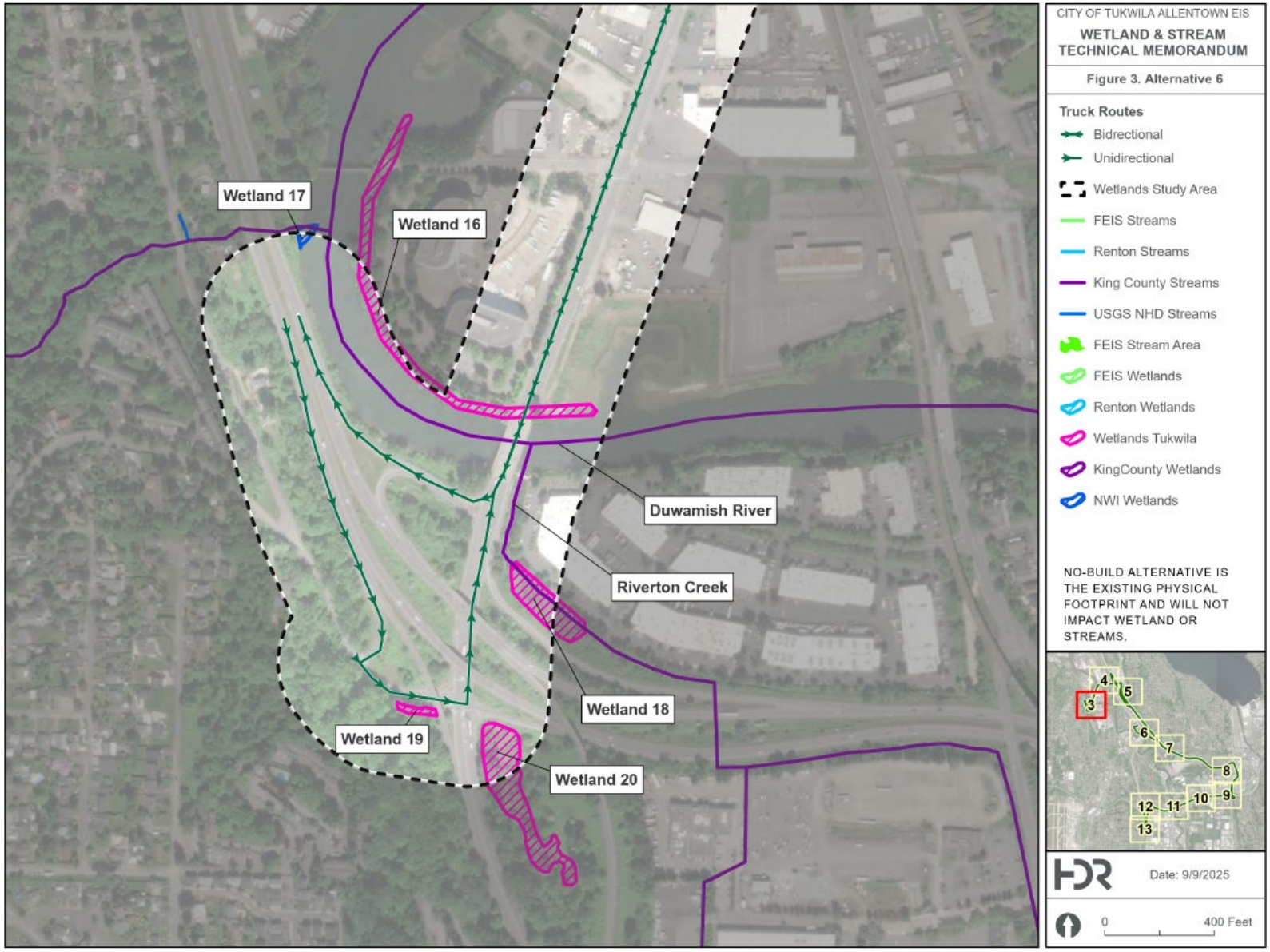

Figure 3. Alternative 6 wetlands and streams: map 1 of 11

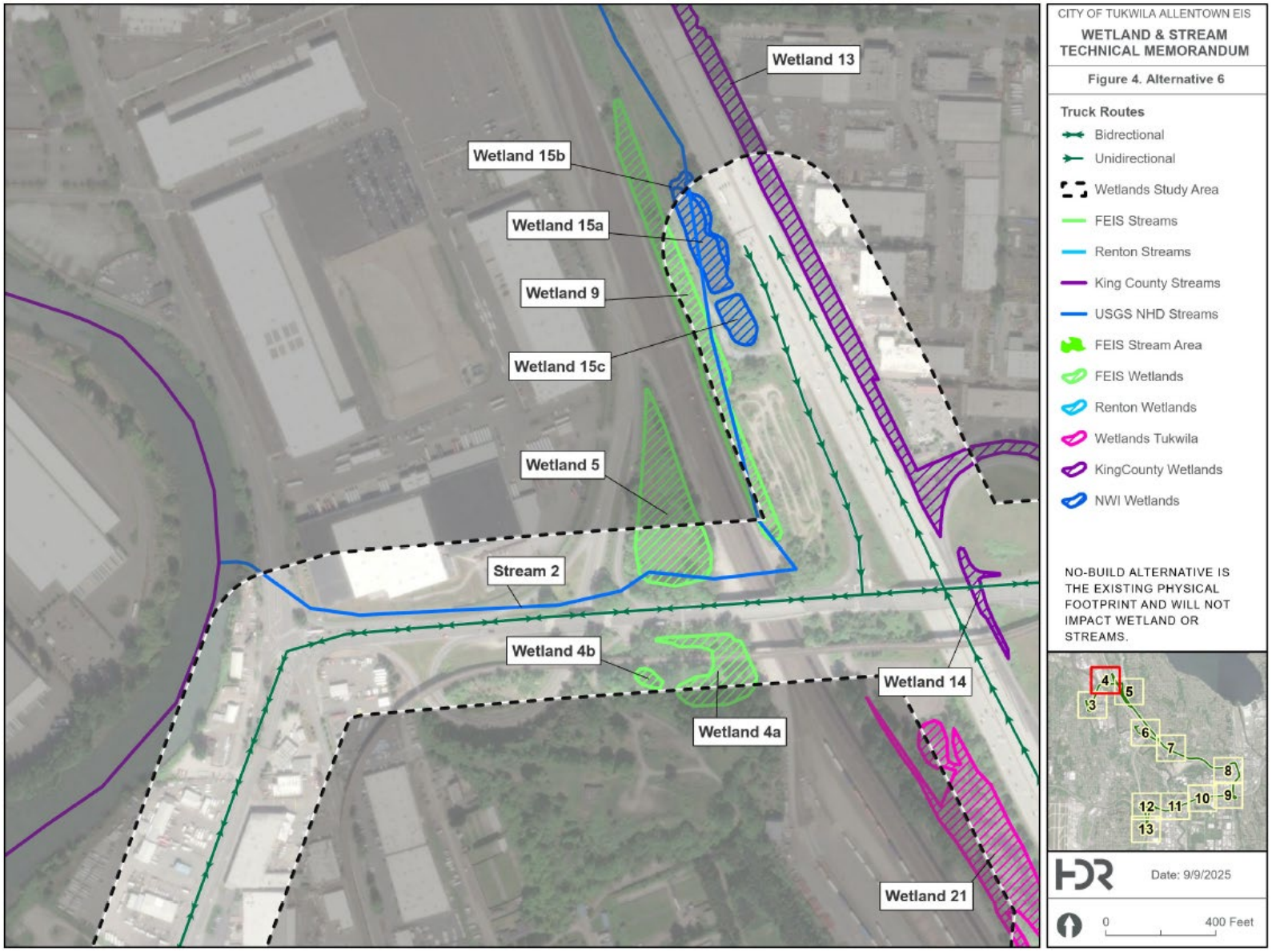

Figure 4. Alternative 6 wetlands and streams: map 2 of 11

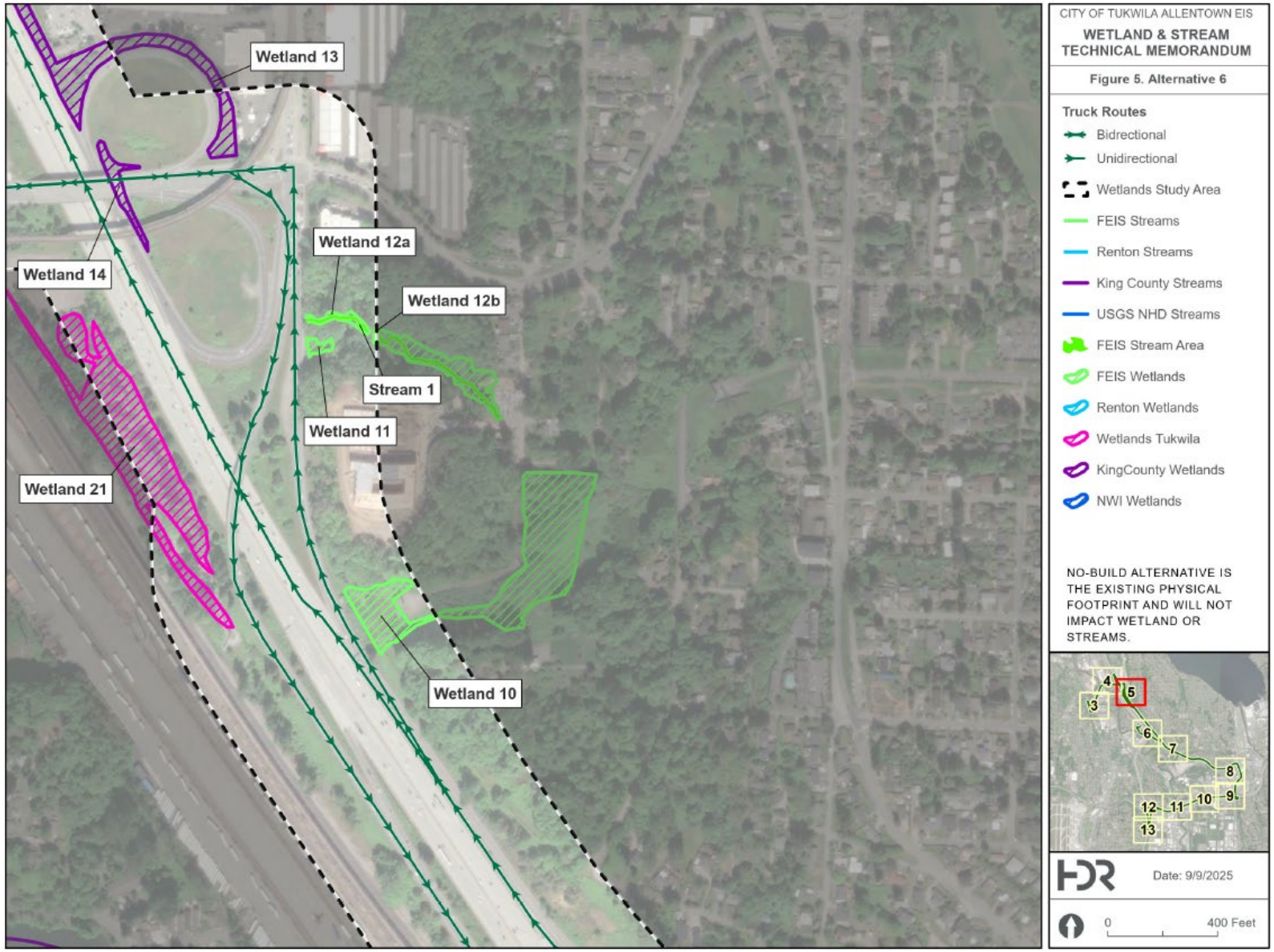

Figure 5. Alternative 6 wetlands and streams: map 3 of 11

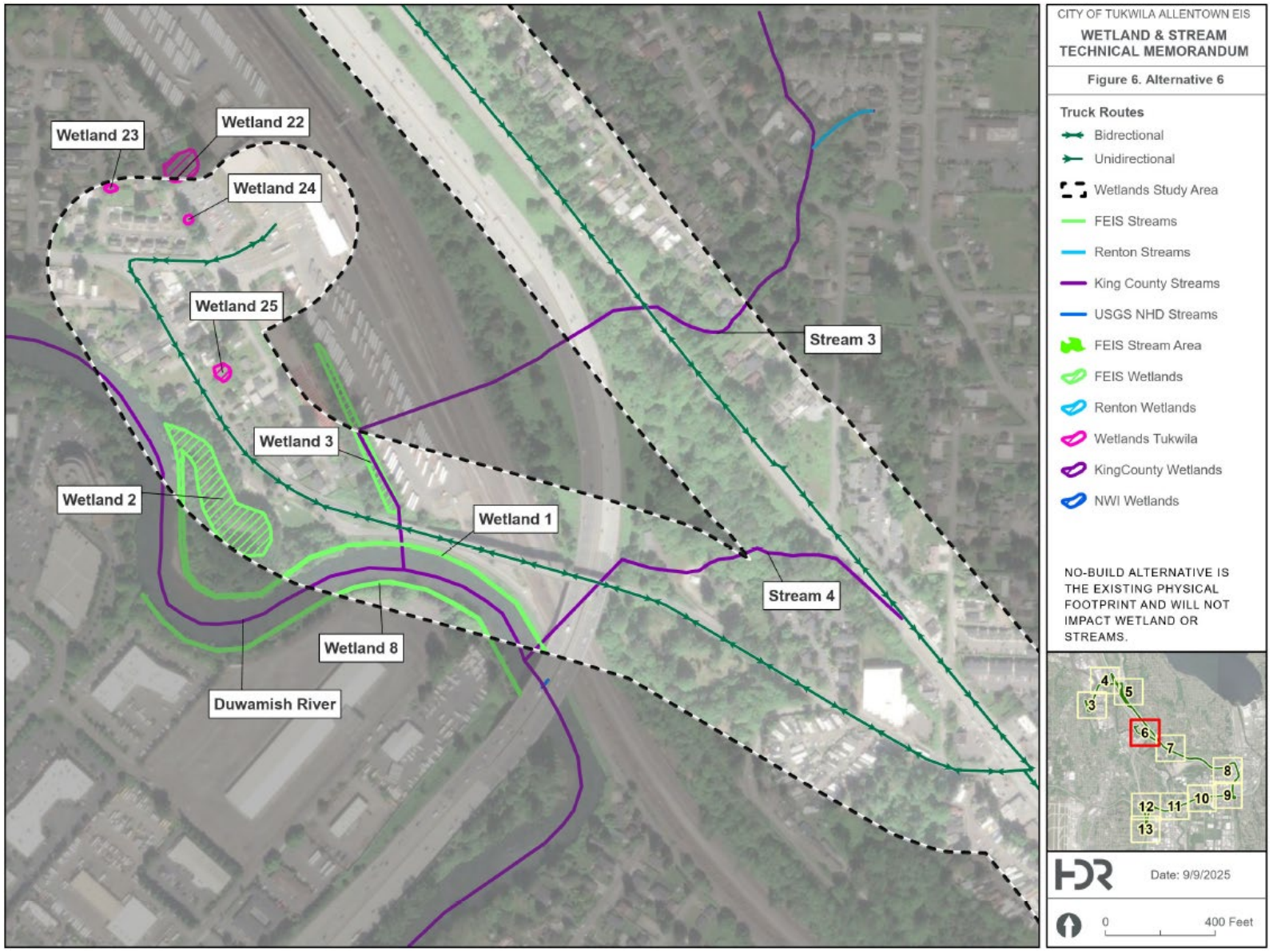

Figure 6. Alternative 6 wetlands and streams: map 4 of 11

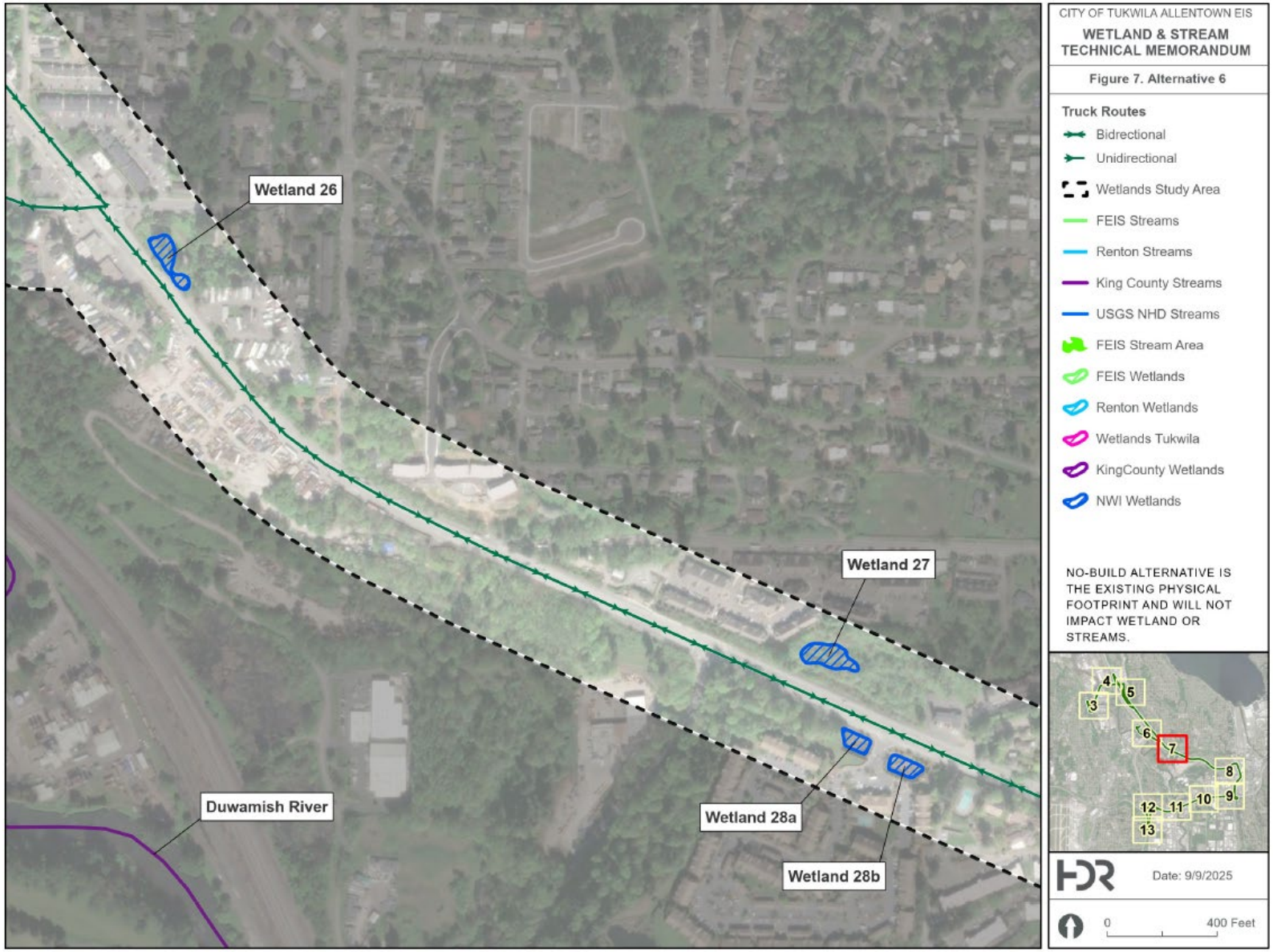

Figure 7. Alternative 6 wetlands and streams: map 5 of 11

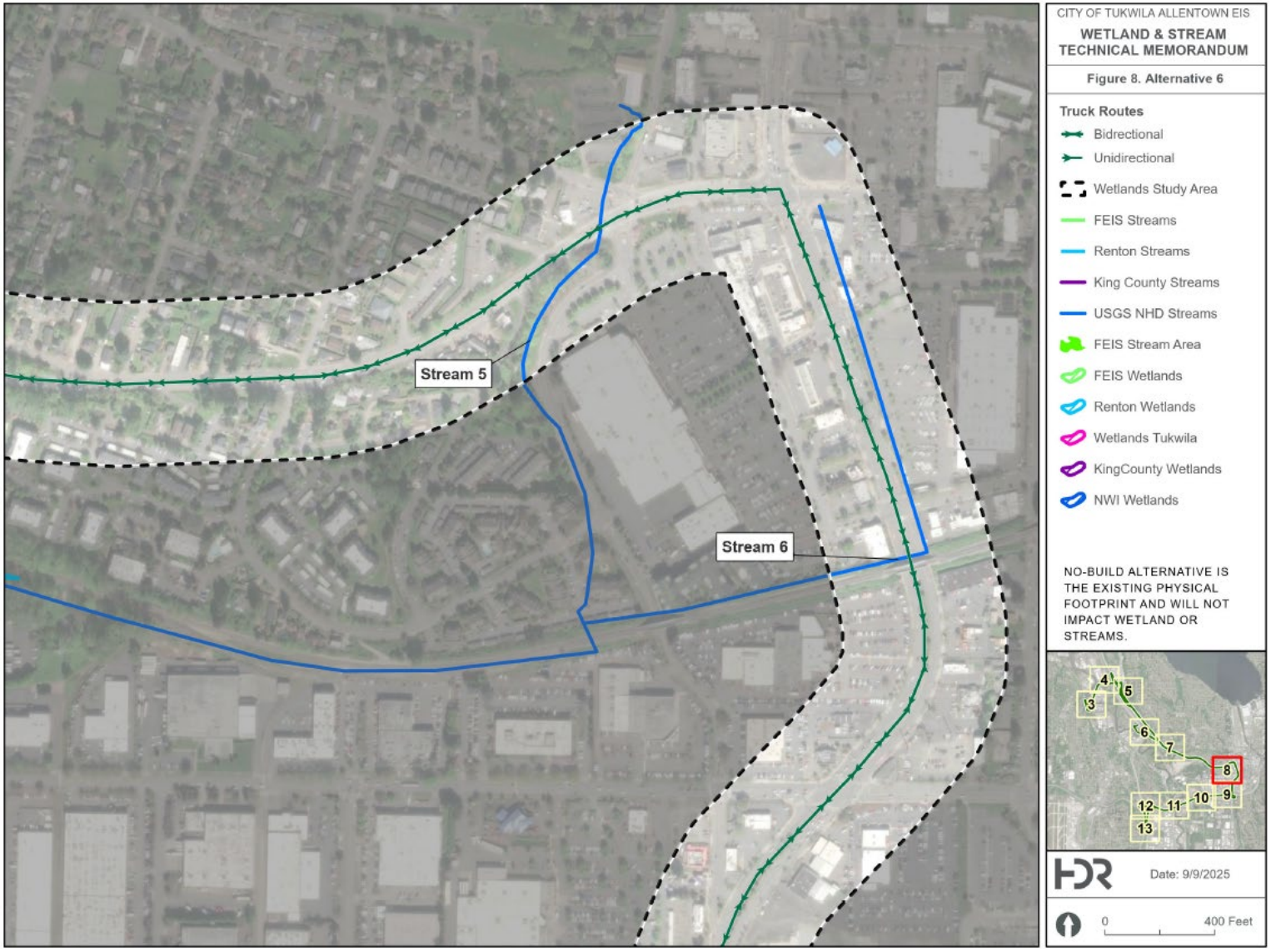

Figure 8. Alternative 6 wetlands and streams: map 6 of 11

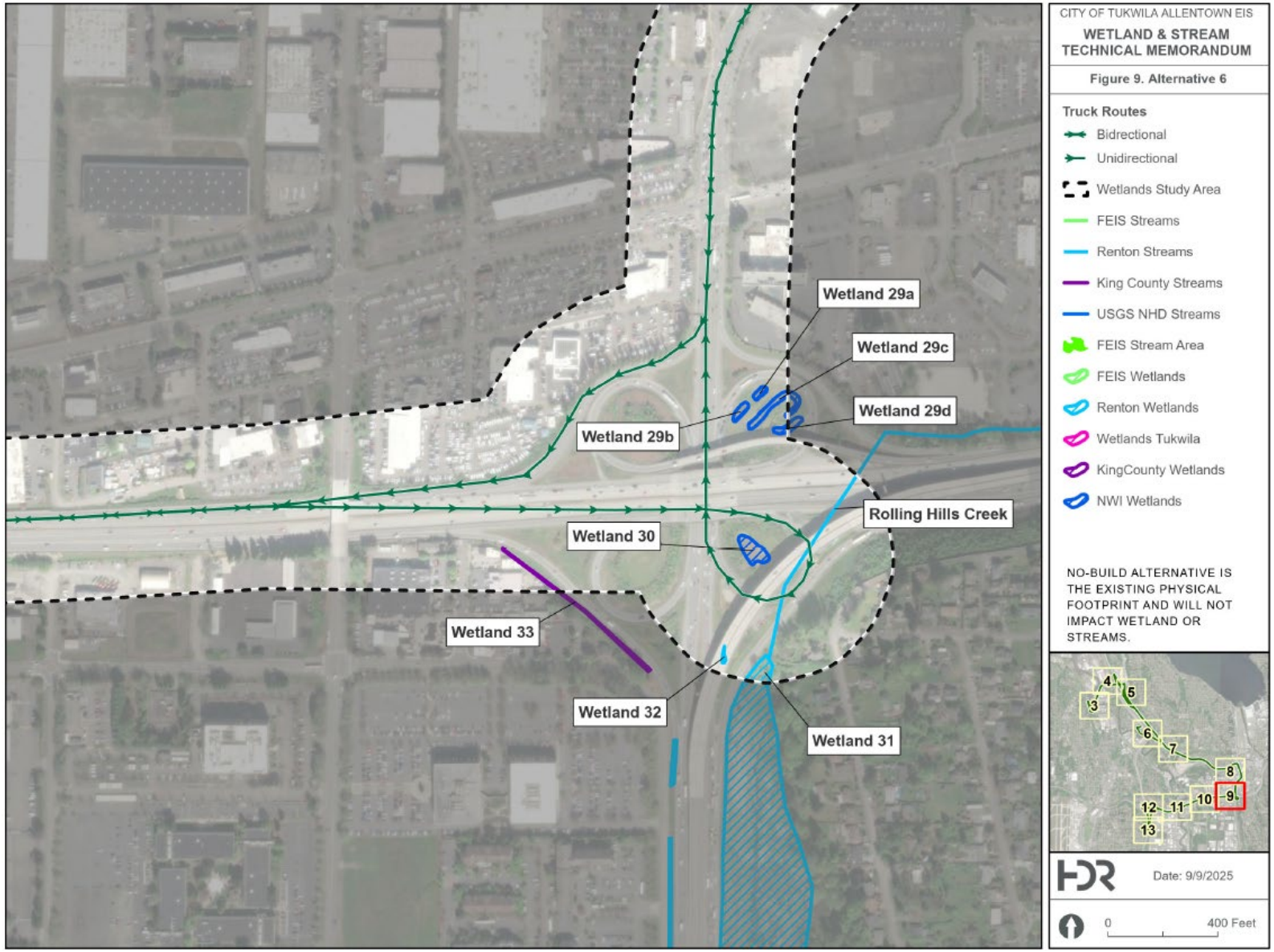

Figure 9. Alternative 6 wetlands and streams: map 7 of 11

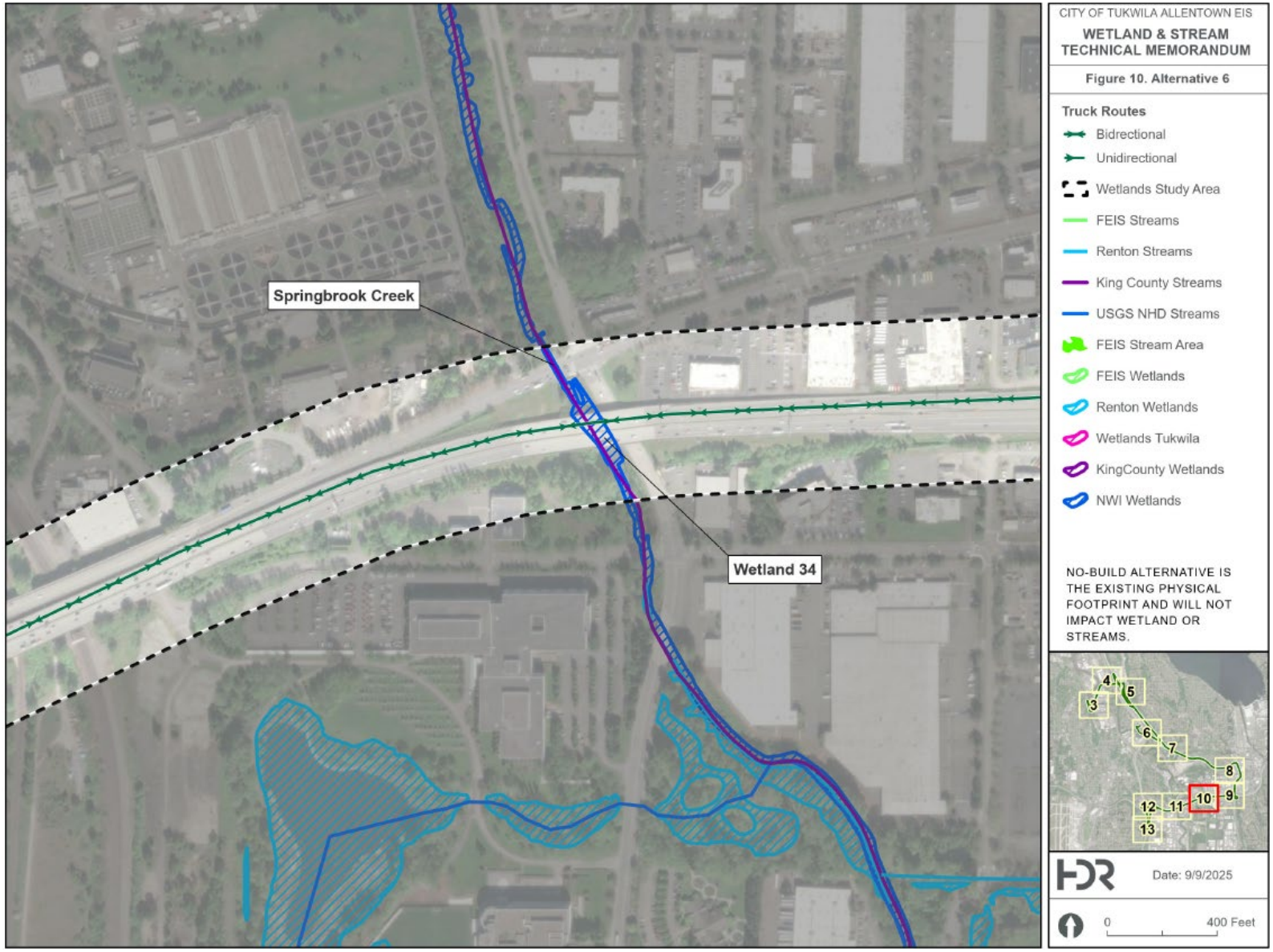

Figure 10. Alternative 6 wetlands and streams: map 8 of 11

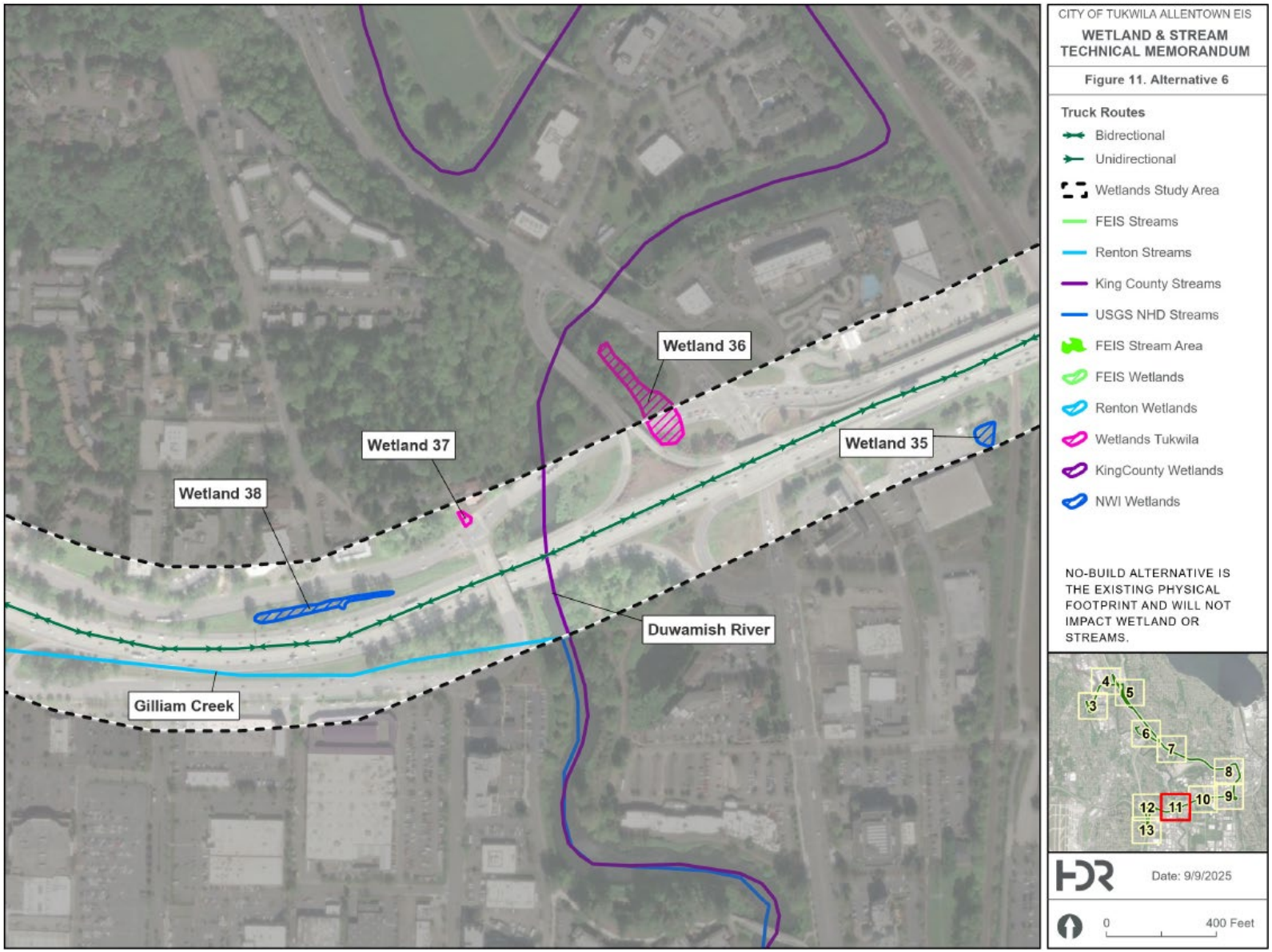

Figure 11. Alternative 6 wetlands and streams: map 9 of 11

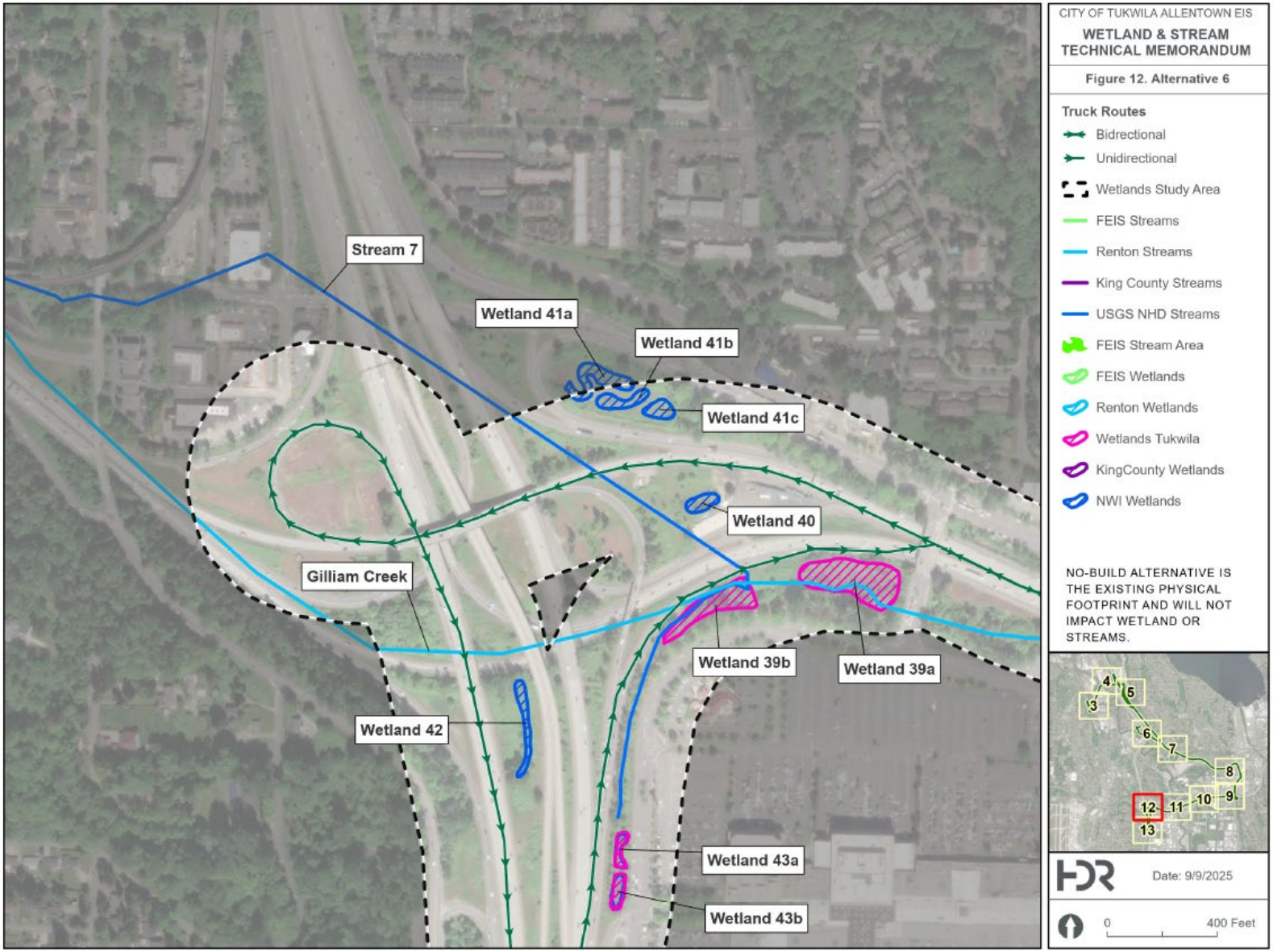

Figure 12. Alternative 6 wetlands and streams: map 10 of 11

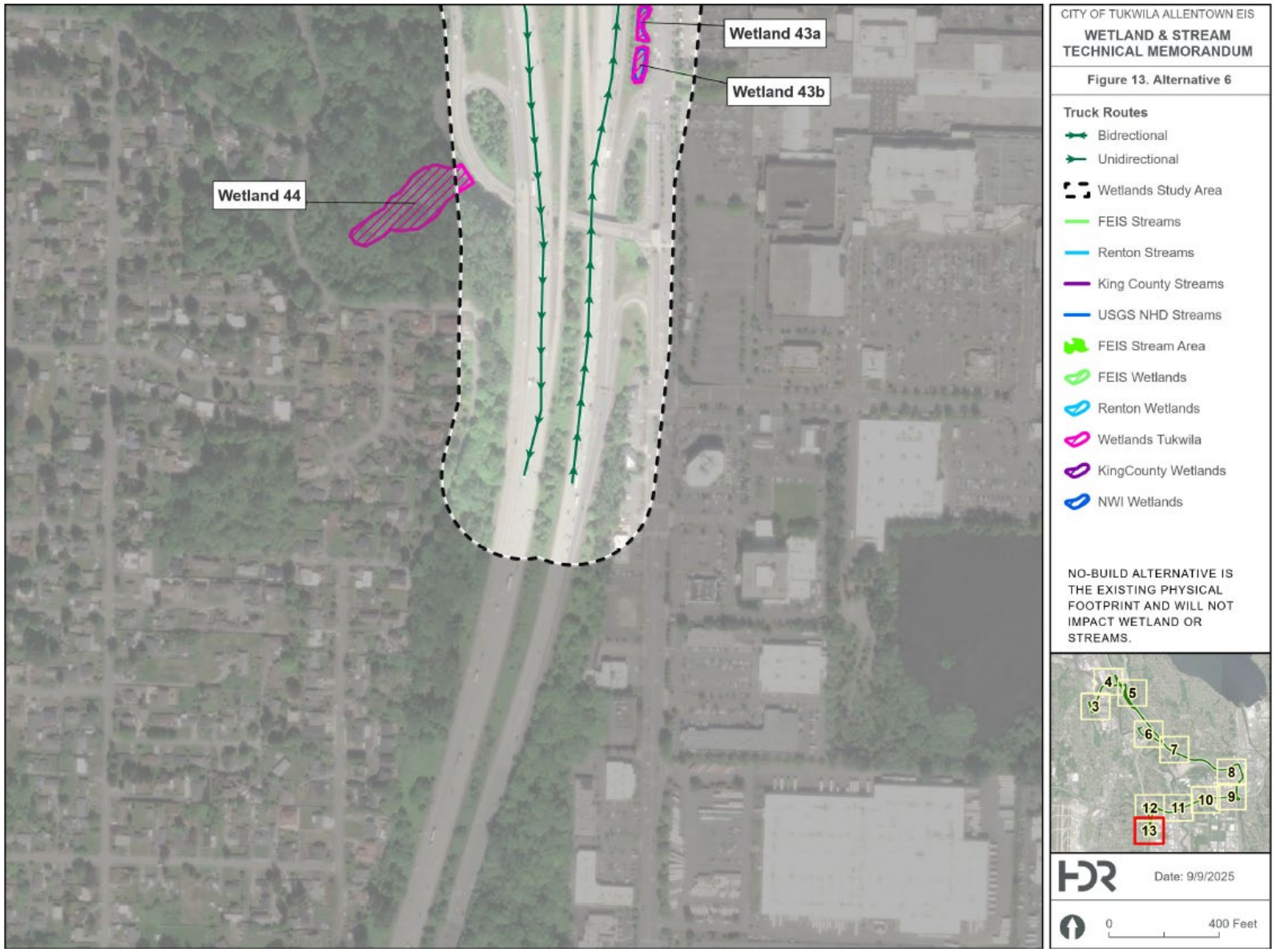

Figure 13. Alternative 6 wetlands and streams: map 11 of 11

2.3.1 Wetlands

Forty-two wetlands (Wetlands 13 through 44) were identified within the Alternative 6 study area, which was not previously reviewed in the FEIS. These wetlands are summarized below in Table 1 and are shown in Figure 3 through Figure 13.

Wetlands 1, 2, 3, 4a, 4b, 5, 8, 9, 10, 11, and 12b intersect the Alternative 6 study area but were previously described in the FEIS (City 2025a) and, therefore, are not included in Table 1 below. Please refer to the FEIS for a summary of these wetlands.

Wetlands in the Alternative 6 study area include riverine wetlands along the Duwamish River and other streams. Other depressional wetlands are interspersed throughout the Alternative 6 study area within developed areas or in fragmented habitats surrounded by development. The findings below represent the results of the desktop review of wetland databases.

Table 1. Summary of wetlands in the Alternative 6 study area

Wetland name	Total size (acres)	Hydrogeomorphic classification[a]	Cowardin classification[b]	Jurisdiction
13	4.36	Depressional	PEM, PFO	Seattle, Tukwila
14	0.29	Depressional	PEM	Tukwila
15a	0.74	Depressional	PSS	Seattle
15b	0.21	Depressional	PSS	Seattle
15c	0.40	Depressional	PEM, PSS	Seattle
16	1.43	Riverine	PEM, PSS, PFO	Tukwila
17	0.07	Riverine	PEM	Tukwila
18	0.73	Depressional	PEM	Tukwila
19	0.08	Depressional	PFO	Tukwila
20	1.33	Depressional	PEM, PFO	Tukwila
21	3.92	Depressional	PEM, PFO	Tukwila
22	0.23	Depressional	PEM	Tukwila
23	0.02	Depressional	PEM	Tukwila
24	0.02	Depressional	PSS	Tukwila
25	0.06	Depressional	PEM	Tukwila
26	0.24	Depressional	PSS	King County
27	0.31	Depressional	PSS	King County
28a	0.13	Depressional	PEM	King County
28b	0.14	Depressional	PEM	King County

Wetland name	Total size (acres)	Hydrogeomorphic classification[a]	Cowardin classification[b]	Jurisdiction
29a	0.03	Depressional	PEM	Renton
29b	0.04	Depressional	PEM	Renton
29c	0.13	Depressional	PEM	Renton
29d	0.06	Depressional	PEM	Renton
30	0.15	Depressional	PEM	Renton
31	6.44	Slope/Riverine	PEM, PSS	Renton
32	0.01	Depressional	PEM	Renton
33	0.11	Depressional	PEM, PSS	Renton
34	24.9	Riverine	PEM, PSS, PFO	Renton
35	0.11	Depressional	PEM	Renton
36	0.70	Depressional	PSS, PFO	Tukwila
37	0.03	Depressional	PEM	Tukwila
38	0.28	Depressional	PSS	Tukwila
39a	0.99	Slope	PSS	Tukwila
39b	0.55	Slope	PEM, PSS	Tukwila
40	0.13	Depressional	PEM	Tukwila
41a	0.32	Depressional	PEM	Tukwila
41b	0.17	Depressional	PEM	Tukwila
41c	0.13	Depressional	PEM	Tukwila
42	0.18	Depressional	PEM	Tukwila
43a	0.09	Depressional	PFO	Tukwila
43b	0.11	Depressional	PAB, PEM	Tukwila
44	1.27	Depressional	PFO	Tukwila

[a] Hydrogeomorphic (HGM) classifications are based on *A Hydrogeomorphic Classification of Wetlands* (Brinson 1993).

[b] *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979, FGDC 2013). PAB = palustrine aquatic bed, PEM = palustrine emergent, PSS = palustrine scrub/shrub, PFO = palustrine forested.

2.3.2 Streams

Eleven streams have been identified within the Alternative 6 study area, which were not previously reviewed in the FEIS. These streams are summarized below in Table 2 and are shown in Figure 3 through Figure 13. Stream 1 and the Duwamish River are located within the Alternative 6 study area, were previously described in the FEIS (City 2025a), and are not included in Table 2 below. Please refer to the FEIS for a summary of these streams.

Streams in the Alternative 6 study area include larger water bodies, such as the Duwamish and Green Rivers, medium-sized tributaries such as Springbrook and Riverton Creeks, and several smaller streams that flow either directly to the Duwamish or Green River, or to their tributaries. Some streams may be piped via culverts through the Alternative 6 study area.

The findings below represent the results of a desktop review of streams mapped within the Alternative 6 study area and available online information.

Table 2. Summary of streams in the Alternative 6 study area

Water body	Tributary to	Water type[a]	Jurisdiction within the study area
Stream 2	Duwamish River	Undetermined	Tukwila
Riverton Creek	Duwamish River	F	Tukwila
Stream 3	Duwamish River	F	Tukwila, King County
Stream 4	Duwamish River	Undetermined	Tukwila
Stream 5	Black River	Undetermined	Renton
Stream 6	Black River	F	Renton
Rolling Hills Creek	Black River	F	Renton
Springbrook Creek	Black River	S	Renton
Green River	Duwamish River	S	Tukwila
Gilliam Creek	Green River	F	Tukwila

[a] Stream typing based on available online resources (King County 2025 and DNR 2025). The stream typings presented in this table are preliminary findings based on a desktop review of existing information.

3.0 Conclusion

The presence or absence of wetlands within the Alternative 6 study area would need to be confirmed with a field investigation. Because Alternative 6 does not include any alteration to the existing roadways, no direct impact to wetlands is anticipated.

The presence or absence of streams within the Alternative 6 study area, and the stream typing, would need to be confirmed with a field investigation. Because Alternative 6 does not propose any development, these streams would not be directly impacted.

4.0 References

Brinson, M.M.

1993 *A Hydrogeomorphic Classification of Wetlands.* Technical Report WRP-DE-4, prepared for the U.S. Army Engineer Waterways Experiment Station. Vicksburg, Mississippi.

City (City of Tukwila)

2025a Allentown Truck Reroute Project. State Environmental Policy Act Final Environmental Impact Statement. Prepared by HDR Engineering, Inc. June 9.

2025b Tukwila iMap. Tukwila iMap (arcgis.com). Accessed August 2025.

City of Renton

2025 COR Maps. https://maps.rentonwa.gov/Html5viewer/Index.html?viewer=CORMaps. Accessed August 2025.

City of Seattle

2024 Seattle Department of Construction & Inspections GIS. Seattle Department of Construction & Inspections GIS (arcgis.com). Accessed August 2025.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe

1979 *Classification of Wetlands and Deepwater Habitats of the United States.* Government Printing Office, Washington, D.C.

DNR (Washington State Department of Natural Resources)

2025 Forest Practices Application Mapping Tool. https://fpamt.dnr.wa.gov/default.aspx Accessed August 2025.

FGDC (Federal Geographic Data Committee)

2013 *Classification of Wetlands and Deepwater Habitats of the United States.* Adapted from Cowardin, Carter, Golet, and LaRoe (1997). FGDC-STD-004-2013. Second Edition. Wetlands Subcommittee, Federal Geographic Data Committee and U.S. Fish and Wildlife Service, Washington, D.C. https://www.fgdc.gov/standards/projects/wetlands/nwcs-2013 Accessed May 2024.

King County

2025 King County iMap Interactive mapping tool. iMap (kingcounty.gov). Accessed August 2025.

USFWS (United States Fish and Wildlife Service)

2025 National Wetlands Inventory. Wetlands Online Mapper. http://www.fws.gov/wetlands/Data/Mapper.html Accessed August 2025.

WDFW (Washington Department of Fish and Wildlife)

2025a SWIFD Web Map. https://geo.nwifc.org/swifd/ Accessed August 2025.2025b SalmonScape. http://wdfw.wa.gov/mapping/salmonscape Accessed August 2025.

Appendix B – Allentown EIS Intersection Study—Alternative 6 Addendum

Memorandum

To: City of Tukwila

From: Bangyu Wang, PhD, PE and Mingwei Shen, PE; HDR

Date: August 22, 2025

Subject: Allentown EIS Intersection Study—Alternative 6 Addendum

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Introduction

This memorandum summarizes the traffic analysis conducted to evaluate an additional scenario, Alternative 6, to supplement the Allentown Final Environmental Impact Statement (FEIS) completed in March 2025. The analysis evaluated the following seven study intersections anticipated to be affected by the proposed access route to the BNSF Railway's South Seattle Intermodal Facility (BNSF facility) under Alternative 6:

- **Intersection 6:** Martin Luther King (MLK) Jr. Way S and S 129th Street
- **Intersection 7:** Tukwila International Boulevard and S 116th Way
- **Intersection 8:** S Boeing Access Road and E Marginal Way
- **Intersection 9:** S Boeing Access Road and MLK Jr. Way S
- **Intersection 10:** MLK Jr. Way S and 68th Avenue S
- **Intersection 11:** SW Sunset Boulevard and Rainier Avenue S
- **Intersection 12:** SW Grady Way and Rainier Avenue S

These intersections are depicted in Figure 1 below.

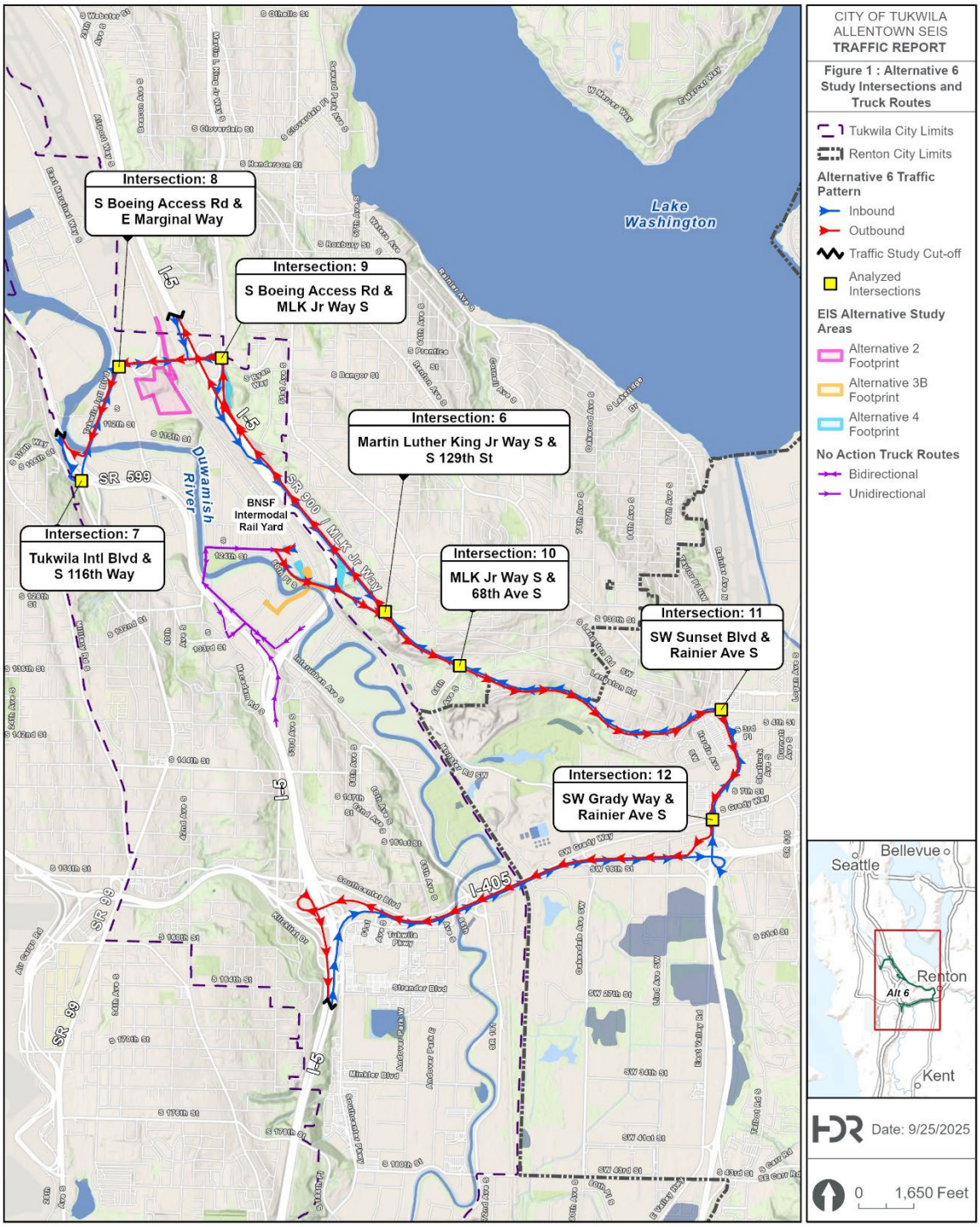


Figure 1. Alternative 6 study intersections and truck routes

Alternative 6

Alternative 6 would maintain the same entrance to the railyard as the existing configuration. Site truck traffic would use S 129th Street to reach MLK Jr. Way S (State Route [SR] 900) and then connect to other highways such as Interstate (I-) 5 and SR 99. Because of topographical constraints in the area, trucks traveling to and from the south are routed via SR 900, Rainier Avenue, and I-405. The study intersections and the inbound and outbound travel routes for this alternative are shown in Figure 1.

Data Collection and Assumptions

This supplemental analysis follows the same methodology used in the FEIS and includes afternoon peak hour intersection analysis with Synchro, truck traffic vehicle miles traveled (VMT) analysis, and crash analysis. Existing, future no-action, and future Alternative 6 scenarios were evaluated.

Recent afternoon peak hour traffic counts were obtained from the City of Tukwila (City) and the City of Renton. Traffic volumes were adjusted to align with the 2024 turning movement volumes analyzed for adjacent intersections in the FEIS. Future traffic conditions in 2045 were projected using an annual growth rate of 1 percent. Annual average daily traffic (AADT) and crash data were sourced from the same Washington State Department of Transportation (WSDOT) databases referenced in the FEIS. The site-generated truck traffic is assumed to be the same as that presented in the FEIS.

Synchro Analysis

This section provides results of the intersection performance analysis conducted by the Synchro models for the study intersections. The traffic volumes analyzed vary across the scenarios because of the differences in analysis years and travel patterns. Level-of-service (LOS) and delay results for each scenario are shown in Table 1 through Table 3. The detailed Synchro results report for each scenario is provided in Appendix A.

Table 1. 2024 existing scenario with bridge closure Synchro results summary

Study intersection LOS/delay (s/veh)	Southbound	Northbound	Eastbound	Westbound	Overall
6: MLK Jr. Way S and S 129th St.	F/87.0	B/13.3	A/9.4	B/10.2	D/51.5
7: Tukwila International Blvd. and S 116th Way	B/16.1	C/28.9	C/31.2	NA	C/21.1
8: S Boeing Access Rd. and E Marginal Way	C/33.9	E/57.0	D/48.9	D/40.1	D/40.2
9: S Boeing Access Rd. and MLK Jr. Way S	D/46.5	D/44.4	D/44.6	E/58.6	D/46.5
10: MLK Jr. Way S and 68th Ave. S	NA	E/70.0	C/21.4	B/15.6	C/27.5
11: SW Sunset Blvd. and Rainier Ave. S	D/38.6	D/49.8	D/49.6	NA	D/44.9
12: SW Grady Way and Rainier Ave. S	E/59.9	F/109.5	F/82.9	E/63.0	F/82.3

Table 2. 2045 no-action scenario Synchro results summary

Study intersection LOS/delay (s/veh)	Southbound	Northbound	Eastbound	Westbound	Overall
6: MLK Jr. Way S and S 129th St.	F/186.0	B/15.5	A/9.4	B/10.2	F/107.2
7: Tukwila International Blvd. and S 116th Way	C/24.5	D/47.8	D/40.5	NA	C/31.4
8: S Boeing Access Rd. and E Marginal Way	D/53.3	E/69.3	E/57.2	D/49.4	D/53.9
9: S Boeing Access Rd. and MLK Jr. Way S	E/56.6	D/46.0	D/51.1	E/77.9	D/54.7
10: MLK Jr. Way S and 68th Ave. S	NA	E/72.5	D/37.1	B/19.7	D/38.7
11: SW Sunset Blvd. and Rainier Ave. S	E/79.9	D/52.0	D/47.3	NA	E/62.9
12: SW Grady Way and Rainier Ave. S	F/112.4	F/191.2	F/82.9	E/64.4	F/126.9

Table 3. 2045 BNSF build Alternative 6 Synchro results summary

Study intersection LOS/delay (s/veh)	Southbound	Northbound	Eastbound	Westbound	Overall
6: MLK Jr. Way S and S 129th St.	F/194.9	B/16.3	A/9.5	B/10.3	F/108.9
7: Tukwila International Blvd. and S 116th Way	C/24.8	D/48.5	D/40.6	NA	C/31.7
8: S Boeing Access Rd. and E Marginal Way	D/53.5	E/69.3	E/57.4	D/49.9	D/54.3
9: S Boeing Access Rd. and MLK Jr. Way S	E/56.8	D/46.1	D/51.3	E/78.1	D/54.9
10: MLK Jr. Way S and 68th Ave. S	NA	E/72.5	D/37.6	B/19.7	D/38.9
11: SW Sunset Blvd. and Rainier Ave. S	F/83.9	D/51.9	D/47.4	NA	E/64.5
12: SW Grady Way and Rainier Ave. S	F/115.2	F/190.9	F/82.9	E/64.4	F/127.7

Truck Traffic Analysis

This section provides analysis of truck percentage changes and truck VMT changes for each travel route alternative to assess the impact of site-generated truck traffic. A truck AADT of 900 vehicles is assumed to be generated by the site. Table 4 provides detailed truck AADT and percentage calculations for segments on the detour routes for Alternative 6.

Table 4. New truck percentage for Alternative 6

Segment difference	Existing AADT	Existing truck percentage	Existing truck AADT	New AADT	New truck AADT	New truck percentage
Tukwila International Blvd. S	21,000	4.0%	840	21,225	1,065	5.02%
Boeing Access Rd.	33,000	4.0%	1,320	33,225	1,545	4.65%
MLK Jr. Way S	26,000	3.5%	910	26,900	1,810	6.73%
Rainier Ave. S	380,00	4.5%	1,710	38,900	2,610	6.71%
I-405	167,000	8.0%	13,360	167,450	13,810	8.25%

The truck VMT is calculated by multiplying site truck AADT, segment length for each alternative, and 365 days in a year. Because Alternative 6 includes a longer truck travel route via I-405, the truck traffic study boundary was extended 1.59 miles south on I-5. To maintain consistency across all alternatives, the truck VMT calculations for all other alternatives previously analyzed in the FEIS have been updated to account for the additional travel distance on I-5. Table 5 shows

the annual truck VMT for each alternative. Alternative 6 results in higher truck VMT than the No-Action Alternative, Alternative 2, and Alternative 3B, but lower compared than Alternative 4.

Table 5. Annual truck VMT for alternatives

Alternative scenario	Length (miles)	Site truck AADT (veh/day)	VMT (annual)	Percent change from No-Action Alternative
Truck VMT for no-action travel route	17.4	900	5,716,000	0%, (no change)
Truck VMT for travel route Alternative 2	17.0	900	5,585,000	2.29% decrease
Truck VMT for travel route Alternative 3B	12.7	900	4,172,000	27% decrease
Truck VMT for travel route Alternative 4	28.0	900	9,198,000	60% increase
Truck VMT for travel route Alternative 6	19.7	900	6,472,000	13% increase

Crash Analysis

Crash data for the study intersections were obtained for a 5-year period, from January 1, 2019, to December 31, 2023, through the WSDOT Public Disclosure Request Center[1]. The data show a total of 363 crashes. Among the study intersections, SW Grady Way and Rainier Avenue S (intersection 12) had the highest number of recorded crashes. There was one recorded fatality during the study period at SW Sunset Boulevard and Rainier Avenue S (intersection 11), and 2 out of the 363 crashes involved serious injuries. Additionally, 124 out of 363 crashes (34 percent) resulted in minor or possible injuries. Table 6 summarizes the crash data by year, and Table 7 summarizes the crash data by severity.

Table 6. Crash data summary by year

Intersection	2019	2020	2021	2022	2023	Total
6: MLK Jr. Way S and S 129th St.	13	15	13	12	9	62
7: Tukwila International Blvd. and S 116th Way	4	7	5	3	5	24
8: S Boeing Access Rd. and E Marginal Way	12	5	10	20	13	60
9: S Boeing Access Rd. and MLK Jr. Way S	14	8	13	11	16	62
10: MLK Jr. Way S and 68th Ave. S	9	8	4	2	2	25
11: SW Sunset Blvd. and Rainier Ave. S	13	9	12	7	12	53
12: SW Grady Way and Rainier Ave. S	17	11	14	14	21	77

[1] https://wsdot.mycusthelp.com/WEBAPP/_rs/(S(sps3y5vjac3yrqoja0tnn0hu))/supporthome.aspx

Table 7. Crash data summary by severity

Intersection	Fatal	Serious injury	Minor injury	Possible injury	No injury	Total
6: MLK Jr. Way S and S 129th St.	0	0	7	17	38	62
7: Tukwila International Blvd. and S 116th Way	0	0	3	6	15	24
8: S Boeing Access Rd. and E Marginal Way	0	0	4	5	51	60
9: S Boeing Access Rd. and MLK Jr. Way S	0	0	11	19	32	62
10: MLK Jr. Way S and 68th Ave. S	0	0	0	10	15	25
11: SW Sunset Blvd. and Rainier Ave. S	1	1	5	13	33	53
12: SW Grady Way and Rainier Ave. S	0	1	8	16	52	77

Crash rates are defined as the frequency of crashes reported by law enforcement agencies, specifically through police reports. Reportable crashes must meet criteria of (1) having property damage of at least $1,000 or injury of an individual, (2) being on a public roadway, (3) involving at least one motorized vehicle, and (4) not involving an intentional act or legal intervention or being medically caused. The overall calculated crash rate for all study intersections ranges between 0.5 and 1.0, which is lower than the Washington State average of 1.0 to 1.5. This indicates that the crash rates for most study intersections range from lower than to equal to Washington State averages.

Findings and Recommendations

Existing traffic conditions are generally acceptable at study intersections, with most intersections operating at LOS D or better. However, intersection 12 at SW Grady Way and Rainier Avenue S, located near the I-405 interchange, experiences significant delays on all approaches and operates at LOS F. Future traffic projections for 2045 indicate that, without improvements, several intersections will experience significant congestion in the no-action scenario. Intersection 12, at SW Grady Way and Rainier Avenue S, is expected to continue facing substantial delay, resulting in LOS F conditions. Intersection 6, at MLK Jr. Way S and S 129th Street, is expected to operate at LOS F, and intersection 11, at SW Sunset Boulevard and Rainier Avenue S, is expected to operate at LOS E. Because the site truck traffic is minimal during the afternoon peak hour, the traffic performance at study intersections under the Alternative 6 scenario are similar to the no-action scenario, indicating minimal impact caused by the truck route shift. In the long term, signal timing adjustments could be implemented to mitigate the traffic impact at several key intersections to alleviate congestion and improve traffic flow.

The truck traffic analysis shows that Alternative 6 would generate higher truck VMT than the no-action scenario and most of the other alternatives previously evaluated.

The crash analysis indicates that the intersections along the Alternative 6 routes have a higher number of crashes than other alternatives. One fatality crash occurred at SW Sunset Boulevard

and Rainier Avenue S (intersection 11). Improvements, such as added signage, pavement markings, and dedicated turn lanes, could be applied as a countermeasure to reduce crash potential and frequency at intersections that experience crashes and fatalities.

Appendix A: Synchro Model Reports

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (veh/h)	39	69	138	160	134	103	116	1517	20	92	748	71
Future Volume (veh/h)	39	69	138	160	134	103	116	1517	20	92	748	71
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	42	75	150	174	146	112	126	1649	0	100	813	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	572	223	445	537	748	634	329	1421		180	1421	
Arrive On Green	0.40	0.40	0.43	0.40	0.40	0.40	0.40	0.40	0.00	0.40	0.40	0.00
Sat Flow, veh/h	1121	557	1113	1156	1870	1585	671	3647	0	303	3647	0
Grp Volume(v), veh/h	42	0	225	174	146	112	126	1649	0	100	813	0
Grp Sat Flow(s),veh/h/ln	1121	0	1670	1156	1870	1585	671	1777	0	303	1777	0
Q Serve(g_s), s	1.0	0.0	3.7	4.9	2.0	1.8	7.2	16.0	0.0	0.0	7.1	0.0
Cycle Q Clear(g_c), s	3.0	0.0	3.7	8.6	2.0	1.8	14.3	16.0	0.0	16.0	7.1	0.0
Prop In Lane	1.00		0.67	1.00		1.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	572	0	668	537	748	634	329	1421		180	1421	
V/C Ratio(X)	0.07	0.00	0.34	0.32	0.20	0.18	0.38	1.16		0.56	0.57	
Avail Cap(c_a), veh/h	572	0	668	537	748	634	329	1421		180	1421	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	8.8	0.0	8.1	11.3	7.8	7.7	14.9	12.0	0.0	20.0	9.3	0.0
Incr Delay (d2), s/veh	0.2	0.0	1.4	1.6	0.6	0.6	3.4	80.3	0.0	11.8	1.7	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	1.2	1.2	0.7	0.6	1.2	20.3	0.0	1.4	2.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	9.0	0.0	9.4	12.9	8.4	8.4	18.3	92.3	0.0	31.8	11.0	0.0
LnGrp LOS	A		A	B	A	A	B	F		C	B	
Approach Vol, veh/h		267			432			1775			913	
Approach Delay, s/veh		9.4			10.2			87.0			13.3	
Approach LOS		A			B			F			B	

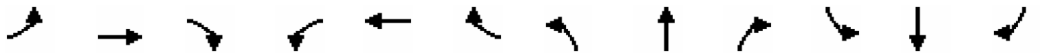
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		20.0		20.0		20.0		20.0				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		16.0		16.0		16.0		16.0				
Max Q Clear Time (g_c+I1), s		18.0		5.7		18.0		10.6				
Green Ext Time (p_c), s		0.0		1.1		0.0		0.9				

Intersection Summary												
HCM 6th Ctrl Delay, s/veh			51.2									
HCM 6th LOS			D									

Notes

User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [NWR, SER] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	279	104	22	0	0	0	29	334	64	681	765	549
Future Volume (veh/h)	279	104	22	0	0	0	29	334	64	681	765	549
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	208	246	24				32	363	0	740	832	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2				2	2	2	2	2	2
Cap, veh/h	337	354	300				80	729		816	2198	
Arrive On Green	0.19	0.19	0.19				0.04	0.21	0.00	0.46	0.62	0.00
Sat Flow, veh/h	1781	1870	1585				1781	3647	0	1781	3554	1585
Grp Volume(v), veh/h	208	246	24				32	363	0	740	832	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585				1781	1777	0	1781	1777	1585
Q Serve(g_s), s	8.4	9.6	1.0				1.4	7.1	0.0	30.0	9.1	0.0
Cycle Q Clear(g_c), s	8.4	9.6	1.0				1.4	7.1	0.0	30.0	9.1	0.0
Prop In Lane	1.00		1.00				1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	337	354	300				80	729		816	2198	
V/C Ratio(X)	0.62	0.69	0.08				0.40	0.50		0.91	0.38	
Avail Cap(c_a), veh/h	788	827	701				240	797		1290	2893	
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	29.0	29.5	26.0				36.2	27.4	0.0	19.6	7.4	0.0
Incr Delay (d2), s/veh	1.8	2.5	0.1				3.2	0.5	0.0	6.2	0.1	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	4.5	0.0				0.6	2.8	0.0	12.3	2.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	30.9	32.0	26.1				39.4	28.0	0.0	25.8	7.5	0.0
LnGrp LOS	C	C	C				D	C		C	A	
Approach Vol, veh/h		478						395			1572	
Approach Delay, s/veh		31.2						28.9			16.1	
Approach LOS		C						C			B	

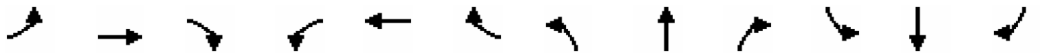
Timer - Assigned Phs	1	2		4	5	6
Phs Duration (G+Y+Rc), s	39.2	20.5		18.3	7.0	52.7
Change Period (Y+Rc), s	4.5	5.5		4.5	4.5	5.5
Max Green Setting (Gmax), s	55.5	16.5		33.5	9.5	62.5
Max Q Clear Time (g_c+I1), s	32.0	9.1		11.6	3.4	11.1
Green Ext Time (p_c), s	2.7	1.2		2.2	0.0	6.9

Intersection Summary			
HCM 6th Ctrl Delay, s/veh			21.1
HCM 6th LOS			C

Notes

User approved volume balancing among the lanes for turning movement.

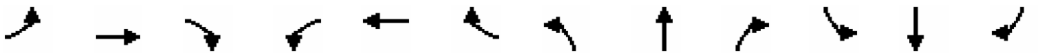
Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	121	483	16	376	789	180	0	67	264	566	353	769
Future Volume (vph)	121	483	16	376	789	180	0	67	264	566	353	769
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00		0.95	1.00	0.97	1.00	0.88
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3523		1770	3539	1583		3539	1583	3433	1863	2787
Flt Permitted	0.95	1.00		0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3523		1770	3539	1583		3539	1583	3433	1863	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	132	525	17	409	858	196	0	73	287	615	384	836
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	213	0	0	21
Lane Group Flow (vph)	132	540	0	409	858	196	0	73	74	615	384	815
Confl. Peds. (#/hr)				3			2		4	4		2
Confl. Bikes (#/hr)									1			
Turn Type	Split	NA		Split	NA	Free		NA	Prot	Split	NA	custom
Protected Phases	2	2		3	3			1	1	4	4	1 4 2
Permitted Phases		2				Free						
Actuated Green, G (s)	30.0	30.0		41.8	41.8	136.5		14.7	14.7	34.0	34.0	86.7
Effective Green, g (s)	31.0	31.0		42.8	42.8	136.5		15.7	15.7	35.0	35.0	87.7
Actuated g/C Ratio	0.23	0.23		0.31	0.31	1.00		0.12	0.12	0.26	0.26	0.64
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	779	800		554	1109	1583		407	182	880	477	1790
v/s Ratio Prot	0.04	c0.15		0.23	c0.24			0.02	0.05	0.18	c0.21	c0.29
v/s Ratio Perm						0.12						
v/c Ratio	0.17	0.68		0.74	0.77	0.12		0.18	0.41	0.70	0.81	0.46
Uniform Delay, d1	42.4	48.2		41.8	42.5	0.0		54.6	56.1	46.0	47.6	12.3
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	2.3		5.1	3.4	0.2		0.2	1.5	2.4	9.6	0.2
Delay (s)	42.5	50.4		47.0	45.9	0.2		54.8	57.5	48.4	57.1	12.5
Level of Service	D	D		D	D	A		D	E	D	E	B
Approach Delay (s/veh)		48.9			40.1			57.0			33.9	
Approach LOS		D			D			E			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	40.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	136.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



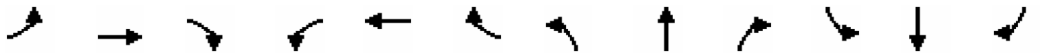
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	350	734	639	222	225	26	123	717	239	76	850	474
Future Volume (vph)	350	734	639	222	225	26	123	717	239	76	850	474
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.88	1.00	0.95		1.00	0.95		1.00	0.91	0.88
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.96		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	2748	1770	3485		1770	3392		1770	5085	2708
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	2748	1770	3485		1770	3392		1770	5085	2708
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	380	798	695	241	245	28	134	779	260	83	924	515
RTOR Reduction (vph)	0	0	437	0	6	0	0	22	0	0	0	299
Lane Group Flow (vph)	380	798	258	241	267	0	134	1017	0	83	924	216
Confl. Peds. (#/hr)	2		2				2		2	2		2
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	3	7		8	4		2	6		5	1	
Permitted Phases			7									1
Actuated Green, G (s)	35.1	39.8	39.8	21.9	26.6		19.6	48.7		7.2	36.3	36.3
Effective Green, g (s)	35.1	39.8	39.8	21.9	26.6		19.6	48.7		7.2	36.3	36.3
Actuated g/C Ratio	0.26	0.30	0.30	0.16	0.20		0.15	0.36		0.05	0.27	0.27
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	465	1054	818	290	693		259	1236		95	1381	735
v/s Ratio Prot	c0.21	c0.23		c0.14	0.08		0.08	c0.30		c0.05	0.18	
v/s Ratio Perm			0.09									0.08
v/c Ratio	0.82	0.76	0.32	0.83	0.38		0.52	0.82		0.87	0.67	0.29
Uniform Delay, d1	46.2	42.5	36.3	54.1	46.4		52.6	38.5		62.7	43.3	38.5
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	10.7	3.2	0.2	18.0	0.4		1.7	4.5		53.5	1.2	0.2
Delay (s)	56.9	45.7	36.6	72.0	46.8		54.4	43.1		116.2	44.5	38.7
Level of Service	E	D	D	E	D		D	D		F	D	D
Approach Delay (s/veh)		44.6			58.6			44.4			46.5	
Approach LOS		D			E			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	46.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	133.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1333	472	44	572	339	90
Future Volume (veh/h)	1333	472	44	572	339	90
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1449	513	48	622	368	98
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	2129	960	73	2358	396	106
Arrive On Green	0.60	0.60	0.04	0.66	0.29	0.29
Sat Flow, veh/h	3647	1585	1781	3647	1368	364
Grp Volume(v), veh/h	1449	513	48	622	467	0
Grp Sat Flow(s),veh/h/ln	1777	1585	1781	1777	1736	0
Q Serve(g_s), s	41.4	28.3	4.0	10.7	39.2	0.0
Cycle Q Clear(g_c), s	41.4	28.3	4.0	10.7	39.2	0.0
Prop In Lane		1.00	1.00		0.79	0.21
Lane Grp Cap(c), veh/h	2129	960	73	2358	503	0
V/C Ratio(X)	0.68	0.53	0.65	0.26	0.93	0.00
Avail Cap(c_a), veh/h	2129	960	101	2358	619	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	20.4	17.2	70.9	10.3	51.8	0.0
Incr Delay (d2), s/veh	1.8	2.1	9.4	0.3	18.2	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.4	11.1	2.0	4.3	19.6	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	22.1	19.4	80.3	10.6	70.0	0.0
LnGrp LOS	C	B	F	B	E	
Approach Vol, veh/h	1962			670	467	
Approach Delay, s/veh	21.4			15.6	70.0	
Approach LOS	C			B	E	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	9.7	93.4				103.0	47.0
Change Period (Y+Rc), s	4.5	4.5				4.5	4.5
Max Green Setting (Gmax), s	7.5	76.5				88.5	52.5
Max Q Clear Time (g_c+I1), s	6.0	43.4				12.7	41.2
Green Ext Time (p_c), s	0.0	18.0				5.0	1.3

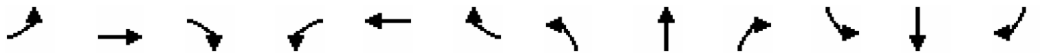
Intersection Summary			
HCM 6th Ctrl Delay, s/veh		27.5	
HCM 6th LOS		C	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	189	497	272	0	0	0	264	853	193	171	1195	345
Future Volume (vph)	189	497	272	0	0	0	264	853	193	171	1195	345
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5	3.5				3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.91	0.91	1.00				0.97	0.91	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85				1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00				0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1610	3384	1583				3433	5085	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00				0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1610	3384	1583				3433	5085	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	205	540	296	0	0	0	287	927	210	186	1299	375
RTOR Reduction (vph)	0	0	21	0	0	0	0	0	148	0	0	111
Lane Group Flow (vph)	184	561	275	0	0	0	287	927	62	186	1299	264
Turn Type	Perm	NA	custom				Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4	3 4 5				3 5	2		1	6	
Permitted Phases	4		4						2			6
Actuated Green, G (s)	35.6	35.6	76.8				32.2	46.5	46.5	37.5	74.2	74.2
Effective Green, g (s)	36.6	36.6	77.8				34.2	47.5	47.5	38.5	75.2	75.2
Actuated g/C Ratio	0.23	0.23	0.49				0.21	0.30	0.30	0.24	0.47	0.47
Clearance Time (s)	4.5	4.5						4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0						3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	368	774	769				733	1509	469	425	1663	744
v/s Ratio Prot			0.17				c0.08	0.18		c0.11	c0.37	
v/s Ratio Perm	0.11	0.17							0.04			0.17
v/c Ratio	0.50	0.72	0.36				0.39	0.61	0.13	0.44	0.78	0.35
Uniform Delay, d1	53.7	57.0	25.6				54.0	48.4	41.2	51.6	35.5	27.0
Progression Factor	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	3.4	0.3				0.3	1.9	0.6	3.3	3.7	1.3
Delay (s)	54.8	60.4	25.8				54.3	50.3	41.8	54.8	39.2	28.3
Level of Service	D	E	C				D	D	D	D	D	C
Approach Delay (s/veh)		49.6			0.0			49.8			38.6	
Approach LOS		D			A			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	44.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	64.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	258	664	543	503	321	106	196	753	661	170	1103	241
Future Volume (veh/h)	258	664	543	503	321	106	196	753	661	170	1103	241
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	280	722	0	547	349	0	213	818	718	185	1199	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	280	814		625	899		383	1242	554	268	1458	
Arrive On Green	0.16	0.23	0.00	0.18	0.25	0.00	0.21	0.35	0.35	0.15	0.29	0.00
Sat Flow, veh/h	1781	3554	1585	3456	3647	0	1781	3554	1585	1781	5106	1585
Grp Volume(v), veh/h	280	722	0	547	349	0	213	818	718	185	1199	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	0	1781	1777	1585	1781	1702	1585
Q Serve(g_s), s	24.5	30.7	0.0	24.0	12.7	0.0	16.6	30.3	54.5	15.4	34.2	0.0
Cycle Q Clear(g_c), s	24.5	30.7	0.0	24.0	12.7	0.0	16.6	30.3	54.5	15.4	34.2	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	280	814		625	899		383	1242	554	268	1458	
V/C Ratio(X)	1.00	0.89		0.87	0.39		0.56	0.66	1.30	0.69	0.82	
Avail Cap(c_a), veh/h	280	877		742	1082		383	1242	554	268	1458	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	65.7	58.2	0.0	62.2	48.3	0.0	54.6	42.9	50.7	62.8	52.0	0.0
Incr Delay (d2), s/veh	54.0	10.4	0.0	10.0	0.3	0.0	5.7	2.7	146.0	13.6	5.4	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.4	15.0	0.0	11.5	5.7	0.0	8.1	13.9	44.0	8.0	15.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	119.8	68.6	0.0	72.2	48.5	0.0	60.4	45.6	196.8	76.4	57.4	0.0
LnGrp LOS	F	E		E	D		E	D	F	E	E	
Approach Vol, veh/h		1002			896			1749			1384	
Approach Delay, s/veh		82.9			63.0			109.5			59.9	
Approach LOS		F			E			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.0	58.0	31.7	39.2	37.0	48.0	28.0	43.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	22.5	45.5	32.5	37.5	32.5	35.5	23.5	46.5
Max Q Clear Time (g_c+I1), s	17.4	56.5	26.0	32.7	18.6	36.2	26.5	14.7
Green Ext Time (p_c), s	0.2	0.0	1.2	2.1	0.5	0.0	0.0	2.4

Intersection Summary	
HCM 6th Ctrl Delay, s/veh	82.3
HCM 6th LOS	F

Notes

Unsignalized Delay for [EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (veh/h)	39	69	138	160	134	103	140	1836	24	111	905	86
Future Volume (veh/h)	39	69	138	160	134	103	140	1836	24	111	905	86
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	42	75	150	174	146	112	152	1996	0	121	984	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	572	223	445	537	748	634	277	1421		180	1421	
Arrive On Green	0.40	0.40	0.43	0.40	0.40	0.40	0.40	0.40	0.00	0.40	0.40	0.00
Sat Flow, veh/h	1121	557	1113	1156	1870	1585	572	3647	0	216	3647	0
Grp Volume(v), veh/h	42	0	225	174	146	112	152	1996	0	121	984	0
Grp Sat Flow(s),veh/h/ln	1121	0	1670	1156	1870	1585	572	1777	0	216	1777	0
Q Serve(g_s), s	1.0	0.0	3.7	4.9	2.0	1.8	6.8	16.0	0.0	0.0	9.2	0.0
Cycle Q Clear(g_c), s	3.0	0.0	3.7	8.6	2.0	1.8	16.0	16.0	0.0	16.0	9.2	0.0
Prop In Lane	1.00		0.67	1.00		1.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	572	0	668	537	748	634	277	1421		180	1421	
V/C Ratio(X)	0.07	0.00	0.34	0.32	0.20	0.18	0.55	1.40		0.67	0.69	
Avail Cap(c_a), veh/h	572	0	668	537	748	634	277	1421		180	1421	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	8.8	0.0	8.1	11.3	7.8	7.7	17.8	12.0	0.0	20.0	10.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	1.4	1.6	0.6	0.6	7.6	186.2	0.0	18.3	2.8	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	1.2	1.2	0.7	0.6	1.8	41.2	0.0	1.9	3.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	9.0	0.0	9.4	12.9	8.4	8.4	25.4	198.2	0.0	38.3	12.7	0.0
LnGrp LOS	A		A	B	A	A	C	F		D	B	
Approach Vol, veh/h		267			432			2148			1105	
Approach Delay, s/veh		9.4			10.2			186.0			15.5	
Approach LOS		A			B			F			B	

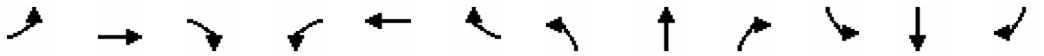
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		20.0		20.0		20.0		20.0				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		16.0		16.0		16.0		16.0				
Max Q Clear Time (g_c+I1), s		18.0		5.7		18.0		10.6				
Green Ext Time (p_c), s		0.0		1.1		0.0		0.9				

Intersection Summary												
HCM 6th Ctrl Delay, s/veh			107.2									
HCM 6th LOS			F									

Notes

User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [NWR, SER] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	337	126	27	0	0	0	35	404	77	823	926	664
Future Volume (veh/h)	337	126	27	0	0	0	35	404	77	823	926	664
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	252	297	29				38	439	0	895	1007	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2				2	2	2	2	2	2
Cap, veh/h	364	382	324				75	559		936	2276	
Arrive On Green	0.20	0.20	0.20				0.04	0.16	0.00	0.53	0.64	0.00
Sat Flow, veh/h	1781	1870	1585				1781	3647	0	1781	3554	1585
Grp Volume(v), veh/h	252	297	29				38	439	0	895	1007	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585				1781	1777	0	1781	1777	1585
Q Serve(g_s), s	13.3	15.3	1.5				2.1	12.1	0.0	48.8	14.5	0.0
Cycle Q Clear(g_c), s	13.3	15.3	1.5				2.1	12.1	0.0	48.8	14.5	0.0
Prop In Lane	1.00		1.00				1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	364	382	324				75	559		936	2276	
V/C Ratio(X)	0.69	0.78	0.09				0.51	0.79		0.96	0.44	
Avail Cap(c_a), veh/h	604	634	537				184	611		989	2276	
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	37.5	38.3	32.8				47.7	41.2	0.0	23.0	9.2	0.0
Incr Delay (d2), s/veh	2.4	3.4	0.1				5.2	6.2	0.0	18.5	0.1	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	7.4	0.0				1.0	5.5	0.0	23.3	5.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	39.9	41.7	32.9				52.9	47.4	0.0	41.5	9.3	0.0
LnGrp LOS	D	D	C				D	D		D	A	
Approach Vol, veh/h		578						477			1902	
Approach Delay, s/veh		40.5						47.8			24.5	
Approach LOS		D						D			C	

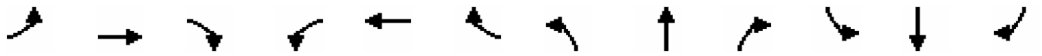
Timer - Assigned Phs	1	2		4	5	6
Phs Duration (G+Y+Rc), s	57.0	20.5		24.3	7.8	69.7
Change Period (Y+Rc), s	4.5	5.5		4.5	4.5	5.5
Max Green Setting (Gmax), s	55.5	16.5		33.5	9.5	62.5
Max Q Clear Time (g_c+I1), s	50.8	14.1		17.3	4.1	16.5
Green Ext Time (p_c), s	1.7	0.6		2.5	0.0	8.9

Intersection Summary			
HCM 6th Ctrl Delay, s/veh			31.4
HCM 6th LOS			C

Notes

User approved volume balancing among the lanes for turning movement.

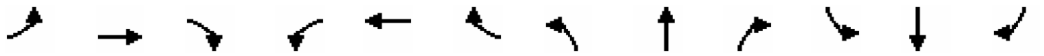
Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	146	584	19	455	955	218	0	81	319	685	427	930
Future Volume (vph)	146	584	19	455	955	218	0	81	319	685	427	930
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00		0.95	1.00	0.97	1.00	0.88
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3522		1770	3539	1583		3539	1583	3433	1863	2787
Flt Permitted	0.95	1.00		0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3522		1770	3539	1583		3539	1583	3433	1863	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	159	635	21	495	1038	237	0	88	347	745	464	1011
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	211	0	0	22
Lane Group Flow (vph)	159	654	0	495	1038	237	0	88	136	745	464	989
Confl. Peds. (#/hr)				3			2		4	4		2
Confl. Bikes (#/hr)									1			
Turn Type	Split	NA		Split	NA	Free		NA	Prot	Split	NA	custom
Protected Phases	2	2		3	3			1	1	4	4	1 4 2
Permitted Phases		2				Free						
Actuated Green, G (s)	32.7	32.7		47.1	47.1	147.1		17.2	17.2	34.1	34.1	92.0
Effective Green, g (s)	33.7	33.7		48.1	48.1	147.1		18.2	18.2	35.1	35.1	93.0
Actuated g/C Ratio	0.23	0.23		0.33	0.33	1.00		0.12	0.12	0.24	0.24	0.63
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	786	806		578	1157	1583		437	195	819	444	1762
v/s Ratio Prot	0.05	c0.19		0.28	c0.29			0.02	c0.09	0.22	c0.25	0.35
v/s Ratio Perm						0.15						
v/c Ratio	0.20	0.81		0.86	0.90	0.15		0.20	0.70	0.91	1.05	0.56
Uniform Delay, d1	45.8	53.7		46.3	47.1	0.0		57.9	61.8	54.5	56.0	15.4
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	6.3		11.9	9.3	0.2		0.2	10.3	13.9	55.0	0.4
Delay (s)	46.0	60.0		58.2	56.5	0.2		58.1	72.1	68.3	111.0	15.8
Level of Service	D	E		E	E	A		E	E	E	F	B
Approach Delay (s/veh)		57.2			49.4			69.3			53.3	
Approach LOS		E			D			E			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	53.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	147.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



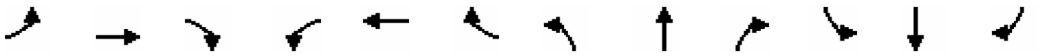
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	424	888	773	269	272	31	149	868	1	92	1029	574
Future Volume (vph)	424	888	773	269	272	31	149	868	1	92	1029	574
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.88	1.00	0.95		1.00	0.95		1.00	0.91	0.88
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	2748	1770	3485		1770	3539		1770	5085	2707
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	2748	1770	3485		1770	3539		1770	5085	2707
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	461	965	840	292	296	34	162	943	1	100	1118	624
RTOR Reduction (vph)	0	0	428	0	7	0	0	22	0	0	0	295
Lane Group Flow (vph)	461	965	412	292	323	0	162	922	0	100	1118	329
Confl. Peds. (#/hr)	2		2				2		2	2		2
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	3	7		8	4		2	6		5	1	
Permitted Phases			7									1
Actuated Green, G (s)	42.0	44.5	44.5	24.0	26.5		18.2	51.1		7.0	39.9	39.9
Effective Green, g (s)	42.0	44.5	44.5	24.0	26.5		18.2	51.1		7.0	39.9	39.9
Actuated g/C Ratio	0.29	0.31	0.31	0.17	0.19		0.13	0.36		0.05	0.28	0.28
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	521	1104	857	297	647		225	1268		86	1422	757
v/s Ratio Prot	0.26	c0.27		c0.17	0.09		0.09	c0.26		c0.06	c0.22	
v/s Ratio Perm			0.15									0.12
v/c Ratio	0.88	0.87	0.48	0.98	0.50		0.72	0.73		1.16	0.79	0.43
Uniform Delay, d1	48.0	46.4	39.7	59.1	52.1		59.8	39.7		67.8	47.4	42.1
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	16.3	7.9	0.4	47.3	0.6		10.8	2.1		147.5	2.9	0.4
Delay (s)	64.3	54.3	40.1	106.4	52.7		70.5	41.8		215.3	50.4	42.5
Level of Service	E	D	D	F	D		E	D		F	D	D
Approach Delay (s/veh)		51.1			77.9			46.0			56.6	
Approach LOS		D			E			D			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	54.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	142.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	81.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1613	571	53	692	410	109
Future Volume (veh/h)	1613	571	53	692	410	109
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1753	621	58	752	446	118
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1920	867	86	2173	469	124
Arrive On Green	0.54	0.54	0.05	0.61	0.34	0.34
Sat Flow, veh/h	3647	1585	1781	3647	1371	363
Grp Volume(v), veh/h	1753	621	58	752	565	0
Grp Sat Flow(s),veh/h/ln	1777	1585	1781	1777	1737	0
Q Serve(g_s), s	67.1	43.8	4.8	15.6	47.6	0.0
Cycle Q Clear(g_c), s	67.1	43.8	4.8	15.6	47.6	0.0
Prop In Lane		1.00	1.00		0.79	0.21
Lane Grp Cap(c), veh/h	1920	867	86	2173	594	0
V/C Ratio(X)	0.91	0.72	0.68	0.35	0.95	0.00
Avail Cap(c_a), veh/h	1920	867	101	2173	619	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	31.3	25.3	70.3	14.4	48.2	0.0
Incr Delay (d2), s/veh	8.2	5.0	13.5	0.4	24.4	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	30.3	17.8	2.5	6.5	24.6	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	39.5	30.4	83.8	14.8	72.5	0.0
LnGrp LOS	D	C	F	B	E	
Approach Vol, veh/h	2374			810	565	
Approach Delay, s/veh	37.1			19.7	72.5	
Approach LOS	D			B	E	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	10.7	84.5				95.2	54.8
Change Period (Y+Rc), s	4.5	4.5				4.5	4.5
Max Green Setting (Gmax), s	7.5	76.5				88.5	52.5
Max Q Clear Time (g_c+I1), s	6.8	69.1				17.6	49.6
Green Ext Time (p_c), s	0.0	6.5				6.4	0.7

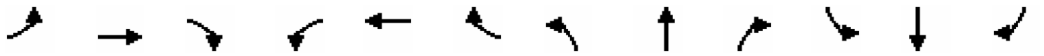
Intersection Summary			
HCM 6th Ctrl Delay, s/veh		38.7	
HCM 6th LOS		D	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	228	601	330	0	0	0	320	1032	233	207	1446	417
Future Volume (vph)	228	601	330	0	0	0	320	1032	233	207	1446	417
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5	3.5				3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.91	0.91	1.00				0.97	0.91	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85				1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00				0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1610	3384	1583				3433	5085	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00				0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1610	3384	1583				3433	5085	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	248	653	359	0	0	0	348	1122	253	225	1572	453
RTOR Reduction (vph)	0	0	19	0	0	0	0	0	153	0	0	123
Lane Group Flow (vph)	223	678	340	0	0	0	348	1122	100	225	1572	330
Turn Type	Perm	NA	custom				Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4	3 4 5				3 5	2		1	6	
Permitted Phases	4		4						2			6
Actuated Green, G (s)	40.4	40.4	85.9				36.5	46.5	46.5	30.0	65.1	65.1
Effective Green, g (s)	41.4	41.4	86.9				38.5	47.5	47.5	31.0	66.1	66.1
Actuated g/C Ratio	0.26	0.26	0.54				0.24	0.30	0.30	0.19	0.41	0.41
Clearance Time (s)	4.5	4.5						4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0						3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	416	875	859				826	1509	469	342	1462	653
v/s Ratio Prot			0.21				c0.10	0.22		c0.13	c0.44	
v/s Ratio Perm	0.14	0.20							0.06			0.21
v/c Ratio	0.54	0.77	0.40				0.42	0.74	0.21	0.66	1.08	0.50
Uniform Delay, d1	51.0	55.0	21.3				51.3	50.8	42.2	59.6	47.0	34.8
Progression Factor	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	4.3	0.3				0.3	3.4	1.0	9.5	46.6	2.8
Delay (s)	52.4	59.3	21.6				51.7	54.1	43.3	69.1	93.6	37.6
Level of Service	D	E	C				D	D	D	E	F	D
Approach Delay (s/veh)		47.3			0.0			52.0			79.9	
Approach LOS		D			A			D			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	62.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	75.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	258	664	543	608	389	128	237	911	800	206	1334	291
Future Volume (veh/h)	258	664	543	608	389	128	237	911	800	206	1334	291
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	280	722	0	661	423	0	258	990	870	224	1450	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	280	814		722	998		383	1143	510	268	1315	
Arrive On Green	0.16	0.23	0.00	0.21	0.28	0.00	0.21	0.32	0.32	0.15	0.26	0.00
Sat Flow, veh/h	1781	3554	1585	3456	3647	0	1781	3554	1585	1781	5106	1585
Grp Volume(v), veh/h	280	722	0	661	423	0	258	990	870	224	1450	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	0	1781	1777	1585	1781	1702	1585
Q Serve(g_s), s	24.5	30.7	0.0	29.2	15.2	0.0	20.7	40.9	50.2	19.1	40.2	0.0
Cycle Q Clear(g_c), s	24.5	30.7	0.0	29.2	15.2	0.0	20.7	40.9	50.2	19.1	40.2	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	280	814		722	998		383	1143	510	268	1315	
V/C Ratio(X)	1.00	0.89		0.92	0.42		0.67	0.87	1.71	0.83	1.10	
Avail Cap(c_a), veh/h	280	877		742	1082		383	1143	510	268	1315	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	65.7	58.2	0.0	60.4	45.8	0.0	56.2	49.8	52.9	64.4	57.9	0.0
Incr Delay (d2), s/veh	54.0	10.4	0.0	15.8	0.3	0.0	9.2	8.9	326.3	25.3	58.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.4	15.0	0.0	14.4	6.8	0.0	10.4	19.6	66.1	10.6	24.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	119.8	68.6	0.0	76.1	46.1	0.0	65.4	58.7	379.3	89.7	115.9	0.0
LnGrp LOS	F	E		E	D		E	E	F	F	F	
Approach Vol, veh/h		1002			1084			2118			1674	
Approach Delay, s/veh		82.9			64.4			191.2			112.4	
Approach LOS		F			E			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.0	53.7	36.1	39.2	37.0	43.7	28.0	47.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	22.5	45.5	32.5	37.5	32.5	35.5	23.5	46.5
Max Q Clear Time (g_c+I1), s	21.1	52.2	31.2	32.7	22.7	42.2	26.5	17.2
Green Ext Time (p_c), s	0.1	0.0	0.4	2.1	0.5	0.0	0.0	3.0

Intersection Summary	
HCM 6th Ctrl Delay, s/veh	126.9
HCM 6th LOS	F

Notes

Unsignalized Delay for [EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (veh/h)	49	69	148	160	134	103	34	1836	24	121	905	86
Future Volume (veh/h)	49	69	148	160	134	103	34	1836	24	121	905	86
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	53	75	161	174	146	112	37	1996	0	132	984	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	572	212	455	527	748	634	277	1421		180	1421	
Arrive On Green	0.40	0.40	0.43	0.40	0.40	0.40	0.40	0.40	0.00	0.40	0.40	0.00
Sat Flow, veh/h	1121	529	1136	1144	1870	1585	572	3647	0	216	3647	0
Grp Volume(v), veh/h	53	0	236	174	146	112	37	1996	0	132	984	0
Grp Sat Flow(s),veh/h/ln	1121	0	1666	1144	1870	1585	572	1777	0	216	1777	0
Q Serve(g_s), s	1.3	0.0	3.9	5.0	2.0	1.8	2.3	16.0	0.0	0.0	9.2	0.0
Cycle Q Clear(g_c), s	3.3	0.0	3.9	8.9	2.0	1.8	11.5	16.0	0.0	16.0	9.2	0.0
Prop In Lane	1.00		0.68	1.00		1.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	572	0	666	527	748	634	277	1421		180	1421	
V/C Ratio(X)	0.09	0.00	0.35	0.33	0.20	0.18	0.13	1.40		0.73	0.69	
Avail Cap(c_a), veh/h	572	0	666	527	748	634	277	1421		180	1421	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	8.9	0.0	8.1	11.5	7.8	7.7	14.7	12.0	0.0	20.0	10.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	1.5	1.7	0.6	0.6	1.0	186.2	0.0	23.1	2.8	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	1.3	1.2	0.7	0.6	0.3	41.2	0.0	2.2	3.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	9.2	0.0	9.6	13.1	8.4	8.4	15.7	198.2	0.0	43.1	12.7	0.0
LnGrp LOS	A		A	B	A	A	B	F		D	B	
Approach Vol, veh/h		289			432			2033			1116	
Approach Delay, s/veh		9.5			10.3			194.9			16.3	
Approach LOS		A			B			F			B	

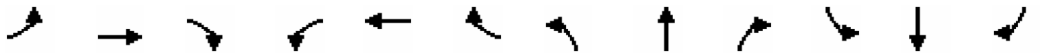
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		20.0		20.0		20.0		20.0				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		16.0		16.0		16.0		16.0				
Max Q Clear Time (g_c+I1), s		18.0		5.9		18.0		10.9				
Green Ext Time (p_c), s		0.0		1.1		0.0		0.9				

Intersection Summary												
HCM 6th Ctrl Delay, s/veh			108.9									
HCM 6th LOS			F									

Notes

User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [NWR, SER] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	342	126	27	0	0	0	35	404	77	823	926	664
Future Volume (veh/h)	342	126	27	0	0	0	35	404	77	823	926	664
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	255	302	29				38	439	0	895	1007	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2				2	2	2	2	2	2
Cap, veh/h	368	387	328				75	555		935	2271	
Arrive On Green	0.21	0.21	0.21				0.04	0.16	0.00	0.52	0.64	0.00
Sat Flow, veh/h	1781	1870	1585				1781	3647	0	1781	3554	1585
Grp Volume(v), veh/h	255	302	29				38	439	0	895	1007	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585				1781	1777	0	1781	1777	1585
Q Serve(g_s), s	13.6	15.6	1.5				2.1	12.2	0.0	49.1	14.6	0.0
Cycle Q Clear(g_c), s	13.6	15.6	1.5				2.1	12.2	0.0	49.1	14.6	0.0
Prop In Lane	1.00		1.00				1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	368	387	328				75	555		935	2271	
V/C Ratio(X)	0.69	0.78	0.09				0.51	0.79		0.96	0.44	
Avail Cap(c_a), veh/h	600	630	534				183	607		983	2271	
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	37.6	38.4	32.8				48.0	41.6	0.0	23.2	9.3	0.0
Incr Delay (d2), s/veh	2.3	3.5	0.1				5.2	6.5	0.0	18.8	0.1	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	7.5	0.0				1.0	5.6	0.0	23.6	5.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	39.9	41.9	32.9				53.2	48.1	0.0	42.0	9.4	0.0
LnGrp LOS	D	D	C				D	D		D	A	
Approach Vol, veh/h		586						477			1902	
Approach Delay, s/veh		40.6						48.5			24.8	
Approach LOS		D						D			C	

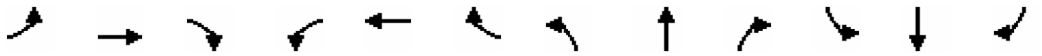
Timer - Assigned Phs	1	2		4	5	6
Phs Duration (G+Y+Rc), s	57.2	20.5		24.7	7.8	69.9
Change Period (Y+Rc), s	4.5	5.5		4.5	4.5	5.5
Max Green Setting (Gmax), s	55.5	16.5		33.5	9.5	62.5
Max Q Clear Time (g_c+I1), s	51.1	14.2		17.6	4.1	16.6
Green Ext Time (p_c), s	1.6	0.6		2.5	0.0	8.9

Intersection Summary			
HCM 6th Ctrl Delay, s/veh			31.7
HCM 6th LOS			C

Notes

User approved volume balancing among the lanes for turning movement.

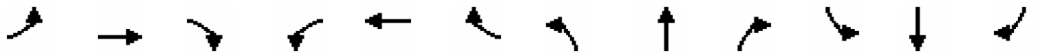
Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	146	589	19	455	960	218	0	81	319	685	427	930
Future Volume (vph)	146	589	19	455	960	218	0	81	319	685	427	930
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00		0.95	1.00	0.97	1.00	0.88
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3522		1770	3539	1583		3539	1583	3433	1863	2787
Flt Permitted	0.95	1.00		0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3522		1770	3539	1583		3539	1583	3433	1863	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	159	640	21	495	1043	237	0	88	347	745	464	1011
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	211	0	0	22
Lane Group Flow (vph)	159	659	0	495	1043	237	0	88	136	745	464	989
Confl. Peds. (#/hr)				3			2		4	4		2
Confl. Bikes (#/hr)									1			
Turn Type	Split	NA		Split	NA	Free		NA	Prot	Split	NA	custom
Protected Phases	2	2		3	3			1	1	4	4	1 4 2
Permitted Phases		2				Free						
Actuated Green, G (s)	32.8	32.8		47.1	47.1	147.2		17.2	17.2	34.1	34.1	92.1
Effective Green, g (s)	33.8	33.8		48.1	48.1	147.2		18.2	18.2	35.1	35.1	93.1
Actuated g/C Ratio	0.23	0.23		0.33	0.33	1.00		0.12	0.12	0.24	0.24	0.63
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	788	808		578	1156	1583		437	195	818	444	1762
v/s Ratio Prot	0.05	c0.19		0.28	c0.29			0.02	c0.09	0.22	c0.25	0.35
v/s Ratio Perm						0.15						
v/c Ratio	0.20	0.82		0.86	0.90	0.15		0.20	0.70	0.91	1.05	0.56
Uniform Delay, d1	45.8	53.8		46.3	47.3	0.0		58.0	61.9	54.5	56.0	15.4
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	6.4		11.9	9.9	0.2		0.2	10.3	14.2	55.0	0.4
Delay (s)	45.9	60.1		58.2	57.2	0.2		58.2	72.2	68.7	111.0	15.8
Level of Service	D	E		E	E	A		E	E	E	F	B
Approach Delay (s/veh)		57.4			49.9			69.3			53.5	
Approach LOS		E			D			E			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	54.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	147.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



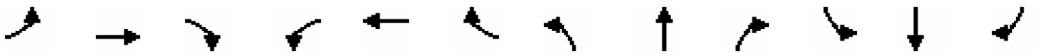
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	424	888	783	269	272	31	154	868	1	92	1029	574
Future Volume (vph)	424	888	783	269	272	31	154	868	1	92	1029	574
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.88	1.00	0.95		1.00	0.95		1.00	0.91	0.88
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	2748	1770	3485		1770	3539		1770	5085	2707
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	2748	1770	3485		1770	3539		1770	5085	2707
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	461	965	851	292	296	34	167	943	1	100	1118	624
RTOR Reduction (vph)	0	0	428	0	7	0	0	22	0	0	0	296
Lane Group Flow (vph)	461	965	423	292	323	0	167	922	0	100	1118	328
Confl. Peds. (#/hr)	2		2				2		2	2		2
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	3	7		8	4		2	6		5	1	
Permitted Phases			7									1
Actuated Green, G (s)	42.1	44.5	44.5	24.0	26.4		18.5	51.4		7.0	39.9	39.9
Effective Green, g (s)	42.1	44.5	44.5	24.0	26.4		18.5	51.4		7.0	39.9	39.9
Actuated g/C Ratio	0.29	0.31	0.31	0.17	0.18		0.13	0.36		0.05	0.28	0.28
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	521	1102	855	297	643		229	1272		86	1419	755
v/s Ratio Prot	0.26	c0.27		c0.17	0.09		0.09	c0.26		c0.06	c0.22	
v/s Ratio Perm			0.15									0.12
v/c Ratio	0.88	0.88	0.49	0.98	0.50		0.73	0.72		1.16	0.79	0.44
Uniform Delay, d1	48.1	46.6	40.0	59.2	52.4		59.8	39.6		68.0	47.6	42.3
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	16.3	8.0	0.5	47.3	0.6		11.0	2.1		147.5	3.0	0.4
Delay (s)	64.4	54.6	40.5	106.5	53.0		70.8	41.7		215.5	50.6	42.7
Level of Service	E	D	D	F	D		E	D		F	D	D
Approach Delay (s/veh)		51.3			78.1			46.1			56.8	
Approach LOS		D			E			D			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	54.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	142.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	81.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1623	571	53	702	410	109
Future Volume (veh/h)	1623	571	53	702	410	109
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1764	621	58	763	446	118
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1920	867	86	2173	469	124
Arrive On Green	0.54	0.54	0.05	0.61	0.34	0.34
Sat Flow, veh/h	3647	1585	1781	3647	1371	363
Grp Volume(v), veh/h	1764	621	58	763	565	0
Grp Sat Flow(s),veh/h/ln	1777	1585	1781	1777	1737	0
Q Serve(g_s), s	68.0	43.8	4.8	15.9	47.6	0.0
Cycle Q Clear(g_c), s	68.0	43.8	4.8	15.9	47.6	0.0
Prop In Lane		1.00	1.00		0.79	0.21
Lane Grp Cap(c), veh/h	1920	867	86	2173	594	0
V/C Ratio(X)	0.92	0.72	0.68	0.35	0.95	0.00
Avail Cap(c_a), veh/h	1920	867	101	2173	619	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	31.5	25.3	70.3	14.4	48.2	0.0
Incr Delay (d2), s/veh	8.6	5.0	13.5	0.4	24.4	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	30.8	17.8	2.5	6.6	24.6	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	40.1	30.4	83.8	14.9	72.5	0.0
LnGrp LOS	D	C	F	B	E	
Approach Vol, veh/h	2385			821	565	
Approach Delay, s/veh	37.6			19.7	72.5	
Approach LOS	D			B	E	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	10.7	84.5				95.2	54.8
Change Period (Y+Rc), s	4.5	4.5				4.5	4.5
Max Green Setting (Gmax), s	7.5	76.5				88.5	52.5
Max Q Clear Time (g_c+I1), s	6.8	70.0				17.9	49.6
Green Ext Time (p_c), s	0.0	5.8				6.5	0.7

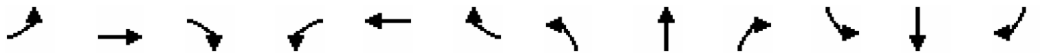
Intersection Summary			
HCM 6th Ctrl Delay, s/veh		38.9	
HCM 6th LOS		D	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	228	601	340	0	0	0	330	1032	233	207	1446	417
Future Volume (vph)	228	601	340	0	0	0	330	1032	233	207	1446	417
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5	3.5				3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.91	0.91	1.00				0.97	0.91	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85				1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00				0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1610	3384	1583				3433	5085	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00				0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1610	3384	1583				3433	5085	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	248	653	370	0	0	0	359	1122	253	225	1572	453
RTOR Reduction (vph)	0	0	19	0	0	0	0	0	153	0	0	124
Lane Group Flow (vph)	223	678	351	0	0	0	359	1122	100	225	1572	329
Turn Type	Perm	NA	custom				Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4	3 4 5				3 5	2		1	6	
Permitted Phases	4		4						2			6
Actuated Green, G (s)	40.1	40.1	86.7				37.6	46.5	46.5	29.5	64.3	64.3
Effective Green, g (s)	41.1	41.1	87.7				39.6	47.5	47.5	30.5	65.3	65.3
Actuated g/C Ratio	0.26	0.26	0.55				0.25	0.30	0.30	0.19	0.41	0.41
Clearance Time (s)	4.5	4.5						4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0						3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	413	869	867				849	1509	469	337	1444	646
v/s Ratio Prot			0.22				c0.10	0.22		c0.13	c0.44	
v/s Ratio Perm	0.14	0.20							0.06			0.21
v/c Ratio	0.54	0.78	0.41				0.42	0.74	0.21	0.67	1.09	0.51
Uniform Delay, d1	51.3	55.3	21.0				50.6	50.8	42.2	60.0	47.4	35.4
Progression Factor	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.4	4.6	0.3				0.3	3.4	1.0	10.1	51.7	2.8
Delay (s)	52.7	59.8	21.3				50.9	54.1	43.3	70.1	99.1	38.2
Level of Service	D	E	C				D	D	D	E	F	D
Approach Delay (s/veh)		47.4			0.0			51.9			83.9	
Approach LOS		D			A			D			F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	64.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	76.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	258	664	543	608	389	128	237	921	800	206	1344	291
Future Volume (veh/h)	258	664	543	608	389	128	237	921	800	206	1344	291
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	280	722	0	661	423	0	258	1001	870	224	1461	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	280	814		722	998		383	1143	510	268	1315	
Arrive On Green	0.16	0.23	0.00	0.21	0.28	0.00	0.21	0.32	0.32	0.15	0.26	0.00
Sat Flow, veh/h	1781	3554	1585	3456	3647	0	1781	3554	1585	1781	5106	1585
Grp Volume(v), veh/h	280	722	0	661	423	0	258	1001	870	224	1461	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	0	1781	1777	1585	1781	1702	1585
Q Serve(g_s), s	24.5	30.7	0.0	29.2	15.2	0.0	20.7	41.5	50.2	19.1	40.2	0.0
Cycle Q Clear(g_c), s	24.5	30.7	0.0	29.2	15.2	0.0	20.7	41.5	50.2	19.1	40.2	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	280	814		722	998		383	1143	510	268	1315	
V/C Ratio(X)	1.00	0.89		0.92	0.42		0.67	0.88	1.71	0.83	1.11	
Avail Cap(c_a), veh/h	280	877		742	1082		383	1143	510	268	1315	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	65.7	58.2	0.0	60.4	45.8	0.0	56.2	50.0	52.9	64.4	57.9	0.0
Incr Delay (d2), s/veh	54.0	10.4	0.0	15.8	0.3	0.0	9.2	9.5	326.3	25.3	61.2	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.4	15.0	0.0	14.4	6.8	0.0	10.4	20.0	66.1	10.6	24.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	119.8	68.6	0.0	76.1	46.1	0.0	65.4	59.5	379.3	89.7	119.1	0.0
LnGrp LOS	F	E		E	D		E	E	F	F	F	
Approach Vol, veh/h		1002			1084			2129			1685	
Approach Delay, s/veh		82.9			64.4			190.9			115.2	
Approach LOS		F			E			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.0	53.7	36.1	39.2	37.0	43.7	28.0	47.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	22.5	45.5	32.5	37.5	32.5	35.5	23.5	46.5
Max Q Clear Time (g_c+I1), s	21.1	52.2	31.2	32.7	22.7	42.2	26.5	17.2
Green Ext Time (p_c), s	0.1	0.0	0.4	2.1	0.5	0.0	0.0	3.0

Intersection Summary	
HCM 6th Ctrl Delay, s/veh	127.7
HCM 6th LOS	F

Notes

Unsignalized Delay for [EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Appendix C – Cultural Technical Memorandum

Technical Memorandum

Date:	Monday, September 01, 2025
Project:	Proposed Allentown Truck Reroute Project
To:	Mark Hafs, Project Director City of Tukwila 6200 Southcenter Boulevard Tukwila, WA 98188
From:	Sarah Desimone, MA and Jennifer Ferris, MA, RPA (HDR Cultural Resources Specialists)
Subject:	Historic Built-Environment Resources Desktop Review for the Allentown Truck Reroute Project Supplemental Environmental Impact Statement

This technical memorandum describes the results of the historic built-environment resources desktop review completed to support the Supplemental Environmental Impact Statement (SEIS) for the Proposed Allentown Truck Reroute Project (Proposed Project) located in Tukwila, Renton, and unincorporated King County, Washington. The Proposed Project is located in Sections 3, 4, 9, 10, 11, 13, 14, 15, 23, 24, and 26 of Township 23, Range 04 E, and Section 18 and 19 of Range 05 E of the Willamette Meridian. The No-Action Alternative (NAA), as described in the Allentown Truck Reroute Project State Environmental Policy Act Final Environmental Impact Statement (FEIS) (City 2025), and one proposed route alternative (Alternative 6), will be analyzed in the SEIS to determine their potential impacts on the built and natural environments. A map of Alternative 6 is shown in Figure 1.

This desktop review focused on archival records pertaining to previously recorded historic built-environment resources on parcels within and immediately adjacent to Alternative 6. This includes those that may be listed in or eligible for listing in the National Register of Historic Places (NRHP), the Washington Heritage Register (WHR), and/or the King County Landmarks Register (KCLR).

Project Background

The BNSF Railway's (BNSF's) South Seattle Intermodal Facility (BNSF facility) in the Allentown neighborhood of Tukwila, Washington, is an important economic link to the Puget Sound region. It serves as an inland port, providing domestic intermodal transloading between truck and rail. Currently incoming freight trucks access the BNSF facility from the S 129th Street bridge to S 50th Place. Outgoing trucks can use either the S 129th Street bridge or take S 124th Street to the 42nd Avenue S bridge. After the planned replacement of the 42nd Avenue S bridge, truck traffic will also be able to access the BNSF facility by traveling north on the 42nd Avenue S bridge and reaching the facility via S 124th Street. To improve livability and safety in Allentown while supporting the operations of the facility, the City of Tukwila (City) evaluated potential alternative truck access routes to the BNSF facility through the FEIS (City 2025).

After the scoping period for the Draft Environmental Impact Statement (DEIS), and during the time the FEIS was being prepared, an additional alternative (Alternative 6) to the current BNSF

truck route was identified. Thus, the City undertook an SEIS that analyzes two alternatives: Alternative 6 (the Rainier Avenue S alternative [see Figure 1] and the NAA as described in the FEIS (City 2025).

The City is the lead agency for reviewing the Proposed Project under the State Environmental Policy Act (SEPA) and is overseeing the preparation of the Draft Supplemental Environmental Impact Statement (DSEIS) for the Proposed Project. One proposed truck route alternative (Alternative 6) and the long-term route that has been used for several decades (the NAA) will be analyzed in the SEIS to determine their potential impacts on the built and natural environments. Alternative 6, which was identified through additional public comment, is intended to reduce the impacts of truck traffic in residential and recreational areas.

No-Action Alternative Description

Under the NAA, the development of an alternative route for freight trucks accessing the BNSF facility would not be considered. The truck route would not be modified or improved.

Alternative 6 Description

Alternative 6 would use 50th Place S and S 129th Street; both inbound and outbound truck traffic would follow this route. Trucks would not travel west on S 124th Street, nor would they use the 42nd Avenue S bridge to cross the Duwamish River.

Northbound trucks departing from the BNSF facility would use a short portion of S 124th Street to access 50th Place S, continue east on S 129th Street, and then travel north on State Route (SR) 900. Stretches of SR 900 are also referred to as Martin Luther King (MLK) Jr. Way S locally. Trucks needing to use SR 99 northbound would exit northbound SR 900 at S Boeing Access Road, travel west to Tukwila International Boulevard, cross over the Duwamish River using the Tukwila International Boulevard bridge, and continue west to the SR 99 northbound on-ramp. Trucks arriving from the north would follow the same route in reverse order.

Southbound trucks departing from the BNSF facility would also use a short portion of S 124th Street to access 50th Place S, continue to S 129th Street, and then travel south on SR 900. In the city of Renton, SR 900 is mapped as MLK Jr. Way S, switching to “SW Sunset Boulevard” where it aligns in an east–west direction. Truck traffic from the BNSF facility would follow SW Sunset Boulevard eastward to where it intersects with SR 167/Rainier Avenue S, and travel along Rainier Avenue S to the interchange with Interstate (I-) 405. From I-405, the truck traffic originating from the BNSF facility would then reach the I-5 interchange where the trucks would exit to go south. Trucks arriving from the south would follow the same route but in reverse order.

The key feature of Alternative 6 is that truck traffic from the BNSF facility would not travel through the Allentown neighborhood along Interurban Avenue S or SR 599 between the I-5/I-405 interchange to the south and the Tukwila International Boulevard/SR 99 interchange to the north. Please refer to Figure 1.

Cultural-Resources Regulations

The Proposed Project is being reviewed under SEPA and must comply with the Revised Code of Washington (RCW). Additionally, the Proposed Project must comply with the King County Code (KCC) as the Proposed Project area resides in King County.

King County Code 20.62

KCC Chapter 20.62 outlines procedures and regulations for the identification and protection of historic and archaeological resources significant to the history of King County. Historic or archaeological resources that are of significance to King County are defined under KCC 20.62.040, and the procedures for nomination of locally significant resources to the KCLR are defined under KCC 20.62.050. In accordance with KCC 20.62.150, any resources identified in the King County Historic Resources Inventory (KCHRI) shall not be altered, demolished, or relocated as a consequence of any development proposal without prior review from the appointed King County Landmarks Commission.

State Regulations

The SEPA review process, as outlined in RCW 43.21c, seeks to provide information that will inform agency decision makers, applicants, and the public to understand how a project would affect the environment. Under SEPA, cultural resources on the subject or adjacent parcels, including historic built-environment resources, should be evaluated for their eligibility to local, state, and/or national registers. SEPA applicants assess potential project impacts to such resources and document their findings in the SEPA checklist.

The lead state agency will review the applicant-prepared SEPA checklist and other information about the proposal and will either make a determination of nonsignificance (DNS) or determine that an Environmental Impact Statement (EIS) is necessary to further evaluate potential Proposed Project impacts. For the current Proposed Project, the City is the lead agency and is preparing the EIS; the EIS provides information to all agencies that must approve the proposal.

The Revised Code of Washington, which governs cultural resources in the state, is organized into several key chapters, including RCW 27.44 (Indian Graves and Records Act), RCW 27.53 (Archaeological Sites and Resources Act), and RCW 68.60 (Abandoned and Historic Cemeteries and Historic Graves).

Historic Context

Historic built-environment resources identified within and adjacent to Alternative 6 are located in Renton, Tukwila (Allentown and nearby), and the Bryn Mawr-Skyway neighborhood in unincorporated King County. See the FEIS (City 2025) for a historical context of the Allentown region.

Renton

Renton is located at the south end of Lake Washington, bordered on the northwest by Bryn Mawr-Skyway (an unincorporated community in King County) and on the southwest by Tukwila. The Cedar River runs south from Lake Washington through downtown Renton and the Duwamish River runs north–south just outside its western boundary. The first non-Native settlers arrived in the area in the early 1850s. Henry Tobin established a sawmill in 1853, and Dr. R. H. Bigelow opened the Duwamish Coal Company next door the same year. In 1855, tensions between the non-Native settlers and the Natives resulted in a brief war during which Tobin's mill was burned (Stein and Boba 2024). When fighting ceased, Natives were forcibly removed from the area and many were assigned to reservations under the Treaty of Point Elliott (Richards 2005). Both businesses were closed by 1856, but Bigelow's operation is significant as the first coal mine in King County (Stein and Boba 2024).

In 1873, Tobin's widow Diana, who held the patent on Tobin's land, married a landowning settler, Erasmus Smithers. Together, they owned nearly 500 acres of land. Smithers and other settlers rediscovered coal in the area circa 1875 and needed funds to set up a new mining operation. They called on Captain William Renton, a wealthy lumber and shipping merchant, who provided capital in exchange for the naming of both the mining operation and the town after him. Smithers filed the first 28-block plat of the Town of Renton on September 5, 1875. Because of its proximity to Lake Washington and the Cedar, Green, and Duwamish Rivers, Renton became the local coal industry hub in the late nineteenth and early twentieth centuries, attracting white and black settlers, Chinese immigrants, and Native Americans to work in the mines.

Along with its lake and river connections, Renton benefited from its proximity to multiple rail lines. In 1877 the Seattle & Walla Walla Railroad (property identifier [ID] 708606) was the first steam railroad to arrive, connecting Seattle to Renton through Tukwila's Black River Junction (Stein and Boba 2024). Beginning in 1896, the electric Seattle, Renton & Southern Railway ran from Seattle to Renton on the western shore of Lake Washington, following the current Rainier Avenue S through Bryn Mawr (Crowley 1999). In 1907, the Northern Pacific Railway (NP) completed the Lake Washington Beltline (LWB) (property ID 88798), which followed the eastern shore of Lake Washington connecting the NP main line in Renton to the Seattle, Lake Shore and Eastern Railway in Woodinville (Allen and O'Brien 2007). In 1909, the Milwaukee Road completed its subsidiary—the Chicago, Milwaukee & Puget Sound Railway (CM&PS; property ID 734040)—through Renton. The CM&PS began in Tacoma, stopped in Seattle, then passed through Renton before continuing east to Chicago and Milwaukee (Luttrell 2003).

Renton's rail connections spurred the town's early growth. The Seattle Car Manufacturing Co. (now PACCAR) opened a factory in 1908 and by 1910, Renton was known as the commercial center of the area with its many lumber mills and factories producing bricks, briquettes, tile, cigars, glass, twine, and pasta. In contrast, land in the nearby Duwamish and White River valleys, including Allentown, was used primarily for agricultural production (Stein and Boba 2024).

One of the biggest influences in Renton's development was the introduction of the Boeing Airplane Company (Boeing). In 1941, the U.S. Navy opened a facility on the south shore of Lake

Washington in Renton to manufacture bombers for use in World War II (1941–1944). In 1943, the U.S. Air Force acquired the factory and built the adjacent Renton airfield to build Boeing B-29 Superfortress bombers. In 1949, Boeing began developing jet transportation at its Renton plant, including the 367-80 (aka Dash 80) and the first commercial jet, the 707. Boeing Renton has been the site of 737 jet assembly since 1967 (Boeing 2025; Stein and Boba 2024).

Bryn Mawr-Skyway

Sandwiched between Tukwila and Renton, Bryn Mawr was first platted in 1890 by Lillie R. Parker and her husband, William. Welsh for “windy hill,” the Parkers named it after a place of the same name in their hometown of Pennsylvania (Meany 1923:29). Located four blocks west of the Interurban line, parcels in Bryn Mawr were initially advertised as an ideal location for summer homes or fruit and vegetable farms, and the area was used primarily for camping and picnicking through 1902, when it was sold to a development company (*Seattle Times* 1903a). In 1903, Bryn Mawr was replatted with streets and parks, and by 1906, it had a hotel with a Lake Washington view (*Seattle Times* 1907). It developed incrementally but remained sparsely developed with large agricultural parcels through the 1930s (NETR 2025; *Seattle Times* 1903b). Skyway Park (later Skyway) developed after World War II as affordable housing for returning veterans. The first blocks of homes were built in Skyway in 1943, and in September 1944, 500 Federal Housing Authority–approved homes were put on the market (*Seattle Times* 1944; Wilson 1992). The remaining parcels in Bryn Mawr were developed during the Skyway boom. Primarily a residential neighborhood with a few supporting businesses, the Bryn Mawr-Skyway neighborhood was fully developed by 1968 (NETR 2025).

Historic Built-Environment Desktop Review

HDR Engineering, Inc. (HDR) cultural-resources specialist staff completed a desktop review in August 2025 using two databases: (1) Washington Information System for Architectural and Archaeological Records Data (WISAARD), managed by the Washington State Department of Archaeology and Historic Preservation (DAHP) (DAHP 2025), and (2) KCHRI managed by the King County Historic Preservation Program (KCHPP). The research area consisted of the Alternative 6 boundary, which comprises the road right-of-way (ROW).

No previously recorded historic built-environment resources are located within or adjacent to Alternative 6 that are listed in the NRHP, WHR, or KCLR.

There are 74 previously recorded historic built-environment resources within or adjacent to Alternative 6. Of these, two were previously determined eligible for listing in the NRHP by the Washington State Historic Preservation Office (SHPO) (property IDs 88798 and 708606) (Table 1, Figure 2). These two NRHP-eligible resources are both railroad alignments.

Of the remaining 72 previously recorded historic built-environment resources, 8 were determined not eligible for listing in the NRHP by SHPO and the remaining 64 are unevaluated for listing in the NRHP.

Table 1. Historic built-environment resources within or adjacent to Alternative 6 previously determined NRHP-eligible by DAHP

Count	Property ID	Property name	Address	Resource type	NRHP eligibility/ date (SHPO)	Proximity to Proposed Project area [a]
1	88798	Northern Pacific Railway: Lake Washington Beltline	Vicinity of Renton	Structure: railroad line	Eligible[b]; 11/6/2024	Within
2	708606	Seattle & Walla Walla Railroad/Puget Sound Shore Railroad/Seattle, Lake Shore and Eastern Railway/Northern Pacific Railway Black River Junction to the Lake Washington Ship Canal	Vicinity of Renton and Seattle	Structure: railroad line	Eligible[b]	Within

[a] Measured from the exterior boundary of the road ROW encompassing Alternative 6.

[b] The overall railroad line was previously determined eligible by DAHP; the segment within or adjacent to Alternative 6 has not been evaluated.

In addition, one historic built-environment resource located within or adjacent to Alternative 6 was previously recorded in the KCHRI (Codiga House; KCHRI ID 493). However, this resource appears to have been demolished between 2002 and 2009 (NETR 2025). No historic built-environment resources are located within or adjacent to Alternative 6 listed in the KCLR (KCHPP 2025).

The SEIS presents the impacts analysis for Alternative 6 and the NAA.

Summary

HDR completed a desktop review of historic built-environment resources to support the SEIS for the Proposed Project. The desktop review was designed to identify previously recorded historic built-environment resources located on parcels within and adjacent to Alternative 6. The review included an archival review of WISAARD (DAHP 2025) and KCHRI.

The review found that no previously recorded historic built-environment resources are located within or adjacent to Alternative 6 that are listed in the NRHP, WHR, or KCLR. There are 74 previously recorded historic built-environment resources within or adjacent to Alternative 6. Of these, two were previously determined eligible for listing in the NRHP by SHPO; both are railroad lines. Of the remaining 72 previously recorded historic built-environment resources, 8 were previously determined not eligible for listing in the NRHP by SHPO and the remaining 64 are unevaluated for listing in the NRHP.

The NAA as described in the FEIS (City 2025) and Alternative 6 is analyzed in the SEIS to determine their potential impacts on the NRHP-eligible historic built-environment resources.

References Cited

Allen, Jason and Elizabeth O'Brien

2007 Historic Property Inventory Form for Property ID: 88798. July 10. On file, Washington Department of Archaeology and Historic Preservation, Olympia.

Boeing Company, The (Boeing)

2025 Renton Production Facility. Boeing company website. Electronic document, https://www.boeing.com/company/about-bca/renton-production-facility#anchor1. Accessed August 2025.

City (City of Tukwila)

2025 Final Environmental Impact Statement for the Allentown Truck Reroute Project. Prepared by HDR Engineering, Inc. June 9.

Crowley, Walt

1999 Seattle Renton & Southern Railway—King County's First True Interurban. HistoryLink.org Essay 1756. Electronic document, https://www.historylink.org/File/1756. Accessed August 2025.

DAHP (Washington State Department of Archaeology and Historic Preservation)

2025 Washington Inventory System for Architectural and Archaeological Records Data (WISAARD). Electronic document, https://wisaard.dahp.wa.gov/. Accessed August 2025.

KCHPP (King County Historic Preservation Program)

2025 Historic Preservation Viewer. Electronic document, https://kingcounty.maps.arcgis.com/apps/View/index.html?appid=08c6e1fe041b4f7a8912e21b55219de1 4. Accessed August 2025.

Luttrell, Charles T.

2003 Historic Property Inventory Form for Property ID: 734040. May 21. On file, Washington Department of Archaeology and Historic Preservation, Olympia.

Meany, Edmond R.

1923 *Origin of Washington Geographic Names.* University of Washington Press, Seattle.

NETR (National Environmental Title Research) Online

2024 "Historic Aerials Viewer." Last updated 2024. https://www.netronline.com/. Accessed June 2024.

Richards, K.

2005 The Stevens Treaties of 1854–1855: an Introduction. *Oregon Historical Quarterly* 106(3):342–351.

Seattle Times, The

1903a "Real Estate Review." February 1, p.36.

1903b "Bryn Mawr Land Co." Advertisement. June 17, p.4.

1907 Advertisement for furnished rooms at Bryn Mawr hotel. April 4, p.19.

1944 "500 New Homes in Skyway Park Open to Public." September 24, p.11.

Stein, Alan J. and Eleanor Boba

2024 Renton—Thumbnail History. HistoryLink.org Essay 688. Electronic document, https://www.historylink.org/File/688. Accessed August 2025.

Wilson, Gordie

1992 At the End of the Rainbow—Skyway: A Community of Color, Conflict and Cooperation. *The Seattle Times*, February 20. Electronic document, https://archive.seattletimes.com/archive/19920220/1476753/at-the-end-of-the-rainbow----skyway-a-community-of-color-conflict-and-cooperation. Accessed August 2025.

Attachment A: Figures

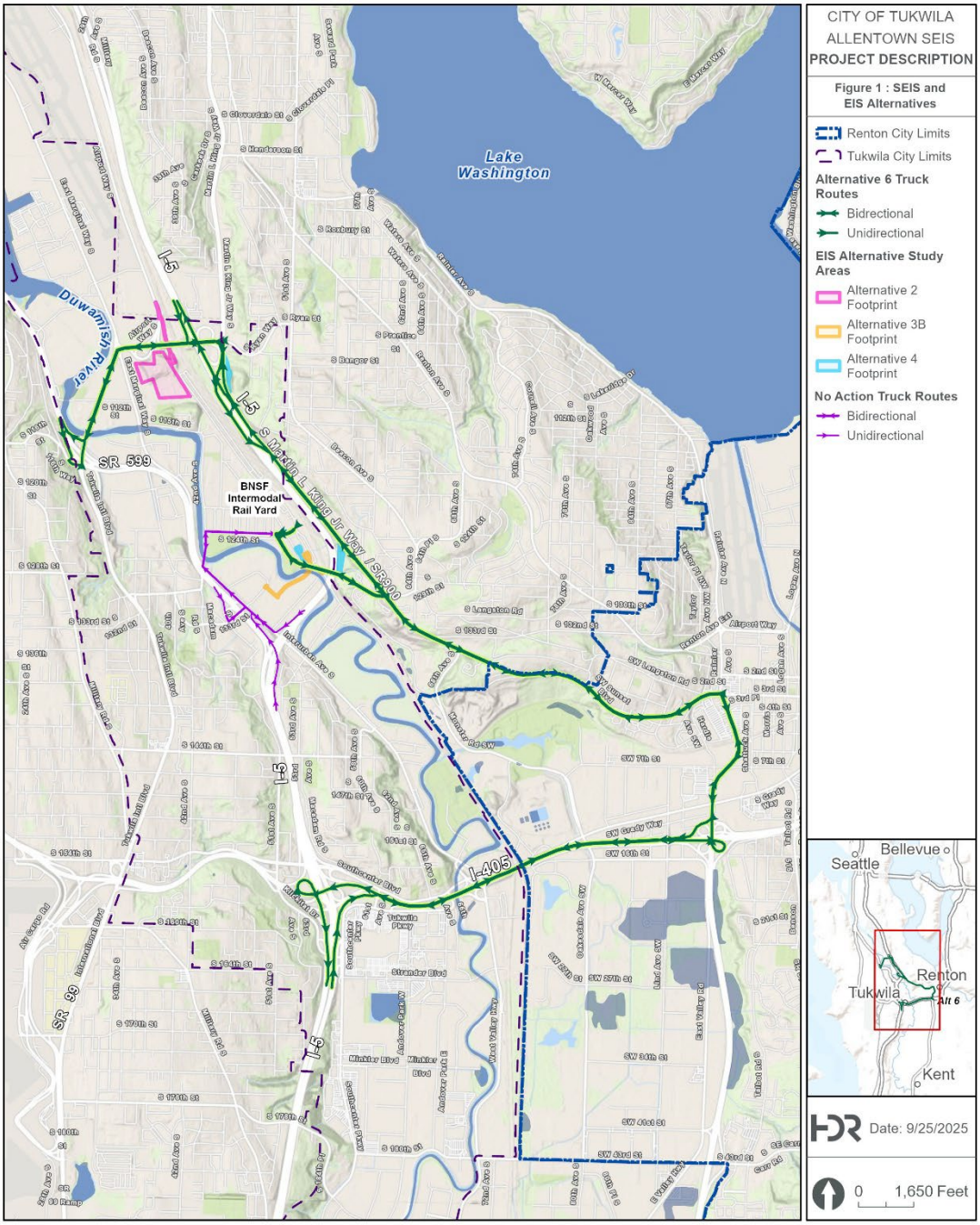


Figure 1. Project location depicting Alternative 6

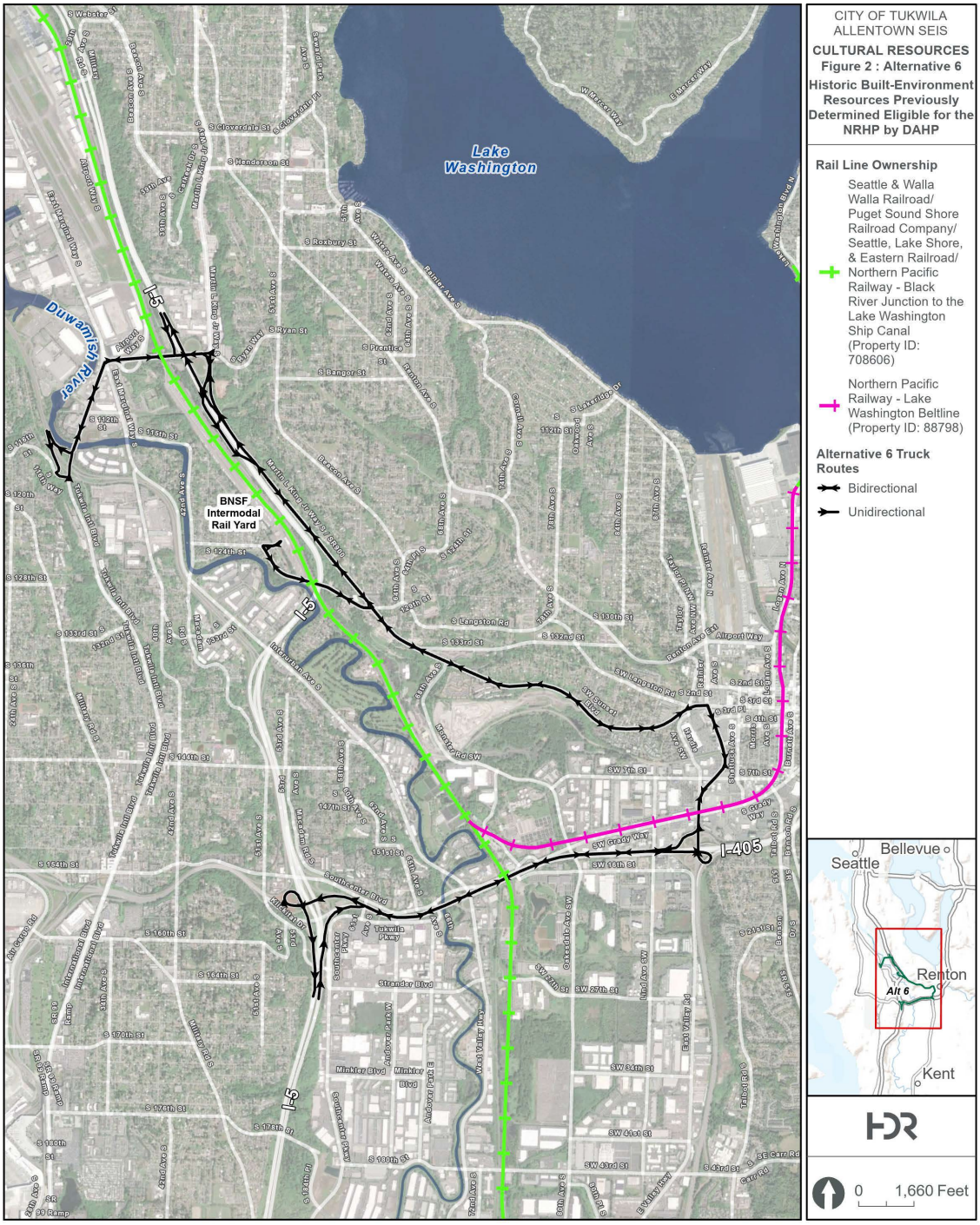


Figure 2. Historic built-environment resources previously determined eligible for the NRHP by DAHP

Appendix D – Public Comments and Response to Public Comments

Comment #	Commenter name	Comment	Response
1	Hannah Hedrick	Alternative 6 still relies on residential streets. This approach sacrifices a few residents for the convenience of others. Trucks will continue to pass homes and parks, so it doesn't solve the problem — it just shifts the burden to a different group. It's inequitable and short-sighted, effectively chopping Tukwila into isolated pieces instead of treating it as a connected, holistic community.	Comment noted. If Alternative 6 were selected as the preferred alternative its potential effects on the elements of WAC 197- 11-444(2)(b) would be determined as part of project-level environmental analysis, including cumulative impacts.
2	Sally Blake	I am supporting this alternative for the following reasons: This alternative is attainable. No bridges needed to be built which would require outlandish and excessive costs. This alternative is economical. Very hard to get funding in this political climate. The lowest bid starts at 41 million - 54 million and you know this will go up and up every year. The other alternatives are over a hundred million. This alternative is timely. It could be accomplished within a reasonable amount of time especially with the detour when the 42nd Ave S bridge is built. WSDOT has communicated that the overpass can handle the traffic and it puts the responsibility with WSDOT where it belongs. Martin Luther King Way is a four-lane highway. Trucks taking a left at the top of the hill takes them to Boeing Access, another left to	Comment noted.

Comment #	Commenter name	Comment	Response
		599 which gives them access to I-5 or 405 all in ten minutes. King County and Renton have already looked at improving the intersection at the top of 129th. All of the other alternatives are excessively long-term projects. No significant impacts so far in the EIS. Higher level of study is not too expensive.	
3	Graham Manson	I think it seems fine either way? It seems like a lot just for like four blocks worth of noise complaints, but also doesn't seem like the impacts of changing the route will be very painful.	Comment noted.
4	Frank Reinhardt	We are in TOTAL agreement with the alternative route #6!!! There is already an extensive level of noise from the gun range and the ambient highway noise in our neighborhood. We really do need more efforts made towards peace, calm and quiet than we currently have. Please help to Mitigate the noise levels.	Comment noted. Potential effects, their severity, and potential mitigation measures cannot be accurately assessed without project-level design and analysis, which the City would engage in once a preferred alternative is selected.
5	WSDOT	DEIS, 1.7 Unavoidable Significant Adverse Impacts, page 18 State routes have level of service standards that should be compared against. See WSDOT Design Manual 1130.09(2)(b), if development degrades below the threshold, mitigation should	The purpose of the DSEIS is to determine potential impacts on the built and natural environment. The supplemental analysis for Alternative 6 in the Draft SEIS follows the same methodology used in the FEIS (see Section 4.6.3 of the

Comment #	Commenter name	Comment	Response
		be established. Synchro analyses do not appear to be accurate - intersections are not currently below level of service thresholds.	FEIS document), which did not include WSDOT LOS standards. If appropriate when preparing a project EIS, WSDOT LOS standards can be included in the analysis. It is unclear what the basis for conclusion that the synchro analysis does not appear to be accurate. Regardless, when preparing a project EIS, the lead agency would review the non-project EIS to ensure that the analysis is valid when applied to the current proposal, knowledge and technology. If it is not valid, the analysis shall be reanalyzed in the project level EIS (WAC 197-11-443(3).
6	WSDOT	DEIS, 4.5.1 Affected Environment, page 55 Intersections 7, 11, and 12 are also WSDOT intersections and are subject to the Level of Service standards. Intersection 6 is in unincorporated King County and under WSDOT jurisdiction.	Section 4.5.1 of the DSEIS specifies that the affected environment includes local roadway networks. Intersections 7,11 and 12 were analyzed as city intersections based on the information provided by the City of Tukwila and the City of Renton. Revisions to the text in the Final SEIS were made to reflect intersections 7, 9, 10, 11 and 12 as intersections that are also WSDOT intersections. The supplemental analysis for Alternative 6 in the Draft SEIS follows the same methodology used in the FEIS (see Section 4.6.3 of the FEIS document), which did not include WSDOT LOS

Comment #	Commenter name	Comment	Response
			standards. If appropriate when preparing a project EIS, WSDOT LOS standards can be included in the analysis.
7	WSDOT	DEIS, 4.5.5 Mitigation Measures, page 62, Synchro analysis does not appear to be accurate to current conditions, nor does it seem to accurately account for the added trucks. When comparing against our own counts and model, the impacts are more significant, so mitigation is not properly identified.	At the time of preparation of the SEIS, the most recent traffic counts were provided by the City of Tukwila and the City of Renton. This supplemental analysis for Alternative 6 follows the same methodology used in the FEIS (see Section 4.6.3 of the FEIS document). Traffic volumes were adjusted to align with the 2024 turning movement volumes analyzed for adjacent intersections in the FEIS. Site generated truck traffic was accounted for and distributed to surrounding roadway network. It is unclear what the basis for conclusion that the synchro analysis does not appear to be accurate. Regardless, when preparing a project EIS, the lead agency would review the non-project EIS to ensure that the analysis is valid when applied to the current proposal, knowledge and technology. If it is not valid, the analysis shall be reanalyzed in the project EIS (WAC 197-11-443(3). The SEIS is a non-project proposal and has less detailed information. The purpose of the EIS and SEIS is to evaluate alternative means of accomplishing a stated objective. Site-

Comment #	Commenter name	Comment	Response
			specific analysis is not required and identification of subsequent actions and mitigation measures specific to the project would be undertaken at the project level.
8	WSDOT	DEIS, 4.5.5 Mitigation Measures, page 62 For safety mitigation: Are there any identified measures? What intersections are they, what are you proposing, and how will they address identified crashes? The crashes are not analyzed more than their severity, so I don't see how measures would be implemented.	General mitigation measures applicable across all alternatives are included in the Final EIS (2025) and referenced in the Draft SEIS. Mitigation measures for Alternative 6 are also general. Revisions to the text in the Final SEIS were made to reflect the non-project level of mitigation measures for Alternative 6. The SEIS is a non-project proposal and has less detailed information. Site-specific analysis is not required and identification of subsequent actions and mitigation measures specific to the project would be undertaken at the project level.
9	WSDOT	Intersection Study Addendum, Data Collections and Assumptions, page 3 PSRC gave us 0.34% growth rate for the SR 900 corridor. What is the 1% growth rate based on?	This supplemental analysis for Alternative 6 in the Draft SEIS follows the same methodology used in the FEIS (see Section 4.6.3 of the FEIS document). The growth rate used in this Draft SEIS is consistent with the growth rate used in the FEIS. When preparing a project EIS, the lead agency would review the non-project EIS to ensure that the analysis is valid when applied to the

Comment #	Commenter name	Comment	Response
			current proposal, knowledge and technology. If it is not valid, the analysis shall be reanalyzed in the project EIS (WAC 197-11-443(3).
10	WSDOT	Intersection Study Addendum, Truck Traffic Analysis, page 4 Based on a recent count, we are seeing more like 5% truck traffic. Where did 3.5% come from?	This supplemental analysis for Alternative 6 in the Draft SEIS follows the same methodology used in the FEIS (see Section 4.6.3 of the FEIS document). The truck traffic counts used in this Draft SEIS are consistent with the FEIS. When preparing a project EIS, the lead agency would review the non-project EIS to ensure that the analysis is valid when applied to the current proposal, knowledge and technology. If it is not valid, the analysis shall be reanalyzed in the project EIS (WAC 197-11-443(3).
11	WSDOT	Intersection Study Addendum, Existing Operations for Intersection 6, page 10 (?) This phasing and timing isn't accurate to the intersection. Protected lefts are not included, and all phases do not need to be the same length. It is bringing SB SR 900 down a lot and is not reflective of actual delay.	The SEIS is a non-project proposal and has less detailed information. The purpose of the EIS and SEIS is to evaluate alternative means of accomplishing a stated objective. Site-specific analysis is not required. This supplemental analysis follows the same methodology used in the FEIS (see Section 4.6.3 of the FEIS document). Intersection 6 was included in the FEIS as part of the other alternatives. Signal timing for this intersection was carried over from the FEIS to ensure a

Comment #	Commenter name	Comment	Response
			direct comparison with other alternatives. When preparing a project EIS, the lead agency would review the non-project EIS to ensure that the analysis is valid when applied to the current proposal, knowledge and technology. If it is not valid, the analysis shall be reanalyzed in the project EIS (WAC 197-11-443(3). Page numbers were added to Appendix B.
12	WSDOT	Intersection Study Addendum, Operations for Intersection 6, page 24(?) The only changes appear to be 10 vehicles added to EBL, EBR, and NWL, but where did that number come from? No trucks are added to mainline SR 900 in the PM? That is not consistent with the graphic depicting Alternative 6.	Site-generated truck traffic (30 trips) was distributed among these movements. Since all site trucks enter and exit the site via SR 900 at this intersection, only these turning movements are associated with access to the BNSF Facility. This supplemental analysis follows the same methodology used in the FEIS (see Section 4.6.3 of the FEIS document). The arrows indicate all truck routes are going to/from 129th rather than traveling N/S through SR 900.
13	WSDOT	Intersection Study Addendum, Operations for Intersection 6, page 24(?) SEL decrease from 140 to 34 between the no action and alternative 6, but it doesn't seem like that should change between the two.	The SEL volume should be 140 for both Alternative 6 and the NAA. The SEL number was updated in Synchro software to be 140, which resulted in a one second increase in delay. The one second increase in delay would not change the delay/LOS given the modeled

Comment #	Commenter name	Comment	Response
			signal phasing. Impacts and mitigation identified in the SEIS would remain the same. Updates to signal timing and phasing would be incorporated during the project EIS if appropriate. When preparing a project EIS, the lead agency would review the non-project EIS to ensure that the analysis is valid when applied to the current proposal, knowledge and technology. If it is not valid, the analysis shall be reanalyzed in the project EIS (WAC 197-11-443(3)).
14	WSDOT	DEIS, Air Quality and Greenhouse Gases, Relevant Plans, Policies, and Regulations, 4.1.2, page 25, Table 4-1 WSDOT AQ/GHG guidance reference should use year of document used in report	The text reading "(WSDOT 2025)" is there as an indicator of the reference for the SEIS, not to reflect the year of publication of the WSDOT air quality, energy and greenhouse gas emissions guidance. The text in Table 4-1 is updated in tracked changes to remove this reference.
15	WSDOT	DEIS, Air Quality and Greenhouse Gases, 4.1.3, Methodology, pages 29 Bullet point #3, quantifying criteria pollutants: "… the Proposed Project is not anticipated to contribute to or exacerbate any violations of the NAAQS, and no significant impacts to criteria air pollutants are expected. However, to be consistent with transportation conformity, the emissions	The SEIS is a non-project proposal and has less detailed information. The purpose of the EIS and SEIS is to evaluate alternative means of accomplishing a stated objective. Project-level analysis for AQ and GHG is not required for a non-project EIS.

Comment #	Commenter name	Comment	Response
		induced by this Proposed Project will need to be reflected in PSRC's latest Regional Transportation Improvement Plan." Are emissions quantified for projects separately, or in the LRTP AQ modeling for all projects? If the latter, it is suggested that criteria pollutants do not also need to be quantified separately for SEIS and should not be included among future analyses.	
16	WSDOT	DEIS, Air Quality and Greenhouse Gases, 4.1.4.1.2, Operations Impacts, page 30 In sentence: "…it will support a quantitative analysis of operational activities to determine the expected air quality, GHG, and climate-change impacts" If criteria pollutants not quantified (see above), delete from sentence	Criteria pollutants are not quantified for this non-project EIS. The discussion under 4.1.4.1.1 of the DSEIS is stating that a quantitative analysis would be done once a preferred alternative is chosen as part of a project EIS.
17	Stander Family LLC/Davis Wright Tremaine	1. Feasibility of Alternative 6 and Prohibition of Truck Access on 124th Street. First, the SEIS does not address the effect of the binding settlement agreement between the City of Tukwila and Baker Commodities, which expressly allows trucks to continue using South 124th Street for access to the Baker Commodities site (see April 8, 1999 Letter from Baker Commodities). Because the Project's central purpose is to remove truck traffic from 124th	At the non-project EIS review level, it is not possible to analyze operation impacts at this level of detail. Limitations on 124th are for BNSF only. If Alternative 6 is selected as the preferred alternative, project level planning and design would assess potential impacts to the Hub, and the City would commit to working with BNSF to avoid them.

Comment #	Commenter name	Comment	Response
		Street, this agreement presents a direct legal constraint on the City's ability to implement Alternative 6 (and other alternatives) as described. Unless the agreement is amended or rescinded, the City cannot lawfully prohibit the truck movements the settlement preserves. In addition, the SEIS fails to explain how such a prohibition on truck access to 124th Street could be equitably enforced. Allowing Baker's trucks to continue using 124th Street while prohibiting others would be impracticable to administer and potentially discriminatory in effect, exposing the City to fairness and equal-protection concerns. Selective enforcement on a public roadway would also undermine the projected environmental benefits, including noise, air-quality, and safety improvements, that assume complete truck removal. The SEIS should disclose the settlement's terms, quantify the residual truck traffic that will remain on 124th Street, and revise its impact analysis accordingly.	
18	Stander Family LLC/Davis Wright Tremaine	2. Deferred Analysis of Air Quality Impacts. Second, the SEIS acknowledges that Alternative 6 has higher potential Mobile Source Air Toxics (MSAT) effects, adverse regional air quality and greenhouse gas impacts compared to the No-Action Alternative but defers all	Potential effects, their severity, and potential mitigation measures cannot be accurately assessed without project level design and analysis, which the City would engage in once a preferred Alternative is selected.

Comment #	Commenter name	Comment	Response
		quantitative modeling and any finding of significance until a later phase. While the SEIS states that a full MSAT and greenhouse-gas analysis will be prepared only after a preferred alternative is selected, that deferral leaves decision-makers without the quantitative data necessary to compare air-quality outcomes between alternatives. Because the reroute would alter truck travel distance and congestion patterns, these operational variables directly affect pollutant outputs. This information is particularly essential given that Alternative 6 would increase truck volumes along existing residential and mixed-use corridors, including 50th Place South, Martin Luther King Jr. Way S, and SW Sunset Boulevard, where nearby homes, apartments, and public parks such as Codiga Park could experience elevated exposure to diesel exhaust and particulate emissions. Deferring this analysis to a later permitting stage prevents decision making to consider the information SEPA requires to identify a least-impactful alternative. To the extent that the City intends to conduct a full MSAT or other analysis in a future phase, the Strander Companies expressly reserve the right to review and comment on those results once they are available. Until that quantitative evaluation is completed, the adequacy of the SEIS's air-quality findings remains uncertain and incomplete.	

Comment #	Commenter name	Comment	Response
19	Stander Family LLC/Davis Wright Tremaine	3. Incomplete and Inconsistent Discussion of Cost and Financial Feasibility Third, the FEIS provided a conceptual cost range of $164–$193 million for Alternative 2 to illustrate that it was economically infeasible. However, the FEIS did not provide comparable cost estimates for any of the other build alternatives, including Alternatives 3B and 4, even though those options would also require substantial new infrastructure and right-of-way acquisition and the City has provided cost estimates for those alternatives in community meetings. Because the SEIS implies a lower overall cost for Alternative 6 compared to other alternatives, the absence of any relative cost comparison creates an internal inconsistency of the impacts studied in the record. Moreover, with cost estimates used to essentially screen alternatives in the FEIS, new or updated cost estimates for Alternative 6 (and other alternatives) must be disclosed. The SEIS should therefore summarize, at least in comparative form, the estimated costs and funding feasibility for all build alternatives previously considered. Providing that information would ensure transparency and allow decision-makers to evaluate whether Alternative 6 is, in fact, the most financially practicable option.	As a nonproject SEIS, project documentation conforms with SEPA guidelines that advise that potential environmental impacts of alternatives be analyzed at a generalized level of detail which forms the basis for project-level review if the City selects and moves forward with an alternative. For purposes of complying with SEPA, the weighing of the merits and drawbacks of the various alternatives need not be displayed in a monetary cost-benefit analysis and should not be when there are important qualitative considerations (WAC 197-11-726).

Comment #	Commenter name	Comment	Response
20	John Hernandez	Seems like the plan will burn more fossil fuels this way. The route extends the travel distance and fuel usage by over 100%	Comment noted.
21	Randy Kissinger	I always felt that Burlington Northern should have had direct access to I-5. No forward thinkers in planning. I have been thinking that the most direct route would be to buy Poverty Hill and either tunnel thru it or blast and haul it off and make the access just behind Volvo/White trucks. That still puts a lot of trucks on Interurban for a short stretch.	Comment noted.
22	Lisa Krober	I am writing in support of Alternative 6. However, I believe it is critical that a portion of funding goes towards FAIR MARKET property buyouts. This should be a given safety net for the homeowners along 51st Place S., severely affected by this option. Sadly, this seems to be the most cost effective and reasonable timeline option.	Comment noted.
23	Kelle Symonds	I am going to comment on this whole process. Here we are something like 4 years later and we ended up with a bunch of unattainable alternatives, AND no funding for a new 42nd Ave Bridge. The last ditch attempt to salvage any sort of change is to put all	Comment noted.

Comment #	Commenter name	Comment	Response
		the traffic on 129th street bridge and 50th PL. The only reason for that is that at the moment we have no 42nd Ave bridge that can handle 2 way traffic. I imagine IF and WHEN we ever do have a bridge all will go back to how it always was. BNSF could care less about this neighborhood and never participated in actually finding a solution and since we can't make them do anything, we will just bend to what ever they want. That is how it was always to be. They want to spend zero money on their part so the entrance needed to stay the same. In order to do that we come up with some outlandish ideas of new freeway overpasses and blah blah blah...Nothing that is feasible in any way. So if we want anything different we have to throw a section of our neighborhood under the bus and put all traffic down a steep hill on a bridge with an even lower safety rating than the 42nd Ave bridge with no plans to restructure it to be safe for that amount of traffic. So what are we commenting on? The fact that nothing will be changing in my lifetime? I am tired and discouraged and don't really have an opinion...sadly.	
24	Duwamish Tribal Historic Preservation	Based on the information provided and our understanding of the project and its APE, the Duwamish Tribe would recommend an archaeological	The SEIS is a non-project proposal and no construction is proposed at this time. If a preferred alternative is chosen that

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		or cultural resources assessment, especially if any groundbreaking activity occurs below fill, topsoil or other impervious surfaces into native soil. This is an area that the Duwamish Tribe considers culturally significant and has a High probability to have unknown archaeological deposits. We note that there are 7 ancestral place names within about a mile of the project location as well as sensitive areas nearby. The DAHP WISAARD predictive model indicates that an archaeological survey is highly advised with a very high risk for encountering cultural resources. If an archaeological survey has already been performed for this project for any of the alternative routes, please let us know.	involves groundbreaking activity, an archeological or cultural resources assessment would be prepared.
25	Duwamish Tribal Historic Preservation	The Duwamish Tribe requests that if any archaeological work or monitoring is performed, we would like notification. Cultural and archaeological resources are non-renewable and are best discovered prior to ground disturbance. The Tribe would also like the opportunity to be present if or when an archaeologist is on site.	If any archaeological work or monitoring is proposed, the City would notify the Duwamish Tribe.
26	Duwamish Tribal Historic Preservation	In addition, the Tribe strongly recommends only native vegetation be used for any proposed landscaping to enhance habitat for fish and wildlife, and native avian life and native pollinators. The Tribe supports observing critical area tracts and stream	The SEIS is a non-project proposal and no construction is proposed at this time. The SEIS analysis of Alternative 6 concluded that because Alternative 6 would not include any alteration to the existing roadways or stormwater facilities, no direct impacts

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		buffers to preserve any remaining wetlands and stream buffers. Loss of wetland habitat is known to affect the viability of fish, water quality and increase the effects of seasonal urban flooding.	on wetlands and streams are anticipated. Once a Preferred Alternative is selected, additional measures will be taken to establish what the existing vegetation is and how it can be restored or improved upon post-construction.
27	Duwamish Tribal Historic Preservation	We also strongly recommend that native trees in the APE, particularly culturally modified trees (CMPs) are preserved. Mature trees can be of profound cultural significance to the Duwamish Tribe and provide innumerable benefits for people, climate, and wildlife. If a tree is suspected to be culturally modified, the Duwamish Tribe would like to be notified and would like the opportunity to come to the site to ensure its protection.	Comment noted.
28	Duwamish Tribal Historic Preservation	For the alternative routes, the Duwamish Tribe supports Alternative Footprint 4. The Tribe feels that this alternative would have the least impact on cultural resources, reduce truck trips to a major freeway and have the least impact on the surrounding neighborhoods.	Comment noted.
29	Duwamish Tribal Historic Preservation	Lastly we request that any permanent lighting associated with the project be dark sky compliant to reduce light pollution. Darkened skies were favorable conditions to practice traditional life pathways.	The SEIS is a non-project proposal and no construction is proposed at this time. However, if a preferred alternative is chosen, any effects from artificial lighting would be minimized by compliance

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			with applicable local lighting standards and BMPs.