



TERMINAL 5 CARGO WHARF REHABILITATION,  
BERTH DEEPENING, AND IMPROVEMENTS  
Final Environmental Impact Statement  
Volume I



**SEPA Lead Agency** **Project Proponent**



**THE NORTHWEST  
SEAPORT ALLIANCE**

October 2016

POS SEPA No. 16-08



P.O. Box 1209  
Seattle, WA 98111-1209  
USA  
Tele: (206) 787-3000

[www.portseattle.org](http://www.portseattle.org)

October 2016

**RE: TERMINAL 5 CARGO WHARF REHABILITATION, BERTH DEEPENING, AND IMPROVEMENTS  
PROJECT FINAL ENVIRONMENTAL IMPACT STATEMENT**

Dear Interested Parties, Jurisdictions, and Agencies:

Attached is a copy of the Final Environmental Impact Statement (FEIS) for the Port of Seattle's Terminal 5 Cargo Wharf Rehabilitation, Berth Deepening, and Improvements project (the Project). The Port of Seattle (Port) is proposing modifications to existing marine cargo facilities at Terminal 5. The Port is part of the Northwest Seaport Alliance (NWSA), a management authority governed by the Port and the Port of Tacoma, with each port acting through its elected commissioners. The ports remain separate organizations retaining ownership of their respective assets, with shared management and operation of marine container cargo facilities.

The proposed Project includes rehabilitation of the existing Terminal 5 marine facility in order to serve larger vessels and includes: cargo wharf rehabilitation necessary to support larger and heavier cranes; deepening of the vessel berth; water and stormwater utility retrofits; and electrical utility capacity increases. Other elements include: reconfigured marine cargo marshalling area; reorganized intermodal rail facilities; cargo area lighting modifications; pavement repair and maintenance; stormwater drainage improvements; renovation of maintenance and repair buildings; and redesign of entrance/exit gates and heavy vehicle access points to serve increased capacity. Project construction of improvements is expected to begin upon receipt of regulatory approvals.

This EIS evaluates the likely probable significant impacts that could occur as a result of the proposed actions. For purposes of environmental review, three EIS alternatives were evaluated. The first alternative is the No-Action Alternative. Two development alternatives were also analyzed in this EIS. A Preferred Alternative was selected and is described in this FEIS.

The following elements of the environment were analyzed and evaluated in the DEIS: Earth, Air Quality, Water, Plants and Animals, Environmental Health, Noise, Land Use, Relationship to Plans and Policies, Aesthetics/Light and Glare, Historic and Cultural Resources, Transportation, Public Services, and Utilities. For each of these elements, the DEIS identified probable environmental impacts, measures intended to avoid, minimize, and/or mitigate these impacts, and any significant unavoidable adverse impacts that may be anticipated.

Together, the May 23, 2016 Draft EIS (DEIS) and this FEIS comprise the environmental impact statement for the Terminal 5 Cargo Wharf Rehabilitation, Berth Deepening, and Improvements Project proposal, as required by the Washington State Environmental Policy Act (RCW Chapter 43.21C and WAC Chapter 197-11). It has been prepared for use by the public, agencies, groups and decision-makers in reviewing the Proposed Actions.

Copies of the FEIS were distributed to agencies, organizations, and individuals noted on the Distribution List. Copies of this document were also available for review at the Seattle Central Library, Delridge Library, South Park Library, Highpoint Library, Southwest Library, and West Seattle Library. Copies were also available at the Port of Seattle, Maritime Environment and Sustainability Department, Pier 69, 2711 Alaskan Way, Seattle, WA, during business hours of 8:30 AM to 4:00 PM. Persons interested in receiving a copy of the FEIS should contact Brenda Thomas at 206-728-3382 or e-mail at: SEPA.p@portseattle.org. Alternatively, the FEIS can be reviewed and downloaded at the Port of Seattle website at: <http://www.portseattle.org/Environmental/Environmental-Documents/Pages/default.aspx> and at the Terminal 5 Improvements Project Online Open House at: [www.nwseaportalliance.com/about/strategic-plan/t5](http://www.nwseaportalliance.com/about/strategic-plan/t5).

This FEIS was prepared pursuant to the State Environmental Policy Act (SEPA—Chapter 43.21C RCW), SEPA Rules (Chapter 197-11 RCW), and Resolution 3650, Port of Seattle SEPA Policies and Procedures. Two public hearings to receive public comment were held on Tuesday, June 7, 2016, from 5:00 PM to 8:30 PM, at the Georgetown Campus, South Seattle Community College, 6737 Corson Avenue, South, Seattle, WA, and on Thursday, June 9, 2016, from 5:00 PM to 8:30 PM, at the Alki Masonic Center, 4736 40th Avenue SW, Seattle, WA. The original deadline for submitting written comments was 4:00 PM on Tuesday, June 21, 2016, but the comment period was extended 17 days to July 8, 2016. This FEIS responds to comments received on the DEIS.

Please address any comments or questions about this FEIS to Paul Meyer, Manager, Environmental Permitting and Compliance, Port of Seattle, Pier 69, P.O. Box 1209, Seattle, WA 98111-1209 or to the electronic mail address at SEPA.p@portseattle.org.

#### **SEPA Compliance**

This notice of the issuance of the FEIS for the Project complies with Resolution 3650, as amended. The Port of Seattle SEPA Responsible Official, has determined that the FEIS is adequate, and that it complies with the requirements of the SEPA, Chapter 43.21C, Chapter 197-11, WAC, and Resolution 3650, as amended, Port of Seattle SEPA Policies and Procedures. The FEIS has been prepared for use by the public, agencies, groups, and decision-makers in reviewing the Project.

#### **Future Actions**

The Port of Seattle Commission has not yet decided whether or not to approve the final design and construction of the Project. The Port of Seattle has already applied for certain regulatory approvals for the Project from other government agencies, including an application for a shoreline master use permit from the City of Seattle.

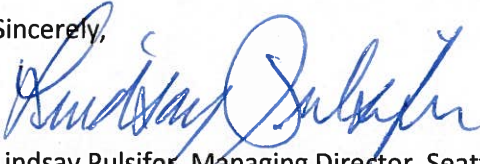
#### **Appeal of the Adequacy of FEIS**

Port of Seattle Resolution 3650, as amended, provides for appeal of the adequacy of a FEIS to be filed with the Port pursuant to the provisions of Section 21. Port of Seattle Resolution 3650, as amended, can be accessed here: <http://www.portseattle.org/Environmental/Environmental-Documents/SEPA-NEPA/Pages/default.aspx>. Any appeal of the adequacy of an FEIS must be filed by 5:00 pm of the 14<sup>th</sup> calendar day following the date that the Port provides public notice of the issuance of the FEIS. In addition, any appeal of the adequacy of the FEIS must comply with the other requirements for filing appeals in Resolution 3650, as amended, including the specific requirements of Section 21.5.

RCW 43.21C.075 requires, with several exceptions which are inapplicable to this FEIS, that any administrative appeal brought under Chapter 43.21C RCW shall be linked to a specific government action. If an underlying government action concerning this Project occurs, any appeal of the adequacy of the FEIS shall be combined with the appeal of the underlying government action as required by RCW 43.21C.075(3)(b). If the Port receives an appeal concerning the adequacy of the FEIS, the appeal will be held in abeyance unless or until the party filing the administrative appeal also appeals a specific government action concerning the Project which would allow the consolidated appeals to be heard in compliance with RCW 43.21C.075(3)(b).

Thank you for your interest and participation in this environmental review.

Sincerely,

A handwritten signature in blue ink, appearing to read "Lindsay Pulsifer". The signature is fluid and cursive, with a large initial "L" and "P".

Lindsay Pulsifer, Managing Director, Seattle Maritime  
SEPA Responsible Official  
Port of Seattle

**FINAL  
ENVIRONMENTAL IMPACT STATEMENT**

**TERMINAL 5 CARGO WHARF REHABILITATION,  
BERTH DEEPENING, AND IMPROVEMENTS**

**PORT OF SEATTLE  
SEATTLE, WASHINGTON**

**POS SEPA NO. 16-08**

Prepared for the Review and Comments of Citizens,  
Groups, and Governmental Agencies

In Compliance With  
The State Environmental Policy Act of 1971 (Chapter 43.21C RCW)  
and Port of Seattle SEPA Policies and Procedures

## SEPA FACT SHEET

### SEPA FACT SHEET

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**Project Title** Terminal 5 Cargo Wharf Rehabilitation, Berth Deepening, and Improvements Project (the Project)

**Proposed Action** The Port of Seattle (Port) with the Northwest Seaport Alliance (NWSA) is proposing rehabilitation of the existing marine cargo facilities at Terminal 5. The proposed Project includes modifications to the existing Terminal 5 marine cargo facility in order to serve larger cargo vessels. The proposed changes consist of cargo wharf rehabilitation, deepening of the vessel berth, electrical service capacity improvements, and upland improvements to serve increased capacities. The proposed Project would rehabilitate Terminal 5 to serve existing large and emerging increased capacity container cargo vessels. Proposed actions also include reconfiguration of the existing upland marine cargo marshalling area, modification of intermodal rail facilities and pavement areas, improvement of stormwater systems, alteration of maintenance and repair buildings, and redesign of entrance/exit gates and heavy vehicle access points.

The proposed Project would begin as soon as city, state, and federal authorizations and approvals are received. The anticipated start for construction is mid-2017, with completion expected by 2019. Upland/landside construction elements would continue throughout this time period while the construction proposed for cargo wharf and vessel berth improvements would be managed during up to three consecutive in-water work seasons to protect endangered species.

Upland improvements anticipated in the alternatives may be constructed over a longer period of time as capacity enhancements are required for operational needs. Specific permit approvals linked with site development activities would be obtained prior to construction.

**Alternatives** For purposes of environmental review, three EIS alternatives were reviewed.

Alternatives that are analyzed in the EIS include:

- Alternative 1 – No-Action Alternative
- Alternative 2 – Cargo Wharf Rehabilitation, Berth

SEPA FACT SHEET

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	<p>Deepening, and Increased Cargo Handling</p> <ul style="list-style-type: none"><li>– Alternative 3 – Cargo Wharf Rehabilitation, Berth Deepening, Increased Cargo Handling, and Additional Upland Improvements</li></ul> <p>A Preferred Alternative is described in this FEIS, consistent with Alternative 2 with commitments to mitigation measures included. The selected Alternative is intended to meet the goals and objectives of the Project and is within the range of alternatives described in the DEIS.</p>
<b>Project Location</b>	<p>The Project site is located at Terminal 5 on the west margin of the West Waterway, in Elliott Bay, Seattle, Washington. The address for the site is 2701 26th Avenue SW, Seattle, Washington, 98106.</p>
<b>Proponent/Applicant</b>	<p>Port of Seattle (in association with the Northwest Seaport Alliance)</p>
<b>Lead Agency</b>	<p>Port of Seattle</p>
<b>SEPA Responsible Official</b>	<p>Lindsay Pulsifer, Managing Director, Maritime Division Port of Seattle</p>
<b>Lead Agency Contact Person</b>	<p>Paul Meyer, Manager, Environmental Permitting and Compliance Port of Seattle, Pier 69 PO Box 1209 Seattle, WA 98111-1209 206-728-3127</p>
<b>Permits and Approvals</b>	<p><u>Northwest Seaport Alliance (NWSA)</u></p> <p>Management authority governed by Port of Seattle and Port of Tacoma, with each port acting through its elected commissioners</p> <p><u>City of Seattle</u></p> <p>Department of Construction and Inspections</p> <p>Shoreline Substantial Development/Master Use Permit and associated demolition, grading and building permits</p> <p><u>Seattle Department of Transportation</u></p> <p>Right-of-Way Use Permit</p> <p><u>State of Washington</u></p> <p>Department of Ecology</p> <ul style="list-style-type: none"><li>– National Pollutant Discharge Elimination System (NPDES)</li></ul>

SEPA FACT SHEET

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Construction permit

- Clean Water Act Section 401 Certification
- Model Toxics Control Act (MTCA) Coordination
- Certification and Coastal Zone Management Act Consistency Determination

Department of Archaeology and Historic Preservation (DAHP)  
Review

Department of Natural Resources Dredged Materials  
Management Office

- Suitability Determination and Open Water Disposal Permit
- Site Use Authorization

Department of Fish & Wildlife

- Hydraulic Project Approval

U.S. Government

U.S. Army Corps of Engineers (USACE)

- Section 10/404 Permit
- National Environmental Policy Act (NEPA) compliance evaluation

U.S. Environmental Protection Agency (EPA)

- Comprehensive Environmental Response, Compensation, and Liability -Act (CERCLA) Coordination

National Oceanic and Atmospheric Administration (NOAA) and  
U.S. Fish & Wildlife Service

- Endangered Species Act (ESA) Section 7 consultation, Biological Evaluation

Treaty tribe consultation

Coordination and consultation with the Muckleshoot Indian Tribe  
and Suquamish Tribe

- Usual and Accustomed Treaty fishing access and aquatic natural resources



**EIS Authors & Principal  
Contributors**

**EIS Project Management, Earth, Environmental Health,  
Aesthetics, Land Use, Plans & Policies, Cultural/Historic**

SoundEarth Strategies, Inc.

Attn: Pam Xander, Peter Kingston, Silvia Hendrickson

2811 Fairview Avenue East, Suite 2000

Seattle, WA 98102

**Vessel Traffic/Operations, Rail, Light and Glare, Public Services,  
Utilities, Sea Level Rise**

Moffatt & Nichol

Attn: Steven Gray, Margaret Schwertner, James Todd

600 University Street #610

Seattle, WA 98101

**Marine Water Quality/Dredging/Geotech/Plants and Animals**

Hart Crowser

Attn: Doug Lindquist, Jim Starkes, Anne Conrad

190 West Dayton Street #201

Edmonds, WA 98020

**Stormwater**

Aspect Consulting

Attn: Tom Atkins

401 2nd Avenue South #201

Seattle, WA 98104

**Air Quality/Noise/Greenhouse Gas Emissions/Health Risk**

Ramboll Environ US Corporation

Attn: Tim Sturtz, Kristen Wallace, Eric Hansen, Richard Steffel

19200 33rd Avenue West, Suite 310

Lynnwood, WA 98036

**Transportation**

Heffron Transportation, Inc.

Attn: Marni Heffron

6544 Northeast 61st Street

Seattle, WA 98115

<b>Date of DEIS Issuance</b>	May 23, 2016
<b>Date of FEIS Issuance</b>	October 18, 2016
<b>DEIS Public Hearings</b>	<p>Two public hearings were held at the following times and locations:</p> <p>Date: Tuesday, June 7, 2016 Time: 5:00 PM to 8:30 PM (public testimony was taken beginning at 6:45 PM) Place: Georgetown Campus, South Seattle Community College, 6737 Corson Avenue, South, Seattle, WA</p> <p>Date: Thursday, June 9, 2016 Time: 5:00 PM to 8:30 PM (public testimony was taken beginning at 6:45 PM) Place: Alki Masonic Center, 4736 40th Avenue SW, Seattle, WA</p> <p>The original comment deadline for the DEIS was June 21, 2016, but it was extended by 17 days to July 8, 2016.</p>
<b>Previous Environmental Document</b>	<p>Per WAC 197-11-635, this EIS builds upon and incorporates by reference the following environmental documents: Port of Seattle, Terminal 5 Cargo Wharf Rehabilitation and Berth Deepening Project SEPA Checklist and Determination of Nonsignificance (DNS) issued March 2, 2015; the Draft Southwest Harbor Cleanup and Redevelopment Project DEIS issued January 1994; the Southwest Harbor Cleanup and Redevelopment Project FEIS issued November 1994; Southwest Harbor Cleanup and Redevelopment Addendums Numbers 1 through 4 issued in June 1995, April 1996, September 1996, and May 1998; and Terminal 5 Maintenance Dredging Program DNS issued January 2010.</p>
<b>Location of Background Information</b>	<p>Background material and supporting documents are located at: Port of Seattle, Pier 69 2711 Alaskan Way Seattle, WA 98111-1209</p>
<b>Availability of the DEIS and FEIS</b>	<p>The DEIS and this FEIS have been distributed to agencies, organizations, and individuals noted on the Distribution List</p>

contained in Chapter 8.

Copies of the FEIS are available for review at the Seattle Central Library, Delridge Library, Southwest Library, Highpoint Library, South Park Branch Library, and the West Seattle Library. Copies were also available at the Port of Seattle, Maritime Environment and Sustainability Department, Pier 69, 2711 Alaskan Way, Seattle, WA, during business hours of 8:30 AM to 4:00 PM. Persons interested in receiving a copy of the Draft or FEIS may contact Brenda Thomas at 206-728-3382 or e-mail at: SEPA.p@portseattle.org. Alternatively, the DEIS and FEIS can be reviewed and downloaded at the Port of Seattle website at:

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and at the Terminal 5 Improvements Project Online Open House at: <[www.nwseaportalliance.com/about/strategic-plan/t5](http://www.nwseaportalliance.com/about/strategic-plan/t5)>.

## **EIS Decision of Adequacy and Appeal Information**

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# Table of Contents

SEPA FACT SHEET .....	I
ACRONYMS AND ABBREVIATIONS .....	XIV
TERMINOLOGY .....	XX
1.0 SUMMARY .....	1-2
1.1 INTRODUCTION .....	1-2
1.2 ENVIRONMENTAL IMPACT STATEMENT .....	1-2
1.2.1 HISTORY OF THE TERMINAL 5 SITE .....	1-3
1.2.2 PROJECT PROPONENT .....	1-3
1.2.3 PROPOSED PROJECT .....	1-3
1.2.4 PROJECT LOCATION .....	1-3
1.2.5 PROPOSED ALTERNATIVES .....	1-4
1.2.6 SELECTION OF A PREFERRED ALTERNATIVE .....	1-5
1.2.7 AREAS OF CONTROVERSY AND UNCERTAINTY .....	1-6
1.2.8 SCHEDULE AND PHASING .....	1-6
1.3 SUMMARY OF IMPACTS AND MITIGATION .....	1-7
2.0 DESCRIPTION OF PROPOSED ACTION(S) AND ALTERNATIVES .....	2-2
2.1 INTRODUCTION .....	2-2
2.2 SUMMARY OF SEPA ENVIRONMENTAL REVIEW .....	2-2
2.2.1 DETERMINATION OF NON SIGNIFICANCE .....	2-2
2.2.2 CURRENT EIS ENVIRONMENTAL REVIEW .....	2-3
2.3 PROJECT BACKGROUND .....	2-4
2.3.1 INTERNATIONAL MARINE CARGO FACILITY TRENDS .....	2-4
2.3.2 PROJECT PROPONENT .....	2-5
2.3.3 PROJECT GOALS AND OBJECTIVES .....	2-5
2.3.4 PROPOSED PROJECT .....	2-6
2.4 ALTERNATIVES .....	2-8
2.4.1 NO-ACTION ALTERNATIVE .....	2-9
2.4.2 ALTERNATIVE 2 CARGO WHARF REHABILITATION, BERTH DEEPENING, AND INCREASED CARGO HANDLING .....	2-10
2.4.3 PROPOSED ALTERNATIVE 2 CONSTRUCTION .....	2-10
2.4.4 PROPOSED ALTERNATIVE 2 OPERATIONS .....	2-14
2.4.5 ALTERNATIVE 3 CARGO WHARF REHABILITATION, BERTH DEEPENING, INCREASED CARGO HANDLING, AND ADDITIONAL UPLAND IMPROVEMENTS .....	2-17
2.4.6 PROPOSED ALTERNATIVE 3 CONSTRUCTION .....	2-17
2.4.7 PROPOSED ALTERNATIVE 3 OPERATIONS .....	2-18
2.4.8 SCHEDULE AND PHASING .....	2-20
2.5 POSSIBLE FUTURE PROJECTS .....	2-21
2.6 DISADVANTAGES AND/OR BENEFITS OF FUTURE IMPLEMENTATION .....	2-21
2.7 CUMULATIVE IMPACTS .....	2-21
2.7.1 REGULATORY CONTEXT .....	2-22

	2.7.2 METHODOLOGY.....	2-22
	2.7.3 REASONABLY FORESEEABLE FUTURE PROJECTS .....	2-22
	2.7.4 CUMULATIVE IMPACTS ANALYSIS CONCLUSION .....	2-23
3.0	AFFECTED ENVIRONMENT, IMPACTS, MITIGATION MEASURES, SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS.....	3.1-1
3.1	EARTH.....	3.1-1
	3.1.1 REGULATORY CONTEXT .....	3.1-1
	3.1.2 AFFECTED ENVIRONMENT.....	3.1-2
	3.1.3 IMPACTS .....	3.1-5
	3.1.4 MITIGATION MEASURES.....	3.1-8
	3.1.5 SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS .....	3.1-10
3.2	AIR QUALITY .....	3.2-1
	3.2.1 REGULATORY CONTEXT .....	3.2-1
	3.2.2 AFFECTED ENVIRONMENT.....	3.2-2
	3.2.3 IMPACTS .....	3.2-10
	3.2.4 MITIGATION MEASURES.....	3.2-28
	3.2.5 SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS .....	3.2-30
3.3	WATER.....	3.3-1
	3.3.1 REGULATORY CONTEXT .....	3.3-1
	3.3.2 AFFECTED ENVIRONMENT.....	3.3-3
	3.3.3 IMPACTS .....	3.3-7
	3.3.4 MITIGATION MEASURES.....	3.3-11
	3.3.5 SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS .....	3.3-15
3.4	PLANTS AND ANIMALS .....	3.4-1
	3.4.1 REGULATORY CONTEXT .....	3.4-1
	3.4.2 AFFECTED ENVIRONMENT.....	3.4-2
	3.4.3 IMPACTS .....	3.4-5
	3.4.4 MITIGATION MEASURES.....	3.4-17
	3.4.5 SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS .....	3.4-19
3.5	ENVIRONMENTAL HEALTH .....	3.5-1
	3.5.1 REGULATORY CONTEXT .....	3.5-1
	3.5.2 AFFECTED ENVIRONMENT.....	3.5-1
	3.5.3 IMPACTS .....	3.5-3
	3.5.4 MITIGATION MEASURES.....	3.5-5
	3.5.5 SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS .....	3.5-8
3.6	NOISE .....	3.6-1
	3.6.1 REGULATORY CONTEXT .....	3.6-1
	3.6.2 AFFECTED ENVIRONMENT.....	3.6-4
	3.6.3 HOTELING VESSEL NOISE.....	3.6-7
	3.6.4 IMPACTS .....	3.6-8
	3.6.5 MITIGATION MEASURES.....	3.6-20
	3.6.6 SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS .....	3.6-23
3.7	LAND USE .....	3.7-1
	3.7.1 REGULATORY CONTEXT .....	3.7-1

3.7.2	AFFECTED ENVIRONMENT.....	3.7-4
3.7.3	IMPACTS .....	3.7-6
3.7.4	MITIGATION MEASURES.....	3.7-11
3.7.5	SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS .....	3.7-12
3.8	RELATIONSHIP TO PLANS AND POLICIES.....	3.8-1
3.8.1	REGULATORY CONTEXT .....	3.8-1
3.8.2	AFFECTED ENVIRONMENT.....	3.8-5
3.8.3	IMPACTS .....	3.8-5
3.8.4	MITIGATION MEASURES.....	3.8-6
3.8.5	SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS .....	3.8-6
3.9	AESTHETICS/LIGHT AND GLARE .....	3.9-1
3.9.1	REGULATORY CONTEXT .....	3.9-1
3.9.2	AFFECTED ENVIRONMENT.....	3.9-2
3.9.3	IMPACTS .....	3.9-2
3.9.4	MITIGATION MEASURES.....	3.9-6
3.9.5	SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS .....	3.9-7
3.10	HISTORIC AND CULTURAL RESOURCES .....	3.10-1
3.10.1	REGULATORY CONTEXT .....	3.10-1
3.10.2	AFFECTED ENVIRONMENT.....	3.10-2
3.10.3	IMPACTS .....	3.10-4
3.10.4	MITIGATION MEASURES.....	3.10-6
3.10.5	SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS .....	3.10-8
3.11	TRANSPORTATION .....	3.11-1
3.11.1	REGULATORY CONTEXT .....	3.11-1
3.11.2	AFFECTED ENVIRONMENT.....	3.11-1
3.11.3	IMPACTS .....	3.11-2
3.11.4	MITIGATION MEASURES.....	3.11-14
3.11.5	SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS .....	3.11-18
3.12	PUBLIC SERVICES.....	3.12-1
3.12.1	REGULATORY CONTEXT .....	3.12-1
3.12.2	AFFECTED ENVIRONMENT.....	3.12-1
3.12.3	IMPACTS .....	3.12-2
3.12.4	MITIGATION MEASURES.....	3.12-2
3.12.5	SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS .....	3.12-3
3.13	UTILITIES.....	3.13-1
3.13.1	REGULATORY CONTEXT .....	3.13-1
3.13.2	AFFECTED ENVIRONMENT.....	3.13-1
3.13.3	IMPACTS .....	3.13-2
3.13.4	MITIGATION MEASURES.....	3.13-8
3.13.5	SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS .....	3.13-10
4.0	UPDATED INFORMATION AND ANALYSIS .....	4-2
4.1	CHAPTER 1 – SUMMARY .....	4-2
4.1.1	UPDATED INFORMATION ON SELECTION OF A PREFERRED ALTERNATIVE .....	4-2
4.2	CHAPTER 2 – DESCRIPTION OF THE ALTERNATIVES.....	4-3

4.2.1	CLARIFICATION OF THE ELECTRIFICATION SCHEDULE AND ACCELERATED SCHEDULE FOR ADOPTION OF ALTERNATIVE 3 .....	4-3
4.3	CHAPTER 3 – AFFECTED ENVIRONMENT, IMPACTS, MITIGATION MEASURES, SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS .....	4-3
4.3.1	EARTH, SECTION 1 .....	4-3
4.3.2	AIR, SECTION 2 .....	4-4
4.3.3	WATER, SECTION 3 .....	4-6
4.3.4	NOISE, SECTION 6 .....	4-6
4.3.5	CULTURAL HISTORICAL, SECTION 10 .....	4-6
4.3.6	TRANSPORTATION, SECTION 11 .....	4-6
4.3.7	CHAPTER 3, SECTION 12, PUBLIC SERVICES.....	4-7
5.0	ERRATA .....	5-2
5.1	VOLUME I (DRAFT EIS) .....	5-2
5.1.1	CHAPTER 2.....	5-2
5.1.2	CHAPTER 3.....	5-2
5.2	VOLUME II (DRAFT EIS) .....	5-2
5.2.1	APPENDIX C TRANSPORTATION TECHNICAL REPORT .....	5-2
6.0	COMMENT LETTERS AND RESPONSES .....	6-2
6.1	STANDARD RESPONSES.....	6-8
6.1.1	STANDARD RESPONSE NO. 1: SELECTION OF AIR QUALITY MONITORING SITES AND DATA.....	6-8
6.1.2	STANDARD RESPONSE NO. 2: POST-OPERATION AIR QUALITY MONITORING .....	6-9
6.1.3	STANDARD RESPONSE NO. 3: USE OF SHOREPOWER .....	6-10
6.1.4	STANDARD RESPONSE NO. 4: ELECTRIFICATION SCHEDULE AND ACCELERATED SCHEDULE FOR ADOPTION OF ALTERNATIVE 3 .....	6-11
6.1.5	STANDARD RESPONSE NO. 5: TRAIN HORN NOISE.....	6-11
6.1.6	STANDARD RESPONSE NO. 6: NIGHTTIME NOISE.....	6-12
6.1.7	STANDARD RESPONSE NO. 7: LOW FREQUENCY NOISE .....	6-12
6.1.8	STANDARD RESPONSE NO. 8: CARGO FORECASTS .....	6-12
6.1.9	STANDARD RESPONSE NO. 9: COMPLIANCE NOISE MONITORING.....	6-13
6.1.10	STANDARD RESPONSE NO. 10: RESPONSIBILITY FOR PERMIT COMPLIANCE .....	6-14
7.0	BIBLIOGRAPHY .....	7-2
8.0	DISTRIBUTION LIST .....	8-2
8.1	FEDERAL AGENCIES .....	8-2
8.2	REGIONAL AGENCIES.....	8-2
8.3	WASHINGTON STATE AGENCIES .....	8-2
8.4	CITY OF SEATTLE.....	8-2
8.5	KING COUNTY.....	8-3
8.6	INDIAN TRIBES.....	8-3
8.7	PUBLIC LIBRARIES.....	8-3
8.8	NEIGHBORHOOD ASSOCIATIONS AND SERVICE CENTERS .....	8-3
8.9	LOCAL BUSINESSES.....	8-4
8.10	ORGANIZATIONS .....	8-4



**LIST OF TABLES**

Table 1.3-1:	Proposed Project Alternatives – Potential Impacts and Mitigation Summary .....	1-10
Table 2.4-1:	Operational Assumptions for Each DEIS Alternative .....	2-8
Table 3.2-1:	Operational Scenarios Considered with Air Quality Modeling .....	3.2-9
Table 3.2-2:	Annual Alternative 1 Emissions (tpy) .....	3.2-11
Table 3.2-3:	Alternative 1 Modeling Results: Maximum Criteria Pollutant Concentrations ( $\mu\text{g}/\text{m}^3$ ) .....	3.2-12
Table 3.2-4:	Annual Alternative 2 Emissions (tpy) .....	3.2-13
Table 3.2-5:	Alternative 2 Modeling Results: Maximum Criteria Pollutant Concentrations ( $\mu\text{g}/\text{m}^3$ ) .....	3.2-14
Table 3.2-6:	Annual Alternative 3 Emissions (tpy) .....	3.2-15
Table 3.2-7:	Alternative 3 Modeling Results: Maximum Criteria Pollutant Concentrations ( $\mu\text{g}/\text{m}^3$ ) .....	3.2-16
Table 3.2-8:	Annual Project Emissions (tons per year).....	3.2-17
Table 3.2-9:	Reduction in Annual Emissions with Shorepower (tons per year) .....	3.2-19
Table 3.2-10:	Construction-Related GHG Emissions (tonnes).....	3.2-23
Table 3.2-11:	Operational Greenhouse Gas Emissions .....	3.2-25
Table 3.2-12:	“Hot-Spot” Intersection Modeling Results: Maximum CO Concentrations (parts per million) .....	3.2-26
Table 3.2-13:	Project Construction-Related Air Pollutant Emissions (tons).....	3.2-27
Table 3.4-1:	Summary of In-water and Over-water Structures Removed and Added .....	3.4-13
Table 3.6-1:	Seattle Maximum Permissible Levels and Construction Noise Limits (dBA).....	3.6-2
Table 3.6-2:	Range of Measured Sound Levels in Project Vicinity (dBA).....	3.6-5
Table 3.6-3:	Expected Operational Equipment .....	3.6-9
Table 3.6-4:	Model-Calculated Sound Levels – No-Action Alternative (dBA, Leq) .....	3.6-11
Table 3.6-5:	Noise Levels from Typical Construction Activities and Equipment (dBA).....	3.6-12
Table 3.6-6:	Model-Calculated Sound Levels - Alternative 2 (dBA, Leq) .....	3.6-15
Table 3.6-7:	Estimated Impacts due to Increases with Alternative 2 using FTA Impact Criteria (Ldn).....	3.6-16
Table 3.6-8:	Model-Calculated Sound Levels - Alternative 3 (dBA, Leq) .....	3.6-18
Table 3.6-9:	Estimated Impacts due to Increases with Alternative 3 using FTA Impact Criteria (Ldn).....	3.6-20
Table 3.7-1:	Land Use Code Requirements for Development in IG1 Zones .....	3.7-2
Table 3.7-2:	Development Standards.....	3.7-8
Table 3.11-1:	Terminal 5 Truck Trip Generation Estimates—All Alternatives .....	3.11-4
Table 3.11-2:	Terminal 5 Employee Trip Estimates – All Alternatives for Design Day Conditions.....	3.11-5
Table 3.11-3:	Terminal 5 Traffic versus Future Traffic Volumes on State Highways .....	3.11-7
Table 3.13-1:	Proposed Electrical System Upgrades for Alternatives 2 and 3 .....	3.13-5

**LIST OF FIGURES**

Figure 1.3.1:	Vicinity Map .....	1-8
Figure 1.3.2:	Terminal 5 Subarea Map .....	1-9
Figure 2.7.1:	Alternative 1 No-Action Alternative Conceptual Construction Elements.....	2-24
Figure 2.7.2:	Alternative 2 Cargo Wharf Rehabilitation, Berth Deepening, and Increased Cargo Handling Construction Elements.....	2-25
Figure 2.7.3:	Alternative 3 Cargo Wharf Rehabilitation, Berth Deepening, Increased Cargo Handling, and Additional Upland Improvements Conceptual Construction Elements .....	2-26
Figure 2.7.4:	Alternative 1 No-Action Alternative Conceptual Operational Elements .....	2-27
Figure 2.7.5:	Alternative 2 Cargo Wharf Rehabilitation, Berth Deepening, and Increased Cargo Handling Conceptual Operational Elements.....	2-28
Figure 2.7.6:	Alternative 3 Cargo Wharf Rehabilitation, Berth Deepening, Increased Cargo Handling, and Additional Upland Improvements Conceptual Operational Elements.....	2-29
Figure 3.2.1:	AERMOD Modeling Domain and Receptor Locations .....	3.2-8
Figure 3.2-2:	Alternative 1 (2020): Model-Calculated Diesel Particulate Concentrations.....	3.2-21

Figure 3.2.3: Alternative 3 (2030): Model-Calculated Diesel Particulate Concentrations .....	3.2-22
Figure 3.5.1: Terminal 5 Upland Remediation Areas.....	3.5-3
Figure 3.6.1: FTA/FRA Noise Impact Criteria .....	3.6-4
Figure 3.6.2: Sound Level Measurement (SLM) and Model Receptor Locations.....	3.6-6
Figure 3.8.1: Comprehensive Plan Designations (City of Seattle website, March 2016).....	3.8-7
Figure 3.9.1: Belvedere Park, Facing East – Existing View.....	3.9-8
Figure 3.9.2: Belvedere Park, Facing East – Proposed View.....	3.9-8
Figure 3.9.3: Don Armeni Boat Ramp, Facing Southeast – Existing View.....	3.9-9
Figure 3.9.4: Don Armeni Boat Ramp, Facing Southeast – Proposed View.....	3.9-9
Figure 3.9.5: Jack Block Park, Facing Southeast – Existing View .....	3.9-10
Figure 3.9.6: Jack Block Park, Facing Southeast – Proposed View .....	3.9-10
Figure 3.9.7: Seacrest Park, Facing Southeast – Existing View .....	3.9-11
Figure 3.9.8: Seacrest Park, Facing Southeast – Proposed View .....	3.9-11
Figure 3.9.9: Victor Steinbrueck Park, Facing Southwest – Existing View .....	3.9-12
Figure 3.9.10: Victor Steinbrueck Park, Facing Southwest – Proposed View .....	3.9-12
Figure 3.9.11: High-Level (Jeanette Williams Memorial) West Seattle Bridge, Facing Northwest – Existing View .....	3.9-13
Figure 3.9.12: High-Level (Jeanette Williams Memorial) West Seattle Bridge, Facing Northwest – Proposed View .....	3.9-13
Figure 3.10.1: Duwamish River Delta 1901 Pre-Dredging Map Terminal 5 Overlay.....	3.10-3
Figure 3.11.1: Analysis Conditions and Projected Future Terminal Throughput.....	3.11-6

LIST OF EXHIBITS

Exhibit 3.10-1: Duwamish River Delta 1901 Pre-Dredging Map Terminal 5 Overlay

VOLUME II APPENDICES

- A Air Quality Technical Report (Ramboll Environ US Corporation [September 2016])
- B Noise Quality Technical Report (Ramboll Environ US Corporation [October 3, 2016])
- C Transportation Technical Report for Draft EIS (Heffron Transportation, Inc. October 6, 2016)
- D Stormwater Technical Memorandum for EIS (Aspect Consulting [May 6, 2016])
- E Biological Assessment Terminal 5 Cargo Wharf Rehabilitation and Berth Deepening (Hart Crowser, Inc. [May 6, 2016])
- F Rail Infrastructure and Train Volume Analysis Memorandum for Terminal 5 (Moffatt & Nichol [April 22, 2016])
- G Vessel Traffic and Navigation Memorandum for Terminal 5 (Moffatt & Nichol [April 20, 2016])
- H Water Quality Monitoring Report (Hart Crowser, Inc. [May 12, 2016])
- I Sea Level Rise Considerations for Terminal 5 (Moffatt & Nichol [April 20, 2016])
- J 95% Geotechnical Engineering Design Study for Terminal 5 Cargo Wharf Rehabilitation and Berth Deepening (Hart Crowser, Inc. [June 14, 2016])
- K Draft Southwest Harbor Terminal 5 Cargo Groundwater Quality Monitoring Evaluation Report, Seattle, Washington (Hart Crowser, Inc. [July 8, 2014])
- L Shoreline Master Program Development Standards Compliance Terminal 5 Cargo Wharf Rehabilitation and Berth Deepening Project (DPD Project No. 3019071) (Anchor QEA, LLC. [December 2015])
- M Operational Noise Management Plan (Ramboll Environ US Corporation [October 1, 2016])

## ACRONYMS AND ABBREVIATIONS

Abbreviation	Term
<u>CHEMICAL ELEMENTS AND COMPOUNDS</u>	
CH <sub>4</sub>	methane
CO	carbon monoxide
CO <sub>2</sub>	carbon dioxide
CO <sub>2</sub> e	carbon dioxide equivalent
cPAH	carcinogenic polycyclic aromatic hydrocarbons
DO	dissolved oxygen
GHG	greenhouse gas
NO <sub>x</sub>	nitrogen oxide
NO <sub>2</sub>	nitrogen dioxide
O <sub>3</sub>	ozone
PM <sub>2.5</sub>	fine particulate matter
PM <sub>10</sub>	inhalable particulate matter
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
SO <sub>x</sub>	sulfur oxide
SO <sub>2</sub>	sulfur dioxide

### UNITS OF MEASURE

µg/m <sup>3</sup>	micrograms per cubic meter
µPa	micropascal
amp	ampere
cy	cubic yard(s)
dB	decibel(s)
dBA	A-weighted decibel(s)
ESU	engineering soil unit

Abbreviation	Term
g	grams
km	kilometer
kV	kilovolt
kW	kilowatt
Ldn	Day-night sound level
Leq	equivalent sound level
Lmax	maximum sound level
m	meter
mg/L	milligrams per liter
MTCO <sub>2e</sub>	million metric tons of carbon dioxide equivalent
MVA	megavolt ampere
MW	megawatts
ng/kg	nanograms per kilogram
NTU	nephelometric turbidity units
ppb	parts per billion
ppm	parts per million
ppt	parts per thousand
pptr	parts per trillion
TEU	twenty-foot equivalent unit
tpy	tons per year

GENERAL ACRONYMS/ABBREVIATIONS

AESS	automatic engine shutoff system
ASIL	Acceptable Source Impact Level
AWDT	Average Weekday Daily Traffic
bgs	below ground surface
BINMIC	Ballard/Interbay Northend Manufacturing Industrial Center
BMP	best management practice
Caltrans	California Department of Transportation

Abbreviation	Term
CEM	the CEM property
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CHE	container handling equipment
Comprehensive Plan	City of Seattle comprehensive Plan
CMP	Construction Management Plan
CPPs	King County Countywide Planning Policies
CWA	Clean Water Act
DAHP	Department of Archaeology and Historic Preservation
DCI	Department of Construction and Inspections
DEIS	Draft Environmental Impact Statement
DMMO	Dredged Material Management Office
DMMP	Dredged Material Management Program
DNR	Washington State Department of Natural Resources
DNS	Determination of Nonsignificance
DPM	diesel engine exhaust particulate matter
ECA	environmentally critical area
Ecology	Washington State Department of Ecology
EFH	essential fish habitat
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
EW	East Waterway
FAP	Freight Access Project
FEIS	Final Environmental Impact Statement
FHWA	Federal Highway Administration
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
GMA	Growth Management Act

Abbreviation	Term
HPA	Hydraulic Project Approval
IBC	International Building Code
IG1	General Industrial 1
IMO	International Maritime Organization
ISGP	Industrial Stormwater General Permit
ITS	Intelligent Transportation System
LAAS	Larson Anthropological and Archaeological Services
LED	light-emitting diode
LEP	light-emitting plasma
LFOL	Longfellow Creek Overflow Line
LOS	level of service
MHHW	mean higher high water
MIC	Manufacturing Industrial Center
MLLW	mean lower low water
MMPA	Marine Mammal Protection Act
MTCA	Washington State Model Toxics Control Act
MTO	Marine Terminal Operator
NAAQS	National Ambient Air Quality Standard
NDZ	No Discharge Zone
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NWSA	Northwest Seaport Alliance
OLM	Ozone Limiting Method
OSC	Ocean Shipping Consultants
PHS	Priority Habitats and Species

Abbreviation	Term
PIANC	Permanent International Association of Navigational Congresses
PMA	Port Management Agreement
Port	Port of Seattle
POSPD	Port of Seattle Police Department
Project	Terminal 5 Cargo Wharf Rehabilitation, Berth Deepening, and Improvements Project (also referred to as the Project)
PSCAA	Puget Sound Clean Air Agency
PSE	Puget Sound Energy
PSLM	Practical Spreading loss model
PSRC	Pacific Sound Regional Council
RA	Remediation Area
RCW	Revised Code of Washington
RLT	rapid load test
RMG	rail-mounted gantry (crane)
rms	root mean square
RTG	rubber-tired gantry (crane)
SCC	Source Category Code
SCL	Seattle City Light
SDOT	Seattle Department of Transportation
SEL	sound exposure level
SEPA	State Environmental Policy Act
SFD	Seattle Fire Department
SIG	Seattle International Gateway
SLM	Sound Level Measurement
SMA	Shoreline Management Act
SMC	Seattle Municipal Code
SMP	Shoreline Master Program
SoundEarth	SoundEarth Strategies, Inc.
SPCC	Spill Prevention, Control, and

Abbreviation	Term
	Countermeasure
SPL	sound pressure levels
SPU	Seattle Public Utilities
SQS	Sediment Quality Standards
ST3	Sound Transit 3
STS	ship-to-shore
SWPPP	Stormwater Pollution Prevention Plan
TAP	toxic air pollutant
TEQ	toxicity equivalent
TMP	Transportation Management Plan
TP	top-pick
TSP	total suspended particulate
UG	Urban General
UGA	urban growth area
UI	Urban Industrial
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish & Wildlife Service
V/C	volume-to-capacity ratio
VTS	Vessel Traffic Service
WA	Washington
WAC	Washington Administrative Code
WDFW	Washington Department of Fish & Wildlife
WPPA	Washington Public Ports Association
WSDOT	Washington State Department of Transportation
WSY	West Seattle Yard



## TERMINOLOGY

**AKART:** all-known, available and reasonable methods of prevention, control and treatment. AKART represents the most current methodology that can be reasonably required for preventing, controlling, or abating the pollutants associated with a discharge. AKART applied to both point and nonpoint sources of pollution.

**Benthic:** the lowest level of a body of water.

**CAIT Database:** an online database maintained by the World Resources Institute of overall estimated global greenhouse gas emissions.

**Comprehensive Plan:** generalized coordinated land use policy statement of the governing body of a county or city that is adopted pursuant to Chapter 36.70A RCW.

**Consist:** a railroad term used to describe the makeup of a train (i.e., freight, car types, etc.).

**Container:** the box used to transport goods by several modes, including truck, rail, and ship. Containers come in a range of sizes from 20-foot long to 48-foot long. The most common containers are 40-foot long.

**Cut:** a railroad term which describes a grouping of cars coupled together.

**Dray:** the movement of cargo by truck. In the Port of Seattle area, a “dray trip” generally refers to the short truck trip between a marine terminal and an off-site intermodal rail terminal, via public right-of-way. Containers that are moved by truck to local or regional businesses are simply referred to as truck trips.

**Force main:** a sewer main that moves wastewater under pressure using pumps or compressors located in lift stations. Force mains are utilized when gravity flow is insufficient to move water.

**GMA:** Growth Management Act. Adopted in 1990 under the Revised Code of Washington Chapter 36.70A. The GMA provides a comprehensive framework for managing growth, and coordinating land use planning with infrastructure.

**Greater Duwamish Manufacturing/Industrial Center:** center of regional industry located on the northern end of an industrial corridor that extends from downtown Seattle to the Kent Valley. The Greater Duwamish Manufacturing/Industrial Center is comprised of approximately 5,000 acres of marine and industrial land.

**Intermodal:** a transfer of cargo from one mode to another. In the shipping business, an “intermodal container” generally refers to one that will be transported from or to a ship by rail. Terminal 5 has an on-dock intermodal rail yard that allows the direct transfer of containers between rail and ship using yard equipment. However, it is expected that some containers will be trucked (see “dray” below) between the marine terminal and the near-dock rail yards operated by the BNSF Railway and Union Pacific (UP) Railroad.

**MARPOL:** The International Convention for the Prevention of Marine Pollution from Ships, which sets limits on emissions from ship exhausts and prohibits deliberate emissions of ozone depleting substances. MARPOL regulations also apply to potential discharges of petroleum materials, bilge/ballast water discharges, and release of solid waste.

**MICs:** Manufacturing Industrial Centers. Manufacturing Industrial Centers are envisioned as areas of concentrated employment, including manufacturing, industrial and advanced technology. Their purpose is to preserve and encourage the aggregation of land suitable for manufacturing/industrial uses, and discourage non-compatible uses.

**OCR:** optical character recognition. OCR portals are positions at terminal entry and exit points to automatically read identification numbers on trucks and containers.

**Panamax/Super post-Panamax:** Panamax-class ships are limited by the size of the original Panama Canal, and are capable of carrying approximately 4,500 TEUs. The existing berth and cranes at Terminal 5 can accommodate Panamax-class vessels as well as post-Panamax vessels up to approximately 6,000 to 7,000 TEUs, depending on vessel and tide conditions. Super post-Panamax vessels are capable of carrying 10,000 to 18,000 TEUs.

**Pile:** a structural column which is driven into the ground in order to support a vertical load.

**RFID:** radio frequency identification. These devices are used to track truck and container movements through the terminal gates.

**Riparian:** land directly adjacent to rivers, streams or other bodies of water.

**Riprap:** rock placed on shorelines in order to prevent water driven erosion.

**RMG crane:** rail-mounted gantry crane. The largest type of equipment used to lift and stack containers. They are guided by fixed rails, and although not as mobile as top-picks or RTGs, allow for more efficient use of container marshalling yard area, including densely stacked containers, increasing facility capacity.

**RTG crane:** rubber-tired gantry crane. Yard equipment used to lift and stack containers in container marshalling yard areas, increasing facility and capacity. They will typically span over trucks, railcars, and container stacks.

**Seattle SMP:** Seattle Shoreline Master Program. The SMP is mandated by the state Shoreline Management Act and includes the goals, policies, and regulations that govern land use and activities within the Seattle Shoreline District. The Seattle Shoreline District includes: the Duwamish River, the Ship Canal, Lake Union, Lake Washington, Green Lake, and Puget Sound; their associated wetlands and floodplains; and all land within 200 feet of these water bodies.

**Ship-to-shore crane:** a large dockside gantry crane used for loading and unloading intermodal containers from container ships.

**TEU:** twenty-foot equivalent unit. A unit of measure used in the shipping industry. A 40-foot container equals two TEUs. In recent years, Port of Seattle shipments have averaged 1.74 TEUs per container.

**Throughput:** volume of container cargo that passes through a terminal, generally measured in TEUs per year.

**Top-Pick:** yard equipment that is used to lift containers off or onto a truck or rail car, and also used to stack containers in the yard.

**Treaty Fishing Access:** Elliott Bay, the East and West Waterways, and the Duwamish Waterway are recognized as Treaty fishing access areas managed by the Muckleshoot Tribe and the Suquamish Tribe. These areas are Treaty-protected fishing areas.

**Turbid:** in relation to water: the state of being cloudy with suspended sediment.

**TWIC:** Transportation Worker Identification Card, which is issued by the U.S. Department of Homeland Security, and is required to access Terminal 5.

**Weir:** a barrier constructed across a flowing body of water in order to alter its flow.

**West Waterway:** western navigational access channel to the Lower Duwamish Waterway.

# Chapter 1

## Summary

## 1.0 SUMMARY

### 1.1 INTRODUCTION

The Port of Seattle (the Port), in coordination with the Northwest Seaport Alliance (NWSA), is proposing the Terminal 5 Cargo Wharf Rehabilitation, Berth Deepening, and Improvements project (the Project) on the West Waterway at Terminal 5. The proposed Project is required to be reviewed for **likely significant adverse environmental impacts** to the built and natural environment under the State Environmental Policy Act (SEPA) for Washington State. SEPA applies to decisions made by state and local agencies, including ports. The Port is lead agency for SEPA environmental review of the proposal and is responsible for conducting the environmental review. The environmental review process helps state and local agencies identify and consider **likely significant adverse** environmental impacts that could result from government actions, including permit actions. This chapter provides a **summary of the environmental** review, the proposed Project, and conclusions.

The FEIS has been written by using the DEIS as a base document and using the tracking changes feature of Microsoft Word to facilitate the recognition of revisions that have been made to the text in the document since the DEIS was issued. The tracking changes will show the text additions that have been made in red. Changes will be indicated with a line down the right-hand margin on each page for the original chapters of the DEIS (Chapters 1, 2, 3, 7, and 8).

Three new chapters are included in this FEIS and will not show tracking changes because all of the information provided in those chapters is new. The new chapters are Chapter 4: Updated Information and Analysis; Chapter 5: Errata; and Chapter 6: Comment Letters and Responses.

### 1.2 ENVIRONMENTAL IMPACT STATEMENT

SEPA requires an Environmental Impact Statement (EIS) for any proposal that is likely to have a significant adverse environmental impact and mitigation has not been able to reduce the impact to a nonsignificant level. The primary purpose of an EIS is to provide an impartial discussion of significant environmental impacts, and reasonable alternatives and mitigation measures that avoid or minimize adverse environmental impacts. The process includes the following activities:

- Gathering background information.
- Developing reasonable alternatives.
- Conducting analysis and review of the alternatives.
- Identifying potential environmental impacts from the alternatives.
- Identifying ways to avoid, reduce, or minimize the effects of significant adverse impacts.
- Conducting public involvement.

The Port of Seattle, as SEPA lead agency for the proposed Project, is responsible for conducting the environmental review. A detailed summary of the SEPA review steps taken for this proposal is found in Chapter 2.1.2. Project Scoping began October 22, 2015 and ended November 23, 2015. The Draft Environmental impact Statement was published May 23, 2016 with comment period closing July 8, 2016. Following review of comments, the Port selected a Preferred Alternative (see Chapter 1.2.6)

and the Final EIS was prepared. The FEIS is now issued with responses to comments and updated information and analysis.

### 1.2.1 HISTORY OF THE TERMINAL 5 SITE

The existing Terminal 5 marine cargo site includes approximately 197 acres committed to marine cargo uses and activities and has long been under Port ownership. It is one of four deep-draft container cargo facilities in Elliott Bay. Previous improvements to the existing Terminal 5 cargo terminal were completed in 1999. Cargo facility improvements completed in 1999 included the following: (1) adding approximately 90 acres of upland cargo marshalling area; (2) construction of intermodal cargo transfer rail lines; (3) construction of approximately 400 linear feet of cargo wharf; (4) construction of a grade-separated vehicle/rail overpass entrance; and (5) improvement of approximately 13 acres of public shoreline access, landscaped buffer areas, pedestrian/bicycle pathways, and approximately 1.6 acres of fish and wildlife habitat restoration.

### 1.2.2 PROJECT PROPONENT

The Port is the Project proponent in partnership with the NWSA. The NWSA is a management authority governed by the Port of Seattle and the Port of Tacoma as equal members, with each port acting through its elected commissioners. The ports remain separate organizations retaining ownership of their respective assets. The NWSA manages import and export container and break-bulk cargo, auto shipping facilities, and some bulk terminals in the Seattle and Tacoma harbors.

### 1.2.3 PROPOSED PROJECT

The proposed Project is the rehabilitation of the existing marine cargo facilities at Terminal 5. The Project includes modifications to the existing Terminal 5 marine cargo facility in order to serve larger cargo vessels. The proposed changes consist of cargo wharf rehabilitation, deepening of the vessel berth, electrical service capacity improvements, and upland improvements to serve larger vessels and increase the container volume shipping capacity at Terminal 5. The proposed Project would rehabilitate Terminal 5 to serve existing large and emerging increased capacity container cargo vessels. Proposed actions also include reconfiguration of the existing upland marine cargo marshalling area, modification of intermodal rail facilities and pavement areas, improvement of stormwater systems, alteration of maintenance and repair buildings, and redesign of entrance/exit gates and heavy vehicle access points. General cargo loading and unloading, and vessel provisioning and fueling, and seasonal lay-berthing would continue at the terminal.

### 1.2.4 PROJECT LOCATION

Terminal 5 is located on the west shoreline of the West Waterway, in southwest Elliott Bay, approximately 1.5 miles southwest from the City of Seattle urban center. The street address for the site is 2701 26th Avenue SW, Seattle, Washington (see Figures 1.3-1 and 1.3-2).

### 1.2.5 PROPOSED ALTERNATIVES

This EIS evaluates the potential environmental impacts of constructing and operating two development alternatives and the No-Action Alternative.

**Alternative 1—No-Action Alternative.** The No-Action Alternative would continue marine cargo operations and other allowable uses similar to previous shipping activities during the past 15 years. The existing lay berthing, general cargo loading and unloading, and provisioning and fueling would continue at the terminal for all three alternatives.

**Alternative 2—Cargo Wharf Rehabilitation, Berth Deepening, and Increased Cargo Handling.** Alternative 2 proposes wharf rehabilitation, berth deepening, and upland improvements to allow for the service of larger vessels, and with the potential to increase container cargo shipping capacity to approximately 1.3 million twenty-foot equivalent units (TEUs) **annually**.

**Alternative 3—Cargo Wharf Rehabilitation, Berth Deepening, Increased Cargo Handling, and Additional Upland Improvements.** Alternative 3 proposes wharf rehabilitation and berth deepening similar to Alternative 2. The difference between the two alternatives is that Alternative 3 proposes additional upland improvements and provides sufficient site facilities to allow service of larger vessels with the potential to increase container cargo shipping capacity up to approximately 1.7 million TEUs **annually**.

**Schedule Assumptions for Implementation of Alternative Operations**—Alternative 2 would improve the container-handling efficiency of the existing site to serve larger **capacity** container vessels up to 18,000 TEUs that are anticipated to call at Terminal 5 through 2040. Alternative 2 would increase **container cargo** throughput capability of the existing Terminal 5 marine cargo site from 647,000 TEUs annually to approximately 1.3 million TEUs per year by 2030 and continuing at that level through the 2040 planning horizon. Modifications to the container cargo marshalling yard would be required to **effectively and efficiently transship up to** accommodate 1.3 million TEUs per year. **Terminal improvements would include the installation of more** efficient STS crane **equipment**, use of more efficient cargo handling equipment, and improvements for **increased use of** existing intermodal rail **shipping facilities**.

The **Alternative 2 EIS** analyses and evaluations for the proposed Terminal 5 actions are based on completion of Project actions **by 2019**, with cargo volumes increasing from approximately 647,000 TEUs to an upper capacity level of approximately 1.3 million TEUs by 2030. The actual throughput levels may be lower than the projected throughput at capacity as analyzed in this document due to **international shipping** conditions.

Proposed operations changes proposed with Alternative 3 would improve the container-handling efficiency of the existing site to serve larger container vessels (up to 18,000 TEUs) that are anticipated to call at Terminal 5 through 2040. The throughput capacity of the terminal would increase from its current capability of approximately 647,000 TEUs, to up to approximately 1.7 million. This option would **require an increased number** of more efficient STS cranes, use of more efficient **fixed rail and mobile** cargo handling equipment, and **reconfiguration of** the existing intermodal rail yard **serviced by rail-mounted gantry cranes**. It is anticipated that annual container

cargo volume at the site would increase gradually from the previous 647,000-TEU levels, reaching a maximum capacity of approximately 1.7 million TEUs.

The **Alternative 3** DEIS analyses and evaluations are based on completion of Project wharf strengthening, berth deepening, and initial electrical and utility actions in 2019. Cargo volumes are expected to increase from approximately 647,000 TEUs to a throughput level of approximately 1.3 million TEUs by 2030 and continuing on to 1.7 million TEUs by 2040. The actual throughput levels and expected progressive timeline of expansion for the proposed Project may be extremely variable due to market conditions.

Upland improvements described and evaluated for Alternatives 2 and 3 may be constructed over a longer period of time as capacity enhancements are required for operational needs. While the FEIS evaluates all ranges of facility operating capacity, specific permit approvals linked with these upland improvements would be obtained prior to construction. Any additional site development activities will be undertaken with appropriate environmental review, per Washington State Environmental Policy Act (SEPA) regulations. The Port and NWSA will use a public process for this environmental review.

#### 1.2.6 SELECTION OF A PREFERRED ALTERNATIVE

SEPA does not require the designation of a "preferred alternative" in an EIS. However, by identifying a preferred alternative, all EIS reviewers are informed which alternative the lead agency determines is best or appears most likely to be approved. If used, the preferred alternative can be identified at any time in the EIS process—scoping, DEIS, or FEIS.

Subsequent to the review of comments received on the Terminal 5 Improvements DEIS and supported by additional analysis and evaluation, the Port made a decision to select a Preferred Alternative. The Preferred Alternative is within the range of alternatives analyzed in the DEIS.

Alternative 2 was selected because it represents the infrastructure improvements necessary to serve larger capacity container cargo vessels at Terminal 5. Alternative 2 balances site improvements necessary for the Port and a marine terminal operator to make efficient and effective use of the terminal with the volume of container cargo anticipated at the site, based on expected container cargo growth rates.

The current EIS analyzes and evaluates actions that will be included in the Project to reduce, minimize, avoid, or mitigate the negative environmental effects anticipated from construction and operation of Terminal 5 consistent with the project described as Alternative 2 in the DEIS and modified in the FEIS based on public and agency comment. The current EIS will be used by the Port to plan future actions and by agencies and entities with authority for project approvals to assess the project and stipulate conditions required for authorization of the proposed project alternative. Agencies and approval entities may determine specific mitigation requirements as conditions of project authorization.

The Port is the property owner and the permit holder. In that capacity, the Port will ultimately be responsible for compliance with all permit requirements during the construction and completed



terminal operations. The NWSA is acting as the agent on behalf of the Port during the construction phase and subsequent terminal operations. This partnership does not diminish the Port's ultimate responsibility for permit compliance.

The Port and NWSA will eventually negotiate an agreement with a terminal operator for long-term use of the rehabilitated Terminal 5 cargo facility. The Port and NWSA will inform the proposed tenant or user of the obligations and conditions of approval essential for compliance with the permits for the site. Even in those situations where the tenant or user has undertaken the obligation for compliance, the Port and NWSA will remain responsible for complying with the permit conditions. The Port and NWSA will consult and provide assistance to the eventual tenant or user to help them comply with the permit conditions. Conditions of approval will be inserted in all lease and site use agreements with a selected marine terminal operator to ensure comprehensive compliance with city, state, federal, and Treaty tribe conditional approvals.

Based on the analyses, evaluations, and mitigation actions included in the FEIS, the Port will continue to seek project authorizations from city, state, federal, and Treaty tribe entities as required for rehabilitating Terminal 5 wharf, berth, and cargo facilities, providing project infrastructure improvements, and managing the impacts from operations resulting from that establishing container cargo capability up to 1.3 million TEUs.

Sustained Terminal 5 operations exceeding Alternative 2 container cargo projections, and inconsistent with the analyses and evaluations included in the EIS may require additional environmental review.

#### 1.2.7 AREAS OF CONTROVERSY AND UNCERTAINTY

Determinations for specific future marine cargo operations, methods, and practices that are likely to be employed at Terminal 5 have not been made. However, it is likely that future long-term facility operations will consider serving the Terminal 5 site with larger capacity vessels compared with vessels that commonly served the site in past decades. This DEIS provides analysis and evaluation of environmental effects due to a likely range of long-term operational conditions anticipated from a rehabilitated Terminal 5 facility.

#### 1.2.8 SCHEDULE AND PHASING

**Construction of the proposed** Project would begin as soon as city, state, and federal authorizations and approvals are received. The anticipated start for construction is mid-2017, with completion expected 2019. Upland/landside construction elements would continue throughout this time period while the proposed in-water wharf **strengthening and vessel berth** improvements would be **distributed over** three consecutive in-water work seasons to protect endangered species.

Upland improvements anticipated in the alternatives may be phased over a longer period of time. If upland improvements are phased, as required for operational needs, specific permit approvals linked with site development activities would be obtained prior to construction.

### 1.3 SUMMARY OF IMPACTS AND MITIGATION

The **Proposed Project Alternatives** – Potential Impacts and Mitigation Summary in Table 1.3-1 summarizes the potential impacts that would result from the alternatives analyzed in this DEIS. It also provides a summary of potential measures for avoiding and minimizing anticipated adverse effects for each of the alternatives. This summary table is not intended to be a substitute for the complete discussion of each element that is contained in Chapter 3. The table is intended to summarize how construction and operation of the proposed Project would likely impact each element of the built and natural environments. Impacts and potential mitigation are listed according to resource area.

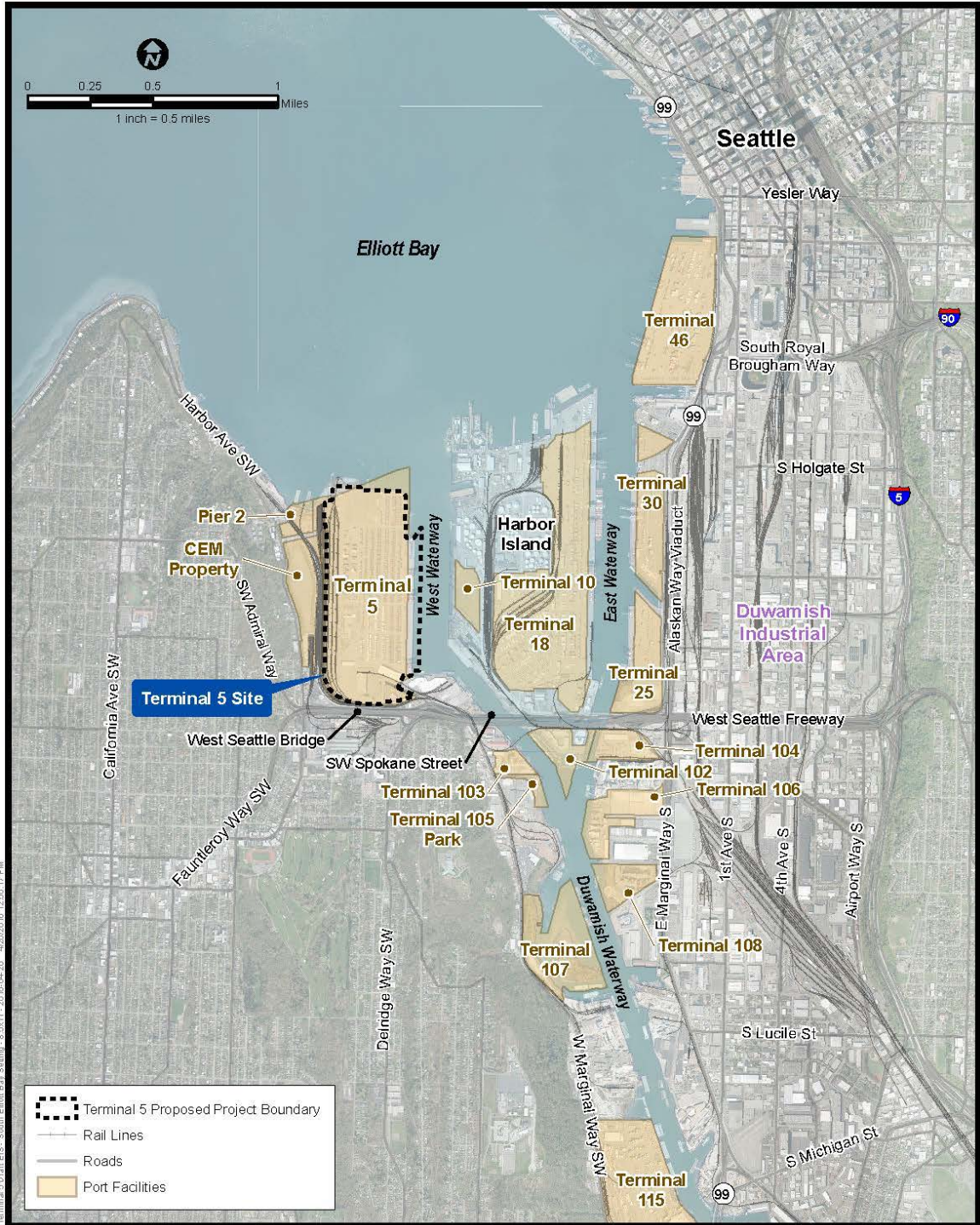


Figure 1.3.1: Vicinity Map

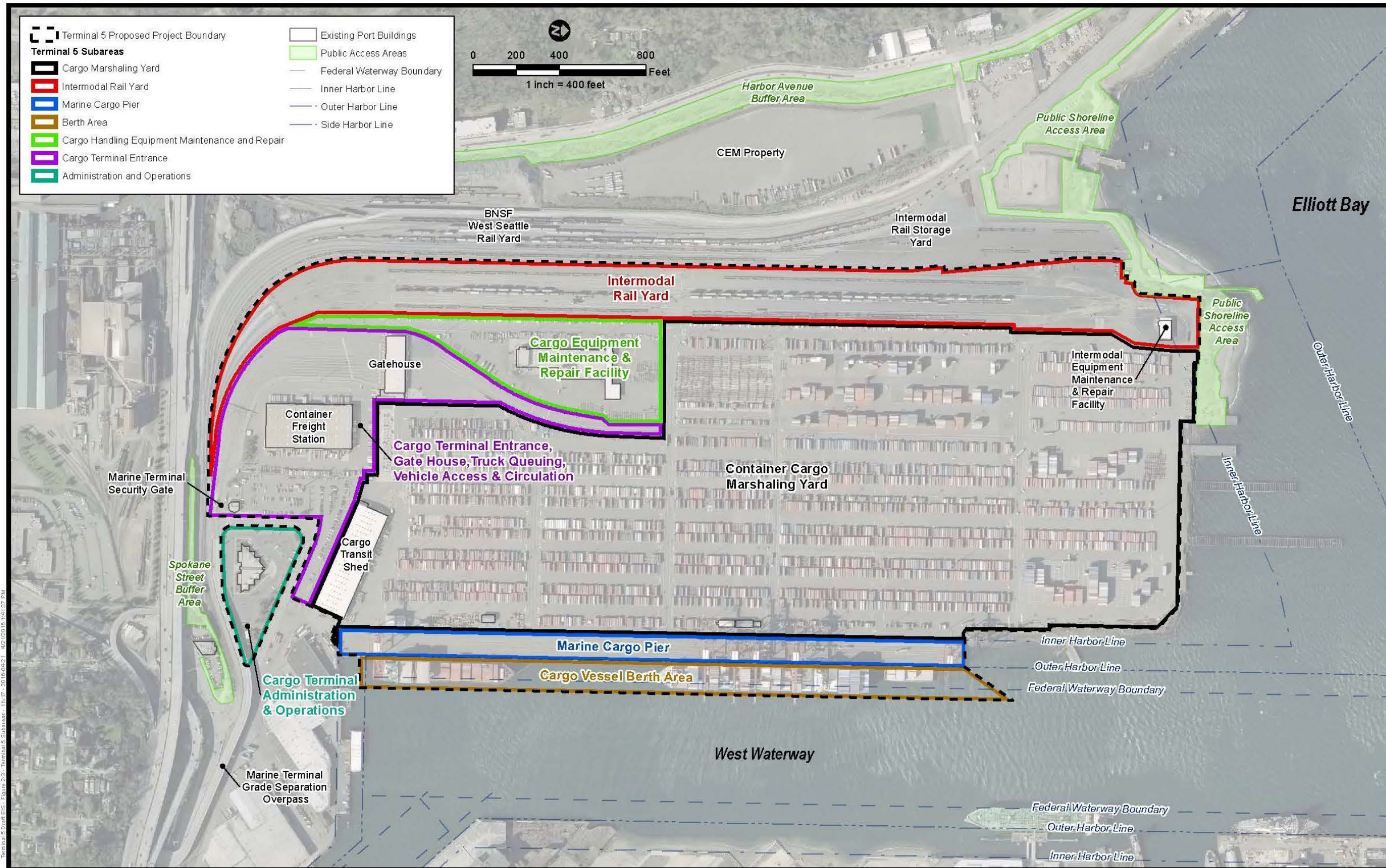


Figure 1.3.2: Terminal 5 Subarea Map

Table 1.3-1: Proposed Project Alternatives – Potential Impacts and Mitigation Summary

RESOURCES	PROPOSED PROJECT ALTERNATIVES – POTENTIAL IMPACTS AND MITIGATION SUMMARY					
	Alternative 1 No-Action		Alternative 2 Cargo Wharf Rehabilitation, Berth Deepening, and Increased Cargo Handling		Alternative 3 Cargo Wharf Rehabilitation, Berth Deepening, Increased Cargo Handling, and Additional Upland Improvements	
	Potential Impacts	Mitigation	Potential Impacts	Mitigation	Potential Impacts	Mitigation
Earth	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>Construction activities would be limited and include only minor alterations and routine maintenance and repair work. No impacts to earth are expected.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>Operational activities are not expected to cause impacts to earth.</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>Construction BMPs to limit soil erosion.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>No mitigation proposed.</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>Short-term slope stability issues during berth dredging.</li> <li>Short-term soil erosion from grading and earthwork activities.</li> <li>Potential for spills of hazardous substances.</li> <li>Excavation and fill for new substation may cause potential for erosion</li> <li>Potential for turbidity during dredge activities in the West Waterway.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>Risk of soil liquefaction, seismic lateral spreading, slope failure and ground shaking causing injury/death and structural damage during earthquakes.</li> <li>Long-term slope stability risk.</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>SWPPP and BMPs to control stormwater runoff/erosion at the upland site.</li> <li>Conditions in construction stormwater permits.</li> <li>SPCCP used for hazardous materials storage, handling, and cleanup.</li> <li>BMPs to minimize turbidity generation during dredging.</li> <li>Compliance with Surface Water Quality Standards for Washington (WAC 173-201A).</li> <li>Conditions specified in the Water Quality Certification that manage turbidity during in water activities.</li> <li>Slope stabilization measures would be followed as recommended by geo-tech analysis.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>Design measures for all new structures will be consistent with state and federal regulations, seismic and building code, and standard construction methods to avoid and minimize earthquake impacts.</li> <li>Per established agreements with the City, the rehabilitation of the existing wharf and slope will be designed to meet or exceed performance of the existing system.</li> <li>For new structures, measures such as foundation tie beams and grade beams to minimize ground movements and/or movements of structures as a result of seismically induced settlement and lateral spreading should be incorporated.</li> <li>Slope stabilization measures including ground improvements, such as pinch piles, stone columns, drilled shafts, or other methods.</li> <li>Use of pile-supported structures where necessary for new designs.</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>Same as Alternative 2 except more upland ground disturbance.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>Same as Alternative 2.</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>Same as Alternative 2.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>Same as Alternative 2.</li> </ul>

RESOURCES	PROPOSED PROJECT ALTERNATIVES – POTENTIAL IMPACTS AND MITIGATION SUMMARY					
	Alternative 1 No-Action		Alternative 2 Cargo Wharf Rehabilitation, Berth Deepening, and Increased Cargo Handling		Alternative 3 Cargo Wharf Rehabilitation, Berth Deepening, Increased Cargo Handling, and Additional Upland Improvements	
	Potential Impacts	Mitigation	Potential Impacts	Mitigation	Potential Impacts	Mitigation
Air Quality and GHG Emissions	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>Construction activities would be limited and include only minor alterations and routine maintenance and repair work and are not expected to result in adverse impacts to air.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>No change from existing terminal cargo use.</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>No mitigation proposed.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>No mitigation proposed.</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>Construction could cause short-term increases in local concentrations of dust and diesel-related air contaminants and possibly odors.</li> <li>No significant air quality impacts are expected.</li> <li>GHG emissions from construction activities were quantified during General Conformity review. GHG emissions were less than 10,000 tonnes/year. The Department of Ecology considers emissions under 25,000 tonnes/year not significant.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>Model-predicted concentrations of criteria air pollutants, including shorepower capability, indicate that emissions do not exceed any National Ambient Air Quality standards (NAAQSs).</li> <li>No significant impacts are expected with health-protective NAAQSs, air quality standards.</li> <li>Facility operations would result in emission of GHG's, but no impact thresholds have been established. Given the world-wide nature of climate change issues, and the relatively small contribution from this facility, the Project would not result in significant impacts from GHGs.</li> <li>The Project would reduce world-wide emissions of GHGs due to improved efficiencies in commodity deliveries compared with existing transport systems – and due to improving emission controls in future years.</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>Construction activities would comply with local, state, and federal air quality regulations requiring minimization of construction-related emissions.</li> <li>Implementation of BMPs to reduce potential for air quality impacts during construction identified in Chapter 3, Section 3.2.</li> <li>Require contractors to prohibit Tier 0 and Tier 1 off-road equipment, to have on-road fleet meet 2007 EPA engine standards or better, and to enforce an idle reduction plan.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>Measures intended to reduce operational emissions (including GHG Emissions) include: <ul style="list-style-type: none"> <li>Reduction of at-berth emissions from ocean-going vessels through the use of shorepower. The NWSA, the Port, and the terminal operator will prepare a shorepower utilization plan to meet projected shorepower utilizations levels.</li> <li>Through the Northwest Ports Clean Air Strategy, the NWSA has adopted a plan to require trucks entering container terminals to meet model-year 2007 EPA emissions standards in 2018.</li> <li>Development of facility will utilize an electrical power supplier that obtains &gt;90% of their power from non-fossil fuel sources, reducing greenhouse gas emissions for terminal operations.</li> <li>Operational management plans to reduce truck queuing and wait times, as outlined in proposed Queue Management Plan (FEIS, Volume II, Appendix C) will reduce idling of diesel drayage vehicles.</li> <li>Port will analyze Terminal 5 air quality performance following resumption of container cargo operations to ensure air quality evaluations included in the EIS are</li> </ul> </li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>The impacts would be the same as Alternative 2.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>The air impacts are the same or lower than Alternative 2.</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>Same as Alternative 2.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>Conversion of diesel engine-powered container handling equipment to electrically powered equipment would avoid, minimize and reduce exhaust emissions. Alternative 3 maximizes the approach by electrifying most cargo handling moves.</li> <li>Measures intended to reduce operational emissions, including GHG Emissions include: <ul style="list-style-type: none"> <li>Reduction of at-berth emissions from ocean-going vessels through the use of shorepower. The NWSA, the Port, and the terminal operator will prepare a shorepower utilization plan to meet project shorepower utilization levels.</li> <li>Through the Northwest Ports Clean Air Strategy, the NWSA has adopted a plan to require trucks entering container terminals to meet model-year 2007 EPA emissions standards in 2018.</li> <li>Development of facility will utilize an electrical power supplier that obtains &gt;90% of their power from non-fossil fuel sources, reducing greenhouse gas emissions for terminal operations.</li> <li>Operational management plans to reduce truck queuing and wait times as outlined in proposed Queue Management Plan (FEIS, Volume II, Appendix C) will reduce idling of diesel drayage vehicles. will reduce idling of diesel drayage vehicles.</li> <li>Port will analyze Terminal 5 air quality performance following resumption of container cargo operations to ensure air quality evaluations included in the EIS are consistent with operations. Data and analysis will be in consultation with PSCAA.</li> </ul> </li> </ul>

RESOURCES	PROPOSED PROJECT ALTERNATIVES – POTENTIAL IMPACTS AND MITIGATION SUMMARY					
	Alternative 1 No-Action		Alternative 2 Cargo Wharf Rehabilitation, Berth Deepening, and Increased Cargo Handling		Alternative 3 Cargo Wharf Rehabilitation, Berth Deepening, Increased Cargo Handling, and Additional Upland Improvements	
	Potential Impacts	Mitigation	Potential Impacts	Mitigation	Potential Impacts	Mitigation
				consistent with operations. Data and analysis will be in consultation with PSCAA.		
Water	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>Construction activities include only minor alterations and routine maintenance and repair work and are not expected to result in adverse impacts to water.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>By not removing the creosote-treated timber piles, creosote from those piles remains in the environment.</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>Continue to follow regulatory requirements and BMPs.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>Continued improvement to water quality as the requirements of the ISGP are implemented.</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>Dewatering effluent from excavations extending into groundwater, stormwater runoff during construction activities, vessel activity, and releases of debris or sediments into the West Waterway during dredging and wharf rehabilitation activities.</li> <li>Removal of asphalt for pile installation on the uplands could lead to hazardous materials spills entering the soil and groundwater.</li> <li>Temporary increases in turbidity caused by suspended sediments during pile removal and pile driving activities.</li> <li>Dredging and pile driving could lead to localized impacts on water quality from turbidity.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>Potential “propwash” scour, deep sub-tidal aquatic are due to tug and vessel service.</li> <li>Vessel maneuvering may suspend sub-tidal sediments, affecting short-term, on site, water column turbidity.</li> <li>Any container cargo operation or cargo transportation facility is required to meet Clean Water Act rules. Cargo terminal are required to be covered under the Industrial Stormwater General Permit. The Washington State ISGP has benchmarks for effluent leaving the site that are some of the strictest in the nation.</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>Adherence to the Construction Stormwater General permit and implementing erosion control and stormwater protection BMPs.</li> <li>Management of toxic and hazardous materials consistent with rules and regulations.</li> <li>Turbidity impacts from on-land and dredging activity monitored and minimized using BMPs.</li> <li>Design features and BMPs to avoid or minimize impacts would be used during construction. Those required by agency standards and permits would be assumed to be part of the proposal.</li> <li>If dewatering is required, the control and management would be implemented in accordance with regulatory requirements.</li> <li>Scour monitoring program would be implemented to observe and track any scour trends.</li> <li>Vessels would be required to follow all over-water work BMPs.</li> <li>Disposal of all dredged sediments would be consistent with DMMP and other jurisdictional agencies.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>Management of toxic and hazardous substances used during operations would be consistent with rules and regulations.</li> <li>Prior to reestablishing container cargo terminal operations, the facility would be reevaluated for the appropriate Level 3 Corrective Actions, requiring a new engineering report. The new engineering report would define treatment options and detailed construction plans for Ecology’s review and approval. Upon approval,</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>Same as Alternative 2.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>Same as Alternative 2.</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>Same as Alternative 2.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>Same as Alternative 2.</li> </ul>

RESOURCES	PROPOSED PROJECT ALTERNATIVES – POTENTIAL IMPACTS AND MITIGATION SUMMARY					
	Alternative 1 No-Action		Alternative 2 Cargo Wharf Rehabilitation, Berth Deepening, and Increased Cargo Handling		Alternative 3 Cargo Wharf Rehabilitation, Berth Deepening, Increased Cargo Handling, and Additional Upland Improvements	
	Potential Impacts	Mitigation	Potential Impacts	Mitigation	Potential Impacts	Mitigation
				<p>the stormwater system would be constructed prior to beginning of operations.</p> <ul style="list-style-type: none"> <li>All operating equipment would be subject to BMPs and SPCC plans.</li> <li>Fueling, ballast water management, and vessel sewage management would comply with regulatory requirements.</li> <li>Bathymetric survey data to confirm vessel berth dimensions will also monitor substrate for evidence of “prop wash” disruption of sediments.</li> </ul>		
Plants and Animals	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>No change from existing conditions is expected other than minor repair and upgrade work.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>No change from existing conditions is expected.</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>BMPs for construction implemented for minor repair and upgrade work.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>No mitigation proposed.</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>Potential negative effects on migratory and resident fish and wildlife salmon from in-water pile driving noise, dredging, and presence of water-based construction equipment.</li> <li>Positive effects may include decrease in shading, removal of creosote-treated wood fender piles, and increased algae and invertebrate production, as well as reduce migratory impediments to salmon during the three-season construction period.</li> <li>Construction activities would be limited and include only minor alterations and routine maintenance and repair work and are not expected to result in adverse impacts to plants and animals.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>Lighting levels could impact plants and animals.</li> <li>Completed project would include modest reduction in area of over-water structure.</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>All in-water work would be limited to periods determined appropriate by participating state and federal agencies.</li> <li>Water quality monitoring plan would be developed and implemented.</li> <li>All equipment would be inspected daily.</li> <li>SPCC plan would be developed and used for the duration of the Project.</li> <li>Waste materials would not be allowed to enter the West Waterway.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>Light fixtures would use directional shields and internal louvers to minimize light reflection onto the waterway.</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>Same as Alternative 2.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>Same as Alternative 2.</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>Same as Alternative 2.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>Same as Alternative 2.</li> </ul>
Environmental Health	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>Construction activities would be limited and include only minor alterations and routine maintenance and repair work and are not expected to result in adverse impacts to environmental health.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>Operational activities are not expected to result in adverse impacts to</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>No mitigation proposed.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>No mitigation proposed.</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>Potential to encounter, expose, or excavate buried contamination during construction.</li> <li>Potential increase in leaching of contaminants.</li> <li>Excavations for utilities may require dewatering and affect receiving waters.</li> <li>Some groundwater monitoring wells may need to be modified or become damaged</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>Implement appropriate mitigation measures if cleanup areas are impacted during construction.</li> <li>Demolition of structures would require surveys.</li> <li>Site specific work plans that address management in known contaminated areas.</li> <li>Construction design would identify locations of known soil and groundwater contamination and</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>Same as Alternative 2.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>Same as Alternative 2.</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>Same as Alternative 2.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>Same as Alternative 2.</li> </ul>



RESOURCES	PROPOSED PROJECT ALTERNATIVES – POTENTIAL IMPACTS AND MITIGATION SUMMARY					
	Alternative 1 No-Action		Alternative 2 Cargo Wharf Rehabilitation, Berth Deepening, and Increased Cargo Handling		Alternative 3 Cargo Wharf Rehabilitation, Berth Deepening, Increased Cargo Handling, and Additional Upland Improvements	
	Potential Impacts	Mitigation	Potential Impacts	Mitigation	Potential Impacts	Mitigation
	environmental health.		<p>during construction.</p> <ul style="list-style-type: none"> <li>Disposal of materials requires characterization.</li> <li>Potential release of hazardous materials to the environment.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>No impacts expected.</li> </ul>	<p>provide specifications to guide management of contaminated soil and groundwater.</p> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>No mitigation proposed.</li> </ul>		
Noise	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>Construction activities would be limited and include only minor alterations and routine maintenance and repair work and noise impacts would be short term.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>No change from existing operations.</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>No mitigation proposed.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>No mitigation proposed.</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>Pile driving may be intrusive and potentially annoying at times. However, pile driving sound levels are expected to fully comply with the noise limits applied by the City of Seattle to these types of activities.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>Noise analyses and evaluation calculations indicate potential nighttime noise exceedances from cargo handling equipment and truck operations for future, more intense cargo activity.</li> <li>Pure tone safety alarms on mobile cargo handling equipment, although not regulated, are an annoyance noise.</li> <li>Train horn noise required for public and private crossings and presence of human activity, although not regulated, are an annoyance noise.</li> <li>On-vessel power generators are perceived as annoyance noise.</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>Typical construction activities would be limited to between 7 AM and 10 PM weekdays and between 9 AM and 10 PM weekends and legal holidays.</li> <li>Impact pile driving would be limited to between 8 AM and 5 PM weekdays and between 9 AM and 5 PM weekends and holidays.</li> <li>Noise from all on-site construction activities would be subject to noise limits established by the City of Seattle.</li> <li>The Port will develop a construction noise management plan prior to start of construction in consultation with the Seattle Department of Construction &amp; Inspections (DCI).</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>Establish an Operational Noise Management Plan/Program. Use of a noise management program would provide objective noise monitoring data and a mechanism to identify reasonable and feasible best practices to ensure compliance with applicable noise limits. The noise management program would include measurement, reporting, and compliance steps to meet applicable Seattle City noise limits. This program would be developed in consultation with the Seattle Department of Construction &amp; Inspections (DCI). (See Volume II, Appendix M, Operational Noise</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>Same as Alternative 2.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>Same as Alternative 2.</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>Same as Alternative 2.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>Same as Alternative 2.</li> </ul>

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	Alternative 1 No-Action		Alternative 2 Cargo Wharf Rehabilitation, Berth Deepening, and Increased Cargo Handling		Alternative 3 Cargo Wharf Rehabilitation, Berth Deepening, Increased Cargo Handling, and Additional Upland Improvements	
	Potential Impacts	Mitigation	Potential Impacts	Mitigation	Potential Impacts	Mitigation
				<p>Management Plan.)</p> <p>Annoyance Control Measures:</p> <ul style="list-style-type: none"> <li>Ensure that all mobile cargo handling equipment uses ambient-sensing, broadband safety alarms.</li> <li>Addition of safety measures to the rail corridor between the bridge across the Duwamish and the terminal. Adding safety measures to the rail use area, including perimeter fencing and installation of crossing gates would reduce the need for locomotive horns. These measures could also be used by the City of Seattle as a basis to begin the process of requesting this section of rail lines be converted into a railroad quiet zone.</li> <li>Reduction in noise from on-vessel power generators due to the provision of shorepower for moored vessels.</li> </ul>		
Land Use	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>Construction activities would be limited and include only minor alterations and routine maintenance and repair work and would not alter surrounding land uses or otherwise affect land use patterns.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>No change to land use is proposed.</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>No mitigation proposed.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>No mitigation proposed.</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>Construction activities would be temporary and would not alter surrounding land uses or otherwise affect land use patterns.</li> <li>Applicable shoreline, , and state and federal authorizations and approvals are required.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>Operational activities would not alter surrounding land uses or otherwise affect land use patterns.</li> <li>Shoreline permit authorizations will include conditions of approval, emphasizing essential compliance with noise code requirement and management of cargo related truck and rail traffic.</li> <li>The Port may need to obtain state aquatic area use authorization or PMA boundary amendments.</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>The Port would obtain all required permits.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>The Port would work with DNR to obtain any necessary aquatic area use authorization or PMA boundary amendments required.</li> <li>The Port and the cargo terminal tenant would ensure compliance conditions of approval relating to noise and traffic</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>Same as Alternative 2.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>Same as Alternative 2.</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>Same as Alternative 2.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>Same as Alternative 2.</li> </ul>

RESOURCES	PROPOSED PROJECT ALTERNATIVES – POTENTIAL IMPACTS AND MITIGATION SUMMARY					
	Alternative 1 No-Action		Alternative 2 Cargo Wharf Rehabilitation, Berth Deepening, and Increased Cargo Handling		Alternative 3 Cargo Wharf Rehabilitation, Berth Deepening, Increased Cargo Handling, and Additional Upland Improvements	
	Potential Impacts	Mitigation	Potential Impacts	Mitigation	Potential Impacts	Mitigation
Relationship to Plans and Policies	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>Construction activities would be limited and include only minor alterations and routine maintenance and repair work and would be consistent with Plans and Policies.</li> <li>Century Agenda goals would not be met.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>No impacts expected.</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>No mitigation proposed.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>No mitigation proposed.</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>All proposed <b>rehabilitation and improvement actions planned and designed to be</b> is consistent with Plans and Policies.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>All proposed operations <b>managed for consistency</b> with Plans and Policies.</li> <li>Proposed Project addresses some of the goals in the Century Agenda.</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>No mitigation proposed.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>No mitigation proposed.</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>Same as Alternative 2.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>Same as Alternative 2.</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>Same as Alternative 2.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>Same as Alternative 2.</li> </ul>
Aesthetics/ Light and Glare	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>Construction activities would be limited and include only minor alterations and routine maintenance and repair work.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>Operational activities are not expected to result in changes to the terminal aesthetics or light and glare.</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>No mitigation proposed.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>No mitigation proposed.</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>Construction of the proposed Project would introduce new temporary sources of light associated with utility and wharf construction, trucks, and other construction equipment.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>The proposed Project <b>includes use of improved lighting features.</b></li> <li>The aesthetics are not expected to change significantly as a result of Alternative 2.</li> <li>Current views of Terminal 5 are dominated by industrial facilities, operations, and activities. Views from public viewpoints are not expected to be <b>affected</b> by Alternative 2.</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>Lighting associated with exterior construction activities would be controlled by City of Seattle regulations, potentially limiting the hours of construction, and thereby limiting construction lighting during nighttime hours. No other measures are expected to be required during construction.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>New lighting would be designed with the latest lighting <b>standards and best practices</b> to minimize glare and confine the lighting using directional lighting and shields. It is expected that new operational lighting <b>will not exceed level of existing lighting.</b></li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>Same as Alternative 2.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>Same as Alternative 2.</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>Same as Alternative 2.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>Same as Alternative 2.</li> </ul>
Historic and Cultural Resources	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>Construction activities would be limited and include only minor alterations and routine maintenance and repair work. These activities would be consistent with current operations at Terminal 5.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>Terminal 5 is within the tribal Treaty fishing area. Vessel activity to and from Terminal 5 may, at times, move through these fishing areas. Existing Treaty fishing access/vessel access agreements with the Muckleshoot Indian Tribe and</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>No mitigation proposed.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>The Port works in partnership with the Muckleshoot Indian Tribe and the Suquamish Tribe to avoid and minimize potential negative effects on Treaty fishing access due to cargo vessel activity. <b>Existing Treaty fishing access/vessel access coordination agreements with the Muckleshoot Indian Tribe and Suquamish Tribe would continue.</b></li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>Construction has the potential to interfere with undiscovered resources; however, the possibility of historic or cultural resources being present is low because Terminal 5 consists of filled upland areas.</li> <li>Water-based equipment used for piling construction and dredging activities could potentially disrupt Treaty fishing access.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>Terminal 5 is within the Treaty fishing <b>access</b> area. Increased capacity container cargo vessels serving Terminal 5, will operate in</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>Construction would follow the SMC for Standards for Archaeological and Historic Resources. If archaeological resources are uncovered during construction, work would be stopped and the City of Seattle, affected tribes, and the Washington State Department of Archaeology and Historic Preservation would be notified.</li> <li><b>Piling and dredging</b> activities would be coordinated with Treaty fishing periods to minimize potential disruption of</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>Same as Alternative 2.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>Same as Alternative 2.</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>Same as Alternative 2.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>Same as Alternative 2.</li> </ul>

RESOURCES	PROPOSED PROJECT ALTERNATIVES – POTENTIAL IMPACTS AND MITIGATION SUMMARY					
	Alternative 1 No-Action		Alternative 2 Cargo Wharf Rehabilitation, Berth Deepening, and Increased Cargo Handling		Alternative 3 Cargo Wharf Rehabilitation, Berth Deepening, Increased Cargo Handling, and Additional Upland Improvements	
	Potential Impacts	Mitigation	Potential Impacts	Mitigation	Potential Impacts	Mitigation
	Suquamish Tribe would continue.		Treaty--protected fishing areas.	<p><b>Treaty fishing access.</b></p> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>The Port would continue to work in partnership with the Muckleshoot Indian Tribe and the Suquamish Tribe to avoid and minimize potential negative effects on Treaty fishing access due to cargo vessel activity. Existing Treaty fishing access/vessel access coordination agreements with the Muckleshoot Indian Tribe and Suquamish Tribe would continue, including coordination of Treaty fishing access and vessel movements in areas used by increased capacity container cargo vessels.</li> </ul>		
Transportation	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>Construction activities would be limited and include only minor alterations and routine maintenance and repair work. These activities would be consistent with current operations at Terminal 5.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>No impacts to traffic would be caused by the No-Action Alternative.</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>No mitigation proposed.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>No mitigation proposed.</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li><b>Construction activities would generate truck and employee trips, but less than No Action Alternative.</b></li> <li>Potential detours required during construction.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>Trains could increase from 9 to 18 trains in the peak week.</li> <li><b>Increased closure time at near-terminal grade crossing due to increased train volumes and switching movements.</b></li> <li><b>Expected additional utilization of storage tracks in the West Seattle Yard (WSY) to support the increased rail volume.</b></li> <li><b>Alternative 2 is projected to result in 1,080 additional Design Day truck trips. It would have the highest peak hour truck trips and is estimated to generate an additional 130 truck trips during the AM peak hour and 31 truck trips during the PM peak hour on the Design Day.</b></li> <li><b>Highest traffic impact on Lower Spokane Street and East Marginal Way between S</b></li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>BMPs for traffic control and safety during construction and adherence to SDOT permits and requirements. Coordination with other construction projects.</li> <li><b>Prepare a Haul Route Plan and Traffic Control Plan for work in City right-of-way.</b></li> <li><b>Coordinate with other construction projects in site vicinity.</b></li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li><b>At full operation, north leg of the intersection at SW Spokane Street/West Marginal Way SW/Chelan Avenue SW closed. All traffic to and from Terminal 5, as well as local industrial businesses located north and east of the rail lines north of West Marginal Way Southwest, should be directed to use the Terminal 5 Access Bridge. Interim measures could convert surface access to entrance only and install advance notification signs.</b></li> <li><b>When surface access is closed, provide</b></li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>Same as Alternative 2.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>Trains could increase from 9 to 24 trains in the peak week.</li> <li><b>Increased closure time at near-terminal grade crossing due to increased train volumes and switching movements.</b></li> <li><b>Increased capacity of the on-dock intermodal yard and increased use of WSY.</b></li> <li><b>Alternative 3 is projected to result in 2,180 additional Design Day truck trips. It is estimated to generate 74 AM peak hour trips and 19 PM peak hour trips on the Design Day.</b></li> <li><b>Highest traffic impact on Lower Spokane Street and East Marginal Way between S Hanford Street and Duwamish Avenue S, which are the primary routes between Terminal 5 and near-dock intermodal yards. Project would increase vehicle delay at key intersections along SW Spokane Street.</b></li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>Same as Alternative 2.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li><b>Add on terminal air system and locate qualified technicians on terminal to perform brake tests for staged cuts of cars.</b></li> <li><b>Some train building operations would have to be transferred to the WSY, and on-terminal air compressor equipment would be added so that the brakes on a fully-built train could be tested prior to connecting to the locomotive.</b></li> <li><b>All traffic mitigation measures would be the same as Alternative 2.</b></li> </ul>

RESOURCES	PROPOSED PROJECT ALTERNATIVES – POTENTIAL IMPACTS AND MITIGATION SUMMARY					
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	Potential Impacts	Mitigation	Potential Impacts	Mitigation	Potential Impacts	Mitigation
			<p>Hanford Street and Duwamish Avenue S, which are the primary routes between Terminal 5 and near-dock intermodal yards.</p> <ul style="list-style-type: none"> <li>Project would increase vehicle delay at key intersections along SW Spokane Street.</li> <li>Gate queuing could increase.</li> <li>Pedestrian access to terminal could be affected by increased train blockages at West Marginal Way.</li> </ul>	<p>alternative pedestrian access to terminal.</p> <ul style="list-style-type: none"> <li>Comprehensive signal improvement along SW Spokane Street from Harbor Avenue SW to E Marginal Way S, and include the signal at E Marginal Way S/S Hanford Street. This project should include upgrading the signal controller at the five-legged intersection and improving interconnection equipment, if needed.</li> <li>Implement Gate Queue Management Plan.</li> <li>Implement additional driver information systems include advance signage about rail blockages and add Terminal 5 to the NWSA's Wait Time Awareness System.</li> <li>Improve access for industrial business located north and east of rail lines serving Terminal 5 and West Seattle Rail Yard by providing additional lane on Terminal 5 Access Bridge (if feasible), adding signage and striping along existing surface routes, and other measures.</li> <li>Continue to work with SDOT related to off-terminal truck parking.</li> </ul>	<ul style="list-style-type: none"> <li>Gate queuing could increase, but would be less than Alternative 2.</li> <li>Pedestrian access to terminal could be affected by increased train blockages at West Marginal Way.</li> </ul>	
Public Services	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>Construction activities would be limited and include only minor alterations and routine maintenance and repair work.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>Operational activities are not expected to result in adverse impacts.</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>No mitigation proposed.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>No mitigation proposed.</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>There could be an increase in service calls related to short-term traffic revisions, site security, and site construction, including potential construction-related injuries and accidental fires.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>Additional security services may be needed due to increase in container terminal traffic.</li> <li>Emergency access routes will be maintained.</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>On-site security features, such as fencing and securing areas where equipment is stored, could be implemented to reduce the potential for construction-related incidents.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>POSPD would coordinate with US Coast Guard on security plans.</li> <li>Existing utility systems would be installed and improved, as needed.</li> <li>Routes for emergency response and apparatus from public right of way</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>Same as Alternative 2.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>Same as Alternative 2.</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>Same as Alternative 2.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>Same as Alternative 2.</li> </ul>

RESOURCES	PROPOSED PROJECT ALTERNATIVES – POTENTIAL IMPACTS AND MITIGATION SUMMARY					
	Alternative 1 No-Action		Alternative 2 Cargo Wharf Rehabilitation, Berth Deepening, and Increased Cargo Handling		Alternative 3 Cargo Wharf Rehabilitation, Berth Deepening, Increased Cargo Handling, and Additional Upland Improvements	
	Potential Impacts	Mitigation	Potential Impacts	Mitigation	Potential Impacts	Mitigation
				through the site would be provided.		
Utilities	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>Construction activities would be limited and include only minor alterations and routine maintenance and repair work.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>ISGP would require meeting benchmarks.</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>No mitigation is proposed.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>Stormwater adaptive management may be required if ISGP benchmarks not met.</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>Utility upgrades would be constructed or installed to meet anticipated site demand and to comply with all applicable local, state, and federal code requirements. Implementation of any improvements would be coordinated with, and approved by, the applicable utility provider.</li> <li>Lighting associated with exterior construction activities would be controlled by City of Seattle regulations, potentially limiting the hours of construction, and thereby limiting construction lighting during nighttime hours.</li> <li>Upgrade to the existing electrical power supply to Terminal 5 by SCL.</li> <li>Water and sewer distribution system would be removed and replaced.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>No impacts.</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>Stormwater improvements would meet state and City of Seattle stormwater regulations.</li> <li>Mitigation measures for utility construction impacts would include those described for general construction activities on the terminal site (see Chapter 2, Section 2.3.2). Construction impacts required for utility.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>Proposed lighting levels would conform to all applicable federal, state, and local standards. Mitigation to minimize light and glare impacts is described in Section 3.9.</li> <li>Compliance with the Clean Water Act through compliance with Industrial Stormwater General Permit and City Stormwater code provides the regulatory-based mitigation standards for potential operational impacts to stormwater. See Section 3.3 and Volume II, Appendix D for detailed information.</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>Additional upgrades to the existing power supply to the terminal would be required to accommodate electrification of the new equipment and systems.</li> <li>Removal of most of high mast lighting in the container yard and only new lighting in the truck circulation areas and near the wharf.</li> <li>New conduit duct bank system.</li> <li>Water and sewer distribution system would be removed and replaced.</li> <li>Relocated buildings.</li> <li>May need more aggressive BMPs for stormwater.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>Same as Alternative 2.</li> </ul>	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>Same as Alternative 2.</li> </ul> <p><u>Operational</u></p> <ul style="list-style-type: none"> <li>Same as Alternative 2.</li> </ul>

## Chapter 2

# Description of Proposed Action(s) and Alternatives

## 2.0 DESCRIPTION OF PROPOSED ACTION(S) AND ALTERNATIVES

### 2.1 INTRODUCTION

The Port of Seattle (Port), in **partnership** with the Northwest Seaport Alliance (NWSA), is proposing the Terminal 5 Cargo Wharf Rehabilitation, Berth Deepening, and Improvements Project (Terminal 5 Improvements Project) on the West Waterway at the existing Terminal 5 facility. The Project site is located on the West Waterway in Seattle as shown on Figure 1.3.1.

The proposed Project includes modifications to the existing Terminal 5 marine cargo facility in order to serve larger cargo vessels, with proposed site changes principally consisting of cargo wharf rehabilitation, deepening of berth navigational access, electrical service capacity improvements, and upland improvements.

This chapter provides background information about the Project, states the goals and objectives for the proposed Project and describes the alternatives. The alternatives include a No-Action Alternative and two development alternatives. **Subsequent to the publication of the Draft Environmental Impact Statement (DEIS) and review of comments, the Port has selected a Preferred Alternative.**

### 2.2 SUMMARY OF SEPA ENVIRONMENTAL REVIEW

The proposed Project is subject to environmental review under SEPA and the Port is lead agency. **The environmental review process for the proposed Project is described below.**

#### 2.2.1 DETERMINATION OF NON SIGNIFICANCE

The Port previously issued a Determination of Nonsignificance (DNS) for the Terminal 5 Wharf Rehabilitation and Berth Deepening Project on March 2, 2015. Specific information characterizing potential Terminal 5 marine cargo operations, including site cargo handling equipment and cargo capacity, was not available when the March 2015 DNS was distributed. The Port received 52 comments from the public during the public comment period for the March 2, 2015, SEPA DNS. Many of the comments were concerned with potential air, noise, and traffic effects. In addition, some commenters requested that the Port prepare an EIS for the proposed Project.

The information provided in the SEPA DNS and checklist, published on March 2, 2015, listed potential environmental effects associated with cargo operations at Terminal 5, including increased capacity vessels and changes in cargo operations and cargo handling and crane equipment expected at the terminal following wharf rehabilitation. The DNS was the first step in a SEPA “phased review” process proscribed by SEPA guidelines, WAC 197-11-0559(2)(A)(i) and 197-11-060(5)(e). A phased SEPA review process was used because future Terminal 5 operations would be shaped by shipping industry scale and efficiency requirements, which were unclear with respect to marine cargo facilities in Elliott Bay when the DNS was prepared. Phased review, as identified in the DNS, provided a framework for evaluation of future Terminal 5 operations and anticipated the likely environmental effects due to potential operational changes at the site, including larger, increased capacity vessels and alternative cargo handling operations.



The Port noted in the previous SEPA DNS that additional environmental review would be conducted when marine cargo operation information and data were available for analysis and evaluation. Subsequent to the issuance of the SEPA DNS for the Cargo Wharf Rehabilitation and Berth Deepening Project, the Port received additional information describing potential marine cargo site use and obtained operational information available for analysis, indicating the potential for substantial changes in Terminal 5 cargo operations, compared to cargo operations and volumes anticipated and evaluated in the DNS.

As a result of the new information characterizing potential changes in cargo operations and volume, the Port withdrew the March 2015 Terminal 5 Cargo Wharf Rehabilitation and Berth Deepening Project SEPA DNS and issued a new threshold determination of a Determination of Significance for the Terminal 5 Cargo Wharf Rehabilitation, Berth Deepening, and Improvements Project (Terminal 5 Improvements Project) on October 22, 2015, and started the analysis necessary for an Environmental Impact Statement.

## 2.2.2 CURRENT EIS ENVIRONMENTAL REVIEW

The current SEPA EIS environmental review is described in detail below.

### 2.2.2.1 SCOPING

With the issuance of the Determination of Significance, the Port began the detailed SEPA review of this proposal by holding a scoping period. The SEPA scoping comment period began on October 22, 2015, and ended on November 23, 2015. A public scoping meeting on the environmental impacts and other issues to be addressed in the DEIS for the Terminal 5 Improvements Project was held on November 12, 2015, at the Hall at Fautleroy, 9131 California Avenue Southwest, Seattle. Forty-eight members of the public attended the meeting. Three written comments were received and seventeen speakers provided comment at the scoping meeting. Seventy-nine comments were received via email or via the online open house website during the scoping period. A total of ninety-six comments were received during the scoping process. The comments were considered in the preparation of the DEIS. The comments were also posted online at the Terminal 5 Improvements Project website.

### 2.2.2.2 DEIS

The Draft Environmental Impact Statement (DEIS) was prepared to meet the environmental needs of the Port, other state and local agencies with jurisdiction over the proposed Project, and members of the community providing comment. The Port prepared the DEIS as required by SEPA Chapter 43.21C RCW. Based on public comment during the Scoping phase of the Project, the following environmental elements were analyzed in the DEIS: Earth, Air Quality, Water Resources, Plants and Animals, Environmental Health, Noise, Land Use, Relationship to Plans and Policies, Aesthetics, Light and Glare, Historic and Cultural Resources, Transportation, Public Services, and Utilities.

Per WAC 197-11-635, the DEIS built upon and incorporated by reference the following environmental documents: Port of Seattle, Terminal 5 Cargo Wharf Rehabilitation and Berth Deepening Project SEPA Checklist issued March 2, 2015; the Draft Southwest Harbor Cleanup and

Redevelopment Project DEIS issued January 1994; Southwest Harbor Cleanup and Redevelopment Project FEIS issued November 1994; Southwest Harbor Cleanup and Redevelopment Addendums Numbers 1 through 4 issued in June 1995, April 1996, September 1996, and May 1998; and Terminal 5 Maintenance Dredging Program DNS issued January 2010.

The Draft EIS was published May 23, 2016. The comment period on the DEIS was scheduled to end June 21, 2016 but was extended 17 days until July 8, 2016. Two public hearings were held: June 7, 2016 and June 9, 2016. A total of 149 comments were received on the DEIS during the comment period. The comments were posted on the online Project website.

Each comment and the transcript of the public hearing are included in Chapter 6 of this FEIS. Comment letters/numbers appear in the margins of the letters/transcript commentary and are cross referenced to the corresponding responses. Responses are provided directly after each letter/transcript commentary. Expressions of opinions, subjective statements, legal argument and positions for or against the Proposed Action and Alternatives are acknowledged without further response.

### 2.2.2.3 FINAL ENVIRONMENTAL IMPACT STATEMENT

The Port is now issuing this Final Environmental Impact Statement (FEIS) that builds upon analyses and evaluations presented in the DEIS and also provides and includes updated information and analysis, errata, and response to comments received during public review of the DEIS. It also provides information on the selection of a Preferred Alternative (See Chapter 1.2.6).

As of the date of publication of this FEIS, the Port has determined that the FEIS is adequate and complies with the requirements of the SEPA, Chapter 43.21C, Chapter 197-11, WAC, and Resolution 3650, Port of Seattle SEPA Policies and Procedures.

## 2.3 PROJECT BACKGROUND

### 2.3.1 INTERNATIONAL MARINE CARGO FACILITY TRENDS

Terminal 5 redevelopment in the late 1990s was necessary in order to serve rapidly expanding trans-Pacific container cargo trade and substantially increased cargo volumes requiring transshipment locations at port facilities in California and Washington. Changes in the **international** container cargo shipping industry **have been substantial** subsequent to substantial redevelopment of the Terminal 5 marine cargo facility completed in 1999.

Increased capacity vessels that benefit from economy of scale to increase efficiency and reduce operating costs are currently being deployed in trade routes between Asia and the West Coast. Vessels with 10,000- to 14,000-twenty-foot-equivalent-unit (TEU) capacities are now in common service at West Coast cargo terminals. Vessels of 18,000-TEU capacity, new “Super post-Panamax” vessels are in the early stages of West Coast deployment. Panamax-class ships are limited by the size of the original Panama Canal, and are capable of carrying 4,500 TEUs. The existing berth and cranes at Terminal 5 can accommodate Panamax-class vessels as well as post-Panamax vessels up to approximately 6,000 to 7,000 TEUs, depending on vessel load and site conditions. Large, post-

Panamax and super post-Panamax vessels cannot be served by existing Terminal 5 cargo wharf and berth infrastructure.

City, state, and federal authorizations for the existing Terminal 5 facility allow for cargo terminal and commercial moorage. This may include seasonal lay berthing of vessels, fueling and provisioning of vessels, on board maintenance and repair of active, stored, and lay-berthed vessels, and related marine cargo activities.

Changes are now required at marine cargo facilities to prepare them to serve large existing and anticipated larger cargo capacity vessels. In the period prior to 2013, Terminal 5 cargo pier and container cranes served Panamax container cargo vessels and post-Panamax vessels, up to 6,000 to 7,000 TEU capacities. However, the Terminal 5 facility was limited in capability to accommodate these large vessels and emerging service from larger capacity vessels. As a result of the rapidly expanding size of vessels on the trans-Pacific trade route, some of the Terminal 5 cargo operations were relocated to other recently improved and more capable port cargo facilities in southeast Elliott Bay.

### 2.3.2 PROJECT PROPONENT

The Port, in partnership with the Northwest Seaport Alliance (NWSA) is the Project proponent. The recently established NWSA is a marine cargo operating partnership between the Port of Seattle and Port of Tacoma, combining marine cargo facilities in Elliott Bay and Commencement Bay, providing for optimal and coordinated use of marine cargo operations infrastructure. The NWSA was established in August 2015, following public review of proposed integrated management of marine cargo assets, approval of combined management by each of the port commissions, and authorization of the partnership by the Federal Maritime Commission.

### 2.3.3 PROJECT GOALS AND OBJECTIVES

The goal of the Project is to rehabilitate Terminal 5 as a long-term, modern, flexible, well-equipped, multimodal cargo terminal. The Terminal 5 facility requires modification in order to adequately serve larger vessels, including increased berth depth, updated cargo crane equipment sufficient to reach up and over the larger vessels, and sufficient electrical power supply necessary to operate the new cargo handling equipment.

The objectives of the proposed Terminal 5 rehabilitation actions include the following:

- Rehabilitate and modernize the existing wharf areas facilities and establish berths of sufficient width, length, and depth to allow access to the docks by existing and future cargo vessels of up to 18,000 TEUs that are anticipated to call at the terminal.
- Strengthen the wharf structure to physically support larger and more efficient container cranes capable of serving increased capacity container cargo vessels.
- Provide sufficient electrical and other utilities to accommodate current and future needs for terminal operations.

- Provide for efficient terminal traffic flow to accommodate projected daily peak increases in cargo movement into and out of the terminal resulting from handling of larger ships.
- Update cargo marshalling area for potential increasing cargo volumes over time.
- Avoid and minimize potential adverse environmental effects during construction and long-term cargo operations.
- Meet NWSA's strategic use and asset management plans and policies.
- Complete the Project in a timely manner within the financial goals set for the Project.
- Allow for interim and existing uses at Terminal 5 during construction and provide flexible facilities to manage multiple cargo types if required.

#### 2.3.4 PROPOSED PROJECT

The proposed Project includes modifications to the existing Terminal 5 marine cargo facility in order to serve larger cargo vessels. The proposed changes consist of cargo wharf rehabilitation, deepening of the vessel berth, electrical service capacity improvements, and upland improvements to serve increased **container cargo volumes**. The proposed Project would rehabilitate Terminal 5 to serve existing large and emerging increased capacity container cargo vessels. Proposed actions also include reconfiguration of the existing upland marine cargo marshalling area, modification of intermodal rail facilities and pavement areas, improvement of stormwater systems, alteration of maintenance and repair buildings, and redesign of entrance/exit gates and heavy vehicle access points. **Seasonal lay** berthing, general cargo loading and unloading, and vessel provisioning and fueling would continue at the terminal.

The proposed Project would begin as soon as city, state, and federal authorizations and approvals are received. The anticipated commencement for construction is mid-2017, with completion expected by **2019**. Upland/landside construction elements would continue throughout this time period while the proposed wharf **strengthening and vessel berth** improvements would be **distributed among** three consecutive in-water work seasons, **as required** to protect endangered species.

Upland improvements anticipated in the alternatives may be **constructed** over a longer period of time **as capacity enhancements are** required for operational needs. **While the FEIS covers all ranges of facility operating capacity, specific permit approvals linked with these upland improvement activities would be obtained prior to construction. Any additional site development activities will be subject to additional environmental review and permit authorization, consistent with Washington State Environmental Policy Act (SEPA) regulations and city, state, and federal requirements.**

This EIS includes a range of structural improvements and operational practices and methods based on container cargo facilities in place throughout the shipping industry and prepared by professional marine planners. They are designed to implement the goals and objectives of the Project and the range should adequately provide analysis and evaluation of potential environmental impacts from the alternatives considered for Terminal 5.

**The physical improvements and anticipated marine cargo operations analyzed in the alternatives in the FEIS are consistent with Project elements needed to accommodate projected increases in cargo**

volume using a forecast cargo growth rate at the upper end of predictions of a twenty year planning horizon. For the purpose of environmental analysis and evaluation, the Terminal 5 container shipping capacity “baseline” is approximately 647,000 TEUs. This is the capacity of the Terminal 5 facility following completion of the redevelopment of Terminal 5 in 1999. It is also the cargo capacity identified in Alternative 1, the No-Action Alternative. The ten year interval Terminal 5 container cargo capacity volumes used for the FEIS environmental analyses were based on forecasts of growth derived from west coast and northwest container cargo forecasts. Based on a compounded container cargo growth rate between four and five percent for Pacific northwest ports, Terminal 5 could be serving up to approximately 1.3 million TEUs by 2030.

This throughput capability could only be accommodated by the cargo wharf rehabilitation, berth deepening, and addition of large cranes and more efficient cargo handling equipment included in proposed Alternative 2. The TEU capacity of approximately 1.3 million is an important threshold because substantial upland improvements would be necessary in order to increase cargo volumes beyond 1.3 million TEUs. In order to exceed 1.3 million TEUs, it would likely be necessary to increase intermodal rail capacity and provide additional electricity capacity to provide for more efficient cargo handling equipment to meet demonstrated capacity demands. The need for additional site improvements and changes in marine cargo operations is the basis for distinguishing between Alternative 2 and Alternative 3.

Terminal 5 container shipping capacity could reach approximately 1.7 million TEUs by 2040 if the same cargo growth trajectory is used. The cargo marshalling areas would need to be redesigned, deployment of more efficient cargo handling equipment would be needed, and intermodal yard improvements would be required to handle the additional capacity. These actions are described in Alternative 3.

The actual container cargo throughput volumes associated with proposed Project alternatives would be variable and may not follow a linear progression of increases or may be lower than projected volumes, due to international trade and shipping industry conditions. Trade and shipping conditions will control the rate towards full capacity envisioned in either of the Alternatives and may vary from the higher levels predicted in the EIS. A lower growth rate will delay the onset the environmental impacts evaluated at full capacity. If the Project does not achieve full capacity, impacts will be less than anticipated, although mitigation steps may still be necessary to reduce significant impacts.

The Alternatives were structured to identify the Project elements that mimic operations and construction occurring and needed to handle increasing throughput capacity at a growth rate at the upper end of predictions of a twenty year planning horizon. Although a rapid growth rate likely overemphasizes speculative harms, the information presented estimates of the type of and timing of reasonably foreseeable significant environmental consequences from the Alternatives.

## 2.4 ALTERNATIVES

This document evaluates a reasonable range of alternatives for the proposed Project. For purposes of environmental review, three EIS alternatives were reviewed. Alternatives that are analyzed in this DEIS include:

- Alternative 1 – No-Action Alternative
- Alternative 2 – Cargo Wharf Rehabilitation, Berth Deepening, and Increased Cargo Handling
- Alternative 3 – Cargo Wharf Rehabilitation, Berth Deepening, Increased Cargo Handling, and Additional Upland Improvements

Table 2.4-1 provides a summary of container cargo facility operational plans and cargo handling equipment requirements prepared by marine cargo facility planners and design engineers for the purpose of analyzing and evaluating environmental effects resulting from future increases in container cargo volume transshipped at Terminal 5. The planning horizon years begin in 2020 and continue through planning horizon years of 2030 and 2040.

*Table 2.4-1: Operational Assumptions for Each DEIS Alternative*

Alternative	Alternative 1			Alternative 2			Alternative 3		
Planning Year	2020	2030	2040	2020	2030	2040	2020	2030	2040
<b>Annual Throughput</b>	647K	647K	647K	647K	1.27M (1.3M)	1.27M (1.3M)	647K	1.27M (1.3M)	1.7M
<b>Vessel Traffic</b>									
Vessel traffic per week	6	6	6	2	4	4	2	3	4
Vessels/year	312	312	312	104	208	208	104	156	208
<b>Rail</b>									
Trains weekly	9	9	9	9	18	18	9	18	24
<b>Yard Storage</b>									
TEU/Gross Acre	3,555	3,555	3,555	3,555	6,771	6,771	3,243	6,366	8,549
<b>Gate</b>									
Truck trips average day (one way)	1,770	1,770	1,770	1,770	2,450	2,450	1,770	2,450	3,320
Design Day Truck Trips per day (one way)	2,480	2,480	2,480	2,480	3,560	3,560	2,480	3,560	4,660
<b>Cargo Handling Equipment</b>									
STS cranes	6	6	6	8	8	8	8	10	12
Yard Tractors	67	67	67	71	92	92	13	13	18
Top-Picks	23	23	23	26	36	36	N/A	N/A	N/A
RTG cranes	3	3	3	3	13	13	N/A	N/A	N/A
Transporters	N/A	N/A	N/A	N/A	N/A	N/A	32	40	48
Waterside RMG cranes	N/A	N/A	N/A	N/A	N/A	N/A	18	22	26
Landside RMG cranes	N/A	N/A	N/A	N/A	N/A	N/A	16	19	26
Intermodal Rail Yard RMG cranes	N/A	N/A	N/A	N/A	N/A	N/A	4	4	6

Note:	
Terminal operation and equipment calculation Information from Moffat & Nichol 2/2016.	
Truck trip information, Heffron 2016.	
K = thousand	RTG = rubber-tired gantry
M = million	STS = ship-to-shore
RMG = rail-mounted gantry	TEU = twenty-foot equivalent unit

#### 2.4.1 NO-ACTION ALTERNATIVE

The existing Terminal 5 marine cargo facility is the result of substantial expansion and improvements completed in 1999. The construction and operation of the present facility was preceded by detailed environmental analyses and evaluations, including a combined federal, state, and local government EIS, Southwest Harbor Cleanup and Redevelopment Project, and subsequent authorizations received from federal, state, and local regulators and government entities, including substantial shoreline development approval from the City of Seattle.<sup>2</sup>

Cargo facility improvements completed in 1999 included the following: (1) adding approximately 90 acres of upland cargo marshalling area; (2) construction of intermodal cargo transfer rail lines; (3) construction of approximately 400 linear feet of cargo wharf; (4) construction of a grade-separated vehicle/rail overpass entrance; and (5) improvement of approximately 13 acres of public shoreline access, landscaped buffer areas, pedestrian/bicycle pathways, and approximately 1.6 acres of fish and wildlife habitat restoration.

<sup>3</sup>The **Project** No-Action Alternative proposes that no physical improvements would be made to the existing 197-acre site other than minor alterations and routine maintenance and repair work (including stormwater upgrades), none of which would increase container cargo capacity. Figure 2.6-1 shows the proposed conceptual construction elements of the No-Action Alternative.

The Terminal 5 shoreline and upland area would continue operating as a marine cargo transportation facility with vessel moorage, commercial moorage, cargo wharf, cargo marshalling, and truck and rail cargo operations taking place at the site. Figure 2.6-4 shows the conceptual operational elements of the No-Action Alternative. The terminal would continue to be capable of accommodating diverse marine cargo uses such as breakbulk or neo-bulk (goods that are loaded individually, and not in containers) and other water-dependent uses and activities intrinsic to marine transportation facilities. Marine cargo operations would be similar to Terminal 5 uses and activities during the past 15

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<sup>2</sup> City of Seattle permits (Master Use Permit files 9404118 and 9404124).

<sup>3</sup> Before discussing this alternative, an explanation of “action” and “no-action” is in order, because “action” as defined in SEPA Rules (WAC 197-11-704) is not necessarily identical to “action” as used in ordinary language. Here it refers specifically to the Port’s decision on a particular project (namely, consideration of approval for proposed redevelopment of the subject properties). Therefore, “no-action” does not mean that the project site would remain unchanged indefinitely, but that the specific SEPA action that is the subject of this environmental document would not occur. SEPA’s inclusion of the No-Action Alternative provides a baseline case against which potential impacts of the proposal can be compared.

years, making use of existing infrastructure designed and constructed to transship approximately 647,000 TEUs per year.

The No-Action Alternative would foreclose large post-Panamax vessels (vessels with TEU cargo capacities greater than approximately 7,000 TEUs) from using the site since they could not be accommodated by the existing wharf or cranes.

Under the No-Action Alternative, environmental conditions resulting from Terminal 5 marine cargo operations would not change significantly. Only minor modifications, including routine maintenance and repair work, would be conducted as necessary. The site would continue to meet existing regulatory requirements and best management practices. Stormwater improvements as required under the Industrial Stormwater General Permit would be implemented after evaluation and approval by the Washington State Department of Ecology (Ecology).

#### 2.4.2 ALTERNATIVE 2 CARGO WHARF REHABILITATION, BERTH DEEPENING, AND INCREASED CARGO HANDLING

Alternative 2 proposes rehabilitation of the existing marine cargo facilities, including cargo wharf rehabilitation, berth deepening, water/stormwater utility retrofits, and electrical utility capacity improvements defined in the Project proposal. The cargo marshalling yard area upland of the rehabilitated cargo wharf would be redesigned and reorganized to provide economies in cargo operations and on-site cargo flow and movement. Changes to existing Terminal 5 facilities would accommodate increased annual container cargo shipping capability at the site to approximately 1.3 million TEUs. Figure 2.6-2 shows the proposed conceptual construction elements of Alternative 2.

#### 2.4.3 PROPOSED ALTERNATIVE 2 CONSTRUCTION

##### 2.4.3.1 DEMOLITION/DECONSTRUCTION

The waterward surface margin, approximately 20 feet of the existing approximately 110-foot-wide, aged and deteriorating cargo wharf structure would be removed, exposing the below-grade concrete beam grid-frame of the wharf and supporting concrete support piling. Approximately 87,000 square feet of existing asphalt wharf pavement and 59,000 square feet of existing horizontal concrete cargo wharf deck panels would be removed, with appropriate protection to prevent material from entering the marine environment. All piling cap beam repair and maintenance activities would take place in above-water portions of the underside of the existing wharf structure, with no in-water actions included. Table 3.4-1 in Section 3.4 of this DEIS provides a summary of in-water and overwater structures to be removed and added. The table includes the number of existing piles to be removed from the Project area subtidal zone by a barge or deck mounted crane. Other existing piles would be removed by extraction and additional structural piles would be cut off and removed.

Timber and concrete piles would be extracted from the substrate using a vibratory pile driver and crane hoist. Extracted piles would be stockpiled in an area with drainage control to prevent release of sediment-laden water to adjacent surface waters. If a pile breaks above the mudline during



extraction, a chain would be used, if practical, to attempt to remove the broken pile. If unsuccessful, the pile would be cut off at the mudline. Most concrete structural piles would be cut off at the mudline with the above-water section hoisted out of the water by crane. The concrete piles remaining below the mudline would act as slope structural reinforcement instead of installing new pinch piles. The existing creosote- and ACZA-treated timber pile and steel pile wharf fender system would be removed and replaced with an above-water fender panel system.

#### 2.4.3.2 REPLACEMENT OF CRANE RAIL BEAMS

Two stronger crane rail beams would replace existing crane rail beams at the Terminal 5 wharf, including a replacement waterside crane rail beam, supported by 24-inch octagonal structural concrete piling, installed within the footprint perimeter of the existing cargo wharf. A second replacement crane rail beam would be installed landward of the existing wharf. The landside crane rail beam is located in existing upland area and includes no in-water construction. Replacement of the waterside crane rail beam includes installation of approximately 420, 24-inch octagonal pre-stressed concrete octagonal piling, driven into the subtidal aquatic area (-35 to 40 feet mean lower low water [MLLW]) beneath the existing Terminal 5 wharf. Concrete piling would be driven with an impact pile driver conducted from a barge or landside crane. The new piling would support the new waterside, cast-in-place, concrete crane rail beam, connecting the upper portions of the 24-inch octagonal concrete support piling. Replacement of the landside crane rail beam would include installation of approximately 420, 30-inch-diameter steel pipe piles, driven with a land-based impact pile driver, providing a foundation for installation of a sufficiently strong, cast-in-place, concrete upland crane rail beam.

#### 2.4.3.3 SLOPE STABILIZATION MEASURES

The existing slope beneath the Terminal 5 wharf includes a grade of approximately 1 vertical to 1.5 - 1.75 horizontal grade (1V:1.5H to 1V:1.75H). Geotechnical investigations have determined that the lower portions of the slope beneath the existing Terminal 5 wharf, constructed three to four decades ago, require structural stabilization measures coincident with strengthening the cargo wharf and deepening the adjacent vessel berths. Planned slope stabilization techniques would consist of installation of up to approximately 3,000, 10- to 14-inch-diameter, approximately 60-foot-long, untreated timber piling, penetrating the existing riprap slope, underlying select fill material, and entering native sediment layers. The timber piling would be installed using impact and vibratory pile driving devices, with the finished piling installation matching the existing riprap slope gradient. In addition, a short "toe-wall" would be installed at the transition between the constructed riprap slope beneath the existing cargo wharf and the adjacent container vessel berth area to stabilize the bottom margin of the riprap armored slope. Approximately 3,100 linear feet of combined steel sheet piling and "HZ" steel piling would be installed at the toe-of-slope. The top elevation of the new "toe-wall" would vary between -42 and -50 feet MLLW. The toe-wall steel sheet and HZ piling would be installed using a vibratory pile driving device. Limited impact pile driving may be required to complete portions of toe-wall piling installation, if soil conditions impede vibratory pile driving installation.

#### 2.4.3.4 REPLACEMENT CONCRETE DECK STRUCTURE

Existing concrete wharf deck panels, pile caps and edge of wharf structures, removed to allow for replacement of the waterward crane rail beam, would be replaced with new concrete panels within the existing wharf footprint. Approximately 20,000 cubic yards of concrete would be placed in field constructed forms in order to replace the deck.

#### 2.4.3.5 REPAIR AND REPLACEMENT OF EXISTING CONCRETE PILING CAPS BEAMS

The existing wharf includes piling cap beams oriented east-west, between the wharf crane rail beams, connecting the above water portions of structural piling, forming a grid to support the wharf deck panel surface would be repaired. Due to the age of the wharf, numerous sections of the cast-in-place piling cap beams have deteriorated and corroded. The proposed Project includes repair and maintenance of failing piling cap beam sections. This consists of removing spalled concrete and corroded reinforcing steel and installing replacement reinforcing steel and concrete grout. All piling cap beam repair and maintenance activities would take place in above-water portions of the underside of the existing wharf structure, with no in-water actions included.

#### 2.4.3.6 REPLACEMENT FENDER SYSTEM

The existing treated wood piling and steel piling wharf fender system would be removed, totaling approximately 290 to 300 piling. They would be replaced with an alternative panelized, above-water fender system. The replacement fender panels would be spaced at approximately 60-foot intervals and would not include in-water elements. Up to 110 cubic yards of clean sand fill would be applied as a protective layer in subtidal aquatic area affected by removal of treated wood fender piling.

#### 2.4.3.7 DREDGING

The subtidal sediments in the existing vessel berth area adjacent to the rehabilitated wharf would be deepened by underwater dredging. Existing depths in the proposed dredge prism are between -47 and -55 feet MLLW. Approximately 235,400 square feet of area (5.38 acres) adjacent to Terminal 5 would be dredged to a Project depth of -55 feet MLLW. An additional 1 foot of advanced maintenance dredge would be completed beyond the Project depth in critical and shoaling areas to avoid frequent redredging. The required Project grade is, therefore, -56 feet MLLW. It is anticipated that up to an additional 2 feet of allowable overdepth would be dredged, to a maximum depth of -58 feet MLLW.

Between 44,000 to 48,000 cubic yards of sediment would be removed from the Project area. Approximately 36,200 cubic yards of sediment would be removed to the Required Project Grade of -56 feet MLLW. Additional sediment volume for the overdepth is estimated to be between 7,900 to 11,800 cubic yards.

Disposal of all dredged sediments removed as part of the Project would be consistent with the requirements of the Dredged Material Management Program (DMMP), including the Washington State Department of Natural Resources (DNR), Ecology, U.S. Army Corps of Engineers (USACE), EPA, and other agencies with jurisdiction. Results of sediment sampling recently completed for DMMP

characterization indicate that all of the sediments in the proposed dredge prism would be suitable for DMMP managed open water disposal operations.

The sediment that would be exposed by dredging has been tested and did not exceed any DMMP screening levels. Therefore, the sediment to be exposed by dredging is not considered to be degraded relative to the currently exposed sediment surface. The DMMP agencies concluded that the Project was in compliance with the Washington State antidegradation policy.

Safety dredging of approximately 10,000 cubic yards may be required in the future to allow for unrestricted berth access for up to two 18,000-TEU vessel moorage. If needed, safety dredging would seek separate regulatory approvals including a new sediment characterization.

#### 2.4.3.8 UPGRADE ELECTRICAL SYSTEM

The electrical supply and distribution would be upgraded for increased loads from its current capacity of 5 megavolt amperes (MVA) to 26 MVA. A new 26 MVA Primary Substation would be constructed to provide electrical power to the new cranes and associated terminal operations, such as cargo handling, marshalling, and refrigeration. Coordination with Seattle City Light (SCL) would provide power to the new Primary Substation from both the SCL Delridge Substation and the SCL South Substation. **Balancing of the electrical load using the historical terminal diversification (different loads come on at different times) provides enough power for up to 8 ship to shore cranes, 2,000 refrigerated container electrical power connections, and 2 ships on shore power concurrently.**

Up to four new electrical distribution substations would be constructed, serving container cranes and dock power and lighting systems. A new underground electrical duct bank would be constructed, connecting distribution elements. Distribution vaults and trenches would be constructed, providing electrical power to container crane equipment. HVAC would be provided for electrical enclosures.

The conduit, wiring, and a connection system would be provided for a shorepower system for two berths. This would allow the terminal to be “plug-in ready” for those ships with have the capability and choose to use shorepower.

#### 2.4.3.9 REPLACE DOCKSIDE POTABLE WATER SYSTEM

The existing dockside water distribution system would be removed and replaced. A sectional distribution system would be provided and integrated with the existing looped water distribution system and existing fire hydrant layout. The existing vessel water supply system would be removed and replaced, including water use metering.

#### 2.4.3.10 UPGRADE STORMWATER SYSTEM

The existing stormwater infrastructure would be modified for the facility to meet Correction Action Level 3 Industrial National Discharge Elimination System (NPDES) improvements and to support the operations of the new cargo wharf facility prior to beginning operations. The design would be reviewed and approved by Ecology prior to installation.

#### 2.4.3.11 CARGO MARSHALLING AREA IMPROVEMENTS

Ground repairs and maintenance activities of container yard asphalt surface would include repaving portions of the facility in areas in with poor pavement condition. Approximately 20 acres of storage yard would be converted to a higher density grounded container storage serviced by motor-powered rubber-tired gantry (RTG) cranes to move cargo. Up to 11,000 linear feet of concrete runways for use of the RTG cranes as improved cargo handling equipment would be added in portions of the container marshalling yard stacks.

The removal, relocation, and modification of underground conduits and pipes beneath the rails would be required, as needed, to accommodate repairs.

The existing approximately 130-acre marine cargo marshalling area would be reorganized for more efficient cargo receiving, staging, and transfer areas that would improve cargo handling efficiency and capacity, without increasing the area used for cargo shipping. Improvements would consist of relocating and changing the distribution of grounded and wheeled container cargo, including changes in internal circulation, travel lanes, restriping, and signage.

No substantial changes are proposed to the upland buildings, intermodal rail facilities, or truck gates. Up to eight container cargo cranes capable of ship-to-shore (STS) cargo operations would replace the existing six cranes to service larger container ships. Existing light poles would be reutilized to provide safe levels of lighting for industrial purposes except where conflicts exist with needed improvements, such as the relocation of light poles necessary to allow safe operation of newer, larger STS cranes. High pressure sodium vapor luminaries currently in use would be replaced with specialized light-emitting diode (LED) or equivalent lamps with energy efficient computerized controls.

The existing longshore employee parking would be maintained on the site. Striping, fencing, barricades, gates, sheds, and signage may be required or relocated for better access and circulation.

Temporary construction trailers may be placed on site during building and wharf improvement construction work. Construction trailers are typically 12 feet wide by 56 feet long (672 square feet of interior space), and 12 feet high. The painted exterior of the trailers would be a neutral color. Construction contractors typically select energy-efficient trailers for temporary construction use. The trailers would be equipped for electrical heating. No excavation is required for placement of temporary construction office and storage trailers, as no permanent foundations would be constructed. Utility services (water, power, and telecommunications) would be provided through connections to existing site utilities, or provided by the contractor (e.g., portable toilets). Vehicular access to trailers would be through existing paved Terminal 5 areas and no striped or designated parking spaces would be required.

#### 2.4.4 PROPOSED ALTERNATIVE 2 OPERATIONS

Alternative 2 evaluates increasing the density of storage within the existing boundary of Terminal 5 and reusing the existing configuration of the intermodal rail yard. Alternative 2 is limited to managing container cargo shipping volumes up to approximately 1.3 million TEUs per year by the

capacity of the intermodal rail yard as currently configured and limitations of the storage yard using a combination of diesel powered RTG cranes oriented parallel to the berth and cargo handling service provided by motor powered top-picks (TPs). Figure 2.7.2 is a conceptual plan for Alternative 2 operations and summarizes anticipated operational characteristics for vessels, trains, and cargo handling equipment for each alternative. See Table 2.4-1 for a summary of the expected cargo handling equipment needs for 2020 to Alternative 2 full capacity buildout in 2030 and continuing through 2040.

#### 2.4.4.1 ANTICIPATED THROUGHPUT

The proposed Alternative 2 operations would improve the container-handling efficiency of the existing site to serve larger container vessels up to 18,000 TEUs that are anticipated to call at Terminal 5 through 2040. Alternative 2 would increase the throughput capability of the existing Terminal 5 marine cargo site from 647,000 TEUs annually to the potential for container cargo shipping volumes up to approximately 1.3 million TEUs per year by 2030 and continuing at that level through the 2040 planning horizon. Modifications to the container cargo marshalling yard would be required to achieve the amount of densification necessary to accommodate 1.3 million TEUs per year. Efficiencies at the terminal would take advantage of more efficient STS crane transfer, use of more efficient cargo handling equipment, and improvements for transshipment of cargo through the existing intermodal rail yard.

The DEIS analyses and evaluations for the proposed Terminal 5 actions are based on completion of Project actions in 2020, with cargo volumes increasing from approximately 647,000 TEUs to an upper capacity level of approximately 1.3 million TEUs by 2030. The actual throughput levels may be lower than the projected throughput at capacity as analyzed in this document, **depending on container cargo shipping conditions.**

#### 2.4.4.2 VESSEL CALLS AND OPERATIONS

The Port anticipates that larger container cargo vessels **will** continue to serve Puget Sound ports and that new larger vessels **will** become the dominant vessel in the Pacific Northwest trade. For purposes of this analysis, we assume that Terminal 5 would have 2 vessel calls, one 14,000-TEU ship discharging and loading 30 percent of their capacity, and one 8,000-TEU ship discharging and loading 24 percent of their cargo. At full capacity expected to be reached by 2030 and continuing through to 2040, Terminal 5 would have 4 vessel calls, two 14,000-TEU ships discharging and loading 30 percent of their capacity, and two 8,000-TEU ships discharging and loading 24 percent of their cargo. **Since cargo volumes would be transported in large vessels, projected yearly vessel calls would be less than 210, similar to the 2000-2013 period vessel call average.** Berth utilization<sup>4</sup> would be approximately 57 percent, **similar to the 2000-2013 period vessel berth utilization average.** Large 18,000-TEU ships may call instead of the 14,000-TEU ships, but a smaller percentage of container

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<sup>4</sup> The percentage of time a ship is occupying each berth.

transshipment would be expected for such vessels, compared with other ships (approximately 23 percent).

#### 2.4.4.3 SHIP-TO-SHORE OPERATIONS

Large vessels serving Terminal 5, following completion of proposed Project actions in 2020, would require a minimum of four STS cranes to work each ship (total of eight container cranes in service at facility). Longshore crews would be anticipated to work continuously while the ship is at berth in order to maintain a rate of container unloading/loading that keeps the ship on schedule for its next port of call. Ships would be anticipated to require between 25 to 50 hours at berth for loading and unloading activities.

A yard tractor would haul the container to a designated location in the cargo marshaling area where cargo handling equipment would remove it and place it in the stack. The yard tractor would then return to the crane to retrieve another container. Loading operations would be similar with the containers traveling from the container stack to the STS cranes.

#### 2.4.4.4 CARGO HANDLING AND CONTAINER YARD OPERATIONS

To achieve the density of storage required for this scenario, the yard would likely be operated with motor powered, RTG cranes oriented parallel to the berth and served by motor powered **yard tractors**. The container storage yard would likely be required to operate two shifts seven days per week to accommodate this throughput. Additional shifts may be required in order to maintain a rate of container unloading/loading that keeps the ship on schedule for its next port of call.

#### 2.4.4.5 RAIL OPERATIONS

Containers would be transferred between the intermodal rail yard and the container marshalling yard stack by yard tractors. A motor powered TP would remove the container from the chassis and place it in the intermodal rail car well.

When rail car segments are filled for a common destination on the storage tracks, a shunting/**switch** engine combines them into a single unit train (approximately 7,500 feet of connected length). Once a unit train is assembled, large “road-power” locomotives would arrive and haul the unit train off terminal and onto the rail mainline bound for eastern destinations. A new train would arrive and be separated into pieces suitable for the intermodal rail yard to discharge them to the terminal stacks. On average, 18 trains each way are anticipated to be processed weekly at maximum capacity anticipated by 2030. The intermodal rail yard would be required to work two shifts 7 days per week to accommodate this throughput. Additional shifts may be required in order to maintain a rate of container unloading/loading.

#### 2.4.4.6 TRUCK AND GATE OPERATIONS

Gate operations are anticipated to be consistent with current operating procedures. Trucks are allowed to deliver or retrieve a container within a designated window as it relates to the ship schedule.

The gate would be required to operate one shift up to six days per week to accommodate the anticipated throughput. Additional shifts may be required in order to maintain a rate of container unloading/loading that keeps the ship on schedule for its next port of call.

#### 2.4.4.7 BUILDING AND SUPPORT ACTIVITIES

The majority of the existing buildings would be reused, although they may require renovation. The maintenance building may be renovated to better serve the new cargo handling equipment (RTG cranes, hostlers, and the new STS cranes). A Labor/Marine Building may be required to provide a break facility to the crews. The Administration Building may remain and/or be remodeled to accommodate additional cargo management and facility operational needs. Employees of the facility would park at the existing parking area at the south end of the terminal.

#### 2.4.5 ALTERNATIVE 3 CARGO WHARF REHABILITATION, BERTH DEEPENING, INCREASED CARGO HANDLING, AND ADDITIONAL UPLAND IMPROVEMENTS

Alternative 3 proposes the same rehabilitation of the existing marine cargo facilities, including cargo wharf rehabilitation, berth deepening, water/stormwater utility retrofits, and electrical utility capacity improvements, defined in the Project proposal and Alternative 2. Alternative 3 additionally proposes significant changes and improvements to the cargo marshalling yard area upland, intermodal rail yard configuration, and electrical capacity increases to the site and on site electric utility upgrades in order to accommodate increased annual container cargo transshipment capability at the site to approximately 1.7 million TEUs instead of approximately 1.3 million TEUs stated in Alternative 2. Figure 2.6-3 shows the proposed conceptual construction elements of Alternative 3.

#### 2.4.6 PROPOSED ALTERNATIVE 3 CONSTRUCTION

Alternative 3 proposes the same cargo wharf rehabilitation, berth deepening, utility upgrades, and building and support activities identified in the Project description for Alternative 2. Alternative 3 includes upland improvements as part of the proposal to be able to handle increased cargo handling. Details of the additional improvements proposed as part of Alternative 3 are described in more detail below.

##### 2.4.6.1 UPLAND IMPROVEMENTS

The area defined for container yard and cargo marshalling area would be increased as part of Alternative 3 through relocation or demolition of the existing entrance gate, freight station, transit shed, maintenance and repair buildings, and operations buildings.

The container cargo marshalling yard capacity would be increased through use of grounded container storage served by RTG or rail-mounted gantry (RMG) cranes oriented perpendicular to the berth. The use of RTG and RMG cranes allows for containers to be stacked higher and packed more closely between rows of stacks as the cranes are restricted to their appropriate rail widths and do not require additional room for maneuvering. The entire paved surface yard would be removed and

regraded, new concrete beams for RTG cranes or RTG cranes would be installed, and the entire yard would be repaved. Exposed utility systems would be reconfigured, as required.

The truck gate would be relocated and require a new gate system, guard booth, truck scales and optical character recognition complex along with associated paving, drainage, power supply, and data network.

The electrical capacity may need to be increased to accommodate additional crane load and to power electrified cargo handling equipment. Additional transmission and electricity of up to 70 MV can be made available from SCL. On-site electric utilities would be upgraded as required to serve new STS, RMG, and RTG cranes and receive the electricity that SCL would provide. The increased SCL power supply from 26 MV expected to be available at the start of operations in 2020 under Alternative 2 would be phased in as capacity is made available. The full demand would not be expected to be needed when a tenant first operates at the site. It may take approximately 10 years or more for SCL to design, undergo separate environmental review appropriate, and build the full demand of power supply. It is expected that this time period for permitting and construction would coincide with the needs of any tenant at the Terminal 5 site.

The intermodal rail yard would require reconstruction to remove existing rail and add approximately eight new tracks and construct RTG crane support infrastructure. The intermodal rail yard would require new paving, stormwater facilities and electrical power improvement's to serve the new crane.

#### 2.4.7 PROPOSED ALTERNATIVE 3 OPERATIONS

This operational scenario evaluates maximizing the density of storage within the existing boundary of Terminal 5 and improves cargo handling ability to transship 1.7 million TEUs per year by 2040 planning horizon. Alternative 3 is limited to managing container cargo shipping volumes up to approximately 1.7 million TEUs per year, making use of modified intermodal rail yard facilities and reconfigured operational dimensions and "layout" in the Terminal 5 cargo marshalling area. Figure 2.7.3 is a conceptual plan for Alternative 3 operations and summarizes anticipated operational characteristics for vessels, trains, and cargo handling equipment for each alternative (see Table 3.2-1).

##### 2.4.7.1 ANTICIPATED THROUGHPUT

Proposed operations at Alternative 3 would improve the container-handling efficiency of the existing site to serve larger container vessels (up to 18,000 TEUs) that are anticipated to call at Terminal 5 through 2040. The throughput capacity of the terminal would increase from its current capability of approximately 647,000 TEUs, to up to approximately 1.7 million. This option would take advantage of more efficient STS crane transfer, use of more efficient cargo handling equipment, and improvements for transshipment of cargo through the existing intermodal rail yard. It is anticipated that annual container cargo volume at the site would increase gradually from the previous 647,000-TEU levels.



The DEIS analyses and evaluations are based on completion of Project wharf strengthening, berth deepening, and initial electrical and utility actions in 2020. Cargo volumes are expected to increase from approximately 647,000 TEUs to a throughput level of approximately 1.3 million TEUs by 2030 and continuing on to 1.7 million TEUs by 2040. The actual throughput levels and expected progressive timeline of expansion for the proposed Project may be extremely variable due to market conditions.

#### 2.4.7.2 VESSEL CALLS AND OPERATIONS

The vessel calls and operations for Alternative 3 would be the same as Alternative 2 except for the assumptions for the number of expected vessel calls and cargo volumes. At full capacity expected to be reached in 2014, Terminal 5 would have 4 vessel calls each week, two 14, 000-TEU ships discharging and loading 40 percent of their capacity instead of the 30 percent capacity of Alternative 2. Two 8,000-TEU ships would be discharging and loading at 32 percent of their cargo instead of 24 percent in Alternative 2. Berth utilization would be on the order of 59 percent instead of the 57 percent for Alternative 2. Since cargo volumes would be transported in large vessels, projected yearly vessel calls would be less than 210, similar to the 2000-2013 period vessel call average.

#### 2.4.7.3 CONTAINER YARD OPERATIONS

To achieve the density of storage required for this scenario, the cargo marshalling yard would likely be operated with electrically powered RTG cranes oriented perpendicular to the berth. Each container stack would be served by two RTG cranes. Table 2.4-1 summarizes the expected cargo handling equipment needs for 2020 to Alternative 3 full capacity buildout in 2040.

The container marshalling yard would be required to work two shifts 7 days per week to accommodate this throughput. Additional shifts may be required in order to maintain a rate of container unloading/loading that keeps the ship on schedule for its next port of call.

#### 2.4.7.4 RAIL OPERATIONS

Containers would be shifted between the intermodal rail yard and the container marshalling yard stack by yard tractors. The yard tractor would connect to chassis in the landside transfer zone, where the container marshalling yard electrically powered RTG cranes had previously staged chassis with loaded container, and would haul the chassis across the truck circulation area to the intermodal rail yard. The hostler would place the chassis in an available parking spot in the intermodal rail yard buffer and retrieve a different chassis bound for the container marshalling yard. The hostler would drop the chassis at the appropriate container stack and repeat with a new chassis bound for the intermodal rail yard.

RTG cranes would retrieve containers from the intermodal buffer and place it on the appropriate rail car. Once a set of cars is filled with containers, it would be removed by a shunting engine and stored in the adjacent storage tracks until enough segments can be combined into a single unit train (approximately 7,500 feet of connected length). Once a unit train is built, road engines would arrive and haul the unit train off terminal and onto the rail mainline bound for eastern destinations. A new

train would arrive and be broken (separated) into pieces suitable for the intermodal rail yard to discharge them to the terminal stacks.

On average, 24 trains each way are anticipated to be processed each week at maximum capacity anticipated by 2040. The rail yard would be required to work two shifts seven days per week to accommodate this throughput. Additional shifts may be required in order to maintain a rate of container unloading/loading.

#### 2.4.7.5 TRUCK AND GATE OPERATIONS

To achieve maximum capacity, it is anticipated that the activity of trucks bringing cargo to the terminal or retrieving a container would be aided by a more controlled system managing queueing at the gate with container cargo ready for movement. An appointment system for trucks arrivals would ensure efficient and effective truck movement. Trucks arriving without an appointment would be turned away and given information on establishing an appointment to drop off or retrieve their container. In order to accommodate the anticipated throughput, the gate would be required to operate two shifts up to six days per week. Additional shifts may be required in order to maintain a rate of container unloading/loading that keeps the ship on schedule for its next port of call.

#### 2.4.7.6 BUILDING AND SUPPORT ACTIVITIES

The majority of the existing building would be relocated or renovated in the revised terminal configuration. The maintenance building would be relocated to accommodate the new container stacks and outfitted to better serve the new cargo handling equipment (RMG cranes, shuttle carriers, hostlers, and the new STS cranes). A labor building may be necessary to provide a break facility to the crews and potentially provide space for clerks to process gate transactions. The Administration Building may remain and be remodeled to accommodate additional cargo management and facility operational needs. There would be several additional ancillary structures, such as guard booths, security building, fueling facility, and container and equipment wash facilities, among others. Employees of the facility would park at the reconfigured parking area at the south end of the terminal.

#### 2.4.8 SCHEDULE AND PHASING

The proposed Project would begin as soon as regulatory approvals and permit authorizations are received. Construction is anticipated to begin in mid-2017, with completion expected within 2 years from that time (2019 and extending through late winter 2020 in order to complete last season berth deepening dredging). Upland/landside construction elements would continue throughout this time period while in-water work would be restricted to in-water work conditions stipulated in project authorizations. In-water work periods, intended to protect migratory and resident fish and wildlife generally allow for piling construction and dredging activities between August 16 and February 15 of each construction year. In addition, in-water construction activities require measures to avoid and minimize potential disruption of Treaty fishing access, generally during fish harvest periods in late summer, fall, and winter months.

Upland improvements anticipated in the alternatives may be constructed over a longer period of time, as capacity enhancements are required for operational needs. While the FEIS covers all ranges of facility operating capacity, specific permit approvals linked with these upland improvement activities described in Alternatives 2 would be obtained prior to construction. Any additional site development activities associated with Alternative 3 will be accompanied by additional environmental analysis and evaluation and site construction and use authorizations, consistent with State Environmental Policy Act (SEPA) and local, state, and federal review and authorization requirements.

## 2.5 POSSIBLE FUTURE PROJECTS

Alternatives 2 and 3 are intended to accommodate container terminal tenants. All current uses remain the same. **Alternative 3 would require substantial electrical transmission approvals.** No other future projects related to the current proposal are currently planned.

## 2.6 DISADVANTAGES AND/OR BENEFITS OF FUTURE IMPLEMENTATION

The SEPA Rules (WAC 197-11-440) require that an EIS address the benefits and disadvantages of reserving for some future time the implementation of the proposal, as compared with possible approval at this time. This proposal is for the Port to redevelop properties for private entities. It is the responsibility of agencies receiving permit applications for this proposal to act on the proposal within the time limits established by regulatory authority.

A disadvantage of delaying implementation is that it would delay meeting the proponent's goals. Construction costs may be higher in the future. Public benefits of the Project, such as increased jobs and tax revenues, would be deferred or may not occur. Another disadvantage in delaying implementation is that the Port would not be able to meet projected demands for container cargo service, potentially reducing Seattle's market share of this business and losing business to more competitive ports elsewhere.

Deferring adoption of the Project would either postpone development on the site or may result in other development of the site. If adoption of the Project is postponed or denied, the site would remain in its existing condition. It is unknown what future uses within the site would be if the proposal was not adopted. **Existing Terminal 5 operations including lay berthing, general cargo loading and unloading, and provisioning and fueling could continue at the terminal, but larger vessels would not be able to berth and be unloaded at the site.**

## 2.7 CUMULATIVE IMPACTS

This section evaluates and summarizes the potential cumulative impacts of the proposed Project. Cumulative impacts are impacts that could result from the incremental consequences of an action (in this case, the proposed Project) when added to other past, present, and reasonably foreseeable future actions. When impacts of an action are analyzed and evaluated individually, they may appear minor but, when considered collectively (cumulatively) with the impacts of other actions, especially over a period of time, the impacts can be more significant. The purpose of the cumulative impacts analysis is to ensure that decision-makers consider the full range of

consequences for the proposed Project, including the proposed Project's incremental contribution to cumulative impacts on the environment.

### 2.7.1 REGULATORY CONTEXT

The Washington SEPA directs lead agencies to consider the direct, indirect, and cumulative impacts of proposed actions. This cumulative impact analysis is prepared in accordance with SEPA (Chapter 43-21C RCW), SEPA Rules (WAC 197-11-060 and 197-11-792), and the SEPA Handbook. The Council on Environmental Quality publication "Considering Cumulative Effects under the NEPA" was also considered for additional guidance where National Environmental Policy Act (NEPA) cumulative impact review is consistent with SEPA requirements.

### 2.7.2 METHODOLOGY

This analysis provides a broad assessment of potential cumulative impacts related to implementing the proposed Project. A wide array of other past, present, and reasonably foreseeable future actions near the Project site and along the West Waterway were reviewed. The cumulative impact analysis used the following approach:

1. Identification of geographic boundaries (i.e., the study area). The preceding chapters of the DEIS describe the potential impacts of the proposed Project on environmental resources. As discussed in those chapters, the study areas are the areas where the proposed Project has the potential to affect environmental resources. In general, the study areas include the Project site and surrounding areas, as well as the West Waterway for the marine terminal and vessel traffic related to the proposed Project. The cumulative impact assessment uses the same study areas, as those study areas represent the areas where the proposed Project, in combination with other past, present, or reasonably foreseeable future actions, could result in cumulative impacts.
2. Identification of time-based boundaries. The proposed Project does not have a stated lifespan. Therefore, this assessment accounts for all reasonably foreseeable projects that could be constructed or operational during the same period as the proposed Project.
3. Identification of reasonably foreseeable future projects and actions within the geographic and time-based boundaries.

### 2.7.3 REASONABLY FORESEEABLE FUTURE PROJECTS

Reasonably foreseeable future projects considered in this cumulative impact analysis are listed below. The projects considered include public and private projects.

Several Port and non-Port proposals are in the conceptual planning stages or are scheduled for construction in the general vicinity of the proposed Project and may affect the Project area. However, the projects have been shown to be independent of one another: each would be undertaken regardless of the other and is not needed to support the other. If the projects listed below are permitted and proposed for construction coincident with time frames of the proposed Project, they would be closely coordinated. Each of the projects would be required to conduct

separate, project-specific SEPA environmental review. Mitigation measures appropriate for each project would decrease the potential for cumulative impacts.

Lockheed West Federal Superfund. Site of Former Lockheed Shipyard Number Two, northwest margin of the West Waterway:

- Record of Decision: issued August 2013
- Consent Decree: expected 2015–2016
- Cleanup design: expected 2016–2018
- Implementation: 2018–2020

Seattle Harbor Navigation Improvement Project (also referred to as the Corps of Engineers East and West Waterway Deepening Feasibility Study):

- Project reconnaissance report: completed 2104
- Draft Integrated Feasibility Report and Environmental Assessment: issued August 2016
- Project design and construction: 2018–2024

The Seattle Harbor Navigation Improvement Project proposed by the USACE is a separate and independent action from the present Terminal 5 Improvements Project and will undergo a separate NEPA/consultation process. The project is expected to be implemented in the period 2018 and 2024, but due to the need for Congressional funding approval, it is not expected that construction of the Terminal 5 Improvements Project and the navigation improvement project would be coincident. The Port and NWSA may propose improvement projects at other cargo facilities in south Elliott Bay, including berth deepening, slope stabilization, or other alterations of in-water facilities. These activities would be for the purpose of accommodating changing commodity and vessel fleet demands. Marine cargo facility improvement would take place in order to serve larger container ships forecast to call at the Port.

The proposed Terminal 5 Improvements Project is not dependent upon the federally-sponsored navigation improvement project. Improvements at other marine cargo terminals in south Elliott Bay would also have independent utility, regardless of the outcome of the Seattle Harbor Navigation Improvement Project feasibility study.

#### 2.7.4 CUMULATIVE IMPACTS ANALYSIS CONCLUSION

None of the above activities are functionally related to the proposed Project (i.e., one could proceed without the other). If any of these projects were constructed at the same time, there is a potential for a cumulative impact. However, the impact would only be during construction and would be temporary for the duration of the construction activity. Therefore, no significant unavoidable cumulative impacts are expected to result from the proposed Project.

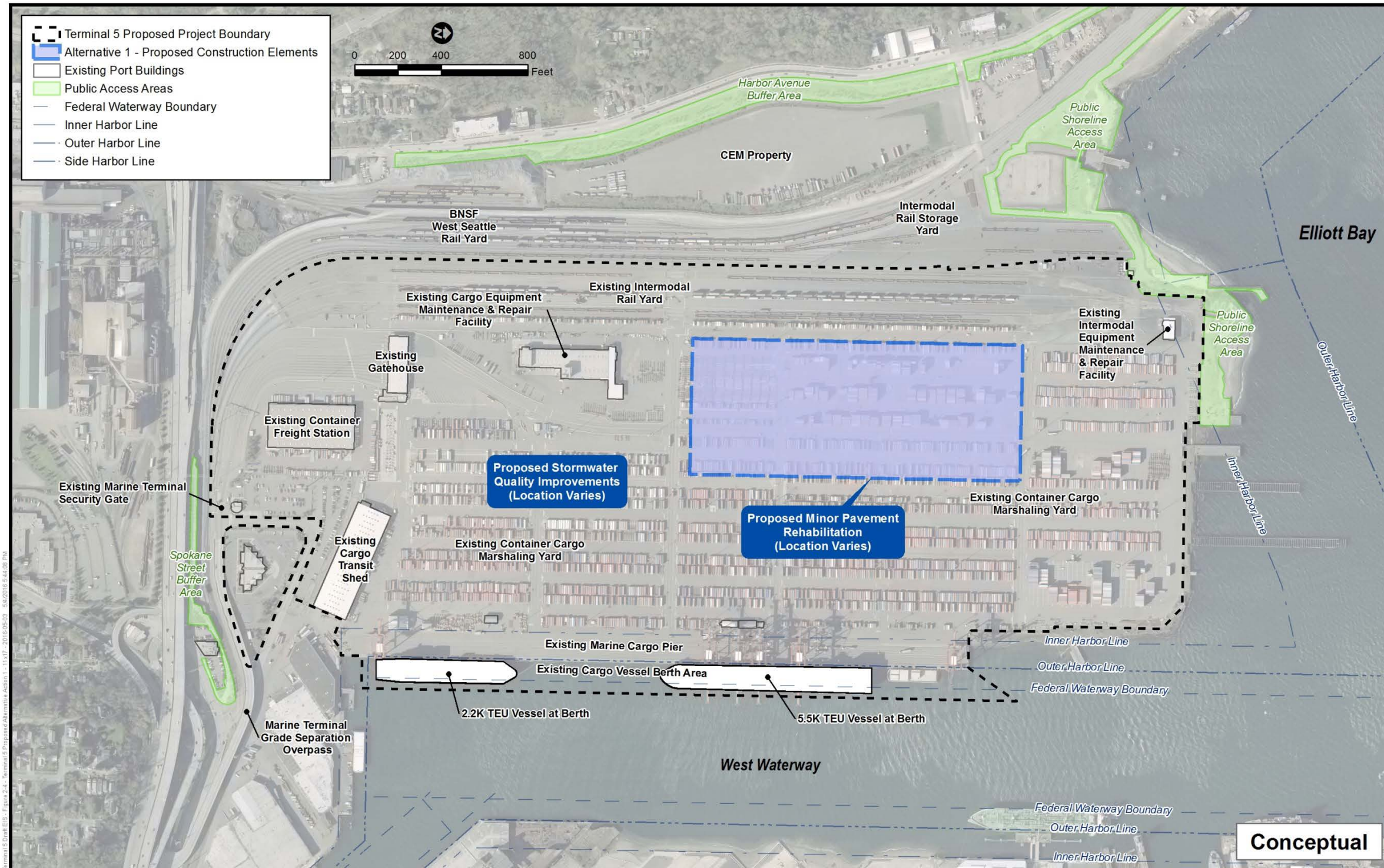


Figure 2.7.1: Alternative 1 No-Action Alternative Conceptual Construction Elements

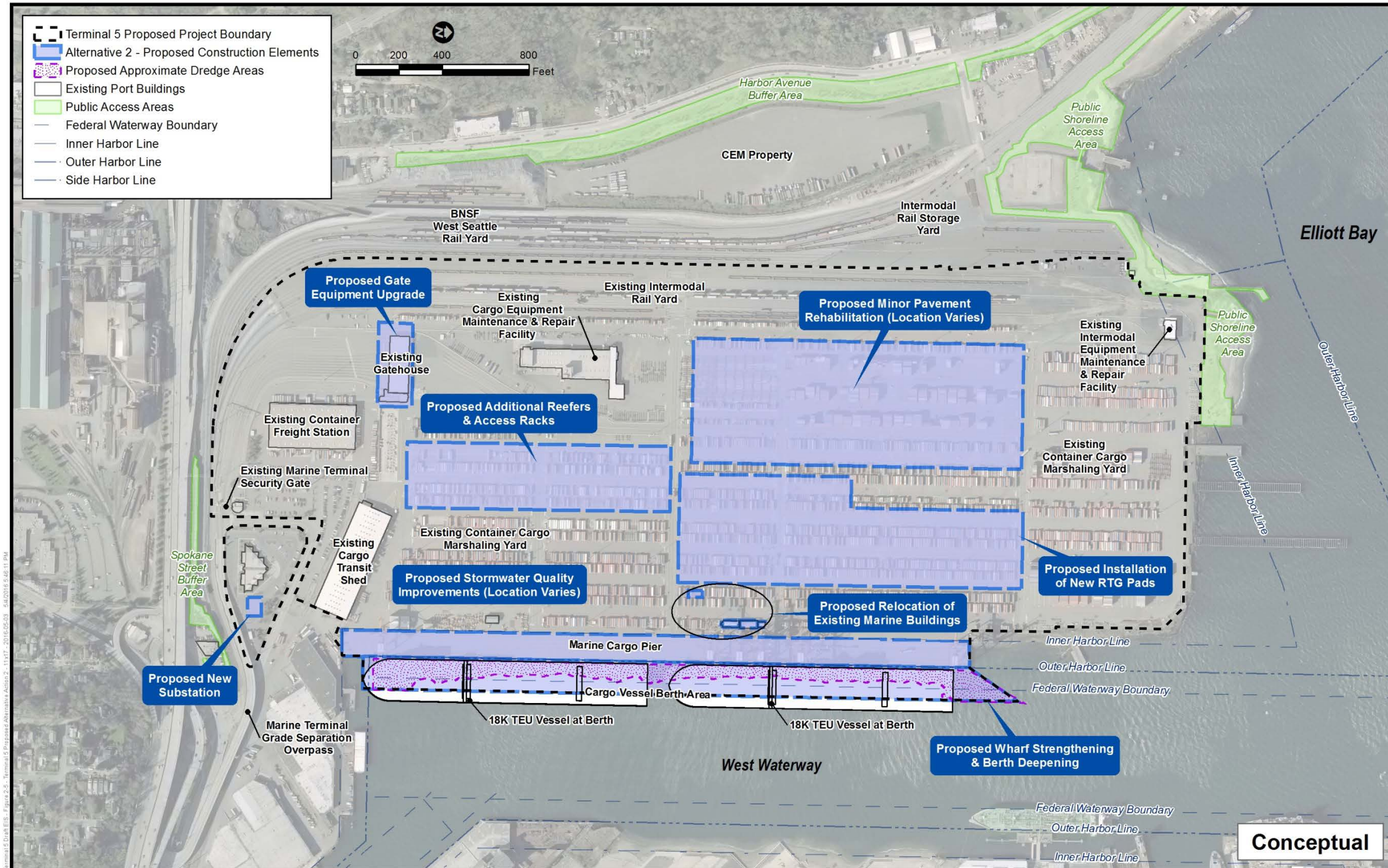


Figure 2.7.2: Alternative 2 Cargo Wharf Rehabilitation, Berth Deepening, and Increased Cargo Handling Construction Elements

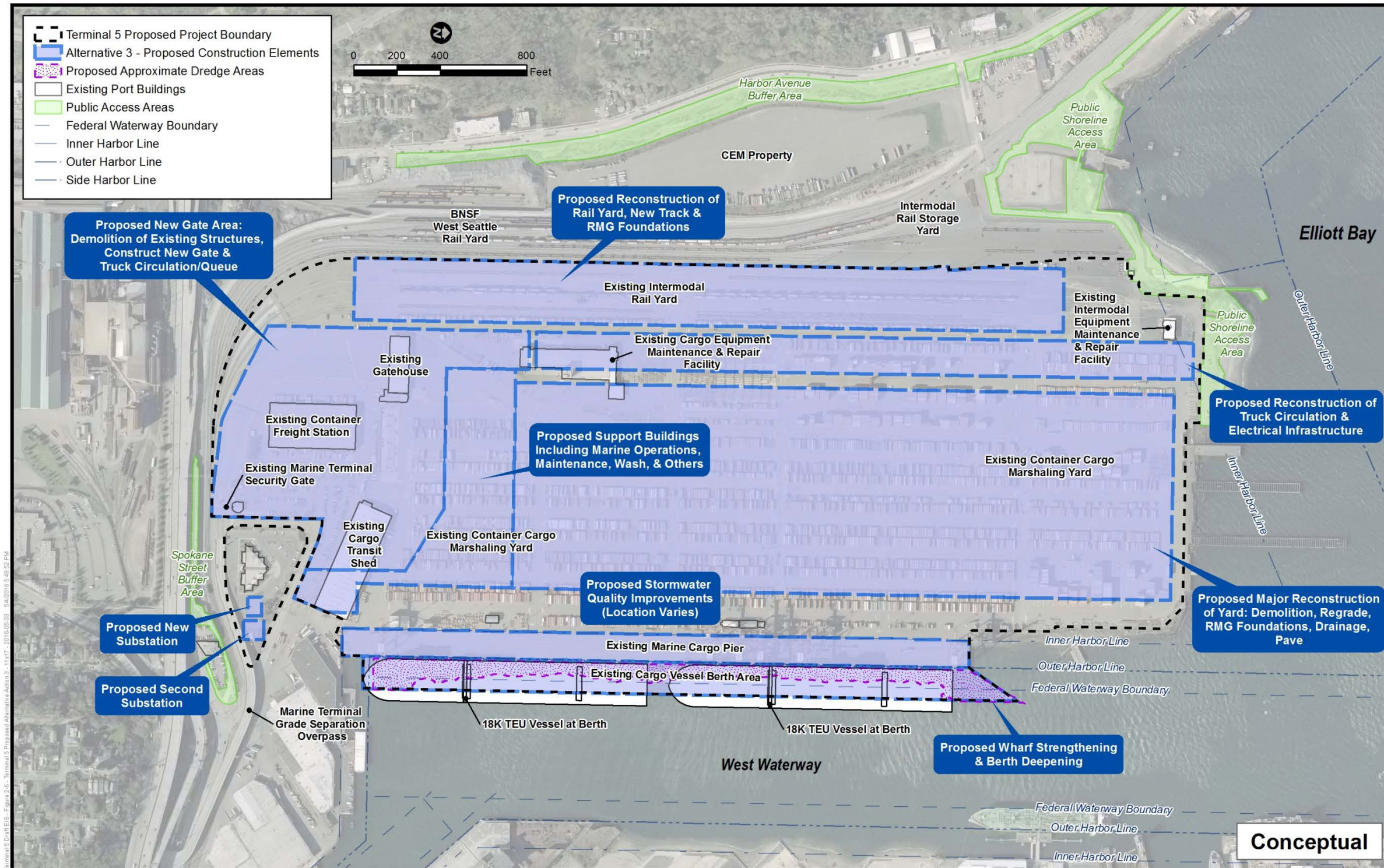


Figure 2.7.3: Alternative 3 Cargo Wharf Rehabilitation, Berth Deepening, Increased Cargo Handling, and Additional Upland Improvements Conceptual Construction Elements



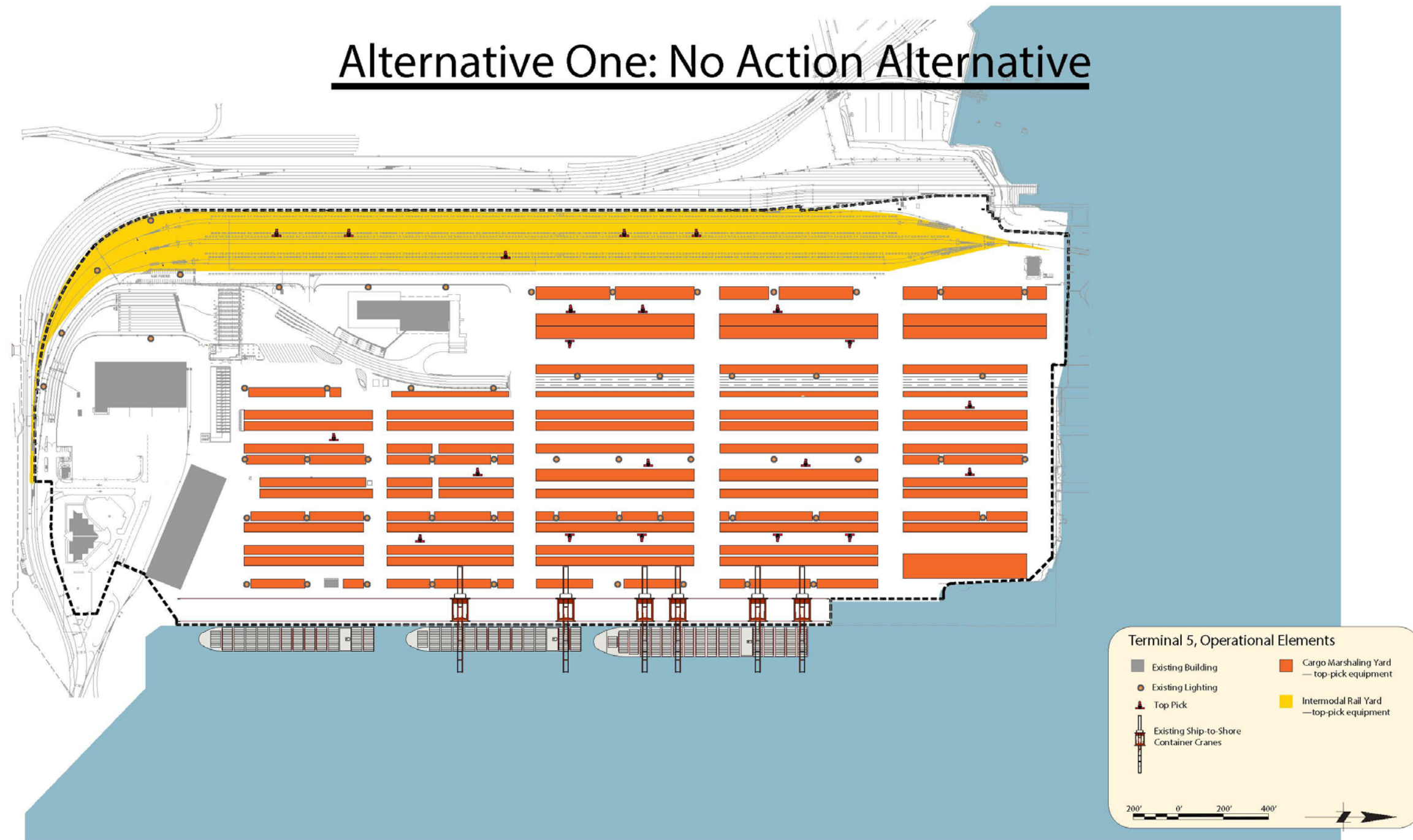


Figure 2.7.4: Alternative 1 No-Action Alternative Conceptual Operational Elements

## Alternative Two: Operational Scenario - 1.3 million TEU

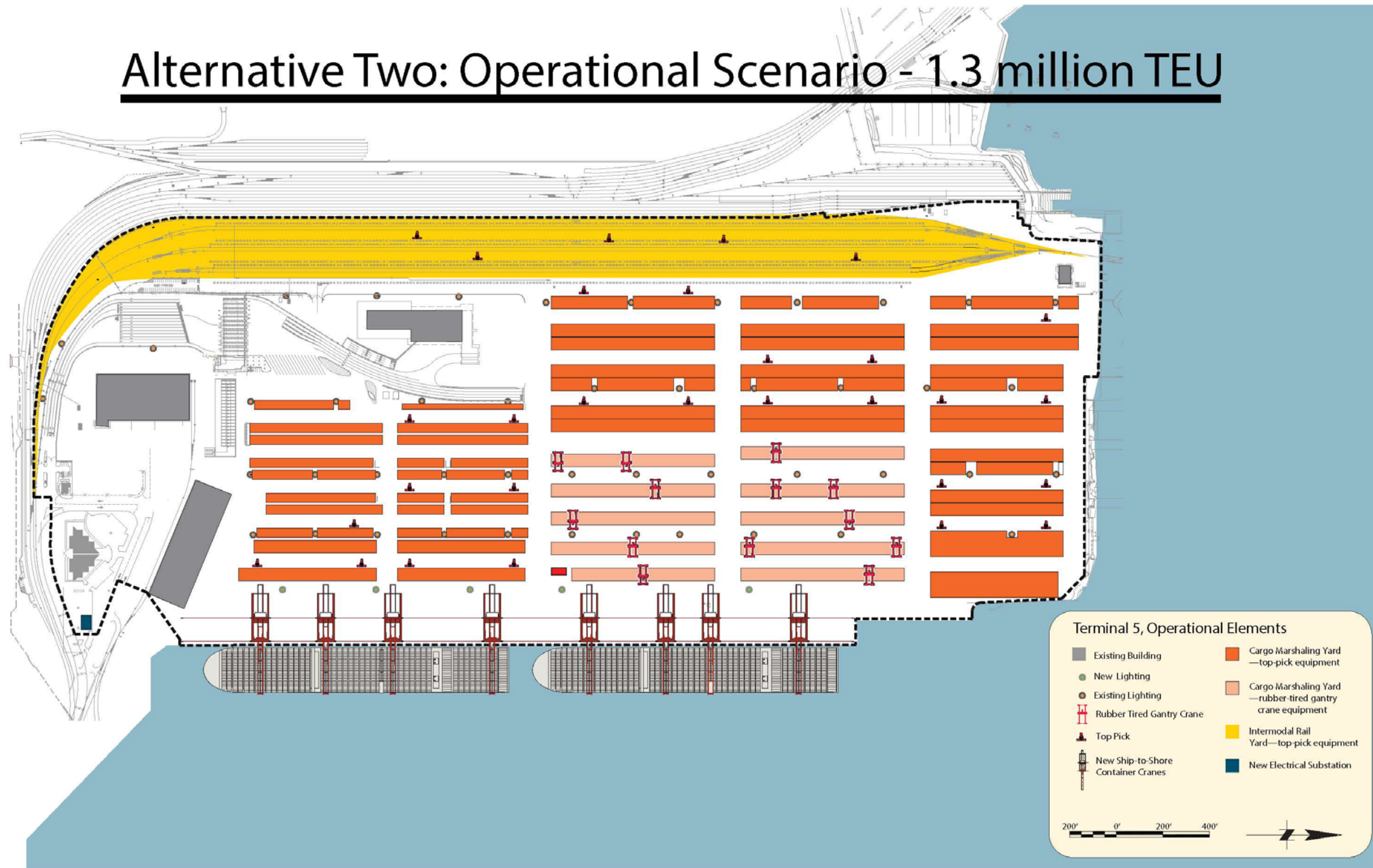


Figure 2.7.5: Alternative 2 Cargo Wharf Rehabilitation, Berth Deepening, and Increased Cargo Handling Conceptual Operational Elements

## Alternative Three: Operational Scenario - 1.7 million TEU

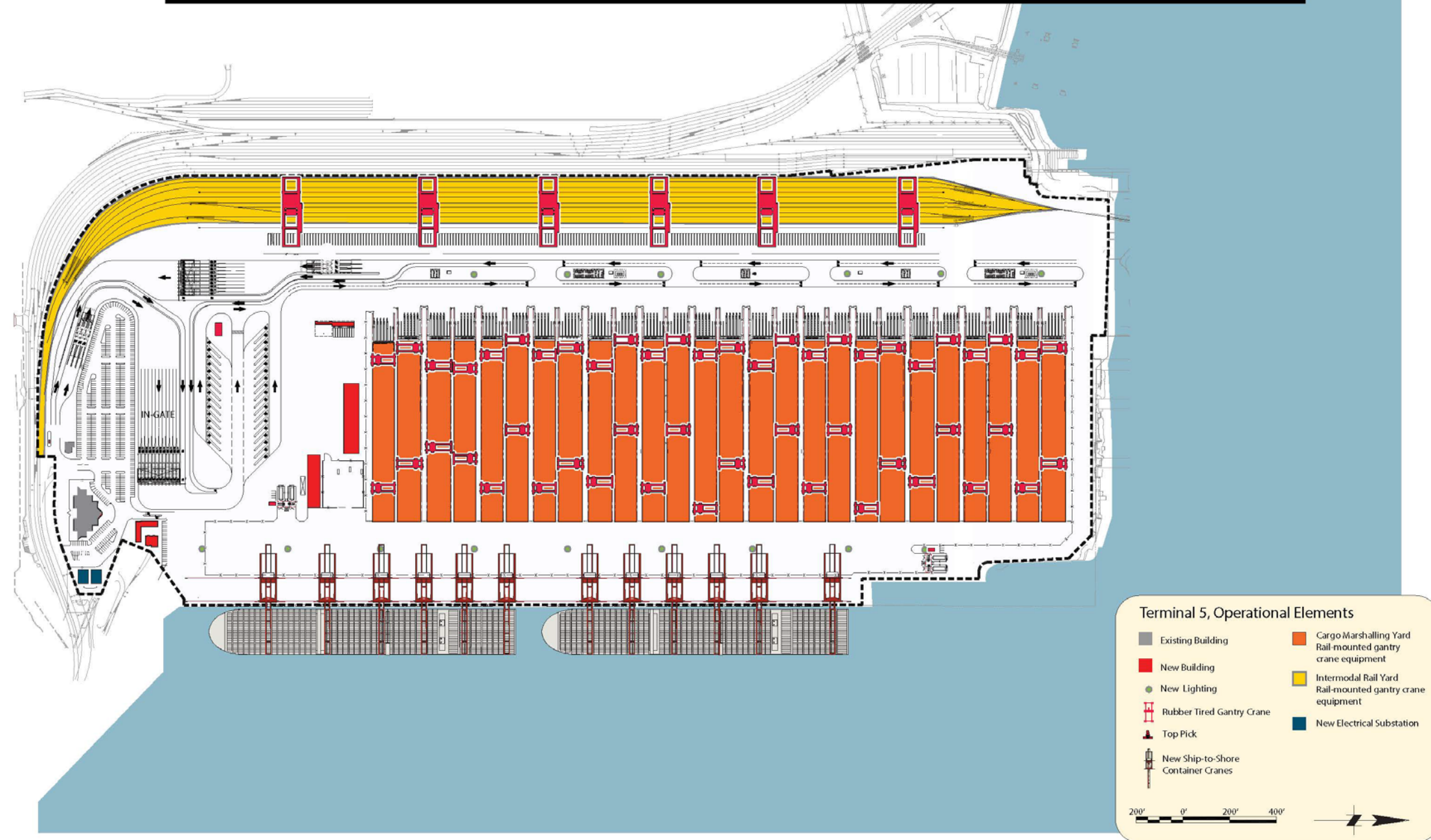


Figure 2.7.6: Alternative 3 Cargo Wharf Rehabilitation, Berth Deepening, Increased Cargo Handling, and Additional Upland Improvements Conceptual Operational Elements

## Chapter 3

# Affected Environment, Impacts, Mitigation Measures, Significant Unavoidable Adverse Impacts

### 3.0 AFFECTED ENVIRONMENT, IMPACTS, MITIGATION MEASURES, SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

#### 3.1 EARTH

Detailed earth technical reports were prepared to evaluate the Terminal 5 Improvements Project impacts to earth and geology at the site and are presented in Volume II, Appendix I, Appendix J, and Appendix K. The technical reports or memos summarized in this section are:

- *Sea Level Rise for the Terminal 5 Cargo Wharf Rehabilitation, Berth Deepening, and Improvements Project*. Draft Memorandum prepared for the Port of Seattle. Prepared by Moffatt & Nichol. April 20, 2016 (Appendix I).
- *Preliminary Geotechnical Engineering Design Study, Terminal 5 Deepening and Crane Rail Upgrade, Seattle, Washington*. Prepared for the Port of Seattle. Prepared by Hart Crowser. May 30, 2014 (Appendix J).
- *Southwest Harbor Terminal 5 Groundwater Quality Monitoring Evaluation Report, Seattle, Washington*. Prepared for Port of Seattle. Prepared by Hart Crowser. July 8, 2014 (Appendix K).

These appendices provide a summary of geologic and geotechnical conditions at the site, as well as information on the geological and seismological settings, sea level rise, and a general assessment of potential geologic hazards at the proposed Project site. Key information about the earth affected environment, relevant to the Project impact assessment, is presented in the following section.

In addition, please see Sections 3.3, [Water](#), and 3.5, [Environmental Health](#), for information on contaminated soils and the extent to which the Duwamish River cleanup will affect the proposed Project.

#### 3.1.1 REGULATORY CONTEXT

##### 3.1.1.1 CITY OF SEATTLE ENVIRONMENTALLY CRITICAL AREAS

The majority of the site is shown on the City of Seattle Environmental Critical Areas (ECA) map as a seismic hazard area and could be subject to liquefaction during a major seismic event. In general, before development is allowed in or immediately adjacent to mapped seismic hazard areas, detailed geotechnical studies must be conducted to address specific standards relating to site geology and soils, liquefaction potential, and building design. Accordingly, City of Seattle regulations require that certain studies and other requirements be met as part of the design and permitting process for future site development. See Section 3.8, for further discussion of the Seattle Critical Areas Ordinance.

The City of Seattle ECA map identifies Terminal 5 area as a liquefaction zone. A preliminary geotechnical engineering design study completed for the proposed Project concluded that this portion of the Terminal 5 property contains liquefiable soil corresponding to a classification of Site Class F, as defined in the 2012 International Building Code (IBC; Hart Crowser May 2014).

#### 3.1.1.2 CITY OF SEATTLE SHORELINE CODE

The City of Seattle Shoreline Code regulates all land 200 feet waterward of the ordinary high water mark as well as all the water and submerged land at this site (SMC 23.60A.010). Areas within 100 feet of the ordinary high water mark are environmentally critical areas. **Environmental critical areas within the Shoreline District are regulated by both SMC 23.60A and SMC 25.09, per SMC 23.60A.156.**

#### 3.1.1.3 CITY OF SEATTLE BUILDING CODE

The City of Seattle Building Code and building design standards establish (2012 IBC) requirement for the construction of above-ground structures. The Port has a Memorandum of Agreement with the City of Seattle to establish the basis of seismic design. The Port would apply its standards and specifications to the design of the proposed Project.

### 3.1.2 AFFECTED ENVIRONMENT

The study area for this assessment is the Project site and the analysis considers regional geology as well as local conditions. See Section 3.3 of this DEIS for a detailed analysis of dredging and stormwater issues.

Existing maps and technical reports published by the U.S. Geological Survey, Washington Department of Natural Resources (DNR), Soil Survey of King County, Seattle Area Geologic Mapping Project, City of Seattle ECA Map, City of Seattle Department of Construction and Inspections (DCI) project files, King County Technical Library, Washington State Department of Ecology (Ecology), well records, and other sources. Geological and geotechnical data reports, memos, and maps derived from previous subsurface investigations on the site were reviewed for site-specific information (Hart Crowser 2010, 2014). These reports are included as appendices to this DEIS (see Volume II, Appendices H, J, and K).

#### 3.1.2.1 GEOLOGIC SETTING

The site is located in the central portion of the Puget Lowland. Regional topography is dominated by a series of north–south-trending elongated ridges and glacial uplands. The uplands are separated by large, glacially excavated troughs that were further modified by geologic processes following the retreat of the most recent ice sheet, and are now partially occupied by Puget Sound and other large bodies of water such as Lake Washington.

The site is in a seismically active area. The seismicity of Western Washington is dominated by the Cascadia Subduction Zone, in which the offshore Juan de Fuca Plate is subducting beneath the continental North American Plate.

#### 3.1.2.2 SITE TOPOGRAPHY AND GEOLOGIC CONDITIONS

The Terminal 5 Project area consists of approximately 197-acres of existing wharf, berth area, and marine cargo use adjacent to the west margin of the West Waterway in southwest Elliott Bay. This portion of the Terminal 5 facility has a general surface elevation approximately 17 to 18 feet above mean lower low water (MLLW), and was constructed by the placement of fill materials over shallow

subtidal and estuarine areas prior to the 1970s. The Terminal 5 surface is generally flat, with constructed impervious pavement slopes of approximately two percent, allowing for collection and management of stormwater.

Some portions of the site are part of cleanup actions conducted under the Superfund program with U.S. Environmental Protection Agency (EPA) oversight. Information about the environmental health at Terminal 5 is provided in Section 3.5 of this DEIS.

The steepest slopes within or adjacent to the proposed Project area are located along the margin of the West Waterway shoreline area beneath the existing pile-supported wharf. The wharf structure provides a connection between the vessel-berthing areas in the West Waterway to the upland cargo operations area. The slope beneath the wharf ranges from 1.5–1.75 Horizontal to 1 Vertical (57 to 67 percent) extending down to the bottom of the West Waterway. The toe of the slope ranges from about –40 to –50 feet MLLW. The constructed slope beneath the wharf is stabilized by concrete piling, a select fill riprap armored slope, top-of-slope bulkhead, pinch piling along the northern end of the slope, and a low toe-wall along portions of lower slope.

#### 3.1.2.3 SUBSURFACE CONDITIONS

The Terminal 5 site is constructed on filled former tideland area of the Duwamish River estuary. Fill at the site consists of sediments dredged from the previous tideland area, excavated in the first two decades of the last century, in order to create deep-draft navigational access in south Elliott Bay and more recently placed fill materials from adjacent upland locations.

#### 3.1.2.4 GROUNDWATER CONDITIONS

The Terminal 5 site is underlain by two aquifers; a shallow fill aquifer and a deeper estuarine aquifer. The fill aquifer consists of groundwater in various fill materials between 20 to 40 feet below ground surface (bgs). The estuarine aquifer is underlain by a lower permeability unit that occurs at depths ranging from 30 to 50 feet bgs. The fill aquifer/estuarine aquifer system is bounded to the north by Elliott Bay. Groundwater levels fluctuate in response to river levels, tidal influence and precipitation. Detailed information on groundwater conditions is provided in Volume II, Appendix K.

#### 3.1.2.5 EARTHQUAKE HAZARDS

General Seismic. Seismic hazard areas are generally defined as those areas subject to severe risk of earthquake damage as a result of ground shaking, ground rupture, or soil liquefaction. Ground shaking can occur large distances from the earthquake source; ground rupture only occurs along the active fault trace; and liquefaction requires a certain combination of soil and groundwater conditions at a given site.

Ground Shaking and Ground Motion Amplification. The entire Puget Sound region lies within a seismically active area, and the potential for moderate to high levels of ground shaking exists. The Terminal 5 site is also located over thick deposits of relatively soft soils that could be susceptible to amplified earthquake ground motions at various frequencies. Consequently, the near-surface soils at the site could affect the level of earthquake ground shaking felt in the site area.

Ground Rupture. The Puget Sound region contains numerous fault zones, and the Seattle Fault Zone, located about 4 kilometers south of the North Bay site, and is the closest reported fault zone. The Seattle Fault Zone is about 4 to 6 kilometers wide and consists of a series of east–west-trending faults. Geologic evidence unearthed on Bainbridge Island suggests that the most recent earthquake to rupture the ground surface occurred about 1,100 years ago with about 20 feet of permanent vertical displacement at that location. Future ground rupture may occur within the Seattle Fault Zone.

#### 3.1.2.6 LIQUEFACTION

Soil liquefaction may occur as a result of seismic shaking because Terminal 5 was constructed on filled former tidelands. When shaken by an earthquake, certain soils lose strength and temporarily behave as if they were liquid. This phenomenon is known as liquefaction. The seismically induced loss of strength can result in loss of bearing capacity for shallow foundations, reduction in vertical and lateral deep foundation capacities, downdrag forces on deep foundations, ground surface settlement, embankment instability, and lateral spreading. Seismically induced liquefaction typically occurs in loose, saturated, sandy material commonly associated with recent river, lake, and beach sedimentation. In addition, seismically induced liquefaction can be associated with areas of loose saturated fill.

#### 3.1.2.7 SEISMIC WATER WAVES (TSUNAMIS AND SEICHES)

The tsunami hazard within Puget Sound is controlled by crustal faults. According to the Tsunami Hazard Map of the Elliott Bay Area, Seattle, Washington, prepared by the DNR (Walsh et al. 2003), a tsunami originating from a Seattle Fault earthquake is predicted to cause widespread inundation ranging from 0.5 to 2 meters deep across the Project site. In addition, inundation could be 2 to 5 meters in localized areas. Because of the relatively long return period of the Seattle Fault, the tsunami hazard during the design life of the structure is also low, but is larger than the potential for fault surface rupture.

#### 3.1.2.8 EROSION

Erosion is a condition that can significantly and adversely affect development on any site. The susceptibility to erosion is generally a function of soil type, topography, occurrence of groundwater seepage or surface runoff, and the built environment. Structures located above or below actively eroding natural slopes or manufactured slopes could be susceptible to the effects of erosion. In addition, development could exacerbate erosion conditions, if they exist, by exposing soils and adding additional water to the soil from irrigation and runoff from new impervious surfaces.

#### 3.1.2.9 LANDSLIDE HAZARDS

Landslides are mass movement of soil down a slope. They can range from small localized failures (sloughing) to massive earth movements that cause extensive damage to the natural and built environments and may cause injury and death to humans and wildlife.



Landslide hazard areas are typically defined as areas with a combination of slope inclination, soil type, geologic structure, and the presence of water, that are susceptible to failure and subsequent downhill movement. Known slide areas are defined by the City of Seattle ECA map. There are no known slide areas on the Terminal 5 Improvements Project site. However, there are known slide areas in the vicinity of Terminal 5 to the south and to the west.

#### 3.1.2.10 SEA LEVEL RISE

Sea level rise is the relative increase in mean sea level, primarily caused by two processes: additional water in the ocean from glacial and land-based ice sheet melt, and thermal expansion of ocean waters due to warmer sea temperatures (Adelsman and Ekrem 2012). Sea level rise is a global occurrence; however, observed sea level rise varies by location due to changes in land elevation and wind. Detailed information on sea level rise can be found in [FEIS](#), Volume II, Appendix I.

#### 3.1.3 IMPACTS

No additional detail would be provided in this section for seismic ground failure, tsunamis, or sea level rise because no Project-related construction or operational impacts are anticipated from the proposed Project under any alternative.

##### 3.1.3.1 NO-ACTION ALTERNATIVE

###### SLOPE STABILITY

###### **Construction and Operations**

The No-Action Alternative is not expected to result in slope stability impacts because only minor maintenance and repair and minor upgrades at the terminal are expected and the proposed operations would not change under this alternative from existing conditions.

###### EROSION

###### **Construction**

No new construction other than minor repairs and upgrades are proposed under the No-Action Alternative. The potential for soil erosion is limited under the No-Action Alternative.

###### **Operations**

The No-Action Alternative is not expected to result in erosion impacts because operations are not proposed to change from existing conditions. The site would remain a flat surface of asphalt and concrete covering.

## EARTHWORK

### **Construction and Operations**

The No-Action Alternative is not expected to result in earthwork impacts because only minor maintenance and repair and minor upgrades at Terminal 5 are expected and proposed operations would not change from existing conditions.

### 3.1.3.2 ALTERNATIVES 2 AND 3

## SLOPE STABILITY

### **Construction**

There could be slope stability **impact** issues during berth dredging as part of Alternatives 2 and 3. The existing slope beneath the Terminal 5 wharf includes a grade of approximately 1 Vertical to 1.5–1.75 Horizontal grade (1V:1.5H to 1V:1.75H). Geotechnical investigations have determined that the lower portions of the slope beneath the existing Terminal 5 wharf, constructed three to four decades ago, require structural stabilization measures coincident with strengthening the cargo wharf and deepening the adjacent vessel berths.

There could be impact to the wharf due to vibratory hammers causing vibrations and shaking. Installation of piles on a slope can cause some sloughing and movement of soil down slope. This is typically not significant and some slope sloughing is accounted for in design. Should the sloughing or movement be larger than expected, pile installation procedures can be set in place to limit the quantity of piles installed near a single location to allow the soil to stabilization. For example, the pile installation can go from one location to another and back again. The proposed construction plan allows for this flexibility (See FEIS, Volume II, Appendix J).

The vibratory pile driving construction at Terminal 5 is expected to cause vibrations in West Seattle well below levels that could cause damage to buildings and residences. The effects of vibratory pile driving on soils during construction are localized and will not cause widespread liquefaction. The slope within the terminal is expected to be, and has historically been stable during vibratory pile driving. This slope is significantly closer to the pile driving than the West Seattle hillside, which is more than 2500 feet west of the Terminal 5 wharf rehabilitation site. Structural damage to buildings and residences caused by vibratory pile driving is rare at distances more than 50 feet from the pile driving and diminishes rapidly with distance. The geology of the slopes along West Seattle is generally unstable for reasons unrelated to liquefaction.

The Port consultant performed vibration monitoring near the intersection of 37th and Prescott in West Seattle during the Statnamic pile load testing (i.e., the loud noise pile testing) in March 2016. The peak measurement was 0.01 inch/second. This is equivalent to a car idling 25 feet away and is well below the level that is perceptible to people (about 0.05 inch/second). The pile driving and testing activity induced vibrations less than or equal to a vehicle driving by on the street.

Minimum vibration levels that could cause damage are generally above 0.1 inch/second for very vulnerable structures and above 1 inch/second for most structures.

In addition to the information noted above, please note that the Port addressed a similar piling installation matter during Terminal 5 redevelopment construction activities, completed in 1999. The 1999 Terminal 5 redevelopment project, completed as the Southwest Harbor Cleanup and Redevelopment Project, included approximately 285 acres of construction activities, with approximately 180,000 square feet of new structures and approximately 570,000 cubic yards total excavation (cut, fill, and dredging). The project included substantial piling construction, with a new grade separated overpass, building foundations, and extension of the container cargo pier.

The project involved the construction of a 400-foot-long extension of the existing container cargo pier, included approximately 195, 24-inch-diameter and 240, 16.5-inch-diameter concrete piling, and approximately 375 timber piling, placed for the purpose of shoreline slope stabilization. All piling installation was accomplished with impact pile driving equipment.

A resident near the Southwest City View/31st Avenue Southwest intersection indicated concern that piling installation and construction activities would adversely affect the foundation of the individual's house. The Port documented the house foundation prior, during, and following construction, marking and detailing existing foundation cracks and general foundation conditions. No change was detected or determined to have resulted from Terminal 5 redevelopment construction activities.

The scope of previous Terminal 5 redevelopment, including piling installation, completed in 1999 was substantially greater than the present Terminal 5 Improvements Project. Therefore, no significant impacts to buildings and residences due to vibrations or shaking are expected.

#### **Operations**

No impacts are expected from operations under Alternatives 2 and 3.

#### EROSION

##### **Construction**

Erosion and the loss of topsoil could occur during implementation of the proposed Project. Terminal 5 upland improvements involve pavement removal and repaving, and these activities could result in the temporary exposure and loss of soils. Currently, the potential for significant soil erosion or loss of topsoil without implementation of the proposed Project is very low because the Terminal 5 site is paved and impacts are not expected to differ as a result of the proposed Project.

##### **Operations**

No additional excavation activities, either with or without shoring, are anticipated during operations under Alternatives 2 and 3. Therefore, on-site soils would not be exposed to erosion. The site would remain a flat surface of asphalt and concrete covering fill, sand and gravel, and estuarine sediments, making erosion negligible and impacts are not expected to differ from existing conditions.

## EARTHWORK

### **Construction**

Alternative 2 would require construction of approximately 1 acre of concrete RTG runways requiring approximately 12,000 cubic yards of excavation and fill. Stormwater improvements including excavation for vaults, repair, and new conveyance structures would cover approximately 3 acres and require approximately 4,000 cubic yards of excavation and fill. Approximately 30 acres of the facility pavement would be ground and repaved with approximately 30,000 cubic yards of new asphalt added. New water lines and duct bank utility trenching would require approximately 10,000 cubic yards of excavation and fill over an area of approximately 4 acres. A new substation would require an area of approximately 1 acre for a new substation foundation.

Alternative 3 would require upgrades to the facility surface, upgrades to utilities, and construction of concrete RMG foundation and rails. New stormwater improvements may include excavation for vaults, repair, and new conveyance structures over an area of approximately 3 acres. This would require approximately 4,000 cubic yards of excavation. Stormwater improvements in the upgraded rail yard would require additional utility trenching for conveyance and catch basins along with additional vaults. This activity would cover approximately 1 acre and require approximately 70,000 cubic yards of excavation and fill.

New truck circulation may require full depth replacement paving which would take place in an area of up to 15 acres and require approximately 33,000 cubic yards of new asphalt. Approximately 120 acres of the existing asphalt surface in the container yard would be re-ground and repaved with approximately 300,000 cubic yards of new asphalt. New water lines and duct bank utility trenching would require approximately 20,000 cubic yards over an area of approximately 8 acres. Construction of approximately 8 acres of concrete RMG runways would require approximately 70,000 cubic yards of excavation and fill for foundations. Approximately 10,000 cubic yards of excavation and fill would be required for a new substation foundation. New foundations for the expanded reefer racks may impact approximately 15 acres and require approximately 35,000 cubic yards of excavation and fill.

Dredging would remove between 45,000 to 49,000 yards of sediment.

### **Operations**

No impacts are expected from existing conditions under Alternatives 2 and 3.

## 3.1.4 MITIGATION MEASURES

### 3.1.4.1 NO-ACTION ALTERNATIVE

## EROSION

### **Construction**

No construction other than minor repairs and upgrades is planned. All proposed work that would have the potential to expose soils would be completed with required best management practices (BMPs). Therefore, no additional mitigation is proposed.

**Operations**

During operation of the proposed alternatives, no additional excavation activities, either with or without shoring, are anticipated; thus, on-site soils would not expose soils to erosion. The site would remain a flat surface covered by asphalt and covering fill, sand and gravel, and estuarine sediments. No impacts are expected from the proposed Project operations.

3.1.4.2 ALTERNATIVES 2 AND 3

EROSION

**Construction**

Impacts would be limited by implementation of a site-specific Stormwater Pollution Prevention Plan (SWPPP) required under the state-mandated permit for all work that exposes soils or creates stockpiles. Impacts would also be limited by use of BMPs to control potential sources of erosion implemented during all demolition and construction activities as consistent with the City of Seattle Stormwater, Grading, and Drainage Control Ordinance and DCI Director's Rules (City of Seattle Stormwater Code Chapter 22.800). No other mitigation is required.

**Operations**

No mitigation is required as a result of the proposed Project. Ongoing routine condition monitoring and evaluation of the pavement surface is necessary to predict and mitigate adverse effect of traffic loads, environmental degradation, and interaction of loads. Monitoring predicts necessary maintenance to ensure safe working surface and protect personnel and equipment. In addition, a specific monitoring program for the barrier remediation caps conducted by the Port is required by the EPA and Ecology. The cap monitoring program started following completion of the terminal in 1999 and would continue indefinitely. The monitoring program prescribes actions to ensure barrier cap continues to function as prescribed by agreed orders. See Section 3.5, for detailed information on the cap monitoring program.

SLOPE STABILITY

**Construction**

Planned slope stabilization techniques would consist of installation of up to approximately 3,000, 10- to 14-inch-diameter, approximately 60-foot-long, untreated timber piling, penetrating the existing riprap slope, underlying select fill material, and entering native sediment layers. The timber piling would be installed using impact and vibratory pile driving devices, with the finished piling installation matching the existing riprap slope gradient. In addition, a short "toe-wall" would be installed at the transition between the constructed riprap slope beneath the existing cargo wharf and the adjacent container vessel berth area to stabilize the bottom margin of the riprap armored slope. Approximately 3,100 linear feet of combined steel sheet piling and "HZ" steel piling would be installed at the toe-of-slope. The top elevation of the new "toe-wall" would vary between -42 and -50 feet MLLW. The toe-wall steel sheet and HZ piling would be installed using a vibratory pile driving device. Limited impact pile driving may be required to complete portions of toe-wall piling installation, if soil conditions impede vibratory pile driving installation.

Ground improvements and structural reinforcement of the slope are designed to meet or exceed the current condition safety factors and no slope stability impacts from construction are expected. The City of Seattle Building Code and building design standards establish (2012 IBC) requirement for the construction of above-ground structures. The Port has a Memorandum of Agreement with the City of Seattle to establish the basis of seismic design. The Port would apply its standards and specifications to the design of the proposed Project. See Appendix J in Volume II of this DEIS for a detailed discussion of slope stability during construction.

***Operations***

Operations would not create impacts to slope stability from current conditions under Alternatives 2 and 3.

### 3.1.5 SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

#### 3.1.5.1 ALL ALTERNATIVES

The proposed Project would not result in unavoidable significant adverse impacts related to earth and geology under any of the alternatives.

## 3.2 AIR QUALITY

A detailed analysis of the air quality implications of the Terminal 5 improvements was conducted, and a technical report is provided in Volume II, Appendix A (*Terminal 5 Wharf Rehabilitation, Berth Deepening, and Improvements Project, Air Quality Technical Report* [Ramboll Environ 2016a]). Information from the technical report was used in the preparation of this section.

### 3.2.1 REGULATORY CONTEXT

#### 3.2.1.1 AMBIENT AIR QUALITY STANDARDS AND ATTAINMENT STATUS

Air quality is generally assessed in terms of whether concentrations of air pollutants are higher or lower than ambient air quality standards set to protect human health and welfare. Ambient air quality standards are set for "criteria" pollutants (e.g., carbon monoxide [CO], particulate matter [in two size ranges described later], nitrogen dioxide [NO<sub>2</sub>], and sulfur dioxide [SO<sub>2</sub>]). Three agencies have jurisdiction over the ambient air quality near Terminal 5: the EPA, Ecology, and the Puget Sound Clean Air Agency (PSCAA). These agencies establish regulations that govern the concentrations of pollutants in outdoor air. Although their regulations are similar in stringency, each agency has established its own ambient air quality standards. These standards have been set at levels that EPA and Ecology have determined will protect human health with a margin of safety, including the health of sensitive individuals such as the elderly, the chronically ill, and the very young. Applicable local, state, and federal ambient air quality standards are displayed in the modeling result tables of Section 3.2.2 and explained in further detail within Volume II, Appendix A of this DEIS.

Ecology and PSCAA maintain a network of air quality monitoring stations throughout the Puget Sound area. In general, these stations are located where there may be air quality problems, and so are usually in or near urban areas or close to specific large air pollution sources. Other stations located in more remote areas provide indications of regional or background air pollution levels.

Based on monitoring information for criteria air pollutants collected over a period of years, Ecology and EPA designate regions as being "attainment" or "nonattainment" areas for particular pollutants. Attainment status is, therefore, a measure of whether air quality in an area complies with the federal health-based ambient air quality standards for criteria pollutants. Once a nonattainment area achieves compliance with the National Ambient Air Quality Standards (NAAQSs), the area is considered an air quality "maintenance" area.

The Project study area is considered an air quality maintenance area for carbon monoxide (CO) and for fine particulate matter (PM<sub>2.5</sub>). There have not been violations of the CO or the fine particulate matter (PM<sub>2.5</sub>) standards in the area in many years.

#### 3.2.1.2 AIR QUALITY CONFORMITY REVIEW

Federal air quality "conformity" rules (Transportation and General) require review of some projects in areas that are designated as nonattainment or maintenance for one or more air pollutants.

The Transportation conformity rules apply to large transportation projects and to components of other projects that would adversely affect operation of the regional transportation system. **This means** considering the emissions of both CO and fine particulate matter (defined and discussed later) from off-site Project-related traffic **for the proposed Project**. The transportation conformity review of the Terminal 5 Improvements Project was conducted using an approved method to consider the potential for pollutant "hot spots." The specific actions and pollutants considered for Transportation Conformity are described in Section 3.2.2.

The General conformity rules apply to the portions of projects that are subject to permits or approvals by federal agencies. Each type of air quality conformity is discussed in further detail below. For the Terminal 5 Improvements Project, this means considering emissions of several air pollutants related to some parts of construction of the facility, while excluding both construction activities that are not subject to federal review and emissions from operation of the facility. The specific actions and pollutants considered for General Conformity are described in Section 3.2.2.

### 3.2.2 AFFECTED ENVIRONMENT

#### 3.2.2.1 EXISTING AIR QUALITY CONDITIONS

Existing sources of air pollution in the vicinity of the proposed Project site include industry and transportation, including marine diesel-fueled vessels and both diesel and gas vehicles on the nearby roadways. Criteria air pollutants of primary concern are NO<sub>2</sub> and particulate matter (PM<sub>10</sub> [coarse particulate matter of 10 microns in diameter or less] and PM<sub>2.5</sub> [fine particulate matter of 2.5 microns in diameter or less]). Other pollutants include ozone precursors (hydrocarbons and nitrogen oxides [NO<sub>x</sub>]), SO<sub>2</sub>, ozone, and CO. Given the setting, industrial and transportation sources likely comprise the largest contributors to ambient pollutant concentrations in the vicinity of the Project site. Wood smoke from residential wood combustion may also be a significant contributor to particulate matter concentrations during winter months.

Estimated existing concentrations of air pollutants in the general vicinity of the Project site were developed based on monitored air data during 2012–2014 at the Beacon Hill and 10th and Weller monitoring sites. **Monitored air data for 2011-2013 at the Marginal Way Duwamish site was included as a site for PM<sub>2.5</sub> as requested during the comments on the DEIS.** Data from these monitors were used to estimate existing background concentrations for a variety of air pollutants. Modeled estimates of background provided by the Northwest International Air Quality Environmental Science and Technology Consortium<sup>5</sup> were used if monitoring data were unavailable. Additionally, if the monitor data were less than that of the modeled estimates, the higher value was used to remain conservative. The exception to this rule was the background 1-hour NO<sub>2</sub> concentrations from Beacon Hill. These measurements provided background NO<sub>2</sub> variations by

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<sup>5</sup> Northwest International Air Quality Environmental Science and Technology Consortium Overview ([https://www.lar.wsu.edu/nw-airquest/lookup\\_overview.html](https://www.lar.wsu.edu/nw-airquest/lookup_overview.html)).



season and by hour of day. Applying background in this manner is consistent with EPA methodologies used for permitting purposes and accounts for the considerable variation in seasonal NO<sub>2</sub> concentrations. The background pollutant concentrations are included in the result tables in Section 3.2.2.

The pollutants of primary concern (particulates and NO<sub>x</sub>) are described in more detail below. The other pollutants are described in further detail within Volume II, Appendix A.

#### 3.2.2.2 INHALABLE COARSE AND FINE PARTICULATE MATTER

Particulate matter air pollution is generated by industrial activities, fuel combustion sources like marine vessels, residential wood burning, locomotives, motor vehicle engines and tires, and other sources. Federal, state, and local regulations set limits for particulate concentrations in the air based on the size of the particles and the related potential threat to health. There are currently health-based ambient air quality standards for PM<sub>10</sub>, as well as for PM<sub>2.5</sub>. **It is now thought that** PM<sub>2.5</sub> and even smaller (ultra-fine) particles are the most harmful size fractions of airborne particulate matter.

With the revocation of the federal annual standard for PM<sub>10</sub> in October 2006, the focus of ambient air monitoring and control efforts related to particle air pollution in the region has been almost entirely on PM<sub>2.5</sub>. The background PM<sub>2.5</sub> concentrations, shown in the results tables in Section 3.2.2, represent about half the daily and annual NAAQs. Particulate matter emissions attributable to Terminal 5 were analysed in detail as part of the air quality review documented here.

#### 3.2.2.3 NITROGEN OXIDES

Collectively, nitric oxide and NO<sub>2</sub> are commonly called oxides of nitrogen or NO<sub>x</sub>. Other oxides of nitrogen, including nitrous acid and nitric acid are part of the nitrogen oxide family. Of this family of gasses, NO<sub>2</sub> is the only component for which ambient air quality standards have been established. An annual average standard for NO<sub>2</sub> has been in effect for many years.

EPA adopted a new 1-hour standard for NO<sub>2</sub> that became effective in April 2010. NO<sub>2</sub> has not been measured in the Project vicinity, though measurements have been taken at Beacon Hill. The 1-hour (by season and by hour of day) NO<sub>2</sub> background concentrations (described above) and the reported annual average concentrations presented by the modeling results tables in Section 3.2.2 indicate that background NO<sub>2</sub> concentrations are well below the current NAAQs. NO<sub>2</sub> concentrations attributable to sources associated with the proposed Terminal 5 Improvements Project are considered in detail in the air quality review documented in this report.

#### 3.2.2.4 TOXIC AIR POLLUTANTS

In addition to the criteria air pollutants for which health-protective air quality standards have been set, fuel combustion sources emit a number of known or suspected toxic air pollutants that may be directly harmful due to their chemistry and/or cause cancer or other detrimental effects to human health with long-term exposure. Although there are not any specific health-related air quality standards for such pollutants, Ecology and have established screening levels for a variety of toxic air pollutants (TAPs) that can be used in assess predicted concentrations. One TAP, diesel engine

exhaust particulate matter (DPM), was considered in this analysis. DPM is described in more detail in Volume II, Appendix A.

#### 3.2.2.5 METEOROLOGICAL CONDITIONS AND CLIMATE

Air quality is substantially influenced by climate and meteorological conditions. Prevalent weather patterns and regional geography are major factors in both short- and long-term air quality conditions. The combination of mountains and water create a regional meteorology unique to the Pacific Northwest. The climate in the proposed Project study area is predominately temperate, characterized by wet, mild winters and dry, warm summers. The climate is influenced by the relative proximity of the Pacific Ocean and the Cascade Range of Washington State.

Wind direction and wind speed are affected by geography, so it is more difficult to represent predominant winds using more distant climatological data. A 5-year meteorological data set was created for purposes of dispersion modeling using data from PSCAA's Duwamish monitoring site. These data captured all hourly combinations of meteorological conditions from 2010 through 2014 and provided the basis of the air quality modeling. These meteorological data are described more thoroughly in Volume II, Appendix A.

#### 3.2.2.6 GREENHOUSE GASES AND GLOBAL CLIMATE CHANGE

The phenomena of natural and human-caused effects on the atmosphere that cause changes in long-term meteorological patterns is known as climate change. Due to the importance of the greenhouse effect and related atmospheric warming to climate change, the gases that affect such warming are called greenhouse gasses (GHGs). The GHGs of primary importance are CO<sub>2</sub>, methane, and nitrous oxide. Because CO<sub>2</sub> is the most abundant of these gases, GHGs are usually quantified in terms of CO<sub>2</sub>e (carbon dioxide equivalent), based on their relative longevity in the atmosphere and the related "global warming potential" of these constituents. CO<sub>2</sub> is not considered an air "pollutant" that causes direct health-related effects, so it is not subject to ambient air quality standards used to gauge pollutant concentrations in the air.

Fuel combustion used for transportation is a significant source of GHG emissions, primarily through the burning of gasoline and diesel fuels. National estimates indicate the transportation sector (including on-road, construction, airplanes, and vessels) accounts for about 31 percent of total domestic CO<sub>2</sub>e emissions from fossil fuels in 2014.<sup>6</sup> In an interim tabulation of 2012 emissions within Washington, Ecology estimated transportation accounted for about 46 percent of statewide GHG

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<sup>6</sup> *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2014*, April 2016, <<https://www3.epa.gov/climatechange/Downloads/ghgemissions/US-GHG-Inventory-2016-Chapter-3-Energy.pdf>>

emissions;<sup>7</sup> the higher percentage is due to lower GHG emissions from electrical generation because the state relies heavily on hydropower for electricity.

No specific federal, state, or local emission reduction requirements or targets are applicable to the proposed Project, and there are no generally accepted emission level thresholds against which to assess potential localized or global consequences of GHG emissions. Ecology has issued internal guidance to assist its staff in determining which projects should be evaluated and how to evaluate GHG emissions under SEPA.<sup>8</sup> The FEIS includes an analysis of GHG emissions in the **Air Technical Report (FEIS, Volume II, Appendix A)** that may be associated with construction and long-term emissions related to operations at the facility.

### 3.2.2.7 ANALYTICAL METHODS

This section documents the air quality implications of the Project alternatives. The first subsection addresses emissions. Emissions are the types and quantities of air pollutants created as engines in locomotives, trucks, cargo handling equipment, tugs, and ships combust fuel. Emissions are typically measured in pounds per hour or tons per year. Evaluating facility-wide emissions over time can provide a general characterization of air quality effects. However, emissions alone do not indicate whether a source has a significant impact on neighboring properties.

In order to determine and characterize air quality impacts, it is important to consider how the emissions from a source disperse in the atmosphere and affect off-site concentrations. Concentrations are commonly measured in micrograms (millions of a gram) per cubic meter of air ( $\mu\text{g}/\text{m}^3$ ). It is standard industry practice to apply EPA-approved air quality computer models to calculate concentrations of air pollutants at off-site locations using the emissions information for the site and local meteorological conditions.

The section that follows the emissions information will describe the computer model, the operating scenarios and meteorological inputs, and other modeling considerations. The results of the modeling (off-site concentrations of air pollutants) are identified and compared with national air quality standards in Section 3.2-3 to provide context for the impact assessment.

### EMISSION INVENTORY METHODS

The proposed modifications to Terminal 5 would result in emissions from ocean-going vessels, harbor craft, locomotives, cargo-handling equipment, and on-road trucks. The emissions derived from these sources change in response to fleet turnover, engine deterioration rates, and regulatory

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<sup>7</sup> 2012 Washington State Greenhouse Gas Inventory Report Table,  
<<http://www.ecy.wa.gov/climatechange/docs/2012GHGtable.pdf>>

<sup>8</sup> *Guidance for Ecology Including Greenhouse Gas Emissions in SEPA Reviews*. June 2011.

triggers. These sources of emissions and their forecast changes in emissions were considered in the analysis and documented here.

***Emission Factor Tools and Sources***

The emissions estimates for project-related sources employed several standard computer tools, as well as emission rate calculations using formulas published by the EPA, the California Air Resources Board, and topic-specific studies conducted by individual ports. Important assumptions employed in this portion of the assessment are provided in Volume II, Appendix A.

***Facility Operational Criteria Pollutant Air Emissions***

Combustion source emissions associated with operation of the terminal in 2020, 2030, and 2040 were estimated based on the maximum expected commodity throughput. The combustion source emissions assessment used detailed operational scenarios of peak hour, peak day, and annual levels of activities developed in discussions with the Port. Emission estimates considered the following sources:

- Vessels in transit, maneuvering, and hoteling at berth.
- Tugs assisting vessels during docking and undocking.
- Empty and loaded trains traveling between E Marginal Way S and the facility.
- A switch engine arranging train cars.
- Cargo handling equipment, including yard tractors, top-picks, rubber-tired gantry cranes, and rail-mounted gantry cranes.

On-road trucks traveling between E Marginal Way S and the facility, queueing before the main gate, queueing at the main gate, and traveling on the facility.

Appendix A details the critical assumptions regarding terminal operations and basic dispersion modeling parameters associated with Project-related combustion sources.

GREENHOUSE GAS EMISSIONS

Short-term GHG emissions associated with construction and long-term emissions related to operation of the proposed facility were estimated based on the proposed configurations and combustion source activity. Those emissions estimates considered combustion source emissions directly related to the construction and operation of the facility (Scope 1), indirect emissions from purchased energy (Scope 2), and indirect emissions due to combustion sources associated with the operational activities of the facility (Scope 3). Emissions of CO<sub>2</sub>, N<sub>2</sub>O, and CH<sub>4</sub> were calculated using the assumptions and models described in Volume II, Appendix A, Table 2.

3.2.2.8 DISPERSION MODELING

Air quality dispersion modeling simulations were used to estimate air pollutant concentrations due to emissions from on-site emission sources associated with selected alternatives and throughputs. This section discusses the methods used to develop these simulations for Terminal 5.

#### MODEL USED

The EPA has designated AERMOD as the preferred guideline air dispersion model for air dispersion modeling (EPA "Guideline on Air Quality Models," codified as Appendix W to 40 CFR Part 51) for complex source configurations and for sources subject to exhaust plume downwash. The most recent version of AERMOD (version 15181) was employed with meteorological data from PSCAA's Duwamish monitoring station and regional upper air data from Quillayute, Washington. Missing surface data observations were substituted from the Boeing Field station. The meteorological pre-processing also included an analysis of the physical characteristics of land use surrounding the terminal.

Dispersion modeling calculates pollutant concentrations at locations referred to as receptors. The Terminal 5 dispersion modeling analyses used receptors spaced 1,000 meters apart covering the 10-kilometer (km) by 15-km simulation domain, with a 10-km by 10-km nested receptor grid at 500-meter (m) spacing; a 5-km by 5-km nested receptor grid at 200-m spacing; a 3-km by 3-km nested receptor grid at 50-m spacing; a 1.8-km by 1.8-km nested receptor grid at 25-m spacing; and fence line receptors with 10-m spacing. The modeling domain and receptor locations are depicted in Figure 3.2.1. Note that the dispersion modeling results discussed in Section 3.2.2 present the maximum concentrations of each pollutant from the more than 7,000 receptors displayed in Figure 3.2.1.

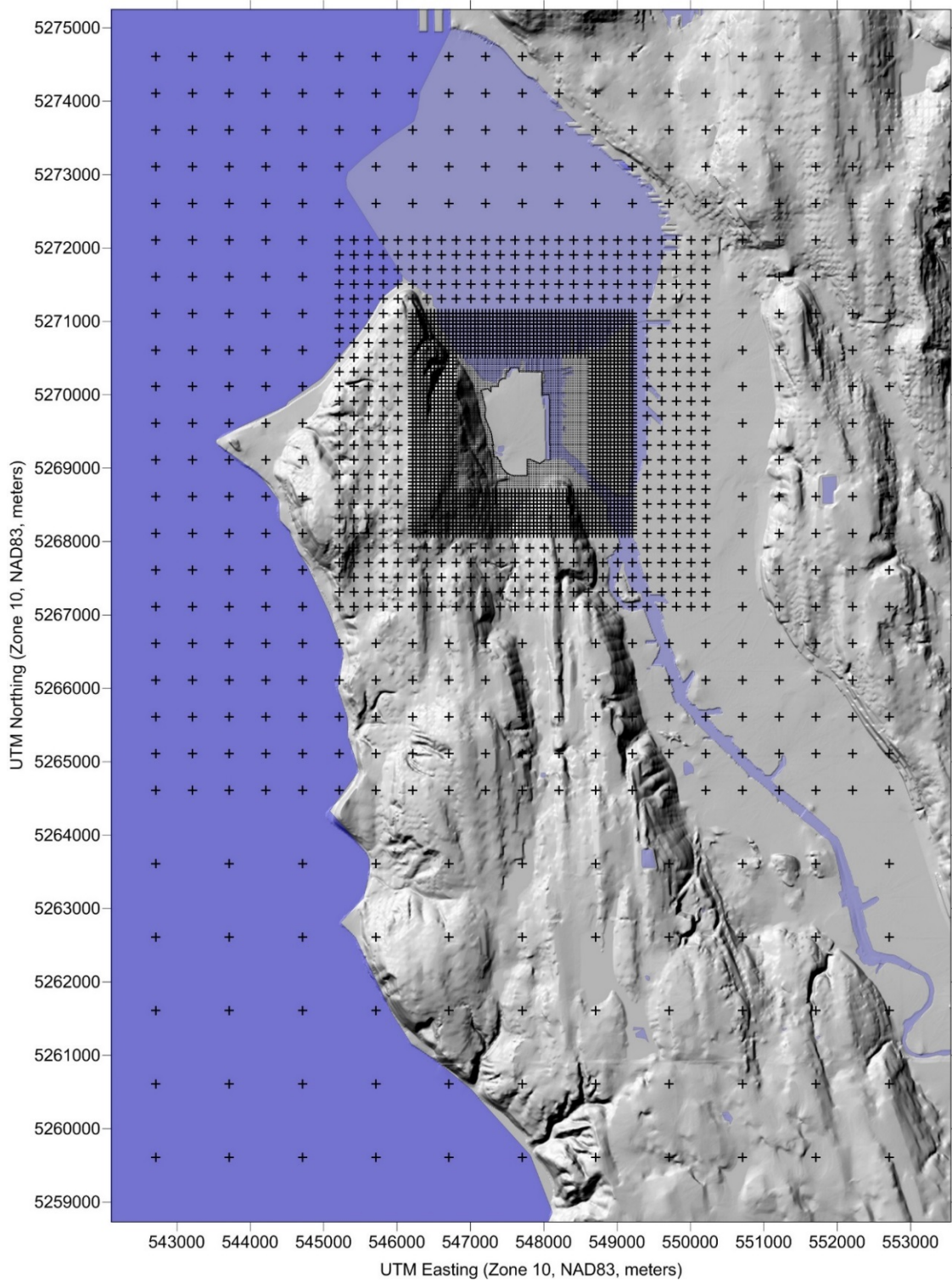


Figure 3.2.1: AERMOD Modeling Domain and Receptor Locations

**OPERATIONAL SCENARIO SELECTION**

Six modeling scenarios were developed for the terminal based on alternative throughputs and associated modeling years. The modeling analysis assumed peak throughput operation for all emission source activities. The selected modeling scenarios considered with air quality modeling are shown in Table 3.2-1 with filled cells. Empty cells in this table were not considered with modeling because operations would not be possible due to physical and year-based economic limitations of the facility (See FEIS, Volume II, Appendix A for enhanced analysis performed based on DEIS comments received).

*Table 3.2-1: Operational Scenarios Considered with Air Quality Modeling*

<b>Operational Scenarios Considered with Air Quality Modeling</b>				
<b>Throughput</b>	<b>Year</b>	<b>Alternative 1</b>	<b>Alternative 2</b>	<b>Alternative 3</b>
647,000 TEU	2020	✓	✓	✓
1,270,000 TEU	2030		✓	✓
1,700,000 TEU	2040			✓

Modeling was not conducted for the 2030 and 2040 throughput scenarios for Alternative 1, or the 2040 throughput scenario for Alternative 2. Alternative 1, with no improvements, would not allow the Port to expand throughput beyond 647,000 twenty-foot equivalent units (TEUs). Similarly, Alternative 2 could not support 1,700,000-TEU throughput without the cargo-handling equipment changes proposed in Alternative 3. Assessing emissions in future years without additional growth in throughput would result in lower emissions due to fleet turnover and regulatory changes. In other words, the scenarios not modeled would be expected to produce lower maximum concentrations than the modeled scenarios. The selected scenarios provided in Table 3.2-1 are reflective of the most conservative configurations with the highest emissions and maximized throughput. See Table 3.2.2 for total emissions (reported in tons per year) expected for each alternative in each year.

**TRANSPORTATION CONFORMITY "HOT-SPOT" MODELING**

The need for CO and PM hot-spot modeling was assessed using traffic data (Volume II, Appendix C of this DEIS) to determine intersection level of service (LOS) and to assess diesel truck volumes.<sup>9</sup> Data for the worst-performing intersection indicates the LOS and delays at SW Spokane Street, W Marginal Way S, and Chelan Avenue SW would be two or more times worse than any other intersection under every alternative. Since idling vehicle emissions represent the greatest source of traffic-related CO emissions, this five-way intersection was selected for quantitative CO "hot-spot" modeling. The quantitative hot-spot modeling used emission factors from the EPA Motor Vehicle Emission Simulator model and assessed dispersion using the EPA's CAL3QHC intersection model.

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<sup>9</sup> *Transportation Technical Report for Draft EIS*, Heffron Transportation, Inc., May 5, 2016

Details on the development of emission factors and the configuration of the dispersion model are provided in Volume II, Appendix A.

PM hot-spot analyses are only required for transportation projects that involve significant levels of diesel vehicle traffic. EPA has indicated facilities serving greater than 125,000 annual average daily traffic with 8 percent or more (i.e., 10,000 or more) of such annual average daily traffic as diesel truck traffic would be considered a significant level of diesel vehicle traffic.<sup>10</sup> Based on review of the traffic study, the maximum total average daily trips would occur in 2040 with the Project. Under Alternative 3 in 2040, Terminal 5 is expected to serve 3,320 average daily truck trips and 4,660 design day truck trips. These volumes are well below the 10,000 average annual daily truck trips that would represent significant levels of diesel vehicle traffic. Therefore, a quantitative hot-spot analysis was not required for PM per EPA guidance.

### 3.2.3 IMPACTS

The air quality analysis presents the emissions modeling and dispersion modeling results for construction and operational scenarios. As indicated in the prior section, the mass of emissions expected to be produced by the on-site equipment for each scenario is reported. The result of dispersing these emissions for every hour of 5-years of meteorological data is reported as the maximum off-site concentrations.

#### 3.2.3.1 NO-ACTION ALTERNATIVE

##### CONSTRUCTION

As indicated in the Project description, Alternative 1 represents no change to the current facility or operating practices except for minor maintenance and repair. Without wharf rehabilitation, berth deepening, or other improvements, no construction-related emissions would be produced.

##### OPERATIONAL EMISSIONS

Project emissions of criteria air pollutants for the No-Action Alternative operation in 2020, 2030, and 2040 are presented in Table 3.2-2. Detailed emission factors and source-specific annual emission totals are provided as attachments in FEIS, Volume II, Appendix A.

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<sup>10</sup> *Transportation Conformity Guidance for Quantitative Hot-spot Analyses in PM<sub>2.5</sub> and PM<sub>10</sub> Nonattainment and Maintenance Areas*. USEPA, November 2015.



*Table 3.2-2: Annual Alternative 1 Emissions (tpy)*

Pollutant	Alt 1		
	2020	2030	2040
PM10	7.4	5.2	4.8
PM2.5	7.0	4.8	4.5
SO <sub>2</sub>	8.0	8.0	8.0
CO	49.7	39.2	37.4
NO <sub>2</sub>	254.5	161.1	154.6

#### OPERATIONAL OFF-SITE CONCENTRATIONS

With no physical changes to Terminal 5, operations would be consistent with those that have occurred in the past. Potential emissions would be lower than in the past because engine emissions are generally decreasing over time with fleet turnover and because equipment are increasingly required to use ultra-low sulfur distillate fuel.

As noted above, pollutant concentrations were calculated at more than 7,300 locations in the vicinity of Terminal 5. Of all those receptors, the highest model-predicted concentrations of criteria air pollutants attributable to capacity operation of Terminal 5 in 2020—**with existing ambient air quality concentrations added**—are presented in Table 3.2-3 and indicates the maximum predicted concentrations of all pollutants comply with ambient air quality standards, **which are designed to be protective of human health.**

*Table 3.2-3: Alternative 1 Modeling Results: Maximum Criteria Pollutant Concentrations ( $\mu\text{g}/\text{m}^3$ )*

Criteria Air Pollutant	Averaging Time	Background Concentration <sup>(a)</sup>	Project-Related Concentration <sup>(b)(c)</sup>	Project Concentration with Background	Ambient Standard <sup>(d)</sup>
			2020 647K TEUs	2020 647K TEUs	
CO	1-hour	3,779	64	3842.5	40,000
	8-hour	1,947	42	1986.7	10,000
NO <sub>2</sub>	1-hour	Varies <sup>(e)</sup>	N/A	183.7	188
	Annual	26.3	1.1	67.4	100
PM <sub>2.5</sub>	24-hour	24.3	2.9	27.2	35
	Annual	10.2	1.2	11.4	12
PM <sub>10</sub>	24-hour	48	4.0	52.0	150
SO <sub>2</sub>	1-hour	68.1	19.9	88.0	196
	3-hour	52.4	17.01	69.45	1,310
	24-hour	21.5	8.7	30.2	365 <sup>(f)</sup>
	Annual	3.7	1.3	5.40	52 <sup>(f)</sup>

Note:

- (a) Background concentrations (expressed as micrograms per cubic meter [ $\mu\text{g}/\text{m}^3$ ]) based on the higher of nearby monitor design values (identified as complete by EPA) or values provided by Northwest Airquest 2009–2011 design values specific to the Terminal 5 location, except for 1-hour NO<sub>2</sub>.
- (b) Reported pollutant concentrations are those occurring at the maximum impact location for each pollutant. Concentrations at all other locations are less than those reported here.
- (c) Except as noted below, all short-term concentrations are based on modeling that considered maximum hourly activity during every hour of the 5-year meteorological data set, which is not a possible actual level of activity. These results therefore represent intentionally conservative conditions. Note that consistent with EPA guidance, the annual modeling results are based on 5-year averages from the 5-year meteorological data set instead of 3-year, as per the NAAQSs.
- (d) All ambient concentrations are expressed in terms of  $\mu\text{g}/\text{m}^3$ ; importantly, other sources may report the ambient air quality standard concentrations in parts per million (ppm) or parts per billion (ppb).
- (e) Hourly and seasonal variation were assessed at Beacon Hill and incorporated into the dispersion model. The use of this form of background concentrations is consistent with EPA guidance.
- (f) Denotes Washington State ambient air quality standard only (i.e., no federal standard).

### 3.2.3.2 ALTERNATIVE 2

#### CONSTRUCTION

The Terminal 5 wharf rehabilitation, berth deepening, and other improvements associated with Alternatives 2 and 3 would include construction of new on-site buildings and other substantial infrastructure improvements. Such activities could result in temporary, localized increases in

particulate concentrations due to emissions from construction-related sources. For example, dust from construction activities such as excavation, grading, sloping, and filling would contribute to ambient concentrations of suspended particulate matter. Construction contractor(s) would be required to comply with PSCAA regulations requiring that reasonable precautions be taken to minimize dust emissions. Further consideration of construction activities is described in Volume II, Appendix A.

With implementation of the controls required for the various aspects of construction activities and consistent use of best management practices (BMPs) to minimize on-site emissions, construction of the proposed Project would not be expected to significantly affect air quality. The construction-related emissions are described in Section 3.2.3.9.

#### OPERATIONAL EMISSIONS

Total Project emissions of criteria air pollutants for Alternative 2 operation are presented in Table 3.2-4. Detailed emission factors and source-specific annual emission totals are provided as attachments in Volume II, Appendix A of this DEIS. Emission factors are, in many cases, lower in 2030 than 2020 because engine emissions are generally decreasing over time with fleet turnover, increased use of ultra-low sulfur distillate fuel, and use of shorepower. The improving emission factors reflect regulatory requirements of engine manufacturers, regulations on in-use fuel for ocean-going vessels and harbour craft, and EPA-model predicted turnover of the cargo-handling equipment fleet for King County. The validity of emission improvements is proven by decades of success with federal mobile source emissions regulations improving urban air quality throughout the United States. **Additionally, the larger vessels that are expected to serve Seattle are newer and more fuel efficient per unit of cargo. The number of vessels needed to transport cargo will not increase even if cargo throughput increases.** The trends in emissions across alternatives and throughputs are described in more detail in Section 3.2.3.4.

*Table 3.2-4: Annual Alternative 2 Emissions (tpy)*

Pollutant	Alt 2		
	2020	2030	2040
PM10	6.3	6.4	4.4
PM2.5	6.0	5.9	4.0
SO <sub>2</sub>	4.3	5.1	3.6
CO	42.4	52.6	42.5
NO <sub>2</sub>	180.9	156.7	117.6

#### OPERATIONAL OFF-SITE CONCENTRATIONS

The physical and operational changes associated with Alternative 2 would enable an increase in container throughput capacity. Model-predicted concentrations of criteria air pollutants attributable to capacity operation in 2020 and 2030 are presented in Table 3.2-5. As shown in Table 3.2-5, the maximum model-predicted concentrations of all pollutants comply with ambient air quality

*standards, which are designed to be protective of human health. Emissions are expected to decrease or be unchanged in 2040 because no design or throughput change is expected.*

Table 3.2-5: Alternative 2 Modeling Results: Maximum Criteria Pollutant Concentrations ( $\mu\text{g}/\text{m}^3$ )

Criteria Air Pollutant	Averaging Time	Background Concentration <sup>(a)</sup>	Project-Related Concentration <sup>(b)(c)</sup>		Project-Related Concentration with Background		Ambient Standard <sup>(d)</sup>
			2020 647K TEU	2030 1.27M TEU	2020 647K TEU	2030 1.27M TEU	
CO	1-hour	3,779	48.8	48.7	3827.3	3827.2	40,000
	8-hour	1,947	35.2	35.2	1981.7	1981.7	10,000
NO <sub>2</sub>	1-hour	Varies <sup>(e)</sup>	N/A	N/A	179.6	163.3	188
	Annual	26.3	25.1	21.6	51.4	47.9	100
PM <sub>2.5</sub>	24-hour	24.3	2.6	2.3	26.9	26.6	35
	Annual	10.2	1.1	0.9	11.3	11.1	12
PM <sub>10</sub>	24-hour	48	3.0	2.8	51.0	50.8	150
SO <sub>2</sub>	1-hour	68.1	13.1	13.2	81.2	81.3	196
	3-hour	52.4	11.5	11.6	63.9	64.0	1,310
	24-hour	21.5	5.8	5.9	27.3	27.4	365 <sup>(f)</sup>
	Annual	3.7	0.5	0.5	4.2	4.2	52 <sup>(f)</sup>

Note:

- (a) Background concentrations (expressed as micrograms per cubic meter [ $\mu\text{g}/\text{m}^3$ ]) based on the higher of nearby monitor design values (identified as complete by EPA) or values provided by Northwest Airstest 2009–2011 design values specific to the Terminal 5 location, except for 1-hour NO<sub>2</sub>.
- (b) Reported pollutant concentrations are those occurring at the maximum impact location for each pollutant. Concentrations at all other locations are less than those reported here.
- (c) Except as noted below, all short-term concentrations are based on modeling that considered maximum hourly activity during every hour of the 5-year meteorological data set, which is not a possible actual level of activity. These results therefore represent intentionally conservative conditions. Note that consistent with EPA guidance, the annual modeling results are based on 5-year averages from the 5-year meteorological data set instead of 3-year as per the NAAQSs.
- (d) All ambient concentrations are expressed in terms of  $\mu\text{g}/\text{m}^3$ ; importantly, other sources may report the ambient air quality standard concentrations in parts per million (ppm) or parts per billion (ppb).
- (e) Hourly and seasonal variation were assessed at Beacon Hill and incorporated into the dispersion model. The use of this form of background concentrations is consistent with EPA guidance.
- (f) Denote Washington State ambient air quality standard only (i.e., no federal standard).

### 3.2.3.3 ALTERNATIVE 3

#### CONSTRUCTION

As described in Section 3.2.2.2, Alternatives 2 and 3 have the same construction-related improvements, despite the distinct differences in operations. The construction-related emissions associated with Alternatives 2 and 3 are described in Section 3.2.3.9.

#### OPERATIONAL EMISSIONS

Total Project emissions for Alternative 3 operation in 2020, 2030, and 2040 are presented in Table 3.2-6. Detailed emission factors and source-specific annual emission totals are provided as attachments in Volume II, Appendix A of this DEIS. Emission factors are, in many cases, lower in successive years because engine emissions are generally decreasing over time vehicles are increasingly required to use ultra-low sulfur distillate fuel and because of the use of a second truck gate and reservation system. The improving emission factors reflect regulatory requirements of engine manufacturers, regulations on in-use fuel for ocean-going vessels and harbour craft, and EPA-model predicted turnover of the cargo-handling equipment fleet for King County. The validity of emission improvements is proven by decades of success with federal mobile source emissions regulations improving urban air quality throughout the United States. **Additionally, the larger vessels that are expected to serve Seattle are newer and more fuel efficient per unit of cargo. The number of vessels needed to transport cargo will not increase even if cargo throughput increases.** The trends in emissions across alternatives and throughputs are described in more detail in Section 3.2.3.4.

*Table 3.2-6: Annual Alternative 3 Emissions (tpy)*

Pollutant	Alt 3		
	2020	2030	2040
PM10	2.8	3.3	3.2
PM2.5	2.6	2.9	2.8
SO <sub>2</sub>	3.5	4.0	3.4
CO	20.6	26.5	29.5
NO <sub>2</sub>	115.1	93.3	82.2

#### OPERATIONAL OFF-SITE CONCENTRATIONS

The physical and operational changes associated with Alternative 3 would enable an increase in container throughput capacity. The maximum model-predicted concentrations of criteria air pollutants attributable to capacity operation in 2020, 2030, and 2040 are presented in Table 3.2-8. As shown in Table 3.2-8, the maximum model-predicted concentrations of all pollutants comply with ambient air quality standards. Increased electrification and lower engine emissions offset the increase in container throughput capacity to result in lower future concentrations.

*Table 3.2-7: Alternative 3 Modeling Results: Maximum Criteria Pollutant Concentrations ( $\mu\text{g}/\text{m}^3$ )*

Criteria Air Pollutant	Averaging Time	Back-ground Concentration <sup>(a)</sup>	Project-Related Concentration <sup>(b)(c)</sup>			Project-Related Concentration with Background			Ambient Standard <sup>(d)</sup>
			2020 647K TEU	2030 1.27M TEU	2040 1.70M TEU	2020 647K TEU	2030 1.27M TEU	2040 1.70M TEU	
CO	1-hour	3,779	40.5	40.4	40.8	3,819.0	3,819.9	3,193.3	40,000
	8-hour	1,947	26.4	26.2	26.9	1972.9	1972.7	1973.4	10,000
NO <sub>2</sub>	1-hour	Varies <sup>(e)</sup>	148.3	139.5	139.1	148.3	139.5	139.1	188
	Annual	26.3	12.5	10.3	9.4	38.8	36.6	35.7	100
PM <sub>2.5</sub>	24-hour	24.3	1.8	1.7	1.8	26.1	26.0	26.1	35
	Annual	10.2	0.3	0.3	0.2	10.5	10.5	10.4	12
PM <sub>10</sub>	24-hour	48	2.5	2.4	2.4	50.5	50.4	50.4	150
SO <sub>2</sub>	1-hour	68.1	13.1	13.1	13.1	81.2	81.2	81.2	196
	3-hour	52.4	11.4	11.4	11.5	63.8	63.8	63.9	1,310
	24-hour	21.5	19.6	19.6	19.6	41.1	41.1	41.1	365 <sup>(f)</sup>
	Annual	3.7	0.4	0.4	0.3	4.1	4.1	4.0	52 <sup>(f)</sup>

Note:

- (a) Background concentrations (expressed as micrograms per cubic meter [ $\mu\text{g}/\text{m}^3$ ]) based on the higher of nearby monitor design values (identified as complete by EPA) or values provided by Northwest Airquest 2009–2011 design values specific to the Terminal 5 location, except for 1-hour NO<sub>2</sub>.
- (b) Reported pollutant concentrations are those occurring at the maximum impact location for each pollutant. Concentrations at all other locations are less than those reported here.
- (c) Except as noted below, all short-term concentrations are based on modeling that considered maximum hourly activity during every hour of the 5-year meteorological data set, which is not a possible actual level of activity. These results therefore represent intentionally conservative conditions. Note that consistent with EPA guidance, the annual modeling results are based on 5-year averages from the 5-year meteorological data set instead of 3-year as per the NAAQSs.
- (d) All ambient concentrations are expressed in terms of  $\mu\text{g}/\text{m}^3$ ; importantly, other sources may report the ambient air quality standard concentrations in parts per million (ppm) or parts per billion (ppb).
- (e) Hourly and seasonal variation were assessed at Beacon Hill and incorporated into the dispersion model. The use of this form of background concentrations is consistent with EPA guidance.
- (f) Denote Washington State ambient air quality standard only (i.e., no federal standard).

### 3.2.3.4 COMPARISON OF THE ALTERNATIVES EMISSIONS

The total estimated annual operational emissions for the three DEIS alternatives are presented in Table 3.2-8. Detailed emission factors and source-specific annual emission totals are provided as attachments in Volume II, Appendix A. Note that the shaded scenarios in Table 3.2-8 were not considered with air quality dispersion modeling because they represent conditions with no operational or site configuration changes. Emissions for these scenarios are presented for comparison with those scenarios that were evaluated with modeling.

The shaded scenarios have estimated emissions equal to or less than with the same facility configurations in the decade prior because of equipment fleet turnover, changes to regulations, and increased utilization of shore power. For these reasons, there was no need to conduct modeling to conclude that emissions associated with the shaded scenarios would be expected to comply with the NAAQS because the prior decade scenario was in compliance.

*Table 3.2-8: Annual Project Emissions (tons per year)*

Pollutant	2020			2030			2040		
	647K TEUs			647K TEUs	1.3M TEUs		647K TEUs	1.3M TEUs	1.7M TEUs
	Alt 1	Alt 2	Alt 3	Alt 1	Alt 2	Alt 3	Alt 1	Alt 2	Alt 3
CO	49.7	42.4	20.6	39.2	52.6	26.5	37.4	42.5	29.5
NO2	254.5	180.9	115.1	161.1	156.7	93.3	154.6	117.6	82.2
PM2.5	7.0	6.0	2.6	4.8	5.9	2.9	4.5	4.0	2.8
PM10	7.4	6.3	2.8	5.2	6.4	3.3	4.8	4.4	3.2
SO2	8.0	4.3	3.5	8.0	5.1	4.0	8.0	3.6	3.4

Note: The shaded cells indicate scenarios that were not considered with air quality modeling but that are expected to comply with the NAAQSs because, for the same alternative, the emissions decreased from the prior decade and no operational or configuration changes occurred between the two decades.

K = thousand  
M = million  
TEU = twenty-foot equivalent unit

As discussed earlier, a facility-wide emissions summary can provide the “big picture” overview of the air quality effects of a project. While not providing the same level of detail as the dispersion modeling analysis, Table 3.2-8 indicates that emissions generally decrease in the future even with the increased activity with Alternatives 2 and 3. There are competing factors that affect the facility-wide emissions:

- Emissions increase with higher activity levels associated with the development alternatives (more ground equipment moving more containers).

- Emissions decrease because the gradual retirement and replacement of locomotives, trucks, ground equipment, and ships substitutes cleaner, less pollutant equipment.
- Emissions decrease with the development alternatives as the percentage of ships using shorepower increases with time.
- Emissions decrease with redevelopment because fewer vessels would call due to increased vessel TEU capacity.

The degree to which emissions rates decrease with fleet turnover is different for each pollutant and each type of equipment (trucks vs locomotives vs ships). The effect of increased use of shorepower is discussed below.

#### INTRA-YEAR COMPARISONS

Table 3.2-8 shows that all criteria pollutant emissions would decrease with the proposed upgrades of the Terminal 5 facility in 2020. This reduction is largely true for the other years. However, there are exceptions between Alternative 1 and Alternative 2 in 2030 for PM and CO, and in 2040 for CO. These increases are attributable to the increased activities required to accommodate a 1.3MM TEU throughput with Alternative 2. Additionally, the larger potential vessel sizes expected with the action alternatives contribute to these exceptions in the emission reduction trend.

#### MODELED SCENARIOS

Scenarios that were considered with air quality modeling are shown in the non-shaded cells. The emission decreases between Alternatives 1 and 2 in 2020 because a: (1) fewer vessels are calling on the Port due to increased vessel TEU capacity; and (2) a projected 30 percent use rate of shorepower (there is no shorepower available for the no-build scenario).

The decreases in emissions from Alternative 2 to Alternative 3 in 2020 are largely due to the electrification of the majority of container-handling equipment activities. As Alternative 2 and Alternative 3 progress into years beyond 2020, their respective activity levels increase with throughput. However, they benefit from increasingly greater use of shorepower and vehicle fleet turnover, which result in reduced overall emissions, except for CO and sulfur dioxide (SO<sub>2</sub>). The estimates for CO and SO<sub>2</sub> increase with activity and do not have the same pronounced reductions in future years as the other pollutants. For Alternatives 2 and 3, the anticipated emissions reductions expected to result from use of shorepower are shown in Table 3.2-9. The emissions reductions associated with shorepower are higher with Alternative 2, 2040 than Alternative 3, 2040 because the numbers of hours spent at berth are higher in Alternative 2 (i.e., less efficient movement of cargo).

Generally, improving emission factors over time reflect regulatory requirements of engine manufacturers, regulations on in-use fuel for ocean-going vessels and harbor craft, EPA-model predicted turnover of the cargo-handling equipment fleet for King County, and increased utilization of shorepower. The validity of expecting emission improvements is proven by decades of success with federal mobile source emissions regulations improving urban air quality throughout the United States.



*Table 3.2-9: Reduction in Annual Emissions with Shorepower (tons per year)*

Pollutant	Alternative 2			Alternative 3		
	2020	2030	2040	2020	2030	2040
<i>Shorepower Efficacy:</i>	30%	50%	70%	30%	50%	70%
CO	3.9	9.3	13.0	3.1	7.8	12.3
NO2	34.3	56.4	79.0	27.2	47.5	74.4
PM10	0.6	1.5	2.1	0.5	1.3	2.0
PM2.5	0.6	1.4	2.0	0.5	1.2	1.9
SO2	1.5	3.5	5.0	1.2	3.0	4.7

### 3.2.3.5 HUMAN HEALTH

Potential **incremental** health risks resulting from emissions of diesel exhaust particulate matter (DPM) and PM<sub>2.5</sub> associated with the proposed Project were evaluated for nearby residences and the communities of Georgetown and South Park. Future ambient air concentrations of DPM and PM<sub>2.5</sub> were modeled to establish baseline (Alternative 1) air quality and the implications for air quality with Alternatives 2 and Alternative 3. Health risks were modeled for both cancer and noncancer health endpoints. Changes in air quality resulting from Alternatives 2 and 3 were small, and the resulting changes in health risks relative to baseline were correspondingly small. The maximum modeled DPM and PM<sub>2.5</sub> concentrations are associated with Alternative 2 (year 2020) and are similar to the No-Action Alternative 1. Thus, there is no anticipated change in health impacts associated with the Project when considering the alternative and time-frame when air concentrations are expected to be greatest. While Alternative 3 (year 2040) is expected to result in the largest decrease in concentrations from baseline, the corresponding observed improvement in the health outcomes relative to baseline is negligible.

The health risk study was conducted in parallel with the DEIS technical report and the study was not updated to include the more realistic characterization of the vessels (vessel shape, stack height, stack location, etc.) that was included in the air quality impact assessment in the DEIS and this FEIS. Those unrefined parameters resulted in higher modeled concentrations and add to the conservatism of the health risk characterization.

A detailed report describing the methods and results for the health risk characterization is provided in FEIS, Volume II, Appendix A.

### 3.2.3.6 DIESEL PARTICULATE MATTER

Potential off-site concentrations of DPM associated with Project emission sources were evaluated using  $PM_{2.5}$  emissions as a surrogate for DPM emissions.  $PM_{2.5}$  concentrations across the entire modeling domain receptor grid were predicted using AERMOD. The results were used to produce isopleths of estimated annual average DPM concentrations.

Predicted concentrations can be compared to a range of DPM unit risk factors to assess potential health implications. Ecology has adopted a DPM Acceptable Source Impact Level (ASIL) for use in the permit process for industrial facilities. However, the basis of Washington's ASIL value has been questioned by numerous recent studies. The inadequacy of the DPM ASIL is discussed at length in FEIS, Volume II, Appendix A, Attachment C.

The EPA has not adopted a cancer risk factor for DPM because of uncertainties in the underlying health risk data. However, in 2002 the EPA suggested a range of values for assessing DPM risk:  $1 \times 10^{-5}$  –  $1 \times 10^{-3}$  micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ). In practical terms, this means the increased risk of cancer after a 70-year exposure to  $1 \mu\text{g}/\text{m}^3$  DPM is between 1 in 100,000 and 1 in 1,000.

Figure 3.2-2 and Figure 3.2-3 indicate predicted DPM concentrations attributable to Terminal 5 activities in neighborhoods west and south of the site are about  $0.1 \mu\text{g}/\text{m}^3$  with No Action and approximately  $0.01 \mu\text{g}/\text{m}^3$  with Alternative 3 in 2040, a 10-fold improvement. The model-predicted concentrations of DPM associated with Alternative 2 were within the bounds of the DPM results identified for Alternatives 1 and 3.

PSCAA has determined that health risks from air toxics are higher at its Duwamish monitoring station on East Marginal Way than at other urban and residential areas in its jurisdiction. The health risk assessment for Terminal 5 focused only on how Terminal 5 activities, for each alternative and analysis year, would incrementally affect health risk and did not assess the collective health impacts due to Terminal 5 emissions plus the numerous other emission sources within the region (i.e., a cumulative health impact assessment). This incremental analysis provides an assessment of the health impacts due specifically to the Project. The analysis concluded that Terminal 5 contribution to health risk would decrease with time but offers no assessment of how other sources of air toxics might affect this area over time.

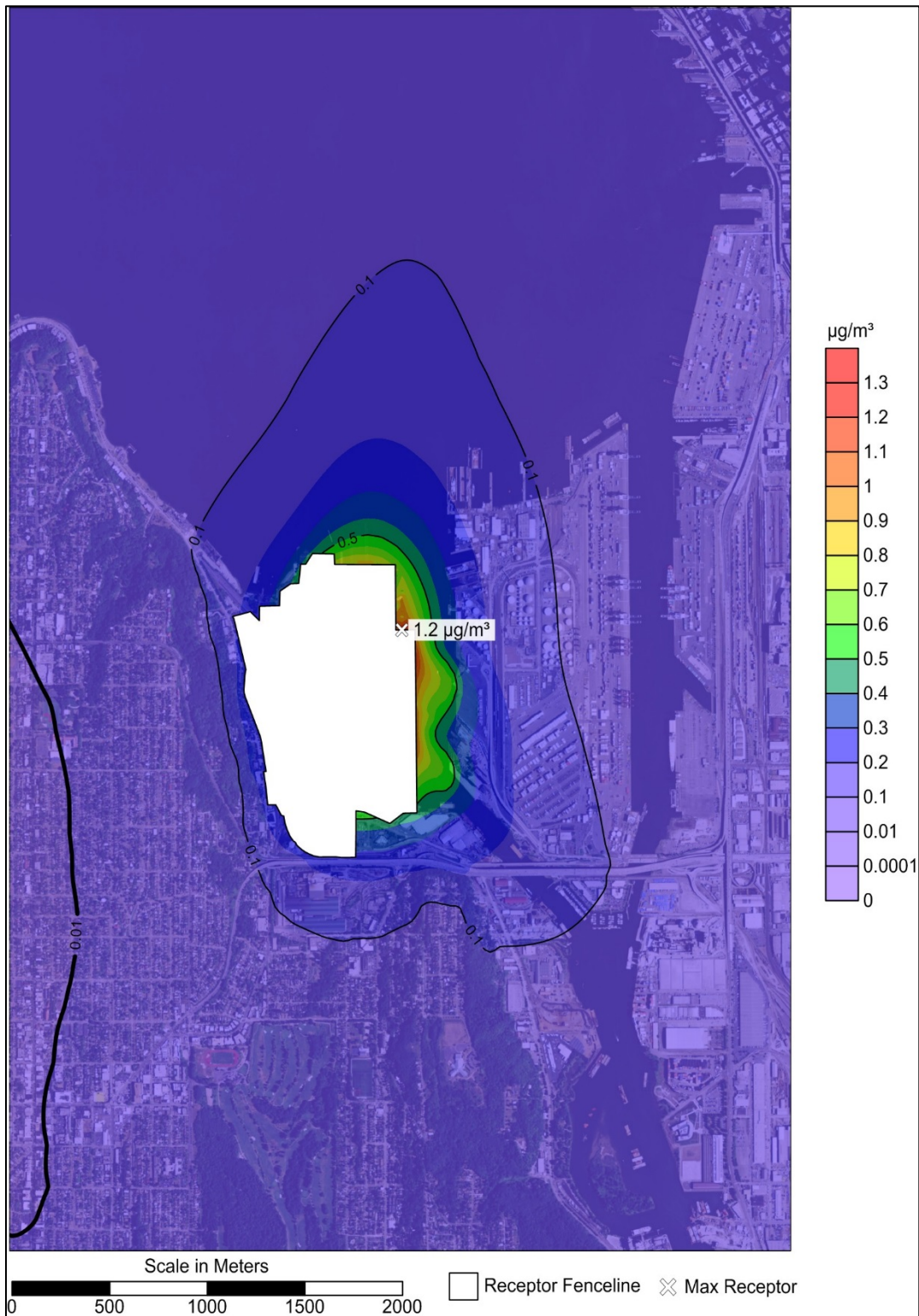


Figure 3.2-2: Alternative 1 (2020): Model-Calculated Diesel Particulate Concentrations

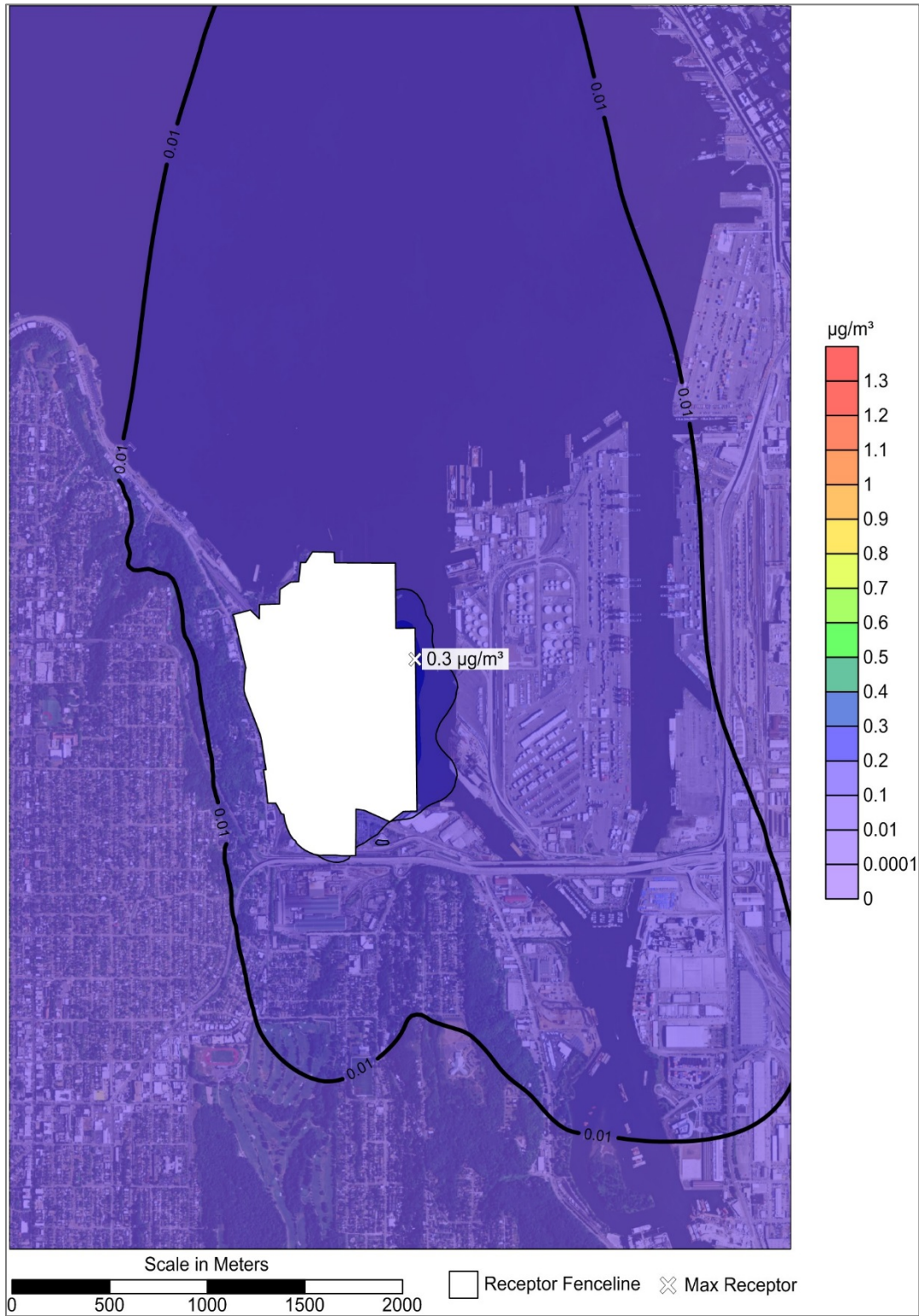


Figure 3.2.3: Alternative 3 (2030): Model-Calculated Diesel Particulate Concentrations

### 3.2.3.7 GREENHOUSE GAS EMISSIONS

In order to evaluate the potential for climate change due to the Terminal 5 action alternatives, direct GHG emissions associated with implementation of the Project were calculated based on fuel combustion related to construction of the facility, operation of the facility, indirect activities associated with Project actions, and purchased electricity.

#### CONSTRUCTION-RELATED GREENHOUSE GAS EMISSIONS

The construction-related GHG assessment was based on estimates of emissions from facility construction using expected construction equipment (specified by Source Category Code and horsepower) and the time all such equipment is expected to be active. Each phase of construction was considered separately and in detail. GHG emissions were tabulated based on emission rates estimated using the EPA NONROAD emissions model and the specific equipment population in King County, Washington. The emissions estimates considered both landside and in-water equipment.

In total, the estimated lifespan emissions attributable to the Project are about 12,000 million metric tons of carbon dioxide equivalent (MTCO<sub>2</sub>e) over the three-season construction period.<sup>12</sup> A summary of the GHG emissions calculations is presented in Table 3.2-10. As shown, direct annual GHG emissions are less than 6,000 MTCO<sub>2</sub>e during each of the first two years of construction and even less in the final year. No additional analysis is required of projects that are expected to produce an average of less than 10,000 metrics tons of CO<sub>2</sub>e per year.<sup>13</sup>

*Table 3.2-10: Construction-Related GHG Emissions (tonnes)*

<b>Construction Phase</b>	<b>CO<sub>2</sub></b>	<b>N<sub>2</sub>O</b>	<b>CH<sub>4</sub></b>	<b>CO<sub>2</sub>e</b>
Phase I (year 1)	1,679	11.90	26.78	5,896
Phase II (year 2)	1,529	10.83	24.38	5,367
Phase III (year 3)	206.7	1.46	3.29	725.1
<b>Total</b>	<b>3,415</b>	<b>24.20</b>	<b>54.45</b>	<b>11,987</b>
Note: CO <sub>2</sub> = carbon dioxide N <sub>2</sub> O = nitrous oxide CH <sub>4</sub> = methane CO <sub>2</sub> e = carbon dioxide equivalent				

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<sup>12</sup> MTCO<sub>2</sub>e is defined as Metric Ton Carbon Dioxide Equivalent; equates to 2,204.62 pounds of CO<sub>2</sub>. This is a standard measure of amount of CO<sub>2</sub>.

<sup>13</sup> *Guidance for Ecology Including Greenhouse Gas Emissions in SEPA Reviews*. June 2011.

#### OPERATIONAL GREENHOUSE GAS EMISSIONS

Long-term (operational) GHG emissions were estimated for on-site sources as well as limited off-site locomotive, vessel, and truck emissions. The operational GHG emissions were quantified within the immediate vicinity of Terminal 5 and were based on Project-specific operations. Statewide, off-site emissions from locomotives, vessels, and on-road trucks were not quantified because they are expected to improve under either action alternative. By leasing Terminal 5, business entities would be seeking to improve their transportation efficiency and cutting associated costs. The Terminal 5 action alternatives would enable larger vessels to serve Seattle and the surrounding region. These larger vessels are more fuel efficient and therefore produce less GHGs per unit of cargo. The improvement in transportation efficiency would be concurrent with improvements in environmental efficiency. Table 3.2-11 identifies the total estimates annual Terminal 5 GHG emissions.

Table 3.2-11: Operational Greenhouse Gas Emissions

Operational Emissions	Annual Emissions CO <sub>2</sub> e - Metric Tons					
	Alt 1 647K TEUs 2020	Alt 2 647K TEUs 2020	Alt 2 1.3M TEUs 2030	Alt 3 647K TEUs 2020	Alt 3 1.3M TEUs 2030	Alt 3 1.7M TEUs 2040
<b>Direct Emissions</b>						
On-Site Cargo-Handling Equipment	36,176	33,419	82,229	10,754	20,742	27,578
<b>Indirect Emissions</b>						
Purchased Energy <sup>(a)</sup>	0	0	0	0	0	0
Employee Commute <sup>(b)</sup>	--	--	--	--	--	--
Rail Product Delivery <sup>(c)</sup>	2,914	2,914	5,733	2,888	5,733	7,620
On-road Truck Delivery <sup>(d)</sup>	2,164	2,164	2,108	2,164	2,108	1,746
<b>Vessel Product Delivery<sup>(e)</sup></b>						
Transiting	13,884	9,076	16,625	9,076	16,625	16,144
Hoteling	53,669	31,639	26,872	25,503	22,121	15,271
Annual Facility-Related GHG Emissions	108,808	79,211	133,568	50,385	67,329	68,359

Note:

- (a) Seattle City Light operates as a "Zero-net Carbon" entity. Their fuel mix is heavily dependent on hydroelectric power and other fuels that produce carbon are offset. Because of these offsets, the purchased energy CO<sub>2</sub>e emissions are zero. (<http://www.seattle.gov/light/enviro/>).
- (a) Construction employee data were not available at the time of this analysis.
- (b) "Rail Product Delivery" refers to locomotive operations to and from E Marginal Way S and operation on-site. Note that these projected emissions do not consider the GHG emission reductions that would result from the use of automatic engine start/stop (AESS) to shut down unneeded locomotives because AESS is not used all the time (i.e., when temperature are less than about 40°Fahrenheit). Since temperatures exceed 40°Fahrenheit about 85 percent of the time, the locomotive AESS would reduce GHG to less than represented in this tabulation.
- (c) "On-road Truck Delivery" refers to truck movements to and from E Marginal Way, but does not consider on-site truck queue idling or movements. On-site truck activity is captured as direct emissions.
- (d) "Vessel Product Delivery" Transiting emissions represent engine and boiler combustion emissions associated with transiting activities during the arrival and departure of vessels and assist tugs. Hoteling emissions are vessel-related combustion emissions from the auxiliary engines and boilers while the vessels are docked at the wharf.
- (e) Seattle City Light operates as a "Zero-net Carbon" entity. Their fuel mix is heavily dependent on hydroelectric power and other fuels that produce carbon are offset. Because of these offsets, the purchased energy CO<sub>2</sub>e emissions are zero. (<http://www.seattle.gov/light/enviro/>).
- (f) Construction employee data were not available at the time of this analysis.
- (g) "Rail Product Delivery" refers to locomotive operations to and from East Marginal Way S and operation on-site. Note that these projected emissions do not consider the GHG emission reductions that would result from the use of automatic engine start/stop (AESS) to shut down unneeded locomotives because AESS is not used all the time (i.e., when temperature are less than about 40°Fahrenheit). Since temperatures exceed 40°Fahrenheit about 85 percent of the time, the locomotive AESS would reduce GHG to less than represented in this tabulation.
- (h) "On-road Truck Delivery" refers to truck movements to and from East Marginal Way, but does not consider on-site truck queue idling or movements. On-site truck activity is captured as direct emissions.
- (i) "Vessel Product Delivery" Transiting emissions represent engine and boiler combustion emissions associated with transiting activities during the arrival and departure of vessels and assist tugs. Hoteling emissions are vessel-related combustion emissions from the auxiliary engines and boilers while the vessels are docked at the wharf.

As mentioned in Section 3.2.2, no specific federal, state, or local emission reduction requirements or targets are applicable to the proposed Project, and there are no generally accepted emission level thresholds against which to assess potential localized or global consequences of GHG emissions. The relatively small contribution from this terminal facility would not result in significant impacts from GHGs. The Project would reduce world-wide emissions of GHGs due to improved efficiencies in commodity deliveries compared with existing transport systems – and due to improving emission controls in future years.

### 3.2.3.8 TRANSPORTATION CONFORMITY REVIEW

The results of the CO "hot-spot" modeling, provided in Table 3.2-9, represents the maximum concentration among the receptors included in the CAL3QHC dispersion model. Based on projected future traffic conditions in 2020, 2030, and 2040, and assuming a background CO concentration of 5 parts per million, model-calculated concentrations are less than the ambient air quality standards for CO. The results of the "hot-spot" modeling indicate additional traffic due to Alternatives 2 and 3 would not increase concentrations compared to the Alternative 1 scenario during the PM peak period to the extent of causing an air quality impact.

Due to the poor performance of the single most affected intersection (Table 3.2-12); the traffic study assessed a mitigated Alternative 3 scenario. Under the mitigated Alternative 3 scenario, the northwest leg of this intersection would be closed permanently, reducing delays from trains and trucks accessing Terminal 5 through this intersection. The results of the hot-spot modelling for this alternative also indicate there would be no change in the maximum Project-related CO concentration because the intersection would continue to perform at **Level of Service (LOS) F** due to local traffic conditions not related to Terminal 5. Although Project-related traffic delays almost double in 2040 over those in 2020, maximum predicted CO concentrations decrease in 2040 due to vehicle emissions reduction measures implemented by federal and state regulatory requirements in future years. Based on this finding, the proposed plan would not be expected to result in any significant air quality impacts due to its effect on the surface roadways in the area.

*Table 3.2-12: "Hot-Spot" Intersection Modeling Results: Maximum CO Concentrations (parts per million)*

Intersection	Averaging Period	Ambient Standard <sup>(a)</sup>	Modeled Concentration <sup>(b)</sup>					
			Alt 1 (No Action)			Alt 2	Alt 3	Alt 3 Mit. <sup>(c)</sup>
			2020 647K TEU	2030 647K TEU	2040 647K TEU	2030 1.27M TEU	2040 1.70M TEU	2040 1.70M TEU
SW Spokane St / W Marginal Way SW / Chelan Ave SW	1-Hour	35	5.7	5.5	5.2	5.5	5.2	5.2
	8-Hour	9	5.5	5.4	5.1	5.4	5.1	5.1

Note:

(a) Ambient concentrations are expressed in terms of parts per million (ppm).

(b) 1-hour and 8-hour modeled concentrations include 5 ppm CO background. 8-hour concentrations assume a 0.7 persistence factor.

(c) Under the Alt 3 Mitigated scenario, the northwest leg of the intersection would be closed, removing access to Terminal 5.



### 3.2.3.9 GENERAL CONFORMITY REVIEW

The proposed Project would result in air pollutant emissions related to demolition of portions of the existing wharf structure, reconstruction of the wharf, and related activities to deepen the adjacent waterway and to stabilize the underwater slope abutting the wharf structure. Because the facility is located in air quality maintenance areas for PM<sub>10</sub>, ozone, and carbon monoxide, and because portions of the facility construction are subject to approval by the U.S. Army Corps of Engineers (USACE), facility construction emissions are subject to consideration under the federal air quality General Conformity rules. Consequently, construction-related emissions were quantified as required under the General Conformity rules for comparison with the General Conformity *de minimis* levels. This tabulation is summarized in Table 3.2-13.

The General Conformity *de minimis* levels are based on annual tons of pollutant emissions, and because each construction phase of the Project is more or less representative of a single year, the emissions associated with each construction phase may be compared with the *de minimis* levels. Although total construction-related emissions are not typically used in General Conformity assessments, the total Project-related construction emissions are listed in Table 3.2-13 to illustrate the relatively minor nature of this Project. As shown, the estimates of Project construction-related emissions are far less than the respective General Conformity *de minimis* levels, and as a result, these emissions would not be expected to significantly affect air quality.

Alternative 1 does not require a General Conformity review because no in-water work with federal oversight would occur. The emissions and comparison against *de minimis* thresholds are relevant to Alternatives 2 and 3, which have identical construction emissions.

*Table 3.2-13: Project Construction-Related Air Pollutant Emissions (tons)*

Construction Phase	VOC	CO	NO <sub>x</sub>	CO <sub>2</sub>	SO <sub>2</sub>	PM
Phase I	0.92	3.96	13.41	1,851	0.06	0.53
Phase II	0.82	3.58	11.82	1,685	0.06	0.47
Phase III	0.13	0.58	1.63	228	0.02	0.08
<b>Total Construction-Related Emissions</b>	<b>1.87</b>	<b>8.12</b>	<b>26.86</b>	<b>3,764</b>	<b>0.15</b>	<b>1.08</b>
<b>General Conformity De Minimis Levels</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>N/A</b>	<b>100</b>	<b>100</b>
Note: CO <sub>2</sub> emissions are not considered under General Conformity rules but are included here for completeness. Likewise, total construction emissions are not used for comparison with the annual-oriented <i>de minimis</i> levels, but are included for completeness. VOC = volatile organic compound						

### 3.2.3.10 TRACKING TERMINAL PROGRESS

The Port and the marine terminal operator will track Terminal 5 air quality performance after the Terminal renews operation to ensure air quality predictions as described in the EIS are consistent with operations over the twenty-year horizon of the Project. Tracked data will supplement the Puget

Sound Maritime Air Emission Inventory, the ongoing summary reporting of airshed wide air emissions related to Pacific Northwest port operations sponsored by the NWSA and part of the Northwest Ports Clean Air Summary. The Port will work with the terminal operator to identify the appropriate level of detail for publication of Terminal 5-specific data (as opposed to aggregate maritime-related information that is currently reported) without compromising proprietary information. Terminal 5 performance information reported on website annually will include:

- Cargo throughput in TEU or other unit
- Summary of CHE inventory e.g. how many units are alternatively fuels (propane, electric, CNG, hybrid) vs. diesel
- % of CHE meeting Tier 4 interim (T4i) emission standards or equivalent
- Summary/status of fuel efficiency planning for CHE and trucks calling at terminal
- Shore power utilization rate (number and % of ships plugged in)
- AQ trends from representative local PSCAA air monitoring station

Every 5 years, emission inventory data specific to terminal will be extracted from Puget Sound Maritime Air Emission Inventory, the ongoing summary reporting of airshed wide air emissions related to Pacific Northwest port operations. The next emission data will be reported in 2022 for data collected in 2021.

### 3.2.4 MITIGATION MEASURES

Construction BMPs would be required during minor repair and maintenance for the No-Action Alternative. No other mitigation is proposed.

#### 3.2.4.1 CONSTRUCTION – ALL ALTERNATIVES

Although proposed construction at Terminal 5 is not expected to significantly affect air quality, construction contractors would be required to comply with all relevant federal, state, and local air quality rules. In addition, implementation of BMPs would reduce emissions related to the construction phase of the Project. Management practices for reducing the potential for air quality impacts during construction include measures for reducing both exhaust emissions and fugitive dust. The Washington Associated General Contractors brochure *Guide to Handling Fugitive Dust from Construction Projects* and PSCAA suggest a number of methods for controlling dust and reducing the potential exposure of people to emissions from diesel equipment.

Some of the control measures that will be implemented during construction include:

- Require Tier 2 or better engines for off-road equipment.
- Require model-year 2007 or newer engines for heavy duty vehicles (exempt trucks that are operated <100 hours/year on this job).
- Require use of biofuel B20, or offer contractor incentive for this fuel.
- Use only equipment and trucks that are maintained in optimal operational condition.
- Require all off-road equipment to have emission reduction equipment (e.g., require participation in Puget Sound Region Diesel Solutions, a program designed to reduce air pollution from diesel, by Project sponsors and contractors).

- Use car-pooling or other trip-reduction strategies for construction workers.
- Spray exposed soil with water or other suppressant to reduce emissions of PM and deposition of particulate matter.
- Pave or use gravel on staging areas and roads that would be exposed for long periods.
- Cover all trucks transporting materials, wetting materials in trucks, or providing adequate freeboard (space from the top of the material to the top of the truck bed), to reduce PM emissions and deposition during transport.
- Provide wheel washers to remove particulate matter that would otherwise be carried off site by vehicles to decrease deposition of particulate matter on area roadways.
- Cover dirt, gravel, and debris piles as needed to reduce dust and wind-blown debris.
- Stage construction to minimize overall transportation system congestion and delays to reduce regional emissions of pollutants during construction.

#### 3.2.4.2 OPERATIONS—ALTERNATIVES 2 AND 3

A number of measures intended to reduce operational emissions, including GHG Emissions, would be implemented for Alternatives 2 and 3. No additional mitigation measures are proposed or warranted. Examples of emission-reducing components would include:

- Shorepower plug-in capability for two berths will be provided as part of project when the terminal renews operation.
- The NWSA and the Port will work with the terminal operator and shipping lines to design a program focused on attracting ships that are already carrying shipside onshore power equipment and encourage usage of electric shorepower at berth to meet the 30 percent adoption goal starting in 2030 and that increases over time. The program will be in place beginning when the terminal restarts operations. The NWSA, Port, and terminal operator will be responsible for tracking progress toward the modeled goals.
- Trucks entering container terminals will be required to meet model-year 2007 EPA emissions standards beginning in 2018 as part of the Northwest Ports Clean Air Strategy.
- Development of facility will utilize an electrical power supplier that obtains >90 percent of their power from non-fossil fuel sources, reducing greenhouse gas emissions for terminal operations.
- Operational management plans to reduce truck queuing and wait times as outlined in proposed Queue Management Plan (Volume II, Appendix C, Transportation Technical Report) will reduce idling of diesel drayage vehicles.
- Port and terminal operator will track Terminal 5 air quality performance after the Terminal renews operation to ensure air quality predictions as described in the EIS are consistent with operations. The tracking plan will be approved prior to occupancy.

Together, these and other features included in the proposed Project represent substantial Project-related GHG emission reductions.

### 3.2.5 SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

#### NO-ACTION ALTERNATIVE

No significant unavoidable adverse impacts would occur with the No-Action Alternative since only minor repairs and upgrades are proposed under this alternative.

#### ALTERNATIVES 2 AND 3

No significant unavoidable adverse impacts would occur with Alternatives 2 and 3 if the proposed mitigation is implemented.

### 3.3 WATER

This section evaluates the potential impacts of the proposed Project alternatives on water resources. The analyses and evaluation area for water resources potentially affected by the alternatives includes surface water, groundwater, and marine water within and adjacent to the Terminal 5 marine cargo site.

Terminal 5 is located on the west shoreline of the West Waterway. Potential impacts to these water resources are discussed under Alternative 1 No-Action, Alternative 2, and Alternative 3. Detailed technical reports or memos were prepared to evaluate the Terminal 5 Improvements Project impacts to water resources at the site and are presented in Volume II, Appendix D, Appendix J, and Appendix K of this DEIS. The technical reports or memos summarized in this section are:

- *Industrial Stormwater Treatment Planning Study for Terminal 5*. Prepared for the Port of Seattle. Prepared by Aspect Consulting. April 30, 2015.
- *Stormwater Technical Memorandum for Terminal 5 EIS, Seattle, Washington*. Prepared for the Port of Seattle. Prepared by Aspect Consulting. May 6, 2016 (Appendix D).
- *Water Quality Monitoring Plan, Terminal 5 Cargo Wharf Rehabilitation and Berth Deepening, Seattle, Washington*. Prepared for the Port of Seattle. Prepared by Hart Crowser. May 6, 2016 (Appendix H).
- *Southwest Harbor Terminal 5 Groundwater Quality Monitoring Evaluation Report, Seattle, Washington*. Prepared for the Port of Seattle. Prepared by Hart Crowser. July 8, 2014 (Appendix K).
- *Preliminary Geotechnical Engineering Design Study, Terminal 5 Deepening and Crane Rail Upgrade, Seattle, Washington*. Prepared for the Port of Seattle. Prepared by Hart Crowser. May 30, 2014 (Appendix J).
- *T-5 Vessel Traffic and Navigation, Terminal 5 Cargo Wharf Rehabilitation, Berth Deepening, and Improvements Project*. Draft Memorandum prepared for the Port of Seattle. Prepared by Moffatt & Nichol. April 20, 2016.
- *Biological Assessment, Terminal 5 Cargo Wharf Rehabilitation and Berth Deepening, Seattle, Washington*. Prepared for the Port of Seattle. Prepared by Hart Crowser. May 6, 2016 (Appendix E).
- *Thruster Impact Analysis. Terminal 5, Port of Seattle, Washington*. Prepared for the Port of Seattle. Prepared by Moffatt & Nichol. June 10, 2015.
- *Lower Duwamish Waterway Sediment Transport Modeling Report, Final*. Prepared for the EPA, Region 10, and Ecology. Prepared by Quantitative Environmental Analysis, LLC. October 2008.

#### 3.3.1 REGULATORY CONTEXT

As described in this section, surface water, groundwater, and marine water quality are regulated at federal, state, and local levels.

#### 3.3.1.1 CLEAN WATER ACT

The Clean Water Act (CWA) is the primary federal law governing water pollution. The CWA is intended to restore and maintain the integrity of “waters of the United States,” which comprise most surface waters.

#### 3.3.1.2 SECTION 401, WATER QUALITY CERTIFICATION AND STANDARDS

A federally issued license or permit for an activity that involves a discharge of fill material to waters of the United States may not be issued without a state certification pursuant to Section 401 of the CWA that the discharge would meet applicable water quality standards and certain other CWA requirements. In Washington, Ecology is the agency authorized to issue Section 401 certifications.

#### 3.3.1.3 SECTION 402, NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

The EPA has delegated authority to Ecology in Washington to issue CWA Section 402 (National Pollutant Discharge Elimination System [NPDES]) permits for point source discharges to waters of the United States. Details on surface water mitigation are provided in the Stormwater Technical Memo located in Volume II, Appendix D of this DEIS. See this appendix for detailed information on BMPs.

Container terminals are required to obtain coverage under the NPDES Industrial Stormwater General Permit (ISGP), which authorizes discharge of stormwater associated with industrial activity. Terminal 5 is covered under ISGP number WAR-000464. The ISGP stipulates requirements for management and control of stormwater collected at Terminal 5 and conveyed to onsite outfalls to the West Waterway and southwest Elliott Bay. Regardless of the alternative, Terminal 5 operations would be required to adhere to the ISGP General Requirements. Information on ISGP General Requirements is included below. The ISGP authorizes stormwater discharges from certain industrial facilities as long as the discharges are consistent with the 13 special conditions and 25 general conditions of the permit. Ecology recently reissued the ISGP with an effective date of January 2, 2015. The reissued permit expires on December 31, 2019.

In addition to the standard ISGP benchmarks, two effluent limits apply to Terminal 5 based on its location. Terminal 5 discharges stormwater to the West Waterway of the Duwamish River, which is identified as an impaired water body on the 2012 Washington State 303(d) list. Therefore, sampling for total suspended solids (TSS) and fecal coliform bacteria is required and included in a table reference in Volume II, Appendix D of this DEIS.

#### 3.3.1.4 SECTION 404, DISCHARGE OF DREDGE OR FILL MATERIAL

Section 404 of the CWA governs the discharge of dredged or fill material into waters of the United States and a 404 permit is required prior to discharging unless the activity falls under an exemption. The USACE, the Section 404 co-implementing agency along with the EPA, evaluates 404 permit applications, including public and environmental review. Under Section 404 guidelines, proposed discharges shall not result in significant degradation of the aquatic ecosystem and all practicable means must be used to minimize adverse impacts.

#### 3.3.1.5 RIVERS AND HARBORS APPROPRIATION ACT OF 1899

Section 10 of the Rivers and Harbors Appropriation Act of 1899 requires authorization from the USACE for the construction of any structure in or over any navigable water of the United States. Section 10 approval applies to all structures, including associated excavation, filling, rechannelization, or any other modification affecting a navigable water of the United States. The proposed Project would trigger this law owing to the rehabilitation of structures and dredging within the West Waterway, a navigable waterway.

#### 3.3.1.6 CITY OF SEATTLE STORMWATER CODE; SEATTLE MUNICIPAL CODE, CHAPTERS 22.800–22.808

The City of Seattle Stormwater Code (Stormwater Code) contains regulatory requirements that provide for and promote the health, safety, and welfare of the general public. Specific technical requirements, criteria, guidelines, and additional information are provided in the five-volume City of Seattle Stormwater Manual. Volume 2 of the manual, Construction Stormwater Control, provides guidance and requirements for project construction and applies to projects within City limits.

#### 3.3.1.7 CITY OF SEATTLE ENVIRONMENTALLY CRITICAL AREAS ORDINANCE

On March 27, 2006, the City of Seattle completed the first major update to environmentally critical areas (ECAs) regulations and policies first adopted in 1990. These regulations address how development on and adjacent to Seattle's ECAs should be regulated. The new ordinance went into effect on May 9, 2006. Regulations governing ECAs in the City of Seattle are contained within Chapter 25.09 of the Seattle Municipal Code (SMC). ECAs include steep slope, landslide-prone, and liquefaction-prone areas; abandoned landfills; flood-prone areas; riparian corridors; wetlands; and fish and wildlife habitat areas.

Grading in environmentally critical areas must be completed or stabilized by October 31 of each year unless an exception is permitted by the Director (SMC 25.09.060). Soils engineering studies are required for development in areas subject to liquefaction, and appropriate mitigation measures must be implemented through the requirements of SMC Title 22, Subtitle VIII, Grading and Drainage Control, SMC Title 22, Subtitle I, Building Code and other applicable regulations (SMC 25.09.100).

*Discussion.* The City of Seattle Environmentally Critical Area Maps (DCI 2016a) identify the Terminal 5 area as having liquefaction-prone soils. Liquefaction zones are considered environmentally sensitive but not ECAs, and require special development considerations. Grading in any ECA would be completed and these areas stabilized by October 31 of the year during which construction would occur. In addition, areas within 100 feet of the ordinary high water mark in the Project area are also ECAs. If necessary, the Project would make use of Environmentally Critical Areas Exemption/Grading Season Extension process to conduct grading work after October 31, in response to schedule needs.

### 3.3.2 AFFECTED ENVIRONMENT

Terminal 5 is located in the Duwamish estuary where the mouth of the Duwamish River flows into Elliott Bay and Puget Sound. It is located on historical fill in the southwest portion of Elliott Bay, west of the West Waterway of the Duwamish River. The Duwamish River originates in the Cascade

Mountains and drains to Elliott Bay in the Puget Sound. The large river, 65 miles in length, is called the Green River upstream of Tukwila (River Mile 12) and the Duwamish River downstream to Elliott Bay. The West Waterway and the East Waterway comprise the principal deep draft cargo vessel navigational access areas in south Elliott Bay and are separated by Harbor Island. Vessels use the West Waterway for cargo transport, fishing, and recreational boating.

The West Waterway is primarily saltwater at depth, but it receives freshwater flows from the Duwamish River that create lower salinity conditions near the surface. Dredging and development since the early 1900s have substantially altered nearshore environments in the West Waterway. The original aquatic area habitat in the Project area has been either filled or dredged, and the entire area is highly modified from original delta conditions. There is no remaining historic/native tidal marsh, mudflat, emergent vegetation, or riparian vegetation within the West Waterway.

Existing shoreline conditions in the West Waterway consist of over-water pile-supported wharves, fenders, riprap slopes, seawalls, and bulkheads associated with marine industrial and commercial use. Approximately 62 percent of the West Waterway shoreline contains over-water wharves located above riprap slopes. The eastern margin of the West Waterway directly across from Terminal 5 includes a constructed sediment contamination cap, with intertidal and subtidal areas composed of imported clean aggregate and sand, with slopes between approximately 3:1H and 6:1V (Horizontal: Vertical), approximately 1,450 feet long.

Before the 1900s, much of the West Waterway upland property consisted of tide flats, which were filled to create usable land for commerce and industrial activities, including railroad yards, rail transfer, wood treatment facilities, steel scrap storage, shipbuilding facilities, and a municipal and wood waste landfill. As a consequence, the fill activities and former industrial activities resulted in the release of hazardous substances at several locations at or near Terminal 5 and impact the adjacent water bodies including the West Waterway.

### 3.3.2.1 SURFACE WATER

The West Waterway is included in Ecology's 303 (d) Water Quality Assessment for the following Category 5 parameters: cadmium and mercury in sediment; polychlorinated biphenyls (PCBs) in tissue samples; and dissolved oxygen and bacteria in the water column. Potential sources of the listed West Waterway Category 5 parameters include urban and industrial stormwater, Duwamish Waterway discharge, Elliott Bay aquatic area conditions, legacy contamination from past industrial uses and activities, and discharges from commercial and recreational vessels. This assessment results in an "impaired waters" designation and requires additional monitoring and actions under the Industrial Stormwater General Permit (ISGP). These requirements include "effluent limits" and sediment sampling.

Stormwater drainage at Terminal 5 includes an on-site system of below grade collection treatment, and discharge utilities, comprised of 11 drainage basins, each discharging the West Waterway and Elliott Bay as Terminal 5 site conveyances, separate from adjacent urban and industrial uses and activities. The location of the drainage basins and outfalls are shown in Figure 1, which also indicates stormwater structure types and stormwater pipe types. The drainage system at Terminal 5 primarily



consists of gradually sloped (one to two percent) impervious pavement directing stormwater to a network of catch basins and lateral collectors (referred to as “trench drains”) connecting to a sub-grade network of aggregating conveyance pipes, and discharging via outfalls to the West Waterway and southwest Elliott Bay. The Terminal 5 marine cargo facility includes approximately 650 offset, gravity separation catch basins, connecting to approximately 18.5 miles of pipe network conveyed to 11 outfalls. Six oil/water and coalescing plate separators are present in addition to the gravity separation catch basins. The separators serve specially designed, confined drainage areas at the site, including all maintenance and repair areas, cargo handling equipment parking areas, container and equipment wash areas, the site’s fueling location.

The Terminal 5 marine cargo **upland use** area includes approximately 197 acres. The entire publicly-owned Terminal 5 site upland area, including the Terminal 5 marine cargo facility, includes approximately 290 acres. The northwest portion of Terminal 5, area not committed to marine cargo use, receives limited stormwater run-off from impervious pavement at the CEM and Pier Two open storage use area, and from the public shoreline access area at the north margin of the combined Terminal 5 site.

In addition, substantial stormwater drainage from the Longfellow Creek is conveyed in sub-grade pipe systems through the Terminal 5 site to discharge in the southwest corner of the West Waterway, at the southeast margin of the Terminal 5 marine cargo site, and to the southwest Elliott Bay, at the northwest margin of Terminal 5 site. Longfellow creek, an urban stream that is piped under the industrial properties in its lowest reaches, drains approximately 3,000 acres of the Delridge valley in West Seattle and crosses the southeast corner of Terminal 5 before discharging to the West Waterway. This primary pipeline for Longfellow Creek has inadequate capacity to convey peak flows and a secondary outlet named the Longfellow Creek Overflow Line (LFOL) was completed in 1999. The LFOL is located entirely underground. A weir installed in the creek north of the SW Spokane Street corridor diverts high flows into the LFOL. The LFOL passes the western edge of Terminal 5 to discharge to Elliott Bay in subtidal aquatic area at the northwest margin of port-owned Terminal 5 property. Portions of Terminal 5 drain to Longfellow Creek and the LFOL, but the majority of Terminal 5 drains directly to the West Waterway through nine active stormwater outfalls.

#### 3.3.2.2 GROUNDWATER

Groundwater in the Project area is generally found between 6 to 9 feet below ground surface (bgs) and is tidally influenced. Contaminated groundwater may be present beneath the proposed Project area. The presence and source for any contaminants are likely associated with the placement of fill materials during the filling of aquatic lands in past decades to construct the present upland area at the Project site; spills or releases from previous operations at the facility; and migration of contaminated groundwater from upgradient sources. Groundwater monitoring data obtained from the area south of W Marginal Way SW indicated the potential presence of low concentrations of arsenic and several volatile organic compounds. The Project area is used for industrial purposes and groundwater is not withdrawn for domestic or industrial uses.

### 3.3.2.3 MARINE WATER QUALITY

The West Waterway is primarily saltwater but receives freshwater flows from the Duwamish River. Dredging and development since the early 1900s have substantially altered nearshore environments in the West Waterway. Water depths in the West Waterway are principally deep subtidal, approximately 40 to 60 feet below MLLW. Salinities are estuarine to marine, generally ranging from 12 to 28 parts per thousand (ppt), depending on freshwater inputs from the Duwamish River and seasonal vertical mixing.

### FISHING VESSEL USE

Aquatic area in Elliott Bay and the Duwamish Waterway includes Treaty-protected “usual and accustomed” fishing area for the Muckleshoot Indian Tribe and the Suquamish Tribe. Treaty fishing access is consistent with past federal government treaties and subsequent court decisions. Treaty fishing is an ongoing activity, and thus, a baseline condition within this area. Members of the Muckleshoot Indian Tribe and Suquamish Tribe harvest chinook, coho, pink, and chum salmon and steelhead in Elliott Bay, the East and West Waterways, and the Duwamish Waterway during summer, fall, and winter of each year, generally from August through February. West Waterway aquatic area adjacent to Terminal 5 is an active set net fishing area. Elliott Bay is used by drift net fishers. Tribal Treaty fishing activities are not limited to fin-fish and include harvest of crab, shrimp and other shellfish.

### CARGO VESSEL OPERATIONS

Terminal 5 operates as a cargo transshipment facility. Fueling facilities at the terminal are in compliance with current policies and regulations. BMPs are required by NPDES permits and are followed in accordance with regulations.

### RECREATIONAL BOATING

The West Waterway is used by recreational boaters traveling between Elliott Bay and the Duwamish River.

### 3.3.2.4 DREDGING

Dredging necessary for navigational access to vessel berths adjacent to the rehabilitated wharf would include excavation of deep subtidal sediments, beneath previously dredged and maintained vessel berth areas. Approximately 235,400 square feet of area (5.38 acres) adjacent to Terminal 5 would be dredged to a Project depth of –55 feet mean lower low water (MLLW). An additional 1 foot of advanced maintenance dredge would be completed beyond the Project depth in critical and shoaling areas to avoid frequent redredging. The required Project depth would be to –56 feet MLLW. Between 44,000 to 48,000 cubic yards of sediment would be removed from the Project area.

The berth area sediments at Terminal 5 have been tested per the Dredged Material Management Program (DMMP) requirements prior to proposed maintenance dredging in 1991, 1996, 2008, 2009, 2013, and most recently in 2014. Historically, the sediments tested in 1991, 1996, and 2009 were found to be suitable for open-water disposal. Some of the sediments from 2008 and all of the sediments from 2013 were dredged and disposed of at an upland facility because they were

determined to be unsuitable. The sediment surface exposed by dredging (known as the Z-layer), did not meet the antidegradation policy in 2009 or 2013, and was capped with a 6-inch layer of clean sand.

In 2014, sediments within the proposed berth deepening dredge footprint at Terminal 5 were sampled and tested per the DMMP to assess the materials' suitability for open-water disposal. The results showed that the only exceedances of DMMP criteria were in two surface samples, which slightly exceeded the dioxins/furans low end criterion of 4 nanograms per kilogram (ng/kg toxicity equivalent; Puget Sound background) but were below the high end of 10 ng/kg toxicity equivalent. These sediments were deemed still eligible for open-water disposal since the volume weighted average of material to be dredged was less than 4.0 ng/kg. Therefore, all proposed dredged sediments are eligible for open-water disposal. The Z-layer samples were tested and did not exceed the DMMP screening levels (USACE 2015). Therefore, the new sediment surface is expected to comply with the antidegradation policy.

### 3.3.3 IMPACTS

#### 3.3.3.1 NO-ACTION ALTERNATIVE

Under the No-Action Alternative, surface water, groundwater, and marine water quality at Terminal 5 would likely remain at existing levels. Cargo vessels would continue to operate at the facility and only minor alterations, including routine maintenance and repair work, would be conducted as necessary. The site would continue to meet existing regulatory requirements and BMPs would continue to be followed in accordance with regulations.

The site would see continued improvements to water quality as the requirements of the ISGP are implemented. However, by not removing the creosote-treated timber piles, creosote from those piles would remain in the environment.

#### 3.3.3.2 ALTERNATIVE 2

Alternative 2 proposes modification of existing container facilities, including cargo wharf rehabilitation, berth deepening, and water/stormwater and electrical utility capacity improvements. The cargo marshalling yard area, upland of the rehabilitated cargo wharf, would be redesigned and reorganized to provide economies in cargo operations and on-site cargo flow and movement. Changes to existing Terminal 5 facilities would accommodate increased annual container cargo transshipment capability at the site to approximately 1.3 million twenty-foot equivalent units (TEUs). Refer to Chapter 2, for a detailed description of work proposed for Alternative 2.

### CONSTRUCTION

The proposed Project would require work over, in, and adjacent to the West Waterway, and has the potential to affect water quality. The proposed Project includes rehabilitation of the existing wharf and dredging of sediments in the West Waterway to increase berthing depths adjacent to the wharf. The proposed Project does not include discharge of waste materials to marine waters in the adjacent West Waterway.

Potential water-related impacts resulting from the proposed Project also include control and management of dewatering effluent that might result from excavations extending into groundwater, control and management of stormwater runoff during construction activities and control of any releases of debris or sediments into the West Waterway during dredging and wharf rehabilitation activities. Potential impacts from construction are described in more detail below.

#### SURFACE WATER

Potential water-related impacts resulting from the proposed upland Project elements include dewatering effluent that might result from excavations extending into groundwater, stormwater runoff during construction activities, and releases of debris or sediments into the West Waterway during upland construction and wharf rehabilitation activities.

Upland redevelopment can expose soils that can be carried by water or wind into adjacent stormwater drains or surface water and increase turbidity. Storage of extracted piles on uplands (until disposal) can lead to release of sediment-laden water to surface waters. Spills of materials during construction, such as petroleum fluids, might occur and negatively impact water quality.

The proposed Project does not require surface water withdrawals or diversions. The Project does not include discharge of waste materials to the aquatic area in the West Waterway.

If not properly controlled through the use of BMPs, pollutants that might be expected in discharge from the site include sediment increases or decreases, pH, and petroleum products. Soil erosion or sheet erosion can cause turbid (muddy) stormwater when the sediment contacts rainwater; this is the most common and visible form of construction stormwater pollution. If not properly controlled with BMPs, soil erosion and the resulting sedimentation produced by construction activities can impact the environment, damaging aquatic and recreational resources, as well as aesthetic qualities. Common examples of the impacts of erosion and sedimentation include the following:

- Silt fills culverts and storm drains, decreasing capacities and increasing flooding and maintenance frequency.
- Sediment causes obstructions to surface water bodies requiring dredging to restore navigability.
- Nutrient loading from phosphorus and nitrogen attached to soil particles and transported to surface water bodies can cause a change in the water pH, algal blooms, and oxygen depletion, leading to eutrophication and fish kills.
- Turbid water replaces aesthetically pleasing, clear, clean water in surface water.
- Eroded soil particles decrease the viability of macroinvertebrates and food chain organisms, impair the feeding ability of aquatic animals, clog gills of fish, and reduce photosynthetic potential.
- Sediment-clogged gravel diminishes fish spawning and can smother eggs or young fry.

The sources of other commonly encountered construction stormwater pollutants include materials and chemicals used during day-to-day construction activities, such as concrete pouring, paving, truck and heavy equipment operation, and maintenance activities.

#### GROUNDWATER

The proposed Project would not require groundwater to be withdrawn from water wells used for drinking water or other purposes. Water from demolition and construction activities would not be directly discharged to groundwater. The proposed Project does not include any discharge of waste material to groundwater at the site. The Terminal 5 upland is completed covered with asphalt. Removal of asphalt for pile installation on the uplands, pavement repair, or utility construction could lead to hazardous material spills entering the soil and reach groundwater (see Section 3.5). BMPs would be followed to minimize that possibility.

#### IN-WATER ENVIRONMENT (MARINE)

There would be potential temporary short-term impacts due to an increase in small vessels in the waterway that would carry material and equipment to the construction Project site. Vessels would be used for dredging, transportation of Project debris, dredged material, and equipment. The movement of these additional vessels could potentially result in debris or fuel leakage in the waterway.

It is the policy of agencies to require replacement of creosote-treated wood pilings with steel or concrete pilings, where possible, because creosote contains polycyclic aromatic hydrocarbons (PAHs), which include carcinogens. The removal of creosote-treated wood piles would decrease the amount of creosote in the environment, and is a beneficial impact. However, it is reasonable to assume that PAH concentrations in the water column would be elevated for a short period of time throughout the duration of the wood piling removal. The elevated PAH concentrations would likely be greatly reduced within a few tidal cycles. The long-term consequence is likely to be beneficial because of improved water quality.

Temporary increases in turbidity would be caused by suspended sediments during pile removal and pile driving activities, cutting of concrete piles, toe-wall installation, and deposition of clean sand fill following removal of the treated wood fender pilings. Turbidity impacts would be monitored and minimized using BMPs and the net effect would be short-term (minutes to an hour or two) and localized.

#### DREDGING

Dredging activities have the potential to affect water quality in the West Waterway. Dredging of the sediment can increase turbidity, and temporarily release sediments and chemicals to the water. Although the sediment exposed by dredging could briefly release chemicals into the water column, sediments in the dredge prism, once completed, meet the Sediment Quality Standards (SQS).

Dredging and pile driving would produce localized impacts on water quality in the form of elevated turbidity plumes that would last from a few minutes to several hours. Elevated turbidity plumes from dredging are likely to occur in the immediate vicinity of Terminal 5 and may extend throughout the outer portions of the West Waterway. Turbidity that results from dredging activities is typically of much less magnitude than increases caused by natural storm events (Nightingale and Simenstad 2001). Dredging activities would be controlled by BMPs intended to minimize releases from entrained sediment in the dredging bucket to the marine environment.

Disposal of all dredged sediments removed as part of the Project would be consistent with the requirements of DMMP, DNR, Ecology, USACE, EPA, and other agencies with jurisdiction.

## OPERATIONS

### ***Surface Water***

Yard improvements considered in Alternative 2 include predominantly electrical, stormwater, and potable water utility new installations, as well as repair and maintenance of existing systems. Ground repairs and maintenance activities involving deep cold grinding and asphalt concrete overlays would occur over a portion of the facility on areas in poor pavement condition from previous work. Approximately 20 acres of storage yard would be converted to a higher density grounded container storage serviced by diesel rubber-tired gantry (RTG) cranes to move cargo. Up to 11,000 linear feet of concrete runways for the RTG cranes would be added to modernize cargo handling equipment in a portion of the storage stacks.

Vehicles and equipment used for facility operations would entail the use of fuels, oils, lubricants, and other petroleum-related products within the proposed Project area. These potentially hazardous materials would be subject to applicable local, state, and federal regulations and guidance pertaining to use, handling, and storage, including BMPs and monitoring under the ISGP. No increase in exposure of the materials or risks of fire or explosion is anticipated. Management of toxic and hazardous substances would be consistent with rules and regulations, and operations would not cause the release of toxic or hazardous substances.

### ***Groundwater***

Alternative 2 operations do not propose to inject any water or waste materials directly into groundwater. The existing pavement provides a working surface of sufficient strength for cargo handling equipment, trucks and container box stacked storage, and other cargo. Parts of the impervious surface also serve as cap over contaminated sediments that prevent negative environmental impacts due to resuspension, transport, and redeposition, and isolate the contaminated sediment from the surrounding environment. Monitoring of the pavement cap areas is required.

### ***In-Water Environment (Marine)***

The number of vessels using the terminal would decrease compared to the No-Action Alternative. However, there would be long-term operational impacts due to larger commercial vessels in the waterway, which could impact access and navigation. Impacts may include the following:

**Vessel Maneuvering.** Vessels maneuvering near the terminal may generate waves that could churn and locally mobilize sediment. The movement of water from vessel propellers and assist tugs could also move sediment from the bottom of the waterway (known as scour). A Thruster Impact Analysis (Moffatt & Nichol 2015) found that the potential scour risk is up to four feet of scour for berthing and unberthing operations for the larger vessels. This activity would increase turbidity and release sediment and chemicals to the water column. Sediments, both pre- and post-dredging, meet the SQS, and resuspension and movement of material in the area of the berth should not impact sediment chemistry.

**Fueling.** The existing fueling facilities would continue to be used in accordance with current policies and regulations. BMPs would continue to be followed in accordance with regulations.

### 3.3.3.3 ALTERNATIVE 3

#### CONSTRUCTION

The potential construction impacts to water in Alternative 3 would be similar to Alternative 2.

#### OPERATIONS

The potential operational impacts to water in Alternative 3 would be similar to Alternative 2, except it is more likely that higher container throughput may require more aggressive operational treatment BMP approaches.

### 3.3.4 MITIGATION MEASURES

#### 3.3.4.1 NO-ACTION ALTERNATIVE

##### CONSTRUCTION

##### ***Surface Water***

Under the No-Action Alternative, the proposed Project would not be constructed. However, it is anticipated that in the future, the Port would pursue marine terminal development at the site consistent with the Port's comprehensive scheme. At this time, no construction is proposed other than minor maintenance and repair and stormwater upgrades.

##### ***Operations***

Terminal 5 would continue to have coverage under and comply with the ISGP. The ISGP authorizes stormwater discharges from Terminal 5 that are consistent with the thirteen special conditions and twenty-five general conditions, and ISGP compliance involves several key actions, including developing an operational Stormwater Pollution Prevention Plan and implementing mandatory operational source controls, structural source controls, operational mitigation measures, and treatment BMPs. The Stormwater Technical Memorandum (Volume II, Appendix D) describes the requirements of the ISGP. Some level of stormwater treatment would be required. Project design and operation would further evaluate and incorporate, as appropriate, the information provided in the Stormwater Technical Memorandum.

#### 3.3.4.2 ALTERNATIVE 2

The design features and BMPs proposed are intended to avoid or minimize environmental impacts during construction and operations, and those required by agency standards or permits are assumed to be part of the proposal and have been considered in assessing the environmental impacts to water resources.

## CONSTRUCTION

### **Surface Water**

An NPDES construction permit would likely be required and standard construction BMPs would be used to control and manage stormwater runoff during Project construction activities. The BMPs would be implemented in general accordance with Ecology's *2012 Stormwater Management Manual for Western Washington* (Ecology 2012), and would also be consistent with the City of Seattle Stormwater, Grading, and Drainage Code requirements. BMP implementation, a spill prevention, control, and countermeasures plan (SPCC plan), and other additional requirements included as part of the Port's stormwater permit would mitigate any potential adverse impacts on stormwater runoff quality and control.

General BMPs may include those listed below:

- In-water work would be conducted only during the in-water work window that is ultimately approved for this Project.
- Project construction would be completed in compliance with Washington State Water Quality Standards (Washington Administrative Code [WAC] 173-201A), including those listed below:
  - Petroleum products, fresh cement, lime, concrete, chemicals, or other toxic or deleterious materials would not be allowed to enter surface waters.
  - There would be no discharge of oil, fuels, or chemicals to surface waters, or onto land where there is a potential for reentry into surface waters.
  - A SPCC plan would be prepared by the contractor and used during all construction operations. A copy of the plan with any updates would be maintained at the work site.
  - The SPCC would outline BMPs, responsive actions in the event of a spill or release, and notification and reporting responsibilities, Project site security, site inspections, and training.
  - The SPCC would outline the measures to prevent the release or spread of hazardous materials found on site or encountered during construction but not identified in contract documents including any hazardous materials that are stored, used, or generated on site during construction activities. These items include, but are not limited to, gasoline, diesel fuel, oils, and chemicals.
  - Applicable spill response equipment and material designated in the SPCC would be maintained at the job site.

### **Groundwater**

If groundwater dewatering is needed for construction, the control and management of the resulting water would be implemented in general accordance with the procedures described in the document *Soil and Groundwater Management and Restoration of Engineered Environmental Controls – Terminal 5 Remediation Areas, Seattle, Washington*, dated April 27, 2011 (Windward 2011), and in applicable regulatory requirements and approved BMPs. Implementing these procedures would mitigate any potential adverse impacts resulting from construction dewatering that might be needed.



***In-Water Environment (Marine)***

Potential mitigation measures for scour included monitoring, creating a mitigation plan if scour was observed, and/or covering the scour area with cobbles to protect the sediments. At a minimum, the Port may implement a scour monitoring program to observe and track any scour trends.

Vessels would be required to follow all appropriate regulations for fueling, ballast water, and sewage disposal.

Over-water work BMPs include typical construction BMPs for working in, over, and near water, and these would be applied, including activities such as the following:

- Checking equipment for leaks and other problems that could result in the discharge of petroleum-based products or other material into waters of the West Waterway.
- Corrective actions taken in the event of any discharge of oil, fuel, or chemicals into the water. These actions would include the following:
- Beginning containment and cleanup efforts immediately upon discovery of the spill and completing them in an expeditious manner, in accordance with all applicable local, state, and federal regulations. Spill response would take precedence over normal work. Cleanup would include proper disposal of any spilled material and used cleanup material.
- Ascertaining the cause of the spill and taking appropriate actions to prevent further incidents and environmental damage.
- Reporting spills to Ecology's Northwest Regional Spill Response Office at 425-649-7000.

***Dredging BMPs***

Dredging activities would be controlled by BMPs intended to avoid and minimize potential releases of fugitive materials to the marine environment. More detail on BMPs is provided in the Biological Assessment provided in FEIS, Volume II, Appendix E.

Dredging BMPs would be conducted during the in-water work window that is ultimately approved for this Project. Construction activities would be conducted in compliance with Surface Water Quality Standards for Washington (WAC 173-201A) or other conditions as specified in the water quality certification.

Disposal of all dredged sediments removed as part of the Project would be consistent with the requirements of the DMMP agencies, which include DNR, Ecology, USACE, and EPA, as well as other agencies with jurisdiction. The results of the 2014 sediment sampling completed for DMMP characterization indicated that all of the sediments in the proposed dredge prism are suitable for DMMP open-water disposal. These dredged sediments would be placed into a bottom-dump barge or split-hull barge for transport and placement into the Elliott Bay non-dispersive Open-Water Disposal Site.

## OPERATIONS

### ***Surface Water***

The Port has plans in place for measures to protect the environment and water quality. These plans would be modified as needed to address the increased capacity and throughput at the Port. Personnel would be trained for general environmental awareness, spill management, hazardous waste management, and stormwater inspections in accordance with permits and regulations.

All operating equipment at the site would be subject to NPDES BMPs and SPCC plans implemented to avoid and minimize potential releases to fresh and marine waters of fuel and petroleum products used by construction equipment, both on the upland side and on barges.

Stormwater treatment and improvements would be installed, as needed, to support the operations of the new facility. Final development of the proposed Project would utilize existing stormwater collection, conveyance, treatment, and discharge infrastructure as much as practicable. Similar to current conditions, the proposed Project would convey and treat stormwater runoff for discharge into the West Waterway as currently designed and permitted. Rates of stormwater runoff would be similar to the existing condition.

Any container cargo operation or cargo transportation facility is required to be covered under the ISGP. The Washington State ISGP has benchmarks for effluent leaving the site that are some of the strictest in the nation. Prior to reestablishing container cargo terminal operations, the facility would be reevaluated for the appropriate Level 3 Corrective Actions, requiring a new engineering report. The new engineering report would define treatment options and detailed construction plans for Ecology's review and approval. Upon approval, the stormwater system would be constructed prior to beginning of operations.

### ***In-Water Environment (Marine)***

**Vessel Maneuvering.** Monitoring and maintenance, which may include a localized rock layer in any areas of unacceptable scour, may be necessary.

**Fueling.** BMPs would continue to be followed in accordance with regulations.

**Ballast Water Management.** Ballast water would continue to be managed in accordance with current policies and regulations.

**Vessel Sewage Management.** Ecology is considering establishment of a No Discharge Zone for vessel sewage in all parts of Puget Sound. Cargo ships and tankers using the Port would follow current regulations.

### 3.3.4.3 ALTERNATIVE 3

The construction and operational mitigation measures would be similar to Alternative 2, except that higher container throughput may require more aggressive operational treatment BMP approaches.

### 3.3.5 SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

#### 3.3.5.1 NO-ACTION ALTERNATIVE

Because of the extensive regulations container vessels must comply with and because Port leases require its tenants to comply with all applicable laws, the Port concludes that there would be no probable, significant unavoidable adverse effects to marine water quality related to the No-Action Alternative.

Implementation and compliance with the requirements specified in the City of Seattle Stormwater Manual and the ISGP would result in the mitigation of any potentially significant adverse impacts to stormwater runoff. Therefore, no significant adverse impacts or cumulative impacts are anticipated from the No-Action Alternative.

#### 3.3.5.2 ALTERNATIVES 2 AND 3

Because of the extensive regulations container vessels must comply with and because Port leases require its tenants to comply with all applicable laws, the Port concludes that there would be no probable, significant unavoidable adverse effects to marine water quality related to the proposed Project.

The mitigation measures described above for water quality would ensure that no unavoidable adverse long-term impacts to water quality from construction or operations from either Alternative 2 or Alternative 3 would occur. Therefore, no significant adverse impacts or cumulative impacts are anticipated.

### 3.4 PLANTS AND ANIMALS

The purpose of this chapter is to evaluate the potential impacts of the proposed Project alternatives on plant and animals, including fisheries and aquatic wildlife resources. This section describes the plant and animal resources at the Project site and assesses potential impacts to plant and animal resources that could occur because of the construction and operation of the proposed alternatives. Most potential impacts on biological resources would result from proposed in-water work needed for wharf strengthening beneath the wharf and from dredging adjacent to the wharf in ship berthing areas. This assessment also describes and accounts for the BMPs and mitigation proposed as part of the Project.

Detailed analyses on plant and animal impacts were performed for the Project and are presented in the Biological Assessment in Volume II, Appendix E of this DEIS. This document is titled: *Biological Assessment, Terminal 5 Cargo Wharf Rehabilitation and Berth Deepening, Seattle, Washington, May 6, 2016*, and is available separately for detailed review (Hart Crowser 2016).

#### 3.4.1 REGULATORY CONTEXT

Local, state, and federal agencies regulate developments within aquatic habitats, which would include in-water construction activities at the Terminal 5 area. Numerous permits and authorizations are required; the regulatory framework and processes relevant to the Project are summarized below.

##### 3.4.1.1 FEDERAL

Under Section 10 of the Rivers and Harbors Act, the USACE regulates navigable waters of the United States, which includes all waters within the Duwamish River and Elliott Bay below mean higher high water. Construction of structures and activities that affect the course, conditions, location, or navigable capacity of the river and waterway would require a Section 10 Permit.

Under Section 404 of the Clean Water Act (CWA), the USACE is responsible for maintaining the chemical, physical, and biological integrity of the Nation's waters. Any discharge of dredged or fill materials into jurisdictional waters of the United States may require a Section 404 Permit. This would include dredging and open-water disposal of sediments.

Under Section 7 of the Endangered Species Act (ESA), National Oceanic and Atmospheric Administration (NOAA) Fisheries, and U.S. Fish & Wildlife Service (USFWS) are responsible for providing for the conservation of species that are endangered or threatened and the conservation of the ecosystems upon which they depend. Section 7 consultations are designed to assist federal agencies in fulfilling their duty to ensure that federal actions (such as issuance of Section 10 and 404 permits) do not jeopardize the continued existence of a species or destroy or adversely modify their critical habitat.

NOAA Fisheries is responsible for protecting habitats important to federally managed marine species, including Pacific salmon. Federal agencies must consult with NOAA Fisheries concerning any action that may adversely affect essential fish habitat (EFH) under the Magnuson-Stevens Act. EFH

includes habitats necessary for spawning, breeding, feeding, or growth to maturity, which includes migratory corridors and rearing areas of salmon.

NOAA Fisheries is also responsible for protecting all marine mammals that fall under the Marine Mammal Protection Act (MMPA), which includes those animals listed under ESA and others common inhabitants of Puget Sound such as harbor seal and California sea lions.

The EPA has review and oversight authority over Section 404 Permit decisions under the CWA and the Spill Prevention, Control, and Countermeasure (SPCC) Plan required for oil storage. Facilities with aboveground and underground storage facilities with capacities that would exceed a specific threshold are required to develop and implement an SPCC Plan.

#### 3.4.1.2 STATE

The Washington Department of Fish & Wildlife (WDFW) administers the Hydraulic Project Approval (HPA) program designed to protect fish life and habitat and to ensure projects meet state conservation standards for finfish, shellfish, and their aquatic environment (Chapter 220-110 of the Washington Administrative Code). Rules specify the establishment of a baseline requirement for “no-net-loss” of productive capacity of fish and shellfish habitat in order for a project to be approved.

Ecology administers the 401 Water Quality Certification Program under the CWA allowing the state to approve, condition, or deny projects that may result in a discharge to waters of the United States. Issuance of a 401 Certification means that Ecology has reasonable assurance that the applicant’s project would comply with state water quality standards and other aquatic resources protection requirements under Ecology’s authority.

#### 3.4.1.3 LOCAL

At the local level, the Shoreline Master Program regulates development on City of Seattle shorelines. Regulations include those that protect shoreline ecosystems, respond to pollutant discharges into bodies of water, and encourage water-dependent uses. The ordinance requires the issuance of a Shoreline Substantial Development Permit for any substantial development in the Shoreline District; also, an applicant must obtain a Master Use Permit for any use or change of use in the Shoreline District.

The City of Seattle DCI governs development within environmentally critical areas (ECAs), which include wetlands, riparian corridors, shoreline habitat, fish and wildlife habitat conservation areas, flood-prone areas, abandoned landfills, steep slopes, and other geologic hazard areas. (Seattle Municipal Code, Chapter 25.09). The goal of ECA regulations is to effectively protect these areas and to protect public safety, while allowing reasonable development within the city.

### 3.4.2 AFFECTED ENVIRONMENT

This section describes the general habitat types and characteristics of the Project site. The affected environment description for the Project site applies to all of the alternatives.

#### 3.4.2.1 HABITATS

Habitats within the West Waterway and the Duwamish estuary have been substantially altered by more than a century of urban and industrial development. Between the late 1800s and the mid-1900s, the Duwamish estuary and south Elliott Bay were modified by excavation of intertidal and shallow subtidal areas and adjacent upland fill for the purpose of industrial development. Filled areas were stabilized and protected with dikes, levees, bulkheads, armor/riprap, and other structures. This development replaced approximately 17.6 miles of former shallow river channel, impassible to commercial vessels during low water periods, with approximately 5.2 miles of straightened, deep navigation channel. More than 99 percent of the historic intertidal mud/sand flats, marsh, and forested wetland areas of the Duwamish estuary—downstream of present-day River Mile 5.2— have been removed (King County 2001).

Terrestrial areas are dominated by the flat and nearly 100 percent impervious surface of the Terminal 5 wharf and cargo handling area. This area provides virtually no terrestrial habitat or vegetation. West of Terminal 5 and Harbor Avenue SW is a relatively continuous greenbelt of deciduous and conifer forest occupying approximately 140 acres, separating the terminal from urban residential areas of West Seattle. Industrial uses and warehouses continue along the Duwamish for several miles south of Terminal 5 before transitioning to urban residential areas.

The built and committed marine cargo use area in existing upland, shoreland, and aquatic areas at Terminal 5 includes active cargo, warehouse, and marine industrial operations and does not include significant upland habitat for birds or mammals. Aquatic areas in the adjacent West Waterway provides habitat important to numerous species of resident and migratory fish and wildlife. In recent years, development and construction activities in marine and estuarine locations in Puget Sound have been the subject of increased scrutiny as a result of ESA listings, with particular concern for the life cycle and aquatic habitat requirements of Chinook salmon, steelhead trout, and bull trout.

The terrestrial and marine habitat Project footprint is described in more detail in the Biological Assessment presented in FEIS, Volume II, Appendix E.

#### 3.4.2.2 WEST WATERWAY

The West Waterway is primarily saltwater at depth, but it receives freshwater flows from the Duwamish River that create lower salinity conditions near the surface. Dredging and development since the early 1900s have substantially altered nearshore environments in the West Waterway. The original aquatic area habitat in the Project area has been either filled or dredged, and the entire area is highly modified from original delta conditions. There is no remaining historic/native tidal marsh, mudflat, emergent vegetation, or riparian vegetation within the West Waterway.

Existing shoreline conditions in the West Waterway consist of over-water pile-supported wharves, fenders, riprap slopes, seawalls, and bulkheads associated with marine industrial and commercial use. Approximately 62 percent of the West Waterway shoreline contains over-water wharves located above riprap slopes. The eastern margin of the West Waterway directly across from Terminal 5 includes a constructed sediment contamination cap, with intertidal and subtidal areas

composed of imported clean aggregate and sand, with slopes between approximately 3:1H and 6:1V (Horizontal: Vertical), approximately 1,450 feet long.

The riprap slopes, structural piling, subtidal and intertidal retaining walls, and fender systems provide substrate for algae and sessile invertebrates, though at substantially lower levels of abundance and diversity beneath Terminal 5 because of a lack of light penetration. Bottom sediments in the waterway, pilings, riprap on the slopes, and in the interstices of the riprap revetment provide habitat for benthic invertebrates. Some estuarine and marine fish and subtidal marine invertebrates inhabit and feed at deeper subtidal elevations within the waterway. These are generally more mobile species, capable of avoidance behavior and, therefore, not subject to entrainment in large numbers during dredging operations.

No eelgrass has been observed nor have suitable aquatic area elevations or substrate appropriate for eelgrass growth been documented in the vicinity of Terminal 5 or the West Waterway.

### 3.4.2.3 ANIMAL SPECIES

#### SALMONID USE

Eight species of anadromous salmonids use the Duwamish Estuary primarily as a migratory corridor: Chinook, coho, chum, pink, and sockeye salmon; steelhead trout; sea-run cutthroat trout; and bull trout. Of these species, Chinook and coho salmon and steelhead trout are common in the Duwamish basin, while pink and sockeye salmon, sea-run cutthroat trout, and bull trout are rare.

#### OTHER AQUATIC FISH SPECIES

Non-anadromous fish species documented within the Duwamish Estuary and West Waterway are dominated by estuarine and marine species, with few freshwater species. In surveys conducted by Warner and Fritz, shiner perch were the most abundant species collected in the West Waterway, but their presence is seasonal—appearing in early May, peaking during the summer, declining by fall, and nearly absent by November (Warner and Fritz 1995). Pacific staghorn sculpin, snake prickleback, starry flounder, and Pacific sand lance were also observed at abundances approaching those of juvenile salmonids during their outmigration. Upwards of 33 different species of fish have been documented in the lower estuary, but the above four species, along with shiner perch and juvenile salmonids, comprised over 99 percent of fish collected in the estuary (Warner and Fritz 1995, Stober and Pierson 1984).

#### BIRDS AND MAMMALS

As reported, very little natural terrestrial habitat is present at Terminal 5 and few animal species outside of several passerine birds have been observed. European starling, song sparrow, house finch, house sparrow, American robin, and American crow were documented in the southwest portion of inner Elliott Bay (USACE 1994). Overwintering bald eagles may fly over the general area during the winter. Bald eagle presence and behavior was documented from four locations located immediately northwest of Terminal 5 within inner Elliott Bay. No nests are located within the West Waterway, but birds have been documented to perch on mature trees south of the Duwamish Head

and on dolphins and moored barges in inner Elliott Bay (USACE 1994). The WDFW Priority Habitats and Species (PHS) database has documented bald eagle nests within the Duwamish Head green belt located approximately 1.3 miles northwest of the center of the Terminal 5 cargo marshalling area (WDFW PHS 2014).

The present Terminal 5 facility also includes constructed, artificial nesting opportunities for two bird species, installed at the site to encourage bird use, not for the purpose of fish and wildlife compensation or mitigation. A single osprey nest box has been present at the top of a cargo marshalling yard light pole for more than 15 years. The nest box is occupied seasonally by migratory osprey. The Terminal 5 north shoreline includes elevated nest sites, pole-mounted “nest gourds,” installed by volunteers and the Port, used by migratory purple martins, during the past decade.

Documented seabird use includes alcids (pigeon guillemot and rhinoceros auklet) and several species of diving ducks (common loon, horned grebe, eared grebe, western grebe, surf scoter, and Barrow’s goldeneye), cormorants, and gulls. Marbled murrelet have not been documented within the West Waterway (WDFW PHS 2014).

PHS has also documented California sea lions and harbor seals throughout the West and East Waterways (WDFW PHS 2014). Both species were observed in the West Waterway during the Test Pile Program during the winter of 2016. Southern resident killer whales have not been documented within West Waterway and are not expected to traverse this highly developed area, but occasionally occupy outer Elliott Bay.

#### THREATENED AND ENDANGERED SPECIES

The ESA-listed species that may occur in the proposed Project area include:

- Three listed salmonid species (Puget Sound Chinook salmon, coastal-Puget Sound bull trout, and Puget Sound steelhead)
- Three listed rockfish species (Georgia Basin bocaccio, canary rockfish, and yelloweye rockfish)
- Two additional fish (green sturgeon and eulachon)
- Southern resident killer whale
- One seabird species (marbled murrelet)

The ESA status of each of these species, as well as an analysis of potential aquatic effects of the proposed wharf rehabilitation and berth deepening, are included in the Biological Assessment, available for review in FEIS, Volume II, Appendix E. In addition, within the Biological Assessment, an evaluation of the effects of the proposed Project on essential fish habitat has also been prepared, pursuant to the Magnuson-Stevens Act.

#### 3.4.3 IMPACTS

The potential impacts of the No-Action Alternative and Alternatives 2 and 3 on plants, animals, and their habitats are described in the sections below. Potential impacts are discussed in terms of short-term and long-term direct and indirect effects of Project activities in the Project area, as well



as the net effects of those activities. Net effect is considered to be the overall effect on the species and habitat in the long term.

Impacts that are considered insignificant relate to the size of the impact and include those effects that are undetectable, not measurable, or cannot be evaluated. Impacts that are considered discountable effects are those that are extremely unlikely to occur. Significant effects are those that are likely to occur and can be documented; they may encompass impacts to individual plants or animals or larger population level impacts.

#### 3.4.3.1 NO-ACTION ALTERNATIVE

##### CONSTRUCTION AND OPERATIONS IMPACTS

Under the No-Action Alternative, no improvements would be made to the existing site other than minor alterations, routine maintenance, and repair work, none of which would increase container cargo capacity. Consequently, Project-related impacts on fish and aquatic resources, wildlife, and plant communities, whether adverse or beneficial, would not occur. Fish and aquatic biota that may be at risk on the basis of existing conditions within the affected watersheds would continue to be at risk subject to other programs and management measures or future developments that may be implemented independent of the proposed Project.

#### 3.4.3.2 ALTERNATIVE 2

##### CONSTRUCTION IMPACTS

Several construction impacts are expected to result from Alternative 2, but these would be temporary in nature and would not progress beyond the construction periods. Potential construction-related impacts include noise (both airborne and waterborne), minor impacts on water quality, and habitat modifications. Specific construction-related impacts are presented below.

##### CONSTRUCTION-RELATED WATER QUALITY IMPACTS ON PLANTS AND ANIMALS

Dredging and, to a lesser extent, pile driving would produce localized impacts on water quality in the form of elevated turbidity plumes that would last from a few minutes to a several hours. Elevated turbidity plumes from dredging are likely to occur in the immediate vicinity of Terminal 5 and may extend throughout the outer portions of the West Waterway. Generalized turbidity effects on fish depend on the amount and timing of exposure (NMFS 2004). Because fish present in the Project area have evolved in Pacific Northwest systems that are glacial, or periodically experience short-term pulses of high suspended sediment, they are adapted to such exposures. Increases in turbidity that result from dredging activities are typically of much less magnitude than increases caused by natural storm events (Nightingale and Simenstad 2001).

Temporary turbidity impacts on juvenile salmonids would be highly unlikely and discountable because work would occur during the approved in-water work window for the area when juvenile salmonids are not expected to be present (August 16 through February 15). Adult salmonids could be present year-round in low numbers; however, the extent of turbidity would not be expected to

reach levels higher than natural storm events and impacts can thus be labeled as insignificant. Adult and juvenile rockfish are not expected in the Project area, and impacts would be discountable.

During dredging, suspension of anoxic sediment may result in reduced dissolved oxygen (DO) in the water column as the sediments oxidize, but any reduction in DO above background would be expected to be limited in extent and temporary in nature. Based on a review of four studies on the effects of dredging on DO levels, LaSalle (1988) showed little or no measurable reduction in DO around dredging operations. In addition, impacts on listed fish due to any potential DO depletion around dredging activities would be expected to be minimal (LaSalle 1988, Simenstad 1988).

No impacts on marbled murrelet, other seabirds, or marine mammals would be expected from the short-term, localized turbidity that may occur within the West Waterway.

There is a chance that other short-term water quality impacts could occur related to fuel, contaminant, or debris spills; however, BMPs would be in place to minimize the potential for these to occur and to minimize the effect to listed salmonids and other species if they do occur. These effects are therefore expected to be insignificant.

Long-term impacts from stormwater discharges are expected to be insignificant. The entire Project site as well as the adjoining upland acreage devoted to cargo movement and storage is paved with concrete or asphalt. The proposed Project would not alter or affect drainage patterns in the vicinity of the site. The existing stormwater collection and conveyance system is designed and maintained to minimize discharge of stormwater pollutants generated from impervious surface runoff in accordance with BMPs and regulatory criteria. Stormwater treatment and improvements would be installed as needed to support the operations of the new facility and in compliance of stormwater permits. Rates of stormwater runoff would be similar to the existing condition.

Any container cargo operation or cargo transportation facility is required to be covered under the Industrial Stormwater General Permit (ISGP). The Washington State ISGP benchmarks for effluent leaving the site are comparatively one of the strictest in the nation. Prior to reestablishing container cargo terminal operations, the facility would be reevaluated for the appropriate corrective actions, requiring a new engineering report. The new engineering report would define treatment options and detailed construction plans for Ecology's review and approval. Upon approval, the stormwater system would be constructed prior to beginning of operations.

Physical resuspension of the sediments during dredging would occur during the dredging component of the Project. The resuspension of contaminated sediments has the potential to release these contaminants into the water column and cause acute or chronic toxicological effects on fish species that may be present during dredge activities. Sediments within the proposed dredge footprint at Terminal 5 have been recently sampled and tested for contaminants per the DMMP protocols to assess the materials' suitability for open-water disposal. After testing, analysis, and evaluation, the DMMP Office recently released its determination that all proposed dredged sediments were sufficiently low in contamination that they would be eligible for open water disposal (DMMP 2015). Potential impacts of sediment resuspension to fish, seabirds, or marine mammals

from resuspended sediments would be discountable. With the removal of any contaminated sediments, long-term effects on sediment and water quality would be expected to be positive.

#### UNDERWATER NOISE IMPACTS ON ANIMALS

Increased noise from pile driving and construction may result in avoidance of the Project area by ESA-listed salmonids and other fish species, seabirds, and marine mammals during Terminal 5 construction activities. Of these activities, pile driving is expected to result in the greatest waterborne noise levels. The waterborne sound pressure levels (SPLs) released by impact pile driving have been shown to cause injuries to fish in the immediate vicinity of such activities, with possible behavior-altering sound levels emanating for hundreds of meters. Because of the potential for waterborne noise to cause injuries and behavioral disturbances to fish, seabirds, and marine mammals, federal agencies have adopted Interim Criteria for injury and disturbance thresholds (Stadler and Woodbury 2009).

Proposed impact pile driving at Terminal 5 would include concrete piles, H-piles, and timber pinch piles; these activities would result in waterborne noise. An in depth analysis of the potential effects of waterborne noise on fish, seabirds, and marine mammals was conducted in the Biological Assessment in FEIS, Volume II, Appendix E. These results are summarized in the following sections.

#### FISH

Underwater noise monitoring during the 2016 Test Pile Program at Terminal 5 (Robert Miner 2016) and the use of other agency-approved underwater noise datasets (ICF Jones and Stokes and Illingworth and Rodkin 2009) were modeled using an agency-approved noise attenuation model (NOAA Fisheries Practical Spreading Loss Model). This analysis was then compared to the federal underwater Interim Noise Criteria (Stadler and Woodbury 2009) to predict the potential zones of injury and disturbance to fish. This analysis has shown that potential injury to fish may occur from 46 to 127 meters from driven piles, depending upon the pile type. The largest of these injury zones extends approximately halfway across the West Waterway, potentially exposing fish to levels of noise that may cause injury. However, fish also have enough available aquatic habitat beyond the potential injury zones to avoid exposure to these levels of noise. No blockage of either juvenile or adult salmonid migratory corridors would occur as a result of pile driving (see Volume II, Appendix E, Biological Assessment; Hart Crowser 2016).

To minimize the potential affects of pile driving on ESA-listed salmonid species within the Project area, all in-water activities, including pile driving, would occur during agency-approved work windows (August 16 through February 15), when few juvenile salmonids are expected to occur in the nearshore.

#### SEABIRDS

Proposed impact pile driving may exceed underwater SPLs considered injurious to ESA-listed marbled murrelet and other seabirds for short distances beyond the pile. Using an approved underwater sound attenuation model, existing pile driving acoustic data, and the estimated number of pile strikes, the distance between pile driving activities and injury thresholds were calculated to

occur between 5 and 15 meters from impact driven piles. In addition, the concrete piles that create the largest potential injury zone would be driven approximately 7 meters beneath the wharf (landward of the wharf face), resulting in an underwater noise threshold exceedance within about 8 meters of the face of the wharf. Marbled murrelet typically loaf and feed in quiet offshore areas of Puget Sound. It is unlikely that they would occupy areas of the West Waterway, much less feed and dive within 8 meters of the face of Terminal 5 during a major construction project. In addition, no marbled murrelet have been reported in the West Waterway.

During the Terminal 5 Test Pile Program, small numbers of several other diving seabird species were observed (pigeon guillemot, horned grebe, double-crested cormorant, Barrow's goldeneye), but none came within 50 meters of the pile during active test pile driving operations (Starkes, J., Biologist, Hart Crowser, personal communication, January 2016).

#### MARINE MAMMALS

Proposed pile driving may create SPLs that exceed behavioral disturbance thresholds for marine mammals at distances between 46 and 1,000 meters from the driven pile. Injury thresholds are not predicted to be exceeded. No southern resident killer whales have been documented within the waterway; therefore, it is highly unlikely that the species would be exposed to waterborne noises that exceed the thresholds for disturbance from pile driving.

Two other species of marine mammal—harbor seal and California sea lions—have been documented within the West Waterway. To further minimize the potential for disturbance impacts on these marine mammals from pile driving, an agency-approved marine mammal monitoring program would be implemented during all periods of impact and vibratory pile driving. If marine mammals are observed to approach underwater injury or disturbance zones, pile driving would cease until the animal has left the zone. This type of monitoring program was successfully implemented during the recent Test Pile Program during the winter 2016. No marine mammals were exposed to the modeled impact zones.

No noise-related adverse effects on fish, seabirds, and marine mammals are anticipated from other construction activities in the West Waterway. Underwater dredging noise has been found to be well below effects thresholds (Hart Crowser 2010), and most other construction noises would be airborne.

#### AIRBORNE NOISE IMPACTS ON ANIMALS

Upland construction activities are expected to have low to minimal impacts on plant and animal communities. All construction would occur on the existing paved wharf and there would be no effects on the existing sparse vegetation. Pile-driving activities would produce airborne noise that may temporarily disturb passerine, seabird, and any birds of prey species in the area during the construction period. It would not likely reach known bald eagle perch trees and nests farther to the northwest along Fairmount Avenue SW in West Seattle (USACE 1994, WDFW PHS 2014).

The USFWS has recently determined that impact pile driving of large diameter steel piles may cause the in-air masking of marbled murrelet calls which the birds use to locate one another. Masking

these calls may disrupt the cooperative feeding efforts of birds, reducing their feeding efficiency. No in-air-related adverse effects are anticipated from the upland impact pile driving of 24-inch-diameter steel piles. According to the USFWS, the in-air masking zone for 24-inch-diameter steel piles is 42 meters from the driven pile, but all upland pile driving would occur 38 meters (125 feet) landward from the face of the wharf. Birds would have to occupy areas within 4 meters of the face of the wharf in order to be exposed to in-air masking. It is highly unlikely that listed marbled murrelets or other seabirds would occupy areas this close to the wharf.

#### SUMMARY OF CONSTRUCTION-RELATED NOISE IMPACTS

In summary, the following conclusions can be drawn from the above analyses and studies:

- The impact driving of concrete, wooden pinch, and steel H-piles beneath the existing wharf would not exceed peak SPLs for injury to fish.
- The more conservative accumulated sound criteria may be exceeded within the West Waterway. Since potentially injurious noise levels would not cross the entire waterway, fish that are present would have avenues to avoid the noise and the migratory corridor would not be completely blocked, allowing fish passage through the waterway.
- It is not likely that significant rockfish habitat or use occurs in the waterway.
- Adherence to approved work windows would minimize the number of juvenile salmonids present during active pile-driving operations.
- Pile-driving noise impacts on seabirds and marine mammals would be minimal because impact zones are relatively close to the terminal and animals are not likely to occupy these zones during active construction activities.
- Pile-driving noise effects on installed nest sites are expected to be minimal. Ospreys using the single Terminal 5 nest box are acclimated to marine cargo activity, including cargo cranes and cargo handling equipment. Purple martin swallow nest sites are approximately 3,000 feet distant from pile driving areas; therefore, the nest locations are not expected to adversely be affected by construction noise.

These conclusions indicate that the impact pile driving of piles beneath the existing Terminal 5 wharf may result in low but potentially significant effects on the few ESA-listed and other juvenile salmonids that may be present during the in-water work window. Similar low but significant impacts may occur to other estuarine/marine species that may be present. These would include shiner perch, Pacific staghorn sculpin, starry flounder, and snake pricklyback, which comprise the great majority of fish found in the West Waterway. Small numbers of other fish species could also be exposed (Warner and Fritz 1995). These potential impacts would be temporary, limited to periods of pile driving during the construction period.

The lack of suitable habitat for either juvenile or adult ESA-listed or other rockfish species would result in insignificant effects on these species. ESA-listed green sturgeon and eulachon are not present in the Duwamish Estuary; therefore, no impacts would occur to these species. Impacts on animal species would be insignificant.

#### CONSTRUCTION-RELATED IMPACTS ON HABITATS

Direct and indirect impacts on aquatic habitats would primarily involve proposed dredging activities in deep water from the face of the Terminal 5 Wharf waterward for approximately 150 feet. Dredging would remove benthic organisms over approximately 235,000 square feet (5.4 acres) of deep subtidal habitat adjacent to Terminal 5. However, the existing substrate has been dredged previously, exists in deep-water locations, is subject to propeller scour, and is below the depth that juvenile salmonids would be expected to feed. Adult salmonids are not expected to feed on benthic prey. Forage fish do not spawn in the West Waterway because suitable substrates are lacking and eelgrass is not present. Adult rockfish are not expected to be present in the area, and juvenile rockfish would likely be feeding in shallower waters associated with marine macrovegetation. Thus, while disturbances to benthic habitat would occur as a result of Project activities, due to existing habitat conditions and feeding habits, it is expected that impacts on fish via disturbance of the benthic prey community would be insignificant.

Perturbation of the benthic community would likely be short-term in duration because the community is expected to recover rapidly after dredging, based on the results of numerous studies in Elliott Bay and Puget Sound (McCauley et al. 1977, Swartz et al. 1980, Albright and Borithilette 1981, Romberg et al. 1995, Wilson and Romberg 1999). It should also be noted that at Terminal 5, full colonization of the benthic community would not likely occur because of the potential impacts of ship berthing adjacent to the terminal. Current bathymetric data show areas of propeller scour in the existing vessel berthing areas. Periodic scouring from prop wash may also occur with Alternatives 2 and 3 (Moffatt & Nichol 2015). This will be further discussed in the following section on Operational Impacts on Plants and Animals.

Dredging is not expected to entrain or kill fish. Pressure waves created as the dredge bucket descends would forewarn fish present within the area and would allow individuals time to avoid these mechanisms. In addition, during dredging the clamshell jaws would be open during descent, which should reduce the likelihood of entrapping or containing fish (NMFS 2003). The USACE conducted extensive sampling within the Columbia River over 4 years (Larson and Moehl 1990) and no juvenile salmon were entrained. McGraw and Armstrong (1988) examined fish entrainment rates over 11 years in Grays Harbor and found only one juvenile salmon was entrained.

Indirect short-term effects, such as a reduction of prey species for juvenile salmonids, are expected to be insignificant since recovery of the benthic community is expected to occur quickly. Short-term effects on the benthic community would also occur in waters deeper than -47 feet MLLW, which is deeper than juvenile salmonids feed while in the nearshore.

For these reasons, it is anticipated that both the impacts on the prey community as a result of proposed dredging and any subsequent effects on fish would be insignificant.

Long-term direct effects would be expected to be positive because construction activities would result in a net reduction of over-water structure. The Project proposes to remove approximately 8,500 square feet (0.20 acres) of over-water structure at the face of the terminal with the removal of the deck between the fender and bull rail (Table 3.4-1). This would provide additional unshaded

aquatic habitat within the West Waterway, increasing aquatic productivity and removing migratory impediments for salmon.

In addition, the removal or cutting off at the mudline of over 200 treated timber piles (creosote or ACZA) would eliminate a potential contaminant source within the water column. The proposed addition of over 400 concrete structural piles and 500 composite sheet piles would provide a net gain of approximately 436 square feet of pile footprint beneath or at the face of the existing wharf, but this would be more than offset by the total reduction in over-water coverage (8,500 square feet; Table 3.4-1).

The pile driving of over 2,000 piles per year has the potential to eliminate benthic habitat or increase impediments to the juvenile salmon migratory corridor. These effects would be minimized given that all concrete and pinch piles would be driven beneath the existing wharf where little light penetration occurs. The scientific literature has consistently shown that juvenile salmon migrating along shorelines avoid areas of intense shading caused by over-water structures (Nightingale and Simenstad 2001), so it is highly unlikely that outmigrating juveniles would travel beneath the wharf. H- and sheet piles would be located at the face of the wharf, but driven to near the mudline in deep waters between -42 and -50 feet MLLW where juvenile salmonids are not likely to feed.

*Table 3.4-1: Summary of In-water and Over-water Structures Removed and Added*

Structure	Number	Diameter (Size)	Removal/ Installation Technique	In-Water Pile Footprint (Square Feet)	Over-Water Coverage (Square Feet)
<b>STRUCTURES REMOVED</b>					
Timber fender piling	227	15-inch (average)	Vibratory extraction	311	N/A
Timber/metal deck between fender and bull rail	N/A	2,900 lineal feet	Above-water demolition	N/A	8,500
Timber pinch Pile	57	15-inch (average)	Vibratory extraction	None, driven to mudline	N/A
Concrete Structural Pile	171	16.5-inch	Vibratory extraction	290	N/A
Concrete Structural Pile	74	20-inch	Cutoff at mudline	162	N/A
Steel Fender Pile	36	16.5-inch	Vibratory extraction	54	N/A
Steel Structural Pile	100	18-inch	Cutoff at mudline	213	N/A
<b>Total Pile removal</b>	<b>665</b>	N/A	N/A	N/A	N/A
<b>Total In-water Footprint Removal</b>	N/A	N/A	N/A	<b>1030</b>	N/A
<b>Total Over-water Structure Removed</b>	N/A	N/A	N/A	N/A	<b>8,500</b>
<b>STRUCTURES ADDED</b>					
Timber Pinch Piles	3,000	15-inch (average)	Vibratory and Impact	No in-water driven to mudline	N/A
Composite Sheet Piles (H pile and sheet pile)	500 H- piles; 500 sheet piles	Each H-pile estimated at 0.3 square feet	Vibratory and Impact	146	N/A
Concrete Structural Pile	420	24-inch	Impact	1,320	N/A
<b>Total In-water footprint addition</b>	N/A	N/A	N/A	<b>1,466</b>	N/A
<b>NET CHANGES</b>					
<b>In-water Pile Footprint</b>	N/A	N/A	N/A	<b>+436</b>	N/A
<b>Over-water Structures</b>	N/A	N/A	N/A	N/A	<b>-8,500</b>

OPERATIONAL IMPACTS ON PLANTS AND ANIMALS

**Lighting**

Lighting at Terminal 5 primarily consists of high-mast light poles and exterior building lights. Lighting along the wharf is primarily comprised of light poles and directional lighting mounted on ship-to-shore (STS) cranes associated with Port operations at the site. For Alternative 2, lighting would be maintained throughout the terminal yard by preserving the existing light poles and building lights. Lighting along the wharf would maintain the same levels, but existing light poles that interfere with new STS crane operations would be removed and replaced with new lights installed landward along with directional lighting. The single osprey nest platform, located at the top of a high-mast at



southeast Terminal 5, may be affected by changes in a light pole location; however, the nest box would be reinstalled if any relocation of the particular light pole is required.

Though total light levels on the wharf would remain the same, moving some lights landward and installing additional directional lighting may decrease the amount of direct light that hits the water. Studies on Lake Union have found that juvenile salmon are attracted to direct nighttime light sources on the water and congregate around them. It is surmised that such behavior may make fish more vulnerable to predation; studies have recommended the reduction of direct lighting on the water (Celedonia et al. 2009). Since nighttime lighting conditions on aquatic habitats would be little changed to improved, impacts on juvenile salmon and other aquatic resources would be insignificant. Similarly, impacts of lighting on wildlife species would be the same as the No-Action Alternative.

#### ***Vessel Traffic***

Existing vessel calls at Terminal 5 have averaged about 18 per month, approximately one call every two days, with a maximum capacity of 6 calls per week. For Alternatives 2 and 3, the number of vessel calls is anticipated to decrease to about 4 calls per week, representing a 20 percent reduction of large vessel traffic in and out of the terminal (Moffatt & Nichol 2016a).

The anticipated reduction in large vessels would likely improve habitats within the West Waterway by reducing migratory impediments to juvenile salmon. Juvenile salmon typically outmigrate along naturally lighted shorelines with low-gradient beaches, or in the surface layers mid-river (Simenstad et al. 1982). They typically avoid migrating under dark over-water structures (Nightingale and Simenstad 2001) such as the conditions found beneath the Terminal 5 wharf. These behavioral traits suggest that outmigrating juveniles would either travel along the shore opposite of Terminal 5, since this area provides a relatively low gradient shoreline, or mid-river waterward from the Terminal 5 face.

#### ***Bow/Stern Thruster and Prop Wash***

Prop wash from propellers and bow thrusters have the potential to cause scour and erosion to existing bottom habitats within the dredge prism adjacent to the Terminal 5 wharf. Bow thrusters have the potential to cause scour in three areas: beneath the wharf along the existing slope, on the proposed new toe-wall at the face of the wharf, and along with propeller wash directly beneath the vessel (PIANC 2015).

Scour and erosion analyses indicate that scour would not occur beneath the wharf along the riprapped slope; the current rock is adequately sized for the larger vessels that may call at Terminal 5 after Project construction (Moffatt & Nichol 2016a). Because of limited light penetration, the slope beneath the existing wharf would have a relatively small population density of benthic invertebrates and marine vegetation; therefore, impacts to this area of bottom habitat would be insignificant.

Toe-wall analyses indicate a moderate risk of bottom sediment scouring next to the wall. If scour is documented, bottom protection in the form of 6-inch-diameter quarry spalls (approximately 12 to 18 inches thick) would be recommended (Moffatt & Nichol 2016a). This would displace the benthic community that typically resides in the sandy silt that currently exists. However, the new larger

substrates would not be subject to scour and therefore the invertebrate community, though a different species composition, would likely become more established. Potential impacts on the benthic community in the vicinity of the toe-wall would be considered discountable.

The initial assessment of main propeller flow velocities indicates that there is a high potential for significant scour under the vessel if the main propellers are used excessively. Potential scour is escalated when the main propeller(s) are used during low tides and deep draft vessels are at berth. The area potentially impacted is approximately 100 feet or greater waterward from the wharf face due to the main propeller location and probable jet flow direction. This distance away from the wharf is unlikely to impact wharf stability (Moffatt & Nichol 2016a), but may provide a chronic level of scour that prevents full colonization of the benthic community within the dredge prism.

However, existing bathymetry adjacent to the terminal face indicates that there are localized scour pockets with existing vessel operations. The scour is offset from the wharf face approximately 120 feet indicating the vessel has pulled away from the wharf before using the main propellers (Moffatt & Nichol 2016a). Because periodic scouring would occur in any vessel scenario, likely resulting in an abbreviated benthic community in bottom sediments, impacts of the proposed vessel berthing and dredge prism would be considered discountable.

All of these potential impacts would occur in deep water in excess of -56 feet MLLW. As reported, juvenile salmon are not expected to rear or feed in waters this deep; therefore, impacts on juvenile salmon would be discountable.

Vehicles and equipment used for facility operations would use fuels, oils, lubricants, and other petroleum-related products within the proposed Project area. These potentially hazardous materials would be subject to applicable local, state, and federal regulations and guidance pertaining to use, handling, and storage. Agency-required BMPs would also be in place to minimize spills and exposure of surface waters to hazardous materials. No increase in exposure of the materials or risks of fire or explosion is anticipated; therefore, potential impacts to water quality from hazardous substances would be discountable.

Though the volume of container traffic handled at Terminal 5 would increase, the amount of vessels berthing at the wharf would decrease (Moffatt & Nichol 2016a). With the new deeper dredge depth to accommodate larger vessels and fewer vessel berths, it is anticipated that water quality impacts from turbidity caused by sediment resuspension would remain similar to the No-Action Alternative. Therefore, impacts to water quality from vessel operation would be insignificant.

#### ***Water Quality***

Vehicles and equipment used for facility operations would use fuels, oils, lubricants, and other petroleum-related products within the proposed Project area. These potentially hazardous materials would be subject to applicable local, state, and federal regulations and guidance pertaining to use, handling, and storage. Agency-required BMPs would also be in place to minimize spills and exposure of surface waters to hazardous materials. No increase in exposure of the materials or risks of fire or explosion is anticipated; therefore, potential impacts to water quality from hazardous substances would be discountable.

Though the volume of container traffic handled at Terminal 5 would increase, the amount of vessels berthing at the wharf would decrease (Moffatt & Nichol 2016a). With the new deeper dredge depth to accommodate larger vessels and fewer vessel berths, it is anticipated that water quality impacts from turbidity caused by sediment resuspension would remain similar to the No-Action Alternative. Therefore, impacts to water quality from vessel operation would be insignificant.

#### 3.4.3.3 ALTERNATIVE 3

Alternative 3 consists of the same proposed work listed for Alternative 2 with the addition of further improvements within upland areas of Terminal 5. The existing container yard would be enlarged through relocation or demolition of operations buildings. The truck gate may be relocated and the existing intermodal rail yard reconfigured with additional rail lines. Further details are presented in Section 2. No additional in-water work or upland pile driving is proposed for this alternative. No expansion of the existing wharf terminal or cargo handling footprint would occur.

#### CONSTRUCTION IMPACTS

Since no additional in-water work is proposed for Alternative 3, impacts on aquatic resources would be the same as evaluated for Alternative 2. Demolition and relocation of buildings and the construction of additional rail lines within the existing cargo handling footprint would likely increase airborne noise during the construction period. However, noise generated by these activities would fall well below those of the proposed upland and in-water pile driving common to both alternatives. All upland work would occur within the existing Terminal 5 footprint, which has virtually no terrestrial habitat functions. Therefore, no additional impacts on aquatic and terrestrial biological resources would occur with upland activities proposed under Alternative 3.

#### OPERATIONAL IMPACTS

##### ***Lighting***

Alternative 3 would remove the majority of, and possibly all, existing lighting throughout the terminal and install new lighting only on the exterior of buildings, in the truck turnaround areas, and along the wharf, landward of the STS cranes. No adverse effects relating to artificial nest sites at Terminal 5 are anticipated.

Similar to Alternative 2, landward movement of lighting may decrease the amount of direct light on the water, therefore possibly improving habitat conditions for juvenile salmon. Impacts on juvenile salmon and other aquatic resources would be insignificant. Impacts of lighting on wildlife species would be the same as with the No-Action Alternative.

##### ***Vessel Traffic***

For Alternatives 2 and 3, the number of large vessel calls is anticipated to be reduced by 20 percent. (Moffatt & Nichol 2016a). This anticipated reduction would likely improve habitats within the West Waterway by reducing migratory impediments to juvenile salmon.

As with Alternative 2, because an abbreviated benthic community is likely present in sediments for any vessel scenario, impacts from the proposed berthing of larger vessels would be considered low.

Benthic impacts would occur in deep water in excess of -56 feet MLLW. Juvenile salmon are not expected to rear or feed in waters this deep; therefore, impacts on juvenile salmon or their prey resources would be discountable.

#### ***Bow/Stern Thruster Prop Wash***

The number of vessel calls would be the same in Alternatives 2 and 3; however, a higher proportion of the largest vessels berthing at the terminal would occur with the Alternative 3 scenario. Bow thruster analyses showed that the flow velocities of the 14,000-twenty-foot-equivalent-unit (TEU) vessel are generally greater than equal to the larger 18,000 TEU vessel. This is because of the larger dimensions of the 18,000 TEU vessel; the geometry of the larger vessel provides a greater buffer between the thruster outlet and the toe-wall and mudline (Moffatt & Nichol 2015). These analyses indicate that there would likely be little difference in the amount of scour and erosion within bottom habitats for Alternative 3 relative to Alternative 2. As with Alternative 2, impacts on the benthic community would be insignificant because of the abbreviated invertebrate communities likely present adjacent to the terminal.

#### ***Water Quality***

Impacts to water quality from wharf operations and vessel **berthing's** would be the same in Alternatives 2 and 3. Under Alternative 3, a larger proportion of larger vessels would berth, likely increasing wharf operations, but the BMPs and applicable regulations would remain in place to minimize hazardous inputs to surface waters. Impacts to surface waters from Alternative 3 berthing and upland activities would be discountable to insignificant.

### 3.4.4 MITIGATION MEASURES

#### 3.4.4.1 NO-ACTION ALTERNATIVE

No mitigation measures are proposed with the No-Action Alternative since the Project would not be constructed.

#### 3.4.4.2 ALTERNATIVE 2

No mitigation measures are proposed for the Project. Proposed impacts would be associated with construction and limited to the construction period. Long-term impacts are likely to be beneficial, based on the smaller post-construction wharf footprint and fewer total vessels that would berth at Terminal 5. During the construction period, several conservation measures and BMPs would be employed to minimize or eliminate the potential for construction-related impacts. Conservation measures and BMPs are presented as follows.

#### CONSTRUCTION MITIGATION

Measures to avoid and minimize potential adverse effects on plant and animal communities and, as a result, function as conservation measures, may include a combination of the following:

- All in-water work would be limited to periods determined appropriate by participating state and federal agencies to avoid potential adverse effects on migratory salmon.

- The Project design includes no expansion of the existing cargo wharf and a modest reduction in “overwater footprint” (8,500 square feet) associated with removal of the existing treated wood fender system and installation of alternative above-water vessel/wharf fender equipment. This is expected to decrease shading within the West Waterway and increase algae and invertebrate production, as well as reduce migratory impediments to salmon.
- Over 200 treated wood piles would be removed, thus removing a potential source of contamination from the Project area. Nearly 400 additional concrete and steel piles would also be extracted or cut off at the mudline. Since these are located in existing intertidal and subtidal aquatic areas, this action would remove over 1,000 square feet of man-made structures from the West Waterway. Though an additional 1,466 square feet of piles would be added, this would be more than offset by the reduction in total over-water coverage (Table 3.4-1).
- An agency-approved water quality monitoring plan has been developed and would be implemented during construction to verify compliance with water quality conditions of the Section 401 Water Quality Certificate, USACE Permit, and Hydraulic Project Approval.
- All equipment would be inspected daily to ensure that it is in proper working condition.
- The contractor would be responsible for the preparation and implementation of a SPCC Plan to be used for the duration of the Project. The SPCC Plan would be submitted to the Project engineer prior to the commencement of any construction activities. A copy of the plan with any updates would be maintained at the work site by the contractor. The contractor would also maintain at the job site the applicable equipment and materials designated in the SPCC Plan.
- Excess or waste materials, petroleum products, fresh cement, lime or concrete, chemicals, or other toxic or deleterious materials would not be allowed to enter the West Waterway.

#### OPERATIONS MITIGATION

##### ***Lighting***

No mitigation measures are expected to be required since lighting levels between all alternatives, including the existing conditions of the No-Action Alternative, would be similar. For Alternative 2, light fixtures would use directional shields and internal louvers to minimize light reflection onto the waterway.

##### ***Water Quality***

No mitigation measures are expected to be required since all Alternative 2 operational activities would occur in upland areas and fewer vessels would berth. Water quality would remain the same as the No-Action Alternative.

#### 3.4.4.3 ALTERNATIVE 3

#### CONSTRUCTION MITIGATION

Construction-related mitigation measures would be the same as presented for Alternative 2, since the same level of in-water work is proposed.

#### OPERATIONS MITIGATION

No mitigation measures are expected to be required since lighting levels between all alternatives, including the existing conditions of the No-Action Alternative, would be similar. For Alternative 3, light fixtures would use directional shields and internal louvers to minimize light reflection onto the waterway.

### 3.4.5 SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

#### 3.4.5.1 NO-ACTION ALTERNATIVE

No significant unavoidable adverse impacts would occur with the No-Action Alternative since the Project would not be constructed under this alternative.

#### 3.4.5.2 ALTERNATIVE 2

With the implementation of proposed conservation measures and BMPs, significant adverse impacts to aquatic habitats and species would be avoided. As presented in the Biological Assessment, in-water pile driving has the potential to expose a small number of juvenile salmonids and resident marine fish to noise at levels above underwater noise criteria for fish. To minimize these potential, in-water pile driving would be conducted during agency-approved work windows specifically timed to avoid the juvenile salmon outmigratory period. However, the few juvenile salmon that may be present, as well as marine species, would be exposed.

#### 3.4.5.3 ALTERNATIVE 3

Similar to Alternative 2, with the implementation of proposed conservation measures and BMPs, significant adverse impacts to aquatic habitats and species would be avoided. As presented in the Biological Assessment, in-water pile driving has the potential to expose a small number of juvenile salmonids and resident marine fish to noise at levels above underwater noise criteria for fish (FEIS, Volume II, Appendix E).

This assessment concludes that the proposed Project, with any alternative (accounting for mitigation), would not result in significant adverse impacts to plant and animal resources.

### 3.5 ENVIRONMENTAL HEALTH

This section evaluates the potential impacts of the Terminal 5 Improvements Project proposed alternatives on environmental health.

#### 3.5.1 REGULATORY CONTEXT

Although not expected to be required, management or cleanup of industrial contamination at the proposed Project area would be conducted under the requirements of the Washington State Model Toxics Control Act (MTCA) regulations (Chapter 173-340 of the Washington Administrative Code [WAC]). Characterization of current site conditions and ongoing and future cleanup activities at the Terminal 5 site are, and would be, conducted under two overarching regulations: the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and MTCA. Implementation of these regulations is administered by the EPA and Ecology. The proposed Project area must comply with MTCA, but portions of the Project area may also be required to comply with CERCLA.

SEPA also requires an evaluation of “releases or potential releases to the environment affecting public health such as toxic hazardous materials” associated with the proposed action.

#### 3.5.2 AFFECTED ENVIRONMENT

Before the 1900s, much of Terminal 5 consisted of tide flats, which were filled to create usable land for commerce and industrial activities, including railroad yards, rail transfer, wood treatment facilities, steel scrap storage, shipbuilding facilities, and a municipal and wood waste landfill. The type of fill material used in the various fill activities is not completely known. The upland area has been used for various industrial purposes, including railroad yards, rail transfer, wood treatment facilities, steel scrap storage, a municipal and wood waste landfill, and shipbuilding facilities.

The fill activities and former industrial activities resulted in the release of hazardous substances at several locations at Terminal 5. The affected environment for environmental health is described in more detail below.

The Port of Seattle (the Port) redeveloped Terminal 5 (known as the Southwest Harbor Redevelopment Project) into a marine cargo terminal in 1999. As part of the redevelopment project, the Port completed extensive subsurface evaluations of soil and groundwater at Terminal 5 locations. These evaluations identified contaminants at concentrations above regulatory cleanup levels on the upland portions of the terminal. Contaminants included polychlorinated biphenyls, carcinogenic polycyclic aromatic hydrocarbons, total petroleum hydrocarbons, and metals. The uplands of Terminal 5 were divided into the following five Remediation Areas (RAs; RA-1 through RA-5) in 1994 and 1995:

- Burlington Northern/Buckley Yard and Spokane Street Properties (RA-1)
- Salmon Bay Steel (RA-2)
- Seattle Steel Incorporated (SSI; RA-3)

- Pacific Sound Resources Superfund Site (RA-4)
- Lockheed West Shipyard No. 2 (RA-5)

Figure 3.5.1 shows the boundaries of each RA with respect to the proposed Project area. The cleanup actions for RA-2, RA-3, RA-5, and a portion of RA-1 (Burlington Northern/Buckley Yard) were conducted via consent decrees between Ecology and the Port. The consent decrees formalized the cleanup action process related to the releases of hazardous substances to soil at Terminal 5. The cleanup actions conducted on the remaining portion of RA-1 (Spokane Street Properties) were conducted as an independent remedial action in general accordance with MTCA.

Cleanup actions for RA-4 were conducted under the Superfund program with EPA oversight. The cleanup actions included removal of select locations of contaminated soil and capping remaining soil contamination that was found to be protective of human health and the environment. In addition, a slurry cut-off wall was constructed at RA-4 to minimize shallow groundwater flow. Institutional controls have been implemented in the RAs and include deed restrictions to limit public access, to prevent use of groundwater as a drinking water source, and to control any future excavation activity that might occur. A groundwater monitoring program was implemented at RA-1 through RA-3 and RA-5 to ensure compliance with applicable MTCA cleanup standards. In 2011, Ecology determined that groundwater data did not show any contaminants exceeding MTCA cleanup standards. Groundwater monitoring at RA-4 is being overseen by EPA. It is unlikely that the proposed Project would impact soil and groundwater in the RAs.

Soil and groundwater data used to characterize the Project area indicate that there could be potential for encountering contaminants in soil and groundwater during construction activities. Groundwater monitoring data collected from the area south of W Marginal Way SW indicate the potential presence of arsenic and several volatile organic compounds in the vicinity of the proposed primary electrical substation. Soil data collected from the Project area during cleanup of the RAs indicate that there is potential to encounter petroleum-contaminated soil during construction of the primary electrical substation and associated underground utility lines.



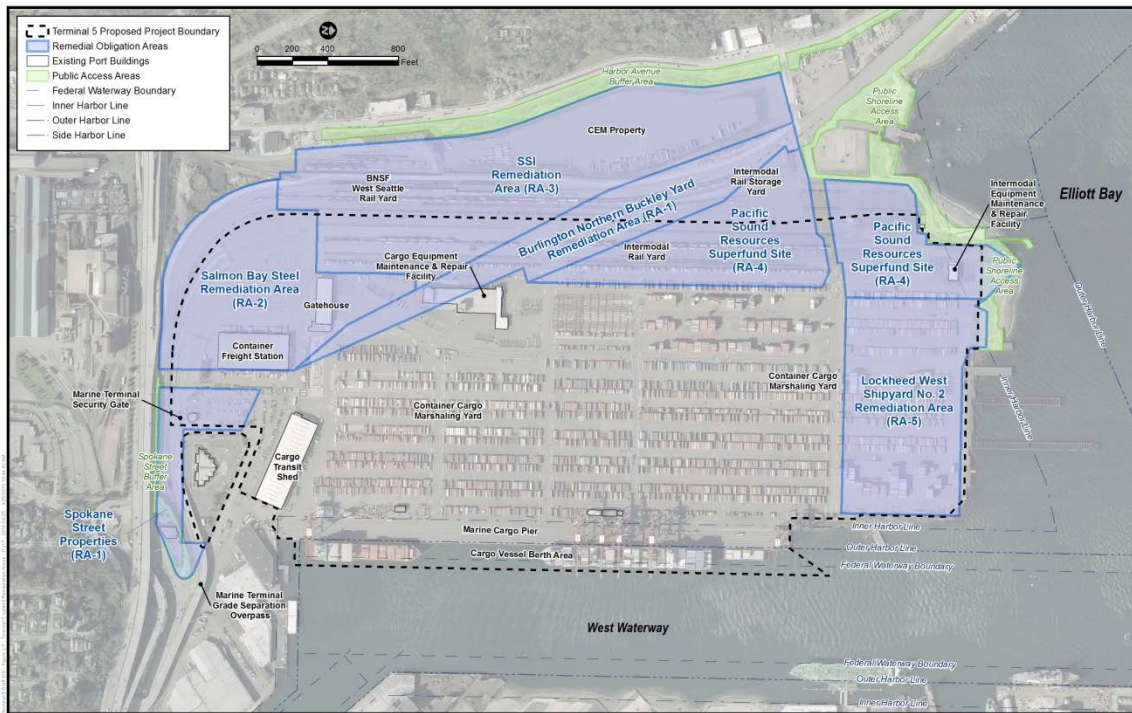


Figure 3.5.1: Terminal 5 Upland Remediation Areas

### 3.5.3 IMPACTS

#### 3.5.3.1 NO-ACTION ALTERNATIVE

##### CONSTRUCTION AND OPERATIONS IMPACTS

Terminal 5 is currently paved or covered by impervious surfaces, which prevents direct contact with buried contaminants and minimizes infiltration of stormwater into contaminated soil and release of volatiles into air. Institutional and engineering controls assist with the long-term management of soil and groundwater with contaminants at concentrations greater than the cleanup levels. Under the No-Action Alternative, existing uses at Terminal 5 would continue under current conditions with only minor alterations and routine maintenance and repair work. No significant impacts are expected.

#### 3.5.3.2 ALTERNATIVE 2

##### CONSTRUCTION IMPACTS

Excavation and dewatering activities associated with upland construction proposed for Alternative 2 have the potential for exposing and handling of contaminated soil and groundwater that might be present beneath some Project areas.

Vehicles and equipment used for both construction activities and subsequent facility operations would include the use of fuels, oils, lubricants, and other petroleum-related products within the proposed Project area. These potentially hazardous materials would be subject to applicable local, state, and federal regulations and guidance pertaining to use, handling, and storage. No increase to exposure of the materials or risks of fire or explosion is anticipated.

Sediments within the proposed dredge footprint at Terminal 5 have been analyzed consistent with DMMP requirements. Preliminary results show that exceedances of DMMP criteria were limited to two locations in substrate newly exposed by the proposed berth-deepening dredging. Disposal of all dredged sediments removed as part of the Project would be consistent with the requirements of the DMMP, DNR, Ecology, USACE, EPA, and other agencies with jurisdiction.

The current Project area is paved and existing environmental contamination is covered by impervious surfaces. Alternative 2 proposes to retain the surface covering that currently prevents direct contact with contaminants in soil or groundwater and reduces infiltration of stormwater through contaminated soil. Therefore, it is anticipated that most environmental health impacts associated with these Project elements would be minor.

Other elements of the proposal include the demolition of structures, grading, construction of lighting pole foundations, and installation and upgrades of utilities and stormwater conveyance piping. Such intrusive activities in some areas of the site have the potential to encounter, expose, or excavate buried contamination. In most cases, existing investigation data allows the Port and its contractors to avoid areas of buried contamination or to anticipate and effectively manage contaminated material. Potential intrusive activities include the following: Removing pavement; demolishing structures; grading the site; and excavating or exposing contaminated soil containing volatile fuel constituents. If not managed correctly during construction, there could be an increase in leaching of contaminants by exposing contaminated soil to precipitation. These activities could also potentially contaminate stormwater and could require construction worker health and safety measures, such as those required by WAC 296-843.

Construction of elements requiring excavations, such as foundations or utilities, may require dewatering (drainage) of excavations. Alternative 2 may affect receiving waters if construction of below-grade structures and utilities require dewatering and if the groundwater is not managed appropriately. Monitoring, and potentially treatment, of dewatering discharges may be needed to address this impact. If contaminated groundwater is pumped, it must be managed in accordance with Ecology regulations and the City of Seattle's municipal wastewater discharge requirements.

Disposal of materials would require characterization to determine the potential presence of contaminated soil and/or asphalt concrete generated as part of site clearing, grading, or general excavating in order to select an appropriate off-site disposal facility.

Construction can also result in the release of hazardous materials to the environment if proper protective measures are not followed. Fuel spills can occur during mobile fueling of heavy equipment. Hydraulic oil leaks are not uncommon on large construction sites, and a typical leak results in the release of 5 to 30 gallons of hydraulic oil to the ground, depending on the size of

equipment. Spill prevention and response planning is typically conducted prior to the start of construction to prevent and, if needed, respond to such spills.

Alternative 2 may affect receiving waters if construction of below-grade structures and utilities requires dewatering and if the facility is located in an area where contaminants are present in groundwater. Monitoring and, potentially, treatment of dewatering discharge may be needed to address this impact.

#### OPERATIONS IMPACTS

Operation of the facilities is not expected to affect human health or the environment. No intrusive activities are expected to encounter soil or groundwater once construction has been completed for the Terminal 5 cargo facility. Focused remedial measures performed prior to or during construction are expected to mitigate potential adverse impacts associated with site development within contaminated areas, including exposure of future site users to hazardous substances in soil, groundwater, and air. Groundwater remediation using monitored natural attenuation, which includes institutional controls with compliance monitoring, is expected to continue without change under Alternative 2. Consumption of contaminated groundwater as drinking water is not considered a potential impact because wells are not used and would not be used under future development plans as a source of potable water.

Indirect impacts associated with Alternative 2 include the following:

- Focused cleanup activities within the development area would likely occur sooner than if development were not to take place, resulting in more rapid removal or control of some contaminant sources.
- Unknown contamination may be discovered and addressed during development activities that otherwise would have remained in place and potentially migrated.
- These are positive impacts and do not necessitate mitigation measures.

#### 3.5.3.3 ALTERNATIVE 3

##### CONSTRUCTION AND OPERATIONS IMPACTS

The construction impacts would occur over a larger footprint over the Project area but would be similar to temporary impacts expected from Alternative 2. The operations impact would be similar to Alternative 2.

#### 3.5.4 MITIGATION MEASURES

##### 3.5.4.1 NO-ACTION ALTERNATIVE

##### CONSTRUCTION AND OPERATIONS MITIGATION

No construction or operations mitigation measures are expected to be required for the No-Action Alternative.

### 3.5.4.2 ALTERNATIVE 2

#### CONSTRUCTION MITIGATION

Most of the work is of a shallow nature on the uplands and away from existing RAs. There are no known impacts associated with hazardous materials located in the proposed Project location that cannot be mitigated.

Mitigation measures may be required if contamination is encountered at the site. Potential mitigation measures are discussed below.

#### CLEANUP OF KNOWN CONTAMINATED AREAS AND MANAGEMENT OF HAZARDOUS MATERIALS

Cleanup actions could be implemented under any of the four processes under the MTCA cleanup regulation to properly eliminate or control risks posed by hazardous materials known to be present at the site. Intrusive activities required for construction that encounter contaminated soil would trigger management practices to comply with the MTCA cleanup regulation (WAC 173-340), Dangerous Waste Regulation (WAC 173-303), Solid Waste Handling Standards (WAC 173-350), and water quality requirements such as those for Ecology's Construction Stormwater General Permit and Water Quality Standards for Surface Waters of Washington State (WAC 173-201A). Demolition of structures would include surveys to assess the need to mitigate and manage hazardous materials. Management of known contaminated areas would include preparation of a site-specific work plan that addresses applicable Ecology regulations and a health and safety plan that includes the safety requirements of WAC 296-843, Hazardous Waste Operations. The investigation information would be used to develop construction specifications to effectively manage contaminated soil and groundwater and to properly control risks posed by hazardous materials known to be present at the site. Where excavation for planned utilities may intersect areas of known contamination, the choice to avoid contamination at the design stage or to use cleaned corridors for multiple compatible utilities could reduce the environmental health impacts associated with excavation of contaminated soil.

Construction designs would identify the locations of known soil and groundwater contamination and provide specifications to guide management of contaminated soil and groundwater (testing, treatment, and disposal) to minimize inadvertent release of contaminants to the environment.

#### CLEANUP OF UNANTICIPATED CONTAMINATED AREAS

The Port would develop and implement plans to address unanticipated contamination discovered during construction. The Port routinely implements plans and specifications to deal with unanticipated contamination for its projects. Such plans may include notification requirements in the event suspicious conditions are encountered, and safety procedures, and response actions. The plans and specifications would be designed to provide for worker health and safety and to minimize cost and schedule impacts. The plans would include the safety requirements of WAC 296-843, Hazardous Waste Operations, and response actions that remove, treat, or contain the contamination or, at a minimum, do not preclude future removal, treatment, or containment of the

contamination. The plans would also include spill response measures to address construction-related releases (e.g., a hydraulic oil spill).

#### ACHIEVEMENT OF MTCA-CONSISTENT CLEANUPS

Cleanup action goals would be established and then achieved through removal, treatment, and containment of hazardous materials. MTCA includes provisions to evaluate the most appropriate cleanup method based on evaluation criteria contained in the MTCA regulation. Regardless of the MTCA process used to conduct the investigation and cleanup activities, cleanup actions would require establishing site-specific cleanup standards for mitigation of contaminated areas. As previously discussed, cleanup standards would include cleanup levels and points of compliance. Currently, the RAs at Terminal 5 use MTCA cleanup levels for industrial properties. The MTCA regulation requires that a restrictive covenant be placed on the property deed that restricts future use of the property to industrial uses if cleanup is limited to industrial cleanup levels. The restriction could be removed in the future if a future cleanup action is implemented that achieves unrestricted cleanup levels. For the type of development included in this Project, potential soil contamination could be limited; therefore, MTCA Method A or Method B cleanup levels for unrestricted land uses would likely apply to most cleanup actions undertaken.

#### USE OF ESTABLISHED REMEDIATION MEASURES

Cleanup actions to be applied may involve soil removal in limited areas of soil contamination where access to the soil is not restricted by structures or utilities. Soil would be disposed of at facilities permitted to manage the type of soil that is present at the site and in a manner consistent with the requirements of the Solid Waste Regulations (WAC 173-350) and Dangerous Waste Regulations (WAC 173-303). Soil may be treated in place if removal is not feasible. Containment of contaminated soil may be appropriate for large volumes of soil if it can be demonstrated that exposure to the soil can be effectively managed through capping and institutional controls (e.g., restrictive covenants on the property deed) and that hazardous materials in the soil do not constitute a source of contamination to surface water or indoor air.

#### CONTROL OF DEWATERING IMPACTS

Plans and specifications may require monitoring to assess the quality of dewatering discharges and would provide for treatment, if needed, for compliance with applicable discharge permits for short-term (i.e., construction dewatering) and any long-term (operational dewatering) discharges. If necessary, an investigation would be performed to determine whether excavations which require dewatering would intercept groundwater contamination.

Alternative 2 may affect receiving waters if construction of below-grade structures and utilities requires dewatering and if the facility is located in an area where contaminants are present in groundwater. Monitoring and, potentially, treatment of dewatering discharge may be needed to address this impact.

#### USE OF DUST CONTROL MEASURES

Standard dust control measures (e.g., water application) may be used during construction to limit the generation of airborne dust which, if inhaled by site workers or the surrounding population, could potentially result in exposure of hazardous material.

#### OPERATIONS MITIGATION

No mitigation is expected to be required for Alternative 2.

#### 3.5.4.3 ALTERNATIVE 3

#### CONSTRUCTION AND OPERATIONS MITIGATION

Mitigation would be the same as Alternative 2.

#### 3.5.5 SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

No significant unavoidable adverse impacts are identified for the No-Action Alternative or Alternatives 2 and 3 at the proposed Project site.

### 3.6 NOISE

A Noise Technical Report is provided with detailed information on the noise analysis. See the full report in FEIS, Volume II, Appendix B (Ramboll Environ 2016b). An introduction to noise terminology and descriptors is included in the Noise Technical Report. The regulatory overview is provided below followed by a description of existing conditions.

#### 3.6.1 REGULATORY CONTEXT

##### CITY OF SEATTLE NOISE REGULATIONS AND ZONING

The Project site and the surrounding communities are located within the City of Seattle, Washington, and the noise limits included in the Seattle noise ordinance (Seattle Municipal Code [SMC] Chapter 25.08) apply to noise related to this Project. The SMC sets noise limits based on sound levels and durations of allowable daytime/nighttime operational noise (upper portion of Table 3.6-1) and daytime construction noise (lower portion of Table 3.6-1). These limits are based on the zoning of the source and receiving properties.

The Project site is zoned for Industrial uses and potentially affected sensitive receivers in the Project vicinity are residences on the hillsides west and south of the site. Because this Project would involve construction-related activities only during daytime hours, only the daytime construction noise limits are pertinent to this analysis of the temporary construction noise related to this Project. Seattle's day and night operational noise limits apply to the operations of the facility as described below.

As indicated in Table 3.6-1, the Seattle noise limits are based on hourly sound-energy average equivalent sound levels (Leqs) in addition to not-to-be-exceeded maximum sound level (Lmax) that vary by zoning of the noise source and receiving properties. The Project site is zoned for Industrial uses and the nearby potentially affected sensitive receivers are in residentially zoned areas on the hillsides west and south of the site. As shown in the highlighted cell of Table 3.6-1, this establishes 1 hour Leq sound level limits for operational noise of 60 A-weighted decibels (dBA) during the day and 50 dBA at night, along with hourly Lmax limits of 75 dBA during the day and 65 dBA at night.

The Seattle noise code identifies a number of noise sources or activities that are exempt from the noise limits shown in Table 3.6-1. The following sources are among those specifically exempted:

*“Sounds created by motor vehicles are exempt from the exterior sound level limits (Table 3.6-1), except that sounds created by any motor vehicle operated off highways shall be subject to the exterior sound level limits when the sounds are received within a residential district of the city (SMC 25.08.480), and*

*Sounds created by warning devices or alarms (such as back-up alarms on vehicles) not operated continuously for more than 30 minutes per incident (SMC 25.08.530)”.*

In addition, sounds from the operation of railroads engaged in interstate commerce are exempt from local noise control rules by virtue of a federal preemption of this issue.<sup>14</sup>

*Table 3.6-1: Seattle Maximum Permissible Levels and Construction Noise Limits (dBA)*

Zoning District of Noise Source [25.08.410 & 420 & 425]	Zoning District of Receiving Property <sup>(b)</sup>		
	Residential Day/Night	Commercial	Industrial
<b>OPERATIONAL NOISE LIMITS<sup>(a)</sup></b>			
Residential	55/45	57	60
Commercial	57/47	60	65
Industrial	60/50	65	70
<b>Daytime Construction Noise Limits<sup>(b)</sup></b>			
On-site sources like dozers, loaders, power shovels, cranes, derricks, graders, off-highway trucks, ditchers, and pneumatic equip (maximum+25) [25.08.425 A.1]			
Residential	80	82	85
Commercial	82	85	90
Industrial	85	90	95
Impact types of equipment like pavement breakers, pile drivers, jackhammers, sand-blasting tools, or other impulse noise sources - may exceed maximum permissible limits between 8 AM and 5 PM weekdays and 9 AM and 5 PM weekends, but may not exceed the following limits [25.08.425 B]:			
Leq (1 hour) 90 dBA Leq (30 minutes) 93 dBA Leq (15 minutes) 96 dBA Leq (7.5 minutes) 99 dBA			
<b>Note:</b> The above sound level limits are based on the measurement interval equivalent sound level (Leq) <i>and</i> a not-to-be-exceeded Lmax level 15 dBA higher than the indicated limits. The construction noise limits are based on an hourly Leq, unless noted otherwise for impact equipment.			
(a) The operational noise limits for residential receivers are reduced by 10 dBA during nighttime hours (i.e., 10 PM to 7 AM weekdays, 10 PM to 9 AM weekends) and are displayed for daytime/nighttime hours.			
(b) Construction noise limits apply at 50 feet or a real property line, whichever is greater. Construction noise is limited to the higher levels listed in the lower portion of the table during "daytime" hours only. For purposes of limiting construction noise received in certain zones, daytime hours are defined as 7 AM to 7 PM weekdays and 9 AM to 7 PM weekends for noise received in Lowrise, Midrise, Highrise, Residential-Commercial, or Neighborhood-Commercial zones. For construction projects in all other zones, and for public projects or locations where there are no residential uses within 100 feet, daytime construction hours are defined as 7 AM to 10 PM weekdays and 9 AM to 10 PM weekends.			
Source: Seattle Municipal Code 25.08 - Specific sections indicated.			

<sup>14</sup> 42 United States Code. §4901 et seq. (1972).



#### FEDERAL TRANSIT/FEDERAL RAILWAY ADMINISTRATIONS NOISE IMPACT CRITERIA

Sound level impact criteria applied by two federal agencies for transportation type projects and activities can be used to provide benchmarks for comparison with off-site sound levels. These noise criteria are discussed below.

The Federal Transit Administration (FTA) has defined noise impact criteria for transit and rail projects in the FTA manual entitled "Transit Noise and Vibration Impact Assessment" (FTA 2006).

The Federal Railroad Administration (FRA) applies the same noise impact assessment procedures and impact criteria employed by the FTA. And although the FTA/FRA noise impact criteria are not directly applicable to on-site and near-site rail activities related to the proposed Project, these criteria provide a useful and objective method for assessing potential noise impacts from increases in noise directly attributable to all sources associated with this Project.

The FTA/FRA noise impact criteria apply a sliding scale of impact levels (or thresholds) for project-related noise based on the existing sound levels and the amount of noise a project would contribute Figure 3.6.1. The criteria are based on the land use category of the receiving properties. For this Project, the receiving properties of concern are residences (shown as Category 2 in Figure 3.6.1), and the FRA criteria use the day-night sound level (Ldn) noise descriptor to include consideration of the potential for sleep disturbance.

Based on the FRA impact criteria for increases in sound levels, receiving locations with low existing sound levels can be exposed to greater increases in overall noise, after the addition of project noise, before an impact occurs. Conversely, locations with higher existing sound levels can be exposed to smaller increases in overall noise before an impact occurs.

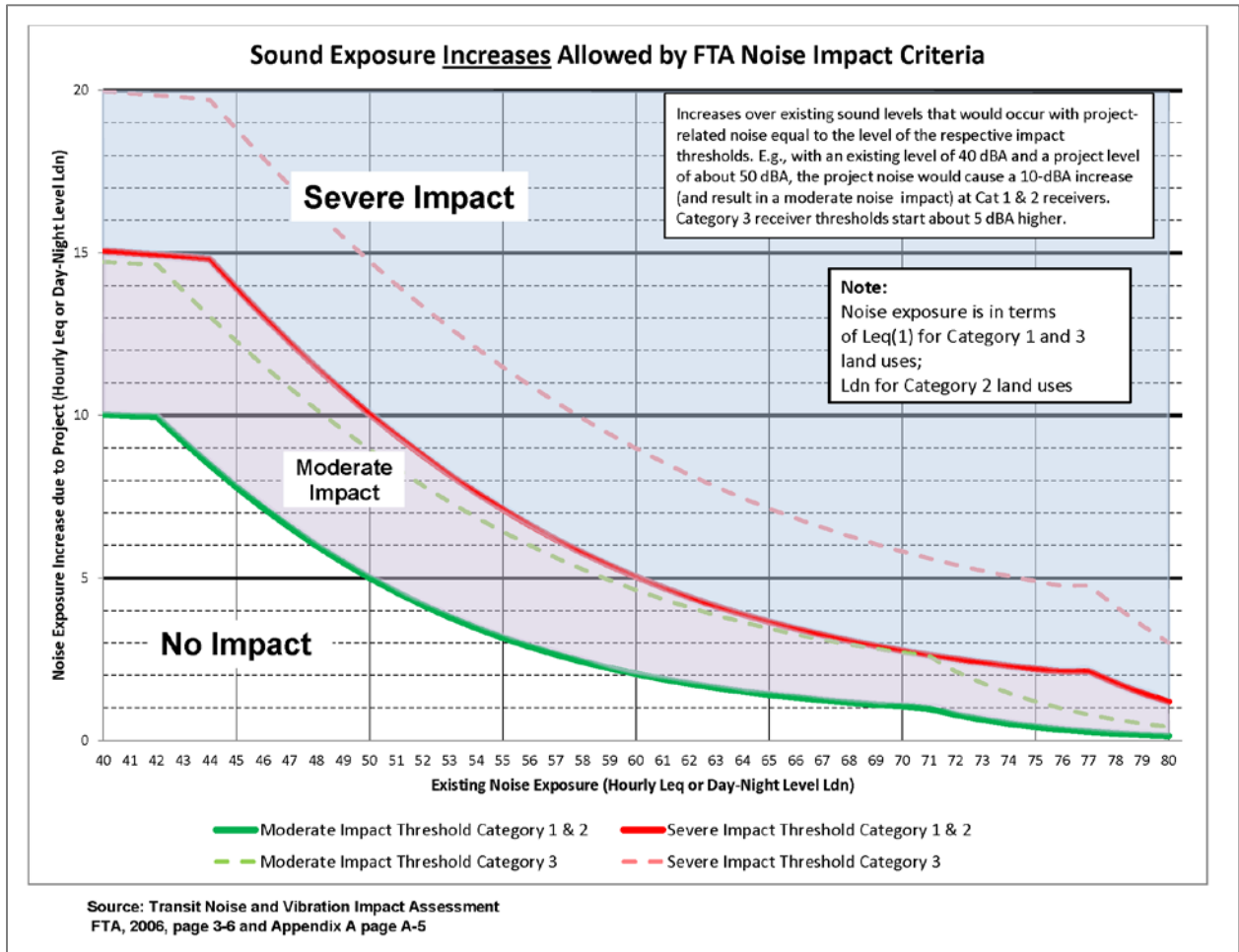


Figure 3.6.1: FTA/FRA Noise Impact Criteria

### 3.6.2 AFFECTED ENVIRONMENT

#### 3.6.2.1 SOUND LEVELS

The Project site is overlooked by hillside residential communities to the southeast and west of the site. Existing acoustic environments at the residential locations nearest the Project site are dominated by roadway traffic noise from the West Seattle Freeway and from surface roads in the area and from a variety of existing industrial uses in the area. Existing industrial uses in the area include operation of a container terminal at the Project site and other heavy industrial uses to the east and west, along with commercial uses along surface streets to the south and west. Ongoing train traffic serving existing industrial facilities in the area also contributes to the existing acoustic environment.

Sound levels in the residential areas to the southeast and west of the Project site have been measured at a number of locations during the past approximately 20 years, including the period preceding and during previous Terminal 5 redevelopment, completed in 1999.<sup>15</sup> The measured sound levels are summarized in Table 3.6-2. Measurement locations are depicted in Figure 3.6.2. Measurement details are provided in the noise technical report found in Volume II, Appendix B of this DEIS.

*Table 3.6-2: Range of Measured Sound Levels in Project Vicinity (dBA)*

SLM Location	Date	Daytime Leqs	Nighttime Leqs	Ldn
SLM1: Hinds Street	2012–2016	62–63 <sup>(a)</sup>	55–57 <sup>(b)</sup>	64 <sup>(c)</sup>
SLM2: 31st Avenue SW	Mid-1990s	58–64	55–60	64
SLM3: Fauntleroy Avenue SW	Mid-1990s	53–61	52–56	60
SLM4: City Light Condos	Mid-1990s	52–59	50–55	60
SLM5: Pigeon Point	1993	70–72	61–72	74

Note:

(a) Measured between 7 AM and noon.

(b) Measured between 11 PM and midnight.

(c) Measured daytime sound levels at the Hinds Street location are similar to levels measured at 31st Avenue SW, so the 31st Avenue SW Ldn is used here to represent the S Hinds Street location.

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<sup>15</sup> Port of Seattle, Southwest Harbor Cleanup and Redevelopment Project - Draft Environmental Impact Statement, January 1994.



Figure 3.6.2: Sound Level Measurement (SLM) and Model Receptor Locations

### 3.6.3 HOTELING VESSEL NOISE

#### 3.6.3.1 VESSEL NOISE AND THE SEATTLE NOISE LIMITS

Container ships usually leave a boiler and/or a ship's service diesel generator operating to supply shipboard power while at port. This action is often called "hoteling," and the power source is not typically audible at a distance.<sup>16</sup> Therefore, noise from hoteling vessels was not included in the model-calculated sound levels identified in the DEIS. However, in response to comments on the DEIS, noise from hoteling vessels was subsequently measured and included in the overall sound levels identified in this FEIS.

To characterize noise from hoteling vessels, a sound level measurement was taken of a 10,000 TEU container ship while hoteling. A larger ship was not available for measurement, so the sound level of a 14,000 TEU container ship while hoteling was estimated by assuming it would emit 1.4 times the sound energy as a 10,000 TEU vessel. The resulting measured sound level for a hoteling 10,000 TEU vessel was 66 dBA at 100 feet. The estimated sound level of a hoteling 14,000 TEU vessel was 68 dBA at 100 feet.

To consider vessel noise, the analysis assumed two 10,000 TEU vessels could be hoteling at any one time under the No Action Alternative, and two 14,000 TEU vessels could be hoteling at any one time under Alternatives 2 and 3.

#### 3.6.3.2 LOW FREQUENCY NOISE

Although noise from hoteling vessels is not expected to substantively add to the overall broadband sound levels from operations at Terminal 5, commenters on the DEIS have expressed concerns that the arrival of larger-capacity container cargo vessels will increase the potential for low frequency noise.

Low frequency noise is typically characterized by noise levels at frequencies less than about 100 hertz (Hz). Noise at those frequencies can be annoying to some people even at relatively low levels.

#### HEALTH EFFECTS

Most health effects due to low frequency noise do not occur until relatively high levels of noise (e.g., greater than 100 dB) occur in frequencies at or below 100 Hz.<sup>17, 18</sup>

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<sup>16</sup> Anecdotal evidence indicates a few, discrete ships that have moored at Terminal 5 have emitted low frequency sound that can be heard by some people on the hillside to the west.

<sup>17</sup> Schust, M. *Effects of low frequency noise up to 100 Hz*. Noise & Health. Volume 6, Issue 23, Pages 73-85. 2004.

Specific potential health effects, and the lower end of the sound levels at which they might occur, follow:

- Aural pain, > 135 dB
- Aural complaints or pressure in the ear, > 100 dB
- Impacts to balance and the vestibular system, > 140 dB
- Respiratory effects, > 150 dB
- Body or hair vibration, > 114 dB
- Blood pressure and heart rate elevation, > 90 dB

Sound levels at the magnitudes shown above are much higher than the levels expected to be generated by the Project, and low frequency noise would not be expected to result in the specific health effects listed above.

Regardless of the unlikelihood of the above health effects due to operations at Terminal 5, excessive levels of low frequency content can result in or magnify annoyance from operational noise, which could potentially lead to elevated levels of stress.

#### ANNOYANCE

Even at fairly low overall sound levels, sound containing a large quantity of low frequency energy can increase annoyance with the sound to an extent greater than one might otherwise expect due to the overall sound level (Berglund, et al. 1996). Neither the City of Seattle nor Washington State provide specific limitations on low frequency content of noise. **Appropriate guidelines for identifying excessive low frequency content from hoteling vessels will be identified in consultation with the City of Seattle Department of Construction and Inspections (DCI) and incorporated into the Operational Noise Management Plan (discussed in Section 3.6.6.1).**

#### 3.6.4 IMPACTS

The noise impact and mitigation assessment conducted for this Project was based on noise modeling using the CadnaA noise model and source-specific sound level data, where possible, to estimate cumulative levels of facility operational noise. The noise analysis of the action alternatives evaluated both compliance with the Seattle noise limits and the potential for noise impacts based on the Project-related changes in the acoustic environment.

Project-related sound levels were predicted at numerous modeling "receptor" locations representing the residences nearest the Project site. The modeling receptors considered in the noise modeling are depicted in Figure 3.6.2 (above).

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<sup>18</sup> Hodgdon, Kathleen. A. Atchley, R. Bernhard. *Low Frequency Noise Study*. Partnership for Air Transportation Noise and Emissions Reduction. Report No. Partner-COE-2007-001. April 2007.

Terminal 5 operations would involve a variety of types of equipment, some of which would produce noise and some of which would not be expected to generate much noise. The expected equipment and the number of pieces involved with the alternative facility configurations are listed in Table 3.6-3. Detailed information about the equipment is provided in FEIS, Volume II, Appendix B.

*Table 3.6-3: Expected Operational Equipment*

Scenario	Shift <sup>(a)</sup>	Facility Cargo Handling Equipment and Mobile Sources								
		Ship	STS Crane	TP	RTG	RMG	Transporter	Hostler	Truck	Train
Alt1 – 647K TEU	1st Shift	2	6	22	3	0	0	67	166/hr	1.3/ day
	2nd Shift	2	6	9	0	0	0	42	0	
Alt2 – 647K TEU	1st Shift	2	8	25	3	0	0	71	166/hr	1.3/ day
	2nd Shift	2	8	12	0	0	0	56	0	
Alt2 – 1.27M TEU	1st Shift	2	8	36	13	0	0	92	327/hr	2.6/ day
	2nd Shift	2	8	29	0	0	0	92	0	
Alt3 – 647K TEU	1st Shift	2	8	0	0	38	32	13	167/hr	1.3/ day
	2nd Shift	2	8	0	0	26	32	13	0	
Alt3 – 1.27M TEU	1st Shift	2	10	0	0	45	40	13	213/hr	2.6/ day
	2nd Shift	2	10	0	0	45	40	13	115/hr	
Alt3 – 1.7M TEU	1st Shift	2	12	0	0	58	48	18	286/hr	3.5/ day
	2nd Shift	2	12	0	0	58	48	18	154/hr	

Note:

(a) First shift is between 8 AM and 5 PM. Second shift is between 6 PM and 3 AM.

Alt = Alternative

hr = hour

RMG = rail-mounted gantry crane

RTG = rubber-tired gantry crane

STS = ship-to-shore

TEU = twenty-foot equivalent unit

TP = top-pick

Source: *Moffatt & Nichol, 2016.*

The facility is expected to only operate one or two 9-hour shifts per day (each containing a 1-hour break). Regularly scheduled "hoot" shift work (i.e., between 3 AM and 8 AM) is not expected to be necessary for any of the alternatives, but hoot shift work could occur occasionally.

Hoot shift operations were not considered in the noise impact assessment, but any such operations would be required to comply with the City of Seattle night-time noise limits.

#### 3.6.4.1 NO-ACTION ALTERNATIVE

##### CONSTRUCTION

The No-Action Alternative would not require more than a nominal amount of construction and maintenance of existing facilities. No construction noise impacts would be expected.

## OPERATIONS

Operation of the terminal under the No-Action Alternative would continue in a fashion similar to the previous uses and activities at the terminal. Under the old permit, the facility was allowed a throughput of up to 647,000 twenty-foot equivalent units (TEUs) or equivalent, with requisite supporting vessels, container handling equipment (CHE), trains, and trucks.

The noise analysis considered whether noise generated by on-site equipment and activities currently allowed under the existing permit would comply with the City of Seattle noise limits (Figure 3.6.2). For this evaluation, the analysis used noise modeling assuming full operation of equipment to estimate resulting sound levels at receptors representing the residences nearest the Project site. As identified in the equipment demand sheets for the No-Action Alternative, no intermodal rail yard or gate operations would be necessary during nighttime hours.<sup>21</sup> Assuming the equipment usage identified in Table 3.6-3 and the timing assumptions in the equipment demand sheet, **the results of the noise modeling** are presented in Table 3.6-4.

As shown in Table 3.6-4, model-calculated operational sound levels associated with the No-Action Alternative facility comply with daytime and nighttime noise limits. This analysis assumed the intermodal rail yard and gate would require only a single, daytime shift.

In the past, occasional nighttime intermodal activity has occurred but typically at lower levels of activity than with full daytime operations. Measured levels of nighttime activity collected at the S Hinds Street and 31st Avenue SW locations (Figure 3.6.2) during nighttime operations in the last several years have indicated that the facility was in compliance with the City of Seattle noise limits. It should be noted that background sound levels during these nighttime measurements were typically higher than sound levels from the facility, although some sources from the facility were audible.

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<sup>21</sup> Moffatt & Nichol, Equipment Calculations, 647,000 TEU Scenario, 02/13/15.



*Table 3.6-4: Model-Calculated Sound Levels – No-Action Alternative (dBA, Leq)*

Receiver	Model-Calculated Sound Level
<i>First Shift (8AM to 5PM), Noise Limit = 60 dBA</i>	
R1 – S Hinds Street	56
R2 – 31st Avenue SW	58
R3 – 30th Avenue SW	59
R4 – Fautleroy Avenue SW	57
R5 – 33rd Avenue SW	57
R6 – City Light Condos	57
R7 – Pigeon Point	55
<i>Second Shift (6PM to 3AM), Most Stringent Noise Limit = 50 dBA</i>	
R1 – S Hinds Street	47
R2 – 31st Avenue SW	49
R3 – 30th Avenue SW	49
R4 – Fautleroy Avenue SW	48
R5 – 33rd Avenue SW	48
R6 – City Light Condos	48
R7 – Pigeon Point	48
<i>Source: Ramboll Environ 2016a</i>	

### 3.6.4.2 ALTERNATIVE 2

#### CONSTRUCTION

Construction activities associated with Alternative 2 would include cargo wharf improvements described in Chapter 2, Section 2.4.3 of this EIS. These activities are categorized here as "typical" construction activities, and pile driving. Noise from construction activities is subject to the City of Seattle noise limits (Table 3.6-1). Facility construction would be limited to daytime hours, and in general terms, the temporary nature of construction coupled with its restriction to daytime hours would reduce the potential for significant impacts from construction activities and equipment. More specifics are discussed below.

**Typical Construction Activities.** Table 3.6-5 shows the overall hourly noise levels (Leqs) from various "typical" construction activities (upper portion of table) and the range of sound levels (i.e., minimum to maximum levels) emitted by individual pieces of equipment (lower portion of table). These levels give an idea of the relative sound levels that can be expected from different kinds of equipment. Existing residences south of the Project site are more than 1,000 feet from the nearest proposed construction activities, and residences west of the site are more than 2,000 feet from the nearest proposed activities. In the absence of intervening terrain, structures, or dense vegetation, sounds from construction equipment and activities (usually point sources) decrease about 6 dBA for each doubling in distance from the source.

As shown in Table 3.6-5, the estimated hourly Leqs from even the nearest construction activities (more than 1,000 feet from the nearest residences) are mostly at or below the noise level limit of 60 dBA that would apply to long-term operational noise. Added to the fact that construction would be temporary and limited to daytime hours, there would be little if any potential for significant noise impacts from "typical" on-site construction activities.

*Table 3.6-5: Noise Levels from Typical Construction Activities and Equipment (dBA)*

Activity	Range of Hourly Leqs		
	At 1000'	At 2000'	At 4000'
Clearing	57	51	51
Grading	50-62	43-56	37-50
Paving	47-62	40-56	34-50
Erection	47-58	40-52	34-46
Types of Equipment	Range of Noise Levels		
	At 1000'	At 2000'	At 4000'
Bulldozer	51-70	45-64	39-58
Dump Truck	56-68	50-62	44-56
Scraper	54-67	48-61	42-55
Paver	60-62	54-56	48-50
Generators	45-56	39-50	33-44
Compressors	48-55	42-49	36-43

*Source: U.S. Environmental Protection Agency 1971.*

**PILE DRIVING**

The proposed Project would require pile driving during construction of the wharf and portions of the trestle. Pile driving would occur over 2,500 feet from the nearest residences west of the site and from 1,000 to 4,000 feet from the nearest residences south of the site. Archived sound level measurement data of pile driving activities indicate that the hourly sound level (Leq) of pile driving at a distance of 100 feet is approximately 86 dBA.<sup>22</sup> The Lmax of pile driving is estimated to be 104 dBA at a distance of 100 feet.

The extent and numbers of piles needed as part of the upgrade of the facility wharf were assessed as part of a specialized pile driving testing program called rapid load testing (RLT). The findings of the RLT program could ultimately lead to reductions in the lengths or numbers of piles needed and to possible reductions in the number hammer pile strikes that would be required using standard pile driving testing methods during the wharf improvements.

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<sup>22</sup> From Ramboll Environ archive of pile driving sound level measurements. The hourly Leq included the placement and driving of two piles in a 1-hour period.

Pile driving sound levels that would be received at residences nearest the site were estimated using the CadnaA noise model. As a worst case scenario, the model assumed three pile driving rigs would operate concurrently, two in water and one on the upland. The resulting sound levels were hourly Leqs in the low 50s to mid-60s dBA and Lmaxs in the mid-60s to upper-70s dBA at the nearest residences. Because of the large intervening distances, estimated pile driving sound levels are greatly reduced at the nearest residences. As with "typical" construction, the model-calculated pile driving sound levels at most locations are below the limits the City of Seattle applies to long-term operational noise and well below the limits applied to impact (e.g., pile driving) sources. Therefore, no significant noise impacts would be expected during construction.

However, even with fairly low levels of pile driving noise, the unique nature of impact pile driving noise can result in the loudest sounds being audible at the residences nearest this activity. This noise could be perceived by some people as intrusive and possibly annoying, but the low overall levels would minimize the potential for impacts.

#### OPERATIONS

Under Alternative 2, operation of the terminal would be similar to the previous operation of the facility relative to the type of cargo handling equipment. The primary difference would be the accommodation of larger ships for loading and unloading using larger and up to 8 ship-to-shore cranes, densification of the operation by stacking more containers instead of placing containers on truck chassis, and increased number and diversity of cargo handling equipment as throughput increased.

At the projected facility opening in 2020, the terminal throughput would be expected to be approximately 647,000 TEUs. At this level of throughput, intermodal rail yard and gate operations are not expected to be necessary at night.<sup>23</sup>

With an expected annual compounded growth rate of 4 percent, the terminal capacity under the Alternative 2 configuration would reach maximum capacity throughput of approximately 1.27 million TEUs in 2030. At this capacity, intermodal rail yard operations would be required at night to accommodate the throughput, but no nighttime gate operations would be expected.

#### **Compliance**

The noise assessment used the assumptions and the equipment usage levels identified in Table 3.6-3 to evaluate whether noise generated by on-site equipment and activities would comply with the City of Seattle noise limits (Table 3.6-1). As discussed in Section 3.6.1, noise from trains is exempt from the limits and was not included in this portion of the analysis. Results of the compliance assessment are presented in Table 3.6-6.

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<sup>23</sup> Moffatt & Nichol, Equipment Calculations, 647,000 TEU Scenario, 02/13/15.

As shown in Table 3.6-6, model-calculated sound levels with the equipment required to handle a throughput of 647,000 TEUs comply with both City of Seattle's 60-dBA daytime limit and 50-dBA nighttime noise limit at residences nearest the site.

Working at a capacity of 1.27 million TEUs, model-calculated sound levels continue to comply with the daytime noise limit of 60 dBA. However, at this throughput, nighttime intermodal rail yard operations would be required, and noise from CHE operating in the intermodal rail yard results in model-calculated sound levels exceeding the 50-dBA nighttime noise limit.

Because model-calculated sound levels with a throughput of 1.27 million TEUs exceed the nighttime noise limits, the analysis went on to consider the following several potential noise mitigation measures in addition to equipment changes:

- Using top-picks with a sound level equivalent to 72 dBA at a distance of 100 feet.
- Constructing a 20-foot-high noise wall along the west side of the entrance and gate area.
- **Additional analysis and** noise modeling indicated the noise barrier would be ineffectual given the topography of the surrounding receivers above the terminal, and using quieter equipment was the only mitigation measure determined to be sufficiently effective to warrant further consideration.
- Although the mitigation using quieter top-picks reduced the model-calculated sound levels somewhat (see the "With Mitigation" column in Table 3.6-6), the model-calculated sound levels continue to exceed the City of Seattle noise limits.

*Table 3.6-6: Model-Calculated Sound Levels - Alternative 2 (dBA, Leq)*

Receiver	Model-Calculated Sound Level		
	647K TEU (~2020)	1.27M TEU (~2030)	
	No Mitigation	No Mitigation	With Mitigation
<i>First Shift (8AM to 5PM), Noise Limit = 60 dBA</i>			
R1 – S Hinds Street	55	57	56
R2 - 31st Avenue SW	58	59	58
R3 – 30th Avenue SW	59	60	59
R4 – Fautleroy Avenue SW	56	57	56
R5 – 33rd Avenue SW	57	58	57
R6 - City Light Condos	56	57	56
R7 - Pigeon Point	54	56	55
<i>Second Shift (6PM to 3AM), Most Stringent Noise Limit = 50 dBA</i>			
R1 – S Hinds Street	48	55	52
R2 - 31st Avenue SW	49	56	54
R3 – 30th Avenue SW	50	57	55
R4 – Fautleroy Avenue SW	49	54	52
R5 – 33rd Avenue SW	49	54	52
R6 - City Light Condos	49	56	53
R7 - Pigeon Point	48	52	51
Note: Shaded cells identify model-calculated sound levels exceeding the applicable noise limit.			
Source: Ramboll Environ 2016a.			

**Noise Impact Due to Sound Level Increases.**

In addition to considering the potential compliance of the facility with the City of Seattle noise limits, the noise analysis also assessed the potential for noise impacts due to Project-related sources (including trains arriving and locomotives departing from the site) increasing the sound levels in the vicinity of the site.

As part of calculating the night sound level (Ldn), the analysis assumed first shift equipment would operate between 8 AM and 5 PM with a 1-hour break, and second shift equipment would operate between 6 PM and 3 AM with a 1-hour break. In addition, the average 1.3 and 2.6 daily train arrivals and departures for throughputs of 647,000 TEUs and 1.27 million TEUs, respectively, were assumed to be split evenly over the first and second shifts.

In the absence of applicable standards or criteria for assessing impacts due to sound level increases, the noise impact assessment applied the FTA/FRA review methodology and noise impact criteria based on the 24-hour day Ldn (see discussion in Section 3.6-1).

The calculated cumulative sound levels, sound level increases, and determinations of the potential for noise impacts (under FTA criteria) are displayed in Table 3.6-7. As shown in Table 3.6-7,

Alternative 2 would not result in noise impacts at the beginning of operations when throughput is at or near 647,000 TEUs. By 2030, when the facility would be at or near its capacity of 1.27 million TEUs, **most** of the receptor locations could experience moderate noise impacts from the Project, but none of the impacts would be classified as severe. With mitigation, the moderate noise impacts at two receptor locations would be reduced to no impact.

It should be noted that the predicted increases over existing sound levels are based on conservative representations of existing sound levels. Most of these sound levels are from measurements taken in 1993 or 1999. Therefore, most of the background levels used for this assessment did not include sounds from operation of the terminal between 1999 and 2014. Therefore, this can be considered a conservative assessment of impacts due to increases.

Regardless, even using conservative baseline sound levels, no severe noise impacts are anticipated based on application of the FTA noise impact criteria.

*Table 3.6-7: Estimated Impacts due to Increases with Alternative 2 using FTA Impact Criteria (Ldn)*

Model Receptor Locations	Existing Ldn	Increase for FTA Impact			Alt2 - 647k			Alt2 - 1.27M No Mitigation			Alt2 - 1.27M With Mitigation		
		Moderate	Severe	Project Ldn	Cumulative	Increase	Project Ldn	Cumulative	Increase	Project Ldn	Cumulative	Increase	
R1 – S Hinds Street	64	1.5	3.9	55	65	0.5	60	65	1.4	58	65	1.0	
R2 – 31st Avenue SW	64	1.5	3.9	57	65	0.7	61	66	1.9	60	65	1.4	
R3 – 30th Avenue SW	64	1.5	3.9	57	65	0.9	62	66	2.3	61	66	1.7	
R4 – Fautleroy Avenue SW	60	2.0	5.0	55	61	1.3	60	63	2.8	58	62	2.1	
R5 – 33rd Avenue SW	60	2.0	5.0	56	61	1.4	60	63	2.8	58	62	2.1	
R6 – City Light Condos	60	2.0	5.0	55	61	1.3	60	63	3.1	58	62	2.1	
R7 – Pigeon Point	74	0.5	2.3	63	74	0.3	66	75	0.6	66	75	0.6	

Note: Shaded values identify potential moderate noise impacts under FTA criteria. No severe noise impacts were identified.

Source: Ramboll Environ 2016a.

### 3.6.4.3 ALTERNATIVE 3

#### CONSTRUCTION

Construction activities associated with Alternative 3 were described in Chapter 2, Section 2.3.5. Construction activities required for modernization of the wharf to accommodate larger cranes would be similar to these activities with Alternative 2, and noise impacts from the associated pile driving activities would be the same under Alternative 3 as discussed previously for Alternative 2.

Upland "typical" construction activities would be more extensive under Alternative 3 than Alternative 2, particularly the modifications to the intermodal rail yard, but the worst-case upland

activities would remain similar to those discussed in Chapter 2, Section 2.3.3. Because typical construction would be limited to daytime hours (i.e., between 7 AM and 10 PM weekdays and between 9 AM and 10 PM weekends and holidays) and impact pile driving would be limited to between 8 AM and 5 PM weekdays and between 9 AM and 5 PM weekends and holidays, no significant noise impacts would be expected.

#### OPERATIONS

Under Alternative 3, major upgrades to the facility would occur and much of the equipment would be electrically powered and may be automated. The diesel top-picks (TPs) and rubber-tired gantry cranes would be replaced with electric rail-mounted gantry (RMG) cranes, substantially reducing noise from CHE.

Even with major upgrades of the facility, the terminal throughput would still be expected to start at approximately 647,000 TEUs in 2020 due to market conditions. At this level of throughput, gate operations are not expected to be necessary at night.<sup>24</sup>

With an expected annual growth rate of 4 percent, the terminal throughput would increase to 1.27 million TEUs in 2030 and reach its capacity of 1.7 million TEUs in 2040. With both these more distant future year throughput scenarios, gate operations would be required at night.

#### **Compliance**

Using the assumptions above and the equipment usage levels identified in Table 3.6-3, the modeling analysis considered whether noise generated by on-site equipment and activities would comply with the City of Seattle noise limits (Table 3.6-1). As discussed in Section 3.6.1, noise from trains is exempt from the limits and was not included in this portion of the analysis. Results of the compliance assessment are presented in Table 3.6-8.

As shown in Table 3.6-8, model-calculated sound levels with the equipment required to handle a throughput of 647,000 TEUs comply with both City of Seattle's 60-dBA daytime limit and 50-dBA nighttime noise limit at residences nearest the site.

With a throughput of 1.27 to 1.7 million TEUs, model-calculated sound levels continue to comply with the daytime noise limit of 60 dBA. However, nighttime gate operations would be required with these levels of throughput, and model-calculated sound levels exceed the 50-dBA nighttime noise limit due primarily to truck noise.

Because model-calculated sound levels with a throughput of 1.27 to 1.7 million TEUs exceed the nighttime noise limits, the analysis considered the following possible noise mitigation measures:

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<sup>24</sup> Moffatt & Nichol, Equipment Calculations, 647,000 TEU Scenario, 02/29/16.

- Installing noise barriers to the height of the reefer stacks, on the west sides of the reefer support structures.
- Constructing 20-foot-high noise walls along the west side of the entrance and gate areas.
- Constructing 20-foot-high noise walls on the east sides of the proposed substation yards (to obstruct mobile source noise transmission).

All of these potential mitigation measurements were determined to be ineffectual for providing cost effective noise reductions. Due to the physical configuration of the gate and on-site roads, it was not possible to substantially reduce on-site truck noise with noise walls. And because the nighttime noise levels are dominated by on-site trucks, using noise barriers to reduce reefer noise also resulted in minimal reduction in overall sound levels. As a result, the model-calculated levels continue to exceed the City of Seattle noise limits. Some versions of these potential noise reduction elements are likely to be considered in later reviews based on more Project-specific facility configuration.

*Table 3.6-8: Model-Calculated Sound Levels - Alternative 3 (dBA, Leq)*

Model Receptor Locations	647K TEU (~2020)	1.27M TEU (~2030)	1.7M TEU (~2040)
	No Mitigation	No Mitigation	No Mitigation
First Shift (8AM to 5PM), Noise Limit = 60 dBA			
R1 – S Hinds Street	53	54	56
R2 - 31st Avenue SW	56	57	59
R3 – 30th Avenue SW	56	57	60
R4 – Fauntleroy Avenue SW	55	57	58
R5 – 33rd Avenue SW	57	59	60
R6 - City Light Condos	54	56	58
R7 - Pigeon Point	52	52	56
Second Shift (6PM to 3AM), Most Stringent Noise Limit = 50 dBA			
R1 – S Hinds Street	47	52	54
R2 - 31st Avenue SW	49	55	57
R3 – 30th Avenue SW	49	55	58
R4 – Fauntleroy Avenue SW	48	54	56
R5 – 33rd Avenue SW	48	56	58
R6 - City Light Condos	49	54	56
R7 - Pigeon Point	49	51	55
Note: Shaded cells identify model-calculated sound levels exceeding the applicable noise limit. Source: Ramboll Environ 2016			

**Noise Impact Due to Sound Level Increases**

In addition to considering compliance, the analysis also assessed the potential for noise impacts with Alternative 3 due to Project-related sources increasing the sound levels in the vicinity of the site. For



this portion of the assessment, the analysis used FTA/FRA noise impact criteria based on the 24-hour day Ldn.

As part of calculating the Ldn, this analysis assumed first shift equipment would operate between 8 AM and 5 PM and that second shift equipment would operate between 6 PM and 3 AM, with both shifts having 1-hour breaks. In addition, the average 1.3, 2.6, and 3.5 daily train arrivals and departures for throughputs of 647,000, 1.27 million, and 1.7 million TEUs, respectively, were assumed to be split evenly over the first and second shifts.

The calculated cumulative sound levels, sound level increases, and determinations of the potential for noise impacts (under FTA criteria) are displayed in Table 3.6-9. As shown, Alternative 3 would not result in noise impacts at the beginning of its operation in 2020 when throughput is at or near 647,000 TEUs. By 2030, when the facility is expected to be at or near an operational throughput of 1.27 million TEUs, many of the receptor locations would experience moderate impacts from the Project, but none of the impacts would be classified as severe under FTA criteria. With mitigation, the moderate noise impacts would be reduced. By 2040, when the facility could be at or near its capacity of 1.7 million TEUs, most of the receptor locations would experience moderate impacts from the Project, but none of the impacts would be classified as severe. The mitigation results in minimal change in the overall sound levels.

It should be noted, again, that the predicted increases over existing levels are based on conservative estimates of existing sound levels. Most of these levels are fairly old, taken in either 1993 or 1999 and do not include sounds from existing operations at the site. Therefore, this can be considered a conservative assessment of impacts due to increases.

Again, even using conservative baseline sound levels, no severe noise impacts are anticipated, using the FTA noise impact criteria.

*Table 3.6-9: Estimated Impacts due to Increases with Alternative 3 using FTA Impact Criteria (Ldn)*

Model Receptor Locations	Existing Ldn	Increase for FTA Impact		Alt3 – 647K			Alt3 - 1.27M			Alt3 - 1.7M		
		Moderate	Severe	Project Ldn	Cumulative	Increase	Project Ldn	Cumulative	Increase	Project Ldn	Cumulative	Increase
R1 – S Hinds Street	64	1.5	3.9	54	64	0.4	58	65	0.9	60	65	1.3
R2 - 31st Avenue SW	64	1.5	3.9	56	65	0.6	60	66	1.5	62	66	2.2
R3 – 30th Avenue SW	64	1.5	3.9	56	65	0.6	60	65	1.5	63	66	2.4
R4 – Fauntleroy Avenue SW	60	2.0	5.0	55	61	1.1	59	63	2.7	61	64	3.6
R5 – 33rd Ave SW	60	2.0	5.0	55	61	1.3	61	63	3.5	63	64	4.5
R6 - City Light Condos	60	2.0	5.0	55	61	1.1	59	62	2.3	60	63	3.2
R7 - Pigeon Point	74	0.5	2.3	63	74	0.3	65	75	0.6	67	75	0.8

Note: Shaded values identify potential moderate noise impacts under FTA criteria. No severe noise impacts were identified. Source: Ramboll Environ 2016a.

### 3.6.5 MITIGATION MEASURES

#### 3.6.5.1 NO-ACTION ALTERNATIVE

No noise impacts were identified with the No-Action Alternative, and no noise mitigation measures are required.

#### 3.6.5.2 ALTERNATIVE 2

##### CONSTRUCTION

Construction of the facility will be limited to daytime hours (i.e., 7 AM to 10 PM weekdays, 9 AM to 10 PM weekends and holidays) for typical construction equipment. The use of impact equipment (e.g., pile drivers) will be limited to between the hours of 8 AM and 5 PM weekdays and between 9 AM and 5 PM weekends and holidays.

Although no significant noise impacts were identified due to construction of Alternative 2, some relatively simple and inexpensive practices are identified here which can reduce the extent to which people are affected by construction noise. Examples include using properly sized and maintained mufflers, engine intake silencers, and engine enclosures, and turning off idle equipment. Construction contracts can specify that mufflers be in good working order and that engine enclosures be used on equipment when the engine is the dominant source of noise.

Substituting hydraulic or electric models for impact tools such as jack hammers, rock drills, and pavement breakers could reduce construction and demolition noise. Electric pumps could be specified if pumps are required.

Pile driving will be the single most annoying noise related to construction. The City of Seattle limits piling emplacement to daytime hours to avoid interfering with the sleep of residents.

Although safety warning devices (e.g., backup alarms) are exempt from noise ordinances, these devices emit some of the most annoying sounds from a construction site. One potential mitigation measure would be to ensure that all equipment required to use backup alarms utilize ambient-sensing alarms that broadcast a warning sound loud enough to be heard over background noise but without having to use a preset, maximum volume. A better alternative would be to use broadband backup alarms instead of typical pure tone alarms. Such devices have been found to be very effective in reducing annoying noise from construction sites.

Details on how the Port will manage construction noise will be included in a construction noise monitoring plan that will be developed prior to start of construction in conjunction with City of Seattle DCI.

#### **Operations**

The model-calculated sound levels of Alternative 2 with a throughput of 1.27 million TEUs do not indicate compliance with the more stringent nighttime noise limit of 50 dBA. Therefore, the following mitigation measure was considered and found to be effective:

- Require the use of TPs that are at least 2 dBA quieter than the Taylor TPs used by the previous tenant (e.g., use Fantuzzi or other equipment).

However, even with the above mitigation, the model-predicted sound levels continue to exceed City of Seattle's nighttime noise limits. However, no severe noise impacts due to increases over existing levels would be expected.

To provide a strategy for the facility to comply with the nighttime noise limits, an Operational Noise Management Plan will be developed in consultation with the City of Seattle Department of Construction and Inspections (DCI). A description of the plan is provided in Section 3.6.5.4 and an outline of the plan is presented in Volume II, Appendix M.

### 3.6.5.3 ALTERNATIVE 3

#### CONSTRUCTION

Construction noise levels with Alternative 3 are expected to be similar to levels identified for Alternative 2, but the upland activities would be more extensive with Alternative 3. Noise mitigation measures for Alternative 3 would be the same as identified for Alternative 2.

## OPERATIONS

Because model-calculated sound levels with a throughput of 1.27 to 1.7 million TEUs exceed the nighttime noise limits, noise mitigation measures using a variety of noise barriers were evaluated with modeling and dismissed from further consideration due to lack of effectiveness. Without effective mitigation, model-predicted sound levels continue to exceed City of Seattle's nighttime noise limits. However, no severe noise impacts due to increases over existing levels would be expected.

To provide a strategy for the facility to comply with the nighttime noise limits, an Operational Noise Management Plan will be developed in consultation with the City of Seattle Department of Construction and Inspections (DCI). A description of the plan is provided below in Section 3.6.5.4 and an outline of the plan is presented in Volume II, Appendix M.

### 3.6.5.4 FACILITY OPERATIONAL NOISE MANAGEMENT PLAN/PROGRAM— ALTERNATIVES 2 AND 3

The noise modeling indicates a potential for the facility to exceed Seattle's nighttime noise limits under Alternatives 2 and 3, but because a tenant has yet to be selected, a specific operational plan with equipment parameters and numbers is not yet available. Therefore, the Port will use an Operational Noise Management Plan (ONMP) to provide a compliance strategy for the facility. An ONMP can be used as an adaptive tool to identify reasonable and feasible best practices to ensure compliance with the noise limits. Advanced noise modeling and assessment, details regarding a noise monitoring program, and procedures for response to noise complaints will be developed as part of the ONMP in facilitated collaboration with all affected parties to ensure that noise levels will be in accordance with noise code and local approvals.

The ONMP will ensure that noise management is undertaken in accordance with the Seattle noise code and the conditions of approval in the City of Seattle MUP. The ONMP will provide commitment, responsibility, and timing to meet the noise code.

Appendix M (Volume II) identifies the framework for the ONMP Elements. The details of the ONMP within the framework will be provided once a marine terminal operator is selected.

### 3.6.5.5 ANNOYANCE NOISE CONTROL MEASURES—ALTERNATIVES 2 AND 3

If the proposed Project proceeds it would include several measures intended to reduce generation of what might be perceived as annoying noise by Project-related sources, including backup alarms, train horn noise, and vessel noise while hoteling at berth. The noise control measures that would be implemented as part of the proposed Project include the following:

- Use of ambient-sensing broadband backup alarms on all mobile equipment instead of using standard pure tone alarms. This would remove one of the most potentially annoying noise sources from the facility;
- Addition of safety measures to the rail corridor between the bridge across the Duwamish and the terminal. Adding safety measures to the corridor, such as chain link fence and

installation of crossing gates and wayside horns at suitable at-grade crossings in all four quadrants of each driveway, would substantially improve the safe operation of trains. As a result, the need to sound audible alarms should be reduced. These measures could also be used by the City of Seattle as a basis to begin the process of requesting the corridor be converted into a railroad quiet zone; and

- Mitigation to reduce air quality impacts is proposed by increasing the use of shorepower for moored vessels. It is anticipated that 30% of the vessels would use shorepower in 2020 and that number would be expected to increase to 50% in 2030 and beyond. Besides controlling air emissions, noise from on vessel generators would be reduced as a result of vessels plugging in to shore power. This change has the potential to reduce or eliminate low frequency noise from moored vessels that, in the past, has been reported as intrusive by some residents on the hill west of the facility. In addition, if noise complaints are received related to a specific hoteling vessel, and if subsequent noise measurements indicate that the vessel is emitting excessive levels of low frequency noise (as determined by a methodology identified in consultation with the City of Seattle DCI as part of the Operational Noise Management Plan), then that specific vessel will be required to use shorepower on any subsequent visits to Terminal 5, if possible.

These noise control measures have the potential to reduce or eliminate what have been identified as some of the most annoying facility related noise sources.

### 3.6.6 SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

#### 3.6.6.1 NO-ACTION ALTERNATIVE

With the No-Action Alternative, no significant noise impacts are identified.

#### 3.6.6.2 ALTERNATIVE 2

With Alternative 2, model-calculated sound levels comply with the City of Seattle's daytime noise limit but exceed the nighttime noise limit. However, no significant noise impacts would be expected based on FTA criteria due to Project-related increases over the existing sound levels. With the implementation of an effective noise management program for the Project, it is expected that compliance with the City of Seattle nighttime noise limit could be achieved and future adverse noise effects avoided or minimized.

#### 3.6.6.3 ALTERNATIVE 3

With Alternative 3, model-calculated sound levels comply with the City of Seattle's daytime noise limit but exceed the nighttime noise limit. However, no significant noise impacts would be expected based on FTA criteria due to Project-related increases over the existing sound levels. With the implementation of an effective noise management program for the Project, it is expected that compliance with the City of Seattle nighttime noise limit could be achieved and future adverse noise effects avoided or minimized.

### 3.7 LAND USE

This section of the DEIS for the Project discusses the pattern of land uses on the site and in the vicinity of Terminal 5, and evaluates how the alternatives would affect these land and shoreline uses and zoning regulations, either directly or indirectly. Section 3.8, which follows, compares consistency of the alternatives with relevant plans and policies.

#### 3.7.1 REGULATORY CONTEXT

##### 3.7.1.1 SEATTLE LAND USE CODE

All of the Terminal 5 property and the properties surrounding it are zoned General Industrial 1 (IG1). The General Industrial zones were established to promote the full range of industrial activities and related support uses. They include those areas most suited to industrial activity, where the separation from residential and pedestrian-oriented commercial areas is sufficient to reasonably mitigate the impacts associated with industrial uses. The designation as General Industrial recognizes the goal of protecting healthy, established marine and rail-related industrial area from the intrusion of substantial amounts of unrelated retail and commercial uses. For example, the City of Seattle Land Use Code restricts the size of certain non-industrial uses in the IG-1 zone.

The IG1 zone is the most intensive industrial zone in Seattle and is intended to accommodate uses classified as “heavy manufacturing.” Among the uses permitted outright in the IG1 zone are manufacturing, passenger terminal, cargo terminal, marine retail sales and service, non-household sales and services, principal use parking (in IG1 in general, but not in the Duwamish M/I Center), office, warehouse, outdoor storage, utility services, eating and drinking establishments, and open space (Seattle Municipal Code [SMC] 23.50.012, Chart A). Certain non-industrial uses, such as retail and office, are allowed, but are restricted in the amount of permitted building area and building height. Retail service use is limited to 10,000 square feet per lot in the IG1 zone. Office use is limited to 10,000 square feet per lot in the IG1 zone.

Terminal 5 lies within the Airport Height Overlay District for King County International Airport (Boeing Field) in the Inner Approach Area (as defined in SMC 23.64). However, due to the sloping angle of the inner approach area, it is less restrictive over the location than the restrictions of the shoreline overlay zone, which are discussed later.

*Table 3.7-1: Land Use Code Requirements for Development in IG1 Zones*

Section	Summary of Code
23.50.022	There is no maximum height limit in the IG1 zone for industrial structures, except under certain circumstances. Under the IG1/85 zoning on Terminals 25/28/30, the height limit is 85 feet for any portion of a structure that contains the following uses: retail sales and services; non-household sales and services; offices; entertainment uses; research and development laboratories; and institutions. Under the IG1/45 zoning on TERMINAL 5, the height limit of those uses is 45 feet.
23.50.028	The total maximum floor area ratio (ratio of building floor area to lot area) for IG1 is 2.5.
23.50.029 & 23.53.020	Setbacks may be required in IG1 zones for certain street improvements, as per SMC 23.53.020.
23.50.034	Screening and landscaping requirements pertain to Industrial Buffer zones and Industrial Commercial zones, not to General Industrial zones like IG1. Therefore, they are not applicable to TERMINAL 5, which is zoned IG1. (There are other screening requirements that apply to parking areas and development along street lot lines, as noted below.)
23.50.042	Venting standards for all Industrial zones—The venting of odors, vapors, smoke, cinders, dust, gas, and fumes shall be at least 10 feet above finished grade, and directed away from residential uses within 50 feet of the vent.
23.50.050	Proposed uses in industrial zones shall meet the transportation concurrency level-of-service standards prescribed in Chapter 23.52 (a proposed project must demonstrate that the traffic it will generate will not cause Level of Service to deteriorate at certain specified locations in the City).
23.50.016A & B	Uses located on streets that are designated on the Industrial Streets Landscaping Plan are to provide street trees in the planting strip unless certain exceptions apply.
23.50.16C	Screening: All outdoor storage, including off-street parking for two or more fleet vehicles...shall provide view-obscuring screening along street lot lines...
23.50.018	View corridors: On lots which are partially within the Shoreline District, except those on the Duwamish Waterway, a view corridor shall be required for the non-shoreline portion, if the portion of the lot in the Shoreline District is required to provide a view corridor under the Seattle Shoreline Master Program.
23.54.015	The minimum number of off-street parking spaces required for specific uses is based upon gross floor area, as set forth in SMC 23.54.015, Chart A.
<i>Source: Seattle Land Use and Zoning Code 2016</i>	

### 3.7.1.2 SHORELINE MANAGEMENT ACT

Summary. The Shoreline Management Act (SMA) of 1971, Chapter 90.58 Revised Code of Washington [RCW]) is intended to protect the public interest associated with shorelines of the state while, at the same time, recognizing and protecting private property rights consistent with the public interest. The primary implementing tool of the SMA is the adoption by local jurisdictions of the City of Seattle Shoreline Master Program (SMP), which must also be approved by Ecology. The

SMA establishes two basic categories of shoreline: “Shorelines of State-wide Significance,” which are identified in the SMA, and “shorelines”; together these include all of the water areas of the state and their associated wetlands, together with the lands underlying them. Areas of Puget Sound and adjacent salt waters between the ordinary high water mark and the line of extreme low tide, which includes Elliott Bay and the Duwamish Waterway, are classified as a “Shoreline of State-wide Significance” under the SMA (Chapter 90.58.030 RCW).

*Discussion.* The SMA is implemented in Seattle through the City of Seattle SMP, which is contained in the Land Use Element of the City of Seattle Comprehensive Plan (Comprehensive Plan) and Chapter 23.60A of the Seattle Land Use Code. The consistency of the alternatives with the adopted City of Seattle SMP is discussed below.

#### SHORELINE MASTER PROGRAM

Management of Seattle’s shorelines is guided by the Area Objectives for Seattle’s shorelines as established in the Land Use Element of the Comprehensive Plan (goals LUG39-LUG63 and policies LU231-LU270) and by Chapter 23.60A of the Seattle Land Use Code. Together, these elements constitute the City of Seattle SMP. SMC 23.60A sets forth regulations for shoreline development and land use in the Shoreline Overlay District, which includes the land areas within 200 feet of the ordinary high water mark. The Washington State Coastal Zone Management Program and the City of Seattle SMP have designated the Duwamish River and Puget Sound as shorelines of statewide significance.

The SMP classifies the City of Seattle shorelines into “shoreline environments,” such as urban, conservancy, and so on. It addresses uses appropriate for each shoreline environment. These shoreline designations are in addition to the City of Seattle zoning code, which also establishes appropriate uses for the area. Terminal 5 lies in the “Urban Industrial” (UI) shoreline environment, consistent with use of the sites for intensive industrial use and with the status of the sites as state harbor areas, reserved for navigation and commerce. The purpose of the UI environment is “to provide for efficient use of industrial shorelines by major cargo facilities and other water-dependent and water-related industrial uses” (SMC 23.60A.220). Some of the uses permitted outright on waterfront lots in the UI environment include marine-related commercial uses, warehouse and outdoor storage uses, passenger and cargo terminals, and some utility uses. Dredging is permitted as a special use when necessary for water-dependent and water-related uses or to install utility lines. Residential, entertainment, and lodging uses are prohibited in the UI environment. All commercial uses are permitted on upland lots within the UI environment (SMC 23.60A.840-854).

**The City’s Shoreline Master Program also regulates potential water quality impacts. The Project would need to be constructed and operated consistent with applicable standards for water quality protection in the SMP.**

#### SHORELINE DEVELOPMENT STANDARDS

The City of Seattle SMP (SMC 23.60A.840) contains development standards for uses permitted in the Urban Industrial Shoreline Environment, which includes the area at Terminal 5 within 200 feet of the ordinary high water mark. Table 3.7-2 summarizes these regulations.



Any proposed dredging would need to be consistent with applicable standards for dredging in SMC 23.60A and receive approval from City of Seattle through a Shoreline Substantial Development Permit.

Construction-related impacts on aquatic/shoreline habitats will be analyzed for consistency with applicable development standards in the City of Seattle Shoreline Master Program (SMC 23.60A), which may include requirements for habitat mitigation.

### 3.7.2 AFFECTED ENVIRONMENT

Terminal 5 is bounded by Harbor Avenue SW on the west, southwest Elliott Bay on the north, the West Waterway on the east, and SW Spokane Street on the south. The site is improved as a marine cargo terminal. The terminal includes 2,900 linear feet of wharf structure and adjacent deep draft vessel berth area along the Duwamish West Waterway, container cranes, a container marshalling yard, and an intermodal rail yard. The site contains a number of accessory terminal structures totaling over 231,000 square feet and currently provides a total of about 540 parking spaces that are located in various lots around the terminal. There are approximately 481 vehicle parking spaces located near the terminal building.

The east side of the wharf is adjacent to the Duwamish Waterway. The adjacent submerged lands are within a state waterway and are owned and managed by the DNR. Public ports, including the Port of Seattle, are authorized to manage state-owned aquatic lands and improvements under a Port Management Agreement (PMA) with the DNR (Chapter 79.90 RCW, Washington Administrative Code [WAC] 332-30). The PMA provides for Port management of such lands used in conjunction with and contiguous to port-controlled uplands. Lands being managed by the agreement are defined in the PMA, and the Port is obligated to manage these aquatic areas consistent with the state's general aquatic land management goals and other applicable state and federal regulations. PMAs typically cover the state harbor areas between the inner and outer harbor lines.

At Terminal 5, the outer harbor line is coincident with the wharf bulkhead. The Port's current PMA does not include certain of the Project elements which fall outside the outer harbor line, such as the toe-wall and dredging. Construction of the toe-wall may require amendment of the existing PMA boundary. A right of entry authorization from DNR, which is short-term license, may be required in order to accomplish the berth dredging. These Project elements and the planned uses of the aquatic land areas are consistent with DNR aquatic lands management policies, which provide a preference for water-dependent uses (WAC 332-30-100). The berth use at the terminal meets the DNR definition of a moorage facility and is clearly included as water-dependent use envisioned under the PMA regulations (see WAC 332-30-106). Thus, such uses are clearly allowed by the amended PMA.

Terminal 5 is also adjacent to the federal navigation channel in the West Waterway. Directly south of the site is Nucor Steel, a large heavy industrial steel manufacturing facility formerly operated by Birmingham Steel. Directly east of the site are industrial warehouses, and further east, across the West Waterway, is the Port's 196-acre Terminal 18 cargo terminal. Single-family residential areas are located on land to the west of the site, west of Harbor Avenue SW. Land uses along the

shoreline of southwest Elliott Bay to Duwamish Head include commercial and park land. Land uses are included below.

At the north end of the Terminal 5 site is Jack Block Park, a 5.8-acre public access park. The park has walking paths and viewing and play areas that were installed in 1998. The park is provided and maintained by the Port.

The site comprises approximately 197 acres with numerous structures, including the following:

- A 14,400-square-foot administrative office building (Building A-1)
- An 80,000-square-foot covered transit shed (Building W-6)
- A 48,000-square-foot maintenance and repair facility
- An 80,000-square-foot container freight station
- A 2,146-square-foot, south-end marina building (Building A-18)
- A 2,853-square-foot, north-end marina building (Building A-19)
- A 2,627-square-foot crane maintenance building
- A 1,429-square-foot yard office
- A gatehouse
- An on-terminal restroom building
- Various equipment sheds and storage structures
- 2,900-lineal-foot cargo wharf structure

The site is zoned General Industrial 1 (IG1/U85) and General Industrial 2 (IG2/85). The Comprehensive Plan designation for the site is Industrial. The City of Seattle SMP designation for the site is Urban Industrial (UI). The site is identified on City of Seattle GIS Critical Area Map layers as having the following critical areas: abandoned landfill; liquefaction zone; riparian corridor; salmon watershed; flood prone area; wildlife area; and shoreline habitat.

The terminal has employed approximately 2,350 people for cargo activities in the past. Recent and current tenants have employed between 350 and 470. Future tenants are expected to range from approximately 350 to 2,350. No residential uses are present at the Project site, and no residential occupancy is proposed.

The existing and proposed use of the site is marine cargo terminal, an industrial use that is consistent with the current and projected underlying zoning designation, the City of Seattle SMP, and Comprehensive Plan. The Project is also consistent with the Port's long-range planning objectives for the facility contained in the 1991 Container Terminal Development Plan and the updated Harbor Development Strategy 21, adopted in June 2001, which identify the need for continued viability of cargo terminal operations and improvement of existing facilities. The continuation of the use is further supported by the Port's Century Agenda planning document adopted in 2013 that calls for support and growth of the cargo business.

Terminal 5 currently is approved for cargo terminal and commercial moorage. The definition for "cargo terminal" in SMC 23.20A.906 is: "Cargo terminal" means a "transportation facility" use in which quantities of goods or container cargo are stored without undergoing any manufacturing processes, transferred to other carriers, or stored outdoors in order to transfer them to other

locations. Cargo terminals may include accessory warehouses, railroad yards, rail transfer, storage yards, and offices. Other uses permitted outright in UI are parking accessory use and utility lines.

Moorage at the cargo terminal would include vessel moorage for transfer of cargo, container cargo, goods, supplies, equipment, stores, gear, provisions, and any other materials which may be transferred to and from the terminal to other locations. The terminal berths may also be used for commercial moorage, which may include the lay berthing of vessels and seasonal berthing of vessels. Fueling and provisioning of active, stored, and lay-berthed vessels may also take place. Such uses have been determined to be allowed outright as part of a permitted cargo terminal and not requiring separate permit authorizations under the current SMP, SMC23.60A (see Seattle Hearing examiner files S-15-001; S-15-002, dated September 30, 2015).

### 3.7.3 IMPACTS

#### 3.7.3.1 NO-ACTION ALTERNATIVE

Under the No-Action Alternative, uses at Terminal 5 would remain the same as currently permitted and no impacts are expected.

#### 3.7.3.2 ALTERNATIVES 2 AND 3

Under Alternatives 2 and 3, uses at Terminal 5 would include a cargo terminal and container yard, with truck gates, remodeled buildings for labor, management, and terminal operations, upgraded wharf and crane rails, upgraded lighting and utilities, and outdoor storage equipment. Accessory parking, utility lines and rail transit facilities may also be included. These uses are all permitted outright in the General Industrial zone. Other Land Use Code requirements that apply to the IG1 zone are summarized in Table 3.7-1. Other land use issues are listed below:

- The proposal would result in a more efficient use of existing built and committed container cargo facilities and would meet Land Use Code requirements for the General Industrial 1 zone. The height limits in the City of Seattle SMP, which are discussed in the following section, are more restrictive than the Land Use Code and supersede SMC 23.50.022.
- Only a few small existing or proposed buildings would occupy Terminal 5, substantially below the maximum 2.5-floor area ratio.
- Setbacks may be required in IG1 zones for certain street improvements, as per SMC 23.53.020. However, the proposed improvements at Terminal 5 would not trigger the need for street improvements.
- Venting of odors, fumes, etc., would be at least 10 feet above grade. There are no residential uses within 50 feet of any potential vent on the Terminal 5 site.
- Transportation concurrency and off-street parking requirements are discussed in the Transportation section of this DEIS.

- SMC 23.50.018 addresses the need for view corridors on lots that are partially within the Shoreline District, except lots on the Duwamish Waterway. Since the proposed Project site is on the Duwamish Waterway, the zoning provisions for view corridors in SMC 23.50.018 do not apply.

*Table 3.7-2: Development Standards*

*(The site is located in both the IG1 U/85 and IG2 U/85 zones; however, the proposal is located entirely within the IG1 portion of the site. A portion of proposal is also located within the UI Shoreline Overlay.)*

<b>Development Standard</b>	<b>Summary of Requirement</b>	<b>Project Consistency</b>
SMC 23.50.012; Table A: L.1	Permitted and prohibited uses in Industrial Zones	Cargo terminals are permitted outright within IG1 and IG2.
SMC 23.54.015	Parking requirements	The installation of the electrical substation would eliminate 29 of the existing 481 parking spaces on the terminal. On-terminal parking spaces would continue to exceed the zoning requirement.
SMC 23.60A.152	General development standards for all shoreline environments	The proposal would comply with all requirements. Water quality controls would be applied during construction and operation of upland and in-water elements. Upland work would adhere to the applicable requirements of the Stormwater, Grading, and Drainage Code (SMC 22.800).
SMC 23.60A.158	Mitigation sequencing	The Project does not result in a net loss of shoreline ecological resources. Impacts of the Project are primarily temporary and construction-related. The short-term net effects of the Project on Endangered Species Act-listed species would be insignificant and the long-term net effects are expected to be positive. The Biological Assessment for the Project identifies numerous mitigation measures that avoid and minimize impacts on shoreline ecological resources.
SMC 23.60A.162	Standards for parking and loading zone requirements	No new parking is proposed. No overwater parking is proposed. The proposal complies with all requirements.
SMC 23.60A.164	Standards for regulated public access	No change or expansion in use is proposed. No change is proposed for the existing regulated public access, which is provided at Terminal 5 at the 15 -acre Jack Block Park directly adjacent and north of the terminal.
SMC.23.60A.167	Standards for shoreline setbacks	The proposed Project elements are water-dependent uses that functionally need to be in the setback and are allowed within the setback under 23.60A.167.D.
SMC 23.60A.170	Standards for view corridors	The proposal meets view corridor requirements.
SMC.23.60A.172 Table A.5	Applicable standards for Shoreline Modifications - Dredging	Dredging necessary for a water-dependent use is allowed as a special use permit in the UI environment.

Development Standard	Summary of Requirement	Project Consistency
SMC.23.60A.172 Table A.(7)(g)	Use Standards - Fill	Placement of clean sand cover after completion of dredging is ecological mitigation that is allowed as a special use; proposed fill would not permanently or negatively impact native aquatic vegetation; no filling incidental to the repair or replacement of shoreline stabilization is proposed.
SMC 23.60A.172 Table A(10)(a)	Use Standards – Piers and floats	Proposed piers and floats are allowed outright as accessory to a water-dependent use (cargo terminal).
SMC 23.60A.172 Table A(11)(b)	Use Standards – Shoreline stabilization	The proposed short sheet wall, or “toe-wall,” is a shoreline stabilization method that is allowed as a special use permit in the UI environment. The criteria in 23.60A.188 would also be met.
SMC 23.60A.182	Standards for dredging	The proposal would comply with all requirements. Dredging is for navigational purposes. Dredging and disposal of dredged material would comply with all permitting requirements of federal and state agencies with jurisdiction. The dredged materials meet state and federal requirements for open-water disposal. The Biological Assessment for the Project identifies numerous mitigation measures that avoid and minimize potential adverse impacts.
SMC 23.60A.184	Standards for fill	The proposal would comply with all requirements. Placement of clean sand as cover after completion of dredging is allowed as a special use; no filling incidental to the repair or replacement of shoreline stabilization is proposed.
SMC 23.60A.187.D	Standards for piers and floats and overwater structures; non-residential	The proposal would meet the requirements. No expansion of overwater coverage is proposed. The wharf is necessary for loading and off-loading of cargo. Light transmitting features are infeasible because the pier is used for average loads that greatly exceed 30 pounds per square foot.
SMC 23.60A.188	Standards for shoreline stabilization	The proposal would comply with the requirements. The proposed short sheet wall at the base of the under-pier slope is adjacent to the navigation channel and necessary for a water-dependent use, marine cargo terminal. The stabilization elements are to protect from erosion and are necessary to prevent or reduce structural damage. The Port is providing detailed information about the geotechnical design as part of the construction permit review.

<b>Development Standard</b>	<b>Summary of Requirement</b>	<b>Project Consistency</b>
SMC 23.60A.190	Standards for vegetation and impervious surface management	No vegetation is present. No additions to impervious surfaces are proposed.
SMC 23.60A.217	Standards for utility lines	The proposed utility lines are within the UI environment and would be installed underground. Site grades would be restored after the utility lines are installed.
SMC 23.60A.482	Uses permitted outright on waterfront lots in the UI environment.	The proposal is a permitted use within the UI shoreline environment. The proposal conforms to all applicable development standards for the UI environment. No change in use is proposed. The use is Cargo Terminal, water-dependent. Utility improvements are accessory to the cargo terminal use.
SMC 23.60A.486	Height in the UI environment	The proposal is within the UG1/U85 portion of the site. The proposed structures (container cranes) are exempted from the maximum height limitation under SMC 23.60A.486.B.1, are necessary for the function of the water dependent, and are a use consistent with allowed uses in the UI environment.
SMC 23.60A.488	Lot coverage in the UI environment	The proposal does not affect the existing lot coverage at the site.
SMC 23.60A.490	Shoreline setbacks in the UI environment	The proposal is a water-dependent use and is allowed within the setback under 23.60A.167.
SMC 23.60A.492	View corridors in the UI environment	The proposal does not affect the existing view corridor condition at the site, which currently greatly exceeds the minimum standards. Open storage of marine cargo is allowed within view corridors under SMC 23.60.876.C.4.
SMC 23.60A.494	Regulated public access in the UI environment	The proposal does not alter or reduce public access at the site, which is provided by Jack Block Park, located at 2130 Harbor Avenue SW.
SMC 23.60.880	Development standards specific to water-dependent uses on waterfront lots in the UI environment	The proposal is for the rehabilitation of an existing marine cargo terminal to allow for modernization and more efficient use, and complies with all requirements of this code section.

In addition, see FEIS, Volume II, Appendix L (Anchor QEA 2015) for a detailed report that was submitted to the City of Seattle DCI to show compliance with City of Seattle SMP Development Standards (SMC 23.60A.152).

#### 3.7.3.3 NO-ACTION ALTERNATIVE

In the No-Action Alternative, the Terminal 5 facilities would retain uses as a container terminal and continue cargo operations. This alternative does not allow the Port to maximize container volume potential or achieve the related economic benefits of providing facilities to support projected growth in container shipping. Existing consistencies or inconsistencies (if any) with the development standards would continue.

#### 3.7.3.4 ALTERNATIVES 2 AND 3

The proposal would meet development standards for the UI shoreline environment. Construction of a new container trucking gate system; new or remodeled buildings for labor, management, and terminal operations; rehabilitated wharf and new crane rails; and upgraded lighting and utilities would either meet the 35-foot height limit or would qualify as exceptions for equipment necessary for water-dependent uses. Since structures on lots in the UI environment may occupy 100 percent of the lot, lot coverage does not constrain development at Terminal 5. SMC 23.50.018 addresses the need for view corridors on lots that are partially within the Shoreline District, except lots on the Duwamish Waterway. Since the Project site is on the Duwamish Waterway, the zoning provisions for view corridors in SMC 23.50.018 do not apply. The site plan for Terminal 5 maximizes water-dependent uses along the shoreline. Required parking spaces and loading berths are discussed in Section 3.11 of this DEIS. New off-street parking at Terminal 5 would be located 50 feet from the shoreline.

The Port may need to obtain aquatic area use authorization or PMA boundary amendments may be required. The Port would follow appropriate BMPs (see Volume II, Appendix L of this DEIS for the complete list of BMPs to be followed).

### 3.7.4 MITIGATION MEASURES

#### 3.7.4.1 NO-ACTION ALTERNATIVE

No mitigation is expected to be required.

#### 3.7.4.2 ALTERNATIVES 2 AND 3

The Port would work with DNR to obtain any necessary aquatic area use authorization or PMA boundary amendments required. In addition, see Volume II, Appendix L of this DEIS (Anchor QEA 2015) for a detailed report that was submitted to the City of Seattle DCI to show compliance with City of Seattle SMP Development Standards (SMC 23.60A.152).



### 3.7.5 SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

#### 3.7.5.1 ALL ALTERNATIVES

Since the intensity of the proposed cargo terminal use is compatible with surrounding uses and all land use and shoreline codes would be adhered to, significant unavoidable adverse impacts are not anticipated.

### 3.8 RELATIONSHIP TO PLANS AND POLICIES

This section evaluates the relationship of the proposed action and alternatives to applicable and adopted plans and policies. Each of the key plans pertinent to the proposed Project is discussed below.

#### 3.8.1 REGULATORY CONTEXT

##### GROWTH MANAGEMENT ACT

*Summary.* The Growth Management Act (GMA; Chapter 36.70A, Revised Code of Washington [RCW]), adopted in 1990 and subsequently amended, provides a comprehensive framework for managing growth and coordinating land use planning with the provision of infrastructure. The general goals of the GMA include, in part, directing growth to urban areas, reducing sprawl, encouraging economic development consistent with adopted comprehensive plans, protecting private property rights, providing efficient multimodal transportation systems, protecting the environment, and ensuring that public facilities and services necessary to support development meet locally established minimum standards at the time development is in place (Chapter 36.70A.020 RCW).

Counties must designate urban growth areas (UGA) as areas within which urban growth and densities are permitted and public services and facilities are available and/or planned to be available (Chapter 36.70A.110 RCW). Within designated UGAs, residential and employment densities are to be sufficient to accommodate 20-year forecasts.

Jurisdictions subject to GMA must prepare and adopt the following: countywide planning policies; comprehensive plans containing policies with specific elements for land use, transportation, housing, capital facilities, utilities, rural lands, and economic development; and development regulations implementing those plans. GMA requires certain jurisdictions subject to it to prepare and adopt a major update to their comprehensive plans every 7 years (GMA was amended to postpone the first required major updates in King County from 2002 to 2004). Jurisdictions subject to GMA must also have regulations governing the use of environmentally sensitive areas. The GMA authorizes the imposition of impact fees for specified public services and facilities, including roads, schools, parks and recreation facilities, and fire protection facilities.

*Discussion.* Consistent with the GMA and the King County Countywide Planning Policies (described below), the City of Seattle has adopted the City of Seattle Comprehensive Plan (Comprehensive Plan) to guide future development and fulfill the City of Seattle's responsibilities under GMA. The proposed action and alternatives, as identified in Chapter 2, are intended to encourage future growth within the UGA and the City of Seattle and are consistent with the GMA goals and policies outlined above. The relationship of the proposed action and alternatives to the Comprehensive Plan is discussed in greater detail below.

#### COUNTYWIDE PLANNING POLICIES

Summary. The King County Countywide Planning Policies (CPPs) were developed and adopted by the Growth Management Planning Council in 1992 (and subsequently amended), consistent with GMA mandates to provide framework policies to guide development of jurisdictional comprehensive plans. The CPPs include employment growth targets for jurisdictions within King County to accommodate within the 20-year growth management planning period. The 2001 to 2022 employment growth target for the City of Seattle is 92,083 jobs.

The CPPs also designate Manufacturing Industrial Centers (MICs) within the county. MICs are envisioned as areas of concentrated employment, including manufacturing, industrial, and advanced technology. Their purpose is to preserve and encourage the aggregation of land suitable for manufacturing/industrial uses, discourage non-compatible uses, and accommodate a minimum of 10,000 jobs per MIC (LU-52). Per LU-52, offices and retail uses should be limited in MICs, except as accessory uses. MICs with at least 15,000 jobs and sufficient employment density should be served by high-capacity transit (LU-59). The City of Seattle contains two designated MICs: the Ballard/Interbay Northend Manufacturing Industrial Center (BINMIC) and the Greater Duwamish Manufacturing/Industrial Center. There are currently five CPPs-designated MICs in King County.

#### SEATTLE COMPREHENSIVE PLAN

The following subsection on the Comprehensive Plan discusses specific plans and policies for the Greater Duwamish Manufacturing/Industrial Center.

Summary. The Comprehensive Plan (2004 and as amended) was developed in compliance with GMA and the CPP. The Comprehensive Plan establishes land use goals and policies that guide future land use and coordinate growth within Seattle and its planning area over a 20-year planning horizon (see Figure 3.8.1. In particular, the Comprehensive Plan serves as a guide for designating land uses, infrastructure development, and community services; its policies serve as a foundation for the City of Seattle's development regulations. In accordance with GMA, the Comprehensive Plan includes the Land Use, Transportation, Housing, Capital Facilities, and Utilities elements. Policy elements of Seattle's Shoreline Management Program are included in the Land Use Element, consistent with GMA. The Land Use component of the plan consists of two separate elements: Land Use and Urban Village. The Comprehensive Plan also includes the following elements: Neighborhood Planning, Economic Development, Environment, Human Development, and Cultural Resources.

The Comprehensive Plan promotes a development pattern called the urban village strategy, which directs most new household and employment growth into places the plan designates as either urban centers or urban villages. In addition, the Comprehensive Plan also designates two manufacturing-industrial centers in the Duwamish and Interbay areas. These are places where residential uses are not permitted and where the City of Seattle encourages growth of employment. The intent of MICs is to direct industrial development to "centers" where conditions can best support industrial use and encourage economic activity.

A neighborhood plan has been adopted for the Duwamish Manufacturing/Industrial Center neighborhood, the locale of Terminal 5. The Neighborhood Planning Element of the Comprehensive

Plan includes general goals and policies regarding neighborhood planning efforts and implementation of neighborhood plans around Seattle. It contains the adopted goals and policies from collaboratively developed neighborhood plans, including those from the Greater Duwamish Manufacturing/Industrial Center Neighborhood Plan (2000). Relevant general neighborhood planning policies call for using adopted neighborhood plan goals and policies in City of Seattle decision-making (N12). The adopted policies from these plans that are relevant to the proposal are discussed below.

#### DUWAMISH MANUFACTURING/INDUSTRIAL CENTER PLAN

All of Terminal 5 (and all adjoining area in every direction) is indicated as Industrial on the Future Land Use Map of the Comprehensive Plan. The Project site is in the area of the 4,700-acre Duwamish Manufacturing/Industrial Center. This center includes lands along both sides of the Duwamish River and waterways and all of Harbor Island, and extends east from Harbor Avenue SW in West Seattle to Interstate 5, north to the edge of Pioneer Square, and south to the Seattle city limits.

In 2000, the Comprehensive Plan was amended to incorporate neighborhood-specific goals and policies of the Duwamish Manufacturing/Industrial Center Plan, and the official land use map was amended to reflect the boundaries of the Duwamish Manufacturing/Industrial Center. Concurrent revisions to the Land Use Code (Seattle Municipal Code [SMC] Title 23) were adopted to implement the approved neighborhood plan.

The adopted neighborhood plan for the Duwamish Manufacturing/Industrial Center contains goals and policies for jobs and economics, land use, transportation, utilities, environmental remediation, and public safety. Goals and policies that are relevant to the proposed Project include the following:

- Maintaining land in the Duwamish Manufacturing/Industrial Center for industrial uses, including the manufacture, assembly, storage, repair, distribution, and research about or development of tangible materials and advanced technologies, as well as transportation, utilities, and commercial fishing activities (GD-G3).
- Facilitating the location and expansion of industrial businesses in the Duwamish Manufacturing/Industrial Center (GD-G4).
- Encouraging site assembly that would permit expansion or new development of industrial uses (GD-P4).
- Limiting the location or expansion of non-industrial uses in the Duwamish Manufacturing/Industrial Center (GD-P5).
- Continuing the Duwamish waterway as a working industrial waterfront that retains and expands in value as a vital resource providing family-wage jobs and trade revenue for the city, region, and state (GD-G6).
- The Duwamish Manufacturing/Industrial Center remaining a MIC, promoting the growth of industrial jobs and businesses and strictly limiting incompatible commercial and residential activities (GD-G8).
- Striving to protect the limited and non-renewable regional resource of industrial land, particularly waterfront industrial land, from encroachment by non-industrial uses (GD-PP8).

- Striving to maintain sufficient capacity in the shoreline areas for anticipated water-dependent industrial uses (GD-P11).
- Seeking to preserve the Duwamish Waterway’s ability to function as Seattle’s gateway to the Pacific and to provide adequate nearby land for warehousing and distribution that serves the shipping industry (GD-P12).
- Especially along the waterway, discouraging conversion of industrial land to non-industrial uses (GD-P13).
- Maintaining shoreside freight access to and from the waterway (GD-P14).
- Attaining a high level of general mobility and access within the Duwamish Manufacturing/Industrial Center (GD-G9).

The Comprehensive Plan designates the Terminal 5 site as Industrial. Situated in the Duwamish industrial area, all land within a mile or more of the Project site is also designated Industrial. A primary purpose of the Industrial land use designation is to support growth in the industrial and manufacturing employment base of Seattle and to preserve industrial land.

#### NORTHWEST SEAPORT ALLIANCE STRATEGIC BUSINESS PLAN<sup>25</sup>

The NWSA Strategic Business Plan established the major business objectives for the NWSA. The plan defines opportunities to develop strategic terminals that are equipped to handle ultra-large container ships and the increased cargo volumes these ships bring. It proposes a phased build-out of the strategic terminals based on market demand, opportunities to optimize existing facilities and using excess container acreage for alternative cargo to further diversify the cargo portfolio. The transition plan component within the business plan discusses the process for establishing the organization necessary to support the business plan. The NWSA operating budget and Capital Improvement plan implement the business plan and are important components of each home port budget.

#### CENTURY AGENDA

The Port of Seattle Commission adopted the Century Agenda in 2013. The goals in the Century Agenda provide a policy context for the Port for setting priorities and making decisions, and a framework for the Port Commission and staff to make choices among competing projects and investment options. An overarching goal is that over the next 25 years, the Port would add 100,000 jobs through economic growth led by the Port, for a total of 300,000 Port-related jobs in the region, while reducing the environmental footprint.

Strategic objectives from the Century Agenda that are relevant to the Terminal 5 proposal include the following:

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<sup>25</sup> <https://www.nwseaportalliance.com/about/strategic-plan>

- Grow seaport annual container volume to more than 3.5 million twenty-foot equivalent units (TEUs).
- Structure our relationship with Washington ports to optimize infrastructure investments and financial returns.
- Triple the value of our outbound cargo to over \$50 billion.

#### ENVIRONMENTALLY CRITICAL AREAS—CRITICAL AREAS ORDINANCE

On March 27, 2006, the City of Seattle completed the first major update to environmentally critical areas (ECAs) regulations and policies since they were first adopted in 1990. These regulations address how development on and adjacent to Seattle's ECAs should be regulated. The new ordinance went into effect on May 9, 2006.

*Summary.* Regulations governing ECAs in the City of Seattle are contained within Chapter 25.09 of the SMC. ECAs include the following: steep slope, landslide-prone, and liquefaction-prone areas; abandoned landfills; flood-prone areas; riparian corridors; wetlands; and fish and wildlife habitat areas.

Grading in ECAs must be completed or stabilized by October 31 of each year unless an exception is permitted by the Director (SMC 25.09.060). Soils engineering studies are required for development in areas subject to liquefaction, and appropriate mitigation measures must be implemented through the requirements of SMC Title 22, Subtitle VIII, Grading and Drainage Control, SMC Title 22, Subtitle I, Building Code, and other applicable regulations (SMC 25.09.100).

*Discussion.* City of Seattle Environmentally Critical Area Maps (DCI 2016a) identify the Terminal 5 area as having liquefaction-prone soils. Liquefaction zones are considered environmentally sensitive but not ECAs, and require special development considerations. Grading in any ECA would be completed and these areas stabilized by October 31 of the year during which construction would occur.

In addition, areas within 100 feet of the ordinary high water mark are also ECAs.

### 3.8.2 AFFECTED ENVIRONMENT

The proposed Project would need to be in compliance with the plans and policies listed above under the heading of Regulatory Context.

### 3.8.3 IMPACTS

#### 3.8.3.1 NO-ACTION ALTERNATIVE

The existing uses at Terminal 5, which would be retained in the No-Action Alternative, are consistent with the goals and objectives of the Greater Duwamish Manufacturing/ Industrial Center Plan. The Port cannot maximize the utilization of the property by the shipping industry as effectively in the No-Action Alternative, so there would be less opportunity for industrial expansion.

The Century Agenda goal of growing the seaport annual container volume to more than 3.5 million TEUs would not be advanced because Terminal 5 would not be able to accommodate higher container volumes over what current operations allow. The No-Action Alternative would also limit infrastructure investments and financial returns and would not play a significant part in tripling the value of outbound cargo to over \$50 billion.

The No-Action Alternative would be required to comply with the ECAs regulations.

#### 3.8.3.2 ALTERNATIVES 2 AND 3

The proposal is consistent with the goals and objectives of the Greater Duwamish Manufacturing/Industrial Center Plan. The proposal would provide a single, highly efficient facility that would enable the Port to work closely with industrial lease-holders and major carriers. It would modify Port facilities to accommodate growth in Seattle's industrial base of shipping, storage, and distribution. The proposal seeks to provide adequate land for distribution near the waterway to serve the shipping industry. The Duwamish Waterway would continue as a working industrial waterfront, retaining and creating jobs and trade revenue. The proposed uses are permitted outright as industrial functions in an industrial area.

Alternatives 2 and 3 would provide the terminal facilities that could accommodate higher container volumes and assist in reaching the goal of growing seaport annual container volume to more than 3.5 million TEUs. Alternatives 2 and 3 may also advance the optimization of infrastructure investments and financial returns and could play a part in tripling the value of outbound cargo to over \$50 billion.

All alternatives would be required to comply with the ECAs regulations.

#### 3.8.4 MITIGATION MEASURES

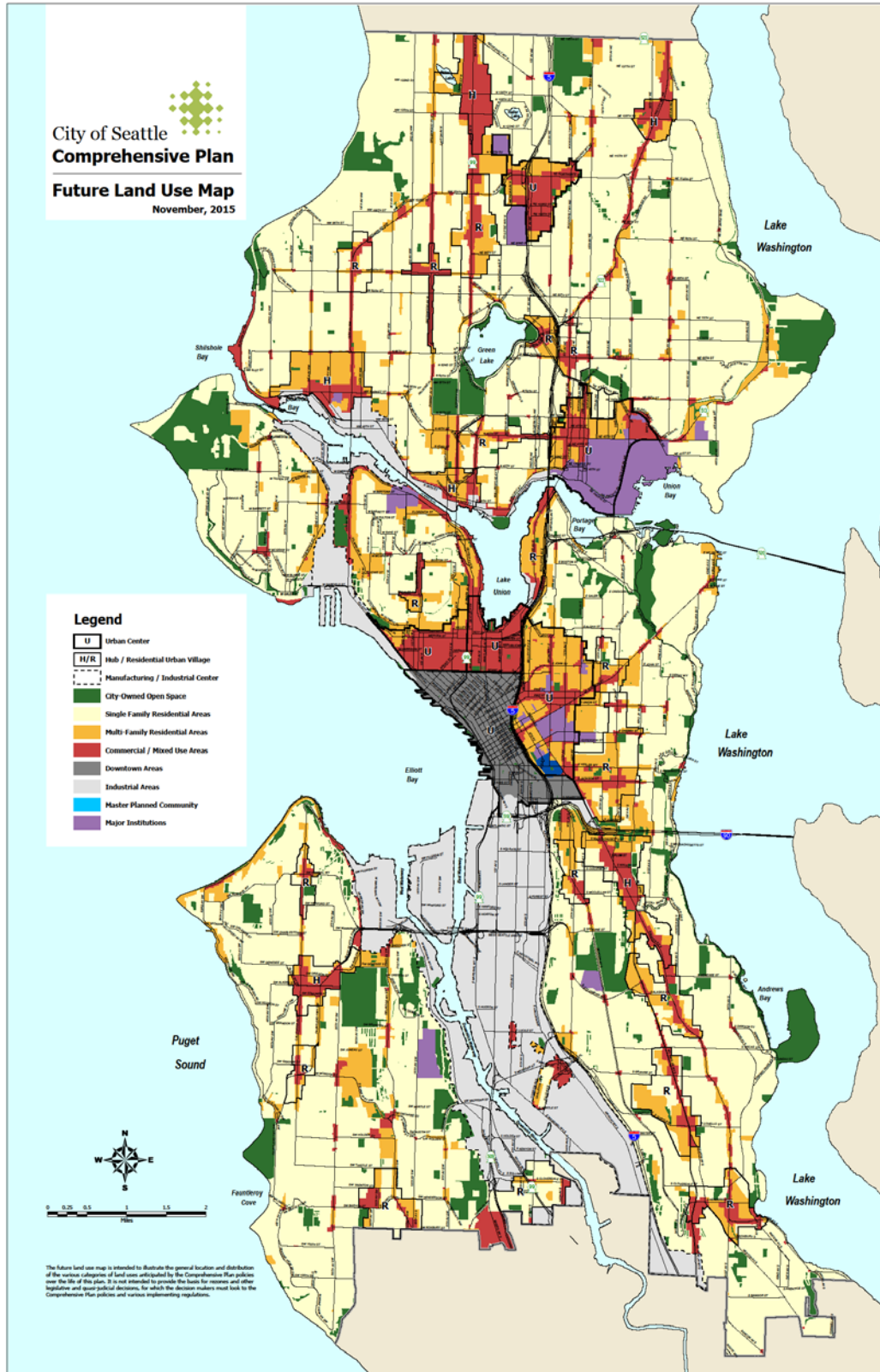
##### 3.8.4.1 ALL ALTERNATIVES

No mitigation would be required under any of the Alternatives because they are all in compliance with the applicable plans and policies.

#### 3.8.5 SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

##### 3.8.5.1 ALL ALTERNATIVES

No significant unavoidable adverse impacts are expected from relationship to plans and policies.





### 3.9 AESTHETICS/LIGHT AND GLARE

This section assesses the potential impacts on aesthetics and visual resources of the proposed Project's alternatives. For the purposes of this assessment, aesthetics and visual resources refer to the overall visual character of the Project site and the surrounding area. This section describes the regulatory setting and methodology used to conduct the aesthetic analysis and describes the affected environment, including an identification of existing visual resources, such as key viewpoints in the study area. The section then assesses the proposed Project's potential impacts on aesthetics and visual resources. This assessment also includes an evaluation of potential impacts due to light (i.e., man-made artificial nighttime light) and glare (i.e., a strong or dazzling lighting condition originating with sources of either direct or reflected light that causes visual discomfort) resulting from the proposed Project.

#### 3.9.1 REGULATORY CONTEXT

##### CITY OF SEATTLE PUBLIC VIEW PROTECTION POLICIES

The Seattle Municipal Code (SMC) Section 25.05.675 contains environmental policies related to public view protection. According to the SMC, it is City of Seattle policy to protect public views of significant natural and man-made features from public places, which include specified viewpoints, parks, scenic routes, and view corridors identified in SMC 25.05.675. It is also City of Seattle policy to protect public views of historic landmarks designated by the Landmarks Preservation Board and to protect views of the Space Needle from listed public places. No public places with views to the Space Needle listed in SMC 25.05.675 are located in the vicinity of the proposed Project.

##### CITY OF SEATTLE SEPA ORDINANCE

The City of Seattle SEPA Ordinance (SMC 25.05) protects public views of significant natural and human-made features: Mount Rainier, the Olympic and Cascade Mountains, the downtown skyline, and major bodies of water, including Puget Sound, Lake Washington, Lake Union, and the Ship Canal, from public places consisting of the specific viewpoints, parks, scenic routes, and view corridors listed in the ordinance. The places listed in the ordinance were reviewed to determine view impacts of the proposed Project.

##### SEATTLE SHORELINE MASTER PROGRAM

The Washington State Shoreline Management Act (SMA) of 1971 includes a provision that, except in certain circumstances, no permit shall be issued for new or expanded buildings or structures more than 35 feet in height that would obstruct the view of a substantial number of residences on areas adjoining the shorelines. However, the SMA does not limit the height of vessels. Also, the goals and policies of the SMA are implemented through the City of Seattle-adopted Shoreline Master Program (SMP). View corridors are required by the City of Seattle SMP in certain instances, but are not required where, as is the case with Terminal 5, the lot is developed with water-dependent uses. In addition, the City of Seattle SMP regulations state that vessels are not structures and those regulations allow vessels to be moored in required view corridors.

### 3.9.2 AFFECTED ENVIRONMENT

#### AESTHETICS

The visual character of the Terminal 5 site and the surrounding area is industrial. Terminal 5 has been a marine terminal for decades and is part of an industrial area that was developed within the Duwamish River estuary to serve water-dependent activities of the Seattle region. Terminal 5 currently operates up to six cranes, which can be configured to serve up to three cargo vessels berthed at the existing wharf. Vessel sizes that currently serve Terminal 5 range up to the 8,000 twenty-foot equivalent units (TEUs) in size.

#### VIEWS

Existing views over the Project site are generally from West Seattle, Harbor Island and the Downtown Seattle area and include views of Puget Sound, Mount Rainier, and the Olympic and Cascade Mountains. The proposed Project site is a developed industrial area characterized by streets, bridge structures, and adjacent businesses. Most of the area (about 95 percent) is paved with asphalt or concrete or covered by buildings. The current view of Terminal 5 and vicinity includes cargo marshalling yards and facilities. Historically, container ships and other large vessels and cranes have partially blocked views of some of the scenic vistas.

#### LIGHT AND GLARE

Current lighting conditions on the site are indicative of the highly industrial Port environment. Lighting at Terminal 5 primarily consists of high-mast light poles and exterior building lights. The existing high-mast light poles are approximately 86 feet tall with eight 1-kilowatt, high-pressure sodium light fixtures. The level of lighting at Terminal 5 is generally similar to that of other adjacent industrial port areas in accordance with Washington State Labor & Industry standards. Lighting along the wharf is primarily comprised of high-mast light poles and directional lighting mounted on ship-to-shore (STS) cranes associated with Port operations at the site. All lighting complies with Washington State Labor & Industries standards.

### 3.9.3 IMPACTS

#### 3.9.3.1 NO-ACTION ALTERNATIVE

##### AESTHETICS

No change to aesthetics of the site or area is expected under the No-Action Alternative because only minor repairs and upgrades to the site are expected.

##### VIEW ANALYSIS

Views from key viewpoints are not expected under the No-Action Alternative because equipment and operations would be similar to operations that are currently permitted at the site.

## LIGHT AND GLARE

No impacts are expected from light and glare because there are no proposed changes to light and glare under the No-Action Alternative.

### 3.9.3.2 ALTERNATIVE 2

#### AESTHETICS

Under Alternative 2, the terminal may replace cargo crane equipment. The container terminal operation for Alternative 2 would increase the number of cranes from the current six cranes to a maximum of twelve cranes depending on the operational needs of a long-term tenant. The new cranes that would be installed would be up taller than the existing cranes, up to approximately 300 feet in height. They would be the same or similar to the cranes across the West Waterway at Terminal 18. The size of vessels would gradually change from the current 8,000-TEU vessels to the larger 18,000-TEU vessel.

The aesthetics of the Terminal 5 site are not expected to change significantly as a result of the proposed Project. The visual character of the Terminal 5 site and the surrounding area is now, would continue to be, industrial. Terminal 5 has been a marine terminal for decades and is part of an industrial area that was developed within the Duwamish River estuary to serve water-dependent activities of the Seattle region. Under Alternative 2 the site would continue to be a marine terminal.

#### VIEWS

An increase in the number of mobile cargo cranes, with increased height under Alternative 2, may alter views across Terminal 5 and to Harbor Island. However, potential changes in crane equipment would not affect the existing view corridor condition at the site.

The addition of the crane structures and the presence of the larger vessels have the potential to block public views of significant natural and human-made features: Mount Rainier, the Olympic and Cascade Mountains, the downtown skyline, and major bodies of water, including Puget Sound, and from public places consisting of specific viewpoints, parks, scenic routes, and view corridors.

Cargo cranes are exempt from height restrictions in the SMP as cited in Chapter 23.60A.486B SMC height exceptions in the Urban Industrial Environment which states:

*“Cranes, mobile conveyers, light standards, and similar equipment necessary for the function of water-dependent uses or the servicing of vessels may extend above the maximum height limits”.*

A view analysis was conducted from public viewpoints and locations designated in the City of Seattle SEPA ordinance, as well as the view from the nearby public shoreline access site, Jack Block Park. The views were selected because they were considered the key viewpoints within the study area that would have the most likelihood for view obstruction. For each view, the analysis describes the existing conditions and the change in views that may be caused by the proposed Project. The views include public streets, public viewpoints, and parks. (Note: Residential views were analyzed from West Seattle neighborhoods, but the homes were located at a high enough elevation that the larger

vessels and higher cranes would not block views of water, shoreline, or mountains, but would be visible from some residences in these neighborhoods.)

The following viewpoints were selected for further analysis:

- View 1: Belvedere Park—SW Admiral Way and SW Olga Street
- View 2: Don Armeni Boat Ramp—Harbor Avenue SW
- View 3: Jack Block Park—SW Florida Street
- View 4: Seacrest Park—Harbor Avenue SW
- View 5: Victor Steinbrueck Park—Virginia Street and Western Avenue
- View 6: High-Level (Jeanette Williams Memorial) West Seattle Bridge

Each view was evaluated with the following criteria:

- Would the proposed Project increase, decrease, or cause no change to the view of the man-made elements (the shoreline, site facilities) visible in each view?
- Would the proposed Project increase, decrease, or cause no change to the view of the natural formations (Mt. Rainier, Puget Sound, Olympic Peninsula, Cascade Mountains, water) visible in each view?
- Would the proposed Project increase, decrease, or cause no change to the view of historic landmarks visible in each view?
- The changes are described below and illustrated in the corresponding figures. Whether the change is perceived as a negative or positive impact depends on the viewer's opinion.

*View 1: Belvedere Park.* Figure 3.9.1 and Figure 3.9.2 simulate what a person standing at Belvedere Park in West Seattle would observe, looking southeast toward Terminal 5. Figure 3.9.1 shows that there are views of the Cascade Mountains. Figure 3.9.2 shows that the proposed 6 additional cranes would not impact the views of the Cascade Mountains.

*View 2: Don Armeni Boat Ramp.* Figure 3.9.3 and Figure 3.9.4 simulate what a person standing at the south end of the Alki Trail at the Don Armeni Boat Ramp site would observe, looking southeast toward Terminal 5. Figure 3.9.3 shows that there are views of Mt. Rainier and Elliott Bay. Figure 3.9.4 shows that no views of Mt. Rainier or Elliott Bay would be obscured by the proposed cranes or vessels that would be moored at Terminal 5.

*View 3: Jack Block Park.* Figure 3.9.5 and Figure 3.9.6 simulate what a person standing at the south end of Jack Block Park would observe, looking southeast toward Terminal 5. Figure 3.9.5 shows that there are no protected views in sight. Figure 3.9.6 shows that the view would change to include a larger container vessel than currently moors at the terminal and the proposed cranes are higher, but there are no protected views.

*View 4: Seacrest Park.* Figure 3.9.7 and Figure 3.9.8 simulate what a person standing at Seacrest Park near the pier would observe, looking south toward Terminal 5. Figure 3.9.7 shows that there are views of Mt. Rainier and Elliott Bay. Figure 3.9.8 shows that no views of Mt. Rainier or Elliott Bay would be obscured by the proposed cranes or vessels that would be moored at Terminal 5.

*View 5: Victor Steinbrueck Park.* Figure 3.9.9 and Figure 3.9.10 simulate what a person standing at the south corner of the Victor Steinbrueck Park would observe, looking south toward Terminal 5. Figure 3.9.9 shows that there is a water view of Elliott Bay in the foreground but no protected views are obscured. Figure 3.9.10 shows higher cranes at the Terminal 5 site but they do not obscure any protected views.

*View 6: High-Level (Jeannette Williams Memorial) West Seattle Bridge.* Figure 3.9.11 and Figure 3.9.12 simulate what a person driving across the West Seattle Bridge would observe, looking northwest toward Terminal 5. Figure 3.9.11 shows that there are water views of Elliott Bay, but there are no other protected views. Figure 3.9.12 shows that some of Elliott Bay in the background would be obscured by the higher cranes. However, the views are currently obscured when large container vessels are moored at the site.

#### LIGHT AND GLARE

New temporary sources of light would be introduced to the site during construction activities. These lighting sources would be associated with utility and wharf construction, trucks, and other equipment. Lighting associated with exterior construction activities would be controlled by City of Seattle regulations, potentially limiting the hours of construction, and thereby limiting construction lighting during nighttime hours.

Lighting under Alternative 2 would maintain the current lighting levels throughout the terminal yard area by preserving the existing high-mast light poles and exterior building lights. The high-pressure sodium light-fixtures that are currently in use would be replaced by light-emitting diode (LED) or equivalent energy efficient fixtures and be operated using programmable control equipment.

Work areas along the wharf would be required to maintain a minimum of 5-foot candles measured 30 inches above the dock floor and maintain a minimum of 3-foot candles illumination measured along the bull rail per Washington Administrative Code (WAC) Chapter 296-56-60221. In order to maintain minimum required lighting levels, the approximately nine new poles would each be 150 feet tall with six LED fixtures oriented in a ring along with ten light-emitting plasma (LEP) directional lights with shields. The directional lights on the new standards would provide the same level of lighting along the wharf as currently exists. Additional localized lighting would be provided from the cranes and the terminal buildings at levels similar to the existing conditions.

### 3.9.3.3 ALTERNATIVE 3

#### AESTHETICS

The impacts would be the same as Alternative 2.

#### VIEWS

The impacts would be the same as Alternative 2.

## LIGHT AND GLARE

New temporary sources of light would be introduced to the site during construction activities similar to Alternative 2. These lighting sources would be associated with utility and wharf construction, trucks, and other equipment and would be controlled by City of Seattle regulations.

Alternative 3 would generally lower the levels of operational lighting in several areas throughout the Terminal 5 yard, as the rail-mounted gantry cranes can function with local crane-mounted lighting only. The majority, and potentially all, of the existing lighting would be removed, and new lighting would only be installed on the exterior of buildings, in the truck turnaround areas, and along the wharf, landward of the STS cranes. New lighting would consist of LED and LEP light fixtures.

Similar to Alternative 2, lighting levels along the wharf would be maintained at current levels and in accordance with WAC 296-56-60221. New high-mast light poles would be provided landward of the cranes, along with directional lighting, in order to maintain current lighting levels.

### 3.9.4 MITIGATION MEASURES

#### 3.9.4.1 NO-ACTION ALTERNATIVE

##### AESTHETICS/VIEWS/LIGHT AND GLARE

No mitigation would be required for aesthetics, views, or light and glare because there is minimal change from the current aesthetic, views, and light and glare at Terminal 5.

#### 3.9.4.2 ALTERNATIVE 2

##### AESTHETICS

There is minimal projected impact to aesthetics from Alternative 2. It is currently a container/cargo terminal and would remain so with Alternative 2. Therefore, no measures are required to reduce or control impacts.

##### VIEWS

Because there is little projected impact to views from public viewpoints under Alternative 2, no measures are proposed to reduce or control such impacts.

##### LIGHT AND GLARE

Lighting associated with exterior construction activities would be controlled by City of Seattle regulations, potentially limiting the hours of construction, and thereby limiting construction lighting during nighttime hours. No other measures are expected to be required during construction.

Proposed operational lighting levels would conform to all applicable federal, state, and local standards. Replaced high-mast light poles would also use LED and LEP lights, which are more efficient and spill less light and glare into adjacent areas than those currently used on site.

Additionally, the fixtures would use directional (glare) shields and internal louvers to minimize light reflection onto the waterway or towards neighboring properties.

### 3.9.5 SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

#### 3.9.5.1 ALL ALTERNATIVES

##### AESTHETICS/VIEWS

No significant unavoidable adverse impacts to aesthetics or views are anticipated from any of the alternatives.

#### 3.9.5.2 ALTERNATIVES 2 AND 3

##### LIGHT AND GLARE

Changes to site lighting under Alternative 2 and Alternative 3 are not anticipated to result in an increase in light and glare on the site or in the surrounding areas. With implementation of mitigation measures, no significant unavoidable adverse impacts are anticipated from light and glare.



*Figure 3.9.1: Belvedere Park, Facing East – Existing View*



*Figure 3.9.2: Belvedere Park, Facing East – Proposed View*





*Figure 3.9.3: Don Armeni Boat Ramp, Facing Southeast – Existing View*



*Figure 3.9.4: Don Armeni Boat Ramp, Facing Southeast – Proposed View*



*Figure 3.9.5: Jack Block Park, Facing Southeast – Existing View*



*Figure 3.9.6: Jack Block Park, Facing Southeast – Proposed View*



*Figure 3.9.7: Seacrest Park, Facing Southeast – Existing View*



*Figure 3.9.8: Seacrest Park, Facing Southeast – Proposed View*



*Figure 3.9.9: Victor Steinbrueck Park, Facing Southwest – Existing View*



*Figure 3.9.10: Victor Steinbrueck Park, Facing Southwest – Proposed View*

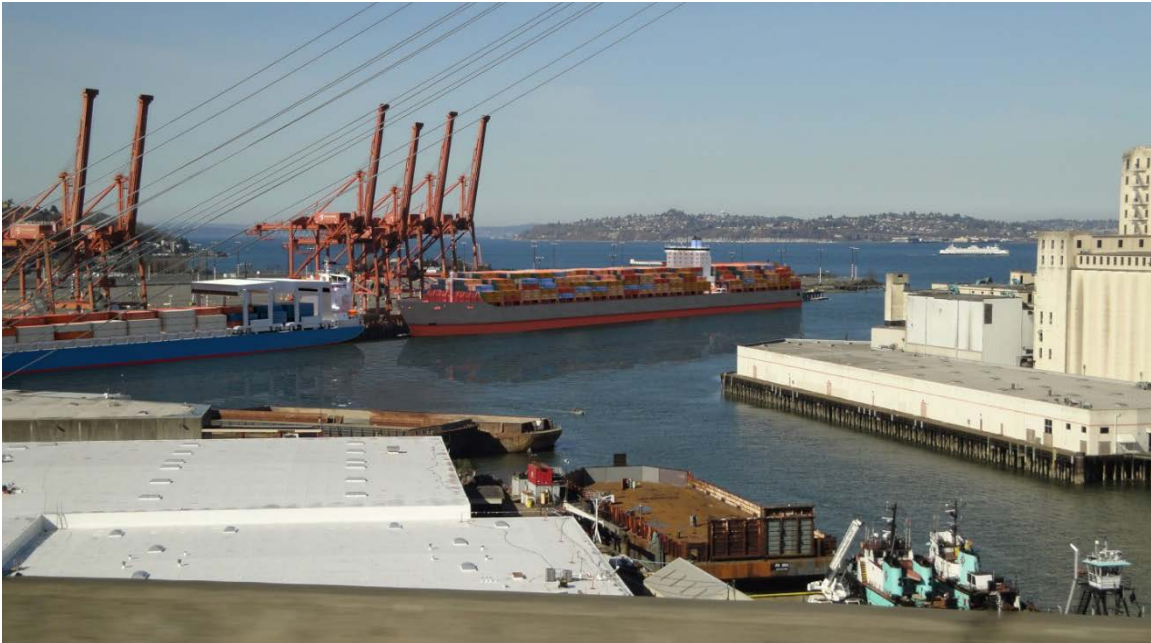


Figure 3.9.11: *High-Level (Jeanette Williams Memorial) West Seattle Bridge, Facing Northwest – Existing View*

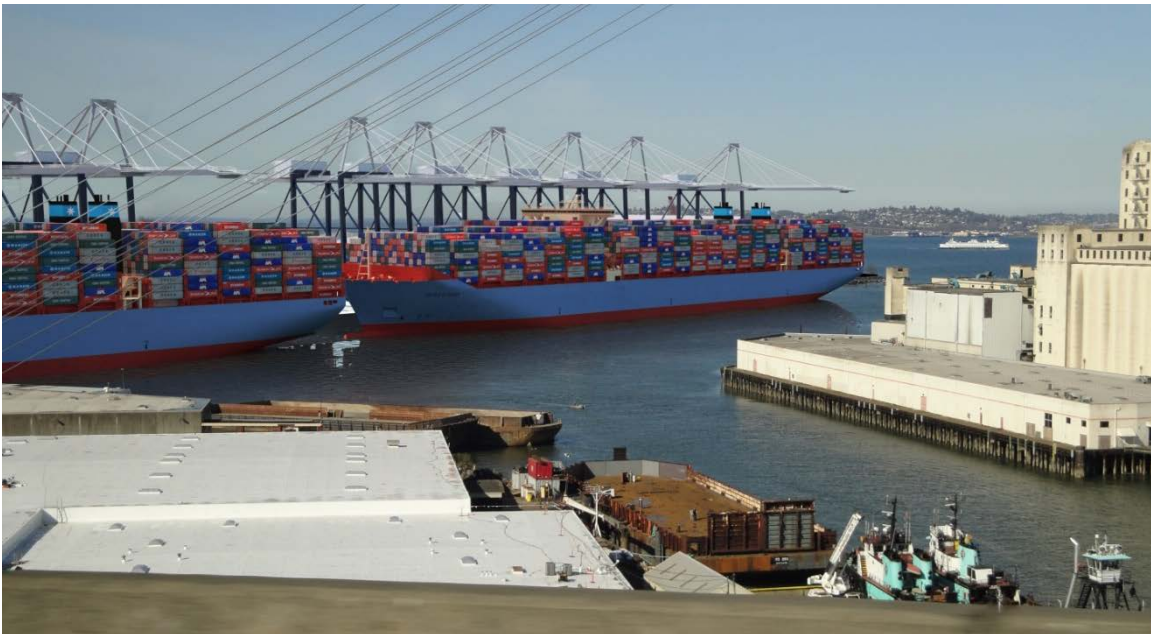


Figure 3.9.12: *High-Level (Jeanette Williams Memorial) West Seattle Bridge, Facing Northwest – Proposed View*

## 3.10 HISTORIC AND CULTURAL RESOURCES

### 3.10.1 REGULATORY CONTEXT

#### FEDERAL, STATE, AND CITY

Federal, state, and City of Seattle laws and processes govern the designation of historic resources in the City of Seattle. The National Register of Historic Places (NRHP) is the official federal list of districts, sites, buildings, structures, and objects significant in American history, architecture, archaeology, engineering, and culture. The National Park Service administers the register. Properties listed in the NRHP must possess historic significance and integrity. Generally, the property must typically be 50 years old to be considered and must be significant when evaluated in relationship to major trends of history in the community, state, or nation. The criteria for listing in the NRHP include the following: (A) the property is associated with events that have made a significant contribution to the broad patterns of our history; or (B) the property is associated with the lives of persons significant in our past; or (C) the property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or presents a significant and distinguishable entity whose components lack individual distinction; or (D) the property has yielded, or is likely to yield, information important in prehistory or history (36 Code of Federal Regulations Part 60).

Within the City of Seattle, historic recognition is provided through designation of a property as a landmark by the Landmarks Preservation Board. The City of Seattle's Preservation Ordinance (Seattle Municipal Code [SMC] 25.12) has threshold requirements that a potential landmark must meet in order to be designated. The ordinance requires a property to be more than 25 years old and "have significant character, interest or value, as part of the development, heritage or cultural characteristics of the City, State or Nation." "Significant character" is a standard of integrity, indicating that sufficient original building fabric is present to convey the historic and architectural significance of the property. The City of Seattle's landmark ordinance also requires a property to meet one or more of its six designation criteria: (A) it is associated in a significant way with an historic event, which has had a significant effect on the community, city, state or nation; (B) it is associated in a significant way with the life of a person important in the history of the city, state, or nation; (C) it is associated in a significant way with a significant aspect of the cultural, political or economic heritage of the community, city, state or nation; (D) it embodies the distinctive visible characteristics of an architectural style, period, or method of construction; (E) it is an outstanding work of a designer or builder; and (F) it is an easily identifiable feature of its neighborhood or the city due to the prominence of its spatial location; contrasts of siting, age, or scale; and it contributes to the distinctive quality or identity of its neighborhood or the city.

Since the Terminal 5 site falls within 200 feet of where the saltwater shoreline existed prior to fill or alteration (known as the U.S. Government meander line), this analysis adheres to the guidelines set out in the City of Seattle DCI Director's Rule 2-98 (SMC). This ruling describes how the City of Seattle environmental guidelines mesh with those implemented under SEPA. Director's Rule 2-98 states that many of Seattle's existing and former shoreline areas may be sites of potential archaeological

significance due to settlement patterns of Native Americans and early European settlements along Puget Sound. Areas where sites or resources of potential archaeological significance could be found include freshwater and saltwater confluences, river confluences and their vicinity, and historical sources of certain kinds of geological formations. Additionally, the City of Seattle recognizes that there is a possibility that new resources may be discovered during construction in other areas.

#### TREATY FISHING

Elliott Bay, the East and West Waterways, and the Duwamish Waterway are recognized as **Treaty-protected, "usual and accustomed" fishing access areas, used by the Muckleshoot Indian Tribe and the Suquamish Tribe**. Treaty fishing access is a continuing activity and is a baseline condition within the Project area. Fishing by tribal members in this area is consistent with past federal government treaties and subsequent court decisions.

### 3.10.2 AFFECTED ENVIRONMENT

#### HISTORIC

No local-, state-, or federal-listed historic or cultural buildings, structures, or sites are located on or near the Terminal 5 Improvements Project boundary, and no sites appear eligible for listing on or near the Project boundary at Terminal 5.

#### ARCHAEOLOGICAL

A previous subsurface investigation by Larson Archaeological and Anthropological Services (LAAS 1993) was summarized in the 1994 Southwest Harbor Cleanup and Redevelopment Project FEIS (USACE 1994) and indicated that archaeological sites are present in the Duwamish Waterway in the vicinity of the Project boundary at Terminal 5.

The nearest sites, 45KI039 and 45KI432, are 0.4 and 0.5 mile away, respectively, and are situated on different landforms (DAHP 2015). Terminal 5 is located in an area that was significantly modified during the dredging of the East and West Waterways and construction of Harbor Island in the early 1900s (the island was completed in 1909). Exhibit 3.10-1 includes a Duwamish River 1901 pre-dredging map with a Terminal 5 overlay.

No additional archaeological sites have been identified in the vicinity of the Project boundary at Terminal 5 since 1993, according to the Washington State Department of Archaeology and Historic Preservation (DAHP; personal communication between A. Hackett and G. Kaehler, February 2015 [SoundEarth 2015]). The possibility that historic or cultural resources are present at Terminal 5 is low since the present industrial facility consists of filled upland area, with the majority of fill placed in the former aquatic area of south Elliott Bay.

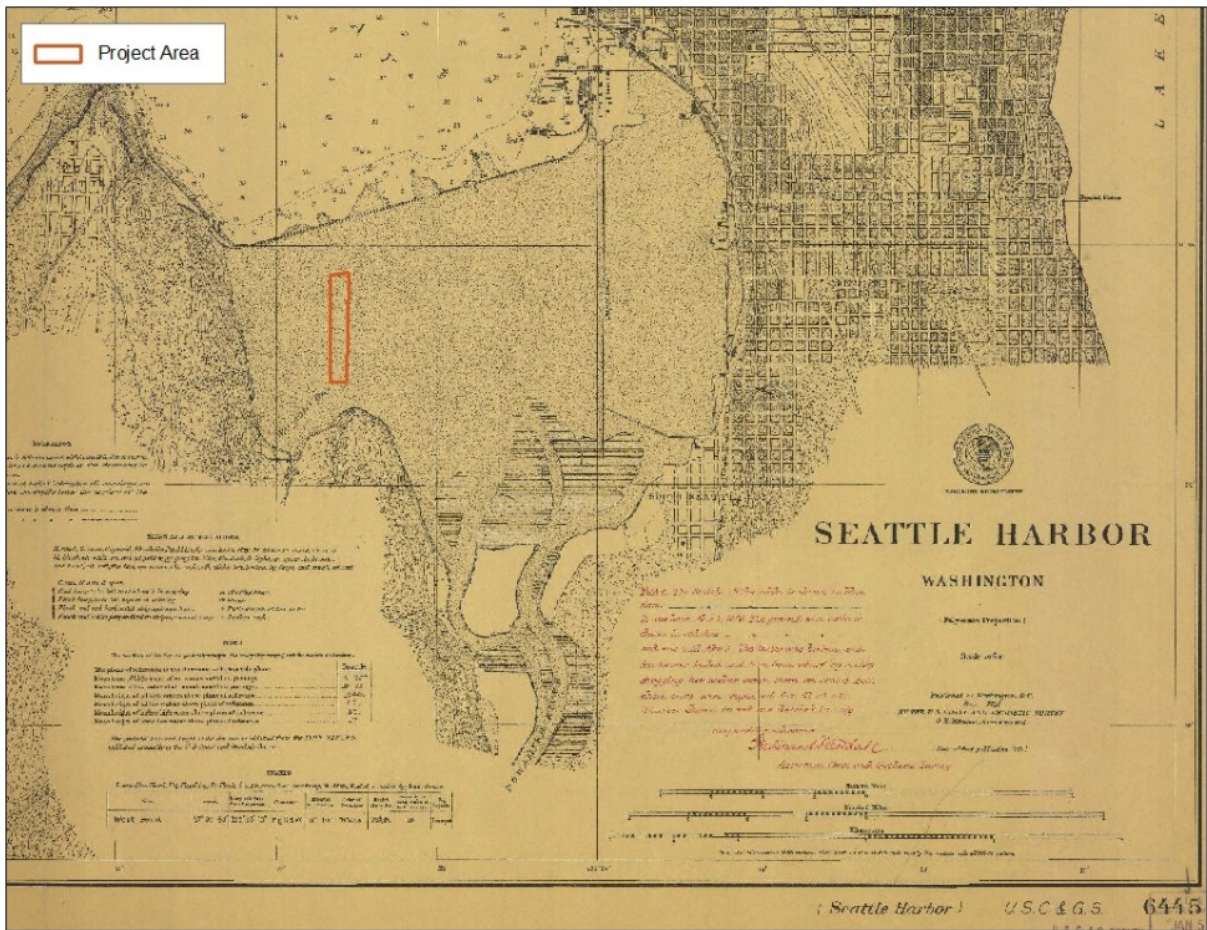


Figure 3.10.1: Duwamish River Delta 1901 Pre-Dredging Map Terminal 5 Overlay

### TREATY FISHING

Elliott Bay, the East and West Waterways, and the Duwamish Waterway are recognized as **Treaty protected, “usual and accustomed” fishing access areas, used by the Muckleshoot Indian Tribe and the Suquamish Tribe**. Treaty fishing access is a continuing activity and is a baseline condition within the Project area. Fishing by tribal members in this area is consistent with past federal government treaties and subsequent court decisions.

Members of the Muckleshoot Indian Tribe and Suquamish Tribe harvest Chinook, coho, chum, pink salmon, and steelhead salmon in south Elliott Bay, the East and West Waterways, and the Duwamish Waterway during summer, fall, and winter of each year, generally from August through December and in January and February. Treaty fishers typically use drift gillnets to harvest salmon, including drift nets in Elliott Bay, and set nets along the south Elliott Bay shoreline and in the East and West Waterways and the Duwamish Waterway. Drift and set gillnets float at the surface, with the bottom edge of the nets extended vertically in the water column as a curtain. Drift gillnets are free floating nets attended by a fisherman. Set nets are often attached to structures or objects along the shoreline, with the waterward end of the net held in place by an underwater anchor. Set gillnets may be left in place unattended. Aquatic area adjacent to Terminal 5 is an active set net fishing area.



### 3.10.3 IMPACTS

#### METHODOLOGY

Methods used to assess the potential impacts to historical and archaeological resources and Treaty fishing included the following:

- Review of the Southwest Harbor Cleanup and Redevelopment Project Final Environmental Impact Statement, prepared in 1994, for the Project boundary at Terminal 5 (USACE 1994).
- Review of Cultural Resource Testing 45KI432 Alki Transfer/CSO Project West Seattle Pump Station, King County, Washington by Paul S. Solimano, Lynn L. Larson and Dennis E. Lewarch. Submitted to HDR Engineering, Bellevue, Washington. Prepared for: Municipality of Metropolitan Seattle, Seattle, Washington. Prepared by Larson Anthropological/Archaeological Services. LAAS Technical Report #93-7. Seattle, Washington. June 30, 1993 (LAAS 1993).
- Review of the DAHP's Washington Information System for Architectural and Archaeological Records Database on January 18, 2015 (DAHP 2015).
- Review of King County and City Landmarks List and Technical Paper No. 6, revised December 2015, on December 29, 2015 (King County 2015).
- Review of Seattle Department of Neighborhoods' database of historical properties on February 2, 2015 (Seattle Department of Neighborhoods 2015).
- Personal communication regarding archaeological sites in the Project boundary at Terminal 5 between Audrey Hackett, SoundEarth Strategies, Inc., and Gretchen Kaehler, Department of Archaeology and Historic Preservation, in February 2015 (SoundEarth 2015).

#### 3.10.3.1 NO-ACTION ALTERNATIVE

##### HISTORIC

No known historic resources are located within the Project boundary at Terminal 5. Therefore, no historic resources would be expected to be affected by the No-Action Alternative.

##### ARCHAEOLOGICAL

The No-Action Alternative would not be expected to affect any known archaeological resources at Terminal 5. If any archaeological resources are present, they would continue to physically deteriorate naturally, primarily as a result of low-level ongoing weathering.

##### TREATY FISHING AT TERMINAL 5

By virtue of its location on the West Duwamish Waterway, Terminal 5 is within the tribal Treaty fishing areas described above. Vessel activity to and from Terminal 5 would continue, at times, to move through drift and set gillnet fishing areas. **Under the No-Action Alternative, container terminal operations would not alter existing measures, actions, and agreements intended to avoid and minimize potential disruption of Treaty fishing access implemented by the Port and in coordination with the Muckleshoot Indian Tribe and the Suquamish Tribe.**

### 3.10.3.2 ALTERNATIVES 2 AND 3

#### HISTORIC

No potential adverse effects on historic or cultural resources are anticipated under either Alternative 2 or 3.

#### ARCHAEOLOGICAL

All Port tenants are obligated by lease to meet all applicable local, state, and federal requirements regarding cultural and historical resources. As shown in Exhibit 3.10-1, Terminal 5 was previously located in the intertidal portion of the Duwamish River estuary. Prior to about 2,200 years ago, when the Duwamish River delta aggraded to its historic premodification maximum, the delta would have been a deep bay. The proposed Project includes deepening a previously maintained berth area occurring in potentially native sediments. The possibility that historic or cultural resources are present at the Project boundary at Terminal 5 is low since the present industrial facility consists of filled upland area, with the majority of fill placed in former aquatic area of south Elliott Bay. While the proposed Project is not expected to impact cultural resources, construction work for the proposed Project has the potential to interfere with undiscovered resources.

#### TREATY FISHING AT TERMINAL 5

The Port recognizes the need to evaluate the proposed Project in detail with the Muckleshoot Indian Tribe and the Suquamish Tribe to determine actions necessary to avoid and minimize potential negative effects on Treaty fishing access. The Port currently works in partnership with the Muckleshoot Indian Tribe and the Suquamish Tribe to exchange harbor-wide vessel arrival, departure, and berth information with Treaty fishers, including measures to offset potential disruption of Treaty fishing access. The proposed Project, including potential changes in the size of cargo vessels serving the site, will be included in existing harbor-wide Treaty fishing coordination activities, in addition to continued consultation throughout the design and implementation of the Project.

The Port also recognizes that in-water construction activities are necessary to rehabilitate the existing Terminal 5 container cargo pier with increased-diameter concrete support piling, installation of deep subtidal slope stabilization steel sheet piling, and dredge for increased navigational access depth. These activities have the potential to affect Treaty fishing access during three consecutive yearly fishing harvest periods. The Port is committed to working with the Treaty fishers to avoid and minimize potential impediments to fishing access.

An essential element of the proposed Project is preparing the marine cargo facility for service by larger container ships. The following provides information comparing past Terminal 5 container vessel service with anticipated use of the rehabilitated marine cargo facility by larger-capacity vessels consistent with wharf rehabilitation actions included in Alternatives 2 and 3.

During the period 2000—2013, the number of container cargo vessels serving Terminal 5 operations included approximately 215 vessel calls per year, with the greatest number of ship calls in 2005

(290) and the fewest number of vessel visits in 2008 (210). During this period, ships calling at Terminal 5 were variable in size, approximately 900 to 960 feet long and 130 to 135 feet in beam. Vessels with similar dimensions typically represented 5,000- to 6,000-TEU capacity. During the period 2000–2013, cargo vessel berths at Terminal 5 were vacant 45 to 60 percent of total berth time. In the period 2012–2014 vessels with approximately 6,000- to 7,000-TEU capacity made irregular visits to Terminal 5. These large vessels represented the maximum size ships that could be accommodated by existing Terminal 5 container cranes, depending on the height of containers loaded above deck, vessel configuration, and other conditions.

Increased cargo capacity vessels commonly serving Terminal 18, Terminal 30, and Terminal 46 in the period 2012–2014 could not be served by Terminal 5 cargo facilities. Container ships with 7,000- to 8,500-TEU cargo capacities have composed the majority of vessels Terminal 18, Terminal 30, and Terminal 46 vessels calls in the period 2012 through the present. These vessels are, generally, approximately 1,125 to 1,200 feet long, with vessel beam dimensions 140 to 150 feet. Vessels of this size average approximately 17 percent greater length and 14 percent greater beam than the vessels calling at Terminal 5 during the period 2000–2013.

Container cargo projections linked with Project Alternatives 2 and 3 include 50 to 65 percent increases in cargo volumes. Increased cargo volumes would be transported in larger vessels. The size of vessels calling at Terminal 5 is expected to be approximately 25 greater in length and approximately 17 to 28 percent greater in beam. As a result, despite increased anticipated cargo volumes, projected yearly vessel calls would be less than 210, similar to the 2000–2013 period vessel call average. In addition, projected berth vacancy rates during the period 2030–2040 would be approximately 50 to 60 percent. The size of vessels calling at Terminal 5, as a result of the proposed Project, is expected to be approximately 25 greater in length and approximately 17 to 28 percent greater in beam, compared with previous vessel service.

In general, increased Terminal 5 cargo volumes anticipated under Alternatives 2 and 3 will not result in an increased numbers of vessels serving the site or an increased cumulative time at berth. However, the size of vessels using the Terminal 5 wharf will increase, particularly in vessel width.

### 3.10.4 MITIGATION MEASURES

#### 3.10.4.1 NO-ACTION ALTERNATIVE

##### HISTORIC

No mitigation is expected to be required and none is proposed.

##### ARCHAEOLOGICAL

No mitigation is expected to be required and none is proposed.

#### TREATY FISHING AT TERMINAL 5

Under the No-Action Alternative, container terminal operations would not alter existing measures, actions, and agreements intended to avoid and minimize potential disruption of Treaty fishing access implemented by the Port and in coordination with the Muckleshoot Indian Tribe and the Suquamish Tribe.

#### 3.10.4.2 ALTERNATIVES 2 AND 3

##### HISTORIC

No known historic resources are located within the Project boundary at Terminal 5. There are no recommended mitigation measures.

##### ARCHAEOLOGICAL

While there is little to no potential for unrecorded cultural resources in the Project boundary at Terminal 5, construction for Alternatives 2 and 3 would follow the SMC for Standards for Archaeological and Historic Resources in SMC 23.60A.154. More details are provided below.

SMC 23.60A.154A. Developments, shoreline modifications, and uses on any site having historic, cultural, scientific, or educational value, as defined by the Washington State Department of Archaeology and Historic Preservation and local tribes, shall reasonably avoid disruption of the historic, cultural, scientific, or educational resource.

If any archaeological resources are uncovered during the proposed work, work shall be stopped immediately and the applicant shall notify the City of Seattle, affected tribes, and the Washington State DAHP. The applicant shall submit a site inspection and evaluation report by a qualified professional archaeologist, approved by the City of Seattle that identifies all possible valuable archaeological data and makes recommendations on how to handle the data properly. When the report is prepared, the applicant shall notify affected tribes and the Washington State DAHP and provide them with copies of the report.

In addition, the minimal excavation and filling for electrical and water utility line placement anticipated for the Project would also be monitored such that historic or cultural materials discovered within the Project boundary at Terminal 5 can be protected from disruption, pending evaluation by participating responsible interests by using established protocol.

##### TREATY FISHING

The Port works in partnership with the Muckleshoot Indian Tribe and the Suquamish Tribe to exchange vessel traffic information and vessel activity data with Treaty fishers in the vicinity of Terminal 5 during fishing periods. Information detailing vessel activity would continue to be provided as a means of avoiding potential fishing access and vessel operation conflicts and to ensure continuing mutual access to this area of the West Waterway.

Wharf rehabilitation piling construction and dredging activities would be coordinated with fishing periods in order to minimize potential disruption of fishing access due to the presence of water-based construction equipment and any shifts in cargo vessel mooring areas.

### 3.10.5 SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

#### 3.10.5.1 ALL ALTERNATIVES

##### HISTORIC

No potential adverse effects on historic or cultural resources are anticipated. The possibility that historic or cultural resources are present within the Project boundary at Terminal 5 is low since the present industrial facility resides on a filled upland area, with the majority of fill placed in the former aquatic area of south Elliott Bay.

##### ARCHAEOLOGICAL

Construction for Alternatives 2 and 3 would follow the Seattle Municipal Code for Standards for Archaeological and Historic Resources in SMC 23.60A.154. By following this protocol, no unavoidable adverse impacts to known significant prehistoric or historical archaeological resources are anticipated.

##### TREATY FISHING AT TERMINAL 5

Continuing Treaty fishing access agreements with the Muckleshoot Indian Tribe and the Suquamish Tribe are expected to ensure that no significant, unavoidable adverse effects to Treaty fishing access will result from any of the proposed Project alternatives.

### 3.11 TRANSPORTATION

Detailed transportation impact analyses were performed to evaluate the Project impacts to all modes of land transportation, and are presented in Volume II, Appendix C and Appendix F of this DEIS. The technical reports summarized in this section are the *Transportation Technical Report for Draft EIS* (Heffron Transportation, Inc. [October, 2016]; Appendix C), and the *T-5 Rail Infrastructure and Grade-Crossing Analysis* (Moffatt & Nichol [April 22, 2016]; Appendix F).

#### 3.11.1 REGULATORY CONTEXT

Projects in the City of Seattle must meet requirements and approvals of the City of Seattle Department of Transportation (SDOT) and the Washington State Department of Transportation (WSDOT).

#### 3.11.2 AFFECTED ENVIRONMENT

Detailed information about the existing and planned future conditions are presented in **FEIS, Volume II**, Appendix C and Appendix F. Elements included in those reports are summarized below.

##### **Appendix C—Transportation Technical Report for FEIS**

- Existing roadway network that serves Terminal 5 and improvements that have been made since the terminal opened in 1999.
- Existing traffic volumes, including how traffic volumes have grown over time and how they fluctuate by month and time of day.
- Traffic operations at key intersections along SW Spokane Street and E Marginal Way S.
- Bridge opening operations of the SW Spokane Street Swing Bridge.
- Traffic safety and historical collision data at roadway intersections.
- Existing and planned transit service near the Project.
- Existing and planned bike and pedestrian (non-motorized) facilities near the Project.
- Existing parking facilities.
- Historical operating conditions and traffic generated by Terminal 5.
- Future plans and policies related to the transportation system.

##### **Appendix F—Terminal 5 Rail Infrastructure and Grade-Crossing Analysis**

- Existing rail networks that serve South Seattle.
- Description of railroad and Terminal 5 intermodal rail yard operations.
- Existing crossing locations.
- Existing freight rail volumes generated by Terminal 5 and other area businesses.
- Historical collision data at area railroad crossings.
- Railroad regulations.

The transportation study area for this report includes **the north end of the Duwamish Manufacturing and Industrial Area (MIC), extending from Terminal 5 to Interstate 5 and from S Atlantic Street (SR 519) to SR 509 south of the 1<sup>st</sup> Avenue S Bridge. Within that area, the primary travel corridors**

servicing Terminal 5 are SW Spokane Street between Harbor Avenue SW and E Marginal Way S, and E Marginal Way S between S Hanford Street and the N Argo Access Road. These corridors cover the primary travel routes between Terminal 5 and the near-dock intermodal rail yard, and between the terminal and the Spokane Street Viaduct, which is the primary route to and from the Interstate Highway System. The following intersections within the study area were evaluated for this report:

- SW Spokane Street/Harbor Avenue SW
- SW Spokane Street/W Marginal Way SW/Chelan Avenue SW
- SW Spokane Street/Terminal 5 Access
- SW Spokane Street/11th Avenue SW
- SW Spokane Street/E Marginal Way S
- S Hanford Street/E Marginal Way S
- E Marginal Way S/N Argo Access Road

Key information about the transportation affected environment, relevant to the Project impact assessment, is presented in the following section. Additional detail is provided in Volume II, Appendix C.

### 3.11.3 IMPACTS

This section summarizes the potential impacts for each element of the transportation system: terminal throughput and traffic volumes, traffic operations, gate queuing, traffic safety, transit, non-motorized facilities, parking, rail volumes, and railroad crossings. Further detail is provided in Volume II, Appendix C and Appendix F.

#### 3.11.3.1 TERMINAL THROUGHPUT, TRUCK TRIPS, AND EMPLOYEE TRIPS

#### 3.11.3.2 NO-ACTION ALTERNATIVE

The Northwest Seaport Alliance, the new partnership between the Port of Seattle and the Port of Tacoma, anticipates that larger vessels would dominate future ship calls to the Pacific Northwest. Improvements at Terminal 5 are proposed to accommodate the larger ships. If the Alternative 2 or 3 improvements are not made (No-Action Alternative), Terminal 5 would not be able to accommodate larger ships because of limitations in the crane height and overreach.

An analysis was performed by Moffatt & Nichol to determine the potential throughput that could be accommodated by the terminal with each alternative, given the potential berth capacity, container yard area, storage density, peaking factors associated with larger ships, and container dwell time in the terminal. Alternative 1 (No-Action Alternative) assumes an annual throughput at Terminal 5 of 647,000 twenty-foot equivalent units (TEUs). Alternative 1 assumes that existing cranes would continue to be used, and that the vessel calls would be similar to what occurred previously when an average of six vessels per week called at the terminal. The vessels reflected a mix of sizes, and only a portion of the vessel capacity was unloaded from or loaded onto each ship.

### 3.11.3.3 ALTERNATIVES 2 AND 3

With Alternatives 2 or 3, the improved wharf and deeper berth would allow larger ships to call at Terminal 5. For Alternative 2, which would have modest upland improvements, the throughput is estimated at approximately 1.3 million TEUs per year. For Alternative 3, which would have increased container yard and intermodal rail yard capacities, the throughput is estimated to be 1.7 million TEUs per year. The range of volumes could be achieved with various vessel service call scenarios. For the purpose of this analysis, a total of four ships per week was assumed: two 18,000-TEU ships and two 8,000-TEU ships. Detailed information related to assumed ship calls is presented in FEIS, Volume II, Appendix C.

#### COMPARISON OF ALTERNATIVES

FEIS, Volume II, Appendix C presents detailed information about factors used to estimate the number of truck trips that the improved terminal could generate. This includes analysis of how larger ships could affect truck volumes through the terminal gate, the share of cargo expected to be transported through the terminal's on-dock intermodal rail yard, and the peak hours for truck movements depending on whether the terminal would operate with one truck gate shift (daytime only) or with a second swing gate shift. Alternative 1 (No-Action Alternative) and Alternative 2 assume that the terminal would operate with just one truck gate shift. Alternative 3 assumes that a second shift would be added to the truck gate on peak days due to capacity limitations of the rail-mounted gantry (RMG) cranes within the terminal to load trucks. **Under this peak condition for Alternative 3, flow management measures would be needed to spread truck traffic across the two shifts.**

These factors were used to estimate truck trips for the increased throughput scenarios, which are presented in Table 3.11-1. As shown, with the increased throughput volumes, the upgraded Terminal 5 is expected to generate 3,560 to 4,660 truck trips on the Design Day for Alternatives 2 and 3, respectively. It is noted that truck trips are reported as one-way trips (e.g., 4,660 truck trips per day reflects 2,330 trucks entering the terminal and 2,330 trucks exiting the terminal). The table also shows the estimated net increase in trips for the action alternatives as compared to the No-Action Alternative. Alternative 2 is projected to result in 1,080 additional Design Day truck trips, and Alternative 3 is projected to result in 2,180 additional Design Day truck trips.

The table also summarizes projected peak hour trips. As previously described, Alternatives 1 and 2 are assumed to operate with only a daytime shift at the truck gate. Alternative 3, however, would require a second gate shift on peak days. Therefore, Alternative 2 would have the highest peak hour truck trips and is estimated to generate an additional 130 truck trips during the AM peak hour and 31 truck trips during the PM peak hour on the Design Day.



*Table 3.11-1: Terminal 5 Truck Trip Generation Estimates—All Alternatives*

Condition	Average Day Truck Trips			Design Day Truck Trips		
	Daily	AM Peak Hour	PM Peak Hour	Daily	AM Peak Hour	PM Peak Hour
<i>Alternative 1, No-Action <sup>(a)</sup></i>						
Drayed to off-dock rail yard	630	76	19	890	107	27
Trucked to local/regional businesses	1,140	137	34	1,590	191	48
Total	1,770	213	53	2,480	298	75
<i>Alternative 2, 1.3 Million TEUs/Year <sup>(a)</sup></i>						
Drayed to off-dock rail yard	1,270	152	38	1,780	214	53
Trucked to local/regional businesses	1,270	152	38	1,780	214	53
Total	2,540	304	76	3,560	428	106
<i>Alternative 3, 1.7 Million TEUs/Year <sup>(b)</sup></i>						
Drayed to off-dock rail yard	1,660	133	33	2,330	186	47
Trucked to local/regional businesses	1,660	133	33	2,330	186	47
Total	3,320	266	66	4,660	372	94
Net Change in Trips for Alternative 2	770	91	23	1,080	130	31
Net Change in Trips for Alternative 3	1,550	53	13	2,180	74	19
<i>Source: Derived by Heffron Transportation, Inc. 2016.</i>						
Note:						
(a) Terminal gate for Alternatives 1 and 2 assumed to be open during day shift only. With that condition, 12 percent of the daily trips would occur in the AM peak hour, and 3 percent would occur in the PM peak hour.						
(b) Terminal gate for Alternative 3 assumed to be open during both day and night shift. With that condition, 8 percent of the daily trips would occur in the AM peak hour and 2 percent would occur in the PM peak hour.						

The number of employees needed to staff the terminal during various ship unload/load events was estimated for each alternative. When the terminal is operating at peak capacity, it is likely to have all cranes staffed. This in turn increases the yard equipment needed, as well as staffing at the terminal’s on-dock intermodal rail yard and truck gates. Based on the estimated staffing levels, the highest number of employee trips would occur in the PM peak hour, when employees who work the day shift leave the terminal and those who work the night shift arrive at the terminal. Employee vehicle trip generation for the Design Day, which assumes all cranes in service plus a swing shift, is summarized in Table 3.11-2. **These trips account for employees who carpool, take transit, walk or bike to the site.** Additional detail related to the staffing level and trip generation assumptions is presented in FEIS, Volume II, Appendix C.

*Table 3.11-2: Terminal 5 Employee Trip Estimates – All Alternatives for Design Day Conditions*

	Daily <sup>(a)</sup>			AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total	In <sup>(b)</sup>	Out	Total
No-Action (Alternative 1)	303	303	606	99	0	99	93	99	192
Alternative 2	480	480	960	159	0	159	144	159	303
Alternative 3	594	594	1,188	189	0	189	186	189	375
Net Change, Alternative 2	177	177	354	60	0	60	51	60	111
Net Change, Alternative 3	291	291	582	90	0	90	93	90	183

Source: Heffron Transportation, Inc. 2016.

Note:

- (a) Daily trips assume that each employee generated 2.10 trips per day, and that 65 percent of the employees commute during the peak one hour period in the morning and afternoon. Vehicle trips assume that 96% of the trips occur by vehicle with an average vehicle occupancy of 1.2 persons per vehicle.
- (b) Accounts for 2nd shift employees arriving during PM peak hour. All inbound trips during the PM peak hour are assumed to be by vehicle (single occupant and carpool) since most transit service does not operate at 2:00 A.M. when the night shift ends.

The number of walk/bike and transit trips was also estimated based on the mode of travel experience for the site area. At peak employment (Alternative 3 during a Design Day), the Project is expected to generate a net increase of 4 walk/bike trips per day (2 in and 2 out) and 10 transit trips per day (5 in and 5 out).

Trip distribution patterns for the Terminal 5 truck and employee trips were derived from existing travel patterns. The methodology to determine the patterns is described in Volume II, Appendix C. Truck trips for all three Terminal 5 alternatives were assigned to the roadway network based on this distribution pattern (see Figure 15 in Volume II, Appendix C).

### 3.11.3.4 TRAFFIC VOLUMES

#### NO-ACTION ALTERNATIVE

Three future years—2020, 2030, and 2040—were evaluated to capture the potential growth in terminal throughput over time. The No-Action Alternative (Alternative 1) volumes for Terminal 5 were evaluated for each of these horizon years to provide a basis for comparison. Under these conditions, container operations could continue with existing terminal infrastructure.

#### ALTERNATIVES 2 AND 3

Alternative 2 was evaluated for year 2030 conditions, and Alternative 3 was evaluated for year 2040 conditions. Figure 3.11.1 illustrates the projected future terminal throughput evaluated for the alternatives. It also shows the growth trend line between the actual conditions in 2013 and the projected Alternative 3 conditions in the year 2040. This reflects a compound growth of 4.4 percent per year, a conservatively high assumption for container growth.

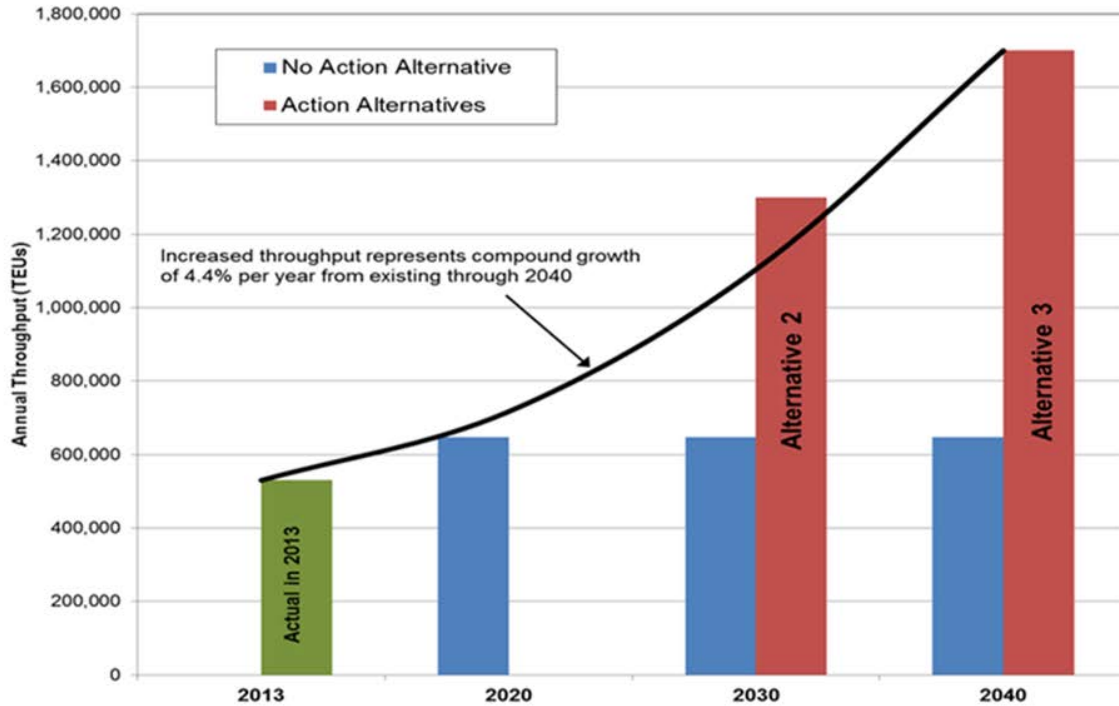


Figure 3.11.1: Analysis Conditions and Projected Future Terminal Throughput  
Source: Heffron Transportation, Inc. 2016.

COMPARISON OF ALTERNATIVES

Traffic volumes for the 2020, 2030, and 2040 No-Action Alternative were derived by applying an annual growth rate of 1.6 percent per year to existing non-Terminal 5 traffic volumes, to account for background traffic growth not related to the Project alternatives. This is the historical growth rate for traffic on the SW Spokane Street Swing Bridge observed from 2005 through 2013, which accounts for the economic recovery since the 2008/2009 recession, as well as increased traffic due to growth in West Seattle. It is consistent with the growth rate projected for the City of Seattle’s proposed 2035 Comprehensive Plan<sup>26</sup>, and exceeds the growth rate predicted by Container Terminal Area Traffic Analysis Tool (The Transpo Group 2015). The forecast Terminal 5 truck and employee trips for each alternative were then added to the network. Volume II, Appendix C includes graphics showing traffic volumes for the various future conditions.

<sup>26</sup> Traffic forecasts developed for the Mayor’s Recommended Draft Plan, Transportation Appendix, May 2016.

**TRAFFIC VOLUMES ON STATE HIGHWAYS**

Traffic forecasts developed for the City of Seattle’s proposed *2035 Comprehensive Plan*<sup>27</sup> included forecasts for state highways in the area. These forecasts, which were built off of the PSRC’s regional model included growth in Port container terminal throughput to 3.5 million TEUs per year. Therefore, the forecasts did include Terminal 5 as part of the overall Port growth target. Forecasts for several state highways in the vicinity of Terminal 5 are summarized in Table 3.11-3. The net change in truck and employee trips generated by the terminal are then compared to the total volumes to show the magnitude of the Project’s impact. As shown, the Project would represent a small percentage of the traffic on these routes. Alternative 2 would represent 0.03 to 0.11 percent of the year 2035 traffic, and Alternative 3 would represent between 0.07 and 0.29 percent of the 2035 traffic.

*Table 3.11-3: Terminal 5 Traffic versus Future Traffic Volumes on State Highways*

State Highway/Interstate	Average Weekday Traffic <sup>(a)</sup>		Net Change in Terminal 5 Traffic <sup>(b)</sup>					
			Alternative 2			Alternative 3		
	Year 2013	Year 2035	Truck Trips	Emp. Trips	T-5 % of 2035 Traffic	Truck Trips	Emp. Trips	T-5 % of 2035 Traffic
Interstate 5 North of West Seattle Freeway	235,700	266,500	30	160	0.07%	90	260	0.13%
Interstate 5 South of West Seattle Freeway	235,700	266,500	50	35	0.03%	130	60	0.07%
Interstate 90 across Lake Washington	142,800	185,100	30	35	0.04%	90	60	0.08%
SR 99 north of First Avenue S Bridge	43,000	61,300	20	0	0.03%	90	0	0.15%
SR 99 at Yesler Way	77,200	66,200	0	90	0.14%	0	150	0.23%
SR 509 at Cloverdale	38,900	51,800	25	30	0.11%	100	50	0.29%

Note:  
 (a) Traffic forecasts developed by Fehr & Peers, for the *Mayor’s Recommended Draft 2035 Comprehensive Plan, Transportation Appendix*, May 2016.  
 (b) Derived by Heffron Transportation, Inc. per methodology described in Volume II, Appendix C.

**3.11.3.5 TRAFFIC OPERATIONS**

Level of service (LOS) is a qualitative measure used to characterize traffic operating conditions. Six letter designations, “A” through “F,” are used to define LOS. LOS A is the best and represents good

<sup>27</sup> Traffic forecasts developed for the *Mayor’s Recommended Draft Plan, Transportation Appendix*, May 2016.

traffic operations with little or no delay to motorists. LOS F is the worst and indicates poor traffic operations with long delays. LOS D is acceptable to the City of Seattle. Traffic operating conditions for the study area intersections were evaluated for each of the future year conditions described in the previous section. Information about the methodology used to determine LOS and the analysis results are presented in Volume II, Appendix C.

#### NO-ACTION ALTERNATIVE

Four intersections in the study area are forecast to operate at LOS E or LOS F in the future without the proposed Terminal 5 improvements. The intersection of SW Spokane Street/W Marginal Way SW/Chelan Avenue SW is forecast to operate at LOS F for the 2020 No-Action Alternative conditions during both the AM and PM peak hours. Conditions would get progressively worse in the subsequent decades due to background traffic growth in the corridor, with average PM peak hour vehicle delays of nearly 280 seconds per vehicle by 2040. During the AM peak hour, the intersection of SW Spokane Street/Harbor Avenue SW is also forecast to operate at LOS E in the year 2030, and it would degrade to LOS F by 2040. During the PM peak hour, the intersections of S Spokane Street/E Marginal Way S is forecast to operate at LOS E in 2030 without the proposed Project, and the intersection of S Hanford Street/E Marginal Way is forecast to operate at LOS E in 2040 without the proposed Project.

#### ALTERNATIVES 2 AND 3

Traffic generated by the Project is projected to add up to about 20 seconds of average delay per vehicle to the SW Spokane Street/W Marginal Way SW/Chelan Avenue SW intersection in the year 2040. As described later in the Mitigation section of this report, increased train traffic associated with the terminal could block the north leg of the five-legged intersection (the at-grade connection to Terminal 5) for much of the day, and at full operation it is recommended that the north leg of the intersection be closed to vehicle traffic. Eliminating this leg of the intersection would dramatically improve traffic operations by eliminating one phase of the sequential-phase signal operation and allowing some movements to operate concurrently. With closure of the north leg, it is estimated that in 2040 with Alternative 3 the intersection would operate at LOS E during the AM peak hour (68 seconds of delay per vehicle) and at LOS F in the PM peak hour, but with substantially reduced delay (97.3 seconds per vehicle) compared to the No-Action Alternative. Closing the north leg of the intersection would also eliminate the at-grade railroad crossing and the signal preemption associated with train movements adjacent to the intersection. With implementation of this measure, all traffic to and from Terminal 5, as well as local businesses at Terminals 7A, 7B, 7C, and 8, would be directed to use the Terminal 5 Access Bridge, which would operate at LOS C or better during the peak hour with diverted traffic.

Terminal 5 would add a small amount of delay to the SW Spokane Street/Harbor Avenue SW, S Spokane Street/E Marginal Way S, and S Hanford Street/E Marginal Way S intersections. The delay increases would be less than 2 seconds per vehicle. However, operations at all three intersections could be improved with changes to existing signal timing and phasing. Further detail about recommended signal improvements for the SW Spokane Street corridor are presented in Section 3.11.4 Mitigation.

### 3.11.3.6 TRANSPORTATION CONCURRENCY

Alternatives 2 and 3 would meet the City of Seattle's Transportation Concurrency policy. Analysis is presented in Volume II, Appendix C.

### 3.11.3.7 GATE QUEUING

#### 3.11.3.8 NO-ACTION ALTERNATIVE

Gate queuing is not expected to change under the No-Action Alternative. The existing gate would remain with the single pre-check lane. Truck queues would be similar to what has occurred in the past.

#### 3.11.3.9 ALTERNATIVES 2 AND 3

Queue analysis was performed for both the pre-check gate and the main gate. Details about the analysis methodology and results are presented in Volume II, Appendix C.

The analysis determined that the pre-check gate is the constraint in the system. Currently, the pre-check gate facility is located about 1,900 feet from SW Spokane Street, a distance that can accommodate about 24 trucks. A single-lane gate with one security guard could accommodate hourly volumes up to about 180 trucks per hour before the truck queue would extend to SW Spokane Street. With two gate lanes for trucks, a single guard could accommodate hourly volumes up to about 280 trucks per hour. Beyond that volume, two security guards would be needed, one for each lane. To reduce the potential that queues would reach SW Spokane Street, it is recommended that Terminal 5 provide two pre-check gate lanes, and that the pre-check gate open at least 30 minutes before the main gate to accommodate early-arriving trucks. The main gate would have adequate capacity to accommodate truck volumes on most days, but would need to open one hour early on days when more than 1,500 truck arrivals are expected, in which case the pre-check gate hours would also need to open earlier. The analysis also determined that the pre-check gate(s) would need to remain open for the entire workday (i.e., a security guard would staff the pre-check gate during morning, lunch, and afternoon breaks). The main gate could close for lunch and breaks.

If RMG cranes are installed within the terminal (Alternative 3), the number of trucks that can be served by the terminal's yard equipment would be constrained. Under that condition a second gate shift and a reservation system would be needed to meter the number of trucks that enter the terminal during each hour. Therefore, although the Design Day volumes would be higher for Alternative 3, hourly queues are expected to be lower.

It is recognized that incidents and labor conditions can affect gate operations and queuing conditions. Protocols to manage the queue should be established if such conditions were to occur in the future.

It is recommended that the Port and NWSA develop a Gate Queue Management Plan that defines the terminal operator's responsibilities related to gate infrastructure and operating protocols to

prevent the truck queue from extending to SW Spokane Street. This Plan is described in Section 3.11.4.

#### 3.11.3.10 TRAFFIC SAFETY

##### NO-ACTION ALTERNATIVE

Traffic safety is not expected to change under the No-Action Alternative.

##### ALTERNATIVES 2 AND 3

Increased throughput at the terminal would add traffic to the surrounding street network which could increase the potential for conflicts. Historical collision data for the study area do not indicate any unusual safety issues, and the data include truck traffic generated by the existing terminal along the same travel routes that would be used in the future. Therefore, the Terminal 5 improvements are not expected to adversely affect safety on the roadway network.

Increased throughput could increase the number of train crossings of W Marginal Way SW. Section 3.11.3, Mitigation recommends that the north leg of the SW Spokane Street/W Marginal Way SW/Chelan Avenue SW intersection be closed to all but emergency vehicle traffic with Alternative 2 or 3. This would eliminate the potential conflict at this intersection.

#### 3.11.3.11 TRANSIT

##### NO-ACTION ALTERNATIVE

Transit would change only to the extent existing transit proposals are initiated. The No-Action Alternative does not proposed transit changes.

##### ALTERNATIVES 2 AND 3

The Project is expected to generate few, if any, transit trips. A potential closure of surface W Marginal Way SW at the railroad tracks would make it more difficult for employees to walk between the terminal and bus stops located along SW Spokane Street **or to/from a future light rail station at Delridge (if Sound Transit's ST3 ballot measure is approved). Measures to improve pedestrian access between the transit stops/station and Terminal 5 are described in the next section.**

#### 3.11.3.12 NON-MOTORIZED FACILITIES

##### NO-ACTION ALTERNATIVE

The No-Action Alternative does not propose non-motorized facility changes and is not expected to have any impact on non-motorized forms of transportation.

### ALTERNATIVES 2 AND 3

Terminal 5 would generate little pedestrian or bicycle traffic. The Project would increase train activity across West Marginal Way SW north of SW Spokane Street. The amount of delay associated with each train crossing event would be the same for the No Action Alternative or Alternatives 2 or 3; however, the frequency of movements, and hence the chance for delay, would increase with the Project. The delay would affect pedestrians and bicyclists travelling to or from Terminal 5 or industrial warehouse and shipping businesses located north and east of these tracks. At some point, the duration of total blockage time would likely warrant closing this surface crossing to all traffic except emergency vehicles. While this change would improve overall intersection operations, it would eliminate the pedestrian and bicycle access to Terminal 5. If and when that happens, an alternative pedestrian and bicycle access would need to be provided, which could be a bridge over the tracks, provision of a shuttle, or another mechanism.

SDOT recently completed short-term bicycle improvements at and near the five-legged intersection of SW Spokane Street/W Marginal Way SW/Chelan Avenue SW, and is considering long-range improvements. As described above, train blockages may warrant closing surface W Marginal Way SW north of SW Spokane Street. This change would improve overall intersection operations and allow existing signal “green time” to be allocated to other movements, including for bicycle movements, if needed. This would improve operations with the City of Seattle proposed short-term bicycle improvements.

Closing this crossing would also improve conditions for the City of Seattle proposed medium-term bicycle improvement project that would provide a surface bicycle trail along the east and north side of W Marginal Way SW. That at-grade trail would no longer need to cross vehicular movements at the intersection, and it could flow freely across that leg of the intersection.

The City of Seattle potential long-term bicycle improvement plan proposes to cantilever a new bicycle facility off of the Terminal 5 Access Bridge. It would also add a new pedestrian/bicycle crosswalk on the west side of the SW Spokane Street/Terminal 5 Access intersection. Additional structural analysis and design for the long-term bicycle improvement is necessary to determine the feasibility of cantilevering a bicycle/pedestrian path off the side of the existing Terminal 5 Access Bridge. The additional crosswalk could be accommodated by the existing signal. It would not affect the overall intersection level of service even with the Terminal 5 improvements and closure of the W Marginal Way SW grade-crossing, which would add more traffic to the intersection.

The proposed Project is not expected to adversely affect the travel time or safety of pedestrians or bicycles who walk or ride near Terminal 5 since the Terminal 5 Access Bridge is located on the opposite side of the street from the bike trail/sidewalk across the SW Spokane Street Swing Bridge, and the new corner-to-corner bike crossing at the West Marginal Way SW/Chelan Avenue SW/Delridge Way/Spokane Street intersection does not cross concurrently with any of the major movements that serve the terminal’s trucks or employees. To the east, the West Seattle Trail crosses SW Spokane Street at 11th Avenue SW, which provides a signalized crossing. While the Project would increase truck and employee trips on SW Spokane Street, it would not affect the timing or operation of the bicycle crossing.



### 3.11.3.13 VEHICLE PARKING

#### NO-ACTION ALTERNATIVE

There are currently 481 vehicle parking spaces near the Terminal 5 Administration Building which would remain for Alternative 1 (No-Action). The No-Action Alternative does not propose changes to vehicle parking and is not expected to have any impact on vehicle parking.

#### ALTERNATIVE 2

Parking would be reduced from 481 vehicle parking spaces to 452 vehicle spaces with Alternative 2 due to construction of the substation, which would eliminate some parking near the Administration Building.

#### ALTERNATIVE 3

Alternative 3 would reconfigure the yard, buildings, and parking lots. This alternative would have approximately 530 vehicle parking spaces. The proposed parking supply would accommodate the Design Day employment for each alternative. **The parking supply for both alternatives reflects the potential worst-case condition assuming some overlap in parked vehicles for the day and night shifts. Fewer parking spaces would be needed if the shifts are spread out enough to allow the day shift employees to leave the site before the night shift employees arrive.**

### 3.11.3.14 RAIL AND ON-DOCK INTERMODAL RAIL YARD OPERATIONS

Terminal 5 has an on-dock intermodal rail yard that allows the direct transfer of containers between rail and ship within the terminal. This yard is primarily used to create or discharge unit trains that transport containers with a common origin or destination. Intermodal containers with other origins or destinations are usually handled through one of the near-dock rail yards operated by the BNSF Railway and UP Railroad. At these facilities, a terminal's cargo is combined with cargo from other terminals to create either full unit trains or mixed-service trains that may drop or pick up segments at inland destinations. These containers are drayed (trucked) between Terminal 5 and the off-dock rail yards. Detailed information about the rail system that serves South Seattle and Terminal 5 is provided in Volume II, Appendix F.

#### NO-ACTION ALTERNATIVE

It is estimated that Terminal 5 would generate 9 trains during a peak week (each way) through its on-dock intermodal rail yard under Alternative 1 (No-Action) conditions. Alternative 1 assumes that the on-dock rail yard would return to operations similar to what has occurred in the past.

#### ALTERNATIVES 2 AND 3

Trains could increase from 9 to 18 trains in the peak week for Alternative 2 and from 9 to 24 trains in the peak week for Alternative 3.

Alternative 2 would not impact the capacity or operations of this yard. There would be some additional utilization of storage tracks in the West Seattle Yard (WSY) to support the increased rail

volume. Alternative 3 would increase the capacity of the yard. Some train building operations would have to be transferred to the WSY, and on-terminal air compressor equipment would be added so that the brakes on a fully-built train could be tested prior to connecting to the locomotive. The addition of an on-terminal air system would result in substantial reductions in idle times for locomotives assembling departing trains. The process of building and testing a train is described in FEIS, Volume II, Appendix F.

### 3.11.3.15 RAILROAD GRADE CROSSING IMPACTS

#### COMPARISON OF ALTERNATIVES

Increased rail volumes moving to and from Terminal 5 would result in additional closure times of near-terminal driveways and at-grade crossings. The additional closures would not require mitigation for impacts to rail infrastructure and capacity.

Arriving and departing trains would have additional impacts on near-terminal crossings beyond just the transit time for a train to move through the crossing. Time may be added for the switching movements between the intermodal rail yard of the terminal and the adjacent storage yard. Volume II, Appendix F provides detailed analysis of potential delays at the vicinity grade crossings.

The arrival-departure of full 7,500-foot trains would impact all five of the crossings west of the West Waterway. The closure time associated with the through train movements is estimated to be approximately 200 minutes per day for Alternative 1, 300 minutes per day for Alternative 2, and 400 minutes per day for Alternative 3.

The switching movements to break down or build a train would add further delay at these crossings. Under Alternative 1, the Terminal 5 surface access via W Marginal Way SW could experience closures of up to 623 minutes per day due to switching. This could increase to 924 minutes under Alternative 2 and 1,246 minutes under Alternative 3. The Terminal 8 access, which is located farther east, would experience approximately one-third the closure time with all alternatives since only the longest switching moves would affect this crossing. The combination of the arriving, departing, and switching trains would effectively block the Terminal 5 surface access route for more than 20 hours in a day for Alternative 2, and almost continuously for Alternative 3.

As previously noted, it is recommended that the surface access to Terminal 5 be closed to improve operations at the five-legged intersection at SW Spokane Street/W Marginal Way SW/SW Chelan Avenue. The surface access is the north leg of this intersection. Closing this access would allow the intersection to operate with more conventional signal phasing and would eliminate the railroad preemption phase that goes into effect whenever a train crosses that leg. Given the potential increase in rail closure times of that intersection with Alternative 2 or 3, the north leg would effectively be blocked for much of the day. The traffic analysis determined that the overpass, which connects from SW Spokane Street to Terminal 5 and private properties north of the tracks (Terminals 7A, 7B, 7C, and 8), has adequate capacity to accommodate all of the traffic generated by the terminal and those businesses.

### 3.11.4 MITIGATION MEASURES

#### 3.11.4.1 NO-ACTION ALTERNATIVE

##### CONSTRUCTION MITIGATION

No construction mitigation would be needed for the No-Action Alternative.

##### OPERATIONS MITIGATION

No operations mitigation would be needed for the No-Action Alternative.

#### 3.11.4.2 ALTERNATIVES 2 AND 3

##### CONSTRUCTION MITIGATION

No transportation or parking impacts are expected from construction of the Terminal 5 wharf improvements or deepening of the berth. The terminal would generate fewer truck and employee trips during the construction period than the No-Action operations would generate. **Prior to beginning construction work that could impact SDOT right-of-way; the contractor would be required to submit the following information to SDOT for review and approval of necessary permits:**

- Haul Route Plan
- Traffic Control Plan for work on or adjacent to an arterial street

**In addition, the Port and NWSA would commit to being part of SDOT's ongoing construction coordination program to ensure coordination of project timelines, construction sequencing, traffic control plans, and construction staging with other projects with overlapping construction timelines. The Port would also be part of any coordination program established by Sound Transit if it proceeds with construction of the light rail line to West Seattle and a new station at Delridge.**

##### OPERATIONS MITIGATION

The following describes measures recommended to mitigate the long-term transportation impacts of the proposed Terminal 5 improvements. This includes both infrastructure improvements and operational protocols.

##### ***Off-site Intersection Improvements***

##### **Intersection of SW Spokane Street/W Marginal Way SW/Chelan Avenue SW**

The analysis determined that increased vehicular traffic associated with either Alternative 2 or 3 would adversely affect operations at the five-legged intersection of SW Spokane Street/W Marginal Way SW/Chelan Avenue SW. In addition, increased train crossings of surface W Marginal Way SW, which is the north leg of this intersection, would exacerbate delay and congestion by increasing the number of signal preemptions of the intersection. Under Alternative 2 or 3, train arrivals, departures, and switching movements would effectively block the crossing during most of the day on peak days. Therefore, it is recommended that the north leg of the intersection (W Marginal Way SW) be closed

to all vehicular traffic except emergency vehicles and the occasional out of gauge cargo. All traffic to and from Terminal 5, as well as local businesses at Terminal 7A, 7B, and 7C should be directed to use the Terminal 5 Access Bridge which has capacity to accommodate this diverted traffic.

In the interim, other measures should be considered to improve operations. One alternative would be to convert the north leg of the five-legged intersection into a one-way northbound roadway and eliminate the ability to exit at this location. That would eliminate the signal phase associated with outbound movements. Advance signage notifying drivers on northbound West Marginal Way to use left lane if the crossing is blocked by a train would be reinstalled (see *Driver Information System Improvements* below). In addition, several measures are proposed to improve local access to businesses located north and east of the rail lines serving Terminal 5 and the West Seattle Rail Yard (see *Local Access Improvements* below). The Port should work with SDOT to determine the most desirable configuration for the five-way intersection and triggers for implementation.

#### **Signal Upgrades on Spokane Street Corridor**

With the closure of the north leg of the five-legged intersection (described above), the traffic signal operations and preemption protocols for that intersection would change. Railroad preemption would no longer be required when a train crosses the north leg of the intersection. Signal timing changes should also be made at SW Spokane Street/Harbor Avenue SW and S Hanford Street/E Marginal Way S intersections to accommodate future background traffic growth. In addition, the manner in which signals operate following an opening of the lower Spokane Street Swing Bridge should be updated. Therefore, it is recommended that a comprehensive signal improvement project for the Spokane Street corridor be implemented as part of the Project that would reprogram signals along SW Spokane Street from Harbor Avenue SW to E Marginal Way S, and include the signal at E Marginal Way S/S Hanford Street. This Project should include upgrading the signal controller at the five-legged intersection and improving interconnection equipment, if needed.

#### ***Driver Information System Improvements***

The Port should improve systems that provide information to drivers. This includes:

- Replacing the Flashing Alert Sign located on northbound West Marginal Way that notifies motorists approaching Terminal 5 (and local businesses) that the railroad tracks are blocked by a train. This would allow motorists time to move from the right turn lane to the left turn lane so they can access the terminal and local businesses via the Terminal 5 Access Bridge. (It is noted that the foundation and conduit for the sign still exist, but the sign was damaged by a collision and removed.) The alert sign should be maintained until the surface access via W Marginal Way is closed to vehicular traffic.
- Connecting Terminal 5 to the NWSA's *Gate Wait Time Awareness System* or a similar system, which provides real-time information to truck drivers and dispatchers about the time it will take to get through a terminal gate and the terminal.

#### ***Local Business Access and Pedestrian Access***

To improve access for local businesses at Terminal 7, the Port should:

- Reconfigure the Terminal 5 Access Bridge (if approved by SDOT and the Seattle Fire Department) to provide two inbound (westbound) lanes, with one of the lanes being signed

- for Terminal 5 only and the other being striped and signed for “Right Turn Only” onto 26th Avenue SW in order to provide a bypass lane for local businesses.
- Work with businesses north and east of the rail lines to reestablish lane striping and No Parking signage to maintain the surface route that connects to West Marginal Way at the south end of Terminal 7 (near the West Seattle Bridge abutments).
  - Work with the tenant to allow trucks from businesses north and east of the rail lines to enter the Terminal 5 queue line from 26th Avenue SW. In the past, these locally-generated trucks were required to exit the terminal via the surface route and re-enter the queue line via the Terminal 5 Access Bridge.

If the surface access to Terminal 5 at West Marginal Way S is closed as described in Section 6.2.1, an alternative pedestrian and bicycle access should be provided, which could be a bridge over the tracks, provision of a shuttle, or other measure.

### ***Gate Design and Operations***

Increased truck traffic associated with Alternative 2 and 3 would require improvements and operational protocols at the truck gates. A *Gate Queue Management Plan* has been developed for Terminal 5, and is presented in Appendix B of this report. The plan identifies various elements that would be implemented to reduce the potential for truck queues to reach SW Spokane Street. It includes detail related to gate infrastructure, gate operations, incident management, monitoring, and remedies. The NWSA and the Port would make the terminal operator responsible for managing the queue.

Three key elements of the plan relate to the infrastructure that should be provided at the gate, the operating protocols that should then be implemented for various throughput conditions, and protocols if there is an incident or event that closes the gate or reduces its capacity. These are outlined below.

### **Gate Infrastructure**

If the existing Terminal 5 Main Gate and queue storage capacity remains, then the following infrastructure will be provided at and approaching the Terminal 5 inbound gate prior to terminal occupancy and operation.

- Retain the Main Gate with at least eight (8) inbound truck lanes and storage for at least 80 trucks (total for all lanes).
- Reconfigure the Terminal 5 Access Bridge (if approved by SDOT and the Seattle Fire Department) to provide two inbound (westbound) lanes and one outbound (eastbound) lane. The southernmost inbound lane should be striped and signed for “Terminal 5 Access Only” and the northernmost inbound lane should be striped for “Right Turn Only” to provide for local access to local businesses and warehouses.
- Provide two inbound pre-check (TWIC security check) lanes entering Terminal 5 with a minimum storage length for two trucks each (150 feet) between the checkpoint and 26th Avenue SW (the road at the west end of the Terminal 5 Access Bridge).
- Provide a single security booth with foot access to each of the inbound pre-check lanes.

- Provide gate processing technologies, including equipment identification, to reduce gate transaction times. Equipment identification should occur at a location that does not affect the ability to queue at the main gate prior to opening.
- Connect Terminal to the NWSA's Wait Time Awareness System or similar application that distributes information about gate and terminal wait times to truck drivers and dispatchers through a mobile phone application or web-based interface.
- Maintain and/or update the existing video equipment (or replacement technology) that provides real-time view of Terminal 5 queue lengths.

If the Terminal 5 Main Gate and Security Gate are relocated to extend the queue storage capacity, then the first four elements above may be altered or eliminated as requirements based on the capacity provided. The required features would be coordinated with SDOT and SDCI staff as part of the permit process for the new gate structures.

#### **Gate Management Protocols**

The terminal operator would operate the pre-check and main gate in a manner to prevent the truck queue from extending onto SW Spokane Street. The operation is expected to change daily based on the expected gate volume. The following lists a menu of potential operations that could be implemented to reduce the potential queue:

- Open the pre-check gate at least 30 minutes prior to main gate opening and allow trucks to queue at the main gate. On days when the daily throughput is expected to generate more than 1,500 inbound truck moves, the pre-check gate may need to be opened 1 hour prior to opening the main gate unless other flow management strategies are implemented.
- Keep the pre-check gate open and staffed during morning, lunch, and afternoon break periods.
- Provide a second security guard at the inbound pre-check lanes.
- Extend main gate hours for specific customers.
- Extend main gate hours for all movements.

#### **Protocols during Gate Incidents/Events**

It is recognized that incidents or events could occur that could reduce capacity of the gate or close it altogether. Under such conditions, the terminal operator would:

- Open up additional queuing space at the main terminal gate to process trucks through the pre-check lane.
- Notify truck drivers and dispatchers (using radio, cell phone and/or internet communications) to avoid Terminal 5 until the queue has cleared.
- Notify SDOT and WSDOT traffic operations personnel about closures, so that messages alerting drivers can be posted on select Dynamic Message signs along travel routes to the terminal.
- Pay the cost of locating a police officer at the intersection of SW Spokane Street and the Terminal 5 ramp to redirect truck traffic and prevent the queue from blocking through-traffic on SW Spokane Street.

In addition, the NWSA would monitor gate queue conditions and issue a biannual report. If queues do extend onto SW Spokane Street, the plan prescribes remedy and enforcement actions that could be taken against the terminal operator.

***Truck Parking***

The Port and NWSA should continue to work with the City to develop brochures and web-based information related to truck parking, and to distribute the information to truck drivers who serve Terminal 5. The materials should include a map of the Sodo, Georgetown, South Park and Delridge neighborhoods, show where truck parking and overnight parking is prohibited, and provide information about off-street parking locations.

***On-Dock Intermodal Rail Yard Improvements***

No improvements to the intermodal rail yard or storage yard would be needed for **Alternative 2**.

3.11.4.3 MITIGATION UNIQUE TO ALTERNATIVE 3

CONSTRUCTION MITIGATION

Same as Alternative 2, no additional mitigation needed.

OPERATION MITIGATION

Same as Alternative 2, except for changes in the rail improvements noted as follows:

Add on terminal air system and locate qualified technicians on terminal to perform brake tests for staged cuts of cars.

3.11.5 SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

There would be no significant unavoidable adverse impacts for any of the alternatives if the recommended mitigation measures are implemented to mitigate the long-term transportation impacts of the proposed Terminal 5 improvements. This includes both infrastructure improvements as well as operational protocols.

## 3.12 PUBLIC SERVICES

### 3.12.1 REGULATORY CONTEXT

#### POLICE SERVICES

The Port's maritime properties are subject to increased security provisions as a result of changing federal requirements. The Transportation Security Administration, as an agency of the federal Department of Homeland Security, oversees the security efforts for all Port properties. Currently, the United States Coast Guard maintains responsibility for shoreline security for the Port. Revised security measures may affect access to Terminal 5.

### 3.12.2 AFFECTED ENVIRONMENT

#### POLICE SERVICES

The Port of Seattle Police Department (POSPD) provides primary police protection to the Port sites. Headquarters and dispatch for the POSPD are located at the Seattle-Tacoma International Airport, and operations are conducted out of the Port's police substation at Terminal 30 at 2431 E Marginal Way S. POSPD is the primary E-911 emergency call/dispatch for all Port-owned properties. As such, POSPD provides special teams/units, such as Criminal Investigations, Tactical, Bomb, K-9, SCUBA, Boat Operators, Crisis Negotiations, Incident Command, and other police services.

#### FIRE AND EMERGENCY SERVICES

The City of Seattle Fire Department (SFD) provides fire protection and basic life support and emergency medical service throughout Seattle from 33 fire stations and Harborview Medical Center. Headquarters for the department are located at Fire Station 10 in Pioneer Square. The closest fire station to Terminal 5 is the SFD Station 5 located at 925 Alaskan Way.

Terminal 5 has multiple access routes in the event of an emergency: 1) the Terminal 5 Access Bridge, 2) West Marginal Way SW north of Chelan Avenue SW, 3) SW Florida Street, and 4) access to Jack Block Public Shoreline Access and Park. If the surface route to West Marginal Way SW is blocked by a train, emergency vehicles can use the grade-separated Terminal 5 Access. Likewise, if rail switching blocks SW Florida Street at the north end of the terminal, emergency vehicles can access the terminal further north along Harbor Avenue SW through the Jack Block Park access driveway and internal access road. Finally, if necessary, a train can be broken at the surface crossings to allow emergency access.



### 3.12.3 IMPACTS

#### 3.12.3.1 NO-ACTION ALTERNATIVE

##### POLICE SERVICES AND FIRE AND EMERGENCY SERVICES

###### **Construction and Operations**

No impacts are anticipated under the No-Action Alternative because terminal operations would not be expected to change from existing permitting conditions.

#### 3.12.3.2 ALTERNATIVES 2 AND 3

##### POLICE SERVICES

###### **Construction and Operations**

No significant impacts for police services are expected during construction or operations at the terminal under Alternatives 2 or 3. The number and type of calls for police services would be expected to continue at their present level at Terminal 5.

##### FIRE AND EMERGENCY SERVICES

###### **Construction**

During construction, there could be an increase in service calls related to site construction and to respond to potential construction-related injuries. Site preparation and construction of the new terminal building could increase the risk of a medical emergency or accidental fire.

###### **Operations**

No significant impacts for fire and emergency services are expected during construction or operations at the terminal under Alternatives 2 or 3. The number and type of calls for fire and emergency services would be expected to continue at their present level at Terminal 5.

**The Project would not change the emergency access routes previously described.**

### 3.12.4 MITIGATION MEASURES

#### 3.12.4.1 NO-ACTION ALTERNATIVE

##### POLICE SERVICES AND FIRE AND EMERGENCY SERVICES

###### **Construction and Operations**

Mitigation measures are not expected to be required.

#### 3.12.4.2 ALTERNATIVES 2 AND 3

##### POLICE SERVICES

POSPD would coordinate with the U.S. Coast Guard on security plans.

##### FIRE AND EMERGENCY SERVICES

###### ***Construction and Operations***

If buildings are demolished or constructed, it would be in compliance with the International Building Code and Fire Code regulations. Adequate fire flow for the Project would be provided according to code. On-site security measures, such as fencing and securing areas where equipment is stored, could be implemented to reduce the potential for construction-related incidents. Existing utility systems (including water systems and capacity) would be installed and improved, as needed, to meet water capacity demands and code requirements for the SFD.

#### 3.12.5 SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

##### 3.12.5.1 ALL ALTERNATIVES

##### FIRE AND EMERGENCY SERVICES

###### ***Construction and Operations***

With implementation of mitigation measures, no significant unavoidable adverse impacts to police services or fire and emergency services would be expected to result for any of the alternatives.

### 3.13 UTILITIES

This section assesses the potential impacts of the proposed Project alternatives on utilities and potential mitigation measures required.

#### 3.13.1 REGULATORY CONTEXT

Projects in the City of Seattle are serviced by a variety public and private utilities. Proposed projects must meet the requirements of each of the applicable local, state and federal agencies.

#### 3.13.2 AFFECTED ENVIRONMENT

##### EXISTING UTILITIES AT THE SITE

Existing utilities at Terminal 5 are described below. They are made available by the following providers:

- Seattle City Light
- Seattle Water Department
- Metro/King County Water Pollution Control Department
- Port of Seattle
- Comcast
- Waste Management, Inc.
- Puget Sound Energy
- Seattle Public Utilities
- Electricity
- Water
- Commercial solid waste collection service
- Storm drainage
- Telephone
- Solid Waste
- Natural Gas
- Sanitary sewer

##### ***Electrical***

Terminal 5 has a significant existing electrical infrastructure. Power is brought into the site by Seattle City Light (SCL) to the main substation near the intersection of W Marginal Way SW and Chelan Avenue SW. Power is fed from the SCL Delridge substation with a single 240 ampere feeder and distributed from the terminal main substation to numerous secondary substations throughout the Terminal 5 site. These substations in turn feed the container cranes, site lights, buildings, refrigerated container storage area, and convenience power along the apron.

##### ***Lighting***

Lighting at Terminal 5 primarily consists of high-mast light poles and exterior building lights. The existing high-mast light poles are approximately 100 feet tall (86 feet tall near the apron) each with eight 1-kilowatt high-pressure sodium light fixtures.

##### ***Water and Sewer***

A Seattle Public Utilities (SPU) water main traverses the site along the terminal's southern and western boundaries. The main connects to Harbor Avenue SW at S Forest Street, at 26<sup>th</sup> Avenue SW,

and at W Marginal Way SW. Internal to the terminal is a network of Port-owned water distribution mains that serve the buildings, site, and wharf with domestic and fire protection water.

A 96-inch-diameter Metro force main sewer pipe runs under the southern portion of the site from W Marginal Way SW past the southern edge of the existing maintenance building northwest under the railroad tracks before connecting back to Harbor Avenue SW at the S Forest Street right-of-way. Terminal buildings connect to various sanitary sewer pipes and typically drain south connecting to a City of Seattle or Metro main at W Marginal Way SW.

#### ***Stormwater***

Stormwater drainage at Terminal 5 consists of 11 drainage basins. The drainage system infrastructure primarily consists of a network of catch basins and pipes. Extensive trench drains are installed in the intermodal rail yard. There are approximately 650 catch basins, 235 manholes, and 2.1 miles of trench drain connected and conveyed to the 11 outfalls by 16.5 miles of subsurface pipe. Six oil/water separators have been installed in areas of intense industrial activity, such as the fueling station and maintenance and repair building. The location of the drainage basins and outfalls and information on stormwater structure types and stormwater pipe types are provided in Section 3.3 of this FEIS and in the Stormwater Technical Memorandum (FEIS, Volume II, Appendix D).

#### ***Natural Gas***

Puget Sound Energy has natural gas mains in the vicinity of Terminal 5. Several of the existing terminal buildings have a natural gas service connection for heating. The terminal also uses propane for fueling smaller yard equipment. The propane is trucked into the site, and tanks are filled in the vicinity of the existing fueling stations.

#### ***Communications***

Terminal 5 is served by fiber optic communication cabling from a local service provider. The point of connection is the administration building at the southern entrance to the site. This communication network is then distributed through existing buried conduit to each terminal building and most high mast light poles. The system is used to track and convey instructions on cargo operations, as well as normal business communication functions with the remote office spaces.

### 3.13.3 IMPACTS

#### 3.13.3.1 NO-ACTION ALTERNATIVE

##### CONSTRUCTION

Although substantial changes to the utility system for the No-Action Alternative are not proposed, minor construction activities proposed by a new tenant may include repair and maintenance of existing utility systems. The extent of repairs would require trenching to expose existing utility systems, making repairs, and replacing fill and pavement repairs. Construction impacts, such as the interruption of some utility supplies, would be temporary and localized within the existing terminal footprint.

Stormwater treatment and improvements would be installed, as needed, to support the operations of the new facility. Prior to reestablishing container cargo terminal operations, **the facility would be reevaluated for the appropriate Level 3 Corrective Actions, requiring a new engineering report for Ecology's review and approval.** Upon approval, the stormwater system would be constructed prior to beginning of operations. The extent of work would likely include installation of below-ground treatment systems, trenching over existing conveyance systems, and repairs to existing conveyance systems.

## OPERATIONS

### ***Electrical***

The No-Action Alternative does not propose any significant upgrades to the existing electrical supply or on-site distribution. A new tenant may provide additional low-voltage power to the light poles in order to support their specific container tracking and yard communication systems. However, this minor development would not require an increase in overall power supply to the site.

### ***Lighting***

While a new terminal tenant may install additional lighting controls (automatic or timer on-off switches) to aid in energy savings, substantial upgrades to the existing terminal lighting system are not anticipated.

### ***Conduit***

Additional conduit may be added to provide low voltage power and communication to various locations throughout the container yard. However, these types of modifications would not result in a need to increase power supply to the site.

### ***Water and Sewer***

No significant changes are proposed to the domestic water, fire water, or sanitary sewer demand for this alternative. New connections to the City of Seattle main are not proposed, but may occur if construction of a project element warrants it. No impacts to the Metro force main or existing easement are anticipated. No changes are anticipated to the existing City of Seattle and Metro mains that cross the Terminal 5 site.

### ***Natural Gas***

No change to the natural gas demand is anticipated for the No-Action Alternative. On-site storage would be expanded if needed to accommodate additional yard equipment that runs on natural gas.

### ***Solid Waste***

No significant changes in the Terminal 5 solid waste demand are anticipated.

### ***Communications***

No significant changes to the Terminal 5 communication systems are anticipated.

### ***Stormwater System***

Stormwater improvements would meet state and City of Seattle stormwater regulations. There may be impacts to stormwater if it cannot be properly controlled through the use of operational source

control and treatment best management practices (BMPs). Stormwater impacts could include waterborne contaminants from a variety of activities, including oil and grease (hydrocarbons) and heavy metals such as copper, lead and zinc, that can adversely impact receiving waters by introducing pollutants, reducing water quality, and adversely impacting aquatic life. Additional information on the existing stormwater system at Terminal 5 is provided in Section 3.3 and in Volume II, Appendix D.

### 3.13.3.2 ALTERNATIVE 2

Alternative 2 would require more substantial construction to upgrade utilities at Terminal 5 than the No-Action Alternative. Construction would take more time, may require construction outside of the terminal footprint, and may require coordination with the utility provided. Trenching would also be required. See Section 3.1.1 of this FEIS for estimated excavation and fill quantities. Improvements would be made to electrical, water, and stormwater systems to accommodate the rehabilitated cargo wharf and support continuing operations. The additional electrical work would also allow the terminal to provide plug-in capability for ships that want to use shorepower as well as provide sufficient electricity for larger and more numerous ship-to-shore (STS) cranes. The upgrades are described in more detail below.

#### UPGRADE ELECTRICAL SYSTEM

Alternative 2 would require an upgrade to the existing power supply to Terminal 5 by SCL. A system impact study was performed to evaluate the upgrades needed by SCL to provide additional power. The upgrades required include installing new higher-capacity feeders from the Delridge Substation to the South Substation to Terminal 5. A new main terminal substation would be constructed in the vicinity of the existing duct banks in the southeastern of the facility near the current administration building. New duct banks would be constructed to distribute power up to four new substations near the terminal apron and existing substations. These improvements would increase the on-terminal power capacity to approximately 26 megawatts (MW). This additional capacity would accommodate up to 8 next generation STS cranes and expansion of the terminal refrigerated container capacity to about 2,000, and would provide shorepower for two berths at 4 MW each, as well as provide sufficient capacity for existing electrical systems such as buildings and lighting.

The electrical demand and equipment upgrades proposed for Alternative 2 are summarized in Table 3.13-1 and are compared to those in place at the existing site (Alternative 1 – the No-Action Alternative) and to those proposed for Alternative 3.

*Table 3.13-1: Proposed Electrical System Upgrades for Alternatives 2 and 3*

	<b>No-Action 1</b>	<b>Alternative 2</b>	<b>Alternative 3</b>
<b><i>Demand</i></b>			
Supply Required by SCL	No change in existing power demand	Increase supply to site to a total of 26 MW	Increase supply to site to a total of 70 MW
<b><i>Equipment Accommodated</i></b>			
Ship-to-Shore Cranes	Up to (6) 5 kV cranes	Up to (8) 15 kV cranes	Up to (12) 15 kV cranes
Container Yard Electrification	None	None	Up to 52 RMG cranes
Refrigerated Containers	Existing 160	Up to 2,000	Up to 2,000
Shorepower (cold ironing)	None	2 berths at 4 MW each	2 berths at 4 MW each
Rail Electrification	None	None	Up to 6 RMG cranes
Time at Berth	16 to 20 hours	25 to 50 hours	30 to 50 hours
Note: kV = kilovolt MW = megawatt(s) RMG = rail-mounted gantry SCL = Seattle City Light			

**REPLACE DOCKSIDE POTABLE WATER SYSTEM**

The existing dockside water distribution system would be removed and replaced. A sectional distribution system would be provided and integrated with the existing looped water distribution system and existing fire hydrant layout. Existing vessel water supply assemblies would be removed and replaced. Water use metering would be included in replacement, including water use metering.

**UPGRADE STORMWATER SYSTEM**

Stormwater treatment and improvements would be installed to support the operations of the new facility. Prior to reestablishing container cargo terminal operations, the facility would be reevaluated for the appropriate Level 3 Corrective Actions, requiring a new engineering report. The new engineering report would define treatment options and detailed construction plans for Ecology’s review and approval. Upon approval, the stormwater system would be constructed prior to beginning of operations. The extent of work would likely include installation of below-ground treatment systems, trenching over existing conveyance systems, and repairs to existing conveyance systems. The stormwater system would be constructed prior to beginning of operations.

**LIGHTING**

In Alternative 2, existing light poles may be reused to provide sufficient lighting for yard, intermodal rail yard, and STS transshipment operations. Many of the existing light poles in the vicinity of the wharf would be relocated further upland and away from the water to avoid conflict with the new container cranes. Existing luminaries may be replaced with more energy efficient lighting systems and programmable controls that are designed with appropriate shades to prevent light and glare impacts.

#### CONDUIT

Alternative 2 proposes to upgrade the conduit systems as needed to accommodate the rehabilitated cargo wharf and to support ongoing operations. A new tenant may provide additional low voltage power to the light poles in order to support their specific container tracking and yard communication systems.

#### WATER AND SEWER

Existing dockside water distribution system would be removed and replaced under Alternative 2. Sectional distribution systems would be constructed and integrated with the existing looped water distribution system and the existing fire hydrant layout. Existing vessel water supply assemblies would be removed and replaced, including water-use metering code requirements. Substantial changes are not proposed for the domestic water, fire water or sanitary sewer demand and systems under this alternative. New connections to the City of Seattle main are not anticipated but may be completed if construction of another project element warrants it. No impacts to the Metro force main or SPU water main or easement are anticipated.

#### NATURAL GAS

No change to the natural gas demand is proposed under Alternative 2. If additional yard equipment is purchased that runs on natural gas, on-site storage would be expanded to accommodate it and minor upgrades would be made as needed to support the terminal operations.

#### SOLID WASTE

No changes are anticipated to the quantity or type of solid waste generated by the terminal. Minor improvements would be made as needed to support the terminal operations.

#### COMMUNICATIONS

Alternative 2 proposes to upgrade the communication systems, as needed, to accommodate the rehabilitated cargo wharf and to support ongoing operations.

#### OPERATIONS

##### ***Stormwater System***

The potential operational impacts in Alternative 2 would be similar to the No-Action Alternative except it is more likely that higher container throughput may require more aggressive operational treatment BMP approaches.

The Industrial Stormwater General Permit (ISGP) would require meeting benchmarks. If operations do not meet benchmarks within one quarter, the site operator would be required to perform adaptive management until benchmarks are achieved. See Section 3.3 Water and Volume II, Appendix D for detailed information on stormwater requirements.



### 3.13.3.3 ALTERNATIVE 3

Utility upgrades under Alternative 3 would be the same as those described for Alternative 2, except that trenching would be required. See Section 3.1 of this DEIS for estimated excavation and fill quantities.

#### ELECTRICAL

Alternative 3 would require substantial upgrades to the existing power supply to the terminal to accommodate electrification of new equipment and systems. Load increases identified in Alternative 3 would require the expansion of the system identified in Alternative 2, which increased peak demand from 5 megavolt amperes (MVA) to 26 MVA to up to 70 MVA. This increase in terminal power capacity (up to about 70 MW) would accommodate up to 12 next-generation STS cranes, up to 52 electrified rail mounted gantry cranes in the container storage yard, expansion of the terminal refrigerated container capacity to about 2,000, STS power for two berths at 4 MW each, electrification of the rail loading operation with up to 6 rail-mounted gantry (RMG) cranes, and other electrical systems, such as buildings and lighting.

SCL has developed solution options to serve a peak load of up to 70 MVA for Terminal 5 based on studies they have conducted. The full demand would not be expected to be needed when a tenant first operates at the Terminal 5 site. It is expected that it would take approximately 10 years or more for SCL to design, complete a separate environmental review, and build the full power supply demand for the facility. It is expected that this time period for permitting and construction would coincide with the needs for electricity of any tenant at the Terminal 5 site.

A new main terminal substation would be required on the terminal site in the vicinity of the substation proposed as part of the current Project. New duct banks would also be needed to distribute power to new substations near the apron and substations near the truck circulation between the container yard and the intermodal rail yard.

#### LIGHTING

Alternative 3 would reduce some of the of the high-mast lighting in the container yard. New lighting would be placed in the truck circulation areas and near the wharf. Existing luminaries may be replaced with more energy efficient lighting systems and programmable controls that are designed with appropriate shades to prevent light and glare impacts.

#### CONDUIT

Alternative 3 would require the construction/installation of an entirely new and upgraded duct bank system for both power distribution and communication systems.

#### WATER AND SEWER

The existing dockside water distribution system would be removed and replaced. A sectional distribution system would be provided and integrated with the existing looped water distribution system and the existing fire hydrant layout. Existing vessel water supply assemblies would be removed and replaced, including water use metering code requirements. Water distribution would

be rerouted in the container yard to serve new hydrant locations and avoid RMG crane foundations. Relocated buildings would have new sanitary sewer connections to the City of Seattle main. No significant changes are anticipated in the domestic water, fire water, or sanitary sewer demand for this alternative. While new connections to the City of Seattle main are not anticipated, they may be incorporated if construction of another project element warrants it. Impacts to the Metro force main or SPU water main or easement are not anticipated.

#### NATURAL GAS

No change to the natural gas demand is proposed under Alternative 3. If additional yard equipment is purchased that runs on natural gas, on-site storage would be expanded to accommodate it.

#### SOLID WASTE

No changes are anticipated to the quantity or type of solid waste generated by Terminal 5 operations.

#### COMMUNICATIONS

The Project proposes to upgrade the communication systems, as needed, to accommodate the rehabilitated cargo wharf and to support the densified operations. An upgraded communication system could include a network of Wi-Fi transponders positioned throughout the terminal interconnected by communications cabling back to the main terminal computer room.

#### OPERATIONS

##### ***Stormwater System***

The potential operational impacts in Alternative 3 would be similar to Alternative 2; however, higher container throughput may require more aggressive operational treatment BMP approaches. See Section 3.3 and Volume II, Appendix D for detailed information on stormwater requirements.

### 3.13.4 MITIGATION MEASURES

#### 3.13.4.1 NO-ACTION ALTERNATIVE

No mitigation measures are required or proposed for utilities other than stormwater. Mitigation measures for stormwater are described in detail in Section 3.3, Water, and in Volume II, Appendix D.

#### 3.13.4.2 ALTERNATIVE 2

#### CONSTRUCTION MITIGATION

Utility upgrades would be constructed or installed to meet anticipated site demand and to comply with all applicable local, state, and federal code requirements. Implementation of any improvements would be coordinated with, and approved by, the applicable utility provider. Mitigation measures for utility construction impacts would include those described for general construction activities on the terminal site (see Chapter 2, Section 2.3.2). Lighting associated with

exterior construction activities would be controlled by City of Seattle regulations, potentially limiting the hours of construction, and thereby limiting construction lighting during nighttime hours. No other measures are expected to be required during construction. Further mitigation measures are not proposed for upgrades to electrical, water and sewer, natural gas, solid waste, or communications.

#### OPERATION MITIGATION

##### ***Lighting***

Proposed lighting levels would conform to all applicable federal, state, and local standards. Mitigation to minimize light and glare impacts is described in Section 3.9.

##### ***Stormwater***

Compliance with the Clean Water Act through compliance with ISGP and City Stormwater code provides the regulatory-based mitigation standards for potential operational impacts to stormwater. See Section 3.3 and Volume II, Appendix D for detailed information.

#### 3.13.4.3 ALTERNATIVE 3

#### CONSTRUCTION MITIGATION

Similar to Alternative 2, utility upgrades would be constructed or installed to meet anticipated site demand and to comply with all applicable local, state, and federal code requirements. Implementation of any improvements would be coordinated with, and approved by, the applicable utility provider. Mitigation measures for utility construction impacts would include those described for general construction activities on the terminal site (see Chapter 2, Section 2.3.2). Lighting associated with exterior construction activities would be controlled by City of Seattle regulations, potentially limiting the hours of construction and thereby limiting construction lighting during nighttime hours. No other measures are expected to be required during construction. Additional mitigation measures are not proposed for upgrades to electrical, water and sewer, natural gas, solid waste, or communications.

#### OPERATIONS MITIGATION

##### ***Lighting***

Proposed lighting levels would conform to all applicable federal, state and local standards. Mitigation to minimize light and glare impacts is described in Section 3.9.

##### ***Stormwater***

Compliance with the Clean Water Act through compliance with ISGP and City Stormwater code provides the regulatory-based mitigation standards for potential operational impacts to stormwater. See Section 3.3, Water, and Volume II, Appendix D for detailed information.

### 3.13.5 SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

#### 3.13.5.1 ALL ALTERNATIVES

With implementation of mitigation measures, no significant unavoidable adverse impacts to utilities are expected.

# Chapter 4

## Updated Information and Analysis

## 4.0 UPDATED INFORMATION AND ANALYSIS

This chapter updates the analysis of environmental impacts contained in the DEIS and provides a listing of the updated information and analysis performed subsequent to the publication of the DEIS. Information on the Preferred Alternative, new analyses performed as a result of comments on the DEIS, and new information that is now available are provided.

### 4.1 CHAPTER 1 – SUMMARY

#### 4.1.1 UPDATED INFORMATION ON SELECTION OF A PREFERRED ALTERNATIVE

The Port has selected a Preferred Alternative as described in Chapter 1 of this FEIS. The level of development and uses assumed in the Preferred Alternative fall within the range of the alternatives analyzed in the DEIS.

The Port has stated in the Project Goals and Objectives section of the EIS that it seeks to maintain Terminal 5 as a major cargo terminal capable of meeting expected vessel traffic needs and provide modern, flexible, and efficient terminal infrastructure.

The Port is proceeding with project impacts that were disclosed in Alternative 2 as the Preferred Alternative and is in the process of acquiring permits with the City of Seattle that approve the project infrastructure improvements and manage the impacts from operations that consider throughput of up to 1.3 million TEUs (twenty-foot equivalent units).

The Port, through the EIS analysis, identified the steps needed to reduce, minimize, avoid, or mitigate the impacts from operations and construction consistent with the Project described as Alternative 2 in the DEIS and modified in the FEIS based on public and agency comment. The Port will commit to the permit conditions created for the mitigation measures needed for the operational throughput of 1.3 million TEUs annually and follow the specific milestones established through the City of Seattle Master Use Permit and building permit processes and other agency regulatory processes.

The Port is the property owner and the permit holder. In that capacity, the Port will ultimately be responsible for compliance with all permit requirements during the construction and completed terminal operations. The NWSA is acting as the agent on behalf of the Port during the construction phase and subsequent terminal operations. Such a role does not diminish the Port's ultimate responsibility for permit compliance.

The Port/NWSA will eventually negotiate an agreement with a terminal operator to run Terminal 5 as a cargo facility. During the course of the negotiations, the Port/NWSA will discuss with the proposed tenant or user the obligations that must be observed to comply with the permits for the site. Even in those situations where the tenant or user has undertaken the obligation for compliance, the Port/NWSA will remain responsible for complying with the permit conditions. The Port/NWSA will consult and provide assistance to the eventual tenant or user to

help them comply with the permit conditions. Conditions of approval will be inserted in all lease and site use agreements with a selected marine terminal operator to ensure comprehensive compliance with city, state, federal, and Treaty tribe conditional approvals.

## 4.2 CHAPTER 2 – DESCRIPTION OF THE ALTERNATIVES

### 4.2.1 CLARIFICATION OF THE ELECTRIFICATION SCHEDULE AND ACCELERATED SCHEDULE FOR ADOPTION OF ALTERNATIVE 3

Alternatives 2 and 3 represent two different possible site configurations after upland improvements have been completed. The maximum TEU throughput for Alternative 2 could be achieved without the improved movement efficiencies associated with the equipment needed for Alternative 3. However, the maximum throughput for Alternative 3 could not be achieved without using the more efficient, electrified equipment. Alternative 3 has lower emissions of all air pollutants because more of the onshore cargo handling equipment is electrified than in Alternative 2, which relies primarily on use of diesel-powered cargo handling equipment. However, even with use of the diesel-powered cargo handling equipment anticipated in Alternative 2, modelling indicates that operational off-site concentrations of criteria air pollutants attributable to capacity operations in 2020 and 2030 and beyond will comply with NAAQS. Emissions reductions relative to the No Action baseline at start-up in 2020 occur with Alternative 2 because the benefits of fleet turnover use of low sulfur fuels and the use of shorepower available to ships at the beginning of operations.

The Port does not have an MTO yet. Interested parties in the facility have indicated that Alternative 2 represents the necessary physical improvements and the anticipated level of throughput required for both the Port and an MTO to make efficient and effective use of the space. Capital improvements to construct an all electrical operation in the next 10 years to support a throughput consistent with the levels anticipated in Alternative 3 are not warranted at this time. After selection, the Port will discuss with any potential MTO its goals to reduce and minimize air quality impacts especially relative to the potential to control emissions using less polluting cargo handling alternatives. But the established mitigation steps in Alternative 2 are protective of air quality.

## 4.3 CHAPTER 3 – AFFECTED ENVIRONMENT, IMPACTS, MITIGATION MEASURES, SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

### 4.3.1 EARTH, SECTION 1

#### 4.3.1.1 UPDATED INFORMATION ON SLOPE STABILITY AND VIBRATIONS

Information was added to the section on potential impacts from slope stability to include potential impacts to buildings and homes from vibratory hammers used in pile driving during construction (See Chapter 3, Section 3.1.3.2).

#### 4.3.1.2 UPDATED GEOTECHNICAL ENGINEERING DESIGN STUDY

The 95% Geotechnical Engineering Design Study for Terminal 5 Cargo Wharf Rehabilitation and Berth Deepening (Hart Crowser, Inc. [June 14, 2016]) is included in this FEIS in Volume II, Appendix J.

#### 4.3.2 AIR, SECTION 2

##### 4.3.2.1 UPDATED AIR QUALITY TECHNICAL REPORT

The Air Quality Technical Report has been updated and can be found in FEIS, Volume II, Appendix A. Portions of FEIS, Volume I, Chapter 3, Section 3.2 include updates for air analysis. It is dated September 2016.

##### 4.3.2.2 UPDATED INFORMATION ON USE OF SHOREPOWER

The DEIS, on page 2-11, Section 2.3.3 Proposed Alternative 2 Construction states, “the conduit, wiring and a connection system would be provided for a shore power system for two berths. This would allow the terminal to be plug-in ready; for those ships with (that) have the capability and choose to use shore power.” Furthermore the DEIS in in the Air Quality technical appendix, in describing the analytical methods assumed in its model, states “For 2020, 2030 and 2040 shore power efficacy of . . . and 30%, 50% and 70% was applied for the action alternatives.” The conclusion that the Terminal 5 operations do not exceed the NAAQS, and therefore do not cause significant environmental impacts, is supported with the understanding that, over time, shorepower will be used by an increasing percentage of oceangoing vessels while at berth.

It is unlikely that 100 percent of container ships will adopt shorepower at berth in the near future. Even the most stringent shorepower adoption requirement in California, whose regulations were promulgated due to severe air quality degradation in the Los Angeles basin, require an 80 percent plug-in rate by 2020. The Port of Seattle and NWSA anticipated the need to reduce air quality impacts as part of the Project and directed planners to include a component of shorepower as part of operations, even though there are no regulatory mandates to do so. Shorepower in Seattle is a voluntarily implementation scheme to minimize potential adverse impacts. The estimated adoption rates, which increase over time, are based on reasonable estimates of vessels with the capability to connect to shorepower. The likelihood of being able to connect 30 percent of the vessels calling Terminal 5 after its rehabilitation is complete is probable. The potential to increase usage up to 50 percent in the following decade is also likely due to the opportunity to plug in and a competitive cost structure relative to diesel fuel.

Adoption rates will be variable and the Port cannot guarantee either that ships with shorepower capability will call at Seattle or that the vessels will utilize shorepower instead of diesel to support vessel needs at berth. However, penetration of plug-in-capable vessels calling at Terminal 5 and utilization of shorepower at berth is encouraged by several developments and policies:



1. Ships entering the ECA (Emissions Control Area) are required to burn fuel with a maximum sulfur content of 0.1 percent as of January 1, 2015. The higher cost of lower sulfur fuels versus electricity costs for shorepower may approach parity, encouraging use of shorepower over diesel generation.
2. The CARB (California Air Resources Board) requires ships in California to use shorepower or equivalent control techniques to reduce at berth emissions by 2020. The number of vessels modified to accept shorepower has increased since passage of the policy. Vessels that call at California ports often call at Pacific Northwest ports as their next destination, increasing the chance that a vessel is equipped to accept shorepower connections.
3. Seattle City Light sells power at rates often less than that of other major shipping centers, making shorepower financially less, or equal in cost, to using diesel when not factoring labor costs. EPA and other organizations may provide grants or matching funds to expedite operator uptake of plug-In capabilities.

Although shorepower connection will be voluntary, the Port recognizes that it must provide additional impetus to encourage shorepower adoption when the terminal goes online with a new terminal operator. Within the existing Clean Air Strategy plan, the NWSA and Port in coordination with an MTO will define a program focused on attracting ships that are already carrying shipside onshore power equipment and encourage usage of electric shorepower at berth to meet the 30 percent adoption goal beginning when the terminal restarts operations. The Program will define specific incentive plans to attract ships which perform better in reducing air emissions and that will use the Port's shorepower system. The Port will be responsible under its Clean Air Strategy plan to report progress to meeting the goal and determine how frequently reporting is needed.

#### 4.3.2.3 ADDITION OF MONITORED AIR DATA

The air analysis added monitored air data for 2011-2013 at the Marginal Way Duwamish site for PM<sub>2.5</sub>. See Section 3.2.2.1.

#### 4.3.2.4 ENHANCED DISPERSION MODELING

The dispersion modeling was enhanced and more detail is provided in the FEIS, Volume II, Appendix A, Air Quality Technical Report and in Section 3.2.2.8 of the FEIS.

#### 4.3.2.5 ADDITION OF COMPARISON OF ALTERNATIVES EMISSIONS

A section on the comparison of alternatives emissions was added to the FEIS, Volume II, Appendix A, Air Quality Technical Report and in Section 3.2.3.4 of the FEIS.

#### 4.3.2.6 ADDITION OF TRACKING TERMINAL PROGRESS

A section on tracking terminal progress with air quality conditions was added to the FEIS, Volume II, Appendix A, Air Quality Technical Report and in Section 3.2.3.10 of the FEIS.

#### 4.3.2.7 ADDITION OF MITIGATION MEASURES TO BE IMPLEMENTED

Section 3.2.4 has been revised to state mitigation measures that will be implemented.

#### 4.3.3 WATER, SECTION 3

##### 4.3.3.1 ADDITIONAL INFORMATION ON ENVIRONMENTALLY CRITICAL AREAS

Information on City of Seattle Environmentally Critical Areas has been added to Section 3.3.1.

##### 4.3.3.2 ADDITIONAL INFORMATION ON FISHING VESSEL USE

Information on fishing vessel use has been added to Section 3.3.2.3.

#### 4.3.4 NOISE, SECTION 6

##### 4.3.4.1 UPDATED NOISE QUALITY TECHNICAL REPORT

The Noise Quality Technical Report has been updated and can be found in FEIS, Volume II, Appendix B. Portions of FEIS, Volume I, Chapter 3, Section 3.2 include updates for noise analysis including an analysis of low frequency noise measurements of vessels at berth running generators. It is dated October 2016.

##### 4.3.4.2 UPDATED INFORMATION ON THE ADDITION OF A FRAMEWORK FOR AN OPERATIONAL NOISE MANAGEMENT PLAN

An Operational Noise Management Plan has been provided as part of the environmental review and mitigation process and can be found in FEIS, Volume II, Appendix M). It is dated October 2016.

#### 4.3.5 CULTURAL HISTORICAL, SECTION 10

##### 4.3.5.1 ADDITIONAL INFORMATION ON TREATY FISHING

Additional information on Treaty Fishing has been added to Section 3.10.1.

#### 4.3.6 TRANSPORTATION, SECTION 11

##### 4.3.6.1 UPDATED TRANSPORTATION TECHNICAL REPORT

The Transportation Technical Report has been updated and can be found in FEIS, Volume II, Appendix C). Portions of the FEIS, Volume I, Chapter 3, Section 3.11 include updates for traffic analysis.

#### 4.3.6.2 UPDATED TRANSPORTATION TECHNICAL REPORT

The geographic area of the traffic study was expanded. The truck trip distribution pattern and trip assignments in Section 4.3 the Transportation Technical Report (see FEIS, Volume II, Appendix C) have been extended to show the net change in truck trips to the state highway network, including Interstate 5, Interstate 90, and SR 99. Analysis has also been added in Section 5.1 of the Transportation Technical Report to show the percentage of total traffic at key locations on the network.

#### 4.3.6.3 ADDITION OF CONCURRENCY REVIEW

The Transportation Concurrency review was added to Chapter 3, Section 11 and is found in Section 3.11.3.1.

#### 4.3.6.4 ADDITION OF GATE QUEUE MANAGEMENT PLAN

The Transportation Technical Report now includes a Queue Management Plan. See FEIS, Volume II, Appendix C).

#### 4.3.6.5 UPDATED MITIGATION MEASURES

Mitigation measures have been updated in Section 6 of the Transportation Technical Report to include several Intelligent Transportation System (ITS) components. These include:

- Replacing the Flashing Alert Sign located on northbound West Marginal Way that notifies motorists approaching Terminal 5 (and local businesses) that the railroad tracks are blocked by a train. This would allow them time to move from the right turn lane to the left turn lane so they can access the terminal and local businesses via the Terminal 5 Access Bridge. (It is noted that the foundation and conduit for the sign still exist, but the sign was damaged by a collision and removed.) The alert sign should be maintained until the surface access via W Marginal Way is closed to vehicular traffic.
- Upgrading the signal system along the lower Spokane Street corridor between Harbor Avenue and East Marginal Way, and providing for interconnection between signals as well as between the signal system and the Spokane Street Swing Bridge.
- Connecting Terminal 5 to the Northwest Seaport Alliance's (NWSA's) Gate Wait Time Awareness System or a similar system, which provides real-time information to truck drivers and dispatchers about the time it will take to get through a terminal gate and the terminal.

#### 4.3.7 CHAPTER 3, SECTION 12, PUBLIC SERVICES

##### 4.3.7.1 ADDITIONAL INFORMATION ON FIRE AND EMERGENCY ACCESS

Additional information on fire and emergency access has been added to Section 3.12.2.

## Chapter 5

### Errata

## 5.0 ERRATA

This chapter identifies corrections to the DEIS and Appendices to the DEIS, including language changes and clarifications, based on comments received on the DEIS and other updated information.

### 5.1 VOLUME I (DRAFT EIS)

#### 5.1.1 CHAPTER 2

##### 5.1.1.1 SECTION 2.3.7.3 AND 2.3.7.4

Sections 2.3.7.3, and 2.3.7.4 refer to “RTG Cranes” but the term should be “RMG Cranes” as the discussion is about Alternative 3.

#### 5.1.2 CHAPTER 3

##### 5.1.2.1 SECTION 3.8.1

The word “Greater” has been removed from the title for Duwamish Manufacturing/Industrial Center Plan in Section 3.8.1 as the organization is now known.

##### 5.1.2.2 SECTION 3.11.4

The reference to the Section on Mitigation has been corrected to correctly identify it as Section 3.11.4.

### 5.2 VOLUME II (DRAFT EIS)

#### 5.2.1 APPENDIX C TRANSPORTATION TECHNICAL REPORT

##### 5.2.1.1 TABLE 8

There should be no outbound employee trips during the AM peak hour for any of the alternatives since the night shift would end at 3:00 AM. As noted in the Transportation Technical Report, “A ‘hoot shift’ (typically from 3:00 AM to 7:00 AM) may be needed to unload or load a ship on rare occasions, which can occur if the ship is delayed by weather” (Section 1.2.2). This condition would not occur on the Average Day or Design Day. This error has been corrected in Table 8 of the Transportation Technical Report. See FEIS, Volume II, Appendix C.

##### 5.2.1.2 SECTION 2.9

The text in Section 2.9 of the Transportation Technical Report has been corrected to state that Terminal 5 currently has 540 spaces. There are 40 “other” spaces. See FEIS, Volume II, Appendix C.

# Chapter 6

## Comment Letters and Responses

## 6.0 COMMENT LETTERS<sup>28</sup> AND RESPONSES

This chapter of the FEIS contains comments received on the DEIS during the comment period and responses to the comments. A total of 149 comments were received on the DEIS during the comment period. Four persons commented at the public hearing held on June 7, 2016 and 14 persons commented at the public hearing held on June 9, 2016 for a total of 18 comments public hearing comments. See below for a list of the comment letters and public hearing speakers followed by all of the comments received and the public hearing transcripts.

Each comment and the transcript of the public hearing are included in this section of the FEIS. Comment letters/numbers appear in the margins of the letters/transcript commentary and are cross referenced to the corresponding responses. Each letter and oral comment received during the DEIS comment period was categorized based on the nature of the commenter into the following groups:

- City of Seattle (C)
- Regional Agency (R)
- Washington State Agency (S)
- Tribe (T)
- Individuals (I)
- Organizations/Neighborhoods (O)

Each response includes the number of the corresponding applicable written comment or transcript, and the number of the individual comment stated within it. Ten separate issues received multiple comments. To address these comments in a manner to avoid repetition and to provide meaningful information to decision-makers, detailed Standard Responses were made to 10 issues. The specific subject areas covered by Standard Responses are:

- 1) Air Quality Monitoring Sites and Data
- 2) Post-Operation Air Quality Monitoring
- 3) Use of Shorepower

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<sup>28</sup> For ease of reference, comments identified in Chapter 6 are collectively referred to as “comment letters.” In this FEIS, it is understood that the term “letter” encompasses the many different avenues for providing comment.

- 4) Electrification Schedule and Accelerated Schedule for Adoption of Alternative 3
- 5) Train Horn Noise
- 6) Nighttime Noise
- 7) Low Frequency Noise
- 8) Cargo Forecasts
- 9) Compliance Noise Monitoring
- 10) Responsibility for Permit Compliance

Following the Standard Responses are the responses to the individual comments. Responses are provided directly after each letter/transcript commentary. Possible options for responding to comments include further explanation of how analysis is conducted, new analysis or modified analysis, factual corrections, or explanation of why comments do not warrant further agency response. Accordingly, each response does one or more of the following:

- Provides additional information or elaborates on a topic previously discussed in the DEIS;
- Notes how the DEIS text has been revised to incorporate new information or factual corrections;
- Refers the reader, when appropriate, to another comment response to avoid repetition;
- Explains why the comment does not warrant further response; or
- Acknowledges the commenter when an opinion is stated (i.e., Comment acknowledged or Comment noted).

The following comment letters were received on the Terminal 5 Improvements Project DEIS.

Number of Comments Received	Category
2	City of Seattle
1	Regional Agency
2	Washington State Agency
3	Tribe
109	Individuals
24	Organizations/Neighborhoods
<b>149</b>	<b>TOTAL</b>



**CITY**

- C-001 Seattle City Council, District 1
- C-002 City of Seattle

**REGIONAL AGENCY**

- R-001 Puget Sound Clean Air Agency

**WASHINGTON STATE AGENCIES**

- S-001 Washington State Department of Ecology
- S-002 Washington State Department of Transportation

**TRIBES**

- T-001 The Suquamish Tribe
- T-002 Muckleshoot Indian Tribe
- T-003 The Suquamish Tribe

**INDIVIDUALS**

- I-001 Rick Aramburu
- I-002 Richard Curtis
- I-003 Dick Buckwitz
- I-004 Eric Newgard
- I-005 johnd200@gmail.com
- I-006 johne452@gmail.com
- I-007 Chad Markham
- I-008 Taylor Heyl
- I-009 Scott Ramage
- I-010 Kraig Kennedy
- I-011 Wendy Sweigart and Nancy DeSpain
- I-012 Victor Bruno
- I-013 Grant Moosha
- I-014 Connie Longrie
- I-015 Allison Ostrer
- I-016 Karen Richter
- I-017 Mark Jacobs
- I-018 Monica and Ron Riva
- I-019 Eric Newgard
- I-020 Unknown
- I-021 Alex Anderson
- I-022 Robert Shampain and Wendy Morgan
- I-023 Paul Luczak
- I-024 Ron Osborne
- I-025 Randal Bass
- I-026 Brian Duncan
- I-027 Steven Cheyne-Cook
- I-028 Trina Loehndorf

I-029 Paul Casey  
I-030 Dori Cahn  
I-031 Mike Haggard  
I-032 Tom Hubbard  
I-033 Terry Sorensen  
I-034 Georgios Chrysanthakopoulos  
I-035 Dennis Olson  
I-036 Clayton LaPlant  
I-037 Steve Ramels  
I-038 Joe Ragghianti  
I-039 Danajo Olsen  
I-040 Joyce Lingg  
I-041 John C (Sp?)  
I-042 Chris Fowler  
I-043 Barb Kizer  
I-044 Teresa K. Lewis  
I-045 Sam M (Sp?)  
I-046 Ben McHenry  
I-047 C.M. Miller  
I-048 S.E. Moss  
I-049 Shaun Murdock  
I-050 Gerald L. Anderson  
I-051 Dennis S (Sp?)  
I-052 Gretchen Van Dyk  
I-053 Andy and Genevieve Carlson  
I-054 Mark Kohmetscher  
I-055 Donn Skrivanek  
I-056 Michael Ulrich  
I-057 Henry Lee  
I-058 Henry Lee  
I-059 Henry Lee  
I-060 Kim Tran  
I-061 Kim Tran  
I-062 Henry Lee  
I-063 Todd Petersen  
I-064 Bart Lilly  
I-065 William Lemley  
I-066 Kenneth J. Turner  
I-067 James Wojciechowski  
I-068 James Wojciechowski  
I-069 James Wojciechowski  
I-070 James Wojciechowski  
I-071 James Wojciechowski  
I-072 JoAnn Brush  
I-073 Nancy Schwab

I-074 David and Meliss Haeckel  
I-075 Martina Mett  
I-076 Mark Johnson  
I-077 Evan Petrie  
I-078 Jessica A. Lee  
I-079 Kenneth E. Stanfel  
I-080 Martine VanDePieterman  
I-081 Martine VanDePieterman  
I-082 Martine VanDePieterman  
I-082 Martine VanDePieterman  
I-083 Martine VanDePieterman  
I-084 Martine VanDePieterman  
I-085 Scott Olson  
I-086 Charles B. Ali  
I-087 Mark R. Anderson  
I-088 Steven D. Bird  
I-089 Shawn Godfrey  
I-090 Terry H (Sp?)  
I-091 Andrew H. Hurt  
I-092 Tyler Linsten  
I-093 Donald R. Madrid  
I-094 Brian McDonald  
I-095 Randy Meeds  
I-096 Phil C (Sp.?)  
I-097 Charles Sharin  
I-098 Vince Taylor  
I-099 D. H.(Sp?)  
I-100 Jill K. Vaden  
I-101 Carol Caley  
I-102 Bob Nuber  
I-103 Michael Whiteman  
I-104 Eugene W. Wong  
I-105 Roxane Rusch  
I-106 Thomas A. Noyes  
I-107 Margaret and Rick Pyfer  
I-108 Michael Hendersen  
I-109 Marti Casey

**ORGANIZATIONS/NEIGHBORHOODS**

O-001 Washington Council on International Trade  
O-002 International Union of Operating Engineers, Local 302  
O-003 Terminal 5 Group  
O-004 Terminal 5 Group  
O-005 Terminal 5 Group

O-006 Terminal 5 Group  
O-007 Terminal 5 Group  
O-008 Terminal 5 Group  
O-009 Terminal 5 Group  
O-010 Terminal 5 Group  
O-011 United Motor Freight  
O-012 Pacific Terminals  
O-013 SSA Marine  
O-014 Terminal 5 Group  
O-015 West Seattle Transportation Coalition  
O-016 West Seattle Transportation Coalition  
O-017 International Longshore and Warehouse Union  
O-018 Pacific Merchant Shipping Association  
O-019 Puget Soundkeeper  
O-020 Washington Maritime Federation  
O-021 CenterPoint Properties Trust

**PUBLIC HEARING TRANSCRIPTS**

**June 7, 2016**

P-001 Patricia Davis, Terminal 5 Group  
P-001 James Rasmussen, Duwamish River Cleanup Coalition  
P-001 Jim Wojciechowski, Neighborhood Organization  
P-001 Patricia Davis, Terminal 5 Group

**June 9, 2016**

P-002 Paul Luczak  
P-002 Patricia Davis, Terminal 5 Group  
P-002 John Persak  
P-002 Deborah Barker, West Seattle Transportation Coalition  
P-002 Henry Lee, East Albro Neighborhood Group  
P-002 Vince O'Halloran, Branch Agent for Sailors Union of the Pacific  
P-002 Jim Wojciechowski, Neighborhood Organization  
P-002 Mark Jacobs  
P-002 Marti Casey  
P-002 Max Vekich  
P-002 Chris Wilke, Puget Soundkeeper  
P-002 Thomas Noyes  
P-002 Tom Hubbard  
P-002 Patricia Davis, Terminal 5 Group

## 6.1 STANDARD RESPONSES

### 6.1.1 STANDARD RESPONSE NO. 1: SELECTION OF AIR QUALITY MONITORING SITES AND DATA

Particulate air pollution is defined by the U.S. Environmental Protection Agency (EPA) as an air-suspended mixture of both solid and liquid particles. They are often separated into three classifications: coarse, fine and ultrafine particles. These smaller particles include combustion particles, organic compounds and metals.

Particulate matter can come from both human and natural sources. Natural sources include sea salt, forest fires, pollen and mold. As they are natural occurrences they are harder to control and are usually left unregulated. Human sources, however, can be regulated and understanding where PM comes from is very important. PM<sub>2.5</sub> is associated with fuel burning, industrial combustion processes and vehicle emissions.

The growing awareness of PM<sub>2.5</sub> is largely associated with the potential damaging effects they can have on the human body. Primary health effects include damage to the respiratory and cardiovascular systems. Due to the small size of PM<sub>2.5</sub> particles, they can penetrate the deepest parts of the lungs as well as access the gas exchange regions of the lung via diffusion.

The Port consultant selected the data that was most relevant to the Project area and that would allow for objective analysis and evaluation of future changes in the area. Experts have determined that these data are of substantial use in analyzing and evaluating air quality. In addition, data logged thus far provides important long-term context, allowing trends and impacts to be identified, independent of short-term anomalies. The selection of monitoring stations used to characterize existing air quality for the proposed Project including PM<sub>2.5</sub> relied on specific criteria: the location, the measured pollutants, the temporal span of available data, and EPA validation. The most recent data available during the development of the Draft EIS were EPA's 2012-2014 (inclusive) design values, which are used to determine a compliance with the National Ambient Air Quality Standards (NAAQSs). Further, the design values provide important long-term context, allowing trends, now and in the future, to be identified independent of short-term anomalies. A review of regional monitor design values and their proximity to Terminal 5 indicated that Beacon Hill was the most representative and conservative monitor for some pollutants. Importantly, the Duwamish monitor's PM<sub>2.5</sub> design values for 2012-2014 were identified as invalid by the EPA and were not considered for the DEIS analysis.

The DEIS also considered air quality monitoring database created by Washington State University (WSU). The WSU database estimates site-specific pollutant concentrations (design values) using a distance-weighted interpolation among air monitoring stations in conjunction with an advanced air quality dispersion and chemistry model. When both Beacon Hill and the WSU model had relevant data, existing ambient air quality was estimated using the higher of the two concentrations. By selecting the higher concentration, the analysis was a conservative representation and may have overstated the actual existing concentration.

In comments on the DEIS, the Puget Sound Clean Air Agency (PSCAA) requested that the Port use the EPA-validated 2011-2013 PM<sub>2.5</sub> EPA design values from the Duwamish monitoring station. However, the original analysis did not use the Duwamish background concentrations because EPA indicated the EPA-calculated design values (also known as background or existing conditions) were, for the most recent years, declared invalid by EPA because they do not validate this particular data. The Port's approach was an appropriate, objective solution to avoid confusion about the data. In response to PSCAA's request, the Port consultant revised the analysis to use the older, EPA-validated, PM<sub>2.5</sub> annual and 24-hour background values from the Duwamish monitoring station. After including the Duwamish data, it was found that background concentrations data did not change the conclusion of the DEIS that predicted cumulative PM<sub>2.5</sub> concentrations are in compliance with the NAAQS (see tables 7, 9 and 11 of the FEIS Air Quality Technical Report in FEIS, Volume II, Appendix A) for the revised PM<sub>2.5</sub> background concentrations).

The Final EIS accommodates PSCAA's request and reports the Duwamish data to characterize existing PM<sub>2.5</sub> concentrations. Although the PM<sub>2.5</sub> concentrations measured at the Duwamish monitoring station are slightly higher than those reported in the DEIS, use of the Duwamish data to represent existing PM<sub>2.5</sub> did not change the overall conclusion that compliance with the NAAQS is not threatened by the Terminal 5 redevelopment alternatives. The Duwamish site does not report any of the other pollutants assessed within the Draft or Final EIS.

#### 6.1.2 STANDARD RESPONSE NO. 2: POST-OPERATION AIR QUALITY MONITORING

There were a number of comments on the DEIS requesting that the Port establish an ambient air quality monitoring station to measure air quality after Terminal 5 is rehabilitated and improved as a marine cargo facility. However, Ecology and PSCAA already maintain a network of permanent monitoring sites throughout the region that are based on EPA siting criteria. Siting criteria ensure that monitors provide a consistent and representative picture of air quality. Several monitoring stations are located near Port operations, including one near the intersection of South Hudson Street and East Marginal Way, one in Beacon Hill, and another at the South Park Neighborhood Association center (which also serves as the Providence Regina outlet). PSCAA has also conducted short-term monitoring studies at temporary locations in Port-adjacent communities. In discussions with PSCAA on the value of an additional monitoring station near Terminal 5, the agency has stated its position that the existing monitoring network is sufficient to track project air quality data. Given PSCAA's position, the fact that project air quality modelling conducted for the DEIS and FEIS indicated that the Project would not cause exceedances of the National Ambient Air Quality Standards (NAAQS), and that, over time, project-related emissions would decrease, there is no need for the Port to install additional monitoring stations.

However, consistent with other comments, the Port will commit to tracking Terminal 5 performance after the Terminal renews operation to ensure air quality assumptions as described in the EIS are consistent with operations. The plan will be designed with consultation with the PSCAA. Section 5 in the Air Quality Technical Report in the FEIS, Volume II, Appendix A includes some proposed elements the Port will monitor and publish as a periodic report. The Port will monitor activity and

publish a periodic report presenting the cargo handling equipment inventory, shorepower utilization rate.

### 6.1.3 STANDARD RESPONSE NO. 3: USE OF SHOREPOWER

The air quality emissions analyses assumed 30 percent of at berth vessel power generation was offset by shorepower in 2020, 50 percent was offset in 2030, and 70 percent was offset in 2040 for the action alternatives. Estimates of the penetration rate of on-shore power (OPS) capable container cargo ships calling at the Northwest Seaport Alliance (NWSA) terminals in 2015 (baseline), and low and high range forecasts for OPS in 2020 and 2030 were derived from a study conducted by Starcrest Consulting (2016). The penetration rates used in the EIS are conservatively optimistic in comparison to the estimates outlined in the study.

For example, the study suggests in 2020 that the percentage of the vessel fleet that is OPS-capable will be between 33%-59%. In contrast, and to remain conservative, the Terminal 5 analysis only assumes 30% shore power use in 2020. In 2030, the study approximates that the OPS-capable fraction will be between 33%-74% and the Terminal 5 analysis selected 50% as a mid-point of this range. Furthermore, 32% of the current container fleet calling the Northwest Seaport Alliance terminals is OPS-capable, this suggests that by 2030 the OPS-capable fleet will be well above the 33% lower-bound indicated in the study.

But the percentage of vessels calling at Terminal 5 that will use shorepower at berth is encouraged by several developments and policies:

1. Ships entering Puget Sound are required to burn fuel with a maximum sulfur content of 0.1 percent as of January 1, 2015. The higher cost of lower sulfur fuels vs electricity costs for shorepower may approach parity encouraging use of shorepower over diesel generation.
2. The CARB (California Air Resources Board) requires ships in California to use shorepower or equivalent control techniques to reduce at berth emissions by 2020. The number of vessels modified to accept shorepower has increased since passage of the policy. Vessels that call at California ports often call at Pacific Northwest ports after calling at California, increasing the chance that a vessel is equipped to accept shorepower connections.
3. Seattle City Light sells power at rates often less than that of other major shipping centers, making shorepower equal to or less expensive than using diesel generators.

In southern California, where regulations were promulgated due to poor air quality in the Los Angeles basin, an 80 percent plug-in rate is required by 2020. The Port and NWSA anticipated the need to provide shorepower as part of the Project and directed planners to include a component of shorepower as part of operations, even though there are no regulatory mandates to do so. The estimated shorepower adoption rate increasing over time is based on reasonable estimates of vessels with the capability to connect to shorepower and a competitive cost structure relative to use of diesel to power vessels at berth.

Although shorepower connection will be voluntary, the Port recognizes that additional incentives beyond low electric rates may further encourage shipping lines to send vessels equipped with shorepower capability to Terminal 5 in the future. Once a marine terminal operator (MTO) is

identified, the NWSA and Port will work with the company and shipping lines to design a program to incentivize shorepower utilization.

#### 6.1.4 STANDARD RESPONSE NO. 4: ELECTRIFICATION SCHEDULE AND ACCELERATED SCHEDULE FOR ADOPTION OF ALTERNATIVE 3

Alternatives 2 and 3 represent two different possible site configurations after upland improvements have been completed. The maximum TEU throughput for Alternative 2 could be achieved without the improved movement efficiencies associated with the equipment needed for Alternative 3. However, the maximum throughput for Alternative 3 could not be achieved without using the more efficient, electrified equipment. Alternative 3 has lower emissions of all air pollutants because more of the onshore cargo handling equipment is electrified than in Alternative 2, which relies primarily on use of diesel-powered cargo handling equipment. However, even with use of the diesel-powered cargo handling equipment anticipated in Alternative 2, modelling indicates that operational off-site concentrations of criteria air pollutants attributable to capacity operations in 2020 and 2030 and beyond will comply with NAAQS. Emissions reductions relative to the No Action baseline at start-up in 2020 occur with Alternative 2 because the benefits of truck and vessel fleet turnover, required use of low sulfur fuels, fewer vessel calls, newer vessels having improved fuel efficiency and emissions characteristics, and the use of shorepower available to ships at the beginning of operations.

The Port does not have a MTO yet. Interested parties in the facility have indicated that Alternative 2 represents the necessary physical improvements and the anticipated level of throughput required for both the Port and a MTO to make efficient and effective use of the space. Capital improvements to construct an all electrical operation in the next 10 years to support a throughput consistent with the levels anticipated in Alternative 3 are not warranted at this time. After selection, the Port will discuss with any potential MTO its goals to reduce and minimize air quality impacts especially relative to the potential to control emissions using less polluting cargo handling alternatives. But the established mitigation steps in Alternative 2 are protective of air quality.

Because the benefits of fleet turnover use of low sulfur fuels and the use of shorepower available to ships at the beginning of operations, Alternative 2 baseline at start up in 2020 achieves more emissions reductions than the No Action Alternative.

#### 6.1.5 STANDARD RESPONSE NO. 5: TRAIN HORN NOISE

The Port in its Noise Quality Technical Report (FEIS, Volume II, Appendix B) and its Rail Infrastructure and Train Volume Analysis Memorandum (FEIS, Volume II, Appendix F) identified train horn noise, as a significant annoyance noise. Implementing safety measures and traffic improvements such as signal gates, fencing and signage in the area of rail lines and vehicle travel routes between the existing Terminal 5 entrance gate and rail lines near the east end of the Duwamish Waterway rail bridge will provide the necessary improvements to allow a train to minimize the need to use on-train, safety horns. The Port will work with the train operator and Seattle Department of Transportation (SDOT) to implement these improvements prior to beginning marine cargo operations at the rehabilitated terminal. These rail, truck, pedestrian, and bicycle improvements and safety measures would be a necessary minimum step towards applying for and establishing a “Quiet



Zone” designation from Federal Railroad Administration (FRA). Changes in rail line warning procedures and operations require City of Seattle and FRA approval with support from the railroad operator, BNSF. The proposed Project will include working with the City and FRA, including design and justification measures, to implement improvements in rail and vehicle traffic conditions west of the Duwamish Waterway rail bridge, with particular emphasis on safety improvements sufficient to establish a Quiet zone.

#### 6.1.6 STANDARD RESPONSE NO. 6: NIGHTTIME NOISE

Nighttime noise monitoring is a specific element of a proposed noise management plan for measuring and reporting noise effects from future marine cargo operations. The objective of the noise management plan is to ensure future compliance with the Seattle noise limits. The Operational Noise Management Plan framework is included as an appendix to the FEIS and can be found in Volume II, Appendix M.

#### 6.1.7 STANDARD RESPONSE NO. 7: LOW FREQUENCY NOISE

Noise from hoteling vessels, including low frequency noise, has been assessed and included in the FEIS (see FEIS, Volume I, Chapter 3, Section 3.6). It is not expected that low-frequency sound at nearby residences would not approach levels that could be considered harmful to health. In addition, low frequency noise from hoteling vessels would not be expected to result in windows rattling. After inclusion of vessel noise in the analysis, the overall model-calculated noise levels from Terminal 5 operations did not substantively change. Regardless, noise from certain hoteling vessels may occasionally be audible, and noise from this source will be addressed in the framework for the Operational Noise Management Plan (see FEIS, Volume II, Appendix M).

#### 6.1.8 STANDARD RESPONSE NO. 8: CARGO FORECASTS

The capacities of the DEIS Action Alternatives are not based on economic forecasts of demand. They are evaluations of the potential capacity of the terminal under different operating conditions that were based on the wharf and berth infrastructure improvements necessary to accommodate larger vessels and the necessary upland improvements to increase cargo handling efficiency without expanding the size of the terminal. The growth projections used in the DEIS to estimate how this capacity might be reached over time are consistent with recently available growth rates.

As part of its business planning, the NWSA identified a long-term need for up to two container terminals that could serve large ships and accommodate increased throughput capacity growing over time. The growth rates used in NWSA planning is similar to two recent forecasts that project Pacific Northwest container volumes. Ocean Shipping Consultants (OSC) prepared a container forecast for Metro Port Vancouver in 2014 as a part of container terminal planning. OCS prepared forecasts of containers transiting Pacific Northwest ports (including Seattle and Tacoma). The resulting growth rates range from a low of 1.85 percent (low) to 3.46 percent (high) with a baseline growth of 2.66 percent.

HIS Global prepared Commodity Forecasts for the Port and for the USACE as a part of a channel deepening study under way for proposed navigation improvements for the Seattle Harbor. HIS

Global prepared forecasts of import and export volumes on a tonnage basis. The resulting growth rates range from a low of 3.03 percent (low) to 5.08 percent (high) with a baseline growth of 3.97 percent.

The Washington Public Ports Association (WPPA) forecast of container cargo growth rates considers the industry as a whole but not the suitability of facilities that can accommodate anticipated shifts in ship size and were not considered in the environmental review.

The Alternatives were structured to identify the project elements that mimic operations and construction occurring and needed to handle increasing throughput capacity at a growth rate at the upper end of predictions of a twenty year planning horizon. Although a rapid growth rate likely overemphasizes speculative harms, the information presented estimates of the type of and timing of reasonably foreseeable significant environmental consequences from the Alternatives.

Market conditions will control the rate towards full capacity envisioned in either of the Alternatives and may vary from the higher levels predicted in the EIS. A lower growth rate will delay the onset the environmental impacts evaluated at full capacity. If the Project does not achieve full capacity, impacts will be less than anticipated, although mitigation steps are likely to be taken.

#### 6.1.9 STANDARD RESPONSE NO. 9: COMPLIANCE NOISE MONITORING

Compliance noise monitoring of past Terminal 5 operations has indicated that the facility has operated within the City of Seattle noise limits for an industrial noise source affecting residential receiving properties. The noise analyses and evaluations conducted for the Project and presented in the EIS indicated that future operations with expanded throughput could result in facility levels exceeding these noise limits. Therefore, as part of the Project, the Port and the Terminal 5 marine cargo operator will develop an Operational Noise Management Plan (a framework of the ONMP is provided in FEIS, Volume II, Appendix M) to ensure that future levels will comply with the noise limits.

The evaluation of noise impacts and steps to avoid, minimize or mitigate noise impacts is found in FEIS, Volume I, Chapter 3, Section 3.6 and the Noise Quality Technical Report in FEIS, Volume II, Appendix B. The Operational Noise Management Plan will define a process to monitor noise levels from the facility annually, set up and respond to noise complaints, and identify potential noise mitigation measures that could be implemented to ensure future compliance with the limits. Some sources of noise are exempt from the noise limits, and control of these sources will be implemented to the extent feasible. For example, backup/motion alarms are exempt from the limits but are often one of the more annoying sources from the site. The Port is committed to requiring the installation and use of ambient-sensing, broadband backup alarms on all on-site mobile equipment to reduce the annoyance from this source. Noise from trains in transit to and from Terminal 5, in the area between the Duwamish Waterway rail bridge and the rail crossing at West Marginal Way Southwest at the southeast margin of Terminal 5, is also exempt from the noise limits. The Port is committed to improving the safety of the rail corridor to the Terminal in order to reduce the occurrence locomotive horns, one of the sources of noise producing the most complaints from nearby communities.

#### 6.1.10 STANDARD RESPONSE NO. 10: RESPONSIBILITY FOR PERMIT COMPLIANCE

The Port has stated in the Project Goals and Objectives section of the EIS that it seeks to maintain Terminal 5 as a major cargo terminal capable of meeting expected vessel traffic needs and provide modern, flexible, and efficient terminal infrastructure.

The Port is proceeding with review of city, state, and federal authorizations necessary to implement Alternative 2 as the Preferred Alternative. City, state, and federal permit agencies will use, in part the objective information, impact assessments, and mitigation measures included in the FEIS, as Alternative 2, with potential container cargo capacity of approximately 1.3 million TEUs (twenty-foot equivalent units).

The Port, through the EIS analysis, identified the steps needed to reduce, minimize, avoid, or mitigate the impacts from operations and construction consistent with the Project described as Alternative 2 in the DEIS and modified in the FEIS based on public and agency comment. The Port is committed to ensuring compliance with conditions of approval, including traffic and noise monitoring based on specific calendar or cargo volume thresholds.

The Port is the property owner and the permit holder. In that capacity, the Port will ultimately be responsible for compliance with all permit requirements during the construction and completed terminal operations. The NWSA is acting as the agent on behalf of the Port during the construction phase and subsequent terminal operations. This partnership does not diminish the Port's ultimate responsibility for permit compliance.

The Port/NWSA will eventually negotiate an agreement with a marine terminal operator for long-term use of the rehabilitated Terminal 5 as a cargo facility. The Port/NWSA will inform the proposed tenant or user of the obligations and conditions of approval essential for compliance with the permits for the site. Even in those situations where the tenant or user has undertaken the obligation for compliance, the Port/NWSA will remain responsible for complying with the permit conditions. The Port/NWSA will consult and provide assistance to the eventual tenant or user to help them comply with the permit conditions. Conditions of approval will be inserted in all lease and site use agreements with a selected marine terminal operator to ensure comprehensive compliance with city, state, federal, and Treaty tribe conditional approvals.



SEATTLE CITY COUNCIL | DISTRICT 1  
**COUNCILMEMBER LISA HERBOLD**

July 7, 2016

Paul Meyer  
 Environmental Services  
 Port of Seattle  
 P.O. Box 1209  
 Seattle, WA 98111

Dear Mr. Meyer,

I want to thank you for this opportunity to comment on the Draft Environmental Impact Study (DEIS) for the Terminal 5 Cargo Wharf Rehabilitation, Berth Deepening, and Improvements project and for extending the comment period so that the community would have more time to understand and comment on the DEIS. The rehabilitation and modernization of Terminal 5 (T5) presents an important opportunity for the Port of Seattle, Seaport Alliance, and the availability of living-wage jobs in Seattle.

While the City of Seattle will provide a thorough set of comments on the DEIS, I would like to particularly call your attention to impacts associated with the T5 Cargo Wharf project that the DEIS does not to fully review: air quality, environmental health, and noise. These impacts are particularly important to my constituents in District 1 – which includes West Seattle and South Park. Please ensure that the Final EIS adequately analyzes these impacts and proposes appropriate mitigation measures, such as:

*Air quality and Environmental Health*

- Battery-electric or electric hybrid construction equipment and vehicles
  - The proposed construction mitigation measures for both of the action alternatives are to comply with regulations and use best management practices. Please, consider utilizing equipment and vehicles that go farther to mitigate air quality impacts during construction.<sup>1</sup>
- Service and equipment upgrades necessary to electrify all functions of T5 operations; including all cranes, cargo handling equipment, services vehicles, and dredging equipment with targets for achieving total electrification
  - The mitigation for operations described for Alternative 3 is preferable to that of Alternative 2. Consider extending the intent of the operational mitigation of the third alternative to total electrification.<sup>2</sup>
- Especially, shore power installation for ships at the Terminal
  - In 2007 the California Air Resource Board adopted a regulation to reduce emissions from diesel engines for vessels docked at the Port of Los Angeles. This regulation required ships to shut down their diesel engines and utilize grid power, to administer

C-001-001

C-001-002

<sup>1</sup> DEIS, Volume I, Chapter 3.2.4.1

<sup>2</sup> DEIS, Volume I, Chapter 3.2.4.2

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 Phone (206) 684-8803 Fax (206) 684-8587 TTY (206) 233-0025  
 Email [lisa.herbold@seattle.gov](mailto:lisa.herbold@seattle.gov)

this LA has a goal of 70% shore power usage by 2017.<sup>3</sup> The Port of Seattle should be similarly ambitious with their targets; additionally, we should outline a specific plan to attain those goals.

C-001-003

*Noise*<sup>4</sup>

- Ambient-sensitive broadband back-up alarms
  - The second and third alternatives call for the use of broadband safety alarms for all mobile cargo handling. Please, maintain this as a viable mitigation measure to be implemented for the T5 project.
- Low frequency noise measurements and monitoring, specifically generated by ships running their engines while docked
  - I appreciate that the DEIS recognizes the reduction of both the air quality and noise impacts that would result from the use of shore power for moored vessels.
- Nighttime noise monitoring to meet compliance with the City's nighttime noise ordinance
  - I look forward to learning more about how the facility operations noise management plan will ensure that exceedances of noise limits from the future operations of the facility will be rare.
- Implementation of a "quiet zone" for train traffic into and out of T5
  - Prioritize and pursue the safety measures described for Alternative 2 (and Alternative 3) that would result in the establishment of a quiet zone.

C-001-004

C-001-005

C-001-006

C-001-007

The Port of Seattle set a goal in 2007 of being "the cleanest, greenest and most energy-efficient port in the U.S." The modernization of T5 presents a potentially, if seized, significant opportunity in meeting this goal. Thank you again for this opportunity to comment and I look forward to working with the Port of Seattle and the Seaport Alliance in implementing these policies as we move forward to ensure the availability of good living-wage jobs all while reducing the Port's carbon footprint.

Sincerely,



Lisa Herbold  
District 1 Councilmember, West Seattle/South Park

CC: Commissions of the Northwest Seaport Alliance  
Delridge Community Council  
Southwest District Council

<sup>3</sup> California Environmental Protection Agency Air Resources Board, *Shore Power for Ocean-going Vessels*  
<http://www.arb.ca.gov/ports/shorepower/shorepower.htm>

<sup>4</sup> DEIS, Volume I, Chapter 3.6.6.1

An equal opportunity employer  
600 Fourth Avenue, Floor 2 | PO Box 34025, Seattle | Washington 98124-4025  
Phone (206) 684-8803 Fax (206) 684-8587 TTY (206) 233-0025  
Email [lisa.herbold@seattle.gov](mailto:lisa.herbold@seattle.gov)

**C-001-001**

Battery-electric or electric hybrid options are not readily available in all types of heavy-duty construction equipment. However, the Port will require that construction equipment meet or exceed EPA Tier 2 off-road diesel engine emission standards and on-road equipment meet or exceed EPA 2007 diesel engine emission standards. Idling of equipment will also be limited.

**C-001-002**

Please see Standard Response No. 4: Electrification Schedule and Accelerated Schedule for Adoption of Alternative 3 at the beginning of Chapter 6 for additional information on proposed electrification of equipment.

**C-001-003**

Please see Standard Response No. 3: Use of Shorepower at the beginning of Chapter 6 for additional information.

**C-001-004**

Please see Standard Response No. 9: Compliance Noise Monitoring at the beginning of Chapter 6 for additional information on how ambient-sensing, broadband backup alarms will be required on all mobile cargo handling equipment for the proposed Project.

Please see Standard Response No. 7: Low Frequency Noise at the beginning of Chapter 6 for additional information on how this noise will be addressed in the Operational Noise Management Plan.

**C-001-005**

Comment acknowledged. Additional studies were conducted in order to evaluate noise from vessels hoteling at Terminal 5, with particular consideration given to the lower frequencies. These studies have been incorporated into the FEIS, Volume I, Chapter 3, Section 3.6, Noise.

Please see Standard Response No. 3: Use of Shorepower at the beginning of Chapter 6 for additional information.

**C-001-006**

Please see Standard Response No. 6: Nighttime Noise at the beginning of Chapter 6 for additional information on the Operational Noise Management Plan framework.

**C-001-007**

Please see Standard Response No. 5: Train Horn Noise at the beginning of Chapter 6 for additional information on addressing annoyance noise and "Quiet Zones".



July 8th, 2016

Submit via email at: [SEPA.p@portseattle.org](mailto:SEPA.p@portseattle.org).

Paul Meyer  
Environmental Svcs.  
Port of Seattle  
P.O. Box 1209  
Seattle, WA 98111

**RE: Terminal 5 Wharf Rehabilitation, Berth Deepening, and Improvements Project DEIS**

Dear Mr. Meyer:

Thank you for the opportunity to review the Northwest Seaport Alliance's Terminal 5 (T5) Improvements Draft Environmental Impact Statement (DEIS). The modernization of T5 at the Port of Seattle provides a tremendous opportunity to further the Port's and City's leadership around job growth, sustainability, climate change adaptation, carbon emissions reduction, and race and social justice.

We at the City of Seattle understand the Northwest Seaport Alliance's desire to modernize T5. Making T5 "big ship ready" will both allow for growth in cargo volumes as well as increase maritime jobs in the Puget Sound region. We also know the introduction of ever-larger container vessels has triggered dramatic changes in the container shipping industry - which necessitates continued modernization. It is the City's hope, as home to the Port of Seattle, that the T5 improvements can be made in a way that harnesses the economic opportunity presented by bigger ships while setting up the Northwest Seaport Alliance as an international exemplar of how a seaport can grow and adapt while also leading on environmental stewardship and community engagement.

In 2007, the Port of Seattle set a goal of being "the cleanest, greenest and most energy-efficient port in the U.S." Nearly a decade later, we know you still aspire to that goal. At the City of Seattle, we are constantly looking for solutions to address the pollution that can come with growth. We hope as the Port plans for growth, you do so in a way that shows your commitment to being a leader in port innovation. For example, taking advantage of City Light's carbon neutral power portfolio to electrify cargo handling equipment and dockside vehicles and on-shore powering of ships could be key to addressing one of the City's largest sources of greenhouse gas emissions (transportation). The City is very interested in partnering with the Port in an electrification effort.

The demolition and construction process to make T5 accessible to larger ships and the resulting expansion of both port operations and cargo transportation will, of course, impact the neighborhoods surrounding the Port. It is imperative for the Northwest Seaport Alliance to adopt mitigation measures that address the impacts generated by the changes presented in this DEIS document and the operations

that will follow, including: increased truck and train traffic, glare, noise, diesel particulate matter and other air impacts that are particularly impactful on surrounding low-income populations and communities of color in the Duwamish Valley. We also understand the importance of livability and mobility for all travelers in the project area.

The comments provided herein reflect our departments' mutual desire to mitigate these impacts on health and environment while advancing economic mobility, racial equity and social and environmental justice in our region. We believe this project provides the Port and the City an opportunity to partner to develop a world-class terminal that will not only create jobs and stimulate the economy but will also demonstrate that this can be done while mitigating environmental impacts and being a good neighbor.

Five City of Seattle Departments - Seattle Department of Construction and Inspection, Seattle Department of Transportation, Seattle Office of Sustainability and the Environment, Seattle Public Utilities, and Seattle City Light - have contributed comments to the DEIS. Their joint comments, separated by Department, are attached as appendices.

Overall, the City of Seattle wants to partner with the Northwest Seaport Alliance to make modernization of Terminal 5 a success. We want to work with you to address the concerns we have identified and to explore opportunities and innovations which will allow the Port to grow, modernize, and thrive.

We look forward to working with the Northwest Seaport Alliance and engaging our neighborhoods and community stakeholders in a positive and productive review process.

Thank you for your consideration.



Edward B. Murray  
Mayor, City of Seattle



**APPENDIX 1****Comments from Seattle Office of Sustainability and the Environment (OSE)**Contact: Chris Bast, 206-233-7253, [chris.bast@seattle.gov](mailto:chris.bast@seattle.gov)

In early 2016, Seattle Mayor Ed Murray launched the Drive Clean Seattle initiative – a comprehensive action agenda to accelerate Seattle’s transition off of oil and to electricity to power the transportation sector. Our dependence on oil to fuel our transportation needs drains money from our communities, exposes us to volatile global markets and puts our national security at risk, and accelerates the dangers of global warming. Further, pollution from burning oil is known to be harmful to human health, especially in underserved communities, such as the Duwamish Valley. By plugging in to Seattle City Light’s carbon-neutral grid and shifting transportation fuel from oil to electricity, the Port of Seattle will reduce harmful pollution that disproportionately affects some of our most vulnerable communities, such as asthma rates that are approximately twice as much as our City average, or the 13-year life expectancy difference when compared to more affluent areas in Seattle. [See [Duwamish Valley Cumulative Health Impacts Analysis: Seattle, Washington](#) (specifically pg. 2 and pgs. 37- 38)].

To reduce climate and health-related air quality impacts, the City of Seattle supports full electrification of Terminal 5 and encourages the Port of Seattle to investigate all opportunities to increase the use of electricity in all Port operations with deployment of either action alternative. Specifically:

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|---|------------------|
| 1. The Port of Seattle should use electric dredging equipment rather than diesel-powered dredges for any and all dredging associated with the modernization of Terminal 5.  | <b>C-002-001</b> |
| 2. Construction mitigation measures listed in the DEIS are a good first step to reducing pollution associated with construction. The Port of Seattle should investigate battery-electric or electric hybrid construction equipment for use during the construction period of the modernization of Terminal 5. The Port should look to partnerships with Sound Transit on this topic and partner with other regional actors on clean construction policies to further mitigate construction pollution. | <b>C-002-002</b> |
| 3. The Port of Seattle should investigate the latest innovations in truck management systems to increase efficiencies, reduce idling, and reduce congestion associated with truck traffic serving the new Terminal 5. Examples include app-based management systems for drivers and trucking companies and advanced communications technologies to track truck traffic throughout the region.   | <b>C-002-003</b> |
| 4. The Port should plan for infrastructure investment to support the future development and/or deployment of electric drayage trucks. The Port of Seattle should conduct an analysis of the current technology and the expected technological improvements over the next several decades to understand the future availability of battery-electric trucks for the drayage fleet that supports Port operations.  | <b>C-002-004</b> |
| 5. All ground equipment, power for refrigeration, all cranes and cargo handling equipment, and Port service vehicles should be targeted for electrification and the needed electrical service upgrades should be included in the Terminal 5 modernization project.  | <b>C-002-005</b> |

6. Providing shore power, or cold ironing, is an imperative and an important component of the modern Port. This should absolutely be a priority in the Terminal 5 modernization project.

**C-002-006**

**APPENDIX 2****Comments from Seattle Department of Construction and Inspections (SDCI)**SDCI Comments - Transportation Technical Report

Contact: John Shaw, 206-684-5837, john.shaw@seattle.gov

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| 7. Page 4, 3 <sup>rd</sup> paragraph: The text states that a higher proportion of containers is expected to be transported by rail with increased throughput at T5, because the regional market is not large enough to support higher demand for locally-trucked cargo. This seems inconsistent with the forecast for a 46% increase in the local/regional volume of cargo shown in Table 2 (425,000 TEUs/year under Alternative 3 compared to 291,100 TEUs/year under Alternative 1). | <b>C-002-007</b> |
| 8. Page 18, Table 3: The table does not indicate the count dates for SW Spokane Street/T5 access and SW Spokane St/11 <sup>th</sup> Avenue SW.   | <b>C-002-008</b> |
| 9. Page 29, 1 <sup>st</sup> paragraph: The parking numbers look a little off. The parking spaces identified for the Administration Building, the transit shed, and the gate house total 481. If other spaces are located near the maintenance facilities, the intermodal yard, and the security gate, the total amount of parking would exceed 480.  | <b>C-002-009</b> |
| 10. Page 30, Demolition: Approximately how long are peak demolition activities (generating 20 truck trips per hour) expected to last?  | <b>C-002-010</b> |
| 11. Page 30, Upland Improvements: Approximately how many truck and construction worker trips will the upland improvements generate?  | <b>C-002-011</b> |
| 12. Page 41, Table 8: Under Alternative 3, the Average Day Condition shows exiting traffic during the AM peak hour. Why does the Alternative 3 Design Day Condition show no exiting traffic during this time period?   | <b>C-002-012</b> |
| 13. Page 42, Table 9: Why is future use of the SIG and Argo yards expected to increase so substantially compared to existing conditions?   | <b>C-002-013</b> |
| 14. Page 52: This section also should discuss the poor levels of service forecast for S Spokane Street/E Marginal Way S.   | <b>C-002-014</b> |

SDCI Comments – Noise

Contact: David George, 206-684-7843, david.george@seattle.gov

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|--|------------------|
| 15. Refrigerated stacked TEUs: How will they be powered? Diesel or electric?                   | <b>C-002-015</b> |
| 16. SDCI wants shore power installed for container ships capable of connecting to shore power. | <b>C-002-016</b> |

17. Diesel Top picks: Purchase quietest units before facility comes on line.	<b>C-002-017</b>
18. Train crossing at Spokane Street: establish a "Quiet Zone" train crossing. This would replicate the City of Seattle's waterfront "Quiet Zone" railroad crossings.	<b>C-002-018</b>
19. Ambient sensitive broadband alarms on all vehicles and equipment that require alarms.	<b>C-002-019</b>
20. How would modification to intermodal yard allow electric RMGs?	<b>C-002-020</b>
21. Transparency in tracking TEU traffic through T5: Provide access to POS website where public can view monthly TEU traffic at T5.	<b>C-002-021</b>
22. Pile driving is not addressed in the construction section, why not? SDCI will require a Construction Management Plan (CMP). CMP will be submitted through SDOT's CMP portal. CMP will also include a traffic control/site plan and truck routing.	<b>C-002-022</b>
23. Nighttime yard activity: none in Alternative 1. How can this be when nighttime work activities took place prior to 2014? Seaport Alliance's NWSA Management Meeting on 6/7/16 talked about Dwell Time. TEU movement through T5, specifically time sensitive product, would not fit into a 7am to 10pm timeframe.	<b>C-002-023</b>
24. Measuring Mega Ship generator noise when docked: we would like to see noise data (please include 1/3 octave band) on a Mega Ship in port.	<b>C-002-024</b>
25. How did you come up with 70 percent using shore power by 2040?	<b>C-002-025</b>
26. How will the Port keep terminal manager in compliance with permit conditions?	<b>C-002-026</b>
27. Operational Management Plan: Since the Port doesn't manage the facility, permit conditions may not be conveyed or communicated to the facility manager over life of the project. Permit conditions need to be looked at yearly, to verify compliance. Responsibility is the Port's. If the Port has a compliance officer, this should be one of their duties.	<b>C-002-027</b>
28. The City of Seattle asks that nighttime ambient noise be measured midnight to 5am. We've used that timeframe to establish nighttime ambient noise levels in similar studies.	<b>C-002-028</b>
29. Electrifying intermodal yard and using electric equipment in Alternative 3 allows this facility to meet nighttime operational noise levels according to noise technical report. Will the infrastructure (conduit and vaults) be installed within intermodal yard during this phase of construction?	<b>C-002-029</b>
30. Once 1.3M TEUs is reached, what is the timeframe for T5 to make changes to meet compliance with the City of Seattle's nighttime noise ordinance objective standard and comply with the FEIS?	<b>C-002-030</b>

SDCI Comments – Shorelines

Contact: Ben Perkowski, 206-684-0347, ben.perkowski@seattle.gov

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|---|-------------------------|
| <p>31. <u>3.1.1.2</u> The City of Seattle Shoreline Code regulates all land 200 feet waterward of OHW as well as all the water and submerged land at this site (see SMC 23.60A.010). Environmental critical areas within the Shoreline District are regulated by both SMC 23.60A and SMC 25.09, per SMC 23.60A.156.</p>   | <p><b>C-002-031</b></p> |
| <p>32. <u>3.2</u> This section makes several reference to the expected implementation of shore power at this site for Alternatives 2 and 3 and the mitigating influence shore power will have on air quality impacts, but it is not clear exactly what assumptions about shore power are being made in terms of what level of activity at T5 would trigger construction and implementation of shore power and at what levels. The modeled scenarios section starting on 3.2-19 summarizes the expected impacts of shore power but does not make it clear when exactly shore power would be required and how. For instance, is it envisioned that there would be a requirement in a lease with the Port for tenants to employ shore power based on specific triggers? The document should provide further explanation for how commitments for shore power implementation would occur and when.</p> | <p><b>C-002-032</b></p> |
| <p>33. <u>3.2.4.2</u> What is Puget Sound Clean Air Authority’s assessment of the adequacy of the air quality impact analysis, modeling and proposed mitigation measures for Alternatives 2 and 3? Port should provide complete responses to any comments from PSCAA on the air quality impacts and mitigation analysis presented in this DEIS, including the Air Quality Technical Report. Does PSCAA believe any further mitigation or air quality monitoring measures are required to address potential human health impacts of the alternatives given that existing air quality regulations cannot always anticipate or adequately mitigate adverse air quality impacts?</p>  | <p><b>C-002-033</b></p> |
| <p>34. <u>3.3.17</u> The City’s Shoreline Master Program (SMC 23.60A) also regulates potential water quality impacts, but is not mentioned in this section. The alternatives would need to be constructed and operated consistent with applicable standards for water quality protection in the SMP.</p>  | <p><b>C-002-034</b></p> |
| <p>35. <u>3.3.2.4</u> Any proposed dredging would also need to be consistent with applicable standards for dredging in SMC 23.60A and receive approval from City of Seattle through a Shoreline Substantial Development Permit.</p>   | <p><b>C-002-035</b></p> |
| <p>36. <u>3.4.11 and 3.4.4.2 and 3.4.4.3</u> It should be noted the construction-related impacts on aquatic/shoreline habitats will be analyzed for consistency with applicable development standards in the City of Seattle SMP (SMC 23.60A), which may include requirements for habitat mitigation. This review is underway by SDCI but is not completed, so it has not been determined yet if habitat mitigation will be required per SMC 23.60A, as well as other state or federal</p>  | <p><b>C-002-036</b></p> |

permits.

37. 3.7.3.4 The Port has submitted a Shoreline Substantial Development Permit application for construction activities at T5, including dredging, but this permit has not been approved yet. Consistency with all applicable use and development standards in the City's SMP (23.60A) will be reviewed as part of this permit application but no determination by the City has been made.

**C-002-037**

**APPENDIX 3****Comments from Seattle Department of Transportation (SDOT)**

Contact: Sara Zora, 206-733-9973, sara.zora@seattle.gov

SDOT requests responses from the Port in the FEIS to the following list of comments. SDOT welcomes the opportunity to work with the Port to clarify or respond to any of these comments. We are recommending areas where additional analysis is needed to better determine project impacts to the transportation system and thus the potential for additional mitigation as the project moves to FEIS, construction and new terminal operations.

A comprehensive list of DEIS review comments is included separately as Attachment 1.

Additional Analysis:**38. Study Area**

Expand the study area to include all intermodal yard entrances, distribution centers, and access to Interstate highway system, all of which encompass the Heavy Haul Network. Additional major intersections (arterial/arterial intersections) should be analyzed with the expanded study area. Include a map of study area with all intersections analyzed to visualize the study area. The increase in truck trips in both Alternatives 2 and 3 warrant a more detailed look at all of the potential destinations trucks could be delivering containers to and from, including highway access points (I-5, SR 99, SR 509, and SR 519) in order to assess impacts to all modes in the transportation system.

Cumulative Impacts Demonstrate why permitted large development projects in West Seattle or the Duwamish MIC have not been included in the future traffic volumes section. The project could impact mobility for all travelers using the Spokane St Swing Bridge to access West Seattle due to potential truck congestion.

Identify and evaluate Lower Spokane St chokepoints and determine if travel blockages can be better coordinated between cumulative impacts of rail, trucks, and bridge openings.

**C-002-038****39. Terminal Gate/Truck Queues**

With larger ships projected to call T5, DEIS needs to provide more detail about how the Port will minimize or eradicate Port-related truck queues and congestion at all times on surrounding city streets. As expressed in SDOT's scoping comments, T5 has experienced major truck queues and instances of substantial traffic, truck, and emergency vehicle delays in recent years, thus SDOT believes that the No Action alternative impacts trigger mitigation. SDOT believes a queue management plan that holds entities accountable and enhances the mitigation listed is necessary, providing an exact process for how to deal with truck queue congestion.

The Port will need to demonstrate that truck queuing will not impact life safety emergency access for first responders due to congestion on S Spokane St to and from the project site, West Seattle, downtown, and hospitals.

**C-002-039**

SDOT would like clarification on mitigation relating to GHG emissions to “implement management system to help manage truck traffic and spread it throughout the day and evening hours” and mitigation related to truck “gate design and operational improvement measures.” How are these mitigation elements similar or not?

40. Rail Operations

DEIS document needs to include a map of the rail crossings analyzed and provide a description of existing safety features that each crossing has in place. If there are certain thresholds that require safety features to be added, please describe those thresholds. A follow-up assessment, after Terminal 5 improvements, is needed to identify opportunities for upgrades in relation to safety concerns.

C-002-040

Assessment of the pavement condition is needed at each rail crossing to determine pavement existing conditions. A follow-up assessment, after Terminal 5 improvements, is needed to identify opportunities for pavement upgrades in relation to pavement condition at each rail crossing.

Analyze the feasibility of implementing a quiet zone.

Evaluate a rail advisory warning system to provide train blockage information to emergency vehicles and people using all modes to allow for alternative route choices to be made earlier in the trip.

Evaluate the process and capability for providing event data reports to the Washington State office of the Federal Railroad Administration (FRA) in order for FRA to enforce the federal maximum 20 minute train blockage rule at all South Seattle street/rail crossings.

41. Employees

The number of employees projected for all three alternatives (over 100) means that the terminal operator will be considered a Commute Trip Reduction (CTR) employer, as 100 or more employees report to work between 6-9 AM. Demonstrate if a Transportation Management Plan (TMP) is required to be a part of the FEIS. Updated information and additional analysis will be necessary for non-motorized and transit impacts that can help the terminal operator achieve mode share targets.

C-002-041

42. Impacts on Transit

DEIS needs to discuss Sound Transit 3 (ST3) plans for West Seattle as the new projected light rail to West Seattle will occur prior to 2040 and a potential station could be located near the 5-way intersection. Demonstrate that the T5 project would not prevent Link Light Rail station location opportunities or station access for Port employees and nearby transit riders.

C-002-042

Determine if, with more ship calls, there are impacts on the West Seattle Water Taxi: route, travel times, on-time performance, etc.

43. Impacts on Non-Motorized Transportation

C-002-043



<p>Evaluate safety and travel time impacts imposed on people riding bikes and walking to, thru, and adjacent the site by both Port trucks and trains along the West Seattle trail. Evaluate safety and travel time impact on these non-motorized trips to, thru, and adjacent the site associated with the north leg of 5-way intersection closure recommendation.</p>	<p><b>C-002-043 (cont.)</b></p>
<p>Produce a map of all modes showing access to, thru, and adjacent to the project area to better understand all potential impacts due to truck volumes and train delay.</p>	
<p>44. Overnight Truck Parking</p>	<p><b>C-002-044</b></p>
<p>Evaluate project demand impacts of overnight parking for trucks, chassis and trailers off-site in the Seattle vicinity. Identify measures that could be implemented to minimize port trucks parking in adjacent residential areas (Georgetown, West Seattle, and South Park) and non-residential areas (along E Marginal Way and industrial streets in the Duwamish MIC).</p>	
<p>45. Intelligent Transportation Systems</p>	<p><b>C-002-045</b></p>
<p>Transportation evaluation should include a specific Intelligent Transportation Systems (ITS) element as potential mitigation measures that the Port, in coordination with other agencies, could implement to improve traveler information and decrease travel delay, in addition to signal timing upgrades for an area that consists of a more regional focus. Provide ITS data readers and Dynamic Message Sign (DMS) messages at locations where drivers can make and execute decisions to take another route to bypass chokepoints.</p>	
<p>46. Pavement condition</p>	<p><b>C-002-046</b></p>
<p>DEIS needs to assess pavement condition for streets within expanded study area and offer mitigation recommendations, especially where maintenance jurisdiction overlaps, to ensure our roadways can handle thousands of more trucks and additional trains when T5 is in operation. Assessment of the pavement condition for the entire study area is needed to determine pavement baseline conditions. A follow-up assessment, after T5 improvements, is needed to identify opportunities for pavement upgrades in relation to pavement condition.</p>	
<p>47. Parking</p>	<p><b>C-002-047</b></p>
<p>Demonstrate the need for up to 530 parking spaces in Alternative 3. It appears that with a design day shift of estimated 364 employees for the day shift there will be land dedicated towards parking that could be used for other options which could be advantageous to the site to help mitigate GHG emissions from trucks.</p>	
<p><u>Mitigation:</u> When the original T5 EIS was published and mitigation of impacts implemented, no one conceived that it might one day serve ships carrying 10,000-18,000 TEUs. The City considers mitigation measures implemented since the original T5 EIS, and the conditions resulting from them, as existing conditions from which this new redevelopment's environmental impact should be assessed.</p>	
<p>48. SDOT has concerns with both the number and quality of mitigation strategies outlined in the DEIS. The first, most critical concern is mitigation to close to the north leg of the five-way intersection. The Port needs to demonstrate that life safety and emergency access will not be diminished to only one access point for T5 and surrounding terminals with mitigation. It is not</p>	<p><b>C-002-048</b></p>

clear in the DEIS how the Port would allow emergency vehicles to access T5 via the closed north leg of the five-way intersection if a train is blocking that intersection. The Port will also need to demonstrate that long closures of private driveways due to train activity will not completely close access to the businesses. Show their secondary access route.

**C-002-048  
(cont.)**

49. Intelligent Transportation Systems (ITS) should be more broadly assumed, meaning consideration of ITS freight corridors to include City of Seattle jurisdiction as well as WSDOT, to help freight mobility to and from the terminal from regional destinations.

**C-002-049**

50. Terminal gate and truck queues mitigation is weak and does not hold any group responsible for alleviating truck queueing. SDOT would like to see a queue management plan developed with roles and responsibilities for all potential agencies explicitly laid out, specific measures that hold the Port and future terminal operator accountable for queue management, detour truck route and off-street temporary truck parking, a reservation system for all alternatives, tracking of incidents and associated delay when queues do occur and follow-up meetings to discuss preventing further queues.

**C-002-050**

Thank you for the opportunity to provide comment on the T5 DEIS. If additional impacts are found after further analysis, SDOT will expect to review more mitigation recommendations to ensure the project moves forward to the betterment of the environment and all modes.

**APPENDIX 4****Comments from Seattle Public Utilities (SPU)**

Contact: Martha Neuman, 206-733-9036, martha.neuman@seattle.gov

The Port has outstanding street vacation utility-related issues under City Clerk File 300283 dated September 28, 1995, Section D of the January 17, 1997 Interlocal Agreement between the City of Seattle and Port of Seattle, and related Terminal 5 redevelopment documents from the mid-1990s. These outstanding issues include resolution of utility concerns. While the Port and SPU have plans to begin work on the older Terminal 5 issues later in 2016, the resolution will not likely be complete before construction starts. In June 2016, SPU and the Port discussed the need for a temporary easement for West Marginal Way SW right-of-way to be vacated as construction will occur in that area and infrastructure protections need to be in place. The Port should initiate the work to develop the temporary easement. SPU would like the temporary easement in place by January 1, 2017.

**C-002-050A**

**APPENDIX 5****Comments from Seattle City Light (SCL)**

Contact: Brendan O'Donnell, 206-733-9265, [brendan.o'donnell@seattle.gov](mailto:brendan.o'donnell@seattle.gov)

51. *Seattle City Light (City Light) has reviewed the Port's characterization of electric service requirements in the Draft Environmental Impact Statement and feel it is accurately represented.*

**C-002-051**

As noted 3-13 (4-5), Alternative 2 will require some upgrades to the distribution system to provide the estimated requirement of 26 MVA. City Light's distribution planning staff believe it can be accomplished by leveraging predominantly existing infrastructure. Please note that the 26 MVA request is approaching a dedicated feeder level of service and operational flexibility needed by City Light's System Operational Center. As such, two independent feeder circuits are required. One existing feeder needs rebuilt getaways at the substation and feeder backbone conductors. A second feeder needs to be brought into the site and its getaway needs to be upgraded to conductors with higher capacity. However, City Light has the current resources to complete this work within our existing capability.

Should the Port pursue Alternative 3 and request a further increase in capacity, City Light would have to look into a transmission level service of 115/230 KV or additional resources.

52. *While we acknowledge that the Port has many issues to evaluate, City Light believes that it is in best interest of the City and the Port to plan for higher levels of equipment electrification, as identified in Alternative 3.*

**C-002-052**

Growth in the cargo industry is vital to regional economic development, and therefore solutions to address pollution that can come with this growth should be further explored and implemented. Electrification of cargo handling equipment, ships and vehicles using City Light's unique carbon neutral power is key to addressing one of the City's largest sources of greenhouse gas emissions -transportation. In addition to environmental benefits, other leading ports, such as Port of Long Beach and Port of Savannah, have shown electrification of equipment can improve operational efficiency and reduce lifecycle costs.

53. *City Light is committed to working with the Port to identify and pursue electrification technology.*

**C-002-053**

City Light has a shared interest in identifying and breaking down the barriers to electrification at Terminal 5—be it technical, economic or behavioral. To support higher levels of electrification, City Light is committed to provide both internal and external resources.

City Light will continue to work cooperatively and creatively to understand and address potential upgrades to Terminal 5's electric service that might be needed for short-term and long-term electrification strategies. One example to consider is substituting diesel dredges for electric dredges in any dredging necessary for the T5 Redevelopment. This option will provide an immediate air-quality and carbon emission reduction opportunity in a disproportionately impacted neighborhood.

City Light can leverage our membership in the Electric Power Research Institute (EPRI) to follow the ever changing market. The technology itself is rapidly evolving, with some products currently available – such as electric and hybrid cranes, battery electric automatic guided vehicles and hybrid straddle carriers – as well as those still in development and demonstration such as the electric and hybrid yard truck.

Project: Port of Seattle Terminal 5  
 Document: Draft Environmental Impact Statement

Date: June 29, 2016



Ben Hansen (BH) - Street Maintenance; Gabriela Vega (GV) - Policy & Planning; Bill LaBorde (BL) - Policy & Planning; Joel Hancock (JH) - CPRS; Chris Eaves (CE) - Transportation Operations; Sara Zora (SZ) - Street Use; Melody Berry (MB) - Street Use; Emily Ehlers (EE) - Street Use; Becky Fiedler (BF) - Transportation Operations; Ron Borowski (RHB) - Transportation Operations

Name of Reviewer(s) & Department Represented:

**Use Codes:**

* Page No. or "G" for general comment about ...	** Priority Levels:
	1) Critical issues requiring discussion/resolution
	2) Substantive comment (including issues pertaining to SDOT policy or precedent setting conclusions)
	3) Factual or substantive issue
	4) Editorial comment (suggestion to improve readability of the document or typographical error)

No.	Document	Chapter	Page*	Exhibit No.	Priority**	Reviewer Comment	Reviewer Initials	Notes / Questions
1	DEIS		G		3	Please insert maps for all intersections analyzed, at-grade railroad crossings, modal maps of the larger surrounding area, including nearby bus stops, and any other maps that will help the reader visualize the text. Clearly show T-7 entrances on the vicinity map.	SZ	
2	DEIS		G		1	Appears to be a disconnect between data presented regarding railroad crossing impacts from the Railway and Infrastructure and Train Volume Analysis and mitigation for such additional delay that would occur in Alternatives 2 and 3. Port needs to demonstrate mitigation for such delays with private driveways and terminal entrances. Show via map where all the private businesses that will have access eliminated for hours in a day and how they will be able to access another entrance or what other mitigation is needed.	SZ	
3	DEIS		G		2	Pavements deteriorate structurally through the mechanism of fatigue, damage caused by repetitive loading. Cars and light trucks (and bicycles, motorcycles, et al) do not load a standard roadway pavement to a level that causes any significant fatigue. Loading by heavy vehicles, trucks and buses, are the primary causes of structural pavement damage. This should be mentioned in the DEIS and a proposal to assess pavement conditions in the surrounding area.	BH	
4	DEIS		G		2	Many of the lower Spokane Street roadway pavements are currently in poor condition, particularly those west of the Spokane Street Bridge. An uptick in truck traffic with the opening of T-5 will accelerate pavement deterioration and there will likely be calls for pavement improvements. Any work that occurs after the opening would potentially be disruptive to terminal operations and general traffic in the area. The Port and the City should jointly consider the best way to plan for, budget for, and manage pavement rehabilitation around the terminal. A mitigation measure should be added that the Port is committed to work with the City on developing an agreement to address these concerns.	BH	
5	DEIS		G		3	Given predicted increases in trucks, traffic mitigation measures such as signal timing improvements and advanced notification may be required. Please explain whether these will be addressed, and if not, why.	MB	
6	DEIS		G		3	Traffic analysis of the West Seattle Corridor indicates a high growth rate of overall traffic demand in the West Seattle Bridge Corridor, including Spokane St Viaduct. It is anticipated that demand will continue to increase as will travel demand on the lower Spokane St roadways, for all traffic demand. The DEIS should consider measures to maintain the quality of traffic flow on the lower roadways, including across the two bridges across the Duwamish waterway. Measures should be explored to reduce port related demand during peak general traffic periods to prioritize and accommodate overall West Seattle peak period demand, particularly in the morning peak period. Cumulative impacts for all traffic demand and travel periods should be evaluated for all users.	RHB	
7	DEIS	1.2.1	1-3		2	T-5 DEIS has existing roadway purchase and turnover to complete from origination.	CE	
8	DEIS	1.3	1-8	Table 1.3-1	3	Earth: discuss whether dredging will stir up contaminated soils and the extent to which the Duwamish River clean-up will affect this operation. Although this is discussed in Section 3.5.3 Environmental Health, dredging and potential impacts and mitigation should also be mentioned in Earth in detail and/or refer reader to Section 3.5.	CE	
9	DEIS	1.3	1-9		3	Water: the mitigation provided for Alternative 2 only deals with the operation of Port facilities and does not provide any mitigation for water quality or mitigation for congestion after work is completed. Please illustrate congestion and water quality impacts of Alternative 2 and indicate how the Port will mitigate these associated impacts.	GV	

C-002-054  
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 C-002-057  
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 C-002-061  
 C-002-062

Project: Port of Seattle Terminal 5  
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Ben Hansen (BH) - Street Maintenance; Gabriela Vega (GV) - Policy & Planning; Bill LaBorde (BL) - Policy & Planning; Joel Hancock (JH) - CPRS; Chris Eaves (CE) - Transportation Operations; Sara Zora (SZ) - Street Use; Melody Berry (MB) - Street Use; Emily Ehlers (EE) - Street Use; Becky Fiedler (BF) - Transportation Operations; Ron Borowski (RHB) - Transportation Operations

Name of Reviewer(s) & Department Represented:

**Use Codes:**

* Page No. or "G" for general comment about	** Priority Levels:
1-11	1) Critical issues requiring discussion/resolution
	2) Substantive comment (including issues pertaining to SDOT policy or precedent setting conclusions)
	3) Factual or substantive issue
	4) Editorial comment (suggestion to improve readability of the document or typographical error)

No.	Document	Chapter	Page*	Exhibit No.	Priority**	Reviewer Comment	Reviewer Initials	Notes / Questions
10	DEIS	1.3	1-9		3	Air Quality: Alternatives 2 and 3 have minimum impacts on air quality during construction with little dust. The mitigation of "newer trucks" does not specify what year those trucks are. Please specify the year of construction trucks and how these trucks will serve to mitigate air quality issues associated with construction. Provide timeline for Port update of Clean Truck Initiative.	GV	C-002-063
11	DEIS	1.3	1-9		3	Air Quality: please clarify why the conversion of diesel engines to electric is only proposed for Alternative 3, and not for Alternative 2.	GV	C-002-064
12	DEIS	1.3	1-9		3	Air Quality: provide more specificity regarding additional mitigation measures to control air pollution related to increased emissions from trucks and equipment. Provide calculations showing how emissions will be offset.	GV	C-002-065
13	DEIS	1.3	1-10		3	Environmental Health: provide analysis and, if needed, control and mitigation measures for the disruption caused by moving and removal of soil from the area. In particular, demonstrate how the Port will protect health safety concerns of residents west and southeast of the project area. Provide distance to nearest residences, potential exposure concerns, and avoidance measures.	GV	C-002-066
14	DEIS	1.3	1-13		3	Transportation: potential for construction of project to coincide with SDOT construction projects including Delridge Corridor, E Marginal Way Corridor, and Lander Street Overpass. Request mitigation measure to work with SDOT to ensure coordination of project timelines and traffic control plans/construction staging and sequencing is seamless.	SZ	C-002-067
15	DEIS	1.3	1-14	1.3	3	Transportation: operation impacts are incomplete in summary table. Provide more detail about operations, gate queuing, safety, non-motorized travel, and parking.	JH	C-002-068
16	DEIS	1.3	1-14		3	Transportation: provide delay times for current conditions with existing train crossings in the study area and impacts of Alternatives 2 and 3 on these delay times. This information was not discussed in Appendix F.	GV	C-002-069
17	DEIS	1.3	1-14		3	Transportation: please clarify the following mitigation measure: "some additional utilization of storage tracks in the West Seattle Yard to support increased rail volume."	GV	C-002-070
18	DEIS	2.1.2	2-2		3	Was Scoping Summary Report prepared? This should be included as an appendix.	JH	C-002-071
19	DEIS	2.3.3.11	2-11		2	The following action and description should be added under construction: pavement to be upgraded to withstand Heavy Haul needs. As previously mentioned, the Port and the City should jointly consider the best way to plan for, budget for, and manage pavement rehabilitation around the terminal.	SZ	C-002-072
20	DEIS	2.3.4.6	2-14		1	With so much more potential truck volumes with Alternative 2 than current/No Action volumes, mitigation of truck queuing impacts need to be included and discussed. Recommend Alternative 3 truck gate mitigation to also be included for Alternative 2, or provide detailed explanation of why this is not needed.	SZ	C-002-073
21	DEIS	2.6	2-19		3	Demonstrate that the cumulative impacts discussion for rail and vehicular traffic are sufficient. Appendices C and F describe cumulative impacts that are not discussed in this section. Why are transportation improvement projects, other foreseeable projects that might use same road or rail network, or other cumulative impacts not discussed. This section needs more detail about what the cumulative impacts are on each resource and why each specifically is not affected by the project. See next comment.	JH	C-002-074
22	DEIS	2.6.3	2-21		3	SDOT Levy to Move Seattle projects in vicinity should be listed as potential for cumulative impact, especially those slated for earlier construction. The effects of these projects during construction and operation and coordinate with SDOT and other agencies should be described.	SZ	C-002-075

Project: Port of Seattle Terminal 5  
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23	DEIS	1.3	2-23		3	Page 2-23 only mentions "upgrade of existing gate" - if the Port is anticipating thousands of additional containers there will be a need for additional queuing that is not taking place within their properties. The Port mentions a new scheduling system but this will not eliminate the lines forming out of Port property. The gate should be moved and additional queuing lines should be included within Port property for all alternatives. A discussion of this option and an explanation of why or why it's not feasible or needed should be described in Section 3.11.3.8.	GV	C-002-076
24	DEIS	3.1.1.2	3.1-1		3	Clarify relationship of ECAs within Shoreline District (SMC 23.60A.156). Areas are regulated within 200 feet of the ordinary high water of Shoreline District.	JH	C-002-077
25	DEIS	3.3.1.7	3.3-3		3	Discussion needs to be specific to the project area and resource section. Need to discuss flood prone areas, riparian corridors, and relationship to SMP and how the project will comply with regulations.	JH	C-002-078
26	DEIS	3.4.1.3	3.4-2		3	Discussion needs to be specific to the project area and resource section. Need to discuss shoreline habitat and fish, wildlife habitat conservation areas, and riparian corridors ECA regulations and how the project will comply with them.	JH	C-002-079
27	DEIS	3.7.1	3.7-1		3	Discuss comprehensive plan under regulatory context. See Appendix C.	JH	C-002-080
28	DEIS	3.11.2	3.11-1		3	Add general context of existing roadway and rail network (with map) in addition to summary.	JH	C-002-081
29	DEIS	3.11.2	3.11-1		4	Discrepancy in Appendix C on whether terminal opened in 1997 or 1999.	JH	C-002-082
30	DEIS	3.11.2	3.11-1		4	Discuss traffic volume fluctuation by day of week, by time of day, and month of year. Note about affected environment second bullet (In reference to traffic volumes).	CE	C-002-083
31	DEIS	3.11.3	3.11-2		3	Discuss construction impacts from Appendix C under Section 3.11.3.	JH	C-002-084
32	DEIS	3.11.3	3.11-2		3	Recommend expanding study area to include Heavy Haul Network streets/intersections to ensure trucks are accounted for in using all nearby likely destinations. Need additional analysis to better understand impacts of expanded study area. Provide map of the seven intersections evaluated in this section.	SZ	C-002-085
33	DEIS	3.11.3	3.11-2		3	Note that the heavy haul permitted trucks are restricted for travel on the West Seattle Bridge, Spokane St Viaduct and connecting ramps. The upper roadways are not part of the heavy haul network. Overweight trucks on the upper roadways can be subject to citations.	RHB	C-002-086
34	DEIS	3.11.3	3.11-3		1	Recommend that both Alternatives 2 and 3 contain mitigation: swing gate shift and reservations system, among other items (see below comments), to ensure preparedness for truck queuing delays.	SZ	C-002-087
35	DEIS	3.11.3	3.11-3		3	Alternative 2 proposes just one terminal gate shift - have not arrived at their analysis but if their throughput is twice as much with Alternative 2 - the gate operation will not accommodate all the ins needed to process the ship at the rate they intend (faster).	GV	C-002-088
36	DEIS	3.11.3	3.11-3		3	The volumes the Port has calculated for Alternatives 2 and 3 (3560 and 4660) are the highest truck numbers in the city, along Major Truck Streets. Concerned about truck queue backups at the terminal gate. Additional mitigation is needed to resolve impacts due to increased number of trucks.	GV	C-002-089
37	DEIS	3.11.3.3	3.11-3		3	Discuss the flow rate of trucks as well as turn limitations and queuing on West Marginal Way. Examine whether flow rates, turn limitations, and queuing will cause the eastbound left turn lane to the T-5 flyover on S Spokane St to fill over capacity and block eastbound motorists.	CE	C-002-090
38	DEIS		3.11-4	Table 3.11-1	3	Describe the in-process requirement at the TWIC gate. The numbers provided indicate a minimum of two TWIC card reviewers to meet queue requirements. Provide number of TWIC card readers proposed for this operation.	CE	C-002-091



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39	DEIS	3.11.3.5	3.11-5		1	Address roadway and traffic control. This responsibility will need to be built into the tenant's lease agreement with trigger points for added card reader positions as well as contingency plans for unexpected surges in traffic as well as computer failure or other events that delay/slow/stop processing.	CE	C-002-092
40	DEIS	3.11.3.6	3.11-6		1	Ensure consistency with Comprehensive Plan for traffic annual growth rate of 1.6% per year. Provide explanation if inconsistent.	SZ	C-002-093
41	DEIS	3.11.3.6	3.11-6		3	Under Comparison of Alternatives: Does this meet the "Century Agenda" growth rate?	CE	C-002-094
42	DEIS	3.11.3.7	3.11-6		3	Please discuss special considerations regarding Level of Service given this is an area with a high percentage of trucks relative to other areas of the city.	CE	C-002-095
43	DEIS	3.11.3.7	3.11-7		2	Alternatives 2 and 3 note that Terminals 7A, 7B, 7C and 8 would be directed to use the T-5 access bridge. Capacity does not equal throughput. Delay to other parcels must be considered when providing an alternative entrance.	CE	C-002-096
44	DEIS	3.11.3.7	3.11-7		3	Provide mitigation for this concern or address why it is not provided - the proposal to close the north leg of the 5-way intersection does not include any mitigation. If this is a City-owned road SDOT/city could be the agency responsible for "taking" access away from businesses affected and responsible for losses. The Port is recommending closure of something they do not own or operate without offering mitigation from the closure to the City or businesses.	GV	C-002-097
45	DEIS	3.11.3.7	3.11-7,10		1	Demonstrate how non-motorized modes are not impacted by the five-way intersection north leg closure. The closure would prohibit access for pedestrians accessing the terminal from the intersection. Please support your assertion that additional vehicle traffic associated with the T-5 improvements would not adversely impact bicycle and pedestrian delay at the intersection of SW Spokane St / T-5 Access Bridge, as noted in the last four sentences of the third paragraph. Please provide additional analysis/data. Mitigation needs to be considered.	SZ	C-002-098
46	DEIS	3.11.3.7	3.11-7	3.11.3	4	Reference should be Section 3.11.4 Mitigation.	JH	C-002-099
47	DEIS	3.11.3.10	3.11-8		2	Make increased reader-personnel a requirement of pre-check gate. But do not use 280/hr, use 180/hr. This indicates approximately three reading positions for peak hour (AM) movement. In addition, a reservation system should be used in conjunction with the increased number of TWIC reading queues. A consultant for the Port (approximately 2010-2012) described these systems as 'layered' and no one system would provide an acceptable answer.	CE	C-002-100
48	DEIS	3.11.3.8	3.11-8		3	Gate pre-check: Port needs to move their gate north of its present location to provide more capacity for stacking. Please provide additional analysis for this option.	GV	C-002-101
49	volume 1 DEIS	3.11.3.16	3.11-9		2	Partial closure of crossings does not translate well. BNSF will need to be involved in a conversation about a limited access crossing, and the end result is still likely to require signal phasing (even if only demand calls). Also, the 'closure' of a driveway crossing needs to be researched with BNSF.	CE	C-002-102
50	DEIS	3.11.3.16	3.11-9		3	Ensure traffic safety data reflects all modes and contains a discussion about each in relation to the expanded study area.	SZ	C-002-103
51	DEIS	3.11.3.16	3.11-9		1	Impact of additional trains and delay requires mitigation for a safe and accessible pedestrian access to bus stop and employment.	SZ	C-002-104
52	DEIS	3.11.3.19	3.11-9		2	Please clarify the first paragraph in section 3.11.3.19 to identify potential additional demand for bike or pedestrian commute trips. An expanded T-5 could potentially increase the number of transit commute trips, as well, and every transit trip begins and ends with walking to and from the bus stop.	EE	C-002-105

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53	DEIS	3.11.3.19	3.11-10		3	Please clarify the third paragraph in section 3.11.3.19 to note that the potential new crosswalk on the west side of the SW Spokane St/T-5 Access way would also be accompanied with bike and pedestrian signal heads and detection.	EE	C-002-106
54	DEIS	3.11.3.19	3.11-10		4	Please change the third sentence of the third paragraph to the following: "It is recognized that additional structural analysis and design is needed to determine the feasibility of accommodating a bike/ped facility along the T-5 Access Bridge."	EE	C-002-107
55	DEIS	3.11.3.19	3.11-10		1	Demonstrate that the project will need a large number of parking spaces in Alternative 3. Relate increase or decrease of parking to anticipated demand. Provide the number of parking spaces provided when T-5 was in operation for baseline purposes. If determined amount of parking is not necessary, could use the extra land to help off-set GHG emissions or for overnight truck storage/day time staging. SDOT request a parking analysis for all three alternatives.	SZ	C-002-108
56	DEIS	3.11.3.19	3.11-10		1	Railroad crossing impacts - number of trains is increasing for each alternative which means more delay at railroad crossings for all modes. Map the number of public and private crossings. Need to indicate which of the driveways are affected and by how much. At least one crossing is to a City of Seattle facility (Low Level Spokane St Swing Bridge). Also note, 1,246 Mins = +/- 21Hrs of closure. These impacts, congestion and air quality, are a direct result of the project and requires mitigation and consideration of all modes.	SZ	C-002-109
57	DEIS	3.11.3.19	3-11-10		3	The Port describes the bicycle improvements the city would like to make from Terminal 5 access bridge - this would be an opportunity for the Port to provide mitigation in the form of bike/ped infrastructure - only mention how bike trips would be improved if the north leg is removed and signal timing is adjusted.	GV	C-002-110
58	DEIS	3.11.3.27	3.11-12	3.11.4.2	3	Construction impacts and mitigation inconsistent with Table 1.3-1 and Appendix C.	JH	C-002-111
59	DEIS	3.11.3.27	3.11-12		2	Discuss alternatives for access to private parcels from T-5 Access Bridge and propose mitigation for all predicted delays.	CE	C-002-112
60	DEIS	3.11.4.2	3.11-13		3	Propose mitigation measures if traffic redirection land locks businesses. Describe specifically which businesses would be affected and outreach that has or will occur with these businesses in the EIS process.	CE	C-002-113
61	DEIS	3.11.4.2	3.11-13		2	Adjustments for signals would be designed by SDOT and paid for by the Port.	CE	C-002-114
62	DEIS	3.11.4.2	3-11-13		3	Opening gates 30 minutes prior to check-in will not resolve congestion, the projected truck volumes are too high. This can be improved by moving the location of the gate, opening an additional gate and longer hours. Additional analysis for gate design and operations needs to be added from these recommendations.	GV	C-002-115
63	DEIS	3.11.4.2	3.11-13		2	To ensure vehicle throughput and network traffic flow, use three TWIC reader lanes not two, and three guards not one. Describe process for addressing uncertainty of truck volume on busy days.	CE	C-002-116
64	DEIS	3.11.4.2	3.11-14	3.11.4.2	4	Under Gate Design and Operations, should this say "pre-check gate at 6:30 AM"?	JH	C-002-117
65	DEIS	3.11.4.2	3.11-14		2	Dynamic signage informing freight would require additional ITS infrastructure. Existing signage is used to provide general conditions rather than mode-specific messages. Describe additional ITS infrastructure that would include mode-specific messaging.	CE	C-002-118
66	DEIS	3.11.4.2	3.11-14		2	Define how "frequently" is defined. The "reservation system" should be considered a parallel management measure rather than a triggered measure.	CE	C-002-119

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67	DEIS	3.13.3.3	3.13-7		3	With the installation of additional high-tension power lines (26-70MVA), it is possible that the existing induction-based bike counter will experience interference (documented at this location) and may require additional resistance modules.	CE	
68	Appendix C		General		1	Please make this section consistent with recommendations made in DEIS Appendix I, sections 3.11.9 and 3.11.10.	EE	
69	Appendix C	1.2.1	3		3	Explain what is driving the difference in percentage change in the chart. If import total volumes remain the same then they could be backed out. Are we trying to consider a varying 'attractiveness' by other ports that influence the import/export numbers in Seattle?	CE	
70	Appendix C	1.2.1	3		2	The time ships are in the berth presents turnaround issues and implies double shifts requirements. Discuss the time ships are in the berth and how the Port will address both turnaround and shift requirements issues.	CE	
71	Appendix C	1.2.1	5	1.2.4	1	Prefer gate to not open one hour early during AM peak hours on high-volume days. Describe the truck reservation system proposed, specifically, where will trucks be directed to wait until their reservation is called, if trucks arrives early where will they be directed to go and what route will they take to get there, and will there be consequences if trucks queue on public ROW?	SZ	
72	Appendix C	1.2.1	5	1.2.4	1	Study area should be expanded to include all potential destinations for trucks, including all intermodal yard entrances, distribution centers, and the highway system access points (Heavy Haul Network). Thus additional intersections should be analyzed.	SZ	
73	Appendix C	2.1.1	6		2	Surface access is addressed as "Secondary." However, it was the "main" access and is a resiliency route	CE	
74	Appendix C	2.1.1	7	Figure 1	3	Label all terminals (missing all of Terminal 7). Label all study area streets on Figure 1.	SZ	
75	Appendix C	2.1.1	8		4	North Argo Access reduces southbound volumes, but maintains northbound volumes	CE	
76	Appendix C	2.1.1	8		3	Include in E Marginal Way description that BNSF SIG yard also has access off of Colorado Ave S.	SZ	
77	Appendix C	2.1.2	8		4	Updated volumes will require review of queue needs.	CE	
78	Appendix C	2.1.2	8, 9		2	These improvements do not mean that new projects should not be identified if the project's impacts require mitigation. Drastic changes have occurred in the cargo ship trade and assumptions and forecasts made in the 1990's may not have projected or assumed 18,000 TEU ships to call T-5. All projects built from previous processes helps to create the baseline of which this upgraded project will be assessed. It cannot be assumed that projects identified from past studies/efforts justify minimal mitigation in this DEIS.	SZ	
79	Appendix C	2.1.3	10		4	Please mention Critical Urban Freight Corridors here. They are a recent development but are a federally recognized as economically significant routes.	CE	
80	Appendix C	2.1.3	10		4	T5.3 - is not exclusively for the "efficient movement of truck traffic" but must accommodate all modes in the corridor. This section should reference the city's Complete Streets Ordinance. T5.7 indicates cooperative review and improvement of overnight parking. This policy needs to be considered in greater detail when assessing potential impacts and mitigation for Alternatives 2 and 3.	CE	
81	Appendix C	2.1.3	12		4	Lower Spokane Street Freight Only Lanes Pilot Project is an evaluation project versus a needs project. This needs to be acknowledged in section.	CE	
82	Appendix C	2.1.3	12		4	South Spokane Street ITS Upgrades should incorporate Port ITS Initiative and FRATIS grants.	CE	

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83	Appendix C	2.1.3	12	FMP/FAP	2	Mitigation recommended for project impacts should consider working with SDOT to identify and implement catalyst projects identified in the Freight Master Plan and Freight Access Project.	SZ	C-002-136
84	Appendix C	2.1.3	14	MM	3	Provide a map of all modes and their future network recommendations, within the expanded study area, to and through the study area to ensure understanding of connectivity and locations that intersect with train crossings.	SZ	C-002-137
85	Appendix C	2.2	15/27	ST3/2.7	2	Ensure any new information from ST3 refined package is reflected in this section. This includes the potential for a stop at Delridge Way SW and SW Spokane Street. The Port needs to work with Sound Transit to not adversely affect station placement opportunities.	SZ	C-002-138
86	Appendix C	2.2	G	ST3	2	Incorporate the ST3 current proposals for rail alignments, stations, construction needs and related timelines and property impacts.	RHB	C-002-139
87	Appendix C	2.2.1	15		4	Freight volumes are projected at 1.6% growth overall, but the proposed facility will almost double port truck volumes from T-5. Explain this.	CE	C-002-140
88	Appendix C	2.2.1	17		4	It would be helpful to see multiple years as a cross comparison for average weekday traffic on Spokane Street Bridge. In addition please explain circumstances that may lead to a variation in AWDT from year to year.	CE	C-002-141
89	Appendix C	2.2.1	17		4	Represent when intake gates are closed and when queueing starts (i.e. morning open and lunch closure) on Figure 4.	CE	C-002-142
90	Appendix C	2.2.4	21		1	Recommend that the Port create daily updates on the number of trucks entering terminal data via a website. Similar to Spokane Street Swing Bridge and Fremont Bridge bike counters. This would be helpful to see the volumes in real-time and their effects on the surrounding modal network.	SZ	C-002-143
91	Appendix C	2.4	23		4	With respect to notation of "dynamic signs", these are actually static message signs with an alert beacon. Please revise text accordingly.	CE	C-002-144
92	Appendix C	2.5	26		4	Replace wording of "accident" with "collision." Please mention direction of the collisions?	CE	C-002-145
93	Appendix C	2.5	26	Table 5	3	Provide additional details on the top three intersections in Table 5. While the collision numbers are below our high collision location threshold, it would be good to see a brief discussion of the top three intersections - breakdown by year (any spikes?), severity, any other trends (peak hour?), etc. Break out the collisions more by showing fatalities and serious injury as two different types of collisions in Table 5.	BF	C-002-146
94	Appendix C	2.8	27		2	Please note in this section that SDOT has no plans or funding to implement mid- or long-term improvements at the intersection of Chelan Ave SW, W Marginal Way SW, SW Spokane St, and the Alki Trail in paragraph two in section 2.8.	EE	C-002-147
95	Appendix C	2.8	27		3	Please note after the last sentence in paragraph two in section 2.8 that bicycle access, visibility and safety to West Seattle along the West Seattle Trail is often compromised by heavy vehicle queue lengths along SW Spokane St e/o Terminal 18 and Terminal 5, particularly during peak periods and when the SW Spokane Street Bridge is open.	EE	C-002-148
96	Appendix C	2.8	27		1	Does the pedestrian realm have any street trees? As part of mitigation, trees could be located strategically on site to help with GHG emissions from trucks.	SZ	C-002-149
97	Appendix C	2.8	27		2	Without pedestrian facilities, the issue may be the incomplete nature of access to businesses. Also, please describe which streets do not have sidewalks in the area.	CE	C-002-150
98	Appendix C	2.8	27	Figure 10	4	Some of the proposed improvements on Figure 10 already exist - installed either late 2015 or early 2016. Please revise figure.	CE	C-002-151

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No.	Document	Chapter	Page*	Exhibit No.	Priority**	Reviewer Comment	Reviewer Initials	Notes / Questions
99	Appendix C	2.8	27		1	If recommended main access is via Terminal 5 Access Bridge, will changes to channelization have to be made to accommodate truck volumes and prevent truck queueing? If so, pedestrian access still needs to be provided. Present mitigation solutions.	SZ	C-002-152
100	Appendix C	2.8	28		4	In the first paragraph, please modify the first sentence as follows: "In the long-term, SDOT recommends a grade-separated structure for bicyclists that would connect from the existing Terminal 5 Access Bridge to SW Spokane Street, west of Chelan Ave SW."	EE	C-002-153 C-002-154
101	Appendix C	2.8	28		1	Pedestrian access could be implementing grade-separation (cantilever) project identified by SDOT.	SZ	
102	Appendix C	3.8	29		2	In the second paragraph, remove the last sentence. At this time, SDOT does not have funding to pursue the mid- or long-term recommendations identified in the report.	EE	C-002-155
103	Appendix C	2.9	29		2	+/- 600 employees are projected (between two shifts), but there is but no expectation of mode share. Please explain mode shift in more detail.	CE	C-002-156
104	Appendix C	3	30/31		3	A Construction Management Plan will be required. This will entail a haul route. Please add to description.	SZ	C-002-157
105	Appendix C	4	G		3	Specific traffic analysis should be conducted for the travel demand for the Alki Neighborhood to SODO corridor. Will acceptable travel conditions be maintained for Alki trips along Harbor Ave SW? Due to the changing grades, it is assumed most Alki trips will be attracted to Harbor Ave SW.	RHB	C-002-158
106	Appendix C	4.1.4	33		1	Good analysis regarding the decrease of daily trucks during peak hours due to a second shift for Alternative 3; please add same analysis for Alternative 2 as it seems like a second shift would also positively impact peak hour traffic (meaning that there will be a lesser impact). Recommend a second shift for Alternative 2, if the conclusion is like that of Alternative 3.	SZ	C-002-159
107	Appendix C	4.1.4	33		2	8 am to 5 pm operation time was the condition that resulted in the 2011 truck congestion. Queue management and enforcement of rules will be necessary to avoid similar issues if the hours are restricted to these.	CE	C-002-160
108	Appendix C	4.1.4	33		4	Please note that changing shifts to night work would affect drivers schedules and may impact some drivers' ability to work.	CE	C-005-161
109	Appendix C	4.1.4	34		2	Note 1/4 of volume arrives in a two hour window in the a.m. and similar occurs in the early p.m. These are the truck peak hours that must be mitigated even though not all coincide with commuter peak hour traffic. This also speaks to reservation systems for all alternatives.	CE	C-005-162
110	Appendix C	4.1.5	36	Figure 14	3	8x increase of large ship traffic. One big ship per month, now it is up to two per week.	CE	C-005-163
111	Appendix C	4.2	36		3	It is stated that "the current Terminal 5 facility was developed when the largest container vessels were Panamax class ships, each capable of carrying 4,500 TEUs" - previous T-5 improvements were thus working under the assumption of 4,500 TEUs ships and mitigation to accommodate the number of trucks/trains needed to reduce the impact. Hard to understand how previous T-5 infrastructure improvements can be considered to alleviate the impacts of 10,000-18,000 TEUs vessels when it was not even known that the larger ships were to be developed in the future. More impacts (same length of trains, but much higher number of trains needed and more trucks needed) to the surrounding environment with a large number of additional trucks/trains requires additional mitigation.	SZ	C-005-164
112	Appendix C	4.2.2	37		1	Description of % of containers transported by on-dock rail, drayed, and trucked to local or regional businesses makes for a good argument to expand the study area to include a larger number of destinations that trucks will deliver to: all entrances to SIG/ARGO yards, distribution centers, interstate system. Provide more information to use to determine any additional impacts that need mitigation from intersections delay to pavement condition.	SZ	C-005-165
113	Appendix C	4.2.3	37		3	This section assumes that there is a perfect 50% split for truck trips. Reservation system will need to be strict.	CE	C-005-166

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114	Appendix C	4.2.4	39		3	It has not been very clear that Alternative 2 would need a second shift as it is not recommended as part of mitigation throughout the DEIS, yet within Table 7, it shows that on design day there is a need for a night shift (also for no action alternative). Explain the discrepancy. It appears that Alternative 2 shall also have two shifts and thus should be a part of mitigation.	SZ	C-002-167
115	Appendix C	4.2.4	39-41	Table 7	2	This comment relates to Race and Social Justice Initiative. Employee trips are addressed. Security staff, bus drivers and truck drivers are not identified or recognized in the narrative of the Table 7. These worker categories and their needs are not addressed. The categories undercut the actual presence of people who are present during the course of the workday. This implies that the worker facilities for these groups are not addressed. This includes break facilities, bathrooms and washing facilities. Address in the DEIS how on-site workers are provided equal access and quality of facilities for all workers to accommodate human needs. Suggest statistics for truck drivers and other individuals who are allowed entry to the Terminal and their activity and peaking conditions. Suggest that given the large footprint of the terminal configuration and the terminal functions that access time and access quality for truck drivers be addressed.	RHB	C-002-168
116	Appendix C	4.2.4	40		1	Appears that the terminal operator will be considered a Commute Trip Reduction (CTR) employer as, assuming from the day shift description of 8 AM to 5 PM, even with the No Action Alternative, there are over 200 employees estimated. This means that a TMP will be required and all previous analysis regarding minimal transit trips and non-motorized trips assumed to access the site, will need to be modified. Any non-motorized access issues or closures that prevent access to the site will have to be mitigated.	SZ	C-002-169
117	Appendix C	4.3.1	41/42		1	Another argument for expansion of study area are the Bluetooth readers to include I-90 access intersection of E Marginal Way and S Atlantic Street.	SZ	C-002-170
118	Appendix C	4.3.1	42		3	The new North Argo Access allows trucks to avoid merging across SR 99 to enter the Argo railyard, describe how trucks leave the yard. Via the Access road or Diagonal Ave S? If Diagonal Ave S, need to extend study area to study impacts.	SZ	C-002-171
119	Appendix C	4.3.1	42	Table 9	3	Does WSDOT extension of SR 509 project have any funding for design or construction? Are there other projects that should be accounted for in the analysis - large development projects in West Seattle that are in some phase of permitting? Want to learn full cumulative future traffic impacts.	SZ	C-002-172
120	Appendix C	5.1	45		1	Describe the potential future operations for the terminal - is it more likely that the future terminal operator will choose either Alternative 2 or 3 and not possibly start with Alternative 2 and work their way to Alternative 3? If yes, demonstrate why Alternative 3 should not be considered for 2030 implementation and thus additional analysis may be necessary.	SZ	C-002-173
121	Appendix C	5.2	52		1	Should be noted that SDOT is in process of E Marginal Way corridor study that may modify the street channelization. If Terminal-5 Access Bridge (Flyover) channelization should change that should be reflected in the LOS analysis.	SZ	C-002-174
122	Appendix C	5.3	55		2	Review TWIC reader personnel and consider 2 as minimum and 3 on busy days.	CE	C-002-175
123	Appendix C	5.3	55		1	A queue management plan should include exact thresholds of when the two additional inbound lanes should be opened to prevent any truck queueing on public ROW.	SZ	C-002-176
124	Appendix C	5.3.3	56		2	Queue analysis indicates that an early opening is beneficial, but what are the impacts of breaks/lunch to queue length?	CE	C-002-177
125	Appendix C	5.3.3	57		3	Regardless of type of crane installed, if one shift means trucks queueing on public ROW (impact), then second shift is needed for mitigation of traffic congestion.	SZ	C-002-178

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No.	Document	Chapter	Page*	Exhibit No.	Priority**	Reviewer Comment	Reviewer Initials	Notes / Questions
126	Appendix C	5.3.3	57		2	2011 issues were based on queueing and could not be resolved easily once the queue was established. Demonstrate how will a queue be avoided rather than 'managed.'	CE	C-002-179
127	Appendix C	5.3.3	57		2	Early open draws added queues if the access is not managed. This resulted in a great number of hours lost by Commercial Vehicle Enforcement, SPD and Port police.	CE	C-002-180
128	Appendix C	5.3.3	58	Figure 24	2	This does not reflect queue operations when the gates are not processing during lunch. The queue along the flyover was never zero - rather, freight operators stacked outside the main gate in anticipation of afternoon operations.	CE	C-002-181
129	Appendix C	5.3.3	58		1	SDOT would prefer a queue management plan that the Port is responsible for to ensure queue are managed early and often. Need to see specific measures that hold both the Port and terminal operator accountable for queue management. Tracking incidents and time of delay should occur every ship call to be shared with SDOT/WSDOT to learn from incidents/mistakes, with updates to the queue management plan every other year. Detour truck route to be established when trucks are told to disperse if queueing on public ROW. Will need a location for the trucks to wait until they can move to the gate (on private land to stoge the trucks as they await their turn) - this is why a reservation system should be a part of the queue management plan to ensure mobility for all modes in the surrounding area.	SZ	C-002-182
130	Appendix C	5.4	59		2	Pedestrian access is a critical component of the network, and the inclusion of weekend operations and second shift operations cannot be dismissed in DEIS. It must be resolved, and crossing closure or repurposing to pedestrian only movement is not feasible when the crossing is closed 20 hours per day.	CE	C-002-183
131	Appendix C	5.6/5.7	59		3	Respectfully disagree that T-5 will generate few if any transit trips or pedestrian/bicycle traffic. If terminal operator is designated as a CTR company, they will be required to have mode share goals, of which transit and non-motorized will be included. These sections may need a whole re-assessment if determined a CTR company.	SZ	C-002-184
132	Appendix C	5.7	59		1	Please note that there is currently no pedestrian phase at the signal of SW Spokane Street and the T-5 access way. The additional phase could impact traffic signal operations. Please identify bike and pedestrian delay associated with additional traffic at the intersection, if any.	EE	C-002-185
133	Appendix C	5.7	60		2	Please modify the fourth sentence of the second paragraph and remove the following, "It is recognized that the City would need to do." Change the sentence to: "Additional structural analysis and design for the long-term bicycle improvement is necessary to determine the feasibility of a bicycle/pedestrian path off the side of the existing Terminal 5 Access Bridge."	EE	C-002-186
134	Appendix C	5.8	60		3	Due to the largest number of employees on site at one time (occurs for Alternative 3 design day day shift with 364 employees), why up to 530 parking spaces are needed? Even if there is a day and night shift, as written in the DEIS, most day shift leaves before night shift begins. Would like to see options for different types of improvements that could be used with the extra capacity of about 165 parking spaces? Overnight truck parking (if allowed by terminal operator)?	SZ	C-002-187
135	Appendix C	6	61		1	The project should consider implementing the bicycle/path along the T-5 Access Way as part of their T-5 improvements or explaining why this is not feasible.	EE	C-002-188
136	Appendix C	6.2.1	61		2	When addressing the off-site intersection improvements, assess all modes in the section. Need to understand full impact of mitigation for all users of the transportation system.	SZ	C-002-189
137	Appendix C	6.2.1	61		2	With 20+ hours of closure, the 5-way intersection cannot be considered an available emergency route. Please explain how this or alternative locations could work as an emergency route.	CE	C-002-190

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138	Appendix C	6.2.2	61, 62		1	SDOT believes that a reservation system should be used for all three alternatives so as to not experience previous queueing and congestion on Spokane St and the surrounding area. This means that an area for trucks to await their turn on private property (not public ROW) is necessary as well as a detour route to provide to truck drivers if they are early to the gate and need to go wait for their reservation to occur. See previous comment about queue management plan that ensures both the Port and terminal operator understand protocol when queueing occurs. More detail needs to be considered as to where the Port would direct trucks if/when "notify truck drivers and dispatchers (using radio, cell phone, and/or internet communications) to avoid Terminal 5 until the queue has cleared".	SZ	

C-002-191



**C-002-001**

The DEIS describes how the Project will satisfy the General Conformity Requirements of the Clean Air Act without use of an electric dredge. (see FEIS, Volume I, Chapter 3, 3.2). Electric dredges are not available in the Seattle area and mobilization of such a dredge from its Los Angeles base—if available—for a relatively small project would not be economically feasible for the environmental benefit. The air quality benefits are diminished as there are significant emissions required for the 240 hours of tug mobilization from the Los Angeles area relative to the total of 800 hours of work for the dredge project itself. Finally, the installation of necessary electrical infrastructure for the crane rails and shorepower, which the dredge would tap into for power, will not be completed prior to the start of dredging.

**C-002-002**

Battery-electric or electric hybrid options are not readily available in all types of heavy-duty construction equipment. However, the Port will require that construction equipment meet or exceed EPA Tier 2 off-road diesel engine emission standards and on-road equipment meet or exceed EPA 2007 diesel engine emission standards. Idling of equipment will also be limited.

**C-002-003**

The Port has little control over how individual trucks are dispatched. However, the Port and MTO can effectively manage truck traffic conditions at marine cargo gate facilities. A Queue Management Plan has been prepared for the proposed Project and is included as an attachment to the modified Transportation Technical Report found in the Appendix C to this FEIS. The Queue Management plan proposes measures to avoid, reduce, and manage queues at the inbound terminal gate. Included in the plan are Wait Time Awareness system, monitoring plans, and gate responses to avoid queuing. The systems are scalable and can be implemented as part of the plan. Also, as part of its business plan, the NWSA has a goal to reduce truck wait and turn times at all terminals and is pilot testing new technologies to accomplish these goals. The expectations that on-dock rail will provide a significant component of outbound cargo movement eliminates many truck movements on City of Seattle rights-of-way.

**C-002-004**

The Project proposes modernization that will supply significant electrical infrastructure to allow for vessel shorepower and, potentially, electrification of portions of the cargo handling equipment. Through the Northwest Ports Clean Air Strategy, the NWSA has adopted a plan to require trucks entering container terminals to meet model-year 2007 EPA emissions standards in 2018. This will decrease air emissions and greenhouse gas emissions. Electric drayage trucks would exceed this standard but are not readily available at present and have a much higher purchase price. This could be a deterrent to independent truck owner/operators. Demonstration projects of zero emissions Class 8 trucks are being introduced in California. The additional electrical infrastructure improvements that are proposed as part of the Project could provide electrical charging capacity should short-haul electric drayage trucks prove to be reliable and available for wider deployment than is currently available.

**C-002-005**

As discussed in the DEIS, up to 12 ship-to-shore cranes will be electrified and shorepower will be provided for visiting ships to reduce on-board generation emissions. Please see Standard Response No. 4: Electrification Schedule and Accelerated Schedule for Adoption of Alternative 3 at the beginning of Chapter 6 for additional information on the proposed electrification schedule.

**C-002-006**

Page 2-11 in the DEIS in Section 2.3.3, Proposed Alternative 2 Construction, states that “the conduit, wiring and a connection system would be provided for a shorepower system for two berths. This would allow the terminal to be “plug-in ready; for those ships with (that) have the capability and choose to use shorepower.” Furthermore, the DEIS in the Air Quality technical appendix in describing the analytical methods assumed in its model “For 2020, 2030 and 2040 shorepower efficacy of . . . and 30%, 50% and 70% was applied for the action alternatives...” The conclusion that the Terminal 5 operations do not exceed NAAQS and, therefore, do not cause significant environmental impacts is supported with the understanding that shorepower will be used by a percentage of oceangoing vessels while at berth that will increase over time.

Please see Standard Response No. 3: Use of Shorepower at the beginning of Chapter 6 for additional information.

**C-002-007**

The statement in the DEIS “... regional market... is not large enough to support higher demand for locally trucked cargo” was not intended to convey that the local market cannot support growth. The statement was meant to convey that local demand is not likely to increase beyond 291,000 TEU’s to 425,000 TEU’s through the facility.

**C-002-008**

Text has been added to Section 2.2.2 of the Transportation Technical Report to clarify that no recent turning movement counts were available for those intersections prior to Terminal 5 closing. Therefore, traffic volumes for the intersections on each side of the Spokane Street Swing Bridge were based on counts at adjacent intersections, historic counts from SDOT’s database for the Swing Bridge and Harbor Island roadways, and Terminal 5 gate volumes.

**C-002-009**

The text in Section 2.9 of the Transportation Technical Report has been corrected to state that Terminal 5 currently has 540 spaces. There are 40 “other” spaces. See FEIS, Volume II, Appendix C.

**C-002-010**

Most of the upland construction is expected to occur during months when in-water work is prohibited. Demolition and new pavement is expected to be performed in phases, with half of the terminal pavement being completed during one year, and half being completed in the next year.

The highest volume of trucks during this stage of the work would occur during demolition if materials are stockpiled before transporting off the site. It is estimated that all of the demolition materials (e.g., pavement, structures) could generate 2,200 to 2,800 truckloads of material, and each load would generate two truck trips (one empty truck entering the site and one full truck leaving). If the material is stockpiled, the number of trucks would be limited by the rate that they can be loaded, which with one loader is estimated to be limited to about 10 loads per hour and 80 loads per day. This would last approximately 35 days. The loading rate could be doubled to 160 loads per day, and halve the duration to about 18 days. If the material is not stockpiled, the loading rate and truck trips per day would be lower and would coincide with the duration of the demolition activities.

Concrete and pavement installation is likely to occur in phases, with half of the pavement being completed during the non-in-water work months of one year, and half being completed in the next year. The total paved area is estimated to require 2,650 truckloads of surface course, concrete, and asphalt, which relates to 1,325 truckloads for

each of the construction seasons. Concrete and asphalt work would likely be done at different times, and each is estimated to generate a maximum of 10 truckloads per hour, and 80 truckloads per day. This activity is expected to last about 17 days in each of 2 years. These details have been added to Section 3 of the Transportation Technical Report. See FEIS, Volume II, Appendix C. In contrast to nearly all previous marine cargo infrastructure projects, Terminal 5 construction activities will take place at a vacant site. This means that construction can be efficiently organized without the need to avoid disruption of ongoing, coincident marine cargo operations. Further, since work is limited to the existing cargo wharf and adjacent upland areas, sufficient area is available at Terminal 5 for stockpiling incoming and outbound construction materials, allowing for effective metering of construction traffic and timing of construction activities to avoid and minimize potential negative traffic effects.

**C-002-011**

Please see response to comment C-002-010 above. Construction worker trips would vary by stage of work. Typically, the peak construction worker load occurs during building construction when many different trades can be on the site simultaneously (e.g., carpenters, electricians, plumbers, etc.). These peak phases for construction workers would not overlap with the peak truck activity described above.

**C-002-012**

There should be no outbound employee trips during the AM peak hour for any of the alternatives since the night shift would end at 3:00 AM. As noted in the Transportation Technical Report, “A ‘hoot shift’ (typically from 3:00 AM to 7:00 AM) may be needed to unload or load a ship on rare occasions, which can occur if the ship is delayed by weather” (Section 1.2.2.). This condition would not occur on the Average Day or Design Day. This error has been corrected in Table 8 of the Transportation Technical Report. See FEIS, Volume II, Appendix C.

It is noted that employee trip generation has also been updated to account for alternative modes of travel (e.g., carpool, transit, walk, and bike). Please see response to comment C-002-156 for additional information related to these adjustments.

**C-002-013**

The existing trip distribution pattern reflects the results of origin and destination studies that were performed in February 2014 when throughput at Terminal 5 was lower than it had been historically. The future analysis is based on the assumptions that 50 percent of the throughput would be moved through the Terminal 5 on-dock intermodal yard and another 25 percent would be drayed to the near-dock intermodal yards.

**C-002-014**

Text has been added to Transportation Technical Report, Section 5.2 related to the S Spokane Street/East Marginal Way S intersection operations. See FEIS, Volume II, Appendix C.

**C-002-015**

Refrigerated cargo shipped in specialized containers (also referred to as “reefers”) includes a substantial portion of potential export and import cargo movement at Terminal 5. Refrigerated containers are fitted with specialized equipment, operated by small motors powering refrigeration compressor units during truck transit. Refrigerated containers marshaled at Terminal 5 are connected to electrical service, eliminating on-site use of petroleum fuel motors. Future refrigerated container cargo marshaling at Terminal 5 will continue use of electrical service “hook-ups,” avoiding and minimizing use of independent motor power to the refrigeration equipment. Similarly,

refrigerated containers stowed aboard vessels are linked to electric service provided by the vessel. Over time, electrical service from shorepower will increasingly substitute for onboard ship-powered electricity generation, reducing air quality impacts. Please see Standard Response No. 3: Use of Shorepower at the beginning of Chapter 6 for additional information. The existing Terminal 5 cargo facility includes approximately 600 refrigerated container electrical service “hook-ups.” Terminal 5 refrigerated cargo marshaling locations are arranged to avoid directing mechanical noise from refrigeration compressor equipment to the west.

**C-002-016**

Comment acknowledged. The infrastructure to plug in up to 2 vessels simultaneously is included in the current construction plans for the Project for both Alternatives 2 and 3. For additional information, please see Standard Response No. 3: Use of Shorepower at the beginning of Chapter 6 and FEIS, Volume II, Appendix A, Air Quality Technical report Section 1.2.4.

**C-002-017**

Comment acknowledged. The specific equipment to be used at the site will not be determined until a Terminal 5 marine terminal operator is identified and specific operational plans and equipment for the terminal are defined by the operator. As part of that process, future lease agreements will stipulate the need to comply with Seattle’s daytime and nighttime noise limits. In addition, a detailed Operational Noise Management Plan (ONMP) will be prepared and implemented (for a framework of the ONMP, see FEIS, Volume II, Appendix M). The marine cargo operator will determine the type and characteristics of cargo handling equipment most suited to specific container cargo operations. Noise monitoring, which will be detailed in the Operational Noise Management Plan, will be used to analyze and report compliance of cargo operations with noise code requirements.

**C-002-018**

Rail traffic from this project is not anticipated to have any significant impacts to at grade crossings across Spokane Street east of the facility. No mitigation measures are proposed for Spokane Street.

**C-002-019**

Comment noted. Please see response to comment C-001-004. Ambient-sensing, broadband backup alarms will be required on all mobile cargo handling equipment for the proposed Project.

**C-002-020**

Modification to the intermodal yard would allow electric RMG’s because it provides for the upgrade to utility and increased electrical capacity which may be needed. Additional transmission and electricity of up to 70 MV can be made available from SCL. On-site electric utilities would be upgraded as required to serve new STS, RMG, and RTG cranes and receive the electricity that SCL would provide.

**C-002-021**

The Port together with the Terminal 5 marine cargo operator will provide ongoing information regarding operations relative to noise and air quality. Information about throughput will be posted as directed in the specific management plans that will be prepared.

**C-002-022**

Noise from pile driving is described in detail for Alternative 2 (section 3.6.3.2 of the DEIS). Noise modeling indicates that noise from pile driving activities is expected to comply with City of Seattle noise limits applicable to impact-type construction sources. In addition, a construction noise management plan will be submitted to the City of Seattle for the Project as part of SDOT's Construction Management Plan. The CMP will also include a traffic control/site plan and truck routing.

**C-002-023**

Equipment demand calculations have indicated that container throughput could be accommodated during daytime hours only for Alternatives 1 and 2 at 647K TEU throughput. Alternative 2 at 1.3M TEUs throughput and Alternative 3 at 647k or greater TEUs throughput would require nighttime activity for marine cargo pier vessel loading/unloading, movement of cargo in/out of container cargo marshaling yard locations, and serving the intermodal rail yard. However, container cargo truck service would be during daytime business hours and no trucks would enter or exit the site at night. It is expected that night shift operations will not be a regular occurrence. However, as noted in the DEIS, nighttime activities have occurred in the past at lower throughput levels and could occur again in the future. Noise monitoring of these activities in the past have indicated that the facility was not out of compliance with City of Seattle noise limits. The Operational Noise Management Plan produced for the facility will require noise monitoring to occur once nighttime activities have begun to ensure compliance with the nighttime noise limits.

**C-002-024**

Please see Standard Response No. 7: Low Frequency Noise at the beginning of Chapter 6 for additional information on how this noise will be addressed in the Operational Noise Management Plan.

**C-002-025**

An analysis of container cargo vessel "plug-in" technology use was conducted by Starcrest Consulting (2016). The shorepower use evaluation estimated that for the Pacific Northwest, in 2020, a conservative 30 percent of the fleet would be able to plug-in (already at 33 percent in 2015), 50 percent by 2030, and 70 percent by 2040. The expected growth between 2020 and 2040 expected increased shorepower capability as f shorepower regulations imposed by the California Air Resources Board (CARB) as an air quality measure and the potential for mandated regulatory requirements in China and Europe as the most important conditions related to increased use of plug-in shorepower.

**C-002-026**

Please see Standard Response No. 10: Responsibility for Permit Compliance at the beginning of Chapter 6 for additional information on how the Port proposes to use agreements with a selected marine terminal operator to ensure comprehensive compliance with city, state, federal, and Treaty tribe conditional approvals.

**C-002-027**

Comment noted. Please see Standard Response No. 10: Responsibility for Permit Compliance at the beginning of Chapter 6 for additional information on how the Port proposes to use agreements with a selected marine terminal operator to ensure comprehensive compliance with city, state, federal, and Treaty tribe conditional approvals.

**C-002-028**

Numerous recent ambient noise level analyses and evaluations have been conducted, including the period between midnight and 5 AM. The Port anticipates additional background noise level measurements will be taken as an element of the facility Operational Noise Management Plan.

**C-002-029**

Please see Standard Response No. 4: Electrification Schedule and Accelerated Schedule for Adoption of Alternative 3 at the beginning of Chapter 6 for additional information.

**C-002-030**

A systematic schedule of noise monitoring will be conducted as part of the Operational Noise Management Plan, and noise monitoring actions will be determined by use of the site and will not be linked to throughput. Therefore, any potential issues regarding compliance with the noise limits will not need to wait until a specific throughput trigger has been reached, but can be addressed if/when identified by the annual monitoring program.

**C-002-031**

See FEIS Chapter 3.1.1.2 for updated information. Chapter 3.8 discusses the Project relative to plans and policies. Chapter 3.7 discusses compliance with land use regulations. Appendix L discusses the Project compliance relative to Shoreline Master Program Development Standards. The City of Seattle Shoreline Code regulates all land 200 feet waterward of ordinary high water mark as well as all the water and submerged land at this site (see SMC 23.60A). Environmental critical areas within the Shoreline District are regulated by both SMC 23.60A and SMC 25.09, per SMC 23.60A.156.

**C-002-032**

Please see Standard Response No. 3: Use of Shorepower at the beginning of Chapter 6 for additional information.

Please see Standard Response No. 10: Responsibility for Permit Compliance at the beginning of Chapter 6 for additional information on how the Port proposes to use agreements with a selected marine terminal operator to ensure comprehensive compliance with city, state, federal, and Treaty tribe conditional approvals.

**C-002-33**

The Port has worked closely with PSCAA to provide the analysis requested. The Port added a health assessment as part of the DEIS and those results are reported in FEIS, Volume II, Appendix A. Air quality monitoring mitigation information is provided in the responses below.

PSCAA comments and Port responses are found in this Chapter, Number R-001, items 1–8.

Please see Standard Response No. 1: Selection of Air Quality Monitoring Sites and Data at the beginning of Chapter 6 for additional information.

Please see Standard Response No. 2: Post-Operation Air Quality Monitoring at the beginning of Chapter 6 for additional information.

**C-002-34**

See FEIS, Volume I, Chapter 3, 3.7.1.2 for updated information that confirms that the City's Shoreline Master Program also regulates potential water quality impacts. The Project would need to be constructed and operated consistent with applicable standards for water quality protection in the SMP.

**C-002-035**

See FEIS, Volume I, Chapter 3.7.1.2 for revised information that confirms any proposed dredging would also need to be consistent with applicable standards for dredging in SMC 23.60A and receive approval from City of Seattle through a Shoreline Substantial Development Permit.

**C-002-036**

See FEIS, Volume I, Chapter 3.7.1.2 for revised information that confirms that construction-related impacts on aquatic/shoreline habitats will be analyzed for consistency with applicable development standards in the City of Seattle Shoreline Master Program (SMC 23.60A), which may include requirements for habitat mitigation. The Port understands that this review is underway by Seattle Department of Construction and Inspections (DCI). It has not been determined yet if habitat mitigation will be required per SMC 23.60A, as well as other state or federal standards.

**C-002-037**

Comment acknowledged. The Port has submitted a Shoreline Substantial Development Permit application for construction activities for the Project.

**C-002-038**

Figure 18 has been added to Section 4.3 of the Transportation Technical Report showing the location of import/export businesses in the Duwamish Industrial Area, and a map showing the study area intersections and adopted Heavy Haul Network has been added as Figure 3. The study area has been expanded to include truck routes to the state highway system, as described in Section 1.3 of the transportation Technical Report. As shown on Figure 21, the projected volumes of trucks through the expanded study area during the AM and PM peak hours are low, and do not warrant analysis of additional intersections beyond what was already included in the study area (see FEIS, Volume II, Appendix C).

The Terminal 5 analysis presented in Section 5 of the Transportation Technical Report was performed for the years 2030 and 2040, well beyond the horizon year evaluated for a typical development project. Therefore, long-range growth rates were applied to existing volumes to account for future development that is now in the permitting process (typically constructed within five years) as well as new development that may occur in the remaining 10 to 20 years. As described in response to Comment C-002-93, the growth rate applied to the study area roadways is consistent with the long-range projections in the proposed City of Seattle Comprehensive Plan.

The Lower Spokane Street chokepoints were evaluated, and mitigation has been recommended in the form of advanced signals to better coordinate the impacts of rail, trucks and bridge openings, as described in Section 6 of the Transportation Technical Report.

**C-002-039**

A Gate Queue Management Plan has been prepared for future marine cargo operations at Terminal 5. The plan identifies specific actions with the objective of avoiding and minimizing potential truck queues, emphasizing that truck queues must not substantially degrade SW Spokane Street traffic conditions. The queue management plan includes details detail related to gate infrastructure, gate operations, incident management, monitoring, and remedies. The NWSA and the Port will make the terminal operator responsible for managing the queue. The proposed Gate Queue Management Plan is described in Section 6.2.4 and provided in Appendix B of the Transportation Technical Report (see FEIS, Volume II, Appendix C).

Additional measures are recommended to enhance local access, including emergency access, on the Terminal 5 Access Bridge. The Port has met with adjacent businesses located north and east of the rail lines serving Terminal 5 and the West Seattle Rail Yard to discuss Terminal 5 and the potential access impacts if the surface connection via West Marginal Way is blocked by a train or permanently closed. To improve access for local businesses, the Port will work with SDOT staff and the Seattle Fire Department to reconfigure the Terminal 5 Access Bridge to provide two inbound (westbound) lanes, with one of the lanes being signed for Terminal 5 only and the other being striped and signed for "Right Turn Only" onto 26<sup>th</sup> Avenue SW in order to provide a bypass lane for local businesses. Also, the Port will work with the Terminal 5 shipping operator to allow trucks from adjacent businesses to enter the Terminal 5 queue line from 26<sup>th</sup> Avenue SW. In the past, these locally-generated trucks were required to exit the terminal via the surface route and re-enter the queue line via the Terminal 5 Access Bridge. Finally, the Port will work with the businesses north and east of the rail lines to reestablish lane striping and "No Parking" signage to maintain the alternative grade-level access route serving businesses with unimpeded truck access via the access road entrance south of the high-level West Seattle bridge columns, at the east margin of West Marginal Way Southwest, north of the Southwest Marginal Place/West Marginal Way Southwest intersection. Mitigation to improve local access for businesses at Terminal 7 has been added to Section 6.2.3 of the Transportation Technical Report.

**C-002-040**

Mapping of crossings, equipment, current and historical accident data, train and vehicle volumes and speeds may be accessed at <http://fragis.fra.dot.gov/GISFRASafety/>.

The Project does not propose to modify any rail crossings. It is outside the boundary of the EIS analysis to provide an assessment of pavement conditions. If modifications to rail crossings are proposed in the future, assessment of pavement conditions will be analyzed during required permit review.

A rail advisory warning system is not in place for crossings in the area of Terminal 5 or in the Spokane Street corridor on Harbor Island and is not warranted at this location. Please note that between 1995 and 2000 the port, in consultation with the City of Seattle, designed and installed a "Rail Activity Advisory System" (RAAS) as a means to notify the Seattle Fire Department and Seattle Police Department when intermodal trains blocked right-of-way crossings in the Spokane Street corridor. The RAAS system was maintained by the port through 2003. In 2003 the Seattle Fire Department informed the port that the RAAS system was not being used and did not affect fire department response effectiveness. In September 2005 the Seattle Fire Department declared that the RAAS system could be discontinued.

Emergency services personnel can use the overpass to access Terminal 5 in all instances. The existing Intelligent Transportation System (ITS) notification system with signage directing use of the overpass is anticipated to remain in place.



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Event data is reported to the FRA per federal guidelines. The Project does not propose to create a procedure that competes with the federally mandated process.

**C-002-041**

While a Transportation Management Plan (TMP) could shift some trips from vehicle to other modes of transportation, the net effect on system operations would be very small. Instead, the Transportation Technical Report recommended upgrades to traffic signal and ITS components systems at study area intersections to mitigate the effects of both increased truck and employee trips. It is noted that if the terminal operator employs more than 100 employees who commute between 6:00 and 9:00 AM, then they would be subject to the State Commute Trip Reduction Law. This law has similar trip reduction targets that a TMP would have, and similar reporting requirements. For these reasons, a TMP is not recommended for Terminal 5.

**C-002-042**

ST3 (Sound Transit 3) program elements were not complete at the time that the Transportation Technical Report for the DEIS was written, as acknowledged in Section 2.1.3. Future Plans and Policies, and the description of the potential West Seattle light rail extension reflected the information available at the time. The ST3 improvements that will go before voters in November 2016 were finalized and adopted by the Sound Transit Board on June 23, 2016, (<http://soundtransit3.org/>) after the May 2016 issuance of the DEIS.

Section 2.1.5 of the Transportation Technical Report describes the proposed West Seattle light rail extension, which was included in the finalized ST3 package. It is proposed as an elevated structure that would cross the Duwamish to the south of the West Seattle Bridge; an elevated station is proposed on Delridge Way S to the south of the West Seattle Bridge. ST3 plans are conceptual at this time and exact locations of stations and support structures for the elevated line are not known. Nevertheless, the proposed light rail corridor and station are located to the south of the West Seattle Bridge; so they would not overlap with the Project footprint, which is located to the north of the West Seattle Bridge. However, the proposed Delridge station could be located within one-quarter mile of Terminal 5, which would provide transit service improvement for Port employees. The proximity would also require coordination if construction activities for both the Terminal 5 and light rail projects were to overlap. The Transportation Technical Report has been updated to reflect the following: the updated Project information identified in the adopted ST3 plan, including update of the project description in Section 2, Affected Environment; addition of discussion on construction coordination in Section 3, Construction Impacts; addition of discussion of access between light rail and the Port in Section 5, Project Impacts; and modification of the recommended mitigation at the SW Spokane Street/West Marginal Way/Chelan Avenue SW intersection to ensure pedestrian access between Terminal 5 and the potential light rail station in Section 6, Potential Mitigation (see FEIS, Volume II, Appendix C).

The Project could decrease the number of ship calls by providing capacity for larger ships. Text has been added to Section 1.2.1 to clarify that, as shown in Table 1 of the Transportation Technical Report, the number of ship calls per week is expected to decrease from six smaller ships under the No Action Alternative to four larger ships with either Alternative 2 or 3. Therefore, the increased throughput is not expected to affect the West Seattle Water Taxi.

**C-002-043**

The Project would increase train activity across West Marginal Way SW north of SW Spokane Street. The amount of delay associated with each train crossing event would be the same for the No Action Alternative or Alternatives 2 or 3; however, the frequency of movements, and hence the chance for delay, would increase with the Project. The

delay would affect pedestrians and bicyclists using existing at-grade intersection crossings at the north leg of the Southwest Spokane Street/Chelan Avenue Southwest/Delridge Way Southwest/West Marginal Way Southwest intersection for access to Terminal 5 or warehouse and industrial businesses located north and east of rail lines serving Terminal 5 and the West Seattle rail yard. As a result of anticipated increases in container cargo volume and associated increased use of intermodal rail facilities the duration of train crossings at the West Marginal Way Southwest/north leg of the intersection is likely to warrant closing the surface crossing at West Marginal Way Southwest for some traffic or all traffic except emergency vehicles. While this change would improve overall operations at the Southwest Spokane Street/Chelan Avenue Southwest/Delridge Way Southwest/West Marginal Way Southwest intersection it would eliminate pedestrian and bicycle access to Terminal 5. Evaluation of alternative pedestrian and bicycle access be necessary. Alternative access routes could include measures to use the existing Terminal 5 vehicle access bridge, a separate pedestrian/bicycle bridge over the tracks, or provision of a shuttle. It is noted that on-terminal shuttles are typically provided to transport employees from the main office to work locations in the 190 acre facility. The shuttle could be extended to off-site locations, including nearby transit stops or the future light rail station, to pick up Terminal 5 employees or workers requiring access to warehouse and industrial businesses located north and east of rail lines.

There is no “through” bicycle or pedestrian access allowed at Terminal 5. Aside from the railroad grade-crossing described above, the proposed Project is not expected to adversely affect the travel time or safety of pedestrians or bicycles who walk or ride near Terminal 5 since the Terminal 5 Access Bridge is located on the opposite side of the street from the bike trail/sidewalk across the SW Spokane Street Swing Bridge, and the new corner-to-corner bike crossing at the West Marginal Way SW/Chelan Avenue SW/Delridge Way/Spokane Street intersection does not intersect or cross any of the rail or truck movements that serve the marine cargo facility. This discussion has been added to Section 5.7 of the Transportation Technical Report (see FEIS, Volume II, Appendix C).

#### **C-002-044**

Information about off-site truck parking has been added to Section 2.9 of the Transportation Technical Report (see FEIS, Volume II, Appendix C). This includes detail about recommendations developed by the South Harbor Truck Parking work group, a stakeholder group convened by the City of Seattle and Port, in 2008.

#### **C-002-045**

Mitigation measures have been updated in Section 6 of the Transportation Technical Report to include several Intelligent Transportation System (ITS) components. These include:

- Replacing the Flashing Alert Sign located on northbound West Marginal Way that notifies motorists approaching Terminal 5 (and local businesses) that the railroad tracks are blocked by a train. This would allow them time to move from the right turn lane to the left turn lane so they can access the terminal and local businesses via the Terminal 5 Access Bridge. (It is noted that the foundation and conduit for the sign still exist, but the sign was damaged by a collision and removed.) The alert sign should be maintained until the surface access via W Marginal Way is closed to vehicular traffic.
- Upgrading the signal system along the lower Spokane Street corridor between Harbor Avenue and East Marginal Way, and providing for interconnection between signals as well as between the signal system and the Spokane Street Swing Bridge.
- Connecting Terminal 5 to the Northwest Seaport Alliance’s (NWSA’s) Gate Wait Time Awareness System or a similar system, which provides real-time information to truck drivers and dispatchers about the time it will take to get through a terminal gate and the terminal.

**C-002-046**

Section 2.1.2 of the Transportation Technical Report describes the Port's commitment to the Heavy Haul Network. As part of this new legislation, the Port and City have entered into a Memorandum of Understanding (MOU). It states that the Port will pay up to \$250,000 to support the implementation and operation of the Heavy Haul program through at least the end of 2017. As a second component of the MOU, the Port has agreed to contribute between \$10 million and \$20 million over the next 20 years to pavement rehabilitation and restoration projects on heavy haul network roadways. Project-specific Port funding would be directly tied to the estimated cost of accelerated deterioration of pavement due to heavy vehicles on the roadway, in addition to the estimated additional layer of paving needed to support more frequent use by heavy vehicles. Initial planning by the City and Port have identified that pavement investments will be targeted to three principal corridors: 1) SW Spokane Street between Terminal 5 and East Marginal Way S, 2) East Marginal Way S between Terminal 46 and the North Access Road, and 3) S Hanford Street between East Marginal Way S and the BNSF SIG Yard.

**C-002-047**

Analysis performed for Terminal 5 reflects a potential worst-case condition where there may be some overlap in the parking demand associated with the day shift and the night shift. The parking supply will be refined once the terminal has a tenant and the actual shift times are known. In addition, parking may be needed for vendors and visitors (e.g., customs inspectors, etc.). It is not the intent to provide more parking than necessary since that space would be used for container or other storage needs.

The No Action Alternative to which impacts of the proposed Project are compared is lower than what had been envisioned in the original EIS for the site. As described in Section 1.1 of the Transportation Technical Report (See FEIS, Volume II, Appendix C). "It is assumed that the No Action Alternative would accommodate 647,000 TEUs per year, which is about 95 percent of the 684,000 TEUs per year established by the Southwest Harbor Cleanup and Redevelopment Project Environmental Impact Statement for the original Terminal 5 improvements." Ships up to about 6,000 TEUs can be accommodated by the existing cranes at Terminal, which are also part of the No Action Alternative. Mitigation presented in Section 6 of the Transportation Technical Report addresses the full range of impacts identified for Alternatives 2 and 3 beyond the impacts of No Action.

**C-002-048**

The original Terminal 5 improvements, completed in 1999, had capacity for the same length of train and same potential duration of train blockages at the surface access via West Marginal Way as contemplated for the proposed Project. Therefore, the emergency access needs will not change due to the proposed Project. There are multiple ways into the terminal if the West Marginal Way surface access is blocked by a train—via the Terminal 5 Access Bridge, via a crossing of the intermodal yard at SW Florida Street, and via a roadway north of the intermodal yard (signed as the "Jack Block Public Shoreline Access and Park"). Additionally, if necessary, a train can be broken at the crossing to allow emergency access. Specific documentation of emergency access routes will be submitted as part of the building permit required by City of Seattle DCI and reviewed by the Seattle Fire Department.

The Transportation Technical Report has evaluated alternative mitigation measures for the five-way intersection that could also improve operations. These are described in Section 6.2.1 of the Transportation Technical Report (see FEIS, Volume II, Appendix C). One alternative would be to convert the north-leg of the intersection (the surface access to Terminal 5) into a one-way northbound roadway and eliminate the ability to exit at this location. That would eliminate the signal phase associated with outbound movements. Advance signage notifying drivers on

northbound West Marginal Way to use left lane if the crossing is blocked by a train would be reinstalled (the original sign was destroyed by a collision). Several measures are also proposed to improve local access to businesses at Terminal 7 (Please see response to comment C-002-039). The Port will work with SDOT to determine the most desirable configuration for the five-way intersection. If full closure of the north leg is desired, it could be designed to allow emergency vehicle access.

**C-002-049**

Please see response to comment C-002-045 for more information on proposed transportation mitigation measures.

**C-002-050**

Please see response to comment C-002-039 for more information on the Gate Queue Management Plan.

**C-002-050A**

The City of Seattle and the Port are working to clarify and finalize complex property and utility matters relating to past Terminal 5 street vacation approvals. The Port will apply for either a street use or an easement for the relatively small utility disturbance for conduit across the W Marginal Way SW right-of-way between the proposed substation and the wharf electrical distribution conduit prior to construction.

**C-002-051**

Comment acknowledged. Please see Standard Response No. 4: Electrification Schedule and Accelerated Schedule for Adoption of Alternative 3 at the beginning of Chapter 6 for additional information.

**C-002-052**

Comment acknowledged. Please see Standard Response No. 4: Electrification Schedule and Accelerated Schedule for Adoption of Alternative 3 at the beginning of Chapter 6 for additional information.

**C-002-053**

Comment acknowledged. Please see Standard Response No. 4: Electrification Schedule and Accelerated Schedule for Adoption of Alternative 3 at the beginning of Chapter 6 for additional information.

**C-002-054**

Figure 2 has been added to the Transportation Technical Report, which shows near-site bus stops, rail lines, major roads, and the Terminal 7 location. (see FEIS, Volume II, Appendix C).

**C-002-055**

Due to the projected train volumes, access to adjacent businesses will be via the grade-separated truck overpass. Frontage access exists from the truck overpass, west of the rail track, under the SW Spokane Street Swing Bridge and south to the Riverside Mill property. No additional private drives are proposed. Refer to the EIS Traffic Section for detailed traffic volumes and routes.

**C-002-056**

Please see response to comment C-002-046 for more information about pavement planning.

**C-002-057**

Please see response to comment C-002-046 for more information about pavement planning.

**C-002-058**

The recommended mitigation in Section 6.2.1 includes signal equipment upgrades that would allow new timing and coordination protocols for the SW Spokane Street corridor between Harbor Avenue SW and East Marginal Way. Additional measures for advance notification via dynamic signs and mobile phone/web-based applications are also proposed, as described in Section 6.2.2.

**C-002-059**

The cumulative impacts for all modes of travel and the key peak periods were evaluated in the Transportation Technical Report (see FEIS, Volume II, Appendix C). The recommended mitigation measures described in Section 6 include improvements for traffic signal operations and wayfinding. The Gate Queue Management Plan also includes measures, when and if needed, to manage gate flows. See also the response to Comment C-002-039.

**C-002-060**

The City of Seattle and the Port are working to clarify and finalize complex property and utility matters relating to past Terminal 5 street vacation approvals. The Port will apply for street use approval or an easement for the minor utility disturbance necessary for a conduit crossing of W. Marginal Way SW right-of-way between the proposed substation and the wharf electrical distribution conduit prior to construction. The Port is continuing to work with SDOT to confirm compliance with previous conditional approval of street vacations necessary for the present Terminal 5 marine cargo facility "footprint." The Port is committed to completing all street vacation documentation prior to issuance of construction permits for the Project.

**C-002-061**

FEIS, Volume I, Chapter 3, Section 3.1 on Earth has been revised to refer the reader to Sections 3.3 on Water and 3.5 Environmental Health for information on contaminated soils and the extent to which the Duwamish River cleanup will affect the proposed Project.

**C-002-062**

Mitigation of water quality impacts under Alternative 2 following construction is described under the Operations section FEIS, Volume I, Chapter 3, 3.3.4.2 Alternative 2, subsection Operations. The Port of Seattle's Industrial Stormwater General Permit (ISGP) requires the development of a Stormwater Pollution Prevention Plan (SWPPP) to prevent and control potential discharge of contaminated stormwater to surface or groundwater. The SWPPP would

be modified as appropriate to manage changes in stormwater conditions resulting from increased Terminal 5 marine cargo capacity and throughput. The SWPPP would also address source control identification as part of the pollutant discharge. Offsite influences would be included as part of the source control identification. Stormwater treatment and improvements will be installed to support operations at the new facility.

**C-002-063**

It is important to measure estimated emissions from vehicles that are associated with work for construction and operations for the proposed Project because of potential health issues. The growing awareness of PM<sub>2.5</sub> is largely associated with the potential damaging effects they can have on the human body. Primary health effects include damage to the respiratory and cardiovascular systems. Due to the small size of PM<sub>2.5</sub> particles, they can penetrate the deepest parts of the lungs as well as access the gas exchange regions of the lung via diffusion.

Estimated emissions from construction trucks is forecast in the DEIS using the EPA NONROAD emissions model. This model assumes a range of model-year trucks in current and future years, based on general industry trends of retiring old trucks and incorporating newly purchased equipment over time. The DEIS properly described how the Project will satisfy the General Conformity Requirements of the Clean Air Act and these requirements are the regulatory air quality criteria associated with the construction impacts and ensure that the area will not contribute to a violation of the NAAQS. (see FEIS, Volume I, Chapter 3, 3.2). Best management mitigation practices that will be specified for the construction project includes construction equipment that will meet or exceed EPA Tier 2 off-road diesel engine emission standards and on-road equipment meet or exceed EPA 2007 diesel engine emission standards (see FEIS Volume 1, Chapter 3.2.4.1).

**C-002-064**

Alternatives 2 and 3 represent two different possible site configurations after upland improvements have been completed. The maximum TEU throughput for Alternative 2 could be achieved without the container cargo handling equipment efficiencies associated with the equipment of Alternative 3. However, the maximum throughput for Alternative 3 could not be achieved without using the more efficient, electrified equipment. The decision to electrify a terminal requires the potential for to increased marine cargo throughput since substantial investment is required for electrically-powered rubber-tired and rail-mounted gantry container cargo handling equipment.

Please see Standard Response No. 4: Electrification Schedule and Accelerated Schedule for Adoption of Alternative 3 at the beginning of Chapter 6 for additional information.

**C-002-065**

Air quality mitigations are provided within the EIS for construction and operational activities. For construction, there are two mitigations: the application of Best Management Practices and restrictions on older, less controlled equipment. For operations, the mitigations are varied for the different types of equipment in use. Mitigations are provided for ocean-going vessel emissions, on-terminal truck emissions, queue-based truck emissions, power generation, and terminal performance tracking.

In general, the air quality assessment in the DEIS identified decreases in annual emissions for Alternatives 2 and 3 when compared to the No Action Alternative (see Table 12). The air dispersion modeling of emissions indicated that the national ambient air quality standards established to be protective of human health are not exceeded for any of the alternatives. Furthermore, both action alternatives have lower diesel particulate matter emissions in 2020, 2030, and 2040 than the No Action Alternative in 2020 (see FEIS, Volume II, Appendix A).

The construction mitigations require common Best Management Practices to be applied (detailed in the EIS) and, as of the FEIS, will require contractors to impose additional measures. Those measures include prohibiting Tier 0 and Tier 1 off-road equipment, requiring on-road trucks to meet or exceed 2007 vehicle emission standards, and requiring the use of an idle reduction plan.

Mitigations associated with operation of the terminal address vessel emissions, on-terminal truck emissions, queue-based truck emissions, power generation emissions, and describe how the Port will track the terminal's ability to meet the mitigations.

Shore power is expected to play a large role in the mitigation of vessel emissions from the terminal. Based on the Starcrest (2016) memo, the Port expects 30%, 50%, and 70% of calls to utilize shore power for 2020, 2030, and 2040 respectively. The offset of emissions due to shore power are tabulated in Table 13 of the FEIS Air Quality Technical Report located in Volume II, Appendix A of the FEIS. Please see Standard Response No. 3: Use of Shorepower at the beginning of Chapter 6 for additional information on shorepower use and the Ports schedule of deployment and commitment of use.

As part of the NWSA's Northwest Ports Clean Air Strategy, all on-terminal trucks will be required to meet or exceed 2007 diesel standards by 2018. More generally, trucks and other mobile equipment engines are governed by federal EPA regulations that have achieved substantial emission reductions over the last several decades. Emissions from trucks with Alternatives 2 and 3 do not increase over the No Action Alternative because engines are getting cleaner and because older, more polluting trucks are being replaced with the newer trucks. See Volume II, Appendix C for additional information. The fleet of cargo handling equipment used on the terminal is expected to be phased out over time and replaced with newer, cleaner equipment.

The difference, or offset, from no-action is can be quantitatively reviewed using Table 12. This table provides an overall comparison of operation emission trends by alternative and decade. The difference between Alternative 1 and either of the action alternatives represents the efficacy of the mitigations. Similarly, Tables 22, 23, and 24 provide information on how source-specific emissions vary.

#### **C-002-066**

Any potential movement or removal of contaminated soil would be conducted consistent with the MTCA Cleanup Regulation, Dangerous Waste Regulation, and Solid Waste Handling Standards. Potential exposure concerns include airborne dust that could potentially impact surrounding residents. To mitigate this potential exposure concern, standard dust control measures (e.g., water application) may be used during construction. The proposed Project does not anticipate significant work in contaminated areas. See Chapter 3.5, Environmental Health.

#### **C-002-067**

Text has been added to Section 6.1 clarifying that the Port commits to being part of SDOT's ongoing construction coordination program to ensure coordination of project timelines, construction sequencing, traffic control plans and construction staging. The Port would also be part of any coordination program (or construction management plan) established by Sound Transit if Sound Transit proceeds with construction of the light rail line to West Seattle and a new station at Delridge. This has been added to the Mitigation measures for construction in the Transportation Technical Report (see FEIS, Volume II, Appendix C).

**C-002-068**

The Summary Table in the FEIS has been updated to include the additional detail and new information.

**C-002-069**

Delay times for arriving/departing and building of trains are provided in Tables 2 and 3 of the Rail Infrastructure and Train Volume Analysis Memorandum for Terminal 5. The transit crossing closure times are listed in Table 6 of the Memorandum (see FEIS, Volume II, Appendix F).

**C-002-070**

Use of the West Seattle Yard (WSY) would allow greater flexibility in the staging and assembling of a higher number of trains. More groups of cars (cuts) could be moved from the terminal to the WSY when crews or equipment are not available for assembling full trains. However, the WSY already exists and has capacity for the proposed function. Therefore, no mitigation for the WSY would be required. The report text has been changed to describe use of the WSY, but eliminate the discussion of mitigation.

**C-002-071**

The SEPA Rules in WAC 197-11 do not require that a formal scoping summary be prepared. However, the Port posted the scoping comments on the Project Online Open House website for the public to review. Scoping was the first step in the EIS process. During scoping, the Port invited agencies, tribes, and the general public to comment on the likely range of alternatives and areas of impact to be evaluated for the Project. Scoping occurred between October 22, 2015, and November 23, 2015. On November 12, 2015, 48 members of the public attended a public scoping meeting. At the scoping meeting, 3 written comments were received and 17 speakers provided comment. Comments received via email or via the online open house website totaled 79. A total of 96 comments were received during the scoping process. The Port prepared reviewed all of the comments received during the scoping period. The most comments were received on Air, Noise and Traffic issues. After review of the scoping comments received, the Port, as lead agency, made a decision to include the following environmental elements for analysis in the DEIS: Earth, Air Quality, Water Resources, Plants and Animals, Environmental Health, Noise, Land Use, Relationship to Plans and Policies, Aesthetics/Light and Glare, Historic and Cultural Resources, Transportation, Public Services, and Utilities.

**C-002-072**

Please see response to comment C-002-046 for more information about pavement planning.

**C-002-073**

Please see response to comment C-002-039 for information about the Queue Management Plan.

**C-002-074**

The cumulative impacts of the proposed Project-generated trips combined with trips generated by other development growth and major infrastructure projects were addressed through application of the background traffic growth rate. Please see the response to comment C-002-093.

As discussed, the annual traffic growth rate of 1.6 percent that was assumed for background traffic growth is consistent with, or conservatively higher than, City of Seattle model forecasts that have been completed in the vicinity of the Terminal 5 study area. The Draft Comprehensive Plan forecasts estimated traffic generated by build-



out of the City's preferred future land use plan, and included the effect on traffic patterns of planned major infrastructure projects (such as the SR 99 tunnel) and continued implementation of multimodal transportation policies. Text has been added to Section 5.1, Future Traffic Volumes (see FEIS, Volume II, Appendix C), to clarify that based upon the City's Draft Comprehensive Plan projections, the application of the 1.6 percent annual traffic growth conservatively reflects the cumulative traffic generated by the City's expected development growth and major infrastructure improvements that are projected with or without the proposed Project.

**C-002-075**

Section 2.1.5 of the Transportation Technical Report (see FEIS, Volume II, Appendix C) identified the three high priority Move Seattle projects located in the vicinity of Terminal 5 (Lander Street Grade Separation Project, East Marginal Way Corridor Project, and Delridge Way Corridor Project).

As of August, 2016, the only published source available from the City of Seattle indicating project construction priorities is the 2016–2021 Capital Improvement Program, which does not identify funding for construction of any of these three projects within the 6-year time period; however, the Lander Street project is currently under design and alternatives analysis is underway for the two corridor projects. Discussion has been added to Section 3, Construction Impacts of the Transportation Technical Report (see FEIS, Volume II, Appendix C), clarifying that prior to construction, the Port would coordinate with SDOT and Seattle DCI to confirm other planned infrastructure projects that warrant coordination. The Port would participate in any construction coordination processes that SDOT or Sound Transit establishes for major projects in the area.

Although the construction timelines and preferred designs for the Move Seattle projects have not yet been identified by the City of Seattle, text has been added to Section 2.1.5, Future Plans and Projects (see FEIS, Volume II, Appendix C), clarifying the potential relationships of these planned future projects to the proposed Terminal 5 project.

**C-002-076**

The Queue Management Plan described in the response to Comment C-002-039 and included in the Transportation Technical Report (see FEIS, Volume II, Appendix C) would provide infrastructure and protocols intended to increase capacity of the main gate and security gate, and is intended to prevent queuing onto SW Spokane Street without moving or expanding the existing main gate. It is recommended that the existing security check-point (the pre-check gate) be moved to provide additional queue space and capacity. As described in the DEIS, it is the pre-check gate that is the existing bottleneck. The Queue Management Plan would require less stringent operational measures if the Port and the terminal determine that reconfiguration of gate facilities would improve gate operations, queue conditions, service/processing durations, and gate capacity.

**C-002-077**

See FEIS Chapter 3, Section 3.1.1.2 for updated information. The City of Seattle Shoreline Code regulates all land 200 feet waterward of ordinary high water mark as well as all the water and submerged land at this site (see SMC 23.60A. Environmental critical areas within the Shoreline District are regulated by both SMC 23.60A and SMC 25.09, per SMC 23.60A.156.

**C-002-078**

See FEIS, Volume I, Chapter 3, Sections 3.1.1.2 and 3.3.1.7 for updated information and compliance with City code. City of Seattle Environmentally Critical Area Maps (DCI 2016a) identify the Terminal 5 area as having liquefaction-prone soils. Liquefaction zones are considered environmentally sensitive but not ECAs, and require special development considerations. Grading in any ECA would be completed and these areas stabilized by October 31 of the year during which construction would occur. In addition, areas within 100 feet of the ordinary high water mark in the Project area are also ECAs. Other ECAs in the Project area are abandoned landfills and riparian corridors.

**C-002-079**

See FEIS, Volume I, Chapter 3, Sections 3.3 and 3.4 for information on shoreline habitat and fish and wildlife habitat areas and riparian corridors and how they project will comply with City regulations. Additional information has also been added in FEIS, Volume I, Chapter 3, Sections 3.1.1.2 and 3.3.1.7.

**C-002-080**

See FEIS, Volume I, Chapter 3, Sections 3.7 and 3.8 for information on the City Comprehensive Plan under the regulatory context. The proposal is consistent with the goals and objectives of the Duwamish Manufacturing/Industrial Center Plan. The proposal would provide a single, highly efficient facility that would enable the Port to work closely with industrial lease-holders and major carriers. Rehabilitation of Terminal 5 marine cargo facilities is consistent with the Port's principal mission, providing marine shipping infrastructure to accommodate and enhance growth in Seattle's industrial base of shipping, storage, and distribution. The south Elliott Bay and Duwamish industrial area, including continuing beneficial use of the Duwamish Waterway, would be improved as an efficient industrial environment, retaining and creating jobs and trade revenue. The proposed Project is consistent with City comprehensive plan and shoreline plan uses and activities, in an area managed for and committed to industrial functions in an industrial area.

Alternatives 2 and 3 would provide the terminal facilities that could accommodate higher container volumes and assist in reaching the goal of growing seaport annual container volume to more than 3.5 million TEUs. Alternatives 2 and 3 may also advance the optimization of infrastructure investments and financial returns and could play a part in tripling the value of outbound cargo to over \$50 billion.

All alternatives would be required to comply with the ECAs regulations.

**C-002-081**

Figures 1 and 2 have been added to the Transportation Technical Report showing the existing roadway and rail network.

**C-002-082**

The Terminal 5 facility improvements were completed in 1999. Portions of the existing 197-acre site were operating as a marine cargo terminal prior to the Southwest Harbor Cleanup and Redevelopment Project.

**C-002-083**

Section 2.2 of the Transportation Technical Report includes detailed charts showing the growth in traffic on the SW Spokane Street Bridge from 1992 through 2015, average weekday traffic for each month of the year from 2013 when Terminal 5 was operating, and traffic volumes by time of day on an average weekday.

**C-002-084**

A summary of transportation construction impacts has been added to the Summary Table in Chapter 1 of this FEIS.

**C-002-085**

Figure 3 has been added to the Transportation Technical Report, which shows the Heavy Haul Network and off-site study area analysis intersections. See also response to comment C-002-038.

**C-002-086**

Comment acknowledged. This information has been added to the Heavy Haul Network discussion in Section 2.1.2 of the Transportation Technical Report (see FEIS, Volume II, Appendix C).

**C-002-087**

Please see response to comment C-002-039 regarding the proposed Queue Management Plan. The terminal operator would be responsible for implementing operation protocols to prevent the queue from extending onto SW Spokane Street, which could include extending the terminal gate hours and implementing measures to reduce peak truck volumes.

**C-002-088**

Please see response to comments C-002-039 and C-002-087 regarding the proposed Queue Management Plan.

**C-002-089**

Comment acknowledged. The Port's container terminals have been and are expected to be the highest truck generators in Seattle. Please see response to comment C-002-039 regarding the proposed Queue Management Plan.

**C-002-090**

Traffic operations analysis determined that the SW Spokane Street/Terminal 5 Access Bridge intersection could accommodate traffic diverted from the closure of the north leg of the five-way intersection. The intersection is expected to operate at Level of Service (LOS) C or better during the peak hours even if all traffic is diverted from the surface route. This assessment has been added to Section 5.2 of the Transportation Technical Report. Combined with the Gate Queue Management Plan (Please see response to comment C-002-039) and proposed signal system upgrades on SW Spokane Street, queues are not expected to block eastbound through traffic to the Swing Bridge.

It is noted that an alternative mitigation measure for the five-way intersection has been evaluated in the Transportation Technical Report (see FEIS, Volume II, Appendix C), which would retain inbound (northbound) traffic on the north leg of the intersection, and provide advance notification if the crossing is blocked by a train. This was described in response to comment C-002-048, and could be an initial phase of mitigation before train volumes reach a threshold that would warrant full closure. The Port would work with SDOT to determine the most desirable configuration for the five-way intersection and triggers for implementation.

**C-002-091**

The queue analysis performed for the security gate, described in Section 5.3.3 of the Transportation Technical Report, assumed a manual process in which involves a security guard manually checking a driver's Transportation Worker Identification Credential (TWIC) and matching it to the noted features of the driver. No TWIC readers are required. Other terminals (e.g., Oakland Outer Harbor and Savannah) have received Coast Guard approval to implement remote security checking processes that involve automatic TWIC readers, cameras, and biometric

equipment—all of which can increase the capacity compared to the manual check. The queue analysis assuming the manual process reflects the worst-case condition.

**C-002-092**

See responses to comment C-002-039 regarding the proposed Queue Management Plan, and Comment C-002-091 regarding the TWIC readers.

**C-002-093**

It should be noted that the City of Seattle's 2035 Comprehensive Plan update is still in draft form and has not yet been adopted by the City. However, traffic forecasts provided in the transportation appendix of the Mayor's Recommended Draft Plan (May 2016) were reviewed for consistency with the background traffic growth assumption applied in the Terminal 5 analysis, which was based upon observed historical growth on SW Spokane Street (described in Section 2.2.1 of the Transportation Technical Report). The Comprehensive Plan analysis forecasts 2035 traffic conditions with buildout of the City's preferred future land use plan, focusing on projected PM peak hour volume-to-capacity ratios (V/Cs) of vehicular traffic on arterials crossing screenlines defined throughout the City. The existing and projected future V/Cs across the screenlines closest to the Terminal 5 study area, as well as the resulting projected annual growth between them, are summarized as follows:

3.11 Duwamish River, West Seattle Freeway – S Spokane Street:

EB – 2013 V/C = 0.61; 2035 V/C = 0.69; annual growth = 0.6%

WB – 2013 V/C = 0.87; 2035 V/C = 1.15; annual growth = 1.3%

9.12 South of Spokane Street, East Marginal Way S – Airport Way S:

NB – 2013 V/C = 0.47; 2035 V/C = 0.60; annual growth = 1.1%

SB – 2013 V/C = 0.52; 2035 V/C = 0.70; annual growth = 1.4%

In addition, the Draft Comprehensive Plan analysis provides existing and projected future Average Weekday Daily Traffic (AWDT) vehicle volume forecasts for state highways throughout Seattle. The existing and projected volumes for the state highway nearest the Terminal 5 study area, as well as the resulting projected annual growth between them, is summarized as follows:

SR 99, East Marginal Way to West Seattle Bridge:

2013 AWDT = 43,000; 2035 AWDT = 61,300; annual growth = 1.6%

These Draft Comprehensive Plan projections indicate that the Terminal 5 background annual traffic growth assumption of 1.6 percent is conservatively higher than the projected annual growth on arterials crossing the screenlines nearest the study area. This discussion has been added to Section 5.1 of the Transportation Technical Report and is consistent with the projected annual growth on the state highway segment nearest the study area. See also, response to Comment C-002-074.

**C-002-094**

The proposed Project is consistent with the goals of the Port's *Century Agenda*, which listed one of its Strategic Objectives as: "Position the Puget Sound region as a premier international logistics hub." It set a target to "Grow seaport annual container volume to more than 3.5 million TEUs." The *Century Agenda* did not specify where the growth would occur, but previous internal Port planning anticipated that the majority of that growth could be

accommodated at Terminal 5 with appropriate infrastructure upgrades. Later planning efforts associated with the formation of the NWSA identified Terminal 5 as one of two strategic terminals for the NWSA, and the throughput volumes evaluated in the Terminal 5 EIS are consistent with the strategic terminal goal.

**C-002-095**

As noted in Section 2.3 of the Transportation Technical Report, “The [Synchro traffic operations] model was also coded to account for the high volumes of trucks in the area with percentages that range up to 100% for some movements based on existing counts.” For future conditions, the truck percentages were recalculated for each movement to reflect changes in truck volumes associated with Terminal 5.

**C-002-096**

Please see response to comment C-002-112 regarding additional improvement measures proposed for Terminal 7 access.

**C-002-097**

The most recent previous Terminal 5 improvements, completed in 1999, included construction of approximately 30 acres of intermodal rail facilities, including capital project elements designed and implemented to avoid and minimize potential impediments to vehicle access to locations north and east of West Marginal Way Southwest and rail lines serving Terminal 5 and the West Seattle rail yard. The FEIS for the Southwest Harbor Cleanup and Redevelopment Project (November 1994) stated, “Trains would cross this section of West Marginal Way SW, requiring 16 to 50 minutes to clear the intersection”. The project included construction of grade separated overpass, available for all traffic and construction of a grade-level alternative access road connecting industrial locations north and east of the rail lines to the overpass and to West Marginal Way Southwest, near the Duwamish Waterway rail bridge rail line curve. The overpass and grade-level access road, combined with real-time automated message signs and fixed way-finding signs, provided for continuous vehicle access when trains cross West Marginal Way Southwest. The grade-level access road removes the potential for rail blockages, allowing trucks and other vehicles, including emergency vehicles, to access industrial sites located north and east of the rail lines at the southeast margin of Terminal 5 by using two routes: (1) access to the Terminal 5 access bridge overpass via Southwest Spokane Street, connecting to the west ramp to the low-level Duwamish Waterway bridge and (2) entrance to the grade-level access road via two curb-cut driveway entrances located on the east margin of West Marginal Way Southwest south of the high-level bridge columns, adjacent to the “Riverside Mill” industrial property. The infrastructure described above for alternative access was completed prior to the terminal opening in 1999.

Each train crossing generated by the currently proposed Project would result in similar street crossing times, compared with conditions projected in 1999. The same continuously accessible alternative routes will be available for use with the present Terminal 5 proposal. Measures to further improve access to businesses located north and east of the rail lines and West Marginal Way Southwest are proposed for the present Terminal 5 improvements. In addition, please see response to comment C-002-112.

**C-002-098**

Please see response to comment C-002-043 for information on non-motorized forms of transportation.

**C-002-099**

The reference was corrected. The information about recommended signal improvements for the SW Spokane Street corridor are presented in Section 3.11.4 Mitigation. The DEIS stated that the information could be found in Section 3.11.3 and that was an error.

**C-002-100**

The Queue Management Plan recommends providing two security gate lanes (only one currently exists). The staffing level, however, would be dependent on the expected truck volume. The queuing analysis presented in Section 5.3.3 of the Transportation Technical Report reflects the assumption that with two gates staffed by only one guard, the capacity **per lane** would decrease compared to existing conditions (140 trucks per hour per lane with two lanes compared to 180 trucks per lane with one lane). The reduction is caused by the security guard having to move back and forth between the lanes. These service rates are reasonable, and as noted in Comment C-002-091, reflect a conservatively high service time with a manual identification check.

**C-002-101**

Please see response to comment C-002-076 for information on the proposed Queue Management Plan.

**C-002-102**

Please see response to comments C-002-048 and C-002-097 for information on closure of crossings.

**C-002-103**

The traffic safety analysis does include all modes of travel. A specific request for just bicycle and pedestrian collisions was made to SDOT to ensure that those modes of travel were included with the original dataset. There were four additional bicycle collisions that occurred near the SW Spokane Street/11<sup>th</sup> Avenue SW intersection. These have been added to the table summary and text in Section 2.5 of the Transportation Technical Report.

**C-002-104**

Please see response to comment C-002-043.

**C-002-105**

Per the 2000 and 2010 Census, an estimated 1 percent of the employees could walk or bike to work and 3 percent could use transit. At peak employment (Alternative 3 during a Design Day), the Project is expected to generate a net increase of 4 bike trips (2 in and 2 out) and 10 transit trips (5 in and 5 out) per day. Further detail is provided in Section 4.2.4 of the Transportation Technical Report.

**C-002-106**

Comment acknowledged. The suggested text has been added to Section 2.8 of the Transportation Technical Report (see FEIS, Volume II, Appendix C).

**C-002-107**

Comment acknowledged. Similar text was included in Section 2.8 of the Transportation Technical Report (see FEIS, Volume II, Appendix C).

**C-002-108**

Please see response to comment C-002-047 for information on pedestrian access.

**C-002-109**

Appendix F of the DEIS (and reprinted in the FEIS) included detailed information and a map of the existing rail crossings. The only at-grade crossing of SW Spokane Street in the site vicinity is a lead track that connects to Terminal 18 and West Way (an agricultural feed company) along the East Waterway (EW).

**C-002-110**

The increased truck and employee trips generated by Terminal 5 would not adversely affect bike travel in the SW Spokane Street corridor since the bike path is located on the south side of the bridge and does not cross the Terminal 5 Access Bridge, which connects to the north side of the bridge. Also, employees are expected to add very few bike/walk trips (up to 4 per day at peak employment levels), as discussed in Section 4.2.4 of the Transportation Technical Report. Therefore, bicycle mitigation is not warranted for the Project.

**C-002-111**

Volume I, Chapter 3, Section 11 has been revised and the construction impacts and mitigation are now consistent between Table 1.3-1 and Volume II, Appendix C.

**C-002-112**

The Port has met with adjacent businesses located north and east of the rail lines serving Terminal 5 and the West Seattle Rail Yard to discuss Terminal 5 and the potential access impacts if the surface connection via West Marginal Way is blocked by a train or permanently closed. To improve access for local businesses, the Port will work with SDOT staff and the Seattle Fire Department to reconfigure the Terminal 5 Access Bridge to provide two inbound (westbound) lanes, with one of the lanes being signed for Terminal 5 only and the other being striped and signed for "Right Turn Only" onto 26<sup>th</sup> Avenue SW in order to provide a bypass lane for local businesses. Also, the Port will work with the Terminal 5 shipping operator to allow trucks from adjacent businesses to enter the Terminal 5 queue line from 26<sup>th</sup> Avenue SW. In the past, these locally-generated trucks were required to exit the terminal via the surface route and re-enter the queue line via the Terminal 5 Access Bridge. Finally, the Port will work with the businesses north and east of the rail lines to reestablish lane striping and "No Parking" signage to maintain the alternative grade-level access route serving businesses with unimpeded truck access via the access road entrance south of the high-level West Seattle bridge columns, at the east margin of West Marginal Way Southwest, north of the Southwest Marginal Place/West Marginal Way Southwest intersection. Mitigation to improve local access for businesses at Terminal 7 has been added to Section 6.2.3 of the Transportation Technical Report.

**C-002-113**

Please see response to comment C-002-112 for information on business access.

**C-002-114**

Comment acknowledged. If SDOT prefers, it could take the lead for design and implementation of signal improvements that are recommended as mitigation measures. Alternatively, the Port could pursue design and implementation through the City of Seattle's Street Improvement Permit process with approved engineers and contractors. Under either delivery method, the Port would be responsible for all design, review, and construction costs.

**C-002-115**

Please see response to comments C-002-039 and C-002-087 regarding the proposed Queue Management Plan.

**C-002-116**

Please see response to comment C-002-091 related to TWIC readers. Please also see comment C-002-039 regarding Queue Management Plan.

**C-002-117**

The referenced text has been replaced with the recommendations in the Queue Management Plan, described in Section 6.2.4 and provided in Appendix B of the Transportation Technical Report (see FEIS, Volume II, Appendix C).

**C-002-118**

Please see response to comment C-002-045 regarding ITS treatments.

**C-002-119**

Please see responses to comment C-002-039 regarding Queue Management Plan (see FEIS, Volume II, Appendix C) and comment C-002-124 regarding the reservation system.

**C-002-120**

Comment acknowledged. Alternative 2 represents the necessary physical improvement and the anticipated level of throughput required for both the Port and a future site operator to make efficient and effective use of the terminal. The Port anticipates working toward authorizations necessary for project infrastructure improvements sufficient for throughput up to 1.3 million TEUS. As such, the Project includes increasing electrical capacity up to 26 MV, not the larger capacity considered in Alternative 3 at this time. No impacts to the bike counter are anticipated.

**C-002-121**

The comment requests that Appendix C be revised to be consistent with recommendations made in DEIS Appendix I, Sections 3.11.9 and 3.11.10. However, Appendix I is the Sea Level Rise Memo with no Section 3.11.9 and 3.11.10 identified. Appendix C is the Transportation Technical Report in Volume I. The Port conferred with SDOT to clarify the intended parts of the document that are being referred to and the contact believes that it was meant to read Appendix C rather than Appendix I. Revisions have been made to both the narrative in Sections 3.11.9 and 3.11.10 to be consistent with FEIS, Volume II, Appendix C, Transportation Technical Report.

**C-002-122**

The assumed percentages of discharge and load are based on analysis of data collected for vessels making Pacific Northwest calls on a Pacific rotation. The frequency of large vessel service at Terminal 5 is anticipated to increase after resumption of container cargo operations in 2020, and grow in frequency or percentage of discharge and load toward Terminal 5's maximum capacity. This is true for both Alternatives 2 and 3. Alternative 1 cannot accommodate vessels of this size, and is assuming a higher frequency of lower-capacity vessels. The assumed percentages are based on experience with vessels making a Pacific Northwest call on a Pacific rotation. Despite anticipated increases in cargo volume, 50 to 65 percent for Alternatives 2 and 3, the number of vessels serving Terminal 5 and cumulative time at berth will not increase, compared with the frequency and berth occupancy



recorded for Terminal 5 during the period 2000–2013. Larger vessels will serve Terminal 5, transporting increased cargo volumes, while the number of vessels and time berthed at the site will be not increase.

The vessels are weekly and the calls are weekly. The year 2030 is anticipated to grow to a throughput capacity of approximately 1.3M TEU. This assumption is for both Alternatives 2 and 3. It is possible that a future ship rotation would include 18,000-TEU vessels instead of the projected 14,000; however, the quantity of discharge or load would not necessarily increase (therefore reducing the percentage). This is true for both Alternatives 2 and 3.

**C-002-123**

Staffing required when a ship is in port is the responsibility of the terminal operator and steamship line that may dictate the desired turnaround schedule. Typically, the steamship lines seek to minimize turnaround times, but it depends on the ship capacity, market conditions, the weather and other factors. The traffic volumes presented in Sections 4.2 and 5.1 of the Transportation Technical Report assume a worst-case condition assuming rapid unloading and reloading of the vessel. A double-shift within the terminal and on-dock intermodal yard was assumed for Alternative 3; however, for Alternative 2 only a single gate shift was assumed. Slower turnaround times would result in lower peak activities on a given day.

**C-002-124**

The Truck Queue Management Plan developed for Terminal 5, described in Section 6.2.4 and provided in Appendix B of the Transportation Technical Report, lists many possible measures that the terminal operator could use to avoid and reduce queues at the truck gates. One potential measure is a “truck flow management system” to reduce the truck volume during typically high-volume periods. A truck reservation system is just one potential flow management tool; other tools include extended gate hours, higher fees for peak delivery times, and a combination of programs. Reservation systems have had mixed results in various markets since they affect all hand-offs along the logistics supply chain including many that are not controlled by the terminal operator such as when the customer is open to pick-up/drop-off a containers or traffic congestion that a trucker may encounter along a route. Reservation systems have worked the best in large markets where customers and warehouses have extended hours that match extended gate hours, and the reservation system can help even out the truck flows between the normal and extended gate hours. Until more Puget Sound area businesses extend their delivery hours, other measures may be required to reduce the queue. Such measures are described in the Truck Queue Management Plan.

**C-002-125**

Please see response to comment C-002-038 for information on the expansion of the geographic area of the transportation analysis.

**C-002-126**

Since construction of the Terminal 5 Access Bridge, the surface route to Terminal 5 has been considered the secondary access. In the past, at times of high truck activity, trucks were discouraged (and even prohibited by the terminal operator) from short-cutting the queue line by using the surface access, and were directed to enter the terminal via the Terminal 5 bridge.

**C-002-127**

Additional streets and Terminal 7 have been labeled on Figure 1 and Figure 2 of the Transportation Technical Report (see FEIS, Volume II, Appendix C). It is noted that Terminal 7 is a private facility, not owned by the Port.

**C-002-128**

Comment acknowledged. The North Argo Access only provides for southbound (inbound) trucks to the Union Pacific's Argo Yard. Northbound (outbound) traffic must return through the Diagonal Way S/East Marginal Way S intersection. The trip assignments performed for the Project and presented in Section 4.3 of the Transportation Technical Report did assume this pattern.

**C-002-129**

The BNSF operates two separate intermodal loading yards: Main SIG and North SIG. The Main SIG Yard is accessed from S Hanford Street, and North SIG is accessed from S Massachusetts Street via Colorado Avenue N. There is no internal connection between these two loading areas. Historically, container traffic from Terminal 5 and 18 has been handled at Main SIG, while containers from Terminal 46 have been handled at North SIG. The analysis assumed that pattern would continue since trucks entering and exiting Main SIG at S Hanford Street would have a larger operational impact at the East Marginal Way S/S Hanford Street intersection. The access to North SIG via Colorado Avenue S and the Little "h" structure over the railyard lead tracks was designed to accommodate trucks generated by the recently reconfigured North SIG yard no matter where they originate, including from Terminal 5.

**C-002-130**

Queue analysis was performed for the worst-case volumes assuming a high percentage of containers would be drayed to off-dock intermodal yards, and would need to pass through the terminal gates. Please see response to comment C-002-039 for strategies to manage the queue.

**C-002-131**

The information about past improvements was provided for context, and to show that much of the infrastructure needed to support the terminal (including rail grade separations at several key locations) is already in place. It is acknowledged that additional mitigation would be required to support growth at Terminal 5 beyond that assumed for the No Action Alternative, as presented in Section 6 of the Transportation Technical Report.

**C-002-132**

Text has been added to the Section 2.1.5, Future Plans and Policies (see FEIS, Volume II, Appendix C), discussion of state and regional designations describing WSDOT's current effort in designating Critical Urban and Rural Freight Corridors, including clarification that the designation is still in draft form.

**C-002-133**

It should be noted that the City of Seattle's Comprehensive Plan Update is still in draft form and has not been finalized or adopted by the City. Because adoption of the updated plan was anticipated to occur in 2016, the DEIS transportation policy assessment focused on draft City policies that were available at the time; the draft policies are listed verbatim from the June 2015 draft, which is cited in the DEIS Transportation Report. An updated draft (the Mayor's Draft Comprehensive Plan) was issued by the City in May 2016, after the May 2016 issuance of the Terminal 5 DEIS. Several policies, including T5.2 and T5.7, were revised in the updated draft plan, though it is noted that the policy listed as T5.7 in the June 2015 draft is still provided as T5.6 in the Mayor's plan, with slightly modified language. It is also noted the language of T5.3 is unchanged in the Mayor's draft, and still refers to "efficient movement of truck traffic," and that none of the current draft freight policies refer to overnight parking. The

Mayor's draft policy T5.7 currently states, "Support efficient and safe movement of goods by rail where appropriate, and promote efficient operation of freight rail lines and intermodal yards."

The City of Seattle's policy revisions and subsequent comments illustrate the challenge of reviewing policies that are still in draft form. Since a specific adoption date for the City's Comprehensive Plan update has not yet been identified, the Section 2.1.5 discussion has been modified in the Transportation Technical Report to include the City's current *adopted* relevant freight policies (from the 2005 Comprehensive Plan, as amended) which are broader but still consistent with the current draft policy updates. The discussion of the expected policy updates has been modified to reflect the policies in the Mayor's Draft Comprehensive Plan, but the discussion has also been modified to clarify that the policies are not official until they have been adopted by the City, and until that point, are subject to change.

A reference to the City of Seattle's Complete Streets ordinance has been added to Section 2.1.5 of the Transportation Technical Report, but the discussion also clarifies that the Complete Streets ordinance is a planning tool implemented by the City to identify the appropriate transportation network and improvement priorities needed to accommodate all modes of travel—it is not a tool implemented at the development project level.

The City policy discussion has also been revised to include discussion of policies that support integration of other modal improvements with freight mobility improvements. It should be noted that transportation impact analysis for new development, including the analysis that was completed for the proposed Project, includes evaluation of potential impacts on all transportation modes, including the effect on existing and planned infrastructure and services identified by the City through Complete Streets assessments. Therefore, the analysis completed for the Project is consistent with the City's multimodal policies.

#### **C-002-134**

The description in Section 2.1.5 has been refined to clarify that the Lower Spokane Street Freight Only Lanes Pilot Project is an evaluation project, while the other projects have been recommended to address capacity or access needs. However, it is noted that this distinction is not emphasized in the Freight Access Project (FAP) report, which is the source of the discussion about this Project in the Transportation Technical Report (see FEIS, Volume II, Appendix C).

#### **C-002-135**

Information about the Port's FRATIS (U.S. Department of Transportation Freight Advanced Traveler Information Systems) grant and ITS infrastructure in the site vicinity has been added to Section 2.1.3 of the Transportation Technical Report (see FEIS, Volume II, Appendix C).

#### **C-002-136**

The Draft Freight Master Plan was completed after the May 2016 issuance of the DEIS. Section 2.1.5 of the Transportation Technical Report has been updated to reflect the projects identified in the Draft Freight Master Plan, in addition to the projects identified for the FAP, which are unchanged from the draft that was reviewed for the Transportation Technical Report (see FEIS, Volume II, Appendix C).

Two of the projects from the Seattle Freight Master Plan—upgrading the intersection at East Marginal Way/S Hanford Street and ITS improvements along S Spokane Street—are incorporated into the mitigation recommended for Terminal 5. The signal improvements recommended for SW Spokane Street as part of the mitigation package

would include some ITS elements to coordinate signal operations with bridge openings and rail crossing, where possible.

**C-002-137**

Additional maps have been provided as Figures 1, 2 and 3 in the Transportation Technical Report (see FEIS, Volume II, Appendix C) to show the expanded study area and to show additional transportation features close to the site. However, it is not reasonable for a project-level impact analysis to map all future network modal recommendations for an expanded study area that would not be adversely impacted by the Project; these would more typically be provided in long-range area-wide plans.

**C-002-138**

Please see response to comment C-002-042 for information on Sound Transit proposals.

**C-002-139**

Please see response to comment C-002-042 for information on Sound Transit proposals.

**C-002-140**

Background growth rates were applied to determine future non-project volumes. The net change in truck and vehicle trips generated by Terminal 5 Alternatives 2 and 3 were then added on top of that background growth. This is described in Sections 4.1, 4.2 and 5.1 of the Transportation Technical Report.

**C-002-141**

Section 2.2 of the Transportation Technical Report (see FEIS, Volume II, Appendix C) includes detailed charts showing the growth in traffic on the SW Spokane Street Bridge from 1992 through 2015. It also includes a discussion of how traffic volumes on the bridge increased substantially between 2011 and 2013 due to construction on the Spokane Street Viaduct.

**C-002-142**

The gate open and close assumptions have been added to the Figure 30 queue charts in the Transportation Technical Report.

**C-002-143**

The Gate Queue Management Plan, described in Section 6.2.4 and provided in Appendix B of the Transportation Technical Report (See FEIS, Volume II, Appendix C), identifies infrastructure improvements for the gate. One measure is to connect the terminal to the NWSA's Wait Time Awareness System or similar application that distributes information about gate and terminal wait times to truck drivers and dispatchers through a mobile phone application or web-based interface.

**C-002-144**

Comment noted. Text has been revised in Section 2.4 of the Transportation Technical Report (see FEIS, Volume II, Appendix C).

**C-002-145**

Text has been revised to eliminate term “accident” In Section 2.5 of the Transportation Technical Report (see FEIS, Volume II, Appendix C).

**C-002-146**

The requested collision information that is available has been added to the text and table in Section 2.5 of the Transportation Technical Report (see FEIS, Volume II, Appendix C). The City of Seattle’s collision reports include the number of injuries but not the severity of the injuries.

**C-002-147**

Comment noted. Text has been added as suggested in Section 2.8 of the Transportation Technical Report (see FEIS, Volume II, Appendix C).

**C-002-148**

Text has been added to Section 2.8 related to the bike path west of Terminal 5 and the fact that it must cross the T-18 driveway and can be affected by truck queues at that location. Additional research was also performed related to bicycle collisions along the SW Spokane Street. While there have been four collisions near the SW Spokane Street/11<sup>th</sup> Avenue SW intersection in the past four years, there have been none at the Terminal 5 Access Bridge, and none at the Terminal 18 driveway. (See FEIS, Volume II, Appendix C).

**C-002-149**

The site is an industrial marine cargo terminal and there is very little vegetation on the terminal. There are adequate sidewalks between the bus stops along SW Spokane Street and the terminal. Text has been added to Section 2.8 of the Transportation Technical Report indicating that there is no sidewalk along the north side of West Marginal Way, south of Chelan Avenue SW, due to the proximity of the railroad tracks, but that there are wide unpaved areas between the curb and railroad tracks that are used by pedestrians; also, West Marginal Way SW has intermittent sections of gravel walkways behind a raised curb.

SDOT recently completed short-term bicycle improvements at and near the five-legged intersection of SW Spokane Street/W Marginal Way SW/Chelan Avenue SW, and is considering long-range improvements.

There is vegetation along sidewalks on Chelan Ave SW, the bike path, and on West Marginal Way leading to the administration building and site entrance at the terminal. However, there are currently no plans to add street trees. The Port will work with the City to fulfill requirements as per City code.

**C-002-150**

The Project would generate few walking trips, most of which would be employees walking from nearby bus stops or a future light rail station at Delridge. The employee trip generation described in Section 4.2.4 of the Transportation Technical Report has been updated to reflect trips from various modes. The proposed Project is expected to generate a net increase of 4 walk/bike trips (2 in and 2 out) and 10 transit trips (5 in and 5 out) per day. There are adequate sidewalks between the bus stops along SW Spokane Street and the terminal. Text has been added to Section 2.8 of the Transportation Technical Report indicating that there is no sidewalk along the north side of West Marginal Way, south of Chelan Avenue SW, due to the proximity of the railroad tracks, but that there are wide

unpaved areas between the curb and railroad tracks that are used by pedestrians; also, West Marginal Way SW has intermittent sections of gravel walkways behind a raised curb.

**C-002-151**

The referenced figure is Figure 13 in the updated Transportation Technical Report. The figure name has been changed to remove the word "Potential." Footnote was added to state that, "The green bicycle lanes were added to the intersection in 2015." (see FEIS, Volume II, Appendix C).

**C-002-152**

Please see response to comment C-002-043 regarding pedestrian access to the terminal.

**C-002-153**

Comment noted. Text has been changed in Sections 2.8 and 5.7 of the Transportation Technical Report as suggested. (see FEIS, Volume II, Appendix C).

**C-002-154**

Comment noted. Please see response to comment C-002-043 for information on pedestrian access.

**C-002-155**

Text changed per suggestion. Please see response to comment C-002-147 for information on SDOT coordination.

**C-002-156**

Trip generation for the employees previously assumed that 100 percent would be by single-occupant vehicle. The trip generation estimates have been adjusted to account for use of carpools, transit, walk, biking modes of travel. Based on data from the 2000 and 2010 Census, it was assumed that 96 percent of the employees would commute by personal vehicle (77 percent by single-occupant vehicle and 19 percent by carpool), 1 percent would walk or bike to work, and 3 percent would use transit. The average vehicle occupancy was assumed to be 1.2 persons per vehicle. These adjustments reduced the number of employee trips for all alternatives, and the changes are presented in Sections 4.2.4 and 4.3.2 of the Transportation Technical Report (see FEIS, Volume II, Appendix C). LOS analysis was also updated to reflect the low trip generation assumptions with results presented in Section 5.2.

**C-002-157**

Comment noted, a haul route plan has been added to the mitigation measures in Section 6.1 of the Transportation Technical Report. (See FEIS, Volume II, Appendix C).

**C-002-158**

Traffic operations analysis was performed for the intersection of SW Spokane Street/Harbor Avenue SW, which addresses potential impacts to the Alki corridor. Traffic signal upgrades were identified as mitigation for that intersection in Section 6.1 of the Transportation Technical Report (see FEIS, Volume II, Appendix C).

**C-002-159**

Extended gate hours are one tool that the terminal operator could use to avoid and manage truck queues. This is listed in the Gate Queue Management Plan (see FEIS, Volume II, Appendix C).

**C-002-160**

Changes in terminal operations limiting gate access precipitated queuing on streets in 2011. Truck congestion at the terminal in 2011 was related to a work slowdown that restricted the capacity of the gate. A Gate Queue Management Plan has been developed for Terminal 5 that has many operating measures that could be implemented to avoid similar queues, including extending the gate hours. The Plan, described in Section 6.2.4 of the Transportation Technical Report (See FEIS, Volume II, Appendix C), also includes protocols to implement if incidents (such as a work slowdown or computer malfunctions) were to occur in the future.

**C-002-161**

Comment noted.

**C-002-162**

See responses to Comment C-002-039 regarding Queue Management Plan (see FEIS, Volume II, Appendix C), and Comment C-002-124 regarding a reservation system.

**C-002-163**

The data illustrated in Figure 14 (Figure 16 in the updated Transportation Technical Report) did include two large ship arrivals on the same day: an 11,288-TEU ship and a 8,566-TEU ship on September 25, 2015. A total of 10,924 TEUs were offloaded from those ships. This is discussed in Section 4.1.5.

**C-002-164**

The existing cranes at Terminal 5 can accommodate ships with up to about 6,000 TEUs each. As shown in Table 1 of the Transportation Technical Report, the No Action condition assumed that two of the six calls per week would be in a 5,500-TEU ship and the rest would be smaller. The Project alternatives were compared to that condition. See also response to Comment C-002-131.

**C-002-165**

Please see response to comments C-002-038 and C-002-046 for information on pavement planning.

**C-002-166**

Please see response to comment C-002-124 for information on truck trips.

**C-002-167**

The terminal often operates with a second shift to service the ship and on-dock intermodal yard. However, even when containers are being moved within the terminal, the gates typically only operate with a single daytime shift. The references to a second gate shift reflect expanded gate hours. The proposed Queue Management Plan, described in Section 6.2.4 and provided in Appendix B of the Transportation Technical Report (see FEIS, Volume II, Appendix C) does include a provision to extend gate hours if needed to prevent queuing onto SW Spokane Street.

**C-002-168**

Container cargo truck drivers serving all marine terminal sites in Elliott Bay may use restroom facilities located at terminal entrance/exit gate areas. The existing Terminal 5 container cargo facility includes a pull-through truck

access area, allowing drivers to park safely, in the event of equipment maintenance, attending to cargo documentation, and for access to restrooms.

**C-002-169**

Please see response to comment C-002-041 for information on mitigation.

**C-002-170**

Please see response to comment C-002-038 for information on the expansion of the geographic area for the transportation analysis.

**C-002-171**

Text has been added to Section 4.3.1 of the Transportation Technical Report to describe the egress route from the Argo Yard, which uses East Marginal Way north of Diagonal Avenue S. It is expected that fewer than 10 trucks during the AM peak hour and no trucks during the PM peak hour would use that return route from Argo. No additional analysis of the East Marginal Way/Diagonal Avenue S intersection would be needed for this level of truck traffic.

**C-002-172**

The SR 509 extension received funding as part of the 2015 Connecting Washington funding package passed by the Legislature in 2015. The Pacific Sound Regional Council's (PSRC) Regional Capacity Projects List indicates that the project has been conditionally approved for right-of-way purchase. The Project is tentatively scheduled to be complete by 2031.

Because the Terminal 5 analysis evaluates long-range analysis years through 2040, adjustments for "pipeline" project trips—which are appropriate for more conventional project-level analyses that evaluate a near-term year of project completion—were not applied. However, as discussed in detail in the responses to Comment C-002-074 and C-002-093, the application of the 1.6 percent annual traffic growth conservatively reflects the cumulative traffic generated by the City of Seattle's expected development growth (including 2035 buildout of the City's future land use map, and extending growth assumptions beyond to 2040) and major infrastructure improvements that are projected with or without the proposed Project. Therefore, the impact analysis reflects cumulative conditions.

**C-002-173**

Alternative 2 would require more traffic-related mitigation than Alternative 3 since it would concentrate truck volumes into the daytime hours. The transportation mitigation recommended for Terminal 5 was developed for this higher condition with Alternative 2 and would also mitigate impacts of Alternative 3.

**C-002-174**

Comment noted that SDOT is currently studying various channelization options for East Marginal Way, but no analysis for those options was available at the time of this study, and there is not yet a decision related to SDOT preferred option. Therefore, the existing lane configuration was assumed for all conditions and provides a basis to compare the potential Terminal 5 impacts.



**C-002-175**

Please see response to comment C-002-039 regarding Queue Management Plan and Section 6.2.4 of the Transportation Technical Report (See FEIS, Volume II, Appendix C).

**C-002-176**

Please see response to comment C-002-039 regarding Queue Management Plan and Section 6.2.4 of the Transportation Technical Report (See FEIS, Volume II, Appendix C).

**C-002-177**

Please see response to comment C-002-039 regarding Queue Management Plan and Section 6.2.4 of the Transportation Technical Report (See FEIS, Volume II, Appendix C).

**C-002-178**

Please see response to comment C-002-039 regarding Queue Management Plan and Section 6.2.4 of the Transportation Technical Report (See FEIS, Volume II, Appendix C).

**C-002-179**

Please see response to comment C-002-039 regarding Queue Management Plan and Section 6.2.4 of the Transportation Technical Report (See FEIS, Volume II, Appendix C).

**C-002-180**

Please see response to comment C-002-039 regarding Queue Management Plan and Section 6.2.4 of the Transportation Technical Report (See FEIS, Volume II, Appendix C).

**C-002-181**

The Port agrees that queues will occur during the lunch peak. The bars on the chart were inadvertently eliminated. This has been fixed in Figure 30 of the Transportation Technical Report (See FEIS, Volume II, Appendix C). The peak queues are still expected to occur in the hour following a lunch break.

**C-002-182**

Please see response to comment C-002-039 regarding Queue Management Plan (See FEIS, Volume II, Appendix C), and comment C-002-124 regarding a reservation system.

**C-002-183**

Please see response to comment C-002-043 regarding pedestrian access to the terminal.

**C-002-184**

Trip generation has been updated to reflect historical use of walk, bike, and transit modes of travel by employees who work in the site vicinity. Per the 2000 and 2010 Census, an estimated 1 percent of the employees could walk or bike to work and 3 percent could use transit. At peak employment (Alternative 3 during a Design Day), the proposed Project is expected to generate a net increase of 4 bike trips (2 in and 2 out) and 10 transit trips (5 in and 5 out) per day. Further detail is provided in Section 4.2 of the Transportation Technical Report. It is true that the terminal operator could be subject to the State's Commute Trip Reduction law if its employment exceeds 100 during the

morning peak period. However, there is no record that any of the container terminals in Seattle have been subject to the Commute Trip Reduction law (see FEIS, Volume II, Appendix C).

**C-002-185**

The statement in Section 5.7 of the Transportation Technical Report has been changed. A new pedestrian crossing phase would be required, and it could run concurrent with the Terminal 5 Access Bridge phase (see FEIS, Volume II, Appendix C).

**C-002-186**

The text has been modified as requested in Sections 2.8 and 5.7 of the Transportation Technical Report (see FEIS, Volume II, Appendix C).

**C-002-187**

Please see response to comment C-002-047 for information on parking.

**C-002-188**

Text has been added to Section 5.7 of the Transportation Technical Report to clarify that the Project would not adversely affect bicycle travel in the site vicinity, and there is no justification that the Port should construct the bicycle improvement as mitigation.

**C-002-189**

The off-site intersection improvements recommended for the Project are primarily signal enhancements. These would not affect pedestrian or bicycle movements since the minimum times required for a crossing would need to be retained. At the five-way intersection of West Marginal Way/Chelan Avenue SW/SW Spokane Street, the mitigation could involve prohibiting vehicular movements, but pedestrian crossings and surface access to the terminal would be retained.

**C-002-190**

Please see response to comment C-002-048 for information on emergency access.

**C-002-191**

Please see response to comment C-002-124 for information on the proposed Queue Management Plan.



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800.552.3565  
(hablamos español)

**Fax**  
206.343.7522

**Mail**  
1904 Third Avenue, Suite 105  
Seattle, WA 98101-3317

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July 8, 2016

Paul Meyer  
Manager, Environmental Permitting and Compliance  
Port of Seattle  
P.O. Box 1209  
Seattle, WA 98111

Re: Terminal 5 Draft Environmental Impact Statement (DEIS)

Dear Mr. Meyer,

Thank you for the opportunity to provide comments on the Terminal 5 Improvements Draft Environment Impact Statement (DEIS). As with our December 2015 scoping letter, we focus our comments on protecting air quality and public health.

*All-Electric Alternative 3 is Essential to Protect Health and Reduce Related Cancer Risk*

Alternative 3 for the improvement of Terminal 5, which includes electrification of terminal operations, is more protective of public health than Alternatives 1 and 2. Alternative 3 will result in the lowest health impact (cancer and non-cancer) on surrounding communities, as well as fewer GHG emissions over the lifetime of the project. Benefits of Alternative 3 in 2040 include:

- Over 70% less in cancer risk from diesel particle exposure compared to Alternative 2 at nearby residences (also over 70% compared to Alternative 1)<sup>1</sup>;
- 30% fewer harmful fine particulate (PM<sub>2.5</sub>) emissions compared to Alternative 2 (over 35% fewer compared to Alternative 1)<sup>2</sup>;
- 30% fewer nitrogen dioxide (NO<sub>2</sub>) emissions compared to Alternative 2 (over 45% fewer compared to Alternative 1)<sup>2</sup>;
- Almost 50% fewer greenhouse gas (GHG) emissions compared to Alternative 2 (over 35% fewer compared to Alternative 1)<sup>3</sup>; and
- Lower incidences of project-related asthma and respiratory hospital admissions and cardiovascular and all-cause mortality as compared to Alternatives 2 and 1.<sup>4</sup>

Alternative 3 is consistent with the goals outlined in the Northwest Ports Clean Air Strategy, with lower pollution diesel and GHG emissions per ton of cargo shipped, and makes progress towards the Port's Century agenda goal to reduce GHG emissions by 50%.<sup>5</sup>

Emerging health research increasingly supports that there are no "safe threshold" exposure levels for pollutants such as PM<sub>2.5</sub> and diesel exhaust.<sup>6</sup> This is particularly true for sensitive populations such as children, the elderly, and people with preexisting conditions.

Alternatives 1 and 2 do not protect public health to the extent that Alternative 3 does, with over 70% less cancer risk. Alternative 3 also provides GHG reduction benefits over Alternatives 1 and 2 of 50% and 35%, respectively. In addition, modeled estimates for Alternatives 1 and 2 show NO<sub>2</sub> levels approaching the 1-

1

R-001-001

hour NO<sub>2</sub> National Ambient Air Quality Standard (NAAQS), within 2% and 4% of the NAAQS, respectively.<sup>7,8</sup> We strongly recommend that the Port pursue Alternative 3, and that the Port do so on an accelerated timeframe, as described below.

R-001-001  
(cont.)

*Accelerate Alternative 3 Pacing*

We request that the final environmental impact statement (FEIS) further describe and elaborate on the shore power benchmarks used based on the 2016 Starcrest Consulting Memo<sup>9</sup> (30% efficacy by 2020, 50% by 2030, and 70% by 2040). We also request that the Port identify and evaluate an additional Alternative 4 in the FEIS that accelerates the timeframe for shore power (or equivalent) adoption beyond the benchmarks included in the DEIS, in addition to the upland revisions included in Alternative 3. Major ports in California are required to achieve 50% shore power (or equivalent) today, and 80% shore power by 2020.<sup>10</sup> Ships calling T5 in the future may call California on the same string. An acceleration of Alternative 3 pacing would allow health benefits and GHG reduction goals to be realized earlier, consistent with the Port's goal to be the greenest and most energy efficient port in North America.

R-001-002

The Port is well-positioned to be the greenest and most energy efficient port, with an electric power supply that obtains >90% of its power from non-fossil fuel sources. California mandates shore power at a much faster schedule (80% by 2020),<sup>11</sup> and if the West Coast ports were united on this requirement, adoption by shipping lines would be more likely and the Port wouldn't compromise its competitiveness. We understand that a California-like shore power timeline would likely require active measures to ensure a ship plug-in rate higher than what would likely occur relying on California or Chinese measures only (the approach outlined in the Starcrest memo). Given the health and GHG benefits and the possibility they could be realized decades sooner, we request this Alternative 4 be analyzed in the FEIS.

R-001-003

*Mitigation and Monitoring – Construction Phase*

We request that the Port commit to implement the cleanest Tier 4 construction equipment<sup>12</sup> to minimize harmful health impacts from diesel exhaust.

R-001-004

*Mitigation and Monitoring – Longterm*

We request that the FEIS identify how activities and emissions will be tracked ("monitored") over the lifetime of the project to ensure consistency with the Alternative ultimately chosen by the Port. For example, specific commitments to activities and resulting emissions reductions could be included in master use permit conditions, tenant lease requirements, and reported periodically.

R-001-005

Please clarify in the FEIS that Alternative 3 includes a second gate and reservation system to limit emissions from idling trucks in the area.<sup>13</sup> This design must be implemented in such a way that it prevents the probable unintended consequence of trucks idling nearby until their reservation time comes, which would adversely affect port-adjacent communities. Additionally, please clarify that Alternative 3 includes an "on-terminal air system" in order to reduce locomotive idling in the area.<sup>14</sup>

*Priority Pollutant Air Quality Modeling and Health Impact Analysis*

We request that the PM<sub>2.5</sub> annual background concentration for the general vicinity of the project site be redeveloped for the FEIS. We request that the FEIS include an annual background of 10.2 micrograms per cubic meter (µg/m<sup>3</sup>) based on the monitored federal equivalent method (FEM) concentrations at the Duwamish East Marginal Way location for 2011-2013.<sup>15</sup> This background value is conservative and more representative of concentrations in the Duwamish Valley than the annual average background concentration of 8.1 µg /m<sup>3</sup> used in the DEIS (from NW Airquest modeling for years 2009 – 2011).<sup>16</sup> Similarly, we request that the 24-hour PM<sub>2.5</sub> background concentration be changed in the FEIS to 24.3 µg/m<sup>3</sup>, also based on the monitored FEM concentrations at the Duwamish East Marginal Way location for 2011-2013.<sup>17</sup>

R-001-006

We request clarification of the inputs used for the NO<sub>2</sub> modeling in the FEIS.<sup>18</sup> In particular, please verify if nearby industrial point sources and MOVES data for motor vehicles were included in the analysis. We request that these sources be included in the FEIS, and can provide relevant information for nearby industrial sources. We also request that the FEIS elaborate on the choice of Tier 3 (PVMRM) in the DEIS, as Tier 2 ambient ratio method (ARM) can be a better approach for multiple plumes.<sup>19</sup> We request a technical meeting to discuss a path forward with NO<sub>2</sub> modeling, which could include a request in the FEIS for Tier 2 ARM.

**R-001-006**  
**(cont.)**

*Highly Impacted Communities and Cumulative Health Impacts*

Duwamish Valley communities such as South Park and Georgetown experience higher average levels of air pollution than other areas across the region, with higher annual average fine particle levels measured in the Duwamish Valley (East Marginal Way site) than anywhere else in our jurisdiction and the state. A 2010 air toxics study placed the potential cancer risk from air toxics at the East Marginal Way site at 450 chances per million, higher than other urban and residential areas across our jurisdiction.<sup>20</sup> This risk was higher mainly because of high diesel pollution.

**R-001-007**

While it's appropriate in the DEIS to look at the changes incrementally to compare and contrast alternatives, these incremental changes aren't experienced in isolation by the nearby impacted communities. Rather, these communities experience the entire cumulative impact, including impacts from this project as well as the existing background levels described above. This makes reducing impacts of new projects in the area all the more imperative to protect public health.

We request that the FEIS include in its Human Health Section 3.2.3.4 (page 3.2-34) language that provides context for cumulative health impacts, and explicitly states that the human health impacts assessment provided in the Appendix takes into account only the incremental impacts from Terminal 5 improvements. In other words, the "negligible" health outcomes do not include the health outcomes currently experienced by this community due to degraded air quality. We request similar language in the FEIS under the Diesel Particulate Section Matter 3.2.3.5 (page 3.2-26), that the estimates of additional cancer risk do not take into account that residents in this area already face an increased cancer risk of 450 chances per million, greater than any other area in the Puget Sound Region.

*Summary of Recommendations*

The Agency urges the Port to continue efforts to reduce air pollution through the following recommendations:

**R-001-008**

- Deliver on Alternative 3 electrification provisions via a tenant that commits to those provisions.
- Identify and evaluate an Alternative 4 that accelerates the shore power electrification schedule of Alternative 3.
- Require the use of Tier 4 or better equipment during construction.
- Clarify PM<sub>2.5</sub> background and NO<sub>2</sub> modeled concentrations as requested in the FEIS.
- Add language in the FEIS that acknowledges cumulative health risk and existing high background PM<sub>2.5</sub> and DPM levels in the Human Health and Diesel Particulate Matter sections.
- Implement strategies such as a second truck entrance gate and "on-terminal air system" to reduce truck and vehicle idling and locomotive emissions in the area.
- Ensure commitments via master use permit conditions and report out on activities and emissions throughout the project life.

The Port has an opportunity to impact how nearby communities bear the health burden for the economic benefits that trade brings to our region. The decision and pacing of the Alternative is also an opportunity for the port to make real progress towards GHG emissions reductions goals in its Century Agenda<sup>21,22</sup>

The Northwest Ports Clean Air Strategy has already reduced harmful pollutant emissions and improved public health. We encourage the Port to build on this progress and are committed to working with the Port to meet the Strategy's goals.

The Agency appreciates the opportunity to comment on the DEIS. Please contact Kathy Strange ([kathys@pscleanair.org](mailto:kathys@pscleanair.org) or 206-689-4095) to set up the technical meeting regarding NO<sub>2</sub> modeling, and if we can be of any other assistance regarding these comments.

Sincerely,



Craig Kenworthy  
Executive Director

jwc

## References

- <sup>1</sup>Draft Environmental Impact Statement (DEIS). Table 6. Annual Average DPM Concentrations at Selected Locations. Page 15 Human Health Risk Characterization, Aid Modeling Methodology and Results.
- <sup>2</sup>DEIS. Table 3.2-2. Annual Project Emissions (tons per year). Page 3.2-19 Air Quality Section.
- <sup>3</sup>DEIS. Table 3.2-8. Annual Emissions Co<sub>2e</sub> (metric tons). Page 3.2-31 Air Quality Section.
- <sup>4</sup>DEIS. Human Health Risk Characterization. Tables A-1 through A-5.
- <sup>5</sup>Port of Seattle Century Agenda Brochure,  
[http://www.portseattle.org/About/Commission/Documents/Century\\_Agenda\\_Folio\\_20130712.pdf](http://www.portseattle.org/About/Commission/Documents/Century_Agenda_Folio_20130712.pdf)
- <sup>6</sup>US EPA, "Integrated Science Assessment for Particulate Matter", <https://www.epa.gov/isa/integrated-science-assessment-isa-particulate-matter>.
- <sup>7</sup>DEIS. Air Quality Technical Report. Table 8, Page 31.
- <sup>8</sup>DEIS. Air Quality Technical Report. Table 9, Page 34.
- <sup>9</sup>DEIS. Table 2 Tools Sources and Critical Assumptions. Page 20 Analytical Methods. Reference to "Forecasting the Penetration of On-Shore Power Supply Capable Container Ships" Memorandum, February 2016.
- <sup>10</sup>California Air Resources Board. Shore Power for Ocean Going Vessels.  
<http://www.arb.ca.gov/ports/shorepower/faq/faq.htm>.
- <sup>11</sup>California Air Resources Board. Shore Power for Ocean Going Vessels.  
<http://www.arb.ca.gov/ports/shorepower/faq/faq.htm>
- <sup>12</sup>DEIS. Section 3.2.4.1 – BMP Construction List. Page 3.2-34.
- <sup>13</sup>DEIS, "Comparison of Alternatives" Page 3.11-3 and 3.11-8 and 3.11-14.
- <sup>14</sup>DEIS, Appendix F, 7.4 "On Terminal Air", page 25.
- <sup>15</sup>Puget Sound Clean Air Agency. 2013 Air Quality Data Summary.
- <sup>16</sup>DEIS. Air Quality Technical Report. Page 34, Table 9.
- <sup>17</sup>Puget Sound Clean Air Agency. 2013 Air Quality Data Summary.
- <sup>18</sup>DEIS. Appendix A, 3.2.1.2 "NO<sub>2</sub> modeling – PVMRM", page 22.
- <sup>19</sup>US EPA. Memorandum: Clarification on the Use of AERMOD Dispersion Modeling for Demonstrating Compliance with the NO<sub>2</sub> National Ambient Air Quality Standard. September 30, 2014.  
[https://www3.epa.gov/ttn/scram/guidance/clarification/NO2\\_Clarification\\_Memo-20140930.pdf](https://www3.epa.gov/ttn/scram/guidance/clarification/NO2_Clarification_Memo-20140930.pdf).
- <sup>20</sup>Puget Sound Clean Air Agency, "2010 Study of Air Toxics in Tacoma and Seattle",  
[http://www.pscleanair.org/library/Documents/TacomaExSummary2010air\\_toxics\\_study.pdf](http://www.pscleanair.org/library/Documents/TacomaExSummary2010air_toxics_study.pdf).
- <sup>21</sup>Proposed Motion for the Port of Seattle Commission Establishing an Energy and Sustainability Policy Committee and Providing Policy Direction to Said Committee:  
[http://www.portseattle.org/ABOUT/COMMISSION/MEETINGS/2016/2016\\_01\\_26\\_RM\\_6b\\_motion.pdf](http://www.portseattle.org/ABOUT/COMMISSION/MEETINGS/2016/2016_01_26_RM_6b_motion.pdf).
- <sup>22</sup>Notes of the approved motion during the Port of Seattle Commission Meeting on January 26, 2016,  
[https://www.portseattle.org/About/Commission/Meetings/2016/2016\\_01\\_26\\_RM\\_Minutes\\_linked.pdf](https://www.portseattle.org/About/Commission/Meetings/2016/2016_01_26_RM_Minutes_linked.pdf).

**Attachment A: Specific Corrections**

- “Approach for Detailed DPM Health Assessment”, Section 7 of Human Health Risk Characterization. Page 40: Please correct “... these concentrations represent a baseline incremental cancer risk of between 1.3 and 2.3 per million individuals at the six residences nearest the facility” to “these concentrations represent a baseline incremental cancer risk of between 1.3 and 230 per million individuals at the six residences nearest the facility.”
- Human Health Risk Characterization. Table A-5. Page A-5. Please correct tenth column to read “Control Air Quality Alternative 2  $\mu\text{g}/\text{m}^3$ ” – currently reads “Control Air Quality Alternative 3  $\mu\text{g}/\text{m}^3$ ” which does not match the title.
- “Approach for Detailed PM<sub>2.5</sub> Health Assessment,” Section 6 of Human Health Risk Characterization. Page 24. Please correct equation (3) on page 24. It currently includes one too many B (baseline health effects incidence) variables. See BENMAP-CE User’s Manual Page 1-3: [https://www.epa.gov/sites/production/files/2015-04/documents/benmap-ce\\_user\\_manual\\_march\\_2015.pdf](https://www.epa.gov/sites/production/files/2015-04/documents/benmap-ce_user_manual_march_2015.pdf).

**R-001-001**

Please see Standard Response No. 4: Electrification Schedule and Accelerated Schedule for Adoption of Alternative 3 at the beginning of Chapter 6 for additional information on the selection of Alternative 2 versus Alternative 3.

**R-001-002**

Please see Standard Response No. 3: Use of Shorepower at the beginning of Chapter 6 for additional information and for a description of the background and the Port's commitment to shorepower.

Please see Standard Response No. 4: Electrification Schedule and Accelerated Schedule for Adoption of Alternative 3 at the beginning of Chapter 6 for additional information on the selection of Alternative 2 versus Alternative 3.

**R-001-003**

The Port will take steps to maximize shorepower adoption as outlined in the shorepower section of the FEIS 1.2.4 to match goals stated in the EIS. However, the proposal to consider moving the shorepower adoption to the same schedule as California is not reasonable and unfeasible because the Port has limited ability—absent a regulatory requirement—to mandate vessel actions and choice. Southern California has poor air quality and for that reason, the State of California mandated shorepower utilization. The Seattle area is currently in compliance with the National Ambient Air Quality Standards, and the Project's modeled air quality indicates future emission reductions and on-going compliance with the national standards.

**R-001-004**

The Port has committed to go beyond common best management practices for reducing air emissions during construction by requiring that off-road construction equipment be Tier 2 or better, and that on-road heavy duty vehicles meet model-year 2007 emission standards, and by requiring or incentivizing the use of biodiesel. The Port reviewed progressive construction standards developed by Sound Transit, Port of Tacoma and the Northeast Diesel Collaborative to identify progressive engine requirements that have been determined to be feasible. This aligns with the targets in the Northwest Ports Clean Air Strategy. The DEIS properly describes how the Project will satisfy the General Conformity Requirements of the Clean Air Act, and air quality impacts during construction would be temporary (see FEIS, Volume I, Chapter 3, Section 3.2).

**R-001-005**

Please see Standard Response No. 4: Electrification Schedule and Accelerated Schedule for Adoption of Alternative 3 at the beginning of Chapter 6 for additional information on the selection of Alternative 2 versus Alternative 3.

The Port and the Terminal Operator will track Terminal 5 air quality performance after the Terminal renews operation to ensure air quality predictions as described in the EIS are consistent with operations over the twenty-year horizon of the Project. Tracked data will supplement the Puget Sound Maritime Air Emission Inventory, the ongoing summary reporting of airshed wide air emissions related to Pacific Northwest port operations sponsored by the NWSA and part of the Northwest Ports Clean Air Summary. The Port will work with the Terminal Operator to identify the appropriate level of detail for publication of Terminal 5 specific data (as opposed to aggregate maritime-related information that is currently reported) without compromising proprietary information. T5 performance information reported on website annually will include:

- Cargo throughput in TEU or other unit.
- Summary of CHE inventory e.g. how many units are alternatively fuels (propane, electric, CNG, hybrid) vs. diesel.
- % of CHE meeting Tier 4 interim emission standards or equivalent.



- Summary/status of fuel efficiency planning for CHE and trucks calling at terminal.
- Shorepower utilization rate (number and % of ships plugged in).
- AQ trends from representative local PSCAA air monitoring station.
- Every 5 years, emission inventory data specific to terminal will be extracted from Puget Sound Maritime Air Emission Inventory, the ongoing summary reporting of airshed wide air emissions related to Pacific Northwest port operations. The next emission data will be reported in 2022 for data collected in 2021.

**R-001-006**

Please see Standard Response No. 1: Selection of Air Quality Monitoring Sites and Data at the beginning of Chapter 6 for additional information.

The PM<sub>2.5</sub> background values were not used in the modeling because the original analysis did not use the Duwamish background concentrations because EPA indicated the EPA-calculated design values (also known as background or existing conditions) were, for the most recent years, declared invalid by EPA for some reason and not usable. The Port does not know why EPA declared the PM<sub>2.5</sub> design values invalid. There could be any number of reasons including missing data or other type of error. However, in response to PSCAA's request, we have revised the analysis to use the older, EPA-validated, PM<sub>2.5</sub> annual and 24-hour background values from the Duwamish monitoring station. After including the Duwamish data, we found that background concentrations data did not change the conclusion of the DEIS that predicted cumulative PM<sub>2.5</sub> concentrations are in compliance with the NAAQS (see tables 7, 9, and 11 of the FEIS air quality technical report for the revised PM<sub>2.5</sub> background concentrations).

In regard to the comment about the NO<sub>2</sub> 1-hour modeling, EPA has no current or historic data of NO<sub>2</sub> for the Duwamish reported in their AQS database. Therefore, when modeling NO<sub>2</sub> (nitrogen dioxide), PVMRM was used with background concentrations taken from the Beacon Hill monitor. For the requested addition of nearby sources, it would not be appropriate for the analysis to add these to the modeling while still applying a background concentration. The requested additional sources are already inherent in the background concentrations.

The Port reviewed whether the Tier 2, ARM method would provide additional value. However, the EPA's Technical Support Document for NO<sub>2</sub>-related AERMOD modifications, argues that, "a case could be made to eliminate the Tier 1 and 2 methods in preferences of OLM and PVMRM." As requested by the commenter, additional discussion of the Tier 3 method has been added to the revised text (see FEIS, Volume II, Appendix A).

**R-001-007**

The commenter is correct that the health effects analysis focused on the incremental effect of the Project. The FEIS text has been updated to clarify that approach (See FEIS, Volume I, Chapter 3, Section 3.2).

**R-001-008**

See responses to R-001-001 through R-001-007 for information on efforts to reduce air pollution.



STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

Northwest Regional Office • 3190 160<sup>th</sup> Ave SE • Bellevue, Washington 98008-5452 • (425) 649-7000  
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June 30, 2016

Paul Meyer, DPER Manager  
Port of Seattle  
PO BOX 1209  
Seattle, WA 98111  
Meyer.p@portseattle.org

RE: Terminal 5 Improvements Project (SEPA No. 16-05) (Ecology SEPA#201602722)

Dear Mr. Meyer:

Thank you for the opportunity to comment on the Port of Seattle Terminal 5 Improvements Project. The Department of Ecology (Ecology) reviewed the environmental checklist and has the following comment(s):

**Section 3.1.1 Regulatory Context**

City of Seattle Shoreline Codes are referenced on page 3.1-1. However, the section only provides reference to critical areas within 100-feet of Ordinary High Water Mark. We suggest that the description be enhanced or a cross reference to section 3.7 be inserted to provide the reader with a more detailed description of the intent of the City's Shoreline Master Program. The enhanced introduction should also describe the extent of shoreline jurisdiction and list applicable shoreline environment designations (aquatic and upland) that are located within the project area.

S-001-001

**Section 3.7 - Land-Use**

On page 3.7-3, the document appropriately addresses standards required by the "Urban Industrial" shoreline environment, which are applicable to areas 200' upland of OHWM. However, the EIS does not address SMP designation of aquatic areas within the project area. We recommend that a similar description of the aquatic shoreline environment designation be added to the document.

S-001-002

Similar to the comment above, table 3.7-2 (beginning on page 3.7-7) provides a good description of SMP development standards applicable to upland development, but does not address any additional or different standards that would apply in aquatic areas under a

For more information about SEPA and Ecology visit [www.ecy.wa.gov/programs/sea/sepa/e-review.html](http://www.ecy.wa.gov/programs/sea/sepa/e-review.html).

The Office of Regulatory Assistance (ORA) can help you determine local, state, and federal permits required for your project. Visit us at [www.ora.wa.gov](http://www.ora.wa.gov) or contact us at [help@ora.wa.gov](mailto:help@ora.wa.gov) or 1(800)917-0043.

different shoreline environment designation. We recommend a similar consistency analysis be included for portions of the project located in aquatic areas addressing the applicable (aquatic) shoreline environment designation.

S-001-002  
(cont.)

**General comment**

Vessel Traffic discussion: the projections of a 20-percent reduction in large vessel traffic under Alternative 2 & 3 as a result of efficiencies in utilizing larger container vessels is potentially significant in reducing a number of potential impacts to the ecology of Puget Sound. Over the last 5-10 years, we have heard increasing concerns raised by shoreline property owners alleging that increases in commercial vessel traffic was increasing erosion on their beach. This allegation is very difficult to verify, but may be a relevant in the anticipated shift to larger container ships. It would also be interesting to know, if the larger ships produce significantly bigger wakes, or if this can be minimized through vessel design or operation.

S-001-003

If you have any questions or would like to respond to these comments please contact Joe Burcar 425-749-2097 or by email at [joe.burcar@ecy.wa.gov](mailto:joe.burcar@ecy.wa.gov).

Department of Ecology  
Northwest Regional Office

(Colleen Crotty: 201602722)

cc: Joe Burcar, Interim SEA Section Manager, Ecology

For more information about SEPA and Ecology visit [www.ecy.wa.gov/programs/sea/sepa/e-review.html](http://www.ecy.wa.gov/programs/sea/sepa/e-review.html).  
The Office of Regulatory Assistance (ORA) can help you determine local, state, and federal permits required for your project. Visit us at [www.ora.wa.gov](http://www.ora.wa.gov) or contact us at [help@ora.wa.gov](mailto:help@ora.wa.gov) or 1(800)917-0043.

**S-001-001**

See FEIS, Volume I, Chapter 3.7.1.2 for revised information that confirms that construction-related impacts on aquatic/shoreline habitats will be analyzed for consistency with applicable development standards in the City of Seattle Shoreline Master Program (SMC 23.60A), which may include requirements for habitat mitigation. This review is currently underway by City of Seattle DCI. It has not been determined yet if habitat mitigation will be required per SMC 23.60A, as well as other state or federal standards.

**S-001-002**

See response to S-001-001. See also FEIS, Volume I, Chapter 3.4 for a detailed description of the aquatic shoreline environmental designation within the Project area. Specific standards and best management practices (BMPs) that would apply in aquatic areas are described in detail and will adhere to the SMP.

**S-001-003**

The Port agrees that a reduction in the number of ships could be significant in reducing a number of potential impacts to the ecology of Puget Sound. The Port also agrees that it is difficult to correlate shoreline erosion with vessel traffic size and speed.

In general, the wake a vessel generates is determined by a number of factors including: vessel design and weight, speed, distance of the vessel to the shore, existing currents and waves, and water depth. Long, slender hulls create less wake than shorter, wider hulls, and vessels with a high length to beam ratio produce less wash.

The Vessel Traffic Service (VTS) Puget Sound, under the authority of the Ports and Waterways Safety Act, is a major effort by the U.S. Coast Guard to ensure the continued safe use of these waters for its many diverse users. They monitor and inform participants using the Puget Sound area to facilitate safe, secure, and efficient vessel traffic. Speed restrictions in Puget Sound are limited to specific areas (e.g., vessel speed within the Duwamish River is limited to 7 knots throughout the river). However, unless posted, Shipping—Title 46 Section 2302 of the United States Code states, “Each vessel operator is responsible for operating their vessel at a safe speed, especially in reduced visibility, and for the wake created by their vessel. When a tide exceeds a stage of 11.0 feet at Seattle, there is an increased risk of vessel wakes endangering persons and/or property along the shoreline within the VTS Area. All vessels operating within the VTS Area should proceed at a speed that will minimize the risk of wake damage while maintaining the ability to maneuver safely.” Anecdotally, larger shipping vessels enter Puget Sound at about 18 to 21 knots and slow down to 4 to 5 knots, as they enter Elliott Bay.



Washington State  
Department of Transportation  
Roger Millar  
Acting Secretary of Transportation

Northwest Region  
Sno-King Local Agency and Development Services  
15700 Dayton Ave. N  
P.O. Box 330310  
Seattle, WA 98133  
[www.wsdot.wa.gov](http://www.wsdot.wa.gov)

July 8, 2016

Paul Meyer  
Port of Seattle - Pier 69  
P.O. Box 1209  
Seattle, WA 98111-1209

**Subject: Terminal 5 Cargo Wharf Rehabilitation and Berth Deepening**  
Draft Environmental Impact Statement (DEIS)

Dear Mr. Meyer:

The Washington State Department of Transportation (WSDOT) is working to ensure that the integrated transportation systems in our state support and enhance economic growth and trade throughout the state. As Washington State is one of the most trade-dependent states in the nation, we are supportive of efforts by the Port of Seattle to improve and increase international trade flows through the Port's facilities including Terminal 5 (T-5) in West Seattle. We also recognize the importance to Washington State and its ports in relying on a robust, multimodal freight network to facilitate these trade flows.

We appreciate the opportunity to provide comments on the T-5 DEIS and we look forward to working with the Port of Seattle on key issues identified in our DEIS comments.

**VOLUME 1**

**1) Chapter One - 1.2.5 "Proposed Alternatives"** (Page 1.4)

The description of the three (3) proposed alternatives should include additional information about the schedule for the implementation of Alternatives 2 and 3 (Alternative 2: 1.3M twenty-foot equivalent units (TEUs) cargo through T-5 by year 2030 and Alternative 3: 1.7M TEUs cargo through T-5 by year 2040) so it is clear to the reader what the timeline is for these two action alternatives.

This is noted later in the technical documents of the DEIS but needs to be included here as well for clarity purposes.

**S-002-001**

**2) Chapter One -1.2.6 "Areas of Controversy and Uncertainty"** (Page 1.4)

This describes the potential for changes in the future operation of T-5 as a result of changes to shipping industry, international trade, larger vessels, etc. It also acknowledges that

**S-002-002**

July 8, 2016  
 Port of Seattle – Terminal 5 DEIS  
 Page 2 of 14

“Determinations for specific future marine cargo operations, methods, and practices that are likely to be employed at Terminal 5 have not yet been made ...” which basically suggests there is no immediate tenant to operate Terminal 5 when it reopens under one of the DEIS alternatives, nor any shipping lines that plan to call at T-5 with “larger capacity vessels.” The range of potential environmental impacts presented in the DEIS presumably shows the “worst-case” impacts.

The market projections presented in this DEIS might benefit from a more extensive comparison of “high” and “low” forecasts of estimated future container traffic through Terminal 5 in the future condition. Later on in this volume of the DEIS, the discussion indicates a future forecast of either 1.3M TEUs in 2030 or 1.7M TEUs I 2040 (Alternative Three) based upon a compounded growth rate of four percent per year, clearly a “high” growth rate. What would be the magnitude of environmental and facility impacts under a lower growth rate of say one or two percent per annum?

Also, how are container growth forecasts in this DEIS considered in, or consistent with local and regional plans such as the city of Seattle’s 2035 Comprehensive Plan or the Puget Sound Regional Council (PSRC) Transportation 2040 Long-Range (Regional) Transportation? These questions are never explained nor addressed anywhere in the DEIS.

S-002-002  
 (cont.)

**3) Chapter One -Summary Table 1.3-1 Proposed Project Alternatives – Potential Impacts and Mitigation Summary (Page 1-14)**

The description of potential impacts and mitigation strategies under Alternatives 2 and 3 do not include any mention of potential impacts to state facilities near the Terminal 5 facility, namely Interstate 5 and SR 99 in Seattle. The traffic and transportation analysis in Volume 2 of the DEIS says that the traffic analysis for impacts from this proposed project essentially end at Spokane Street at SR 99 even though a number of the truck trips coming out of T-5 in all three alternatives continue onto Interstate 5.

Although this proposed project would not necessarily be required to mitigate traffic impacts to I-5 and/or SR 99 as a result of these increased truck trips, the traffic analysis area should be expanded to include I-5 and SR 99 since so many of these truck trips will use these state routes.

The DEIS traffic analysis should also identify and address future regional and state plan considerations for I-5 and SR 99 in central Seattle (WSDOT State Highway System Plan and the PSRC T-2040 Regional Transportation Plan), given the importance of these plans for these state routes.

The description of potential rail impacts indicate that the (existing) freight train counts would increase from 9 to 18 weekly trains under Alternative Two and from 9 to 24 weekly trains under Alternative Three. The only suggested mitigation measures related to these train increases is the closure of the north leg of the intersection at Chelan Street / Spokane Street / West Marginal Way

S-002-003

July 8, 2016  
 Port of Seattle – Terminal 5 DEIS  
 Page 3 of 14

and various on-dock (T-5) rail infrastructure/equipment improvements to facilitate increased train operations out of T-5.

**S-002-003  
 (cont.)**

There is no mention of the connecting mainline (BNSF Railway / Union Pacific) trackage from Seattle and the assumption is that the Class I railroads will make the necessary infrastructure improvements required when increased train traffic occurs in the future conditions. If this is the unstated assumption by the Port in this analysis, it should be clearly noted here.

Does this T-5 facility rail analysis assume that the North-South BNSF Railway / Union Pacific mainline (Seattle-Tacoma-Portland, Oregon) will be able to accommodate these additional freight trains under Alternatives 2 and 3 in light of other increased rail traffic on the north-south corridor (future Sounder commuter rail and Amtrak Cascades service increases and potential increases in commodity-related freight traffic)? Additional discussion and/or consideration of this issue here or later in the technical analysis portion of the DEIS is warranted.

**4) Chapter Two – (Page 2-4)**

“Complete the Project in a timely manner within the financial goals set for the project.” What are the “financial goals for the project?” They are never stated here or anywhere else in the DEIS.

**S-002-004**

**5) Chapter Two – (Page 2-5)**

The discussion of the “ten-year interval Terminal 5 Container cargo volumes used for the DEIS environmental analyses” in the third paragraph on this page indicates that they were derived from “west coast and northwest container cargo forecasts.” What were these forecast(s) specifically, who developed them and what were the assumptions behind these forecast(s)?

**S-002-005**

Also, were one of the forecasts referenced in this chapter derived from the Washington Public Ports Association (WPPA) Marine Cargo Forecasts <http://washingtonports.org/wp-content/uploads/2013/01/MCF-2009-Final-Report-3-23-2009.pdf>? The WPPA Marine Cargo Forecasts are updated periodically and the previous (2009) Marine Cargo Forecasts will be revisited and revised soon. This section should be revised to cite the sources of these “west coast and northwest container cargo forecasts” and the assumptions and any limitations in these forecasts in order to provide a better understanding of the forecasts, their assumptions and any limitations.

This discussion of forecasts should also identify how and if these forecasts for the T-5 project alternatives are considered and included (or not) included in the PSRC’s long range regional transportation plan [Transportation 2040](#).

**6) Chapter Two – (Page 2.5)**

The fifth paragraph further discusses the container cargo forecasts for Alternatives 2 and 3. It indicates that the basis for the environmental analysis in Alternative 2 is the need to improve

**S-002-006**

July 8, 2016  
 Port of Seattle – Terminal 5 DEIS  
 Page 4 of 14

intermodal rail yard capacity in order to achieve and accommodate 1.3 million annual TEUs through T-5.

**S-002-006**  
**(cont.)**

What about landside arterial roadway capacity adjacent to T-5 and downstream on the Spokane Street Viaduct and (eventually) Interstate 5 to accommodate the 3,560 (one-way) design day daily (Table 2.3.1 page 2-6) truck trips that are projected to operate out of T-5 in Alternative 2 in Year 2030?

**7) Chapter Two – (Page 2.5)**

The sixth paragraph further discusses the container cargo forecasts for Alternative 3 whereby approximately 1.7M TEUs are projected to pass through T-5 in Year 2040 and that the necessary (mitigation?) actions evaluated in Alternative 3.

**S-002-007**

What are the landside (arterial roadway / limited access Spokane Street Viaduct / I-5) impacts that need to be considered and possibly mitigated given the 4,660 (one-way) design-day truck trips (Table 2.3.1 page 2-6) projected to be operating out of T-5 under Alternative 3 in the Year 2040?

**8) Chapter Two – (Page 2.6)**

Table 2.3.1 describes the operational assumptions for each DEIS Alternative for the T-5 Redevelopment project. The description of daily truck trips is broken down into “average day” (one way) truck-trips and “design day” (one way) truck trips, which appear to be peak-period (or peak day) truck trip forecasts.

**S-002-008**

The “average day” and “design day” one-way truck trip forecasts are as follows per description in Table 2.3.1:

- Alternative One – **1,770 / 2,480** (Year 2020)
- Alternative Two – **2,450 / 3,560** (Year 2030)
- Alternative Three – **3,320 / 4,660** (Year 2040)

How are these truck forecasts for the three DEIS alternatives considered in or compared to overall forecasts for traffic in the immediate arterial network proximate to Terminal 5 in West Seattle in the city of Seattle’s 2035 Comprehensive Plan? Or in other words, have these truck forecasts been included in the city of Seattle’s long-range transportation forecasts in their updated Comprehensive Plan? That question is never addressed here.

Also, how have these forecasts been incorporated into the PSRC long-range, regional transportation plan, Transportation 2040? Will they be incorporated in the PSRC Transportation 2040 update that is underway <http://www.psrc.org/transportation/t2040/>?

Further explanation is needed in this section about the consistency and consideration of these truck forecasts in local and regional plans.

**9) Chapter Two – (Page 2-13)**



July 8, 2016  
 Port of Seattle – Terminal 5 DEIS  
 Page 5 of 14

The discussion of anticipated container ship operations in Section 2.3.4.2 (“Vessel Calls and Operations”) is somewhat unclear as presented and needs additional context, clarity and description in order to be understandable to the reader. It starts by mentioning “For the purposes of this analysis, we assume that Terminal 5 would have 2 vessel calls, one 14,000 TEU ship discharging and loading 30 percent of their capacity, and one 8,000 TEU ship discharging and loading 24 percent of their cargo.” Is this vessel call assumption for Alternative One? And if so, what is the basis for the assumed percentages of discharged and loaded cargo for the 14,000 and 8,000 TEU vessels?

S-002-009

Furthermore, it is unclear as to whether these two vessel calls are a daily, weekly or monthly figure. They appear to be a weekly figure but this point should be clarified in the FEIS.

This section goes on to describe the scenario at T-5 where ‘at full capacity expected to be reached by 2030 and continuing to 2040, Terminal 5 would have 4 vessel calls, two 14,000 TEU ships discharging and loading 30 percent of their capacity, and two 8,000 TEU ships discharging and loading 24 percent of their cargo. Berth utilization would be approximately 57 percent.’ This appears to be a description of Alternative 2 but is not stated as such and should be clarified. Again same question here: Are these vessel call figures in this scenario a daily or weekly estimate? Also, what is the basis for assumed loading and unloading estimates for the 14,000 and 8,000 TEU vessels?

This section concludes by describing the substitution of “Large 18,000 TEU ships” in lieu of 14,000 TEU ships but with a smaller percentage of container transshipment expected from these larger vessels at about 23 percent. This would appear to be the situation under Alternative 3 in Year 2040. Again confirmation of the frequency of these ship calls (weekly) with the larger, 18,000 TEU ships is warranted along with explanation regarding the assumptions for the percentage of loading/unloading of these larger ships.

Finally, how do these assumed vessel calls and loading/unloading estimates relate to the previous (2009) or upcoming WPPA Marine Cargo Forecasts for Washington State Ports?

#### **10) 2.3.4.5 Rail Operations** (Page 2-14)

The description of rail operations at T-5 in this section suggests that the approximate length of a full container train would be 7,500 feet. Elsewhere in the DEIS report and in both the Transportation Technical Report for the DEIS and the Terminal 5 Railway Infrastructure and Train Volume Analysis Memorandum, there is a stated assumption that the train length of trains operating into and out of T-5 would be 7,500 feet.

S-002-010

What is the basis for this assumption? Is it the limitations of the intermodal rail yard facility at T-5 that drives this assumed train length? Or are there limitations regarding how many efficient “doubling” moves can practically be done to build trains at the T-5 intermodal yard? The Class I railroads are in some cases moving to operating practices whereby they operate longer, but fewer

July 8, 2016  
 Port of Seattle – Terminal 5 DEIS  
 Page 6 of 14

trains and this could impact future rail operations at T-5 should it achieve partial or full buildout under Alternative 2 or 3.

S-002-010  
 (cont.)

**11) 2.3.7.1 Anticipated Throughput** (Page 2-16)

The description of the forecasted increases in container throughput at T-5 would increase from the baseline 647,000 TEU to 1.3M TEU under Alternative 2 by 2030 and up to 1.7M TEUs by 2040 under Alternative 3. This section should provide some additional context regarding the basis for these container forecasts for two alternatives and how they are (or are not) consistent with other regional and statewide forecast efforts such as the WPPA Marine Cargo Forecasts and the PSRC T-2040 Regional Transportation Plan .

S-002-011

**12) 2.3.7.2 Vessel Calls and Operations** (Page 2-17)

The description of the various scenarios of vessel calls with a mix of either 14,000 or 18,000 TEU vessels along with various 8,000 TEU vessel calls indicates that these would be weekly vessel calls in these scenarios. The description of these scenarios should be cross-referenced and confirmed with the description in the aforementioned section 2.3.4.2 discussion of vessel calls where it was not clear whether the estimates cited there were for daily, weekly, or monthly vessel calls at T-5.

S-002-012

Also, what is the basis for the assumptions regarding the percentage of loading and unloading of the various sizes (8,000, 14,000, 18,000 TEU) of vessels calling at T-5 and where did these assumptions come from? What market forecasts were they based upon? How consistent are these forecasts with other regional or local forecasts, if any such forecasts exist?

**VOLUME 2**

**13) 1.2.1 Throughput and Vessel Calls** (Page Two)

The last paragraph on Page Two describes the range of container volumes estimated under Alternatives 2 and 3 “with various vessel service call scenarios.” This paragraph goes on to describe the assumptions for this analysis being a total of four ships per week, two 18,000 TEU capacity ships and two 14,000 TEU capacity ships. Detailed information regarding the vessel capacity and the container volumes disgorged and/or reloaded under each alternative scenario is described in Table One on Page Three.

S-002-013

However, this analysis is not consistent with container volume and vessel analysis presented in Chapter Two of the first volume of the DEIS (Page 2-13), which describes a range of vessel call scenarios ranging from one 14,000 TEU and one 8,000 TEU ship call (per week? Alternative 1?) to two 14,000 TEU and two 8,000 TEU ship calls (per week? Alternatives 2/3?) with the possibility of a substitution of an 18,000 TEU capacity vessel for a 14,000 TEU capacity vessel on occasion (Alternative Three?). Nowhere in the previous description on Page 2-13 in Chapter Two

July 8, 2016  
 Port of Seattle – Terminal 5 DEIS  
 Page 7 of 14

of the first Volume of the DEIS does it mention the possibility of two 18,000 TEU ship calls per week at T-5.

**S-002-013**  
**(cont.)**

These discrepancies should be clarified and corrected since they lead to potentially drastically different results in terms of potential landside transportation facility impacts. Although it is never stated, it appears that the two 18,000 TEU ship calls per week were assumed as a “worst-case” scenario for transportation impact analysis purposes. If this is the case, then this should be clearly stated both in this section and in the previous discussion in Chapter Two, Volume One of the DEIS so that there is no confusion to the reader on the differing analysis assumptions which lead to considerable confusion regarding actual landside impacts.

Also, the first paragraph on Page Three indicates the “The time that a ship spends at berth would vary based on size.” with smaller ships generally expected to take only 16 to 20 hours to unload and reload and larger ships (14,000 / 18,000 TEUs) taking between 25 to 50 hours for loading and unloading. If these ship calls to T-5 are only loading and unloading 35 percent or less of their cargo, why are the loading/unloading times so long, especially for the larger ships? The rationale for doing the T-5 dock improvements in this DEIS is intended to improve unloading and loading times and efficiencies for the larger ships as the stated project purpose several times in this DEIS.

**14) 1.2.3 – Rail Intermodal Yard Operations (Page Four)**

The description of the assumed mode-split of container traffic coming into T-5 under increased throughput scenarios suggests the percentage of containers being transported by rail is expected to increase to 75 percent from the previous 55 percent range under Alternative One. The remaining 25 percent of the containers will be shipped out of T-5 via truck operations, primarily south to the Green River Valley via Interstate 5 or SR 509. The specific mode-split numbers for the three Alternatives is shown in Table Two on page four.

**S-002-014**

What is the basis for this assumption and are there any opportunities to increase the rail share of container traffic out of T-5, especially on-dock rail loading instead of draying the containers to other rail intermodal yards in Seattle (SIG and Argo yards)? Even with the lower (25 percent) estimate of truck trips operating out of T-5, there will be a substantial increase in truck traffic operating on Seattle arterials proximate to T-5 in West Seattle as well as the proximate regional network (Spokane Street Viaduct, West Marginal Way, SR 509, I-5 south and SR 99 south) which will be substantially more congested in the future years considered in this DEIS (2030 and 2040).

**15) 1.2.3 – Rail Intermodal Yard Operations (Page Four)**

The final paragraph on Page Four describes the intermodal train operations serving the T-5 facility and suggests that the typical container train operating out of T-5 will be approximately 7,500 feet in length. What is the basis for this assumption? Is the 7,500 foot train length the maximum train length that can be efficiently accommodated in the T-5 intermodal terminal? What would be the impact if the railroads operated longer (than 7,500’) unit trains in and out of

**S-002-015**

July 8, 2016  
 Port of Seattle – Terminal 5 DEIS  
 Page 8 of 14

T-5 with the possible consequence of fewer but longer trains? Or would this not be possible given intermodal rail terminal constraints at T-5 and limitations of the rail infrastructure on the BNSF Railway to the T-5 facility in West Seattle?

**S-002-015**  
**(cont.)**

Same question for the statement at the top of Page Five.

**16) Page Four**

Under alternative 2 and 3, 75% of container traffic is assumed to be transported by rail, and 25% of container traffic is assumed to be transported by truck. There are several issues with this modal split assumption:

**S-002-016**

- The transportation technical report didn't estimate how much of the total throughput will be containers imported through terminal 5, getting unloaded and transported to their destinations in US, and how much of the total throughput will be containers exported through terminal 5 and getting loaded onto the vessels. This summary needs to provide an estimate of container import/export volume because cargo imports and exports are likely to use different modes to/from ports.
- The alternative 2 assumed that container traffic moved by trucks will increase from 161,800 to 325,000 TEUs between 2020 and 2030, an average of 1.1% annual growth rate. The alternative 3 assumed that the container traffic moved by trucks will increase to 425,000 TEUs in 2040, an average of 1.9% annual growth rate. Both forecasts are significantly lower than the baseline forecast from FHWA's Freight Analysis Framework (FAF) 4, which estimates an average of 2.3% annual growth rate for freight shipment demand within, from, and to Seattle metropolitan area moved by trucks. FAF forecast is an extrapolation of current trend and does not account for changes in costs or other major investments in transportation system, and the annual growth rate for truck demand through T-5 should be higher than 2.3%, FAF baseline forecast.
- It is invalid to assume that all the containers moved by trucks only go to local and regional businesses. For container export, Port of Seattle draws from a much larger market beyond PSRC region, and Washington's manufacturers and farmers rely on Port of Seattle to ship their products to their customers overseas. For container import, there is statewide demand outside PSRC region for product consumption. A large portion of intrastate shipments from/to Port of Seattle will be moved by trucks rather than rail.
- For alternative 2 and 3, higher throughput capacity at T-5 and larger container vessels will help reduce the logistics cost of shipping products through Port of Seattle. The 25% of truck mode share did not take into account the growing intrastate export and import demand using T-5 due to reduction in transportation cost.
- The modal share forecast of port's freight moved by truck and rail in T-5 DEIS appendix C is in conflict with the future freight trend analysis published in Seattle's Draft FMP

July 8, 2016  
 Port of Seattle – Terminal 5 DEIS  
 Page 9 of 14

Plan. On page 44, Seattle’s FMP plan said “*While rail freight is expected to grow in the future, an increasing share of the volume of imports and exports through the Seattle area transported by rail is projected to shift to truck. Figure 2-16 shows that freight imported or exported through our ports will triple between 2012 and 2040. During that same timeframe, the shares of freight transported by truck will increase in relation to rail.*”

The city of Seattle’s FMP plan predicts an increase in truck share of freight imported and exported through Port of Seattle, while T-5 DEIS assumed that truck share of future freight through T-5 will significantly decrease compared to rail. This indicates that T-5 DEIS transportation analysis significantly underestimates the future truck traffic that will be generated by T-5 facility investments.

Therefore, much higher truck trips are likely to be generated under alternative 2 and 3 than are shown in the estimates in table 6, page 38 of appendix C. The traffic impact analysis only evaluated the impacts to local roadway network in close vicinity of T-5, but did not consider the potential impacts to State Highway System, especially I-5 and I-90. I-5 and I-90 are heavily congested high-volume freight corridors, and page 42 in Appendix C shows that currently 44% of truck trips from/to T-5 uses I-5, and 20% uses I-90. This study should evaluate the impact of increased truck traffic due to T-5 improvements that will result on the Interstate system (I-5 / I-90), especially during peak hours.

**17) 1.3. Study Area (Page Five)**

This section describes the transportation study area for impact analysis as consisting primarily of SW Spokane Street and East Marginal Way South and East Marginal Way South between Hanford Street to the North Argo Access. This section also lists seven intersections proximate to T-5 in West Seattle that were also analyzed for transportation impacts. Given the substantial increase in truck traffic associated with Terminal 5 improvements, the DEIS traffic analysis should identify potential impacts on I-5, I-90 and SR 99.

This truck trip analysis should also consider regional travel demand forecasts in the PSRC’s long-range regional transportation plan, Transportation 2040, for consideration and comparative purposes to these truck trip forecast estimates and potential impacts to local and regional facilities.

**18) Seattle Comprehensive Plan (Page Ten)**

The summary discussion of the Seattle Comprehensive Plan ( *2005 Comprehensive Plan – Toward a Sustainable Seattle* ) provides a good overview of the transportation policies that relate to and support freight access as well focus in the land-use element to protect and support industrial uses in Seattle. This section also references the Container Port Element of the Comprehensive Plan and the 2015 update of this element.

**S-002-016  
 (cont.)**

**S-002-017**

**S-002-018**

July 8, 2016  
 Port of Seattle – Terminal 5 DEIS  
 Page 10 of 14

However, there is no mention of how the container forecasts under the three alternatives of the T-5 DEIS, nor the traffic and transportation facility impacts are considered and/or identified in Seattle’s Comprehensive Plan. How are the forecasts in the T-5 DEIS for the three facility alternative development scenarios included in Seattle’s (adopted) Comprehensive Plan? Will they also be included in Seattle’s updated Comprehensive Plan (Seattle 2035) when it is due to be adopted this summer?

**S-002-018**  
**(cont.)**

**19) Seattle Freight Master Plan and Freight Access Project (Page 11)**

The summary about the Seattle Freight Master Plan in this section provides a good summary of Seattle DOT Freight Master Plan (FMP) that is under development and to be adopted in the summer of this year.

**S-002-019**

This section also summarizes the Freight Access Project, which was a collaborative effort between the Port of Seattle and the city of Seattle to identify truck-freight investments that could be needed in the next 20 years to support the city’s industrial lands and to keep freight traffic moving. There is a good summary of four key intersection improvement projects identified in the Freight Access Project to serve this needed freight mobility. There is also a good summary Duwamish Waterway Corridor and Duwamish Freight Corridor spot improvements provided in the subsequent section on pages 12 and 13 of this chapter.

However, there is no discussion in this section about or if the project market forecasts for the T-5 DEIS build alternatives were or will be considered and included in either the SDOT Freight Master Plan nor the Freight Access Project so it is unclear as to whether or not these projects listed for both plans will be sufficient to accommodate the project increases in truck traffic demand resulting from either Alternative Two or Three of the T-5 DEIS.

This section should further elaborate on and explain how or if the T-5 DEIS container forecasts for Alternatives 2 and 3 are included in these two plans and whether or not the proposed projects in these two plans will accommodate future growth in truck traffic coming out of T-5 in either of these two future alternative scenarios.

**20) 2.6 – Rail (Page 27)**

The detailed description of rail operations at T-5 in this section again references the assumption that a full train operating out of the rail intermodal facility in T-5 will be 7,500 feet in length. As noted before, what is the basis for this assumed train length and what would be impacts on rail operations (and number of trains) operating in and out of T-5 in West Seattle if longer trains were to be operated by the Class I railroads? Or is the 7,500 foot length the maximum length of a train that can be accommodated at the T-5 rail intermodal yard due to facility constraints?

**S-002-020**

The second paragraph in this section indicates the present capacity of the intermodal rail yard is equivalent to approximately 530,000 TEUs annually, which equates to approximately 18 loaded trains per week. This summary notes that T-5 was historically only generally operating at most

July 8, 2016  
 Port of Seattle – Terminal 5 DEIS  
 Page 11 of 14

nine loaded trains per week, presumably because container cargo throughput at T-5 was below this annual 530,000 TEU figure. However, description of T-5 Alternative 2 suggested that at 1.3M annual TEUs throughput in 2030, there would be 18 weekly trains out of T-5 plus nine additional intermodal trains loaded off-site at other area intermodal yards (SIG and Argo) for a total of 24 weekly intermodal trains at the 1.3M TEU level in 2030.

There appears to be a discrepancy and some confusion between these two figures, given that the annual TEU figure of 1.3M is substantially higher (more than double) the 530,000 TEU annual figure noted in this section with its projected level of train volume. Please clarify, confirm and correct as necessary this discrepancy and source of confusion on train volumes.

**S-002-020**  
**(cont.)**

**21) Chapter Four – Travel Demand Estimates for All Project Alternatives (WSDOT General Comment on Chapter Content related to the Seattle Freight Network)**

WSDOT recommends adding a brief discussion to talk about the connection between Seattle’s Freight Network and the Truck Freight Economic Corridors designated by WSDOT in 2014 State Freight Plan. Truck Freight Economic Corridors designation includes high volume truck corridors, alternative freight routes, and first/last mile connectors, which is also a component in Seattle’s freight network. First/last mile connectors in the WSDOT designation were reviewed and verified by the Seattle Department of Transportation (SDOT) in 2013, and were subsequently revised based on the city’s inputs.

It is valuable to discuss the similarities and differences between state and city’s designation. By comparing the two networks, the major difference we identified is that most minor truck streets identified in city’s freight network are missing from state’s freight network. That is because the criteria for minor truck street, “to/from urban villages, neighborhood commercial districts” are not included under state freight economic corridor criteria.

We acknowledge that the corridor criteria designated by city is developed to meet specific local needs of freight movement within Seattle, which is not the same as the freight need on statewide basis.

**S-002-021**

**22) 4.3.1 Truck Trips (Page 42)**

The description of truck trips operating locally and regionally out of T-5 on page 42 indicates that in the ten-plus year planning horizon for Alternative Two, an assumption is stated suggesting that the SR 509 South Extension Project will be completed by Year 2030 and this will therefore have potential to draw additional southbound truck trips off of I-5 and onto West Marginal Way South and the SR 509 South Extension connection to I-5 south of SeaTac. While WSDOT agrees that this is a reasonable assumption for planning purposes in this analysis, please consider that the planning and phasing effort for the SR 509 South Extension Gateway project is currently underway with the Port of Seattle and other local partners. Due to the programming structure of

**S-002-022**

July 8, 2016  
 Port of Seattle – Terminal 5 DEIS  
 Page 12 of 14

the 2015 Connecting Washington Transportation Funding package, it is possible that actual completion date of the SR 509 Extension could end up being slightly later than year 2030.

S-002-022  
 (cont.)

Table Nine below this paragraph describes the assumed truck distribution patterns on various local and regional facilities in and around Seattle and includes I-5 North/South, SR 99 and SR 509. Two questions on this summary:

- 1) Are these truck-trip distribution patterns assumed to be the same for all three alternatives considered in the T-5 DEIS? And
- 2) Do these truck-trip distribution estimates also include the assumption of increased future (2030) SB truck-trip shifts to the SR 509 South Extension from I-5?

Even given the assumed drop of I-5 SB truck trips from 29% of the total truck trips to 18%, the number of truck-trips estimated in the future scenarios (Alternatives 2 and 3 in 2030/2040) may not be able to be accommodated on Interstate 5 given increased levels of congestion and regional population and employment growth that is due to occur in the future.

**23) 5.1 Future Traffic Volumes** (Page 45)

The discussion regarding the future container forecasts in this section and as shown in Figure 17 indicates that a compounded growth rate of 4.4% per year was applied as a conservatively high estimate of future import container traffic growth, leading to the estimate volume levels of 1.3 million TEUs through T-5 by Year **2030** and 1.7 million TEUs through T-5 by **2040**. This is reasonable in terms of trying to define a “high” growth forecast scenario.

S-002-023

However, were there any other forecasts conducted on the lower end, say a 1.5% or 2% growth forecast per annum to show what a lower-level forecast would be for these future horizon years?

**24) 5.5 Rail** (Page 59)

The description of the typical container train configuration accessing T-5 in the introductory paragraph says that “Each train would typically be 7,500 feet in length, but could range up to 8,600 feet in length.”

S-002-024

This contradicts earlier and subsequent statements regarding the assumed train length not to exceed 7,500 feet in Sections 1.2.3 and 2.6 of the Transportation Technical Report as well as in Appendix F – Rail Infrastructure and Train Volume Analysis Technical Memorandum by suggesting total train lengths could be up to 8,600 feet in length, which is not mentioned anywhere else in this document. This inconsistency should be addressed and corrected.

**APPENDIX F**

**25) 2.1 Existing Rail Infrastructure** (Minor Correction) (Page 3 of 25)

The description of the two transcontinental railways that originally reached Seattle in 1883, the Northern Pacific, and in 1893, the Great Northern “became components of the BNSF and UPRR.”

S-002-025



July 8, 2016  
 Port of Seattle – Terminal 5 DEIS  
 Page 13 of 14

Actually the Northern Pacific and Great Northern Railways merged with the Chicago, Burlington, and Quincy Railroad in 1970 to become the Burlington Northern (BN) Railroad. The BN merged with the Atchison, Topeka and Santa Fe Railway in 1995 to become the Burlington Northern-Santa Fe Railway, now known as the BNSF Railway. Neither the Great Northern nor the Northern Pacific railroads were predecessors of the Union Pacific Railroad.

S-002-  
 025  
 (cont.)

**26) 2.2 Existing Freight Rail Traffic Volumes (Clarification) (Page 7 of 25)**

The summary of existing freight rail traffic volumes provides a comparison of daily track capacity relative to daily train volumes (2010) on key Class I mainline rail segments in Washington State, such as the north-south Seattle-Portland mainline and the east/west crossings of the Cascade Mountains via Stevens and Stampede passes. This data set is referenced as being published out of the Washington State Rail Plan (March 2014). However this plan is slightly dated now, being over two years old and will be updated soon (2017). This analysis should note that the dynamics, composition of freight rail traffic and volumes have changed somewhat since the publication of the Washington State Rail Plan in 2014.

S-002-  
 026

There have been increases in commodity-based trains, especially oil and coal, since 2010 and future plans for expansion of both the Washington/Oregon Amtrak Cascades passenger service as well as potential for increases in Sounder Seattle-to-Tacoma commuter train service could end up consuming more north-south mainline capacity on the BNSF/UP corridor in the future.

While it is true that the 2014 Washington State Rail Plan suggests additional available Class I mainline capacity is sufficient to accommodate additional intermodal container trains coming out of T-5 in West Seattle (and the additional “off-site” container trains out of BNSF’s SIG and UP’s Argo yards) in development Alternatives 2 and 3, this condition might not hold in the future, given changing dynamics in the freight and passenger rail industry in Washington State.

The rail capacity analysis summary in this section should be expanded to either explain what dialogue has or is occurring with the Class I railroads (BNSF / UP) regarding expectations for future mainline capacity to serve expected intermodal rail traffic growth of T-5 through the year 2040 OR there should be further analysis conducted suggesting how future Class I mainline rail capacity analysis will be made available for this future intermodal rail traffic growth out of T-5 in either Alternative 2 or Alternative 3.

**27) 7.3 Quiet Zones (Clarification) (Page 23 of 25)**

The description of the FRA Quiet Zones, requirements for implementation, and the methodology for determining if a Quiet Zone can be implemented as a community mitigation component is quite descriptive. However the conclusion of this section indicates that the costs and footprint required to upgrade the various rail grade crossings proximate to the T-5 terminal in West Seattle is infeasible. However, no cost information or other data was presented to support this statement.

S-002-  
 027

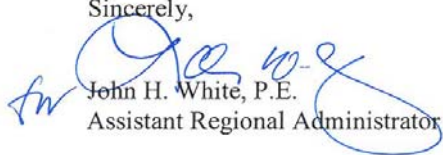
July 8, 2016  
Port of Seattle – Terminal 5 DEIS  
Page 14 of 14

What was the basis for this assertion and what cost-information or other data was used to make this determination? Additional information and justification is needed here to support this assertion.

**S-002-027**  
**(cont.)**

Thank you for giving us the opportunity to review the Terminal 5 DEIS. If you have any questions, or require additional information on our review comments, please contact Ramin Pazooki of our Development Services section by phone at 206-440-4710, or via e-mail at [pazookr@wsdot.wa.gov](mailto:pazookr@wsdot.wa.gov).

Sincerely,

John H. White, P.E.  
Assistant Regional Administrator

JW:rp

cc: Project File  
R. Brown, MS 120  
T Noyes, MS 116  
J. Beloso, MS 55

Note that many of the comments in the State Department of Transportation letter were the same as one of the individual commenters. Therefore, many of the responses apply to Comment S-002 as well as I-106.

**S-002-001**

See FEIS, Volume I, Chapter 1, Section 1.2.5 for additional information on the schedule for implementation of Alternatives 2 and 3.

**S-002-002**

The Port identified reasonable alternatives for the proposal to rehabilitate and improve Terminal 5 to continue as a long-term, modern, flexible, well-equipped, multimodal cargo terminal. The facility requires modification in order to adequately serve larger vessels, including increased berth depth, increased capability cargo crane equipment sufficient to reach up and over the larger vessels, and sufficient electrical power supply necessary to operate the rehabilitated facility. The principal focus of the proposed Project, as described in Alternatives 1 and 2 is to rehabilitate existing wharf areas and establish vessel berth dimensions to allow access for existing and future cargo vessels of up to 18,000 TEUs that are anticipated to call the terminal over the next 20 years.

The Project alternatives described in the DEIS describe essential physical improvements necessary for rehabilitation of Terminal 5 marine cargo facilities, combined with analysis and evaluation of potential environmental effects resulting from anticipated levels of container cargo throughput.

The alternatives were structured to identify project elements and operations necessary for efficient and effective future use of Terminal 5 as a productive container cargo facility. Alternatives 1 and 2 represent conservative cargo growth rate projections. The Project alternatives provide a framework reference for analyzing and evaluating foreseeable environmental effects. Future operations at Terminal 5, including identification of a container cargo operator, will be within the reference framework defined by Alternatives 1 and 2.

The Project EIS analyzes and evaluates potential environmental effects using conservative container cargo volume projections. SEPA rules do not require a lead agency to make use of a conservative analysis in its EIS. The alternatives in the EIS were structured to identify project elements that would mimic operations and construction occurring at intense levels and occurring at a growth rate at the upper end of projections. The potential impacts may be conservative but the information reasonably estimates foreseeable significant environmental consequences. Throughput levels and the expected timeline for implementation of rehabilitation and improvement actions included in the proposed Project may be variable due to changes in international cargo shipping volumes and business practices. Shipping needs would affect the rate towards full capacity envisioned in either of the Alternatives and may vary from the higher levels predicted in the EIS. A lower growth rate would delay the environmental impacts evaluated in relation to full capacity. If the Project does not achieve full capacity, impacts would likely be less than anticipated, although mitigation actions would be implemented as appropriate and stipulated by conditions of approval.

Section 5.1 in the Transportation Technical Report in the FEIS analyzes future potential growth in terminal throughput over time. Traffic forecasts developed for the City of Seattle's proposed *2035 Comprehensive Plan* were reviewed for consistency with the background traffic growth assumptions was added in the FEIS. These Draft Comprehensive Plan projections indicate that the Terminal 5 background annual traffic growth assumption of 1.6 percent is conservatively higher than the projected annual growth on arterials crossing the screenlines nearest the study area, and is consistent with the projected annual growth on the state highway segment nearest the study

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area. Additionally, Section 2.1.5 future plans and policies section in the FEIS was expanded to include additional modal transportation plans and programs.

**S-002-003**

The truck trip distribution pattern and trip assignments in Section 4.3 the Transportation Technical Report (see FEIS, Volume II, Appendix C) have been extended to show the net change in truck trips to the state highway network, including Interstate 5, Interstate 90, and SR 99. Analysis has also been added in Section 5.1 of the Transportation Technical Report to show the percentage of total traffic at key locations on the network. The net change in traffic associated with Terminal 5 would be a small percentage of the total traffic on the state highways.

State and regional plans were reviewed, but no additional projects that would affect operation in the study area, beyond those already described in Section 2.1.5 of the Transportation Technical Report, were identified.

The only vehicle capacity improvement projects on Interstate-5 or SR 99 in the WSDOT Highway System Plan in central Seattle are addition of a lane to the Interstate-5 Northbound to Interstate-90 Eastbound ramp, and provision of HOV access between Interstate-5 and the E3 busway, neither of which would affect nor be affected by the proposed Project. The only projects identified on Interstate-5 or SR 99 listed in Transportation 2040 are conversion of Interstate-5 HOV lanes to HOT lanes (which is listed as a Candidate project and not yet approved) and improvements related to the Alaskan Way Viaduct replacement project which is currently under construction. Overall, the projections above indicate that additional trucks generated by the proposed Project would comprise a very small portion of the total vehicle growth projected through 2035 on Seattle's highways, and would not affect long-range plans or policies developed for these facilities.

Forecasted volumes for each alternative were provided to UPRR and BNSF. The railroads did not indicate any anticipated difficulties supporting the future operations at Terminal 5.

**S-002-04**

The language of the SEPA Rules in WAC 197-11-448 makes it clear that only impacts related to the environment stated in 197-11-444 are mandatory for analysis. Purely economic, socioeconomic and nonenvironmental impacts are not required for the EIS analysis. Contextual background economic information was provided in the DEIS to assist in understanding the scope of the proposed Project and no additional detail is provided in this FEIS.

The Port planned and designed the proposed Project to serve anticipated increased marine cargo growth in the next 20 years, including approximately 4 to 5 percent compounded annual growth. The investment necessary to rehabilitate Terminal 5 to accommodate increased marine cargo volumes, transported by increased capacity vessels, will be offset by long-term lease revenue from the rehabilitated and improved site. Additional financial benefits from the Project will include increased direct and indirect tax revenue, including property/leasehold, business and occupation taxes, and sales and use taxes, resulting from the revenue generated by increased cargo volumes. Additional benefits will result from continuing direct and indirect industry employment linked with growth in marine cargo volumes.

The financial goals of the proposed Project include balancing investment in efficient Terminal 5 infrastructure and the resulting economic benefits to the region with the need to meet the needs of existing and anticipated marine cargo shipping. The proposed Project includes marine cargo infrastructure changes consistent with changes in the

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container cargo transshipment industry. The physical infrastructure Project goals complement long-term NWSA and Port investment and financial goals.

**S-002-005**

Please see Standard Response No. 8: Cargo Forecasts at the beginning of Chapter 6 for additional information.

**S-002-006**

The referenced section (Section 2.2.4 of the DEIS) describes the proposed Project alternatives, including container cargo throughput that could be accommodated by rehabilitated Terminal 5 infrastructure. Off-site improvements are recommended as mitigation measures linked with Project alternatives (described in Chapter 3 of the DEIS and Section 6 of the Transportation Technical Report).

**S-002-007**

Please see response to comment S-002-006. The referenced section describes the proposed Project, not the off-site mitigation measures.

**S-002-008**

The future traffic volumes presented in the City of Seattle's Draft 2035 Comprehensive Plan Update were projected using the City's long-range travel demand forecasting model. It should be noted that both the PSRC (Puget Sound Regional Council) regional travel demand forecasting model and the City's travel demand forecasting model (which was developed by starting with PSRC regional model and adding more detail at the city level) are macroscopic models that aggregate land use within Transportation Analysis Zones and not at a site or parcel level. The travel demand forecast models are appropriate for projecting long-range corridor-level traffic growth and changes in travel patterns expected to result from buildout of future land use plans, which is how they are applied both by the City and the PSRC.

The background growth rate applied to estimate future traffic volumes reflects the same type of regional growth that is reflected in the City and PSRC long-range forecasts. Please see also the responses to Comments C-002-74 and C-002-093. As discussed, the 1.6 percent annual background growth rate that was applied to develop the volume forecasts for the Terminal 5 alternatives is higher (and thus more conservative) than the growth projected in the Comprehensive Plan forecasts for arterials near the site, and is similar to the growth projected for SR 99 near the site. Because the City model was built off of the PSRC regional model, it is also consistent with regional forecasts. The additional trips expected to result from the Terminal 5 alternatives were added to the projected background traffic, resulting in conservative "with project" estimates.

Related to the PSRC forecasts, the Port has closely coordinated with PSRC since 2008 to make sure that its growth expectations were included in the regional forecasting models. Truck trip estimates were provided to the PSRC in 2008 (*Memorandum: Port of Seattle Truck Trips for PSRC Modelling*, November 5, 2008). That memorandum had estimates for Terminal 5 that ranged from 2,930 truck trips per day in 2020 to 6,150 truck trips per day by 2040. The currently conceived Project is expected to generate fewer than 5,000 truck trips on a Design Day. Therefore, the PSRC forecasts have adequately accounted for the potential Terminal 5 growth.

The methods applied to evaluate the Project reflect best practice for project-level transportation impact analyses, as established by the Institute of Transportation Engineers. Because the Project would not affect the zoning or land use designation of the Terminal 5 site, it is compatible with long-range model assumptions, and there is no basis for

revisiting long-range citywide or regional travel demand forecasts. Text has been added to Section 5.1 of the Transportation Technical Report to clarify that growth assumptions applied to the Terminal 5 analysis are compatible with the City's long-range forecasts.

**S-002-009**

Please see response to comment C-002-122 for information on vessel calls.

**S-002-010**

The Port used the following information when creating the assumptions for the EIS analysis. Consist (cars in a train)<sup>29</sup> and train lengths (consist plus the number of engines) are approximate. Thirty-six (36) sets of three-well cars would be approximately 7,272 feet while 22 sets of five-well cars would be 7,194 feet. GE locomotives range from 70 to 75 feet each; three locomotives would range from 210 to 225 feet. Current EMD locomotives are not Tier 4 compliant. Therefore, it was assumed that EMD locomotives would not be used in the future to serve Terminal 5. Full consists with three road power GE locomotives could range from 7,404 to 7,497 feet.

For purposes of the EIS, it is acceptable to use an estimate of 7,200 feet for a complete consist and 7,500 feet for a full train with road power. However, it should be noted that these lengths are approximate and will vary with current and future combinations of equipment and motive power.

In addition, the geometry of Terminal 5 and the available track between the last terminal switch and the lift bridge do not allow longer trains with current equipment. The existing Terminal 5 rail line infrastructure, constructed in 1999, is sufficient to accommodate inter-modal rail operations associated with increased Terminal 5 container cargo volumes. No rail line changes are included in Alternatives 2 and 3.

While the railroads, at their discretion, might elect to deliver longer trains to the terminal; the longer trains would back up across the lift bridge and harbor island as they are broken down into cuts<sup>30</sup> for placement in the WSY and terminal. This would not be efficient use of the infrastructure in the vicinity of the terminal. If the railroads choose to operate longer trains leaving the Seattle area, these trains would have to be assembled off terminal (at SIG or Argo) and would not impact the operations of the terminal.

**S-002-011**

Please see Standard Response No. 8: Cargo Forecasts at the beginning of Chapter 6 for additional information.

**S-002-012**

Please see response to comment S-002-009.

The vessel call frequency noted in the tables and descriptions are weekly vessel calls.

Clarification on the basis for assumptions used for loading and unloading of vessels was requested. Large vessel service at Terminal 5 is expected to increase after the terminal opening in 2020 and grow in frequency or in

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<sup>29</sup> In train terminology, the term "consist" is used to describe the makeup of a train (i.e., freight, car types, etc.)

<sup>30</sup> In train terminology, the term "cut" describes the grouping of cars coupled together.

percentage of discharge and load, until reaching the terminal's full potential capacity. This is true for both Alternatives 2 and 3. Alternative 1 cannot accommodate vessels of this size, and assumes a higher frequency of lower-capacity vessels. The assumed percentages are based on experience with vessels making a call Pacific Northwest call on a Pacific rotation.

By the year 2030, throughput capacity is anticipated to grow to approximately 1.3M TEU. This is the assumption for both Alternatives 2 and 3. The assumed percentages of discharge and load are based on our experience with vessels making a call Pacific Northwest call on a Pacific rotation. It is possible that a future ship rotation would include 18,000-TEU vessels instead of the projected 14,000. However, the quantity of discharge or load would not necessarily increase (therefore reducing the percentage). This is true for both Alternatives 2 and 3.

Information on assumptions used for cargo forecasting can be found in Standard Response No. 8: Cargo Forecasts at the beginning of Chapter 6.

**S-002-013**

The ship sizes and the percentage of discharge used in the Transportation Technical Report are not identical to those described in Volume 1; however, the weekly and annual container volumes are identical in each of these sections. Volume 1 acknowledges that 18,000-TEU ships may serve the facility in lieu of 14,000-TEU vessels. There were no substantial impacts identified between the ships being 14,000 TEU or 18,000 TEU. The Vessel Traffic and Navigation Report considers up to 18,000-TEU vessels. The number of calls is weekly for each.

Section 2.3.4.2 on page 2-13 is a description of Alternate 2, as is all of the text under Section 2.3.4, Proposed Alternative 2 Operations.

**S-002-014**

The basis for the modal split is historic and forecasted based on distribution of proposed Terminal 5 freight. The Port anticipates that if the existing Northwest container terminals maintain their volume or continue to grow, that the increased capacity proposed for Terminal 5 will need to be primarily intermodal traffic to the Midwest, as the local demand will not keep up with this additional regional throughput. Several terminals in the northwest have operated at this modal split in the past, and it is therefore a reasonable assumption or analysis of potential impacts.

**S-002-015**

Please see response to comment S-002-010 for information on regional traffic.

**S-002-016**

(a) Terminal 5 is one of two terminals, one in Elliott Bay and another in Commencement Bay, identified by the NWSA as strategic terminals, with sufficient existing berth length and intermodal rail facilities necessary to serve increased volumes of export and import container cargo, including regional and national cargo requirements. Northwest marine cargo facilities, due to regional population and economies of container cargo shipping, serve regional and national cargo movement needs. A substantial portion of cargo transshipped by regional container cargo facilities serves business and populations beyond the Pacific Northwest, making effective intermodal rail transportation an essential element of strategic terminals. Cargo transfer operations outside the region are often referred to as discretionary cargoes, relying on efficiencies provided by capable and productive marine cargo facilities. Transshipment of outside-of-region cargoes generates substantial coincident benefits for regional businesses, allowing for productive use of cost-effective rail and ocean transportation rates and services due to the

import/export shipping threshold opportunities provided by productive marine cargo facilities serving national cargo needs. A Terminal 5 operator has not been identified and specific features of rail and ocean service at Terminal 5 are not determined. However, it is known that the container cargo volumes evaluated in the DEIS will be critically supported by movement of intermodal cargo into national rail shipping networks. The DEIS included substantial evaluation of intermodal rail shipment activities.

(b) The growth in truck trips related to the Project is a minor component of the total volume of truck traffic that the region will experience in future years, and therefore, its growth should not be directly related to the growth projected for Federal Highway Administration's Freight Analysis Framework. For example, each import container that is trucked to a local warehouse could generate many more trips from that warehouse as the container is repackaged, or its contents are processed by a local manufacturer and then transported again to a wholesaler or secondary processor. Analysis and evaluation of project-specific truck traffic effects linked with the Project cannot anticipate or reasonably assess multiplier effects resulting from other land use and project sites.

(c) It is noted that the "regional" market referred to in this comment and discussed in Section 1.2.3 of the Transportation Technical Report relates to the Pacific Northwest, and not just the four-county PSRC region. The trip assignment accounted for local and regional trips.

(d) Larger ships are expected to reduce shipping costs due to economies of scale, compared to service by smaller vessels linked with the infrastructure limitations described by the No Action Alternative. Please note that shipping costs are evaluated by terminal operators and shippers in the context of container cargo facilities throughout the northwest and west coast. The present Project is for the purpose of meeting expected cargo shipping needs associated with larger ships and vessel services that other northwest and west coast cargo facilities are also being modified to receive.

(e) The Port has submitted a comment to the City of Seattle that the referenced statement regarding a shift from rail to truck is incorrect.

(f) The study area has been expanded to show the net change of truck traffic on the local network.

**S-002-017**

Please see the responses to Comments S-002-003 and S-002-008 regarding analysis of an extended study area and PSRC growth forecasts.

**S-002-018**

Please see the responses to Comment S-002-008 and Comment C-002-093 for information on the Comprehensive Plan.

**S-002-019**

The Port and SDOT were lead partners for the Freight Access Project, and it did include growth in container terminal traffic to 3.5 million TEUs per year with much of the growth occurring at Terminal 5 and/or Terminal 18. The FMP followed the FAP and adopted many of the recommendations that had been made for the near Port area.

However, the capacities used in the EIS are not economic forecasts of demand, but are evaluations of the potential capacity of the terminal under different operating conditions. Growth projections were used to reasonably estimate how this capacity might be reached over time. These capacities were generated to define the conditions that the



maximum potential impacts of the Project could be defined and analyzed. Therefore, the scenarios used in the EIS would not be appropriate to include in the FAP and FMP at this time.

Mitigation measures to address all transportation impacts are presented in Volume II, Appendix C, Section 6 of the Transportation Technical Report.

**S-002-020**

There is not a discrepancy in the analysis. The train volumes are based on a modal split of the peak daily/weekly volume. Peak weekly container volumes are a product of berthing configuration and potential vessel capacities. Annual volume is a product of these factors and may not vary linearly depending on the disproportionate impact of berth and vessel sizes. The prior operations of the Terminal 5 rail yard and those described in the No Action Alternative are below the maximum existing capacity of the Terminal 5 rail yard.

**S-002-021**

Chapter 4 of the Transportation Technical Report presents the travel demand forecasts for the Project alternatives. Information related to the freight networks, both city and state, was provided in an earlier section (Section 2.1.5 of the Transportation Technical Report in FEIS, Volume II, Appendix C). That section has been updated to reflect new information available since publication of the DEIS.

**S-002-022**

(a) Comment about SR 509 noted. WSDOT's current target date to complete SR 509 is 2031.

(b) Related to the truck trip distribution pattern, the same pattern was assumed for all three alternatives, and they do assume that trucks would shift to SR 509 when that route is available. Prior to that, many of the trips may continue to use West Marginal Way to SR 599 to Interstate 5 to reach destinations south of Seattle.

(c) Analysis related to Terminal 5 trips on the state highways and the percent increase in traffic on those routes has been added in Table 11 of the Transportation Technical Report (See FEIS, Volume II, Appendix C).

**S-002-023**

No lower growth rates were evaluated. The worst-case condition at the higher rates would not adversely affect the state highways in the site vicinity.

**S-002-024**

Please see response to comments S-002-010 and S-002-015 for information on future traffic volumes.

**S-002-025**

Comment acknowledged.

**S-002-026**

The EIS is based on currently available information. Future unpublished reports from WSDOT are not incorporated. The EIS makes no representation that future traffic, technology, or business models will not change.

**S-002-027**

Mitigation measures for train horn noise are proposed for Alternative 2 and Alternative 3. The safety measures could include fencing, gates, or wayside horns.

These measures are anticipated to be the infrastructure improvements necessary to facilitate the implementation of a quiet zone.

Local public authorities (such as the City of Seattle) may designate, or request approval of, quiet zones from the FRA, in which train horns may not be routinely sounded. Since several of the crossings are accessed by private property, the designation of the quiet zone would be coordinated with the adjacent property owners.



## THE SUQUAMISH TRIBE

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Post Office Box 498  
Suquamish, WA 98392-0498  
Phone (360) 598-3311  
Fax (360) 394-3686

June 4, 2016

Paul Meyer  
Port of Seattle, Pier 69  
P.O. Box 1209  
Seattle, WA 98111-1209

Re: Terminal 5 Wharf Rehabilitation, Berth Deepening, and Improvements Project  
Draft EIS – Comment Period Extension Request

Dear Mr. Meyer:

The Suquamish Tribe requests a 15-day extension for providing written comments on the draft Environmental Impact Statement for the Terminal 5 Wharf Rehabilitation, Berth Deepening, and Improvements Project. Per our meeting on June 3, 2016, this 15-day extension request is modified from the Tribe's preferred 30-day extension of the comment period. We look forward to our continued discussions on the project.

T-001-  
001

Please contact me at 360-394-8442 if you have any questions.

Sincerely,



Richard Brooks  
Environmental Program Manager

Cc: Lindsay Pulsifer, POS

---

**T-001-001**

The comment period originally was to close June 21, 2016, and was extended 17 days to July 8, 2016



**MUCKLESHOOT INDIAN TRIBE**  
**Fisheries Division**

39015 - 172<sup>nd</sup> Avenue SE • Auburn, Washington 98092-9763  
 Phone: (253) 939-3311 • Fax: (253) 931-0752



8 July 2016

Mr. Paul Meyer, Manager  
 Environmental Permitting and Compliance  
 Port of Seattle, Pier 69  
 PO Box 1209  
 Seattle, Washington 98111-1209  
 Email Address: SEPA.p@portseattle.org

Re: Comments on Draft Environmental Impact Statement, Terminal 5 Cargo Wharf  
 Rehabilitation, Berth Deepening, and Improvements. Port of Seattle, Seattle, Washington  
 (POS SEPA No. 16-03)

Dear Mr. Meyer:

The Muckleshoot Indian Tribe Fisheries Division has reviewed the above-referenced draft Environmental Impact Statement (dEIS). Actions and operations evaluated in this dEIS occur within the Tribe's Usual and Accustomed Fishing Area. The proposed project includes rehabilitation of Terminal 5 "to serve existing large and emerging increased capacity container cargo vessels" (dEIS, p. iii). Both of the action alternatives evaluated in the dEIS (Alternatives 2 and 3) involve identical cargo wharf rehabilitation, berth deepening, water/stormwater utility retrofits, and electrical utility capacity improvements, but differ as to the extent of upland improvements, which ultimately influences the annual container cargo transshipment capacity at the site. The purpose of this letter is to provide comments on the dEIS, specifically regarding potential impacts to Muckleshoot treaty-reserved fishing and potential impacts to fisheries resources. The Tribe reserves the right to submit additional comments to the Port regarding this project at a later date.

In general, the dEIS mentions that Tribal fishing occurs at Terminal 5 and adjacent areas, but fails to analyze any impacts to Tribal fishing as a result of either of the action alternatives. This omission is despite the fact that the Tribe raised these concerns to the U.S. Army Corps of Engineers regarding this project in a comment letter dated 16 June 2015 (attached). For example, the dEIS discusses that construction of improvements to the wharf and other in-water activities are expected to occur over 3 fish windows (between August 16 and February 15 of each construction year). This construction work has the potential to significantly displace or otherwise impact Tribal fishing in this area during the 3 seasons of in-water and over-water work. In addition to the construction-related impacts to Tribal fishing, the dEIS fails to discuss potential impacts to Tribal fishing from larger capacity vessels calling at Terminal 5. These larger-

**T-002-  
001**

capacity vessels, with capacities upwards to 18,000 TEU's, occupy a significantly larger footprint compared to existing vessels currently utilizing Terminal 5. These larger vessels have the ability to impact tribal fishing due to their larger size and how other vessels navigate around these larger vessels entering and exiting the West Waterway. The alternatives also discuss "berth utilization" percentages associated with each capacity improvement, in addition to the ability of the Port to utilize Terminal 5 for "lay berthing, general cargo loading, and vessel provisioning and fueling," all of which have the potential to impact Tribal fishing (dEIS, p. 2-4). It is unclear as to whether the proposed project would also accommodate seasonal berthing at Terminal 5. The Port of Seattle should meet with the Muckleshoot Indian Tribe to initiate in-depth discussions regarding potential impacts to Tribal fishing as a result of these proposed activities.

**T-002-001**  
**(cont.)**

Beyond the potential for project construction activities and future vessel use of Terminal 5 to impact Tribal fishing as stated above, we have several comments on the following sections of the dEIS. These comments are as follows:

- *Operational Impacts on Plants and Animals, Vessel Traffic (page 3.4-14)*. This section explains that vessel calls are expected to decrease by 20% for Alternatives 2 and 3, and, therefore, reduce migratory impediments to juvenile salmon. This information seems incongruous with berth utilization estimates of 57% and 59% for Alternatives 2 and 3, respectively (See Section 2.3.7.2). Please clarify.
- *Reasonably Foreseeable Future Projects (pages 2-20 – 2-21)*:
  - 1) The dEIS identifies that the Lockheed West Federal Superfund Site cleanup, which is adjacent to Terminal 5, is scheduled to be conducted during the same time frame as the Terminal 5 work. This work, depending on timing and equipment use, also has the potential to impact Tribal fishing during in-water work activities. The Port should consider cumulative impacts to Tribal fishing as a result of both of these activities occurring simultaneously.
  - 2) The Seattle Harbor Navigation Improvement Project is also similarly identified as a project that could be under construction at the same time as the Terminal 5 work. The dEIS further states that this project not functionally related to the Terminal 5 work (see Section 2.6.4). We understand that a major factor influencing the Seattle Harbor Navigation Improvement Project is the Port's stated need to have deeper draft vessels call at Terminal 5 and in select other areas of Seattle Harbor, so it seems that these projects are very much functionally related. Furthermore, the Port should consider cumulative impacts to Tribal fishing as a result this activity occurring simultaneously to the proposed Terminal 5 work, as well.

**T-002-002**

**T-002-003**

Comments on Port of Seattle Terminal 5 dEIS  
T5 Cargo Wharf Rehabilitation, Berth Deepening, and Improvements

8 July 2016  
Page 3

- *Treaty Fishing (Section 3.10.2, Page 3.10-3)*: The Muckleshoot Indian Tribe also harvests pink salmon in the project area.
- *Treaty Fishing at Terminal 5 (Sections 3.10.3.1, 3.10.3.2, 3.10.4.2, and 3.10.5.1, pages 3.10-4 through 3.10-7)*. These sections need to be updated based on the Tribal fishing impacts discussion earlier in this comment letter.

T-002-  
004

Thank you for the opportunity to comment on this draft Environmental Impact Statement. The Tribe appreciates your careful consideration of these comments. We would welcome the opportunity to meet with the Port of Seattle to initiate in-depth discussions regarding potential impacts to Tribal fishing as a result of these proposed activities. For additional questions regarding these comments, please contact me at (253) 876-3130.

Sincerely,



Glen R. St. Amant  
Habitat Program Manager



**MUCKLESHOOT INDIAN TRIBE**  
**Fisheries Division**

39015 - 172<sup>nd</sup> Avenue SE • Auburn, Washington 98092-9763  
Phone: (253) 939-3311 • Fax: (253) 931-0752



16 June 2015

U.S. Army Corps of Engineers  
Regulatory Branch  
Post Office Box 3755  
Seattle, Washington 98124-3755  
Attn: Olivia Romano, Project Manager  
olivia.h.romano@usace.army.mil

Re: Comments on Joint Public Notice for Terminal 5 Rehabilitation Project proposed by the Port of Seattle in the West Waterway, Duwamish River (Reference No. NWS-2015-0269-WRD).

Dear Ms. Romano:

The Muckleshoot Indian Tribe Fisheries Division has reviewed the above-referenced Joint Public Notice. The proposed action occurs within the Tribe's Usual and Accustomed Fishing Area. The proposed action is to conduct numerous construction activities to rehabilitate/strengthen Terminal 5 and dredge up to 29,800 cubic yards of sediment in the berthing area of Terminal 5. The stated purpose for the project is to "improve efficient, operation safety, and support larger capacity container ships at Terminal 5."

This project has the potential to generate impacts to Tribal fishing in the area if construction activities occur during periods of Tribal fishing. Although the specific details involved with the construction equipment and construction dates are not discussed in the Joint Public Notice, these activities pose the real ability to adversely affect Tribal fishing in the area, either through direct displacement of fishing areas or through fishing gear damage caused by the construction activities. It will also be important for the Tribe to understand all uses at the Terminal concurrent to construction activities, in order to more fully understand impacts. Please direct the applicant to contact the Tribe with more details, so that the potential impacts can be properly evaluated.

Beyond the potential for project construction activities to impact Tribal fishing as stated above, this project itself has the potential to create new, long-term impacts to Tribal fishing due to future anticipated vessel use enabled with the proposed project. Please direct the applicant to contact the Tribe with more information on the anticipated sizes and moorage details associated with larger capacity container ships and other vessels that could moor at Terminal 5 so that potential impacts can be properly evaluated.

Comments on Proposed Terminal 5 Strengthening  
Duwamish West Waterway

NWS-2015-0269-WRD  
Page 2

Thank you for the opportunity to comment on this Joint Public Notice. The Tribe appreciates your careful consideration of these comments. For additional questions regarding these comments, please contact me at (253) 876-3130.

Sincerely,



Glen R. St. Amant  
Habitat Program Manager



**T-002-001**

The Port recognizes the need to evaluate the proposed Project in detail with the Muckleshoot Indian Tribe and the Suquamish Tribe to determine actions necessary to avoid and minimize potential negative effects on Treaty fishing access. The Port currently works in partnership with the Muckleshoot Indian Tribe and the Suquamish Tribe to exchange harbor-wide vessel arrival, departure, and berth information with Treaty fishers, including measures to offset potential disruption of Treaty fishing access. The proposed Project, including potential changes in the size of cargo vessels serving the site, will be included in existing harbor-wide Treaty fishing coordination activities, in addition to continued consultation throughout the design and implementation of the Project.

Terminal 5, located on the west margin of the West Waterway, is within the Treaty fishing access areas. Vessel activity to and from Terminal 5 would continue, with the potential to affect fishing access in Elliott Bay and in the West Waterway, including drift-net and set-net Treaty fishing areas.

The Port recognizes that in-water construction activities, necessary to rehabilitate the existing Terminal 5 container cargo pier with increased diameter concrete support piling, install deep subtidal slope stabilization steel sheet piling, and dredge for increased navigational access depth, has the potential to affect Treaty fishing access during three consecutive yearly fishing harvest periods. The Port is committed to work with the Treaty fishers to avoid and minimize potential impediments to fishing access.

An essential element of the proposed Project is preparing the marine cargo facility for service by larger container ships. The following provides information comparing past Terminal 5 container vessel service with anticipated use of the rehabilitated marine cargo facility by larger capacity vessels.

During the period 2000–2013, the number of container cargo vessels serving Terminal 5 operations included approximately 215 vessel calls per year, with the greatest number of ship calls in 2005, 290 vessel calls, and least frequent vessel visits in 2008, 210 vessel calls. During this period, ships calling at Terminal 5 were variable in size, approximately 900 to 960 feet long and 130 to 135 feet in beam. Vessels with similar dimensions typically represented 5000- to 6000-TEU capacity. During the period 2000–2013, cargo vessel berths at Terminal 5 were vacant 45 to 60 percent of total berth time. In the period 2012–2014 vessels with approximately 6000- to 7000-TEU capacity made irregular visits to Terminal 5. These larger vessels represented the maximum size ships that could be accommodated by existing Terminal 5 container cranes, depending on the height of containers loaded above deck.

Increased cargo capacity vessels commonly serving Terminal 18, Terminal 30, and Terminal 46 in the period 2012–2014 could not be served by Terminal 5 cargo facilities. Container ships with 7000- to 8500-TEU cargo capacities have composed the majority of Terminal 18, Terminal 30, and Terminal 46 vessels calls in the period 2012–the present. These vessels are, generally, approximately 1100 to 1200 feet long, with vessel beam dimensions 140 to 150 feet. Vessels of this size average approximately 17 percent greater length and 14 percent greater beam than the vessels calling at Terminal 5 during the period 2000–2013.

Container cargo projections linked with proposed Project Alternatives 2 and 3 include 50 to 65 percent increases in cargo volumes. Increased cargo volumes would be transported in larger vessels. The size of vessels calling at Terminal 5 is expected to be approximately 25 greater in length and approximately 17 to 28 percent greater in beam. As a result, despite increased anticipated cargo volumes, projected yearly vessel calls would be less than 210, similar to the 2000–2013 period vessel call average. In addition, projected berth vacancy rates during the period 2030–2040 would be approximately 50 to 60 percent. The size of vessels calling at Terminal 5, as a result of the

proposed Project, is expected to be approximately 25 greater in length and approximately 17 to 28 percent greater in beam, compared with previous vessel service.

In general, increased Terminal 5 cargo volumes presented in the DEIS will not result in increased numbers of vessels serving the site or increased cumulative time at berth. However, the size of vessels using the Terminal 5 wharf will increase, particularly in vessel width.

In addition, the Port acknowledges that continuing and future use of existing and rehabilitated Terminal 5 cargo pier facilities for lay-berth, general cargo loading, and vessel provisioning and fueling has the potential to adversely affect Treaty fishing access. It is important to note that, existing and future Terminal 5 operations may include seasonal and short-term lay berth activities. The Port and the future Terminal 5 marine cargo operator are committed to working in consultation with the Muckleshoot Indian Tribe to avoid and minimize potential negative effects to Treaty fishing due to all vessel operations during fishing periods. The Port submits that the existing maritime access and impact mitigation agreement with the Muckleshoot Indian Tribe will serve as the basis for consultation and coordination between the Tribe and the Port and the Northwest Seaport Alliance.

#### **T-002-002**

Environmental analysis prepared for the proposed Project included use of improved Terminal 5 marine cargo facilities by large vessels transporting increased volumes of cargo. Rehabilitation of the Terminal 5 cargo wharf, to provide stronger dock infrastructure capable of supporting larger cranes required for loading/unloading larger vessels, is expected to result in changes in vessel service at the improved wharf, compared with recent conditions.

During the period 2000–2013, the number of container cargo vessels serving Terminal 5 operations averaged approximately 215 vessel calls per year, with the greatest number of ship calls in 2005, 290 vessel calls, and least frequent vessel visits in 2008, 210 vessels calls. During the period 2000–2013, cargo vessel berths at Terminal 5 were vacant approximately 45 to 60 percent of total berth time.

Container cargo projections linked with Project Alternatives 2 and 3 include 50 to 65 percent increases in cargo volumes. It is important to note that increased cargo volumes would be transported in larger vessels. As a result, despite increased anticipated cargo volumes, projected yearly vessel calls would be less than 210 ships, similar to the 13-year average number of vessel calls during the period 2000–2013. In addition, projected berth vacancy rates during the period 2030–2040 would be approximately 50 to 60 percent. Average periods without vessels present at the improved Terminal 5 wharf would be similar to berth vacancy data during the period 2000–2013.

#### **T-002-003**

The Port will coordinate the proposed Project with the Lockheed West Federal Superfund Site cleanup, as appropriate, particularly if the work is scheduled to take place during the same time period. The upland and shoreline cleanup actions at the Lockheed site are expected to be accomplished using land-based equipment and are not expected to adversely affect aquatic habitat or Treaty fishing access. The Port understands that Lockheed is preparing plans for clean-up and remediation of near-shore area in the former shipyard at the north margin of Terminal 5. In addition, the Port will be preparing plans for piling removal and clean-up in former shipyard areas at the north margin of Terminal 5 where the port has Superfund responsibility. The Port is committed to conducting all Port instigated clean-up and remediation to avoid and minimize disruption of Treaty fishing access. Similarly, the Port will work cooperatively with Lockheed to avoid and minimize potential coincident clean-up actions and coincident clean-up and Terminal 5 rehabilitation actions. Lockheed-sponsored shipyard clean-up is expected to begin in 2018, with the Port's clean-up work anticipated in 2017. The Seattle Harbor Navigation Improvement

Project proposed by the USACE is a separate and independent action from the proposed Project and will undergo a separate NEPA/consultation process. The port acknowledges that, as local sponsor of navigational improvements planned, designed, and implemented by the Corps of Engineers, consultation and coordination with the Muckleshoot Indian Tribe is essential in order to avoid disruption of Treaty fishing access. Potential negative effects on Treaty fishing due to navigational access improvements may include physical dimensions of dredging as well as dredging schedules. Both require consultation and coordination with the Muckleshoot Indian Tribe. Implementation of the navigation improvement project is unlikely to coincide with completion of the proposed Project, however, if portions of Corps of Engineers navigation dredging and Terminal 5 construction actions are coincident, the Port will make use of existing coordination and impact reduction agreements with the Muckleshoot Indian Tribe as well as work with the Tribe to determine the need for additional measures to avoid and minimize Treaty fishing access disruptions, as appropriate. The objective is to avoid potential coincident and cumulative effects on Treaty fishing access.

However, the Port and NWSA may propose future, as yet undetermined, improvement projects at other cargo facilities in south Elliott Bay, including berth deepening, slope stabilization, or other alterations of in-water facilities. These activities would be for the purpose of ensuring that existing container cargo facilities have sufficient infrastructure to serve larger container ships forecast to enter service in the next decades. The proposed Project is not dependent upon the proposed federally-sponsored navigation improvement project. Improvements at other marine cargo facilities in southwest and south Elliott Bay would also have independent utility, regardless of the outcome of the Seattle Harbor Navigation Improvement Project feasibility study. Navigational access improvements included in the present Seattle Harbor Navigation Improvement Project would, however, be important to long-term, large vessel access to Port container cargo facilities.

The proposed Federal navigation improvement project will be evaluated under NEPA, including dredging in the East and West waterways, aquatic and upland disposal. Under ESA, potential future Port-sponsored capital improvement projects such as berth deepening or slope stabilization are not considered a Federal action for consultation since the actions proposed by the Port would not depend on the Federal action for justification and because each actions would be planned and designed to have independent utility, apart from the Federal action. Future non-Federal improvements would be sponsored and implemented by the Port or NWSA and would be required to meet ESA requirements. The disposal of material at the Elliott Bay Open-Water Disposal site has already undergone ESA Section 7 consultation and is therefore not included in the ESA effects determination for the proposed deepening.

Therefore, effects of non-Federal improvements and disposal are analyzed for cumulative impacts under NEPA, but only the effects of Federal navigation channel dredging are analyzed for an effects determination under ESA. The Corps will prepare a Biological Assessment to analyze the Tentatively Selected Plan during feasibility-level design phase. The Biological Assessment will be submitted to NMFS and USFWS pursuant to ESA Section 7 consultation procedures. A preliminary determination appears in this document.

**T-002-004**

See FEIS, Volume I, Chapter 3, Section 3.10 for updated information on Treaty Fishing at Terminal 5.



PHONE (360) 598-3311  
 Fax (360) 598-6295  
<http://www.suquamish.nsn.us>

## THE SUQUAMISH TRIBE

PO Box 498 Suquamish, WA 98392-0498

July 8, 2016

Paul Meyer, Environmental Permitting and Compliance Manager  
 Port of Seattle, Pier 69  
 P.O. Box 1209  
 Seattle, WA 98111-1209

Re: Terminal 5 Cargo Wharf Rehabilitation, Berth Deepening, and Improvements  
 Draft Environmental Impact Statement (May 2016)

Dear Mr. Meyer,

The site for this proposed project is within the usual and accustomed fishing area of the Suquamish Tribe. The Tribe seeks protection of all treaty-reserved natural resources and cultural resources. The Tribe has had a chance to review information provided and has the following comments.

**T-003-001**

### Section 3.3.2.3 (Fishing Vessel Use)

- Text is erroneous and needs correction.
  - The Suquamish Tribe also has treaty-protected “usual and accustomed” fishing area in Elliott Bay and the Duwamish Waterway.
  - Neither the Muckleshoot Tribe or Washington Department of Fish and Wildlife regulate Suquamish Tribal treaty fishing activity.
  - Tribal treaty fishing activities are not limited and could include crab and/or shellfish, etc. Delete last sentence in the paragraph.

### Section 3.4.3 (Impacts) and 3.4.4 (Mitigation Measures)

- Operational impacts do not discuss or provide mitigation for the increased footprint of the larger vessels that will be utilizing the waterway including but not limited to navigational issues, impacts to smaller vessels (tribal and non-tribal), overwater coverage (impacts not only to fish and other wildlife migrating up and down the waterway but leaving less space for treaty fishing activities to occur), etc.
- Text states rockfish are not present in the project area. What information is there to support this? According to the Lower Duwamish Waterway Group Rockfish Memo (July 2004) rockfish are present within the project vicinity.

**T-003-002**

## Section 3.5.2 (Affected Environment)

- There is no figure showing existing and proposed cap locations (as well as areas where activated charcoal may be proposed) within the direct and indirect project area and there is no detailed text describing how contaminants will remain contained and not migrate into the environment.

T-003-003

## Section 10.4.2 (Treaty Fishing)

- There is currently no formal coordination process in place regarding vessel management and identifying how Tribal treaty fishing conflicts and/or impacts will be addressed.

T-003-004

## Appendix E (Biological Assessment)

- As stated above according to the Lower Duwamish Waterway Group Rockfish Memo (July 2004) rockfish are present within the project vicinity.

T-003-005

## Appendix G (Vessel Traffic and Navigation Memorandum)

- It is unclear how temporary vessel moorage will be addressed when vessels are waiting for berth space and/or unforeseen occurrences including but not limited to union strikes.
- As previously mentioned there is currently no formal coordination process in place regarding vessel management and identifying how Tribal treaty fishing conflicts and/or impacts will be addressed.

T-003-006

Thank you for the opportunity to provide comment. The Suquamish Tribe looks forward to continuing to work cooperatively with the Port of Seattle to develop a plan that satisfies the goals and visions for the future development of Port properties as well as protects Tribal treaty reserved resources. Please keep us informed of project status and project related activities and/or actions. If you have questions or concerns please don't hesitate to call 360-394-8447.

Sincerely,



Alison O'Sullivan  
Biologist, Environmental Program

**T-003-001**

See FEIS, Volume I, Chapter 3, Section 3.3.2.3, Fishing Vessel Use for additional information on Tribal fishing.

**T-003-002**

Please see response to comment T-002-001 for information on Treaty fishing coordination.

In addition, the over-water footprint of the existing Terminal 5 wharf will decrease by approximately 8,500 square feet, all of which will be at the face of the wharf. This will provide additional open water within the waterway. The reduction in over-water coverage, combined with no increase or a small diminution in frequency and duration in berth use, is expected to offset potential impediments to juvenile salmon outmigration and other fish species in the vicinity of Terminal 5.

The DEIS reports that it is not likely that significant rockfish habitat or use occurs in the West Waterway, not that they are not present. This is based on studies by Warner and Fritz (1995) and Stober and Pierson (1984) that did not find rockfish in extensive beach seine surveys within the estuary (99 percent of fish were composed of 4 marine species and juvenile salmon). However, Miller et al. (1977) found significant use of rockfish within Elliott Bay at West Point and Alki Point. It is conceivable that rockfish are present near the mouth of the West Waterway and within the lower reaches, but numbers are very likely low since the West Waterway, as a dredged navigation channel in the area of a former intertidal/shallow subtidal sand flat, does not include rocky substrate in deep subtidal environments important to adult rockfish. Further, the West Waterway does not include areas of substantial marine macro-vegetation important to juvenile rockfish.

**T-003-003**

Detailed information regarding how contaminants will be managed during construction and operation is provided in FEIS, Volume I, Chapter 3, Section 3.5.4.2. The Figure 3.5.1 in this section shows the location of existing remediation areas.

**T-003-004**

We believe that the DEIS section that is referenced is Volume I, Chapter 3, Section 3.10.4.2 rather than 10.4.2.

Since distribution of the DEIS, the Suquamish Tribe, the Northwest Seaport Alliance, and the Port have approved a "Maritime Access and Impact Mitigation Agreement " for the purpose of avoiding and minimizing potential conflicts between Treaty fishing access and vessels call at marine cargo, cruise terminals, and commercial marinas. Section 3.10.4.2 is revised, regarding Treaty fishing access at Terminal 5. The fundamental objective of working in consultation with the Suquamish Tribe as previously stated. The Port is committed to working in partnership with the Suquamish Tribe to inform treaty fishermen of vessel activity in the vicinity of Terminal 5 during fishing periods. Exchange of detailed vessel information is provided as a means of avoiding potential fishing use and vessel operation conflicts and to ensure continuing Treaty fishing access to this area of the West Waterway. All construction activities would be coordinated with fishing periods in order to minimize potential disruption of fishing locations due to the presence of floating equipment and any shifts in cargo vessel mooring areas.

The Port acknowledges the need to evaluate the proposal in detail with the Suquamish Tribe to determine actions necessary to avoid and minimize Treaty fishing access and vessel use conflicts. The Port will continue to work together with the Suquamish Tribe to ensure effective consultation throughout the design and implementation of the Project.

**T-003-005**

The biological assessment reports that it is not likely that significant habitat or use by Endangered Species Act-listed rockfish occurs in the waterway (Bocaccio, canary rockfish, yelloweye rockfish). This is based on studies by Warner and Fritz (1995) and Stober and Pierson (1984) that did not find rockfish in extensive beach seine surveys within the estuary (99 percent of fish were composed of 4 marine species and juvenile salmon). However, Miller et al. (1977) found significant rockfish use within Elliott Bay at West Point and Alki Point (brown, quillback, copper, and sharpchin rockfish were found). It is conceivable that rockfish are present near the mouth of the West Waterway and within the lower reaches, but numbers are very likely low due to limitations in existing habitats, including the absence of deep rocky substrate and the lack of substantial deep intertidal or subtidal macro-algal vegetation. ESA-listed rockfish species are extremely unlikely to occur.

**T-003-006**

The Port acknowledges that continuing and future use of existing and rehabilitated Terminal 5 cargo pier facilities for lay-berth, general cargo loading, and vessel provisioning and fueling has the potential to adversely affect Treaty fishing access. Existing and future Terminal 5 operations may include seasonal and short-term lay berth activities. The Port and the future Terminal 5 marine cargo operator are committed to working in consultation with the Suquamish Tribe to avoid and minimize potential negative effects to Treaty fishing due to all vessel operations during fishing periods. The Port submits that the recently approved maritime access and impact mitigation agreement with the Suquamish Tribe will serve as the basis for consultation and coordination between the Tribe and the Port and the NWSA. The access and impact mitigation agreement is appropriate for use in avoiding Treaty fishing access and vessel conflicts during periods when vessel moorage may be limited by berth availability or during waterfront labor disputes.

-----Original Message-----

From: EnviroLytical - Port of Seattle Terminal 5 Improvements [<mailto:info@envirolytical.com>]

Sent: Monday, May 23, 2016 11:26 AM

To: [Shultz.M@portseattle.org](mailto:Shultz.M@portseattle.org); Pam Xander; [Meyer.P@portseattle.org](mailto:Meyer.P@portseattle.org)

Subject: New Communication: This DEIS must consider how the Port will reduce the impact of truck traffic to its facilities, especially Terminal 46. Terminal 5 was to reduce truck congestion at port facilities, but is now sittin

Rick Aramburu <[rick@aramburu-eustis.com](mailto:rick@aramburu-eustis.com)>

<https://e2.envirolytical.com/communication/view/213290>

This DEIS must consider how the Port will reduce the impact of truck traffic to its facilities, especially Terminal 46. Terminal 5 was to reduce truck congestion at port facilities, but is now sitting empty and previous commitments to reduction of congestion have not been met.

I-001-001

Any review of new port facilities must include the impacts of the new bored tunnel project. This includes predictions of substantial number of vehicles avoiding the tunnel because of tolling and traffic increasing downtown because of the lack of downtown access to the tunnel.

I-001-002

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#### I-001-001

The Port currently has no plans to make changes at Terminal 46. If a decision is made in the future to make changes Terminal 46, those changes and plans would be addressed as part of an independent action. The Port has made extensive investments to infrastructure in the Spokane Street Corridor to facilitate freight and rail movements to and from Terminal 5. These are documented in Section 2.1.4 of the Transportation Technical Report (FEIS, Volume II, Appendix C).

#### I-001-002

The growth assumed for area roadways is consistent with long-term forecasts that assume completion of SR 99 as a tolled facility through downtown Seattle. To reduce the potential for diversions to surface streets, the State's Tolling Committee recommended relatively low rates to drive through the tunnel and also recommended that the segment of SR 99 between the West Seattle Freeway and the South Portal (at S King Street) not be tolled.



-----Original Message-----

From: EnviroLytical - Port of Seattle Terminal 5 Improvements [<mailto:info@envirolytical.com>]

Sent: Tuesday, May 24, 2016 9:09 AM

To: [Shultz.M@portseattle.org](mailto:Shultz.M@portseattle.org); Pam Xander; [Meyer.P@portseattle.org](mailto:Meyer.P@portseattle.org)

Subject: New Communication: This entire conversation seems completely delusional. One need not deep ports when sea level increases will make the current infrastructure unusable anyway -- and it will be deeper regardless. These

Richard Curtis <[RichardCurtisPhD@msn.com](mailto:RichardCurtisPhD@msn.com)>

<https://e12.envirolytical.com/communication/view/213349>

This entire conversation seems completely delusional. One need not deep ports when sea level increases will make the current infrastructure unusable anyway -- and it will be deeper regardless. These plans seem to show no awareness that global warming is happening and will overwhelm port infrastructure within a few decades, under current moderate estimates. What we have to plan for is a society and economy that does not rely on international trade, which will become increasingly impractical, not to mention these things are destroying the planet. We cannot continue on as if the world is not changing. Ports will be profoundly affected and this delusional hiding from that reality only creates more difficulties. The future will have less trade, less shipping, fewer boats and cranes and trucks, not more. We must change how we live, including how the port functions.

I-002-001

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**I-002-001**

Comments acknowledged.

**From:** [dickbuckwitz@comcast.net](mailto:dickbuckwitz@comcast.net) [<mailto:dickbuckwitz@comcast.net>]  
**Sent:** Wednesday, May 25, 2016 17:26  
**To:** Port Sepa  
**Subject:** Comment - Terminal 5 Improvements

Dear Sir:

You promise to create more well paying jobs? This means my real estate tax will go up. You don't have my permission to increase my taxes! The Seattle Container Port operates at a loss! The Seattle Container Port is the most heavily subsidized port in the USA. You are planning to create even greater losses. How dare you!

I-003-  
001

Dick Buckwitz  
Issaquah, WA

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**I-003-001**

Comments acknowledged.

-----Original Message-----

From: EnviroLytical - Port of Seattle Terminal 5 Improvements [<mailto:info@envirolytical.com>]

Sent: Friday, May 27, 2016 11:51 AM

To: [Shultz.M@portseattle.org](mailto:Shultz.M@portseattle.org); Pam Xander; [Meyer.P@portseattle.org](mailto:Meyer.P@portseattle.org)

Subject: New Communication: I vote against all improvements to Terminal 5. This EIS report does not meet satisfactory requirements. The amount of significant job losses that will be a result of this project are more valuable t

Eric Newgard <[eric.newgard@gmail.com](mailto:eric.newgard@gmail.com)>

<https://e12.envirolytical.com/communication/view/213593>

I vote against all improvements to Terminal 5. This EIS report does not meet satisfactory requirements. The amount of significant job losses that will be a result of this project are more valuable than these upgrades. Overall traffic will also be affected by these improvements. This is Seattle, we don't want improvements to our city and need to keep those big ships out of our house!!!

I-004-  
001

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**I-004-001**

Comments acknowledged. FEIS, Volume II, Appendix C discusses traffic and mitigation strategies to manage traffic effects.

-----Original Message-----

From: EnviroLytical - Port of Seattle Terminal 5 Improvements [<mailto:info@envirolytical.com>]

Sent: Sunday, May 29, 2016 2:37 AM

To: [Shultz.M@portseattle.org](mailto:Shultz.M@portseattle.org); Pam Xander; [Meyer.P@portseattle.org](mailto:Meyer.P@portseattle.org)

Subject: New Communication: Hello there! This post could not be written any better! Reading this post reminds me of my good old room mate! He always kept talking about this. I will forward this page to him. Fairly certain he wil

Johnd290 Johnd290 <[johnd200@gmail.com](mailto:johnd200@gmail.com)>

<https://e12.envirolytical.com/communication/view/213620>

Hello there! This post could not be written any better! Reading this post reminds me of my good old room mate! He always kept talking about this. I will forward this page to him. Fairly certain he will have a good read. Thank you for sharing! dddcakedcaec

I-005-001

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**I-005-001**

This comment appears to be in response to a prior comment on the Project Open House website rather than a comment on the DEIS for the Port to respond to.

-----Original Message-----

From: EnviroLytical - Port of Seattle Terminal 5 Improvements [<mailto:info@envirolytical.com>]

Sent: Sunday, May 29, 2016 2:37 AM

To: [Shultz.M@portseattle.org](mailto:Shultz.M@portseattle.org); Pam Xander; [Meyer.P@portseattle.org](mailto:Meyer.P@portseattle.org)

Subject: New Communication: Definitely pent subject material, be thankful in support of picky facts . fcegdddgeeg

Johne652 Johne652 <[johne452@gmail.com](mailto:johne452@gmail.com)>

<https://e12.envirolytical.com/communication/view/213621>

Definitely pent subject material, be thankful in support of picky facts . fcegdddgeeg

I-006-  
001

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**I-006-001**

This comment appears to be in response to a prior comment on the Project Open House website rather than a comment on the DEIS for the Port to respond to.

-----Original Message-----

From: EnviroLytical - Port of Seattle Terminal 5 Improvements [<mailto:info@envirolytical.com>]

Sent: Wednesday, June 01, 2016 2:06 PM

To: [Shultz.M@portseattle.org](mailto:Shultz.M@portseattle.org); Pam Xander; [Meyer.P@portseattle.org](mailto:Meyer.P@portseattle.org)

Subject: New Communication: In order to mitigate what is obviously going to result in a depressed quality of life for the inhabitants of the West Seattle Neighborhood due to the resulting increase in volume and frequency of train

Chad Markham <[chad\\_markham@msn.com](mailto:chad_markham@msn.com)>

<https://e12.envirolytical.com/communication/view/213794>

In order to mitigate what is obviously going to result in a depressed quality of life for the inhabitants of the West Seattle Neighborhood due to the resulting increase in volume and frequency of train traffic and large container ship noise pollution; the Port of Seattle MUST REQUIRE and install shore power hook-ups for the extremely large vessels as well as limit train horn frequency and volume.

I-007-001

It's imperative to recognize the long-term health risks associated with the impending long-term Low Frequency Vibrations that will invade our homes 24/7 as a result of the lack of shore power and the necessity of generator use, not to mention the environmental impact on our water ways. The noise and damage cannot simply be stopped (as some of the advocates for the terminal 5 opening have suggested) with the installation of better windows, rather the cure is to install and mandate shore power hook-ups. We appreciate the support of Councilpersons Lisa Herbold and Mike O'Brien as well as Port Commissioner Fred Felleman, but the remainder of the voting body needs to recognize the inherent dangers of the current plans without the implementation of the avenues that will safe-guard our children's health and property values.

I-007-002

Suggestions regarding the alterations to limit frequency of the train horns is not enough, stronger language and regulation is essential and as our elected body we demand that you act in the interest of your constituents as opposed to big business, or we will show our disapproval at the polls next election cycle.

I-007-003

**I-007-001**

Please see Standard Response No. 3: Use of Shorepower at the beginning of Chapter 6 for additional information.

**I-007-002**

Please see Standard Response No. 7: Low Frequency Noise at the beginning of Chapter 6 for additional information on how this noise will be addressed in the Operational Noise Management Plan.

Noise from hoteling vessels, including low frequency noise, has been analyzed and evaluated, and included in the FEIS (see FEIS, Volume I, Chapter 3, Section 3.6). It is not expected that low-frequency sound at nearby residences will approach levels that could be considered harmful to health. In addition, low frequency noise from hoteling vessels is not expected to result in windows rattling. After inclusion of vessel noise in the analysis, the overall model-calculated noise levels from Terminal 5 operations did not substantively change. Regardless, noise from certain hoteling vessels may occasionally be audible, and noise from this source will be addressed in the Operational Noise Management Plan.

**I-007-003**

Please see Standard Response No. 5: Train Horn Noise at the beginning of Chapter 6 for additional information on addressing annoyance noise and "Quiet Zones".

-----Original Message-----

From: EnviroLytical - Port of Seattle Terminal 5 Improvements [<mailto:info@envirolytical.com>]

Sent: Wednesday, June 01, 2016 2:15 PM

To: [Shultz.M@portseattle.org](mailto:Shultz.M@portseattle.org); Pam Xander; [Meyer.P@portseattle.org](mailto:Meyer.P@portseattle.org)

Subject: New Communication: It is imperative that the Port of Seattle install and then implement regulations requiring the use of shore power hook-ups while incorporating language prohibiting the use the ship generators that emi

Taylor Heyl <[tayheyl@gmail.com](mailto:tayheyl@gmail.com)>

<https://e12.envirolytical.com/communication/view/213795>

It is imperative that the Port of Seattle install and then implement regulations requiring the use of shore power hook-ups while incorporating language prohibiting the use the ship generators that emit dangerous long-term Low Frequency Vibrations that will invade our homes and businesses. The damaging health effects of the aforementioned vibrations on our children and their development is well documented and must be controlled.

I-008-001

Additionally, the Port must enact guidelines to drastically reduce the frequency and volume of the impending increase in train traffic; suggestions regarding the alterations to limit frequency of the train horns is not enough, stronger language and regulation is essential.

I-008-002

The constituency must be heard on this matter, a great number of individuals as well as small local businesses are going to be negatively affected without proper safeguards being put into place. Please do your job as elected officials by representing and protecting those individuals who cannot advocate for them selves as opposed to representing unconscionable big business interests.

I-008-003

**I-008-001**

Please see Standard Response No. 3: Use of Shorepower at the beginning of Chapter 6 for additional information.

**I-008-002**

Please see Standard Response No. 5: Train Horn Noise at the beginning of Chapter 6 for additional information on addressing annoyance noise and “Quiet Zones”.

Train volumes will be dependent on the throughput at the Terminal and the percentage of containers being transported by trucks versus rail. Restrictions on train volumes would not meet the objectives of the Project. The frequency of locomotive horn use may be reduced by implementing safety measures in the area between the Duwamish Waterway rail bridge and the rail crossing at West Marginal Way Southwest at the southeast margin of Terminal 5. Please see response to comment C-001-007.

**I-008-003**

Comment acknowledged.

-----Original Message-----

From: EnviroLytical - Port of Seattle Terminal 5 Improvements [<mailto:info@envirolytical.com>]

Sent: Wednesday, June 01, 2016 4:13 PM

To: [Shultz.M@portseattle.org](mailto:Shultz.M@portseattle.org); Pam Xander; [Meyer.P@portseattle.org](mailto:Meyer.P@portseattle.org)

Subject: New Communication: Please explain how you justify having an asset the size of terminal 5 sitting idle for almost two years while planning for deeper draft cargo ships? Why wasn't this area used while the planning p

Scott Ramage <[raminsag@yahoo.com](mailto:raminsag@yahoo.com)>

<https://e12.envirolytical.com/communication/view/213808>

Please explain how you justify having an asset the size of terminal 5 sitting idle for almost two years while planning for deeper draft cargo ships? Why wasn't this area used while the planning process was going on? Where did all of the traffic that was handled at terminal 5 go over the last 22 months? Has there been a back log of ships on and/or off loading cargo due to the shut down of terminal 5? If not, then I ask why is the project even being considered? What studies have been done and by whom to show that the berth deepening would draw these big ships? Can anyone at the port assure the taxpayers that this will be worth the undoubtedly huge expense to make these changes?

I-009-001

I-009-002



**I-009-001**

The existing Terminal 5 marine cargo facility is insufficient for service by large vessels at present. Marine cargo terminals in the East Waterway (EW) and southeast Elliott Bay have existing dock strength and cargo crane capability to accommodate large vessels commonly in service. The Terminal 5 tenant determined in late 2013 that cargo facilities were not sufficient for present-day container cargo operations due to inadequate wharf, cranes, and berth facilities. Terminal 5 container cargo shipping capability was limited to vessels with approximately 5000- to 6000-TEU capacity. Cargo operations required by shipping lines calling at Terminal 5 included an immediate need to serve 7000- to 8500-TEU and larger ships. In addition, interim container cargo operations were also determined to be infeasible. The Port has made use of Terminal 5 since 2014 for other marine cargo uses and activities.

The container cargo shipment volume formerly served by Terminal 5 was shifted to the EW, in Elliott Bay, and to marine cargo facilities in Commencement Bay. No interruption of cargo service resulted.

The present Project has been designed to return Terminal 5 to active, productive marine cargo infrastructure, capable of serving larger vessels, including economies of scale. In addition, improvements at Terminal 5 will make more efficient upland and intermodal cargo transfer operation possible, providing the potential for increased cargo volumes, without increasing the “footprint” area of the facility. An improved marine cargo terminal will ensure that previous and new investments at Terminal 5 will provide future economic benefits.

Relocation of Terminal 5 container cargo shipping operations to other Port-operated cargo shipping terminals in Elliott Bay and terminals in Commencement Bay, provides the Port with an opportunity to rehabilitate elements of the Terminal 5 container cargo shipping infrastructure without disrupting or impeding tenant cargo operations. Strengthening the existing Terminal 5 wharf and deepening navigational access is timely since the site is not committed to a long-term cargo use at present, allowing for efficient, cost-effective, comparatively unimpeded marine cargo site rehabilitation actions.

**I-009-002**

See response to I-009-001 above.

-----Original Message-----

From: EnviroLytical - Port of Seattle Terminal 5 Improvements [<mailto:info@envirolytical.com>]

Sent: Saturday, June 04, 2016 3:19 PM

To: [Shultz.M@portseattle.org](mailto:Shultz.M@portseattle.org); Pam Xander; [Meyer.P@portseattle.org](mailto:Meyer.P@portseattle.org)

Subject: New Communication: Thank you for this opportunity to weigh in on the proposed Terminal 5 modifications. My background is both military and civilian maritime related and I support the effort the Port is making to accomm

Kraig Kennedy <[kraigk116@gmail.com](mailto:kraigk116@gmail.com)>

<https://el2.envirolytical.com/communication/view/214014>

Thank you for this opportunity to weigh in on the proposed Terminal 5 modifications. My background is both military and civilian maritime related and I support the effort the Port is making to accommodate larger container ships. Clearly, larger container ships are the future of the maritime industry and Seattle must remain competitive in the market. I have worked briefly through the draft EIS and I have one comment which I hope will be taken for consideration. While there is a plan to increase electrical capacity for the cranes, I see no plan to provide capability for allowing (or requiring) ships to shut down while they are in port. It seems to me that if there is going to be an upgrade of this magnitude to Terminal 5, shore power capability would be a natural add. I strongly recommend that this addition be part of the final upgrade plan.

Thank you for your consideration of this recommendation Kraig Kennedy

I-010-001

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#### I-010-001

Please see Standard Response No. 3: Use of Shorepower at the beginning of Chapter 6 for additional information.

214016 06/05/2016 Wendy Sweigart

1. As a concerned neighbor of the Port of Seattle's (POS) Terminal 5, I am writing to raise concerns that the March 2, 2015 POS SEPA No 15-03 checklist is incomplete and does not address the following conditions which jeopardizes public health and well-being.

I-011-001

2. The POS does not address the impact to air quality once Terminal 5 is operating again. Taken directly from page 10 of POS SEPA No 15-03 the specific operating characteristics of larger capacity vessels serving Terminal 5 are unknown at present. It is anticipated that larger capacity vessels would result in fewer vessel calls with longer duration stays at the facility. However, the specific number and duration of vessels calls and the maneuvering and at berth air emission performance of vessels cannot be predicted at this time. The means and methods for future cargo discharge and loading activities cannot be predicted. Thus, until more specific information is available, it is not possible to analyze any changes to air emissions and production of noise.

I-011-002

Since the POS cannot address the impact to air quality in SEPA, I contend that an Environmental Impact Statement to address air quality would be a requirement prior to permitting. There are potentially other ways for the POS to answer the amount of pollutants during operation of Terminal 5. Perhaps a study of the operations on Terminal 30 along the East Waterway could lead to possible projections of air pollutants. Terminal 30 is already berthing super post-panamax ships.

I-011-003

3. In regards to the noise sections of SEPA (p .23-24, POS SEPA No 15-03) there needs to be un-waiverable conditions for the POS to conduct impact construction work and OPERATIONS of Terminal 5. Impact construction such as pile driving during evenings, weekends and holidays HAVE TO BE PROHIBITED for neighbors to get rest. Safe guards to ensure the Port's compliance to SMC 25.08 needs to be in place. A suggestion would be to have designated points of contact and phone numbers for noise complaints. The SEPA checklist does propose measures to reduce and control noise impacts. These proposed noise mitigation techniques must be transferred and condition into the new master use permit. Examples of noise mitigation from the POS SEPA NO 15-03 include using properly sized and maintained mufflers, engine intake silencers, engine enclosures, and turning off idle equipment. Substituting hydraulic or electric models for impact tools such as jack hammers, rock drills, and pavement breakers c

I-011-004

could reduce construction and demolition noise. Electric pumps may also be specified if pumps are required. Although as safety warning devices back-up alarms are exempt from noise ordinances, these devices emit some of the most annoying sounds from a construction site. An essential construction noise mitigation measure would be to require that all construction equipment is fitted with ambient-sensing alarms that broadcast a warning sound loud enough to be heard over background noise but without having to use a preset, maximum volume. Another alternative would be to use broadband backup alarms instead of typical pure tone alarms. Such devices have been FOUND TO BE VERY EFFECTIVE in reducing annoying noise from construction sites.

**I-011-004  
(cont.)**

My recommendation is to condition these noise mitigating requirements as part of the master use plan.

4. The SEPA discusses that construction will take place on liquefiable soil. Liquefiable soil is fill dirt and unstable during seismic activity. Liquefiable soil will amplify the earth vibrations stemming from the pile driving. Nowhere in the POS SEPA 15-03 does it address the geological effects of two years of pile driving. Additional shifting of hillside homes already in designated slide zones could occur. Costly civil lawsuits to recover damages against DPD and POS could come in the future if homes are damaged due to the ground vibrations of pile driving. It is DPD's responsibility to ensure the protection of the environment and public safety from rogue construction projects in environmentally critical areas (SMS 25.09.020). Please have the POS study the impacts of pile driving.

**I-011-005**

5. The POS SEPA 15-03 does not address the issues of light and glare affects to the surrounding areas. Please limit the areas, angles, and intensity of illumination originating from the new cranes. Look at having covers over the lights so it is not disruptive to surrounding neighborhoods and air traffic.

**I-011-006**

Wendy S Sweigart

Nancy A De Spain

3402 SW City View St

Seattle, WA 98126"

**I-011-001**

This comment appears to be in response to a SEPA checklist that was issued in March 2015 rather than a comment on the DEIS currently under review which the Port is responding to comments for.

**I-011-002**

This comment cites the previous SEPA checklist that was withdrawn. The Draft Environmental Impact Statement (DEIS) assesses air quality related to the frequency, maneuvering, and berth activities of vessel calls. Additionally, air quality related to cargo-handling equipment, rail, and trucks were analyzed.

**I-011-003**

Please see response to comment I-011-002 above.

**I-011-004**

As required in Section 25.08 of the Seattle Municipal Code, pile driving activities will be restricted to between 8 AM and 5 PM on weekdays and between 9 AM and 5 PM on weekends. Noise from pile driving and other construction activities would be required to comply with the City of Seattle noise limits identified in Section 25.08.425b of the Seattle Municipal Code.

Prior to construction, a Construction Noise Management Plan will be developed and outline allowable construction hours, noise limits, and mitigation measures. As part of the plan, a noise complaint hotline will be implemented.

Please see Standard Response No. 9: Compliance Noise Monitoring at the beginning of Chapter 6 for additional information on how ambient-sensing, broadband backup alarms will be required on all mobile cargo handling equipment for the proposed Project.

Please see Standard Response No. 6: Nighttime Noise at the beginning of Chapter 6 for additional information on the proposed Operational Noise Management Plan framework.

**I-011-005**

Information on vibrations and shaking that could potentially impact buildings and residences due to vibratory pile driving during construction have been added to the information in the EIS (See Volume I, Chapter 3, Section 3.1.3.2 for additional information).

The vibratory pile driving construction at Terminal 5 is expected to cause vibrations in West Seattle well below levels that could cause damage to buildings and residences. The effects of vibratory pile driving on soils during construction are localized and will not cause widespread liquefaction. The slope within the terminal is expected to be, and has historically been stable during vibratory pile driving. This slope is significantly closer to the pile driving than the West Seattle hillside, which is more than 2500 feet west of the Terminal 5 wharf rehabilitation site. Structural damage to buildings and residences caused by vibratory pile driving is rare at distances more than 50 feet from the pile driving and diminishes rapidly with distance. The geology of the slopes along West Seattle is generally unstable for reasons unrelated to liquefaction.

The Port consultant performed vibration monitoring near the intersection of 37th and Prescott in West Seattle during the Statnamic pile load testing (i.e., the loud noise pile testing) in March 2016. The peak measurement was 0.01 inch/second. This is equivalent to a car idling 25 feet away and is well below the level that is perceptible to

people (about 0.05 inch/second). The pile driving and testing activity induced vibrations less than or equal to a vehicle driving by on the street.

Minimum vibration levels that could cause damage are generally above 0.1 inch/second for very vulnerable structures and above 1 inch/second for most structures.

In addition to the information noted above, please note that the Port addressed a similar piling installation matter during Terminal 5 redevelopment construction activities, completed in 1999. The 1999 Terminal 5 redevelopment project, completed as the Southwest Harbor Cleanup and Redevelopment Project, included approximately 285 acres of construction activities, with approximately 180,000 square feet of new structures and approximately 570,000 cubic yards total excavation (cut, fill, and dredging). The project included substantial piling construction, with a new grade separated overpass, building foundations, and extension of the container cargo pier.

The project involved the construction of a 400-foot-long extension of the existing container cargo pier, included approximately 195, 24-inch-diameter and 240, 16.5-inch-diameter concrete piling, and approximately 375 timber piling, placed for the purpose of shoreline slope stabilization. All piling installation was accomplished with impact pile driving equipment.

A resident near the Southwest City View/31st Avenue Southwest intersection indicated concern that piling installation and construction activities would adversely affect the foundation of the individual's house. The Port documented the house foundation prior, during, and following construction, marking and detailing existing foundation cracks and general foundation conditions. No change was detected or determined to have resulted from Terminal 5 redevelopment construction activities.

The scope of previous Terminal 5 redevelopment, including piling installation, completed in 1999 was substantially greater than the present Terminal 5 Improvements Project. Therefore, no significant impacts to buildings and residences due to vibrations or shaking are expected.

**I-011-006**

Proposed improvements are anticipated to either maintain or reduce the potential impacts from light and glare. Any new or replaced lighting will be designed using fixtures that will minimize glare and confined with the use of directional shields.

-----Original Message-----

From: EnviroLytical - Port of Seattle Terminal 5 Improvements [<mailto:info@envirolytical.com>]

Sent: Monday, June 06, 2016 9:51 AM

To: [Shultz.M@portseattle.org](mailto:Shultz.M@portseattle.org); Pam Xander; [Meyer.P@portseattle.org](mailto:Meyer.P@portseattle.org)

Subject: New Communication: This project should not be allowed to proceed without addressing some key deficiencies in the current plan. 1. Shore-power. The terminal 5 rehab plan should include on-shore power

Victor Bruno <[vicdamone@gmail.com](mailto:vicdamone@gmail.com)>

<https://el2.envirolytical.com/communication/view/214027>

This project should not be allowed to proceed without addressing some key deficiencies in the current plan.

1. Shore-power. The terminal 5 rehab plan should include on-shore power facilities for cargo ships at port during loading/unloading. Ships should be required to use shore power instead of idling on diesel power. Not doing so will have a negative impact on the air quality and cause noise pollution for the neighboring communities.

I-012-001

2. Impact of pile-driving during construction. A plan need to be put in place to mitigate noise during construction activities and limit those activities between the hours of 8am and 5pm.

I-012-002

3. Noise pollution during normal Port operations. A fund should be established for the purpose of mitigating noise impacts to neighboring homes, who will be negatively impacted by the operations of a larger, busier port terminal. Similar to airports funding noise proofing in flight paths, the port should be responsible for mitigating the extra noise pollution they cause. Fund would pay things such as soundproofing for neighboring homes, planting additional trees, and noise reduction fencing along trucking roads and railways.

I-012-003

**I-012-001**

Please see Standard Response No. 3: Use of Shorepower at the beginning of Chapter 6 for additional information.

**I-012-002**

Comment acknowledged. Please see response to I-011-004.

**I-012-003**

Specific noise mitigation measures may be identified as part of the Operational Noise Management Plan (see FEIS, Volume II, Appendix M) or in response to noise monitoring or complaints. Noise assessments would focus on container cargo handling equipment and cargo operations and activities. Noise mitigation responses would likely include use of different types of equipment, construction of on-site noise barriers, or changes to operations. Other than safety improvements to the rail corridor, no noise mitigation is proposed at off-site locations or residences.

-----Original Message-----

From: EnviroLytical - Port of Seattle Terminal 5 Improvements [<mailto:info@envirolytical.com>]

Sent: Wednesday, June 08, 2016 12:16 PM

To: [Shultz.M@portseattle.org](mailto:Shultz.M@portseattle.org); Pam Xander; [Meyer.P@portseattle.org](mailto:Meyer.P@portseattle.org)

Subject: New Communication: It should be noted that the Port only agreed to do an EIS after receiving public pressure from North Admiral residents. The Port tried to claim that an EIS from long ago (20 years?) was sufficient an

Grant Moosha <[gmoosha@gmail.com](mailto:gmoosha@gmail.com)>

<https://el2.envirolytical.com/communication/view/214193>

It should be noted that the Port only agreed to do an EIS after receiving public pressure from North Admiral residents. The Port tried to claim that an EIS from long ago (20 years?) was sufficient and a new EIS was not needed.

I-013-001

I am extremely concerned about air quality under Alternative 2 and 3. Will the Port be able to enforce use of shore electric power, thus limiting ships idling under diesel -power? I would like to see the "potential mitigation" of converting container handling equipment from diesel engine-powered to electrically powered equipment made to be a "required mitigation." I request that Puget Sound Clean Air Agency equipment, monitoring, and enforcement. We need 24/7 air quality monitoring at Terminal 5 and in the North Admiral neighborhood.

Use of shore power for moored vessels needs to a requirement and it needs to be enforced.

I-013-002

With regards to the increase in trains listed in the Transportation section, what is "peak week"?

I-013-003

**I-013-001**

Please see Standard Response No. 3: Use of Shorepower at the beginning of Chapter 6 for additional information.

Please see Standard Response No. 2: Post-Operation Air Quality Monitoring at the beginning of Chapter 6 for additional information on future air quality monitoring and tracking.

**I-013-002**

Please see Standard Response No. 3: Use of Shorepower at the beginning of Chapter 6 for additional information.

**I-013-003**

The term "peak week" is used to describe the busiest week of the year anticipated for trains onto and off the terminal. This week is usually some percentage above the average week train volume. The peak week is a single seven day period during which train volumes will be at their maximum. These peaks correspond to, but may be slightly offset from, the peak week of terminal operations. Depending on backlog of loaded cars in the WSY, there may be peaks in train arrivals prior to a vessel call. It is more likely, however, that the peak week of train operations would occur one to two days after peak operations of the terminal immediately following a vessel. These variables point out the critical role of the WSY in absorbing offsets in terminal and railroad peak periods. The WSY allows buffering between surges in terminal and rail activities.



-----Original Message-----

From: Port Sepa [<mailto:sepa.p@portseattle.org>]

Sent: Wednesday, June 08, 2016 1:32 PM

To: Meyer, Paul; Pam Xander

Subject: FW: T5 Project - Longrie, Connie

-----Original Message-----

From: Connie Longrie [<mailto:sirenconnie@aol.com>]

Sent: Saturday, June 04, 2016 08:07

To: Port Sepa

Subject: T5 Project - Longrie, Connie

I would like

Sent from my iPhone

I-014-  
001

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**I-014-001**

It appears the comment was sent before it could be completed.

## TERMINAL 5 IMPROVEMENTS DRAFT EIS COMMENTS



The Port of Seattle with the Northwest Seaport Alliance is proposing modifications of the existing marine cargo facilities at Terminal 5 and has prepared a draft environmental impact statement (DEIS). The study evaluates potential impacts to: Earth, Air, Water, Plants, Animals, Energy and Natural Resources, Environmental Health, Noise, Aesthetics (including light and glare), Historic and Cultural Resources, Transportation, and Public Services.

Public comments as part of the Draft EIS process are being sought until:  
**Tuesday, June 21, 2016**

Name: Allison Oster

Mailing Address (City, ZIP): 8814 15<sup>th</sup> Avenue SW  
Seattle, WA 98106

E-mail: aoster2@gmail.com

**Comments are being accepted until Tuesday, June 21. Ways to comment include:**

- This comment card (please provide to a Port of Seattle representative)
- Visit the Online Open House at [T5EIS.publicmeeting.info/](http://T5EIS.publicmeeting.info/)
- E-mail: [SEPA.p@portseattle.org](mailto:SEPA.p@portseattle.org) (please include your mailing address)

Comments (continue on back if needed)

I was present for the public meeting on June 7, and after listening to the presenters, I think that at minimum the Port should require ships to plug into ~~the~~ shoreside power, rather than let their engines idle.  
 If they won't plugin, NO DEAL.

I-015-001

**I-015-001**

Please see Standard Response No. 3: Use of Shorepower at the beginning of Chapter 6 for additional information.

**TERMINAL 5 IMPROVEMENTS DRAFT EIS COMMENTS**



The Port of Seattle with the Northwest Seaport Alliance is proposing modifications of the existing marine cargo facilities at Terminal 5 and has prepared a draft environmental impact statement (DEIS). The study evaluates potential impacts to: Earth, Air, Water, Plants, Animals, Energy and Natural Resources, Environmental Health, Noise, Aesthetics (including light and glare), Historic and Cultural Resources, Transportation, and Public Services.

Public comments as part of the Draft EIS process are being sought until:  
**Tuesday, June 21, 2016**

Name: KAREN RICHTER

Mailing Address (City, ZIP): 4115 SW ARROYO DRIVE  
SEATTLE, WA 98146

E-mail: KERICHTER100@GMAIL.COM

**Comments are being accepted until Tuesday, June 21. Ways to comment include:**

- This comment card (please provide to a Port of Seattle representative)
- Visit the Online Open House at [T5EIS.publicmeeting.info/](http://T5EIS.publicmeeting.info/)
- E-mail: [SEPA.p@portseattle.org](mailto:SEPA.p@portseattle.org) (please include your mailing address)

Comments (continue on back if needed)

- Shore power use should be a requirement, not an option, to reduce emissions from ships, as well as noise impacts; otherwise how can emissions reductions be calculated?
- What traffic management practices will be used to mitigate the significant increase in truck traffic? and what air quality ~~strategies~~ strategies will be used to minimize truck exhaust? These should also be required, not optional.
- Option 2 should be upgraded to some level as electrical capacity as Option 3, and the terminal tenet should be required to use shore power at all times.

I-016-001

I-016-002

I-016-003

I-016-004

- Pls. consider extending public comment period to allow better comprehension understanding of all impacts.

**I-016-001**

Please see Standard Response No. 3: Use of Shorepower at the beginning of Chapter 6 for additional information.

**I-016-002**

In addition to physical improvements to off-site intersections and the traffic signal system along SW Spokane Street, the mitigation measures include management practices to reduce potential queues. These are defined in the Gate Queue Management Plan described in Section 6.2.3 of the Transportation Technical Report (see FEIS, Volume II, Appendix C).

Please see response to comment 1-101-001 for information on the measures the Port plans to minimize truck exhaust. The measures are included in FEIS, Volume II, Appendix A.

**I-016-003**

The Port anticipates proceeding with review of the proposed Alternative 2, with the objective of obtaining city, state, and federal approvals/authorizations. It is expected that project approvals for infrastructure improvements, including actions necessary to control and manage potential adverse environmental effects associated with cargo volumes up to 1.3 million TEUs. The Port, based on EIS analyses and evaluations and public and agency comment, has identified measures to reduce, minimize, avoid or mitigate likely adverse effects due to project construction and operation. Alternative 2 identified container cargo operations using diesel powered equipment to handle cargo and would not need the electrical capacity required for Alternative 3. However there is sufficient capacity in the electrical system to power some electrically powered cargo handling equipment. Decisions of what equipment will be used will depend on the needs of a future marine terminal operator, with all operations requiring compliance with agency regulations and conditions of approval.

**I-016-004**

The comment period originally was to close June 21, 2016, and was extended 17 days to July 8, 2016.

**TERMINAL 5 IMPROVEMENTS DRAFT EIS COMMENTS**



The Port of Seattle with the Northwest Seaport Alliance is proposing modifications of the existing marine cargo facilities at Terminal 5 and has prepared a draft environmental impact statement (DEIS). The study evaluates potential impacts to: Earth, Air, Water, Plants, Animals, Energy and Natural Resources, Environmental Health, Noise, Aesthetics (including light and glare), Historic and Cultural Resources, Transportation, and Public Services.

*Personnel Jobs  
Improved transport.  
Benefits all*

Public comments as part of the Draft EIS process are being sought until:  
**Tuesday, June 21, 2016**

Name: Mark Jacob, PE, PTOE, WSTC Board Member

Mailing Address (City, ZIP): 2614 35th Ave SW  
Seattle WA 98116

E-mail: mij@mij@msn.com

**Comments are being accepted until Tuesday, June 21. Ways to comment include:**

- This comment card (please provide to a Port of Seattle representative)
- Visit the Online Open House at [T5EIS.publicmeeting.info/](http://T5EIS.publicmeeting.info/)
- E-mail: [SEPA.p@portseattle.org](mailto:SEPA.p@portseattle.org) (please include your mailing address)

Comments (continue on back if needed)

- 5-lanes I/S include right in/out only for Post Access
- TIA was too limited Low Level Sp-helic street needs to be studied from site to SN-5 (potential - interconnect signals, adaptive signal control, left turn revisions?)
- Traffic concurrency was not evaluated/discussed
- Avoid truck operations during the street peak hours
- Cholon signal to the west of the 5-lanes I/S

*wrongly stops WB curb lane traffic when there is no conflict this needs to be fixed*

I-017-001  
I-017-002  
I-017-003  
I-017-004  
I-017-005

**I-017-001**

Alternative mitigation for the five-way intersection at West Marginal Way SW/Chelan Avenue SW/SW Spokane Street has been evaluated in Section 6.2.1 of the Transportation Technical Report (See FEIS, Volume II, Appendix C). One option would be to retain the at-grade access but eliminate outbound (southbound) movements. This would eliminate the signal phase associated with southbound traffic, and improve overall intersection operations. It is also recommended that the westbound left turn movement (from Chelan Avenue SW into Terminal 5) be prohibited since if a train is blocking the tracks, vehicles waiting to turn left could block through vehicles to West Marginal Way. The preferred configuration would need to be approved by SDOT.

**I-017-002**

The study area has been extended to reach the state highways and to show how trucks and employee trips would distribute to the broader network. See responses to Comments C-002-038 and S-002-003.

**I-017-003**

Transportation Concurrency Analysis has been added as Section 5.9 of the Transportation Technical Report (See FEIS, Volume II, Appendix C). Transportation concurrency would be met with the Project.

**I-017-004**

It is not possible to prevent truck operations during the peak hours. Elements of the Gate Queue Management Plan described in Section 6.2.4 and provided in Appendix B of the Transportation Technical Report (See FEIS, Volume II, Appendix C) developed for the terminal could reduce peak impacts by extending gate hours or implementing other strategies to reduce peak loads, if and when needed. See also the response to Comment C-002-039.

**I-017-005**

Comment acknowledged. Depending on the configuration for the five-way intersection agreed to by SDOT, signal phasing changes that eliminate the “merry-go-round” operation may be possible. In addition, the recommended upgrades to the signal system on SW Spokane Street would likely require that new signal control equipment be installed at the five-way intersection, which would provide more flexibility in timing and phasing patterns.

214397 06/10/2016

Monica & Ron Riva PLEASE -- we can do this thing smart, we can have quiet trains, we can have plugged-in vessels, we can have all that, we should have all that, because it's vital to this community and vital to the jobs AND to our health and well being. Thank you.

I-018-001

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**I-018-001**

Comments acknowledged. Please see Standard Response No. 3: Use of Shorepower at the beginning of Chapter 6 for additional information.

Please see Standard Response No. 5: Train Horn Noise at the beginning of Chapter 6 for additional information on addressing annoyance noise and "Quiet Zones".



214807 06/17/2016

Eric Newgard "Alternative 1 – No-action Alternative is the best option!"

The draft EIS is not specific enough in it's analysis.

**I-019-001**

Environmental impacts of construction and seawall deepening are too harmful.

No improvements are necessary at this time and that is why I vote for Alternative 1 – No-action Alternative"

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**I-019-001**

The EIS describes the environment that will be affected by a proposal and analyzes significant impacts and discusses reasonable mitigation measures that would mitigate the impacts. See Chapter 1, Table 1.3-1 for a summary of potential impacts and mitigation measures for the proposed Project.

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-----Original Message-----

From: EnviroLytical - Port of Seattle Terminal 5 Improvements [<mailto:info@envirolytical.com>]

Sent: Saturday, June 18, 2016 11:03 AM

To: [Shultz.M@portseattle.org](mailto:Shultz.M@portseattle.org); Pam Xander; [Meyer.P@portseattle.org](mailto:Meyer.P@portseattle.org)

Subject: New Communication: Shore power option would reduce noise from on-vessel power generators. Pile driving-daytime hours, are the only option! North leg of Spokane, W. Marginal and Chelan closed?

<https://el2.envirolytical.com/communication/view/214835>

Shore power option would reduce noise from on-vessel power generators.

Pile driving-daytime hours, are the only option!

North leg of Spokane, W. Marginal and Chelan closed?

Impact on low bridge traffic?

I live on Pigeon Point, and my chief concerns are noise, air quality, and traffic impacts. I think it's crucial to address these concerns at the maximum level of mitigation. While I realize that this is where I've chosen to live, these concerns are reasonable, given the current level of train, truck, and plane levels of noise and pollution. I would like to see the Port of Seattle provide the solutions at the maximum levels of mitigation. Traffic is already stretched to the limit in the area of N. Delridge at the entrance to the West Seattle Bridge, especially from the truck traffic coming from Nucor Steel, and the reduction of automobile lanes from the "Bus Only" lanes that have been changed in recent years.

I believe that the Port's ability to address these concerns means that every tool available to lessen the impact on area residents will be used.

I-020-001

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#### I-020-001

The EIS describes the environment that will be affected by a proposal and analyzes significant impacts and discusses reasonable mitigation measures that would mitigate the impacts. See Chapter 1, Table 1.3-1 for a summary of potential impacts and mitigation measures for the proposed Project.

The off-site traffic mitigation recommendations described in Section 6.2.1 of the Transportation Technical Report, which include changes to the five-way intersection at West Marginal Way/SW Chelan Avenue/SW Spokane Street as well as signal upgrades for the SW Spokane Street corridor, are expected to improve traffic conditions with the Project to better than would exist under the No Action Alternative. This would improve traffic for through traffic to and from West Seattle. Mitigation measures for noise and air are listed in Chapter 1, Table 1.3.1.

-----Original Message-----

From: EnviroLytical - Port of Seattle Terminal 5 Improvements [<mailto:info@envirolytical.com>]

Sent: Saturday, June 18, 2016 3:09 PM

To: [Shultz.M@portseattle.org](mailto:Shultz.M@portseattle.org); Pam Xander; [Meyer.P@portseattle.org](mailto:Meyer.P@portseattle.org)

Subject: New Communication: Comment 1: Appendix C Section 5.2 states that the Spokane/West Marginal/Chelan "five way intersection" will be at level of service F during rush hours in 2020 under the No Action AI

Alex Anderson <[ajanderson33@yahoo.com](mailto:ajanderson33@yahoo.com)>

<https://el2.envirolytical.com/communication/view/214837>

Comment 1:

Appendix C Section 5.2 states that the Spokane/West Marginal/Chelan "five way intersection" will be at level of service F during rush hours in 2020 under the No Action Alternative, with delays increasing over time to 280 seconds by 2040. This section also states that closing the Chelan leg of the intersection would "dramatically improve traffic operations". My comment here is that closing the Chelan leg of the intersection should be included as part of the No Action Alternative. Something that costs the Port little to no money and has dramatic benefits for traffic should have happened already, and likely will happen in the near future with or without terminal 5 work due to pressure from SDOT, given the obvious benefit to be gained.

**I-021-001**

Comment 2:

The Air Quality section of the DEIS should include emissions of non-Port vehicles that are stuck idling in traffic jams caused or made worse by the increased Port traffic. These emissions will not exist in the No Action alternative, so they should be accounted for in the Action alternatives.

**I-021-002**

Comment 3:

The DEIS did not study the rail crossings along West Marginal south of the rail draw bridge. Potential issues in this area that should have been studied include restricted access to (or stranding in) Herring's House Park by rail blocking the only entrance/exit. Similarly, the Duwamish River Trail includes two at-grade rail crossings south of Herring's House Park that could suffer from increased rail traffic.

**I-021-003**

### **I-021-001**

Comment noted. SDOT may prefer to retain the surface access for some movements or modes. Alternative measures have been evaluated and are described in Section 6.2.1 of the Transportation Technical Report (See FEIS, Volume II, Appendix C). The Port will work with SDOT to develop a preferred plan for the intersection.

### **I-021-002**

The air quality analysis considered impacts from added congestion due to Terminal 5 operations. This "hot-spot" modeling took into consideration the vehicle volumes and delays at the intersections near Terminal 5 and resulted in no violations of NAAQS for carbon monoxide. Modeling of PM was not required because the EPA indicated PM hotspot modeling is only appropriate when a project directly-influences a volume of 125,000 annual average daily traffic. None of the roadways adjacent to Terminal 5 exceed or even approach this threshold. Additional detail can be found in the air quality technical report (See FEIS, Volume I, Chapter 3, Section 3.2).

### **I-021-003**

All intermodal rail access to Terminal 5 would use the rail lines north and west of the Duwamish Waterway railroad bridge. No intermodal rail operations, including rail car staging and storage, will take place on rail lines located south of the bridge, on the east margin of W Marginal Way SW. No rail impacts are expected at Herring's House Park, in the area of Southwest Alaska Street, at the north margin of the Terminal 107 public shoreline access site.

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**From:** Robert Shampain [<mailto:shampers@aol.com>]  
**Sent:** Thursday, June 16, 2016 21:45  
**To:** Port Sepa; [Mwendy500@aol.com](mailto:Mwendy500@aol.com)  
**Subject:** Terminal 5 comments - Robert Shampain and Wendy Morgan

Dear Ms. Pulsifer -- Our family lives in the Pigeon Point Neighborhood of West Seattle, just above Terminal 5. While any increase in construction, traffic, and noise are certainly concerns for us, they are strongly outweighed by our much more serious concerns about the harmful effects of diesel pollution from idling trucks and ships.

We moved back to Seattle a year and a half ago from a dozen years in Los Angeles, where the ongoing issues with the Port of Longbeach (near where we lived) were constantly in the news. The rates of respiratory illnesses in for those living, working and going to school near the Port are higher, and we know firsthand that the smell is awful. There are also major concerns among many reputable researchers about the rates of cancers and other illnesses in the area. We do not want our children to live under the threat of that kind of pollution.

Seattle, as an environmental leader, must ensure that new port facilities provide enough power for ships and rules for truckers so that more pollution is not created, and so that we provide a model for how to run a port that is successful, safe, profitable and always looking to the future and better ways of doing things so that ALL stakeholders benefit.

I-022-001

Thank you for seriously considering ours and others' comments.

Sincerely,

Robert Shampain and Wendy Morgan  
4050 20th Avenue, SW  
Seattle, WA 98106

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### I-022-001

Please see Standard Response No. 3: Use of Shorepower at the beginning of Chapter 6 for additional information on shorepower use and the Ports schedule of deployment and commitment of use. As part of the Northwest Ports Clean Air Strategy, the NWSA will require drayage trucks to meet or exceed 2007 diesel standards by 2018.

**From:** Paul Luczak [<mailto:pluczak49@gmail.com>]  
**Sent:** Sunday, June 19, 2016 10:42  
**To:** Port Sepa  
**Cc:** Paul Luczak; Ellen Challenger; Bill Brewer  
**Subject:** Issues surrounding Terminal 5 Expansion

I attended the hearing on T5 on June 9<sup>th</sup>. My original intent was to assure that the large ships had mandatory shore power. I live a few blocks from Nucor and already have the noise of trains as well as pollution from the factory when they are burning off impurities and there is a northern (fair weather) breeze. What I learned shocked me and raised my level of concern for a variety of reasons:

**There will only be two voluntary shore power hookups-** unlike the required show power hookups the are required for cruise ships in Elliot Bay, it is up to the tenant as to whether they will use the hookups. Not only will City Light lose revenue, residents will be subjected to unnecessary noise and dangerous diesel pollution.

I-023-001

**The port has shown little interest in health and welfare of residents-** It was residents of West Seattle who forced the port to conduct an EIS. They attempted to proceed without it. This is the same port who blocked the arena expansion and allowed the Shell Arctic drilling rig to moor there. Is the port motivated by anything beside economic expansion?

I-023-002

**Transportation, health, and quality of life-** port officials and there paid consultants trrid to minimize the following things that they opening admit:

- Up to 1800 truck trips per day, at its peak
- 12-14 more train trips per day

**The tenant, whomever it may be, assumes the power** over many of these safety and health decisions, not the Port or the residents impacted.

I-023-003

**The construction and pile driving will erode air quality of residents, fish and wildlife.**

I-023-004

**There is no provision for air quality monitoring-** so far they have used beacon Hill monitors, far fro prevailing winds and not the Duwamish station.

I-023-005

I urge you to incorporate the minimal expansion possible. I urge you to take control of the decisions and require mandatory shore power hookups by the tenant. (The Port of Long Beach

I-023-006

requires shore power, yet due to truck and train traffic it remains the highest cancer rate in California, a state that has dramatically reduced cancer rates overall).

I-023-006  
(cont.)

I urge you to consider the noise, pollution and transportation gridlock that increased trains and trucks will allow.

I-023-007

Please consider quality of life. Even the few folks who are employed by the maritime industry and its high paying jobs admitted to mixed feelings as residents of the West Seattle area. Please don't sacrifice the health of residents and damage the paradise of West Seattle for profit.

**I-023-001**

Please see Standard Response No. 3: Use of Shorepower at the beginning of Chapter 6 for additional information on shorepower use and deployment and commitment of use.

**I-023-002**

The proposed Project includes marine cargo infrastructure changes intended to meet the challenge of recent dramatic changes in the container cargo transshipment industry. The physical infrastructure project goals complement the long-term investment and financial goals of the Project, providing efficient, cost-effective improvements at Terminal 5, sufficient to meet the needs of existing and anticipated marine cargo shipping.

The proposed Project has been planned and designed to serve anticipated increased marine cargo growth in the next 20 years with the coincident goal of avoiding and minimizing potential negative effects on environmental conditions. Project elements included in the present proposal are intended to avoid and minimize potential adverse effects on traffic, air quality, and noise at the Project site and in surrounding locations. The Project represents balanced marine cargo facility reuse and management of potential negative environmental effects.

**I-023-003**

Please see Standard Response No. 10: Responsibility for Permit Compliance at the beginning of Chapter 6 for additional information on how the Port proposes to use agreements with a selected marine terminal operator to ensure comprehensive compliance with city, state, federal, and Treaty tribe conditional approvals.

**I-023-004**

The potential impacts of airborne noise from pile driving to fish and wildlife were analyzed in Section 5.2.1.2 of the Biological Assessment.

Pile driving activities would produce airborne noise that may temporarily disturb any passerine birds (sparrow, starling, finch, robin, and crow) that may occupy the fringes of Terminal 5. Very few of these birds will occupy the Terminal itself because of a lack of habitat. Airborne noise analyses indicate it is unlikely that airborne noise from pile driving will reach documented bald eagle nesting area in the vicinity of Fairmount Avenue Southwest/Southwest Harbor Avenue. The in-air masking zone for marbled murrelet has been calculated to occur only within 4 meters of the face of the wharf. Seabirds have not been documented this close to the face of the wharf during pile driving activities during the Test Pile Program conducted in winter 2016.

With the implementation of proposed conservation measures described in Section 3.4-9, significant adverse impacts to aquatic habitats and species would be avoided.

The potential impacts of airborne noise from pile driving to residents were analyzed in Section 3.4-9 in the DEIS. The proposed Project would require pile driving during construction of the wharf and portions of the trestle. Pile driving would occur over 2,500 feet from the nearest residences west of the site and from 1,000 to 4,000 feet from the nearest residences south of the site. Archived sound level measurement data of pile driving activities indicate that

the hourly sound level (Leq) of pile driving at a distance of 100 feet is approximately 86 dBA.<sup>31</sup> The Lmax of pile driving is estimated to be 104 dBA at a distance of 100 feet.

The extent and numbers of piles needed for the rehabilitation of the existing cargo wharf were assessed as part of a specialized pile driving testing program called rapid load testing (RLT). The RLT program was subject to a separate environmental review, and the RLT was completed prior to the conclusion of this EIS process. The findings of the RLT program could ultimately lead to reductions in the lengths or numbers of piles needed and to possible reductions in the number hammer pile strikes that would be required using standard pile driving testing methods during the wharf improvements. While results were generally positive, the outcome of the RLT program has not been finalized and has therefore not affected the assessment documented here.

Pile driving sound levels that would be received at residences nearest the site were estimated using the CadnaA noise model. As a worst case scenario, the model assumed three pile driving rigs would operate concurrently, two in water and one on the upland. The resulting sound levels were hourly Leqs in the low 50s to mid-60s dBA and Lmax in the mid-60s to upper-70s dBA at the nearest residences. Because of the large intervening distances, estimated pile driving sound levels are greatly reduced at the nearest residences. As with "typical" construction, the model-calculated pile driving sound levels at most locations are below the limits the City of Seattle applies to long-term operational noise and well below the limits applied to impact (e.g., pile driving) sources. Therefore, no significant noise impacts would be expected during construction.

However, even with fairly low levels of pile driving noise, the unique nature of impact pile driving noise can result in the loudest sounds being audible at the residences nearest this activity. This noise could be perceived by some people as intrusive and possibly annoying, but the low overall levels would minimize the potential for impacts.

#### **I-023-005**

Please see Standard Response No. 1: Selection of Air Quality Monitoring Sites and Data at the beginning of Chapter 6 for additional information.

Please see Standard Response No. 2: Post-Operation Air Quality Monitoring at the beginning of Chapter 6 for additional information on operations monitoring.

#### **I-023-006**

The Port is proceeding with moving the Project ahead in the FEIS with impacts that were described in Alternative 2 and acquiring permits with the City of Seattle that approve the project infrastructure improvements and manage the impacts from operations that consider throughput of up to 1.3 million TEUs. The Port, through the EIS analysis, will identify the steps needed to reduce, minimize, avoid, or mitigate the impacts from operations and construction consistent with the Project described as Alternative 2 in the DEIS and modified in the FEIS based on public and agency comment.

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<sup>31</sup> From Ramboll Environ archive of pile driving sound level measurements. The hourly Leq included the placement and driving of two piles in a 1-hour period.



**I-023-007**

The EIS considers the noise, pollution and transportation impacts of the Project. Mitigation plans to address the potential impacts are presented in the FEIS, Volume I, Chapter 1, Summary Table 1.3-1.

-----Original Message-----

From: Ronald Osborne [<mailto:rosborne@farmersagent.com>]

Sent: Wednesday, June 15, 2016 11:52

To: Port Sepa

Subject: Re: Notice of Terminal 5 Improvements Project Draft EIS - Osborne, Ron

Home address: 3860 34th ave sw, Seattle 98126.

My home overlooks Harbor Island.

I am Ron Osborne, former VP of logistics for Fisher Flour Mill (Harbor Island).

Part of my accountability was railroad track design & management, Harbor Island renovation and Environmental Remediation. One requirement of track work was to contain and cap with asphalt to keep potentially harmful emissions at bay as required by the EPA.

So how can the Port even think about disrupting the Duwamish river bed more than absolutely necessary for current water transportation?

The EPA will not ignore this unnecessary disruption either.

At this point the Port of Seattle needs to defer larger cargo vessels to the Port of Tacoma.

It's time to re-purpose T-5 to tourism & recreation.

Building this very expensive and environmentally questionable project does not guarantee a tenant or fair value for a tenant if one were found.

There is so much competing port & rail leverage on the west coast and elsewhere that this project, if allowed is absolutely doomed to fail. It will never be profitable, it cant be.

I also believe that you all know it but are committed to try as that is your job and internal forces lobby hard with deep pockets for their personal employment.

No! to T-5 commercial containership expansion!

Sincerely,

Ron Osborne

I-024-001

Osborne Insurance and Financial Services

8009 S 180th St Suite 102

Kent, WA 98032

[rosborne@farmersagent.com](mailto:rosborne@farmersagent.com)

Agent Web: <http://www.farmersagent.com/rosborne>

**I-024-001**

During the dredge characterization sediment sampling, 35 sediment samples were collected and analyzed for dioxins/furans. Of the 35 samples, only 2 samples had dioxins/furans concentrations between 4 and 10 parts per trillion (ppt) toxicity equivalents (TEQs). Concentrations between 4 and 10 ppt are accepted at non-dispersive sites as described in the DMMP Dioxin Guidelines.

The DMMP agencies calculated the volume-weighted average for the sediments to be disposed of for the individual sediment management units in the dredge prism. The analysis showed that the material passed the DMMP non-dispersive dioxin/furan guidelines. The analysis is provided in the April 21, 2015, Suitability Determination Memorandum.

There are no monitoring requirements for dioxins/furans during dredging. Due to the low levels of these chemicals at the site, the chemicals cannot be monitored in the field, but require laboratory preparation and analysis.

The potential impacts of dredging at Terminal 5 were assessed by conducting a full DMMP characterization of the sediments proposed for dredging (Please see response to comment I-101-002). Sediment was found to be clean enough for offshore disposal since chemical concentrations were less than DMMP open water disposal criteria and Washington State Sediment Management Standards.

Dredging at Terminal 5 would not impact sediments in the vicinity because chemical concentrations are below Washington State Sediment Management Standards. Short-term impacts within the Terminal 5 dredging area would likely be limited to increased turbidity, which would be brief and localized. Based on other maintenance or remediation dredging projects in the area, the lowering of dissolved oxygen to unacceptable levels or increased acidity are not expected. Water quality monitoring will be performed during dredging to measure potential impacts and, if any are found, dredging operations will be modified or temporarily suspended.

The benthic community and deepwater habitat of the Terminal 5 berthing area is routinely disturbed from maintenance dredging activities and vessel operations (e.g., propwash from tugs). Due to the dynamic nature of the West Waterway, the benthic consists of assemblages that are capable of readily reestablishing after disturbances. The unconsolidated fine grained subtidal sediment throughout the West Waterway also aids to rapid recolonization, which typically ranges from 3 months to 1 year.

The Lockheed West Superfund sediment site along the northern portion of Terminal 5 is the only cleanup project remaining within the West Waterway. All other Superfund sites in the West Waterway have been remediated. The Lockheed West remediation is anticipated to begin in 2018. The cleanup of contaminated sediment and removal of pilings at Lockheed West will improve water quality and habitat in that area. Additionally, habitat improvements have been integrated into the remedial design. Due to the similar construction timeframes (approximately 2017-2020), the sequencing of Lockheed West and Terminal 5 berth deepening activities will be coordinated to minimize potential impacts associated with the proximity of in-water construction activities (e.g., dredging, pile pulling, pile driving). Although any impacts from these in-water construction activities are typically brief and localized, and water quality would be monitored for both projects.

There are two Superfund sediment sites outside of the West Waterway: The East Waterway (EW) and the Lower Duwamish Waterway (LDW).

The EW Superfund Site is located approximately one-half mile to the east of Terminal 5. It encompasses approximately 157 acres intertidal and subtidal habitats, compared to the 5.38 acres of proposed dredging area at

Terminal 5 (equivalent to 3.4 percent of the EW site). The EW cleanup activities are not anticipated to begin until after 2030. Based on the distance, comparative size of the sites, and the timing of dredging activities, no cumulative impact assessment was conducted for the EW site.

The LDW Superfund Site, which is located approximately one-half mile to the south of Terminal 5, and extends from the southern tip of Harbor Island up-river approximately 5 miles. It encompasses approximately 441 acres of intertidal and subtidal habitats, compared to the 5.38 acres of proposed dredging area at Terminal 5 (equivalent to 1.2 percent of the LDW site). The LDW cleanup activities are not anticipated to begin until after 2030. Based on the distance, the comparative size of the sites, and the timing of dredging activities, no cumulative impact assessment was conducted for the LDW site. As the LDW cleanup continues, contaminated sediment will be removed upstream, which will decrease the likelihood of recontamination to the Terminal 5 location.

The upland and shoreline cleanup actions conducted by Lockheed site are expected to be accomplished using land-based equipment and are not expected to adversely affect aquatic area habitat. The Port understands that Lockheed is preparing plans for clean-up and remediation of near-shore area in the former shipyard at the north margin of Terminal 5. In addition, the Port will be preparing plans for piling removal and clean-up in former shipyard areas at the north margin of Terminal 5 where the port has Superfund responsibility. The Port is committed to conducting all Port instigated clean-up and remediation to avoid and minimize disruption of aquatic area habitat. Similarly, the Port will work cooperatively with Lockheed to avoid and minimize cumulative potential adverse aquatic area effects if clean-up actions are coincident or coincident with Terminal 5 rehabilitation actions. At present, Lockheed-sponsored shipyard clean-up is expected to begin in 2018, with the Port's clean-up work anticipated in 2017.

The Seattle Harbor Navigation Improvement Project proposed by the USACE is a separate and independent action from the Terminal 5 Improvements Project. Navigational access improvements will undergo a separate NEPA/consultation process. The Port acknowledges that, as local sponsor of navigational improvements planned, designed, and implemented by the USACE, coordination with adjacent Terminal 5 rehabilitation actions and Lockheed and Port-sponsored clean-up and remediation actions at the north margin of Terminal 5 will be essential in order to avoid and minimize potential cumulative adverse aquatic area effects. Implementation of the navigation improvement project is unlikely to coincide with completion of the proposed Terminal 5 Improvements Project, however, if portions of USACE navigation dredging and Terminal 5 construction actions are coincident, the Port is committed to implementing the two projects with the objective to avoid potential coincident and cumulative effects on aquatic area fish and wildlife habitat resources.

All dredging actions are preceded with substantial sediment testing and state and federal agency review, emphasizing avoiding and minimizing negative effects on water column conditions. In addition, handling and off-site disposal of contaminated sediments is carefully controlled in order to protect water quality and fish and wildlife habitat and resources. It is expected that short-term impacts to water quality and the benthic community from dredging may result, however, navigational access and berth deepening dredging is expected to improve sediment and water quality due to the removal of contaminated sediment, with post-project sediment conditions consisting of a "clean" new surface of native material available for benthic community re-establishment.

In summary, although there are potential short-term impacts to water quality and the benthic community, the dredging and remediation activities that will be occurring within and upstream of the West Waterway will ultimately improve the habitat and water quality conditions within the waterway and vicinity.

-----Original Message-----

From: EnviroLytical - Port of Seattle Terminal 5 Improvements [<mailto:info@envirolytical.com>]

Sent: Thursday, June 09, 2016 9:47 PM

To: [Shultz.M@portseattle.org](mailto:Shultz.M@portseattle.org); Pam Xander; [Meyer.P@portseattle.org](mailto:Meyer.P@portseattle.org)

Subject: New Communication: Terminal 5 improvements estimate 20s per vehicle deals due to train traffic. What is the total traffic impact to west Seattle commuter door to door? What is the compounded traffic delay with increased

Randal Bass <[randal.bass@gmail.com](mailto:randal.bass@gmail.com)>

<https://el2.envirolytical.com/communication/view/214381>

Terminal 5 improvements estimate 20s per vehicle deals due to train traffic. What is the total traffic impact to west Seattle commuter door to door? What is the compounded traffic delay with increased development and density and why is this not included in the total calculation? Also, with regard to air quality impact, I see nothing regarding the uptake of shore power as mandatory. We have had oil company ships at Terminal 5 for many months, immune ignoring, or no access to shore power, emitting tons of CO2 running engines, while docked. This is unacceptable for ships at port. Certainly for ones stored for months at dock. Shore power connections, like low sulphur diesel in our waters should be mandatory.

I-025-001

I-025-002

#### I-025-001

Train crossings would block the surface access to Terminal 5 and Terminal 7. The recommendation to close the north leg of the five-way intersection to traffic would eliminate signal preemption associated with a train crossing and eliminate potential delays to the arterial route for West Seattle commuters. To the east, train crossings of East Marginal Way are grade-separated by the recently completed East Marginal Way Grade-Separation project.

#### I-025-002

Please see Standard Response No. 3: Use of Shorepower at the beginning of Chapter 6 for additional information.

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-----Original Message-----

From: EnviroLytical - Port of Seattle Terminal 5 Improvements [<mailto:info@envirolytical.com>]

Sent: Thursday, June 09, 2016 4:27 PM

To: [Shultz.M@portseattle.org](mailto:Shultz.M@portseattle.org); Pam Xander; [Meyer.P@portseattle.org](mailto:Meyer.P@portseattle.org)

Subject: New Communication: The mitigation measure of requiring docked and/or idling ships to use shore power electricity is crucial, for protecting puget sound water from ocean acidification from air pollutants, including CO2.

Brian Duncan <[beduncan@earthlink.net](mailto:beduncan@earthlink.net)>

<https://e12.envirolytical.com/communication/view/214364>

The mitigation measure of requiring docked and/or idling ships to use shore power electricity is crucial, for protecting puget sound water from ocean acidification from air pollutants, including CO2. Therefore infrastructure for this purpose must be provided and its use made mandatory for all docking ships.

I-026-001

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**I-026-001**

Please see Standard Response No. 3: Use of Shorepower at the beginning of Chapter 6 for additional information.

-----Original Message-----

From: EnviroLytical - Port of Seattle Terminal 5 Improvements [<mailto:info@envirolytical.com>]

Sent: Saturday, June 11, 2016 7:12 AM

To: [Shultz.M@portseattle.org](mailto:Shultz.M@portseattle.org); Pam Xander; [Meyer.P@portseattle.org](mailto:Meyer.P@portseattle.org)

Subject: New Communication: I am a West Seattle resident. Truck traffic is my biggest concern. Too many times the port cannot manage the number of trucks already on the area roads. Imagine the mess if we bring in larger ships, h

Steven Cheyne-Cook <[cooksteven@earthlink.net](mailto:cooksteven@earthlink.net)>

<https://el2.envirolytical.com/communication/view/214428>

I am a West Seattle resident. Truck traffic is my biggest concern. Too many times the port cannot manage the number of trucks already on the area roads. Imagine the mess if we bring in larger ships, hence more trucks. Our area roads should not be used as your parking lot! Let's let the larger ships dock somewhere else. We don't want the gridlock!

I-027-001

NO TERMINAL 5 EXPANSION

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**I-027-001**

Comment acknowledged. Many mitigation measures to address truck traffic and queuing have been developed and are presented in Section 6 of the Transportation Technical Report (See FEIS, Volume II, Appendix C).

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-----Original Message-----

From: EnviroLytical - Port of Seattle Terminal 5 Improvements [<mailto:info@envirolytical.com>]

Sent: Saturday, June 11, 2016 11:42 AM

To: [Shultz.M@portseattle.org](mailto:Shultz.M@portseattle.org); Pam Xander; [Meyer.P@portseattle.org](mailto:Meyer.P@portseattle.org)

Subject: New Communication: I believe that Seattle has to do the updating of Terminal 5. As a major shipping port, our city needs to be prepared to handle the bigger ships that bring goods in and export goods out to other countr

Trina Loehndorf <[pennfolks@gmail.com](mailto:pennfolks@gmail.com)>

<https://el2.envirolytical.com/communication/view/214431>

I believe that Seattle has to do the updating of Terminal 5. As a major shipping port, our city needs to be prepared to handle the bigger ships that bring goods in and export goods out to other countries. If we do not stay abreast of the changing times, commerce here and abroad will suffer. Many jobs here as dependent on the flow of goods through this port. My concern is the possible idling of the engines on these huge ships as they use the port.

I do believe that there needs to be an alternate plan to provide power to the ships to keep our air clean.

I-028-001

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### I-028-001

The goals and objectives state that the Project is intended to prepare the terminal to accommodate larger vessels (see FEIS, Volume I, Chapter 2 2.2.3).

Please see Standard Response No. 3: Use of Shorepower at the beginning of Chapter 6 for additional information.

Please see Standard Response No. 6: Nighttime Noise at the beginning of Chapter 6 for additional information on the Operational Noise Management Plan framework.

Please see Standard Response No. 7: Low Frequency Noise at the beginning of Chapter 6 for additional information on how this noise will be addressed in the Operational Noise Management Plan.



**From:** Paul Casey [<mailto:paul@caseycommunications.net>]  
**Sent:** Friday, June 10, 2016 22:30  
**To:** Port Sepa  
**Subject:** West Seattle Terminal 5

I have lived at 2653 Belvidere Ave. SW Seattle, WA, for 12 years, which is located about a mile or so as the crow flies, from Terminal 5.

I am more than extremely concerned about the deep sea port expansion.

From what I see, a negative prior to Terminal 5 closing will only intensify if these plans goes through. The increased volumes of diesel trucks, and the train traffic will make the east slope of West Seattle uninhabitable.

I have absolutely no confidence that the Port will do anything to mitigate our concerns. I say that because residents of the east slope of West Seattle including me, have made numerous complaints about the train horns that blast in the early morning hours over the last 10 years.

The complaints have fallen on ears. So the Port, who can't do anything about reducing train horn blasts that sometimes last for 45 seconds at 3 am in the morning, are asking us to trust them with a future expansion. Not me.

Fortunately, I am in a financial position to move out of the area and will do so, if this expansion comes even close to reality. Shame on the Port for even considering such a project that will destroy the tranquility of such a lovely part of the city.

I say that because since Terminal 5 shut down, the noise levels have been reduced significantly.

Paul E. Casey



I-029-001

### I-029-001

The Terminal 5 site has been committed to marine cargo transportation and industrial development since the early 1900s. The proposed Project does not include expansion of the existing facility. The Port is proposing to derive more value from Terminal 5 infrastructure, increasing cargo activity from previous levels of operation, up to 650,000 container cargo units, by 50 to 65 percent. As part of the environmental review process under SEPA, environmental impacts, including impacts from construction and operational noise, were evaluated and steps were identified to avoid, minimize, or offset likely adverse effects. A specific noise mitigation strategy was identified to reduce train horn noise associated from trains serving the site. Refer to FEIS, Volume I, Chapter 3, Section 3.6. The mitigation steps are also summarized in Chapter 1.3, Summary of Impacts and Mitigation.

Please see Standard Response No. 5: Train Horn Noise at the beginning of Chapter 6 for additional information on addressing annoyance noise and "Quiet Zones".

Please see Standard Response No. 6: Nighttime Noise at the beginning of Chapter 6 for additional information on the Operational Noise Management Plan framework.

Please see Standard Response No. 7: Low Frequency Noise at the beginning of Chapter 6 for additional information on how this noise will be addressed in the Operational Noise Management Plan.

Please see Standard Response No. 8: Cargo Forecasts at the beginning of Chapter 6 for additional information on the strategic business planning for the proposed Project.

Please see Standard Response No. 9: Compliance Noise Monitoring at the beginning of Chapter 6 for additional information on how ambient-sensing, broadband backup alarms will be required on all mobile cargo handling equipment for the proposed Project.

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**From:** Dori Cahn [<mailto:dccahn@gmail.com>]

**Sent:** Monday, June 13, 2016 15:30

**To:** Port Sepa

**Subject:** Draft EIS for Terminal 5

Hello,

I reside in West Seattle at 3210 38th Ave. SW, and I am concerned about the impacts to our neighborhood by the proposed expansion at Terminal 5.

**Air Quality:** I am concerned about worsening air quality from increased truck, ship, and train activity at the terminal. I support the neighborhood's request for permanent 24/7 air quality monitoring at T-5 and impacted neighborhoods. The lease between the Port and the Terminal Operator must require electric cranes, use of shore power, and getting idling engines turned off while waiting in line.

I-030-001

**Noise:** I was stunned at the level of noise at night after I moved into the neighborhood. I am extremely concerned about increases in night noise; it will soon be impossible to sleep with open windows at night, contrary to the quiet of the neighborhood we live in.

I-030-002

I recognize the important role the Port plays in the local and regional economy. The Port must also be a good neighbor.

Dori Cahn  
3210 38th Ave SW  
Seattle 98126  
[dccahn@gmail.com](mailto:dccahn@gmail.com)

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#### I-030-001

Please see Standard Response No. 2: Post-Operation Air Quality Monitoring at the beginning of Chapter 6 for additional information on post-operation monitoring.

Please see Standard Response No. 3: Use of Shorepower at the beginning of Chapter 6 for additional information.

#### I-030-002

Comment acknowledged. The evaluation of noise impacts and steps to avoid, minimize or mitigate noise impacts is found in Volume I, Chapter 3, Section 3.6 and the Noise Technical Report in Volume II, Appendix B.

Please see Standard Response No. 5: Train Horn Noise at the beginning of Chapter 6 for additional information on addressing annoyance noise and "Quiet Zones".

Please see Standard Response No. 6: Nighttime Noise at the beginning of Chapter 6 for additional information on the Operational Noise Management Plan framework.

Please see Standard Response No. 7: Low Frequency Noise at the beginning of Chapter 6 for additional information on how this noise will be addressed in the Operational Noise Management Plan.

Please see Standard Response No. 8: Cargo Forecasts at the beginning of Chapter 6 for additional information on the strategic business planning for the proposed Project.

Please see Standard Response No. 9: Compliance Noise Monitoring at the beginning of Chapter 6 for additional information on how ambient-sensing, broadband backup alarms will be required on all mobile cargo handling equipment for the proposed Project.

-----Original Message-----

From: EnviroLytical - Port of Seattle Terminal 5 Improvements [<mailto:info@envirolytical.com>]

Sent: Wednesday, June 15, 2016 12:16 PM

To: [Shultz.M@portseattle.org](mailto:Shultz.M@portseattle.org); Pam Xander; [Meyer.P@portseattle.org](mailto:Meyer.P@portseattle.org)

Subject: New Communication: 1 Question, 1 recommendation. Question, How will you get the added truck traffic out onto I-5, especially with the advent of increased coal and oil trains? One new overpass in the area is no

Mike Haggard <[mikeh7515@centurylink.net](mailto:mikeh7515@centurylink.net)>

<https://el2.envirolytical.com/communication/view/214580>

1 Question, 1 recommendation.

Question, How will you get the added truck traffic out onto I-5, especially with the advent of increased coal and oil trains? One new overpass in the area is not even a good start. Your solution had better be in place when you receive your first 18,000 box ship.

I-031-001

Recommendation: Drive down Harbor ave toward Alki on a weekend morning. Many, many scuba divers. The area is great for new divers and classes because there is no current. When you extend pier on Terminal 5, fill in the area to the west and construct a heavy breakwater with a vainer of lots of very large rocks and broken "clean" concrete to form an underwater park. Bring your camera and light, but leave your spear gun at home. It would be a boom for not only local divers and dive shops but in a few years a noted tourist attraction, a destination underwater park in the middle of a major city. Local scuba clubs would be thrilled to help plant eel grass or help in any way asked.

I-031-002

### I-031-001

Truck access between Terminal 5 and Interstate 5 will not be affected by the potential increase in oil and coal trains. Those trains would use the BNSF Railway's mainline track, which is grade-separated from the primary travel routes to Interstate 5 via the Spokane Street Viaduct or SR 519.

### I-031-002

The proposed Project does not include expansion of the area of the existing marine cargo facility. The objective of the Project is investment in existing marine cargo infrastructure, including beneficial reuse of the Terminal 5 site. In-water construction is limited to strengthening of the existing 2,900-foot-long marine cargo wharf and deepening vessel berth depths adjacent to the strengthened wharf. No negative effects on aquatic area resources are anticipated and, as a result, no compensatory measures, including subtidal habitat improvements, are proposed.

Previous Terminal 5 redevelopment, completed in 1999, included construction of a 5.8-acre public shoreline access area at the northwest margin of the marine cargo facility. The Terminal 5 public shoreline access site, Jack Block Park, is maintained by the Port as a public use/open space area and represents an important shoreline recreational destination on Harbor Avenue Southwest, serving West Seattle and adjacent neighborhoods.

4847 California Ave SW #405  
Seattle, WA 98116

May 10, 2016

Paul Meyer  
Environmental Review and Permitting  
Port of Seattle  
P.O. Box 1209  
Seattle, WA 98111



Re: Terminal 5- Cargo Wharf Rehabilitation DEIS

Dear Mr. Meyer:

Thank you for the opportunity to comment on the draft Environmental Impact Statement (DEIS) for the proposed rehabilitation of Terminal 5 (T-5). I am concerned that some of the scoping comments that I sent to you on November 3 of last year were not addressed in the DEIS. Specifically, my comments on impacts and improvements to fish passage and habitat in Longfellow Creek were ignored. Why should the Port solicit comments if they are not addressed? I also have additional concerns regarding traffic and salmonid rearing/ migration impacts from the proposed project.

I-032-  
001

Longfellow Creek. The southeast corner of T-5 is located above the mouth of Longfellow Creek, where it discharges into the West Waterway of the Duwamish River. Longfellow Creek is one of the few remaining salmon-bearing streams in the City of Seattle. The City has installed drainage controls and restored critical habitat for salmonids along Longfellow Creek. The EIS should address the effect of the Port's culvert at the mouth of the creek and drainage impacts of the 3 outfalls from T-5 that discharge to the creek. Specifically, the EIS should state the length of the culvert that each salmonid must navigate during migration from and returning to Longfellow Creek. The Port has paved over the creek and should be responsible for daylighting it. The Port should re-establishing appropriate riparian vegetation to restore the ecological function of the section of Longfellow Creek that flows through Port property. Every salmon juvenile migrating downstream and returning adult must navigate the gauntlet created by the Port's culvert. Certainly something can be done to improve migration through Port property.

I-032-  
002

Salmonid Rearing and Migration. Similarly, every chinook, coho, pink and chum salmon in the entire Green- Duwamish system rears and migrates in and around T-5 - unless they use the East Waterway. Although the proposed changes to T-5 may not further impact salmonids beyond the existing development, are there any opportunities to enhance the quality and quantity of salmonid habitat at

I-032-  
003

the mouth of the river? I find it surprising that the Port did not explore this issue despite the environmental rhetoric in countless Port publications and pronouncements regarding environmental stewardship by the Port. This proposed re-development of T-5 is a once in a generation opportunity for the Port to make a significant contribution to the enhancement of salmonids including threatened chinook salmon. It is interesting that the biological assessment does not address this issue.

I-032-  
003  
(cont.)

Traffic Impacts. I question the Port's analysis of traffic impacts that will be generated by the re-development of T-5. Several of the intersections analyzed in the DEIS are already at Level F, the worst rating possible. Although several intersections are studied in the DEIS, there is a glaring absence of analysis of the most significant bottleneck for most West Seattle residents, the connection of the West Seattle Bridge and Interstate 5 (I-5). Trucks from T-5 merge onto the eastbound ramp from the West Seattle Bridge and I-5 causing significant delays especially during the morning rush hour (6-10AM). The Port's analysis in the DEIS states that 15% of the traffic generated by the proposed expansion of T-5 enters I-5 northbound. According to Table 6 of Appendix C of the DEIS, there will be on average, an **additional 91 trucks** during peak morning hours for Alternative 2 and 53 with Alternative 3. On "design days," traffic will be 40% greater. Will the Port commit to mitigation of the truck traffic impacts by limiting truck traffic at rush hour? Will the Port participate in the funding and construction of additional ramps from T-5 to I-5? Will the Port commit to implement traffic signaling that will improve the flow of traffic? Does the Port have specific plans to coordinate and cooperate with the City of Seattle and/ or the Washington Department of Transportation to improve traffic flow in an intersection that is already very congested? As a resident of West Seattle who is impacted by Port-generated traffic on a daily basis, I believe the traffic issues at I-5 and the West Seattle viaduct must be addressed by the EIS.

I-032-  
004

Thank you for the opportunity to comment on the DEIS. I look forward to reviewing your response to each of the items described above. Please include me in any future mailings or electronic communication regarding the proposed rehabilitation of T-5.

Sincerely,



Thomas P. Hubbard

TONASI.HUBBARD@GMAIL.COM

✓ Cc POS Commissioner Fred Felleman

Ray Hoffman, Director, City of Seattle, Public Utilities

**I-032-001**

The Project does not affect the existing Longfellow Creek outfall, in the southwest corner of the West Waterway, located in the Southwest Hinds Street public right-of-way. No proposed construction activities will affect to existing outfall in any way. The proposed Project does not include expansion of the Terminal 5 facility area and will not affect Longfellow Creek stream channel or stormwater capacity. No project stormwater discharges to the Longfellow Creek conveyance system area proposed.

**I-032-002**

The Project will not affect current conditions of Longfellow Creek. Proposed construction activities will not expand the current footprint of the wharf. The existing treated wood and steel piling cargo wharf fender system will be removed and replaced with an alternative, above-water fender system, reducing the over-water area of the wharf by approximately 8,500 square feet, providing modest improvements to resident and migratory fish and wildlife. Proposed construction activities and subsequent operations will not change the existing drainage patterns. No project stormwater will discharge to Longfellow Creek.

**I-032-003**

After proposed construction activities, the Terminal 5 wharf will occupy a smaller footprint within the West Waterway (decrease of 8,500 square feet), remove approximately 284 timber piles, many of which are treated with creosote, and will remove any existing contaminated sediments at the face of the wharf. These conservation measures, built into the design of the Project will improve existing aquatic habitat conditions for rearing and migrating salmonids. For these reasons, the Port has not proposed any additional habitat mitigation actions within the waterway associated with this Project.

**I-032-004**

It is recognized that the Interstate 5/Spokane Street Viaduct interchange currently operates at poor levels of service during many hours of the day. Additional analysis is provided on Figure 21 and in Table 11 of the Transportation Technical Report (see FEIS, Volume II, Appendix C) to show the net change in truck traffic to Interstate 5 and the proportion of total traffic along those routes. That analysis shows that the net increase in truck traffic generated by the proposed Project is estimated to be fewer than 20 truck trips per hour. Overall, this net increase would represent less than 0.1% of the traffic through this interchange, a level that would not warrant mitigation.



215086 06/23/2016

Terry Sorensen "I am a homeowner living directly up the hill from Terminal 5. I have a direct line of sight to the terminal from my bedroom window. As I read through the drafts the points that caught my attention the most were the non-committal words: could, intended, and examples, in the following paragraphs. Short of replacing those with alternatives like "must" and "guaranteed", there is literally no accountability beyond the "best effort" for the organization who will be implementing these changes to the terminal and operating it thereafter. On the subject of noise, there are also discrepancies in accountability. These arguments for excluding ships from the study are weak at best. Just because the noise isn't always constant is not grounds to eliminate the noise ships produce from consideration. The sound of a barking dog doesn't have to be constant to drive one mad. Very clever and disappointing language. I suggest changing the following items:

1. Volume II, page 45

a. 5.1 Construction

i. A list of some of the controls measures that could be implemented during construction follows:

b. 5.2 Operations

i. The project, as proposed, includes a number of measures intended to reduce operation emission, including GHG Emission. No additional mitigation measure are proposed or warranted. Examples of emission-reducing components included in the project as proposed:

2. Volume II, page 216

a. Ships – Although the occasional ship may be heard on the hillside, noise from these ships was not included in the analysis because it is not a consistent noise source, it will likely decrease in the future with the advent of newer ships, and it will likely decrease in the future when up to 70% of the ships are expected to use shorepower while at birth.

to: (I've CAPITALIZED the words for easier identification)

1. Volume II, page 45

a. 5.1 Construction

i. A list of some of the controls measures that WILL be implemented during construction follows:

b. 5.2 Operations

i. The project, as proposed, includes a number of measures GUARANTEED to reduce operation emission, including GHG Emission. No additional mitigation measure are proposed or warranted. MEASURABLE EVIDENCE of emission-reducing components included in the project as proposed:

I-033-001

Ships should be included in the study and scrutinized as any other source of noise and air pollution. A requirement for mandatory shorepower should be enforced for all ships docking at Terminal 5. The same noise ordinance should be enforced for trains that will carry the cargo away.

**I-033-002**

2. Volume II, page 216

a. Ships – Although the occasional ship may be heard on the hillside, noise from these ships was not included in the analysis because it is not a consistent noise source, it will likely decrease in the future with the advent of newer ships, and it will likely decrease in the future when up to 70% of the ships are expected to use shorepower while at birth.

**I-033-003**

Thanks you for considering my concerns,

Terry Sorensen

**I-033-001**

Please see Standard Response No. 5: Train Horn Noise at the beginning of Chapter 6 for additional information on addressing annoyance noise and “Quiet Zones”.

Please see Standard Response No. 6: Nighttime Noise at the beginning of Chapter 6 for additional information on the Operational Noise Management Plan framework.

Please see Standard Response No. 9: Compliance Noise Monitoring at the beginning of Chapter 6 for additional information on how ambient-sensing, broadband backup alarms will be required on all mobile cargo handling equipment for the proposed Project.

Battery-electric or electric hybrid options are not readily available in all types of heavy-duty construction equipment. However, the Port will require that construction equipment meet or exceed EPA Tier 2 off-road diesel engine emission standards and on-road equipment meet or exceed EPA 2007 diesel engine emission standards. Idling of equipment will also be limited.

**I-033-002**

Comment acknowledged. Vessel noise has been assessed and is included in the discussion of noise impacts in the FEIS (see FEIS, Volume I, Chapter 3, Section 3.2). Please also see response to comment I-007-001. See also Operational Noise Mitigation plan in FEIS Appendix M which describes detailed framework for managing noise during operations.

**I-033-003**

Please see Standard Response No. 7: Low Frequency Noise at the beginning of Chapter 6 for additional information on how this noise will be addressed in the Operational Noise Management Plan.

After publication of the DEIS, comments were received about low frequency noise vibrations. Measurements were made to assess the levels of low-frequency noise. The FEIS reports on those measurements and efforts to manage low frequency noise were included in the FEIS (see FEIS, Volume I, Chapter 3, Section 3.6).

-----Original Message-----

From: EnviroLytical - Port of Seattle Terminal 5 Improvements [<mailto:info@envirolytical.com>]

Sent: Friday, June 24, 2016 6:21 PM

To: [Shultz.M@portseattle.org](mailto:Shultz.M@portseattle.org); Pam Xander; [Meyer.P@portseattle.org](mailto:Meyer.P@portseattle.org)

Subject: New Communication: Our house (in the North Admiral neighborhood of West Seattle) overlooks the Port of Seattle terminals and as a result, port operations have a direct impact on our quality of life. We strongly

Georgios Chrysanthakopoulos <[georgechrysanthakopoulos@live.com](mailto:georgechrysanthakopoulos@live.com)>

<https://el2.envirolytical.com/communication/view/215194>

Our house (in the North Admiral neighborhood of West Seattle) overlooks the Port of Seattle terminals and as a result, port operations have a direct impact on our quality of life.

We strongly believe that the Port of Seattle needs to update the draft EIS, stop ignoring the thousands of people living around it and commit to solutions to the following concerns:

1) The EIS fails to address Noise pollution concerns. We can trivially prove (with recordings across the year, day, time of day) that the noise levels from the port and its operations (ship engines, train horns, trucks) are beyond what a residential family should have to endure. The EIS must address noise pollution and take actions to mitigate it: Supply shorepower to ships so they do not run their engines, limit the times of day that trains operate, limit track traffic during generally accepted quiet hours

I-034-001

2) The EIS fails to address Light pollution concerns. The light pollution levels from the port disrupt sleep patterns on thousands of homes on both sides of the terminals. The impact statement needs to address this and modify the lighting fixtures so light is focused down, and the hundreds of light fixtures are not on all night for no clear reason. Security and safety concerns, once light pollution is mitigated should be addressed with focused light, low light/IR camera installations, etc

I-034-002

3) The EIS fails to address Air pollution concerns. Once again, traffic from both trains, tracks, and a requirement for supplying electricity to docked ships, so they do not run their diesel engines must be present in the statement.

I-034-003

The EIS in general needs to commit to solutions that address the concerns above. We are of thousands of families that chose to live within the City of Seattle, avoid sprawl, lengthy commutes, etc only to have to deal with part of our local government, the Port of Seattle, that seems to focus on competition with remote cities, vs taking care of its neighbors.

**I-034-001**

Please see Standard Response No. 5: Train Horn Noise at the beginning of Chapter 6 for additional information on addressing annoyance noise and “Quiet Zones”.

Please see Standard Response No. 6: Nighttime Noise at the beginning of Chapter 6 for additional information on the Operational Noise Management Plan framework.

Please see Standard Response No. 7: Low Frequency Noise at the beginning of Chapter 6 for additional information on how this noise will be addressed in the Operational Noise Management Plan.

Please see Standard Response No. 9: Compliance Noise Monitoring at the beginning of Chapter 6 for additional information on how ambient-sensing, broadband backup alarms will be required on all mobile cargo handling equipment for the proposed Project.

Compliance noise monitoring of past Terminal 5 operations has indicated that the facility has operated within the City of Seattle noise limits for an industrial noise source affecting residential receiving properties. The noise study conducted for the DEIS indicated that future operations with expanded throughput could result in facility levels exceeding these noise limits. Therefore, as part of the Project, the Port and the Terminal 5 marine cargo operator will develop an Operational Noise Management Plan (a framework of the ONMP is provided in FEIS, Volume II, Appendix M) to ensure that future levels will comply with the noise limits.

The evaluation of noise impacts and steps to avoid, minimize or mitigate noise impacts is found in Chapter 3, Section 3.6 and the Noise Technical Report in Volume II, Appendix B. The Operational Noise Management Plan will define a process to monitor noise levels from the facility annually, set up and respond to noise complaints, and identify potential noise mitigation measures that could be implemented to ensure future compliance with the limits. Some sources of noise are exempt from the noise limits, and control of these sources will be implemented to the extent feasible. For example, backup/motion alarms are exempt from the limits but are often one of the more annoying sources from the site. The Port is committed to requiring the installation and use of ambient-sensing, broadband backup alarms on all on-site mobile equipment to reduce the annoyance from this source. Noise from trains in transit to and from Terminal 5, in the area between the Duwamish Waterway rail bridge and the rail crossing at West Marginal Way Southwest at the southeast margin of Terminal 5, is also exempt from the noise limits. The Port is committed to improving the safety of the rail corridor to the Terminal in order to reduce the occurrence locomotive horns, one of the sources of noise producing the most complaints from nearby communities.

**I-034-002**

Proposed improvements are anticipated to either maintain or reduce the potential impacts from light and glare. Any new or replaced lighting will be designed using fixtures that will minimize glare and confined with the use of directional shields.

**I-034-003**

The updated evaluation of air impacts and steps to avoid, minimize or mitigate air quality impacts is found in the FEIS Chapter 3, Section 3.2, Volume 1 and the Air Quality Technical report (see FEIS, Volume II, Appendix A). These studies summarize a detailed air quality analysis, including provision of shorepower. Please see Standard Response No. 3: Use of Shorepower at the beginning of Chapter 6 for additional information.

-----Original Message-----

From: denny [mailto:dennyoneputt@hotmail.com]

Sent: Thursday, June 23, 2016 11:24

To: Port Sepa

Cc: [jtvoj2@earthlink.net](mailto:jtvoj2@earthlink.net)

Subject: Terminal 5 Wharf Rehabilitation, Berth Deepening & Improvements - DEIS

I am writing to the Port and the decision makers regarding the impact that your decisions will have on us homeowners in West Seattle. I have lived and raised my family in our current location for some 35 years. This was before West Seattle became "discovered" due to the high level bridge. However, it still remains to be an excellent place to live. I am concerned about the expansion of Terminal 5 and would highly recommend that you address the following issues:

1. NOISE ABATEMENT - When these super large container ships dock at Terminal 5 it will be extremely important that they have the ability to hook up to shore power. If these ships have to rely upon their own generators for power the humming noise will be extremely detrimental to living in an otherwise enjoyable community. The noise comes right up to our home and without shore power access the pollution would be horrendous.

I-035-001

The same concern is with trains accessing the property at all times, especially during the sleeping hours of 10:00PM to 7:00 AM. Please insist that trains do not blow their horns during these times. Again, the noise can be so loud that it wakes one up from their sleep. And right now there is very little activity. With the expansion and the anticipated increase of both trains and trucks it is imperative that you place tight controls on those accessing the property during the normal sleeping hours.

I-035-002

2. LIGHT ABATEMENT - Please do whatever is necessary to control the lighting on Terminal 5 so that it doesn't interfere with homeowner's ability to enjoy the comforts of their own home. The glaring of light can be obtrusive and certainly disruptive to the quality of life that homeowner's are entitled to enjoy by living in the city. I understand there must be light for the safety of the operations of the terminal but please be cognizant of your tax-paying neighbors who do not want to see strong glaring lights coming at them during the middle of the night.

I-035-003

I appreciate the opportunity to provide input as a concerned homeowner and would request that you receive them in the same spirit in which they are offered. In short, put yourselves in my shoes or better yet, at my address, and make your decisions in a favorable manner to all concerned.

Sincerely,

Dennis R. Olson  
3316 - 35th Ave. SW  
Seattle, WA 98126

**I-035-001**

Please see Standard Response No. 3: Use of Shorepower at the beginning of Chapter 6 for additional information.

**I-035-2**

Please see Standard Response No. 5: Train Horn Noise at the beginning of Chapter 6 for additional information on addressing annoyance noise and “Quiet Zones”.

**I-035-3**

See response to I-034-002 for information about light and glare.

June 20, 2016

Paul Meyer  
Environmental Services  
Port of Seattle  
PO Box 1209  
Seattle, WA 98111


Dear Mr. Meyer,

As a resident of King County, I am vitally interested in the economic future of our area, and I'm writing in support of the Terminal 5 cargo wharf rehabilitation, berth deepening and improvements, alternative #2.

Terminal 5 has been a cargo terminal for 100 years; it is a rare deep-water terminal. To maintain the city's place in the world economy, we must rebuild Terminal 5 to accommodate the industry's mega-ships that are coming online. As you know, the maritime industry brings billions to the economy of the Pacific Northwest yearly, and employs, directly and indirectly, more than 150,000 people in the Seattle/King County area. The workforce is diverse, and the jobs are largely family-wage jobs, allowing men and women with or without college degrees to support their families. Upgrading the terminal is critical to maintaining the diverse workforce and creating new maritime and industrial jobs. It is critical to the economic and human environment of the of the Seattle/King County area.

Sincerely,

Signature:



E-mail:

clayton988@earthlink.net

I-036-  
001

I-036-001

Comment acknowledged.



June 20, 2016

Paul Meyer  
Environmental Services  
Port of Seattle  
PO Box 1209  
Seattle, WA 98111

Dear Mr. Meyer,

As a resident of King County, I am vitally interested in the economic future of our area, and I'm writing in support of the Terminal 5 cargo wharf rehabilitation, berth deepening and improvements, alternative #2.

Terminal 5 has been a cargo terminal for 100 years; it is a rare deep-water terminal. To maintain the city's place in the world economy, we must rebuild Terminal 5 to accommodate the industry's mega-ships that are coming online. As you know, the maritime industry brings billions to the economy of the Pacific Northwest yearly, and employs, directly and indirectly, more than 150,000 people in the Seattle/King County area. The workforce is diverse, and the jobs are largely family-wage jobs, allowing men and women with or without college degrees to support their families. Upgrading the terminal is critical to maintaining the diverse workforce and creating new maritime and industrial jobs. It is critical to the economic and human environment of the of the Seattle/King County area.

I-037-  
001

Sincerely,

Signature: 

E-mail: [steverasmels@gmail.com](mailto:steverasmels@gmail.com)

I-037-001

Comment acknowledged.

-----Original Message-----

From: EnviroLytical - Port of Seattle Terminal 5 Improvements [<mailto:info@envirolytical.com>]

Sent: Tuesday, June 28, 2016 8:18 AM

To: Shultz.M@portseattle.org; Pam Xander; Meyer.P@portseattle.org

Subject: New Communication: I fully support the modernization of T5. We have a geographic goldmine which many other states would kill to have. Unlike Boeing and other major corporations this work can not be da

Joe Raghianti <[joe\\_raghianti@hotmail.com](mailto:joe_raghianti@hotmail.com)>

<https://el2.envirolytical.com/communication/view/215304>

I fully support the modernization of T5.

We have a geographic goldmine which many other states would kill to have.

Unlike Boeing and other major corporations this work can not be dangled over our head for major tax breaks. They can not threaten to move this work to North Carolina, Alabama, Missouri etc Only us Washingtonians can reap the benefits of this geographic goldmine.

While undergoing modernization it would be a huge mistake not to add the ability for cold ironing. Cold ironing will decrease carbon emissions and support cleaner air for our city.

This terminal is vital to our region and its economy.

Thank you

I-038-001

I-038-002

#### I-038-001

Comment acknowledged.

#### I-038-002

Please see Standard Response No. 3: Use of Shorepower at the beginning of Chapter 6 for additional information.

---

**From:** Danajo Olsen [<mailto:danajoolsen@gmail.com>]  
**Sent:** Tuesday, June 28, 2016 15:40  
**To:** Port Sepa  
**Subject:** Terminal 5

Dear Mr. Meyer,

As a resident of King County, I am vitally interested in the economic future of our area, and I am writing in support of the Terminal 5 cargo wharf rehabilitation, berth deepening and improvements, alternative #2.

I-039-001

Terminal 5 has been a cargo terminal for 100 years. It is a rare deep-water terminal. To maintain the city's place in the world economy, we must rebuild Terminal 5 to accommodate the industry's mega-ships that are coming online. The maritime industry brings billions to the economy of the Pacific Northwest yearly, and employs, directly and indirectly, more than 150,000 people in the Seattle/King County area. The workforce is diverse, and the jobs are largely family-wage jobs, allowing men and women with or without college degrees to support their families. Upgrading the terminal is critical to maintaining the diverse workforce and creating new maritime and industrial jobs. It is critical to the economic and human environment of the Puget Sound area.

Sincerely,

Danajo Olsen

---

**I-039-001**

Comment acknowledged.

-----Original Message-----

From: EnviroLytical - Port of Seattle Terminal 5 Improvements [<mailto:info@envirolytical.com>]

Sent: Thursday, June 30, 2016 3:18 PM

To: Shultz.M@portseattle.org; Pam Xander; Meyer.P@portseattle.org

Subject: New Communication: (1) failure to study traffic choke points beyond immediate T-5 area (I-5, I-90, 1st and 4th Avenues.); (2) failure to commit to electrification and shore power to decrease noise and air pollution from

Joyce Lingg <[jvlingg@comcast.net](mailto:jvlingg@comcast.net)>

<https://e12.envirolytical.com/communication/view/216088>

(1) failure to study traffic choke points beyond immediate T-5 area (I-5, I-90, 1st and 4th Avenues.); (2) failure to commit to electrification and shore power to decrease noise and air pollution from ships (including the low-frequency rumble from ships, equipment, and trains); (3) failure to address and mitigate the effects of pile driving; (4) failure to commit to changes that would eliminate the need for blaring train horns 24/7; (5) failure to use baseline air quality monitoring in the vicinity of T-5 to study pollution effects and failure to commit to an ongoing air quality monitoring plan (draft study uses Beacon Hill baseline!!); (6) failure to correctly study and address water pollution (PCB and other carcinogen) from dredging and open water disposal of dredged materials in the Duwamish waterway and Elliott Bay; and (7) failure to acknowledge the negative health impacts upon the surrounding residential areas which are rapidly expanding and becoming more dense.

I-040-001

I-040-002

I-040-003

I-040-004

I-040-005

I-040-006

I-040-007

**I-040-001**

Please see response to comment C-002-038.

**I-040-002**

Please see Standard Response No. 3: Use of Shorepower at the beginning of Chapter 6 for additional information.

**I-040-003**

Construction of the facility will be limited to daytime hours (i.e., 7 AM to 10 PM weekdays, 9 AM to 10 PM weekends and holidays) for typical construction equipment. The use of impact equipment (e.g., pile drivers) will be limited to between the hours of 8 AM and 5 PM weekdays and between 9 AM and 5 PM weekends and holidays.

Pile driving will be the single most annoying noise related to construction. The City of Seattle limits piling emplacement to daytime hours to avoid interfering with the sleep of residents. Details on how the Port will manage construction noise will be included in a construction noise monitoring plan that will be developed prior to start of construction in conjunction with City of Seattle DCI.

**I-040-004**

Please see Standard Response No. 5: Train Horn Noise at the beginning of Chapter 6 for additional information on addressing annoyance noise and “Quiet Zones”.

**I-040-005**

Please see Standard Response No. 1: Selection of Air Quality Monitoring Sites and Data at the beginning of Chapter 6 for additional information.

Please see Standard Response No. 2: Post-Operation Air Quality Monitoring at the beginning of Chapter 6 for additional information on post-operation monitoring.

**I-040-006**

All proposed dredged sediments were sampled and tested per the Dredged Material Management Program and were determined to be appropriate for open-water disposal by state and federal review agencies.

**I-040-007**

The Health Risk Characterization attachment of the air quality technical report provided an extensive analysis of human health risk. The analysis considered the lower Duwamish region’s hospitalization rates, tailored the health-related dose-response equations to those most appropriate to the region, and provided health incidence rates due to the Project for each of the zip codes surrounding Terminal 5. Please see Attachment C of the air quality technical report (FEIS, Volume II, Appendix A) for additional details.

June 20, 2016

Paul Meyer  
Environmental Services  
Port of Seattle  
PO Box 1209  
Seattle, WA 98111

Dear Mr. Meyer,

As a resident of King County, I am vitally interested in the economic future of our area, and I'm writing in support of the Terminal 5 cargo wharf rehabilitation, berth deepening and improvements, alternative #2.

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Sincerely,

Signature:



E-mail:

jte local52@hotmail.com

I-041-  
001

I-041-001

Comment acknowledged.

June 20, 2016

Paul Meyer  
Environmental Services  
Port of Seattle  
PO Box 1209  
Seattle, WA 98111

Dear Mr. Meyer,

As a resident of King County, I am vitally interested in the economic future of our area, and I'm writing in support of the Terminal 5 cargo wharf rehabilitation, berth deepening and improvements, alternative #2.

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Sincerely,

*Chris Fowler*

Signature:

*Christopher Fowler*

E-mail:

*10052@comcast.NET*

I-042-  
001

I-042-001

Comment acknowledged.

June 20, 2016

Paul Meyer  
Environmental Services  
Port of Seattle  
PO Box 1209  
Seattle, WA 98111

Dear Mr. Meyer,

As a resident of King County, I am vitally interested in the economic future of our area, and I'm writing in support of the Terminal 5 cargo wharf rehabilitation, berth deepening and improvements, alternative #2.

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Sincerely,

*Barb Kizer*

Signature:

*Barb Kizer*

E-mail:

*bdkhotsand@yahoo.com*

I-043-  
001

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I-043-001

Comment acknowledged.



June 20, 2016

Paul Meyer  
Environmental Services  
Port of Seattle  
PO Box 1209  
Seattle, WA 98111

Dear Mr. Meyer,

As a resident of King County, I am vitally interested in the economic future of our area, and I'm writing in support of the Terminal 5 cargo wharf rehabilitation, berth deepening and improvements, alternative #2.

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Sincerely,



Signature:

E-mail: [bbteresa@msn.com](mailto:bbteresa@msn.com)

P.S. On a personal note, my family has worked in the maritime industry here in Seattle since the late 60's. I personally have worked on the waterfront 31 years. There are very few places that can accommodate the huge container ships and Seattle should make it a priority to keep them coming here.

JK Lewis

I-044-  
001

I-044-001

Comment acknowledged.

June 20, 2016

Paul Meyer  
Environmental Services  
Port of Seattle  
PO Box 1209  
Seattle, WA 98111

Dear Mr. Meyer,

As a resident of King County, I am vitally interested in the economic future of our area, and I'm writing in support of the Terminal 5 cargo wharf rehabilitation, berth deepening and improvements, alternative #2.

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I-045-001

Sincerely,

Signature:

E-mail:

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I-045-001

Comment acknowledged.

June 20, 2016

Paul Meyer  
Environmental Services  
Port of Seattle  
PO Box 1209  
Seattle, WA 98111

Dear Mr. Meyer,

As a resident of King County, I am vitally interested in the economic future of our area, and I'm writing in support of the Terminal 5 cargo wharf rehabilitation, berth deepening and improvements, alternative #2.

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Sincerely,

Signature:



E-mail:

eckertmchenry@comcast.net

I-046-  
001

I-046-001

Comment acknowledged.

June 20, 2016

Paul Meyer  
Environmental Services  
Port of Seattle  
PO Box 1209  
Seattle, WA 98111

Dear Mr. Meyer,

As a resident of King County, I am vitally interested in the economic future of our area, and I'm writing in support of the Terminal 5 cargo wharf rehabilitation, berth deepening and improvements, alternative #2.

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Sincerely, *ILWU Local 52 clerk*  
*CM Miller*

Signature:

*CM Miller*

E-mail:

I-047-001

I-047-001

Comment acknowledged.

June 20, 2016

Paul Meyer  
Environmental Services  
Port of Seattle  
PO Box 1209  
Seattle, WA 98111

Dear Mr. Meyer,

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Sincerely,

Signature:



E-mail:

I-048-  
001

I-048-001

Comment acknowledged.

June 20, 2016

Paul Meyer  
Environmental Services  
Port of Seattle  
PO Box 1209  
Seattle, WA 98111

Dear Mr. Meyer,

As a resident of King County, I am vitally interested in the economic future of our area, and I'm writing in support of the Terminal 5 cargo wharf rehabilitation, berth deepening and improvements, alternative #2.

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Sincerely, SHAWN MURDOCK  
38916 117<sup>th</sup> AVE S.W.  
FEDERAL WAY WA 98023

Signature: 

E-mail: smurdock562@gmail.com

I-049-001

I-049-001

Comment acknowledged.

June 20, 2016

Paul Meyer  
Environmental Services  
Port of Seattle  
PO Box 1209  
Seattle, WA 98111

Dear Mr. Meyer,

As a resident of King County, I am vitally interested in the economic future of our area, and I'm writing in support of the Terminal 5 cargo wharf rehabilitation, berth deepening and improvements, alternative #2.

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Sincerely,

Signature:



E-mail:

cargo56442@mac.com

I-050-001

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I-050-001

Comment acknowledged.

June 20, 2016

Paul Meyer  
Environmental Services  
Port of Seattle  
PO Box 1209  
Seattle, WA 98111

Dear Mr. Meyer,

As a resident of King County, I am vitally interested in the economic future of our area, and I'm writing in support of the Terminal 5 cargo wharf rehabilitation, berth deepening and improvements, alternative #2.

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Sincerely,

Signature:



E-mail:

I-051-  
001

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I-051-001

Comment acknowledged.



June 20, 2016

Paul Meyer  
Environmental Services  
Port of Seattle  
PO Box 1209  
Seattle, WA 98111

Dear Mr. Meyer,

As a resident of King County, I am vitally interested in the economic future of our area, and I'm writing in support of the Terminal 5 cargo wharf rehabilitation, berth deepening and improvements, alternative #2.

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Sincerely,



Signature:

Gretchen Van Dyk

E-mail:

Gard22 @ Hotmail . com

I-052-  
001

I-052-001

Comment acknowledged.

-----Original Message-----

From: EnviroLytical - Port of Seattle Terminal 5 Improvements [<mailto:info@envirolytical.com>]

Sent: Saturday, July 02, 2016 11:07 AM

To: [Shultz.M@portseattle.org](mailto:Shultz.M@portseattle.org); Pam Xander; [Meyer.P@portseattle.org](mailto:Meyer.P@portseattle.org)

Subject: New Communication: Port, of Seattle I am providing my comments in regard to the T5 port expansion related to the deficiencies of the study related to Traffic, Train and Truck noise. These are at pre

Andy Carlson <[acarlson@drizzle.com](mailto:acarlson@drizzle.com)>

<https://el2.envirolytical.com/communication/view/216598>

Port, of Seattle

I am providing my comments in regard to the T5 port expansion related to the deficiencies of the study related to Traffic, Train and Truck noise. These are at present a very negative impact to our neighborhood and have not realized by this study.

The comments to add volume to the West and remove it from East side of the Port is forcing a system that can not support port or our neighborhood. The land is available but the access is not!

What has not been evaluated is a complex bridge system that supports West Seattle, and all traffic and access systems.

The marine traffic is very active up and down the river and the lower bridge openings are not a measure of the volume. Most tug and barges have been built to pass under the bridge. None of the traffic can pass when the train bridge is lowered. This is a impact to all marine traffic.

T5 being a dead end. The train bridge will be down twice for each train leaving T5. How many hours a day will this close river traffic. Blocking car and truck access via the road crossings and marine traffic. This 100 year old bridge is not fast and typical is down for 40 minutes to 2 1/2 hours at present.

**I-053-001**

After comercial traffic is stopped and waiting for the rail bridge to open from now longer trains (blocking traffic and trucking) then we can expect longer openings of the swing bridge (blocking traffic and trucking) As a driver should I anticipate 3-4 hours wait times?

**I-053-002**

Marine traffic has a right of way to use this existing waterway, this T5 proposal has not evaluated the blockage to this access nor has assessed how this will further impact grid lock to both the port access and all of West Seattle which is the largest neighborhood in Seattle.

**I-053-003**

At present the lower Spokane St swing bridge is active as is our water way and our traffic is unbearable as it is. Although studies are ongoing I urge the port to understand how the residents will react to the expansion once it is in place and we reach gridlock.

Andy Carlson

Genevieve Carlson

**I-053-001**

Existing protocols for coordination between the railroads and vessel navigation will be retained. The bridge will be lowered to allow for intermodal trains arriving and departing at Terminal 5. Disassembly or assembly of intermodal trains will not require lowering the bridge.

Typical closure for the passage of a 7,500-foot train travelling at a speed of approximately 10 mph is 9 minutes. Approximately 5 minutes is allocated for lowering/raising the bridge for a total waterway blockage of 19 minutes per train. Note that blockage by the train bridge does not require opening the swing bridge and thus train traffic does not impact the vehicle and bike capacity of Spokane Street. During the peak week in Alternative 2, a total of up to six train moves would cross the bridge per day. This results in a total of 114 minutes of closure of the bridge during a peak 24-hour period. During the peak week in Alternative 3, a total of up to 7 train moves per day would result in a total of 133 minutes of closure of the bridge during a peak 24 hour period.

**I-053-002**

Opening and closing the rail lift bridge will not block roadways or impact the vehicular swing bridge operation or duration of opening. The swing bridge would not open to marine traffic unless the rail lift bridge could open for marine traffic.

**I-053-003**

Cycling of the lift bridge will not block roadways. Drivers on area roads will not be impacted by the train bridge. Cycling the bridge will have intermittent impact on vessel navigation.

Mark Kohmetscher <[makohm@comcast.net](mailto:makohm@comcast.net)>

<https://e2.envirolytical.com/communication/view/216617>

The best solution would be to divert shipping traffic to areas in Washington that better accommodate and expand infrastructure. There is no ability to expand E to W travel thru Mercer/I90 and certainly I 5 is at maximal capacity. The businesses and sporting events in Sodo and thru the North (Elliot Bay and Sculpture Park) and South Seattle will be paralyzed by 2-3 x more trucks and trains. The current level of community growth and port traffic is not sustainable, how could doubling or tripling container traffic on roads and rail be considered viable? Everett and Tacoma already have better infrastructure as well as better ability to expand, why is the State not putting efforts towards this, instead of stifling an already struggling city?

I-054-  
001

It seems better to see if the port is able or willing to implement the improvements prior to expansion (Shore Power, less rail noise etc). Thus far I do not see any attempt by the port to improve noise, air and light pollution. This gives me no faith in the Ports desire to improve the quality of life for the community. It seems that all the Port cares about is money and not a sustainable and livable city.

I-054-  
002

Essentially spend the next 5 years implementing all the "improvement" projects, that for some reason have not already been implemented, then have the City decide if this is the direction they want Seattle to go.

I have yet to see anything that shows how expansion could improve anything for the City and its community. Especially in a time we should be trying to attract more businesses, tech and health related fields. Not pushing them out to other states, like what happened and is happening with Boeing.

I-054-  
003

Can we at least get a statement explaining the benefit this will give the City, all are see are tremendous negatives.

**I-054-001**

Terminal 5 is one of two sites in Puget Sound that have been identified as having sufficient infrastructure attributes to accommodate two large ships, with appropriate on-dock intermodal rail facilities, and existing container cargo truck access. The other site is located in Tacoma. There are no other marine industrial locations in Washington State that can accommodate these needs.

**I-054-002**

The list of proposed mitigation can be found in FEIS, Volume I, Chapter 1, Table 1.3-1. In addition, there are proposed noise, air and traffic mitigation that are found in FEIS, Volume II, Appendices A, B, and C. Please see the responses below for additional information on air quality mitigation.

Please see Standard Response No. 1: Selection of Air Quality Monitoring Sites and Data at the beginning of Chapter 6 for additional information.

Please see Standard Response No. 2: Post-Operation Air Quality Monitoring at the beginning of Chapter 6 for additional information on post-operation air quality monitoring.

Please see Standard Response No. 3: Use of Shorepower at the beginning of Chapter 6 for additional information.

**I-054-003**

The present Project includes marine cargo infrastructure changes intended to meet the challenge of recent dramatic changes in the container cargo transshipment industry. The physical infrastructure project goal is to retain present marine cargo business and accommodate future marine cargo needs. Long-term marine cargo infrastructure investment is necessary to sustain and improve the maritime economy of the City and serve the region.

The proposed Project has been planned and designed to receive anticipated increased marine cargo growth, while avoiding potential negative human health and environmental effects. In addition, investment necessary to rehabilitate Terminal 5 to accommodate increased maritime trade will be accompanied by economic benefits, including increased direct and indirect tax revenue (property/leasehold, business, and occupation tax revenue) and increased sales and use taxes resulting from the revenue generated by increased cargo volumes. Additional economic/business benefits will result from continuing direct and indirect industry employment linked with growth in marine cargo volumes.

216620 0, 7/03/2016, Donn Skrivanek

I-055-  
001

I know these comments are supposed to address concerns with the EIS, but I cannot avoid stepping back and commenting on the decision to proceed with this project at all. In a piece published in the Seattle Times on June 25, 2016, by Jon Talton in the Business Section - "Redone Panama Canal deepens port rivalries",

"Now about 18 percent of the globe's container vessels are sitting idle. Worse, builders went on a spree that continued through the downturn, building ever-bigger ships.

Overcapacity is at crisis levels, and ships such as the massive Benjamin Franklin, which called at Seattle in February, are seen as albatrosses.

The downturn has shaken the shipping companies. For example, last week the conglomerate that runs Maersk Line, the biggest container carrier by fleet size, said it was exploring options to break up. A.P. Moller-Maersk has the bad fortune to be in two ailing businesses, shipping and oil."

And from Adam Minter, writing on BloombergView from June 14, 2016:

"In December, the quarter-mile-long Benjamin Franklin became the largest cargo ship ever to dock at a U.S. port. Five more mega-vessels were supposed to follow, creating a trans-Pacific shipping juggernaut by the end of May. But thanks to a massive miscalculation on the part of the fleet's owner -- there's not enough demand for all that shipping -- the Benjamin Franklin made its last U.S. port visit a few weeks ago.

It was an ignominious end to an overly ambitious plan. But it shouldn't have been a surprise. The shipping industry is struggling through its worst recession in half a century, and that icon of globalization -- the mega-container ship -- is a major part of the problem. With global growth and trade still sluggish, and the benefits of sailing and docking big boats diminishing with each new generation, ship owners are belatedly realizing that bigger isn't better."

So, given that, if the port does insist on continuing this project, it should not be at the expense of the quality of life of the residents of West Seattle. Whatever it takes to minimize air water and sound pollution, and traffic impact should be at the core of the project.

I-055-  
002

**I-055-001**

Dramatic changes in the container cargo transshipment industry have occurred in the most recent 15 years. One of the most significant changes in present-day container cargo vessel transportation is the introduction of increased capacity vessels, benefiting from economy of scale to increase efficiency and reduce operating costs. Vessels with 10,000- to 14,000-TEU capacities are now in common service at West Coast cargo terminals, with vessels of 18,000-TEU capacity beginning deployment on a regular basis to California ports in 2016.

The proposed Terminal 5 rehabilitation actions are in response to industry changes, and the need to ensure that existing cargo facilities remain capable of serving industry needs. Three of the Port's container terminals have been improved since 1999 to serve 10,000-TEU capacity and greater vessels; however, the existing cargo wharf, berth depth adjacent to the wharf, electrical capacity and container cranes at Terminal 5 are insufficient to berth and transfer cargo transported by larger capacity vessels. Eighty five percent of the existing Terminal 5 cargo wharf is 30 to 45 years old, and the entire 7.1-acre cargo wharf cannot support the heavier cargo crane equipment required for transfer of cargo to and from increased capacity vessels. In addition, existing Terminal 5 vessel berth depths are inadequate for larger-capacity container ships. The inability of the Terminal 5 site to accommodate existing large capacity vessels and increased capacity cargo carriers currently being deployed in Pacific trade forecloses the capability of Terminal 5 to serve future marine cargo activity. Existing Terminal 5 container cargo shipping capability is limited to vessels with approximately 5000- to 6000-TEU capacity. Existing cargo operations elsewhere in Elliott Bay include facilities with the capability to serve 7000-8500 TEU and larger ships. Large capacity vessels are common at present in Elliott Bay. Larger capacity vessels, representing substantial economies of scale and associated environmental benefits and efficiencies, are expected to serve Elliott Bay in the next 20-year period.

The Project is proposed to meet present and emerging, long-term marine cargo business needs while avoiding and minimizing potential negative effects on air and water resources, and avoiding adverse effects on traffic and noise conditions.

**I-055-002**

The SEPA environmental review is a process involving interaction between the lead agency, the proponent, public agencies, interest groups, Tribes, and private individuals. The SEPA analysis requires that the DEIS consider the impacts to the community as part of the environmental review. The Port, as lead agency, acquired technical information from scientific experts to present the description of the proposal and its potential environmental impacts. The EIS also took into consideration the public agency and private citizen comments provided at the scoping meeting and at additional opportunities for input throughout the SEPA process.

The Port is both lead agency and proponent (along with NWSA) for this EIS documentation. The Port believes that the process will result in sufficient and adequate information, analysis, and evaluation to: (1) determine likely adverse environmental effects anticipated from construction and operation of the proposed Terminal 5 rehabilitation and improvement actions and (2) identify ways to avoid, minimize, reduce, or mitigate reasonably foreseeable impacts. From the inception of the Project, the community and public agencies have emphasized that impacts to noise, air, and transportation are critically important. The particular technical sections for these elements identify environmental impacts and the steps that will be taken to avoid, minimize, reduce, or mitigate impacts.

216623, 07/04/2016, Michael Ulrich

“But bigger ships don’t necessarily mean more cargo. It’s a common mistake to think that if you build up a port, traffic will come.” (Asaf Ashar, port infrastructure expert: 2016, June 20). Wall Street Journal, p. B4

Dear Port of Seattle;

Thank you for this opportunity to respond to the Draft EIS for Port of Seattle’s proposed Terminal 5 expansion. Unfortunately, for the Port of Seattle and our region the Terminal 5 expansion project just doesn’t make sense for Seattle when Tacoma, which has existing efficiencies in place to meet landside demands, would likely be the best alternative to accommodate larger ships as part of the NW Seaport Alliance.

I-056-001

As was completed by the Port of Seattle in 1995 for the Third Runway project and in partnership with the Puget Sound Regional Council, other airports in our region were considered in that EIS for the Third Runway expansion project. The Port of Seattle should provide analysis of other seaport alternatives in this Draft EIS and, as part of the NW Seaport Alliance, it would be beneficial to Seattle to provide analysis of a comparable project with using the existing Tacoma seaport as an alternative instead of Seattle.

Los Angeles and Long Beach combined accounted for 39% of all ocean imports to the U.S. during the first two months of this year alone. Tacoma is already in a position to be a strong competitor with other U.S. seaports and ranks 8th in the nation, according to Logistics Management magazine.

As a lifetime Seattle resident who is supportive of growth projects in our region to keep us competitive, I have to say that Seattle is too geographically constricted in surface street and highway access infrastructure to handle the load in capacity demands to transport increased container volumes. The Port of Seattle Seaport is clearly in a big ship obsession and citizens had to ask for an EIS be completed because the Port wants to move forward regardless of regional impacts and potential consequences to traffic issues that are already at full capacity.

Our Seattle seaport ranks 13th in March 2016 import TEU traffic among U.S. seaports and the Asia trade shipping container diversion to other ports has already happened. The NW Seaport Alliance is a partnership between Seattle and Tacoma seaports to provide a trade gateway from Asia, Hawaii, and Alaska to the Pacific Northwest. Tacoma can better handle the traffic and support landside infrastructure and efficiencies with higher capacity surface streets to provide easy access to less constrained highways.

I would like the Port of Seattle to provide other regional alternatives in the EIS to further analyze what is best for Seattle and the Pacific Northwest environment and to remain a competitive force with other national seaports. As part of the NW Seaport Alliance between Seattle and Tacoma, the Port of Seattle should do what is best for the Seattle region from an environmental and economic standpoint and face the facts that the best Port to handle cargo throughput using existing railway and highway access transportation of more cargo could likely be the Tacoma seaport.



As written in the Port of Seattle mission statement values as being “responsible stewards of community resources and the environment”, part of a business partnership and neighbor in commerce to join forces in this alliance with Tacoma would include providing this analysis as an alternative to minimize costs and better manage future growth of our community and would provide the best sense and overall decision for our regional transportation impacts and Seattle.

Sincerely,

Mike Ulrich

2752 37th Ave SW

Seattle, WA 98126

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### **I-056-001**

The NWSA, as a marine cargo operating partnership between the Port of Seattle and Port of Tacoma, is responsible for combining marine cargo facilities in Elliott Bay and Commencement Bay, with the objective of rational, cost effective, coordinated use of marine cargo transshipment infrastructure. The NWSA partnership includes a 10-year business plan, identifying goals for increased marine cargo terminal utilization and infrastructure improvements at terminals determined to be most capable of meeting future marine industry shipping needs.

Changes in cargo vessel size during the past decade, and continuing emphasis on the economies of scale provided by larger cargo vessels, combined with operational changes in marine terminal facilities necessary to complement vessel scale efficiencies and consolidation in cargo vessel deployment routes, requires responsive marine terminal planning and facility improvements. To maintain existing cargo service and ensure that Puget Sound marine cargo terminals continue to serve international commerce needs, the NWSA evaluated existing marine cargo facilities in Elliott Bay and Commencement Bay, focusing on the ability of marine terminals to serve existing and anticipated commerce, balanced with long-term investment requirements. Terminals identified as strategic facilities were defined as the terminals with the following or capable of providing the following essential attributes: (1) sufficient cargo wharf infrastructure to serve two large (up to 14,000-TEU capacity) container vessels, with a minimum of 2800 linear feet of wharf; (2) wharf structural capacity sufficient to receive large, heavy ship-to-shore container cranes; (3) minimum berth depth, 55 feet below MLLW; (4) on-terminal intermodal rail transshipment facilities; (5) minimum of 100 acres container cargo marshalling area; and (6) on-site intermodal rail facilities.

Based on these criteria, the General Central Peninsula Terminal located at the Port of Tacoma and Terminal 5 emerged as the two terminals with sufficient existing and potential infrastructure elements, consistent with cargo terminal criteria identified in the NWSA business plan. Two improved marine cargo terminals are required to meet long-term container cargo needs in Puget Sound, one in Elliott Bay and one in Commencement Bay. The present Project represents the NWSA commitment to meet existing and future marine cargo needs, while avoiding and minimizing potential negative environmental effects, emphasizing the need to transship increased cargo volumes while avoiding adverse effects on traffic conditions.

-----Original Message-----

From: EnviroLytical - Port of Seattle Terminal 5 Improvements [<mailto:info@envirolytical.com>]

Sent: Tuesday, July 05, 2016 7:55 AM

To: Shultz.M@portseattle.org; Pam Xander; Meyer.P@portseattle.org

Subject: New Communication: 1) DEIS noise study does not address low frequency vibration. Please study the health affects of long-term exposure. Also study ways to mitigate low frequency vibration. Provide options to the publ

Henry Lee <henrylee206@gmail.com>

<https://el2.envirolytical.com/communication/view/216626>

1) DEIS noise study does not address low frequency vibration. Please study the health affects of long-term exposure. Also study ways to mitigate low frequency vibration. Provide options to the public on how to block it out.

I-057-001

2) Traffic study does not address trucks entering the Interstate 5 & West Seattle Bridge junction. This is a critical traffic choke point and options to mitigate this need to be examined.

I-057-200

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#### I-057-100

Please see Standard Response No. 7: Low Frequency Noise at the beginning of Chapter 6 for additional information on how this noise will be addressed in the Operational Noise Management Plan.

#### I-057-200

The geographic area of the traffic study was expanded. The truck trip distribution pattern and trip assignments in Section 4.3 the Transportation Technical Report (see FEIS, Volume II, Appendix C) have been extended to show the net change in truck trips to the state highway network, including Interstate 5, Interstate 90, and SR 99. Analysis has also been added in Section 5.1 of the Transportation Technical Report to show the percentage of total traffic at key locations on the network.

-----Original Message-----

From: EnviroLytical - Port of Seattle Terminal 5 Improvements [<mailto:info@envirolytical.com>]

Sent: Tuesday, July 05, 2016 7:59 AM

To: Shultz.M@portseattle.org; Pam Xander; Meyer.P@portseattle.org

Subject: New Communication: An inadequate air sampling station was used for the air study. Consider using the air sampling station at West Marginal instead of Beacon Hill to gather air particulate sampling.

Henry Lee <[henrylee206@gmail.com](mailto:henrylee206@gmail.com)>

<https://el2.envirolytical.com/communication/view/216627>

An inadequate air sampling station was used for the air study. Consider using the air sampling station at West Marginal instead of Beacon Hill to gather air particulate sampling.

I-058-  
001

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**I-058-001**

Please see Standard Response No. 1: Selection of Air Quality Monitoring Sites and Data at the beginning of Chapter 6 for additional information.

Please see Standard Response No. 2: Post-Operation Air Quality Monitoring at the beginning of Chapter 6 for additional information on post-operation monitoring.

-----Original Message-----

From: EnviroLytical - Port of Seattle Terminal 5 Improvements [<mailto:info@envirolytical.com>]

Sent: Tuesday, July 05, 2016 8:10 AM

To: Shultz.M@portseattle.org; Pam Xander; Meyer.P@portseattle.org

Subject: New Communication: The DEIS mentions there are only two options for increased electrical capacity for shorepower: 26 MVA and 70 MVA. 26 MVA may not be enough to balance the electrical load of two docked ships, however;

Henry Lee <[henrylee206@gmail.com](mailto:henrylee206@gmail.com)>

<https://e12.envirolytical.com/communication/view/216628>

The DEIS mentions there are only two options for increased electrical capacity for shorepower: 26 MVA and 70 MVA. 26 MVA may not be enough to balance the electrical load of two docked ships, however; 70 MVA may require significant upgrades from Seattle City Light that would far exceed the budget. Look at studying an in-between requirement like 35 MVA. Would that be enough to power two parked ships? How much infrastructure improvement would be needed for 35 MVA?

I-059-001

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**I-059-001**

Substantial improvements are required for electrical service levels beyond 26 MVA based on recent conversations with Seattle City Light. Improvements would be similar to those described for 70 MVA.

-----Original Message-----

From: EnviroLytical - Port of Seattle Terminal 5 Improvements [<mailto:info@envirolytical.com>]

Sent: Tuesday, July 05, 2016 8:13 AM

To: Shultz.M@portseattle.org; Pam Xander; Meyer.P@portseattle.org

Subject: New Communication: The DEIS has very little mention of low frequency sound coming from a ship's generators. Please study the health effects of low-frequency vibration and options to mitigate it.

Kim Tran <[kim.tran.lee@gmail.com](mailto:kim.tran.lee@gmail.com)>

<https://e12.envirolytical.com/communication/view/216629>

The DEIS has very little mention of low frequency sound coming from a ship's generators. Please study the health effects of low-frequency vibration and options to mitigate it.

I-060-001

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**I-060-001**

Please see Standard Response No. 7: Low Frequency Noise at the beginning of Chapter 6 for additional information on how this noise will be addressed in the Operational Noise Management Plan.

-----Original Message-----

From: EnviroLytical - Port of Seattle Terminal 5 Improvements [<mailto:info@envirolytical.com>]

Sent: Tuesday, July 05, 2016 8:17 AM

To: Shultz.M@portseattle.org; Pam Xander; Meyer.P@portseattle.org

Subject: New Communication: The train noise mitigation study is incomplete. The DEIS only mentions blocking off the entrance to T5 at the Chelan Café entrance. There are still multiple intersections that trains must blow their

Kim Tran <[kim.tran.lee@gmail.com](mailto:kim.tran.lee@gmail.com)>

<https://el2.envirolytical.com/communication/view/216630>

The train noise mitigation study is incomplete. The DEIS only mentions blocking off the entrance to T5 at the Chelan Café entrance. There are still multiple intersections that trains must blow their horns. Consider looking at building a frontage road and closing off more intersections to reduce train noise.

I-061-001

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**I-061-001**

Please see Standard Response No. 5: Train Horn Noise at the beginning of Chapter 6 for additional information on addressing annoyance noise and “Quiet Zones”.

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-----Original Message-----

From: EnviroLytical - Port of Seattle Terminal 5 Improvements [<mailto:info@envirolytical.com>]

Sent: Tuesday, July 05, 2016 8:46 AM

To: Shultz.M@portseattle.org; Pam Xander; Meyer.P@portseattle.org

Subject: New Communication: During the public scoping period for the EIS in November, I asked the NWSA to look at retrofitting homes for sound mitigation that are in close proximity to T5. This precedence has already been set w

Henry Lee <[henrylee206@gmail.com](mailto:henrylee206@gmail.com)>

<https://el2.envirolytical.com/communication/view/216637>

During the public scoping period for the EIS in November, I asked the NWSA to look at retrofitting homes for sound mitigation that are in close proximity to T5. This precedence has already been set with homes that surround Sea-Tac airport. There was no mention of this in the DEIS. Please study the option for sound mitigation of homes that would most greatly be affected.

I-062-001

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**I-062-001**

Please see Standard Response No. 6: Nighttime Noise at the beginning of Chapter 6 for additional information on the Operational Noise Management Plan framework.

Please see Standard Response No. 7: Low Frequency Noise at the beginning of Chapter 6 for additional information on how this noise will be addressed in the Operational Noise Management Plan.

Please see Standard Response No. 9: Compliance Noise Monitoring at the beginning of Chapter 6 for additional information on how ambient-sensing, broadband backup alarms will be required on all mobile cargo handling equipment for the proposed Project.

Please see response to comment I-012-003 for information on proposed mitigation measures.

-----Original Message-----

From: EnviroLytical - Port of Seattle Terminal 5 Improvements [<mailto:info@envirolytical.com>]

Sent: Wednesday, July 06, 2016 1:31 PM

To: Shultz.M@portseattle.org; Pam Xander; Meyer.P@portseattle.org

Subject: New Communication: My concerns: Air quality – Diesel trucks and equipment release lots of particulate and sulfur into the air and they are the primary vehicle used for the moving of containers.

Todd Petersen <[todd@f-p-d.com](mailto:todd@f-p-d.com)>

<https://el2.envirolytical.com/communication/view/216745>

My concerns:

Air quality – Diesel trucks and equipment release lots of particulate and sulfur into the air and they are the primary vehicle used for the moving of containers. **I-063-001**

Shore Power – Ships must have and be required to use shore power when docked. Ships bunker fuel is really dirty - see air quality above. **I-063-002**

Traffic – Moving that many containers using our existing roads is insane! Especially when the trucks currently back up onto the West Seattle Bridge and the lower bridge intersection is a mess and the lower bridge opens during peak commute times as dictated by the Coast Guard and the tides. **I-063-003**

Noise – Trains and container noise is currently bad. More trains and containers? WOW its gonna be noisy. **I-063-004**

#### **I-063-001**

The diesel trucks and cargo-handling equipment associated with the proposed Terminal 5 improvements were analyzed in detail within the air quality technical report.

#### **I-063-002**

Please see Standard Response No. 3: Use of Shorepower at the beginning of Chapter 6 for additional information.

#### **I-063-003**

Comment noted. Please see response to comment I-054-001. Mitigation is recommended in Section 6 of the Transportation Technical Report to alleviate the increased traffic associated with the terminal.

#### **I-063-004**

Please see Standard Response No. 6: Nighttime Noise at the beginning of Chapter 6 for additional information on the Operational Noise Management Plan framework.

Please see Standard Response No. 7: Low Frequency Noise at the beginning of Chapter 6 for additional information on how this noise will be addressed in the Operational Noise Management Plan.

Please see Standard Response No. 9: Compliance Noise Monitoring at the beginning of Chapter 6 for additional information on how ambient-sensing, broadband backup alarms will be required on all mobile cargo handling equipment for the proposed Project.



-----Original Message-----

From: EnviroLytical - Port of Seattle Terminal 5 Improvements [<mailto:info@envirolytical.com>]

Sent: Wednesday, July 06, 2016 6:46 PM

To: Shultz.M@portseattle.org; Pam Xander; Meyer.P@portseattle.org

Subject: New Communication: As a family who lives directly above the south side of T5, one of my biggest concerns is the train noise for which there is absolutely no excuse to not amend the crossings so the horns are not require

Bart Lilly <bartlilly@yahoo.com>

<https://el2.envirolytical.com/communication/view/216792>

As a family who lives directly above the south side of T5, one of my biggest concerns is the train noise for which there is absolutely no excuse to not amend the crossings so the horns are not required. The addition of up to 24 more trains a day without adding the mitigating safety measures to the rail corridor from the terminal to rail bridge over West Waterway to support reduced need for sound audible alarms would be absolutely unacceptable. Additionally, the pollution and smell from idling ships would also greatly impact our lives, making outdoor activities and/or sleeping with the windows open a near impossibility. Shore power is a must for this project.

**I-064-001**

**I-064-002**

Lastly, we believe it is in the Port and region's best interest to expand, but it must be done so responsibly and with high regard for the impact on its neighbors. As taxpayers who subsidize the Port, the least the Port could do is take the necessary mitigating steps for the concerns highlight above, and those mentioned by others.

**I-064-003**

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**I-064-001**

Please see Standard Response No. 5: Train Horn Noise at the beginning of Chapter 6 for additional information on addressing annoyance noise and "Quiet Zones".

**I-064-002**

The large vessel and tug boat emissions associated with the proposed Terminal 5 improvements were analyzed in detail within the air quality technical report (see FEIS, Volume II, Appendix A).

Please see Standard Response No. 3: Use of Shorepower at the beginning of Chapter 6 for additional information.

**I-064-003**

Comment acknowledged.

-----Original Message-----

From: EnviroLytical - Port of Seattle Terminal 5 Improvements [<mailto:info@envirolytical.com>]

Sent: Thursday, July 07, 2016 10:13 AM

To: Shultz.M@portseattle.org; Pam Xander; Meyer.P@portseattle.org

Subject: New Communication: I am very concerned about the potential increased noise which will be generated by increasing the volume of cargo transiting Terminal 5. I live above Terminal 5 right now, and the noise from trains i

William Lemley <[wlemley@gmail.com](mailto:wlemley@gmail.com)>

<https://el2.envirolytical.com/communication/view/216807>

I am very concerned about the potential increased noise which will be generated by increasing the volume of cargo transiting Terminal 5. I live above Terminal 5 right now, and the noise from trains is extremely disruptive. When trains use the northern most tracks of the facility, the noise from the train engines can be heard very clearly inside my home with all windows closed. I live 0.38 miles from the tracks as measured on google maps, and there is a green space between my home and the tracks, so I suspect there is some noise attenuation by the intervening trees, meaning that the noise will be even more obtrusive to those without trees to mitigate the sound.

I-065-001

I see mention of train horns as potential noise impacts for alternatives 2 and 3; however, I see no notice of train noise generated by the diesel locomotives, which is at least as obtrusive as the horns. Given the very loud noise the train's engines generate inside my home, I find it very hard to believe the trains are in compliance with Seattle noise ordinances. Right now, the frequency of trains utilizing those tracks is fairly low and nearly always during the daytime hours. If the port is expanded and the train traffic increases, the noise generated by these trains will be exponentially worse, and potentially occurring at all hours including the middle of the night. The noise will have a strong detrimental effect on the property values of all residents in the area with substantial economic harm.

I-065-002

I am strongly opposed to any expansion of port operations at Terminal 5. I see no way that the increased train traffic will not destroy the values of our homes.

**I-065-001**

Please see Standard Response No. 5: Train Horn Noise at the beginning of Chapter 6 for additional information on addressing annoyance noise and “Quiet Zones”.

**I-065-002**

Rail-related noises are exempt from the City of Seattle noise limits due to federal preemption. However, noise from increased train visits to and from Terminal 5 was analyzed and discussed in the DEIS.

Please see Standard Response No. 5: Train Horn Noise at the beginning of Chapter 6 for additional information on addressing annoyance noise and “Quiet Zones”.

**From:** Kenneth Turner [<mailto:kenneth.turner4@gmail.com>]  
**Sent:** Friday, July 01, 2016 09:49  
**To:** Port Sepa  
**Subject:** Terminal 5 Expansion Project - Turner, Kenneth

Hello,

I am very concerned with the environmental impact the expansion project at Terminal 5 will cause for not only myself but other neighbors who live around T-5 and in West Seattle.

If this project is to go ahead, I as a registered voter and home owner in West Seattle, request the below:

- Permanent 24/7 air quality monitoring at T-5 and impacted neighborhoods
- We need the Port to effectively use their LEASES to mitigate some huge pollution sources that are 'unregulated' such as tugs. and terminal operators. Use of shorepower. Noise containment

I-066-001

I-066-002

Thank you for considering the needs of the public during this matter.

Kenneth J. Turner

**I-066-001**

Please see Standard Response No. 1: Selection of Air Quality Monitoring Sites and Data at the beginning of Chapter 6 for additional information.

Please see Standard Response No. 2: Post-Operation Air Quality Monitoring at the beginning of Chapter 6 for additional information on post-operation monitoring.

**I-066-002**

Please see Standard Response No. 10: Responsibility for Permit Compliance at the beginning of Chapter 6 for additional information on how the Port proposes to use agreements with a selected marine terminal operator to ensure comprehensive compliance with city, state, federal, and Treaty tribe conditional approvals.

-----Original Message-----

From: James Wojciechowski [<mailto:jtwoj2@earthlink.net>]

Sent: Friday, July 01, 2016 10:55

To: Port Sepa

Subject: Terminal 5 DEIS Public Comment - Wojciechowski, James - 7 1 16 at 10:55

Subject: Alarms and Quiet Yard Equipment

**I-067-001**

The DEIS supports the use of the latest technology Broadband back-up alarms at Terminal 5. The wording needs to be expanded to say "ambient sensing Broadband alarms." The ambient sensing portion is important because even Broadband alarms can be too annoying if they are too loud. Mounting a non-adjusting, high dB alarm on a noisy piece of yard equipment would negate any benefit gained.

And since ambient sensing alarms boost their volume 5 to 10 dB higher than the existing noise level, it is also important that the equipment on which these alarms are mounted be as quiet as possible. In the case of top picks used to handle the containers in the intermodal yard at night, they need to be the models that are "quieted " by the manufacturer with high performance mufflers and encapsulated engine compartments. The old Fantuzzi and Mi-Jack top picks mentioned in the DEIS are not quiet enough. A good alarm on a noisy piece of equipment makes no sense when the goal is to reduce impacts to the community.

The commonly used term is "back-up alarm." But some machines on the terminal also have forward alarms and movement alarms. The wording in the Final EIS and the resulting permits needs to mandate that all safety alarms on the terminal, during both the construction phase and the operational life of the project, be ambient sensing Broadband alarms.

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**I-067-001**

Please see Standard Response No. 9: Compliance Noise Monitoring at the beginning of Chapter 6 for additional information on how ambient-sensing, broadband backup alarms will be required on all mobile cargo handling equipment for the proposed Project.

-----Original Message-----

From: James Wojciechowski [<mailto:jtwoj2@earthlink.net>]

Sent: Friday, July 01, 2016 11:06

To: Port Sepa

Subject: Terminal 5 DEIS Public Comments - Wojciechowski, James - 7 1 2016 @11:06

Subject: Faulty Noise Modeling

In both Tables 3.6-4 and 3.6-6 the modeling used shows the Second Shift (night) noise levels to come in at or just under the Seattle Noise Ordinance limits of 50 dBA at volumes of 647,000 TEU's.

I-068-001

One of the assumptions used in that modeling was that there would be no operations in the intermodal rail yard until throughput exceeds 647,000 TEU's. That assumption was used even though the consultant and the Port know full well that the previous tenant at Terminal 5 routinely ran a Second Shift until 3am with operations in the intermodal rail yard at throughput levels below 647,000 TEU's. The terminal operator was willing to pay the night shift differential required by labor to build the trains at night and keep the product moving. The intermodal yard was very active. And it is the area of the Terminal that is tucked up against the nearby residents. That need to reduce "dwell" time to stay competitive will not go away and, if anything, will be even stronger in the future.

The Port is planning on spending millions of dollars in infrastructure upgrades to keep the containers moving on there way. (reducing dwell time) The idea that multiple mega ships (the reason for the upgrade) will be unloaded into the terminal and those containers will sit there and not be loaded onto trains during the night shift does not make sense.

It is deceptive, to say the least, to not include the intermodal yard operations in the night noise modeling. We can only assume this was done because the daytime estimates exceed the night time limits.

There was another attempt using Table 3.6-2 to say that the terminal will not exceed the night time background noises from the area. Those background noise measurements ceased at midnight, while the Night Shift goes until 3am! Everyone who lives in the area knows that the background noise drops off precipitously after midnight when everything shuts down and the traffic drops off. In the past, and at levels below 647,000 TEU's, the terminal operations were certainly louder than the background noise.

I-068-002

For both the No-Action Alternative and Alternative 2 noise modeling it was assumed there would be no night shift work in the intermodal rail yard. Given that, the permits issued by DCI for terminal 5 should prohibit any night shift operations at the intermodal rail yard until throughput levels exceed 647,000 TEU's.

Jim Wojciechowski

3311 SW Hinds St.

Seattle, WA 98126

**I-068-001**

Comment noted. Please see response to comment C-002-023.

**I-068-002**

Existing sound levels in the Project vicinity, measured in 1997 when the container terminal was not active, were consistently higher than 50 dBA, except for between 5 AM and 6 AM at City Lights Condominiums. The nighttime noise limit for Terminal 5 is 50 dBA. Therefore, noise from terminal operations are generally expected to be lower than existing noise levels. This does not, however, mean that noise from terminal operations would not be audible, or that terminal operations would not result in an increase in sound levels in the Project vicinity during the quietest nighttime hours. A monitoring program, will be outlined in the Operational Noise Management Plan (see FEIS, Volume II, Appendix M for a general framework for the plan), and will be used to assess ongoing compliance with the City of Seattle daytime and nighttime noise limits. Noise monitoring will be required and will include all nighttime hours.



-----Original Message-----

From: James Wojciechowski [<mailto:jtwoj2@earthlink.net>]

Sent: Friday, July 01, 2016 11:08

To: Port Sepa

Subject: Terminal 5 DEIS Public Comment - Wojciechowski, James at 11:08

Subject: Train Horns

There is suggested mitigation in the DEIS to reduce/eliminate the need for trains to blow their horns at crossings near Terminal 5. One suggestion is to close the North leg of the five-way intersection next to the Chelan Cafe. An even better solution mentioned is to put crossing arms at four of the nearby driveway crossings and fencing along the rail corridor to "eventually" create an FRA approved "Quiet Zone."

I-069-001

But there is no mention of when those improvements would be created.

The mitigation needs to be in place when the Terminal begins operations in 2020, not postponed until throughput levels exceed 647,000 TEUs.

For the 15 years that the Terminal operated with throughput levels well below 647K the train horns were very intrusive on the surrounding community as the container trains operated around the clock. Requests to the Port for relief fell on deaf ears and meetings with City Councilman Tom Rasmussen yielded no results. In the 1994 EIS for the 1998 expansion of Terminal 5, the Port promised to get a waiver so the trains would not blow their horns at the West Marginal crossing. No waiver was ever applied for and the FRA subsequently stopped approving all such waivers. Now is the time for the Port to follow through on it's commitment to quiet those horns that are so disruptive.

I-069-002

It is true that Nucor Steel and BNSF run occasional trains along that route. But after Terminal 5 closed in 2014 we heard a dramatic drop off in train horn noise. Counting the number of trains that enter and leave the area does not tell the whole story. Trains servicing Nucor or the BNSF line will come and go once. But the longer container trains entering and leaving Terminal 5 pull forward and back up multiple times as they build sections or break the train down to feed into the intermodal yard. Each back and forth that crosses West Marginal requires the engineer to put out another series of horn blasts. So the container train count is deceiving when comparing all uses of that intersection. In addition, the container train locomotives are "road equipment." Those are the large, usually orange, engines that pull long trains across the continent. They are also the ones with the loudest horns designed to warn cars when the train is approaching at high speed. That horn is complete overkill at Terminal 5 in the middle of the night when the trains don't get over 5 mph. Contrast that with the Nucor and BNSF traffic that is usually handled by "yard engines" that are smaller and equipped with less powerful horns. This goes to the statements we hear that Terminal 5 is not the only train traffic at the Terminal entrance. While true, it doesn't tell the real story of the cause of the most intrusive noise.

So, we need the suggested measures to reduce train horn noise to be in place when the doors reopen in 2020.

Jim Wojciechowski

3311 SW Hinds St.

Seattle, WA 98126

**I-069-1**

Please see Standard Response No. 5: Train Horn Noise at the beginning of Chapter 6 for additional information on addressing annoyance noise and “Quiet Zones”.

**I-069-2**

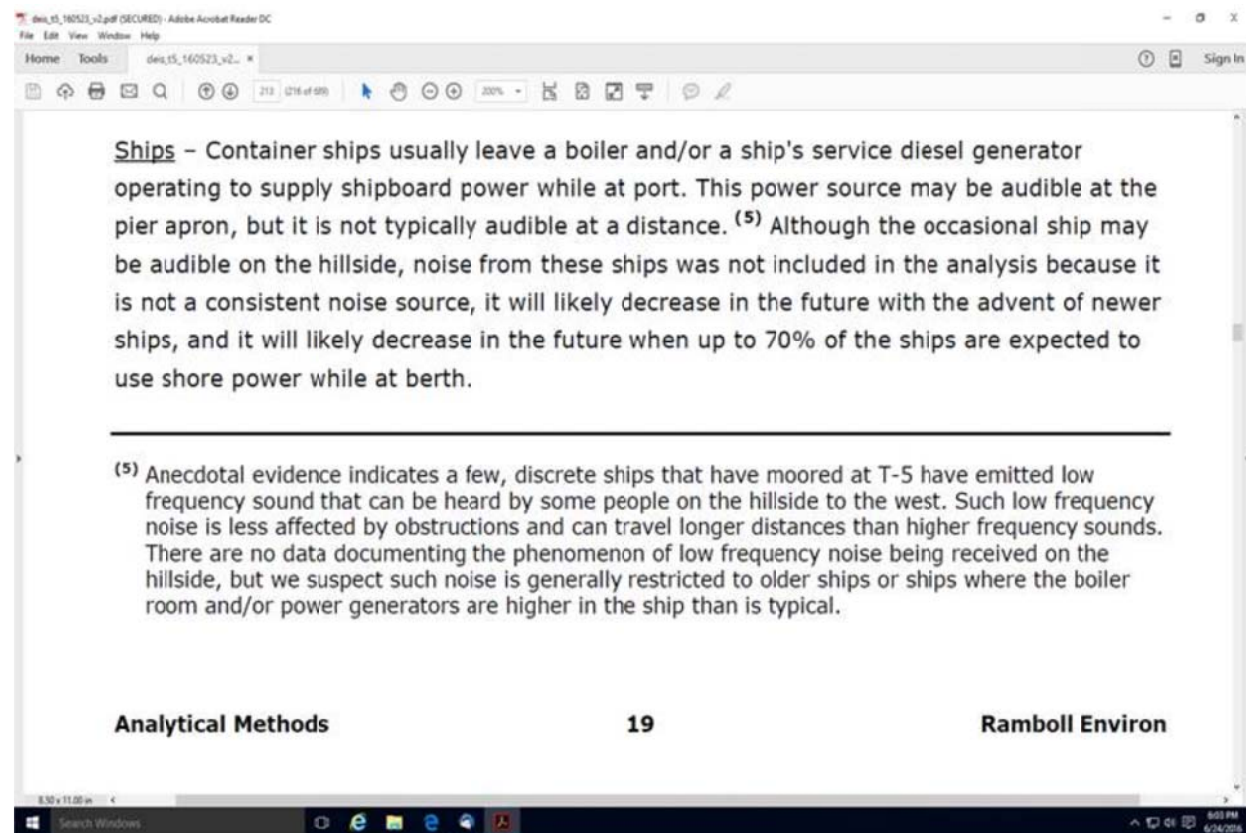
Please see Standard Response No. 5: Train Horn Noise at the beginning of Chapter 6 for additional information on addressing annoyance noise and “Quiet Zones”.

**From:** James Wojciechowski [<mailto:jtwoj2@earthlink.net>]  
**Sent:** Friday, July 01, 2016 11:08  
**To:** Port Sepa  
**Subject:** Terminal 5 DEIS Public Comment - Wojciechowski, James - 7 1 2016 at 11:08

Subject: Low Frequency Noise from Docked Ships

We have been told that SEPA required the DEIS to address all issues brought forward at the November scoping meeting. Several commenters requested an analysis of the noise that comes from ships running their own power generators while docked at Terminal 5. But yet we found these statements when the DEIS came out:

Volume II, Appendix B, Page 19



I-070-001

Not a consistent noise source?? What is not consistent about two mega ships parked for days next to a residential neighborhood? The reason there is no documenting data is because the Port of Seattle never had a system for people to report the noisy ships that visited Terminal 5 for the past 15 years. (and those ships were on average only half the size of the ships planned after this upgrade) The people that did go through the effort to find someone at the Port of Seattle to complain to ended up hitting a dead end of non-returned phone calls.

Look at the words they used, "may be, anecdotal, some people, typically, suspect, generally, occasional, likely." This passes for scientific analysis? And the kicker, "noise from these ships was not included in the analysis." Even though that was requested in multiple scoping comments. They actually had the nerve to say the noise will "likely" decrease in the future. Residents will have to deal with the here and now in 2020 and cannot live with "likely."

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Throughout this DEIS the limits of the Seattle Noise Ordinance are quoted with the assumption that coming in under those limits is all that is necessary. Well, the Seattle Noise Ordinance does not address Low Frequency Noise limits. The dBA limits addressed in the Ordinance are for the higher frequency noise that dissipates better with distance than Low Frequency Noise. Analyzing noise with a meter on the A scale is not acceptable by anybody's standard for LFN. Since perception and feel are the main annoyances of LFN, there is no dB standard to easily apply. Common sense has to come into play that the Low Frequency rumbling from large diesel engines (these ships have more than one generator) throughout the night is not good for the extended community. Instead of making uninformed speculative guesses about how many neighbors of Terminal 5 have been/will be annoyed (some severely) by noise from these ships, do some accurate surveying of the residents to get to the truth. And recognize that the ships coming are much larger than the previous ones.

**I-070-001  
(cont.)**

The cure for LFN is Shore Power and it's a win/win because Shore Power also eliminates the Green House Gases and the cancer causing Diesel Particulate Matter (DPM) that comes out of those on-board generators running 24/7.

**I-070-002**

Jim Wojciechowski

3311 SW Hinds St.

Seattle, WA 98126

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**I-070-001**

Please see Standard Response No. 7: Low Frequency Noise at the beginning of Chapter 6 for additional information on how this noise will be addressed in the Operational Noise Management Plan.

**I-070-002**

Please see Standard Response No. 3: Use of Shorepower at the beginning of Chapter 6 for additional information.

**From:** James Wojciechowski [<mailto:jtwoj2@earthlink.net>]  
**Sent:** Friday, July 01, 2016 11:08  
**To:** Port Sepa  
**Subject:** T 5 Draft EIS Public Comment - Wojciechowski, James 7 1 2016 at 11:08 Shore Power

Subject: Shore Power and Cold Ironing

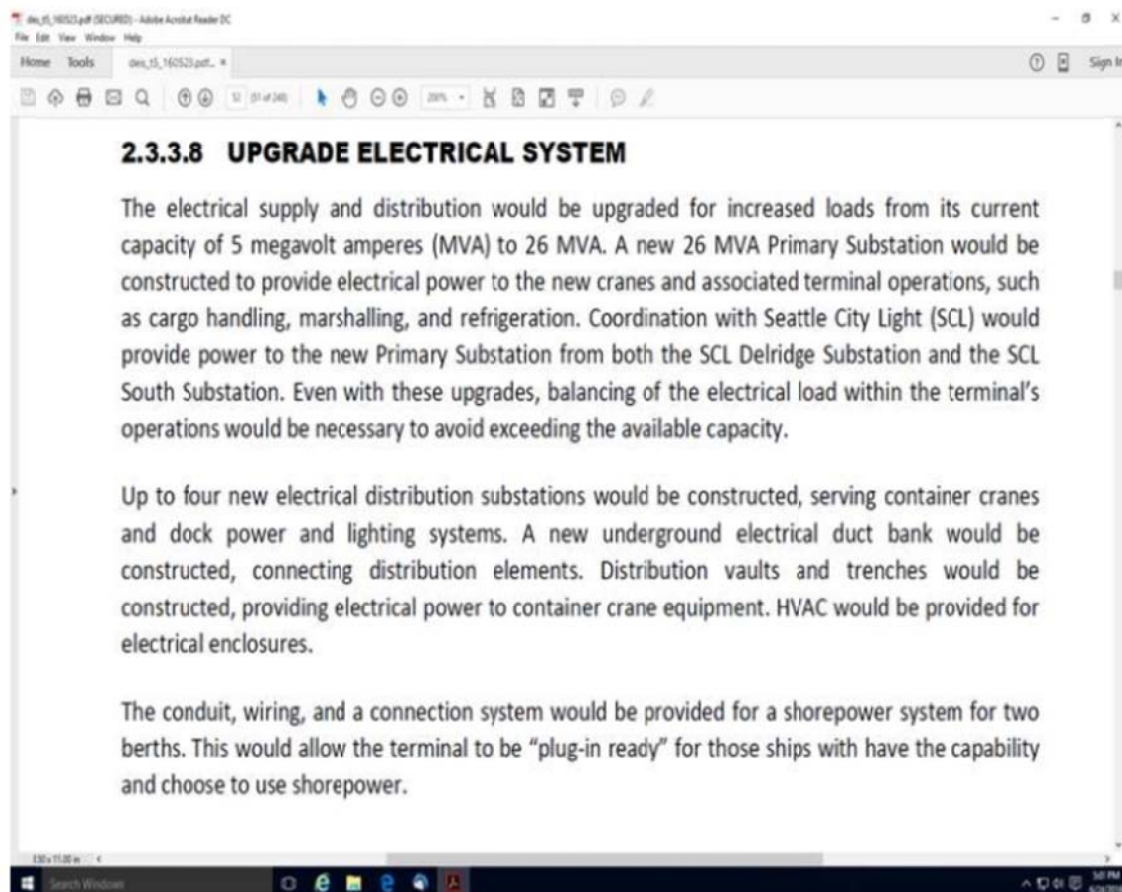
The mega ships planned to visit Terminal 5 have huge on-board generators. Running those generators 24/7 while in port puts tons of unnecessary air pollution into the nearby community, as well as extremely annoying levels of low frequency noise that travels long distances and is difficult to block from entering homes.

The installation of the wiring and plugs to enable Shore Power at two Terminal 5 berths is mentioned in Volume I, Section 2.3.3.8. But there are two "escape clauses" in that section that make the use of those plugs by ships to "cold iron" while at the dock questionable.

The first one is the statement that the planned upgrade to 26 MVA will not be enough electricity to power the entire terminal without "balancing" the load. With two ships being worked at the pier and the terminal in full operation, Shore Power will be at the bottom of the priority list of items needing electricity and the ships will be asked to go back on their generators.

The second one is that last sentence giving the ships (carriers) the option of "choosing" to use Shore Power while at Terminal 5. Unless the economics of fuel vs an electric bill tilt heavily back in favor of electricity, carriers will not voluntarily choose to plug in. The incentive to plug in must come from the community/Port of Seattle requiring any ship that is capable to use Shore Power.

I-071-001



I-071-  
001  
(cont.)

We are constantly told that the language in this DEIS is so weak because the Port of Seattle has to follow SEPA rules and cannot commit to any mitigation. Yet without committing to the use of Shore Power at Terminal 5, the use of Shore Power appears as a mitigation factor in the Air Quality and Noise analysis sections of this DEIS. Shore Power should not be used in the modeling unless it can be guaranteed the ships will actually be using it.

The right alternative is to keep Shore Power mitigation in the modeling and insert language into the Final EIS and resulting Master Use Permit mandating that all capable ships plug into Shore Power while docked at Terminal 5.

There should also be a program instituted to gradually incentivize/require an increasing percentage of the ships visiting Terminal 5 to be Shore Power capable. The Port of Seattle needs to join the other West Coast ports in "going green" and not let Terminal 5 be the destination for noisy, dirty ships that can't get into the other ports.

Jim Wojciechowski  
3311 SW Hinds St.  
Seattle, WA 98126

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**I-071-001**

Please see Standard Response No. 3: Use of Shorepower at the beginning of Chapter 6 for additional information.

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**From:** [bjbrush@comcast.net](mailto:bjbrush@comcast.net) [<mailto:bjbrush@comcast.net>]  
**Sent:** Wednesday, July 06, 2016 13:22  
**To:** Port Sepa  
**Subject:** Terminal 5 - Brush, JoAnn 7 6 2016 at 13.22

Would like to address the DEIS issue. Have found areas that have not been addressed which are listed below:

Traffic - no study to address traffic beyond the T-5 area. Traffic a nightmare already leaving West Seattle, not only during rush hour, but all day long! Getting onto I-5 Northbound is at a stand still most of the day, to say nothing of the viaduct, and when that comes down- - -

I-072-  
001

Shore power not addressed!

I-072-  
002

Still hear train horns at all hours at night, and I live in north Admiral, over looking Elliott Bay.

I-072-  
003

Concerned over pollution not only air, but water.

I-072-  
004

How do you justify spending \$300 million on this when we see declining port business, or again is the City of Seattle wasting the tax payer dollar.

I-072-  
005

JoAnn Brush  
North Admiral Resident

**I-072-001**

The geographic area of the traffic study was expanded. The truck trip distribution pattern and trip assignments in Section 4.3 the Transportation Technical Report (see FEIS, Volume II, Appendix C) have been extended to show the net change in truck trips to the state highway network, including Interstate 5, Interstate 90, and SR 99. Analysis has also been added in Section 5.1 of the Transportation Technical Report to show the percentage of total traffic at key locations on the network.

**I-072-002**

Please see Standard Response No. 3: Use of Shorepower at the beginning of Chapter 6 for additional information.

**I-072-003**

Please see Standard Response No. 5: Train Horn Noise at the beginning of Chapter 6 for additional information on addressing annoyance noise and “Quiet Zones”.

**I-072-004**

Mitigation of water quality impacts under Alternative 2 following construction is described under the Operations section FEIS, Volume I, Chapter 3, 3.3.4.2 Alternative 2, subsection Operations. The Port of Seattle’s Industrial Stormwater General Permit (ISGP) requires the development of a Stormwater Pollution Prevention Plan (SWPPP) to prevent and control potential discharge of contaminated stormwater to surface or groundwater. The SWPPP would be modified as appropriate to manage changes in stormwater conditions resulting from increased Terminal 5 marine cargo capacity and throughput. Stormwater treatment and improvements will be installed to support operations at the new facility.

Please see response to comment O-019-002 for additional information on status of dredged sediments.

**I-072-5**

The Project includes marine cargo infrastructure changes intended to meet the challenge of recent dramatic changes in the container cargo transshipment industry. The physical infrastructure project goals complement the long-term investment and financial goals of the Project, providing efficient, cost-effective improvements at Terminal 5, sufficient to meet the needs of existing and anticipated marine cargo shipping.

The Project costs will likely be funded from a combination of Port operating revenues and limited tax general obligation bonds. The objective is to provide prudent long-term investment, supported by lease payments, and returning City of Seattle and regional value as tax revenue resulting from increased maritime business activity.

The proposed Project has been planned and designed to serve anticipated increased marine cargo growth in the next twenty years, approximately 4 to 5 percent compounded annual growth. The investment necessary to rehabilitate Terminal 5 to accommodate increased marine cargo volumes, transported by increased capacity vessels will be offset by long-term lease revenue from the rehabilitated and improved site. Additional financial benefits from the Project will include increased direct and indirect tax revenue, including property/leasehold, business and occupation taxes, and sales and use taxes, resulting from the revenue generated by increased cargo volumes. Additional benefits will result from continuing direct and indirect industry employment linked with growth in marine cargo volumes.



-----Original Message-----

From: EnviroLytical - Port of Seattle Terminal 5 Improvements [<mailto:info@envirolytical.com>]

Sent: Thursday, July 07, 2016 5:47 PM

To: Shultz.M@portseattle.org; Pam Xander; Meyer.P@portseattle.org

Subject: New Communication: Our son lives right up the hill from Terminal 5. He just bought the house a year ago. We are all very concerned that the environmental factors including traffic, noise, water quality

Nancy Schwab <nancy.schwab@gmail.com>

<https://el2.envirolytical.com/communication/view/216888>

Our son lives right up the hill from Terminal 5.

He just bought the house a year ago.

We are all very concerned that the environmental factors including traffic, noise, water quality, air quality be addressed and regulated during the construction and modernization process that is being considered for Terminal 5.

All of these factors affect the health of all residents in West Seattle and their health should have guaranteed protection above all else.

The types of ships and the fuels they use need to be regulated so as to not pollute the air and cause severe lung disease to residents. Noise is another factor that needs laws to regulate. And of course water quality affects everyone, not just the immediate area.

Please think of people's lives and health first as this project moves forward.

Thank you,

Nancy Schwab

I-073-001

I-073-002

#### I-073-001

The environmental studies that support the environmental review of the Project and its alternatives for both operations and construction consider the environmental factors of traffic, noise, water quality, and air quality (see FEIS, Volume II, Appendices).

#### I-073-002

The ship engine manufacturers are regulated and are required to produce cleaner ships over time. The most stringent engine manufacture standards went into effect in 2016 and require new Category 3 marine engines to meet strict Tier 3 standards.

The fuel for large container ship operation within 200 nautical miles of the United States coast is regulated by the International Maritime Organization's International Convention for the Prevention of Pollution from Ships (also known as MARPOL). These regulations reduce sulfur content in fuel, which in-turn reduces emissions of sulfur dioxide and particulate matter from the vessels. Beginning in 2016, additional MARPOL regulations to reduce nitrogen oxide emissions went into effect. Additional detail on the engine and fuel regulations can be found here: <<https://www3.epa.gov/otaq/oceanvessels.htm>>.

-----Original Message-----

From: EnviroLytical - Port of Seattle Terminal 5 Improvements [<mailto:info@envirolytical.com>]

Sent: Thursday, July 07, 2016 6:41 PM

To: Shultz.M@portseattle.org; Pam Xander; Meyer.P@portseattle.org

Subject: New Communication: Major concerns with the inadequacies of draft EIS. Although I want to see Seattle as a great business port and am supportive of growth, my concerns come down to a few things: 1) Noi

David Haeckel <dhaeckel@msn.com>

<https://el2.envirolytical.com/communication/view/216889>

Major concerns with the inadequacies of draft EIS. Although I want to see Seattle as a great business port and am supportive of growth, my concerns come down to a few things:

- 1) Noise
- 2) Impact to already connected traffic
- 3) Impact to our property values

I-074-001

I-074-002

I-074-003

Understanding there are always ways to work things out, I would like to know how impact to quality of life for our West Seattle residence will be addressed.

Thank you,

David and Meliss Haeckel

#### **I-074-001**

The environmental studies that support the environmental review of the Project and its alternatives for both operations and construction consider the environmental elements of traffic, noise, water quality, and air quality (see FEIS, Volume II, Appendices). From these analyses, steps to avoid, minimize or mitigate impacts were identified. These steps are summarized in Table 1.3-1 in Chapter 1, Volume 1 of the FEIS.

#### **I-074-002**

Traffic impacts associated with the proposed Project were evaluated in the DEIS, and have been updated for the FEIS. Detailed analysis is provided in the Transportation Technical Report (see FEIS, Volume II, Appendix C) along with mitigation recommendations.

#### **I-074-003**

Please see response to comment S-002-008 for information on growth assumptions.

-----Original Message-----

From: EnviroLytical - Port of Seattle Terminal 5 Improvements [<mailto:info@envirolytical.com>]

Sent: Thursday, July 07, 2016 8:27 PM

To: Shultz.M@portseattle.org; Pam Xander; Meyer.P@portseattle.org

Subject: New Communication: I have 3 main concerns regarding the terminal 5 improvements: 1) Air Pollution: With the increase of ship, truck, and train traffic, I'm very concerned about the impact on the a

Martina Mett <[mett.martina@gmail.com](mailto:mett.martina@gmail.com)>

<https://el2.envirolytical.com/communication/view/216891>

I have 3 main concerns regarding the terminal 5 improvements:

1) Air Pollution: With the increase of ship, truck, and train traffic, I'm very concerned about the impact on the air quality in the surrounding neighborhoods (such as Pigeon Point) impacting the residents' health. It will be absolutely necessary to permanently monitor and enforce the air quality at the terminal and even more importantly in the surrounding neighborhoods.

I-075-001

2) Noise: With the increase of train traffic it will be necessary to ensure acceptable noise levels. We already hear train horns day and night and I'm very concerned that this will increase further with the planned changes. Therefore the City of Seattle needs to acquire effective methods to monitor and enforce excessive noise 24/7.

I-075-002

3) Traffic: I'm very concerned about the increase in traffic. Trucks already line up in the mornings to get to the other terminals, significantly blocking streets such as Marginal Way. Therefore a detailed analysis of traffic impacts is absolutely needed.

I-075-003

#### I-075-001

The detailed air quality analysis concluded that cumulative concentrations will comply with ambient air quality standards that were established to protect public health.

Please see Standard Response No. 2: Post-Operation Air Quality Monitoring at the beginning of Chapter 6 for additional information on post-operation monitoring.

#### I-075-002

The environmental studies that support the environmental review of the Project and its alternatives for both operations and construction consider the environmental elements of traffic, noise, water quality, and air quality (see FEIS, Volume II, Appendices). From these analyses, steps to avoid, minimize or mitigate impacts were identified. These steps are summarized in Table 1.3-1 in Chapter 1, Volume 1 of the FEIS.

Please see Standard Response No. 5: Train Horn Noise at the beginning of Chapter 6 for additional information on addressing annoyance noise and "Quiet Zones".

**I-075-003**

Traffic impacts associated with the proposed Project were evaluated in the DEIS, and have been updated for the FEIS. Detailed analysis is provided in the Transportation Technical Report (see FEIS, Volume II, Appendix C) along with mitigation recommendations.

-----Original Message-----

From: EnviroLytical - Port of Seattle Terminal 5 Improvements [<mailto:info@envirolytical.com>]

Sent: Thursday, July 07, 2016 10:13 PM

To: Shultz.M@portseattle.org; Pam Xander; Meyer.P@portseattle.org

Subject: New Communication: The train horn noise as trains travel between the bridge across the Duwamish and T5 will be terribly excessive and disruptive under Alternative 2 and Alternative 3 if no mitigation measures are taken.

Mark Johnson <topspin23@gmail.com>

<https://el2.envirolytical.com/communication/view/216898>

The train horn noise as trains travel between the bridge across the Duwamish and T5 will be terribly excessive and disruptive under Alternative 2 and Alternative 3 if no mitigation measures are taken. The mitigation measures listed in the draft EIS Summary (installation of chain link fencing and crossing gates/wayside horns at various crossings) are a start towards a railroad quiet zone. But additionally, the following needs to occur:

1. Close (ie. permanently block off) the numerous crossings that go directly from W Marginal Way across the railroad tracks to T5 (ie. the crossing immediately adjacent to the Chelan Café), T6, T7A, T7B, T7C and onwards as you go Southbound along W Marginal Way. These crossings are extremely dangerous, and trains need to honk their horns at each of these crossings, regardless if there is a car actually using the crossing.
2. Take all necessary actions to get the railroad companies (BN, UP) and the federal government to allow for the establishment of a railroad quiet zone. Don't just say it's a possibility, but actually do it.
3. Establish an independent review board to monitor train horn noise, establish acceptable train horn noise standards (ie. zero horn noise because it will be a quiet zone), recommend corrective action when those standards are not adhered to, and give the board the authority to force the Port of Seattle, the T5 tenant, BN and UP to comply with the noise standards, and impose penalties for non-compliance.

This T5 modernization project will affect this area of the city for decades to come, and the establishment of a railroad quiet zone is the right thing to do. A railroad quiet zone has been established directly in front of the Port of Seattle headquarters, so why can't it be established around T5?

Please insure that the addition of shorepower is made part of the T5 modernization project. Providing shorepower for moored vessels, and putting provisions in the tenant's lease that require moored vessels to use shorepower, will keep the air clean and eliminate any vibrations from ship's engines disturbing residents who live near T5.

Please insure that the tenant's lease contains provisions requiring the tenant to insure all mobile cargo handling equipment has broadband (or ambient) safety alarms, not pure tone safety alarms.

I-076-001

I-076-002

I-076-003

I-076-004

I-076-5

I-076-6

**I-076-001**

Please see responses to comments C-002-055 and I-021-003 regarding access routes to the facility.

Please see Standard Response No. 5: Train Horn Noise at the beginning of Chapter 6 for additional information on addressing annoyance noise and “Quiet Zones”.

**I-076-002**

Comment acknowledged. Please see Standard Response No. 5: Train Horn Noise at the beginning of Chapter 6 for additional information on addressing annoyance noise and “Quiet Zones”.

**I-076-003**

Independent governing councils are not proposed. Please see Standard Response No. 5: Train Horn Noise at the beginning of Chapter 6 for additional information on addressing annoyance noise and “Quiet Zones”.

**I-076-4**

Please see Standard Response No. 5: Train Horn Noise at the beginning of Chapter 6 for additional information on addressing annoyance noise and “Quiet Zones”.

**I-076-5**

Please see Standard Response No. 3: Use of Shorepower at the beginning of Chapter 6 for additional information.

**I-076-6**

Comment acknowledged. Please see Standard Response No. 9: Compliance Noise Monitoring at the beginning of Chapter 6 for additional information on how ambient-sensing, broadband backup alarms will be required on all mobile cargo handling equipment for the proposed Project.

-----Original Message-----

From: EnviroLytical - Port of Seattle Terminal 5 Improvements [<mailto:info@envirolytical.com>]

Sent: Friday, July 08, 2016 8:32 AM

To: Shultz.M@portseattle.org; Pam Xander; Meyer.P@portseattle.org

Subject: New Communication: To Whom It May Concern, As a home owner and resident in West Seattle, I am writing to say that I strongly oppose any 'improvements' to Terminal 5 that do not guarantee the h

Evan Petrie <[petrieev@gmail.com](mailto:petrieev@gmail.com)>

<https://el2.envirolytical.com/communication/view/216908>

To Whom It May Concern,

As a home owner and resident in West Seattle, I am writing to say that I strongly oppose any 'improvements' to Terminal 5 that do not guarantee the highest standards for environmental protection. It is my strong opinion that the proposals currently under consideration fail to ensure adequate environmental safeguards. There are no commitments to 24/7 air quality monitoring and the Draft Environmental Impact Statement Volume II lays out many assumptions of continuous reductions in air pollution over time as the result of industry adoption of cleaner technologies without actually providing any assurances or guarantees that this will come to pass. For example, page 52 of the DEIS vol. II says, "Emission factors are, in many cases, lower in successive years because engine emissions are generally decreasing over time due to fleet turnover, use of ultra-low sulfur distillate fuel, and increased use of shore power. Project-specific total emissions frequently decrease over time, despite the increased intermodal activity, due to the increased adoption of shore power and due to fleet turn-over."

I-077-  
001

In addition to the impacts on air quality, I am concerned that expansion of Terminal 5 will result in significantly worse congestion and difficulty of travel to and from West Seattle to Seattle and the surrounding area. Congestion and traffic are already significant issues and the expansion of Terminal 5 would only compound these issues for decades to come with increased truck and rail traffic.

I-077-  
002

I strongly believe that the proposed expansion of Terminal 5 as detailed in alternatives 2 and 3 would be detrimental to Seattle and it's residents. Our future depends on establishing and maintaining the highest standards of environmental stewardship and the proposed expansion of Terminal 5 strikes me counter to the direction Seattle should be moving in as a city.

Thank you,

Evan Petrie

**I-077-001**

The assumptions of improving emission factors presented in the DEIS reflect regulatory requirements of engine manufacturers, regulations on in-use fuel for oceangoing vessels and harbor craft, and EPA-model predicted turnover of the cargo-handling equipment fleet for King County (the EPA's NONROAD model estimates fleets at a county-level of detail). The validity of such assumptions is proven by decades of success with federal mobile source emissions regulations improving urban air quality throughout the United States. The DEIS text has been revised to state the regulatory drivers of the emission factor trends with more clarity (see FEIS, Volume I, Chapter 3, Section 3.2).

**I-077-002**

Traffic impacts associated with the proposed Project were evaluated in the DEIS, and have been updated for the FEIS. Detailed analysis is provided in the Transportation Technical Report (see FEIS, Volume II, Appendix C) along with mitigation recommendations.



-----Original Message-----

From: EnviroLytical - Port of Seattle Terminal 5 Improvements [<mailto:info@envirolytical.com>]

Sent: Friday, July 08, 2016 2:19 PM

To: Shultz.M@portseattle.org; Pam Xander; Meyer.P@portseattle.org

Subject: New Communication: I am writing to express my opposition to the Terminal 5 expansion plan. The many negative externalities -- including greater air pollution, water pollution, noise pollution, light pollution, and traff

Jessica Lee <[jessica.anne.lee@gmail.com](mailto:jessica.anne.lee@gmail.com)>

<https://e12.envirolytical.com/communication/view/217033>

I am writing to express my opposition to the Terminal 5 expansion plan. The many negative externalities -- including greater air pollution, water pollution, noise pollution, light pollution, and traffic - - would place an undue burden on the residents of West Seattle, White Center, and neighborhoods further south.

The regional economy would be better served by a focus on mid-sized ships (non-Panamax), a niche that the Port could easily dominate on the West Coast.

I-078-001

It's true that the Port does provide some of the most well-paying, stable jobs for individuals without a 4-year degree. But there are many industries -- including tech -- where individuals can train for and obtain well-paying jobs without having to get a bachelor's. Investing in these programs would increase the size of labor pool in industries with skills gaps while also helping unemployed residents secure jobs that pay well -- all without the negative externalities detailed above.

I-078-2

Thank you for your consideration.

Jessica A. Lee

**I-078-001**

The proposed actions include modifications to existing Terminal 5 marine cargo facilities in order to serve large cargo vessels, with proposed site changes principally consisting of cargo wharf rehabilitation, deepening of vessel berth navigational access, electrical service capacity improvements, and upland improvements. The proposed actions are for the purpose of serving larger cargo vessels at Terminal 5, including increased marine cargo handling efficiency and capability required for accommodating large vessels at the site, with associated potential for increased container cargo shipping capacity. Please note that improved infrastructure will also be capable of serving combined large and moderate capacity vessels. The proposed Project will not foreclose cargo transshipment via smaller, mid-sized vessels, although this is contrary to cargo forecasts.

The proposed action would retro-fit Terminal 5 for re-use as an improved cargo transshipment facility, providing essential infrastructure elements necessary to serve existing post-Panamax container ships (vessels with length and beam exceeding the dimensions of the historic/original Panama Canal) and to transfer cargo among new post-Panamax vessels now entering service (ships too long and wide to transit the newly enlarged Panama Canal). The physical strength of the existing Terminal 5 cargo wharf and vessel berth depth adjacent to the wharf, are insufficient for access by larger capacity container cargo vessels and the wharf lacks the physical capacity and electrical capacity to receive heavier and increased dimension container cranes necessary to serve larger vessels.

Dramatic changes in the container cargo transshipment industry have occurred in the most recent 15 years. One of the most significant changes in present-day container cargo vessel transportation is the introduction of increased capacity vessels, benefiting from economy of scale to increase efficiency and reduce operating costs. Vessels with 10,000- to 14,000-TEU capacities are now in common service at West Coast cargo terminals, with vessels of 18,000-TEU capacity beginning deployment on a regular basis to California ports in 2016.

The proposed Terminal 5 rehabilitation actions are in response to industry changes, and the need to ensure that existing cargo facilities remain capable of serving industry needs. Three of the Port's container terminals have been improved since 1999 to serve 10,000-TEU capacity and greater vessels; however, the existing cargo wharf, berth depth adjacent to the wharf, electrical capacity and container cranes at Terminal 5 are insufficient to berth and transfer cargo transported by larger capacity vessels. Eighty five percent of the existing Terminal 5 cargo wharf is 30 to 45 years old, and the entire 7.1-acre cargo wharf cannot support the heavier cargo crane equipment required for transfer of cargo to and from increased capacity vessels. In addition, existing Terminal 5 vessel berth depths are inadequate for larger-capacity container ships. The inability of the Terminal 5 site to accommodate existing large capacity vessels and increased capacity cargo carriers currently being deployed in Pacific trade forecloses the capability of Terminal 5 to serve future marine cargo activity. Existing Terminal 5 container cargo shipping capability is limited to vessels with approximately 5000- to 6000-TEU capacity. Existing cargo operations elsewhere in Elliott Bay include facilities with the capability to serve 7000- to 10,000-TEU and larger ships. Large capacity vessels are common at present in Elliott Bay. Larger capacity vessels, representing substantial economies of scale and associated environmental benefits and efficiencies, are expected to serve Elliott Bay in the next 20-year period.

**I-078-002**

The Project includes marine cargo infrastructure changes intended to meet the challenge of recent dramatic changes in the container cargo transshipment industry. The physical infrastructure project goals complement the long term investment and financial goals of the Project, providing efficient, cost-effective improvements at Terminal 5, sufficient to meet the needs of existing and anticipated marine cargo shipping.

Investment in marine cargo facilities generates potentially substantial direct and indirect tax revenues benefiting the City of Seattle and the region. Increased maritime business revenue enhances general economic conditions,

including employment in longshoring, stevedoring, trucking, rail and marine transportation, and other related employment, opportunities that cannot be met at other industrial sites in the city. In addition, average maritime employment wages are 20 to 25 percent higher than average manufacturing/wholesale trade employment.

The proposed Project has been planned and designed to serve anticipated increased marine cargo growth in the next twenty years, approximately four to five percent compounded annual growth. The investment necessary to rehabilitate Terminal 5 to accommodate increased marine cargo volumes, transported by increased capacity vessels will be offset by long-term lease revenue from the rehabilitated and improved site and does not diminish other, city-wide or regional industrial development opportunities. Additional financial benefits from the Project will include increased direct and indirect tax revenue, including property/leasehold, business and occupation, and sales and use taxes, resulting from the revenue generated by increased cargo volumes.

In addition, the Project is proposed to meet present and emerging, long-term marine cargo business needs while avoiding and minimizing potential negative effects on air and water resources and avoiding adverse effects on traffic and noise conditions.

**From:** Stanfel, Kenneth E [<mailto:kenneth.e.stanfel@boeing.com>]  
**Sent:** Friday, July 08, 2016 08:10  
**To:** Port Sepa  
**Cc:** [behind\\_blue\\_eyes\\_1@hotmail.com](mailto:behind_blue_eyes_1@hotmail.com)  
**Subject:** Statement Against Any Terminal 5 Project Work - Stanfel, Kenneth E.  
**Importance:** High

Any Terminal 5 project work other than the no-action alternative would be an environmental disaster for those of us human beings living in close proximity to the site. There are hundreds of us who live within a few hundred yards and thousands more living within a few miles of Terminal 5 whose lives would be significantly impacted by project noise, light, particulate and traffic pollution. Therefore, the no-action alternative is the only viable option. If the Port of Seattle wants to increase container bandwidth, let them do so away from one of the densest population centers in the Seattle.

I-079-  
001

Kenneth E. Stanfel  
2349 Harbor Ave SW #305  
Seattle, WA 98126

Email: [behind\\_blue\\_eyes\\_1@hotmail.com](mailto:behind_blue_eyes_1@hotmail.com)

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#### I-079-001

Comment acknowledged. The environmental studies that support the environmental review of the Project and its alternatives for both operations and construction consider the environmental elements of traffic, noise, water quality, air quality (see FEIS, Volume II, Appendices) as well as other elements. From these analyses, steps to avoid, minimize or mitigate impacts were identified. These steps are summarized in Table 1.3-1 in Chapter 1, Volume 1 of the FEIS.

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**From:** Martine Vandepieterman [[mailto:martine\\_vdp@hotmail.com](mailto:martine_vdp@hotmail.com)]  
**Sent:** Friday, July 08, 2016 08:52  
**To:** Port Sepa  
**Subject:** Terminal 5 DEIS Public Comment - Alarms and Quiet Yard Equipment - Vandepieterman, Martine

Subject: Alarms and Quiet Yard Equipment

I-080-001

The DEIS supports the use of the latest technology Broadband back-up alarms at Terminal 5. The wording needs to be expanded to say "ambient sensing Broadband alarms." The ambient sensing portion is important because even Broadband alarms can be too annoying if they are too loud. Mounting a non-adjusting, high dB alarm on a noisy piece of yard equipment would negate any benefit gained.

And since ambient sensing alarms boost their volume 5 to 10 dB higher than the existing noise level, it is also important that the equipment on which these alarms are mounted be as quiet as possible. In the case of top picks used to handle the containers in the intermodal yard at night, they need to be the models that are "quieted " by the manufacturer with high performance mufflers and encapsulated engine compartments. The old Fantuzzi and Mi-Jack top picks mentioned in the DEIS are not quiet enough. A good alarm on a noisy piece of equipment makes no sense when the goal is to reduce impacts to the community.

The commonly used term is "back-up alarm." But some machines on the terminal also have forward alarms and movement alarms. The wording in the Final EIS and the resulting permits needs to mandate that all safety alarms on the terminal, during both the construction phase and the operational life of the project, be ambient sensing Broadband alarms.

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#### **I-080-001**

Please see Standard Response No. 9: Compliance Noise Monitoring at the beginning of Chapter 6 for additional information on how ambient-sensing, broadband backup alarms will be required on all mobile cargo handling equipment for the proposed Project.

---

**From:** Martine Vandepieterman [[mailto:martine\\_vdp@hotmail.com](mailto:martine_vdp@hotmail.com)]  
**Sent:** Friday, July 08, 2016 08:55  
**To:** Port Sepa  
**Subject:** Terminal 5 DEIS Public Comment - Faulty Noise Modeling - Vandepieterman, Martine

Subject: Faulty Noise Modeling

In both Tables 3.6-4 and 3.6-6 the modeling used shows the Second Shift (night) noise levels to come in at or just under the Seattle Noise Ordinance limits of 50 dBA at volumes of 647,000 TEU's.

One of the assumptions used in that modeling was that there would be no operations in the intermodal rail yard until throughput exceeds 647,000 TEU's. That assumption was used even though the consultant and the Port know full well that the previous tenant at Terminal 5 routinely ran a Second Shift until 3am with operations in the intermodal rail yard at throughput levels below 647,000 TEU's. The terminal operator was willing to pay the night shift differential required by labor to build the trains at night and keep the product moving. The intermodal yard was very active. And it is the area of the Terminal that is tucked up against the nearby residents. That need to reduce "dwell" time to stay competitive will not go away and, if anything, will be even stronger in the future.

The Port is planning on spending millions of dollars in infrastructure upgrades to keep the containers moving on there way. (reducing dwell time) The idea that multiple mega ships (the reason for the upgrade) will be unloaded into the terminal and those containers will sit there and not be loaded onto trains during the night shift does not make sense.

It is deceptive, to say the least, to not include the intermodal yard operations in the night noise modeling. We can only assume this was done because the daytime estimates exceed the night time limits.

I-081-  
001

There was another attempt using Table 3.6-2 to say that the terminal will not exceed the night time background noises from the area. Those background noise measurements ceased at midnight, while the Night Shift goes until 3am! Everyone who lives in the area knows that the background noise drops off precipitously after midnight when everything shuts down and the traffic drops off. In the past, and at levels below 647,000 TEU's, the terminal operations were certainly louder than the background noise.

For both the No-Action Alternative and Alternative 2 noise modeling it was assumed there would be no night shift work in the intermodal rail yard. Given that, the permits issued by DCI for terminal 5 should prohibit any night shift operations at the intermodal rail yard until throughput levels exceed 647,000 TEU's.

Martine VanDePieterman  
3824 34th Ave SW, Seattle, WA 98126

**I-081-001**

Comment noted. Please see response to comment C-002-023.

**I-081-002**

Existing sound levels in the Project vicinity, measured in 1999 when the container terminal was not active, were consistently higher than 50 dBA, except for between 5 AM and 6 AM at City Lights Condominiums. The nighttime noise limit for Terminal 5 is 50 dBA. Therefore, noise from terminal operations is generally expected to be lower than existing noise levels. This does not, however, mean that noise from terminal operations would not be audible, or that terminal operations would not result in an increase in sound levels in the Project vicinity during the quietest nighttime hours. A noise monitoring program, detailed in the Operational Noise Management Plan; see FEIS, Volume II, Appendix M for a framework of the ONMP), will be used to assess ongoing compliance with the Seattle daytime and nighttime noise limits. Noise monitoring will be required and will include all nighttime hours.



**From:** Martine Vandepieterman [[mailto:martine\\_vdp@hotmail.com](mailto:martine_vdp@hotmail.com)]  
**Sent:** Friday, July 08, 2016 08:58  
**To:** Port Sepa  
**Subject:** Terminal 5 DEIS Public Comment - Train Hornsm - Vandepieterman, Martine

Subject: Train Horns

There is suggested mitigation in the DEIS to reduce/eliminate the need for trains to blow their horns at crossings near Terminal 5. One suggestion is to close the North leg of the five-way intersection next to the Chelan Cafe. An even better solution mentioned is to put crossing arms at four of the nearby driveway crossings and fencing along the rail corridor to "eventually" create an FRA approved "Quiet Zone."

I-082-  
001

But there is no mention of when those improvements would be created. The mitigation needs to be in place when the Terminal begins operations in 2020, not postponed until throughput levels exceed 647,000 TEU's. For the 15 years that the Terminal operated with throughput levels well below 647K the train horns were very intrusive on the surrounding community as the container trains operated around the clock. Requests to the Port for relief fell on deaf ears and meetings with City Councilman Tom Rasmussen yielded no results. In the 1994 EIS for the 1998 expansion of Terminal 5, the Port promised to get a waiver so the trains would not blow their horns at the West Marginal crossing. No waiver was ever applied for and the FRA subsequently stopped approving all such waivers. Now is the time for the Port to follow through on it's commitment to quiet those horns that are so disruptive.

I-082-  
002

It is true that Nucor Steel and BNSF run occasional trains along that route. But after Terminal 5 closed in 2014 we heard a dramatic drop off in train horn noise. Counting the number of trains that enter and leave the area does not tell the whole story. Trains servicing Nucor or the BNSF line will come and go once. But the longer container trains entering and leaving Terminal 5 pull forward and back up multiple times

as they build sections or break the train down to feed into the intermodal yard. Each back and forth that crosses West Marginal requires the engineer to put out another series of horn blasts. So the container train count is deceiving when comparing all uses of that intersection. In addition, the container train locomotives are "road equipment." Those are the large, usually orange, engines that pull long trains across the continent. They are also the ones with the loudest horns designed to warn cars when the train is approaching at high speed. That horn is complete overkill at Terminal 5 in the middle of the night when the trains don't get over 5 mph. Contrast that with the Nucor and BNSF traffic that is usually handled by "yard engines" that are smaller and equipped with less powerful horns. This goes to the statements we hear that Terminal 5 is not the only train traffic at the Terminal entrance. While true, it doesn't tell the real story of the cause of the most intrusive noise.

So, we need the suggested measures to reduce train horn noise to be in place when the doors reopen in 2020.

Martine VanDePieterman  
3824 34th Ave SW, Seattle, WA 98126

I-082-  
002  
(cont.)

**I-082-001**

Please see Standard Response No. 5: Train Horn Noise at the beginning of Chapter 6 for additional information on addressing annoyance noise and “Quiet Zones”.

**I-082-002**

Please see Standard Response No. 5: Train Horn Noise at the beginning of Chapter 6 for additional information on addressing annoyance noise and “Quiet Zones”.

**From:** Martine Vandepieterman [[mailto:martine\\_vdp@hotmail.com](mailto:martine_vdp@hotmail.com)]

**Sent:** Friday, July 08, 2016 09:04

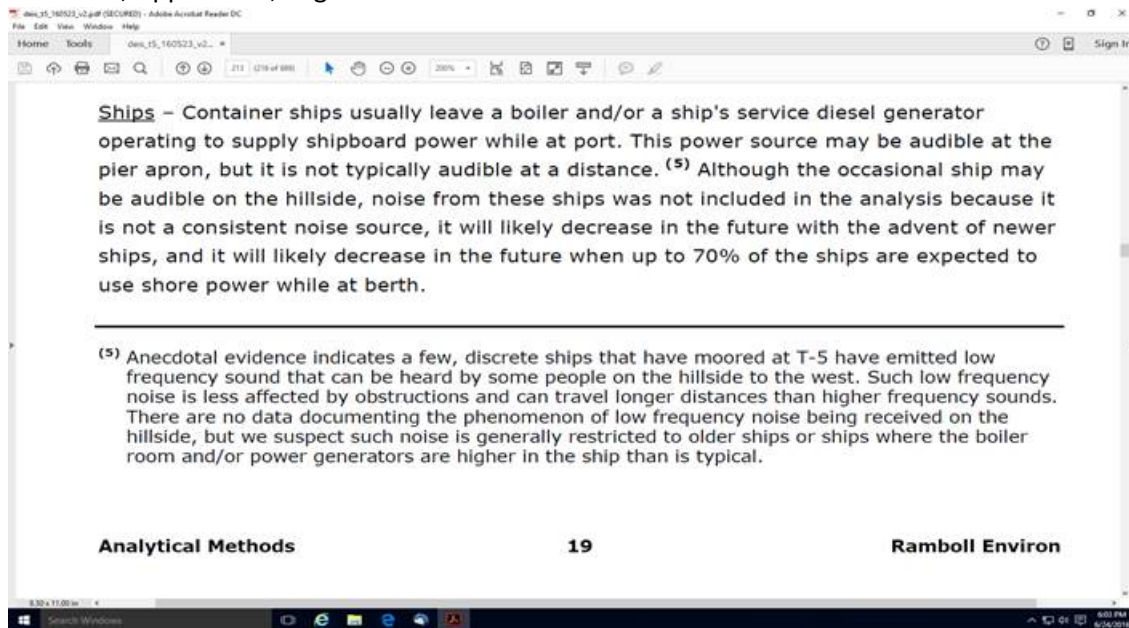
**To:** Port Sepa

**Subject:** T 5 DEIS Public Comment - Low Frequency Noise from Docked Ships - Vandepieterman, Martine

Subject: Low Frequency Noise from Docked Ships

We have been told that SEPA required the DEIS to address all issues brought forward at the November scoping meeting. Several commenters requested an analysis of the noise that comes from ships running their own power generators while docked at Terminal 5. But yet we found these statements when the DEIS came out:

Volume II, Appendix B, Page 19



I-083-001

Not a consistent noise source?? What is not consistent about two mega ships parked for days next to a residential neighborhood? The reason there is no documenting data is because the Port of Seattle never had a system for people to report the noisy ships that visited Terminal 5 for the past 15 years. (and those ships were on average only half the size of the ships planned after this upgrade) The people that did go through the effort to find someone at the Port of Seattle to complain to ended up hitting a dead end of non-returned phone calls.

Look at the words they used, "may be, anecdotal, some people, typically, suspect, generally, occasional, likely." This passes for scientific analysis? And the kicker, "noise from these ships was not included in the analysis." Even though that was requested in multiple scoping comments. They actually had the nerve to say the noise will "likely" decrease in the future. Residents will have to deal with the here and now in 2020 and cannot live with "likely."

Throughout this DEIS the limits of the Seattle Noise Ordinance are quoted with the assumption that coming in under those limits is all that is necessary. Well, the Seattle Noise Ordinance does not address Low Frequency Noise limits. The dBA limits addressed in the Ordinance are for the higher frequency noise that dissipates better with distance than Low Frequency Noise. Analyzing noise with a meter on the A scale is not acceptable by anybody's standard for LFN. Since perception and feel are the main annoyances of LFN, there is no dB standard to easily apply. Common sense has to come into play that the Low Frequency rumbling from large diesel engines (these ships have more than one generator) throughout the night is not good for the extended community. Instead of making uninformed speculative guesses about how many neighbors of Terminal 5 have been/will be annoyed (some severely) by noise from these ships, do some accurate surveying of the residents to get to the truth. And recognize that the ships coming are much larger than the previous ones.

**I-083-  
001  
(cont.)**

The cure for LFN is Shore Power and it's a win/win because Shore Power also eliminates the Green House Gases and the cancer causing Diesel Particulate Matter (DPM) that comes out of those on-board generators running 24/7.

**I-083-  
002**

Martine VanDePieterman  
3824 34th Ave SW, Seattle WA 98126

**I-083-001**

Please see Standard Response No. 7: Low Frequency Noise at the beginning of Chapter 6 for additional information on how this noise will be addressed in the Operational Noise Management Plan.

**I-083-002**

Please see Standard Response No. 3: Use of Shorepower at the beginning of Chapter 6 for additional information.

**From:** Martine Vandepieterman [[mailto:martine\\_vdp@hotmail.com](mailto:martine_vdp@hotmail.com)]

**Sent:** Friday, July 08, 2016 09:07

**To:** Port Sepa

**Subject:** T 5 Draft EIS Public Comment - Shore Power and Cold Ironing - Vandepieterman, Martine

Subject: Shore Power and Cold Ironing

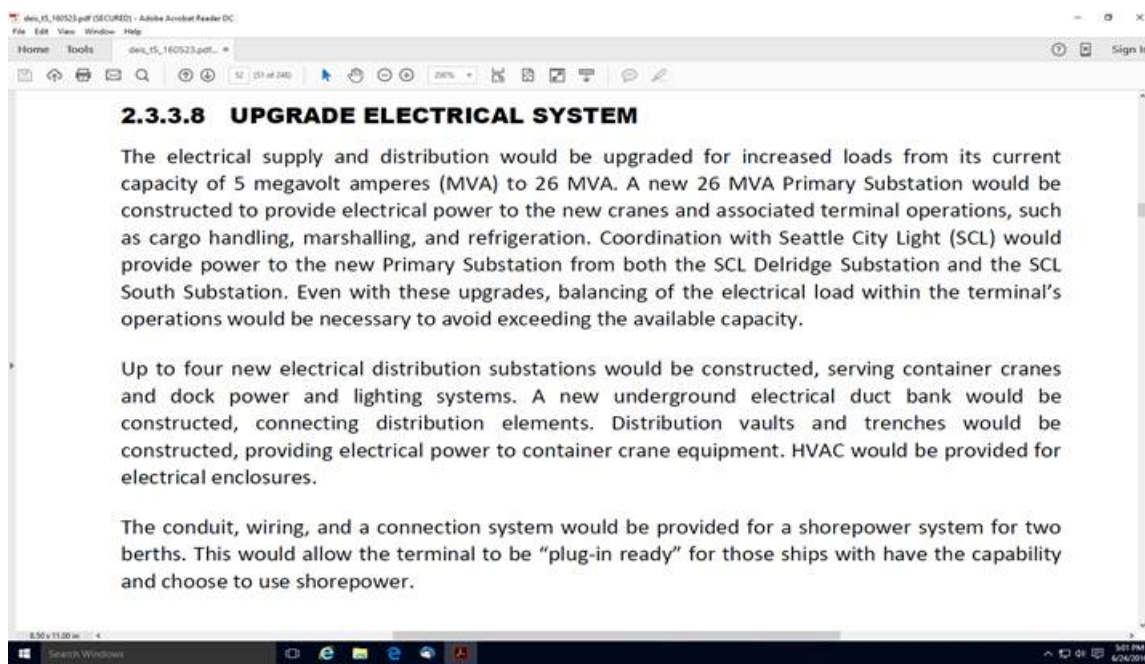
The mega ships planned to visit Terminal 5 have huge on-board generators. Running those generators 24/7 while in port puts tons of unnecessary air pollution into the nearby community, as well as extremely annoying levels of low frequency noise that travels long distances and is difficult to block from entering homes.

The installation of the wiring and plugs to enable Shore Power at two Terminal 5 berths is mentioned in Volume I, Section 2.3.3.8. But there are two "escape clauses" in that section that make the use of those plugs by ships to "cold iron" while at the dock questionable.

The first one is the statement that the planned upgrade to 26 MVA will not be enough electricity to power the entire terminal without "balancing" the load. With two ships being worked at the pier and the terminal in full operation, Shore Power will be at the bottom of the priority list of items needing electricity and the ships will be asked to go back on their generators.

I-084-001

The second one is that last sentence giving the ships (carriers) the option of "choosing" to use Shore Power while at Terminal 5. Unless the economics of fuel vs an electric bill tilt heavily back in favor of electricity, carriers will not voluntarily choose to plug in. The incentive to plug in must come from the community/Port of Seattle requiring any ship that is capable to use Shore Power.



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We are constantly told that the language in this DEIS is so weak because the Port of Seattle has to follow SEPA rules and cannot commit to any mitigation. Yet without committing to the use of Shore Power at Terminal 5, the use of Shore Power appears as a mitigation factor in the Air Quality and Noise analysis sections of this DEIS. Shore Power should not be used in the modeling unless it can be guaranteed the ships will actually be using it.

**I-084-001  
(cont.)**

The right alternative is to keep Shore Power mitigation in the modeling and insert language into the Final EIS and resulting Master Use Permit mandating that all capable ships plug into Shore Power while docked at Terminal 5.

There should also be a program instituted to gradually incentivize/require an increasing percentage of the ships visiting Terminal 5 to be Shore Power capable. The Port of Seattle needs to join the other West Coast ports in "going green" and not let Terminal 5 be the destination for noisy, dirty ships that can't get into the other ports.

Martine VanDePieterman

3824 34th Ave SW, Seattle WA 98126

---

**I-084-001**

Please see Standard Response No. 3: Use of Shorepower at the beginning of Chapter 6 for additional information. There will be sufficient electrical load capacity provided to serve up to 1.3M TEU's annually.



**From:** Scott Olson [<mailto:scolson1223@gmail.com>]  
**Sent:** Friday, July 08, 2016 13:30  
**To:** Port Sepa  
**Subject:** Terminal 5 Draft EIS Public Comment - Olson, Scott

Thank you for the opportunity to comment on the draft EIS for the Terminal 5 Rehabilitation, Deepening and Improvement Project. I live in the neighborhood on 33rd Ave. SW, in close proximity to the Terminal. I am aware that the lion share of my concerns with the draft are being addressed in greater detail by my neighbors and representatives; I wish to add my voice. In the broadest context, I support the project and believe that the improvements will enhance the economic welfare of the entire region. I believe that this project is an opportunity for the Port of Seattle to set the future green standard and become a leader in the highly competitive maritime industry not only in economic terms but also social and environmental responsibility.

My primary areas of focus and request for further review include:

#### Noise

- Assurance of ambient sensitive broadband back-up alarms.
- Mitigation of the impacts of low frequency noise from docked ships. The current draft addresses mitigation by making shore power available but not mandatory. Please consider requiring shore power use for all ships capable, incentivize conversion for all others, and ensure sufficient capacity upgrade.
- Thorough review of all options to reduce nighttime train horns at multiple current crossings. Crossing arms and crossing consolidation were mentioned as a mitigating solution to create a "quiet zone." Near term time frames for these solutions should be included.

I-085-  
001

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Air Quality

- Consider all opportunities with time frame targets to electrify construction and operating equipment.

I-085-  
002

Traffic

- Expand the scope of review for truck and train traffic impacts both immediate to the site and extended beyond the current reviewed radius.

I-085-  
003

Once again, thank you for this opportunity to comment. I look forward to consideration for expanded review and proposed resolution.

Sincerely,

Scott Olson  
3414 33rd Ave. SW  
Seattle, WA 98126

**I-085-001**

Please see Standard Response No. 9: Compliance Noise Monitoring at the beginning of Chapter 6 for additional information on how ambient-sensing, broadband backup alarms will be required on all mobile cargo handling equipment for the proposed Project.

Please see Standard Response No. 6: Nighttime Noise at the beginning of Chapter 6 for additional information on the Operational Noise Management Plan framework.

Please see Standard Response No. 7: Low Frequency Noise at the beginning of Chapter 6 for additional information on how this noise will be addressed in the Operational Noise Management Plan.

Shorepower will be installed as part of the Project. Please see Standard Response No. 3: Use of Shorepower at the beginning of Chapter 6 for additional information.

Please see Standard Response No. 5: Train Horn Noise at the beginning of Chapter 6 for additional information on addressing annoyance noise and "Quiet Zones".

**I-085-002**

Please see response to C-002-002 for details on construction equipment.

Please see Standard Response No. 3: Use of Shorepower at the beginning of Chapter 6 for additional information.

Please see Standard Response No. 4: Electrification Schedule and Accelerated Schedule for Adoption of Alternative 3 at the beginning of Chapter 6 for additional information.

**I-085-003**

The geographic area of the traffic study was expanded. The truck trip distribution pattern and trip assignments in Section 4.3 the Transportation Technical Report (see FEIS, Volume II, Appendix C) have been extended to show the net change in truck trips to the state highway network, including Interstate 5, Interstate 90, and SR 99. Analysis has also been added in Section 5.1 of the Transportation Technical Report to show the percentage of total traffic at key locations on the network.

June 20, 2016

Paul Meyer  
Environmental Services  
Port of Seattle  
PO Box 1209  
Seattle, WA 98111

Dear Mr. Meyer,

As a resident of King County, I am vitally interested in the economic future of our area, and I'm writing in support of the Terminal 5 cargo wharf rehabilitation, berth deepening and improvements, alternative #2.

Terminal 5 has been a cargo terminal for 100 years; it is a rare deep-water terminal. To maintain the city's place in the world economy, we must rebuild Terminal 5 to accommodate the industry's mega-ships that are coming online. As you know, the maritime industry brings billions to the economy of the Pacific Northwest yearly, and employs, directly and indirectly, more than 150,000 people in the Seattle/King County area. The workforce is diverse, and the jobs are largely family-wage jobs, allowing men and women with or without college degrees to support their families. Upgrading the terminal is critical to maintaining the diverse workforce and creating new maritime and industrial jobs. It is critical to the economic and human environment of the of the Seattle/King County area.

Sincerely,

Signature: *Charles B Ali*

E-mail: *boomcharless@hotmail.com*

I-086-  
001

I-086-001

Comment acknowledged.

June 20, 2016

Paul Meyer  
Environmental Services  
Port of Seattle  
PO Box 1209  
Seattle, WA 98111

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Sincerely,

Signature: *Mark R. Anderson*

E-mail:

*P.S. while we are at it, how about "leveling the playing field" with our competitors in Prince Rupert and Vancouver, B.C. Remove the fees from Seattle/Tacoma that they don't pay. When T-5 reopens for business the customers will be breaking down the gates for its services, making any investment there easier and quicker to recoup, a bankers dream. MA*

I-087-001

I-087-002

**I-087-001**

Comment acknowledged.

**I-087-002**

Please see response to comment I-056-001 for more information on market conditions.

Paul Meyer  
Environmental Services  
Port of Seattle  
PO Box 1209  
Seattle, WA 98111

Dear Mr. Meyer,

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Sincerely,



Signature:

STEVEN D BIRD

E-mail:

stillandjefe@hotmail.com

I-088-  
001

I-088-001

Comment acknowledged.

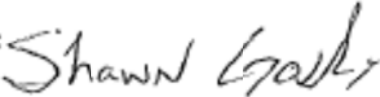
Paul Meyer  
 Environmental Services  
 Port of Seattle  
 PO Box 1209  
 Seattle, WA 98111

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Sincerely,  Mr. Shawn Godfrey  
 7615 7th Ave. SW  
 Seattle, WA 98106-2081

Signature: 

E-mail: LONGIEBOAT@GMAIL.COM

I AM A WEST SEATTLE RESIDENT AND FORMER WORKER AT TERMINAL 5, THE TERMINAL CLOSURE HAS PERSONALLY AND DRAMATICALLY AFFECTED MY LIFE. I SPECIFICALLY BOUGHT A HOME IN WEST SEATTLE TO BE CLOSE TO WORK, REDUCE MY CARBON FOOTPRINT, AND SPEND MORE TIME WITH MY FAMILY. SINCE THE CLOSURE I'VE BEEN COMMUTING OUTSIDE SEATTLE FOR WORK, BURNING ALMOST 10X THE FUEL I USED TOO, AND SPENDING APPROX. 3 HRS. PER DAY LESS, WITH FAMILY, MISSING SEVERAL EVENTS, AND GAMES. I WOULD LIKE TERMINAL 5, OPEN, AND HANDLING CARGO, A.S.A.P. WITHOUT UNNECESSARY DELAYS.

Thank You!

I-089-001

I-089-002



**I-089-001**

Comment acknowledged.

**I-089-002**

Comment acknowledged.


Paul Meyer  
Environmental Services  
Port of Seattle  
PO Box 1209  
Seattle, WA 98111

Dear Mr. Meyer,

As a resident of King County, I am vitally interested in the economic future of our area, and I'm writing in support of the Terminal 5 cargo wharf rehabilitation, berth deepening and improvements, alternative #2.

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Sincerely,

Signature: 

E-mail:

TERRY.IRENS @ YAHOO . COM

I-090-  
001

I-090-001

Comment acknowledged.

June 20, 2016

Paul Meyer  
Environmental Services  
Port of Seattle  
PO Box 1209  
Seattle, WA 98111

Dear Mr. Meyer,

As a resident of King County, I am vitally interested in the economic future of our area, and I'm writing in support of the Terminal 5 cargo wharf rehabilitation, berth deepening and improvements, alternative #2.

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Sincerely,



Signature:

E-mail: [hurt.andrew@gmail.com](mailto:hurt.andrew@gmail.com)

I-091-  
001

---

I-091-001

Comment acknowledged.

June 20, 2016

Paul Meyer  
Environmental Services  
Port of Seattle  
PO Box 1209  
Seattle, WA 98111

Dear Mr. Meyer,

As a resident of King County, I am vitally interested in the economic future of our area, and I'm writing in support of the Terminal 5 cargo wharf rehabilitation, berth deepening and improvements, alternative #2.

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Sincerely,

Signature:



Tyler Linsten, west Seattle

E-mail:

TLINSTEN@gmail.com

I-092-001

---

I-092-001

Comment acknowledged.

June 20, 2016

Paul Meyer  
Environmental Services  
Port of Seattle  
PO Box 1209  
Seattle, WA 98111

Dear Mr. Meyer,

As a resident of King County, I am vitally interested in the economic future of our area, and I'm writing in support of the Terminal 5 cargo wharf rehabilitation, berth deepening and improvements, alternative #2.

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Sincerely,

DONALD R. MADRID

Signature:



E-mail: [NEENCOM.E@HOTMAIL.COM](mailto:NEENCOM.E@HOTMAIL.COM)

I-093-  
001

I-093-001

Comment acknowledged.

June 20, 2016

Paul Meyer  
Environmental Services  
Port of Seattle  
PO Box 1209  
Seattle, WA 98111

Dear Mr. Meyer,

As a resident of King County, I am vitally interested in the economic future of our area, and I'm writing in support of the Terminal 5 cargo wharf rehabilitation, berth deepening and improvements, alternative #2.

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Sincerely,

BRIAN McDONALD

Signature:



E-mail:

brian45mcd@GMAIL.COM

I-094-  
001

I-094-001

Comment acknowledged.

June 20, 2016

Paul Meyer  
Environmental Services  
Port of Seattle  
PO Box 1209  
Seattle, WA 98111

Dear Mr. Meyer,

As a resident of King County, I am vitally interested in the economic future of our area, and I'm writing in support of the Terminal 5 cargo wharf rehabilitation, berth deepening and improvements, alternative #2.

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Sincerely, *Randy Meeds*

Signature: *Randy Meeds*

E-mail: *Donttakemy-pencil@Frontier.com*

I-095-  
001

I-095-001

Comment acknowledged.

June 20, 2016

Paul Meyer  
Environmental Services  
Port of Seattle  
PO Box 1209  
Seattle, WA 98111

Dear Mr. Meyer,

As a resident of King County, I am vitally interested in the economic future of our area, and I'm writing in support of the Terminal 5 cargo wharf rehabilitation, berth deepening and improvements, alternative #2.

Terminal 5 has been a cargo terminal for 100 years; it is a rare deep-water terminal. To maintain the city's place in the world economy, we must rebuild Terminal 5 to accommodate the industry's mega-ships that are coming online. As you know, the maritime industry brings billions to the economy of the Pacific Northwest yearly, and employs, directly and indirectly, more than 150,000 people in the Seattle/King County area. The workforce is diverse, and the jobs are largely family-wage jobs, allowing men and women with or without college degrees to support their families. Upgrading the terminal is critical to maintaining the diverse workforce and creating new maritime and industrial jobs. It is critical to the economic and human environment of the of the Seattle/King County area.

Sincerely,



Signature:

PHIL C 261 @ AOL COM

E-mail:

I-096-  
001

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I-096-001

Comment acknowledged.



June 20, 2016

Paul Meyer  
Environmental Services  
Port of Seattle  
PO Box 1209  
Seattle, WA 98111

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Sincerely,

Signature:



E-mail:

CAMAROSRU5@gmail.com

I-097-  
001

I-097-001

Comment acknowledged.

June 20, 2016

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Environmental Services  
Port of Seattle  
PO Box 1209  
Seattle, WA 98111

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Sincerely,

Vince Taylor

Signature:



E-mail:

Vince@olympen.com

I-098-  
001

I-098-001

Comment acknowledged.

June 20, 2016

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Environmental Services  
Port of Seattle  
PO Box 1209  
Seattle, WA 98111

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Sincerely,

Signature:



E-mail:

I-099-  
001

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I-099-001

Comment acknowledged.

June 20, 2016

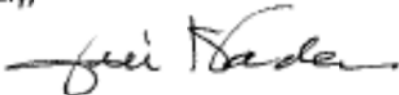
Paul Meyer  
Environmental Services  
Port of Seattle  
PO Box 1209  
Seattle, WA 98111

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Sincerely,



Signature: JILL K VADEN

E-mail:

I-100-  
001

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I-100-001

Comment acknowledged.

-----Original Message-----

From: Port Sepa [<mailto:sepa.p@portseattle.org>]  
Sent: Friday, July 08, 2016 4:11 PM  
To: Meyer, Paul; Pam Xander  
Cc: Thomas, Brenda  
Subject: FW: No changes to Terminal 5 - Caley, Carol

-----Original Message-----

From: Carol Caley [<mailto:carolcarmicheal@gmail.com>]  
Sent: Friday, July 08, 2016 12:50  
To: Port Sepa  
Subject: No changes to Terminal 5 - Caley, Carol

Hello,

I don't think any changes should be made to the terminal without a clear plan that will minimize impact on the environment and the community. That is clearly not the case with the current proposals. My primary concerns are the increased pollution from diesel fumes that have been correlated with increases in cancer incidence and the possible destabilization of the slope from large vehicle traffic. I've already lost enough people in my life to cancer and I don't want to lose any more. I am also concerned about the broader environmental impact of dredging the sound and from pollution.

I-101-  
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I-101-  
002

Please don't go forward with a proposal that doesn't have a clear plan for minimizing the impact on our environment and our community. Seattle is a unique community that values the environment and the health of its citizens. We shouldn't sacrifice those things for the sake of profit.

Thanks for your time,  
Carol Caley  
West Seattle

Sent from my iPhone

**I-101-001**

The environmental studies that support the environmental review of the Project and its alternatives for both operations and construction consider the environmental elements of traffic, noise, water quality, air quality (see FEIS, Volume II, Appendices) as well as other elements. From these analyses, steps to avoid, minimize or mitigate impacts were identified. These steps are summarized in Table 1.3-1 in Chapter 1, Volume 1 of the FEIS.

The air quality analysis and human risk characterization reported in the DEIS air quality technical report assessed the emissions from the proposed Terminal 5 activities and did not identify any violations of the national ambient air quality standards or a significant change in human health risk from the Project itself. Furthermore, both action alternatives have lower diesel particulate matter emissions in 2020, 2030, and 2040 when compared to the No Action Alternative in 2020 (see FEIS, Volume II, Appendix A).

All proposed dredge sediments were sampled and tested per the Dredged Material Management Program and were deemed eligible for open-water disposal.

**I-101-002**

The air quality assessment in the DEIS identified decreases in emissions for Alternatives 2 and 3 when compared to the No Action Alternative. Additionally, the modeling of emissions indicated that the national ambient air quality standards established to (protective of human health) would not be violated for any of the alternatives. Furthermore, both action alternatives have significantly lower diesel particulate matter emissions in 2020, 2030, and 2040 than the No Action Alternative in 2020.

-----Original Message-----

From: Bob Nuber [<mailto:bjnuber@comcast.net>]

Sent: Friday, July 08, 2016 15:51

To: Port Sepa

Cc: bob Judy Nuber

Subject: Input re Terminal 5 - Nuber, Bob

We live at 2314 37th Ave SW, Seattle, 98126. I have the following comments on the Terminal 5 project:

1. Noise. Currently, we hear train engines running all night when parked below us which even closed windows and ear plugs can't fully shut out. Given that the number of trains is supposed to double and the length increased to 7500' my wife and I are greatly concerned that the number of trains that sit still but keep their engines running will significantly increase the amount and levels of noise over what it is today. I read the portion about noise monitoring; it is not comforting. The report cites two measuring stations, one on Beacon Hill and one at Weller and 10th street. Both are a very long way from the homes on 37th (and the areas surrounding us) and, of course, when noise is measured that far away noise levels decrease resulting in "acceptable" noise levels. So, I dispute the conclusions of acceptable noise levels derived from data at those two locations. The report does cite many additional noise monitoring simulations that conclude noise levels at the City Light Condos (the closest to us) will exceed nighttime noise levels (I don't recall if that is for operations or for pile driving). Further, noise from generators on moored ships also run 24/7 which adds to the noise. Your report discusses having ships (and trains?) use land-based electricity to operate with but as I read the report such use is not certain and it appears it will be in the distant future. Lastly, re noise, pile driving should produce significant noise at the highest level of what is deemed to be acceptable which doesn't leave any room for error in measurement or measurements taken from a long distance such as Beacon Hill and Weller street.

I-102-  
001

In summary, we have great concerns about the plan to control/manage noise both during construction and during operations especially since the noise produced by Terminal 5 today when operating normally is excessive, especially at night. Noise problems come from at least three sources: train engines that operate 24/7; vessel generators that operate while docked; and pile driving during construction. What will the Port of Seattle and/or The City of Seattle do to protect home owners in the area from increased noise? We're not convinced the plan as written adequately and accurately measures prospective noise nor does it properly provide for reasonable noise mitigation. I don't believe the report's conclusion that noise levels will just be at the "moderate" level; I believe they will be higher. The methods used to arrive at a "moderate" level do not seem to reflect actual on-the-ground reality, rather an academic study that assumes some unrealistic conditions.

2. Air quality. Currently we have a thin film of dark, greasy material that gathers on our deck over time we believe comes from the diesel engines that constantly run when trains and ships are at Terminal 5. The report does not, in my opinion, adequately deal with improving air quality to the point where current air quality does not produce this residue and certainly doesn't address what will be a significant increase in dirty air from the doubling of trains at Terminal 5. Further, it appears from my reading of the report that ships that use on-board diesel generators for power while docked will continue to produce the same diesel residue as trains until the use of ground based electricity is fully operational in the distant future. So, we have two major contributors to dirty air: trains and ships using diesel power. I hope you'll seriously consider what air contaminated with diesel sludge does to human lungs in addition to what it does to surfaces like houses, cars and decks.

I-102-2

In summary, I am not convinced from reading the report (EIS) that adequate provisions have been made to ensure safe levels of air quality will be established and maintained especially since air quality today is not good.

3. Liquefaction/earth movement. Our house sits on the crest of the hill immediately above Terminal 5 as do all the homes on 37th, along Admiral Way and along the hillside where the City Light Condo's are located. I'm concerned that the 3,000 60' piles that will be driven could cause liquefaction and/or earth movement along the hillsides resulting in significant damage to houses in the area including ours. It doesn't appear to me from reading the report that any consideration has been taken of the potential negative impact pile driving of the proposed magnitude will have on surrounding hillsides. We will probably retain a geotech engineer to document our house situation before pile driving begins to develop benchmarks for possible earth movement.

**I-102-  
003**

In summary, please provide input on earth movement in the surrounding areas.

Sincerely,  
Bob Nuber



**I-102-001**

Please see Standard Response No. 5: Train Horn Noise at the beginning of Chapter 6 for additional information on addressing annoyance noise and “Quiet Zones”.

Please see Standard Response No. 6: Nighttime Noise at the beginning of Chapter 6 for additional information on the Operational Noise Management Plan framework.

Please see Standard Response No. 7: Low Frequency Noise at the beginning of Chapter 6 for additional information on how this noise will be addressed in the Operational Noise Management Plan.

Please see Standard Response No. 9: Compliance Noise Monitoring at the beginning of Chapter 6 for additional information on how ambient-sensing, broadband backup alarms will be required on all mobile cargo handling equipment for the proposed Project.

The Port acknowledges that there are concerns with potential noise impacts from both construction and operations. In response, the Port provided additional analysis in the EIS including a low frequency noise analysis of hoteling vessels. Information on the analysis is included in Volume II, Appendix B. The Port has also provided a framework for an Operational Noise Management Plan (see FEIS, Volume II, Appendix M) which will be fully completed after a tenant is selected.

At this time, there is no indication that noise from hoteling vessels will substantively change the sound levels from the model-calculated sound levels identified in the DEIS, although noise from some specific vessels may be audible in the surrounding communities. Furthermore, the model-calculated sound levels of hoteling vessels would not be loud enough to result in impacts such as rattling windows. In recognition of the concern over hoteling vessel noise, the Operational Noise Management Plan will include a procedure by which specific vessels that have been verified to cause low frequency noise issues in the surrounding communities will be required to plug into the available shorepower, if the ship is capable of doing so. Please refer to I-011-004 regarding measures for control and management of noise produced by construction activities.

In response to the concern about locomotives running at the terminal, note that there is a distinction between switching locomotives serving the West Seattle Rail Yard and “road power” locomotives used for arriving and departing intermodal cargo trains. West Seattle Rail Yard switch engines serve the rail yard and service to industrial sites located east of West Marginal Way Southwest, south of the Duwamish rail bridge. Switching locomotives operated by BNSF are based near the southwest margin of Terminal 5. Road power locomotives deliver and “pick-up” full intermodal train assemblies, directly linked with off-site rail lines extending to the nation-wide rail network. Road power locomotives are present only during intermodal train arrival and departure operations. In contrast, smaller switching engines serve on-site intermodal train disassembly and assembly, in addition to general West Seattle Rail Yard and non-port rail car activities. Road power locomotives would not be stationed at Terminal 5 in the future under this proposal.

It is also important to note that the monitoring stations the commenter is referencing at Beacon Hill and Weller and 10<sup>th</sup> Street are related to air quality monitoring. No noise measurements are derived from those locations. Noise from hoteling vessels was analyzed and is included in the FEIS. Please see response to comments C-001-005, C-002-017, and the updated analysis in Volume II, Appendix B.

**I-102-002**

The EIS assessed air quality emissions from all equipment associated with Terminal 5 operations. The result of this analysis demonstrated that each pollutant is within the health protective National Ambient Air Quality Standards

(NAAQS) when added to existing air quality conditions. The particle deposition associated with the combustion of fuel from these engines is expected to be minimal because the particles are very small. In particular, the majority of the emitted particles are 2.5 micrometers or less in aerodynamic diameter, have low mass, and generally disperse in the air over long distances, for days or weeks, before settling.

Additionally, the EIS outlines the Port's anticipated utilization of shore power by vessels at berth for the action alternatives. The use of shore power will reduce emissions by providing a non-diesel, hydropower-heavy electricity source for the vessels to use. This source of power is expected to be leveraged by an increasing percentage of the vessel fleet over time, starting with 30% in 2020.

Please see Standard Response No. 3: Use of Shorepower at the beginning of Chapter 6 for additional information about shorepower.

**I-102-003**

See response to I-011-005 for information on the effects of pile driving.

-----Original Message-----

From: EnviroLytical - Port of Seattle Terminal 5 Improvements [<mailto:info@envirolytical.com>]

Sent: Friday, July 08, 2016 3:44 PM

To: [Shultz.M@portseattle.org](mailto:Shultz.M@portseattle.org); Pam Xander; [Meyer.P@portseattle.org](mailto:Meyer.P@portseattle.org)

Subject: New Communication: Mr Meyer, I appreciate the opportunity to comment on the DEIS for T5. I am particularly concerned about the transportation impact of Alternative 2 and Alternative 3. Further isolat

Michael Whiteman <[michael@michaelwhiteman.com](mailto:michael@michaelwhiteman.com)>

<https://el2.envirolytical.com/communication/view/217099>

Mr Meyer,

I appreciate the opportunity to comment on the DEIS for T5. I am particularly concerned about the transportation impact of Alternative 2 and Alternative 3. Further isolating the West Seattle peninsula does little to stimulate economic development for the small businesses or maintain livability for residents.

**I-103-001**

In the EIS, please consider the net impact of additional truck traffic at chokepoints from the port into the rest of the city and I5 on the West Seattle bridge. For example, additional truck traffic entering I5 from Spokane. The analysis of traffic impacts below the bridge is robust; however, the trucks get on the I5 somewhere, and that contributes to backups on the bridge. T5 has not been operational for some time, during which West Seattle has grown phenomenally. The impact of the additional trucks on top of the traffic caused by growth after T5 stopped operation may compound the gridlock beyond the previous norms.

Please consider establishing grade separated light rail between downtown Seattle and the peninsula as a means to mitigate additional T5 traffic prior to embarking on the construction phase of Alternative 1 and Alternative 2.

**I-103-002**

Cooperation between the Port and Sound Transit could mitigate transportation concerns, further promote industrial growth, stimulate economic development and demonstrate the Port's commitment to be the greenest and most energy efficient port in North America.

**I-103-003**

Light rail first. Then T5.

Thank you.

**I-103-001**

Traffic impacts associated with the proposed Project were evaluated in the DEIS, and have been updated for the FEIS. Detailed analysis is provided in the Transportation Technical Report (see FEIS, Volume II, Appendix C) along with mitigation recommendations.

The net increase in truck traffic generated by the proposed Project is estimated to be fewer than 20 truck trips per hour and would be a small fraction of the total traffic that uses the Spokane Street Viaduct to access Interstate 5. Additional analysis is provided in the Transportation Technical Report to show the net change in truck traffic to Interstate 5 and the proportion of total traffic along those routes. See also the response to Comment S-002-003.

**I-103-002**

See Response comment C-002-042 regarding Sound Transit's ST3 project to West Seattle and Terminal 5 planning.

**I-103-003**

Please see response to comment I-103-002.

**From:** Eugene W. Wong [<mailto:wong@lasher.com>]  
**Sent:** Friday, July 08, 2016 14:24  
**To:** del Fierro, Sally; Port Sepa; [meyer.p@porsteattle.org](mailto:meyer.p@porsteattle.org)  
**Subject:** RE: T5 DEIS extension - Wong, Eugene W

Sally,

Thanks for your note. This communication constitutes the timely submittal of comments to the Port of Seattle's ("POS") draft Environmental Impact Study ("DEIS") for Terminal 5. The Port of Seattle's proposed plans (scenarios) for Terminal 5 (the "Project") not only lack economic rational, especially in light of declining cargo shipping market, the DEIS is deficient and flawed in several respects. While not exhaustive, following is a list of deficiencies and issues to be addressed by the POS and in the Final Environmental Impact Study:

- |   |                  |
|---|------------------|
| 1. Lead Agency – by acting as Lead Agent, the evaluation, process, permitting, and other aspects of the Project lack objectivity, independent oversight or control, and are rife with impropriety. It is imperative to appoint an objective, independent party (that will also protect the interests of those affected and negatively impacted by the Project) to serve as Lead Agent, especially with a project of this magnitude and impacts.   | <b>I-104-001</b> |
| 2. Segmenting – the Project is ostensibly and artificially segmented to make the Project appear less significant than it is. The segmenting and lack of an impartial Lead Agent add to the lack of a good faith evaluation of the Project and its impacts.  | <b>I-104-002</b> |
| 3. Traffic Impacts – traffic impacts need to be evaluated along the entire route to the final destination. The DEIS appears to only consider traffic impacts at or near the gate to T-5 and is woefully inadequate and uninformed.  | <b>I-104-003</b> |
| 4. Noise – the DEIS flagrantly dismisses the impact of noise, violations of which occurred repeatedly under the existing permit for T-5, and fails to take a hard look, evaluate, or address the impact of low frequency vibration. A "Port of the Future" (as the POS holds itself out to be) should not be dismissive of measurable and pervasive impacts of low frequency vibration, which can be mitigated. The impacts of pile driving, including noise and effect on sea life, also need to be better evaluated and mitigated.                | <b>I-104-004</b> |
| 5. Timelines – in light of the Project's magnitude, giving the DEIS review process the statutory minimum comment period to review 500+ pages of DEIS and technical data only adds to the lack of good faith in the process; minimal timelines do not allow for sufficient participation or input by those affected by the Project. Only after significant pressure was the comment period for the DEIS extended, which extension was appreciated. Future timelines need to be commensurate with the issues and materials up for review and comment. | <b>I-104-005</b> |
| 6. Alternatives – the POS has failed to provide for sufficient modeling, shore power supply, and mitigation if T-5 were to be in full operation with two (2) vessels on shore-power.  | <b>I-104-006</b> |
| 7. Pollution – failing to use relevant measurements and monitoring stations in proximity to T-5 is further evidence of the lack of good faith and inadequate evaluation of the pollution impacts by T-5 and operations thereof. Pollution impacts, in addition to others, need to be properly and thoroughly evaluated as well as mitigated.  | <b>I-104-007</b> |
| 8. Resources – the EIS needs to also document the resources that will be irretrievably and irreversibly committed to mitigation should any aspect of the Project go forward.  | <b>I-104-008</b> |

The communities of Seattle, especially those surrounding T-5, look forward to the POS addressing the foregoing issues (in addition to those referenced in other comments to the DEIS) with continued public input, comment, and consensus. Failure to do so will only engender continued challenges to the Project.

Regards,  
Eugene

**Eugene W. Wong**

*Principal*

DIRECT 206 654-2486



601 UNION STREET ■ SUITE 2600 ■ SEATTLE WA 98101

FAX 206-340-2563 ■ [WWW.LASHER.COM](http://WWW.LASHER.COM)

[Click here](#) to view my online bio

***WE MAKE LAW MAKE SENSE.®***

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**I-104-001**

The SEPA environmental review is a process involving interaction between the lead agency, the proponent, public agencies, interest groups, Tribes, and private individuals. The SEPA analysis requires that the DEIS consider the impacts to the community as part of the environmental review. The Port, as lead agency, technical analyses and evaluations from experts in disciplines essential to assessing likely adverse environmental effects due to the proposed Terminal 5 actions, for example discipline experts regarding air quality, noise, and traffic/transportation matters. The Port was also assisted by technical experts in analyzing and evaluating public agency and private citizen comments provided at the scoping meeting and at additional opportunities for input throughout the SEPA process.

The Port is both lead agency and proponent (along with NWSA) for this EIS documentation. The Port believes that analyses and evaluations prepared for environmental review are objective and adequate for the purposed of assessing likely adverse environmental effects linked with the alternatives proposed and for identification of measures to avoid, minimize, or mitigate reasonably foreseeable impacts. From the inception of the Project, the community and public agencies have clearly stated the importance of analyzing and evaluating potential adverse project effects due to noise, air, and transportation. The particular technical sections for these elements identify environmental impacts and the steps that will be taken to avoid, minimize, or mitigate impacts.

**I-104-002**

The Port disagrees with the statement that the Project is being segmented for environmental review. The EIS covers a full range of alternatives for the proposed action. The Port is following SEPA guidelines in WAC 197-11 to prepare the environmental review with the assistance of technical expertise from scientists that can provide data to assist decision makers.

**I-104-003**

The geographic area of the traffic study was expanded. The truck trip distribution pattern and trip assignments in Section 4.3 the Transportation Technical Report (see FEIS, Volume II, Appendix C) have been extended to show the net change in truck trips to the state highway network, including Interstate 5, Interstate 90, and SR 99. Analysis has also been added in Section 5.1 of the Transportation Technical Report to show the percentage of total traffic at key locations on the network.

**I-104-004**

Noise monitoring of previous activities at Terminal 5 did not reveal that the Port was in violation of the City of Seattle noise limits. The primary issue, that the previous tenant was not using ambient-sensing backup alarms, was investigated and eventually resolved by the tenant installing such alarms. Regardless, the Port has committed to requiring the new tenant to install ambient-sensing, broadband backup/motion alarms on all on-site mobile equipment.

Please see Standard Response No. 9: Compliance Noise Monitoring at the beginning of Chapter 6 for additional information on how ambient-sensing, broadband backup alarms will be required on all mobile cargo handling equipment for the proposed Project.

Please see Standard Response No. 7: Low Frequency Noise at the beginning of Chapter 6 for additional information on how this noise will be addressed in the Operational Noise Management Plan.

**I-104-005**

The comment period originally was to close June 21, 2016, and was extended 17 days to July 8, 2016.

**I-104-006**

Please see Standard Response No. 3: Use of Shorepower at the beginning of Chapter 6 for additional information.

**I-104-007**

Please see Standard Response No. 1: Selection of Air Quality Monitoring Sites and Data at the beginning of Chapter 6 for additional information.

Please see Standard Response No. 2: Post-Operation Air Quality Monitoring at the beginning of Chapter 6 for additional information on container-handling equipment and desire for air monitoring.

**I-104-008**

An irreversible or irretrievable commitment of resources refers to impacts on or losses to resources that cannot be recovered or reversed. Examples include permanent conversion of wetlands and aquatic environments, or loss of cultural resources or permanent loss of soils, fish and wildlife habitat, and agricultural land. The losses are permanent. Irreversible is a term that describes the loss of future options. It applies primarily to the effects of use of nonrenewable resources, such as minerals or cultural resources, or to those factors, such as soil productivity, that are renewable only over long periods of time. Irretrievable is a term that applies to the loss of production, harvest, or use of natural resources. For example, some or all of the timber production from an area is lost irretrievably while an area is serving as a winter sports site. The production lost is irretrievable, but the action is not irreversible. If the use changes, it is possible to resume timber production. The monetary investment for the Project is not considered to be an irreversible or irretrievable commitment of resources. If this Project was not built, the investment that would have otherwise been spent on this Project could be spent elsewhere. The proposed Project does include an irretrievable commitment of natural resources resulting from use of construction materials and from direct consumption of fossil fuels during marine cargo operations.



**FROM:** Roxane Rusch  
3311 SW Hinds Street  
Seattle WA 98126-2339

**TO:** Northwest Seaport Alliance

**ATTN:** Paul Meyer, Port of Seattle  
Environmental Services  
P.O. Box 1209  
Seattle, WA 98111

**CC:** SEPA.p@portseattle.org

**July 8, 2016**

**RE: Comments** on Draft Environmental Impact Statement (EIS) Terminal 5 Improvements Project

When the Port of Seattle relented and reversed the DNS, citizens of West Seattle were enthused that the Port had gained a genuine and authentic dedication to and concern for the health and welfare of its citizens. Residents took it as a positive sign that the draft EIS would comprehensively address all the serious impacts posited by citizens in earlier comments. As a result, residents anticipated that the draft EIS would reflect best environmental practices and firmly commit to clear mitigation as the Port attempted to build a sustainable, efficient, and productive Port of The Future. The draft EIS did not meet our expectations and appears deficient in many important areas.

I thank the Northwest Seaport Alliance for allowing a comment period to rectify these deficiencies prior to the issuance of the final EIS.

The following **Comments** are offered as needed amendments to the DRAFT EIS before it becomes FINAL:

**COMMENT 1: Do NOT Use Phasing/ Segmenting as a Tactic** - The draft EIS appears to be without a **clearly stated goal**. Is the public being asked to evaluate an upgrade or no upgrade? Without a clear strategic goal, this tactic is a thinly veiled attempt to skirt permitting requirements by segmenting and phasing the rehabilitation. Dealing with the rehabilitation in phases, without accurate information about the business requirements of tenants likely to conduct industrial marine business at T5, allows the NW Seaport Alliance to allow mission creep later while staying marginally below TEU volumes, regulatory minimums and standards required for phased construction permitting. In the case of this project, phased review is not appropriate as it merely divides a larger project into exempted fragments to avoid discussion of eventual cumulative impacts of full operation. This segmentation avoids present consideration of the fully operational port proposal, and the subsequent marine activity it would ultimately generate AND their impacts that are required to be evaluated in a single environmental

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document under SMC Section 25.05.060 C2 or Section 25.05.305 A. This strategy opens the door to default to the 1994 EIS as an inaccurate baseline for permitting. Further, serving as their own lead agency on the EIS allowed the Port to limit the scope of analysis in each key area or to disregard the key areas altogether. This underhanded strategy allows the Port to proceed with permitting of construction with an unknown tenant and piecemeal the already obsolete planning and development of a Port from the Past, not a Green Port lasting well into the future. ***Assure there is not sequencing of the permitting process and intentional segmentation to avoid a comprehensive review of the cumulative effects of this project as required by SEPA and interpreted in Seattle Municipal Code.***

I-105-001  
(cont.)

#### **COMMENT 2: Correct the inappropriate Interpretation of Cumulative Impact Assessment**

I-105-002

**The Final EIS Must correctly interpret and assess CUMULATIVE IMPACT** –The cumulative impact definition in Seattle Municipal code interprets cumulative impact in the following context:

- **Cumulative impact**” is defined as the “past, present, and reasonably foreseeable impacts” of a proposal.
  - A project or action which by itself does not create undue impacts on the environment may create undue impacts when combined with the cumulative effects of prior or simultaneous developments; further, it may directly induce other developments, due to a causal relationship, which will adversely affect the environment.
  - An individual project may have an adverse impact on the environment or public facilities and services which, though acceptable in isolation, could not be sustained given the probable development of subsequent projects with similar impacts.

**2.a. Assess Cumulative effect with other Port and industrial activity** The residents and habitat of West Seattle and adjacent areas south will bear an unreasonable socioeconomic burden with the upsizing of Terminal 5. It is clear, NOT SPECULATIVE, that this upsizing will ultimately result in larger ships and more frequent berthing at Terminal 5. The NW Seaport Alliance is required to review together “closely- related” proposals and prior developments which cannot proceed or be viewed independently. The ***presence of other active terminals*** in the adjacent area is a known, quantifiable **prior** development of heavy industrial activity already occurring, consuming natural resources and natural systems that the Shoreline Management Act was designed to protect. It is neither reasonable nor appropriate that the impact of these preexisting, prior, and simultaneous activities can be separated in terms of water and air pollution, and traffic congestion from the impacts of this rehabilitation project. The misguided interpretation of cumulative impacts section and the failure to include a **socioeconomic** cumulative impact element and a **climate change** impact element in the draft EIS, have resulted in the appearance of a complete whitewash of the multiple environmental assaults on the proximate citizens. These citizens will bear the inordinate burden of air, noise, traffic, and water pollution generated during the lifetime of operations for the project, especially when cumulatively combined with current industrial and other port activity in the SAME VICINITY.

I-105-003

**2.b. Act as an objective Lead Agent** The Port, as Lead Agency, should not piecemeal consideration of cumulative impacts to neighbors west and south of the project both during construction and full operations. These simultaneous, preexisting/prior and anticipated burdens on an increasingly dense population should be inventoried, appropriately acknowledged, and soundly mitigated without disparity and with firm commitment **in all options**, not explained away.

I-105-004

**2.c. POS methodologies** analyzed in the EIS must include on-road mobile sources, non-road mobile sources, stationary combustion, industrial processes, fugitive emissions, construction emissions, employee commute, water use and wastewater emissions consistent with 2011 Port of Seattle GHG Emissions Quantification Methodology from Resolution 3650. Pollution generated by the proposed project should be ***cumulatively calculated as total pollution generated using the above methodology in a reasonable dispersion area to INCLUDE Terminal 18, 30, and 46 AND the other industrial uses on PORT leased property already in place and operational.***

I-105-005

**2.d. Low Frequency Noise (LFN)** Study the Impact of LFN in a cumulative manner for all Port operations in the VICINITY.

I-105-006

**2.e. Natural Systems** The capacity of natural systems-such as air, water, light, and land-to absorb the direct and reasonably anticipated indirect impacts of the proposal must be properly assessed in a **cumulative fashion**.

I-105-007

- **Ambient air standard** from a source in the dispersion vicinity (not Beacon Hill) should be used as a baseline to add cumulative emissions from full operations of this project.
- **Dredging** DO not explain away the impact of dredging and requirements for maintenance dredging based upon “it is a small area” – Assess the dredging with the Superfund cleanup and other dredging in the same waterway in a cumulative manner in the EIS. Acknowledge that there are multiple clean-up activities planned or underway in the same waterway. Viewing the dredging associated with the Terminal 5 Rehabilitation project in isolation, rather than in synchrony with other cleanup and maintenance efforts in adjacent Elliott Bay areas, will result in poor sediment remediation and restoration, slower habitat recovery and increase the likelihood that adjacent activities can re-contaminate clean-up of initial contamination areas. The goal should be limiting sediment disturbance and maintenance of water quality not worsen the water quality and acidity while depleting oxygen levels with multiple, uncoordinated disruptions. Recovery of the habitat can take years even with modest contaminations. Commit to reclaim the Duwamish for the future.

**2.d. Traffic impact** should be calculated throughout the entire continuum of the transportation of containers to the **point of end use** NOT only to the point when truck and rail leave the Port Property as noted in the draft EIS; If this is not deemed to be feasible, then this boundary must, at a minimum, span the heavy haul corridor and rail system within King county.

I-105-008

**COMMENT 3:** The suggested mitigation tactics fail to reflect the most fundamental aspects of green technology. Additionally, the mitigation is not comprehensive for even basic abatement.

I-105-009

**3.a. Eliminate disparities** The NW Seaport Alliance should **EXCEED not just meet minimum air and water quality standards and operate well below noise allowances.** The Alliance should commit resources for commensurate improvements to transportation (traffic, bridge, and parking) infrastructure, and reduction in air, salt and river water, noise, (rail, ship generator, and other hazardous emission) pollution **to levels enjoyed by other of the city's residents FOR ALL OPTIONS.** To do otherwise will only worsen community health and socioeconomic disparities.

**3.b. Incorporate Green mitigation** The NW Seaport Alliance EIS should benchmark with other green ports. Suggested mitigation tactics should reflect the most fundamental aspects of green technology to include:

I-105-010

- solar /hydrogen power,
- biofiltration and bioretention systems (especially of storm water),
- zero emission policies, and
- electrification.

*Note: The Innovative Point Defiance Stormwater Facility, The solar Jurong Port with it's ability to reduce 5,200 tonnes of CO<sub>2</sub> emissions annually with the power generated from this facility, are examples.*

**3.c. Incorporate basic mitigation appropriate for a dense urban environment to include:**

I-105-011

- Increase the tree canopy in and around the perimeter of the site to allow trees to filter the air for bikers and pedestrians along Alki Bike Trail,
- Leverage other aesthetics to restore the natural shoreline and shoreline viewing along Spokane, Harbor to the largest extent possible given the poor accessibility of Jack Block Park,
- Prohibit compression and engine braking with proper signage in the operational perimeter, West Seattle Bridge, and access roads at all times,
- Increase shore power use immediately regardless of option selected, and
- Commit to create quiet zones for train traffic for all options.

It is often said that when you do right by your citizens, the jobs and vibrant economic growth will follow. We hope the NW Seaport Alliance commits to use its resources responsibly and improve the health of communities as it prepares the final Environmental Impact Study. It should be a core commitment of the Alliance to use our resources—natural, human, and financial— responsibly and to care for the environment while protecting its citizens.

I thank you for the opportunity to comment on the content of the final EIS.

Roxane Rusch

**I-105-001**

The Port disagrees that the Project is phased or segmented. The Port also disagrees that there is not a clearly stated goal. The Port has stated in the Project Goals and Objectives section of the DEIS and the FEIS that the purpose of the Project is to rehabilitate existing Terminal 5 facilities as an effective container cargo terminal capable of meeting expected vessel traffic needs and provide modern, flexible, and efficient terminal infrastructure.

The Port is proceeding with Project actions described and analyzed and evaluated for Alternative 2 and will use the information presented in the EIS in support of permit authorizations from the City of Seattle allowing for Terminal 5 infrastructure improvements and including measures to avoid, minimize, or off-set likely adverse environmental effects associated with annual container cargo volumes up to 1.3 million TEUs (twenty-foot equivalent units). The Port, through the EIS analysis, identified the steps needed to reduce, minimize, avoid, or mitigate the impacts from construction and operation consistent with the Project described as Alternative 2 in the DEIS and selected it as the Preferred Alternative as modified in the FEIS based on public and agency comment and additional design, analysis, and evaluation.

The EIS document is used by decision makers to enable governmental agencies and in conjunction to plan actions and make decision including conditioning of permits. The Port has identified a number of environmental impacts as part of the environmental review process and provided ways to reduce, minimize or mitigate the environmental impacts. A decision maker from an agency may choose to adopt specific mitigation as a condition of use. The Port will hold these permits for construction and operation. However compliance with these conditions will also be the responsibility of the tenant. Lease language includes sections that facilities are subject to requirements of various state, federal, and local agencies, and that the lessee is responsible for maintaining compliance.

The Port is proposing that operational milestones be established, allowing for implementation of specific mitigation measures as container cargo growth occurs at the site following Terminal 5 rehabilitation and improvement actions described for Alternative 2.

**I-105-002**

The Project EIS includes the Cumulative Impacts analysis, DEIS, Volume I, Chapter 2, Section 2.6. The analysis and evaluation includes assessment of potential cumulative environmental changes and outcomes related to implementing the proposed Project. Washington SEPA guidelines stipulate that lead agencies should assess the direct, indirect, and cumulative impacts of proposed actions. The roject cumulative impact analysis has been prepared in accordance with SEPA (Chapter 43-21C RCW), SEPA Rules (WAC 197-11-060 and 197-11-792), and the SEPA Handbook. In addition, please note that SEPA cumulative impact assessment guidelines are congruent with federal policies prepared for evaluations consistent with the National Environmental Policy Act (NEPA).

Cumulative impact analysis for individual elements of the environment can be found in the following sections: DEIS, Volume I, Chapter 3, Section 3.2 (Air Quality), 3.3 (Water Quality), 3.6 (Noise), and 3.11 (Traffic) include cumulative impact analysis and evaluation.

**I-105-003**

The Project EIS analyses and evaluations include past, present, and reasonably foreseeable future actions near the Project site and in the area of the West Waterway. The cumulative impact analysis used the following approach:

1. Identification of geographic boundaries (i.e., the study area). The Project study area included the areas where the proposed Project has the potential to affect environmental resources. In general, the study areas include the

Project site and surrounding areas, as well as the West Waterway for the marine terminal and vessel traffic related to the proposed Project. The cumulative impact assessment uses the same study area as the proposed Project analysis, in combination with other past, present, or reasonably foreseeable future actions, could result in cumulative impacts.

2. Identification of time-based boundaries. The proposed Project would be constructed 2017 through 2021, however the operational period of the rehabilitated Terminal 5 marine cargo facility does not have a stated lifespan. Therefore, this assessment accounts for all reasonably foreseeable projects that could be constructed or operational during the same period as the proposed Project.
3. Identification of reasonably foreseeable future projects and actions within the geographic and time-based boundaries.

In addition, DEIS, Volume I, Chapter 3, Section 3.2 (Air Quality), 3.3 (Water Quality), 3.6 (Noise), and 3.11 (Traffic) include cumulative impact analysis and evaluation.

Socioeconomic analysis is not required by SEPA and was not an element brought up in the Scoping process prior to the preparation of the DEIS. An analysis of economic or socioeconomic impacts in a SEPA EIS is not required under the SEPA guidelines. The language of the SEPA Rules in WAC 197-11-448 makes it clear that only impacts related to the environment stated in 197-11-444 are mandatory for analysis. Purely economic, socioeconomic and nonenvironmental impacts are not required for the EIS analysis. The Port made a decision not to include an economic or socioeconomic analysis in the environmental review for this EIS.

Climate change was not a specific element of the environment brought up in Scoping. However, Greenhouse Gas Emissions (GHG) is analyzed in the Air Quality section of the DEIS (see DEIS, Volume I, Chapter 3, Section 3.2) and a Technical Memo on Sea Level Rise is included in Volume II of the FEIS as Appendix I.

#### **I-105-004**

The Port disagrees that the Project is piecemealed or segmented. Please see response to comment I-105-001.

#### **I-105-005**

The air quality analysis summarized in the DEIS (DEIS, Volume II, Appendix A, and detailed in Appendix D or the report) considers all significant sources of emissions attributable to Terminal 5 operations. Terminal 5 emissions are evaluated by applying an EPA-approved dispersion model (AERMOD) and local meteorology to predict concentrations at more than 7,300 locations in a 10 by 15 kilometer grid surrounding Terminal 5. This evaluation area includes all Port property and terminals in the Terminal 5 vicinity. Cumulative concentrations are determined by adding the highest concentration at the worst-case receptor to conservatively high estimates of existing pollutant concentrations.

SEPA Policies and Procedures Resolution 3650 do not require a specific analysis of pollutant emissions at other terminals. The EIS does account for area-wide emissions since the Terminal 5 analyses and evaluations incorporate existing area-wide background concentrations, with other cargo terminals and industrial uses and activities in south Elliott Bay represented in the background data.

#### **I-105-006**

Please see Standard Response No. 7: Low Frequency Noise at the beginning of Chapter 6 for additional information on how this noise will be addressed in the Operational Noise Management Plan.

**I-105-007**

For the air quality assessment, background ambient concentrations were taken from the most representative sites available and added to the modeled concentrations to assess the cumulative impacts on the region. At the request of commenters on the DEIS, the FEIS revisions use older background PM<sub>2.5</sub> ambient concentrations from the Duwamish monitoring site. Ambient concentrations for other pollutants were taken from sites which monitored the pollutant of interest, met the EPA's validity criteria, and were within reasonable proximity of Terminal 5. For additional information, please see Standard Response No. 1: Selection of Air Quality Monitoring Sites and Data at the beginning of Chapter 6 for additional information on the selection of monitoring data to measure background, including inclusion of other monitoring locations.

The potential impacts of vessel berth dredging at Terminal 5 were analyzed and evaluated using existing state and federal Dredged Material Management Office (DMMO) sampling, testing, and assay protocols. The DMMO characterization of the sediments proposed for dredging (Please see response to comments I-101-2 and O-019-2) concluded that sediments proposed for berth deepening dredging were acceptable for open-water disposal in Elliott Bay, finding that chemical concentrations were less than DMMO open water disposal criteria and Washington State Sediment Management Standards.

Dredging at Terminal 5 would not impact sediments in the vicinity because chemical concentrations are below Washington State Sediment Management Standards. Short-term impacts within the Terminal 5 dredging area would likely be limited to increased turbidity, which would be brief and localized. Based on other maintenance or remediation dredging projects in the area, the lowering of dissolved oxygen to unacceptable levels or increased acidity are not expected. Water quality monitoring will be performed during dredging to measure potential impacts, and, if any are found, dredging operations will be modified or temporarily suspended.

The benthic community and deepwater habitat of the Terminal 5 berthing area is routinely disturbed from maintenance dredging activities and vessel operations (e.g., propwash from tugs). Due to the dynamic nature of the West Waterway, benthic marine organisms/communities with resilient life history capabilities, allowing for rapid reestablishment following disruption. The unconsolidated fine grained subtidal sediment throughout the West Waterway also aids to rapid recolonization, which typically ranges from 3 months to 1 year. Four additional dredging projects may take place in the area of Terminal 5 in the coming years: (1) dredging as an element of cleanup of the former Lockheed Shipyard in southwest Elliott Bay; (2) dredging as part of navigational access improvements proposed by the USACE; (3) dredging necessary for sediment remediation in the East Waterway; and, (4) dredging in connection with sediment cleanup in the Duwamish Waterway.

The Port will coordinate proposed Project dredging with the Lockheed West Federal Superfund Site cleanup, as appropriate, particularly if the work is scheduled to take place during the same time period. The upland and shoreline cleanup actions at the Lockheed site are expected to be accomplished using land-based equipment and are not expected to adversely affect aquatic fish and wildlife habitat. At present, the Port understands that Lockheed is preparing plans for clean-up and remediation of near-shore area in the former shipyard at the north margin of Terminal 5. In addition, the Port will be preparing plans for piling removal and clean-up in former shipyard areas at the north margin of Terminal 5 where the Port has Superfund responsibility. The Port is committed to conducting all Port instigated clean-up and remediation to avoid and minimize disruption of fish and wildlife resources. Similarly, the Port will work cooperatively with Lockheed to avoid and minimize potential coincident clean-up actions and coincident clean-up and Terminal 5 rehabilitation actions. Lockheed-sponsored shipyard clean-up is expected to begin in 2018, with the Port's clean-up work anticipated in 2017.

Additional future south harbor dredging is being assessed for the Seattle Harbor Navigation Improvement Project proposed by the USACE as a separate and independent action from the Terminal 5 Improvements Project. The

USACE project includes deepening navigation channel access into the East and West Waterways. Implementation of the navigation improvement project is unlikely to coincide with completion of the proposed Terminal 5 Improvements Project, however, if portions of USACE navigation dredging and Terminal 5 construction actions are coincident, the Port, as local project sponsor, will work with the USACE to avoid potential coincident and cumulative effects on fish and wildlife resources.

The East Waterway Superfund Site is located approximately one-half mile to the east of Terminal 5. It encompasses approximately 157 acres of intertidal and subtidal habitats, compared to the 5.38 acres of proposed dredging area at Terminal 5 (equivalent to 3.4 percent of the East Waterway site). The East Waterway cleanup activities are not anticipated to begin until after 2030. Based on the distance, comparative size of the sites, and the timing of dredging activities, no cumulative impact assessment was conducted for the East Waterway site.

The Lower Duwamish Waterway (LDW) Superfund Site, located approximately one-half mile to the south of Terminal 5, extending from the southern tip of Harbor Island up-river for 5 miles. It encompasses approximately 441 acres of intertidal and subtidal habitats, compared to the 5.38 acres of proposed dredging area at Terminal 5 (equivalent to 1.2 percent of the LDW site). The LDW cleanup activities are not anticipated to begin until after 2030. Based on the distance, the comparative size of the sites, and the timing of dredging activities, no cumulative impact assessment was conducted for the LDW site. As the LDW cleanup continues, contaminated sediment will be removed upstream, which will decrease the likelihood of recontamination to the Terminal 5 location.

Each of the four additional future dredging actions described above will be accompanied by separate environmental evaluations and will be planned and designed to avoid and minimize potential negative effects on resident and migratory fish and wildlife. It is unlikely that the projects described will be coincident. Individually and in combination the dredging actions will improve benthic substrate conditions.

#### **I-105-008**

The Transportation Technical Report (see FEIS, Volume II, Appendix C) was updated to show the Heavy Haul Network and the location of import/export businesses in the Duwamish to which containers may be trucked. The Draft EIS had evaluated the transportation impacts along the priority Heavy Haul Network that extends from Terminal 5 to East Marginal Way and the access points to the SIG and Argo intermodal rail yards. The Final EIS has extended that study area to Interstate 5 to the east, Interstate 90 to the north, and State Route (SR) 509 to the south. It is noted that the net change in project-generated traffic beyond the Heavy Haul Network would represent a very small percentage of total traffic volumes.

#### **I-105-009**

The Port submits that environmental review included in the EIS documents is adequate for decision-making relating to the proposed actions, including identification of likely adverse environmental effects and identification of measures to avoid, minimize, or mitigate reasonably foreseeable impacts. Community and public agencies have emphasized the importance of analyzing and evaluating potential noise, air, and transportation effects. Potential health risks resulting from emissions of diesel exhaust particulate matter and PM 2.5 associated with the proposed Project were evaluated for nearby residences and the communities of Georgetown and South Park. The analysis included a health assessment. Changes in air quality resulting from Alternatives 2 and 3 were small, and the resulting changes in health risks relative to baseline were correspondingly small (see FEIS, Volume II, Appendix A).

Water quality impacts are analyzed in a variety of detailed technical reports of the FEIS, Volume II, Appendix D, H, I, K) and summarized in Section 3.3, Volume 1. The most significant improvement to water quality will be the installation of Corrective Action Level 3 stormwater system improvement, approved by the Department of Ecology,



prior to occupancy. These improvements will be designed to meet state of Washington IGSP requirements, some of the most protective in the nation.

**I-105-010**

Comment acknowledged. The Port, through the EIS process, identified environmental impacts with steps to reduce, minimize, avoid, or mitigate environmental impacts from operations and construction consistent with the project described as Alternative 2. These steps are summarized in DEIS, Volume I, Chapter 1, Table 1.3-1. Details of mitigation are found in the individual technical analyses.

**I-105-011**

The proposed Project EIS analyses and evaluations include identification of potential or likely adverse environmental effects due to the proposed Project and include measures to avoid, minimize, or mitigate environmental impacts from construction and operations consistent with the Project described as Alternative 2. These steps are summarized in DEIS, Volume I, Chapter 1, Table 1.3-1. Details of mitigation are found in the individual technical analyses.

Please see Standard Response No. 3: Use of Shorepower at the beginning of Chapter 6 for additional information.

Please see Standard Response No. 5: Train Horn Noise at the beginning of Chapter 6 for additional information on addressing annoyance noise and “Quiet Zones”.

Paul Meyer  
 Port of Seattle  
 Pier 69  
 P.O. Box 1209  
 Seattle, WA. 98111-1209

July 8<sup>th</sup>, 2016

Dear Mr. Meyer:

This letter serves as my response to request from the Port of Seattle's request for public comments on the Terminal 5 Cargo Wharf Rehabilitation, Berth Deepening, and Improvements project Draft Environmental Impact Statement (DEIS). Thank you for the opportunity to comment on this document.

This letter commences with general comments on specific issues and questions regarding the T-5 DEIS and then proceeds with specific review comments on the DEIS documents.

### **General Review Comments**

#### **Container Forecasts / Project Need**

The basis for the market forecasts supporting growth in container traffic under development Alternatives Two and Three suggest that there will be approximately **1.3 million TEU** container equivalents passing through T-5 in Alternative Two by year **2030** and **1.7 million TEU** container equivalents passing through T-5 by **2040** under Alternative Three. Clearly this forecast is presented as a conservative "worse-case" scenario and is supposedly based upon a compound, approximate four percent/year forecast growth rate.

However, did the Port of Seattle consider any high/low range of future container forecasts given market uncertainties described in Chapter One, Section 1.2.6? It also appears that the Port of Seattle currently does not have a proposed tenant for Terminal 5 in West Seattle. This calls into question the rather speculative nature of major proposed investments for T-5 under Alternatives Two and Three.

I-106-  
001

#### **Traffic Analysis / Future Forecasts and Truck Trip Distribution**

The traffic analysis in Transportation Technical Report, DEIS Volume Two, Appendix C, describes the projected traffic impacts under the 'No-Action' Alternative One and development Alternatives Two and Three for future horizon years 2030 and 2040. The project Vicinity Map, Figure One, shows the immediate traffic and transportation study area proximate to T-5 and discussion elsewhere in this report indicates a traffic analysis area that runs generally east towards East Marginal Way / Holgate Street and to the edge of SR 99 South.

However, while some of the narrative discussion mentions truck trips under Alternatives Two and Three head east on the Spokane Street Viaduct to either SR 99 South or I-5 North/South, there is no specific analysis of the potential impacts of these additional truck trips in the future year scenarios (2030/2040) to either Interstate 5 or SR 99.

I-106-  
002

I-106-  
002  
(cont.)

Given the current levels of congestion on these state highways and likely greater levels of congestion on these routes in the future, the traffic analysis in the DEIS should be expanded to include these state routes, even if it might not be possible (or required) for the Port of Seattle to mitigate these impacts, it seems to be irresponsible to automatically assume that these additional future truck trips, even if they are at a reduced overall percentage compared to today (though in greater volume in the future), will automatically be able to use these state routes which could be completely gridlocked in the future year scenarios and unable to accommodate this additional truck traffic. Simply put, the traffic analysis needs to be expanded to consider future year conditions on state/regional routes where truck trips from T-5 are expected to traverse unimpeded to assess potential impacts to these routes.

It is also questionable and perhaps invalid to automatically assume that container traffic moved in and out of T-5 in West Seattle merely go to local/regional businesses either in Seattle or the Green River Valley. In terms of container exports, the Port of Seattle draws truck trips well beyond the immediate Puget Sound region (King/Pierce/Snohomish Counties). For example, many farmers and some manufacturers in eastern Washington rely on the Port of Seattle to export their goods through the port. Ostensibly therefore, the traffic analysis in this DEIS could realistically be expanded to include Interstate 90 east out of Seattle, given the magnitude of future truck trip forecasts under Alternatives Two and Three.

In reality, a large portion of intrastate shipments of inbound/outbound containers will be by truck and not by rail, given the dynamics and economics of longer haul rail operations. The "75/25" rail/truck mode split assumption could also be called into question if there are more intrastate rather than interstate shipments in and out of T-5 in either future development condition.

#### **Rail Infrastructure and Operations**

The rail technical operations and infrastructure analysis described in Volume Two of the DEIS (**Appendix F: Railway Infrastructure and Train Volume Analysis**) and discussion elsewhere in the Transportation Technical report provides a pretty good overview of rail operations both in the current and future conditions in and proximate to T-5. It appears that much of the Class I mainline (BNSF Railway and Union Pacific) operations analysis and assumptions are based up on the recent Washington State Rail Plan (2014), however rail market conditions have changes somewhat since then and the Class I railroads are seeing increases in bulk commodity traffic such as coal and oil. The 2014 Washington State Rail Plan did not account for these changes in the rail freight traffic mix and so the assumptions about available future capacity for growth in intermodal container trains under Alternatives Two and Three might need to be revisited.

There is some confusion in the various scenarios of how many intermodal container trains would be generated under the various alternatives as presented in the Transportation Technical Report and the Railway Infrastructure and Train Volume Analysis. For example, on page 27 of the Transportation Technical Report states that *It is estimated that the existing intermodal yard has the capacity to handle about 530,000 TEUs per year, which averages to about 18 full unit trains per week*. However discussion of rail operations under Alternative Two with 1.3M TEUs would generate up to 18 loaded unit trains per week as result of this increased traffic. The discussion on page 27 further indicates that T-5 had typically generating about nine loaded unit trains per week, which suggests that container throughput at T-5 was well below this 530,000 TEU capacity.

I-106-  
003

However with the 1.3M TEU (projected) 2030 forecast being more than double this 530,000 TEU figure, even with up to nine trains being generated off-site, either at BNSF's SIG or UP's Argo yard, there does not appear to be a clear correlation between the more than doubling of container volumes in this alternative (and Alternative Three at 1.7M TEUs in 2040) and increased train volumes forecast. Either this suggests future unit trains will be longer than the 7,500 foot assumed length (contrary to stated assumption) OR there will be more local/regional truck trips emanating from T-5 in either Alternatives Two or Three.

I-106-003  
(cont.)

Please clarify and correct this rather obvious discrepancy regarding train volumes in existing and future conditions as all of this data and information isn't clear or comprehensible as presented.

### **T-5 Mitigation**

The summary of mitigation measures in Section 3.11.4 appears to be quite inadequate in its scope, content and proposed measures (where needed) when compared to potential impacts and in particular given the uncertainties of truck forecasts (see above comments) and the potential adequacy, or lack thereof of the rail infrastructure both adjacent to T-5 and on the Class I mainlines to serve future growth projected to come through T-5 either under Alternatives Two or Three in the future.

I-106-004

Also, as another example, the description of construction mitigation on pages 3.11-13 and 3.11-14 as well as some of the operational mitigation appears to be inadequate and should be more specific and detailed. What about all of the truck trips and construction related traffic generated as a result of major construction that would occur under Alternatives Two and Three.

I-106-005

The description of "Quiet Zones" in Section 7.3 of The Terminal 5 Railway Infrastructure and Train Volume Analysis provides a good summary of the methodology and requirements under FRA rules for the establishment of a Quiet Zone as a possible mitigation measure for increased train operations and the concurrent increase in train air-horn noise. However the conclusion of this section states that *The costs and footprint required to upgrade additional crossings east of the West Waterway makes an eastward extended quiet zone infeasible.* This is an unacceptable statement indicating that an extended FRA certified quiet-zone is infeasible, given that no costs or further data related to this is presented to support this assertion. There needs to be more specific information and data before the Port can clearly assert this.

I-106-006

There might be some not-insignificant costs related to implementing an FRA certified Quiet-Zone on the BNSF Railway line to T-5 in West Seattle, but in the context of a potentially multi hundred million dollar investment in redeveloping / rebuilding T-5 in West Seattle (\$300 million or more?), a small investment in a mitigation measure, a quiet-zone, that provides substantial relief to the immediate West Seattle community that will suffer the impacts of increased train traffic and noise, is not an unreasonable request !

If the Port of Seattle is truly interested in being a “good neighbor” to its taxpaying neighbors, it will reconsider and seriously address this unacceptable statement regarding quiet zones.

I-106-  
006  
(cont.)

## Specific Review Comments on Port of Seattle Terminal 5 DEIS

### DEIS Volume #1

#### 1. Chapter One – “Proposed Alternatives” (1.2.5 Page 1.4)

The description of the three alternatives should include additional information about the specific schedule for implementation of the two development alternatives (Two & Three) consistent with information provided elsewhere in this DEIS report (Alternative 2 – 1.3M TEU) volume total by 2030 and (Alternative 3 – 1.7M TEU) volume total by 2040) so it is clear to the reader what the timeline is for the two action alternatives going forward.

I-106-  
007

#### 2. Chapter One – “Areas of Controversy and Uncertainty” (1.2.6 Page 1.4)

This section briefly describes potential changes in the future operation of T-5 as a result of considerable changes in the international maritime industry, increased competition among West Coast ports, potential impacts of the widened Panama Canal, larger “Post Panamax” ships and so forth. This section acknowledges that *Determination for specific future marine cargo operations, methods and practices that are likely to be employed at Terminal 5 have not yet been made*. This suggests there is no immediate tenant planned for T-5 in West Seattle and future ship calls by various marine lines are uncertain at this point. Clearly, the range of potential environmental impacts presented in the DEIS chapters show a “worse case” scenario for impacts, which is probably a reasonable and conservative assumption for analysis.

I-106-  
008

However, the market analysis projections presented in the DEIS and subsequent presented impacts might possibly benefit from some level of sensitivity analysis with a “high” and “low” estimation scenario. The presentation later on in the DEIS of a 1.3M TEU container forecast scenario by 2030 (Alternative Two) and a 1.7M TEU container forecast scenario by 2040 clearly demonstrate a “high” growth rate based upon an assumed compounded forecast of four percent per annum. However, what might a lower growth rate scenario of one or two-percent per annum look like in terms of potential impacts to transportation and the environment? Has the Port of Seattle conducted any type of this high/low forecast scenarios? And if so, what are the results of them?

Also, how are these future container forecasts considered in or consistent with any local or regional planning efforts at the city of Seattle or the Puget Sound Regional Council (PSRC)? That consideration is never mentioned here or anywhere else in the DEIS

document. Local and Regional plan consideration and consistency, to the extent possible, is important.

I-106-008  
(cont.)

3. **Chapter One – “Proposed Project Alternatives – Potential Impacts and Mitigation Summary** (Summary Table 1.3-1, page 1-14)

The description of potential impacts and mitigation strategies for Alternatives Two and Three do not mention any potential impacts to state highways in Seattle that ultimately serve truck traffic coming to/from T-5 (I-5, I-90, SR 99, SR 509). The traffic/transportation analysis in Volume 2 of the DEIS basically appears to end at the intersection of SR 99 / The Spokane Street Viaduct, even though it is expected that many truck trips either originating or terminating at T-5 in these two development scenarios are expected to access these state routes. What are the potential impacts to state/regional facilities such as I-5, I-90 or SR 99 that could result from increased truck traffic out of T-5 in either development Alternatives Two or Three?

I-106-009

The traffic analysis in the port’s DEIS should also address and consider future regional/state plans for major corridors in the central Seattle region and beyond (I-5, I-90, SR 99, SR 509, SR 167 in King County) given that many truck trips out of T-5 are expected to regional in nature and continue to destinations such as the Green River Valley or eastern Washington.

I-106-010

The description of potential rail impacts suggest that the existing train counts would increase from nine weekly trains to 18 under development Alternative Two and from nine to 24 weekly trains under development Alternative Three. The only suggested mitigation measure is to close the north leg of the Spokane/Chelan/West Marginal Way intersection and that there would be certain and various infrastructure and on-dock rail improvements. However there is no discussion or mention of the connecting Class I mainline routes to T-5 in West Seattle (BNSF Railway and the Union Pacific). How will these Class I rail connections perform in these future development conditions? Where are there deficiencies on these lines that would make them incapable of handling this increased train traffic? If the port merely assumes that the Class I Railroads will make the necessary infrastructure improvements to handle this new and increased future traffic, which should be clearly stated here.

I-106-011

Also, does this rail analysis assume that other Class I mainline rail segments, such as the north/south BNSF/UP mainline between Seattle and Portland, the east/west Cascade Crossings (Stevens/Stampede Passes) will be able to accommodate future container rail traffic projected in Alternatives Two and Three? How/Is this still a realistic expectation in light of the change in freight rail traffic (increased bulk commodity traffic, for

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example) and also future passenger rail services (Sounder / Amtrak)? Additional discussion in this area is needed here.

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(cont.)

4. **Chapter Two – (Page 2.4)**

*Complete the Project in a timely manner within the financial goals set for the project.* What are the “financial goals for this project”? These are never stated anywhere here in the document?

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5. **Chapter Two – (Page 2.5)**

Discussion of the ten-year “interval” cargo forecasts for the T-5 DEIS suggests they were derived from “west coast and northwest container cargo forecasts” as mentioned in the third paragraph on page 2-5. Who developed these cargo/container forecasts and what were the basis and assumptions for these forecasts? It is my understanding that the Washington Public Ports Association (WPPA) conducts a periodic “Marine Cargo Forecasts” for all Washington State public ports (and with participation of these ports). I believe the last WPPA statewide forecast effort (20-year forecasts) were done and published in 2009 (?) <http://washingtonports.org/member-resources/publications/resource-tools/> .

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This section needs to be revised to explain in greater detail the specifics and methodology of the cited forecasts here and how they do or do not support the projected forecasts in Alternatives Two and Three (1.3 & 1.7M TEUs for years 2030 & 2040 respectively). This section should also discuss consideration, or lack thereof, of the Washington State / WPPA Marine Cargo Forecasts in this analysis as well.

6. **Chapter Two - (Page 2.5)**

The fifth paragraph in this section discussed container forecasts for Alternative Two. It indicates this is the basis for the environmental analysis and the need to expand rail infrastructure capacity at T-5 for this alternative.

I-106-  
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However, it would appear that discussion of necessary mitigation and capacity expansion(s) needed on the nearby arterial /roadway network seems lacking here. What about impacts to the Spokane Street Viaduct downstream (east of) from T-5 and ultimately connecting to Interstate 5, I-90 and SR 99, etc.? The “Design Day” forecasts for daily truck trips of 3,560 under Alternative Two (2030) suggests a substantial increase in truck traffic in the future, also in the light of other residential/commercial growth in West Seattle and the city of Seattle as a whole.

Also, to what extent, if any, does the traffic analysis and projection of future regional truck traffic consider the function and possible future levels of congestion on

regional/state routes such as SR 99, I-5, I-90 and other routes? Has this forecasting effort been compared to city, regional and/or state forecasting/planning efforts (E.G. *Seattle 2035 Comprehensive Plan*, *PSRC Transportation 2040 – Regional Plan*, WSDOT state plans/forecasts, etc.?)?

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(cont.)

7. **Chapter Two - (Page 2.5)**

The sixth paragraph in this section discussed container forecasts for Alternative Three. It indicates this is the basis for the environmental analysis and the need to expand rail infrastructure capacity at T-5 for this alternative.

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In Alternative Three, it is projected that there will be approximately 1.7M TEU container equivalents passing through T-5 by 2040. This sets the basis for the suggested necessary mitigation needs under Alternative Three. This section discusses the necessary landside (terminal) improvements at T-5 for rail capacity here.

However, what are the landside roadway/arterial improvements that will be needed beyond just the adjacent arterial intersection improvements identified in the mitigation summary? What are the downstream (east of East Marginal Way) traffic-facility impacts to the Spokane Street Viaduct and to the state route (SR 99 / Interstate 5) connections to the Spokane Street Viaduct? The “Design Day” forecasts for daily truck trips of 4,660 under Alternative Three (2040) suggests a substantial increases in truck traffic in the future, also in the light of other residential/commercial growth in West Seattle and the city of Seattle as a whole. This will be an enormous impact on what will very likely be a very congested network in the region in 2040, which might not be able to efficiently accommodate this additional truck traffic.

Also, to what extent, if any, does the traffic analysis and projection of future regional truck traffic consider the function and possible future levels of congestion on regional/state routes such as SR 99, I-5, I-90 and other routes? Has this forecasting effort been compared to city, regional and/or state forecasting/planning efforts (E.G. *Seattle 2035 Comprehensive Plan*, *PSRC Transportation 2040 – Regional Plan*, WSDOT state plans/forecasts, etc.?)?

8. **Chapter Two - (Page 2.5)**

Table 2.3.1 in this section describes the operational assumptions for each DEIS development alternative. The description of daily truck trips is broken down into an “average day” (one-way) truck trips and “design day” (one-way) truck trips. Though it isn’t clearly explained in this section, it would appear that the “Design Day” forecasts are “Peak-day” truck trips when there will be ship calls at T-5.

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The average-day and design-day one-way truck-trip forecasts are presented as follows:

- Alternative One: 1,770 / 2,480 (Year 2020)
- Alternative Two: 2,450 / 3,560 (Year 2030)
- Alternative Three: 3,320 / 4,660 (Year 2040)

How are the truck forecasts in the three DEIS alternatives considered in and/or compared to overall forecasts for traffic in West Seattle proximate to Terminal 5 or in the larger regional roadway network in Seattle? How, if at all, are these truck forecasts accounted for in the city of Seattle's 2035 Comprehensive Plan? Or, in other words, have these truck forecasts been included in the city's long-range transportation forecasts in the Seattle 2035 Comprehensive Plan? That question is never addressed here.

Also, have these forecasts been incorporated or considered in the PSRC's long-range regional transportation plan known as Transportation 2040?

9. **Chapter Two** - (Page 2.13)

The discussion of expected container ship operations in Section 2.3.4.2 (*Vessel Calls and Operations*) is unclear as presented and it needs additional context and clarity to make it understandable. It starts by mentioning: *For the purposes of this analysis, we assume that Terminal 5 would have 2 vessel calls, one 14,000 TEU ship discharging and loading 30 percent of their capacity, and one 8,000 TEU ship discharging and loading 24 percent of their cargo.* Is this the vessel call assumption for Alternative One?

And if so, what is the basis for the assumed percentages of loaded/unloaded cargo for these 8,000/14,000 TEU vessels? Furthermore it is unclear as to whether these two ship calls are a daily, weekly or monthly figure (?). In reading this summary, I'm guessing that this is a weekly figure, but it isn't clear from this summary.

The section goes onto describe the next ship-call scenario at T-5 where *at full capacity expected to be reached by 2030 and continuing into 2040, Terminal 5 would have 4 vessel calls, two 14,000 TEU ships discharging and loading 30 percent of their capacity and two 8,000 TEU ships discharging and loading 24 percent of their cargo. Berth utilization would be approximately 57 percent.* This would appear to be a description of Alternative Two but is not stated as such, so the reader is left guessing as to which Alternative scenario this statement is referring to. Again, same question: Are these vessel calls in this scenario (Alternative) a daily or weekly estimate? Also, what is the basis for assumed loading/unloading estimates for the two 14,000 and two 8,000 TEU ships?

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(cont.)

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The section concludes in describing the substitution of “Large 18,000 TEU ships” in lieu of the 14,000 TEU ships but with a smaller percentage of container trans-shipment expected from the larger 18K TEU ships than the 14K TEU ships and the larger ships are expected to only load/unload about 23 percent of their cargo (containers). This would appear to be the projected ship-call operational scenario under Alternative Three, but that is not stated here. Again, confirmation of the frequency of these ship calls (daily/weekly/monthly) for the larger 18,000 TEU ships is needed along with explanation regarding the assumptions for the percentage of unloading/loading of these larger ships.

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(cont.)

Finally, how do these projected vessel calls comport with or consider forecasts from the aforementioned WPPA 2009 Marine Cargo Forecasts?

10. **Chapter Two – 2.3.4.5 – Rail Operations** (Page 2.14)

Description of rail operations at T-5 here suggest the approximate and assumed length of loaded unit trains operating out of T-5 to be 7,500 feet in length (train consist: 300 feet worth of motive-power & 7,200 feet of container cars). The DEIS elsewhere mentions the stated assumption of the train length being 7,500 feet (Transportation Technical Report & Terminal 5 Railway Infrastructure and Train Volume Analysis Memorandum).

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What is the basis for this train length assumption? Is it the physical/infrastructure limitations of the Terminal 5 facility itself? Or is it rail operating limitations in and out of T-5 for switching/building trains?

It is my understanding that the Class I railroads are moving to operate fewer and longer trains, in some cases in excess of 10,000 feet for some container trains. This therefore could affect operations in and out of T-5 (and thus landside impacts to roadway traffic) were this practice to occur by the BNSF and UP railroads up here. Or do the aforementioned physical or facility limitations at T-5 prohibit operation of longer trains into/out of this facility? Additional explanation on this matter is needed here.

11. **Chapter Two – 2.3.7.1 Anticipated Throughput** (Page 2.16)

The description of the forecasted container traffic increase through T-5 from baseline 647,000 TEUs to 1.3M TEUs under Alternative Two (2030) and up to 1.7M TEUs under Alternative Three (2040). This section needs to provide additional context and explanation regarding the basis for these forecasts for Alternatives Two and Three and how they are or are not consistent with statewide and regional forecasts such as the WPPA Marine Cargo Forecasts and the PSRC (regional) Transportation 2040 plan.

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020

12. **Chapter Two – 2.3.7.2 Vessel Calls and Operations** (Page 2.17)

The description of vessel call scenarios in this section with either a mix of 14,000 or 18000 TEU vessels along with various 8,000 TEU vessel calls indicate that these would be weekly vessel calls for these scenarios. The description of these scenarios should be compared/cross-referenced/confirmed with the description in the aforementioned section 2.3.4.2 where there is also discussion about the # and type of vessel calls at T-5 in Alternatives Two/Three. This is important since it was not clear in this previous section whether or not the mentioned vessel call figures were daily, weekly, or monthly.

Also, what is the basis for the assumptions regarding the percentage of load/unload containers from/to vessels of various sizes and configurations (e.g. 8,000 / 14,000 / 18,000 TEUs)? Where did these assumptions come from? What market forecasts are they based upon?

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**T-5 DEIS VOLUME TWO**  
**TRANSPORTATION TECHNICAL REPORT FOR THE DRAFT EIS**  
**– TERMINAL 5 IMPROVEMENT PROJECT**

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13. **1.2.1 Throughput and Vessel Calls** (Page 2)

The last paragraph on this page describes the range of container volumes estimated for Alternatives Two and Three “with various vessel service call scenarios.” It goes onto to describe the assumptions for this analysis being a total of four ships per week, two 18,000 TEU capacity ships and two 14,000 TEU capacity ships. The detailed information regarding vessel capacity and container volumes to be loaded/unloaded under each alternative is also provided in Table One on Page Three. However this analysis is not consistent with container volume and vessel analysis presented in Chapter Two of the first volume of the DEIS (Page 2-13) which describes a range of vessel call scenarios from one 8,000/14,000 TEU ship pair calls (per day/week/month?) to two 14,000 / 8,000 TEU ship calls (per day/week/month) with the possibility of an 18,000 TEU capacity ship call in lieu of a 14,000 TEU ship call on occasion (Alternative Two? or Alternative Three?). Nowhere in the previous description on Page 2-13 in Chapter Two of the first DEIS volume does it mention the possibility of **two** 18,000 TEU vessel ship calls per week at T-5.

These discrepancies need to be corrected and clarified as necessary since they lead to great confusion to the reader and potentially drastically different results in terms of landside transportation (and environmental) impacts. Although it is never stated, it would appear that the two 18,000 ship/vessel calls per week were assumed as a “worst-case”

I-106-  
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scenario for transportation impact analysis purposes. If this is the case, then it should be clearly stated both here and in the previous discussion in Chapter Two, Volume One so that there is no confusion on the reader's part. This will also clarify and confirm the true potential magnitude of landside transportation and environmental impacts.

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(cont.)

The first paragraph on Page Three indicated that "The time that a ship spends at berth would vary based on the size..." (of the ship) with smaller ships only expected to take only 16 to 20 hours to unload and reload and larger ships (14,000/18,000 TEU) taking between 25 to 50 hours for loading/unloading. If these ship calls to T-5 are loading/unloading 35 percent or less of their cargo, why is the loading/unloading times so long, especially for larger ships? The supposed efficiencies and rationale to do the T-5 terminal improvements are being driven by the need to speed-up and improve ship turnaround times as the port has made clear and stated several times in the DEIS. This summary seems to contradict this claim by the Port.

14. **1.2.3 Rail Intermodal Operations** (Page 4)

The description of assumed mode-split for container traffic coming through T-5 suggests the percentage of containers being transported by rail will increase to 75 percent from the previous 55 percent under Alternative One. The remaining 25 percent of containers will be delivered to local/regional destinations via truck with access to the local/regional roadway network. The stated destination for most of this truck traffic is the Green River Valley via I-5 and/or SR 509. The specific mode-split assumptions are presented in Table Two (page four).

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What is the basis for this assumption on mode-split? What about the aforementioned intrastate container traffic projected to come through T-5 that will predominantly move by truck? Are there any other operational scenarios or opportunities to increase rail mode share at T-5 (via on-dock rail) and thus further reduce truck trips in future scenarios out of T-5?

Even given lower (25 percent?) mode split estimates of truck trips operating out of T-5, this is a substantial increase in the amount of trucks projected to operate over an increasing congested arterial and regional roadway network.

15. **1.2.3 Rail Intermodal Yard Operations** (Page 4)

The final paragraph in this section (page 4) describes the intermodal train operations serving the T-5 facility and it suggests the typical (future) container train operating out of the T-5 intermodal facility will be 7,500 feet in length, as has been stated elsewhere in this DEIS

I-106-  
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What is the basis for this stated assumption regarding train length? Is the 7,500 length the maximum train length that can be efficiently accommodated in and out of T-5? What would be the impact if the railroads operated longer (and fewer) trains out of T-5? Or is this not possible given rail infrastructure constraints at T-5 and possible limitations of rail infrastructure on the BNSF rail corridor to West Seattle?

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(cont.)

Same question for the top of Page Five.

**16. 1.3 Study Area (Page 5)**

Description of the transportation study area in this section primarily describes SW Spokane Street, East Marginal Way and East Marginal Way South from the Hanford Street intersection to North Argo Yard. This section also lists the seven intersections proximate to T-5 in West Seattle. Was there any consideration of downstream traffic congestion on key regional/state routes such as I-5, I-90, SR 99 and SR 509? What are the future conditions and levels of congestion, projected to be on these key routes that truck traffic from T-5 is expected to access in years 2030 and 2040? Perhaps the traffic analysis geography should be expanded to consider these key routes and corridors?

I-106-  
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The analysis should also demonstrate regional travel considerations and forecasts in both the Seattle 2035 and the PSRC long-range Transportation 2040 plan.

**17. Seattle Comprehensive Plan (Page 10)**

The discussion about the Seattle Comprehensive Plan ( 2005 Comprehensive Plan – Towards a Sustainable Seattle ) provides a good overview of the transportation policies that relate to and support freight access and land-use policies in the comprehensive plan that encourage protection and promotion of industrial uses in Seattle. This section also refers to the Container Port Element of the Seattle Comprehensive Plan (updated in 2013 for the 2015 comprehensive plan update).

I-106-  
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However, there is no mention of how container forecasts in neither the T-5 DEIS alternatives, nor the traffic and transportation facility impacts are considered and/or identified in Seattle's Comprehensive Plan. How are (are?) the T-5 DEIS forecasts included in the Seattle (adopted) Comprehensive Plan? Will these forecasts be included in Seattle's updated Comprehensive Plan (Seattle 2035) when it is due to be adopted this summer by City Council action?

**18. Seattle Freight Master Plan (Page 11-12)**

The discussion here about the Seattle Freight Master Plan provides a good summary of Seattle (SDOT's) first freight plan under development and due to be adopted by the Seattle City Council this summer.

I-106-  
027

The section also summarizes the Freight Access Project, which was a collaborative effort between the port and the city of Seattle to identify truck-freight investments that might be needed in the next 20-years to keep freight moving in Seattle and to support the city's industrial lands. This discussion also includes a good summary of four key intersection projects identified in the plan to help support future freight mobility in Seattle. There is also a good summary of the Duwamish Waterway and the Duwamish Freight Corridors spot improvements as noted in pages 12 and 13 of this chapter.

I-106-  
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(cont.)

However, there is no discussion in this section about how or if the T-5 DEIS market forecasts and DEIS build alternatives were or will be considered in either the SDOT Freight Master Plan or the Freight Access Project. Further explanation is required in this section of how and whether the T-5 market forecasts and transportation/traffic forecasts are considered and/or included in these two city plans.

19. **2.6 Rail** (Page 26)

Detailed description in this section of rail operations at T-5 again references the loaded unit trains are assumed to be 7,500 feet in length. As noted and asked before, what is the basis for this assumption and what would be the impacts on rail operations (and number of trains operated out of T-5 under a future development scenario) if longer trains are operated out of T-5 to serve the future projected international vessel calls?

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028

The second paragraph indicates the present capacity of the T-5 intermodal rail yard to be the equivalent of approximately 530,000 TEUs annually. This equates to approximately 18 loaded container trains per week. This section notes that T-5 historically was only generating about nine loaded trains per week, indicating that T-5 was operating well below this 530,000 TEU annual capacity at the intermodal yard. However, description of the T-5 development Alternative Two suggests that at a 1.3M annual TEU throughput, there will be 18 loaded unit trains out of T-5 per week **plus** nine off-site loaded unit trains generated as well, for a total of 27 weekly unit trains. At 1.7M TEUs per year in 2040 at the ultimate conception of Alternative Three, should it occur, there would be 24 loaded unit trains operating out of T-5 plus another 12 off-site (SIG/Argo yards) unit trains generated.

There is some confusion and discrepancy between these two train generation figures in the baseline (530,000 TEUs/18 trains) and Alternative Two (1.3 M TEUs and 24 trains) given that Alternative Two is more than double the baseline/current capacity figure in terms of TEU throughput. Will longer (and thus fewer) trains be the basis for these differences in train counts? Please clarify and correct this discrepancy.

20. **5.1 – Future Traffic Volumes** (Page 45)

The discussion of future container forecasts in this section and as shown in Figure 17 indicate a compound growth rate of about 4.4 percent per year applied as a “conservatively high” estimate of future import container forecasts. This would result in approximately 1.3M annual TEUs in year 2030 and 1.7M TEUs in 2040. This is probably reasonable in terms of defining a “high” forecast and concurrent potential impacts.

However, was there any consideration in devising these forecasts regarding possible lower ranges of forecasts or any level of sensitivity analysis to define a range of possible future container forecasts at T-5?

I-106-029

21. **5.5 – Rail** (Page 59)

The description of the typical container train configuration and length in this section again states the 7,500 foot length assumption but also suggests that train lengths could be up to 8,600 feet in length. This contradicts earlier and subsequent statements regarding assumed train lengths not exceeding 7,500 feet in Sections 1.2.3 and 2.6 of the DEIS Transportation Technical Report as well as in the Rail Technical Memorandum (Appendix “F”) by suggesting train lengths could be up to 8,600 feet in total length.

Why the inconsistency in reporting these train lengths here? This inconsistency needs to be addressed and corrected.

I-106-030

## **APPENDIX F: RAILWAY INFRASTRUCTURE AND TRAIN VOLUME ANALYSIS MEMORANDUM**

22. **2.1 – Existing Rail Infrastructure** (Minor Correction) (Page 3 of 25)

The description of the two transcontinental railroads that originally reached Seattle in 1883, the Northern Pacific Railroad, and in 1893, the Great Northern Railway “became components of BNSF and UPRR.” Actually the Northern Pacific and Great Northern Railways merged with the Chicago, Burlington and Quincy and Spokane, Portland, and Seattle Railways to form the Burlington Northern Railroad in 1970. Neither the NP nor the GN was a component railroad of the Union Pacific Railroad.

The Burlington Northern Railroad merged with the Santa Fe Railway to become the Burlington Northern-Santa Fe Railroad, now known as “BNSF Railway.”

I-106-031

23. **2.2 – Existing Freight Rail Traffic Volumes** (Clarification) (Page 7 of 25)

The summary of existing freight rail traffic volumes provide a comparison of daily track capacity relative to daily train volumes (2010) on key Class I mainlines in Washington State. This data set is referenced as being published in the Washington State Rail Plan (2014). However this plan is now slightly dated and is expected to be updated soon (2017?). This analysis should acknowledge the changing dynamics of freight rail operations in Washington State and impacts for rail capacity and operations, particularly in the form of more bulk trains (oil/coal/grain) and potential impacts for future container train traffic.

Also, future plans for more Amtrak regional passenger or Sounder commuter train service on the North/South BNSF mainline (Seattle/Tacoma/Portland) could also consume and reduce future rail capacity for the Port of Seattle.

I-106-  
032

24. **7.3 – FRA – Quiet Zones** (Clarification) (Page 23 of 25)

The description of the FRA Quiet Zones in this section, the overall requirements and methodology for determining when and how a Quiet Zone can be implemented as a community mitigation element is well done and descriptive.

However, the conclusion of this section indicates that the costs and footprint required to upgrade the various rail grade crossings proximate to Terminal 5 in West Seattle make implementation of a Quiet Zone east of T-5 infeasible. However, no cost data or any other information is presented here to support this claim. What is the basis for this claim and what cost-information or other data was used to make this determination? This is unacceptable as presented here.

There will undoubtedly be some costs to implement an FRA compliant Quiet-Zone on the BNSF Rail line out of T-5 in West Seattle. However, given that the ultimate potential investment the port is considering for the T-5 Terminal rebuilding project (**\$300M** or more?), the costs and effort to implement an FRA Quiet Zone on this rail corridor are perfectly reasonable mitigation measure that the port should be expected to support and implement, should this project go forward.

Failure to address, consider and implement this mitigation for the West Seattle neighbors who will experience many negative impacts from train operations, especially train air-horn noise, would seem to suggest the need for the community to consider a SEPA appeal on environmental grounds or other appropriate legal measures.

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**Closing**

Again, thank you for the opportunity to comment on the Port of Seattle's Terminal 5 Cargo Wharf Rehabilitation, Berth Deepening, and Improvements project Draft Environmental Impact Statement (DEIS). I look forward to the Port of Seattle's response and follow-up actions to the issues and concerns raised in this letter.

Please contact me with any questions you might have regarding this letter and its contents. My contact information is provided below.

Thomas A. Noyes

Thomas A. Noyes  
3215 38<sup>th</sup> Avenue SW,  
Seattle, Washington 98126-2241

[Thomas\\_Noyes@comcast.net](mailto:Thomas_Noyes@comcast.net) (email address)

**I-106-001**

The proposed Project has been planned and designed to serve anticipated increased marine cargo growth in the next 20 years, approximately 4 to 5 percent compounded annual growth. This rate of change is acknowledged in numerous North American and international cargo evaluations. The steady, continuous growth rate is used to compute potential cargo volumes that would be accommodated by Alternatives 2 and 3 identified in Project environmental evaluations. The proposed Project is based on confirmed marine cargo transshipment needs and does not represent speculative development. The Project is limited to reuse and improvement of an existing built and committed marine cargo site and does not include expansion of the site, acquisition of additional property, or other speculative development or land uses and activities.

**I-106-002**

Please see response to comments S-002-003 and S-002-016 for information on container forecasts and traffic analysis.

**I-106-003**

There is not a discrepancy in the analysis. The train volumes are based on a modal split of the peak daily/weekly volume. Peak weekly container volumes are a product of berthing configuration and potential vessel capacities. Annual volume is a product of these factors and may not vary linearly depending on the disproportionate impact of berth and vessel sizes. The prior operations of the Terminal 5 rail yard and those described in the No Action Alternative are below the maximum existing capacity of the Terminal 5 rail yard.

**I-106-004**

As acknowledged in response to Comment S-002-16, a container cargo operator for Terminal 5 has not yet been identified, and it is possible that a different type of service could locate at the terminal. However, it is highly unlikely that the throughput targets evaluated in the DEIS could be achieved without the high volume of intermodal cargo. Thus, the truck volumes associated with the Project reflect a worst-case condition that assumes high throughput targets. The mitigation measures defined for the terminal are appropriate given that much of the grade-separated infrastructure in the rail corridor serving Terminal 5 has already been constructed.

**I-106-005**

Truck trips associated with constructing the terminal are expected to be relatively low, particularly when compared to the truck trips that the existing terminal generated when it operated as a container terminal. Additional detail related to construction truck traffic has been added to Sections 3 and 6.1 of the Transportation Technical Report.

**I-106-006**

Please see Standard Response No. 5: Train Horn Noise at the beginning of Chapter 6 for additional information on addressing annoyance noise and "Quiet Zones".

**I-106-7**

Please see response to comment S-002-001 for information on the schedule for implementation of the two development alternatives. It is now provided in Volume I, Chapter 1, Section 1.2.5.

**I-106-008**

Please see response to comment S-002-002 for information on changes in the maritime industry.

**I-106-009**

The truck trip distribution pattern and trip assignments in the Transportation Technical Report (See FEIS, Volume II, Appendix C) have been extended to show the net change in truck trips to the state highway network, including Interstate 5, Interstate 90, and SR 99. Analysis has also been added to show the percentage of total traffic at key locations on the network. See also the response to Comment S-002-003.

**I-106-010**

Please see response to comment S-002-003.

**I-106-011**

Forecasted volumes for each alternative were provided to UPRR and BNSF. The railroads did not indicate any anticipated difficulties supporting the future operations at Terminal 5.

**I-106-012**

Please see response to comments S-002-003 and I-106-011 for information on traffic analysis.

**I-106-013**

Please see response to comment S-002-004 for information on project goals and objectives.

**I-106-014**

Please see Standard Response No. 8: Cargo Forecasts at the beginning of Chapter 6 for additional information.

**I-106-015**

Please see response to comment S-002-006. The referenced section describes the Project, not the off-site mitigation measures.

**I-106-016**

Please see response to comment S-002-007. The referenced section describes the Project, not the off-site mitigation measures.

**I-106-017**

Please see response to comment S-002-008 for information on operational assumptions.

**I-106-018**

Please see response to comments S-002-013 and I-106-014 on vessel calls and cargo forecasts.

**I-106-019**

Please see response to comments I-106-011 and I-106-024 for information on rail operations.

**I-106-020**

Please see response to comment S-002-011 for information on anticipated throughput.

**I-106-021**

Please see response to S-002-012 for information on vessel calls and operations.

Section 2.3.7.2 on page 2-17 is a description of Alternate 3, as is all of the text under Section 2.3.7, Proposed Alternative 3 Operations.

**I-106-022**

Please see response to S-002-013 for information on throughput and vessel calls.

**I-106-023**

Please see response to comment S-002-014 for information on cargo forecasts.

**I-106-024**

Please see response to comment S-002-010 for information on rail operations.

**I-106-025**

The truck trip distribution pattern and trip assignments in the Transportation Technical Report (See FEIS, Volume II, Appendix C) have been extended to show the net change in truck trips to the state highway network, including Interstate 5, Interstate 90, and SR 99. Analysis has also been added to show the percentage of total traffic at key locations on the network. See also the response to Comment S-002-003.

Please see the responses to Comments S-002-003 and S-002-008 regarding analysis of an extended study area and PSRC growth forecasts.

**I-106-026**

Please see response to comment S-002-018 for information on plans and policies.

**I-106-027**

Please see response to comment S-002-019 for information on the Seattle Freight Master Plan.

**I-106-028**

Please see response to comments I-106-024 and I-106-003 for information on rail operations.

**I-106-029**

Please see response to comment S-002-023. The throughput forecasts evaluated are intended to be worst-case conditions that could account for lower throughput.

**I-106-030**

Please see response to comment S-002-010 for information on rail operations.

**I-106-031**

Comment acknowledged.

**I-106-032**

The EIS is based on currently available information. Future unpublished reports from WSDOT are not incorporated. The EIS makes no representation that future traffic, technology, or business models will not change.

**I-106-033**

Please see Standard Response No. 5: Train Horn Noise at the beginning of Chapter 6 for additional information on addressing annoyance noise and "Quiet Zones".

June 20, 2016

Paul Meyer  
Environmental Services  
Port of Seattle  
PO Box 1209  
Seattle, WA 98111

Dear Mr. Meyer,

As a resident of King County, I am vitally interested in the economic future of our area, and I'm writing in support of the Terminal 5 cargo wharf rehabilitation, berth deepening and improvements, alternative #2.

Terminal 5 has been a cargo terminal for 100 years; it is a rare deep-water terminal. To maintain the city's place in the world economy, we must rebuild Terminal 5 to accommodate the industry's mega-ships that are coming online. As you know, the maritime industry brings billions to the economy of the Pacific Northwest yearly, and employs, directly and indirectly, more than 150,000 people in the Seattle/King County area. The workforce is diverse, and the jobs are largely family-wage jobs, allowing men and women with or without college degrees to support their families. Upgrading the terminal is critical to maintaining the diverse workforce and creating new maritime and industrial jobs. It is critical to the economic and human environment of the of the Seattle/King County area.

Sincerely,

Signature:



MARGARET AND RICK PYFER

E-mail:

thepyfers@comcast.net

BOTH MY HUSBAND AND I ARE  
FORMER APL AND T-5 EMPLOYEES.

I-107-001

1-107-001

Comment acknowledged.

June 20, 2016

Paul Meyer  
Environmental Services  
Port of Seattle  
PO Box 1209  
Seattle, WA 98111

Dear Mr. Meyer,

As a resident of King County, I am vitally interested in the economic future of our area, and I'm writing in support of the Terminal 5 cargo wharf rehabilitation, berth deepening and improvements, alternative #2.

Terminal 5 has been a cargo terminal for 100 years; it is a rare deep-water terminal. To maintain the city's place in the world economy, we must rebuild Terminal 5 to accommodate the industry's mega-ships that are coming online. As you know, the maritime industry brings billions to the economy of the Pacific Northwest yearly, and employs, directly and indirectly, more than 150,000 people in the Seattle/King County area. The workforce is diverse, and the jobs are largely family-wage jobs, allowing men and women with or without college degrees to support their families. Upgrading the terminal is critical to maintaining the diverse workforce and creating new maritime and industrial jobs. It is critical to the economic and human environment of the of the Seattle/King County area.

Sincerely,

Signature:



E-mail:

I-108-001

---

**1-108-001**

Comment acknowledged.

**From:** Marti Casey [<mailto:marti@caseycommunications.net>]  
**Sent:** Friday, July 08, 2016 7:26 PM  
**To:** Meyer, Paul  
**Cc:** Gregoire, Courtney; Felleman, Fred; [mayormurray@seattle.gov](mailto:mayormurray@seattle.gov); [lisa.herbold@seattle.gov](mailto:lisa.herbold@seattle.gov); [lorena.gonzalez@seattle.gov](mailto:lorena.gonzalez@seattle.gov)  
**Subject:** Proposed Expansion of Terminal 5

The expansion of Terminal 5 to a mega-ship port is something that will be looked at historically as fiscally irresponsible and environmentally disastrous while putting citizens of the city of Seattle at risk of health and safety issues.

If the Port of Seattle undertakes either Option 2 or 3 (as outlined here: <http://bit.ly/29sWj18>) the East Slope of the North Admiral District down to White Center will be uninhabitable due to noise and air pollution. The remainder of West Seattle will see significant increases in gridlock due to increased truck traffic using the ramp on to 1-5 North. With the increases in truck traffic it is hard to understand why this choke point is not being evaluated as part of the EIS.

I-109-1

Not only residents of West Seattle, but also those in downtown Seattle, South Lake Union, Queen Anne and other neighborhoods will have increased health risks due to noise and poor air quality. The diesel from the ships and the many, many trucks will be carried their way by the (predominantly) South to Southwest winds.

I-109-2

The promise of more jobs is not one that can be made with integrity. It is well documented that the mega-ships will be utilizing the ports that offer automated loading and unloading of cargo utilizing robotics. The new ports will offer fewer jobs than are currently available due to higher levels of automation. It has become very popular to say that it will offer more middle class jobs for the maritime industry. How many more? At what cost? Why not take some of the billions of dollars to provide the best of the best training for those that are displaced? They are going to be displaced under any circumstances due to technology. Where are our leaders that will speak the truth and help us all address the consequences?

I-109-3

Additionally, facts indicate that undertaking an expensive and disruptive port expansion may not make sense due to the over-capacity that the shipping industry is currently experiencing with the expectation that over capacity levels will increase.

It is hard to believe the Port of Seattle will implement the mitigation steps listed in the EIS draft. Past actions do not inspire confidence that the Port of Seattle will follow through. For years there have been promises to take steps to reduce the train noise. I am aware that Burlington is ultimately responsible but I also know that the Port of Seattle could make this happen by working with Burlington.

I-109-4



By undertaking Option 2 or 3 the Port of Seattle is creating a public safety issue that affects all residents of Washington State. The increased noise that keeps residents awake at night puts us all at risk when the airline pilot cannot sleep and loses just a tiny fraction of their reaction time. The trucker who was kept awake by the increased noise gets in to their big rig and out on the road with cars that carry our families, our relatives, our loved ones. I could provide many other examples of these type of situations which will increase due to the expansion of Terminal 5.

I-109-5

Amazon is hiring and bringing many new residents to Seattle, Expedia is moving their headquarters here. Their employees are making real estate investments in Seattle, with West Seattle being a popular choice. I have knowledge of several multi-million dollar homes in West Seattle being sold to Amazon executives. Their investment and quality of life diminishes substantially with either option 2 or 3 of the Terminal 5 development plan. Some of those executives were recruited with great effort by Amazon. Who is going to explain to the company why their valued employees want to leave the area?

I-109-6

It is very hard to understand why a world class city like Seattle would accept that Elliott Bay will become a port for the very large ships without the adequate space to turn around. Elliott Bay and its ferries that are the envy of the nation will be exchanged for a parking lot of huge cargo carriers spewing diesel into the air. Those million dollar views will lose value rapidly.

I am making this plea for careful consideration of implementing a plan that will cause great damage to our environment and quality of life for many people. I am one of the lucky ones, if option 2 or 3 are implemented, we will pick up and move. Most people do not have that same option, they will endure increased stress and illness because of a decision that will forever change the character of Seattle and the health and welfare of its residents.

Sincerely,

Marti Richardson Casey

2653 Belvidere Ave SW

Seattle, WA 98126



**1-109-1**

The environmental studies that support the environmental review of the Project and its alternatives for both operations and construction consider the environmental elements of traffic, noise, water quality, air quality (see FEIS, Volume II, Appendices) as well as other elements. From these analyses, steps to avoid, minimize or mitigate impacts were identified. These steps are summarized in Table 1.3-1 in Chapter 1, Volume 1 of the FEIS.

The geographic area of the traffic study was expanded. The truck trip distribution pattern and trip assignments in Section 4.3 the Transportation Technical Report (see FEIS, Volume II, Appendix C) It has been extended to show the net change in truck trips to the state highway network, including Interstate 5, Interstate 90, and SR 99. Analysis has also been added in Section 5.1 of the Transportation Technical Report to show the percentage of total traffic at key locations on the network.

**1-109-2**

The air quality analysis and human risk characterization reported in the DEIS air quality technical report assessed the emissions from the proposed Terminal 5 activities and did not identify any violations of the national ambient air quality standards or a significant change in human health risk from the Project itself. Furthermore, both action alternatives have lower diesel particulate matter emissions in 2020, 2030, and 2040 when compared to the No Action Alternative in 2020 (see FEIS, Volume II, Appendix A).

**1-109-3**

The Port planned and designed the proposed Project to serve anticipated increased marine cargo growth in the next 20 years, including approximately 4 to 5 percent compounded annual growth. The investment necessary to rehabilitate Terminal 5 to accommodate increased marine cargo volumes, transported by increased capacity vessels, will be offset by long-term lease revenue from the rehabilitated and improved site. Additional financial benefits from the Project will include increased direct and indirect tax revenue, including property/leasehold, business and occupation taxes, and sales and use taxes, resulting from the revenue generated by increased cargo volumes. Additional benefits will result from continuing direct and indirect industry employment linked with growth in marine cargo volumes.

The financial goals of the proposed Project include balancing investment in efficient Terminal 5 infrastructure and the resulting economic benefits to the region with the need to meet the needs of existing and anticipated marine cargo shipping. The proposed Project includes marine cargo infrastructure changes consistent with changes in the container cargo transshipment industry. The physical infrastructure project goals complement long-term NWSA and Port investment and financial goals.

**1-109-4**

Please see Standard Response No. 10: Responsibility for Permit Compliance at the beginning of Chapter 6 for additional information on how the Port proposes to use agreements with a selected marine terminal operator to ensure comprehensive compliance with city, state, federal, and Treaty tribe conditional approvals.

**1-109-5**

Please see Standard Response No. 6: Nighttime Noise at the beginning of Chapter 6 for additional information on the Operational Noise Management Plan framework.

**1-109-6**

The environmental studies that support the environmental review of the Project and its alternatives for both operations and construction consider the environmental elements of traffic, noise, water quality, air quality (see FEIS, Volume II, Appendices) as well as other elements. From these analyses, steps to avoid, minimize or mitigate impacts were identified. These steps are summarized in Table 1.3-1 in Chapter 1, Volume 1 of the FEIS. The proposed Standard Responses below include measures that are intended to address concerns of residents and businesses located in the vicinity of Terminal 5:

Please see Standard Response No. 5: Train Horn Noise at the beginning of Chapter 6 for additional information on addressing annoyance noise and “Quiet Zones”.

Please see Standard Response No. 6: Nighttime Noise at the beginning of Chapter 6 for additional information on the Operational Noise Management Plan framework.

Please see Standard Response No. 7: Low Frequency Noise at the beginning of Chapter 6 for additional information on how this noise will be addressed in the Operational Noise Management Plan. The Port understands that there are concerns with potential noise impacts from both construction and operations. In response, the Port provided additional analysis in the EIS including a low frequency noise analysis of hoteling vessels. Information on the analysis is included in Volume II, Appendix B. The Port has also provided a framework for an Operational Noise Management Plan (see FEIS, Volume II, Appendix M) which will be fully completed after a tenant is selected.

Please see Standard Response No. 9: Compliance Noise Monitoring at the beginning of Chapter 6 for additional information on how ambient-sensing, broadband backup alarms will be required on all mobile cargo handling equipment for the proposed Project.

May 25, 2016

Mr. Paul Meyer  
Environmental Permitting and Compliance  
Port of Seattle, Pier 69  
PO Box 1209  
Seattle, WA 98111-1209

Dear Mr. Meyer,

**On behalf of the members of the Washington Council on International Trade (WCIT), I am pleased to submit a comment on the Draft Environmental Impact Statement (DEIS) for the Port of Seattle's Terminal 5 improvement project, expressing enthusiastic support for proposed Alternative 3.**

We are thrilled to learn that modernization can bolster Washington's global competitiveness while incorporating responsible environmental mitigations. Our members rely on the Port of Seattle as a gateway to global trade. In January alone, the Northwest Seaport Alliance handled over 250,000 twenty-foot equivalent units (TEU) moving in and out of the Pacific Northwest. Because 40% of Washington jobs are connected to trade, it is vital that investments are made in the Port's competitiveness.

An improved Terminal 5 offers the opportunity to expand both local revenue and job creation – the Port estimates that Terminal 5 capacity could reach 1.7 million TEUs by 2040. As is, Terminal 5 cannot support rapidly-growing vessels that are re-defining how the world trades. Because our state heavily depends upon trade for economic success, it is imperative the Port prioritizes forward-looking infrastructure.

WCIT enthusiastically supports the DEIS' Alternative 3, prioritizing cargo wharf rehabilitation, deepening of vessel berth, increased cargo handling, and upland improvements. If you have additional questions, please do not hesitate to contact me at [erics@wcit.org](mailto:erics@wcit.org) or 206.389.7273.

Yours,



Eric Schinfeld  
President  
Washington Council on International Trade

O-001-001

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**O-001-001**

Comment acknowledged.

-----Original Message-----

From: EnviroLytical - Port of Seattle Terminal 5 Improvements [<mailto:info@envirolytical.com>]

Sent: Tuesday, June 07, 2016 9:22 AM

To: [Shultz.M@portseattle.org](mailto:Shultz.M@portseattle.org); Pam Xander; [Meyer.P@portseattle.org](mailto:Meyer.P@portseattle.org)

Subject: New Communication: The International Union of Operating Engineers, Local 302 represents approximately 10,000 working men and women in both Alaska and Washington. We are in full support of the Terminal 5 project for the

Josh Swanson <[jswanson@iuoe302.org](mailto:jswanson@iuoe302.org)>

<https://el2.envirolytical.com/communication/view/214112>

The International Union of Operating Engineers, Local 302 represents approximately 10,000 working men and women in both Alaska and Washington. We are in full support of the Terminal 5 project for the following reasons:

1. It retains and ensures that the Port of Seattle remains a fully functional and operational port for the mobility of freight and goods necessary for expeditious delivery to the marketplace.
2. Provides hundreds of family-wage construction jobs and thousands of ancillary jobs.
3. It ensures for the necessary and responsible environmental protections.

**O-002-001**

We appreciate your consideration and encourage this project to move forward without any unnecessary delays.

---

**O-002-001**

Comment acknowledged.

**From:** [Patricia Davis](#)  
**To:** [Thomas, Brenda](#); "[Craig Kenworthy](#)"; [nathan.torgelson@seattle.gov](mailto:nathan.torgelson@seattle.gov); "[Suder, Jerry](#)"; "[Perkowski, Ben](#)"; [Meyer, Paul](#); "[PRC](#)"; "[Kathy Strange](#)"  
**Cc:** "[Fred Felleman](#)"  
**Subject:** PUBLIC COMMENT/ inquiry Terminal 5 Project #  
**Date:** Tuesday, June 14, 2016 4:38:37 PM  
**Attachments:** [image002.png](#)

thank you Ms.Thomas

Mr. Meyer Please supply us with detailed **dispersion DATA** (eg: the base figures/data used for the DEIS) which will specify streets and air flow of air pollution? We are interested in complex data here: not just a wind flow chart and a disbursement summary, and Appendix A. We want the background data. We are looking at Figures the size of 1" ! We need greatly detailed and expanded data with streets shown and pollution levels specified

O-003-001

Also it is strongly suggested that the Tables should (restate) the acceptable levels of the various toxins in addition to data stated. Unhealthy levels are stated, but not included in the tables. It is more convenient for the reader to see the reference of levels as they pertain to EPA/standards of acceptability.

O-003-002

**We have complained that Dispersion Model data from Beacon Hill and 10th and Weller is not applicable to our neighborhoods here WEST and uphill topographically from Terminal 5.**

O-003-003

\*\*\*\*\*We have grave concern that the data bases of Beacon Hill and 10th and Weller are severe confounds to the validity and reliability of the DEIS itself  
 \*\*\*\*\*

I, personally, live within approx 1,500 feet (uphill) of Terminal 5 . The Appendix shows 98116 as impacted via visits to the hospital and mortality.....and yet graphically we are at a loss to 'see' the movement and levels of the air pollution. Our community is being asked to review a very complex DEIS and those Tables and Figures (7) should be shown in much more detail (with street names and specific air toxins identified.....as well as specific levels) Also each table and figure should include an 'easy reference' guide to when those levels reach harmful levels (low, medium, high at a minimum)

There is also use of data from California. Where is the data from Washington? From a research standpoint is that a confounding variable?

O-003-004

This DEIS appears to be severely confounded with data bases that are not specific and applicable to the community directly above, and very close to T-5: North Admiral an East Admiral districts. That is a severe confound.

O-003-005

cc: Craig Kenworthy, Director, PSCAA and Kathy Strange, PSCAA  
 Nathan Torgelson, Director, DPD  
 Mr. Suder and Mr. Perkowski, DPD  
 Fred Felleman, Port Comissioner

**O-003-001**

The concentrations are appropriately presented graphically using air pollutant concentration contour lines. The Air Quality technical report has been updated to include additional pollution contours within the figures (see FEIS, Volume II, Appendix A). These additional contours provide a graphical indication of how pollutant concentrations change over space based. The color ramp in the corner of the graphics indicate the level of pollutant concentration at any given point on the map. These results are based on the best available estimates of emissions, 5 years of hourly meteorological data, and the most recent version of the EPA's dispersion model.

**O-003-002**

The tables of model results compare the model-predicted concentrations of each pollutant to their respective national ambient air quality standards (NAAQS). The NAAQS is designed to be protective of human health and provides clear thresholds. Unlike the NAAQS, no comparable thresholds are defined for human risk characterization. Instead, direct estimates of incidence for health end-points are provided.

**O-003-003**

Please see Standard Response No. 1: Selection of Air Quality Monitoring Sites and Data at the beginning of Chapter 6 for additional information on container-handling equipment and desire for air monitoring and background concentrations.

Please see response to comment O-003-001 for a description of how contour levels within the DEIS figures have been improved. Regarding an "easy reference guide," there are no clear thresholds associated with the health end-points assessed. Estimates of incidences were provided.

**O-003-004**

The modeling effort used local meteorological conditions and background air quality. Emission data for vessels, shorepower, cargo-handling equipment, and trucks, as appropriate, came from California-based sources, which are the best available and are applicable throughout the United States.

**O-003-005**

The data used for the air quality analysis used the most recent and representative background concentrations available. However, to remain more conservative, the PM<sub>2.5</sub> background concentrations reported in the FEIS use older background values monitored in the Duwamish along East Marginal Way. For additional information on the background air monitoring data selection, please see Standard Response No. 1: Selection of Air Quality Monitoring Sites and Data at the beginning of Chapter 6.

An improved discussion of the use of meteorological data by the dispersion model has been incorporated into the FEIS technical report (please see section 3.2.17).

**From:** [Patricia Davis](#)  
**To:** [Thomas, Brenda](#); ["Craig Kenworthy"](#); ["Kathy Strange"](#); [Meyer, Paul](#)  
**Cc:** ["Fred Felleman"](#); [Port Sepa](#)  
**Subject:** DATA REQUEST and comment/changes needed  
**Date:** Tuesday, June 14, 2016 8:55:02 PM  
**Attachments:** [image002.png](#)

public comment to [sepa.p@portseattle.org](mailto:sepa.p@portseattle.org) as well as a specific REQUEST FOR DATA BASE AND DATA FLOW from PSCAA and the Port. (see addresses above)

REGARDING TERMINAL 5 DEIS

Please read the email below to Mr. Meyers et al:

to clarify (which I was covered in an earlier email) we are looking for more specific date, more of a 'close up' of streets and data with regard to **7. SELECTED FIGURES** what a 'useless' identifier that includes Figure 1. AERMOD Modeling **DOMAIN AND RECEPTOR LOCATIONS** on page 49 in the Air Quality Technical Report section

We want to know (specifically):

- 1) AERMOD - which uses meteorological data - commonly measures PM2.5, NO2 and NO%, and SO2
- 2) Which method was used? 1 or 2?
- 3) What length of **time** was the data compiled? (1 hour? or?)
- 4) **What year** was the data acquired/compiled (apparently multi-year data collection is more challenging with that model? This should show visually as well (identifier on the page)
- 5) and very IMPORTANT to our community: we need all graphs, tables and visuals to be data specific and 'close up' so we can see our neighborhood streets and pollution measurements in our homes.

A. Specify all air toxins were measured with regard to Figure 1 ? specifically

B. SHOW - graphically -via a map format where the air toxins are (street names) - specifically and their levels - individually. For example: how much/what levels - specifically - PM2.5 is in the **2300 Block of Walnut** (where we live) What are the levels of other air pollutants at that location? Specify what is being measured, what the levels are, and where those levels can be found - SPECIFICALLY. **Significantly ENLARGE T-5 AND North and East portions of West Seattle** (currently about one inch in size) to show street names. WE NEED CLOSE UP MAPS WITH DATA AND WITH THE DATA DEFINED, MEASURED AND REFERENCES TO EPA STANDARDS and/or City of Seattle standards/PSCAA goals/data.

C. For the EIS it would be helpful if colors were used to 'show' air toxins and also a *repeated* 'reference guide' depicting what levels are consider harmful (along with what the 'real' levels

O-004-001

O-004-002

O-004-003

O-004-004



are...and *where they are*)

O-004-04 (cont.)

Given the Port of Seattle has asked for public input: scoping and DEIS - it is essential that the material be more 'user friendly' for our residents (who have a right to know what they are breathing and how close it is to their homes.....and what the specific levels are.....and what levels can harm them. STREET NAMES AND CLOSE UP VIEWS OF AIR QUALITY IMPACTS ON EVERY DIAGRAM, FIGURE AND GRAPHIC.

O-004-005

Effective and more abundant use of graphs, maps and data tie in with street names (above) That is *essential*.

We also should be provided with contact information with professional who can answer technical questions (which I am finding is hard to do) especially given that our community was not offered any 'technical' meeting time.

We also want 'charts' and 'displays' around a meeting room with the public to provide **MUCH MORE** 'impact' displays (air quality , noise) as compared to most if being project related. The public should be shown maps and graphs of air pollution overlay in our neighborhoods and clear, layman's level explanation of air toxins. Name them on the room display 'charts'. Let people know - in the display - how those air toxins impact health. Show a GIANT MAP AND OVERHEAD (while the presentation takes place) of DATA with regard to air toxins and excessive noise.

More will be written later, and prior to the comment period.

Patricia Davis

2313 Walnut Ave SW, Seattle, WA 98116 (North Admiral.....approx. 1,500 FEET from T-5 !

**O-004-001**

Figure 1 in the air quality technical report (DEIS, Volume II, Appendix A) was designed to demonstrate the breadth and density of the air quality model's receptors. For each of these receptors, the model predicts an air concentration for each pollutant assessed and for every hour of the 5-year meteorological data set. This figure serves to demonstrate how the model receptors were configured for the Terminal 5 analysis.

We are not clear about the intent of question 2. AERMOD can assess numerous pollutants, using a number of methods. The model assessed each hour of a 5-year period (2010-2014) at every receptor.

For question 5, please see the response to O-003-001.

**O-004-002**

See FEIS, Volume II, Appendix A for the analysis of air toxins.

**O-004-003**

Please see the response to comment I-003-001 for a description of the contours (including PM<sub>2.5</sub>) presented in the air quality figures. Maximum modeled concentrations of each pollutant are compared with EPA standards established to protect public health in the results tables found in the DEIS narrative and the air quality technical report (see DEIS, Volume II, Appendix A).

**O-004-004**

The colors of the contours presented in the results correspond with different modeled concentrations. Because none of the pollutants violated the national ambient air quality standards, there are no contours that exceed these levels.

**O-004-005**

Please see comment O-003-001 for a response to the request for figure updates.

From: Patricia Davis [mailto:tapestry4@gmail.com]  
 Sent: Tuesday, June 21, 2016 11:04 AM  
 To: Port Sepa; 'PRC'; nathan.torgelson@seattle.gov; Meyer, Paul; 'Craig Kenworthy'; 'Fred Felleman'; 'Ryan Dicks'; 'Kathy Strange'; 'Suder, Jerry'; 'Perkowski, Ben'  
 Cc: editor@westseattleblog.com  
 Subject: REQUEST FOR NEW DEIS - Terminal 5 due to data flaws of substance

RE: Draft EIS for Terminal 5 Project # 3019071 - PUBLIC COMMENT AND REQUEST FOR NEW DEIS

TO: SEPA.p@portseattle.org and Mr. Meyers, Port of Seattle and Fred Felleman, Port of Seattle Craig Kenworthy, Director of PSCAA and Kathy Strange, PSCAA  
 Nathan Torgelson, Director of DPD, DPD public records file, and Jerry Suder and Ben Perkowski, DPD West Seattle blog

Due to 1) inadequate data and 2) substantial confounds to data and interpretation due to a) non-representative wind data (Windrose is obstructed by Beacon Hill to get true E wind data. There are many more east winds at my home: 2313 Walnut Ave SW (almost daily at some point in 24 hrs) Lack of real data on b) the impact of Elliott Bay on 'lifting' hot air into the communities above) There are very serious data confounds that negate the validity and reliability of the DEIS. We are requesting it be redone. Our community is in harms way and we deserve accurate and representative data for N and E Admiral. People die from what T-5 'does' ...please get representative data for the protection of our health.

**O-005-001**

There are very serious data issues with the DEIS with regard to N and E Admiral. Specifically if you look at Figure 2. Wind rose station located at 4401 E Marginal Way - that wind data which shows literally NO EAST WIND. I talked with Kathy strange at PSCAA for an hour 6/15/16 and she said that the width represents speed, and the length is the frequency of occurrence. When you look at the page and see the circle is shows where the wind is FROM. (eg: lots of wind from the south (the largest visual)

**O-005-002**

Problem (and a serious one) is that winds from the East are shown as literally non-existent. I have multiple wind flags in my yard and there are very frequent east winds (including at night, per weather reports) per those flags.

Additionally, there are other weather/wind sources: www.wunderground.com and www.weather.gov

THE DATA PROBLEM IS MULTI-FACTED AND SERIOUS!

1) Windrose is located where the hillside to the east (Beacon Hill) would obstruct the wind (and give that literally non-existent east wind data). inadequate data relative to N and E Admiral (closest proximity) due to LOCATION of wind data. It fails to capture the wind patterns for N and E Admiral - therefore we do not have a 'representative sample' which is core to research and data.

**O-005-003**

2) Air quality data was used from locations at Beacon Hill an 10th and Weller - neither of which represent the air flow patterns that N and E Admiral experience. Again: DATA IS NOT REPRESENTATIVE - NOR APPLICABLE - TO THE COMMUNITY THAT IS CLOSEST GEOGRAPHICALLY TO T-5 (North and East Admiral)

O-005-004

3) The profound and complex impact of ELLIOTT BAY IMPACTING AIR FLOW/AIR POLLUTION MOVEMENT. T-5 air pollution is 'hot' (from equipment, ships, rail engines) and everyone knows hot air goes upward. The cooling impact of Elliott Bay and an eastward wind , or southeast wind (for Admiral) Northeast for E. Admiral(and we have many eastward winds based on the wind flags - I have had placed daily for years in multiple positions front and rear yard) then T-5 air pollution comes right up into our perimeter neighborhoods. Data from Beacon Hill and 10th and Weller used in this DEIS is therefore INADEQUATE DATA (true data, not modeling) because no first hand data exists for North or East Admiral.

O-005-005

We view the DEIS - NON -REPRESENTATIVE AND INADEQUATE - and are requesting that the DEIS be re-done and resubmitted to our community. There are grave health issues with Terminal 5 activities and North and East Admiral real data is missing, Windrose data is insufficient and non-representative, and therefore the representations in the DEIS are contaminated and confounded. We need real data on wind flow especially - taken over a long period of time (months) in various location. Given T-5 is 'vacant' we lack the opportunity to have hard, real data of 'what goes on down there' and what air toxins REALLY get into our homes and breathing air.

O-005-006

We know PM2.5 is a high risk factor, among others.

WE DO NOT ACCEPT THE DEIS AND DO NOT WANT A FINAL EIS AS THE NEXT STEP. WE WANT THE DEIS DONE AGAIN TO REPRESENT THE IMPACTED COMMUNITIES THAT WERE LEFT OUT AND MISREPRESENTED.

PLEASE RE-DO THE DRAFT EIS to include 98116  
Sincerely,

Patricia Davis,  
2313 Walnut Avenue SW,  
Seattle, WA (North Admiral - approx 1500 feet away from T-5)

[www.terminal5group.com](http://www.terminal5group.com)

**O-005-001**

The air quality analysis used the most rigorous data available. Of note, the dispersion model takes into account the ambient air temperature, temperature of emissions from each source, and the topography of the surrounding region when calculating concentrations. Five years of hourly wind data was taken from the nearest, reliable, quality assured source: from the meteorological tower located on East Marginal Way (collocated with the air monitor). Each of these hourly winds was used to estimate the dispersion of the Terminal's emissions at all receptors.

**O-005-002**

Comment acknowledged. Please see the response to O-005-001 for additional detail on the meteorological data used for the analysis.

**O-005-003**

Comment acknowledged. Please see the response to O-005-001 for additional detail on the meteorological data used for the analysis.

**O-005-004**

Please see Standard Response No. 1: Selection of Air Quality Monitoring Sites and Data at the beginning of Chapter 6 for additional information on container-handling equipment and desire for air monitoring.

**O-005-005**

Please see the response to comment O-005-001 for meteorological considerations.

Please see Standard Response No. 1: Selection of Air Quality Monitoring Sites and Data at the beginning of Chapter 6 for additional information on container-handling equipment and desire for air monitoring and details on background concentrations.

**O-005-006**

Comment acknowledged. The FEIS responds to questions received during the public comment period. As a result, additional air, noise and traffic analysis are provided and clarification is provided to questions that may not have been clear in the DEIS. The Port is confident that the FEIS provides the technical analysis needed to assess potential impacts and provide for mitigation for those impacts as appropriate.

From: Patricia Davis [mailto:tapestry4@gmail.com]

Sent: Thursday, June 23, 2016 10:36 AM

To: 'Craig Kenworthy'; 'Kathy Strange'; nathan.torgelson@seattle.gov; Port Sepa; 'PRC'; 'Ryan Dicks'; 'Fred Felleman'; Meyer, Paul

Subject: TERMINAL 5 PUBLIC COMMENT

TERMINAL 5 PUBLIC COMMENT: Project # 3019071

Mr. Kenworthy, Mr.Torgelson, Mr. Dicks, Mr. Felleman, Ms. Strange, Mr. Meyer, SEPA, PRC I have captured SE wind below (just now taking place)

That can provide a rough data check: check your windrose station for that exact moment of time and see if it registered this higher speed SE wind? Data verification Windrose versus [www.weather.gov](http://www.weather.gov)

Also there are 2 - 3 sites here in North Admiral (which often vary in wind direction and speed) via [www.wunderground.com](http://www.wunderground.com)

Admiral, North Admiral and Admiral (Two Dogs Observatory) You can go further into the program by selecting all these locations and gets more data and their geographical location.

We get more air flow from T-5 up here then the DEIS shows.

I have 'wind flags' in my driveway here (2313 Walnut Ave SW) one which has been placed - for years - to move with East and West winds.....and the other for North and South. I frequently observe east winds here.

The DEIS has data that is not representative for North Admiral (up the hill) and perhaps not for East Admiral as well. But certainly I know the wind in my neighborhood.

The DEIS for Terminal 5 is one problem (non representative data) but one value from the DEIS is it shows what we have been complaining about for quite some time: NORTH ADMIRAL exposure to air toxins (from Harbor Island (multiple and numerous air toxins - 24/7); Nucor Steel, and Terminal 5 that there is no 'real' data for. Again (per our community petition: [www.terminal5group.com](http://www.terminal5group.com) WE HAVE MASSIVE HEAVY INDUSTRIAL NEXT TO HIGH DENSITY RESIDENTIAL ! We need to have

24/7 monitoring and accurate data. Not models, not information from California, not Beacon Hill, not 10th and Weller.....OUR DATA. Tens of THOUSANDS of people. children, elderly, schools, playgrounds (multiple) Please protect us !

O-006-001

patricia davis

2313 Walnut Avenue SW

Seattle, WA 98116

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**From:** Patricia Davis [<mailto:tapestry4@gmail.com>]

**Sent:** Thursday, June 23, 2016 10:23 AM

**To:** 'Patricia Davis'

**Subject:** 7-Day Forecast for Latitude 47.57°N and Longitude 122.41°W (Elev. 200 ft.)

<http://forecast.weather.gov/MapClick.php?lat=47.57754406820527&lon=-122.40005555282085>

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**O-006-001**

Comment acknowledged. Please see the response to O-005-001 for additional detail on the meteorological data used for the analysis.

From: Patricia Davis [mailto:tapestry4@gmail.com]

Sent: Monday, June 20, 2016 3:58 PM

To: 'Kathy Strange'; 'Craig Kenworthy'; 'Ryan Dicks'

Cc: 'sepa.p@portseattle.org'; 'PRC'

Subject: TERMINAL 5 - DATA BASE issues

RE: Terminal 5 DPD Project # 3019071 PUBLIC COMMENT HERewith

Hello Ms. Strange, Mr. Kenworthy and Mr. Dicks

Thank you Ms Strange for talking with me on a more technical level last week on the phone. That is greatly appreciated

O-007-001

I had requested to know the data collection address for the "Windrose Meteorological Station" per Figure 2. page 50 of the DEIS for Terminal 5.

Upon further investigation it is clear that site (although valuable in location, I am sure) does not capture the wind activity that west seattle experiences. That is for certain. I have checked online and local/nearby residents that gather wind data 24/7 at [www.wunderground.com](http://www.wunderground.com) . Two Dogs is one site that is near here, as well as Admiral.

There is much more wind, and high velocity than has been captured by the 4401 E. Marginal Way "Duwamish Station".

why does that matter?

I keep stressing that DATA for our high density residential neighborhood is not at hand.

Any research must be valid and reliable. The data source (as you know) is a critical variable to the entire outcome.

Again: Data from Beacon Hill does not represent the Northern and Eastern portions of West Seattle. Why? Wind flow is not the same, it is not as close to Elliott Bay: the water and temperature difference create significant impact on air movement and raises serious confounds in application of base data.



**O-007-001**  
**(cont.)**

Again: 10th and Weller has the same problem: the data is not direct for our community and there are numerous confounds with that location being applicable to north and eastern portions of west seattle.

Again: Given the thousands and thousands of people that will be breathing Terminal 5 air pollution (uphill from it) we need to have specific data for our air. The EIS is severely confounded in that regard: the data supplies inference, but the application to an unmeasured, no real data base is alarming. Given the significant health risks shows in the Appendix via modeling.....it certainly supports our request for 24/7 data collection as it pertains specifically to our community.

As PSCAA comments on the DEIS please keep in the front of your mind that we are the closest neighborhood. Not Beacon Hill and not South Park. We, at N. and E portions of West Seattle are most impacted. We need data, not inference.

Again I personally live within 1,500 feet (approx) of Terminal 5 - uphill and upwind...and yes, we get much more E. winds than Windrose is showing based on my personal experience as well as data from Wunderground.

We continue to increase in signatures of residents asking that PSCAA get monitoring on site at T-5 as well as within impacted community(s).

Thank you Patricia Davis

2313 Walnut Avenue SW Seattle, WA 98116

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**O-007-001**

See the general response to comment O-005-1 for responses to your concerns about the meteorological data. The site used for the analysis is located at 4700 East Marginal Way and is owned and operated by the Puget Sound Clean Air Agency.

Please see Standard Response No. 1: Selection of Air Quality Monitoring Sites and Data at the beginning of Chapter 6 for additional information on container-handling equipment and desire for air monitoring.

Please see Standard Response No. 2: Post-Operation Air Quality Monitoring at the beginning of Chapter 6 for additional information on post-operation monitoring.

**From:** Patricia Davis [<mailto:tapestry4@gmail.com>]

**Sent:** Monday, June 20, 2016 16:22

**To:** 'Kathy Strange'; 'Craig Kenworthy'; 'Ryan Dicks'

**Cc:** Port Sepa; 'PRC'

**Subject:** FW: TERMINAL 5 - DATA BASE issues

RE: TERMINAL 5 Project # 3019071 PUBLIC COMMENT - concerns with data base viability (inference and modeling versus true data) Given statistically people **will have health problems from T-5 from zip code 98116 - we need real data. Hard data and wind data that represents what take place here for North and E Admiral because eastern wind, along with temperature differences between Elliott Bay (cool) and air pollution (hot engines) naturally goes upward. Add to that: the hillside 'stops/obstructs/impacts' air movement - that is a significant and TERRITORIALY UNIQUE (as compared to data from Beacon Hill and 10th which is not direct data**

O-008-001

**....nor are those areas as close to Elliott Bay which has significant impact on air flow) Again: data confounds and people's future health at risk.**

Hello Ms. Strange, Mr. Kenworthy and Mr. Dicks

I just checked [www.weather.gov](http://www.weather.gov) (for my zip code: 98116 ) which I do almost daily. It predicts 10 pmNEAST wind for Tues. We have much more eastern wind flow that Windrose captures. I

experience it.....I read it online.

Why does that matter? Because it 'shows' we get T-5 impact more than the DEIS captured. That is a huge data confound.

thank you  
patricia davis

**O-008-001**

See the response to comment O-005-001 for meteorological considerations.

Please see Standard Response No. 1: Selection of Air Quality Monitoring Sites and Data at the beginning of Chapter 6 for additional information and section 3.2.1.7 for additional detail on the use of the meteorological data by the dispersion model.

-----Original Message-----

From: Patricia Davis [<mailto:tapestry4@gmail.com>]

Sent: Friday, June 24, 2016 10:36 PM

To: Bacon, Connie

Cc: Port Sepa; Meyer, Paul; 'Fred Felleman'

Subject: FW: Terminal 5 located under and near high density residential

Ms. Bacon, NW Seaport Alliance

My understanding is that you are with the NW Seaport Alliance. There are a number of us in West Seattle that have grave concerns about Terminal 5 due to it being right below our high density residential neighborhoods (this neighborhood was settled at the turn of the century - long before Terminal 5 below us in the mid-late 1990's)

We are concerned with many aspects of the DEIS for Terminal 5. The locations of the air quality data were Beacon Hill and 10th and Weller and neither of those 'captures' the air pollution that we receive here in North Admiral (northern tip of West Seattle - above Harbor Avenue) and also neighborhoods in the East Admiral area (east of here) Both North and East Admiral are located at higher elevations than Terminal 5. (North Admiral being approximately 300 feet in height) There actually is no data for our area in 'real time' (modeling has been used in the DEIS using the above mentioned locations which absolutely do not represent our wind flow and topography. Beacon Hill is east - by some distance from Terminal 5. 10th and Weller - also conveying data for what we experience here. We believe the data confounds and that the data is not representative/inclusive of our neighborhood to be alarming and potentially negating the conclusions stated.

O-009-001

Our home is approx. 1500 feet from Terminal 5

We are very concerned with the diesel (ships, tugs, rail being unregulated and 'exempt' gives us no relief) as well as 24/7 operations, and in particular we do not find the DEIS to have adequately represented our communities of North and East Admiral.

O-009-002

Topographically we are 'up the hill' from Terminal 5. Additionally, Elliott Bay is right below and the temperature difference - and topographically - give us a unique air flow in the Elliott Bay vicinity. As you likely know:  
the engines/equipment of a Port Terminal produce heat/pollution. Heat rises (the pollution into our neighborhood - the closest neighborhoods to T-5 and we have no direct data!) and Elliott Bay cool air further impacts the flow of the air pollution. Regretfully this was not addressed in the air quality portion of the DEIS.

O-009-  
002  
(cont.)

Additionally, the photos used inside the DEIS are also not representative.  
In fact, the photos used in Volume 1, Figures 3.9.1 through 3.9.11 cleverly OMIT OUR NEIGHBORHOODS IN THE PHOTOS! That is insulting to our intelligence, and misrepresentative to someone reading the DEIS who is not geographically familiar with the terrain.

O-009-  
003

If you could view the photos taken in the above attachment, it would be appreciated.

I am going to include a copy of this letter with SEPA.p public comment on the DEIS.

PLEASE ENSURE THAT ANY AND ALL PHOTOS FOR TERMINAL 5 PROJECT SHOW OUR HIGH DENSITY NEIGHBORHOOD.

The photos are deceitful and misleading.....and likely intentional in that regard.

Patricia Davis  
2313 Walnut Avenue SW  
Seattle, WA 98116





**O-009-001**

Please see the response to comment O-005-001 for meteorological considerations.

Please see Standard Response No. 1: Selection of Air Quality Monitoring Sites and Data at the beginning of Chapter 6 for additional information and section 3.2.1.7 for additional detail on the use of the meteorological data by the dispersion model.

**O-009-002**

Ships, tugs, and rail are regulated by federal and international entities such as the International Maritime Organization, EPA, and U.S. Coast Guard. A summary of air emission regulations governing maritime sources can be found in Appendix B of the Northwest Ports Clean Air Strategy 2013 Update available at <http://www.portseattle.org/Environmental/Air/Seaport-Air-Quality/Pages/default.aspx>.

The Terminal 5 analysis incorporated emission fluctuations due to regulatory changes and the results were used in the associated dispersion modeling. The emission and dispersion results are provided in the air quality analysis presented in the DEIS, FEIS, and air quality technical report (See FEIS, Volume II, Appendix A).

Please see response to comment O-005-001 for information on the modeling and meteorological concerns of the assessment.

**O-009-003**

The visual character of the Terminal 5 site is industrial with residences along the west periphery of the terminal site. The purpose of the photographs in the DEIS was to analyze existing viewpoints and how those viewpoints may change if the proposed Project is constructed. The photographs were not intended to provide an image of the site with surrounding land uses. The SEPA Rules provide specific direction on how to analyze viewpoints. The places listed in the ordinance were reviewed to determine view impacts of the proposed Project. Therefore, all of the photographs are taken from the vantage point of a public viewpoint, park, scenic route or view corridor. The City of Seattle SEPA Ordinance (SMC 25.05) protects public views of significant natural and human-made features: Mount Rainier, the Olympic and Cascade Mountains, the downtown skyline, and major bodies of water, including Puget Sound, Lake Washington, Lake Union, and the Ship Canal, from public places consisting of the specific viewpoints, parks, scenic routes, and view corridors listed in the ordinance.

Existing views over the Project site are generally from West Seattle, Harbor Island, and the Downtown Seattle area and include views of Puget Sound, Mount Rainier, and the Olympic and Cascade Mountains.

The Project site is in an existing industrial district characterized by arterial streets, bridge structures, and adjacent industrial businesses and residences.



-----Original Message-----

From: Patricia Davis [<mailto:tapestry4@gmail.com>]

Sent: Friday, June 24, 2016 10:17

To: Port Sepa; nathan.torgelson@seattle.gov; 'Kathy Strange'; 'PRC'

Cc: 'Fred Felleman'; 'Ryan Dicks'

Subject: FW: Terminal 5 located under and near high density residential

RE: TERMINAL 5 project # 3019071

PUBLIC COMMENT

O-010-001

the photos attached (taken by me, Patricia Davis last Fall 2015) show a more realistic view of how close our residences are to Terminal 5 and a vantage that can help the evaluator understand the topography/hillside - uphill flow of air pollution into our homes. There are five photos and they show North Admiral and East Admiral homes. The photos were taken from seashore level on Harbor Island.

Thank you for taking a moment to 'offset' the fact that the DEIS photos, in Volume 1, pages under Aesthetics/light and glare are not representative of the terrain, per se. the photos are taken (likely purposefully) to leave our high density neighborhoods out of the photos. Image 3.9-13 being a 'case in point' where our homes are completely missing from the photo as they show the ships and cranes.

Again: We have significant issue with clever 'bias' in the DEIS (including the choice of photos)

Patricia Davis  
2313 Walnut Avenue SW  
Seattle, WA 98116  
[www.terminal5group.com](http://www.terminal5group.com)





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**O-010-001**

Please see response to comment O-009-003 for information about the aesthetics and view analysis.

**From:** Jeff Landstrom [<mailto:jeffl@unitedmotorfreight.com>]  
**Sent:** Tuesday, June 28, 2016 15:25  
**To:** Shultz, Mick  
**Cc:** Port Sepa  
**Subject:** FW: Terminal 5 Draft EIS comments

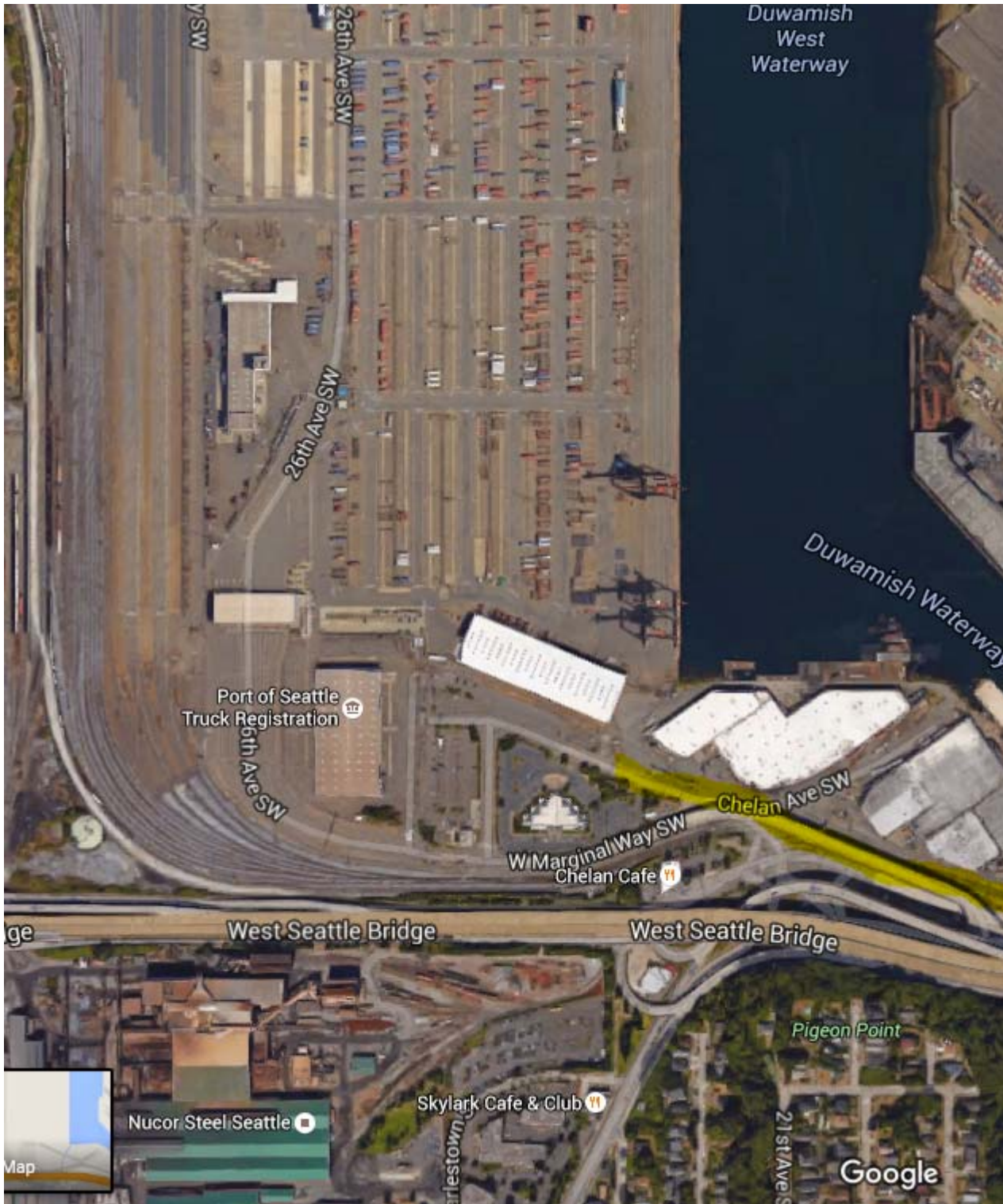
Hello Mick,

As discussed. You will need to keep the Haul road clear as well as keeping the striping(highlighted below in yellow). This must remain open to allow for emergency access | O-011-001

Train must be held back and not allowed to block all access points (red circles in below map) | O-011-002

Directional sign/reader board must state United Motor Freight and the missing one replaced. | O-011-003

Thank you



**O-011-001**

Additional mitigation is recommended in Section 6.2.3 of the Transportation Technical Report to address local business access needs, including at Terminal 7. The Port will work with SDOT staff and the Seattle Fire Department to reconfigure the Terminal 5 Access Bridge to provide two inbound (westbound) lanes, with one of the lanes being signed for Terminal 5 only and the other being striped and signed for “Right Turn Only” onto 26<sup>th</sup> Avenue SW in order to provide a bypass lane for local businesses. Also, if the surface route to Terminal 5 is closed, the Port will work with the Terminal 5 operator to allow trucks from adjacent warehouse and industrial businesses located north and east of the rail lines to enter the Terminal 5 queue line from 26<sup>th</sup> Avenue SW. In the past, these locally-generated trucks were required to exit the terminal via the surface route and re-enter the queue line via the Terminal 5 Access Bridge. Finally, as part of the establishment of the safety corridor between the T5 entrance and the west end of the railroad bridge, the Port will work with existing warehouse and industrial shipping businesses north and east of West Marginal Way Southwest and rail lines serving Terminal 5 and the West Seattle rail yard (also referred to as the “inter-bridge” industrial sites) to re-establish lane striping and No Parking signage to maintain the surface route that connects to West Marginal Way in the area south of the West Seattle Bridge abutments.

**O-011-002**

Interruptions to driveway access between Terminal 5 and the lift bridge will be intermittent. In Alternatives 2 and 3, the Terminal 5 grade-separated vehicle access bridge, providing alternative vehicle access service since 1999, will be made available for grade separated access to existing warehouse and industrial shipping businesses north and east of West Marginal Way Southwest and rail lines serving Terminal 5 and the West Seattle rail yard.

Due to the length of trains that could arrive and depart Terminal 5, it is likely that all of the surface crossings between the Duwamish River rail bridge and the Terminal 5 intermodal yard could be blocked at the same time. As noted in the prior comment response, the Port will work to restripe the Terminal 5 Access Bridge to provide two inbound lanes, one of which would be designated for right turns only to serve local businesses.

**O-011-003**

The Port will work with SDOT to prepare signage that is acceptable and allowed with the City land use regulations.

**From:** Pat Cohn [<mailto:pcohn@pacificterminals.com>]  
**Sent:** Wednesday, June 29, 2016 13:50  
**To:** Port Sepa  
**Subject:** EIS Comments- Pacific Terminals - Cohn, Pat

Please see my attached comments RE: Terminal 5 Cargo Wharf Rehabilitation, Berth Deepening and Improvements.

Thanks,  
 Pat Cohn  
 President- Pacific Terminals  
 3480 W Marginal Way SW  
 Seattle, WA 98106

Comments Re: Terminal 5 Berth Modernization Project;

The following are comments, concerns, and suggested remediation regarding the Terminal 5 Berth Modernization Project as it impacts the movement of freight in Seattle, especially the businesses adjacent to Terminal 5.

We request written response, from the Port of Seattle, to these comments, concerns and suggestions.

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>• Barge traffic at Pacific Terminals.           <ul style="list-style-type: none"> <li>○ The Terminal 5 Berth Modernization Project plans to rebuild portions of the Marine Cargo Pier and to dredge the berth area to a depth of 56' (approx. 20' additional depth).</li> <li>○ Mitigation measure: the contractor performing the pier rebuild coordinate with Pacific Terminals those instances when Pacific Terminals Berth 1 would be blocked by construction barges.</li> <li>○ It is understood that vessels docked on "rebuilt" Terminal 5 will not extend south of the 150' mark of the "rebuilt" Terminal 5.</li> <li>○ Dredging an additional 20' in depth, at Terminal 5, could remove the toe of the slope and possibly cause an issue at the north boundary of Pacific Terminals seawall. Has a geologic study been done to address this concern?</li> </ul> </li> </ul>  | <p>O-012-001</p> <p>O-012-002</p> <p>O-012-003</p> <p>O-012-004</p> |
| <ul style="list-style-type: none"> <li>• The Terminal 5 Berth Modernization Project calls for BLOCKING West Marginal Way SW, North of Spokane Street.           <ul style="list-style-type: none"> <li>○ Traffic for businesses now served by W. Marginal Way SW will be diverted to either:               <ul style="list-style-type: none"> <li>▪ An access road ("alternative access route") paralleling W. Marginal Way SW, intersecting with W. Marginal Way SW south of Terminal 7B.</li> <li>▪ The ramp connecting the Lower West Seattle bridge with the Terminal 5 main gate.</li> </ul> </li> <li>○ Plans call for the street closure to be delayed until Terminal 5 is operational- sometime on or after 2020. <b>This is a very important issue for the adjacent businesses.</b></li> <li>○ The Low West Seattle bridge is often a choke point- especially for morning traffic if commuters decided to use the low bridge instead of the high bridge and when the low bridge opens for marine traffic.</li> <li>○ A series of improvements to signals to and from the low bridge is expected to ease congestion.</li> <li>○ There is concern that signal improvements may encourage more commuter traffic to the Low Bridge.</li> </ul> </li> </ul> | <p>O-012-005</p>  |

O-012-005  
(cont.)

- The elimination of access to downtown from the closure of the viaduct will potentially add more traffic to the Lower Bridge as West Seattle residents attempt to access downtown locations via the Low Bridge.
- Any plan to dissuade commuter traffic from the Low Bridge would enhance freight mobility.
- The possibility of adding a third lane for local access to the connector ramp from the Lower Bridge to the Terminal 5 gate would lessen the impact of the street closure on business adjacent to Terminal 5.
- Adjacent businesses handle heavy and oversized/overweight loads as well as container transloads exceeding sixty (60) per day. The street closure will have an adverse impact on these operations.
- **Allowing adjacent businesses direct access to Terminal 5 would help negate some of the negative impacts from the street closure.**
- Use of the West access drive should be explored to serve impacted adjacent businesses.
- The Alternative Access route should exclude all traffic except trucks attempting to serve adjacent businesses and employees working at those locations.
- The Plan states that trucks will not be queued on the ramp into Terminal 5 due to a two-shift operation with two entry gates. This is very important to adjacent businesses as truckers coming from the other Seattle terminals will now be forced to use the Terminal 5 ramp. Wait times could be significant if there is a queue.



**O-012-001**

The Project is proposing to rebuild portions of the marine cargo pier and to dredge the berth area to a depth of -56 feet MLLW, including the south end of the berth.

**O-012-002**

Construction management will ensure that access to terminals in the vicinity will be provided during the construction process.

**O-012-003**

The south end of the existing Terminal 5 cargo wharf and the west end of barge and tug moorage operations at the existing privately-owned Terminal 7 facility, are adjacent in the southwest corner of the West Waterway. In past decades, cooperation between adjacent marine cargo operations has avoided and minimized potential berth conflicts. It is expected that similar moorage area coordination and cooperation will continue following rehabilitation of the Terminal 5 cargo wharf. Please consider moorage details below.

The existing Terminal 5 cargo wharf extends to the south end of the Terminal 5 property line. Four existing Terminal 5 heavy moorage bollards in position at the south end of the Terminal 5 dock determine the location of large cargo vessels moored at the Terminal 5 south berth, with bollards located approximately 80 feet, 120 feet, 190 feet, and 240 feet, measured from the south end of the dock. Also please note that container cranes cannot move south of the position of the second bollard, approximately 120 feet from the south end of the cargo wharf.

In past years vessels typically moored port-side against the wharf at the Terminal 5 south berth, with the stern of the vessel facing south. Vessel mooring lines require substantial scope, therefore, the stern of moored vessels making use of the southern-most three bollards, was, generally, approximately 125-150 feet north of the south end of the cargo wharf. The configuration of cargo storage spaces in contemporary vessels is variable, however, past experience indicates that container cranes serving vessels moored in the south berth would be positioned no less than approximately 175 feet from the south end of the Terminal 5 wharf.

It is expected that larger capacity vessels will require similar or greater moorage line scope. It is likely that a future marine terminal operation may moor larger vessels port or starboard side against the wharf. In either case, it is unlikely that the vessel end, bow or stern, would extend within 175 feet from the south end of the rehabilitated Terminal 5 wharf.

**O-012-004**

Technical engineering analyses included in project planning and design identified potential slope stability matters related to Terminal 5 berth dredging improvements. Current design plans include construction of a toe wall to stabilize the adjacent slope after dredging to the required depth. The slope design will maintain the current level of stability of the slope to protect adjacent navigational access and dock structures

**O-012-005**

The recommended mitigation for Terminal 5 has been revised so that the closure of the surface access to Terminal 5 and local businesses would not be closed until train volumes warrant (estimated to be 12 to 15 trains per week). Prior to that level, interim measures would be implemented to alert motorists if and when the crossing is blocked by a train, including reinstalling the former warning sign on West Marginal Way south of the terminals. Another measure could be converting West Marginal Way to one-way northbound. This would still allow traffic to enter the terminal and local businesses, but would improve operations of the five-legged intersection by eliminating a signal

phase and reducing train pre-emptions. See also response to Comment O-011-001 related to local access improvements that are recommended when the surface access route is closed to all traffic.

216833 07/07/2016

July 7, 2016  
 Paul Meyer  
 Environmental Services  
 Port of Seattle  
 P.O. Box 1209  
 Seattle, Washington 98111

RE: Public Comment on the T-5 Rehabilitation Plan DEIS

Dear Mr. Meyer,

Thank you for the opportunity to comment on the Terminal 5 Cargo Wharf Rehabilitation, Berth Deepening and Improvements Draft Environmental Impact Statement (DEIS).

We commend the Northwest Seaport Alliance (NWSA) on its efforts to achieve the Alliance's objectives, particularly as it relates to the Puget Sound gateway container cargo facilities. SSA Marine shares the NWSA's focus and determination to attract more marine cargo to the Pacific Northwest, which will create jobs, increase prosperity and strengthen the overall economy.

Operating at the front line of the country's most trade-dependent state, the Puget Sound's working waterfront community recognizes the NWSA's need to maximize its existing assets to induce economic growth in a competitive environment. NWSA must take action to attract discretionary cargo market share to the Puget Sound region and ensure that its assets are put to their highest use, and we applaud NWSA's foresight to undertake a major project study at Terminal 5 in pursuit of these goals

Rehabilitating Terminal 5 is a significant project that will require significant resources. We know the NWSA is committed to ensuring the port structure, terminal capacity balance and commercially competitive conditions that are commensurate with current and reasonably anticipated trade demands. Achieving sustainable container terminal utilization for NWSA facilities at a level that can support the significant investments in port and terminal infrastructure proposed by the NWSA is a vital goal.

Consistent with the principles established by the NWSA and based on our own experience operating container terminals in the Pacific Northwest and around the world for over 50 years, we offer the following comments in support of the NWSA's efforts:

- In order to clarify the NWSA's strategy and market timing of the proposed Project, the Final EIS should include a clearly articulated Purpose and Need section, along with supporting analysis of the proposed Project's economic and commercial rationale.
- The Final EIS should contain a broader Alternatives Analysis that considers alternatives other than construction only at T5. This should include alternative development plans to capture discretionary cargo market share by investing in one or more of the existing NWSA container terminals that already accommodate Ultra Large Container Ships (including Husky Terminal), which may achieve the NWSA's defined objectives and the Purpose and Need statement at a lower economic and environmental cost.

**O-013-001**

**O-013-002**

**O-013-003**

- The NWSA should review the economic impact of the proposed project on the region's other container terminals. Only by performing a rigorous analysis of the economic environment and the consequences of the project, as required by the SEPA guidelines, can the NWSA determine the best use of its time, money and effort to achieve its highest goal of fostering overall economic development in the Puget Sound region.

We look forward to continuing to partner with the NWSA to provide world class customer service to shipping customers in the Pacific Northwest. In particular, we are committed to working with the NWSA to expand the cargo base for import and export container movements, which will reduce the current oversupply of capacity at existing terminal facilities and create a commercially sustainable financial result for tenants at all NWSA terminal facilities.

Sincerely,

Bob Watters

Senior Vice President - Director Business Development

SSA Marine

cc: J. Wolfe

A. Steinberg

B. Mannelly

**O-013-001**

Please see response to comment I-056-001 for information on the goals and objectives for the Project.

**O-013-002**

Please see response to comment I-056-001 for information on the selection of Terminal 5 for rehabilitation.

**O-013-003**

An analysis of economic impacts in a SEPA EIS is not required under the SEPA guidelines. The language of the SEPA Rules in WAC 197-11-448 makes it clear that only impacts related to the environment stated in 197-11-444 are mandatory for analysis. Purely economic, socioeconomic and nonenvironmental impacts are not required for the EIS analysis. The Port decided not to include an economic or socioeconomic analysis.

**From:** Patricia Davis [<mailto:tapestry4@gmail.com>]  
**Sent:** Tuesday, July 05, 2016 14:17  
**To:** Port Sepa; Meyer, Paul; [nathan.torgelson@seattle.gov](mailto:nathan.torgelson@seattle.gov); 'Suder, Jerry'; 'Perkowski, Ben'; 'PRC'; [fred@fredforport.com](mailto:fred@fredforport.com); 'Ryan Dicks'  
**Cc:** 'Craig Kenworthy'; 'Kathy Strange'; [editor@westseattleblog.com](mailto:editor@westseattleblog.com)  
**Subject:** Unregulation engines - Terminal 5 DEIS public comment - Davis, Patricia 7 5 2016 at 14:17

PUBLIC COMMENT - SEPA , DPD, PSCAA  
Terminal 5 Project # 3019071

O-014-001

Another serious shortcoming of the DEIS for Terminal 5 is the reality that there are

NUMEROUS **UNREGULATED** ENGINES PRODUCING POLLUTION

In fact some of the most toxic air polluting variables are UNregulated engines such as

- 1) ships on the water
- 2) tugs
- 3) trains

The DEIS did not adequately address the impact of those entities and show mitigation potential.

Even with electric cranes, and shore power (which can be done with any "alternative" - and done soon via Port of Seattle Lease requirements: to do business with the Port ) there still remains UNregulated pollution sources of significance.

When high air polluting entities such as ships coming/going; tugs maneuvering ships, massive train smoke are UNREGULATED.....then there is a problem that is not addressed.

The EIS should look for solutions/mitigation on how to get those extremely toxic engines addressed.

The DEIS did not address UNregulated engines adequately and offer mitigation/solution

If we are supposed to endure more trains, tugs, ships.....where is the **SOLUTION TO THE NASTY POLLUTING UNREGULATED ENGINES ?**

**Those UNregulated engines have a profound impact on our breathing air. The DEIS does not mitigate that - let alone when we are high density residential breathing those toxins from port activity.**

Patricia Davis  
[www.terminal5group.com](http://www.terminal5group.com)

**O-014-001**

Ships, tugs, and rail are regulated by federal and international entities such as the International Maritime Organization, EPA, and U.S. Coast Guard. A summary of air emission regulations governing maritime sources can be found in Appendix B of the Northwest Ports Clean Air Strategy 2013 Update available at <http://www.portseattle.org/Environmental/Air/Seaport-Air-Quality/Pages/default.aspx>.

The Terminal 5 analysis incorporated emission fluctuations due to regulatory changes and the results were used in the associated dispersion modeling. The emission and dispersion results are provided in the air quality analysis presented in the DEIS, FEIS, and air quality technical report (See FEIS, Volume II, Appendix A).

**From:** West Seattle Transportation Coalition [<mailto:info@westseattletc.org>]

**Sent:** Thursday, July 07, 2016 15:16

**To:** Kuroiwa, Roy; Port Sepa

**Cc:** [Lisa.Herbold@seattle.gov](mailto:Lisa.Herbold@seattle.gov); [Scott.Kubly@seattle.gov](mailto:Scott.Kubly@seattle.gov); [Bill.LaBorde@seattle.gov](mailto:Bill.LaBorde@seattle.gov);  
[WestSeattleBlog@gmail.com](mailto:WestSeattleBlog@gmail.com); [westseattle@robinsonnews.com](mailto:westseattle@robinsonnews.com)

**Subject:** WSTC comments on the T 5 Draft Env Impact Statement - West Seattle Trans Coalition 7 7 2016

The West Seattle Transportation Coalition's comments regarding the Port Of Seattle Terminal 5 Draft Environmental Impact Statement are attached.

Respectfully submitted,

West Seattle Transportation Coalition Board



## WEST SEATTLE TRANSPORTATION COALITION

July 5, 2016

Port of Seattle  
Pier 66  
Seattle, WA 98104



Re: Comments on the Terminal 5 Draft Environmental Impact Statement

To Whom It May Concern:

The West Seattle Transportation Coalition (WSTC) is a peninsula-wide organization working to address transportation and mobility issues for Seattle's largest constituency – the nearly 100,000 people living on the 10 square miles of the West Seattle Peninsula. The WSTC focuses most on ingress-egress and mobility issues for the West Seattle Peninsula. The West Seattle Bridge Transportation Corridor (WSBTC), which crosses Terminal 5 (T5) and Harbor Island, is the city's busiest transportation artery. It carries nearly 118,000 vehicles a day (10,300 on the Spokane St Swing (low) Bridge, 107,300 on the High Bridge (SDOT 2014)).

The Terminal 5 upgrade is a significant project that will contribute jobs and commerce to Seattle's prosperity. It will also cause impacts in several areas. Most significant for peninsula residents are congestion and traffic management challenges that trucking and other carrier operations will create as they serve huge (12,000-18,000 TEU) container ships expected to call at T5. Related challenges include air pollution, light and noise pollution, lost efficiency and productivity caused by bridge- and railroad-related traffic delays, and others.

Comments presented here reflect WSTC suggestions for improvement, and concerns for inclusion in the DEIS. Our goal is to help create final T5 design and construction that works for all communities connected to T5 – the West Seattle Peninsula, Georgetown, and SODO.

### Traffic related issues:

#### 1. Traffic Report study:

- Expand scope beyond E. Marginal Way, to include the entire WSBTC and its surface and elevated roadways, from the east side of the West Seattle hill (approximately Harbor Ave) eastward to I-5.
- Focus on creating holistic improvements that benefit the entire corridor, including (a) additional or improved high Bridge access ramps to and from connecting roadways (SR-99, 1st Ave, 4th Ave, 6th Ave S/Airport Way), and (b) Spokane St surface street signalized intersections at 1<sup>st</sup>, 4<sup>th</sup> and 6<sup>th</sup> Avenues, and signalized intersections on Horton St at 1<sup>st</sup> and 4<sup>th</sup> Avenues.
- Discuss Airport Way intersections at Spokane St & Diagonal Way, with regard to existing and projected T-5 traffic through those intersections.

#### 2. East-West Flow Harbor Avenue SW to I-5:

- Interconnect signals at signalized intersections; use dynamic signal control; make left turn changes (restriction during peak traffic times); etc.

O-015-001

O-015-002

**WEST SEATTLE TRANSPORTATION COALITION** / *Comments on Port of Seattle DEIS***O-015-002**  
**(cont.)**

- Add messages to existing warning signage on Fauntleroy Way & Admiral Way, to alert West Seattle motorists when T-5 is fully active, so they can avoid the low bridge.
- If possible, limit hours of T5 operations and/or truck movements, to reduce Lower Spokane St congestion during peak AM and PM drive times.

**O-015-003****3. Traffic Concurrency needs to be disclosed**

Directors Rule 5 – 2009, Feb. 16, 2009 Attachment C provides data for the screen-lines. Screen-line analysis was not conducted (westbound direction on screen-line 3.11 West Seattle Bridge at Spokane Street is noted to have a 2008 v/c ratio of 1.15 with the City limit set at 1.2.).

**O-015-004****4. Truck queuing:**

Good staging space exists on-site at T-5. At-grade street structure width near the gate measures approximately 36-feet. It could potentially be re-stripped west-bound to provide two lanes in lieu of one, or to provide more on-site storage, or a dedicated right turn at the base.

**O-015-005****5. Chelan Five-Way Intersection:**

- The T-5 Traffic Report mentions closing the north access at the intersection. A possibly better choice: create a right in/out at this existing access.
- West Marginal Way is an underutilized arterial that serves T-5 traffic to and from the Kent/Auburn Industrial area. With a right in/out, trucks coming from the south can turn right into T5. During a train event, they can turn left up the ramp to the Spokane Street Swing Bridge, and left again to ingress via the T-5 signal. Leaving the site to go south, trucks would egress via the ramp to the signal, then turn right and circle around to West Marginal Way.
- Revising the north access to T-5 from the intersection to right in/out could eliminate a signal phase and improve the operation of this intersection (e.g., S-bound traffic could cross with the Delridge phase, and then go E-bound with the West Marginal Way phase; and E-bound/W-bound could potentially operate concurrently (contained in "27 Point Memo," p.3)
- Improve signal coordination so a train running on T5, parallel to Marginal-Spokane, doesn't trip all signals to "stop" for the five lanes of traffic entering the intersection (contained in "27 Point Memo," p.3)
- A queuing analysis is required for potential queue storage deficiencies along Spokane St., between the Chelan 5-way intersection and the east T-5 access.
- Work with SDOT, and with local stakeholders – from Nucor Steel to Greyline, to upgrade and coordinate signal equipment and traffic flows, from SW Andover-Delridge Way SW through intersection to W Marginal Way.

**O-015-006****6. Infrastructure improvements:**

- Examine feasibility of adding a second north-bound lane to I-5, between the West Seattle Bridge and the I-90 exit
- Examine feasibility of adding a second exit lane to the I-90 off-ramp, to potentially reduce WS Bridge east-bound to I-5 north-bound traffic queuing

**WEST SEATTLE TRANSPORTATION COALITION** / *Comments on Port of Seattle DEIS*

- Fund and/or contribute to funding and constructing such infrastructure improvements as Lander St overpass, WSBTC signal upgrades, W Marginal Way-to-Alki Trail bicycle flyover, etc.

O-015-006  
(cont.)**Interagency cooperation:**

- Coordinate with Seattle Dept. of Transportation, to implement elements of the November 2015 (Rasmussen) \$600,000 Green Sheet (\$100K for corridor improvements & upgrades, \$500K for ITS signage), the Inter-Departmental Team's "27 Point Memo."
- Coordinate Port of Seattle Traffic Study with City of Seattle Freight Master Plan (FMP), to identify and incorporate recommendations. (DEIS Traffic Study Appendix C references only four of the FMP's six recommendations: East Marginal Way / S Hanford Street Intersection Improvements; S Hanford St & Main SIG Yard Access; Lower Spokane St Freight-Only Project; S Spokane St ITS Upgrades).

O-015-007

**WSTC also supports addressing these related issues:**

**Monitor Air Quality at Terminal 5:** The Port must monitor air quality at T5, where terminal operations will occur, and which is located adjacent to the WSBTC, where most of the peninsula's traffic congestion and air pollution output is generated.

O-015-008

**Environmental Accounting:** We suggest integrating a pricing protocol into planning and budgeting, that will account for costs of carbon footprint, and productivity and efficiency losses related to traffic congestion. This will help improve cost-benefit analyses, decision-making, design, planning and build-outs related to transportation.

O-015-009

The WSTC looks forward to seeing the Port of Seattle incorporate these suggestions into its EIS, and its planning, as it designs and builds out improvements to the Terminal 5 area.

In Community,

**West Seattle Transportation Coalition Board**

[info@westseattletc.org](mailto:info@westseattletc.org) / [www.westseattletc.org](http://www.westseattletc.org)

Cc: Seattle City Councilmember Lisa Herbold  
Scott Kubly, SDOT Director  
Bill LaBorde, SDOT  
West Seattle Blog  
West Seattle Herald

**O-015-001**

The geographic area of the traffic study was expanded. The truck trip distribution pattern and trip assignments in Section 4.3 the Transportation Technical Report (see FEIS, Volume II, Appendix C) It has been extended to show the net change in truck trips to the state highway network, including Interstate 5, Interstate 90, and SR 99. Analysis has also been added in Section 5.1 of the Transportation Technical Report to show the percentage of total traffic at key locations on the network.

The report also shows the location of import/export businesses in the Duwamish that may attract truck trips from the terminal. The analysis shows that the majority of the traffic would cross the Duwamish using the low-level Swing Bridge, and the proposed mitigation would focus on that corridor with improvements to the traffic signal system on the SW Spokane Street between Harbor Avenue SW and East Marginal Way S.

While some traffic could use Airport Way S to reach local import/export businesses, the net change in truck traffic that would reach Airport Way S is expected to be very small (fewer than 5 trucks per hour).

**O-015-002**

Improvements to the signal system on SW Spokane Street are recommended as a mitigation measure, and would include interconnection to the Swing Bridge, and if possible to key railroad crossings that affect signal phasing on the corridor.

As part of the Gate Queue Management Plan (see FEIS, Volume II, Appendix C), the terminal operator will be required to implement both infrastructure improvements and operational measures to prevent the queue from reaching SW Spokane Street. One of the tools is a Gate Wait Time Application that alerts truck drivers about queue conditions prior to arrival. If incidents do occur that create a queue, the terminal operator would notify SDOT and WSDOT so those entities can post warning on available dynamic message signs.

**O-015-003**

Transportation Concurrency Analysis has been added to the Transportation Technical Report (see FEIS, Volume II, Appendix C).

**O-015-004**

Additional mitigation has been recommended to address gate queue, including restriping the Terminal 5 Access Bridge to provide two inbound lanes, one of which would be dedicated for right-turns only to 26th Avenue SW to improve access for local businesses. It is noted that such a change would require approval from SDOT and the Seattle Fire Department.

**O-015-005**

Alternative mitigation has been evaluated for the five-way intersection, which includes many of the measures suggested in this comment. See responses to Comment C-002-048 and I-025-001.

**O-015-006**

Interstate 5 north of the Spokane Street Viaduct carries about 238,000 vehicles per day (per WSDOT count at milepost 163 in 2015). Alternative 2 for the proposed Project is expected to result in a new increase of fewer than 50 truck trips per day to that segment. Any improvements to that segment would be the responsibility of WSDOT, and there are currently no plans to expand the capacity of Interstate 5 at the Spokane Street Viaduct junction. WSDOT

does have plans, albeit currently unfunded, to add a northbound lane between Olive Way and SR 520 by upgrading the shoulder and allowing it to be used during peak periods, likely for transit and carpools only.

Two of the projects from the Seattle Freight Master Plan—upgrading the intersection at East Marginal Way/S Hanford Street and ITS improvements along S Spokane Street—are incorporated into the mitigation recommended for Terminal 5. The signal improvements recommended for SW Spokane Street as part of the mitigation package would include some ITS elements to coordinate signal operations with bridge openings and rail crossing, where possible.

**O-015-007**

The proposed mitigation for Terminal 5 does include elements from the Rasmussen recommendations, including upgrading signals along SW Spokane Street and gate queue management. Elements of the Rasmussen plan (formally referred to as the *West Seattle Bridge/Duwamish Waterway Corridor Whitepaper and Priority Investment List*) are presented in Section 2.1.5 of the Transportation Technical Report.

**O-015-008**

Please see Standard Response No. 2: Post-Operation Air Quality Monitoring at the beginning of Chapter 6 for additional information on post-operation monitoring.

**O-015-009**

The EIS evaluates environmental impacts and is used by agency decision makers in making final decisions on a proposal. Socioeconomic environmental accounting causes a great deal of uncertainty and does not have a uniform meaning and is not used in the state SEPA statutes [WAC 197-11-448 (2)]. This document focuses on assessing the environmental impacts from the Project and efforts were made to reduce, minimize or mitigate impacts to a level below significance.

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**From:** m j [<mailto:mjimi@msn.com>]  
**Sent:** Thursday, July 07, 2016 15:47  
**To:** West Seattle Transportation Coalition; Kuroiwa, Roy; Port Sepa  
**Cc:** [Lisa.Herbold@seattle.gov](mailto:Lisa.Herbold@seattle.gov); [Scott.Kubly@seattle.gov](mailto:Scott.Kubly@seattle.gov); [Bill.LaBorde@seattle.gov](mailto:Bill.LaBorde@seattle.gov);  
[WestSeattleBlog@gmail.com](mailto:WestSeattleBlog@gmail.com); [westseattle@robinsonnews.com](mailto:westseattle@robinsonnews.com)  
**Subject:** Re: WSTC comments on the Terminal 5 Draft Environmental Impact Statement - m a at [mjimi@msn.com](mailto:mjimi@msn.com) 7 7 2016

item #5 bullet 3 the discussion is for pedestrian/bicycle crossing

O-016-001

also item #2 first bullet: add signal interconnect on low level Spokane Street to tie the intersections at Airport, 6th, 4th, 6th and EMW together to facilitate E/W traffic flow.

O-016-002

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**O-016-001**

Comment acknowledged. Please see response to comment C-002-043 for information on pedestrian/bicycle crossings.

**O-016-002**

Mitigation described in Section 6.2.1 of the Transportation Technical Report includes signal upgrades on the Spokane Street corridor at intersections that would be impacted by the Project.



*International*  
**LONGSHORE and WAREHOUSE**

3440 East Marginal Way So., Seattle, WA 98134 • (206) 623-7461 • Fax (206) 623-8136  
businessoffice@ilwulocal19.org

*Union*  
**LOCAL 19**

RICHARD AUSTIN  
*President*

KURT HARRIAGE  
*Day Business Agent*

JEROME JOHNSON  
*Night Business Agent*

Terminal 5 DEIS comments  
c/o Paul Meyer, Port of Seattle  
P.O. Box 1209,  
Seattle, WA 98111

July 8th, 2016

sent to: [SEPA.p@portseattle.org](mailto:SEPA.p@portseattle.org)

Dear Mr. Meyer and staff;

ILWU Local 19 fully supports the modernization of the Northwest Seaport Alliance's Terminal 5 in the Port of Seattle. We also believe that preserving and growing jobs, a central component of the Century Agenda, can be realized at Terminal 5 if job preservation and growth is considered. The ILWU represents approximately 2000 full time and casual (temporary) employees in Seattle, who may at some point work at Terminal 5, from full time steady positions to sporadic employment within the casual workforce. We believe it is possible to develop a greener and cleaner terminal, while preserving the accustomed staffing levels. Those who work at Terminal 5 are at least as much of an impacted community as the surrounding residential community, and as such deserve equal consideration.

Consideration of the comments below will enhance the data within the scoping, in order to ensure that workers are treated as well and are treated as part of the community of stakeholders impacted by this project. We have reviewed the DEIS document concerning the Terminal 5 project, and we are submitting the following comments concerning the DEIS.

**I. We ask that the FEIS include a comparison of economic data of the jobs as a result of both Alternatives #2 and #3. In particular for each:**

1. Number of jobs total, on a yearly, weekly, daily, and shift basis;
2. Number of jobs total, ship to shore;
3. Number of jobs total, within the Container Yard (CY);
4. Number of jobs total, CY to rail;

**O-017-001**

5. Number of jobs total, gate and yard/vessel planning;
6. Number of jobs total, Maintenance and Repair (M & R);
7. Labor savings and costs to potential terminal operator for Alternatives #2 & #3
8. Historical impacts of lease agreements (job stability), including Seattle and Tacoma comps:
  - a. Average term of lease at inception
  - b. Average term of lease due to renegotiation/early termination
  - c. Average years use of terminal before change of use or remodel
  - d. 25 year MAG history for each port terminal
9. Compare necessary total overall and public investment (tax levy, bonding) for Alternatives #2 & #3 and potential Port income from leases and other sources, in order to determine the reliability and responsibility of investment for ongoing mitigation and job stability by both the private and public sector.

O-017-001 (cont.)

**II. Air emissions, impacts of operations:**

1. Please study and include in the FEIS the use of shore power in relation to:
  - a. Ships that are capable of shore power service that do not plug in;
  - b. Ships that are not capable of shore power service and cannot plug in;
  - c. Provisions in lease/regulations necessary to ensure that 100% of shore power capable ships are required to use shore power.
2. Please study and include in the FEIS the feasibility of using all available and near-available diesel emissions capturing systems for:
  - a. All ocean vessels that cannot or do not use shore power, including the use offshore barge systems
  - b. All RTG and RMG cranes that use any kind of diesel power
  - c. All yard tractors that use any kind of diesel power

O-017-002



<p>d. All top handlers, reach stackers, and other container handling equipment that use any kind of diesel power</p> <p>e. All forklifts that use any kind of diesel power</p> <p>f. All other transport vehicles that use any kind of diesel power</p> <p>g. All stationary equipment that use any kind of diesel power</p>	<p>O-017-002 (cont.)</p>
<p>3. Please study air quality and climate control cabin filtration systems for all closed cab vehicles in the equipment list provided above in II-2. Additionally, study the proper method to remove potential particulate matter that may accumulate on the dock surface area.</p>	<p>O-017-003</p>
<p>4. Please study, model, and include in the FEIS on site or substantially near site emissions monitoring systems of terminals of similar use and size as proposed in Alternates #2 &amp; #3, in order to generate a more reliable estimate of potential diesel emission outputs.</p>	<p>O-017-004</p>
<p>5. Please study and include in the FEIS more advanced and stringent strategies for over-the road trucks' diesel emissions and engine condition, including other existing programs (e.g. LA/Long Beach) that surpass the standards of the NW Clean Air Strategy.</p>	<p>O-017-005</p>
<p>6. For Alternative #2, please study and include the use of alternative powering options for all equipment (e.g. Electrical Operated RMGs, Hybrid RTGs and LNG or Electric UTRs) that burn cleaner than the diesel powered equipment that is in current use.</p>	<p>O-017-006</p>
<p><b>III. Noise:</b> Noise fatigue is an environmental hazard on working container terminals. Fatigue and desensitization by workers occur when loud single tone alarms are in used in the same area where sound overlaps. Several studies have shown that accidents are more frequent due to the "crying wolf" aspect of single tone alarms when they are in heavy use during a busy operation. While changes of use in any kind of safety warning device are a subject of collective bargaining, we request that the FEIS include:</p> <p>1. Feasibility of alternate types of back up alarms already in use in other international container Port facilities on the U.S. West Coast.</p>	<p>O-017-007</p>
<p><b>IV. Throughput:</b> The 18,000 TEU ships have been removed from the Asia-Pacific service for the foreseeable future, due to market conditions. This will impact throughput. Also, maximum capacity utilization for the first 20 years is assumed to be 1.3m TEUs/yr, but terminals do not typically operate at maximum capacity utilization Year over Year (YOY).</p>	<p>O-017-008</p>

1. Please include in the FEIS the impact of the removal of the 18,000 TEU vessels from the Asia-Pacific routes, estimate of how long this will likely be in effect, and the resulting impact on throughput;

O-017-008 (cont.)

2. Please include the likely average capacity utilization of Alternative 2, and what the resulting YOY TEU throughput.

**V. Misc.**

1. Please include a full description of all operations and a breakdown of staffing under Alternative #3, including M & R and ship to shore operations.

O-017-009

2. Please include a full accounting of the cost of electric RMG cranes in Alternative #2, since this item was dismissed as too costly.

O-017-010

3. Please include a full description of when the terminal operator would utilize full flexibilities afforded to them under the current ILWU-PMA CBA in regards to gate operations and its relationship to decreasing impacts to daytime commuter traffic and noise outside the Terminal.

O-017-011

4. Please include a full description of disaster recovery scenarios in relation to earthquake or fire, including estimated times it make take to reach personnel in the proposed terminal configurations for Alternative #2 & #3.

O-017-012

5. Competition w/ T18, 30 & 46: Competition with Terminals 18, 30, and 46 may result in an economic substitution effect. Please include in the FEIS the potential substitution numbers as a result of local competition.

O-017-013

Sincerely,



Rich Austin,  
President, ILWU 19



Chris Romischer  
President, ILWU 52

**O-017-001**

SEPA guidelines require analysis and evaluation of expected environmental conditions due to proposed development uses and activities, independent of economic outcomes, including potential changes in employment opportunities (WAC 197-11-448 [2]). The language of the SEPA Rules in WAC 197-11-448 makes it clear that only impacts related to the environment stated in 197-11-444 are mandatory for analysis. Purely economic, socioeconomic and nonenvironmental impacts are not required for the EIS analysis. The Port made a decision not to include an economic or socioeconomic analysis in the environmental review for this EIS.

The proposed Project DEIS documents potential effects anticipated from proposed actions at Terminal 5, including substantial changes in marine cargo volumes and potential measures for avoiding and minimizing reasonably expected negative environmental conditions. In addition, the Project evaluation projects potential marine cargo operations necessary to accommodate increased cargo volumes. It is not possible at present to accurately identify the number of workers linked with the project cargo volume alternatives since potential cargo activities and practices used by potential facility operators have not been determined. It is reasonable to anticipate, however, that increased cargo volumes and increased shipping revenue may be accompanied by employment and economic benefits.

**O-017-002**

A global study of vessel plug-in capability and preferences of utilization is beyond the scope of this DEIS analysis. Please see Standard Response No. 3: Use of Shorepower at the beginning of Chapter 6 for additional information.

Please see Standard Response No. 4: Electrification Schedule and Accelerated Schedule for Adoption of Alternative 3 at the beginning of Chapter 6 for additional information.

Emissions from oceangoing vessels that cannot or do not connect to shorepower could be reduced by using wharf or barge-mounted emission control equipment. Based on systems operating in southern California that control NO<sub>x</sub>, SO<sub>2</sub>, and PM emissions, such systems might cost approximately \$5-10 million to purchase. However these systems do not help reduce noise at berth, are a fairly new technology and would be more expensive to operate based on low electricity costs available in the Seattle area and were not considered for implementation.

**O-017-003**

The EIS process is intended to address environmental impacts in the neighboring community. Worker exposure to air pollutants is regulated by Washington and federal occupational safety regulations.

**O-017-004**

Please see Standard Response No. 1: Selection of Air Quality Monitoring Sites and Data at the beginning of Chapter 6 for additional information on developing air quality models.

Please see Standard Response No. 2: Post-Operation Air Quality Monitoring at the beginning of Chapter 6 for additional information on future monitoring and tracking efforts near the terminal.

**O-017-005**

The Project proposes modernization that will supply significant electrical infrastructure to allow for vessel shorepower and, potentially, electrification of portions of the cargo handling equipment. Through the Northwest Ports Clean Air Strategy, the NWSA has adopted a plan to require trucks entering container terminals to meet model-year 2007 EPA emissions standards in 2018. This will decrease air emissions and greenhouse gas emissions. Electric drayage trucks would exceed this standard but they are not readily available at present and have a much higher purchase price. This could be a deterrent to independent truck owner/operators. Demonstration projects of

zero emissions Class 8 trucks are being introduced in the state of California. The additional electrical infrastructure improvements that are proposed as part of the Project could provide electrical charging capacity should short haul electric drayage trucks prove to be reliable and available for wider deployment than is currently available.

**O-017-006**

The analyses of Alternative 2 does not reveal significant adverse air quality effects that warrant implementation of alternative powering options for mobile equipment. The Port will rely on the Federal regulatory programs that are resulting in lower engine air pollutant emissions as new equipment is introduced. However, the Port will encourage any MTO to consider alternative power options for cargo handling equipment if the equipment produces less criteria pollutants and reduces noise emissions.

**O-017-007**

Please see Standard Response No. 9: Compliance Noise Monitoring at the beginning of Chapter 6 for additional information on how ambient-sensing, broadband backup alarms will be required on all mobile cargo handling equipment for the proposed Project.

**O-017-008**

The 18,000-TEU vessel was selected as the largest sized vessel that could be used in Alternatives 2 and 3. While these 18,000-TEU vessels may not visit Terminal 5 in the immediate future, it was important to understand potential impacts associated with serving this size vessel at the site. The use of 14,000-TEU vessels at a higher discharge and load percentage is expected to result in similar truck and rail traffic effects, as identified in the DEIS.

Vessel routes prior to and after berthing at Terminal 5 are difficult to anticipate and, therefore, were not included in the analysis of the EIS.

Alternative 2 in the EIS assumes the maximum anticipated cargo and vessel capacity for this scenario to better assess potential impacts on the environment.

**O-017-009**

Staffing will be determined by the specific tenant operations and procedures and is not available at this time.

**O-017-010**

We were not able to identify the referenced dismissal of RMGs for cost in the document. There is no intent to preclude the use of RMGs associated with the volumes noted in Alternate 2.

**O-017-011**

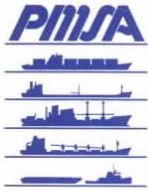
The specific operations and use of ILWU-PMA agreements will be at the discretion of the future tenant and their collaboration with the ILWU, and are not available at this time.

**O-017-012**

The Terminal 5 operator will be responsible for developing safety management plans as a part of their operation.

**O-017-013**

Strategic business planning and associated assessments of marine cargo infrastructure requirements analyzed and evaluated by the NWSA are critical to efficient, optimal facility investments. A principal goal of the NWSA is to rationalize container cargo infrastructure improvements in Elliott Bay and Commencement Bay, in order to reduce the potential for displacement or substitution of cargo operations at existing facilities. The objective of the Project is to add to marine cargo capability, increasing regional ability to accommodate projected long-term increases in container cargo volumes.



July 8, 2016

Mr. Paul Meyer  
Environmental Permitting and Compliance  
Port of Seattle, Pier 69  
PO Box 1209  
Seattle, WA 98111-1209

Dear Mr. Meyer,

Thank you for the opportunity to submit comments on the Draft Environmental Impact Statement (DEIS) for the Port of Seattle's Terminal 5 improvement project. I am writing on behalf of the Pacific Merchant Shipping Association (PMSA) whose members include marine terminal operators and vessel lines that serve the West Coast, including the ports of Tacoma and Seattle.

After reviewing the DEIS, we are pleased to see that the port has developed a reasonable scope of environmental review. We have been concerned recently by the "scope creep" of recent environmental reviews at other port development projects in Washington State, and appreciate efforts to identify impacts and mitigation from the project in a reasonable and responsible manner.

The Terminal 5 improvement project seeks to upgrade an "existing" container terminal facility and the impacts and mitigation measures identified in the DEIS are reasonable and consistent with past measures. The DEIS addresses these issues in an objective fashion rather than recent politically driven efforts to add unreasonable mitigation measures in order to delay or prevent projects.

Port competition is at an historic high. Global trade is not growing as expected and market share growth at one port comes at a cost to another. Competing in this environment means ports must provide a competitive cost, regulatory certainty, and reliable and efficient service. Upgrading and maintaining terminals is a challenge in this commercial environment. The timing of investments, given the lag time in decisions, permitting, environmental review, and construction, is a critical part of any port's overall development strategy. The EIS is one piece of that larger process and this draft EIS includes a reasonable scope that identifies and mitigates project impacts.

Thank you for the opportunity to comment. If you have any questions, please contact me at (206) 441-9700.

Sincerely,

Captain Mike Moore  
Vice President

O-018-001

**Pacific Merchant Shipping Association**

World Trade Center 2200 Alaskan Way, Suite 160, Seattle, WA 98121 phone (206) 441-9700 fax (206) 441-0183

**O-018-001**

Comment acknowledged.



July 8, 2016

*Protecting and  
Preserving  
Puget Sound*

130 Nickerson Street,  
Suite 107  
Seattle, WA 98109

P 206.297.7002  
F 206.297.0409

Paul Meyer  
Environmental Services  
Port of Seattle  
P.O. Box 1209  
Seattle, WA 98111  
(sent via email to [SEPA.p@portseattle.org](mailto:SEPA.p@portseattle.org))

RE: Puget Soundkeeper Comments on Terminal 5 Cargo Wharf  
Rehabilitation, Berth Deepening and Improvement Draft Environmental  
Impact Statement

[www.pugetsoundkeeper.org](http://www.pugetsoundkeeper.org)

Dear Mr. Meyer,

Puget Soundkeeper Alliance (hereinafter "Soundkeeper") is a water quality focused grassroots citizen's organization founded in 1984. Soundkeeper's mission is to protect and preserve the waters of Puget Sound. Representing over 3,000 members, supporters, volunteers and activists, Soundkeeper works to meaningfully decrease pollutants reaching the Sound by actively monitoring Puget Sound water quality, enforcing clean water laws, improving policies and regulations, preventing pollution and cleaning up waterways. Soundkeeper is profoundly concerned with the health of the Duwamish River and appreciates the opportunity to comment on the draft environmental impact statement (DEIS) for the proposed Terminal 5 (hereinafter "T5") improvement project, specifically regarding the project's impact on the water quality of the West Waterway of the Duwamish River and the surrounding area.

With the Terminal 5 improvement project the Port of Seattle has the opportunity to be a shining example of environmental stewardship and to live up to its stated goal of being the cleanest, greenest and most energy-efficient port in the U.S.. In a city that is already a model for the rest of the country and the world, the Port should use this opportunity to make improvements, go above and beyond basic requirements and to show everyone that the city of Seattle and the Port are truly the environmental leaders they are considered to be.

### **Stormwater**

Volume I section 2.3.3.10 of the DEIS states that "existing stormwater infrastructure would be modified for the facility to meet Correction Action Level 3 Industrial National Discharge Elimination System improvements..." Based on Soundkeeper's

O-019-001

interpretation of what level three actions entail per the ISGP, this should require T5 to implement treatment for all outfalls at the site. Based on our experience with sites such as T5 it is patently unreasonable to expect this facility to be able to comply with ISGP conditions and benchmarks without comprehensive stormwater treatment. Installing treatment before new tenants begin operation will ensure that these treatment systems are working to decrease pollutants and comply with the ISGP from day one. This will also result in the least amount of disruption to the tenants operations. Are there plans to install stormwater treatment at the site as part of Level 3 Corrective Actions? If so, will the treatment be required for all outfalls? Will the treatment be fully operational before the new tenants begin their operations? Will the design that Ecology is required to review and approve be available to the public? Are there currently any deadlines set for the Level 3 Corrective Action process?

O-019-001 (cont.)

### **Dredging**

Volume I of the DEIS references sediment testing pursuant to the Dredged Material Management Plan. Specifically there is reference to two surface samples that exceeded the dioxin/furans criterion. Despite these two exceedances the sediment was still deemed acceptable for open water disposal based on the volume weighted average of the material to be dredged. This is highly concerning. As the Port is well aware, the mere presence of dioxins/furans is a very serious issue as these chemicals are among the most toxic known. How is this decision consistent with the open water disposal requirements? Will there be monitoring requirements for dioxins/furans while dredging is occurring? Further testing should be conducted in order to make a determination that the sediments being dredged do not exceed the limit allowed for open water disposal. Monitoring should be required during the dredging to ensure these toxins are not occurring in unsafe amounts.

O-019-002

Soundkeeper appreciates that pile driving would be limited to periods deemed acceptable by the appropriate agencies and will be interested to see what other protective measures are determined necessary by Section 7 consultation as is required under the Endangered Species Act.

### **Air Pollution/GHG/Fuel Source**

Under both alternatives two and three in the DEIS there is a requirement to increase use of low-sulfur distillate fuel as well as increase use of shorepower. Soundkeeper supports these mechanisms. Does the Port have any timeline for the increases in

O-019-003



O-019-003 (cont.)

these alternative methods? Is there a certain percentage increase in the use of both low-sulfur distillate fuel and shorepower that the Port expects to meet by a certain date? Will the Port require that on-site equipment also use low-sulfur distillate fuel? Will the port be fully ready to connect shorepower to any ship capable of receiving shorepower? What is the Port doing to increase and/or require that visiting ships be outfitted to accept shorepower.

O-019-004

Also in regards to air emissions is the concern of increased train and truck traffic as well as the increase in personal vehicle traffic in the area. Soundkeeper is specifically concerned about this from a water quality perspective and would like to call attention to the fact that particulate matter from increased vehicle traffic often ends up in the water, as evidenced by water samples taken in the lower Duwamish source control work and in monitoring of mussel tissue through the WDFW Musselwatch program. Does the Port plan to implement any mitigation strategies to decrease the impacts of increased traffic on air deposition in the surrounding water?

**Hide Storage**

O-019-005

There is no mention in the DEIS of animal hide storage which are a significant export product from container ports in the area. Hides often leak liquid contaminants onto impervious surfaces particularly on hot days. Storing hides at this type of facility without proper containment can have serious contamination issues for surrounding waterways. Will T5 have designated hide storage similar to Terminal 18 and Terminal 46? If there will be hide storage on the T5 site, the containment area should drain to the sanitary sewer system to avoid contamination of surrounding waterways with pathogens.

**Fecal Coliform**

O-019-006

The West Waterway of the Duwamish River is listed as an impaired water body for fecal coliform on the Washington 303(d) list. Based on this designation, fecal coliform monitoring is required at the site. However, Soundkeeper has concerns with only requiring the proposed BMPs to alleviate fecal coliform issues. Without the requirement to comply with an effluent limit for fecal coliform the T5 site risks contributing to violations of water quality standards in the surrounding waters. The BMPs as currently written in Volume II of the DEIS require additional bacteria related sampling only when Ecology orders it. Based on the extremely high levels of fecal coliform that have been detected at this facility and neighboring facilities in the

O-019-006 (cont.)

past (as much as 500 times the allowable limit, or more), it seems reasonable to require additional bacteria sampling. Soundkeeper urges the Port to consider this along with the requirement to comply with numeric effluent limits at the site.

**Pump-Out Facility**

O-019-007

Currently there is a process underway to propose a No Discharge Zone (NDZ) for Puget Sound which would prohibit the discharge of any vessel-related sewage, whether treated or untreated. The Port would be advised to provide a pump out facility for vessel sewage at the T5 facility in order to provide a means for visiting ships to comply with the pending NDZ. In addition, such a pump could provide a ready means of accepting contaminated bilgewater and gray water to prevent their discharge into the Sound. Are there plans to provide such a facility on the site?

Thank you for considering Puget Soundkeeper's comments.

Sincerely,

Chris Wilke, Executive Director and Puget Soundkeeper

Sophia Ressler, Executive and Administrative Coordinator

**O-019-001**

The Port and the future Terminal 5 marine cargo operator will have an Ecology-approved Level 3 Corrective Action treatment system in place prior to startup of new operations at Terminal 5. DEIS Section 3.3.4 Mitigation Measures (pg. 3.3.14) describes how surface water mitigation for operations will include the implementation of stormwater treatment prior to the startup of new operations: "Prior to reestablishing container cargo terminal operations, the facility would be reevaluated for the appropriate Level 3 Corrective Actions, requiring a new engineering report. The new engineering report would define treatment options and detailed construction plans for Ecology's review and approval. Upon approval, the stormwater system would be constructed prior to beginning of operations."

Details of the stormwater treatment system including treatment technology and location(s) have not yet been determined. The new treatment BMPs will require site-specific design and sizing of equipment and structures, therefore an engineering report will need to be prepared and submitted to Ecology for review and approval prior to construction. The engineering report will include a description of the treatment alternatives considered and why the proposed option was selected, design data including sizing calculations of the treatment units, a description of the treatment process and operation, and anticipated results.

Once new container terminal operations start at Terminal 5, the Port (or the marine cargo operator, if it is determined that the ISGP is more appropriately held by the site operator) will be responsible for future ISGP compliance including quarterly monitoring and reporting, and performing escalating levels of corrective action (if needed) based on benchmark exceedances in compliance with ISGP Special Condition S8 pertaining to Level 1, 2, and 3 Corrective Actions.

**O-019-002**

During the dredge characterization sediment sampling, 35 sediment samples were collected and analyzed for dioxins/furans. Of the 35 samples, only 2 samples had dioxins/furans concentrations between 4 and 10 parts per trillion (pptr) toxicity equivalents (TEQ). Concentrations between 4 and 10 pptr are accepted at non-dispersive sites as described in the DMMP Dioxin Guidelines.

The DMMP agencies calculated the volume-weighted average for the sediments to be disposed of for the individual sediment management units in the dredge prism. The analysis showed that the material passed the DMMP non-dispersive dioxin/furan guidelines. The analysis is provided in the April 21, 2015 Suitability Determination Memorandum.

There are no monitoring requirements for dioxins/furans during dredging. Due to the low levels of these chemicals at the site, the chemicals cannot be monitored in the field, but require laboratory preparation and analysis.

The potential impacts of dredging at Terminal 5 were assessed by conducting a full DMMP characterization of the sediments proposed for dredging (Please see response to comment I-101-002). Sediment was found to be clean enough for offshore disposal since chemical concentrations were less than DMMP open water disposal criteria and Washington State Sediment Management Standards.

Dredging at Terminal 5 would not impact sediments in the vicinity because chemical concentrations are below Washington State Sediment Management Standards. Short term impacts within the Terminal 5 dredging area would likely be limited to increased turbidity, which would be brief and localized. Based on other maintenance or remediation dredging projects in the area, the lowering of dissolved oxygen to unacceptable levels or increased acidity are not expected. Water quality monitoring will be performed during dredging to measure potential impacts and, if any are found, dredging operations will be modified or temporarily suspended.

The benthic community and deepwater habitat of the Terminal 5 berthing area is routinely disturbed from maintenance dredging activities and vessel operations (e.g., propwash from tugs). Due to the dynamic nature of the West Waterway, the benthic consists of assemblages that are capable of readily reestablishing after disturbances. The unconsolidated fine grained subtidal sediment throughout the West Waterway also aids to rapid recolonization, which typically ranges from 3 months to 1 year.

The Lockheed West Superfund sediment site along the northern portion of Terminal 5 is the only cleanup project remaining within the West Waterway. All other Superfund sites in the West Waterway have been remediated. The Lockheed West remediation is anticipated to begin in 2018. The cleanup of contaminated sediment and removal of pilings at Lockheed West will improve water quality and habitat in that area. Additionally, habitat improvements have been integrated into the remedial design. Due to the similar construction timeframes (approximately 2017–2020), the sequencing of Lockheed West and Terminal 5 berth deepening activities will be coordinated to minimize potential impacts associated with the proximity of in-water construction activities (e.g., dredging, pile pulling, pile driving). Although any impacts from these in-water construction activities are typically brief and localized, and water quality would be monitored for both projects.

There are two Superfund sediment sites outside of the West Waterway: The East Waterway (EW) and the Lower Duwamish Waterway (LDW).

The East Waterway Superfund Site is located approximately one-half mile to the east of Terminal 5. It encompasses approximately 157 acres intertidal and subtidal habitats, compared to the 5.38 acres of proposed dredging area at Terminal 5 (equivalent to 3.4 percent of the East Waterway site). The East Waterway cleanup activities are not anticipated to begin until after 2030. Based on the distance, comparative size of the sites, and the timing of dredging activities, no cumulative impact assessment was conducted for the East Waterway site.

The LDW Superfund Site, which is located approximately one-half mile to the south of Terminal 5, extending from the southern tip of Harbor Island up-river for 5 miles. It encompasses approximately 441 acres of intertidal and subtidal habitats, compared to the 5.38 acres of proposed dredging area at Terminal 5 (equivalent to 1.2 percent of the LDW site). The LDW cleanup activities are not anticipated to begin until after 2030. Based on the distance, the comparative size of the sites, and the timing of dredging activities, no cumulative impact assessment was conducted for the LDW site. As the LDW cleanup continues, contaminated sediment will be removed upstream, which will decrease the likelihood of recontamination to the Terminal 5 location.

Additional future south harbor dredging is being assessed for the Seattle Harbor Navigation Improvement Project proposed by the U.S. Army Corps of Engineers as a separate and independent action from the Terminal 5 rehabilitation project. The Corps of Engineers project includes deepening navigation channel access in the East and West Waterways. Implementation of the navigation improvement project is unlikely to coincide with completion of the proposed Terminal 5 Improvements Project, however, if portions of Corps of Engineers navigation dredging and Terminal 5 construction actions are coincident, the port, as local project sponsor, will work with the Corps of Engineers to avoid potential coincident and cumulative effects on fish and wildlife resources.

Dredging activities described above, in addition to the berth improvements included in the present Project, include potential short-term impacts to water quality and deep sub-tidal, sessile organisms. The dredging and remediation activities that will be occurring within and upstream of the West Waterway will include beneficial long-term habitat and water quality conditions within the waterway and vicinity.

**O-019-003**

Alternatives 2 and 3 have the commitment of the Port to attempt to increase the use of low-sulfur fuel as well as increase the use of shorepower. The Port has committed to supplying shorepower plug-in capability, and it is likely that the vessels able to use the infrastructure will do so. Please see Standard Response No. 3: Use of Shorepower at the beginning of Chapter 6 for additional information on shorepower, milestones, incentives for use of shorepower and the overall commitment to advancing the use of shorepower.

There are several ways that the use of low-sulfur fuel may increase. The ship engine manufacturers are regulated and are required to produce cleaner ships over time. The most stringent engine manufacture standards went into effect in 2016 and require new Category 3 marine engines to meet strict Tier 3 standards.

The fuel for large container ship operation within 200 nautical miles of the United States' coast is regulated by the International Maritime Organization's International Convention for the Prevention of Pollution from Ships (also known as MARPOL). These regulations reduce sulfur content in fuel, which in-turn reduces emissions of sulfur dioxide and particulate matter from the vessels. Beginning in 2016, additional MARPOL regulations to reduce nitrogen oxide emissions went into effect. Additional detail on the engine and fuel regulations can be found here: <https://www3.epa.gov/otaq/oceanvessels.htm>.

Similarly, fuel used for cargo handling equipment is regulated by the EPA. Additionally, as described in the Northwest Ports Clean Air Strategy, the Port will continue to partner with its tenant terminal operators to obtain grants to retrofit or replace older cargo-handling equipment and to increase fuel efficiency. In 2018, the Port's clean trucks program will limit the model year of on-road trucks (2007 or newer) allowed on-site, which is directly tied to the most stringent particulate emission standards.

**O-019-004**

The Port relies on federal programs that have a proven record of significant reductions in engine emissions over the last 40 years. On-site emissions of diesel engine particulate matter will decrease with both the action alternatives; so deposition to water bodies from on-site sources will be lower than what would occur with no action.

**O-019-005**

At present, a marine cargo operator for Terminal 5 has not been determined and it is not known if shipment of animal hides would be included in operations at the rehabilitated/improvement facility. When operational plans are known, any storage at Terminal 5 would comply with the Port of Seattle's Industrial Stormwater General Permit (ISGP). The ISGP requires the development of a Stormwater Pollution Prevention Plan (SWPPP) to prevent and control the contamination of discharges of stormwater to surface or groundwater. The SWPPP would be updated to reflect any changes to the facility, which would include a facility assessment, description of the drainage system, and a description of source control best management practices (BMPs). Structural source control BMPs applicable to hide storage would include grading, berming, or curbing to prevent runoff and coverage of material storage areas to minimize exposure to weather. This information is available in the Stormwater Technical Memorandum for Terminal 5 FEIS, Volume II, Appendix D.

**O-019-006**

The industrial Stormwater General Permit (ISGP) requires the collection of quarterly sampling for fecal coliform bacteria. The Port has the option to collect multiple samples during the quarter and report the geometric mean. Additional sampling is at the discretion of Ecology.

Stormwater treatment and improvements are to be installed as needed, to support operations at the new facility. Prior to reestablishing container cargo terminal operations, a new engineering report that would define treatment

options and detail construction plans will be written, and the plan will be reviewed and approved by Ecology. Upon approval, the stormwater system would be constructed. The new system and the fecal coliform bacteria specific BMPs should improve water quality.

**O-019-007**

All vessels visiting Terminal 5 must comply with any and all applicable regulations regarding the discharge of sewage. Currently, federal law prohibits the discharge of untreated sewage into Puget Sound waters. Within 3 nautical miles of shore, a vessel's sanitary sewage must be at least minimally treated by a marine sanitation device (MSD) before discharge into the waters of Puget Sound. Beyond 3 nautical miles, federal law permits the discharge of untreated sewage.

The Port is aware of the NDZ process and understands that on July 21, 2016, Ecology issued a petition to the EPA to establish a NDZ ban on vessel sewage in Puget Sound. The EPA has 90 days to issue a decision on acceptance of the petition, which, if accepted, can take years to evaluate and process.

Currently, there are no pump-out facilities proposed as part of the proposed Project. However, should a pump-out facility be required or warranted in the future, the installation of a pump-out facility will be reevaluated.

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**From:** David Richey [<mailto:davidr@strategies360.com>]  
**Sent:** Friday, July 08, 2016 16:14  
**To:** Port Sepa  
**Subject:** Draft Environmental Impact Statement T5 - Richey, David

Mr. Paul Meyer  
Environmental Permitting and Compliance  
Port of Seattle, Pier 69  
PO Box 1209  
Seattle, Washington 98111-1209

Dear Mr. Meyer,

On behalf of the Washington Maritime Federation, we are pleased to submit comments on the Draft Environmental Impact Statement (DEIS) for the Port of Seattle's Terminal 5 improvement project, and to express our strongest support the proposed project.

Washington's global competitiveness depends upon ongoing access to our state through our harbors. This project is a critical infrastructure improvement that will be used by the Northwest Seaport Alliance, a regional partnership of the Port of Seattle and the Port of Tacoma. Our members rely on the Port of Seattle's infrastructure to support our gateway to global trade and as a cornerstone of the regional maritime economy. At the risk of repetition, we note that 40% of Washington jobs are connected to trade. In Seattle, the family wage jobs provided by the Port, its tenants, and the cluster of related businesses form the bedrock of our local economy.

Experience tells us that maintaining high wage jobs in our community demands that investments are made to bolster the competitive position of the Northwest Seaport Alliance. A failure to make this strategic investment will ensure that Terminal 5 cannot support the new generation of high capacity container vessels that are even now re-defining how the world moves goods in trade. We must act to preserve our place in world trade and to protect our working waterfront.

Because our state heavily depends upon trade for economic success, it is imperative the Port prioritizes forward-looking infrastructure. In this context, it is especially important to recognize the profound importance of the land use planning priorities that are reflected in this project by both the Port and the City of Seattle.

Terminal 5's current condition as a marine terminal represents good land use planning and environmental

**O-020-001**

O-020-001 (cont.)

stewardship. This terminal was originally developed on property that was under-utilized and environmentally contaminated. The Port of Seattle was a regional leader twenty years ago when it cleaned up and re-used this 'brownfield' property. This effort efficiently used existing infrastructure and reduced pressure to develop more pristine properties elsewhere.

The draft EIS prepared by the Port of Seattle outlines investment priorities that complement past efforts, and which are consistent with policy direction set forth by the legislature to utilize existing industrial properties within urban areas. The Growth Management Act directs infrastructure investments into areas in which high density and industrial activity currently exist. The Shoreline Management Act requires local governments to plan for and support water dependent uses. The proposal under consideration is consistent with, and supports, these priorities under state law. It also aligns well with large transportation investment decisions that have been made by the state.

To emphasize this point, we wish to point out actions taken by the state legislature in 2009, when Governor Gregoire's Container Ports Initiative led to creation of a 'port planning element' for the Cities of Seattle and Tacoma. This element of the city's comprehensive plan mandated that the City plan for, and take actions to support, the long-term health and vibrancy of the Port of Seattle. The proposal contained in this draft EIS is entirely consistent with this policy direction, and we urge the final EIS to include a description of how the City's port planning element will be used to support port plans and activities.

In addition, we commend the Port of Seattle for completing a thorough evaluation of the environmental impacts of operating the proposed facility. Maritime terminal operations have proven to be a low-impact industrial activity that supports high-wage regional jobs.

The Maritime Federation enthusiastically supports the DEIS' proposed project, including prioritizing cargo wharf rehabilitation, deepening of vessel berth, increased cargo handling, and upland improvements.

If you have additional questions, please do not hesitate to contact us at [info@maritimefederation.com](mailto:info@maritimefederation.com).

Sincerely,

**David Richey**

On Behalf of the Washington Maritime Federation

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**O-020-001**

Comment acknowledged.





JOHN T. (J.T.) COOKE  
ATTORNEY  
JT@HOULIHAN-LAW.COM

July 8, 2016

**VIA Email (meyer.p@portseattle.org) & US MAIL**

Paul Meyer  
Environmental Services  
Port of Seattle  
P.O. Box 1209  
Seattle, WA 98111

**Re: Comments on Terminal 5 DEIS**

Dear Mr. Meyer:

We represent CenterPoint Properties Trust , CenterPoint 3546 Marginal Way LLC and CenterPoint Marginal LLC (collectively “CenterPoint”) owners of property located 3480 West Marginal Way SW, 3546 West Marginal Way SW and 3518 West Marginal Way SW respectively (collectively “CenterPoint Properties”).<sup>1</sup> The CenterPoint Properties will be substantially impacted by proposed Terminal 5 expansion. CenterPoint supports a competitive and thriving port, but is concerned that the DEIS has not sufficiently evaluated and mitigated the significant impacts the proposed Terminal 5 expansion will have on ingress, egress, circulation and overall access to the CenterPoint Properties, and has not adequately evaluated the potential loss of lateral support for the 3480 West Marginal Way property from proposed dredging operations.

Delays to Business and Emergency Access to CenterPoint Properties

**O-021-001**

Presently, the CenterPoint Properties are accessed via at-grade rail crossings along West Marginal Way SW and the north leg of the intersection SW Spokane Street/West Marginal Way SW/Chelan Avenue SW. The DEIS anticipates that these access points will be effectively blocked by the anticipated increase in train traffic generated by the Terminal 5 expansion (the increase in train traffic is expected to block these at grad crossing for more than 20 hours in a day under Alternative 2 and almost continuously for Alternative 3). The DEIS also proposes to close the north leg of the SW Spokane Street intersection to all traffic except for emergency access as mitigation for anticipated traffic impacts. The DEIS proposes to address the loss of access to the CenterPoint Properties by diverting traffic to

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<sup>1</sup> An aerial photo depicting the CenterPoint Properties is enclosed.

the Terminal 5 access bridge. This proposal, without additional mitigation, will substantially impair CenterPoint's right of access to public right-of-ways.

The Terminal 5 access bridge will not provide adequate business or emergency access to the CenterPoint Properties during container transfer operations. First, the access bridge is not a public right-of-way and the CenterPoint Properties do not have easements to use the bridge. Second, the City gave the Port permission to construct the Terminal 5 access bridge over the West Marginal Way Southwest right-of-way in 1996 and that permission expires in 2046 at which point that City could compel the Port to remove the Terminal 5 access bridge.<sup>2</sup> Finally, anticipated truck traffic from the Terminal 5 expansion will overwhelm the current gate system causing long delays on the Terminal 5 access bridge and the surrounding road network as trucks wait to access Terminal 5. Before Terminal 5 closed truck queues on the Terminal 5 access bridge routinely reached SW Spokane Street causing a cascade of congestion into SODO and West Seattle as trucks attempted to enter Terminal 5. The proposed expansion will significantly increase the number of truck trips making additional congestion inevitable. For these reasons, diverting access to the CenterPoint Properties to the Terminal 5 the access bridge does not provide the CenterPoint Properties with suitable, permanent, alternative access to the public right-of-way.

CenterPoint supports the traffic mitigation measures in the DEIS aimed at relieving congestion on the Terminal 5 access bridge, but believes more must be done to make it an adequate access route to the CenterPoint Properties and to ensure the larger traffic patterns remain above acceptable levels of service. First, all of the proposed mitigation measures should be implemented immediately instead of on a rolling basis triggered by future, subjective events. For instance, the DEIS proposes that the Port implement a reservation system if the queues "frequently" extend onto SW Spokane Street. A reservation system should be put in place as a condition to project approval to control the amount of truck traffic entering the Terminal 5 access bridge. History has already demonstrated that with fewer truck trips queues routinely reached SW Spokane; it is arbitrary to conclude that similar congestion will not occur following the expansion and it contrary to SEPA to take wait and see approach to mitigation for these impacts. The whole purpose of mitigation is to prevent significant impacts from occurring in the first place, not to try to remedy known, significant impacts after-the-fact.

**O-021-001  
(cont.)**

**O-021-002**

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<sup>2</sup> City of Seattle Ordinance No. 118221 (July 30, 1996).

Second, the FEIS should consider adding a third pre-check gate and redesigning the entire gate system so that the pre-check gates are located deeper into Terminal 5. This would permit more trucks to que within Terminal 5 without impacting the Terminal 5 access bridge. The reservation and gate system could then be designed in tandem so that trucks do not que on the Terminal 5 access bridge at any given time.<sup>3</sup>

O-021-003

Finally, in addition to the gate design and operation mitigation measures the Port should also consider other additional measures to mitigate the significant access impacts to and from the CenterPoint properties caused by the elimination of current access along West Marginal Way SW. For example, a middle flex lane on the Terminal 5 access bridge to allow non-Terminal 5 traffic and emergency vehicles to circumvent trucks queuing for access to Terminal 5 would help alleviate the impacts of diverting non-Terminal 5 traffic to the Terminal 5 access bridge. In sum, additional mitigation measures must be imposed to ensure that non-Terminal 5 traffic is not stuck on the Terminal 5 access bridge or on the surrounding road network in the vicinity of the Terminal 5 access bridge.

O-021-004

#### Undermining Lateral Support for the 3480 Marginal Property

A portion of the 3480 Marginal Property extends over water and is supported by piles driven into the tidelands owned by CenterPoint Properties Trust. The proposed dredging will come as close as 150 feet to CenterPoint's tidelands. As detailed in a response from CenterPoint's engineer (enclosed), there is a significant risk that the proposed dredging will undermine the lateral support of CenterPoint's tidelands and compromise the structural integrity of the pilings. The loss of lateral support creates a significant risk to the health and safety of employees at the 3480 Marginal Property and damage to the real property itself. The FEIS should study this risk and, if necessary, propose adequate mitigation measures to monitor and prevent the loss of support of the tidelands owned by CenterPoint.

O-021-005

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<sup>3</sup> A reservation systems will also reduce port-related truck emissions by reducing que times and idling.

Page 4

Thank you for the opportunity to provide these comments on the DEIS for the Terminal 5 expansion. We would welcome the opportunity to meet with you to discuss our concerns and measures to address them.

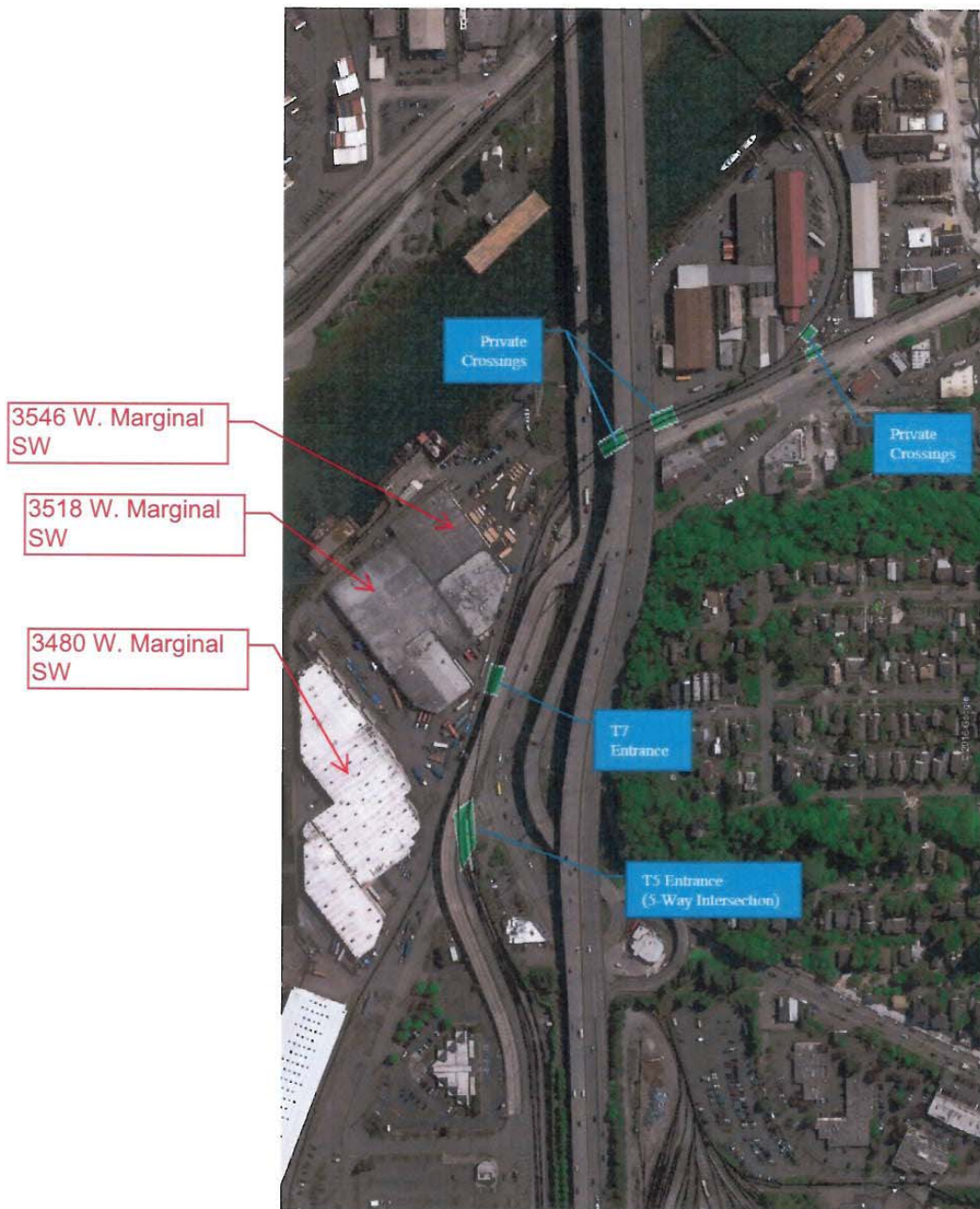
Sincerely,



John T. Cooke

Encls.

Cc: Client (via email)



**Figure 7 – Near Terminal Crossings**

Source: Google Earth



HARBOR CONSULTING ENGINEERS, INC.

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July 6, 2016

CenterPoint Properties  
725 South Figueroa Street, Suite 3005  
Los Angeles, California 90017

Attention: Mr. Bob Andrews

O-021-  
006

Subject: Terminal 5 Cargo Wharf Rehabilitation, Berth Deepening, and Improvements

We are writing in response to the Draft Environmental Impact Statement (DEIS), dated May 2016, regarding the subject proposed Terminal 5 Rehabilitation project. We are expressing our concern regarding the proposed dredging plan outlined in the DEIS. We submit that the plan does not adequately address the possible adverse effects to adjacent facilities, in particular the CenterPoint Properties marine cargo terminal to the east of Terminal 5. We understand that the maximum proposed dredged depth would be -58 feet MLLW. Existing depths at the CenterPoint Properties terminal vary from -14 to -25 feet MLLW. We believe there may be a possibility of undercutting the existing pile-supported marine structures at this location and destabilizing the existing bottom. We suggest that there should be additional geotechnical studies undertaken to study the possibility that structural damage could occur at this site and that current plans to rehabilitate the CenterPoint Properties terminal would not be compromised.

We request a written response to these concerns and suggestions.

Sincerely,  
Harbor Consulting Engineers, Inc.

A handwritten signature in blue ink, appearing to read 'John R. Hutchins', is written over the typed name.

John R. Hutchins, P.E., S.E., Principal

CC: Port of Seattle

**O-021-001**

Please see response to comment O-011-001.

**O-021-002**

Additional mitigation is recommended to address local business access needs, including at Terminal 7. The Port will work with SDOT staff and the Seattle Fire Department to reconfigure the Terminal 5 Access Bridge to provide two inbound (westbound) lanes, with one of the lanes being signed for Terminal 5 only and the other being striped and signed for “Right Turn Only” onto 26th Avenue SW in order to provide a bypass lane for local businesses.

In addition, the Port is working directly with existing businesses located north and east of West Marginal Way Southwest and the rail lines serving Terminal 5 and the West Seattle rail yard, with the objective of avoiding and minimizing potential negative truck and private vehicle traffic effects if the surface connection via West Marginal Way is blocked by a train. Businesses located in this area have particular need for trucks with cargo destined for Terminal 5 to enter the Terminal 5 gate from 26th Avenue Southwest. Previously, trucks from these nearby businesses intending to serve Terminal 5 were required to travel south, using the alternative grade-level access road, connecting with north-bound West Marginal Way Southwest, and turn left at the five-way intersection, traveling east, up the low-level bridge ramp, to turn left onto the grade-separated Terminal 5 access bridge to enter Terminal 5. Improved automated message signs and fixed signage are also being evaluated. Finally, the Port is working with businesses in this localized area to reestablish effective lane striping, enforce truck and passenger vehicle parking restrictions, and control loading/unloading of truck cargo in the grade-level access road travel lanes.

A more detailed Gate Queue Management Plan is described in Section 6.2.4 and provided in Appendix B of the Transportation Technical Report. It includes both physical and operational measures that will be required of the terminal operator to prevent the queue from extending to SW Spokane Street.

**O-021-003**

The Queue Management Plan (See FEIS, Volume II, Appendix C) would require less stringent operational measures if the terminal operator chose to reconstruct the gate and add queue or service capacity. Please also see the response to comment O-021-002.

**O-021-004**

Please see response to comment C-002-112 for information on business access.

**O-021-005**

Project engineering design included slope stability analyses to identify the potential for disruption of adjacent structures and aquatic area slopes related to Terminal 5 berth dredging improvements. Current design plans include construction of a toe wall to stabilize the adjacent slope after dredging to the required depth. The slope design will maintain the current level of stability of the slope to protect adjacent navigational access and dock structures.

**O-021-006**

Please see response to comment O-021-005 for information about slope stability. Please also see response to comment I-011-005 for information on geotechnical design and potential impact from vibratory pile driving.



Port of Seattle Draft EIS Public Hearing  
, - June 07, 2016

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Port of Seattle  
Draft EIS Public Hearing

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Taken at South Seattle Community College at Georgetown  
6737 Corson Avenue South  
Seattle, Washington

June 7, 2016

REPORTED BY: April L. Cook, CCR  
CCR No.: 3245

206.389.9321



info@srspremier.com

MS. MABIE: So now I will open the public hearing. We'll ask our court reporter to start the fingers going.

And so I will be calling names off the sign-up sheet, which I know is going to be brought to me at any moment, and Rick's going to turn on the mike and then he's gonna make sure I get my sign-in. And if you have not signed up and you wish to make -- there it is. Imagine that. If -- if you wish to make comment and you have not signed up yet, please do. Make sure you sign up so that I can call on you. Right now I have two people on the list.

So the way that I'm going to do this is we're going to do a three-minute public commentariat unless either one of the people right now is representing an organization. If you're representing an organization, you may have four minutes. And then we will check in and see if we have more people to comment, and we will see how we go. We are scheduled to go to 8:00. Obviously if we only have two or three people I don't think we need to go till 8:00, but let us get started.

And this -- please start out by stating your name and -- do you need address? --

THE REPORTER: That would be helpful.

MS. MABIE: -- that would be great -- name and address, and I will start the clock after that. And I

will ask you to hold yourself to three minutes if you're an individual and four minutes if you're representing an organization.

So we'll start with Miss Davis and then we'll go to Mr. Rasmussen. Use that -- use that microphone over there, please.

MS. DAVIS: Okay. Now, is this on?

MS. MABIE: Yes, it is.

MS. DAVIS: Can you hear way back there? They can't hear it. Can you hear me?

THE AUDIENCE: No.

MS. DAVIS: Okay.

MS. MABIE: It's on. You've gotta get closer. You should be right on top of it.

MS. DAVIS: Okay. Yeah, there we go. Okay.

Well, what I'm really concerned about -- and I represent an organization so I will talk five minutes. But I'd also like to tell you who I'm with --

MS. MABIE: Four minutes. And -- yes, four minutes. And your name and your organization, please.

MS. DAVIS: Thank you. You'll start the timer again; is that right?

MS. MABIE: Go ahead.

MS. DAVIS: After I'm done.

Okay. Patricia Davis. I am with

terminal5group.com. We would love it if you could help sign our petition, which is for clean air protection in particular.

So I'd like to tell you that the American Heart Association did some research. They found causality between air pollution and heart disease. I think we all know that heart disease is the number one killer -- ahead of cancer -- for all of us. So air pollution isn't just some inconvenience or some nasty thing that we have to deal with. It's a killer. So when we're talking about plans for you guys and being competitive, people die if you don't protect us. So I have that petition -- and a number of us do -- trying to get support for Puget Sound Clean Air to have onsite air quality monitoring 24/7, real data, so we know what's down there. That protects longshore, that protects our community, and we deserve that. So terminal5 -- the number 5 -- group.com. So air pollution's important because it's a killer and causality is very tough research criteria and it was causality.

P-001-001

What concerns me so far in the draft EIS, which is huge and difficult to digest, is that there's too much terminology that is a shell game. And I don't like the idea that -- I wrote one of them down -- that we're considering conversion from diesel to electric. I, as a community member, would like to know that shore power's a

P-001-002

real thing. And, Mr. Felleman -- and I'm so hoping on you; I voted for you -- I hope we can get some sense into the city council, no offense, to listen to the public and understand we have health concerns.

Terminal 5 is right below high-density residential zoning. Terminal 18 on Harbor Island isn't and it already has rail. Terminal 46 is industrial zoning and it has rail. So you start going, "Oh, well, let's improve upland. Let's put more density. Let's work it 24 hours."

Well, let's look at geology. So what's true is we have the water, which is cold; the pollution, which is hot; our community is upland. And what's true is it goes right up there. A lot of people think we have mostly southwest and north prevailing winds, but the truth is we have east winds a lot. So what does that do? That brings that pollution into our breathing air and our communities. And I wanna repeat to you, this is a killer, okay?

So can we be competitive? Sure. But can we also protect our environment and our community, our children, the planet? You don't sell out for that. We have a great job market. We have the hottest housing market in the United States. We can do clean stuff. So let's look for both. Let's look for the port being competitive, let's protect longshore, let's protect our community, let's clean up the air.

P-001-003

So what I'd like to see you do is have Puget Sound Clean Air put equipment down there. They already have air-quality monitoring equipment at the Duwamish Head, East Marginal Way. We have nothing that measures over in West Seattle when it captures the east winds. That helps longshore as well because you're down there choking on --

MS. MABIE: 30 seconds, please.

MS. DAVIS: -- day -- how much time? --

MS. MABIE: 30 seconds.

MS. DAVIS: -- day after day. And that can kill you, too. So we can be competitive. We can clean up our air. There's no excuse not to. This is a quarter of a billion dollar project.

MS. MABIE: Next, Mr. Rasmussen. Thank you. And then followed by James -- oh, I'm sorry, I'm not gonna get it right, but you know who you are.

And you are representing an organization, yes?

MR. RASMUSSEN: Yes. I --

MS. MABIE: Okay.

MR. RASMUSSEN: -- represent the Duwamish River Cleanup Coalition that's a community advisor to the EPA on the Superfund site that is the Duwamish River.

First of all, one of the first comments that I'd like to make, it seems like the comments that are made in -- in the EIS is -- as it stands right now -- this is a --

P-001-004

P-001-005

originally a cleanup site already, and it does not state that it is a cleanup site already, and -- but it does state through that that there might be some issues as you work through construction of deepening the berths and those type of things as far as it relates to the cleanup site.

And one of things I would like to make sure is that Port of Seattle is working very closely with the Environmental Protection Agency and those organizations that are -- are looking at the MTCA cleanups that were done at the site -- I believe that's right, George -- as well as the EPA cleanups that were done on the site with Wycoff.

One of the other things I heard, that there would be mitigations as far as horns are concerned with trains, but only as they go through Spokane Street. Once they start going down East Marginal Way, where the -- where Georgetown is, you would not have those mitigations. And that is where the majority of the interaction with trains and community actually happen. And if you're saying that you're going to run trains at the same time as you're running them now, that means you're running trains 2:00, 3:00, 4:00 in the morning because that's what's happening right now.

The other thing that I think is probably the most important thing that is not considered in this EIS is the -- is the -- is the impact upon the community with the diesel particulate; in other words, you're running more

P-001-005  
(cont.)

P-001-006

P-001-007

trucks through these neighborhoods. These neighborhoods are highly impacted already because of diesel particulate. There is no question about that. And I'm not saying that this might not be able to be mitigated, but it's something that needs to be looked at. To be able to plant trees to protect Georgetown and protect South Park would be a good start of being able to do these type of things, green screens, all other types of things, but don't not talk about it. Because that's what's going on right now. You're increasing truck traffic by a huge amount through these neighborhoods. They're going down East Marginal Way, they're gonna go down West Marginal Way, and that means that they're going to be impacting these communities immensely. And so this is something that needs to be looked at. This is off site; it is not on site.

So when you mitigate possibilities of greenhouse gas emissions just on site, as was said earlier, with the possibility of electric shoreline or something like that, it needs to be sure. And then also to please look at the mitigation that needs to be done to the communities that are impacted. And let me be very clear about this: Asthma rates that are through the roof compared to anyplace else in the state of Washington, okay? Highly impacted communities. How do we mitigate that as we move forward? I want the port to be successful, but not at the cost of the communities of

**P-001-007  
(cont.)****P-001-008**



Georgetown and South Park. Thank you.

MS. MABIE: Thank you. All right.

James Wojciechowski.

MR. WOJCIECHOWSKI: Very good.

MS. MABIE: And are you representing yourself  
or a -- a -- a community organization?

MR. WOJCIECHOWSKI: Well, I -- I could be a  
big ego and say I represent everybody, but no. We've got a  
neighborhood organization.

MS. MABIE: Okay. Four --

MR. WOJCIECHOWSKI: But --

MS. MABIE: -- minutes then --

MR. WOJCIECHOWSKI: -- I'm --

MS. MABIE: -- after you get set.

MR. WOJCIECHOWSKI: -- I'm here as a  
representative.

MS. MABIE: But you're gonna need to get  
closer to the mike.

MR. WOJCIECHOWSKI: I didn't come prepared for  
tonight's meeting, I'm looking more towards Thursday, but  
I -- I got drawn into making a comment. So we've repeatedly  
heard through this whole process that these public comments  
need to be addressed. At the scoping meeting we brought up  
low-frequency noise off of the ships at the dock. Volume 2,  
and it's Page 19, your go-to consultant that's been working

P-001-008  
(cont.)

P-001-009

with you for, what, 20 years that you always go to for analysis specifically says, we're not gonna bother with it. It's unconscionable that they didn't even analyze that.

I think any of you that actually think that a ship down there with generators right down the hill is gonna impact you, you can stand on Terminal 5, look at the hill and see all the homes that are gonna be impacted. They're not thinking about it right now, but they'll be coming after you if you don't shore power for the ships that can handle it. Volume 1, weak language, no commitment to shore power. It says if the ships wanna hook up if they choose to. You know they don't choose to; you tell them they have to.

So, anyway, from the beginning of all this process we've heard that everybody's interested in protecting the community. I was very disappointed at the tone of -- of this DEIS, how weak it was. It left so many loopholes that your -- that your lawyer's gonna come back, as they've done in the past, and exploit if the language isn't locked down in the DCI permitting process. That's where the rubber meets the road, obviously. You've got a document that's weak going into those negotiations.

So I would hope that the attitude that prevails that you really are looking out for the community gets a little stronger, gets better language, and gets more momentum going in our direction.

P-001-009  
(cont.)

P-001-010

Oh, one more thing: For all of you that think we're accomplishing a lot by speaking in the microphone, make sure you put it in writing, submit it in writing, so they can go over it and we can use it to -- to hold them accountable.

MS. MABIE: Thank you. Now, if I don't have any other new commenters signed up to make public comment, does anybody else wish to make public comment before I go back to repeat commenters?

MS. DAVIS: I signed up again.

MS. MABIE: I saw that. I saw that.

Anyone else who has not yet signed up for public comment? If you haven't done so and you want to make some, please get your name on one of our lists here.

And, Kurt, did you want to take a moment?

MR. BECKETT: I did. I wanted to clarify just one thing with your blessing here.

MS. MABIE: Okay.

MR. BECKETT: From a couple comments that were made -- and, again, as a reminder --

MS. DAVIS: I have -- I have a public comment. I signed up one more time. I just had one thing I forgot to say.

MS. MABIE: I'm -- I'm gonna come back to you.

MS. DAVIS: Oh, we're --

MS. MABIE: Taking a break --

MS. DAVIS: -- not taking --

MS. MABIE: -- for a moment.

MS. DAVIS: -- comment?

MR. BECKETT: Yeah, it just was suggested it might be helpful to -- to clarify if it's still appropriate in terms of the SEPA process that we're in tonight.

So, on that note, part of the SEPA process -- you find it perhaps imperfect, but, nonetheless, what it requires of the lead agency in particular --

MS. DAVIS: Louder.

MR. BECKETT: -- is at this time that it would -- we don't want to prejudge the outcome in terms of if you were to make the final full commitments that would be the stronger language that we've heard in various ways that would be an appropriate outcome from what I heard from various citizens tonight and in other cases. It's premature for that from the SEPA process standpoint. So that's underlying inherent to the document as to why it is written that way at this time. It does not mean that it will be the same way when an FEIS is -- is issued. Obviously we'll reserve their full judgement as to what that document says. Tonight is about us making sure that we've heard clarifying questions that -- that either we didn't get deep enough on or that we didn't get right on how they were framed in the scoping period.

A couple other important things on air quality that are in -- in -- in effect, regardless of things like shore power, which Mr. Felleman wanted to be sure and -- and call out -- and he's right to do it -- and that is the environmental control area. So that is a North American continent policy that requires low-sulfur diesel fuel in a particular range on the coasts. And so ships, as a result of that international maritime organization regulations, today are burning that -- that cleaner fuel. In earlier times when the Port of Seattle was able to incent adoption and burning of that fuel at berth, this is an example of the kinds of incentives that can work before those kinds of -- of macro regulation come -- come into effect. The Port of Seattle, at an earlier time, was an advocate for that particular regulation; was on the, I would argue, cutting edge at that time to have that larger policy put in place, which is not only right for the environment and the citizens who live near facilities like Terminal 5, but it's also an example of where, from a competitive standpoint, it's a level playing field. And where we can have those outcomes for all the reasons I've stated, it's the kind of things that we're gonna continue to seek to do.

And the closing point was just things like the truck -- clean truck program, the SCRAPS program, that's pulling the older, dirtier trucks out faster than what the

market might do is another element of the work that continues today and will certainly continue to be part of the strategy for the commissioners -- in this case, the managing members of the seaport alliance -- simultaneously. Thanks.

MS. MABIE: Let me go back to Miss Davis. Anyone -- come on up to the mike -- that mike, please. Yes. Anyone else that wishes to make public comment, if you have not signed up, please do so.

MS. DAVIS: Okay. I'd like to respond to what he said before I get started here. The SCRAPS program is underutilized. There's plenty of funding. The purpose of it is to retrofit trucks so that their diesel is not so nasty for everyone. But, regretfully, that is not being taken advantage of. There is significant money there that sits, so those diesel trucks are not taking advantage of the SCRAPS program. So when you say, oh, we have that, well, it's not working.

Let's talk about the clean -- clean port strategy. That was the EPA, Department of Ecology putting some pressure on the ports to try to get them to clean up their act. There was Tacoma, Seattle, and Vancouver B.C. Seattle underperformed. Vancouver, B.C., who we compete with, did better relative to cleaning up their ports. So we kinda get told a song and dance in my opinion.

Jim, when you asked for more definitive

P-001-011

P-001-012

language, you say, well, we can't do that because we don't know what we're gonna do. I think it's reasonable as citizens to expect definitive language in each option, not, well, maybe this, maybe that. You're asking us to choose. So if you're gonna do shore power, say so and stick with it. And, Mr. Felleman, I do believe I saw you on a TV interview that looked like we were gonna get shore power. Now it looks like we might not.

P-001-013

You talk about diesel fuel incentives. That goes back to the SCRAPS issue. We do not have a port that cares about our air quality. I consider that the public is giving one shell game after another, whether it's the language in the EIS, whether it's not listening to what we said in the scoping project.

P-001-014

They just -- you know, well, look at what happened at Terminal 5. Even the City of Seattle could not control the Port of Seattle. Russia has the mafia. And the government, we have the Port of Seattle and the government. And it's a big push. We'd like to breathe. We'd like to survive.

Why I came up here is to say what I forgot to say: When you look at doing a planned rail, my God, please, we are already suffering from the rail that exists. You're putting it even closer to the base of our hill, right smack in the area that's gonna bring that sound and bring that

P-001-015

pollution up. I cannot understand why you want to add rail right below the high-density residential area when you have existing rail at Terminal 18. Terminal 46 is right next to all that SODO district rail. Why would you give us more rail, 1,800 diesel trips a day? Why? Why next to heavy residential zoning when, as I said, we can die from what you do?

MS. MABIE: Thank you. Anyone else who wishes to make public comment? One last time, anyone else who wishes to make public comment? Then I will call this public hearing part of the meeting closed, and so we will return to the open house. But before I do that, let me tell you that this is certainly not your last opportunity to make public -- to make comment. There are many ways you can continue to do so until 4:00 p.m. on June 21st. You can go to the online open house, which is at [t5eis.publicmeeting.info](http://t5eis.publicmeeting.info), and you can do that tonight on the laptops here or you can do that from the comfort of your own home or business. You can also email your comments to [SEPA.p@portseattle.org](mailto:SEPA.p@portseattle.org).

P-001-015  
(cont.)



**P-001-001**

Please see Standard Response No. 2: Post-Operation Air Quality Monitoring at the beginning of Chapter 6 for additional information.

**P-001-002**

Please see Standard Response No. 3: Use of Shorepower at the beginning of Chapter 6 for additional information.

**P-001-003**

Please see the response to comment O-005-001 for information on air quality.

**P-001-004**

Please see Standard Response No. 2: Post-Operation Air Quality Monitoring at the beginning of Chapter 6 for additional information.

**P-001-005**

The FEIS, Volume I, Chapter 3, Section 3.5.2 provides information on the cleanups that have been conducted at Terminal 5, which were referred to as Remediation Areas. If the Project impacts the Remediation Areas, the Port will work with the applicable regulatory agency to minimize exposure to remediated areas. Detailed information regarding how contaminants will be managed during construction and operation is provided in Section 3.5.4.2.

**P-001-006**

Increased throughput at Terminal 5 could result in an increase in trains on the railroad mainline and an increase in associated noise. By 2020, the average number of train trips on the mainline through south Seattle is estimated to be 94 trains daily. Assuming that four trains (8 train trips) related to the Terminal 5 operations would be considered additional trains on the mainline, the increase in the day-night sound level (Ldn) would be less than 1 dBA. This would represent a negligible increase in sound levels and would result in negligible noise impacts.

Please see Standard Response No. 5: Train Horn Noise at the beginning of Chapter 6 for additional information on addressing annoyance noise and "Quiet Zones".

**P-001-007**

The Air Quality Technical Report, Volume II, Appendix A of the FEIS includes a description of the analysis of the potential impacts of diesel particulate matter to residents in the vicinity of the Project area from operations. The assessment of diesel particulate matter indicated that the no-action alternative had the highest possible concentration of diesel particulate matter and the action alternatives resulted in lower concentrations.

Some of the control measures that will be implemented during construction include:

- Require Tier 2 or better engines for off-road equipment.
- Require model year 2007 or newer engines for heavy duty vehicles (exempt trucks that are operated <100 hours/yr on this job).

- Require use of biofuel B20, or offer contractor incentive for this fuel.
- Use only equipment and trucks that are maintained in optimal operational condition.
- Require all off-road equipment to have emission reduction equipment (e.g., require participation in Puget Sound Region Diesel Solutions, a program designed to reduce air pollution from diesel, by Project sponsors and contractors).
- Use car-pooling or other trip-reduction strategies for construction workers.
- Spray exposed soil with water or other suppressant to reduce emissions of PM and deposition of particulate matter.
- Pave or use gravel on staging areas and roads that would be exposed for long periods.
- Cover all trucks transporting materials, wetting materials in trucks, or providing adequate freeboard (space from the top of the material to the top of the truck bed), to reduce PM emissions and deposition during transport.
- Provide wheel washers to remove particulate matter that would otherwise be carried off site by vehicles to decrease deposition of particulate matter on area roadways.
- Cover dirt, gravel, and debris piles as needed to reduce dust and wind-blown debris.
- Stage construction to minimize overall transportation system congestion and delays to reduce regional emissions of pollutants during construction.

A number of measures intended to reduce operational emissions, including GHG Emissions, would be implemented for Alternatives 2 and 3. No additional mitigation measures are proposed or warranted. Examples of emission-reducing components would include:

- Shorepower plug-in capability for two berths will be provided as part of the Project when the terminal renews operation.
- The NWSA and Port will work with the terminal operator and shipping lines to design a program focused on attracting ships that are already carrying shipside onshore power equipment and encourage usage of electric shore power at berth to meet the 30 percent adoption goal that increase over time. The program will be in place beginning when the terminal restarts operations. The NWSA, Port and terminal operator will be responsible for tracking progress toward the modeled goals.
- Trucks entering container terminals will be required to meet model-year 2007 EPA emissions standards beginning in 2018 as part of the Northwest Ports Clean Air Strategy.
- Development of facility will utilize an electrical power supplier that obtains >90 percent of their power from non-fossil fuel sources reducing greenhouse gas emissions for terminal operations.
- Operational management plans to reduce truck queuing and wait times as outlined in proposed Queue Management Plan (Volume II, Appendix C, Transportation Technical Report) will reduce idling of diesel drayage vehicles.
- Port and terminal operator will track Terminal 5 air quality performance after the Terminal renews operation to ensure air quality predictions as described in the EIS are consistent with operations. The tracking plan will be approved prior to occupancy.

Together, these and other features included in the proposed Project represent substantial Project-related GHG emission reductions.

**P-001-008**

The environmental review in the EIS has provided decision makers sufficient information as the environmental impacts of the proposed actions, identified the adverse environmental effects for alternatives proposed, and identified ways to avoid, minimize, reduce, or mitigate reasonably foreseeable impacts. From the inception of the Project, the community and public agencies have made it sufficiently known that impacts to noise, air, and transportation are of paramount interest. The particular technical sections for these elements identify environmental impacts and the steps that will be taken to avoid, minimize, reduce, or mitigate impacts. Potential health risks resulting from emissions of diesel exhaust particulate matter and PM 2.5 associated with the proposed Project were evaluated for nearby residences and the communities of Georgetown and South Park. Changes in air quality resulting from Alternatives 2 and 3 were small, and the resulting changes in health risks relative to baseline were correspondingly small. See Volume II, Appendix A for additional information on the health risk assessment that was completed.

**P-001-009**

Please see Standard Response No. 7: Low Frequency Noise at the beginning of Chapter 6 for additional information on how this noise will be addressed in the Operational Noise Management Plan.

**P-001-010**

Please see Standard Response No. 9: Compliance Noise Monitoring at the beginning of Chapter 6 for additional information on how ambient-sensing, broadband backup alarms will be required on all mobile cargo handling equipment for the proposed Project.

Please see Standard Response No. 10: Responsibility for Permit Compliance at the beginning of Chapter 6 for additional information on how the Port proposes to use agreements with a selected marine terminal operator to ensure comprehensive compliance with city, state, federal, and Treaty tribe conditional approvals.

**P-001-011**

Almost 700 drayage trucks calling at the Port of Seattle and Port of Tacoma have been scrapped and replaced with financial assistance from federal and state grants and port funds under the "ScRAPs" umbrella since 2010. This includes over 270 trucks replaced with model-year 2007 or newer engines in the past 2 years, and there are many additional applications being processed.

**P-001-012**

Comment acknowledged.

**P-001-013**

Please see Standard Response No. 3: Use of Shorepower at the beginning of Chapter 6 for additional information.

**P-001-014**

The Port, as lead agency in the EIS documentation, believes that it has provided decision makers sufficient information as to the environmental impacts of the proposed actions, identification of the adverse environmental effects for alternatives proposed, and identification of ways to avoid, minimize, reduce, or mitigate reasonably foreseeable impacts. From the inception of the Project, the community and public agencies have made it sufficiently known that impacts to noise, air, and transportation are of paramount interest. The particular technical sections for these elements identify environmental impacts and the steps that will be taken to avoid, minimize, reduce, or mitigate impacts.

**P-001-015**

No change in the location of the existing off terminal rail line is proposed. The only change to the offsite rail is to establish a safety corridor which could eventually lead to managing train horn noise. Under Alternative 3, increased throughput would require placing more tracks in the intermodal yard between existing tracks in order for rail mounted gantry cranes to span the tracks more efficiently. These tracks are located approximately 800 feet from the nearest residential site. At this point the Alternative 2 represents the necessary physical improvements and the anticipated level of throughput required for both the Port and a tenant to make efficient and effective use of the terminal. The Port plans to move forward with acquiring permits with the City of Seattle and other regulatory agencies that will approve the Project infrastructure improvements and manage the impacts from operations that consider throughput of up to 1.3 million TEUs. The Port, in coordination with agencies, will identify the steps needed to reduce, minimize, avoid, or mitigate the impacts from construction and operations consistent with the Project described as Alternative 2 in the DEIS and modified in this FEIS based on public and agency comment. Alternative 2 does not anticipate increasing the size of the intermodal yard.

Port of Seattle Draft EIS Public Hearing  
, - June 09, 2016

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Port of Seattle  
Draft EIS Public Hearing

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Taken at Alki Masonic Hall  
4736 40th Avenue Southwest  
Seattle, Washington

June 9, 2016

REPORTED BY: April L. Cook, CCR  
CCR No.: 3245

206.389.9321



info@srspremier.com

MS. MABIE: Okay. Thank you, everybody. We're now going to move into the public hearing, and there's my sign-in sheet. Thank you so much.

So the way this will work is I'll be calling names off the sign-up list. I'll call the first person up, and then I'll let the next two people in line know so they can be ready. I will get the microphone back over there on that stand here in just a moment. So you'll come up to the microphone. The court reporter will be recording your comments. Please start with your name and, if you represent an organization, the name of the organization that you represent. Each individual person will get a three-minute comment period. And if you are representing an organization, you will get four minutes. If we have time, you'll be able to sign up again for additional time at the end of the list after everyone has had their first opportunity to make public comment. I'll give you about a 30-second warning when you are approaching the end of your time, and we'll ask you to wrap up your comments at the three-minute mark.

So I'm going to put the microphone over here, and I'm going to ask Paul Luczak up first, followed by Patricia Davis and then John Persak. Okay.

MR. LUCZAK: Hi, everybody. My name is Paul. I live down in the industrial area down by Nucor and Dragonfly Park. My wife and I did not move down there

because we always dreamed of living in an industrial area. We're more in touch with the paradise we live in called West Seattle.

The concerns that I've had have only been heightened by this meeting. You know, when I see that the voluntary air shoreline -- shore hookups are voluntary, I got on my phone because I've been studying Long Beach. They require them in Long Beach. The community forced it and they were in an uproar. And if you look now, if you're a shipping operator, there's a whole set of standards that you have to comply with with very few exceptions. That's because the cancer rates in Long Beach still are the highest in California even though California is a -- a forerunner in reducing air pollution.

So we should all be concerned. We should be concerned about the size of these vessels, the construction noise. And when I hear people say, oh, it won't be 1800 trucks a -- a -- a day, it could be less, what if it was half that? It'd still be a huge impact on our lives. My neighborhood has a bunch of young families and retirees like me fixing up their yards, living happily under the illusion that we're gonna have a quality of life. I already have to listen to Nucor, and I already see what comes out of my downspouts on my driveway, a black goo. It's not everybody's fault, but I don't see this helping me have a better quality

P-002-001

of life.

When I think of the port, I hate to say it, but I think of you guys blocking the Sonics arena and blocking -- and bringing in that Shell Oil facility -- and I'm not really super liberal, I'm a centrist -- but I need to trust that you guys are looking out for more than profit for me. Because I can see that your facility might need to have a level two -- Alternative Two, but an Alternative Three, when you're admitting that you're gonna have a 38 percent increase in pollution, that scares the hell out of me, folks. So I hope that you really take a good look at this and really give it a fair shake in the public's eye. Thank you.

MS. MABIE: Patricia Davis, followed by John Persak and then Deb Marker.

MS. DAVIS: Can you turn this up a little bit?

MS. MABIE: No. Just be very close to it.

MS. DAVIS: Okay. Can you hear in the back, way back?

AUDIENCE MEMBER: Yeah.

MS. DAVIS: Okay. Good.

Couple of -- maybe some of you were at the hearing a couple of days ago where I mentioned about the American Heart Association having causality research that air pollution causes heart disease, which is our number one killer of both men and women. Also I want you to know that

P-002-002



one of the measurements that they have is fine particulate, 2.5 to be exact. The American Lung Association did research that showed that fine particulate can go inside our homes, even with all the windows and doors closed. Diesel is a killer. I think almost everyone knows that.

And I'm gonna run out of time so I just wanna say: Air pollution does matter. It matters to us, to our health, to the environment, to the planet. It is not a small thing.

When we look at the EIS and look at some of the high-pollution activities -- certainly ships berthing as well as the average of two tugs, 40 minutes at work there -- one of the things that's perplexing about this is both of those entities are unregulated. So we have a lot of difficulty.

We keep being reassured that the port's clean-air strategy is somehow here to protect us when, as I said in the meeting two days ago, we have significant underachievement on the Port of Seattle's part as compared to Port of Tacoma or Vancouver. So we've got a problem at hand, first off, of not taking our air quality seriously, based on results in the clean-port strategy documents, which are failing. In addition, some of the heavy-duty black diesel that I'm sure we've all seen coming out of tugs and coming out of ships, there's no regulation. That is not addressed

P-002-003

in the draft EIS.

But I thought of a way we could handle it maybe. And I'll -- and they said the same thing about noise, oh, gee, sorry, we just can't do anything about that. It's unregulated. So something that's really important is to pay attention to what's unregulated. Well, the port has one massive tool at hand that we have not heard about: Leases. Guess what? When you own the property, you get to say what happens with it. So it's not, oh, gee, I'm so sorry we're polluting your air. Put it in the lease of what their performance needs to be.

MS. MABIE: 30 seconds.

MS. DAVIS: I'll probably have to come back up here and talk again.

We would like some change in the language so that it's more definitive, not considers electric operations.

Are you giving me four minutes, incidentally?

MS. MABIE: Uh-huh.

MS. DAVIS: Okay. Thank you. And I'm gonna come back up here.

So we need leases with some bite in them for the ships, the tugs, to do business with the port. And we are our health and our environment. It's a killer.

AUDIENCE MEMBER: How many people are --

MS. MABIE: John --

P-002-004

P-002-005

AUDIENCE MEMBER: -- going?

MS. MABIE: Excuse me?

AUDIENCE MEMBER: How many people --

MS. MABIE: At this --

AUDIENCE MEMBER: -- are going?

MS. MABIE: -- point right now, we have ten.

John Persak, followed by Deb Barker and then Henry Lee.

MR. PERSAK: Good evening -- good evening,  
everybody. My name is -- does this move up?

MS. MABIE: You need help?

MR. PERSAK: Good evening, everyone. My name  
is John Persak, and I am a longshoreman with ILWU Local 19,  
I'm the vice president of Local 19, and I'm also president of  
the Puget Sound District Council of the ILWU. I also live in  
a neighborhood that is impacted by the port, trucks in  
particular. I live in the Georgetown neighborhood. There's  
a lot of container truck traffic as well as other diesel  
traffic there.

So as someone who works there and as someone  
who lives in an impacted community, I understand fully the  
concerns that are being brought forward by the community. We  
understand and appreciate the issues about emissions because  
people that work down there like myself also have issues with  
clean air and noise also.

Backup alarms, in particular, are very

P-002-006

important to us. Back in 2006 we had an unfortunate fatality of a good friend at Terminal 5 in a nighttime operation, so backup alarms are very sensitive issues with us. But I think also that we can look at ways where we can find ways to navigate around how we can have less of an impact on the community and I hope the port can look into that issue further.

A couple things I wanna bring up: We are still reviewing the draft environmental impact statement, and we will be submitting all of our comments in writing. And so those comments are typically public information available on the web so anybody who would want to look at those would be there. And we did submit comment on the scoping, and a lot of what we had to say I felt was in line with what the concerns of the community are as well.

In particular, Option Number Two, Alternative Two, the question was asked at the last hearing on Tuesday whether or not the equipment -- the -- the -- the assumption of what type of equipment was being used to study the -- the emission, what kind of -- was it the state-of-the-art staffed equipment that is available or is it -- or is it equipment that's typically in use, and the answer was it's equipment typically in use. So we would hope that the port could study, you know, all types of equipment that are available while maintaining the traditional amounts of staffing at the

P-002-006  
(cont.)

P-002-007

terminal so that we can actually get a better picture of what Alternative Two might look at as a -- as the cleanest operation we can have while maintaining the workforce there.

Also, I think it's very important to understand that, you know, the terminal -- the port has been here since 1912, you know, when the people of Washington wrestled control of the port from the rail and the shipping company interests, you know, and placed it into public hands. And I think it's a very important point in that, you know, we all have a responsibility to protect that asset. It belongs to us. And because it belongs to us, you know, we -- we have a say in -- in how new facilities are constructed.

And so I would -- I would make myself available, I know other people in our local union would make themselves available, to the community where we can all have a conversation about ways that we can work together to make sure that, you know, the port is going to do right by the community because we are the port and these commissioners work for us. So thank you very much, and we look forward to talking to you more and putting our comments out there in writing. Thank you.

MS. MABIE: Thank you. Deb Barker, followed by Henry Lee and Vince O'Halloran.

MS. BARKER: I've got this big object in my face. Can I hold this in my hand, Peggy?

P-002-007  
(cont.)

MS. MABIE: No, but I can move it down.

MS. BARKER: Thank you. That's better. Thank you so much.

MS. MABIE: Yep.

MS. BARKER: Hi. Deb Barker. I'm a member of the West Seattle Transportation Coalition. I'm also a union member, although not a longshore person.

Alternative Two and Three are effectively two- and three-man rocks -- or two- and eight-man rocks, really, that are thrown into the bowl that T5 actually is. I know many of us have talked to folks about the perceived impacts beyond the actual port, T5 parameters, uphill, across The Sound, how far we can hear the trains, how far we can hear noise. Follow those ripples and extend the impact analysis to Interstate 5, to State Route 99. Make sure that all the impacts caused by noise, transportation -- including traffic -- are analyzed all the way to Interstate 5, all the way up and down 99 within that bowl, and all the way up that hill that -- I wouldn't say all the way to California, but it's a start. So follow the ripples.

Lastly, I would strongly encourage that final report to take the high road. Adopt the most rigorous standards that are known to, all right, the U.S. Probably there's higher standards in Europe, but adopt the rigorous standards. Don't talk about optional or proposed. Go for

P-002-008

P-002-009

the highest standard. It's the Port of Seattle. Just do it.  
Thank you.

MS. MABIE: Henry Lee, followed by  
Vince O'Halloran and Jim Wojciechowski. Sorry, Jim.

MR. WOJCIECHOWSKI: You're getting closer.

MR. LEE: Okay. My name's Henry Lee, and I'm  
with the -- the East Albro Neighborhood Group. I'm going to  
be speaking about low-frequency vibration.

So last Friday at 5:00 in the morning I was  
woken up in -- from a dead sleep to a skull-numbing, pulsing  
sound in my head with all the windows closed. It was -- I  
looked out towards Terminal 5 and felt the low-frequency  
vibration penetrating my house for the next two hours with  
accompanying smoke plume blowing northwest over  
North Admiral, just litter -- littering the pea patches with  
creasote. I guess what the vessel was doing during those  
hours was that it was clearing its diesel boilers, thinking  
that no one was watching, except maybe me.

I live roughly 2,500 feet from Terminal 5,  
and I was able to feel that vibration penetrating the walls  
of my house. Imagine -- just imagine how bad it could be  
for -- when ships four times as large and two of them are --  
are based at Terminal 5 with eight total diesel -- diesel  
power -- diesel engines that can power whole cities all  
running all at once.

P-002-009  
(cont.)

P-002-010

When I was in the military, I used low-frequency sound to communicate over hundreds of miles of ocean. When the air is damp, the sound from these ships can travel well beyond my neighborhood. When the seaport alliance brought the BENJAMIN FRANKLIN in back in March, they had the great opportunity to study the engine sounds of the BEN FRANKLIN, even though it's only operating one out of its four generators, but there was no mention of that in either Volume 1 or Volume 2 of the -- the draft EIS.

P-002-011

On Page 19 of the Ramboll Environ noise study it acknowledges that some of my neighbors on the hillside have heard the low-frequency vibration; however, it doesn't take into account the neighbors that hear the constant humming in the Pigeon Point and Delridge neighborhoods, which I've heard the people complain about at the community meetings at the Pathfinder School.

P-002-012

On Page 16 of the Ramboll Environ noise study it also mentions that the existing environment -- the existing noise environment comes mostly from the West Seattle Bridge and that noise really falls below 50 decibels; however, if you ever -- are ever on the hillside in the middle of the night, the bridge is quiet and all you hear is the noise from the port, the humming from the ships, the -- the beeping from -- from the -- from the topics. There's no masking of -- of that from the -- the bridge traffic.



So what I'm asking for is concrete mitigation and since few are shouldering a blame -- or shouldering the burden of economic growth at the port, I ask that -- I ask in the public comments for the EIS to look at retrofitting the homes that surround the port. A precedent has already been set with Sea-Tac, and the request was ignored. So I hope the port can look at this. Thank you.

P-002-013

MS. MABIE: Vince O'Halloran, followed by Jim and then Mark Jacobs.

MR. O'HALLORAN: Hi, everybody. My name is Vince O'Halloran. I'm the branch agent for the Sailors' Union of the Pacific -- we've been in Seattle since 1885 -- and I'm also the executive secretary/treasurer of the Puget Sound Ports Council, Maritime Trades Department, AFL-CIO. My office was, up until two years ago, right down next to Nucor Steel. And rising rents forced me out and forced me over into Ballard.

This process is a good process. We -- my -- the men and women that work for the companies that -- American President Lines is one, Matson are another -- that both call here, they deserve to work under safe conditions, breathe good air, and -- and support their families.

The comments that I have heard -- the strong lease agreements and the lady from the West Seattle coalition that she made a remark that I thought was very good -- are --

P-002-014

is great stuff. Those really go far in -- in directing how the port will -- will put together this project.

Now I remember what she said. So she talked about bringing up the standards. And, amazingly enough, Washington state has the highest oil-transfer standards of waterborne oil-transfer standards in the nation and the world. Our shipyard right down here works under the most stringent environmental regulations in the United States and probably the world. And that -- that comes from meetings like this and the participation of the public. I think that we are gonna go a long way in -- in accomplishing this project as being one of the leading environmentally progressive projects in the country and in the world. I have no doubt about that.

I would like to read just one quick statement.  
Am I close here?

MS. MABIE: No, you're fine.

MR. O'HALLORAN: Anyway, from -- in my position as the director for the Sailors' Union of the Pacific, I would like the final EIS to -- should include information that recognizes the value of Terminal 5 as a linchpin in the local and regional economy and the role maritime cargo transportation plays in getting goods produced in our region to the markets and around the globe. Thank you.

P-002-014  
(cont.)

P-002-015

MS. MABIE: Thank you. Jim, followed by Mark Jacobs and then Marti Casey.

And let me take a -- a moment here: If you have not yet signed up for public comment and you wish to make it, please do sign up at the back, and that will be brought up to me. And once we've gone through everyone who wants their first shot, then we will take additional comments in a second go round if that's necessary. Thank you.

Go ahead.

MR. WOJCIECHOWSKI: Thanks. I'll start out with generalities and see how much time we have left. What we all need to keep in mind is where this all started.

MS. MABIE: You gotta get right up to that mike, please.

MR. WOJCIECHOWSKI: Yeah, that's what I was afraid of. All right. I'll eat the mike.

Anyway, this whole thing started --

AUDIENCE MEMBER: Yeah.

MR. WILKE: Is that better? All right.

AUDIENCE MEMBER: Yeah.

MR. WOJCIECHOWSKI: Back when the port, before Commissioner Felleman came on board, tried to get expedited permits to get this thing going without an environmental review. So that's the tendency that we're having to resist. Thanks to Patricia Davis's effort, we got an EIS commitment,

and then we all got hopeful. Then you read the DEIS when it came out and it didn't deliver what we were hoping for: No commitments, a lot of possibilities, a lot of vague language, possibilities.

Commissioner Felleman is serious. He's going to look out for us. But we all need to give him the written comments that he can work with. He doesn't perceive everything that we need and every problem that we see. We've heard several from the mike, but don't feel comfortable that that's good enough. Put it in writing so that he can work with it because he has to oversee a group that is a business. They are not oriented towards pleasing us and satisfying our needs. Keep that in mind.

So, for example, under SEPA -- they're the lead agency -- they got to hire the consultants that they wanted to do this analysis. You can imagine that they went to the usual go-to consultants and got -- the -- the consultants were motivated to deliver what the port was looking for, even if it wasn't explicit, and they did. I'm more familiar with the noise sections; there's all kinds of holes in it. Not direct lies; lots of omissions. Not a correct illumination of the reality in the valley we live in down there.

But the one that amazed me at the scoping meeting, we, several of us -- especially my comments -- asked

P-002-016

P-002-017

for shore power to eliminate low-frequency noise. Henry hit it right on the head. It's irritating, it's been there for years, and the consultant came out with noise from these ships is not included in the analysis. Now, they're required by SEPA to address every one of our comments. They didn't. You've gotta fight that tendency, stay on top of this.

Listen to the words: It will likely decrease in the future with the advent of newer ships and it will likely decrease in the future when up to 70 percent of the ships are expected to use shore power while at berth. That 70 percent number is 2040. You're gonna sit through 20 years till it gets up to that number.

Pay attention. I know they dumped a thousand pages on you and you've got a little over two weeks to review it. Look for the holes. Bring your issues forward in writing.

MS. MABIE: 30 seconds.

MR. WOJCIECHOWSKI: Thank you.

They keep quoting ordinances. The Seattle noise ordinance has a dB level. Low-frequency hum coming out of these ships doesn't come anywhere near the threshold of those limits. You need to push for them to analyze it from a different standard; otherwise, that hum is gonna drive you crazy.

All right. I'll be back later if I think of

P-002-017  
(cont.)

P-002-018

more.

MS. MABIE: Thank you. Mark Jacobs, followed by Marti Casey and then Max Vekich.

MR. JACOBS: I probably don't need to worry about my -- my voice usually projects very well.

Mark Jacobs here. I'm a professional engineer and also a professional traffic operations engineer. I do know the author that wrote the transportation section of the EIS. She's credible and well known in the community. I did review the transportation section of the report and focused my review, and I'm a member of the West Seattle Transportation Coalition board, and so I've got a couple personal comments is -- the personal comments are from me, not the board.

The personal is that we all gotta remember that the port generates good-paying jobs and I'm tired of, you know, the politicians and all, we need good-paying jobs. Well, the port generates these kinds of jobs. We need to be cognizant of that through this.

And then also the port -- you know, improved transportation benefits all. So whether the port's paying for it or whether WSDOT's paying for it or whether SDOT's paying for it, it's all public dollars. And we need improved transportation. The port needs improved transportation. We need improved transportation. You know, getting on and off

the peninsula during peak time periods is very difficult.

So now here are my formal comments through the transportation coalition board: The five-legged intersection was analyzed in the report, but they didn't look at what I call a right-in, right-out option which would allow them to eliminate that phase because it's only end on a right in and right out. What that benefits is all the trucks coming from the Kent Valley coming up West Marginal Way no longer have to turn left at the five-way intersection and then turn left again at T5. What they're doing is simply turning right into the port. It's a benefit for all because it gets the trucks -- instead of two left turns, one right turn. A lot simpler. And then when some trucks are leaving and wanting to go to Interstate 5 and the low-level bridge is closed for barge traffic or whatever, they have the option to use the -- you know, use the right out to get to the high-level bridge. So that benefits the -- the port and also reduces congestion on the low-level bridge.

P-002-019

The TIA was too limited. I -- I think it should've -- the low-level Spokane Street needs to be looked at from the site all the way to Interstate 5, all of the signals at First, Fourth. East Marginal Way was looked at. And I think Sixth is also signalized. Is there potential to, say, interconnect those signals, install adaptive signal control, and maybe look at some left-turn revisions? Because

P-002-020

if you're driving east-west or riding your bike east-west and you get stuck at First and Fourth, it can be a long wait. Can there be ways to make that work better?

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(cont.)

The traffic report in the -- did not look at -- traffic concurrency was not evaluated and disclosed. The city's got traffic concurrency standards. Why is it not identified in the -- in the report?

P-002-021

Another thing is -- you know, maybe something to look at maybe avoiding truck operations during the street peak hour. In fact, my wife was coming home from work this morning, got -- she called me, what the fuck's going on? Well, apparently there was some port traffic happening that was backing up onto the West Seattle Bridge. And that's during a peak time period. Is that really a responsible thing to do? Can we say, hey, we're not gonna open the gates till after 9:00?

P-002-022

The Chelan signal west of the five-way intersection continues to stop westbound curb-lane traffic. I think it was alluded to in the report, but that signal needs to be fixed because that -- that curb lane is an add lane and should be turning right all the time. And that backs up into the five-way intersection, worsening the operations of that.

P-002-023

So those are pretty much my comments, so thank you.



MS. MABIE: Thank you. Marti Casey, followed by Max Vekich.

MS. CASEY: I usually never need a microphone because my voice also carries.

My name is Marti Casey, and I moved to West Seattle -- do I still need it?

MS. MABIE: Yep.

MS. CASEY: Okay.

I moved to West Seattle in 2000. I've lived in many cities across the country, and I've really grown to love West Seattle, and I don't want to have to leave it because of the air pollution. But the unbearable noise that comes from the trains and the increase in the trains, this is one of the most notable things that I think we need to address for our quality of life, along with the air pollution.

My first question I want to ask is: Why is the Port of Seattle and why are we looking at developing Terminal 5 so close right under a high-density residential area? There are -- you said that you did develop -- look at developing other terminals and it could be cost or shape. I think it's important that the costs include all the costs to all the people in their medical care, in their productivity. And what does sleep deprivation cost?

Finally, I wanna say this is a public-safety

P-002-024

P-002-025

issue. Not only will this expansion create a very poor quality of life for all of us in this room and all the residents of West Seattle, it's also a public-safety issue for all the people that go, get on an airplane at Sea-Tac Airport and it might be flown by a pilot that couldn't sleep the night before or someone that's on I-5 and gets next to a truck where the driver hasn't had enough sleep because he lives in West Seattle and was woken up by horns three times as much as what was done in 2008.

P-002-025  
(cont.)

And, lastly, all of the potential and the possibilities of what will be done for mitigation -- I'm trying to be diplomatic -- but I want to know how can we trust you when West Seattle residents have been begging for relief on the train noise for years and years prior to Terminal 5 closing and nothing was done? So I guess I -- I leave you with that, that I think that I and I think, from what I'm hearing in the room, we support the port.

P-002-026

MS. MABIE: 30 seconds.

MS. CASEY: We want to have a world-class city, but this is not leading us to a world-class city. Thank you.

MS. MABIE: Max Veek-ich.

THE VIDEOGRAPHER: Vek-ich.

MS. MABIE: Vek-ich. My -- my apologies.

Do I have any others signed up? I do. Okay.

Thank you.

MR. VEKICH: Thank you.

My name is Max Vekich and I -- I'm a longshoreman by day, but I'm a West Seattle resident all the time and, unlike many of you, I wasn't lucky enough to be born here. I moved here from Aberdeen.

And I picked West Seattle of all the neighborhoods to live because, well, I've been political and I had the misfortune -- or fortune -- of sitting next to a guy from West Seattle, Paul Pruitt, who was a legislator. So I ended up voting for all the stupid West Seattle stuff when I was a legislator, even though I didn't represent West Seattle. So I kinda thought, I already got investment in this place, in this community, including the First Avenue South Bridge. When we had to replace that, by God here's a guy from Grays Harbor who voted for it. So, anyway, here I am.

Fast forward a few years and I've lived here now for 12 years. I live in High Point. I -- I bought into the dream there that they're gonna create a new model community. Well, we're trying to get it right. We're starting over there, so create a community from the -- from -- from scratch.

Now, Terminal 5, believe it or not, was a model port, a model dock. It was the model of the Shorelines

Management Act. People dotted i's and crossed t's to make sure it was done environmentally right.

But now as we're maturing and moving forward, those are great-paying jobs, let me tell you. I mean, if I can buy a condo in West Seattle -- or bought when the market was high -- if you can afford a condo in West Seattle, then those jobs must be decent. And they are. And there's a whole lot of longshoremen and port workers who live there. And in our -- my neighborhood it's diverse economies, too. So we have -- a lot of truck drivers also live in High Point and a lot -- a lot of racial integration and we got a nice -- a nice blend of people there. And they're here because they can work in West Seattle.

So, as we move forward, we should embrace a lot of what the community's saying. They're talking and complaining about a lot of things that my union complains about: Complained about the diesel particulate, complained about the emissions from the ships.

Now, why are you giving the cruise ships a pass? Because they're bigger polluters than the container ships. And we've been sold a bill of goods that they plug in. Well, thanks to people like Fred and some of the other port commissioners, there is more plugging in than there was. But I work on those ships, and half of them are still not plugging in. So when they say the cruise ships are plugging

P-002-027

P-002-028

in, the cruise ship industry says that, they're only telling you half the truth. So now the union's been pushing for these things.

MS. MABIE: 30 seconds.

MR. VEKICH: And so we embrace a lot of things you do. Be we can do this thing smart. We can move forward smartly. We can have quiet trains. We can have plugged-in vessels. We can do all that. We should do that as this terminal moves into its next generation of life because it's vital to this community and it's vital to the jobs. Thank you.

MS. MABIE: Chris Wilke, followed by Thomas Noyes and Tom Hubbard.

And anyone who has signed up that has already spoken, I'll be dropping you down to the bottom until we have all the first commenters done.

MR. WILKE: Great. Hi, I'm Chris Wilke. I'm the executive director at Puget Soundkeeper Alliance in Seattle here.

We'll be submitting written comments also. We're still analyzing the high volume of -- of material associated with this draft EIS. We think the revitalization of Terminal 5 is a real opportunity for the port to live up to its stated goal of being a leader in sustainability. While we do applaud the goal of reducing carbon -- carbon

P-002-028  
(cont.)

P-002-029

emissions which is included in this -- in this plan, a five-minute idle max for the trucks, and a goal of getting on 90 percent of the electrical supply, we echo what some of the other commenters have stated here that it really should include a shore power requirement for ships. This will cut down on the burning of bunker and diesel fuel while at the dock, it'll reduce carbon emission, and it is an opportunity for the court -- for the port to lead the way for West Coast ports. This is not addressed -- not fully addressed in the EIS.

P-002-030

I'd like to devote the bulk of my comments to the stormwater plan because I don't know if anyone else here is gonna talk about stormwater. The -- a little bit of background on industrial stormwater: It has high levels of zinc, turbidity, and then, believe it or not, fecal coliform. Even though it's not a sewage source, the other container ports discharge extremely high levels of fecal coliform into a waterway which is already impaired for fecal coliform. I was reviewing some numbers today from one of the adjacent ports: 120,000 colony forming units; the water-quality standard is 100. The port needs to address this. Currently the permit, the stormwater permit, that the port will be operating under only requires them to monitor. It doesn't require them to address this issue. The port should address this issue.

P-002-031

We do support the -- the general direction of the environmental impact statement. To meet the industrial stormwater general permit's Level 3 corrective action requirements, they're allowed to test their stormwater and when it exceeds the standards, they have to do something about it. But the EIS does not guarantee that a Level 3 adapted management corrective action will be implemented. It absolutely should be implemented.

The other two major ports along the Seattle waterfront have exceeded their standards repeatedly. They had to be sued in order to get them to implement water-treatment systems for their stormwater, and those treatment systems are going in right now. They are treating their stormwater.

The port should see the writing on the wall and guarantee us that a Level 3 stormwater treatment system will be implemented from day one. This is an opportunity for leadership, and we think that the design of the stormwater improvements should be available for the public before they're submitted to Department of Ecology for approval.

Another aspect of the stormwater at -- at this facility is discharge from animal hides. The other two -- evidently one of the main export products of the United States is animal hides. We don't make much anymore, but the other two port facilities have entire sections where

P-002-032

P-002-033

the containers are stored with uncured animal hides. And these sweat and ooze in the hot weather, and -- and the port workers don't even wanna go near it.

MS. MABIE: 30 seconds.

MR. WILKE: The --

AUDIENCE MEMBER: I've heard that before.

MR. WILKE: -- the other -- one of the other facilities has now cordoned off that and the wastewater from that area is being sent to the sanitary sewer for treatment. It's not going into Puget Sound. The port should -- should look at that.

We'll be submitting detailed comments on the dredging and the air emissions, but I just wanna say one more thing about the dredging: The Duwamish River is a highly polluted waterway. The samples on the dredging that -- that have been taken show at least two samples exceeding toxic standards for dioxin. This is one of the most toxic chemicals known to man --

MS. MABIE: Time.

MR. WILKE: -- and they're planning on open-water disposal. That's not acceptable. Those are biocumulative toxins. Also, the PCBs that are prevalent throughout the Duwamish --

MS. MABIE: Please wrap up, Chris.

MR. WILKE: Okay. I'll wrap it up.

P-002-033  
(cont.)

P-002-034



The -- the monitoring standards don't actually get down to the level of the PCBs, and these work their way all the way up the food chain to Chinook salmon and Orca whales. We end up ingesting them if we eat salmon. So -- so look at this open-water disposal and see if there's not a better way.

MS. MABIE: Thank you.

MR. WILKE: Thanks.

MS. MABIE: Thomas Noyes, followed by Tom Hubbard and anyone else who has not yet signed up for a comment. Then it will be followed by Patricia Davis.

MR. NOYES: Good evening. I'm Thomas Noyes. I'm an Admiral District --

MS. MABIE: Right -- right on top of the mike.

MR. NOYES: -- Admiral District resident.

Thank you for the opportunity to comment.

My first request would be, given the magnitude of both of these two documents, if the port would allow for an extension to the comment period. A lot of people here would appreciate more time to review this. We all have very busy lives, so that would be great if you could extend that for us all.

My second input comment -- even though I realize it's not part of the environmental assessment itself -- in reading the document, the market forecasts, I

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(cont.)

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P-002-036

think, are subject to maybe perhaps a little more analysis and explanation. Basically what the report says is it's a straight trend line, roughly 4, 4.5 percent growth rate, in -- in the intermodal traffic and it acknowledges that there's some uncertainty in that number, but we're basically led to believe we're gonna get to 1.3 million in 2030 and 1.7 by 2040. I think that's somewhat questionable, so just a comment there.

P-002-036  
(cont.)

The rail infrastructure analysis report, I would say for the most part is pretty good. There are some discrepancies and issues between that and the overall transportation summary. If I might just quickly give a few examples, and in terms of the environmental impact questions, specifically on Page 25 of the rail technical report, it talks about quiet zones and does give some explanation to that. But it doesn't really. It basically concludes that it's infeasible because it's too costly, but there's no mention of costs in there as to what -- you know, how much would it cost to implement and how much of a cost is it relative to, say, a \$300 million investment in a terminal. So I think it's kind of -- I think it's basically unacceptable to say, well, it's too costly, we can't do it. I understand there's some technical issues involved, but I think that needs to be revisited.

P-002-037

Very quickly, just two examples of some of the

rail questions I think that will need to be further vetted:  
In the transportation report it talks about the existing rail capacity based on a volume of about 530,000 TEU, it being equivalent to about 18 trains per week, 18 loaded trains. And then in the rail technical report it talks about Alternative Two generating 18 loaded trains a week. So I think there's some questions about what are the rail operating assumptions and configurations of the train.

And also tied to that, it talks about the assumption was that the average train length was expected to be 7500 feet. And maybe that's the -- excuse me -- maybe that's the limit that can be operated out of Terminal 5, but the railroad operating practices are moving to bigger and longer trains. So that might be included in the analysis.

So, finally, in --

MS. MABIE: 30 seconds.

MR. NOYES: -- in conclusion, I would just really encourage for the rail operations analysis to really further vet out the quiet zone, because that's a huge issue. Thank you.

MS. MABIE: Thank you. Tom Hubbard, followed by Patricia Davis.

Has anyone else signed up for public comment? Thank you.

MR. HUBBARD: Good evening. My name is

P-002-037  
(cont.)

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P-002-039

Tom Hubbard. I live in the West Seattle Junction.

I'd like to address a couple of issues that I haven't heard much about yet this evening. The first one is something that I raised in my comment letter on the scoping document that was not addressed in the EIS, but Longfellow Creek discharges to the Duwamish River, right underneath Terminal 5. It drains all the Delridge Valley all the way up to Westwood Village. It's one of the three or four streams left in the city of Seattle that has salmonid, but the port controls the mouth of the creek. And if we're gonna redevelop the Terminal 5, I think we should look at looking at the mouth of Longfellow Creek. I realize the creek also runs underneath the steel mill, but that is no excuse for the port to just ignore the issue.

The second thing I'd like to raise is traffic. And when I read the EIS, it says that during the -- in the ten-year increments that we're gonna have 73, then 103, and then 148 trucks per hour. If the trucks run 24 hours a day, and I don't think they're gonna run 24 hours a day, that means 1.2 trucks a minute, 1.7 trucks a minute, and 2.5 trucks a minute. And I don't believe that there's only gonna be a 30-second increase in traffic at Chelan Street.

Furthermore, I think the EIS should address the big traffic issue in West Seattle, and that is where the West Seattle bridge intersects with Interstate 5. I find it

P-002-040

P-002-041

P-002-042

very interesting that the EIS has not covered the big junction where all of us see the traffic backing up. And if you've ever been on the West Seattle Bridge at 8:00 or 9:00 in the morning and you see the big trucks coming up from the port, you know what it means -- what that means to -- to us as residents.

P-002-042  
(cont.)

And, finally, I realize -- I read through the biological assessment. And though this project does not adversely affect the salmonid habitat of the Duwamish River, I wonder if there's anything that can be done to improve salmonid rearing for Chinook salmon in the green Duwamish, because they all swim right past Terminal 5. Thank you.

P-002-043

MS. MABIE: Thank you. Patricia Davis.

Anyone else who wishes to sign up for public comment?

MS. DAVIS: I wanted to tell you my personal experience. I live at 2313 Walnut. I am off your data list. So I was very distressed to go through those 1,000 exhausting pages and find out that 98116, which is the ZIP code that we're in, certainly is listed for mortality and hospital visits, but we're not in the other data. It's very distressing.

P-002-044

So I do want to tell you, we have a lot of people, and I share this about train noise, the thought of you doing more upland rail is, oh, my God, we can't even

P-002-045

stand what we have. It's better with Terminal 5 closed, but we still have Nucor trains down there. We have other trains that are moving garbage. So train noise is unbelievable. You can hear their motors.

I found it distressing that you -- high levels of -- of data on West Seattle Bridge traffic. At night we don't have that. It's really quiet. And, as we know, the city bounces sound. And we know that water carries sound. And we have high levels of noise up in North Admiral. I just can't believe it. We're not represented. I was shocked. So -- you know, so much for covering 1,000 pages.

One of things that we have asked for is a reliable data source to understand what we're going through. 10th and Weller doesn't capture us. Beacon Hill doesn't capture us. And when you look at what's addressed in the EIS, they mention those two neighborhoods, and North Admiral is never, ever mentioned. I live, and I went and looked it up, three-quarters of a mile -- that's not far -- from Terminal 5. If you guys know where the scaffolding place is, that's the 2300 block, same as me. Why don't -- why don't you have data for us?

So let's review that air pollution is hot, that the water is cold, and it goes up to the hill to us. That's very real. And I suppose I should tell you, too, I have a master's degree from the University of Washington,

P-002-045  
(cont.)

graduated in the top 1 percent of my class. I've done many, many EISs over the years. I am amazed that our North Admiral community is not in there.

P-002-045  
(cont.)

When we look at truck emissions, I think that you guys, the average person there, you should know that the emission standards that are out right now is 1994 and that in January 2018 they will go up to 1997. Wow, can you believe it? And we're gonna do 1800 of those? So what's true is the SCRAPS program, which was put together by EPA and Department of Ecology, is underutilized. There is a lot of money there to replace truck engines. The truckers are waiting, okay?

P-002-046

MS. MABIE: 30 seconds.

MS. DAVIS: So I will just say terminal5group.com. We have a petition on this for requests for you to make letters. We will put addresses of where you can write to. Terminal5 -- the number 5 -- group.com. Thank you.

MS. MABIE: Thank you. Is there anyone else who wishes to make public oral comment tonight? With that I will close the public hearing part of the meeting. Thank you very much.

**P-002-001**

Comment acknowledged. The EIS described the environment that will be affected by the proposal, analyzed significant impacts, and discussed reasonable mitigation measures that would mitigate the impacts. The EIS document is used by decision makers to enable governmental agencies and in conjunction to plan actions and make decisions, including conditioning of permits. The Port has identified a number of environmental impacts as part of the environmental review process and provided ways to reduce, minimize, or mitigate the environmental impacts. A decision maker from an agency may choose to adopt specific mitigation measures as a condition of use. The Port will hold these permits for construction and operation. However compliance with these conditions will also be the responsibility of the tenant. Lease language states that facilities are subject to requirements of various state, federal, and local agencies and that the lessee is responsible for maintaining compliance.

**P-002-002**

The Port selected a Preferred Alternative in the FEIS with impacts that were disclosed in Alternative 2 of the DEIS and is acquiring permits with the City of Seattle that approve the Project infrastructure improvements and manage the impacts from operations that consider throughput of up to 1.3 million TEUs. The Port, through the EIS analysis, will identify the steps needed to reduce, minimize, avoid, or mitigate the impacts from operations and construction consistent with the Project described as Alternative 2 in the DEIS and modified in the FEIS, based on public and agency comment.

**P-002-003**

Air pollution related to harbor vessels is not unregulated. Marine service vessels, like oceangoing vessels, are required to use low sulfur 0.5 parts per million (ppm) diesel fuel.

Between 2005 and 2011, the number of tons of pollutant emissions from the Port for Commercial Harbor vessels shows significant reductions (see FEIS, Volume II, Appendix A).

The Port and the Northwest Seaport Alliance (NWSA) take air pollution seriously, as evidenced by the stated goals in the Northwest Ports Clean Air Strategy program to reduce diesel and greenhouse gas emission in advance of, and complementary to, applicable regulations. Evidence of achievement is observed in the significant air emissions reductions between 2005 and 2011 (see FEIS, Volume II, Appendix A).

**P-002-004**

Comment acknowledged. Please see response to comment P-002-001. Please see Standard Response No. 10: Responsibility for Permit Compliance at the beginning of Chapter 6 for additional information on how the Port proposes to use agreements with a selected marine terminal operator to ensure comprehensive compliance with city, state, federal, and Treaty tribe conditional approvals.

**P-002-005**

The response for P-002-4 partially answers this comment. Please see Standard Response No. 4: Electrification Schedule and Accelerated Schedule for Adoption of Alternative 3 at the beginning of Chapter 6 for additional information.



**P-002-006**

Please see Standard Response No. 9: Compliance Noise Monitoring at the beginning of Chapter 6 for additional information on how ambient-sensing, broadband backup alarms will be required on all mobile cargo handling equipment for the proposed Project.

Chapter 3.6.6.1, Annoyance Noise Control Measures—Alternatives 2 and 3, states that “several measures intended to reduce generation of what might be perceived as annoying noise by Project-related sources, including backup alarms...The noise control measures that would be implemented as part of the proposed Project include the following: Use of ambient-sensing broadband back up alarms on all mobile equipment instead of using pure tone alarms.”

**P-002-007**

The DEIS analyzed and evaluated noise anticipated from a range of cargo handling equipment, derived from potential operational requirements associated with Alternatives 2 and 3 and identified potential noise impacts linked with throughput levels. The specific equipment to be used at the site will not be precisely known until a Terminal 5 site operator has been identified and specific operational plans for the terminal determined. As part of that process, the need for the site operator to comply with the City of Seattle’s daytime and nighttime noise limits will be stipulated, including formulating and implementing a detailed Operational Noise Management Plan. The tenant will, ultimately, make the decision on what equipment to purchase, and noise monitoring will be used to confirm compliance of the facility with the noise limits.

**P-002-008**

The noise, air, and traffic reports have all been updated to make sure the analysis provides adequate data to measure potential impacts. The study area for the transportation analysis has been extended to the state highway system, including Interstate 5. Information on low frequency noise has been added to the Noise Technical Report, and additional analysis has been provided to measure potential air quality impacts. See updated technical reports in FEIS, Volume II, Appendices.

**P-002-009**

Comment acknowledged. The EIS described the environment that will be affected by the proposal, analyzed significant impacts, and discussed reasonable mitigation measures that would mitigate the impacts. The EIS document is used by decision makers to enable governmental agencies and in conjunction to plan actions and make decisions, including conditioning of permits. The Port has identified a number of environmental impacts as part of the environmental review process and provided ways to reduce, minimize, or mitigate the environmental impacts. A decision maker from an agency may choose to adopt specific mitigation measures as a condition of use.

**P-002-010**

After publication of the DEIS, comments were received about low-frequency noise vibrations. Measurements were made to assess the levels of low-frequency noise. The FEIS reports on those measurements and efforts to manage low-frequency noise (see FEIS, Volume II, Appendix B).

Please see Standard Response No. 7: Low Frequency Noise at the beginning of Chapter 6 for additional information on how this noise will be addressed in the Operational Noise Management Plan.

The site is built and committed as a marine cargo terminal. The air quality analysis provided in the DEIS indicated that the Terminal 5 operations for the proposed alternatives do not exceed NAAQS for criteria pollutants, even with increased intensity of use.

**P-002-011**

Please see Standard Response No. 7: Low Frequency Noise at the beginning of Chapter 6 for additional information on how this noise will be addressed in the Operational Noise Management Plan.

**P-002-012**

Comment acknowledged. The Operational Noise Management Plan (see FEIS, Volume II, Appendix M) for future activities at Terminal 5 will include both a noise monitoring program and a noise complaint hotline. Through these avenues, any noise issues arising from hoteling vessels can be identified, and specific vessels that have been verified to cause low-frequency noise issues in the surrounding communities will be required to use shorepower, if the ship is capable of doing so.

**P-002-013**

Comment acknowledged. Noise mitigation, if deemed necessary by steps outlined in the Operational Noise Management Plan (see FEIS, Volume II, Appendix M), would be focused on on-site equipment and activities. Noise mitigation to individual residences is not being considered.

**P-002-014**

Comment acknowledged. The Port and NWSA intend to operate the facility in a manner that avoids potential adverse environmental effects during construction and long-term cargo operations and meets all environmental regulations.

**P-002-015**

DEIS, Volume I, Chapter 2, Section 2.2 discusses the Project background including Project goals and objectives. Included in the discussions are the changing global marine cargo facility trends and the need to maintain existing cargo service to ensure that Puget Sound marine cargo terminals can continue to serve international commerce needs. Terminal 5 has sufficient existing and potential infrastructure elements, consistent with cargo terminal criteria identified in the NSWA business plan, capable of serving existing and anticipated commerce with appropriate long-term investment.

**P-002-016**

The DEIS includes environmental analyses and evaluations prepared by Port staff and contributing engineering, planning, design, and environmental review experts. The DEIS presents objective, technically rigorous environmental assessments of potential Project impacts, including measures with the objective of avoiding and minimizing anticipated adverse environmental effects.

**P-002-017**

After publication of the DEIS, comments were received about low-frequency noise vibrations. Measurements were made to assess the levels of low-frequency noise. The FEIS reports on those measurements and efforts to manage low-frequency noise (see FEIS, Volume I, Chapter 3, Section 3.6). Please see Standard Response No. 7: Low Frequency Noise at the beginning of Chapter 6 for

additional information on how this noise will be addressed in the Operational Noise Management Plan.

**P-002-018**

Please see Standard Response No. 7: Low Frequency Noise at the beginning of Chapter 6 for additional information on how this noise will be addressed in the Operational Noise Management Plan.

**P-002-019**

Please see Standard Response No. 9: Compliance Noise Monitoring at the beginning of Chapter 6 for additional information on how ambient-sensing, broadband backup alarms will be required on all mobile cargo handling equipment for the proposed Project.

**P-002-020**

The study area for the transportation analysis has been extended to the state highway system, including Interstate 5. See also responses to C-002-038 and S-002-003.

**P-002-021**

Transportation Concurrency Analysis has been added to Section 5.9 of the Transportation Technical Report (see FEIS, Volume II, Appendix C). Transportation concurrency would be met with the proposed Project.

**P-002-022**

It is not possible to prevent truck operations during the peak hours. Elements of the Gate Queue Management Plan described in Section 6.2.4 and provided in Appendix B of the Transportation Technical Report (see FEIS, Volume II, Appendix C) developed for the terminal could reduce peak impacts by extending gate hours or implementing other strategies to reduce peak loads, if and when needed.

**P-002-023**

Comment acknowledged. Depending on the configuration for the five-way intersection agreed to by SDOT, signal phasing changes may be possible. In addition, the recommended upgrades to the signal system on SW Spokane Street would likely require that new signal control equipment be installed at the five-way intersection, which would provide more flexibility in timing and phasing patterns.

**P-002-024**

The site is built and committed as a marine cargo terminal since 1965. Terminal 5 is one of two sites that have been identified as having the infrastructure attributes to accommodate two large ships, on-dock intermodal rail transfers, and truck access. The other site is located in Tacoma which is currently being upgraded. There are no other ports in Washington State that can accommodate those needs.

**P-002-025**

The DEIS includes environmental analyses and evaluations prepared by Port staff and contributing engineering, planning, design, and environmental review experts. The DEIS presents objective, technically rigorous environmental assessments of potential Project impacts, including measures with the objective of avoiding and minimizing anticipated adverse environmental effects.

**P-002-026**

The Port has committed to implementing safety measures and traffic improvements in the area of rail lines and vehicle travel routes between the existing Terminal 5 entrance gate and rail lines near the east end of the Duwamish Waterway rail bridge. These rail, truck, pedestrian, and bicycle improvements and safety measures could assist in establishing a "Quiet Zone" designation from. Please note that changes in rail line warning procedures and operations require City of Seattle and Federal Railroad Administration (FRA) approval. The Port supports working to implement improvements in rail and vehicle traffic conditions west of the Duwamish Waterway rail bridge and will assist with planning, design, and justification actions.

**P-002-027**

The site is built and committed as a marine cargo terminal. The air quality analysis provided in the DEIS indicated that the proposed Terminal 5 operation and construction do not exceed NAAQS for criteria pollutants, even with increased intensity of use.

**P-002-028**

Comment acknowledged. Terminal 5 is designed for container vessels and the EIS does not take into consideration the use of cruise vessels that call at other terminals.

**P-002-029**

Please see Standard Response No. 3: Use of Shorepower at the beginning of Chapter 6 for additional information. The Port can do nothing about decreasing noise emanating from train themselves, but have committed to taking steps to reduce noise from train safety horn requirements. The Port has committed to implementing safety measures and traffic improvements in the area of rail lines and vehicle travel routes between the existing Terminal 5 entrance gate and rail lines near the east end of the Duwamish Waterway rail bridge. These rail, truck, pedestrian, and bicycle improvements and safety measures could assist in establishing a "Quiet Zone" designation from.

**P-002-030**

Please see Standard Response No. 3: Use of Shorepower at the beginning of Chapter 6 for additional information.

Please see Standard Response No. 4: Electrification Schedule and Accelerated Schedule for Adoption of Alternative 3 at the beginning of Chapter 6 for additional information.

**P-002-031**

The industrial Stormwater General Permit (ISGP) requires the collection of quarterly sampling for fecal coliform bacteria. The Port has the option to collect multiple samples during the quarter and report the geometric mean. Additional sampling is at the discretion of Ecology.

Stormwater treatment and improvements are to be installed as needed, to support operations at the new facility. Prior to reestablishing container cargo terminal operations, a new engineering report that would define treatment options and detail construction plans will be written, and the plan will be reviewed and approved by Ecology. Upon approval, the stormwater system would be constructed. The new system and the fecal coliform bacteria specific BMPs should improve water quality.

**P-002-032**

The Port and the future tenant will have an Ecology-approved Level 3 Corrective Action treatment system in place prior to startup of new operations at Terminal 5. DEIS Section 3.3.4 Mitigation Measures (pg. 3.3.14) describes how surface water mitigation for operations will include the implementation of stormwater treatment prior to the startup of new operations: "Prior to reestablishing container cargo terminal operations, the facility would be reevaluated for the appropriate Level 3 Corrective Actions, requiring a new engineering report. The new engineering report would define treatment options and detailed construction plans for Ecology's review and approval. Upon approval, the stormwater system would be constructed prior to beginning of operations."

Details of the stormwater treatment system including treatment technology and location(s) have not yet been determined. The new treatment BMPs will require site-specific design and sizing of equipment and structures, therefore an engineering report will need to be prepared and submitted to Ecology for review and approval prior to construction. The engineering report will include a description of the treatment alternatives considered and why the proposed option was selected, design data including sizing calculations of the treatment units, a description of the treatment process and operation, and anticipated results.

Once new operations startup at Terminal 5, the Port (or the new tenant if the ISGP is transferred to that tenant) will be responsible for future ISGP compliance including quarterly monitoring and reporting, and performing escalating levels of corrective action (if needed) based on benchmark exceedances in compliance with ISGP Special Condition S8 pertaining to Level 1, 2, and 3 Corrective Actions.

**P-002-033**

At the present time, no tenants for Terminal 5 have been identified that would store animal hides at the terminal. If a tenant is identified, any storage at Terminal 5 would comply with the Port of Seattle's Industrial Stormwater General Permit (ISGP). The ISGP requires the development of a Stormwater Pollution Prevention Plan (SWPPP) to prevent and control the contamination of discharges of stormwater to surface or groundwater. The SWPPP would be updated to reflect any changes to the facility, which would include a facility assessment, description of the drainage system, and a description of source control best management practices (BMPs). Structural source

control BMPs applicable to hide storage would include grading, berming, or curbing to prevent runoff and coverage of material storage areas to minimize exposure to weather. This information is available in the Stormwater Technical Memorandum for Terminal 5 in the FEIS, Volume II, Appendix D.

**P-002-034**

See response to O-019-002 about monitoring standards.

**P-002-035**

The comment period originally was to close June 21, 2016, and was extended 17 days to July 8, 2016.

**P-002-036**

Please see Standard Response No. 8: Cargo Forecasts at the beginning of Chapter 6 for additional information.

**P-002-037**

Please see Standard Response No. 5: Train Horn Noise at the beginning of Chapter 6 for additional information on addressing annoyance noise and “Quiet Zones”.

Noise from increased train visits to and from Terminal 5, in the area between the Duwamish Waterway rail bridge and the rail crossing at West Marginal Way Southwest at the southeast margin of Terminal 5, was analyzed and discussed in the DEIS. It was found that at most locations in the vicinity of the site, additional train deliveries would result in minimal increases in the day-night sound level (Ldn) when compared to existing conditions. For these locations, FTA noise impact criteria characterize the increases as resulting in no noise impacts. For residences on Pigeon Point, the additional trains could result in moderate noise impacts due primarily to the increase in locomotive horn soundings. If the proposed safety improvements on the rail corridor result in an overall reduction in locomotive horns, or if the City of Seattle uses the safety improvements to pursue a “Quiet Zone” designation, the increases and resulting impacts at Pigeon Point would be less than identified in the DEIS. Although the projected increases in the Ldn levels in the communities surrounding the site are minimal, it does not mean that noise from locomotives, when present, would not occasionally be audible.

**P-002-038**

Please see Standard Response No. 8: Cargo Forecasts at the beginning of Chapter 6 for additional information on the business planning for the proposed Project.

**P-002-039**

Please see Standard Response No. 5: Train Horn Noise at the beginning of Chapter 6 for additional information on addressing annoyance noise and “Quiet Zones”.

**P-002-040**

Please see response to comments I-032-002 and I-032-003 for information on water quality.

**P-002-041**

Information has been added to the Transportation Technical Report (See Final EIS, Volume II, Appendix C) to show the Project's impact to the Interstate 5/Spokane Street Viaduct interchange. The Project impact to that interchange would be small. See also the response to Comment S-002-003.

**P-002-042**

The geographic area of the traffic study was expanded. The truck trip distribution pattern and trip assignments in Section 4.3 the Transportation Technical Report (see FEIS, Volume II, Appendix C) have been extended to show the net change in truck trips to the state highway network, including Interstate 5, Interstate 90, and SR 99. Analysis has also been added in Section 5.1 of the Transportation Technical Report to show the percentage of total traffic at key locations on the network.

**P-002-043**

Conservation measures built into the design of proposed Terminal 5 upgrades will improve rearing and migratory habitats within the basin. After proposed construction activities, the Terminal 5 wharf will occupy a smaller wharf footprint (decrease of 8,500 square feet); remove approximately 284 timber piles, many of which are treated with creosote, a potential contaminant source; and remove residual contaminated sediments at the face of the wharf by dredging. These conservation measures will improve existing aquatic habitat conditions for rearing and migrating salmonids by reducing impediments to migration, reducing overwater shading, and improving water quality.

New stormwater improvements will be designed prior to new MTO occupancy that will have approval from the Department of Ecology. The projected impacts to essential fish habitat from loss of benthic productivity due to dredging will be temporary (5 months to two years). The Port is proposing mitigation that offsets the unavoidable loss of habitat without a lag time. The proposed mitigation is being negotiated with the USACE and NOAA and will be included as part of the Corps permits.

**P-002-044**

Comment acknowledged. The Port has confirmed that you are on the mailing list to receive information about the proposed Project.

**P-002-045**

See the response to comment O-005-001 for meteorological considerations.

Please see Standard Response No. 1: Selection of Air Quality Monitoring Sites and Data at the beginning of Chapter 6 for additional information.

**P-002-046**

The Northwest Ports Clean Air Strategy has a clean truck program that currently requires trucks to be no older than 1994. By 2018, that program becomes more stringent and only 2007 and newer trucks will be allowed on Port terminals. By the time Terminal 5 would begin operations in 2020, the

Clean Truck program will require on-road, long-haul trucks to be manufactured no earlier than 2007. This timeline mirrors the aggressive truck programs at the Port of Los Angeles and Port of Long Beach. Heavy-duty trucks for 2007 and beyond are manufactured to the EPA's most stringent regulations for particulate matter.



# Chapter 7

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# Chapter 8

## Distribution List

## 8.0 DISTRIBUTION LIST

(Partial List included below. Full list on file at Port of Seattle offices)

### 8.1 FEDERAL AGENCIES

U. S. Army Corps of Engineers

U. S. Bureau of Indian Affairs

U. S. Coast Guard

U. S. Customs and Border Protection, Department of Homeland Security

U. S. Environmental Protection Agency

U. S. Fish & Wildlife

U. S. National Marine Fisheries Services

### 8.2 REGIONAL AGENCIES

Puget Sound Clean Air Agency

[Puget Sound Partnership](#)

### 8.3 WASHINGTON STATE AGENCIES

Washington Council on International Trade

Washington Department of Archaeology and Historic Preservation

Washington Department of Ecology

Washington Department of Fish & Wildlife

Washington Department of Natural Resources

Washington Department of Transportation

Washington Environmental Council

Washington State Ferries

Washington State Labor Council

### 8.4 CITY OF SEATTLE

Seattle City Council Members and Mayor's Office

Seattle City Light

Seattle Civil Service Commission

Seattle Department of Neighborhoods

Seattle Department of Construction and Inspections

Seattle Department of Transportation

Seattle Fire Department

Seattle Office of Intergovernmental Relations

Seattle Planning Commission

Seattle Public Utilities

## 8.5 KING COUNTY

King County Council Members and Executive

King County Department of Natural Resources

King County Development/Environmental Services

King County Industrial Waste

King County Public Health

King County Transit Division

King County Wastewater Treatment Division

## 8.6 INDIAN TRIBES

Duwamish Tribal Office

Muckleshoot Tribe

Suquamish Tribe

United Indians of All Tribes

## 8.7 PUBLIC LIBRARIES

Seattle Public Library – Central Branch, West Seattle Branch, Southwest, Highpoint, Delridge Branch, South Park Branch

University of Washington Libraries, Government Publications Division

## 8.8 NEIGHBORHOOD ASSOCIATIONS AND SERVICE CENTERS

Admiral Neighborhood Council

Delridge District Council

Georgetown Community Council

Duwamish District Council

South Park Neighborhood Association

Southwest District Council

Terminal 5 Interest Group

West Seattle Transportation Coalition

## 8.9 LOCAL BUSINESSES

Alaska Maritime Agencies

BNSF Railway Company

Clipper Navigation

Crowley Maritime Corporation

King County Labor Council

Northwest Ships Services LLC

Puget Sound Energy

Republic Parking Northwest, Inc.

Seattle Times

SSA Marine

## 8.10 ORGANIZATIONS

Bicycle Alliance

Bluewater Network

Cascade Land Conservancy

Downtown Seattle Association

Freight Mobility Advisory Committee

ILWU Local 9

ILWU Local 19

League of Women Voters

NW Steelhead Salmon Council

Ocean Advocates

People for Puget Sound

Puget Sound Pilots

Puget Sound Regional Council

Puget Soundkeeper Alliance

Sea Scouts

Seattle Audubon

Seattle Convention and Visitors Bureau

Seattle Downtown Alliance

Seattle Parks Foundation

SEIU Local 6

SEIU Local 9

SODO Business Association

Sound Transit

Urban League

Washington Toxics Coalition